



State of West Virginia  
 Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25306-0130

**Request for  
 Quotation**

RFQ NUMBER
EBA210

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF
SHELLY MURRAY 304-558-8801



Bram Flynn & Assoc  
 3312 Shorecrest Drive  
 PO Box 36229  
 Dallas, TX 75235

EDUCATIONAL BROADCASTING AUTH.  
 600 CAPITOL ST.

CHARLESTON, WV  
 25301 348-3000

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
05/28/2009				

BID OPENING DATE: 06/23/2009 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		020-71		
<p>THE WEST VIRGINIA PURCHASING DIVISION, FOR THE AGENCY, THE WEST VIRGINIA EDUCATIONAL BROADCASTING AUTHORITY, IS SOLICITING BIDS FOR EQUIPMENT TO EXPAND EXISTING UPLINK SYSTEM TO INCLUDE VIDEO PER THE ATTACHED SPECIFICATIONS.</p> <p>TECHNICAL QUESTIONS MUST BE SUBMITTED IN WRITING TO SHELLY MURRAY IN THE WEST VIRGINIA PURCHASING DIVISION VIA MAIL AT THE ADDRESS SHOWN AT THE TOP OF THIS RFQ, VIA FAX AT 304-558-4115, OR VIA EMAIL AT SHELLY.L.MURRAY@WV.GOV. DEADLINE FOR ALL TECHNICAL QUESTIONS IS 6/11/2009 AT THE CLOSE OF BUSINESS. ALL TECHNICAL QUESTIONS RECEIVED, IF ANY, WILL BE ADDRESSED BY ADDENDUM AFTER THE DEADLINE.</p> <p>QUESTIONS CONCERNING THE ACTUAL PROCESS BY WHICH A VENDOR MAY SUBMIT A BID TO THE STATE OF WEST VIRGINIA ARE NOT CONSIDERED TO BE TECHNICAL QUESTIONS AND MAY BE SUBMITTED AT ANY TIME PRIOR TO THE RFQ OPENING DATE AND IN ANY FORMAT.</p> <p>EQUIPMENT, BROADCASTING</p> <p>CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE COMMODITIES AND/OR SERVICES SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM TO THE SPECIFICATIONS OF THE BID AND CONTRACT HEREIN.</p>						

RECEIVED  
 2009 JUN 22 12:45:51  
 PURCHASING DIVISION  
 STATE OF WV

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
<i>[Signature]</i>	214-353-0770	6/22/09
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
OWNER	75-234101	

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



State of West Virginia  
 Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

**Request for Quotation**

RFQ NUMBER
EBA210

PAGE
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ADDRESS CORRESPONDENCE TO ATTENTION OF
SHELLY MURRAY 304-558-8801

RFQ COPY

TYPE NAME/ADDRESS HERE

SHIP TO

EDUCATIONAL BROADCASTING AUTH.  
 600 CAPITOL ST.

CHARLESTON, WV  
 25301 348-3000

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
05/28/2009				

BID OPENING DATE: **06/23/2009** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
<p><b>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.</b></p> <p style="text-align: center;"><b>NOTICE</b></p> <p><b>A SIGNED BID MUST BE SUBMITTED TO:</b></p> <p style="text-align: center;">DEPARTMENT OF ADMINISTRATION                  PURCHASING DIVISION                  BUILDING 15                  2019 WASHINGTON STREET, EAST                  CHARLESTON, WV 25305-0130</p> <p><b>THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:</b></p> <p><b>SEALED BID</b></p> <p>BUYER: <span style="float: right;">SHELLY MURRAY</span></p> <p>RFQ. NO.: <span style="float: right;">EBA210</span></p> <p>BID OPENING DATE: <span style="float: right;">06/23/2009</span></p> <p>BID OPENING TIME: <span style="float: right;">1:30 PM</span></p> <p>PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>[Signature]</i>	TELEPHONE 214-353-0770	DATE 6/23/09
FILE Owner	FEIN 75-2341101	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



State of West Virginia  
Department of Administration  
Purchasing Division  
2019 Washington Street East  
Post Office Box 50130  
Charleston, WV 25305-0130

