

IRD-3802

MPEG Decoder with ASI and GigE IP Inputs

Space-saving, modular platform for advanced signal processing.

The IRD-3802 from Grass Valley provides MPEG-2 decoding of ASI and IP transport streams to either HD or SD. It also provides processing of key video and audio parameters and signal probing functions for feed aggregation, distribution and monitoring applications by broadcasters and TV services providers.

DVB-ASI or IP transport streams fed to the IRD-3802 can be decoded to provide either HD or SD video with embedded multichannel audio, in all leading formats, as well as composite video and stereo analog audio for monitoring. The IRD is also available with a DVB-CI slot, supporting leading conditional access systems, and allowing descrambling of multiple encrypted services. With its Gigabit Ethernet port, the IRD-3802 can also act as a gateway, by performing IP encapsulation of the input transport stream in either RTP or UDP mode.

The IRD also provides optional video signal processing with frame synchronization and selectable delay, as well as proc amp, up/down/crossconversion and aspect ratio conversion. The IRD can decode an extensive range of metadata, such as CEA-608 compliant closed captioning, teletext, AFD, V-chip and DVITC timecode, which can be embedded in the decoded SDI signal. Transport stream metadata, such as PSIP can also be analyzed.

The audio processing capabilities of the IRD-3802 are also extensive, with dual audio decoding and selectable stereo downmix modes of decoded MPEG-1 and Dolby Digital (AC-3) 2.0 audio. Optionally, the IRD-3802 also performs embedding of decoded of Dolby Digital (AC-3) 5.1 audio, with discrete 8-channel output.

In addition, the IRD-3802 performs a wide range of signal quality probing, with user-defined alarm settings on an extensive range of transport stream parameters, including TR 101 290 alarms, transport stream structure analysis and individual program statistics. The IRD also generates low-resolution H.264 video proxy and 2-channel audio streams of selected programs for monitoring.

KEY FEATURES

Input/output versatility

- Dual ASI transport stream inputs
- Single ASI transport stream output for signal monitoring or retransmission
- IP transport stream input/output: an ASI signal can be re-transmitted as IP and an IP stream can be forwarded as ASI
- IRD acts as IP video gateway with forward error correction (FEC) for improved quality
- IRD-3802 is now available with a rear module featuring two Ethernet ports and change-over functionality for use in redundant IP router topologies
- Dual HD/SD SDI outputs
- Composite video and stereo analog audio monitoring outputs

Easy input and program selection

- Manual or automatic input selection mode
- Automatic mode allows switching to backup input upon loss of signal on active input, with adjustable duration
- Program selection using local control or iControl
- MPTS automatic program selection mode and recovery

Extensive video format support

- 1920x1080i59.94/50
- 1280x720p59.94/50
- 720x486i59.94 and 720x576i50

Comprehensive dual program audio decoding

- Decoding of MPEG-1 layer 2 stereo audio
- Decoding of Dolby Digital (AC-3) 2.0 audio
- Optional decoding and embedding of Dolby Digital (AC-3) 5.1 audio to SDI with support of main and associated audio services for up to discrete 8-channel output
- Selectable pass-through of Dolby Digital stream to SDI
- Decoding of AAC-LC audio for 2/0 and 1/0 coding modes

Frame synchronizer/delay, reference input and video proc

- Supports timing, full phasing and freeze modes
- Reference can be external via BNC, internal using URS or directly from the decoded signal with selectable genlock modes
- Video proc amp functions including, brightness, saturation, hue and contrast

Decoded video format identification

- Identification of key video parameters
 - Aspect ratio identification: 16:9 or 4:3
 - Video resolution

Audio processing and format identification

- Provides downmix of 5.1 channel to Lt/Rt or Lo/Ro modes
- Extensive Dolby Digital metadata reporting
- Support for secondary audio program (SAP)
- Configurable Dolby Digital dynamic range and compression
- Dolby metadata embedding on SDI (SMPTE ST 2020-A)

