User Operations Guide
Mira Production Server

Mira Software V5.0.9

6 May 2015

Hi there. Is there any reason why you must print this document? It looks so nice on the screen, with that pretty Mira logo glowing at the top of the page — plus, everything in this PDF is cross-linked, making it VERY easy to find what you're looking for. So make good use of it, and save some trees. And thank you for considering Mira.

Now please consider the environment.

Abekas®

Get ready to learn about a rather resourceful product.

But first, that stuff you tend to skip over. Please pay attention; it could perhaps save your life.

Regulatory Information

The following information provides regulator and safety information for the Abekas Mira product.

Publishing, Copyright and Compliance Information

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Publishing History

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- Published in the United States of America

Copyright

FCC Compliance and User Information

The following information has been provided to clarify FCC requirements for operation of this device. These requirements are found in the FCC rules for radio frequency devices, Part 15.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference—in which case the user is required to correct the interference at the user's own expense.

Important - Modifications & Shielded Cables

Changes or modifications to this product not authorized by Abekas, Incorporated could void the FCC Compliance and negate your authority to operate the product.

This product was tested for FCC compliance under conditions that included the use of Abekas peripheral devices and Abekas shielded cables and connectors between system components. It is important that you use Abekas peripheral devices and shielded cables and connectors between system components to reduce the possibility of causing interference to radios, television sets, and other electronic devices. You can obtain Abekas peripheral devices and the properly shielded cables and connectors through an Abekas-authorized dealer.

Notice

Information contained in this document is not guaranteed and is subject to change without notice or obligation, and does not represent a commitment on the part of Abekas, Incorporated.

Acknowledgments

Company Information

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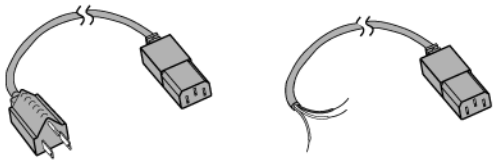
Safety and First Aid

Abekas equipment is designed to the highest standards of quality and reliability. However, no matter how these systems are designed, operators and maintenance personnel can be exposed to electrical shock hazard when protective covers are removed for maintenance or the installation of options. With this caution in mind, each operator and engineer must observe all safety regulations, and have a clear understanding of first aid procedures related to electrical hazards.

Power Information

This device is supplied with two sets of two power cords. One set is for use in the United States and those areas where a North American style cord can be used. A second power cord set is provided for use outside the United States use. The so-called "international cord" has a "female" receptacle on one end for fitting to the Abekas hardware, and three pre-stripped wires on the remaining end—ready for installation of the proper localized plug (which is to be supplied by the customer). It is the responsibility of the customer to obtain the proper localized plug and to ensure it is properly fitted on the end of the "international cord" before using with Abekas Mira.



North American International IEC 320

To ensure safe operation and to guard against potential shock or risk of fire, ensure your AC power source for the Mira is within the required voltage range and frequency. The Mira power supply has the following input AC power requirements:

- AC Voltage Input (Auto-Ranging): 100VAC through 240VAC
- Input AC Frequency Range (nominal) 47Hz — 63Hz
- Input AC Power Requirement at 110VAC: ~12A Maximum
- Input AC Power Requirement at 240VAC: ~6A Maximum

Safety and Compliance Certifications

Certified to:

- EN-60950-1
- EN-55103-1
- EN-55103-2

And some fancy logos from the certification agencies:

Operating Environment

The Mira system will operate to all specifications within the temperature, humidity and altitude ranges indicated in Table 1 below. However, reliability is greatly enhanced by operating the Mira within the following ranges:

- Recommended Operating Temperature: 13°C to 35°C (55°F to 95°F)
- Recommended Operating Humidity: 20% to 80% non-condensing

High temperature/humidity combinations should be avoided at all times. Please keep Mira's main chassis well ventilated at all times during active operation.

Table 1: Temperature, Humidity and Altitude

Operating Conditions		
	Metric	***English***
Temperature	5°C to 55°C (*See Notes below*)	41°F to 131°F (*See Notes below*)
Relative Humidity	8% to 90% non-condensing	8% to 90% non-condensing
Maximum Wet Bulb Temperature	29.5°C non-condensing	85°F non-condensing
Maximum Temperature Gradient	15°C/Hour	59°F/Hour
Altitude Range	-300 m to 3,048 m	-984 ft. to 10,000 ft.
Non-Operating Conditions		
	Metric	***English***
Temperature	-40°C to 65°C	-40°F to 149°F
Relative Humidity	5% to 95% non-condensing	5% to 95% non-condensing
Maximum Wet Bulb Temperature	35°C non-condensing	95°F non-condensing
Maximum Temperature Gradient	15°C/Hour	59°F/Hour
Altitude Range	-300 m to 12,200 m	-984 ft. to 40,026 ft.

Notes:

- Operator is responsible for providing sufficient ventilation to maintain surface temperature below 40°C (104°F) at the center of the top cover of the media disk drives.
- Non-condensing conditions should be maintained at all times.
- Maximum storage period inside shipping package is one year.
- Recommended Operating Temperature: 13°C to 35°C (55°F to 95°F)
- Recommended Operating Humidity: 20% to 80% non-condensing

Safety Warnings

We were at the mercy of a multi-language translation service provider, who produced the translations for the following very important information; we realize there are some pretty humorous phrasing, grammar, and choice of vocabulary used in some of the translated text. Please ignore that humor as best you can, so you can better pay attention to the basic messages being conveyed. You will then learn how to avoid situations which may result in consequences that will short-circuit your chances of enjoying this humor again.

The text of the ENGLISH version may be highlighted, copied and pasted into your favorite language-translation tool (online or offline) to translate this important text into your local language for others to read.

Safety Warnings — English / Arabic / Chinese

ENGLISH	WARNING!

This system complies with the safety standard IEC/EN60950-1. To ensure safe operation and to guard against potential shock hazard or risk of fire, the following must be fulfilled:

- This system features auto-ranging power supplies. Ensure your AC power source is within the correct operating range of voltage and frequency, as required by the system.
- Each chassis in this system must be electrically grounded by connecting the input power cord(s) to a correctly wired and grounded power outlet.
- The input AC power cord(s) supplied with this system must be wired as follows:

Live = Brown	Neutral = Blue	Earth = Green

Completely disconnect all input AC power cords from chassis before removing top cover from chassis. Failure to do so will expose dangerous electric currents and voltages. Physical contact with these electric currents and voltages is extremely dangerous and may result in severe physical injury or death! Only qualified service personnel should remove the top cover from the chassis.

Modules marked with this symbol may be removed while the system is operating (powered). After removing a module, beware of dangerous electric currents and voltages that are exposed on the module receptacle connector inside the chassis. Please keep fingers, tools, and foreign metal objects away from the exposed receptacle connector while the chassis has input AC power applied. Physical contact with these electric currents and voltages is extremely dangerous and may result in severe physical injury or death! Only qualified service personnel should remove these modules.

العربية	تحذير!	ملاحظات هامة للسلامة

هذا النظام متوافق مع معيار السلامة **IEC/EN60950-1**. لضمان التشغيل الآمن والوقاية من احتمال التعرض لصدمة كهربية أو خطر نشوب حريق يجب اتباع الآتي:

- هذا النظام مزود بخاصية الضبط الآلي لمدى الطاقة. تأكد من أن مصدر الطاقة في مدى التشغيل الصحيح للجهد أو التردد وفقاً لما يتطلبه النظام.
- يجب تأريض كل هيكل في النظام بتوصيل سلك/ أسلاك دخول الطاقة بمقبس للتيار مؤرض وموصل بالطريقة الصحيحة.
- سلك/ أسلاك دخول الطاقة المقدمة مع هذا النظام يجب توصيلها كما يلي:

أرضي = أخضر/ أصفر	سالب = أزرق	موجب = بني

يجب فصل جميع أسلاك دخول التيار المتردد من الهيكل قبل خلع الغطاء العلوي من الهيكل، حيث أن عدم القيام بذلك يتسبب في التعرض لشحنات خطيرة من التيار والجهد الكهربي. ملامسة الجسم لهذه الشحنات من التيار والجهد الكهربي تعد أمراً في غاية الخطورة، وقد تؤدي إلى إصابات جسمية خطيرة أو تتسبب في الوفاة! لهذا يراعى عدم خلع الغطاء العلوي من الهيكل إلا بواسطة أحد أفراد الخدمة المؤهلين.

الوحدات التي عليها هذا الرمز يجوز خلعها أثناء تشغيل الجهاز (توصيله بالتيار). عند خلع أي وحدة احترس من شحنات التيار والجهد الكهربي التي تنتشر على موصل مقبس الوحدة داخل الهيكل. يرجى إبعاد الأصابع والأدوات والأشياء المعدنية الغريبة عن موصل المقبس المكشوف أثناء دخول التيار المتردد إلى الهيكل. ملامسة الجسم لهذه الشحنات من التيار والجهد الكهربي تشكل خطورة كبيرة وقد تتسبب في إصابة جسمية خطيرة أو تؤدي إلى الوفاة. يراعى عدم خلع هذه الوحدات إلا بواسطة أحد أفراد الخدمة المؤهلين.

中文	警告！	重要安全注意事项

本系统遵守安全标准 **IEC/EN60950-1**。为确保安全操作及防止电击或火灾危险，请遵守以下规定:

· 本系统能够自动调整以适应供电情况。请确保贵处的电源符合本系统所要求的正确电压和频率工作范围。
· 本系统中的每个机壳均必须接地，方法是将输入电源线连接到正确接线并接地的电源插座上。
· 对于随本系统提供的输入电源线，必须按如下方式接线:

载电线 = 棕色	中性线 = 蓝色	地线 = 绿色/黄色

在从机壳取下顶盖之前，必须从机壳完全断开所有的输入交流电源线。否则将会暴露于危险电流及电压之下。身体接触这些电流和电压非常危险，并可能导致严重的人身伤害或伤亡！只有合格的服务人员才可以取下机壳的顶盖。

对于带有此标记的组件，可以在系统运行（带电）时取下。在取下组件之后，请当心机壳内组件插孔连接器上暴露的危险电流及电压。当机壳接通输入交流电时，请勿用手指、工具和外部金属物体接触裸露的插孔连接器。身体接触这些电流和电压非常危险，并可能导致严重的人身伤害或伤亡！只有合格的服务人员才能取下这些组件。

Safety Warnings — Danish / Dutch / Finnish / French

DANSK	ADVARSEL!	VIGTIGE SIKKERHEDSOPLYSNINGER

Dette system er i overensstemmelse med sikkerhedsstandarden **IEC/EN60950-1**. Følgende skal være opfyldt for at garantere sikker drift og beskyttelse mod stød og brand :

- Systemet er udstyret med selvjusterende strømforsyning. Sørg for at strømkilden ligger inden for det korrekte interval med hensyn til spænding og frekvens i henhold til systemkravene.
- Hvert chassis i dette system skal jordforbindes ved at tilslutte netledningerne til en korrekt forbundet og jordet stikkontakt.
- Netledningerne til dette system skal forbindes som følger:

Strømførende = brun	Neutral = blå	Jord = grøn/gul

Afbryd alle netledningers forbindelse til chassiset før det øverste dæksel fjernes fra chassiset, da der ellers er risiko for at komme i kontakt med farlig elektrisk strøm og spænding. Fysisk kontakt med elektrisk strøm og spænding er yderst farlig og kan resultere i alvorlig fysisk skade eller dødsfald. Det øverste dæksel må kun fjernes fra chassiset af kvalificerede servicemedarbejdere.

Moduler markeret med dette symbol kan fjernes mens systemet er tændt (tilsluttet elnettet). Vær opmærksom på modulkontakten inde i chassiset efter fjernelse af et modul, da denne stadig er strømførende. Rør ikke kontakten med fingre, værktøj eller andre metalgenstande så længe chassiset er tilsluttet elnettet. Fysisk kontakt med strøm fra elnettet er yderst farlig og kan resultere i alvorlig fysisk skade eller dødsfald. Disse moduler må kun fjernes af kvalificerede servicemedarbejdere.

NEDERLANDS	WAARSCHUWING!	BELANGRIJKE VEILIGHEIDSVOORSCHRIFTEN

Dit systeem voldoet aan veiligheidsstandaard **IEC/EN60950-1**. Om veilig gebruik te garanderen en de gebruiker te beschermen tegen het potentiële gevaar van een elektrische schok en tegen brandgevaar, moet aan de volgende voorwaarden worden voldaan:

- Dit systeem is voorzien van zelf-instellende stroomvoorzieningen. Controleer of uw stroombron zich binnen het juiste voltage- en frequentiebereik bevindt zoals die door het systeem wordt vereist.
- Elk chassis in dit systeem moet elektrisch zijn geaard door de invoer-stroomkabel(s) te verbinden met een goed bedraadde en geaarde wandcontactdoos.
- De invoer-stroomkabel(s) die bij dit systeem is(zijn) geleverd, moet(en) als volgt worden aangesloten:

Stroomvoerend = Bruin	Neutraal = Blauw	Aarde = Groen/Geel

Ontkoppel alle stroomkabels van het chassis voordat u de bovenklep van de chassis verwijdert. Als u dit niet doet, wordt u blootgesteld aan gevaarlijke elektrische stroom en spanningen. Fysiek contact met deze elektrische stroom en spanningen is extreem gevaarlijk en kan leiden tot ernstig lichamelijk letsel of de dood! Alleen gekwalificeerd onderhoudspersoneel mag de bovenklep van het chassis verwijderen.

Modulen die met dit symbool zijn gemarkeerd, kunnen worden verwijderd terwijl het systeem in bedrijf (aan) is. Nadat u een module heeft verwijderd, dient u op te passen voor gevaarlijke elektrische stroom en spanningen die door het aansluitkoppelstuk voor de module binnen het chassis worden vrijgegeven. Houd vingers, gereedschap en andere metalen voorwerpen weg van het blootgestelde aansluitkoppelstuk zolang het chassis is aangesloten op de netvoeding. Fysiek contact met deze elektrische stroom en spanningen is extreem gevaarlijk en kan leiden tot ernstig lichamelijk letsel of de dood! Alleen gekwalificeerd onderhoudspersoneel mag deze modulen verwijderen.

SUOMI	VAROITUS!	TÄRKEITÄ TURVALLISUUSOHJEITA

Tämä järjestelmä on standardin **IEC/EN60950-1** mukainen. Noudata ehdottomasti seuraavia ohjeita, niin järjestelmän käyttö on turvallista ja vältät sähköisku- ja tulipalovaaran:

- Järjestelmä sopeutuu automaattisesti verkkovirran jännitteeseen. Varmista, että käyttämäsi verkkovirran jännite ja taajuus vastaavat järjestelmän vaatimia jännitettä ja taajuutta.
- Järjestelmän jokainen kotelo on maadoitettava liittämällä tulovirtajohto (johdot) asianmukaisesti johdotettuun ja maadoitettuun virtalähteeseen.
- Liitä järjestelmän mukana tulleet virtajohdot seuraavasti:

Jännitteinen = Ruskea	Nolla = Sininen	Maadoitus = Vihreä/keltainen

Kytke kaikki vaihtovirran tulojohdot kokonaan irti kotelosta ennen kuin avaat kotelon kannen. Jos unohdat tämän, joudut alttiiksi vaaralliselle sähkövirralle ja jännitteelle. Fyysinen kosketus tällaisen sähkövirran ja jännitteen kanssa on äärimmäisen vaarallista ja saattaa aiheuttaa vakavia vammoja tai kuoleman! Siksi kotelon kannen avaaminen tulisi jättää sähköalan ammattilaisen tehtäväksi.

Tällä symbolilla merkityt osat voidaan irrottaa, kun järjestelmä on käytössä (kytketty virtalähteeseen). Kun irrotat jonkin osan, varo kotelon sisäpuolen vastakkeessa olevaa vaarallista sähkövirtaa ja jännitettä. Pidä sormet, työkalut ja muut metalliesineet loitolla vastakkeesta silloin, kun kotelo on kytketty vaihtovirtaan. Fyysinen kosketus tällaisen sähkövirran ja jännitteen kanssa on äärimmäisen vaarallista ja saattaa aiheuttaa vakavia vammoja tai kuoleman! Siksi näiden osien irrottaminen tulisi jättää sähköalan ammattilaisen tehtäväksi

FRANÇAIS	ATTENTION !	INFORMATIONS IMPORTANTES DE SÉCURITÉ

Ce système correspond à la norme de sécurité **IEC/EN60950-1**. Les instructions suivantes doivent être respectées pour garantir une utilisation en toute sécurité et pour vous protéger d'une électrocution ou d'un risque d'incendie :

- Ce système est doté d'une alimentation électrique automatique. Assurez-vous que le courant délivré par votre source correspond au voltage et à la fréquence requis par le système.
- Chaque boîtier de ce système doit être relié électriquement à la terre en connectant le ou les cordons de puissance d'entrée à une prise de courant correctement connectée et mise à la terre.
- Le ou les cordons fournis avec ce système doivent être branchés comme suit :

Phase = Marron	Neutre = Bleu	Terre = Vert/jaune

Déconnectez entièrement tous les cordons de puissance d'entrée CA du boîtier avant d'enlever le couvercle. Si vous ne suivez pas cette instruction, vous risquez de vous exposer à des courants électriques et des voltages dangereux. Le contact physique de ces courants électriques et voltages est très dangereux et vous pouvez vous blesser gravement ou vous mettre en danger de mort ! Seule une personne qualifiée doit enlever le couvercle du boîtier.

Les modules portant ce symbole peuvent être retirés pendant que le système fonctionne (est sous tension). Après avoir enlevé un module, faites attention aux courants électriques et voltages dangereux qui peuvent parcourir l'emplacement du connecteur du module à l'intérieur du boîtier. Ne touchez pas et éloignez les outils et autres objets en métal de l'emplacement du connecteur dangereux lorsque que le boîtier est sous tension (CA). Le contact physique de ces courants électriques et voltages est très dangereux et vous pouvez vous blesser gravement ou vous mettre en danger de mort ! Seule une personne qualifiée doit enlever ces modules.

Safety Warnings — Greek / German / Hebrew

ΕΛΛΗΝΙΚΑ	ΠΡΟΕΙΔΟΠΟΙΗΣΗ!	ΣΗΜΑΝΤΙΚΕΣ ΑΝΑΚΟΙΝΩΣΕΙΣ ΑΣΦΑΛΕΙΑΣ ΑΣΦΑΛΕΙΑΣ

Αυτό το σύστημα συμμορφώνεται με το πρότυπο ασφαλείας **IEC/EN60950-1**. Για να εξασφαλίσετε την ασφαλή λειτουργία και να προστατευθείτε από ενδεχόμενη ηλεκτροπληξία ή κίνδυνο πυρκαγιάς, πρέπει να τηρούνται τα εξής:

- Αυτό το σύστημα χαρακτηρίζεται από παροχές ρεύματος αυτόματης διακύμανσης. Βεβαιωθείτε ότι η πηγή τροφοδοσίας σας είναι εντός των σωστών ορίων διακύμανσης τάσης και συχνότητας, όπως απαιτείται από το σύστημα.
- Κάθε πλαίσιο στο σύστημα αυτό πρέπει να είναι ηλεκτρικά γειωμένο συνδέοντας το(τα) ηλεκτρικό(ά) καλώδιο(α) παροχής σε μια σωστά συνδεδεμένη και γειωμένη πρίζα ρεύματος.
- Το(τα) ηλεκτρικό(ά) καλώδιο(α) παροχής που συνοδεύει το σύστημα πρέπει να είναι συνδεδεμένο ως εξής:

Φάση = Καφέ | Ουδέτερο = Μπλε | Γείωση = Πράσινο/Κίτρινο

Αποσυνδέστε εντελώς όλα τα ηλεκτρικά καλώδια παροχής πριν αφαιρέσετε το επάνω καπάκι από το πλαίσιο. Σε αντίθετη περίπτωση θα εκτεθείτε σε επικίνδυνα ηλεκτρικά ρεύματα και τάσεις. Η φυσική επαφή με αυτά τα ηλεκτρικά ρεύματα και τάσεις είναι άκρως επικίνδυνη και μπορεί να προκαλέσει σοβαρό τραυματισμό ή θάνατο: Μόνο εξειδικευμένο τεχνικό προσωπικό θα πρέπει να αφαιρέσει το επάνω καπάκι από το πλαίσιο.

Οι μονάδες που είναι μαρκαρισμένες με το σύμβολο αυτό μπορούν να αφαιρεθούν ενώ το σύστημα είναι σε λειτουργία (τροφοδοτείται). Μετά την αφαίρεση της μονάδας, προσέξτε τα επικίνδυνα ηλεκτρικά ρεύματα και τάσεις που υπάρχουν στο συνδετήρα υποδοχής της μονάδας στο εσωτερικό του πλαισίου. Παρακαλούμε κρατάτε χέρια, εργαλεία και ξένα μεταλλικά αντικείμενα μακριά από τον εκτεθειμένο συνδετήρα υποδοχής της μονάδας ενώ το πλαίσιο είναι συνδεδεμένο στο ρεύμα. Η φυσική επαφή με αυτά τα ηλεκτρικά ρεύματα και τάσεις είναι άκρως επικίνδυνη και μπορεί να προκαλέσει σοβαρό τραυματισμό ή θάνατο: Μόνο εξειδικευμένο τεχνικό προσωπικό θα πρέπει να αφαιρέσει αυτές τις μονάδες.

DEUTSCH	ACHTUNG!	WICHTIGE SICHERHEITSHINWEISE

Dieses System erfüllt den Sicherheitsstandard gemäß **IEC/EN60950-1**. Um einen sicheren Betrieb sowie Schutz vor Stromschlag oder Feuer zu gewährleisten, muss folgendes beachtet werden:

- Dieses System verfügt über eine variable Stromversorgung. Stellen Sie sicher, dass die Stromquelle über die korrekte, für das System vorgeschriebene Spannung und Frequenz verfügt.
- Jedes einzelne Gehäuse des Systems muss elektrisch geerdet werden, indem die Netzkabel an eine ordnungsgemäß verdrahtete und geerdete Steckdose angeschlossen werden.
- Die Netzkabel, die mit diesem System geliefert werden, müssen wie folgt verdrahtet sein:

Phase = Braun | Null = Blau | Schutz = Grün/Gelb

Trennen Sie alle Netzkabel vom Gehäuse, bevor Sie die obere Gehäuseabdeckung entfernen. Wenn Sie diese Sicherheitsmaßnahmen nicht beachten, werden Sie gefährlicher elektrischer Spannung ausgesetzt. Wenn Sie mit dieser extrem gefährlichen elektrischen Spannung in Berührung kommen, kann dies zu Gesundheitsschäden oder sogar zum Tod führen. Die obere Gehäuseabdeckung sollte nur von geschultem Service-Personal entfernt werden.

Module, die mit diesem Symbol gekennzeichnet sind, können während des Betriebs (bei eingeschalteter Stromversorgung) entfernt werden. Wenn Sie ein Modul entfernt haben, schützen Sie sich vor elektrischer Spannung, die an der Anschlussdose innerhalb des Gehäuses freigesetzt wird. Berühren Sie die freigelegte Anschlussdose erst dann mit Fingern, Werkzeug oder Metallgegenständen, wenn die Stromzufuhr zum Gehäuse unterbrochen ist. Wenn Sie mit dieser extrem gefährlichen elektrischen Spannung in Berührung kommen, kann dies zu Gesundheitsschäden oder sogar zum Tod führen. Diese Module sollten nur von geschultem Service-Personal entfernt werden.

עברית	אזהרה!	מידע בטיחות חשוב

מערכת זו עומדת בדרישות תקן בטיחות **IEC/EN60950-1**. חובה למלא אחר ההנחיות הבאות בכדי להבטיח הפעלה בטוחה ולמנוע סכנה אפשרית של הלם חשמלי או שריפה:

- טפקי הכוח של מערכת זו מתאימים עצמם אוטומטית לתחום הנדרש. חובה לוודא כי המתח והתדר המסופקים על ידי מקור המתח מתאימים לתחום הנדרש על ידי המערכת.
- חובה לחבר כל גוף במערכת להארקה חשמלית, על ידי חיבור כבל(י) מתח הכניסה לשקע חשמלי בעל הארקה וחיבורים חשמליים מתאימים.
- חוטי החשמל בכבל(י) הכניסה של המערכת יהיו בצבעים הבאים:

מתח חשמל = חום | נייטרלי (0) = כחול | הארקה (אדמה) = צהוב/ירוק

נתק לחלוטין את כל כבלי מתח הכניסה (AC) מן הגוף לפני הסרת המכסה העליון של הגוף. הסרת המכסה ללא ניתוק החשמל תחשוף אותך לזרמים ומתחים חשמליים גלויים ומסוכנים. מגע בזרמים ומתחים חשמליים אלה מסוכן ביותר ועלול לגרום לפציעה גופנית חמורה ואפילו למוות! אין להתיר לכל גורם מלבד אנשי שרות מוסמכים להסיר את המכסה העליון של הגוף.

ניתן להוציא מודולים המסומנים בסימון זה מתוך המערכת באשר היא מופעלת (מחוברת לחשמל). לאחר הוצאת מודול, יש להיזהר מזרמים ומתחים חשמליים גלויים ומסוכנים בקונקטור הכניסה הממוקם בתוך הגוף. הרחק אצבעות, כלי עבודה וחפצי מוליכות מן הקונקטור הגלוי כל עוד הגוף מחובר למתח בכניסה AC. מגע בזרמים ומתחים חשמליים אלה מסוכן ביותר ועלול לגרום לפציעה גופנית חמורה ואפילו למוות! אין להתיר לכל גורם מלבד אנשי שרות מוסמכים להוציא מודולים אלו ממקומם.

Safety Warnings — Hindi / Icelandic / Italian

हैन्दी	सावधान!	महत्त्वपूर्ण एहतियाती कथन

यह प्रणाली सुरक्षा मानक **IEC/EN60950-1** के अनुकूल है। इसे सावधानी से चलाने और सम्भावित प्रघात या आग के खतरे से बचने के लिए, निम्न का पालन करना आवश्यक है:

- इस प्रणाली में स्वत: परास पावर-सप्लाई लक्षण प्रस्तुत है। कृपया ध्यान दें कि आपका बिजली-स्रोत वोल्टेज तथा आवृति के सही चालन क्षेत्र में है, जैसा कि प्रणाली आवश्यकता सूची में बताया गया है।
- इस ढाँचे के हर प्रणाली का भूसंपर्कित वैद्युत संबंधन करना आवश्यक है। इसके लिए निवेशी पावर लाइन(नों) को ठीक से लगाए गए तारों तथा भूसंपर्कित पावर निकास से जोड़ना होगा।
- इस प्रणाली के साथ जो निवेशी पावर लाइन दिए गए है न तारों को निम्न तरीके से लगाना चाहियेख

सजीव = भूरा | निष्प्रभावी = नीला | भूसंपर्कित = हरा/पीला

⚠ ढांचे के ऊपरी ढक्कन को हटाने से पहले हर किसी निवेशी AC पावर लाइन को वियोजित (अलग) करें। यदि ऐसा न किया गया तो अत्यंत ही खतरनाक बिजली के करेंट तथा वोल्टेज अनावृत हो सकते है। इन करेंट तथा वोल्टेजों से शारीरिक संपर्क करना बहुत ही खतरनाक है और आदमी को बुरी तरह से घायल होने या मर जाने का डर है! केवल प्रशिक्षित सर्विस कर्मचारियों को ढांचे पर से ऊपरी ढक्कन हटाना चाहिये।

⚠ जिन पुर्ज़ों पर यह चिह्न अंकित है न्हें चलते (यानी पावर आते) हुए प्रणाली से निकाला जा सकता है। पुर्जा निकालने के बाद, ढांचे के अंदर प्रस्तुत पुर्जा पात्र संयोजन पर अनावृत खतरनाक बिजली के करेंट तथा वोल्टेज से सावधान रहें। कृपया अंगुली, औज़ार तथा धात्विक वस्तुओं को अनावृत पात्र संयोजन से अलग रखें जब तक कि ढांचे में निवेशी AC पावर आ रहा हो। इन करेंट तथा वोल्टेजों से शारीरिक संपर्क करना बहुत ही खतरनाक है और आदमी को बुरी तरह से घायल होने या मर जाने का डर है! केवल प्रशिक्षित सर्विस कर्मचारियों द्वारा इन पुर्जो को हटवाना चाहिये।

ÍSLENSKA	VIÐVÖRUN!	MIKILVÆGAR ÖRYGGISUPPLÝSINGAR

Þetta kerfi samræmist öryggisstaðlinum **IEC/EN60950-1**. Til að tryggja örugga starfsemi og til að varna gegn hugsanlegri hættu á raflosti eða eldhættu skal uppfylla eftirfarandi kröfur:

- Kerfið er búið aflgjöfum með sjálfvirkri stillingu. Gakktu úr skugga um að rafspennu- og tíðnimörk aflgjafa séu rétt fyrir kerfið.
- Sérhver grind í kerfinu skal vera jarðtengd með því að tengja rafleiðslu(r) fyrir inntaksafl við rétt tengda og jarðtengda rafmagnsinnstungu.
- Meðfylgjandi rafleiðslu(ur) fyrir inntaksafl skal tengja með eftirfarandi hætti:

Virkt = Brúnt | Hlutlaust = Blátt | Jörð = Grænt/Gult

⚠ Aftengið allar riðstraumsinntaksleiðslur frá grind áður en yfirhlíf er fjarlægð. Sé það ekki gert skapast hætta á snertingu við rafstraum og -spennu. Líkamleg snerting við slíkan rafstraum og -spennu er afar hættuleg og getur valdið miklum líkamsmeiðslum eða dauða! Einungis sérhæft fagfólk ætti að fjarlægja yfirhlíf af grindinni.

⚠ Fjarlægja má einingar auðkenndar með þessu merki meðan kerfið starfar (með orku). Eftir að eining hefur verið fjarlægð skal gæta að hættulegum rafstraumi og -spennu í opnum tenglum í einingum grindarinnar. Gætið þess að fingur, verkfæri og aðskotahlutir úr málmi komist ekki í snertingu við opna tengla eininganna á meðan inntaksriðstraumur er á grindinni. Líkamleg snerting við slíkan rafstraum og -spennu er afar hættuleg og getur valdið miklum líkamsmeiðslum eða dauða! Einungis sérhæft fagfólk ætti að fjarlægja þessar einingar.

ITALIANO	AVVERTENZA!	NOTE DI SICUREZZA IMPORTANTI

Questo sistema è conforme alle norme di sicurezza **IEC/EN60950-1**. Per garantire il funzionamento sicuro e proteggere l'operatore da potenziali pericoli di folgorazione o da rischio di incendio, attenersi alle indicazioni che seguono:

- Il sistema è dotato di alimentatori autoranging. Assicurarsi che la sorgente di alimentazione rientri nell'intervallo corretto di tensione e frequenza, come richiesto dal sistema.
- Ogni chassis del sistema deve essere messo a terra per collegamento del cavo o dei cavi di alimentazione a una presa elettrica cablata e messa a terra correttamente.
- Il cavo o i cavi di alimentazione forniti con il sistema devono essere collegati come segue:

Tensione = Marrone | Neutro = Blu | Terra = Verde/Giallo

⚠ Disconnettere tutti i cavi di alimentazione c.a. dallo chassis prima di rimuovere la copertura. La mancata osservanza di questa indicazione può comportare l'esposizione a pericolose correnti e tensioni elettriche. Il contatto fisico con queste correnti e tensioni è estremamente pericoloso e può provocare lesioni gravi o fatali! La copertura deve essere rimossa dallo chassis solo da personale qualificato per l'assistenza.

⚠ I moduli che riportano questo simbolo possono essere rimossi con il sistema in funzionamento (alimentato). Dopo la rimozione di un modulo, fare attenzione alle correnti e tensioni elettriche pericolose esposte sul connettore della presa del modulo all'interno dello chassis. Non toccare tale connettore della presa del modulo con le dita, con utensili o con oggetti metallici. Il contatto fisico con queste correnti e tensioni è estremamente pericoloso e può provocare lesioni gravi o fatali! Questi moduli devono essere rimossi solo da personale qualificato per l'assistenza.

Safety Warnings — Japanese / Norwegian

英語	警告！	安全上の重要事項

このシステムは、安全基準 **IEC/EN60950-1** に従っています。 安全に作動させるため、また感電によるショックや発火の危険性をさけるために、以下のことを必ず守ってください。

- このシステムでは、電力が自動的供給されるため、電源の電圧や周波数が正常域内にあるかを確認してください。 電源が正常作動範囲内の電圧と周波数であることは、このシステムで必要とされています。
- このシステムの各シャーシは入力電源コードを正しく配線され、アースが取られた電源コンセントに接続することにより、電気的にアースされることが必要です。
- このシステムに供給される入力電源コードを必ず以下のように配線してください。

電源に接続 ＝ 茶　　中性 ＝ 青　　接地 ＝ 緑または黄

シャーシから上部カバーを外す前に、シャーシからすべての入力 AC 電力コードを完全に抜いてください。 完全に抜かれていない場合、危険な電流や電圧にさらされます。 電流や電圧に直接触れることは、非常に危険です。怪我をしたり死亡する恐れがあります！ シャーシから上部カバーを外す場合には、必ず有資格のサービス要員が行ってください。

このマークがついたモジュールの場合は、システム稼動中（電源が入っているとき）に取り外すことができます。 モジュールを取り外した後、シャーシ内にあるモジュールのコンセントコネクターに電流、電圧が流れているので注意してください。 シャーシに入力 AC 電力が流れているときには、指、ツール、金属異物をコンセントコネクターに近づけないでください。 電流や電圧に直接触れることは、非常に危険です。怪我をしたり死亡する恐れがあります！ これらのモジュールを取り外すときには、必ず有資格の職員が行ってください。

NORSK	ADVARSEL!	VIKTIG SIKKERHETSINFORMASJON

Dette systemet samsvarer med sikkerhetsstandarden **IEC/EN60950-1**. For å sikre trygg bruk og unngå fare for elektrisk støt eller brann, må disse retningslinjene følges:

- Dette systemet er utstyrt med selvjusterende strømforsyning. Kontroller at strømkilden du bruker, ligger innenfor riktig bruksområde mht. spenning og frekvens for systemet.
- Alle kabinetter i dette systemet må jordes ved å koble nettkablene til en riktig koblet og jordet stikkontakt.
- Nettkablene som leveres sammen med systemet, må kobles på følgende måte:

Strømførende = brun　　Nøytral = blå　　Jord = grønn/gul

Koble fra alle nettkabler før du fjerner toppdekslet på kabinettet. Hvis ikke, kan du komme i kontakt med farlig elektrisk strøm og spenning. Fysisk kontakt med elektrisk strøm og spenning er ekstremt farlig og kan føre til alvorlige personskader eller døden. Toppdekslet på kabinettet må bare fjernes av kvalifisert servicepersonale.

Moduler, som er merket med dette symbolet, kan fjernes mens systemet er i bruk (slått på). Vær oppmerksom på farlig elektrisk strøm og spenning på modulens kontakt inne i kabinettet, etter at en modul er fjernet. Pass på at du ikke berører den ubeskyttede kontakten med fingre, verktøy eller metallobjekter, mens kabinettet er koblet til nettet. Fysisk kontakt med elektrisk strøm og spenning er ekstremt farlig og kan føre til alvorlige personskader eller døden. Disse modulene må bare fjernes av kvalifisert servicepersonale.

Safety Warnings — Korean / Portuguese / Russian

한글 **주의!** **주요 안전 사항**

이 시스템은 **IEC/EN60950-1** 안전기준을 준수한다. 안전한 조작과 전기쇼크 또는 화재발생 방지를 확실히 하기 위해서는 다음 사항들을 반드시 지켜야 한다:

- 이 시스템의 특징은 전력량을 자동적으로 검침하는 기능이 내장된 전력 공급 장치이다. 사용자는 시스템에 공급하는 전력원의 전압과 주파수가 시스템의 동작 요구 범위안에 있는지 반드시 확인하여야 한다.
- 이 시스템내의 각 섀시는 전원선을 접지단자가 있는 콘센트에 연결하여 접지 상태를 만들어야 한다.
- 이 시스템의 전원선은 다음과 같이 연결되어야 한다:

전류흐름 = 고동색 중성극 = 파랑색 접지 = 초록색/노랑색

섀시의 상단 커버를 열기 전에 모든 AC 전원선이 섀시로부터 분리되어야 하며, 만약 이 사항을 지키지 않을 경우 위험한 전류와 전압에 노출된다. 전류,전압에 신체가 접촉되면 매우 위험하며 중상이나 사망의 원인이 된다! 반드시 자격을 갖춘 기술자가 섀시의 상단 커버를 벗겨야 한다.

이 심볼이 표시되어있는 모듈은 시스템 작동중(전원 켜져있음)에도 제거될 수 있다. 일단 모듈을 제거한 후에는 섀시내의 노출되어 있는 모듈 연결 부위에 흐르는 전류와 전압에 주의하여야 한다. 섀시에 AC 전원이 공급되고 있는 동안에는 노출된 모듈 연결 부위에 손가락, 도구 및 기타 금속 물체와의 접촉을 피하여야 한다. 전류, 전압에 신체가 접촉되면 매우 위험하며 중상이나 사망의 원인이 된다! 반드시 자격을 갖춘 기술자가 모듈을 제거하여야 한다.

PORTUGUÊS **AVISO!** **AVISOS IMPORTANTES SOBRE SEGURANÇA**

Este sistema está em conformidade com a norma de segurança **IEC/EN60950-1**. Para garantir um funcionamento seguro e para evitar riscos potenciais de choques eléctricos e de incêndio, tenha em atenção o seguinte:

- Este sistema está equipado com um sistema de fornecimento de corrente de selecção automática. Verifique se a sua fonte de alimentação corresponde aos limites correctos de tensão e frequência de funcionamento, requeridos pelo sistema.
- Cada chassis deste sistema tem de estar efectivamente ligado a terra através do cabo de alimentação ligado a uma tomada de corrente com terra.
- O(s) cabo(s) de alimentação fornecido(s) com este sistema têm de ser ligado(s) da seguinte maneira:

Com corrente = Castanho Neutro = Azul Terra = Verde/Amarelo

Desligue completamente todos os cabos de alimentação CA do chassis antes de retirar a tampa superior. O não cumprimento desta instrução aumenta a exposição a correntes e tensões perigosas. O contacto físico com estas correntes e tensões é extremamente perigoso e pode resultar em ferimentos ou mesmo morte! A tampa superior só deve ser retirada do chassis por pessoal qualificado.

Os módulos assinalados com este símbolo podem ser removidos enquanto o sistema está ligado. Quando remover um módulo, tenha cuidado com as correntes eléctricas e tensões perigosas existentes no conector do receptáculo do módulo, localizado no interior do chassis. Afaste os dedos, ferramentas e objectos metálicos do conector do receptáculo, pois este fica exposto enquanto o chassis estiver ligado à corrente. O contacto o físico com estas correntes e tensões é extremamente perigoso e pode resultar em ferimentos graves ou mesmo morte! Os módulos só podem ser retirados por pessoal técnico qualificado.

РУССКИЙ **ПРЕДУПРЕЖДЕНИЕ!** **ВАЖНЫЕ СВЕДЕНИЯ ПО БЕЗОПАСНОСТИ**

Эта система отвечает стандарту безопасности **IEC/EN60950-1**. Чтобы гарантировать безопасную работу и защиту от возможной опасности поражения током или возникновения пожара, необходимо выполнить следующее:

- В этой системе используются блоки питания с автоматической настройкой на входное напряжение. Убедитесь, что напряжение и частота источника питания соответствуют диапазону рабочих характеристик системы.
- Необходимо обеспечить заземление всех шасси в этой системе путем подключения кабелей питания к правильно подключенной и заземленной розетке.
- Кабели питания, поставляемые с этой системой, необходимо подключать следующим образом:

Под напряжением = коричневый Нулевой = синий Земля = зеленый/желтый

Перед снятием верхней крышки шасси отсоедините все кабели питания переменного тока от шасси. В противном случае можно подвергнуться воздействию опасных для жизни токов и напряжений. Физический контакт с этими токами или напряжениями очень опасен и может привести к серьезным травмам или смерти! Поэтому верхнюю крышку шасси должны снимать только квалифицированные технические специалисты.

Модули, отмеченные этим символом, можно демонтировать во время работы системы (под напряжением). После демонтажа модуля ни в коем случае не следует касаться оголенных контактов разъема модуля внутри шасси, ввиду наличия опасных токов и напряжений. Не трогайте руками оголенные контакты разъема, не прикасайтесь к ним инструментами и посторонними металлическими предметами, когда на шасси подается питание переменного тока. Физический контакт с этими токами или напряжениями очень опасен и может привести к серьезным травмам или смерти! Демонтаж модулей должен выполняться только квалифицированными техническими специалистами.

Safety Warnings — Spanish / Swedish / Thai

ESPAÑOL — ADVERTENCIAS! — AVISOS IMPORTANTES DE SEGURIDAD

Este sistema cumple los estándares de seguridad **IEC/EN60950-1**. Para asegurar un funcionamiento seguro y como protección frente a riesgos potenciales de descarga o riesgo de incendio, se debe cumplir lo siguiente:

- Este sistema incorpora fuentes de alimentación eléctrica de rango automático. Asegúrese de que la alimentación de corriente se encuentra dentro del rango correcto de voltaje y frecuencia que requiera el sistema.
- Todos los chasis de este sistema deben estar conectados a tierra; para ello se deben conectar los cables de entrada de alimentación a una toma de corriente con un cableado y toma de tierra correctos.
- El cableado de los cables de entrada de alimentación suministrados con este sistema debe ser el siguiente:

Fase = Marrón — Neutro = Azul — Tierra = Verde/Amarillo

Antes de retirar la cubierta superior del chasis, desconecte completamente todos los cables de entrada de alimentación de CA del chasis. Si no se hace así, se estará expuesto a voltajes y corrientes eléctricas peligrosos. El contacto físico con estas corrientes y voltajes es extremadamente peligroso y puede provocar daños físicos graves o muerte. La cubierta de la parte superior del chasis sólo la debe retirar personal técnico cualificado.

Los módulos marcados con este símbolo se pueden retirar mientras el sistema está en funcionamiento (encendido). Después de retirar un módulo, tenga cuidado con los voltajes y corrientes eléctricas peligrosos que están expuestos en el conector del receptáculo del módulo en el interior del chasis. Mantenga alejados del conector del receptáculo dedos, herramientas y objetos de metal extraños mientras el chasis reciba alimentación de CA. El contacto físico con estas corrientes y voltajes es extremadamente peligroso y puede provocar daños físicos graves o muerte. La cubierta de la parte superior del chasis sólo la debe retirar personal técnico cualificado.

SVENSKA — VARNING! — VIKTIGA SÄKERHETSMEDDELANDEN

Detta system uppfyller säkerhetsstandarden **IEC/EN60950-1**. Följande villkor måste vara uppfyllda för att garantera säker operation och skydd mot elektriska stötar och brandrisk:

- Detta system har strömförsörjning med automatisk inställning. Kontrollera att din strömkälla är inom korrekt intervall avseende spänning och frekvens, enligt systemets krav.
- Varje chassi i systemet måste vara jordat genom att nätsladdarna ansluts till en kontakt som är korrekt kopplad och jordad.
- De nätsladdar som levereras med systemet måste kopplas enligt följande:

Spänning = brun — Neutral = blå — Jord = grön/gul

Koppla helt och hållet bort alla växelspänningssladdar med ström in till systemet från chassit innan du tar bort chassits övre hölje. Annars friläggs farliga elektriska spänningar och strömmar. Fysisk kontakt med dessa elektriska spänningar och strömmar är ytterst farlig och kan orsaka allvarlig fysisk skada eller dödsfall. Det övre höljet bör endast tas bort från chassit av utbildad servicepersonal.

Moduler som märkts med den här symbolen kan tas bort medan systemet är i drift (strömförsörjt). Se upp för farliga elektriska spänningar och strömmar som friläggs på modulanslutningen inuti chassit när en modul tagits bort. Se till att inte vidröra den frilagda modulanslutningen med fingrar, verktyg eller metallföremål så länge chassit är anslutet till en spänningskälla. Fysisk kontakt med dessa elektriska spänningar och strömmar är ytterst farlig och kan orsaka allvarlig fysisk skada eller dödsfall. Dessa moduler bör endast tas bort av utbildad servicepersonal.

ภาษาไทย — คำเตือน! — ประกาศสำคัญเพื่อความปลอดภัย

ระบบนี้สอดคล้องกับมาตรฐานความปลอดภัย **IEC/EN60950-1** เพื่อการใช้งานอย่างปลอดภัยและป้องกันอันตรายร้ายแรงที่อาจเกิดขึ้นจากไฟฟ้าดูดหรือ ความเสี่ยงต่ออัคคีภัย ท่านต้องปฏิบัติตามข้อกำหนดต่อไปนี้:

- ระบบนี้มีคุณสมบัติเป็นแหล่งจ่ายไฟที่ปรับแรงดันไฟฟ้าโดยอัตโนมัติ โปรดตรวจสอบให้แน่ใจว่าแหล่งจ่ายไฟของท่านจ่ายแรงดันไฟฟ้าและความถี่อยู่ภายในย่านการใช้งานที่ถูกต้องตามที่กำหนดไว้ในระบบ
- กล่องโครงเหล็กแต่ละชิ้นในระบบนี้จะต้องต่อสายดิน โดยเชื่อมต่อสายไฟขาเข้ากับจุดจ่ายไฟฟ้าที่ต่อสายดินและเดินสายไฟ ไว้อย่างถูกต้อง
- สายไฟขาเข้าที่จัดส่งมาพร้อมกับระบบนี้ จะต้องเดินสายดังนี้

สายไฟ = สีน้ำตาล — สายกลาง = สีน้ำเงิน — สายดิน = สีเขียว/เหลือง

ถอดสายไฟ AC ขาเข้าทุกเส้นออกจากกล่องโครงเหล็กทั้งหมด ก่อนจะเปิดฝาครอบด้านบนกล่อง หากไม่ปฏิบัติตามนี้ จะมีความเสี่ยงต่ออันตรายจากกระแสไฟและแรงดันไฟฟ้าที่เป็นอันตราย การสัมผัสกับกระแสไฟและแรงดันไฟฟ้าโดยตรงนับเป็นอันตรายอย่างยิ่ง และอาจเป็นผลให้ได้รับบาดเจ็บสาหัสหรือถึงแก่ชีวิตได้! การถอดฝาครอบด้านบนออกจากกล่องโครงเหล็กควรกระทำโดยพนักงานบริการที่มีคุณสมบัติเหมาะสมเท่านั้น

โมดูลที่มีสัญลักษณ์เช่นนี้อาจจะถอดออกได้ในขณะที่ระบบกำลังทำงาน (มีกระแสไฟ) หลังจากถอดโมดูลแล้ว พึงระวังอันตรายจากกระแสไฟและแรงดันไฟฟ้าที่อาจมีอยู่บนฐานรับขั้วต่อของโมดูลภายในกล่องโครงเหล็ก ระวังอย่าให้นิ้วมือ เครื่องมือ หรือวัตถุแปลกปลอมใด ๆ ที่ทำจากโลหะอยู่ใกล้กับฐานรับขั้วต่อที่เปิดโล่งอยู่ในขณะที่มีไฟ AC ขาเข้าจ่ายไปยังกล่องโครงเหล็ก การสัมผัสกับกระแสไฟและแรงดันไฟฟ้าโดยตรงนับเป็นอันตรายอย่างยิ่งและอาจเป็นผลให้ได้รับบาดเจ็บสาหัสหรือถึงแก่ชีวิตได้! การถอดโมดูลเหล่านี้ออกควรกระทำโดยพนักงานบริการที่มีคุณสมบัติเหมาะสมเท่านั้น

Safety Warnings — Turkish / Vietnamese

TÜRKÇE	DIKKAT!	ÖNEMLI GÜVENLIK UYARILARI

Bu sistem **IEC/EN60950-1** güvenlik standardıyla uyumludur. Sistemin güvenli çalışmasını sağlamak ve olası bir elektriksel şok veya yangın tehlikesini ortadan kaldırmak için aşağıdakilerin yapılması gereklidir:

- Sistemin giriş gücü otomatik olarak ayarlanmaktadır. Kullanılan güç kaynağının, sistemin kullandığı doğru güç ve frekans çalışma aralığında olduğundan emin olun.
- Sistemdeki her şasi, giriş güç kabloları hatasız olarak bağlanmış ve toprak bağlantısı yapılmış bir güç çıkışına bağlanarak topraklanmalıdır.
- Bu sistemle birlikte verilen giriş güç kabloları aşağıdaki biçimde bağlanmalıdır:

Faz = Kahverengi Nötr = Mavi Toprak = Yeşil/Sarı

Üst kapağı şasiden çıkartmadan önce tüm giriş AC güç kablo bağlantılarını tamamen sökün. Bu işlemin yapılmaması, elektrik akımının ve gücün kesilmesini engeller. Söz konusu akım ve güç, temas edildiği takdirde çok ciddi yaralanmalara ve hatta ölüme bile neden olabilir! Üst kapağı şasiden çıkarma işlemini yalnızca yetkili servis teknisyenleri yapmalıdır.

Yandaki simgeyle işaretlenen modüller, sistem çalışır durumdayken (açıkken) çıkartılabilir. Bir modül çıkartıldıktan sonra, şasi içindeki ilgili modülün algılama konnektöründe kalan akım ve güç tehlikeli olabileceğinden tedbirli davranılmalıdır. Şaside giriş AC gücü varken, parmaklarınızı, araçlarınızı ve metal nesneleri boşta kalan algılama konnektöründen uzak tutun. Söz konusu akım ve güç, temas edildiği takdirde çok ciddi yaralanmalara ve hatta ölüme bile neden olabilir! Bu modülleri çıkartma işlemini yalnızca yetkili servis teknisyenleri yapmalıdır.

TIẾNG VIỆT	CẢNH GIÁC!	THÔNG BÁO AN TOÀN QUAN TRỌNG

Hệ thống này chấp hành đúng tiêu chuẩn an toàn **IEC/EN60950-1**. Để đảm bảo hoạt động được an toàn và tránh nguy hiểm bị điện dật hay rũi ro hỏa hoạn, những điều sau đây phải được thực hành :

· Hệ thống này cung cấp nguồn điện năng tự động. Bảo đảm rằng nguồn điện lực trong phạm vi tầm điện thế và tần số đúng mức, theo sự đòi hỏi của máy.
· Mỗi vỏ máy trong hệ thống này có giây mát xuống đất bằng cách nối đúng cách đường giây dẫn điện váo máy và đường giây xuất điện nối xuống đất.
· Giây nối đường điện vào máy do hệ thống cung cấp phải nối như sau :

Điện sống = Mầu nâu Điện trung hòa = Mầu xanh Giây nối xuống đất = Xanh lá cây/Vàng

Hoàn toàn gỡ tất cả giây điện nhập AC từ vỏ máy trước khi mở nắp đậy phía trên ra khỏi vỏ máy. Nếu không làm như vậy sẽ để lộ ra dòng diện và điện thế nguy hiểm. Sờ tay vào những dòng diện và điện thế sẽ vô cùng nguy hiểm và có thể gây thương tích hay chết người! Chỉ có nhân viên sửa máy có khả năng mới được mở nắp đậy ra khỏi vỏ máy.

Bộ phận máy nào có mang dấu hiệu này có thể lấy ra được trong khi máy đang chạy (có gắn điện). Sau khi gỡ một bộ phận máy ra, coi chừng dòng điện và điện thế nguy hiểm để lộ ra trên bộ phận máy có gắn điện bên trong vó máy. Phải để ngón tay, dụng cụ, và những vật kim loại lạ ra xa chỗ nối điện để trần trong khi vỏ máy có gắn nút điện AC. Đụng chạm vào dòng diện và điện thế thật vô cùng nguy hiểm và có thể gây thương tích nặng hay chết người ! Chỉ có nhân viên sửa máy có khả năng mới được tháo những bộ phận máy này đi mà thôi.

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User Operations Guide
Mira Production Server

Applicable to Mira Software 5.0.9 and Higher

6 May 2015

Background

This operations guide is intended for new users to quickly familiarize themselves with the primary operations of the Mira Digital Video Production Server.

Components of the Mira Server

The Mira Digital Video Production Server consists of a single 3RU chassis, which contains all of the video/audio processing hardware and a RAID-6 disk array. The Mira system comes standard with the following components:

- (1) 3RU chassis; body of which measures 17.0”/43.2cm wide by 25.0”/ 63.5cm deep
  (including rack-mount flanges: 19.0”/48.3cm wide)
- (1) Rack Slide Mount Kit for standard 19.0”/48.3cm width racks.
- (1) USB Mouse
- (1) USB QWERTY Keyboard
- (2) AC Power Cords
- (4) “Male RJ45” to “Female DB9” Adaptors for RS422 Serial Control (*Mira 4-Channel Server only*)
- (8) “Male RJ45” to “Female DB9” Adaptors for RS422 Serial Control (*Mira 8-Channel Server only*)

Required Support Equipment

The following support equipment is to be supplied by the customer:

- (1) DVI-D Display 1280x1024 minimum resolution (for user graphical user interface)
- (1) HD-SDI Video Monitor (*for displaying Mira’s internal quad-split viewer output; Mira 4-Channel Server only*)
- (2) HD-SDI Video Monitor (*for displaying Mira’s internal quad-split viewer output; Mira 8-Channel Server only*)
- External professional **video** / **audio** / **control** / **monitoring** equipment, as required for the given application

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Table of Contents

The main sections of this document include:

Connections to Mira Server

Since first product introduction, Mira has experienced two major hardware revisions. The original four-channel Mira has been modified with a new motherboard, with some changes to the circuit boards that plug into the motherboard. Therefore, if you own a four-channel Mira, there are two possible rear panel configurations.

In addition, an eight-channel Mira was first shipped into the marketplace in June 2010; so the eight-channel Mira will have a third possible rear panel configuration.

Choose the rear panel illustration below which best matches your Mira.

Original Mira 4-Channel Server Rear Panel (*shipped before June, 2010*)

The illustration in **Figure 1** below details the video, audio, timecode, control, data and power connections on the rear panel of the original Mira server, shipped before June, 2010. Descriptions for each connection begin below the illustration.

Mira 4CH Server with EMBEDDED DIGITAL AUDIO & AES DIGITAL AUDIO) shipped only BEFORE June, 2010:

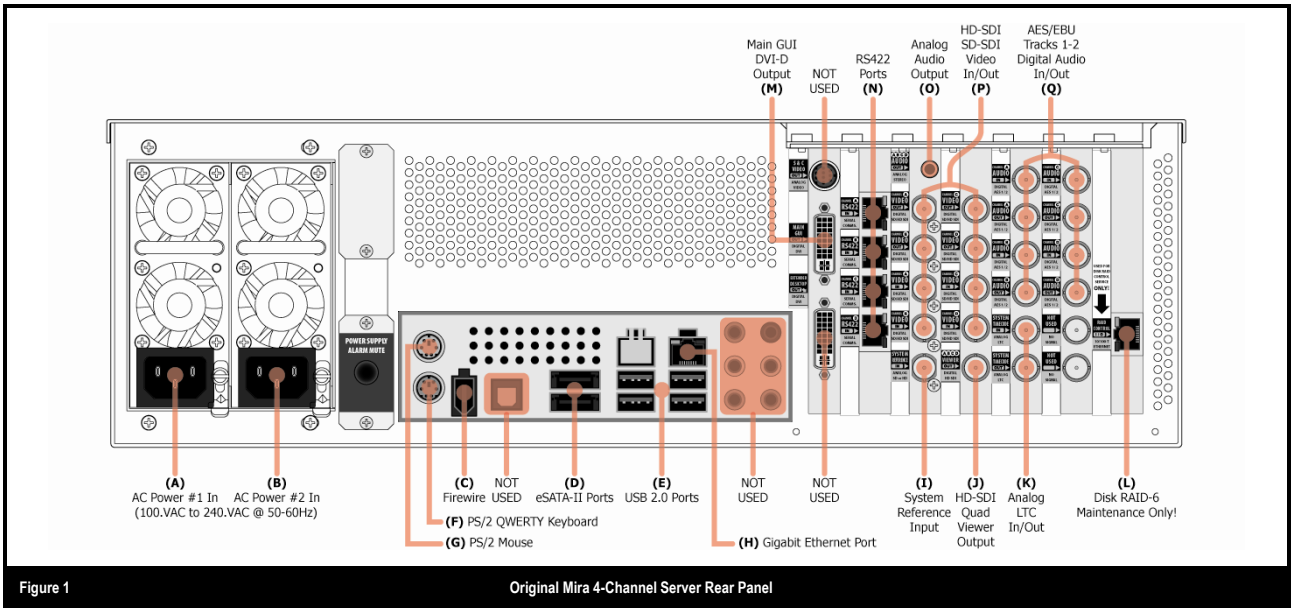


Figure 1 Original Mira 4-Channel Server Rear Panel

(A) AC Power #1 In

Input #1 for mains power into the dual-redundant power supply. The power supply is auto-sensing with an input AC voltage range of 100VAC to 240VAC at 47Hz to 63Hz. If only one mains power cord is plugged in, the power supply alarm will sound when Mira is powered on. Either plug in the second AC power cord or press the **POWER SUPPLY ALARM MUTE** button (located to the immediate right of the PSU's) to silence the alarm.

▶ ***NOTE:*** *Some versions of the Mira power supply do not offer an "Alarm Mute" button. You must plug in the second power cord to silence the alarm.*

(B) AC Power #2 In

Input #2 for mains power into the dual-redundant power supply. The power supply is auto-sensing with an input AC voltage range of 100VAC to 240VAC at 47Hz to 63Hz. If only one mains power cord is plugged in, the power supply alarm will sound when Mira is powered on. Either plug in the second AC power cord or press the **POWER SUPPLY ALARM MUTE** button (located to the immediate right of the PSU's) to silence the alarm.

▶ ***NOTE:*** *Some versions of the Mira power supply do not offer an "Alarm Mute" button. You must plug in the second power cord to silence the alarm.*

(C) Firewire Port *(only available on "Original" Mira 4-Channel servers shipped before June, 2010)*

This port is used to connect to an external 1394 Firewire portable disk drive. Data transfer rates up to 800Mb/s are possible. Typically, this port is used to transfer clip file data between the Mira server and the portable disk drive.

▶ ***NOTE:*** *Any portable disk drive connected to this Firewire port must be formatted for use on a Windows O/S. Portable disk drives formatted for exclusive use on the Mac O/S will not operate properly.*

(D) eSATA-II Ports

These ports are used to connect to an external eSATA-II portable disk drive. Data transfer rates up to 3.0Gb/s are possible. Typically, this port is used to transfer clip file data between the Mira server and the portable disk drive.

▶ ***NOTE:*** *Any portable disk drive connected to this eSATA-II port must be formatted for use on a Windows O/S. Portable disk drives formatted for exclusive use on the Mac O/S will not operate properly.*

(E) USB 2.0 Ports

These ports are used to connect to an external Hi-Speed USB 2.0 portable disk drive or memory stick. Data transfer rates up to 800Mb/s are possible. Typically, this port is used to transfer clip file data between the Mira server and the portable disk drive.

- ***NOTE:*** *Any portable disk drive or memory stick connected to this USB port must be formatted for use on Windows O/S. Portable disk drives or memory sticks formatted for exclusive use on the Mac O/S will not operate properly.*

(F) USB QWERTY Keyboard

The included USB QWERTY Keyboard (or any USB compatible keyboard) is connected to this port. The QWERTY keyboard must be connected to this port in order to properly operate the Mira server.

(G) USB **Mouse**

The included USB Mouse (or any USB compatible mouse) is connected to this port. The mouse must be connected to this port in order to properly operate the Mira server.

(H) Gigabit Ethernet Port

This port is used to connect the Mira server to a local area network (LAN). Typically, this port is used to transfer clip file data between the Mira server and the LAN. This port is capable of gigabit performance, and is backward compatible with older 10-T and 100-T Ethernet networks.

When multiple Mira servers are installed, these Ethernet ports can be used to manage all the clip content on the multiple Mira servers.

(I) System Reference Input

This BNC connector must be supplied with house Bi-Level analog reference or Tri-Level analog reference. If this input signal is missing, then video/audio outputs from the Mira server will not be synchronized with external video/audio equipment.

If Tri-Level reference is used, then an external 75-ohm terminator with a BNC "T" connector must be employed in order to double-terminate the Tri-Level reference signal feeding Mira.

(J) Quad Viewer Output

This BNC connector provides an HD-SDI serial digital video output of the built-in quad-split viewer, which is used to monitor the second group of four video channels ChA-ChD. This HD-SDI output can only connect to an external picture monitor capable of accepting 1.5Gb/s HD-SDI digital video input. Each of the four "panes" in the quad-split viewer also contains the timecode and title of the clips loaded in the four video output channels.

- ***NOTE:*** *The Quad Viewer only appears when Mira is operating in HD video formats, 720 or 1080. The Quad Viewer output is* ***disabled*** *when Mira is operating in SD video formats, 525 or 625. If you will be operating Mira in standard definition, then please use the desktop Viewer that is built into the Mira Explorer user interface instead of this Quad Viewer.*

(K) Analog LTC I/O

These two BNC connectors provide input and output for the analog longitudinal timecode (LTC) signal, which is used as system reference timecode. When recording clips, the timecode data present on this port is also recorded on the "External Timecode" track inside the clip.

(L) Disk RAID-6 Maintenance Only!

This 100/T Ethernet port is only used for a dedicated maintenance terminal for the internal media RAID-6 disk array. This port should **never** be used as a "general" Ethernet port for file transfer and clip management. Alternatively, the RAID-6 disk array maintenance can be performed through a web browser via the main gigabit Ethernet port [item (H) on page 18 above].

(M) Main GUI DVI-D Output

This output displays the main graphical user interface (GUI) of the Mira server, and connects to an external computer monitor with a DVI-D port. For optimum user experience, this external computer monitor should feature a minimum resolution of 1280x1024. Monitors with higher resolution are also acceptable and encouraged, in order to provide more "screen real estate" for users.

(N) RS422 Ports

These RS422 serial control ports are used to control the video/audio channels of the Mira server from external controllers capable of RS422 serial control, and which support either "Sony BVW-75", "Odetics" and/or "Louth VDCP" protocols.

Each video channel in Mira features an RS422 serial control port, located through a break-out cable on the rear panel of the Mira Server. At the end of the breakout cable are "Ethernet" type RJ45 connectors. Mira includes adapters for each RS422 serial port to convert the RJ45 cable to 9D, so you can just plug a standard male 9D serial cable into the adapter.

These RJ45 cables for the RS422 serial ports are each wired 1:1 from the eight pins of the RJ45 to the first eight of the nine pins in standard "D9" serial RS422 cables. A given installation of the Mira server may require use of the RJ45-to-D9 adapter connector if RS422 serial control is routed via D9 connection.

These RS422 serial ports are used to control the video/audio channels of the Mira server from external controllers capable of RS422 serial control, and which support either "Sony BVW-75," "Odetics," or "Louth VDCP" protocols.

(O) Analog Audio Output

This 3.5mm female jack provides an analog monitoring output for two tracks (one stereo pair) of audio from any of the four video channels in the ChA through ChD group of channels in the Mira server. By default, the output is set to monitor the stereo audio output from the ChD video channel.

From the Mira Engineering Setup user interface, the stereo audio pair can be switched to monitor the audio output from any of the other three video channels in the group; refer to the section "***Engineering Setup — Audio***" on page 188 below.

(P) HD-SDI / SD-SDI Digital Video In/Out

These eight BNC connectors provide the serial digital video (SDI) inputs and outputs for the second group of four video channels labeled ChA-ChD. Each BNC pair provides the IN and OUT for one video channel.

When operating the Mira server in standard-definition (SD) video formats, these BNC connectors accept and provide serial digital video signals operating at a data rate of 270Mb/s (SD-SDI).

When operating the Mira server in high-definition (HD) mode, these BNC connectors accept and provide serial digital video signals operating at data rate of 1.5Gb/s (HD-SDI).

- ***NOTE:*** *It is not possible to operate the Mira server is both SD and HD mode at the same time; so these BNC connectors operate either in the SD-SDI **or** in the HD-SDI mode at any given time.*

(Q) AES/EBU Tracks 1-2 Digital Audio In/Out

These eight BNC connectors provide the "Tracks 1-2" serial digital audio inputs and outputs for the four video channels built into the Mira server. Each BNC pair provides the audio IN and OUT for one video channel.

- ***NOTE:*** *Two tracks of digital audio on each video channel are supported via **AES** BNC connection, with 8 track total. However, digital audio embedded in the HD-SDI video stream supports eight tracks of audio per video channel (32 tracks total); and in the SD-SDI video stream, four tracks are supported per video channel (16 tracks total). In Q3 of 2011, two options will be available to expand the number of audio tracks: (a) Hardware 1RU "break-out" panel option to provide 8-track AES digital audio per video channel with 32 tracks total; and (b) Software option to provide 16-track embedded digital audio per video channel with 64 tracks total, as embedded in the HD-SDI video streams.*

Mira 4-Channel & Mira 8-Channel Rear Panel (*shipped after June, 2010*)

The illustrations in Figure 2 and Figure 3 below details the video, audio, timecode, control, data and power connections on the rear panel of the latest Mira servers, which shipped after June, 2010. Descriptions for each connection follow the illustrations.

