Synapse

2EB24

Dual SDI 4 channel analog audio embedder

TWINS

Synapse

TECHNICAL MANUAL
2EB24

Dual SDI 4 channel analog audio embedder

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1 Introduction to Synapse

An Introduction to Synapse

Synapse is a modular system designed for the broadcast industry. High density, intuitive operation and high quality processing are key features of this system. Synapse offers a full range of converters and processing modules. Please visit the AXON Digital Design Website at www.axon.tv to obtain the latest information on our new products and updates.

Local Control Panel

The local control panel gives access to all adjustable parameters and provides status information for any of the cards in the Synapse frame, including the Synapse rack controller. The local control panel is also used to back-up and restore card settings. Please refer to the RRC18, RRC10 and RRC04 manuals for a detailed description of the local control panel, the way to set-up remote control over IP and for frame related settings and status information.

Remote Control Capabilities

The remote control options are explained in the rack controller (RRC18/RRC10/RRC04) manual. The method of connection to a computer using Ethernet is described in the RRC manual.

! **CHECK-OUT:** "SYNAPSE SET-UP" SOFTWARE WILL INCREASE SYSTEM FLEXIBILITY OF ONE OR MORE SYNAPSE FRAMES

Although not required to Setup a Synapse frame, you are strongly advised to use a remote personal computer or laptop PC with the Synapse Setup software as this increases the ease of use and understanding of the modules.

Introducing TWINS

TWINS double-density modules are very efficient as they contain two channels of the same functionality. Cost-effective and space efficient, you can use TWINS modules independently or together with other Synapse cards in Axon's ultimate modular broadcast system.

TWINS is developed to serve two purposes:

- Extremely high space efficiency by providing 36 individual processing channels in 4RU.

- Superb flexibility for the customer: TWINS and other Synapse cards can be housed independently or in the same Synapse frame.

TWINS is an important enhancement of AXON's Synapse range and is another example of how AXON translates future proof and customer compatibility into products.

2 Unpacking and Placement

Unpacking

The Axon Synapse card must be unpacked in an anti-static environment. Care must be taken NOT to touch components on the card – always handle the card carefully by the edges. The card must be stored and shipped in anti-static packaging. Ensuring that these precautions are followed will prevent premature failure from components mounted on the board.

Locating the card

The Synapse card can be placed vertically in an SFR18 frame or horizontally in an SFR04 frame. Locate the two guide slots to be used, slide in the mounted circuit board, and push it firmly to locate the connectors.

Correct insertion of card is essential as a card that is not located properly may show valid indicators, but does not function correctly.

NOTE: On power up all LED's will light for a few seconds, this is the time it takes to initialise the card.

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3 A Quick Start

When Powering-up

On powering up the Synapse frame, the card set will use basic data and default initialisation settings. All LED's will light during this process. After initialisation, several LED's will remain lit – the exact number and configuration is dependant upon the number of inputs connected and the status of the inputs.

Changing settings and parameters

The front panel controls or the Synapse Set-Up Software can be used to change settings. An overview of the settings can be found in chapter 5, 6 and 7 of this manual.

Front Panel Control

Front Panel Display and Cursor

```
[No Alarms]
```
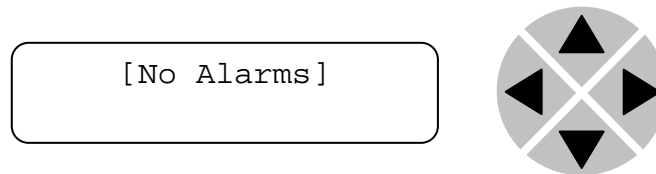
Settings are displayed and changed as follows;

Use the cursor 'arrows' on the front panel to select the menu and parameter to be displayed and/or changed.

Press ► To go forward through the menu structure.
Press ◄ To go back through the menu structure.
Press ▲ To move up within a menu or increase the value of a parameter.
Press ▼ To move down through a menu or decrease the value of a parameter.

NOTE: Whilst editing a setting, pressing ► twice will reset the value to its default.

Example of changing parameters using front panel control

With the display as shown below

```
RRC18 [Select Card]
>S01=2EB24
```
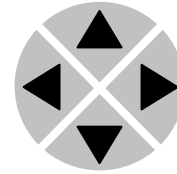
Pressing the ► selects the 2EB24 in frame slot 01.

