



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
EBA252

PAGE
1

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

VENDOR

*520132253 920-893-4204
 HEARTLAND VIDEO SYSTEMS INC
 1311 PILGRIM RD
 PLYMOUTH WI 53073

SHIP TO

WNPB-TV
 191 SCOTT AVENUE
 MORGANTOWN, WV 26505 293-6511

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
03/02/2010				

BID OPENING DATE: **03/31/2010** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		020-71		\$88,816.02
<p>THE WEST VIRGINIA PURCHASING DIVISION, FOR THE AGENCY, THE WEST VIRGINIA EDUCATIONAL BROADCASTING AUTHORITY, IS SOLICITING BIDS FOR TERMINAL EQUIPMENT FRAMES AND CARDS THAT MUST WORK IN THE OPENGear (TM) ENVIRONMENT AND UNDER DASHBOARD (TM) NETWORK CONTROL REMOTE SOFTWARE 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 E-MAIL AT SHELLY.L.MURRAY@WV.GOV. DEADLINE FOR ALL TECHNICAL QUESTIONS IS 03/16/2010 AT THE CLOSE OF BUSINESS. ALL TECHNICAL QUESTIONS RECEIVED, IF ANY, WILL BE ADDRESSED BY ADDENDUM AFTER THE DEADLINE.</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 MATERIALS OR WORKMANSHIP SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM WITH THE SPECIFICATIONS OF THE THE BID AND CONTRACT HEREIN.</p> <p>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.</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
<i>Amy Westphalen</i>	920-893-6760	3-22-10
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
<i>Inside Sales</i>	39-1917289	

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

GENERAL TERMS & CONDITIONS REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods this Purchase Order/Contract becomes void and of no effect after June 30.
5. Payment may only be made after the delivery and acceptance of goods or services.
6. Interest may be paid for late payment in accordance with the *West Virginia Code*.
7. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
9. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
10. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern the purchasing process.
11. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
12. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
13. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at www.state.wv.us/admin/purchase/vrc/hipaa.htm and is hereby made part of the agreement. Provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
14. **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>.
15. **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, and the West Virginia Insurance Commission. 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.
16. **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 material, 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.

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division. Complete all sections of the quotation form.
2. Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Unit prices shall prevail in case of discrepancy. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
4. All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130.
5. Communication during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited (W.Va. C.S.R. §148-1-6.6).



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
EBA252

PAGE
2

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

VENDOR

*520132253 920-893-4204
 HEARTLAND VIDEO SYSTEMS INC
 1311 PILGRIM RD
 PLYMOUTH WI 53073

SHIP TO

WNPB-TV
 191 SCOTT AVENUE
 MORGANTOWN, WV
 26505 293-6511

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
03/02/2010				

BID OPENING DATE: **03/31/2010** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
<p>THE MODEL/BRAND/SPECIFICATIONS NAMED HEREIN ESTABLISH THE ACCEPTABLE LEVEL OF QUALITY ONLY AND ARE NOT INTENDED TO REFLECT A PREFERENCE OR FAVOR ANY PARTICULAR BRAND OR VENDOR. VENDORS WHO ARE BIDDING ALTERNATES SHOULD SO STATE AND INCLUDE PERTINENT LITERATURE AND SPECIFICATIONS. FAILURE TO PROVIDE INFORMATION FOR ANY ALTERNATES MAY BE GROUNDS FOR REJECTION OF THE BID. THE STATE RESERVES THE RIGHT TO WAIVE MINOR IRREGULARITIES IN BIDS OR SPECIFICATIONS IN ACCORDANCE WITH SECTION 148-1-4(F) OF THE WEST VIRGINIA LEGISLATIVE RULES AND REGULATIONS.</p> <p style="text-align: center;">NOTICE</p> <p>A SIGNED BID MUST BE SUBMITTED TO:</p> <p style="text-align: center;">DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130</p> <p>THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:</p> <p>SEALED BID</p> <p>BUYER: SHELLY MURRAY</p> <p>RFQ. NO.: EBA252</p> <p>BID OPENING DATE: 03/31/2010</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>Amy Westphalen</i>	TELEPHONE 920-893-6760	DATE 3-22-10
TITLE <i>Inside Sales</i>	FEIN 39-1917289	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
EBA252

PAGE
3

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

VENDOR

*520132253 920-893-4204
HEARTLAND VIDEO SYSTEMS INC
1311 PILGRIM RD

PLYMOUTH WI 53073

SHIP TO

WNPB-TV

191 SCOTT AVENUE

MORGANTOWN, WV
26505 293-6511

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
03/02/2010				

BID OPENING DATE: **03/31/2010** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
BID OPENING TIME:				1:30 PM		
PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:						
				<i>920-893-3100</i>	-----	
CONTACT PERSON (PLEASE PRINT CLEARLY):						
				<i>Amy Westphalen</i>	-----	
***** THIS IS THE END OF RFQ					EBA252 ***** TOTAL:	<u>\$ 88,816.02</u>

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>Amy Westphalen</i>	TELEPHONE <i>920-893-6760</i>	DATE <i>3-22-10</i>
TITLE <i>Inside Sales</i>	FEIN <i>39-1917289</i>	ADDRESS CHANGES TO BE NOTED ABOVE

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

EBA 252 Terminal Equipment, Frames and Cards of the openGear™ family

The West Virginia Educational Broadcasting Authority (WVEBA) is conducting a Request for Quotations for terminal equipment frames and cards that must work in the openGear™ environment and under DashBoard™ Network Control remote software, at the WNPB-TV Broadcast and Production Center in Morgantown, WV. This equipment does not interact with the State of West Virginia networking systems; they are for the internal plant use at WNPB-TV and West Virginia Public Broadcasting.

Due to the open architecture of this system, a variety of manufacturers may have equivalent products and similar part numbers. The requirement list below will only use ROSS or COBALT model numbers to keep it simple for cross referencing.

Specifications must be equal to or exceed items listed below.

Qty.	Description
1	2RU, 10 slot card frame with 1 power supply, fans, Modular Rear Panel Ross # DFR-8310-C or equal

The DFR-8310 is a 2RU modular frame, designed to accommodate up to 10 modules of the openGear Multi-Definition product family.

The front-door mounted fans provide forced air cooling for all modules, and additional cooling for the power supplies. An intelligent fan controller adjusts fan speed with changes in frame power loading or temperature. Particular attention has been paid to frame acoustics in order to keep fan noise to a minimum

- 2RU frame houses up to 10 modules
- Can house any mix of analog, digital, video and audio modules in the same frame
- Available with preloaded 10-BNC rear modules, or modular I/O panels for connector flexibility
- Heavy-duty hinged front door panel lowers to allow easy card insertion
- Durable powder-coat paint finish
- Aluminum construction reduces overall weight
- Two independent looping Reference Inputs feed all module slots
- SMPTE alarm interface for simple monitoring
- Robust 150 watt power supply with integral cooling fan
- Optional redundant power supply is hot-swappable for 24 / 7 operation
- Power switch is accessible from the front of the rack frame
- Power supplies are replaceable from the front of the frame without requiring rear-frame access
- Separate power cords to each supply for power feed redundancy
- PowerLock cord retainer mechanism guards against accidental power loss
- Optional Cooling Fan Module for increased ventilation and enhanced reliability
- Fan Fail and Error Indicator LEDs on front of the frame (available with optional Cooling Fan Module)

- Optional Ethernet based frame controller for remote setup, monitoring, and control
- 5-year transferable warranty

Qty.	Description
8	2RU, 10 slot card frame with 1 power supply, fans, 100 BNC Rear Panel Ross # DFR-8310-C-BNC or equal

The DFR-8310 is a 2RU modular frame, designed to accommodate up to 10 modules of the openGear Multi-Definition product family.

