

0 to 30 dB 10 Bit Programmable TTL Controlled Step Attenuator With a 0.03 dB Step 2.4mm Female To 2.4mm Female From 18 GHz To 40 GHz

FMAT6001 is 10 Bit Programmable 30 dB Pin Diode Attenuator with Step Resolution as Low as 0.03 dB over the Operating Frequency Range from 18 GHz to 40 GHz. The Attenuator is offered in a slim line housing measuring only 0.5" Height. The RF Input/Output Connectors are 2.4mm Female. Along with a 15 Pin Micro-D Female Control Socket. The unit is shipped with a Micro-D Mating Connector.



Electrical Specifications (Values at 25°C, sea level)

Description	Min	Typ	Max	Unit
Frequency Range	18		40	GHz
Mean Attenuation Range	0		30	dB
Input VSWR			2.5:1	
Input at P1dB		+10		dBm
Survival Power Average -65 to +25 deg C			+24	dBm
Attenuation Flatness @ 30 dB		±1.5		dB
Accuracy of Attenuation 0 dB to 30 dB		±2		dB
Step Size	0.03			dB
Switching Time				
On Time			1	µs
Off Time			0.5	µs
DC Power Supply 100 mA		12		Volts
Logic Input				
Logic "0" (Bit Off)	-0.3		0.8	Volts
Logic "1" (Bit On)	2		5	Volts

Features:

- 10 Bit Programmable 30 dB Attenuator
- 18 GHz to 40 GHz Frequency Range
- 30 dB Attenuation Range
- Step Resolution of 0.03 dB
- +10 dBm typ P1dB
- Insertion Loss 6 dB typ
- VSWR 2.5: 1 Max
- RF Connectors are 2.4mm Female
- 15 Pin Micro-D Female Connector

Applications:

- Electronic Warfare
- Test & Measurement
- Military & Space
- Radar
- Military Communications Systems

Mechanical Specifications

Size	
Length	2 in [50.8 mm]
Width	1.8 in [45.72 mm]
Height	0.5 in [12.7 mm]
Weight	0.2 lbs [90.72 g]
Connector 1	2.4mm Female
Connector 2	2.4mm Female

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Environmental Specifications

Temperature

Operating Range -40 to +85 deg C
 Storage Range -65 to +125 deg C

Environment MIL-STD-202F, METHOD 107
 Humidity MIL-STD-202F, METHOD 103B COND. B
 Shock MIL-STD-202F, METHOD 213B COND. B
 Vibration MIL-STD-202F, METHOD 204D COND. B
 Altitude MIL-STD-202F, METHOD 105C COND. B
 Temperature Cycle MIL-STD-202F, METHOD 107

Compliance Certifications (visit www.FairviewMicrowave.com for current document)