Mira 4CH Servers with EMBEDDED DIGITAL AUDIO ONLY (NO AES DIGITAL AUDIO) only shipped AFTER June, 2010:

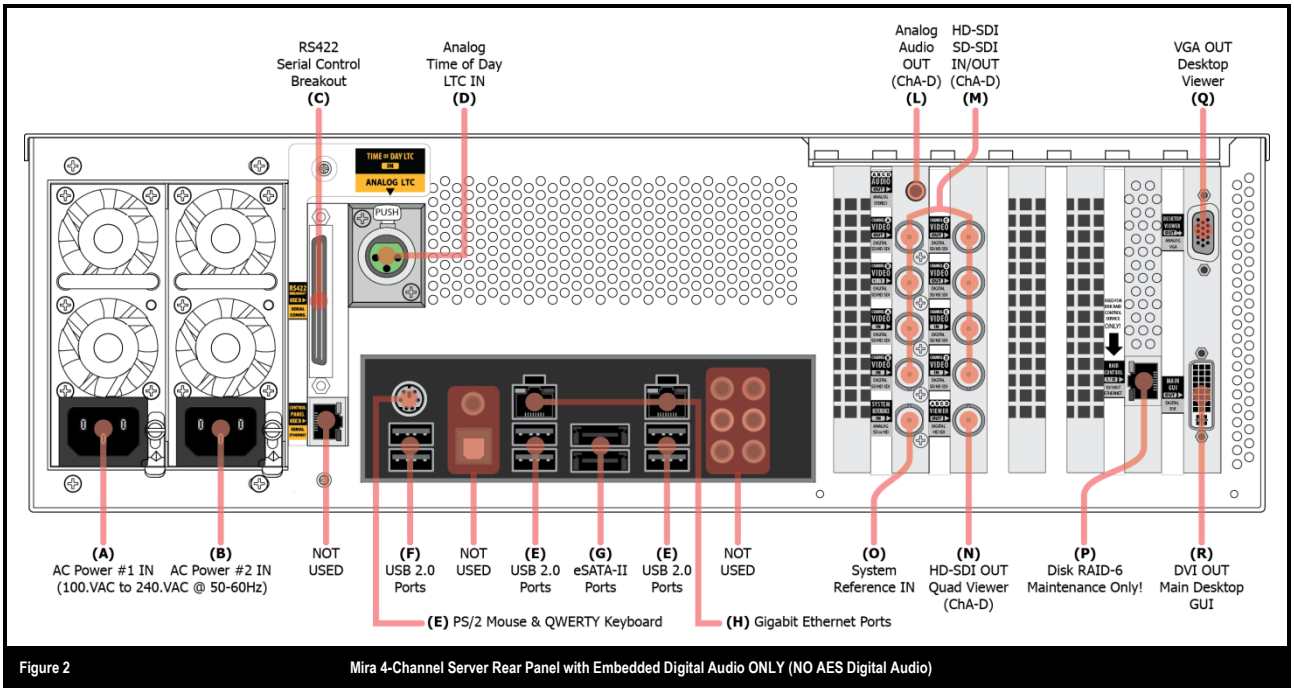


Figure 2 Mira 4-Channel Server Rear Panel with Embedded Digital Audio ONLY (NO AES Digital Audio)

Mira 8CH Servers with EMBEDDED DIGITAL AUDIO ONLY (NO AES DIGITAL AUDIO) only shipped AFTER June, 2010:

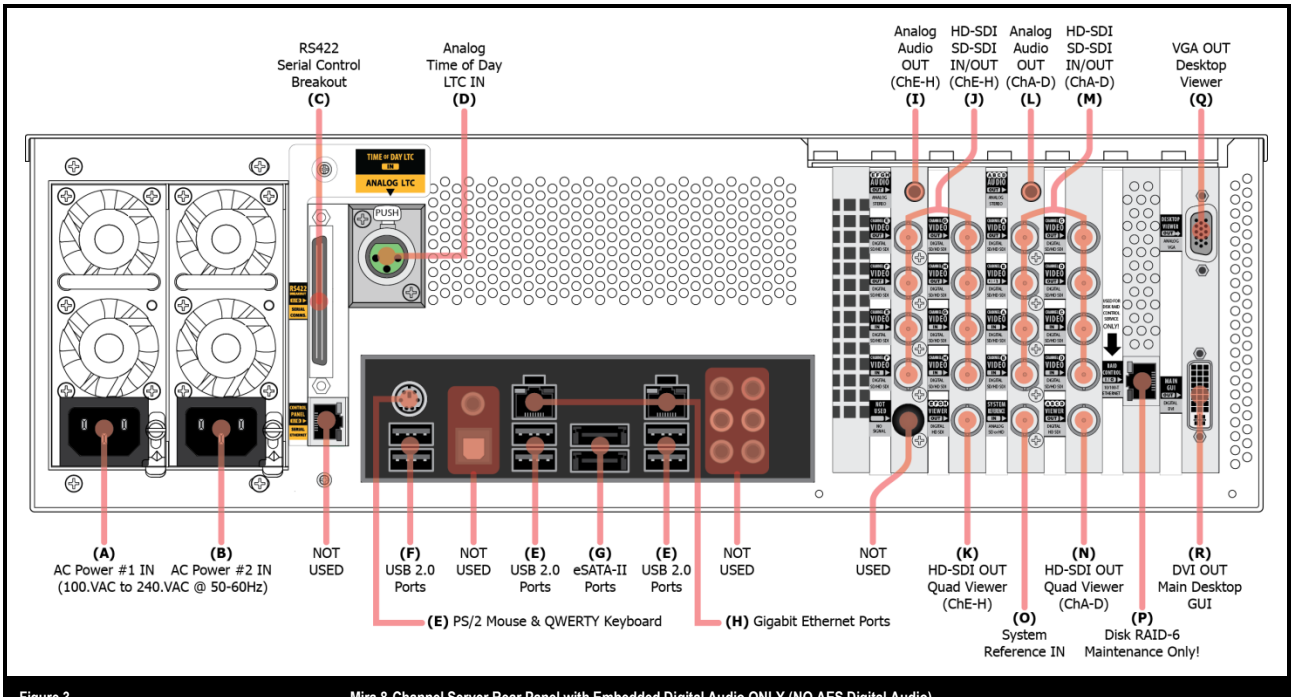


Figure 3 Mira 8-Channel Server Rear Panel with Embedded Digital Audio ONLY (NO AES Digital Audio)

Mira 4CH & 8CH Servers with EMBEDDED DIGITAL AUDIO and AES DIGITAL AUDIO OPTION; only shipped AFTER June, 2010

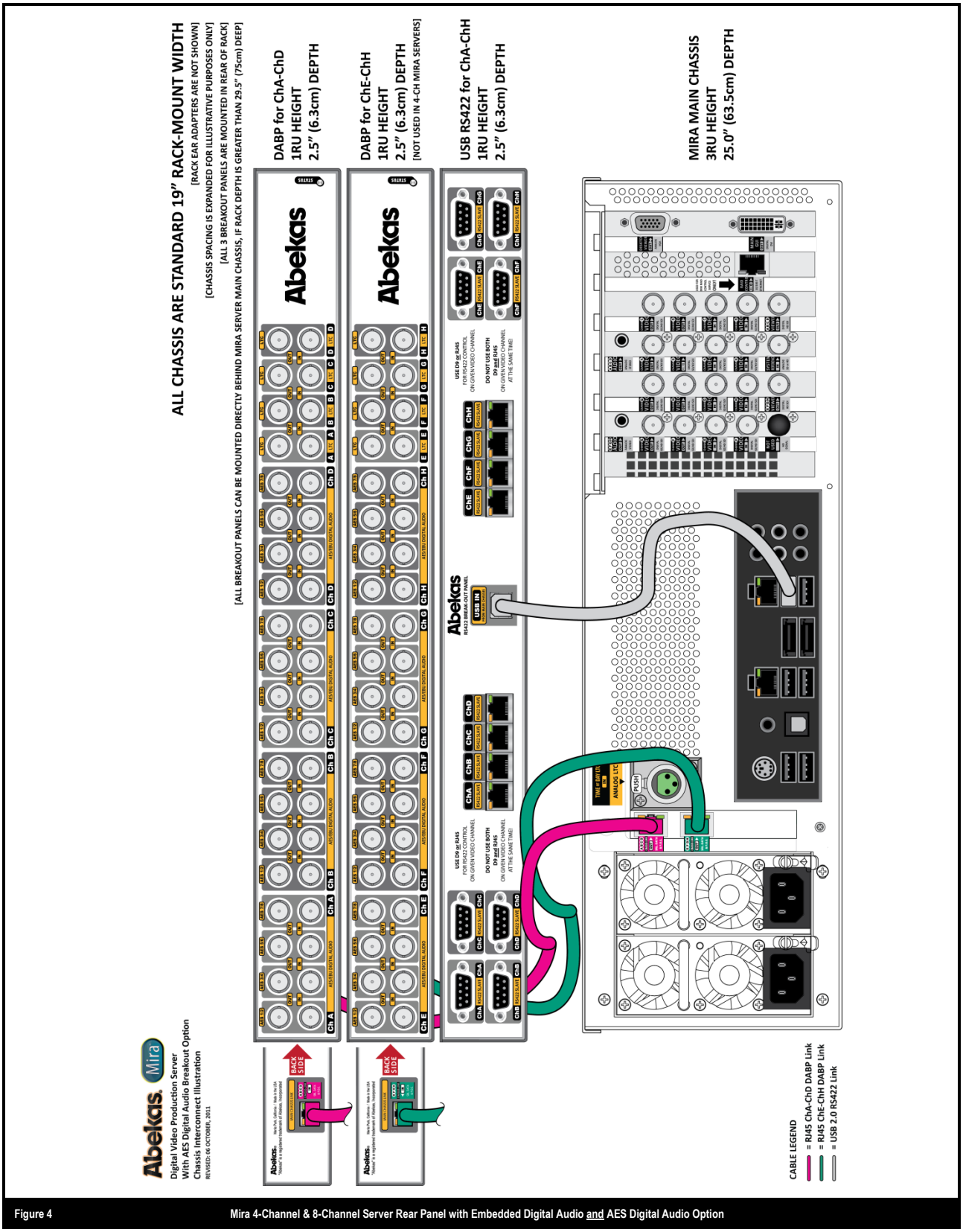


Figure 4 Mira 4-Channel & 8-Channel Server Rear Panel with Embedded Digital Audio and AES Digital Audio Option

Referring to the illustrations in Figure 2 and Figure 3 on the previous page above:

(A) AC Power #1 In
Input #1 for mains power into the dual-redundant power supply. The power supply is auto-sensing with an input AC voltage range of 100VAC to 240VAC at 47Hz to 63Hz. If only one mains power cord is plugged in, the power supply alarm will sound when Mira is powered on. Either plug in the second AC power cord or press the **POWER SUPPLY ALARM MUTE** button (located to the immediate right of the PSU's) to silence the alarm.

▶ ***NOTE:*** *Some versions of the Mira power supply do not offer an "Alarm Mute" button. You must plug in the second power cord to silence the alarm.*

(B) AC Power #2 In
Input #2 for mains power into the dual-redundant power supply. The power supply is auto-sensing with an input AC voltage range of 100VAC to 240VAC at 47Hz to 63Hz. If only one mains power cord is plugged in, the power supply alarm will sound when Mira is powered on. Either plug in the second AC power cord or press the **POWER SUPPLY ALARM MUTE** button (located to the immediate right of the PSU's) to silence the alarm.

▶ ***NOTE:*** *Some versions of the Mira power supply do not offer an "Alarm Mute" button. You must plug in the second power cord to silence the alarm.*

(C) RS422 Ports
This 64-Pin-D connector attaches to a breakout cable (supplied with Mira) which has eight RJ45 connectors at the other end.

When connected to the Mira 4-Channel server, the first four RJ45 connectors at the end of this breakout cable provide RS422 serial control ports for the four video channels: ChA, ChB, ChC and ChD.

When connected to the Mira 8-Channel server, all eight RJ45 connectors at the end of this breakout cable provide RS422 serial control ports for all video channels: ChA, ChB, ChC, ChD, ChE, ChF, ChG and ChH.

These RS422 serial control ports are used to control the video/audio channels of the Mira server from external controllers capable of RS422 serial control, and which support either "Sony BVW-75", "Odetics" and/or "Louth VDCP" protocols.

Each video channel in Mira features an RS422 serial control port, located through a break-out cable on the rear panel of the Mira Server. At the end of the breakout cable are "Ethernet" type RJ45 connectors. Mira includes adapters for each RS422 serial port to convert the RJ45 cable to 9D, so you can just plug a standard male 9D serial cable into the adapter.

These RJ45 cables for the RS422 serial ports are each wired 1:1 from the eight pins of the RJ45 to the first eight of the nine pins in standard "D9" serial RS422 cables. A given installation of the Mira server may require use of the RJ45-to-D9 adapter connector if RS422 serial control is routed via D9 connection.

These RS422 serial ports are used to control the video/audio channels of the Mira server from external controllers capable of RS422 serial control, and which support either "Sony BVW-75," "Odetics," or "Louth VDCP" protocols.

(D) Analog Time of Day LTC IN
This XLR connector provides input for an analog longitudinal timecode (LTC) signal, which is typically used as "time of day" or "house" timecode. When recording clips into Mira, the user may specify this timecode input signal as the timecode source, which is then recorded into the timecode track within the clip.

(E) USB **QWERTY Keyboard**
A USB QWERTY Keyboard or USB Mouse can be connected to this port.

(F) USB 2.0 Ports
These ports are used to connect to an external Hi-Speed USB 2.0 portable disk drive or memory stick. Data transfer rates up to 800Mb/s are possible. Typically, this port is used to transfer clip file data between the Mira server and the portable disk drive.

▶ ***NOTE:*** *Any portable disk drive or memory stick connected to this USB port must be formatted for use on Windows O/S. Portable disk drives or memory sticks formatted for exclusive use on the Mac O/S will not operate properly.*

(G) eSATA-II Ports
These ports are used to connect to an external eSATA-II portable disk drive. Data transfer rates up to 3.0Gb/s are possible. Typically, this port is used to transfer clip file data between the Mira server and the portable disk drive.

▶ ***NOTE:*** *Any portable disk drive connected to this eSATA-II port must be formatted for use on a Windows O/S. Portable disk drives formatted for exclusive use on the Mac O/S will not operate properly.*

(H) Gigabit Ethernet Port

These ports are used to connect the Mira server to one or two local area networks (LAN). Typically, these ports are used to transfer clip file data between the Mira server and the LAN. This port is capable of gigabit performance, and is backward compatible with older 10-T and 100-T Ethernet networks.

When multiple Mira servers are installed, these Ethernet ports can be used to manage all the clip content on the multiple Mira servers.

(I) Analog Audio OUT for ChE-ChH (*Mira 8-Channel Servers Only*)

This 3.5mm female jack provides an analog monitoring output for two tracks (one stereo pair) of audio from any of the four video channels in the ChE through ChH group of channels in the Mira server. By default, the output is set to monitor the stereo audio output from the ChE video channel.

From the Mira Engineering Setup user interface, the stereo audio pair can be switched to monitor the audio output from any of the other three video channels in the group; refer to the section "***Engineering Setup — Audio***" on page 188 below.

(J) HD-SDI / SD-SDI Digital Video IN/OUT for ChE-ChH (*Mira 8-Channel Servers Only*)

These eight BNC connectors provide the serial digital video (SDI) inputs and outputs for the second group of four video channels labeled ChE-ChH. Each BNC pair provides the IN and OUT for one video channel.

When operating the Mira server in standard-definition (SD) video formats, these BNC connectors accept and provide serial digital video signals operating at a data rate of 270Mb/s (SD-SDI).

When operating the Mira server in high-definition (HD) mode, these BNC connectors accept and provide serial digital video signals operating at data rate of 1.5Gb/s (HD-SDI).

- ***NOTE:*** *It is not possible to operate the Mira server is both SD and HD mode at the same time; so these BNC connectors operate either in the SD-SDI **or** in the HD-SDI mode at any given time.*

(K) Quad Viewer Output for ChE-ChH (*Mira 8-Channel Servers Only*)

This BNC connector provides an HD-SDI serial digital video output of the built-in quad-split viewer, which is used to monitor the second group of four video channels ChE-ChH. This HD-SDI output can only connect to an external picture monitor capable of accepting 1.5Gb/s HD-SDI digital video input. Each of the four "panes" in the quad-split viewer also contains the timecode and title of the clips loaded in the four video output channels.

- ***NOTE:*** *The Quad Viewer only appears when Mira is operating in HD video formats, 720 or 1080. The Quad Viewer output is **disabled** when Mira is operating in SD video formats, 525 or 625. If you will be operating Mira in standard definition, then please use the desktop Viewer that is built into the Mira Explorer user interface instead of this Quad Viewer.*

(L) Analog Audio OUT for ChA-ChD

This 3.5mm female jack provides an analog monitoring output for two tracks (one stereo pair) of audio from any of the four video channels in the ChA through ChD group of channels in the Mira server. By default, the output is set to monitor the stereo audio output from the ChA video channel.

From the Mira Engineering Setup user interface, the stereo audio pair can be switched to monitor the audio output from any of the other three video channels in the group; refer to the section "***Engineering Setup — Audio***" on page 188 below.

(M) HD-SDI / SD-SDI Digital Video IN/OUT for ChA-ChD

These eight BNC connectors provide the serial digital video (SDI) inputs and outputs for the second group of four video channels labeled ChA-ChD. Each BNC pair provides the IN and OUT for one video channel.

When operating the Mira server in standard-definition (SD) video formats, these BNC connectors accept and provide serial digital video signals operating at a data rate of 270Mb/s (SD-SDI).

When operating the Mira server in high-definition (HD) mode, these BNC connectors accept and provide serial digital video signals operating at data rate of 1.5Gb/s (HD-SDI).

- ***NOTE:*** *It is not possible to operate the Mira server is both SD and HD mode at the same time; so these BNC connectors operate either in the SD-SDI **or** in the HD-SDI mode at any given time.*

(N) Quad Viewer Output for ChA-ChD

This BNC connector provides an HD-SDI serial digital video output of the built-in quad-split viewer, which is used to monitor the second group of four video channels ChA-ChD. This HD-SDI output can only connect to an external picture monitor capable of accepting 1.5Gb/s HD-SDI digital video input. Each of the four "panes" in the quad-split viewer also contains the timecode and title of the clips loaded in the four video output channels.

- ***NOTE:*** *The Quad Viewer only appears when Mira is operating in HD video formats, 720 or 1080. The Quad Viewer output is* ***disabled*** *when Mira is operating in SD video formats, 525 or 625. If you will be operating Mira in standard definition, then please use the desktop Viewer that is built into the Mira Explorer user interface instead of this Quad Viewer.*

(O) System Reference Input

This BNC connector must be supplied with house Bi-Level analog reference or Tri-Level analog reference. If this input signal is missing, then video/audio outputs from the Mira server will not be synchronized with external video/audio equipment.

If Tri-Level reference is used, then an external 75-ohm terminator with a BNC "T" connector must be employed in order to double-terminate the Tri-Level reference signal feeding Mira.

(P) Disk RAID-6 Maintenance Only!

This 100/T Ethernet port is only used for a dedicated maintenance terminal for the internal media RAID-6 disk array. This port should **never** be used as a "general" Ethernet port for file transfer and clip management. Alternatively, the RAID-6 disk array maintenance can be performed through a web browser via the main gigabit Ethernet port [item (H) on page 23 above].

(Q) VGA OUT Desktop Viewer

This VGA output can be used to display a second desktop view for the Windows operating system. When this is done, the Viewer built into Mira Explorer can be separated and positioned onto this second desktop VGA monitor. This provides another method of viewing the video channels in Mira.

(R) DVI OUT Main Desktop GUI

This output displays the main graphical user interface (GUI) of the Mira server, and connects to an external computer monitor with a DVI-D port. For optimum user experience, this external computer monitor should feature a minimum resolution of 1280x1024. Monitors with higher resolution are also acceptable and encouraged, in order to provide more "screen real estate" for users.

Power-ON / Power OFF Procedure

Ensure the AC power cords are connected to the two AC inputs to the power supply on rear panel of the Mira server—it's also a good idea to plug them into two separate AC circuits, on two separate circuit-breakers. Then follow this procedure to power on/off the Mira server. Also ensure the USB QWERTY Keyboard, USB Mouse and a computer monitor are connected to the appropriate connectors on the rear panel of the Mira server chassis.

Power ON Procedure—Normal

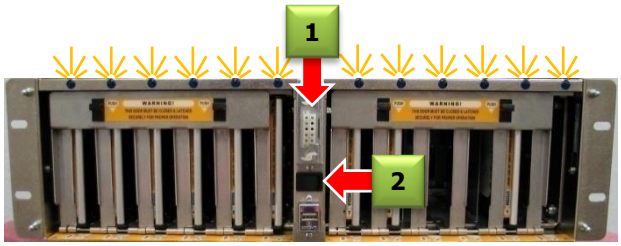
Use this procedure with the gray plastic front panel in place on the front of the Mira server chassis.

1. **Press & release** (Power) button.
   - ▶ *The "**Abekas**" logo will illuminate, indicating the server is powering ON.*
2. If required, continue with optional ***Windows Login*** procedure, located on page 27 below.

Power ON Procedure—Alternative

Use this procedure if the gray plastic front panel is missing from the front of the Mira server chassis.

1. Locate center post at front of Mira chassis, with small black rocker switch & USB port.
2. **Press** and **release** RIGHT side of this spring-loaded black rocker switch.



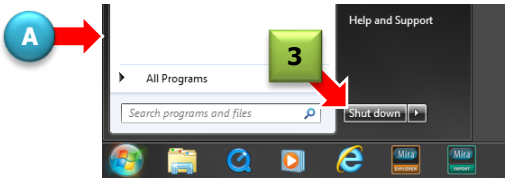
   - ▶ *You will see the row of 12 blue lights located at the top edge of the chassis illuminate briefly (for a second or so) followed by a short "beep" sound from inside the chassis. This all indicates the server is powering ON.*
3. Continue with ***Windows Login*** procedure, located on page 27 below.

Power OFF Procedure—Normal

It is highly recommended to always use this "software" power-down procedure for the Mira server, to ensure an orderly shut-down of all components inside the server.

1. Move mouse pointer to lower edge of screen, to reveal Windows taskbar.
2. Click (Windows START) icon.
   - ▶ **(A)** *"**Windows Start**" menu appears, as shown below.*

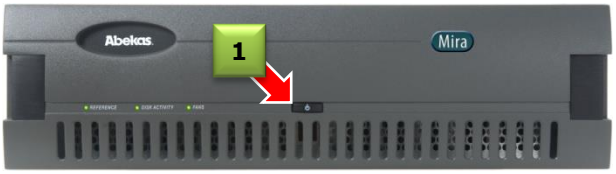
3. Click Shut down button.
   - ▶ *"**Shutting down...**" screen appears.*
   - ▶ *In a few seconds, Mira Server will power OFF.*



Power OFF Procedure—Alternative 1

Use this procedure only in extreme cases; when the Windows O/S has crashed, or if the terminal is otherwise unavailable.

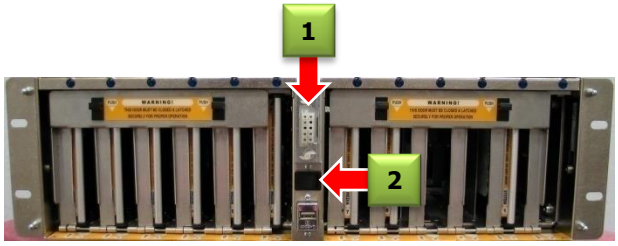
1. HOLD DOWN (Power) button for **five seconds**.
   - ▶ *"**Abekas**" logo illumination will turn OFF; indicating Mira server is powered OFF.*



Power OFF Procedure—Alternative 2

Use this procedure only in extreme cases; when the Windows O/S has crashed, or if the terminal is otherwise unavailable; and when the gray plastic front panel is missing from the front of the Mira server chassis.

1. Locate center post at front of Mira chassis, with small black rocker switch & USB port.
2. HOLD DOWN for **four seconds** RIGHT side of this black rocker switch.
   - ▶ *You will hear internal fans spin down, indicating Mira server is powered OFF.*



Windows Login

After powering ON the Mira server, the Windows login screen may appear if your Mira server is configured with this option.

If a login screen appears, a user password must be entered. This password may be changed by the end-user after a successful login.

1. At the "**Mira Server**" password prompt, enter the factory-default password:

   Abekas

   Be sure to enter this password exactly as shown, observing the upper-case "**A**" and lower-case letters which follow.

   - *The password may be different, if the system administrator for Mira within your organization has changed it.*
   - *If the password was changed and then forgotten, please contact Abekas technical support.*

2. Click blue arrow button to right of password entry field to accept the password (or press Enter on QWERTY keyboard).

   - *You will now be logged into Mira Server.*
   - ***NOTE:** After a successful login into Windows, the video channels and RS422 serial control in Mira are all active. If you're using an external RS422 controller on Mira, that controller may now be used to control the video channels (including loading and playing clips).*
   - ***NOTE:** If you do NOT have an external controller connected to Mira, you may use the procedure below to log into Mira Explorer and use that program to load and play clips.*

Mira Explorer — Login & Operations

Mira Explorer is a software application included with every Mira server which provides the primary user interface for the server. This interface is known as a "graphical user interface"; or abbreviated as a "GUI" for short.

The Mira Explorer application is a "high-level" application which runs quite independently of the "low-level" video/audio hardware in Mira. What this means for the user is that even if the Mira Explorer application is quit, closed or unexpectedly crashes—the underlying operations of the video/audio hardware in Mira is unaffected. Therefore, all recording and playback operations that are underway when Mira Explorer is close or quit will continue without any interruption.

This also means that if you intend to halt recording or playback (or both), you cannot do so by simply closing or quitting the Mira Explorer user interface. You must first stop the recording and playback operations before closing Mira Explorer—if that is what you intend to do.

Included in the Mira Explorer application are: four or eight sets of transport controls with built-in live video preview windows for all server video channels; a Clip Library used to organize the media clips stored in the Mira server, including clip metadata editing facilities and an advance Find utility; a built-in Multi-Viewer to display the video outputs of the server; and an Export utility which can export clips stored in Mira into media files using the most popular wrappers and codecs.

The Mira Explorer application can be installed and run on external computers running Windows Vista or Windows 7 operating systems, to provide remote control of Mira across an Ethernet network.

This section of the operations guide is divided into several operational procedures; please find the procedure you're interested in from the list below, and then go to that page in the document.

Mira Explorer Login

After a successful Windows log-in to Mira Server, the log-in dialog for the "**Mira Explorer**" application will automatically appear.

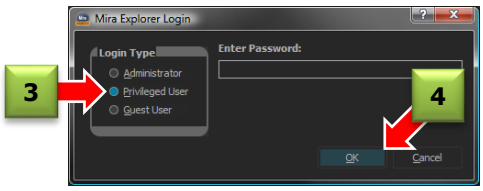
- *If Mira Explorer does not launch (or it was closed and needs to be run again), start here. Otherwise, skip ahead to step (3) below.*

1. Move mouse cursor to lower edge of screen, to reveal Windows taskbar.

2. Click (Mira Explorer) icon.
   - *The "**Mira Explorer Login**" dialog window appears, as shown below.*

3. Click "**Privileged User**" radio button.
   - *The factory default requires NO password.*

4. Click OK.



- *The "**Mira Explorer**" window appears, as shown in **Figure 4** below. If your Mira Server is new, there may be only one Clip Name listed.*
- ***NOTE:** When logging in as "**Privileged User**" or "**Guest**", you have limited access to all of the features of Mira Explorer. The number of features available to these two user levels is dictated by settings available to the System Administrator.*
- ***NOTE:** To use the "**System Administrator**" login and the features of the Mira Server available to the system administrator, please refer to the section titled "**Administrator Options**" starting on page 109.*
- ***NOTE:** To ingest media files into the Mira Server, refer to the section titled "**Mira Media File Import**" starting on page 121 below.*

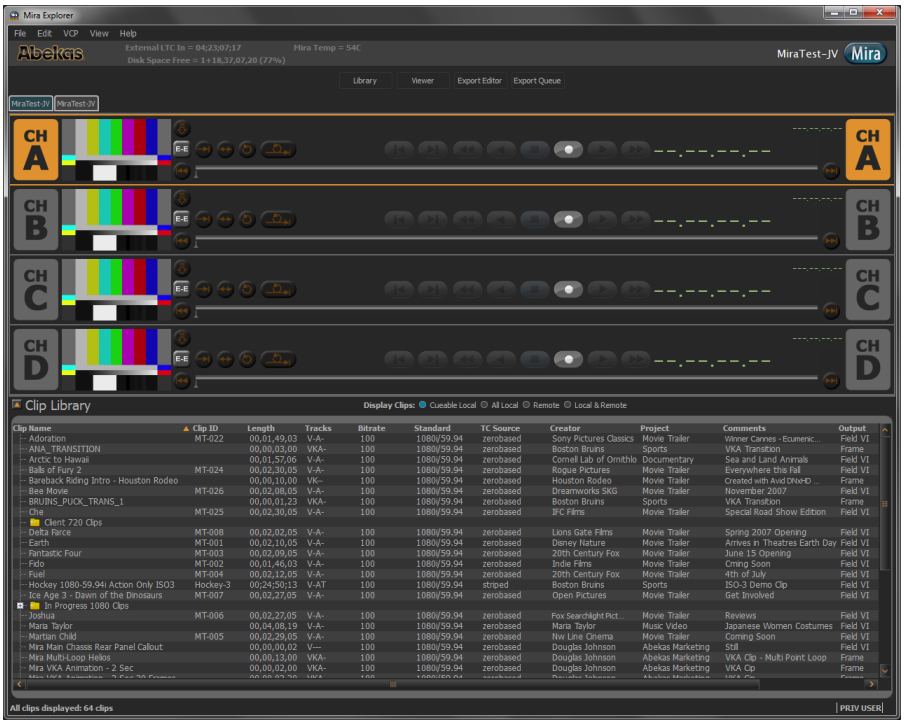


Figure 5 **Mira Explorer Graphical User Interface (GUI)**

Select Video Channel, Load & Unload Clips

To begin playback of stored clips from Mira Explorer, you first need to select a video channel and then load a clip into that channel.

Select a Video Channel

1. Click Library near top center of Mira Explorer screen to display Clip Library.

The next step applies only to 8-Channel Mira servers (skip ahead to step 3 below, for 4-Channel Mira)

2. Click desired tab near top of screen to select desired group of video channels:

   LEFT TAB = **ChA** / **ChB** / **ChC** / **ChD**

   RIGHT TAB = **ChE** / **ChF** / **ChG** / **ChH**

3. Click anywhere in horizontal transport control area for desired channel

   ▶ *In this example, **ChB** is selected, as indicated by the orange highlight on **ChB**:*

Load Clip into Channel Transport

There are **four** methods available to load a clip into a channel transport:

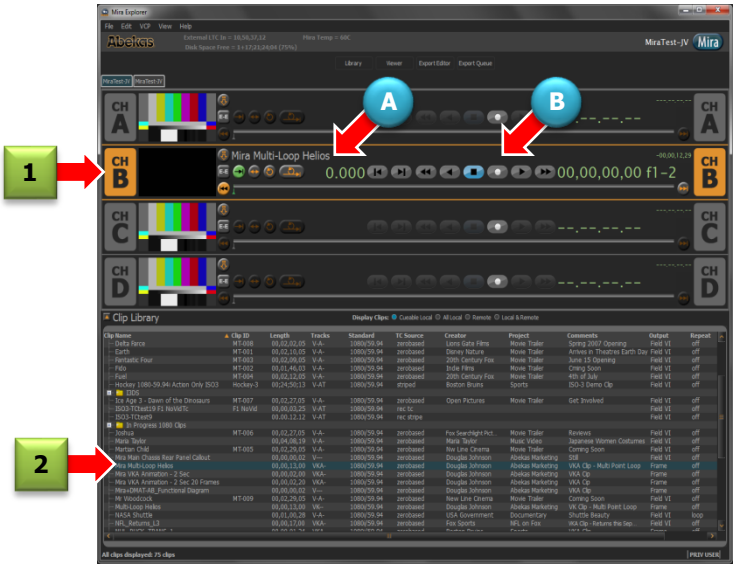
METHOD 1

1. Click mouse cursor to highlight a clip in **Clip Library** listing
2. Click (clip load button) in desired channel transport:
   - ▶ **(A)** *Clip unloaded from **ChB**; indicated by color bars loaded into **ChB**.*
   - ▶ **(B)** *Transport control buttons are active for **ChB**.*

— or —

METHOD 2

1. Click anywhere in transport to highlight it;
2. **Double-Click** desired clip in Clip Library:
   - ▶ **(A)** *Clip unloaded from **ChB**; indicated by color bars loaded into **ChB**.*
   - ▶ **(B)** *Transport control buttons are active for **ChB**.*



Continued on next page…

METHOD 3

1. **Click-and-Hold** mouse on desired clip in Clip Library.
2. **Drag** clip into desired video channel transport; **release mouse button**. (in this example, ChB):

   ▶ **(A)** *Clip unloaded from **ChB**; indicated by color bars loaded into **ChB**.*

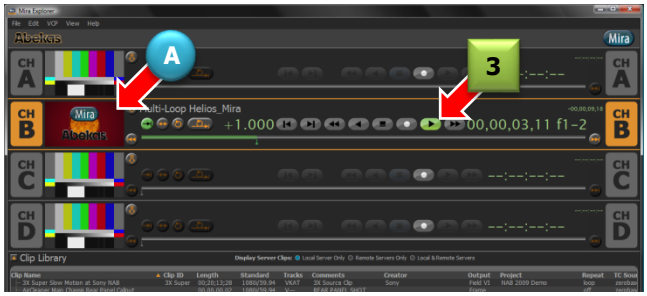
   ▶ **(B)** *Transport control buttons are active for **ChB**.*

3. Click desired transport control button. Here, ▶ (Play Forward) was clicked.

— or —

Press <SPACEBAR> on QWERTY keyboard.

▶ **(A)** *Clip playback appears in video window at left of transport control area, unless Mira Explorer GUI is running on remote computer; in which case, video window is not available.*



4. Repeat steps (1) through (3) above to select other video channels and to load and play clips in other video channels.

Unload Clip from Channel Transport

Use this procedure to unload a clip from any video channel transport (video channel transport must first be selected/clicked on).

1 (HOLD DOWN) Shift on QWERTY keyboard.

+

1. HOLD DOWN Shift on QWERTY keyboard.
2. Click (clip load button) in desired channel transport.

— or —

— or —

1. HOLD DOWN Shift on QWERTY keyboard.
2. Press F1 on QWERTY keyboard.

Shift + F1 on QWERTY keyboard.

▶ **(A)** *Clip unloaded from **ChB**; indicated by color bars loaded into **ChB**.*

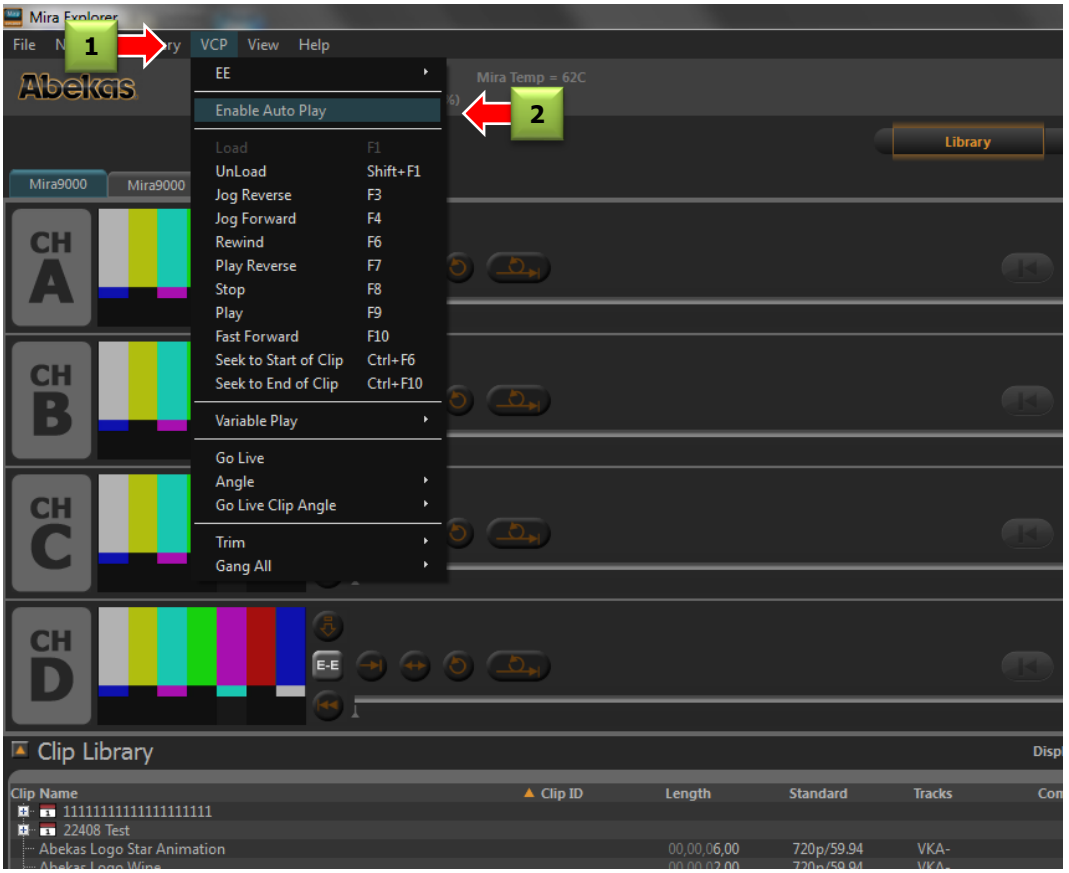
▶ **(B)** *The **ChB** transport control buttons are de-activated.*

Auto Play Upon Clip Load in Channel Transport

Use this procedure to automatically play a clip immediately after it is loaded into any channel transport.

1. Click **"VCP"** in the top-left corner of Mira Explorer window.

2. Select **"Enable Auto Play"** from the drop down menu.



➢ ***IMPORTANT NOTE**: Currently this feature only functions when clips are loaded and played locally on the Mira server (from the Mira Explorer applications). Auto Play does not yet function when loading clips via RS422 serial control.*

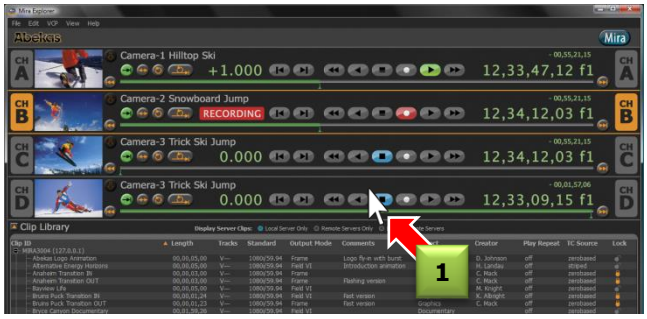
Lock & Unlock Transport Control

This feature allows the user to deactivate any (or all) of the video channel transport control sets in the Mira Explorer Graphical User Interface (GUI). This locking mechanism does NOT affect RS422 serial control—it affects only GUI control. This feature prevents unintended interruption and/or clip loading in video channels that are otherwise in use.

To LOCK a video channel:

1. Position mouse cursor anywhere within transport control area for channel you wish to lock.

   ▶ *In this example, the mouse cursor is positioned over the **ChD** transport area.*



2. HOLD DOWN Ctrl on QWERTY keyboard.

3. Click LEFT mouse button.

▶ **(A)** *The* Ctrl + = *icon appears.*

▶ *Transport controls are locked in **ChD**.*

To UNLOCK a locked video channel:

1. Repeat steps (1) through (3) above, positioning mouse cursor over locked video channel.

Expand & Shrink Clip Library Listing

This feature allows the user to maximize the size of the Clip Library listing, in order to view more of the clips listed in the library. This action does NOT affect any clip playback or recording that is underway—this simply changes the size of the clip library listing.

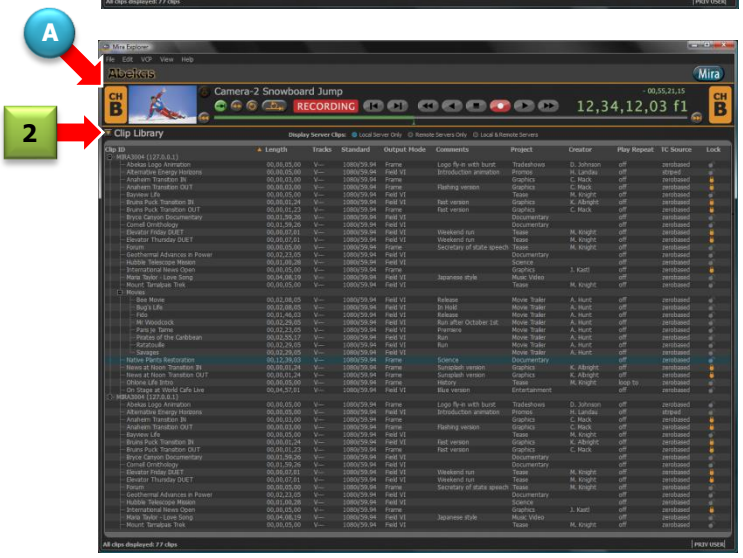
When the clip library listing is expanded, the transport controls for *only* the currently active video channel remain in view.

To EXPAND the Clip Library Listing:

1. Click ▲ (Clip Library expand) button.

▶ **(A)** *Clip Library is expanded, with transport controls only for currently active video channel (**ChB**) in view.*

Other transport controls are hidden from view.



To SHRINK the Clip Library Listing:

2. Click ▼ (Clip Library shrink) button.

▶ **(A)** *Clip Library shrinks, with transport controls for all four video channels in view.*

Display Clips in Clip Library

The Clip Library features radio buttons to select which clips are displayed in the library listing.

1. Click Library near top center of Mira Explorer screen to display Clip Library.

2. Click "**Display Clips**" radio button for desired display in **Clip Library**.

   The four radio buttons are:

   - **Cueable Local**
     Displays only those clips that match the video format in which Mira is currently operating; and only those clips stored in the local Mira serer. All other clips are hidden.

     For example, if Mira is currently operating in 1080/59.94i video format, then only clips recorded in the 1080/59.94i video format are displayed. Clips recorded in any other video format are hidden from view.

   - **All Local**
     Displays all clips stored in the local Mira server. Clips that don't match the video format in which Mira is currently operating are displayed in the Clip Library, but these clips cannot be loaded into any video channel.

     For example, if Mira is currently operating in the 1080/59.94i video format, then clips stored in the local Mira server that are 525, 625, 720, 1080/23.98p, 1080/24p and 1080/50i video formats are displayed in the Clip Library, but these clips cannot be loaded into any video channel. Only clips recorded in 1080/59.94i can be loaded into video channels.

   - **Remote**
     Displays only those clips stored in remote Mira servers, and displays all clips regardless of video format. Since these clips are all located on remote Mira servers, they cannot be loaded into any video channel.

   - **Local & Remote**
     Displays all clips stored in both the local and remote Mira servers, regardless of video format. Clips located on remote Mira servers, cannot be loaded into any video channel, regardless of video format. For clips located on the **local** Mira server, only those clips that match the video format in which Mira is currently operating can be loaded into video channels.

     For example, if Mira is currently operating in the 1080/59.94i video format, then clips stored in the **local** Mira server that are 525, 625, 720, 1080/23.98p, 1080/24p and 1080/50i video formats are displayed in the Clip Library, but these clips cannot be loaded into any video channel. Only clips recorded in 1080/59.94i can be loaded into video channels.

Transport Controls in Mira Explorer

A brief explanation of the transport controls available within Mira Explorer is provided below, with reference to the illustration in **Figure 5** below. Be sure to first select a video channel and load a clip in that channel to help illustrate these concepts on the Mira server; this procedure is provided on page 30 above.

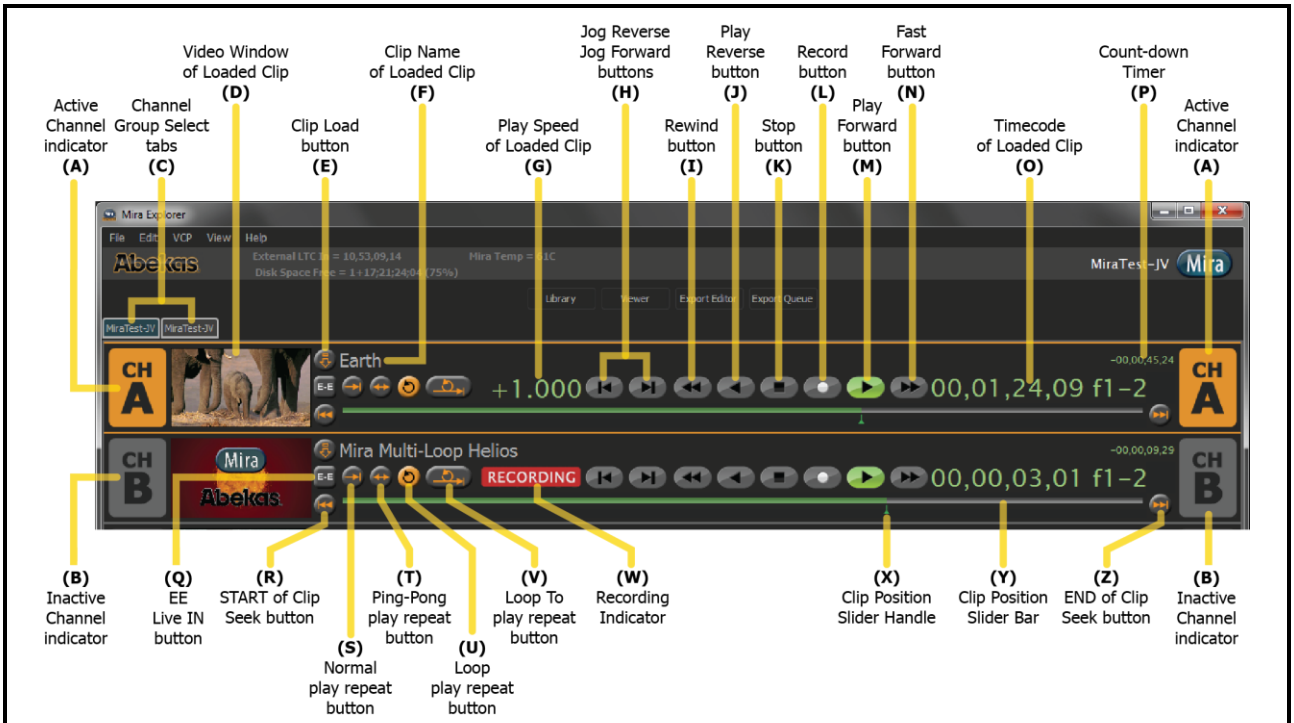


Figure 6 Mira Explorer Transport Controls

(A) 

Active Channel Indicator (Orange)

When a set of transport controls are active, the channel label for that video channel will illuminate with an orange color. To activate the transport controls for a given video channel, click the mouse anywhere within the horizontal transport control area.

- ***NOTE:** Only **one** video channel can be selected and controlled at any given time within Mira Explorer.*

(B) 

Inactive Channel Indicator (Gray)

When a given set of transport controls are not active, the channel label for that video channel will turn gray in color.

(C) 

Channel Group Select tab

Click the LEFT tab to display transport controls for the first set of four video channels (ChA-ChD).

Click the RIGHT tab to display transport controls for the second set of four video channels (ChE-ChH).

- ***NOTE:** In a Mira 4-Channel server, only ONE tab will be visible.*
- ***NOTE:** The label inside each tab will reflect the name of the server, which is set as the "Computer Name" in Windows. The factory default setting for the Computer Name is the serial number of the Mira Chassis.*

(D) 

Video Window of Loaded Clip

These small low-resolution windows display the full-motion video during clip playback, or the live input video during clip recording and when "EE" mode is ON

(E) Clip Load / Clip Unload button

To Load a Clip: In the Mira Clip Library, highlight a Clip Name with the teal-blue highlighter (use the mouse cursor to highlight the desired clip); then click the button to load the highlighted clip into the active video channel.

To Unload a Clip: With a clip loaded in a video channel transport, HOLD DOWN the Shift button on the QWERTY keyboard, then click the button. The clip currently loaded in the video channel will be unloaded, and color bars will appear in the video channel.

(F) Earth Clip Name of Loaded Clip

This text indicates the name of the currently loaded clip in the associated video channel. If this area is blank, then no clip is currently loaded in that video channel.

(G) +1.000 Play Speed of Loaded Clip

This displays the current play speed of the clip. The complete range of play speed is from -99.999 to +99.999 times the normal play speed (1.000). Double-click on this section of Mira Explorer to enter in a custom value using the QWERTY keyboard.

(H) Jog Reverse / Jog Forward buttons

These buttons are used to jog forward or reverse by one frame (or one field; depending upon the playback "output mode" of the clip). Each click jogs by one frame (or field).

(I) Rewind button

Rewinds the currently loaded clip in the active video channel; the speed of play is 30X normal play speed.

(J) Play Reverse button

Plays in reverse at 1X play speed the currently loaded clip in the active video channel.

(K) Stop button

When clicked, halts playback of the currently loaded clip in the active video channel.

(L) Record button

Clicking this button presents the "Clip Record Setup" dialog window, which is used to define the type of recording (New Clip, Append or Overwrite) and the parameters for this recording.

Refer to the section "***Recording Clips***" on page 42 below for complete recording instructions.

If the parameters are already defined, you may HOLD DOWN Shift on QWERTY keyboard and click the button to immediately execute the record function, avoiding the "*Clip Record Setup"* dialog window.

(M) Play Forward button

Plays forward at 1X play speed the currently loaded clip in the active video channel.

(N) Fast Forward button

Fast forwards the currently loaded clip in the active video channel; the speed of play is 30X normal play speed.

(O) 00,01,24,09 f1-2 Timecode of Loaded Clip

This indicator displays the timecode value at the current position within the currently loaded clip in the associated video channel. The "f1" or "f2" indication at the right end of the timecode string denotes the clip is in the FIELD playback mode, while an "f1-2" indication denotes the clip is in FRAME playback mode. Double-click on this section of Mira Explorer to enter in a custom value using the QWERTY keyboard.

- ***NOTE:*** *the separators between the digits can be displayed as either: comma (,) semi-colon (;) period (.) or full colon (:). The comma and semi-colon denotes "drop-frame" timecode, with comma being field-1 and semi-colon being field-2; while the period and colon denotes "non-drop frame" timecode, with the period being field-1 and colon being field-2.*

(P) -00,00,45,24 **Count-down Timer**

This display indicates the time remaining in the clip playback before it reaches the end of the clip. When the end of clip is reached, this timer will display all zeros (00.00.00.00). During new clip RECORD operations, this timer display will typically display all zeros (00.00.00.00), because the record pointer is always at the end of the new clip.

(Q) E-E **EE Live IN button**

This button is used to place the transport into a LIVE EE mode, which displays the input video (and audio) directly on the output of the given video channel. The video window at the far left of the transport will display the input video while EE mode is active. The button changes to a red color while EE mode is ON (E-E). Click the active button to turn EE mode OFF.

(R) **START of Clip Seek button**

This button is used to immediately seek to the first frame of the currently loaded clip. When parked on the first frame of the clip, this button will be illuminated with an orange color ( ). The keyboard shortcut for this function is Ctrl + F6.

(S) **Normal play repeat button**

This button is mutually exclusive with the three buttons to its immediate right; and when this button is highlighted with a green color, this indicates the "Normal" play repeat mode is active—which means all play repeat modes are turned OFF. When this button is active, the loaded clip will play all the way to its end point and then stop.

(T) **Ping-Pong play repeat button**

When this button is clicked and activated with an orange color ( ), the "Ping-Pong" play repeat mode is active. The loaded clip will play between the marked IN and OUT points stored within the clip metadata (*see description "**Clip Metadata**" on page 57 below*), and will reverse the play direction during playback whenever the IN or OUT point is reached.

- ***NOTE:** This button is mutually-exclusive with the three other buttons to its immediate left and right (i.e. only one of the buttons in this group of four buttons can be active at any given time).*

(U) **Loop play repeat button**

When this button is clicked and activated with an orange color ( ), the "Loop" play repeat mode is active. The loaded clip will play between the marked IN and OUT points stored within the clip metadata (*see description "**Clip Metadata**" on page 57 below*). During playback, whenever the OUT point is reached inside the clip, the playback will seamlessly and immediately seek back to the IN point, and will play forward again from there. This playback cycle will repeat continuously thereafter.

- ***NOTE:** If the video channel is being controlled from an external controller using Odetics protocol, and the Odetics "Loop" command is used to control the "Loop" play repeat, this button has no effect upon clip playback.*
- ***NOTE:** This button is mutually-exclusive with the three other buttons to its immediate left and right (i.e. only one of the buttons in this group of four buttons can be active at any given time).*

(V) **Loop To play repeat button**

(This mode is also known as "*Multi-point Loop*" in products from other manufacturers)

When this button is clicked and activated with an orange color ( ), the "Loop To" play repeat mode is active. The loaded clip can begin playback from any point *before* the marked IN point, and will then play repeatedly between the marked IN and OUT points thereafter. These IN and OUT points are stored within the clip metadata (*see description "**Clip Metadata**" on page 57 below*).

During playback, whenever the OUT point is reached inside the clip, the playback will seamlessly and immediately seek back to the stored IN point, and will play forward again from there. This playback cycle will repeat continuously thereafter.

- ***NOTE:** If the video channel is being controlled from an external controller using Odetics protocol, and the Odetics "Multi-point Loop" command is used to control the "Loop To" play repeat, then this button will have no effect upon clip playback.*
- ***NOTE:** This button is mutually-exclusive with the three other buttons to its immediate left and right (i.e. only one of the buttons in this group of four buttons can be active at any given time).*

(W) RECORDING **Recording Indicator**

This indicator is displayed whenever the associated video channel is actively recording. This indicator replaces the "play speed" display during recording; when recording is stopped, the play speed display returns.

IMPORTING **Importing Indicator**

This indicator is displayed whenever the associated video channel is currently being used to import a file. When this indicator is present, the user has no control of the associated channel until the Mira Importer is closed.

EXPORTING **Exporting Indicator**

This indicator is displayed whenever the associated video channel is currently being used to export a clip. When this indicator is present, the user has no control of the associated channel until the export cue is completed or aborted.

(X) **END of Clip Seek button**

This button is used to immediately seek to the last frame of the currently loaded clip. When parked on the last frame of the clip, this button will be illuminated with an orange color ( ). The keyboard shortcut for this function is Ctrl + F10.

(Y) **Clip Position slider bar**

This horizontal bar shows the timeline duration of the currently loaded clip. The color of this slider bar changes from gray to green while the clip is played, indicating the playback position of the currently loaded clip.

(Z) **Clip Position slider handle**

This icon denotes the current position within the clip, with respect the clip's progress slider bar (*see description for next item*). The position of this cursor corresponds to the clip's current timecode [item (O) above on page 39].

During clip playback operation, use the mouse to "click, hold, and drag" the position of this cursor—in order to seek to any point within the currently loaded clip. The clip playback will be stopped when you release the mouse from the slider handle.

During clip RECORD operation, if the position slider is clicked and dragged, then recording will stop!

(A1) **Gang Button**

Any channel with a blue gang button is currently included in the channel "gang;" any transport control applied to one channel in the ganged group of channels will affect all other ganged channels. A video channel with a grey gang button is not involved in the channel "gang," and any transport controls applied to that channel will not affect any other channel.

Record Clips

Using Mira Explorer, you can perform four types of clip recording operations using the input video/audio on the currently selected video channel. The four types of recordings are: "**New Clip**"; "**Append**"; and "**Overwrite**".

New Clip (Record After Arming)

The "**New Clip (Record After Arming)**" record is used to create a brand new clip in the clip library, using the digital video and audio inputs on the selected video channel as the source for the new clip recording.

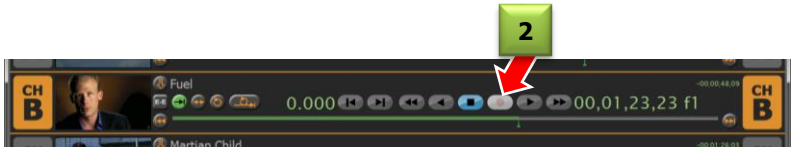
▶ ***NOTE:*** *If the video channel you wish to record with is already selected, then skip ahead to step 0 below.*

1. Click anywhere in horizontal transport control area for desired channel.

   ▶ ***ChB*** *is selected in this illustration, as indicated by the orange highlight on* ***ChB.***

2. Click (Record) button.

   ▶ *This presents the "Clip Record Setup" dialog window, shown in the next step.*



3. Click "**New Clip**" radio button.

   ▶ **(A)** *The "**New Clip**" data field section is active.*

   ▶ **(B)** ***NOTE****: If you're not recording an alpha matte "Key" signal, then uncheck this checkbox; less media disk space will be used.*

4. Type desired **Clip Name** for new clip.

   ▶ ***HINT:*** *To record new clip into a sub-folder, please refer to "**New Clip** (Create & Load)*

The "**New Clip (Create & Load)"** record option in the Clip Record Setup dialog window will create a new 1-frame duration clip and load it in the video channel transport after the OK button is clicked. This function is very useful if you want to first create a new clip from within the Mira Explorer user interface, and then use that same clip for recording purposes in the video channel transport while that channel is under remote RS422 serial control.

- *New Clip Record into Sub-Folder" starting on page 45 below.*

5. OPTIONAL: Define an 8-character "**Clip ID**" for new clip.

   - ***NOTE:** If you type more than eight characters for the Clip ID, only the first eight are used.*
   - ***NOTE:** If the "Clip ID" field is kept empty, then external control machines (via RS422 or Ethernet) will utilize the first eight characters of the defined "Clip Name" field as the "Clip ID".*

6. OPTIONAL: If you wish to create a series of new clips with same "base" Clip Name, use "**Auto Name**" feature.

   As each new clip is recorded, data within "Auto Name" are appended to end of each new clip.

   The "Auto Name" choices are:

   - **Numeric Append**: a numeric digit is added, and increments by one with each new clip recording.
   - **Time of Day**: The current date and time is appended to each new clip name.
   - **LTC In**: timecode data from the LTC IN connector are appended to each new clip name.

See also "*Overwrite Recording*" on page 52 below.

7. Select "Timecode" source for new clip.

   The "Timecode" choices are:

   - **Striped**: The timecode source is an internal TC generator, which by default starts at zero; the "Starting at:" field can be used to set the striped timecode to a non-zero value.
   - **External TC**: Timecode data from the LTC IN connector are used.

Continued on next page…

8. If "External TC" is chosen as timecode source in step (7) above, then also choose where timecode gets recorded:

   The choices are:

   - **First Frame Only**: The external timecode is recorded only on the first frame of the clip, and the timecode over the remainder of the clip is synthesized. Use this option if your timecode source is unreliable and will have "breaks" in the TC stream.

     NOTE: You may also want to use this option with any "ISO" clips used for instant replay, since the seek response from external controllers will work much faster than when timecode is recorded over the entire length of the ISO clip.

   - **Entire Clip Length**: The external timecode signal is recorded over the entire length of the clip; so if there is a break in timecode, then that break will be recorded too.

9. Click OK to finish.

— or —

Press Enter on QWERTY keyboard.

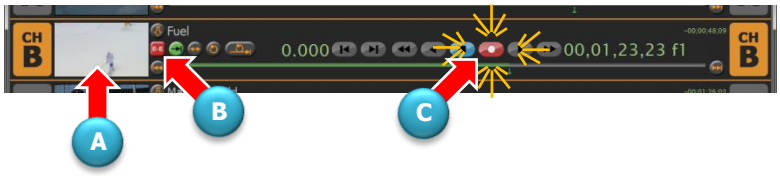
▶ *"**Clip Record Setup**" dialog window closes.*

▶ *The following will happen in transport:*

(A) Video window displays live input video.

(B) E-E button turns ON.

(C) (Record) button blinks on/off, to indicate recording is armed and ready; recording has not yet started.



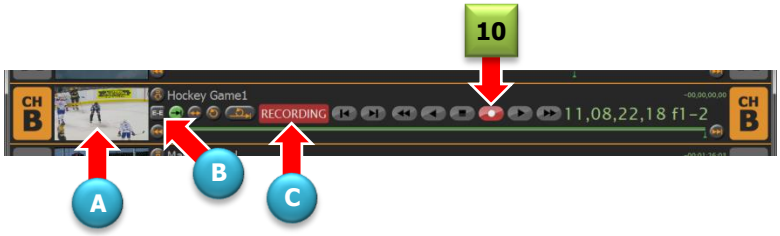
10. Click (Record) button to start recording.

▶ *The following will happen in the transport:*

(A) E-E button turns OFF.

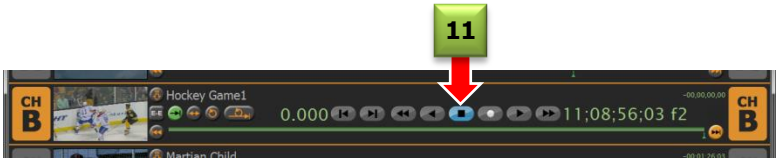
(B) New clip name is displayed.

(C) RECORDING indicator appears.



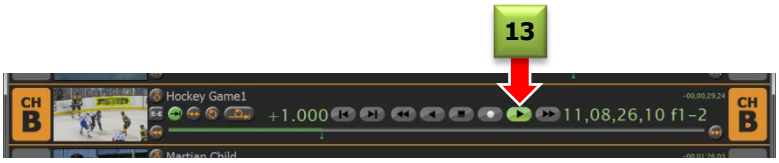
Continued on next page…

11. Click (Stop) button to halt recording.



12. Click (Seek to Start) button to seek to first frame of clip.

13. Click (Play Forward) button to play clip.



New Clip (Create & Load)

The "**New Clip (Create & Load)"** record option in the Clip Record Setup dialog window will create a new 1-frame duration clip and load it in the video channel transport after the OK button is clicked. This function is very useful if you want to first create a new clip from within the Mira Explorer user interface, and then use that same clip for recording purposes in the video channel transport while that channel is under remote RS422 serial control.

New Clip Record into Sub-Folder

New clips can be recorded directly into a defined sub-folder—but only when the folder already exists. To create a new sub-folder in the main Clip Library directory, you must use the Window Explorer program; creating a new folder in the root of the main Clip Library cannot (yet) be performed from within Mira Explorer.

Once a clip folder is created in the main Clip Library, it is then possible to create new sub-folder(s) below that clip folder from within Mira Explorer. Please refer to the procedures below.

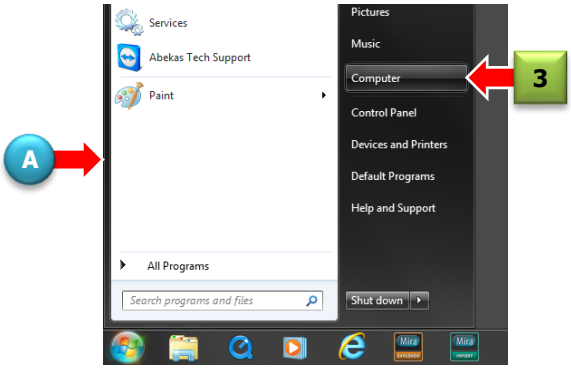
Using Windows Explorer to Create Clip Folder

1. Move mouse pointer to lower edge of screen, to reveal Windows taskbar.
2. Click (Windows START) icon.

   ▶ **(A)** *"**Windows Start**" menu appears, as shown below.*

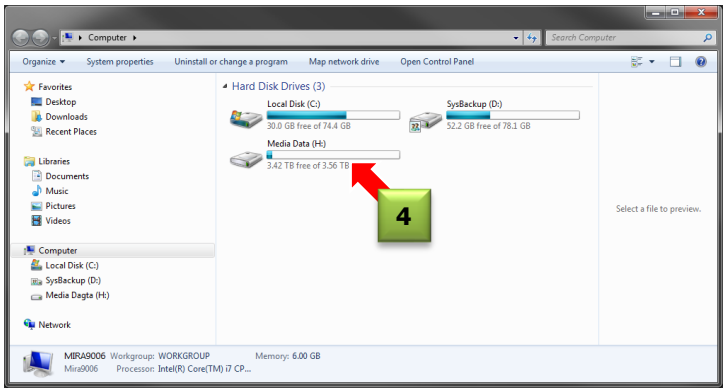
3. Click Computer in right-hand list.

   ▶ ***Windows Explorer*** *window opens, as shown in next step.*



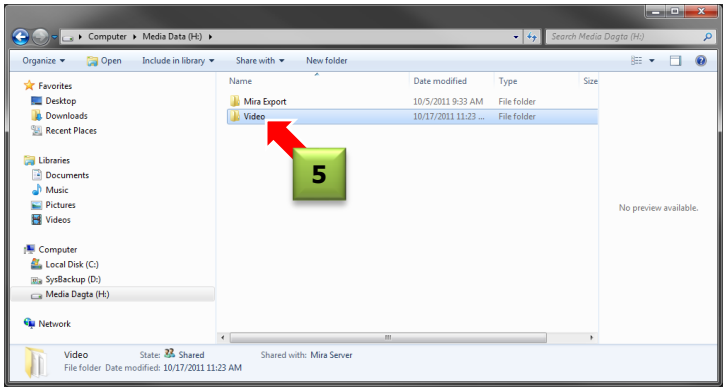
4. **Double-Click** "***Media Data (H:)***" volume.

   ▶ ***Volume*** *opens, as shown in next step.*

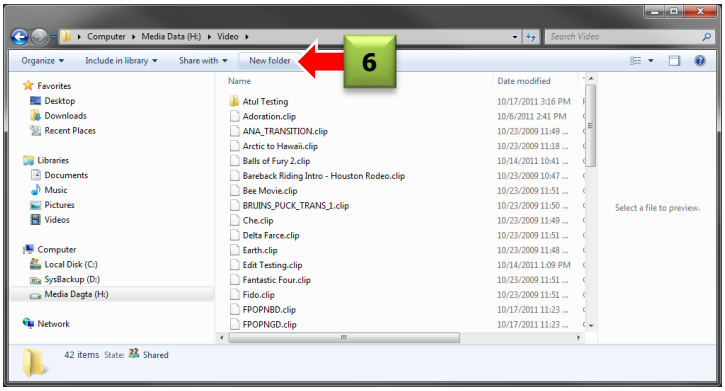


5. **Double-Click** "***Video***" folder.

   ▶ ***Video*** *folder opens, as shown in next step.*

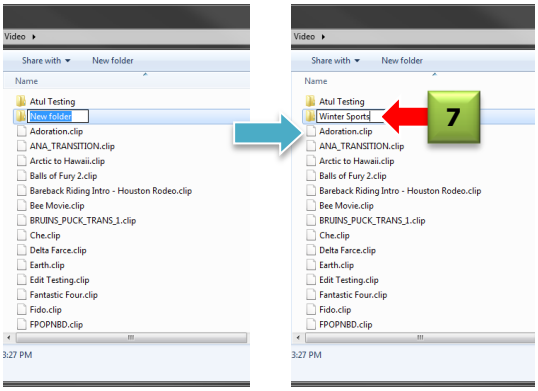


Continued on next page…



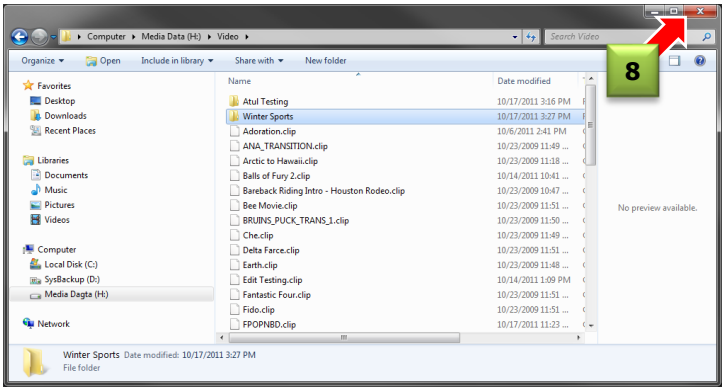
6. Click New folder button.

   ▶ *"**New folder**" is created, as shown in next step.*



7. On QWERTY keyboard, type desired name for new folder; finish with Enter.

   ▶ *Folder is named, as shown in next step.*

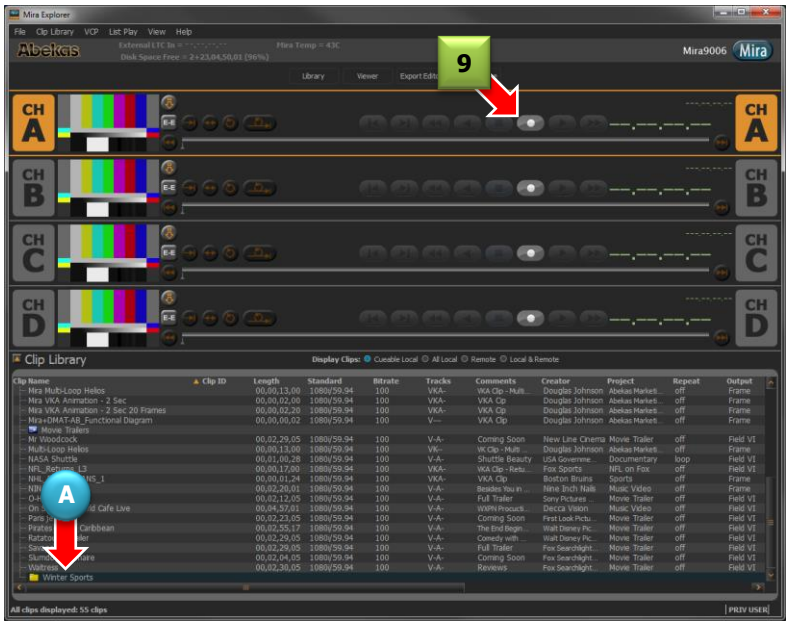


8. Click (Close window).

   ▶ ***Windows Explorer** window closes.*

Continued on next page…

▶ **(A)** *New folder now appears in* ***Clip Library****.*



9. Click (Record).

   ▶ *The "**Clip Record Setup**" dialog window opens, shown in next step.*

10. Click "**New Clip**" radio button.

    ▶ *The "**New Clip**" data field section is active.*

    ▶ **(A)** ***NOTE****: If you're not recording an alpha matte "Key" signal, then uncheck this checkbox; less media disk space will be used.*

11. Using QWERTY keyboard, type desired "**Folder\Clip Name**" for destination folder and name of new clip.

12. OPTIONAL: Define an 8-character "**Clip ID**" for new clip.

    ▶ ***NOTE:*** *If you type more than eight characters for the Clip ID, only the first eight are used.*

    ▶ ***NOTE:*** *If the "Clip ID" field is kept empty, then external control machines (via RS422 or Ethernet) will utilize the first eight characters of the defined "Clip Name" field as the "Clip ID".*

Continued on next page…

13. Click OK to finish.

▶ *The "Clip Record Setup" dialog window closes.*

▶ *The following will happen in the transport:*

(A) Video window displays live input video.

(B) E-E button turns ON.

(C) (Record) button blinks on/off, to indicate recording is armed and ready; recording has not yet started.

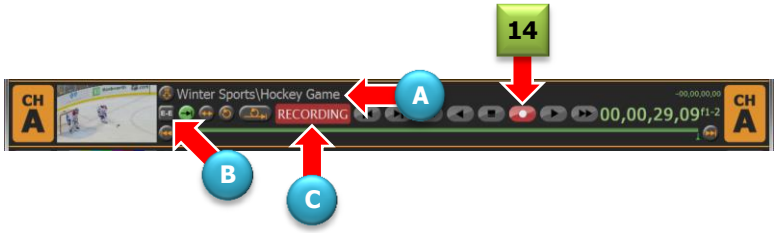
14. Click (Record) button to start recording.

▶ *The following will happen in the transport:*

(A) Folder and New Clip Name are displayed.

(B) E-E button turns OFF.

(C) RECORDING indicator appears.

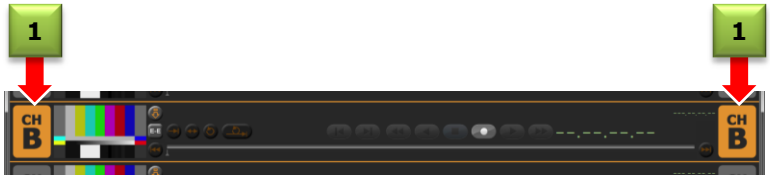


Append Record

The "**Append**" recording function is used to add (append) material to the end of an existing clip in the clip library, using the digital video and audio inputs on the currently active video channel as the source for the append recording. Append recordings always begin at the end of the currently loaded clip; no matter where the clip is positioned when the append recording begins.

NOTE: *If the video channel you wish to record with is already selected, then skip ahead to step 2 below.*

1. Click anywhere in horizontal transport control area for desired channel.



   ▶ ***ChB*** *is selected in this illustration, as indicated by the orange highlight on* ***ChB.***

2. Load clip into selected video channel into which you want to Append.

   ▶ *If you don't know how to load a clip into the selected video channel, please refer to "****Selecting Video Channels & Loading Clips****" on page 30 above.*

3. Click (Record) button.

   ▶ *This presents "****Clip Record Setup****" dialog window, shown in next step.*

4. Click "**Append**" radio button.

   ▶ *The "New Clip" data fields become grayed-out and inactive.*

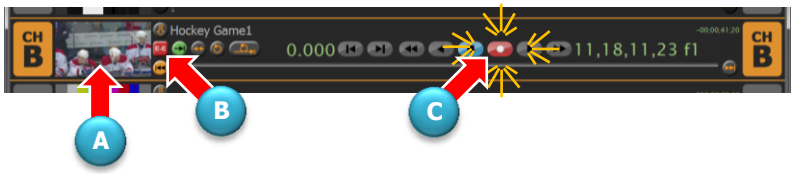
5. Click OK to finish.

— or —

Press Enter on QWERTY keyboard).

   ▶ *The "****Clip Record Setup****" dialog window closes.*

   ▶ *The following will happen in transport:*



   (A) Video window displays live input video.

   (B) E-E button turns ON.

   (C) (Record) button blinks on/off, to indicate recording is armed and ready; recording has not yet started.

Continued on next page…

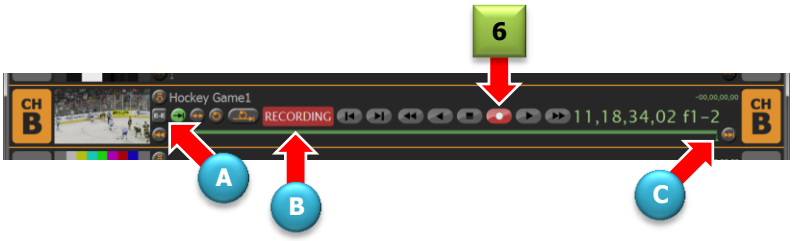
6. Click (Record) button to start recording.

   ▶ *The following will happen in the transport:*

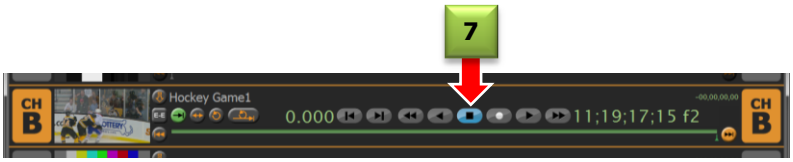
   (A) button turns OFF.

