

# ENGINEERING BEYOND THE SIGNAL

2020-2021 PRODUCT BRIEF

COBALT

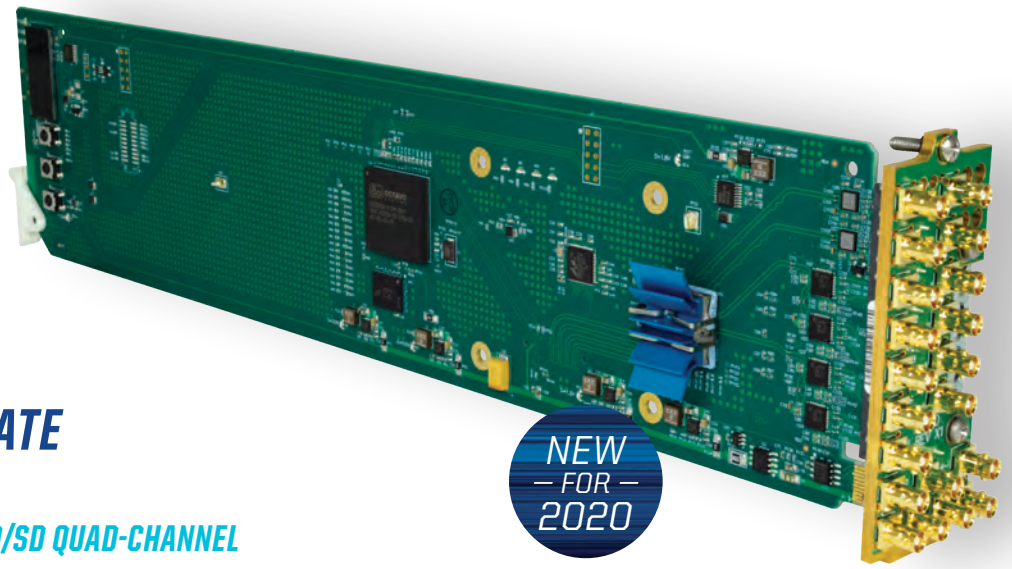


# BEYOND THE SIGNAL

## 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 specific 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



## QUAD-CHANNEL MULTI-RATE RELOCKING DA

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

The all-new 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.

### 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

### KEY FEATURES

- 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 for 12G/6G/3G/HD/SD-SDI and ASI
- Input data rate auto-detection for all industry-standard data rates
- Optional fiber inputs/outputs via SFPs
- One-card solution for distribution of 4K/8K content over 12G-SDI interfaces
- Card display and DashBoard™ status input lock indicators
- Failover provides backup to selected secondary inputs if primary input loses lock. Available for both coax and (optional) fiber inputs.
- Five year warranty

