

**36 dB Gain, 21 dBm P1dB, 0.01 GHz to 3 GHz,
 Broadband AC Low Noise Amplifier, Bench-Top,
 110/240VAC, 2.5 dB Noise Figure, SMA**

The FMAM63022 is an AC powered Bench-Top Low Noise Amplifier that operates across a broadband frequency range from 10 MHz to 3 GHz. This 50 Ohm highly linear design exhibits impressive typical performance that includes 36 dB gain, 1.7 dB noise figure, +21 dBm P1dB, and +37 dBm output IP3. Maximum RF input power (CW) is -3 dBm. The rugged MIL Grade aluminium package is finished in gray paint and has SMA Female connectors at the RF input and output ports, and an indicator light on the front panel. The rear panel supports an IEC 320-C14 AC power socket (IEC 320-C13 plug required), and an On/Off switch. The module supports a wide operating AC voltage range from 110VAC to 240VAC with 55 mA supply current. Designed for high reliability, the package supports an integrated heatsink and cooling fan and is suitable for outdoor operation (moisture exposure dependent on temperature and humidity conditions). The amplifier has an operational temperature range from -40°C to +85°C and meets a series of environmental test conditions including Altitude, Vibration, Humidity, and Shock.


Features:

- AC Powered Bench-Top Low Noise Amplifier
- 10 MHz to 3 GHz
- High Linearity
- High Small Signal Gain 36 dB typ
- Low Noise Figure 1.7 dB typ
- VSWR 1.8:1 typ
- Output P1dB +21 dBm typ
- Output Psat +23 dBm typ
- Output IP3 +36 dBm typ
- AC Supply 110-240VAC @ 55 mA
- Max RF Input Power (CW) -3 dBm
- 50 Ohm Design
- Integrated Heatsink and Cooling Fan
- RF Input and Output SMA Female Connectors
- On/Off Switch and Indicator Light
- Operational Temperature Range -40°C to +85°C
- Rugged MIL Grade Aluminum Package Design with Gray Paint finish
- Guaranteed Environmental Test Conditions Altitude, Vibration, Humidity, Shock

Electrical Specifications (TA= 25°C)

Description	Min	Typ	Max	Unit
Frequency Range	0.01		3	GHz
Gain	33	36		dB
Gain Flatness		±1.25		dB
Gain Variation over Temp.		±1		dB/°C
P1dB	+20	+21		dBm
Saturation Output Power		+23		dBm
IP3		+36		dBm
Reverse Isolation		-55		dB
Noise Figure		1.7	2.5	dB
Input VSWR		1.7:1		
Output VSWR		1.9:1		
Operating AC Voltage		110 to 240		VAC
Supply Current (AC 110-220V)		55		mA
Operating Temperature Range (OTR)	-40		+85	°C

Performance by Frequency
Biasing Up Procedure

Step 1	Connect input and output with 50 Ohm source and load with in band return loss better than 10dB.
Step 2	Connect AC Plug
Step 3	Flip switch to "ON" position

Power OFF Procedure

Step 1	Flip switch to "OFF" position
Step 2	Remove AC Plug
Step 3	Remove RF Connection

Applications:

- Test & Measurement
- 5G Communication
- Wireless Infrastructure
- Military & Commercial Communications
- Military Electronic Systems
- Research & Development
- Microwave Radio
- VSAT
- Fiber Optics

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Absolute Maximum Rating

Parameter	Rating
Supply Voltage	110V to +240V AC
RF Input Power (RFIN)*	-3dBm

*Note: Maximum RF input power is defined to protect the amplifier from damage. Input power may be increased at the users ownrisk to achieve the full output power of the amplifier. Please reference gain and power curves and monitor the temperature.

Mechanical Specifications

Size

Length	6.46 in [164.08 mm]
Width	5.83 in [148.08 mm]
Height	2.28 in [57.91 mm]
Weight	2.5 lbs [1.13 kg]
Input Connector	SMA Female
Output Connector	SMA Female

Environmental Specifications

Temperature

Operating Range	-40 to +85 deg C
Storage Range	-50 to +105 deg C
Humidity	100% RH at 35°C, 95%RH at 40°C
Shock	20G for 11msec half sine wave,3 axis both directions
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Altitude	30,000 ft.

