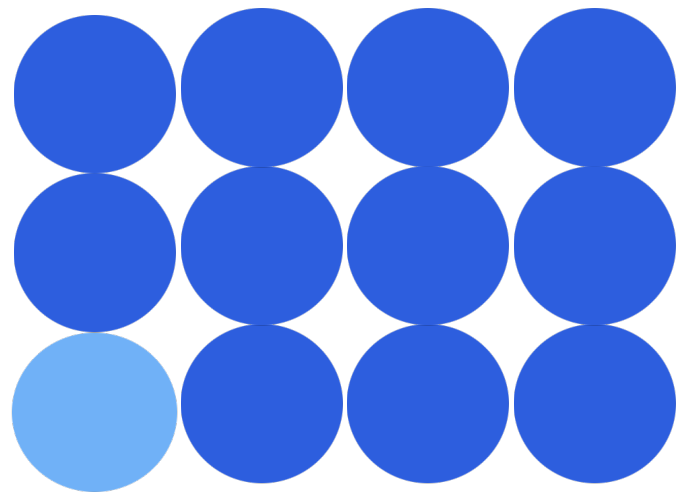


# VAADR R-EX



## Processing Platform

VAADR R-EX can interface to most FLIR/CCD cameras, and provides both conventional and advanced image processing, and then can output processed analog or digital video. Processing options are shown below. Various combinations can be created for various applications.

- Sharpening
- LAP
- Variable zoom
- White/black hot
- Temporal filter
- Distortion correction
- Spatial filters
- De-interlace filter
- Fusion
- Image stabilization
- Graphics overlay.
- NUC/BPR
- False coloring / thermography
- MJPEG encoding
- MPEG2 encoding
- H.264 encoding

**DDC has created a ultra-small SWaP board that is designed to provide a leap forward in situational awareness via the next generation of IR sensors.**

## General Information

The DDC small form factor Advanced Video and Data Recorder (VAADR R-EX) and processing platform provides real-time compressed or uncompressed recording and/or processing of 16-bit video (color or gray scale), in ruggedized applications. It allows unprecedented advanced image analysis and processing during debriefing, and allows unprecedented image processing capabilities on live video. It provides multiple channels, a variety of conventional VCR type controls, and a mix of very advanced image analysis and processing, with multiple input and output formats.

## Recording Platform

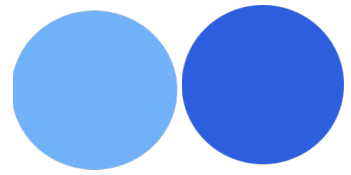
Providing for portable recording and image processing, VAADR R-EX provides all of the features of a conventional solid state video and data recorder, but additionally, provides unprecedented new capabilities, including:

- Record to attached solid state memory : 32G, 64G, or 128G.
- No debriefing station required, just a PC or laptop with USB... Or play directly to a flat panel, with no PC.
- Ability to record RAW data (in addition to compressed). This gives unprecedented new power in analyzing the video. Not only are there no compression artifacts of any kind, but, more importantly, the full dynamic range of the video source is preserved, providing the ability to extract significant detail otherwise lost through the compression process and the pre compression process of clamping the dynamic range. The image enhancement capabilities are optimal. Data can be recorded raw or compressed (MPEG2 now, h.264 soon).
- Metadata support. Record metadata (GPS, timestamps, IRIG, etc.) over serial ports, synchronized and along with video. Includes support for digital IRIG codes. Retrieve and display or process this data during debrief.
- Process the data during debriefing. Apply sophisticated processing algorithms real-time during playback for new power in extracting detail. Any processing does not affect the pristine raw data. It only modifies the data during playback via various simple-to-use controls for maximizing the detail. Since the recorded data is unaffected, this can be done again and again with different settings or by different people who might be studying different aspects, or at different times.
- Video portability. This comes in a few forms:
  - The video is available via plug-and-play USB2.0. Simply hook a PC or laptop to VAADR R-EX for instant debriefing
  - VAADR R-EX can directly process or playback video via NTSC or LVDS directly to a panel, no PC is required.



