

RF-LAMBDA

THE LEADER OF RF BROADBAND SOLUTIONS

**150W Wideband EMC
Benchtop Power Amplifier
26GHz - 40GHz**

REMC26G40G0



Note: Photo is for illustration purposes only. Please refer to outline drawing.

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Rev 2. 06-26-2026 | Subject to change without notice

www.rflambda.com

PRODUCT SUMMARY

PRODUCT OVERVIEW

GENERAL DESCRIPTION

REMC26G40G0 is a wideband EMC power amplifier with a frequency range of 26 to 40GHz.

The power output of this amplifier is 52dBm typical. The typical small signal gain is 60dB with a flatness of ± 5 dB. This performance is achieved through the use of GaN devices. The power amplifier's input connector is SMA-Female and Output connector is WR42. This product has a calibration feature which enables customer to obtain great performance through time and temperature changes. The operating temperature of this product is within 0°C to +50°C.



FEATURES

- » Wide band EMC Solid State Power Amplifier
- » Small Signal Gain 52dB Typical
- » Output Saturation Power 52dBm Typical
- » Supply Voltage 110/220 VAC
- » 50 Ohm Matched Input / Output
- » Fast RF Blanking
- » Real Time VSWR measurement
- » Internal Signal Generator – Optional
- » Over temperature Protection
- » Over current Protection
- » Over voltage Protection
- » Auto Calibration



TYPICAL APPLICATIONS

- » Wireless Infrastructure
- » Military and Aerospace Applications
- » Test Instrumentation
- » Radar Systems
- » 5G Wireless Communications
- » Microwave Radio Systems
- » TR Modules
- » Research and Development
- » Cellular Base Stations

QUALITY STANDARDS



ESD Policy



https://rflambda.com/pdf/rflambda_esd_control.pdf

Random Vibration Test Standard



https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf

Connector Torque Specifications



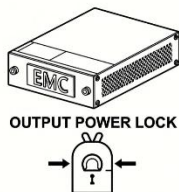
https://www.rflambda.com/pdf/Torque_Specifications.pdf

Parameter	Description
Operational Temperature	0°C to +50°C (Ambient Temperature)
Thermal Shock	0°C → +50°C (5 Cycles / 10 hours, Only internal modules tested prior to final assembly)
*Random Vibration	MIL-STD-202G, Table 214-I, Test Condition Letter C, 1.5 Hours Per Axis
High Temperature Burn In	Temperature +50°C for 72 Hours
Storage Temperature	-40°C to +85°C

*For vibration testing details please see additional information section.

RF-Lambda is ISO: 9000 certified with 25,000 ft² combined R&D and production space, including an ISO7 10K Clean Room to meet ISO-14644-1.

PRODUCT FUNCTIONS



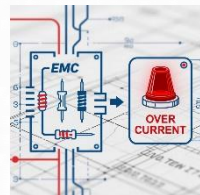
OUTPUT POWER LOCK

Local/Remote Control Toggle

Remote Control



Select control mode:
Local (direct) or Remote (network)