   (B) RECORDING indicator appears.

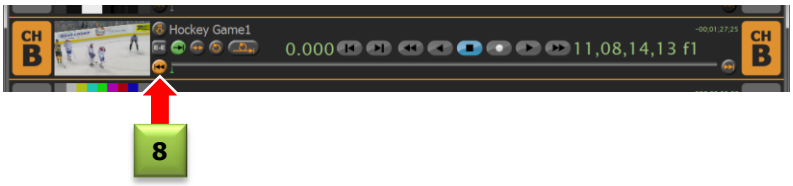
   (C) Clip position indicator seeks to END of clip.



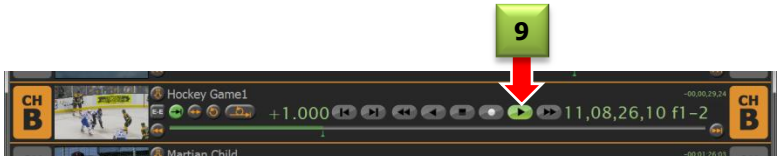
7. Click (Stop) button to halt recording.



8. Click (Seek to Start) button to seek to first frame of clip.



9. Click (Play Forward) button to play clip.



Overwrite Record

The "**Overwrite**" recording function is used to insert new audio/video material into an already-existing clip in the Clip Library, using the digital video and audio inputs on the currently active video channel as the source for the append recording.

Overwrite recording can be "destructive" to the content already in the clip, so be aware of the current position within the clip when using this record function: the Overwrite recording begins at the current position within the clip!

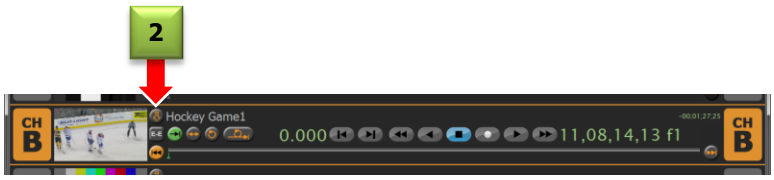
NOTE: *If the video channel you wish to record with is already selected, then skip ahead to step 2 below.*

1. Click anywhere in horizontal transport control area for desired channel.

   ▶ ***ChB*** *is selected in this illustration, as indicated by the orange highlight on* ***ChB.***

2. Load clip into selected video channel into which you want to Overwrite.

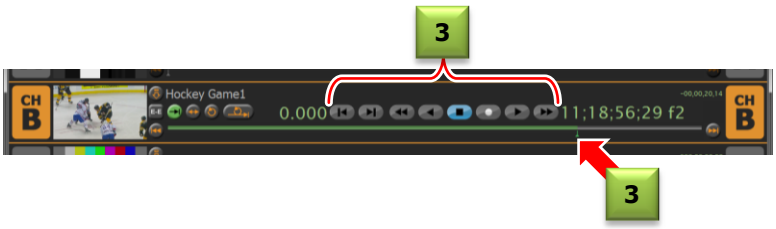
   ▶ *If you don't know how to load a clip into the selected video channel, please refer to "****Selecting Video Channels & Loading Clips****" on page 30 above.*



3. Use clip slider *(or any transport control)* to position clip where insert recording will begin.

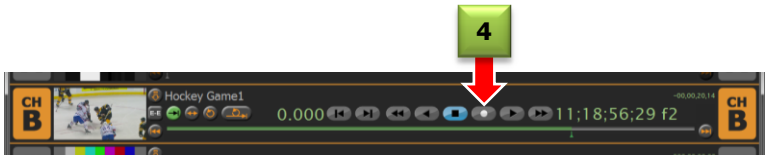
   ▶ *Use video window to view clip, along with the timecode display to correctly position the clip.*

   ▶ *You may also use the other transport controls (Play, Jog, FFD, REW, etc.) to locate the desired position inside the clip.*



4. Click (Record) button.

   ▶ *This presents "****Clip Record Setup****" dialog window, shown in next step below.*



5. Click "**Overwrite**" radio button.

   ▶ *The "New Clip" data fields become grayed-out and inactive.*

6. OPTIONAL: Select desired tracks within clip to record into (Video; Key; or Audio): overwrite recording will take place only on selected (blue box) tracks.

7. Click OK to finish.

— or —

Press Enter on QWERTY keyboard.

   ▶ *The "Clip Record Setup" dialog window closes.*

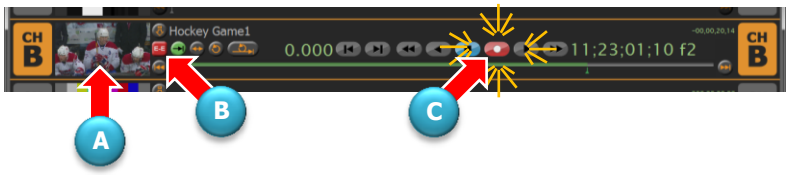
Continued on next page…

▶ *The following will happen in the transport:*

(A) Video window displays live input video.

(B) E-E *button turns ON.*

(C) *(Record) button blinks on/off, to indicate recording is armed and ready; recording has not yet started.*



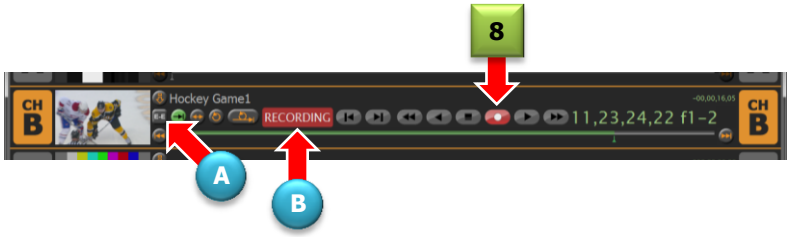
8. Click (Record) button to start recording.

▶ ***Overwrite*** *recording will always start from the* ***current position*** *inside existing clip*

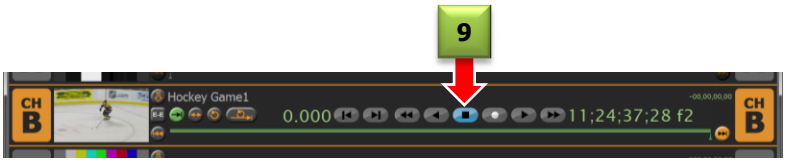
▶ *Following will happen in transport:*

(A) E-E *button turns OFF.*

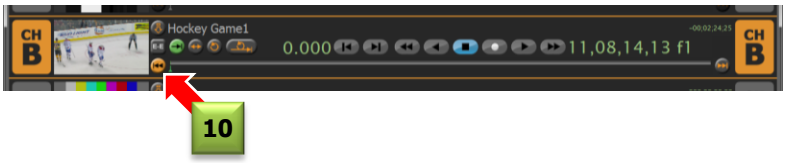
(B) RECORDING *indicator appears.*



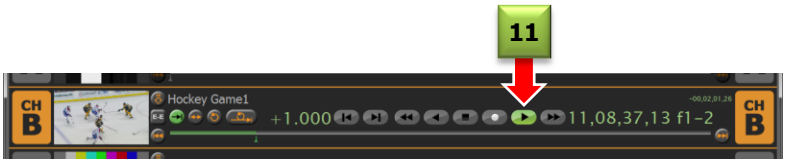
9. Click (Stop) button to halt recording.



10. Click (Seek to Start) button to seek to first frame of clip.



11. Click (Play Forward) button to play clip.



Immediate Record Shortcut

If you wish to perform a series of recordings in succession and avoid both the “Record Setup” dialog window and the “record arm” operation, then use the following shortcut procedure.

1. HOLD DOWN Shift on QWERTY keyboard;
2. Click (Record) button.

   - *Recording will begin immediately; without the “Record Setup” dialog window and without “arming” of record.*
   - *Whichever record function that was last selected will be performed again: NEW CLIP; APPEND; or OVERWRITE.*

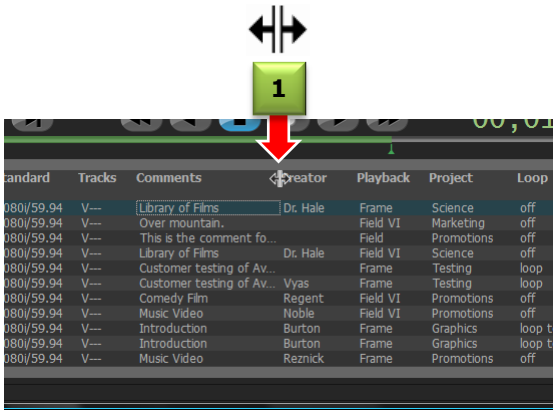
Customize Clip Library

At any time, you may customize the appearance of the clip listing in the Clip Library within Mira Explorer by re-arranging the order of the column headings (from left-to-right), and by changing the width of each column.

Choosing *which* columns of data are displayed within Mira Explorer is determined only by the "Administrator" user (please refer to "***Selecting Columns displayed in Mira Explorer***" on page 113 below), which requires logging into Mira Explorer as "Administrator" user.

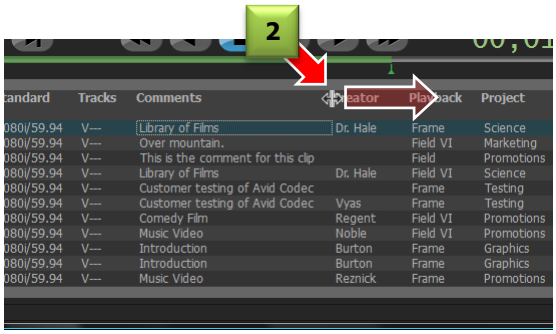
Change Column Width

In this example, some of the "**Comments**" aren't fully visible; so we need to expand this column.

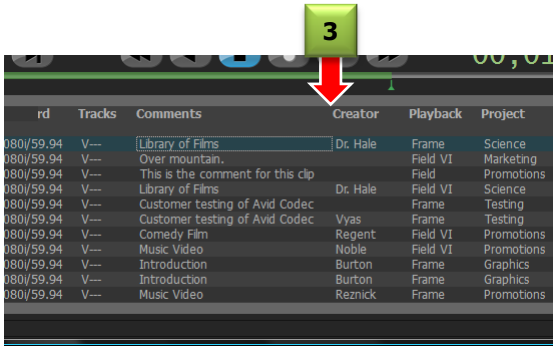


1. Position mouse cursor at RIGHT edge of "**Comments**" column label…

   ► *The mouse cursor changes to* ⇹.



2. Click-and-drag column border to right, which expands width of "**Comments**" column.

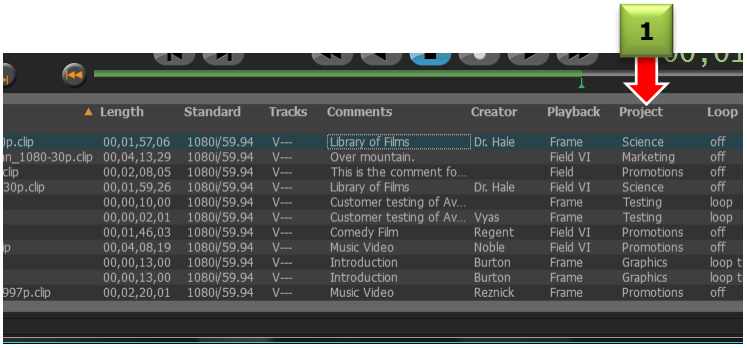


3. Release mouse button.

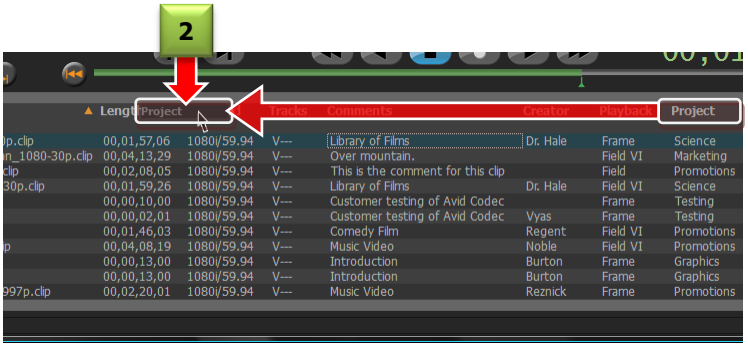
Change Column Position

In this example, we wish to position the "**Project**" column between the "**Length**" and "**Standard**" columns.

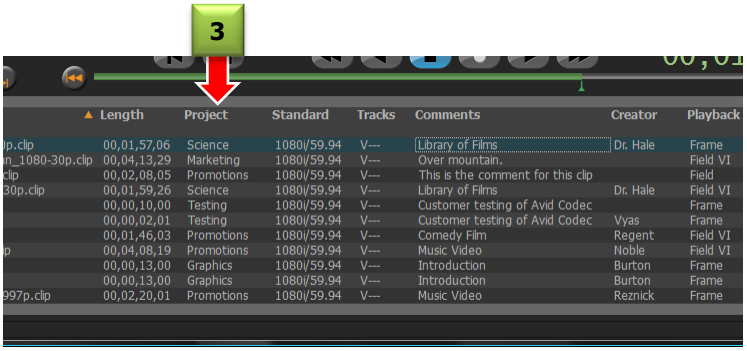
1. Click & HOLD DOWN mouse cursor on "**Project**" column label…



2. …and drag "**Project**" column label to left, positioning it between "**Length**" and "**Standard**" columns.



3. Release mouse button.

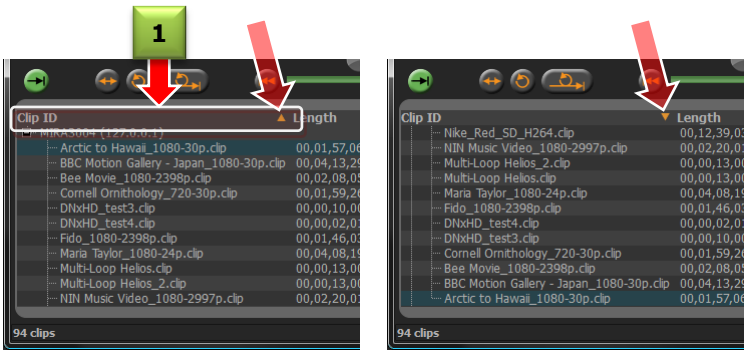


Sort on Columns

In this example, the clip list is sorted in ascending order on the "**Clip ID**" column; we will change this sorting order.

1. Click mouse cursor anywhere within the "**Clip ID**" column label (shaded here):

   ▶ *Notice the "Clip ID" sorting arrow has changed direction; and the list of clips is sorted according to the "Clip ID" column, in descending order.*



Clip Metadata — Modify

There are two methods available to modify the clip metadata: either directly within the Mira Explorer clip listing window itself or from the "**Clip Modify**" pop-up window. The direct method within the Mira Explorer window does not provide access to the clip Play Repeat "IN and "OUT" metadata; therefore, if you need to modify these metadata, then please use the "**Clip Modify**" pop-up window.

▶ ***NOTE:*** *If the clip you are attempting to modify is locked ("locked" icon is visible), then it is not possible to modify that clip. Please refer to the procedure to unlock the clip, found starting on page 106 below.*

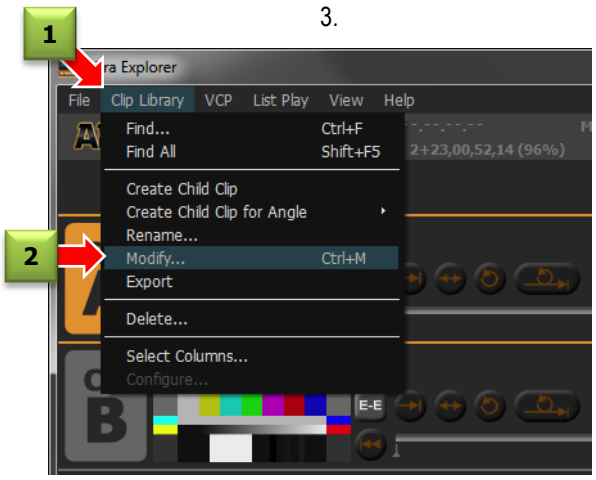
Modify Clip Metadata — Clip Modify Dialog

The clip modify menu provides additional metadata that can be modified for each stored clip. There are **three** methods available to open the **Clip Modify** window:

METHOD 1

1. Click "**Clip Library**" menu.
2. Select "**Modify…**" menu item:

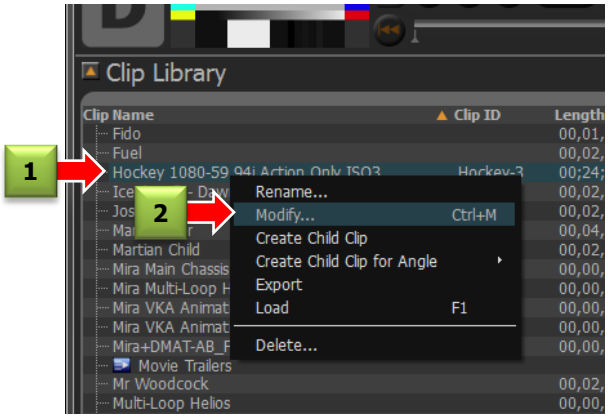
3.



— or RIGHT click **Clip Name** in Clip Library —

METHOD 2

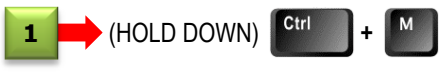
1. **RIGHT-Click** on desired clip.
2. Click "**Modify…**" from pop-up menu:



— or use QWERTY keyboard shortcut —

3

1. HOLD DOWN Ctrl, and press M



▶ *The "**Clip Modify**" window appears, as shown below:*

Continued on next page…

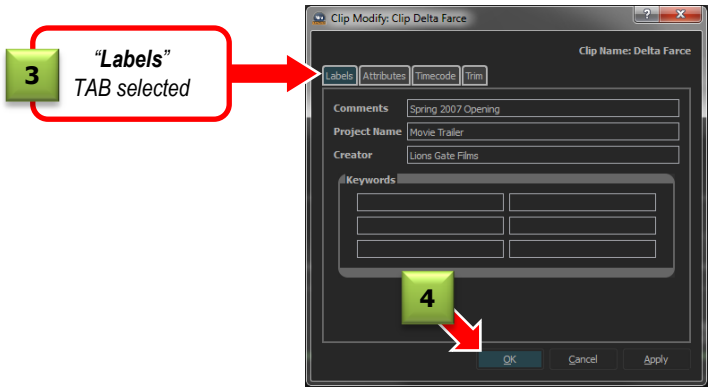
3. The "**Labels**" tab is selected by default, from which you can modify the following:
   - **Comments**
   - **Project Name**
   - **Creator**
   - **Keywords**

   ▶ *See explanations on page 63 for these metadata.*

4. Click OK to accept changes and close dialog window.

— or —

Click Apply to accept changes without closing dialog window.



5. Click "**Attributes**" tab, from which you can modify the following:
   - **Output Mode**
   - **Play Repeat Mode**

   ▶ *Refer to explanation on page 64 for further information on these metadata.*

6. Click OK to accept changes and close dialog window.

— or —

Click Apply to accept changes without closing dialog window.

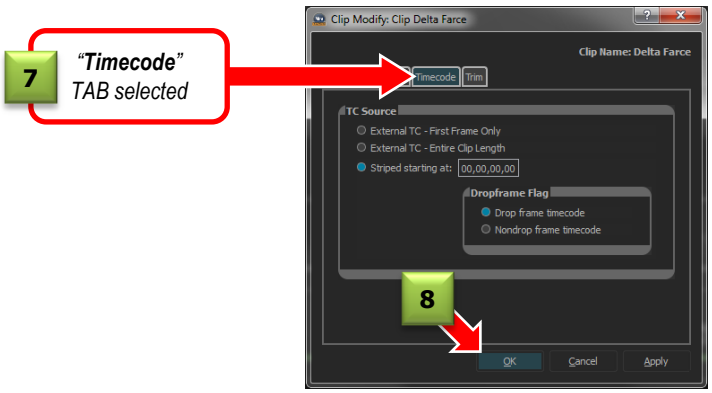
7. Click "**Timecode**" tab, from which you can modify the following:
   - **TC Source**

   ▶ *Refer to explanation on page 66 for further information on these metadata.*

8. Click OK to accept changes and close dialog window.

— or —

Click Apply to accept changes without closing dialog window.



Continued on next page…

9. Click "**Trim**" tab, from which you can modify the following:

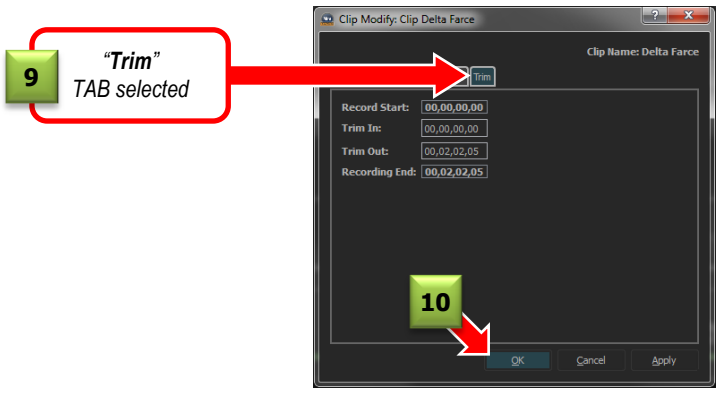
   - **Trim In**
   - **Trim Out**

   ▶ *Refer to explanation on page 67 for further information on these metadata.*

10. Click OK to accept changes and close dialog window.

— or —

Click Apply button to accept changes without closing dialog window.



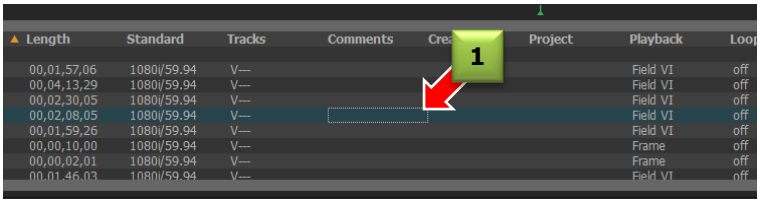
Modify Clip Metadata — Direct Method

This direct-access method simply requires the operator to double-click the mouse cursor on the given clip attribute within the Mira Explorer clip directory listing. The text field for the given parameter will then change to become a selectable entry field or pull-down menu (only when multiple items are available).

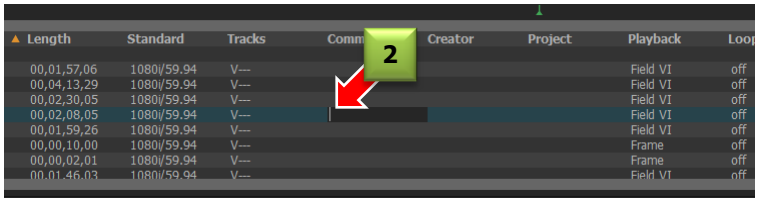
- ***NOTE:*** *Not all of the fields visible in Mira Explorer can be modified with this direct method of modification—simply because some of the parameters don't make any sense to change. You cannot change the "**Length**", "**Standard**", "**Tracks**" or "**Lock**" parameters.*
- ***NOTE:*** *If the clip you are attempting to modify is locked ("locked" icon is visible), then it is not possible to modify that clip. Please refer to the procedure to unlock the clip, found starting on page 106 below.*

Modify text-entry data fields:

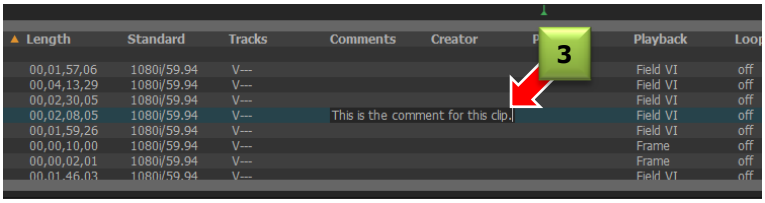
1. Click mouse once on "**Comments**" field for one of the clips in clip directory listing.



2. Click mouse twice on "**Comments**" field for one of the clips in clip directory listing; this provides data entry for that field.
   - *A cursor appears within the entry field.*



3. Type desired data.



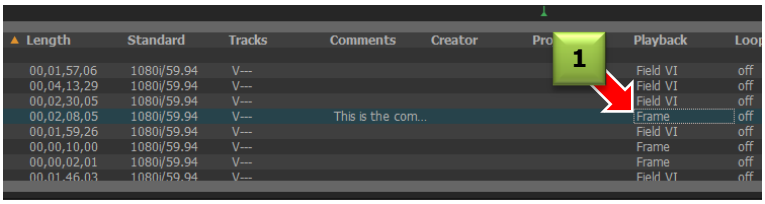
4. Press Enter on QWERTY keyboard.

- ***NOTE:*** *If the data entered creates a text string longer than the displayed width of the field, the "**...**" symbol appears at the end of the text string. All of the text is actually stored, but it's not all displayed. You can position the mouse cursor at the column title boundary, and then click and drag the column separator to increase its width.*
- *Please refer to the procedure "**Changing Column Width**" on page 55 above.*

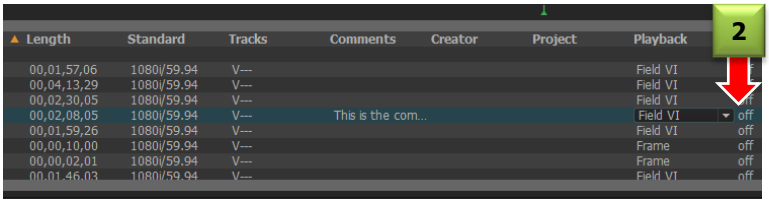
Continued on next page…

Modify pull-down data fields:

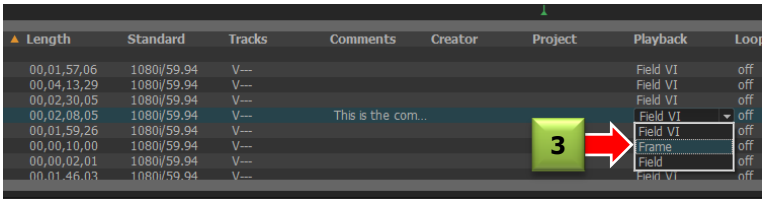
1. Click mouse once on "**Playback**" field for one of the clips in clip directory listing.



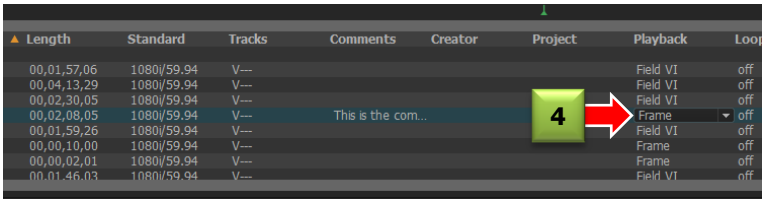
2. Click mouse twice on "**Playback**" field for one of the clips in clip directory listing; this provides a pull-down widget for that field.



3. Click pull-down widget once, and select desired parameter from list; in this example, "**Frame**" mode is highlighted.



4. Click mouse on that desired parameter, and it's changed to that value.



Clip Metadata — Descriptions

The set of non-volatile "Clip Metadata" are stored with *each* clip in the Mira server, which provides the operator a set of user-defined metadata for each clip. A menu dialog window is provided to allow the operator to modify these metadata, and some metadata can be directly edited in the Clip Library, in Mira Explorer.

The complete set of clip metadata includes the following items:

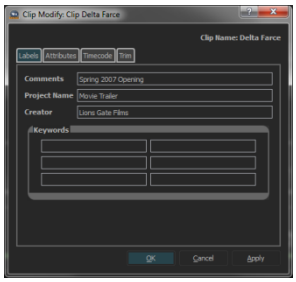
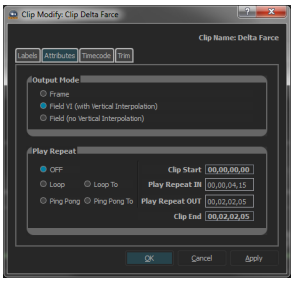
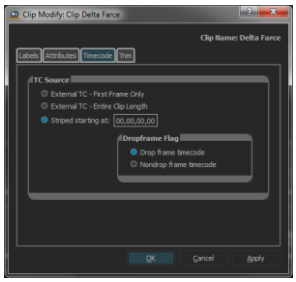
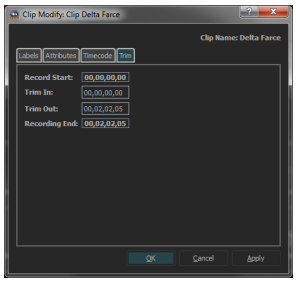
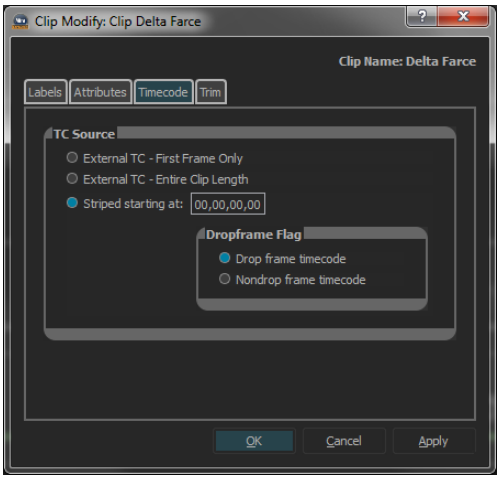
LABELS	ATTRIBUTES	TIMECODE	TRIM
• Comments • Project Name • Creator • Keywords (6)	• Output Mode ○ Frame ○ Field VI (Vertical Interpolation) ○ Field • Play Repeat Mode ○ OFF ○ Loop ○ Loop To ○ Ping Pong ○ Ping Pong To	• Timecode Playback Source ○ Recorded Timecode ○ Zero-based ○ Striped	• Trim In • Trim Out
			

Figure 7 Clip Metadata List

▶ ***NOTE:*** *In order to change any clip attribute parameter, the operator must be logged into Mira Explorer at the level of either "Administrator" or "Privileged User". To use the "System Administrator" login and the features of the Mira Server available to the system administrator, please refer to the section titled "Administrator Options" starting on page 109.*

▶ ***NOTE:*** *If the clip you are attempting to modify is locked ("locked" icon is visible), then it is not possible to modify that clip. Please refer to the procedure to unlock the clip, found starting on page 106 below.*

Labels



Labels metadata can be modified two different ways:

- Through the **Clip Modify** dialog window
  (please see *Modifying Clip Metadata — Clip Modify Dialog* on page 57 above)
- Through the **Clip Library** in Mira Explorer
  (please see *Modifying Clip Metadata — Direct Method* on page 60 above)

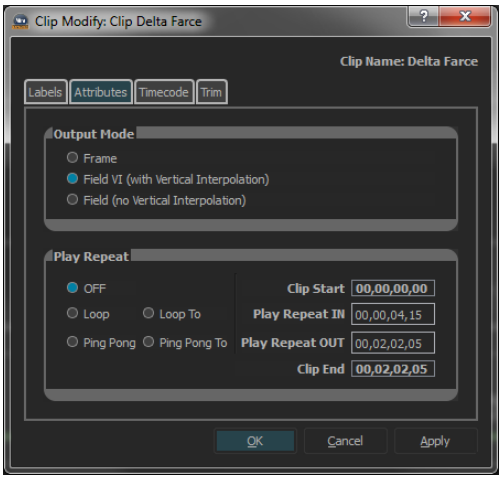
There are four sets of labels that can be applied to each clip.

The **Label** metadata can be modified through the **Clip Modify** dialog window (please see *Modifying Clip Metadata — Clip Modify Dialog* on page 57 above), or directly through the Clip Library in Mira Explorer (please see *Modifying Clip Metadata — Direct Method* on page 60 above).

- **Comments —** This field is used to enter text comments for the clip. You may enter text up to 255 characters long.
- **Project Name** — This field is used to enter the project name for the clip. You may enter text up to 255 characters long.
- **Creator** — This field is used to enter the name of the person who created the clip. You may enter text up to 255 characters long.
- **Keywords** — These six fields are used to enter keywords for the clip. You may enter text up to 35 characters long; by definition, there can be no spaces in any keyword.

  ▶ ***NOTE**: The set of six **Keywords** can be entered and modified by the user, and the "Find" search operation will search for Keyword stored in the clips. However, the Keywords cannot are cannot be displayed in the Clip Library listing.*

Attributes



Attributes metadata can be modified two different ways:

- Through the **Clip Modify** dialog window
  (please see *Modifying Clip Metadata — Clip Modify Dialog* on page 57 above)
- Through the **Clip Library** in Mira Explorer
  (please see *Modifying Clip Metadata — Direct Method* on page 60 above)

The "**Output Mode**" flag should be set to match the content of the video within the clip:

- **Field VI** or **Field** — either of these output modes should be selected for those clips with "field-based" video content (i.e. clips which were originally shot with field-based video cameras). The "**Field VI**" mode should be selected if the given clip will be played with slow motion or will be frequently paused when playing out the clip.

  The vertical interpolator will help to eliminate "vertical hopping" during slow motion playback, and will help to eliminate "jagged edges" when paused on a still image of field-based content.

- **Frame** — this output mode should be selected for those clips with "frame-based" content (i.e. clips which were originally shot on film, or shot with frame-based video cameras—or clip that were created completely within computer graphics programs).

  The "**Frame**" output mode provides the best resolution for such frame-based content, especially during slow motion or paused (still-frame) playback.

The "**Play Repeat Mode**" flag determines whether the clip will be loaded and played with a repetitive playback cycle or not. The defined play repeat mode is automatically activated whenever the given clip is loaded into a play channel.

- **OFF** — any time the given clip is loaded into a play channel, the play repeat mode is turned OFF by default and the "Normal Play" ( ) button is activated. This flag is used if play repeat cycling is not desired, or if play repeat cycling is to be controlled from an external control device such as third-party hardware control panels or vision mixer (switcher) controllers.

- **Loop** — any time the given clip is loaded into a play channel, the "**Loop**" ( ) play repeat mode is turned ON by default. With this flag enabled, when the clip is played from the starting point, the clip immediately seeks to the defined "**Play Repeat IN**" timecode point within the clip, and continues to play forward to the "**Play Repeat OUT**" timecode point.

  When this OUT point is reached, the clip automatically (and seamlessly) seeks to the defined "**Play Repeat IN**" point, and play forward from there again. This cycle will repeat for as long as the clip is playing.

- **Loop To** — any time the given clip is loaded into a play channel, the "**Loop To**" ( ) play repeat mode is turned ON by default. With this flag enabled, the clip can be played from the starting point through the defined "**Play Repeat IN**" timecode point within the clip, and continues to play forward up to the "**Play Repeat OUT**" timecode point.

  When this OUT point is reached, the clip automatically (and seamlessly) seeks to the "**Play Repeat IN**" point, and play forward from there again. This cycle will repeat as long as the clip is playing. You can exit the loop mode by clicking the "Normal Play" button ( ).

  This "**Loop To**" play repeat mode is typically used when playing animated graphics which have a "lead-in" portion at the beginning of the clip, then has a cycling component somewhere within the middle of the clip; and upon a user command, will play an "exit" animation on the trailing portion of the clip.

For example, the "lead-in" may be an image of the world's globe that zooms into view on the screen; then the globe is seen seamlessly spinning around on its axis during the main body of the animation, and then upon a user's command (clicking the button) the entire globe zooms out of view, and off the screen.

- **Ping Pong** — any time the given clip is loaded into a play channel, the "**Ping Pong**" ( ) play repeat mode is turned ON by default. With this flag enabled, when the clip is played from the starting point, the clip immediately seeks to the defined "**Play Repeat IN**" timecode point within the clip, and continues to play forward to the "**Play Repeat OUT**" timecode point.

  When this OUT point is reached, the clip automatically (and seamlessly) reverses direction and plays backward to the defined "**Play Repeat IN**" point. The clip then plays forward from there again.

  This cycle will repeat for as long as the clip is playing.

- **Ping Pong To** —

  ▶ *(**NOTE:** This flag is not yet implemented in current software; it will be activated in a future software update)*

  Any time the given clip is loaded into a play channel, the "**Ping Pong To**" play repeat mode is turned ON by default. With this flag enabled, the clip can be played from the starting point through the defined "**Play Repeat IN**" timecode point within the clip, and continues to play forward up to the "**Play Repeat OUT**" timecode point.

  When this OUT point is reached, the clip automatically (and seamlessly) reverses play directions and plays backward to the "**Play Repeat IN**" point. The clip then plays forward from there again.

  This cycle will repeat as long as the clip is playing.

  This "**Ping Pong To**" play repeat mode is typically used when playing animated graphics which have a "lead-in" portion at the beginning of the clip, then has a cycling component somewhere within the middle of the clip; and upon a user command, will play an "exit" animation on the trailing portion of the clip.

  For example, the "lead-in" may be an image of an animated character that zooms into view on the screen; then the character is seen seamlessly dancing back-and-forth during the main body of the animation, and then upon a user's command (clicking the button) the entire character zooms out of view, off the screen.

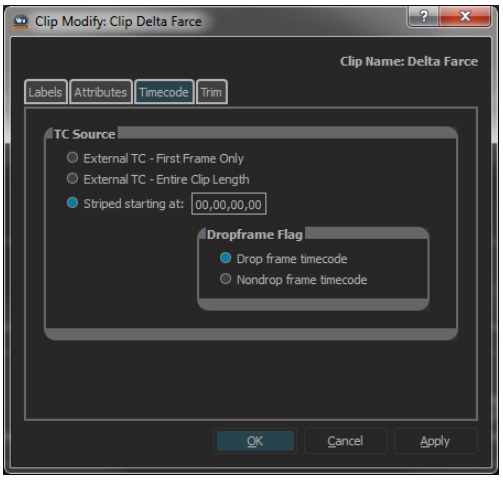
- **Play Repeat IN** — This timecode value determines the first frame (or field, depending upon the Output Mode flag) of the play repeat cycling. The IN point defaults to the first physical frame of the clip. Click the mouse in this field and type a new timecode value to define a new IN point.

  The IN point is "inclusive" during play repeat playback, meaning this particular frame is included when playing the clip while play repeat modes are active.

- **Play Repeat OUT** — This timecode value determines the last frame (or field, depending upon the Output Mode flag) of the play repeat cycling. The OUT point defaults to one frame *beyond the last physical frame* of the clip. Click the mouse in this field and type a new timecode value to define a new OUT point.

  The OUT point is "exclusive" during play repeat playback, meaning this particular frame is NOT included when playing the clip while play repeat modes are active.

Timecode



Timecode metadata can be modified two different ways:

- Through the **Clip Modify** dialog window
  (please see *Modifying Clip Metadata — Clip Modify Dialog* on page 57 above)
- Through the **Clip Library** in Mira Explorer
  (please see *Modifying Clip Metadata — Direct Method* on page 60 above)

The "**TC Source**" parameters determine which timecode value to use when playing back the given clip.

- **External TC - First Frame Only —** when selected, forces the clip to use the external timecode that was originally recorded along with the clip when it was first recorded from the digital video input (HD-SDI or SD-SDI).

  Only the timecode at the first frame of clip is used; the timecode in the remainder of the clip is synthesized.

  Use this setting if there was a "break" or interruption in the timecode stream that had occurred during recording;

  Use this setting if the clip in question is an "ISO" multi-angle clip—because this setting will ensure the fastest seek to distant locations within the clip when using external controllers via RS422 serial control.

- **External TC - Entire Clip Length —** when selected, forces the clip to use the external timecode that was originally recorded along with the clip when it was first recorded from the digital video input (HD-SDI or SD-SDI).

  The timecode over the entire length of the clip is used.

  Use this setting if you wish to maintain all "breaks" or interruptions in the timecode stream that had occurred during recording; for example, if the source video consisted of several segments—each segment with their own unique timecode range.

- **Striped Starting At: —** when selected, uses internally-generated (or "synthesized") timecode, with a defined starting timecode for the first frame of the clip. The timecode then increments from the defined value as the clip is played forward.

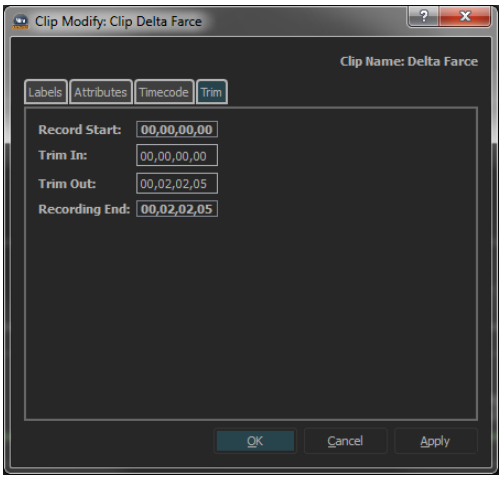
  Use this setting if you wish to eliminate any and all "breaks" or interruptions in the timecode stream that had occurred during recording.

The "**Dropframe Flag**" parameter appears only when the clip in question has a frame rate of 59.94 (i.e. 525/59.94i; 1080/59.94i; or 720/59.94p) and determines whether to use "drop-frame" or "non-drop frame" timecode while playing back the given clip.

- **External TC - First Frame Only —** when selected, forces the clip to use the external timecode that was originally recorded along with the clip when it was first recorded from the digital video input (HD-SDI or SD-SDI).

  Only the timecode at the first frame of clip is used; the timecode in the remainder of the clip is synthesized.

Trim



Clip **Trim** can be modified two different ways:

- Through the **Clip Modify** dialog window
  (please see ***Modifying Clip Metadata — Clip Modify Dialog*** on page 57 above)
- Through the **VCP Trim** in Mira Explorer
  (please see "***Trimming Clips***" *on page 68 below*)

The "**Trim**" parameters are used to trim off the "head" or "tail" of the clip.

- **Trim In —** Trims off the "Head" from the beginning of the clip.

  By default, the value in the "**Trim In**" entry field is set to the "**Record Start**" value shown above it. When these two values are the same, then there is no trim on the head end (start) of the clip.

  By clicking into the "**Trim In**" entry field, and typing a new timecode value, you can trim off the specified amount from the beginning of the clip.

  For example, if the "**Record Start**" is "00.00.00.00" timecode, and you enter a value of "00.00.07.15" into the "**Trim In**" entry field, then you will trim off 7:15 (seven seconds and fifteen frames) from the beginning of the clip.

- **Trim Out —** Trims off the "Tail" from the end of the clip.

  By default, the value in the "**Trim Out**" entry field is set to the "**Recording End**" value shown below it. When these two values are the same, then there is no trim on the head end (start) of the clip.

  By clicking into the "**Trim Out**" entry field, and typing a new timecode value, you can trim off the specified amount from the end of the clip.

  For example, if the "**Recording End**" is "00.14.02.05" timecode, and you enter a value of "00.14.00.00" into the "**Trim Out**" entry field, then you will trim off 2.05 (seven seconds and fifteen frames) from the end of the clip.

To visually trim the "head" and "tail" from any clip using the Mira Explorer channel transport controls, please refer to the procedure on the following pages.

Trim Clips

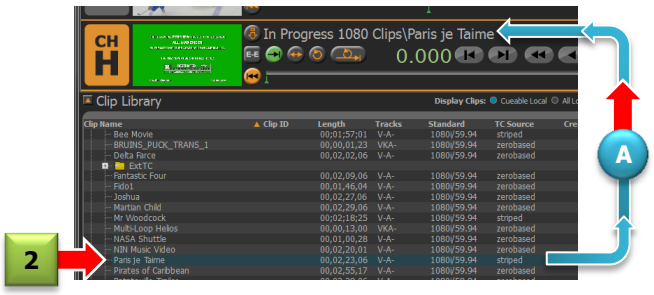
Mira Explorer provides functionality to trim off the beginning (known as the “head”) and the end (known as the “tail”) from any clip. This trim function is “non-destructive”; meaning the trim operation can later be removed, restoring the original heads and tails to the trimmed clip.

Trim Head Off Clip

Use this procedure to trim head off the clip. Begin by first loading the clip you wish to trim into any available transport.

1. Click channel you want to use.
   ▶ *The selected channel is highlighted in orange.*

2. **Double-Click** clip you want to trim.
   ▶ **(A)** *The clip is loaded into the selected channel.*



(*Skip ahead to step [1] on page 69 below, if you want to trim off only the tail from the clip*)

3. Use clip slider *(or any transport control)* to locate desired **IN** point for clip.

There are two methods available to **trim Head off** from clip:

METHOD 1

4. Click “**VCP**” menu.
5. Select “**Trim**” menu item
6. Click “**Trim Head Off**” item.

— or use QWERTY keyboard shortcut —

2

4. HOLD DOWN Ctrl and press T then H.

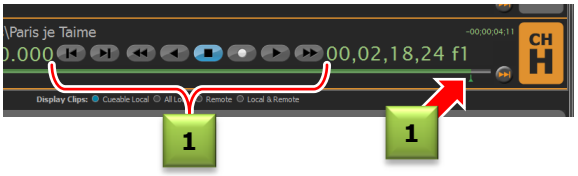
▶ **(A)** *Clip head is trimmed off; play-head slider automatically seeks to new START of clip.*

Trim Tail Off Clip

Use this procedure to trim tail off the clip.

If the clip you want to trim is not yet loaded in the video channel, then perform steps [1] and [2] on page 68 above.

1. Use clip slider *(or any transport control)* to locate desired **OUT** point for clip.



There are two methods to **trim Tail off** from clip:

METHOD 1

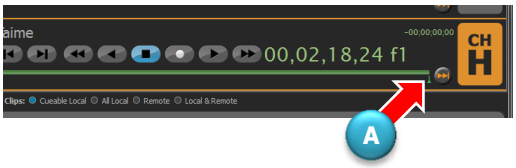
2. Click "**VCP**" menu.
3. Select "**Trim**" menu item.
4. Click "**Trim Head Off**" item.

— or use QWERTY keyboard shortcut —

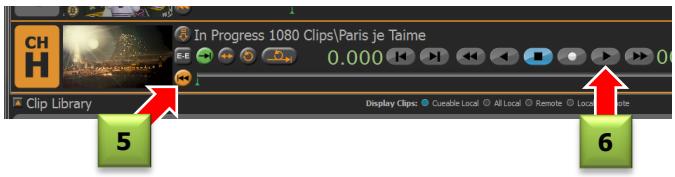
2

2. HOLD DOWN Ctrl and press T then T

▶ **(A)** *Clip tail is trimmed off; play-head slider automatically seeks to new END of clip.*



5. Click (Seek to Start) button to seek to first frame of newly trimmed clip.
6. Click (Play Forward) button to play clip.



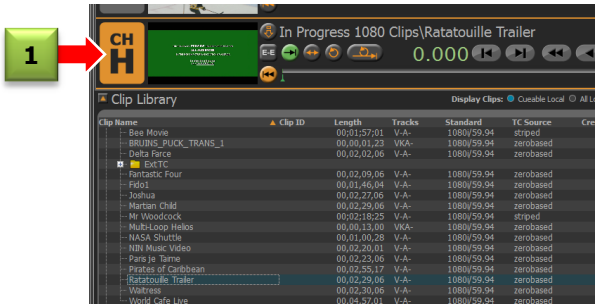
Restore Head on Trimmed Clip

The Clip Trim function is “non-destructive”; which means the trim operation can later be removed, restoring the original head and/or tail to the trimmed clip. Use this procedure to restore the original “head” to any clip that had the head trimmed off.

Load the clip in which you wish to restore the head.

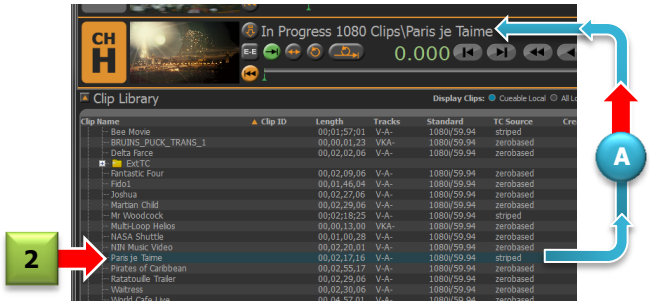
1. Click video channel you want to use.

   ▶ *The selected channel is highlighted in orange.*

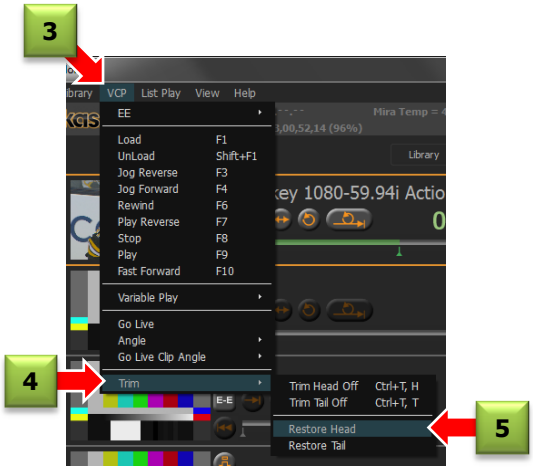


2. **Double-Click** clip you want to restore.

   ▶ **(A)** *The clip is loaded into the selected channel.*



3. Click “**VCP**” menu.
4. Select “**Trim**” menu item.
5. Click “**Restore Head**” item.



▶ **(A)** *The clip’s **head** is restored.*

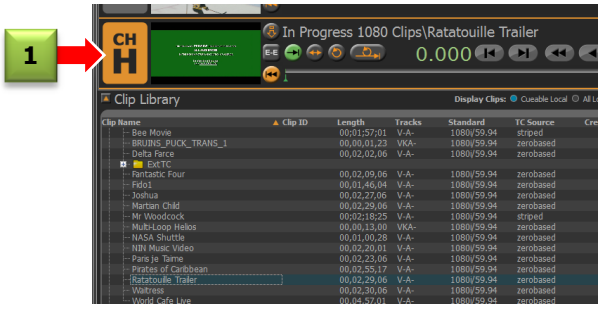
Slider remains in place at old IN point, revealing restored head to LEFT of slider.

Restore Tail on Trimmed Clip

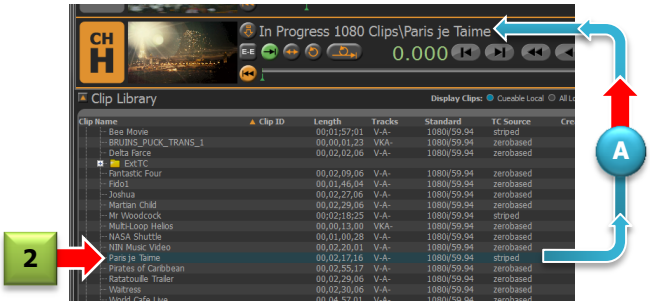
The Clip Trim function is “non-destructive”; which means the trim operation can later be removed, restoring the original head and/or tail to the trimmed clip. Use this procedure to restore the original “tail” to any clip that had the tail trimmed off.

Load the clip in which you wish to restore the tail.

1. Click video channel you want to use.
   ▶ *The selected channel is highlighted in orange.*



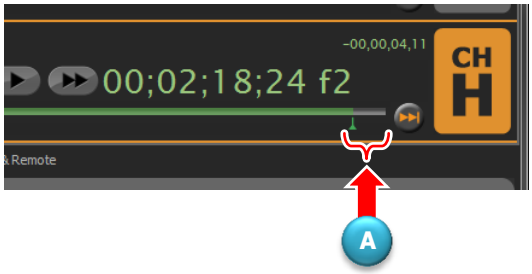
2. **Double-Click** clip you want to restore.
   ▶ *The clip is loaded into the selected channel.*



3. Click “**VCP**” menu.
4. Select “**Trim**” menu item.
5. Click “**Restore Tail**” item.

▶ **(A)** *The clip’s **tail** is restored.*

Slider remains in place at old OUT point, revealing restored tail to RIGHT of slider.



Parent/Child Clips

Mira Explorer provides functionality to create virtual copies from "Parent" clips; these virtual copies of the clips are called "Child" clips. One may create as many Child clips as desired from the Parent clip. No physical media data are duplicated when the Child clip(s) is/are created; thus, the Child clips are created instantly.

After a Child clip is created, one may mark and then trim off the "Head" and "Tail" sections from the Child clip, so that only the area of interest is included in the Child clip.

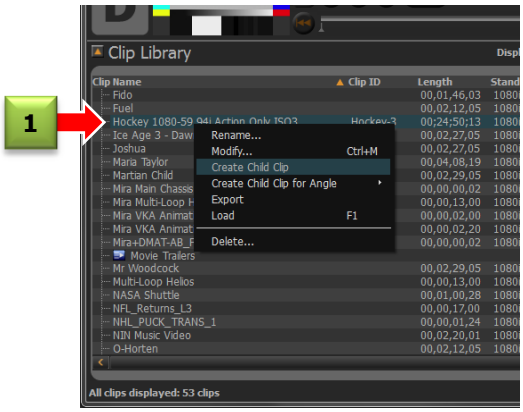
It should be noted that once a Child clip is created from a given Parent clip, then that Parent clip cannot be deleted from the Mira Clip Library while the Child clip (or any other Child clips from that Parent clip) is still in existence; a clip delete error message will appear. If you wish to delete a given Parent clip, then all Child clips created from that Parent clip must first be deleted; once this is done, then that Parent clip can be deleted from the Mira Clip Library.

Create a Child Clip

Begin by first selecting then Parent clip from which you wish to create the Child clip.

1. **RIGHT-Click** on Parent clip.

   ▶ *Pop-up menu appears.*



2. Click one of the following two items:

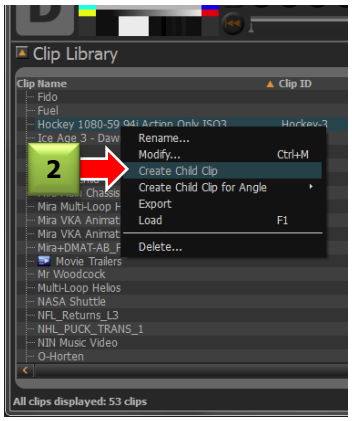
   ➢ **Create Child Clip**

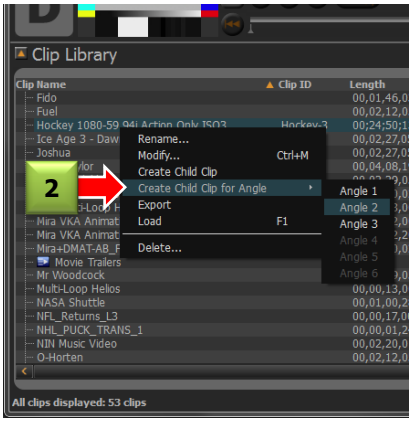
   (Selection appears for both "regular" and "multi-angle ISO" clips; if used with multi-angled ISO clips, then Camera Angle 1 is used in the Child clip)

   or...

   ➢ **Create Child Clip for Angle**

   (Selection appears only on multi-angle "ISO" clips)



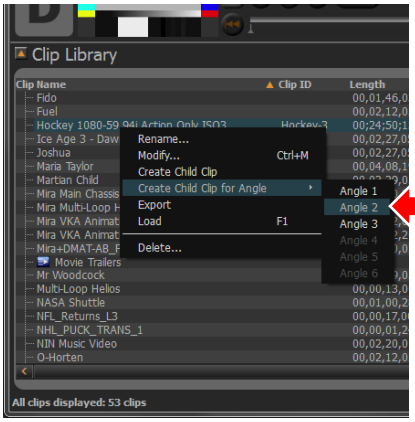


NOTE: *If the Parent clip is locked, then a Child clip cannot be created from it. You must first unlock the Parent clip; refer to the procedure "Locking Clips" on page 106 below.*

Continued on next page…

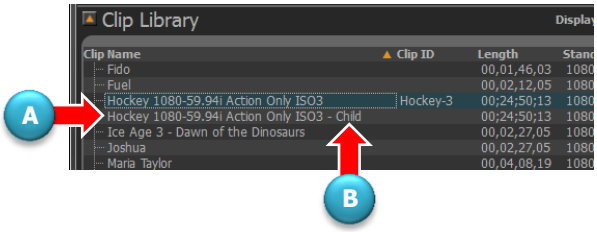
(OPTIONAL)

3. If creating *Child Clip for Angle*, then click desired camera angle.



The following happens in Clip Library:

- ▶ **(A)** *Child clip is created and is listed immediately below the Parent clip.*
- ▶ **(B)** *Child clip is automatically labeled as "Child" within the Clip Name field.*



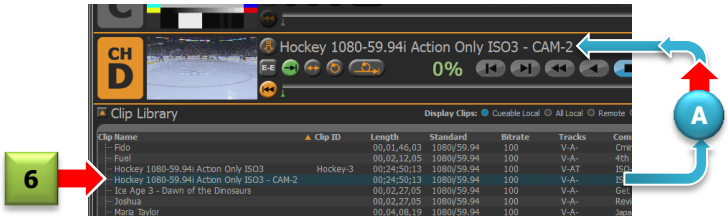
(OPTIONAL)

4. If desired, click into the Clip Name field for the new Child clip, and rename the clip to something meaningful.

(OPTIONAL)

5. Press Enter on QWERTY keyboard.
   - ▶ *The clip is renamed.*

6. **Double-Click** Child clip to load it into currently active video channel.
   - ▶ *ChD is the active video channel in the illustration.*
     *(A) The Child clip is loaded into **ChD**.*



7. Trim "Head" and "Tail" from Child clip, by following procedures for "***Trim Clips***" beginning on page 68 above.

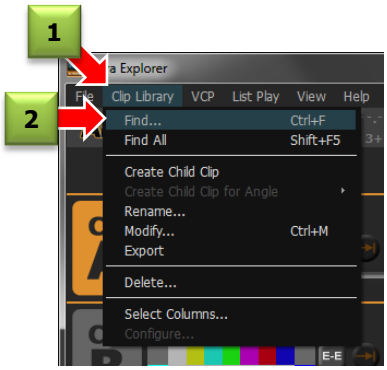
Find Clips

Mira Explorer provides search functionality to find clips stored in both the local server and servers connected to the local area network, based upon any of the clip's metadata.

There are two methods to open the **Find** dialog window:

METHOD 1

1. Click "**Clip Library**" menu.
2. Select "**Find**" menu item.

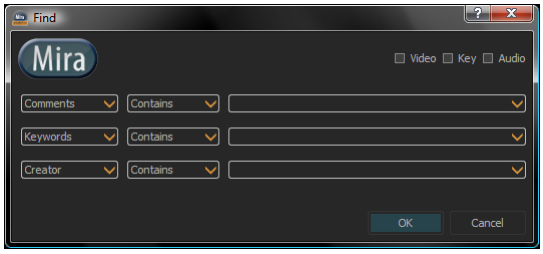


— or use QWERTY keyboard shortcut —

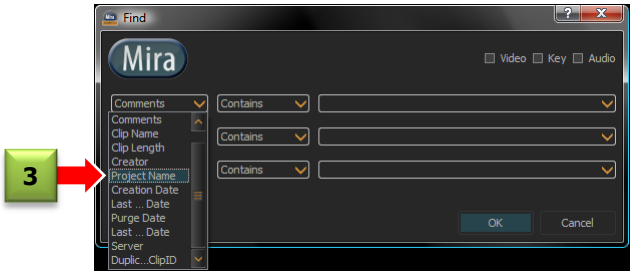
2

1. HOLD DOWN Ctrl and press F

▶ *The "**Find**" window appears, as shown:*



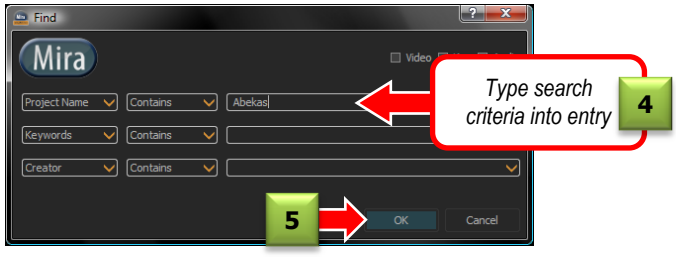
3. Use pull-down fields to define find criteria;
   ▶ *In this example, "**Project Name**" is selected.*



4. Type desired find criteria in fields provided. You may change the find field and operators by using pull-down items.
5. Click OK to start search.

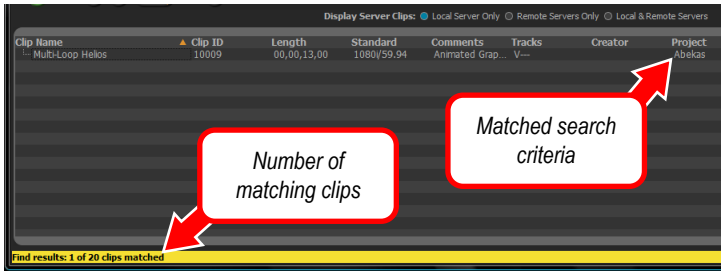
— or —

Press Enter on QWERTY keyboard to start search.



Continued on next page…

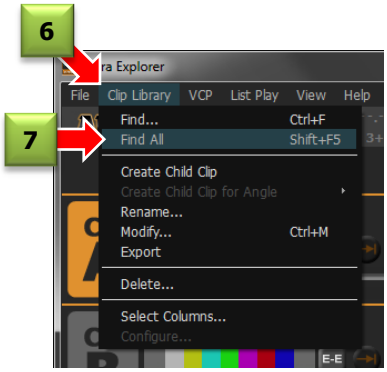
- ▶ *The "**Find**" window closes, and the list of clips is updated in Mira Explorer, as shown here:*
- ▶ *Only the matching clips are now displayed in Mira Explorer.*



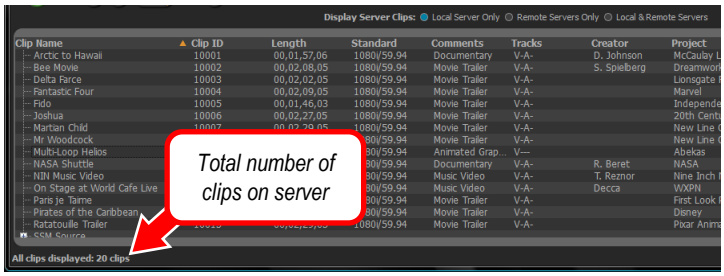
6. To view all clips on all servers again, click "**Clip Library**" menu item.
7. Click "**Find All**" item.

— or —

HOLD DOWN Shift then press F5 on QWERTY keyboard.



- ▶ *The list of clips is updated in Mira Explorer, as shown below:*



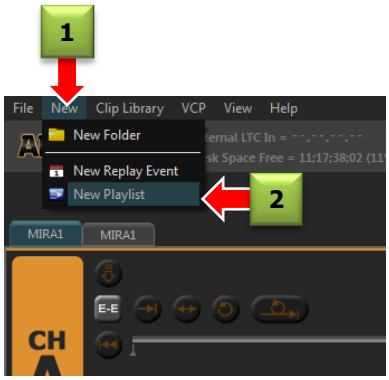
- ▶ *All clips are now displayed in Mira Explorer.*

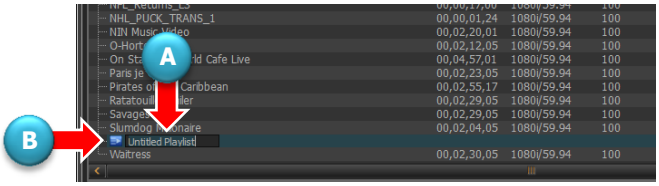
List Play

Functionality is provided within Mira Explorer for creating any number of playlists, which contain a playing order for clips contained within the Mira Clip Library. This functionality has two distinct modes of operation: Edit-Mode (for adding clips to playlists, rearranging clips, changing clip play behavior and transitions) and Air-Mode (for when you're ready to air your list live). **IMPORTANT:** Clips within playlists can be edited in either Edit-Mode or Air-Mode, and the changes made to a playlist can likewise be saved in either Edit-Mode or Air-Mode.
IMPORTANT: You CANNOT edit either the RED-highlighted PGM clip or the GREEN-highlighted PVW during Air-Mode.

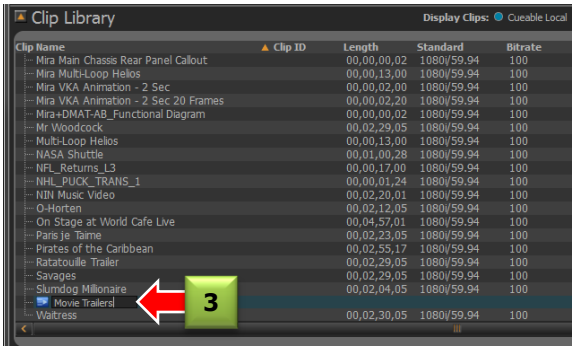
Create a new playlist within Mira Explorer

1. Click "**New**" menu;
2. In pop-up menu that appears, click "**New playlist**" item.
   - ▶ **(A)** *Item "**Untitled Playlist**" appears in Clip Library, as shown in lower portion of illustration.*
   - ▶ **(B)** *Playlists are denoted by blue icon in Clip Library listing.*

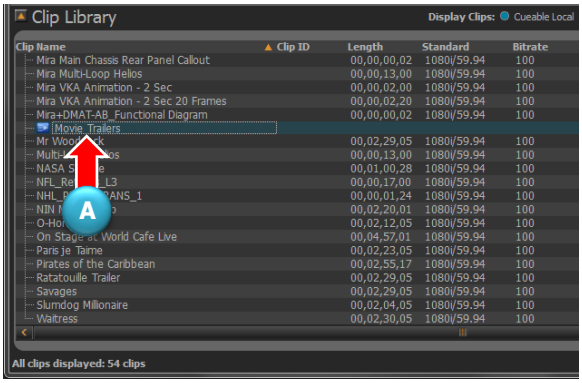




3. Type desired name of new playlist into QWERTY keyboard.



4. Press Enter on QWERTY keyboard to finish.
   - ▶ **(A)** *Renamed playlist is listed in alphabetical order in Clip Library.*



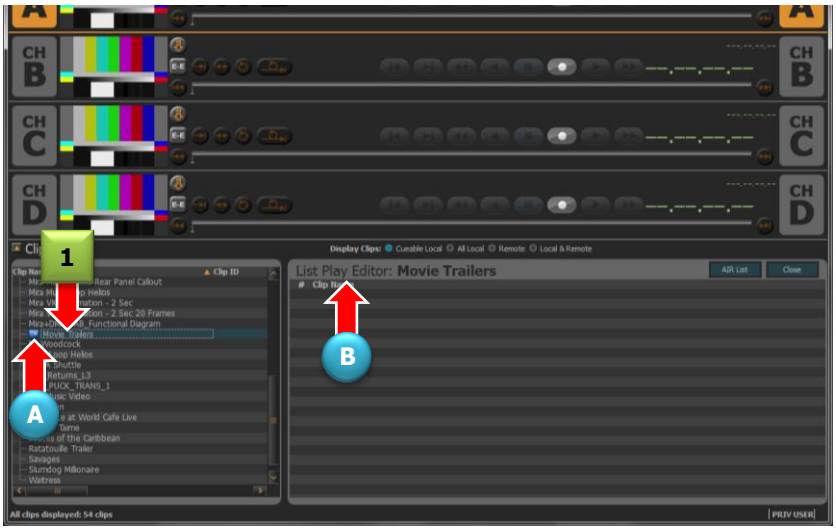
Populate playlist with clips within Mira Explorer

Add single clip to playlist

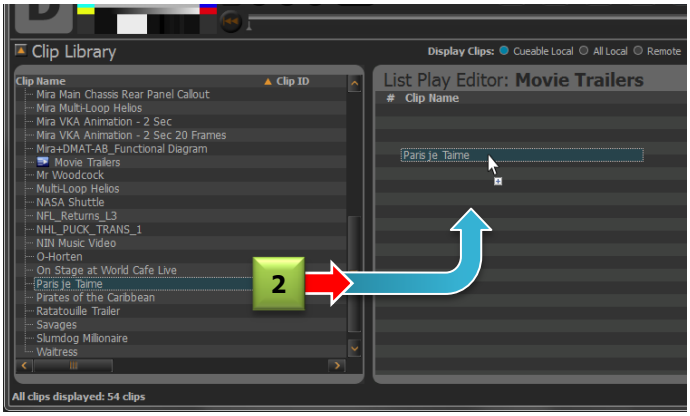
1. **Double-Click** desired playlist in Clip Library.

   ▶ **(A)** *Playlists are denoted by blue icon in Clip Library listing.*

   ▶ ***(B)*** *"**List Play Editor**" pane opens with desired playlist in view.*

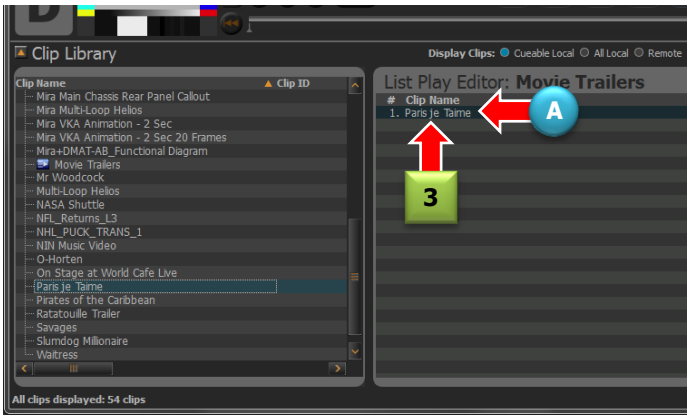


2. **Click-Hold-and-Drag** desired clip from Clip Library into Play List Editor.



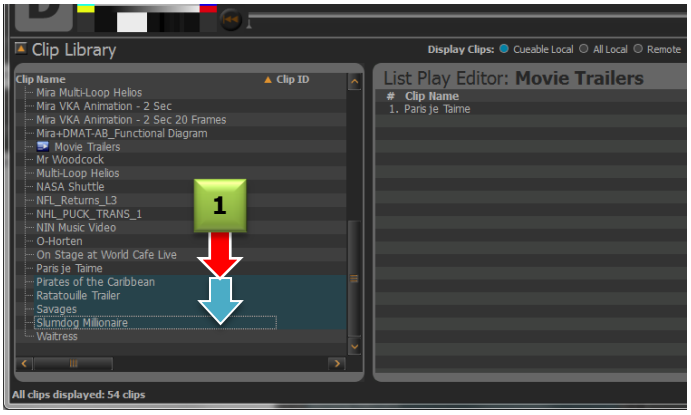
3. Release mouse button.