Not RoHS Compliant

Plotted and Other Data

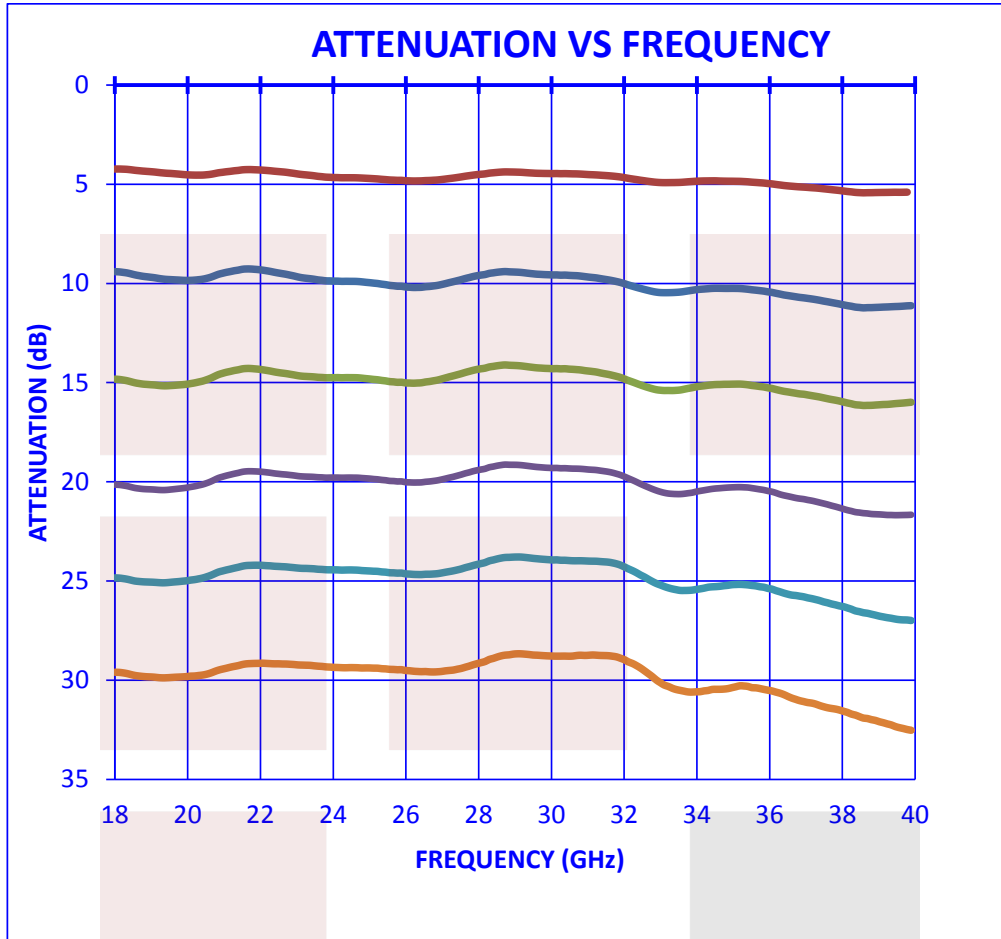
Notes:

- Values at +25 °C, sea level
- ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