INSTALLATION AND OPERATION MANUAL

Synapse UDR108

UHD, FHD, HD and SD distribution amplifier with 8 reclocked outputs (single wire 12Gb/s SDI)

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General Information

ALWAYS disconnect your entire system from the AC mains before cleaning any component. The product frame (SFR18, SFR08 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 EVS distributor.

NEVER expose this product to extremely high or low temperatures.

NEVER operate this product in an explosive atmosphere.

To reduce the risk of fire or electrical shock, do not expose this appliance to rain or moisture.

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.

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

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.

Contents

ICONOGRAPHY

 Note

 Tip

 Warning

What's New?

In the Installation and Operation Manual the icon 

has been added on the left margin to highlight information on updated features.

1. Introduction

Synapse is a modular system designed for interconnecting various devices and equipment used in the broadcast industry. High density, intuitive operation and high-quality processing are key features of the system. Synapse offers a full range of converters and processing modules. Please visit the EVS website at www.evs.com for the information on our new products and the latest 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 backup and restore card settings. Please refer to the RRC18, RRC10, RRC04, RRS18 and RRS04 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 / RRS18 / RRS04 / ERC108-118 / ERS108-118) manuals. The method for connecting to a computer using Ethernet is also described in the ERC/ERS/RRC/RRS manuals.

Cortex software will increase system flexibility of one or more Synapse frames.

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

2. Unpacking and Placement

Unpacking

The EVS 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 of 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 the card is essential, as a card that is not located properly may show valid indicators, but will not function correctly.

On power up, all LEDs will light up for a few seconds. This is the time it takes to initialize the card.

3. The UDR108 Card

Introduction

The UDR108 is a single channel 12Gb/s UHD SDI reclocking distribution amplifier with 8 outputs. This card is ASI/DVB compatible.

Features

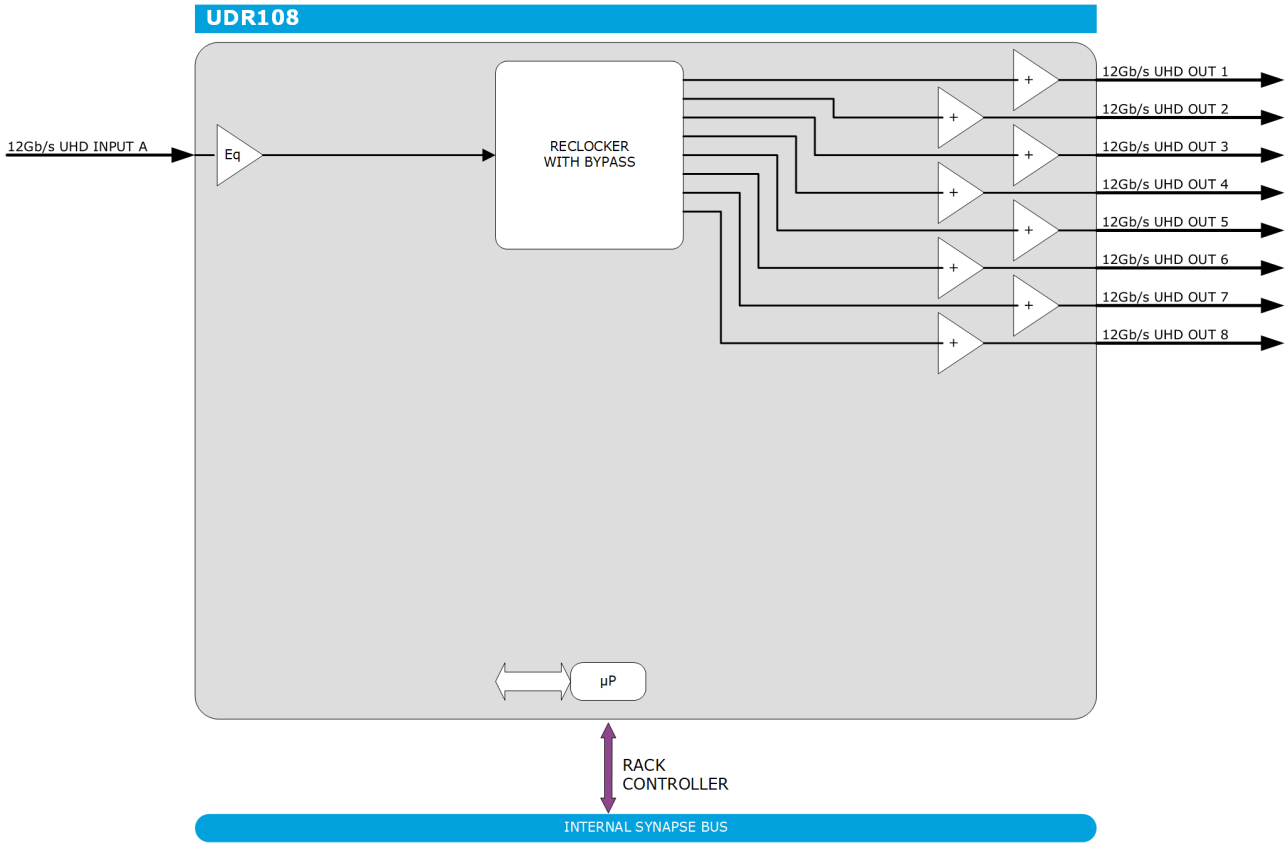
Compatible with:

- SD SDI 270 Mbit/s (SMPTE 259)
- HD SDI 1485 Mbit/s (SMPTE 292M)
- 3Gb/s SDI 2970 Mbit/s (SMPTE 424M)
- Ultra HD 12 Gb/s (SMPTE 2082-1)
- MADI
- ASI/DVB

Applications

The UDR108 can be used as a single channel generic wideband 12 Gb/s distribution amplifier.

Block Schematic



4. Settings Menu

4.1. Introduction

The Settings menu displays the current state of each UDR108 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. The SCP08 control can also be used. Please refer to "Quick Start" on page 1 for information on the Synapse front panel control and Cortex.

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

4.2. System Settings

Setting	Description
PLL_set_A	This sets the rate at which the PLL of input A is locked. This can be: 125M-270M, HD, 3G, 6G, 12G, Auto. Auto is the default value. Auto means that the card will detect the locking rate automatically. This will take a bit more time than setting this to a fixed rate.
Reclock_A	Allows to enable or bypass the regeneration of the timing of input signal A at the output. By default, this feature is set to On.
Mute_A	Allows to mute the video outputs. By default, this feature is set to Off.

5. Status Menu

5.1. Introduction

The Status menu provides information about the current status of each item listed below. There are no defaults for status indicators. The status depends on the presence of the input signals.

5.2. Status Items

Item	Description
SDI-Input_A	This status item indicates the presence of a valid SDI signal on the input. SDI_Input_A indicates if an input signal is Present, Loss or NA (Not Available).
PLL-rate_A	PLL_rate_A indicates the rate at which the PLL (= Phase-Locked Loop) of input A is locked when PLL_Set_A is set to auto. PLL_rate_A is a copy of the PLL_Set setting that sets the input. The range of locking rates is as follows: 270 Mb/s, 1.5 Gb/s, 3 Gb/s, 6 Gb/s, 12 Gb/s, NA.
Backplane-type	This status item indicates the type of backplane (I/O-panel) that is currently connected to the card, i.e. BPU03.

6. 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.

The events reported by the UDR108 card are as follows:

Menu Item	Description
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_A can be selected between 0 .. 255. 0= no event, 1..255 is the priority setting.
Lock-Status_A	Lock 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:

- A message string to show what has happened in text, for example: “INP_LOSS”, “REF_LOSS”, “INP_RETURN”.
- 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, please see the table below.
- 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.
- A slot number of the source of this event.

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.

Tags

The tag is also defined in the card. The tag has a fixed meaning. When controlling or monitoring software has to 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 an error status (e.g. 1 for Loss of Input), the complement is marked by the tag increased by 128 (80hex), (e.g. 129 (81hex) for Return of Input).

