Fairview Microwave
an INFINITE brand

# FMBT1660
# DATA SHEET

## Ultra-Wide Band Kelvin Bias Tee, 100 MHz -110 GHz, 1.00mm(m) input, 1.00mm(f) output, SMC(m) bias and sense

The FMBT1660 is an Ultra-Wide Band Kelvin Bias Tee that operates from 100 MHz to 110 GHz. This high precision design incoporates Metrology-Grade quality with robust mechanical packaging. Kelvin connection Bias Tees are designed for applications where both DC and RF signals must be applied to the Device Under Test (DUT) and precision DC measurements are required. A high resistance DC coil results in a voltage drop that leads to a DC biasing voltage error in the measurements. A Kelvin connection Bias Tee is used to eliminate DC biasing errors as the sense coil allows accurate measurement of the DC Voltage appied across the DUT. The module is RoHS Compliant and designed for a 50 ohm input/ output impedance with insertion loss of 2 dB typ and good return loss of 12 dB typ. The Bias Tee is rated for 0.4 Amps max DC current and +16V maximum DC voltage. Maximum RF input power hanlding is 1W. The compact packge uses a W1 (1.00mm) Male connector at the RF input and a W1 (1.00mm) Female connector at the RF output. SMC female connectors are used for DC Bias and Sense ports. Two (2) cable assemblies (48 inch BNC male to SMC male) are included and used for making the DC Bias and Sense connections. Designed for high reliability the FMBT1660 is guaranteed and not tested to meet MIL-STD-202F environmental test conditions for Thermal Shock, Mechanical Shock, and Vibration.

### Electrical Specifications

| Description | Min | Typ | Max | Units |
|---|---|---|---|---|
| Frequency Range | 0.1 | | 110 | GHz |
| Impedance | | 50 | | Ohms |
| Return Loss | | 12 | | dB |
| Insertion Loss | | 2 | | dB |
| DC Voltage | | | 16 | Vdc |
| DC Current | | | 0.4 | mA |
| Input Power (CW) | | | 1 | Watt |
| Rise Time | | 3.2 | | ps |
| Leakage Current | | 80 | | pA |
| Group Delay | | 108 | | ps |

### Mechanical Specifications

**Size**

| | |
|---|---|
| Length | 1.56 in [39.62 mm] |
| Width | 1.34 in [34.04 mm] |
| Height | 0.41 in [10.41 mm] |
| Weight | 0.285 lbs [129.27 g] |

### Environmental Specifications

**Temperature**

| | |
|---|---|
| Operating Range | -20 to +60 deg C |
| Storage Range | -25 to +65 deg C |

### Configuration:

- RF Port Connector: 1.0mm Male
- DC/RF Port Connector:BNC Male
- DC Port Connector: SMC Female

### Features:

- Precision Ultra-Wide Band Kelvin Bias Tee
- Metrology Grade
- 100 MHz to 110 GHz Frequency Range
- Insertion Loss: 2 dB typ
- Return Loss 12 dB typ
- Rating: 0.4A max DC Current and +16V max DC Voltage
- Rise Time 3.2 psec typ
- Group Delay 108 psec typ
- Leakage Current 80 pA
- RF Input Power Handling 1W max
- 50 Ohms Input and Output Matched
- W1 (1.0 mm) Male RF Input Connector
- W1 (1.0 mm) Female RF output Connector
- SMC Female Connectors for DC Bias and Sense Ports
- BNC Male to SMC Male Cable Assemblies Included
- Meets MIL-STD-202F Environmental Test Consitions for Thermal Shock, Mechanical Shock, and Vibration
- RoHS Compliant Design

