

# DENSITÉ series

## DEC-1003

### 10-Bit Composite to SDI Decoder

### Guide to Installation and Operation

M761-9400-100

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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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*GUIDE TO INSTALLATION AND OPERATION*

# 1 DEC-1003 10-bit Composite to SDI Decoder

## 1.1 Introduction

The DEC-1003 is a high-quality composite analog video to SDI decoder designed for incoming feed applications. This 10-bit decoder offers 2D adaptive decoding filters, video proc-amp functions, VBI data processing, AGC, input validity and error detection reporting. A frame sync with TBC functions is optional. When combined with one or multiple audio cards, an operator can select any of the audio channels to embed into the SDI signal. Each audio output channel can be composed of a mix of any two audio input channels. New technology includes Thumbnail & ALM (audio level meter) generation and an optional Waveform/Vectorscope over IP of the output signal, which allows the operator to control and see the changes made to the signal.

This card operates with the MSB-1121 Monitoring Switching Bridge which allows the output of any module in the Densité frame to be monitored.

## 1.2 Features

- Composite analog video differential input with passive loop-through
- Up to five (5) SDI 4:2:2 digital video outputs
- Reference input with passive loop-through
- 10-bit A to D conversion with 2D adaptive decoding
- Video processing control
- Ancillary Data Blanking or pass-through
- Automatic user calibration of components based on a known test pattern
- Built-in test signal (Full Field 75% Color Bars with 100% White)
- Audio embedding of 8 channels (when linked with audio card)
- Frame Sync Option provides timing, full phasing and freeze modes
- Thumbnail generation
- Waveform/Vectorscope over IP option (operates with iControl)
- Provides output to Monitoring Switching Bridge option (MSB-1121)

## 1.3 Probing option

The DEC-1003 Probing Option integrates several advanced features for monitoring of both video and embedded audio signals. The Probing Option offers complete real-time measurement and analysis of an extensive set of signal parameters, as well as flexible alarm thresholds and sensitivity. Once defined, the DEC-1003 probing settings can be saved along with the rest of the card configuration, in five user-defined profiles. Using iControl, the DEC-1003 Probing Option can conveniently and remotely be enabled and configured, on existing Densité-Series DEC-1003 cards.

### ***Features and benefits***

Multi-format Video Parameter Probing

- Signal Presence Detection
- White Limit Max
- Luma Min
- Luma Max
- Chroma Limit Max
- Freeze Detection
- Black Detection

VBI Signal Extraction and Analysis

- Close Caption
- VITC (Analysis Only)
- V-Chip
- WSS
- XDA Data

Audio Parameter Probing – using Densité-Series UAP-1781 audio companion card

- Audio Silence
- Audio Overload
- Audio Max Level
- Audio Min Level

1.4 Functional Block Diagram

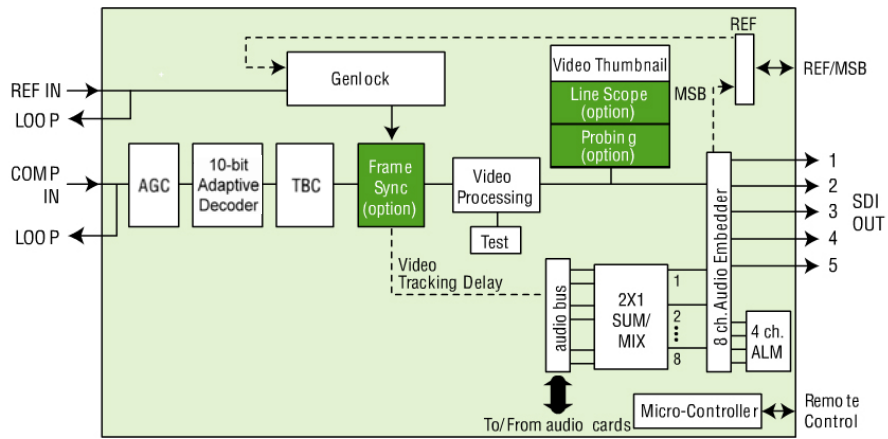


Figure 1.1 Functional block diagram DEC-1003

1.5 Front Card-edge Interface

The front card-edge of the DEC-1003 incorporates three elements:

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

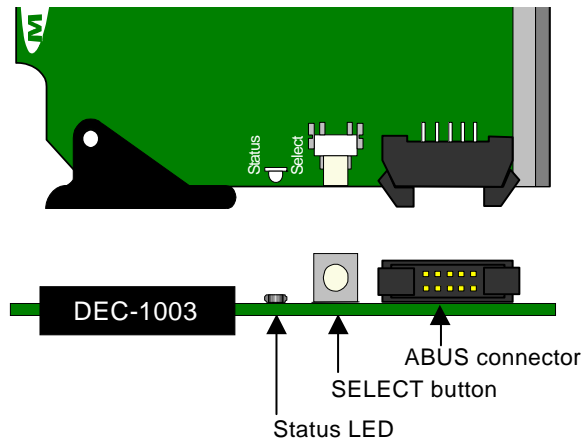


Figure 1.2 Front card-edge layout

## 2 Installation

### 2.1 Unpacking

Make sure the following items have been shipped with your DEC-1003. If any of the following items are missing, contact your distributor or Miranda Technologies Inc.

- DEC-1003 10-bit Composite to SDI Decoder
- DEC-10NN-SRP Single Rear Panel or DEC-10NN-DRP Double Rear Panel (see figure 2.2)

### 2.2 Installation in the Densité frame

The DEC-1003 must be mounted in a DENSITÉ frame. The installation includes both the DEC-1003 module, and the rear panel module (single or double). It is not necessary to switch off the power from these frames when installing or removing the DEC-1003.

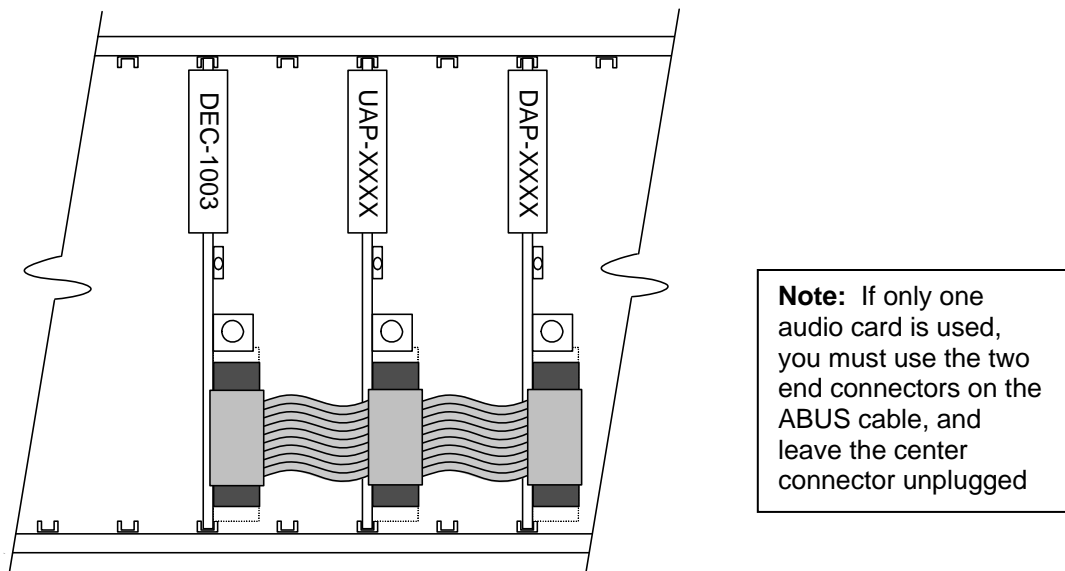
When used in conjunction with an audio module such as the UAP-1781, the ABUS flat cable needs to be installed between the ABUS connector of the DEC-1003 and the connector of the audio module. The ABUS flat cable is supplied with the audio module.

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

If the double-width rear panel has been installed, the module must be installed in the right-most of the two slots covered by the panel in order to mate with the rear panel connectors. Should it be installed in the wrong slot, the front panel LED will flash red. Move the card to the other slot for correct operation. No damage will result to the card should this occur.

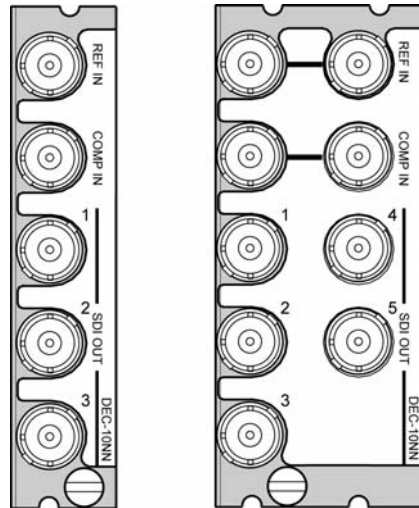
### 2.3 ABUS Connection to Companion Audio Cards

When the DEC-1003 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 DEC-1003 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



**Figure 2.2** DEC-1003 Rear Panels (SRP on left; DRP on right)

### REF IN – Studio reference input and loop-through

For external synchronization, connect a black studio reference signal to the BNC labeled **REF IN**. The reference input must conform to SMPTE 170M/SMPTE 318M/ITU 624-4/BUT 470-6 for standard definition signals, and should match the format of the composite input signal..