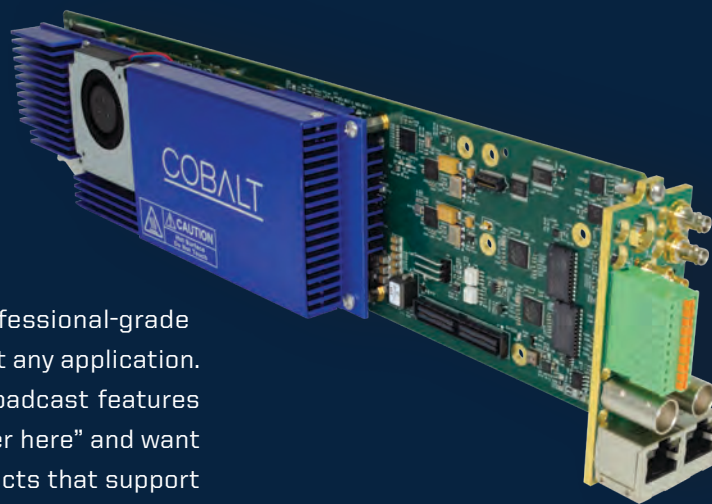


## COMPRESSION

### TRADITIONAL BROADCAST FEATURES WITH ADVANCED NETWORK OPTIONS

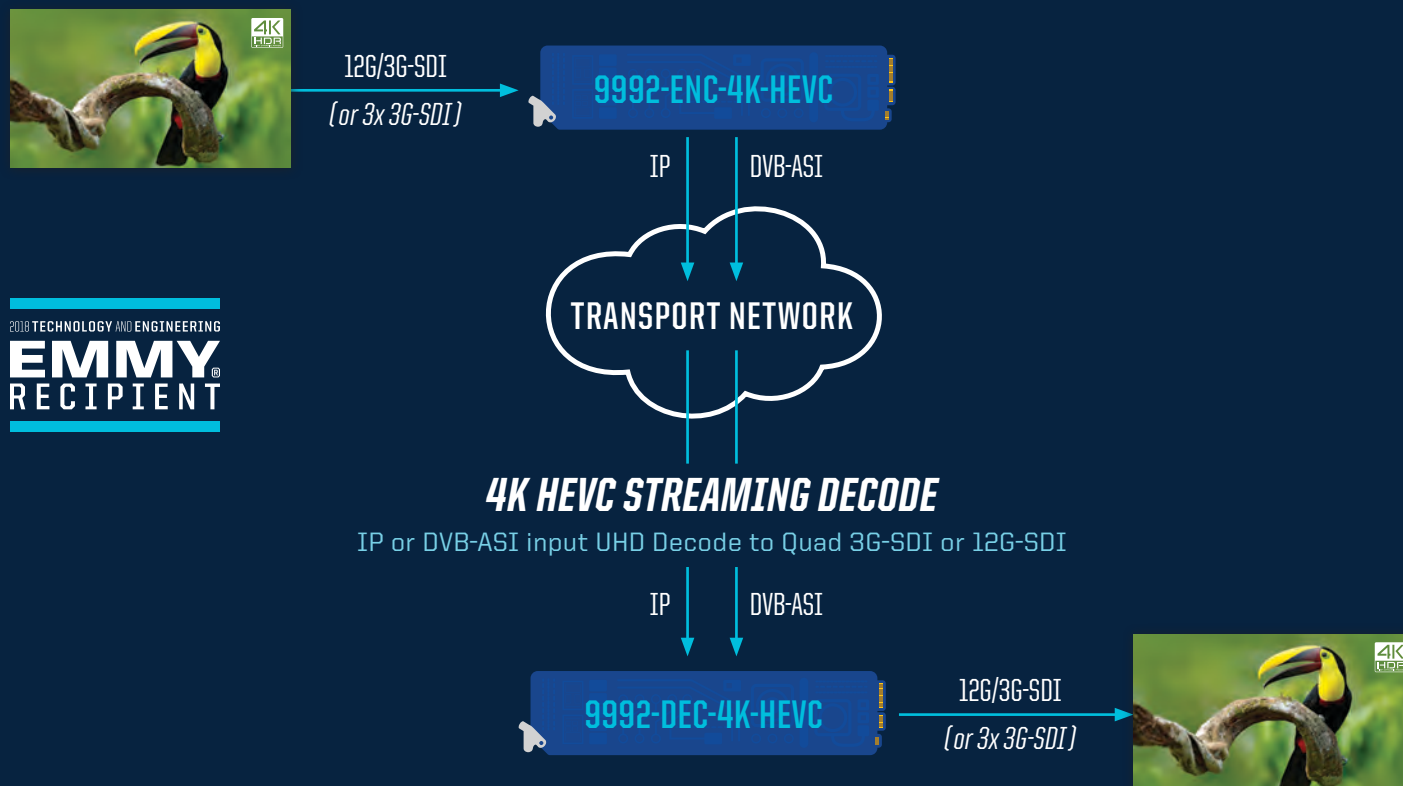
Cobalt Digital has an extensive set of products with professional-grade support for compressed audio and video, suitable for almost any application. Cobalt products are unique in their blend of traditional broadcast features with advanced networking options. If you have a signal “over here” and want to send it “over there”, we have you covered! 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.



## 4K HEVC STREAMING ENCODE

12G-SDI OR QUAD 3G-SDI INPUT UHD STREAMING ENCODE TO IP & DVB-ASI OUT



**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 are designed for reliable 24x7x365 operation, and have extensive frame-accurate support for ancillary data, which includes CC, AFD, SCTE-104/35 for ad insertion, SMPTE 2038 for generic ANC transport, and SMPTE 2108 for HDR transport. 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 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	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 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

