

HIGHLIGHTS

- 4x TS descrambler with four integrated DVB-CI slots
- Single/dual channel decoder in 1-RU
- MPEG-4 AVC/MPEG-2 SD/HD decoding
- Variety of inputs including four DVB-S/S2, ASI and IP inputs
- Two independent ASI outputs
- Dual IP outputs with 1+1 redundancy support
- HD-SDI, SD-SDI, HDMI and analog video outputs
- Any to any re-multiplexing capabilities
- Deterministic re-multiplexing for SFN distribution
- Regeneration of PSI/SI and MPEG tables
- Graphical user interface provides easy drag-and-drop management

Harmonic's ProView™ 7000 is the world's first single rack unit (1-RU) scalable receiver, DVB descrambler, multi-format video decoder and MPEG stream processor. The ProView 7000 is ideal for digital turnaround processing, full transport stream descrambling and decoding applications.

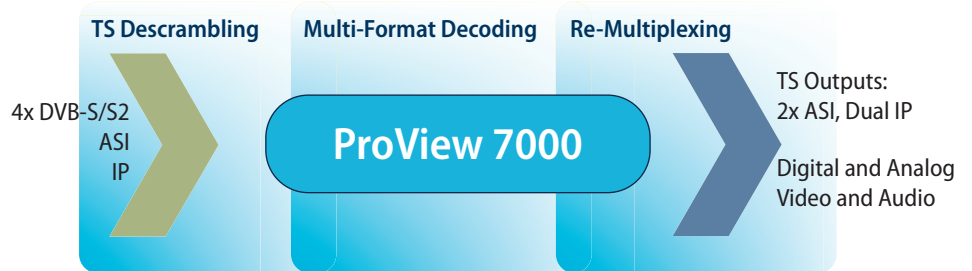


Harnessing a flexible and modular design, the ProView 7000 cost-effectively addresses the vast spectrum of content reception applications, from single channel decoding to descrambling and re-multiplexing of multiple transport streams. With an advanced and dense multi-channel descrambler, the ProView 7000 enables the deployment of or migration to an all-IP headend solution, and powers the launch of added-value services such as HD.

The Harmonic ProView 7000 features broadcast quality Standard Definition and High Definition, MPEG-2 and MPEG-4 AVC (H.264) video decoders, engineered for distribution and contribution applications. The flexible hardware design can be easily reconfigured by a firmware upgrade, enabling seamless adaptation to new inbound video formats and codecs such as the transition from SD MPEG-2 to HD AVC.

The ProView 7000 supports a rich set of input options ranging from multiple DVB-S/S2 to IP and DVB-ASI, allowing it to mesh with any headend architecture and enabling support for advanced content delivery redundancy schemes, such as primary satellite and backup IP network feeds.

Utilizing its processing capabilities, the ProView 7000 includes new technology, Deterministic SFN re-multiplexing (DSR), for dramatic reduction of distribution network bandwidth with regional program replacement in DVB-T SFN broadcast. By using DSR, the local regional programs are synchronously included in the SFN multiplex at each transmitting site, avoiding the need for full multiplex regional re-transmission.



High End Receiver & Processor

- Contribution and distribution
- Decoding for re-encoding
- Digital turnaround
- All-IP headends
- DTT Distribution – MFN and SFN

BUSINESS BENEFITS

- **Lower CAPEX** – Integrating and combining multi-format decoding, multi-program descrambling and re-multiplexing capabilities, the ProView 7000 dramatically streamlines system architecture. Its unequalled density and flexibility makes it the clear choice for CAPEX investment.
- **Business continuity** – The trend towards HD and AVC content distributing creates business continuity issues with legacy receivers. The ProView 7000 can be repurposed via firmware upgrades for different uses and new applications, such as migration from SD MPEG-2 to HD AVC.
- **Expanding channel line-up** – Integrating multiple DVB-S/S2 demodulation and streaming descrambled content over IP, the ProView 7000 enables operators to quickly and cost-effectively launch new services leveraging their existing IP or legacy ASI infrastructure.
- **OPEX friendly** – Able to house a multi-format decoder and descramble up to 4 full Multi-Program Transport Streams (MPTS) in a 1-RU chassis, the dense ProView 7000 is perfectly suited for operators mindful of their energy cost and rack space.
- **Lower OPEX** – Harmonic's unique DSR technology on the ProView 7000 can save up to 90% of satellite or IP bandwidth and increase network architecture flexibility in regional DVB-T SFN distribution networks. The common national programs do not need to be re-transmitted in each region, and both the national and regional signals can be distributed over different networks.

