

NI Measurement Suite for Fixed WiMAX Specifications

Version 1.0

This document lists specifications for the NI Measurement Suite for Fixed WiMAX.

These specifications are representative and cannot be guaranteed for different payload configurations and/or spectrum control parameters. In addition, these specifications cannot be guaranteed on all units shipped from the factory.

Specifications subject to change without notice. For the most recent toolkit specifications, visit ni.com/manuals.

Generation

The generation specifications were derived using the following configuration:

- Duplex mode: FDD Downlink
- PN sequence order: 31
- PDU fragmentation: Enabled
- PDU size: 11
- Nominal bandwidth: 10 MHz
- Cyclic prefix ratio: 1/4
- Subframe gap duration: 10 ms
- Number of bursts: 1
- Burst preamble: Short
- Number of data OFDM symbols in burst: 10
- Modulation and coding scheme: 64-QAM 3/4
- Carrier frequencies: 2.5 GHz, 3.5 GHz, and 5.8 GHz
- Power levels: -10 dBm, -20 dBm, and -30 dBm
- Number of averages: 10

Frequency range

NI PXIe-5673 10 MHz to 6.6 GHz

ISM band¹ Supported by NI PXIe-5673

Absolute amplitude accuracy Refer to the NI PXIe-5673 specifications.

Amplitude resolution..... Refer to the NI PXIe-5673 specifications.

Recommended operating

average burst power –6 dBm to –30 dBm

Residual RMS EVM (at carrier frequency of 2.5 GHz) with NI PXIe-5673

Average Burst Power	RMS EVM
–10 dBm	< –46 dB
–20 dBm	< –46 dB
–30 dBm	< –45 dB

Residual RMS EVM (at carrier frequency of 3.5 GHz) with NI PXIe-5673

Average Burst Power	RMS EVM
–10 dBm	< –41 dB
–20 dBm	< –43 dB
–30 dBm	< –43 dB

Residual RMS EVM (at carrier frequency of 5.8 GHz) with NI PXIe-5673

Average Burst Power	RMS EVM
–10 dBm	< –39 dB
–20 dBm	< –41 dB
–30 dBm	< –40 dB

¹ The WiMAX Forum licensed spectrum profiles are 2.3 GHz, 2.5 GHz, and 3.5 GHz.

Analysis

The analysis specifications were derived using the following configuration:

- Duplex mode: FDD Uplink
- PN sequence order: 31
- PDU fragmentation: Enabled
- PDU size: 11
- Nominal bandwidth: 10 MHz
- Cyclic prefix ratio: 1/4
- Subframe gap duration: 10 ms
- Number of bursts: 1
- Burst preamble: Short
- Number of data OFDM symbols in burst: 10
- Modulation and coding scheme: 64-QAM 3/4
- Carrier frequencies: 2.5 GHz, 3.5 GHz, and 5.8 GHz
- Power levels: -10 dBm, -20 dBm, and -30 dBm
- Number of averages: 10

Frequency range

NI PXIe-5663 10 MHz to 6.6 GHz

ISM band¹ Supported by NI PXIe-5663

Maximum IF bandwidth

NI PXIe-5663 50 MHz

Frequency measurement accuracy Refer to the NI PXIe-5663 specifications.

Recommended power

measurement range 0 dBm to -30 dBm

Power measurement accuracy Refer to the NI PXIe-5663 specifications.

¹ The WiMAX Forum licensed spectrum profiles are 2.3 GHz, 2.5 GHz, and 3.5 GHz.

Residual RMS EVM (at carrier frequency of 2.5 GHz) with NI PXIe-5663

Average Burst Power	RMS EVM
-10 dBm	< -45 dB
-20 dBm	< -44 dB
-30 dBm	< -45 dB

Residual RMS EVM (at carrier frequency of 3.5 GHz) with NI PXIe-5663

Average Burst Power	RMS EVM
-10 dBm	< -45 dB
-20 dBm	< -42 dB
-30 dBm	< -43 dB

Residual RMS EVM (at carrier frequency of 5.8 GHz) with NI PXIe-5663

Average Burst Power	RMS EVM
-10 dBm	< -40 dB
-20 dBm	< -39 dB
-30 dBm	< -39 dB

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