



GDV080/090/100

HDV080/090/100

Monitoring distribution amplifier with down converted SD or analog video outputs and optional audio de-embedder

Installation and Operation manual

**MASTER
Card**

3 TRIPLE RATE
GB/s, HD, SD

Upgradable to
3Gb/s

AFD ready
S2016



Synapse

TECHNICAL MANUAL

GDV080/090/100

HDV080/090/100



Lange Wagenstraat 55

NL-5126 BB Gilze

The Netherlands

Phone: +31 161 850 450

Fax: +31 161 850 499

E-mail: Info@axon.tv

Web: www.axon.tv



WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE

- ALWAYS disconnect your entire system from the AC mains before cleaning any component. The product frame (SFR18 or SFR04) must be terminated with three-conductor AC mains power cord that includes an earth ground connection. To prevent shock hazard, all three connections must always be used.
- NEVER use flammable or combustible chemicals for cleaning components.
- NEVER operate this product if any cover is removed.
- NEVER wet the inside of this product with any liquid.
- NEVER pour or spill liquids directly onto this unit.
- NEVER block airflow through ventilation slots.
- NEVER bypass any fuse.
- NEVER replace any fuse with a value or type other than those specified.
- NEVER attempt to repair this product. If a problem occurs, contact your local Axon distributor.
- NEVER expose this product to extremely high or low temperatures.
- NEVER operate this product in an explosive atmosphere.

Warranty: Axon warrants their products according to the warranty policy as described in the general terms. That means that Axon Digital Design BV can only warrant the products as long as the serial numbers are not removed.

Copyright © 2001 – 2013 AXON Digital Design B.V.

Date created: 23-10-2009

Date last revised: 03-01-2013

Axon, the Axon logo and Synapse are trademarks of Axon Digital Design B.V.

This product complies with the requirements of the product family standards for audio, video, audio-visual entertainment lighting control apparatus for professional use as mentioned below.



EN60950	Safety
EN55103-1: 1996	Emission
EN55103-2: 1996	Immunity

Axon Digital Design
GDV080/090/100
HDV080/090/100



Tested To Comply
With FCC Standards

FOR HOME OR OFFICE USE

This device complies with part 15 of the FCC Rules
Operation is subject to the following two conditions:
(1) This device may cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

Table of Contents

Introduction to Synapse	4
An Introduction to Synapse	4
Local Control Panel	4
Remote Control Capabilities	4
Unpacking and Placement	5
Unpacking	5
Placing the card	5
A Quick Start	6
When Powering-up	6
Changing settings and parameters	6
Front Panel Control	6
Example of changing parameters using front panel control	7
Synapse Cortex Software	8
Menu Structure Example	8
The GDV080/090 Card	9
Introduction	9
Features	9
Conversion capabilities	10
Applications	10
Block schematic	10
Settings Menu	12
Introduction	12
Inp-Form	12
SD_ColorConv	12
Clip-Video	12
WSS-det	12
Control	13
No-Control	13
PrstEditView	13
Output1	13
Output2	13
Output3	13
Output4	13
Active-Preset	13
Edit-Preset	14
#DConv_Scale	14
#H-Pos	14
#WSS-insert	14
#WSS-Stnd	14
#WSS-Extnd	14
#VI-Insert	14
#VI-Data	15
R-Gain	15
G-Gain	15
B-Gain	15
Black	15
R-Black	15
G-Black	15
B-Black	15
VITC_Insert	15
VITC_Ln_Dup	15
VITC_Ln_625	15
VITC_Ln_525	16
VITC_RD_Ln	16
Y-Filter	16
C-Filter	16
Setup	16
Audio-Phase	16
AudioStatusBits	16
Out3-AES1_L ~ Out4-AES2_R	17
AddOn-A	17
AddOn-B	17
Video-delay	17

Status Menu	18
Introduction	18
SDI-Input	18
AFD-Det	18
WSS-Std-Det	19
WSS-Ext-Det	19
VI_Det	20
TC_Stat	20
GrpInUse	20
AES_Ch_1 ~ AES_CH_4	20
ADDON_A_1 ~ ADDON_B4	20
CRC-Stat	20
Events Menu	21
Introduction	21
What is the Goal of an event?	21
Events	21
Announcements	21
Input-Status	21
CRC-Stat	21
What information is available in an event?	21
The Message String	22
The Tag	22
Defining Tags	22
The Priority	22
The Address	22
LED Indication	23
Error LED	23
Input LED	23
ANC Data LED	23
Reference LED	23
Data Error LED	23
Connection LED	23
Block Schematic	24
Connector Panels	25

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 rack controller 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 manual. The method of connection to a computer using Ethernet is also described in the ERC/ERS/RRC/RRS manual.