# Request for Quotation

RFQ NUMBER  
**EBA210**

PAGE  
**3**

ADDRESS CORRESPONDENCE TO ATTENTION OF  
**SHELLY MURRAY  
304-558-8801**

**VENDOR**  
RFQ COPY  
TYPE NAME/ADDRESS HERE

**SHIP TO**  
EDUCATIONAL BROADCASTING AUTH.  
600 CAPITOL ST.  
  
CHARLESTON, WV  
25301 348-3000

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
05/28/2009				

BID OPENING DATE: **06/23/2009** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
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CONTACT PERSON (PLEASE PRINT CLEARLY):

*Bram Flynn 214-353-0770*

\*\*\*\*\* THIS IS THE END OF RFQ EBA210 \*\*\*\*\* TOTAL: \_\_\_\_\_

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>[Signature]</i>	TELEPHONE <b>214-353-0770</b>	DATE <b>6/22/09</b>
TITLE <b>Owner</b>	FEIN <b>75-2341101</b>	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

## EBA210

West Virginia Public Broadcasting is conducting a request for quotations for equipment to expand an existing uplink system by adding video capability.

General Description- WVPB operates a terrestrial uplink used to feed audio to a statewide radio network. This project will add video capability to this system. The existing system has a dish fixed on Galaxy 16, with redundant amplifiers and upconverters. Field tests using rental equipment have proven the feasibility of the expansion, and it is desired to utilize the same make and model of equipment for the permanent installation. Vendors are requested to provide a bid on a redundant encoder/modulator and integrated receiver/decoder system. The bid will be awarded to the lowest cost redundant system.

As an option, vendors are requested to submit a bid for a non-redundant encoder/modulator and integrated receiver/decoder system.

### Encoder/Modulator

#### Encoder

Unit shall have the following inputs:

Composite NTSC

SDI SMPTE 292M

4 channels of audio via XLR connectors

Unit shall provide the following encoding:

4:2:0 at 1.5 to 15 Mbits

4:2:2 at 2 to 50 Mbits

Unit shall use MPEG-2 encoding

Unit shall be an Advent Communications DVE5000 or equivalent

### Monitoring

An Integrated Receiver/Decoder shall be provided for monitoring of the signal off the satellite

During times of satellite illumination, the IRD shall receive and decode the signal from the satellite via L band (feed already in place)

IRD shall be an Advent Communications IRD5000 or equivalent

### Modulator

An internal modulator shall take the encoder output and provide a <sup>usb</sup> broadcast ready signal at 70Mhz;  $0 - 12\text{dB}$  adjustable

The modulator shall be capable of linear operations up to +5dBm output <sup>usb</sup>  
Output level shall be adjustable over a 40 dB range; <sup>applies to L-band</sup>  
*Operation only; optional*

### Shipping and Delivery

Vendor shall provide shipping

Delivery shall be to:

West Virginia Public Broadcasting  
600 Capitol Street  
Charleston, WV 25301  
ATTN: Dave McClanahan

Invoicing

Send invoices to:

West Virginia Public Broadcasting  
600 Capitol Street  
Charleston, WV 25301  
ATTN: Steve Chapman

**EBA210 Uplink Expansion Pricing Page**

Quantity	Description	Unit Price	Extended Price
2	Advent Communications BFA Systems DVE5000	\$16,452.00ea.	\$2,904.00
2	Tiernan TDR4022	\$2,543.00ea.	\$,086.00
	Total	\$37,990.00	

## Option Non-redundant Expansion System

Quantity	Description	Unit Price	Extended Price
1	Advent Communication BFA Systems DVE5000	\$16,452.00	\$16,452.00
1	Tiernan TDR4022	\$2,543.00	\$2,543.00
	Total	\$18,995.00	

# Advent's 5000 Series Electronics

## COMPACT, LIGHTWEIGHT 1/2 WIDTH RACK UNITS

Advent Communications established lightweight, compact, 1/2 rack electronics packages are ideally suited for flyaway or vehicle mounted solutions, where weight and space are at a premium. The 5000 series of electronics can be packaged in different lightweight, ruggedised canvas flight cases, depending on units selected and configuration.

