Kaleido-Alto
Kaleido-Quad

User's Manual

M791-9900-101

Multi-Image Display Processor

Kaleido-Alto
Kaleido-Quad

Safety Compliance Information

Safety Compliance

This equipment complies with:

- CSA C22.2 No. 60950-1-03 / Safety of Information Technology Equipment, Including Electrical Business Equipment.
- UL 60950-1 (1st Edition) / Safety of Information Technology Equipment, Including Electrical Business Equipment.
- IEC 60950-1 (1st Edition) / Safety of Information Technology Equipment, Including Electrical Business Equipment.

CAUTION

These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, 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. Servicing should be done in a static-free environment.

Electromagnetic Compatibility

- This equipment has been tested for verification of compliance with FCC Part 15, Subpart B, class A requirements for Digital Devices.
- This equipment complies with the requirements of:
  EN 55022 Class A, Electromagnetic Emissions,
  EN 61000-3-2 & -3-3, Disturbance in Supply Systems
  EN 61000-4-2, -3, -4, -5, -6, -8 & -11 Electromagnetic Immunity

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Kaleido-ALTO/QUAD

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1.1 Introduction

The Kaleido-Alto and Kaleido-Quad multi-image processors can display multiple video inputs (up to 10 for Alto, up to 4 for Quad) on a single high resolution output. The Kaleido-Alto/Quad combines the display of video windows, audio level metering, text identification labelling, tallies and in-screen status indicators in a convenient single RU frame. Various models are offered to support SDI video, composite video or the auto-detection of composite and SDI. Four stereo audio level meters can be displayed inside or outside each video window. Audio sources can be extracted from the embedded audio inside the SDI signals, or input via optional audio mezzanines providing 4 or 10 AES or Analog stereo input signals. A DVI input allows the insertion of an external computer signal to fill the background of the video layout. The layout can be created using the KEdit software and applied to the system afterward. Layouts and frequently-used functions can be operated via the Kaleido-RCP or via a mouse/pointer interface. Even though the Kaleido-Alto/Quad is not equipped with the entire Kaleido-K2 extended function set, it is an ideal solution in areas where fewer signals need to be monitored with fine picture quality. Its compact 1 RU frame is a real asset in areas where space is restricted..

1.2 Installation and Connection

Please see the Installation Guide for detailed instructions on setting up the Kaleido-Alto or Kaleido-Quad unit within your installation and configuring the necessary network connections for its operation.

2 Kaleido-Alto/Quad System Concepts

2.1 Software Components

There are two software components associated with the Kaleido-Alto/Quad system:

- **Kaleido-Alto/Quad** software is already installed in the Kaleido-Alto/Quad unit, and performs all functions associated with integrating data streams and presenting the multi-image display.

- *K-Edit Layout Editor* software runs on a remote computer connected to the Kaleido-Alto or Kaleido-Quad through an IP interface. It creates the on-screen layout formats used by the Kaleido-Alto/Quad.

2.2 Visual Elements

Kaleido-Alto/Quad replaces the traditional physical display devices in a monitor wall, such as video monitors, audio meters and tally lamps, with graphical representations. The objects and images that appear on the screen of the Kaleido-Alto/Quad multi-image display and of the computer running Kaleido-Edit Layout Editor will be referred to as *visual elements*. A visual element is the on-screen manifestation of a data stream.

There is a one-to-one correspondence between the visual elements in a layout prepared in K-Edit Layout Editor, and those presented on the Kaleido-Alto/Quad multi-image display.

However, there is an essential difference between the visual elements as presented by these two packages:

- The multi-image output represents the exact program stream being processed. Its visual elements show a dynamic, real-time representation of the data in the program stream. UMDs, status and tally indicators change shape and color according to the information status. All objects are drawn with details and resolution. Text appears with a cleanly rendered font

- The K-Edit Layout Editor software is used off-line to create the elements to be used in the actual Kaleido-Alto/Quad multi-image display output. As such, it has no knowledge of the actual information that the Kaleido-Alto/Quad is processing. The Kaleido-Edit Layout Editor representation is static, and the visual elements are displayed as icons, of the correct size and position, but without dynamic program content.

While the K-Edit Layout Editor screen shows a good representation of the final output, the user is advised to look at the actual Kaleido-Alto/Quad output on the monitor wall screen, to verify that the output is as desired.

This manual describes operation of the Kaleido-Alto/Quad. The use of the K-Edit software to create layouts for the Kaleido-Alto/Quad is described in its own manual, which is available as on-line help when you are running the K-Edit software.

3 Getting Started with the Kaleido-Alto/Quad

3.1 Quick Tour of the System

Once the Kaleido-Alto/Quad is properly set up and powered, it immediately displays a multi-image output. A default layout is used to monitor the incoming feeds. This figure shows the principal features of a layout.

Figure 3.1 *Kaleido-Alto layout*

The first thing that you notice is the visual elements: there are several windows with UMD information underneath, VU meters, clock, tallies, even countdown timers (not shown in this figure). All these elements may be configured to suit your monitoring preferences, as explained in the following sections. In addition, when the mouse is moved toward the bottom of the screen, a toolbar appears, with buttons and icons. The layout buttons are used to quickly change the layout being displayed. The K-Alto or K-Quad button gives access to different system-level parameters, and the icon buttons are tools to customize the windows and layouts. When using a Kaleido-RCP, the buttons of the remote panel allow much of the same control and flexibility as if you were accessing the task bar with a mouse.

3.2 The Toolbar

Just as on a PC computer, moving the mouse toward the bottom of the screen calls up the toolbar.
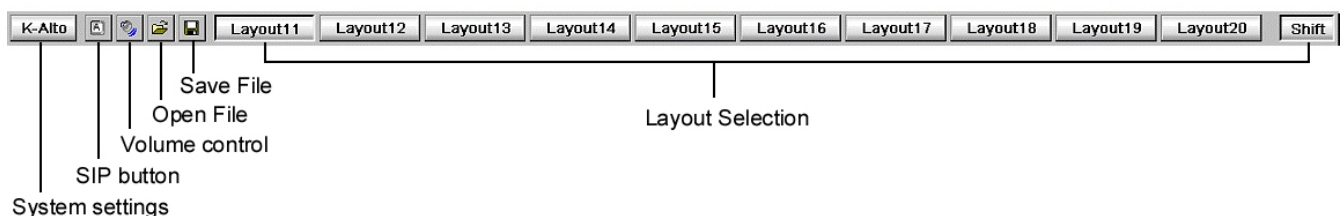
Figure 3.2 *Elements of the toolbar*

This bar is composed of buttons, as shown in figure 3.2.

The K-Alto or K-Quad button opens a sub-menu showing the system parameter settings and status information; they will be described in detail in section 4.

The Software Input Panel (SIP) Button
To access this tool, click the keycap icon in the toolbar and the SIP keyboard will appear in the bottom right corner of the screen. Using the mouse to click keycaps, you will find that it reacts just like a physical keyboard. To move this panel, position the cursor over its title bar, click and hold the left mouse button, move the mouse to reposition the panel, then release the mouse button.
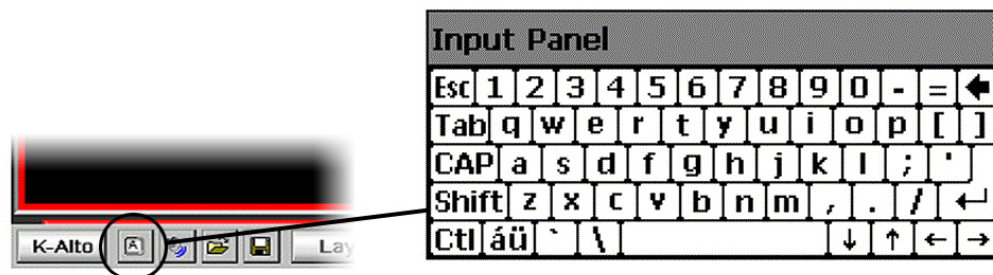
Figure 3.3 *SIP Keyboard*

The Volume control button controls the volume of the channel being monitored. When pushed, a long slider appears, with 3 additional buttons. Moving the slider changes the volume as expected; the "Mute" button mutes the volume and the "-20dB" attenuates it accordingly. Use the "Select" button to specify which audio group to monitor for each channel, in the case of embedded audio. This feature will be detailed in section 4. If the volume is being changed using the RCP or keyboard, this volume control will appear, and can be used to monitor the changes as they are made.

Figure 3.4 *Volume Control*

Open File and Save File buttons allows access to the internal memory of the Kaleido-Alto/Quad, in which is stored channel information and layouts.

The **Layout Selection buttons** enable a quick change of layouts. There are 20 layouts saved as defaults on the Kaleido-Alto/Quad; ten buttons are visible at once on the tool bar, click the "Shift" button to access the next ten. The first ten default layouts are for a 16:9 display, while layouts 11 to 20 are for a 4:3 display. You can rename a layout by right-clicking on the button and selecting Rename Recall Button; the button turns on an editing mode and a new name can be entered.

3.3   Using a Layout

In this section you will learn how to "use" the layout and understand the different parameters associated with the video images. Each window in the layout, with a video screen coupled with audio and data information, is called a "monitor".

To personalize your layout, you will use the mouse supplied with the unit; there is a lot you can do just by doing what you would normally do with a computer. Note that you do not need a physical keyboard to enter text, the software input panel (SIP) built into the software will be used for that purpose.

If you already have inputs connected to your unit, they will display right away in the monitors. Each monitor is configured to include a video image, an audio signal and data information; this grouping of signals and data is called a channel, and may be changed using K-Edit. Several channel configurations

may be saved inside Kaleido-Alto/Quad, as explained later. A channel may be placed in any window of the layout; the window may be assigned a name, its aspect ratio may be changed, markers may be displayed, etc. We will detail these below.

*Note: To better explain the difference between **Monitors** and **Channels**, consider that:*

- *A Monitor is analogous to a common home TV set: it has a screen, speakers, possibly the option to display the closed captioning (CC), and some on-screen text to identify the current program.*

- *A Channel is conceptually the same as a broadcast or cable channel (which includes video, audio, closed captioning text, program information, etc) captured by the TV set. Assigning a channel to a Kaleido-Alto/Quad monitor is equivalent to switching a TV set to a numbered channel.*

Editing Text ID
Click on the monitor's text ID bar and it immediately turns on Edit mode – the text ID is highlighted and ready to be overwritten. To change the text, you need to use the keyboard – either a physical, USB keyboard connected to the unit or the SIP keyboard. Note that you need to click the SIP keyboard first, then select the name bar. Whether you use the SIP keyboard or a physical one, you need to push the Enter key to validate the new text ID or the ESC key to exit without change.

Note: if you change layouts, the text ID will disappear. If you wish to associate the new ID with the channel, you need to save it using the *Save File* button. Saving it will ensure that the channel stays with the new name throughout all the layouts.

Assigning a new channel to a monitor
Right-clicking on a window brings up the monitor configuration menu. The first item of this menu is **Assignment**. Select **Assignment** to display the *Channel Selection* as shown in figure 3.5. The current Channel Assignment for this window is grayed out. Select any channel to be displayed in the monitor; a channel may be assigned to more than one monitor, but the actual input signal will only be visible in the last monitor assignment.

Note: you can see at a glance which channel is assigned to which monitor by clicking the Tab key on the SIP keyboard (you can also do this with the Kaleido-RCP – see section 5).
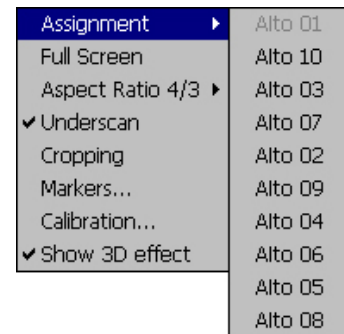

Figure 3.5 *Channel Selection*

Making a monitor display full screen
The next parameter in the Monitor Configuration menu is **Full Screen**, which makes the window fill up the screen. When a monitor has been enlarged to full screen, right-click on it and you will notice that a check mark appears next to the **Full Screen** parameter; select **Full Screen** again to unselect it, and the previous layout is restored.

Note: the full screen layout is configurable via K-Edit, and can be saved as default by pressing the *Full Screen* key on the Kaleido-RCP for more than 7 seconds (see section 5.3 *Kaleido-RCP operation in detail*).

Changing a monitor's aspect ratio
If the video input signal is of a different aspect ratio than the monitor in which it is displayed, you may change the monitor's aspect ratio to display the signal without deformation. The available selections are **4:3, 16:9**, and a **custom** ratio, if any, defined with K-Edit.
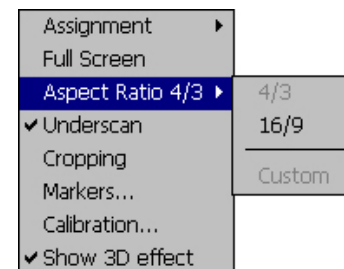
Figure 3.6 *Aspect Ratio Selection*

Displaying an underscanned video signal
During normal operation, the monitor displays most of the active video picture, gently cropped to mask those lines that may contain VITC and CC. Checking **Underscan** displays the entire active picture area plus a portion of the H and V blanking.

Cropping a monitor
You may crop a monitor in your display if you wish. The cropping can be done in KEdit when the layout is created, or it may be done in the Alto or Quad while the layout is in use. Right-click on the screen to bring up the Monitor Configuration menu, and click on Cropping. A cropping window opens, in which you can adjust the position of all four sides individually, as a percentage of height or width, to crop the monitor to your requirements.
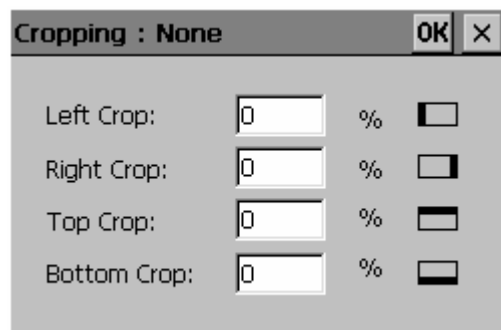
Figure 3.7 Monitor Cropping

Displaying aspect ratio markers in a monitor
You may display markers in a monitor to show how a 4:3 input signal will display in 16:9 or vice-versa. Select **Markers…** in the monitor configuration menu to display the markers menu. Check the box to display markers in the format that you wish to monitor your monitor. You can also check the two boxes to display markers all the times when changing the monitor's aspect ratio. Click the OK button to apply your selection.
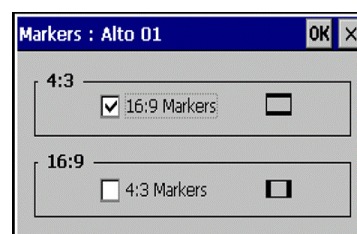
Figure 3.8 Markers Display Selection

Calibrating a video signal
For monitoring purposes, you may want to modify the input signal calibration. Select **Calibration…** to display the Video Calibration menu. You can adjust the *Brightness*, *Contrast*, *Hue*, *Color* and *Sharpness* parameters directly by using the sliders. To reset the signal to "factory" calibration click *Default*. Click the *Custom* button to apply your calibration to the video. A built-in *DeInterlacer* may also improve the display of the video signal; the choice of decoding filter - *Adaptive*, *Temporal* or *Spatial* – depends highly on the contents of the image. Most artifacts will disappear with *Adaptive*. The simplest way to select a decoding filter is to pass through each one and compare their performance on your monitoring display.

