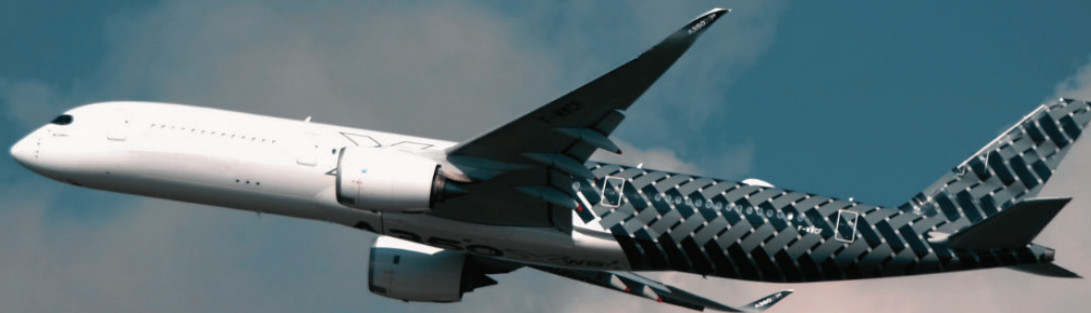




*Great River
Technology*

Advanced
Video & Data
Systems



+1 866-478-4491
www.GreatRiverTech.com
www.Arinc818-Academy.com

**2026
Product
Brochure**

TEST & DEVELOPMENT

PRODUCT CAPABILITIES	Converters, Frame Grabbers, & Generators <i>pgs. 4-7</i>				Development <i>pgs. 8-9</i>		Systems & Software <i>pg. 10</i>	
	Velocity PCIe	Velocity PXIe	SAM G3	Helios	XF Tuner	VPA III	Europa	TAL & SDK
1. Load a test image and header data, and transmit it as ARINC 818	●	●	●		●			
2. Receive and display an ARINC 818 image and header data	●	●	●		●	●		
3. Time multiplexing multiple video streams onto a single ARINC 818 link								
4. Capture and analyze an ARINC 818 source, verify ARINC 818 protocol at the byte level, and verify video timing is correct (line and frame timing)						●		
5. Perform robustness testing of an ARINC 818 receiver using a source that includes error injection, timing variation, and header modifications					●			
6. Perform pixel-by-pixel image comparison	●	●						
7. Factory configured multi-ICD support	●	●	●					
8. User-configurable option available (XI)	●	●	●	●	●			
9. Emulate data-only ARINC 818 links or sensor return paths	●	●			●			
10. Scripting Task Automation Language (TAL)	●	●						●
11. Control an ARINC 818 device through an API	●	●	●	●				●
12. Convert ARINC 818 to HDMI/DVI or HDMI/DVI to ARINC 818 in real time	●	●	●	●				
13. Record an ARINC 818 video stream in real time							●	
14. Play a video file out as an ARINC 818 video stream in real time	●	●					●	
15. LABVIEW SDK available	●	●						●
16. Echo out input or line spy	●	●	●	●	●	●		
17. Switch, split, or broadcast ARINC 818 channels								
18. HD-BNC Copper option available up to 6x	●	●	●	●	●	●		
19. Ethernet streaming future option								
20. Convert ARINC 818 to/from HD-SDI and 3G-SDI	●	●						
21. IP to implement ARINC 818 in your FPGA								
22. Maximum Link Rate	10.0 Gbps	10.0 Gbps	10.0 Gbps	8x	10.0 Gbps	10.0 Gbps	10.0 Gbps	NA

RUGGED & FLYABLE

Switch <i>pg. 11</i>	Upcoming Products <i>pgs. 12-13</i>					Avionics & Mission System Building Blocks <i>pgs. 14-17</i>				
Spider	Next Gen IP Core	XL PCIe	Next Gen XF Tuner	Next Gen VPA	Next Gen EB	IP Core	EB	XMC	VCM	MC-VCM
		●	●					●		
		●	●		●			●		
		●								●
				●						
		●						●		
		●						●		●
		●	●		●			●		
	●	●	●			●		●		●
		●						●		
		●						●		
●		●	●	●				●		
●										●
			●	●						
					●					●
	●					●		●		●
10.0 Gbps	32x	32x	10.0 Gbps	10.0 Gbps	24x	10.0 Gbps	4x	10.0 Gbps	4x	10.0 Gbps

XI SUITE

GRT XI SUITE

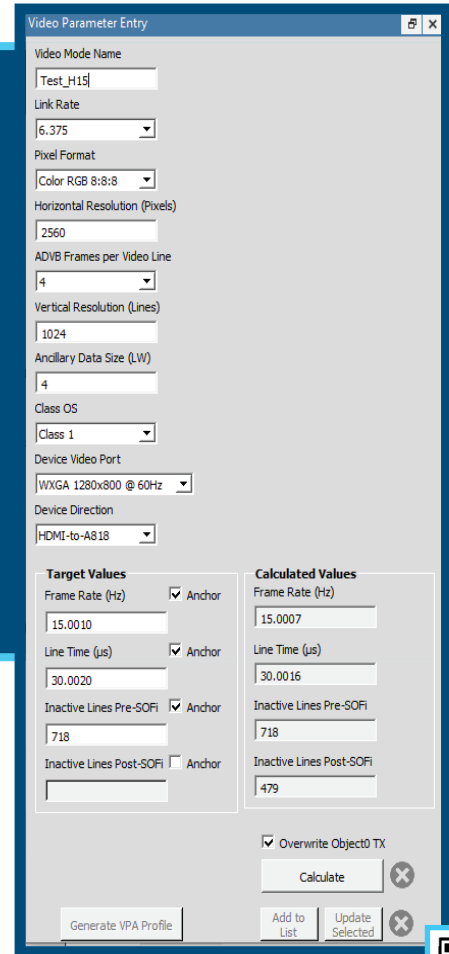
USER-CONFIGURABLE ICDs

All products in the GRT XI Suite have ICD parameters that are user-configurable using the GRT XI Configuration Application. The XI Config App allows the user to clone compatible video formats across any XI suite device type. For parameter limitation queries, contact GRT.

Setable Parameters:

- Conversion Direction
- Link Rate
- Pixel Packing Mode
- Resolution
- Ancillary Data Size
- Class OS
- Frame Rate
- Line Time

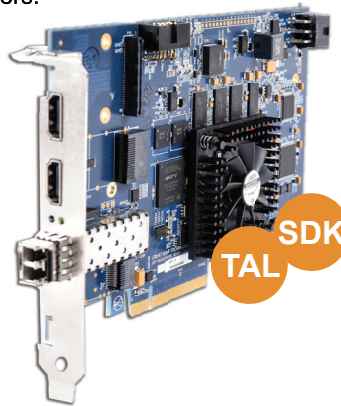
GRT XI Config App supports the Velocity XI series, SAM G3 XI, SAM G3c XI, and Helios XI.



