SECTION 1
GENERAL INFORMATION

DESCRIPTION

The EIP Model 1313A VXIbus Microwave Downconverter is a VXI module specially designed to downconvert microwave signals in the 1 to 20 GHz range to an intermediate frequency (IF) in the 1 to 500 MHz range.

In a common application, a complex-modulated microwave signal can be characterized by a VXIbus system consisting of an EIP 1141A/1142A VXIbus Synthesized Signal Generator (or similar equipment) feeding the LO input of the EIP 1313A. The LO mixes against the complex signal-under-test connected to the RF input and provides an IF signal that is analyzed by a measurement module. A video-detected output of the IF is also provided. Refer to Figure 3-2 for a typical setup.

The 1313A is a "C" size, 1-slot VXIbus module that has no manual controls and requires a VXIbus mainframe for operation. The VXIbus mainframe provides the 1313A with ±24 Vdc. The 1313A passes the interrupt acknowledge lines and the bus grant lines.

OPERATING CONDITIONS

The EIP 1313A downconverter is designed to operate at temperatures from 0 to 55 °C at a relative humidity not to exceed 95% (75% over 25 °C; 45% over 40 °C). The downconverter will perform to specifications at altitudes not exceeding 10,000 ft (3050 m) and will tolerate vibration not exceeding 2 g. It is fungus resistant. The module housing is not designed to provide protection from severe mechanical shock or liquids and is intended for normal VXIbus use in an environmentally clean area.

The 1313A downconverter meets the requirements of MIL-T-28800D, Type III, Class 7, Style G, Color R with the following modifications and exceptions:

1. The non-operating temperature requirement is limited to the range of -40 to +71 °C.
2. The operating and non-operating altitude requirements are not invoked.
3. The EMI requirement is modified as follows:
   a) For frequencies ≥1 GHz, RE02 of MIL-STD-461C applies.
   b) For frequencies <1 GHz, VXIbus System Specifications Revision 1.3/1.4 applies.

STORAGE

To prevent possible damage to the instrument, it must be stored in an antistatic bag or enclosure and in an environment that is protected from moisture, dust, and other contaminants. Do not expose the instrument to temperatures below -40 °C or above 71 °C, nor to altitudes above 40,000 ft (12,000 m).

SPECIFICATIONS

GENERAL	
Operating Temperature Range	0 to 55 °C
Non-operating Temperature Range	-40 to 71 °C
Relative Humidity	0 to 95%, non-condensing
EMI	
Below 1 GHz	Complies with VXIbus Revision 1.3/1.4 specifications
Above 1 GHz	Complies with RE02 of MIL-STD-461C
Warm-up Time	None required
Weight	<6 lbs

VXIbus	
General	No interface to message backplane. Requires power only.
Module Size	C-size, 1 slot wide
Device Type	Passive
Protocol	Not used
Local Bus	Not used
ECLTRG Utilization	Not used
TTLTRG Utilization	Not used
CLK10 Utilization	Not used
Cooling	1 mm H_2O @ 1.6 liters/s
Power Dissipation	7.2 watts

Current Requirements

Voltage (VDC)	+5	+12	+24	-2	-5.2	-12	-24
IPEAK (Amperes)	-	-	0.2	-	-	-	0.1

RF INPUT	
Frequency	1 to 20 GHz (usable to 26.5 GHz)
Input Power Level	1 dB compression at +8 dBm typical
Damage Level	+23 dBm
Impedance	50 Ω nominal
VSWR	<2.5:1
Connector	APC-3.5 female

LO INPUT	
Frequency	1 to 20 GHz (Usable to 26.5 GHz)
Input Power Level	+10 to +13 dBm
Damage Level	+23 dBm
Impedance	50 Ω nominal
VSWR	<3.5:1 typical
Connector	APC-3.5 female

SPECIFICATIONS (Continued)

IF OUT	
Frequency	|RF-LO| = 1 to 500 MHz, 3 dB bandwidth
Conversion Loss	6 dB max @ 100 MHz, 3 dB typical
IF Flatness	±2 dB typical
Noise Figure	20 dB typical
3rd Order Output Intercept Point	+15 dBm @ 100 MHz typical
LO and RF Rejection	>30 dB
Impedance	50 Ω nominal
Connector	BNC female

DET OUT	
Output Polarity	Positive
3 dB Bandwidth	100 kHz typical
Output Level	0.3 V typical for -10 dBm IF output level
Load	10 kΩ
Connector	BNC female

Note: Specifications subject to change without notice.

ACCESSORIES

011 Extra Operation Manual (one supplied at no charge with each instrument)