SONY

CAMERA CONTROL UNIT

CCU-900
CCU-900P

DIGITAL INTERFACE UNIT
BKP-9330

INSTALLATION AND MAINTENANCE MANUAL
1st Edition (Revised 2)
Serial No. 10001 and Higher: CCU-900 (UC)
Serial No. 30001 and Higher: CCU-900 (J)
Serial No. 40001 and Higher: CCU-900P (CE)
Serial No. 10001 and Higher: BKP-9330 (SY)

⚠警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理などを行うと感電や火災，人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用ください。

⚠WARNING

This manual is intended for qualified service personnel only.
To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.
Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

⚠AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l’entretien. Afin de réduire les risques de décharge électrique, d’incendie ou de blessure n’effectuer que les réparations indiquées dans le mode d’emploi à moins d’être qualifié pour en effectuer d’autres. Pour toute réparation faire appel à une personne compétente uniquement.

Note

The cautions on this page are applied to CCU-900/900P.

Laser Diode Properties

Material	: In GaAsP
Wave length	: 1310 nm
Emission duration	: Pulse code modulation
Laser output power	: –8 dBm

CLASS 1
LASER PRODUCT

LASER KLASSE 1
PRODUKT

This camera control unit is classified as a CLASS 1 LASER PRODUCT.
The CLASS 1 LASER PRODUCT label is located on the rear panel.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer :

Check the metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 3.5 mA. Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 5.25 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 20 V AC range are suitable. (See Fig. A)

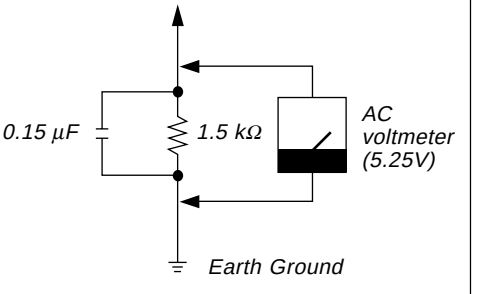

Fig A. Using an AC voltmeter to check AC leakage.

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Manual Structure

1. Installation Overview

2. Setting Menu

3. System Setup

4. Service Overview

Manual Structure

Purpose of this manual

This manual is the installation and maintenance manual of Camera Control Unit CCU-900/900P.
This manual is intended for use by trained system and service engineers, and describes the information regarding the installation of the unit and the information that premises the service based on components replacement.

Related manuals

Beside this Installation and Maintenance Manual, the following manuals are available for the unit.

- **Operation Manual (supplied with CCU-900/900P)**
  This manual describes how to operate the CCU-900/900P.

- **Maintenance Manual Vol. 1 (available on request)**
  This manual intended for use by trained system and service engineers describes (the circuit overview, self-diagnosis, the main part replacements, electrical alignment, etc.) required for parts-level service.
  For obtaining, contact your local Sony Sales Office/Service Center.
  Part number: 9-968-569-0X

- **Maintenance Manual Vol. 2 (available on request)**
  This manual intended for use by trained system and service engineers describes (the parts list, semiconductor pin assignments, block diagrams, schematic diagrams and board layouts) required for parts-level service.
  For obtaining, contact your local Sony Sales Office/Service Center.
  Part number: 9-968-570-0X

- **“Semiconductor Pin Assignments” CD-ROM (available on request)**
  This “Semiconductor Pin Assignments” CD-ROM allows you to search for semiconductors used in Communication System Solutions Network Company equipment.
  Semiconductors that cannot be searched for on this CD-ROM are listed in the maintenance manual for the corresponding unit. The maintenance manual contains a complete list of all semiconductors and their ID Nos., and thus should be used together with the CD-ROM.
  Part number: 9-968-546-XX

Contents

The following is a summary of the sections of this manual.

Trademarks

Trademarks and registered trademarks used in this manual are follows.

- Clear-Com is a registered trademark of Clear-Com Intercom Systems.
- Accuride is a registered trademark of Accuride International Corporation.

Section 1
Installation Overview

1-1. Checking the ROM Version

When connecting this unit to the BVP-950/950P, MSU-700A, CNU-700 or other unit, confirm that the versions of the ROMs which are installed in each model are the following versions or higher in advance. If the ROM needs to be replaced, contact your local Sony Sales Office/Service Center.

Peripheral equipment	Board	Ref. No.	ROM version
BVP-950/950P	AT-121 board	IC8, IC9	Ver.1.30 or higher
MSU-700A	CPU-293 board	IC5, IC6	Ver.1.10 or higher
MSU-750	CPU-286 board	IC5, IC6	Ver.1.10 or higher
CNU-700	AT-89 board	IC4, IC5	Ver.3.20 or higher
CNU-500	AT-100 board	IC4, IC5	Ver.2.80 or higher

1-2. Connectors and Cables

1-2-1. Connector Input/Output Signal

The connector input/output signals are as follows.

Rear panel

Input signals (BNC connector : 75 Ω)

- SERIAL RET (4 systems)*1 D1 format serial digital, 270 Mbps
- SERIAL AUX*1 D1 format serial digital, 270 Mbps
- REFERENCE 40 IRE, VS, sync loop through
- RET (4 systems)*1 140 IRE, VBS or VS
- PROMPTER INPUT 140 IRE, VBS or VS, loop through

∗1 : The SERIAL RET/RET/SERIAL AUX signal should be clock-synchronized with the CCU-900/900P or the REFERENCE signal.

Output signals (BNC connector : 75 Ω)

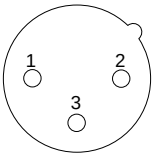
- SERIAL OUTPUT (3 systems) D1 format serial digital, SMPTE 259M/ITU-R BT.656
- SERIAL MONITOR OUTPUT D1 format serial digital, SMPTE 259M/ITU-R BT.656
- SERIAL AUX OUTPUT*2 D1 format serial digital
- PIX (2 systems) 140 IRE
- WF (2 systems) 100 IRE/140 IRE (ENC)
- PROMPTER OUTPUT 140 IRE
- CHARACTER 210 mV p-p, 300 mV p-p (sync)
- SYNC 300 mV p-p
- DIGITAL AUDIO AES/EBU format
- SS-A, SS-B, SS-C D1 format serial digital, SMPTE 259M/ITU-R BT.656
  Super motion output (when the BKP-9330 is installed)

∗2 : When the dual mode is selected and set (in both primary and secondary), the data that is unique to the camera system is inserted.

CAMERA (Optical/electorical connector)

- VIDEO 1.08 Gbps serial
- RET VIDEO/AUX 1.08 Gbps serial
- INCOM 2ch
- AUDIO 2ch
- PGM 2ch
- CAMERA COMMAND

AUDIO OUTPUT CH-1/CH-2 (XLR 3-pin, Male)

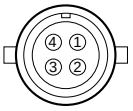


– EXT VIEW –

(0 dBu = 0.775 Vrms)

No.	Signal	Specifications
1	MIC OUT (G)	0 dBu/–20 dBu
2	MIC OUT (X)	(Selectable with S101, S102/
3	MIC OUT (Y)	AT board)

WF MODE (4-pin Female)

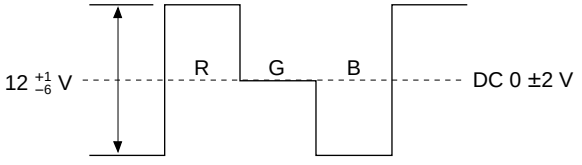


– EXT VIEW –

(0 dBu = 0.775 Vrms)

No.	Signal	Specifications
1	SEQ CONT OUT (G)	OPEN COLLECTOR
		+(PNP)/–(NPN)
2	SEQ CONT OUT (X)	(Selectable with S601/DPR board)
3	STAIR CASE OUT (X)	∗1
4	STAIR CASE OUT (G)	GND for STAIR CASE

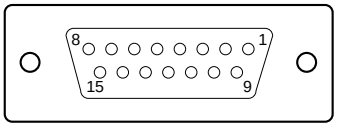
∗1 : Stair Case signal



∗2 :

CONT0	CONT1	CONT2	CHU MIC AMP GAIN
H	H	H	60 dB
L	H	H	50 dB
H	L	H	40 dB
L	L	H	30 dB
H	H	L	20 dB

MIC REMOTE (D-sub 15-pin, Female)



– EXT VIEW –

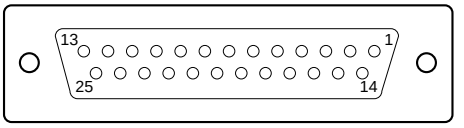
(0 dBu = 0.775 Vrms)

No.	Signal	Specifications
1	+5.5 V OUT	Max. 500 mA
2	TALLY GND	GND for TALLY
3	G TALLY OUT	Q9 (NPN)/AT board
		ON (GND) : Max 30 mA
4	R TALLY OUT	Q17 (NPN)/AT board
		ON (GND) : Max 30 mA
5	CHU MIC1 AMP GAIN CONT2	∗2 Refer to the following table.
6	CONT1	
7	CONT0	
8	MIC GAIN CONT1 IN	∗3 Refer to the following table.
9	GND (+5.5 V)	GND for +5.5 V
10	TALLY OUT	R/G TALLY OUT
		Q7 (NPN)/AT board
		ON (GND) : Max 30 mA
11	NC	No connection
12	16:9/4:3 SELECT EN IN (S1002-1/AT board → OFF)	+5.0 V (or OPEN) : DIS-EN GND : EN
	CHU MIC2 AMP GAIN CONT2 (S1002-1/AT board → ON)	∗2 Refer to the following table.
13	16:9/4:3 SELECT IN (S1002-1/AT board → OFF)	+5.0 V (or OPEN) : 4 : 3 GND : 16 : 9
	CHU MIC2 AMP GAIN CONT1 (S1002-1/AT board → ON)	∗2 Refer to the following table.
14	NC (S1002-1/AT board → OFF)	No connection
	CHU MIC2 AMP GAIN CONT0 (S1002-1/AT board → ON)	∗2 Refer to the following table.
15	MIC GAIN CONT2 IN	∗3 Refer to the following table.

∗3 :

8-pin	15-pin	MIC GAIN CONT
L	L	MIC1/MIC2 ON
L	H	MIC1 ON
H	L	MIC2 ON
H	H	INTERNAL SET

INTERCOM/TALLY/PGM (D-sub 25-pin, Female)

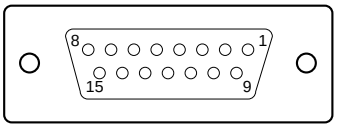


– EXT VIEW –

(0 dBu = 0.775 Vrms)

No.	Signal	Specifications
1	ENG (R) (X) OUT	ENG SYSTEM RECEIVE
2	ENG (R) (Y) OUT	0 dBu BALANCED
3	ENG (G)	GND for ENG
4	ENG (T) (X) IN	ENG SYSTEM TALK
5	ENG (T) (Y) IN	0 dBu BALANCED
6	PGM1 (X) IN	–20 dBu/0 dBu
7	PGM1 (Y) IN	(Selectable with S201/AT board)
8	PGM1 (G) IN	
9	GND	GND for AUX
10	AUX8	
11	R TALLY (X) IN	ON : 24 V dc, TTL (H), SHORT
12	R TALLY (Y) IN	OFF : 0 V dc, TTL (L), OPEN
13	GND	CHASSIS GND
14	PROD (R) (X) OUT	PROD SYSTEM
15	PROD (R) (Y) OUT	RECEIVE 0 dBu BALANCED
16	PROD (G)	GND for PROD
17	PROD (T) (X) IN	PROD SYSTEM TALK
18	PROD (T) (Y) IN	0 dBu BALANCED
19	PGM2 (X) IN	–20 dBu/0 dBu
20	PGM2 (Y) IN	(Selectable with S202/AT board)
21	PGM2 (G) IN	
22	AUX7	
23	AUX6	
24	G TALLY (X) IN	ON : 24 V dc, TTL (H), SHORT
25	G TALLY (Y) IN	OFF : 0 V dc, TTL (L), OPEN

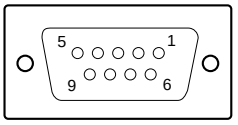
WF MODE (D-sub 15-pin, Female)



– EXT VIEW –

No.	Signal	Specifications
1	NC	No connection
2	NC	No connection
3	RECALL9	LOW ACTIVE
4	NC	No connection
5	RECALL2	LOW ACTIVE
6	RECALL3	
7	RECALL1	
8	RECALL4	
9	GND	
10	NC	No connection
11	RECALL10	LOW ACTIVE
12	RECALL5	
13	RECALL6	
14	RECALL7	
15	RECALL8	

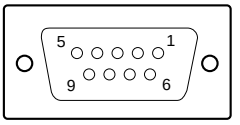
AUX1 (D-sub 9-pin, Female)



– EXT VIEW –

No.	Signal	Specifications
1	GND	
2	VTR RX (–)	
3	VTR TX (+)	
4	GND	
5	NC	No connection
6	GND	
7	VTR RX (+)	
8	VTR TX (–)	
9	GND	

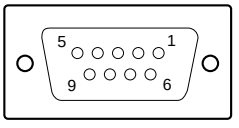
TRUNK LINE1 (D-sub 9-pin, Female)



– EXT VIEW –

No.	Signal	Specifications
1	DCD	
2	EXT-COM1 (RXD)	
3	EXT-COM1 (TXD)	
4	DTR	12 V, 15 kΩ
5	GND	
6	DSR	
7	EXT-COM1 (RTS)	
8	EXT-COM1 (CTS)	
9	NC	No connection

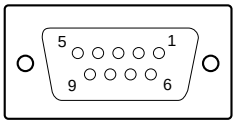
AUX2 (D-sub 9-pin, Female)



– EXT VIEW –

No.	Signal	Specifications
1	GND	
2	SPM TX (–)	
3	SPM RX (+)	
4	GND	
5	NC	No connection
6	GND	
7	SPM TX (+)	
8	SPM RX (–)	
9	GND	

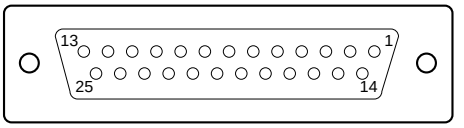
TRUNK LINE2 (D-sub 9-pin, Female)



– EXT VIEW –

No.	Signal	Specifications
1	DCD	
2	EXT-COM2 (RXD)	
3	EXT-COM2 (TXD)	
4	DTR	12 V, 15 kΩ
5	GND	
6	DSR	
7	EXT-COM2 (RTS)	
8	EXT-COM2 (CTS)	
9	NC	No connection

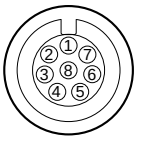
INCOM REMOTE (D-sub 25-pin, Female)



– EXT VIEW –

No.	Signal	Specifications
1	+5.5 V OUT	Max.500 mA THP7/AT board
2	CAMERA No. CK OUT	
3	CAMERA No. SPARE	
4	TALLY GND	GND for TALLY
5	G TALLY OUT	Q9 (NPN)/AT board ON (GND) : Max.30 mA
6	R TALLY OUT	Q17 (NPN)/AT board ON (GND) : Max.30 mA
7	TALLY OUT	RG TALLY OUT Q7 (NPN)/AT board ON (GND) : Max.30 mA
8	CALL OUT	Q1002 (NPN)/AT board ON (GND) : Max.30 mA
9	VOICE LOAD IN	L : VOICE LOAD
10	NC	No connection
11	NC	No connection
12	PRIVATE IN	L : INCOM PRIVATE ON
13	INCOM OFF OUT	L : CHU INCOM MIC OFF
14	GND	GND for +5.5 V
15	CAMERA No. DATA	
16	CAMERA No. STROB	
17	NC	No connection
18	ENG INTR IN	L : ENG INTERRUPT ON
19	PROD INTR IN	L : PROD INTERRUPT ON
20	×1/×3 IN	L : ×3 (for BVP-9500WS/9500WSP) H (OPEN) : ×1
21	NC	No connection
22	NC	No connection
23	×1/×3 ENABLE	L : Enable (for BVP-9500WS/9500WSP) H (OPEN) : DIS-EN
24	NC	No connection
25	NC	No connection

RCP/CNU (8-pin, Female)

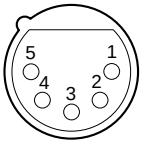


– EXT VIEW –

No.	Signal	Specifications
1	RCP TRS (+)	CCU SERIAL DATA
2	RCP TRS (–)	
3	RCP RCV (+)	RCP/CNU/BVP/MSU/VCS
4	RCP RCV (–)	SERIAL DATA
5	TX GND	GND for TX
6	POWER (+) OUT	RCP POWER, +30 V
7	POWER (–) OUT	GND for POWER
8	SPARE	
	CHASSIS GND	CHASSIS GND

Front panel

INTERCOM (5-pin, Female)



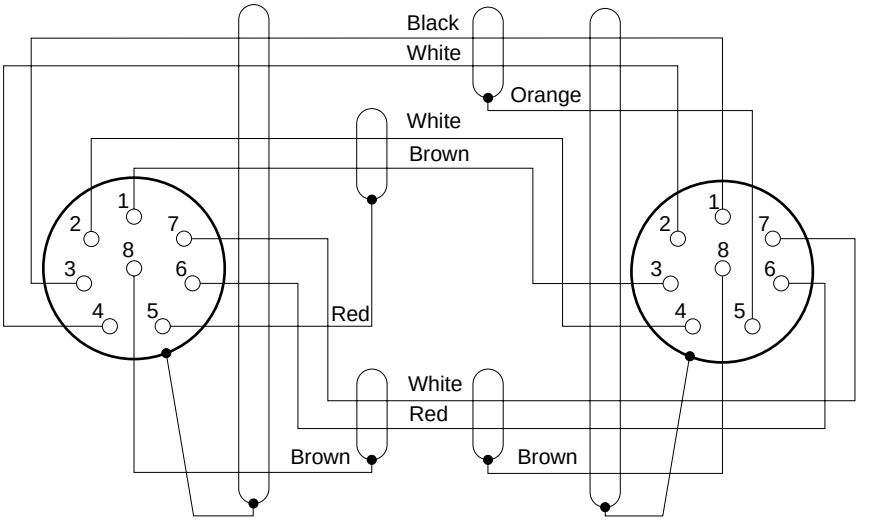
– EXT VIEW –

(0 dBu = 0.775 Vrms)

No.	Signal	Specifications
1	INCOM (T) IN (Y)	–20 dBu (CARBON MIC)
2	INCOM (T) IN (X)	–60 dBu (DYNAMIC MIC)
3	INCOM (T) IN (G)	GND for INCOM
4	INCOM (R) OUT (X)	Max. 12 dBu
5	NC	No connection

1-2-2. Cable Wiring Diagram

CCA-5 cable (for RCP/CNU connector)



1-2-3. Connection Connectors

When connecting cables to each connector of the connector panel during installation or service, connect the following connectors or equivalent to the tip.