The front-door mounted fans provide forced air cooling for all modules, and additional cooling for the power supplies. An intelligent fan controller adjusts fan speed with changes in frame power loading or temperature. Particular attention has been paid to frame acoustics in order to keep fan noise to a minimum

- 2RU frame houses up to 10 modules
- Can house any mix of analog, digital, video and audio modules in the same frame
- Available with preloaded 10-BNC rear modules, or modular I/O panels for connector flexibility
- Heavy-duty hinged front door panel lowers to allow easy card insertion
- Durable powder-coat paint finish
- Aluminum construction reduces overall weight
- Two independent looping Reference Inputs feed all module slots
- SMPTE alarm interface for simple monitoring
- Robust 150 watt power supply with integral cooling fan
- Optional redundant power supply is hot-swappable for 24 / 7 operation
- Power switch is accessible from the front of the rack frame
- Power supplies are replaceable from the front of the frame without requiring rear-frame access
- Separate power cords to each supply for power feed redundancy
- PowerLock cord retainer mechanism guards against accidental power loss
- Optional Cooling Fan Module for increased ventilation and enhanced reliability
- Fan Fail and Error Indicator LEDs on front of the frame (available with optional Cooling Fan Module)
- Optional Ethernet based frame controller for remote setup, monitoring, and control
- 5-year transferable warranty

Qty.	Description
9	Frame controller card with network interface Ross # MFC-8320-N or equal

The MFC-8320-N is a network controller card that allows the 8310 (10-slot) and 8321 (20-slot) openGear™ frames to communicate with multiple copies of DashBoard™ or Cobalt remote control panels via Ethernet and TCP/IP—allowing remote access to the openGear™ frames across both LAN and WAN architectures.

Qty.	Description
9	Redundant Power Supply for each 8310 Card Frame Ross # PS-8300 or equal

The DFR-8310 frame can accommodate two front-loaded PS-8300 power supplies. Although a single supply can fully power a loaded frame, the addition of a second (optional) supply gives the frame full power redundancy. Each supply is fed by a separate power cord, which is held in position to guard against accidental power loss. Each power supply contains an independent cooling fan, status LED, and a front-mounted power switch.

Qty.	Description
2	Analog A/V (Composite, 4 ch audio) to SDI converter card with proc amp and frame sync Ross # ADC-8732B-SC or equal

- 12-bit analog to digital conversion
- 10-bit decoding with 3-line / 5-line / 3D adaptive comb filters
- 4 channels of analog audio A / D with embedding
- Optional Frame Synchronization
- Freeze modes
- Horizontal and vertical timing adjustments
- Programmable vertical interval blanking
- Proc Amp controls
- 24-bit audio ADC resolution, adjustable gain and delay
- Status indicator LEDs on card-edge
- Choice of reference inputs
- 5-year transferable warranty
- Power: 7.8 watts

Qty.	Description
2	Analog A/V (Component, 4 ch audio) to SDI converter card with proc amp and frame sync Ross # ADC-8733A-SC or equal

- Component video with 4 analog audio conversion to SDI input from Betacam, MII and SMPTE / EBU formats
- All RGB input formats supported
- Automatic 525/625-line selection
- Programmable vertical interval blanking and signal pass-through
- Extensive Proc Amp controls
- Freeze modes, horizontal and vertical timing adjustments
- 4 channels of analog audio embedded
- 24-bit audio ADC resolution, adjustable gain and delay
- 5-year transferable warranty

- Power: 8.5 watts

Qty.	Description
------	-------------

3	Analog Component Video to SDI converter card with proc amp and frame sync Ross # ADC-8733A-S or equal
---	---

- YUV input from Betacam, MII and SMPTE / EBU formats
- All RGB input formats supported
- Field-upgradeable Frame Synchronization option available
- Programmable vertical interval blanking and signal pass-through
- Extensive Proc Amp controls, pass or clip Super Black
- Freeze modes, horizontal and vertical timing adjustments
- Tracking Delay Output for companion audio synchronizer
- Built-in test signals (FF color bars, SDI Checkfield)
- 5-year transferable warranty
- Power: 4.5 watts

Qty.	Description
------	-------------

32	Dual Multi-rate SDI 1x4 multi configurable reclocking distribution amplifier card: dual 1x4 or single 1x8 or 1x2 & 1x6 Ross # DRA-8204 or equal
----	---

- Two independent channels of SDI distribution on one card!
- Equalizes and reclocks all SDI signals from 143Mb/s to 1.485Gb/s
- Equalizes up to 300m of 1694A cable at 270Mb/s, or up to 100m of cable at 1.485Gb/s
- Automatic detection of incoming data rate
- Flexible channel configurations:
- single 1:8 amplifier
- dual 1:4 + 1:4 amplifiers
- dual 1:6 + 1:2 amplifiers
- LED indicators for signal presence and data rate for each channel
- High-end input / output return loss specifications
- 10 DAs in DFR-8310 or DFR-8321
- 5-year transferable warranty
- Power: 3.7 watts

Qty.	Description
------	-------------

3	HD/SD-SDI input, AES De-embedder (de-multiplexer) card with audio proc amp, 8 AES 75ohm outputs, 1 HD/SD-SDI output Ross # DMX-8259-A or equal
---	--

- 16 Channel Audio de-embedding for all popular HD-SD SDI formats
- Audio Proc Amp controls; gain, invert, and delay
- Assign any embedded channel to any discrete audio output
- Ability to re-map channels in embedded video stream

- Programmable video output on SDI input loss
- Silence output on loss of audio input
- Programmable silence detection and timeout thresholds
- No audio breakout cables required
- 5-year transferable warranty
- Power: 8.5 watts

Qty.	Description
24	AES 75ohm 1x8 or 2x4 reclocking distribution amplifier Ross # ADA-8401-A or equal

- 1x8 AES distribution amplifier
- Ideal for distributing Dolby® E and Dolby Digital signals
- Cable equalization and data reclocking on the incoming AES / EBU signal
- Supports audio sampling frequencies from 30kHz to 192kHz
- 75Ω unbalanced I/O
- 10 DAs in DFR-8310 or DFR-8321
- 5-year transferable warranty
- Power: 2 watts

Qty.	Description
6	HD/SD-SDI Test pattern generator card Cobalt # 9361 or equal

The 9361 is an HD/SD-SDI multi-format test signal generator, generating 1.485 Gbit test signals. The 9361 delivers a user-selectable test pattern in several SD and HD-SDI formats.

The 9361 can overlay up to 20 characters of text onto the test pattern for channel ID. The SDI outputs can either be locked to a reference signal connected to the openGear™ frame, or run off an internal clock.

SPECS:

Electrical

Power: 8 watts

Reference Video Input

Number of Inputs: 2 looping (openGear™ frame)

Standard: Tri-level sync (SMPTE 274) and Black Burst (NTSC and PAL)

Test Patterns

HD/SD: Black Flat Frame 75% Color Bars Sweep Pattern

HD/SD-SDI Output

Number of outputs: 4 Reclocked, 4 Processed

Standard: SMPTE 292 and 259M

Signal Level: 800 mV nominal

Return Loss: >15 dB at 5 MHz - 270 MHz >12 dB at 270 MHz - 1.485 GHz

Jitter: HD: < 0.15 UI

SD: < 0.10 UI

II. Service/Support

Toll free phone technical support must be provided through vendor or manufacturer for a minimum of three years and included in the price of equipment bid.

