

# DENSITÉ series

## EAP-1103

### SDI Embedded Audio Processor/Shuffler/Mixer

### Guide to Installation and Operation

M764-9400-100

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## 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 (1<sup>st</sup> Edition) / Safety of Information Technology Equipment, Including Electrical Business Equipment.
- IEC 60950-1 (1<sup>st</sup> 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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# 1 EAP-1103 SDI Embedded Audio Processor/Shuffler/Mixer

## 1.1 Introduction

The EAP-1103 is an SDI embedded audio processor / shuffler / mixer which allows audio to be reconfigured to match a station's infrastructure.

This card will allow you to process up to 8 channels (2 groups) of audio. Audio processing includes gain, phase inversion, delay, shuffling and mixing. All audio channels can be mixed multiple times, and re-embedded into different audio channels.

The EAP-1103 generates up to 8 audio level meters for display with the iControl Web control and monitoring over IP system. This allows the signals being controlled to be monitored more effectively, with operators able to see and hear changes to the signal.

This card operates with the MSB-1121 Monitoring Switching Bridge which allows the output of any module in a Densité frame to be monitored. Multiple MSB-equipped frames may be cascaded, eliminating the need for dedicated monitoring routers.

## 1.2 Features

- SDI isolated input with auto-detection 525/625
- 10-bit processing (video)
- Ancillary Data Blanking or pass-through
- Audio processing of 8 channels of embedded audio
- Audio Level Meter generation
- Provides output to Monitoring Switching Bridge option (MSB-1121)

## 1.3 Functional Block Diagram

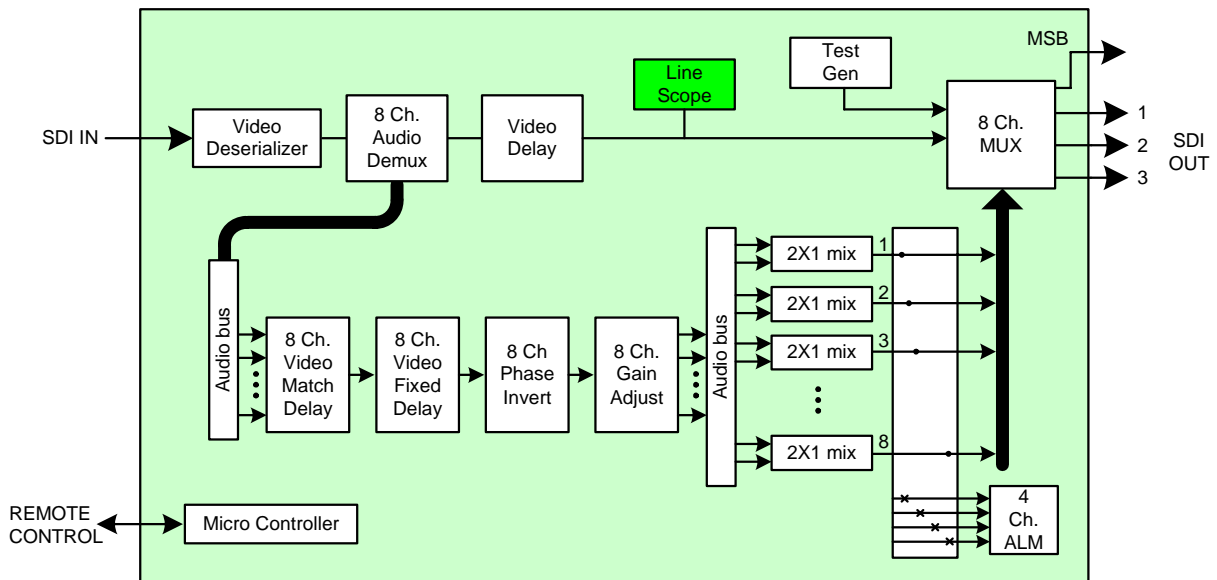
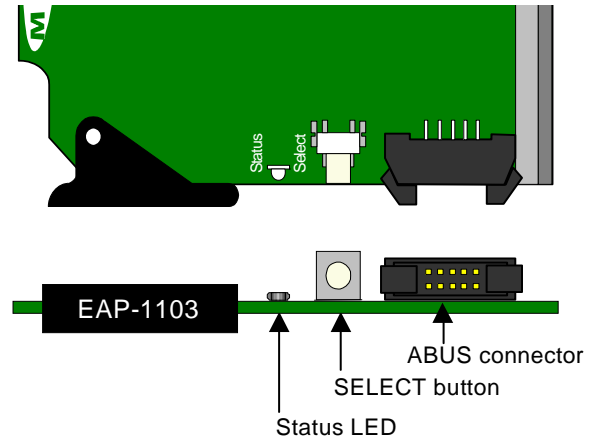


Figure 1.1 Functional block diagram EAP-1103

## 1.4 Front Card-edge Interface

The front card-edge of the EAP-1103 incorporates three elements:

- Status LED (see section 3.2)
- Select Button (see section 3.3)
- ABUS connector (see section 2.3)



**Figure 1.2** Front card-edge layout

## 2 Installation

### 2.1 Unpacking

Make sure the following items have been shipped with your EAP-1103. If any of the following items are missing, contact your distributor or Miranda Technologies Inc.

- EAP-1103 SDI Embedded Audio Processor/Shuffler/Mixer
- EAP-1103-SRP Single Rear Panel (see figure 2.2)

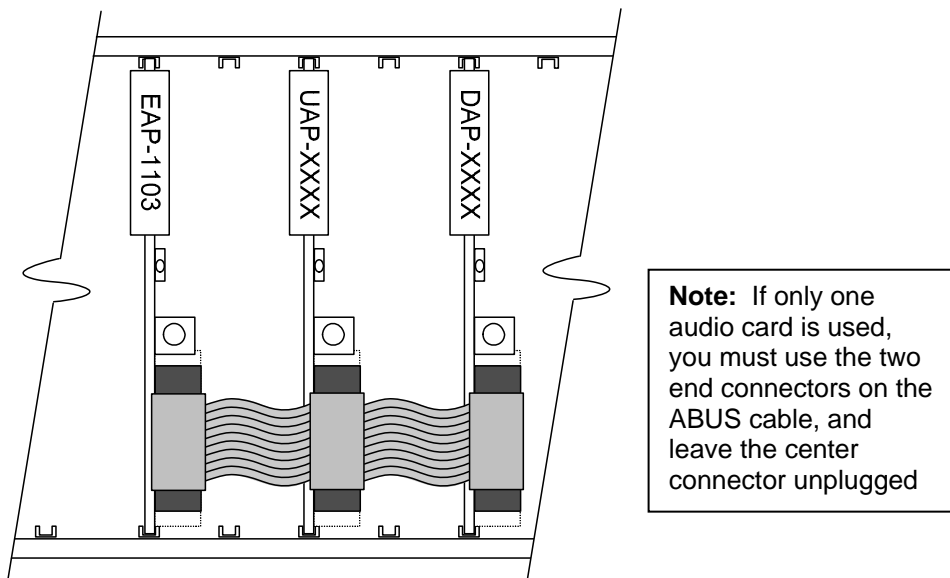
### 2.2 Installation in the Densité frame

The EAP-1103 must be mounted in a DENSITÉ frame. The installation includes both the EAP-1103 module, and the rear panel module. It is not necessary to switch off the power from these frames when installing or removing the EAP-1103.

Detailed instructions for installing cards and their associated rear panels in the Densité frame are given in the Densité Frame manual.

### 2.3 ABUS Connection to Companion Audio Cards

When the EAP-1103 is used in conjunction with one or two companion audio cards (Miranda's AAP, DAP or UAP series), the ABUS flat cable must be installed between the ABUS connector of the EAP-1103 and the connectors on the audio cards. The ABUS flat cable is supplied with the audio card.



**Figure 2.1** ABUS flat cable installation

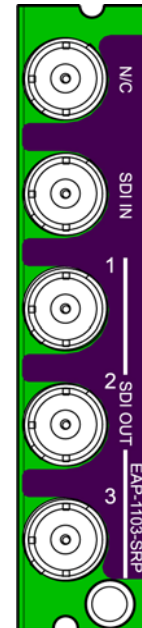
## 2.4 Rear Panel Connectors

### SDI IN – serial digital video input

Connect an SD-SDI video signal. The SD-SDI video signal must conform to the SMPTE 292M and SMPTE 259M-C standard.

### SDI OUT – serial digital video outputs (3)

The EAP-1103 provides three SD-SDI video outputs on BNC connectors, labeled **SDI OUT 1** through **3**. The SDI video signal conforms to the SMPTE 292M and SMPTE 259M-C standard.



**Figure 2.2** EAP-1103-SRP Rear Panel



## 3 Operation

### 3.1 Control options

The EAP-1103 can be controlled in three different ways:

- The local control panel in the Densité frame can be used to move through a menu of parameters and to adjust parameter values (see section 3.3).
- Miranda's RCP-100 remote control panel can be used to access the same menu structure from a remote location (see section 3.4).
- Miranda's iControl system can be used to access the card's operating parameters from a remote computer, using a convenient graphical user interface (GUI). (see section 3.5)

### 3.2 Card-Edge Status LED

The status monitor LED is located on the front card-edge of the EAP-1103, and is visible through the front access door of the DENSITÉ frame. This multi-color LED indicates the status of the EAP-1103 by color, and by flashing/steady illumination.