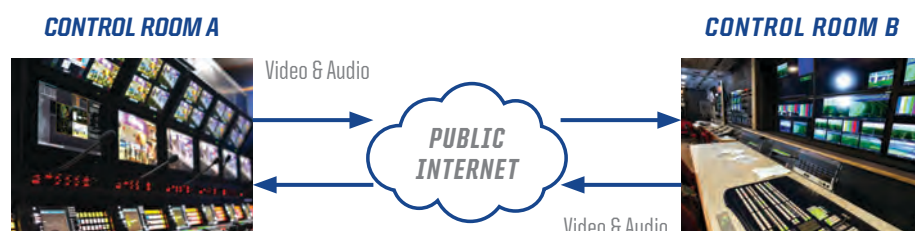
	MPEG-1 Layer II	AAC-LC Stereo	AAC-LC 5.1	HE-AAC Stereo/5.1	Dolby AC-3 Stereo/5.1	Dolby EAC-3 Stereo/5.1	Max Stereo Channels
9990-DEC	●	●	●**	●**	●**	●**	2
9992-DEC	●	●	●	●	●	●	16

\* All Cobalt Decoders support Dolby Pass-Through. \*\* Surround channels downmixed to stereo in this model.

# RELIABLE INTERNET STREAMING TRANSPORT (RIST)

## LOW COST INTERNET CONTRIBUTION

RIST is an Internet transport protocol created by the VSF with contributions 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.



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

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

\* Future Availability

### SAFELINK RIST GATEWAY

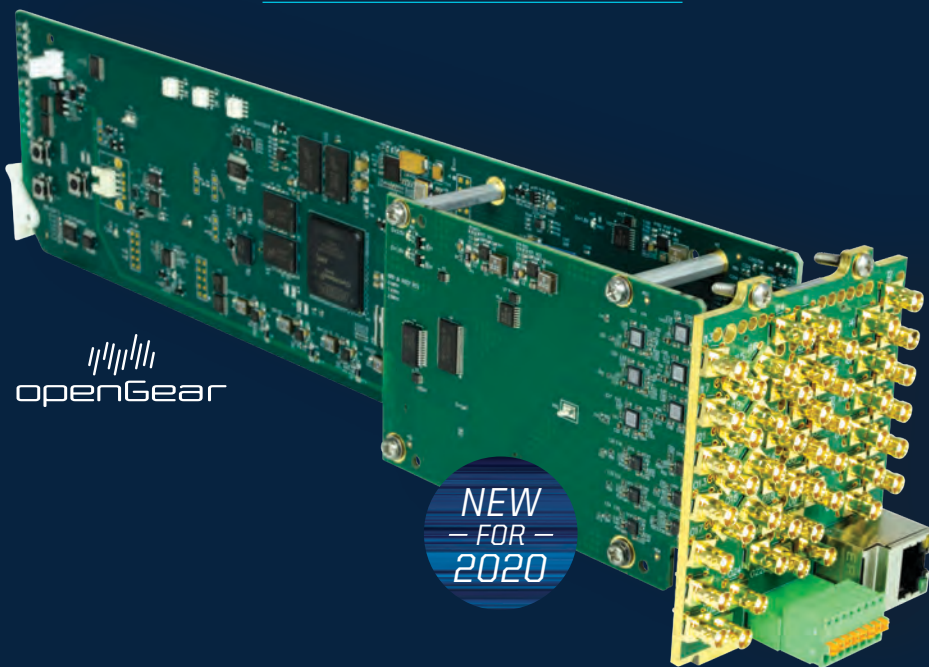
Cobalt offers the SafeLink RIST Gateway to convert between RIST streams and standard UDP/RTP streams, to support legacy equipment without RIST support.

# 9942-RTR SERIES ROUTERS

## 12G ROUTER WITH UNPRECEDENTED FLEXIBILITY

The Cobalt 9942-RTR series provides a high-density card-based solution that offers unprecedented 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, SNMP, 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. GUI choices include an integrated HTML-5 Web server and support for the DashBoard™ control system, allowing users to design custom control panels that provide the most intuitive remote control and monitoring interfaces possible.

*The 9942-RTR Series Routers – Design specifically optimized for 12G support.*



### KEY FEATURES

- Exclusive openGear® card-based scalable router solution
- Design specifically optimized for 12G support
- High-density design in openGear® form offers compact 2RU solution
- Flexible control/monitoring options including Ethernet, JSON-based ReFLEX, SNMP, 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

### 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*

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 without taking additional outputs on the custom rear IO module.



*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 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 20 slot openGear® frame is not required.

