CELEBRATING
25 YEARS
OF INNOVATION

25

— 2022-2023
PRODUCT BRIEF

COBALT®

ENGINEERING
BEYOND
THE SIGNAL

BEYOND THE SIGNAL

ENGINEERING BEYOND THE SIGNAL STARTS WITH INNOVATION.

Cobalt Digital has proudly provided engineering solutions to meet customers' needs since 1997. By speaking and listening closely to end users, Cobalt has developed equipment offering the answer for many challenges. Our innovative products feature 24/7 service and support and many come with a five-year warranty, vital in today's broadcast industry. Our products are used extensively worldwide in production trucks, and by terrestrial, satellite and cable broadcasters, as well as many government facilities. As we enter our third decade of innovation and service, we reflect on how far the industry has come, and look forward to engineering products for tomorrow's broadcast and beyond.

COBALT

INDIGO SERIES

NEW
— FOR —
2022

HIGH DENSITY NATIVE 2110 SOLUTION
NATIVE SMPTE ST 2110 INTERFACE OPTION

INDIGO 2110-DC-01 – SMPTE ST 2110 INTEGRATED SUPPORT DAUGHTERCARD OPTION FOR 9904-UDX-4K AND 9905-MPX CARDS

The Indigo 2110-DC-01 is a factory add-on option to Cobalt 9904-UDX-4K and 9905-MPx models. This option adds native SMPTE ST 2110 support for these cards, with dual 25G Ethernet interfaces.

The Indigo 2110-DC-01 avoids the cumbersome, error-prone, and expensive prior solutions of deploying multiple devices in the data path. Adding native ST 2110 interfaces to the audio/video processing elements, Cobalt is providing a cost-effective, easily manageable, integrated solution to this problem. Multiple boxes or processing elements are no longer needed in the data path, going back and forth between IP and SDI. By natively doing all the processing directly over IP, unnecessary complexity and cost is avoided.

With this option, all the advanced processing in these cards is now available with IP inputs and outputs, without the need for an external gateway. Indigo 2110-DC-01 includes support for ST-2022-7 seamless redundancy switching, as well as IS-04/IS-05 NMOS for automatic discovery and configuration. Mated with the host card, this creates a powerful and processing-dense product that is capable of natively processing HD, 3G and 4K IP streams with no quality compromises. No other solution currently in the market can achieve the density provided by the combination of functionality offered by the Indigo 2110-DC-01 and the 9904-UDX-4K/9905-MPx combination.
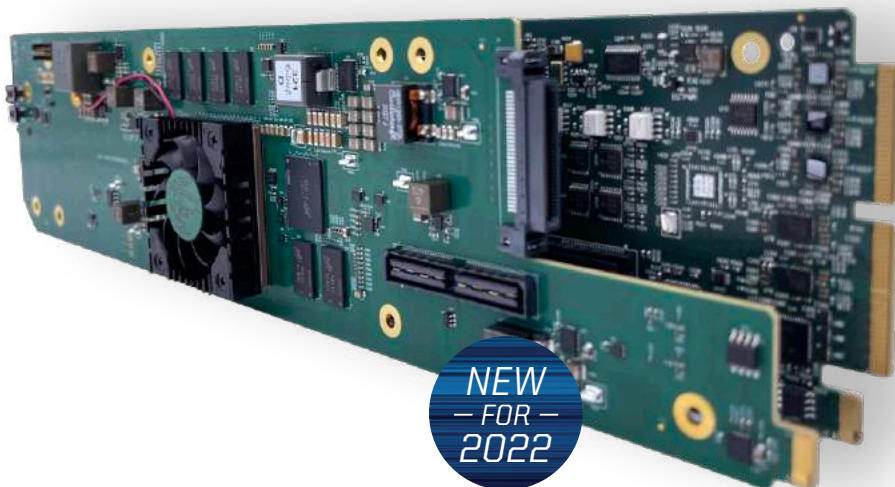
KEY FEATURES

- Highly integrated ST 2110 companion for the Cobalt 9904-UDX-4K and 9905-MPx audio/video processors

- Offers dual 25G Ethernet interfaces to support 4K signals without the need for any type of compression and to support ST 2022-7 seamless redundancy switching for improved network reliability

- Built-in NMOS support offers straightforward interface to an existing network, with auto-discovery by the network management

- High-density, compact openGear card-based solution, with multiple devices able to be combined into a single frame for multi-channel operation, as well as offering the standard features of redundant hot-swappable power supplies and hot-swappable cards

- Five year warranty

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9904-UDX-4K
UHD & HDR UP/DOWN/CROSS CONVERTER WITH FRAME SYNC & AUDIO SUPPORT

The award-winning Cobalt® 9904-UDX-4K 12G/6G/3G/HD/SD UHD Up/Down/Cross Converter/Frame Sync/Embed/De-Embed Audio Processor is Cobalt's next generation of advanced scaler/frame synchronizers for the openGear® platform.

The 9904-UDX-4K upconverts 12G/6G/3G/HD/SD to either UHD 3840x2160 Square DIvision Multiplex (SDM) or Two-Sample Interleave (2SI) quad 3G-SDI based formats, or can output ST 2082 12G-SDI for single-wire 4K transport. With both 12G-SDI and quad 3G-SDI inputs, the 9904-UDX-4K can downconvert 12G and quad UHD. The 9904-UDX-4K provides an HDMI 2.0 output for economical 4K video monitoring. The 9904-UDX-4K offers numerous options, including SDR-to-HDR conversion and color correction.

Next-generation scaler/frame sync featuring an industry-first, 12G-SDI bridge to DANTE™ Audio

NEW — FOR — 2022

+UDX-DANTE-16x16
THE INDUSTRY'S FIRST LICENSE-BASED 12G-SDI BRIDGE TO DANTE AUDIO. HIGH-DENSITY, CONVENIENT AND COST-EFFECTIVE.

ALSO AVAILABLE

9904-UDX-4K-IP 12G/6G/3G/HD/SD UHD Up/Down/Cross Converter/Frame Sync/Embed/De-Embed Audio Processor with Dual 10GigE IP Ports

9904-UDX-4K-DSP 12G/6G/3G/HD/SD UHD Up/Down/Cross Converter/Frame Sync with DSP Advanced Audio Processing

KEY FEATURES

- Supports Indigo 2110-DC-01 (see page 3)

- High-density openGear comprehensive UDX solution

- Supports all popular formats: 480i, 576i, 720p, 1080i, 1080pSF, 1080p. Can support/accept 3G Level A or Level B-DL input with output as Level A or B-DL (via UI control) and also support RGB 4:4:4 / YCbCr 4:4:4 (see Ordering Info for details).

