

# RGB SPECTRUM



**VIDEO  
SOLUTIONS**

DEFENSE & AEROSPACE



Space Shuttle Simulator, Johnson Space Center  
Courtesy of NASA

Cover Photo: F-16 Simulator Control Room  
Courtesy of Air Force Research Lab, U.S. Airforce

RGB Spectrum designs  
and manufactures video  
and decision support  
solutions for government,  
military, security and  
industrial applications.

In the defense and  
aerospace sector  
we offer solutions for  
the display, recording,  
transmission and  
switching of visual data.

# VISUAL COMMUNICATIONS

We're at your service  
worldwide, with sales  
and support operations  
in North America,  
South America, Europe,  
the Middle East and Asia  
and multiple facilities  
worldwide providing  
hands-on training  
and demonstrations.

# BETTER DECISIONS. FASTER.

Some of our clients require more than just a pretty picture. They want an audio visual solution that offers decision support:

- Intelligent display of visual information
- Improved situational awareness
- Single keyboard and mouse control of multiple devices
- Intuitive graphical user interfaces

Command and operations centers come in many shapes and sizes and are called by various names: Tactical Operations Centers (TOCs), Emergency Operations Centers (EOCs) and Security Operations Centers (SOCs), to name a few. What they have in common is that they are information-rich environments where operators and supervisors collaborate to make decisions.

That's where we come in. We're operations center experts.

## MISSION - CRITICAL RELIABILITY

RGB Spectrum has been building equipment for challenging environments for nearly 30 years. We design for reliability from the ground up. High MTBF. Robust packaging. Extra cooling. Redundant power supplies.

That's why we are chosen for projects around the world, like the control rooms at NASA's Marshall Space Flight Center and the Indian Space Research Organization in Bangalore.

When 24/7 reliability isn't negotiable.

## INTEGRATION AT THE VIDEO LEVEL

There are different ways to tie disparate systems into a cohesive whole. One is with custom software, which can be time consuming and costly. Another is integration at the video level, where everything comes down to manipulating video pixels, whatever their source. Our intelligent display and control solutions allow video from different systems to be captured, switched, processed, composited, displayed and controlled, without the need for custom software.

Cost effective. Seamless. Elegant.

## COTS

RGB Spectrum is primarily a vendor of commercial off-the-shelf (COTS) products, serving customers in demanding civilian and military applications with high quality, available, cost effective solutions. If required, we are prepared to modify designs to address special packaging and engineering needs.

# VISUALIZE . . . COLLABORATE . . . CONTROL . . .



Payload Operations Integration Center, Marshall Space Flight Center  
Courtesy of NASA

NASA's Marshall Space Center is the headquarters for International Space Station science operations. The center's teams coordinate all U.S. scientific and commercial experiments on the space station, synchronize payload activities of international partners and direct communications between researchers around the world. NASA required a system to enhance collaborative research and deliver around-the-clock support for the space station crew. Our video wall delivered.