- Compact 1/2 width 19" x 1U rack mountable units
- 1/4 of the size and 1/6th of the weight of competitors equivalent products
- Designed for contribution flyaway and DSNM vehicle applications where space and weight are critical
- Full range of units available:

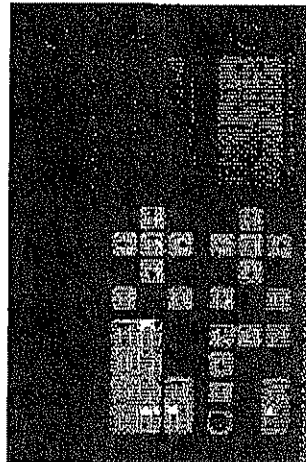
- SD and HD L Band Digital Video Extender
- IP Modem
- Multiplexer Router
- SUCS
- Antenna and Drive Control units
- IRD and System / Redundancy controllers
- Protection Switches

- All units field upgradeable
- All units have integral web browser facility (where applicable) for RMA&C applications
- A comprehensive range of flight case solutions for 1/2 rack and 19" rack units to suit system configuration, i.e. 3U, 4U, 5U.
- All units can also be fixed together and mounted in a standard 19" flight case or rack within a vehicle

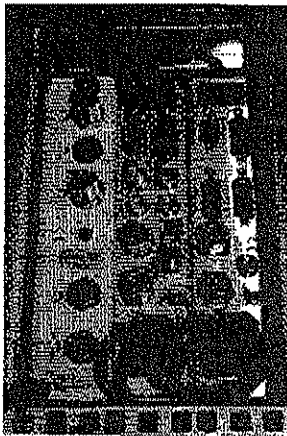


Two units joined to fit into 19" rack

ACU5000, DVE5000 and AUC5000 showing front panel display



Rear panels of ACU5000, DVE5000 and AUC5000 housed within a 3U half rack flightcase



Half rack flight case, housing three 5000 series units. Flightcases are available in variety of options to suit the application



## DVE5000 STANDARD DEFINITION AND HIGH DEFINITION L BAND DIGITAL VIDEO EXCITER

### KEY FEATURES

- DVE5000 is a Standard Definition and High Definition MPEG encoder with integrated L-band modulator
- Integrated HPA controller supporting a wide range of TWTA / SSPAs
- HPA controller via L-band cable or direct connection
- MPEG-4 PT10, H264 SD & HD 4:2:0/4:2:2 encoding, upgradeable
- L-band monitor
- Integral L-band combiner for external L-band carrier addition
- DVB-S QPSK, 8PSK, 16QAM
- DVB-S2, QPSK, 8PSK, 16 and 32 APSK options
- HD and SD MPEG-2, 4:2:2 encoding.
- 8 audio channels (4 analogue plus embedded SDI)
- AC3, Dolby E, auto aligner
- BISST / E conditional access
- Low delay
- 70MHz output option
- DVB-TLMS-T COFDM option for IF output
- 19" 1U HD SHF solution available with AUC5000 series
- Remote control via web browser
- SNMP control
- Field upgrade by USB memory stick