- Full up/down conversion between HD/3G, ST 2082 12G-SDI single-wire, and SDM/2SI quad 3G-SDI based formats, with ST 2082 12G-SDI single-wire and quad 3G UHD available at both input and output

- Supports Square Division Multiplex (SDM) and Two-Sample Interleave (2SI) quad UHD formats

- 12G-SDI and quad 3G frame sync and user delay

- Supports Cobalt's Reflex (JSON) Protocols

- Full embedded audio processing with user delay offset and AES I/O

- Noise Reduction and Detail Enhancement provide image quality optimization

- Remote control/monitoring via Dashboard™ software, OGCP-9000 remote control panels, or Cobalt's RESTful-based Reflex protocol

- Supports options for 3D LUTs and BBC 3D LUTs and includes NBCU LUTs as standard
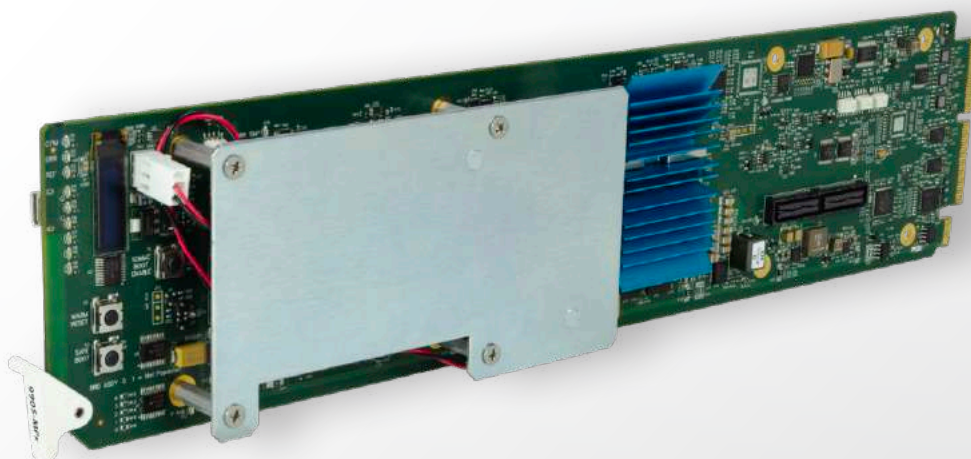
- Five year warranty

9905-MPX
3G/HD/SD QUAD-PATH UP/DOWN/CROSS CONVERTER/FRAME SYNC/EMBED/DE-EMBED AUDIO PROCESSOR

The Multi-Path 9905-MPx 3G/HD/SD Quad-Path Up/Down/Cross Converter/ Frame Sync/Embed/De-Embed Audio Processor is a Cobalt® next-generation advanced scaler/frame synchronizer for the openGear® platform. The 9905-MPx provides four independent signal paths of UDX / frame sync / audio embedding and de-embedding on a single open-Gear® card. Using our HPF-9000 20-slot frame, this provides up to 24 channels (6 cards) of processing in a single frame. The 9905-MPx represents a new level of openGear packaging density!

The 9905-MPx provides high-density that offers unprecedented multi-input support and flexibility. Independent up/down/cross convert scalers are specifically designed for broadcast video formats, with full ARC control suitable for conversions to or from 4:3 and 16:9 aspect ratios. Discrete AES and MADI audio audio embedding/routing/mixing/de-embedding to any of four processing paths is supported. Standard 3D LUTs, NBCU LUTs and color correction provide support for SDR and HDR workflows.

Card control/monitoring is available via DashBoard user interface or Cobalt's RESTful-based Reflex protocol. The 9905-MPx can be software-converted to a 4K Quad-Link Input SDM/2SI 4K UDX/Frame Sync card with an option software license.

KEY FEATURES

- Supports Indigo 2110-DC-01 (see page 3)

- Multi-Path design offers four independent UDX / frame sync paths (channels) per card

- Flexible AES and MADI embed/de-embed for each path

- Multi-input RP168 clean switch, with manual selection or GPI controlled input selection

- Up/Down/Cross Conversion with user ARC control. 3D-LUT is standard feature for all paths.

- Supports all popular formats: 480i, 576i, 720p, 1080i, 1080pSF, 1080p

- Independent four-path ANC bridging, including timecode and closed-captioning processing

- Noise Reduction and Detail Enhancement provide image quality optimization

- Remote control/monitoring via Dashboard™ software, OGCP-9000 remote control panels or Cobalt's RESTful-based Reflex protocol

- Five year warranty

Multi-Path & Multi-Function. A new level of openGear® Packaging density.

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9915DA-4X16-XPT-12G
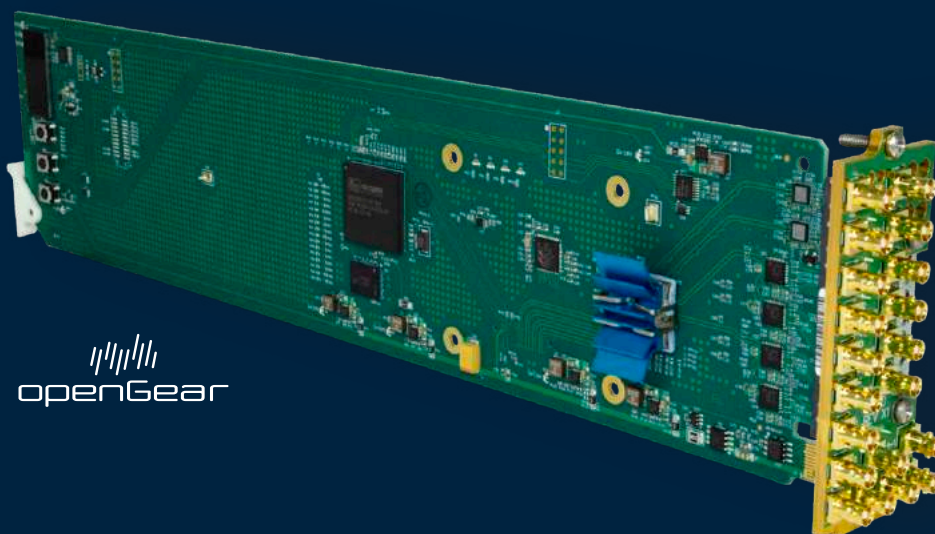## 12G/6G/3G/HD/SD QUAD-CHANNEL MULTI-RATE RECLOCKING DA WITH X4 OUTPUT CROSSPOINT

The 9915DA-4x16-XPT-12G 12G/6G/3G/HD/SD Quad-Channel Multi-Rate Reclocking DA with x4 Output Crosspoint supports four input channels which can be crosspoint-routed to up to 16 DA outputs. As demand for 4K continues to rise, distribution of 12G-SDI signals within a rackspace becomes increasingly important. The 9915DA allows for copper runs of up to 45 meters, reaching most equipment within a rack room or truck. For longer runs, the optional optical inputs and outputs allow the 9915DA to connect distribution from zones of much greater distances.

The extremely flexible crosspoint (which is user-configurable via DashBoard™ GUI remote control) allows quad 1x4, dual 1x8, single 1x16 and other routing possibilities. Any of the four input channels can be distributed or duplicated across four groups of 1x4 DAs. The quad-input capacity provides a one-card solution for distribution of 8K quad-link content over 12G-SDI interfaces. A failover function allows going to secondary backup inputs should the primary input lose lock.

Up to 10 of the 9915DA-4x16-XPT-12G cards can be installed in a frame to provide 40 channels of input, with distribution to up to 160 outputs. Full user DashBoard™ or Remote Control Panel remote control allows full status and control access locally or across a standard Ethernet network.

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KEY FEATURES

- Supports all popular formats: 480i, 576i, 720p, 1080i, 1080pSF, 1080p and 4K

- Flexible output crosspoint allows card to function as quad-channel 1x4, dual-channel 1x8, single-channel 1x16, or other numerous routings with reclocking DA

- Full support of 12G/6G/3G/HD/SD-SDI and ASI/DVB

- Input data rate auto-detection for all industry-standard data rates

- Fiber inputs/outputs can be added via optional SFPs

- One-card solution for distribution of 4K/8K content over 12G-SDI interfaces

- Failover provides backup to selected secondary inputs if primary input loses lock, available for both coax and (optional) fiber inputs.