   ▶ **(A)** *The clip appears in playlist.*

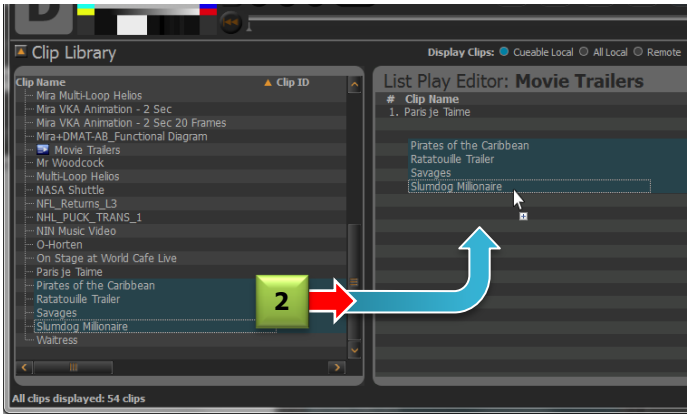


Add range of clips to playlist

1. **Click-and-Drag** blue highlighter over several clips in Clip Library, to select a range of clips.

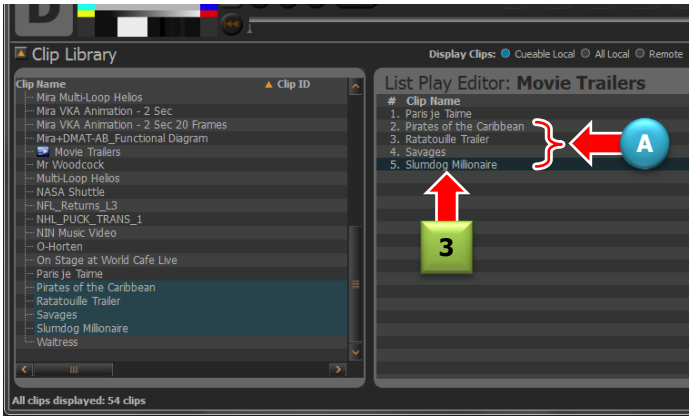


2. **Click-Hold-and-Drag** highlighted range of clips from Clip Library into List Play Editor.



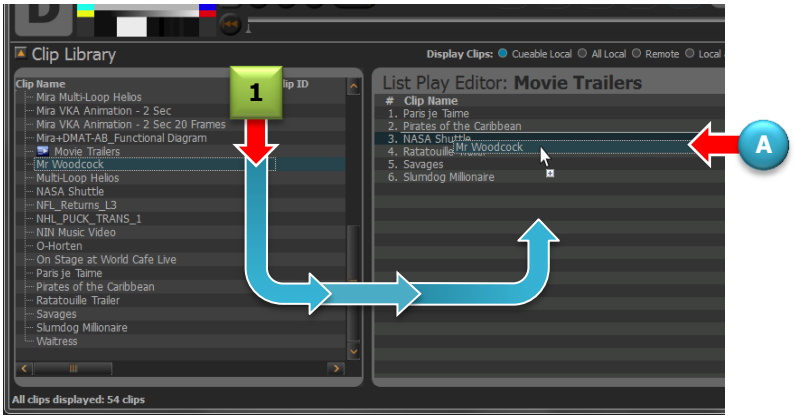
3. Release mouse button.

   ▶ **(A)** *Range of clips appears in playlist.*



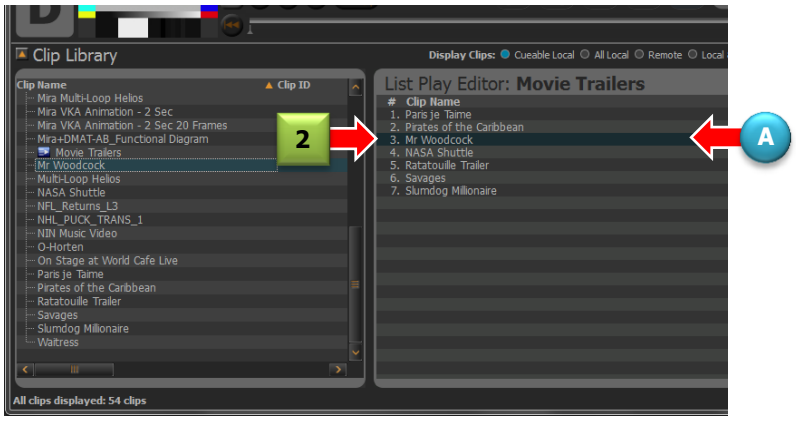
Edit an existing playlist

Insert clip into middle of playlist



1. **Click-and-Drag** desired clip into desired position within playlist.

   ▶ **(A)** *White horizontal line marks insertion point within playlist.*

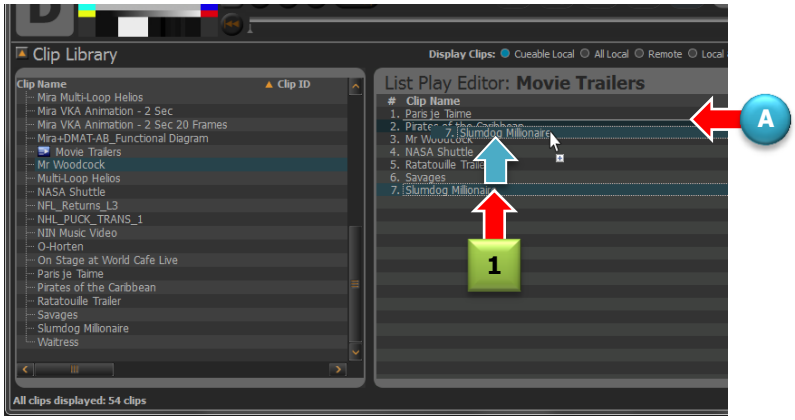


2. Release mouse button.

   ▶ **(A)** *Clip appears at insertion point within playlist.*

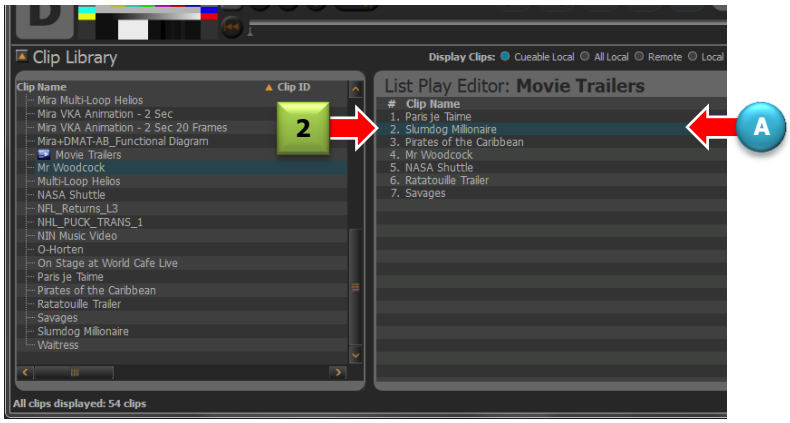
Edit an existing playlist

Move clip to new position within playlist



1. **Click-Hold-and-Drag** desired clip into desired position within playlist.

   ▶ **(A)** *White horizontal line marks insertion point within playlist.*

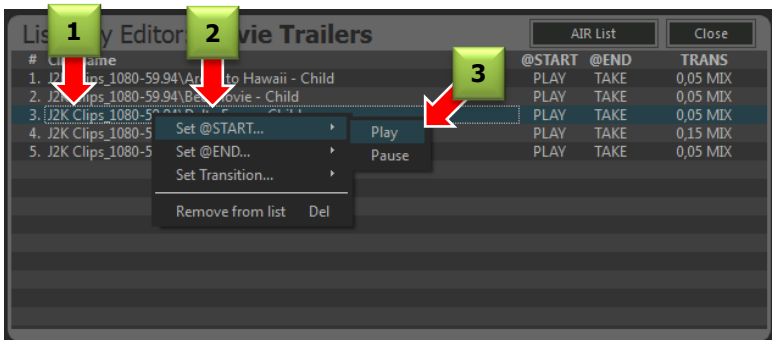


2. Release mouse button.

   ▶ **(A)** *Clip appears at insertion point within playlist.*

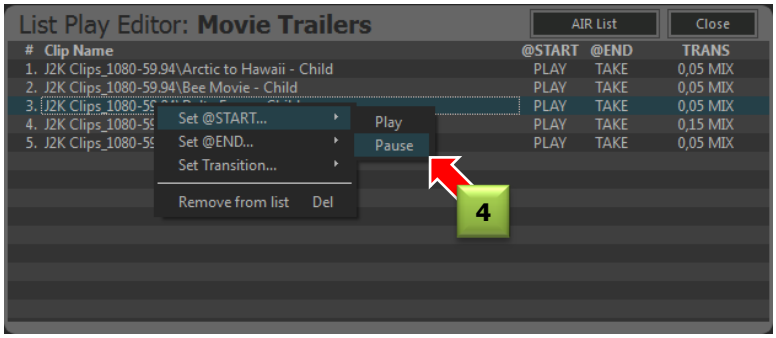
Edit an existing playlist

*Change **@START** play behavior*



1. Right-click on desired clip or group of clips.
2. Hover mouse cursor over **"Set @START…"**
3. Select **"PLAY"** (default playlist clip behavior) if you want this clip to automatically play in Air-Mode.

OR

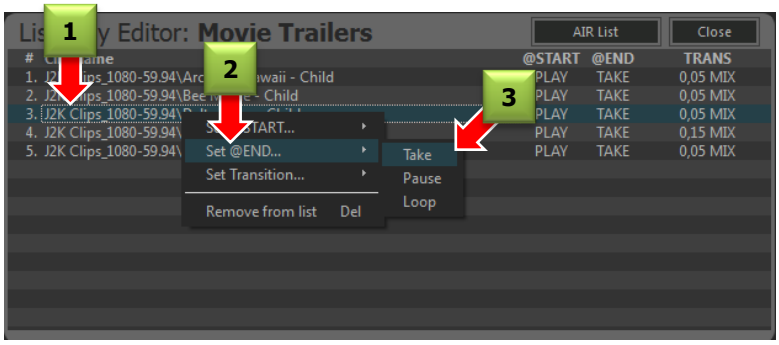


4. Select **"PAUSE"** if you want to pause playback on the first frame of this clip in Air-Mode.
   - When this clip transitions to the PGM channel in Air-Mode, it <u>will **not** play</u> until a "play" command is manually given, such as clicking ▶ in the PGM channel transport control.

Edit an existing playlist

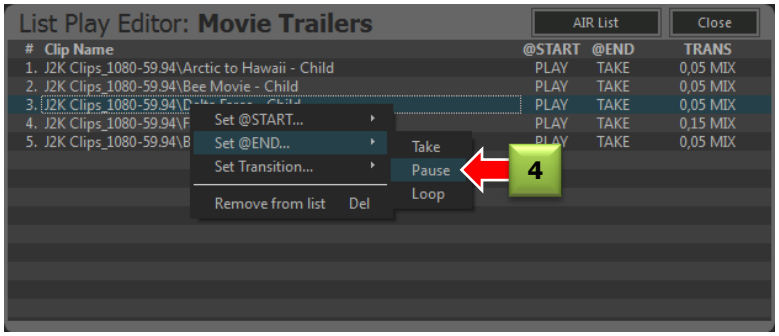
*Change **@END** play behavior*

1. Right-click on desired clip or group of clips.
2. Hover mouse cursor over **"Set @END…"**
3. Select **"TAKE"** (default playlist item behavior) if you want this clip to automatically transition to the next clip in Air-Mode.



OR

4. Select **"PAUSE"** if you want to pause playback on the last frame of this clip in Air-Mode.
   - When this clip plays to its end, it will **not** transition to the next clip in the playlist until an "advance" command is manually given, such as clicking TAKE in the playlist window.

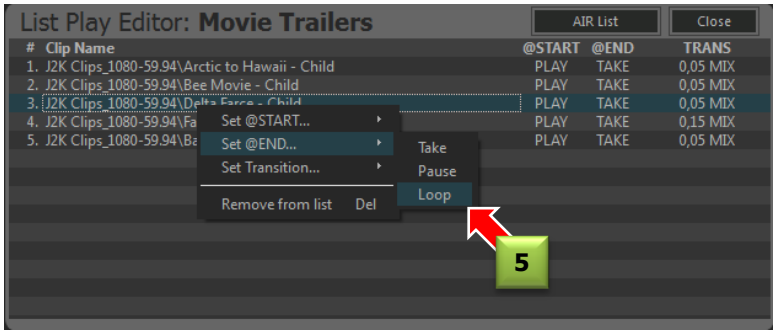


OR

5. Select **"LOOP"** if you want to loop this clip in Air-Mode.
   - This clip will continue to loop until a command is manually given. You can click in the PGM channel transport control to disengage the loop flag, at which point the clip will play to its end and transition to the next clip in the playlist

     OR

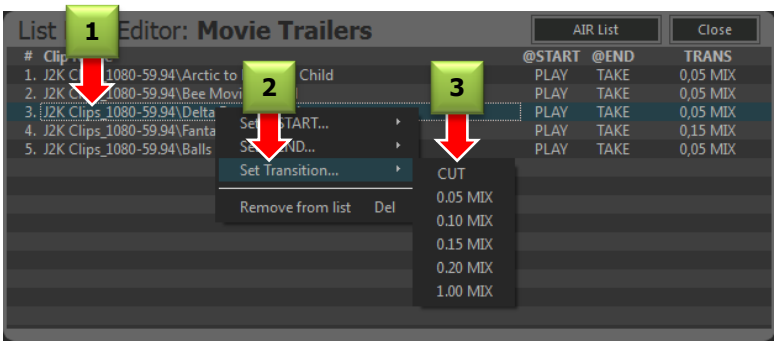
     Click TAKE in the playlist window to immediately transition to the next clip in the playlist.



Edit an existing playlist

Change transition between items

IMPORTANT!
Only 2-channel, PGM/PVW playlists can play in Air-Mode with MIX (dissolve) transitions between clips. 1-channel playlists will only have CUT transitions.



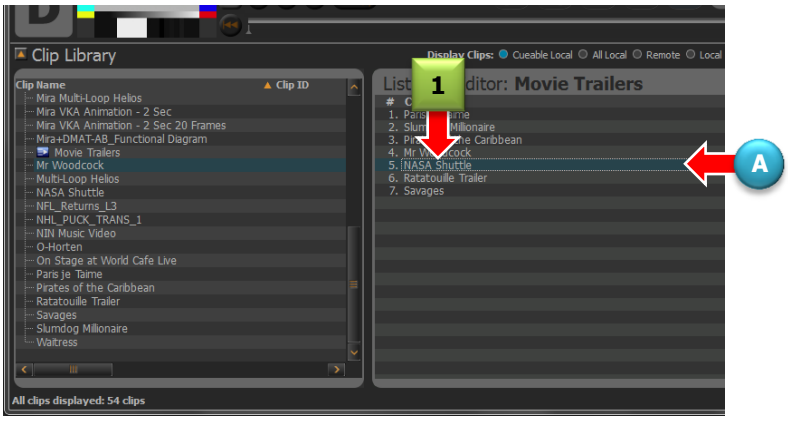
1. Right-click on desired clip or group of clips.
2. Hover mouse cursor over **"Set Transition…"**
3. Select transition type and duration.
   - **CUT**
   - **0.05 MIX** (5-frame dissolve)
   - **0.10 MIX** (10-frame dissolve)
   - **0.15 MIX** (15-frame dissolve)
   - **0.20 MIX** (20-frame dissolve)
   - **1.00 MIX** (1-second dissolve)

Edit an existing playlist

Delete item from playlist

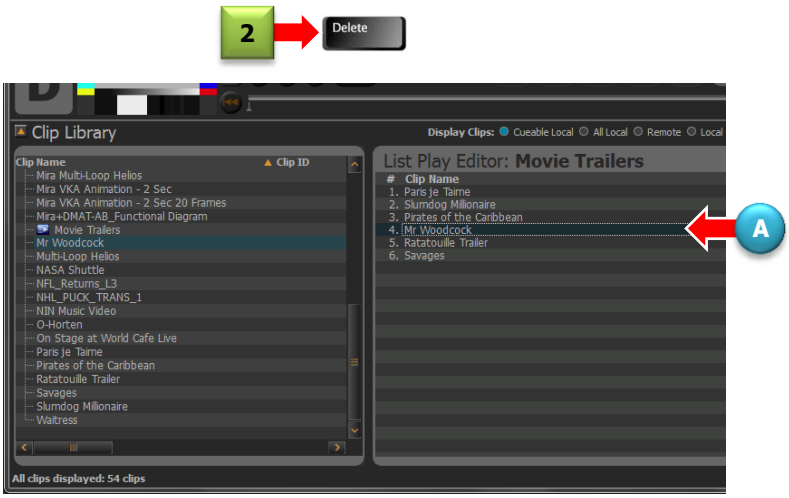
1. **Click** item you want to delete.

   ▶ **(A)** *The item is highlighted.*



2. Press Delete on QWERTY keyboard to remove item.

   ▶ **(A)** *The item is removed from playlist.*

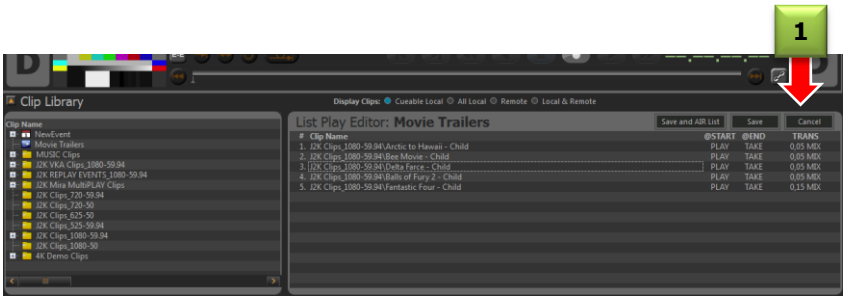


Cancel changes made to a playlist

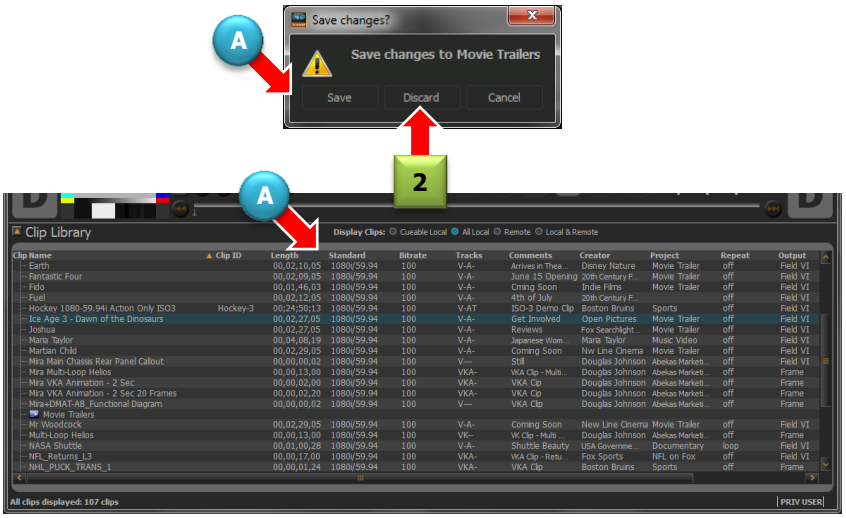
If you made unintended changes to playlist, you may cancel these changes.

1. Click "**Cancel**" in List Play Editor.

   ▶ **(A)** *"**Save changes?**" dialog pop-up appears, as shown below.*



2. Click "**Discard**" in dialog.

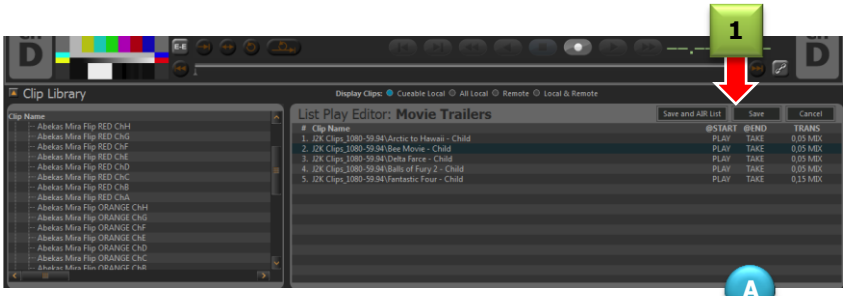


   ▶ **(A)** *List Play Editor is closed, and changes are canceled.*

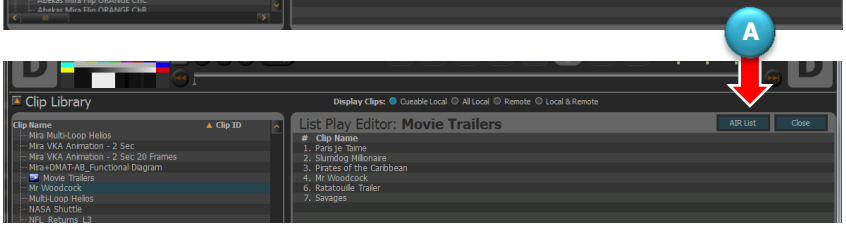
Save a Modified playlist

When satisfied with changes made to playlist, you must save the changes.

1. Click "**Save**" in List Play Editor.

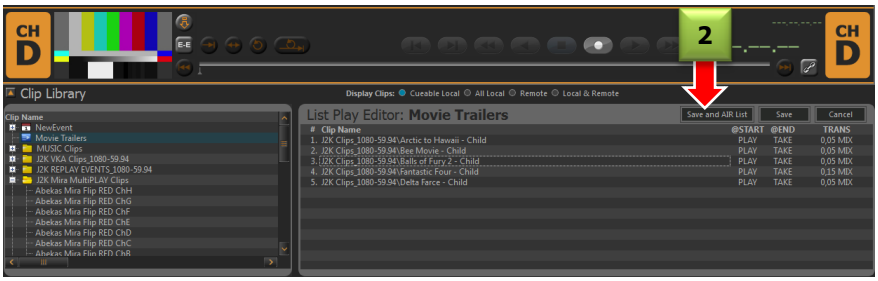


▶ **(A)** *"**Save**" button disappears, indicating changes to playlist was saved.*



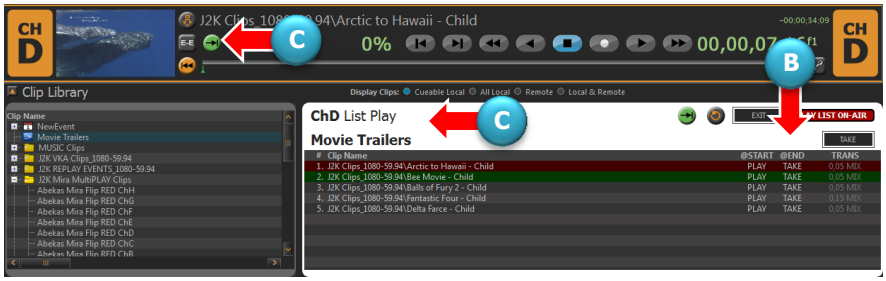
OR

2. Click **"Save and Air List"** in List Play Editor.



▶ **(B)** ***"Save"*** *and* ***"Save and Air List"*** *buttons disappear, indicating changes to playlist were saved.*

▶ **(C)** *List Play Editor window closes, and Air-Mode is engaged on selected PGM channel.*



Air playlist within Mira Explorer

Air playlist: One-channel "PGM" play-out with CUT transitions

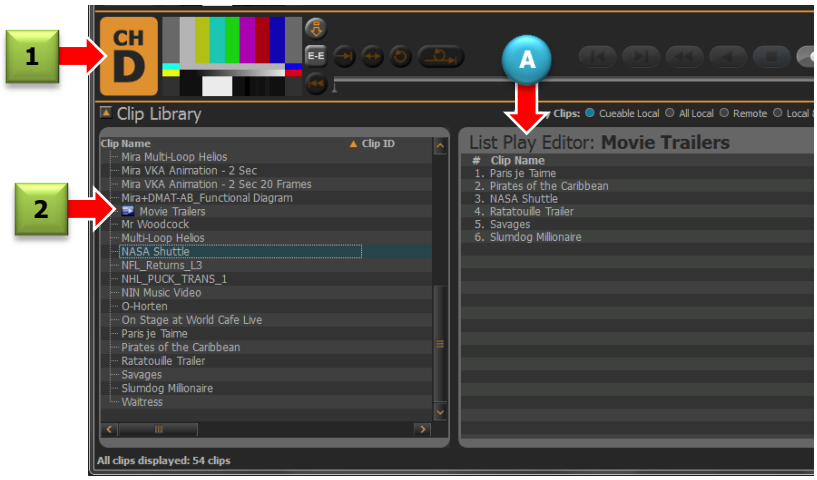
1. Click video channel for playlist PGM play-out.

   NOTE: *You may select any video channel for PGM-only playlist play-out.*

2. **Double-Click** desired playlist.

   (*Playlists are denoted by blue* icon *in Clip Library listing*)

   ▶ **(A)** *"**List Play Editor**" pane opens with desired playlist in view.*



3. Click "**AIR List**" button.

   ▶ *List Play Editor window closes, Air-Mode is activated on active channel (**ChD**)*

   ▶ **(A)** *First item in playlist is loaded into active PGM video channel (**ChD**). PGM clip is highlighted red, PVW clip (next clip) is highlighted green*

4. Click (Play Forward) button in **ChD** (PGM channel).

   The playlist is now playing.

   ▶ **(B)** *Play-head slider advances in PGM video channel (**ChD**).*

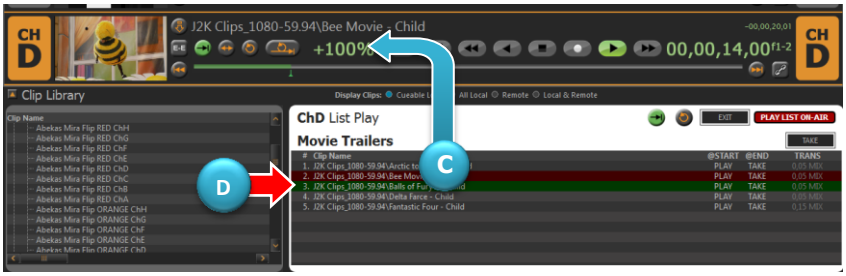
Continued on next page…

▶ **(C)** *When the first clip ends, RED highlighter moves to second clip, second clip cuts into PGM channel.*

▶ **(D)** *GREEN highlighter moves to the third clip, which becomes the next item ready to be aired.*

Playlist continues to play, advancing through playlist automatically.

To STOP playlist play-out, click  **button in PGM channel (ChD).**



Air playlist: Two-channel "PVW / PGM" play-out with MIX transitions

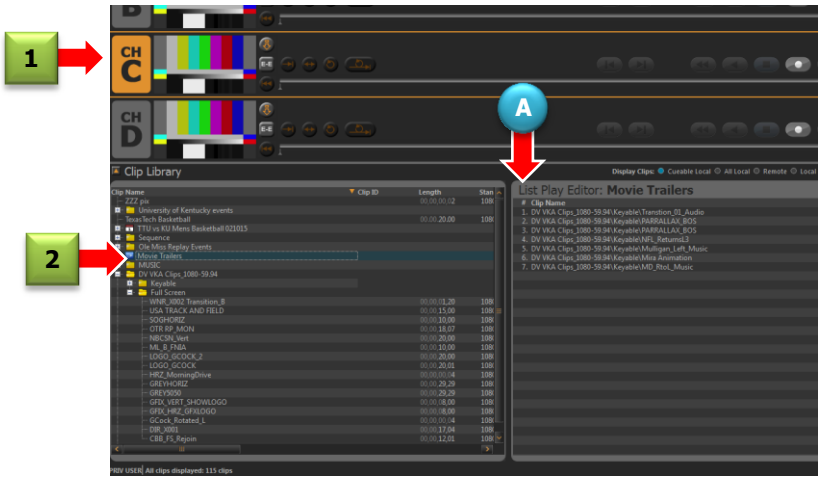
1. Click video channel for playlist PGM play-out.

   NOTE: *You must select* **ChA**, **ChC**, **ChE** *or* **ChG** *for PVW / PGM playlist play-out.*

2. **Double-Click** desired playlist.

   (*Playlists are denoted by blue* icon *in Clip Library listing*)

   ▶ **(A)** *"**List Play Editor**" pane opens with desired playlist in view.*



3. Click "**AIR List**" button.

   ▶ *List Play Editor window closes, Air-Mode is engaged on selected PGM channel* ***(ChC)***

   ▶ **(A)** *First item in playlist is loaded into active PGM video channel (**ChC**). PGM clip is highlighted RED, PVW clip (next clip) is highlighted GREEN.*

4. Click the "**ChD ➡ ChC**" checkbox.

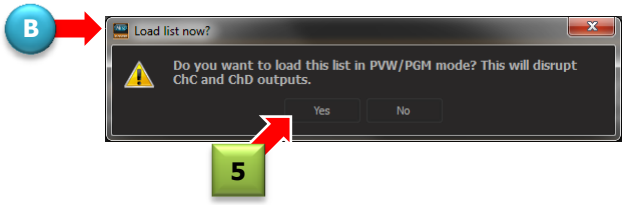
   NOTE: *If* **ChA** *was selected for PGM, click "***ChB ➡ ChA***" checkbox.*

   If **ChE** *was selected for PGM, click "***ChF ➡ ChE***" checkbox.*

   If **ChG** *was selected for PGM, click "***ChH ➡ ChG***" checkbox.*

   ▶ **(B)** *"**Load list now**" pop-up appears.*

5. Click "**Yes**" button.

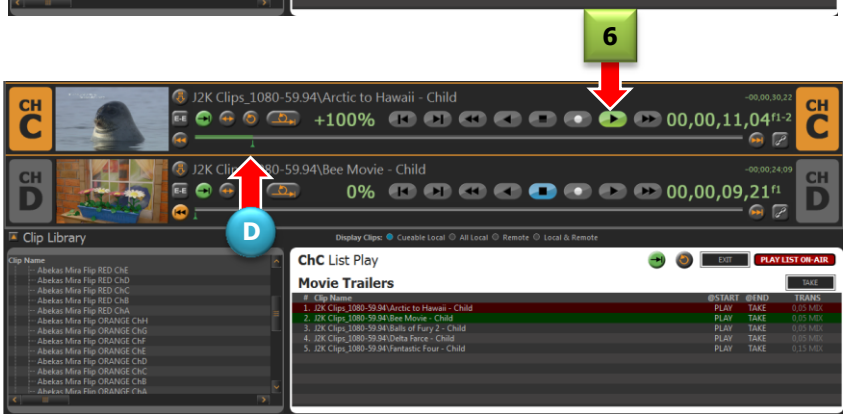


Continued on next page…

▶ **(C)** *PVW channel* **(ChD)** *is loaded with second (GREEN) item from playlist.*

6. Click (Play Forward) button in **ChC** (PGM channel).

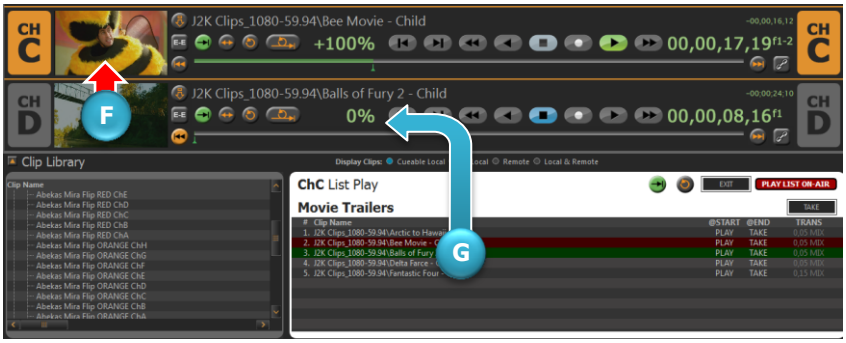
   The playlist is now playing.



▶ **(D)** *Play-head slider advances in PGM video channel (***ChC***).*

▶ **(E)** *When there are less than* ***3:15*** *seconds remaining in PGM clip play time, PVW highlighter turns YELLOW.*

This indicates PVW item is about to dissolve into PGM channel.



▶ **(F)** *When the first clip ends, RED highlighter moves to second clip. Second clip transitions to PGM channel.*

▶ **(G)** *GREEN highlighter moves to third clip, and third clip is loaded into PVW channel.*

Playlist continues to play, advancing through playlist automatically.

To STOP playlist play-out, click button in PGM channel (ChC).

Advance playlist manually while On-Air within Mira Explorer

PLAY specific segment NEXT in active playlist (with AUTO Play)

Use this if specific item in playlist must be played next, AFTER current segment finishes.

Playback of segment starts automatically.

1. **RIGHT-Click** desired segment in playlist that must play next.

   ▶ **(A)** *Segment is highlighted.*

   ▶ **(B)** *Pop-up menu appears.*

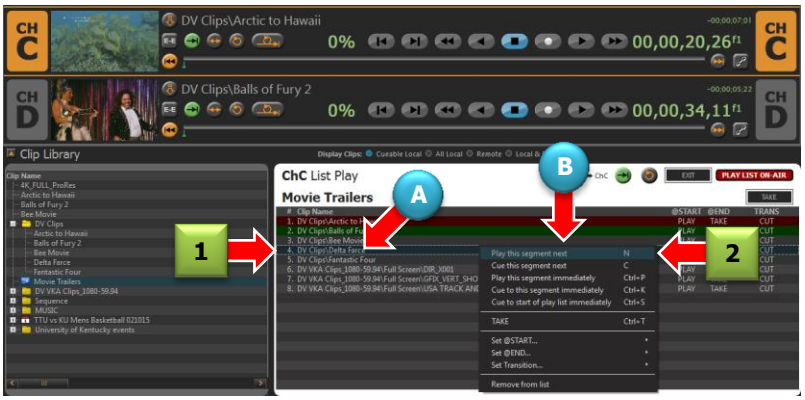
2. Click "**Play this segment next**" item in pop-up menu list.

— or —

1. Click desired segment in playlist that must play next.

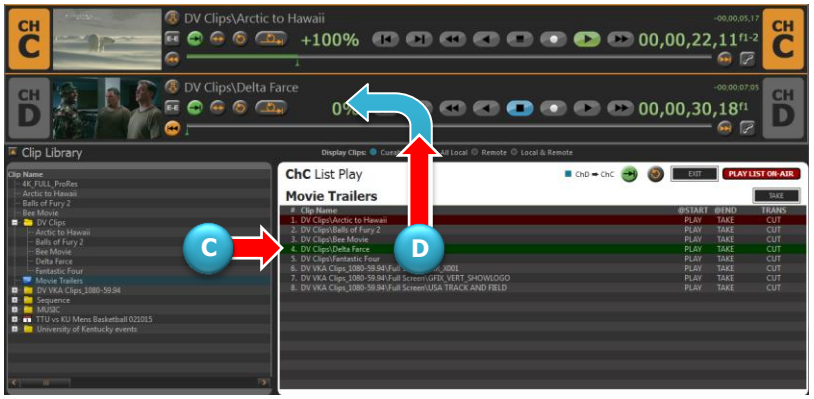
   ▶ **(A)** *Segment is highlighted.*

2. Press N on QWERTY keyboard.



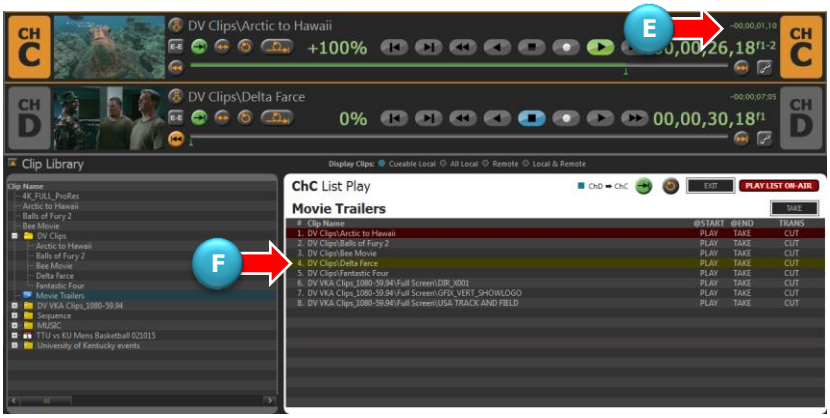
▶ **(C)** *GREEN highlighter moves to highlight this segment in playlist.*

▶ **(D)** *Segment is immediately loaded into "PVW" video channel.*
(only for PVW / PGM playlist play-out)



▶ **(E)** *When **3:15** seconds remain in PGM playback…*

▶ **(F)** *Next segment is highlighted in YELLOW.*



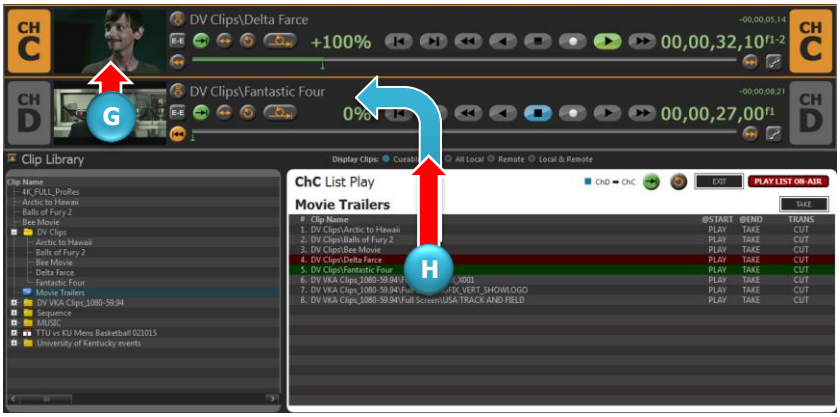
Continued on next page…

▶ **(G)** *When the first clip ends, RED highlighter moves to "next" clip selected in step 1, and Next clip transitions to PGM channel.*

▶ **(H)** *GREEN highlighter moves to new next clip, which is loaded into PVW channel.*

Playlist continues to play, advancing through playlist automatically.

To STOP playlist play-out, click  **button in PGM channel (ChC).**



CUE specific segment NEXT in active playlist (with MANUAL Play)

Use this if specific item in playlist must be cued next, AFTER current segment finishes.

Playback of segment must be started manually.

1. **RIGHT-Click** desired segment in playlist that must play next.

   ▶ **(A)** *Segment is highlighted.*

   ▶ **(B)** *Pop-up menu appears.*

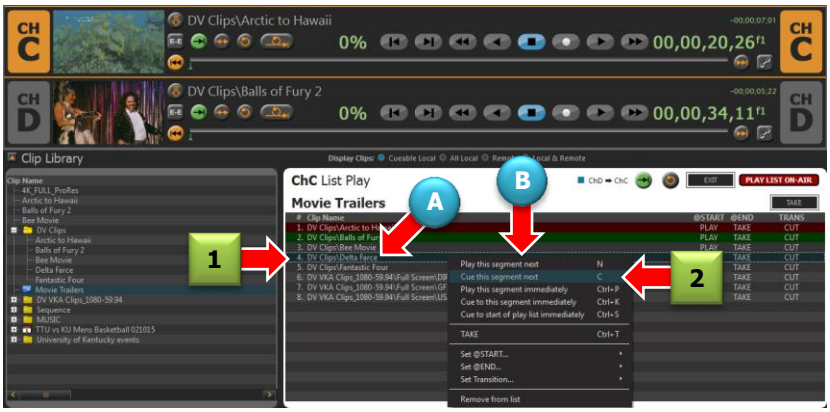
2. Click "**Cue this segment next**" item in pop-up menu list.

— or —

1. Click desired segment in playlist that must play next.

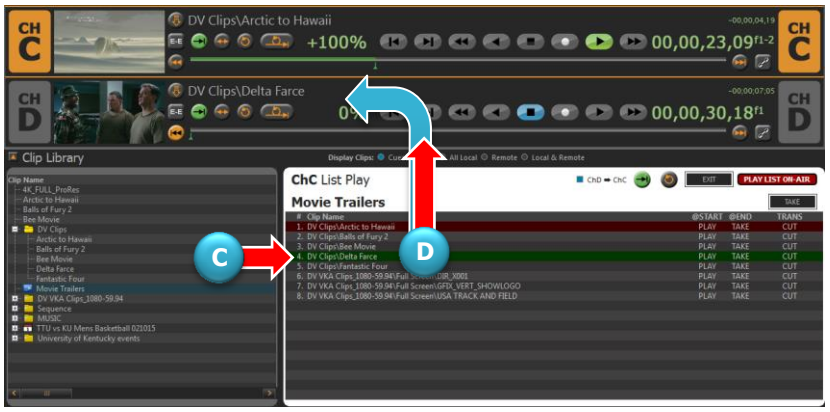
   ▶ **(A)** *Segment is highlighted.*

2. Press C on QWERTY keyboard.



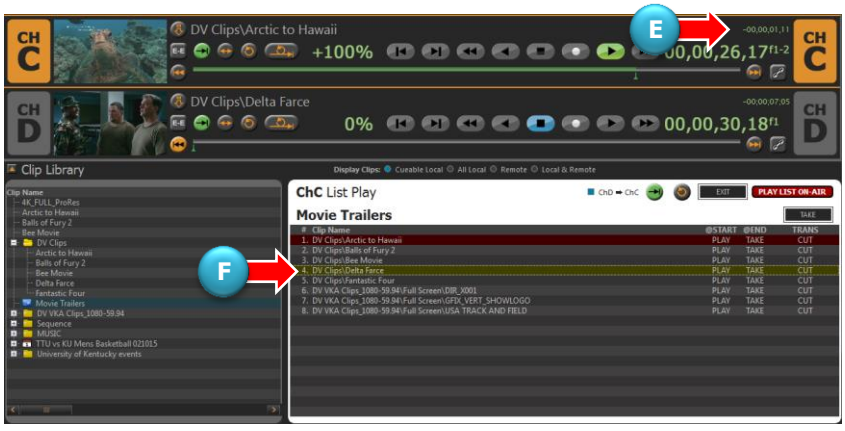
▶ **(C)** *GREEN highlighter moves to highlight this segment in playlist.*

▶ **(D)** *Segment is immediately loaded into "PVW" channel.*
(only for PVW / PGM playlist play-out)



▶ **(E)** *When **3:15** seconds remain in PGM playback…*

▶ **(F)** *Next segment is highlighted in YELLOW.*

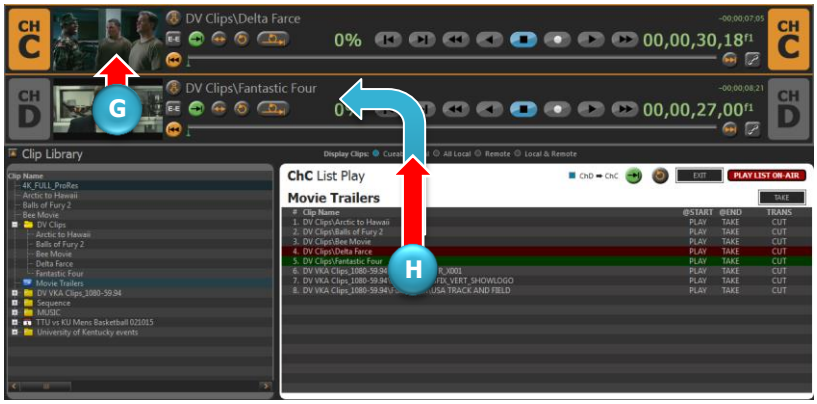


Continued on next page…

▶ **(G)** *When the first clip ends, RED highlighter moves to "Next" clip selected in step 1, and Next clip transitions to PGM channel.*

▶ **(H)** *GREEN highlighter moves to new next clip, which is loaded into PVW channel.*

Playlist play-out STOPS.



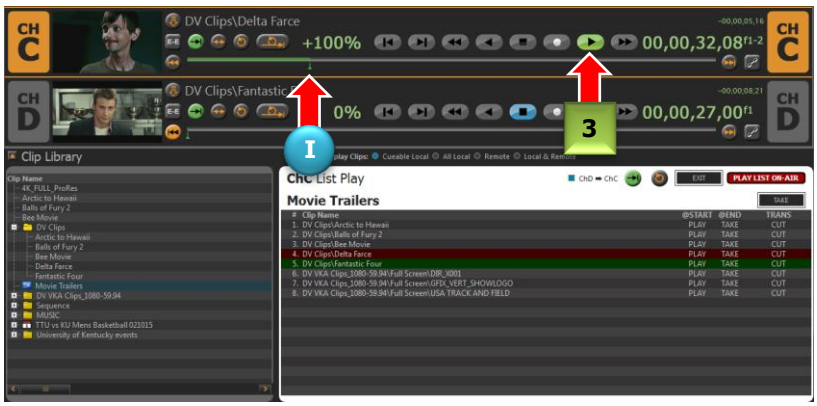
3. Click (Play Forward) button in **ChC** (PGM channel).

   The playlist is now playing.

   ▶ **(I)** *Play-head slider advances in PGM video channel (**ChC**).*

   Playlist continues to play, advancing through playlist automatically.

   To STOP playlist play-out, click button in <u>PGM</u> channel (ChC).



PLAY specific segment IMMEDIATELY in active playlist (with AUTO Play)

Use this if specific item in playlist must be played immediately, BEFORE current segment finishes.

Playback of segment starts automatically.

1. **RIGHT-Click** desired segment in playlist that must play RIGHT NOW.

   ▶ **(A)** *Segment is highlighted.*

   ▶ **(B)** *Pop-up menu appears.*

2. Click "**Play this segment immediately**" item in pop-up menu list.

— or —

1. Click desired segment in playlist that must play RIGHT NOW.

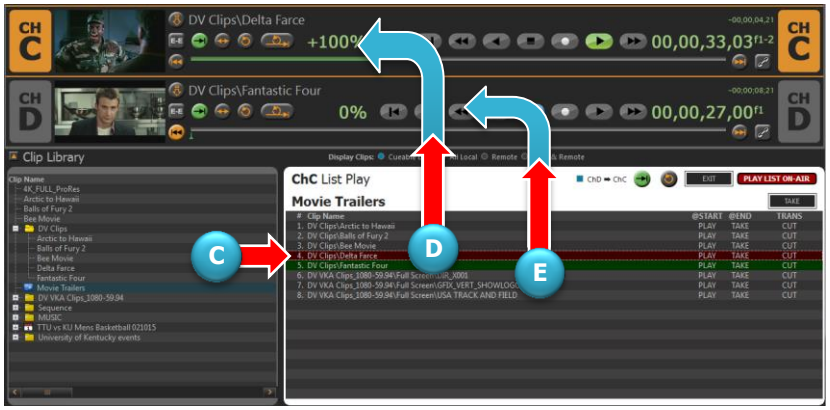
   ▶ **(A)** *Segment is highlighted.*

2. Press Ctrl + P on QWERTY keyboard.

   ▶ **(C)** *RED highlighter moves to highlight this segment in playlist.*

   ▶ **(D)** *segment is immediately loaded into "**PGM**" video channel.*

   ▶ **(E)** *Following segment is immediately loaded into "**PVW**" video channel.*
   (only for PVW / PGM playlist play-out)



Playlist continues to play, advancing through playlist automatically.

To STOP playlist play-out, click button in PGM channel (ChC).

CUE specific segment IMMEDIATELY in active playlist (with MANUAL Play)

Use this if specific item in playlist must be cued immediately, BEFORE current segment finishes.

Playback of segment must be started manually.

1. **RIGHT-Click** desired segment in playlist that must cue up RIGHT NOW.

   ▶ **(A)** *Segment is highlighted.*

   ▶ **(B)** *Pop-up menu appears.*

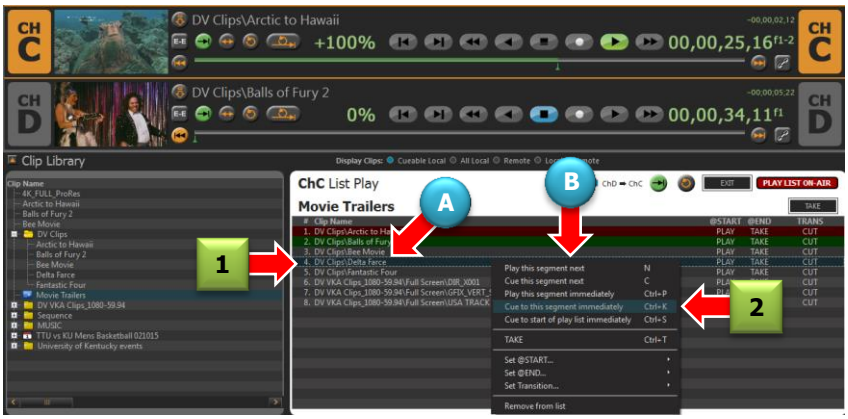
2. Click "**CUE this segment immediately**" item in pop-up menu list.

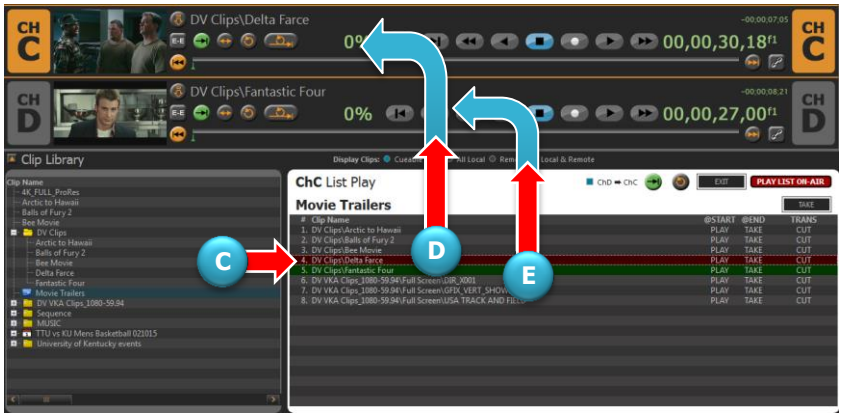
— or —

1. Click desired segment in the playlist that must cue up RIGHT NOW.

   ▶ **(A)** *Segment is highlighted.*

2. Press Ctrl + K on QWERTY keyboard.





▶ **(C)** *RED highlighter moves to highlight this segment in playlist.*

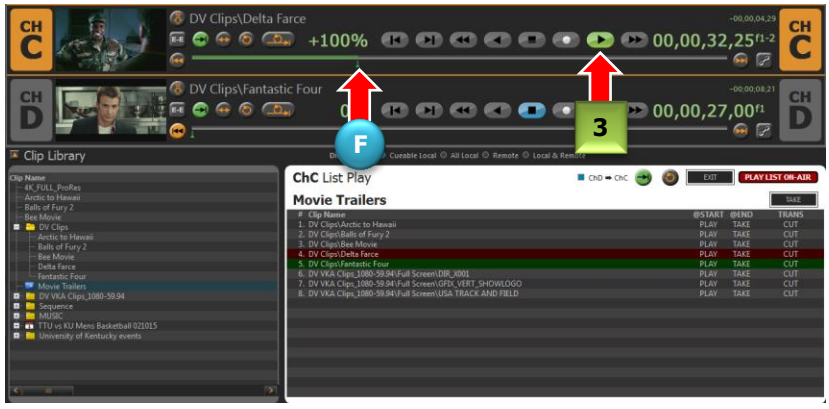
▶ **(D)** *Segment is immediately loaded into "**PGM**" video channel.*

▶ **(E)** *Following segment is immediately loaded into "**PVW**" video channel. (only for PVW / PGM playlist play-out)*

Playlist play-out STOPS.

3. Click ▶ (Play Forward) button in **ChC** (PGM channel).

   The playlist is now playing.



▶ **(F)** *Play-head slider advances in PGM video channel (**ChC**).*

Playlist continues to play, advancing through playlist automatically.

To STOP playlist play-out, click ■ button in PGM channel (ChC).

CUE to START of playlist IMMEDIATELY in active playlist (with MANUAL Play)

Use this if you want to re-cue playlist to FIRST segment, BEFORE current segment finishes.

Playback of segment starts manually.

1. **RIGHT-Click** anywhere within playlist.

   ▶ **(A)** *Segment is highlighted.*

   ▶ **(B)** *Pop-up menu appears.*

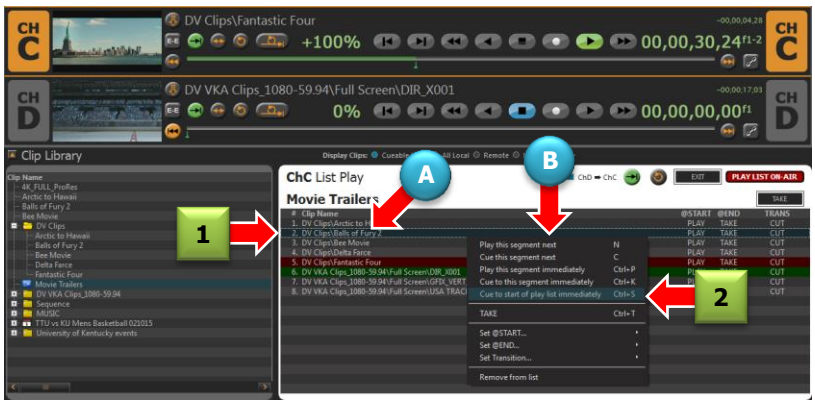
2. Click "**Cue to start of playlist immediately**" item in pop-up menu list.

— or —

1. Click anywhere within playlist.

   ▶ **(A)** *Segment is highlighted.*

2. Press Ctrl + S on QWERTY keyboard.

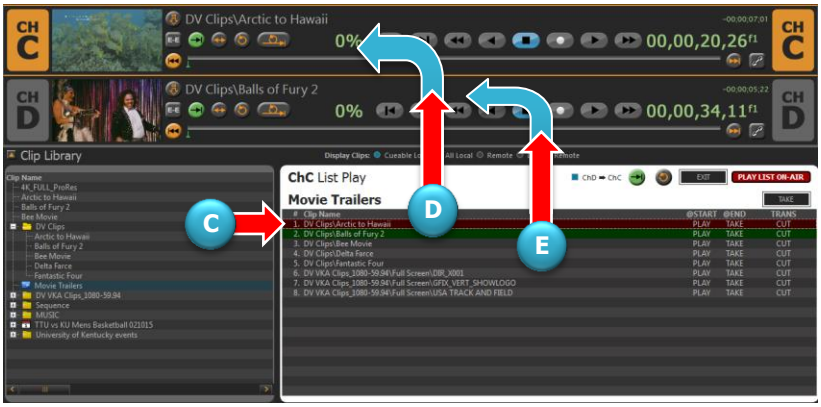


▶ **(C)** *RED highlighter moves to highlight FIRST segment in playlist.*

▶ **(D)** *FIRST segment is immediately loaded into "**PGM**" video channel.*

▶ **(E)** *SECOND segment is immediately loaded into "**PVW**" video channel. (only for PVW / PGM playlist play-out)*

Playlist play-out STOPS.



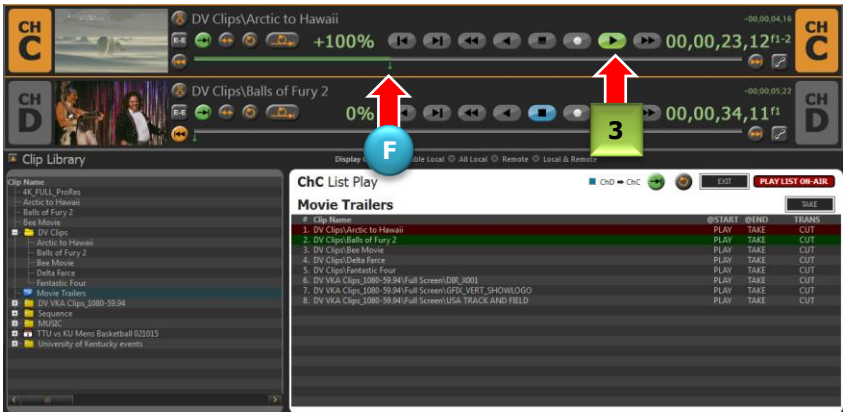
3. Click ▶ (Play Forward) button in **ChC** (PGM channel).

   The playlist is now playing.

   ▶ **(F)** *Play-head slider advances in PGM video channel (**ChC**).*

   Playlist continues to play, advancing through playlist automatically.

   To STOP playlist play-out, click ■ button in PGM channel (ChC).



Exit List Play within Mira Explorer

When you're finished using List Play, be sure to exit the list play function.

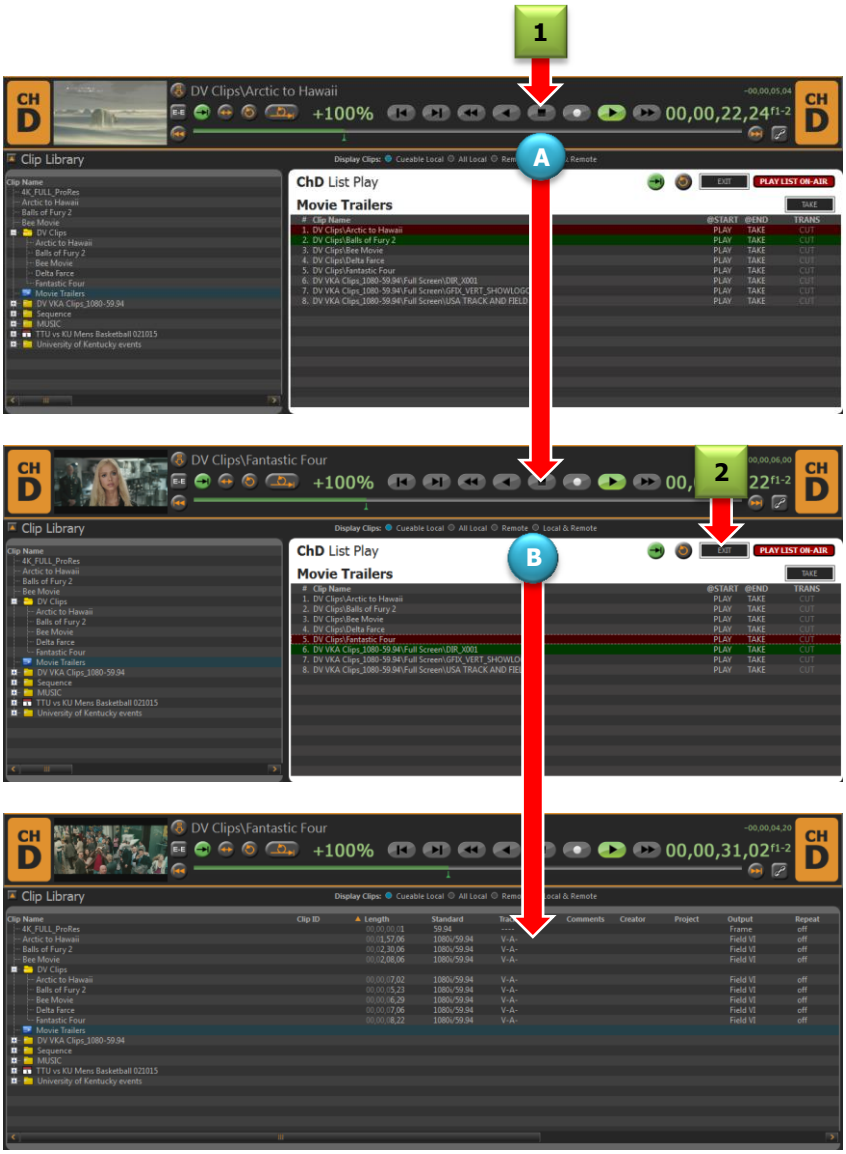
1. If PGM transport is not yet stopped, click ■ button in PGM channel.

   ▶ **(A)** *Stop button illuminates (■).*

2. Click "**EXIT**" button in List Play.

   ▶ **(B)** ***List Play*** *window closes; this indicates List Play function is now turned off for this video channel.*

   If List Play is running in other video channels, then you will need to select those channels, and repeat this procedure.



Delete Clips

Functionality is provided within Mira Explorer for deleting clips from the server. Under normal circumstances, only "Administrator" and "Privileged" users logged into Mira Explorer may delete clips from the server.

Furthermore, it's normally only possible to delete one clip at a time through Mira Explorer, for safety reasons. However, one may change the "Administrator Options" to allow deletion of multiple clips in a single delete operation. Please refer to "***Administrator Options***" starting on page 109 for more information on allowing multi-clip delete operations.

- ***IMPORTANT NOTE:*** *Once performed, a clip delete operation cannot be undone!*
- ***IMPORTANT NOTE:*** *When a clip is marked with the "locked" symbol ( ) within the "Lock" column, it's not possible to delete that clip. Please refer to the "**Locking / Unlocking Clips**" instructions provided on page 106 below to unlock any locked clip before attempting to delete that clip.*

To delete a clip from within Mira Explorer:

1. Click on clip you wish to delete, so it is selected with the teal-colored highlighter.

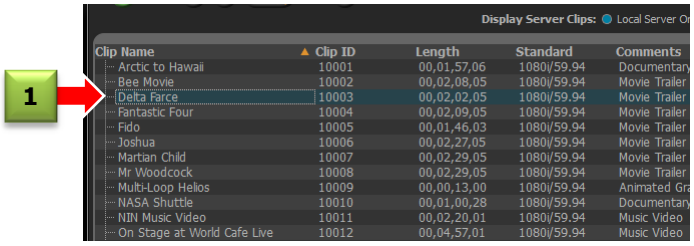
   - *If "multi-clip deletion" is enabled in the Administrator Options, then you may also perform one of the following:*

   — or —

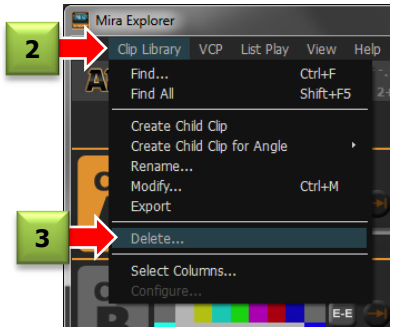
   HOLD DOWN Ctrl on QWERTY keyboard and *MOUSE CLICK to select **a random set** of several clips.*

   — or —

   HOLD DOWN Shift on QWERTY keyboard *and MOUSE CLICK to select **a range** of multiple clips.*

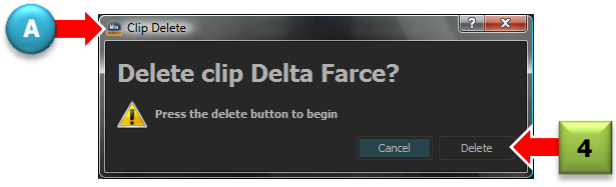


2. Click "**Clip Library**" menu item.
3. Select "**Delete…**" from pull-down list:

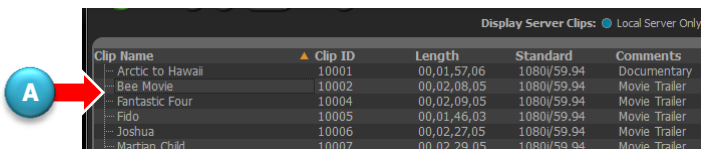


   - **(A)** *The "**Clip Delete**" window appears.*

4. Click Delete to confim delete operation.



   - **(A)** *Clip is removed from Clip Library listing.*



Desktop Viewer

The Mira Explorer user interface includes a built-in desktop viewer, which displays the video channels in the Mira server onto the computer monitor connected to the VGA or DVI output on the graphics card in the Mira server chassis.

To access the Desktop Viewer, click the Viewer button near the top center of the Mira Explorer display:

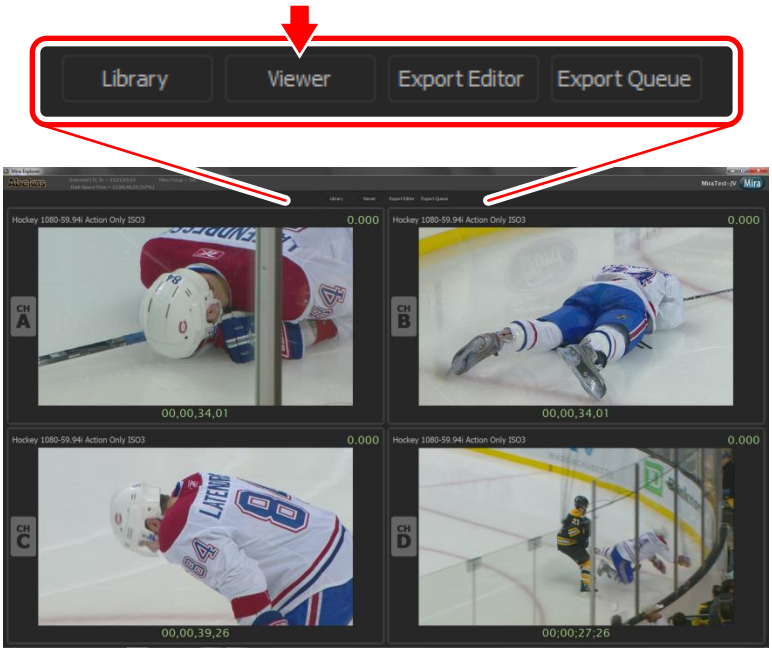
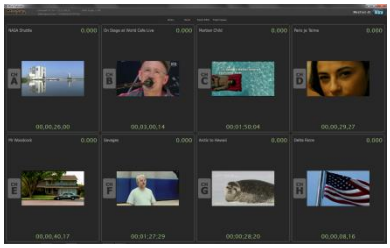
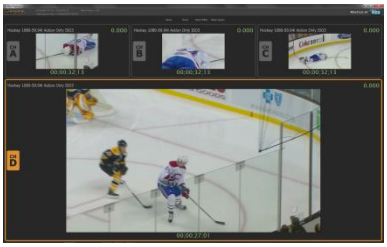


Figure 8 Mira Explorer with "Viewer" Selected

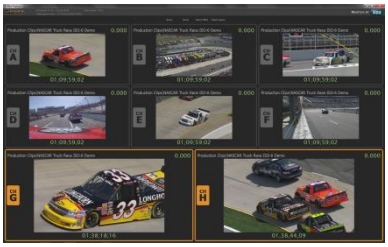
The desktop Viewer will take on a different appearance than that shown above, depending on whether Mira is fitted with 4 or 8 video channels, and the configuration in which the video channels are currently operating. Here are some possibilities:



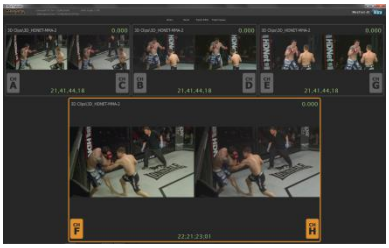
Desktop Viewer for Mira 8-Channel Server VVVV + VVVV Mode



Desktop Viewer for Mira 4-Channel Server ISO3 Mode (3-In/1-Out)



Desktop Viewer for Mira 8-Channel Server ISO6 Mode (6-In/2-Out)



Desktop Viewer for Mira 8-Channel Server 3D ISO3 Mode (3D 3-In/1-Out)

Undock and Dock Viewer in Mira Explorer

If desired, it's possible to "undock" the Viewer from the main Mira Explorer window, opening the Viewer in a separate window.

This is usually desired in order to place the Viewer onto a second computer desktop monitor connected to a second monitor output on the Mira server graphics card.

If you connect the primary computer monitor to the DVI connector, and the secondary monitor to the VGA/DVI connector, and then start up Mira, the Win7 operating system will usually auto-detect the second monitor, and create an "extended desktop" on this second monitor.

If the second computer monitor is connected while the Mira server is running, then you'll need to manually detect the monitor, and extend the desktop onto that monitor.

Manually Extend Win7 Desktop onto second computer monitor

1. Connect **MAIN** monitor to **DVI** output;

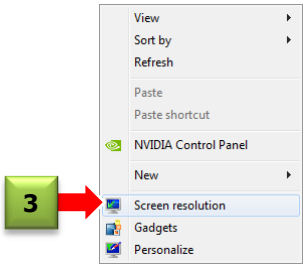
   Connect **EXTENDED** monitor to **VGA/DVI** output.

2. **RIGHT-Click** anywhere on computer desktop, as shown here.

   ▶ **(A)** *Dialog pop-up appears, as shown.*

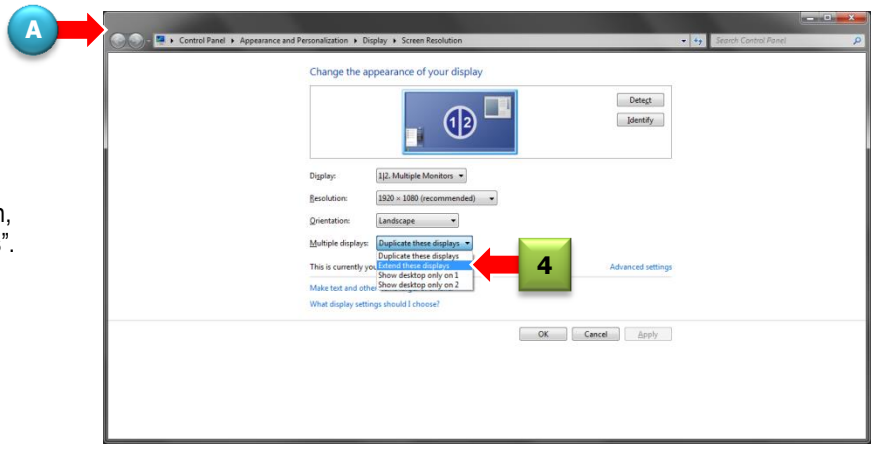
3. Click "**Screen resolution**" in pop-up.