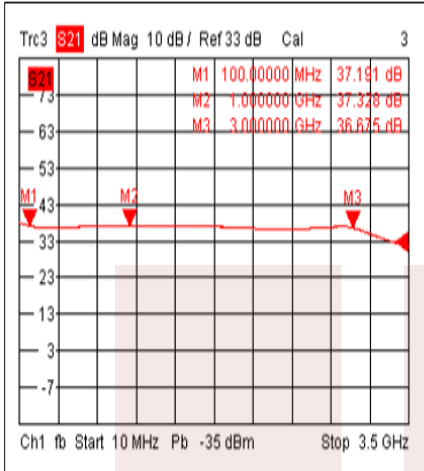
Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

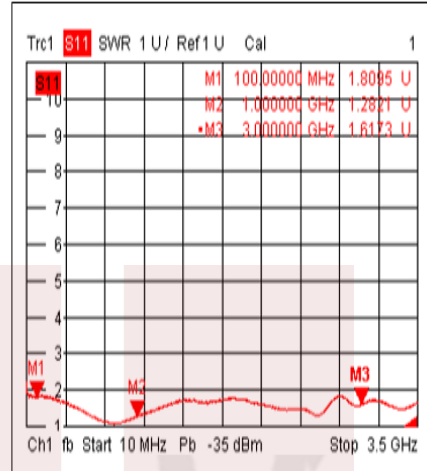
Notes:

Typical Performance Data

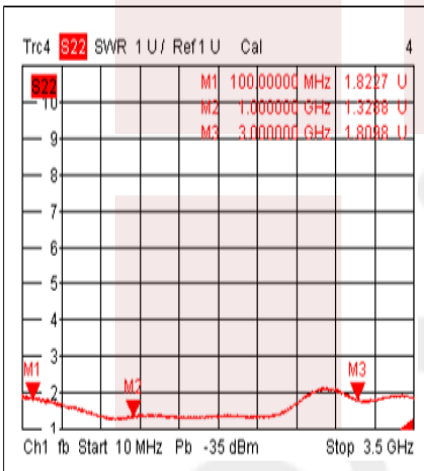
Gain



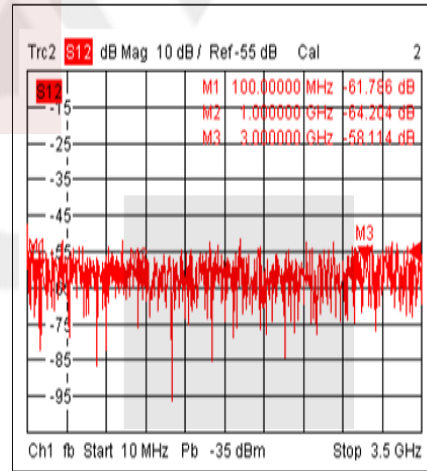
Input VSWR



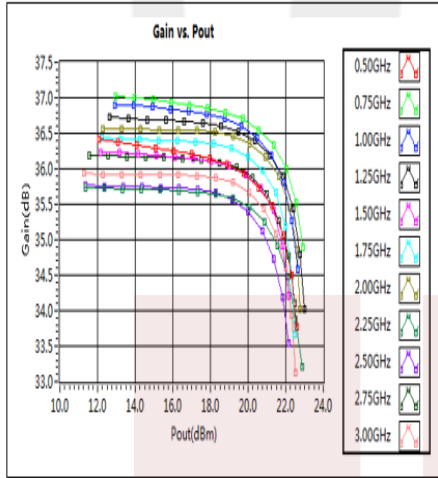
Output VSWR



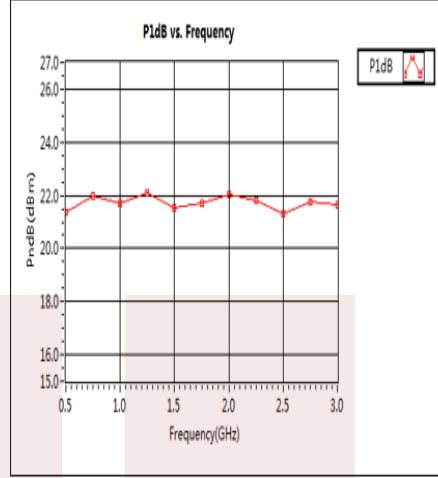
Isolation



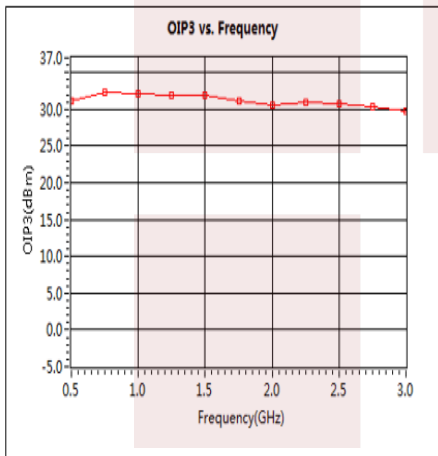
Gain vs. Output Power



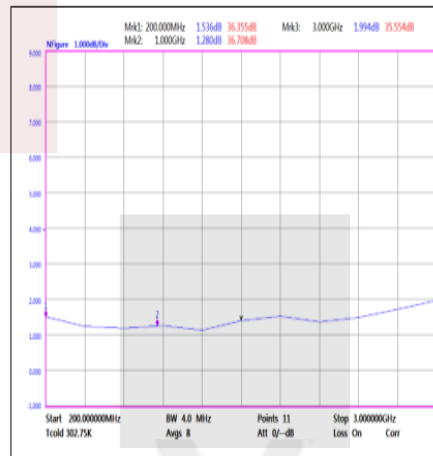
P1dB vs. Frequency



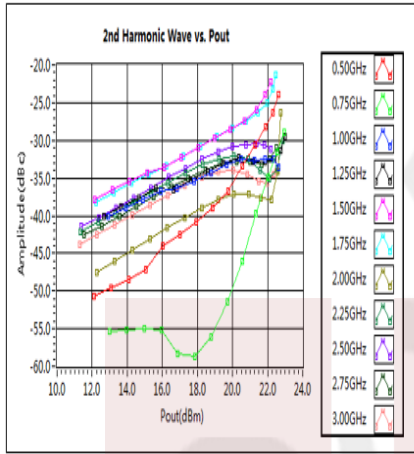
Output Third Order Intercept (IP3)



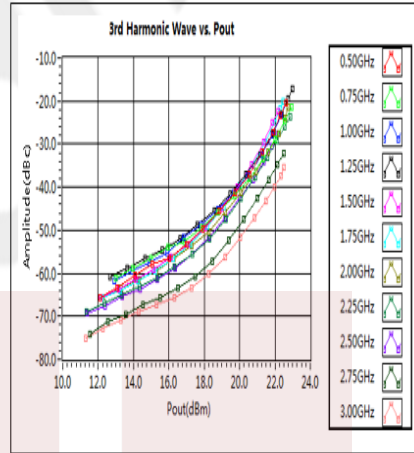
Noise Figure



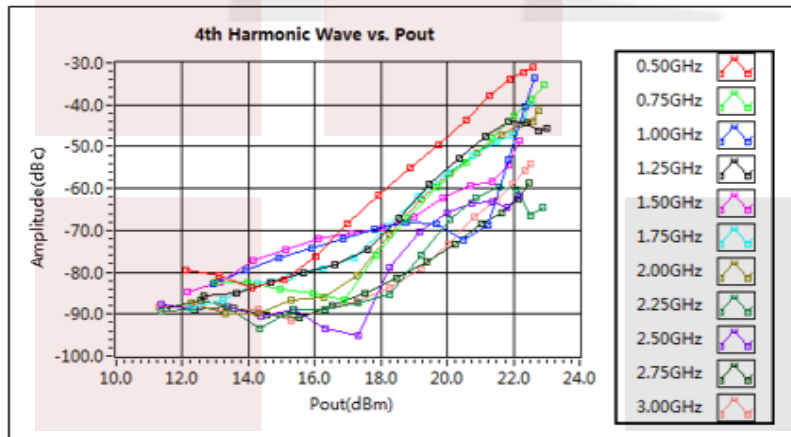
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power



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For additional information on this product, please click the following link: [36 dB Gain, 21 dBm P1dB, 0.01 GHz to 3 GHz, Broadband AC Low Noise Amplifier, Bench-Top, 110/240VAC, 2.5 dB Noise Figure, SMA FMAM63022](#)

URL: <https://www.fairviewmicrowave.com/10-mhz-3-ghz-low-noise-broadband-amplifier-fmam63022-p.aspx>

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