- **MULTIVIEWERS · VIDEO WALLS · SWITCHERS**
- **IP CODECS · RECORDERS**
- **NETWORKED VIDEO · CONTROL SYSTEMS**

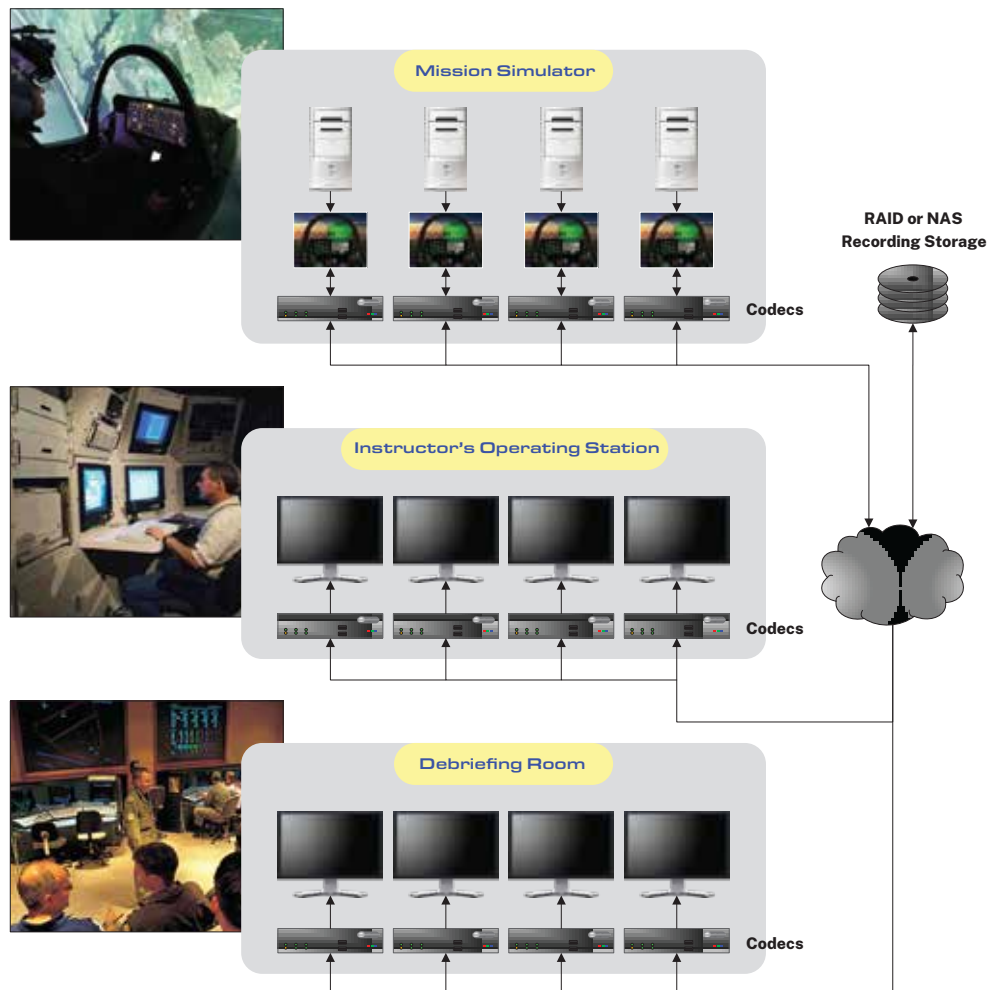
# SIMULATION & TRAINING

RGB Spectrum's codecs, recorders, switchers and multiviewers have been chosen for some of the most important simulation and training programs in the U.S. and abroad.

Our IP codecs are the de facto standard for pilot training. They are deployed in the flight simulators for the F-35 Joint Strike Fighter, P-8 Poseidon, F-22 Raptor and V-22 Osprey aircraft, the Global Hawk/Triton UAV and the Apache, Kiowa, Chinook and Blackhawk helicopters.



For the F-35, we provided a complete signal distribution and recording solution. Our codecs are installed in each of the simulator's pilot pods. Feeds from image generators and video cameras are encoded, distributed and recorded, including avionics, out-the-window imagery, target acquisition, navigation and weapons control. Decoders in the Instructor's Operation Station (IOS) and the After Action Review (AAR) facility are used for real-time access or replay.



Our video equipment is widely deployed to support warfighter training –including the Canadian Navy’s Halifax-class frigate fleet for on-board operations, the Swedish Army’s BAMSE ground-to-air missile system, the THAAD ICBM missile defense system and the U.S. Marine Corps Center for Emerging Threats & Opportunities for urban warfare training.



F-16 Jet Simulator  
Courtesy of Lockheed Martin Corp.



Apache Helicopter Simulator  
Courtesy of the Boeing Company

# C4ISR & SITUATIONAL AWARENESS

RGB Spectrum's solutions for Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) are deployed in the air, on land and on sea for the U.S. and other military agencies.

We are a preferred vendor for upgrade programs. The ability to integrate at the video level means that our equipment can be deployed without significant software development.



BAMSE Missile Defense System  
Courtesy of Saab Bofors Dynamics



Tactical Operations Center  
Courtesy of Ft. Hood, U.S. Army III Corps

Our solutions are widely deployed in both fixed and mobile tactical operations centers (TOCs). TOCs are getting the right data in front of decision makers, with the flexibility to adapt quickly to new threats and mission requirements. We meet that challenge.

When the Navy decided to upgrade the Phalanx Close-In Weapon System, Raytheon chose our multiviewers to integrate an IR targeting system. By using our picture-in-picture capability in the display, operator consoles did not require modification for a second screen. The upgraded Phalanx systems are now in service on all U.S. fighting ships and those of several allied navies.



Phalanx Weapon System  
Courtesy of Raytheon Systems Company

Phalanx Operator Console



MEKO A200S Corvette Vessel Console  
Courtesy of South Africa Navy

**For mission-critical applications, choose equipment you can count on.**

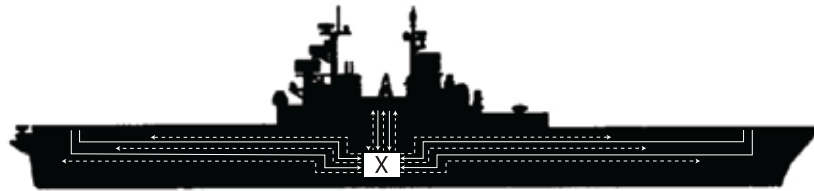


# VIDEO DISTRIBUTION & RECORDING


We offer solutions based on both IP distribution and baseband video switching.

Our flexible video switchers can accept a variety of analog and digital formats, with options for conversion and distribution over copper or fiber.

Our IP solutions support both IP streaming and recording, with concurrent recording/streaming and recording/playback. They are suitable for applications requiring the best possible quality even under conditions of limited bandwidth.



Example of a shipboard video distribution system, where camera, sensor, and computer signals are aggregated and converted to IP format available throughout the vessel or beyond.