- Card display and DashBoard status input lock indicators

- Hot-swappable

- Five year warranty

ALSO AVAILABLE

9915DA-2X16-XPT-12G 12G/6G/3G/HD/SD Dual-Channel Multi-Rate Reclocking
Distribution Amplifier with x4 Output Crosspoint

9915DA-1X16-12G 12G/6G/3G/HD/SD-SDI 1x16 Reclocking Distribution Amplifier

9910DA-4Q-3G
3G/HD/SD/ASI QUAD-CHANNEL MULTI-RATE DA WITH X4 OUTPUT CROSSPOINT
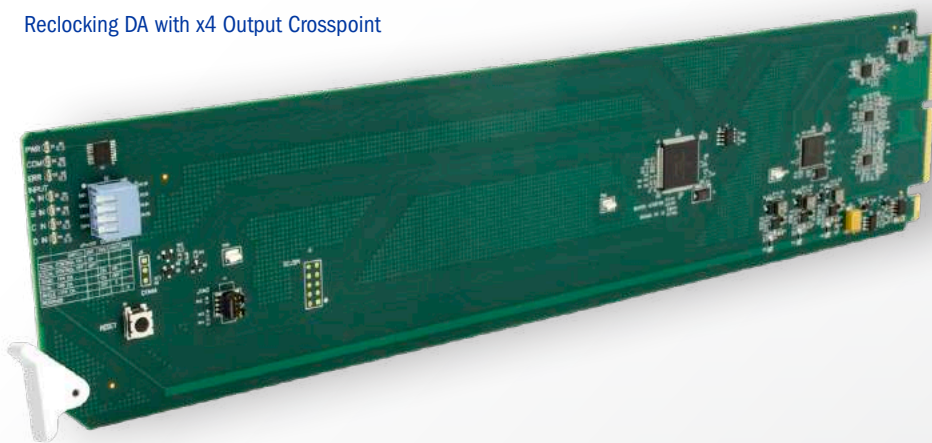
The 9910DA-4Q-3G 3G/HD/SD/ASI Quad-Channel Multi-Rate DA with x4 Output Crosspoint supports four input channels which can be crosspoint-routed to any of 16 DA outputs. The 9910DA-4Q-3G is multi-rate, and supports SDI and ASI/DVB on all inputs and outputs with non-inverting outputs. The quad-input capacity provides a one-card solution for distribution of 4K quadrant-division content over 3G/HD/SD-SDI interfaces.

The extremely flexible crosspoint (which is user-configurable via DashBoard™ GUI remote control) allows quad 1x4, dual 1x8, single 1x16 and other routing possibilities (such as dual 1x4 plus a single 1x8). Any of the four input channels can be distributed or duplicated across four groups of 1x4 DAs, and any of the four inputs can be set to use an alternate failover input upon loss of signal.

Excellent receive performance allows receive EQ for up to 120m 3G and 160m HD cable length (1694A). Card edge and DashBoard™ remote status monitoring indicates input lock for each input channel. Up to 10 of the 9910DA-4Q-3G cards can be installed in a frame to provide 40 channels of input, with distribution to up to 160 outputs.

RECLOCKING ALSO AVAILABLE
9910DA-4Q-3G-RCK 3G/HD/SD/ASI Quad-Channel Multi-Rate
Reclocking DA with x4 Output Crosspoint

SINGLE-CHANNEL MODELS
9910DA-1Q-3G 3G/HD/SD/ASI Single-Channel Multi-Rate DA (Non-Reclocking)
9910DA-1Q-3G-RCK 3G/HD/SD/ASI Single-Channel Multi-Rate Reclocking DA
DUAL-CHANNEL MODELS
9910DA-2Q-3G 3G/HD/SD/ASI Dual-Channel Multi-Rate DA with x4 Output Crosspoint (Non-Reclocking)
9910DA-2Q-3G-RCK 3G/HD/SD/ASI Dual-Channel Multi-Rate Reclocking DA with x4 Output Crosspoint

KEY FEATURES

- Full support of 3G/HD/SD-SDI and ASI/DVB

- Supports all popular formats: 480i, 576i, 720p, 1080i, 1080pSF, 1080p

- Excellent receive performance – EQ allows 1694A cable lengths up to 120m (3G) / 160m (HD) / 400m (SD)

- One-card solution for distribution of 4K quadrant-division content over 3G/HD/SD-SDI interfaces

- Flexible output crosspoint allows card to function as quad-channel 1x4, dual-channel 1x8, or single-channel 1x16 reclocking DA

- Failsafe mode automatically switches to selected secondary input on loss of primary input

- Input data rate auto-detection for all industry-standard data rates

- All outputs are non-inverting – ASI can be transmitted on any output

- Card edge and DashBoard™ status and individual input lock indicators

- Hot-swappable

- Five year warranty

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COMPRESSION
TRADITIONAL BROADCAST FEATURES WITH ADVANCED NETWORK OPTIONS

Cobalt Digital has an extensive set of products with professional-grade support for compressed audio and video, suitable for almost any application. Cobalt products are unique in their blend of traditional broadcast features with advanced networking options. If you have a signal "over here" and want to send it "over there", we have you covered with support for protocols such as RIST, RTP/UDP/FEC, RTMP, RTSP and SRT. We have products that support MPEG-2 (H.262), AVC (H.264) and HEVC (H.265), with extensive audio support.

All of our products are offered both as openGear® cards for high density, as well as standalone units if you need just a few channels and are space-constrained.

LEARN MORE AT COBALTDIGITAL.COM ↗
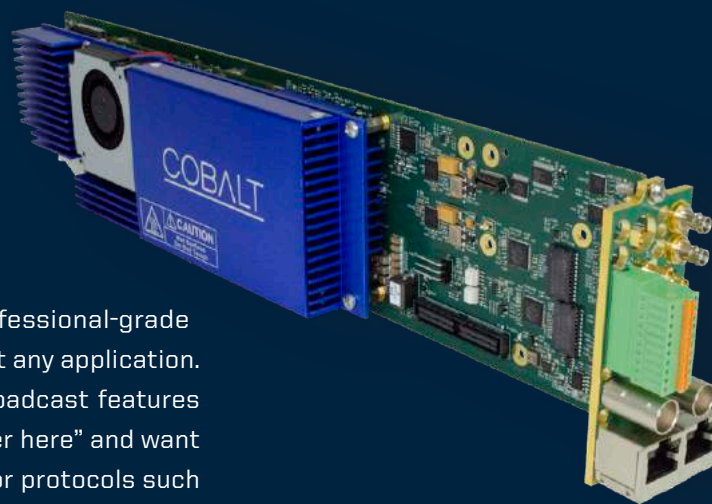
4K HEVC STREAMING ENCODE
12G-SDI OR QUAD 3G-SDI INPUT UHD STREAMING ENCODE TO IP & DVB-ASI OUT

12G/3G-SDI
(or 3x 3G-SDI)

9992-ENC-4K-HEVC

IP   DVB-ASI

TRANSPORT NETWORK

2018 TECHNOLOGY AND ENGINEERING
EMMY®
RECIPIENT

4K HEVC STREAMING DECODE
IP or DVB-ASI input UHD Decode to Quad 3G-SDI or 12G-SDI

IP   DVB-ASI

9992-DEC-4K-HEVC

12G/3G-SDI
(or 3x 3G-SDI)

