

U-P2330

Rugged 3U SOSA™ Aligned Power Supply Card



*U-P2330 is an advanced, feature-rich 3U Power Supply aligned with the **Open Group SOSA™** technical standard. It's a perfect companion for building next-generation SOSA™ aligned systems and sensors.*

- 3U Conduction-Cooled 2LM Form Factor
- Aligned to SOSA™ Technical Standard Edition 1.0
- VITA 62 Compliant
- Up to 600W Output Power
- 88% Typical Efficiency
- Wide Input Range
- EMI/RFI Input Filter
- Two SOSA™ Standard Output Supplies
 - ▶ +12V
 - ▶ +3.3V_AUX
- Holdup Capacitor Bank & Backup Battery Options
- No Minimum Load Requirement
- Input/Output and Chassis Isolation
- Input Transient Protection per MIL-STD-704 and MIL-STD-1275
- Input Reverse Polarity Protection
- Output Over/Under-Voltage, Short Circuit and Over-Temperature Protections
- No Electrolytic Capacitors (except hold-up option)
- Standard Control Signals
 - ▶ FAIL# and SYSRESET# Outputs
 - ▶ ENABLE# and INHIBIT# Inputs (ON/OFF Control)
- IPMI and Internal BIT



PRELIMINARY



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The Aitech U-P2330 is a versatile and reliable 3U PSC (Power Supply Card) aligned with The Open Group Sensor Open System Architecture™ Technical Standard, Edition 1.0, and compliant with VITA 62. It was designed for harsh environment applications, with a wide input voltage range and a total power output capacity of up to 600W.

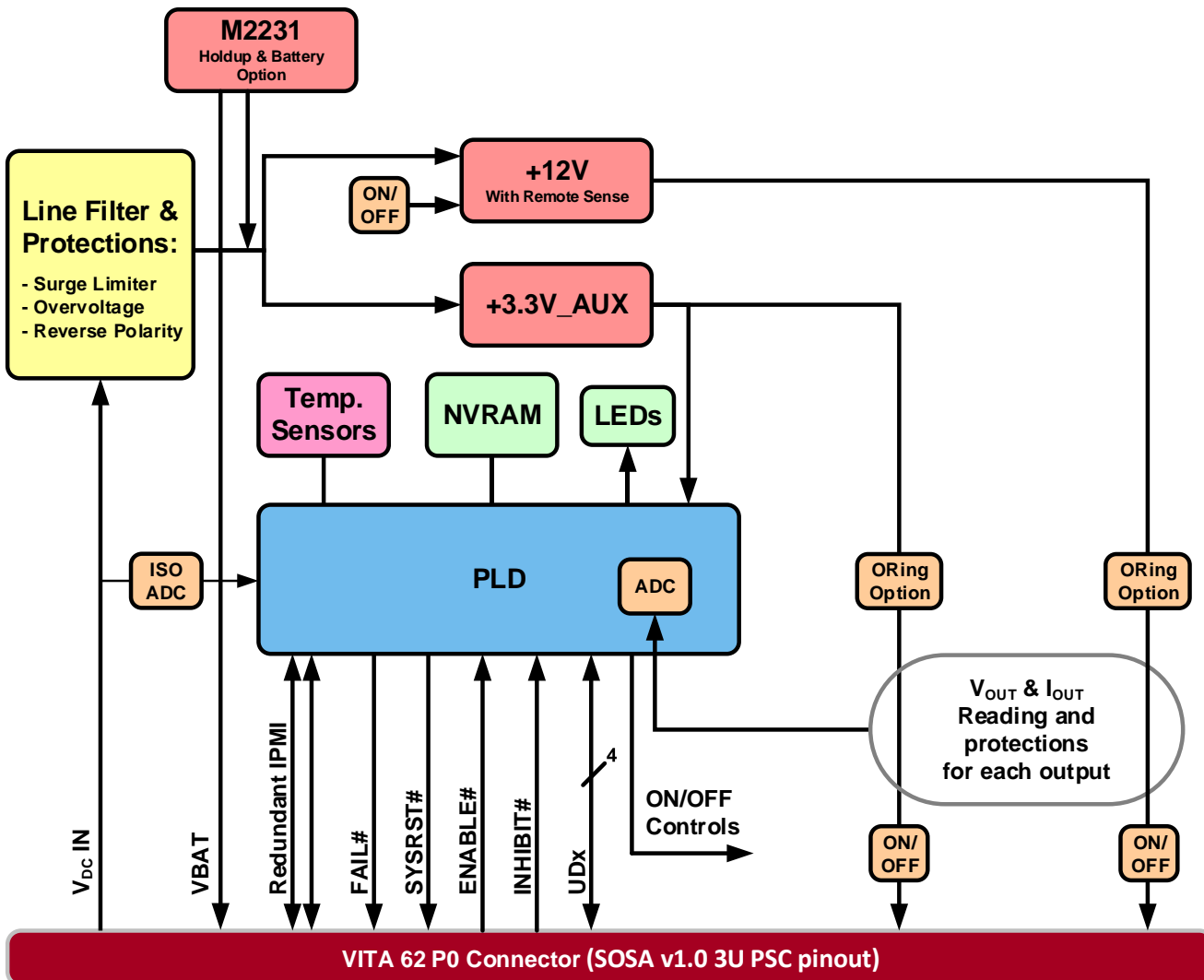
An optional sharing mechanism, per VITA 62 / SOSA™ Technical Standard, enables two U-P2330 power supplies to be operated in parallel in order to provide redundant operation (ORing), or to provide a maximum power output of up to 1200W.