- The loop is not available on the single rear panel
- The loop must be terminated if not used.

### COMP IN – analog composite video input and loop-through

Connect an analog composite video signal – NTSC, PAL, PAL-M and SECAM are supported.

- The loop is not available on the single rear panel

### SDI OUT – serial digital video outputs (3 for SRP, 5 for DRP)

The DEC-1003 provides SD SDI video outputs on BNC connectors, labeled **SDI OUT 1** through **3 (SRP)** or **SDI OUT 1** through **5 (DRP)**. The SDI video signal conforms to the SMPTE 292M and SMPTE 259M-C standard.



### 3 Operation

#### 3.1 Control options


The DEC-1003 can be controlled in three different ways:

- The local control panel and its push-buttons 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 DEC-1003, and is visible through the front access door of the DENSITÉ frame. This multi-color LED indicates the status of the DEC-1003 by color, and by flashing/steady illumination.

The chart shows how the various error conditions that can be flagged on the DEC-1003 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 3.5.15 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:

D	E	C	-	1	0	0	3								
S	I	L	E	N	C	E	C	H	1						

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. 7		✱		
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 DEC-1003 card edge (see Section 1.5) to assign the local control panel to operate the DEC-1003. 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.

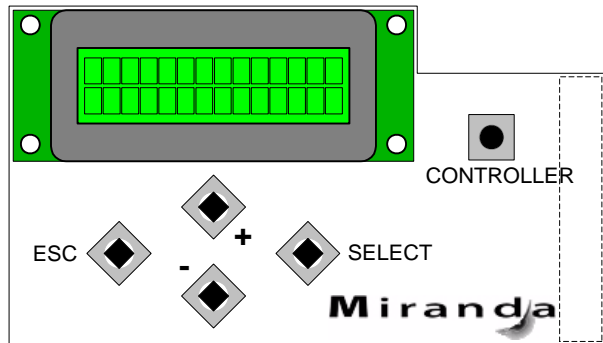


Figure 3.1 Densité Frame local control panel

- 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 DEC-1003 has operating parameters which may be adjusted locally at the controller card interface.

- Press the SELECT button on the DEC-1003 front card edge to assign the Densité frame's local control panel to the DEC-1003
- Use the keys on the local control panel to step through the displayed menu to configure and adjust the DEC-1003.

The complete menu structure is shown in the Annex to this document, beginning on page 34.

## 3.4 Remote Control Using the RCP-100

The DEC-1003 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 DEC-1003 (or any other supported card) so that the menu can be accessed.

## 3.5 Remote control using iControl

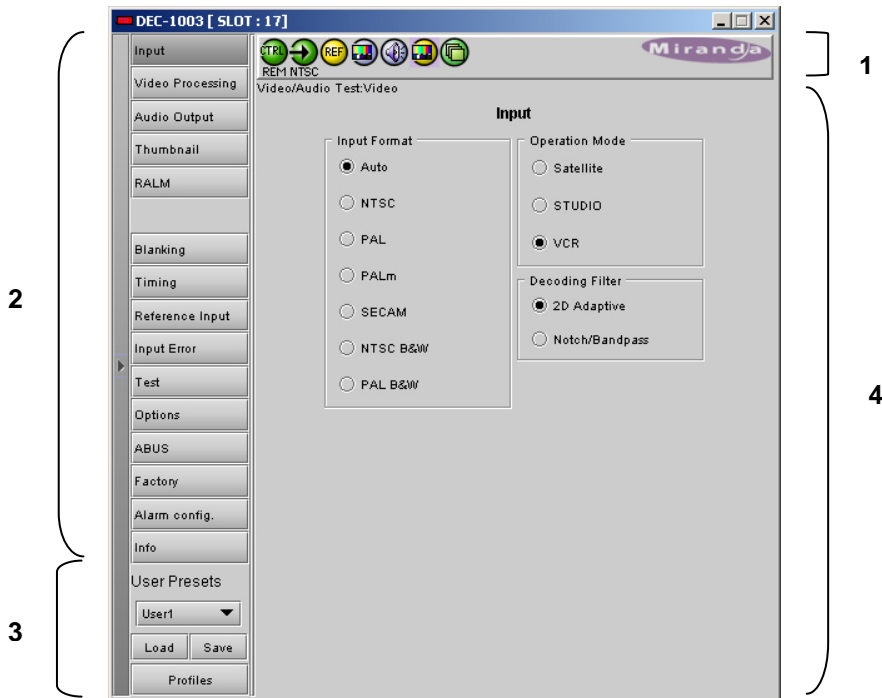
The operation of the DEC-1003 may be controlled using Miranda's iControl system.

- This manual describes the control panels associated with the DEC-1003 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 DEC-1003 icon to open the control panel.

### 3.5.1 The iControl graphic interface window

The basic window structure for the DEC-1003 is shown in figure 3.2. The window identification line gives the card type (*DEC-1003*) and the slot number where the card installed in its Densité frame.



**Figure 3.2** DEC-1003 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 5 6 7












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

Icon #1 – Manual Card Configuration	
 <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.
Icon #2 – Input status	
 <p>(green)</p>	Signal detected and valid. <ul style="list-style-type: none"> <li>Beneath the icon, the format will be indicated, and the specific format details will be listed if the cursor is moved over the icon.</li> </ul>
 <p>(red)</p>	Signal absent No rear Reference mismatch
Icon #3 – Reference	
 <p>(green)</p>	Reference signal detected and valid
 <p>(yellow)</p>	Input signal used as reference
 <p>(red)</p>	Reference absent
Icon #4 – Video alarms status	
 <p>(green)</p>	Video OK
 <p>(yellow)</p>	
 <p>(red)</p>	Error
 <p>(gray)</p>	All video disabled

<b>Icon #5 – Audio alarms status</b>	
 (green)	Audio OK
 (yellow)	Non-PCM audio detected on 1 or more channels
 (gray)	All audio disabled
<b>Icon #6 – Video/Audio Test</b>	
 (green)	Operation mode: process – normal processing of the input signal – test signals OFF
 (yellow)	Operation mode: TEST – color bar enabled (see Sect.3.5.11)
 (yellow)	Operation mode: TEST – audio test tones enabled (see Sect.3.5.11)
 (yellow)	Operation mode: TEST – color bar and audio test tones enabled (see Sect.3.5.11)
<b>Icon #7 – ABUS Multiple card configuration / presence</b>	
 (green)	OK – detected card configuration matches configuration set in the ABUS control panel
 (red)	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 all the parameter groups, which become highlighted when they are selected; the main panel (4) then displays the group's set of parameters. Each of the groups 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 DEC-1003's features. Types of controls that may be found are:

**Slider:**



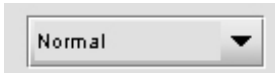
The current value is displayed beneath the center of the slider bar (e.g. 39 in the example shown). To change the value, move the slider by clicking and dragging it, or by clicking the arrow icon at either end.

**Slider with data box:**



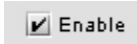
The current value is displayed in the data box at the right hand side (e.g. 50 in the example shown). To change the value, move the slider by clicking and dragging it, or by clicking the arrow or double-arrow icon at either end, or type a new value directly into the data box, and hit "enter" from your 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 Input

This group allows input selection, operation mode selection, and selection of the decoding filter. See figure 3.3.

**INPUT FORMAT:** *Auto, NTSC, PAL, PALm, SECAM, NTSC B&W, PAL B&W*: Select the input format using the radio buttons.

- When using *AUTO*, the DEC-1003 detects the type of input and automatically switches to that format by loading the decoder with the format's parameters.
- When working with monochrome input signals, set the format to *NTSC B&W* or *PAL B&W* to accept a black and white input.

**OPERATION MODE:** Select an option based on the nature of the input signal:

- *STUDIO* source type when using high quality sources
- *SATELLITE* for satellite sources
- *VCR* for unstable sources.

**DECODING FILTER:** Select the decoding filter according to the nature of the input composite signal:

- *2D Adaptive* for fast-moving images requiring optimum performance
- *Notch/Bandpass* for lower-quality sources

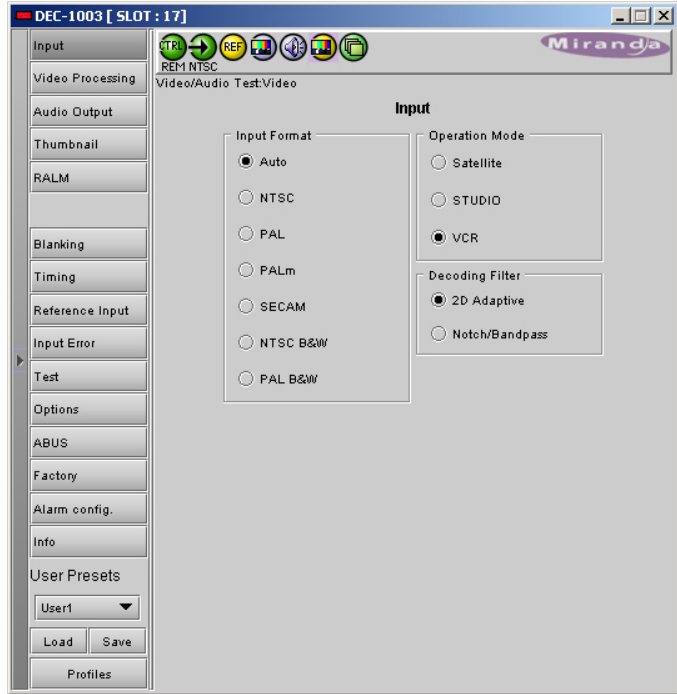


Figure 3.3 Input group

### 3.5.3 Video Processing

These controls allow the user to adjust some parameters of the video encoded in the output SDI signal.

