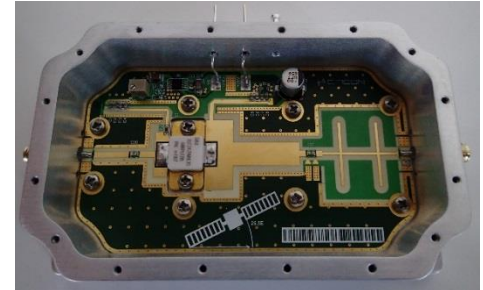


PowerBlast™ 30

30 Watts CW,
2400 MHz to 2500 MHz,
450mW Input Power to P1dB RF OUT

P/N: ERN-MH01-2425-30-RH



Images are for reference only.
See Product Specifications.

E-REON's PowerBlast 30 is a compact, highly efficient, connectorized solid state power amplifier that delivers over 30 watts of RF power over the 100MHz BW of ISM 2.45GHz frequency band.

The amplifier accepts a nominal 26 dBm (400 mW) RF input and provides 18 dB of gain from 2400 MHz to 2500 MHz for continuous wave (CW) and constant envelope input signals. Based on the latest and more mature LDMOS technology, this high power amplifier achieves drain efficiency of 62% (final stage) and more than 60% in module level at rated power¹.

E-REON Green Series PAs feature, PA Enable function and Active Bias as standard functions . The units can be provided in machined aluminum housing, or in pallet form. For proper thermal management E-REON provides customized solutions of forced air or water-cooling plates. For more information, please contact us at info@e-reon.com.

Features

- Min 30 Watts RF Output Power
- 2400 MHz to 2500 MHz
- Small Form Factor
- High-Efficiency LDMOS Technology
- 26 dBm Nominal RF Input
- Harmonics Rejection Filter
- Logic On/Off Control

Benefits

- Minimal integration requirements
- Ease of use
- Reduced load on DC power budget due to high efficiency operation
- Requires less volume on space-constrained platforms

Applications

- Drone Killer
- Sat Links
- WiFi Booster
- Medium Power Driver
- P2P Links
- Laboratory equipment

¹ Module efficiency varies according to extra features employed to the module.

PowerBlast 30

Specifications

Absolute Maximums

Parameter	Rating	Unit
Max Device Voltage	32	V
Max Device Current	1.5	A
Max Load VSWR	30:1	-
Max RF Input Power, ZL = 50 Ω	30	dBm
Max Operating Temperature (ambient)	55	°C
Max Operating Temperature (baseplate)	85	°C
Max Storage Temperature	85	°C

Export Classification

EAR99

Electrical Specifications @ 32 VDC, 20 °C, ZS=ZL=50 Ω

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Operating Frequency	BW	2400		2500	MHz	
RF Output Power	P _{SAT}	30.3		31.5	W	20°C Baseplate Temperature
Output Power @ 1dB Compression	P1dB	29.8		30.5	W	
Small Signal Gain	G	17.8		18.2	dB	
Small Signal Gain Flatness	ΔG	-0.25		0.25	dB	
Input VSWR	VSWR			2:1		@ +5dBm
Nominal Input Drive Level	P _{IN}		26		dBm	For P1dB
Operating Voltage	VDC	28		32	V	Derated power by 10%-15% at 28V
Quiescent Current (RF Enable Off)	I _{DQ}			1	mA	
Quiescent Current (RF Enable On)	I _{DQ}			70	mA	
Operating Current	I _D			1.5	A	
Module Efficiency		60		62	%	
Switching Speed	T _{XON/OFF}	1			μs	
Harmonics	2nd			70	dBc	
	3rd			55		
Output Mismatch (No Damage)	VSWR _{load}			30:1		External circulator required if the module is to operate under continuous mismatch. For integrated circulator please contact: info@e-reon.com

Specifications (cont.)

