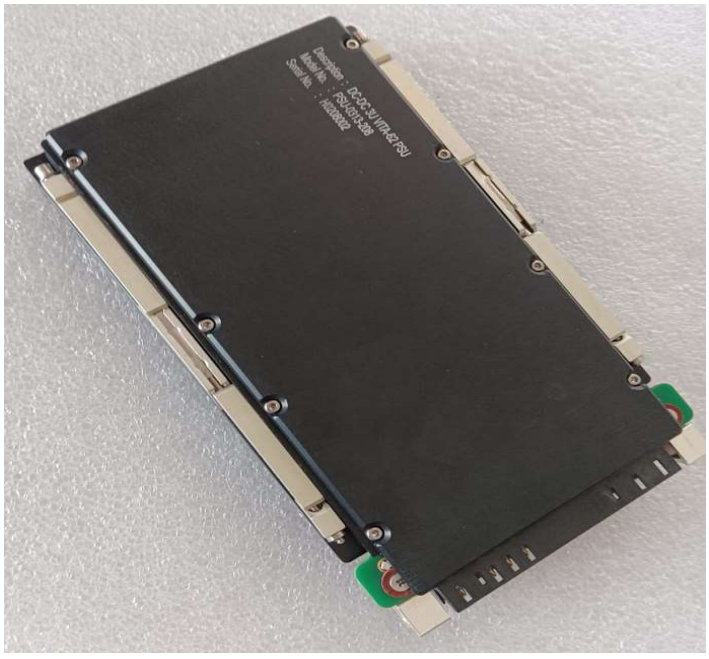
VITA-62 COMPLIANT DC-DC 3U VPX POWER SUPPLY

KEY FEATURES & HIGHLIGHTS

- **VITA-62 Compliant**
- **3U 4HP 1'' Form Factor**
- **DC Wide Input Range**
- **Standard 6 outputs**
- **I2C™ monitoring and control**
- **Conduction cooled**
- **400W O/P Power(continuous)**
- **Enable, inhibit, system reset and power fail controls**
- **Remote voltage sense: VS1, VS2, VS3**
- **Build to meet Military Standards**
  - **MIL STD 704F**
  - **MIL STD 461F**
  - **MIL STD 810G**



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Technical Specifications

DC Input

- 28VDC Nominal I/P
- 18 to 36 VDC Range
- MIL-STD-704 (A-F) Normal and Abnormal Steady State
- MIL-STD-704(A-F) transients Up to 50V, 80V.
- MIL-STD-704(A-F) Transients Under 18V and Starting transients.

DC Output Voltages & Current

- VS1: 12V, up to 20A
- VS2: 3.3V, up to 25A
- VS3: 5V, up to 25A
- 12V_Aux: 12V, up to 2A
- -12V_Aux: -12V, up to 1A
- 3.3V_Aux: 3.3V, up to 5A

Ripple and Noise

- Typically, less than 100mV$_{p\text{-}p}$.
- Measured across a 0.1µF capacitor and 47µF/63V.
- With the Shortest Ground loop and PSU Connector End capacitor with on load at Input Voltage of 28VDC
- Bandwidth Set limit of 20Mhz

Special Features

- VITA 62 Compliant
- Wide Input Range
- Remote Senses (VS1,VS2&VS3)
- Output short circuit Protection
- Output Over-voltage Protection
- DC I/P Reverse Polarity protection
- Over temperature shutdown with auto-recovery
- EMI filters included
- I2C communication

EMI/EMC

Build to meet with MIL-STD 461F
(CE101, CE102, CS101, CS114, CS115, CS116

Efficiency

Up to 80-85 %
(At Full load room temperature)

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Environmental

Design to Meet MIL-STD-810G

Temperature
Operating: –40°C to +85°C
Storage: –40°C to +100°C

Altitude
3,000m (10,000feet) max

Humidity
Up to 95% RH

Fungus
As Per Mil Std 810G

Shock
As Per Mil Std 810G

Vibration
As Per Mil Std 810G

Salt Fog:
As Per Mil Std 810G

Isolation

- Input to Output: DC1500V or AC1,000V 1minute, Cut off current = 10mA,
- Input to Case Ground: DC1000V or AC1,000V 1minute, Cut off current = 10mA,
- Output to Case Ground: DC1000V 1minute, Cut off current = 10mA,