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





## FEATURES

High power for 4K and IP solutions

Full openGear® compatibility supporting openGear-compatible cards as well as latest and legacy 20-slot frame openGear® rear modules

One looping reference internally routed to all user card slots

Two power supplies for power redundancy

Network Controller Card enables Dash-Board™ for seamless remote setup, monitoring, and control.

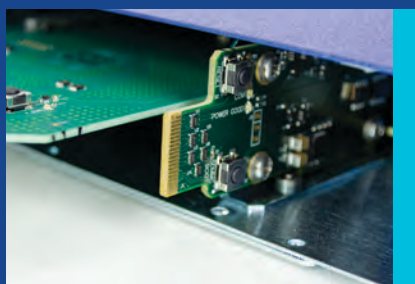
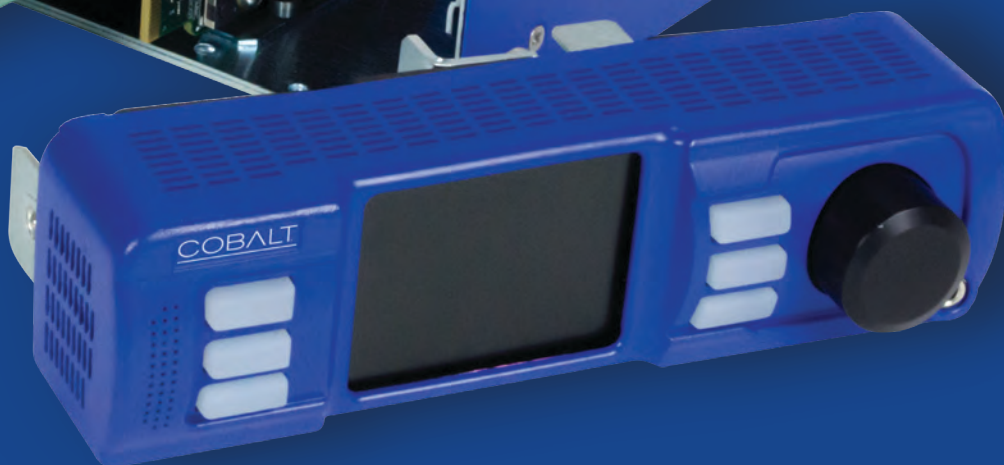
Front display with rotary knob and buttons for simple and quick control

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

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



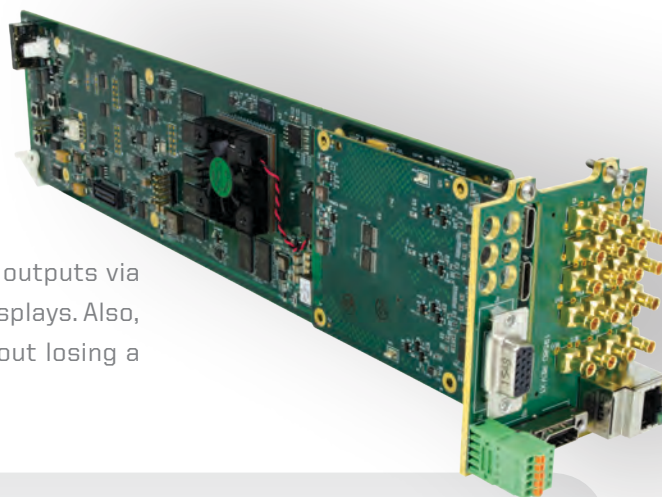
### BBG-TRAY-RSB

Rear Support Bars and Brackets

# MULTVIEWERS

## FULL 4K MULTVIEWERS 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-efficient 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.