.

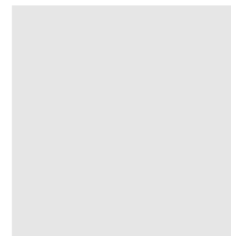
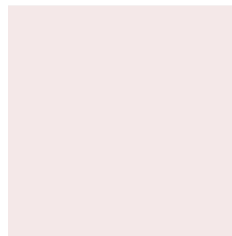
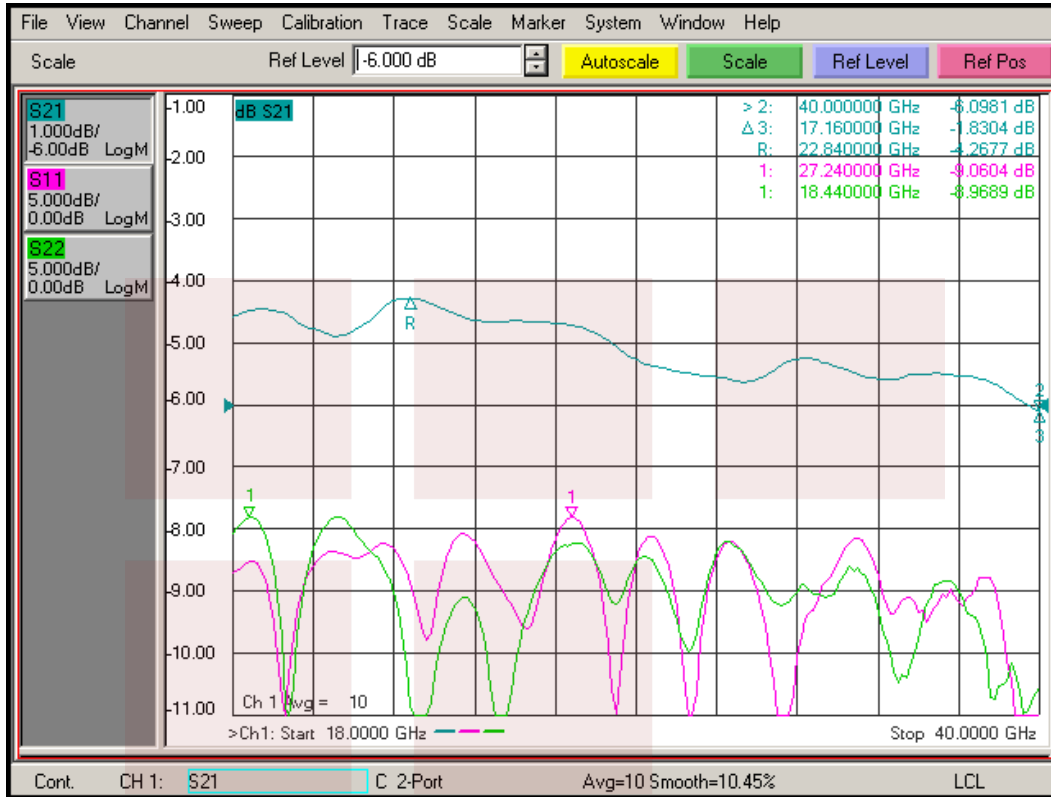


