LYNXTechnik **AG**®

Broadcast Television Equipment

Reference Manual

P DM 5280

SD / HD / 3 GBit/s Multi-format digital Audio
Embedder / Deembedder

Revision: 1.2
September 2013

This Manual Supports Device Revisions:	
P DM 5280 Firmware Revision	564
Control System GUI Release	6.4.0

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Contents

Warranty

LYNX Technik AG warrants that the product will be free from defects in materials and workmanship for a period of three (3) years from the date of shipment. If this product proves defective during the warranty period, LYNX Technik AG at its option will either repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product.

In order to obtain service under this warranty, customer must notify LYNX Technik of the defect before expiration of the warranty period and make suitable arrangements for the performance of service. Customer shall be responsible for packaging and shipping the defective product to the service center designated by LYNX Technik, with shipping charges prepaid. LYNX Technik shall pay for the return of the product to the customer if the shipment is within the country which the LYNX Technik service center is located. Customer shall be responsible for payment of all shipping charges, duties, taxes and any other charges for products returned to any other locations.

This warranty shall not apply to any defect, failure, or damage caused by improper use or improper or inadequate maintenance and care. LYNX Technik shall not be obligated to furnish service under this warranty a) to repair damage resulting from attempts by personnel other than LYNX Technik representatives to install, repair or service the product; b) to repair damage resulting from improper use or connection to incompatible equipment; c) to repair any damage or malfunction caused by the use of non LYNX Technik supplies; or d) to service a product which has been modified or integrated with other products when the effect of such modification or integration increases the time or difficulty servicing the product.

THIS WARRANTY IS GIVEN BY LYNX TECHNIK WITH RESPECT TO THIS PRODUCT IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED. LYNX TECHNIK AND ITS VENDORS DISCLAIM ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. LYNX TECHNIK`S RESPONISIBILITY TO REPAIR AND REPLACE DEFECTIVE PRODUCTS IS THE SOLE AND EXCLUSIVE REMEDY PROVIDED TO THE CUSTOMER FOR BREACH OF THIS WARRANTY. LYNX TECHNIK AND ITS VENDORS WILL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTIAL, OR CONSEQUENTIAL DAMAGES IRRESPECTIVE OF WHETHER LYNX TECHNIK OR THE VENDOR HAS ADVANCE NOTICE OF THE POSSIBILITY OF SUCH DAMAGES.

Regulatory information

Europe

Declaration of Conformity

We   LYNX Technik AG
Brunnenweg 3
D-64331 Weiterstadt
Germany
Declare under our sole responsibility that the product

      TYPE: **P DM 5280 D**; **P DM 5280 U**

To which this declaration relates is in conformity with the following standards (environments E1-E3):
    EN 55103-1 /1996
    EN 55103-2 /1996
    EN 60950-1 /2006
Following the provisions of 89/336/EEC and 73/23/EEC directives.

        Winfried Deckelmann

Weiterstadt, July 2013

  Place and date of issue   *Legal Signature*

USA

FCC 47 Part 15

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

Getting Started

Most CardModules are installed into the rack frames and system tested in the factory. If this is an upgrade part or service exchange item then the module is supplied in a padded cardboard carton which includes the CardModule, rear connection plate and mounting screws.

Packaging

The shipping carton and packaging materials provide protection for the module during transit. Please retain the shipping cartons in case subsequent shipping of the product becomes necessary. Do not remove the module from its protective static bag unless observing adequate ESD precautions. Please see below.

ESD Warning

This product is static sensitive. Please use caution and use preventative measures to prevent static discharge or damage could result to module.

Preventing ESD Damage

Electrostatic discharge (ESD) damage occurs when electronic assemblies or the components are improperly handled and can result in complete or intermittent failure.

Do not handle the module unless using an ESD-preventative wrist strap and ensure that it makes good skin contact. Connect the strap to any solid grounding source such as any exposed metal on the rack chassis or any other unpainted metal surface.

Caution
Periodically check the resistance value of the antistatic strap. The measurement should be between 1 and 10 Megohms.

Product Description

The P DM 5280 is a high quality 3GBit/s digital audio (AES) embedder and de-embedder suitable for use in SDTV applications and new HDTV applications, with support for a variety of HDTV formats.

The 8 AES ports can be individually configured by the user as audio inputs or outputs. Already embedded audio can be de-embedded internally, processed and routed through an audio mono crossbar in parallel to up to eight external audio inputs.

The module is multi-format (3GBit/s, HD and SD) and multimode in operation. The input video standard (and format) is detected and the module automatically switches its operation to the detected format.

The module provides support for balanced AES audio inputs or outputs on a 25 pin SubD connection plate (P DM 5240 D) and for unbalanced AES audio inputs or outputs on 75Ohm MiniDin connectors (P DM 5280 U).

> *Note. The P DM 5280 is shipped as a 4 x AES Embedder (Aes1..4) and 4 x AES Deembedder (AES5..8) (factory default). To configure audio ports, please use GUI application (APPolo Control) (see page 23).*

> *Note. Please check connected peripheral equipment before using the P DM 5280 to make sure the audio ports of the P DM 5280 are configured correctly, e.g. an output is not connected to an output of another device, this might damage the equipment.*

Key Features

- Support for SDTV, HDTV and 3GBit/s standards
- Automatic video standard and format detection
- Audio ports can be individually configured as inputs or outputs
- Existing embedded audio can be deembedded
- Delete, replace or shuffle existing embedded audio
- Mono audio crossbar
- Audio processing (mono gain, test tone, mute, phase invert, mix, overload and silence detection)
- Video delay up to 62 frames in steps of frames, lines and pixels
- Audio delay up to 10s in steps of audio samples
- Embedded audio group selection
- Embedding into test pattern output video frame with no SDI input signal
- Selectable Horizontal and Vertical Video Blanking

Input Formats

The module has one multi-format serial digital input with automatic input detection. The module will detect the following input standards and configure the module automatically for operation in the connected format.

SDTV Formats	HDTV Formats	3GBit/s (Level A) Formats
525 / 59.94Hz	1080i / 50Hz	1080p / 50Hz
625 / 50Hz	1080i / 59.94Hz	1080p / 59.94Hz
	1080i / 60Hz	1080p / 60Hz
	1080p / 23.98Hz	
	1080p / 24Hz	
	1080p / 25Hz	
	1080p / 29.97Hz	
	1080p / 30Hz	
	1080psf / 23.98Hz	
	1080psf / 24Hz	
	1080psf / 25Hz	
	720p / 23.98Hz	
	720p / 24Hz	
	720p / 25Hz	
	720p / 29.97Hz	
	720p / 30Hz	
	720p / 50Hz	
	720p / 59.94Hz	
	720p / 60Hz	

Output Formats

Same as the input format, or the pre-selected format if no input is connected (see above).

Video and Audio Delay

The SDI signal can be delayed up to 62 frames in steps of frames, lines and pixels. The delay adjustment is applied after the embedding stage, i.e. the embedded audio is delayed with the same amount.

Audio can be adjusted in various ways (see GUI section of this manual). The audio delay is always in reference to the video delay and can be negative to video, depending on the video delay. Max. audio delay is 10s in steps of single audio samples.

Audio Embedding with No Video Input

With no SDI signal connected the module will switch to the last connected video standard (default) and will produce a test pattern video output with the audio embedded.
The test pattern can be selected using the GUI of the APPolo Control SW.

> **Note:** It is possible to disable this automatic generation of an output SDI signal. When this function is disabled, and no SDI input is connected, the SDI output will not generate any signal at all.

If used in standalone mode with no SDI input connected the output standard can be changed from the default using the format selections provided in the GUI or local menus.

> **Note.** The modules are supplied set to *"default to the last connected video standard"*. This will be 1080i / 50Hz for new modules. This can be cleared by connecting a different video input, or by selecting the required video format (using the selections provided) – waiting approx. 10 seconds for the module LEDs to flash yellow three times and then switching it back to "*follow last input*". This will have the same effect.