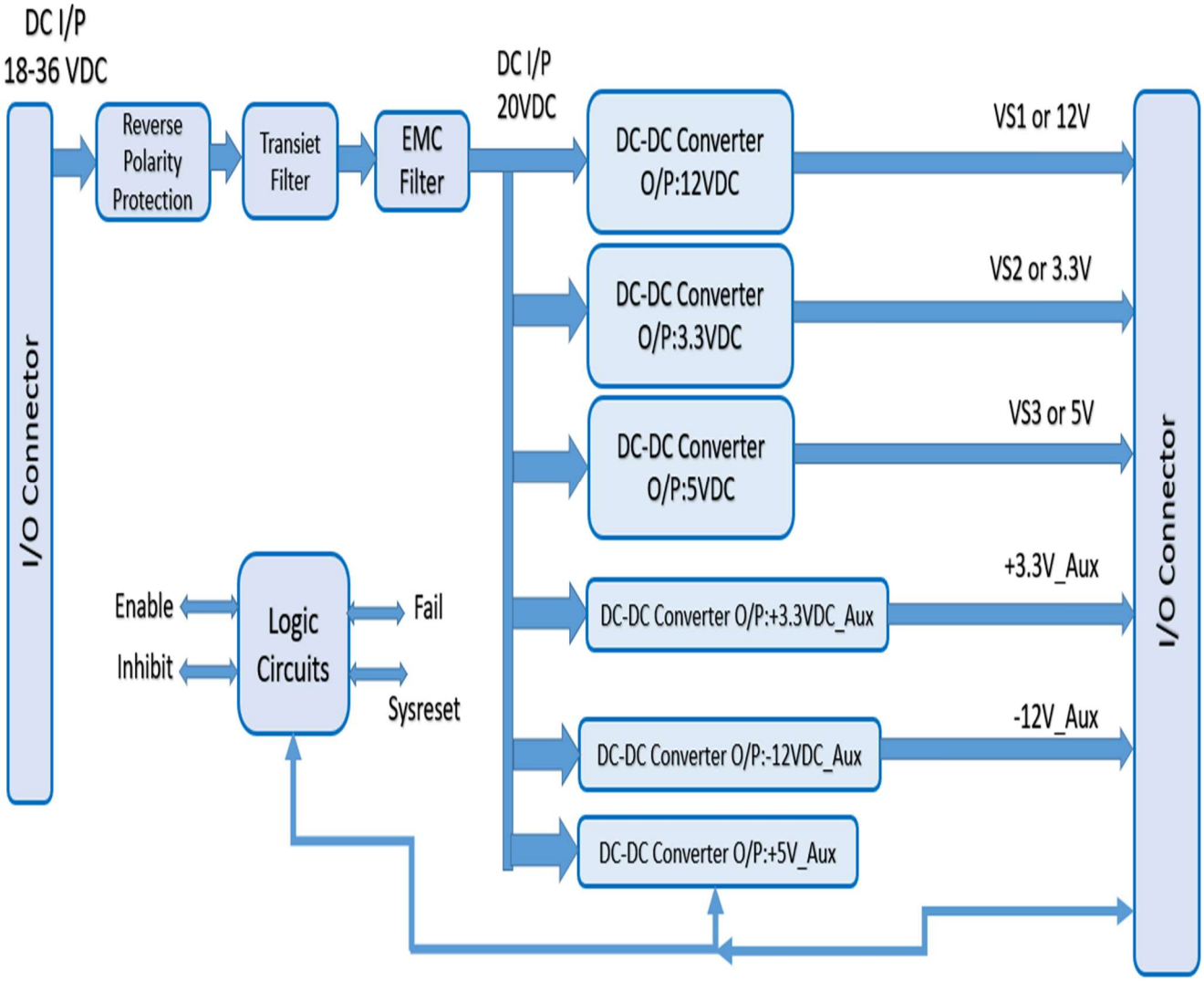
Functions and Signals - According to VITA 62