Typical Performance Data

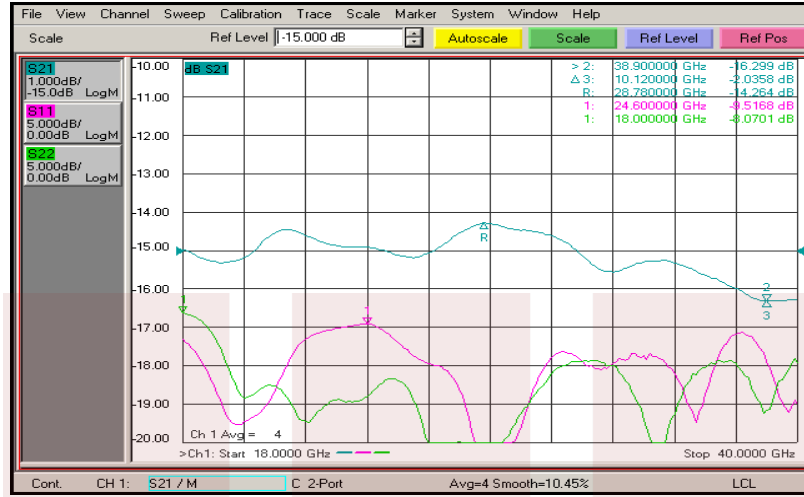
Attenuation vs. Frequency Plot



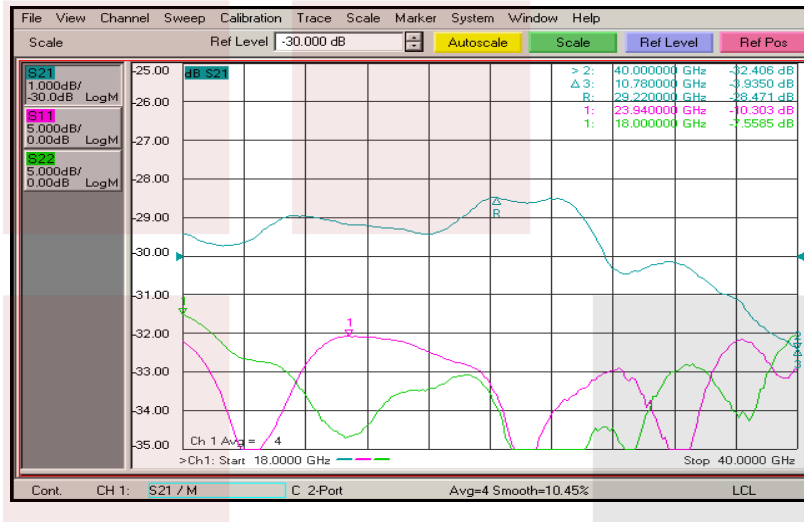
Insertion Loss & Return Loss



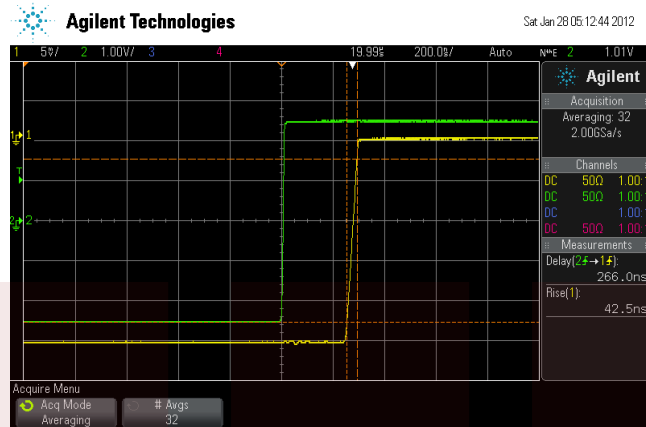
-15dB Attenuation



-30dB Attenuation

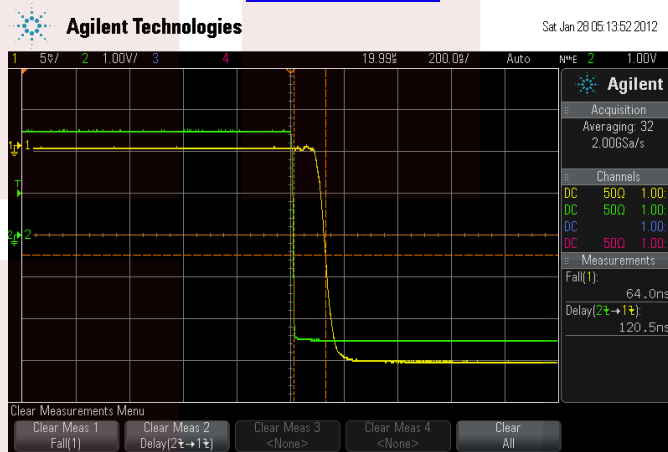


Delay On
Measured with a Tunnel Diode @ 30GHz
Input Power @ -5dBm



Channel 1 (Yellow): Tunnel Diode output
Channel 2 (Green): TTL Input from Signal Generator

