



H.264 and JPEG 2000 Recording and Streaming Codecs

Simulation



Command & Control



C4ISR



UAV Training Systems



Missile Testing



Command Information Centers (CIC)



Highest Fidelity Encoding using H.264 and JPEG 2000 Compression

Concurrent Recording/Streaming and Recording/Replay

Local and Network Recording

Graphics and HD video up to 1920 x 1200

Variable Speed Playback

Event Marking





H.264 and JPEG 2000 Recording & Streaming

RGB Spectrum offers an extensive line of leading-edge codecs packed with unique capabilities for streaming and recording. Our innovative DSx™ codecs offer superior high profile H.264 encoding. Our DGy™ codecs provide visually lossless JPEG 2000 encoding for applications requiring the best possible quality for recording.

H.264 vs. JPEG 2000	
H.264	JPEG 2000
<ul style="list-style-type: none">• Ideal for Streaming	<ul style="list-style-type: none">• Ideal for Recording
<ul style="list-style-type: none">• Efficient, Low Bandwidth	<ul style="list-style-type: none">• Visually Lossless
<ul style="list-style-type: none">• PC Decoding or Dedicated Decoder	<ul style="list-style-type: none">• Encodes Every Frame and Full Color Range (4:4:4 vs. 4:2:0)

Our DSx and DGy codecs provide an unmatched combination of exceptional image quality, high performance, and scalability, with exclusive features not found with other codecs, such as concurrent recording/streaming and concurrent recording/playback.

RGB Spectrum's codecs are the de facto standard for mission-critical applications, including vessel and vehicle consoles, command and control, simulation, training, missile testing, and C4ISR. High-profile installations include F35 Joint Strike Fighter mission simulators, P-8 Poseidon WST and PTT trainers, simulators for the Global Hawk UAV, F-16 and F-22 aircraft, Apache, Kiowa, Chinook, and Blackhawk helicopters, and deployments on the U.S. Navy destroyer fleet, the Canada Navy frigate fleet, and the U.S. Missile Defense Agency THAAD and MEADS programs.

The DSx and DGy codecs – 24/7 operation, unrivaled capabilities and performance.



F-35 Mission Simulator

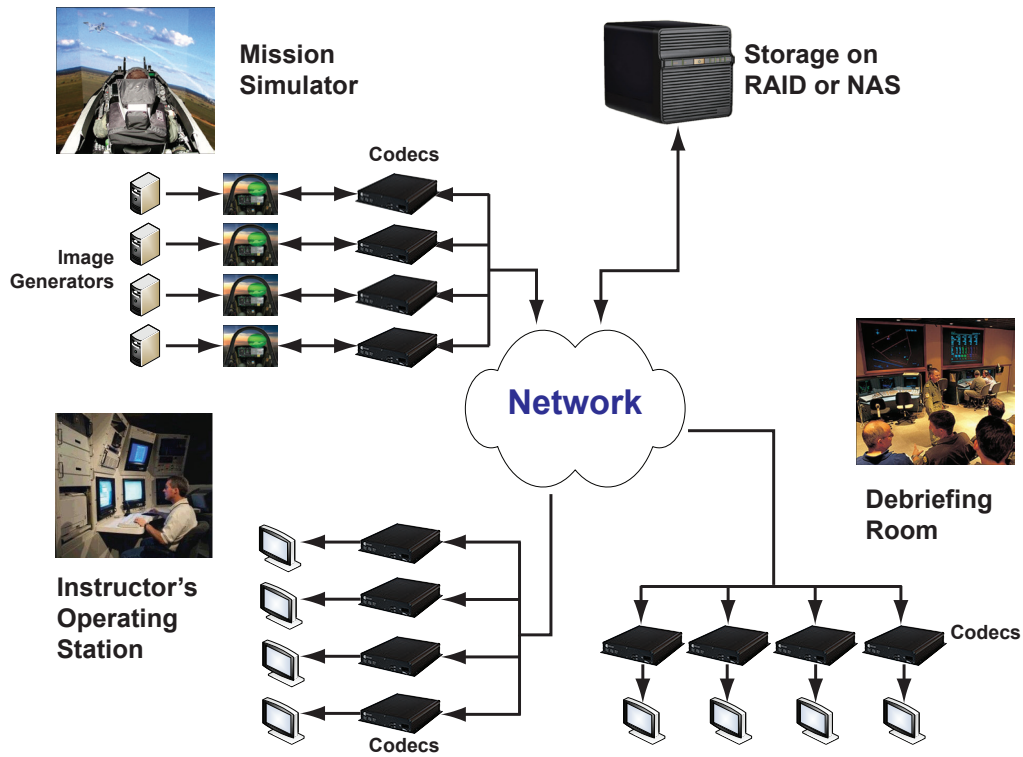


Ground Control Station Trainer



Multi-Channel Operation

DSx and DGy codecs can be interconnected to support multi-channel concurrent recording, streaming, and replay. Flexible systems can be configured to support up to 32 independent channels.