If the SDI video input is removed during operation, then the embedder will continue to embed audio into a test pattern video frame in the selected format until the video is restored.

> **Note.** *Settings will be written to flash RAM automatically after 10 seconds with no activity. This will be indicated by the alarm LED flashing yellow three times. If power is removed before the settings have been stored the module will revert back to the previous settings when powered up*

Audio Processing

All internal and external audio signals can be processed in an audio processing stage including mono gain, phase invert, test tone, stereo mix down as well as overload and silence detection.

Audio Mono Crossbar

All audio signals (external and deembedded) are fed into a monaural audio crossbar where individual left and right audio channels can be re-assigned / swapped prior to embedding.

Audio Group Deletion

The P DM 5280 will detect any audio groups present in the SDI stream, and each group can be selected individually. The user has the choice of passing any existing embedded audio group(s) intact, replacing the audio group(s) or deleting the audio group(s).

Functional Diagram (P DM 5280)
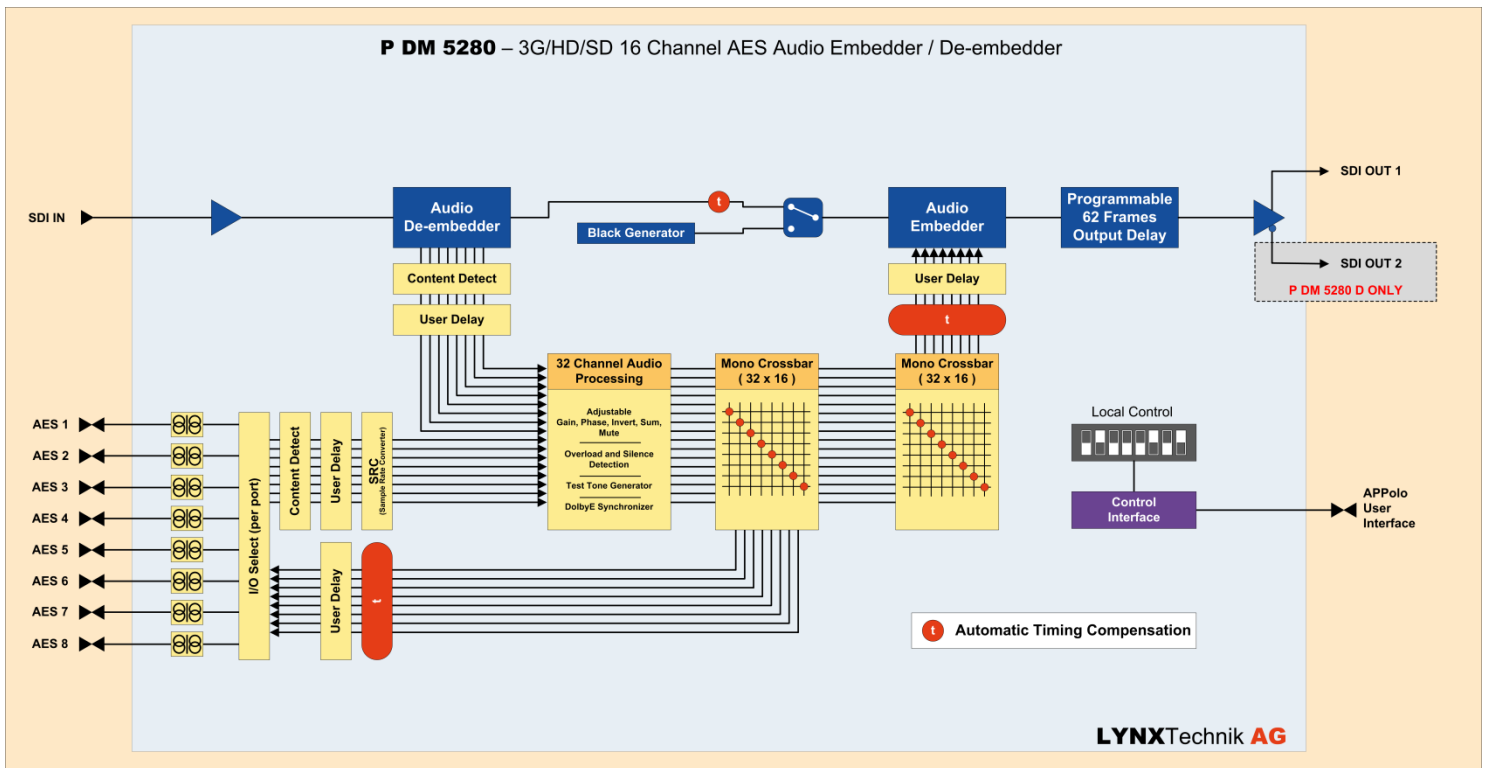
> **Note.** *The P DM 5280 is shipped as a 4 x AES Embedder (Aes1..4) and 4 x AES Deembedder (AES5..8) (factory default). To configure audio ports, please use GUI application (APPolo Control) (see page 23).*

> **Note.** *Please check connected peripheral equipment before using the P DM 5280 to make sure the audio ports of the P DM 5280 are configured correctly, e.g. an output is not connected to an output of another device, this might damage the equipment.*

Module Layout
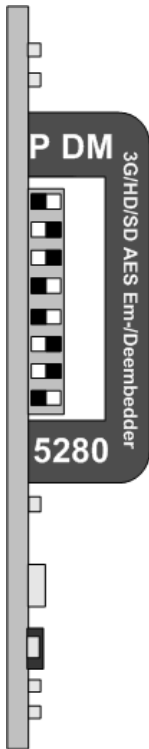
Module Front Panel
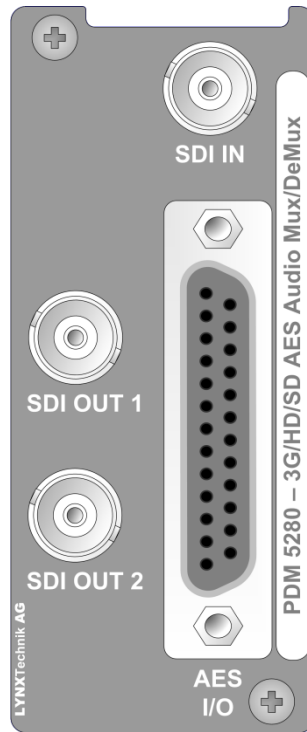
Module Rear Termination Panel

CardModule Layout

Connections

Video

The P DM 5280 uses standard 75 Ohm BNC connectors. We recommend the use of high quality video cable for digital video connections to reduce the risk of errors due to excessive cable attenuation. Max cable lengths the module will support are shown below.
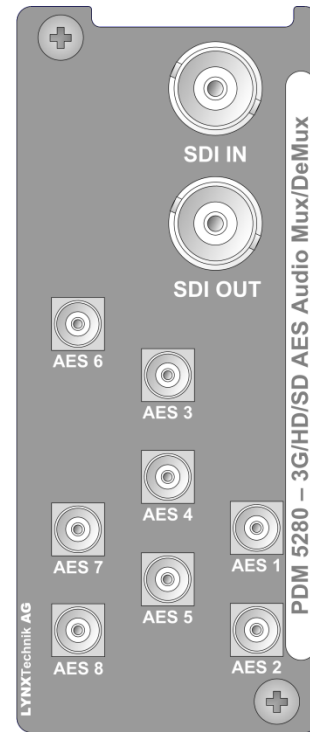
SDTV = 250m Belden 8281 (270Mbits/s)
HDTV = 140m Belden 1694A (1.4Gbits/s)
3GBit/S = 80m Belden 1694A (2.97Gbits/s)

> *Note. Due to the compact design of the connection plate it will be necessary to use a connection tool to secure the BNC video connectors.*
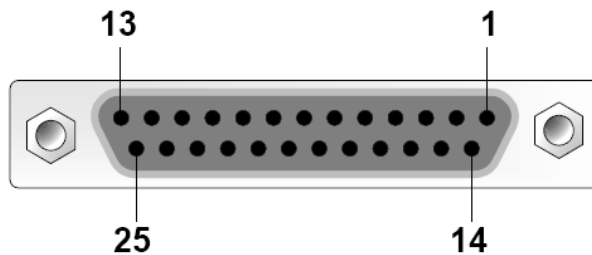
Audio

The module provides for both Unbalanced (AES3id on MINI DIN connectors) and Balanced (AES3) external audio connections.

