



# Visual Communications

## Defense & Aerospace Solutions

# Visual Communications

RGB Spectrum designs and manufactures video and decision support solutions for government, military, security and industrial applications. We offer solutions for the display, recording, transmission, and switching of visual data.

We're at your service worldwide.



Intelligent display of visual information



Improved situational awareness



Single KVM control of multiple devices



Intuitive graphical user interfaces

## Mission-Critical Reliability

RGB Spectrum has been building equipment for challenging environments for more than 35 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.**

## Better Decisions. Faster.

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

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.**

## 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.

**Proven solutions. Ready to deploy.**

COVER IMAGE

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

# MULTIVIEWERS • VIDEO WALLS • SWITCHERS

## IP CODECS • RECORDERS

### NETWORKED VIDEO • CONTROL SYSTEMS



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

## Visualize. Collaborate. Control.

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.



## Simulation and 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.

## The De Facto Standard for Pilot Training

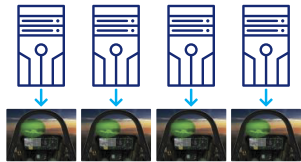
Our IP codecs are the de facto standard for military pilot training. They are deployed in flight simulators for the F-35 Lightning, P-8 Poseidon, F-22 Raptor, and V-22 Osprey aircraft, the Global Hawk/ Triton UAV, and the Apache, Kiowa, Chinook, and Blackhawk helicopters.

## F-35 Full Mission Simulator

For the F-35 program, we provide a complete signal distribution, display, and recording solution deployed across the Full Mission Simulator (FMS). Our codecs are installed in each of the simulator's pilot pods, where feeds from image generators and video cameras — including avionics displays, out-the-window imagery, target acquisition, navigation, and weapons control — are encoded, distributed, displayed and recorded.



**Mission Simulator**



RAID or NAS  
Recording Storage



**Instructors Operating Station**



Multiviewers/Codecs



**Debriefing Room**



F-35 Simulator Schematic

## Warfighter Training Worldwide

Our video equipment is widely deployed to support warfighter training around the world — including the Canadian Navy’s Halifax-class frigate fleet, the Swedish Army’s BAMSE ground-to-air missile system, the THAAD 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 and 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.

Our solutions are widely deployed in both fixed and mobile tactical operations centers (TOCs). TOCs are all about 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.

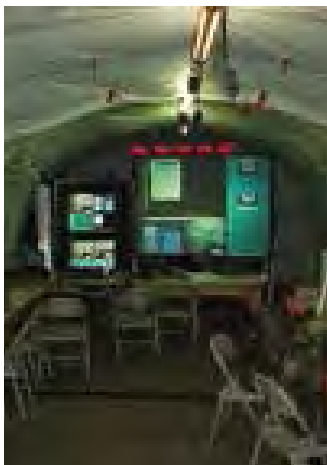
We are a preferred vendor for upgrade programs. The ability to integrate at the video level means that

our equipment can be deployed without significant software development.

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, existing 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.

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



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



**Phalanx Operator Console**



**Phalanx Weapon System**  
Courtesy of Raytheon  
Systems Company

## Video Distribution and Recording

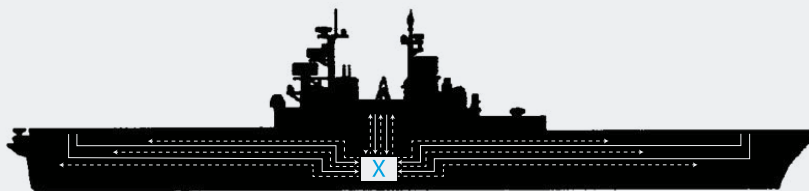
We offer solutions based on both IP distribution and baseband video switching, giving system designers flexibility to match the right architecture to their needs.

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 IP concurrent recording/streaming and recording/playback. They are

suitable for applications requiring the best possible quality even under conditions of limited bandwidth.

RGB Spectrum provides a full video-over-IP solution, including encoders/decoders, video wall processors, multiviewers, and decoder apps for mobile devices. We offer video distribution between command centers and mobile devices anywhere within reach of a LAN, WAN, or mobile network.



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

X Video Distribution Center

— Cameras, Computers, Sensor Feeds

- - - Ethernet Distribution

## Command-and-Control: Video Wall and Console Display

Providing situational awareness and a common operating picture requires sophisticated display technology. RGB Spectrum is a pioneer in multi image display, allowing screens to display content from multiple sources, rapidly reconfigurable 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.

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.