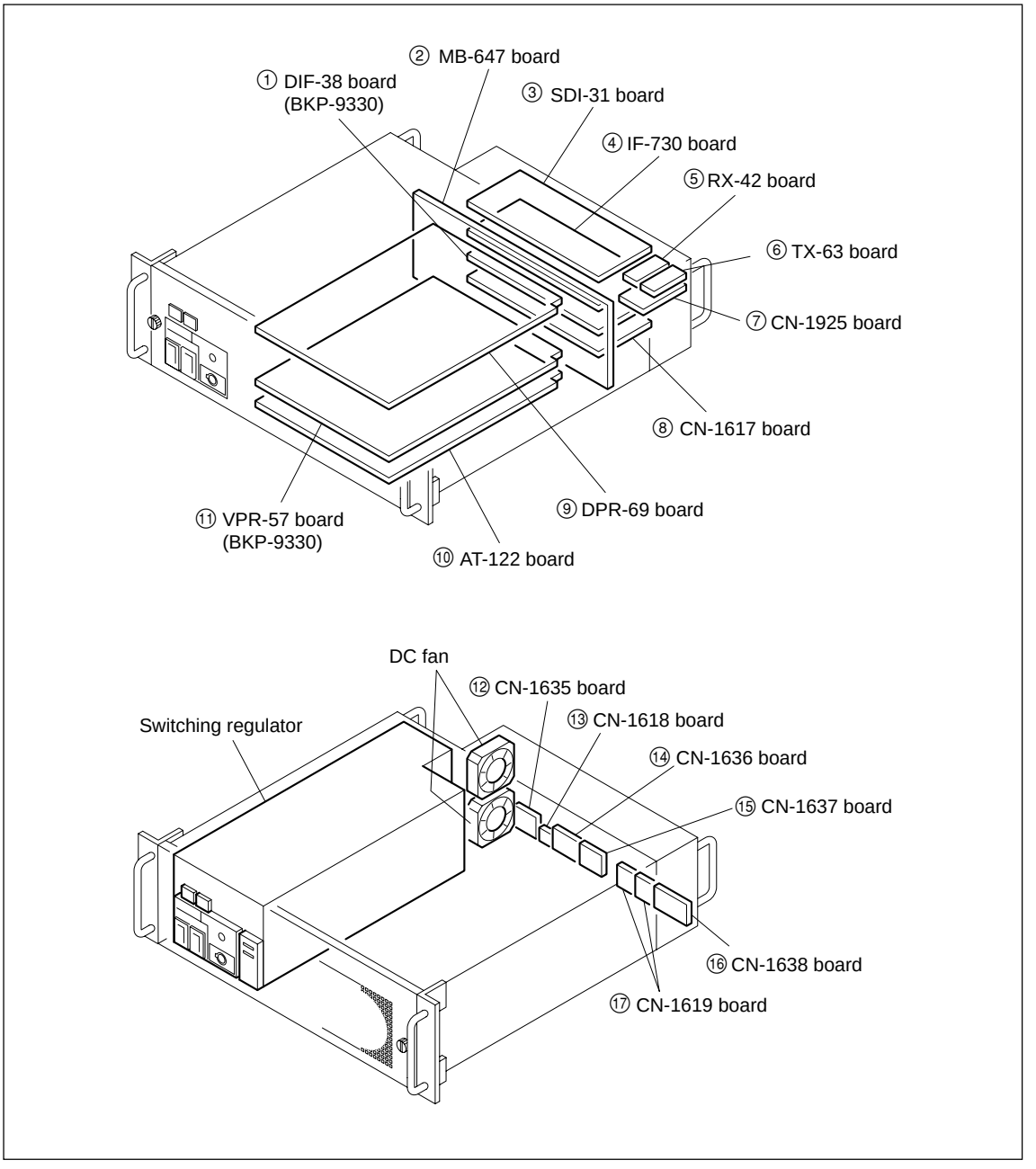
Connector	Connector/cable
REFERENCE RET 1/2/3/4 PROMPTER INPUT WF 1/2 PIX 1/2 PROMPTER OUTPUT CHARACTER SYNC DIGITAL AUDIO (BNC type)	1-569-370-12 PLUG, BNC
SERIAL RET 1/2/3/4 SERIAL AUX SERIAL OUTPUT 1/2/3 SERIAL AUX OUTPUT SERIAL MONITOR OUTPUT SS-A, SS-B, SS-C (BKP-9330) (BNC type)	1-569-370-12 PLUG, BNC or BELDEN8281 Cable or equivalent
AUDIO OUTPUT CH-1/CH-2 (3-pin, male)	1-508-083-00 XLR 3-pin, female or Cannon XLR-3-11C or equivalent
MIC REMOTE WF MODE (D-sub 15-pin, female)	1-506-582-11 D-sub 15-pin, male or JAE DA-15PF-N or equivalent
INTERCOM/TALLY/PGM INCOM REMOTE (D-sub 25-pin, female)	1-766-367-11 D-sub 25-pin, male JAE DA-25PF-N or equivalent
WF MODE (4-pin, female)	1-506-155-00 PLUG 4-pin, male (accessory)
RCP/CNU (8-pin, female)	1-766-848-11 PLUG 8-pin, male or CCA cable assembly (optional) : CCA-5-10 (10 m) CCA-5-3 (3 m)
INTERCOM (5-pin, female)	1-508-370-11 XLR 5-pin, male or Cannon XLR-5-12C or equivalent
AUX1/2 TRUNK LINK 1/2 (D-sub 9-pin, female)	1-568-182-11 D-sub 9-pin, male or JAE DA-9PF-N or equivalent

1-2-4. Note when Connecting CAMERA Connector

Before connecting the unit to the camera adapter, clean the following optical contact portions.
For the cleaning procedure, refer to Section 4-1, “Cleaning of Connector/Cable”.

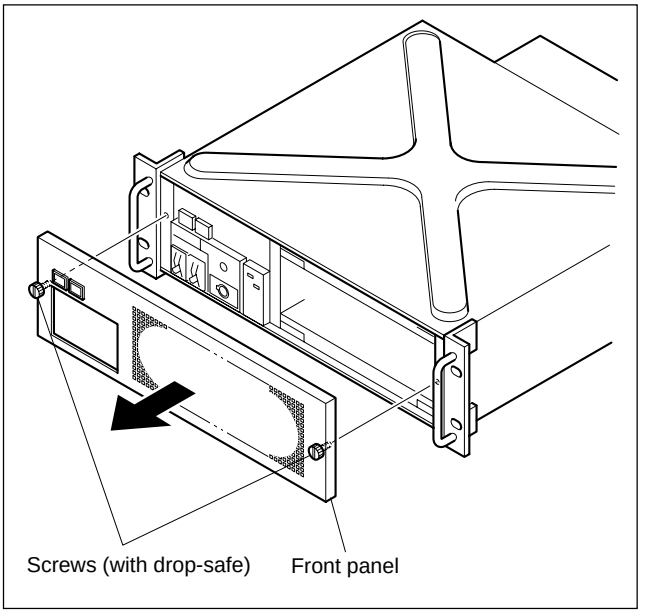
- CAMERA connector of the unit
- CCU connector of the camera adapter side
- Optical/electrical cable

1-3. Circuit Board and Main Parts Layouts



1-4. Removing/Installing the Front Panel

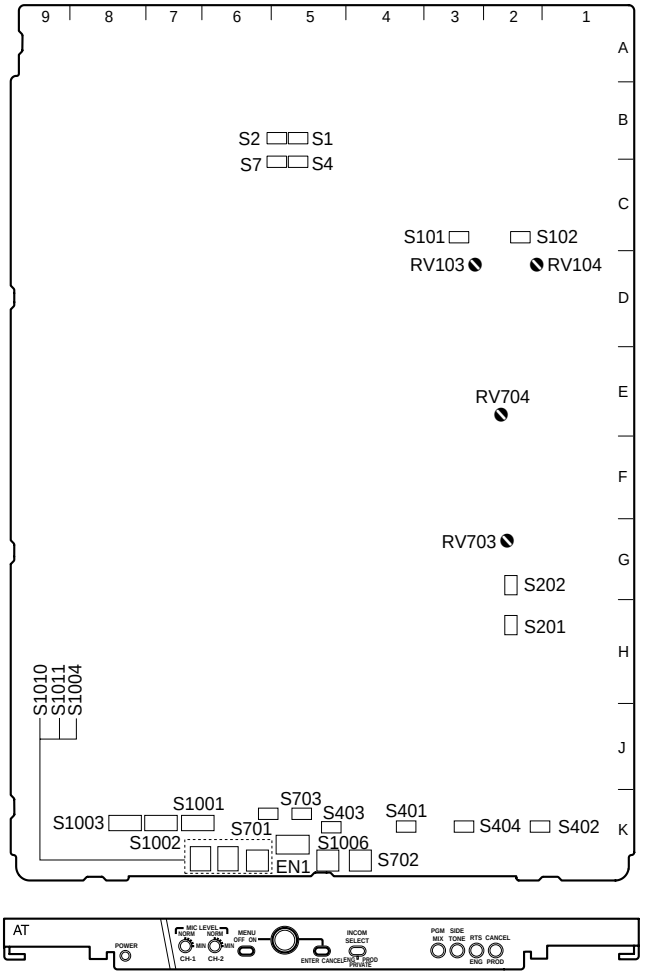
1. Fully loosen the two screws (with drop-safe) and remove the front panel in the direction of the arrow.



2. Reattach the front panel in reverse order of step 1.

1-5. Settings of Switches and Controls on Boards

1-5-1. AT-122 Board



Switches

- EN1 (ROTARY ENCODER)
  Selects menu items and sets adjustment values.
  Pressing this switch enables the selection or the setting to be determined.

- S1 (R TALLY POWER/CONTACT)
- S4 (R TALLY POWER/TTL)
  Set this switch according to the signal standard of the R TALLY signal to be input in the INTERCOM/TALLY/PGM connector of the rear panel. Refer to the following table for the relation between signals and switch setups.
  Factory setting : POWER

- S2 (G TALLY POWER/CONTACT)
- S7 (G TALLY POWER/TTL)
  Set this switch according to the signal standard of the G TALLY signal to be input in the INTERCOM/TALLY/PGM connector of the rear panel. Refer to the following table for the relation between signals and switch setups.
  Factory setting : POWER

Setting tally system

	Red tally		Green tally	
Switch	**S1**	**S4**	**S2**	**S7**
Signal standard	POWER/ CONTACT	POWER/ TTL	POWER/ CONTACT	POWER/ TTL
Contact supply	CONTACT	–	CONTACT	–
24 V voltage supply	POWER	POWER	POWER	POWER
5 V voltage supply	POWER	TTL	POWER	TTL

- S101 (MIC1 OUT LEVEL)
  Set the audio signal level of the AUDIO OUTPUT CH-1 connector on the rear panel to 0 dBu or −20 dBu.
  Factory setting : 0 dBu

- S102 (MIC2 OUT LEVEL)
  Set the audio signal level of the AUDIO OUTPUT CH-2 connector on the rear panel to 0 dBu or −20 dBu.
  Factory setting : 0 dBu

- S201 (PGM1 IN)
  Set the PGM (program audio) CH-1 level to 0 dBu or −20 dBu.
  Factory setting : 0 dBu

- S202 (PGM2 IN)
  Set the PGM (program audio) CH-2 level to 0 dBu or −20 dBu.
  Factory setting : 0 dBu

- S401 (INCOM PROD SELECT)
- S403 (PROD RTS/CLEAR)
  Select the intercom system of the producer line.
  Factory setting : 4W (S401)
  RTS (S403)

	S401	S403
4-wire system	4W	–
RTS system	RTS	RTS
Clear-Com system	RTS	CLEAR

- S402 (INCOM ENG SELECT)
- S404 (ENG RTS/CLEAR)
  Select the intercom system of the engineer line.
  Factory setting : 4W (S402)
  RTS (S404)

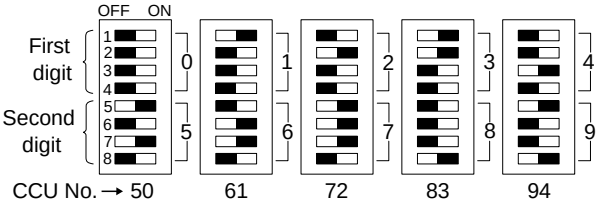
	S402	S404
4-wire system	4W	–
RTS system	RTS	RTS
Clear-Com system	RTS	CLEAR

- S701 (INPUT SELECT)
  Set this switch to 1ch (PROD), 2ch (PROD, ENG) according to the intercom system. When 1ch is set, PROD is fixed regardless of the setting of the ENG/ PROD select switches of the camera and the CCU.
  Factory setting : 2ch

- S702 (INCOM SELECT)
  Select the line to which the intercom of the front panel is connected.
  PROD : Producer line
  PRIVATE : Private line
  ENG : Engineer line
  Factory setting : PROD

- S703 (INCOM MIX)
  Select the line to which the intercom of the front panel is connected.
  ON : Connected to both of the producer line and the engineer line.
  OFF : Depends on the setting of S702.
  Factory setting : OFF

- S1001 (1 to 8 CCU No.)
  This switch is mainly used to set the CCU numbers.
  Use switches 1 to 8 to set the CCU numbers from 1 to 96 in BCD notation.
  Use switches 1 to 4 to set the first digit and use switches 5 to 8 to set the second digit. (“a” to “f” are invalid.)
  Factory setting : OFF



- S1002-1 (MIC GAIN setup, new/old CROP assignment)
  Set the assignment of the MIC REMOTE connector of the rear panel.
  ON : Old MIC1/2 GAIN independent control
  OFF : New CROP control becomes valid.
  Factory setting : OFF

S1002-1		
MIC REMOTE connector Pin No.	**ON**	**OFF**
12	16 : 9/4 : 3 $\overline{EN}$	CHU MIC2 AMP GAIN CONT2
13	$\overline{16}$: 9/4 : 3	CHU MIC2 AMP GAIN CONT1
14	NC	CHU MIC2 AMP GAIN CONT0

- S1002-2
  Not used.
  Factory setting : OFF

- S1002-3 (CB CAMERA POWER independent/interlock)
  Set whether color bars or gray pattern is output before the camera signal is output when the power of the CCU is turned on.
  ON : Interlock (Outputs color bar or gray pattern according to the setting of S1003-3.)
  OFF : Independent (Not output.)
  Factory setting : OFF

- S1002-4 (MONI SEL system 1, 2 independent/interlock)
  Select a control system of the PIX1/2 and WF1/2 connector output.
  ON : Interlock (Controls PIX1 and PIX2, and WF1 and WF2 simultaneously from MSU or RCP.)
  OFF : Independent (Controls PIX1 and WF1 from RCP and PIX2 and WF2 from MSU.)
  Factory setting : OFF

- S1002-5 (board diagnosis display ON/OFF)
  When the CHARACTER button on the control panel of RCP goes off, set whether the error message is displayed during Auto Setup and Diagnosis (self-diagnosis).
  ON : Does not display the error message.
  OFF : Normal mode (Displays the error message.)
  Factory setting : OFF

- S1002-6
  Not used.
  Factory setting : OFF

- S1002-7 (CB CHARACTER OFF/ON)
  Set ON or OFF of the character signal that is superimposed on the color-bars signal output from CCU.
  ON : Character superimposed
  OFF : Character not superimposed
  Factory setting: OFF

- S1002-8 (BACKUP data initialization)
  Use this switch to return all the set values to the factory settings. Set the switch to ON and turn on the power of the CCU to return to the factory settings.
  Note
  Be sure to set the switch to OFF after initialization.

