500 MHz–2.5 GHz 50 W Minimum Broadband RF Power Amplifier Module

The latest selected source specifies 500–2500 MHz, 50 W minimum saturated output and 47 dB minimum gain. At 50 W, current is 4.5 A typical and harmonics are –12 dBc typical.

The 180 × 100 × 25 mm module uses SMA female input and output. Its 7-pin D-Sub provides RS-485 and internally pulled-low 3.3 V TTL enable; the source's 5:1 load rating remains measured at 30 W.



Electrical Specifications

+28.0 VDC, 25 °C, 50 Ω system unless otherwise stated; Input power 0 dBm

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	BW	500	-	2500	MHz
Saturated RF output power	Pout	50	-	-	W
Power gain	Gp	47	-	-	dB
Power gain flatness	Gp	-	±1.5	-	dB
VSWR	S11	-	-	2	-
Harmonics at 50 W	H	-	-12	-	dBc
Spurious signals	Spur	-	-60	-	dBc
Input/output impedance	Impedance	-	50	-	Ω
Operating voltage	VDC	24	28	32	VDC
Power-added efficiency	Eff	-	35	-	%
Current consumption at Pout = 50 W	IDD	-	4.5	-	A

Monitoring and Protection

Parameter	Specification
Monitoring	Voltage, current, temperature and open/short-circuit detection
Over-temperature protection	Amplifier shutdown above 85 °C
Supply protection	Shutdown above 32 V, below 24 V, or with accidental reverse wiring

Absolute Maximum Ratings

Exceeding these ratings may damage the module

Parameter	Rating
RF input drive without damage	+10 dBm
Load VSWR at Pout = 30 W	5:1 at all load phases, continuous
Thermal overload	85 °C shutdown

Environmental Specifications

The environmental figures are design targets. Confirm the applicable values for your project.

Parameter	Minimum	Typical	Maximum	Unit
Operating temperature	-20	-	60	°C
Storage temperature	-25	-	65	°C
Relative humidity (non-condensing)	-	-	95	% RH

DC and Control Interface

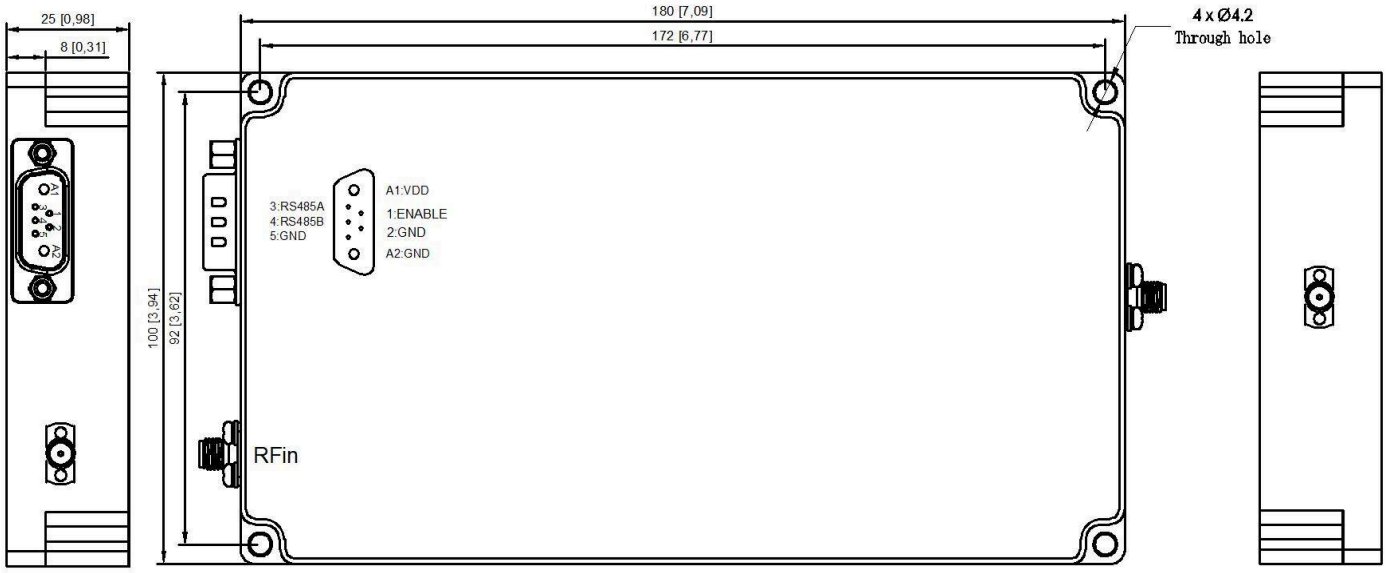
Pin #	Description	Specification
A1	A1 VDD	+28 VDC
A2	A2 GND	Ground
1	1 ENABLE	TTL logic high (3.3 V); internally pulled low
2	2 GND	Ground
3	3 RS485A	RS-485 serial communication
4	4 RS485B	RS-485 serial communication

Mechanical Specifications

Hybrid D-Sub 7-pin male connector; The source table marks pin 5 as NC; the source drawing marks it as GND. Confirm the function and wiring of pin 5 before connection.

Parameter	Value	Unit
Dimensions	180 × 100 × 25[7.09 × 3.94 × 0.98] (Maximum)	mm [in]
Weight	1[2.2] (Typical)	kg [lb]
RF input connector	SMA female	-
RF output connector	SMA female	-
DC/control interface	Hybrid D-Sub 7-pin male	-

Mechanical Outline



Current publication record · 1.3 · 2026-11-11. Specification tables updated. Replaces revision 1.2.

Document notice

Specifications are subject to revision. Before design release, confirm the current document revision and product-specific requirements with LCRF. The approved quotation and order documentation define the supplied configuration.