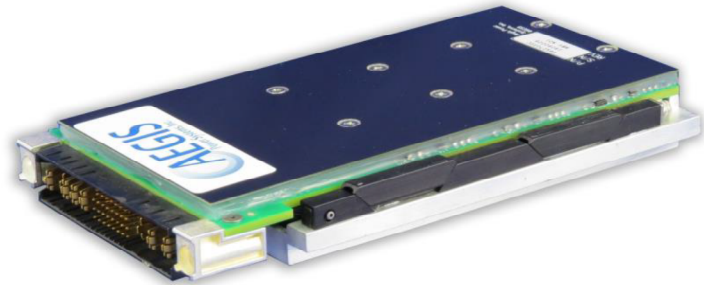


## VPX2703UC

### VPX DC-DC

3U x 5HP x 168.49mm  
Power Converter Card

(Document Rev A03, 1/17/2017)



**270Vdc Input**  
**6 Output, 650W Max Combined Output**

### Features

- 270Vdc per MIL-STD-704F
- 6 Output Voltages, 650W
- MIL-STD-810F Environmental \*
- MIL-STD-461E EMI \*
- Single Slot VPX Power Card

**Table 1: Maximum Ratings**

Parameter	Rating	Unit	Notes
Vin max range	160 to 420	Vdc	270V Nominal
Temperature	-40 to +85	°C	Baseplate @ wedgelocks
Input power	715	W	@ 650W out (270VDC input)
Combined output power	650	W	See Table 2 for DC output variations
Efficiency	91	%	Typical @ nominal conditions

\* Designed to meet applicable portions of the standard. Contact Aegis Power for details.

### Product Highlights

This single slot thin (5HP) filtered 270Vdc VPX2703UC power card with six outputs at 650W maximum power, is a COTS military power supply solution designed to meet portions of MIL-STD-810F vibration and shock requirements and designed to meet portions of the MIL-STD-461E EMI requirements. When compared to VPX power supplies using conventional technology, the single-slot VPX2703UC provides users with higher efficiency (up to 93%), and higher power (up to 650W). It also has alignment keys that offer keying options when using multiple power supplies in one chassis.

**AEGIS Power Systems, Inc.** specializes in the front-end design, development, and manufacture of Rapid Response Custom Switching Power Supplies for defense, industrial, telecommunication, electric powered vehicle and Mil-Cots military power supply applications. Contact Aegis Power Systems for details on Mil-Specs that this product is designed to meet.

## **SPECIFICATIONS**

**(Typical at 25°C, nominal line and 100% load, unless otherwise specified.)**

<b>DC input voltage:</b>	Designed to meet MIL-STD-704F, continuous operation 160Vdc to 420Vdc, 270 Vdc nominal.
<b>DC input line current:</b>	4.47A max @ 160Vdc; 2.65A typical @ 270Vdc input (650W out).
<b>Input power:</b>	715W max @ 650W out
<b>Output power:</b>	650W max. all outputs combined.
<b>Output voltages:</b>	See table 2.
<b>Efficiency:</b>	88.5% minimum, 91% typical, 93% max
<b>Start up time:</b>	120 millisecond maximum.
<b>Voltage set point/ Line/Load regulation:</b>	+/- 2% Vout nominal (for any combination).
<b>Temperature regulation:</b>	+/- 0.01% / °C.
<b>Output ripple:</b>	50mV pk-pk Max. (20 MHz BW) all except; +/-12 Vdc 100mV pk-pk Max.
<b>Current Limit:</b>	Short circuit protected with automatic recovery.
<b>Temperature:</b>	-40°C to +85°C Operating baseplate @ wedge locks 650W. -55°C to +100°C Non-operating.
<b>Cooling:</b>	Conduction cooling through wedgelocks attached to customer rack.
<b>Package:</b>	Single slot pluggable slide in rack card.
<b>Dimension:</b>	3U x 5hp x 168.49mm (see mechanical drawing page).
<b>Weight:</b>	1.56 lbs. (typical)
<b>Connector:</b>	1ea TE Connectivity 6450849-7 or equivalent (see pin assignments page).
<b>Vibration:</b>	Designed to meet MIL-STD-810F, Method 514.5, Procedure I.
<b>Shock:</b>	Designed to meet MIL-STD-810F, Method 516.5, Procedure I.
<b>Humidity:</b>	0 – 95% non-condensing.
<b>EMI:</b>	Designed to meet MIL-STD-461E (CE101, CE102, and CS101).
<b>Safety Approvals:</b>	

**Table 2: Voltage Outputs**

	V1	V2	V3	V4	V5	V6
<b>VPX2703UC</b>	+12VDC	+3.3VDC	+5VDC	-12VDC_AUX	3.3VDC_AUX	+12VDC_AUX
<b>Output Power @ 85°C*</b>	396W	66W	150W	3.6W **	19.8W	18W
<b>Max Output Power</b>	500W	130W	250W	12W **	19.8W	18W

\* Temperature measured on the unit's baseplate @ wedge locks

\*\*12 Watts (1A) @ 40°C

- V1-V6 output power levels indicate maximum power available per output. Total combined power of all outputs on VPX2703UC cannot exceed 650W @ 85°C
- Output voltage variants possible. VPX2703UC can be configured with one to six outputs (one can be negative) (-48VDC to +48VDC)

Contact AEGIS sales for details.