CHECK-OUT: “SYNAPSE CORTEX” SOFTWARE WILL INCREASE SYSTEM FLEXIBILITY OF ONE OR MORE SYNAPSE FRAMES

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

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.

Placing the card

The Synapse card can be placed vertically in an SFR18 frame or horizontally in an SFR04 and SFR08 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.

NOTE: Please check appendix 1 before connecting any backpanel!

3 A Quick Start

When Powering-up

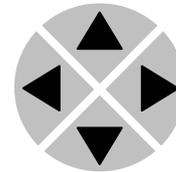
On powering up the Synapse frame, the card set will use basic data and default initialisation settings. All LED's will light during this process. After initialisation, several LED's will remain lit – the exact number and configuration is dependent upon the number of inputs connected and the status of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

Changing settings and parameters

The front panel controls or the Synapse Cortex 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



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.

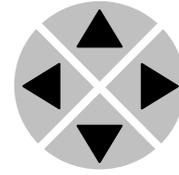
- Press ► To go forward through the menu structure.
- Press ◀ To go back through the menu structure.
- Press ▲ To move up within a menu or increase the value of a parameter.
- Press ▼ To move down through a menu or decrease the value of a parameter.

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

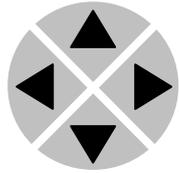
```
RRC18 [Select Card]
>S01=SFS10
```



Pressing the ► selects the SFS10 in frame slot 01.

The display changes to indicate that the SFS10 has been selected. In this example the Settings menu item is indicated.

```
SFS10 [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 SFS10 Settings menu item SDI-Format has been selected and shows that its current setting is Auto.

```
SFS10 [Settings]
>SDI-Format=Auto
```

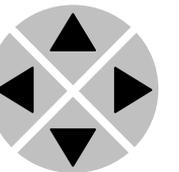


Pressing the ► selects the settings item shown, in this example SDI-Format.

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

The display changes to indicate that the SFS10 Edit Setting menu item SDI-Format has been selected.

