

# TDR4022

## DVB Professional MPEG-2 Integrated Receiver/Decoder



### HIGHLIGHTS

- ASI, QPSK/8PSK/16QAM/16APSK\*, DVB-S2, DS3, E3 and IP UDP & COP3 IP input options available
- QPSK And ASI Input options included in base unit
- RF input Freq. 950 to 2150 MHz, Sym Rate up to 45 MSps
- 4-port RF input switch included
- PGCA, BISS 1 and BISS E Conditional Access
- Front Panel Power Switch
- Fully functional front panel control
- Easy-to-use Web Browser Control
- Large Illuminated LCD Display
- 1RU Compact Rugged Rack-Mount Chassis is Ideal for DSNG and Sports/Event Contribution
- Fully MPEG-2 and DVB Compliant
- 4:2:0 or 4:2:2 operation
- Broadcast Quality Video and Two Stereo Audio Pairs
- Composite PAL/NTSC and SDI Video Outputs
- Decode MPEG & AC3 Stereo
- Pass-through Dolby AC3 5.1
- Analog and AES Serial Digital Audio Outputs
- SDI Embedded Audio
- Supports Teletext, Closed Captions and other VBI

### DESCRIPTION

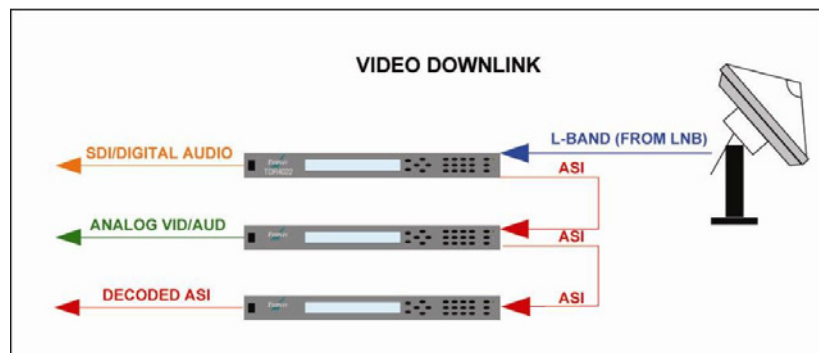
The TDR4022 MPEG-2 IRD delivers features and performance collected over years of leadership in the Broadcast Contribution and Satellite Modem business. Tiernan technology enabled the first commercial deployment of 4:2:2 MPEG-2 video compression/decompression in 1997 and continues today with advanced video decompression technology as the industry demands higher performance. The TDR4022 combines best-in-class demodulator technology with proven Tiernan decoding to provide a complete IRD solution in a rugged 1U chassis. It is ideal for mobile broadcast contribution applications as well as monitoring in network and cable head end use.

**EASY TO USE:** There is a complete set of alphanumeric buttons on the front panel for easy configuration. The large LCD display is illuminated, yet provides high contrast for visibility in direct sunlight. The power switch is on the front panel for easy access. There are 24 user programmable preset configurations that can be stored and recalled from the front panel menu. They can even be named by the user with the alphanumeric buttons to make them easy for the operator to remember.

**RELIABLE AND AFFORDABLE:** By using the latest integration of MPEG and low-power digital electronics technology, the TDR4022 combines a complete IRD in a small, low power, quiet, highly reliable and full-featured professional package.

**AGILE RECEIVER:** The TDR4022 comes standard with both ASI and DVB-S QPSK demodulator. Additionally, the TDR4022 may be optionally configured with an 8PSK/16QAM demodulator, DS3/E3 receiver, IP input or DVB-S2 demodulator, using industry-leading S2 technology. The TDR4022 supports all standard video (PAL/NTSC) and audio (MPEG, AC3) formats, making the TDR4022 ideal for virtually every application.

**SECURE TRANSMISSION:** BISS Mode 1 and Mode E are supported by the TDR4022, in addition to the Tiernan proprietary Privacy Guard Conditional Access (PGCA). PGCA is a fixed key scrambling system that is included as a standard feature in Tiernan encoders and decoders. It is addressable, and, when used with a Tiernan encoder such as the SE4000 or HE4000, allows individual decoders to be added or deleted from the authorization list. No special intervention is required on the part of the TDR4022 operator.



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### TECHNICAL SPECIFICATIONS

