

0 to 95 dB Programmable USB Controlled Step Attenuator with a 1 dB Step SMA Female to SMA Female from 200 MHz to 6 GHz

FMAT3902



Features

- 7 Bit Programmable Attenuator
- 200 to 6000 MHz Bandwidth
- 0-95 dB attenuation
- 1 dB Step Size
- 50 Ohms
- Switching Speed: 1 microseconds max
- Insertion Loss: 8 dB max
- Attenuation Accuracy: +/-1.0 dB typ
- DC Bias: +5 Vdc @ 50 mA
- SMA female connectors
- GUI software downloadable onto a PC via a USB stick (included)
- 6' USB A to USB MINI-B cable included

Applications

- Electronic Warfare
- Electronic Countermeasures
- Microwave Radio
- VSAT
- Radar
- Fiber Optic
- Space Systems
- Test Instrumentation
- Telecom Infrastructure

Description

The FMAT3902 is a USB Controlled Programmable Attenuator which operates over the frequency range of 200 MHz to 6000 MHz. The solid state design supports a USB interface and MS .NET 4.0+ framework. GUI software is downloadable onto a PC via a USB stick that's included. The module is command controlled by the PC interface using a USB cable. The FMAT3902 has an attenuation range that covers 0 to 95 dB in 1 dB steps. Attenuation steps are 1, 2, 4, 8, 16, 32, and 32 dB bit steps. Insertion loss is 8 dB maximum with a maximum operating RF input power +20 dBm. Additional typical performance includes +/- 1.0 dB attenuation accuracy and switching speed of 1 microseconds. The DC supply is +5 Vdc @ 50 mA. The compact and rugged package design supports SMA female RF input/output connectors, and a USB MINI-B connector for DC and serial controls. A 6 ft USB A to USB MINI-B cable is included. The FMAT3902 has an operational temperature range of -40°C to +85°C.

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

Description	Min	Typ	Max	Unit
Frequency Range	0.2		6	GHz
Impedance		50		Ohms
Attenuation Range	0		95	dB
Insertion Loss			8	dB
VSWR			2:1	
Survial Power Average -40 to +85 deg C			+25	dBm
Power Handling Capacity			+20	dBm
Accuracy of Attenuation				
1 dB to 7 dB		±0.5		dB
8 dB to 11 dB		±1		dB
12 dB to 95 dB is ±1.25 dB or 4% which-				
ever is greater				
Step Size		1		dB
Switching Time		1		us

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

Description	Min	Typ	Max	Unit
Logic Input "0" (Bit Off)	0			
Logic Input "1" (Bit On)	5			

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	0.2-0.8	0.8-2	2-6			GHz
Insertion Loss, Typ	4	4.8	7.5			dB

Electrical Specification Notes:

1, 2, 4, 8, 16, 32, and 32 dB bit Steps

Mechanical Specifications

Size

Length	2.5 in [63.5 mm]
Width	2.5 in [63.5 mm]
Height	0.48 in [12.19 mm]
Weight	0.403 lbs [182.8 g]
Connector 1	SMA Female
Connector 2	SMA Female

Environmental Specifications

Temperature

Operating Range	-40 to +85 deg C
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Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