```
SFS10 Edit Setting]
SDI-Format>Auto
```



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.



Synapse Cortex Software

Synapse Cortex 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. Synapse Cortex 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.

For operation of Synapse Cortex, please refer to the Cortex help files.

Menu Structure Example

Slot	Module	Item	Parameter	Setting
▲				
▲				
S02		Identity		
▲				
S01	SFS10	▶ Set-tings	▶ Standard_dig	▶ Auto
▼				
S00	RRC18	▼ Status	▼ Mode	▼ 625
		▼ Events	▼ Ref-Input	▼ 525
			▼ H-Delay	
			▼	
			▼	

NOTE: Further information about Front Panel Control and Synapse Cortex can be obtained from the ERC, ERS, RRC and RRS operational manuals and the Cortex help files.

4 The GDV080/090/100 Card

Introduction

The GDV- and HDV080/090/100 are 3Gb/s - HD – SD SDI distribution amplifiers with a built-in 3Gb/s, HD SDI to SD SDI or composite down converter. The GDV- and HDV090/80 cards are capable of de-embedding 8 channels audio into 2 groups on the bus. The GDV100 and HDV100 cards can de-embed 16 channels of audio into 4 groups on the bus. The GDV- and HDV090 and the GDV- and HDV100 is also capable of de-embedding 4 channels audio in two AES channels on the back panel.

This card acts as a master-card. It is an audio extractor that outputs 2 x 4 channels ADD-ON audio signals via the local bus to two ADD-ON cards.

The GDV080 is future upgradeable to GDV090 or GDV100. The HDV080 is future upgradeable to HDV090, HDV100, GDV080, GDV090 or GDV100.

Features

- 1 auto-detect 3Gb/HD/SD SDI input
- 4 reclocked HD/SD SDI outputs or 3 3Gb outputs
- 4 individually switchable down converted video outputs. User can choose from CVBS or SD SDI or AES audio (lowest 2 BNCs on G-HDV090 and G-HDV100 only)
- Supports 16:9 letterbox, 14:9 letterbox, 4:3 (anamorphic and centre crop)
- HD to SD color space conversion (ITU709 and ITU601)
- Reads S2016 and converts to WWS/VI preset based (3Gb/s and HD)
- Copies WSS/VI into SD output (SD)
- Reads ATC data and transports TC data from 3Gb/s, HD and SD to SD SDI
- Transparent for 16 channels of audio on down converted video (G-HDV100 only)
- 2 groups (G-HDV090) or 4 groups (G-HDV100) de-embedding on ADD-ON bus
- Selectable NTSC setup removal
- Y level adjustable for SMPTE
- Locks to SDI input
- Full control and status monitoring through the front panel of the SFR04/08/18 frame and the Ethernet port (ACP)
- Optional 1 fiber input (replacing 1 SDI input) on I/O panel

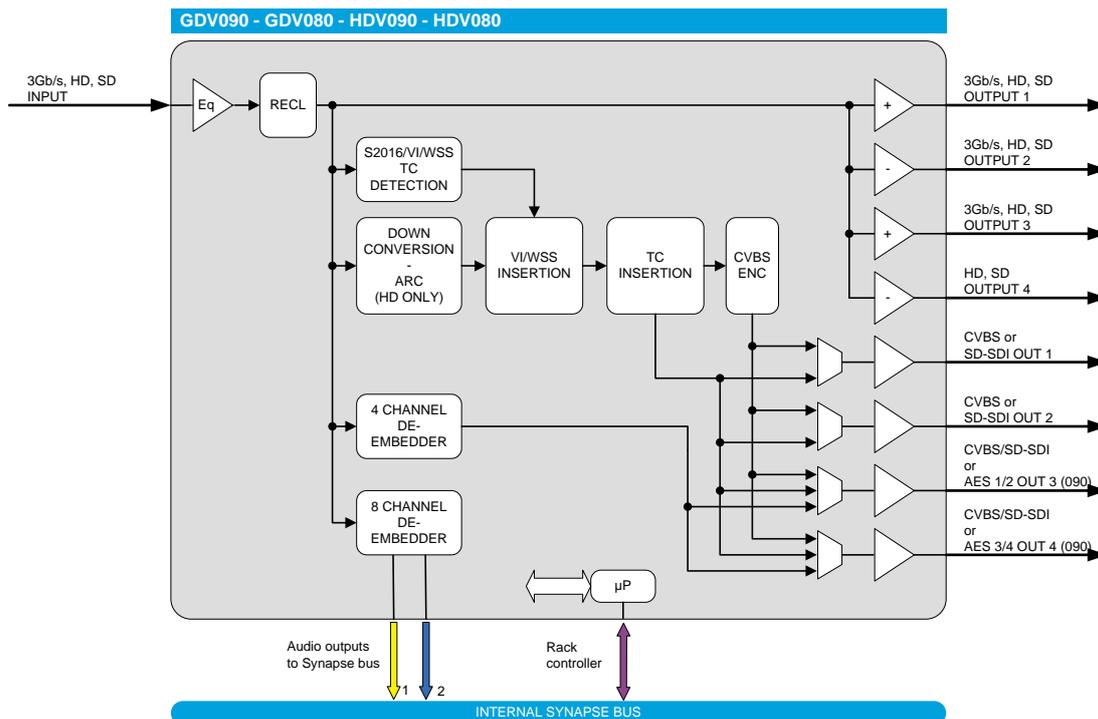
Conversion capabilities

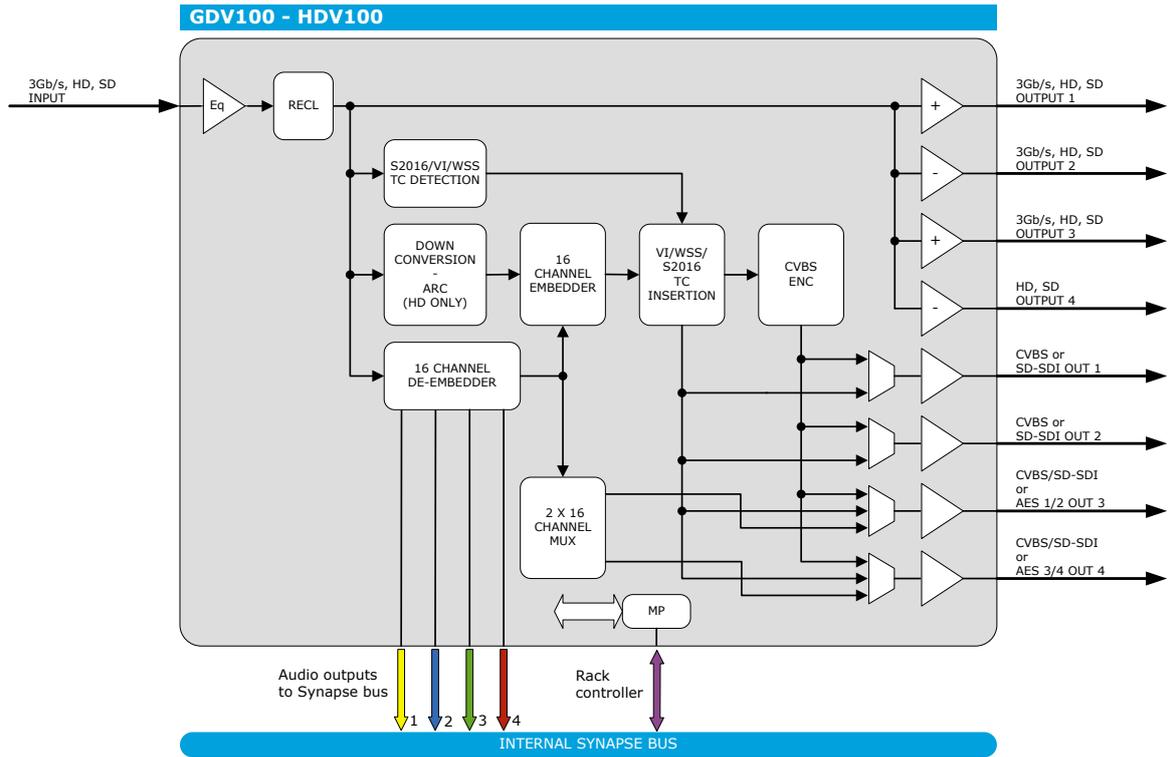
CONVERSION		Output												
		1080p29.97	1080p25	1080p23.97	1035i59.97	1080i59.94	1080i50	720p59.94	720p50	720p29.97	720p25	720p23.98	480i59.94(525)	576i50(625)
Input	1080p29.97											x		
	1080p25												x	
	1080p23.97											x		
	1035i59.97											x		
	1080i59.94											x		
	1080i50												x	
	720p59.94												x	
	720p50													x
