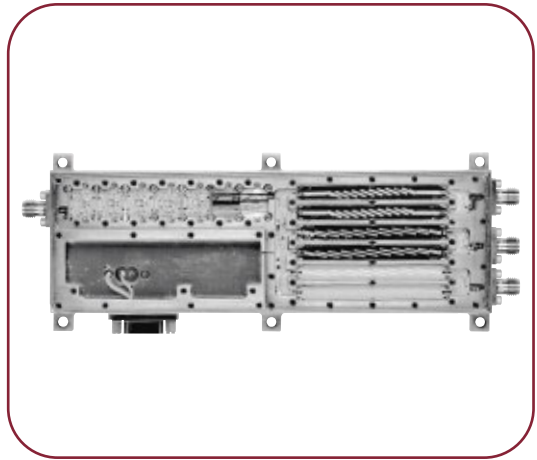


# 7.6–21.2 GHz FREQUENCY MULTIPLEXER

## MODEL: FMX-076212

### FEATURES

- High reliability spaceborne application
- Broadband RF coverage ..... 7.6–21.2 GHz
- Gain ..... 23 dB nominal
- Channel-to-channel isolation.. 50 dB minimum
- In/out VSWR..... 1.5:1 typical,  
1.8:1 maximum
- Noise figure ..... 4 dB typical,  
6 dB maximum
- Low power ..... 130 mA (5 V) typical



MITEQ's Model FMX-076212 broadband three-output frequency multiplexer precedes the second IF down conversion stage in a low earth orbit-based millimeter-wave radiometer. In combination with second IF downconverter, the system provides maximally flat frequency response over the bands of interest, high linearity of output power to input power, and high isolation between the frequency bands of interest as well as from other undesirable signals. In addition, this high reliability, spaceborne integrated assembly is optimized for small size, low power consumption, lightweight, and excellent thermal stability of operation.

### ELECTRICAL SPECIFICATIONS

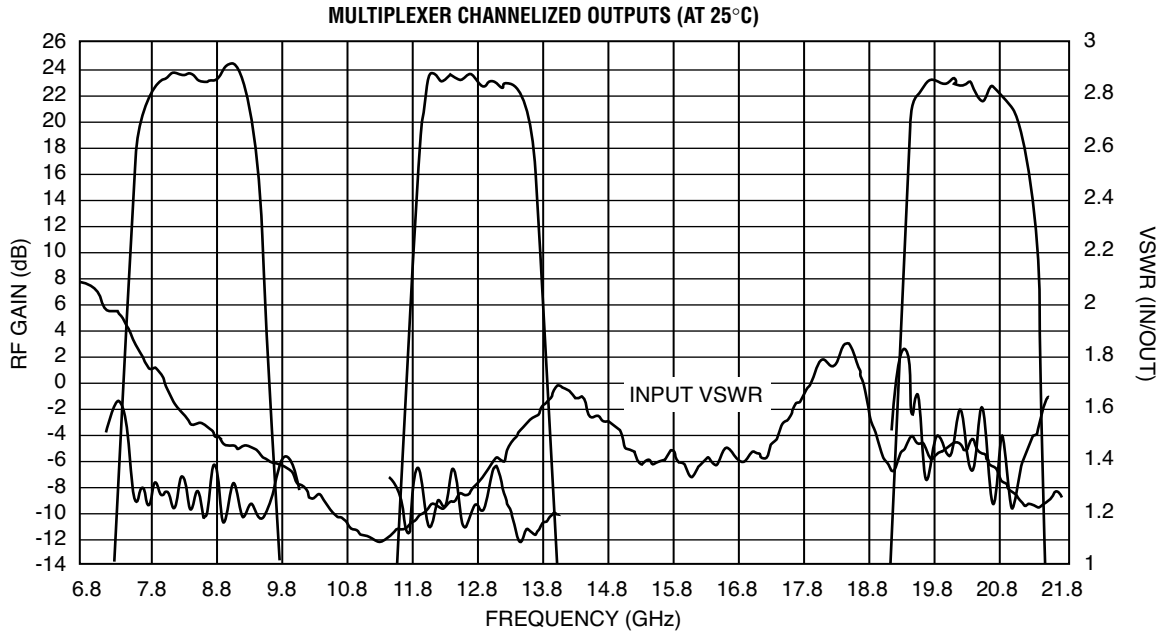
RF INPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
Frequency range		GHz	7.6		21.2
VSWR		Ratio			1.8:1
RF OUTPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
Number of RF output channels				3	
Channel bandwidth		MHz	1300		
Channel center frequencies		GHz		8.4081 12.7759 20.4012	
Gain flatness	Over 1300 MHz passband	dB		2	
Normal gain		dB		23	
Channel 20 dB rejection bandwidth		MHz			2300
Output power (1 dB compression)		dBm	-8	-5	
Noise figure		dB		4	6
Isolation between output channels		dB	50		
VSWR	Over 1300 MHz passband	Ratio		1.5:1	1.8:1
OTHER PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
Connectors, RF				SMA	
Connector, DC				15-pin, micro D	
Supply voltage		Volts		5	
DC power consumption	At 5 V supply	mA		130	
Weight		Grams		210	