VELOCITY XI

Velocity XI provides all of the functionality of Velocity Plus PCIe card and adds user configurability for ICD parameters.

- Implement almost any ICD
- Acts as an ARINC 818 transmitter or receiver
- Includes the Velocity Test Application
- Converts ARINC 818 to DVI or HDMI for resolutions on standard monitors
- Create a library of ICDs to cover multiple ARINC 818 programs
- SDK is available for base Velocity functionality



VELOCITY XI:
GreatRiverTech.com/velocityxi



VELOCITY DUAL-CHANNEL RECEIVER XI

While both video streams that the Velocity Dual XI receives can be completely asynchronous, they must be the same ICD. This ICD can be modified using the GRT XI Config App.

- Simultaneously receive ARINC 818 streams from 2 different sources
- Base functionality of Velocity Dual card with added XI configuration capabilities



VELOCITY PXIe XI

The GRT Velocity PXIe card seamlessly integrates the Velocity XI functionality into PXIe-based test and development environments.

- Includes all Velocity features and capabilities
- LabVIEW™ SDK available for base Velocity functionality



VELOCITY XMC XI

To read more about the embedded version of the Velocity series card, Velocity XMC XI, please see page 15.



▶ SAM G3 XI

SAM G3 XI is a user-configurable, portable, converter module that converts ARINC 818 to/from HDMI. Suited for benchtop applications, the module allows the user to view ARINC 818 video on a standard computer monitor, and transfer live video from a graphics card into ARINC 818.

SAM View Application

SAM G3 XI is delivered with the SAM View Application and the GRT XI Config App.



SDK



SAM G3 XI:
GreatRiverTech.com/sam-g3-xi

Bracketed options available for both the SAM G3 XI and the SAM G3c XI

SDK

▶ SAM G3c XI

COMPACT STAND ALONE MODULE

- All of the original SAM G3 XI functionality in a smaller package without a touchscreen, measuring 6.8" x 4.4" x 1.4"
- Easily turn on and off a test pattern with the flip of a switch
- Ideal for rack-mounted or permanent solutions



SAM G3c XI:
GreatRiverTech.com/sam-g3c-xi

▶ HELIOS XI

Convert up to 12 user-configured channels of ARINC 818 to/from HDMI in a 1U 19-inch mountable rack system. SDK is available for base Helios functionality.

- Available in a 4, 6, 8, or 12 channel configuration



HELIOS XI:
GreatRiverTech.com/helios-xi

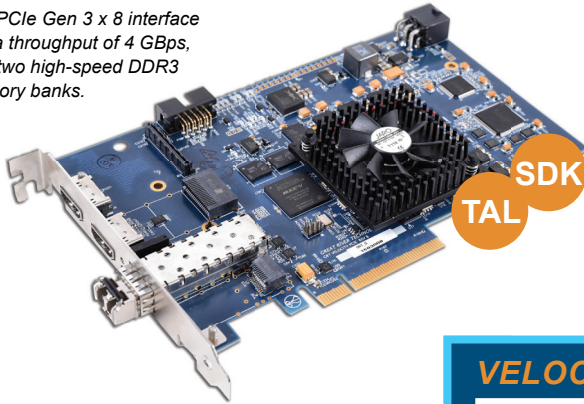


SDK

CONVERTERS, FRAME GRABBERS, & GENERATORS

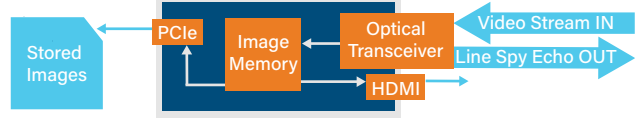
▶ VELOCITY PLUS

The PCIe Gen 3 x 8 interface has a throughput of 4 GBps, with two high-speed DDR3 memory banks.



Factory configured in a variety of interface/conversion modes:

- ARINC 818 to/from HDMI
- ARINC 818 to/from SDI



Block diagram shows card in receive mode

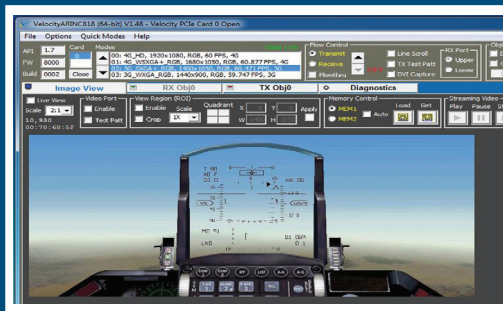
VELOCITY PLUS:
GreatRiverTech.com/velocity



Velocity Plus is a factory-configured frame grabber, graphics generator, and converter.

- Transmit and receive ARINC 818 video
- Pre-configured for up to 15 video formats
- ARINC 818 link rates of up to 10.0 Gbps
- Frame Grabbers can be integrated with StreamPix DVR Software for real time recording
- Optional SDK and scripting (TAL) available

VELOCITY ARINC 818 TEST APPLICATION



- Status indicators for link synchronization
- Detects the presence of SOFI, EOFt and idle ordered sets, as well as 8b/10b and CRC errors
- Magnification option in GUI to look at region of interest
- Convert to HDMI to see full resolution image

▶ VELOCITY DUAL-CHANNEL ARINC 818 RECEIVER CARDS

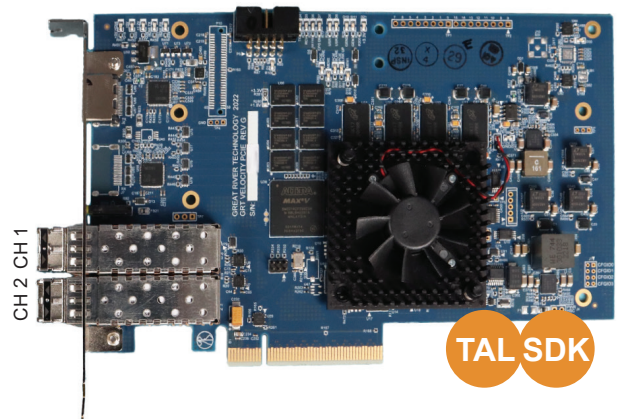
High bandwidth, multi-channel capture from 2 sources simultaneously that can be completely asynchronous of each other, but must be the same, factory-configured ICD.

- Each ARINC 818 stream can be captured to a host computer memory via PCIe DMA transfers and viewed in the test application. If desired, the user can select one of the ARINC 818 streams to be routed to HDMI transmit.
- The ARINC 818 transmit can be set to either transmit a test pattern or echo out the individual ARINC 818 receiver channels.
- Equipped with full-featured test application.
- Optional SDK and scripting (TAL) available.