   ▶ **(A)** *"**Screen Resolution**" window appears, as shown below.*



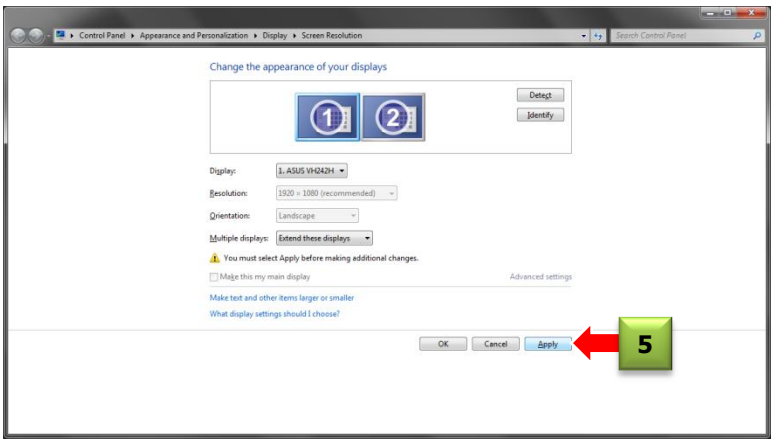
Continued on next page…

4. Click "**Multiple Displays**" pull-down, and select "**Extend these displays**".

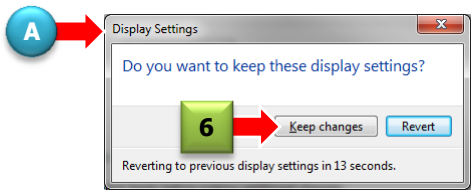


5. Click Apply button.

▶ **(A)** *"**Display Settings**" pop-up appears, as shown below.*

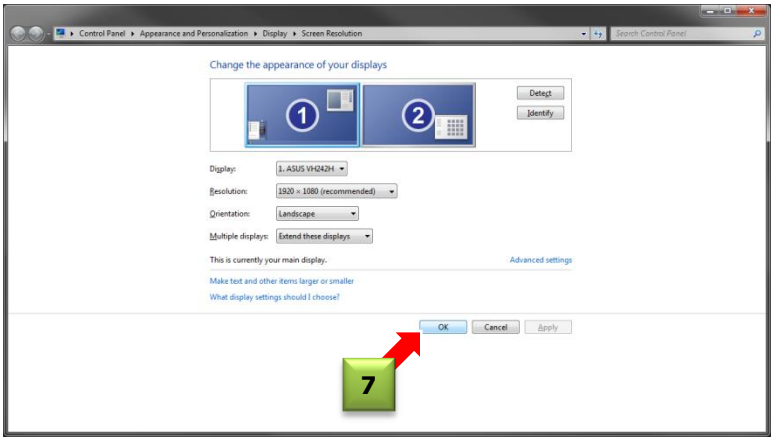


6. Click Keep changes button.



7. Click OK button.

▶ *"**Screen Resolution**" window closes.*



Continued on next page…

▶ **(A)** *Extended Desktop appears on second monitor.*

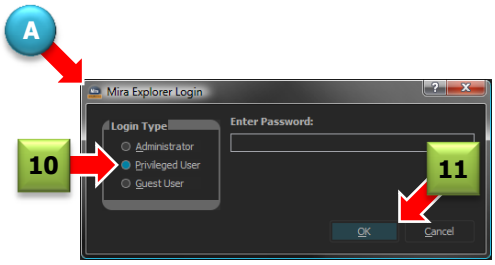
8. Move cursor to lower edge of MAIN desktop, to reveal Windows taskbar.
9. Click (Mira Explorer) icon.

▶ **(A)** *"**Mira Explorer Login**" dialog window appears, as shown below.*

10. Click "**Privileged User**" radio button.

▶ *The factory default requires NO password.*

11. Click OK (*or press* Enter *on QWERTY keyboard*).



▶ **(A)** *"**Mira Explorer**" window appears on MAIN monitor.*

Continue with the procedure on the following page if you want to undock the Viewer and position it on the extended desktop monitor.

Undock Viewer and position onto extended desktop monitor

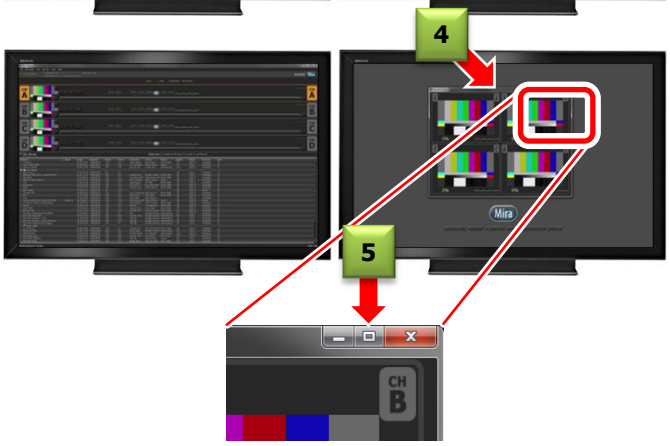
This procedure undocks the Viewer from Mira Explorer, and positions the Viewer on the extended desktop monitor.

1. In Mira Explorer menu, click "**View**".
2. In menu list, click "**Undock Viewer**".

▶ **(A)** *Viewer undocks, and appears on the MAIN monitor.*

3. **Click-and-Hold** mouse on "**title bar**" at very top of Viewer window.

   Drag Viewer window onto second monitor.



4. Release mouse button.
5. Click (Maximize window) button in Viewer window.

▶ **(A)** *Viewer is maximized on extended desktop monitor.*

Dock Viewer from extended desktop monitor back into Mira Explorer

There are two methods for docking the Viewer back into Mira Explorer.

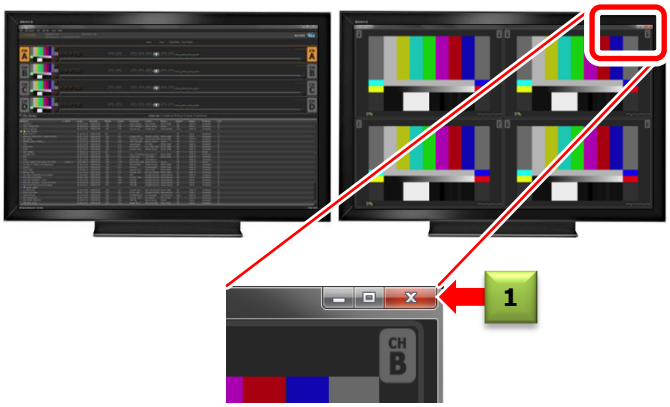
METHOD 1

1. In Mira Explorer menu, click "**View**".
2. In menu list, click "**Dock Viewer**".

— or —

METHOD 2

1. Click [x] (Close window) button in Viewer window.



▶ **(A)** *Viewer docks back into Mira Explorer on MAIN monitor.*

Lock / Unlock Clips

Clips displayed in the Mira Explorer window with the "Lock" column visible will display the "locked" icon ( ) when the file for this clip has the "read-only" flag enabled (refer to **Figure 8** below). There is no functionality provided within the Mira Explorer program itself to *change* the lock status for any given clip.

In order to *change* the lock status of any clip stored in the Mira server, one must use the Windows Vista ***File Explorer*** program to change the "read-only" flag for the desired clips.

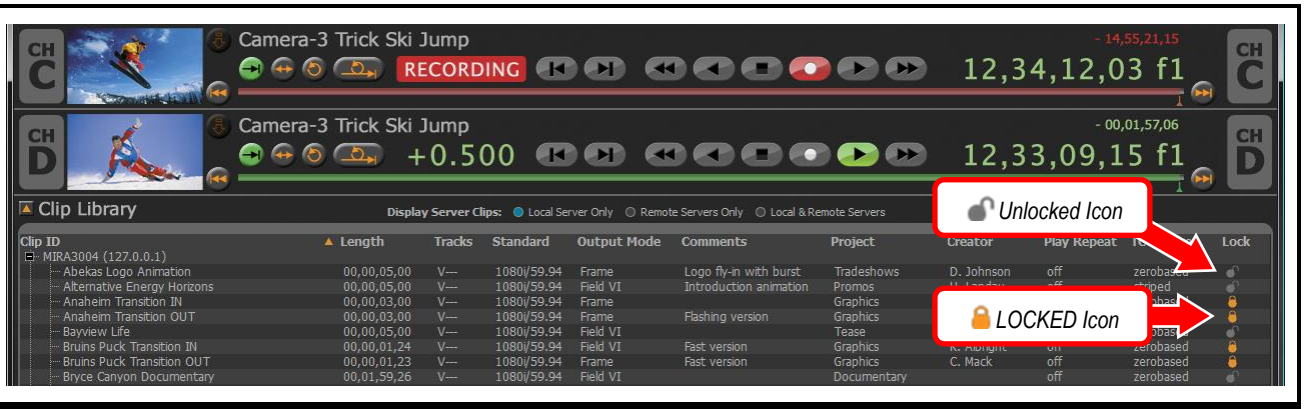


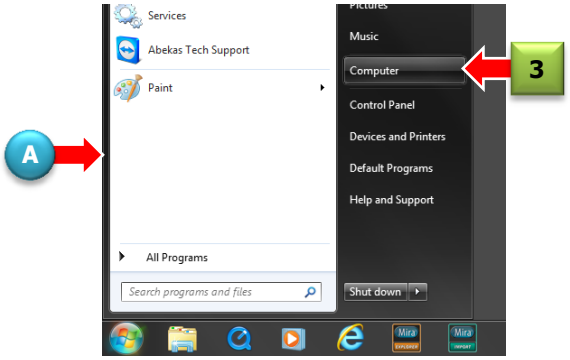
Figure 9 Mira Explorer showing the Clip "Locked" icon

▶ ***IMPORTANT NOTE:*** *When a clip is marked with a "locked" icon ( ), it's not possible to delete, record into, or modify any of the clip metadata for that particular clip.*

To lock or unlock a clip in the Mira Server:

1. Move mouse pointer to lower edge of screen, to reveal Windows taskbar.
2. Click (Windows START) icon.

   ▶ **(A)** *"**Windows Start**" menu appears, as shown below.*

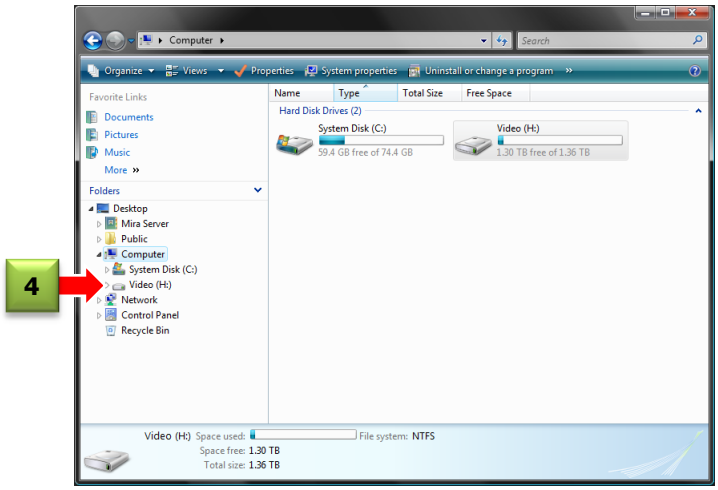


3. Click "**Computer**" item:

   ▶ *"**Windows Explorer**" window opens, as shown at top of next page.*

Continued on next page…

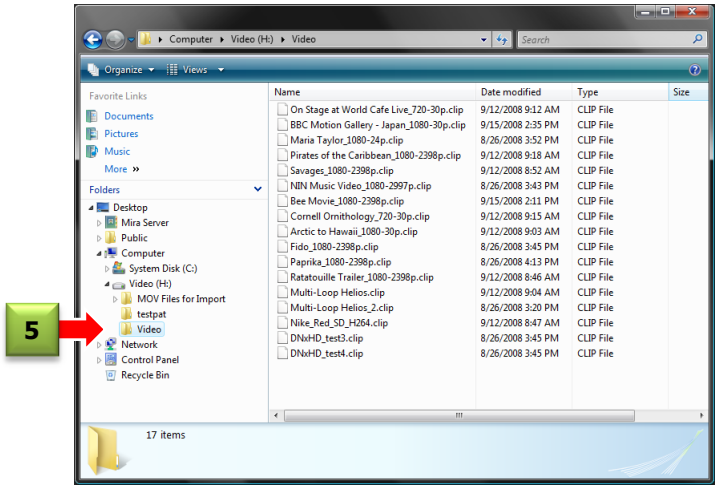
4. Click "**Video (H:)**" in LEFT pane…



5. …and navigate to following directory:

   Computer ▸ Video (H:) ▸ Video

   ▶ *This directory is where clip files are stored inside Mira Server.*

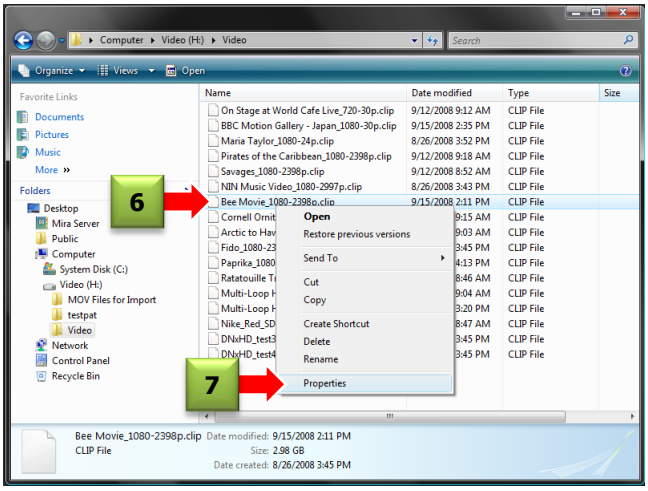


6. **RIGHT-Click** on clip file you want to lock (or unlock);

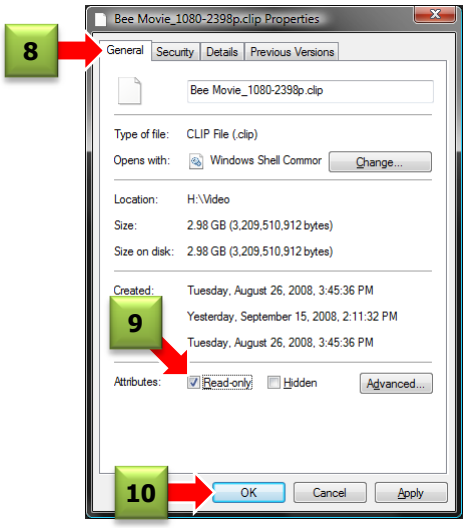
   ▶ *In this example, the "**Bee Movie**" clip is selected.*

7. Select "**Properties**" item in pop-up menu that appears:

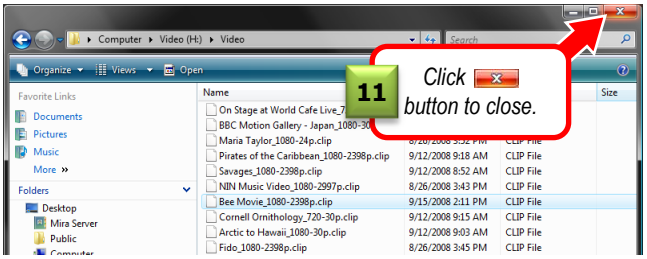
   ▶ *"**Properties**" window opens, as shown below.*



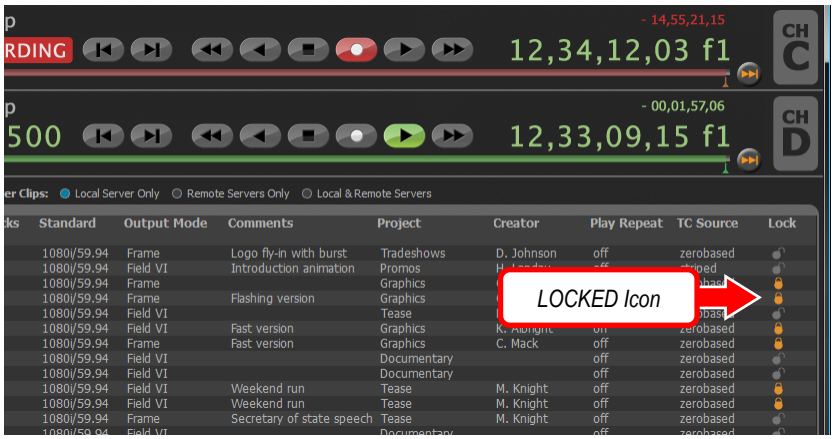
Continued on next page…



8. Click "**General**" tab.
9. Click "**Read-only**" checkbox to change its status
   - ▶ *In this example, it's shown as "checked" which means the clip will be "locked".*
10. Click OK to finish.
    - ▶ *"**Properties**" window closes.*



11. Click (Close window) button to close window.
    - ▶ *The "**Windows Explorer**" window closes.*



- ▶ *Mira Explorer clip library will now display the "locked" icon ( ) for this particular clip.*

Administrator Options

When one logs into the Mira Explorer program at the “Administrator” level, one will have access to all of the features of Mira Explorer, including the ability to assign privileges to the three levels of users (“Administrator”, “Privileged User” and “Guest”), as well as to change the passwords required for the two higher levels of users (“Administrator” and “Privileged User”).

The “Guest” level of login never requires a password.

This section of the document is divided into several operational procedures; please find the procedure you’re interested in from the list below, and then go to that page in the document.

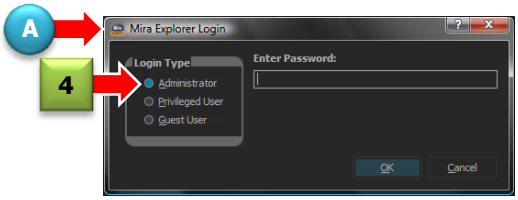
Login as Administrator into Mira Explorer

In order to change any administrator settings, you must be logged in as "Administrator" in Mira Explorer.

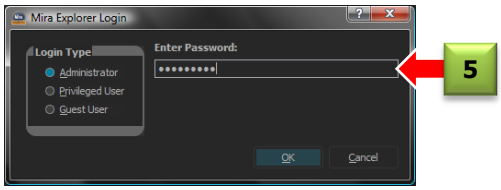
- ▶ *If the Mira Explorer program is running, you will need to close this program before you may login as "Administrator".*
- ▶ *If the Mira Explorer program is not running, then please skip ahead to step (2) below.*

1. Click (Close window) button in upper right corner to close Mira Explorer.

2. Move mouse cursor to lower edge of screen, to reveal Windows taskbar.
3. Click (Mira Explorer) icon.
   - ▶ **(A)** *"**Mira Explorer Login**" dialog window appears, as shown below.*



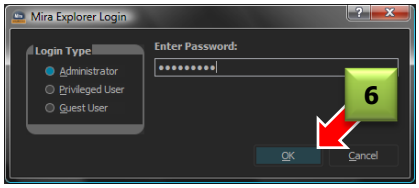
4. Click "**Administrator**" radio button:



5. In space provided, type password:

   multiflex

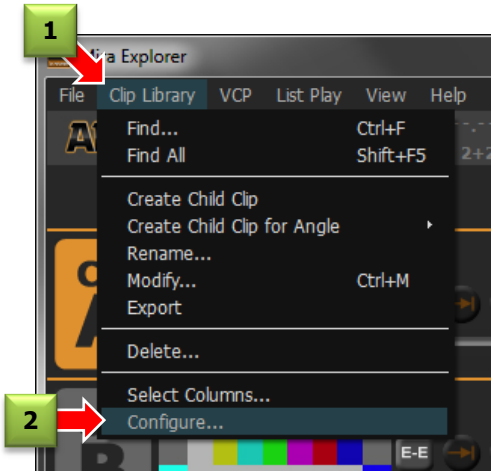
   Be sure to enter this password exactly as shown, observing upper-case and lower-case letters.
   - ▶ ***NOTE:** This password may be different if a previous administrator had already changed the password. Check with your administrator.*



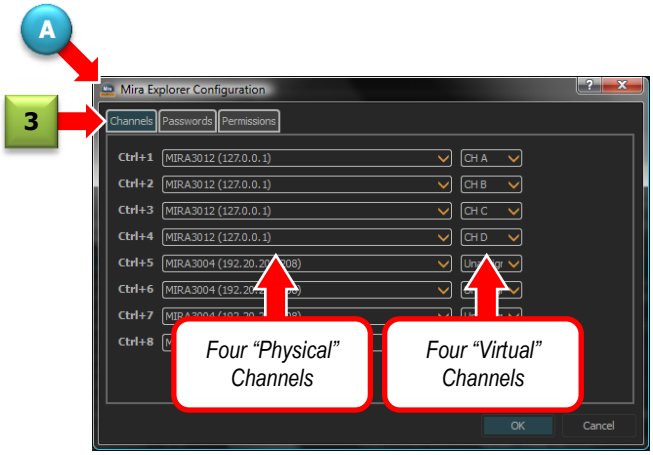
6. Click OK to finish.
   - ▶ *"**Mira Explorer**" window appears (not shown).*

Change Administrator Configurations

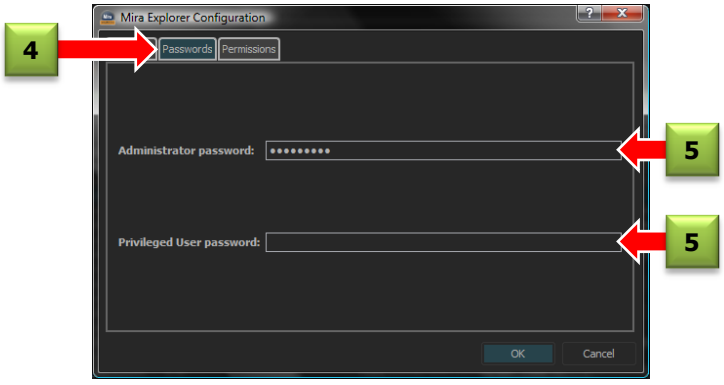
In order to change any administrator settings, you must be logged in as "Administrator" in Mira Explorer; refer to the previous procedure to properly log in as "Administrator".



1. Click "**Clip Library**" menu item;
2. Click "**Configure…**" item in pop-up menu:
   - ▶ **(A)** *"**Mira Explorer Configuration**" window appears, as shown below.*



3. With "**Channels**" tab selected, you may assign four "***Physical***" video channels within Mira Server to be assigned to four "***Virtual***" channels, by using provided pull-down items. Click and select desired items.
   - ▶ ***NOTE:** There are eight Virtual channels provided (CH.A thru CH.H), but only four are actually usable. If you assign any physical channels to virtual channels CH.E through CH.H, they will not operate within Mira Explorer!*



4. Click "**Passwords**" tab to change password for either "Administrator" or "Privileged User" access.
5. Type new password into entry field(s).
   - ▶ *Passwords may contain alphabet, numerals and special characters.*
   - ▶ *Upper-case and lower-case characters are allowed; pay close attention when entering alphabet characters…*

     *For example, "**LonGshoRe**" is interpreted as a different password from "**longshore**".*

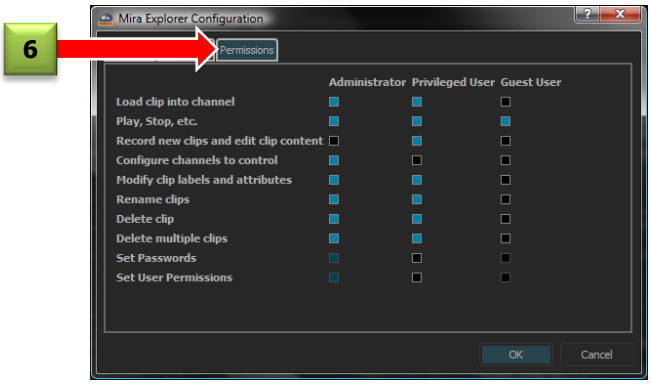
Continued on next page…

6. Click "**Permissions**" tab to change which features in Mira Explorer are available for the three different levels of login:

   "Administrator"

   "Privileged User"

   "Guest"

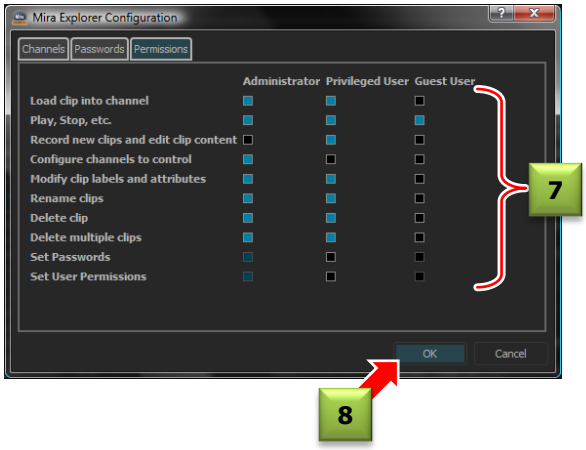


7. Click each checkbox for any feature you want to allow or deny within Mira Explorer for the given user-level login:

   Blue = Feature Allowed

   Black = Feature Denied

   ▶ *The "**Guest User**" account cannot be allowed the "**Set Passwords**" or "**Set User Permissions**" items, for reasons of security.*

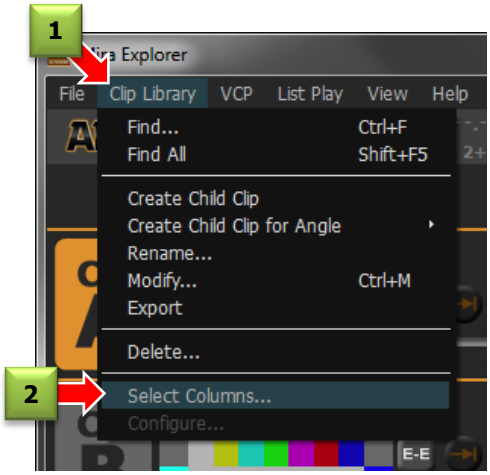


8. Click OK to finish.

Select Columns displayed in Mira Explorer

When logged in as "Administrator" or "Privileged User", the user may add or remove column headings to be displayed within the Mira Explorer program. Refer to the procedure "***Login as Administrator into Mira Explorer***" on page 110 above, to properly log in as "Administrator".

1. Click "**Clip Library**" menu item
2. Click "**Select Columns…**" item.

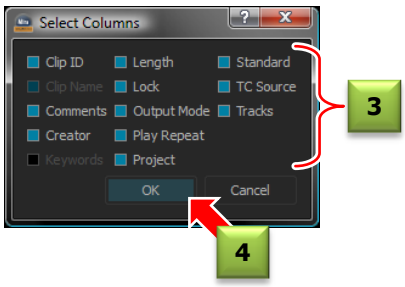


▶ *The "**Select Columns**" window appears, as shown below.*

3. Click each checkbox for any column you want to display or hide within Mira Explorer Clip Library:

   Blue = Column Displayed

   Black = Column Hidden



▶ *The "**Keywords**" checkbox cannot be selected, because Keywords cannot be displayed within the Clip Library.*

4. Click OK to finish.

Mira Explorer on Remote PC

The executable installation file for the Mira Explorer application can be run and installed on any external computer running either the Microsoft **Windows 7** or Microsoft **Windows Vista** operating system.

After installing Mira Explorer software on a Remote Windows PC, and connecting both machines to the same Ethernet network, perform the procedures to assign video channels to Mira and video channels to the Remote PC. Any number of Mira video channels can be assigned to either instance of Mira Explorer.

This section of the manual includes these procedures:

Download & Install Mira Explorer on Remote PC

Use this procedure to download and install the executable file for the Mira Explorer application on a remote WinVista or Win7 computer.

1. Download latest Mira Explorer installation file from Abekas FTP Site.

   (Download latest version from: ftp://ftp.abekas.com/Abekas_Products/Mira/Software/Release/ *)*

On Remote PC:

2. Run downloaded **Mira Setup.exe** file on your remote WinVista or Win7 computer.

   This will install Mira Explorer on your PC.

   - ***Mira Setup.exe*** *cannot be installed on Mac or older Windows O/S computers.*
   - *Follow default prompts in the Installation Wizard.*

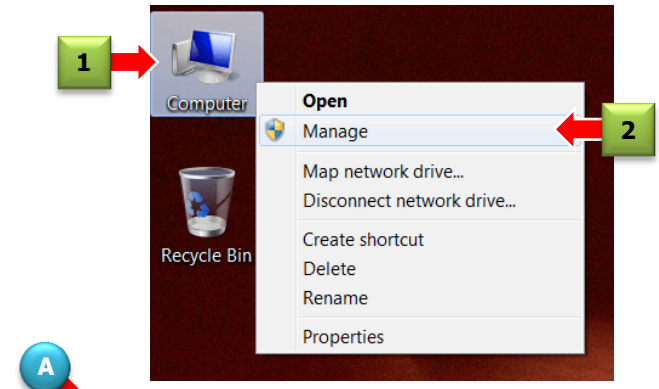
Disable Abekas Mira Services on Remote PC

After installing Mira Explorer software on a Remote Windows PC, you must disable three "Abekas" services which are automatically installed and set to automatically run at the start-up of the Remote PC.

All three of these services must be set to "**Disabled**" so as not to interfere with operations of other programs on the Remote PC.

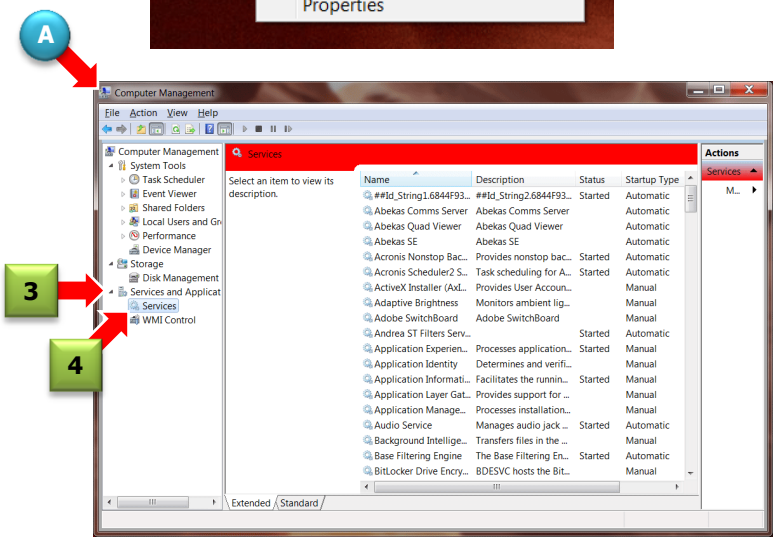
On Remote PC:

1. **RIGHT-Click** on "**Computer**" icon on desktop;
2. Click "**Manage**" item in pop-up menu that appears.
   - ▶ **(A)** *"**Computer Management**" window appears, as shown in next step, below.*
   - ▶ *Access to Computer Management may need to be granted in another pop-up window (not shown), depending on how the Remote PC is configured.*



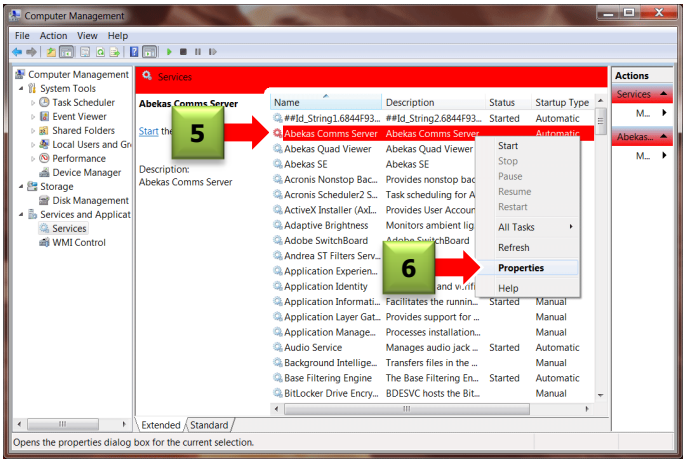
*In LEFT pane of **Computer Management** window:*

3. Expand "**Services and Applications**" item.
4. Click "**Services**" item.



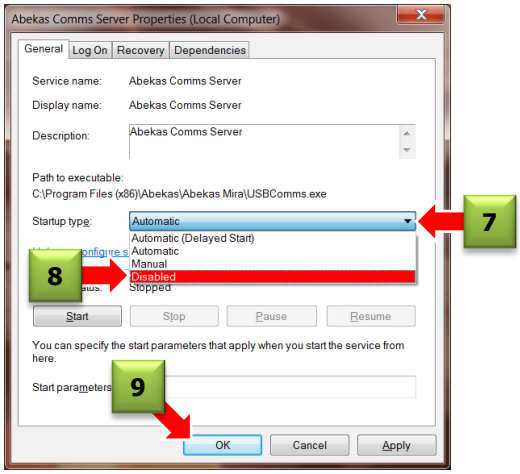
*In RIGHT pane of **Computer Management** window:*

5. **RIGHT-Click** "**Abekas Comms Server**" item.
6. Click "**Properties**" item in pop-up menu that appears.
   - ▶ *The **Abekas Comms Server Properties** window appears, as shown in the next step, below.*



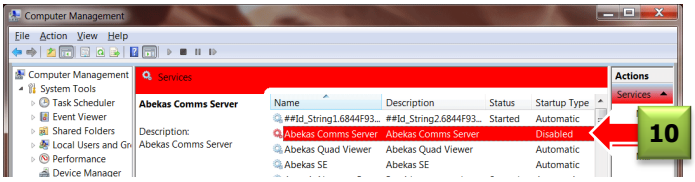
Continued on next page…

*In **Abekas Comms Server Properties** window:*



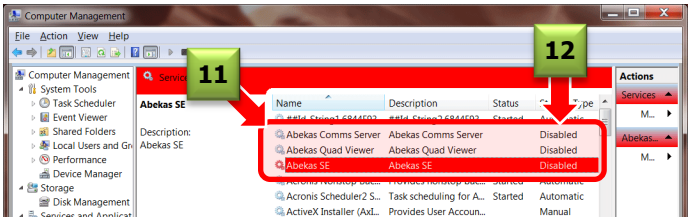
7. Click "**Startup type**" pull-down;
8. Select "**Disabled**" option;
9. Click OK to finish.

*In RIGHT pane of **Computer Management** window:*

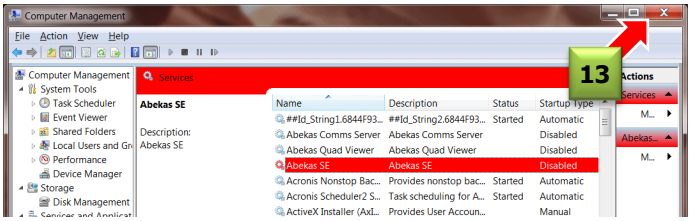


10. Verify service is now set to "**Disabled**":

*In RIGHT pane of **Computer Management** window:*



11. Repeat steps (5) through (9) above for <u>two</u> other "Abekas" services.
12. Verify all three "**Abekas**" services are set to "**Disabled**" as shown here:



13. Click (Close window) button to quit **Computer Management**.

14. <u>Restart</u> Windows for changes to take effect.

Assign Mira Video Channels to Remote PC

After installing Mira Explorer software on a Remote Windows PC and disabling the three "Abekas" services, you can now assign video channels to the remote instance of Mira Explorer.

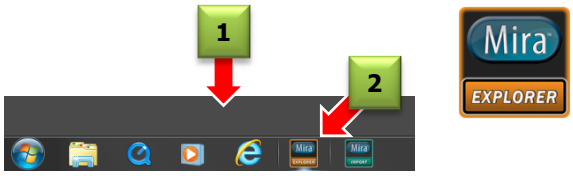
Be sure to perform the following procedures on the Mira Server first, followed by the procedure on the Remote PC.

Un-Assign Channels on Mira Server

On the Mira Server:

1. Move mouse cursor to lower edge of screen, to reveal Windows taskbar.
2. Click (Mira Explorer) icon.

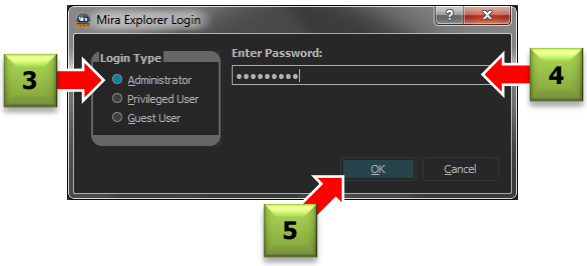
   ▶ **(A)** *"**Mira Explorer Login**" dialog window appears, as shown below.*



3. Select "**Administrator**" Login Type;
4. Enter password "**multiflex**"; observing the all-lower-case spelling.
5. Click OK to launch Mira Explorer.

   ▶ **(A)** *"**Mira Explorer**" application window appears, as shown in the next step, below.*

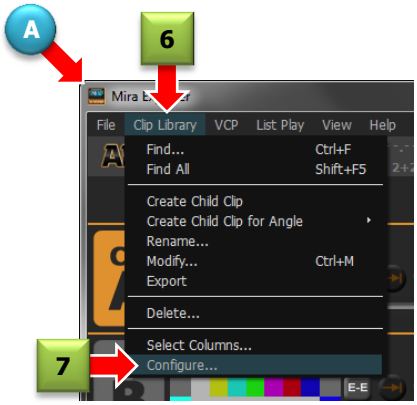
   ▶ *If your Mira server is administered by a systems administrator whom has changed the default password, you may need to obtain the new password from that person.*



*In the **Mira Explorer** window:*

6. Click "**Clip Library**" menu item;
7. Click "**Configure…**" item in drop-down list that appears;

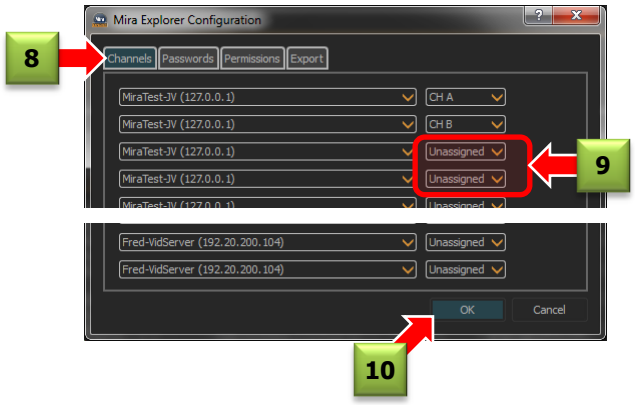
   ▶ *The **Mira Explorer Configuration** window appears, as shown in the next step, below.*



Continued on next page…

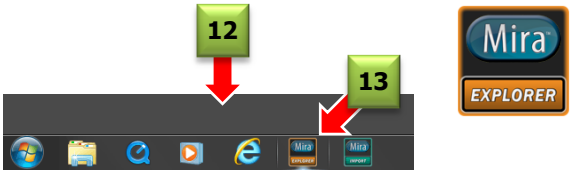
*In the **Mira Explorer Configuration** window:*

8. Click "**Channels**" tab;
9. Change "**ChC**" and "**ChD**" channels to the "**Unassigned**" setting.
   - ▶ *Keep **ChA** and **ChB** settings unchanged.*
10. Click OK to finish.
    - ▶ *The **Mira Explorer Configuration** window closes.*

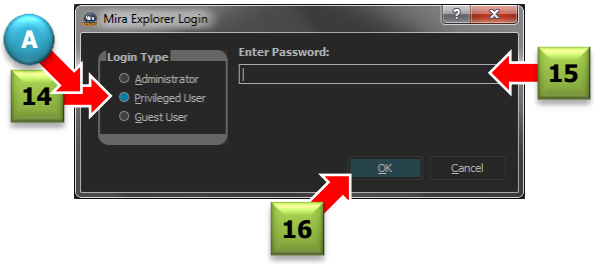


11. Click ( ) to quit **Mira Explorer**:

12. Move mouse cursor to lower edge of screen, to reveal Windows taskbar.
13. Click Mira (Mira Explorer) icon.
    - ▶ **(A)** *"**Mira Explorer Login**" dialog window appears, as shown below.*



14. Select "**Privileged User**" Login Type;
15. By default, there is no password required.
16. Click OK to launch Mira Explorer.
    - ▶ **(A)** *"**Mira Explorer**" application window appears, as shown in the next step, below.*
    - ▶ *If your Mira server is administered by a systems administrator whom has changed the default password, you may need to obtain the new password from that person.*



*In the **Mira Explorer** window:*

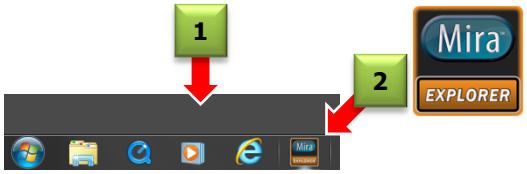
17. Verify both **ChC** and **ChD** are removed from Mira Explorer:
    - ▶ *If your Mira server has eight video channels, video channels ChE-ChH will also be in view, but not ChC and ChD.*

Assign Channels on Remote PC

NOTE: *The Remote PC running Mira Explorer and the Mira server itself must be on same Ethernet network.*

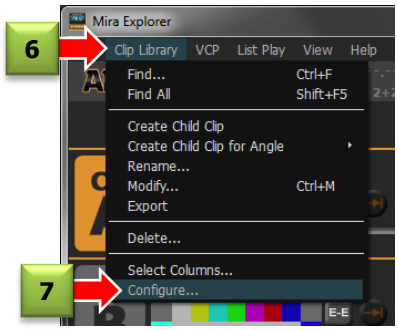
On Remote PC:

1. Move mouse cursor to lower edge of screen, to reveal Windows taskbar.
2. Click (Mira Explorer) icon.
   - ▶ **(A)** *"**Mira Explorer Login**" dialog window appears, as shown below.*
3. Select "**Administrator**" Login Type;
4. Enter password "**multiflex**"; observing the all-lower-case spelling.
5. Click OK to launch Mira Explorer.
   - ▶ **(A)** *"**Mira Explorer**" application window appears, as shown in the next step, below.*
   - ▶ *If your Mira server is administered by a systems administrator whom has changed the default password, you may need to obtain the new password from that person.*



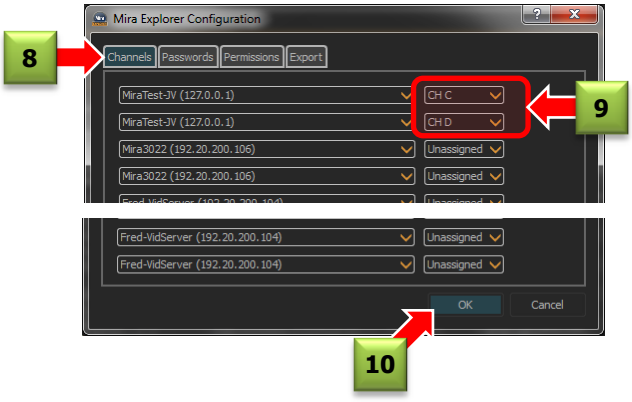
*In the **Mira Explorer** window:*

6. Click "**Clip Library**" menu item;
7. Click "**Configure…**" item in drop-down list that appears;
   - ▶ *The **Mira Explorer Configuration** window appears, as shown in the next step, below.*



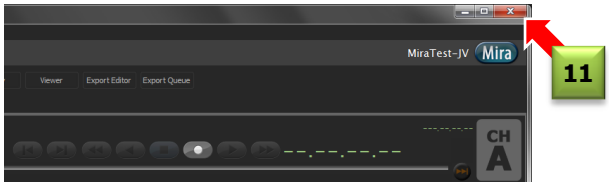
*In the **Mira Explorer Configuration** window:*

8. Click "**Channels**" tab;
9. Assign "**ChC**" and "**ChD**" channels to first two server channels.
   - ▶ *Keep **all other** settings "Unassigned".*
10. Click OK to finish.
    - ▶ *The **Mira Explorer Configuration** window closes.*



Continued on next page…

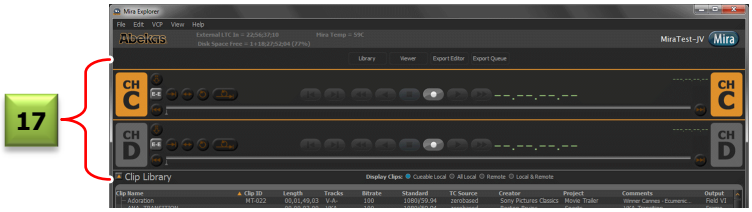
11. Click (Close window) button to quit **Mira Explorer**.



12. Move mouse cursor to lower edge of screen, to reveal Windows taskbar.
13. Click (Mira Explorer) icon.
    - ▶ **(A)** *"**Mira Explorer Login**" dialog window appears, as shown below.*
14. Select "**Privileged User**" Login Type;
15. By default, there is no password required.
16. Click to launch Mira Explorer.
    - ▶ *If your Mira server is administered by a systems administrator whom has changed the default password, you may need to obtain the new password from that person.*
    - ▶ *The **Mira Explorer** application window appears, as shown in the next step, below.*

*In the **Mira Explorer** window:*

17. Verify only **ChC** and **ChD** are present in Mira Explorer:
    - ▶ ***NOTE**: The small video windows in ChC and ChD will be absent on the Remote PC; the instance of the Mira Explorer GUI running on the Remote PC will not have live video windows in the transport controls in the "Library" view—and there will be no active video windows in the "Viewer" view.*
    - ▶ *The HD-SDI "Quad-Viewer" output from the Mira Server will have live video in all video channels (the Quad Viewer is not affected by this limitation).*
    - ▶ *You will now have two separate instances of the Mira Explorer GUI running—one on the Mira Server itself; the other on the Remote PC.*



Media File Import

The Mira Media File Import utility is used to import media files into the Mira Server. The file import utility converts all media files into the current video output format of the Mira Server. For example, if the server is set to the 1080/59.94i video format for the video output channels, then all imported media files are converted to 1080/59.94i video format—even if the media files are in a different video format; say 720/59.94p or 525/59.94i.

This section of the document is divided into several operational procedures; please find the procedure you're interested in from the list below, and then go to that page in the document.

Supported Media Files for Import

There are several media file formats and codecs supported by the Mira Media File Import utility. Some of these file formats will require third-party codecs to be purchased and installed on Mira before these files can be imported into Mira.

How to Use this Table: First determine the file type(s) you need to import (first column). Then determine the Codec(s) you need to import (second column). Read notes in the third column for that file type/codec required, and refer to the numbered descriptions on next page.

File Type	Codec	Plug-in Required * [Refer to Notes below with number in (n) for required plug-in]
.dv	(DV25) DVCPro	None needed
.dv	(DV50) DVCPro50	(2) Calibrated{Q} DV50 Decode (Windows Only)
.mov	(DV25) DVCPro	None needed
.mov	(DV50) DVCPro50	(2) Calibrated{Q} DV50 Decode (Windows Only)
.mov	(DV100) DVCProHD	(6) Calibrated{Q} QuickTime DVCProHD Play back components
.mov	Animation H.264 JPEG JPEG-2000 MPEG-4 Video NONE (No compression) PNG	None needed
.mov	Apple XDCam-HD	(3) Calibrated{Q} XD Decode (Windows Only)
.mov	Avid DNxHD	(7) Avid DNxHD (Windows Only)
.mxf	Apple XDCam-HD	(4) Calibrated{Q} XD Decode + MXF Import Bundle #1 (Windows Only)
.mxf	XDCam EX	
.mxf	HDV	
.mxf	(DV25) DVCPro	(1) Calibrated{Q} MXF Import (Windows Only)
.mxf	(DV50) DVCPro50	(1) Calibrated{Q} MXF Import (Windows Only) (2) Calibrated{Q} DV50 Decode (Windows Only)
.mxf	(DV100) DVCProHD	(5) Calibrated{Q} DV100 Decode + MXF Import Bundle #2 (Windows Only)
.mxf	(AVC100, AVC50) AVC-Intra	(8) Calibrated MXF Import + AVCI Decode Bundle (Windows Only) *Only needed on Mira Servers with JPEG-2000 or DVCPro native recording.*
.p2	(DV25) DVCPro	(1) Calibrated{Q} MXF Import for Windows *When importing a P2 file with Mira Importer, select the "**.mxf**" file in the P2 "**CONTENTS/VIDEO**" directory.*
.p2	(DV50) DVCPro50	(1) Calibrated{Q} MXF Import (Windows Only) (2) Calibrated{Q} DV50 Decode (Windows Only) *When importing a P2 file with Mira Importer, select the "**.mxf**" file in the P2 "**CONTENTS/VIDEO**" directory.*
.p2	(DV100) DVCProHD	(5) Calibrated{Q} DV100 Decode + MXF Import Bundle #2 (Windows Only) *When importing a P2 file with Mira Importer, select the "**.mxf**" file in the P2 "**CONTENTS/VIDEO**" directory.*
.mov .mxf .p2	Apple XDCam-HD XDCam EX HDV	(4) Calibrated{Q} XD Decode + MXF Import Bundle #1 (Windows Only) *When importing a P2 file with Mira Importer, select the "**.mxf**" file in the P2 "**CONTENTS/VIDEO**" directory.*
.dv .mov .mxf .p2	(DV50) DVCPro50	(5) Calibrated{Q} DV100 Decode + MXF Import Bundle #2 (Windows Only) *When importing a P2 file with Mira Importer, select the "**.mxf**" file in the P2 "**CONTENTS/VIDEO**" directory.*
Audio Files	.aif, .aiff, .aifc, .mp3, .m4a, .wav, .wave	None needed
Image Files	.bmp, .jpg, .png, .psd, .tif, .tiff	None needed

* Notes on Codecs & Plug-Ins

The **Calibrated{Q}** and **Avid** plug-Ins and/or codecs need to be installed on Mira prior to import of the file types and essences outlined in the table above, as noted (there may be a cost involved to obtain these codecs):

(1) Calibrated{Q} MXF Import for Windows
http://www.calibratedsoftware.com/MXFImport_Win.asp

This plugin from *Calibrated Software* enables Mira to read MXF files. Additional codec(s) may be required to decode the video essence within some MXF files.

(2) Calibrated{Q} DV50 Decode (Windows Only)
http://www.calibratedsoftware.com/QDV50.asp

This codec from *Calibrated Software* enables import of DVCPro50 essence within MOV or DV files.

In combination with the Calibrated{Q} MXF Import component, this DV50 codec enables import of DVCPro50 essence within MXF files [http://www.calibratedsoftware.com/MXFImport_Win.asp].

(3) Calibrated XD Decode (Windows Only)
http://www.calibratedsoftware.com/QXD.asp

This codec from *Calibrated Software* enables import of XDCam-HD essence within MOV files.

(4) Calibrated XD Decode + MXF Import Bundle #1 (Windows Only)
http://www.calibratedsoftware.com/store/WindowsBundleStore.asp (*select* "**Bundle #1**" *from list*)

This codec from *Calibrated Software* enables import of XDCam-HD essence within MXF and P2 files.

(5) Calibrated DV100 Decode + MXF Import Bundle #2 (Windows Only)
http://www.calibratedsoftware.com/store/WindowsBundleStore.asp (*select* "**Bundle #2**" *from list*)

This codec from *Calibrated Software* enables import of DV100 essence within MXF and P2 files.

(6) Calibrated QuickTime DVCProHD Playback Components
http://www.calibratedsoftware.com/QDVCProHDDownload.asp
This codec from *Calibrated Software* enables import of DVCProHD essence within MOV files.
In combination with Calibrated{Q} MXF Import component, this codec enables import of DVCProHD essence within MXF files.

(7) Avid DNxHD QuickTime Components
http://avid.custkb.com/avid/app/selfservice/search.jsp?DocId=372311 (*select* "Avid Codecs LE 2.3.2.zip - PC" *under* ***Downloads***)

This codec from *Avid* enables import of DNxHD essence within MOV files.

(8) Calibrated MXF Import + AVC-Intra Decode Bundle (Windows Only)
http://www.calibratedsoftware.com/store/item_view.asp?estore_itemid=1000023

Known Problematic Codecs

The following codecs are not compatible with Mira File Importer as of this writing:

• None

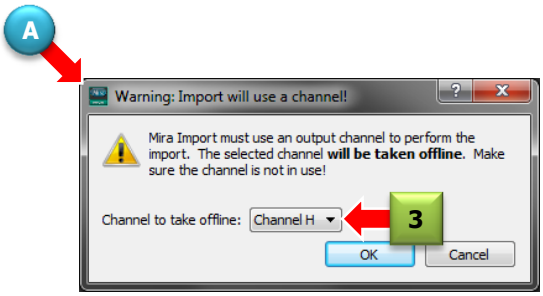
Import Media Files

Follow this procedure to import media files into your Mira Server. If the media file being imported includes both video and an "alpha" track (i.e. "RGBA" or "Millions of Colors+"), the clip created by the media file import in Mira will include video+key (and audio, if the media file also includes audio tracks).

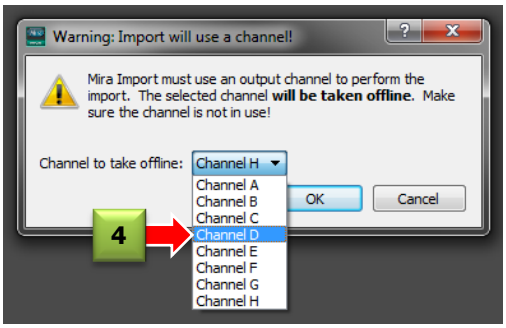
▶ ***IMPORTANT NOTE:*** *When launched and activated, the Mira Media import utility will take over control of one of the hardware for video channels. Therefore, before starting your import operation, be sure the video channel you assign for file Importing is not in use by anyone else.*

1. Move mouse cursor to lower edge of screen, to reveal Windows taskbar.
2. Click (Mira Import) icon.

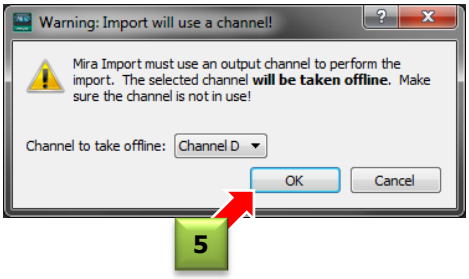
   ▶ **(A)** *"**Importer Activation**" window appears, as shown below.*



3. Click Channel pull-down.



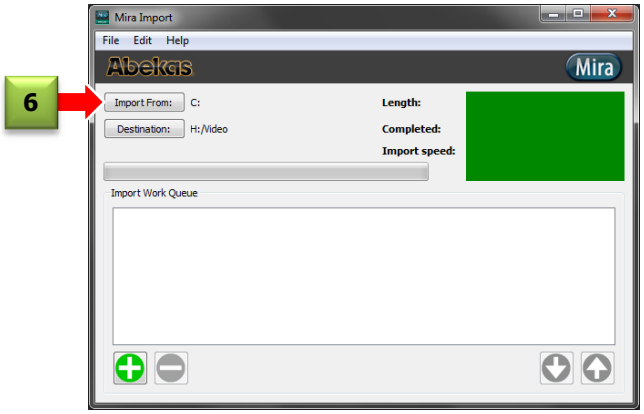
4. Select desired video channel to use for Import.



5. Click OK to launch Importer.

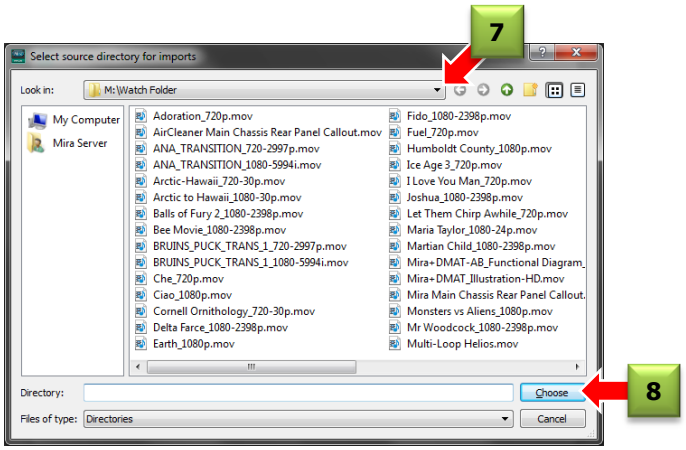
   ▶ *"**Mira File Importer**" window appears, as shown below.*

Continued on next page…



6. Click the Import From: button:

   ▶ *"**Select source directory for imports**" window appears, as shown below.*



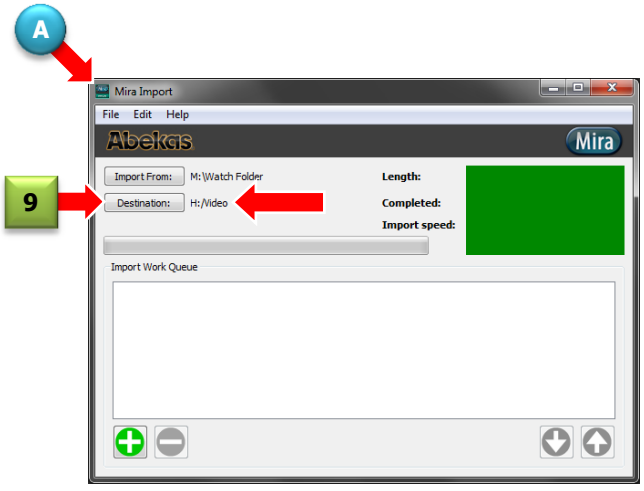
7. Navigate to directory in which MOV files are located.

   ▶ ***NOTE:** If the media files are located on a remote network directory, then you must first "map" that directory as a disk volume to the Mira Server before the Importer will get a view of that remote directory. Please refer to procedure "**Map Network Disk for Media File Import**" on page 140 below.*

8. Click Choose to finish.

   ▶ *"**Select source directory for imports**" window closes.*

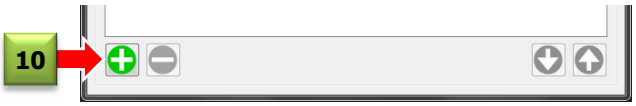
   ▶ **(A)** *"**Import From**" directory appears in the "**Mira Import**" window (to right of Import From: button), as shown below.*



9. The "**Destination**" directory should be set to the "**H:\Video**" folder;

   If it's not, then click Destination: button and select this folder.

   ▶ ***NOTE:** You may select any sub-folder below the "**Video**" folder. But do not select any folder or directory above the "Video" folder.*



10. Click (Add File) button.

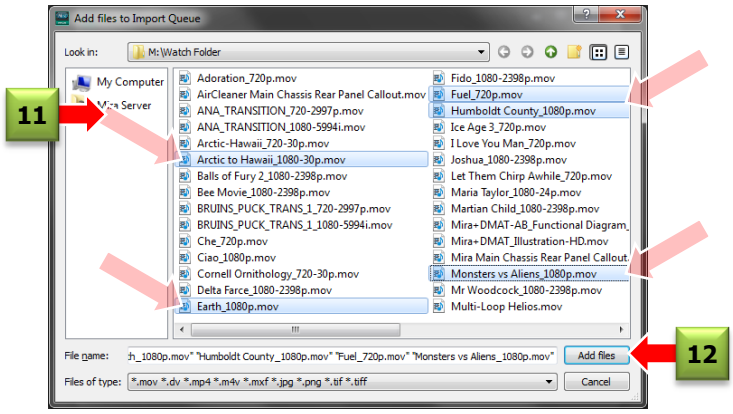
    ▶ *"**Add files to Import Queue**" dialog window appears, as shown below.*

Continued on next page…

11. Click desired file(s) you wish to add to import queue, highlighting each file.
    - ▶ *HOLD DOWN* Ctrl *while clicking on file names to select **random multiple files**.*
    - ▶ *HOLD DOWN* Shift *while clicking on file names to select a **contiguous range of files**.*

12. Click Add files button to add selected file(s) to import queue.
    - ▶ **(A)** *Selected file(s) are added to work queue, and importing immediately begins on the first file, as shown in **Figure 10** below.*

13. You may click (Add File) button at any time while file import is active, to add additional file(s) to import queue.



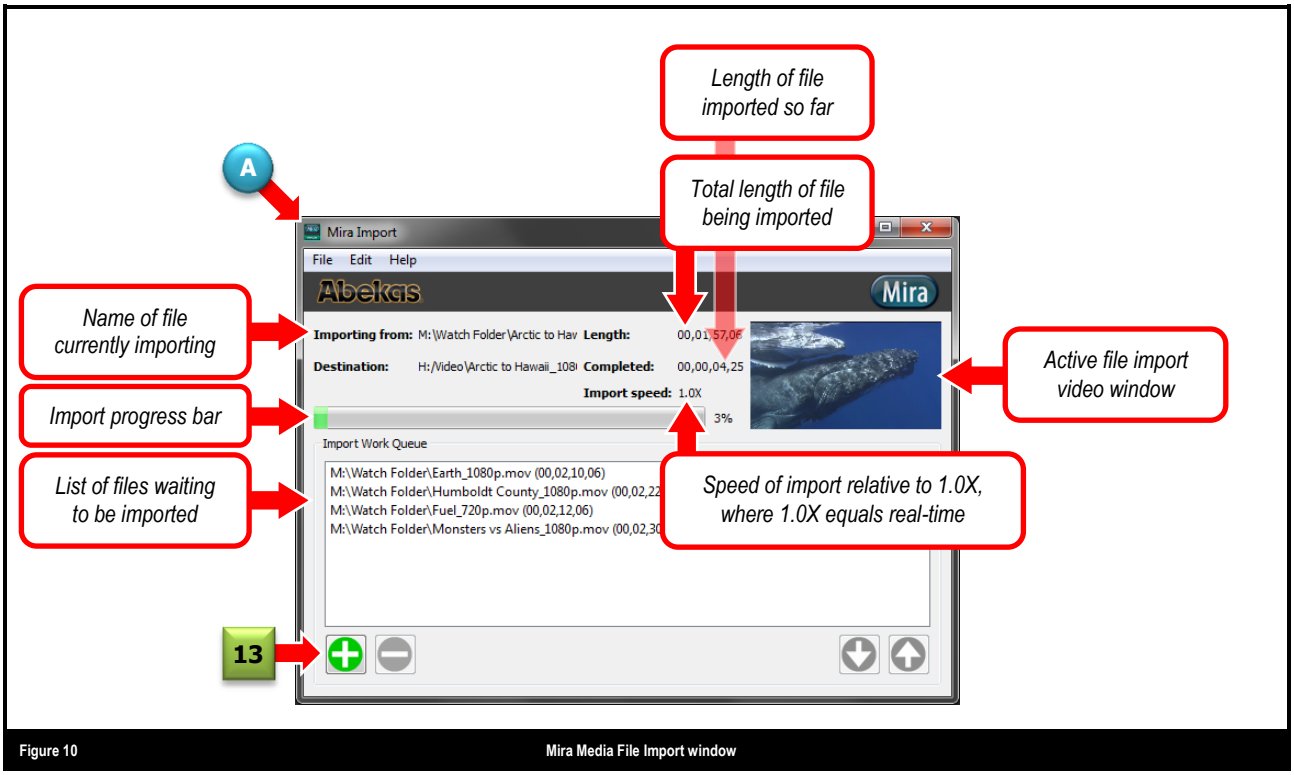
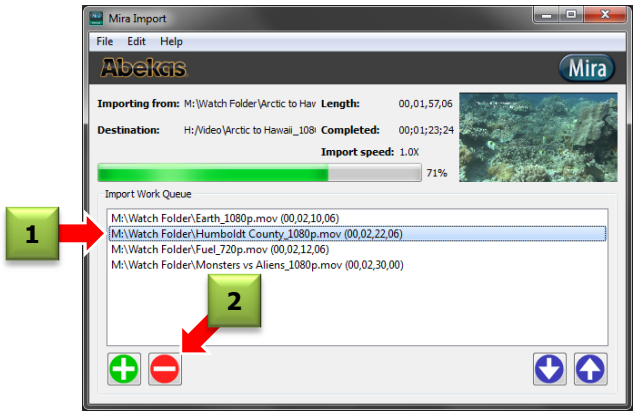


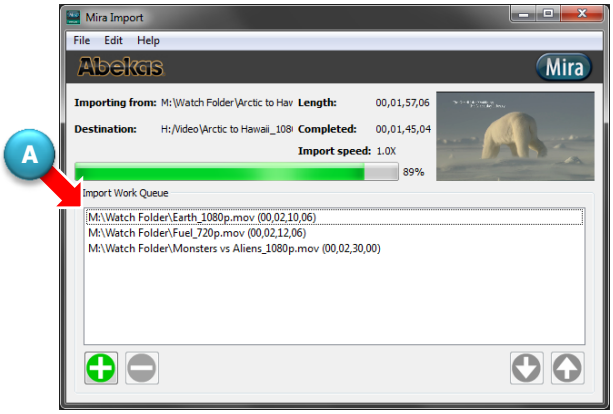
Figure 10 Mira Media File Import window

Remove files from Import Queue

While the Media File Importer is working on a list of files, you can remove one or more files from the list of files to be imported.

1. Click file(s) you wish to *remove* from queue.
   - ▶ *Notice filename is highlighted in blue, and*  *(Remove File) button becomes available.*
   - ▶ *HOLD DOWN*  *while clicking on file names to select* ***multiple files****.*
   - ▶ *HOLD DOWN*  *while clicking on file names to select a* ***range of files****.*
2. Click  (Remove File) button.
   - ▶ **(A)** *Selected file(s) are removed from import queue without interrupting importing of current file, as shown below.*





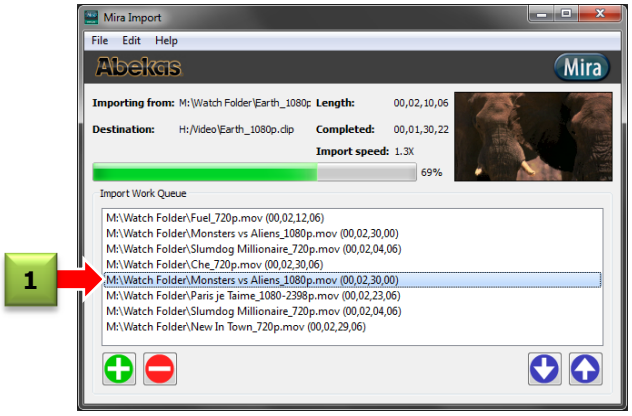
- ▶ *This file removal operation does not delete any source media file(s); it simply removes file(s) from import queue.*

Change Order of Import Queue

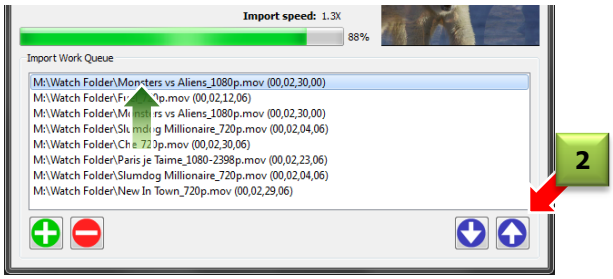
While the Mira Import application is working on a list of files, you can change the order in which the files will be imported. There are two methods for changing the order of files in the queue.

METHOD 1

1. Click file you wish to ***move*** within queue, highlighting the file.
   - ▶ *Notice filename is highlighted in blue, and (Move File) buttons become available.*
   - ▶ *HOLD DOWN* Ctrl *while clicking on file names to select **multiple files**.*
   - ▶ *HOLD DOWN* Shift *while clicking on file names to select a **range of files**.*

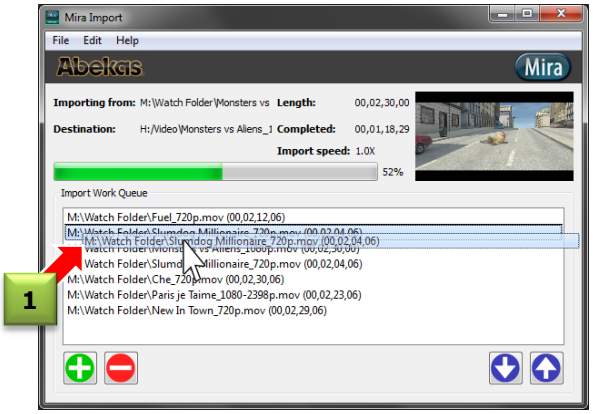


2. Click (Move File Up) button or (Move File Down) button to change position of selected file(s) within import queue.
   - ▶ *Notice highlighted file(s) are moved within queue list.*
   - ▶ *In this example, (Move File Up) button was clicked **four times**.*

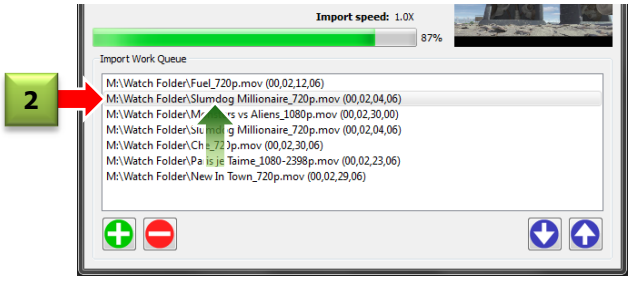


METHOD 2

1. **Click-hold-and-Drag** file you wish to ***move*** within queue.
   - ▶ *HOLD DOWN* Ctrl *while clicking on file names to select **multiple files**.*
   - ▶ *HOLD DOWN* Shift *while clicking on file names to select a **range of files**.*
   - ▶ *The black horizontal line indicates new insertion point for moved file.*



2. Release mouse button.
   - ▶ *File(s) are moved within queue list.*

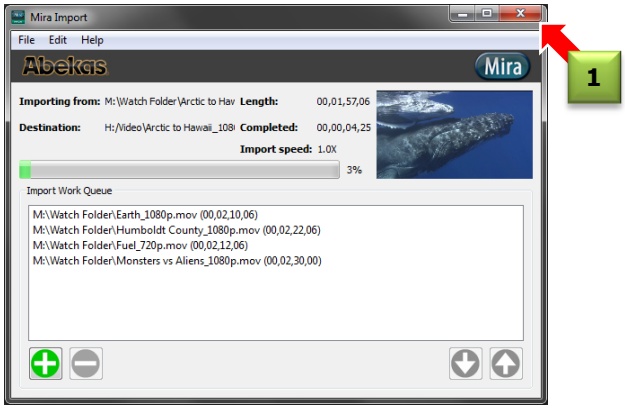


Halt & Resume Media File Import

While the Media File Importer is working on a list of files, you can completely halt the operation; and then restart it again later. When you restart the operation again, you have the option to pick up where the operation left off, or to begin a brand-new import queue.