### ENVIRONMENTAL CONDITIONS

Operating temperature..... 0 to 70°C  
 Storage temperature..... -30 to +85°C  
 Humidity..... 95% noncondensing  
 Vibration..... 12 g's rms, 20-2000 Hz per MIL-STD-810B Method 514, Procedure 5

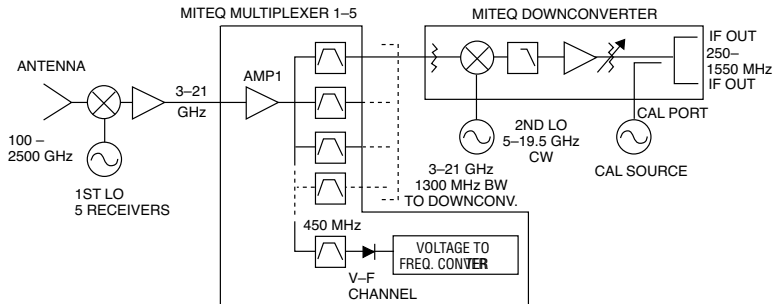


# FMX-076212 TYPICAL TEST DATA

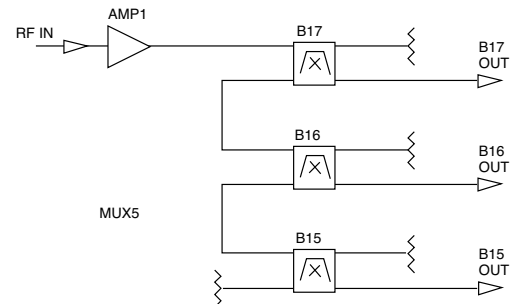


## FUNCTIONAL BLOCK DIAGRAMS

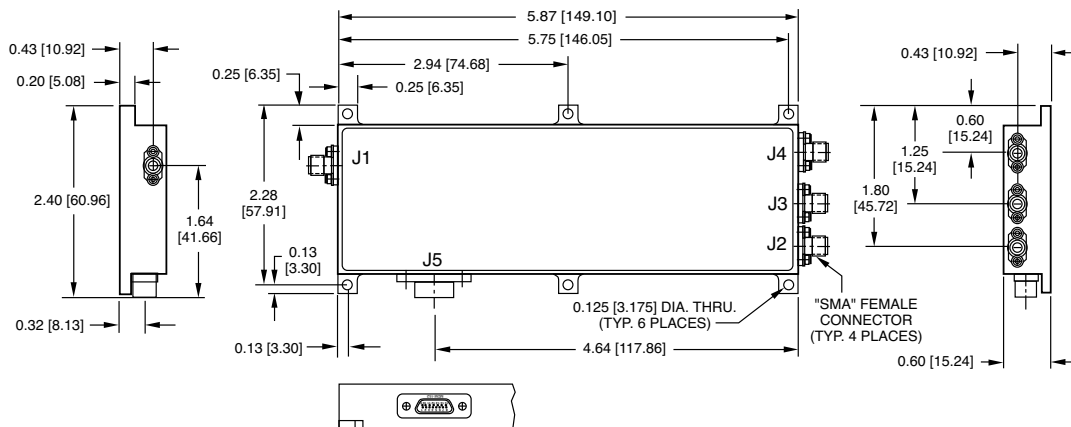
**GENERIC SYSTEM**



**MODEL FMX-076212**



## OUTLINE DRAWING



**GENERAL NOTES:**

1. Dimensions shown in brackets [ ] are in millimeters.
2. Tolerance as follows: .xx = ±0.01 [xx = ±0.25], .xxx = ±0.005 [xxx = ±0.13]