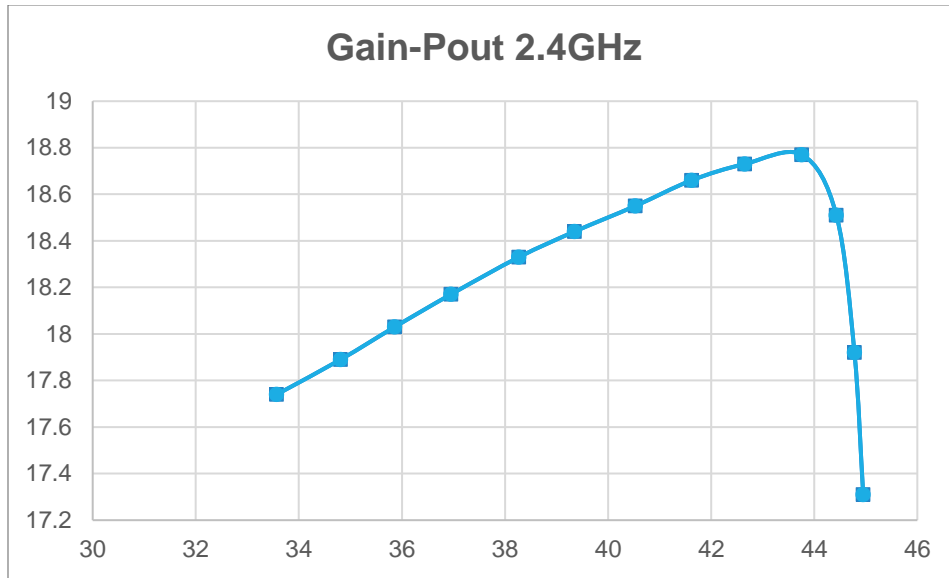


Figure 1: Gain variation with output power at 2.4GHz (50Ohm load).

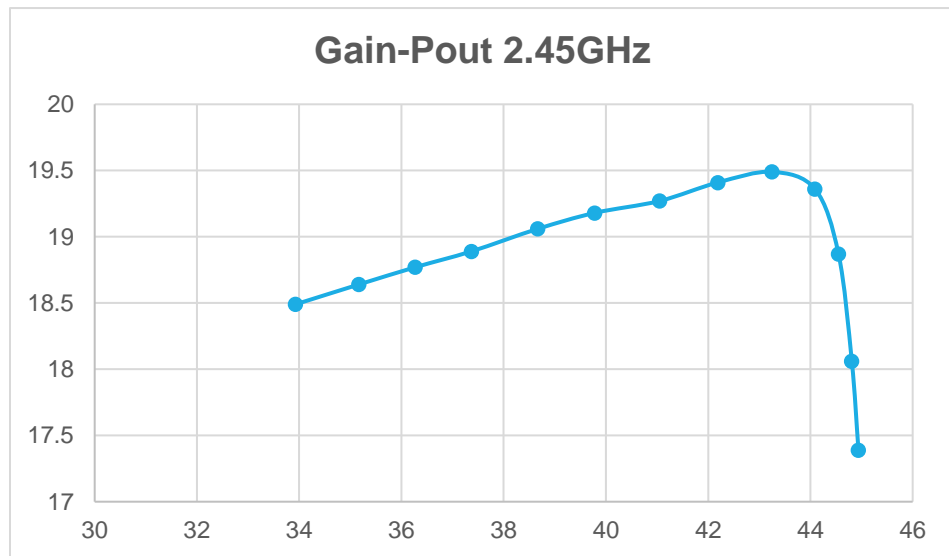


Figure 2: Gain variation with output power at 2.45GHz (50Ohm load).

Specifications (cont.)

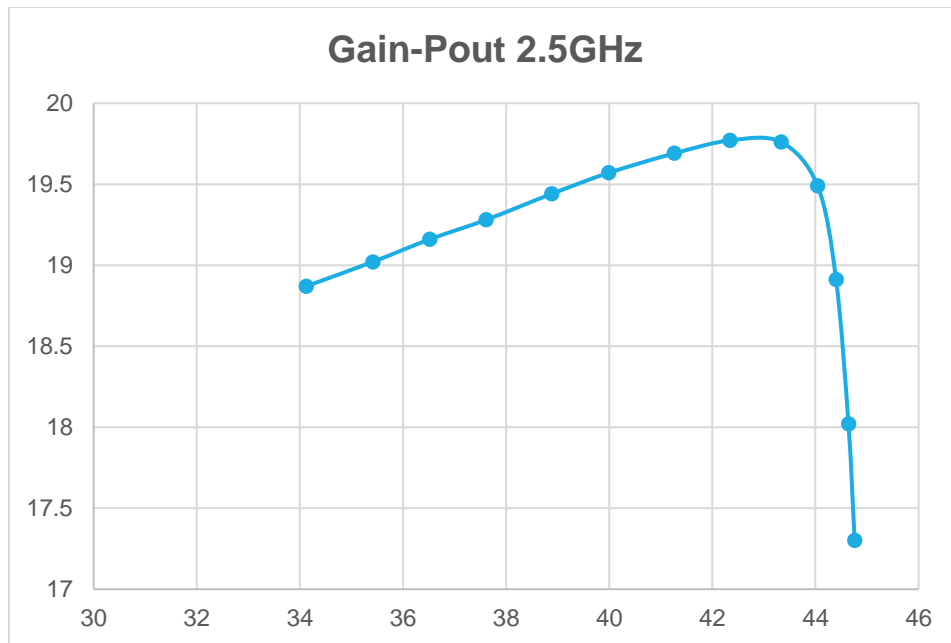


Figure 3: Gain variation with output power at 2.5GHz (50Ohm load).

