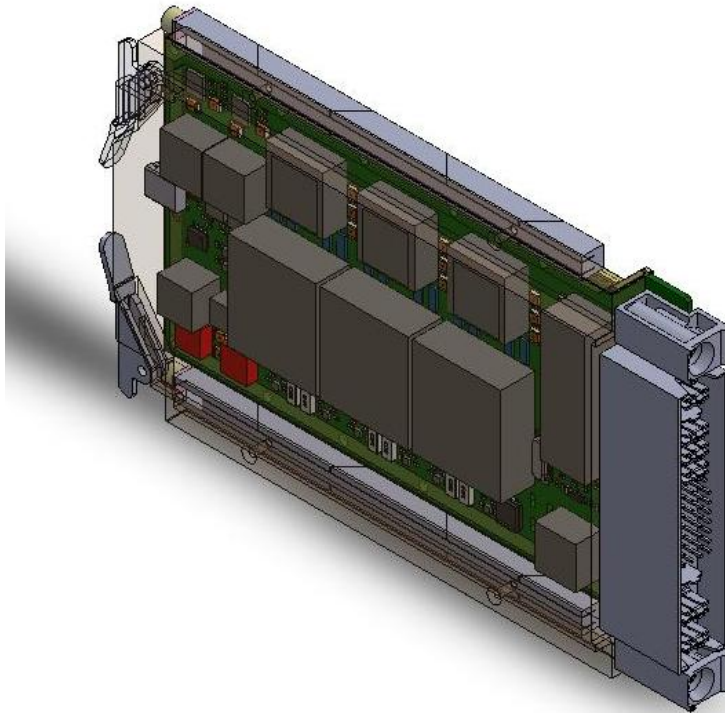




W-IE-NE-R

VPX-3P15DM_A



3U / 4HP / 150W

-

VPX Power Supply

Performance Specification V1.3

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1 General Description

This is a draft performance specification for a single stage, conduction cooled VPX power supply with 150W output power according to the ANSI/VITA 62.0 specification. The power supply can be used to power a VPX chassis and will fit into the standard envelope defined by VITA 48.0 specifications.

The 150W VPX power supply mechanical dimensions are 3U x 4HP. It is outfitted with connectors, keying and alignment mechanism as per VITA 62.

For use in MIL applications compliance with relevant MIL standards should be achieved. The compliance with MIL standards is discussed in paragraph 2.3 to 2.5.

1.1 Overview

1.2 Functional description

1.2.1 Block diagram

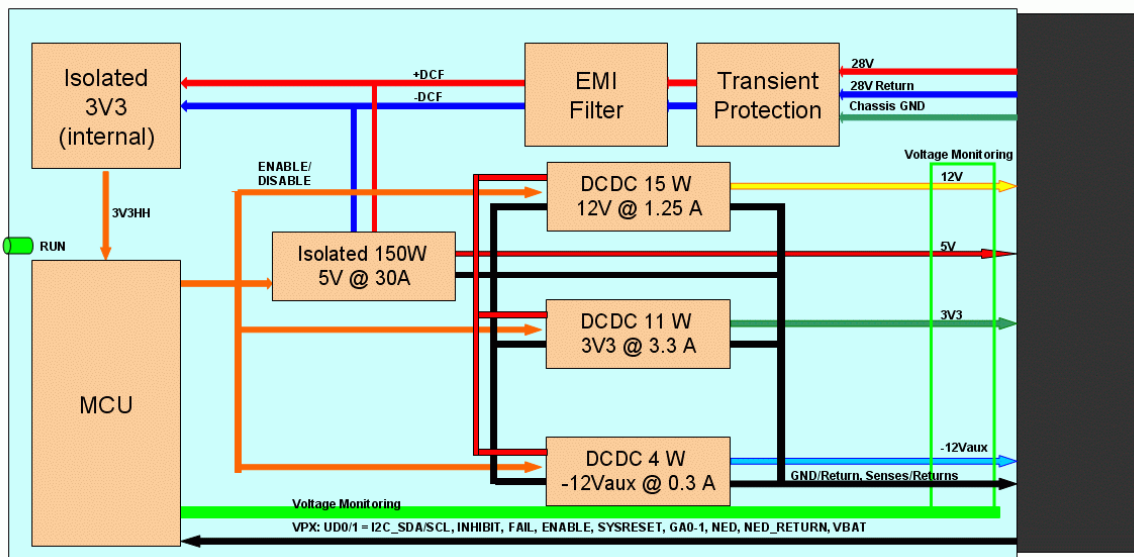


Figure 1: VPX-3P15DM_A Block-Diagram

Support for power supply specific signals: ENABLE*, INHIBIT*, FAIL* , NED and NED_RETURN

Communication interface: a I²C communication interface is planned and will be defined via two of the user defined backplane pins (e.g. UD0 / UD1, TBC).

