For applications requiring fast, dense and reliable 2:1 MPEG-2 transport stream redundancy switching, the Amethyst™ III from Harmonic is the best-in-class solution to ensure 24/7 availability of digital TV signals.

When down time is not an option, you can depend on the Amethyst III. The compact, stand-alone system continuously monitors your MPEG-2 TS, seamlessly switching to a backup stream if the active stream is detected as being corrupted. Whether used for equipment redundancy or network-path redundancy, the Amethyst III offers the utmost in performance, flexibility and delay capability to increase robustness and maximize up time of your broadcast and transmission chains — and ensure that your MPEG-2 TS (DVB, DVB-T/T2 or ATSC) can be properly secured.

Offering up to eight 2:1 IP switches or four 2:1 ASI switches in 1 RU, the high-density Amethyst III provides cost, power and space savings, helping operators to save on CAPEX and OPEX.

**Reliable & Flexible**
Available with Gigabit Ethernet or ASI interfaces, the Amethyst III is suitable for any type of architecture: from widely deployed ASI-based headends to new IP-centric networks. The switch is equipped with dual power supplies/plugs to maximize service availability, and maintains service delivery via a smart and configurable bypass mechanism on the GbE and ASI interfaces — even in case of power failure.

**Highly Configurable Testing**
The Amethyst III measures the health of incoming streams via a wide range of configurable tests. It supports TR 101 290 tests (Priority 1/2/3) to provide a complete health-status check of your digital DVB network. The unit also supports testing and monitoring models that provide the same level of comprehensive information for ATSC environments. To improve redundancy, template checking of expected PIDs, rate limits and/or scrambling status of various critical program components are available. Each test can be configured and associated to a critical alarm level that either engages switching or logs the alarm. In addition, tests can be set to avoid unwanted switching in the case of transitory events (time persistence mechanism).

**Delay Compensation Capability**
The Amethyst III offers delay-compensation capability by simultaneously analyzing delayed input streams (from several milliseconds to several seconds). If one input is detected as being corrupted, the unit compensates for the time difference and switches seamlessly to the other uncorrupted stream without any disturbance to end users. The typical application is network distribution redundancy.
Designed For Terrestrial Networks
When combined with the Harmonic NetProcessor™ 9030/40 multiplexer and video processor, the Amethyst III can perform seamless switching for DVB-T/T2 SFN terrestrial networks. For DVB-T, the Amethyst III preserves the mega-frame structure from the NetProcessor SFN adapter. For DVB-T2, it realigns the T2-MI streams from NetProcessor T2 gateways.

In case of switching, the Amethyst III preserves the structure and timestamp on its output, avoiding service outage on DVB-T/T2 modulators caused by resynchronization.

Configuration & Supervision
The Amethyst III is equipped with a 10/100Base-T port for control and supervision. The unit can be supervised and configured remotely through any standard web browser, and provides a complete display of switching configurations, along with easy-to-read input/output status information, error-log data and bitrate graphics. The Amethyst III embeds an SNMP agent for centralized management applications.

World-Class Service and Support
Harmonic stands behind the Amethyst III switch with comprehensive service and support programs, including system design, service deployment, technical support and network maintenance. World-class service plans and a global network of flexible and responsive support professionals help ensure your ability to deliver outstanding “anytime, anywhere, any-device” customer experiences.
**SPECIFICATIONS**

**DELAY COMPENSATION**
- Available on ASI and IP switches (up to several seconds)
- TS seamless switching for identical TS (network redundancy)
- DVB-T/SFN seamless switching (mega-frame) from NetProcessor (SFN adapter)
- DVB-T2/SFN seamless switching (T2-MI) with NetProcessor (T2-MI gateway)

**SWITCHING CONDITIONS**
- Full real-time monitoring of all incoming transport streams
- TR 101 290 Priority 1/2/3 analysis
- Advanced tests: PID max/min bitrate, stuffing max/min bitrate, service presence, scrambling PIDs, DVB-T MIP checking, DVB-T2 T2-MI packet checking

**SWITCHING STRATEGIES**
- Automatic switch supporting TS input priority (Main/Spare mode)
- Automatic switch on TS input upon failure (Redundancy mode)
- Manual switch

**CONTROL & SUPERVISION**
- Web GUI for remote control
- SNMP v2 agent for NMS
- Six GPI inputs
- Four contact closure outputs

**PHYSICAL**
- Dimensions (H x W x D): 1.7 in x 17.5 in x 19.8 in (1 RU)
- 4.3 cm x 44.5 cm x 50.2 cm
- Weight: 13.8 lbs/6.3 kg
- Power Supplies: Dual
- Input Voltage: 100-240 VAC
- Input Frequency: 50-60 Hz
- Power Consumption: Up to 80 W

**ENVIRONMENTAL**
- Operating Temperature: 41° to 104° F
  5° to 40° C
- Storage Temperature: -13° to 158° F
  -25° to 70° C
- Operating Humidity: < 95% non-condensing
- Electromagnetic Compliance: EN55032
  EN55024
  EN61000-3-2
  FCC, VCCI, ICES
- Safety: IEC 60950
  EN60950
  UL60950
  CSA C22.2 N°60950
- CE: Low Voltage Directive 2006/95/EC
  EMC Directive 2004/108/EC
  ROHS Directive 2011/65/UE

**ORDERING INFORMATION**

**BASE SYSTEM**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMETH3-IU-2AC-FULL</td>
<td>1-RU chassis with full front panel (LEDs, LCD, keypad), dual power supply, GPI, contact closure</td>
</tr>
<tr>
<td>AMETH3-IU-2AC-LITE</td>
<td>1-RU chassis with light front panel (LEDs), dual power supply, GPI, contact closure</td>
</tr>
</tbody>
</table>

**INTERFACE OPTIONS**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMETH3-HW-ASI-4-1ST</td>
<td>Four ASI inputs + four ASI outputs, bypass, required for single/dual/triple/quad ASI switch</td>
</tr>
<tr>
<td>AMETH3-HW-ASI-4-2ND</td>
<td>Four ASI inputs + four ASI outputs, bypass, required for triple/quad ASI switch</td>
</tr>
<tr>
<td>AMETH3-HW-GIGE-4</td>
<td>Four GbE/RJ45 bidirectional ports, bypass, required for TS over IP switch</td>
</tr>
<tr>
<td>AMETH3-HW-GIGE-4-FEC</td>
<td>Four GbE/RJ45 bidirectional ports, bypass, FEC correction or FEC generation, required for TS over IP switch</td>
</tr>
</tbody>
</table>

**SOFTWARE OPTIONS**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMETH3-SW-DVB</td>
<td>DVB software version</td>
</tr>
<tr>
<td>AMETH3-SW-DVBT2</td>
<td>DVB-T/T2 software version</td>
</tr>
<tr>
<td>AMETH3-SW-ATSC</td>
<td>ATSC software version</td>
</tr>
</tbody>
</table>

**SWITCHING LICENSES**

One license required per switching function (e.g., three licenses required for triple ASI or TS over IP switch)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMETH3-LIC-SWITCH-STD</td>
<td>2:1 TS switching license, standard monitoring including TR 101 290 Priority 1</td>
</tr>
<tr>
<td>AMETH3-LIC-SWITCH-ADV</td>
<td>2:1 TS switching license, advanced monitoring including TR 101 290 Priority 1/2/3 and advanced tests</td>
</tr>
</tbody>
</table>

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