

High-speed low-cost direct conversion digital receiver

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In this paper, an analog carrier recovery loop is proposed and developed to provide a complete direct conversion digital six-port receiver operating at microwave ISM frequency of 2.45 GHz. Results on data rate limitation are shown for QPSK signals up to data rates of 52 Mb/s. Parametric measurements in connection with CW, adjacent channel and co-channel interferences are presented for a data rate of 40 Mb/s. Finally, phase offset between the carrier and the reference signal, along with carrier frequency deviation performance are also presented for a rate of 40 Mb/s.

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