- Features:
- status of individual power lines
 - Global status
 - Remote On/Off
 - DC-IN ok
 - Temperatures (optional)
 - Measured voltages (optional)

2 Specifications

2.1 Standard Input Voltage Range

18V – 36V DC input

UV lockout 16V or less

Reverse Polarity Protection

2.2 Final Output Specification

Channel	Voltage	Current	Wattage
VS1	+12.00 V	1.5 A	15 W
VS2	+3.30 V	3.3 A	11 W
VS3	+5.00 V	24.0 A	120 W
VAUX –	-12.00 V	0.30 A	4 W
Total			150W

Overall Efficiency: > ~90% (at 100W to max 150W load)

Power quality / ripple as per VITA 62 specification:

+5V / +3.3V: 50 mV, see [VITA 46.0] Rule 3-6 / 3-9]

+12V / -12V: <120 mV peak-to-peak, measured over a range of 0 to 20 MHz.

2.3 MIL STD 810 (Shock / Vibe / Ambient Temp.)

Levels to be specified.

2.4 MIL STD 461 (EMI)

CE101	CE102	CE106	CS101	CS103	CS104	CS105	CS109	CS114	CS115	CS116	RE101	RE102	RE103	RS101	RS103	RS104	RS105
A	A	N/A	A	A	N/A	N/A	N/A	A	A	A	A	A	N/A	A	A	N/A	N/A

Applicable Standards Only: CE101, CE102, CS101, CS114, CS115, CS116, CS103, RE101, RE102, RS101, RS103

See Applicability, §1.1 Scope and Purpose of MIL-STD 461: “Should not be directly applied to items such as modules located inside electronic enclosures or entire platforms”.

A VPX power supply is a module located inside electronic enclosures like ATR chassis boxes.

All RE/RS like requirements do not apply to a VPX power supply, these are: RS104, RS105.

All ANTENNA PORT like requirements do not apply to a VPX power supply, these are: CE106, CS103, CS104, CS105, RE103.

CS103 is needed (part of rev. C and newest MIL461 ref, to be checked).

STRUCTURE CURRENT requirement does not apply to a VPX power supply, this is CS109.

2.5 MIL-STD 704 Applicability

Applicable with exception of Emergency Mode or Emergency Case.