	720p29.97												x	
	720p25													x
	720p23.98												x	
	480i59.94(525)												x	
	576i50(625)													x

Applications

- Generic 3Gb/s, HD, SDI Distribution with preview output
- Pre-routing down converted DA or SD with monitoring output
- De-embedding audio to the ADD-ON bus
- De-embedding of two AES channels on back panel (G-HDV090/100 only)

Block schematics





5 Settings Menu

Introduction

The settings menu displays the current state of each GDV-HDV080/090/100 setting and allows you to change or adjust it. Settings can be changed using the front panel of the Synapse frame (SFR18, SFR08 or SFR04) or with Cortex. Also the SCP08 control can be used. Please refer to chapter 3 for information on the Synapse front panel control and Cortex.

Note: All items preceded with a #-sign are part of the presets.

SYSTEM

Inp-Form

With Inp-Form you can set what the input format is. Possible settings are:

- 1080p60, 1080p50 (only for GDV versions)
- 1080i60, 1080i50
- 1080p30, 1080p25, 1080p24
- 1035i60
- 720p60, 720p50
- 720p30, 720p25, 720p24
- SD525, SD625
- Auto (automatically sets this setting to what is detected)

SD_ColorConv

SD_ColorConv optimizes the color conversion of the SD signal. As the color coding of HD (709) and SD (601) are different, it is necessary to convert these when the output is SD. The best result when down-converting is active is when this is set to 601to709. It is also possible to switch the filter off or to have it automatically set (Auto). The default setting is Auto.

Clip-Video

With this item the Y,Pr,Pb values that are out of the official reach of the Y,Pr,Pb protocol can be brought back to the maximum allowed values. Can be switched On or Off. By default it is switched Off.

WSS-det

The GDV/HDV can either detect standard WSS or extended WSS (indicated in the Status menu). The status items will only indicate a detected WSS value when this setting is set to Standard (WSS-Std-Det is indicated) or to Extended (WSS-Ext-Det is indicated). When set to off, both status items will be on NA.

Control The G/HDV can be controlled by the AFD (SMPTE 2016) data of the input, or manually. When set to S2016 the presets are triggered by the incoming AFD value respectively (AFD_0 = preset 1, AFD_1 = preset 2, AFD_2 = preset 3, etc.). When set to manual (default) you can manually change the preset by changing the Active-Preset setting .

No-Control With this setting you can select what should happen when Control is set to S2016 and there is no AFD data detected on the input. You can choose one of the 16 presets to be activated in that event, or you can choose to hold the current active preset.

PrstEditView With this setting set to Follow Active, the edit preset setting (Edit-Preset) will follow the active preset when the active preset is changed. This to avoid confusion when changing the active. Set to Independent the edit preset will not automatically follow active preset changes. By default set to Follow Active.