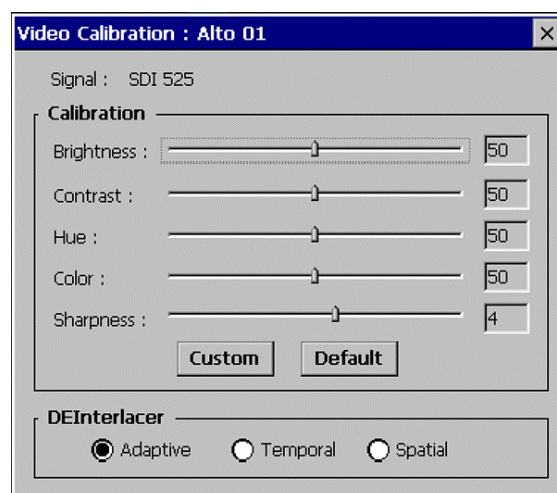Note: when using the *Temporal* decoding filter, the *Sharpness* parameter is not available.

Figure 3.9 Video Calibration window

Displaying a 3D border around a monitor
To put emphasis on a monitor, you may add a 3D frame around it. Simply select *Show 3D Effect* in the monitor configuration menu.

Selecting the audio signal to be monitored
The assigned channel in each monitor may or may not have an audio signal present; the Audio Level indicator next to the video image shows you if there is indeed audio. As you can only listen to one audio signal at a time, you select the channel that you wish to monitor by clicking on the Audio Level indicator. It then becomes "highlighted", showing a contrasting line appears around it.

Note: there may be more several AES audio group embedded in a serial digital signal. You may select which audio group to monitor using the System Status panel; this panel is described in section 4.

Clock display
If your layout includes a clock (analog or digital), you can set it to use its internal time reference or use an external source from a serial port (see note below). You may also set it to a different time zone or to include a time offset from the time reference by a specified amount in either direction.

Right-click on the clock and a **Clock Settings** window appears.
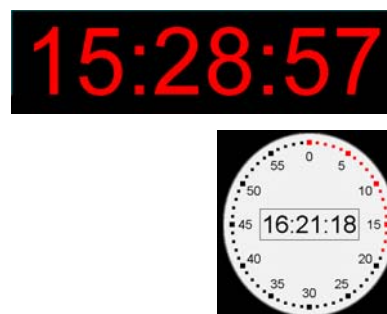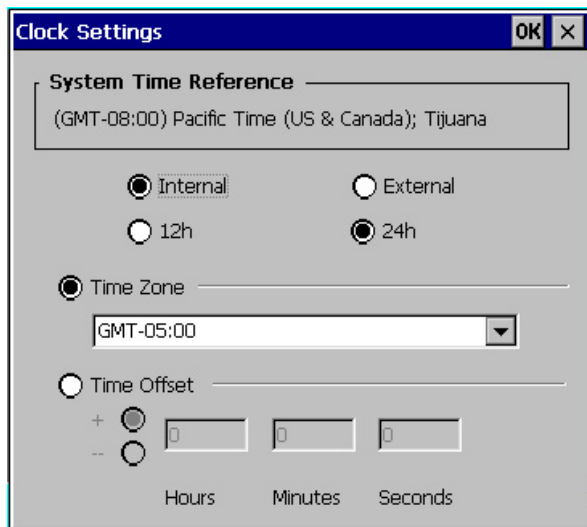
Figure 3.10 Clock Settings window

Note that when using the internal reference time, the correct time of day needs to be set in the system settings, which will be explained in the next section.

To input time code from a serial port, use Miranda's Little Red to connect Linear Time Code (on a BNC connector) to RS-232, as described in section 4.2 Parameter Settings.

Countdown Timer
When a countdown timer is available in a layout, you may use it to either count down or count up a specific time interval. Additionally, you can set it to display the remaining time to a specific time of day. To change the timer behavior (e.g. countdown time, count up time or display remaining time) click on the top

right icon; it will change to signals its function. The down-pointing arrow indicates a count down timer, an up-pointing arrow indicates a count up timer and the hourglass icon indicates a remaining time counter.

The timer provides controls to start, stop, loop and reset a timer. To access the controls, click on the double arrow in the lower right corner of the timer.

Countdown timer:
The countdown timer is identified by its arrow pointing downward: see figure 3.11 below. To set the time interval to count down from, click on the time display to access edit mode. Enter the desired time interval; the seconds are entered first, then minutes and finally hours. Click *Enter* when finished editing. To start the countdown timer, click on the double arrow in the lower right corner to access the controls. Click on the **Play** button to start the timer. To stop it, click on the *Stop* button. Click **Reset** to reset the timer or the **Loop** icon to loop the countdown cycle.

Count up timer:
The count up timer is identified by its arrow pointing upward: see figure 3.12 below. To set the time interval to count up to, click on the time display to access edit mode. Enter the desired time interval; the seconds are entered first, then minutes and finally hours. Click *Enter* when finished editing.
To start the count up timer, click on the double arrow in the lower right corner to access the controls. Click on the **Play** button to start the timer. To stop it, click on the *Stop* button. Click **Reset** to reset the timer or the **Loop** icon to loop the countdown cycle.
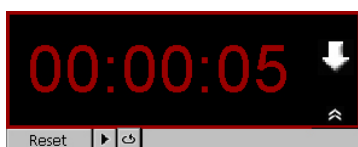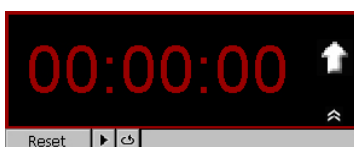
Remaining time counter:
The remaining time counter is identified by the hourglass icon: see figure 3.13 below. To set the "destination" time, click on the time display to access edit mode. Enter the desired time of day; the seconds are entered first, then minutes and finally hours. Click *Enter* when finished editing. To start the remaining time counter, click on the double arrow in the lower right corner to access the controls. Click on the **Play** button to start the timer. To stop it, click on the **Stop** button. The **Reset** button is not used with this function.

Fig. 3.11 Countdown Timer   *Fig. 3.12* Count Up Timer   *Fig. 3.13* Remaining Time Counter
(Controls not shown)

3.4   Some notes about importing layouts from KEdit

Layouts are created in KEdit, and sent to the Kaleido Alto or Kaleido Quad using the Export to Kaleido Alto dialog (see the on-line Help when running KEdit for details). KEdit creates layouts for these products, but also for Kaleido-K2. As the feature set of Kaleido-K2 is different, there are a number of points you should be aware of when creating layouts destined for an Alto or Quad.

Audio Scales: the Alto and Quad do not support the VU and Kaleido Classic audio scales that are available in KEdit, so make sure your layout does not include audio meters configured to use these scales, or else the scale will be replaced by a default scale.

Images: you can export backgrounds and logos to your Alto or Quad along with the layout, but be aware that the Alto/Quad unit supports a limited color palette of 256 colors. If your image was created with a large color palette, then rendering it onto the Alto or Quad may adversely affect its appearance, and large image files, especially jpegs, may take a long time to display.

Note that Kaleido-Alto/Quad does not support bitmap images, so only export images to Kaleido-Alto/Quad in .jpg or .png formats

International Fonts: KEdit creates layouts that may include a wide spectrum of international fonts. Kaleido-Alto/Quad will display the character sets of any such fonts that are installed in it's font database. However, certain fonts incorporate complex rules that change the sequence of character presentation at certain points ("multidirectional" fonts), and Kaleido-Alto/Quad is not able to present the appropriate sentence structure. When assigning text to text labels, etc. using such a font, the user would be wise to verify its presentation on the Kaleido-Alto/Quad output, as it may not match the KEdit original.

Component Count: while KEdit allows you to create large layouts with many components, those destined for use on a Kaleido Alto or Kaleido Quad must respect limitations on the total number of components that can appear in a layout, and within each of the monitors in that layout, as shown here:

Component type	Max # of components in a …	
	Layout	Monitor
Monitor	12	
Video screen	12*	1
Audio meter	10	6
Status indicator	5	5
Tally	4	4
Text Label	12	2
UMD	12	2
Timer	5	
Clock	5	
Logo	5	

*   All Video screens must be within a monitor, and a monitor can only contain one video

4 Detailing the Features

This section will detail all the parameters of the system, including all video and audio settings.

4.1 System Status

From the toolbar click the K-Alto or K-Quad button and select **Status** to display the System Status window. This window includes four tab-selectable panels that give information on the system.

The first panel is the *System* status, shown in the figure on the right. It contains basic information about your unit.

- The name of the unit, its address, IP and MAC addresses (some of these settings may be changed in the **Settings** menu), and the capacity and usage of the unit's hard drive.

- The Software, firmware and hardware version numbers are indicated. In the event of a system upgrade, the software and firmware numbers will reflect the change.

- The RS-232, RS-422 A and RS-422 B ports settings are listed. They may be changed in the **Settings** menu.

- At the bottom, the panel reports on the status of the Kaleido's power supply (or supplies if the optional redundant supply is installed), and of the cooling fans in the case. The status is reported as:
  - ◊ **Ok** if installed and functioning normally
  - ◊ **Defective** if the supply or fan is faulty
  - ◊ **Absent** if no supply or fan is installed
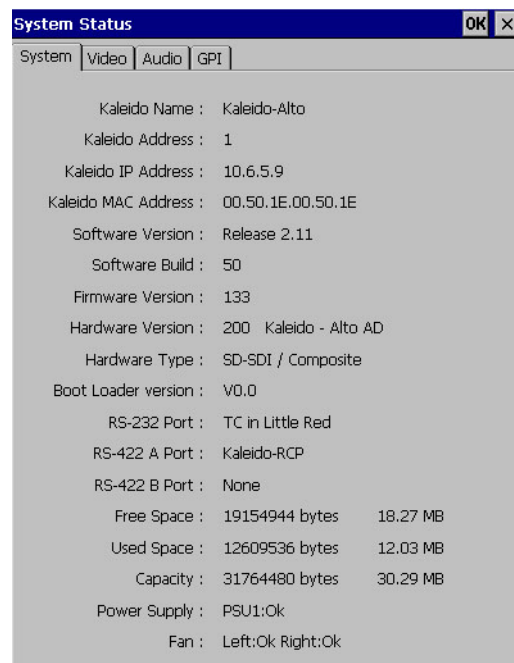
Figure 4.1 System status panel

The next panel is the *Video* status. Listed here are the type and format of all video inputs connected to the unit, as well as the output settings currently selected. Additionally, when an embedded audio is being monitored, the corresponding SDI input is highlighted as shown below. In figure 4.2, the panel shows a MWO-HDM monitoring output mezzanine installed (lower right corner).
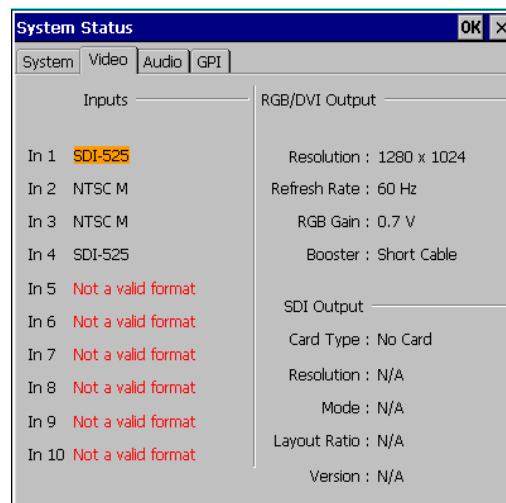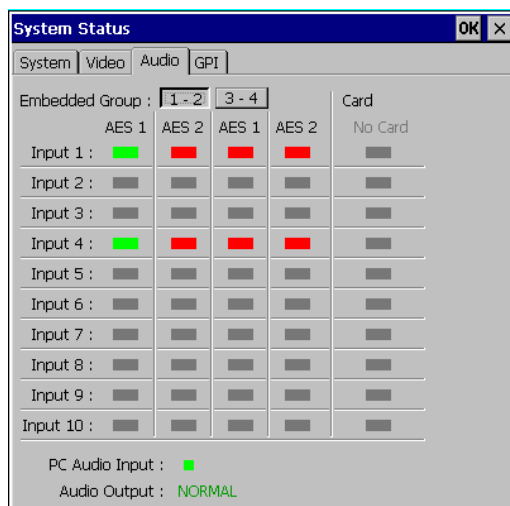

Figure 4.2 Video status panel

The *Audio* status panel shows all the audio that may be connected to the unit, and indicates if an optional audio card is installed.

- Embedded AES audio signals are listed here for each valid SDI input: there may be up to four audio groups per input, each consisting of 2 signal pairs (or four signals).

  Note: in this panel you may also select which audio signal to monitor by clicking on a pair. The pair selected is then highlighted and becomes audible.

- Only one of the two audio groups are listed at a time for all the inputs; to view the other audio groups, click on the button for the other group and they are in their turn listed below.

Audio status:

GREEN: On
RED: Silence or Overload
GRAY: Disabled

Figure 4.3 *Audio status panel*

- If there is an optional audio card installed in the system, the status of the audio signal connected to the card is also shown on this panel, much the same way as embedded audio. The symbols are grayed out if no card is installed.

The *GPI* status panel lists the active GPI inputs connected to the unit, and the status of the GPI outputs.. The GPI inputs are used to activate alarms. GPI input configurations are defined with K-Edit software.

GPI Outputs are generated by Actions, and defined in KEdit.
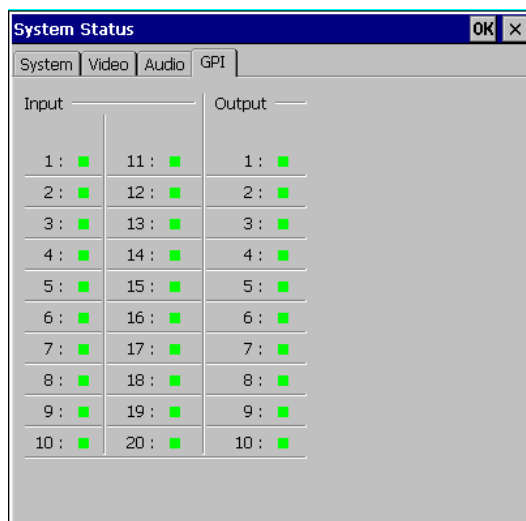
Figure 4.4 *GPI status panel*

4.2   Parameter Settings

From the toolbar click the K-Alto or K-Quad button and select the **Settings** menu. Here you find resources to configure the system to interact with your existing installation and set some basic controls.