VELOCITY DUAL TEST APPLICATION



Simulate a LAD view using the Velocity Dual Test Application



VELOCITY DUAL-CHANNEL:
GreatRiverTech.com/velocitydualch

CONVERTERS, FRAME GRABBERS, & GENERATORS

▶ SAM G3 PLUS



SAM G3 Plus is a portable stand-alone converter module that converts ARINC 818 to/from HDMI and enables the viewing of ARINC 818 video on a standard computer monitor or transfers live video from a graphics card onto ARINC 818.

The module is delivered with Windows application software that can connect to the unit via USB. This application enables sending and retrieving single images to/from the unit, viewing the status of incoming video, managing video formats stored in the unit, and controlling multiple SAM units at once.

SAM G3 PLUS FEATURES

- Supports up to 15, factory-configured ICD formats that are easily selectable via a touch screen on the unit
- Loaded formats can be of different conversion directions (ARINC 818 to/from HDMI) and can be different ARINC 818 link rates, video resolutions, and pixel types
- Supports ARINC 818 link rates up to 10.0 Gbps



SAM G3 PLUS:
GreatRiverTech.com/sam-product-line

▶ HELIOS MULTI-CHANNEL ARINC 818/HDMI CONVERTER SYSTEM

The Helios converts up to 12 factory-configured channels of ARINC 818 to/from HDMI in a 1U 19-inch rack mountable system. ARINC 818 to HDMI conversion provides a way to view live ARINC 818 video on common HDMI monitors.

Applications:

- Pilot training simulators
- Cockpit development
- Flight test recording of ARINC 818 (requires additional equipment)
- Factory test of ARINC 818 equipment

Features:

- Factory configurations for 4, 6, 8, or 12 channels
- ARINC 818 link rates from 1x to 8x
- 19 inch 1U rack
- 100-240 VAC (28 VDC option)
- HDMI connectors (6 locking/6 standard)
- ARINC 818 to HDMI or HDMI to ARINC 818
- Remote-based controls (LAN) with C API or Web Interface:
 - Query status
 - Control test pattern outputs
- SDK included



HELIOS:
GreatRiverTech.com/helios



ROBUSTNESS TESTING & ERROR INJECTION

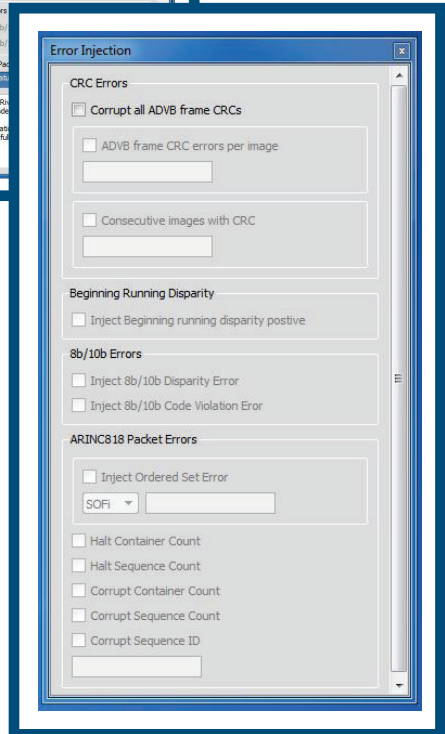
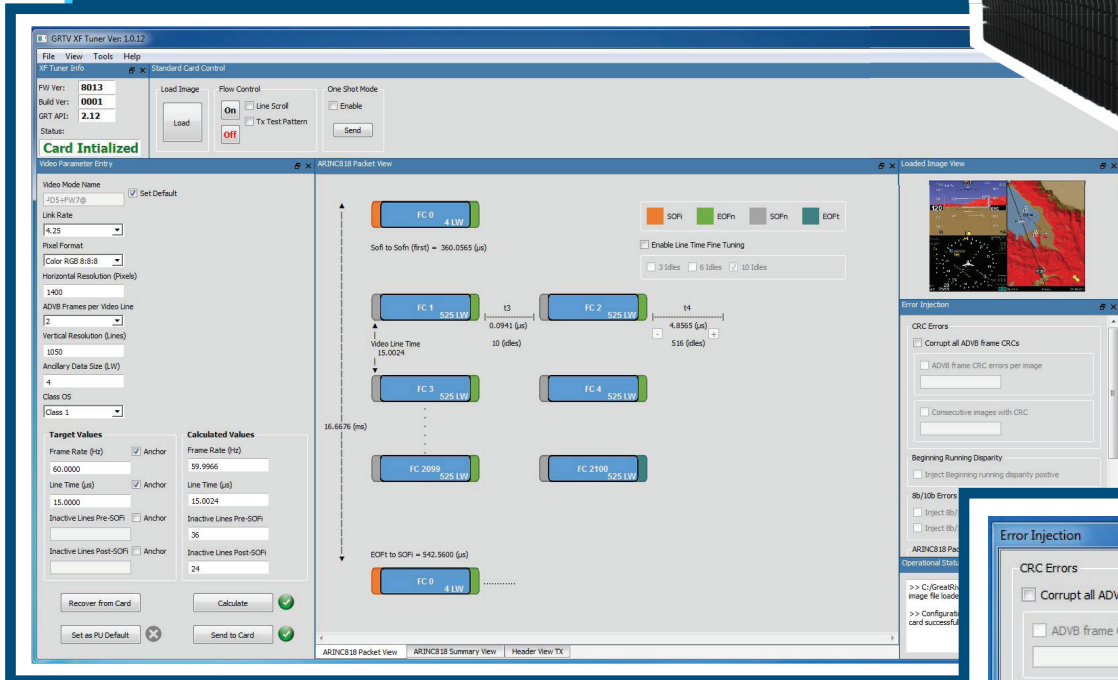
► XF TUNER GEN 3

The XF Tuner is an ARINC 818 transmitter with programmable protocol parameters including timing, and is capable of injecting protocol errors into the transmitted stream.

ERROR INJECTION FOR ROBUSTNESS & VALIDATION TESTING

- Packet CRC errors [all frames]
- Packet CRC errors [selected frames]
- Ordered Set corruption errors
- Ordered Set beginning running disparity errors
- Halt sequence & container counts

Europa configured with XF Tuner card



The XF Tuner's Error Injection dock

Features:

- Implement ICD link rates: 1x, 2x, 3x, 4x, 5.0 Gbps, 6x, 8x, and 10.0 Gbps
- Set other ARINC 818 parameters: pixel packing, resolution, ADVB frames per line, frame rate, and ancillary data size
- Robustness & qualification testing
- Anchor parameters to prioritize line, frame, or vertical blanking timing
- Adjust and calculate protocol in real time
- Intuitive view of critical timing parameters & video frame structure
- Creation of a library of ICDs



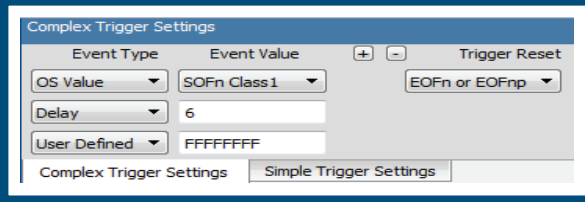
XF TUNER:
GreatRiverTech.com/xftuner

▶ VIDEO PROTOCOL ANALYZER (VPA) GEN III

The VPA Gen III captures ARINC 818 video, provides a complete analysis at multiple levels (payload, ancillary data, FC frame, video line, and video frame), and evaluates line and frame timing.