1 EMC Functions

- Output Power Lock
- Automatic Calibration

2 Mode Selections

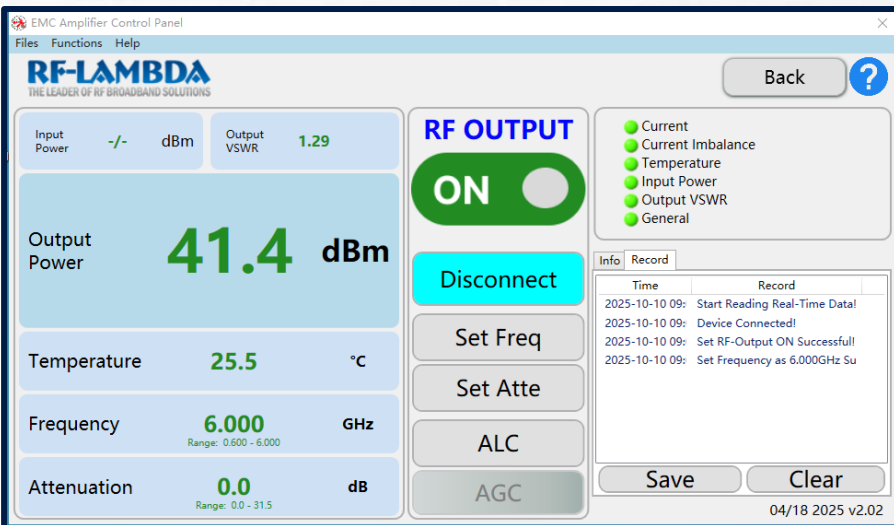
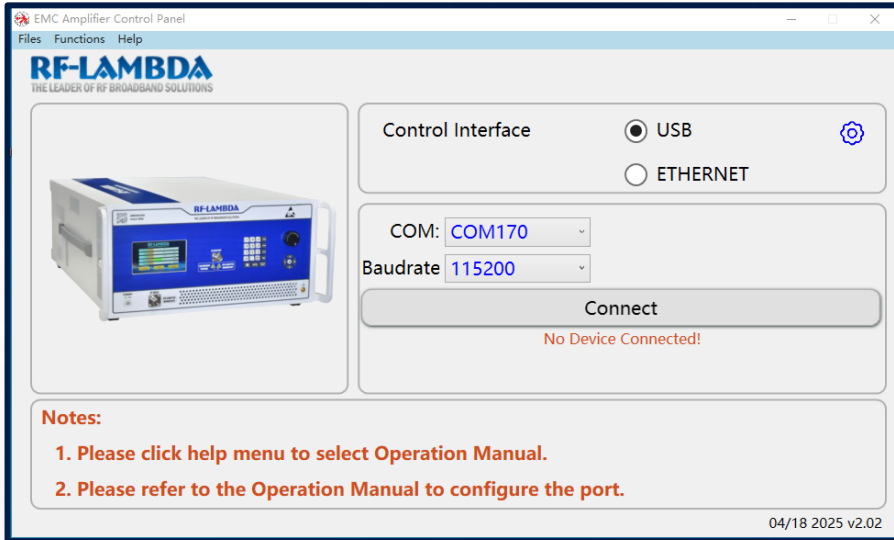
- Local
- Remote Control

3 Product Safety Interlock

- Input Power Overload Protection
- Output Mismatch Protection
- Over Temperature Protection
- Over Current Protection
- Cooling System Anomaly Protection

Category	Function	Included	Optional (Licensing)	Optional (Hardware)	NOT Applicable
Product Safety Interlock	Input Overload Protection	☒	☐	☐	☐
	Output VSWR Protection	☒	☐	☐	☐
	Current Overload Protection	☒	☐	☐	☐
	Temperature Protection	☒	☐	☐	☐
	Current Imbalance Protection	☒	☐	☐	☐
	Overvoltage and Undervoltage Protection	☒	☐	☐	☐
	AC Power Abnormality Protection	☒	☐	☐	☐
	Fan Abnormality Protection	☒	☐	☐	☐
User Operation Functions	USB, LAN Communication	☒	☐	☐	☐
	DB Interface	☒	☐	☐	☐
	Self-Calibration Function	☒	☐	☐	☐
	Gain Compensation Over Temperature	☒	☐	☐	☐
	Current Compensation Over Temperature	☒	☐	☐	☐
	TDD Control - RF Switch Enable	☒	☐	☐	☐
	TDD Control - Positive Voltage Enable	☒	☐	☐	☐
	TDD Control - Negative Voltage Enable	☒	☐	☐	☐
	GUI Interface	☒	☐	☐	☐
	Parameter Setting	☒	☐	☐	☐
	Gain Calibration Each Stage	☒	☐	☐	☐
	Software ON/OFF Function	☒	☐	☐	☐
	Modularized System Integration	☒	☐	☐	☐
	Remote Software Control ON/OFF	☒	☐	☐	☐
	Rotary Gain Adjustment	☒	☐	☐	☐
EMC Functions	Screen Protection Function	☒	☐	☐	☐
	Touch Screen Display	☒	☐	☐	☐
	Developer Interface	☒	☐	☐	☐
	System Log Recording	☒	☒	☐	☐
User Customization Functions	Output VSWR Measurement	☒	☒	☐	☐
	Input Power Measurement	☒	☒	☐	☐
	ALC - Automatic Loop Control Gain	☒	☒	☐	☐
	AGC - Automatic Gain Control Function	☐	☒	☐	☐
	Input Circulator Protection (Internal Load)	☐	☐	☒	☐
	Output Circulator Protection (Internal Load)	☐	☐	☒	☐
	Waveguide Adapter (E-H)	☐	☐	☒	☐
	Fast RF Blanking	☒	☐	☐	☐
	Single Frequency Output	☐	☒	☐	☐
	Frequency Auto Sweeping	☐	☒	☐	☐
Internal Signal Generator	Frequency Hopping	☐	☒	☐	☐
	External Signal	☐	☒	☐	☐