Figure 4.5 *Settings menu*

The *Input Panel Properties* allows changing the size of the keys on the SIP keyboard. Click *Options…* and choose between *Large keys* 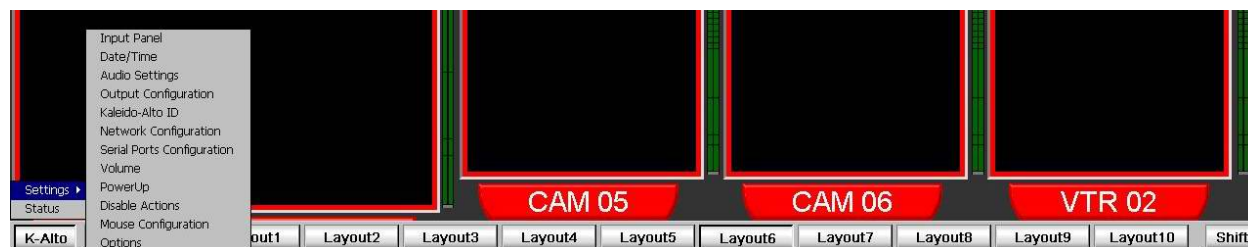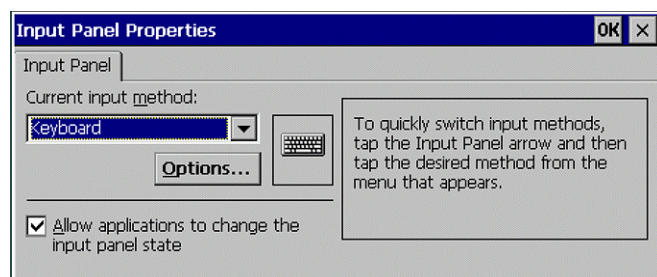and *Small keys.* You can also use the **Use gesture…** feature to replace some keys on the keyboard such as Enter and Space. Other properties are not supported yet.

Figure 4.6 *Input Panel Properties*

Date/Time is where you set the internal time reference. Start by setting the *Time zone* that you wish to use for your reference. Set the date on the calendar by selecting the correct month using the left/right arrows and clicking on the correct date; set current time using the up arrow/down arrow buttons.

The *Automatically adjust clock for daylight saving* feature of the operating system is not supported by Kaleido Alto/Quad, so the checkbox is inoperative.

Click the *Apply* button to apply the changes you just made.
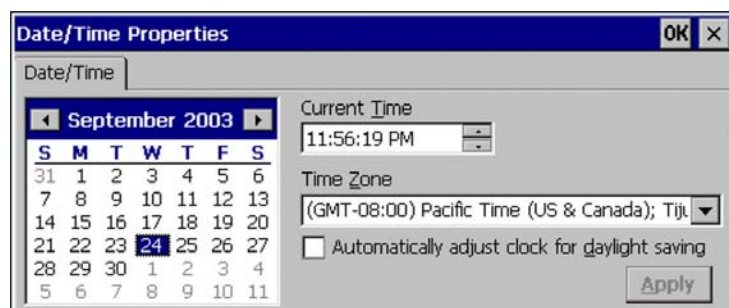
Figure 4.7 *Date/Time Properties*

Audio Settings opens the Audio Settings panel, which allows various audio parameters to be set.

The *Audio Meters* tab provides the option of setting the rise time of the audio meters associated with audio from the audio card. Select either Instantaneous or 10 ms. Note that the rise time for Embedded audio is always instantaneous. It also allows you to select the 0 dBU reference point for analog monitoring of digital signals. Select either -24 dBFS = 0 dBU (per SMPTE RP-155) or -18 dBFS = 0 dBU (per EBU RP-68).

Figure 4. 8 *Audio meter settings*

The *Audio Error Config* tab allows you to set the conditions under which an audio error will be detected for each of the embedded audio channels entering the Kaleido-ALTO/QUAD. This can be done:
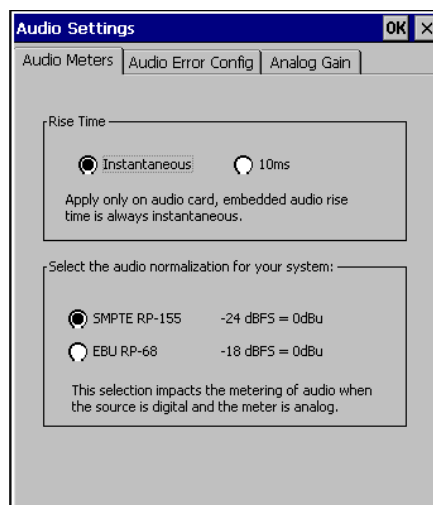
- individually for each channel (select the channel by selecting Group 1-2 or 3-4 using the buttons at the top, and then selecting AES 1 or AES 2 for one of the 10 inputs using the 40 buttons below)

- for all channels at once (by clicking the Embedded Gr. button at the top left).

In either case, a window will open allowing you to set the error detection parameters. The window header will identify the specific audio channel you are setting up (in the example below: Video input 1, AES group 1, AES Channel 1) or ALL if you selected to set up all channels at once. The window contents are the same in both cases:
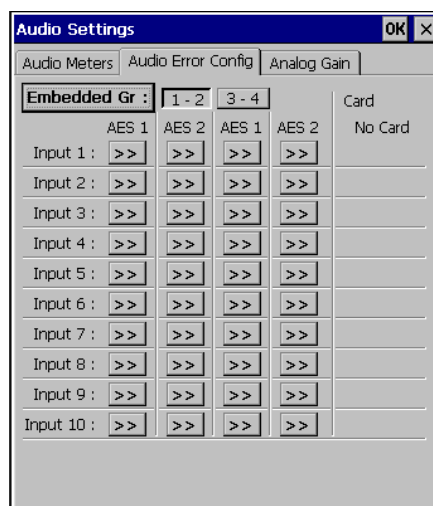
Figure 4.9 *Audio Error Configuration main panel*

Silence: set the level (in dBFS) below which the signal must remain continuously for longer than the duration (in seconds) in order for a Silence error to be flagged.

Overload: set the level (in dBFS) above which the signal must remain continuously for longer than the duration (in seconds) in order for an Overload error to be flagged.
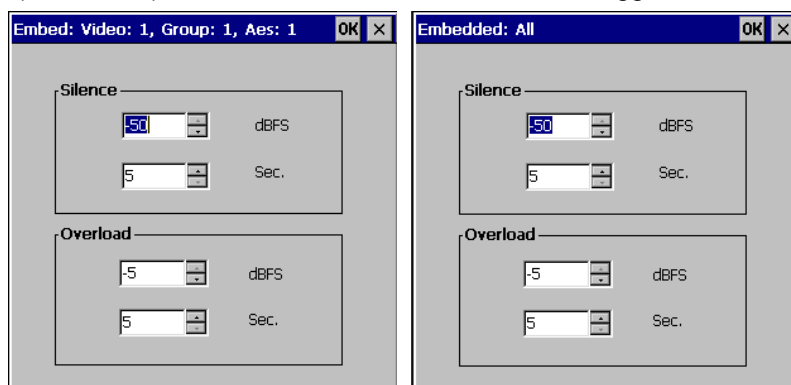
Figure 4.10 *Error detection threshold settings for Embedded audio*

The *Analog Gain* tab provides a slider for each of the inputs of the analog audio card, allowing the gain levels to be set. The gain can be adjusted from 0 to 30 dB in steps of 6 dB. (Note: this tab is only present when an analog audio card is installed)

Figure 4.11 *Analog gain adjustment for the input channels.*

The *Kaleido-Alto/Quad ID* property is where a unique name and address is given to a system. This unique address is used by a remote control panel or other equipment for RS-422 communication. As an example, several Kaleido-Alto/Quads, each with its own ID number, may be controlled individually by the optional Kaleido-RCP. The unit's name may be changed also, although the utility of this information is limited for the time being.

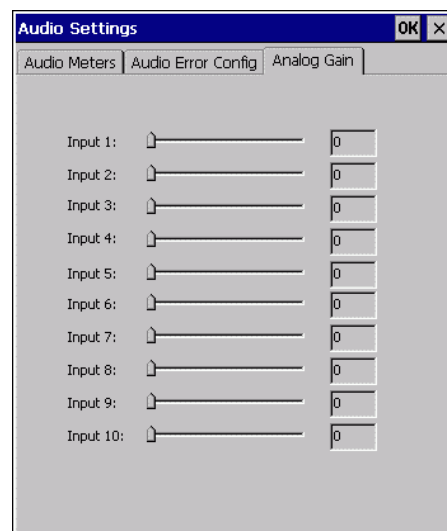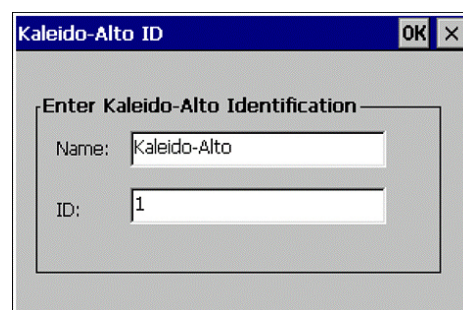**Figure 4.12** *Kaleido-Alto/Quad ID panel*

Output Configuration must be set according to your display device (plasma monitor, video projector, etc.) capabilities and installation conditions. Select the correct *Resolution* and frequency in the list: 1920 x 1080, 1600 x 1200, *1024 x 768*, *1280 x 1024*, *1280 x 768*, *1360 x 768* and *800 x 600*, all at *50* or *60* Hz. (NB: the 1920 x 1080 and 1600 x 1200 images are presented in letterbox format – see the Installation Manual for details. Certain Kaleido-Alto/Quad models and hardware revisions do not support these formats, but they will not appear in the Resolution pulldown unless they are supported – again, see the Installation Manual for details). You may have to manually change the resolution on the display device if it doesn't lock on the Kaleido-Alto/Quad's output automatically. The *RGB Gain* may be changed to increase the video dynamic range; some display accepts 1.0 V. p.p. while others not. A built-in cable equalization provides compensation for the output cable length; try the different cable length categories (*Short Cable*, *Medium Cable* and *Long Cable*) if the signal seems to be noisy.
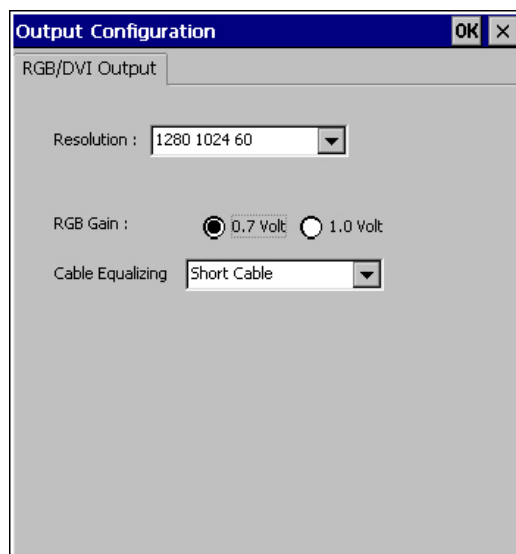
Figure 4.13 *Output Configuration panel, RGB/DVI Output*

An optional monitoring mezzanine can be installed in the Alto/Quad to convert its main RGB/DVI output to an SD or HD SDI format. Two mezzanine models are available: MWO-SDM and MWO-HDM. When a monitoring mezzanine is installed, an additional tab named *SDI Output* provides controls over the monitoring output. The monitoring mezzanine may be used as a 10 x 1 routing switcher or a scan converter, and may also output a test signal (color bars).

As shown on the left of figure 4.14, the *10 x 1 Routing Switcher* is selected; when this option is selected, any of the Alto/Quad's 10 inputs may be directed to the monitoring output by clicking on the corresponding window. This is particularly useful for a QC application where any of the inputs may be viewed on a Waveform Monitor, as an example.

As shown on the right of figure 4.14, *the Scan Converter* option is selected; when this option is selected, the mezzanine converts the main RGB/DVI output of the Kaleido-Alto/Quad into an HD or SD video signal. A pull-down list displays the available HD or SD SDI output formats. A checkbox allows retaining of the original output's aspect ratio, in the case where the display device is of a different aspect ratio.

Detail Enhancer and *Sharpness* sliders allow the user to select a value in the range *0* to *16*, *8* being the default (nominal) value in all output formats. The *Detail Enhancer* increases high frequency components thereby increasing fine detail and edges. The *Sharpness* slider allows to choose an aliasing adjustment, *0* being maximum anti-aliasing and *16* maximum aliasing (or max. sharpness), resulting in more or less perceived flickering.

You may also choose to output a color bars test pattern at the MWO-HDM or MWO-SDM output: check the *Color Bars* checkbox.
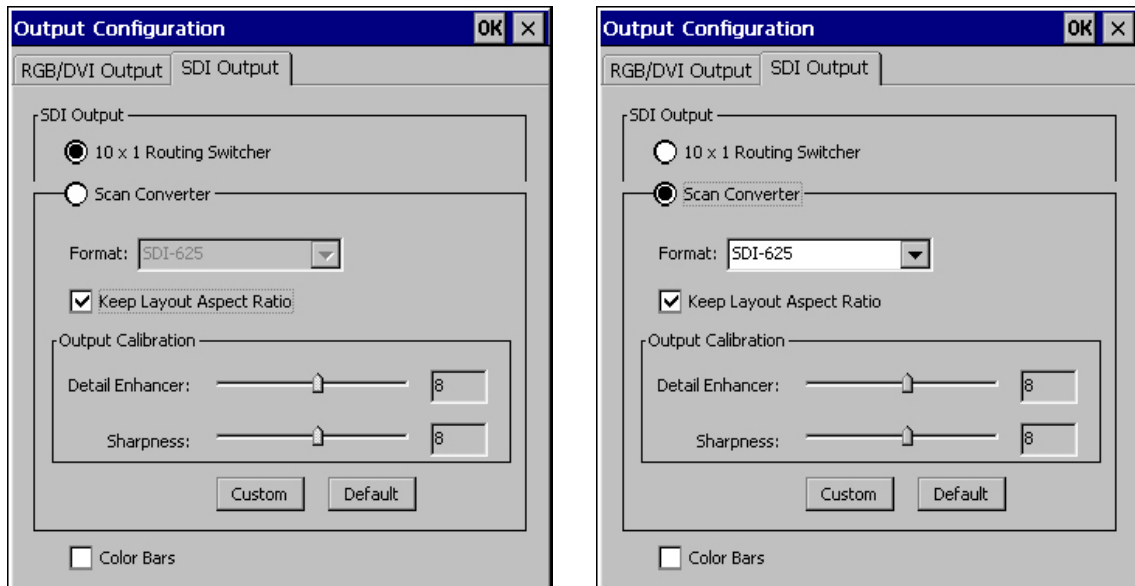
Figure 4.14 *Output Configuration panel, SDI Output*

The *PowerUp* menu item opens up the *Save Default Layout* window; clicking the button saves the position of each window in hardware as system default, which will be used when powering up. This layout will appear after 5 seconds when power-up is initiated. The current layout is re-applied once the application is up and running (10 sec. later).
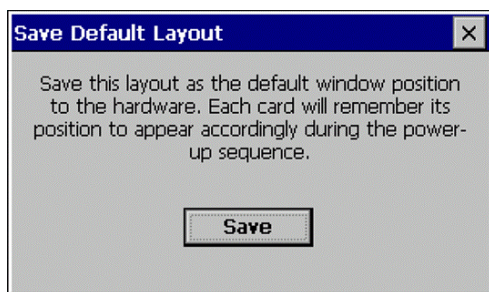
Figure 4.15 *PowerUp panel*

The *Volum*e item menu invokes the same volume control slider described on page 4.