**ALL GAIN:** *-800, -799 ..., 799, 800*: Sets luma and chroma gains to a specific value. When other gains are individually set, *ALL GAIN* reflects the average value of the combined gains for a given output format.

**LUMA GAIN:** *-800, -799 ..., 799, 800*: Sets luma gain to a specific value.

**CHROMA GAIN:** *-800, -799 ..., 799, 800*: Sets chroma gain to a specific value.

**HUE:** *-40, -39 ..., 40*: Sets hue to a specific value in degrees.

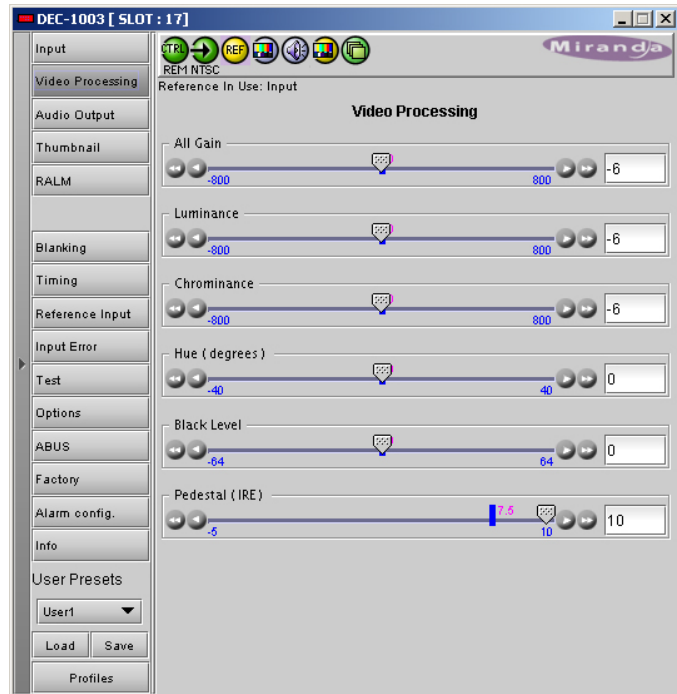


Figure 3.4 Video Processing group



**BLACK LEVEL:** -64, -63 ..., 63, 64: In NTSC mode, sets Black level to a specific value.

**PEDESTAL:** -5, -4.5 ..., 9.5, 10 (525) / -27, -26 ..., 106, 107 (625): sets a pedestal value in IRE units.

### 3.5.4 Audio Output

**Enabled only when an optional audio card is in use via ABUS**

When combined with up to two audio cards such as the UAP-1781 Universal Audio Processor, these parameters provide extended controls over audio embedding.

**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.



**Figure 3.5** Audio Output group – CH 1-2 tab

**Source A and Source B**

**ABUS Select:** A1, A2: selects the external audio card to be used for this channel (A1 or A2).

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

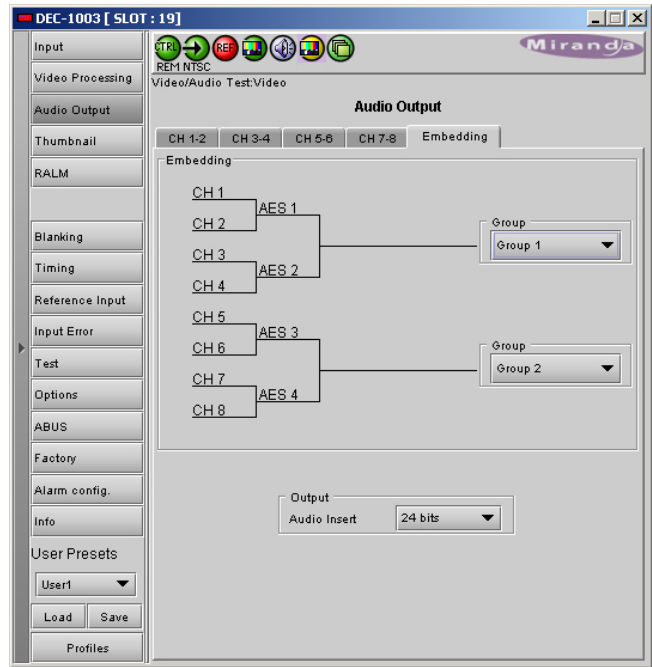
**Level (dB):** -96, -95 ..., -1, 0: sets an attenuation Level for the selected source.

**Note:** SOURCE A and SOURCE B must be made available through *Multiple Card Config* in the ABUS window (see page 15) before they can be used in this window.

**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.

*Output – Audio Insert:* use the pulldown to select whether the inserted audio will be 20 bit or 24 bit



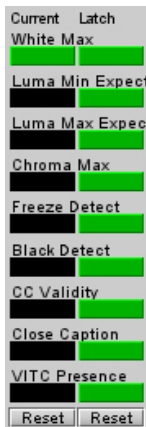
**Figure 3.6** Audio Output group – Embedding tab

**3.5.5 Thumbnail**

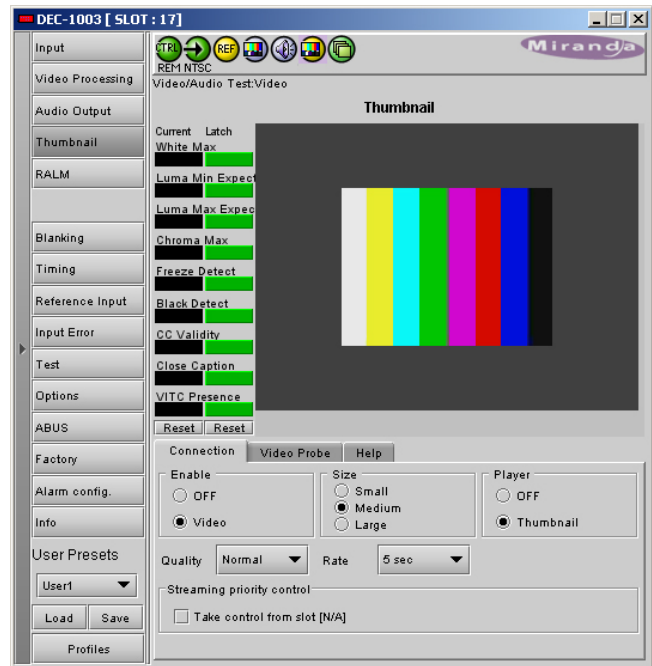
Thumbnails are used to monitor the video output signal of the DEC-1003. Streaming parameters are set using these controls.

**Status Display (optional with activation of the probing option)**

On the left side of the panel is a display of the current status of the parameters measured by the probe. Two separate status columns are shown:



*Current status* shows the status now. *Latched status* shows the status as affected by latching. When an error is detected, it is flagged in both columns by turning red. When the error disappears, the current status returns to green. However, the Latched status shows the error until it is manually cleared using the Reset Latched button beneath the status monitors. You can also reset the Current status, to confirm the presence of displayed errors. Only those parameters that have been enabled are reported in the current status list; the others show a gray status box and their names are grayed in the list.



**Figure 3.7** Thumbnail group – Connection tab

*CONNECTION sub-tab:*

**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 DEC-1003.

- 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 (e.g. high quality).

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

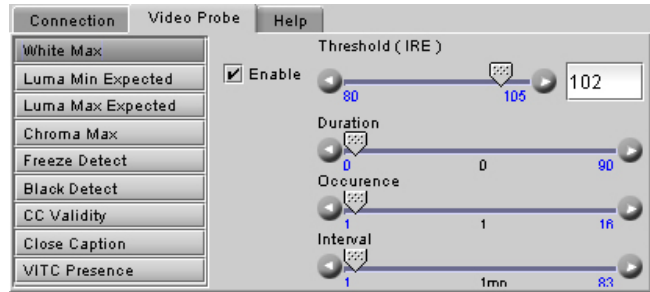
- The choices are Fast, 1 sec, 2 sec ..., 10 sec.

**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 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.

*VIDEO PROBE tab:*

**The Video Probe tab is only available if the probing options have been enabled via the activation code in the options tab (p. 24).**

This control panel allows the user to establish conditions under which errors will be flagged and reported by the video probe feature. The top error parameter in the list is selected when you open the view, indicated by the darker color of its name box. To select any other parameter, click on it.



**Figure 3.8** Thumbnail group – Video Probe tab

To the right of the parameter list appear all the controls necessary to configure the selected parameter.

The parameter configuration panel usually includes, from top to bottom:

**Enable:** a checkbox to enable the alarm associated with this parameter

**Threshold:** a threshold value for detection of an error. The error will be detected when the measured parameter falls above (or below, depending on the nature of the parameter) the indicated threshold value. The values are those of the equivalent analog signal. In most cases this is a slider with data entry box.