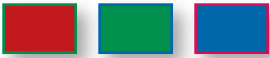


Mission Simulation Diagram

The Multi Channel Manager™ (MCM) is a stand-alone software package that controls multiple codecs. An intuitive GUI is easy to use and requires minimal learning time.



- Operates multiple codecs for multi-channel recording, playback & streaming
- Controls up to 32 interconnected codecs from a single control panel
- Record and replay to/from remote NAS storage devices
- Place and randomly access event marks



DSx

— H.264 Graphics and Video Recording and Streaming



Best-in-Class Image Quality

- H.264 *high* profile compression delivers superior image quality

Concurrent Recording and Streaming

- Exclusive ability to record while streaming

Highest Resolution Encoding

- Industry-leading resolution up to 1920x1200

The DSx™ 300 codec's advanced H.264 compression provides an unmatched combination of best-in-class image quality and features for the recording and streaming of graphics and video over IP networks. The codec encodes, records, streams, and replays signals up to 1920x1200 resolution. Our H.264 high profile compression delivers the best image quality with sharp, crisp detail versus “softer” imagery depicted in main and baseline profiles used in most other codecs.

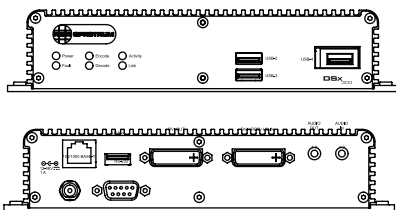
The codec offers recording to locally connected USB storage devices, including memory sticks, and to external network storage devices, such as NAS devices and servers. The codec supports concurrent streaming and recording – an RGB Spectrum exclusive.

IP streams can be decoded with commercial off-the-shelf PC software or, where very low latency is required, DSx codecs. Each codec can decode and display one graphics/HD image or four SD images.

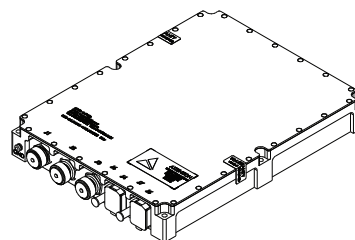
Leading-edge features include on-screen display (OSD), external time code synchronization, event marking, variable speed playback, random access, confidence monitoring, and a unique failsafe recording feature which protects recordings-in-process.

Two special models are offered: The DSx 300M secure access model is designed without USB ports, preventing unauthorized access and transfer of confidential data. The DSx MILPACK 300 is a mil-spec ruggedized model designed for challenging, mission critical environments.

To assist with integration, the DSx 300 offers the choice of an external power module or Power-over-Ethernet (PoE). The codec comes in a fanless, compact, rugged enclosure. Remote operation is simple using an embedded, web-based graphical user interface accessible by any standard web browser.



DSx 300



DSx 300 MILPACK



DGy

— JPEG 2000 Graphics and Video Recording



Highest Fidelity Reproduction

- Leading-edge JPEG2000 compression delivers superior image quality with sharp, crisp imagery, preserving the most intricate detail

Concurrent Recording and Replay

- Unique ability to record a live input while replaying a previous recording

Unmatched Feature-Rich Performance

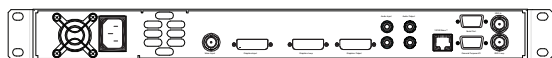
- Packed with best-in-class capabilities and exclusive features: high resolution encoding, event marks, frame-by-frame jog/shuttle, variable speed playback, external time code synchronization, signal confidence monitoring, and a unique failsafe recording feature.

The DGy™ series of JPEG2000 codecs record, transmit, and stream high quality graphics and video at up to 1920 x 1200 resolution. These codecs set a new standard in image quality, using JPEG2000 compression to achieve visually lossless results.

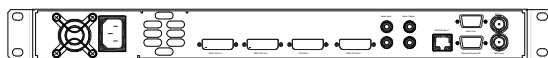
The codecs support recording and streaming of computer, radar, sonar, FLIR, X-Ray, and HD signals at up to 30 frames per second. Models are available with a built-in removable hard disk and an optional fixed drive for storage. All models support external network attached storage devices, such as RAID's, offering virtually unlimited storage capacity. Dual channel models offer the ability to record two inputs at half rates, with fully synchronized playback.