The *Serial Ports* control panel allows configuration of the serial communication ports. They may be used to communicate with third-party devices to provide tally information and dynamic text for UMDs and Text Labels, or interface with the Kaleido-RCP or a time code reader such as Miranda's Little Red. Details on how to use the data can be found in the K-Edit software's on-line help manual They may be used to communicate with third-party devices to provide tally information and dynamic text for UMDs and Text Labels or interface with the Kaleido-RCP or a time code reader such as Miranda's Little Red. Details on how to use the data can be found in the K-Edit software's on-line help manual.

Assign a function to each port as needed. When using a Kaleido-RCP with the unit, select the *Kaleido-RCP* option in the menu for Port RS-422 A. When using a Little Red Time Code Reader, select *TC in Little Red* for Port RS-232. Note that TSL and Andromeda protocols are mutually exclusive; when one is selected for a communication port, the other protocol is not available on other ports as only one communication protocol may be used with the Alto/Quad at any time. Communication port parameters are set according to the selected function; for Andromeda in particular, parameters may be changed manually if required. See section 7 *Andromeda Port Settings*.
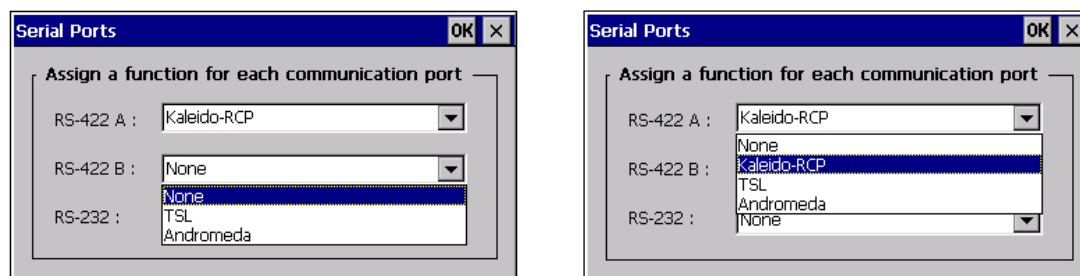
Figure 4.16 *Serial Ports RS-422A and RS-422B configuration panel*
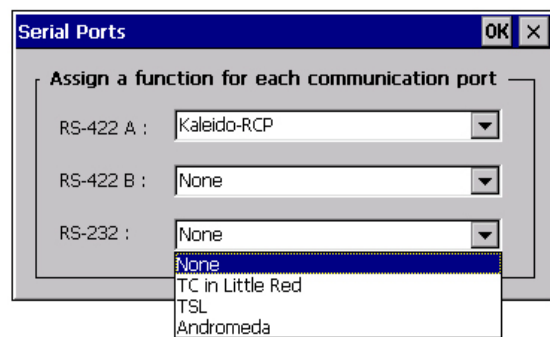
Figure 4.17 *Serial Ports RS-232 configuration panel*

Network Configuration is where the network settings are found. If your LAN network uses the DHCP protocol to dynamically allocate IP address on startup, check *"Obtain an address via DHCP"*; otherwise, you must specify an IP address the usual way, by entering the necessary information manually. Consult your network administrator if you are not sure about this.
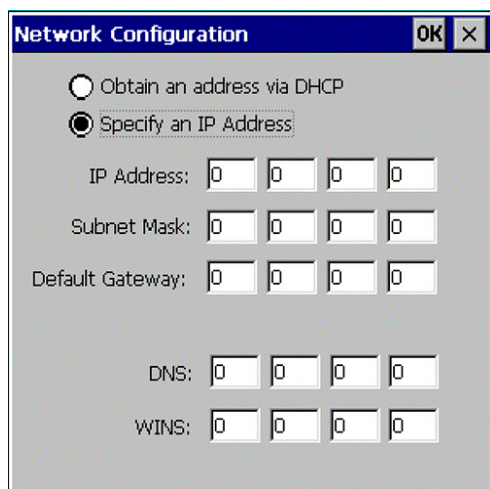
Figure 4.18 *Network configuration panel*

Disable Actions opens the Action Settings window, showing the *Actions Enabled* checkbox. Unchecking this box disables all actions on the Kaleido ALTO/QUAD. This is of most use when a sequence of actions is inadvertently triggered that enters a loop. The only way to get out of the loop is to disable actions using this panel, and then examine the sequence of actions and eliminate the problem.
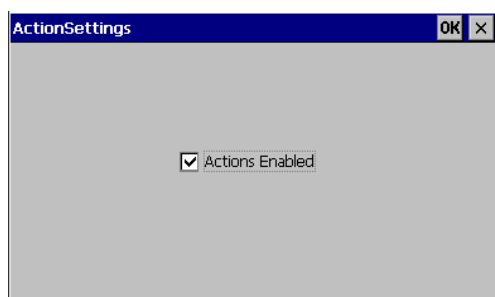
Figure 4.19 *Action Settings panel*

Mouse Configuration sets the time duration since the last mouse movement after which the mouse cursor will become invisible on the screen. The cursor will immediately become visible again if the mouse is moved.
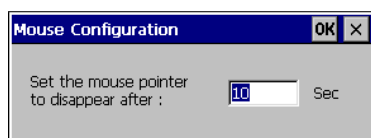
Figure 4.20 *Mouse configuration panel*

Options opens a window that allows the user to activate the Embedded Audio option on the Kaleido ALTO/QUAD. If you wish to purchase this option, contact your sales representative. Once the option is

purchased, you will be sent a key that is exclusive to your Kaleido (i.e. based on the serial number). Enter the key in the *Embedded Audio* data box, and click the Validate button in the lower right of the window. Once the key is validated, the Validate button will be replaced by a Save button. Click it to store the valid key information in the system. The option is now activated.
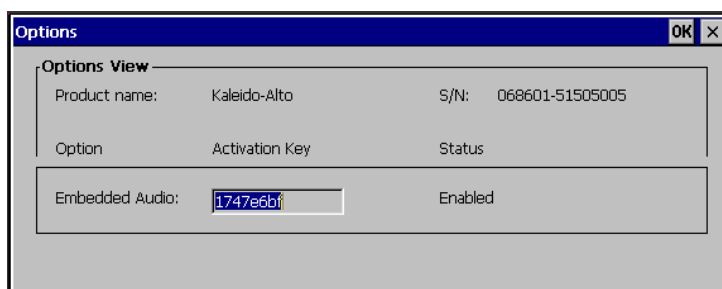
Figure 4.21 *Network configuration panel*

5 Controlling Kaleido-Alto/Quad Using the Kaleido-RCP or a Keyboard

The Kaleido-Alto/Quad may be controlled in operation using either the Kaleido-RCP remote control panel, or a standard computer keyboard plugged into its rear panel. The Kaleido-RCP may be located far away from the Kaleido-Alto/Quad itself, and has a keyboard designed to access Kaleido-Alto/Quad functions, so it will be the most useful choice in most operational situations. A computer keyboard may only be located near the frame, but has the full functionality of the Kaleido-RCP, and may be used for maintenance or when the frame is physically located near the operating location. For convenience, the operation will be described here in terms of the Kaleido-RCP. See section 5.2 to identify the keyboard keys that are equivalent to the various Kaleido-RCP keys.

The Kaleido-RCP controls allow many aspects of the multi-image display to be controlled, but some parameters such as input calibration or markers display are not accessibles.

5.1 Kaleido-RCP Remote Control Panel Description

The Kaleido-RCP is designed specifically to operate Kaleido-Alto/Quad. It may be used to control, singly or together, multiple Kaleido-Alto/Quad. See the Kaleido-Alto/Quad hardware manual for installation instructions. The panel layout is shown in figure 5.1.
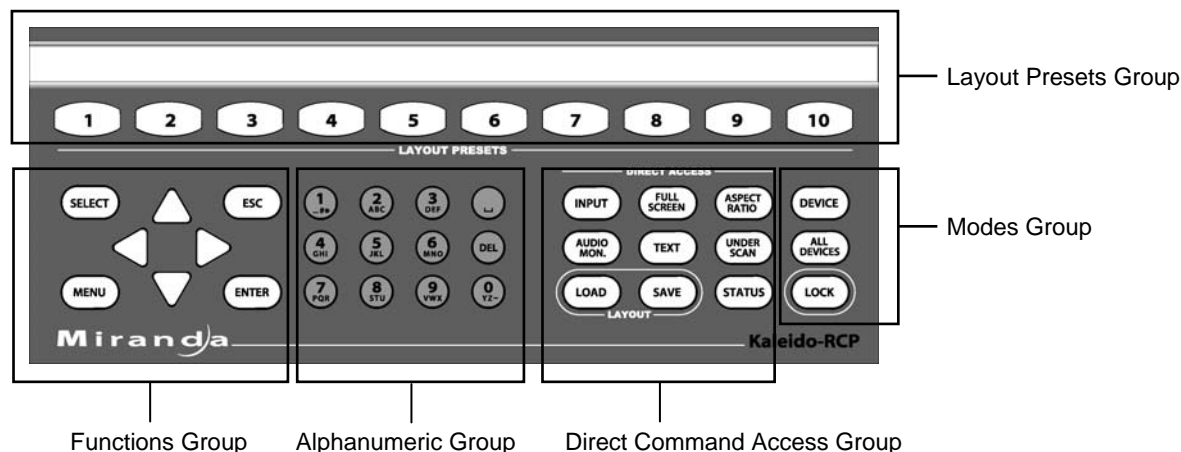
Figure 5.1 *Kaleido-RCP Functions*

The use of these controls for operational adjustment of the Kaleido is detailed in **5.3 Kaleido-RCP operation in detail**.

Layout Presets Group
In a production environment, display layouts need to be accessed quickly and easily. The Kaleido-RCP allows the user to access stored layouts through Layout Presets buttons 1 through 10. Push one of these buttons and the Kaleido-Allto instantly updates the layout being displayed. Above the buttons is a paper strip that can be used to identify these customized layouts.

Note that when the Shift button is clickeded in the toolbar using the mouse, the Preset buttons 1 to 10 will recall the layouts 11 to 20 respectively; in this case, the buttons are not highlighted.

Functions Group
The up, down, left and right arrow buttons are used for moving the selection pointer when adjusting the multi-image output.

- The Select button enables monitors to be accessed on-screen for adjustment.
- The Enter button is used to add monitors to the selection group.
- The Esc button allows the user to escape an action without changes.
- The Menu button is inactive for this version of the software.

Alphanumeric Group
The alphanumeric buttons are used to type text in the name bar of a monitor or to enter ID numbers when selecting a Kaleido-Alto/Quad to control. The DELETE key is included in this group.

Direct Command Access Group
This group is used to control certain on-screen effects directly.
Input invokes the input list to assign a channel to a selected monitor.

Full Screen applies to the selected or most recently selected monitor and enlarges it until it fills up the display area. You can cycle through all monitors having channel assignments using the Right and Left buttons. Press *Full Screen* or *Escape* again to return to the multi-screen mode.

Aspect Ratio toggles a window's aspect ratio between 4:3. 16:9, and a custom ratio.

Underscan toggles a window's scan mode between Underscan/Normal and Overscan, allowing the user to see whether the vertical and horizontal blanking areas are seen in the video window.

Audio Mon activates audio monitoring for the selected window. Audio volume may be controlled by the Up and Down buttons; pushing the Left button will mute the audio output and pushing the Right button will attenuate the level by 20 dB. When multiple meters are active for the selected window, pushing *Audio Mon* again will cycle audio monitoring among the available pairs of audio inputs. When this feature is used, the on-screen volume bar will appear, and can be used as a visual indicator of the volume level.

Text activates text edition for UMD and Text Label of the selected window. When multiple UMD's and Text Labels are present in the selected window, pushing *Text* again will cycle text edition among the available UMD's and Text Labels.

The *Load* and *Save* buttons are reserved for future use.

The *Status* button open the System Status window.

Modes Group
The Kaleido-RCP has 4 modes of operation: *Standby, Device, All Devices* and *Lock*.

In *Standby* mode, the unit is waiting for an instruction to enter one of the 3 other modes. *Standby* is the default mode upon startup.

Device or *All Devices* modes let the user control a selected Kaleido-Alto/Quad or all Kaleido-Alto/Quad units, respectively. In *Device* mode, the user is required to enter the ID number of the desired Kaleido-Alto/Quad. In *All Devices* mode, all Kaleido frames will be controlled at the same time (only the loading of layouts can be controlled in *All Devices* mode).

Lock mode effectively disables all but the Layout Presets buttons, preventing any change in the configuration of the Kaleido frames. Additionally, it can be used to restrain access to a selected Kaleid-Alto/Quad.

5.2   Using a keyboard to control Kaleido-Alto/Quad

For setting up a complex system including several Kaleido-Alto/Quad units, or when the Kaleido-RCP and/or the mouse is missing or defective, it is possible to use a standard extended keyboard. The keyboard is connected to the USB connector on the Kaleido-Alto/Quad rear panel, as shown in the hardware manual. Note that the functionality is identical to that of a Kaleido-RCP. Figure 5.2 below shows the keys used on a keyboard and their equivalent on the Kaleido-RCP.
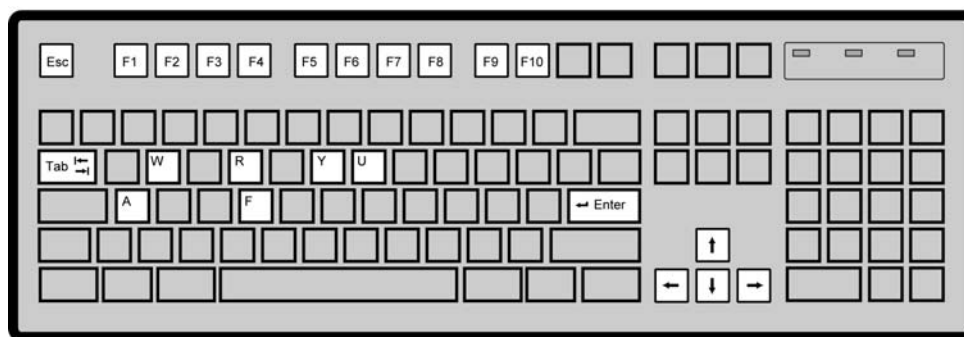
Key	Kaleido RCP equivalent
Esc:	Escape
Tab:	Select
Enter:	Enter
CTRL+A:	Input
CTRL+F:	Full Screen
CTRL+R:	Aspect Ratio
CTRL+U:	Underscan
CTRL+W:	Audio Mon
CTRL+Y:	Status
Arrow keys:	Arrow buttons
Function keys:	Layout Presets buttons

Figure 5.2 Keyboard key assignments for Kaleido operation

5.3   Kaleido-RCP operation in detail

Using the Kaleido-RCP to operate the Kaleido-Alto/Quad is similar to using the mouse. The same menu and windows appear for all the features; refer to section **3.3** for a specific description of all the features.