  Factory setting : OFF

- S1003-1
  Not used.
  Factory setting : OFF

- S1003-2 (No Light Gray)
  When the incident light level is lower than the specified level, gray pattern is output from the CCU.
  ON : Function OFF (Gray pattern is not output)
  OFF : Function ON (Gray pattern is output)
  Factory setting : OFF

- S1003-3 (CB/GRAY during CB interlock)
  Select the pattern that is output when S1002-2 is interlocked.
  ON : Gray pattern
  OFF : Color bars
  Factory setting: OFF

- S1003-4
  Not used.
  Factory setting : OFF

- S1003-5 (external TALLY/S-bus)
  Select whether the INTERCOM/TALLY/PGM connector of the rear panel is used for TALLY control or whether S-bus/CNU is used for TALLY control.
  ON : S-bus
  OFF : INTERCOM/TALLY/PGM connector
  Factory setting : OFF

- S1003-6 (WFM PRESET reflection address)
  When S1002-3 is set to OFF, select whether the RECALL signal input from the WF MODE connector (D-sub 15-pin) is interlocked with RCP or MSU.
  ON : MSU
  OFF : RCP
  Factory setting : All OFF

- S1003-7 to 8
  Not used.
  Factory setting : All OFF

- S1004 (MENU ON/OFF)
  Use this switch to display the setup menu.
  ON : Displays.
  OFF : Does not display.

- S1006 (MENU ENTER/CANCEL)
  When S1004 is set to ON, use this switch to select items from the setup menu, cancel the setting or return to the default setting.

- S1010 (MIC CH-1 LEVEL)
- S1011 (MIC CH-2 LEVEL)
  Use these switches to switch AMP GAIN of MIC CH-1/CH-2 of the camera head using this unit. Set GAIN to 60 dBu (NORMAL), 50 dBu, 40 dBu, 30 dBu or 20 dBu (MIN) according to MIC sensitivity and audio conditions during shooting.
  Factory setting : “NORM” (60 dBu)
  (0 dBu = 0.775 Vrms)

Controls

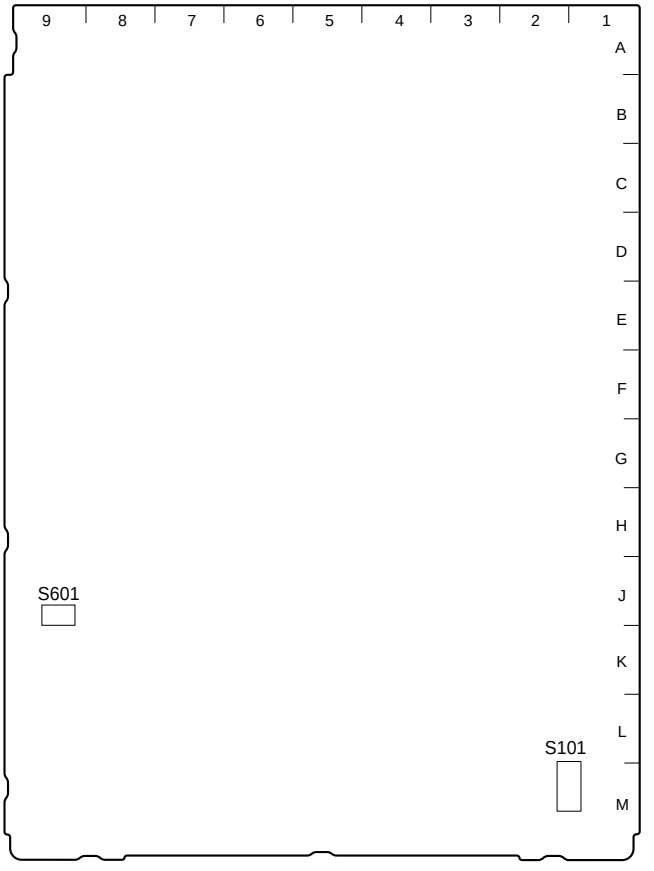
- RV103 (MIC1 OUT LEVEL)
  Set the output level of MIC OUTPUT 1.

- RV104 (MIC2 OUT LEVEL)
  Set the output level of MIC OUTPUT 2.

- RV703 (TALK LEVEL)
  Set the TALK level of the headset.

- RV704 (RECEIVE LEVEL)
  Set the RECEIVE level of the headset.

1-5-2. DPR-69 Board



Note

Do not change the settings of the switches describes “Factory use only”.

- S101-1
  Factory use only
  Factory setting : OFF

- S101-2
  Factory use only
  Factory setting : OFF

- S101-3 to 5
  Not used.
  Factory setting : OFF

- S101-6 (SETUP ON/OFF)
  Set SETUP ON or OFF of the analog video output.
  ON : SETUP ON (UC)
  OFF : SETUP OFF (J/CE)

  Note

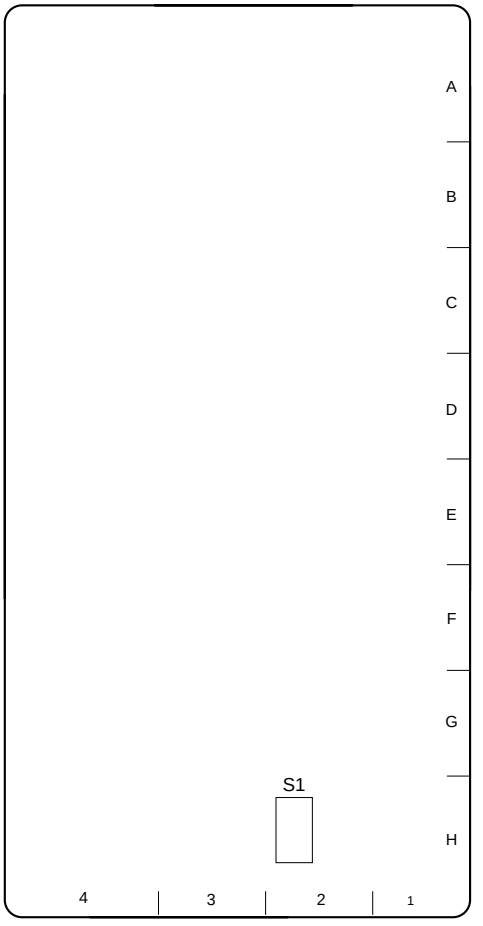
  When the switch S101-8 is set to ON (PAL), this switch is invalid.

- S101-7
  Not used.
  Factory setting : OFF

- S101-8 (NTSC/PAL)
  Select the signal type of the CCU.
  ON : PAL (CCU-900P)
  OFF : NTSC (CCU-900)

- S601 (SEQ +/−)
  Switch + or − according to the used waveform monitor.
  + : NPN open collector output
  − : PNP open collector output
  Factory setting : −

1-5-3. SDI-31 Board



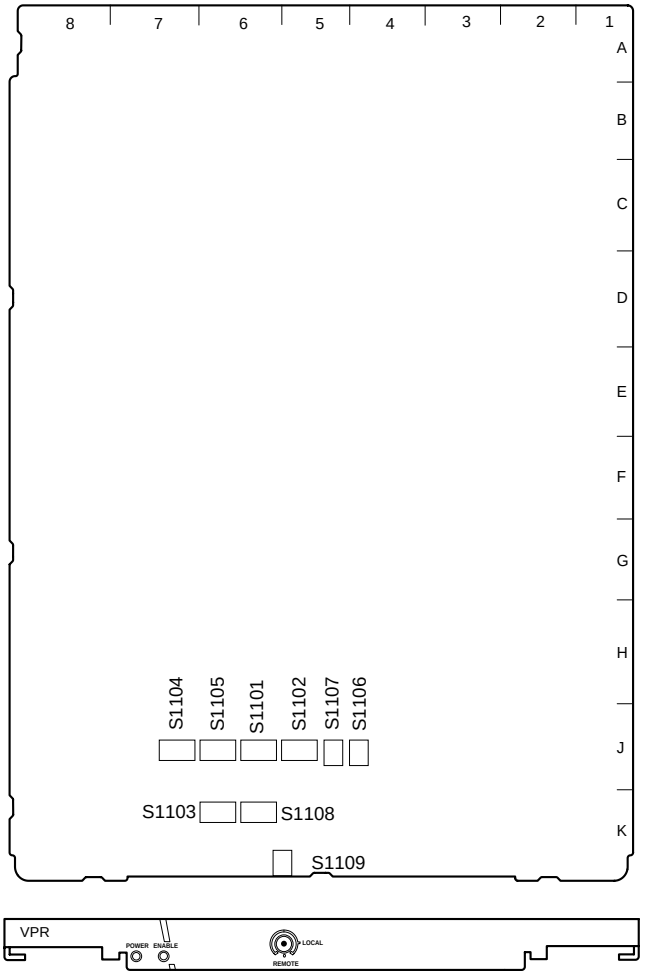
Note

Do not change the settings of the switches describes “Factory use only”.

- S1-1, 2
  Factory use only
  Factory setting : OFF

- S1-3 to 8
  Not used.
  Factory setting : OFF

1-5-4. VPR-57 Board (BKP-9330)



Note

Do not change the settings of the switches describes “Factory use only”.

- S1101-1 to 8
  Factory use only
  Factory setting : All OFF

- S1102-1 to 8
  Factory use only
  Factory setting : All OFF

- S1103-1 to 8
  Factory use only
  Factory setting : All OFF

- S1104-1 to 8
  Factory use only
  Factory setting : All OFF

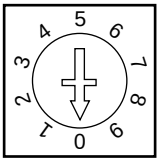
- S1105-1 to 8
  Factory use only
  Factory setting : All OFF

- S1106
  Factory use only
  Factory setting : 0

- S1107
  Factory use only
  Factory setting : 0

- S1108 (three-time speed output format)
  Select the format of the super motion video the SS-A, SS-B and SS-C connectors on the rear panel) output from the DIF-38 board so that the output video signal format agrees with that of the input format of the recording equipment connected to the CCU-900/900P.
  MAV: Format conforming to multi-access video disk recorder MAV-555 (when the optional super motion input board BKMA-520SS is installed).
  DISC2 : Format conforming to EAV SLMS
  DISC3 : Not used.
  Factory setting : MAV

- S1109 (frame interpolation)



When operating in the super motion mode, select the CCU-900/900P standard output mode (for SERIAL OUTPUT 1/2/3, SERIAL MONITOR OUTPUT, PIX1/2 and WF1/2 connectors of the rear panel).
The CCU-900/900P can perform the normal speed video signal output with minimum unnatural movement from the three-time speed video signal.

Note

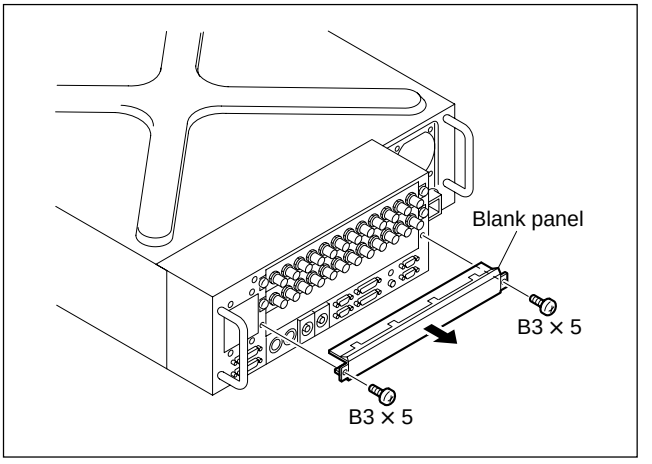
Each of the A, B and C modes is the same as the modes (A, B, C) that can be set on the super motion setting menu of the MSU-700A/750.

0	REMOTE :	Controlled by the MSU.
1	A mode :	Standard interpolation ratio
2	B mode :	Set when the motion speed of object is high and the video signal is unnatural with the setting “A”.
3	C mode :	Set when the motion speed of object is slow and the video signal is unnatural with the setting “A”.
4 to 8		Not used. Do not set these.
9	OFF :	Interpolation is not used. The three-time speed video signal that is the same as the output signal from the SS-A connector on the rear panel is output as the CCU standard output.

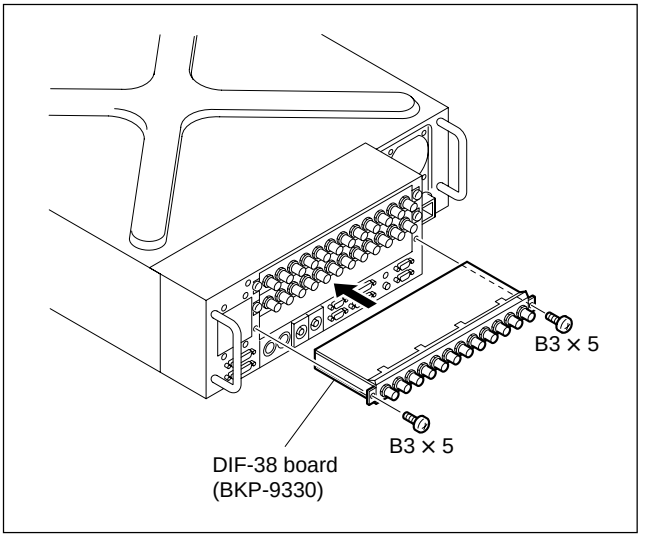
Factory setting : 0 (REMOTE)
However, if the MSU is not connected, the unit is put into the same mode as “1 : A mode”.

1-6. Installing the BKP-9330

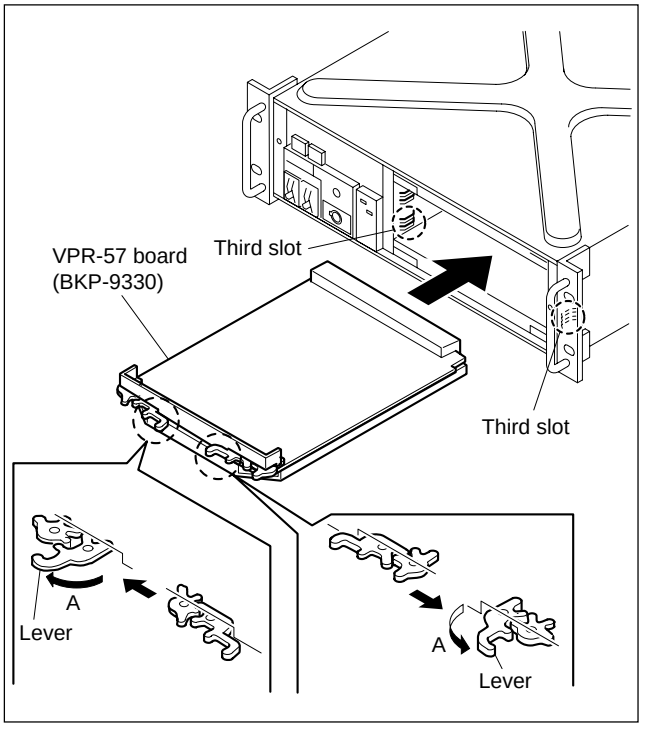
1. Turn off the main power and disconnect the plug from the outlet.
2. Remove the two screws and remove the blank panel.