Below the **THRESHOLD** slider are found slider bars allowing the configuration of the conditions under which a detected error is flagged and reported. These conditions are set independently for each error type:

- **ERROR DURATION:** the length of time during which a parameter is allowed to be out-of-tolerance without being identified as an error. This is useful for situations such as a hard switch or patch of a video signal where there is a discontinuity in the signal which the user has deliberately caused and does not need to be flagged as an error. If a parameter is continuously out of tolerance for the specified duration, then an error is considered to have been detected. However, this error will not be

flagged (causing the status LED to change color and an error message to be sent out on the frame's interface) until the OCCURRENCE / DETECTION WINDOW conditions have been satisfied.  
 (Range: 0 to 90 seconds)

- **OCCURRENCE:** the number of times that a detected error is allowed to occur in a specified DETECTION WINDOW before an error flag is set, and the error is reported (status LED changes color, and message sent on the interface)  
 (Range: 1 to 16)
- **INTERVAL:** the time duration during which errors are counted to determine if the error flag should be set. This is a moving window, e.g. the previous 2 minutes, and only errors falling within that window are counted.  
 (Range: 1 min to 24 hours)

In most cases, all three conditions are defined:

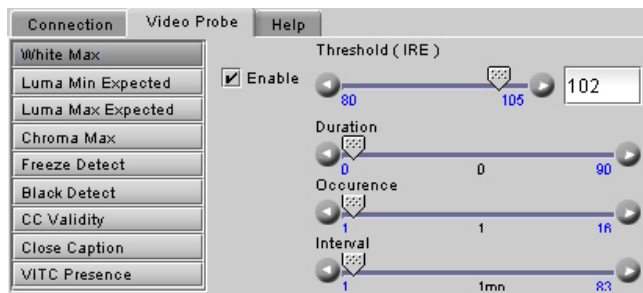
In some cases, a different set of controls is available.

The following chart shows the controls for each error type..

**White Max:** Detects whether the maximum luminance level of the input video signal is too high by verifying if it does not rise above a specified threshold.

**ENABLE:** check to enable this test.

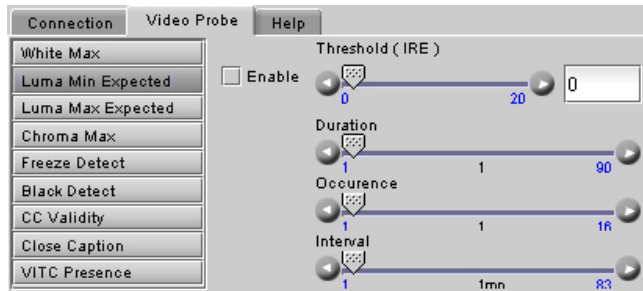
**THRESHOLD:** set the level (in IRE or mV) above which this condition will be flagged



**Luma Min expected:** Detects whether the video signal contains some nearly-black information by verifying if the Luma component of the video signal includes information below a specified threshold.

**ENABLE:** check to enable this test.

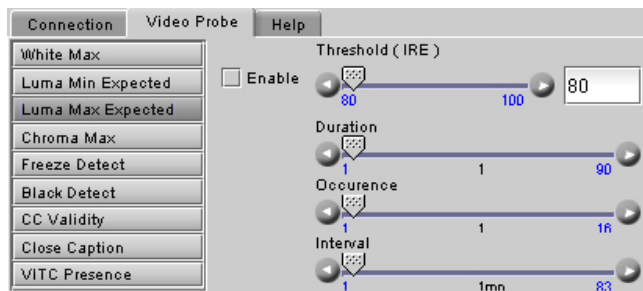
**THRESHOLD** set the level (in IRE or mV) below which this condition will be flagged



**Luma Max expected:** Detects whether the video signal contains some nearly-white information by verifying if the Luma component of the video signal includes information above a specified threshold.

**ENABLE:** check to enable this test.

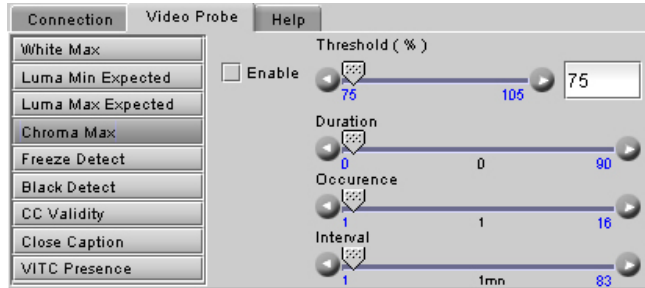
**THRESHOLD:** set the level (in IRE or mV) above which this condition will be flagged



**Chroma Max:** Detects whether the amplitude of the chroma information in the video signal is too high by verifying if the peak chrominance of the input video signal is less than a specified threshold.

*ENABLE:* check to enable this test.

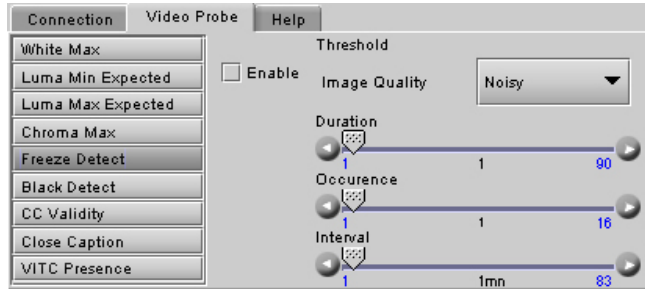
*THRESHOLD:* set the level (in %) above which this condition will be flagged



**Freeze Detection:** Detects whether a sequence of video frames are identical by verifying if it has been detected on the input signal, taking account of noise.

*ENABLE:* check to enable this test.

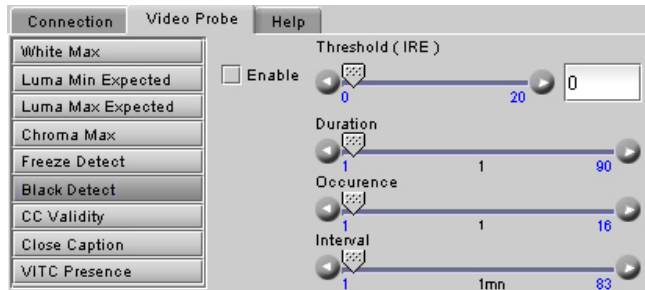
*VALUE:* select an image quality to be used as a reference in determining whether the current image is frozen. Choices are Noisy, Normal and HiQ.



**Black Detection:** Detects whether a sequence of video frames contains only black on the input signal.

*ENABLE:* check to enable this test.

*THRESHOLD:* set the level (in IRE or mV) below which this condition will be flagged

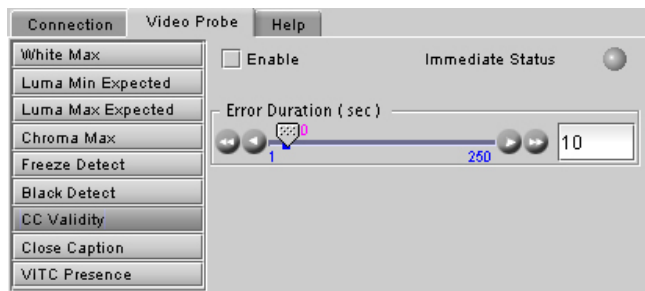


**CC Validity:** Detects the validity of Closed Captioning (CC) information in the VBI of the input video signal.

*ENABLE:* check to enable this test

*IMMEDIATE PRESENCE STATUS:* shows the current status of CC; green for present, and red for absent.

*ALARM CONFIG:* use the slider to set the Error Duration; the period during which CC must be continuously absent before the CC Presence error will be flagged



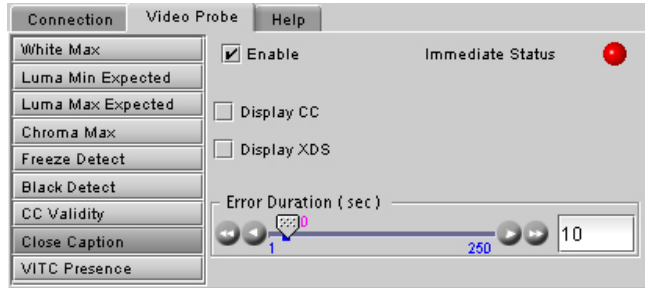
**Close Caption:** Detects the presence of Closed Captioning (CC) information in the VBI of the input video signal.

*ENABLE:* check to enable this test.

*IMMEDIATE PRESENCE STATUS:* shows the current status of CC – green for present, and red for absent.

*DISPLAY CC, DISPLAY XDS:* Enables the parsing and the display of the Closed Captioning and the XDS.

