

## Datasheet

### Features and Capabilities

- A key differentiator from VAADR MIL-N is that the recorder and the storage are both housed in what used be just the storage module. It is thus very small (6.5”Lx4.6”Wx1.4”H) and light (2 lbs. 3 oz.)
- Very high write and read bandwidth, supports very high resolution
- Very fast debrief
- Records high resolution raw imagery for great lengths of time
- Very rugged solution for all sorts of combat applications.
- Low cost.
- Low power (< 25 W)
- Very Small form factor. Recorder and storage media in a single VRMM chassis
- Many drive sizes: 1T, 2T, 4T, 8T, and others as needed
- Field upgradable
- Image enhancement ready
- Optional full debrief groundstation with corresponding playback of synchronized metadata and satellite data, and full bookmark capabilities and format conversions. Full plug-and-play with VAADR.

**VAADR MIL-SU is a high bandwidth airborne record platform for UAV applications.**



### Best Performance to SWaP Ratio:

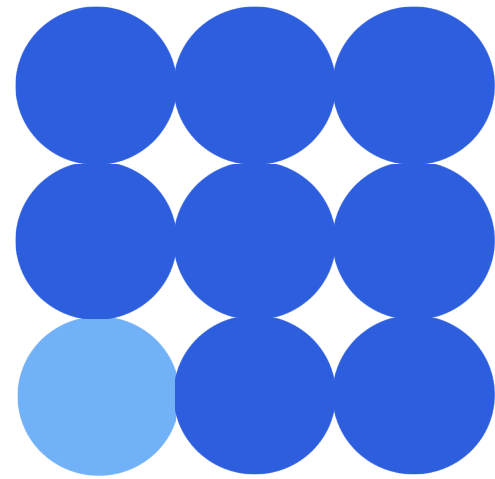
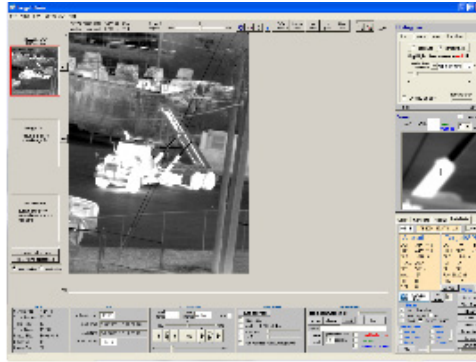
High Bandwidth up to 8TB Storage in .2 Cubic Feet

### General Information

The VAADR MIL-SU provides real-time recording of high frame-rate imagery from any number of sources, high read/write bandwidth. Records RAW imagery and associated meta-data (GPS, timestamp, IRIG codes, vehicular info, etc.). The RAW imagery recording and associated playback allows unprecedented advanced image analysis and processing during debriefing.

## VAADR Viewer Console and Debriefing Software

Running on almost any PC or laptop, and directly connecting to VAADR hardware via USB2.0 (VAADR shows up as a pen drive on PC/laptop), the VAADR Viewer application can *instantly* open up (or drag and drop) *all* of the VAADR video and data, and pan through it, play it, single step thru it, fast forward, rewind, all while zoomed, or with other contrast, analysis, or processing operations. Works on VAADR or other imagery.



### I/O

- Reads RAW, jpg, gif, png, tiff, FTS, MPEG2
- Write out AVI movies in RAW or compressed for playback in Windows Media Player (or other). Also writes bmp, jpeg, png, gif, tiff of selected images
- Extract selected raw images for own processing
- Supports drag and drop of countless amount of video
- Completely configurable RAW data dialog box, to view your RAW imagery: resolution, byte ordering, header bytes, timestamps, rotation, decimation, etc.

### Look/Feel

- Multiple 'skins' for simple or advanced controls
- Many view modes: Native size, Fit To Window, Rotated, PixelText, and hex-dump
- Other data: actual pixel data with mouse, histogram (line, frame, and area), line intensity

### Bookmarks

- Add bookmarks during debriefing, or display operator inserted bookmarks during recording.
- Add highlight-boxes, captions, etc. to each bookmark
- Playback only bookmarks, or index thru them
- Write out an AVI movie of bookmarks only
- Selectable playback time of each individual bookmark
- Different individuals can bookmark the same video with their own points of interest.
- Save bookmarks off for future use

### VAADR Example Record Times

Video	1 TB		2 T		4T		8T	
	RAW	MPEG2	RAW	MPEG2	RAW	MPEG2	RAW	MPEG2
640x480 (16 bit, 30 fps)	14.4h	3.4d	1.2d	6.8d	2.4d	13.6d	4.8d	27.2d
640x512 (16 bit, 60 fps)	7.2h	1.9d	14.4h	3.8d	1.2d	7.6d	2.4d	15.2d
1024x1024 (16 bit, 30 fps)	4.6h	3d	9.2h	6d	18.4h	12d	36.8h	24d
1024x1024 (16 bit, 60 fps)	2.4h	1.5d	4.8h	3d	9.6h	6d	19.2h	12d
2048x2048 (16 bit, 60 fps)	0.6h	0.4d	1.2h	0.8d	2.4h	1.5d	4.8h	3d

### Multiple Videos

- Supports 2 movies loaded simultaneously, so that they might be compared to one another. Also a mosaic mode to view 2 movies simultaneously
- Any field or frame from one movie can be differenced with any field or frame from another movie

### Processing

- Dynamic controls for zoom, contrast, rotation, flip, brightness, LAP, sharpen, histogram stretch, AGC, invert, color corrections, interpolate, white hot / black hot, etc.
- RAW video untouched, despite the processing done to enhance the playback.
- Supports plugins. Simple API to create other processing functions
- Bring out the most amount of detail with plugins such as: LAP (dynamic gamma), sharpening, various filters, tracker, thresholding, TRZ (translate/rotate/zoom), etc.
- Statistical and histogram analysis to analyze and detect defects or oddities in your sensor.
- Declassify mode for black boxing desired areas