**Table 3: ENABLE / INHIBIT**

Control Inputs		Power Outputs	
ENABLE	INHIBIT	3.3V_AUX	PO1, PO2, PO3, +12V_AUX, and -12V_AUX
High	High	Off	Off
High	Low	Off	Off
Low	High	On	On
Low	Low	On	Off

## VPX2703UC- Connector Pin Out Assignment

TE Connectivity Connector 6450849-7 or equivalent

<i>Pin Number</i>	<i>Rated Current (A)</i>	<i>Pin Name</i>
P1	50A	-DC_IN/ACN
P2	50A	+DC_IN/ACL
LP1	30A	CHASSIS
A1	<1A	(NC)
B1	<1A	(NC)
C1	<1A	(NC)
D1	<1A	(NC)
A2	<1A	(NC)
B2	<1A	FAIL*
C2	<1A	INHIBIT*
D2	<1A	ENABLE*
A3	<1A	(NC)
B3	<1.5A	+12V_AUX
C3	<1A	(NC)
D3	<1A	(NC)
A4	<1.5A	3.3V_AUX
B4	<1.5A	3.3V_AUX
C4	<1.5A	3.3V_AUX
D4	<1.5A	3.3V_AUX
A5	<1A	(NC)
B5	<1A	(NC)
C5	<1A	SM0 (Temperature I2C, SCL)
D5	<1A	SM1 (Temperature I2C ,SDA)
A6	<1A	(NC)
B6	<1A	(NC)
C6	<1.5A	-12V_AUX
D6	<1A	(NC)
A7	<1A	(NC)
B7	<1A	(NC)
C7	<1A	(NC)
D7	<1A	SIGNAL_RETURN (Common)
A8	<1A	PO1_SENSE
B8	<1A	PO2_SENSE
C8	<1A	PO3_SENSE
D8	<1A	SENSE_RETURN (Common)
P3	50A	PO3 (5V )
P4	50A	POWER_RETURN (Common)
P5	50A	POWER_RETURN (Common)
LP2	30A	PO2 (3.3V)
P6	50A	PO1 (12V)

\* Use of a trailing asterisk indicate a logic signal which is active when at the less positive level of its allowable range.

ALL PINS DESIGNATED NC SHOULD HAVE NO CONNECTION ON THE BACKPLANE

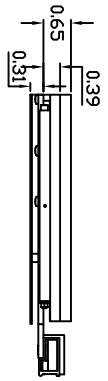
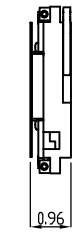
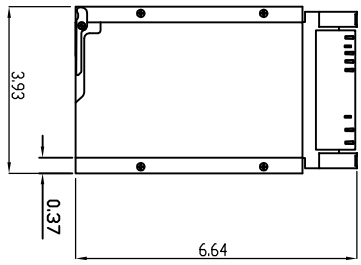
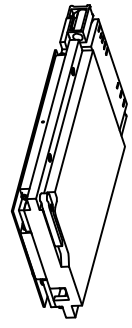
ALL OUTPUT RTN PINS (COMMON) SHOULD BE TIED TOGETHER ON BACKPLANE

ALL PINS OF THE SAME VOLTAGE SHOULD BE TIED TOGETHER ON THE BACKPLANE (i.e. ALL 4 OF THE +3.3V\_AUX PINS SHOULD BE TIED TOGETHER)

8 7 6 5 4 3 2 1

ZONE	REV	DESCRIPTION	DATE	APPROVED
M00	INITIAL RELEASE		08/24/16	TLD

CAD MAINTAINED CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY



<p>UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. FRACTIONS SHALL BE IN 16ths.</p>	
FINISH	SEE NOTE 2
DO NOT SCALE DIMENSIONS	SEE NOTE 3
APPROXIMATE	
DATE	08/27/16
APPROVED	TLD
TITLE	VPX2703UC-M00
DESCRIPTION	VPX2703UC-M00
DATE	08/24/16
APPROVED	TLD
SCALE	1/1
SHEET	1 OF 1

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