Synapse

GAW-HAW-SAW300

3Gb/s, HD, SD embedded domain watermarking encoder based on Kantar® technology

A Synapse® product
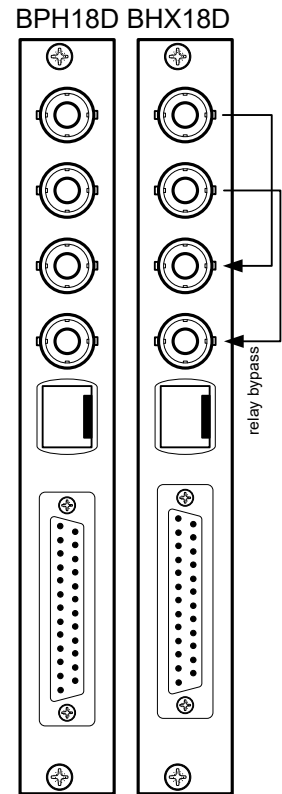
Quad speed **MASTER**

3 TRIPLE RATE Gb/s, HD, SD

Powered by **LINUX**

Block schematic & I/O panel
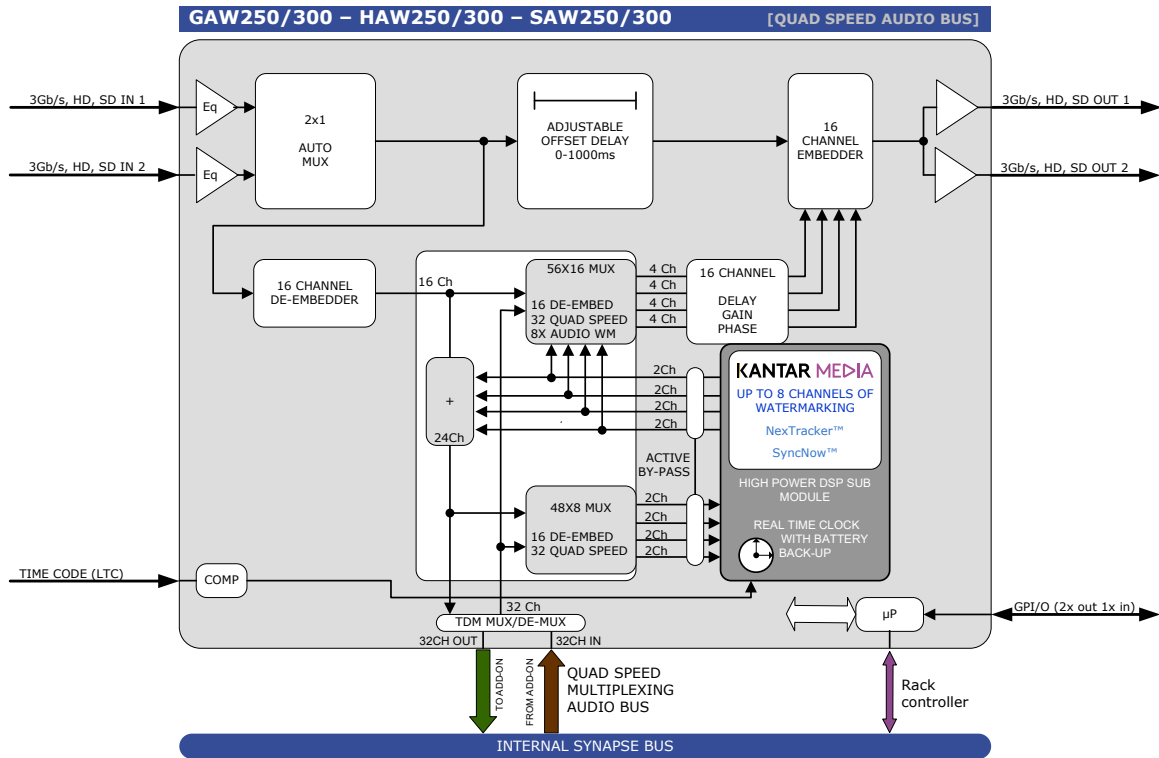
Features

The GAW-HAW-SAW300 are embedded domain audio watermarking embedders for Audience measurement (NexTracker™), Second Screen applications (SyncNow™) or both of the services. Developed in corporation with Kantar this powerful card can encode/watermark up to 8 mono channels in the AES/EBU domain.

The Quad Speed audio bus allows for implementation of additional audio processing. This means that an additional processing card like for instance a DLA44 can be added to perform loudness control, without any additional wiring. The ADD-ON card often does not need a connector panel and all audio routing is performed inside the Synapse frame by just placing these cards in adjacent slots.

The SAW300 can be upgraded to HAW300 or GAW300. This allows for staged implementation of HD infrastructures and spread the cost over multiple budget years.