*ALARM CONFIG:* use the slider to set the Error Duration; the period during which CC must be continuously absent before the CC Presence error will be flagged

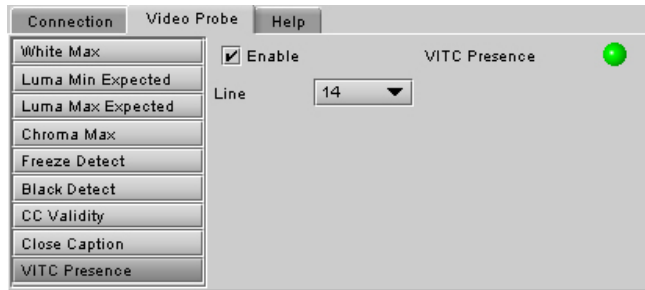


**VITC Presence:** Detects the presence of the input Time Code from a predetermined input line.

*ENABLE DETECTION:* check to enable this test

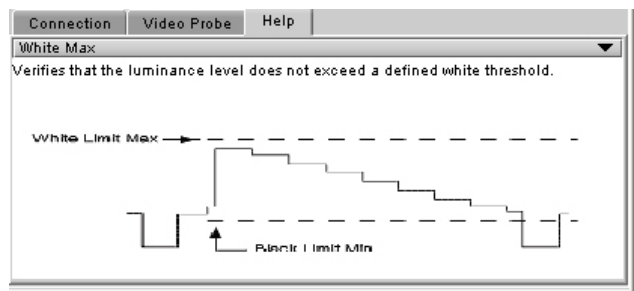
*IMMEDIATE PRESENCE STATUS:* show the current status of VITC – green for present, and red for absent.

*LINE:* Determines the input line monitored for the Time Code detection.



*HELP tab:*

Gives additional information on each of the parameters measured by the Video Probe. Click on the pull down box at the top of the panel to select the desired parameter.



**Figure 3.9** Thumbnail group – Help tab

### 3.5.6 RALM

Click on the RALM button at the left side of the DEC-1003 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.

#### Status reporting

The Status display shows the status of the functions monitored by the Audio Probing function of the DEC-1003 (Optional).

	Current				Latch			
Silence	1	2	3	4	1	2	3	4
Min Level	1	2	3	4	1	2	3	4
Max Level	1	2	3	4	1	2	3	4
Overload	1	2	3	4	1	2	3	4
	5	6	7	8	5	6	7	8

Current status shows the status now.

Latched status shows the status as affected by latching. When an error is detected on a channel, it's flagged in both sections by turning red. When the error disappears, the current status returns to green but the latched status stays marked as an error. Both statuses can be manually cleared by using the reset button. Only the parameters that have been enabled are reported in the current status list; the others are grayed out. Each alarm node monitors a channel (from 1 to 8).

#### 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 3.10 RALM group – RALM Connections tab

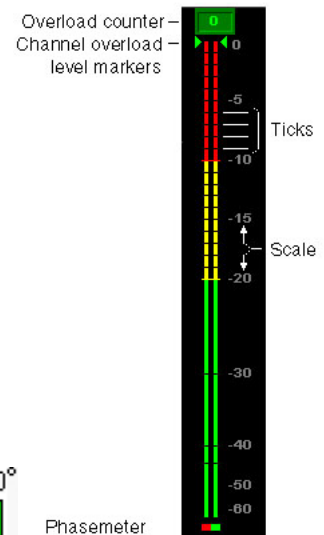
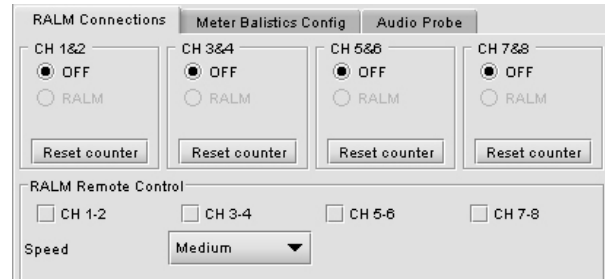


Figure 3.11 RALM audio level meter

**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. Note: you need to check the desired channels in the *Audio Probe Remote Control* sub-section below in order to enable the RALM button.

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



**Figure 3.12 RALM Connections tab**

**METER BALLISTICS CONFIG tab:**

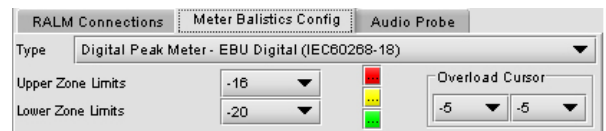
**TYPE** pull-down box: this pull-down offers a list of the available meter types, whose ballistics are identified by the standard to which they conform.

**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).



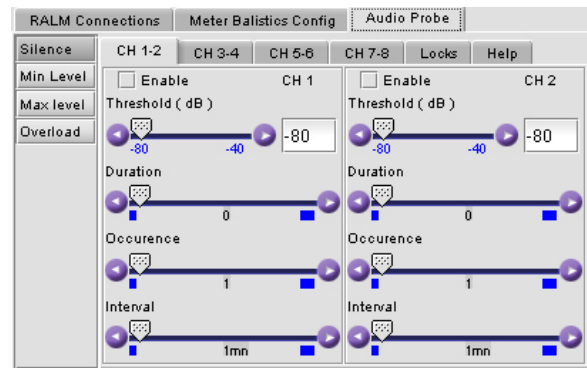
**Figure 3.13 Meter Ballistics Config tab**

**AUDIO PROBE tab:**

This control panel allows the user to establish conditions under which errors will be flagged and reported by the Audio probe feature. The top error parameter in the list is selected when you open the view, indicated by the darker color of its name box. To select any other parameter, click on it.

The error parameter list includes:

- SILENCE
- MIN. LEVEL
- MAX. LEVEL
- OVERLOAD



**Figure 3.14 Audio Probe tab**

To the right of the parameter list appear all the controls necessary to configure the selected parameter.

- Sub-tabs give access to the audio channels in pairs (1&2, 3&4, 5&6, 7&8)
- The values are independently configurable for each channel



The controls for all of these error types are identical (see figure 3.14), except for the threshold range available. Each set of controls contains these elements:

**Enable:** a checkbox to enable the alarm associated with this parameter

**Threshold:** a threshold value for detection of an error. The error will be detected when the measured parameter falls above (or below, depending on the nature of the parameter) the indicated threshold value. In most cases this is a slider with data entry box.

Below the *THRESHOLD* slider are found controls for configuring the conditions under which a detected error is flagged and reported. These conditions are set independently for each error type::

- **ERROR DURATION:** the length of time during which a parameter is allowed to be out-of-tolerance without being identified as an error. This is useful for situations such as a hard switch or patch of a video signal where there is a discontinuity in the signal which the user has deliberately caused and does not need to be flagged as an error. If a parameter is continuously out of tolerance for the specified duration, then an error is considered to have been detected. However, this error will not be flagged (causing the status LED to change color and an error message to be sent out on the frame's interface) until the OCCURRENCE / DETECTION WINDOW conditions have been satisfied.  
(Range: 0 to 90 seconds)
- **OCCURRENCE:** the number of times that a detected error is allowed to occur in a specified DETECTION WINDOW before an error flag is set, and the error is reported (status LED changes color, and message sent on the interface)  
(Range: 1 to 16)
- **INTERVAL:** the time duration during which errors are counted to determine if the error flag should be set. This is a moving window, e.g. the previous 2 minutes, and only errors falling within that window are counted.  
(Range: 1 min to 24 hours)

**LOCKS tab:** allows the user to lock the alarm settings for pairs of audio channels, e.g. 1&2, 3&4.

**HELP tab:** gives the user basic information on the different audio parameters.

- Use the pulldown to select the error type

### 3.5.7 Blanking

This panel provides control over VBI data handling.

**VBI: PROCESS, PASS, BLANK, LINE BY LINE:** select whether the overall VBI data field will be processed, will pass or be blanked. If *Line by Line* is selected, use the right-side panel to set each line individually.



Figure 3.15 Blanking group

**LINE BY LINE:** Available when Line by Line is checked in the previous section. Radio buttons allow the selection of conditions for each line of the VBI data field.

**CC (525) / WSS (625):** if CC or WSS data are present in the signal, you may check this box to allow this data to pass-through unaffected.

### 3.5.8 Timing

These controls provide access to timing adjustments which affect the signal outputs. There are two slider controls, each with a data reporting box which shows the current value, and into which values can be typed directly. If the Frame Sync option is not enabled, only the Horizontal delay may be accessed.

**VERTICAL (Lines):** 0, 1 ..., 523, 524 (for 525 operation), 623, 624 (for 625 operation): sets the number of lines for vertical delay. This control is available when the *Frame Sync* option has been activated (see *Options* tab).

**HORIZONTAL ( $\mu$ s):** 0, 0.037, 0.064 ..., 63.5 (for 525 operation) ..., 64 (for 625 operation): sets the horizontal delay in  $\mu$ s.

**FRAME DELAY** Pulldown box: sets delay by frame steps: 0, 1 or 2 frames. This control is available when the *Frame Sync* option has been activated (see *Options* tab p.24).

### 3.5.9 Reference Input

These controls allow selection of the reference signal.

**REFERENCE SOURCE:** Select between *AUTO*, *EXTERNAL* (use the REF input signal connected to the rear panel), *URS* (see below) or *INPUT* (use the input video signal as reference) as the reference source. *AUTO* mode searches for available signal in this order: REF input, URS and finally video input signal.