III. Warranty

All items must be covered by a minimum one year parts and labor warranty to be included in the equipment cost.

IV. Delivery

Delivery shall be FOB destination. Shipping included in the price quoted.

Delivery address is:

WV Public Broadcasting,
Attention: Chris Vincent
191 Scott Ave.
Morgantown, WV 26508-8802

V. Invoicing

Send invoice to:
West Virginia Educational Broadcasting Authority
Attention: Steve Chapman
600 Capitol Street
Charleston, WV 25301

EBA252 Pricing Page
openGear™ Terminal Equipment, Frames and Cards or equivalent

Qty.	Description	Unit Price	Extended
1	2RU, 10 slot card frame with 1 power supply, fans, Modular Rear Panel Ross # DFR-8310-C or equal Cobalt 8310-N	\$ <u>1330.26</u>	\$ <u>1330.26</u>
8	2RU, 10 slot card frame with 1 power supply, fans, 100 BNC Rear Panel Ross # DFR-8310-C-BNC or equal Cobalt 8310-N-BNC	\$ <u>1725.00</u>	\$ <u>13,800.00</u>
9	Frame controller card with network Interface Ross # MFC-8320-N or equal (included in items 1 & 2 above)	\$ <u>0.00</u>	\$ <u>0.00</u>
9	Redundant Power Supply for each 8310 Card Frame Ross # PS-8300 or equal	\$ <u>426.32</u>	\$ <u>3836.88</u>
2	Analog AV (Composite, 4 ch audio) to SDI converter card with proc amp and frame sync Ross # ADC-8732B-SC or equal Cobalt 9034-SD & RM-9034-B	\$ <u>2391.32</u>	\$ <u>4782.64</u>
2	Analog AV (Component, 4 ch audio) to SDI converter card with proc amp and frame sync Ross # ADC-8733A-SC or equal Cobalt 9034-SD & RM-9034-B	\$ <u>59.21</u>	\$ <u>118.42</u>
3	Analog Component Video to SDI converter card with proc amp and frame sync Ross # ADC-8733A-S or equal Cobalt 9032-SD	\$ <u>59.21</u>	\$ <u>118.42</u>
32	Dual Multi-rate SDI 1x4 multi config. reclocking distribution amplifier card Ross # DRA-8204 or equal Cobalt 9003	\$ <u>1262.37</u>	\$ <u>3787.11</u>
3	HD/SD-SDI input, AES De-embedder card with ,audio proc amp Ross # DMX-8259-A or equal Cobalt 9321	\$ <u>1022.89</u>	\$ <u>32,732.48</u>
		\$ <u>1775.53</u>	\$ <u>5326.59</u>

Qty.	Description	Unit Price	Extended
24	AES 75ohm 1x8 reclocking distribution amplifier Ross # ADA-8401-A or equal Cobalt 9253	\$ <u>331.58</u>	\$ <u>7957.92</u>
6	HD/SD-SDI Test pattern generator card Cobalt # 9361 or equal	\$ <u>1707.11</u>	\$ <u>10,242.66</u>
TOTAL		\$ <u>88,816.02</u>	

Amy Westphalen
Signature of Vendor Representative

3-25-10
Date



Heartland Video Systems

1-800-332-7088
www.hvs-inc.com

QUOTE

Quote #	WISQ18758
Doc Name	State of WV Cobalt Bid # EBA252
Date	03/22/10
Sales Rep.	Amy Westphalen
Terms	25% Down, balance net 30

Quote To:

State of West Virginia

Shelly Murray

2019 Washington St. East
P.O. Box 50130
Charleston, WV 25305-0130
USA

Ship To:

State of West Virginia

Shelly Murray

2019 Washington St. East
P.O. Box 50130
Charleston, WV 25305-0130
USA

(304)558-8801

Qty	Manuf	Model	Description	Unit Price	Ext. Price
1	Cobalt Digital	8310-N	10-slot openGear Frame - 2 Rack Units with Fans and Metal Plates on Rear I/O - Includes one PS-8300 Power Supply and MFC-8320-N Network Controller Card	\$1,330.26	\$1,330.26
8	Cobalt Digital	8310-N-BNC	10-slot openGear Frame - 2 Rack Units with Fans and 100 BNC Rear I/O Module - Includes one PS-8300 Power Supply and MFC-8320-N Network Controller Card	\$1,725.00	\$13,800.00
9	Cobalt Digital	PS-8300	openGear Frame Power Supply for 8310 and 8321 frames	\$426.32	\$3,836.88
4	Cobalt Digital	9034-SD	SD only 12-bit Analog to Digital Video Converter with Audio Embedding and Frame Sync	\$2,391.32	\$9,565.28
4	Cobalt Digital	RM-9034-B	8310 Frame Rear I/O Module (Single Slot) Analog Video Input, 4 Analog Audio Inputs, and 2 SDI Output BNCs	\$59.21	\$236.84
3	Cobalt Digital	9032-SD	SD only 12-bit Analog to Digital Video Converter with Frame Sync	\$1,262.37	\$3,787.11
32	Cobalt Digital	9003	Dual 3G/HD/SD Reclocking Distribution Amplifier, 2X4 or 1X8 Configurations, Fallover mode	\$1,022.89	\$32,732.48
3	Cobalt Digital	9321	HD/SD-SDI 16 Channel Audio Embedder with A/V Processing	\$1,775.53	\$5,326.59
24	Cobalt Digital	9253	2 X 4 AES/EBU Reclocking Distribution Amplifier, 75 Ohm, Unbalanced, BNC I/O	\$331.58	\$7,957.92
6	Cobalt Digital	9361	HD/SD-SDI Test Signal Generator with Text Overwrite	\$1,707.11	\$10,242.66

Note: Cobalt Digital will hand deliver this equipment so no shipping charges apply.

Total \$88,816.02

PROPOSALS FROM HEARTLAND VIDEO SYSTEMS INC. (HVS) ARE VALID FOR 120 DAYS
Restocking Fees: A 15% restocking fee will be charged for items returned unopened and within 30 days of shipment date with approval.

Quote accepted for order by: _____ Date: _____

RECEIVED

2010 MAR 29 P 12: 24

PURCHASING DIVISION
STATE OF WV

Heartland Video Systems, Inc.

Corporate Office:
1311 Pilgrim Road, Plymouth, WI 53073, (800) 332-7088, (920) 893-4204, fax: (920) 893-3106

IA Office:
375 Collins Rd NE, Ste. 114, Cedar Rapids, IA 52402, (319) 294-1360, (800) 332-7088, fax: (319) 294-1341

State of West Virginia
VENDOR PREFERENCE CERTIFICATE

Certification and application* is hereby made for Preference in accordance with *West Virginia Code*, §5A-3-37. (Does not apply to construction contracts). *West Virginia Code*, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the *West Virginia Code*. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

1. **Application is made for 2.5% resident vendor preference for the reason checked:**
 Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; or,
 Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or,
 Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; or,
2. **Application is made for 2.5% resident vendor preference for the reason checked:**
 Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
3. **Application is made for 2.5% resident vendor preference for the reason checked:**
 Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
4. **Application is made for 5% resident vendor preference for the reason checked:**
 Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,
5. **Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**
 Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,
6. **Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**
 Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (*West Virginia Code*, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: Heartland Video Systems Signed: Amy Westphalen
 Date: 3-25-10 Title: Inside Sales

*Check any combination of preference consideration(s) indicated above, which you are entitled to receive.

