ProView™ 8100

COMMERCIAL INTEGRATED RECEIVER-DECODER

The first member of the all-new Harmonic ProView™ 8000 family of integrated receiver-decoders, the ProView 8100 single-channel commercial decoder and descrambler is a compact, fully featured unit for general-purpose primary distribution applications.

With the ProView 8100, migrating to an all-IP headend and powering the launch of value-added services has never been easier. Users can receive DVB-S/S2/S2X, IP or ASI signals, decode SD and HD MPEG-2 and MPEG-4 AVC transport streams to baseband, descramble encrypted programs, and output content to analog or digital. Reception of broadcast-quality video over the Internet is also supported. Harmonic's superior video quality and low latency ensure the timely distribution of content at resolutions up to 1080i30.

Workflow efficiency is a key trait of the ProView 8100. The unit provides simultaneous HD-SDI and SD-SDI output with high-quality HD-to-SD down-conversion, allowing operators to use the same device to feed both the HD and SD production chains.

The 1-RU ProView 8100 supports a rich set of interfaces, including two independent RF ports, DVB-ASI and IP inputs and outputs, and 3G HD-SDI and HDMI outputs. This I/O flexibility allows the unit to integrate with any headend architecture and enables support for advanced content delivery redundancy schemes, such as primary satellite and backup IP network feeds. In addition to live broadcasting, the ProView 8100 supports extraction of encapsulated video content as Multiprotocol Encapsulation (MPE) data for offline distribution — a particularly valuable feature for distribution of syndicated content to network affiliates.

Simple front-panel controls on the ProView 8100 and an intuitive web-based interface let users quickly set all system parameters and store presets for fast recall. Integration with the Harmonic DMS™ video distribution management system allows users to deploy and manage a large pool of widely distributed ProView devices from a single interface, resulting in a highly flexible, cost-effective primary distribution solution.

Business Benefits

Lower CAPEX
The ProView 8100 receiver-decoder brings advanced features more often seen in high-end professional contribution IRD designs to the general-purpose distribution market. Integrating multi-format decoding and multi-program descrambling capabilities, the unit streamlines system architectures at an attractive price, making it an ideal choice for CAPEX investment.

HIGHLIGHTS

- Single-channel SD/HD MPEG-2/MPEG-4 AVC decoding and descrambling
- DVB-S/S2/S2X, DVB-ASI and IP inputs
- Two independent RF ports
- Reception of broadcast-quality video over the Internet
- Up to 4 Audio decoding channels (8140)

- Simultaneous HD-SDI and SD-SDI output
- High-quality HD-to-SD down-conversion
- 3G HD-SDI output supports up to 1080i30 workflows
- ASI, IP, HDMI and analog video outputs

- 4:2:0 subsampling
- Integrated BISS and Verimatrix® support, dual DVB-CI slots
- Front-panel controls and intuitive, web-based GUI
- Compatible with Harmonic DMS video distribution management system

Reduced OPEX
Housing a multi-format decoder and descrambler in a 1-RU chassis, the ProView 8100 is perfectly suited for operators mindful of their energy costs and rack space.

Business Continuity
The trend towards HD and MPEG-4 AVC content distribution creates business continuity issues with legacy receivers. The ProView 8100 can be repurposed via firmware upgrades for different uses and new applications, such as migration from SD MPEG-2 to HD AVC.

Expanding Channel Lineups
Integrating DVB-S/S2/S2X demodulation and the ability to stream descrambled content over IP, the ProView 8100 enables operators to quickly and cost-effectively launch new services by leveraging their existing IP or legacy ASI infrastructure.

Workflow Flexibility
The general-purpose design of the ProView 8100 allows the unit to be used in a wide range of solutions, including basic monitoring up to and including end-point delivery in distribution networks.

Distribution over the Internet
With support for the reception of broadcast-quality video over the Internet, ProView 8100 alleviates a dependence on satellite and fiber transport, dramatically altering the economics of video distribution.

Technical Benefits

Expanded Input Options
Able to simultaneously receive SD and HD MPEG-2 and MPEG-4 AVC content over DVB-S/S2/S2X, ASI and IP, the ProView 8100 allows operators to maximize flexibility and optimize redundancy schemes.

Output Format Freedom
The ProView 8100 offers a range of output options, including ASI and IP transport stream, MPE data, 3G HD-SDI, SD-SDI, HDMI, two AES balanced analog audio outputs, two AES digital audio outputs (unbalanced BNC) and genlock.