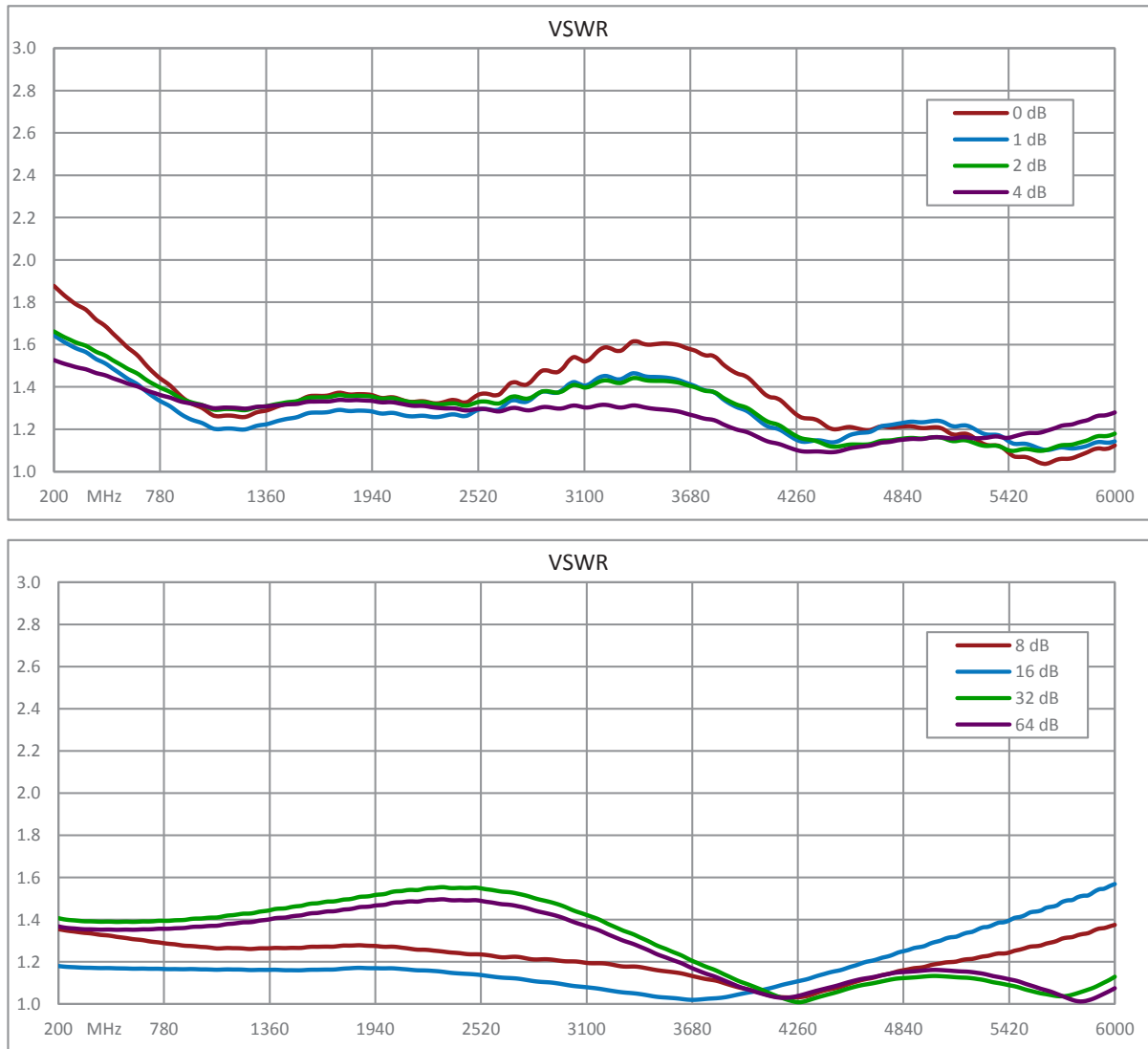
- Values at 25 °C, sea level

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FMAT3902

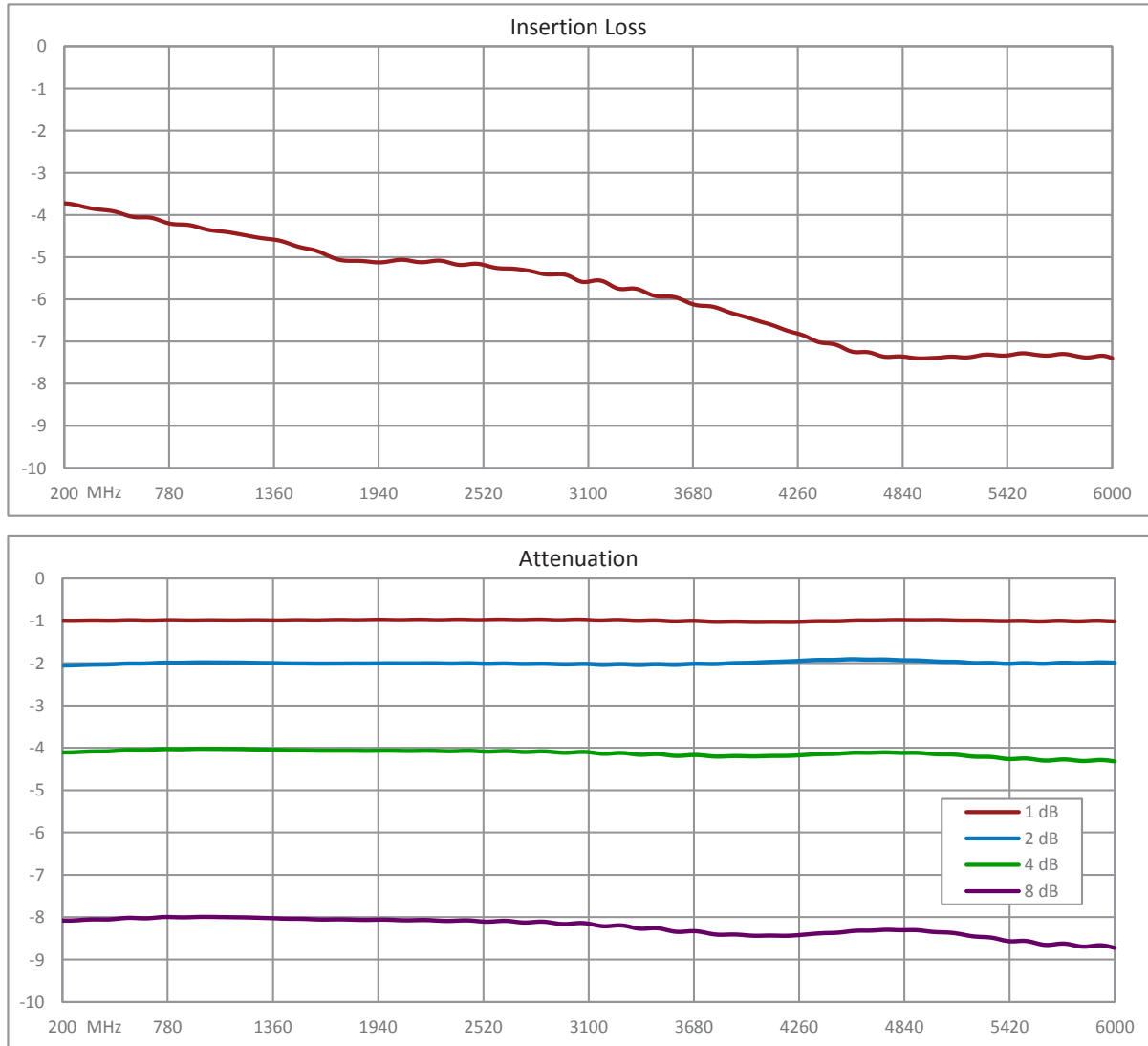


Typical Performance Data



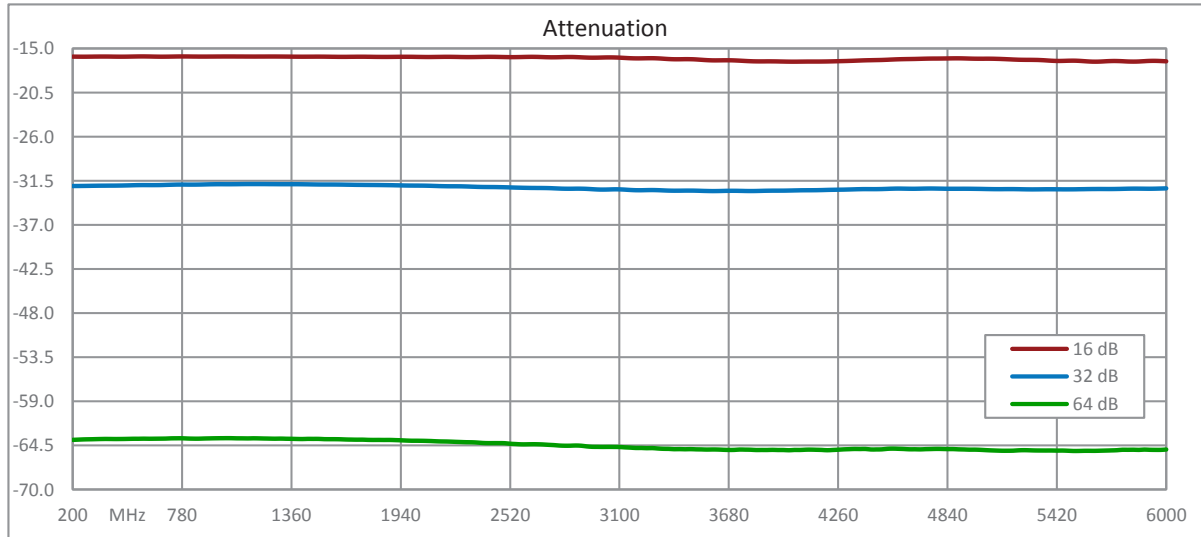
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0 to 95 dB Programmable USB Controlled Step Attenuator with a 1 dB Step SMA Female to SMA Female from 200 MHz to 6 GHz from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