**URS<sup>1</sup> FORMAT:** Select between OFF, 525 or 625 for the Universal Reference Signal format.

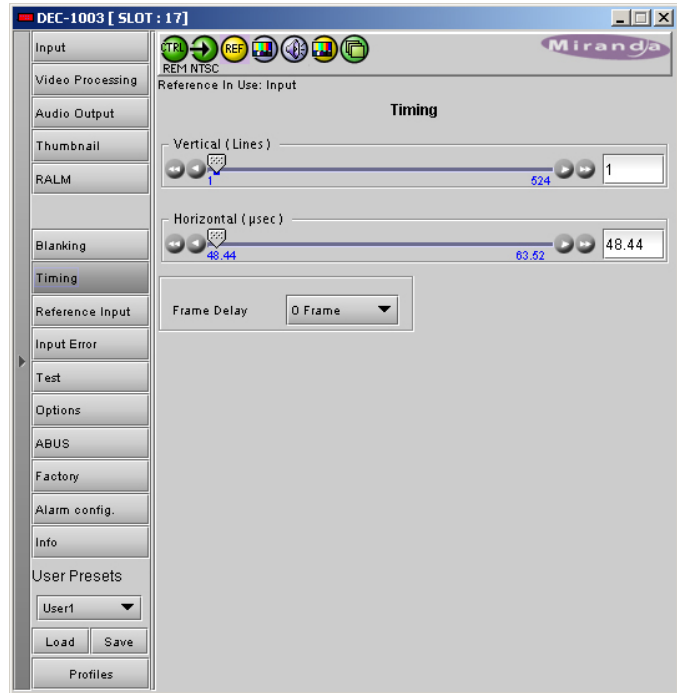


Figure 3.16 Timing group

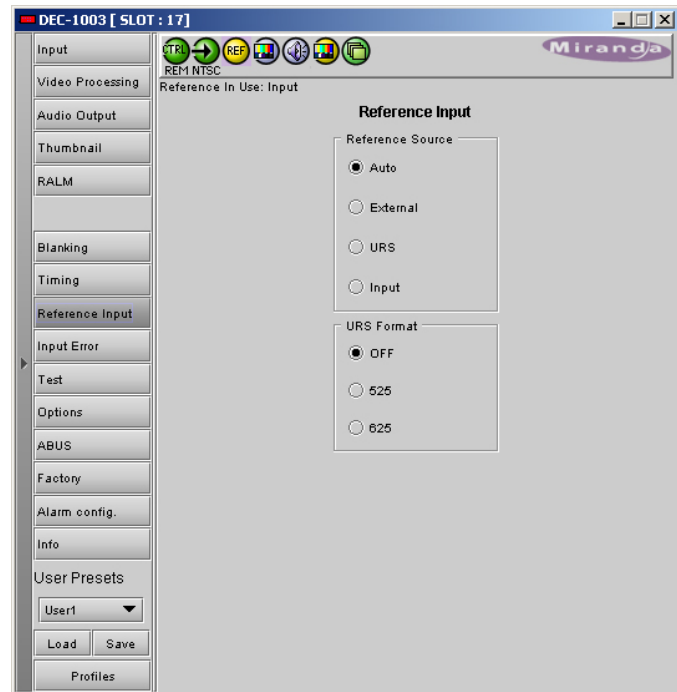


Figure 3.17 Reference group

<sup>1</sup> The URS is a single signal that distributes a frequency reference and frame alignment references for all video and audio signals to all cards in a Densité frame.

### 3.5.10 Input Error

These controls set card behavior when an input error is detected:

- KILL – kill the output
- BLACK – generate a video black at the output
- FREEZE – freeze the last video frame before the error was detected
- BYPASS – pass the input through as received.



Figure 3.18 Input Error group

### 3.5.11 Test

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 box for the desired channel pair.

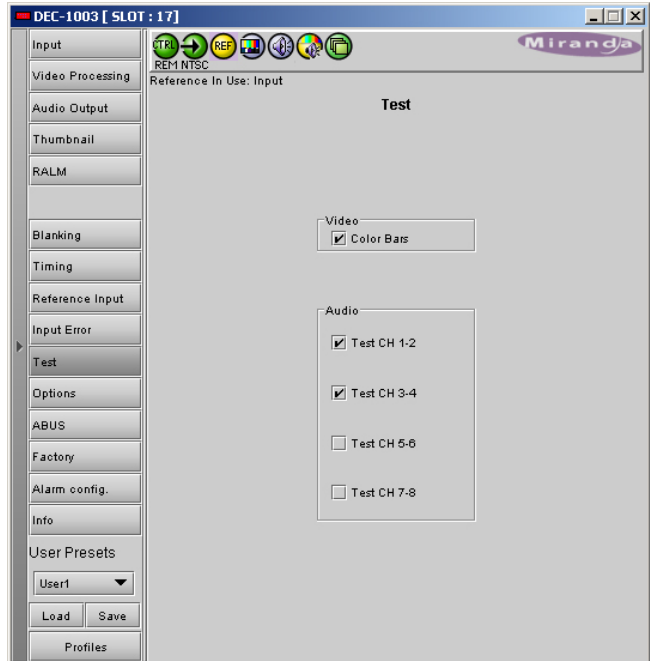


Figure 3.19 Test group

### 3.5.12 Options

Three options are available for the DEC-1003:

- Frame Sync option (DEC-1003-OPT-FS)
- Line Scope over IP option (DEC-1003-OPT-LS)
- Probing option (DEC-1003-OPT-PR).

**FRAME SYNC Option:** activates the Frame Sync functions on the DEC-1003.

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 enable additional timing controls (see section 3.5.8 on page 22).



Figure 3.20 Options group – Frame Sync

**IP SCOPE Option:** adds Waveform Monitor and Vectorscope over IP functions to the DEC-1003.

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.

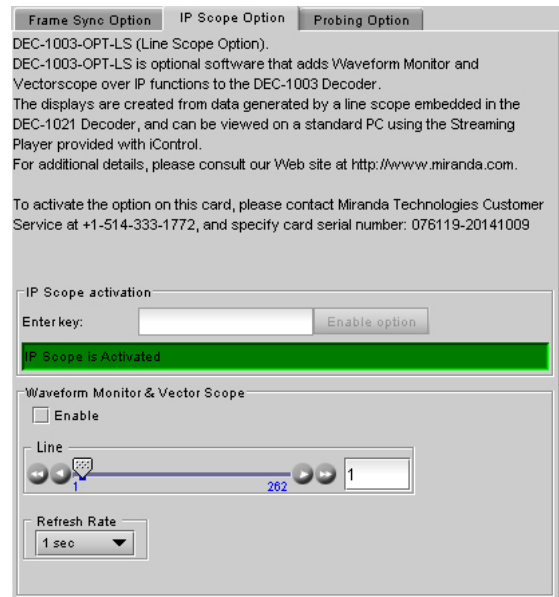


Figure 3.21 Options group – IP Scope

*PROBING Option:* activates the audio and video probing functions of the DEC-1003.

- Video probing: see Section 3.5.5 on page 14
- Audio probing: see Section 3.5.6 on page 19

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 enable probing controls.

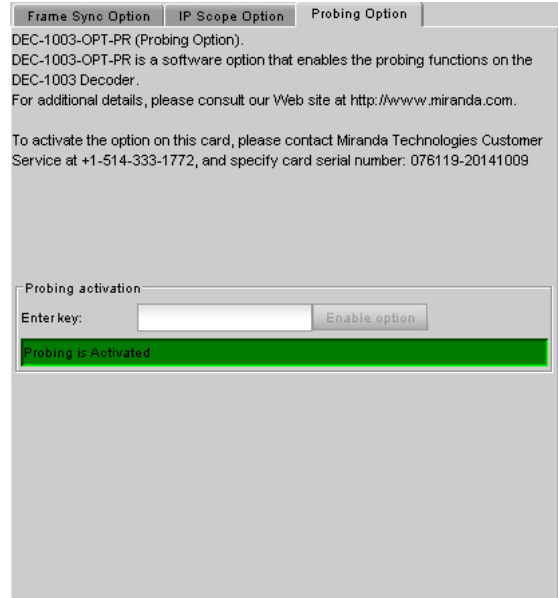


Figure 3.22 Options group - Probing

### 3.5.13 ABUS

When optional audio cards such as the UAP-1781 are used to provide audio signals for embedding in the DEC-1003's SDI output, the ABUS audio bus links the audio cards and the DEC-1003. The ABUS tab is used to instruct the DEC-1003 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 audio will be embedded
- V/ A1 – audio from the external A1 card is available for embedding in the DEC-1003 output
- Video / A1 / A2 – audio from both external audio cards A1 and A2 is available for embedding in the DEC-1003 output



Figure 3.23 ABUS group

### 3.5.14 Factory

The Factory tab contains a LOAD FACTORY button and an Auto-Calibration mode button.

*Load Factory:* Clicking this button will reinstate all default parameter values. The DEC-1003 Menu on pages 4-6 shows the default value underlined for all parameters.

*Auto Calibration (Color Bar):* If the video input is a color bar signal, the DEC-1003 can perform an automatic calibration of its decoder function.

