Harmonic’s ProView™ 7100 is the industry’s first single-rack-unit, scalable, multiformat integrated receiver-decoder (IRD), transcoder and MPEG stream processor.

Leveraging Harmonic expertise in Intelligent Function Integration™, the ProView 7100 adds broadcast-quality SD/HD MPEG-2 and MPEG-4 AVC 4:2:0/4:2:2 10-bit decoding and video transcoding to the feature-rich ProView IRD platform, allowing content providers, broadcasters, cable MSOs and telcos to easily and cost-effectively streamline their workflows and decrease operating costs. For applications in which preserving pristine video quality is paramount, the ProView 7100 supports HEVC 4:2:2* 10-bit decoding of resolutions up to 1080p60.

The ProView 7100 IRD harnesses a flexible and modular design to address the vast spectrum of content reception applications, from decoding, descrambling and multiplexing of multiple transport streams to MPEG-4 to MPEG-2 transcoding. With an advanced and dense multichannel descrambler, the ProView 7100 simplifies the deployment of (or migration to) an all-IP headend solution and powers the launch of added-value services. The flexible hardware design is easily reconfigured with firmware upgrades, enabling seamless adaptation to new inbound video formats and codecs, such as MPEG-4 AVC and HEVC.

The ProView 7100 utilizes powerful processing capabilities to multiplex transport streams that include local and regional data, and also to perform deterministic remultiplexing for SFN distribution. It supports transcoding of up to eight channels of AVC to MPEG-2, allowing programmers to efficiently distribute superior-quality video content while using minimal satellite transponder capacity. Content can be received and transcoded to any resolution required.

A rich set of options includes input of multiple DVB-S/S2/S2X, IP and DVB-ASI feeds. Support for advanced content delivery redundancy schemes includes the ability to provide simultaneous primary satellite and backup IP network feeds.

**HIGHLIGHTS**

- Four TS descramblers with four integrated DVB-CI slots
- MPEG-2 4:2:0 8-bit and MPEG-4 AVC 4:2:2 10-bit decoding
- HEVC decoding of 1080p60 media
- Broad SD/HD format support
- Up to eight channels of MPEG-4 AVC to MPEG-2 transcoding with down-conversion option
- Single/dual-channel decoder in 1 RU
- Four stereo pairs of audio decoding
- Four independent ASI outputs
- Four IP outputs with 1+1 redundancy support
- HD-SDI, SD-SDI, HDMI and analog video outputs
- Any-to-any remultiplexing capabilities
- Deterministic remultiplexing for SFN distribution
- T2-MI deframing to MPEG TS
- Regeneration of PSI/SI and MPEG tables
- Graphical user interface provides easy drag-and-drop management
Marketing Benefits

Lower CAPEX
Integrating and combining multiformat decoding, multi-program descrambling and remultiplexing capabilities, the ProView 7100 dramatically streamlines system architectures. Its unequalled density and flexibility makes it the clear choice for CAPEX investment.

Business Continuity
The trend towards HD and AVC content distribution creates business continuity issues with legacy receivers. The ProView 7100 can be repurposed via hardware options and firmware upgrades for different uses and new applications, such as migration from SD MPEG-2 to HD AVC. It can also support the emerging HEVC codec via a simple software update, paving the way for highly efficient HEVC workflows and 1080p HD and 2160p Ultra HD content distribution.

Expanding Channel Lineup
By integrating DVB-S/S2/S2X demodulation with the streaming of descrambled content over IP, ProView 7100 enables operators to quickly and cost-effectively launch new services while leveraging their existing IP or legacy ASI infrastructure.

OPEX Friendly
Able to house a multiformat decoder and descramble up to four full Multi-Program Transport Streams (MPTS) in a 1-RU chassis, the dense ProView 7100 is perfectly suited for operators mindful of their energy cost and rack space.

Lower OPEX
Harmonic’s unique DSR technology can save up to 90% of satellite or IP bandwidth and increase architecture flexibility in regional DVB-T SFN distribution networks. The common national programs do not need to be retransmitted in each region, and both the national and regional signals can be distributed over different networks.

Applications
- Contribution and distribution
- Decoding for re-encoding
- Digital turnaround
- DVB descrambling
- All-IP headends
- DTT distribution — MFN and SFN

Technical Benefits

Fully Integrated Platform
The ProView 7100 combines all headend reception functionality — such as multiple transport-stream descrambling, multiformat and codec decoding, and any-to-any transcoding — with full remultiplexing capabilities, including PID filtering, remapping and table regeneration.

High-Fidelity Decoding
The ProView 7100 offers integrated MPEG-2 4:2:0 8-bit and AVC and HEVC 4:2:2 10-bit precision decoding for DVB-S/S2, DVB-ASI and IP applications, enabling content providers to decode content up to 1080p60** with pristine picture fidelity.