DGy codecs offer an unparalleled feature set, including external time code synchronization (IRIG-B or Network Time Server), event marking, random access, variable speed playback, frame-by-frame jog/shuttle, and a unique failsafe recording feature which protects recordings-in-process. Simultaneous record/replay capability allows review of imagery while recording is still in process.

	DGy JPEG 2000 Codec Models				
	201HD	301HD	201x	301x	401x
Internal Recording Storage	Yes	No	Yes	No	Yes
External Network Attached Recording Storage	Option	Yes	Option	Yes	Option
Maximum Record/replay Resolution	1920x1200	1920x1200	1600x1200	1600x1200	1600x1200
Maximum Stream Resolution	1600x1200	1600x1200	1600x1200	1600x1200	1600x1200
Frame Rate at Maximum Resolution: Recording	30fps	30fps	20fps	20fps	10fps/chan.
Frame Rate at 1280x1024 Resolution: Recording	30fps	30fps	30fps	30fps	15fps/chan.
Frame Rate at Maximum Resolution: Streaming	20fps	20fps	20fps	20fps	10fps/chan.
Recording/Playback/Streaming Channels	1	1	1	1	2



Model 201x/201HD with Optional IRIG-B Time Code



Model 401x with Optional IRIG-B Time Code



Specifications

	DSx 300	DGy Series
Graphics & HD Video Input		
Signal type	DVI or analog RGB	DVI or analog RGB
Connector	DVI-I	DVI-I
Channels	1	Models 201HD, 201x, 301HD, 301x: 1 Models 401x: 2
Signal formats	Non-interlaced	Interlaced or non-interlaced
Resolution	1920 x1200 to 640x480	Models 201HD & 301HD: 1920x1200 to 640x480 Models 201x, 301x, 401x: 1600x1200 to 640x480

Audio		
Analog Input		
Sample rate	up to 48kHz	11.025, 22.05, or 44.1 kHz
Connector	3.5mm Audio Mini-Jack	2x RCA
Digital Input		
Sample rate	up to 48kHz	11.025, 22.05, or 44.1 kHz
Connector	DVI-I	DVI-I
Analog Output		
Channels	Stereo	2 mono or 1 stereo
Connector	3.5mm Audio Mini-Jack	2x RCA

Encoding/Recording/Streaming		
Format	H.264, RTSP	JPEG 2000
Profiles	High, Baseline, & Main (Level 4.1)	Not applicable
Bit Stream Bandwidth	User selectable from 96kbps to 6Mbps	40Mbps
Time Code Synchronization	Network Time Server (NTS/NTP)	Network Time Server (NTS/NTP), Optional IRIG, B123, DCLS or 1kHz modulated
Audio Compression	AAC LC (Low complexity)	JPEG 2000

Video Output & Monitoring		
Format	Unprocessed or encoded/decoded image	Unprocessed or encoded/decoded image
Signal type	DVI	DVI or RGB
Connector	DVI-I (digital only)	DVI-I
Frame Rate	HD, 1920x1080 up to 30 fps, 1920x1200 up to 24 fps	Models 201HD/301HD: up to 1920x1200 @ 30 fps Models 201x/301x/401x: up to 1600x1200 @ 20 fps, 1280x1024 @ 30 fps

Recording		
Local Codec Storage	DSx 300: (4) USB Type-A ports DSx 300M: No USB ports	Internal Removable drive: 201HD, 201x, & 401x models Fixed Drive Option for 201HD, 201x, & 401x models
External Remote Storage	Network Attached Storage (NAS) devices; Linux Network File System (NFS)	Network Attached Storage (NAS) devices; Linux Network File System (NFS)
Options	Not Applicable	Automatic backup (models 201HD, 201x, 401x) Remote Storage / NAS (models 201HD, 201x, 401x)

Control		
Network		
Type	10/100/1000 Base-T Ethernet	10/100/1000 Base-T Ethernet
Connector	RJ 45	RJ 45
Command line	Internal telnet server	Internal telnet server
Graphical interface	Internal web server for browser based control	Internal web server for browser based control
RS-232 Serial		
Connector	9 pin D sub female	9 pin D sub female
Function	Command line control	Command line control

	DSx 300	DGy 201HD/201x/401x	DGy 301HD/301x
Power	Power over Ethernet (PoE) (802.3af) or external 12-40 VDC power supply	100 - 240 VAC autoranging, 50-60 Hz < 60 Hz	100 - 240 VAC autoranging, 50-60 Hz < 60 Hz
Size	Width:	8.0" (20.3cm)	17.5" (44.5cm)
	Depth:	9.0" (22.9cm)	12.0" (30.5cm)
	Height:	1.67" (4.24cm)	1.75" (4.45cm)
Weight	3.5 lbs. (1.59 kg)	16.0 lbs (7.26 kg)	11.0 lbs (5.0 kg)



RGB Spectrum Products

MultiPoint Control Room Management Systems

A collaborative system to display and control shared computer and visual resources, MCMS integrates a state-of-the-art multi-user KVM system with RGB Spectrum hardware, including video walls, multiviewers, codecs and switchers. Better decisions. Faster.



