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Find the *Aitech Defense Systems P233* at our website: ***Click HERE***

P233

Rugged 3U VITA 62 Power Supply Board

Aitech
Embedded Computing *without* Compromise



- 3U Conduction-Cooled 2LM Form Factor
- VITA 62 Compliant
- Suitable for VPX, VME, and CompactPCI Systems
- Up to 600 W Output Power
- 88% Typical Efficiency
- Wide Input Range
- EMI/RFI Input Filter
- Six Output Supplies
  - +12 V
  - +5 V
  - +3.3 V
  - +3.3 V_AUX
  - +12 V_AUX
  - -12 V_AUX
- 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 VITA 62 Control Signals
  - FAIL# and SYSRESET# Outputs
  - ENABLE# and INHIBIT# Inputs (ON/OFF Control)
- IPMI and Internal BIT
- Holdup Capacitors & Backup Battery (optional)



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The Aitech P233 is a versatile and reliable VITA 62 compliant 3U power supply designed for harsh environment applications, with a wide input voltage range and a total power output capacity of up to 600 W.

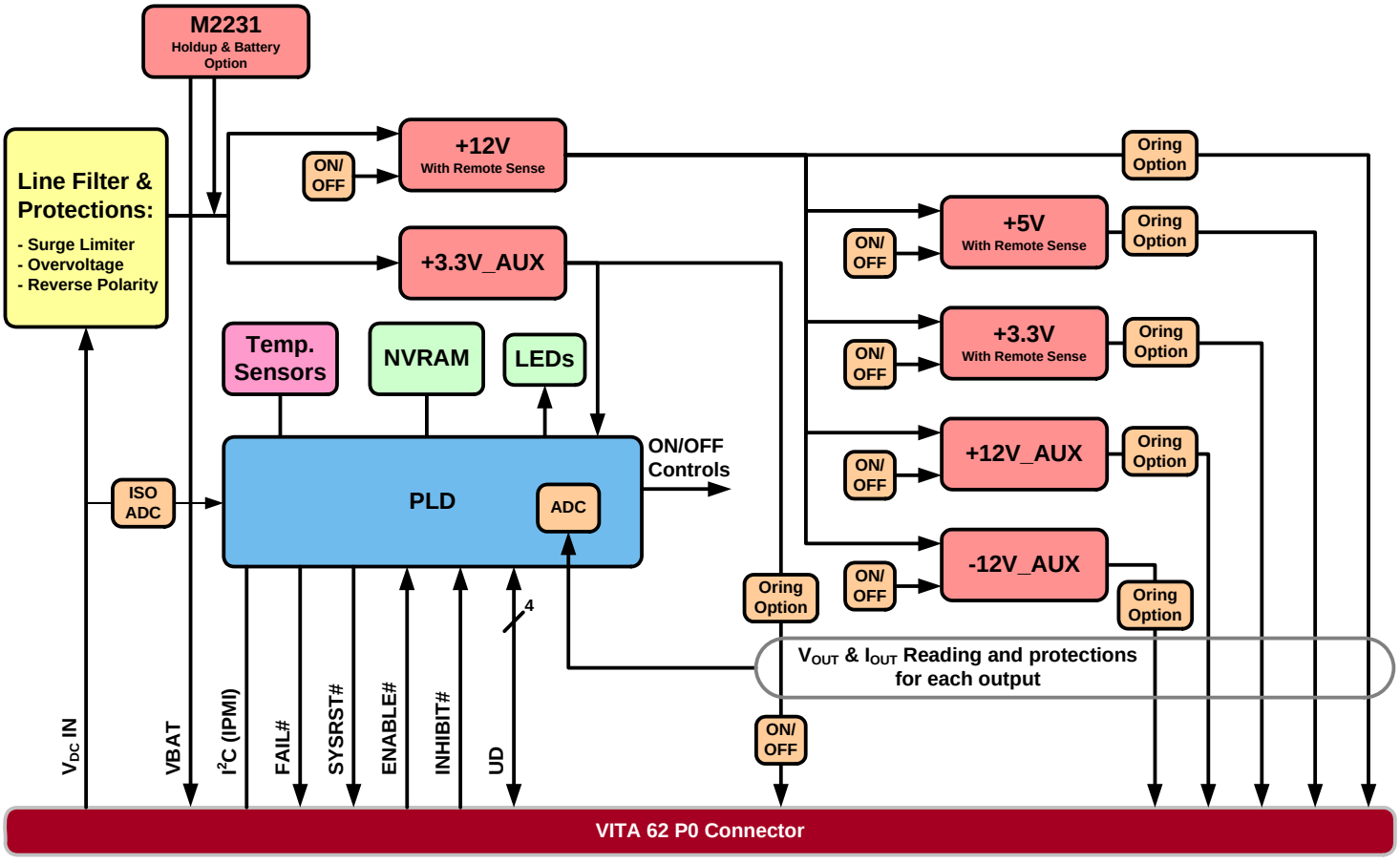
An optional sharing mechanism, per VITA 62, enables two P233 power supplies to be operated in parallel in order to provide redundant operation (ORing), or to provide a maximum power output of up to 1200 W.

