

7882IRD2–S2X

Professional DVBS/S2/S2X MPEG–2/H.264 SD/HD Dual Integrated Receiver Decoder



The 7882IRD2 Series is the basis of a professional platform for receiving, demodulating and decoding digital DVBS/S2/S2X satellite signals. With a compact, modular form–factor, the 7882IRD2 represents one of the highest density and most flexible solutions in the industry. The 7882IRD2 may be mounted in the Evertz 7800 series of enclosures, providing a high–density, modular solution. Options for an innovative removable front control panel and 1RU chassis also allow the 7882IRD2 to be packaged in the traditional IRD2 form–factor, while maintaining all of the benefits of modularity.

Applications include signal reception for broadcasters, cable, DTH and IPTV providers, or any other small to large head–end operators who need to receive and utilize or re–distribute satellite content, and also receive and distribute off–air local contents.

The 7882IRD2 series provides ASI and IP outputs, ideal for turnaround, transcoding, monitoring or other applications where the received signal remains in the compressed domain. For baseband output, the 7882IRD2

utilizes an advanced decoder with support for both MPEG–2 and H.264/AVC, SD or HD encoded signals, optionally up to 4:2:2 10–bit.

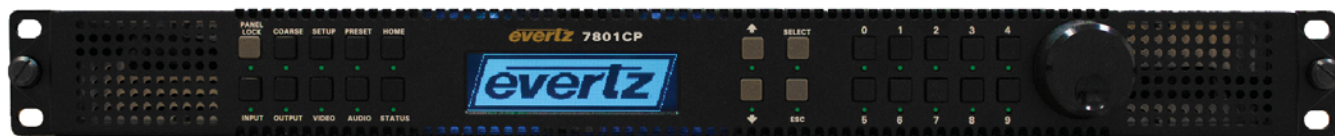
In addition to a quad–RF input, the 7882IRD2 also provides inputs for IP and ASI signals, making it a future–proof, universal reception platform for signals delivered over satellite, fiber and other network media. Monitoring parameters such as EsNo ratio, RF power, BER and packet errors present a convenient solution for broadcasters and cable companies who wish to not only receive, but also remotely monitor signal quality. Also, these parameters as well as full monitoring and control of the IRD are relayed over SNMP, for convenient remote access using Evertz own VistaLINK® PRO SNMP monitoring and control package. Additionally, low–speed data support is provided for in–band control.

For applications requiring decryption, the 7882IRD2 provides two slots for installation of a customer–supplied conditional access module. DVB–CI compliant conditional access modules and formats are supported.

