

# Verona™ IP+ASI/HD-SDI x4

**Broadcast Quality, Frequency Agile, 1 RU, Modular, 1-4 Tuner HDTV Receiver and Decoder with 4 Each On Board HD or SD MPEG-2 or H.264 TS Decoders with IP Unicast or Multicast (with Pro-MPEG FEC), or ASI, or DVB-S, DVB-S2 In and SDI, HD-SDI, ASI, or IP Out. Dolby AC-3 and MPEG Audio Decoder with BNC Connectors. Ideal Receiver for Comprehensive Off Air Monitoring of Multiple On Airs via RF or IP for Master Control or ENG Trucks. Features Many On Screen Diagnostics Displayed as Overlay. Supports AES-3 id Audio as well as MPEG-1/2, PCM, and AC-3. Supports BISS and Other CA. SNMP Management. Failover between RF and ASI In.**



## Features

- Receiver/Decoder with up to 4 decoder modules
- Supports Pro-MPEG FEC on IP input
- Inputs: Up to 4 channels of IP, DVB-ASI, and DVB-S/2
- Each tuner/decoder module may have up to three BNC connectors which can be DVB-ASI input, DVB-ASI output, or AES-3 PCM or compressed audio output
- SCTE 104/SCTE 35 output
- IP output supports MPTS or SPTS
- Outputs: Up to four mirrored HD-SDI/SDI outputs (one per module), plus ASI, HDMI, and/or MPEG over IP
- New preview screen displays decoded output
- Gigabit Ethernet media port on each module supports four IP outputs and one IP input
- Audio outputs: MPEG, PCM, or AC-3
- Includes CAM module and BISS-1/E support
- Supports "Stream All" for all RF to IP
- May choose or automate choice of digital stream from satellite or DVB-ASI or IP signal. Auto switching with sync loss.
- H.264 (MPEG-4) or MPEG-2 MP@HL compliant video decoder supplies digital video signal
- Digital video signal compliant with SMPTE-259M or SMPTE-292M (SDI) with embedded 8 channel audio (SMPTE-299M) or embedded compressed audio
- Dolby Digital® AC-3 and HE-AAC and MPEG-1/2 5.1 channel audio decoder, MPEG-2 AAC-LC (13818-7), MPEG-4 HE-AACv1 (14496-3.2003) support, MPEG-4 HE-AACv2 (14496-3.2004) not available
- Dolby Digital® AC-3 or PCM stereo audio selectable over BNC connector
- SDI video signal with 1080i/720p/576p/576i (480i) video mode along with SCTE 35/104
- Supports subtitles
- Down converts HD input to SD out if requested
- Firmware upgradeable via Internet
- SNMP management support (GigE)
- 2 lines by 40 characters LCD display
- Dual power supply option available

## Overview

The Verona™ IP+ASI/HD-SDI x4 is a modular four channel professional broadcast digital TV decoder. It has five slots. Each slot can have a power supply module or a decoder module. The typical application uses one AC power supply and up to four decoder modules.

Each decoder module can have an IP input, DVB-ASI input, or DVB-S-S2 input. Uncompressed video is available as SDI or HD-SDI. IP outputs can have up to five transport streams. A useful feature is its ability to automatically switch between RF and IP inputs.

Designed to support all the industry standard forms of the DVB standard, the Verona supports 576i/480i, 576p/480p, 720p and 1080i decoding. Audio output is available through embedded audio and AES-3 BNC connectors. The compressed audio on the BNC has a Dolby AC-3 with 5.1 channels.

## Applications

- Multichannel off air terrestrial receiver
- Multichannel MPEG-2/4/H.264 HD Decoder
- HD-SDI file playback
- Content repurposing
- RF to IP with RFC 3022 out
- Multichannel IP decoder



**Computer Modules, Inc.**

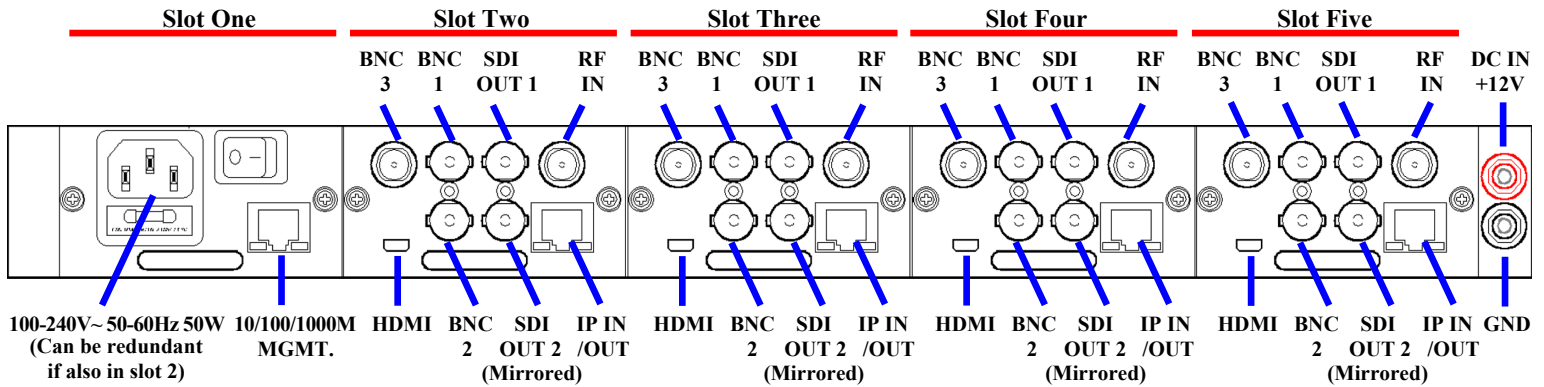
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## Rear View