1. Click (Close window) button to quit media file Import application.

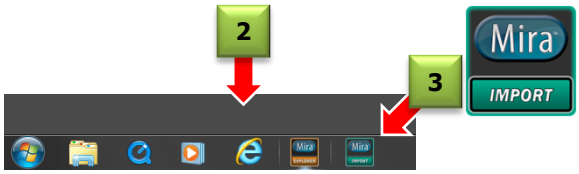
   ▶ *"**Mira Import**" window closes immediately, and Video Channel is released for Mira Explorer.*

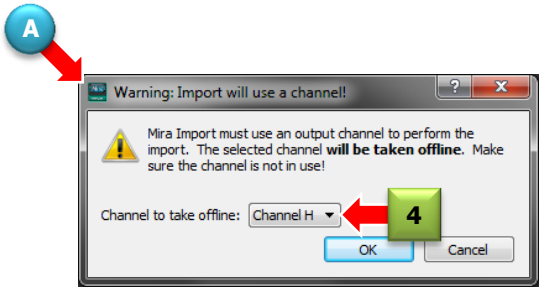


Later, when you wish to resume Media File importing…

2. Move mouse cursor to lower edge of screen, to reveal Windows taskbar.
3. Click (Mira Import) icon.

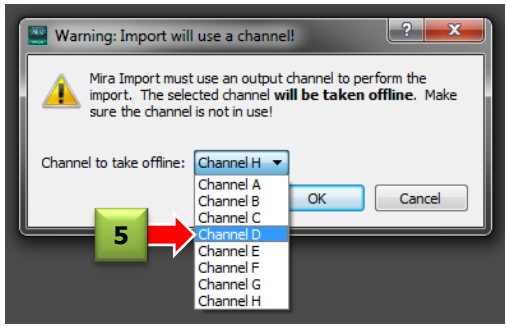
   ▶ **(A)** *"**Importer Warning**" window appears, as shown below.*





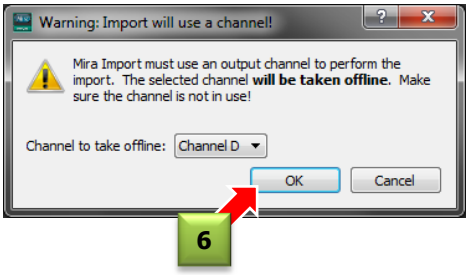
4. Click Channel pull-down.

5. Select desired video channel to use for Import.



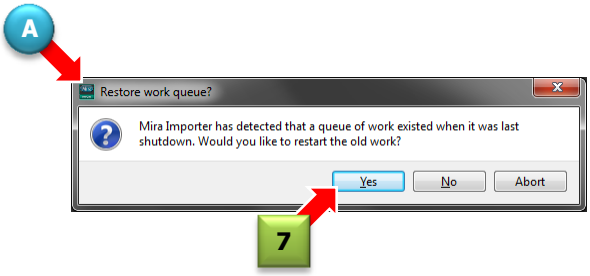
Continued on next page…

6. Click OK to launch Importer.

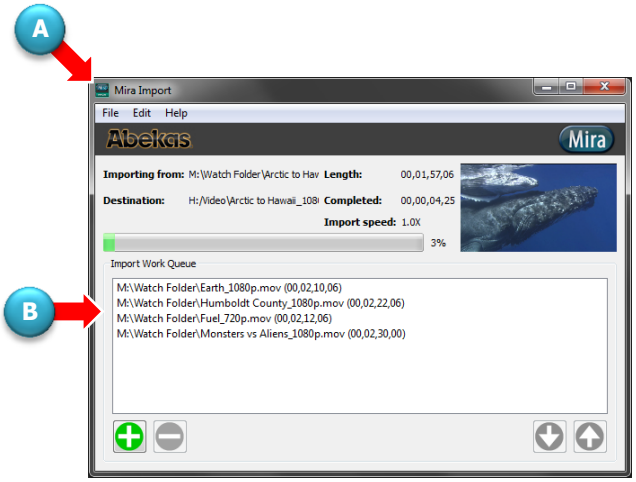


▶ **(A)** *"**Restore work queue?**" window appears, as shown below, since you had earlier closed the Media File Import application while it was working on an import queue.*

7. Click Yes to restore former work queue, and to launch Media File Importer.



▶ **(A)** *"**Mira Import**" window appears, as shown below.*



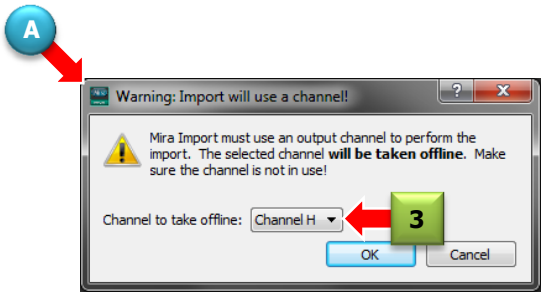
▶ **(B)** *The original list of import files is restored, and the file that was being actively imported when the Import application was halted is imported again, from its beginning.*

Multi-Screen Import

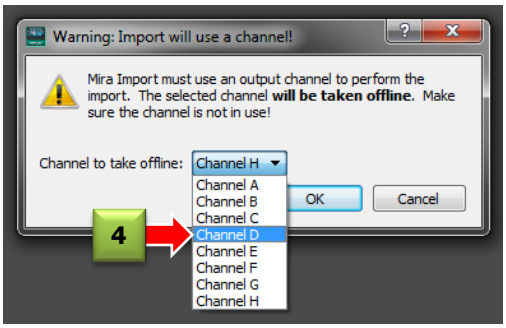
Mira Import client now provides users with the ability to import graphics of non-standard resolutions for JPG2000 and AVC-Intra servers only. For example, if an editor builds a looping animation that is meant to play seamlessly across **three** horizontally-mounted HD monitors, then the editor would build an animation or graphic that is **3 times wider** than a normal HD animation (5,760 X 1080). Mira's Multi-Screen import capabilities allow for such graphics to be imported into the Mira Clip Library and handled as one file containing video, audio, and key tracks (if clip to be imported includes an "alpha" track, i.e. "RGBA" or "Millions of Colors+"). To import a multi-screen clip:

1. Move mouse cursor to lower edge of screen, to reveal Windows taskbar.
2. Click (Mira Import) icon.

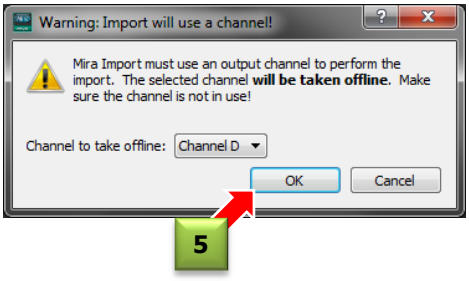
   ▶ **(A)** *"**Importer Activation**" window appears, as shown below.*



3. Click Channel pull-down.



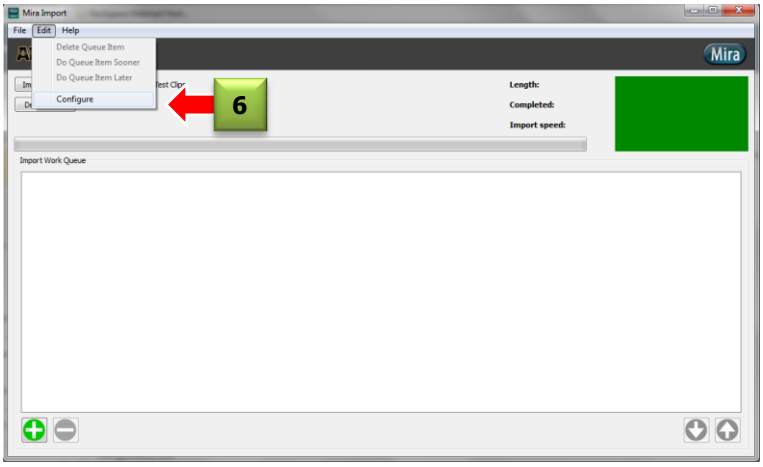
4. Select desired video channel to use for Import.



5. Click OK to launch Importer.

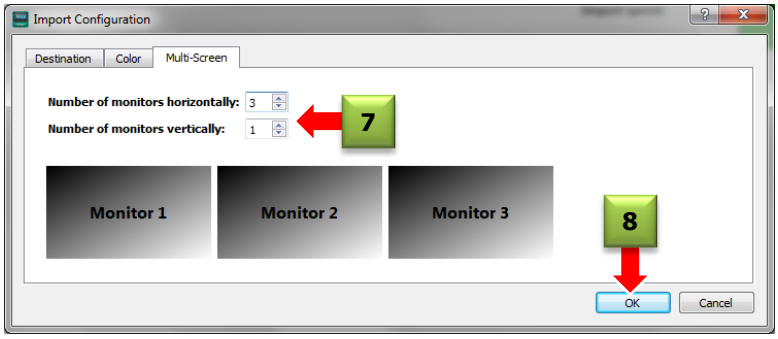
   ▶ *"**Mira File Importer**" window appears, as shown below.*

Continued on next page…



6. Click "Edit," then select "Configure."

▶ ***"Import Configuration"*** *screen appears, as shown below.*

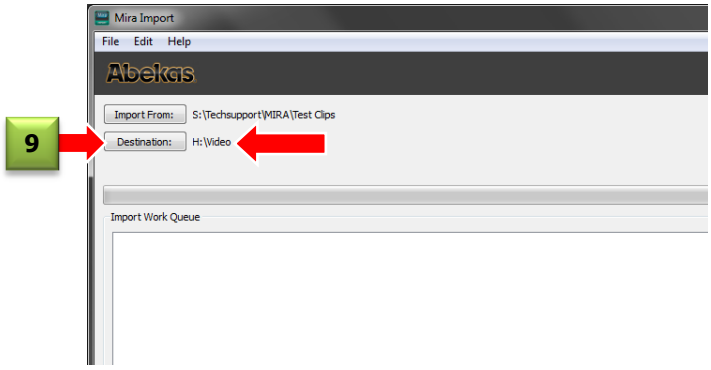


7. Configure the number of horizontal and vertical "monitors" that are to be filled by the imported file.

▶ *Example: For a **3X wide** animation that measures 5,760x1080 pixels, select 3 horizontal monitors and 1 vertical monitor, shown to the right.*

8. Click OK

▶ *This configuration will be applied to any future multi-screen imports. To import a file of a different size, repeat steps **6 and 7.***

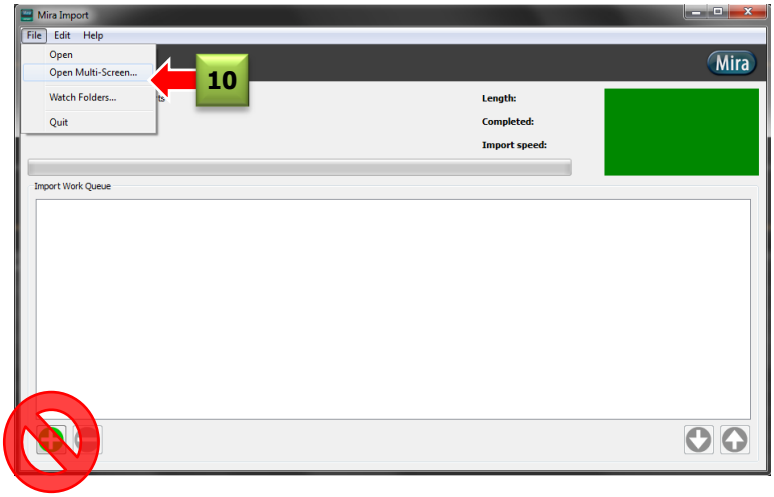


9. The "**Destination**" directory should be set to the "**H:\Video**" folder;

   If it's not, then click Destination: button and select this folder.

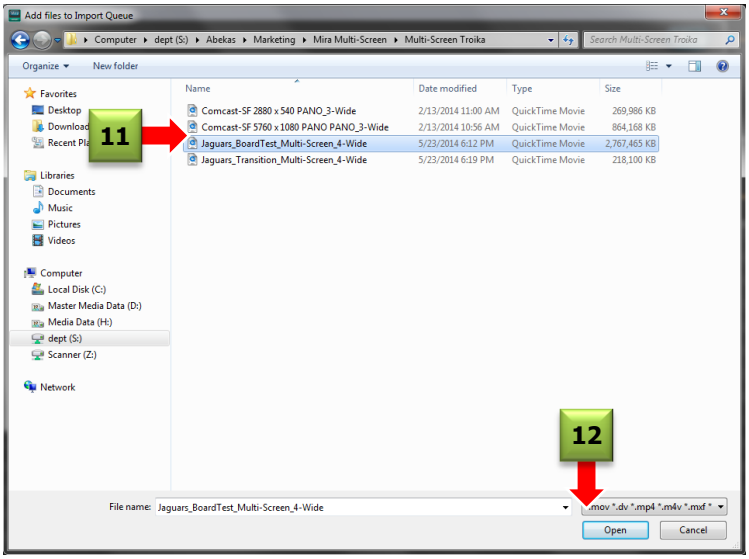
▶ ***NOTE:*** *You may select any sub-folder below the "**Video**" folder. But do not select any folder or directory above the "Video" folder.*

Continued on next page…



10. Click **"File"** then **"Open Multi-Screen…"**

- ▶ ***"Add Files To Import Queue"*** *window opens, shown in next step.*
- ▶ ***DO NOT*** *click the green + button at the bottom of the screen. That button is only used for importing single-screen files.*



11. Click desired file(s) you wish to add to import queue, highlighting each file.

- ▶ *HOLD DOWN* Ctrl *while clicking on file names to select* ***random multiple files***.
- ▶ *HOLD DOWN* Shift *while clicking on file names to select a* ***contiguous range of files***.

12. Click **"Open"** button to add selected file(s) to import queue.

- ▶ *Selected file(s) are added to work queue, and importing immediately begins on the first file, as shown in* ***Figure 10*** *above.*

Important Note: In order to play a multi-screen video clip, the proper ISO channel configuration is required. Refer to section ◘ Engineering Setup — Channels for more information on how to configure ISO channels to play a multi-screen video clip.

Important Note: In order to play a multi-screen video clip with its associated key track, a Multi-Screen VK channel configuration is required. Refer to section Multi-Screen Video+Key Channel Modes for more information on how to configure Multi-Screen VK channels to play a multi-screen video clip with a key track.

Import Watch Folders

You can program one or more "watch folders" in the Mira Media File Import utility, which will automatically import any valid media file that is later dropped into the watch folder(s). In order for the watch folder operation to take place, the Mira Media File Import utiltity must be running, and the "Watch Folders" function enabled.

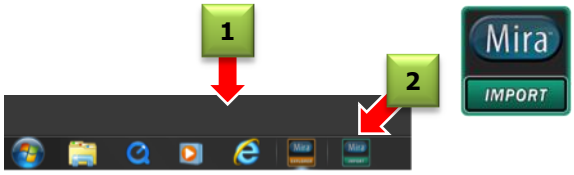
After the watch folders are programmed, you may enable or disable the "watch" function.

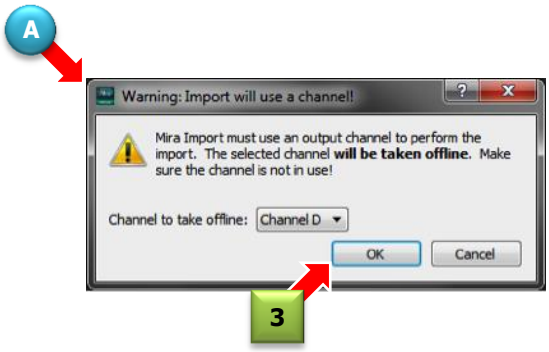
NOTE: *Physical media file(s) in the Watch Folder are* ***not*** *deleted after they are imported using the Watch Folder function.*

Add Watch Folder(s) & Enable Watch Folder Function

1. Move mouse cursor to lower edge of screen, to reveal Windows taskbar.
2. Click (Mira Import) icon.

   ▶ **(A)** *"**Import Warning**" window appears, as shown in next step.*





3. Click OK to launch Importer.

   ▶ *Select channel to be taken offline.*

   ▶ *"**Mira Import**" window appears, as shown in next step.*

4. Click "**File**" menu.

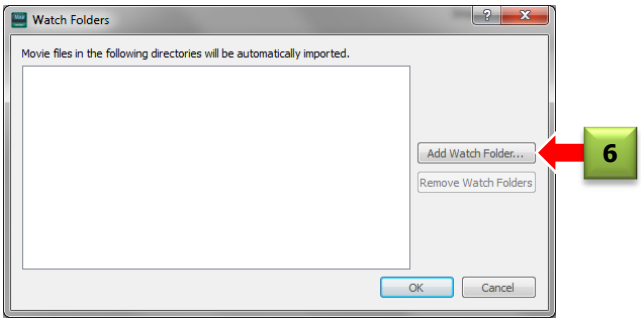
   ▶ *The File menu list appears.*

5. Click "**Watch Folders…**" item.

   ▶ *"**Watch Folder**" window appears, as shown in next step.*

6. Click Add Watch Folder... button.

   ▶ *"**Select Watch Directory**" window appears, as shown in next step.*



Continued on next page…

7. Click local or network location where your watch folder is located.

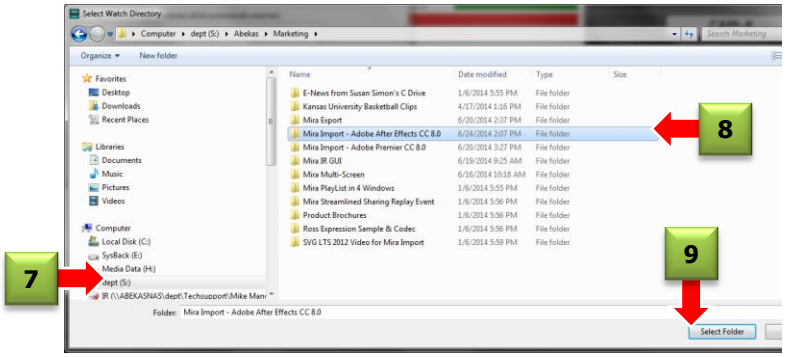
   ▶ ***NOTE:*** *You may need to obtain a password from your in-house network systems administrator in order to log into remote computers on network.*

8. Click to highlight the desired watch folder.

9. Click Select Folder button.

   ▶ "***Select Watch Folder***" *window closes.*

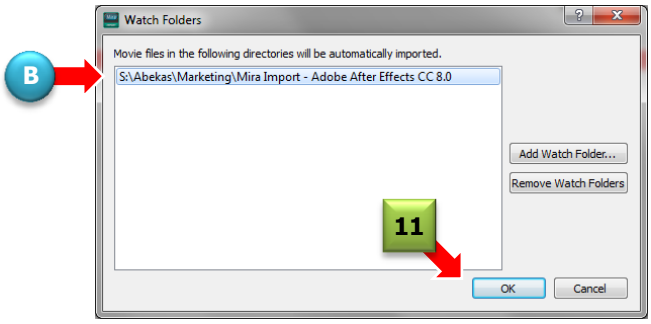
   ▶ **(B)** *The selected watch folder is listed.*



10. Repeat steps (**6**) through (**9**) above for any additional watch folders you'd like to add.

11. Click OK to finish.

    ▶ "***Watch Folder***" *window closes.*



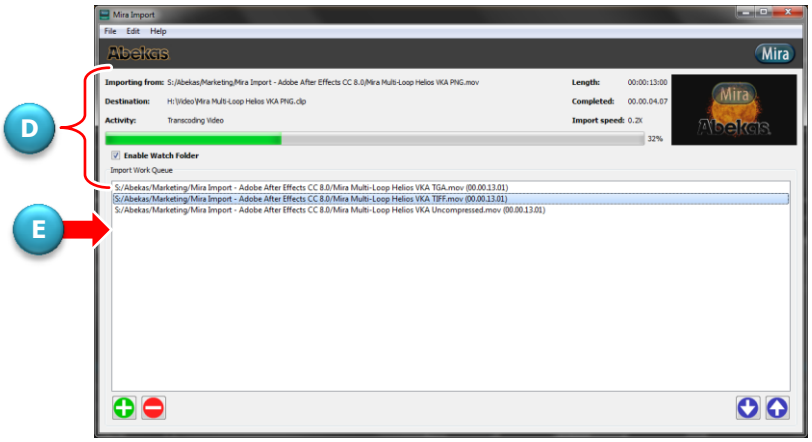
   ▶ **(C)** "***Enable Watch Folder***" *checkbox is now present in the Mira Import window.*

12. Click ☑ Enable Watch Folder checkbox.

    ▶ *With this checkbox CHECKED, the "**Watch Folder**" function is **ACTIVE**.*

Continued on next page…

13. Drop media files into the watch folder that was selected in step [8] above (**not shown**).



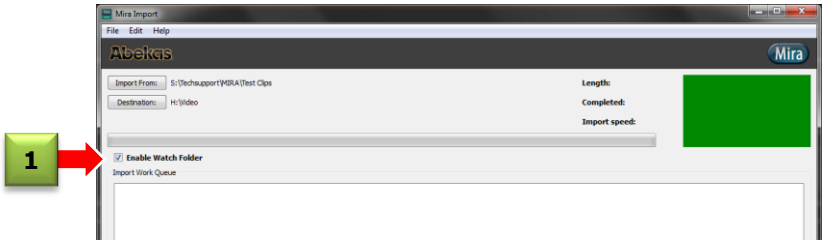
- ▶ **(D)** *The first media file dropped into the watch folder is currently importing.*
- ▶ **(E)** *Additional items dropped into the watch folder are listed in the import queue.*
- ▶ **NOTE:** Physical media file(s) in the Watch Folder are **not** deleted after they are imported.

Disable Watch Folder Function

After a given Watch Folders operation is finished, you can simply disable the Watch Folder function—without eliminating the programmed watch folders. This allows you to use the same Watch Folder(s) again at a later time.

1. Click ☑ **Enable Watch Folder** checkbox.

   ▶ *With this checkbox is UNCHECKED, the "**Watch Folder**" function is **INACTIVE**.*



   ▶ **(A)** *"**Enable Watch Folder**" checkbox is now disabled in the Mira Import window.*

   ▶ The Watch Folder function is now disabled.

2. Click ✕ button to quit Importer.

   ▶ *"**Mira Import**" window closes.*

   ▶ *Offline import channel transport in Mira Explorer returns to previous operation.*

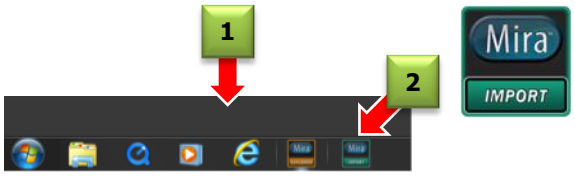
Remove Watch Folders

Use this procedure to remove one or more Watch Folder(s) from the list of programmed watch folders.

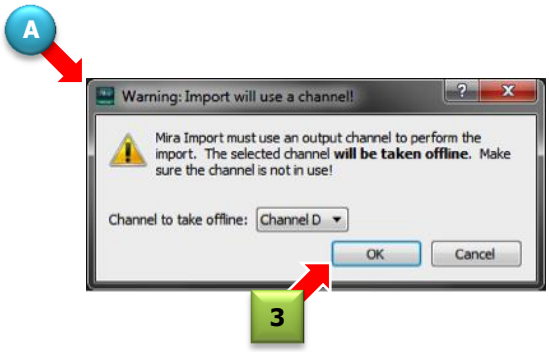
***NOTE:** This procedure will **not** delete any physical media file(s) from the Watch Folder(s) being removed from the list of watch folders.*

*If the **Mira Import** window is already opened, then please skip ahead to step (**4**) below.*

1. Move mouse cursor to lower edge of screen, to reveal Windows taskbar.
2. Click (Mira Import) icon.



   ▶ **(A)** *"**Import Warning**" window appears, as shown in next step.*



3. Click OK to launch Importer.

   ▶ *Select import channel to be taken offline.*

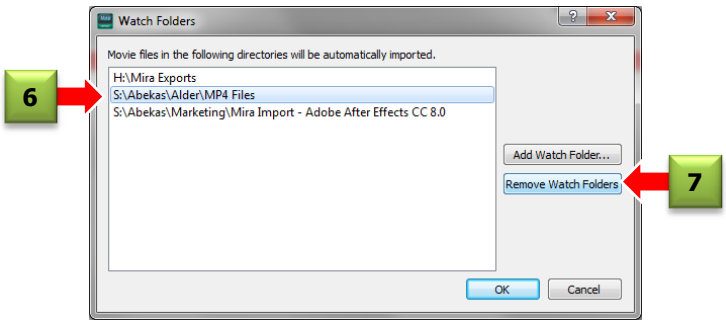
   ▶ *"**Mira Import**" window appears, as shown in next step.*

4. Click "**File**" menu.

   ▶ *The File menu list appears.*

5. Click "**Watch Folders…**" item.

   ▶ *"**Watch Folder**" window appears, as shown in next step.*



6. Click to highlight the watch folder you want to remove from the list.

   ▶ *You may highlight only ONE folder at a time!*

7. Click Remove Watch Folders button.

   ▶ **(A)** *The highlighted folder is removed from the list, as shown in next step.*

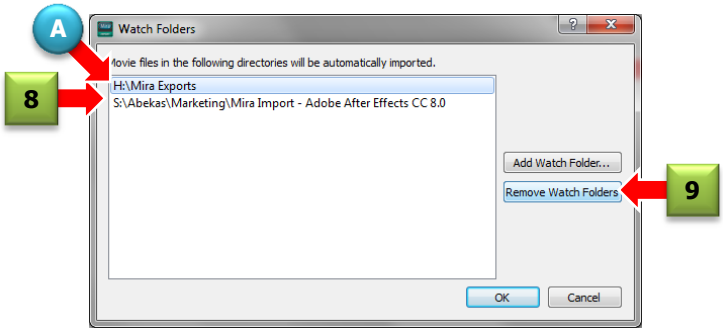
Continued on next page…

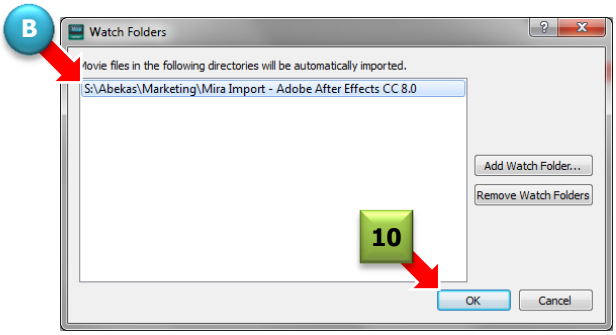
8. Click to highlight any additional watch folder you want to remove from the list.

   ▶ *You may highlight only ONE folder at a time!*

9. Click Remove Watch Folders button.

   ▶ **(B)** *The highlighted folder is removed from the list, as shown in next step.*





10. Click OK to finish.

    ▶ *The "**Watch Folders**" window closes.*

Map Network Disk for Media File Import

Normally, the Mira Media File Importer does not have access to remote network directories until those remote directories are "mapped" as a local disk drive. This procedure maps a remote network directory to the local Mira Server, so Mira Media File Import utility can access it.

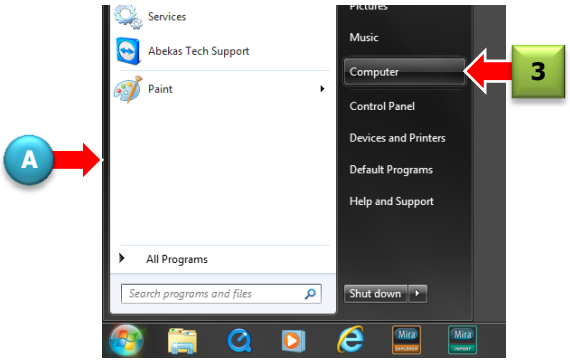
▶ ***NOTE:*** *You may need to obtain an access password from your in-house network system administrator in order to map the remote directory.*

1. Move mouse pointer to lower edge of screen, to reveal Windows taskbar.
2. Click (Windows START) icon.

   ▶ **(A)** *"**Windows Start**" menu appears, as shown below.*

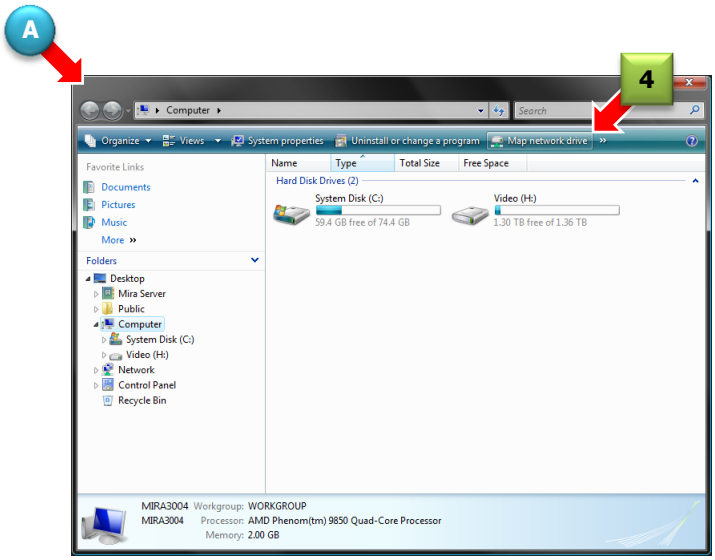
3. Click "**Computer**" item:

   ▶ **(A)** *"**Windows Explorer**" window opens, as shown below.*



4. Click Map network drive, as shown.

   ▶ *"**Map Network Drive**" window opens, as shown below.*

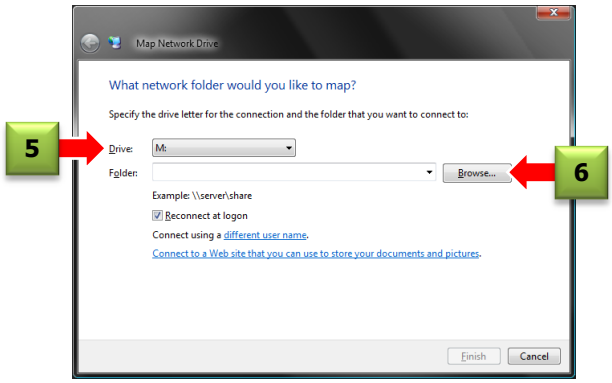


Continued on next page…

5. Click "**Drive**" pull-down, and select drive letter you would like to assign to the mapped network drive.

6. Click Browse... ...

   ▶ **(A)** *"**Browse For Folder**" window opens, as shown below.*



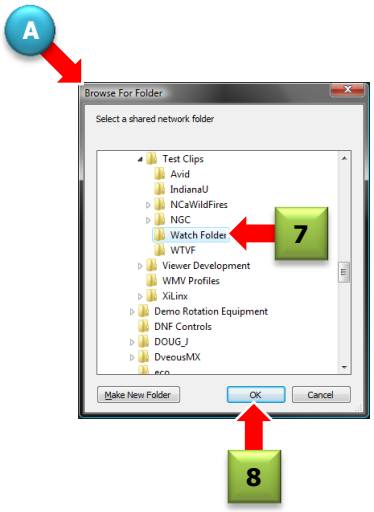
7. Navigate to remote drive folder you wish to map to local Mira Server.

   ▶ *In the example here, the remote directory named "**Watch Folder**" is selected.*

   ▶ ***NOTE:** You may need to obtain an access password from your in-house network system administrator in order to map the remote directory.*

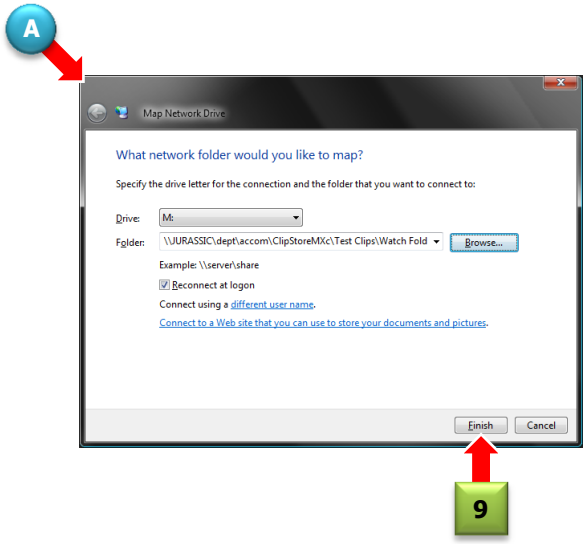
8. Click OK to select folder.

   ▶ **(A)** *"**Browse For Folder**" window closes, and you're returned to the "**Map Network Drive**" window, as shown below.*



9. Click Finish to finish.

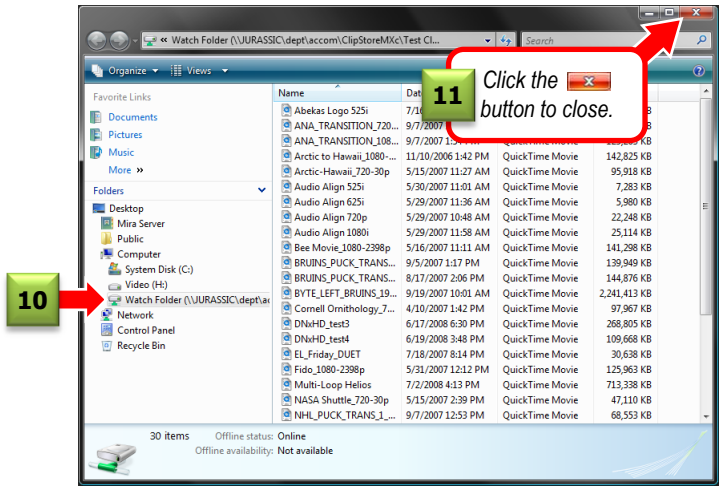
   ▶ *"**Map Network Drive**" window closes, and you're returned to "**Windows Explorer**" window, as shown below.*



Continued on next page...

10. Verify networked drive is now listed in LEFT pane of Windows Explorer:

11. Click (Close window) button to quit Windows Explorer.



Media File Export

The Mira Media File Export utility is used to export clips stored in the Mira Server into media files that can be used with professional video equipment outside of the Mira Server. The file export utility converts stored Mira clips into media files having the same video format. For example, if the Mira server has recorded and stored clips in the 1080/59.94i video format, then clips exported from Mira using the Export utility are will be in the 1080/59.94i video format.

This section of the document is divided into several operational procedures; please find the procedure you're interested in from the list below, and then go to that page in the document.

Supported Media Files for Export

Several media file formats and codecs are supported by the Mira Media File Export utility.

The list of "**HD Video Formats**" in the table list the file codecs and wrappers supported when exporting High-Definition clips from the Mira server. The list of "**SD Video Formats**" in the table list the file codecs and wrappers supported when exporting Standard-Definition clips from the Mira server.

HD Video Formats		
File Type	**Codec**	**Comments**
MOV	XDCam HD422	Sony XDCam in QuickTime MOV wrapper
	DNxHD 145Mb/s	Avid DNxHD in QuickTime MOV wrapper
	DNxHD 220Mb/s	Avid DNxHD in QuickTime MOV wrapper
	DV100	Panasonic DV100 in QuickTime MOV wrapper
MXF	XDCam HD422	Sony XDCam in MXF wrapper
	DV100	Panasonic DV100 in MXF wrapper
AVI	MSMP4	Microsoft MPEG-4 in Windows AVI wrapper
WMV	MSMP4	Microsoft MPEG-4 in Windows Media Video (WMV) wrapper
	WMV2	Microsoft MPEG-2 in Windows Media Video (WMV) wrapper
P2	DV100	Panasonic DV100 in Panasonic P2 wrapper
clip	Server native	Copy of Mira native clip

SD Video Formats		
File Type	**Codec**	**Comments**
MOV	DV25	Panasonic DV25 in QuickTime MOV wrapper
	DV50	Panasonic DV50 in QuickTime MOV wrapper
	D10 IMX 30Mb/s	Sony IMX in QuickTime MOV wrapper
	D10 IMX 40Mb/s	Sony IMX in QuickTime MOV wrapper
	D10 IMX 50Mb/s	Sony IMX in QuickTime MOV wrapper
MXF	DV25	Panasonic DV25 in MXF wrapper
	DV50	Panasonic DV50 in MXF wrapper
	D10 IMX 30Mb/s	Sony IMX in MXF wrapper
	D10 IMX 40Mb/s	Sony IMX in MXF wrapper
	D10 IMX 50Mb/s	Sony IMX in MXF wrapper
P2	DV25	Panasonic DV25 in Panasonic P2 wrapper
	DV50	Panasonic DV50 in Panasonic P2 wrapper
DV	DV25	Panasonic DV25 in Panasonic DV wrapper
	DV50	Panasonic DV50 in Panasonic DV wrapper

Export Clips into Media Files

There are three possible ways to export clips stored on the Mira Server: (a) Export Whole Clips—which exports the contents of the entire clip; (b) Export Segments from within Clips—which exports one or more segments from within each clip; and (c) Export Segments from within ISO Clips—which exports one or more segments from a multi-angle ISO clip.

Choose the Export procedure you're interested in from the list below.

Prepare Target Volume for Export

When exporting clips from Mira, media files are created which must be written to a computer storage device; either across a local area network (LAN) via Gigabit Ethernet, or to a portable memory device or hard drive plugged into one of the USB 2.0 or eSATA ports on Mira.

W A R N I N G !

Do NOT export media files to the system "C:" volume or media "H:" volume inside Mira!

These two volumes are reserved for the Windows operating system and record/play of real-time media clips, respectively.

Exporting to either of these drive volumes will cause interruption to the server system, and/or cause video stuttering and corruption of real-time video recording and playback within the Mira server!

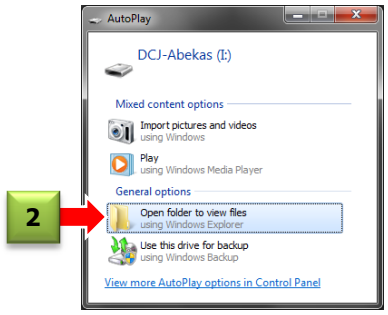
The following procedure outlines the steps necessary to plug in a portable hard drive on one of the USB 2.0 ports in Mira, and to create a target directory (or folder) on the portable device.

1. Plug portable hard drive into an available USB 2.0 or eSATA port on Mira chassis;

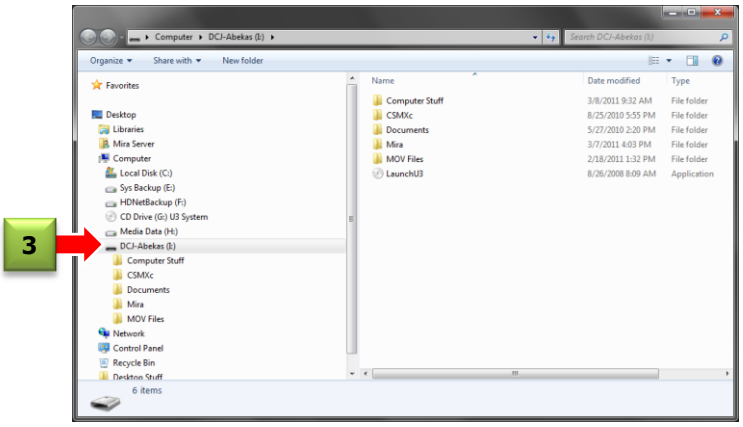
   ▶ *The **AutoPlay** window appears in a few seconds.*

2. Click "**Open folder to view files**" item in AutoPlay window.

   ▶ *"**Windows Explorer**" window appears, as shown in next step below.*



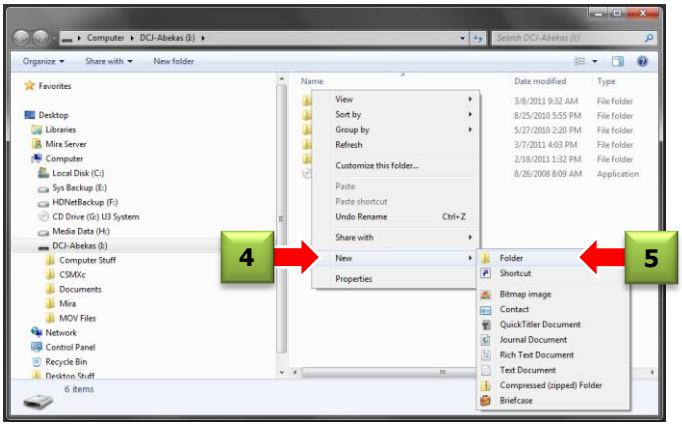
3. Navigate to location on portable device where you want to create "Export Folder":



Continued on next page…

4. In RIGHT pane of the window:

   Right-Click and select "**New**" item from pop-up menu;

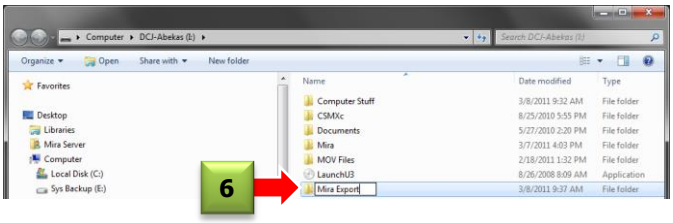


5. Click "**Folder**" item in list.

   ▶ *The **New Folder** directory is created, as shown in next step below.*

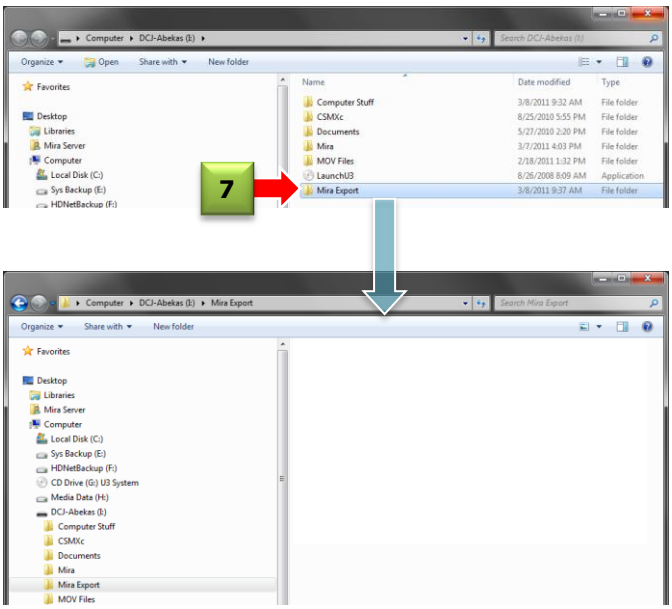
6. Type new name of folder, then Enter.

   ▶ *The **New Folder** directory is named.*



7. Press Enter again to open folder.

   ▶ *Leave this window open in the background; it will be accessed again after the export is finished.*



Export Whole Clips

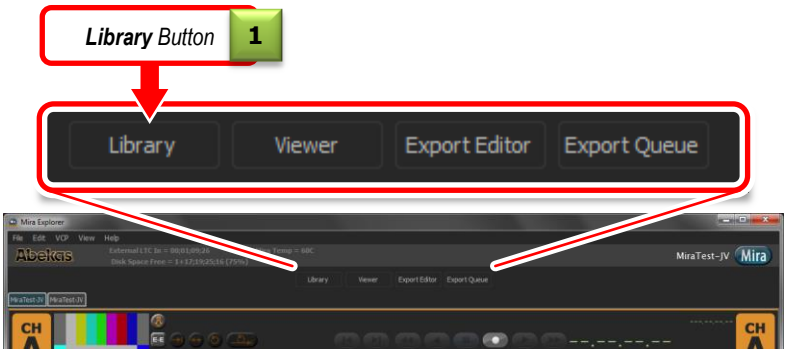
Use this procedure to export content from an entire clip (or group of clips), from beginning to end.

Select Clips for Export

This procedure takes place in Mira Explorer. You will select the clips for export, move them into the Export Editor, select the export file format, and then move the clips into the Export Queue for final export.

▶ *Perform the procedure "**Preparing Target Volume for Export**" starting on page 145 above, before performing the following procedure.*

1. Click Library near top center of Mira Explorer to display **Clip Library**.



2. Click to highlight clip(s) you want to export;

   ***Hint:** Press & hold Ctrl then click mouse on clip names to select multiple clips.*

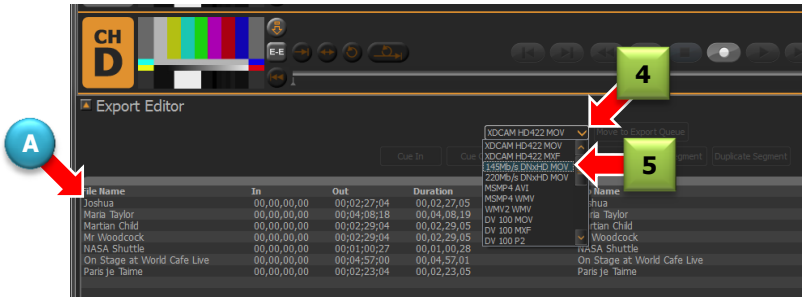
3. On last clip highlighted:

   Right-Click on clip name and select "**Export**" item from pop-up list.

   ▶ **(A)** *The **Export Editor** is populated with selected clips, as shown in next step below.*

4. Click **File Format** pull-down;

5. Click desired file export format.

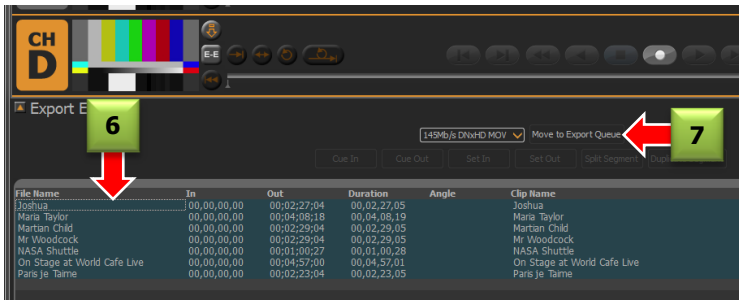


Continued on next page…

6. **Click-and-drag** mouse over all clip file names to highlight them all.

7. Click Move to Export Queue to move items to export queue.

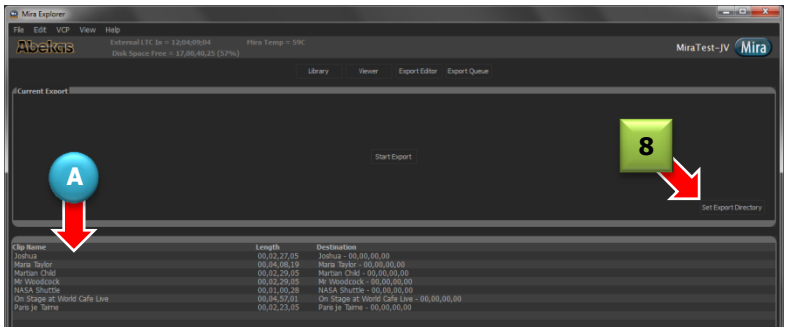
   ▶ **(A)** *The **Export Queue** is populated with selected clips, as shown in next step below.*



▶ *If the **Export Directory** has been defined from a previous Export operation, you can skip ahead to step (15) below.*

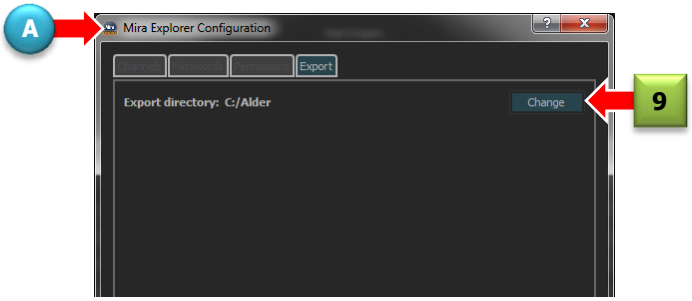
8. Click Set Export Directory to set export directory.

   ▶ **(A)** *The **Mira Explorer Configuration** window appears, as shown in next step below.*



9. Click Change to specify new directory.

   ▶ *The **Select Export Directory** window appears, as shown in next step below.*



W A R N I N G !

Do NOT export media files to the system "C:" volume or media "H:" volume inside Mira!

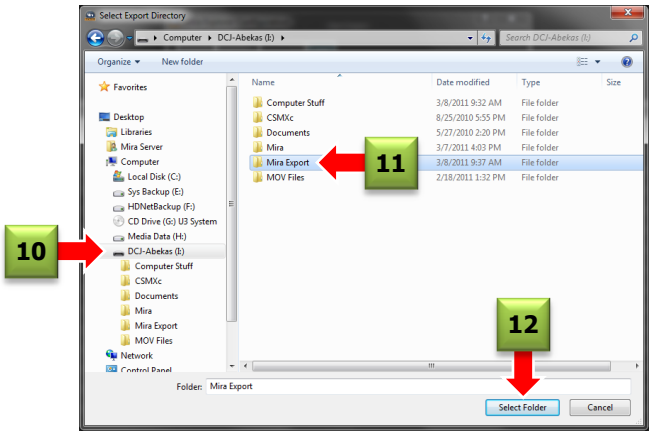
Exporting to either of these drive volumes will cause interruption to the server system, and/or cause video stuttering and corruption of real-time video recording and playback within the Mira server!

10. Click desired **drive volume**.

11. Click desired **export folder**.

12. Click Select Folder to select this folder.

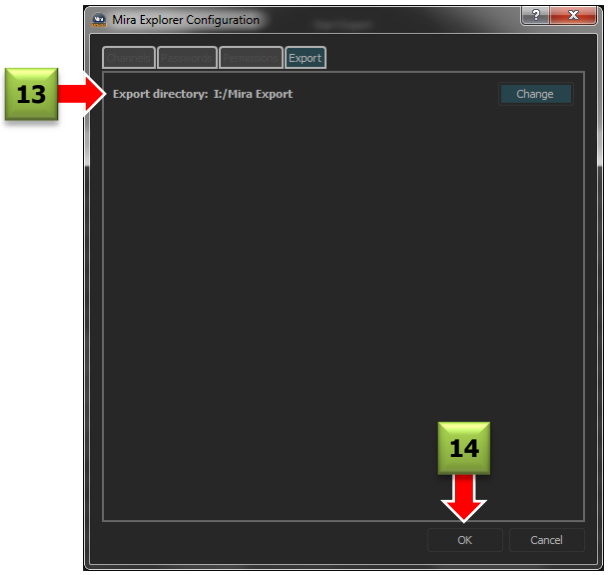
    ▶ *"**Select Export Directory**" window closes.*



Continued on next page…

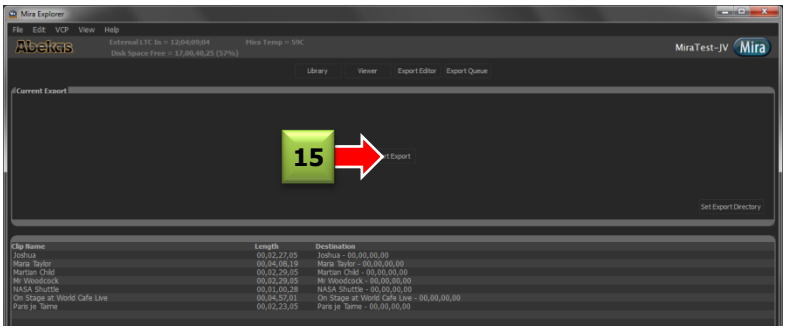
13. Verify Export directory is correct.

14. Click OK to finish.

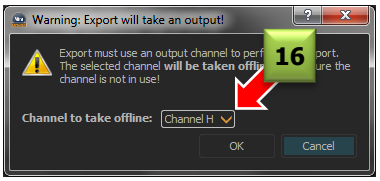


15. Click Start Export to begin export.

    ▶ *The Export Warning dialog appears, as shown in the next step below.*

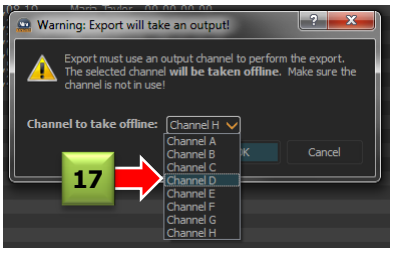


16. Click channel select pull-down.



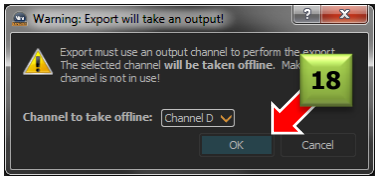
▶ ***IMPORTANT NOTE:*** *When the following steps are performed, Mira Export will take control over one of the video channels. Before continuing, be sure the video channel you select is not in use by anyone else.*

17. Select video channel to use for Export.



Continued on next page…

18. Click OK to begin Export.

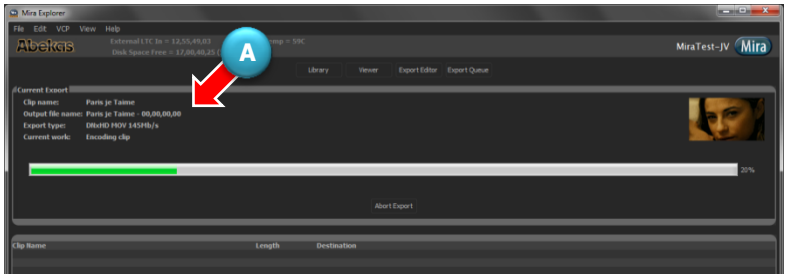


▶ **(A)** *The export process begins, with a progress bar and preview video window.*

The entire list of clips in queue will be exported.

19. ***Optional***: you may click Abort Export to cancel export operation at any time.

▶ *Items in queue will remain intact after abort, so you can later resume exporting the same queue.*

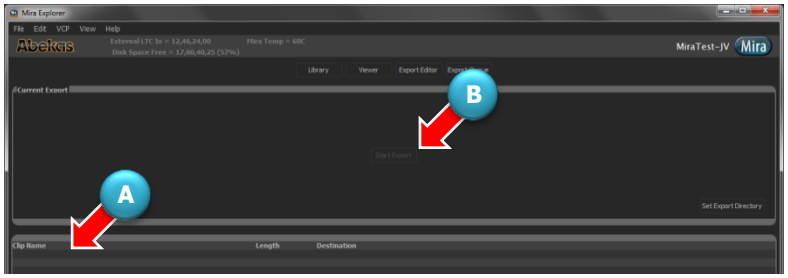


▶ **(A)** *The last clip is being imported from queue.*

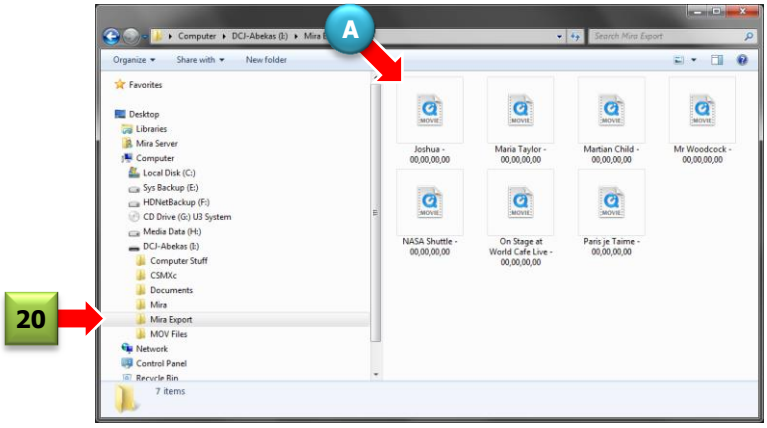
▶ *Export operation is finished.*

▶ **(A)** *The queue is empty.*

▶ **(B)** *The* Start Export *button is grayed out, since no clips are in queue.*



20. Select **Windows Explorer** window containing the Export Directory. [*from step (7) on page 146 above*]



▶ **(A)** *You will see your exported media files.*

Export Segments from within Clips

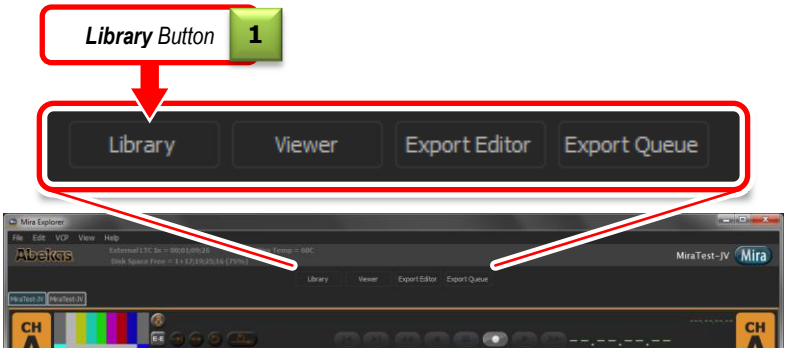
Use this procedure to export one or more segments from within a clip (or group of clips), rather than exporting the entire clip.

Select Clips for Export

This procedure takes place in Mira Explorer. You will select the clips for export, move them into the Export Editor, select the export file format and edit the clip segments for export, and then move the clip segments into the Export Queue for final export.

▶ *Perform the procedure "**Preparing Target Volume for Export**" starting on page 145 above, before performing following procedure.*

1. Click Library near top center of Mira Explorer to display **Clip Library**.



2. Click to highlight clip(s) you want to export;

   ***Hint:** Press & hold* Ctrl *then click mouse on clip names to select multiple clips.*

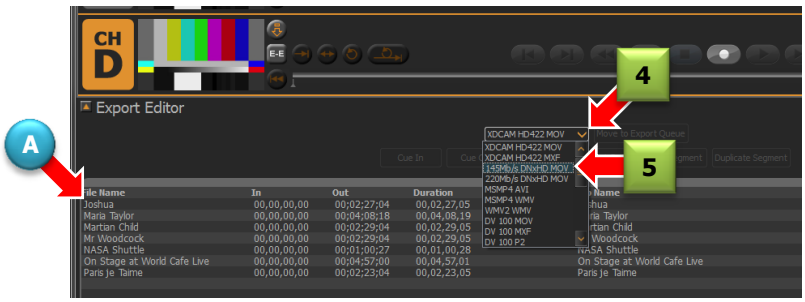
3. On last clip highlighted:

   Right-Click on clip name and select "**Export**" item from pop-up list.

   ▶ **(A)** *The **Export Editor** is populated with selected clips, as shown in next step below.*

4. Click **File Format** pull-down;

5. Click desired file export format.

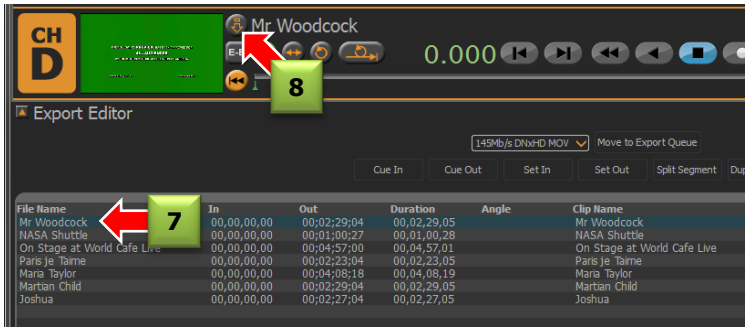


Continued on next page…

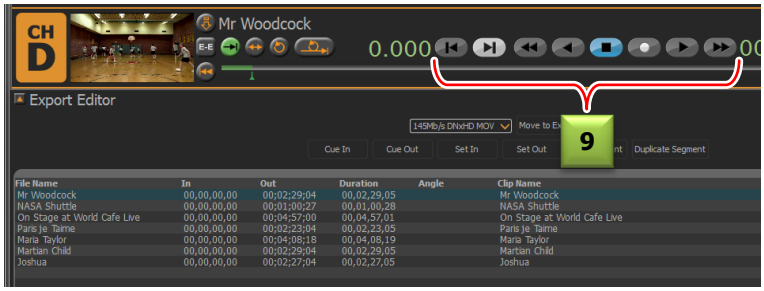
6. Select a video channel transport by clicking anywhere on that channel.

   Here, **ChD** is selected.

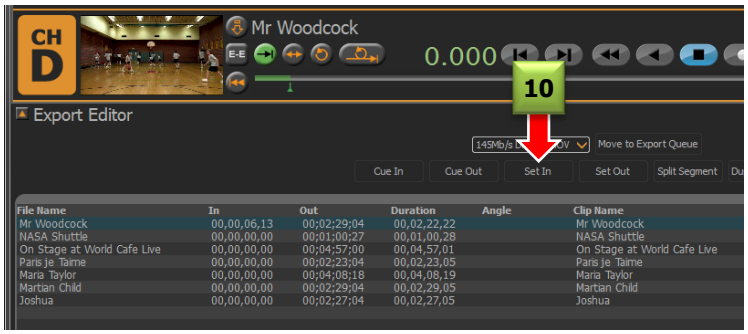
7. Click to highlight the first clip you want to edit for creating a segment.
8. Click ( )to load clip in channel transport.



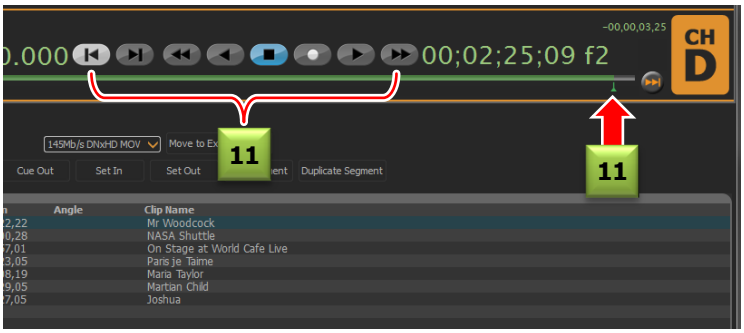
9. Use clip slider *(or any transport control)* to locate desired **IN** point for segment.



10. Click Set In to mark **IN** point.



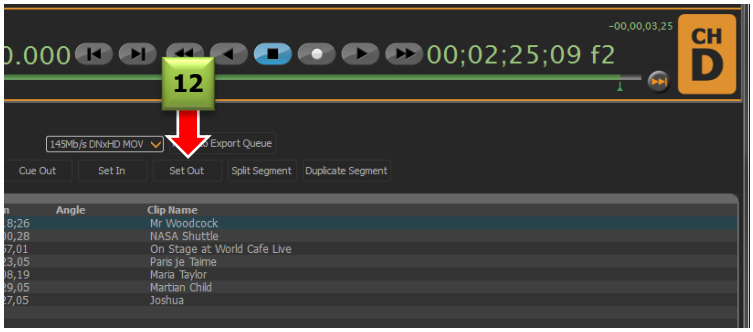
11. Use clip slider *(or any transport control)* to locate desired **OUT** point for segment.



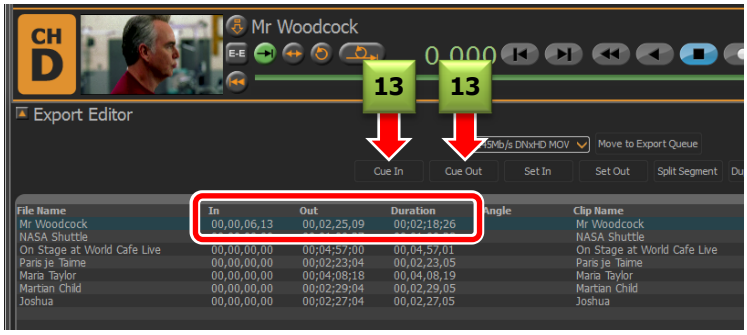
Continued on next page…

12. Click Set Out to mark **OUT** point.

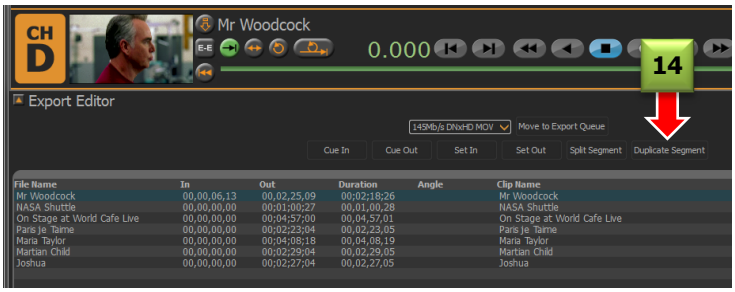
    ▶ *The modified **In**, **Out** and **Duration** values are displayed, as shown by the rectangle outline.*



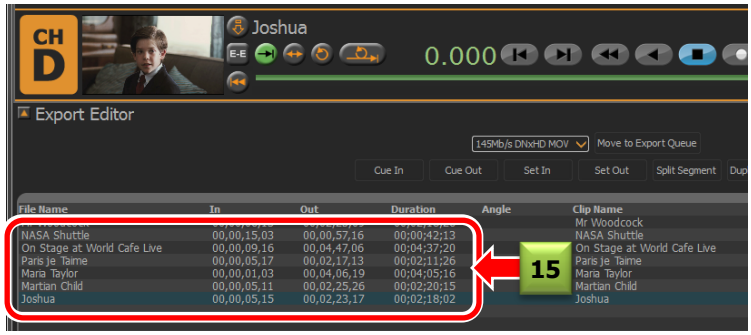
13. ***Optional:*** Click Cue In and/or Cue Out to seek to IN and/or OUT points to review defined segment.



14. ***Optional:*** Click Duplicate Segment if you wish to create another segment from the **same** clip.



15. Repeat steps (7) through (12) above for any additional segments you wish to create.

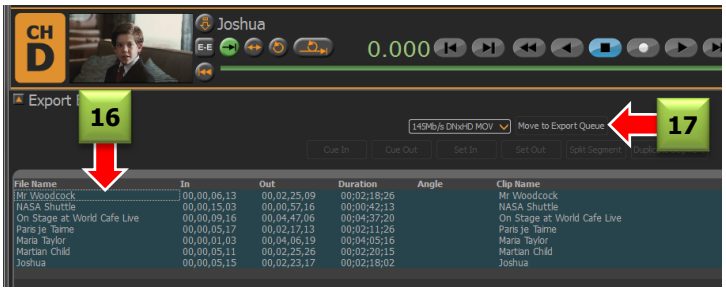


Continued on next page…

16. **Click-and-drag** mouse over all clip file names to highlight them all.

17. Click Move to Export Queue to move items to export queue.

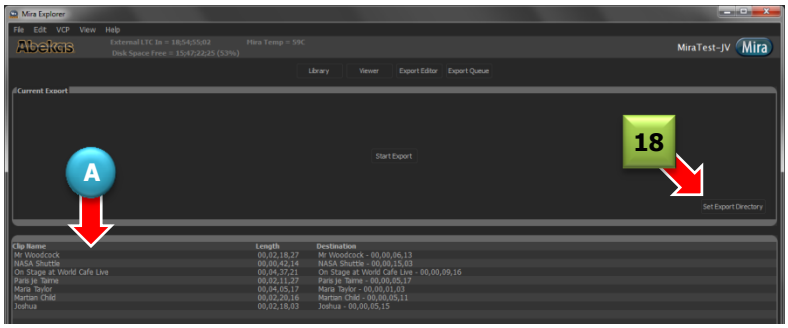
    ▶ **(A)** *The **Export Queue** is populated with selected clips, as shown in next step below.*



▶ *If the **Export Directory** has been defined from a previous Export operation, you can skip ahead to step (25) below.*

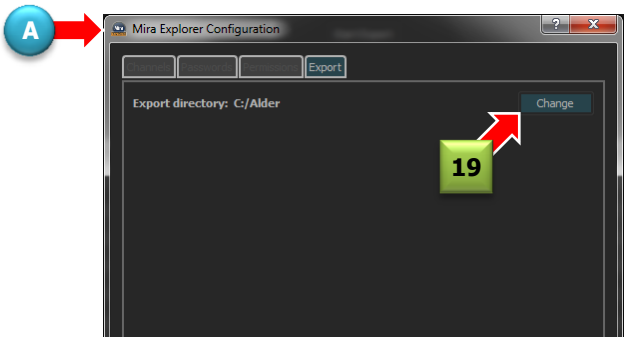
18. Click Set Export Directory to set export directory.

    ▶ **(A)** *"**Mira Explorer Configuration**" window appears, as shown in next step below.*



19. Click Change to specify new directory.

    ▶ *The **Select Export Directory** window appears, as shown in next step below.*



W A R N I N G !

Do NOT export media files to the system "C:" volume or media "H:" volume inside Mira!

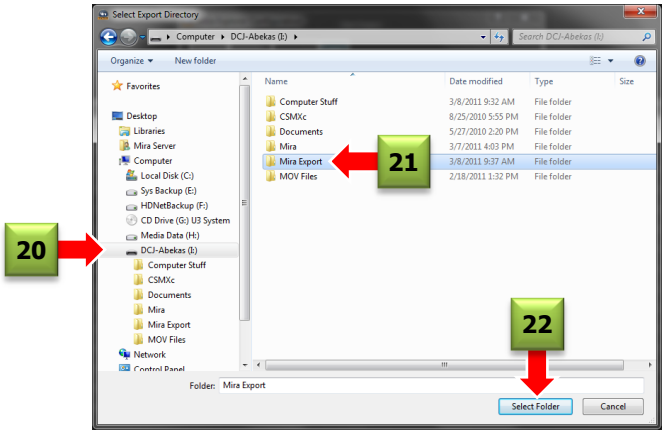
Exporting to either of these drive volumes will cause interruption to the server system, and/or cause video stuttering and corruption of real-time video recording and playback within the Mira server!

20. Click desired **drive volume**.

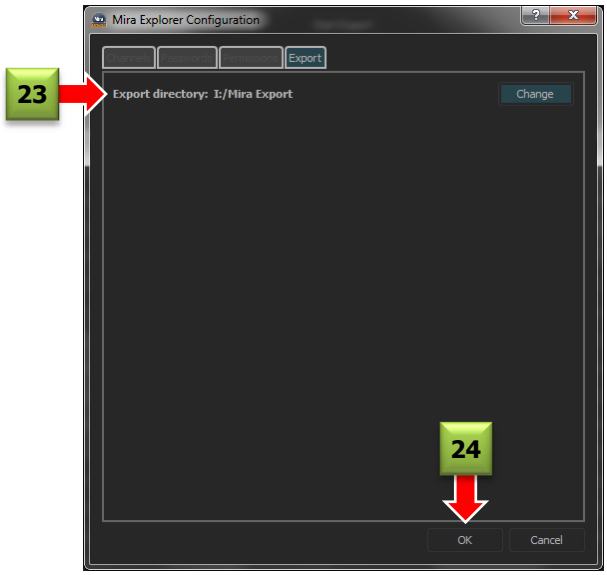
21. Click desired **export folder**.

22. Click Select Folder to select this folder.

    ▶ *The "**Select Export Directory**" window closes.*

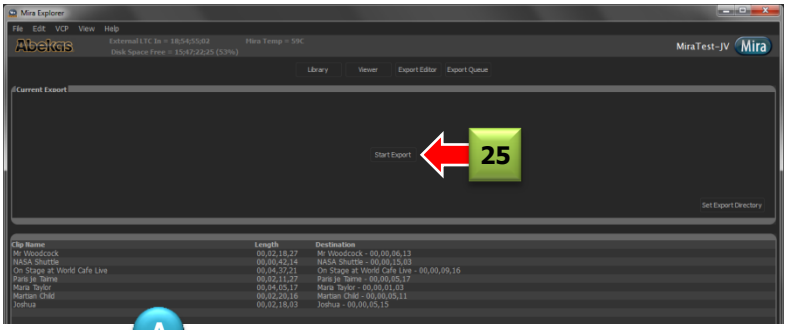


Continued on next page…



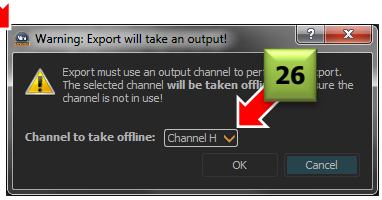
23. Verify Export directory is correct.

