

## 1 MHz to 43.5 GHz Absorptive Digital Control Attenuator, 31.5 dB, 6 Bits, 0.5 dB Step Size, Field Replaceable 2.92mm

The FMAT5015 is an Absorptive 6 Bit Digitally Controlled Programmable Attenuator that operates across a wide frequency band from 1 MHz to 43.5 GHz. The 50 Ohm design supports TTL control logic and has an attenuation range that covers 0 to 31.5 dB in 0.5 dB steps. Attenuation steps are 0.5, 1, 2, 4, 8, and 16 dB. Insertion loss is 6.5 dB typical with a maximum RF input power of +27 dBm. Additional typical performance includes attenuation flatness of +/- 0.6 dB, Input P0.1dB compression power of +26 dBm, input IP3 of 41.5 dBm, and switching speed of 200 nsec. The unit requires a DC bias supply of +5V with DC current of 10mA max. The low profile pin package is aluminum with Gold plating and supports field replaceable 2.92mm RF connectors and a Micro-D9 female connector for DC Bias and Command Control functions. The module has an operational temperature range from -40°C to +85°C and is guaranteed to meet a series of environmental test conditions for Altitude, Vibration, Humidity, and Shock.

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

Description	Min	Typ	Max	Unit
Frequency Range	0.001		43.5	GHz
Impedance		50		Ohms
Attenuation Range		31.5		dB
Insertion Loss		7	10	dB
VSWR		1.7:1	2.2:1	
Input at 0.1 dB Compression Point		+26		dB
Input IP3		+41		dBm
DC Voltage		+5		Vdc
Attenuation Flatness*		0.6		dB
TTL Low for Thru Path		0 to 0.8V		Vdc
TTL High for Attenuation		2-5V		Vdc
Step Size		0.5		dB
Switching Speed		200		ns
RF Input Power			27	dBm
Control Bits		6		Bits
Bias Current			10/10	mA
IL Temperature Coefficient		0.005		dB/deg C

\*Referenced to Insertion Loss

### Absolute Maximum Rating

Parameter	Rating
Biasing	+5V±10%
RF Input power	+27dBm



ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.



### Features:

- Absorptive Programmable Voltage Controlled Attenuator
- 1 MHz to 43.5 GHz
- Attenuation Range 0 to 31.5 dB typ
- 0.5 dB Step Size
- 6 Bits
- Digital TTL Logic Control
- Insertion Loss 7 dB typ
- Attenuation Flatness +/- 0.6 dB typ
- Input P0.1 dB Compression Power +26 dBm typ
- Input IP3 41 dBm
- Max RF Input Power (CW) +27 dBm
- Switching Speed 200 nsec typ
- DC Supply +5V/-5V @ 10 mA/10 mA
- 50 Ohm Design
- Field Replaceable 2.92mm Female RF Connectors
- Micro-D9 Female connector for DC Bias and Command Control
- Operational Temperature Range -40°C to +85°C
- Rugged and Compact Aluminum Gold Plated Package Design
- Guaranteed Environmental Test Conditions Altitude, Vibration, Humidity, Shock
- Single Positive Control Line Per Bit

### Applications:

- Test & Measurement
- Military and Commercial Communications
- Military Electronic Systems
- Research & Development

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## Mechanical Specifications

### Size

Length	1.46 in [37.08 mm]
Width	0.37 in [9.4 mm]
Height	1.1 in [27.94 mm]
Weight	0.002 lbs [0.91 g]
Connector 1	Field Replaceable 2.92mm Female
Connector 2	Field Replaceable 2.92mm 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 11 msec half sine wave, 3 axis both directions
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Altitude	30,000 Feet

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

## Plotted and Other Data

Notes:

1 MHz to 43.5 GHz Absorptive Digital Control Attenuator, 31.5 dB, 6 Bits, 0.5 dB Step Size, Field Replaceable 2.92mm 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: [1 MHz to 43.5 GHz Absorptive Digital Control Attenuator, 31.5 dB, 6 Bits, 0.5 dB Step Size, Field Replaceable 2.92mm FMAT5015](#)

URL: <https://www.fairviewmicrowave.com/31.5-db-ttl-controlled-step-attenuator-2.92mm-female-fmat5015-p.aspx>

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