

AD9352/AD9353: Radio Frequency Transceivers for WiMAX Terminals

Key Benefits

Excellent RF Performance

- Operates over 2.x GHz, 3.x GHz, and 5.x GHz WiMAX profile bands
- Transmitter EVM –37 dB @ 0 dBm P_{OUT}
- Noise figure: 3.5 dB
- High dynamic range
12-bit, 160 MSPS ADCs and DACs
- ADI/Q™ interface

Ease of Use

- Digital data and control
- Simple RF software drivers
- Reduced real-time signaling
- Autonomous automatic gain control
- Transmit power control
- Support for automatic frequency control

Smart Integration Enables Low BOM

- Direct downconvert architecture eliminates SAW filters
- DCXO eliminates expensive VCTCXOs
- Accurate power control enables inexpensive PA
- LDO regulators enable single 3.3 V operation
- Programmable digital filters:
80 taps Rx, 57 taps Tx



Analog Devices offers the AD9352 and AD9353—a family of high performance, highly integrated CMOS, direct conversion transceivers covering all the WiMAX profiles in the 2.x GHz, 3.x GHz, and 5.x GHz frequency bands. The high level of integration on the transceiver enables the reduction of the system bill of materials for the radio as well as reduced digital modem cost. The ADI/Q™ interface integrated on the transceiver allows the digital modem solutions to be manufactured on a fine line process such as 65 nm or 45 nm, thus taking advantage of the lower cost per transistor. The ADI/Q™ bidirectional interface is a simple parallel CMOS digital I/O interface between the transceiver and the digital modem. The interface has been adopted by multiple digital modem partners.

For information on radio reference cards, ADI WiMAX partners, and partnership opportunities, please email wimaxtransceivers@analog.com.

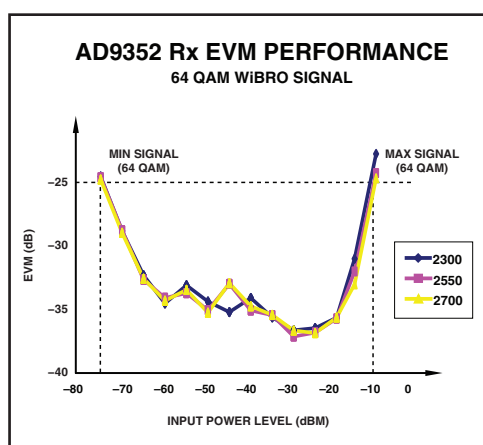
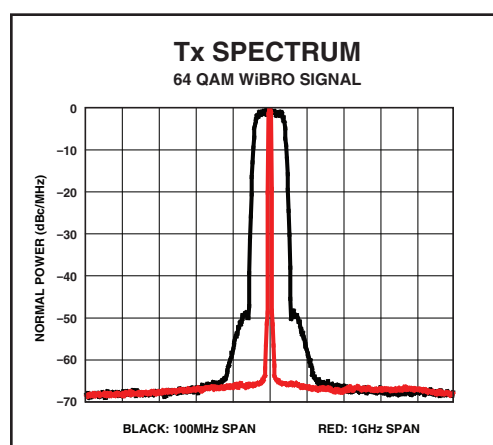
Selection Guide

Part Number	Frequency (GHz)	Bandwidth (MHz)	Supply (V)	Package	Interface
AD9352-BCPZ	2.3 to 2.7	3.5 to 20	3.3	9 mm × 9 mm, 64-lead LFCSP	ADI/Q™
	4.9 to 5.9				
AD9353-BCPZ	3.3 to 3.8				



Smart Integration Enables Low System Bill of Materials

The AD9352/AD9353 family of WiMAX transceivers offers a complete RF and mixed-signal system on a chip. The transceiver integrates a high sensitivity direct-conversion receiver, and channel-select filtering at baseband, thus eliminating the need for external SAW filters. The highly linear transmitter offers excellent EVM and spurious performance. A low phase noise LO path is achieved by an integrated fractional-N synthesizer. To enable low system cost, an on-chip crystal oscillator replaces the expensive external voltage controlled temperature compensated crystal oscillator (VCTCXO) with a simple 40 MHz crystal. Additionally, these transceivers integrate smart system features such as self-calibration, automatic gain control, transmit power control, support for automatic frequency control, and auxiliary ADCs and DACs for system monitoring, thus reducing the level of real-time signaling between the modem and the transceiver, dramatically simplifying the RF driver development and support.



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