NexTracker™ watermarking

Digital watermarking consists in embedding inaudible and imperceptible data, the payload, into a media asset or live signal to give it a persistent identity. This data can later be extracted and interpreted by devices to identify, manage or monetize the asset. Kantar NexTrackerTM solution for Audience Measurement makes uses of a proprietary and patented Audio Watermarking technology to identify the signal aired by TV Channels and Radio Stations. During playout or distribution, a Channel Identifier is embedded in real time and on the fly, enabling audience measurement companies to easily detect which channels the panelists are watching at home and calculate audience figures. As a Time Code is embedded in the signal, it is also possible to identify and measure which content is watched in deferred time (from Personal Video Recorders).

SyncNow™ watermarking

Kantar's state-of-the-art Audio Watermarking technology allows broadcasters, content producers and advertisers to build truly immersive experiences in designing 2nd screen applications that will interact in real time with their content when played on the TV set. SyncNowTM enables companion devices (like tablets, smartphones, or laptops) to automatically identify the TV channel or content/advert being watched on the TV set. The watermark detection SDK running in the app will pick up the TV sound from the device microphone input, and accurately time sync' up with the content played on TV so that app user will be able to engage and interact in real time with it. This method automatically accommodates different network latencies and supports time shifted viewing.

- Full audio swapping of all input channels allow for a selection of any AES/EBU input or any of the 32 channel bus input
- 16 channels of audio gain
- 16 channel audio delay up to 5000ms just prior to the embedding stage
- Pre and post processed Quad speed bus reinsertion of all audio channels
- 2 SDI inputs (with auto switch on carrier loss, and switch back function)
- Compatible with the following input formats (auto selecting) (1080p only for GAWxxx):
  - 1080p50/59.94
  - 1080i50/59.94/
  - 1080p25/29.97
  - 1080psf/23.98
  - 720p50/59.94
  - SD525/SD625
- Video offset delay between 0 and 1000ms
- Quad Speed Audio ADD-ON bus for bidirectional audio processing
  - Streaming channel 1-16 + watermarked channels 1-8 (= 24 channels to ADD-ON)
- 2 SDI + embedded audio outputs
- 7 presets that configure all 16 input channels at once, controlled by ACP (Cortex)
- Append and overwrite modes
- Silence detection and peak detection (0dBFS)
- Transparent for ATC time code RP188, RP196, RP215
- Locks to Tri-level, Bi-level syncs or input
- Full control and status monitoring through the front panel of the SFR04/SFR08/SFR18 frame and the Ethernet port (ACP)
- Optional relay bypass (BHX18D)

Complementary cards:

- DBD18, DDP24 and DIO88 plus other quad speed audio ADD-ON cards

Applications

- 3Gb/s, HD and SD embedded domain audio watermarking
  - Second Screen
  - Audience measurements
- Preset based 16 channel audio/bitsream shuffling

Ordering information

Module:
- **GAW300:** 3Gb/s, HD, SD embedded domain SyncNow™ and NexTracker™ watermark engine
- **HAW300:** HD, SD embedded domain SyncNow™ and NexTracker™ watermark engine
- **SAW300:** SD embedded domain SyncNow™ and NexTracker™ watermark engine

Standard I/O:
- **BPH18D_GAW300:** I/O panel for xAW300 family

Relay bypass I/O:
- **BHX18D_GAW300:** I/O panel for xAW300 family with relay bypass

Specifications

Serial Video Input

Standard	SD,HD and 3Gb/s SDI: SMPTE 292M, SMPTE 259M, SMPTE424
Number of Inputs	2
Connector	BNC
Equalization	Typical maximum equalized length of Belden 1694A cable: 90m at 2.97Gb/s, 120m at 1.485Gb/s, and 250m at 270Mb/s
Return Loss	> 15dB up to 1.5GHz

Serial Video Output

Number of Outputs	2
Connector	BNC
Signal Level	800mV nominal
DC Offset	0V ±0.5V
Rise/Fall Time	135ps nominal
Overshoot	< 10% of amplitude
Return Loss	> 15dB up to 1.5GHz (typ.) > 10dB up to 3GHz (typ.)
Wideband Jitter	< 0.2UI

Reference Input through rack controller

Number of Inputs	2 on SFR18, 2 on SFR08 and 1 on SFR04
Tri-level	SMPTE274M, SMPTE296M 600 mVp-p nominal, 75 Ohms terminated through loop
Bi-level	PAL Black Burst ITU624-4/SMPTE318, Composite NTSC SMPTE 170M 1Vp-p nominal, 75 Ohms terminated through loop

Miscellaneous

Weight	Approx. 250g
Operating Temperature	0 °C to +50 °C
Dimensions	137 x 296 x 20 mm (HxLxD)

Electrical

Voltage	+24V to +30V
Power	<15 Watts