The **P DM 5280 U** version provides MiniDIN (DIN1.0/2.3) connections for unbalanced AES3id

The **P DM 5280 D** version provides a SubD connector for balanced AES3

Pin Number	Connection	Pin Number	Connection
1	AES 8 +	14	AES 8 -
2	AES 8 GND	15	AES 7 +
3	AES 7 -	16	AES 7 GND
4	AES 6 +	17	AES 6 -
5	AES 6 GND	18	AES 5 +
6	AES 5 -	19	AES 5 GND
7	AES 4 +	20	AES 4 -
8	AES 4 GND	21	AES 3 +
9	AES 3 -	22	AES 3 GND
10	AES 2 +	23	AES 2 -
11	AES 2 GND	24	AES 1 +
12	AES 1 -	25	AES 1 GND
13	n.c.		

View looking INTO connector as seen on module

We recommend you use high quality screened (twisted pair) cable for the balanced audio connections. LYNX has an optional audio breakout cable which will bring out all audio connections to in line XLR connectors. Model number **R AC M 25-8** or **R AC F 25-8**

Installation

If this module was supplied as part of a system it is already installed in the rack enclosure. If the module was supplied as a field upgrade please follow the installation procedure below.

NOTE Observe static precautions when handling card. Please see ESD warnings on Page 6.

Each Card Module is supplied with a rear connection panel and two mounting screws. Please follow the following procedure for installation of the card module into the Series 5000 Card Frame.

1. Select a slot in the card frame where the CardModule will be located.

2. Remove the blank connection panel from the rear of the rack (if fitted)

3. Install the rear connection panel using the screws supplied. Do not tighten the screws fully

4. Slide the card module into the card frame and carefully check the CardModule connects to the rear connection plate. The card should fit easily and should not require excessive force to insert, if you feel any resistance, there could be something wrong with the rear connection panel location. Do not try and force the connection this may damage the connectors. Remove the rear connection panel and check alignment with the CardModule.

5. Insert and remove the CardModule a few times to ensure correct alignment and then tighten the two screws to secure the rear connection plate.

Settings and Control

The P DM 5280 has an integrated micro-controller, which enables the module to be configured and controlled locally via the dip-switch or from remote when using one of the optional controllers and control software.

Once set, all settings are automatically saved in non-volatile internal memory. (Flash RAM) The module will always recall the settings used prior to power down.
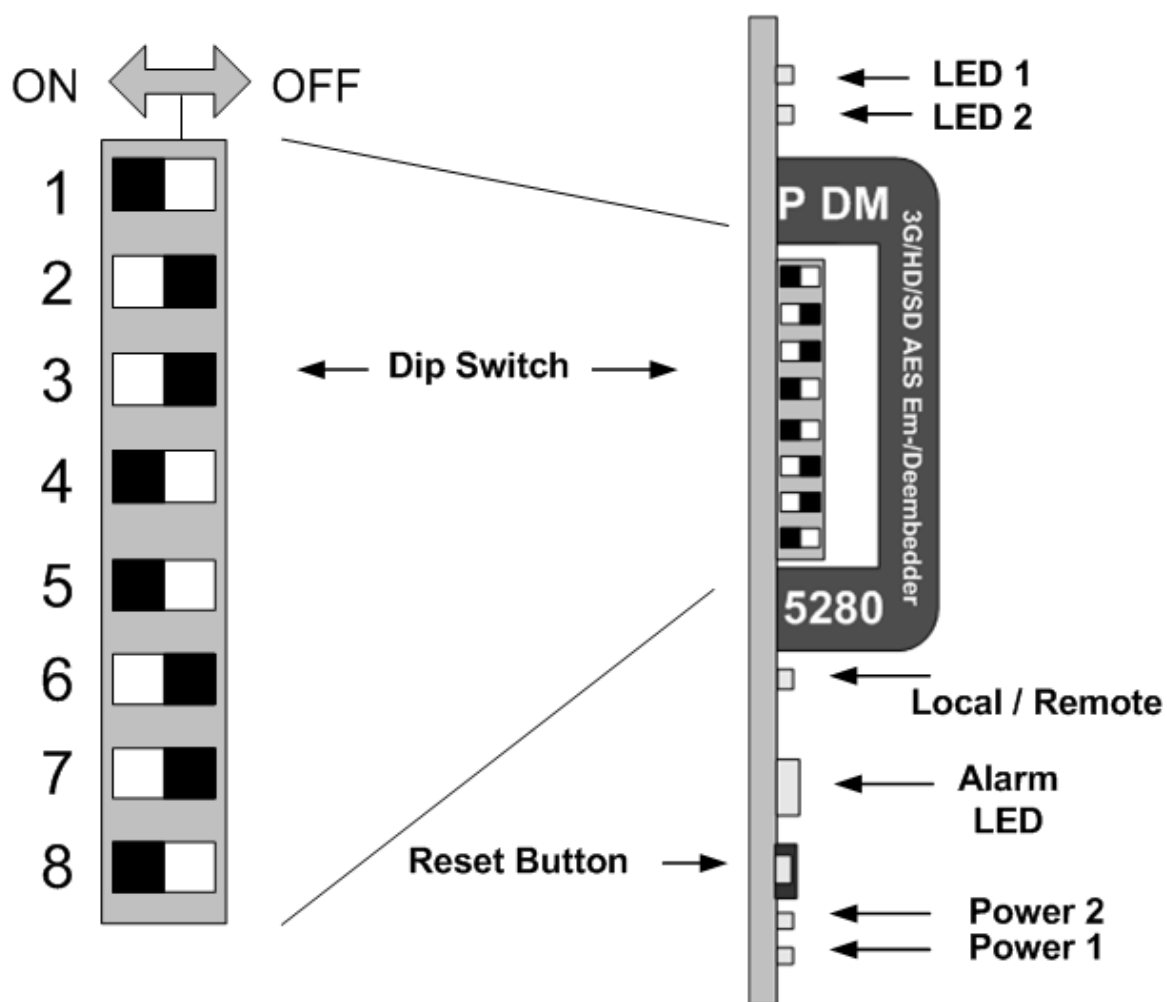
Switch and LED locations

Switch Settings

Below the switch settings for the 8-position dip-switch are defined.

Switch	Setting	Function
1	ON	Enable Local Adjustment
	OFF	Disable Local Adjustment
2	ON	Audio Embedder for Group 1 active
	OFF	No Embedding for Audio Embedder Group 1
3	ON	Audio Embedder for Group 2 active
	OFF	No Embedding for Audio Embedder Group 2
4	ON	Audio Embedder for Group 3 active
	OFF	No Embedding for Audio Embedder Group 3
5	ON	Audio Embedder for Group 4 active
	OFF	No Embedding for Audio Embedder Group 4
6	ON	Erase content in H-Blanking interval
	OFF	Content in H-Blanking interval preserved
7	ON	Erase content in V-Blanking interval
	OFF	Content in V-Blanking interval preserved
8	ON	Auto Test pattern enabled if no SDI input detected
	OFF	Auto Test pattern disabled

Switch Function Detail

Dip Switch 1
This switch is used to enable or disable local adjustments. Set to **ON** enables the setting of the other dip switches to configure the module. Set to **OFF** will prevent any switch settings taking effect.

Note. It is recommended to set it to **OFF** to prevent accidental changes to the stored module configuration if the switches are moved.

