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Data Sheet

August 14, 2026

AMPLIFIER RESEARCH

Amplifier Research 50S1G4M3

Amplifier Research 50S1G4M3 Solid State Microwave Amplifier The Amplifier Research 50S1G4M3 is a rack-mount configuration of the 50S1G4A solid-state amplifier family providing 50 W CW minimum from 0.8 GHz to 4.2 GHz. OEM 50S1G4A datasheets list 47 dB minimum gain, 40 W minimum at 1 dB compression, and IEEE-488/RS-232 control; M3 denotes the rear-connector rack-mount mechanical variant. Wireless and EMC drive from 0.8 to 4.2 GHz in rack systems, component testing, and multi-band swept power applications. The Amplifier Research 50S1G4M3 is a rack-mount configuration of the 50S1G4A solid-state amplifier family providing 50 W CW minimum from 0.8 GHz to 4.2 GHz. OEM 50S1G4A datasheets list 47 dB minimum gain, 40 W minimum at 1 dB compression, and IEEE-488/RS-232 control; M3 denotes the rear-connector rack-mount mechanical variant. Wireless and EMC drive from 0.8 to 4.2 GHz in rack systems, component testing, and multi-band swept power applications. Input For Rated Output: 1.0 milliwatt maximum Power Output At 3 dB Compression Nominal: 70 watts



MODEL

**Amplifier Research
50S1G4M3**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

50S1G4M3

LISTING

<https://aumictechlabs.com/products/50s1g4m3-3/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Amplifier Research 50S1G4M3 is a solid-state, air-cooled broadband RF amplifier engineered for high gain, linearity, and instantaneous bandwidth across 0.8 GHz to 4.2 GHz. This self-contained unit delivers minimum 50 Watts output power and integrates internal protection circuits

for operational reliability. The M3 designation indicates rack-mount configuration with outer enclosure removed for direct integration into standard equipment racks. Front-panel gain control enables convenient output adjustment. RF input leveling protects the first stage by controlling input levels exceeding 0 dBm. Over-temperature protection automatically removes DC voltage from RF amplifier stages during cooling failures. The amplifier operates without damage or oscillation across any magnitude and phase of source and load impedance, delivering full rated power without foldback. Technical Specifications Frequency range: 0.8 GHz to 4.2 GHz Output power: Minimum 50 Watts Input signal level for rated output: Typically 0 dBm maximum AC power consumption: Nominal 150 Watts (reference model) Cooling method: Air-cooled Form factor: Rack-mount (enclosure removed) Key Features Front-panel gain control for output level adjustment RF input leveling circuit protecting first stage above 0 dBm DC voltage removal from RF stages during over-temperature events Unconditional mismatch tolerance across full impedance range 100% rated power delivery without foldback Broadband instantaneous bandwidth coverage Typical Applications EMC testing environments Communication system validation Radar system testing Driver amplifier for wireless and communication component testing Applications requiring undistorted modulation envelope linear performance Compatibility & Integration The 50S1G4M3 integrates into standard equipment racks via its M3 rack-mount configuration. Similar model series support digital control panels with local and remote operation via IEEE-488 (GPIB) and RS-232 interfaces.

50S1G4M3 Characteristics / Specifications

PARAMETER	VALUE
Rated Power Output	50 watts minimum
Input For Rated Output	1.0 milliwatt maximum
Power Output At 3 dB Compression Nominal	70 watts
Power Output At 3 dB Compression Minimum	50 watts
Power Output At 1 dB Compression Nominal	60 watts
Power Output At 1 dB Compression Minimum	40 watts
Flatness Typical	plus or minus 1.5 dB
Flatness Maximum	plus or minus 2.0 dB
Frequency Response	0.8 to 4.2 GHz instantaneously
Gain At Maximum Setting	47 dB minimum
Gain Adjustment Range	10 dB minimum 4096 remote steps
Input Impedance	50 ohms VSWR 2.0:1 maximum
Output Impedance	50 ohms nominal
Harmonic Distortion	minus 20 dBc maximum at 50 watts
Spurious Typical	minus 73 dBc
Primary Power	90 to 132 or 180 to 264 VAC 50/60 Hz
Primary Power Consumption	600 watts maximum
Mismatch Tolerance	100 percent of rated power without foldback
Remote Interfaces	IEEE 488 and RS 232
RF Connectors	TypeNfemale
Cooling	Forced air self contained fans
Form Factor	Rack mount M3 configuration
Series Family	50S1G4A M1 through M4

50S1G4M3 Specifications

PARAMETER	VALUE
Applications	Wireless and EMC drive from 0.8 to 4.2 GHz in rack systems, component testing, and multi-band swept power applications.
Key Features	50 W CW 0.8 to 4.2 GHz
Digital local and remote control	IEEE 488 and RS 232
Technical Specifications	Rated Power Output: 50 watts minimum

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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Notes	
From Amplifier Research Model 50S1G4A OEM datasheet applied to the 50S1G4M3 rack-mount configuration. Confirm connector placement on the M3 configuration row.	

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.