5.3.1 Accessing a single Kaleido-Alto/Quad using the Kaleido-RCP

To access a single Kaleido-Alto/Quad in a daisy-chain of several units, follow these steps:

1- Push the *Device* button on the Kaleido-RCP. The *Device* button lights up brightly (and the current layout button if applicable) and all alphanumeric buttons light up as the unit awaits an ID number entry. At the same time, on all display devices, the ID number of the associated Kaleido-Alto/Quad unit appears at the bottom of the screen.

2- Push the alphanumeric buttons corresponding to the ID number of the desired Kaleido-Alto/Quad unit. The frame is selected and the available control buttons at the Kaleido-RCP are illuminated.

Once a Kaleido frame is selected, any actions taken at the Kaleido-RCP apply only to that Kaleido-Alto/Quad.

5.3.2 Accessing all Kaleido-Alto/Quad units using the Kaleido-RCP

To access all Kaleido-Alto/Quads in a daisy-chain of several units:

Push the *All Devices* button; on the Kaleido-RCP, the *All Devices* button lights up brightly while all other buttons are dimly lit (note that if the same Preset Layout is currently being displayed on all Kaleido-Alto/Quads, its corresponding button will light up brightly as well). At the same time, on all Kaleido-Alto/Quad outputs, the ID number of the associated Kaleido-Alto/Quad unit appears at the bottom of the screen.

In this mode, the only active controls are the Preset Layout selection buttons 1 to 10. The same layout number can be selected for all units simultaneously.

5.3.3 Accessing Kaleido-Alto/Quad units

The *Device* or *All Devices* buttons allows to select which Kaleido-Alto/Quad you wish to send commands, or select all Kaleido-Alto/Quad. When All Devices is used, the Layout Presets group only is enabled, so that layouts can be changed if desired.

To access a single Kaleido-Alto/Quad, push the *Device* button, then enter the ID number of that unit. You are now in communication with that unit.

To access all Kaleido-Alto/Quad units, push the *All Devices* button; it lights up to indicate that all Kaleido-Alto/Quad units are accessed.

5.3.4 Restricting Control of Kaleido-Alto/Quad units

The *Lock* button restricts control of Kaleido-Alto/Quad, allowing only the layouts to be changed. All other commands are disabled. When used with the *Device* button, the Kaleido-RCP can only change layouts on the unit being accessed. When used with *All Devices* button, selecting a layout preset will apply that layout to all units.

To use the Lock feature for a single Kaleido-Alto/Quad unit:

1- If the Kaleido-Alto/Quad unit that you want to lock on is currently being accessed by the Kaleido-RCP, go directly to step 3.

2- To select another Kaleido-Alto/Quad unit, push the *Device* button, then enter the ID number of that unit.

3- Push the *Lock* button; it lights up brightly to indicate that it is now in Lock mode. Only Layout Presets may be selected.

4- To unlock, push the *Lock* button for 2 seconds; the button's light turns off. All commands are accessible.

To lock all Kaleido-Alto/Quad units:

1- Push the *All Devices* button; it lights up to indicate that all Kaleido-Alto/Quad units are accessed.

2- Push the *Lock* button; it lights up brightly to indicate that it is now in Lock mode. Only Layout Presets may be selected.

3- To unlock, push the *Lock* button for 2 seconds; the button's light turns off. All commands are accessible.

5.3.5   Recalling a layout

The Kaleido-Alto/Quad stores 20 different layouts in its on-board memory. To display one of them on the multi-image output, push a Layout Preset button numbered between 1 and 10; the button will flash to indicate the selected layout. To access layouts 11 to 20, click the *Shift* button on the toolbar with the mouse or push the Shift key on the keyboard. (Note: The Caps Lock Key is not supported).

5.3.6   Selecting a monitor within a layout

Each layout contains multiple Monitors, which may be customized separately or together. To select one to adjust, push *SELECT*. Each monitor in the layout will show a number, and its current channel assignment. A white box surrounds the ID of the monitor currently being pointed to. To select this monitor for adjustment, push *Enter*. A white frame surrounds the entire monitor. Move the pointer to other monitors using the arrow keys. Push *Enter* to add any of these to the adjustment group. If you are pointing at a monitor already selected for adjustment, you can remove it from the group by pushing *Enter*. Once you have selected all the monitors you wish to adjust, perform the adjustment (underscan/overscan or aspect ratio change only). When finished, exit the select/ adjust process by pushing *Select or ESC* until no more frames boxes appear on the screen.

The group of monitors selected for adjustment is saved in memory. Pushing the select key multiple times brings up the following displays:

First push   Displays ID numbers and channel assignments on all monitors and the pointer
Second push   Highlights the group of monitors last selected for adjustment with white frames
Third push   Highlights all adjustable monitors with white frames
Fourth push   Exits the select/adjust process – no frames displayed

5.3.7   Assigning a channel to a monitor

Point to a Monitor by pushing *Select* and using the arrow keys. Then push *Input*; a scrollable window opens on-screen listing all the defined Channels stored in the Kaleido-Alto/Quad. Scroll up or down to find the desired Channel, then push *Enter* to assign the channel to that monitor.

5.3.8   Changing the video screen aspect ratio within a monitor

The video screen displayed in a monitor may have an aspect ratio of either 4:3, 16:9 or a custom ratio. It is possible to change this manually from the Kaleido-RCP; this would be done when changing the Channel assignment to one with video in a different aspect ratio. Point to the Monitor by pushing *Select* and using the arrow keys. Push *Aspect Ratio* to switch the screen's aspect ratio.

5.3.9   Audio monitoring

The audio output of the Kaleido-Alto/Quad is that from the last-selected monitor. Select a monitor by pushing *Select* and using the arrow keys to move the cursor to the desired monitor. Push *Audio Mon* and the channel's audio will be heard. If there are multiple audio groups in the same monitor, then the first audio will be heard. Push *Audio Mon* again to cycle through the available audio groups.

Note: if you call up the Volume control slider (using the mouse), you can change the volume with the keyboard; the left and up arrows will decrease the volume and the right and down arrows will increase it. After a few seconds the slider disappears.

5.3.10   Full screen display

The user may expand the selected monitor so it occupies the full output display, by pushing the *Full Screen* button. Pushing F*ull Screen* again or *Escape* returns to the normal display. The button is illuminated when the full screen mode is selected. Using the arrow keys while in full screen mode, the user can cycle the display through the various monitors in the layout.

When displayed in full screen mode, other commands such as Aspect Ratio, Underscan, etc. and even text editing may be performed, which is useful when editing small monitors on the layout.

Note: the full screen layout is configurable via K-Edit (see on-line Help) and can be saved as default by pressing the *Full Screen* key on the Kaleido-RCP for more than 7 seconds (see section 5.3 *Kaleido-RCP operation in details*).

5.3.11   Resetting the Kaleido-RCP

In case of a frozen Kaleido-RCP, simultaneously push *Layout Presets* buttons *1* and *10*. The Kaleido-RCP will be operational again.

## 6   Channels, Layouts and Alarms Management

The channels, layouts and alarm conditions are defined using the K-Edit software. A channel is an ensemble of signals that drives a monitor. It includes some or all of the following: video, audio, tallies, UMDs, text labels and status. Layouts are designed to use and display this information conveniently. The channels, layouts and alarms created with K-Edit may be uploaded to the Kaleido-Alto/Quad internal hard disk as sets to suit different applications; this library of channels may then be used by the Kaleido-Alto/Quad to be displayed on the multi-image output.

These pre-defined sets of layouts may be activated using the *Open Layout* control panel. Channels and alarms are loaded through layouts. Click the *Open* icon button in the toolbar to access the *Open Layout* panel. In this panel figures the list of available layouts, and two additional folders for the Alarms and Channels. Selecting an item and clicking OK will load it and display it on-screen.
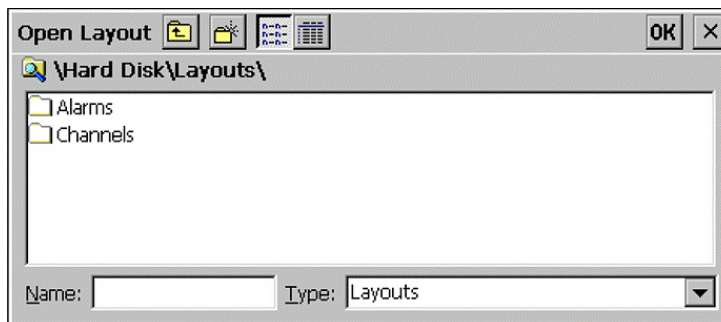
Figure 6.1 *Open Layout Panel*

When changes are made to the monitors, such as renaming or input re-assignment, these layout-type changes can be saved as well. Click the *Save* icon button on the toolbar; the *Save Copy As* panel will appear. Assign a name to the layout and click OK to save. Note that you can create new folders to store layouts that have been modified.
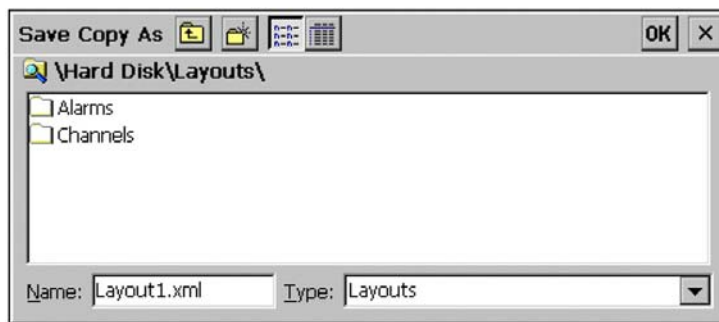
Figure 6.3 *Save Copy As panel*

7 Andromeda Port Settings

The Andromeda port settings are set by default to:

- BaudRate   9600
- Parity   no
- Handshake   False

The Andromeda controller may be set to a different BaudRate. In this case, it is possible to change the default port settings of the Alto/Quad from an .XML configuration file inside the Kaleido-Alto/Quad. This configuration is not accessible through the menu and must be accessed through an FTP session.

1 - From your computer, open a Command Prompt (DOS command).
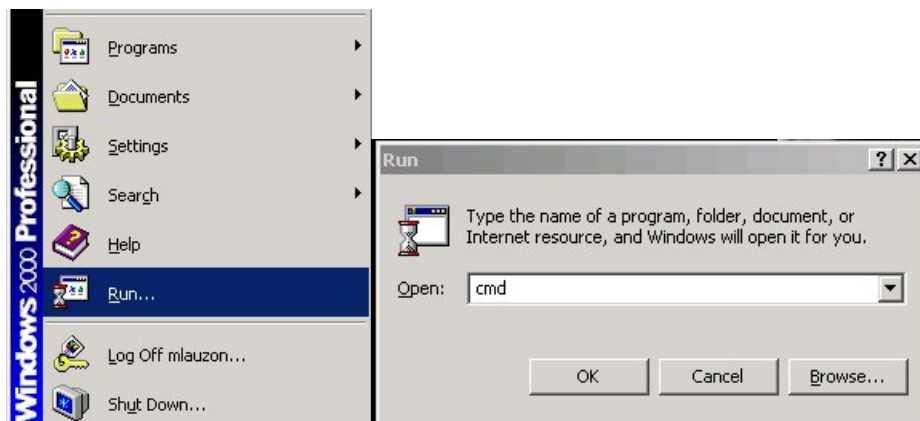
The following instructions must be done in the Command Prompt.

2-   At the DOS prompt, change the directory to the temporary directory
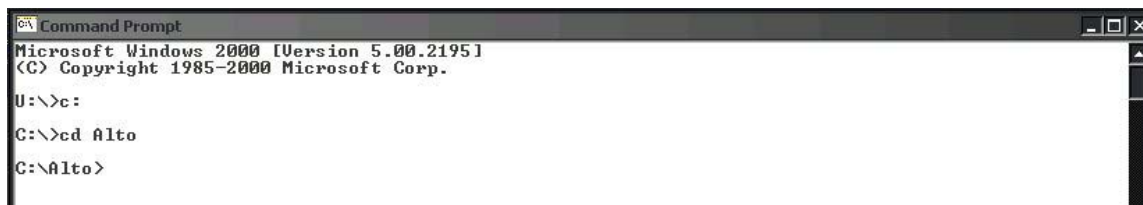
3- Open an FTP session to the Kaleido-Alto/Quad by typing "*ftp <IP Address>*" and log in as the "super user" user by typing "*su*". Change the remote directory to Formats and retrieve the system.xml file.


```
Command Prompt - ftp 10.6.5.14
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

U:\>c:

C:\>cd Alto

C:\Alto>ftp 10.6.5.14
Connected to 10.6.5.14.
220 Service ready for new user.
User (10.6.5.14:(none)): su
230 User logged in, proceed.
ftp> cd formats
250 Requested file action okay, completed.
ftp> get system.xml
200 Command okay.
150 File status okay; about to open data connection.
226 Closing data connection.
ftp: 520 bytes received in 0,17Seconds 3,02Kbytes/sec.
ftp>
```
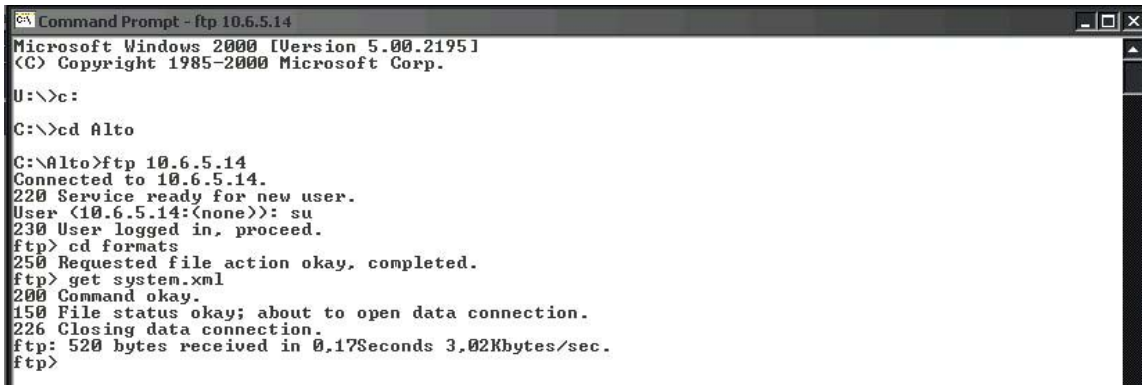
Note: You should keep your ftp session open to put back the file.

4- At this point the file is in your temporary folder. You have to modify the file to meet your needs. Open the file and modify it; you may use Notepad for this.

You can change the settings for the following:

Baudrate

To modify the Baudrate, just change the 9600 to, for example, 38400:

Old line:

<prop name="ANDROMEDA_BAUDRATE" val="9600"></prop>

New line:

<prop name="ANDROMEDA_BAUDRATE" val="38400"></prop>

Parity

The parity values are,

0	no,
1	odd,
2	even,
3	mark,
4	space.