Dip Switch 2
This switch configures audio embedder for group 1. **ON** enables the embedder, new audio is then embedded into the SDI signal. Already embedded audio of group 1 will be overwritten, **OFF** disables the embedder, already embedded audio in the SDI signal will be preserved

Dip Switch 3
This switch configures audio embedder for group 2. **ON** enables the embedder, new audio is then embedded into the SDI signal. Already embedded audio of group 2 will be overwritten, **OFF** disables the embedder, already embedded audio in the SDI signal will be preserved

Dip Switch 4
This switch configures audio embedder for group 3. **ON** enables the embedder, new audio is then embedded into the SDI signal. Already embedded audio of group 3 will be overwritten, **OFF** disables the embedder, already embedded audio in the SDI signal will be preserved

Dip Switch 5
This switch configures audio embedder for group 4. **ON** enables the embedder, new audio is then embedded into the SDI signal. Already embedded audio of group 4 will be overwritten, **OFF** disables the embedder, already embedded audio in the SDI signal will be preserved

Dip Switch 6
If this Dip Switch is set to ON all content in the horizontal blanking intervals will be erased
If set to OFF the content in the horizontal blanking intervals will be preserved

Dip Switch 7
If this Dip Switch is set to ON all content in the vertical blanking intervals will be erased

If set to OFF the content in the vertical blanking intervals will be preserved

Dip Switch 8
With this Dip switch a test pattern can be activated in case no SDI input is detected. The SDI signal will be generated in the SDI format which was last detected on the SDI input. **ON** enables this function.
The test pattern can be pre-selected through the GUI application of the APPolo Control SW.

Factory Preset Condition

The P DM 5280 is delivered programmed and preset for the following mode of operation:

Switch 1   **ON**   Local Adjustment Enabled
Switch 2 -5 **OFF** Embedders for Group 1..4 enabled
Switch 6   **OFF** Content in H-Blanking interval preserved
Switch 7   **OFF** Content in V-Blanking interval preserved
Switch 8   **ON**   Auto Test Pattern disabled
If this is the required mode of operation, then no adjustments are necessary.

Auto Store

If no parameters are changed for 10 seconds then the current settings will be written into the flash memory automatically. This can be seen by the channel status LEDS flashing yellow three times.

Reset Button

If this button is pressed for 5 seconds all parameters will be reset to their factory default settings. To confirm this reset, the device will blink all LEDs once (OFF – ON – OFF) and then return to their normal state.

Alarm/LED Status Indicators

The P DM 5280 module has integral LED indicators, which serve as alarm and status indication for the module. Function is described below.

LED 1: SDI Status

This LED indicates the status of the SDI input signal

LED Color	Indication
Green	SDI present and ok
Yellow	SDI o.k, but unsupported standard, no embedding takes place
Red	No valid SDI standard

LED 2: Audio Status

This LED indicates the status of the audio input signals

LED Color	Indication
Green	All used audio inputs present and o.k.
Yellow	Warning condition. Any of: - At least one embeeded group is missing one AES signal and Embedder event enabled. - At least one external Audio Input is missing but routed to be embedded.
Red	Error condition. Any of: - At least one external Audio Input has no signal. - At least one embedded group is missing both AES signals and Embedder event is enabled.
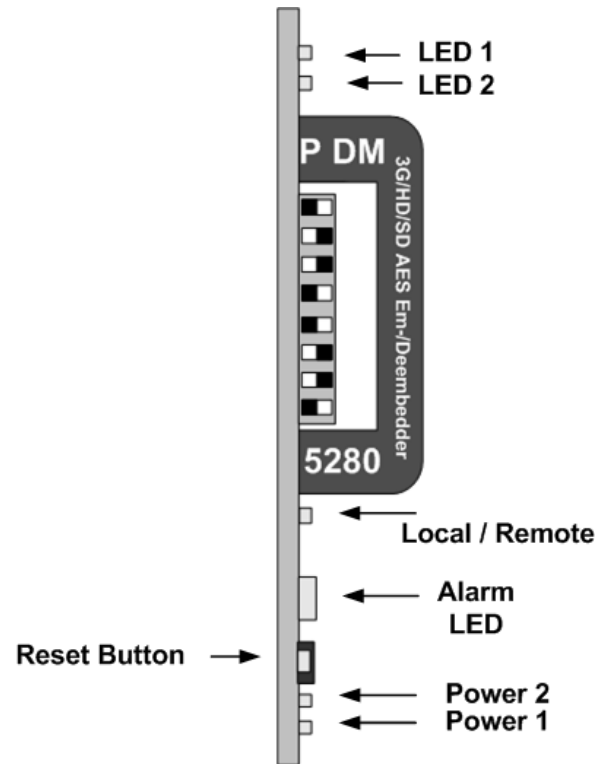
Alarm Indicator

There is also a single alarm LED on the lower edge of the module. This is visible through the card frame front cover and provides a general indication of the module status.

LED Color	Indication
Green	External Audio Output: - All audio output pairs have two audio channels Embedder: - Each selected embedded group has all four possible audio channels.
Yellow	External Audio Output: - At least one of the audio output pairs is missing one audio channel Embedder: - At least one of the selected embedded groups is missing one, two and/or three of the possible four audio channels.
Red	External Audio Output: - At least one audio output pair is missing both possible audio channels. Embedder - At least one embedded group is missing all four possible audio channels

Power Indication

There are two LEDs on the lower edge of the module indicating the presence of the two power supply voltages (main power supply and redundant power supply).

LED 1	Indication
Green	Power from Main PSU ok
off	No power from Main Power Supply

LED 2	Indication
Green	Power from Redundant PSU ok
off	No power from Redundant PSU

Local/remote LED

| LED Color	Indication
Green	Local control via DIP switches active, all settings according to local DIP switches
off	Current settings may be overwritten through remote control

Control System GUI

All LYNX CardModules support a computer interface which allows setting the modules parameters using a simple GUI interface. Access to all standard features (and in some cases) extended features is possible using this interface.

Access to the GUI requires the use of the optional LYNX control system

> *Note. Any settings made using the control system overrides any local settings made on the module. All settings are stored in internal flash ram and will survive power cycles and long term storage.*