-  Video Distribution Center
- Cameras, Computers, Sensor Feeds
- - - - - Ethernet Distribution

RGB Spectrum provides a full video-over-IP solution, including encoders, video wall processors, multiviewers, and decoder apps for smart displays and mobile devices. It offers video distribution, recording, and display to command centers and mobile devices anywhere within reach of a LAN, WAN, or mobile network.



# COMMAND-AND-CONTROL: VIDEO WALL AND CONSOLE DISPLAY



Norad Operations Center  
Courtesy of Norad

Providing situational awareness and a common operating picture encompasses sophisticated display with attention to effectively managing display “real estate.” RGB Spectrum is a pioneer in multi image display, allowing screens to show relevant content whatever the source and to be rapidly reconfigured as circumstances require.

Our video walls are well known for presenting the big picture to multiple decision makers, on LED, LCD or projector arrays. Individual signals can be presented from any source, any size, anywhere on the video wall.

Our multiviewers display multiple devices - cameras, computers, sensors – on a single pane of glass. Each signal is displayed in a video window in easily reconfigured layouts. These compact systems are well suited to retrofits and upgrades where existing consoles are fixed but display capabilities must be expanded.

Our KVM-over-IP extenders allow operators to control remote systems across a room, a ship, a command center, or worldwide. Secure communication and control is provided for both point-to-point and matrixed operation, with multiple operators serving multiple devices. Display options include multiview and arrays of single view monitors. In either case, a single mouse and keyboard provides seamless control of multiple devices.

# ASSET PROTECTION

In addition to military base security, we provide systems for critical infrastructure and asset protection including airports, buildings, ports and transportation hubs. Our video wall is part of a state-of-the-art video surveillance system at the Statue of Liberty for monitoring the security of the facility and the safety of its visitors.



Statue of Liberty Command Center  
Courtesy of National Parks Service & Total Recall Corporation

## THE NEW 4K 8 MEGAPIXEL STANDARD

The history of display technology has been one of increasing resolution, from the early VGA and NTSC/PAL standards with approximately a quarter million pixels to the current 2K/HD standard of two million. The emerging 4K standard offers eight million pixels--four times the resolution of the current generation.

*Why is this important?* Higher resolution facilitates the viewing of all types of imagery, whether real or computer-generated. Moreover, it allows multiple images to be displayed on a single screen without downscaling; for example, four 1920 x 1080 images fit on a 4K display at full resolution. This is space efficient, allowing a single multi-image screen to replace at least four single image displays.

Also, flexibility is significantly improved as the scale and position of each image can be changed on the fly depending on the situation. In fact, a single multi-image display can accommodate a multitude of images, downscaling or shrinking those of lesser importance at any given time. This makes for more effective use of available display real estate, while also reducing weight and power consumption when compared to the alternative of four or more HD displays.

RGB Spectrum supports 4K technology throughout its offerings, including video walls, multiviewers, switchers and codecs.

# DESIGN SERVICES



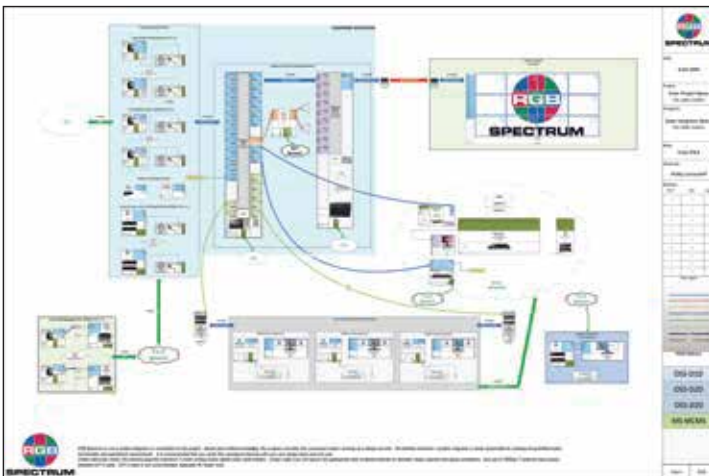
## From Concept

We encourage our customers to bring us their challenges. The design process starts with a phone call or a visit to our website.

We'll take a concept scribbled on the back of a napkin and generate a design using the best components to meet system requirements. Then we'll tie them together with a customizable graphical user interface.

We offer solutions based on our own suite of hardware and software systems, including networked codecs, switchers, wall processors, multiviewers, and control systems. Think of them as customizable solutions without custom software.

Choosing the right equipment can involve tradeoffs between cost, features, security, and ease of use. Because no single architecture is best in all situations, we offer choices.



## To Design

With more than 30 years of delivering solutions into the most demanding environments in the world, we know that the design phase is critical to success. We encourage our customers to leverage our experience.

# WORLDWIDE SUPPORT

RGB Spectrum maintains sales and support operations in North and South America, Europe, the Middle East, and Asia. We currently operate facilities worldwide for hands-on training and demonstrations.

The process starts with exceptional design. It continues with exceptional support.

# Corporate Headquarters

---

1101 Marina Village Pkwy, Suite 101  
Alameda, California 94501

(510) 814-7000    sales@rgb.com

Visit Our Website for Worldwide Offices

---

[www.rgb.com](http://www.rgb.com)

