3116-140-4110 Agile Block Downconverter, 14.00 - 14.50 GHz to 4110 ± 62.5 MHZ

The 3116-140-4110 Agile Block Downconverter converts 14.00 - 14.50 GHz to 4.11 ± 0.0625 GHz in 1 MHz steps with low phase noise and flat frequency response. Frequency translation is via a 9.89 - 10.39 GHz local oscillator (Fc = 14.0 - 14.5 GHz). The gain is +35 ± 2 dB maximum and is adjustable in 0.5 ± 0.5 dB steps. Front panel LEDs provide indication of Remote operation, Pll Alarm and DC Power. Frequency, gain and internal/external/Auto reference frequency selection are controlled by front panel switches or remote selection (via RS 232C, standard; Ethernet Optional) and are viewable on the LCD Display. Connectors are SMA female for the RF Input and RF Output and BNC female for the external reference input and reference output. In AUTO, the 10 MHz reference stays in external if the external level is +1 to +8 dBm. The 3116 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 (RF Input)**
- Impedance/Return Loss: 50Ω / 14 dB
- Frequency: 14.00 to 14.50 GHz
- Noise Figure, Max.: 12 dB max gain
- Input Level range: -55 to -35 dBm
- Input 1 dB compression: -25 dBm

**Output Characteristics (RF Output)**
- Impedance/Return Loss: 50Ω / 14 dB
- Frequency: 4.11 ± 0.0625 GHz
- Output Level Range: -20 to 0 dBm
- Output 1 dB compression: +10 dBm at max. gain

**Channel Characteristics**
- Gain, max; adjustment: +35 dB ±2 dB, max. gain; 30 dB adjustment in 0.5 ± 0.5 dB Steps
- Image Rejection: > 60 dB, min
- Spurious, In Band: < -55 dBc in band, 0 dBm out; 2X Fo < 45dBc; SIGNAL INDEPENDENT, < -60 dBm
- Spurious, Out of Band: < -50 dBm, 0.5 - 4.05 GHz and 4.20 - 6.0 GHz
- Intermodulation: < -55 dBc for two carriers each at -10 dBm out
- Frequency Response: ± 2 dB, Band: ± 1.5 dB, 4.11 ± 0.0625 GHz out; ± 0.5 dB, 40 MHz BW
- Frequency Sensitivity: Non-inverting

**LO Characteristics**
- LO Frequency: 9.89 - 10.39 GHz (Fc = 14.0 - 14.5 GHz)
- Frequency Step: 1.0 MHz
- Frequency Accuracy: ± 0.01 ppm max over temp internal reference; ext. ref. input
- 10 MHz In/Out Level: 3 dBm, ± 3 dB, w/ Auto-detect

**Phase Noise @ F (Hz)**

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<th>dBC/Hz</th>
<th>100</th>
<th>1K</th>
<th>10K</th>
<th>100K</th>
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<td>-110</td>
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**Controls, Indicators**
- Freq; Gain; Ext. Ref Sel. direct readout LCD; pushbutton switches or remote
- Pwr; Alarm; Rem; Mute Remote
- Green LED; Red LED; Yellow LED; Yellow LED
- RS232C/RS485/422, 9600 baud (Ethernet Optional)

**Other**
- RF In/RF Out Conn. SMA (female), 50Ω / SMA (female), 50Ω
- 10 MHz Connectors BNC (female), 75Ω, works with 50 or 75 ohms
- Alarm/Remote Conn. DB9 - NO or NC contact closure on Alarm
- Size: 19 inch standard chassis 1.75” high X 14.0” deep
- Power: 100-240 ± 10% VAC, 47 - 63 Hz, 30 watts max.

*10°C to 40°C; Specifications subject to change without notice

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**Available Options**
- **E6-25X**: Int 10MHz ref. locked to ext 25 MHz
- W31: 0 to +50 degrees C operation

**Remote M&C Interfaces**
- W8: Ethernet w/web browser Interface
- W18: Ethernet w/SNMP (and MIB) Interface
- W28: Ethernet w/direct TCP/IP Interface
- W828: W8 + W18 + W28

**Connector Options**
- STD - SMA (RF In), 50Ω SMA (RF Out)
- NN - N-type (RF In), 50Ω N-type (RF Out)
- SN - SMA (RF In), 50Ω N-type (RF Out)

**Contact Cross for other options**