

### Key Features:

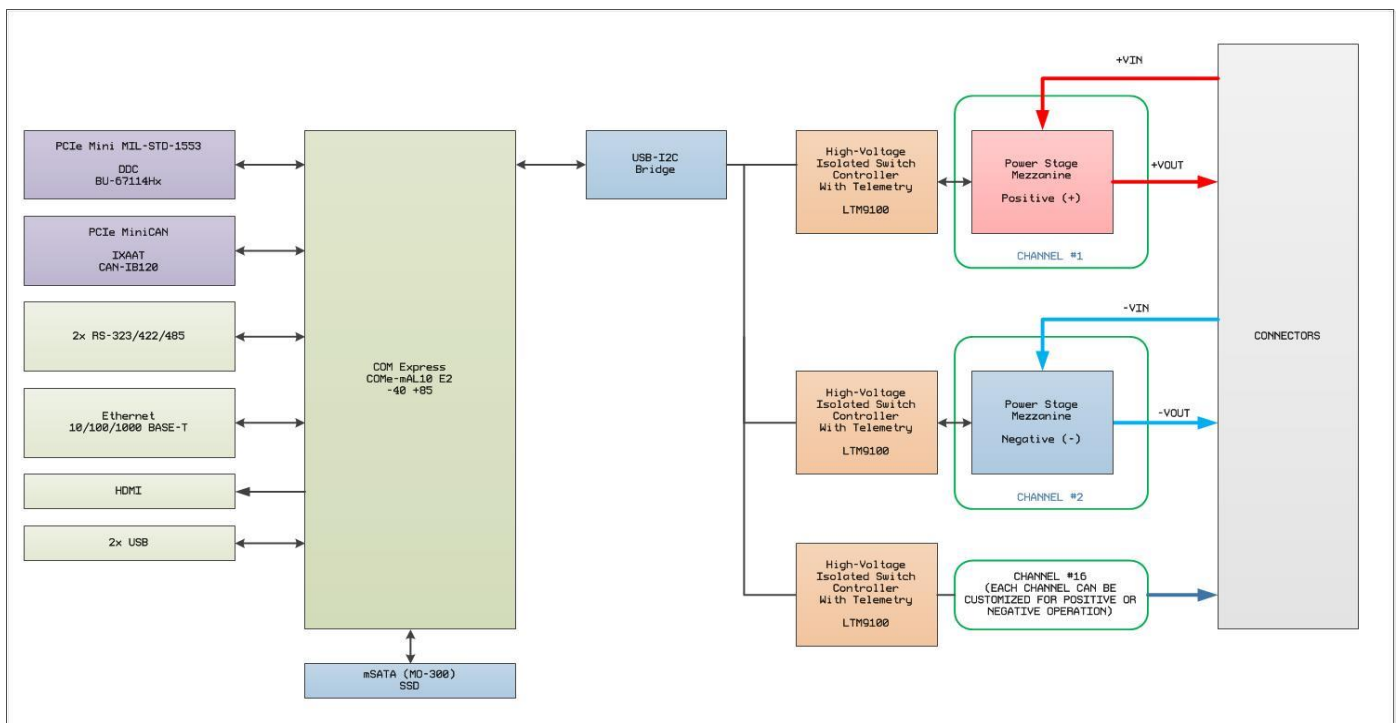
- +/- 70VDC Continuous Input/Output Voltage
- Sixteen independent +/- channels at 15A, 20A max. each
- Trip current and ON/OFF, trip reset capability for each channel
- VITA 83 compliant
- Channel sequencing with user defined delays,
- Ethernet interface, Dual RS485 interfaces for control
- Optional CANbus and MILbus 1553 interface
- Dual Voltage (+/-) Tracking for each channel
- Measurements of Input, output voltage, output current for each channel
- Trip/Fault Status (if Over Current / Short Circuit)
- Friendly WINDOWS based GUI to set up and monitor all system parameters

The Power Distribution Unit (PDU) primarily receives +/-70 VDC power as input from the main platform and distributes it as same +/-70 VDC 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 is 2% accurate. 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.

The COMe CPU module provides Channel sequencing with user defined delays. All settings and configuration are stored in the internal eGate SSD for non-volatile configuration.



Overview	
P/N	<b>PCI_800.917</b>
Size	<b>6U or TBD</b>
Temp. Range	<b>-40 +85 C</b>
Input (AC or DC)	<b>DC</b>
Input Range (VDC)	<b>+/- 20-80</b>
# of dual outputs	<b>16</b>
Weight	<b>&lt;1.5kg TBD</b>

FEATURES	
Over-current Protection	<b>YES</b>
Over-voltage Protection	<b>YES</b>
Over-temperature Protection	<b>YES</b>
Dual R485 interfaces	<b>YES</b>
Extended Control	<b>YES, PCI Systems</b>
Trip response	<b>Faster than 10 uSec</b>

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

CHANNEL RATING, TRIP CURRENT, CHANNEL CONFIGURATION DETAILS					
Parameter	Min.	Typ.	Max.	Units	Notes
<b>Absolute Maximum Ratings</b>					
<b>Channel Current</b>					
<i>All Channels</i>			<b>15</b>	A	
<b>Trip peak/spike Current</b>			<b>1000</b>	%	User Programmable
<b>Trip Current</b>	<b>0</b>		<b>100</b>	%	User Programmable
<b>Programmable delay in Channel sequencing</b>			<b>60</b>	sec	User Programmable

**ENVIRONMENTAL QUALIFICATION**

**THESE TESTS CAN ONLY BE PERFORMED WITH BOARD INSTALLED IN COLDPLATE  
COOLED RUGGED TURTLE SHELL CHASSIS**

<i>Test Name</i>	<i>Method</i>	
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 <sup>3</sup> b).Duration: 6 hrs at 55°C ±2°C Dust concentration : 10.6 ±7 gms/m <sup>3</sup>	
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

**THESE TESTS CAN ONLY BE PERFORMED WITH BOARD INSTALLED IN COLDPLATE  
COOLED RUGGED TURTLE SHELL CHASSIS**

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 or custom**

### ORDERING INFORMATION:

**PCI\_800.917**  
**PCI\_800.917\_C**

70VDC Power Distribution Unit  
Version with Conformal Coating

Release\_October\_24\_2017



[www.pcisystems.com](http://www.pcisystems.com)

**PCI-SYSTEMS**  
EMBEDDED COMPUTER SOLUTIONS