

# ComSys-5363 Rugged High Performance Mission Computing

## XEON E3 BASED MODULAR SYSTEM

### DESCRIPTION

The ComSys-5363 is a rugged COTS based mission computer targeted for use in demanding defense installations for avionic, land and sea applications. The feature packed 5363 is driven by a fully capable, server grade Intel Core™ i7-7820EQ (Kaby Lake) Xeon E3 CPU that provides the bandwidth necessary to support the signal processing requirements of a range of critical applications. In addition to the native CPU I/O, four mini-PCIe expansion sites enable a high level of configurability for multiple combinations of application specific I/O including but not limited to CANbus, MIL-1553, video, ARINC-429, RS-232/422/485, GPS, mSATA storage and gigabit Ethernet expansion. A removable drive bay supports two 2.5" SSDs for fast storage upgrades and multi-terabyte capacities. The small, sturdy, lightweight alumni chassis provides fanless, passive conduction cooling with maximum shelter from the elements including high levels of water and particle ingress protection. ComSys-5363 is ideally suited for use in mobile or stationary defense applications and its low power operation enables use in long duration missions as part of the overall power budget for a given platform.



### Features

- Intel Core™ i7-7820EQ processor with 16GB dual channel 1867/2133 MHz DDR4 memory and Intel® HD Graphics 630
- Dual 2.5" SSD removable drive bay. Inquire about optional high insertion / extraction cycle connectors
- 4 x miniPCIe / mSATA expansion sites supporting a wide range of application specific I/O configurations
- I/O configurations may include CANbus, MIL-1553, video, ARINC-429, RS-232/422/485, GPS, Ethernet, mSATA storage and others
- COM Express type 6 module / carrier architecture
- High bandwidth reliable MIL-STD-38999 and Hercules circular connectors
- MIL-STD-810G and MIL-STD-461G qualified for EMI, thermal, shock, vibration, altitude and humidity etc.
- 28 VDC MIL-1275/704 power supply with transient protection

### Benefits

- COTS modular construction:
  - Allows a wide mix of I/O combinations
  - Supports "future proofing" as missions evolve
  - Extends platform service life
- Easy storage capacity upgrades
- Fanless operation for higher reliability
- Base plate flange enables secure mounting
- Lightweight design for mobile applications
- Access to Elma's system integration specialists
- Modular/expandable design enables reconfiguration as missions evolve

## SPECIFICATIONS

### MIL-STD-704F

Input transient protection in normal and abnormal operating mode (MIL-HDBK-704-8 : LDC102, LDC103, LDC104, LDC105, LDC301)

Emergency operation (MIL-HDBK-704-8 : LDC401)

Grounding and phase reversal protection (MIL-HDBK-704-8 : LDC 602)

Power interruption (MIL-HDBK-704-8 : LDC601)

### MIL-STD-810H

Operating temperature: - 40°C to 71°C (MIL-810G, Methods 501.502)

Storage temperature: - 40°C to 85°C (MIL-810G, Methods 501.502)

Operating shock: 40g, 11ms, 3 pos/neg per axis, 18 terminal peak sawtooth pulses (MIL-STD-810H, Method 516.8, Procedure V)

Crash Hazard Shock: 75g, 11ms, 2 pos/neg per axis, 12 terminal peak sawtooth pulses (MIL-810H, Method 516.8, Procedure V)

Random vibration: 10Hz to 2000Hz, 3 axes, 1 Hour/Axis (MIL-STD-810H, Method 514.8, Procedure I)

Humidity: Up to 95% RH @, Non-condensing (MIL-STD-810H, Method 507.6, Procedure II)

Ingress, sand and dust: No ingress (IP67) (MIL-STD-810H, Method 510.7, Procedure I and II)

Water immersion: No leakage (IP67) (MIL-STD-810H, Method 512.6, Procedure I)

Operational Altitude: Up to 15,000 feet (4,572 meters) (MIL-STD-810H, Method 500.6)

Storage Altitude: Up to 40,000 feet (12,192 meters) (MIL-STD-810H, Method 500.6)

### Physical

Weight: 10 lbs. (4.5 kg)

Dimensions: 109.96mm (4.33") H x 297.5mm (11.7") W x 238.6mm (9.4") D

Installation: Base flange mount

Connectors: MIL-DTL-38999 Series III

Cooling: Passive. Conduction cooled with fins.