- Connect a standard color bar signal to the DEC-1003 video input
- Click *Start* to run the auto-calibration procedure



Figure 3.24 Factory group

### 3.5.15 Alarm Configuration

This panel allows the alarm reporting of the DEC-1003 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 DEC-1003 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

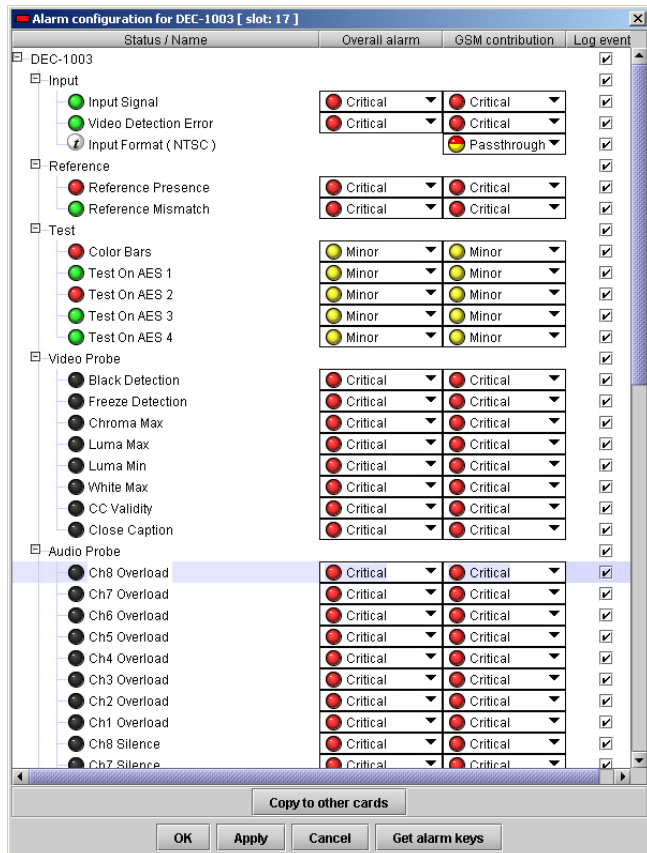


Figure 3.25 Alarm Configuration panel

• **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 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 DEC-1003 cards.

- The window shows other DEC-1003 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

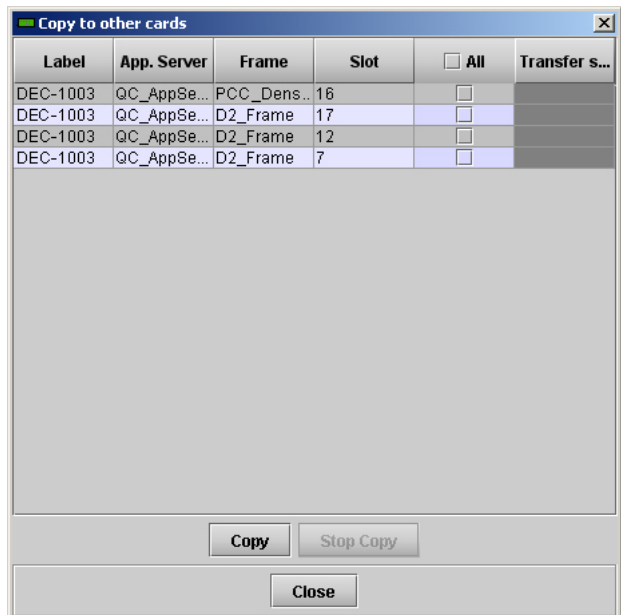


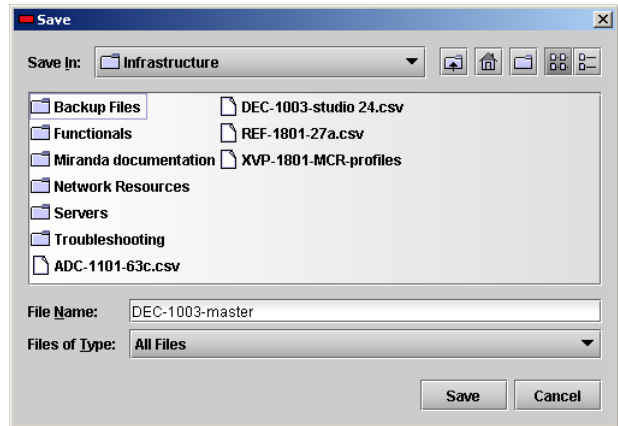
Figure 3.26 Copy to other cards

- Note that when you do a Copy Profile for this card (see Sect. 3.5.18), the alarm configuration is copied along with all the other settings.

**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 3.27** 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.

**3.5.16 The Info group**

The top two lines in this panel identify the model of this DEC-1003, and the rear panel that is currently installed.

When the DEC-1003 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 DEC-1003 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 DEC-1003
- Comments:** type any desired text



**Figure 3.28** Info group



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

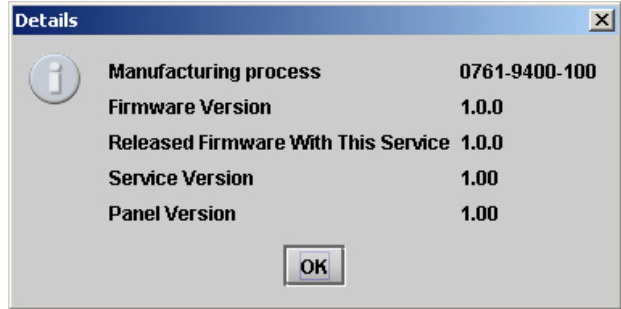


Figure 3.29 Details window

- Advanced...: Shows the Miranda LongID for this card. The Miranda LongID is the address of this DEC-1003 in the iControl network.

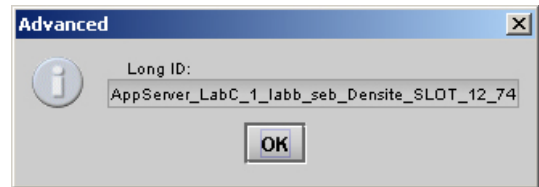


Figure 3.30 Advanced window

- Remote System Administration – opens the Joining Locators data box, which lists remote lookup services to which this DEC-1003 is registered.

**Add:** Force the iControl service for this DEC-1003 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

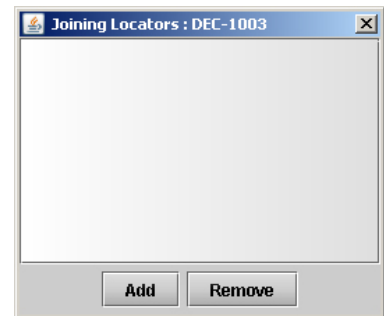


Figure 3.31 Joining Locators window

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

### 3.5.17 User Presets

The DEC-1003 has 5 memory registers which can hold user-defined parameter settings.

**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.

**To recall a saved configuration:**

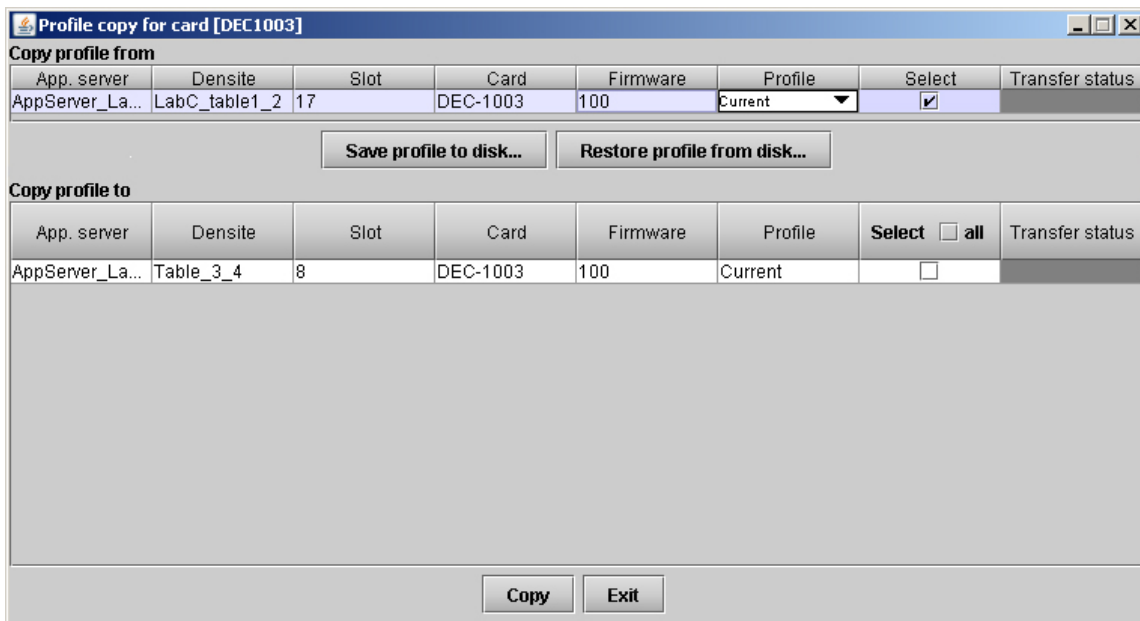
- Select the register with the saved configuration using the pulldown box
- Click *Load* to configure the DEC-1003 with the recalled data



### 3.5.18 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 DEC-1003 card.

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



**Figure 3.32** Profile Copy for Card window

**Copy profile from section**

This line shows this DEC-1003 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 as 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.

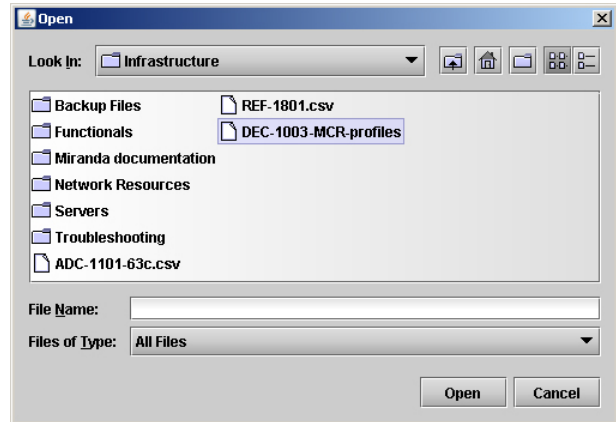
*Hint - It is a good idea to create a folder for these files, because they are not explicitly identified as DEC-1003 profiles, and will be difficult to find and identify if not clearly named and conveniently located.*

- 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

**Restore profile from disk...**

Click this button to open an *Open* dialog box within which you can locate and select a valid DEC-1003 profile file.