A COMPLETE SYSTEM AND AN ESSENTIAL TOOL FOR THE ARINC 818 DESIGNER

- User-configurable for multiple link rates:
1x, 2x, 3x, 4x, 5.0 Gbps, 6x, 8x, and 10.0 Gbps
- Complex, multilayer triggering up to 3 levels within payload or Object 0



- Raw data trace captures up to 4 gigabytes, with save and load capability
- Pre- and post-trigger capture settings
- Real-time monitoring of link status, such as Sync Link or SoF Detect
- View live video
- Container & ADVB frame analysis
- Container & ADVB header decoding
- Search captured data for a predefined ordered set
- Error messages for timing, resolution, payload, ancillary data, and more
- Dockable user-friendly interface



VPA GEN III:
[GreatRiverTech.com/
arinc-818-protocol-analyzer](http://GreatRiverTech.com/arinc-818-protocol-analyzer)

Offset	Time (µs)	MS	LS	Data Type	Status	Location(Frame:WORD)
-2	-0.03	BC	95	B5	IDLE OS	OK
-1	-0.01	BC	95	B5	IDLE OS	OK
0	+0.00	BC	85	57	SOFn Class1	OK
1	+0.01	11	11	11	Data	OK
2	+0.03	22	22	22	Data	OK
3	+0.05	33	33	33	Data	OK
4	+0.07	BE	44	00	Data	OK
5	+0.09	55	55	55	Data	OK
6	+0.11	66	66	66	Data	OK
7	+0.13	00	38	72	Data	OK
8	+0.15	88	88	88	Data	OK
9	+0.16	99	99	99	Data	OK
10	+0.18	AA	AA	AA	Data	OK
11	+0.20	BB	BB	BB	Data	OK
12	+0.22	CC	CC	CC	Data	OK
13	+0.24	DD	DD	DD	Data	OK
14	+0.26	EE	EE	EE	Data	OK
15	+0.28	FF	FF	FF	Data	OK
16	+0.30	10	10	10	Data	OK
17	+0.31	11	11	11	Data	OK
18	+0.33	22	22	22	Data	OK
19	+0.35	33	33	33	Data	OK
20	+0.37	44	44	44	Data	OK
21	+0.39	55	55	55	Data	OK
22	+0.41	66	66	66	Data	OK
23	+0.43	77	77	77	Data	OK
24	+0.45	88	88	88	Data	OK
25	+0.47	99	99	99	Data	OK
26	+0.48	AA	AA	AA	Data	OK
27	+0.50	BB	BB	BB	Data	OK
28	+0.52	CC	CC	CC	Data	OK
29	+0.54	DD	DD	DD	Data	OK
30	+0.56	EE	EE	EE	Data	OK
31	+0.58	FF	FF	FF	Data	OK

SYSTEMS & SOFTWARE

SOFTWARE

Add-On for Specific Products

TAL

SDK

SDK

SOFTWARE DEVELOPMENT KIT

Complete SDK for Applications Development

Software Development Kit (SDK) for Windows or Linux enables software engineers to write custom applications and integrate GRT products into Automated Test Equipment (ATE).

TAL

TASK AUTOMATION LANGUAGE

Production Tests / DO160 Validation

TAL (Task Automation Language) for Windows is a high-level scripting language that is used to automate the control of Great River Technology's card products.

Velocity ARINC 818 and Velocity Dual Test applications included with their ARINC 818 card products can execute a TAL script to automate almost any task on one or more cards with no external software required.

Receive TAL commands from any source over a TCP/IP connection, allowing for remote control or automation of GRT's card products from external applications.

- Reproducible and repeatable tests
- Remote control of test equipment
- Control up to 16 GRT cards
- Store test results to log files at timed intervals



▶ EUROPA SYSTEM

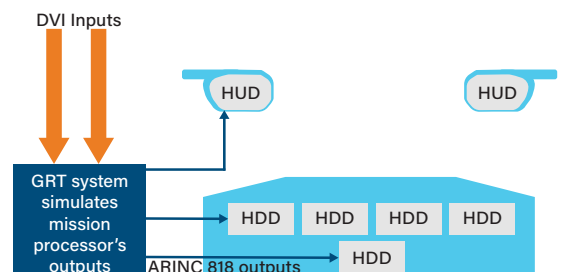
HIGH PERFORMANCE SYSTEMS

Europa systems have several base configurations with extensive options for program needs.

- Configured with Velocity cards to match program ICD(s)
- Will arrive fully tested and configured with cards such as the Velocity, XF Tuner, and/or VPA

Europa's compact chassis provides convenience and ease of use for engineering development, flight testing, and field testing of ARINC 818.

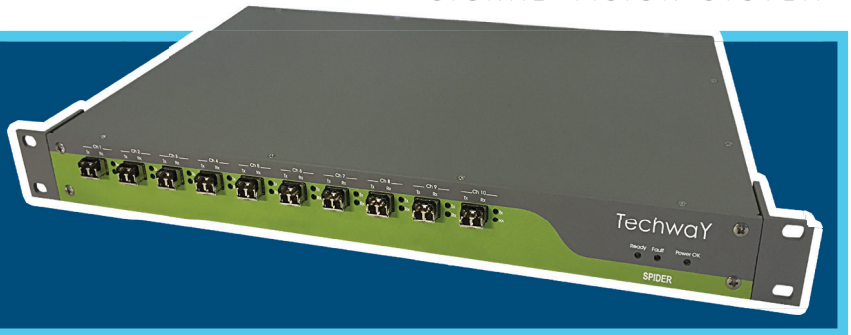
- Small enough to support lab testing, where it can easily be moved from one bench top to another
- Rugged enough for flight testing
- Operate Europa remotely without a keyboard or mouse using Windows Remote, making the footprint small enough to locate near any ARINC 818 equipment being tested
- Provides up to two cards, factory configured to specific tasks, such as development and robustness testing with the VPA and XF Tuner
- GRT can configure record/playback systems, each includes four 1-Terabyte removable drives and StreamPix recording software





TECHWAY SPIDER 10X10 ARINC 818 SWITCH

The Techway Spider Switch offers real-time switching of ARINC 818 video at rates of up to 10.0 Gbps.