IN ADDITION TO ENCODERS AND DECODERS, COBALT OFFERS THE FOLLOWING PRODUCTS:

9220 ASI/IP GATEWAY: Converts between ASI and IP for legacy products

9990-RTR: Unicast/Multicast IP stream conditioner and distribution amplifier

9990-TRX: 4-channel MPEG-2/H.264 transcoder with IP and ASI inputs and outputs

ENCODER LINE OF COMPRESSION PRODUCTS

Cobalt offers a comprehensive broadcast-grade encoder line that can address virtually any application. All of our encoders and decoders are designed for reliable 24x7x365 operation, and have extensive frame-accurate support for ancillary data, which includes EIA-608 and 708 closed captions, AFD, SCTE-104/35 for ad insertion, SMPTE 2038 for generic ANC transport, SMPTE 2108 for HDR transport and now OP-47. Additionally, the 9992-ENC includes a built-in framesync at no additional cost. Cobalt encoders offer unparalleled flexibility, where most advanced features are enabled by field-installed license keys. This creates a pay-as-you-go structure, where there is a relatively low entry cost, and features such as audio support, HEVC, 4:2:2, can be added at a later time in an as-needed basis. On the networking side, the encoders support ASI, UDP, RTP, FEC, HLS and RTMP. The encoders also support SRT and RIST (Reliable Internet Stream Transport), both Simple Profile and Main Profile (which includes encryption and authentication).

ENCODER – VIDEO FEATURES

	MPEG-2	H.264	H.265	4:2:0	4:2:2	8-bit	10-bit	ASI	Max Resolution	Max HD Channels
9223		●		●		●		●	1080p60	2
9990-ENC		●		●		●			1080p60	2
9992-ENC	●	●	●	●	●	●	●	●	4Kp60	4

ENCODER – AUDIO FEATURES

	MPEG-1 Layer II	AAC-LC Stereo	AAC-LC 5.1	HE-AAC Stereo/5.1	Dolby AC-3 Stereo/5.1	Dolby EAC-3 Stereo/5.1	LPCM	Max Stereo Channels
9223	●	●						4
9990-ENC	●	●						2
9992-ENC	●	●	●	●	●	●	●	16

All Cobalt Encoders support Dolby Pass-Through.

DECODER LINE COMPRESSION PRODUCTS

Cobalt offers a similar broadcast-grade decoder line that matches the encoder lineup. This includes ASI input support, as well as the same set of networking protocols, including UDP, RTP, FEC, HLS, RTMP, SRT and RIST, including both Simple Profile and Main Profile. Cobalt decoders also support RTSP, which allows the signal from surveillance cameras to be ingested into your workflow in a professional manner.

DECODER – VIDEO FEATURES

	MPEG-2	H.264	H.265	4:2:0	4:2:2	8-bit	10-bit	ASI	Max Resolution	Max HD Channels
9990-DEC	●	●		●		●		●	1080i60	1
9992-DEC	●	●	●	●	●	●	●	●	4Kp60	2

DECODER – AUDIO FEATURES

	MPEG-1 Layer II	AAC-LC Stereo/5.1	HE-AAC Stereo/5.1	Dolby AC-3 Stereo/5.1	Dolby EAC-3 Stereo/5.1	Dolby AC-4 Stereo/5.1	ST 302M LPCM	Dolby E	Max Stereo Channels
9990-DEC	●	●*	●*	●*	●*				2
9992-DEC	●	●	●	●	●	●	●	●	16

*All Cobalt Decoders support Dolby Pass-Through. *5.1 down-mixed to stereo in this product.*

RELIABLE INTERNET STREAMING TRANSPORT (RIST)
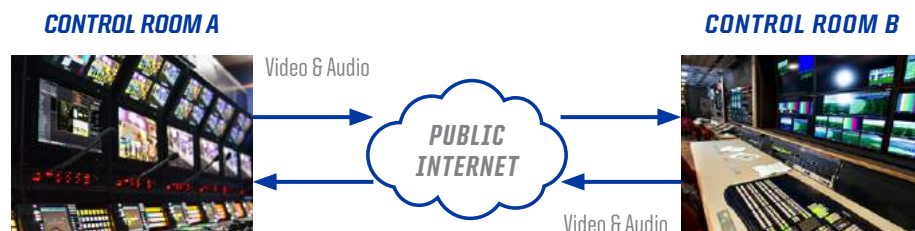## LOW COST INTERNET CONTRIBUTION

RIST is an Internet contribution protocol created by the VSF with participation from Cobalt Digital. The multi-vendor support behind RIST makes it an important part of the technology stack for any video workflow. With less required bandwidth than FEC in most cases, RIST uses the Emmy winning ARQ technology that Cobalt Digital has helped pioneer.

CONTROL ROOM A

Video & Audio

PUBLIC INTERNET

CONTROL ROOM B

Video & Audio

>>RIST
RELIABLE INTERNET STREAM TRANSPORT

>>> RIST Forum

2018 TECHNOLOGY AND ENGINEERING
EMMY
RECIPIENT

Use the Internet as a Low Cost Contribution Network with RELIABLE INTERNET STREAMING TRANSPORT (RIST) – the Interoperable, Multivendor Open Protocol Developed by the VSF for Video Transport Over Unmanaged Networks.

RIST SUPPORT IN COBALT ENCODERS/DECODERS

The compression products now support multi-link operation which includes Bonding (combining multiple links for increased bandwidth) and Seamless Switching (operating links in parallel for increased reliability.)

	RIST Simple Profile	RIST Main Profile		
		Tunneling	Encryption	Authentication
9990-ENC				
9223	●	●		
9990-DEC	●	●	●	●
9992-ENC	●	●	●	●
9992-DEC	●	●	●	●
SafeLink	●	●*	●*	●*

Future Availability

SAFELINK RIST GATEWAY

Cobalt offers the SafeLink RIST Gateway to convert between RIST streams and standard UDP/RTP streams, to support legacy equipment without RIST support.
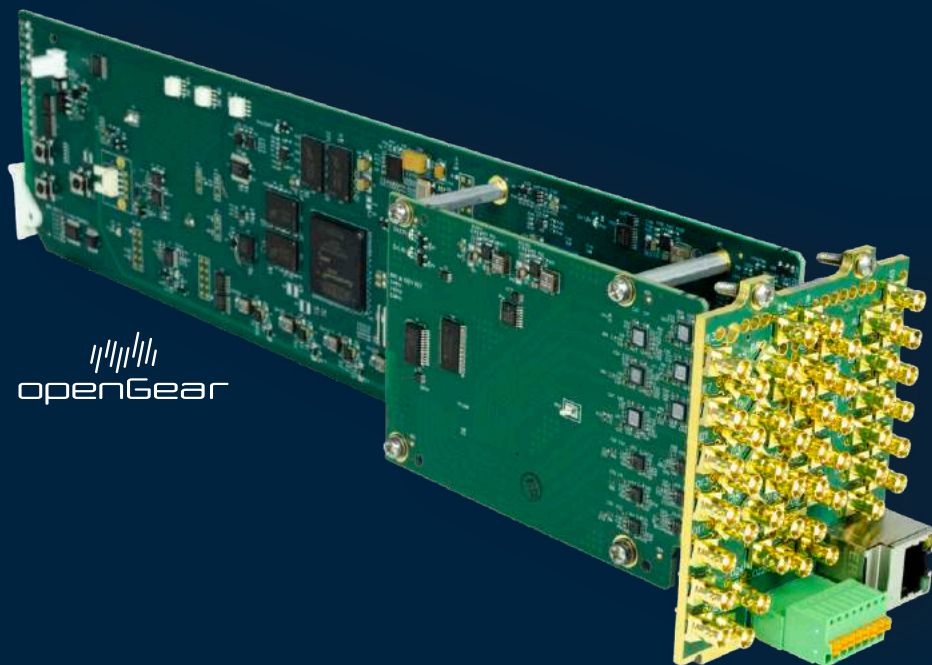
9942-RTR SERIES ROUTERS
12G ROUTER WITH UNPRECEDENTED FLEXIBILITY

