BAD WOLF TECHNOLOGIES LLC

Corsair™

COTS DVR with external SSD storage for shipborne, aviation and harsh environment use

Technical specification for **P/N: 9090106** is shown below. Other configurations are available in accordance with customer requirements [1]

- **Purpose-built DVR for shipborne, aviation and harsh environment use**
- **Non-ITAR COTS & modified COTS units**
- **Modular Design**
- **Video Configuration for P/N: 9090106101**
  - 4 x CVBS (RS170, RS170A, CVBS, NTSC/PAL) via TNC connectors
- **Optional video configurations**
  - 2 x HDSDI and 2 x CVBS via TNC connectors, or
  - 1 x HDSDI and 3 x CVBS via TNC connectors
- **Video Out** [2]
  - May be configured instead of 1 x or 2 x TNC connectors
  - NTSC 720x480i and PAL 720x576i
- **Audio Input** [2]
  - 1 x Audio In, microphone level
- **Video/Audio Information (abridged)**
  - Codec: MPEG-4 Part 10 Advanced Video Coding (H.264)
  - Resolution: NTSC/PAL, 1080p30/p25, 1080i60, 1080p30, 720p60, 720i60, 720p30
  - Compression: CBR and VBR
  - Video Bitrate: up to 23 Mbps CBR, VBR
  - File Format: Transport Stream (.ts)
  - Audio Codec: G711, G726, mp2, mp3, opus
  - Sample Rate: 8000/41000/48000, 8 bits or 16 bits per sample
- **Streaming, low latency**
  - TS, RTP or RTSP unicast and multicast
  - Stream and/or Record single or multiple video streams to/from other network devices
  - 100 ms, low latency Video Player available upon request
- **I/O**
  - 1 x RS232 – Console (ENGINEERING USE), API/SDK programming access
  - 1 x RS232 – GPS, Sensor, Data

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  - 1 x Ethernet/RJ45 – API/SDK programming access, web server, video download (may be removed or disabled for Cyber Security compliance)
- **GPIO (14)**
  - 4 x Input [2]
  - 10 x Output
- **Storage Type**
  - 1 x Removable, Universal Serial Bus 2.0 interface with locking 38999 MILSPEC connector
  - 2 x Internal SD Slot (engineering use – other options available, access via Ethernet/API)
  - Additional customizations and re-design may be performed in accordance with customer requirements [1]
- **Recording Media** (configurable)
  - Detachable USB 2.x/3.x SSD
  - Built-in Secure Digital with retrieval via Ethernet or USB OTG (instead of engineering use)
  - Additional customizations and re-design may be performed in accordance with customer requirements [1]
- **File System Support**
  - FAT, FAT32, exFAT, EXT3 and EXT4
- **Status LED (4x2), NVIS Bi-Color**
  - NVIS (night vision compatible)
  - 2-in-1, Top/Bottom: Green/Green, Yellow/Yellow, Yellow/Yellow, and Green/Green
  - Embedded in stainless steel protective housing
  - Custom manufactured for Bad Wolf Technologies by Oxley Group UK
- **Chassis** (6061-T6 Aluminum Alloy)
  - Coating: MIL-DTL-5541F Type II Class 3, using an AC7108 Nadcap approved chemical process
  - Main chassis
    - Part Numbers
      - Procurement: **9090106101**
      - Vendor: **BW-CORS-4A**
    - Connectors: 3xMIL-DTL-D38999 Series III (QPL) and 4xTNC
    - Option: Replace 4xTNC with coaxial four (4) contact MIL-DTL-38999[1]
    - Weight: < 4.75 pounds, approximate.
    - Dimensions: 6” x 1.75” x 8” not including SSD, 1U tray, side mounting flanges and connectors [1]
  - SSD, External
    - Part Numbers
      - Procurement: **90901062**
      - Vendor: **BW-CORS-SSD**
    - Connectors: 1xMIL-DTL-D38999 Series III (QPL)

