Getting the most performance out of a communications system means minimizing sources of error wherever possible. dBm’s UDC series of RF Converters perform broadband frequency translation with low distortion, high dynamic range, and low phase noise.

The UDC is a laboratory instrument designed to upconvert, downconvert, or frequency translate a signal with minimal distortion. Center frequency can be programmed, and optionally, attenuation of each channel can be controlled. The instrument is controllable from the front panel or remotely via LAN or GPIB.

dBm has an extensive range of RF Converters that can be customized to suit your specific application. And although these converters can be customized, we use standard building blocks so that you don’t have to wait forever to get one.

The UDC is ideally suited for extending the operating frequency range of multipath fading emulators for IEEE Std 802.11a Wireless LAN test applications.

**Applications**

Typical applications for the **RF Converter** Series include:

- Mobile phone baseband chipset test
- Satellite system integration
- Frequency translation to microwave and millimeter wave devices
- Multimedia Mobile Access (MMAC)

**Features**

**Flexibility**

Using standard building blocks for single, double, and triple conversion converters, each RF Converter can be customized in accordance with your specific test needs. Functionality, performance, and even connector location, are optimized.

**Block or Tunable, IF or Baseband**

Whether performing block up and down conversion or tunable translation, we have a solution. RF to baseband units can provide I/Q interfaces with programmable AGC and AFC.

**Rack Mounting and Custom Enclosures**

All RF Converters are available in 19" rack mountable enclosures, or as an option can be designed as an embedded chassis.

**Multiple Control Options**

TCP/IP LAN V and IEEE-488.2 are standard.
## Specifications

### Down converter
- **Input frequency range:** typically L, C, S, Ku, or Ka bands
- **Output frequency:** typically 70 or 140MHz
- **Input power (max):** 0 dBm typical
- **Conversion gain:** 0 dB +/- 1.0 dB typical
- **IF bandwidth:** 125 MHz typical
- **In band spurious:** -55 dBc typical
- **Out of band spurious:** -50 dBc typical
- **Amplitude flatness:** < 0.2 dBpp/2MHz typical
- **Phase linearity:** +/- 2° /10MHz
- **VSWR:** 1.5:1 maximum into 50 ohms

### Up converter
- **Input frequency:** typically 70MHz or 140MHZ
- **Input power(max):** 0 dBm typical
- **Conversion loss:** 0 dB +/- 1.0 dB
- **IF bandwidth:** 125MHz typical
- **Amplitude Flatness:** < 0.2 dBpp / 2MHz
- **Phase linearity:** +/-2° /10MHz typical
- **Output frequency range:** typically L, C, S, Ku, or Ka bands
- **In band spurious:** < -55 dBc typical
- **Out of band Spurious:** < -50 dBc typical
- **VSWR:** 1.5:1 maximum into 50 Ohms

### General
- **RF Connectors:** type N or K (3.5mm) typical
- **Control:** IEEE 488.2, TCP/IP LAN

### Primary power
- **Voltage:** 90-264 VAC auto ranging
- **Frequency:** 48-66Hz
- **Consumption:** 1.0A maximum
- **Fuse:** 2A
- **Ambient (operating):** +10 °C to +40 °C
- **Dimensions:** 5.25” H x 19” W x 21” D