Input to output isolation eliminates any possibility of ground loops, and the main output supply (+12V) has remote sense lines to ensure voltage stability for high current loads. The U-P2330 also includes numerous protection mechanisms both for input power and for output power supplies.

EMI/RFI protections include the U-P2330 heatsink, which provides enhanced EMI/RFI shielding of on-board components, and the on-board second stage EMI/RFI filter for input power (designed to be used along with a system level first stage filter).

On-board logic, control functions, user defined pins are managed by an FPGA that can be field customized (contact an Aitech representative for more information).

An optional capacitor bank provides holdup time to enable orderly system shutdown in the event of power failure. The capacitor bank also includes a backup battery to provide VBAT per VITA 62 / SOSA™ Technical Standard in order power a system real time clock when the system is powered off.



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Board Architecture

General Features	<ul style="list-style-type: none">• 88% efficiency (depending on load and distribution)• +12V & +3.3V_AUX output voltages, per SOSA™ Technical Standard, Edition 1.0• Power monitor• Independent current limiting for each output• Over-temperature protection
IPMI	Redundant Intelligent Platform Management Interface per VITA 46.11 / SOSA™ Technical Standard
Built-In Tests	BIT monitors output voltages, and provides test status via the front panel indicator LED and FAIL# output signal
Isolation	<ul style="list-style-type: none">• >10MΩ at 100 V Input to Chassis• >10MΩ at 50 V Output to Chassis• >10MΩ at 500 V Input to Output

Input Power

Steady State Operation Input	Up to 500W	18 – 32 Vdc continuous
	500 - 600W	22 – 32 Vdc continuous, 18 V for 3 seconds.
Turn-on Threshold Input		18 Vdc minimum
Overvoltage Protection		Up to 60 Vdc (100 ms)
Reverse Polarity Protection		Up to 50 Vdc
EMC		Designed to meet MIL-STD-461F (with 5 μH LISNs)
Transient Suppression		Per MIL-STD-704D/E and MIL-STD-1275

Output Power

		+12V	+3.3V_AUX
Total Combined Output Capacity	600 W *	50 A *	4 A
Remote Sense		✓	N/A
Short Circuit, Overcurrent, and Over/Under-Voltage Protections		✓	✓

* Maximum power of 600W available only when all power is delivered from +12V output

Control Signals

ENABLE# and INHIBIT#	ON/OFF control input signals. Outputs are turned ON/OFF according to ENABLE# and INHIBIT# as listed below.			
	ENABLE#	INHIBIT#	+3.3V_AUX	+12V Output
	1	1	OFF	OFF
	1	0	OFF	OFF
	0	1	ON	ON
	0	0	ON	OFF
FAIL#	Output signal, asserted during power up events until the U-P2330 reaches fully operational mode, or if one of the output voltages is out of range			
SYSRESET#	Output signal, asserted during power up, remains asserted until 200ms after all outputs are within range			