Delay Off
Measured with a Tunnel Diode @ 30GHz
Input Power @ -5dBm



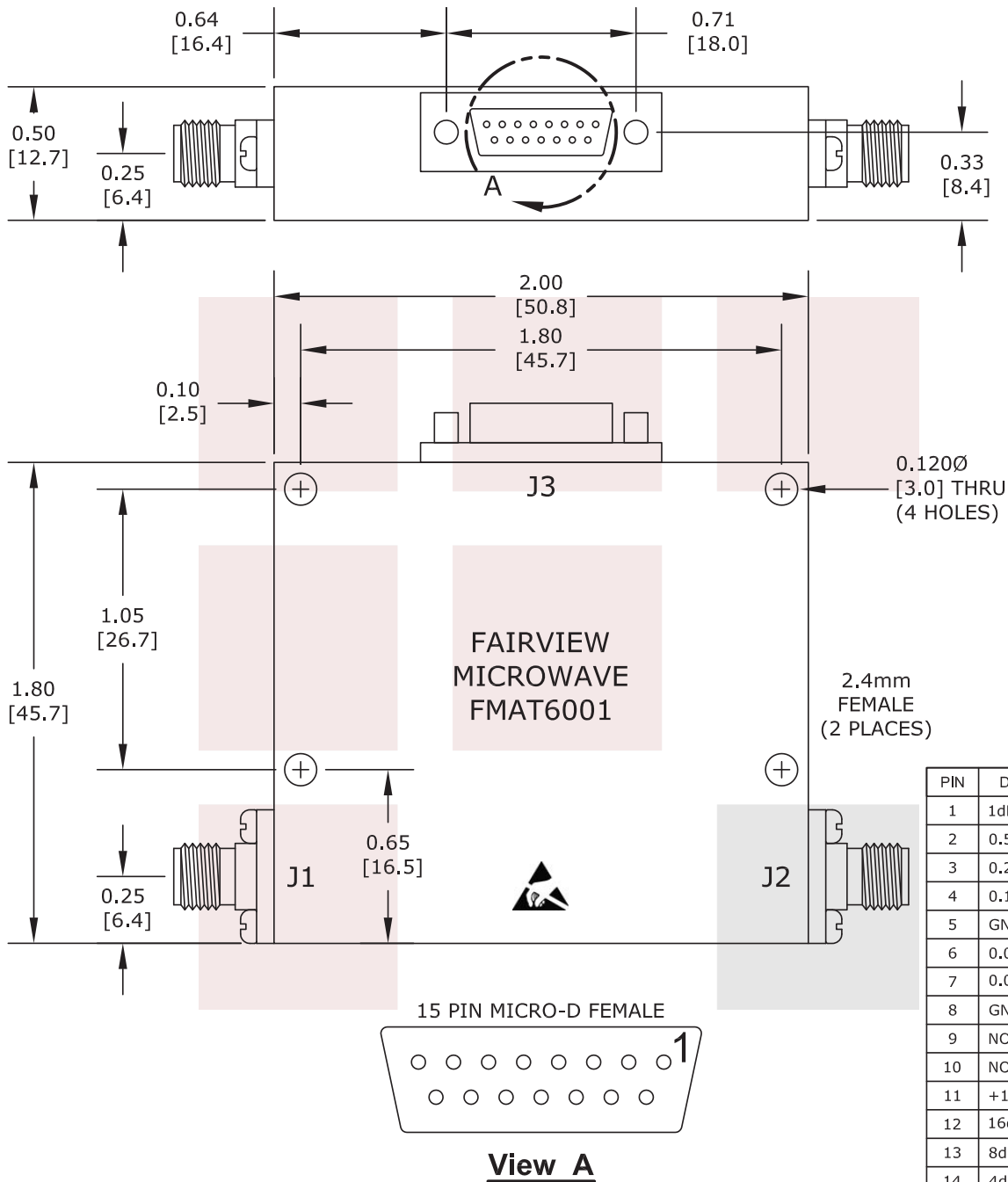
Channel 1 (Yellow): Tunnel Diode output
Channel 2 (Green): TTL Input from Signal Generator

0 to 30 dB 10 Bit Programmable TTL Controlled Step Attenuator With a 0.03 dB Step 2.4mm Female To 2.4mm Female From 18 GHz To 40 GHz from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [0 to 30 dB 10 Bit Programmable TTL Controlled Step Attenuator With a 0.03 dB Step 2.4mm Female To 2.4mm Female From 18 GHz To 40 GHz FMAT6001](#)

URL: <http://www.fairviewmicrowave.com/30-db-ttl-controlled-step-attenuator-2.4mm-female-fmat6001-p.aspx>

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PIN	DESCRIPTION
1	1dB
2	0.5dB
3	0.25dB
4	0.125dB
5	GND
6	0.06dB
7	0.03dB (LSB)
8	GND
9	NO CONNECTION
10	NO CONNECTION
11	+12 VDC
12	16dB (MSB)
13	8dB
14	4dB
15	2dB

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TITLE 0 to 30 dB 10 Bit Programmable TTL Controlled Step Attenuator With a 0.03 dB Step 2.4mm Female To 2.4mm Female From 18 GHz To 40 GHz		DWG NO FMAT6001		CAGE CODE 3FKR5	
CAD FILE	052715	SHEET	SCALE	N/A	SIZE A 2233