Sl. No.	Signal Name	Type	Description
1	FAIL*	Output	Indicates to other modules in the system that a failure has occurred in one of the outputs. Please refer to Figure 2 This signal is referenced to **SIGNAL RTN**.
2	SYSRESET*	Output	Indicates to other modules in the system that all outputs are within their working level. Please refer to Figure 2 This signal is referenced to **SIGNAL RTN**.
3	INHIBIT*	Input	Controls power supply outputs. This signal in conjunction with **INHIBIT** controls the outputs. Please refer to Table 1 and Figure 1 This signal is referenced to **SIGNAL RTN**.
4	ENABLE*	Input	Controls power supply outputs. This signal in conjunction with **INHIBIT** controls the outputs. Please refer to Table 1 and Figure 1 This signal is referenced to **SIGNAL RTN**.
5	VOUT REMOTE SENSE	Input	The SENSE is used to achieve accurate load regulations at load terminals (this is done by connecting the pins directly to the load's terminals).

Inhibit and Enable Functionality

INHIBIT*	Low	Low	High	High
ENABLE*	Low	High	Low	High
VS1,VS2,VS3,±12VAux	OFF	OFF	ON	OFF
+3.3VAux	ON	OFF	ON	OFF

Block Diagram:



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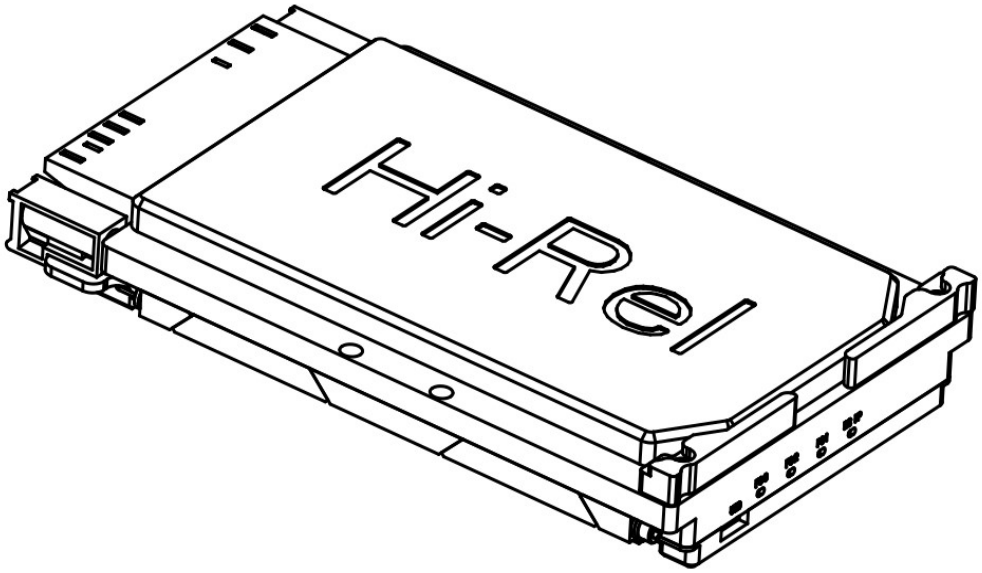
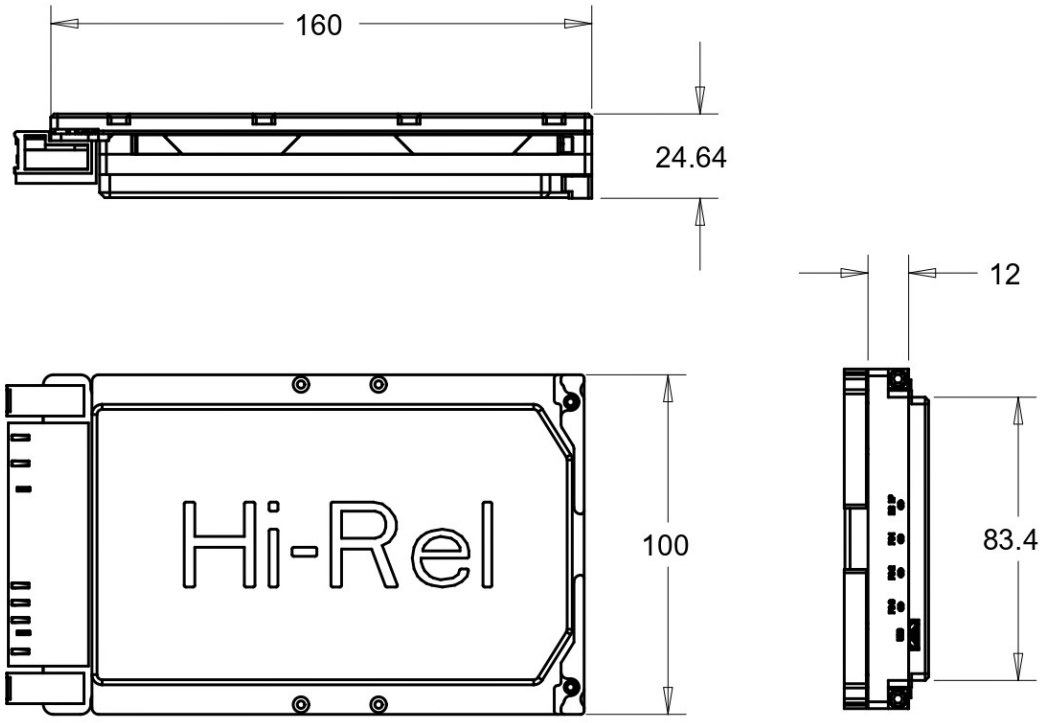
I/O Connector Pin Details:

Pin	Function	Description
P1	28VDC_RET	DC Input Voltage Return
P2	28VDC_POS	DC Input Voltage
LP1	Chassis GND	Chassis Gnd
A1	Status Signal	PSU Function Status Signal-1
B1	Status Signal	PSU Function Status Signal-3
C1,D1,A2	NC	Not Used
B2	FAIL	Indicates to other modules in the system that a failure has occurred in one of the outputs.
C2	INHIBIT	Input control signal as defined in VITA 62, referenced to SIGNAL_RETURN
D2	ENABLE	Input control signal as defined in VITA 62, referenced to SIGNAL_RETURN
A3	Status Signal	PSU Function Status Signal-2
B3	+12V_Aux	+12V auxiliary output voltage
C3,D3	NC	Not Used
A4	+3.3V_Aux	+3.3V auxiliary output voltage
B4	+3.3V_Aux	+3.3V auxiliary output voltage
C4	+3.3V_Aux	+3.3V auxiliary output voltage
D4	+3.3V_Aux	+3.3V auxiliary output voltage
A5,B5	NC	Not Used
C5	PSU_SCL	I2C Communication Bus for PSU Status-Spare
D5	PSU_SDA	
A6	PSU_SCL1	I2C Communication Bus for PSU Status
B6	PSU_SDA1	
C6	-12V_Aux	–12V auxiliary output voltage
D6	PSU_SYSRESET	Indicates to other modules in the system that all outputs are within their working level.
A7,B7,C7	NC	Not Used
D7	Signal_RTN	Ground pin for control signals
A8	VS1_S+/12V	VS1 sense, should be connected at point-of-load or on the backplane to corresponding voltage output
B8	VS2_S+/3.3V	VS2 sense, should be connected at point-of-load or on the backplane to corresponding voltage output
C8	VS3_S+/5V	VS3 sense, should be connected at point-of-load or on the backplane to corresponding voltage output
D8	Sense_RTN	Should be connected to Common output Ground Rtn at the connector
P3	P03/5V	+5V main output
P4	GND_RTN	Common output Ground Rtn
P5	GND_RTN	Common output Ground Rtn
LP2	P02/3.3V	+3.3V main output
P6	P01/12V	+12V main output

Mechanical GA Drawing:



ISOMETRIC VIEW



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