The tags defined for the UDR108 card are:

Event Menu Item	Tag		Description
Announcements	0 or NA	0 or NA	Announcement of report and control values
Input_A	01_{hex}=INP_LOSS_A	81_{hex}=INP_A_ PRESENT	SDI Input A lost or returned
Lock-status_A	11_{hex} =PLL_LOSS_A	91_{hex} = PLL_LOCKED_ A	PLL input A locked or unlock

Priority

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

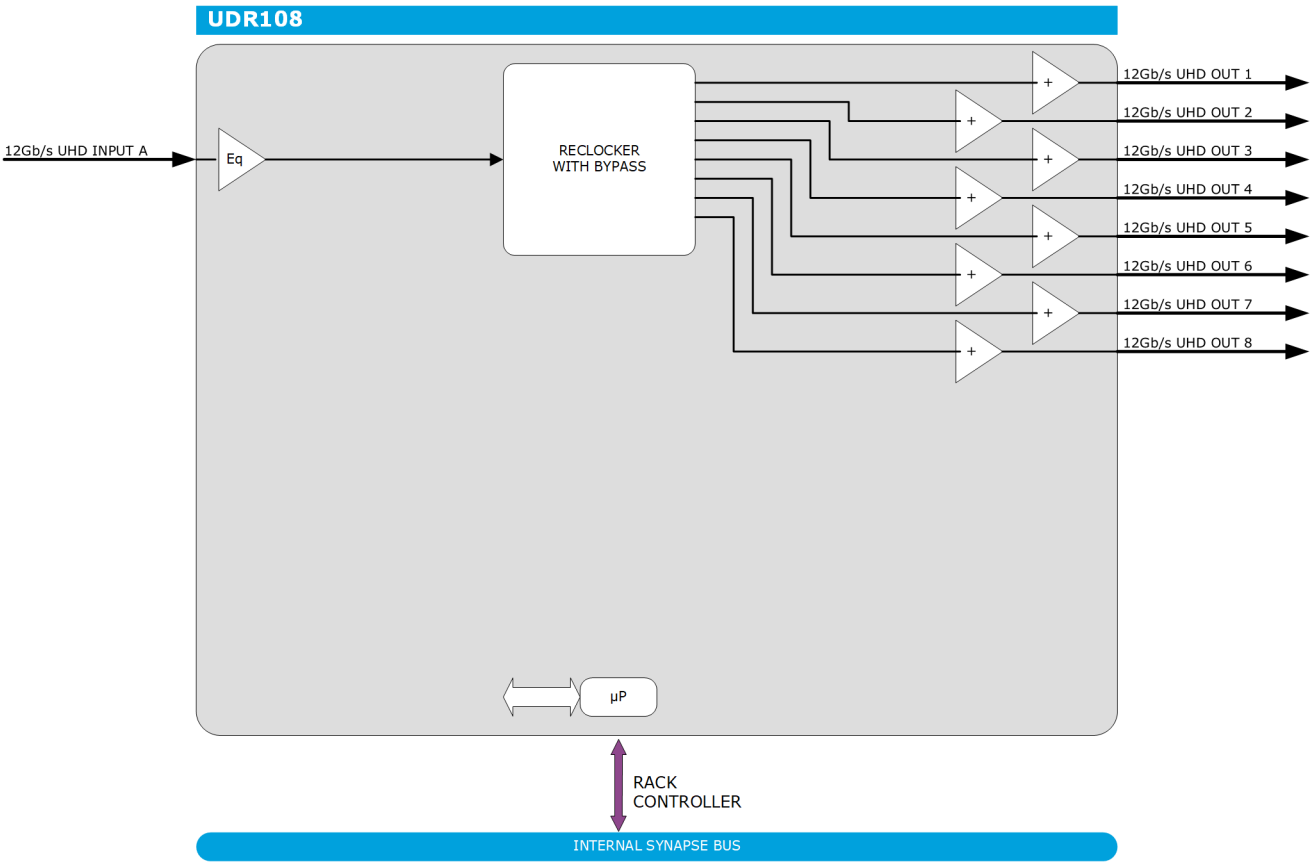
Card Address

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.