RFQ No. EBA252

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: 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.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

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.

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: Heartland Video Systems, Inc.

Authorized Signature: Amy Westphalen Date: 3-25-10

State of WI

County of Sheboygan, to-wit:

Taken, subscribed, and sworn to before me this 25th day of March, 2010.

My Commission expires 3-31, 2013.

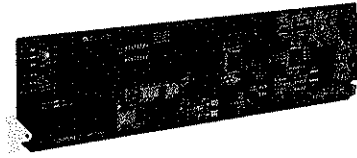
AFFIX SEAL HERE

NOTARY PUBLIC Ronda Schneider

9253



openGear



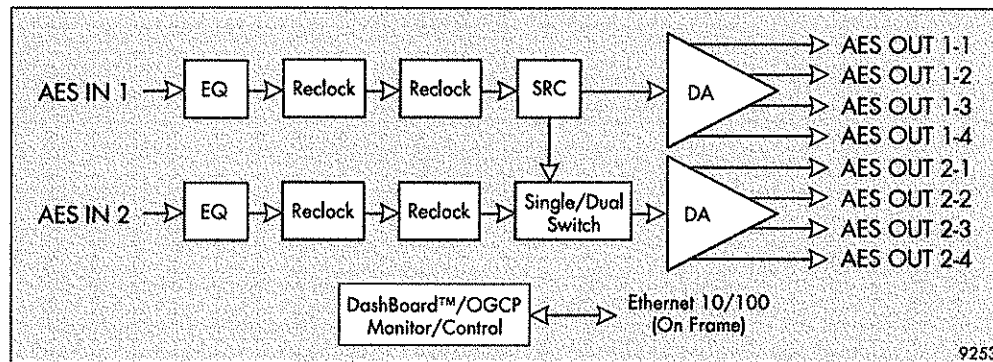
2 x 4 AES Audio Distribution Amplifier, 75 Ohms

The 9253 is a dual AES/EBU distribution amplifier, providing four copies of each incoming signal. The card supports audio sampling frequencies from 30 kHz to 192 kHz. It can also be used as a 1x8 distribution amplifier, providing eight outputs that are sample rate converted. Cable equalization and reclocking techniques enable the 9253 to reliably recover the incoming digital audio signal.

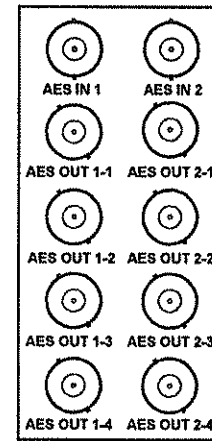
The 9253 has two 75Ω unbalanced AES inputs and four 75Ω unbalanced AES outputs per AES input. The card can be monitored for status using DashBoard™ remote control software.

Features

- Supports audio sampling frequencies from 30 kHz to 192 kHz
- Cable equalization and data reclocking on AES inputs
- Configurable as dual 1x4 or 1x8 distribution amplifier
- Remote monitoring via DashBoard™ software
- Five year warranty



9253 Block Diagram



RM-9253-A

Specifications

Electrical		AES Output	
Power:	4 watts	Number of outputs:	8 unbalanced BNC (2 Ch per BNC)
AES Input		Impedance:	75 Ω
Number of Inputs:	2 unbalanced BNC (2 Ch per BNC)	Resolution:	24-bit
Impedance:	75 Ω	Level:	1 Vp-p
Resolution:	24-bit	Sample rate:	30 kHz to 192 kHz
Level:	0.2 - 7 Vp-p	Jitter:	<5 ns
Sample rate:	30 kHz to 192 kHz		

Ordering Information

- 9253** 2 X 4 AES/EBU Reclocking Distribution Amplifier, 75 Ohm, Unbalanced, BNC I/O
- RM-9253-A** Rear I/O Module (Single Slot) 1 AES Input BNC, 8 AES Output BNCs

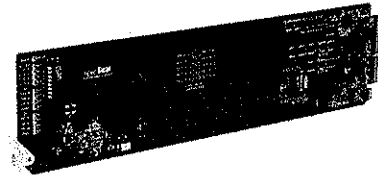


9003



openGear

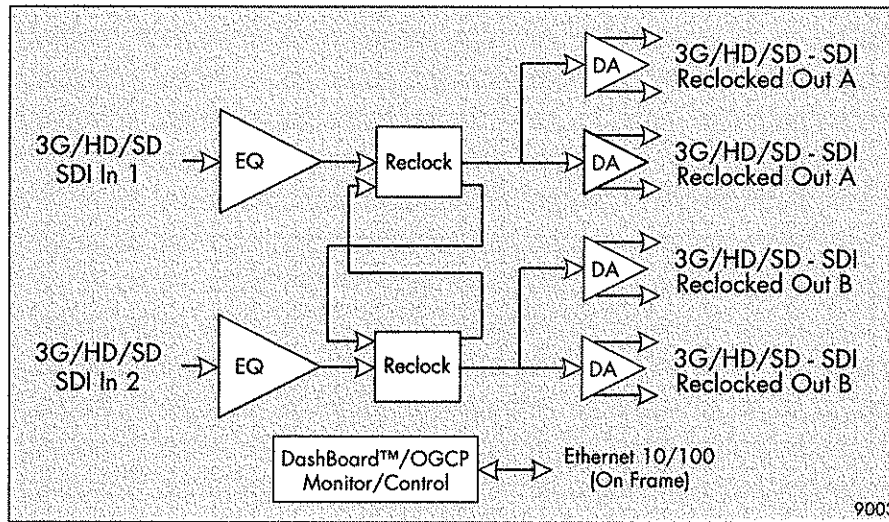
Dual 3G/HD/SD Reclocking Distribution Amplifier



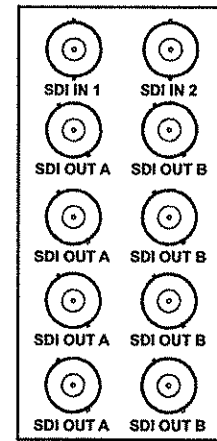
The 9003 is a two-channel, multi-rate SDI distribution amplifier capable of equalizing and reclocking 3G, HD, and SD signals. The 9003 can be set up as either a single-channel 1:8, dual-channel 1:4, or 1:8 with failsafe using DashBoard™ remote control software or card-edge switches. In failsafe mode, the card automatically switches to the secondary input if the primary input is lost.

