

Key Features:

- 220-290VDC Continuous Input Voltage
- 1800V Isolation Between Input /Output
- Active Input EMI Filtering
- Transient look ahead/cut-off technology
- 6 Voltage output Rails
- Isolated 3.3V aux standby feature
- 600W Continuous Power
- 93% Typical Efficiency
- -40°C to 85°C Rail Operating Temperature
- VITA 62 3U Form Factor
- VITA 46.11 ready
- Patent pending **FourRail** thermal interface
- [SMART.PSU] Technology

VITA 62 3U ISOLATED 600W 270VDC POWER SUPPLY

This 3U power supply works with **270VDC input** isolates the input voltage ground from the output voltage ground. The power supply is **conduction cooled**, uses **poly-phase** technology on all voltage rails and can provide up to **600 watts**. It is suitable for use in **mission critical rugged applications**.

[**SMART.PSU**]PCI-Systems Inc. intelligent power supplies integrate a **microcontroller** (MCU) for a fully programmable and flexible solution. Intelligent power conversion allows **configuration and reconfiguration** for different applications. With intelligent power conversion, the power supply becomes a platform solution for Vita 46.11 system management based systems. The power supply can easily be **reprogrammed** to support different **operating limits and control inputs**.

Features:

- Parallel operating with multiple power supplies, all rails
- Load sharing and balancing
- Digital On/Off control for low standby power
- Input / Output Voltage rail setting /adjustment
- Spread Spectrum Clocking of power supply stages
- Power supply sequencing
- Power supply history logging and fault management
- Monitoring all output voltages, currents and power
- Automatic temperature drift compensation for all outputs
- Total-Elapsed-Time Recorder
- Communication via SMB/I2C (PMB)for Vita 46.11 system management
- Over temperature protection
- Precision compensation of all output voltages using integrated 5ppm voltage reference

Overview	
P/N	PCI_800.116
Hold Up time	TBD
VITA Compliant	VITA62
Size	3U
Temp. Range	-40 +85 C
Input (AC or DC)	DC
Input Range	270
Active EMI Filtering	YES
Power (W, max.)	600
Efficiency (% , typ.)	93
# of outputs	6

OUTPUTS (Total output not to exceed 600W)	
VS1, V@A	+12@40A
VS2, V@A	+3.3@20A
VS3, V@A	+5@40A
AUX, V@A	+3.3@4A
AUX, V@A	+12@1.5A
AUX, V@A	-12@1.5A

FEATURES	
Over-current Protection	YES
Over-voltage Protection	YES
Over-temperature Protection	YES
Current Sharing	VS1, VS2, VS3
Remote Sense	YES
Standard Control	YES, VITA62
Extended Control	YES, PCI Systems

COMPLIANCE	
Designed to meet the following standards, additional circuitry inside the chassis may be required	
VITA62	YES
MIL-STD-704 (B-F)	YES
MIL-STD-461	YES
MIL-STD-810G	YES
* ESD Protection	YES
* Shock	YES
* Vibration	YES
* Rapid Decompression	YES
* Corrosion Resistance	YES
* Fungus Resistance	YES
* Altitude	YES
* Humidity	YES

