Solid-State Broadband RF Power Amplifier

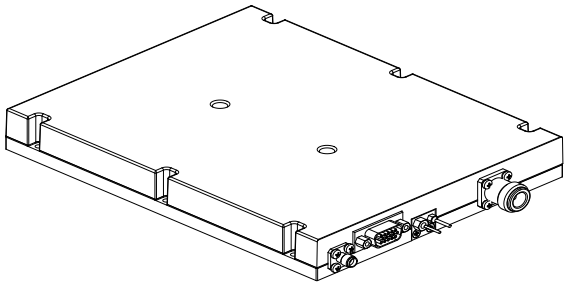
CRF-PA-2000M6000M-50W

GaN SSPA platform for broadband RF systems

2000 MHz to 6000 MHz | 50 W

FREQUENCY RANGE	RATED OUTPUT POWER	RF CONNECTORS	Mechanical Form Factor
2000–6000 MHz	50 W	SMA-F In / N-F Out	200×158×25 mm

Product Overview



The 2000 MHz–6000 MHz 50 W is a solid-state RF power amplifier (SSPA) using third-generation GaN transistors. It delivers 50 W rated CW output power over the 2000 MHz to 6000 MHz operating band with up to 200 MHz instantaneous bandwidth for broadband / OFDM-type signal amplification. The design supports fast PA enable/disable control, external heat-sink cooling and project-ready RF system integration, with optional RS485 monitoring/control plus temperature, VSWR, voltage and current protection.

Key Capabilities

- 2000–6000 MHz broadband coverage
- 200 MHz instantaneous bandwidth
- 50 W CW solid-state RF output power
- 40–58 dB small-signal gain
- Optional RS485 monitoring/control and multi-protection

Primary Applications

- Broadband RF system amplification
- SDR / OFDM signal amplification
- RF test and measurement systems
- System-level RF integration

Project Review Note: Final mechanical drawing, test data and control protocol can be supplied for project review where applicable.

Electrical Characteristics

Unless otherwise specified: 50 Ω system, +28 V DC nominal supply, CW operation at normal temperature and standard swept-frequency test configuration.

Parameter	Min.	Typ.	Max.	Units
Frequency Range	2000	-	6000	MHz
Instant Bandwidth	-	-	200	MHz
Output Power (Psat)	40	50	-	W
Small-Signal Gain	40	-	58	dB
Gain Flatness	-3	-	+3	dB
Gain Adj. Range / Step	20	0.5	-	dB
Noise Figure	-	-	20	dB
Input VSWR	-	-	1.8	-
Spurious	-	-60	-	dBc
Harmonics (2nd, 3rd)	-10	-	-	dBc
Operating Voltage	24	28	32	V
Operating Current	-	10	12	A
PA Enable/Disable Time	-	-	1	µs
RF Connectors In / Out	-	SMA-F In / N-F Out	-	-
Control / Power Connector	-	D-Sub 15-Pin Female; Pull-core Capacitance	-	-
Mechanical / Thermal	-	200×158×25 mm; 1.4 kg; external heat sink	-	-

Monitoring & Diagnostics

- 200 MHz instantaneous bandwidth
- Optional RS485 monitoring/control
- Temperature/current analog reporting available
- Alarm output and hardware reset support

Built-in Protection

- Over-temperature shutdown / recovery
- Over-VSWR locked shutdown
- Over-voltage lock above 32 V
- Over-current lock above 14 A

Note: M1 optional functions include gain adjustment, RS485 monitoring/control, analog temperature/current reporting, alarm output and reset where applicable.

Mechanical, Interface & Quality Support

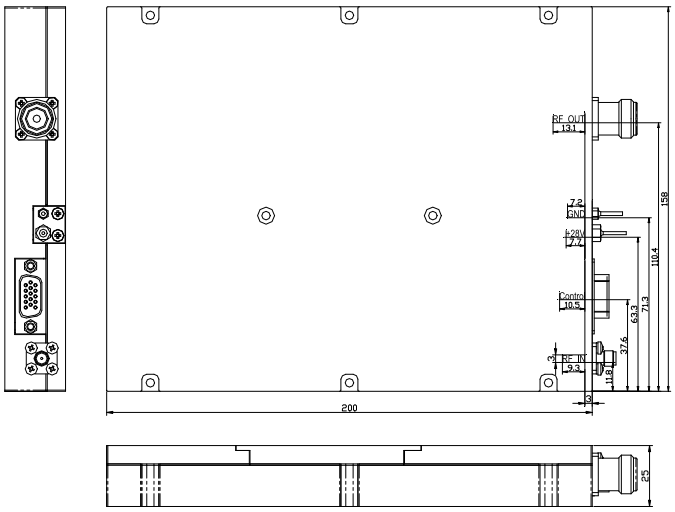
Model CRF-PA-2000M6000M-50W	**Mechanical Form Factor** Size: 200×158×25 mm Weight: 1.4 kg	**Gain** 40 dB min. 58 dB max.
Connector Reference RF IN: SMA-F RF OUT: N-F Control: D-Sub 15-Pin Female Power: Pull-core Capacitance	**Power / Cooling** Supply: +24 V to +32 V, +28 V nominal Cooling: External heat sink	**Release Note** M version: broadband amplifier module. M1 optional: RS485 monitoring/control and alarms.

Applications

- Broadband RF amplification
- SDR / OFDM signal amplification
- RF test and measurement
- System-level RF integration

Customization

D-Sub 15-Pin Female interface supports PA_EN, alarm output, hardware reset, optional RS485, gain/power adjustment and analog temperature/current reporting where applicable. RF interfaces are SMA-F input and N-F output. Power input uses Pull-core Capacitance. Version selection and project-specific documentation can be confirmed during technical review.



CRF-PA-2000M6000M-50W Outline Drawing

Quality & Compliance Support

Manufactured under ISO 9001 quality management system. Source environmental references include storage temperature -55°C to +85°C, 95% RH non-condensing, altitude MIL-STD-810F Method 500.4, and vibration/shock pass MIL-STD-810F Method 514.5/516.5 Proc I.

For technical review, please provide frequency range, output power, signal type, instantaneous bandwidth requirement, control interface, mechanical constraints and environmental requirements.