Superior Transcoding
The ProView 7100 can be equipped with two decoding or transcoding cards for SD/HD MPEG-2 and AVC formats. Harmonic’s industry-leading compression algorithms assure the distribution of superior-quality video for all added-value services, including HD and VOD.

Expanded Input Options
Able to simultaneously receive content over DVB-S/S2, ASI and IP, the ProView 7100 allows operators to maximize flexibility and optimize redundancy schemes.

Support for All-IP Infrastructures
The ProView 7100, in combination with the integrated Harmonic FLEX® decoder, enables an all-IP headend architecture, resulting in a more scalable and lower-cost transition to IP-based services.

T2-MI Deframing to MPEG TS
The ProView 7100 converts the PLPs (physical layer pipes) in a T2-MI stream into a regular transport stream. Up to four simultaneous T2-MI-to-TS conversions can be performed, eliminating the need to distribute separate TS for baseband decoding and for feeding the headend.

Broadcast-Quality Down-Conversion
The ProView 7100 performs HD down-conversion and aspect ratio adaptation to generate broadcast-quality baseband analog video and audio that can be easily integrated with existing cable network infrastructures.

Friendly Management
The ProView 7100 can be simply configured through a stand-alone 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 7100 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.

* Check availability
### RF INPUT INTERFACES

<table>
<thead>
<tr>
<th>Number of Inputs</th>
<th>Four L-band (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connectors</td>
<td>Four F-type, 75 Ω (working simultaneously)</td>
</tr>
<tr>
<td>Frequency Range</td>
<td>950-2,150 MHz</td>
</tr>
<tr>
<td>RF Input Level</td>
<td>I-25 to (65) dBm</td>
</tr>
<tr>
<td>LNB Power</td>
<td>13 VDC, 18 VDC / 350 mA</td>
</tr>
</tbody>
</table>

### TRANSPORT STREAM INPUT INTERFACES

#### DVB-S
- **Constellation**: QPSK
- **Symbol Rate**: 1-45 Msym/s
- **FEC Blocks**: All ratios compliant with standard

#### DVB-S2
- **Constellation**: QPSK, BPSK 1, 16APSK, 32APSK
- **Symbol Rate**: 1-45 Msym/s
- **FEC Blocks**: All ratios compliant with standard
- **Roll Off**: 0.05, 0.2, 0.25 and 0.35
- **Mode**: CCM, VCM

#### DVB-S2X
- **Constellation**: 8PSK, 16APSK, 32APSK
- **Symbol Rate**: 1-45 Msym/s
- **FEC Blocks**: BPSK-L: L/5, 9/26, 45/7
- **Roll Off**: 0.05, 0.1, 0.15, 0.2, 0.25 and 0.35
- **Mode**: CCM, VCM

### TRANSPORT STREAM OUTPUT INTERFACES

#### ASI
- **Number of Outputs**: Four (duplicate or independent)
- **Connectors**: BNC, 75 Ω
- **Packet Length**: 188 byte packets
- **TS Max Bitrate**: 160 Mbps
- **Input Data Rate Levels (Compliance)**: Compliant with CENELEC EN 50083-9
- **Interface**: B3ZS

#### MPEG over IP
- **Number of Inputs**: Four simultaneous SPTS/MPTS
- **Sockets**: Four
- **Encapsulation Protocols**: MPEG-2 TS over UDP
- **Addressing**: Multicast/unicast
- **Connectors**: Two 100/1000 Base-T RJ45 for redundancy

### VIDEO DECODING

#### Configuration
- Single or dual channel

#### Decoding Formats
- **MPEG-2-2 SD**: 4.2.0 MP @ ML
- **MPEG-2-2 HD**: 4.2.2 MP @ ML
- **MPEG-4-4 AVC SD**: 4.2.0 MP @ L3
- **MPEG-4-4 AVC HD**: 4.2.0 MP @ L4.0 / HP @ L4.1
- **HEVC HD**: Main/Main 10

#### Maximum Video Rate
- **MPEG-2-2 SD**: 4.2.0 – 15 Mbps
- **MPEG-2-2 HD**: 4.2.2 – 50 Mbps
- **MPEG-4-4 AVC SD**: 4.2.0 – 10 Mbps
- **MPEG-4-4 AVC HD**: 4.2.0 – 20 Mbps (MP), 25 Mbps (HP)
- **HEVC HD**: Up to 50 Mbps (CABAC)