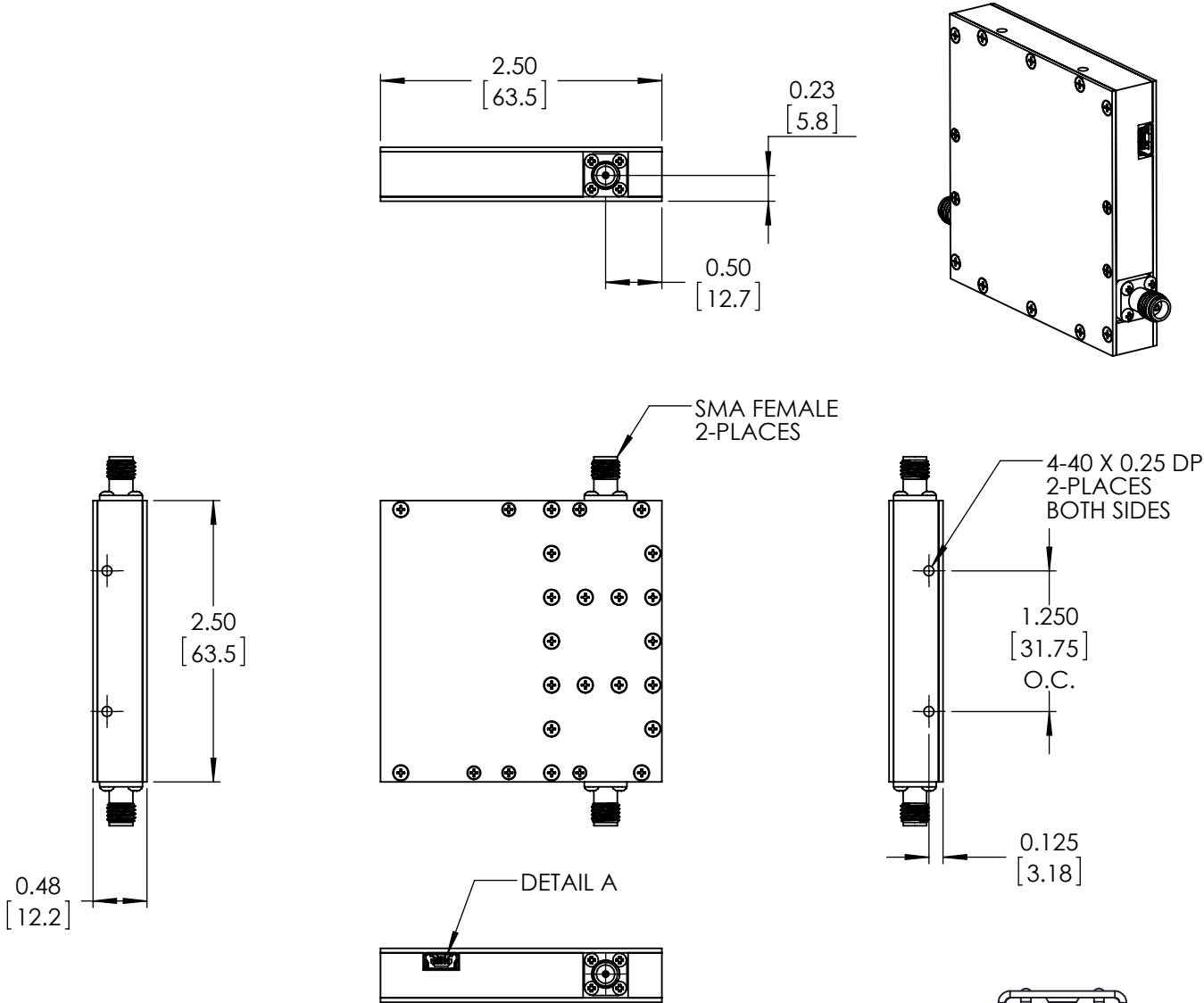
For additional information on this product, please click the following link: [0 to 95 dB Programmable USB Controlled Step Attenuator with a 1 dB Step SMA Female to SMA Female from 200 MHz to 6 GHz FMAT3902](https://www.fairviewmicrowave.com/95-db-usb-controlled-step-attenuator-sma-female-fmat3902-p.aspx)

URL: <https://www.fairviewmicrowave.com/95-db-usb-controlled-step-attenuator-sma-female-fmat3902-p.aspx>

The information contained within this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume liability arising out of the use of any part or document.

FMAT3902 CAD Drawing

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STANDARD TOLERANCES

.XX ±0.01
.XXX ±0.005

*STANDARD TOLERANCES APPLY
ONLY TO DIMENSIONS IN INCHES



1 2 3 4 5

DETAIL A
USB MINI-B

PIN	FUNCTION
1	+5Vdc
2	D-
3	D+
4	NO CONNECTION
5	GROUND

NOTES:
1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.
2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.
3. DIMENSIONS ARE IN INCHES [mm].

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TITLE	DWG NO		CAGE CODE		
	FMAT3902		3FKR5		
	CAD FILE	040817	SHEET	SCALE N/A	SIZE A
					CN_0992