- Customizable work environment
- KVM access of controlled computers without software installed
- Unique operator GUI for both local and shared resource control
- Full bandwidth, uncompressed video
- Integration with shared display walls

Multiviewers

For displaying multiple video and graphics on a single screen, the QuadView® and SuperView® product lines provide superb multiviewer functionality with the ability to move, resize and overlap images. Options include KVM control of sources, HDCP compliance, and annotation.

SuperView 4100 / 5000



QuadView HDx



- 4, 8, or 12 windows
- DVI, RGB, HD-SDI, SD/HD video inputs
- Resolutions to 1920x1200
- Smooth scaling, panning, and zooming

SuperView 4K



- 8 megapixel multiviewer
- Up to 8 windows
- DVI single-link or dual-link output
- Smooth scaling, panning, and zooming

Codecs and Recorders

For streaming and recording video, graphics and audio with the highest fidelity, RGB Spectrum offers two codec families — the DSx™ with H.264 *high* profile compression and the DGy™ with JPEG 2000 compression.

DSx



DGy



- Up to 1920x1200 resolution
- Simultaneous recording and replay
- Event marking
- Variable speed playback
- Multi-unit synchronization
- Concurrent streaming and recording
- Recording to local and network storage devices

Digital Switchers

The Linx™ Prime and Opto™ series of DVI and fiber optic switchers enable transmission without signal degradation, providing superb tools for A/D conversion, routing and control, with HDCP compliance.

Linx Prime



- Single-link and dual-link DVI, RGB, 3G/HD-SDI inputs
- Single and dual-link DVI and scaled DVI outputs
- Fiber and copper I/O
- Chassis I/O up to 32x32

Opto

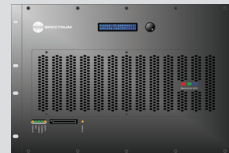


- Industry highest bandwidth - 6.22 GHz
- Chassis I/O up to a giant 320x320
- Simplex or duplex operation
- Single mode or multimode fiber
- Single and dual-link DVI, RGB and 3G/HD-SDI

MediaWall® Video Processors

Simultaneously display multiple computer and video signals across an array of high definition monitors or projectors, with the ability to interact with any source via KVM control. Windows can be custom sized, positioned and stretched across any combination of displays.

MediaWall



MediaWall 4200



MediaWall 2900

- Real-time operation, no dropped frames
- RGB/DVI, 3G/HD-SDI and analog inputs
- Smooth scaling, panning, and zooming
- Edge blending support and bezel compensation
- HDCP compliant

Extenders

For secure transmission of DVI signals over long distances, XtendView® FiberDVI signal extenders represent the state-of-the-art with the industry's smallest size housing.



- Up to 400M over a single fiber
- Resolutions to 2048x1152
- "All-in-the-headshell" design
- HDCP compliant



Worldwide Offices

Corporate Headquarters

950 Marina Village Parkway
Alameda, California 94501
TEL: (510) 814-7000
FAX: (510) 814-7026
WEB: www.rgb.com
email: sales@rgb.com

European Headquarters

Dragonder 20A
5554 GM Valkenswaard
The Netherlands
TEL: +32 11 515600
FAX: +32 11 515601
CELL: +31 6 51319730
email: europesales@rgb.com

Asian Headquarters

14F Cimic Tower
800 Shang Cheng Rd. Pudong District
200120, Shanghai, China
TEL: +86 10 5905 5776
FAX: +86 10 5905 5900
CELL: +86 1391 6213 594
email: asiasales@rgb.com

USA Offices

Somerset, New Jersey
Baltimore, Maryland
Atlanta, Georgia
Orlando, Florida
Cincinnati, Ohio
Dallas, Texas
Los Angeles, California

Middle Eastern Headquarters

Suite 302, Yes Bussiness Center
14B Street, Al Mafraq Road
Al Barsha 1, Dubai
United Arab Emirates
TEL: +971 (0) 44 46 84 16
CELL: +971 (0) 50 420 3867
email: middleeastsales@rgb.com
africasales@rgb.com

International Offices

Paris, France
Shanghai, China
Seoul, Korea
Mumbai, India
St. Petersburg, Russia
Miami, Florida for Latin America
Beirut, Lebanon
London, UK
Dubai, UAE



Specifications subject to
change without notice
©2013 RGB Spectrum