The display changes to indicate that the 2EB24 has been selected. In this example the Settings menu item is indicated.

```
2EB24 [Select Menu]
>Settings
```
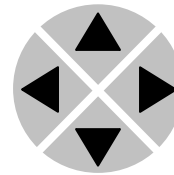
Pressing the ► selects the menu item shown, in this example Settings.

(Pressing ▲ or ▼ will change to a different menu eg Status, Events).

The display changes to indicate that the ASM10 Settings menu item SDI-Format has been selected and shows that it current setting is Auto.

```
2EB24 [Settings]
>SDI-Format=Auto
```
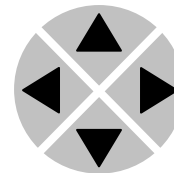
Pressing the ► selects the settings item shown, in this example SDI-Format.

(Pressing ▲ or ▼ will change to a different setting, eg Mode, H-Delay).

The display changes to indicate that the 2EB24 Edit Setting menu item SDI-Format has been selected.

```
2EB24 [Edit
Setting]
```
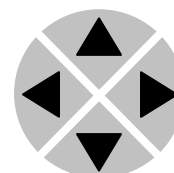
To edit the setting of the menu item press ▲ or ▼.

All menu items can be monitored and/or changed in this way. Changing a setting has an immediate effect.

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Synapse Setup Software

Synapse Setup Software can be used to change the settings of Synapse modules from a PC, either locally or remotely. The software enables communication based on TCP/IP between the Setup PC and Synapse frames/modules.

Each Synapse frame is addressed through its rack controller's unique IP address, giving access to each module, its menus and adjustment items. The Synapse Setup software has access to data contained within the Synapse module and displays it on a GUI. The software has an intuitive structure following that of the module that it is controlling.

Having selected the desired Frame and Module from the GUI Synapse Network View, select the menu item that you wish to open. Opening the menu item gives a complete list of available properties with their associated Value.

For example to change a setting e.g. SDI-Format, select SDI-Format form the list of settings by 'double clicking' to open a dialogue box. The dialogue box allows parameters to be changed or set to default value. On completion close the dialogue box.

Menu Structure Example

Slot	Module		Item		Parameter		Setting
▲							
▲							
S02			Identity				
▲			▲				
S01	2EB24	►	Settings	►	Standard_dig	►	Auto
▼			▼		▼		▼
S00	RRC18		Status		Mode		625
			▼		▼		▼
			Events		Ref-Input		525
					▼		
					H-Delay		
					▼		
					▼		

NOTE: Further information about Front Panel Control and Synapse Setup Software can be obtained from the RRC18 and RRC04 operational manuals.

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4 The 2EB24 Card

Introduction

The 2EB24 contains two fully independent analog audio embedders. The analog inputs can handle up to +24dBu audio levels and are converted to digital audio through 24-bit high quality A/D converters. There are independent audio level controls and also selectable append and overwrite modes.

Two processed Serial Digital Outputs

Each SDI input provides two SDI with embedded audio outputs.

Automatic Standard Selection

Both SDI input channels have Automatic standard selection, meaning that the video input standard (525 or 625) is recognized automatically.

Back planes

BPL12 is the backplane for the 2EB24

Miscellaneous

The 2EB24 cards fit into the Axon SFR04 & SFR18 racks.

LED's at the front of the board indicate the presence of an Input signal, Connection & Processor Errors.

The 2EB24 can be controlled by Axon Synapse set-up software.

5 Settings Menu

Introduction

The settings menu displays the current state of each setting within the 2EB24 and enables the item to be changed or adjusted.

Settings can be changed using the front panel of the Synapse frame (SFR18 or SFR04) or Synapse Setup software.

Please refer to chapter 3 for information on the Synapse front panel control and Synapse Setup software.

Card_Mode

Card_Mode determines whether the card operates as dual SDI input (TWINS) card or as a single SDI input with 4 AES inputs (SINGLE).

TWINS for dual

SINGLE for single

The default setting is Twins.

Note: for proper single mode operation, set EMB_A_MODE to Overwrite, Emb_B_mode to APPEND and Emb_B_sel to GROUP 2.

Emb-A_mode

Emb-A_mode enables audio channels to be added to the ancillary data space of the SD stream Emb-A_Mode has three settings, Off, Append, and Overwrite. The default setting is Overwrite.