#### STANDARD FEATURES

<b>VIDEO OUTPUT:</b>	<ul style="list-style-type: none"><li>• PAL (625 Line) or NTSC (525 Line) Formats</li></ul>
<b>ANALOG:</b>	<ul style="list-style-type: none"><li>• SMPTE 170M NTSC or ITU-R BT.470-6 PAL-I/B/D, 2 * BNC Connector</li></ul>
<b>SERIAL DIGITAL:</b>	<ul style="list-style-type: none"><li>• SMPTE 259M SDI @ 270 Mbps, 2 * BNC Connector</li></ul>
<b>VIDEO PROCESSING:</b>	<ul style="list-style-type: none"><li>• MPEG-2 4:2:0 (Main Profile @ Main Level), 1.0 to 15.0 Mbps</li><li>• MPEG-2 4:2:2 (422Profile @ Main Level), up to 50.0 Mbps</li><li>• Horizontal Resolutions: 720, 704, 640, 544, 480 and 352 Pixels/Line</li><li>• Vertical Resolutions 240 or 480 Lines (NTSC) or 288 or 576 Lines (PAL)</li><li>• 4:3 and 16:9 Configurable Aspect Ratio</li></ul>
<b>VERTICAL BLANKING INTERVAL:</b>	<ul style="list-style-type: none"><li>• ATSC Closed Captions, Per A/53 (Composite or SDI)</li><li>• DVB Teletext For World System Teletext on PAL Composite Video</li><li>• 4:2:2 Expanded windows operation (16 or 32 lines)</li><li>• Proprietary Tiernan Closed Captions</li></ul>
<b>AUDIO OUTPUTS:</b>	<ul style="list-style-type: none"><li>• Two Stereo or Four Independent Analog Mono Channels on Balanced XLR Connectors (with optional adapter)</li><li>• Two AES/EBU Digital Stereo Pairs on 75 Ohm BNC Connectors</li><li>• Two pairs of SDI embedded digital audio</li></ul>
<b>AUDIO PROCESSING:</b>	<ul style="list-style-type: none"><li>• MPEG-1 Layer II, AC3 2.0 Encoding, AC-3 5.1 Pass-Through</li><li>• Two Stereo Channels or Four Independent Mono Channels</li><li>• Sampling Rates of 32, 44.1 and 48 Ksps</li><li>• All Data Rates Supported</li></ul>
<b>AUXILIARY DATA:</b>	<ul style="list-style-type: none"><li>• One Synchronous: 1 to 20 Mbps, Resolution 1 bps, EIA-422, on Female DB-9 Connector</li><li>• One Asynchronous: 1200 to 115 Kbps, EIA-232, on Female DB-9 Connector</li></ul>
<b>CONTROL TABLES:</b>	<ul style="list-style-type: none"><li>• Process MPEG or DVB-Compatible PSI/SI Tables</li></ul>
<b>CONDITIONAL ACCESS:</b>	<ul style="list-style-type: none"><li>• BISS Mode 1/E &amp; PGCA Proprietary Conditional Access</li></ul>
<b>TIMING:</b>	<ul style="list-style-type: none"><li>• Lip Synchronization Adjustment – 30 to +300 ms</li></ul>
<b>TRANSPORT INPUT:</b>	<ul style="list-style-type: none"><li>• DVB ASI Input (75 Ohm BNC Connector) and QPSK L-Band (F-type) Standard</li><li>• 4-Input L-band input switch standard</li></ul>
<b>TRANSPORT OUTPUT:</b>	<ul style="list-style-type: none"><li>• DVB-ASI transport stream output of received source</li></ul>
<b>FRONT PANEL CONTROL:</b>	<ul style="list-style-type: none"><li>• Membrane style Pushbuttons; Special Purpose Status Button</li><li>• Recessed Front Panel AC Power Switch</li><li>• Backlit 2 x 40 LCD Display</li><li>• 24 User-Programmable Preset Configurations</li></ul>
<b>REMOTE CONTROL:</b>	<ul style="list-style-type: none"><li>• EIA-232 on Male DB-9 Connector (DTE), ASCII Commands</li><li>• IEEE 802.3 10/100 Base-T (Ethernet) on RJ-45 Connector</li><li>• Web Browser</li></ul>
<b>FAULT MONITORING:</b>	<ul style="list-style-type: none"><li>• Contact Closure for Alarm Conditions on RJ-11 Connector</li></ul>
<b>SOFTWARE UPGRADE:</b>	<ul style="list-style-type: none"><li>• EIA-232 Remote Port, Ethernet Remote Port</li></ul>
<b>PHYSICAL:</b>	<ul style="list-style-type: none"><li>• 1RU High, Rugged Chassis Suitable for Mobile Operations, 19" Rack-Mount, 17.7" (45 cm) Deep</li><li>• Weighs Less Than 5.5 kg (12 lbs.)</li></ul>
<b>POWER SUPPLY:</b>	<ul style="list-style-type: none"><li>• Autoranging 90 to 240 VAC, 50/60 Hz, 40 Watts Typical Consumption</li></ul>
<b>OPERATING CONDITIONS</b>	<ul style="list-style-type: none"><li>• 0<sup>0</sup> to +50°C, up to 95% Humidity, Non-Condensing</li></ul>

#### OPTIONAL FEATURES

<b>TRANSPORT INPUT:</b>	<ul style="list-style-type: none"><li>• DVB-S QPSK / 8PSK/16QAM Demod</li><li>• DVB-S2 QPSK / 8PSK / 16APSK* Demod</li><li>• DS3 / E3 Input (BNC Connector)</li><li>• 100/1000 Base-T IP input card with COP3 FEC</li></ul>
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