

High-performance 20 GHz Frequency Down-converter

- Down-conversion input 20 MHz – 20 GHz
- Bypass input frequency 9 kHz – 2900 MHz
- Output frequency 9 kHz - 2900 MHz
- Ultra-high frequency stability 0.01 ppm
- High dynamic range
- Low noise figure
- Simple installation
- Integrates with WR-G39DDC and WR-G527 receivers
- Suitable for any third-party receivers
- Low power consumption
- USB interface

The WiNRADiO WR-G20DWC is a high-performance single-conversion frequency down-converter suitable for input frequencies up to 20 GHz.

This device contains a high-stability local oscillator, mixer and various filters to convert an incoming UHF to SHF frequency down to an intermediate frequency of 9 kHz to 2900 MHz, which is then directly applied to the receiver's antenna. This can be used to extend the frequency range of the WiNRADiO G39DDC and G527e receivers, as well as third-party products, into the high UHF and SHF regions.

Unlike most simple down-converters, the WR-G20DWC unit ensures excellent frequency stability by utilizing an ultra-high stability 0.01 ppm OCXO reference oscillator. This makes it usable even for narrow-band modulation modes, and due to its low noise figure it can also be used with high-end professional applications.

The WiNRADiO WR-G20DWC down-converter is especially suitable for use with the WiNRADiO G39DDC-series wideband receivers (WR-G39DDCe and WR-G39DDCi), whereby it integrates fully transparently to the user, i.e. the frequency entry and display of these receivers is automatically extended up to 20 GHz.

Physically, the WR-G20DWC unit stacks neatly under or above the WiNRADiO receivers, thus providing a neat and elegant extension of their capabilities.

Third party receiver products can also be interfaced by using the supplied software application.



Specifications

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|-------------------------|--|
| Type | Single-conversion frequency down-converter |
| Input frequency | 20 MHz – 20 GHz (down-converter mode) 9 kHz – 2900 MHz (bypass input) |
| Output frequency | 9 kHz – 2900 MHz |
| Gain | -2 dB (9 kHz – 2.9 GHz) 13 – 25 dB (2.9 – 15 GHz) 7 – 16 dB (15 – 20 GHz) |
| NF | 3 dB (using optional bypass input) 2.5 dB @ 10 GHz |
| IIP1 | +3 dBm (using optional bypass input) +2 dBm |
| Isolation In/Out | 30 dB min. |
| LO leakage to IF | -50 to -30 dBm depending on sub-band |
| LO stability | 0.01 ppm (0 – 60 °C) |
| Connectors | 1 x SMA (RF in) 1 x SMA (bypass input) 1 x SMA (IF out) 1 x SMA (10 MHz ref. input) 1 x SMA (10 MHz ref. output) Power jack OD=5.5 mm, ID=2.5mm (center positive) |
| Power | 12V DC \pm 10% @ 600 mA max. |
| Interface | USB (1.1 and 2.0 compatible) |
| Dimensions | Length: 164 mm (6.46") Width: 96 mm (3.78") Height: 41 mm (1.61") |
| Weight | 360 g (17.7 oz) |

Specifications are subject to change without prior notice due to continuous product development.

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