Enclosure Finish: Corrosion resistant aluminum allow with black anodized finish per MIL-A-8625, Type II, Class 2.

### EMI / EMC

Qualified to MIL-STD-461F

Conducted Emissions, CE102, Power Leads, 10 KHz to 10 MHz, basic curve

Conducted Susceptibility, CS101, Power Leads, 30 KHz to 150 KHz, Curve 2 (28V and below)

Radiated Emissions, RE102, Electric Field, 10 KHz to 18 GHz, Fig RE102-3

Radiated Susceptibility, RS103, Electric Field, 2 MHz to 18 GHz, Aircraft External, 200 Volts per Meter

### Power

28VDC nominal input voltage (16.5VDC – 50VDC)

Provides 117W

Over-voltage protection

Reverse polarity protection

Galvanic isolation of 500V

Compliant to:

- MIL-STD-461F
- MIL-STD-704A/E/F
- MIL-STD-1275A/B/D

### MIL-STD-1275D

Surge and Spike protection (Imported and Exported) in normal operating mode

Surge and Spike protection (Imported and Exported) in generator operating mode

Ripple Voltage Imported

### MIL-STD-461G

Conducted susceptibility (CS101, CS114, CS115, CS116)

Radiated emission (RE102, RS103)

Conducted emission (CE101, CE102)

### RTCA DO-160G

Electrostatic Discharge, Category A

### MIL-STD-464C

Electrical bonding

### External I/O Connections (miniPCIe I/O included)

2 x CANbus interface ports

2 x MIL1553 Interface

6 x 10/100/1000 Ethernet ports

2 x USB 3.0 and 3 x USB 2.0 ports

1 x eSATA port (optional)

1 x HDMI, 1 x VGA

8 x RS422 / RS485 and 2 x RS232

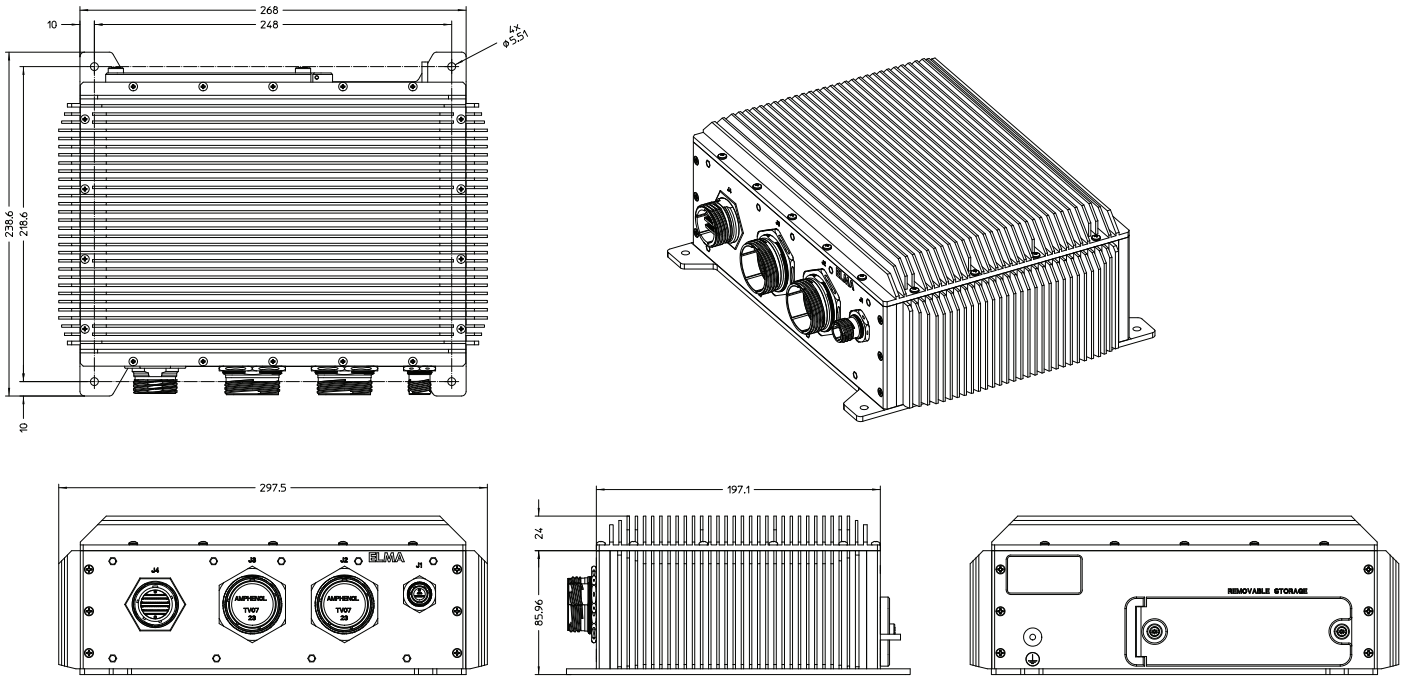
1 each analog audio stereo input and output

