**2009-38 Test Downconverter** - Converts a 3.8 - 5.05 GHz signal to 900 - 2150 MHz with a high side local oscillator (LO) (inverted spectrum) for loop-back applications. With low phase noise, this unit down converts "clean" (having only this frequency) 3.8 - 5.05 GHz signals to 900 - 2150 MHz for test purposes. The 3.8 - 5.05 GHz input is mixed with a synthesized local oscillator (LO) signal to 900 - 2150 MHz. The mixer output goes to the output attenuator providing a nominal gain of -40 dB. Connectors are 75 ohm F female for the 900 - 2150 MHz output and 50 ohm N, female for the RF input. Front panel LEDs show DC power is applied (green) and if a PLL alarm occurs (red). DC power is provided by the LNB voltage from the receiver under test or by an external wall mount power supply (option -P, 115 VAC or Option -P4, 90-260 VAC). **Option -C** has no power supply and is powered by an external power supply like the 2000-01. The 2009 can be mounted on an 1 3/4 " X 19 " rack mount panel (option R ).

### 2009-38 Downconverter Block Diagram and Chassis

#### EQUIPMENT SPECIFICATIONS*

**Input Characteristics**
- Input Impedance/RL: 50 Ω /10 db
- Frequency: 3.8-5.05 GHz
- Input Level: -15 to +0 dBm
- Input 1 dB: +5 dBm

**Output Characteristics**
- Impedance/RL: 75 Ω/10 db
- Frequency Band: 900 -2150 MHz

**Channel Characteristics**
- Gain at band center: -40 dB ±2 dB
- Spectrum Sense: Invert
- Spurious Response: < -40 dBC, 900-2150 MHz out
- Frequency Response: ± 2 dB, 900 -2150 MHz; ± 0.5 dB, any 10 MHz increment

**Synthesizer Characteristics**
- LO Frequency: 5.95 GHz
- Frequency Accuracy: ± 4 ppm max
- Phase Noise (dBc/Hz): ≤-85@1 kHz; ≤-90@10 kHz; ≤-95@100 kHz; ≤-110@1 MHz

**Indicators**
- DC Power; Alarm: Green LED; Red LED

**Other**
- RF In, RF Out Connectors: Type N, female, Type F, female
- Size, Bench Top: 4.7" wide X 1.75" high X 6.5" deep
- Size, Rack Mount (R): 19 inch standard chassis 1.75" high X 7.0" deep (Optional)
- Power: +16 to +20 VDC, 280 ma on RF Out;
  - P Option, 120 ± 10% VAC, 60 Hz, 15 watts max, wall mt PS
  - P4 Option, 90-260 VAC, 47-63 Hz, 15 watts max, wall mt PS

**Models**
- 2009-38: 3.8-5.05 GHz in, 900 - 2150 MHz Out, Uses Receiver LNB Voltage to IF out
- 2009-38C: 3.8-5.05 GHz in, 900 - 2150 MHz Out, No Power Supply, Use with 2000-01 Power Supply
- 2009-38P: 3.8-5.05 GHz in, 900 - 2150 MHz Out, 115 VAC Wall Power Supply
- 2009-38P4: 3.8-5.05 GHz in, 900 - 2150 MHz Out, 90-260 VAC Wall Power Supply

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*+10 to +40 degrees C; 2000 meters max elevation; 80% max humidity; Specifications subject to change without notice

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