24. Click OK to finish.



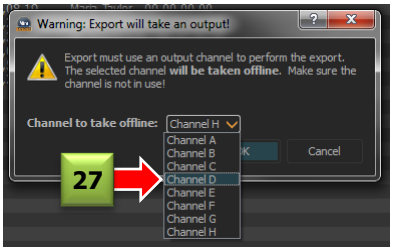
25. Click Start Export to begin export.

    ▶ **(A)** *The "**Export Warning**" dialog appears, as shown in next step below.*



26. Click channel select pull-down.

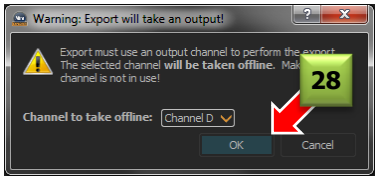
▶ ***IMPORTANT NOTE:*** *When the following steps are performed, Mira Export will take control over one of the video channels. Before continuing, be sure the video channel you select is not in use by anyone else.*



27. Select video channel to use for Export.

Continued on next page…

28. Click OK to begin Export.



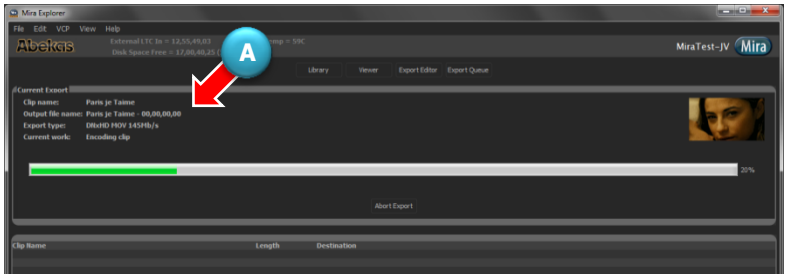
▶ **(A)** *The export process begins, with a progress bar and preview video window.*

The entire list of clips in queue will be exported.

29. ***Optional***: you may click Abort Export to cancel export operation at any time.

▶ *Items in queue will remain intact after abort, so you can later resume exporting the same queue.*

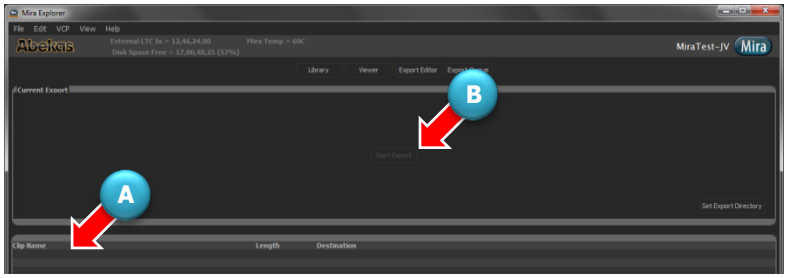
▶ **(A)** *The last clip is being imported from queue.*



▶ *Export operation is finished.*

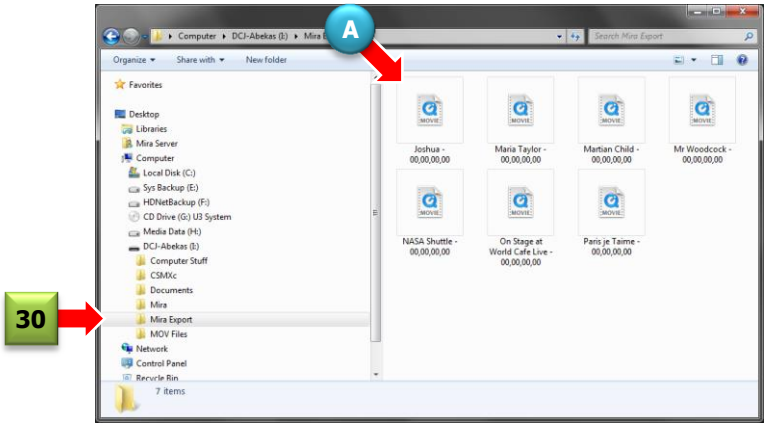
▶ **(A)** *The queue is empty.*

▶ **(B)** *The* Start Export *button is grayed out, since no clips are in queue.*



30. Select **Windows Explorer** window containing the Export Directory. [*from step (7) on page 146 above*]

▶ **(A)** *You will see your exported media files.*



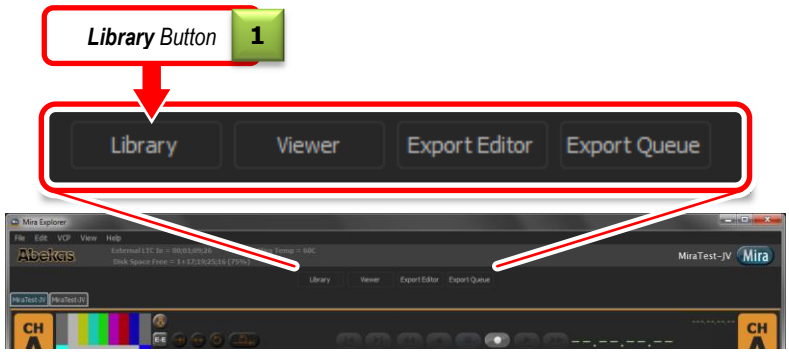
Export Segments from within ISO Clips

"ISO Clips" are single Mira clip files which contain multiple video tracks; each video track is usually recorded from a single camera during a multi-camera recording event. These ISO clips can contain anywhere from two to six "camera angle" video tracks. ISO clips are usually created when Mira is configured for live instant replay or multi-camera recording applications.

Mira Export provides the ability to export segments from any camera angle contained within an ISO clip.

▶ *Perform the procedure "**Preparing Target Volume for Export**" starting on page 145 above, before performing following procedure.*

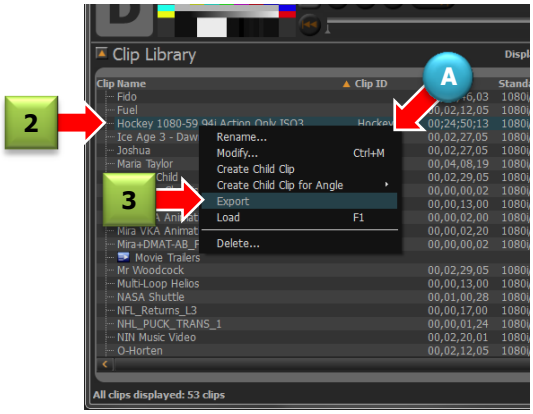
1. Click Library near top center of Mira Explorer to display **Clip Library**.



2. **RIGHT-Click** on ISO clip to export;

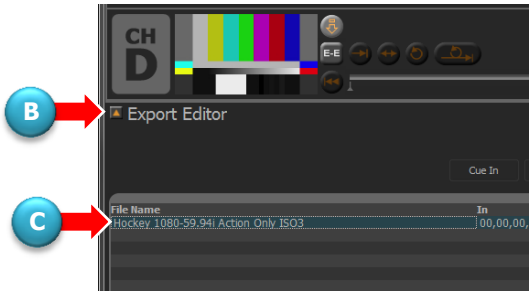
   ▶ **(A)** *Pop-up menu appears.*

3. Click "**Export**" item in pop-up menu.



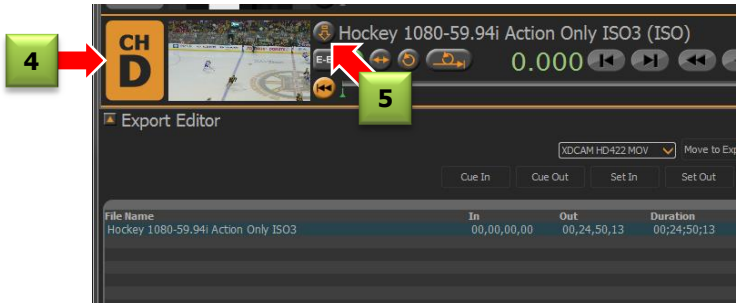
   ▶ **(B)** *The **Export Editor** automatically appears.*

   ▶ **(C)** *The clip is copied into the **Export Editor**.*

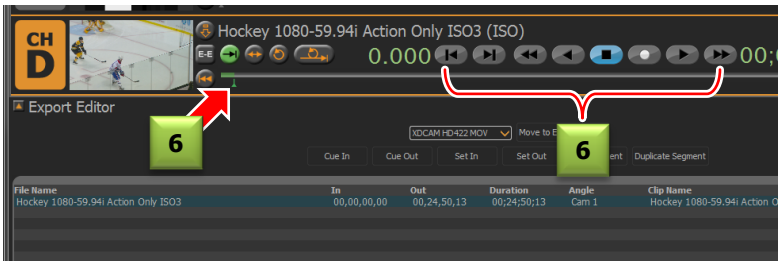


Continued on next page…

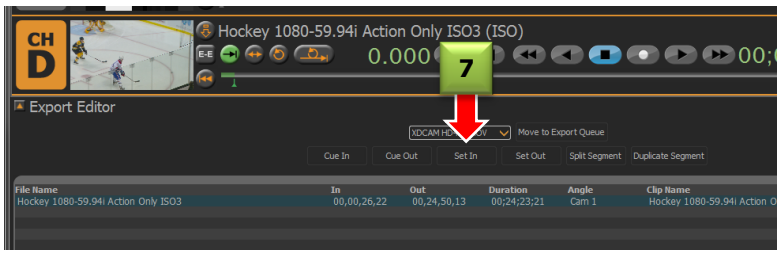
4. Click any channel transport to activate it; here we are using **ChD**.
5. Click ( )to load clip in channel transport.
   ▶ *The clip is loaded in the video channel.*



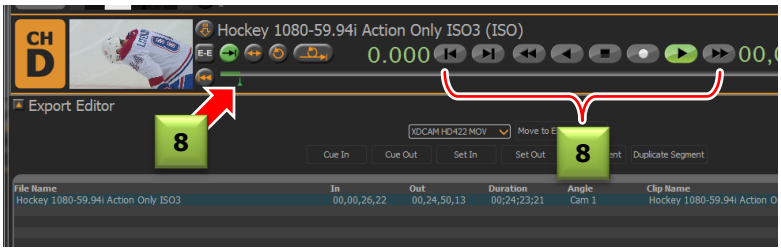
6. Use clip slider *(or any transport control)* to locate desired **IN** point for segment.



7. Click Set In to mark **IN** point.



8. Use clip slider *(or any transport control)* to locate desired **OUT** point for segment.



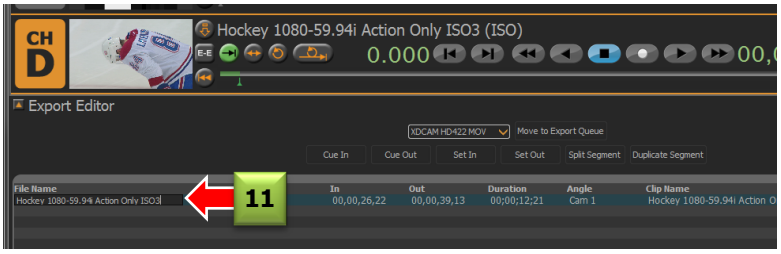
9. Click Set Out to mark **OUT** point.
10. ***Optional:*** Click Cue In and/or Cue Out to seek to IN and/or OUT points to review defined segment.

Continued on next page…

▶ *If you don't want to rename the media file, skip ahead to step (15) below.*

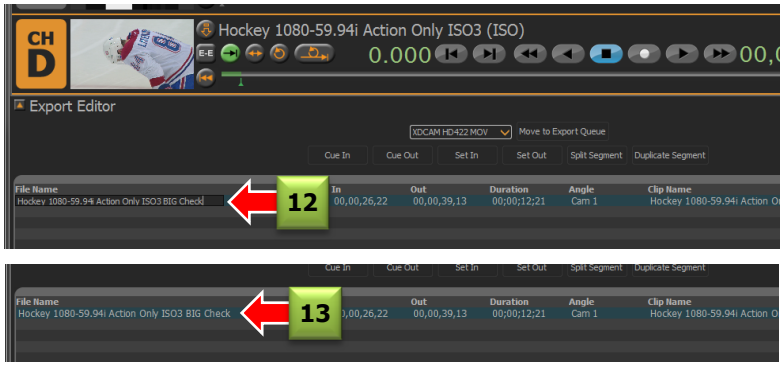
11. ***Optional***: If you wish to change the name of the media file to be exported:

    Click once; wait; then click a second time in "**File Name**" column.



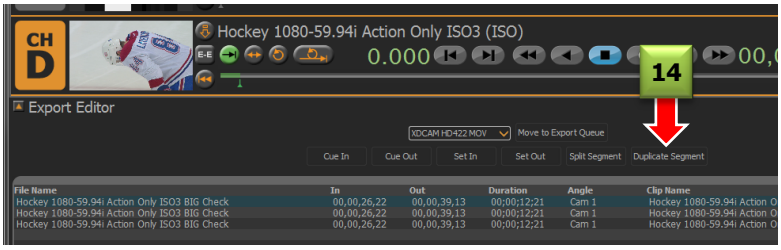
12. ***Optional***: Type new name of media file.

13. ***Optional***: Press Enter on QWERTY keyboard to complete re-name.



The following steps are performed to duplicate the same defined segment for the other camera angles in the ISO clip.

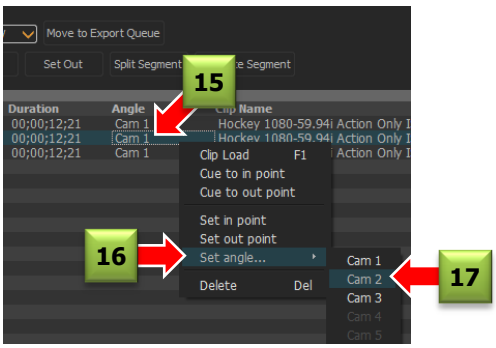
14. Click Duplicate Segment two or more times, to create duplicate segments from **same** clip.



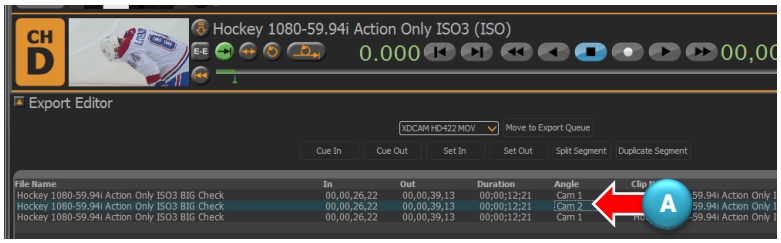
15. **Right-Click** on first duplicate segment under "**Angle**" column;

16. Select "**Set angle…**" item;

17. Click desire "**Cam**" angle.



▶ **(A)** *The new camera angle is selected.*

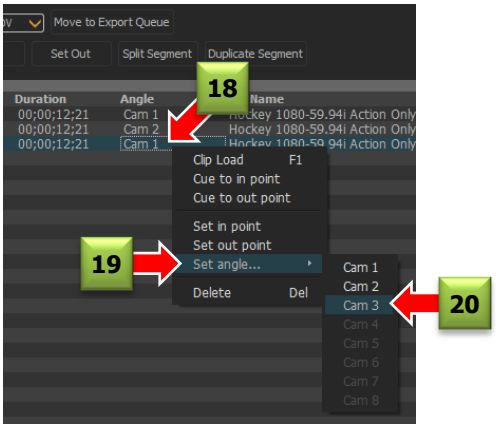


Continued on next page…

18. **Right-Click** on next duplicate segment under "**Angle**" column;

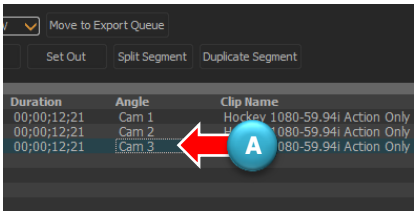
19. Select "**Set angle…**" item;

20. Click desire "**Cam**" angle.



▶ **(A)** *The new camera angle is selected.*

▶ *Repeat steps for any additional CAM angles.*



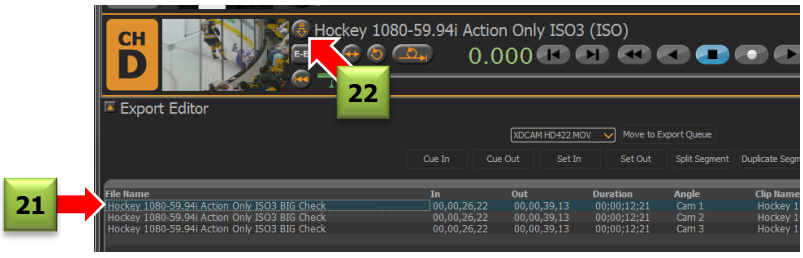
The following steps are performed to split one of the segments to create two separate segments from the one segment.

This step is optional; skip ahead to step (25) if you don't need to split the segment.

21. Click to highlight desired segment.

22. Click (Clip Load) button to load clip in channel transport.

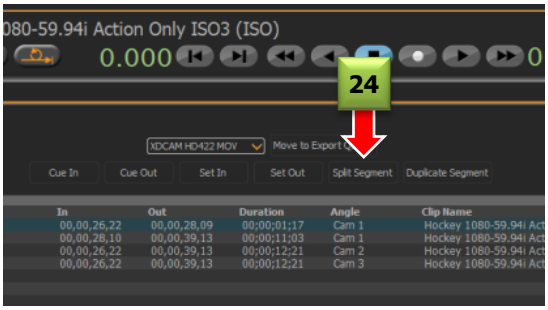
▶ *The clip is loaded in the video channel.*



23. Use clip slider *(or any transport control)* to locate desired **SPLIT** point for segment.

24. Click Split Segment to split the segment.

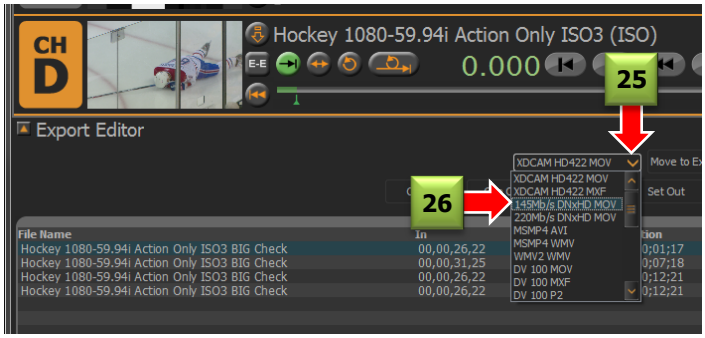
▶ *The segment is split, and a new segment created from the split point forward. The Cam angle remains the same.*



Continued on next page…

25. Click **File Format** pull-down;

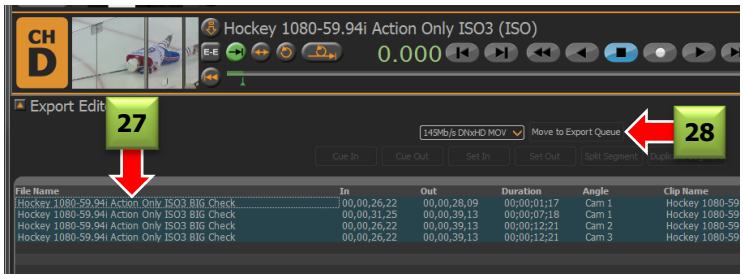
26. Click desired file export format.



27. Click and drag the mouse over all clip file names to highlight them all.

28. Click Move to Export Queue to move items to export queue.

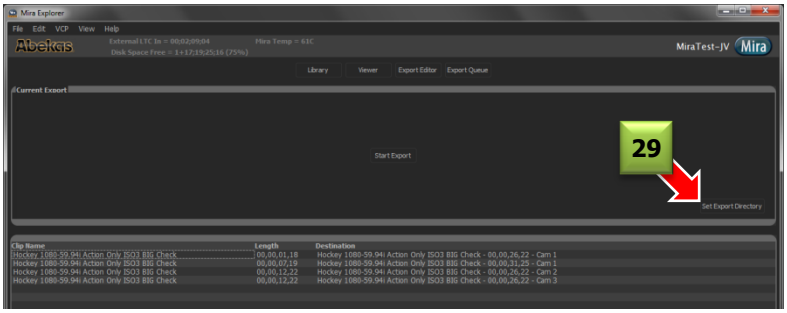
▶ *The **Export Queue** is populated with the selected clips, as shown in next step below.*



▶ *If the **Export Directory** has been defined from a previous Export operation, you can skip ahead to step (39) below.*

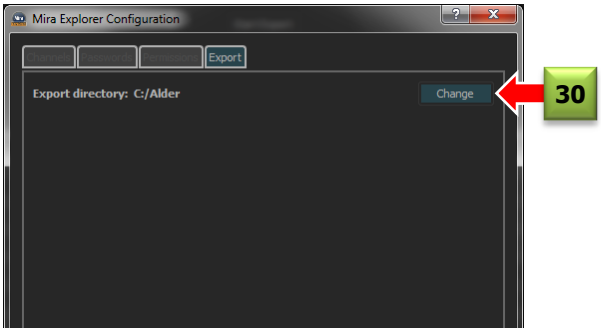
29. Click Set Export Directory to set export directory.

▶ *"**Mira Explorer Configuration**" window appears, as shown in next step below.*



30. Click Change to specify new directory.

▶ *"**Select Export Directory**" window appears, as shown in next step below.*



W A R N I N G !

Do NOT export media files to the system "C:" volume or media "H:" volume inside Mira!

Exporting to either of these drive volumes will cause interruption to the server system, and/or cause video stuttering and corruption of real-time video recording and playback within the Mira server!

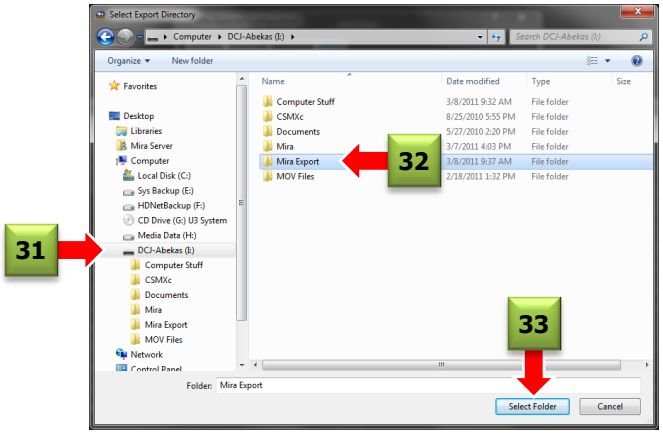
Continued on next page…

31. Click desired **drive volume**.

32. Click desired **export folder**.

33. Click Select Folder to select this folder.

    ▶ *The **Select Export Directory** window closes.*



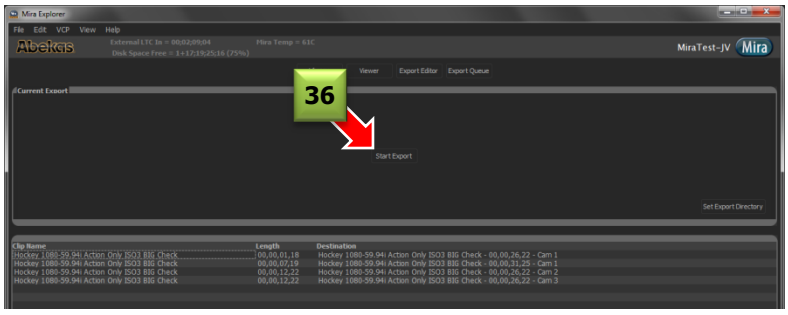
34. Verify Export directory is correct.

35. Click OK to finish.

    ▶ *"**Mira Explorer Configuration**" window closes.*

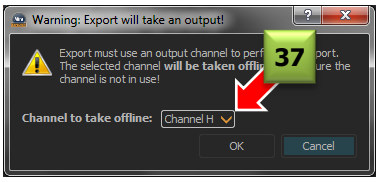
36. Click Start Export to begin export.

    ▶ *"**Export Warning**" dialog appears, as shown in next step below.*



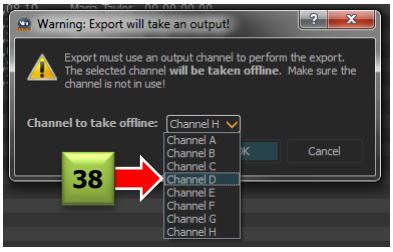
Continued on next page…

37. Click channel select pull-down.

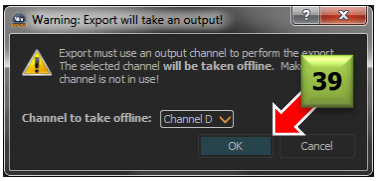


▶ ***IMPORTANT NOTE:*** *When the following steps are performed, Mira Export will take control over one of the video channels. Before continuing, be sure the video channel you select is not in use by anyone else.*

38. Select video channel to use for Export.

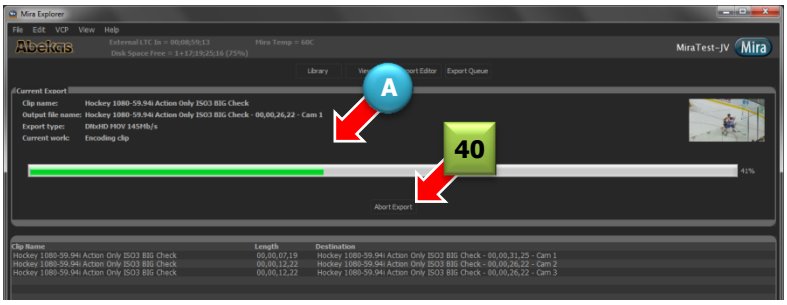


39. Click OK to begin Export.



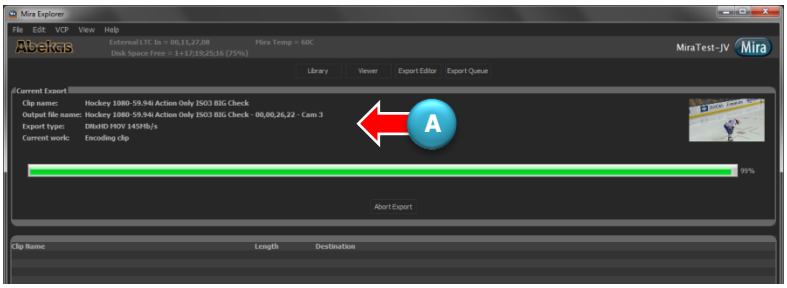
▶ **(A)** *The export process begins, with a progress bar and preview video window.*

The entire list of clips in queue will be exported.



40. ***Optional***: you may click Abort Export to cancel export operation at any time.

▶ *Items in queue will remain intact after abort, so you can later resume exporting the same queue.*



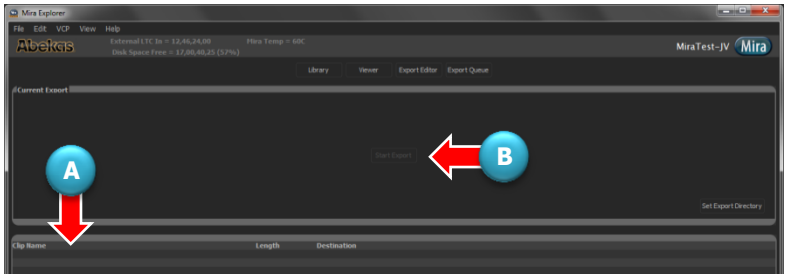
▶ **(A)** *The last clip is being imported from queue.*

Continued on next page…

▶ *Export operation is finished.*

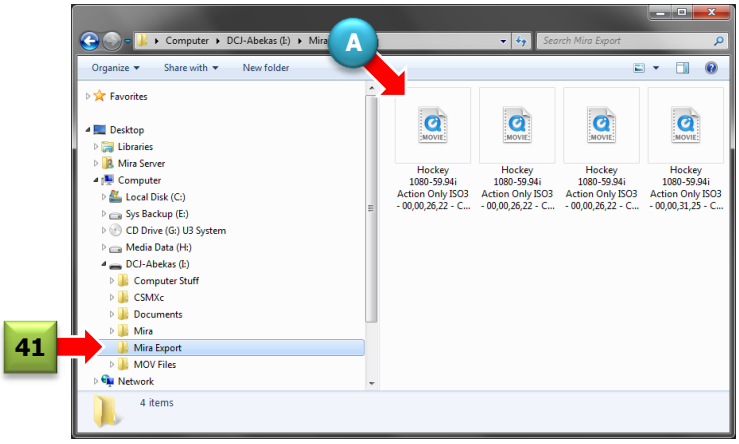
▶ **(A)** *The queue is empty.*

▶ **(B)** *The* Start Export *button is grayed out, since no clips are in queue.*



41. Select **Windows Explorer** window containing the Export Directory [*from step (7) on page 146 above*].

▶ **(A)** *You will see your exported media files.*



Engineering Setup

The Mira Engineering Setup utility is used to configure engineering aspects of the Mira Server.

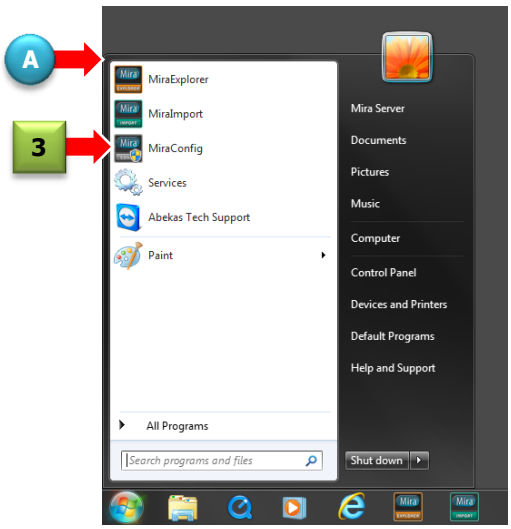
This section of the document is divided into several operational procedures; please find the procedure you're interested in from the list below, and then go to that page in the document.

Launch Mira Engineering Setup Utility

Use this procedure to open the Mira Engineering Setup utility. This utility is used to configure the engineering aspects of the Mira server.

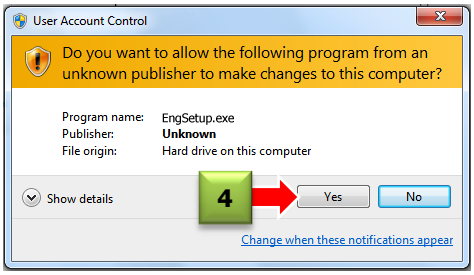
1. Move mouse pointer to lower edge of screen, to reveal Windows taskbar.
2. Click (Windows START) icon.

▶ **(A)** *"**Windows Start**" menu appears, as shown below.*



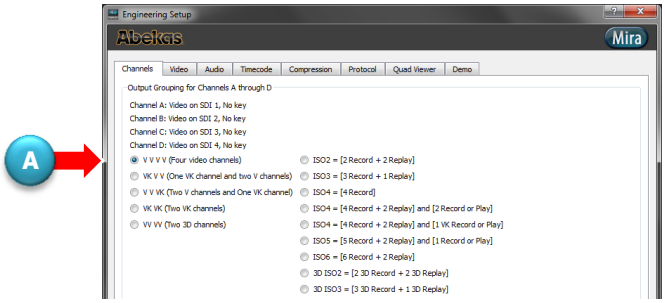
3. Click (Mira CONFIG) icon.

▶ *"**User Account Control**" dialog window appears, as shown below.*



4. Click Yes button.

▶ **(A)** *Mira "**Engineering Setup**" window opens:*



Engineering Setup — Channels

The "**Channels**" tab is used to modify the configuration of the video channel hardware in the Mira Server, allowing Mira to be configured for different operational environments.

The **Channels** tab has a different appearance for the **Mira 8-Channel** server versus the **Mira 4-Channel** server.

Individual Video Channels

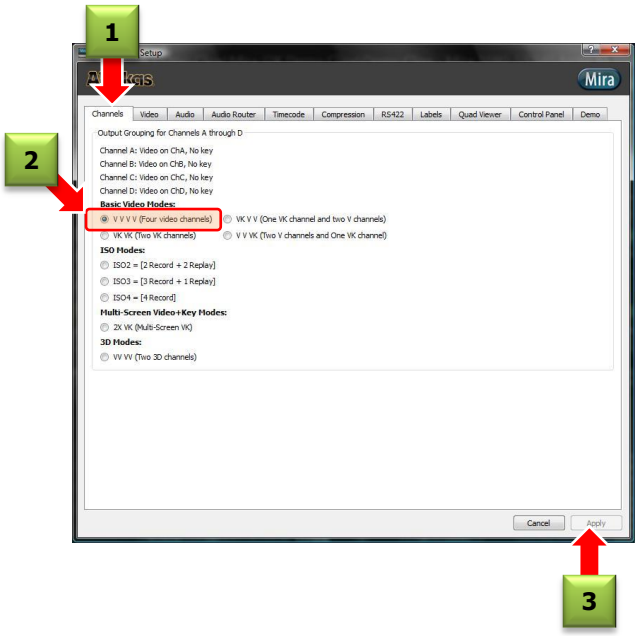
The following configurations of the Mira 8-Channel and Mira 4-Channel servers allow each video channel to operate as an individual transport, with each transport having its own RS422 serial control port. With Mira configured this way, each channel is like a separate VTR, and each video channel can operate as either a recorder or player (*a given video channel cannot record and play at the same time*).

Mira 4-Channel Server

Use this procedure to configure all video channels as four independent channels, each channel with its own RS422 serial control port. Each video channel can be used as either a recorder or player (*a given video channel cannot record and play at the same time*).

*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

1. Click "**Channels**" tab.
2. Click "**V V V V**" radio button for first group of four channels (ChA-ChD).
3. Click Apply to accept the changes.



Group for Channels A through D

- **V V V V (Four video channels)**
  Configures the first group of four video channels (ChA-ChD) as four independent video I/O channels, each channel with its own RS422 serial control port.

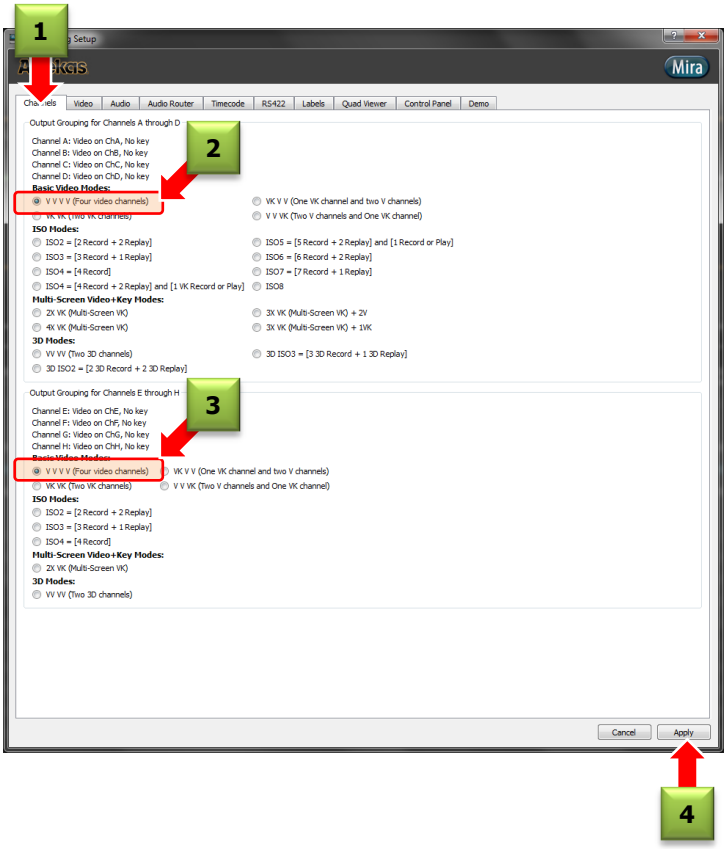
Continued on next page…

Mira 8-Channel Server

Use this procedure to configure Mira with eight individual video channels, each channel having its own RS422 serial control port. Each video channel can be used as either a recorder or player (*a given video channel cannot record and play at the same time*).

*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

1. Click "**Channels**" tab.
2. Click "**V V V V**" radio button for first group of four channels (ChA-ChD).
3. Click "**V V V V**" radio button for second group of four channels (ChE-ChH).
4. Click Apply to accept changes.



Group for Channels A through D

- **V V V V (Four video channels)**
  Configures the first group of four video channels (ChA-ChD) as four independent video I/O channels, each channel with its own RS422 serial control port.

Group for Channels E through H

- **V V V V (Four video channels)**
  Configures the second group of four video channels (ChE-ChH) as four independent video I/O channels, each channel with its own RS422 serial control port.

Video+Key Channel Pairs

The following configurations of the Mira 8-Channel and Mira 4-Channel servers allow video channel pairs to operate as a "Video+Key" (VK) transport, with each paired transport having one RS422 serial control port.

With Mira configured this way, each VK channel pair is a single transport, and this VK pair can operate as either a recorder or player.

When Media Files that contain "RGB+Alpha with Audio" are ingested with the Mira Media File Import utility, the clips created in Mira will have VKA (video+key+audio) tracks—and will play the video and key on the VK paired channels.

IMPORTANT NOTE: The following tables detail the channel pairing for VK channel configuration, with RS422 serial control. No other VK channel pairing is possible. The shading highlights channels that are paired together for VK operation.

Mira 4-Channel & Mira 8-Channel Servers

Configuration	SD/HD-SDI Video IN / OUT		RS422 Control Port	
ChA+ChC | ChB+ChD **VK V V**	CH A = VIDEO	CH C = KEY	CH A = VK	CH C = Unused
	CH B = VIDEO	CH D = VIDEO	CH B = VIDEO	CH D = VIDEO
ChA+ChC | ChB+ChD **V V VK**	CH A = VIDEO	CH C = VIDEO	CH A = VIDEO	CH C = VIDEO
	CH B = VIDEO	CH D = KEY	CH B = VK	CH D = Unused
ChA+ChC | ChB+ChD **VK VK**	CH A = VIDEO	CH C = KEY	CH A = VK	CH C = Unused
	CH B = VIDEO	CH D = KEY	CH B = VK	CH D = Unused

Mira 8-Channel Servers Only

Configuration	SD/HD-SDI Video IN / OUT		RS422 Control Port	
ChE+ChG | ChF+ChH **VK V V**	CH E = VIDEO	CH G = KEY	CH E = VK	CH G = Unused
	CH F = VIDEO	CH H = VIDEO	CH F = VIDEO	CH H = VIDEO
ChE+ChG | ChF+ChH **V V VK**	CH E = VIDEO	CH G = VIDEO	CH E = VIDEO	CH G = VIDEO
	CH F = VIDEO	CH H = KEY	CH F = VK	CH H = Unused
ChE+ChG | ChF+ChH **VK VK**	CH E = VIDEO	CH G = KEY	CH E = VK	CH G = Unused
	CH F = VIDEO	CH H = KEY	CH F = VK	CH H = Unused

Continued on next page…

Mira 4-Channel Server Video+Key Pairs

Use this procedure to configure Mira with video+key (VK) paired channels. The RS422 serial control port is only on the "video" channel. Each VK channel pair can be used as either a recorder or player (*a given VK channel cannot record and play at the same time*).

Mira 4-Channel Server

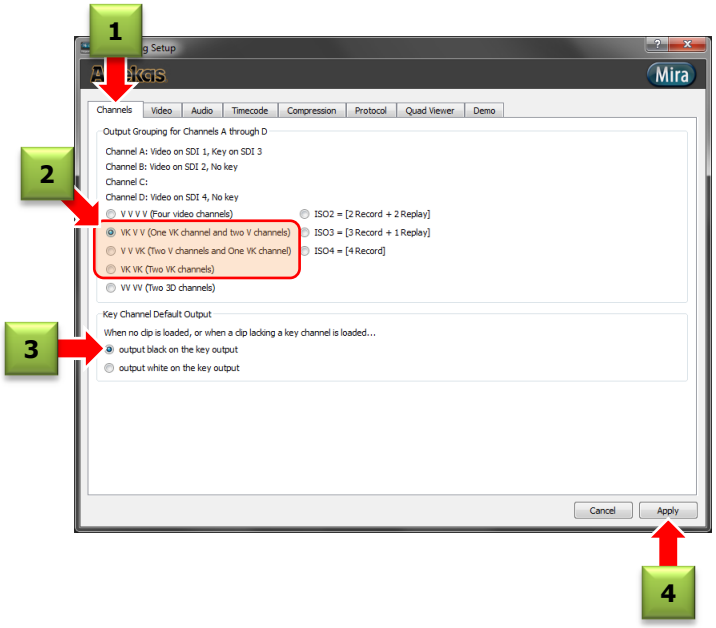
*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

1. Click "**Channels**" tab.
2. Click radio button for desired **VK** channel pairing on (ChA-ChD) group of video channels.
3. Select radio button for desired output on "Key" channel when a "video-only" clip (clip without a key image) is loaded into the "VK" channel pair.

   Normally, "**output white on the key output**" is selected, so video clips without a key image will be visible through a downstream keyer if the "key" is "on" in this keyer.
4. Click Apply to accept changes.

Group for Channels A through D

- **VK V V**
  (**ChA**=VIDEO) + (**ChC**=KEY) RS422=**ChA**
- **V V VK**
  (**ChB**=VIDEO) + (**ChD**=KEY) RS422=**ChB**
- **VK VK**
  (**ChA**=VIDEO) + (**ChC**=KEY) RS422=**ChA**
  (**ChB**=VIDEO) + (**ChD**=KEY) RS422=**ChB**



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Mira 8-Channel Server Video+Key Pairs

Use this procedure to configure Mira with video+key (VK) paired channels. The RS422 serial control port is only on the "video" channel. Each VK channel pair can be used as either a recorder or player (*a given VK channel cannot record and play at the same time*).

Mira 8-Channel Server

*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

1. Click "**Channels**" tab.
2. Click radio button for desired **VK** channel pairing on (ChA-ChD) group of video channels.
3. Click radio button for desired **VK** channel pairing on (ChE-ChH) group of video channels.
4. Select radio button for desired output on the "Key" channel when a "video-only" clip (clip without a key image) is loaded into the "VK" channel pair.

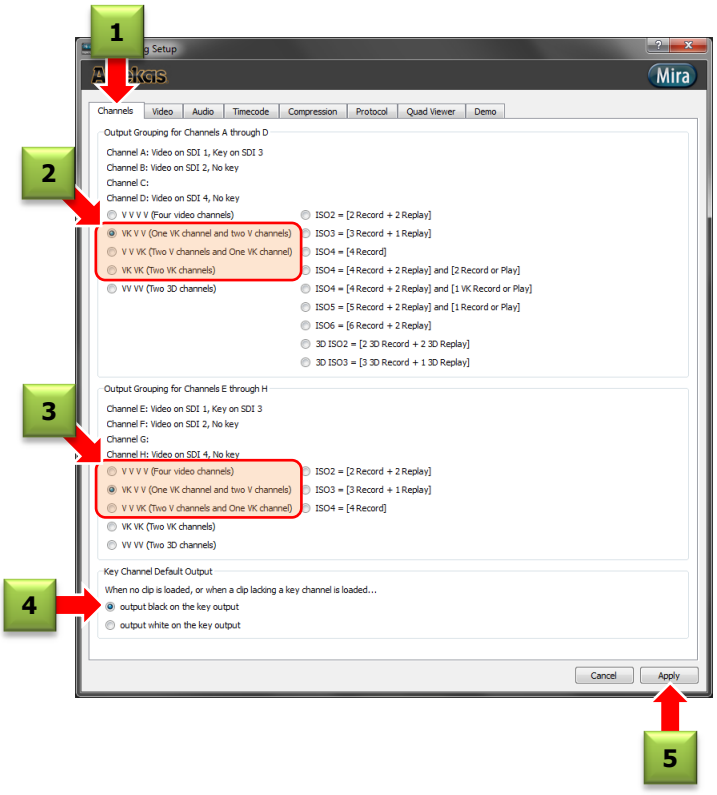
   Normally, "**output white on the key output**" is selected, so video clips without a key image will be visible through a downstream keyer if the "key" is "on" in this keyer.
5. Click Apply to accept changes.

Group for Channels A through D

- **VK V V**
  (**ChA**=VIDEO) + (**ChC**=KEY) RS422=**ChA**
- **V V VK**
  (**ChB**=VIDEO) + (**ChD**=KEY) RS422=**ChB**
- **VK VK**
  (**ChA**=VIDEO) + (**ChC**=KEY) RS422=**ChA**
  (**ChB**=VIDEO) + (**ChD**=KEY) RS422=**ChB**

Group for Channels E through H

- **VK V V**
  (**ChE**=VIDEO) + (**ChG**=KEY) RS422=**ChE**
- **V V VK**
  (**ChF**=VIDEO) + (**ChH**=KEY) RS422=**ChF**
- **VK VK**
  (**ChE**=VIDEO) + (**ChG**=KEY) RS422=**ChE**
  (**ChF**=VIDEO) + (**ChH**=KEY) RS422=**ChF**



Multi-Screen Video+Key Channel Modes

The following configurations of the Mira 8-Channel and Mira 4-Channel servers allow multiple video+key channel pairs to operate as a "Multi-Screen Video+Key" (VK) transport, with each multi-screen VK element transport having one RS422 serial control port.

With Mira configured this way, each multi-screen VK channel pair is a single transport, and this multi-screen VK transport can operate as either a recorder or player.

When Media Files of non-standard resolution (i.e. 5,760x1080) that contain "RGB+Alpha with Audio" are ingested with the Mira Media File Import utility, the clips created in Mira will have VKA (video+key+audio) tracks—and will play the video and key on the multiple VK paired channels.

IMPORTANT NOTE: See section ◘ Multi-Screen Import for information on importing multi-screen files.

IMPORTANT NOTE: The following tables detail the channel pairing for multi-screen VK channel configuration, with RS422 serial control. No other multi-screen VK channel pairing is possible. The shading highlights channels that are paired together for multi-screen VK operation.

Mira 4-Channel & Mira 8-Channel Servers

Configuration	SD/HD-SDI Video IN / OUT		RS422 Control Port	
ChA+ChC | ChB+ChD **2X VK** [2-wide video+2 key]	CH A = VIDEO	CH C = KEY	CH A = 2X VK	CH C = Unused
	CH B = VIDEO	CH D = KEY	CH B = Unused	CH D = Unused

Mira 8-Channel Servers Only

Configuration	SD/HD-SDI Video IN / OUT		RS422 Control Port	
3X VK + 2V [3-wide video+3 key] and [2 Record or Play]	CH A = VIDEO	CH C = KEY	CH A 3X VK	CH C Unused
	CH B = VIDEO	CH D = KEY	CH B Unused	CH D Unused
	CH E = VIDEO	CH G = KEY	CH E Unused	CH G Unused
	CH F V REC/PLAY	CH H V REC/PLAY	CH F V REC/PLAY	CH H V REC/PLAY
3X VK + 1VK [3-wide video + 3 key] and [1 VK Record or Play]	CH A = VIDEO	CH C = KEY	CH A 3X VK	CH C Unused
	CH B = VIDEO	CH D = KEY	CH B Unused	CH D Unused
	CH E = VIDEO	CH G = KEY	CH E Unused	CH G Unused
	CH F = VIDEO	CH H = KEY	CH F VK	CH H Unused

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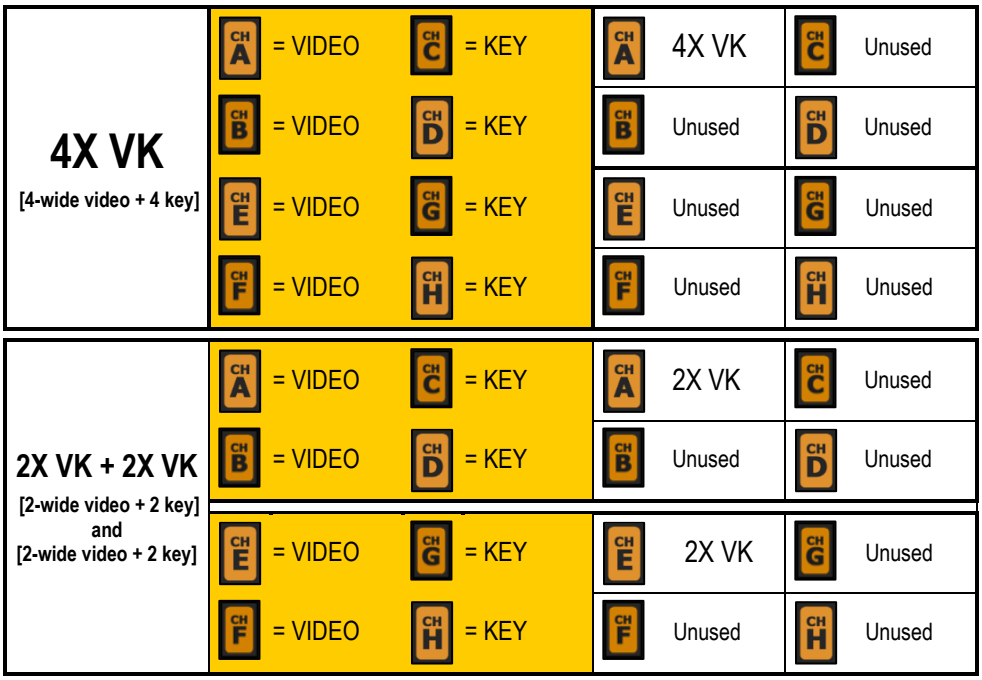

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Mira 4-Channel Server Multi-Screen Video+Key Pairs

Use this procedure to configure Mira with multi-screen video+key (VK) paired channels. The RS422 serial control port is only on the main "video" channel transport. Each multi-screen VK channel pair can be used as either a recorder or player (*a given multi-screen VK channel cannot record and play at the same time*).

Mira 4-Channel Server

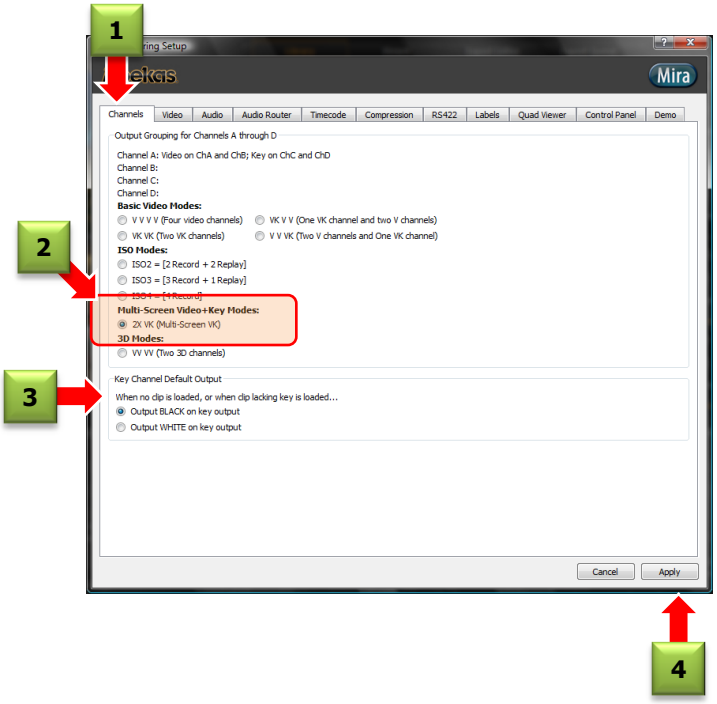
*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

1. Click "**Channels**" tab.
2. Click radio button for desired **Multi-Screen VK** channel pairing on (ChA-ChD) group of video channels.
3. Select radio button for desired output on "Key" channel when a "video-only" clip (clip without a key image) is loaded into the "VK" channel pair.

   Normally, "**output white on the key output**" is selected, so video clips without a key image will be visible through a downstream keyer if the "key" is "on" in this keyer.
4. Click Apply to accept changes.

Group for Channels A through D

- **2X VK**
  (**ChA + CHB** =VIDEO) + (**ChC + CHD** =KEY) RS422=**ChA**



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Mira 8-Channel Server Multi-Screen Video+Key Pairs

Use this procedure to configure Mira with multi-screen video+key (VK) paired channels. The RS422 serial control port is only on the main "video" channel transport. Each multi-screen VK channel pair can be used as either a recorder or player (*a given multi-screen VK channel cannot record and play at the same time*).

Mira 8-Channel Server

*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

1. Click "**Channels**" tab.
2. Click radio button for desired **Multi-Screen VK** channel pairing on (ChA-ChD) group of video channels.
3. Click radio button for desired **Multi-Screen VK** channel pairing on (ChE-ChH) group of video channels.
4. Select radio button for desired output on the "Key" channel when a "video-only" clip (clip without a key image) is loaded into the "VK" channel pair.

   Normally, "**output white on the key output**" is selected, so video clips without a key image will be visible through a downstream keyer if the "key" is "on" in this keyer.
5. Click Apply to accept changes.

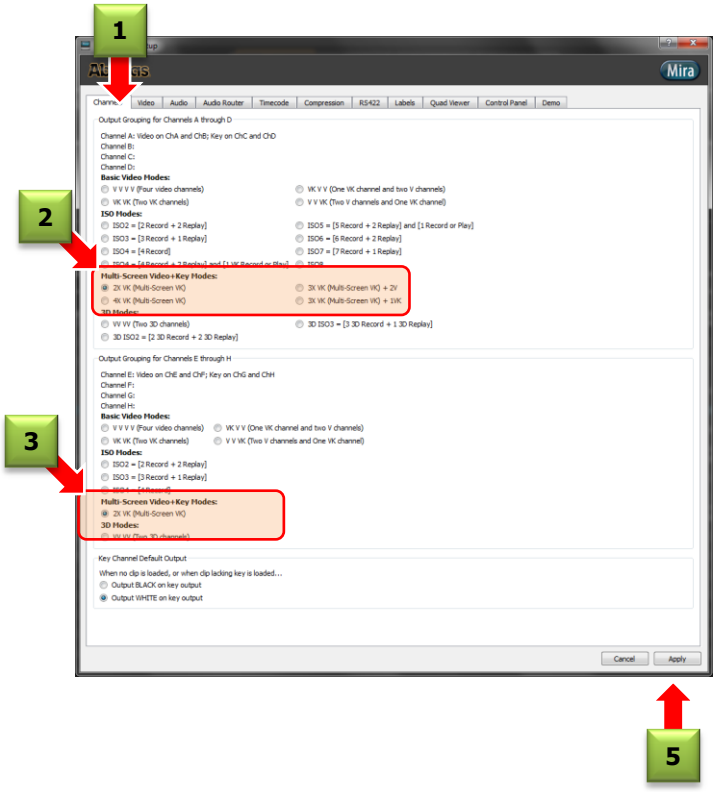
Group for Channels A through D

- **2X VK**
  (**ChA + CHB** =VIDEO) + (**ChC + CHD**=KEY) RS422=**ChA**
- **3X VK + 2V**
  (**ChA+ChB+ChE**=VIDEO) + (**ChC+ChD+ChG**=KEY)
  RS422=**ChA**
- **3X VK + 1VK**
  (**ChA+ChB+ChE**=VIDEO) + (**ChC+ChD+ChG**=KEY)
  RS422=**ChA**

  (**ChF**=VIDEO) + (**ChH**=KEY) RS422=**ChF**
- **4X VK**
  (**ChA+ChB+ChE+ChF**=VIDEO)
  + (**ChC+ChD+ChG+ChH**=KEY) RS422=**ChA**

Group for Channels E through H

- **2X VK**
  (**ChE + CHF** =VIDEO) + (**ChG + CHH**=KEY) RS422=**ChE**



Stand-Alone Stereoscopic 3D Channels

The following configurations of the Mira 8-Channel and Mira 4-Channel servers allow video channel pairs to operate as a Stereoscopic 3D (3D) transport, with each paired transport having one RS422 serial control port.

With Mira configured this way, each 3D channel pair acts as a single transport, and this 3D pair can operate as either a recorder or player.

IMPORTANT NOTE: If you wish to use Mira for Sports Instant Replay with 3D cameras, then please use the procedure "*Instant Replay for Stereoscopic 3D Cameras*" on page **Error! Bookmark not defined.** below.

IMPORTANT NOTE: The following tables detail the channel pairing for 3D channel configuration, with RS422 serial control. The shading highlights channels that are paired together for 3D operation.

Mira 4-Channel & Mira 8-Channel Servers

Configuration	SD/HD-SDI Video IN / OUT		RS422 Control Port	
ChA+ChC | ChB+ChD VV VV	CH A 3D-LEFT #1	CH C 3D-RIGHT #1	CH A 3D L+R #1	CH C = Unused
	CH B 3D-LEFT #2	CH D 3D-RIGHT #2	CH B 3D L+R #2	CH D = Unused

Mira 8-Channel Servers Only

Configuration	SD/HD-SDI Video IN / OUT		RS422 Control Port	
ChE+ChG | ChF+ChH VV VV	CH E 3D-LEFT #3	CH G 3D-RIGHT #3	CH E 3D L+R #3	CH G = Unused
	CH F 3D-LEFT #4	CH H 3D-RIGHT #4	CH F 3D L+R #4	CH H = Unused

Continued on next page…

Mira 4-Channel Server for Stand-Alone Stereoscopic 3D Channels

Use this procedure to configure Mira with stand-alone Stereoscopic 3D (3D) paired channels that will not be used for instant replay applications. The RS422 serial control port is required only on the "LEFT" channel.

Each 3D channel pair can be used as either a recorder or player (*a given 3D channel cannot record and play at the same time*).

NOTE: If you want to use Mira for Sports Instant Replay with 3D cameras, refer to "***Cameras" on*** page **Error! Bookmark not defined.** below.

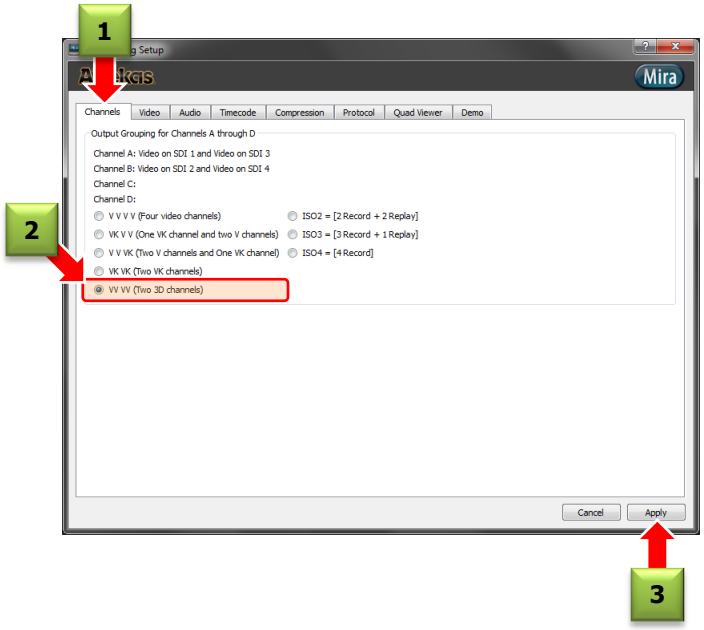
Mira 4-Channel Server

*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

1. Click "**Channels**" tab.
2. Click radio button for "**VV VV**" channel-pairing on (ChA-ChD) group of video channels..
3. Click Apply to accept changes.

Group for Channels A through D

- **VV VV**
  (**ChA**=3D LEFT #1) + (**ChC**=3D RIGHT #1) RS422=**ChA**
  (**ChB**=3D LEFT #2) + (**ChD**=3D RIGHT #2) RS422=**ChB**



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Mira 8-Channel Server for Stand-Alone Stereoscopic 3D Channels

Use this procedure to configure Mira with stand-alone Stereoscopic 3D (3D) paired channels that will not be used for instant replay applications. The RS422 serial control port is required only on the "LEFT" channel.

Each 3D channel pair can be used as either a recorder or player (*a given 3D channel cannot record and play at the same time*).

NOTE: If you want to use Mira for Sports Instant Replay with 3D cameras, refer to "***Cameras" on*** page **Error! Bookmark not defined.** below.

Mira 8-Channel Server

*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

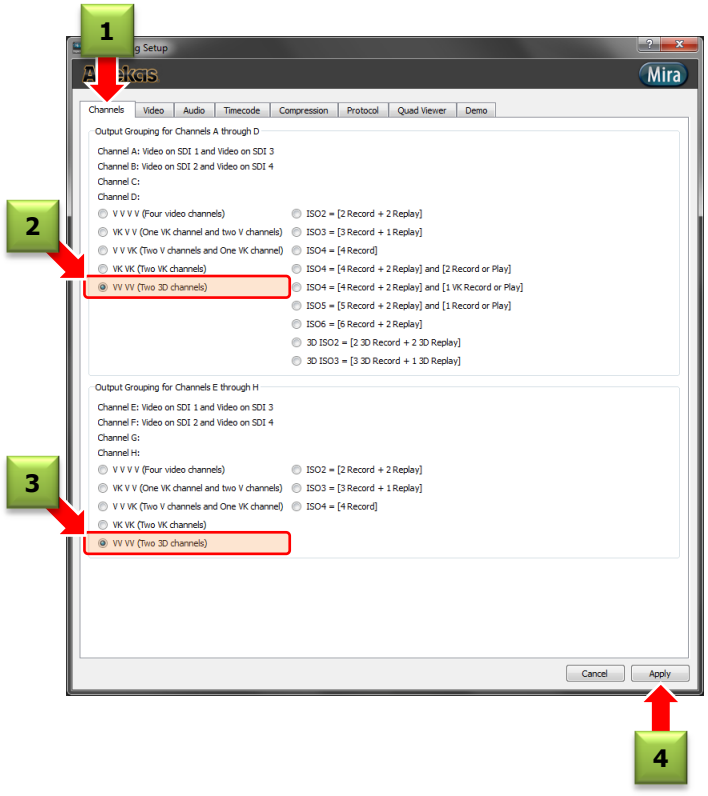
1. Click "**Channels**" tab.
2. Click radio button for "**VV VV**" channel-pairing on (ChA-ChD) group of video channels..
3. Click radio button for "**VV VV**" channel-pairing on (ChE-ChH) group of video channels.
4. Click Apply to accept changes.

Group for Channels A through D

- **VV VV**
  (**ChA**=3D LEFT #1) + (**ChC**=3D RIGHT #1) RS422=**ChA**
  (**ChB**=3D LEFT #2) + (**ChD**=3D RIGHT #2) RS422=**ChB**

Group for Channels E through H

- **VV VV**
  (**ChE**=3D LEFT #3) + (**ChG**=3D RIGHT #3) RS422=**ChE**
  (**ChF**=3D LEFT #4) + (**ChH**=3D RIGHT #4) RS422=**ChF**



Stand-Alone Super Slow Motion Camera Channels

Support of Super Slow Motion (SSM) cameras requires the SSM software option to be installed in Mira. If this option is not currently installed in your Mira server, then it may be purchased and installed at any time. Please contact Abekas for pricing and purchasing information. There is different pricing for the SSM option in Mira 4-Channel servers versus Mira 8-Channel servers; so please determine which Mira platform you own prior to contacting Abekas.

The following configurations of the Mira 8-Channel and Mira 4-Channel servers allow groups of video channels to operate as a Super Slow Motion camera (SSM) transport, with each transport group having one RS422 serial control port. With Mira configured this way, each SSM channel group acts as a single transport, and can operate as either a recorder or player.

If you wish to use Mira for Sports Instant Replay with SSM cameras, then please use the procedure "***Instant Replay for Super Slow Motion Cameras***" on page **Error! Bookmark not defined.** below.

Mira 4-Channel & Mira 8-Channel Servers

Configuration	SD/HD-SDI Video IN / OUT		RS422 Control Port	
ChA+ChB | ChC+ChD **2X SSM**	CH A CAM #1 LINK-A	CH B CAM #1 LINK-B	CH A = CAM #1	CH B = Unused
	CH C CAM #2 LINK-A	CH D CAM #2 LINK-B	CH C = CAM #2	CH D = Unused
ChA+ChB | ChC+ChD **2X SSM**	CH A CAM #1 LINK-A	CH B CAM #1 LINK-B	CH A = CAM #1	CH B = Unused
	CH C = Replay P1	CH D = Replay P2	CH C = Replay P1	CH D = Replay P2
ChA+ChB+ChC | ChD **3X SSM**	CH A CAM #1 LINK-A	CH B CAM #1 LINK-B	CH A = CAM #1	CH C = Unused
	CH C CAM #1 LINK-C	CH D = Replay P1	CH B = Unused	CH D = Replay P1

Mira 8-Channel Servers Only

Configuration	SD/HD-SDI Video IN / OUT		RS422 Control Port	
ChE+ChF | ChG+ChH **2X SSM**	CH E CAM #3 LINK-A	CH F CAM #3 LINK-B	CH E = CAM #3	CH F = Unused
	CH G CAM #4 LINK-A	CH H CAM #4 LINK-B	CH G = CAM #4	CH H = Unused
ChE+ChF | ChG+ChH **2X SSM**	CH E CAM #3 LINK-A	CH F CAM #3 LINK-B	CH E = CAM #3	CH F = Unused
	CH G = Replay P1	CH H = Replay P2	CH G = Replay P1	CH H = Replay P2
ChE+ChF+ChG | ChH **3X SSM**	CH E CAM #1 LINK-A	CH F CAM #1 LINK-B	CH E = CAM #1	CH F = Unused
	CH G CAM #1 LINK-C	CH H = Replay P1	CH G = Unused	CH H = Replay P1

Continued on next page…

Mira 4-Channel Server for Stand-Alone Super Slow Motion Channels

Use this procedure to configure Mira with stand-alone Super Slow Motion (SSM) grouped channels that will not be used for instant replay applications. The RS422 serial control port is required only on the "LINK-A" channel.

Each SSM channel group can be used as either a recorder or player (*a given SSM grouped channel* set *cannot record and play at the same time*).

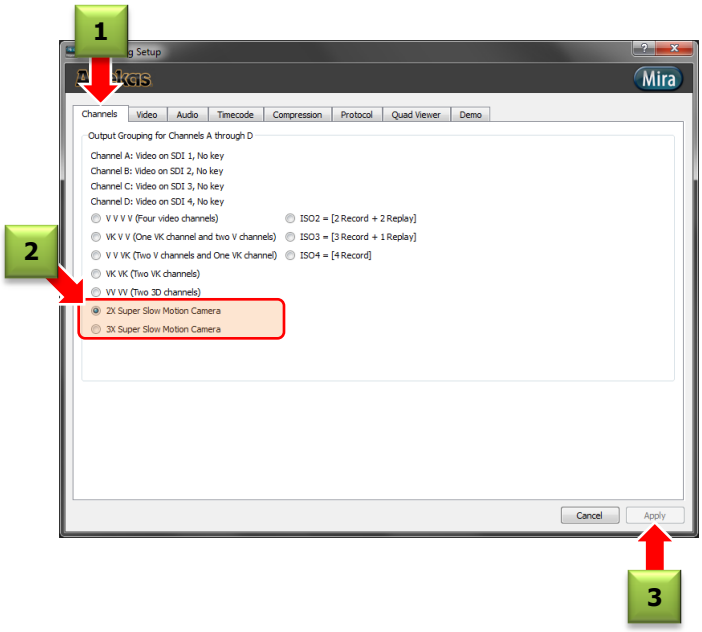
Mira 4-Channel Server

*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

1. Click "**Channels**" tab.
2. Click radio button for desired SSM camera ("**2X Super Slow Motion Camera**" or "**3X Super Slow Motion Camera**") on the (ChA-ChD) group of video channels.
3. Click Apply to accept changes.

Group for Channels A through D

- **2X Super Slow Motion Camera**
  (**ChA**=CAM#1 LINK-A)+(**ChB**=CAM#1 LINK-B) RS422=**ChA**
  (**ChC**=CAM#2 LINK-A)+(**ChD**=CAM#2 LINK-B) RS422=**ChC**
- **3X Super Slow Motion Camera**
  (**ChA**=CAM LINK-A)+(**ChB**=CAM LINK-B)+(**ChC**=CAM LINK-C) RS422=**ChA**



* *Output from 2X SSM high-speed cameras operate at two times the frame rate of normal video (60fps instead of 30fps—or 50fps instead of 25fps).*

2X SSM video clips can be loaded on any "regular" video channel for replay. When played at 1.000 (1X) play speed, the 2X SSM clip will replay with half play speed, with twice the temporal resolution of regular video.

** *Output from 3X SSM high-speed cameras operate at three times the frame rate of normal video (90fps instead of 30fps—or 70fps instead of 25fps).*

3X SSM video clips can be loaded on any "regular" video channel for replay. When played at 1.000 (1X) play speed, the 3X SSM clip will replay with one-third play speed, with triple the temporal resolution of regular video.

Continued on next page…

Mira 8-Channel Server for Stand-Alone Super Slow Motion Channels

Use this procedure to configure Mira with stand-alone Super Slow Motion (SSM) grouped channels that will not be used for instant replay applications. The RS422 serial control port is required only on the "LINK-A" channel.

Each SSM channel group can be used as either a recorder or player (*a given SSM grouped channel* set *cannot record and play at the same time*).