Features

- Dual or single input with user-configurable modes
- Automatic rate detection/display for all popular data rates
- Equalize up to 160m of Belden 1694A cable at 1.485 Gbit
- Remote monitoring via DashBoard™ software or OGCP-9000 remote control panel
- Failsafe mode automatically switches to secondary input on primary input loss
- Five year warranty



9003 Block Diagram



RM-9003-A

Specifications

Electrical	Cable Length Equalized (w/Belden 1694A)	HD/SD-SDI Output
Power: 3 watts	3 Gbps: 100m	Number of outputs: 8 (4 ASI Compatible)
3G/HD/SD-SDI Input	1.485 Gbps: 160m	Standard: SMPTE 424M, 292M, and 259M
Number of Inputs: 2	143-360 Mbps: 350m	Signal Level: 800 mV nominal
Standard: SMPTE 424M, 292M, and 259M		Return Loss: >15 dB at 5 MHz - 1.485 GHz
Return Loss: >15 dB at 5 MHz - 1.485 GHz		>10 dB at 1.5 GHz to 3 GHz
>10 dB at 1.5 GHz to 3 GHz		Jitter (wideband): HD: < 0.2 UI

Ordering Information

9003 Dual 3G/HD/SD Reclocking Distribution Amplifier, 2 X 4 or 1 X 8 Configurations, Failover mode

RM-9003-A Rear I/O Module (Single Slot) 2 HD/SD-SDI Inputs, 8 Reclocked HD/SD-SDI Outputs



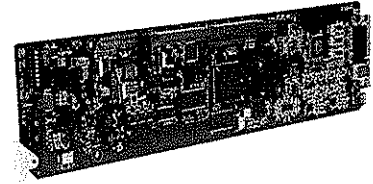
Sales 800.669.1691 • Office 217.344.1243 • Fax 217.344.1245 • www.cobaltdigital.com

9032



openGear

AFD
READY



9000 Series

HD/SD 12-bit Analog to Digital Converter with Universal Inputs and Frame Sync

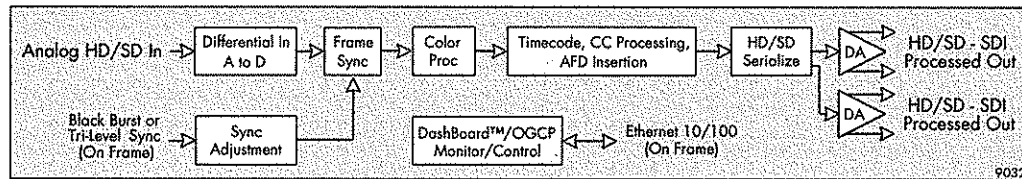
The 9032 is an HD/SD analog-to-digital video converter with 12-bit conversion bit depth that provides adjustable frame sync.

The 9032 includes full proc control, frame sync controls, and AFD code insertion – all with user memory. Frame sync can be used to delay the video. Factory presets enable a return to factory settings.

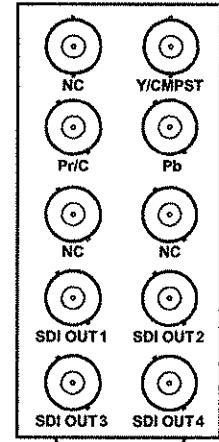
9032-SD – SD Only 12-bit Analog to Digital Video Converter with Frame Sync

Features

- HD/SD analog to SDI conversion
- HD/SD closed captioning and timecode support
- Differential analog video inputs for power hum rejection
- 5-Line adaptive comb filter for SD-Composite mode
- AFD code insertion
- Frame sync with up to 13 frames of user adjustable delay
- Video proc controls
- 16 user presets
- Remote control/monitoring via DashBoard™ software or OGCP-9000 control panel
- Five year warranty



9032 Block Diagram



RM-9032-A

Specifications

Electrical

Power: 10 watts

Analog Video Input

HD Standard: YPbPr or RGB SMPTE

SD Standard: Composite, Y/C or Component (YPbPr BetaCam™, MI™ or SMPTE/N10)

Impedance: 75 Ω

Reference Video Input

Number of Inputs: 2 looping (openGear™ frame)

Standard: Tri-level sync (SMPTE 274) and Black Burst (NTSC and PAL)

Processing

A/D Conversion: HD: 4:4:4 SD: 8:8:8

Quantization: 12-bit A to D and 10-bit video data path

SD Comb Filter: 5-line adaptive

Freq. Response: HD: Y - 0-25 MHz +/- 0.3 dB

HD: Pb, Pr 0-13.5 MHz +/- 0.3 dB

SD: 5.2 MHz +/- 0.25 dB

Processing Delay

Minimum Frame Sync Delay: < 3 lines

HD/SD-SDI Output

Number of outputs: 4 Processed

Standard: SMPTE 292 and 259M

Signal Level: 800 mV nominal

Return Loss: >15 dB at 5 MHz - 270 MHz

>12 dB at 270 MHz - 1.485 GHz

Jitter: HD: < 0.15 UI

SD: < 0.10 UI

Ordering Information

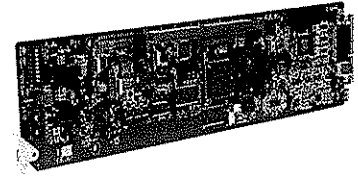
9032 HD/SD 12-bit Analog to Digital Video Converter with Frame Sync

9032-SD SD Only 12-bit Analog to Digital Video Converter with Frame Sync

RM-9032-A Rear I/O Module (Single Slot) HD/SD Analog Inputs, 4 x HD/SD-SDI Outputs



9034



Input Processing Analog to Digital Video with Audio Embedding and Frame Sync

The 9034 is an HD/SD analog-to-digital video converter with 12-bit conversion bit depth that provides an HD/SD analog video input, analog and digital audio inputs, audio embedding, frame sync, and user audio/video level controls.

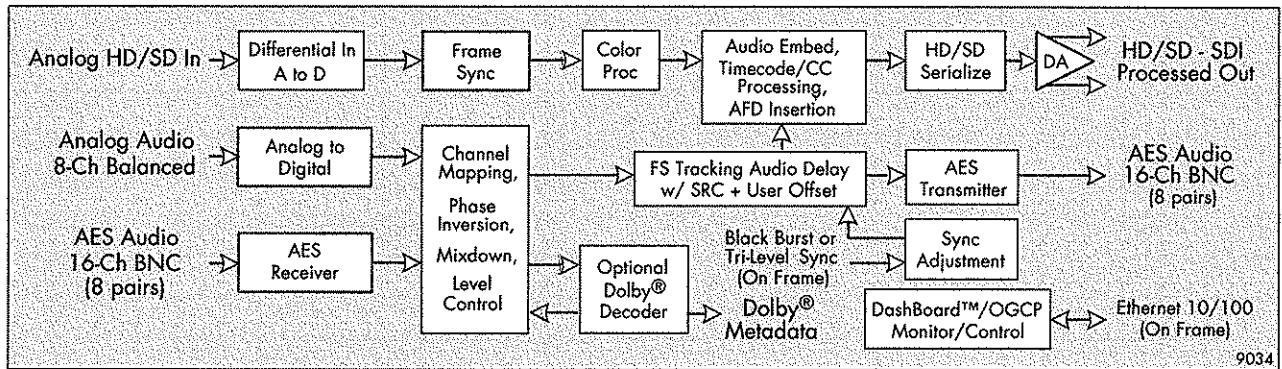
The 9034 includes a full proc control with user memory, full audio routing and frame sync controls, and AFD code insertion – all with user memory. Frame sync can be used to delay video or audio-video offset for lip-sync alignment. Factory presets enable a return to factory settings

9034-SD – SD Only 12-bit Analog to Digital Video Converter with Audio Embedding and Frame Sync

9034-DEC – HD/SD 12-bit Analog to Digital Video Converter with Audio Embedding, Frame Sync and Dolby® Digital/E Decoding