1 x analog microphone input

8 x GPIO

4 each avionics input and output

### DRAWINGS



### APPLICATIONS

The ComSys-5363 combines high performance compute capability with a rich set of I/O choices in a rugged chassis designed by the leaders in electronic packaging. The system is intended for use in a wide range of defense applications such as:

- › Mobile ground, sea and airborne mission computing
- › Manned and un-manned fixed and rotary wing aircraft
- › Wide range of fixed and mobile C4ISR equipment in harsh environments
- › Outdoor and underground platforms

### RELATED PRODUCTS



- › Complete line of small form factor chassis systems for a wide range of applications and environments
- › Standards-based I/O cards for connectivity configuration
- › Storage solutions to meet most usage requirements across a range of applications.

### ORDER INFORMATION

Description	Model Number
<b>Base ComSys-5363 (no miniPCIe modules) including:</b> Intel Core™ i7-7820EQ processor with 16GB dual channel 1867/2133 MHz DDR4 memory Removable drive bay for 2 x 2.5" SSDs 4 x miniPCIe COTS expansion sites 4 x 10/100/1000 Ethernet ports 2 x USB 3.0 and 3 x USB 2.0 ports 1 x eSATA port (optional) 1 x HDMI/DVI/DP++ port and 1 x VGA port 8 x RS422 / RS485 and 2 x RS232 1 each analog audio stereo input and output 1 x analog microphone input 8 x GPIO 4 each avionics input and output	DVS53GGCS321210XXL
<b>ComSys-5363 with CANbus, 1553 and GigE expansion:</b> Intel Core™ i7-7820EQ processor with 16GB dual channel 1867/2133 MHz DDR4 memory Removable drive bay for 2 x 2.5" SSDs 1 x miniPCIe COTS expansion sites 6 x 10/100/1000 Ethernet ports 2 x CANbus port 2 x MIL-STD-1553 channels 2 x USB 3.0 and 3 x USB 2.0 ports 1 x eSATA port (optional) 1 x HDMI/DVI/DP++ port and 1 x VGA port 8 x RS422 / RS485 and 2 x RS232 1 each analog audio stereo input and output 1 x analog microphone input 8 x GPIO 4 each avionics input and output	DVS53GGCS321237CXL

Description	Model Number
Optional Cable Assemblies	
J1 Cable - Power Input, 28V Nominal	CAE044227
J2 Cable - Gigabit Ethernet, RS232, Analog Audio Stereo Output, Analog Audio Stereo Input, Analog Microphone input, MIL1553 Interface, CAN Interface, GPIO, Avionics Output, Avionics Input, Power Button	CAE049448
J3 Cable - Gigabit Ethernet, RS422 / RS485, USB2	CAE049491
J4 Cable - eSATA, USB3, HDMI, VGA	CAE049492

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