To modify the parity from **no** to **even** for example,

Old line:

<prop name="ANDROMEDA_PARITY" val="0"></prop>

New line:

<prop name="ANDROMEDA_PARITY" val="2"></prop>

Handshake

The handshake values are,

0	False,
1	True,

To modify the handshake from **False** to **True** for example,

Old line: <prop name="ANDROMEDA_HANDSHAKE" val="0"></prop>

New line: <prop name="ANDROMEDA_HANDSHAKE" val="1"></prop>

```
system.xml - Notepad
File  Edit  Format  Help
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE kaleidosystem>
<kaleidosystem>
        <constant name="SYSTEM">
                <prop name="AUTOSAVE_DELAY" val="6000"></prop>
                <prop name="MAX_ALARMS" val="256"></prop>
                <prop name="MAX_CHANNELS" val="64"></prop>
                <prop name="ANDROMEDA_BAUDRATE" val="9600"></prop>
                <!-- ANDROMEDA_PARITY properties -->
                <!-- 0-4 = no,odd,even,mark,space -->
                <prop name="ANDROMEDA_PARITY" val="0"></prop>
                <prop name="ANDROMEDA_HANDSHAKE" val="0"></prop>
        </constant>
</kaleidosystem>
```
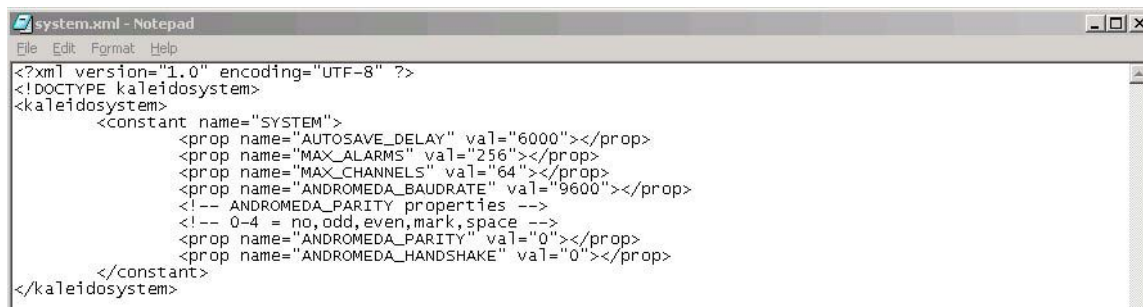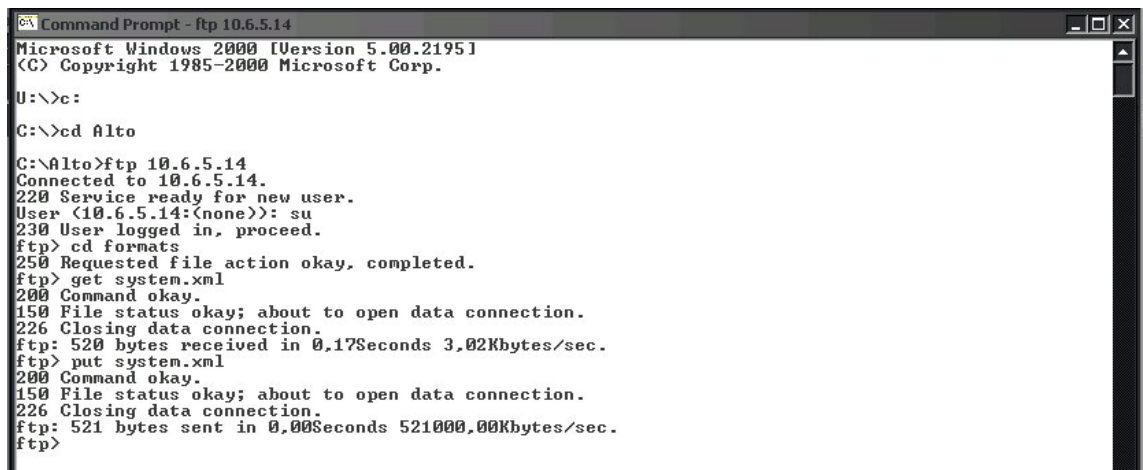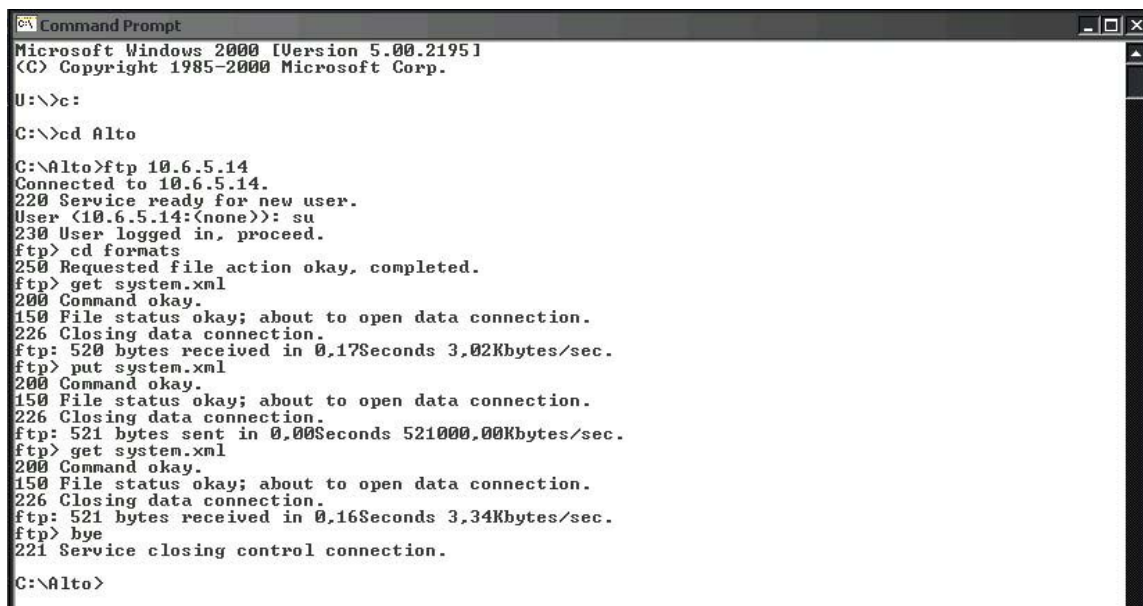
5- Now save the file and put it back in the Alto/Quad.

```
Command Prompt - ftp 10.6.5.14
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

U:\>c:

C:\>cd Alto

C:\Alto>ftp 10.6.5.14
Connected to 10.6.5.14.
220 Service ready for new user.
User (10.6.5.14:(none)): su
230 User logged in, proceed.
ftp> cd formats
250 Requested file action okay, completed.
ftp> get system.xml
200 Command okay.
150 File status okay; about to open data connection.
226 Closing data connection.
ftp: 520 bytes received in 0,17Seconds 3,02Kbytes/sec.
ftp> put system.xml
200 Command okay.
150 File status okay; about to open data connection.
226 Closing data connection.
ftp: 521 bytes sent in 0,00Seconds 521000,00Kbytes/sec.
ftp>
```

6- The operation is finished; close your ftp session by typing "*bye*".

```
Command Prompt
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

U:\>c:

C:\>cd Alto

C:\Alto>ftp 10.6.5.14
Connected to 10.6.5.14.
220 Service ready for new user.
User (10.6.5.14:(none)): su
230 User logged in, proceed.
ftp> cd formats
250 Requested file action okay, completed.
ftp> get system.xml
200 Command okay.
150 File status okay; about to open data connection.
226 Closing data connection.
ftp: 520 bytes received in 0,17Seconds 3,02Kbytes/sec.
ftp> put system.xml
200 Command okay.
150 File status okay; about to open data connection.
226 Closing data connection.
ftp: 521 bytes sent in 0,00Seconds 521000,00Kbytes/sec.
ftp> get system.xml
200 Command okay.
150 File status okay; about to open data connection.
226 Closing data connection.
ftp: 521 bytes received in 0,16Seconds 3,34Kbytes/sec.
ftp> bye
221 Service closing control connection.

C:\Alto>
```

7- Now reboot the Alto/Quad so that the changes apply.

8 Using XML commands with the Kaleido-Alto/Quad

Kaleido-Alto/Quad can execute XML commands received via TCP/IP (Transmission Control Protocol/Internet Protocol). To send commands, you can use a Terminal Emulation (telnet) program or create your own application using the language of your choice (C++, Visual Basic, Java, …). In this section, the use of "Hyper Terminal" software will be described. "Hyper Terminal" is a Windows application that is typically installed on every Windows computer, you will find it under the *Program - Accessories - Communications* menu. This program will communicate with the Kaleido-Alto/Quad using communication port 13000.

8.1 Commands

Many commands can be sent to the Kaleido-Alto/Quad via TCP/IP. Following is a list of these commands and below a complete description of their usage. Please note that the syntax must be exactly replicated when sending a command.

Command	Description	Page
openID	Opens a session with the specified Kaleido-Alto/Quad.	28
closeID	Closes a previously opened session.	28
getKCurrentLayout	Gets the name of the current layout	28
setKCurrentLayout	Loads a specific Layout.	29
getKLayoutList	Gets the list of available Layouts.	29
setKStatusMessage	Sets a Gateway Alarm to the specified state.	29
setKChannel	Associates a Channel to the specified Monitor.	29
setKDynamicText	Configures the text to display for a Dynamic Text.	30
setKTimer	Configures the specified Count Down Timer.	30
setKTimerTrigger	Starts, stops or resets a Count Down Timer.	30
setKFireAction	Fires the specified Action.	31
setKSaveLayout	Saves the current layout	31
getKAudioOut	Gets the identity of the current audio output	31
setKAudioOut	Selects the audio to be monitored	32
getKAudioOutVolume	Get the current audio monitoring output volume	33
setKAudioOutVolume	Set the volume of the audio monitoring output	33
getKAudioOutMode	Get the current audio monitoring output mode	33
setKAudioOutMode	Set the audio monitoring output mode	33

setKVerticalOffset	Offset the graphic from display	34
setKIcontrolMode	Enable/Disable mouse color keying over video	34
setKMouseColorA	Mouse color to be keyed over video	34
setKMouseColorB	Mouse color to be keyed over video	34
setKMouseColorC	Mouse color to be keyed over video	34

openID

This command opens a session with the specified Kaleido-Alto/Quad .
Please note that it is not necessary to open a session every time you want to send a command to the Gateway. Since opening a session takes a few seconds, it is recommended that you keep a session open as long as commands need to be sent.

- <openID>*IP_ADDRESS*_0_4_0_0</openID>

Where:

- IP_ADDRESS is the IP address of your destination Kaleido-Alto/Quad .

Gateway response:

- <nack/>: the Gateway was not able to recognize the command.
- <ack/>: the command was recognized by the Gateway.

closeID

This command closes a session with the specified Kaleido-Alto/Quad

- <closeID>*IP_ADDRESS*_0_4_0_0</closeID>

Where:

- *IP_ADDRESS* is the IP address of the Kaleido-Alto/Quad .

Gateway response:

- <nack/>: the Gateway was not able to recognize the command.
- <ack/>: the command was recognized by the Gateway.

Note that this command closes the current connection to the client via port 13000, so this connection must be re-established before another session can be opened. If you are using Hyperterminal, it will automatically re-establish the previous connection if you begin typing new commands, but other clients may require you to manually reconnect.

getKCurrentLayout

This command retrieves the name of the current layout.

- <getKCurrentLayout>

Gateway response:

- <nack/>: the Gateway was not able to recognize the command.
- <kCurrentLayout>*CurrentLayout.xml* </kCurrentLayout>
  where *CurrentLayout.xml* is the name of the Layout currently in use by the Kaleido.

setKCurrentLayout

This command loads the specified layout.

* <setKCurrentLayout>set *LayoutToLoad.*xml</setKCurrentLayout>

Where:

* *LayoutToLoad* is the name of the Layout to load. This Layout must have been exported to the Kaleido-Alto/Quad prior to executing this command. Note that you can use the getKLayoutList command to retrieve the available layouts before sending this command.

Gateway response:

* <nack/>: the Gateway was not able to recognize the command.

* <ack/>: the command was recognized by the Gateway.

getKLayoutList

This command returns the list of Layouts that can be used on the Kaleido-Alto/Quad.

Gateway response:

* : the Gateway was not able to recognize the command.

* <kLayoutList> *Layout1*.xml *Layout2*.xml … *AnAvailableLayout*.xml</kLayoutList>
Where:

* *Layout1*, *Layout2* and *AnAvailableLayout* are the names of the Layouts that are available on the Kaleido-Alto/Quad.

setKStatusMessage

This command associates an Alarm state with an id. The Kaleido-Alto/Quad can be configured to listen to this id using an Alarm Monitor, and thus report the state. This is a convenient way of reporting Alarms to the Kaleido-Alto/Quad.

* <setKStatusMessage>set id="AnId" status="status" message="*TheMessage*"</setKStatusMessage>

Where:

* *AnId* is the identifier that will receive the new state.

   Note: Kaleido-Alto/Quad only accepts numeric values in the range 0 to 1024 for this argument

* *Status* is any of the available statuses (OK, DISABLE, WARNING or ERROR).

* *TheMessage* is reserved for future use, and will be ignored.

Gateway response:

* <nack/>: the Gateway was not able to recognize the command.

* <ack/>: the command was recognized by the Gateway.

setKChannel

This command is used to assign a Channel to the specified Monitor in the current Layout.

* <setKChannel>set channelname="*ChannelName*" monitor="*MonitorNumber*" </setKChannel>

Where:

- *ChannelName* is the name of the Channel to assign to the specified Monitor.

- *MonitorNumber* is the identifier of the Monitor to which the Channel must be assigned.
  Note: to get the identifier of Monitors of your current Layout press the TAB key of the Kaleido-Alto/Quad's keyboard or the SELECT key of the RCP.

Gateway response:

- <nack/>: the Gateway was not able to recognize the command.

- <ack/>: the command was recognized by the Gateway.

setKDynamicText

This command is used to set the text of a UMD or Text Label Component that is configured to use Dynamic Text. Note that the Service ID for this component must be set to "Gateway" when the layout is created in KEdit in order for this command to work.

- <setKDynamicText>set address="*Address*" text="*NewText*" </setKDynamicText>

Where:

- *Address* is the configured Text Address of the UMD or Text Label Component (numerical value only, in the range 0-1024).

- *NewText* is the text to display.

Gateway response:

- <nack/>: the Gateway was not able to recognize the command.

- <ack/>: the command was recognized by the Gateway.

setKTimer

This command is used to configure the specified Count Down Timer Component.

- <setKTimer>set id="*TimerID*" preset="*HH:MM:SS*" direction="*Direction*" loop="*Loop*" </setKTimer>

Where:

- *TimerID* is the id of the Count Down Timer Component to modify.

- *HH:MM:SS* is the preset to associate to the Count Down Timer Component.

- *Direction* is the direction to count, this value can be UP or DOWN.

- *Loop* indicates if the counter must count continuously. This value can be either ON or OFF.

Gateway response:

- <nack/>: the Gateway was not able to recognize the command.

- <ack/>: the command was recognized by the Gateway.

setKTimerTrigger

This command is used to control the specified Count Down Timer Component. The Count Down Timer can be started, stopped or reset.

- <setKTimerTrigger>set id="*TimerID*" trigger="*Trigger*"</setKTimerTrigger>

Where:

- *TimerID* is the id of the Count Down Timer Component to control.

- *Trigger* is the action that the Count Down Timer must do. This value can either be **START**, **STOP** or **RESET**.