The Cobalt 9942-RTR series provides a high-density card-based solution that offers flexibility, ease of use, and integration. The 9942-RTR series offer a built-in Ethernet port, as well as serial and GPIO control interfaces. Also supported are easy-to-use JSON-based ReFLEX, and third-party router protocols that allow for easy integration with A/V control and automation systems, including interface support of industry-standard router protocols and panels. Through the DashBoard™ control system, users can design custom control panels that provide the most intuitive remote control and monitoring interfaces possible.

KEY FEATURES

- openGear® card-based scalable router solution

- Design specifically optimized for 12G signals

- High-density design in openGear® form offers compact 2RU solution

- Flexible control/monitoring options including Ethernet, JSON-based ReFLEX, and third-party router protocols

- Direct interface compatibility with openGear®, Cobalt Reflex, SW-P-08, and Sierra Video (serial) protocols. Direct compatibility with DNF, PESA PNET, and LAWO SNAP panels (and other panels conforming with supported protocols).

- Supports software upgrades allowing expanded functionality without removing cards and minimal disruption

- DashBoard™ remote control status monitoring and setup/control

- Five year warranty

The 9942-RTR Series Routers – Design Specifically Optimized for 12G.

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9942-RTR SERIES MODELS
9942-RTR-12X12-12G 12G/3G/HD/SD-SDI / ASI / MADI 12x12 Router
9942-RTR-24X24-12G 12G/3G/HD/SD-SDI / ASI / MADI 24x24 Router
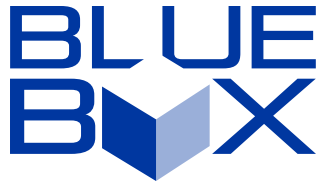
BBG-1300-FR
1RU ENCLOSURE FOR OPENGEAR® CARDS

BLUE BOX

The Cobalt BBG-1300-FR is a 1/3 rack width 1RU openGear® compatible frame capable of housing two cards in a split width or 1 card in a standard width rear IO module. A built in network card allows any openGear® capable card to show up and be controlled or monitored in DashBoard™. Looping reference on the unit provides black burst or tri-level timing to both cards slots within the chassis.

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The BBG-1300-FR 1RU Enclosure Holds up to Two openGear® Cards with Standard Size Rear IO Modules, a Built In Network Card and 60 W of Available Power.

Any card within the Cobalt Product lineup (or any third-party openGear card) with a compatible I/O panel can be housed in the BBG-1300-FR, with a total available power of 60 W. Three BBG-1300-FR units can fit onto a single 1 RU tray for maximum density when a 2RU frame is not feasible. The unit can also be employed in remote locations where a full size 2RU 22 slot openGear® frame is not required.

A front control panel makes status monitoring and network connectivity straightforward with an LCD display screen. The front rotary knob makes navigation simple and easy to use. SNMP control available.

LEARN MORE AT COBALTDIGITAL.COM ↗
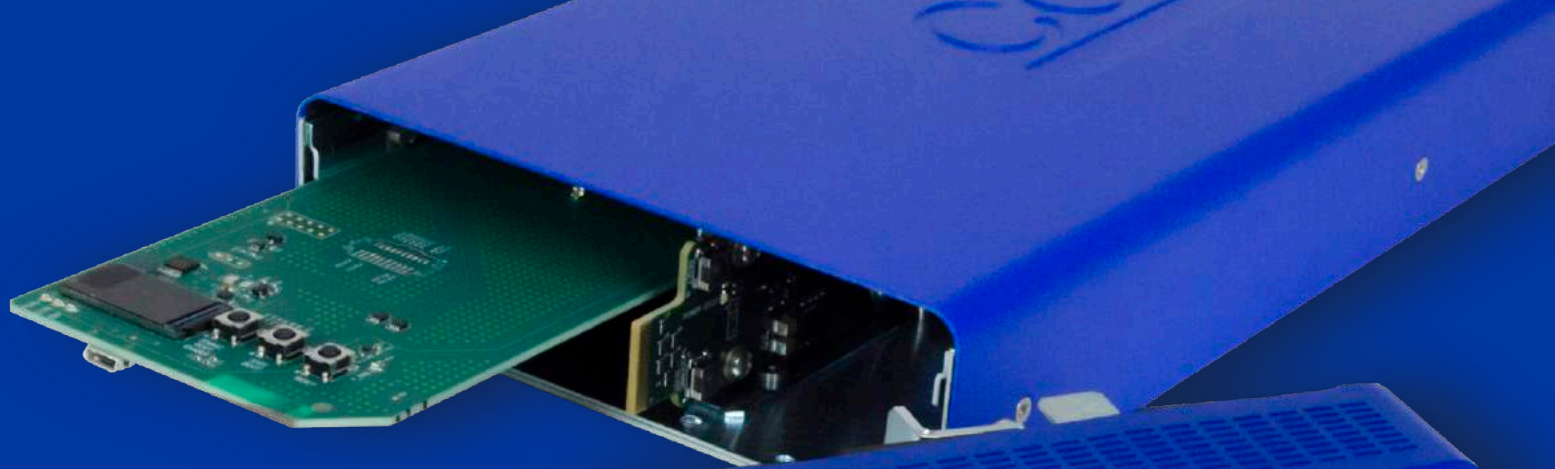
FEATURES

High power for 4K and IP solutions

Full openGear® compatibility supporting openGear-compatible cards as well as latest and legacy openGear® rear modules

One looping reference internally routed to all user card slots

Two power supplies for power redundancy

Network Controller Card enables DashBoard™ for seamless remote setup, monitoring, and control.

Front display with rotary knob and buttons for simple and quick control

Pull-away front door panel allows quick, easy card insertion

Optional Frame Support Bracket kit provides frame rear support for mobile applications

Remote control/monitoring via DashBoard™ or SNMP

Built-in Gigabit Ethernet backplane

Five year warranty

A built in network card, along with an LCD screen and front control panel that includes a rotary knob, makes navigation, status monitoring and network connectivity simple and easy to use.

SNMP control available.

ACCESSORIES FOR THE BBG-1300-FR

BBG-1300 Tray
Rack Mounting Surface for Mounting three BBG-1300-FR units


BBG-TRAY-RSB
Rear Support Bars and Brackets

MULTIVIEWERS
FULL 4K MULTIVIEWERS WITH 12G-SDI, HDMI 2.0

Cobalt's line of 4K multiviewers support 3840x2160 inputs and outputs via 12G-SDI & HDMI 2.0 so you can use cost-effective consumer 4K displays. Also, for 1080p input applications you can drive a 4K quad split without losing a pixel of resolution. They also feature multi-language capability.

