
Digital Radio Receiver and Transmitter Modules

Characteristics

The Digital Radio Transmitter Modules, (DRT1-23XX and DRT1-38XX) supply the transmit function for digital radios operating in the 23 and 38 GHz frequency bands. The Digital Radio Receiver Modules, (DRR1-23XX and DRR1-38XX) supply the receive functions in the same frequency bands.

These modules are used in short-haul radios that supply the back haul function between cellular and PCS base station sites as well as for private microwave links used in campus applications for voice and data transmission. They interconnect these sites with each other and with the switching networks. They are ideal for use in radios operating with 4 level FSK modulation and up to 34 mB/s data rates. They are capable of handling traffic levels from 1 T-1 line to 1 DS-3 line.

The modules feature an integrated ultra low noise silicon bipolar VCO operating in the S/C band as the local oscillator. A portion of the oscillator output is coupled off and is applied to a frequency divider network. This signal is divided down to a low frequency that allows the oscillator to be easily phase locked.

Both transmit and receive modules operate over a -30 to +70°C temperature range and are moisture sealed to provide protection against environmental conditions that the radio may have to operate in.

Receiver/Down Converter Modules

These modules incorporate a low noise MMIC amplifier coupled to an image reject mixer and an IF amplifier providing an output signal in the 630 or 1260 MHz range, other IF frequencies are

available. The local oscillator function is provided by an integrated VCO, multiplier network providing the mmwave low phase noise signal to the mixer.

Transmitter Modules

This module uses the VCO described above coupled to a multiplier network to transform the signal to the mmwave region. Additional amplifiers are added to provide +18 to +20 dBm of output power in the specific mmwave band. A detector is provided at the output as a power indicator and an optional attenuator is also available providing 30 dB dynamic range adjustment and there is mute function providing 50 dB signal reduction for "hot standby" applications.

Other Frequency Bands

Additional models will be available for the 13, 15, 18 and 26 GHz bands by the end of 1997.