



24G10W-OD

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24G Series 2.4GHz 10Watt Bi-Directional Outdoor Amplifier

Features

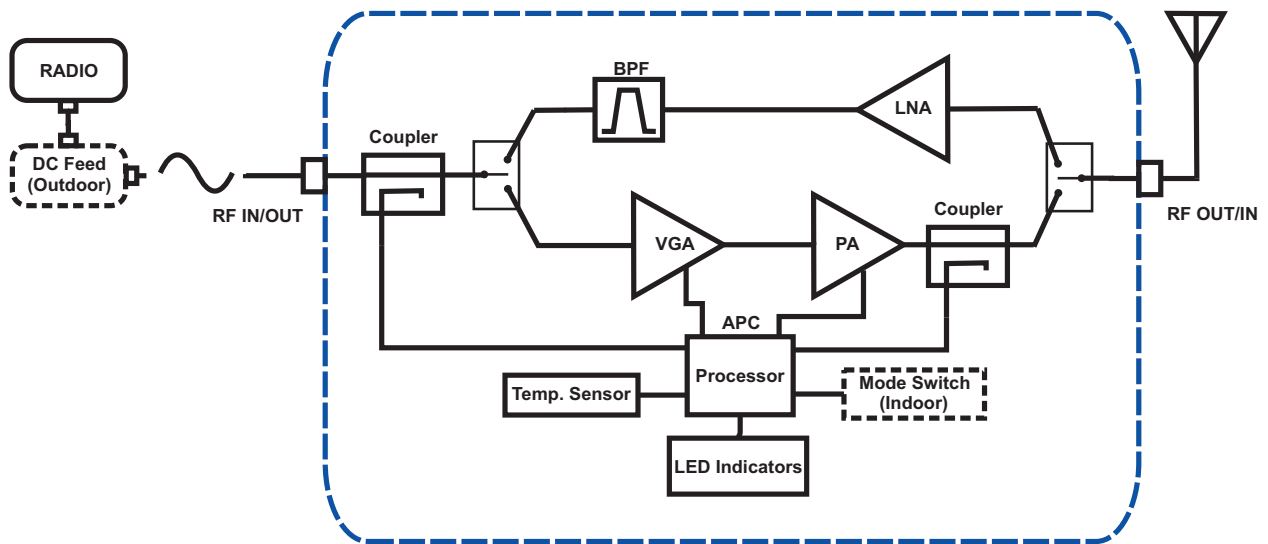
- TX Power Output 10W Avg, 25W Peak
- 802.11b,g,n compatible
- Low Receive Noise Figure
- Includes DC Injector, Power Supply
- Rugged, sealed aluminium housing
- Internal Lightning Protection
- N-Female Connectors
- Intelligent Power Control

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 24G10W-OD bi-directional amplifier feature a rugged, water-proof, cast aluminum construction with large heat sink to ensure years of reliable operation and are available in either indoor or outdoor models. Designed for use with existing wireless radio equipment, 802.11b/g/n base stations, AM/FM or video products where high transmit power is required. The 1dB compression point is 20Watts. The Intelligent Active Power Control circuit automatically adjusts the amplifier's gain to provide a constant output power regardless of cable length, radio transmit power, temperature shifts or equipment aging. The built-in microprocessor also monitors the input power and the temperature of the amplifier to protect the amplifier's FET reducing the output power when operating in high temperature condition. 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.

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24G10W BLOCK DIAGRAM



Indicator LEDs Diagnostics

Power LED (Green)	Transmit LED (Red)		
	On	Off	Blink
On	Transmit	Receive	Receive/Transmit
Off	Power Off		
Blink	Temperature Warning		



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Electrical Specifications

Parameter	Unit	Minimum	Typical	Maximum
Frequency Range	GHz	2.4		2.5
Operating Mode		TDD, Time Division duplex or CW		
Receive Gain	dB		22	
Receive Noise figure	dB			2
Transmit Input RF Power	mW	1		100
Transmit Gain	dB	Automatically adjusted		
Gain flatness over band	dB		±0.5	
Average Transmit RF Power	W		10 (+40dBm)	
Peak Transmit RF Power	W		25 (+44dBm)	
Input Return Loss	dB		20	
Output Return Loss	dB		17	
RX to TX switching time	µs			0.2
DC Power Supply	V	18		24
Receive supply current	mA		250	
Transmit supply current	mA		1.55	
Average supply current (Note 1)	mA		0.5	
Tolerance to constant input power into a mismatch load (Note 2)		No damage		
Lightning Supression		1/4 wavelength short		
DC supply overvoltage-protection		TVS diode		
Operating Temperature	°C	-40		+60

Note 1: Bi-directional operation, using 802.11g Orthogonal Frequency Division Multiplexing Input Signal, Data Rate = 54 Mbps.