►Features & Benefits

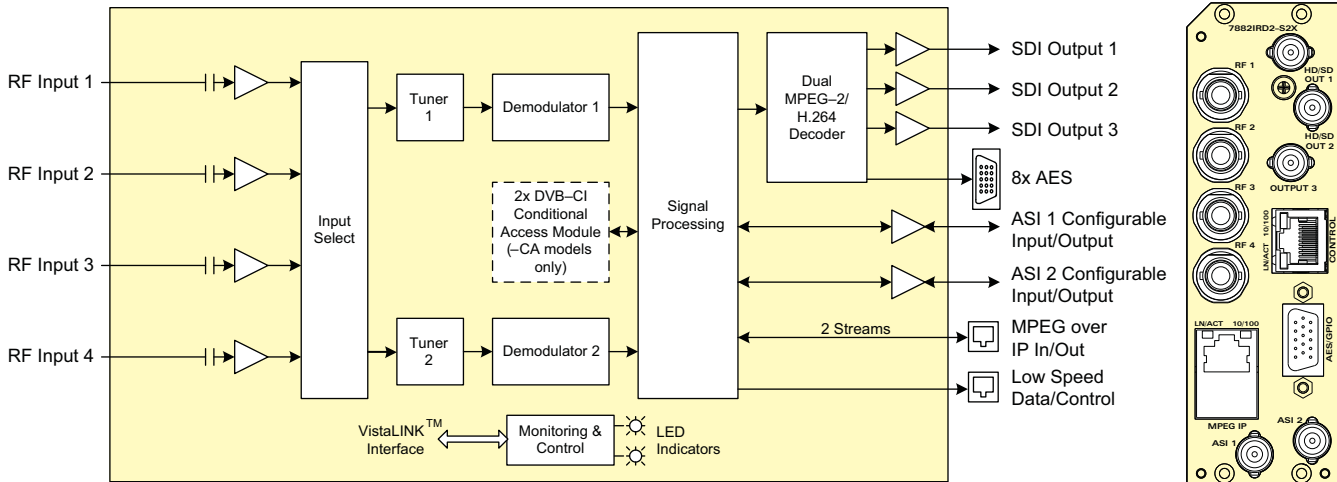
- Modular design, allowing flexible configurations along with easy system reconfiguration and service
- May be mounted in the 7800FR series frames in high–density applications (up to seven IRD2 in one 3RU frame)
- May be mounted in the 7801FR and fitted with the 7801CP control panel, yielding a 1RU IRD with removable front control panel and optional redundant power supplies, all of which are hot–swappable and may be serviced without any de–cabling required. Up to 2x units may be mounted in the 7801FR and used with the 7801CP, providing a dual–IRD solution in 1RU
- Future–proof with upgrade paths to support future modulation and encoding technologies
- Standard support for advanced modulation schemes, including DVB–S2 with 16APSK, 32APSK and 64APSK
- Optional DVB–S2X Modulation support
- Standard support for advanced transport stream processing including service filtering and output bitrate control
- Long frames and Short frames
- CCM, VCM and ACM
- SCPC and MCPC support
- Automatic detection and configuration of modulation type, filter roll–off, symbol rate, pilot presence (on/off) and frame length
- Supports on–board Input auto–failover between various inputs including RF/ASI or IP inputs
- Support for encoding profiles from distribution to contribution grade, including H.264 in 4:2:0 8–bit and optional 4:2:2 10–bit formats, along with legacy MPEG–2
- Available two DVB–CI slots for conditional access modules
- Flexible dual decoding of SD and HD as standard
- Optional BISS and BISS–E decryption
- Flexible mid–stage access to compressed domain signals, including two ASI and optional IP outputs
- Straight pass through or PID filtering/remapping of compressed stream outputs
- Standard Dolby pass through and decode of Dolby AC–3 and MPEG–2 Layer 1 audio
- Optional decoding of Dolby E, Plus, AAC, and HE–AAC v1 & v2 for up to 5.1 channels
- 4x AES outputs for each decode
- Optional SCTE 105/34 translation
- Optional Audio Video Monitoring (AVM) for audio mute, video freeze and black detection
- Control through web browser or SNMP using third–party application or Evertz’ own VistaLINK SNMP control and monitoring software
- Ability to store ten preset configurations
- Event log support with exporting capabilities are supported on VLPRO

Front View — 7881IRD2 in 1RU with Control Panel



Rear View — 7881IRD2 in 1RU





Specifications

RF Input:

Number: 4
 Connector: 75Ω F-Type
 (Optional BNC connector)
 Frequency: 950–2150 MHz
 Power: –20 to –65dBm
 Voltage: 13/18V DC, off (selectable)
 Max Current: 400mA
 Protection: Short circuit, overload
 Local oscillator: 1000 to 35000 MHz to be used for C-Band & Ku-Band
 Input Return Loss: 15dB Min.
 Noise Figure: 9dB Max.
 AFC Tuning Range: ±67 MHz using search range adjusted from 6 MHz to 50 MHz
 IF Filter Bandwidth: in 1-MHz steps

Modulation Support:

Symbol Rate: Up to:
 QPSK, 8PSK, 16APSK: 64 Msps
 32APSK: 51 Msps
 64APSK: 43 Msps

Coding Rates:

FECFRAME (normal) 64 800 (bits)
 DVB-S QPSK: 1/2, 2/3, 3/4, 5/6, 7/8
 DVB-S2 QPSK: 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
 DVB-S2 8PSK: 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
 DVB-S2 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
 DVB-S2 32APSK: 3/4, 4/5, 5/6, 8/9, 9/10
 DVB-S2x QPSK: 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10, 13/45, 9/20, 11/20
 DVB-S2x 8PSK: 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10, 23/36, 25/36, 13/18
 DVB-S2x 8APSK-L: 5/9, 26/45
 DVB-S2x 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 (S2-MODCODs), 26/45, 3/5, 28/45, 23/36, 25/36, 13/18, 7/9, 77/90
 DVB-S2x 16APSK-L: 5/9, 8/15, 1/2, 3/5, 2/3
 DVB-S2x 32APSK: 3/4, 4/5, 5/6, 8/9, 9/10, 32/45, 11/15, 7/9
 DVB-S2x 32APSK-L: 2/3
 DVB-S2x 64APSK: 11/15, 7/9, 4/5, 5/6
 DVB-S2x 64APSK-L: 32/45