Features:

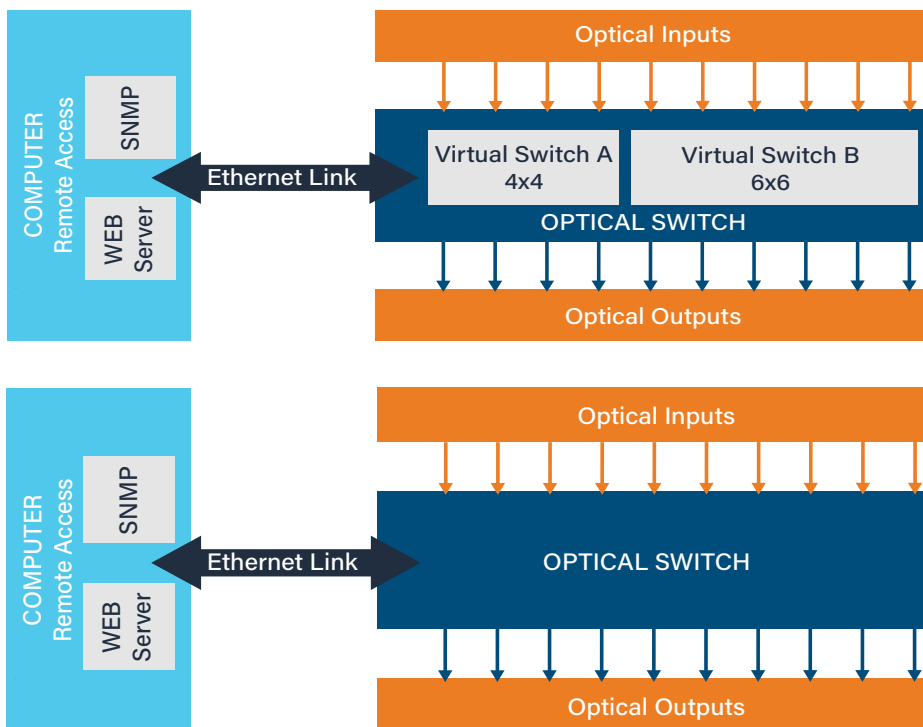
- Up to 10 inputs/10 outputs and supports link rates up to 10.0 Gbps per link
- ICD independent
- SPIDER is manageable by web or SNMP
- Unicast, multicast, or broadcast transmission
- Real-time monitoring and error counter
- Great River Technology ARINC 818 IP Core

Applications:

- Laboratory test equipment
- Production bench
- Qualification bench
- Certification bench
- ARINC 818 R&D support, prototyping

The Spider Switch can be configured with all 10 inputs and outputs having the same link rate, or using a 4x4 + 6x6 configuration where these different groups use a total of 2 different link rates. These configurations are demonstrated in the examples below.

Configuration Examples:



TECHWAY PRODUCTS:
Techway.com/products

UPCOMING 32X ARINC 818 ECO-SYSTEM

SUPPORT FOR THE NEXT GENERATION OF COMPLEX SYSTEMS

GRT is preparing for the next generation of complex systems with upgrades to its IP Core, Frame Grabber PCIe card, Embedded Board, XF Tuner, and VPA. These upgrades will provide a complete ARINC 818 test and development suite for the next generation of advanced data and video systems.

Upgrades for Systems that Include:

- 4K + resolutions
- Stereo displays
- Stereo EO/IR displays
- Multistream ARINC 818
- Up to 32x link rates

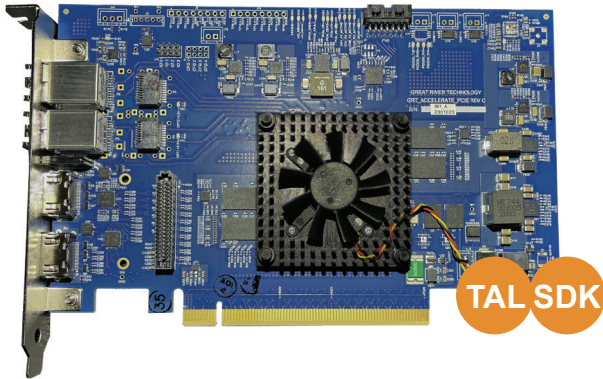
▶ NEXT GEN IP CORE

The next generation of the IP Core will support higher link rates, up to 32X, and will still be compatible with most Xilinx, Altera, and Microsemi FPGAs. Use the Next Gen IP Core to integrate the full extent of ARINC 818-3 into your system.

Upgrades Include:

- Additional ICD link rates: 12x, 16x, 24x, and 32x
- Support for pixel packing and unpacking formats using 32, 24, 16, and 8 bits with room for expansion
- Multi-stream support, including concentration and de-concentration
- Embedded video timing generator
- AXI bus support

▶ XL HIGH-SPEED, HIGH-RESOLUTION FRAME GRABBER



The XL card supports high link rates used on high-resolution sensors, cameras, and 4K+ displays for modern avionics and mission systems. The XL card is an ARINC 818 frame grabber and generator that includes a video concentrator (multiple video streams on a single link) and de-concentrator.

- Supports ARINC 818 link rates from 12.0 Gbps to 32x (28.05 Gbps) with 64B/66B encoding
- Single and dual-channel options
- Supports multiple ICDs
- User configurable XI option
- Equipped with full-featured test application
- Optional SDK and scripting (TAL) available

▶ NEXT GEN EMBEDDED BOARD

The Embedded Boards can convert ARINC 818 to or from DVI, HDMI, LVDS, or Ethernet with DisplayPort conversion coming soon. Other than the standard board upgrade, other variations will serve a specific system type and be optimized for that use case.

Future Embedded Board Variations:

- Upgraded version of the current embedded board with increased link rate capabilities
- New version with lower power consumption to ensure higher reliability, designed specifically for systems that use passive cooling methods
- New version in a smaller form factor designed for sensor applications

▶ NEXT GEN XF TUNER

The XF Tuner is an ARINC 818 transmitter with programmable protocol parameters including timing, and is capable of injecting protocol errors into the transmitted stream.