SIX INPUT 4K MULTIVIEWER
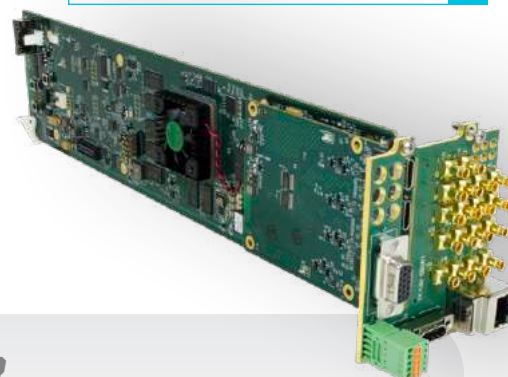
6x 12G-SDI → **9971-MV6-4K** → 12G-SDI / HDMI 2.0

Six 12G-SDI 4K Inputs to a Single 3840x2160 UHD Display via 12G-SDI & HDMI 2.0

HYBRID TEN INPUT 4K MULTIVIEWER
+ OPTIONAL DUAL OUTPUT

12G-SDI / HDMI 2.0 → *+DUAL* **9971-MV6-4H-4K** → 12G-SDI / HDMI 2.0
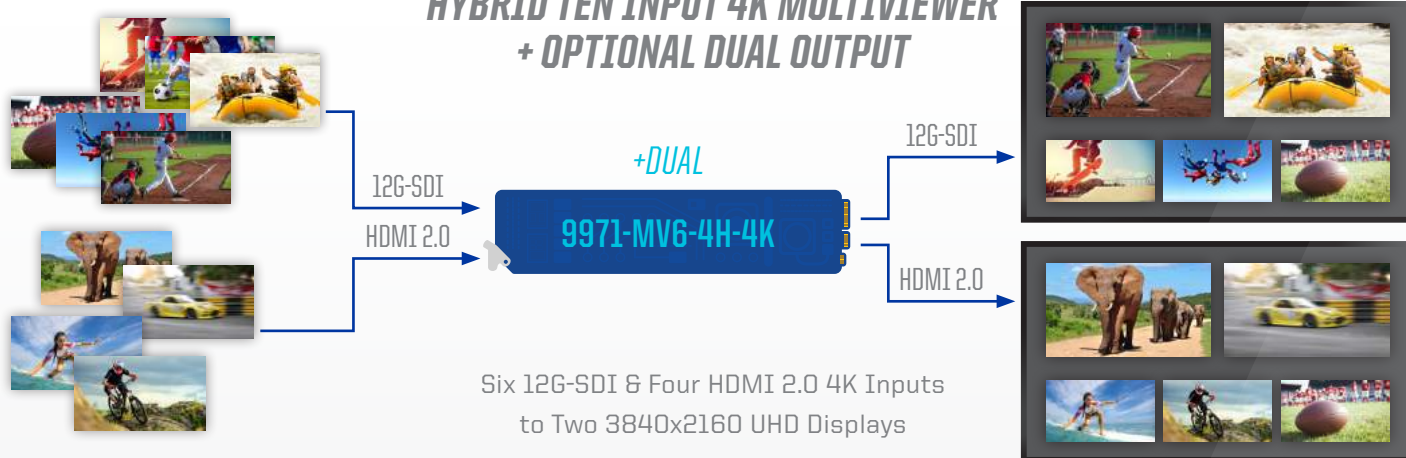
Six 12G-SDI & Four HDMI 2.0 4K Inputs to Two 3840x2160 UHD Displays

	9970-QS	9970-QS-MC	9971-MV6-4K	9971-MV6-4H-4K	9971-MV18-4K
SDI Inputs	5	5	6	6	18
SDI Outputs	2	2	4	4	4
4K			●	●	●
HDMI 2.0 Inputs				4	
HDMI 2.0 Outputs			●	●	●
DUAL Output Capable			●	●	●
Feed Consumer or Professional Monitors	●	●	●	●	●
External Alarming		●			

EIGHTEEN INPUT 4K MULTIVIEWER
+ OPTIONAL DUAL OUTPUT

12G-SDI

+DUAL

9971-MV18-4K

12G-SDI

HDMI 2.0

4K HDR

4K HDR
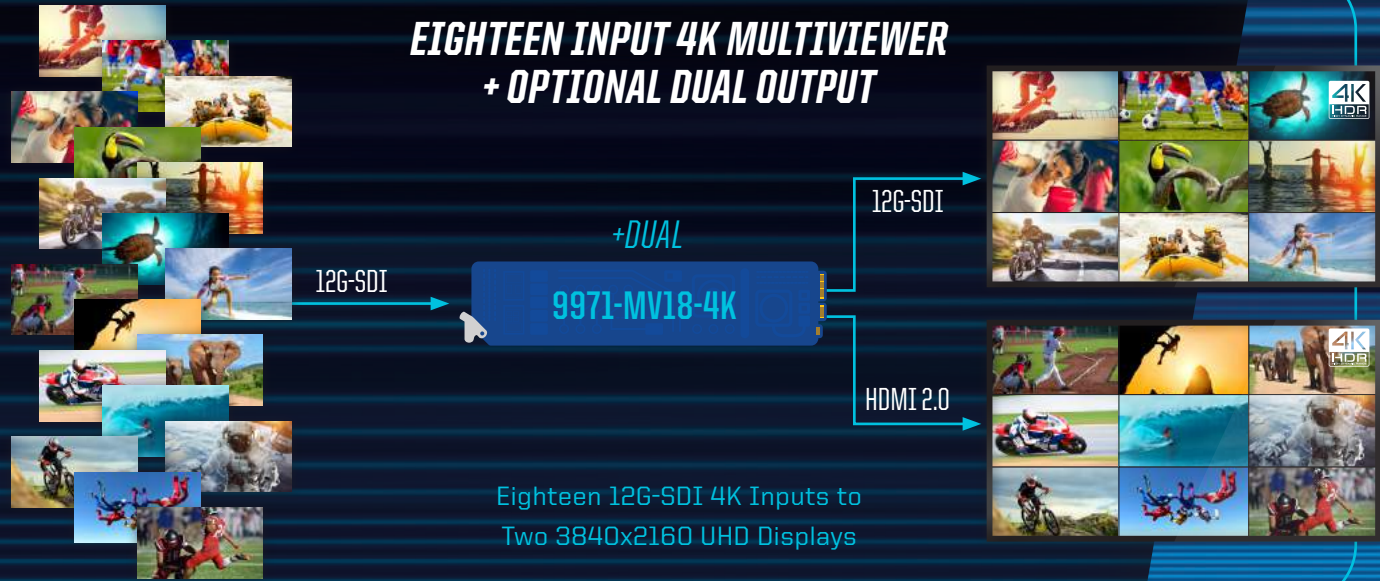
Eighteen 12G-SDI 4K Inputs to
Two 3840x2160 UHD Displays

MASTER CONTROL MULTIVIEWERS
SOLUTIONS FOR PRODUCTION AND MASTER CONTROL

The popular line of 9970-QS 3G-SDI 1080p multiviewers integrate five discrete 3G/HD/SD-SDI or CVBS inputs onto a single 3G/HD/SD-SDI quint-split output, with each image being flexibly inserted into the output image area.

Based on our award-winning 9970-QS, the 9970-QS-MC is specifically designed for master control applications by providing layout optimization that saves space, and easily implemented QC screening of master control ingest.

The 9970-QS-MC provides the ability to orient and arrange PIPs in columns arranged for a 9x16 "portrait" layout. This allows consumer or professional monitors to be oriented "on-end", thereby saving wall-width in any area (especially in space-conscious mobile environments).

