

24G Series

2Watt Bi-Directional Outdoor Amplifier

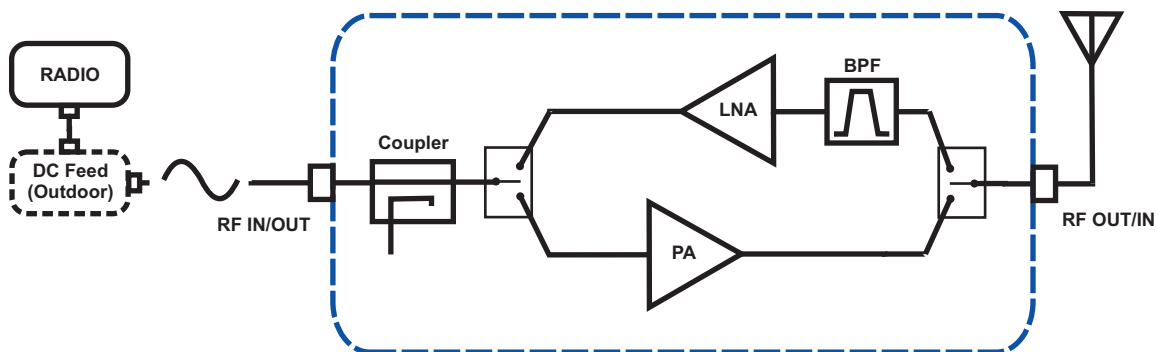
Features

- TX Power Output 2W Avg, 4W Peak
- 802.11b,g,n compatible
- Low Receive Noise Figure
- Includes DC Injector, Power Supply
- Rugged, sealed aluminium housing
- Internal Lightning Protection
- N-female Connectors
- Indoor and Outdoor Models Available

Description

The 24G 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 wireless radio equipment, 802.11b,g,n AM/FM 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.

24G SERIES BLOCK DIAGRAM





24G2W-OD

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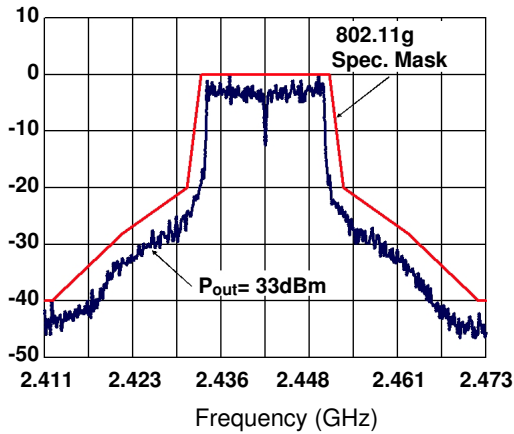
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Electrical Specifications

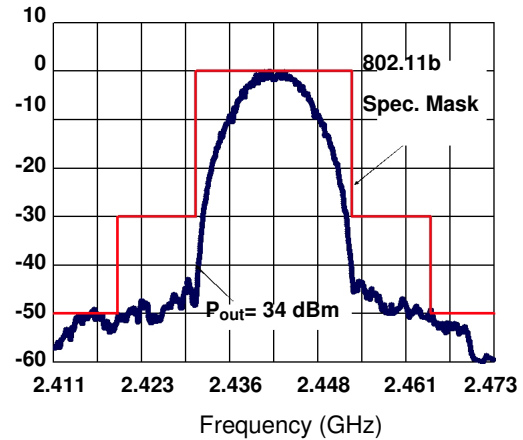
Parameter	Unit	Minimum	Typical	Maximum
Frequency Range	GHz	2.4		2.5
Operating Mode (Note1)		TDD, Time Division duplex		
Receive Gain	dB		12	
Receive Noise figure	dB			2
Transmit Input RF Power	mW	1		50
Transmit Gain	dB		20	
Gain flatness over band	dB		±0.3	
Average Transmit RF Power	mW		2000 (+33dBm)	
Peak Transmit RF Power	mW		4000 (+36dBm)	
RX to TX switching time	µs			0.2
DC Power Supply Voltage	V	8		12
Receive supply current	mA		120	
Transmit supply current	mA	1000	2000	2500
Average supply current (Note 2)	mA	360	440	660
Lightning Supression		1/4 wavelength short		
DC supply overvoltage-protection and line filtering		TVS diode and L-C filter		
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: Bi-directional operation, using 802.11g Orthogonal Frequency Division Multiplexing Input Signal, Data Rate = 54 Mbps.



Output Spectrum Response for 802.11g,
Power Out = 33 dBm



Output Spectrum Response for 802.11b
CCK-Coded, Power Out = 34 dBm

Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power	+20dBm (100mW)
Supply Voltage	+14V
Operating Temperature	-40 °C to +65 °C
Storage Temperature	-55 °C to +100 °C



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The complete set includes:

- The Outdoor Amplifier
- DC Power Injector (24INJ-2)
- Universal Power Supply (110V~240V AC to 12V DC 2A)

Mechanical Specifications (Outdoor Amplifier)

Parameter	Unit	
RF Connectors		N female
Chassis		Diecast Aluminium with rugged white coat finish
Dimensions	mm	154 x 65 x 63
Weight	kg	0.52

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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Installation

- Step 1. Turn off the PC, router, radio and unplug the power cords from the wall outlets.
- Step 2. Connect the amplifier to the antenna, and the DC Injector via RF cable.
- Step 3. Connect the DC Injector to the radio, PC, router via RF cable.
- Step 4. Connect the DC Power adaptor to the DC Injector.
- Step 5. Plug PC, router, radio, DC Power adaptor's power cord into the wall outlet.
- Step 6. Turn on the PC, router, radio.

Guaranteed Quality

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