Mira 8-Channel Server

*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

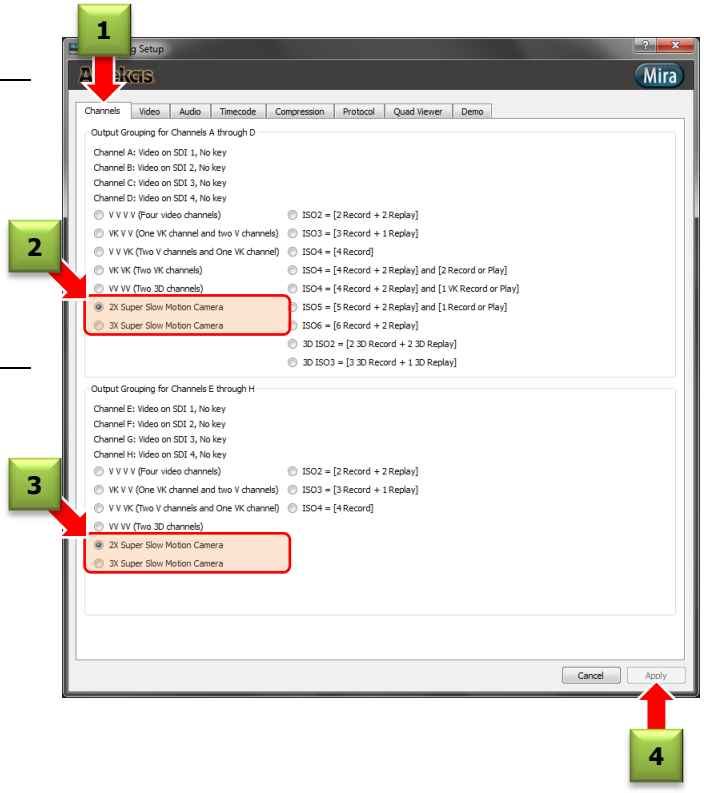
1. Click "**Channels**" tab.
2. Click radio button for desired SSM camera ("**2X Super Slow Motion Camera**" or "**3X Super Slow Motion Camera**") on the (ChA-ChD) group of video channels.
3. Click radio button for desired SSM camera ("**2X Super Slow Motion Camera**" or "**3X Super Slow Motion Camera**") on the (ChE-ChH) group of video channels.
4. Click Apply to accept changes.

Group for Channels A through D

- **2X Super Slow Motion Camera ***
  (**ChA**=CAM#1 LINK-A)+(**ChB**=CAM#1 LINK-B) RS422=**ChA**
  (**ChC**=CAM#2 LINK-A)+(**ChD**=CAM#2 LINK-B) RS422=**ChC**
- **3X Super Slow Motion Camera ****
  (**ChA**=CAM LINK-A)+(**ChB**=CAM LINK-B)+(**ChC**=CAM LINK-C)
  RS422=**ChA**

Group for Channels E through H

- **2X Super Slow Motion Camera ***
  (**ChE**=CAM#1 LINK-A)+(**ChF**=CAM#1 LINK-B) RS422=**ChE**
  (**ChG**=CAM#2 LINK-A)+(**ChH**=CAM#2 LINK-B) RS422=**ChG**
- **3X Super Slow Motion Camera ****
  (**ChE**=CAM LINK-A)+(**ChF**=CAM LINK-B)+(**ChG**=CAM LINK-C)
  RS422=**ChE**



* *Output from 2X SSM high-speed cameras operate at two times the frame rate of normal video (60fps instead of 30fps—or 50fps instead of 25fps).*

2X SSM video clips can be loaded on any "regular" video channel for replay. When played at 1.000 (1X) play speed, the 2X SSM clip will replay with half play speed, with twice the temporal resolution of regular video.

** *Output from 3X SSM high-speed cameras operate at three times the frame rate of normal video (90fps instead of 30fps—or 70fps instead of 25fps).*

3X SSM video clips can be loaded on any "regular" video channel for replay. When played at 1.000 (1X) play speed, the 3X SSM clip will replay with one-third play speed, with triple the temporal resolution of regular video.

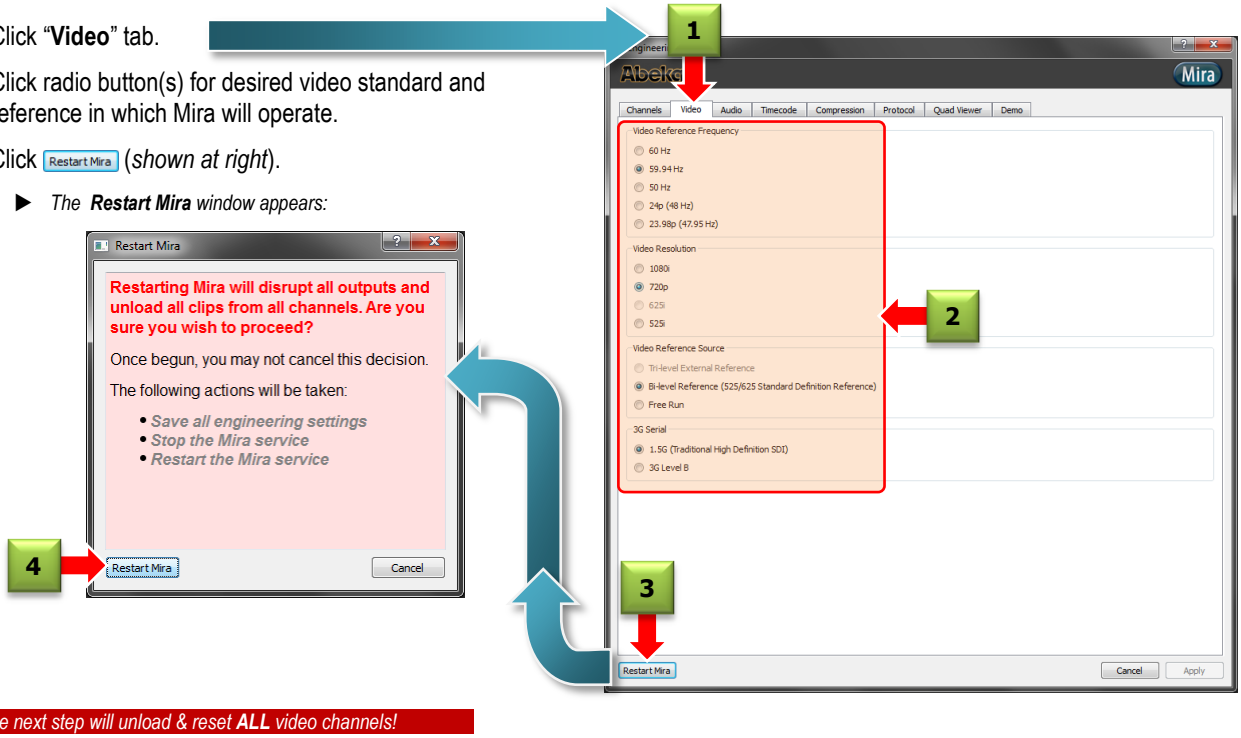
Engineering Setup — Video

The **Video** tab in the Mira Engineering Setup menu is used to configure the operational video format of the Mira server.

- ***IMPORTANT NOTE:*** *All video channels in the Mira server must operate with the same video standard at any given time.*
- *It is **not** possible to operate one or more video channels with a different video standard from the other video channels.*

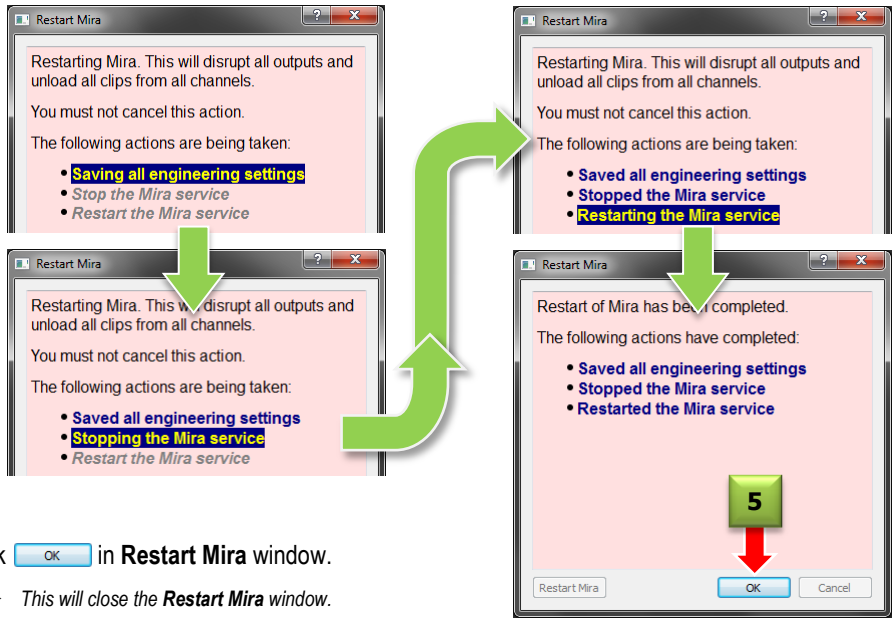
*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

1. Click "**Video**" tab.
2. Click radio button(s) for desired video standard and reference in which Mira will operate.
3. Click Restart Mira (*shown at right*).
   - *The **Restart Mira** window appears:*



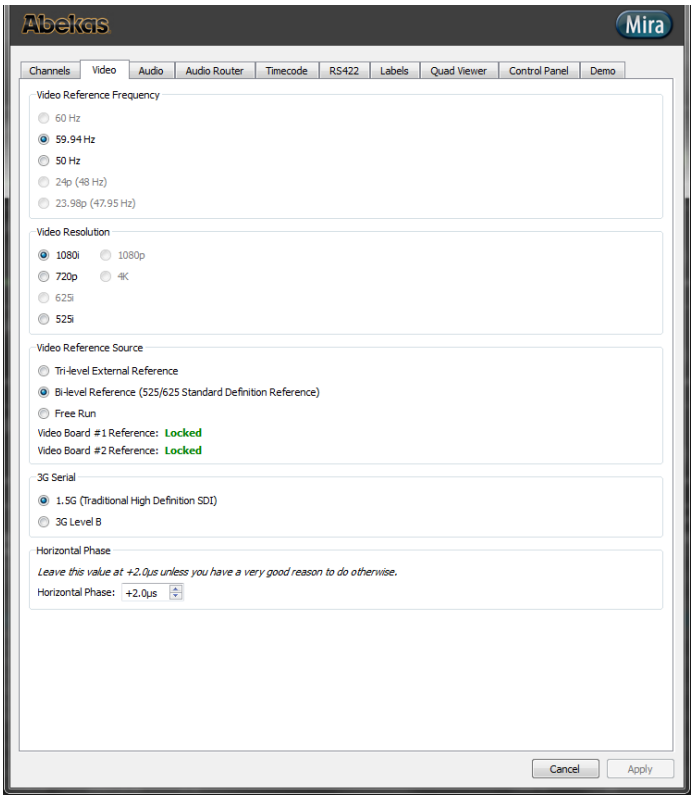
- *The next step will unload & reset **ALL** video channels!*

4. Click Restart Mira (*shown above*).



5. Click OK in **Restart Mira** window.
   - *This will close the **Restart Mira** window.*

(Video Format parameters are described on next page)



- **Video Reference Frequency**
  This parameter sets the operating video frame rate of the hardware for all video channels in Mira Server. Selecting some frame rates will disable some "Video Resolution" radio buttons, because those combinations are invalid. Likewise, selecting other frame rates will enable some "Video Resolution" radio buttons, because those combinations are valid.

- **Video Resolution**
  This parameter sets the operating video resolution of the hardware for all video channels in Mira Server. If the video resolution parameter you want is grayed-out an unavailable for selection, the first select the "**Video Reference Frequency**" radio button for the desired format; and the "Video Resolution" radio button will then become active and available.

- **Video Reference Source**
  This parameter selects the operating output reference of the hardware for all video channels in Mira Server. Below the radio button selectors is a reference signal status indicator area, which shows whether or not each Mira video board is locked to correct reference signal. **"Locked"** (shown above) indicates that both video boards are genlocked to the correct reference source (bi-level or tri-level). **"Not Locked"** indicates that a signal is detected on the Mira's system reference input spigot, but that the signal does not match the reference source that has been selected. **"Not Present"** indicates that there is no signal detected on the Mira's system reference input spigot.

  IMPORTANT NOTE: Using the "**Free Run**" setting is recommended only for the Mira 4-Channel server, and only when that Mira server is operating as a "stand-alone" device, with no video interconnect to any other external equipment.

  IMPORTANT NOTE: Failure to supply an external reference signal (Bi-Level or Tri-Level) to the Mira 8-Channel server will eventually result in corrupted video on all video outputs. It is critical to supply an external reference signal!

  IMPORTANT NOTE: When using "**Tri-Level External Reference**" you must double-terminate with a 75-ohm terminator the Tri-Level reference signal. This is best done with a BNC "T" connector and the 75-ohm terminator.

- **3G Serial**
  This parameter selects whether a "VK", "VV" or "3D" channel pair operates as "Dual-Link 1.5Gb/s" or as "Single-Link 3.0Gb/s" with Level B protocol.

  The 3G parameter is available only in HD video formats (720 and 1080); and will only apply to those video channels configured with channel pairing, including: "VK / VV / 3D" channel configurations. With "3G" selected, the lower-order channel in the channel pair will carry the single-link 3Gb/s video signal. For example, when ChA and ChC are paired together, then the 3Gb/s video signal connects only with ChA.

- **Horizontal Phase**
  This parameter allows the user to advance or delay the horizontal system timing of the Mira Server's outputs.

4K Play / Record

IMPORTANT NOTE: *This new 4K feature is applicable only to **8-Channel** Mira servers with **JPEG-2000** native recording. This new 4K feature is **not** applicable to 4-Channel Mira servers; and not to Mira servers with DVCPro native recording.*

This 4K feature allows the eight video channels in any 8-Channel Mira server to be configured as a "one-channel" 4K recorder/player.

When configured for 4K operation, the Mira server can record a single real-time 4K video stream via four "base-band" 3Gb/s serial digital input video cables. Likewise, during 4K playout, the single real- time 4K video clip content is replayed via four "base-band" 3Gb/s serial digital output video cables.

The media file Import tool can also be used to import 4K media files, using any video codec supported by the media file importer.

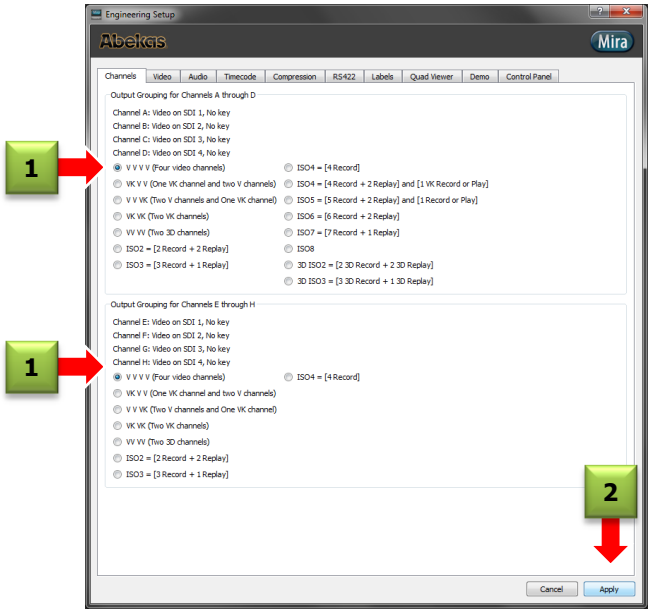
In addition, during 4K operation the "ABCD" Quad Viewer provides a down-scaled HD-SDI 1080i representation of the 4K recording and playback video. Via the Mira Config utility, on the Quad Viewer tab, the user may turn OFF the overlay text and audio meters, to show a "clean" down-scaled HD video representation of the 4K video output on this ABCD Quad Viewer feed.

Configure Mira Server for 4K Operation

IMPORTANT NOTE: *This new 4K feature is applicable only to 8-Channel Mira servers with JPEG-2000 native recording. This new 4K feature is **not** applicable to 4-Channel Mira servers; and not to Mira servers with DVCPro native recording!*

1. In the **"Channels"** tab of the **"Engineering Setup"** menu, select **"V V V V (Four Video Channels)"** radio button for **both** channel groups.

2. Click Apply button.

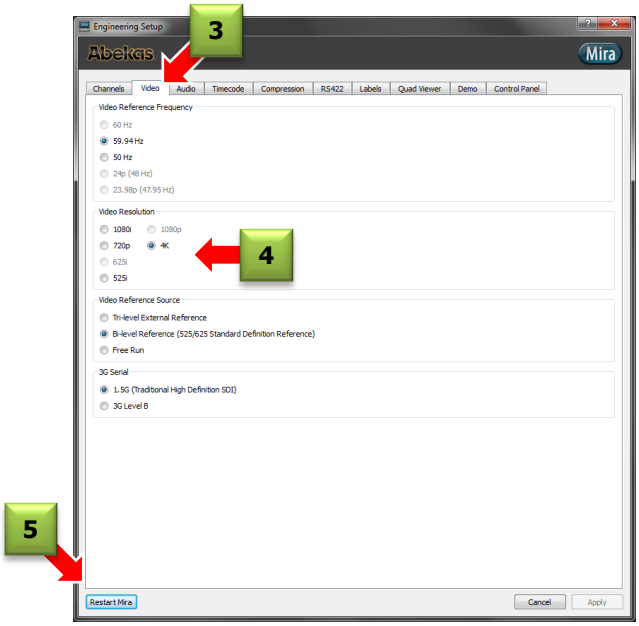


Continued on next page…

3. Click the **"Video"** tab.

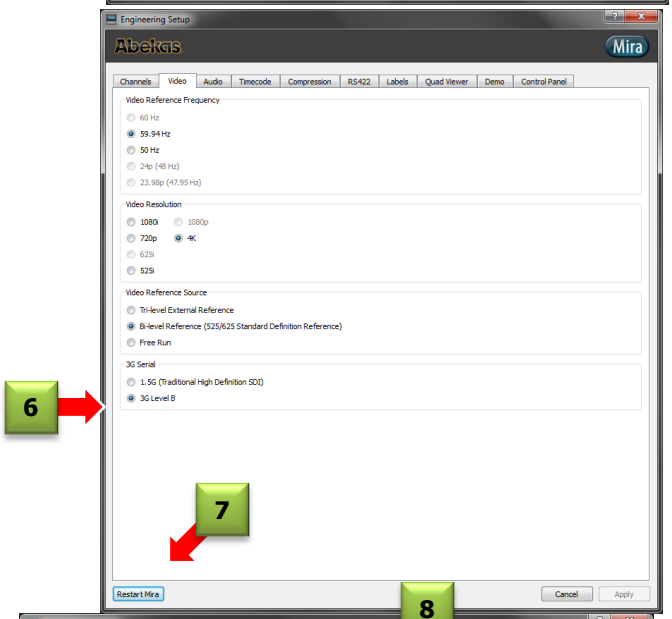
4. Select the **"4K"** radio button.
   ▶ *Do not select "3G" radio button yet.*

5. Click Restart Mira button.
   ▶ *Wait for up to 15 seconds for* Restart Mira *button to disappear.*



6. Click the **"3G Level B"** radio button.

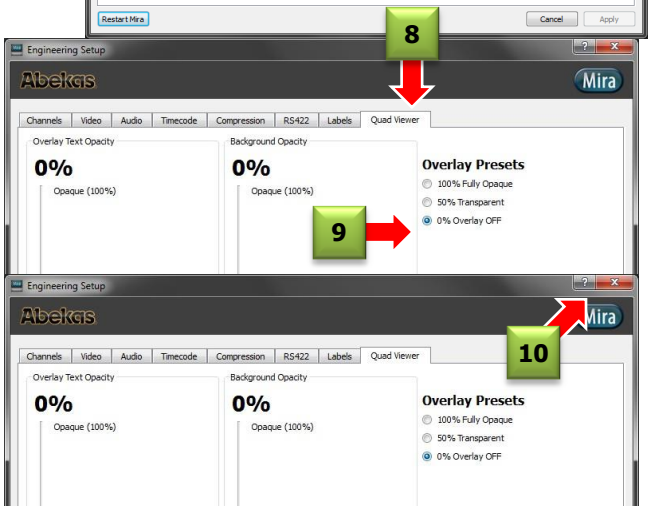
7. Click Restart Mira button.
   ▶ *Wait for up to 15 seconds for* Restart Mira *button to disappear.*



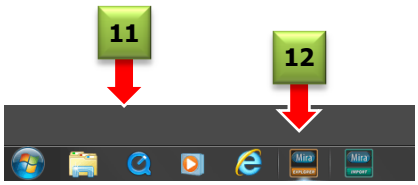
8. Click **"Quad Viewer"** tab.

9. Click **"0% Overlay OFF"** radio button.

10. Click (close window).
    ▶ ***"Engineering Setup"** window closes.*

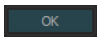


11. Move mouse cursor to bottom edge of the screen, revealing windows taskbar.

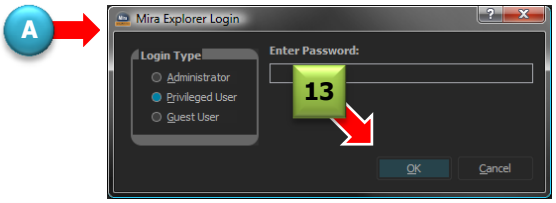


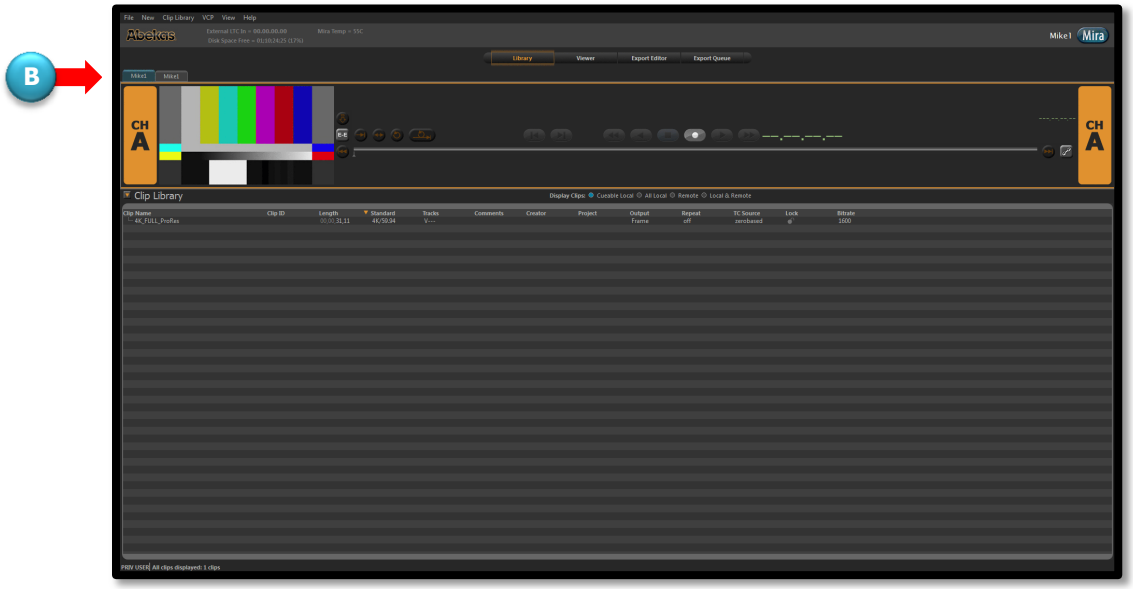
12. Click 

(Mira Explorer) icon.
▶ **(A)** ***Mira Explorer Login*** *window appears.*

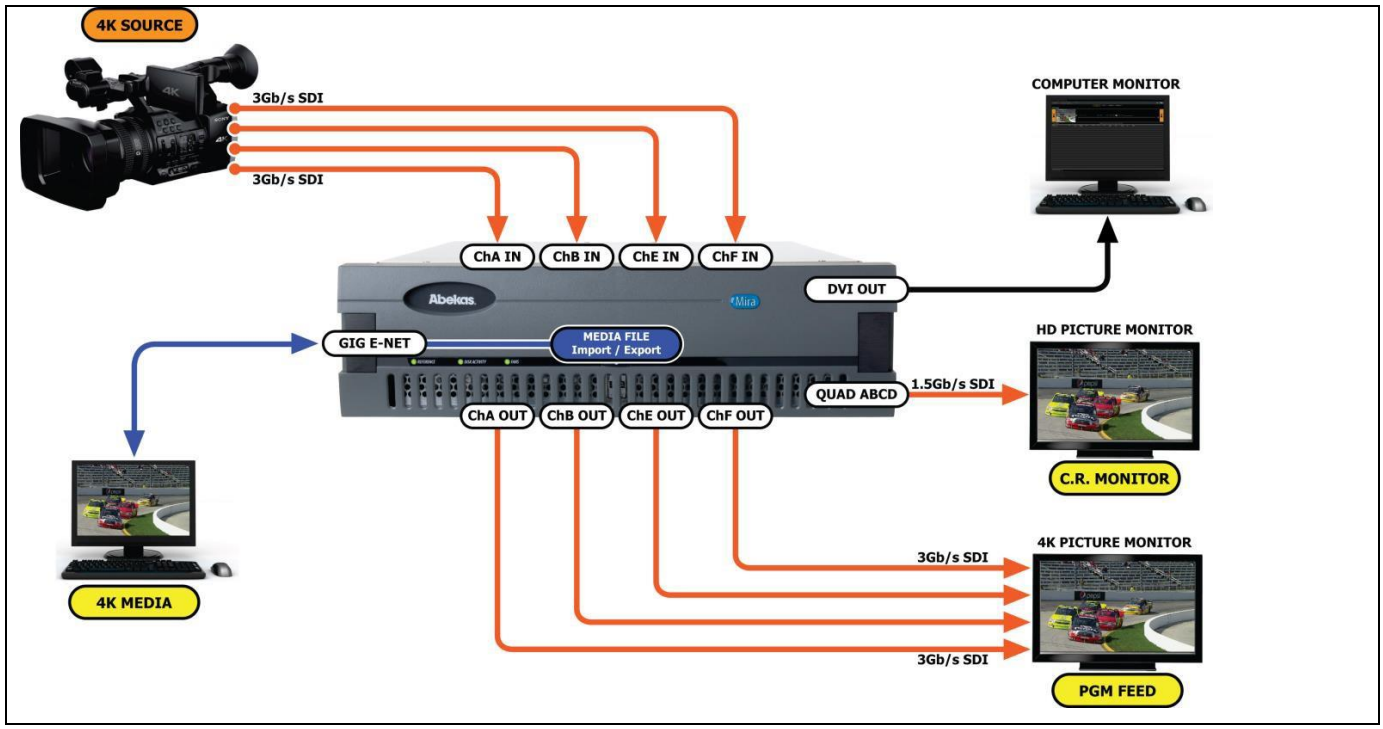
13. Click 

button.
▶ **(B)** ***Mira Explorer*** *opens.*





14. Connect 4K video source and monitoring as shown in the diagram below.
Please pay very close attention to Mira video channel IN/OUT connections!
The "**QUAD ABCD**" output is the "**Quad Viewer OUT**" for channels **A/B/C/D**; this output displays an HD down-scaled representation of the 4K video on a regular HD picture monitor.



Engineering Setup — Audio

The **Audio** tab in the Mira Engineering Setup menu is used to select the digital audio input sources, the number of audio tracks to use in new clips created in Mira, and to determine which video channel(s) to monitor on the analog audio monitoring jack(s) located at the **top** edge of the video board(s) on the Mira server rear panel.

NOTE: All Mira 8-Channel servers and Mira 4-Channel servers purchased and delivered after June 2010 do not feature built-in AES digital audio I/O, and require an external 1RU "Digital Audio Breakout Panel" option to have AES digital audio I/O.

Mira 4-Channel servers delivered before June 2010 featured built-in 2-track AES digital audio I/O (on each video channel).

Mira 4-Channel Server

*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

1. Click "**Audio**" tab.
2. Click radio button for desired number of digital audio tracks for all individual video channels.
3. Click radio button for desired number of digital audio tracks per channel of an ISO recording.
4. Click radio button for desired audio muting policy
5. Click radio button for desired video channel to assign to the **Analog Audio Monitor** jack.
6. Click Apply to accept changes.

Audio Tracks

- **2 track / 4 track / 8 track / 16 track**
  Assigns the number of audio tracks Mira will create when recording new clips into the server.
  - ▶ ***NOTE:** Applies only to new clips recorded in Mira. All previously recorded clips retain and use the number of audio tracks with which they were originally created.*
  - ▶ ***NOTE:** The "**16 track audio**" requires a software option.*

NOTE: "**16 track**" & "**8 track**" settings are not available when operating Mira in SD (525 or 625).

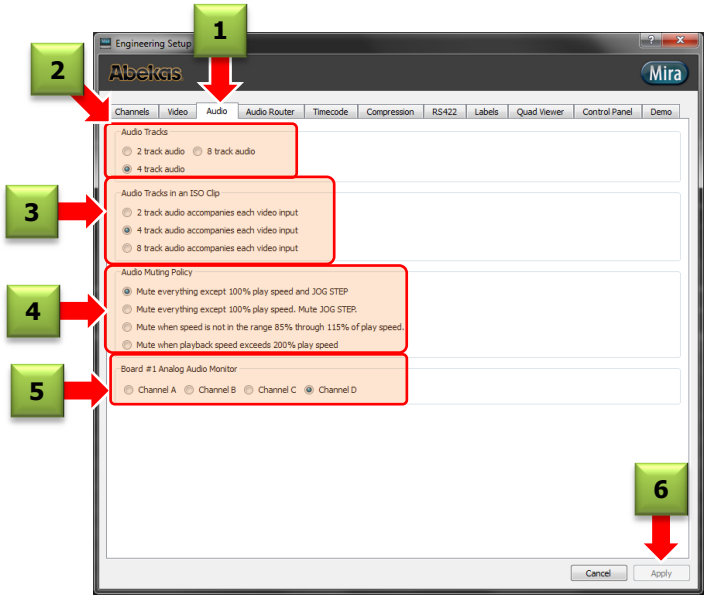
Audio Tracks in an ISO Clip

- **2 track / 4 track / 8track**

Assigns the number of audio tracks Mira will create per input channel when recording new clips into the server in an ISO mode.

Analog Audio Monitor

- **Channel A / Channel B / Channel C / Channel D**
  Assigns the desired video channel to the analog audio monitoring jack located at the TOP of the ChA/B/C/D video board on the rear panel of Mira.
  - ▶ ***NOTE:** The 3.5mm analog audio monitoring jack monitors only audio tracks 1-2 at this point in time; it's not yet possible to select any other audio track pair (i.e. 3-4; 5-6, 7-8, etc.) for monitoring on this monitoring jack.*
  - ▶ ***NOTE:** The 3.5mm analog audio monitoring jack is located at the **top** edge of the video board on the Mira server rear panel.*
  - ▶ ***NOTE:** Do not use the 3.5mm analog audio monitoring jack located on the computer motherboard!*



Audio Muting Policy

Changes whether or not the embedded audio is muted in the HD-SDI output of the Mira during different playback speeds.

Mira 8-Channel Server

*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

1. Click "**Audio**" tab.
2. Click radio button for desired number of digital audio tracks for all individual video channels.
3. Click radio button for desired number of digital audio tracks per channel of an ISO recording.
4. Click radio button for desired audio muting policy
5. Click radio button for desired video channel to assign to the **Analog Audio Monitor** jack.
6. Click Apply to accept changes.

Audio Tracks

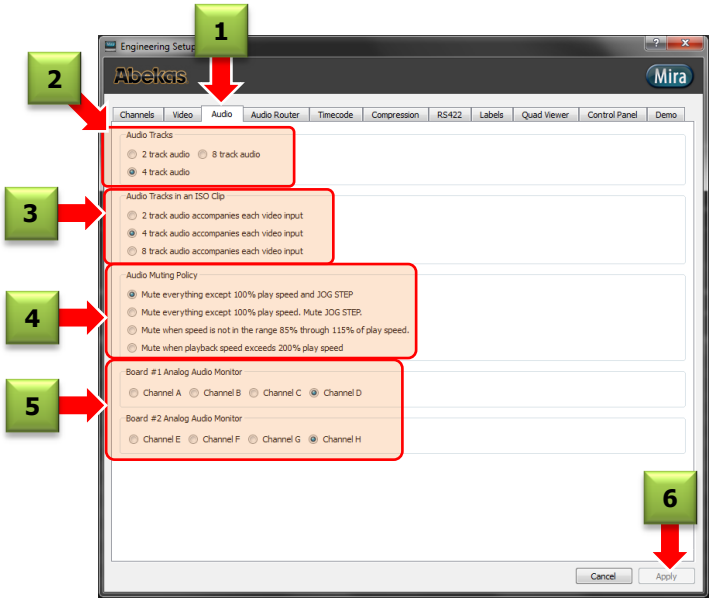
- **2 track / 4 track / 8 track / 16 track**
  Assigns the number of audio tracks Mira will create when recording new clips into the server.
  - ▶ ***NOTE:** Applies only to new clips recorded in Mira. All previously recorded clips retain and use the number of audio tracks with which they were originally created.*
  - ▶ ***NOTE:** The "**16 track audio**" requires a software option.*
  - ▶ ***NOTE:** "**16 track**" & "**8 track**" settings are not available when operating Mira in SD (525 or 625).*

Audio Tracks in an ISO Clip

- **2 track / 4 track / 8track**
  Assigns the number of audio tracks Mira will create per input channel when recording new clips into the server in an ISO mode.

Analog Audio Monitor

- **Channel A / Channel B / Channel C / Channel D**
  Assigns the desired video channel to the analog audio monitoring jack located at the TOP of the ChA/B/C/D video board on the rear panel of Mira.
- **Channel E / Channel F / Channel G / Channel H**
  Assigns the desired video channel to the analog audio monitoring jack located at the TOP of the ChE/F/G/H video board on the rear panel of Mira.
  - ▶ ***NOTE:** The 3.5mm analog audio monitoring jack monitors only audio tracks 1-2 at this point in time; it's not yet possible to select any other audio track pair (i.e. 3-4; 5-6, 7-8, etc.) for monitoring on this monitoring jack.*
  - ▶ ***NOTE:** The 3.5mm analog audio monitoring jack is located at the **top** edge of the video boards on the Mira server rear panel.*
  - ▶ ***NOTE:** Do not use the 3.5mm analog audio monitoring jack located on the computer motherboard!*



Audio Muting Policy

Changes whether or not the embedded audio is muted in the HD-SDI output of the Mira during different playback speeds.

Engineering Setup — Timecode

The **Timecode** tab in the Mira Engineering Setup menu is used to select the timecode input source, and to determine if "burned-in" timecode overlay appears on the SD/HD-SDI digital video outputs.

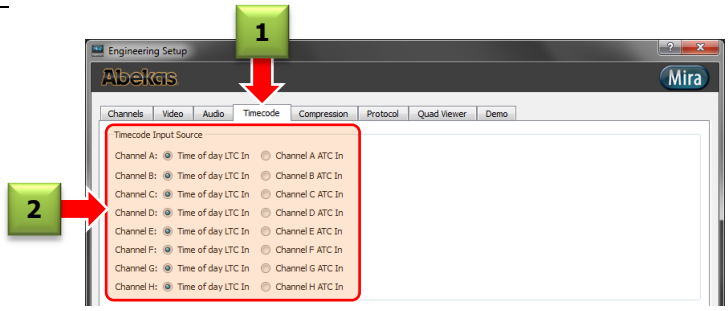
Mira 4-Channel & Mira 8-Channel Servers

*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

1. Click "**Timecode**" tab.
2. Click radio button for desired timecode input source for the (ChA-ChD) group of video channels.
3. **Optional:** Click radio button for desired timecode overlay for the (ChA-ChD) group of video channels (Note Warning!).
   a. When timecode overlay is turned ON: use these four controls to set character size and position on the screen.
4. Click Apply to accept changes.

Timecode Input Source

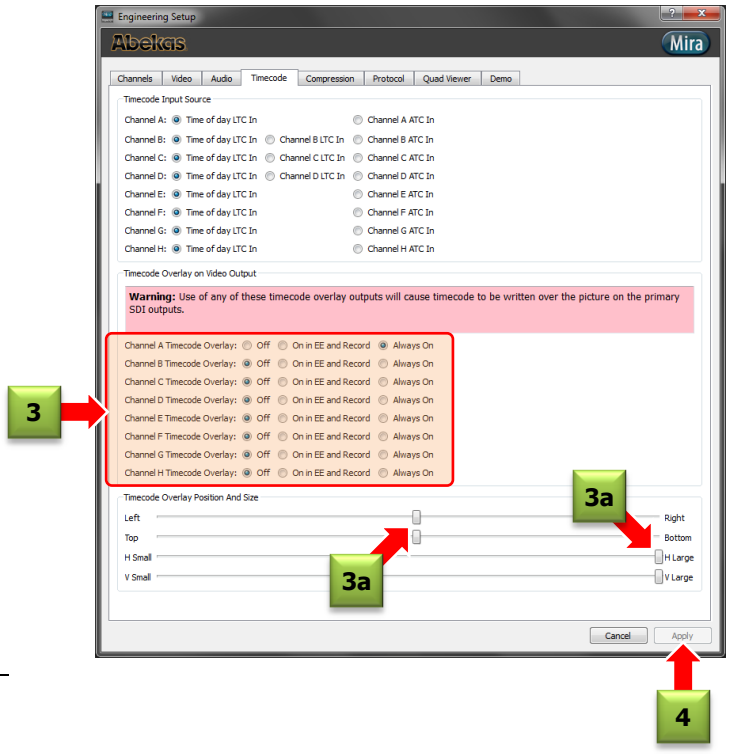
- **Time of Day LTC In**
  Selects the analog LTC input signal from the "LTC IN" XLR connector on the Mira rear panel as the timecode source when recording clips in Mira.
- **Channel A – Channel H ATC In**
  Selects the SDI embedded digital timecode as the timecode source when recording clips in Mira.



Timecode Overlay on Video Output

- **Off**
  Turns OFF the timecode overlay. This is the normal default setting.
- **On in EE and Record**
  Turns ON the timecode overlay on the SD/HD-SDI digital video outputs—but the timecode overlay appears only when "EE" mode is ON; or when "RECORDING" mode is active.
- **Always On**
  Turns ON the timecode overlay on the SD/HD-SDI digital video outputs—the overlay appears in all transport modes of operation.

  ▶ ***NOTE:** Any "On" setting will cause burned-in timecode overlay to appear in the SD/HD-SDI digital video outputs:*



Engineering Setup — Compression

The **Compression** tab in the Mira Engineering Setup menu is used to set the desired compression bit rate for new clip recordings in Mira. The bit rate determines the overall video quality and server storage times: lower bit rates result in lower picture quality with higher server recording time; higher bit rates result in higher image quality with lower server recording time.

This compression setting affects only new clip recordings. Clips are already recorded in Mira are unaffected by changes to this setting.

Mira 4-Channel & Mira 8-Channel Servers

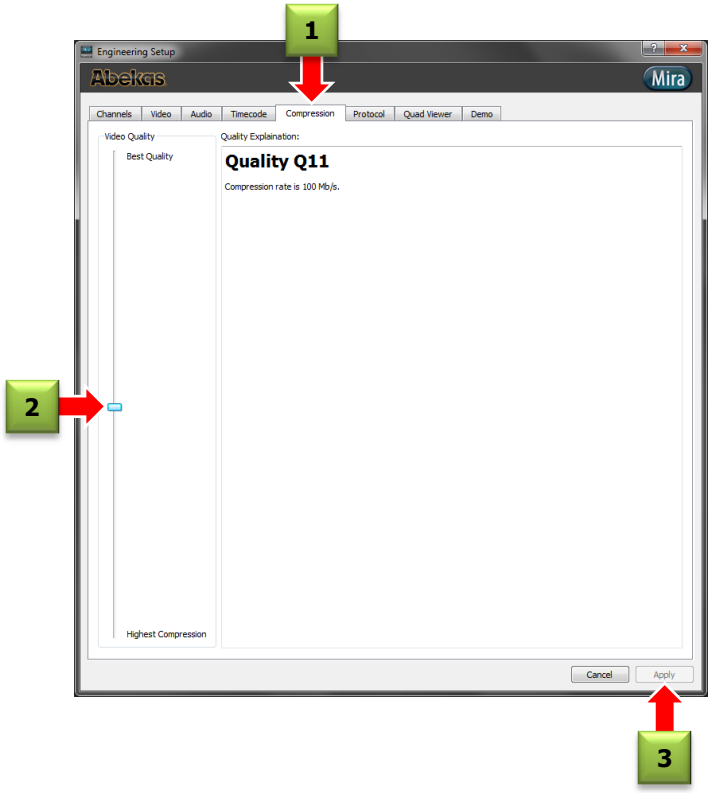
*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

1. Click "**Compression**" tab.
2. Click and drag slider to set desired compression bit rate.
3. Click Apply to accept changes.

Video Quality

There are 20 compression settings (Q1 through Q20), and are set by the slider bar.

- **Best Quality**
  Moving the slider upward results in higher bit rates with higher image quality. The overall server recording time reduces when the slider is moved upward.
- **Highest Compression**
  Moving the slider downward results in lower bit rates with lower image quality. The overall server recording time increases when the slider is moved downward.

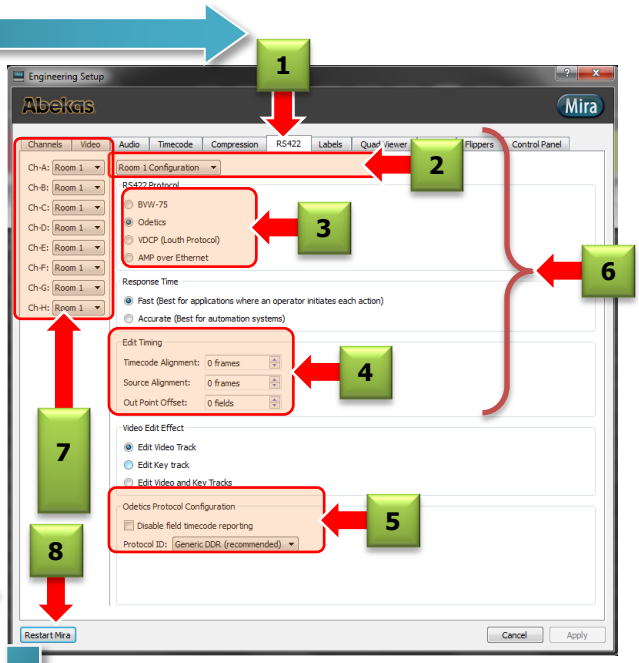


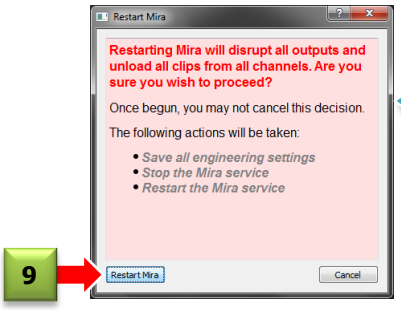
Engineering Setup — RS422

The **RS422** tab in the Mira Engineering Setup menu is used to assign RS422 serial control protocol and customized parameters to one of 16 "Rooms"; and then you can assign that "Room" to any of the video channel RS422 serial control ports.

*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

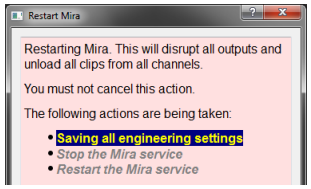
1. Click "**RS422**" tab.
2. Click "**Room x Configuration**" pull-down and select desired "**Room #**" you wish to configure.
3. Click radio button for desired RS422 protocol.
4. ***Optional:*** Adjust Edit Timing parameters (*see explanations on next page*).
5. ***Optional:*** Adjust Protocol Configuration parameters (*see explanations on next page*).
6. Repeat steps (2) thru (5) above for any additional "***Rooms***" you wish to configure.
7. Assign configured "***Room***" to desired RS422 serial control port, using Port pull-downs.
   - ▶ *(Port 1 = ChA); (Port 2 = ChB); etc.*
8. Click Restart Mira button.
   - ▶ *The Restart **Mira** window appears:*

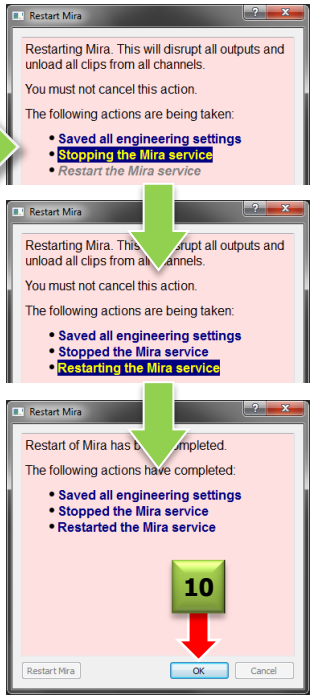




▶ *The next step will unload & reset **ALL** video channels!*

9. Click Restart Mira (*shown above*).
   - ▶ *Restart progress is displayed; finishes in 10-15 seconds:*





10. Click OK in **Restart Mira** window.
    - ▶ *This will close the **Restart Mira** window.*

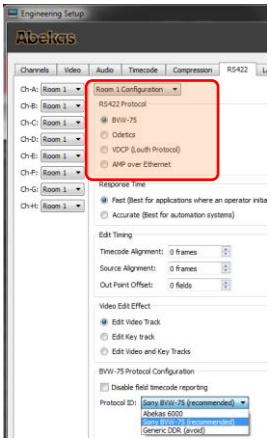
Continued on next page…

Explanation of “RS422” parameters in Mira Engineering Setup menu.

Mira 4-Channel & 8-Channel Servers

*To open the Mira **Engineering Setup** window shown below, perform the procedure “**Launching Mira Engineering Setup Utility**” found on page 166 above.*

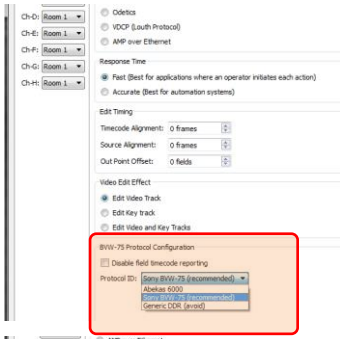
Protocol

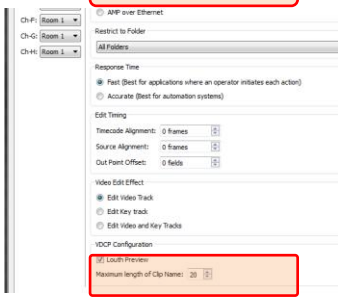


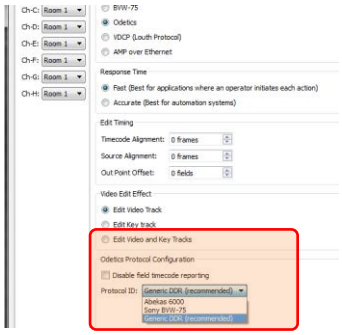
This set of radio buttons assigns the RS422 serial protocol to the currently selected ***Room Configuration*** *(pull-down located above the radio buttons)*.

- **BVW-75**
  Assigns Sony BVW-75 protocol to the selected Room; no Clip ID listing & loading.
- **Odetics**
  Assigns Odetics protocol to the selected Room; supports Clip ID listing & loading.
- **VDCP (Louth Protocol)**
  Assigns VDCP protocol to the selected Room; supports Clip ID listing & loading.
- **AMP over Ethernet**
  Assigns AMP protocol to the selected Room; supports Clip ID listing & loading.

Protocol Configuration







This area will change according to the currently selected Protocol.

- **Disable field timecode reporting**
  This parameter determines how often timecode is reported on the RS422 serial control port. Some external controllers expect to see timecode once every field of video; while others expect to see timecode once every frame of video.

  Unchecked = timecode reported every field of video.

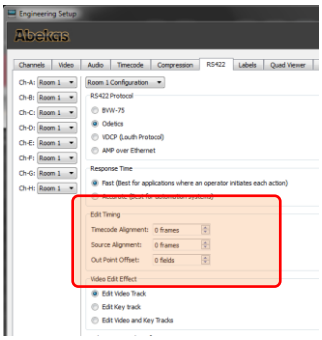
  Checked = timecode reported every frame of video.
- **Protocol ID**
  This parameter determines which “Device ID” is sent down the RS422 serial control port to the controlling device when queried by the controller.
- **Louth Preview**
  In VDCP protocol, this command allows clip ID’s to be “pre-cued” in the background, providing seamless transitions when playing back-to-back clips. If this command is turned OFF in Mira, there may be frozen video at the end of clips when played back-to-back.

  Unchecked = Preview support turned OFF.

  Checked = Preview support turned ON.
- **Response Time**
  Fast = best for applications where an operator initiates each action.

  Accurate = best for automation systems.

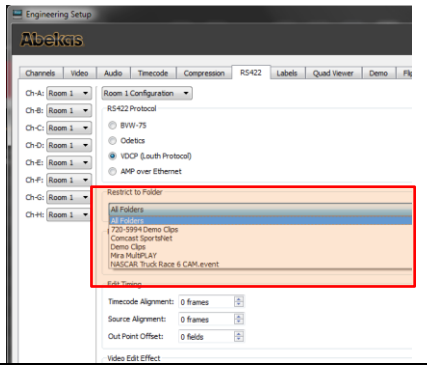
Edit Timing



These parameters have effect only when Mira is under RS422 serial control from and external edit controller.

- **Timecode Alignment** — offsets the position of the timecode (with respect to video/audio) that's reported on the RS422 serial control port when Mira is used as Player or Recorder while under control from an external edit controller.
- **Source Alignment** — offsets the position of the timecode (with respect to video/audio) that's reported on the RS422 serial control port when Mira is used as Player (Source Machine) while under control from an external edit controller.
- **Out Point Offset** — offsets the position of the edit OUT point that's reported on the RS422 serial control port when Mira is used as Recorder (Record Machine) while under from an external edit controller.

VDCP: Restrict to Folder



This parameter allows the user to restrict the Mira Clip Library (which is all data housed in the **"Video"** folder of the Mira's **H Drive**) to display only individual sub-folders for use with production switchers. The drop down menu provides a list of all file folders located in the **Video** folder of the **H Drive.**

Engineering Setup — Quad Viewer

The **Quad Viewer** tab in the Mira Engineering Setup menu is used to control the desired amount of opacity/transparency for the text overlays on the HD-SDI Quad Viewer video output (see Figure 10 on page 199 below for an illustration of this Quad Viewer).

These overlay opacity/transparency settings affects only the HD-SDI Quad Viewer output from Mira. These settings do **not** affect the computer desktop Viewer that is part of the Mira Explorer user interface.

Mira 4-Channel & Mira 8-Channel Servers

*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

1. Click "**Quad Viewer**" tab.
2. Click and drag "**Overlay Text Opacity**" slider to set desired transparency of character text.
3. Click and drag "**Background Opacity**" slider to set desired transparency of black backgrounds behind text.
4. **Optional**: instead of two previous steps, you may select one of three "Overlay Preset" radio buttons.

Overlay Text Opacity

This is a continuous adjustment slider bar ranging from 0% opacity to 100% opacity:

- **Opaque (100%)**
  Makes the text completely opaque; the black background rectangles and/or video in the background are not visible through the text.
- **Invisible (0%)**
  Makes the text completely transparent; the black background rectangles and/or video in the background are completely visible through the text.

Background Opacity

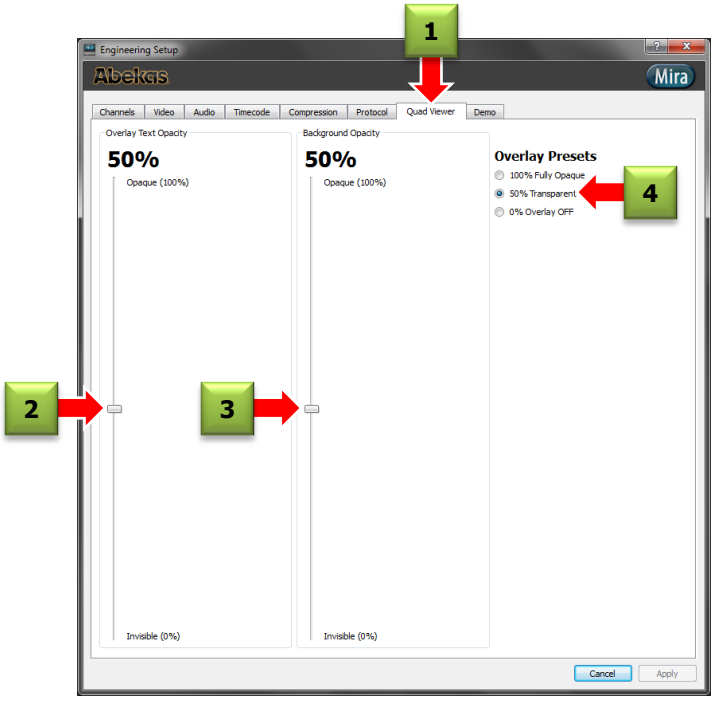
This is a continuous adjustment slider bar ranging from 0% opacity to 100% opacity:

- **Opaque (100%)**
  Makes the black background rectangles behind the overlay text completely opaque; so none of the video behind the black rectangles is visible.
- **Invisible (0%)**
  black background rectangles behind the overlay text completely transparent; so all of the video behind the black rectangles is visible.

Overlay Presets

Three radio buttons that assign preset values to the two opacity sliders:

- **100% Fully Opaque**
  Sets both the Text Overlay and Background Opacity to 100%; so no video behind the overlay is visible.
- **50% Transparent**
  Sets both the Text Overlay and Background Opacity to 50%; so video behind the overlay is partially visible.



- **Overlay OFF**
  Sets both the Text Overlay and Background Opacity to 0%; so video behind the overlay is completely visible.

Engineering Setup — Demo

The **Demo** tab in the Mira Engineering Setup menu may or may not be present; it is usually only present in Abekas demo equipment.

If the **Demo** tab is not present, then all is okay.

If the **Demo** tab is present, then be sure to disable the demo function if you wish to use Mira for any real-life applications.

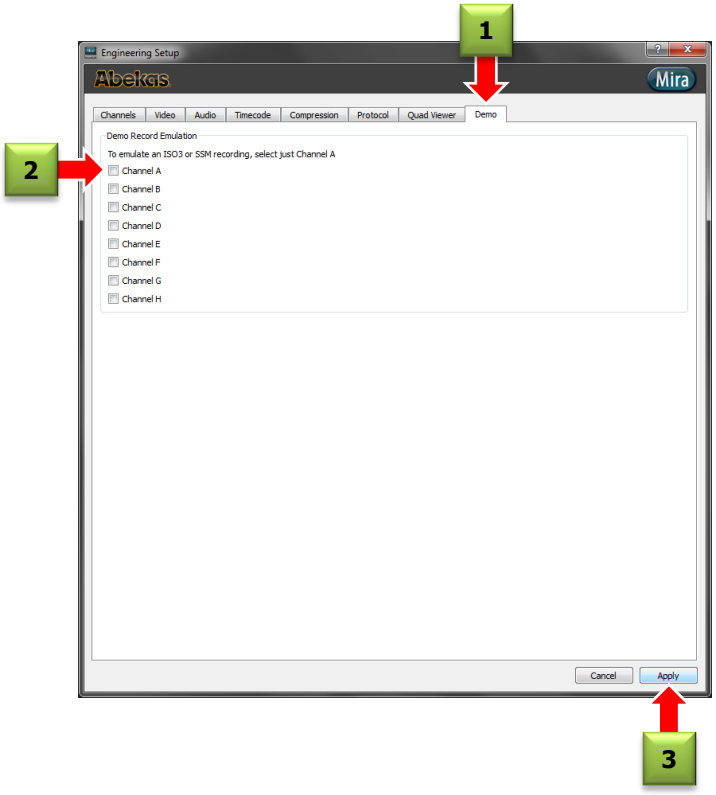
NOTE: When the demo mode is enabled for Channel A, the Mira server will simulate live recording on Channel A when a multi-camera ISO clip is loaded and played in Channel A. This demo mode is for purposes of demonstrating the "Live Instant Replay" application in Mira with an external instant replay control panel. This is useful if live cameras are not available; a pre-recorded multi-camera demo clip may be used instead.

To ensure proper operation of the Live Instant Replay application when live cameras are available, then be sure to disable the "Demo" mode.

Mira 4-Channel & Mira 8-Channel Servers

*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

1. Click "**Demo**" tab.
   (*If this tab is not present, then Demo mode is disabled by default*)
2. Click the "**Channel A**" checkbox (and any other checkbox that may be enabled) so it is "**un-checked**".
3. Click Apply to accept changes.



Engineering Setup — Flipper Option

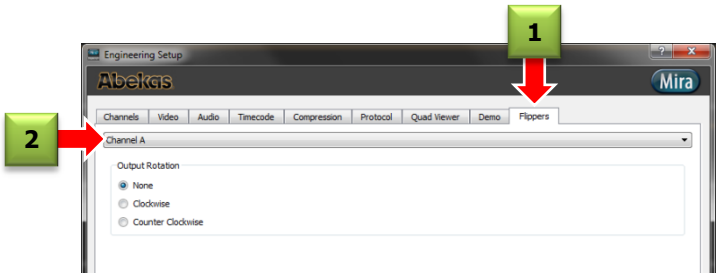
When operating Mira in HD 720 or 1080 video formats, the Flipper option can rotate each 16x9 HD video output clockwise or counter-clockwise by 90° and automatically apply a crop & resize to the image—so the image will fit and fill a vertically-mounted 16x9 widescreen monitor. An image pan control is also provided to select within the source video image where the crop is applied. Each video output channel has independent controls for the Flipper option, so one may tailor the video outputs to more than one monitor.

NOTE: The **Flippers** tab in the Mira Engineering Setup menu may or may not be present; it is only present when the optional hardware for the Flipper option is fitted in the Mira server. There is also a license key required to enable the feature and have the "Flippers" tab present in the Mira Engineering Setup menu. If the **Flippers** tab is not present and you want this functionality, then please contact your Abekas sales representative.

Mira 4-Channel & Mira 8-Channel Servers

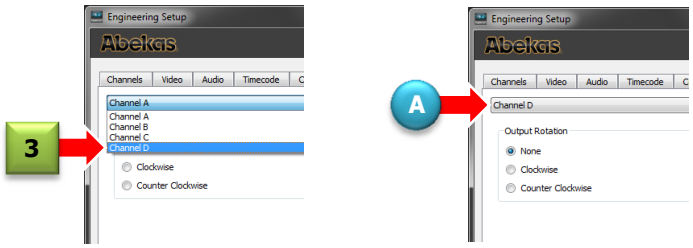
*To open the Mira **Engineering Setup** window shown below, perform the procedure "**Launching Mira Engineering Setup Utility**" found on page 166 above.*

1. Click "**Flippers**" tab.
   (*If this tab is not present, this hardware feature is not installed in your Mira*)
2. Click "**Channel**" pull-down.



3. Click video channel on which you want to apply the Flipper function; release mouse button.

   (A) ***Channel D*** *is selected.*



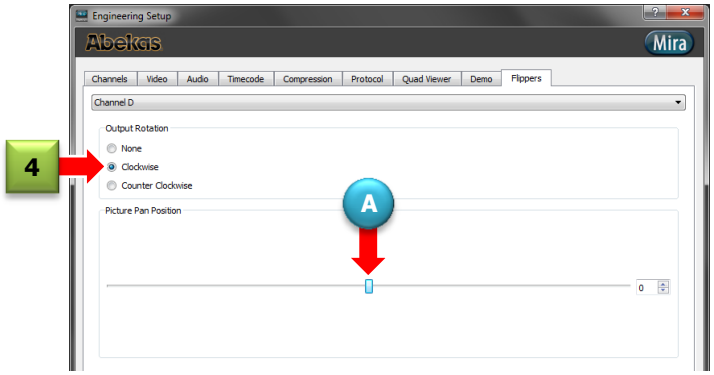
Channel D video output on vertically-oriented widescreen monitor with **Output Rotation** = **None**

Continued on next page…

4. Click "**Clockwise**" or "**Counter Clockwise**" radio button in the ***Output Rotation*** section.

   (*Select radio button according to which direction the physical widescreen monitor is rotated*)

   (A) *"**Picture Pan Position**" control appears.*

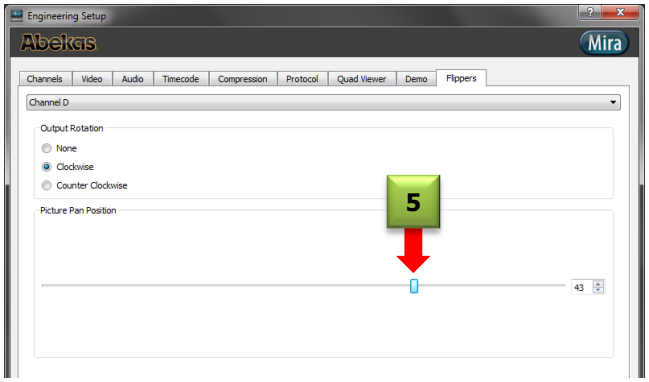


   (B) *Video output on **Channel D** is rotated clockwise 90° (or counter-clockwise 90°); and is automatically resized to fit vertically on monitor.*

Channel D video output on vertically-oriented widescreen monitor with **Output Rotation** = **Clockwise**

5. **Click-hold-and-drag** mouse Pan control in the ***Picture Pan Position*** section.

   Adjust Pan control until source video is positioned as desired on vertically-oriented widescreen monitor.



   (A) *The source video is moved LEFT or RIGHT, depending on the movement of the Pan control.*

Channel D video output on vertically-oriented widescreen monitor with **Output Rotation** = **Clockwise & Pan Control RIGHT**

Quad Viewer

As a standard feature, Mira includes a built-in Quad Viewer which displays the outputs of a set of four video channels on a single dedicated digital video output. This Quad Viewer appears on a dedicated HD-SDI digital video connector on the Mira server rear panel.

The Quad Viewer only appears when Mira is operating in HD video formats, 720 or 1080. The Quad Viewer output is **disabled** when Mira is operating in SD video formats, 525 or 625. If you will be operating Mira in standard definition, then please use the desktop Viewer that is built into the Mira Explorer user interface instead of this Quad Viewer.

To locate the BNC connector that supplies this Quad Viewer image, please refer to item "**(J)**" in the illustration found in **Figure 1** on page 17 above. Mira 8-Channel servers feature two of these BNC connectors: one for ChA-ChD; the other for ChE-ChH.

The four video images are full-motion low-resolution images of the four video channel outputs. Superimposed over each video channel is a status display which includes the following:

A. **Channel Label** (ChA, ChB, ChC, ChD) and (ChE, ChF, ChG, ChH) for the Mira 8-Channel server.
B. **Calibrated Audio Metering** (8-Track audio is standard; 16-Track audio is optional)
C. **"Play Speed / RECORDING" Indicator** (the illustration below shows ChA-ChC with the RECORDING indicator; ChD is shown with play speed indicator)
D. **Clip Name** (length varies, according to Clip Name; if length of Clip Name is very long, then the right end of the Clip Name will be truncated)
E. **Timecode** (field mode is appended with "f1" or "f2"; frame mode is appended with "f1-2")

The opacity of the text and black rectangles within the status overlay can be adjusted in the Mira Engineering Setup menu. These overlay characters and background can be made semi-transparent, so video images behind the overlay can be made visible through the overlay. Please refer to the procedure "***Engineering Setup — Quad Viewer***" on page 194 above to change the overlay opacity.

The illustration in **Figure 10** below provides a sample image of the Quad Viewer output.

Figure 11 Mira Quad Viewer

RS422 Serial Control

Each video channel in Mira features an RS422 serial control port, located through a break-out cable on the rear panel of the Mira Server. At the end of the breakout cable are "Ethernet" type RJ45 connectors. Mira includes adapters for each RS422 serial port to convert the RJ45 cable to 9D, so you can just plug a standard male 9D serial cable into the adapter.

These RJ45 cables for the RS422 serial ports are each wired 1:1 from the eight pins of the RJ45 to the first eight of the nine pins in standard "D9" serial RS422 cables. A given installation of the Mira server may require use of the RJ45-to-D9 adapter if RS422 serial control is routed via D9 connection.

These RS422 serial ports are used to control the video/audio channels of the Mira server from external controllers capable of RS422 serial control, and which support either "Sony BVW-75," "Odetics," "AMP over Ethernet," or "Louth VDCP" protocols.

Select RS422 Protocol

To select the desired protocol for the RS422 serial control ports, please refer to the procedure "***Engineering Setup — Protocol***" found on page 192 above.

Clip ID Support

From remote controllers with Louth VDCP, AMP, or Odetics protocol, the eight-character "Clip ID" for clips stored in Mira is used for referencing the clip listing and clip loading.

The "**Clip ID**" field is normally left blank when importing media files, and is sometimes left blank when recording new clips into Mira. If the **Clip ID** remains blank, external controllers via RS422 serial control will automatically reference the first eight characters of the **Clip Name**. If/when the user populates the **Clip ID** field from Mira Explorer, then external controllers will reference the **Clip ID** instead of **Clip Name** for clip listing and loading.

Trouble-shooting Guide

The following trouble-shooting chart will help you to solve the most common problems you may encounter while operating the Mira Server.

Problems with Mira Explorer

Symptom	Solution
Transport control buttons (Play, Stop, etc.) are grayed out.	Is Mira operating in an "ISO" mode; if yes, then only ChA will have active transport controls in the ISO group. For example, during "ISO3" operation, ChA will have active transport controls, but ChB and ChC will have their controls grayed out. Is a play channel selected? Is a clip loaded in the selected play channel? ➲ Refer to "***Select Video Channel & Load Clips***" as described on page 30.
A play channel is selected, and a clip is loaded, but still can't control anything.	Are you logged in as "Guest" user? "Guest" user level may not have permission to transport controls; quit Mira Explorer, and log back in as either "Administrator" or as "Privileged User". ➲ Refer to "***Administrator Options***" as described on page 109; pay particular attention to the "***Permissions***" items as described in step 6 on page 112.
There are clips stored inside the Mira Server, but don't see any clips listed in Mira Explorer clip directory listing.	Expand the clip listing within the "**Clip ID**" column, by clicking the small ⊞ symbol before the server name. ➲ Perform "**Find All**" search operation, described in step 6 on page 75.
Cannot see all of the information for a given column in the clip directory listing; there is a "…" symbol at end of the field.	Expand the width of the given column. ➲ Refer to "***Changing Column Width***" on page 55.
Cannot modify any of the clip metadata in Clip Modify menu.	Is the clip locked? Clip metadata cannot be modified on locked clips. ➲ Refer to "***Lock / Unlock Clips***" as described on page 106.
Cannot see any other Windows or Taskbar, because Mira Explorer covers the entire computer screen.	Mira Explorer is in "**Full Screen**" mode. Toggle **F11** key on QWERTY keyboard to exit (or to enter) this mode.
Cannot delete a given clip, or cannot delete any clips.	Is the clip locked? Clips cannot be deleted if locked. ➲ Refer to "***Lock / Unlock Clips***" as described on page 106. Do you have proper user permissions? You may not have permission to delete clips at your user level. ➲ Refer to "***Administrator Options***" as described on page 109; pay particular attention to the "***Permissions***" items as described in step 6 on page 112.
I see the "Keywords" field in the Clip Modify menu, I can enter them, but I can't see the Keywords in the Clip Library listing.	While it is possible to enter, save and search (Find) Keywords for all clips, the feature to display the Keywords in the Clip Library listing is not yet implemented.

Problems with Mira Media File Import

Symptom	Solution
Cannot see any remote directories when choosing the "**Import From**" directory, or when selecting clips to import.	Have you mapped the remote directory as a local disk drive? ➲ Refer to the procedure "**Map Network Disk for Media File Import**" on page 140.
Video on Channel is disrupted when importing media files.	This is how media file importing operates; the processing hardware for a video Channel is used during media file import—to accelerate the import process. Think of the import as a "record" operation for media files.
Get a "missing codec" error message when importing some QuickTime MOV files.	If the MOV file you're attempting to import was created with a non-standard codec (for example, with Avid DNxHD codec), then you will need to visit the web site of the codec creator, and download and install that codec on the Mira Server. To find out which codec was used to create the MOV file, open the MOV file in the standard QuickTime player, then choose the "Window" and then the "Movie Inspector" items (shortcut = "CTRL+i). The codec will be listed within the "Source" information shown in the movie inspector.
Importing SD-525 MOV files result in HD-1080 clips (or vice-versa).	This is how the media file importer works. The importer converts all MOV files into the current video output format of the Mira Server. For example, if the server is set to the 1080/59.94i video format for the video output channels, then all imported clips are converted to 1080/59.94i video format. If you want to import SD-525 MOV files as SD-525 clips, then change the video format of the server to the SD-525 video format before importing these MOV files.

Continued on next page…

Problems with Mira Server in General

Symptom	Solution
Video output is not synchronized with downstream devices.	Have you connected bi-level analog reference to reference input? ➲ Connect bi-level reference to the input reference connector—please refer to item (I) on page 18.
I cannot record external timecode.	Have you connected analog timecode to the LTC IN on the chassis rear? ➲ Connect analog timecode signal to the LTC IN connector. ➲ Ensure the timecode signal is 1V peak-to-peak minimum.
How do I record more than just two tracks of audio?	Mira comes standard with 8-track embedded audio per video channel as a standard feature. To record more than two-track audio, you must enable the selection in Mira Engineering Setup utility, under the "**Audio**" tab. See page 188 for more information.
I hear a beeping sound from inside the main server chassis.	This could be either a power supply problem or a media disk drive problem. ➲ Check to see if two power cords are connected to the AC input on both power supplies; if only one power cord is connected, then the internal alarm will sound. The only way to silence the alarm is to either connect AC power to both modules; or remove the module without power, and operate with just one power module (not recommended). ➲ If the two power cords are connected to the two modules of the power supply, and you're sure there is full power on both power cords, then check the small l.e.d. on each of the two power supply modules (from the chassis rear); these lights should be solid green. If either light is blinking, or has changed to yellow or red, then you may have a power module failure. Remove the suspect module immediately—the alarm should then mute. Please telephone Abekas technical support for assistance: (+1-650-470-0905 in the PST time zone of United States). ➲ If the power supply checks okay, then remove the plastic front panel cover from the front of the Mira Server; check the row of blue lamps above the two disk drive bays. All 12 of these lights should be OFF; are any of these lights ON or blinking? If yes, then there may be a failed media disk drive. Please telephone Abekas technical support for assistance: (+1-650-470-0905 in the PST time zone of United States). Since the media disk array is RAID-6 parity-protected, all recorded media are protected, even with up to two failed media disk drives. You may experience slight reduction in video playback performance in some cases when one or two media disk drives have failed—for example, jog operation may appear less smooth. However, media record operations will be unaffected by one or two media disk drive failures. It is strongly recommended to replace a failed media disk drive as soon as possible. This is especially true if two media disk drives have failed—if a third media disk drive were to then fail, then all recorded media on Mira will be forever destroyed!

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