

FRS-1801

HD/SD frame synchronizer



The FRS-1801 is a highly integrated module which offers frame synchronization, and video processing, including color correction and delay, for HD and SD signals in HD/SD hybrid plants. A processing delay of up to 1.3 seconds is available for Dolby E and AC3 encoders/decoders.

With the audio processing option, the card can process up to 16 channels (four groups) of embedded audio or 8 channels (two groups) of discreet AES inputs/outputs. The FRS-1801 can offer shuffling and downmixing, and provides 4 AES inputs and 4 AES outputs.

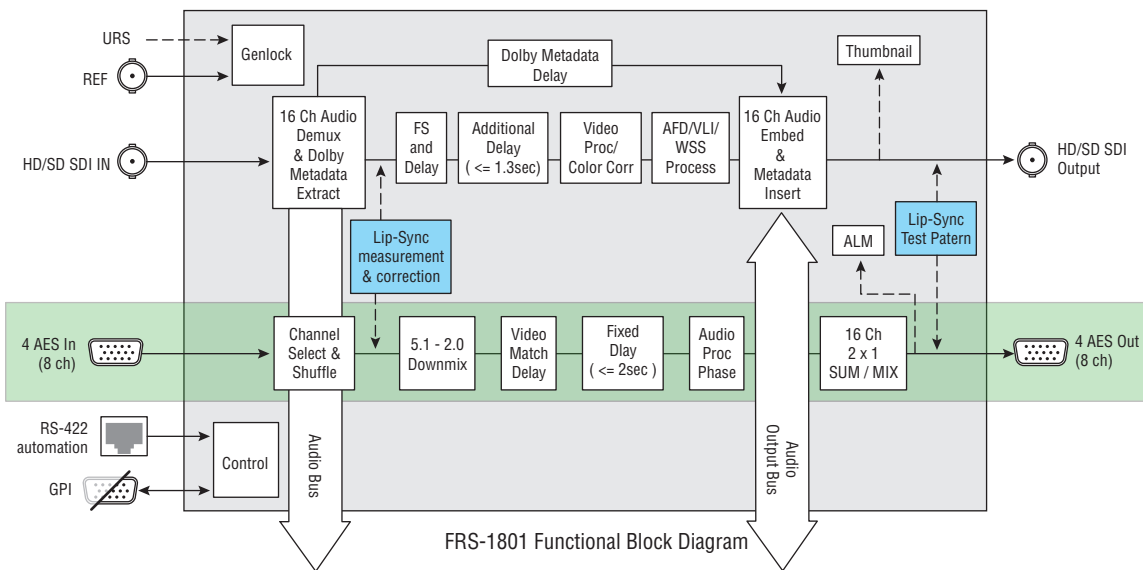
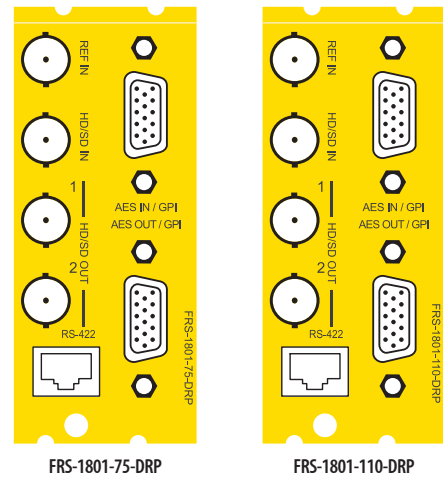
The FRS-1801 can also be associated with a Miranda audio processor modules, such as the UAP and DAP, for more advanced audio requirements, such as analog audio processing or Dolby E decoding.

Advanced monitoring and control features include thumbnail and audio level meter (ALM) generation, as well as an optional waveform/vectorscope over IP of the output signal, which allows the operator to control and see the changes made to the signal.

With Out-of-Service Lip-sync measurement and correction option, now the broadcaster can measure and correct the lip-sync problem within their facilities. By analyzing the Miranda's lip-sync test pattern, the broadcaster can perform the Out-of-Service lip-sync measurement.