Metadata extraction, display and embedding

- EIA-608 and EIA-708 closed captioning
- WST teletext
- SMPTE ST 12 timecode
- SMPTE ST 2016 AFD flag

Extensive PSIP data extraction

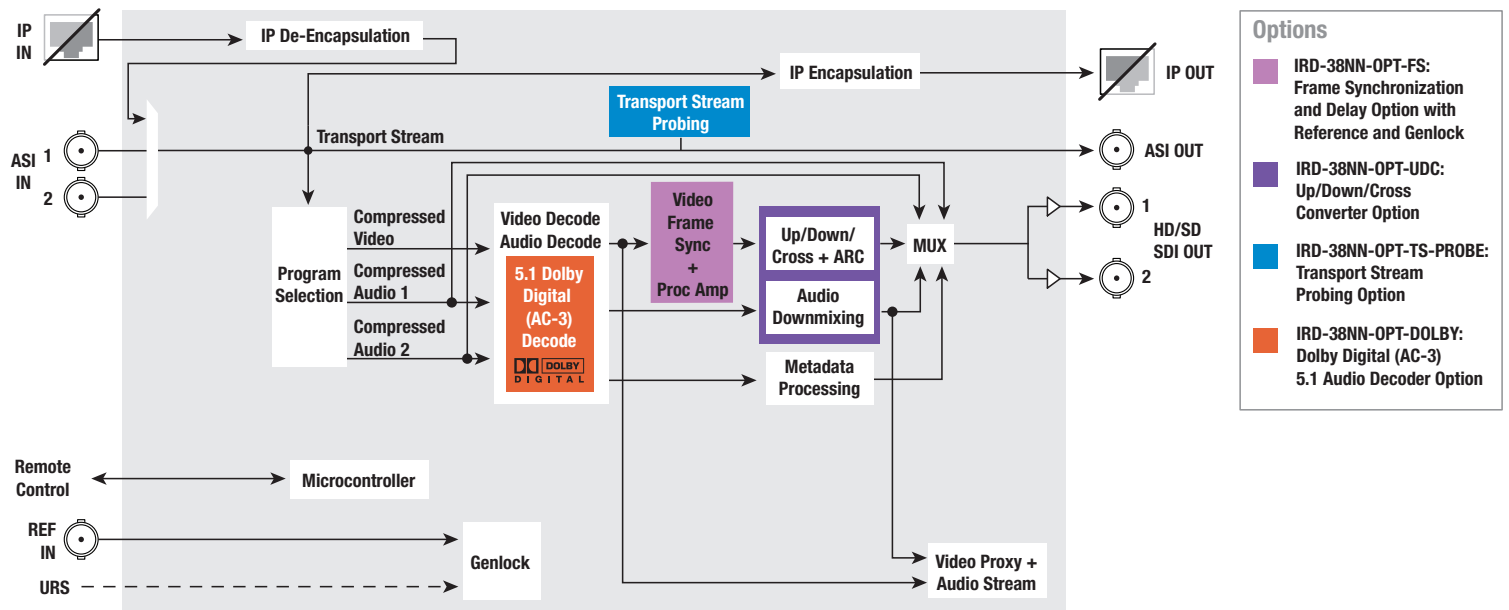
- Time and date and other STT data
- VCT, EIT, RRT, TSID

Transport stream probing and alarming

- Transport stream (TS) monitoring and alarming and settings:
 - TR 101 290 Priority 1 and Priority 2 alarming on key parameters
 - Logging of alarms using iControl
- Detailed TS structure reporting using graphical and hierarchical views
- Individual program data statistics, including individual program bit rate, content and PMT data
- IRD generates low-resolution H.264 video proxy and 2-channel audio streams of selected programs for monitoring