Output1 With this setting you select whether you want output1 (BNC 6 on the backpanel) to be a CVBS output or an SDI output.

Output2 With this setting you select whether you want output2 (BNC 7 on the backpanel) to be a CVBS output or an SDI output.

Output3 With this setting you select whether you want output3 (BNC 8 on the backpanel) to be a CVBS output , an SDI output or an AES /EBU audio output (G-HDV090 models only).

Output4 With this setting you select whether you want output4 (BNC 9 on the backpanel) to be a CVBS output , an SDI output or an AES /EBU audio output (G-HDV090 models only).

PRESET

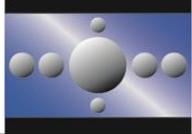
Active-Preset With this item you can manually change the currently active preset when control is set to manual. Can be any preset between 1 and 16. By default it is set to 1. All menu settings that are preceded with a '#'-prefix are part of the preset.

Edit-Preset

Here you can select which of the 16 selectable presets you want to edit. Changing this will *not* change the active preset, unless the currently active preset is the same you are going to edit. All menu settings that are preceded with a ‘#’ -prefix are part of the preset.

#DConv_Scale

With this item you set the Aspect Ratio of the output when down converting. Can be Anamorphic, LetterBox, LBox-14:9 or PanScan. The following table shows examples of the possible aspect ratios when the input source is 16:9.

Setting:	Result on 4:3 screens:
Anamorphic	
LetterBox	
LBox-14:9	
PanScan	

#H-Pos

With this setting you can adjust the horizontal position of the output picture between -64 and +64 pixels.

#WSS-insert

With this item you can set whether or not you want to insert a (new) WSS value on the output. This can be a standard WSS value or an extended WSS value. Can also be set to off, which is default.

#WSS-Stnd

When WSS-insert is set to standard, you can choose which standard WSS value should be inserted. Can be 1_vid to 8_vid or 1-flm to 8-flm. Default is 1_vid.

#WSS-Extnd

When WSS-insert is set to extended, you can choose which extended WSS value should be inserted. Can be 4:3_0 to 4:3_7 or 16:9_0 to 16:9_7. Default is 4:3_0.

#VI-Insert

With this item you can Switch on or off VI insertion.

#VI-Data With the #VI-Insert setting set to on, you can select VI values with this setting, which you want to be inserted. possible are all VI settings between 4:3_0 and 4:3_7 and the values between 16:9_0 and 16:9_7. Default is 4:3_0.

PROC AMP

R-Gain R-Gain controls the Red gain. The control range is between 50% and 150%. The default setting is 100%.

G-Gain G-Gain controls the Green gain. The control range is between 50% and 150%. The default setting is 100%.

B-Gain B-Gain controls the Blue gain. The control range is between 50% and 150%. The default setting is 100%.

Black Black controls the total R-G-B Black gain. The control range is between -128bit and 127bit. The default setting is 0bit.

