

## DDC has created an Advanced 16 Bit, High-Resolution, High Frame Rate, Ruggedized Video and Data Vehicular Recorder.

### Features

- Records multiple channels of 16-bit high frame-rate video and metadata
- Multiple drive configurations from 48GB to 288GB+
  - Embedded, ruggedized solid state drive
  - Supports COTS ruggedized drives
  - SATA drive compatible
  - Supports generic disk drives for lab use
- High record bandwidth can be divided into multiple combinations of frame rate resolution
- Record RAW, MJPEG or MPEG-2 video
  - RAW for unadulterated imagery needed for post-process recon ops
  - MJPEG for 8x visually lossless compression
- Stream or pull video and/or data off
  - Plug and play USB 2.0
  - GigE 10/100/1000: network drive capable and GigE Vision capable
- Metadata recorder with video
  - Each frame time stamped to 1/100th second
  - Position, heading, speed, targeting, etc. recorded and synchronized with video
- Lightweight and compact: 3.25lbs, 7.68" x 4.86" x 2"

### General Information

DDC has a line of video recorders, capable of:

- Ruggedized vehicular (airborne, ground vehicle, automotive, commercial) use for mission or research (our main market is vehicular video processing and recording)
- Recording almost any camera (up to 8 currently), even high speed ones
- Prototyping most image lineups that might be needed in a customer application (i.e. we can prototype video electronics on the recorder for testing etc.)
- Morphing to the needed product form factor. The current circuit card is 4"x6", and smaller versions are available for specialized applications. The smaller one is approximately 3.5"x2.5".

This product is field deployed in automotive and military applications, and we use it widely to risk-reduce customer projects, and to perform research for making best possible algorithms for custom applications.

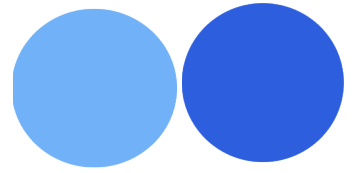
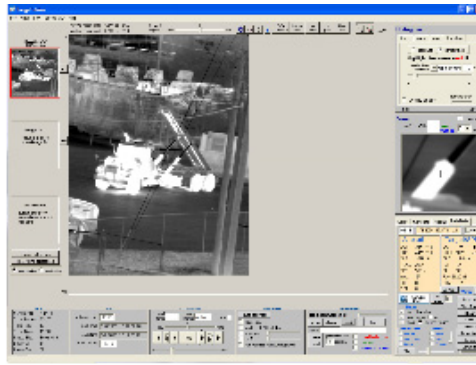
### Recording Platform

VAADR AUTO-EX provides real-time recording of high frame rate, 16-bit, high-resolution imagery in the field in ruggedized applications, or in other industrial settings. The powerful yet simple user interface application allows unprecedented real-time advanced image analysis and processing during playback at debriefing. Metadata acquisition, synchronization, management and display is also provided.



## 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

### 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

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