LEARN MORE AT COBALTDIGITAL.COM

9x16 "portrait" layout, perfect
for mobile environments

HDR CONVERSION AND DISTRIBUTION
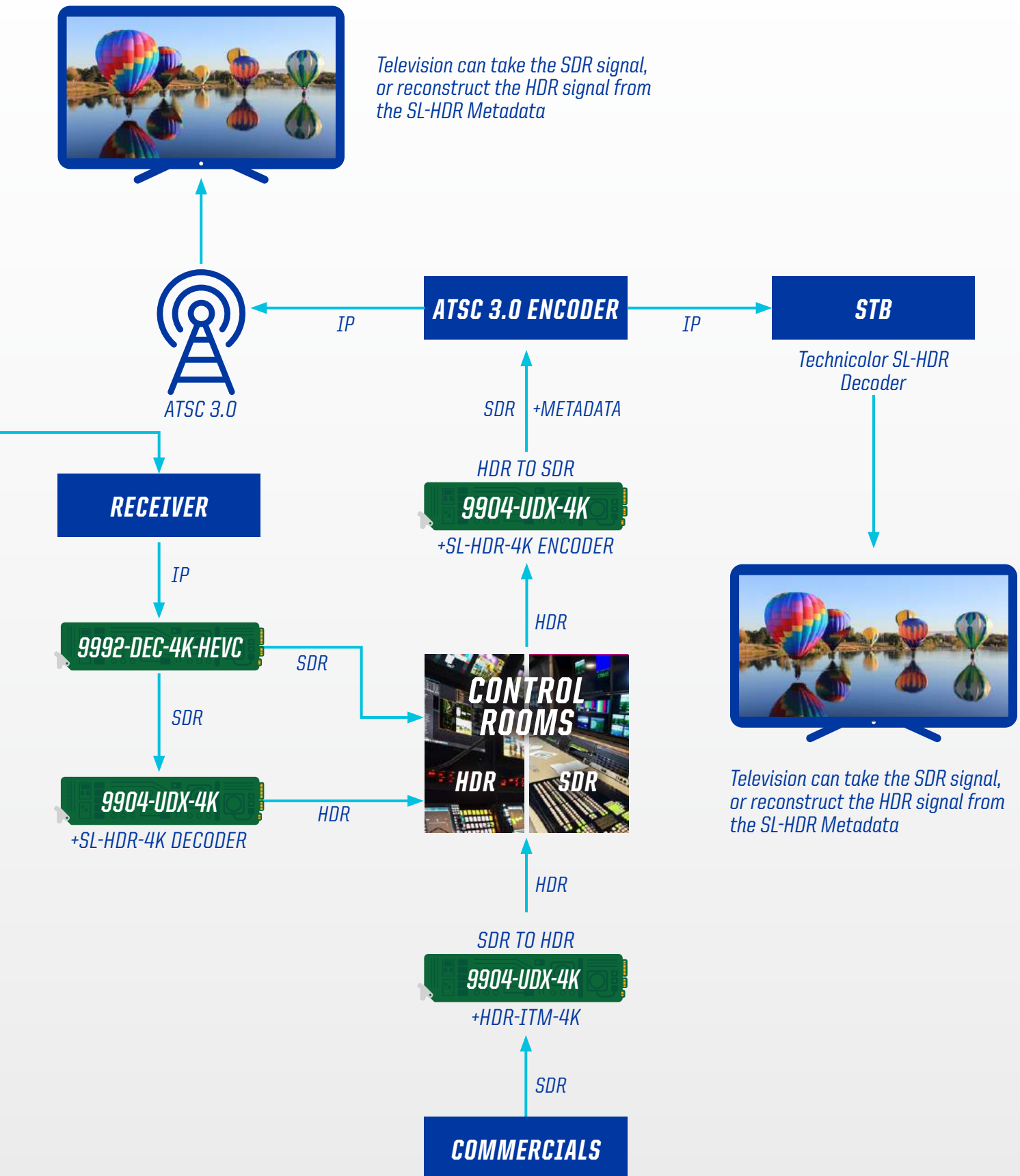## HLG, S-LOG 3 OR PQ FORMATS

Producing HDR broadcasts with a mix of HDR and SDR sources has never been easier, with Cobalt's implementation of Technicolor's Intelligent Tone Mapping (ITM) and SL-HDR technology. With the 9904-UDX-4K processing card SDR can be turned in to HDR dynamically without operator intervention. Similarly HDR sources can be fed to SDR trucks or facilities, just as if the production was shot in SDR.

For distribution of HDR content, Cobalt leverages Technicolor's SL-HDR encode to create an SDR signal with metadata that can be reconstructed downstream to play the original HDR signal, or SDR depending on the capabilities of the TV or set-top-box. This allows for a single stream of transport to support both HDR and SDR devices.

The 9904-UDX now features Technicolor's Reverse ITM technology. which allows a broadcaster to generate an SL-HDR1 HDR rendition of an SDR signal, without any impact to the original SDR signal.

HDR CAMERA — HDR → SWITCHER

SDR CAMERA — SDR → SDR TO HDR **9904-UDX-4K** +HDR-ITM-4K → HDR → SWITCHER

SDR ARCHIVE — SDR → SDR TO HDR **9904-UDX-4K** +HDR-ITM-4K → HDR → SWITCHER

SWITCHER → HDR → +SL-HDR-4K ENCODER **9904-UDX-4K** → SDR → **9992-ENC-4K-HEVC** → IP → TRANSMITTER

SWITCHER → HDR → HDR TO SDR **9904-UDX-4K** +SL-HDR-4K → SDR → SDR TRUCK

Advanced HDR by
technicolor

Television can take the SDR signal, or reconstruct the HDR signal from the SL-HDR Metadata

ATSC 3.0 ENCODER

IP

IP

STB

Technicolor SL-HDR Decoder

ATSC 3.0

SDR   +METADATA

HDR TO SDR

9904-UDX-4K

+SL-HDR-4K ENCODER

RECEIVER

IP

HDR

9992-DEC-4K-HEVC

SDR

CONTROL ROOMS

HDR   **SDR**

SDR

9904-UDX-4K

+SL-HDR-4K DECODER

HDR

HDR

Television can take the SDR signal, or reconstruct the HDR signal from the SL-HDR Metadata

SDR TO HDR

9904-UDX-4K
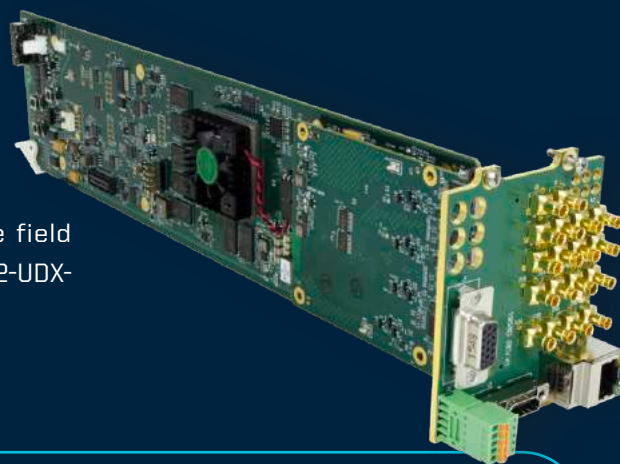
+HDR-ITM-4K

SDR

COMMERCIALS

SOFTWARE DEFINED PROCESSING
FOR 2K & 4K

Cobalt products support licensable feature upgrades that are field installable – you can add functionality when you need it. The 9902-UDX-DSP-CI and 9904-UDX-4K have an extensive library of options.