### Applications:

- High Frequency System and Instrumentation

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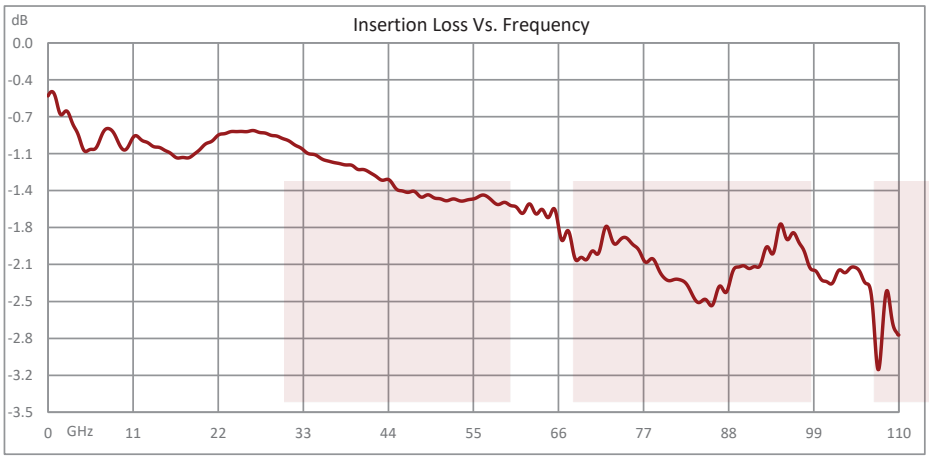
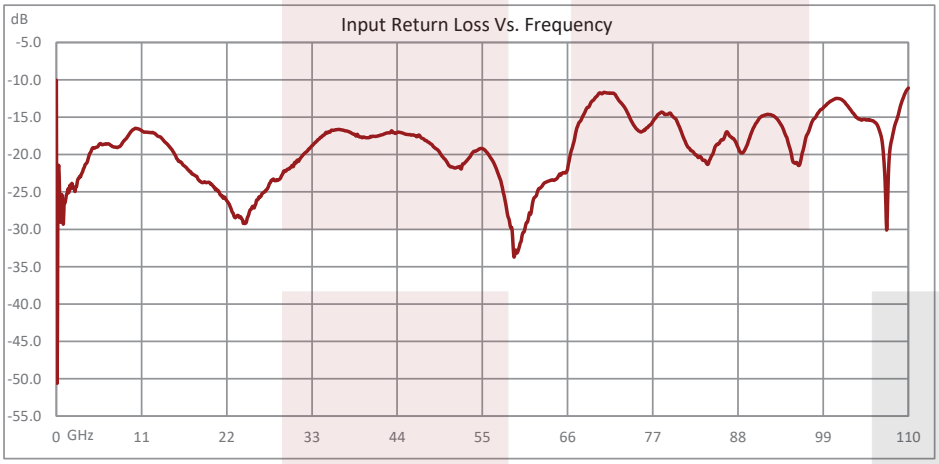
## Compliance Certifications (see product page for current document)

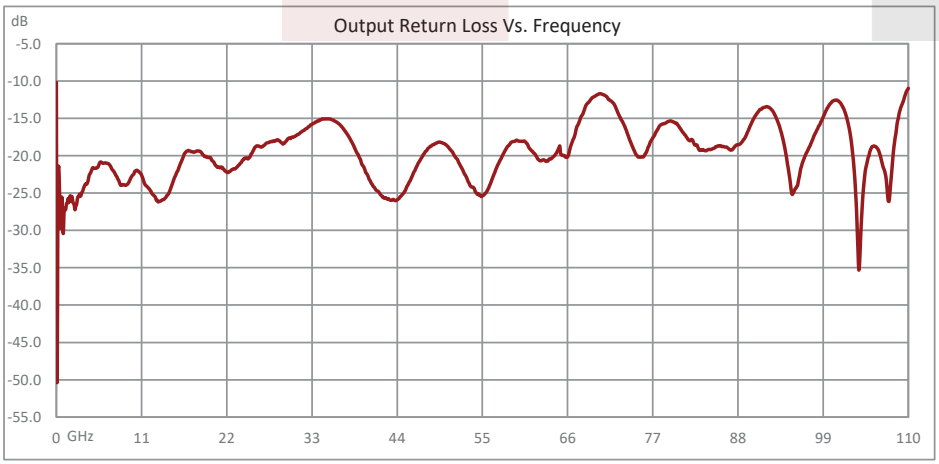
## Plotted and Other Data

Notes:

### Typical Performance Data



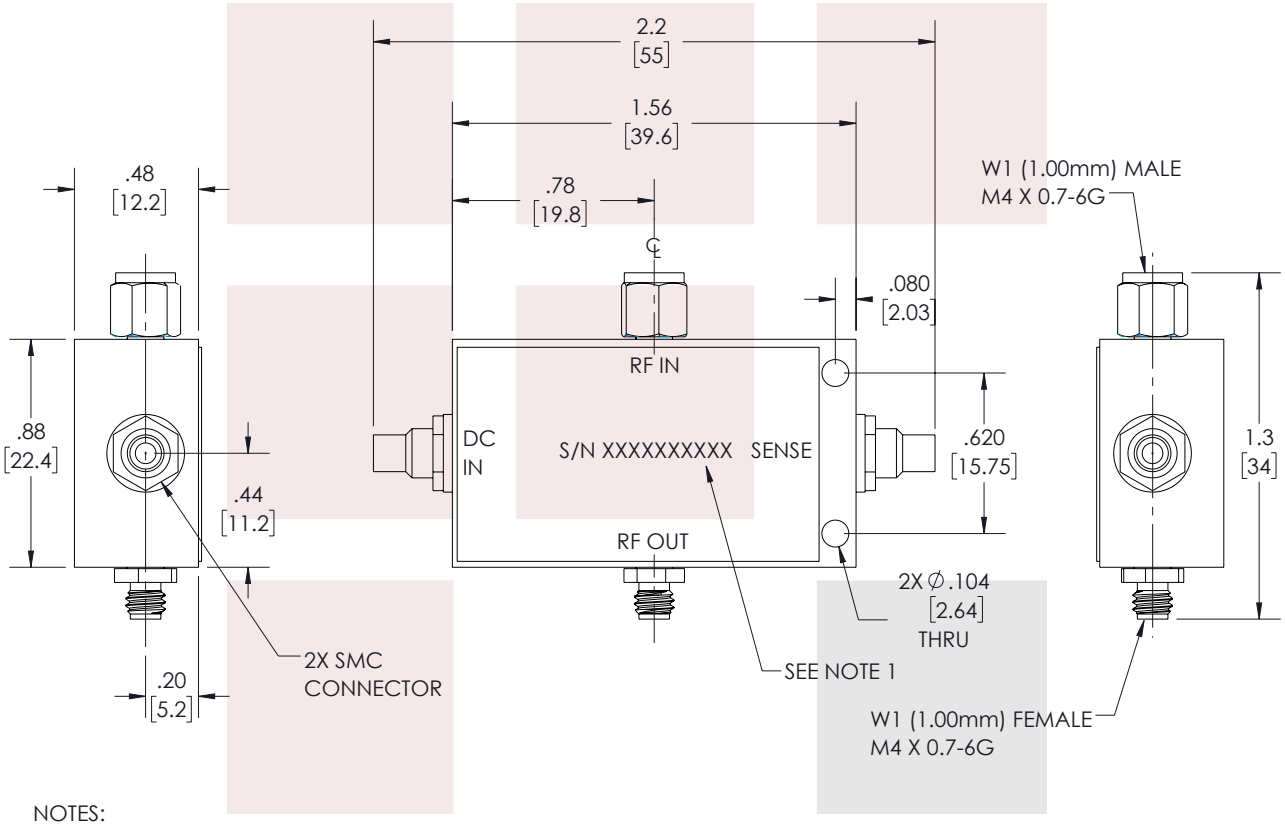
Ultra-Wide Band Kelvin Bias Tee, 100 MHz -110 GHz, 1.00mm(m) input, 1.00mm(f) output, SMC(m) bias and sense from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: Ultra-Wide Band Kelvin Bias Tee, 100 MHz -110 GHz, 1.00mm(m) input, 1.00mm(f) output, SMC(m) bias and sense FMBT1660

URL: https://www.fairviewmicrowave.com/bias-tee-100-mhz-110-ghz-0-ma-16-volts-dc-fmbt1660-p.aspx

| REVISIONS | | | |
|---|---|---|---|
| REV. | DESCRIPTION | DATE | APPROVED |
| A | INITIAL RELEASE | 06/28/2022 | TGALLA |


SEE NOTE 2




NOTES:
1. SERIAL NUMBER AND DATE CODE ARE COMBINED, EX. 2022310002
2. 2X 48 INCH CABLE ASSEMBLY PROVIDED

**REGULATORY COMPLIANCE:**
EU RoHS DIRECTIVE (MOST RECENT RELEASED VERSION)



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TITLE

Ultra-Wide Band Kelvin Bias Tee, 100 MHz -110 GHz, 1.00mm(m) input, 1.00mm(f) output, SMC(m) bias and sense

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

TOLERANCES:

.X = ±.2 [5.08]
.XX = ±.02 [ .51 ]
.XXX = ±.005 [ .13 ]
FRACTIONS ± 1/32
ANGLES ± 1°

CABLE LENGTH (L) TOLERANCES:

L ≤ 12 [305] = +1 [25] / -0
12 [305] < L ≤ 60 [1524] = +2 [51] / -0
60 [1524] < L ≤ 120 [3048] = +4 [102] / -0
120 [3048] < L ≤ 300 [7620] = +6 [152] / -0
300 [7620] < L = +5%L / -0

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

THIRD-ANGLE PROJECTION



SHEET 1 OF 1

SCALE N/A

| SIZE | CAGE CODE | DRAWN BY | ITEM NO. | REV |
|---|---|---|---|---|
| A | 3FKR5 | BPUCHASKI | FMBT1660 | A |

T-Rev.D

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