The chart shows how the various error conditions that can be flagged on the EAP-1103 affect the LED status.

- If a cell is gray, the error condition cannot cause the LED to assume that status
- If more than one LED status is possible for a particular error condition, the status is configurable. See Section 3.5.13 for details.
- The factory default status is shown by a 🔄
- The error conditions that affect the LED status can be viewed on the Densité frame's local control panel. Push the Status button on the front of the card and see the error message displayed.

For example:

|   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|--|--|--|--|--|--|--|--|--|
| E | A | P | - | 1 | 1 | 0 | 3 |   |  |  |  |  |  |  |  |  |  |
| A | 1 | M | I | S | S | I | N | G |  |  |  |  |  |  |  |  |  |

See section 3.3 for more information.

The LED will always show the most severe detected error status that it is configured to display, and in the chart error severity increases from left to right, with green representing no error/disabled, and flashing red the most severe error.

| Error Condition | LED Status |        |     |              |
|-----------------|------------|--------|-----|--------------|
|                 | Green      | Yellow | Red | Flashing Red |
| No rear panel   |            |        |     | ⊗            |
| Hardware error  |            |        |     | ⊗            |
| No SDI signal   |            |        | ⊗   |              |
| No audio grp 1  |            | ⊗      |     |              |
| No audio grp 2  |            | ⊗      |     |              |
| No audio grp 3  |            | ⊗      |     |              |
| No audio grp 4  |            | ⊗      |     |              |
| Silence Ch. 1   |            | ⊗      |     |              |
| Silence Ch. 2   |            | ⊗      |     |              |
| Silence Ch. 3   |            | ⊗      |     |              |
| Silence Ch. 4   |            | ⊗      |     |              |
| Silence Ch. 5   |            | ⊗      |     |              |
| Silence Ch. 6   |            | ⊗      |     |              |
| Silence Ch. 7   |            | ⊗      |     |              |
| Silence Ch. 8   |            | ⊗      |     |              |
| Overload        |            | ⊗      |     |              |
| Test            |            | ⊗      |     |              |
| Card system     |            |        | ⊗   |              |

⊗ : Factory default.

If the LED is Flashing Yellow, it means that the card is selected for local control using the Densité frame’s control panel. See Section 3.3 for details.

### 3.3 Local control using the Densité frame control panel

#### 3.3.1 Overview

Push the SELECT button on the EAP-1103 card edge (see Section 1.4) to assign the local control panel to operate the EAP-1103. Use the control panel buttons to navigate through the menu, as described below.

All of the cards installed in a Densité frame are connected to the frame’s controller card, which handles all interaction between the cards and the outside world. There are no operating controls located on the cards themselves. The controller supports remote operation via its Ethernet ports, and local operation using its integrated control panel.

The local control panel is fastened to the controller card by a hinged connector, and when installed is located in the front center of the frame, positioned in front of the power supplies. The panel consists of a display unit capable of displaying two lines of text, each 16 characters in length, and five pushbuttons.

The panel is assigned to operate any card in the frame by pushing the SELECT button on the front edge of that card.

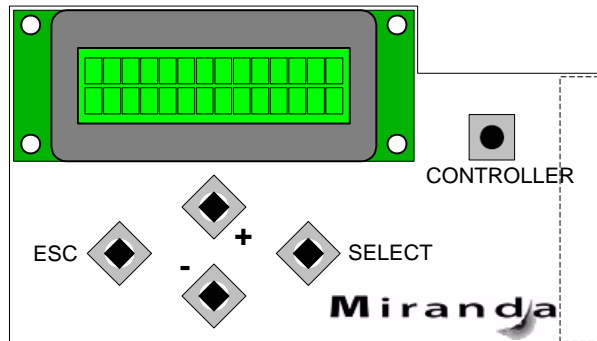


Figure 3.1 Densité Frame local control panel

- Pushing the CONTROLLER button on the control panel selects the Controller card itself.

- The STATUS LED on the selected card flashes yellow.

The local control panel displays a menu that can be navigated using the four pushbuttons located beneath the display. The functionality of the pushbuttons is as follows:

[+] [-] Used for menu navigation and value modification

[SELECT] Gives access to the next menu level. When a parameter value is shown, pushing this button once enables modification of the value using the [+] and [-] buttons; a second push confirms the new value

[ESC] Cancels the effect of parameter value changes that have not been confirmed; pushing [ESC] causes the parameter to revert to its former value.

Pushing [ESC] moves the user back up to the previous menu level. At the main menu, [ESC] does *not* exit the menu system. To exit, re-push the [SELECT] button for the card being controlled.

If no controls are operated for 30 seconds, the controller reverts to its normal standby status, and the selected card's STATUS LED reverts to its normal operating mode.

### 3.3.2 Menu for local control

The EAP-1103 has operating parameters which may be adjusted locally at the controller card interface.

- Press the SELECT button on the EAP-1103 front card edge to assign the Densité frame's local control panel to the EAP-1103
- Use the keys on the local control panel to step through the displayed menu to configure and adjust the EAP-1103.

The complete menu structure is shown in the Annex to this document, beginning on page 26.

## 3.4 Remote Control Using the RCP-100

The EAP-1103 can be controlled through a menu accessible using Miranda's RCP-100 remote control panel.

Please refer to the RCP-100 Guide to Installation and Operation for detailed instructions on installing and operating the RCP-100, and for instructions on how to connect the RCP-100 to the EAP-1103 (or any other supported card) so that the menu can be accessed.

## 3.5 Remote control using iControl

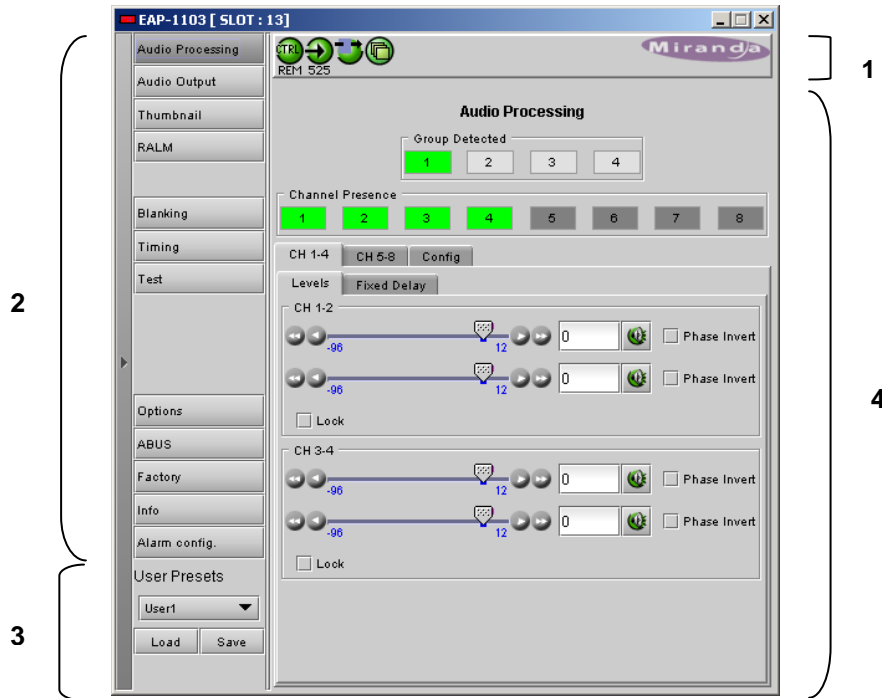
The operation of the EAP-1103 may be controlled using Miranda's iControl system.

- This manual describes the control panels associated with the EAP-1103 and their use.
- Please consult the iControl User's Guide for information about setting up and operating iControl.

In iControl Navigator or iControl Websites, double-click on the EAP-1103 icon to open the control panel.

### 3.5.1 The iControl graphic interface window

The basic window structure for the EAP-1103 is shown in figure 3.2. The window identification line gives the card type (*EAP-1103*) and the slot number where the card installed in its Densité frame.



**Figure 3.2** EAP-1103 iControl graphic interface window:

There are four main sections in the window itself, identified in figure 3.2:

1. The top section displays icons on the left. These icons report different statuses such as card communication status, input signal and reference signal format and statuses. In some instances, they relate to conditions defined through parameters settings.



Icon # 1 2 3 4





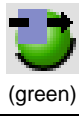





Move the mouse over an icon and a status message appears below the icon providing additional information. If there is an error, the error status message appears in the message area without mouse-over.

- If there are multiple errors, the error messages cycle so all can be seen
- The icon whose status or error message is shown is highlighted with a mauve background

The table below lists the various status icons that can appear, and how they are to be interpreted.

- In cases where there is more than one possible interpretation, read the error message in the iControl window to see which applies.