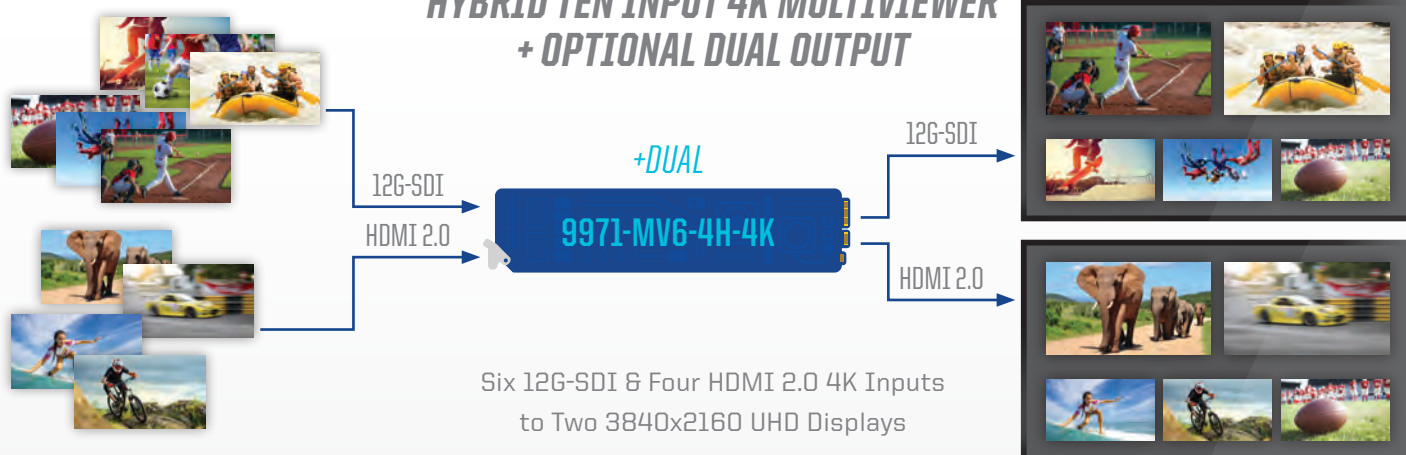


### SIX INPUT 4K MULTIEWER



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

### HYBRID TEN INPUT 4K MULTIEWER + OPTIONAL DUAL OUTPUT

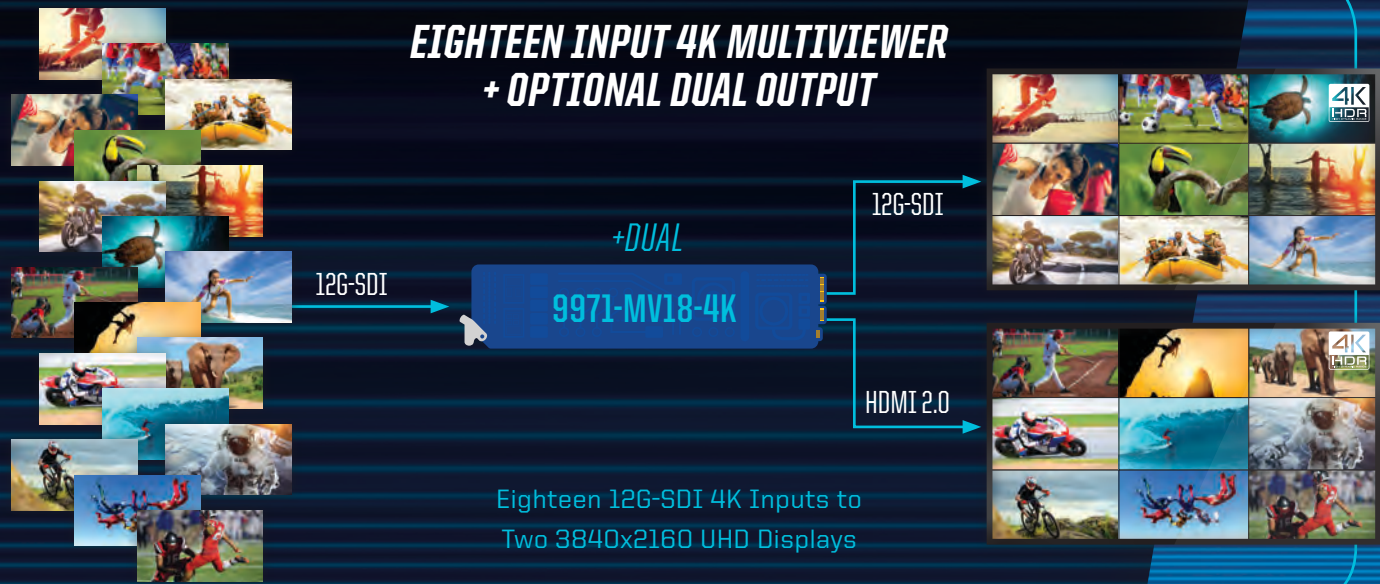


Six 12G-SDI & Four HDMI 2.0 4K Inputs  
to Two 3840x2160 UHD Displays

	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



## MASTER CONTROL MULTIVIEWERS SOLUTIONS FOR PRODUCTION AND MASTER CONTROL



9x16 "portrait" layout, perfect  
for mobile environments

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.