TECHNICAL BENEFITS

- **Fully integrated platform** – Combines all headend reception functionality such as multiple TS descrambling, multi-format and codec decoding, as well as full re-multiplexing capabilities including PID filtering, remapping and table re-generation.
- **Versatile video and audio format and codec support** – The ProView 7000 is equipped with two decoding cards for Standard Definition, High Definition, MPEG-2 and AVC formats.
- **Expanded set of input options** – Able to simultaneously receive content over DVB-S/ S2, ASI and IP, the ProView 7000 allows operators to maximize flexibility and optimize redundancy schemes.
- **Support for all-IP infrastructure** – The ProView 7000, in combination with the integrated FLEX™ decoder, enables an all-IP headend architecture. The result is a more scalable and lower-cost transition to IP-based services.
- **Integrated broadcast quality down-conversion** – The ProView 7000 performs HD down-conversion and aspect ratio adaptation to generate professional quality baseband analog video and audio that can be easily integrated with existing cable network infrastructure.
- **Friendly management** – The ProView 7000 can be simply configured through a standalone interface or with Harmonic's NMX Digital Service Manager™ for mass configuring, monitoring and automated redundancy in centralized or distributed architectures.
- **Advanced DSR processing** – The ProView 7000 performs regional program insertion in a national common multiplex at each DVB-T SFN transmission site. DSR supports CBR and VBR content replacement or insertion of any number of programs or PIDs. A special EAS mode is provided for emergency alert program switching.

RF INPUT INTERFACES – DVB-S/DVB-S2

4x L-Band RF inputs with LNB control for 2 inputs

Connector	4x F-type, 75 ohm (working simultaneously)
Frequency Range	950 - 2150 MHz
RF Input Level	(-65) to (-25) dBm
LNB Power	13 VDC, 18 VDC / 350 mA

TRANSPORT STREAM INPUT INTERFACES

DVB-S Inputs

Constellation	QPSK
Symbol Rate	1 - 45 Msym/s
FEC	All ratios compliant with standard

DVB-S2 Inputs

Constellation	QPSK, 8PSK
Symbol Rate	1 - 45 Msym/s
FEC	All ratios compliant with standard
FEC Blocks	Short and normal
Roll Off	0.2, 0.25 and 0.35
Mode	CCM, VCM
Pilots	On & off

ASI Input

Connector	4x BNC, 75 ohm
Packet Length	188 byte packets
TS Max Bit Rate	108 Mbps
Compliant with CENELEC EN 50083-9	

MPEG over IP Input

Up to 4x TS input	SPTS/MPTS
Number of Sockets	4
Encapsulation Protocols	MPEG-2 TS over UDP
Addressing	Multicast/unicast
Connectors	100/1000 Base-T, RJ-4 for redundancy

TRANSPORT STREAM OUTPUT INTERFACES

ASI Output

Number of Outputs	2 (duplicate or independent)
Connector	2x BNC, 75 ohm
Packet Length	188
TS Maximum Output Bit Rate	108 Mbps
Compliant with CENELEC EN 50083-9	

MPEG Over IP Output

SPTS / MPTS	Up to 4 sockets
Encapsulation Protocols	MPEG-TS over UDP
Redundancy	1+1 Physical Layer Support
Addressing	Multicast
Connectors	100/1000Base-T, RJ-45

TRANSPORT STREAM PROCESSING

Service level re-multiplexing from any input to any output

Service level filtering

High accuracy PCR re-stamping

PSI / SI processing and regeneration

Auto generation or pass through of PSI/SI tables

CA signaling removed when descrambling

Deterministic re-multiplexing of local content into the national TS for DVB-T SFN content distribution

CONDITIONAL ACCESS

BISS

DVB-CI Interface

CA Methods

CAS

Embedded, up to full TS

Four independent CI slots EN-50221, allowing descrambling of up to four TS (number of PIDs dependent on the CAMs)

Multicrypt, Simulcrypt

Viaccess®, Irdeto®, Conax®,

Nagravision® (partial list)

VIDEO DECODING

Number of Decoders 2

Decoding Formats

MPEG-2 SD	4:2:0 MP@ML
MPEG-2 HD	4:2:0 MP@HL
MPEG-4 AVC SD	MP@L3
MPEG-4 AVC HD	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, Russian SECAM

VIDEO PROCESSING

HD video down-converted to SD with aspect ratio conversion Letter Box, Center Cut, AFD

Aspect Ratio Conversion 16:9 to 4:3

VBI reinsertion in composite video and embedded in SDI

AUDIO DECODING

2 stereo pairs audio decoding per video channel

MPEG-1 Layer-II

Dolby Digital® stereo down-mix

Dolby Digital® 5.1 pass-through

AAC (single audio pair per video channel)

Dolby Digital Plus (single stereo pair per video decoding)

VIDEO AND AUDIO INTERFACES

Video Outputs

2x composite video interfaces (per video channel)

2x SD/HD SDI with embedded audio (per video channel)

1x Analog video RGB-HD. 15 pin D-connector (only for the single channel decoder)

1x HDMI (only for single channel decoder)

Audio Outputs

2 stereo pairs per video channel

2x analog audio stereo pairs, balanced

2x digital audio (AES/EBU-S/P-DIF)

2 Balanced digital audio interfaces

Modes Stereo, joint stereo, dual channel,
single channel

CONTROL AND MONITORING

Web browser interface

Ethernet – RJ45 10/100BaseT control interface

Front panel keypad and LCD

SNMP traps and alarms

Telnet

Terminal via RS-232 or RS-485

Presets

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

ENVIRONMENTAL

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

Dimensions (H x W x D) 1.75" x 19" x 15.5" (1-RU unit 19" rack)
4.4 cm x 48.3 cm x 39.37 cm

Weight 11 Lbs. / 5 kg

Power Voltage 100V-240V AC, 50/60Hz

Power Consumption Up to 100W max