In Off mode the card will re-clock the input.

In Overwrite mode all existing audio groups will be overwritten and the processes group is inserted.

In Append mode additional audio channels will be added.

In order to blank the ancillary data space of the SDI stream, set Emb-A_Mode to Overwrite and set Emb-A_Sel to Off.

Emb-A-sel

Emb-A-Sel determines which of the four groups will be embedded into the SDI stream_A. The settings of Emb-A-Sel are Off, Group_1, Group_2, Group_3, Group_4.

The default setting is Group_1.

Emb-A1/2

Emb-A1/2 determines which audio channels are embedded by channels 1 and 2 of embedder A. The available settings are Ana_A1/2 or Ana_A3/4.

The default setting of Emb-A1/2 is Ana_A1/2.

Emb-A3/4 Emb-A3/4 determines which audio channels are embedded by channels 3 and 4 of embedder A. The available settings are Ana_A1/2 or Ana_A3/4.

The default setting of Emb-A1/2 is Ana_A3/4.

Delay-Ch_A1 Every audio output channel can be delayed up to 2.6 seconds. The delay of Delay-Ch_A1 can be adjusted with Delay-Ch_A1. The delay can be adjusted between 0ms and 2600ms in steps of 1ms.

The default delay is 0ms.

Delay-Ch_A2 Every audio output channel can be delayed up to 2.6 seconds. The delay of Delay-Ch_A2 can be adjusted with Delay-Ch_A2. The delay can be adjusted between 0ms and 2600ms in steps of 1ms.

The default delay is 0ms.

Delay-Ch_A3 Every audio output channel can be delayed up to 2.6 seconds. The delay of Delay-Ch_A3 can be adjusted with Delay-Ch_A3. The delay can be adjusted between 0ms and 2600ms in steps of 1ms.

The default delay is 0ms.

Delay-Ch_A4 Every audio output channel can be delayed up to 2.6 seconds. The delay of Delay-Ch_A4 can be adjusted with Delay-Ch_A4. The delay can be adjusted between 0ms and 2600ms in steps of 1ms.

The default delay is 0ms.

Gain-Ch_A1 The level of input Channel A1of is set by the Gain control Gain-Ch_A1. The audio level can be adjusted between +12dB and −60 dB in steps of 0.25dB. Below 60dB the audio is muted and the display shows −999.00dB.

The default setting is 0.00dB.

Gain-Ch_A2 The level of input channel A2 of is set by the Gain control Gain-Ch_A2. The audio level can be adjusted between +12dB and −60 dB in steps of 0.25dB. Below 60dB the audio is muted and the display shows −999.00dB.

The default setting is 0.00dB.

Gain-Ch_A3 The level of input channel A3 of is set by the Gain control `Gain-Ch_A3`. The audio level can be adjusted between +12dB and −60 dB in steps of 0.25dB. Below 60dB the audio is muted and the display shows −999.00dB.

The default setting is 0.00dB.

Gain-Ch_A4 The level of input channel A4 of is set by the Gain control `Gain-Ch_A4`. The audio level can be adjusted between +12dB and −60 dB in steps of 0.25dB. Below 60dB the audio is muted and the display shows −999.00dB.

The default setting is 0.00dB.

Phase-Ch_A1 The phase of the audio of channel A1 can be adjusted using `Phase-Ch_A1`. The user can choose between 0 degrees and 180 degrees phase shift.

The default setting is 0 degrees.

Phase-Ch_A2 The phase of the audio of channel A2 can be adjusted using `Phase-Ch_A2`. The user can choose between 0 degrees and 180 degrees phase shift.

The default setting is 0 degrees.

Phase-Ch_A3 The phase of the audio of channel A3 can be adjusted using `Phase-Ch_A3`. The user can choose between 0 degrees and 180 degrees phase shift. The default setting is 0 degrees.

Phase-Ch_A4 The phase of the audio of channel A4 can be adjusted using `Phase-Ch_A4`. The user can choose between 0 degrees and 180 degrees phase shift. The default setting is 0 degrees.

0dBFS-In_A With this setting you can select which reference level input is expected on input A. Selectable are +24dBu, +22dBu, +18dBu, +15dBu and +12sBu. Set to for instance +15dBu (which is default) the card will produce a -15dBFs gain which then counts as 0dBu.

