Versatile Computing Systems

VCompS-3100 Versatile Computing Platform

Versatile and rugged embedded computing that satisfies a wide range of vehicle and mission computing applications reducing life cycle costs

Flexible Computing Solution

- Employs open architecture components and software to provide a flexible yet cost effective solution
- Enhanced avionics capabilities include on-aircraft 615A data loading, fast restart, and integrated Built-in-Test (BIT)
- Support for single to quad redundancy applications via Cross Channel Data Link (CCDL) and Channel Operation discretes

Designed for Critical Applications

- High Design Assurance Level (DAL) with ability to support certification up to DAL A for DO-254, DO-178C, and ARP4754
- Employs five (5) 3U OpenVPX slots for integrating up to two (2) 3U VPX Single Board Computer (SBC) processor cards and up to seven (7) input/output (I/O) cards (3U VPX and/or XMC)
- GE Synergy software environment allows includes all software components necessary to fully support embedded avionics application software development

Installation Ready

- Ruggedized unit is mountable directly to airframe structure
- Uses MIL-STD-38999 circular connectors
- Passively cooled chassis does not require direct cooling

Operating Environment

- Ruggedized design allows for operations at extreme temperature, altitude, and humidity conditions
- Protected from electro-magnetic interference, power transients, and lighting strikes

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Performance specifications

Baseline Configuration

- 2x T2081 PowerPC 1.4 GHz Quad-Core Processors
  - 4,200 DMIPS/core x8 with 33,600 DMIPS total
- GE Synergy w/ VxWorks7
- ARINC 615A Data Loader

Interface Signal Characteristics

- Mode Discretes
- Discrete Output O/G: 250 mA
- Discrete Output 28V/O: 28V @ 250 mA
- Discrete Input 28V/O: 14/3.5 V (high/low)
- Discrete Input O/G: 100K / 10 ohm
- RT ADDR: Open/Gnd (5+Parity)
- CHOP: RS-422 signal levels (Low Voltage Differential Signal), 100 us pulse @ 800 Hz
- RS-485/422: up to 921.6 K Baud
- ARINC 429: Low or High Speed
- IEEE-1349b: 200 mbps
- ARINC 825 (CAN)
- Ethernet: 10/100/1000 BaseTx
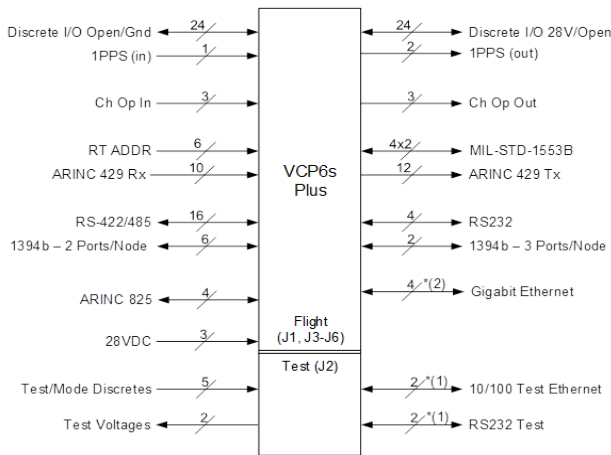- 1PPS: 0-10 V, 20 mSec pulse/sec

Operating Environment

- Temperature: -40°C – +71.1°C
- Altitude: to 50,000 feet
- Relative Humidity: >95%
- Vibration: up to 11.3 GRMS
- MIL-STD-461E: CE102, CS101, CS114, CS115, CS116, RE102, and RS103 (200V/m)
- DO-160E A1J22 Lightning Protection
- MIL-STD-704F, 50 mSec Transient Protection

Safety

- BIT > 95% coverage
- Up to ARP4754, DO-178C, and DO-254 DAL A certifiable
- MIL-HDBK-516C Safety Critical

Feature	Attribute
Size (L x W x H)	9.4 inches x 8.8 inches x 5.7 inches 23.9 cm x 22.4 cm x 14.5 cm
Weight	16.5 lbs (7.5 Kg)
Power	100 W (28 VDC) Typical

Discrete I/O Open/Gnd — 24 — VCP6s Plus — 24 — Discrete I/O 28V/Open
1PPS (in) — 1 — 2 — 1PPS (out)
Ch Op In — 3 — 3 — Ch Op Out
RT ADDR — 6 — 4x2 — MIL-STD-1553B
ARINC 429 Rx — 10 — 12 — ARINC 429 Tx
RS-422/485 — 16 — 4 — RS232
1394b – 2 Ports/Node — 6 — 2 — 1394b – 3 Ports/Node
ARINC 825 — 4 — 4 *(2) — Gigabit Ethernet
28VDC — 3
Flight (J1, J3-J6)
Test (J2)
Test/Mode Discretes — 5 — 2 *(1) — 10/100 Test Ethernet
Test Voltages — 2 — 2 *(1) — RS232 Test

* The Dual SBC configuration is the first number. The Single SBC configured number of connections is in (#).