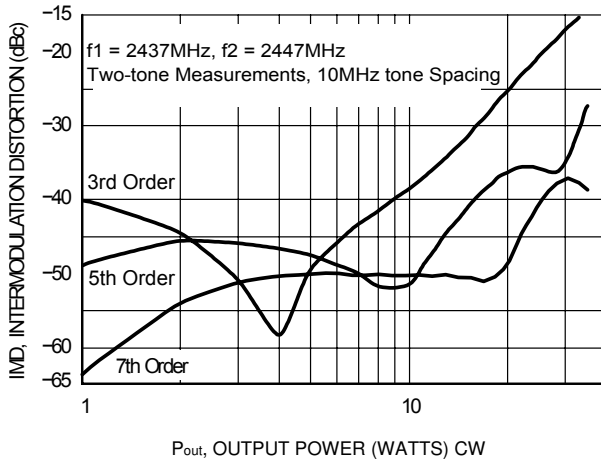
Note 2: Pin= +20dBm, CW, VSWR = 5:1, all phases.



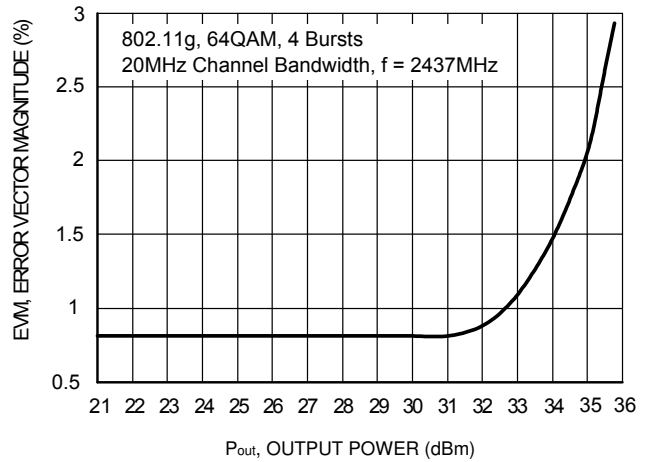
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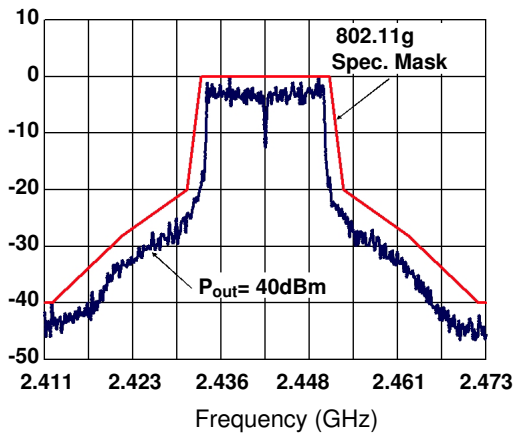
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Intermodulation Distortion Products vs. Output Power



Error Vector Magnitude vs. Output Power



Output Spectrum Response for 802.11g, Power Out = 40 dBm



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Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power	+23dBm (200mW)
Supply Voltage	+31V
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +100 °C

The complete set includes:

- The Outdoor Amplifier
- DC Power Injector (24INJ-2)
- Universal Power Supply (110V~240V AC to 24V DC 4A)

Mechanical Specifications (Outdoor Amplifier)

Parameter	Unit	
LED Indicators		Green for Power On, Red for Transmit
RF Connectors		N female
Chassis		Diecast Aluminium with rugged white coat finish
Dimensions	mm	140 x 100 x 60
Weight	kg	1.4



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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

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.

Due to the high RF power output this unit is only offered for sale to Military, OEM or Licensed customers.

Guaranteed Quality

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