EDH-Gen_A This setting allows the user to switch the built-in EDH generator on/off. The EDH generator inserts EDH (SDI Error Detection Handling) into the output signal. The settings of `EDH-Gen` are `On` and `Off`.

The default setting is `On`.

Emb-B_mode

Emb-B_mode enables audio channels to be added to the ancillary data space of the SD stream Emb-B_Mode has three settings, Off, Append, and Overwrite. The default setting is Overwrite.

In Off mode the card will re-clock the input.

In Overwrite mode all existing audio groups will be overwritten and the processes group is inserted.

In Append mode additional audio channels will be added.

In order to blank the ancillary data space of the SDI stream, set Emb-B_Mode to Overwrite and set Emb-B_Sel to Off

Emb-B-sel

Emb-B-Sel determines which of the four groups will be embedded into the SDI stream_B. The settings of Emb-B-Sel are Off, Group_1, Group_2, Group_3, Group_4.

The default setting is Group_1.

Emb-B1/2

Emb-B1/2 determines which audio channels are embedded by channels 1 and 2 of embedder B. The available settings are Ana_B1/2 or Ana_B3/4.

The default setting of Emb-B1/2 is Ana_B1/2.

Emb-B3/4

Emb-B3/4 determines which audio channels are embedded by channels 3 and 4 of embedder B. The available settings are Ana_B1/2 or Ana_B3/4.

The default setting of Emb-B1/2 is Ana_B3/4.

Delay-Ch_B1

Every audio output channel can be delayed up to 2.6 seconds. The delay of Delay-Ch_B1 can be adjusted with Delay-Ch_B1. The delay can be adjusted between 0ms and 2600ms in steps of 1ms.

The default delay is 0ms.

Delay-Ch_B2

Every audio output channel can be delayed up to 2.6 seconds. The delay of Delay-Ch_B2 can be adjusted with Delay-Ch_B2. The delay can be adjusted between 0ms and 2600ms in steps of 1ms.

The default delay is 0ms.

Delay-Ch_B3	Every audio output channel can be delayed up to 2.6 seconds. The delay of Delay-Ch_B3 can be adjusted with `Delay-Ch_B3`. The delay can be adjusted between `0`ms and `2600`ms in steps of 1ms.

The default delay is `0`ms. |
| **Delay-Ch_B4** | Every audio output channel can be delayed up to 2.6 seconds. The delay of Delay-Ch_B4 can be adjusted with `Delay-Ch_B4`. The delay can be adjusted between `0`ms and `2600`ms in steps of 1ms.

The default delay is `0`ms. |
| **Gain-Ch_B1** | The level of input channel B1 of is set by the Gain control `Gain-Ch_B1`. The audio level can be adjusted between `+12`dB and `−60 dB` in steps of 0.25dB. Below 60dB the audio is muted and the display shows `−999.00dB`.

The default setting is 0.00dB. |
| **Gain-Ch_B2** | The level of input channel B2 of is set by the Gain control `Gain-Ch_B2`. The audio level can be adjusted between `+12`dB and `−60 dB` in steps of 0.25dB. Below 60dB the audio is muted and the display shows `−999.00dB`.

The default setting is 0.00dB. |
| **Gain-Ch_B3** | The level of input channel B3 of is set by the Gain control `Gain-Ch_B3`. The audio level can be adjusted between `+12`dB and `−60 dB` in steps of 0.25dB. Below 60dB the audio is muted and the display shows `−999.00dB`.

The default setting is 0.00dB. |
| **Gain-Ch_B4** | The level of input channel B4 of is set by the Gain control `Gain-Ch_B4`. The audio level can be adjusted between `+12`dB and `−60 dB` in steps of 0.25dB. Below 60dB the audio is muted and the display shows `−999.00dB`.

The default setting is 0.00dB. |
| **Phase-Ch_B1** | The phase of the audio of channel B1 can be adjusted using `Phase-Ch_B1`. The user can choose between `0` degrees and `180` degrees phase shift.

The default setting is `0` degrees. |

Phase-Ch_B2 | The phase of the audio of channel B2 can be adjusted using `Phase-Ch_B2`. The user can choose between `0` degrees and `180` degrees phase shift.

The default setting is `0` degrees.

