ProView™ 2900

Integrated Receiver Decoder

HIGHLIGHTS

- MPEG-2 DVB and ATSC decoding
- High quality video and audio outputs
- Variety of front-end options, including DVB-S (single or dual)
- DVB-S2 Professional, MPEG over IP, G.703, DS3-ATM, DSNG and ASI
- Dual MPEG over IP inputs support SPTS and MPTS, and provide link redundancy and logical source redundancy
- Pro-MPEG FEC ensures high video quality
- IP data output (MPE decapsulation)
- ASI transport stream input and output
- DVB common interface (2 slots)
- SDI, AES/EBU and analog outputs
- Up to 4 pairs of audio outputs support multiple decoding schemes
- VBI re-insertion in composite and SDI
- Genlock for high-end accurate frame and color synchronization
- SNMP and web-based management
- Embedded BISS Mode-1 and BISS-E (DSNG-CA)

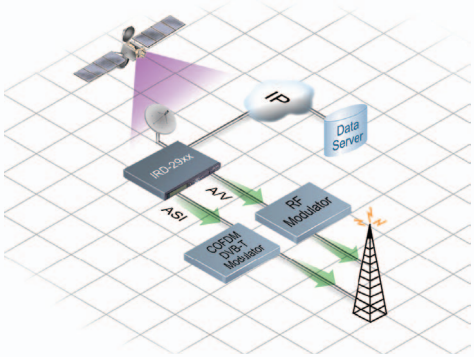
The professional ProView™ 2900 integrated receiver decoder is a broadcast-quality decoder, decryptor and interface converter that provides MPEG-2 and AVC SD decoding, advanced transport stream processing, cuttingedge IP processing technologies and a variety of front-ends, including DVB-S2, MPEG over IP and more.

BENEFITS OF THE NSG 9000

- Rich variety of models and front-end options enable creation of tailored solutions for individual operators
- Dual decoder saves space
- Pay only for software options needed now; enable additional ones later
- DVB-S2 receiver reduces satellite bandwidth expense
- Enables cost-effective migration to IP networks
- Service and PID filtering capabilities eliminate the need for a stand-alone multiplexer unit
- Easily integrates with market-leading network management systems

DISTRIBUTION FOR TERRESTRIAL BROADCAST

The ProView 2900 enables terrestrial distribution through output of analog audio and video signals to RF modulators for VHF/UHF terrestrial broadcast. It supports migration to DVB-T by providing a digital ASI transport stream output to a CODFM modulator and DVB-T transmitter. In addition to live broadcasting, the ProView 2900 supports extraction of encapsulated video content as MPE data for off-line distribution. This is particularly valuable for distribution of syndicated content to network affiliates.



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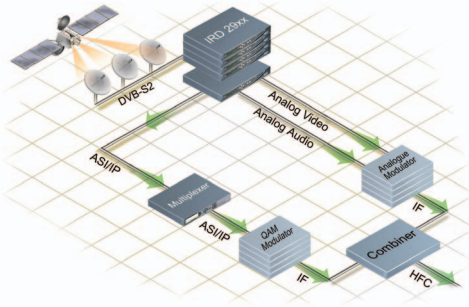
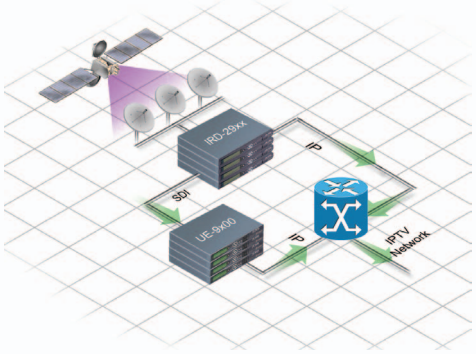


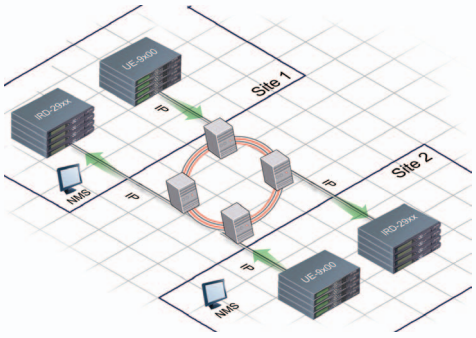
DISTRIBUTION TO IPTV HEADEND

The ProView 2900 receives and decrypts DVB-S or DVB-S2 content, and outputs content both over IP for streaming and over SDI for re-encoding. When streaming content, the device can be configured to filter and forward only a subset of the programs in the transport stream (TS), for output over the IP interface. The filter is applied either to services (dynamic), or to PIDs (static). The output TS is configured as either VBR or CBR, with NULL stuffing enabling it to fit a configured bandwidth. The ProView 2900 can also decapsulate IP over MPEG (MPE) and output it over an IP network.