**Table –iControl Status Icon interpretation**

| <b>Icon #1 – Manual Card Configuration</b>                                                          |                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>(green)</p>    | Remote card control activated. The iControl interface can be used to operate the card                                                                                                                        |
|  <p>(yellow)</p>   | Local card control active, The card is being controlled using the Densité frame control panel, as described in section 3.3. Any changes made using the iControl interface will have no effect on the card.   |
| <b>Icon #2 – Input status</b>                                                                       |                                                                                                                                                                                                              |
|  <p>(green)</p>    | Signal detected and valid. <ul style="list-style-type: none"> <li>The video format is shown under the icon; move the cursor over the icon to see a more detailed description in the message area.</li> </ul> |
|  <p>(red)</p>      | Signal absent<br>No rear<br>Reference mismatch                                                                                                                                                               |
| <b>Icon #3 – Video/Audio Test</b>                                                                   |                                                                                                                                                                                                              |
|  <p>(green)</p>  | Operation mode: process – normal processing of the input signal – test signals OFF                                                                                                                           |
|  <p>(yellow)</p> | Operation mode: TEST – color bar enabled (see Sect.3.5.8)                                                                                                                                                    |
|  <p>(yellow)</p> | Operation mode: TEST – audio test tones enabled (see Sect.3.5.8)                                                                                                                                             |
|  <p>(yellow)</p> | Operation mode: TEST – color bar and audio test tones enabled (see Sect.3.5.8)                                                                                                                               |
| <b>Icon #4 – ABUS Multiple card configuration / presence</b>                                        |                                                                                                                                                                                                              |
|  <p>(green)</p>  | OK – detected card configuration matches configuration set in the ABUS control panel                                                                                                                         |
|  <p>(red)</p>    | Card System Mismatch – the audio cards detected on the ABUS do not match the configuration selected in the ABUS panel                                                                                        |

2. The left portion of the window contains selection buttons for the various control panels, which become highlighted when they are selected; the main pane (4) then displays the selected panel. Each of the panels is described in detail below.
3. The lower left corner of the window contains the controls for user presets.
4. The main panel contains all the parameters specific to the group selected. It may contain several tabs to help manage the different parameters.

The Main Window shows all controls, adjustments and information pertaining to the area of interest which appears as a title to the panel, corresponding to the selection button to the left of the control panel.

In many cases, controls are provided to configure the EAP-1103's features. Types of controls that may be found are:

**Slider:**



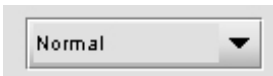
The current value is displayed beneath the center of the slider bar (e.g. 39 in the example shown). To change the value, move the slider by clicking and dragging it, or by clicking the arrow icon at either end.

**Slider with data box:**



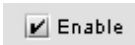
The current value is displayed in the data box at the right hand side (e.g. 50 in the example shown). To change the value, move the slider by clicking and dragging it, or by clicking the arrow or double-arrow icon at either end, or type a new value directly into the data box, and hit "enter" from your keyboard. If you enter a value outside the permitted range (as shown beneath the slider), the data box will flash red and the value will not be changed.

**Pull-down list:**



The current selection is shown on the icon. To change it, click on the down arrow at the right of the box, and click on the desired option in the list that appears below the box.

**Check box (with label):**



A selected box has a checkmark in it, as shown in the example, while an unselected box is blank. Click on the box to change its status.

Each of the panels associated with the groups accessed from the buttons in Section 2, and shown in Section 4, is described individually in the following sections.

### 3.5.2 The Audio Processing Panel

*Group Detected:* If an embedded audio group is detected on the input signal, its icon is green.

*Channel Presence:* Indicates the channels found in the detected groups

*CH 1-4* and *CH 5-8* tabs:

Each of these tabs controls *Levels* and *Fixed Delays* for two pairs of channels; each channel is provided with a set of controls.

*Levels* sub-tab: grouped by pair of channels, each channel has the following controls: a *Level* slider (from -96 to 12 dB), an input box where the desired level may be input directly, a *Mute* icon button and a *Phase Invert* checkbox. At the bottom is a *Lock* checkbox that “locks” both channel sliders together for levels and delay, so that moving one slider moves the other one as well.

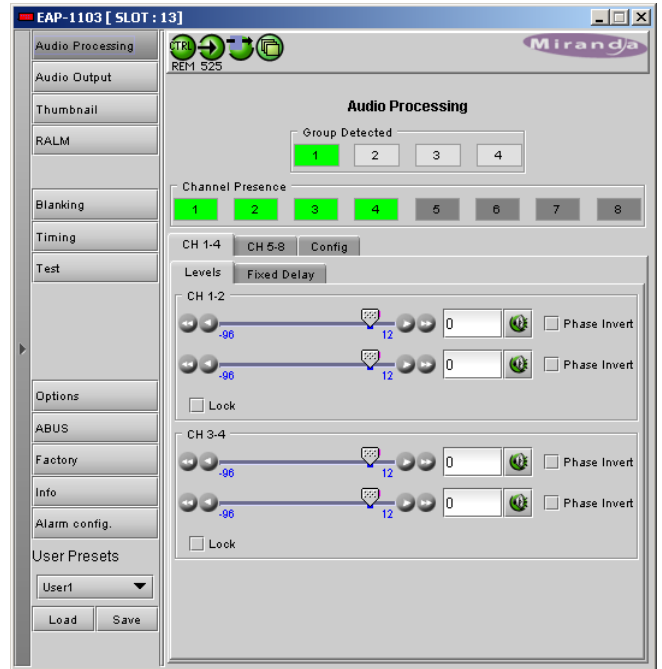


Figure 3.3 Audio Processing – Levels tab

*Fixed Delay* sub-tab: inserts an audio delay offset from the nominal value. For each channel, two sliders allow delay to be adjusted.

- The *Coarse* slider adjusts the delay in ms, from 0 ms to 2000 ms
- The *Fine* slider adjusts the delay in sample increments, from 0 to 47.

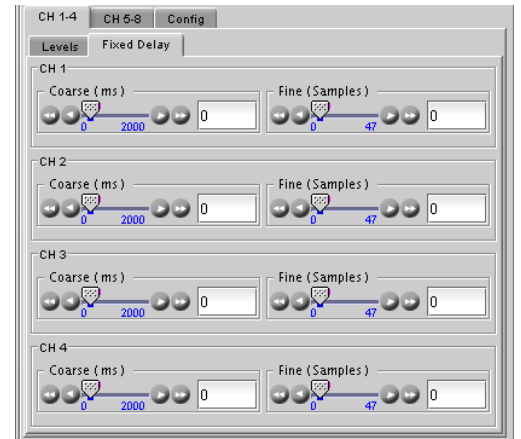


Figure 3.4 Fixed Delay sub-tab

**Config tab:**

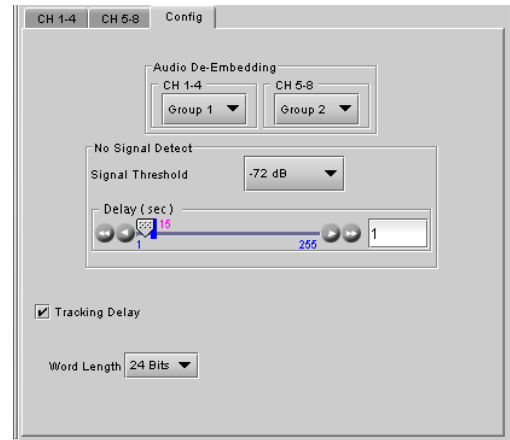
This tab sets the card’s behavior in the event of a loss or absence of audio signal .

**Signal Threshold:** *-72, -66, -60, -54, -48 dB:* Signal absence is declared when the signal level is lower than the signal threshold during the selected period. The threshold can be set through the pull-down box. The default value is *-60 dBFS*.

**Delay:** The signal absence period can be adjusted from 0 to 255 seconds. The default value is set to 15 s.

**Tracking Delay:** use this checkbox to enable fixed delay tracking.

**Word Length 20 bits, 24 bits:** sets embedded audio resolution.



**Figure 3.5** Audio Processing – Config tab

**3.5.3 The Audio Output Panel**

This panel allows the audio from the incoming video, plus the audio from any external audio cards connected via ABUS, to be configured for embedding in the EAP-1103’s SDI output.

**CH 1-2, CH 3-4, CH 5-6, CH 7-8 tabs:** each of these tabs controls a pair of channels; each channel is provided with a set of controls.

**Operation Mode:** *Off, A, SUM (A+B), Mix:* Select the source of the signal that will be output on this channel:

- **Off:** The output channel is muted.
- **A:** Output only the channel selected in the Source A pulldown
- **SUM (A+B):** Output the sum of two channels selected in the SOURCE A and SOURCE B pulldowns. Use the **SUM (A+B) Level** pulldown to apply an attenuation (*-6 dB, -3 dB, 0 dB*) to the summed output.
- **Mix:** Output a mono mix of two channels selected in the SOURCE A and SOURCE B pulldowns.
- **MUTE:** click the checkbox to mute this channel.

**Source A and Source B**

**ABUS Select:** *A1, A2:* selects the external audio card to be used for this channel (*A1* or *A2*). *V* refers to the audio associated with the incoming video on this card.