Upgrades Include:

- All original XF Tuner features expanded to include link rates of up to 32x
- Additional pixel modes including Bayer and expanded YCbCr options



A COMPLETE SYSTEM OF TESTING TOOLS FOR THE ARINC 818 DESIGNER

Right: Europa configured with the current generation of XF Tuner and VPA

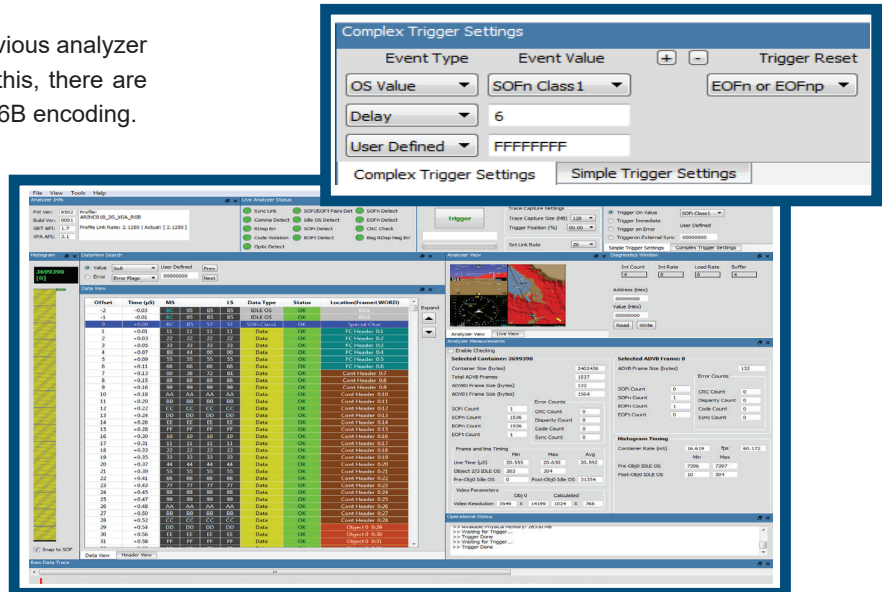
Also pictured: Current user interfaces for the VPA III and XF Tuner Gen 3

▶ NEXT GEN VIDEO PROTOCOL ANALYZER (VPA)

The next generation of VPA expands the previous analyzer capabilities to link rates of 32x. Along with this, there are inspection capabilities for 8B/10B and 64B/66B encoding.

Upgrades Include:

- All original VPA features expanded to include link rates of up to 32x
- Ability to inspect 8B/10B and 64B/66B headers and scrambled data
- Additional pixel modes including Bayer and expanded YCbCr options
- Simultaneous dual channel capture
- Multi-stream, source ID screening for capture



FLYABLE AVIONICS & MISSION SYSTEMS BUILDING BLOCKS

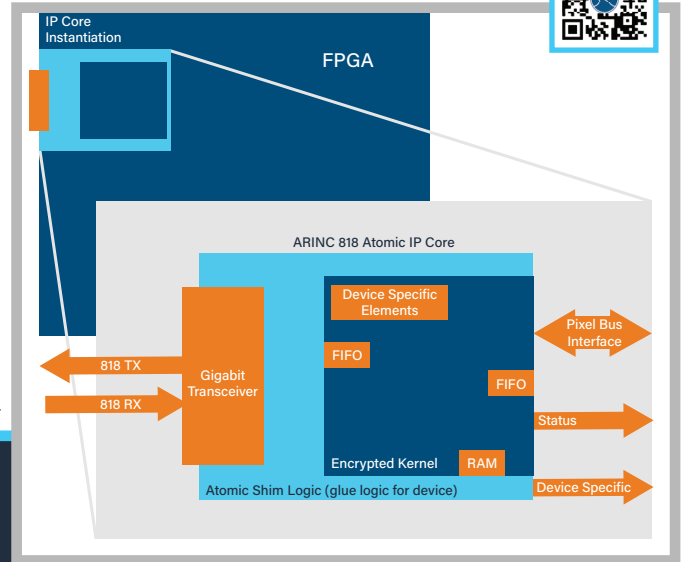
ARINC 818 IMPLEMENTATION OPTIONS

Flight-rugged building blocks allow system architects the freedom to mix old and new video formats seamlessly: HD-SDI, 3G-SDI, HDMI, RS-170, NTSC, ARINC 818, HOTLink, or Ethernet. Support for 32x rate systems coming soon.

Choose an ARINC 818 IP implementation:

- In an FPGA
- On small, embedded board that can be incorporated into a chassis
- Stand-alone switches and converters (VCM and MC-VCM)

ARINC 818 IP CORE:
GreatRiverTech.com/arinc-818-ipc



ARINC 818 IP in an FPGA:

IN YOUR FPGA

The ARINC 818 Atomic transceiver IP core provides an easy way to implement ARINC 818 compliant interfaces in common FPGAs. The IP core pairs with the high-speed serial tiles of the FPGA (e.g., GX or GT tiles) to achieve ARINC 818 interfaces up to 10.0 Gbps. The core can be used for transmit only, receive only, or for transmit and receive applications.

The IP core has flexible compile time settings allowing for various link speeds, line segmentations, and line synchronization methods. The core can be configured for various resolutions and pixel packing methods.

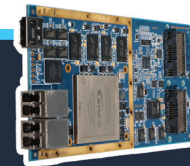
Transmitted ancillary data can use default values (set at compile time) or data can be updated in real time via register interface.

The Atomic IP core is delivered as encrypted VHDL. The Atomic IP Core development packages are delivered with a development board and a reference design. GRT also offers an Airborne Atomic IP Core package with all elements to support DO-254 certification. GRT offers the IP Core for a broad range of Altera, Xilinx, and MicroSemi FPGAs.

IN YOUR CHASSIS



EMBEDDED BOARD



XMC BOARDS

IN OUR CHASSIS

VIDEO CONVERTER MODULES



SINGLE CHANNEL VCM



MULTI-CHANNEL VCM

► EMBEDDED BOARDS

Small, Embedded Board (EB) converters can be incorporated into a sensor, processor, or display. EBs are developed according to DO-254, and variants have been certified to DAL A.

