

## GEM24G Series

## 1Watt Bi-Directional Amplifier

### Features

- TX Power Output 1W Avg, 2W Peak
- 802.11b,g,n compatible
- Low Receive Noise Figure
- TX/RX LED indicator
- Low-cost, high-performance
- Internal Lightning Protection
- SMA / RPSMA Connectors

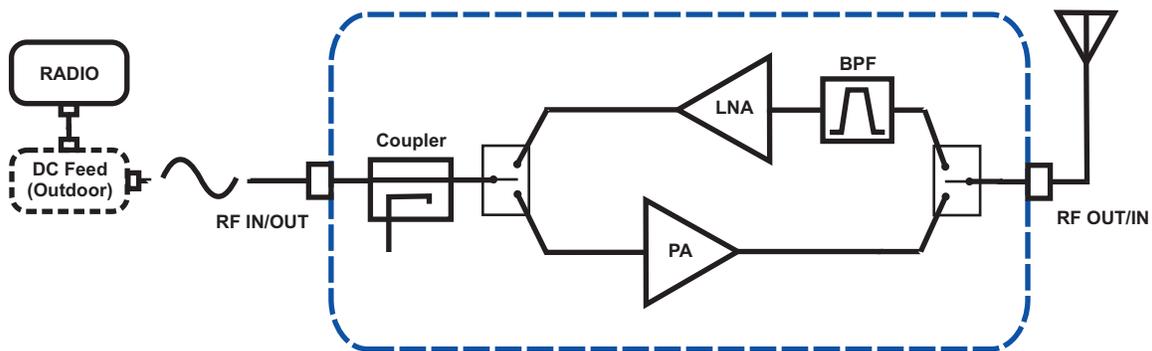
### Picture



### Description

The *GEM-24G1IDA* bi-Directional Amplifier will significantly improve link reliability and operating range by providing Low Noise Amplification during Receive, and Spectrally Clean Power Amplification during Transmit. Designed for use with existing wireless radio equipment, 802.11b,g,n or video products where higher power is required. The saturated output power is 2Watts. This amplifier offers low cost solution to power problems. GEM Microwave's proprietary copper heat sinking technology allows maximum heat transfer between RF power device and the case which doubles as a large heat sink.

**GEM-24G1IDA BLOCK DIAGRAM**





# GEM-24G1IDA

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## GEM24G Series

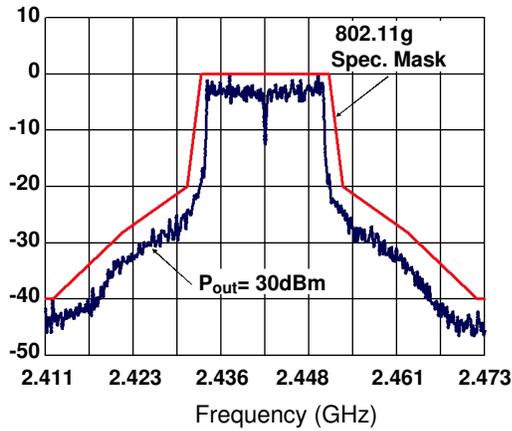
## 1Watt Bi-Directional Amplifier

### Electrical Specifications

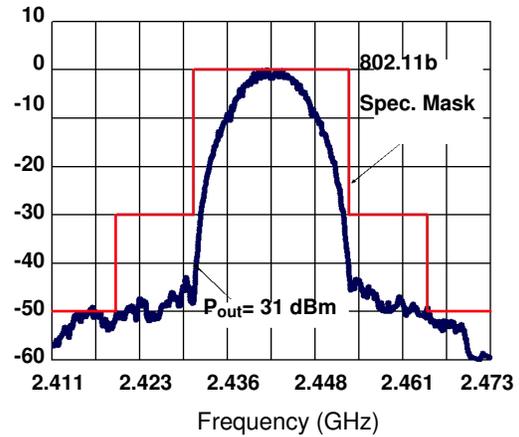
Parameter	Unit	Minimum	Typical	Maximum
Frequency Range	GHz	2.4		2.5
Operating Mode (Note1)		TDD, Time Division duplex		
Receive Gain	dB		12	
Receive Noise figure	dB			2
Transmit Input RF Power	mW	2		50
Transmit Gain	dB		14	
Gain flatness over band	dB		±0.3	
Average Transmit RF Power	mW		1000 (+30dBm)	
Peak Transmit RF Power	mW		2000 (+33dBm)	
RX to TX switching time	µs			0.2
DC Power Supply	V	8		12
Receive supply current	mA		120	
Transmit supply current	mA	550	1000	1200
Average supply current (Note 2)	mA	180	220	330
Lightning Supression		1/4 wavelength short		
DC supply overvoltage-protection		TVS diode		
Operating Temperature	°C	-40		+40

**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 = 30 dBm



Output Spectrum Response for 802.11b  
CCK-Coded, Power Out = 31 dBm

## Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power	+20dBm (100mW)
Supply Voltage	+14V
Operating Temperature	-40 °C to +50 °C
Storage Temperature	-55 °C to +100 °C



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### Mechanical Specifications

Parameter	Unit	
LED Indicators		Green for Power On, Red for Transmit
RF Connectors		SMA female for Radio port and RP-SMA female for antenna port
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	94 x 40 x 40
Weight	Kg	0.11

### 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 radio, PC, router via RF cable.
- Step 3. Connect the DC adaptor to the amplifier.
- Step 4. Plug PC, router, radio's power cord into the wall outlet.
- Step 5. Plug the DC 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.