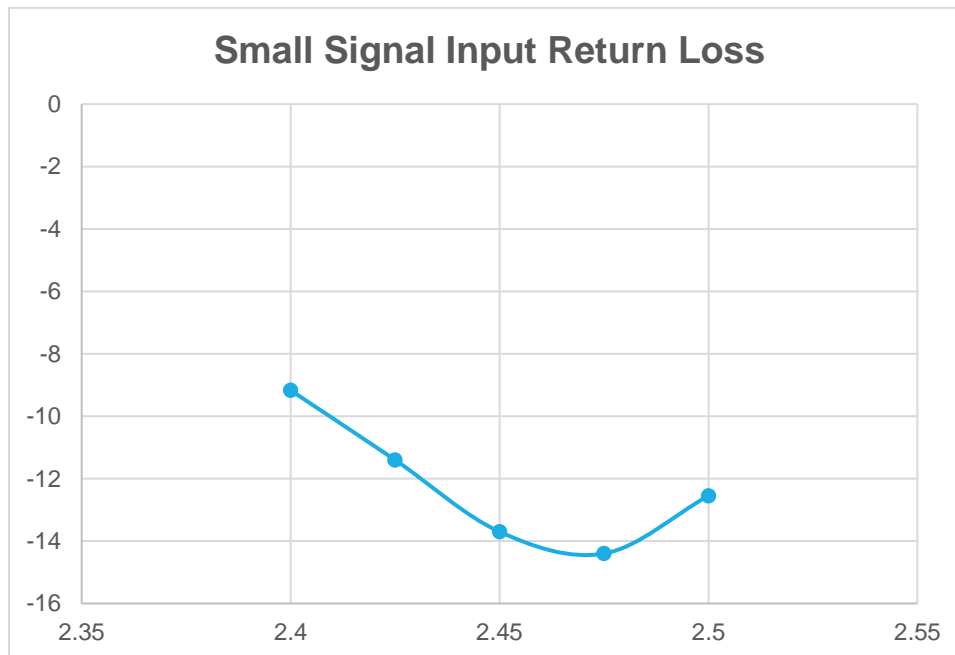


Figure 4: Small Signal (+5dBm) input return loss.

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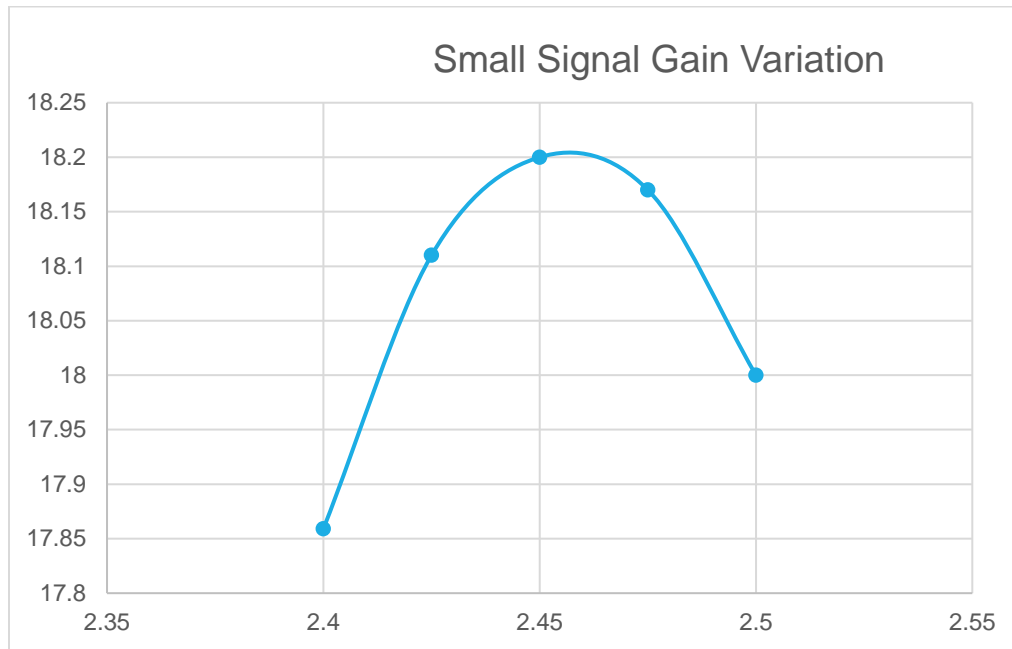


Figure 5: Small Signal Gain across frequency band. (at +5dBm input power).