Gateway response:

- <nack/>: the Gateway was not able to recognize the command.

- <ack/>: the command was recognized by the Gateway.

setKFireAction

This command is used to fire the specified Action.

- <setKFireAction>set name="*NameOfTheActionToFire*"</setKFireAction>

Where:

- *NameOfTheActionToFire* is the name of the Action to be executed. The Action must have been exported to the Kaleido-Alto/Quad in order to be executed.

Gateway response:

- <nack/>: the Gateway was not able to recognize the command.

- <ack/>: the command was recognized by the Gateway.

setKSaveLayout

This command allows the user to save the currently displayed layout to a file.

- <setKSaveLayout>set name="*FileName*"</setKSaveLayout>

  Where: FileName   is the name of the file that will contain the Layout.

  NOTE: do not specify an extension to the file name, as the file extension "xml" is hardcoded for the Kaleido-Alto/Quad Layouts.

Gateway response:

- <ack/>   The command was correctly interpreted and executed.

- <nack/>   The command wasn't executed.

getKAudioOut

This command allows the user to get the selected Audio Monitoring Output

-

Returned value can be any of:

-        The command was not executed (bad spelling).

- <kAudioOut>DETAILS</kAudioOut>   The command was executed

DETAILS will vary depending on the type of audio output detected, as follows.

When no audio output is currently being monitored:

- <kAudioOut>Type="NONE"</kAudioOut>.

When the format is an AUDIO CARD, the returned value indicates which audio card input is being monitored:

- <kAudioOut> Type="AUDIOCARD" Input="*999*"</kAudioOut>
  Where:
  999   indicates the input from the card.

When the format is EMBEDDED, the returned value will contain the video input, the group and the AES used. The syntax will be:

- <kAudioOut>Type="EMBEDDED" Input="*AAA*" Group="*BB*" AES="*X*"</kAudioOut>
  Where:
  AAA indicates the video input.
  BB   indicates the group. Valid values range from 1 to 4.
  X   indicates the AES. Valid value can be either 1 or 2.

setKAudioOut

The user can select the audio to be monitored by using this Gateway command. The syntax of the command will differ if the user indicates to monitor audio coming from an audio card, from an embedded source or no audio at all. In general, you can select any audio source to be monitored, even if this source is not represented in an audiometer on the current layout.

- <setKAudioOut>DETAILS</setKAudioOut>

  DETAILS will differ depending on the type of audio source being selected for monitoring, as shown below. Note that Kaleido-Alto/Quad does not support STREAMING sources.

Gateway response:

- <ack/>   The command was correctly interpreted.

- <nack/>   The command was not executed (spelling error or invalid audio source).

DETAILS:

To select an AUDIO CARD source, format the command as follows:

- <setKAudioOut>set Type="AUDIOCARD" Input="999"</setKAudioOut>
  Where:
  999   indicates the input from the card.

To select an EMBEDDED source, format the command as follows:

- <setKAudioOut>set Type="EMBEDDED" Input="*AAA*" Group="*BB*" AES="*X*"</setKAudioOut>
  Where:
  AAA indicates the video input.
  BB   indicates the group. Valid values range from 1 to 4.
  X   indicates the AES. Valid value can be either 1 or 2.

To STOP audio monitoring and MUTE the audio output:

- <setKAudioOut>set NONE</setKAudioOut>

  You may select any audio for monitoring, independent of whether it is being metered in the current Layout.

  If the source is included in the layout, the meter assigned to it will be highlighted.

  If the source is not included in the layout, the sound will be routed to the audio monitors, but there will be no indication in the layout of the source.

getKAudioOutVolume

This command retrieves the Audio Monitoring Volume currently used:

-

The returned value will have the form:

- <kAudioOutVolume>volume="*XX*" </kAudioOutVolume>

Where:
  XX = the value, expressed in dB, at which the Audio Monitoring volume is set. This value ranges between –90dB and 0.

- will be returned if the command was misspelt.

setKAudioOutVolume

This command sets the Audio Monitoring Volume:

- <setKAudioOutVolume>set volume="*XX*"</setKAudioOutVolume>
  Where:
  XX   Value expressed in dB at which the volume will be set.
         Valid values range from –90dB to 0dB.

Returned value will be one of:

- :   The command was correctly interpreted. Volume was set to its new value.

- : The command was not executed, due to bad spelling or invalid parameter. The volume remains unchanged.

Note that if the audio is muted, then it shall be un-muted after this command.

getKAudioOutMode

This command retrieves the Audio Monitoring Mode currently used:

-

Returned value will have the form:

- <kAudioOutMode>mode="*XXXXX*"</kAudioOutMode>
  Where: *XXXXX* is the mode, which can be any of NORMAL, MUTE or –20dB.

- : The command was misspelled. In this case the Audio Monitoring Mode remains unchanged.

setKAudioOutMode

To set the Audio Monitoring Mode the following command will be used:

- <setKAudioOutMode>set mode="*XXXXX*"</setKAudioOutMode>
  Where:
  XXXXX is the value at which the mode must be set. Valid values are NORMAL, MUTE and –20dB.

Returned value will be any of:

- : The command was correctly interpreted. The Audio Monitoring Mode was set to the specified value.

- : The command was not executed, due to bad spelling or invalid parameter. The Audio Monitoring Mode remains unchanged.

setKVerticalOffset

This command is used to offset the graphic vertically on the display

- <setKVerticalOffset>set offset="88"</setKVerticalOffset>

Where offset is the number of lines to offset, 0 to 175.

setKIcontrolMode

This command is used to enable the Alto/Quad to key the detected mouse colors on video.

- <setKIcontrolMode>set mode="*0*"</setKIcontrolMode>

Where:
   Mode = 0, Color not keyed, Mode = 1, color key enabled.

setKMouseColorA

This command is used to set a color to key.

- <setKMouseColorA>set mouseColorA= FF00FF00"</setKMouseColorA>

   mouseColorA is defined as FFBBGGRR
   BB: the blue component.
   GG: the green component.
   RR: the red component.

setKMouseColorB

This command is used to set a color to key.

- <setKMouseColorB>set mouseColorB= FF00FF00"</setKMouseColorB>

   mouseColorB is defined as FFBBGGRR
   BB: the blue component.
   GG: the green component.
   RR: the red component.

setKMouseColorC

This command is used to set a color to key.

- <setKMouseColorC>set mouseColorC= FF00FF00"</setKMouseColorC>

   mouseColorC is defined as FFBBGGRR
   BB: the blue component.
   GG: the green component.
   RR: the red component.

8.2   A typical session

Here is a description of how to open and close a typical session during which you will use these commands to operate a Kaleido-Alto/Quad. You can open sessions with multiple Kaleido-Alto/Quads simultaneously; each session will have its own window on your desktop.

Note: If your environment includes a Miranda *iControl* Application Server, see the Application Server's manual for a discussion of appropriate network configurations.

Open the Hyper Terminal software on another computer; from the "Program" menu choose "Accessories", "Communications" and "Hyper Terminal". A dialog will appear, asking you to enter a name for the connection and to select an icon.
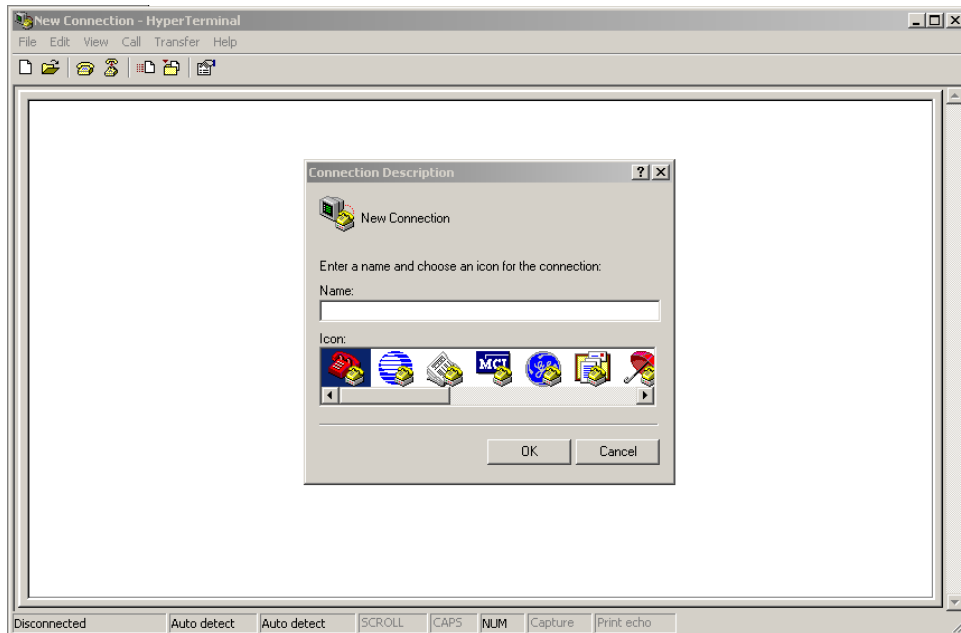
A second dialog, "Connect To", will appear. In the "Connect using" dropdown field choose "TCP/IP (Winsock)".
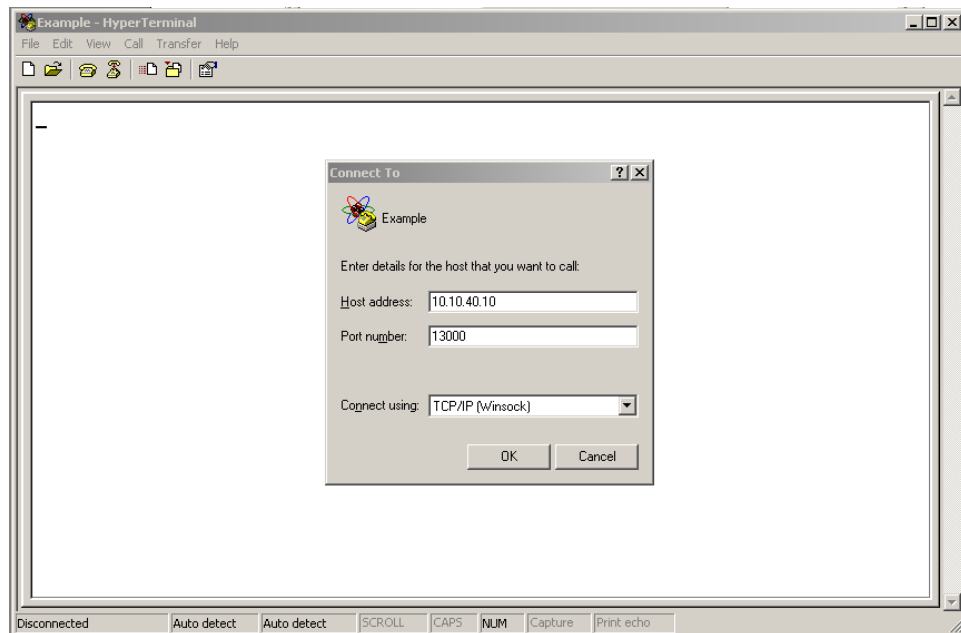

Two new fields will appear: in the "Host address" field enter the IP address of your Kaleido-Alto/Quad, and in the "Port number" field enter "13000". This indicates that connection to the Kaleido-Alto/Quad will be established via the port 13000. Click on the "OK" button.

To be able to see the typed characters:

◊ Select "Properties" from the "File" menu, the "Properties" dialog box appears.

◊   Go to the "Settings" tab, click on the "ASCII Setup…" button located at the bottom of the
    dialog.
◊   Select "Echo typed characters locally".
◊   Click on the "OK" button and click again on the "OK" button from the "Properties" dialog.
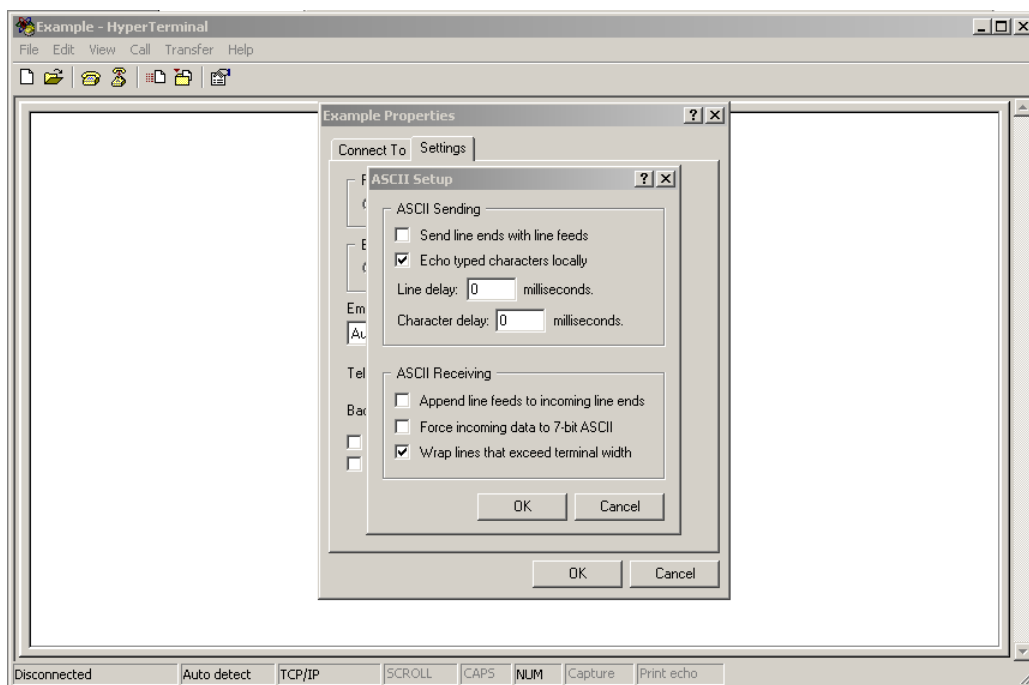

The typed characters will appear in the console.

Commands can be sent to the Kaleido-Alto/Quad while a session is open. There is no maximum number
of commands that can be sent in a session, and it is recommended to keep a session open as long as
there are commands to send, since opening a session takes a few seconds. Here is a simplified example
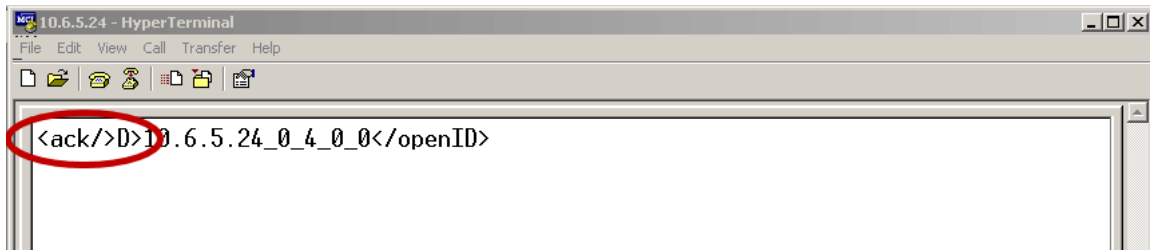of a session:

Open a session
       send command
       send command
       …
       send command
Close the session.