3. Insert the DIF-38 board (BKP-9330) into the slot of the removed blank panel and fix the board with the screws removed in step 2.



4. Remove the front panel. (Refer to Section 1-4.)
5. Insert the VPR-57 board (BKP-9330) into the third slot from the top, open the levers in the direction of arrow A to lock them.



1-7. Installing in 19-inch Rack

The unit can be mounted in a 19-inch EIA standard rack (height three unit).

WARNING

- To prevent turning over the rack, fix the rack on the horizontal and firm floor securely using the bolts.
- Do not install at a height of 1 m or higher from the floor. If the rack falls, death or serious injury may result. When attaching the unit, be sure to fix the rack on the floor and be careful not to attach at a height of 1 m or higher from the floor.

Required Parts

CAUTION

Use the specified rack mount rail.
If not, injury could occur by drop of the unit because strength of rail is not enough.

- Slide rail : 1 set
  Accuride No.305A-18 (457 mm)
- Front brackets : 2 pcs
  Sony P/N 2-142-214-01
- Rear brackets : 2 pcs
  Sony P/N 2-142-215-01
- Screws (B4 × 8) : 14 pcs
- Screws (B5 × 8) : 8 pcs
- Plate nut : 1 pc
  Sony P/N 3-651-812-00
- Screws for rack mounting (RK5 × 14) : 4 pcs
- Washers for rack mounting : 4 pcs
  Sony P/N 2-297-913-01

Manufacturer :

UNITED STATES

- **Accuride**
  12311 Shoemaker Avenue
  Santa Fe Springs, CA 90670
  TEL 213-903-0200
  FAX 213-903-0208
- **Accuride**
  Quality Drive
  Charlotte, NC 28217
  TEL 704-588-5880
  FAX 704-588-6316
- **Accuride**
  1930 Parco Avenue
  Ontario, CA 91761
  TEL 714-923-9922
  FAX 714-947-8586

WEST GERMANY

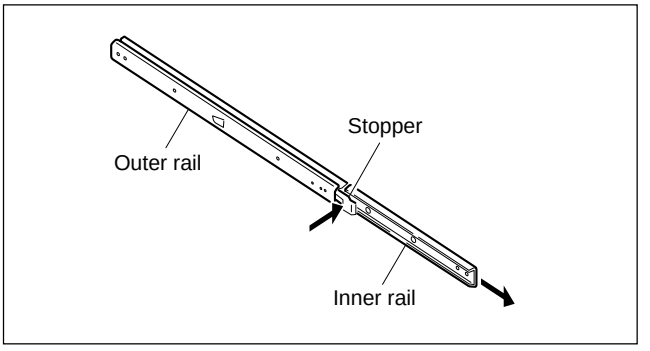
- **Standard-Praezision GmbH**
  Postfach 1464
  Werner-von-Siemens-Strasse 16-18
  6252 Diez/Lahn West Germany
  TEL 6432-6080
  FAX 6432-60820

UNITED KINGDOM

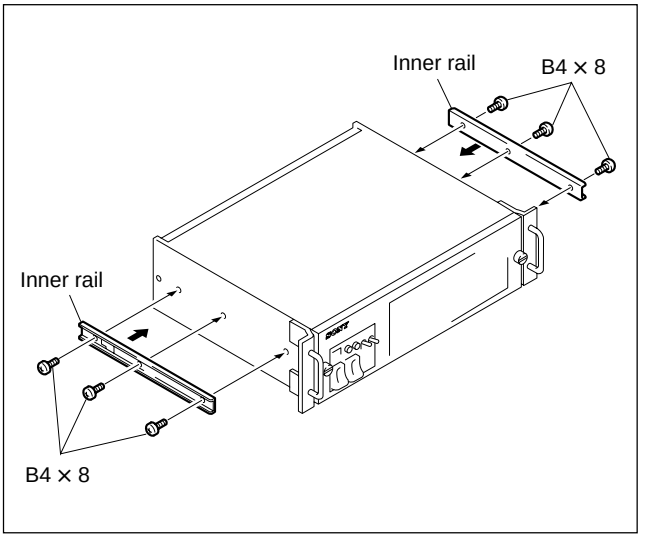
- **Accuride Limited**
  Lilliput Road
  Brackmills Industrial Estate
  Northampton, NN4 OAR
  United Kingdom
  TEL 604-761111
  FAX 604-767190

Rack Mount Procedure

1. Pull out the inner rail while pressing the stopper of the rail.



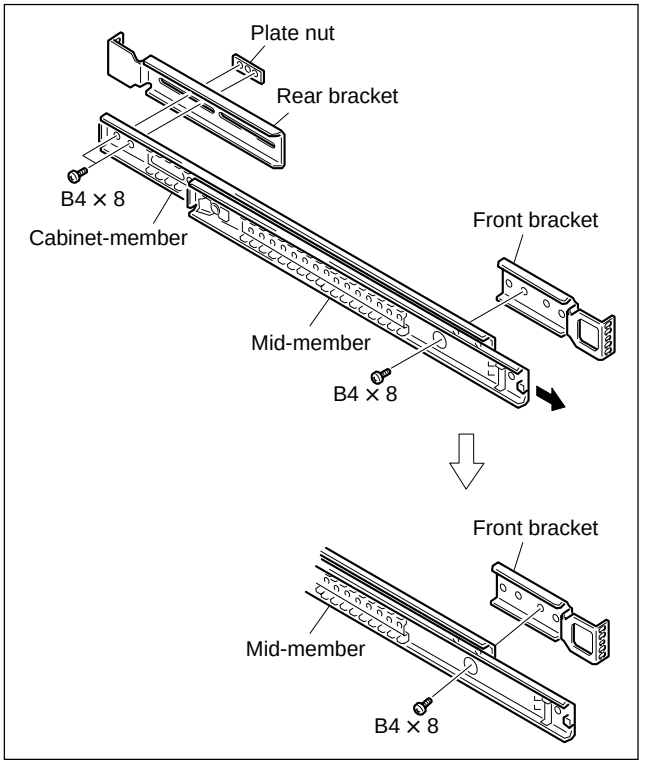
2. Attach the inner rails to the unit using the six screws (B4 × 8).



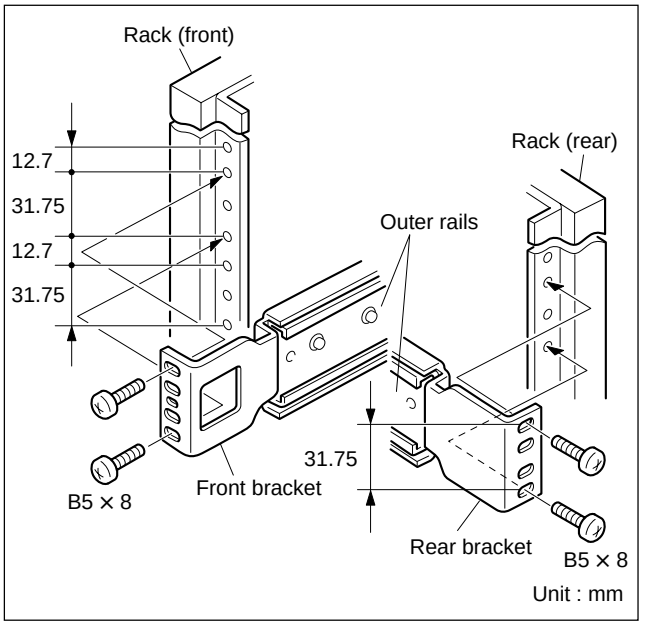
3. Attach the front and rear brackets to the outer rails using the eight screws (B4 × 8).

Notes

- When attaching the front bracket, slide the mid-member until the screw holes in the cabinet-member are visible through the hole in the mid-member as shown below.
- When attaching the rear bracket, adjust the position of the bracket with the rack depth.



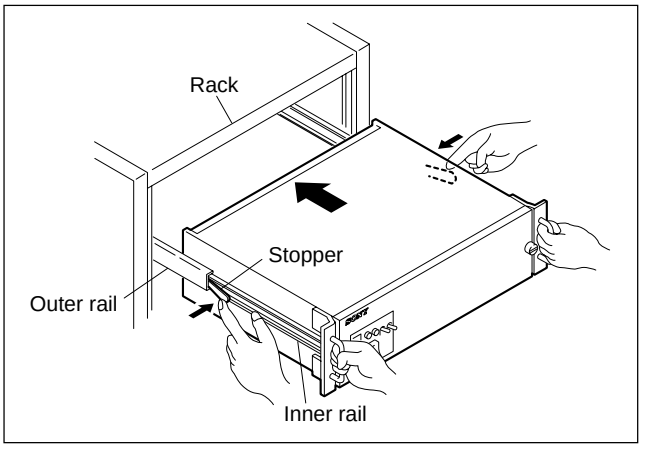
4. Attach the front and rear brackets to the outside of the rack temporarily using the eight screws (B5 × 8).



CAUTION

- Mount the unit with more than two persons.
  A one-man job may cause injury.
- If you forget to fasten the screws of the rack angle, the unit may slip and fall, causing injury.
  After rack mounting, be sure to fasten the screws.
- Install in a posture of stability.
  Injury could occur by drop of the unit in unbalance condition of installation or removal. Install in a posture of stability and carefully.
- Be careful not to catch your finger or hand in rack mount rail.

5. While pressing the stoppers of the inner rails, slide the inner rails fully into the outer rails, and push the unit into the rack slowly.

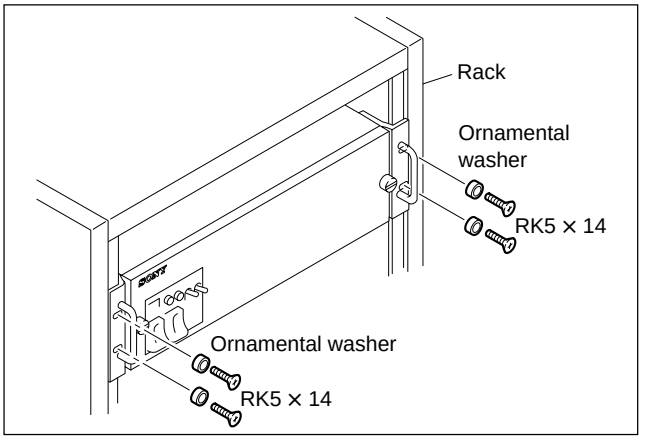


6. After confirming that the unit can be moved smoothly, tighten the screws (B5 × 8) secured temporarily in the step 4.

   Note

   When securing the front brackets to the rack by screws, pull the unit out of the rack about 20 cm (8 inches), and fasten the screws of the front brackets to the rack.

7. After installing the unit in the rack, fix the unit to the rack using the four screws (RK5 × 14) and four ornamental washers.

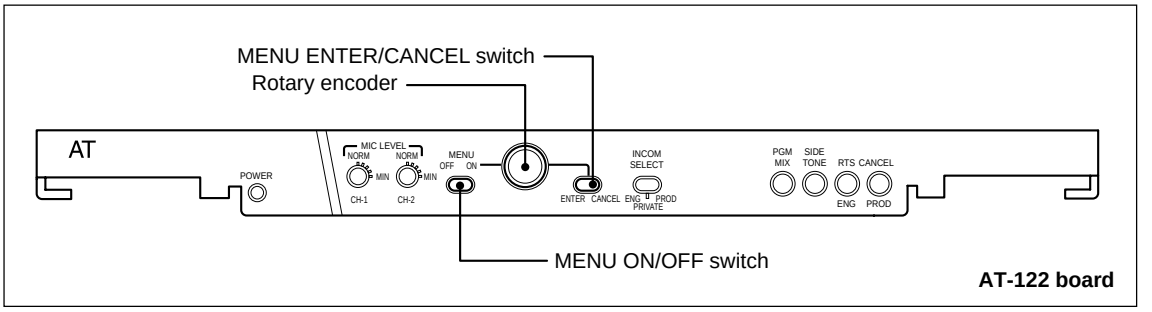


Section 2
Setting Menu

There is the setting menu consisting of the setup menu and the engineering menu. Various settings can be performed in this setting menu.
To use the setting menu, display it on the external monitor connected to the PIX1/2, SERIAL MONITOR or CHARACTER connector on the rear panel of the unit.

2-1. Basic Operations of Setting Menu

Switches



MENU ON/OFF switch

Use this switch to display the menu.

ON : Displays the menu.

OFF : Ends the menu.

MENU ENTER/CANCEL switch

When the MENU ON/OFF switch is set to ON, select items on the setup menu to cancel the setting or restore the default setting.

CANCEL : Cancels the executed setting or returns to the default setting.

ENTER : Selects items.

Rotary encoder

Rotate : Moves the page or the item, or changes the set value.

Push : Determines the page or enters the set value change mode.

Operating procedure

1. Set the MENU ON/OFF switch to ON.
2. To move the page, rotate the rotary encoder. (Determined by pressing the rotary encoder.)
3. To move the item, rotate the rotary encoder. (Determined by pressing the rotary encoder.)

   Note

   To enter the set value change mode, press the rotary encoder.

4. To change the set value, rotate the rotary encoder.
5. To end the setup menu, set the MENU ON/OFF switch to ON.

2-2. Setup Menu

Use this setup menu to set each signal line.
Set data is stored in NV-RAM of the AT-122 board.
To enter the setup menu, set the MENU ON/OFF switch to ON.

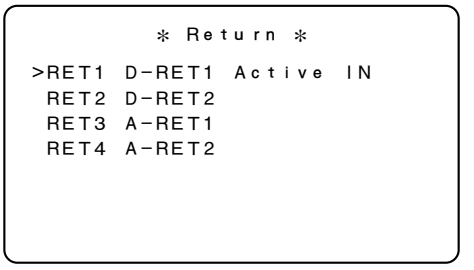
2-2-1. Contents of Setup Menu

Setup Menu Entry Display

```
        * Setup Menu *
>Return
 AUX
 PROMPT
 PIX Out
 WFM Out
 ColorBars
 Others
```

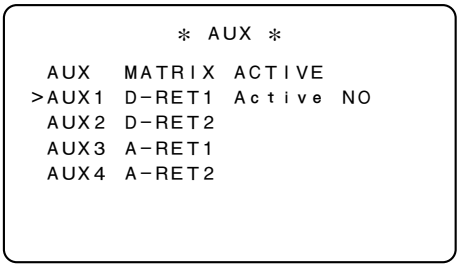
Menu	Function
Return	Return video line setup
AUX	AUX video line setup
PROMPT	PROMPT video line setup
PIX Out	PIX Out setup
WFM Out	WFM Out setup
Color Bars	Setup relevant to color bars
Others	Other setups

Return Video Select Display



Item	Setup	Function	Factory setting
RET1	D-RET1/2/3/4	Selects the signal to be assigned to each of RET1/2/3/4 when	RET1 = A-RET1
RET2	AUX	any of them is selected by the camera.	RET2 = A-RET2
RET3	A-RET1/2/3/4	The following signals can be selected for the RET1/2/3/4.	RET3 = D-RET1
RET4	PROMPTER	• D-RET (SERIAL RET INPUT) 1/2/3/4	RET4 = D-RET2
	CAM	• AUX (SERIAL AUX INPUT)	
		• A-RET (RET INPUT) 1/2/3/4	
		• PROMPTER (PROMPTER INPUT)	
		• CAM (CAMERA picture)	
		ACTIVE display	
		Indicates the line selected at the Camera side.	
		IN/NO display	
		IN : When there are input signals	
		NO : When there are no signals	

AUX Video Select Display



Item	Setup	Function	Factory setting
AUX MATRIX	ACTIVE/ INACTIVE	Sets the AUX video line. ACTIVE : Controls by CCU. INACTIVE : Controls by MSU. When INACTIVE is set, follows the RET MATRIX setup of the MSU setup menu.	ACTIVE
AUX1 AUX2 AUX3 AUX4	D-RET1/2/3/4 AUX A-RET1/2/3/4 PROMPTER CAM	Selects the signal to be assigned to each of AUX1/2/3/4 when any of them is selected by the CA-950/950P. The following signals can be selected for the AUX1/2/3/4 • D-RET (SERIAL RET INPUT) 1/2/3/4 • AUX (SERIAL AUX INPUT) • A-RET (RET INPUT) 1/2/3/4 • PROMPTER (PROMPTER INPUT) • CAM (CAMERA picture) ACTIVE display Indicates the line selected at the CA-950/950P side. When any of AUX1/2/3/4 is not selected by the CA-950/950P, the SERIAL AUX IN signal to the CCU-900/900P is selected as the signal of the AUX line. IN/NO display IN : When there are input signals NO : When there are no signals	AUX1 = A-RET1 AUX2 = A-RET2 AUX3 = D-RET1 AUX4 = D-RET2

Note

When the dual mode is selected and set (in primary and secondary), the AUX Video line setup becomes invalid and the setup is fixed to the SERIAL AUX INPUT.

