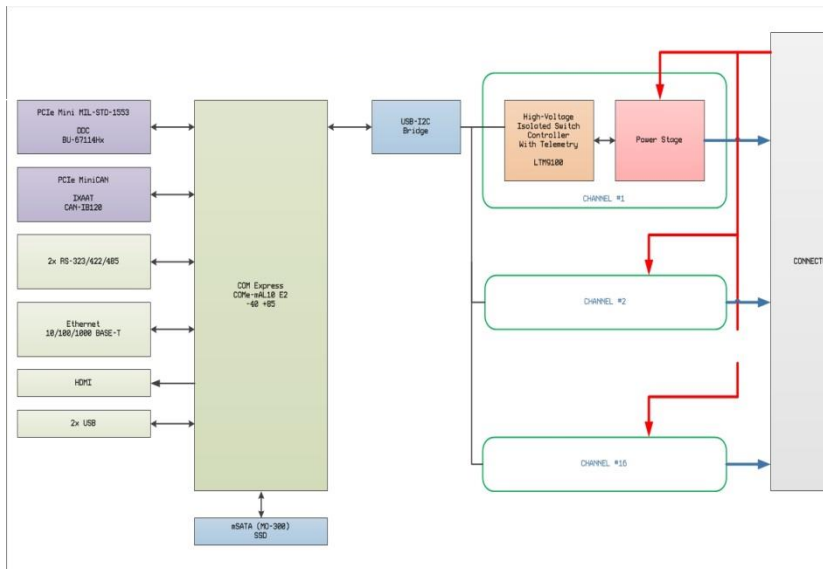


Key Features:



- 100VDC Continuous Input Voltage
- Sixteen independent channels at 25A each
- ON/OFF capability for each channel
- Trip current capability for each channel
- Trip Reset capability
- Channel sequencing with user defined delays
- Dual RS485 interfaces for control
- Ethernet and MILbus interface
- Optional CANbus interface
- Measurements of Input voltage, output voltage, output current for each channel
- 12-/16-Bit ADC with $\pm 0.7\%$ Error
- On board temperature of the Unit
- Trip/Fault Status (if Over Current / Short Circuit)
- Friendly GUI to set up and monitor

100VDC POWER DISTRIBUTION UNIT

Power Distribution Unit (PDU) primarily receives 100VDC power as input from the airborne platform and distributes it as same 100VDC to the subsystems having different current loads. The power input to the individual subsystem is controlled remotely through a set of commands sent on several interface options.

The PDU is **conduction cooled** and suitable for use in **mission critical rugged applications**.

There are sixteen independent channels. Each of them is independently programmed for power ON/OFF capability. Power monitors used in each channel performs measurements of Current, Voltage, Power and Energy with 12-/16-Bit ADC with $\pm 0.7\%$ of total error. Programable current limit with 2% accuracy. PDU provides MOSFET power limiting with current foldback, continuously monitors MOSFET health, stores Minimum and Maximum measurements, alerts when thresholds exceeded, provides input Overvoltage/Undervoltage protection.

PDU provides Channel sequencing with user defined delays. All settings and configuration are stored into internal EEPROM for nonvolatile configuration.

| Overview | |
|-------------------|-------------|
| P/N | PCI_800.915 |
| Size | 6U |
| Temp. Range | -40 +85 C |
| Input (AC or DC) | DC |
| Input Range (VDC) | 20-100 |
| # of outputs | 16 |
| Weight | <1.5kg |

| FEATURES | |
|-----------------------------|------------------|
| Over-current Protection | YES |
| Over-voltage Protection | YES |
| Over-temperature Protection | YES |
| Dual R485 interfaces | YES |
| Extended Control | YES, PCI Systems |
| | |
| | |

| INPUT CHARACTERISTICS | | | | | |
|------------------------------------|------|------|------|-------|-------|
| Parameter | Min. | Typ. | Max. | Units | Notes |
| Absolute Maximum Ratings | | | | | |
| Input Voltage | | | | | |
| - Operating | 20 | | 100 | V | |
| | | | | | |
| Operating Temperature | -40 | | 85 | C | |
| Storage Temperature | -55 | | 105 | C | |
| Electrical Characteristics | | | | | |
| Under-Voltage Lockout | | | | | |
| - Turn-On Input Voltage Threshold | 18.5 | 19 | 19.5 | V | |
| Over-Voltage Lockout | | | | | |
| - Turn-Off Input Voltage Threshold | 99 | 100 | 102 | V | |

| CHANNEL RATING, TRIP CURRENT, CHANNEL CONFIGURATION DETAILS | | | | | |
|---|------|------|------|-------|-------------------|
| Parameter | Min. | Typ. | Max. | Units | Notes |
| Absolute Maximum Ratings | | | | | |
| Channel Current | | | | | |
| - All Channels | | | 25 | A | |
| | | | | | |
| | | | | | |
| Trip Current | 0 | | 100 | % | User Programmable |
| Programmable delay in Channel sequencing | | | 60 | sec | |
| | | | | | |