To open a session enter the openID command using the IP address of the Kaleido-Alto/Quad with which
the connection has to be established.


```
<openID>10.6.5.24_0_4_0_0</openID>
```
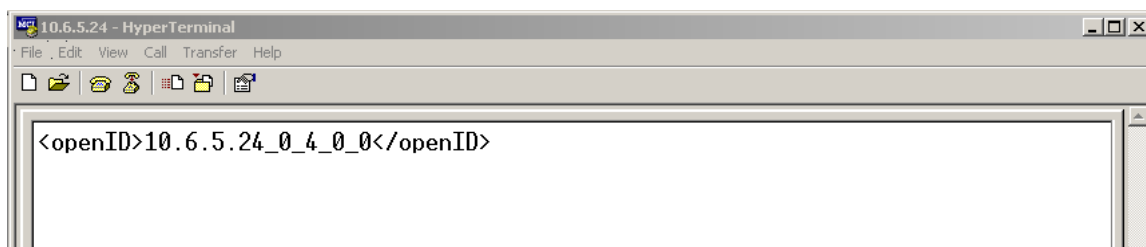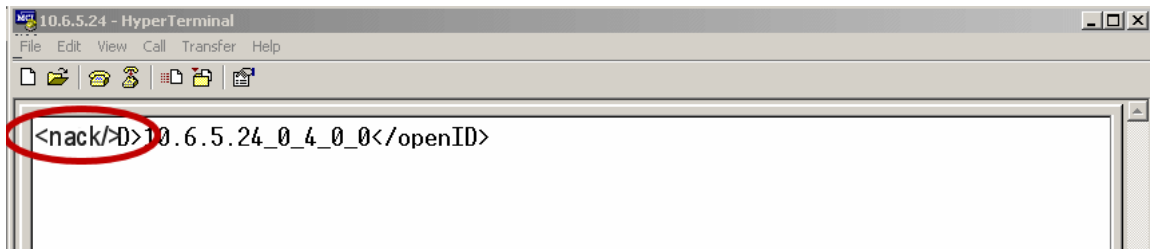
If the Kaleido-Alto/Quad receives the command and recognizes it, it will respond with the following:
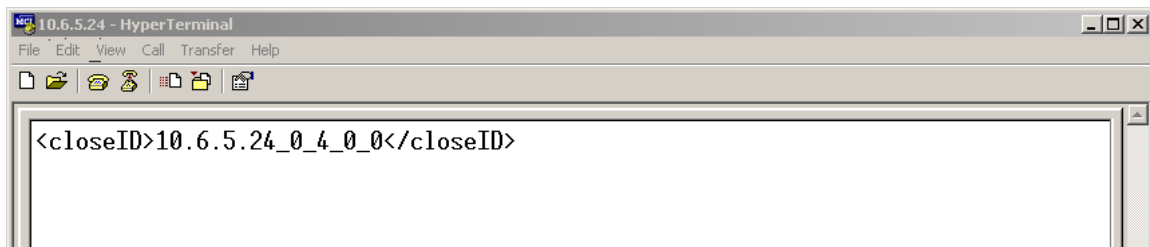
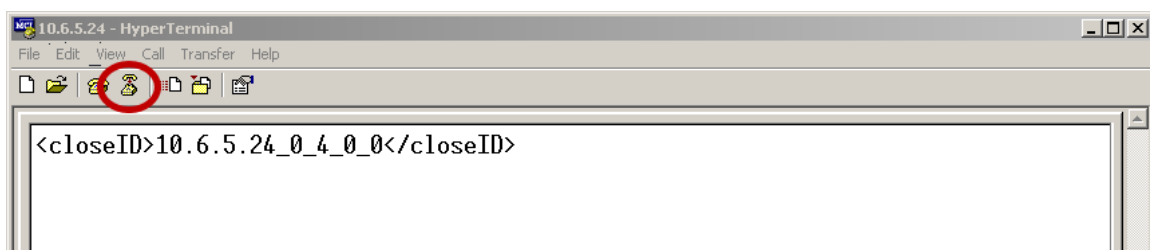If the command cannot be recognized the following message will appear:

The Kaleido-Alto/Quad is now ready to receive commands.

When no more commands need to be sent to the Kaleido-Alto/Quad, close the connection using the closeID command.


To end the communication, select the "Disconnect" icon from the toolbar.

9 Installing Fonts on the Kaleido-Alto/Quad

Several components in a layout use text to display information (e.g. UMD, clocks, Text Labels, etc.). It is possible to select the font that will be used in the display, but the selected font must be installed on the Kaleido-Alto/Quad in order to be used. Proceed as follows:

Select the desired font in the Fonts folder of your computer.
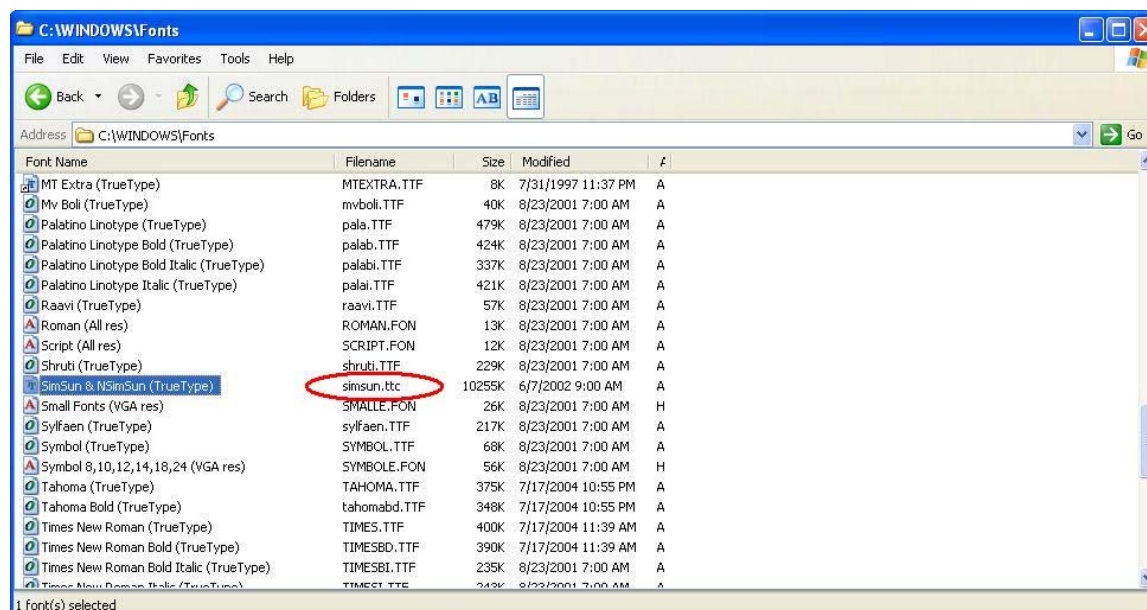
Open a Command Prompt and move to the Fonts folder.
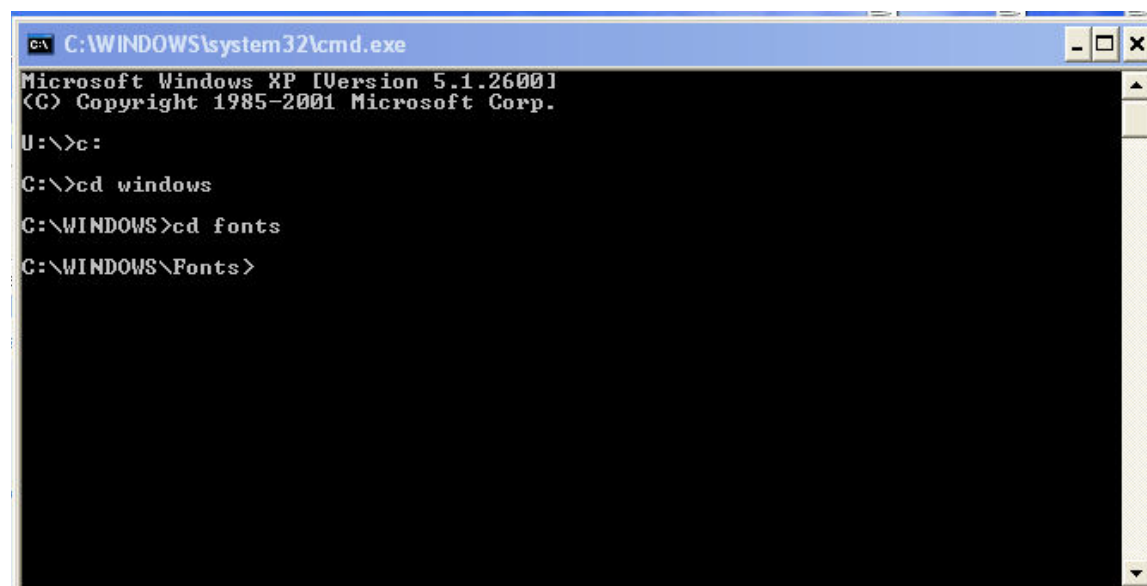
Open an FTP session on your Alto/Quad unit, logging in as Layouts.

```
C:\WINDOWS\system32\cmd.exe - ftp 10.6.5.9                        _ □ ×

Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

U:\>c:

C:\>cd windows

C:\WINDOWS>cd fonts

C:\WINDOWS\Fonts>ftp 10.6.5.9
Connected to 10.6.5.9.
220 Service ready for new user.
User (10.6.5.9:(none)): layouts
230 User logged in, proceed.
ftp>
```

Type the command `dir` to see if the Fonts folder exists on the Alto/Quad.

```
C:\WINDOWS\system32\cmd.exe - ftp 10.6.5.9                        _ □ ×

Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

U:\>c:

C:\>cd windows

C:\WINDOWS>cd fonts

C:\WINDOWS\Fonts>ftp 10.6.5.9
Connected to 10.6.5.9.
220 Service ready for new user.
User (10.6.5.9:(none)): layouts
230 User logged in, proceed.
ftp> dir
200 Command okay.
150 File status okay; about to open data connection.
11-04-2005  11:02       <DIR>        Channels
11-04-2005  11:02       <DIR>        Audioscales
11-04-2005  11:03       <DIR>        Alarms
11-04-2005  11:03       <DIR>        Actions
11-04-2005  14:00       <DIR>        Images
226 Closing data connection.
ftp: 243 bytes received in 0.39Seconds 0.62Kbytes/sec.
ftp>
```

If not, create it by using the command `mkdir`.

  `mkdir Fonts`

move into this folder using `cd`

  `cd Fonts`

```
C:\WINDOWS\system32\cmd.exe - ftp 10.6.5.9                        _ □ ×
230 User logged in, proceed.
ftp> dir
200 Command okay.
150 File status okay; about to open data connection.
11-04-2005  11:02        <DIR>         Channels
11-04-2005  11:02        <DIR>         Audioscales
11-04-2005  11:03        <DIR>         Alarms
11-04-2005  11:03        <DIR>         Actions
11-04-2005  14:00        <DIR>         Images
226 Closing data connection.
ftp: 243 bytes received in 0.42Seconds 0.57Kbytes/sec.
ftp> mkdir Fonts
257 "Fonts".
ftp> dir
200 Command okay.
150 File status okay; about to open data connection.
11-04-2005  11:02        <DIR>         Channels
11-04-2005  11:02        <DIR>         Audioscales
11-04-2005  11:03        <DIR>         Alarms
11-04-2005  11:03        <DIR>         Actions
11-04-2005  15:01        <DIR>         Fonts
11-04-2005  14:00        <DIR>         Images
226 Closing data connection.
ftp: 289 bytes received in 0.42Seconds 0.68Kbytes/sec.
ftp>
```

Copy the font file from your computer onto the Alto/Quad. Use the font file name, and not the name of the font.
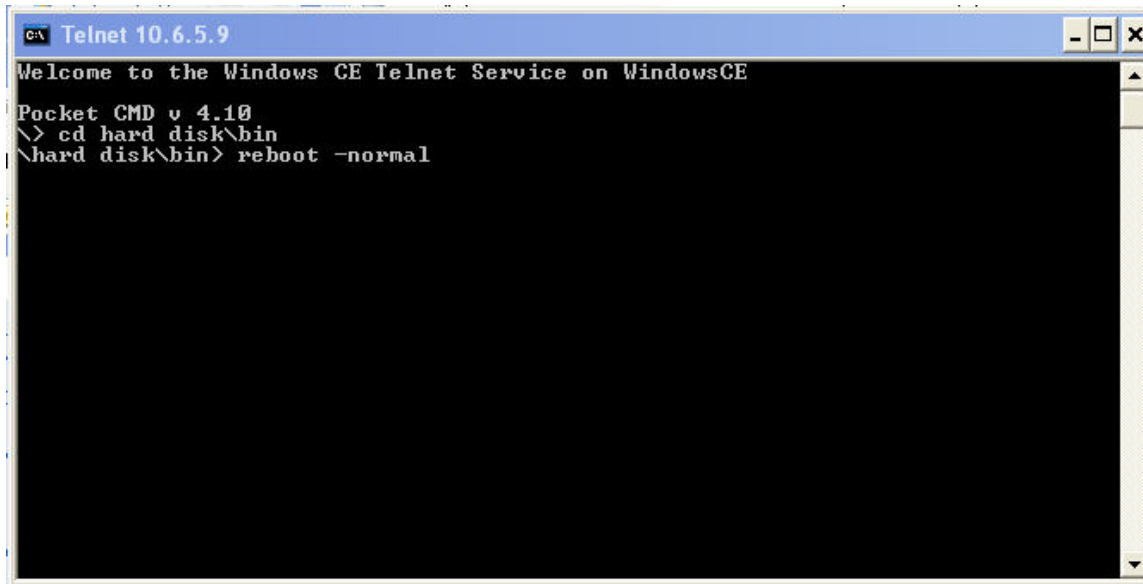
Use the `put` command to make the copy.

```
C:\WINDOWS\system32\cmd.exe - ftp 10.6.5.9                        _ □ ×
11-04-2005  11:03        <DIR>         Actions
11-04-2005  14:00        <DIR>         Images
226 Closing data connection.
ftp: 243 bytes received in 0.42Seconds 0.57Kbytes/sec.
ftp> mkdir Fonts
257 "Fonts".
ftp> dir
200 Command okay.
150 File status okay; about to open data connection.
11-04-2005  11:02        <DIR>         Channels
11-04-2005  11:02        <DIR>         Audioscales
11-04-2005  11:03        <DIR>         Alarms
11-04-2005  11:03        <DIR>         Actions
11-04-2005  15:01        <DIR>         Fonts
11-04-2005  14:00        <DIR>         Images
226 Closing data connection.
ftp: 289 bytes received in 0.42Seconds 0.68Kbytes/sec.
ftp> cd Fonts
250 Requested file action okay, completed.
ftp> put simsun.ttc
200 Command okay.
150 File status okay; about to open data connection.
226 Closing data connection.
ftp: 10500400 bytes sent in 46.73Seconds 224.70Kbytes/sec.
ftp>
```

The font is now on the Alto/Quad unit.

To make this new font available on the system, you will need to reboot it.

To reboot the system, open a telnet session on the Alto/Quad unit, change the directory to Hard Disk\bin and type the command reboot –normal.

Or

Reboot the unit manually.