R-Black R-Black controls the Red-Black. The control range is between -128bits and 127 bits in steps of 1 bit. The default setting is 0 bit.

G-Black G-Black controls the Green-Black. The control range is between -128bits and 127 bits in steps of 1 bit. The default setting is 0 bit.

B-Black B-Black controls the Blue-Black. The control range is between -128bits and 127 bits in steps of 1 bit. The default setting is 0 bit.

TIMECODE

VITC_Insert With this card it is possible to copy the embedded timecode information of the to the output. With this setting you choose if you want to switch time code inserting on (default) or off.

VITC_Ln_Dup When set to On, the VITC line is duplicated to the above selected line + 2 lines.

VITC_Ln_625 When VITC_Ln_Ctrl is set to Manual, with this setting you can select a line between 7 and 22 when the output is SD625. Default is line 19.

VITC_Ln_525 When `VITC_Ln_Ctrl` is set to Manual, with this setting you can select a line between 7 and 22 when the output is SD525.

VITC_RD_Ln With this setting you can select what line of the input you want to copy the VITC data from. Can be any line between line 7 and line 22. Default is line 17.

ANA VIDEO

Y-Filter `Y-Filter` allows the selection of filters with different characteristics that can be used to enhance Luminance performance. `Y-Filter` can be set to Normal, Low-Pass and Notch. The default setting is Normal.

C-Filter The `C-Filter` setting adjusts the bandwidth of the chroma channel. Selection is made between LP1.3, LP.65, LP1.0, and LP2.0 all of which represent the bandwidth in MHz. The default setting is LP2.0.

Setup `Setup` allows the user to add setup when using NTSC signals. The settings of `Setup` are Enabled or Disabled. The default setting is Disabled.

AUDIO

Embedder
(G-HDV100 only) This G-HDV100-only setting switches on or off the audio embedder. Switched on will enable full 16 channel audio transparency on the down converted outputs. Default is off.

Audio-Phase With this item you can set the audio phase to be aligned or not (off). Default is Align.

AudioStatusBits With this item you can choose to either overwrite the audio status bits of the outputs, or to have them transparent (copied from the input).

**Out3-AES1_L ~
Out4-AES2_R**

With these items, which are only available in the GDV090/100 and HDV090/100, you can select which de-embedded audio channels you want as AES/EBU outputs.

AES1_L and AES1_R are the channels for the first AES output (BNC 8 on the backpanel), depends on whether Output3 is set to AES or not.

AES2_L and AES2_R are the channels for the second AES output (BNC 9 on the backpanel), depends on whether Output4 is set to AES or not.

AddOn-A

With this item you can select to which add-on group de-embedded audio channels A1 till A4 should be forwarded. Can be `group1`, `group2`, `group3` or `group4`. Can also be switched off (meaning channels A1 till A4 will not be de-embedded to the add-on bus at all. Default is `off`).