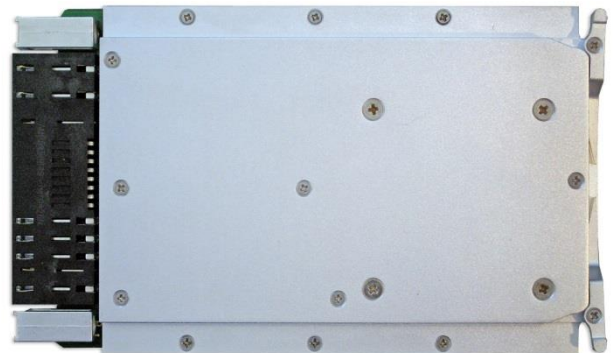
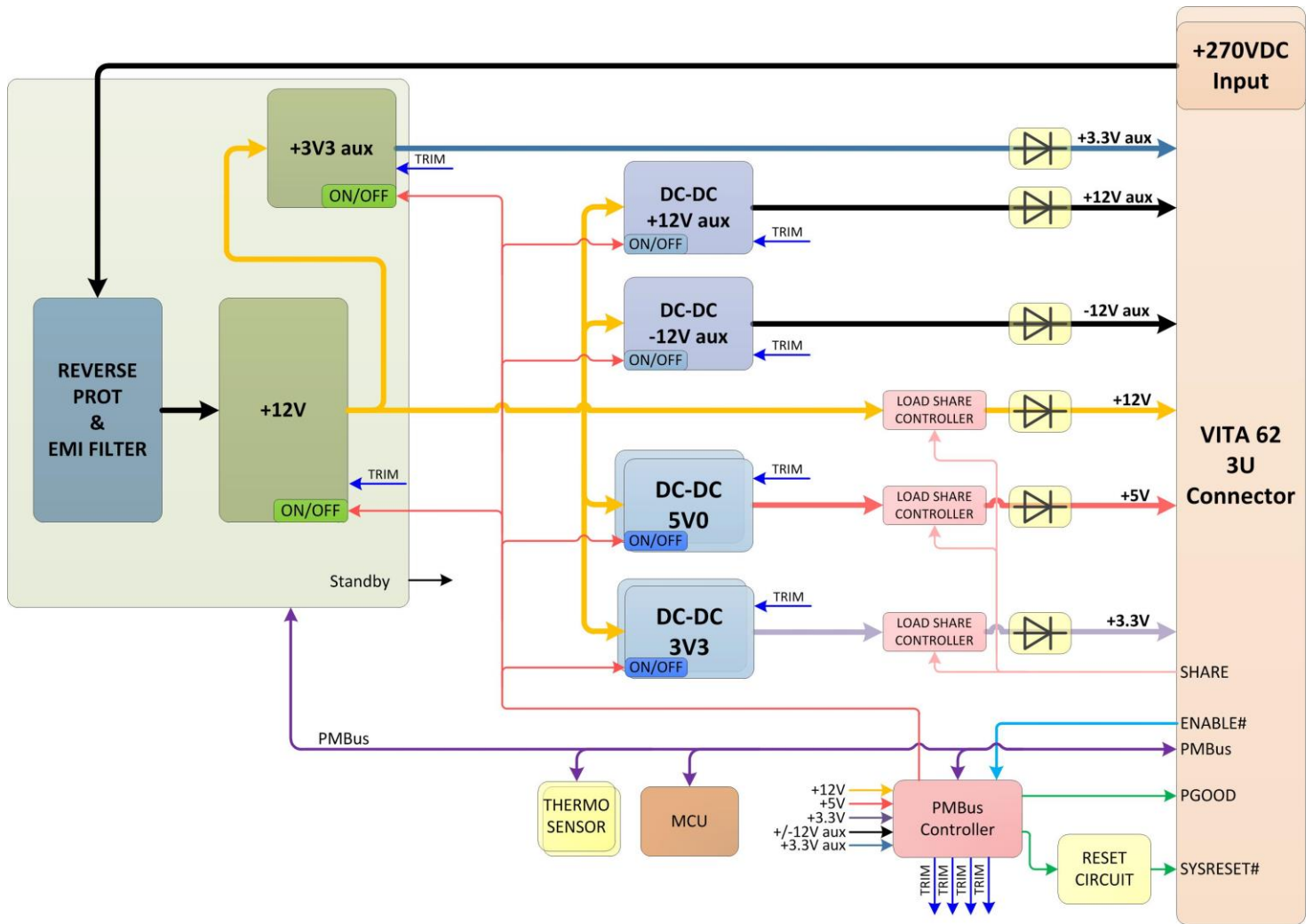
INPUT CHARACTERISTICS					
Parameter	Min.	Typ.	Max.	Units	Notes
Absolute Maximum Ratings					
Input Voltage					
- Non-Operating			600	V	Continuous
- Operating			290	V	Continuous- Reverse input Protection
- Operating Transient Protection			350	V	100ms transient, square wave
Isolation Voltage			1800	V	
Operating Temperature	-40		85	C	
Storage Temperature	-55		105	C	
Electrical Characteristics					
Input Voltage					
- Continuous	220	270	290	V	
Under-Voltage Lockout					
- Turn-On Input Voltage Threshold	190	200	210	V	

INPUT VOLTAGE SPIKES SUPPRESSION (Vin Centered)	
Designed to meet the following standards, additional circuitry inside the chassis may be required	
+/- 450V, 100 us	MIL-STD-1275D
+/- 490V, 10 us	MIL-STD-461C (CS06); DEF-STAN 61-5
+/- 450V, 5 us	MIL-STD-461C (CS06)
+/- 600V, 10 us	RTCA/DO-160E

OUTPUT CHARACTERISTICS							
Parameter	+12V	+5V	+3.3V	+3.3V aux	+12V aux	-12V aux	Notes
Output Voltage Set Point, V	12	5	3.3	3.3	12	-12	Vin = 270VDC
- Drift -40 deg.C to 85degC +/- %	0.01	0.01	0.01	0.01	0.01	0.01	Vin = 270VDC
Output Voltage Trim Range, V	12	5	3.3	3.3	12	-12	Over Line/load/temp.
	+/- 10%	+/- 10%	+/- 10%	+/- 10%	+/- 10%	+/- 10%	Over Line/load/temp.
Output Voltage Ripple (pk-pk), mV	80	50	40	40	80	80	Full load with 1 uF + 10 uF tantalum capacitor
Operating Current Range, A	0-40	0-40	0-20	0-4	0-1.5	0-1.5	600W Total, combined Output
Over-Voltage Protection, V	13	6	3.6	3.6	13	13	
Current Limit Inception, A	42	42	22	5	2	2	
Maximum Output Capacitance, mF	10	10	10	1	1	1	