The GUI screenshots below are for the P DM 5280 module.
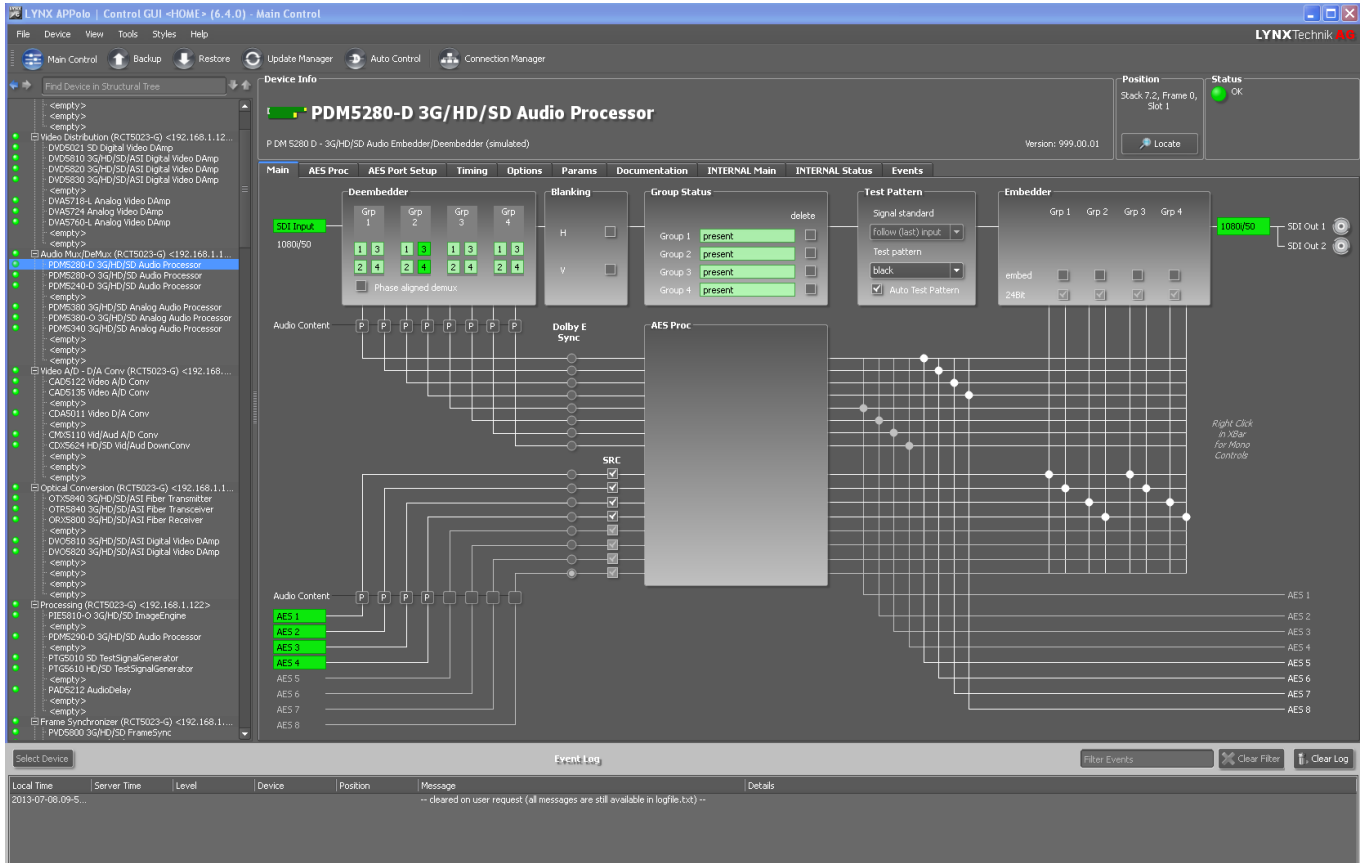
The above screenshot shows the complete module GUI. The Device info area contains information about the module including name and firmware revision. If used as part of a larger system (using the LYNX central control system) the modules position and physical location is displayed above the "locate" button.

> *Note. The Locate function us a tool used to quickly identify a module in larger systems. Selecting "locate" will flash the module alarm LED yellow. (does not effect module operation). This function will be automatically stopped (timeout)*

The first screen you see when the module is selected is the **Main** tab this is a graphical representation of the modules function and signal flow (left to right). Clicking on processing boxes where shown will link to other GUI screens with controls for these specific functions.

The area at the bottom of the screen is the error log. Any fault condition will be time stamped and entered into the log.

There are a number of Tabs associated with each Module which splits up the modules settings into a number of separate screens. The primary GUI screens and functions are described below.

Main Tab

This screen is the main GUI interface and is presented first when the module is displayed in the GUI. The layout replicates module function and the signal flow if from left to right. Selections are made using onscreen sliders, radio buttons, drop down selections and checkboxes.
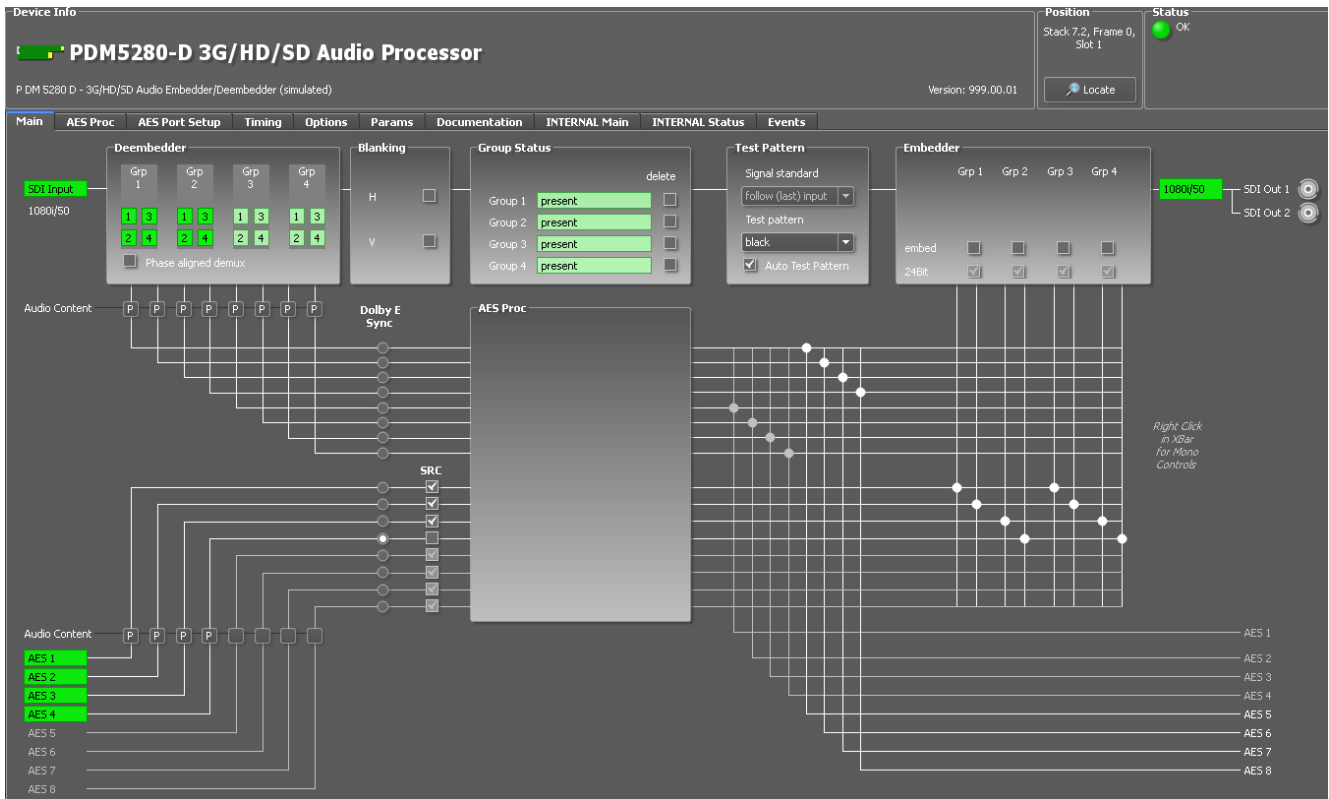
Input Detection

On the left the SDI input and the Audio inputs are detected.
The standard / format of the SDI signal is displayed on screen in green (if format is not supported then the color is YELLOW and if input is missing the color is RED).

If a valid audio signal is detected the audio input detection turns GREEN, a missing audio signal will be indicated in RED.
Audio ports which are configured as outputs are greyed out in the input section.

Note: *Input and outputs signals can be renamed by the user. Simply right click on the signal name and specify a user defined signal name*

Embedded Audio Presence Detection

The presence of embedded audio is indicated in deembedder area. A green color indicates presence of the respective audio signal

Group Status

Any embedded audio is detected and the status is displayed in the Group Status area. If embedded audio is present it will highlight green. It is possible to delete each incoming audio group individually at this stage using the delete checkbox.

> *Note. If an existing embedded group has not been deleted but is selected for embedding then the existing audio will be overwritten*

Test Pattern Signal Standard

This selection is grayed out when a valid input signal is detected. When there is no input (or an invalid input signal) then the selection made in this drop down box will determine the output standard of the "test pattern" audio sync frame for the embedder.

Default is "follow last input" which is recommended for most applications. If the video input is removed then the embedder will continue to function (with a minimal interruption to the audio embedding process) by outputting embedded audio in a test pattern "audio sync" frame.