A single mouse and keyboard provides control of multiple devices across a monitor or an array of monitors.



## One Keyboard. One Mouse. Total Control.

RGB Spectrum's KVM-over-IP extenders allow operators to control remote systems from anywhere — across a room, a ship, a command center, or worldwide. A single keyboard and mouse provides seamless switching between multiple computers and devices, eliminating the need for redundant peripherals at each workstation.

## Ideal for Upgrades and Retrofits

There are different ways to tie disparate systems into a cohesive whole. One is with custom software, which can be time consuming and costly. Alternatively, we provide 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.

This makes it an ideal solution for console upgrades and retrofits, where physical space is constrained but operational capability must expand.

## Flexible Deployment

Secure communication and control is provided for both point-to-point and matrixed configurations, with multiple operators serving multiple devices. Display options include multiview — showing several systems on a single screen — or arrays of dedicated monitors. In either case, operators switch between sources instantly with no lag or disruption.



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

## Asset Protection

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

## 4K and Beyond

Today's operations demand high-resolution display. 4K (8 megapixel) screens deliver four times the pixel density of legacy HD, allowing multiple full-resolution sources to be viewed on a single display without downscaling. The result: more information in less space, with the flexibility to resize and reposition windows on the fly.

This is especially valuable in space-constrained environments where replacing multiple HD monitors with a single 4K multiview display reduces weight, power consumption, and console footprint.

**RGB Spectrum supports 4K and higher resolutions across its product lines, including video walls, multiviewers, switchers, and codecs.**

## Design Services

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.

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. And we'll show you how to integrate third party hardware as well.

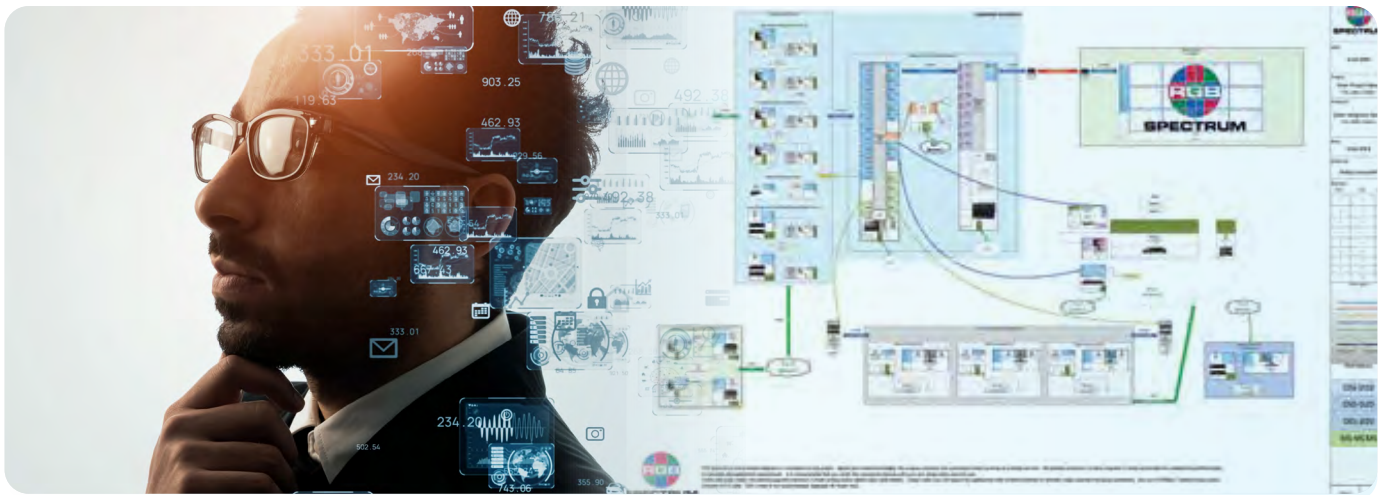
Choosing the right equipment can involve tradeoffs between cost, features, security, and ease of use. Because no single architecture is best in all situations, we offer choices.

With 40 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

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

We operate facilities worldwide for hands-on training and demonstrations.



**We're Here to Help from Concept to Design to Support**



## Why RGB Spectrum

Since 1987, RGB Spectrum has delivered video and display solutions into the most demanding defense and aerospace environments in the world. Our equipment operates 24/7 in command centers, flight simulators, naval vessels, missile defense systems, and forward-deployed tactical operations centers.

Our COTS products are designed for mission-critical reliability, with high MTBF, redundant power, and robust packaging, built to perform in harsh conditions.



[Contact us to learn more](#)

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