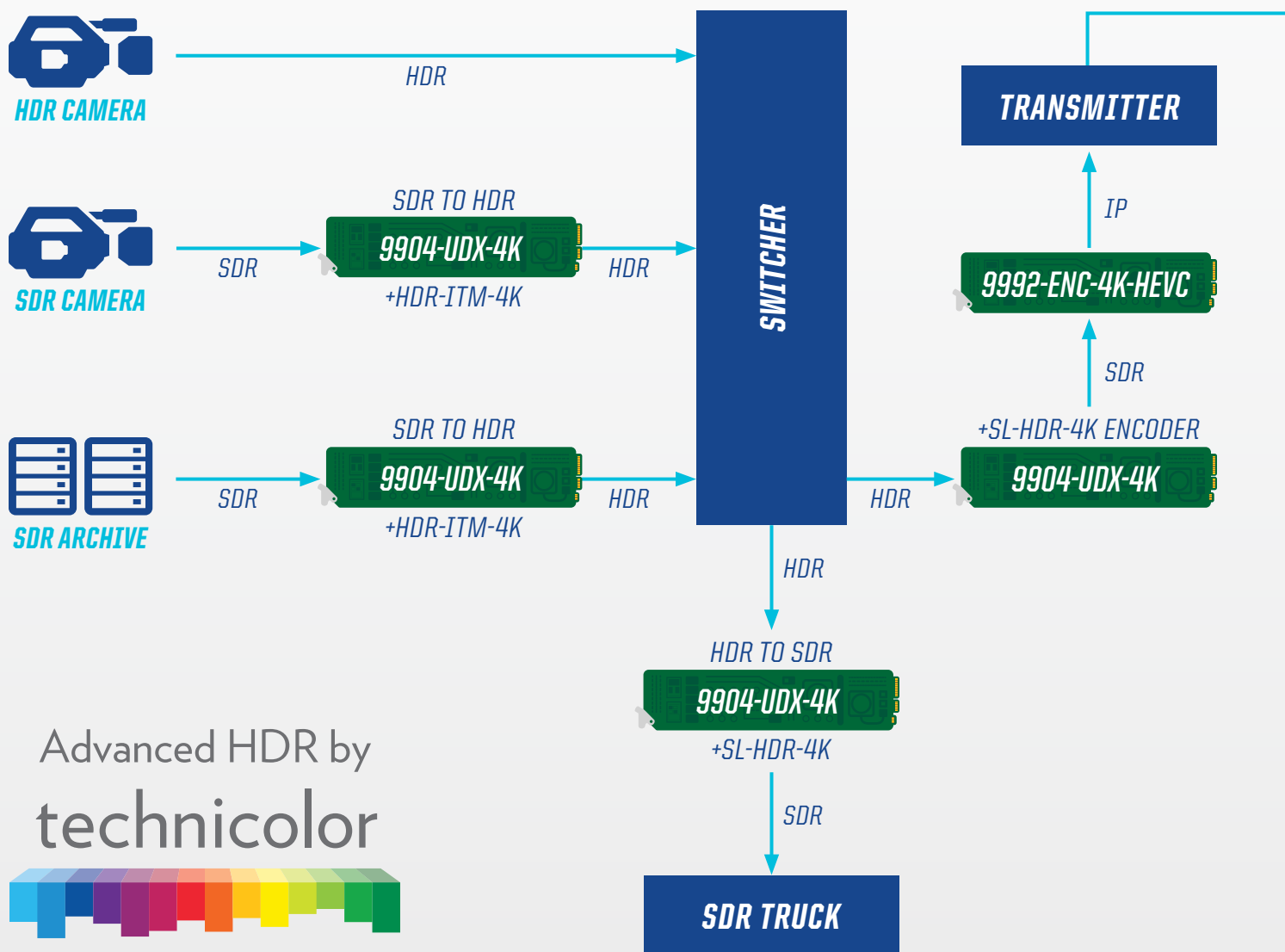
The 9970-QS-MC provides the ability to orient and arrange PIPs in columns arranged for a 9x16 "portrait" layout. This allows consumer or professional monitors to be oriented "on-end", thereby saving wall-width in any area (especially in space-conscious mobile environments).