## Specifications

|                                    |   |
|------------------------------------|---|
| <b>Front Display/Keys</b>          | <ul style="list-style-type: none"> <li>2 lines by 40 characters LCD</li> <li>11 keys for Easy Control</li> <li>ENTER, EXIT, ARROW, and Slot Selection Keys</li> </ul>             |
| <b>Slots</b>                       | Five slots for power supply module and decoder modules  |
| <b>TS Input</b>                    |   |
| Format:                            | IP (with FEC), DVB-ASI, SCTE-035  |
| Connectors:                        | 75 ohm BNC, RJ-45   |
| <b>DVB-S2/S RF Input</b>           |   |
| Channel:                           | 950-2150 MHz RF Selectable  |
| Connector:                         | 2 x 75 Ohm BNC-type Connector (8VSB/QAM or DVB-T+T2 options available)  |
| Symbol Rate:                       | DVB-S2 (8PSK/QPSK): 10 ~ 30 Msps<br>DVB-S (QPSK): 2 ~ 45 Msps   |
| <b>Display</b>                     | Video and TS parameters displayed via "on screen" mode (see manual)   |
| <b>Redundancy</b>                  | ASI or RF input with auto failover  |
| <b>Audio Output</b>                |   |
| Signal:                            | AES3-id (Select ASI or AES3-id output at front panel)   |
| Connectors:                        | 75 Ohm BNC – one audio output per module  |
| Format:                            | Dolby AC-3 audio with 5.1, AAC, MPEG 1/2, PCM   |
| 1st Audio Output (one per module): | Connector: 75 Ohm BNC   |
| Audio Pairs Decoded:               | Standard – Select any one of four stereo pairs<br>Optional – audio decoder board for selecting one additional stereo pair, for a total of 2 of 4 stereo pairs                     |
| <b>Audio Levels</b>                | Set to +4dBm for -20dBFS digital audio contents when the audio attenuation menu is set to zero. The audio level can be attenuated using the front panel audio configuration menu. |

|   |   |
|---|---|
| <b>Digital Audio Output</b>               | <p>Choose either PCM mode or COMPRESSED audio output mode for MAIN channel. The chosen audio mode is used for all BNC output ports. You can have PCM mode only for the SUB channel.</p> <p>You may have COMPRESSED audio out of MAIN channel over BNC port and PCM audio out of SUB channel over BNC port.</p> <p>Output supports 2 channels, not 5.1</p> |
| <b>Audio Decoding Standard</b>            | ISO/IEC 14496-3:2009 (MPEG-4 HE AACv2)  |
| <b>TS Output</b>                          |   |
| Format:                                   | DVB-ASI or IP   |
| Connectors:                               | 75 ohm BNC, RJ-45   |
| Decoding Standard:                        | ISO/IEC 14496-10:2012 (MPEG-4 AVC/H.264)  |
| <b>Digital Video Output (SDI, HD-SDI)</b> | SMPTE259M/SMPTE292M with embedded audio (SMPTE-299M) with SCTE 104/35   |
| <b>Ethernet Input/Output</b>              | 10/100/1000 Mbps<br>MPEG over RTP/UDP<br>FEC supported (Pro MPEG) (IP in)   |
| <b>Management Ethernet</b>                | 10/100/1000 Mbps<br>SNMP, Web-browser manager   |
| <b>Conditional Access</b>                 | BISS-1/E and DVB-CI   |
| <b>Network Management</b>                 | NMS supported through SNMP  |
| <b>CPU and RAM</b>                        | MIPS 300 MHz 32 bit RISC  |
| <b>Unit</b>                               | 1 RU 19-inch rackmountable  |
| <b>Operating Temp.</b>                    | +0 ~ +45°C (32 to 113°F)  |
| <b>Storage Temperature</b>                | -20 ~ +50°C (-4 to 122°F)   |
| <b>Operating Humidity</b>                 | 10 to 90%, Non-condensing   |
| <b>Power Supply Module</b>                | AC 100-240V~ 50-60Hz 120W max<br>DC 12V 8A max output   |
| <b>Dimensions</b>                         | HxWxL: 1.7 x 19 x 16.9 inches<br>(4.3 x 48.26 x 42.93 cm)   |
| <b>Weight</b>                             | 14.1 lbs. (6.396 kg.)   |
| <b>Conformities</b>                       | <p>FCC, RoHS<br/>CE Mark: Electromagnetic Compatibility Directive<br/>2004/108/EC<br/>Low Voltage Directive 2006/95/EC</p>  |

## Ordering Info

Verona IP+ASI/HD-SDI x4  
 Verona IP+ASI/HD-SDI x4/PS – replace one or more tuner modules with an additional power supply

Also available:

Verona 4 Tuner 8VSB/HD-SDI+IP  
 Verona 4 Tuner QAM/HD-SDI+IP  
 Verona 4 Tuner S+S2/HD-SDI+IP  
 Verona 4 Tuner T+T2/HD-SDI+IP  
 Verona-MF – Multiformat: T+T2, S+S2, and/or 8VSB/QAM