AddOn-B

With this item you can select to which add-on group de-embedded audio channels B1 till B4 should be forwarded. Can be `group1`, `group2`, `group3` or `group4`. Can also be switched off (meaning channels B1 till B4 will not be de-embedded to the add-on bus at all. Default is `off`).

AddOn-C

(G-HDV100 only)

With this item you can select to which add-on group de-embedded audio channels C1 till C4 should be forwarded. Can be `group1`, `group2`, `group3` or `group4`. Can also be switched off (meaning channels C1 till C4 will not be de-embedded to the add-on bus at all. Default is `off`. Only available in GDV100 and HDV100).

AddOn-D

(G-HDV100 only)

With this item you can select to which add-on group de-embedded audio channels D1 till D4 should be forwarded. Can be `group1`, `group2`, `group3` or `group4`. Can also be switched off (meaning channels D1 till D4 will not be de-embedded to the add-on bus at all. Default is `off`. Only available in GDV100 and HDV100).

Video-delay

With this setting you can set the video delay to a constant 40ms, or to `minimal` (in which case the resulting video delay depends on the input format)

6 Status Menu

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

SDI-Input This status item indicates the presence and format of a valid signal on the input. This is displayed as:

- 1080P60
- 1080p50
- 1080i60
- 1080i50
- 1080p30
- 1080p25
- 1080p24
- 1035i60
- 720p60
- 720p50
- 720p30
- 720p25
- 720p24
- SD525
- SD625
- NA

Link-format This status item displays the 3Gb/s format (Level-A or Level-B) when the input is 3Gb/s. If the input is not 3Gb/s, this item will indicate NA.

AFD-Det This item displays the detected SMPTE 2016 (AFD) values of the input. This is displayed as follows:

- AFD_0
- AFD_1
- AFD_2
- AFD_3
- AFD_4
- AFD_5
- AFD_6
- AFD_7
- AFD_8
- AFD_9
- AFD_10
- AFD_11
- AFD_12
- AFD_13
- AFD_14
- AFD_15
- NA (no S2016 detected)

WSS-Std-Det

This status item displays the detected standard WSS value of the input (only when WSS-Det in the settings menu is set to Standard). this is displayed as follows:

- 1_vid
- 2_vid
- 3_vid
- 4_vid
- 5_vid
- 6_vid
- 7_vid
- 8_vid
- 1_flm
- 2_flm
- 3_flm
- 4_flm
- 5_flm
- 6_flm
- 7_flm
- 8_flm
- NA (no standard WSS detected or detection switched off)

WSS-Ext-Det

This status item displays the detected extended WSS value of the input (only when WSS-Det in the settings menu is set to Extended). this is displayed as follows:

- 4:3_0
- 4:3_1
- 4:3_2
- 4:3_3
- 4:3_4
- 4:3_5
- 4:3_6
- 4:3_7
- 16:9_0
- 16:9_1
- 16:9_2
- 16:9_3
- 16:9_4
- 16:9_5
- 16:9_6
- 16:9_7
- NA (no WSS extended detected or detection switched off)

VI_Det	<p>This item displays the detected VI values of the input. This is displayed as follows:</p> <ul style="list-style-type: none"> ▪ 4:3_0 ▪ 4:3_1 ▪ 4:3_2 ▪ 4:3_3 ▪ 4:3_4 ▪ 4:3_5 ▪ 4:3_6 ▪ 4:3_7 ▪ 16:9_0 ▪ 16:9_1 ▪ 16:9_2 ▪ 16:9_3 ▪ 16:9_4 ▪ 16:9_5 ▪ 16:9_6 ▪ 16:9_7 ▪ NA (no VI detected)