Features

- HD/SD analog to SDI conversion
- Differential analog video inputs for power hum rejection
- 5-Line adaptive comb filter for SD-Composite mode
- Video proc controls
- Analog and AES audio inputs and AES output
- 24-bit analog audio conversion to AES
- 24-bit audio embedding
- Audio channel mapping and level control
- Audio offset adjustment for lip-sync alignment
- Frame sync with tracking audio delay
- User offset to frame sync to align Dolby® delay
- HD/SD closed captioning and timecode support
- AFD code insertion
- Dolby® Digital/E Decoder option with metadata output
- 16 user presets
- Remote control/monitoring via DashBoard™ software or OGCP-9000 control panel
- Five year warranty



9034 Block Diagram

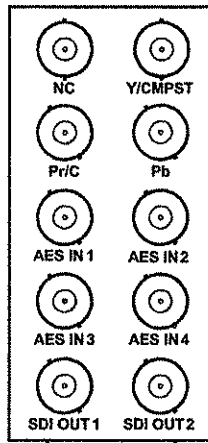
Ordering Information

- 9034** HD/SD 12-bit Analog to Digital Video Converter with Audio Embedding and Frame Sync
- 9034-SD** SD Only 12-bit Analog to Digital Video Converter with Audio Embedding and Frame Sync
- 9034-DEC** HD/SD 12-bit Analog to Digital Video Converter with Audio Embedding, Frame Sync and Dolby® Digital/E Decoding
- RM-9034-A** Rear I/O Module (Single Slot) Analog Video Input, 4 x AES In/Out BNCs, and 2 SDI Output BNCs
- RM-9034-B** Rear I/O Module (Single Slot) Analog Video Input, 4 Analog Audio Inputs, and 2 SDI Output BNCs
- RM-9034-C** Rear I/O Module (Double Slot) Analog Video Input, 2 AES In BNCs, 4 AES In/Out BNCs, 8 Analog Audio Inputs, and 2 SDI Output BNCs
- RM-9034-D** Rear I/O Module (Double Slot) Analog Video Input, 4 AES In BNCs, 4 AES In/Out BNCs, 6 AES Out BNCs, and 2 SDI Output BNCs

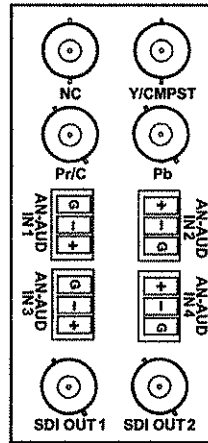


9034

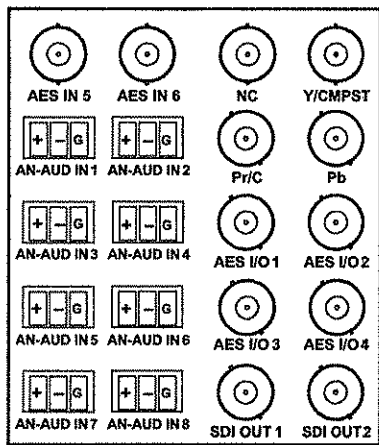
Rear Module Options



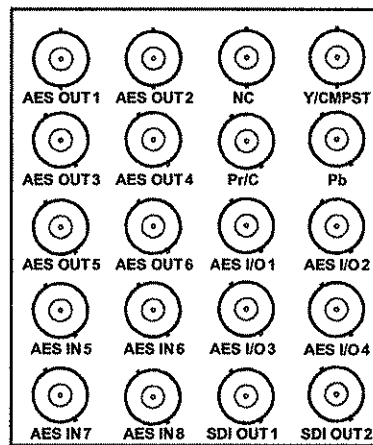
RM-9034-A



RM-9034-B



RM-9034-C



RM-9034-D

Specifications

Electrical

Power: 13 watts
 Power (Dolby®-DEC option): 15.5 watts

Analog Video Input

HD Standard: YPbPr or RGB SMPTE
 SD Standard: Composite, Y/C or Component (YPbPr BetaCam™, MII™ or SMPTE/N10)
 Impedance: 75 Ω

AES Input

Number of Inputs: 16-Ch unbalanced BNC
 Impedance: 75 Ω
 Input Level: 0.1 V to 2.5 V p-p (5 V p-p tolerant)
 Resolution: 24-bit

Analog Audio Input

Number of Inputs: 8-Ch Balanced
 Connector: Removable 3-pin Phoenix
 Signal Level: up to +24 dBu
 Sample Rate: 48 kHz

Reference Video Input

Number of Inputs: 2 looping (openGear™ frame)
 Standard: Tri-level sync (SMPTE 274) and Black Burst (NTSC and PAL)

Processing

A/D Conversion: HD: 4:4:4 SD: 8:8:8
 Quantization: 12-bit A to D and 10-bit video data path
 SD Comb Filter: 5-line adaptive

Processing Delay

Minimum Frame Sync Delay: < 3 lines

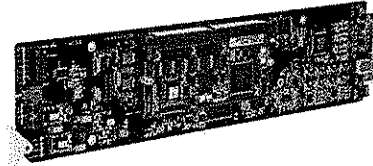
AES Output

Number of outputs: 16-Ch unbalanced BNC
 Impedance: 75 Ω
 Sample Rate: 48 kHz
 Resolution: 24-bit

HD/SD-SDI Output

Number of outputs: 2
 Standard: SMPTE 292 and 259M
 Signal Level: 800 mV nominal
 Return Loss: >15 dB at 5 MHz - 270 MHz
 >12 dB at 270 MHz - 1.485 GHz
 Jitter: HD: < 0.15 UI
 SD: < 0.10 UI
 Embedded Audio: 16-Ch SD/HD

9321



HD/SD Embedder with Dolby® Decoding Option

The 9321 is a 24-bit audio processing card that supports 16 AES input channels, 16 de-embedded channels from the SDI input, and eight analog audio inputs. The 9323 in turn provides 16 re-embedded channels that can be sourced from any of the inputs.

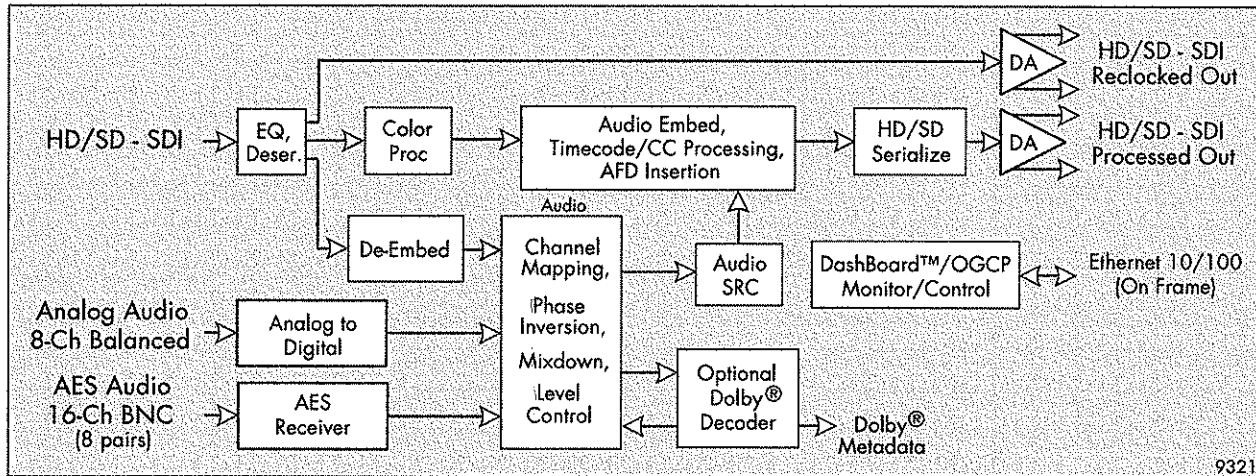
The 9323 features full user remote and card-edge proc control that allows adjustment of audio levels and routing. Full video proc control with user memory allows adjustment of white level, black level, color gain, and color phase. Factory presets enable a return to factory settings.