**Channel:** *Channel 1 ..., Channel 16:* selects the source channel to be used from the Audio Bus.

**Level (dB):** *-96, -95 ..., -1, 0:* sets an attenuation Level for the selected source.

**Note:** **SOURCE A** and **SOURCE B** must be made available through **Multiple Card Config** in the **ABUS** panel (see page 18) before they can be used in this panel.

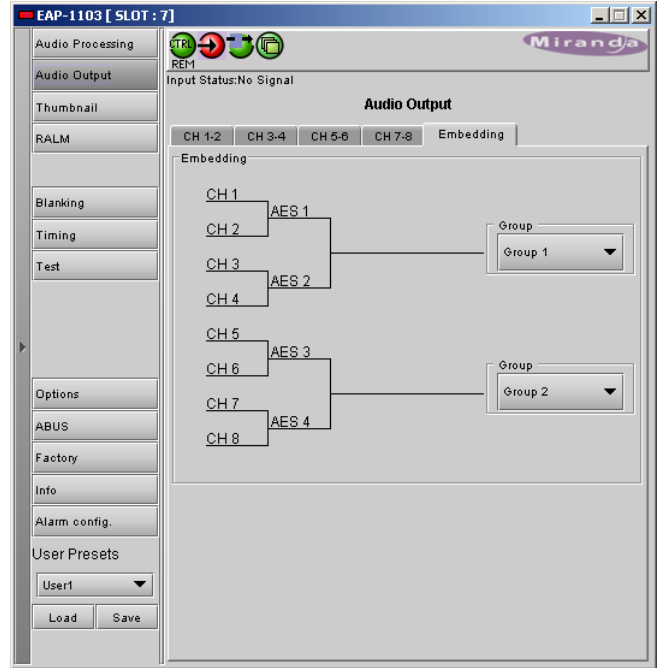


**Figure 3.6** Audio Output panel – CH 1-2 tab



**Embedding tab**

CH 1, 2, 3, 4 and CH 5, 6, 7, 8: use the pulldown list to choose the AES audio groups in which audio channels 1 to 4 and 5 to 8 will be embedded.



**Figure 3.7** Audio Output panel – Embedding tab

**3.5.4 The Thumbnail Panel**

Thumbnails are used to monitor the video output signal of the EAP-1103. Streaming parameters are set using these controls.

**ENABLE:** OFF, Video: enables thumbnail streaming or turns streaming OFF

**SIZE:** Small, Medium, Large: selects the size of the Thumbnail image.

**PLAYER:** OFF, Thumbnail: Click on the Thumbnail box to enable the thumbnail Player. A window opens in the top section and shows a thumbnail associated with the SDI video stream that is being encoded by the EAP-1103.

- Note: you must check the VIDEO box in the ENABLE section to see the video image.

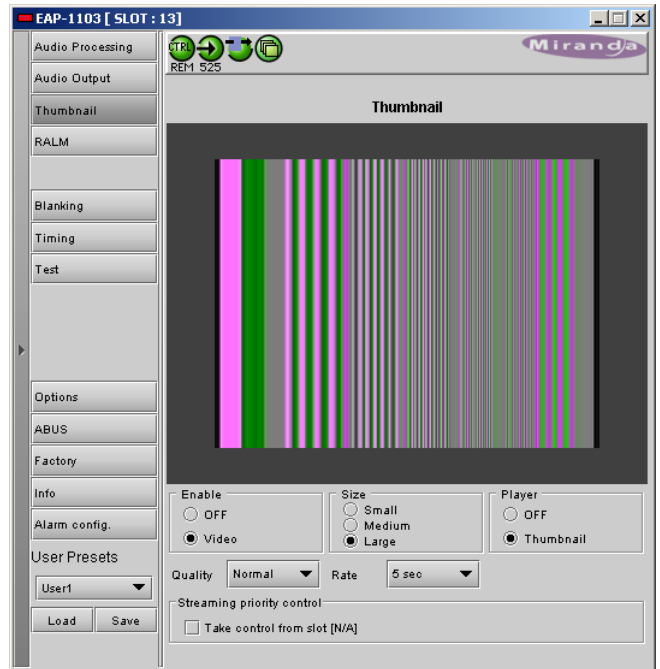
**QUALITY:** Use the left-hand pulldown to select the video quality to be sent by the streaming encoder.

- The choices are Poor, Normal and HiQ (i.e. high quality).

**RATE:** Use the right-hand pulldown to select the refresh rate for the transmitted thumbnails.

- The choices are Fast, 1 sec, 2 sec ..., 10 sec.

**Streaming Priority Control:** Click the Take control from Slot [##] checkbox to force the Densité Controller for this frame to assign more bandwidth for this card’s streaming output. Only one card in the frame can use this feature. It



**Figure 3.8** Thumbnail panel

has no effect unless you have selected *Fast* for the refresh rate. The actual slot number of this card, as shown in the window title bar, will appear when the checkbox is ticked.

### 3.5.5 The RALM Panel

Click on the RALM button at the left side of the DEC-1023 control panel to open this view in the main window.

The Real-time Audio Level Meter (RALM) visually displays the status of each audio channel present. Channels are displayed in pairs, so up to four meters will be present in the meter display window.

The top section of the window shows a Status Reporting section on the left, and the audio level meters on the right.

#### Audio meters

The meter display includes four double meters

Each meter is divided into three zones, and the dividing points and color of each zone are individually configurable under the *Meter Ballistics Config* tab.

- The *Overload Counter* shows a running count of the number of overloads detected. The Overload level is shown by a marker beside the meter, and its position can be set under the *Meter Ballistics Config* tab
- The *Phasemeter* (located at the bottom of the RALM meter display) is a small meter that represents the phase correlation factor between the two channels of a pair.



Figure 3.9 RALM panel

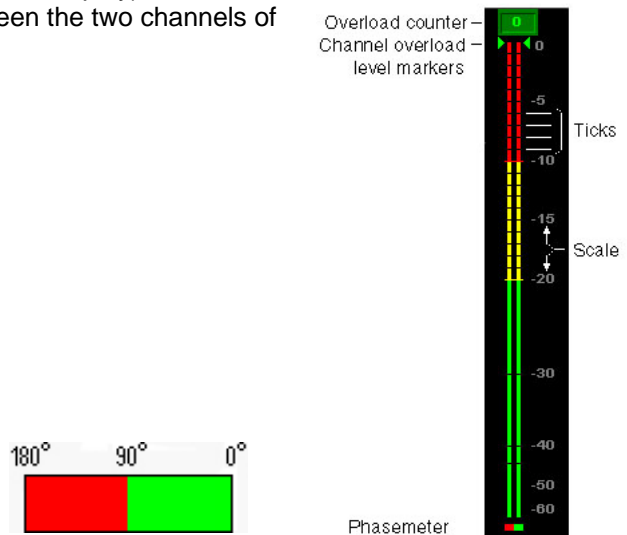


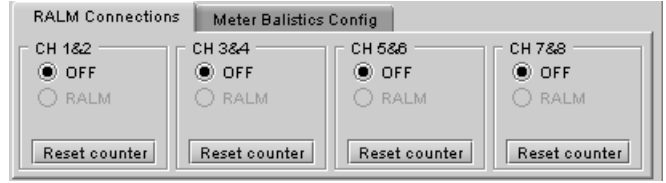
Figure 3.10 RALM audio level meter

*RALM CONNECTIONS tab:* applies to local display in the iControl panel.

*CH 1&2, CH 3&4, CH 5&6 and CH 7&8:*

Audio meters for each pair of channels may be turned on (RALM) or OFF.

*Reset counter:* click this button to reset the overload counter to zero.



**Figure 3.11** RALM Connections tab

*METER BALLISTICS CONFIG tab:*

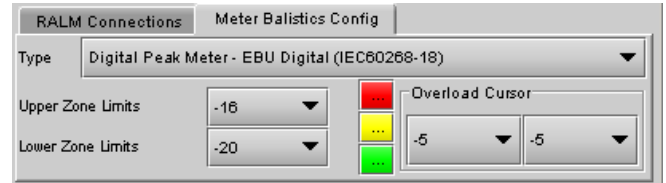
*TYPE* pull-down box: this pull-down offers a list of the available meter types, whose ballistics are identified by the standard to which they conform.

*UPPER ZONE LIMITS (dB):* select the crossover level between the upper and middle zones of the meter (the range of values shown in the pull-down list depends on the type of meter selected)

*LOWER ZONE LIMITS (dB):* select the crossover level between the middle and lower zones of the meter (the range of values shown in the pull-down list depends on the type of meter selected)

*COLOR SAMPLES:* the three samples show the current selected color for the upper, middle and lower zones of the meter. Click on the color sample of a zone to open a color selection panel to choose a different color for that zone.

*OVERLOAD CURSOR (dB):* The overload cursor appears on the meter as an arrowhead in the meter scale. The two pulldown boxes set the position of the overload cursor on the left and right meters (the range of values shown in the pull-down list depends on the type of meter selected).



**Figure 3.12** Meter Ballistics Config tab

*RALM Remote Control:* Click in the check box to select Remote Control ON for the indicated RALM.

Use the pulldown list to select the Speed.