#### 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
- Letterbox, center cut, AFD

#### Aspect Ratio Conversion
- 16:9 to 4:3

#### VB Reinsertion
- Composite video, embedded in SDI

#### Descrambling
- Four TS with four DVB CAM slots
# SPECIFICATIONS

## AUDIO DECODING

<table>
<thead>
<tr>
<th>Stereo Pairs per Video Channel</th>
<th>Four¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio Formats</td>
<td>MPEG-1 Layer-II, Dolby® Digital (AC-3) stereo down-mix, Dolby Digital Plus (E-AC-3), Dolby E pass-through, AAC, Audio leveling</td>
</tr>
</tbody>
</table>

## VIDEO AND AUDIO INTERFACES

<table>
<thead>
<tr>
<th>Video Outputs</th>
<th>Two (per video channel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite Video Interfaces</td>
<td>Two (per video channel)</td>
</tr>
<tr>
<td>SD/HD/3G-SDI with Embedded Audio HDMI</td>
<td>One (single-channel decoder only)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Audio Outputs</th>
<th>Four (per video channel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog Audio Stereo Pairs</td>
<td>Four (balanced)</td>
</tr>
<tr>
<td>Digital audio (AES/EBU-S/P-DIF)</td>
<td>Four</td>
</tr>
<tr>
<td>Digital Audio Interfaces Modes</td>
<td>Four (balanced) Stereo, joint stereo, dual channel, single channel</td>
</tr>
</tbody>
</table>

## VIDEO TRANSCODING

<table>
<thead>
<tr>
<th>Number of channels</th>
<th>Up to eight (from the same input TS)¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Inputs</td>
<td>MPEG-4 AVC SD MP @ L3, MP @ L4.0/HP @ 4.0</td>
</tr>
<tr>
<td></td>
<td>MPEG-4 AVC HD MP @ L3, MP @ L4.0/HP @ 4.0</td>
</tr>
<tr>
<td>SD Resolutions and Frame Rates</td>
<td>480i @ 29.97 fps, 480p @ 59.94 fps, 576i @ 25 fps, Vertical: 720/704/544/528</td>
</tr>
<tr>
<td>HD Resolutions and Frame Rates</td>
<td>720p: 1280 x 960 @ 59.94, 50, 60 fps, 1080i: 1920 x 1440 @ 29.97, 30, 25 fps</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Video Outputs</th>
<th>4:2:0 MP@ML MP@L3, MP@4.0/HP@4.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPEG-2 HD</td>
<td>4:2:0 MP@ML MP@L3, MP@4.0/HP@4.0</td>
</tr>
<tr>
<td>MPEG-4 AVC</td>
<td>MP@L3, MP@4.0/HP@4.0</td>
</tr>
<tr>
<td>MPEG-4 AVC HD</td>
<td>MP@L3, MP@4.0/HP@4.0</td>
</tr>
</tbody>
</table>

## CONTROL AND MONITORING

<table>
<thead>
<tr>
<th>Web browser interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethernet – RJ45 10/100BaseT control interface</td>
</tr>
<tr>
<td>Front panel keypad and LCD</td>
</tr>
<tr>
<td>SNMP traps and alarms</td>
</tr>
<tr>
<td>Telnet</td>
</tr>
<tr>
<td>Terminal via RS-232 or RS-485</td>
</tr>
</tbody>
</table>

## PHYSICAL

<table>
<thead>
<tr>
<th>Dimensions (H x W x D)</th>
<th>1.75 in x 19 in x 15.5 in (1 RU)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>11 lbs / 5 kg</td>
</tr>
<tr>
<td>Power Voltage</td>
<td>100 V-240 V AC, 50/60 Hz</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>Up to 100 W max</td>
</tr>
</tbody>
</table>

## ENVIRONMENTAL

<table>
<thead>
<tr>
<th>Operating Temperature</th>
<th>0-50° C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Humidity</td>
<td>5-90% (non-condensing)</td>
</tr>
<tr>
<td>Storage and Transportation Temperature</td>
<td>-40° C - 70° C</td>
</tr>
<tr>
<td>Storage and Transportation Humidity</td>
<td>0-95% (non-condensing)</td>
</tr>
</tbody>
</table>

## COMPLIANCE

<table>
<thead>
<tr>
<th>EMC</th>
<th>EN61000-3-2;3, EN55022 (CISPR 22), EN55024 (CISPR 24), FCC part 15 (class A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety</td>
<td>EN60950, CB IEC60950, UL60950, ROHS Directive 2002/95/EC</td>
</tr>
</tbody>
</table>

### Notes:

1. Licensed feature
2. Hardware option
3. Requires optional 4:2:0 and 4:2:2 decoding boards
4. Requires optional video decoding board
5. Requires optional video transcoding board
6. Supported only with the new DVB-S/S2/S2X board, PN: HW-PVR-7100-S2X-B-0004
7. DVB-S2/S2X 32ASPK symbol rate: 1-36 Msym/s

*Contact sales
**Check availability