Advanced audio features such as selectable Sample Rate Converters allow audio re-timing.

9321-DEC – HD/SD-SDI Audio Embedder with A/V Processing and Dolby® Digital/E Decoding

Features

- HD/SD universal digital inputs
- 16 channels of de-embedding and embedding
- Eight analog audio inputs with 24-bit conversion
- 24-bit embedded audio processing
- Audio channel mapping phase inversion and level control
- 16 channels of sample rate conversion
- Dolby® Decoder option with metadata output
- Internal tone generator
- Video proc controls
- Local or remote user controls
- Remote control/monitoring via DashBoard™ software or OGCP-9000 remote control panel
- Five year warranty



9321 Block Diagram

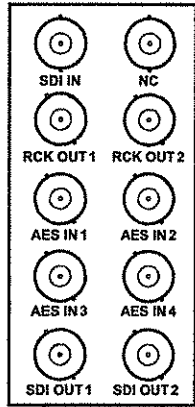
Ordering Information

- 9321** HD/SD-SDI 16 Channel Audio Embedder with A/V Processing
- 9321-DEC** HD/SD-SDI Audio Embedder with A/V Processing and Dolby® Digital/E Decoding
- RM-9321-A** Rear I/O Module (Single Slot) HD/SD-SDI Input BNC, 4 AES Input BNCs, 2 HD/SD-SDI Output BNCs
- RM-9321-B** Rear I/O Module (Single Slot) HD/SD-SDI Input BNC, 6 Analog Audio Inputs, 2 HD/SD-SDI Output BNCs
- RM-9321-C** Rear I/O Module (Double Slot) HD/SD-SDI Input BNC, 8 Analog Audio Inputs, 8 x AES Input BNCs, 2 HD/SD-SDI Output BNCs
- RM-9321-D** Rear I/O Module (Single Slot) HD/SD-SDI Input BNC, 7 AES Input BNCs, 2 HD/SD-SDI Output BNCs
- RM-9321-E** Rear I/O Module (Double Slot) HD/SD-SDI Input BNC, 4 AES In BNCs, 8 Analog Audio In, 2 HD/SD-SDI Out BNCs, Dolby® Metadata Out

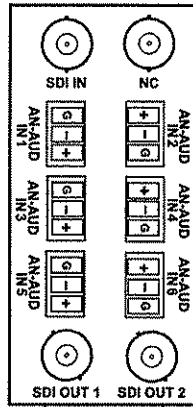


9321

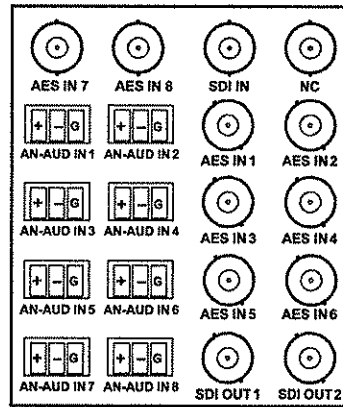
Rear Module Options



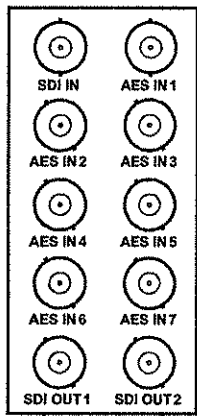
RM-9321-A



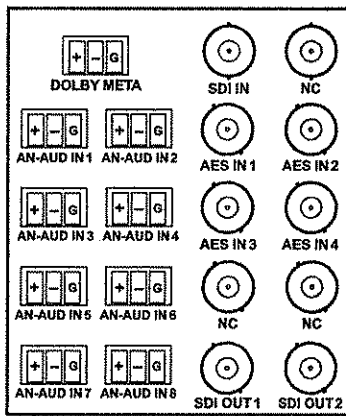
RM-9321-B



RM-9321-C



RM-9321-D



RM-9321-E

Specifications

Electrical

Power: 10 watts
 Power (Dolby®-DEC option): 12.5 watts

HD/SD-SDI Input

Number of Inputs: 1
 Standard: SMPTE 292 and 259M
 Return Loss: >15 dB at 5 MHz - 1.485 GHz

AES Input

Number of Inputs: 16-Ch unbalanced BNC
 Impedance: 75 Ω
 Input Level: 0.1 V to 2.5 V p-p (5 V p-p tolerant)
 Resolution: 24-bit

Analog Audio Input

Number of Inputs: 8-Ch Balanced
 Connector: Removable 3-pin Phoenix
 Signal Level: up to +24 dBu
 Sample Rate: 48 kHz

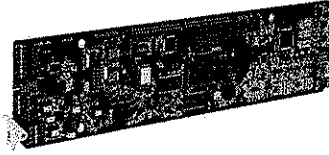
HD/SD-SDI Output

Number of outputs: 2 Processed
 2 Reclocked
 Standard: SMPTE 292 and 259M
 Signal Level: 800 mV nominal
 Return Loss: >15 dB at 5 MHz - 270 MHz
 >12 dB at 270 MHz - 1.485 GHz
 Jitter: HD: < 0.15 UI
 SD: < 0.10 UI
 Embedded Audio: 16-Ch SD/HD

9361



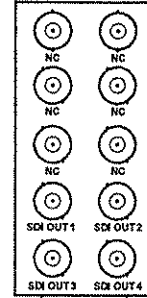
openGear



HD/SD-SDI Test Signal Generator with Text Overwrite

The 9361 is an HD/SD-SDI multi-format test signal generator, providing a cost-effective method of generating 1.485 Gbit test signals. The 9361 delivers a user-selectable test pattern in several SD and HD-SDI formats.

The 9361 can overlay up to 20 characters of text onto the test pattern for channel ID. The SDI outputs can either be locked to a reference signal connected to the openGear™ frame, or run off an internal clock.



RM-9361-A

Specifications

Electrical

Power: 8 watts

Reference Video Input

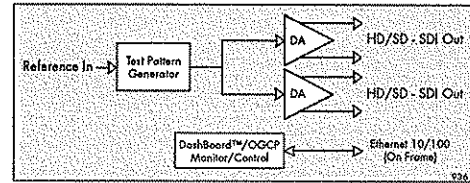
Number of Inputs: 2 looping (openGear™ frame)
Standard: Tri-level sync (SMPTE 274) and Black Burst (NTSC and PAL)

Test Patterns

HD/SD: Black Flat Frame
75% Color Bars
Sweep Pattern

HD/SD-SDI Output

Number of outputs: 4 Reclocked, 4 Processed
Standard: SMPTE 292 and 259M
Signal Level: 800 mV nominal
Return Loss: >15 dB at 5 MHz - 270 MHz
>12 dB at 270 MHz - 1.485 GHz
Jitter: HD: < 0.15 UI
SD: < 0.10 UI



9361 Block Diagram

Ordering Information

- 9361** HD/SD-SDI Test Signal Generator with Text Overwrite
- RM-9361-A** Rear I/O Module (Single Slot) 4 HD/SD-SDI Test Pattern Output BNCs

9362

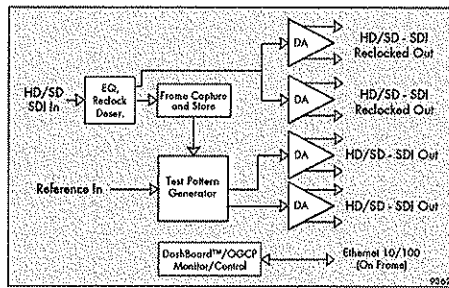
HD/SD-SDI Test Signal Generator with Text Overwrite, SDI Input Frame Capture/Store, and Fail Safe Mode

The 9362 is an HD/SD-SDI multi-format Test Signal Generator that provides 1.485 Gbit test signals. The 9362 outputs a user-selectable test pattern in several SD and HD-SDI formats.