**Figure 3.13** RALM Remote Control section

### 3.5.6 The *Blanking* Panel

This panel provides control over VBI data handling.

*HANC: Pass, Blank:*

Select whether the incoming horizontal ancillary data packets will be passed through the EAP-1103, or blanked.

*VBit: Line 7, Line 23*

Select the line for VBit insertion  
(625 only; grayed out for other formats)

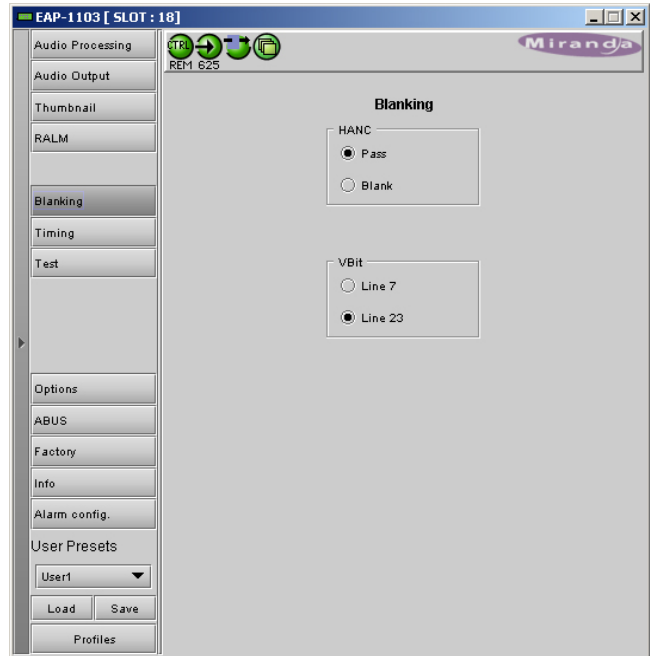


Figure 3.14 Blanking panel

### 3.5.7 The *Timing* Panel

*FRAME DELAY* Pulldown box: sets delay by frame steps: 0, 1 or 2 frames.



Figure 3.15 Timing panel

### 3.5.8 The Test Panel

Use these controls to place test signals at the video and/or audio outputs

VIDEO: check the box to select a 75% color bar test signal at the output.

AUDIO: an audio tone may be selected for each of the 4 channel pairs. Check the boxes for the desired channel pairs.

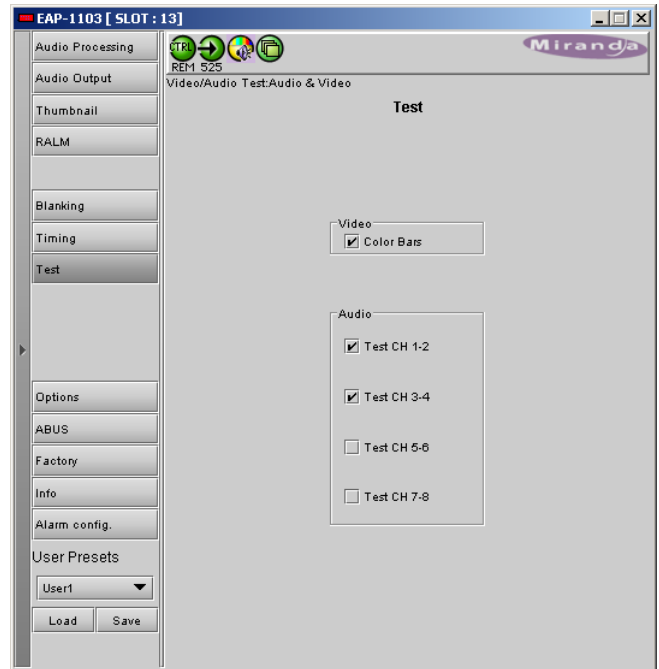


Figure 3.16 Test panel

### 3.5.9 The Options Panel

*IP SCOPE Option:* adds Waveform Monitor and Vectorscope over IP functions to the EAP-1103.

To activate this option, you must obtain a licence key from Miranda Technologies.

- Type the licence key in the *Enter Key* box
- Click *Enable Option* to activate the waveform monitor and vector scope feature.

To view the waveform monitor and vector scope data, use the Streaming Player that is provided with the iControl software. Consult the iControl documentation to learn more about the Streaming Player.

- Click the *ENABLE* checkbox to enable the transmission of waveform monitor and vector scope data
- Use the slider to select the line that will carry the data.
- The *REFRESH RATE* pulldown box selects the desired refresh rate:

*Fast, 1 sec, 2 sec, ..., 9 sec, 10 sec.*

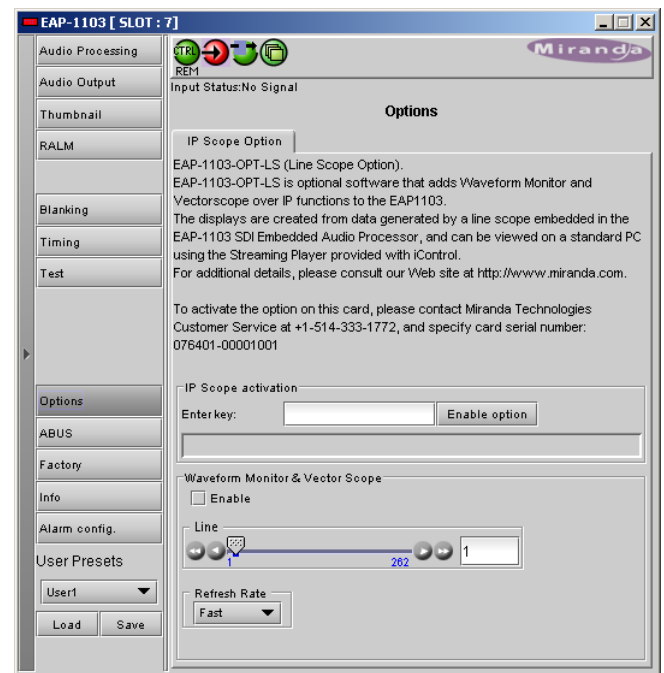


Figure 3.17 Options panel – IP Scope

### 3.5.10 The ABUS Panel

When optional audio cards such as the UAP-1781 are used to provide audio signals for embedding in the EAP-1103's SDI output, the ABUS audio bus links the audio cards and the EAP-1103. The ABUS panel is used to instruct the EAP-1103 about the presence of installed audio cards.

**MULTIPLE CARD CONFIG:** The indicators signal the presence of appropriate audio cards installed in the Densité frame.

Use the pulldown box and select your system's configuration.

- Video – only the input video signal is used, and no external audio will be embedded
- V/ A1 – audio from the external A1 card is available for embedding in the EAP-1103 output
- Video / A1 / A2 – audio from both external audio cards A1 and A2 is available for embedding in the EAP-1103 output



Figure 3.18 ABUS panel

### 3.5.11 The Factory Panel

**Load Factory:** Clicking this button will reinstate all default parameter values.

- The EAP-1103 Menu in the Annex shows the default value underlined for all parameters.



Figure 3.19 Factory panel

### 3.5.12 The Info panel

The top two lines in this panel identify the model of this EAP-1103, and the rear panel that is currently installed.

When the EAP-1103 is included in an iControl environment, certain information about the card should be available to the iControl system. The user can enter labels and comments that will make this card easy to identify in a complex setup. This information is entered into data boxes in the Info control panel.

- Label: type the label that is shown for this EAP-1103 when it appears in iControl applications
- Short Label type the short-form label that iControl uses in some cases (8 characters)
- Source ID type a descriptive name for this EAP-1103
- Comments: type any desired text

The remaining data boxes show manufacturing information about this card.

Three buttons in the panel give access to other information.

- Details...: Reports the Firmware version, service version, and panel version for this card

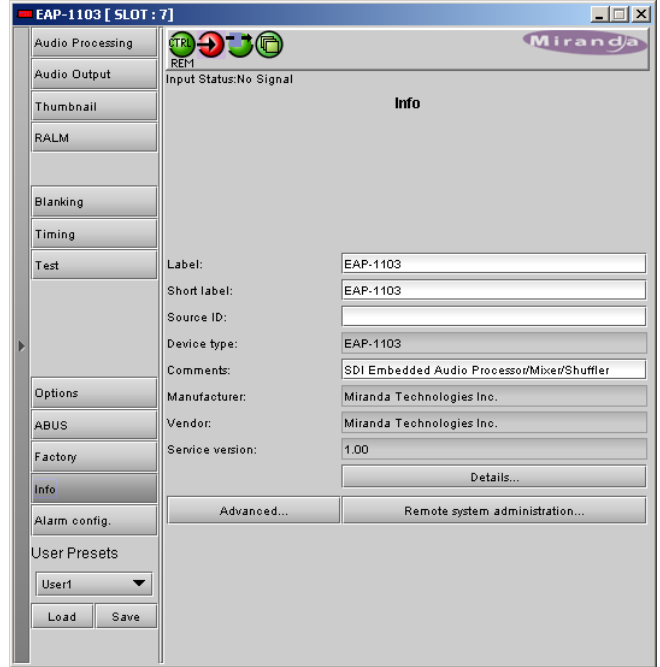


Figure 3.20 Info panel

- Advanced...: Shows the Miranda LongID for this card. The Miranda LongID is the address of this EAP-1103 in the iControl network.