KEY FEATURES AND BENEFITS

- > HD/SD frame synchronizer, delay and line sync
- > Video delay up to 1.3 seconds
- > Video proc and color correction
- > 16 channels of embedded audio processing
- > AFD insert
- > Out-of-Service Lip-sync measurement and correction option
 - Able to detect the AV delay using the Lip-Sync test pattern
 - Able to correct automatically or manually the AV delay that is offset by up to 1.3 seconds in HD
 - Supports both embedded audio and AES/EBU audio I/O
- > Downmixing from 5.1 to 2.0
- > Flexible HD/SD reference input
- > Perfect audio/video synchronization with adjustable fixed delay
- > Processes and delays ancillary data such as CC, Time Code, and Metadata
- > Compatible with Miranda audio processing cards



Software Enabled Options

- FRS-1801-OPT-AUD16
- FRS-1801-OPT-LIPSYNC

TECHNICAL SPECIFICATIONS

VIDEO INPUT

Signal: SD: SMPTE-259M-C (270 Mbps)
 HD: SMPTE-292M (1.485, 1.485/1.001 Gbps)

Supported formats: SD: SMPTE-125M: 480i59.94
 SD: EBU: 576i50
 HD: SMPTE-274M: 1080i59.94, 1080i50
 HD: SMPTE-296M: 720p59.94, 720p50

Embedded audio: SMPTE-299M, SMPTE-272

Cable length: 350 m Belden 1694A at 270 Mbps
 150 m Belden 1694A at 1.485 Gbps

Return loss: >15 dB up to 1.5 GHz

VIDEO OUTPUT

Signal: SMPTE-259M-C (270 Mbps)
 SMPTE-292M (1.485, 1.485/1.001 Gbps)

Supported formats: SD: 480i59.94, 576i50
 HD: SMPTE-274M: 1080i59.94, 1080i50
 HD: SMPTE-296M: 720p59.94, 720p50

Embedded audio: SMPTE-299M, SMPTE-272

Return loss: >15 dB up to 1.5 GHz

Jitter: HD/SD: <0.2 UI

REFERENCE INPUT

Signal: SMPTE 170M/SMPTE 318M/ITU 624-4/
 BUT 470-6 or black burst
 SMPTE 274M / SMPTE 296M tri-level
 sync (black)

Return loss: >35 dB up to 5.75 MHz

VIDEO PROCESSING PERFORMANCE

Signal path: 10 bits

Latency: 3 lines minimum

Additional video delay: 1.3 s maximum (HD/SD)

AUDIO DIGITAL INPUTS(4)

Sampling freq.: 32 to 96 kHz
 Quantization: 16 to 24

Inputs

AES3
 Level: 0.2 to 7 Vp-p
 Input impedance: 110 balanced

AES3-id

Level: 0.2 to 7 Vp-p
 Input impedance: 75 ohm
 Return loss: 25 dB @ 6 MHz

Outputs

AES3
 Level: 4 Vp-p
 Input impedance: 110 balanced

AES3-id

Level: 1 Vp-p
 Input impedance: 75 ohm
 Return loss: 15 dB @ 6 MHz

AUDIO PROCESSING PERFORMANCE

Quantization: 20-24 bits
 Sampling: 48 KHz, synchronous
 Number of channels: 16 (4 groups)
 Freq. response: ±0.02 dB (20 Hz to 20 kHz)
 SNR: 123 dB (A weighted)
 THD+N: -138 dB (20 Hz to 20 kHz)

MISCELLANEOUS

SIGNAL PRESENCE

Threshold: From -72 to -48 dBFS (6 dB steps)
 Silence detection delay: From 0 to 255 s
 Fixed delay: 0 to 2.0 s
 Step: 1 ms (coarse), 1 sample (fine)

GPI (8)

Connector: 15-pin D-Sub
 GPI in: Input selection: 1 or 2
 Presets: 1, 2, 3, 4
 GPI out: Provides status of selected input: 1 or 2

RS-232/422

Connector: RJ-69 (RJ-45 10 contact)

ABUS CONNECTOR

As per ABUS standard, Miranda Technologies Inc.

TEST PATTERN GENERATOR

Video: Color bars - 100 % white bar with 75 % color
 Audio: Left channel pulsed 1 KHz
 Right channel steady 1 KHz tone

ELECTRICAL

Power: 10 W



ORDERING INFORMATION

Densité 2 frame

FRS-1801 HD/SD frame synchronizer
 FRS-1801-75-DRP Double rear connector panel, 75 ohm
 FRS-1801-110-DRP Double rear connector panel, 110 ohm

Densité 3 frame

FRS-1801-3RU 3RU HD/SD frame synchronizer
 (including 3RU adaptor)
 FRS-1801-75-DRP-3RU Double rear connector panel, 75 ohm
 (including 3RU adaptor)
 FRS-1801-110-DRP-3RU Double rear connector panel, 110 ohm
 (including 3RU adaptor)

Options

FRS-1801-OPT-AUD16 16 channel on-board audio processing option
 FRS-1801-OPT-LIPSYNC Out-of-Service Lip-Sync measurement and correction option
 BOC-DE15-4BNC-1 75 ohm digital audio breakout cable

Related products

AAP-1741 4 ch. analog audio processor
 UAP-1783 8 ch. universal audio processor
 DAP-1781 8 ch. digital audio processor

Remote control

iControl, iControl Solo, RCP-200