REMOTE CONTROL



TECHNICAL DATA SPECIFICATIONS

Parameter		Min	Typ	Max	Units
Frequency Range		26		40	GHz
Small Signal Gain		50	52		dB
Gain Flatness			±5		dB
Gain Variation Over Temperature (0°C to +50°C)			±3		dB
Input VSWR			2		:1
Output 1dB Compression Point (P1dB)			47		dBm
Saturated Output Power (Psat)			52		dBm
Supply Current (110V / 220V AC)			10		A
IM3			-		dBc
Power Added Efficiency (PAE)			10		%
Turn On/Off Speed (Switch Disable)	ON		/		ns
	OFF		/		ns
Turn On/Off Speed (Drain Disable)	ON		/		us
	OFF		/		us
Turn On/Off Speed (Gate Disable)	ON		/		us
	OFF		/		us
RF Fast Blanking Speed (Optional) (Mute RF Output signal and noise)	ON		/		us
	OFF		/		us
Optional RF Fast Blanking Frequency (Optional)			/		kHz
Weight			22.6 Max		lbs.
Impedance			50		Ohms
*RF Input Power (RFIN)			Psat – Large Signal Gain		
Package			4U Please see the detailed mechanical drawing		
Cooling System			Forced air (Self-contained fan)		
Supply Voltage			110 to 240		VAC
Supply Frequency			47 to 63		Hz
Supply Power			2000		W

*Maximum RF input power is set to assure safety of amplifier. Input power may be increased at own risk to achieve full power of amplifier. Please reference gain and power curves.

INSTRUCTIONS FOR USE



CAUTION!

1. Please connect and turn OFF input RF signal.
2. Please verify output-load is connected.

ENTER



Signal Source Selection

(1) External Source **ESC**

(2) Internal Source **ENTER**

[[2] Internal Source Function Not Licensed. Please contact Technical Support.



Output Status ON **Band** 18.0 - 40.0 GHz

Frequency 22.8 GHz **MENU**

Output Power 45.2 dBm 33.1 W

ALC ON **AGC** OFF

Temp. 35.2 °C/95.4 °F **Attenu.** 15.5 dB

[1] Freq. Set
[2] ALC Set
[3] AGC Set
RF ON/OFF

Please follow the instructions on the front panel LCD screen after switching on the power. Press “ENTER” on keypad to continue.

Please follow the instructions

Name	Description
RF Output Status	Indicates instrument RF output status. It will display: ON or OFF
Frequency	RF input signal frequency (For illustrative purposes only)
Output Power	Instrument RF output power (For illustrative purposes only)
RF ON/OFF	Switches On or Off for instrument RF output port
ALC	ALC mode, Automatic Loop Control
AGC	AGC mode, Automatic Gain Control, this function is invalid
Temperature	Instrument temperature (For illustrative purposes only)
Attenuation	RF output attenuation (change with adjustment knob)

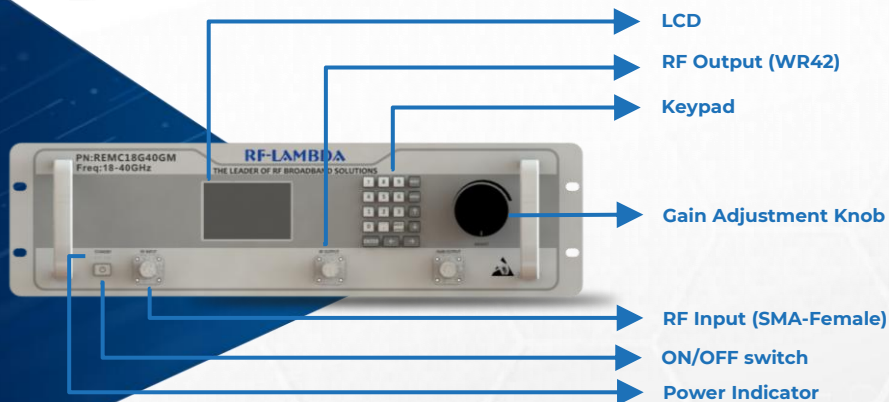
Power On/Off Procedure

Power On Procedure	Power Off Procedure
1. Connect the back panel grounding post to the common ground wire.	1. Turn off the RF output and the input source signal.
2. Connect RF input and RF output with 50 Ohm source/load. (In band VSWR < 1.9:1 or >10dB VSWR).	2. Turn off the unit, turn off the display, and enter standby mode.
3. Connect the AC power cord, turn on the AC switch, and enter standby mode.	3. Turn off the AC switch and remove the AC power cord.
4. Press the front panel switch button to enter operating mode.	4. Remove RF Connection.
5. Ensure the input signal is a low-power signal and turn on the RF output.	5. Remove ground.