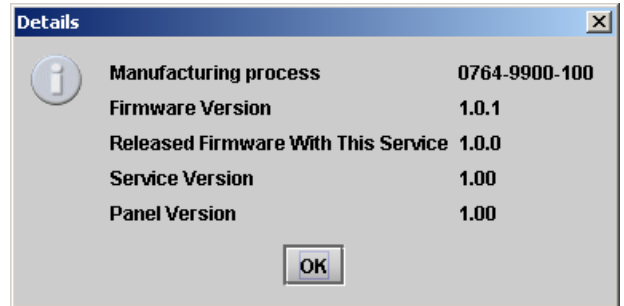


Figure 3.21 Details window

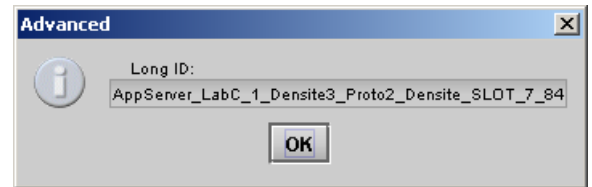


Figure 3.22 Advanced window

- Remote System Administration – opens the Joining Locators data box, which lists remote lookup services to which this EAP-1103 is registered.

**Add:** Force the iControl service for this EAP-1103 to register itself on a user-specified Jini lookup service, using the following syntax:

jini://<ip\_address>

where <ip\_address> is the ip address of the server running the lookup service

Enter the address in the Input data box, e.g.:

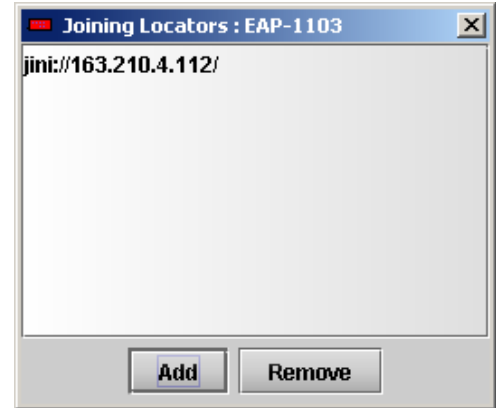
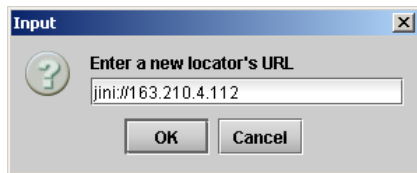


Figure 3.23 Joining Locators window

**Remove:** select one of the services listed in the window by clicking on it, and click *Remove* to delete it from the window.

### 3.5.13 Alarm Configuration

This panel allows the alarm reporting of the EAP-1103 to be configured. The panel opens in a new window when the button is clicked, and can be resized if needed.

The panel is organized in columns.

#### Status/Name

This contains an expandable tree listing all the alarms reported by this EAP-1103 card.

- Each alarm name includes an icon that shows its current status
- Some alarms may be text-only and the alarm status is shown in the name and not by a status icon (e.g. *Input Format* in Fig. 3.25)

The **Overall alarm** and **GSM contribution** columns contain pulldown lists that allow the level of contribution of each individual alarm to the alarm named in the column heading to be set.

- If there is no arrowhead in the box, there is no pulldown and the alarm is not user-configurable

#### Overall Alarm

This column allows configuration of the contribution of each individual alarm to the Overall Alarm associated with this card. The Overall Alarm is shown in the upper left corner of the iControl panel, and also appears at the bottom of the Status/Name column.

#### GSM Contribution

This column allows configuration of the contribution of each individual alarm to the GSM Alarm Status associated with this card. GSM is a dynamic

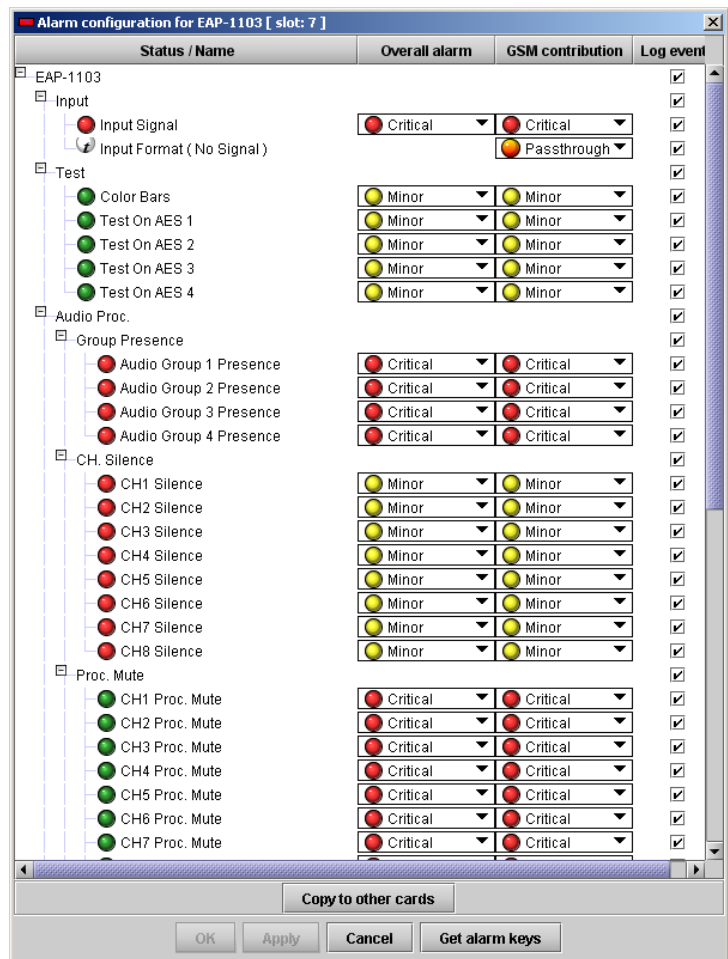


Figure 3.24 Alarm Configuration panel








register of all iControl system alarms, and is also an alarm provider for external applications. The possible values for this contribution are related to the Overall alarm contribution:

- If the Overall alarm contribution is selected as Disabled, the GSM alarm contribution can be set to any available value
- If the Overall alarm contribution is selected as any level other than disabled, the GSM contribution is forced to follow the Overall Alarm.

**Levels associated with these alarms:**

The pulldown lists may contain some or all of the following options:

-  Disabled ▼ The alarm makes no contribution (black icon)
-  Minor ▼ The alarm is of minor importance (yellow icon)
-  Major ▼ The alarm is of major importance (orange icon)
-  Critical ▼ The alarm is of critical importance (red icon)
-  Passthrough ▼ The alarm exists but has no effect (used for text and composite alarms)

**Shortcut:** if you click in one of the columns beside a major heading in the Status/Name column (where there is no pulldown shown), you will open an “invisible” pulldown that lets you assign a level to all alarms in that section of the column simultaneously.

**Log Events**

iControl maintains a log of alarm events associated with the card. The log is useful for troubleshooting and identifying event sequences. Click in the checkbox to enable logging of alarm events for each individual alarm.

At the bottom of the window are several other controls

**Copy to other cards**

Click this button to open a panel that allows the alarm configuration set for this card to be copied into other EAP-1103 cards.

- The window shows other EAP-1103 cards available through iControl
- Select one or more destination cards from the list in the window by clicking in the checkboxes, or all of them by clicking in the All checkbox

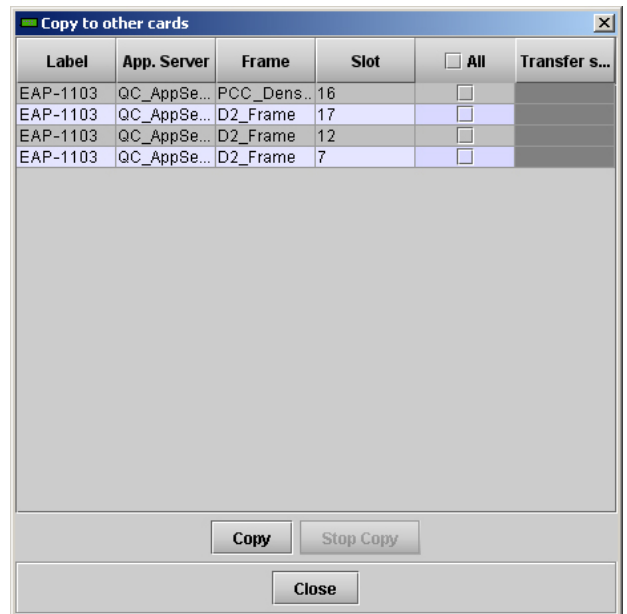


Figure 3.25 Copy to other cards

**Get alarm keys**

Click this button to open a save dialog where you can save a file containing a list of all alarms on this card and their current values, along with an Alarm Key for each. The alarm keys are useful for system integration and troubleshooting.