Analog PROMPTER Select Display

```
    * Analog PROMPTER *
>PROMPTER PROMPT IN
```

Item	Setup	Function	Factory setting
PROMPTER	A-RET1/2/3/4 PROMPTER	Selects a signal to be transmitted by the PROMPTER line. The following signals can be selected for the PROMPTER line. • A-RET (RET INPUT) 1/2/3/4 • PROMPTER (PROMPTER INPUT) IN/NO display IN : When there are input signals NO : When there are no signals	PROMPTER

PIX Out Setup Display

```
        * PIX Out *
>Gate        Zebra
 4:3Marker OFF
 Char Level
  Analog PIX        0
  Analog PIX BG     0
  SERIAL MONI       0
```

Item	Setup	Function	Factory setting
4 : 3 Marker	ON/OFF	Selects whether the 4:3 marker is displayed or not in the WIDE mode.	OFF
Gate	ZEBRA/NORMAL	Selects the gate signal to be super-imposed on PIX Out. ZEBRA : ZEBRA display NORMAL : Solid white display	NORMAL
Analog PIX	0 to 127	Adjusts the mix character level.	
Analog PIX BG	0 to 127	Adjusts the mix character background level.	
SERIAL MONI	–127 to 127	Adjusts the character level of SDI PIX Out.	

WFM Out Setup Display

```
        * WFM Out *
>SEQ 4/3   3 wave
 SYNC      ON
 100% Level Line
  Insert   OFF

 BasicLevel Line
  Insert   OFF
  Level    200
  Mode       0
  Mode       0
```

Item	Setup	Function	Factory setting
SEQ4/3	4/3	Sets SEQ mode. (Selects STAIR CASE OUT.) 4 : 4 waveform 3 : 3 waveform	3
SYNC	ON/OFF	Sets whether SYNC is added to WFM Out.	ON
100% Level Line			
Insert	ON/OFF	Sets whether the line of 100% level is displayed on WFM Out.	OFF
Basic Level Line			
Insert	ON/OFF	Sets whether the desired level line is displayed on WFM Out.	OFF
Level	0 to 1023	Sets the level of the level line.	
Mode	0 to 3	Sets the width of the level line.	

Color Bars Setup Display

```
        * ColorBars *
>Char Color/BW  BW
 Char Level     Y B C O
 Char BD Level  Y 3 C O
 Char Color     White
 Char BG Color  White
```

Item	Setup	Function	Factory setting
Char Color/Bw	C/BW	Selects whether the character signal to be super-imposed on the color-bar signal is set to color or to white. C : Color BW : White	BW
Char Level	Y : 0 to 15/C : 0 to 15	Sets the level of the character signal to be super-imposed on the color-bar signal. C is valid in the color mode.	
Char BD Level	Y : 0 to 15/C : 0 to 15	Sets the level of the character signal's border to be super-imposed on the color-bar signal. C is valid in the color mode.	
Char Color	White/Yellow/Green/ Magenta/Cyan/Blue/ Red/Black	Sets the color of the character signal to be super-imposed on the color-bar signal.	White
Char BG Color	White/Yellow/Green/ Magenta/Cyan/Blue/ Red/Black	Sets the level of the character signal background to be super-imposed on the color-bar signal.	White

Display of Other Setups

```
          * Others *
>Reference    Analog
 Dual Mode    OFF
 FRONT PGM    PGM1
 PGM INPUT    SERIAL
 SDI AUDIO    ON
 CF Shift
```

Item	Setup	Function	Factory setting
Reference	Digital/Analog	Selects the genlock source. Digital : SERIAL RET INPUT1 Analog : REFERENCE INPUT	Analog
Dual Mode	OFF/Primary/ Secondary	Sets use of a dual CCU. OFF : When one machine is only used Primary : When the machine is used on the primary side for a dual system Secondary : When the machine is used on the secondary side for a dual system	OFF
FRONT PGM	PGM1/PGM2	Selects a PGM channel to be mixed with the front INTERCOM connector. PGM1 : 1 ch PGM2 : 2 ch	PGM1
PGM INPUT	Serial/Analog	Selects the AUDIO input to be used as PGM. Serial : Embedded audio signal of SERIAL RET INPUT1 Analog : Input signal of INTERCOM/TALLY/PGM connector	Analog
SDI AUDIO	ON/OFF	Selects whether audio signal is mixed with serial out.	ON
CF Shift	–	Press the rotary encoder once to shift a color frame of the VBS output of PIX1/PIX2/WF1/WF2 of CCU-900/900P by one frame.	

2-3. Engineering Menu

Use the engineering menu to adjust the boards.
The set data except the SEQ H/V setting is stored in EEPROM of each board.
The SEQ H/V setup data is stored in NV-RAM on the AT-122 board.
To enter the engineering menu, set the MENU ON/OFF switch to ON while pressing the rotary encoder.

2-3-1. Contents of Engineering Menu

Engineering Menu Entry Display

```
    * Engineering Menu *
  DA1
  DA2
  DA3
 >Others
```

Menu	Function
DA1	Sets the output signal level of the WF1/PIX1 connector.
DA2	Sets the output signal level of the WF2/PIX2/PROMPTER connector
DA3	Adjusts the analog input of the IF-730 board.
Others	H-Phase/Y-Mix Gain adjustment and SEQ setting.

DA1 Display

```
          * DA1 *
  PIX1 Gain          80
  PIX1 DC            A2
 >WFM1 Gain          80
  WFM1 DC            A2


  EEPROM Store
```

Item	Setup	Function
PIX1 Gain	0 to 255	Adjusts the output signal level of the PIX1 connector.
PIX1 DC	0 to 255	Adjusts the DC level of the PIX1 connector.
WFM1 Gain	0 to 255	Sets the output signal level of WF1 connector.
WFM1 DC	0 to 255	Adjusts the DC level of the WF1 connector.
EEPROM Store	Rotate the rotary encoder to move the cursor and press the rotary encoder twice to execute.	Saves the set value in EEPROM of the DPR-69 board.

DA2 Display

```
          * DA2 *
  PIX2 Gain          80
  PIX2 DC            A2
  PROMPT Gain        80
 >WFM2 Gain          80
  WFM2 DC            A2

  EEPROM Store
```

Item	Setup	Function
PIX2 Gain	0 to 255	Adjusts the output signal level of the PIX2 connector.
PIX2 DC	0 to 255	Adjusts the DC level of the PIX2 connector.
PROMPT Gain	0 to 255	Adjusts the output signal level of the PROMPTER OUTPUT connector
WFM2 Gain	0 to 255	Sets the output signal level of the WF2 connector.
WFM2 DC	0 to 255	Adjusts the DC level of the WF2 connector.
EEPROM Store	Rotate the rotary encoder to move the cursor and press the rotary encoder twice to execute.	Saves the set value in EEPROM of the DPR-69 board.

DA3 Display

```
          * DA3 *
  RET IN
 > Brightness    00
   Contrast     127
   Saturation   127
   Hue            0
  AUX IN
 > Brightness    00
   Contrast     127
   Saturation   127
   Hue            0
  EEPROM Store
```

Item	Setup	Function
RET IN	Setup for A-RET input	
Brightness	−64 to 63	Brightness adjustment
Contrast	0 to 255	Contrast adjustment
Saturation	0 to 255	Saturation adjustment
Hue	−128 to 127	Hue adjustment*1
AUX IN	Setup for A-AUX input	
Brightness	−64 to 63	Brightness adjustment
Contrast	0 to 255	Contrast adjustment
Saturation	0 to 255	Saturation adjustment
Hue	−128 to 127	Hue adjustment*1
EEPROM Store	Rotate the rotary encoder to move the cursor and press the rotary encoder twice to execute.	Saves the set value in EEPROM of the IF-730 board.

*1 : The Hue adjustment menu is displayed only when the system software version is 1.05 or higher. The Hue adjustment itself can be performed only when the system software version is 1.05 or higher.

Display of Other Board Adjustments

```
        * Others *
>H-Phase            45
 Y-Mix Gain          7

 EEPROM Store
 SEQ H/V             H
 PLD Version
 DPR IC251           V1.02
 DPR IC901           V1.02
 IF  IC418           V1.02
```

Item	Setup	Function	Factory setting
H-Phase	0 to 255	Phase adjustment of output signal	
Y-Mix	1 to 7	Y-Mix gain adjustment	
EEPROM Store	Rotate the rotary encoder to move the cursor and press the rotary encoder twice to execute.	Saves the set value in EEPROM of the DPR-69 board.	
SEQ H/V	H/V	Selects whether the STAIR STEP output is set to the H rate or the V rate. H : H rate V : V rate The SEQ H/V setup data is stored in NV-RAM on the AT-122 board.	H
PLD Version	–	Version display of each PLD*2	

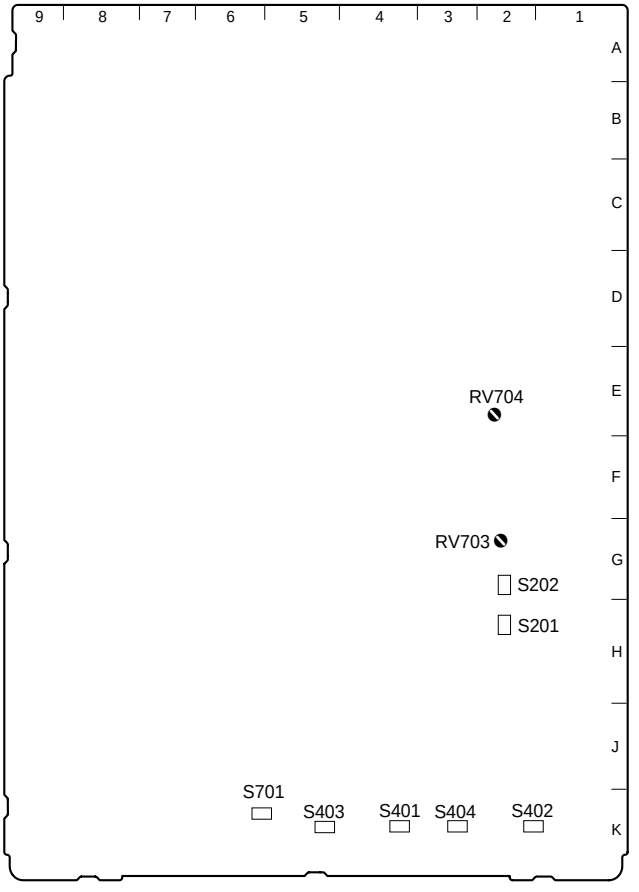
*2 : Unless the version of the system software is 1.05 or higher and the suffix of the DPR-69 board is -12 or higher, the PLD version cannot be displayed.

Section 3
System Setup

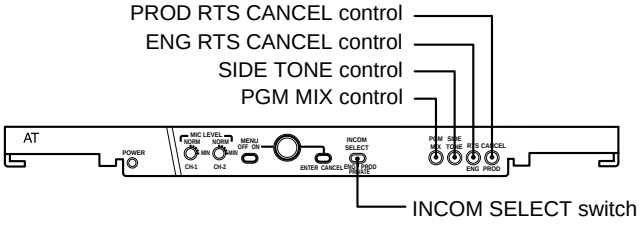
3-1. Audio System

3-1-1. Setting the Intercom System

This unit can be connected to the intercom lines (producer line and engineer line) of the two independent systems and can switch them with camera adapter CA-950/950P.
The intercom systems conforming to this unit are 4W, RTS and Clear-Com. The internal switches of the unit need to be set according to the system used.



AT-122 board



AT-122 board

1. Selecting the Intercom System

Select a system (4W, RTS or Clear-Com) respectively for the engineer line and the producer line according to the system used. Then, select the number of intercom line systems (1 ch or 2 ch).

- **Selecting the producer line :**
  Set switches S401 and S403 (PROD SELECT) on the AT-122 board according to the system.
  Factory setting : 4W (S401)
  RTS (S403)
- **Selecting the engineer line :**
  Set switches S402 and S404 (ENG SELECT) on the AT-122 board according to the system.
  Factory setting : 4W (S402)
  RTS (S404)
- **When the intercom line is 1 channel :**
  Set switch S701 (INPUT SELECT) on the AT-122 board to 1 ch. Then, connect the intercom line to the producer line of the unit.
- **When the intercom line is 2 channel :**
  Set switch S701 (INPUT SELECT) on the AT-122 board to 2 ch.
  Factory setting : 2 ch

Adjusting the RTS cancel

When using the RTS intercom system, the following adjustment also needs to be made.

(1) Connect the headset to the INTERCOM connector on the front and perform the procedure in the next step, “2. Setting the headset microphone”.
(2) Fully rotate the SIDE TONE control of the AT-122 board panel counterclockwise to minimize the side tone.
(3) Set the INCOM SELECT switch of the AT-122 board panel to PROD.
(4) Speak into the microphone of the headset and adjust the PROD RTS CANCEL control of the AT-122 board panel to minimize the side tone.
(5) Set the INCOM SELECT switch of the AT-122 board panel to ENG.
(6) Speak into the microphone of the headset and adjust the ENG RTS CANCEL control of the AT-122 board panel to minimize the side tone.
(7) Return the SIDE TONE control on the AT-122 board panel to its original position.

Note

When setting S401 and S402 to RTS, be sure to connect them to the RTS system. Otherwise, they oscillate and have adverse effects on the peripheral circuits.

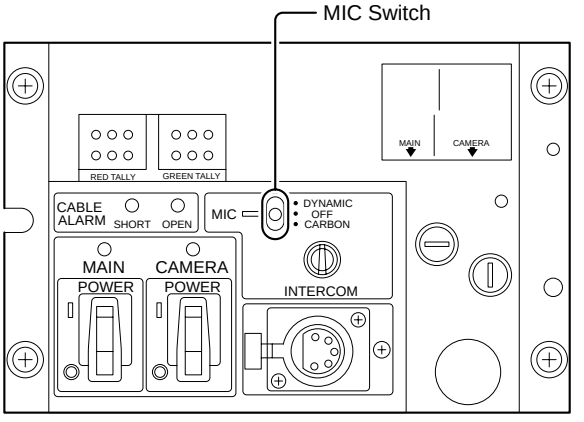
2. Setting the headset microphone

Set the MIC switch on the front panel according to the type of headset microphone to be connected to the INTERCOM connector on the front.

When using a carbon microphone : CARBON

When using a dynamic microphone : DYNAMIC

When no microphone is connected : OFF (factory setting)



- **Adjusting the side tone amount**
  Use the SIDE TONE volume on the AT-122 board panel and adjust the side tone amount of the headset to be connected to the INTERCOM connector on the front to fit your needs.
- **Adjusting the TALK level**
  Use volume RV704 on the AT-122 board and adjust the TALK level of the headset to fit your needs.
- **Adjusting the RECEIVE level**
  Use volume RV703 on the AT-122 board and adjust the RECEIVE level of the headset to fit your needs.

3. Setting the input level of the PGM audio signal

Set switches S201 (PGM1 SEL) and S202 (PGM2 SEL) on the AT-122 board to 0 dBu or −20 dBu according to each level of audio 1 and 2 of the system.

Factory setting : 0 dBu

- **Adjusting the mix amount of the PGM audio signal**
  Use the PGM MIX volume on the AT-122 board panel and adjust the mix amount of the PGM audio signal of the headset connected to the INTERCOM connector on the front to fit your needs.

4. Selecting an intercom line to be connected to the INTERCOM connector

Use the switch on the AT-122 board panel to select the intercom line to be connected to the INTERCOM connector on the front as follows.