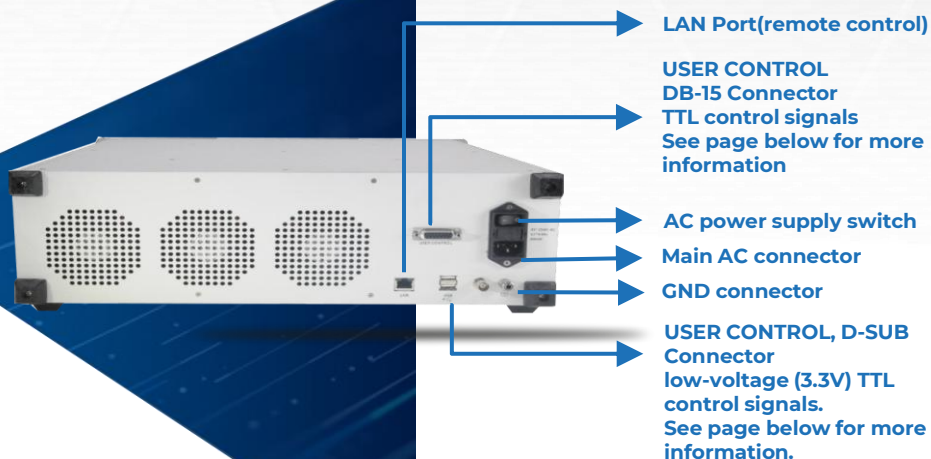
*When using two identical devices simultaneously for testing or power combining applications, it is necessary to add reverse isolation protection measures at the output port of each device to prevent mutual interference from large signals between the devices under different operating conditions, which could cause equipment damage. For example: add an isolator at the output of each device.

