

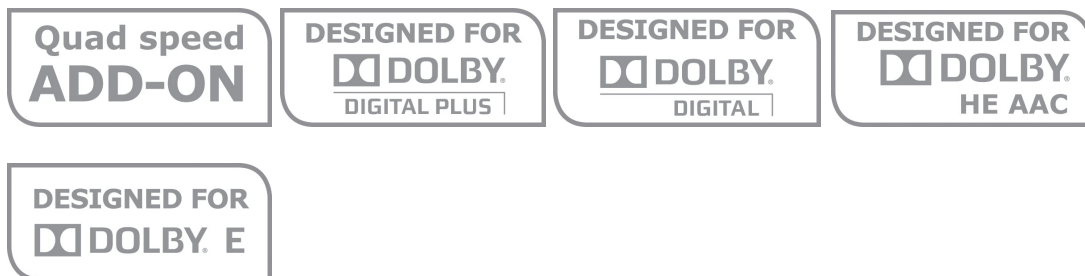


# Synapse

## DDP94

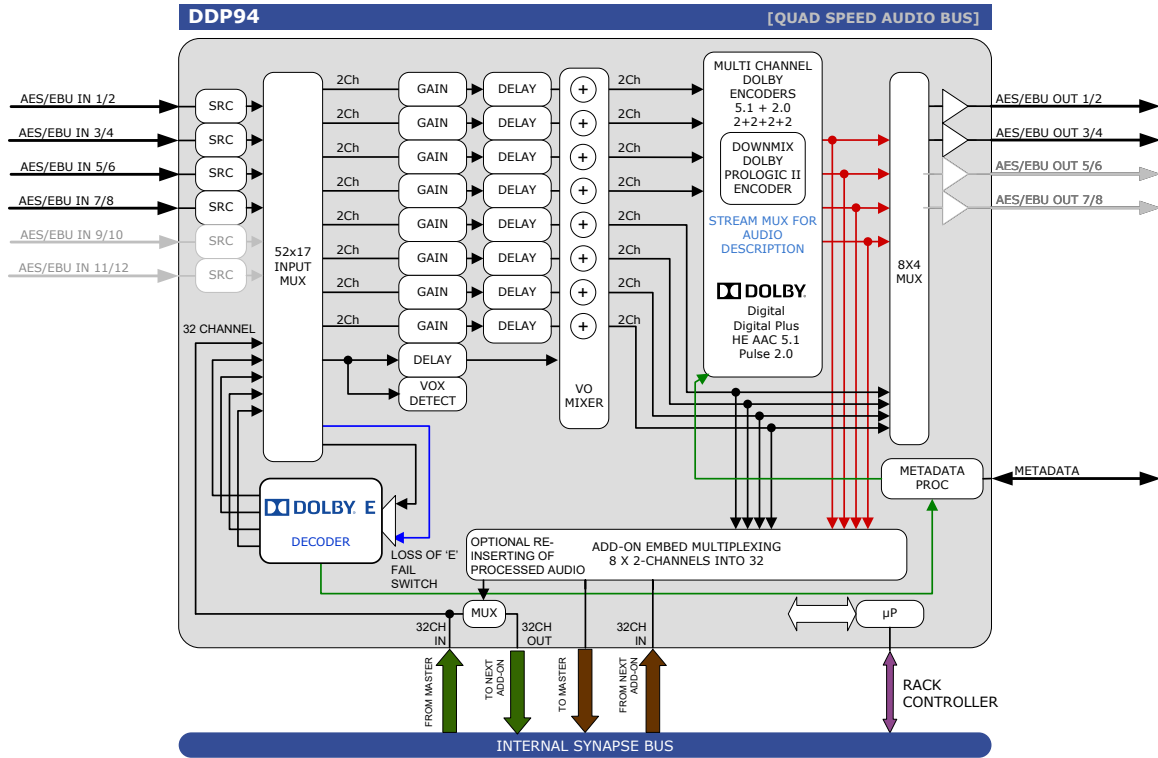
Quad-Speed Quad Speed multi-channel Dolby Digital (Plus), Dolby HE-AAC 5.1 and Dolby Pulse 2.0 encoder with Dolby E decoder

A Synapse® product



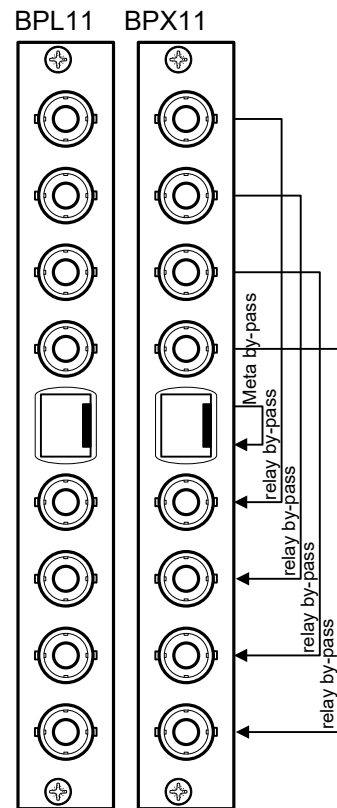
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# Block schematic & I/O panel



- AES/EBU IN 1/2
- AES/EBU IN 3/4
- AES/EBU IN 5/6
- AES/EBU IN 7/8
- METADATA I/O
- AES/EBU (OR BITSREAM) OUT 1/2
- AES/EBU (OR BITSREAM) OUT 3/4
- AES/EBU (OR BITSREAM) OUT 5/6 (OR IN 9/10)
- AES/EBU (OR BITSREAM) OUT 7/8 (OR IN 11/12)

BPX11 only in 4in/4out mode



## Features

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The DDP94 is a Quad Speed ADD-ON Dolby E decoder and multi channel Dolby Digital (plus), Dolby HE-AAC 5.1 and Dolby Pulse 2.0 encoder. The card is designed for the use with the Synapse high efficient Quad Speed multiplexing audio bus. The Quad Speed bus enables ADD-ON cards to be connected with a MASTER Card and have both input and output signals connected to this card for convenient routing and integration.