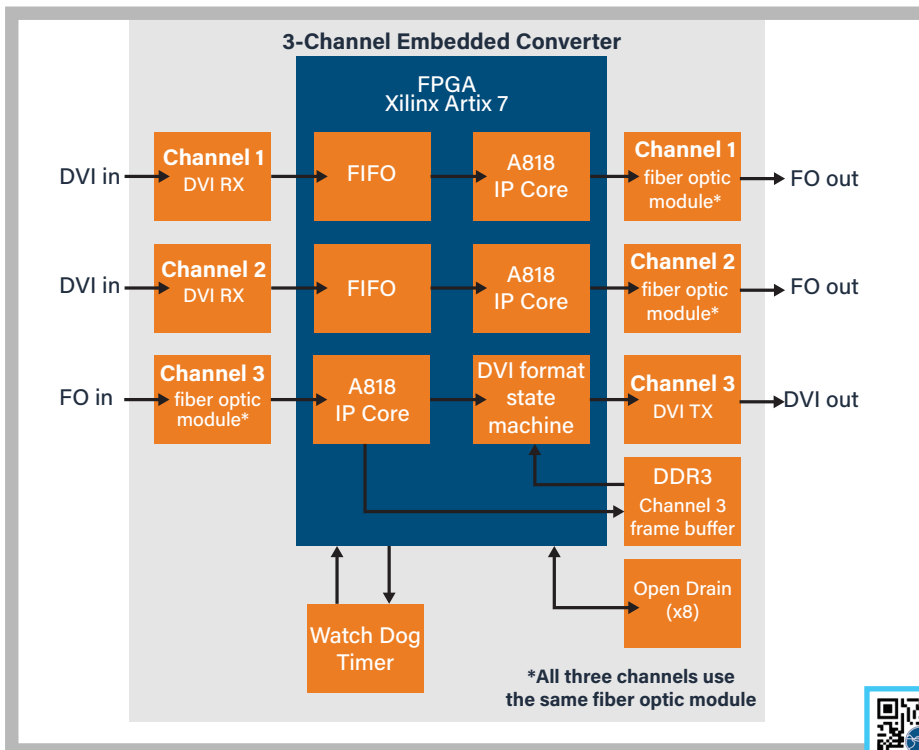
The EBs are designed with features that ensure reliability and contribute to the certification process, including: watchdog timer, SEU monitoring & reconfigure, stale image detection, and fault discrettes.

One board can supply 2 channels of DVI to ARINC 818 and 1 channel of ARINC 818 to DVI for 1, 2, or 3 channel applications.

Custom board options are available. Contact GRT with requirements.



Dimensions:
3.0"x3.8" (76mm x 97mm)

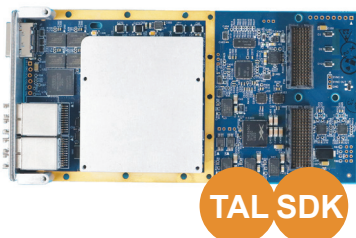


- Low Power: <8 watts
- ARINC 818 to/from: DVI, VGA, LVDS, Ethernet
- LC or ARINC 801 Fiber options available
- Link rates: 1x, 2x, 3x, 4x; 24x to 32x coming soon
- The module contains supervisory logic to monitor and report stream and fault status to the host system DS, or Ethernet



EMBEDDED BOARDS:
GreatRiverTech.com/embeddedboards

► VELOCITY XMC



The Velocity XMC is a rugged form factor of Velocity Plus.

- ARINC 818 link rates up to 10.0 Gbps
- VITA66 optic transceiver option available
- Supports display resolutions up to 4K at 30Hz
- Windows and Linux SDKs enable integration into VPX platforms
- Heat spreader for integration into system level cooling
- 256 MB DDR3 Memory
- 3 levels of ruggedization available
- XI option available

► VCM



VCM
Video Converter
Module

- Factory-configured for a specific ARINC 818 ICD
- Converts ARINC 818 to/from DVI or VGA
- Can be certified to DO-254 and DO-160

Contact us to discuss other analog or digital video formats.



VCM:
GreatRiverTech.com/vcm

Applies to VCM & MC-VCM:

Environmental Conditions, DO-160G
(partial list; detailed list in datasheet; subject to change)

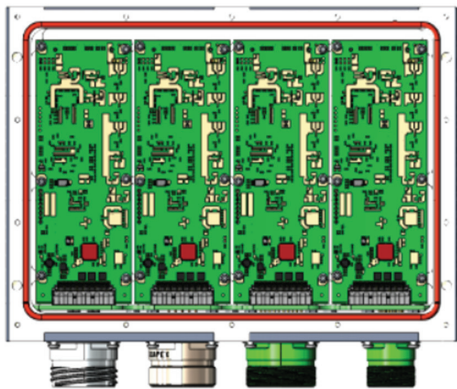
Sec 4: Temperature and Altitude Overpressure.....	A1/A2
Sec 5: Temperature Variation	B
Sec 6: Humidity	A
Sec 7: Shock & Crash Safety	B
Sec 8: Vibrations	R(C/C1)
Sec 10: Water Proofness.....	Y
Sec 11: Fluids Susceptibility, Cleaning Fluids	F
Sec 12: Sand and Dust.....	D
Sec 13: Fungus Resistance, Analysis	F
Sec 14: Salt Fog (Spray).....	S
Sec 15: Magnetic Effect.....	Z
Sec 16: Power Input.....	B (50 ms)
Sec 17: Voltage Spike	A
Sec 18: AF Conducted Susceptibility.....	B
Sec 19: Induced Signal Susceptibility.....	ZC
Sec 20: RF Radiated and Conducted Susceptibility...R	
Sec 21: RF Radiated and Conducted Emissions	M
Sec 22: Lightning Induced Transient	A1/A2J2M2
Sec 24: Icing.....	A
Sec 25: ESD Susceptibility.....	A (equipment off)
Sec 26: Fire, Flammability, Analysis	C

► MC-VCM

AVIONICS & MISSION VIDEO ARCHITECTURE

The MC-VCM (Multi-Channel Video Converter Module) is an extremely flexible platform designed for flyable environments including helicopter and fixed-wing applications.

Factory-configured according to customer requirements for conversion, switching, and ICD specification.



MC-VCM populated with four slice boards.

The MC-VCM includes a separate switch controller board, capable of switching 12 channels of video. It also includes four slots for converter “slice” boards for new video protocols and interfaces.



► MC-VCM CONT.

FACTORY CONFIGURATIONS

- **Available I/O:** ARINC 818 conversion to or from HDMI, DVI, 3G/HD-SDI, NTSC/PAL, STANAG 3350, HOTlink, Ethernet, RS-170; not all I/O available at the same time
- **Available command and control:** RS485/422, ARINC 429, or Ethernet
- Divide channels between protocols (e.g., 2 channels 3G/HD-SDI, 2 channels NTSC)
- Link rates: 1x, 2x, 3x, 4x, 5.0 Gbps, 6x, 8x, 10.0 Gbps, or other custom rates
- Video concentrator to ARINC 818 or 1 GbE
- GPU based video compression and decompression

EXAMPLE CONFIGURATIONS

- 4 or 8 Ch ARINC 818 Switch
- 4 or 8 Ch ARINC 818 Switch + 4 channels of HDMI conversion
- 4 or 8 Ch ARINC 818 Switch + 6 channels of 3G/HD-SDI conversion
- 4 or 8 Ch ARINC 818 Switch + 4 channels of RS-170 conversion
- 4 Ch ARINC 818 Switch + 4 channels conversion + Ethernet streaming