ENVIRONMENTAL QUALIFICATION

| Test Name | Method | |
|---|---|----------------------------------|
| Vibration Test | At 1.0kg from 5Hz to 500Hz, Equipment to be Off | |
| | Random, Duration 1Hr | |
| | 0.5K / 1.0g from 5Hz to 500Hz, Equipment to be Off | |
| High Temperature Storage cum Operational Test | From 35°C to 70°C diurnal cycle, Duration 7 cycles, 24 Hrs each cycle | |
| Low Temperature Storage cum Operational Test | From 27°C to -45°C , 2 cycles | |
| Humidity | From 30°C to 55°C with RH:95 TO 85%, 24 Hrs each cycle , No.of cycles: 10 | |
| Low Pressure (Altitude) | Test I : 37,500 ft ~ 11.2 Km Altitude, Rate of altitude change ≤ 2000 ft./min | |
| Shock | Functional | Crash Safety |
| Severity | 15g, 11 m sec | 30g, 11 m sec |
| Pulse shape | Half Sine Pulse | Half Sine Pulse |
| No. of shocks | 3 shocks on each of 6 directions | 2 shocks in each of 6 directions |
| Total of shocks | 18 | 12 |
| Acceleration | (X-Axis or Roll axis) before and after : 2.5g (Y-Axis or Pitch axis) up and down : 3.0g Test Duration 1.0 (ONE) minute after the specified "g" level reached DUT to be POWER ON during this test and possible critical parameters like current Drawn etc. to be Monitored Structural test levels is 1.5 times the Functional test levels Units are OFF during the test | |
| Fungus | Temperature : 30°C ±2°C RH : Not less than 95% Duration : 28 days | |
| Salt Fog | Salt concentration : 5% ±1% of salt solution 24 hrs exposure & 24 hrs drying constitutes one cycle Temperature : Standard ambient No. of cycles : 2 | |
| Sand / Dust | Temperature : 23°C ±2°C RH : < 30% ±5% Air velocity : 1.5 m/s to 8.9 m/s a).Duration: 6 hrs at 23°C ±2°C Dust concentration : 10.6 ±7 gms/m ³ b).Duration: 6 hrs at 55°C ±2°C Dust concentration : 10.6 ±7 gms/m ³ | |
| Transit Drop | MIL-STD-810F, Method 516.5 Procedure -VI | |
| Bench Handling | MIL-STD-810F, Method 516.5 Procedure -IV Height of drop : As per table 516.6-VI No.of Drops : 26 (1drop on each face , edge and corner) | |

| ENVIRONMENTAL QUALIFICATION | |
|-----------------------------|---|
| Arrestor landing | Severity: 21g , half sine, 39ms or 30g , half sine, 30ms or 50g , half sine, 18ms or 100g half sine, 9ms No. of cycles 15 shocks in each of vertical and longitudinal axis. Duration between two shocks is >10sec. BOARDS are energized during the test, After each of 5 the performance of the Boards are to be shocks, verified. |
| Fluid Contamination | Test Fluid : Fuel DERD 2494 Hydraulic Fluid MIL-H-5606E Lub. Oil OERD 2497/MIL-L-7808 Test Temp : + 65°C ±3°C Duration : 7 days / Test Fluid |
| Rain Drip / Driving Rain | Driving Rain Test is performed on external LRU's and rain drop tests are done on LRU's installed inside the fuselage |

RELIABILITY CHARACTERISTICS

Calculated MTBF per MIL-HDBK-217F (GB) at 70 deg C. 2.500.000 Hrs.
Calculated MTBF per MIL-HDBK-217F (GM) at 70 deg C. 480.000 Hrs.

Pinout: **TBD**

Mechanical Dimensions: **1" pitch, 6U, VITA83 compatible**

ORDERING INFORMATION:

PCI_800.916 100VDC Power Distribution Unit
PCI_800.916_C Version with Conformal Coating

Release_October_04_2017