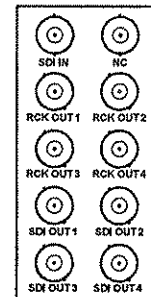
The 9362 is installed in the HD/SD-SDI feed and passes the video signal as normal when not needed. In the event of video signal loss, the test signal generator function can be set to switch to a selected pattern manually, or set to provide a selected pattern.

The 9362 can overlay up to 20 characters of text onto the test pattern for channel ID. The SDI outputs can either be locked to a reference signal connected to the openGear™ frame, or run off an internal clock.

The 9362 can capture and store a frame such as a station ID logo from the HD/SD-SDI input and use this as a selectable test pattern.



9362 Block Diagram



RM-9362-A

Features

- 75% Color Bars Test Pattern
- Up to 20 character text overlay
- Locks to external reference (bi-level, black burst, or tri-level)
- Controllable timing offset from reference
- Four tone generators with adjustable frequency and amplitude, available to all 16 embedded audio channels
- Remote control/monitoring via DashBoard™ software or OGCP-9000 remote control panel
- Five year warranty

Specifications

Electrical

Power: 8 watts

HD/SD-SDI Input

Number of Inputs: 1
Standard: SMPTE 292 and 259M
Return Loss: >15 dB at 5 MHz - 1.485 GHz

Reference Video Input

Number of Inputs: 2 looping (openGear™ frame)
Standard: Tri-level sync (SMPTE 274) and Black Burst (NTSC and PAL)

Test Patterns

HD/SD: Black Flat Frame, 75% Color Bars, Sweep Pattern, User Captured

HD/SD-SDI Output

Number of outputs: 4 Reclocked, 4 Processed
Standard: SMPTE 292 and 259M
Signal Level: 800 mV nominal
Return Loss: >15 dB at 5 MHz - 270 MHz
>12 dB at 270 MHz - 1.485 GHz
Jitter: HD: < 0.15 UI
SD: < 0.10 UI
Embedded Audio: 16-Ch SD/HD

Ordering Information

- 9362** HD/SD-SDI Test Signal Generator with Text Overwrite, SDI Input Frame Capture/Store, and Fail Safe Mode
- RM-9362-A** Rear I/O Module (Single Slot) HD/SD-SDI Input, 4 SDI Reclocked Outputs, 4 SDI Outputs

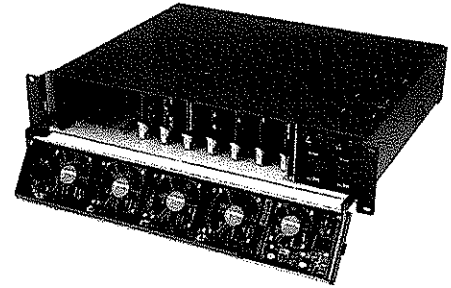


openGear™ Frame



NAMM 2006
AWARD FOR INNOVATION IN MEDIA
WINNING PRODUCT

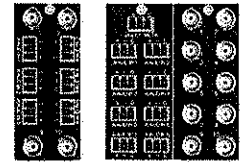
openGear



8310 openGear™ frame

The 2RU openGear™ modular frames accommodate up to 10 or 20 openGear™ cards, providing maximum application flexibility. The 10-slot 8310-C-BNC frame offers the simplicity of a standardized rear connector frame. Any openGear™ card using BNC-type connections can be installed into any slot. Unused slots can be pre-cabled in anticipation of future needs; additional cards can be installed later without accessing the rear of the frame.

Where flexibility of I/O connection type is necessary (such as mixed BNC, twisted-pair audio or fiber interfaces), the 10-slot 8310-C frame offers the flexibility of independent rear modules suited to each slot's interface requirements. Rear modules specifically suited to various card and interfaces can be ordered with card modules and are easily installed.



Modular Rear I/O

openGear™ frames are designed with an advanced cooling architecture that includes front-door mounted fans to provide forced air cooling for all cards and additional cooling for the power supplies. The intelligent fan controller adjusts fan speed with changes in frame power loading or temperature. Particular attention has been paid to frame acoustics to minimize fan noise.

Two buffered looping reference inputs are distributed to all card slots. A frame-mounted Ethernet port allows an MFC-8310-N network controller card to be added without occupying a module slot.

The frame can accommodate two front-loaded power supplies. Although a single supply can fully power a loaded frame, the addition of a second (optional) supply gives the frame full power redundancy. Each supply is fed by a separate power cord with a PowerLock cord retainer to guard against accidental power loss. Each power supply contains an independent cooling fan, status LED and a front-mounted power switch. One power supply is standard with each openGear™ frame.

Now introducing the 8320, a 2RU modular frame designed to accommodate up to 20 openGear™ cards.

Features

- 8310-C-BNC frame has fixed 100-BNC rear panel
- 8310-C has modular I/O panels for connector flexibility
- Two independent looping reference inputs feed all module slots
- Robust 150 watt power supply with integral cooling fan
- Optional redundant power supply is hot-swappable for 24/7 operation
- Power switch/supplies accessible from the front of the frame
- Separate power cords to each supply for power feed redundancy
- Power lock cord retainer guards against accidental power loss
- Fan fail and error indicator LEDs on front of the frame
- Optional Ethernet based frame controller (MFC-8310-N) for remote setup, monitoring, and control
- Heavy duty hinged front door panel lowers to allow easy card insertion
- The frame and electronics have a five year warranty; fans and power supplies have a one year warranty
- SNMP option
- Remote Control/monitoring via DashBoard™ software or OGCP-9000 remote control panel

Ordering Information

- 8310-C** 10-slot openGear™ Frame - 2 Rack Units with Fans and Metal Plates on Rear I/O - Includes one power supply
- 8310-C-BNC** 10-slot openGear™ Frame - 2 Rack Units with Fans and 100 BNC Rear I/O Module - Includes one power supply
- PS-8300** Additional power supply for 8310-C frame
- MFC-8310-N** openGear™ Network Controller Card - Allows remote control and monitoring of cards through DashBoard™ software
- SNMP-8310** Software option for MFC-8310-N: Provides SNMP (v1 and v2) control and monitoring
- 8320-C** 20-slot openGear™ Frame - 2 Rack Units with Fans and Metal Plates on Rear I/O - Includes one power supply
- 8320-CN** 20-slot openGear™ Frame with Network Controller Card
- 8320-CNS** 20-slot openGear™ Frame with Network Controller Card and SNMP



Sales 800.669.1691 • Office 217.344.1243 • Fax 217.344.1245 • www.cobaltdigital.com

Specifications subject to change without notice. E. & O.E. Copyright 2009 Cobalt Digital Inc. 3/09