
58G Series 5GHz 1Watt Bi-Directional Outdoor Amplifier

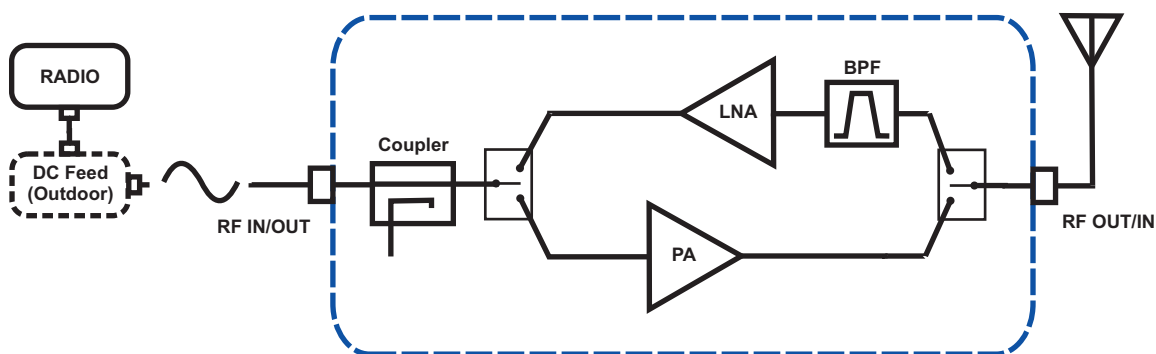
Features

- TX Power Output 1W Avg, 4W Peak
- 5GHz 802.11a,n,ac compatible
- Low Receive Noise Figure
- Includes DC Injector, Power Supply
- Rugged, sealed aluminium housing
- Internal Lightning Protection
- N Connectors
- Indoor and Outdoor Models Available

Description

The 58G series Bi-Directional Amplifiers will significantly improve link reliability and operating range by providing Low Noise Amplification during Receive, and Spectrally Clean Power Amplification during Transmit. The 24G2W-OD amplifier feature a rugged, cast aluminum water-proof construction to ensure years of reliable operation in the harshest environments. Designed for use with existing 5GHz wireless radio equipment, 802.11a/ac/n or video products where higher power is required. The saturated output power is 4 Watts. GEM Microwave's proprietary copper heat sinking technology allows maximum heat transfer between RF power device and the large aluminium heat sink. This exclusive GEM Microwave feature allows the amplifier to be used in high duty cycle applications like Hotspots or IP cameras. Included with the outdoor models, the DC Power Injector provides power to the amplifier through the antenna cable, simplifying installation. Current-sensing circuits provide remote amplifier diagnostic LEDs. In addition, this unit provides effective lightning protection with multi-strike capability.

58G SERIES BLOCK DIAGRAM





58G1W-OD

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Electrical Specifications

Parameter	Unit	Minimum	Typical	Maximum
Frequency Range	GHz	5.15		5.85
Operating Mode (Note1)		TDD, Time Division duplex		
Receive Gain	dB		12	
Receive Noise figure	dB			2
Transmit Input RF Power	mW	2		50
Transmit Gain (Note 2)	dB	13		17
Transmit Gain @ 3.8GHz	dB			-10
Average Transmit RF Power (Note 3)	mW		1000 (+30dBm)	
Peak Transmit RF Power	mW		4000 (+36dBm)	
Transmit Harmonic 2f, 3f (Note 4)	dBm/MHz			-60
RX to TX switching time	μs			0.2
DC Power Supply	V	8		12
Receive supply current	mA		50	
Transmit supply current	mA	1000	1200	1600
Average supply current (Note 5)	mA		400	500
Lightning Supression		1/4 wavelength short		
DC supply overvoltage-protection		TVS diode		
Operating Temperature	°C	-40		+60

Note 1: This GEM Microwave bi-directional amplifier is designed for burst half-duplex operation. It is not intended for constant transmit or CW operation. Operation of the amplifier in CW mode will damage the amplifier and void the warranty.

Note 2: Within each UNII Band.

Note 3: @ 3% EVM, using 802.11a Orthogonal Frequency Division Multiplexing Input Signal, Data Rate = 54 Mbps.

Note 4: Power Output=30dBm.

Note 5: Bi-directional operation, using 802.11a Orthogonal Frequency Division Multiplexing Input Signal, Data Rate = 54 Mbps, Power Output=30dBm.

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Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power	+20dBm (100mW)
Supply Voltage	+14V
Operating Temperature	-40 °C to +70 °C
Storage Temperature	-55 °C to +100 °C

The complete set includes:

- The Outdoor Amplifier
- DC Power Injector (58-INJ-1)
- Universal Power Supply (110V~240V AC to 12V DC 2A)

Mechanical Specifications (Outdoor Amplifier)

Parameter	Unit	
RF Connectors		N-male for antenna, N-female for radio (DC Injector)
Chassis		Diecast Aluminium with rugged white coat finish
Dimensions	mm	154 x 65 x 63
Weight	kg	0.53

Mechanical Specifications (DC Injector)

Parameter	Unit	
LED Indicators		Green for Power On, Red for Transmit
RF Connectors		N female
DC Power Connector		DC Via 2.1mm I.D. (+), 5.5mm O.D. (-)
Chassis		Steel with hot tin-plating, rugged white coat finish
Dimensions	mm	85 x 45 x 25
Weight	kg	0.06



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Guaranteed Quality

24G Series is designed and manufactured by GEM Microwave and is backed by GEM Microwave's Limited Warranty.