Mechanical specifications

Parameter	Value	Unit	Limits
Dimensions	105x65x25	mm	124.1x72x25 (connectors included)
Weight	224	grams	
RF Connectors, Input/Output	SMA(F)/SMA(F)	-	
Interface Connector	Solder Pins	-	
Cooling	Adequate Heatsink (not included)	-	Depends on mode of operation. Consult factory contact: info@e-reon.com

Environmental Specifications

Parameter	Symbol	Min	Typ	Max	Unit
Operating Temperature (ambient)	Ta	-20		85	°C
Operating Temperature (baseplate)	Tc	-20		55	°C
Storage Temperature	Tstg	-30		100	°C
Relative Humidity (non-condensing)	RH			95	%
Altitude	N/A	N/A	N/A	N/A	ft
Vibration / Shock Profile	N/A ²				

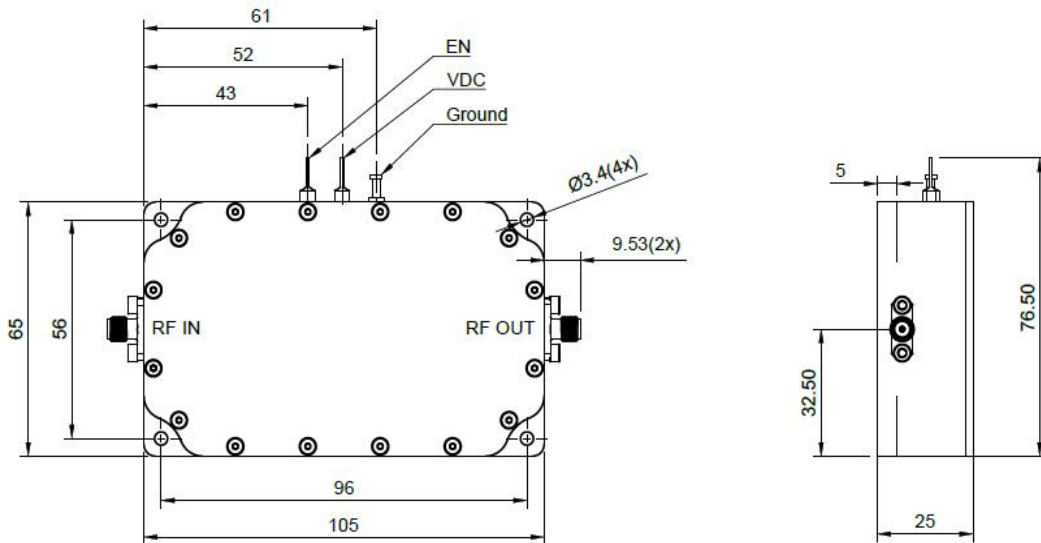
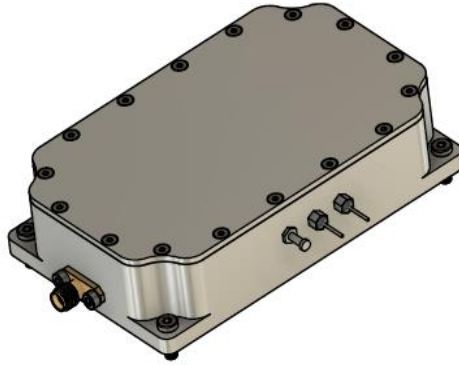
² N/A: Not Applicable

Operation

- The module offers two pin terminals (for DC Power and Control voltages) and a Ground post.
- All pin and post terminals are solderable.
- For proper module operation the module must be powered with 28 to 32 Volts.
- ! **Never Exceed 32.5V or permanent damage might occur**
- The control pin (EN) operates as:
 - 0 to 1V “OFF state”
 - 1V to Vdc “ON state”
- ! **Never exceed the Vdc voltage at the EN terminal. Permanent damage may occur.**
- The module consumes 1.5A at 32V at P1dB.
- Avoid powering the module (DC) with the RF input and/or output connectors non terminated to 50Ohm.
- Avoid running the amplifier at full power and high VSWR loads.
- The amplifier module provides an integrated overtemp protection; In case the protection will be triggered the gate bias is set to 0V.
- The module can be operated without a heatsink. Use a heatsink in case during specific operation the average temperature at the bottom face of the housing exceeds 50°C.

PowerBlast 30

Mechanical Outlines



PowerBlast 30

Accessory Part Numbers

Part Number	Description
N/A	N/A

Pinout

Function	Pin	Input/Output
DC power (+32 volt DC)	VDC	I
Ground	Ground	O
BIAS Enable	EN	I

Contact E-REON

Handelsweg 15
3161 GD, Rhooon
The Netherlands

www.e-reon.com
T: +31 (0)850471082
info@e-reon.com



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Notes:
