The WBDC-0/21-0/3 is a programmable multiband block downconverter. The WBDC-0/21-0/3 accepts an RF spectrum from 10 kHz to 21 GHz and downconverts the input into seven 3 GHz bands. The IF output can be programmed for a spectrum of 10 kHz to 3 GHz, 1.5 GHz to 3 GHz or 10 kHz to 1.5 GHz. The frequency of the local oscillators can be offset programmed in 5.0 kHz steps over a ±2.5 MHz span for signal resolving and identification. The gain of the converter can be programmed from 0 to 30 dB in 1 dB step. All functions are local and remotely programmable.

**FEATURES**
- Local or remote control
- Low phase noise
- Local oscillator offset programming
- Multiband IF output spectrum
- 30 dB gain programming
- Front panel/remote status monitoring
- Programmable save recall features
- Nonvolatile memory
- External battery or AC adapter operation

**OPTIONS**
- Customer specified frequency bands
- Lower noise figure
- Customer specified IF filter bands
- Higher gain
**SPECIFICATIONS**

**RF INPUT CHARACTERISTICS**
- Frequency: 10 kHz–21 GHz
- Frequency bands:
  - Band 1: 10 kHz–3 GHz
  - Band 2: 3–6 GHz
  - Band 3: 6–9 GHz
  - Band 4: 9–12 GHz
  - Band 5: 12–15 GHz
  - Band 6: 15–18 GHz
  - Band 7: 18–21 GHz
- Level: to -35 dBm
- Impedance: 50 ohms
- VSWR: < 2.2:1

**IF OUTPUT CHARACTERISTICS**
- Frequency bands:
  - Band 1: 10 kHz–3 GHz
  - Band 2: 10 kHz–1.5 GHz
  - Band 3: 1.5–3 GHz
- Impedance: 50 ohms
- VSWR: < 2:1

**TRANSFER CHARACTERISTICS**
- Gain: 30 dB
- Programming range: 30 dB
- Programming resolution: 1 dB
- Noise figure: 11 dB typical, 13 dB maximum
- Inband spurious response: 50 dBc typical
- RF band 1 (10 kHz to 3 GHz): Spectrum processed without conversion
- RF bands 1 through 6 (6 GHz spectrum): Folded in half (±3 GHz) and mapped into 10 kHz to 3 GHz
- Folded spectrum ambiguity resolution: Resolved by frequency offset programming of the conversion LO source

**CONVERSION LO SOURCE**
- Frequency accuracy: 2.5 ppm typical
- Temperature variation: 0.25 ppm/°C typical
- Offset programming range: ±2.5 MHz typical
- Programming resolution: 5.0 kHz typical

**LOCAL CONTROL**
- Via front panel rotary control and LCD display and four button keypad

**REMOTE CONTROL**
- Via RS232 remote interface

**LOCAL ALARMS**
- Voltage alarm

**REAR PANEL CONNECTORS**
- RF input: SMA female
- IF output: N female
- Remote interface: DEM-9S

**ENVIRONMENTAL**

**Operating**
- Ambient temperature: -5 to +50°C (-20 to +70°C optional)
- Relative humidity: Up to 95% at 30°C, noncondensing
- Atmospheric pressure: Up to 10,000 feet (40,000 feet optional)

**Nonoperating**
- Ambient temperature: -30 to +70°C
- Relative humidity: Up to 95% at 40°C
- Atmospheric pressure: Up to 40,000 feet
- Shock and vibration: Normal handling by commercial carriers

**PRIMARY POWER**
- External battery pack or power supply
- Power consumption: 7.5 W typical, 8.5 W maximum

**PHYSICAL**
- Overall dimensions: 8” x 8” x 1.75”