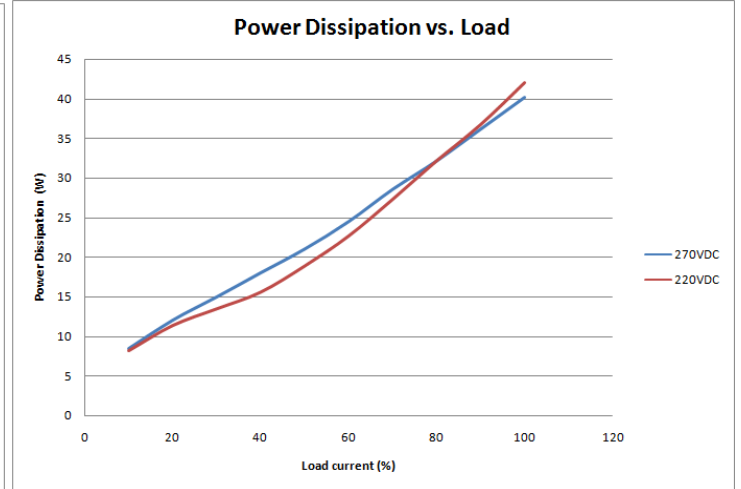
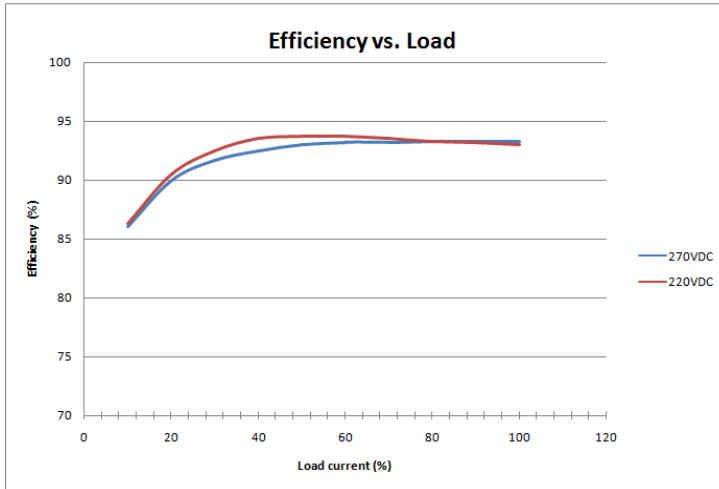
MODULE QUALIFICATION	
Designed to meet the following standards, additional circuitry inside the chassis may be required	
Test Name	Method
Random Vibration	MIL-STD-810, 514.6 - Procedure I, Class V3
Shock	MIL-STD-810, 516.6 - Procedure I, VI, Class OS2
Altitude	MIL-STD-810, 500.5 - Procedure I, II, III
Fungus Resistance	MIL-STD-810, 508.6
Corrosion Resistance	ASTM G85, Annex A4
Humidity	MIL-STD-810, 507.5 - Procedure II
High Temperature	MIL-STD-810, 501.5 - Procedure I, II
Low Temperature	MIL-STD-810, 502.5 - Procedure I, II
Temperature Cycling	MIL-STD-202, 107 - Class C4
ESD	EN61000-4-2, Level 4; 15kV Air Discharge

Block Diagram:

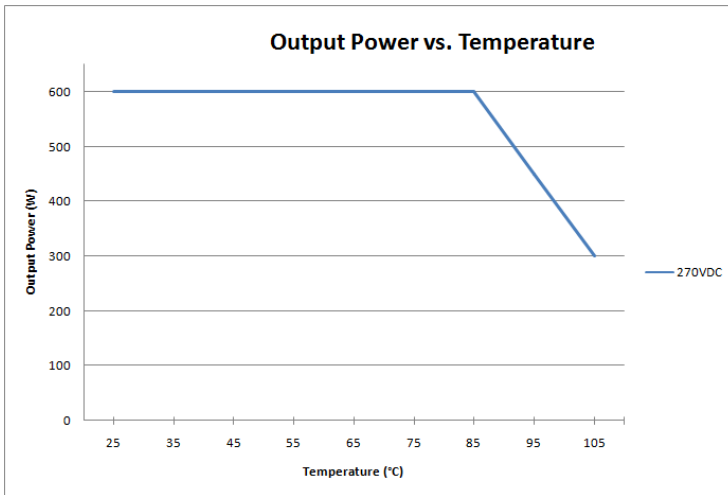


Pin-out: As per VITA 62 specification

Mechanical Dimensions: As per VITA 62 specification (1.2(a)" pitch)



Efficiency and Power Dissipation at nominal output voltage vs. load current at 25°C



Thermal derating

Max. Output Power vs. temp at module cover.

(Delta T to wedgelock 7°C)

ORDERING INFORMATION:

PCI_800.116

3U VITA 62 270VDC 600W Isolated Rugged Power Supply

PCI_800.116_C

Version with Conformal Coating

Release_October_26_2019