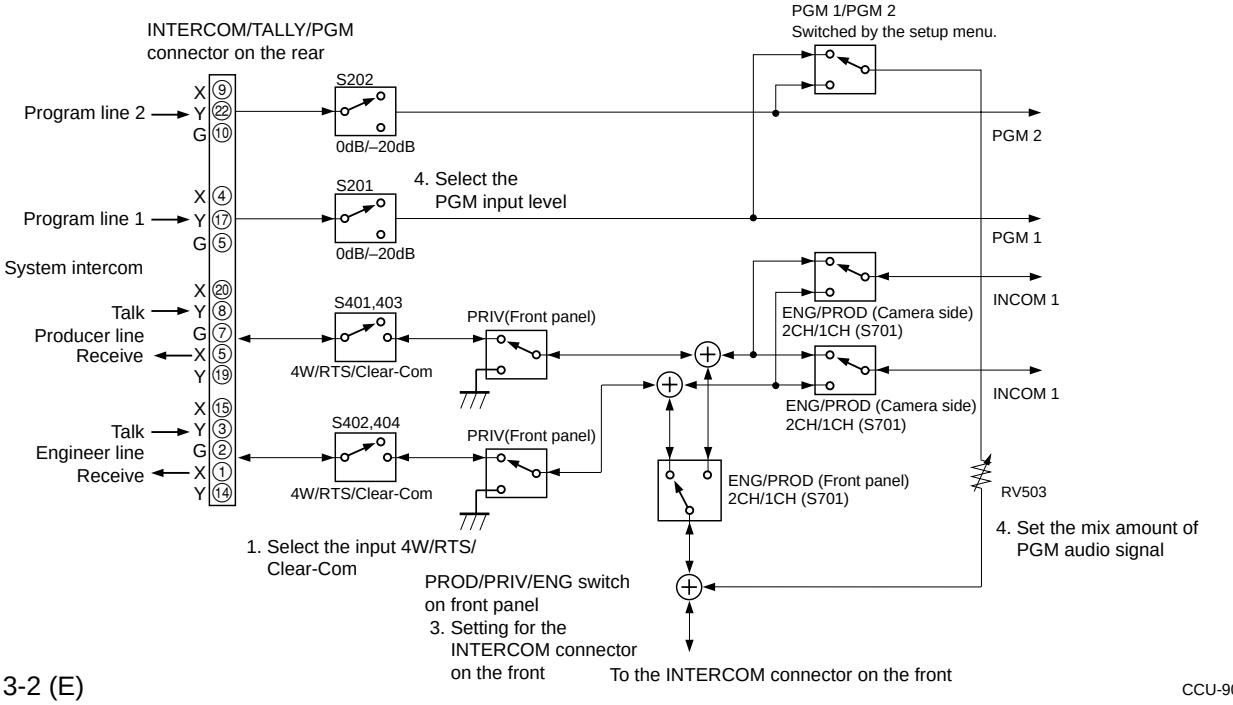
- **When connecting to the producer line :**
  Set the INCOM SELECT switch to PROD.
- **When connecting to the engineer line :**
  Set the INCOM SELECT switch to ENG.
- **When connecting only a camera :**
  Set the INCOM SELECT switch to PRIV. When this position is set, the intercom from outside is cut and the system consists of the intercom and camera.

Note

When switch S701 (INPUT SELECT) on the AT-122 board is set to 1 ch, the INCOM SELECT switch on the AT-122 board panel of the camera and the unit is fixed to the producer line regardless of the setting.

5. Setting the AT-122 board switch

The flow of the switch setting of the AT-122 board and the intercom signals is as follows.



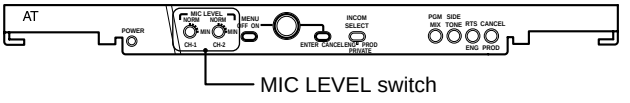
3-1-2. Setting the Microphone

This unit can output the two independent microphone lines (MIC 1, MIC 2) of video camera BVP-950/950P/9500WS/9500WSP and camera adapter CA-950/950P as it receives these MIC signals.

Controlling the Microphone Input Level from the Remote Control

This unit can adjust the input level of the MIC connector of BVP-950/950P/9500WS/9500WSP and the input level of the MIC connector of CA-950/950P from the remote control in 10 dBu steps in the range of −60 dBu to −20 dBu using either of the following methods.

1. Adjusting the microphone input level using the MIC LEVEL switch



AT-122 board

When the MIC REMOTE connector on the rear is connected to nothing or the levels of pin-8 (MIC 1) and pin-15 (MIC 2) of the MIC REMOTE connector are High, use the MIC LEVEL switch on the AT-122 board panel of the unit to set the microphone input level.
Factory setting : NORM (60 dBu)

2. Adjusting the input level of the microphone using the MIC REMOTE connector

Set the microphone input level control to ON or OFF via pin-8 and pin-15 of the MIC REMOTE connector on the rear as shown below. The input level can be controlled via pin-5, pin-6 and pin-7 as shown in the table on the top-right.

Setting the microphone input control of the video camera

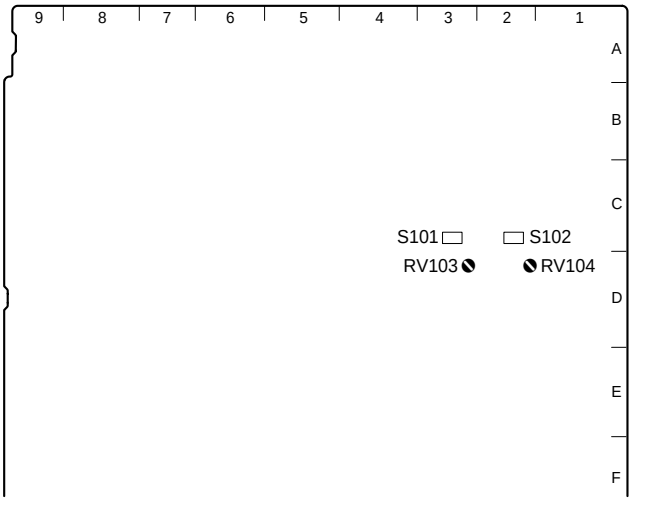
Pin No.		Microphone connector	
8	15	MIC IN CH-1	MIC IN CH-2
L	L	ON	ON
L	H	ON	OFF
H	L	OFF	ON
H	H	Internal setup	

Setting the microphone input control of the video camera

Pin No.	7	6	5
−60 dBu	H	H	H
−50 dBu	L	H	H
−40 dBu	H	L	H
−30 dBu	L	L	H
−20 dBu	H	H	L

H : +5 V (C-MOS level)
L : Ground
Input resistance : Pulled-up 100 kΩ +5 V

Setting the Microphone Output Level



AT-122 board

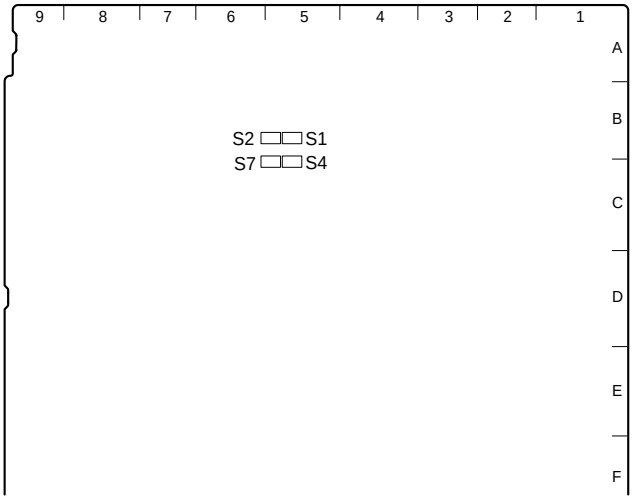
Select the output signal level (0 dBu, −20 dBu) from the MIC OUTPUT connector on the rear using the switches on the AT-122 board.
Setting the output level of MIC OUTPUT 1 :
Switch S101 (MIC 1 OUT LEVEL)
Setting the output level of MIC OUTPUT 2 :
Switch S102 (MIC 2 OUT LEVEL)
Factory setting : 0 dBu (both S101 and S102)

The output signal level from the MIC OUTPUT connector on the rear can be adjusted using the AT-122 board volume.
Setting the output level of MIC OUTPUT 1 :
⊘RV103 (MIC 1 OUT LEVEL)
Setting the output level of MIC OUTPUT 2 :
⊘RV104 (MIC 2 OUT LEVEL)

3-2. Systems

3-2-1. Setting the Tally System

This unit conforms to the tally system of the red tally and green tally, and also conforms to the contact supply and power supply (24 V/TTL). Set the switches on the AT-122 board according to the system used as follows.



AT-122 board

Set the tally system as shown in the following table.

Setting the tally system

	Red tally		Green tally	
Switch	**S1**	**S4**	**S2**	**S7**
Contact supply	CONTACT	–	CONTACT	–
24 V power supply	POWER	POWER	POWER	POWER
5 V power supply	POWER	TTL	POWER	TTL

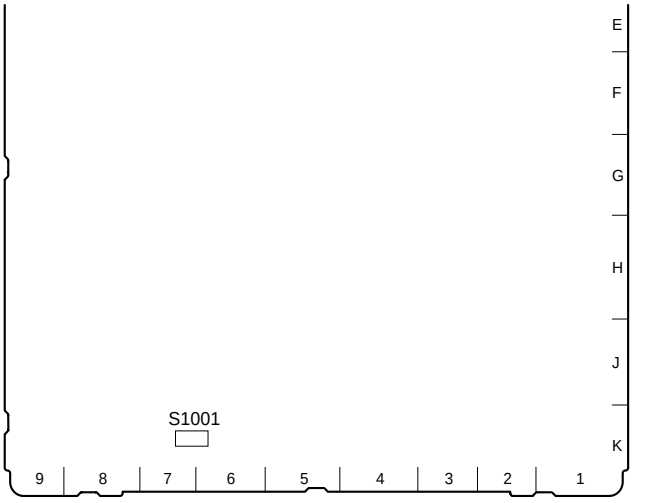
All the switches are set to POWER when shipped from the factory. If you do not use the tally system, set switches S1 and S2 of the CCU-900/900P to CONTACT.

3-2-2. Setting the Camera Number

System that does not use CNU-700/500

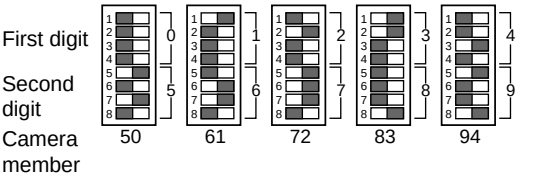
Use switch S1001 on the AT-122 board to set the camera number.

Use switches 1 to 4 to set the first digit and use switches 5 to 8 to set the second digit. “0” to “f” can be set as each digit, but “a” to “f” are invalid. Camera numbers 1 to 96 can be set.



AT-122 board

(Example of setting)



System that uses CNU-700/500

The CCU connector number on the rear of the CNU-700/500 is the camera number. For example, the camera number of the CCU video camera that is connected to the CCU 1 connector is 1.

3-3. Video Signal System

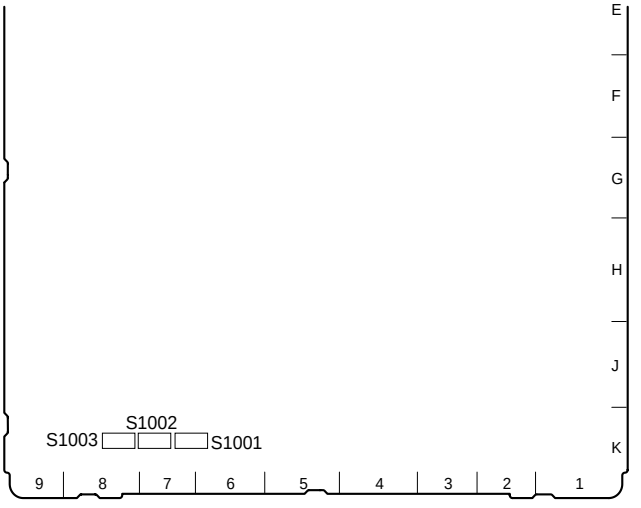
The equipment that is used for the BVP-900 series camera system and this unit were set to the specified level when shipped from the factory. Before operating, check the signal levels between each equipment and adjust them if required. Some adjustments can be performed using the maintenance menu of the MSU-700A/750 instead of using the controls or switches on the board. Perform the basic adjustments on the board and perform the fine adjustments on the maintenance menu.

3-3-1. Selecting the Input/Output Signal

Select the input/output terminal signal of the rear panel according to the video system to be installed.

3-3-2. Resetting the Control Data

Before adjustment, reset the control data of the unit.



AT-122 board

1. Set switches S1001-1 to S1001-8, S1002-1 to S1002-7 and S1003-1 to S1003-8 on the AT-122 board to OFF.
2. Set S1002-8 to ON.
3. Set the power supply of the unit to ON.
4. Set the power supply of the unit to OFF.
   The control data will be reset by these operations.
5. Return switches S1001-1 to S1001-8, S1002-1 to S1002-8 and S1003-1 to S1003-8 to their original settings or set all to OFF.

Note

Switches S1001-1 to S1001-8, S1002-1 to S1002-8 and S1003-1 to S1003-8 are set to OFF when shipped from the factory.

3-3-3. Adjusting the Signal Phase

Adjust the signal phase of the unit. Before adjustment, input the next sync signal to the unit and each of the equipment used.

CCU-900/900P

Signal that includes sync signal which are references of the system

Signal level : 40 IRE (0.3 V p-p)

Waveform monitor, vector scope

Sync signal that is used as the reference of the system and is specified by the measuring equipment.

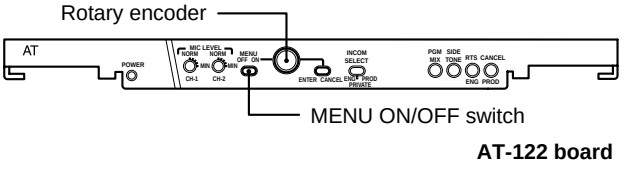
Adjusting the Phase of the Sync Signal

Adjust the phase of the output signal to match it with that of the reference signal. Perform the adjustment on the engineering menu of the unit or on the maintenance menu of the MSU-700A/750.

Note

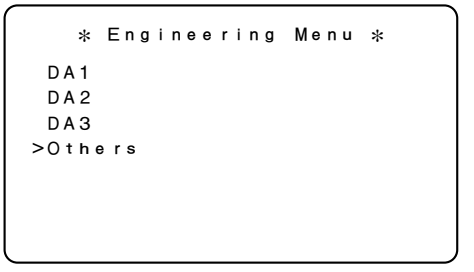
When the MSU/RCP is connected to the unit during phase adjustment, indications of the ECS/Shutter control block or the Iris control block of the MSU/RCP could disappear or the CAM PW button could flash. These do not affect the adjustment. After a while, normal operation starts.

How to adjust on the engineering menu of the unit

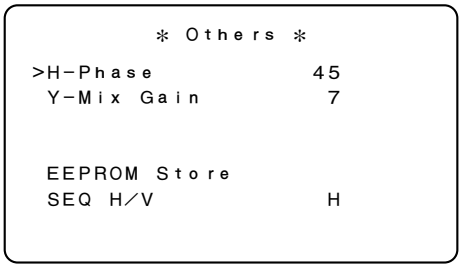


AT-122 board

1. While pressing the rotary encoder on the AT-122 board panel, set the MENU ON/OFF switch to ON. The engineering menu will be displayed.
2. Select “Others” from the engineering entry menu.



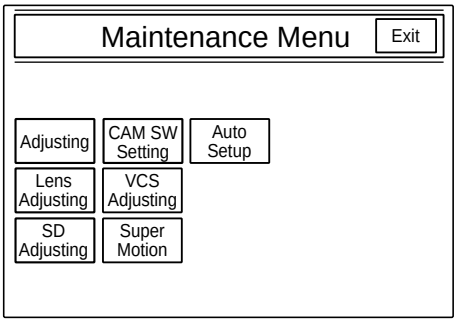
3. Select “H-Phase” and adjust the H phase.



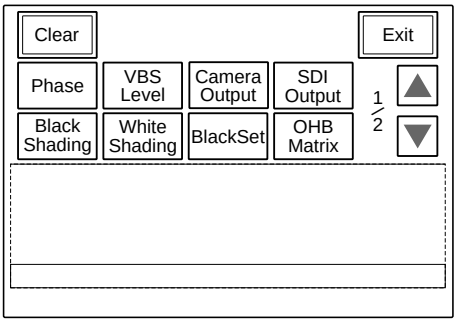
4. After adjustment, select “EEPROM Store” and save the adjustment value.

How to adjust using the MSU-700A/750

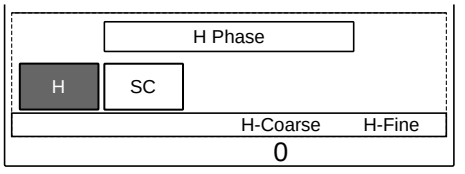
1. Press the MAINTENANCE button of the MODE block of the MSU-700A/750 to light the button. The maintenance menu will be displayed.