- **Technical**
  - Multiple configuration files – ability to save and recall up to four (4) system configuration files via web browser. Program multiple systems from master config file. Restore system in real-time.
  - API/SDK – Application Development Interface available for complete control via UART or Ethernet
  - Operating temp range: -40ºC (-40ºF) to +85ºC (185ºF)
  - Qualifications [(3)]:
    - MIL-STD-461E, MIL-STD-810G CH1
    - Additional qualification testing performed in accordance with customer requirements [(3)]
  - Power Supply, MILSPEC:
    - Input: +9.5 VDC to +50 VDC
    - Draw: 10 Watts within operational temperature range
    - Output: Power peripherals or 3rd party devices:
      - 2 x +5 VDC @ 2A, isolated
      - +12 VDC @ 2A [optional], isolated
  - EMI/RFI filter, Aviation – MILSPEC (MIL-STD-461F, -55 ºC to +125 ºC operating temp)
- **Other**
  - API/SDK Custom Programming services available

(1) Additional qualification testing may be required.

(2) GPIO uses +3.3 VDC LVTTL with isolated signal ground and pull-down resistors. Pull-up resistor option available. Function reassignment may be performed in accordance with customer requirements.

(3) Conformance Testing Performed Successfully without relaxation:

- Conducted Emissions: MIL-STD-461E CE101, Tailored, Power Leads (30 Hz to 10 kHz)

Tailoring:	Frequency	Limit Level
	30 Hz	95 dBuA
	1.1kHz	95 dBuA
	10 kHz	76 dBuA

- Conducted Emissions: MIL-STD-461E CE102, Power Leads (10 kHz to 10 MHz)
- Radiated Emissions: MIL-STD-461E RE101, Magnetic Field (30 Hz to 100 kHz)
- Radiated Emissions: MIL-STD-461E RE102, Radio Frequency Electric Field (10 Hz to 18 GHz)

Tailoring:	Frequency	Limit Level
	10 kHz	70 dBuV/m
	800 kHz	50 dBuV/m
	100MHz	36 dBuV/m
	18 GHz	82 dBuV/m

- Radiated Susceptibility: MIL-STD-461E RS103, Tailored, Antenna Spurious and Harmonic Outputs (10 kHz to 40 GHz)

Tailoring:	Frequency	Limit Level
	2 MHz to 30 MHz	10 V/m
	30 MHz to 1 GHz	10 V/m
	1 GHz to 18 GHz	10 V/m

- Operating Temperature (High): MIL-STD-810G CH1 Method 501.6 Procedure II, 2-hour operating mode @ +40°C
- Operating Temperature (Low): MIL-STD-810G CH1 Method 502.6 Procedure II, 2-hour operating mode @ 4°C
- Storage Temperature (High): MIL-STD-810G CH1 Method 501.6 Procedure I, Category A2, 7 cycles/temperature & humidity @ +40°C
- Storage Temperature (Low): MIL-STD-810G CH1 Method 502.6 Procedure I, Category C2, 4 hours @ -33°C
- Mechanical Shock (Transportation): MIL-STD-810G CH1 Method 516.7 Procedure VI
- Mechanical Shock (Maintenance): MIL-STD-810G CH1 Method 516.7 Procedure 6
- Vibration (Operational): MIL-STD-810G CHG1, Method 514.7, Annex D, Category 21, including vibrations defined in Method 528.1 for Type 1 equipment at Frequency Range: 4 to 14 Hz at 1/2 amplitude
- Vibration (Transportation): MIL-STD-810G CHG1, Method 514.7 Category 4 [4,000 miles equivalent per axis] & Category 7 [30 takeoff/landing equivalent per axis].
    - Category 4 – Truck transportation over US highways – restrained cargo (Annex C 2.1.3 Section A & Test Procedure I)
    - Category 7 – Aircraft – Jet (Annex C 2.4 & Test Procedure I)
- Pressure (Transportation): MIL-STD-810G CHG1, Method 500.6, Procedure I, (57.2 kPa to 101.4 kPa)
- Inclination: +/- 90° in all axes