With no input selected it is possible to preset the output format by making a selection from the drop down selections.

Test Pattern Selection

With the Drop-down list "Test Pattern" a specific test pattern can be selected for the test pattern "audio sync" frame as described above.
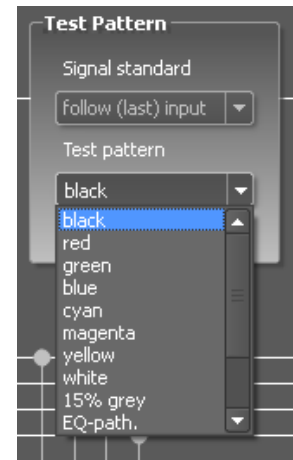
Audio Crossbars

Each audio input as well as each deembedded AES signal passes (after going through the audio processing stage) into a mono crossbar where each individual left and right channel is split from the AES inputs and made available for the available crossbar outputs for activated audio outputs and the embedder feeds.

Embedder

The crossbar provides 8 audio stereo outputs combined into 4 AES groups which can be embedded into the SDI input stream. Group selection is possible using the group select checkbox.

> *Note. If an existing embedded group has not been deleted but is selected for embedding then the existing audio will be overwritten*

If an HDTV or 3GBit/s input signal is detected then only signals with 24 Bit audio will be embedded. If an SDTV signal is detected then you can select in between 20 and 24 Bit embedding.

Audio Outputs

If audio ports are configured as outputs the selection matrix for the respective cross points will be activated. Also the respective audio outputs will be highlighted.

If AES ports are configured as inputs the respective cross points and the audio outputs are greyed out.

AES Processing Tab

All audio signals (external and deembedded AES) can be processed individually.
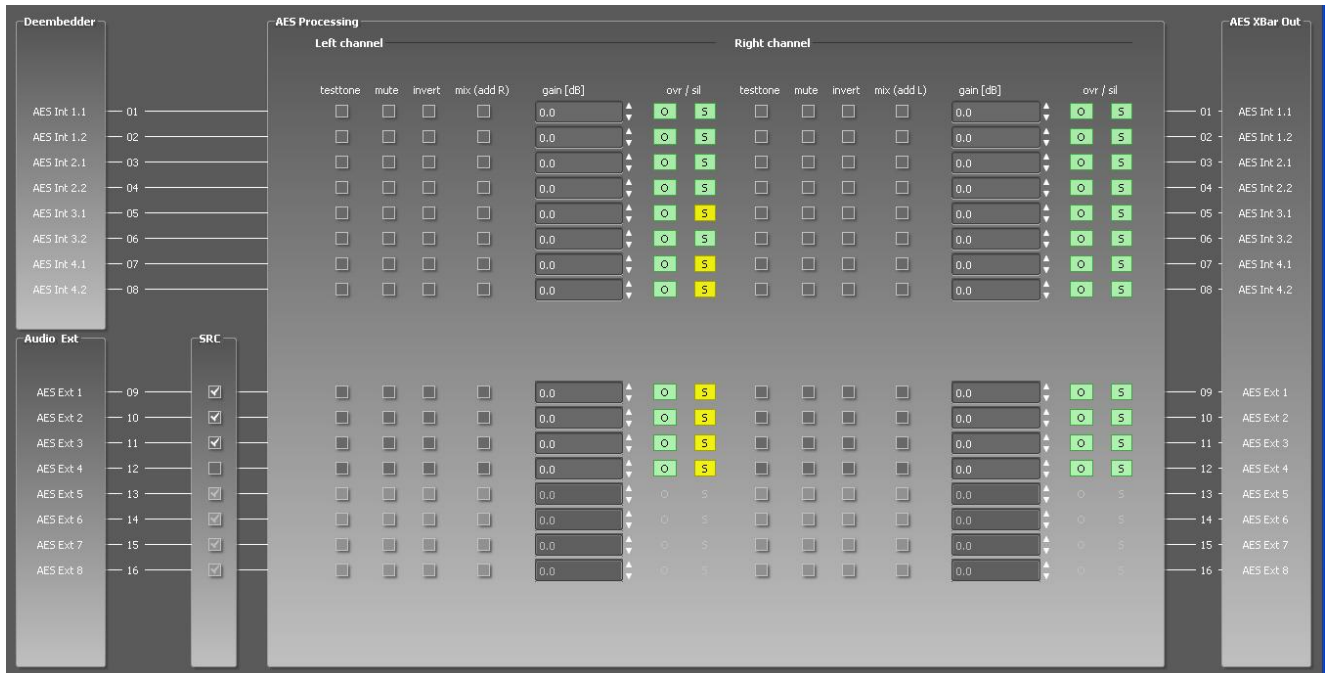
The following functions are provided:
- Left and Right Test Tone
- Left and Right MUTE
- Left and Right PHASE INVERT
- Left and Right mix
- Left and right GAIN (0dB .. -66.3dB)
- Overload and Silence detection for Left and Right

Audio Port Setup

In this tab the ports can be configured. Configuration is for audio stereo signals (Left and Right). The configuration is locked automatically when the tab is closed and the selections to configure the individual ports are greyed out.
To change a configuration the check box "Unlock Audio Port Settings" has to be activated.
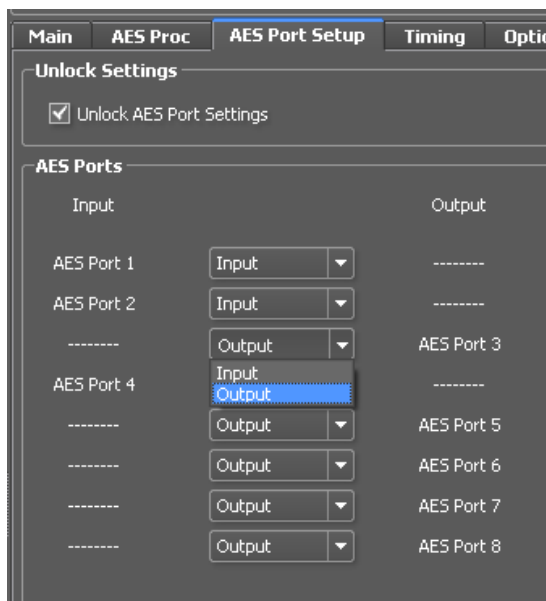
Note. The P DM 5280 is shipped as a 4 x AES Embedder (Aes1..4) and 4 x AES Deembedder (AES5..8) (factory default). To configure audio ports, please use GUI application (APPolo Control) (see page 23).

Note. Please check connected peripheral equipment before using the P DM 5280 to make sure the audio ports of the P DM 5280 is configured correctly, e.g. an output is not connected to an output of another device, this might damage the equipment.

Timing Tab
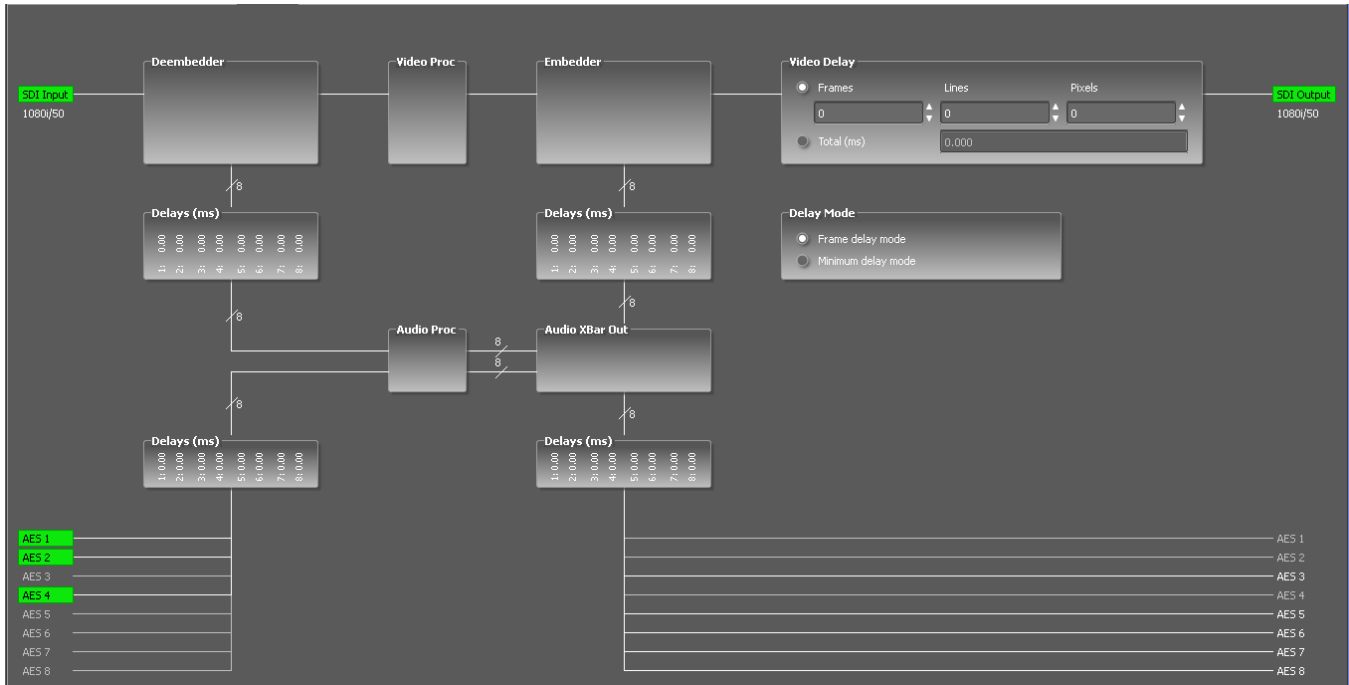
All manually adjustable delays for audio and video can be set in the GUI shown below.

The video delay (up to 62 frames) can be adjusted either in frames, lines and pixels or in ms.

Note: *Adjusting the video delay will always apply simultaneously to both Video and embedded Audio contents. So, this adjustment can NOT be used to modify the relative timing between Video and Audio (lip-sync corrections). See also audio delay adjustments below.*

The audio delay can be set at various positions:

SDI in: Delay of the embedded audio after de-embedding
SDI out: Delay of audio for re-embedding
Audio in: Individual delays for the audio inputs (stereo pair)
Audio out: Delay at audio outputs (stereo pair)

Setting of the audio delays can be performed in a pop-up window, when clicking on the deembedder/embedder blocks.
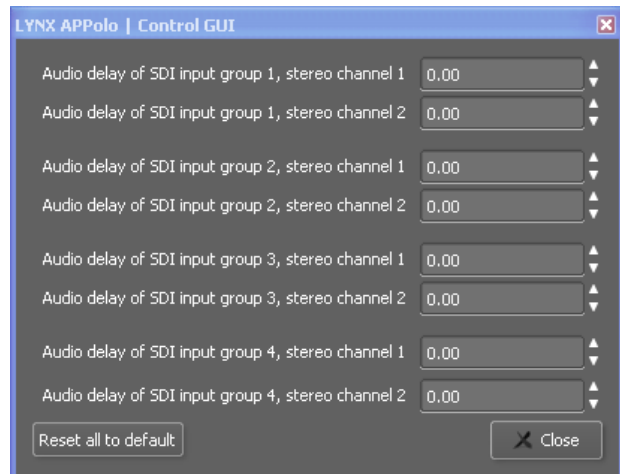
Adjusting the Audio delay in any of these locations is the only way to adjust the relative timing between Video and Audio (i.e. lip-sync corrections). Audio timing controls are offered in the context of the input as well as the output. This helps to eliminate a dependency on the routing crossbars, while you are adjusting audio-timing.

Simply follow these two rules:
1) If there is a lip-sync error in the incoming signals (embedded Audio, or discreet Audio relative to Video), this input-related timing problem should be corrected with the INPUT-related timing controls (i.e. before the audio channels are routed in the crossbar).
2) If there is, however, an Audio-Video-Timing situation behind the output (to be compensated here), then this output-related timing issue should be corrected with the OUTPUT-related timing controls.

Events Tab

The Events Tab is where the module alarming and error notifications are configured for the module.

The GUI has an integrated error log, which is a simple text log file stored in the controller PC. This will record an event and timestamp it. The log can be seen at the bottom of the GUI screen and can be scrolled through using the scrolling bar.

Log in GUI Function

Events are selectable, you can chose if you want to record a particular event in the log (or not) or configure it to only record one side of the event. (*For example you might want to log when a SDI input is removed but do not want to log when it comes back*). The ON/OFF trigger can be configured for each of the available events shown in the list and is setup using the checkboxes provided.

Event Enabled

By default all alarm conditions are activated (checked), by de-selecting a specific alarm condition I this column you are telling the module to ignore this condition completely. It will not color the alarm LED, log and event in the GUI or send a SNMP trap. This is useful if for example you never have anything connected to AES input 4 and want the card to ignore this input condition completely then you would simply de-select "AES 4 Input: No input" and it will be ignored.

SNMP Support

If the system is using a RCT 5031 Master Controller and the SNMP option is installed then the "SNMP Trap" columns become available.

Here you can configure for which events you would like to transmit a "SNMP trap" over the network. (This has no impact or influence over the internal error log maintained by the LYNX control system)

(Internal LYNX error logging and external SNMP traps can be configured independently).

Common GUI Controls

There are a number of GUI controls and commands which are common for all modules in the control system. These are explained below.

Right click on any module in the tree will bring up a sub-menu of available commands (see below). **Note.** This menu can also be selected using the GUI drop down menus by clicking on *"Device"*
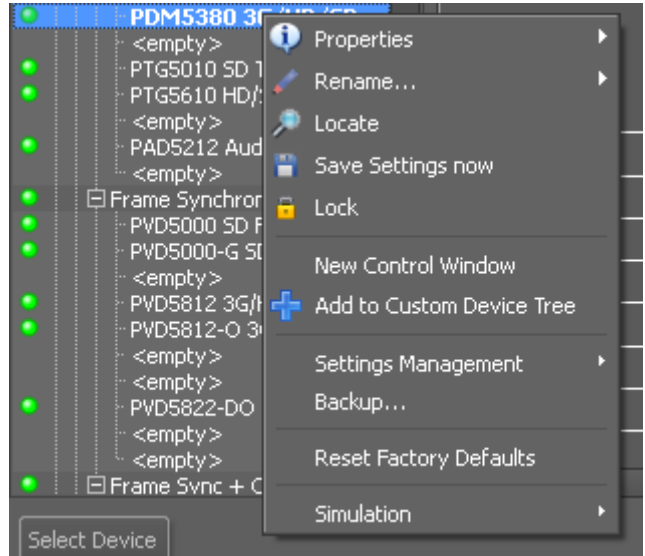

