2116-139 Block Downconverter, 13.95 - 14.45 GHz

The 2116-139 Block Downconverter converts 13.95 - 14.45 GHz to 1.20 - 1.70 GHz with low phase noise and flat frequency response. Frequency translation is via a 12.75 GHz local oscillator. Front panel LEDs provide indication of DC Power, External 10 MHz, and PLL Alarm. The gain is +35 dB. Connectors are SMA female for the RF and BNC female for the L-Band and external reference input and reference output. A three-way switch controls which 10 MHz reference is being used. In the INT position, the internal reference is used in the EXT position, the external reference is used and in the AUTO position, the internal reference is used unless a 3 dBm ± 3 dB, 10MHz reference signal is connected to the external reference input. The 2116 is powered by a 100-240 ±10% VAC power supply, and housed in a 1 3/4" X 19" X 14" rack mount chassis.

**EQUIPMENT SPECIFICATIONS**

**Input Characteristics**
- Impedance/Return Loss: 50Ω/14 dB
- Frequency: 13.95 to 14.45 GHz
- Noise Figure, Max.: 20 dB max. gain
- Input Level range: -55 to -35 dBm
- Input 1 dB compression: -25 dBm

**Output Characteristics**
- Impedance/Return Loss: 50Ω / 14 dB
- Frequency: 1.20 to 1.70 GHz
- Output Level Range: -20 to 0 dBm
- Output 1 dB compression: +10 dBm

**Channel Characteristics**
- Gain: +35 dB ±2 dB
- Image Rejection: > 60 dB, min
- Spurious, In Band: SIGNAL RELATED < -60 dBC in band, 0 dBm out; SIGNAL INDEPENDENT, < -60 dBm
- Spurious, Out of Band: LO < -70 dBm
- Intermodulation: < -55 dBc for two carriers each at -10 dBm out
- Frequency Response: ±1.5 dB, 1.20 - 1.70 GHz out; ± 0.5 dB, 40 MHz BW
- Frequency Sense: Non-inverting

**LO Characteristics**
- LO Frequency: 12.75 GHz
- Frequency Accuracy: ± 0.01 ppm max over temp internal reference; ext. ref. input
- 10 MHz level: 3 dBm, ± 3 dB, 75 ohms, External In or Monitor out

**Phase Noise @ F (Hz) > dBC/Hz**
- 100 Hz: 100
- 1K Hz: 1K
- 10K Hz: 10K
- 100K Hz: 100K
- 1M Hz: 1M

**Controls, Indicators**
- Ext 10 MHz: Yellow LED, indicates external 10 MHz reference selected (rear panel DPDT switch)
- PLL Alarm: Red LED, External contact closure
- Power: Green LED

**Available Connector Options**
- M - 50Ω N-type (RF), 50Ω BNC (L-BAND)
- N - 50Ω N-type (RF), 75Ω BNC (L-BAND)
- NF - 50Ω N-type (RF), 75Ω F-type (L-BAND)
- NN - 50Ω N-type (RF), 50Ω N-type (L-BAND)
- S7 - 50Ω SMA (RF), 75Ω BNC (L-BAND)
- SF - 50Ω SMA (RF), 75Ω F-type (L-BAND)
- SN - 50Ω SMA (RF), 50Ω N-type (L-BAND)
- SS - 50Ω SMA (RF), 50Ω SMA (L-BAND)

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