Phase-Ch_B3 | The phase of the audio of channel B3 can be adjusted using `Phase-Ch_B3`. The user can choose between `0` degrees and `180` degrees phase shift.

The default setting is `0` degrees.

Phase-Ch_B4 | The phase of the audio of channel B4 can be adjusted using `Phase-Ch_B4`. The user can choose between `0` degrees and `180` degrees phase shift.

The default setting is `0` degrees.

0dBFS-In_B | With this setting you can select which reference level input is expected on input B. Selectable are +24dBu, +22dBu, +18dBu, +15dBu and +12sBu. Set to for instance +15dBu (which is default) the card will produce a -15dBFs gain which then counts as 0dBu.

EDH-Gen_B | This setting allows the user to switch the built-in EDH generator on/off. The EDH generator inserts EDH (SDI Error Detection Handling) into the output signal.

The settings of `EDH-Gen` are `On` and `Off`.

The default setting is `On`.

6 Status Menu

Introduction

The status menu indicates the current status of each item listed below.

SDI-In_A

This status item indicates the presence of a valid serial digital video signal is present at the input. `SDI-Input_A` indicates if an input signal is `NA` (not available) or `Present`.

SDI-In_B

This status item indicates the presence of a valid serial digital video signal is present at the input. `SDI-Input_B` indicates if an input signal is `NA` (not available) or `Present`.

GrpInUse_A

`GrpInUse` indicates the audio groups that are already present in the incoming SDI_A signal. The indication of a group, or groups being present is as follows, ____1, __2_, etc. When no groups are present `GrpInUse` indicates _____.

GrpInUse_B

`GrpInUse` indicates the audio groups that are already present in the incoming SDI_B signal. The indication of a group, or groups being present is as follows, ____1, __2_, etc. When no groups are present `GrpInUse` indicates _____.

Grp-Ins_A

When the serial digital video signal already contains audio data and `Emb-A_Mode` is set to `Append` and the selection `Emb-A_Sel` is set to the same group number as the present audio, this status item will generate an `Error`. No embedding occurs for the selected group that creates the error. If `Emb-Mode` is set to `Overwrite` the present audio data will be lost, and replaced by the new audio data. If an error does not occur `Grp-Ins` will indicate `Ok`.

Grp-Ins_B

When the serial digital video signal already contains audio data and `Emb-B_Mode` is set to `Append` and the selection `Emb-B_Sel` is set to the same group number as the present audio, this status item will generate an `Error`. No embedding occurs for the selected group that creates the error. If `Emb-Mode` is set to `Overwrite` the present audio data will be lost, and replaced by the new audio data. If an error does not occur `Grp-Ins` will indicate `Ok`.

Audio-Ch_A1

The status menu item `Audio-Ch_A1` indicates the status of audio data that will be embedded in channel 1 of the group selected by `EMB_A`.

When this channel does not contain audio, this item will indicate `NA`. If embedded audio is present and not clipped it will indicate `Ok`. Due to mis-adjustment of `Gain-Ch_A1`, the audio signal can be raised above 0 dBFS, a distorted audio signal will be the result. In this situation `Audio-Ch_1` indicates `Clipped` and the DATA-ERROR-led on the 2EB24 will illuminate.

Audio-Ch_A2

The status menu item `Audio-Ch_A2` indicates the status of audio data that will be embedded in channel 2 of the group selected by `EMB_A`.

When this channel does not contain audio, this item will indicate `NA`. If embedded audio is present and not clipped it will indicate `Ok`. Due to mis-adjustment of `Gain-Ch_A2`, the audio signal can be raised above 0 dBFS, a distorted audio signal will be the result. In this situation `Audio-Ch_2` indicates `Clipped` and the DATA-ERROR-led on the 2EB24 will illuminate.

Audio-Ch_A3

The status menu item `Audio-Ch_A3` indicates the status of audio data that will be embedded in channel 3 of the group selected by `EMB_A`.

When this channel does not contain audio, this item will indicate `NA`. If embedded audio is present and not clipped it will indicate `Ok`. Due to mis-adjustment of `Gain-Ch_A3`, the audio signal can be raised above 0 dBFS, a distorted audio signal will be the result. In this situation `Audio-Ch_1` indicates `Clipped` and the DATA-ERROR-led on the 2EB24 will illuminate.

Audio-Ch_A4

The status menu item `Audio-Ch_A4` indicates the status of audio data that will be embedded in channel 1 of the group selected by `EMB_A`.

When this channel does not contain audio, this item will indicate `NA`. If embedded audio is present and not clipped it will indicate `Ok`. Due to mis-adjustment of `Gain-Ch_A4`, the audio signal can be raised above 0 dBFS, a distorted audio signal will be the result. In this situation `Audio-Ch_4` indicates `Clipped` and the DATA-ERROR-led on the 2EB24 will illuminate.

Audio-Ch_B1

The status menu item `Audio-Ch_B1` indicates the status of audio data that will be embedded in channel 1 of the group selected by `EMB_B`.

When this channel does not contain audio, this item will indicate `NA`. If embedded audio is present and not clipped it will indicate `Ok`. Due to mis-adjustment of `Gain-Ch_B1`, the audio signal can be raised above 0 dBFS, a distorted audio signal will be the result. In this situation `Audio-Ch_1` indicates `Clipped` and the DATA-ERROR-led on the 2EB24 will illuminate.

Audio-Ch_B2

The status menu item `Audio-Ch_B1` indicates the status of audio data that will be embedded in channel 2 of the group selected by `EMB_B`.

When this channel does not contain audio, this item will indicate `NA`. If embedded audio is present and not clipped it will indicate `Ok`. Due to mis-adjustment of `Gain-Ch_B2`, the audio signal can be raised above 0 dBFS, a distorted audio signal will be the result. In this situation `Audio-Ch_2` indicates `Clipped` and the DATA-ERROR-led on the 2EB24 will illuminate.

Audio-Ch_B3

The status menu item `Audio-Ch_B3` indicates the status of audio data that will be embedded in channel 3 of the group selected by `EMB_B`.

When this channel does not contain audio, this item will indicate `NA`. If embedded audio is present and not clipped it will indicate `Ok`. Due to mis-adjustment of `Gain-Ch_B3`, the audio signal can be raised above 0 dBFS, a distorted audio signal will be the result. In this situation `Audio-Ch_3` indicates `Clipped` and the DATA-ERROR-led on the 2EB24 will illuminate.

Audio-Ch_B4

The status menu item `Audio-Ch_B4` indicates the status of audio data that will be embedded in channel 4 of the group selected by `EMB_B`.

When this channel does not contain audio, this item will indicate `NA`. If embedded audio is present and not clipped it will indicate `Ok`. Due to mis-adjustment of `Gain-Ch_B4`, the audio signal can be raised above 0 dBFS, a distorted audio signal will be the result. In this situation `Audio-Ch_4` indicates `Clipped` and the DATA-ERROR-led on the 2EB24 will illuminate.

EDH-Stat_A EDH-Stat_A, indicates the status of the EDH within the incoming SDI (A) signal.

OK is indicated if the status of the detected EDH does not indicate errors.

UES is shown if an EDH data block is not present.

EDA is displayed if an EDH error has previously been detected by another card in the SDI chain.

EDH is displayed if a previously undetected EDH error is detected by this device.

EDH-Stat_B EDH-Stat_B, indicates the status of the EDH within the incoming SDI (B) signal.

OK is indicated if the status of the detected EDH does not indicate errors.

UES is shown if an EDH data block is not present.

EDA is displayed if an EDH error has previously been detected by another card in the SDI chain.

EDH is displayed if a previously undetected EDH error is detected by this device.

7 Events Menu

Introduction

An event is a special message that is generated on the card asynchronously. This means that it is not the response to a request to the card, but a spontaneous message.

What is the Goal of an event?

The goal of events is to inform the environment about a changing condition on the card. A message may be broadcast to mark the change in status. The message is volatile and cannot be retrieved from the system after it has been broadcast. There are several means by which the message can be filtered.

Events

The events reported by the 2 EB24 are as follows;

Announcements

Announcements is not an event. This item is only used for switching the announcement of status changes on/off. 0=off, other =on

Input_A

Input_SDI_A can be selected between 0 .. 255. 0= no event, 1..255 are the priority setting. If set to 0 no events will be generated. If the input is lost an Event will be generated at the priority.

Input_B

Input_SDI_B can be selected between 0 .. 255. 0= no event, 1..255 are the priority setting. If set to 0 no events will be generated. If the input is lost an Event will be generated at the priority.

EDH-Status_A

EDH status_A can be selected between 0 .. 255. 0= no event, 1..255 is the priority setting.

EDH-Status_B

EDH status_B can be selected between 0 .. 255. 0= no event, 1..255 is the priority setting.

Grp-Insert_A

Grp-Insert_A status can be selected between 0..255. 0= no event, 1..255 is the priority setting.

Grp-Insert_B

Grp-Insert_B status can be selected between 0..255. 0= no event, 1..255 is the priority setting.

What information is available in an event?	The message consists of the following items;		

What information is available in an event?

The message consists of the following items;

1) A message string to show what has happened in text, for example: "INP_LOSS", "REF_LOSS", "INP_RETURN".

2) A tag that also shows what happens, but with a predefined number: e.g. 1 (= loss of input), 2 (= loss of reference), 129(= 1+128 = return of input). For a list of these predefined tags see the table on the next page.

3) A priority that marks the importance of an event. This value is defined by the user and can have any value between 1 and 255, or 0 when disabled.

4) A slot number of the source of this event.

The Message String

The message string is defined in the card and is therefore fixed. It may be used in controlling software like Synapse Set-up to show the event.

The Tag

The tag is also defined in the card. The tag has a fixed meaning. When controlling or monitoring software should make decisions based on events, it is easier to use the tag instead of interpreting a string. The first implementation is the tag controlled switch in the GPI16.

In cases where the event marks a change to fault status (e.g. 1 for Loss of Input) the complement is marked by the tag increased by 128 (80_{hex}) (e.g. 129 (81_{hex}) for Return of Input).

Defining Tags

The tags defined for the ASM10 are:

Event Menu Item	Tag		Description
Announcements	0 or NA	0 or NA	Announcing of report and control values
Input	01_{hex}=INP_LOSS	81_{hex}=INP_RETURN	primary input lost or returned
EDH-Status	03_{hex}=EDH_ERROR	83_{hex}=EDH_OK	EDH error occurred
Ref-Status	02_{hex}=REF_LOSS	82_{hex}=REF_RETURN	reference lost or returned
ANC-Insert	0_{hex}=ANC_ERROR	8_{hex}=ANC_OK	ANC- error

The Priority The priority is a user-defined value. The higher the priority of the alarm, the higher this value. Setting the priority to Zero disables the announcement of this alarm. Alarms with priorities equal or higher than the Error Threshold setting of the RRC will cause the error LED on the Synapse rack front panel to light.

The Address Together with the message string or the tag, the slot number or address of the card is relevant to be able to assign the event to a certain card.

8 LED Indication

Error LED The error LED indicates an error if the internal logic of the 2EB24 card is not configured correctly or has a hardware failure.

Input LED This LED indicates the presence of a valid video signal at the input.

Reference LED Indicates the presence of a valid reference signal at the selected reference input connector (ref-1 or ref-2). See section 5 Ref Input.

ANC Data LED This led indicates the presence of embedded audio in the serial digital video signal.

DATA ERROR LED This led indicates three different types of errors:

- Audio signal 1, 2, 3 or 4 of the local output is clipped
- ANC Error
- EDH Error

Connection LED This LED illuminates after the card has initialized. The LED lights for 0.5 seconds each time a connection is made to the card.