IP CONTRIBUTION

The ProView 2900 enables cost-efficient contribution of high-quality video content via IP networks. The IRD offers extensive advanced IP functionalities including configurable de-jittering buffers that facilitate trade-offs between latency and network burstiness resiliency, Pro-MPEG Forward Error Correction (FEC) for excellent packet loss recovery, dual Ethernet inputs for link redundancy protection against failure of directly connected switches, and dual sources over IP for logical redundancy protection against source failure.



MODEL DESCRIPTIONS

The ProView 2900 series features 3 distinct models:
IRD-296x - Professional single 4:2:0 receiver decoder
IRD-298x - Professional single 4:2:2/4:2:0 receiver decoder
IRD-299x - Professional dual 4:2:0 receiver decoder

TRANSPORT STREAM INPUT INTERFACES

DVB-S Single Input	Single L-Band RF input with LNB control and loop-through output
Connector	F-type, 75 ohm
Frequency range	950 - 2150 MHz
RF input level	(-65) to (-25) dBm
Constellation	QPSK
Symbol Rate	1 - 45 Msym/s
FEC	All ratios compliant with standard DVB-S ETS 300 421
LNB power	13VDC, 18VDC / 350mA or off, 22KHz or off
DVB-S Dual Selectable Input	Dual L-Band RF input with LNB control and loop-through output Manual selection of active input Same characteristics as DVB-S single input
DVB-S2 Single Input	Single L-Band RF input with LNB control and loop-through output
Connector	F-type, 75 ohm
Frequency range	950 - 2150 MHz
RF input level	(-65) to (-25) dBm
Constellation	QPSK, 8PSK (16APSK Optional)
Symbol rate	1 - 45 Msym/s
FEC	All ratios compliant with standard DVB-S2 (EN 302 307)
FEC Blocks	Short and normal
Roll off	0.2, 0.25 and 0.35
Mode	CCM (VCM, ACM Optional) Physical layer scrambling Multiple input transport stream (MSI)
Pilots	On & off
Data rate	100 Kbps - 100 Mbps
LNB power	13VDC, 18VDC / 350mA or off, 22KHz or off
DVB - DSNG Input	
Constellations	QPSK, 8PSK and 16QAM
Frequency Range	950-2150 MHz
Symbol rate range	1-45 Msym/s Two L-and RF 75 ohm inputs with LNB control
MPEG over IP Input	
Number of inputs	2 (one active at a time) -used for physical link redundancy
Connectors	10/100 Base-T, RJ-45
Number of sockets	2 (one active at a time) - used for logical (source) redundancy
Redundancy Scheme	Physical (link) and logical (source) - coupled
De-jittering buffer size	configurable 0-2000mSec.
Encapsulation type	UDP and RTP (Automatic detection)
TS bit-rate	Up to 44 Mbps SPTS / MPTS Unicast/multicast GMPv2
Forward Error Correction (FEC)	ProMPEG CoP3r2
Maximum input bit-rate	25Mb/s Columns only FEC protection
Matrix dimensions Columns:	1-20, Rows: 4-20 Columns*Rows = 100 (Automatic detection
Telecom G.703 Input	Unframed PDH Data rates: E1,E2 or E3
FEC (optional):	DVB-C FEC Loop-through output
DVB - PDH Input	
Interface	ATM AAL-1
Data rates	DS3 or E3 Loop-through output
DVB - ASI Input	
Interface	Copper, BNC 75 ohm
TS bit-rate	Up to 100 Mbps (Byte and burst mode)
DVB - ASI Output	
2 ASI connectors	Copper, BNC 75 ohm
ASI options	
ASI out 1	Stream with decrypted selected program, output stream and loop-through ASI out 2 stream with decrypted selected program, output stream
MPEG over IP Output	SPTS / MPTS
TS bit-rate	Up to 85 Mbps
Encapsulation	UDP All programs and PIDs present in the output TS
Interface	10/100 Base-T, RJ-45

ADVANCED PROCESSING OPTIONS

Service and PID filtering	Active on ASI and IP outputs PCR re-stamping VBR and CBR modes (NULL stuffing) Forward only and filter only modes Dynamic Service filtering (tracks PID modifications Static PID filtering
Data	
High speed data	RS-422 up to 20Mbps, RJ-45
IP data out	Up to 60Mbps, MPE decapsulation