7. LED Indication

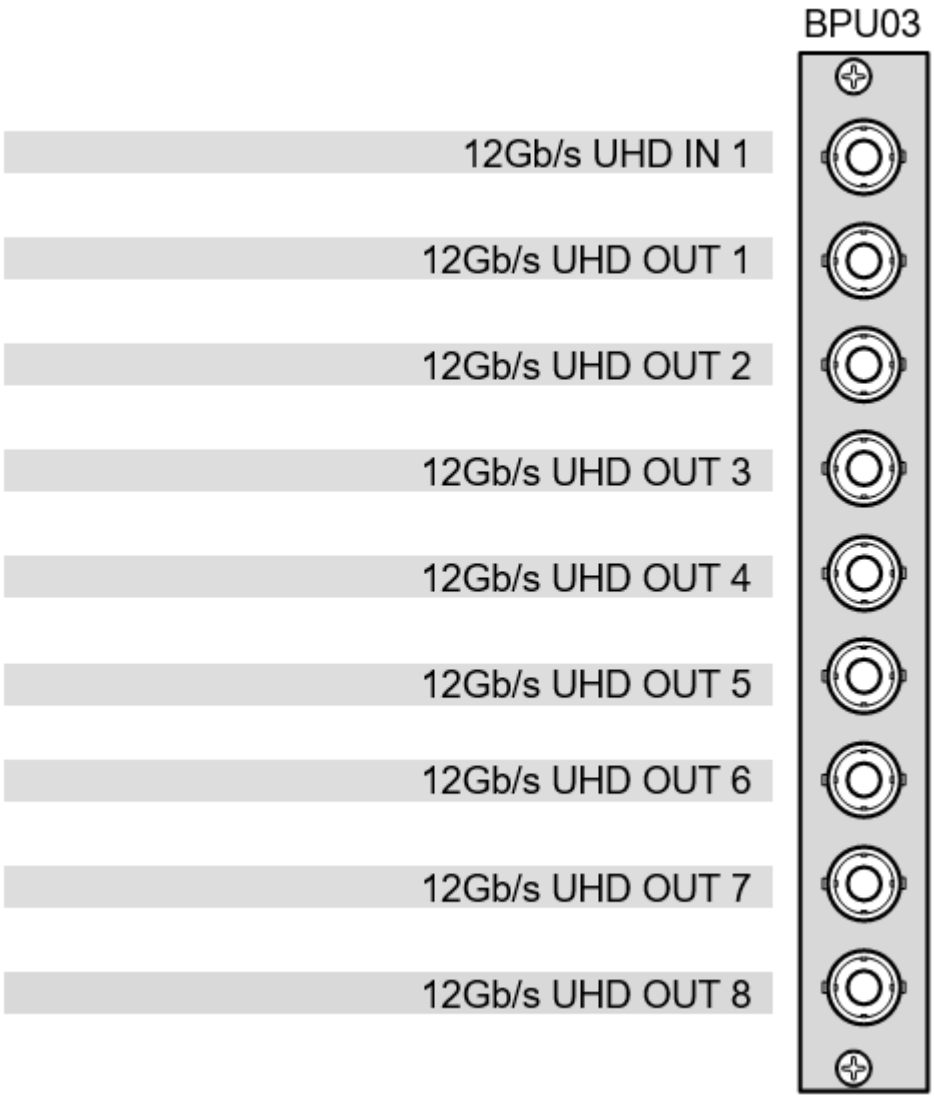
Indicator	Description
Error LED	The error LED indicates an error if the internal logic of the card is not configured correctly or has a hardware failure.
Input_A LED	This LED indicates the presence of a valid SDI video signal on input A.
Connection LED	This LED lights up after the card has initialized. The LED lights up for 0.5 seconds every time a connection is made to the card.

8. Block Schematic



9. Connector Panels

The UDR108 can be used with the BPU03 connector panel.



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