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9 Block Schematic
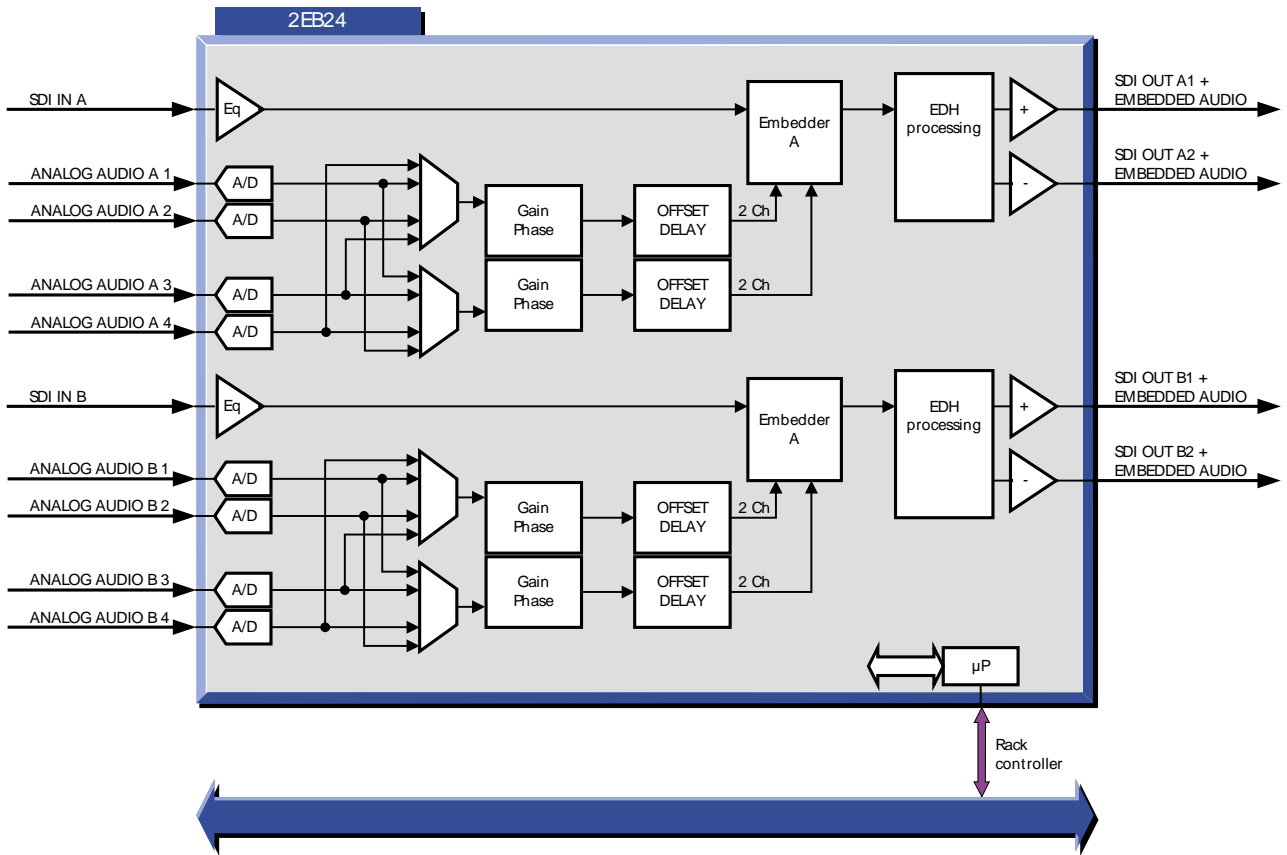
10 Connector Panel
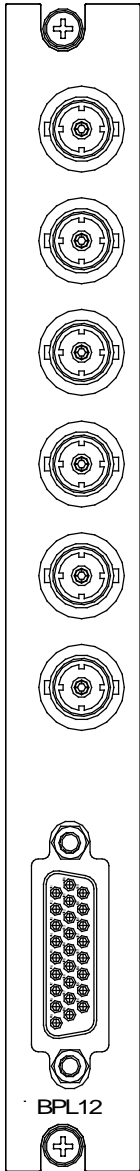
J1 = SDI in A

J2 = SDI + Embedded audio A out

J3 = SDI + Embedded audio A out

J4 = SDI in B

J5 = SDI + Embedded audio B out.

J6 = SDI + Embedded audio B out.

J7 = Analog audio input (for connections see table)

BPL12

Analog_Input	D-sub pin number J7
A1_Pos	10
A1_Neg	19
A1_GND	1
A2_Pos	11
A2_Neg	20
A2_GND	2
A3_Pos	12
A3_Neg	21
A3_GND	3
A4_Pos	13
A4_Neg	22
A4_GND	4
B1_Pos	14
B1_Neg	23
B1_GND	5
B2_Pos	15
B2_Neg	24
B2_GND	6
B3_Pos	16
B3_Neg	25
B3_GND	7
B4_Pos	17
B4_Neg	26
B4_GND	8

The fiber backplanes that can used are: BPL12T2_FC/PC,
BPL12T2_SC, BPL12R2_FC/PC and BPL12R2_SC

!Unused inputs and outputs must be terminated
with the correct impedance!

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