Input to output isolation eliminates any possibility of ground loops, and the main output supplies (+3.3 V, +5 V, and +12 V) have remote sense lines to ensure voltage stability for high current loads. The P233 also includes numerous protection mechanisms both for input power and for output power supplies.

EMI/RFI protections include the P233 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, are 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, in order power a system real time clock when the system is powered off.



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Board Architecture

General Features	• 88% efficiency (depending on load and distribution) • Six output voltages • Power monitor • Independent current limiting for each output • Over-temperature protection
IPMI	Intelligent Platform Management Interface provides voltage and board temperature measurements
Built-In Tests	BIT monitors output voltages, and provides test status via the front panel indicator LED and FAIL# output signal
Isolation	• >10 MΩ at 100 V Input to Chassis • >10 MΩ at 50 V Output to Chassis • >10 MΩ at 500 V Input to Output

Input Power

Steady State Operation Input	Up to 500 W	18 – 32 Vdc continuous
	500 - 600 W	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
Transient Suppression		Per MIL-STD-704D/E and MIL-STD-1275

Output Power

		+12V	+5V	+3.3V	+3.3V_AUX	+12V_AUX	-12V_AUX
Total Combined Output Capacity	**600 W ***	50 A *	40 A	30 A	4 A	1 A	1 A
Remote Sense		✓	✓	✓	N/A	N/A	N/A
Short Circuit, Overcurrent, and Over/Under-Voltage Protections		✓	✓	✓	✓	✓	✓

* Maximum power of 600 W available only when all power is delivered from +12 V 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	Other Outputs
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 P233 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 200 ms 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	Reserved	C5	I2C_SCL	A8	+12V_SENSE
LP1	CHASSIS	B3	+12V_AUX	D5	I2C_SDA	B8	+3.3V_SENSE
A1	UD1	C3	Reserved	A6	Reserved	C8	+5V_SENSE
B1	UD2	D3	Reserved	B6	Reserved	D8	SENSE_RETURN
C1	UD3	A4	+3.3V_AUX	C6	-12V_AUX	P3	+5V
D1	UD4	B4	+3.3V_AUX	D6	SYSRESET#	P4	POWER_OUT_RETURN
A2	VBAT	C4	+3.3V_AUX	A7	+12V_SHARE	P5	POWER_OUT_RETURN
B2	FAIL#	D4	+3.3V_AUX	B7	+3.3V_SHARE	LP2	+3.3V
C2	INHIBIT#	A5	GA0#	C7	+5V_SHARE	P6	+12V

Mechanical

	Without Holdup Capacitor Bank	With Holdup Capacitor Bank
Cooling	Conduction-cooled	Conduction-cooled
Form Factor & Dimensions	3U per VITA 62	3U per VITA 62 (except thickness - see Pitch)
Two Level Maintenance (2LM)	Yes	Yes
Weight	<875 g (1.93 lbs)	<1200 g (2.65 lbs)
Pitch	1"	2"
Keying	Key 1 = 0°, Key 2 = 0°	Key 1 = 0°, Key 2 = 0°

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)	

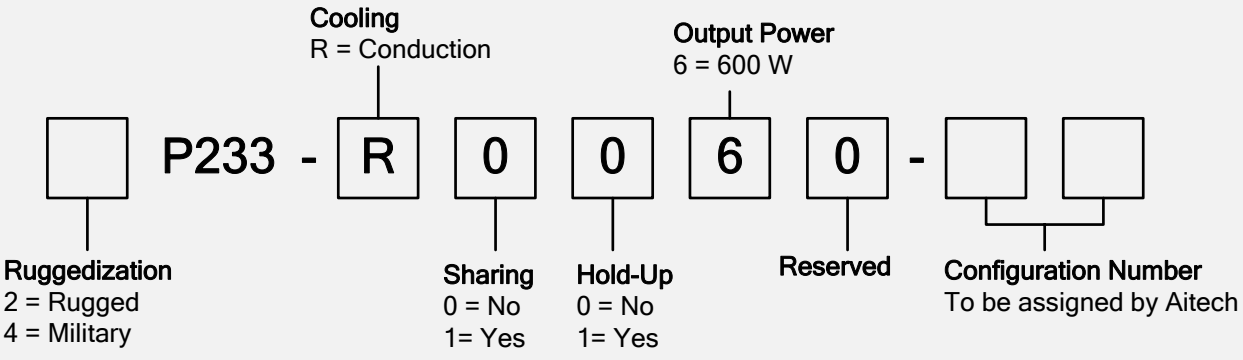
Notes:
(1) -55 °C available, contact an Aitech representative for more information
(2) Operating card edge temperature
(3) Non-condensing

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Ordering Information



Example: 4P233-R0060-00

Optional Accessories

2B047-R00-00	Dual Slot VITA 62 Backplane with Sharing
M1010-00	Fan control unit
M2231-00	Hold-up and battery module to support 704 and VPX VBAT (see ordering information)







Contact Aitech

Contact your Aitech sales representative for additional product information and for inquiries regarding customized configurations of the P233.



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