Friendly System Management
Control options on the ProView 8100 include an easy-to-use front panel with back-lit LCD status display and LED indicators, and an intuitive, web-based GUI. Large ProView 8100 populations can be remotely controlled with Harmonic's DMS video distribution management system.
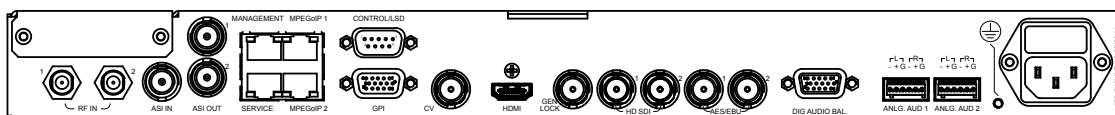
Peace of Mind
To assure the security of content, ProView 8100 offers integrated BISS and Verimatrix descrambling, as well as two CAM slots for use of your preferred DVB-CI vendor.

Configurations
Two ProView 8100 configurations are available to meet a variety of customer applications and price points.
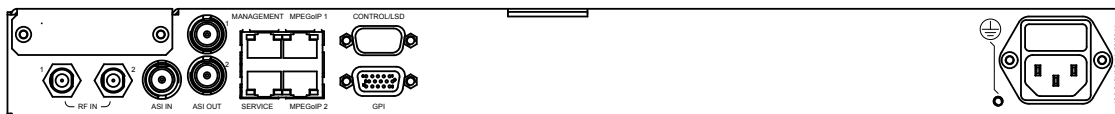
ProView 8105 Descrambler
ASI, IP and MPE data outputs

ProView 8130 Descrambler and Analog/Digital Decoder
ASI, IP, MPE data, composite video, SDI, HDMI, genlock, two balanced analog and two balanced digital audio outputs
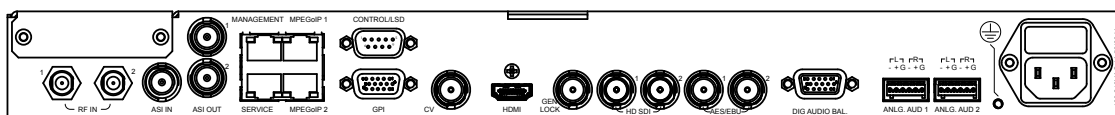
ProView 8140 Descrambler and Analog/Digital Decoder
ASI, IP, MPE data, composite video, SDI, HDMI, genlock, two balanced analog and four balanced digital audio outputs

SPECIFICATIONS

TRANSPORT STREAM INPUT INTERFACES

DVB-S/S2

RF Ports	Two
Inputs	Single Service
Constellation	DVB-S: QPSK
	DVB-S2: QPSK, 8PSK
Symbol Rate	1-45 Msym/s
Input Level	-65 to -25 dBm
Throughput Range	Up to 108 Mbps
Tuning Step Size	125 kHz
FEC	All ratios compliant with standard
FEC Blocks	Normal
Roll-Off	0.2, 0.25, 0.35 and 0.05
Modes	CCM, VCM
Pilots	On & off

DVB-S2X[2]

Constellation	8PSK[1],16APSK[1],32APSK[1]
Symbol Rate	1-45 Msym/s[1]
	Up to 64Mbaud[2]
FEC Blocks	8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10, 23/36, 25/36, 13/18
	8PSK-L: 5/9, 26/45
	16APSK: 2/3,3/4,4/5,5/6,8/9,9/19
	26/45,3/5,28/45,23/36,25/36,13/18,7/9,77/90
	16APSK-L: 5/9, 8/15, 1/2, 3/5, 2/3
	32APSK: 3/4, 4/5, 5/6, 8/9, 9/10, 32/45, 11/15, 7/9
	32APSK-L: 2/3
Roll Off	0.05, 0.1, 0.15, 0.2, 0.25 and 0.35
RF Input Max Bitrate	160Mbps per port
Mode	CCM, VCM
Pilots	On & off

DVB-ASI

Connectors	One BNC, 75 Ω
Packet Length	188 or 204 byte packets
TS Max Input Bitrate	160 Mbps

MPEG over IP[1]

Connectors	Two 100/1000 Base-T RJ45 for redundancy
Sockets	Two
	SPTS/MPTS
Encapsulation Protocols	MPEG-2 TS over UDP, IPv4
	Multicast/Unicast
	SMPTE 2022-1/2
FEC[1]	SMPTE-2022 FEC
	Deep Packet Recovery (DPR) for public Internet delivery (optional)[1]

TRANSPORT STREAM OUTPUT INTERFACES

ASI

Outputs	Single TS
Connectors	Two BNC, 75 Ω
Packet Length	188
TS Max Output Bitrate	160 Mbps

IP

Ports	Two, mirrored
Connector	RJ45, 100/1000 Base-T
Sockets	Two
Maximum Socket Bitrate	120 Mbps
MPEG over IP Encapsulation	Pro-MPEG CoP3
IP Address Type	Multicast
TS Type	SPTS/MPTS