## HDR CONVERSION AND DISTRIBUTION

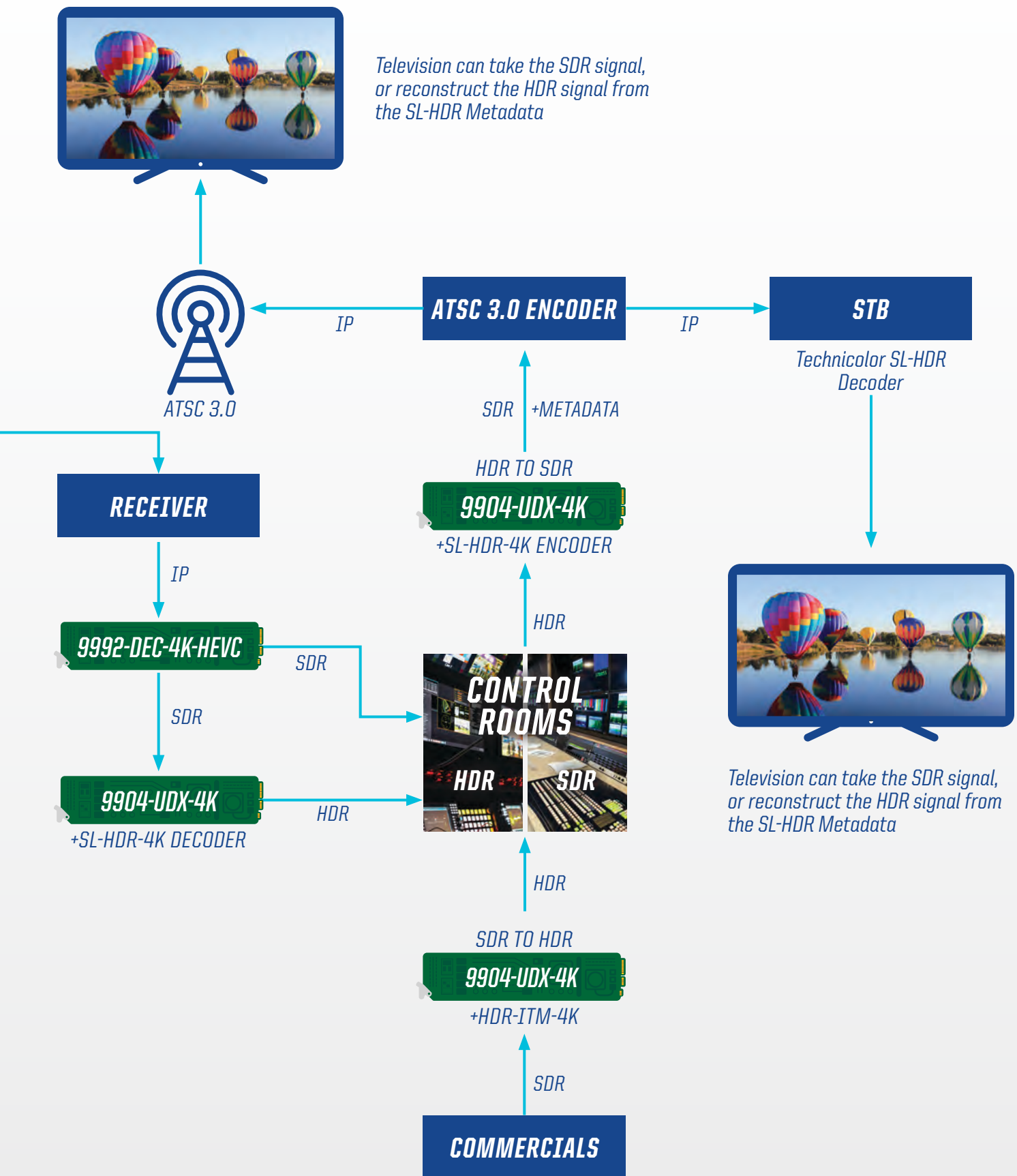
### HLG, S-LOG 3 OR PQ FORMATS

Producing HDR broadcasts with a mix of HDR and SDR sources has never been easier than 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.