Video up/down/crossconversion

- Extensive selection of video format conversions



IRD-3802 and IRD-3802-CI Functional Block Diagram

SPECIFICATIONS

ASI Inputs

Quantity/connector: 2 inputs with BNC connectors
Standards: EN50083-9 (V2:3/98) DVB ASI
Data bit rate: DVB ASI: Up to 80 Mb/s
Mode: Burst and byte supported
TS packet length: 188/204 byte packets
Return loss: >15 dB up to 270 MHz

ASI Output

Quantity/connector: One output with BNC connector

IP Input/Output

Quantity/connector: One gigabit Ethernet with RJ45 connector IEEE 802.3
Standards: Pro-MPEG code of practice 3 (CoP3)
Stream protocols: IP/UDP, RTP and IGMPV3

Video Decoder

Compatibility standard:

MPEG-2 compatible MP at HL
 4:2:0, resolution up to 1080i, 59.94 Hz
 ATSC A/53

Bit rate: Up to 25 Mb/s

Audio Decoder

Standard:
 MPEG-1 layer-II
 Dolby Digital (AC-3) audio 2.0
 Optional Dolby Digital (AC-3) Audio 5.1
 AAC-LC audio 2/0 and 1/0
 Dual Dolby Digital pass-through
Service/channels: As per ATSC A/54A

Video Outputs

HD/SD SDI outputs: 2 outputs with BNC connectors
Signal:
 SMPTE ST 259-C (270 Mb/s)
 SMPTE ST 292 (1.485, 1.485/1.001 Gb/s)

Supported formats:

SD: 480i59.94, 576i50
 HD: SMPTE ST 274: 1080i59.94/50
 HD: SMPTE ST 296: 720p59.94/50

Embedded audio: SMPTE ST 299, SMPTE ST 272

Return loss: >15 dB up to 1.5 GHz

Jitter:

<0.2 UI as per SMPTE ST 259-C for SD output
 <0.2 UI as per SMPTE ST 292 for HD output

Monitoring Outputs

Analog video: NTSC 525/60, PAL (625/50) with one BNC connector
Analog audio: Unbalanced analog audio with two RCA connectors
Video and TS Metadata
CC data extraction: NTSC CC1 and CC2 as per EIA-608B
DTV CC: EIA-608B compliant bytes of EIA-708B
CC embedding: CC embedding as per SMPTE ST 334
Teletext: WST/EIA 300 706
Timecode: SMPTE ST 12
PSIP: ATSC PSIP standard A/65

Reference Input

Reference input: One input with BNC connector
Signal:
 SMPTE ST 170/SMPTE ST 318/ITU 624-4/BUT 470-6 black-burst
 SMPTE ST 274/SMPTE ST 296 tri-level sync (black)
Return loss: >35 dB up to 5.75 MHz

Electrical

Power: 20W

ORDERING

Densité 3 frame

IRD-3802
 IRD-3802-3DRP

Options

IRD-38NN-OPT-FS
 IRD-38NN-OPT-UDC
 IRD-38NN-OPT-TS-PROBE
 IRD-38NN-OPT-DOLBY

Related products

Remote control

Description

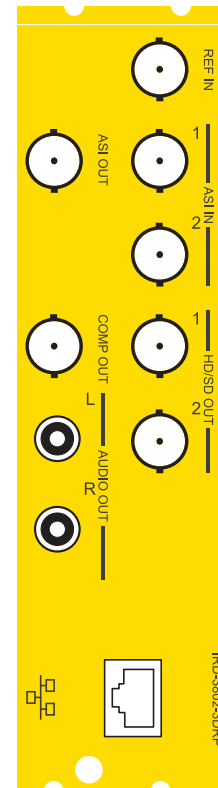
MPEG decoder with ASI and GigE IP inputs
 Double rear connector panel

Description

Frame synchronization and delay option with reference and genlock
 Up/down/crossconverter option
 Transport stream probing option
 Dolby Digital (AC-3) 5.1 audio decoder option

Densité REF-1801 reference module

iControl, iControl Solo, RCP-200



IRD-3802-3DRP



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