Great River Technology
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Advanced Video and Data Systems

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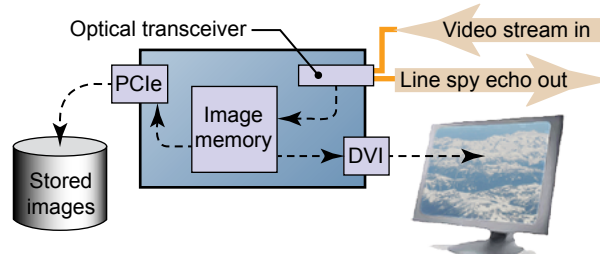
Initial release

Matrix Plus Series ARINC 818 Cards

GRT can factory configure a single Matrix Plus card for up to 15 ICDs using up to four different link speeds. Each mode matches one of your ICDs: link speed, image resolution, and pixel format. Like Matrix Series cards, Matrix Plus cards support interfaces from 1 to 4 Gb/s. A single card can function as a receiver and a transmitter for ARINC 818.
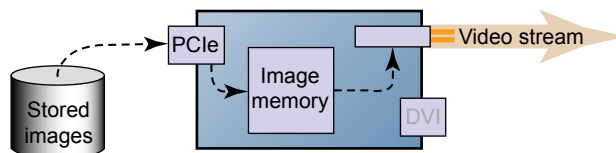
As an ARINC 818 receiver

Matrix Plus cards can capture ARINC 818 video to the software GUI and permit real-time viewing of embedded ARINC 818 data. The cards have a dedicated video port (VGA or DVI, depending on your specification) to view the incoming ARINC 818 video on a monitor.
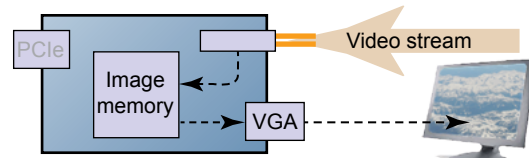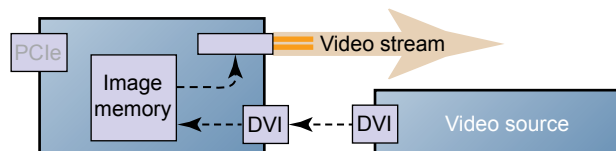

As an ARINC 818 transmitter

Load test images and embedded header data into the Matrix Plus card and transmit using the test software.

Versions of Matrix Plus: fiber (MX-E8-A8-O8) and coax with mezzanine (MX-E8-A8-CX). An enhanced test application ships with every card (see next page for details).

As an ARINC 818 converter

A Matrix Plus board can be factory configured as a converter: DVI to ARINC 818 or ARINC 818 to VGA.
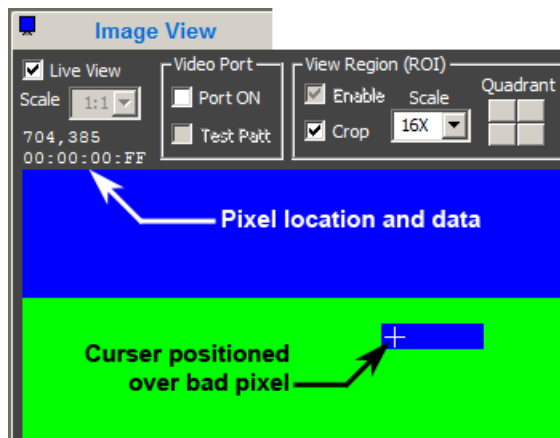

Applications

- Avionics video
- ATP for production displays
- Display development
- Sensor arrays
- Cockpit simulations
- Video generation
- High-speed video recording

Enhanced test application with every Matrix Plus card

GRT ships **MatrixPlusARINC818** test software with all Matrix Plus ARINC 818 cards. Configure and test ARINC 818 systems. Diagnose the health of your links. New features include:

- Use the View Region (ROI) window to magnify a specific area of your image. A problem in the image is easy to isolate and troubleshoot. Easily define the enlargement area. Curser over the

MatrixPlusARINC818 Image View

image to determine the location and read values for any pixel in the region.

- Compare a received image with a reference image from a file or card memory. See the count for mismateched images. Even view a "difference" image on the screen.
- Quickly select any mode (ICD) on the card.
- Transmit streaming video from numerous file types (including .avi, .wmv, .mov, and .mp4 formats)

All features of the older Matrix Series test application have been retained, including:

- Status indicators afford quick checks of link synchronization, presence of SOFi, EOFt, and idle oredered sets. They will detect any 8b/10b and CRC errors.
- A scrolling one-pixel horizontal line provides a convenient way to visually confirm live video on the ARINC 818 receiver.

The application includes a detailed user manual. It can also be used with older Matrix Series cards for any feature supported by those cards.

Card specifications

Standards	FC-PH Revision 4.3 ARINC 818 (818-2 ADVB high data rate)
Memory	500 MB plus throughput
Power requirement	8W (2.66A @ 3.0V)
Operating System	Windows XP, 32-bit; Windows 7, 8, 10, 64-bit; Linux (call for kernels supported)
Form factor	PCIe half length
Connectors	DVI; optional VGA
Operating temp.	0–50ºC (32–122ºF)

Software Development Kits

An optional Windows- or Linux-based Software Development Kit (SDK) enables faster development of real-time image and data acquisition systems, camera and sensor emulators, video generators, or other video-intensive applications. The SDK includes a user guide, sample code, and four hours of technical support.

For those using LabVIEW™ to develop systems with GRT cards, we also offer an SDK with sample and functional code that can be quickly customized.

How to buy

Determine your part number for Matrix Plus Series (MX-E8) ARINC 818 (A8) cards as follows:

MX-E8-A8-__-__-__-____

Video port
00 = none	VG = VGA
DR = DVIrx	VR = VGA and DVIrx
DT = DVItx	VT = VGA and DVI-i

Not all combinations are valid. If in doubt, call.

Custom characters assigned by GRT

Interface
C1 = FCN copper
C2 = Dual FCN
CX = Coax 75Ω
D3 = Dual Fiber 1310nm
D8 = Dual Fiber 850nm
O3 = Fiber 1310nm single mode
O8 = Fiber 850nm multi mode
SA = SMA

Link rate
1X = 1.0625 Gb/s
2X = 2.125 Gb/s
3X = 3.1875 Gb/s
4X = 4.250 Gb/s
ZZ = custom

For example:

MX-E8-A8-D8-4X-DT-0000 or **MXE8A8D84XDT0000**

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