2. Press [Adjusting]. The maintenance adjustment menu will be displayed.



3. Press [Phase] to highlight the button. The phase adjustment display will appear on the lower side of the display.
4. Press [H] to highlight the button. The H phase adjustment display will be displayed.



5. Adjust the H phase using the control conforming to the display item.
   Phase : Adjustment of H phase

How to end the adjustment

Press the MAINTENANCE button to turn it off.

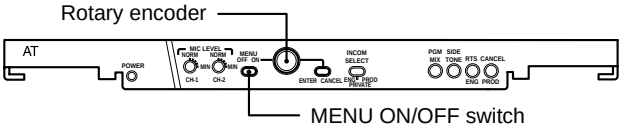
Adjusting the Color Frames between the CCU Systems

This unit does not synchronize with the sub-carrier. Therefore, when plural CCU-900/900Ps are connected in parallel, be sure to adjust the color frames between the CCUs.
Perform this operation on the setup menu of the unit or on the maintenance menu of the MSU-700A/750.

Note

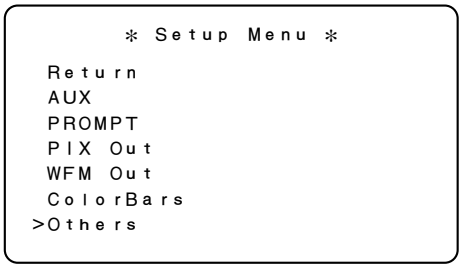
Do this operation every time after turning on the power of the unit.

How to adjust on the setup menu of the unit

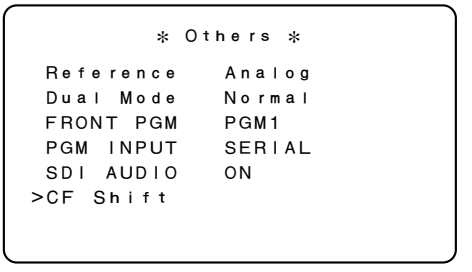


AT-122 board

1. Set the MENU ON/OFF switch on the AT-122 board panel to ON. The setup menu will be displayed.
2. Select “Others” from the setup menu entry display.

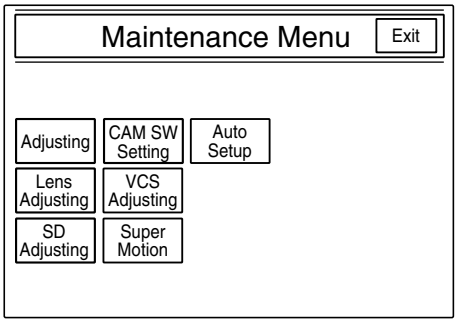


3. Select “CF Shift” and press the rotary encoder. Each press of the rotary encoder shifts the color frame output from the PIX1/2 and WF1/2 connectors on the rear panel of the unit by one frame. Adjust the color frame until the color frames of all the CCU outputs are synchronized.

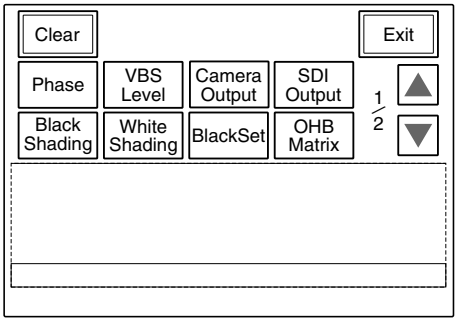


How to adjust using the MSU-700A/750

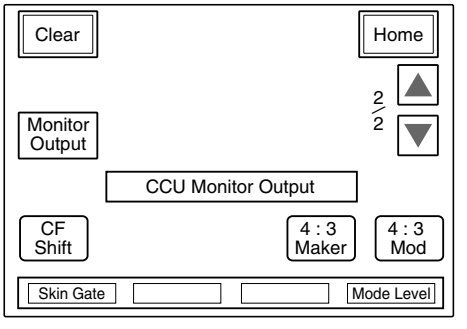
1. Press the MAINTENANCE button of the MODE block of the MSU-700A/750 to light the button. The maintenance menu will be displayed.



2. Press [Adjusting].
The maintenance adjustment menu will be displayed.



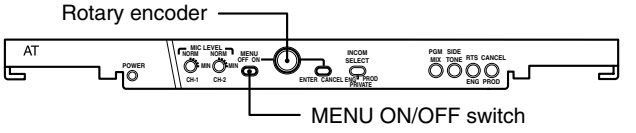
3. Press [▼] to display the maintenance adjustment menu 2/2.
4. Press [CF Shift] once.
The color frame output from the PIX1/2 and WF1/2 connectors on the rear panel of the unit is shifted by one frame. Adjust the color frame until the color frames of all the CCU outputs are synchronized.



3-3-4. Adjusting the Level of Signals for Waveform Monitor

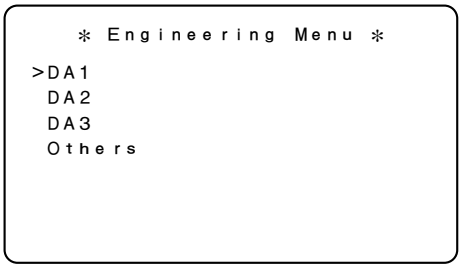
The video output signal of this unit can be checked on the waveform monitor connected to the WF output connector. Adjust the WF output signal level using the color-bar signal. In the system with the MSU-700A/750, CNU-700/500 and VCS-700, the video output signal can be checked on the waveform monitor connected to the VCS-700. For more details, refer to the system manual or the VCS-700 maintenance manual.

Adjusting the WF Output Signal Level

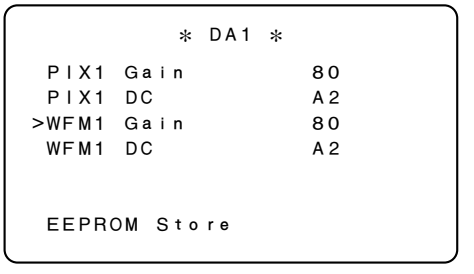


AT-122 board

1. While pressing the rotary encoder on the AT-122 board panel, set the MENU ON/OFF switch to ON. The engineering menu will be displayed.
2. Press the BAR button of the MSU-700A/750, RCP-740/741 or others and press the ENC button of the WAVEFORM MONITOR button (or the MONITOR SELECT button) to display the color bars on the waveform monitor.
3. Select “DA1” from the engineering menu entry display.



4. Select “WFM1 Gain” and adjust the color bar signal so that it is within the specified levels.



5. Select “EEPROM Store” and save the adjustment value.

6. Select “DA2” from the engineering menu entry display.

```
    * Engineering Menu *

  DA1
>DA2
  DA3
  Others
```

7. Select “WFM2 Gain” and adjust the color-bar signal so that it is within the specified levels.

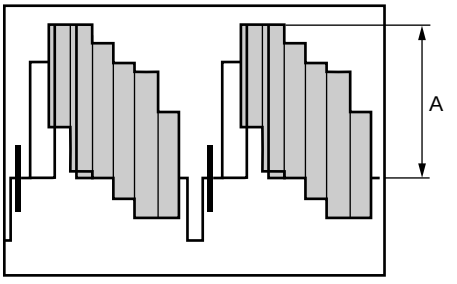
```
          * DA2 *

  PIX2 Gain          80
  PIX2 DC            A2
  PROMPT Gain        80
>WFM2 Gain           80
  WFM2 DC            A2

  EEPROM Store
```

8. Select “EEPROM Store” and save the adjustment value.

   Measurement point : WF1/2 OUT connector of CCU rear panel

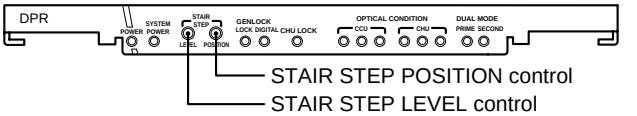
   Specification : A = 100 ±1 IRE (CCU-900)

   A = 700 ±7 mV p-p (CCU-900P)



Adjusting the Staircase Signal

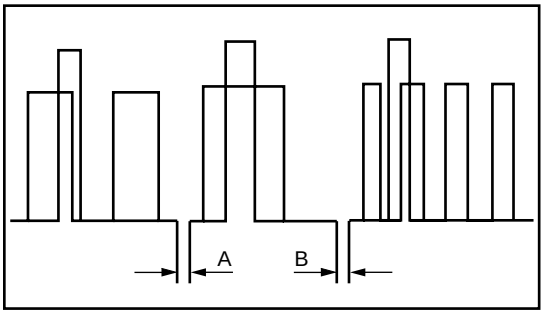
Adjust the staircase signal to display signals in the sequential mode on the waveform monitor. If the signal of the sequential mode is not normally displayed on the waveform monitor, perform this adjustment.
When the waveform monitor is connected to the unit, perform the adjustment using the controls on the DPR-69 board panel of the unit. When the VCS-700 is connected, refer to the VCS-700 maintenance manual.



DPR-69 board

1. Press the SEQ button of the WAVEFORM MONITOR button (or MONITOR SELECT button) of the MSU-700A/750, RCP-740/741 or others.
2. Adjust the position of the signal to be displayed using the STAIR STEP POSITION control.
3. Use the STAIR STEP LEVEL control so that the intervals of signals A and B to be displayed are almost equal.

Press the SEQ button of the WAVEFORM MONITOR button (or the MONITOR SELECT button) of the MSU-700A/750, RCP-740/741 or others to output the waveform monitor control signal of the unit, synchronizing with the output signal of the WF output connector.

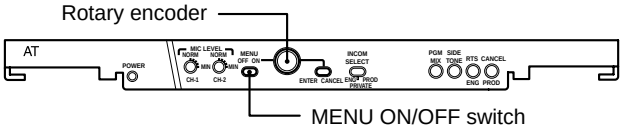


Note

The control method of the sequential mode depends on the waveform monitor used. If required, change the polarity of the control from the setting of switch S601 (SEQ +/−) on the DPR-69 board.
If adjustment is not possible even after the polarity is changed, perform the adjustment on the waveform monitor side.

3-3-5. Adjusting the Level of Signals for Picture Monitor

The video output signal can be checked on the picture monitor connected to the PIX output connector. Use the color bars to adjust the level of the PIX output signal.
In addition, in the system with the MSU-700A/750, CNU-700/500 or VCS-700, the video signal of the unit can be checked on the picture monitor connected to the VCS-700. For more details, refer to the system manual or the VCS-700 maintenance manual.



AT-122 board

1. While pressing the rotary encoder on the AT-122 board panel, set the MENU ON/OFF switch to ON. The engineering menu will be displayed.
2. Press the BAR button of the MSU-700A/750, RCP-740/741 or others, and press the ENC button of the PICTURE MONITOR button (or the MONITOR SELECT button) to display the color bar on the waveform monitor.
3. Select “DA1” from the engineering menu entry display.

```
    * Engineering Menu *
>DA1
 DA2
 DA3
 Others
```

4. Select “PIX1 Gain” and adjust the color bar signal so that it is within the specified levels.

```
          * DA1 *
>PIX1 Gain          80
 PIX1 DC            A2
 WFM1 Gain          80
 WFM1 DC            A2


 EEPROM Store
```

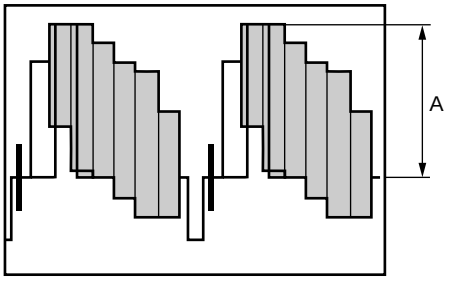
5. Select “EEPROM Store” and save the adjustment value.
6. Select “DA2” from the engineering menu entry display.

```
    * Engineering Menu *
 DA1
>DA2
 DA3
 Others
```

7. Select “PIX2 Gain” and adjust the color bar signal so that it is within the specified levels.

```
          * DA2 *
>PIX2 Gain          80
 PIX2 DC            A2
 PROMPT Gain        80
 WFM2 Gain          80
 WFM2 DC            A2

 EEPROM Store
```

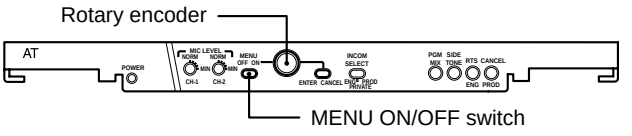
8. Select “EEPROM Store” and save the adjustment value.
   Measurement point : PIX1/2 OUT connector of CCU rear panel
   Specification : A = 100 ±1 IRE (CCU-900)
   A = 700 ±7 mV p-p (CCU-900P)



3-3-6. Setting the RETURN MATRIX

Each input signal of the SERIAL RET INPUT1 to 4 and SERIAL AUX IN connectors on the SDI-31 board rear panel and that of RET INPUT1 to 4 and PROMPTER IN connectors on the IF-730 board, can be allocated to RET1 to 4 selected from the camera side by using the RETURN MATRIX function.
Perform this setting on the setup menu of the unit or on the configuration menu of the MSU-700A/750.

Setting on the setup menu of the unit



AT-122 board

1. Set the MENU ON/OFF switch on the AT-122 board panel to ON. The setup menu will be displayed.
2. Select “Return” from the setup menu entry display.

```
        * Setup Menu *
>Return
 AUX
 PROMPT
 PIX Out
 WFM Out
 ColorBars
 Others
```

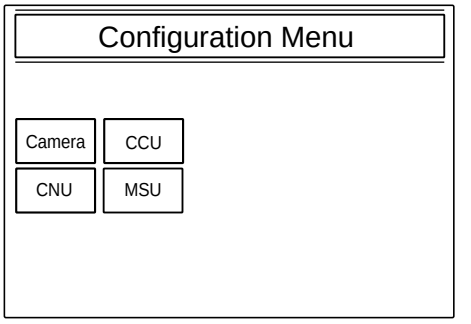
3. Select the RET number to be allocated using the rotary encoder and press the rotary encoder.

```
          * Return *
>RET1 D-RET1 Active IN
 RET2 D-RET2
 RET3 A-RET1
 RET4 A-RET2
```

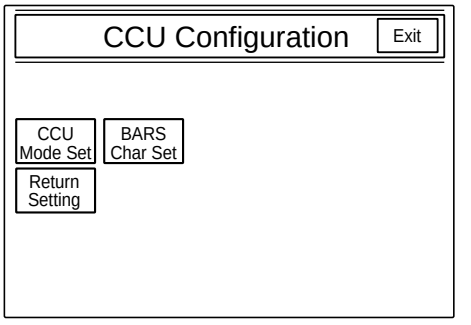
4. The signals that can be allocated blink. Select the desired signal using the rotary encoder and press Enter. The signal to be allocated can be selected from D-RET1/2/3/4, A-RET1/2/3/4, AUX, PROMPTER and CAM.
   For the details, refer to Section 2-2, “Setup Menu”.

Setting on the MSU-700A/750

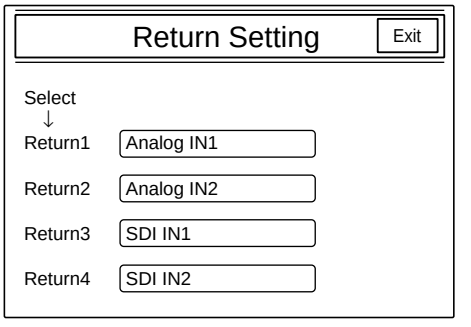
1. Press the CONFIG button of the MODE block of the MSU-700A/750 to light up the button.
   The configuration menu will be displayed.



2. Press [CCU].
   The CCU configuration items will be displayed.



3. Select [Return Setting] from the configuration items.
4. The Return Setting select display appears.
   The allocating RET numbers appear in the selection lines. The present allocated signals are displayed in the neighboring frame.
   In this state, press any of [Return1] through [Return4] of the selection line for allocation.



5. The Return Matrix setup display appears.
   The present allocated Return numbers are shown in high light in the selection line.

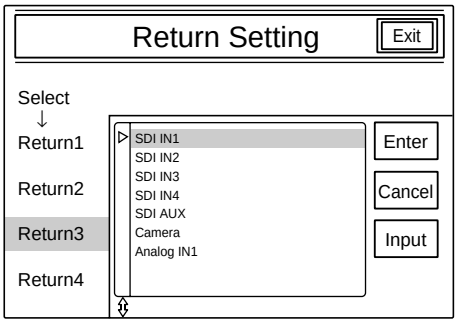
   Note

   The Return number to be allocated can be changed in this state.

