Adtec Multi-CODEC 1080P IRD Platform

RD-70

The Adtec RD-70 is a 1080P multi-CODEC very low latency MPEG 2 and MPEG 4 AVC/H.264 high definition IRD. The ultra-low delay mode requires the use of Adtec's EN-91 1080i, EN-91P or EN-100 1080P encoder which delivers picture-to-picture services in as little as 33 milliseconds. The RD-70 is interoperable with other encoders making it ideal for mission critical ASI/IP trunking, ad-hoc OB, DSNG and teleport applications.
The lightweight, and nearly silent RD-70 offers amazing features and specifications in its 1 RU chassis, including redundant AC power supplies, enhanced control and monitoring via its front-panel, a browser and SNMP; video support includes SD, 2D-HD and 3D AVC 422 with sixteen channels of audio. The RD70 supports VBI services and offers unmatched reliability and ease of use for an extraordinary value. In addition to decoding sixteen channels of audio, the RD-70 pass-through support includes PCM, Dolby E (16 and 20 Bit) and Dolby Digital (2.0 and 5.1). Advanced audio CODCE support is available through extra licensing and keys.

The RD-70 IRD identifies services concurrently from ASI, IP and DVBS/S2 transport interfaces. The DVBS/S2 demodulator supports modes ranging from QPSK up to 32APSK based on software licenses.

Contact Digisat for a detailed price quote.

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Key Features

Full frame 1080P 59.94/50 3G decoding*
3G Copper
Fiber SFP Video Interfaces
Automatic SD and HD, resolution and frame rate detection
AVC 1080P 4:2:2 10 bit Video Decoding
MPEG 2 SD/HD 4:2:2 Decoding
Concurrent HD decode with SD down-convert on alternate SDI interface
Sixteen (16) channels of audio decoding
MPEG 1 Layer 2, AAC*, Dolby Digital* Audio Decoding
Dolby E and PCM pass-through
Time Code, Captions, Teletext and other VBI
Redundant Power Supplies
Front Panel, Web UI, SNMP
Optional DVBS/S2 demodulation supporting QPSK to 32APSK with 5% rolloff*
ASI Transport Interface to 210 Mbs
IP Transport Interface (IP supports UDP/RTP and SMPTE 2022 FEC)
TCP/IP transport
Adaptive Bit Rate decoding
Web UI
Front Panel UI
SNMP Control and Monitoring
Remote UI Video and Audio Thumbnail (preview of decode via IP network)
Supports Adtec iOS Multiviewer
Robust, quiet, lightweight design
* Optional licenses required.

Applications

DSNG (ultra-low, low and normal delay)
Tier One Contribution on dedicated ASI or IP circuits
3D and 4K (Ultra HD) Discrete Contribution
Adaptive IP Contribution using Adtec EN-91/91P/100 with ABR feature
High Efficiency Trunking (JPEG replacement)
Teleport Infrastructure for Ad Hock
Occasional Use Field and Studio decode and monitoring

Adtec RD-70 Specifications

Inputs

DVB-ASI
Input available for Decode or Pass to ASI outputs.
Asynchronous Serial Interface per EN500083-9
Full DVB-ASI bandwidth for free-to-air 188/204/208 Byte Transport streams (SPTS and MPTS). Up to 210 Mbps for 188/204/208 byte Transport Streams.
1 x BNC (75 Ohm)

IP
Input available for decode, but may also be used for control

MPEG 2 RTP v2 transport (RFC 3550)
150 Mbps (188 byte DVB packet size, 7 per IP packet)*

MPEG 2 UDP transport
150 Mbps (188 byte DVB packet size, 7 per IP packet)*

RTP SMPTE 2022-1 2007 FEC
80 Mbps (188 byte DVB packet size, 7 per IP packet)*

Connection speed:
GigE (100/1000BaseT)
Ethernet (10/100BaseT)
8 pin RJ45
*Supported bandwidth decreases with streams that have not been created with 7 DVB packets per IP packet. 1 DVB Packet per IP Packet does not utilize the same data efficiency / throughput as 7. The amount of DVB packets per IP payload is a multicast transmitter configuration and is automatically detected by the receiver. To utilize full IP receive throughput, use of the GigE port with packetization of 7 DVB packets per IP packet is recommended.
**The user has the ability to receive IP streams via the GigE or 10/100 management port. When receiving streams via the 10/100 management port, throughput is limited.

RF (Optional)
Input available for decode.
DVBS & DVB-S2 QPSK/8PSK with 16APSK and 32APSK options available. 188/204/208 byte packet size
Two Female F connectors (75 Ohm)

Outputs
3G-SDI / HD-SDI / SD-SDI
Two banks (two mirrored SDI outputs per bank) of SDI Outputs from Decoder
Video & Audio SMPTE 259M - SD, SMPTE 292M - HD, SMPTE 424M - 3G
Each output individually down-scaled to SD
Up to 16 Channels of Embedded audio
SDI Ancillary support for Closed Captioning, AFD, VITC, LTC and Teletext

SDI Ancillary data and OSD overlay have unique configuration for each SDI bank
Three BNC (75 Ohm), One SFP

note*: 3G-SDI Outputs have selectable Level A and Level B Dual Link output control to retain interoperability with other third party 3G devices. The default mapping level is Level A.