VIDEO DECODING

MPEG-2 Decoding	
Maximum TS decoding bit rate	108 Mbps
Video Formats	PAL-B/G/I/M/N/D, NTSC, SECAM L/B/G/K1 Russian SECAM D/K (composite video only)
Decoding	4:2:0 MP@ML (1.5-15 Mbps) 4:2:2 PP@ML (1.5-50 Mbps)
Video resolution interpolation	Pan-Scan, letter box or pass-through
Aspect ratios	4:3/16:9 Aspect ration 14:9 by signaling over VBI video index
Graphic processing	OSD, DVB subtitling, EBU (Teletext) subtitling (optional)
Audio Decoding	Musicam Dolby Digital (AC-3) pass-through Dolby Digital (AC-3) LT/RT downmixing

VIDEO AND AUDIO OUTPUTS

Video	Up to 3 composite video interfaces OSD only on monitoring output GenLock input and loop-through output Genlock Sync lock resolution: +/- 37nSec
Audio Modes Max output level Attenuation control	Up to 4 analog audio stereo pair balanced interfaces Up to 4 digital audio AES/EBU-SPDIF interfaces Stereo, joint stereo, dual channel, single channel +18 dBu analog, 0 dBFs digital -64 dB to 0 dB / mute
Front Panel Monitoring	Video monitor output connector Audio monitor output connector
VBI Re-insertion	All VBIs adhere to relevant standards including line numbers in composite video and embedded in SDI WST Teletext and inverted Teletext WSS, VPS, VITC, CC, AMOL I, AMOL II (Nielsen), TV-Guide, V-CHIP Enhanced VITS with built-in audio generator

CONDITIONAL ACCESS

Embedded DVB Descrambling	BISS Mode-1 BISS-E CAS-5000 Conax
DVB-CI Interface Maximum decrypted programs	 Two CI slots EN-50221 one for single decoder, two for dual decoder
Maximum TS bit-rate	72 Mbps
CA methods	Multicrypt, Simulcrypt
CAS	Viaccess®, Irdeto®, Conax®, MediaGuard® Nagravision®, Cryptoworks®, VideoGuard®, OnDigital®, CODICrypt®

CONTROL AND MONITORING

Local	Easy-to-use graphical panel Advanced satellite scanning Operates in service and PID modes 2 GPI dry contacts for various status and fault indications
Enhanced DVB Monitoring	Front panel display: signal quality, Eb/N0, BER, ASI format, network and service information, CA information, CI slots, video and audio decoded information
Remote	SNMP management Web-based management Telnet Terminal via RS-232 or RS-485 Software download
Over the Air	Software download
Configuration Backup Number of presets	Presets 50 Each preset saves/recalls one service relevant parameters Complete Configuration saves/recalls complete configuration using FTP

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COMPLIANCE

EMC	EN55013 (CISPR 13) EN55020 (CISPR 20) EN55022 (CISPR 22) EN55024 (CISPR 24) FCC part 15 (class B)
Safety	EN60950 CB (IEC60950) UL60950 ROHS Directive 2002/95/EC

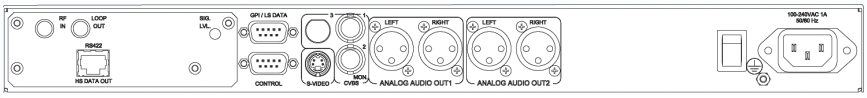
ENVIRONMENTATAL

Operating Temperature	0°C - 50°C
Operating Humidity	5% - 90% (non-condensing)
Storage and Transportation Temperature	-40°C - 70°C
Storage and Transportation Humidity	0% - 95% (non-condensing)

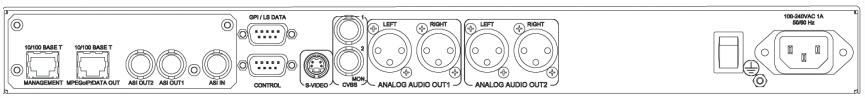
PHYSICAL

Size Dimensions (H x W x D)	1-RU unit (19" rack) 1.75" x 19" x 14" (4.4 cm x 48.3 cm x 35.7 cm
Weight	7.7 lbs (3.5 kg)
Power Voltage Power Consumption	 -100V-240V AC, 50/60Hz Up to 50W max

PROFESSIONAL 4:2:0 IRD



IRD-2960



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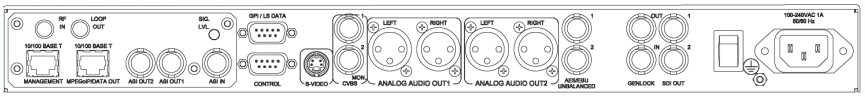