   All the signals that can be allocated, are listed and the list of signal names is shown in the center box. Select the desired signal to be allocated using the MSU-700A/750 knob, and press Enter.

   Note

   The present allocated signals are high lighted on display.



Correspondence between the signal names in the box and the actual signals is shown as follows.

Name in the selection box	Actual selection signal
SDI IN1	CCU rear panel SERIAL RET INPUT1
SDI IN2	CCU rear panel SERIAL RET INPUT2
SDI IN3	CCU rear panel SERIAL RET INPUT3
SDI IN4	CCU rear panel SERIAL RET INPUT4
SDI AUX	CCU rear panel SERIAL AUX IN
CAMERA	CAMERA picture
Analog IN1	CCU rear panel RET INPUT1
Analog IN2	CCU rear panel RET INPUT2
Analog IN3	CCU rear panel RET INPUT3
Analog IN4	CCU rear panel RET INPUT4
PROMPTER	CCU rear panel PROMPTER IN

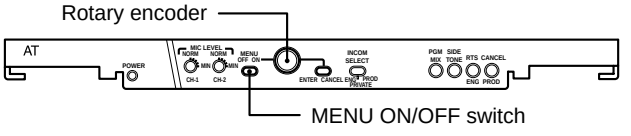
3-3-7. Setting the DUAL CAMERA MODE

When AUX IN and AUX OUT on the rear panel of the unit are respectively connected to the BNC cable, two CAMERA systems can be operated by using one fiber cable. In this case, set the CCU connected by using the fiber cable to Dual Mode: Primary and the CCU connected by using the BNC cable to Dual Mode: Secondary.
Perform this setting on the setup menu of the unit or on the configuration menu of the MSU-700A/750.

Note

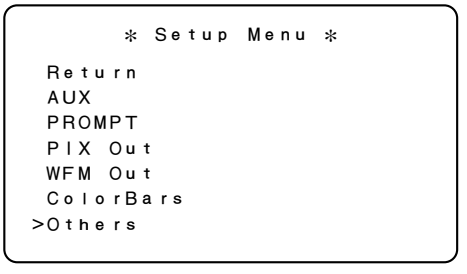
The AUX MATRIX setting of the CCU that is set to Primary or Secondary is fixed to AUX and cannot be changed. In addition, AUX1/2/3 cannot be switched from the CA-950/950P. The Primary CCU and Secondary CCU must be synchronized.
If setting the BVP-9500WS/9500WSP at the primary side to the three-time speed when the dual system is operated by the BVP-9500WS/9500WSP, the primary mode is released. In this case, the secondary system is not transmitted.
The BVP-9500WS/9500WSP at the secondary side cannot be set to the three-time speed.

Setting on the setup menu of the unit

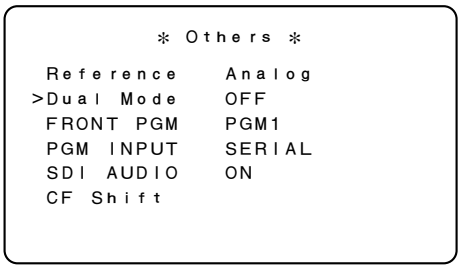


AT-122 board

1. Set the MENU ON/OFF switch on the AT-122 board panel to ON. The setup menu will be displayed.
2. Select “Others” from the setup menu entry display.



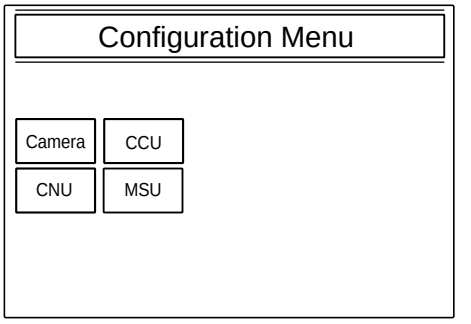
3. Select “DUAL MODE” of the rotary encoder.
   Press the rotary encoder.



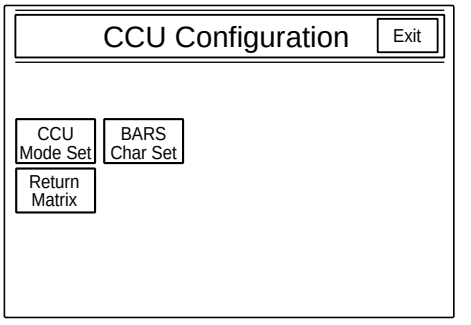
4. Set OFF (normal mode), Primary or Secondary according to the relevant CCU.
   For the details, refer to Section 2-2, “Setup Menu”.

Setting using the MSU-700A/750

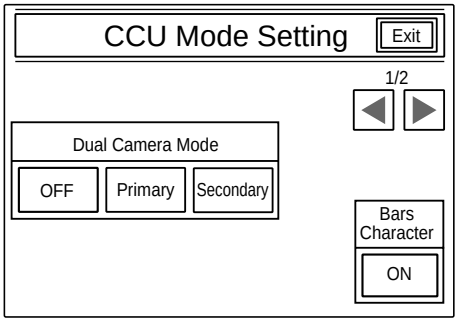
1. Press the CONFIG button of the MODE block of the MSU-700A/750 to light up the button.
   The configuration menu will be displayed.



2. Press CCU.
   The CCU configuration items will be displayed.



3. Select CCU Mode Set from the configuration items.
4. The CCU mode setting display appears.
   Select OFF (normal mode), Primary or Secondary according to the relevant CCU.



3-3-8. Settings for the Signals of the Optional Boards

Setting the Three-time Speed Output Format

Either the MAV or the DISC2 format can be selected as the video signal format of the three-time speed output signal from the SS-A, SS-B and SS-C connectors on the rear panel using the switch S1108 on the VPR-57 board. The MAV format suits to the multi-access video disk recorder MAV-555 (when the optional super motion input board BKMA-520SS is installed). The DISC2 format supports EVS-SLMS.
For more details, refer to Section 1-5. “Settings of Switches and Controls on Boards.”

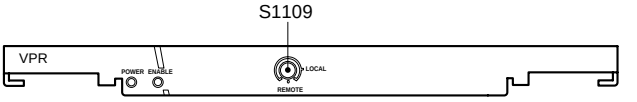
Setting the Normal Speed Video Signal Generation (Frame Interpolation)

When operating in the super motion mode, the CCU-900/900P standard output mode (for SERIAL OUTPUT 1/2/3, SERIAL MONITOR OUTPUT, PIX1/2 and WF1/2 connectors of the rear panel) enables the normal speed video signal output to be executed with minimum unnatural movement from the three-time speed video signal.

How to set from CCU-900/900P

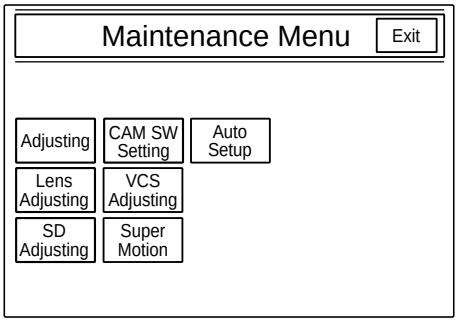
Perform setting using the switch S1109 on the VPR-57 board. For more details, refer to Section 1-5. “Settings of Switches and Controls on Boards.”

How to set from MSU-700A/750

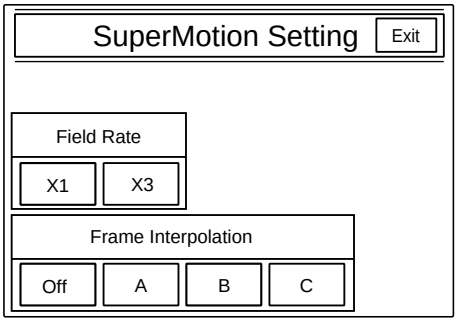


VPR-57 board

1. Set 0 (REMOTE) to the switch S1109 on the VPR-57 board panel of the CCU-900/900P.
2. Press the MAINTENANCE button of the MODE block of MSU-700A/750 to turn on the button.
   The maintenance menu appears.



3. Press [Super Motion].
   The super motion setting menu appears.
4. Select the desired mode of generating the normal speed video signal using the Frame Interpolation switches.
   - Off : Does not generate the normal speed video signal. The same video signal as the output signal from the SS-A connector on the rear panel is output as the CCU standard output.
   - A : Standard interpolation ratio (Normally set)
   - B : Quick object mode
     Used when the motion speed of object is high and the video signal is unnatural with the setting “A”.
   - C : Slow object mode
     Used when the motion speed of object is slow and the video signal is unnatural with the setting “A”.



3-3-9. Mode Control Setting from the REMOTE Connector

When BVP-9500WS/9500WSP is connected, the × 1/× 3 mode can be switched from the INCOM REMOTE connector of the rear panel of the unit.
When 16 : 9/4 : 3 switchable camera is connected, the 16 : 9/4 : 3 mode can be switched from the MIC REMOTE connector of the rear panel of the unit.

× 1/× 3 Mode Control

The × 1/× 3 mode can be switched from the INCOM REMOTE connector by setting ENABLE as shown in the following table.

Note

When ENABLE setting is performed (when setting pin-23 of the INCOM REMOTE connector to the GND level from the external), the CCU of the × 1/× 3 mode setting is valid and settings of the MSU and BVP-9500WS/9500WSP are invalid.

INCOM REMOTE Connector Pin No.	Signal	Specifications	
20	× 1/× 3 IN	+5 V (OPEN) :	× 1
		GND :	× 3
23	× 1/× 3 ENABLE	+5 V (OPEN) :	DISABLE
		GND :	ENABLE

16 : 9/4 : 3 Control

The 16 : 9/4 : 3 mode can be switched from the MIC REMOTE connector by turning off the S1002-1 switch on the AT-122 board and setting ENABLE as shown in the following table.

Note

When ENABLE setting is performed (when setting pin-12 of the MIC REMOTE connector to the GND level from the external), the CCU of the 16 : 9/4 : 3 mode setting is valid and settings of the MSU and camera are invalid.

MIC REMOTE Connector Pin No.	Signal	Specifications	
12	16 : 9/4 : 3 SELECT EN IN	+5 V (OPEN) :	DISABLE
		GND :	ENABLE
13	16 : 9/4 : 3 SELECT IN	+5 V (OPEN) :	4 : 3
		GND :	16 : 9

Section 4
Service Overview

4-1. Cleaning of Connector/Cable

Before connecting the unit to the camera adapter, it is recommended to clean the following optical contact portions.

- CAMERA connector of the unit
- CCU connector of the camera adapter side
- Optical/electrical cable

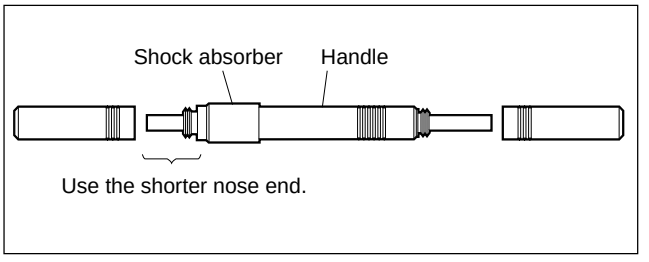
Follow the procedures below for cleaning.

Tools Required

- Alignment sleeve remover HC-001
  (for female connector)
  Sony P/N : J-6480-010-A

Note

Insert the shorter nose end when removing/installing the alignment sleeve.
Grasp not the shock absorber portion of the remover but the handle in use.



- Cotton swabs (commercially available)

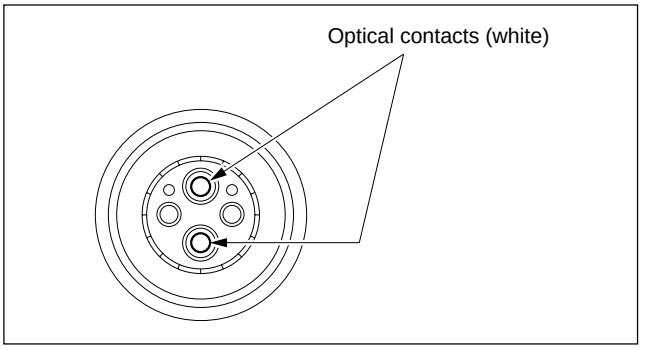
Note

Use a cotton swab whose diameter is about 4 mm.
If a cotton swab whose diameter exceeds 5 mm is used, the cotton swab cannot be inserted into the end of the connector and the tip of the optical contact cannot be cleaned.

Cleaning

Male connector

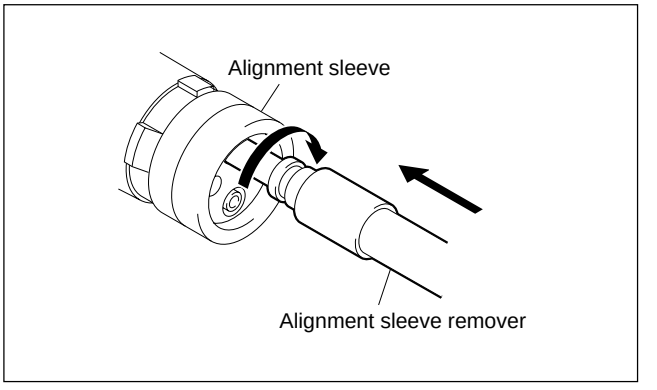
Clean the tip of the white optical contacts by a cotton swab moistened with alcohol.



Female connector

The optical contacts for female connector are in an unexposed state. In cleaning, it is necessary to be exposed by removing the alignment sleeve in advance. Proceed as follows.

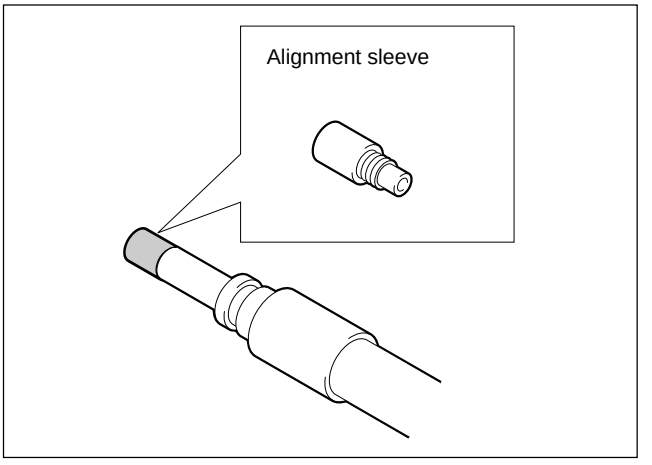
1. Insert the alignment sleeve remover into the alignment sleeve in the straight line and turn it clockwise.



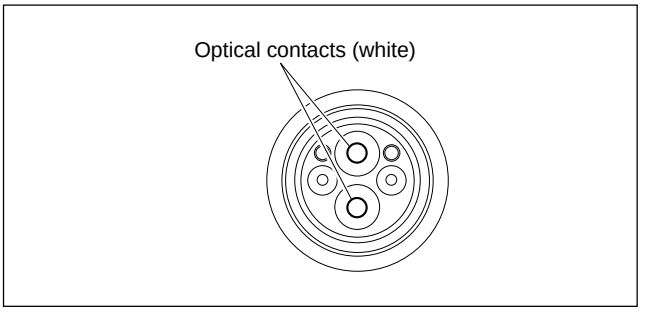
2. When the turn stops, pull out the remover in the straight line forcedly.

Note

The alignment sleeve can be removed/reinstalled with the sleeve itself attached to the tip of the remover. Great care should be taken so as not to lose or damage the alignment sleeve.
(Alignment sleeve: Sony P/N 9-980-074-01)



3. Clean the tip of the white optical contacts by a cotton swab moistened with alcohol.



4. Insert the remover with the alignment sleeve attached to its tip, and push it until it clicks.
5. Rotate the remover counterclockwise to install the alignment sleeve, and extract the remover.

4-2. Recommended Replacement Parts

4-2-1. DC Fans (Rear Panel)

The recommended replacement fans should be used in the rear panel assembly of this unit.
The lifespan of these fans is about 30,000 hours, which means that the fans can be used for about three and a half years if the power is on all the time, so the fans should be replaced according to service conditons.
For the replacement procedure, refer to the separately available maintenance manual volume 1.

Note

This unit is provided with the two DC fans in the rear panel assembly.

Replacement Part

Part : DC fan
Part No. : 1-698-059-11

CCU-900 (J, UC)
CCU-900P (CE)
BKP-9330 (SY) J, E
3-204-336-03

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