### SPECIFICATION

<b>RF PARAMETERS</b>	<b>VIDEO PARAMETERS</b>
<b>Output Frequency Range</b> L-band 950 to 1750 MHz stepsize 1KHz (70MHz option)	<b>Inputs</b> HD-SDI / SDI: SMPTE 292M SMPTE 259M / ITU-R BT.656 with embedded audio. SD version, composite PAL/NTSC
<b>Frequency Stability</b> +/- 2 x 10 <sup>-8</sup>	<b>VIDEO ENCODING</b>
<b>Output Power Level</b> L-band -51 +5dBm	<b>SD</b> 420MP@ML 1.5 - 138Mbps 422MP@ML 2 - 50Mbps
<b>Gain Adjustment</b> 40 dB min.	<b>HD</b> 420MP@HL 8 - 80Mbps 422MP@HL 8 - 80Mbps 720p/1080i
<b>Gain Variation</b> +/- 2 dB full band +/- 0.25 dB 24hr @ constant temperature	<b>Resolutions</b>
<b>Splurious</b> -70 dBc / 4 KHz	HD 1080p/30 HD 1080p/29 HD 1080p/25 HD 1080p/23 HD 1080p/20 HD 1080p/15 HD 1080p/10 HD 1080p/5
<b>L-Band Monitor</b> Monitor level -20dBc	<b>SD</b> 480 x 720 NTSC 576 x 720 PAL
<b>L-Band Combiner</b> Combining ratio 5dB +/-2	<b>Delay (encoding)</b> Typically less than 50ms
<b>Modulation</b>	<b>SCRAMBLING</b>
QPSK 1 - 38Msymbols	BISST 1 & E Encryption
Option 8PSK / 16QAM / 64QAM / DVD-S2 DVBS.	<b>DATA CHANNEL</b>
DVB-S2, DVB-T 1 - 45Msymbols	RS232 @ 9600 / 19200 / 38400 baud
<b>FEC</b>	<b>AUDIO PARAMETERS</b>
DVB-S QPSK FEC rates 1/2, 2/3, 3/4, 5/6, 7/8	<b>Inputs</b>
DVB-S 8PSK FEC rates 2/3	2 analogue stereo pairs / 4 mono 600 $\Omega$ Impedance plus 4 channels embedded in SDI / Linear PCM AC3, Dolby E, DTS; pass through with Dolby E auto align
DVB-S 16QAM FEC rates 3/4	<b>Performance</b>
DVB-T QPSK, 16QAM, 64QAM FEC rates 1/2, 2/3, 3/4, 5/6, 7/8	THD <0.1% +18 dBm max input level S/N >66 dB RIKS Frequency response 20 Hz-20 KHz +/- 0.5dB Crosstalk better than 60 dB
DVB-S2 QPSK FEC rates 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10	<b>Encoding</b>
DVB-S2 8PSK FEC rates 3/5, 2/3, 3/4, 5/6, 8/9, 9/10	MPEG-1 Layer 2 128 Kbs - 384 Kbs / channel (Audio A & B)
DVB-S2 16PSK FEC rates 3/5, 2/3, 3/4, 5/6, 8/9, 9/10	
DVB-S2 32 APSK FEC rates 3/5, 2/3, 3/4, 5/6, 8/9, 9/10	
	<b>HPA CONTROLLER</b>
	Integrated HPA controller for RS485 serial controlled TWTA / SSPA - Xicon, CPI, eTV, Paradise supported, others to order. Control via L-band using AUC5000 series converter
	<b>REMOTE CONTROL</b>
	RS 485 2400 - 9600 Baud Ethernet / Web browser / SNMP
	<b>WEB BROWSER</b>
	Supporting Internet Explorer 7, Firefox, Safari and Opera
	<b>CONNECTORS</b>
	CVBS 75 $\Omega$ BNC female (HD) SDI 75 $\Omega$ BNC female ASIN 75 $\Omega$ BNC female ASI / 70MHz out 75 $\Omega$ BNC female RF Output & Monitor 50 $\Omega$ N-female Combiner in 50 $\Omega$ TNC female
	<b>Audio Input</b>
	55W D type male breakout to 4 x XLR provided
	<b>Data / Remote / Status / HPA Control</b>
	15W D type female 2 x USB for field upgrades
	<b>Ethernet / Web Interface</b>
	RJ45 10 / 100 base-T
	<b>ENVIRONMENT AND PHYSICAL</b>
	Temperature 0 to +60°C Operational -20° to +70°C Storage:
	<b>Size</b>
	210mm wide by 350mm deep 1U half rack width
	<b>Weight</b>
	1.9kg approx.
	<b>POWER</b>
	Frequency 47 to 63 Hz @ <60W Operating Voltage 100 - 240 Vac +/- 10%





# 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

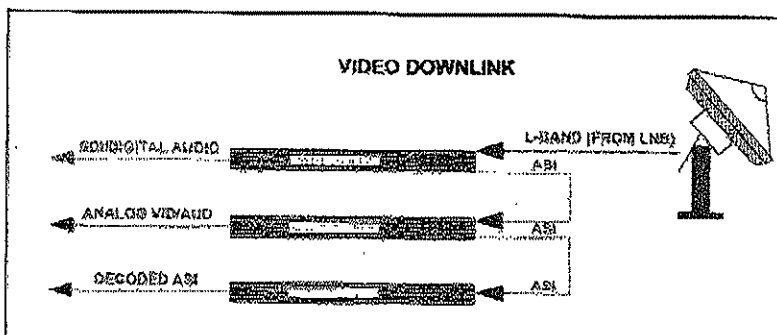
The TDR4022 MPEG-2 IRD delivers features and performance collected over years of leadership in the Broadcast Contribution and Satellite Modem business. Tiernan technology enabled the first commercial deployment of 4:2:2 MPEG-2 video compression/decompression in 1997 and continues today with advanced video decompression technology as the industry demands higher performance. The TDR4022 combines the leadership of Radyne 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 Radyne's industry-leading S2 technology. The TDR4022 supports all standard video (PAL/NTSC) and audio (MPEG, AC3, SMPTE302M) 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.