INTERFACE DESCRIPTION

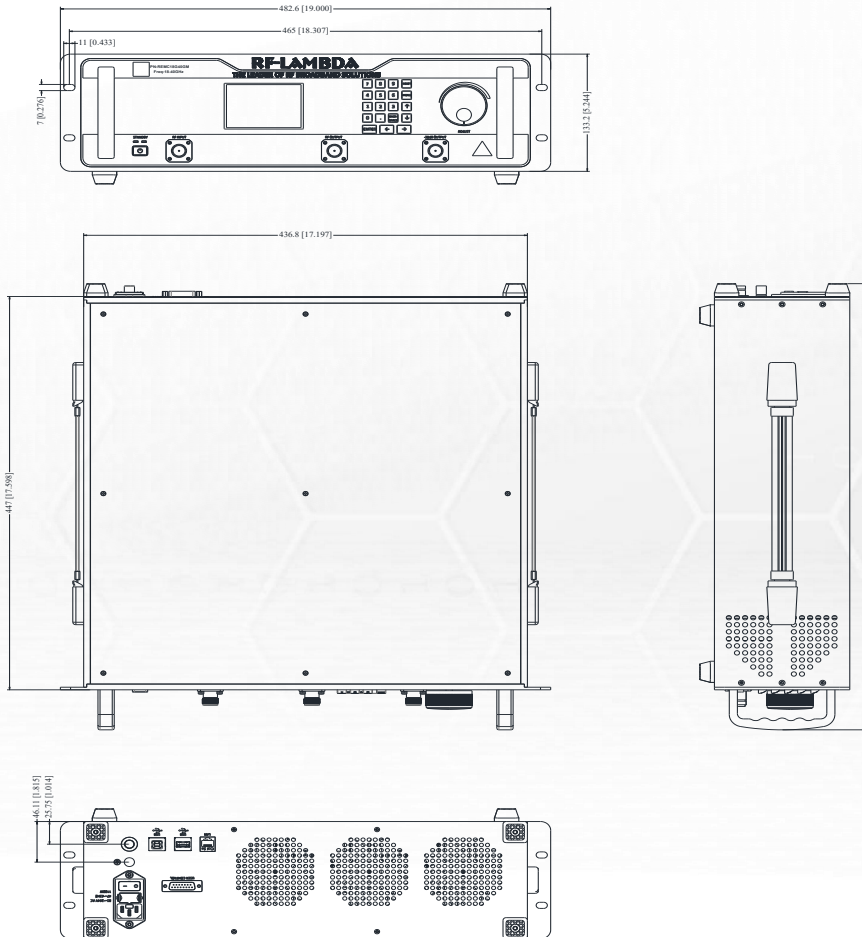
FRONT PANEL



REAR PANEL



OUTLINE DRAWING

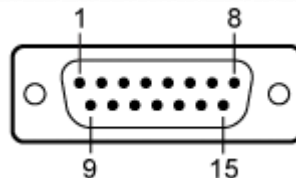


Notes:

1. Package Material: Aluminum
2. Finish: White Baking Paint
3. All dimensions are in millimeters [inches].
4. Standard torque wrench must be used to secure RF connectors.

PROTECTION CONNECTOR TABLE

User Control Connector on Rear Panel



Pin #	Name	Function	Initial State	Description	Applied
1	Reset	Control		Resets PA when logic LOW is applied and released	Yes
2	Driver Disable	Control	LOW	Applying logic HIGH disables driver of amplifiers	Yes
3	Drain Disable	Control	LOW	Applying logic HIGH disables drain of amplifiers	Yes
4	RF IN Over	Indicator	LOW	Pin will be latched to logic HIGH when input signal is over limit	No
5	Temp Over	Indicator	LOW	Pin will be latched to logic HIGH when amplifier is driven over temperature	Yes
6	Current Over	Indicator	LOW	Pin will be latched to logic HIGH when drain current limit is reached	Yes
7	ID Imbalance	Indicator	LOW	Pin will be latched to logic HIGH when an imbalance in the drain current of the combining branches occurs	Yes
8	PA input power	Indicator		PA input power is represented by voltage	No
9	PA output power	Indicator		PA output power is represented by voltage	No
10	PA output reflection power	Indicator		PA output reflection power is represented by voltage	No
11	VSWR	Indicator	LOW	Pin will be latched to logic HIGH when output reflection is over limit	No
13	+5V	Power Supply	+5V	+5V DC is supplied for reference	Yes
14	GND	Ground	GND	Ground	Yes
15	GND	Ground	GND	Ground	Yes

Notes:

- HIGH/LOW voltages are standard TTL signals 0.0V-0.8V = LOW, 2.8V-5V = HIGH. Input current is 10uA.
- Matching connector and cable will be shipped with the product.
- Applied=Yes means the feature is included. Applied=No means the feature is not included with this model.
- 5V reference supply can source 700mA.
- Indicator output signals can source 24mA.

PACKING LIST

ID	Description	QTY
1	Fig a. AC power supply line (Consulting sales)	1
2	Fig b. DB15 cable (RFCBLADB15)	1



Fig a.



Fig b.

ORDERING INFORMATION

Part Number	Modification	Description
REMC26G40G0	Input connector SMA-Female and Output connector WR42	26GHz - 40GHz EMC Benchtop Power Amplifier

AMPLIFIER USE

Ensure that the amplifier input and output ports are safely terminated into a proper 50 ohm load before turning on the power. Never operate the amplifier without a load. A proper 50 ohm load is defined as a load with impedance less than 1.9:1 or return loss larger than 10dB relative to 50 Ohm within the specified operating band width.

Power Supply Requirements

Power supply must be able to provide adequate current for the amplifier. Power supply should be able to provide 1.5 times the typical current or 1.2 times the maximum current (whichever is greater).

In most cases, RF - Lambda amplifiers will withstand severe mismatches without damage. However, operation with poor loads is discouraged. If prolonged operation with poor or unknown loads is expected, an external device such as an isolator or circulator should be used to protect the amplifier.

Ensure that the power is off when connecting or disconnecting the input or output of the amp.

Prevent overdriving the amplifier. Do not exceed the recommended input power level.

Adequate heat-sinking required for RF amplifier modules. Please inquire.

Amplifiers do not contain Thermal protection, Reverse DC polarity or Over voltage protection with the exception of a few models. Please inquire.

Proper electrostatic discharge (ESD) precautions are recommended to avoid performance degradation or loss of functionality.

What is not covered with warranty?

Each RF - Lambda amplifier will go through power and temperature stress testing.

Since the die, ICs or MMICs are fragile, these are not covered by warranty. Any damage to these will NOT be free to repair.

IMPORTANT NOTICE

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