Properties

This will bring up a dialog which shows device specific properties about the module selected.
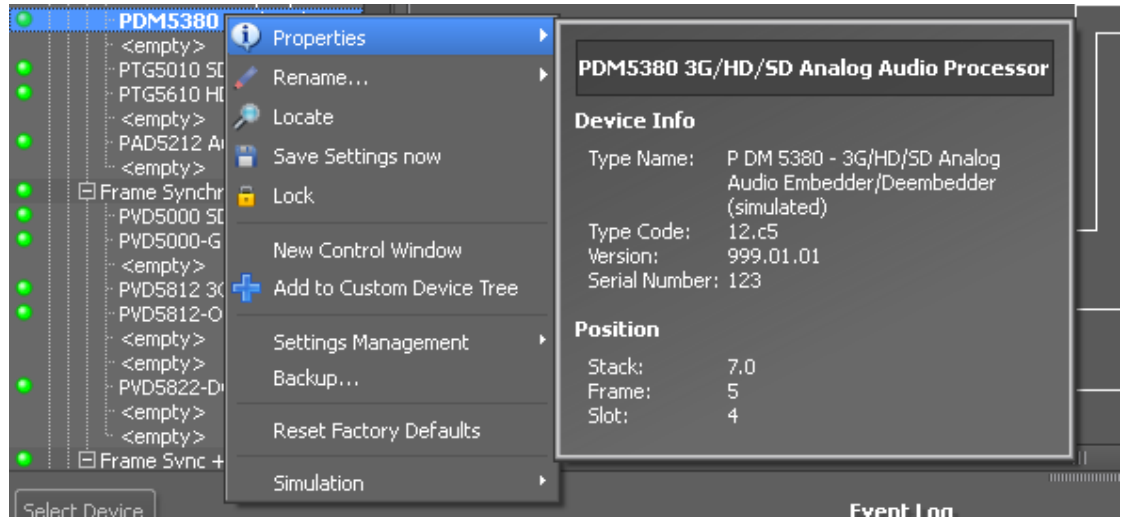
Locate

This feature is useful if you need to physically locate a module in a larger system quickly (for removal or maintenance purposes) When Locate selected this will flash the module alarm LED yellow. This function does not impact normal module operation and will timeout after a short time period.
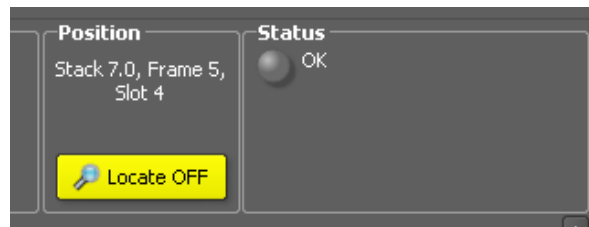

This feature can also be invoked from the main GUI screen using the "locate" button in the top right hand side of the screen (see below)

New Control Window

Selecting this will open up a new control window with the selected module GUI contained within. This window can be minimized to the taskbar for fast access and is useful if this GUI is something you will need to refer to often.

Rename

It is possible to rename individual items in the control system selection tree, this includes all rack names and the individual module names. The descriptions supplied are default descriptions the system applies. To rename a device simply select the device in the tree, right click and then select "rename". Tthe dialog below will be displayed
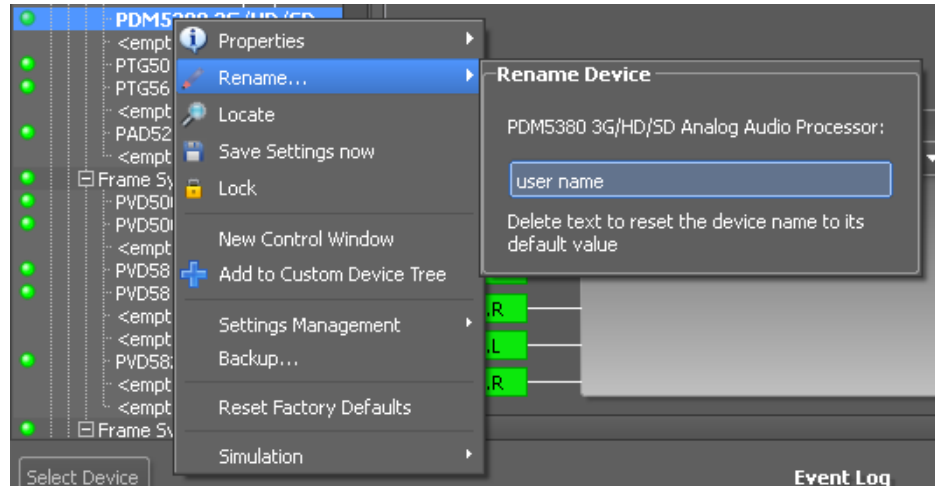
Simply type in the name you wish to assign to this device and press RETURN. If you wish to restore the default name simply delete the content from the text field and press RETURN

Note: *The names are stored inside the flash memory of a LYNX server (if installed) or the hard disk of the connected Computer.*

Save Settings Now

During normal operation if there is no activity on the module GUI for approx.. ten seconds then any changed settings are automatically written to flash RAM in the module. You can store the settings immediately by using the "save settings now" command. When the settings have been stored you will see the confirmation dialog below.

It is recommended you use the "save settings now" function before removing any module from the rack to ensure the latest settings have been stored prior to module removal (if a module is removed before the normal 10 second timeout then the settings will not be stored)

Lock

Selecting this will lock the device to prevent any accidental changes being made to the modules settings. The module status can be seen but all the controls will be grayed out. To unlock simply deselect the lock control from the menu.

Reset Factory Defaults

If you are unsure of the settings, or have managed to set the module into a strange mode of operation and wish to recover the factory defaults then this can be done by selecting reset factory defaults. You will be asked to confirm this operation with the dialog below

Specifications

Digital Video Input	
Signal Type	Serial Digital Video (SDI) SMPTE 292M, 259M, 424 M with automatic input standard and format detection
Supported Formats	See page 8
Input Imedance	75 Ω BNC
Input Level	0.8V
Return Loss	>15dB (<1.485Gbit/s); >10dB (>1.485Gbit/s)
Digital Video Ouputs	
Signal	Serial Digital Video (SDI) SMPTE 292M, 259M, 424M
Output Impedance	75 Ω
Output Level	0.8V pp +/- 10%
Return Loss	>15dB (<1.485Gbit/s); >10dB (>1.485Gbit/s)
Connection	BNC
Video Delay	Up to 62 frames in steps of pixels, lines, frames
Jitter	< 0.2 UI (270Mbit/s) < 0.2 UI (Alignment Jitter); < 1.0 UI (Timing Jitter); (1.485Gbit/s) < 0.3 UI (Alignment Jitter); < 2.0 UI (Timing Jitter); (2.97Gbit/s)
AES Audio Inputs / outputs	
Signal	P DM 5280 U = AES3 id un-balanced on Mini DIN connectors P DM 5280 D = AES3 balanced on SubD 25 connector
No. of inputs / outputs	8 x AES ports
Coupling	Transformer
Performance	
Audio Group Deletion	Existing groups pass transparently or they can be deleted and/or replaced with new embedded audio (user selectable)
Audio Group Selection	Map AES inputs or deembedded audio into any of the 4 embedded audio groups
Audio Crossbar	Mono crossbar allows for individual (left and right) channel mapping
Audio Sync Frame	With no SDI input the audio is embedded into a test pattern video sync frame (last connected video standard, or a user selected standard).
Audio Delay	Up to 10s
Electrical	
Operating Voltage	+ 12 VDC
Power Consumption	*8W*
Safety	IEC 950 / EN 60950 / VDE 0805
Mechanical	
Size	283mm x 78mm
Weight	CardModule 120g, connector plate 70g
Ambient	
Temperature	5ºC – 40ºC Maintaining Specifications
Humidity	90% non condensing

Service

Parts List

Due to the very dense design and high level of integration there the module is not user serviceable. Please contact LYNX for repairs or to request an exchange unit.

Technical Support

If you are experiencing problems, or have questions please contact your local distributor for further assistance.

Technical support is also available from our website.

Please do not return products to LYNX without an RMA. Contact your authorized dealer or reseller for more details on our return process.

More detailed product information and product updates may be available on our web site:

www.lynx-technik.com

Contact Information

Please contact your local distributor; this is your local and fastest method for obtaining support and sales information.

LYNX Technik can be contacted directly using the information below.

Address   LYNX Technik AG
                     Brunnenweg 3
                     D-64331 Weiterstadt
                     Germany

Website   www.lynx-technik.com

E-Mail   info@lynx-technik.com

LYNX Technik manufactures a complete range of high quality modular products for broadcast and Professional markets, please contact your local representative or visit our web site for more product information.

LYNXTechnik **AG**®
Broadcast Television Equipment