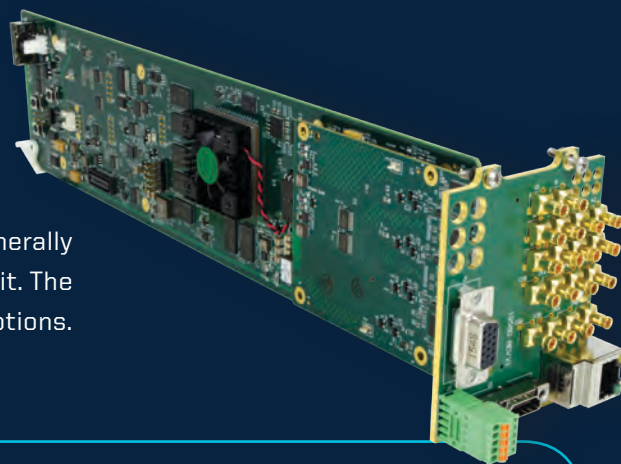






## SOFTWARE DEFINED PROCESSING FOR 2K & 4K

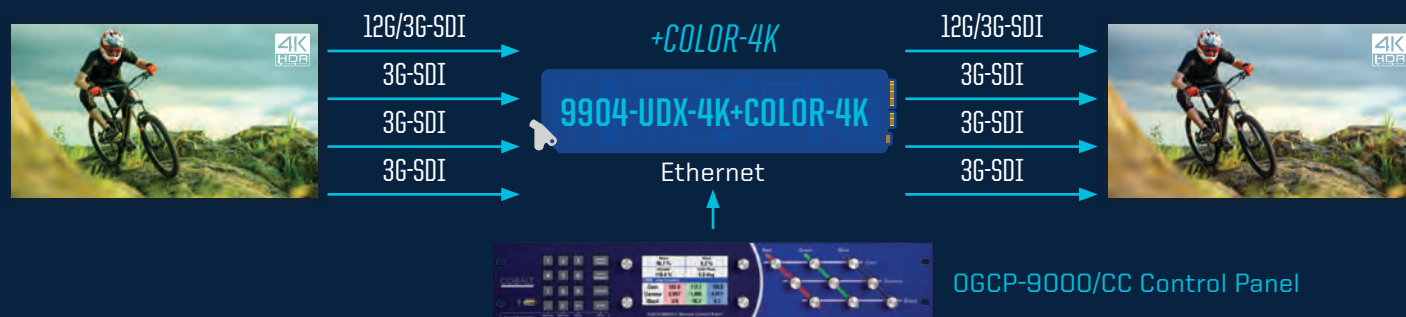
Cobalt products support licensable feature upgrades that are generally field installable meaning you can add functionality when you need it. The 9902-UDX-DSP-CI and 9904-UDX-4K have an extensive library of options.



### SMPTE-2110 FRAME SYNC & CONVERSION



### HD & 4K OPTIONAL REMOTE CONTROL RGB COLOR CORRECTION



	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	•		•	

# OTT MULTISCREEN DELIVERY

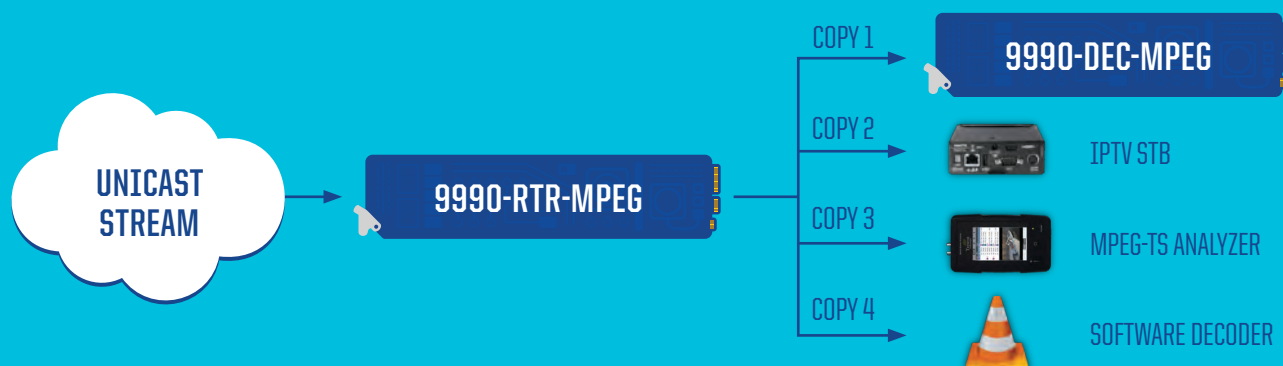
## RTMP & HLS STREAMING



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.



## UNICAST STREAM CONDITIONER & DISTRIBUTION AMPLIFIER



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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