- The file is saved in Excel.csv format

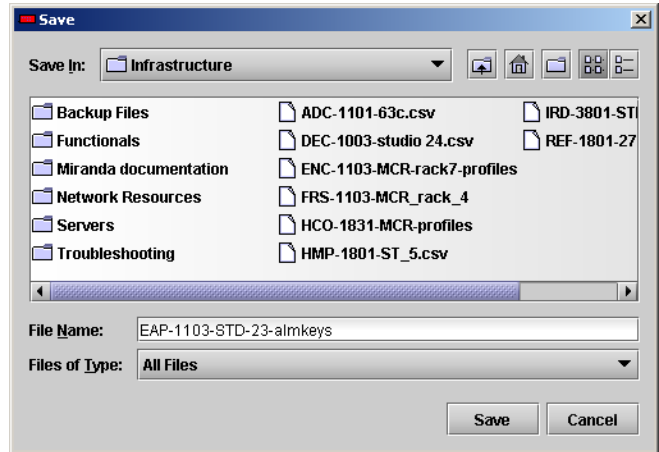


Figure 3.26 Get alarm keys save dialogue

**OK, Apply, Cancel**

- **OK** accepts the settings and closes the window once the card confirms that there are no errors.
- **Apply** accepts the settings, but leaves the window open
- **Cancel** closes the window without applying any changes, and leaves the previous settings intact.

**3.5.14 User Presets**

The EAP-1103 has 5 memory registers which can hold user-defined parameter settings, accessed through controls located at the bottom left corner of the iControl window.

**To save the current settings:**

- Select the register to be used through the pull-down box at the bottom left corner of the control panel (the current selection is shown).
- Click *Save* to store the current configuration in that register.
- The existing contents of the preset will be overwritten.

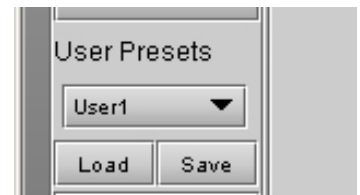


Figure 3.27 User Presets

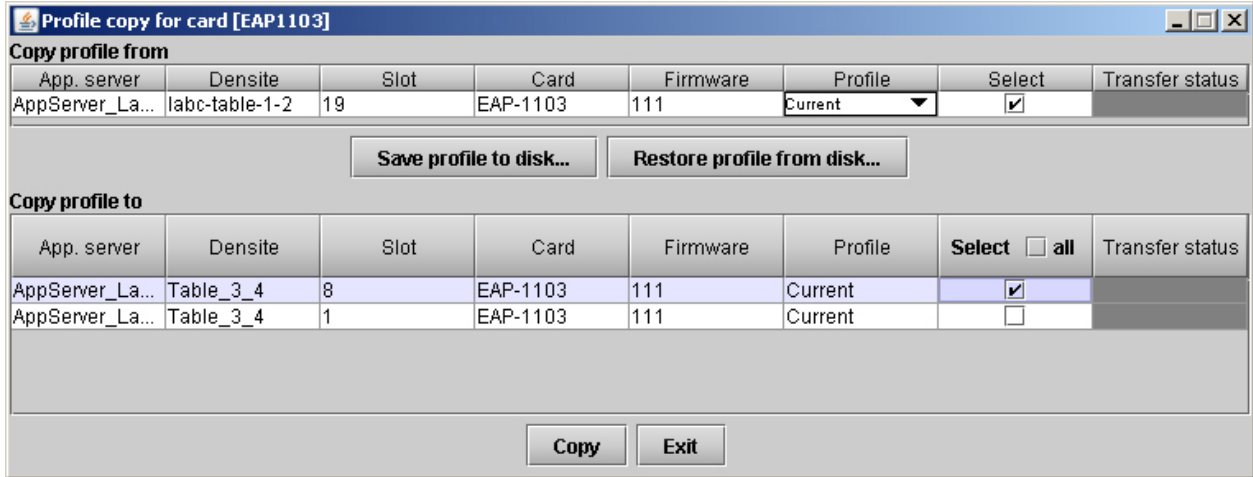
**To recall a saved configuration:**

- Select the register with the saved configuration using the pulldown box
- Click *Load* to configure the EAP-1103 with the recalled data

### 3.5.15 Profiles

This section provides the option to save and recover the entire card configuration (including user presets if desired) on an external disk, or to copy it to another EAP-1103 card.

Click on *Profiles* (at the bottom left corner of the window) to open the Profile Copy window.



**Figure 3.28** Copy Profile for Card window

#### Copy profile from section

This line shows this EAP-1103 card, and identifies it by App server, Densité frame and slot number, card type and firmware version.

The *Profile* column has a pulldown that allows you to select which profiles you will work with, and gives these choices:

- Current, User1, User2, User3, User4, User5, All

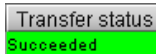
The *Select* column includes a checkbox (preselected checked) to confirm that you want to work with the current card.

#### Save Profile to Disk...

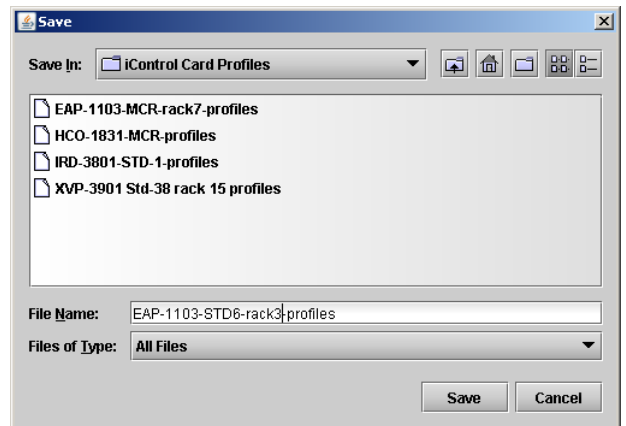
Click this button to open a Save dialog allowing you to specify a file name and location to which the selected profiles for this card will be saved.

*Hint - It is a good idea to create a folder for these files, because they are not explicitly identified as EAP-1103 profiles, and will be difficult to find and identify if not clearly named and conveniently located.*

- Click the save button once the name and location have been identified in the Save box
- If the file is saved correctly, the Transfer Status box on the right of the *Copy profile from* line will indicate *Succeeded* against a green background



- If the file was not saved for some reason, the Transfer Status box to the right of the *Copy profile from* line will indicate *Failed* against a red background

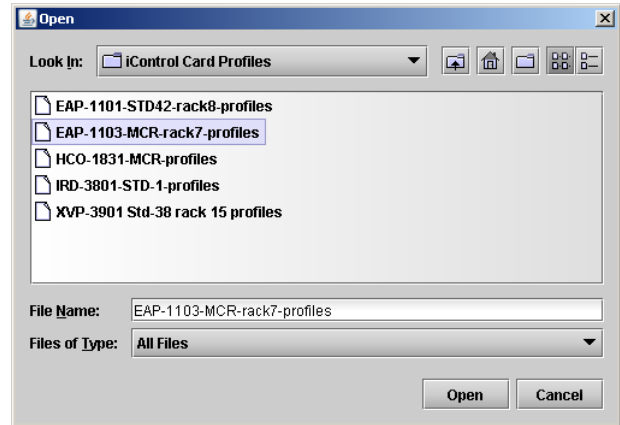


**Figure 3.29** Save Profile to Disk dialog

**Restore profiles from disk...**

Click this button to open an *Open* dialog box within which you can locate and select a valid EAP-1103 profile file.

- Click Open to read the contents of the file and to reconfigure this EAP-1103's profiles according to its contents
- While the reconfiguration is in progress, the Transfer Status box on the right of the *Copy profile from* line will indicate *Working* against a yellow background
- When the reconfiguration is complete, the Transfer Status box on the right of the *Copy profile from* line will indicate *Succeeded* against a green background



**Figure 3.30** Restore Profiles from Disk dialog

**Copy profile to section**

This line shows other EAP-1103 cards that are available on the iControl network, each identified by App server, Densité frame and slot number, card type and firmware version.

The *Profile* column shows the same information as is shown for the current card in the *Copy profile from* line, i.e. one of the following:

- Current, User1, User2, User3, User4, User5, All

The *Select* column includes a checkbox to identify which XVP-3901 cards you wish to copy profiles into from the current card.

