

## 100 MHz to 40 GHz Absorptive Digital Step Attenuator, 15.5 dB, 5 Bits, 0.5 dB Step Size, Field Replaceable 2.92mm

The FMAT5016 is an Absorptive 5 Bit Digitally Controlled Programmable Attenuator that operates across a wide frequency band from 100 MHz to 40 GHz. The 50 Ohm design supports TTL control logic and has an attenuation range that covers 0 to 15.5 dB in 0.5 dB steps. Attenuation steps are 0.5, 1, 2, 4, and 8 dB. Insertion loss is 6 dB typical with a maximum RF input power of +27 dBm. Additional typical performance includes attenuation flatness of +/- 0.8 dB, Input P0.1dB compression power of +27 dBm, input IP3 of 40 dBm, and switching speed of 100 nsec. The unit requires a dual bias supply of +5V/-5V with DC current of 10mA/10 mA 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	0.1		40	GHz
Impedance		50		Ohms
Attenuation Range		16.5		dB
Insertion Loss		7	9	dB
VSWR		1.9:1	3:1	
Input at 0.1 dB Compression Point		+27		dB
Input IP3		+40		dBm
DC Voltage		+5		Vdc
Attenuation Flatness*		0.8		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		100		ns
RF Input Power			27	dBm
Control Bits		5		Bits
Bias Current		10		mA
IL Temperature Coefficient		0.03		dB/deg C

\*Referenced to Insertion Loss

### Absolute Maximum Rating

Parameter	Rating
Biasing	+5V / -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
- 100 MHz to 40 GHz
- Attenuation Range 0 to 16.5 dB typ
- 0.5 dB Step Size
- 5 Bits
- Digital TTL Logic Control
- Insertion Loss 7 dB typ
- Attenuation Flatness +/- 0.8 dB typ
- Input P0.1 dB Compression Power +27 dBm typ
- Input IP3 40 dBm typ
- Max RF input Power (CW) +27 dBm
- Switching Speed 100 nsec
- Dual DC Supply +5V/-5V @ 10mA/10mA
- 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	1.1 in [27.94 mm]
Width	0.37 in [9.4 mm]
Height	0.79 in [20.07 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**

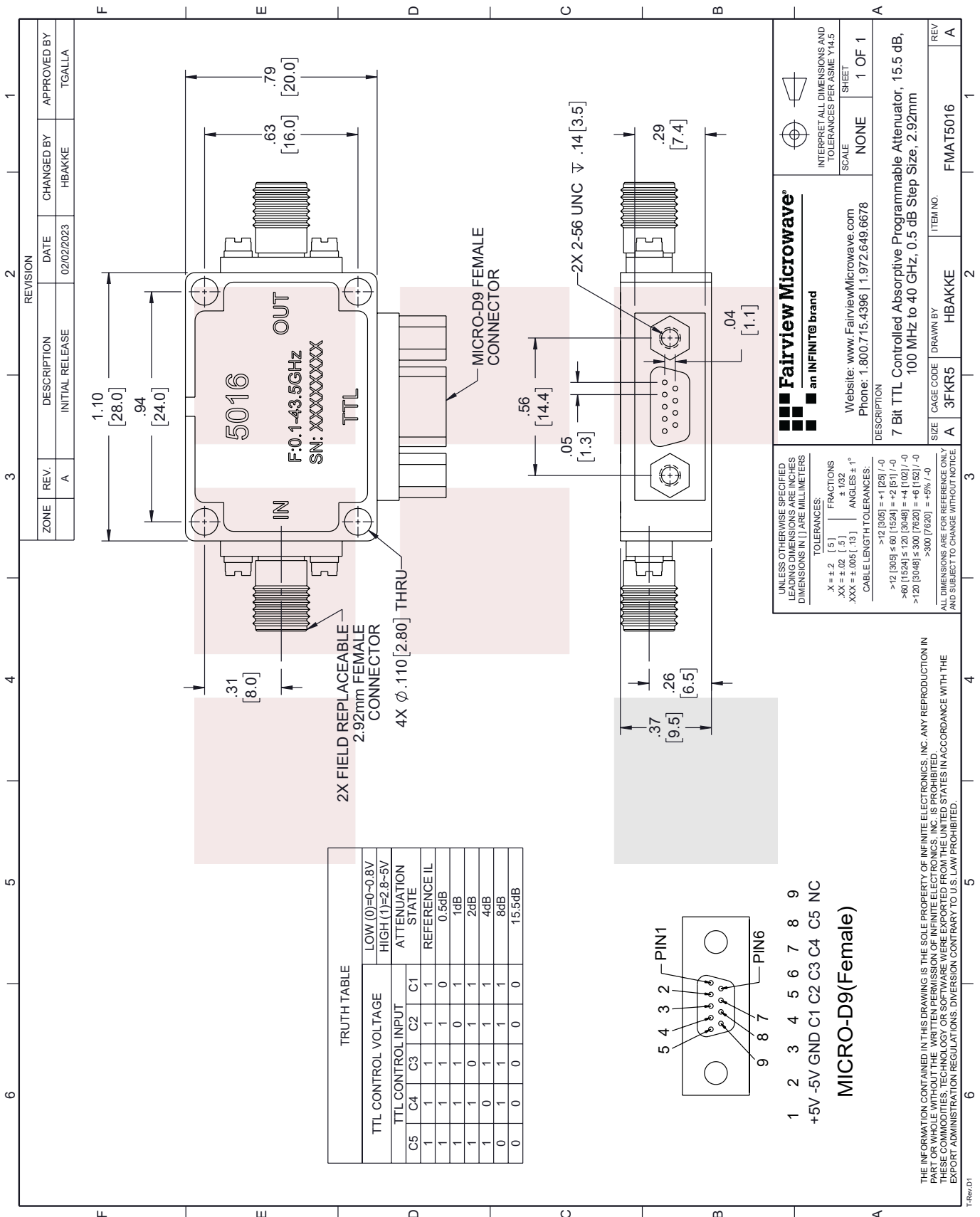
Notes:

100 MHz to 40 GHz Absorptive Digital Step Attenuator, 15.5 dB, 5 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: [100 MHz to 40 GHz Absorptive Digital Step Attenuator, 15.5 dB, 5 Bits, 0.5 dB Step Size, Field Replaceable 2.92mm FMAT5016](#)

URL: <https://www.fairviewmicrowave.com/15.5-db-ttl-controlled-step-attenuator-2.92mm-female-fmat5016-p.aspx>

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INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5  
SCALE NONE SHEET 1 OF 1

DESCRIPTION  
7 Bit TTL Controlled Absorptive Programmable Attenuator, 15.5 dB, 100 MHz to 40 GHz, 0.5 dB Step Size, 2.92mm

SIZE A CAGE CODE 3FKR5 DRAWN BY HBAKKE ITEM NO. FMAT5016 REV A

UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES DIMENSIONS IN [ ] ARE MILLIMETERS

TOLERANCES:  
 .X = ±.2 [5]  
 .XX = ±.02 [5]  
 .XXX = ±.005 [13]  
 FRACTIONS ± 1/32  
 ANGLES ± 1°  
 CABLE LENGTH TOLERANCES:  
 >12 [305] = ±1 [25] / -0  
 >12 [305] ≤ 60 [1524] = ±2 [51] / -0  
 >60 [1524] ≤ 120 [3048] = ±4 [102] / -0  
 >120 [3048] ≤ 300 [7620] = ±6 [152] / -0  
 >300 [7620] = ±5% / -0

ALL DIMENSIONS ARE FOR REFERENCE ONLY AND SUBJECT TO CHANGE WITHOUT NOTICE

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