PROCESSING/REMULTIPLEXING

Stream and service level remultiplexing with service/unreferenced PID remultiplexing
Service filtering and remapping
ES PID remapping
Unreferenced PID filtering and remapping
High-accuracy PCR restamping
PSI/SI processing and regeneration
CA signaling removed when descrambling

DESCRAMBLING

Embedded Descrambling	BISS, Verimatrix
DVB-CI Interface	Two independent CI slots, EN-50221
CA Methods	Multicrypt, Simulcrypt
Supported CAMs	Aston® Multi™ for Conax™, Irdeto™ and Viaccess-Orca™
	Aston Multi for BISS™
	Aston Duo for Conax, Irdeto and Viaccess-Orca
	SmarDTV® EuroCAM for Irdeto
	SmarDTV WorldCAM™ for Nagra™ (Mediaguard and Aladdin)®
	SCM® Viaccess-Orca
	SMIT® Professional 4/6/8 programs: Irdeto, Viaccess-Orca, Conax, Cryptoworks, NDS™ and Verimatrix
	Phillips® Cryptoworks™
	Rosscrypt® CAMs and encryption
	Neotion® Viaccess-Orca
	DreCrypt® CAMs and encryption
Multi-Channel Descrambling[1]	Variable, depending on the CAM (e.g., Aston Professional enables descrambling of up to 12 services and up to 24 PIDs)

VIDEO DECODING

Number of Channels	One

Decoding Formats

MPEG-2 SD 4:2:0	MP@ML
MPEG-2 HD 4:2:01	MP@HL
MPEG-4 AVC SD	MP@L3
MPEG-4 AVC HD1	MP@L4.0, HP@4.0

Maximum Video Rate

MPEG-2 SD	15 Mbps
MPEG-2 HD	50 Mbps
MPEG-4 AVC SD	10 Mbps
MPEG-4 AVC HD	20 Mbps (MP), 25 Mbps (HP)
Video Formats	1080i @ 29.97, 30, 25 fps
	720p @ 59.94, 50, 60 fps
	480i @ 29.97 fps
	576i @ 25 fps
	480p @ 59.94 fps
Analog Video Output	PAL-B/G/I/M/N/D
	NTSC
	SECAM

VIDEO PROCESSING

HD video down-converted to SD with aspect ratio conversion
Aspect ratio conversion: 16:9 to 4:3
Simultaneous HD-SDI and SD-SDI output[1]
VBI reinsertion in composite video and embedded in SDI
CC CEA 608/708 re-insertion in composite video and SDI VANC

SPECIFICATIONS

AUDIO DECODING

Audio PID Decoding	Two audio PIDs (8130) Up to four audio PIDs (8140)
Decoding Formats	Stereo down-mix MPEG-1 Layer II (Musicam) Dolby® Digital (AC-3)/Dolby Digital Plus (E-AC-3) stereo decode AC-3/E-AC-3 5.1 decode[1] AC-3/E-AC-3 5.1 down-mix, passthrough AAAC/HE-AAC, LC stereo decode[1] AAC/HE-AAC, LC 5.1 decode, down-mix, passthrough[1] Dolby-E and Linear PCM passthrough[2]

VIDEO AND AUDIO INTERFACES

Video Input	Frame sync1: SD/HD, digital/analog
Video Output	One composite (PAL/NTSC) Two 3G HD-SDI with embedded audio; each can be SD-SDI or HD-SDI HDMI
Audio Output	Two analog audio terminal blocks, 600 Ω Two digital audio (AES/EBU-S/P-DIF), embedded SDI Two digital audio, balanced, 15-pin D-connector Four digital audio (AES/EBU/ S/P-DIF), embedded SDI[2]

CONTROL AND MONITORING

HTTP browser interface
Ethernet: RJ45 10/100BaseT control interface
Front-panel keypad and LCD
SNMP traps and alarms
XML interface for control and monitoring
Harmonic DMS video distribution management system
Control
GPI

PHYSICAL

Dimensions (H x W x D)	1.75 in x 19 in x 15.5 in (1 RU) 4.4 cm x 48.3 cm x 39.37 cm
Weight	11 lbs / 5 kg
Power Voltage	100 V-240 V AC, 50/60 Hz
Power Consumption	Up to 100 W max

ENVIRONMENTAL

Operating Temperature	0-50° C
Operating Humidity	5-90% (non-condensing)

Storage and
    Transportation
    Temperature
	-40° C - 70° C

Storage and
    Transportation
    Humidity
	0-95% (non-condensing)

COMPLIANCE

EMC	EN61000-3-2;-3 EN55022 (CISPR 22) EN55024 (CISPR 24) FCC part 15 (class A)
Safety	EN60950 CB (IEC60950) UL60950 ROHS Directive 2002/95/EC

Notes:

1. *Licensed feature*

2. *Relevant only for ProView 8140 model with license*