- For convenience, a *Select all* checkbox is provided in the column header

Click *Copy* to copy the selected profiles from this card into the selected other EAP-1103 cards

- While the profile copy operation is in progress, the Transfer Status box on the right of the *Copy profile to* line will indicate *Working* against a yellow background
- When the profile copy operation is complete, the Transfer Status box on the right of the *Copy profile to* line will indicate *Succeeded* against a green background

## 4 Specifications

### **INPUT**

|                 |                             |
|-----------------|-----------------------------|
| SIGNAL:         | SMPTE 259M-C (270 Mbps)     |
| EMBEDDED AUDIO: | SMPTE 272M-C                |
| CABLE LENGTH:   | 300m (900') of Belden 1694A |
| RETURN LOSS:    | >15 dB up to 270 MHz        |

### **VIDEO OUTPUTS**

|              |                                 |
|--------------|---------------------------------|
| SIGNAL (3):  | SDI SMPTE 259M-C (270 Mbps)     |
| RETURN LOSS: | > 15 dB up to 270 MHz           |
| JITTER:      | < 0.2 UI (0.74ns) pp (WIDEBAND) |

### **VIDEO PROCESSING PERFORMANCE**

|                   |                                       |
|-------------------|---------------------------------------|
| SIGNAL PATH:      | 10 bits                               |
| PROCESSING DELAY: | 1 ms (min)                            |
| TEST GENERATOR:   | 75 % color bars with 100 % white bars |

### **AUDIO PROCESSING PERFORMANCE**

|                   |                   |
|-------------------|-------------------|
| SIGNAL PATH:      | 20 or 24 bits     |
| SAMPLING:         | 48 kHz            |
| PROCESSING DELAY: | 1 ms (min)        |
| TEST GENERATOR:   | 1 kHz, as per EBU |

**POWER:** 3.5 W

## ANNEX – EAP-1103 User Interface

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                          |                              |                                       |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|------------------------------|---------------------------------------|
| STATUS      | NO SIGNAL / SDI 525 / SDI 625<br>NO AES / AES GROUP: 1234<br>SILENCE CH 1<br>SILENCE CH 2<br>SILENCE CH 3<br>SILENCE CH 4<br>SILENCE CH 5<br>SILENCE CH 6<br>SILENCE CH 7<br>SILENCE CH 8<br>OVERLOAD CH 1<br>OVERLOAD CH 2<br>OVERLOAD CH 3<br>OVERLOAD CH 4<br>OVERLOAD CH 5<br>OVERLOAD CH 6<br>OVERLOAD CH 7<br>OVERLOAD CH 8<br>NO REAR / SINGLE REAR<br>OUTPUT : 525 / 625<br>TEST<br>A1 MISSING<br>A2 MISSING<br>CARD SYSTEM<br>HARDWARE FAILURE |                                          |                              |                                       |
| USER PRESET | LOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                    | [USER 1 ,USER 2, USER 3, USER 4, USER 5] |                              |                                       |
|             | SAVE                                                                                                                                                                                                                                                                                                                                                                                                                                                    | [USER 1 ,USER 2, USER 3, USER 4, USER 5] |                              |                                       |
| AUDIO       | DE-EMBED                                                                                                                                                                                                                                                                                                                                                                                                                                                | CHANNELS 1234                            | [GRP 1, GRP 2, GRP 3, GRP 4] |                                       |
|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CHANNELS 5678                            | [GRP 1, GRP 2, GRP 3, GRP 4] |                                       |
|             | PROC                                                                                                                                                                                                                                                                                                                                                                                                                                                    | CHANNEL 1                                | LEVEL                        | [-96, -95.5, ....0,.....12] (dB)      |
|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                          | MUTE                         | [OFF / ON]                            |
|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                          | LOCK CH. 1 & 2               | [OFF / ON]                            |
|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                          | PHASE INVERT                 | [OFF / ON]                            |
|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                          | FIXED DELAY                  | COARSE [None, 0, 1, .... 2000] (msec) |
|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                          |                              | FINE [0, 1, 2, .... 47] (samples)     |

Repeated for channels 2 to 8

EMBEDDING CHANNELS 1234 TO [OFF, GRP 1, GRP 2, GRP 3, GRP 4]  
 CHANNELS 5678 TO [OFF, GRP 1, GRP 2, GRP 3, GRP 4]

OUTPUT MIXERS CHANNEL 1 OPERATION MODE [OFF, A, SUM(A+B), MIX]

**Note:** An output mixer menu appears for all 8 channels. The menu content varies depending on the choice made under OPERATION MODE.

The four channels shown indicate the four possible formats

CHANNEL 2 OPERATION MODE [OFF, A, SUM(A+B), MIX]  
 ABUS [V, A1, A2]  
 CHANNEL SELECT [1, 2, 3, .... 16]  
 LEVEL [-96, -95, .... 0] (dB)  
 MUTE [OFF / ON]

CHANNEL 3 OPERATION MODE [OFF, A, SUM(A+B), MIX]  
 SOURCE A ABUS [V, A1, A2]  
 CHANNEL SELECT [1, 2, 3, .... 16]  
 SOURCE B ABUS [V, A1, A2]  
 CHANNEL SELECT [1, 2, 3, .... 16]  
 SUM (A+B) LEVEL -6, -3, 0 dB  
 MUTE [OFF / ON]

CHANNEL 8 OPERATION MODE [OFF, A, SUM(A+B), MIX]  
 SOURCE A ABUS [V, A1, A2]  
 CHANNEL SELECT [1, 2, 3, .... 16]  
 LEVEL [-96, -95, .... 0] (dB)  
 SOURCE B ABUS V, A1, A2  
 CHANNEL SELECT [1, 2, 3, .... 16]  
 LEVEL [-96, -95, .... 0] (dB)  
 MUTE [OFF / ON]

TRACKING DELAY [OFF, ON]  
 NSD THRESHOLD [-72, -66, -60, -54, -48] (dB)  
 NSD DELAY [1, 2, 3, 4, ....255] (sec)  
 WORD LENGTH [20 bits, 24 bits]

GUIDE TO INSTALLATION AND OPERATION

|               |                  |                     |                                 |
|---------------|------------------|---------------------|---------------------------------|
| BLANKING      | HANC             | [PASS, BLANK]       |                                 |
|               | VBIT             | [7, 23]             |                                 |
| TIMING        | FRAME DELAY      | [0, 1, 2]           |                                 |
| CARD SYSTEM   |                  | [NONE, A1, A1 + A2] |                                 |
| TEST          | VIDEO            | [OFF / ON]          |                                 |
|               | AUDIO CH 1&2     | [OFF / ON]          |                                 |
|               | AUDIO CH 3&4     | [OFF / ON]          |                                 |
|               | AUDIO CH 5&6     | [OFF / ON]          |                                 |
|               | AUDIO CH 7&8     | [OFF / ON]          |                                 |
| CONFIG ALARMS | NO SIGNAL        | ALARM LEVEL         | [GREEN, YELLOW, RED, FLASH RED] |
|               |                  | ALARM REPORT        | [NONE, GPI]                     |
|               | NO AUDIO GRP 1   | ALARM LEVEL         | [GREEN, YELLOW, RED, FLASH RED] |
|               |                  | ALARM REPORT        | [NONE, GPI]                     |
|               | NO AUDIO GRP 2   | ALARM LEVEL         | [GREEN, YELLOW, RED, FLASH RED] |
|               |                  | ALARM REPORT        | [NONE, GPI]                     |
|               | NO AUDIO GRP 3   | ALARM LEVEL         | [GREEN, YELLOW, RED, FLASH RED] |
|               |                  | ALARM REPORT        | [NONE, GPI]                     |
|               | NO AUDIO GRP 4   | ALARM LEVEL         | [GREEN, YELLOW, RED, FLASH RED] |
|               |                  | ALARM REPORT        | [NONE, GPI]                     |
|               | NSD CH 1         | ALARM LEVEL         | [GREEN, YELLOW, RED, FLASH RED] |
|               |                  | ALARM REPORT        | [NONE, GPI]                     |
|               | NSD CH 2         | ALARM LEVEL         | [GREEN, YELLOW, RED, FLASH RED] |
|               |                  | ALARM REPORT        | [NONE, GPI]                     |
|               | NSD CH 3         | ALARM LEVEL         | [GREEN, YELLOW, RED, FLASH RED] |
|               |                  | ALARM REPORT        | [NONE, GPI]                     |
|               | NSD CH 4         | ALARM LEVEL         | [GREEN, YELLOW, RED, FLASH RED] |
|               |                  | ALARM REPORT        | [NONE, GPI]                     |
|               | NSD CH 5         | ALARM LEVEL         | [GREEN, YELLOW, RED, FLASH RED] |
|               |                  | ALARM REPORT        | [NONE, GPI]                     |
|               | NSD CH 6         | ALARM LEVEL         | [GREEN, YELLOW, RED, FLASH RED] |
|               |                  | ALARM REPORT        | [NONE, GPI]                     |
|               | NSD CH 7         | ALARM LEVEL         | [GREEN, YELLOW, RED, FLASH RED] |
|               |                  | ALARM REPORT        | [NONE, GPI]                     |
|               | NSD CH 8         | ALARM LEVEL         | [GREEN, YELLOW, RED, FLASH RED] |
|               |                  | ALARM REPORT        | [NONE, GPI]                     |
|               | OVL D PROCESSING | ALARM LEVEL         | [GREEN, YELLOW, RED, FLASH RED] |
|               |                  | ALARM REPORT        | [NONE, GPI]                     |



|                 |               |                  |                                         |
|-----------------|---------------|------------------|-----------------------------------------|
|                 | TEST          | ALARM LEVEL      | [GREEN, <u>YELLOW</u> , RED, FLASH RED] |
|                 |               | ALARM REPORT     | [ <u>NONE</u> , GPI]                    |
| VERSION         | EAP-1103: xxx |                  |                                         |
| OPTIONS         | LINE SCOPE    | Key: xx.xx.xx.xx |                                         |
| FACTORY DEFAULT | [RESTORE]     |                  |                                         |