# TDR4022

## DVB Professional MPEG-2 Integrated Receiver/Decoder



### TECHNICAL SPECIFICATIONS STANDARD FEATURES

<b>VIDEO OUTPUT:</b>	PAL (625 Line) or NTSC (525 Line) Formats
<b>ANALOG:</b>	SMPTE 170M NTSC or ITU-R BT.470-8 PAL-I/B/D, 2 * BNC Connector
<b>SERIAL DIGITAL:</b>	SMPTE 259M SDI @ 270 Mbps, 2 * BNC Connector
<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 (422 Profile @ 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>	Process MPEG or DVB-Compatible PSI/SI Tables
<b>CONDITIONAL ACCESS:</b>	BISS Mode 1/E & PGCA Proprietary Conditional Access
<b>TIMING:</b>	Lip Synchronization Adjustment - 30 to +300 ms
<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>	DVB-ASI transport stream output of received source
<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>	Contact Closure for Alarm Conditions on RJ-11 Connector
<b>SOFTWARE UPGRADE:</b>	EIA-232 Remote Port, Ethernet Remote Port
<b>PHYSICAL:</b>	<ul style="list-style-type: none"> <li>1RU High, Rugged Chassis Suitable for Mobile Operations, 18" Rack Mount, 17.7" (45 cm) Deep</li> <li>Weights Less Than 5.5 kg (12 lbs.)</li> </ul>
<b>POWER SUPPLY:</b>	Autoranging 90 to 240 VAC, 50/60 Hz, 40 Watts Typical Consumption
<b>OPERATING CONDITIONS:</b>	0° to +50°C, up to 95% Humidity, Non-Condensing

### 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>
<b>GENLOCK INPUT:</b>	Retime and Frame-Synchronize Audio/Video Outputs to external timing Input (75 OHM BNC) *

U.S.A./Canada: 7330 Trade Street, San Diego, California 92121 USA Tel: +(1) 858.805.7000 Fax: +(1) 858.805.7001  
 3139 East Elwood Street, Phoenix, Arizona 85034 USA Tel: -(1) 602.497.9920 Fax: -(1) 602.497.4811  
 Europe/Middle East/Africa: 13 The Enterprise Centre, Coxbridge Business Park, Alton Road, Farnham, Surrey GU10 5ES, UK  
 Tel: +(44) 1292-731.300 Fax: +(44) 1252-716-915  
 Latin America: 7330 Trade St. San Diego, California 92121 USA Tel: +(1) 561-497-7972 Fax: +(1) 561-492-2363  
 China: Room 405, Building B, Heqiao Mansion, No. 8 Guanghua Road, Chaoyang District, Beijing 100026 China Tel: +(86) 10.658.31975  
 Fax: +(86) 10.658.31974  
 Asia-Pacific: 150 Cecil St. #08-02 Singapore 069543 Tel: +(65) 6325.1958 Fax: +(65) 6325.1950  
 7<sup>th</sup> Floor Wisma Budi Suite 702, JL. H.R. Ratuana Seid Kav C-6, Jakarta 12940, Indonesia Tel: +(62) 21 521-3793, 252 2676 Fax: +(62) 21 252 0142  
[www.tdn.com](http://www.tdn.com)

Prices, specifications, and product availability subject to change without notice. All trademarks acknowledged.

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\*Contact Factory for Availability



RFQ No. EBA 210

STATE OF WEST VIRGINIA  
Purchasing Division  
**PURCHASING AFFIDAVIT**

**VENDOR OWING A DEBT TO THE STATE:**

*West Virginia Code* §5A-3-10a provides that: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

**PUBLIC IMPROVEMENT CONTRACTS & DRUG-FREE WORKPLACE ACT:**

If this is a solicitation for a public improvement construction contract, the vendor, by its signature below, affirms that it has a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the *West Virginia Code*. The vendor must make said affirmation with its bid submission. Further, public improvement construction contract may not be awarded to a vendor who does not have a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the *West Virginia Code* and who has not submitted that plan to the appropriate contracting authority in timely fashion. For a vendor who is a subcontractor, compliance with Section 5, Article 1D, Chapter 21 of the *West Virginia Code* may take place before their work on the public improvement is begun.

**ANTITRUST:**

In submitting a bid to any agency for the state of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the state of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the state of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the state of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership or person or entity submitting a bid for the same materials, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

**LICENSING:**

Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agencies or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

**CONFIDENTIALITY:**

The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.

Under penalty of law for false swearing (*West Virginia Code* §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

Vendor's Name: Bram Flynn Associates  
Authorized Signature: [Signature] Date: 6/22/9