The DDP94 receives the Dolby E or PCM from one of the 4 (or 6) physical AES/EBU inputs or any of the 32 stereo pairs that can enter the card via the Quad Speed audio bus. The decoded stereo AES/EBU signals are available on its 4 (or 2) physical output connectors, via the internal Synapse bus directly to the MASTER Card or to the looping Quad Speed bus outputs. The same counts for the bitstream outputs that can be routed to the physical outputs, the Quad Speed bus return path outputs or the Quad Speed bus looping outputs. The latter will make it possible to route the decoded E (PCM) streams to an adjacent ADD-ON card for further processing.

An additional level activated Voice Over processor is included. This processor detects a user defined signal level and then ducks the predefined channels that are used to mix the VO with. The VO can be applied to 8 stereo channels (user selectable). The DDP94 has the ability to use stream muxing in a Dolby Digital Plus environment. This stream contains both the (multi channel) audio stream as the audio description stream in a convenient single Dolby Digital Plus stream (single PID) or in a dual stream (dual PID).

The DDP94 gets its processing clock from the MASTER Card and will operate fully clock synchronous with this MASTER Card. You can use the DDP94 stand alone by locking on AES1 to 4 or Ref 1 or 2.

- Quad speed audio bus for convenient routing of ADD-ON channels
- Optional re-inserting of processed audio for downstream post-processing (DLAxx)
- 4 or 6 physical stereo AES/EBU inputs and 16 stereo bus inputs.
- 4 or 2 physical stereo AES/EBU (can contain Dolby Bit streams) outputs and 8 stereo (into 16 stereo) bus outputs
- I/O mode can be set to 6 in and 2 out (12 mono in 2 bitstream out)
- E decoding with automatic source selection on loss of E
- Up to 4 times 2.0 Dolby Digital (Plus) or Pulse outputs.
- 5.1 Dolby Digital (Plus)+ 2.0 Dolby Digital (Plus)
- HE-AAC 5.1 + Dolby Pulse 2.0 stream
- Dolby Pro Logic II encoding from downmixed discrete 5.1 source
- Metadata mixing
- Audio Description processing (single and dual PID)
- Physical metadata output and input
- Individual offset delay per input
- Individual gain control per input (except bitstream input)
- Able to handle all AES/EBU input formats
- Full audio channel shuffling

Complementary cards:

- All Quad speed audio Master cards (G/HED100, G/HRB100, G/HDK100, G/HXT110 etc).

## Applications

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- Efficient Dolby processing to Quad Speed audio Master Cards.
- Extra Dolby channel processing next to G/HEP100, G/HPD100 and G/HED100

## Ordering information

### Modules:

- **DDP94:** Quad Speed multi channel Dolby encoder with Dolby E decoder

### Standard I/O:

- **BPL11\_DDPxx:** I/O panel for DDP94
- **BPX11\_DDPxx:** I/O panel for DDP94 with relay bypass.

## Specifications

### AES Audio Input

<b>Connector</b>	BNC
<b>Standard</b>	SMPTE 276M for single ended synchronous or asynchronous PCM/AES
<b>Number of Inputs</b>	4
<b>Sampling Rate</b>	32 kHz to 192 kHz asynchronous 48 kHz synchronous in SRC off mode
<b>Resolution</b>	24 bits
<b>Minimum Input Offset Delay</b>	0 to 1300 ms
<b>Input Gain Control</b>	+12dB to -60 dB
<b>Gain step size</b>	0.25dB
<b>Impedance</b>	75 Ohms
<b>Level</b>	0.2V to 1V nom

### Encoding

<b>Encoding bitrate:</b>	~200kbps for broadcast ~800kbps for disc based formats
<b>Encoding capabilities:</b>	Dolby Digital (plus) Dolby HE-AAC 5.1 Dolby Pulse 2.0 Dolby Surround Pro Logic II

### Reference input through RRC

<b>Number of Inputs</b>	2 on SFR18, 2 on SFR08 and 1 on SFR04
<b>Standard</b>	PAL Black Burst ITU624-4/SMPTE318, Composite NTSC SMPTE 170M 1Vp-p nominal, 75 Ohms terminated through loop

### AES/EBU or bitstream Audio Outputs - Dolby Digital (Plus)

<b>Number of Outputs</b>	4
<b>Connector</b>	BNC 75 Ohms ADD-ON bus
<b>Resolution</b>	NA
<b>Sampling Rate</b>	48KHz synchronous
<b>Nominal Input/Output Delay</b>	200ms

### Miscellaneous

<b>Weight</b>	Approx. 300g
<b>Operating Temperature</b>	0 °C to +50 °C
<b>Dimensions</b>	137 x 296 x 20 mm (HxWxD)

### Electrical

<b>Voltage</b>	+24V to +30V
<b>Power</b>	<13 Watts