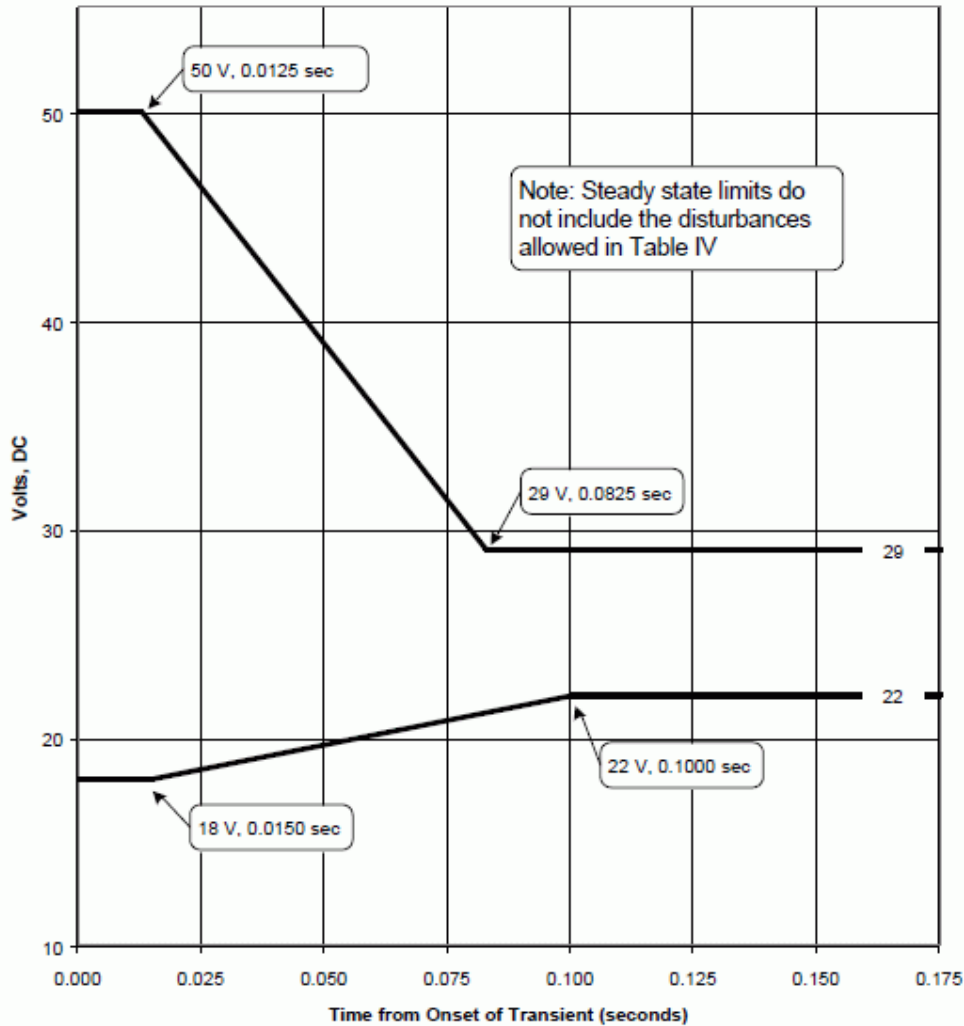


Figure 1: Envelope for normal voltage transients for 28 VDC Systems

2.6 MIL-STD 1275 D Applicability

Applicable with exception of Generator-Only Mode or Generator-Only Case.

5.1.3.3 Surges. All surges resulting from system operation shall fall within the envelope shown in Figure 5.

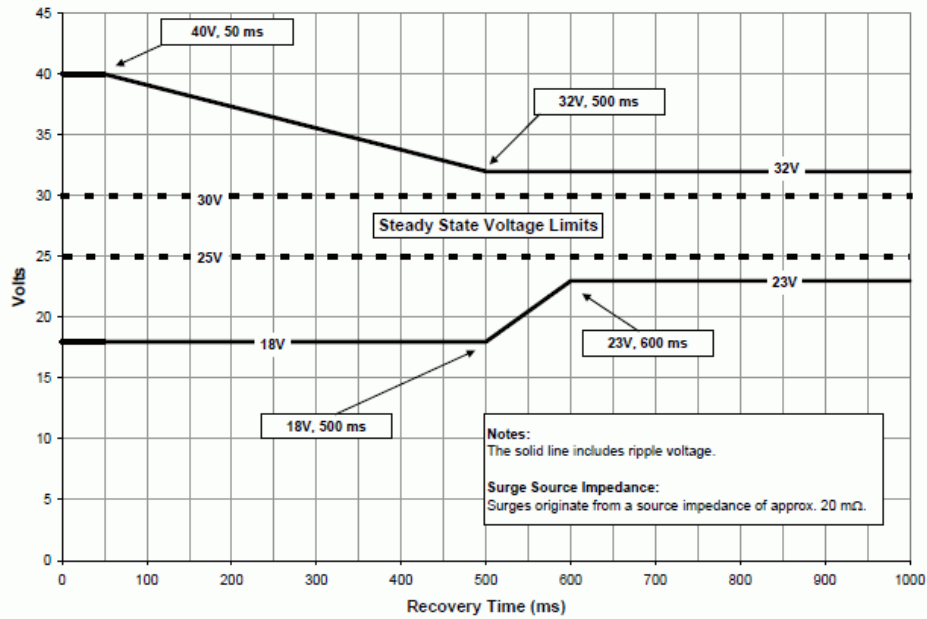


Figure 2: Envelope of Surges in Normal Operating Mode for 28 VDC Systems

Applicable is only the Normal Operating Mode, s. Figure 2.

2.7 P1 Connector Pin-Layout