- Click Open to read the contents of the file and to reconfigure this DEC-1003'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

**Copy profile to section**

This line shows other DEC-1003 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.

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

The *Select* column includes a checkbox to identify which DEC-1003 cards you wish to copy profiles into from the current card.

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

## GUIDE TO INSTALLATION AND OPERATION

Click *Copy* to copy the selected profiles from this card into the selected other DEC-1003 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

### **COMPOSITE IN with EQUALIZATION**

SIGNAL:	NTSC (525/60) SMPTE 170M PAL (625/50) ITU-R BT470-6 PAL-M (525/60) ITU-R BT470-6 SECAM ITU-R BT470-6 with passive loop-through.
RETURN LOSS:	> 35 dB up to 5.75 MHz
COUPLING:	DC
LEVEL:	2Vpp max
IMPEDANCE:	75 Ohms bridging

### **REFERENCE IN**

SIGNAL:	NTSC SMPTE 170M / PAL ITU-R BT470-6 reference black signal with passive loop-through
RETURN LOSS:	> 35 dB up to 5.75 MHz

### **SDI OUT**

SIGNAL (5):	SDI SMPTE 259M-C (270 Mbps) + SMPTE 272M-C
RETURN LOSS:	> 15 dB up to 270 MHz
JITTER:	< 0.2 UI (0.74ns) pp (WIDEBAND)

### **VIDEO PROCESSING PERFORMANCE**

QUANTIZATION:	10 Bits
SAMPLING:	8fsc (2X oversampling)
FREQ. RESPONSE:	± 0.1 dB up to 5.5 MHz
NOISE (UNWEIGHTED):	< -58 dB up to 5,75MHz
PROCESSING DELAY:	110 µs (min)
2T K FACTOR:	< 1%
DIFFERENTIAL GAIN:	< 1%
DIFFERENTIAL PHASE:	< 1 degree
LNL:	< 1%

### **MISCELLANEOUS**

TEST GENERATOR:	75% color bars with 100% white bar
STORAGE TEMP.:	-40 to 85 °C
OPERATING ENV.:	0 to 40 °C
POWER:	5W

### **AUDIO EMBEDDING**

DIGITAL STREAM:	8 audio signals embedded Audio selectable (On/Off) 24 bits, 48 kHz, Synchronous
EMBEDDING:	As per SMPTE-272M-C

## ANNEX – DEC-1003 User Interface

STATUS	NO SIGNAL / NTSC / PAL / PAL-M / SECAM, NTSC B&W, PAL B&W NO EXTERNAL REF / EXTERNAL REF 525 / EXTERNAL REF 625 NO URS / URS 525 / URS 625 REF MISMATCH INPUT FORMAT ERR NO REAR / SINGLE REAR / DOUBLE REAR OUTPUT : 525 / 625 TEST ON A1 MISSING A2 MISSING CARD SYSTEM 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]
INPUT	FORMAT	[ <u>AUTO</u> , NTSC, PAL, PAL-M, SECAM, NTSC B&W, PAL B&W]
	OPERATION MODE	[SATELLITE, <u>STUDIO</u> , VCR]
	DECODING FILTER	[ <u>2D ADAPTIVE</u> , NOTCH / BANDPASS]
	CC	[ <u>OFF</u> , ON] (525)
	WSS	[ <u>OFF</u> , ON] (625)
AUTO CALIBRATE	START	O.K / NO GOOD
VIDEO PROC	ALL GAIN	[-800, -799, ... <u>0</u> ...799, 800]
	LUMA GAIN	[-800, -799, ... <u>0</u> ...799, 800]
	CHOMA GAIN	[-800, -799, ... <u>0</u> ...799, 800]
	HUE	[-40, -39,... <u>0</u> , .... 39, 40]
	BLACK LEVEL	[-64, -63, .. <u>0</u> , ..., 63, 64]
	PEDESTAL	[-5, -4.5, ... <u>0</u> ...9.5, 10] (IRE) (NTSC / PAL-M)
		[-27, -106, ... <u>0</u> ...106, 107] (PAL / SECAM)

(continued)

*GUIDE TO INSTALLATION AND OPERATION*

AUDIO	EMBEDDING	CHANNELS 1234 TO	[OFF, <u>GRP 1</u> , GRP 2, GRP 3, GRP 4]	
		CHANNELS 5678 TO	[OFF, GRP 1, <u>GRP 2</u> , GRP 3, GRP 4]	
* Available with Audio Card connected				
OUTPUT MIXERS	CHANNEL 1	OPERATION MODE	[OFF, A, SUM(A+B), MIX]	
		CHANNEL 2	OPERATION MODE	[OFF, <u>A</u> , SUM(A+B), MIX]
		ABUS	[A1, A2]	
		CHANNEL SELECT	[1, 2, 3, .... 16]	
		LEVEL	[-96, -95, .... 0] (dB)	
		MUTE	[OFF / ON]	
	CHANNEL 3	OPERATION MODE	[OFF, A, <u>SUM(A+B)</u> , MIX]	
		SOURCE A	ABUS	[A1, A2]
			CHANNEL SELECT	[1, 2, 3, .... 16]
		SOURCE B	ABUS	[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), <u>MIX</u> ]	
		SOURCE A	ABUS	[A1, A2]
			CHANNEL SELECT	[1, 2, 3, .... 16]
		LEVEL	[-96, -95, .... 0] (dB)	
SOURCE B		ABUS	[A1, A2]	
		CHANNEL SELECT	[1, 2, 3, .... 16]	
		LEVEL	[-96, -95, .... 0] (dB)	
MUTE		[OFF / ON]		
BLANKING	VBI (10-20)	[ <u>PASS</u> , BLANK, PROC, DECOD, USER]	(DEC-1003 525)	
	VBI (6-22)	[ <u>PASS</u> , BLANK, PROC, DECOD, USER]	(DEC-1003 625)	
INPUT LOSS	[ <u>KILL</u> , BLACK, FREEZE FIELD, PASS]			* Available with Frame Sync Option
TIMING	FRAME DELAY	[0, 1, 2]		* Available with Frame Sync Option
	VERTICAL	[0, 1, 2, .... 523, 524] (lines)	(525)	* Available with Frame Sync Option
		[0, 1, 2, .... 623, 624] (lines)	(625)	* Available with Frame Sync Option
	HORIZONTAL	[0, 0.037, 0.064, .... 63,5] (us)	(525)	
		[0, 0.037, 0.064, .... 64] (us)	(625)	

(continued)

*GUIDE TO INSTALLATION AND OPERATION*

REFERENCE	SOURCE	[ <u>AUTO</u> , EXTERNAL, URS, INPUT]	* Available with Frame Sync Option
	URS FORMAT	[ <u>OFF</u> , 525, 625]	* Available with Frame Sync Option
CARD SYSTEM	[ <u>NONE</u> , A1, A1 + A2]		
TEST	VIDEO	[ <u>OFF</u> / ON]	
	AUDIO CH 1&2	[ <u>OFF</u> / ON]	* Available with Audio Card connected
	AUDIO CH 3&4	[ <u>OFF</u> / ON]	* Available with Audio Card connected
	AUDIO CH 5&6	[ <u>OFF</u> / ON]	* Available with Audio Card connected
	AUDIO CH 7&8	[ <u>OFF</u> / ON]	* Available with Audio Card connected
CONFIG ALARMS	NO SIGNAL	ALARM LEVEL [GREEN, YELLOW, <u>RED</u> , FLASH RED] ALARM REPORT [ <u>NONE</u> , GPI]	
	REF MISMATCH	ALARM LEVEL [GREEN, YELLOW, <u>RED</u> , FLASH RED] ALARM REPORT [ <u>NONE</u> , GPI]	
	NO REF	ALARM LEVEL [GREEN, YELLOW, <u>RED</u> , FLASH RED] ALARM REPORT [ <u>NONE</u> , GPI]	
	INPUT FORMAT ERR	ALARM LEVEL [GREEN, YELLOW, <u>RED</u> , FLASH RED] ALARM REPORT [ <u>NONE</u> , GPI]	
	TEST	ALARM LEVEL [GREEN, <u>YELLOW</u> , RED, FLASH RED] ALARM REPORT [ <u>NONE</u> , GPI]	
	CARD SYSTEM	ALARM LEVEL [GREEN, YELLOW, <u>RED</u> , FLASH RED] ALARM REPORT [ <u>NONE</u> , GPI]	
VERSION	DEC-1003: xxx		
OPTIONS	LINE SCOPE ON/OFF	Key: xx.xx.xx.xx	
	FRAME SYNC ON/OFF	Key: xx.xx.xx.xx	
	VIDEO PROBING ON/OFF	Key: xx.xx.xx.xx	
FACTORY DEFAULT	[RESTORE]		