TC_Stat	<p>This item indicates the status of the timecode on the input. Can be OK, NA (not available) or Error.</p>
GrpInUse	<p>This status item indicates which audio groups are used on the input. This is indicated as _____ when no audio is embedded, as 1234 when all audio groups are being used and for instance as _2_4 when only audio groups 2 and 4 are in use.</p>
AES_Ch_1 ~ AES_CH_4	<p>These items indicate the status of the AES audio output channels. Indicated as NA when there is no audio, OK when the audio is ok and Clipped when the audio is clipping.</p>
ADDON_A_1 ~ ADDON_D4	<p>These items indicate the status of the audio of each individual channel on the addon bus. Can be OK or NA (not available).</p>
CRC-Stat	<p>CRC Stat gives the status of the incoming SDI signal CRC. Can be: Error, Luma_CRC, Chroma_CRC or OK (when no CRC errors are detected).</p>

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 card 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-Status	Input-Status can be selected between 0 .. 255. 0= no event, 1..255 is the priority setting. If the input is lost an Event will be generated at the priority.
CRC-Stat	Input-Status can be selected between 0 .. 255. 0= no event, 1..255 is the priority setting. If the CRC-status is in error an Event will be generated at the priority.
TC-Stat	Time Code Status can be selected between 0 .. 255. 0= no event, 1..255 is the priority setting. If the TC-status is in error (Time Code loss) an Event will be generated at the priority.
What information is available in an event?	<p>The message consists of the following items;</p> <ol style="list-style-type: none"> 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 card are:

Event Menu Item	Tag		Description
Announcements	0 or NA	0 or NA	Announcement of report and control values
Input-Status	01 _{hex} =INP_LOSS	81 _{hex} =INP_RETURN	input lost or returned
CRC-status	02 _{hex} =CRC_ERROR	82 _{hex} =CRC_OK	CRC status error or OK
TC-status	04 _{hex} =TC_LOSS	84 _{hex} =TC_RETURN	TC status loss or return

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.

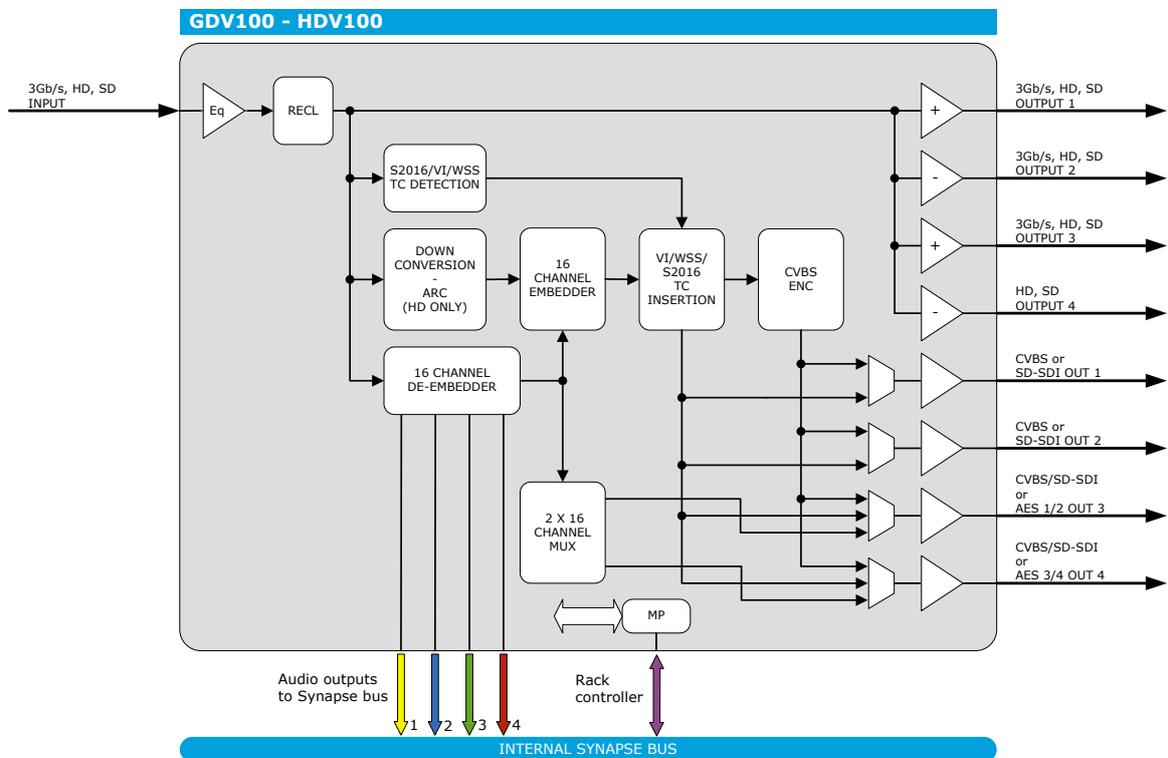
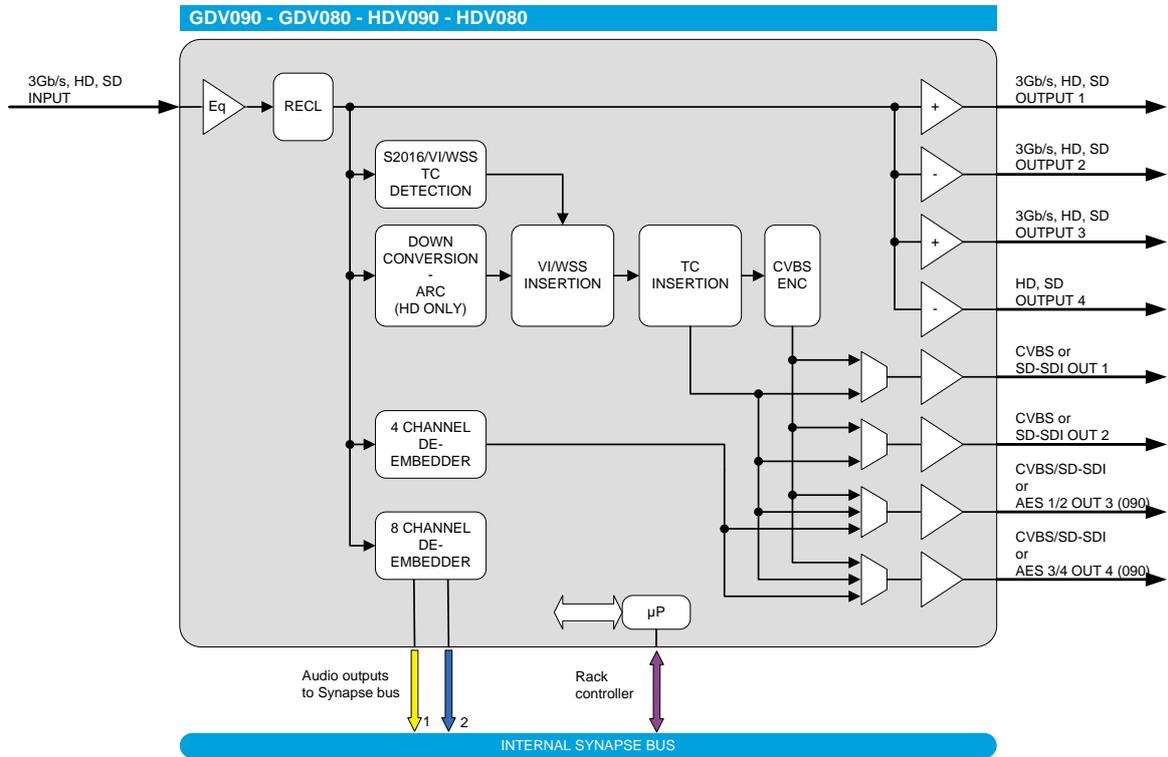
The Address

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 G-HDV080/090/100 card is not configured correctly or has a hardware failure.
Input LED	This LED indicated the presence of a valid SDI video signal on the input.
ANC Data LED	Indicates the presence of embedded audio within the input signal.
Reference LED	Indicated the presence of a valid reference signal on the selected reference input connector (ref-1 or ref-2).
Data Error LED	This LED indicates a CRC error.
Connection LED	This LED illuminates after the card has initialized. The LED lights for 0.5 seconds every time a connection is made to the card.

9 Block Schematic



10 Connector Panels

The GDV-HDV080/090/100 can be used with the BPH01 or the BHX01a. The following table displays the pinout of these backpanels in combination with the card.