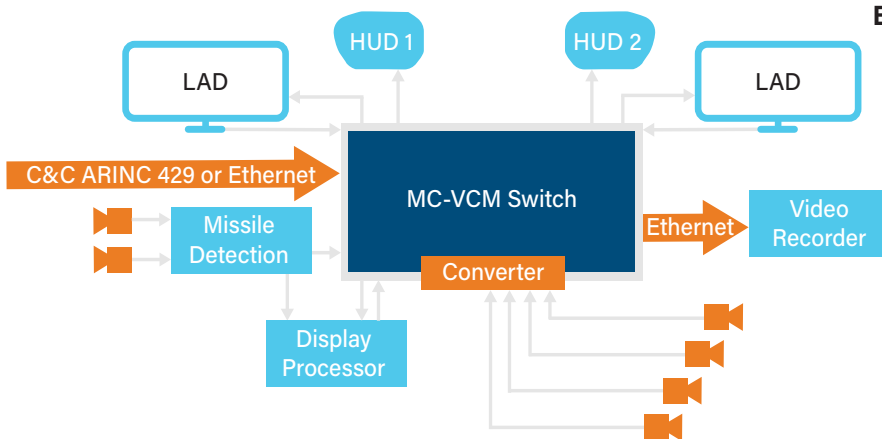


MC-VCM
Multi-Channel
Video Converter
Module

MC-VCM:
GreatRiverTech.com/mc-vcv



Configurations are virtually limitless due to the flexible architecture.



Example Avionics System Using MC-VCM

Connect older cameras and sensors, together with newer, high-resolution large-area displays, HUDs, and EO/IR sensors.

- Video COAX support is available through a D38999 connector with coax inserts, or via individual DIN 1.0/2.3 coax

LEARN ABOUT ARINC 818 @ THE ARINC 818 ACADEMY

New to ARINC 818?

The Avionics Digital Video Bus is the leading standard for uncompressed digital video used in commercial and military aerospace.

Visit ARINC818-Academy.com, an online academy that combines video instruction for both basic and comprehensive education on Great River Technology products and the ARINC 818 protocol & standard.

Who can use the ARINC 818 Academy?

The Academy supports Aerospace Engineers, Systems Architects, Test Engineers, Tech Fellows and is applicable to every level of experience.



VISIT THE ARINC 818 ACADEMY →

► FREE CERTIFICATION PROGRAMS



ARINC 818 BASICS

Start Here

Intended Audience:

- Marketing
- Tech Management
- Tech Fellows
- Engineers
- Technicians

Videos:

- Overview of the ARINC 818 Standard & Protocol
- Why ARINC 818
- Overview of ARINC 818 revisions 1-3



ARINC 818 TEST, SIMULATION, & TROUBLESHOOTING

Start Here

Intended Audience:

- Tech Management
- Tech Fellows
- Engineers
- Technicians

Videos:

- Using Image Compare
- Simulating & Testing ARINC 818 Systems Part 1 & 2
- Designing your ICD
- VPA

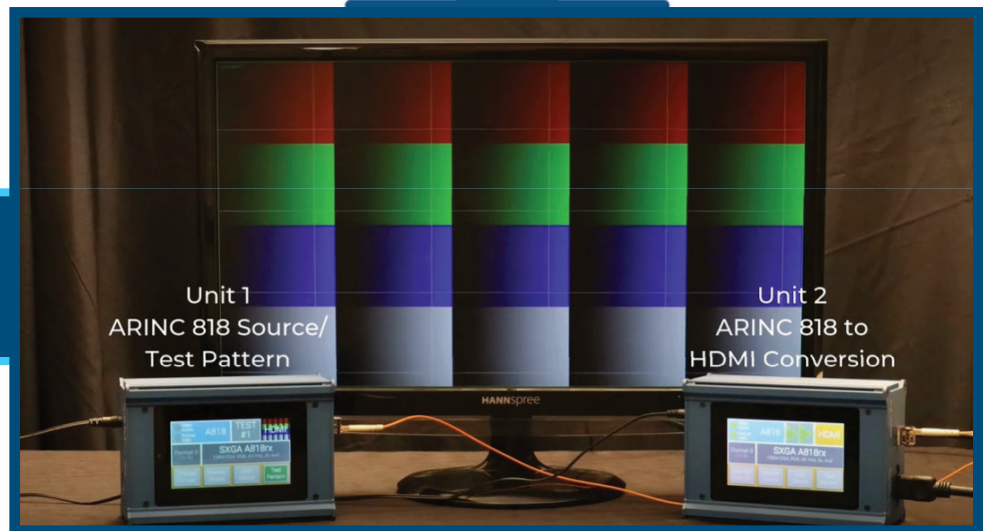
► INSTRUCTIONAL AND DEMO VIDEOS

PRODUCT DEMOS

- ARINC 818 Test, Simulation & Development Suite
- ARINC 818 Flyable Solutions (including IP Core)
- Video Protocol Analyzer: VPA III
- Velocity Plus
- Velocity XI
- SAM Product Line
- VCM / MC-VCM
- Overview of the ARINC 818 Atomic Core
- Overview of the ARINC 818 Atomic References Design
- Implementing an ARINC 818 Interface

ARINC 818 INSTRUCTIONAL VIDEOS

- Overview of the ARINC 818 Standard and Protocol
- Designing your ICD (Interface Control Document)
- Why ARINC 818?
- Overview of ARINC 818 Revisions 1-3
- Simulating & Testing ARINC 818 Systems
- Implementing ARINC 818



SAM PRODUCT LINE DEMO VIDEO
Member's only video

Developing your ICD

• Simple ICD calculator demonstration

Resolution 1280 x 1024 SXGA, 60Hz
 Pixels are RGB (24 bit/pixel)
 Ancillary Data = Default 4 LWORDS
 OS Class 1
 Link Rate... Not sure 2Q or 3Q?

DESIGNING YOUR ICD INSTRUCTIONAL VIDEO
Public video



Great River Technology

ADVANCED VIDEO & DATA SYSTEMS

We are the world's leader in ARINC 818 implementation. Working with us is fast and easy! You'll get support from the same engineers who design our products.

NORTH AMERICA SALES



CONTACT US!
GreatRiverTech.com/sales

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- **EUROPE:** Techway
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- **ISRAEL:** Reciotec
- **SOUTH KOREA:** Realtimewave

SOME OF OUR ARINC 818 CUSTOMERS INCLUDE:

NORTH AMERICA

- BAE
- Boeing
- CAE Canada
- CMC
- Collins Aerospace
- Flight Safety
- General Dynamics
- Honeywell
- Kranze
- L3 Harris
- Lockheed Martin
- Northrup Grumman
- Raytheon

ASIA

- Avic Optronics
- CARERI
- COMAC
- Elbit
- Elop
- HAL
- KAI
- Samtel
- Savic

EUROPE

- Airbus
- BAE Sysytems
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- Leonardo
- MBDA
- SAAB Avionics
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- General Dynamics



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