FECFRAME (short) 16 200 (bits)

DVB-S2x QPSK: 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10, 11/45, 4/15, 14/45, 7/15, 8/15, 32/45
 DVB-S2x 8PSK: 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 7/15, 8/15, 26/45, 32/45
 DVB-S2x 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 7/15, 8/15, 26/45, 3/5, 32/45
 DVB-S2x 32APSK-L: 2/3, 32/45

MPEG over IP Input/Output:

Number of Connectors: 1
 Number of Streams: 2
 Type: SMPTE 2022–1, –2
 Connector: RJ–45, 10/100/1000
 FEC: per SMPTE 2022 (Output only)
 Optional SMPTE2022–1 FEC encoding with L&D following the following range:

- $L \cdot D \leq 100$
- $1 \leq L \leq 20$
- $4 \leq D \leq 20$
- if $L < 4$, then $D = 4$ always

Conditional Access Support:

- 2x DVB-CI slot

Baseband Video Outputs (Dual Decode*):

Number: 3
 Connector: BNC
 Type: SDI (SMPTE ST 259), HD-SDI (SMPTE ST 292–1)

* Both channels must decode the same codec on both services

AES Audio Outputs:

Number: Total 8 PIDS (Total 16 channels of embedded PCM) – 4 AES per decode (8 channels of embedded PCM per decode)
 Connector: BNC breakout from DB–15
 Type: Unbalanced AES
 Standard: AES3 (aka AES/EBU) as an AES output standard
 Compression Format: MP1L2 and Dolby digital AC–3 up to 3/2L Passthrough: PCM, Dolby Digital, Dolby–E
 Optional: Dolby–E decode and AAC–LC

Audio Processing:

- Supports decoding of MPEG1 Layer 2, AAC, Dolby E, Plus and AC–3
- Supports Dolby E and AC–3 pass-through

ASI Input/Output:

Number: 2 (configurable input/output)
 Type: ASI per DVB TR101-891
 Connector: 75Ω BNC

Ancillary Data:

- Embedding of: Audio pass-through Closed caption/Teletest SCTE35 to 104 (+SCTE104 option)
- AFD/WSS
- Timecode caption/Teletest SCTE35 to 104 (+SCTE104 option)

Low Speed Data:

Number: 1
 Type: De-encapsulation from control data PID
 Connector: RJ–45, 10/100/1000

Frame Sync (+FSE Option):

- Sync 1080i/59.94, 1080i/50, 720p/59.94, 720p/50, 525i/59.94, 625i/50
- Video Delay between 3 lines & 1 frame + 3 Lines
- Programmable output phase with respect to reference input
- Reference input via common 7800FR frame reference connector

Control:

- SNMP over Ethernet via frame controller
- Web browser
- Low speed control data over Ethernet output derived from data PID

Electrical:

Power: <46W
 Voltage: 12VDC
 Temperature: 0–50°C

Physical:

Number of slots: 2

7882IRD2-S2X

Professional DVBS/S2/S2X MPEG-2/H.264 SD/HD Dual Integrated Receiver Decoder

Ordering Information

7882IRD2-S2X DVBS/S2/Optional S2X IRD, up to 64APSK, quad L-Band input, dual demodulator, dual DVB-CI conditional access slot, ASI input and output, dual MPEG-2/H.264 SD/HD decode (4:2:0 8-bit)

Ordering Options

+HD HD-SDI dual decode
+FSE Integrated frame synchronizer
+42210B 4:2:2 (MPEG-2/H.264) and 10-bit (H.264) decode
+AVM Basic freeze, black and mute audio/video monitoring
+DD Dolby E decode
+AAC AAC decode
+SCTE104-1 SCTE 35/104 translation
+DBISS BISS and BISS-E decryption
+IP IP input/output support
+FEC Forward Error Correction Capability for IP output
+B75 75 Ohm, BNC connector for RF input
7882DM-FK-S2K License to enable DVB-S2X (Broadcast and DSNG profiles) demodulation standards

Rear Plate Suffix

+3RU 3RU Rear Plate for use with 7800FR or 7801FR Multiframe

3RU Enclosures

7800FR 3RU Multiframe which holds up to 15 single slot modules

1RU Enclosure and Front Control Panel

Note: 7801FC is required for 1RU IRD configuration

7801FR

1RU Multiframe which holds up to 4 single or 2 dual slot modules

+781PS

Redundant power supply (optional)

7801FC

Frame controller module

7801CP

Removable front control panel for 7801FR populated with 7881IRD(s)