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Pinout

Pin	Function	Pin	Function	Pin	Function	Pin	Function
P1	POWER_IN_RETURN	D2	ENABLE#	B5	GA1#	D7	SIGNAL_RETURN
P2	POWER_IN	A3	UD0 / SYNC_IN	C5	I2C_SCL0	A8	+12V_SENSE
LP1	CHASSIS	B3	Reserved	D5	I2C_SDA0	B8	+3.3V_AUX_SENSE
A1	UD1 / SYNC_OUT	C3	NED	A6	I2C_SCL1	C8	+12V_SENSE
B1	UD2 / NVMRO	D3	NED_RETURN	B6	I2C_SDA1	D8	SENSE_RETURN
C1	UD3 / GA2#	A4	Reserved	C6	Reserved	P3	+12V
D1	UD4 / Reserved	B4	Reserved	D6	SYSRESET#	P4	POWER_OUT_RETURN
A2	VBAT	C4	Reserved	A7	SHARE_1	P5	POWER_OUT_RETURN
B2	FAIL#	D4	Reserved	B7	SHARE_2	LP2	+3.3V_AUX
C2	INHIBIT#	A5	GA0#	C7	SHARE_3	P6	+12V

Mechanical

	Without Holdup Capacitor Bank	With Holdup Capacitor Bank
Cooling	Conduction-cooled	Conduction-cooled
Form Factor & Dimensions	3U per VITA 62 / SOSA™ Tech. Standard	3U per VITA 62 / SOSA™ Tech. Standard (except thickness - see Pitch)
Two Level Maintenance (2LM)	Yes	Yes
Weight	<750 g (1.65 lbs)	<1150 g (2.53 lbs)
Pitch	1"	2"
Keying	Key 1 = 0°, Key 2 = 135°	Key 1 = 0°, Key 2 = 135°

Environmental

Specs per VITA 47	Conduction-Cooled	
	Rugged	Military
Operating Temp.	CC3 (-40 to +70 °C) ⁽²⁾	CC4 (-40 to +85 °C) ^(1,2)
Non-Operating Temp.	C3 (-50 to +100 °C)	C4 (-55 to +125 °C)
Vibration	V3	
Operating Shock	OS2	
Altitude	35,000 ft.	60,000 ft.
Relative Humidity ⁽³⁾	0 - 95% with Acrylic (Standard),	
Conformal Coating	0 - 100% with Urethane (Optional)	

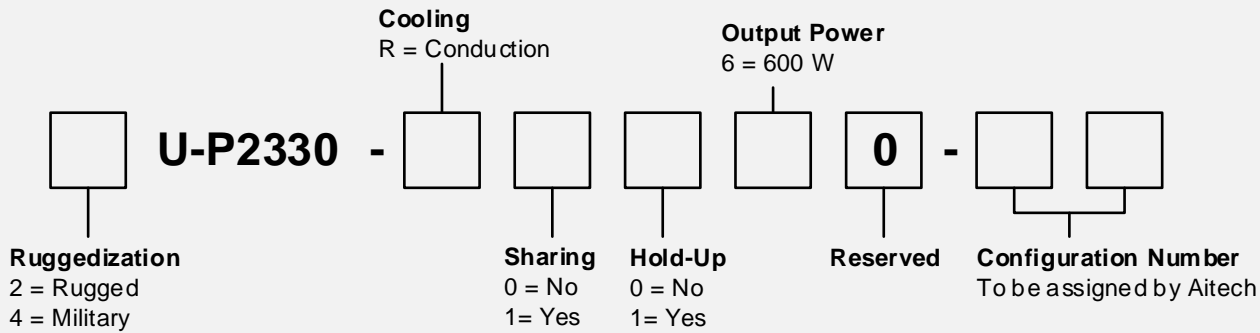
- Notes:
- (1) -55 °C available, contact an Aitech representative for more information
 - (2) Operating card edge temperature
 - (3) Non-condensing

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Ordering Information



Example: 4U-P2330-R0060-00

Optional Accessories

2B047-R00-00	Dual Slot SOSA™ Aligned Backplane with Sharing
M1010-00	Fan control unit
M2231-00	Hold-up and battery module to support 704 and VBAT (see ordering information)



Contact Aitech

Contact your Aitech sales representative for additional product information and for inquiries regarding customized configurations of the U-P2330.

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