LEARN MORE AT COBALTDIGITAL.COM

SMPTE-2110 FRAME SYNC & CONVERSION

720P → ST 2110 10GigE → **9904-UDX-4K-IP** → ST 2110 10GigE → IP NETWORK → 1080p

HD & 4K OPTIONAL REMOTE CONTROL RGB COLOR CORRECTION

12G/3G-SDI, 3G-SDI, 3G-SDI, 3G-SDI → **+COLOR-4K** **9904-UDX-4K+COLOR-4K** → 12G/3G-SDI, 3G-SDI, 3G-SDI, 3G-SDI

Ethernet

OGCP-9000/CC Control Panel

	9902-UDX-DSP-CI	9904-UDX-4K	9904-UDX-4K-DSP	9904-UDX-4K-IP
Software Defined Processing	●	●	●	●
4K 3840x2160		●	●	●
HD 1080p/1080i/720p	●	●	●	●
12G I/O		●	●	●
HDMI 2.0 I/O		●	●	●
HDMI 1.4 I/O	●	●	●	●
PAL/NTSC Composite Analog	●			
AES I/O	●	●	●	●
Format/Standards Conversion	●	●	●	●
IP Formats (2110 & 2022-6/7)	●			●
Advanced Audio Processing	●		●	
Native SMPTE ST 2110		●		

OTT MULTISCREEN DELIVERY
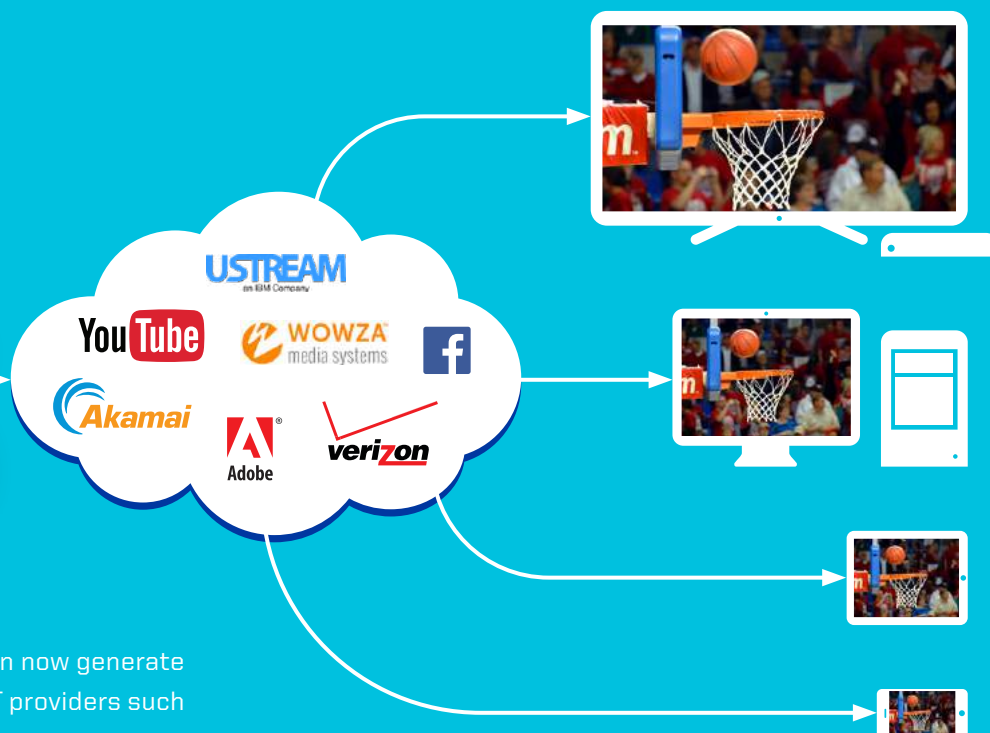## RTMP & HLS STREAMING

With consumer preference changing to consume media across a range of devices, content providers need to ensure the ability to deliver content to those devices. Cobalt Digital encoding products provide the on-site appliance for delivery to any range of Content Distribution Networks.
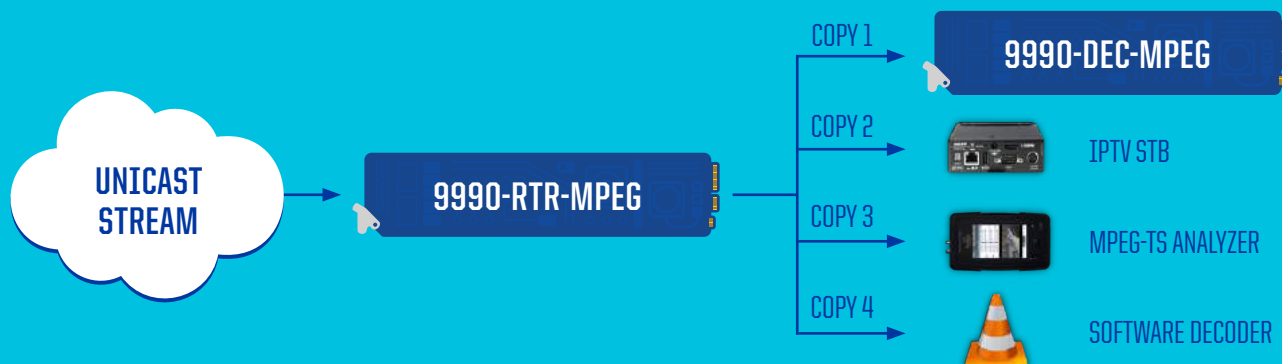
LEARN MORE AT COBALTDIGITAL.COM ↗

openGear

2019 TECHNOLOGY AND ENGINEERING
EMMY ®
RECIPIENT

AVAILABLE FOR
9223
9990-ENC
9992-ENC
9992-ENC-4K-HEVC

USTREAM
on IBM Company

You Tube

WOWZA media systems

f

Akamai

Adobe

verizon

The 9992-ENC series of encoders can now generate ad insertion triggers suitable for OTT providers such as YouTube and Akamai.

UNICAST STREAM CONDITIONER & DISTRIBUTION AMPLIFIER

UNICAST STREAM

9990-RTR-MPEG

COPY 1 → 9990-DEC-MPEG

COPY 2 → IPTV STB

COPY 3 → MPEG-TS ANALYZER

COPY 4 → SOFTWARE DECODER

Streams are De-Jittered & Re-Clocked then Replicated up to Eight Times

Cobalt Digital Inc. designs and manufactures award-winning IP and 12G/6G/3G/HD/SD conversion, throwdown, and multiviewer technology for the production and broadcast television environment. As a founding member in the openGear® initiative, Cobalt offers a full range of openGear-compliant solutions as well as video and audio processing products for closed caption compliance, production trucks, master control, HD news, signal transport, audio loudness processing, and color correction. Cobalt's Blue Box Group™ line of interface converter throwdown boxes streamlines and simplifies a wide range of IP and 12G/6G/3G/HD/SD conversion and processing tasks. In addition, the company's multi-image display processors enable multiviewer capabilities in the most demanding studio and remote production/broadcasting environments. Cobalt Digital products are distributed through a worldwide network of dealers, system integrators, and other partnerships.

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