Digital Design Corporation

Digital Design Corporation • 3820 Ventura Dr. Arlington Hts. IL  
60004 • Phone: 847-359-3828 • Fax: 847-359-5418  
Website: [www.digidescorp.com](http://www.digidescorp.com) • E-Mail: [sales@digidescorp.com](mailto:sales@digidescorp.com)



## Storage

Operate with solid state drive:

- 32G
- 64 G
- 128 G
- Larger sizes can be created

Video	32 G			64G			128G		
	Raw	MJPEG	MPEG2	Raw	MJPEG	MPEG2	RAW	MJPEG	MPEG2
RS-170	1h	8h	12h	2h	16h	24h	4h	32h	48h
NTSC	30m	4h	6h	1h	8h	12h	2h	16h	24h
640x480 (16bit, 30 fps)	30m	4h	6h	1h	8h	12h	2h	16h	24h

\*Numbers are approximate, especially MJPEG and MPEG2. Results may vary depending on noise content of video, and quality required.

## Display Driver

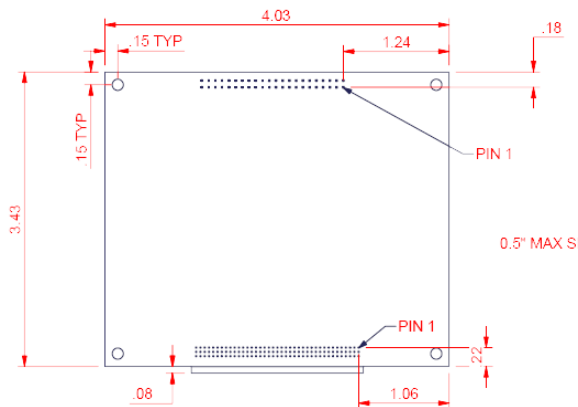
Providing for direct drive of a NTSC/PAL/RS-170 monitor or LCD flat panel with or without touch-screen. The unit also contains a graphics controller and can contain processing as listed above. Since the device supports multiple camera inputs or video sources, some advanced features supported include PIP (picture-in picture), PBP (picture-by-picture), and fusion.

## Environmental

- **Power/Temp**
  - 6W maximum dissipation for non-recording
  - 7W-8W for conventional recording
  - 8W-9W for multiple digital channel recording
  - Exceeds MIL-STD-704A, Type B
  - -40 to +85C ambient operation
  - Storage -55 to +125C
- **Operational Envelope:** The Insight is capable of being carried within a 7.5g envelope.
- **Mechanical Shock:** The board operates within specified performance requirements after being subjected to mechanical shocks per MIL-STD-810F, Method 516.5, in opposite directions along each of three orthogonal axes, with waveform and amplitude of the shock impulse characteristics as follows: Operating:  $\pm 20$  G, all shocks are half sine pulses, 11 milliseconds (ms) in duration in all 3 axes.
- **Vibration:** The board withstands vibration levels outlined in MIL-STD-810F, Method 514.5, Procedure 1.

## Mechanical

- Approx 4"x3.5
- Can be custom mounted into your chassis
- Custom form factors can be created



## Interfaces

- 5V power
- Data ports:
  - USB2.0
  - 2 RS-422 (graphics, spare)
  - 4 RS-232 (touchscreen, control, 2 spare)
  - I2C
  - GigE (10/100/1000) (via mezz card)
- Video In ports:
  - Parallel LVDS
  - 4 RS-170 / NTSC / PAL
  - 4 HOTLink
- Video Out ports:
  - 1 RS-170 / NTSC / PAL + 1 copy
  - LVDS out (see expansion below)
  - DVI (via mezz card)
- LCD display drive capabilities:
  - LVDS flat panel drive
  - Backlight control
  - Front panel interface
  - Touchscreen interface
- Expansion Header for mezz cards:
  - 16 Signals (single ended or differential)
  - 19 LVDS pairs

For more information  
contact Digital Design Corporation  
sales at:

+ 1-847-359-3828

or go to our website at:

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