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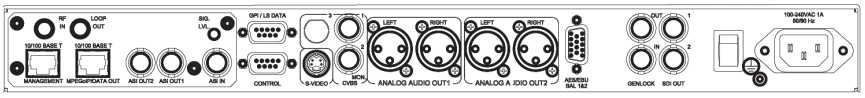
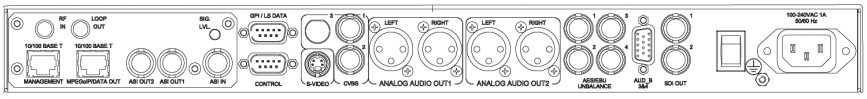
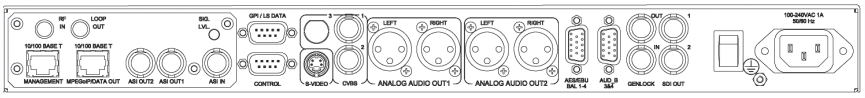


IRD-2963

PROFESSIONAL 4:2:2 IRD



IRD-2980



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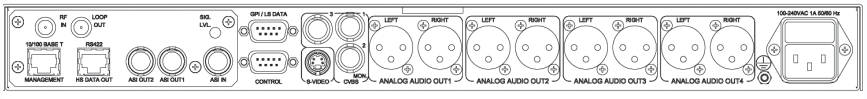
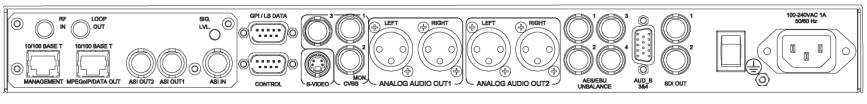
PROFESSIONAL 4:2:0 DUAL DECODER



IRD-2990



IRD-2991

	Single 4:2:0 Decoder				Single 4:2:2 Decoder		Dual 4:2:0 Decoder	
	2960	2961	2962	2963	2980	2981	2990	2991
INTEGRATED TRANSPORT STREAM INTERFACES								
DVB-ASI Input	L	L	L	L	L	L	L	L
DVB-ASI outputs	–	L	L	L	L	L	L	L
MPEG over IP output	–	L	L	L	L	L	–	L
VIdeo Decoding Outputs and Option								
Number of decoders	1	1	1	1	1	1	2	2
Number of composite video interfaces	2	2	2	2	2	2	3	3
Front panel monitoring connectors	–	–	Y	Y	Y	Y	–	–
Number of SDI interfaces	–	–	2	2	2	2	–	2
SDI with embedded VBI and up to 4 stereo channels	–	–	Y	Y	Y	Y	–	–
Second SDI with embedded VBI and up to 4 stereo ch.1	–	–	–	–	–	–	–	Y
Russian SECAM D/K (composite video only)	L	L	–	–	–	–	L	–
Decoding: 4:2:2 PP@ML (1.5 - 50 Mbps)	–	–	–	–	Y	Y	–	–
GenLock input and loop-through output	–	–	L	L	–	Y	–	–
Audio Decoding Outputs and Options								
Number of analog audio balanced interfaces	2	2	2	2	4	4	4	4
Active first analog stereo	Y	Y	Y	Y	Y	Y	Y	Y
Active second analog stereo	Y	Y	Y	Y	Y	Y	Y	Y
Active third analog stereo	–	–	–	–	L	L	Y	Y
Active fourth analog stereo	–	–	–	–	L	L	Y	Y
Number of AES/EBU-SPDIF audio unbalanced interfaces	–	–	2	–	4	–	–	4
Number of AES/EBU-SPDIF audio balanced interfaces	–	–	–	2	–	4	–	–
Active first and second AES/EBU-SPDIF	–	–	Y	Y	Y	Y	–	Y
Active third AES/EBU-SPDIF	–	–	–	–	L	L	–	Y
Active fourth AES/EBU-SPDIF	–	–	–	–	L	L	–	Y
Number of stereo channels embedded in SDI	–	–	2	2	4	4	–	2
Dolby Digital (AC-3) pass-through	–	–	Y	Y	Y	Y	–	Y
Dolby Digital (AC-3) LT/RT downmixing	L	L	L	L	L	L	L	L
Linear PCM (SMPTE 302M), Dolby-E pass-through	–	–	–	–	L	L	–	L
Data Outputs								
RS-422 high speed data	Y	–	–	–	–	–	Y	–
RS-422 low speed data	Y	Y	Y	Y	Y	Y	Y	Y
IP data (MPE decapsulation)	–	L	L	L	L	L	–	L
Advanced Features								
ProMPEG FEC (CoP3v2)	–	L	L	L	L	L	–	L
IP dual inputs- for link and source redundancy	–	L	L	L	L	L	–	L
Service and PID filtering	–	L	L	L	L	L	–	L
Control & Monitoring								
SNMP control	–	Y	Y	Y	Y	Y	Y	Y
Web based management	–	Y	Y	Y	Y	Y	Y	Y

L = License permission

Y = Included in basic configuration

HEADQUARTERS

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