CVBS
SD NTSC or PAL D1 Composite Video Output (downscaled from HD source)
Supports Closed Captioning and Teletext
BNC (75 Ohm)

DVB-ASI Outputs
Asynchronous Serial Interface per EN500083-9
ASI Mirrored from DVB-ASI Input, IP Input, or RF Input with purchase of optional tuner package. All streams are output as 188 byte packets.
Three BNC (75 Ohm)

AES Audio
AES3
8 pairs of decoded audio
4 pairs of de-embedded passthrough audio
Eight BNC (75 Ohm)

Analog Audio
Two balanced channels per DB9 connector. (2 pairs)
Two DB9 (600 Ohm)

Communications
COM2 Serial Port
API Serial Communication Interface
Default Baud Configuration: 38,400 bps 8 data bits 1 stop bit no parity
8 pin RJ45

COM1 Serial Port
Serial Port Used for Troubleshooting (Terminal)
8 pin RJ45 (supplied with DB9 to RJ45 adapter)
Baud Configuration: 115,200 bps 8 data bits 1 stop bit no parity

Ethernet Port
Ethernet port used for network control, but can be used for IP receive
Ethernet 10/100BaseT
Communication Methods: WebUI, SNMP, Telnet, XCP
8 pin RJ45

DB9 Parallel Port
DB9 parallel port used for custom triggering / integration
DB9 Male

Video and Audio

Video Decode
MPEG-2 SD (ISO/IEC 13818-2) Decode:
480i59.94, 576i50
MP@ML, SP@ML, 422P@ML

MPEG-2 HD (ISO/IEC 13818-2) Decode:
720p50, 720p59.94, 720p60, 1080i50, 1080i59.94, 1080i60
422P@HL, MP@H14L, MP@HL, SP@H14L, SP@HL

MPEG-4 SD (ISO/IEC 14496-10) Decode:
480i59.94, 576i50
Baseline, Main (support 8 bits only)

MPEG-4 HD (ISO/IEC 14496-10) Decode:
720p50, 720p59.94, 720p60, 1080i50, 1080i59.94, 1080i60, 1080p50, 1080p59.94, 1080p60
Profiles: High, High422 (support 8 bit and 10 bit)
Max Level: 4.1-4.2 (CABAC:50Mbps, CAVLC:150Mbps)
Supported tools support Baseline except ASO, FMO

Audio Decode
Supported Audio CODEC (Decode and pass through)

Dolby Digital 2.0 (AC3)*

Dolby Digital 5.1 (AC3)*

Dolby Digital+ 2.0, 5.1*

MPEG1 Layer 2 decode **

AAC LC *

AAC HEv1, HEv2*

* Optional licensing and keys required
** No licensing, keys only

Audio Pass-through
Supports up to four Dolby-E 16/20 bit, Dolby Digital AC3 16 bit, and/or Linear PCM 16/20/24 bit pass-through sessions. 24 bit input samples are truncated to 20 bits.

Each SDI output contains all
active pass-through sessions.
Passthrough on AES3 interfaces

LBand Demodulator (option)

Modulation Scheme support: QPSK / 8PSK / 16APSK / 32APSK*
Supported Code Rates:
DVB-S QPSK: 1/2, 2/3, 3/4, 5/6, 6/7, 7/8
DVB-S 8PSK: 2/3, 5/6, 8/9
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, 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-S symbol rate range: 1 - 45 Mbaud
DVB-S2 symbol rate range: 0.256 - 45Mbaud (QPSK/8PSK /16APSK)
DVB-S2 symbol rate range 1-33Mbaud (32APSK, normal frames only)
frequency range: 950 - 2150MHz
min. input level: -70dBm
max. input level: -25dBm
Carrier acquisition Range: up to 7.5MHz
(if symbolrate < 5 Mbaud: 1.5 x baudrate . if symbol rate > 5 Mbaud: 7.5MHz)
LNB Power and Control:
11.5 - 14V (vertical polarization)
16 - 19V (horizontal polarization)
22kHz ± 4kHz (band selection according to universal LNB for ASTRA satellites)
Clean Channel Technology Capable (extended 5%, 10%, 15% roll-off capability)
* software keys are required to unlock full hardware support. Software update may be required
to enable Clean Channel Technology support on older demodulators.

iOS Multiviewer
Control multiple encoders and decoders with video and audio thumbnail.
Compatible with iPad and iPhone
Android and Windows mobile coming soon

Physical

1 RU chassis (19 x 18 x 1.75 / 482 x 44 x 457 mm) - 9 pounds (~4 Kg).

Power Input

Redundant auto switching dual 70-240 VAC 50/60 Hz

Power Usage

Start-up: 35 Watts - Operational: 12 Watts

Cooling and Loudness

Dynamically controlled low noise fan system with left to right airflow. Very quiet operation at less than 60 dBA.

Operating temp of 0 to 50 degrees C, non-condensing

Alarms
-Front Panel LED, Web UI, SNMP, GPIO