Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Receiver Sensitivity contribution to IEEE P802.16a/D2-2002**
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Source(s)	Gordon Antonello Shane Rogers Shawn Taylor Shawn Lightfoot Wi-LAN Inc. 2891 Sunridge Way NE Calgary, AB T1Y 7K7 Voice: (403) 207-6477 Fax: (403) 273-5100 gantonello@wi-lan.com srogers@wi-lan.com staylor@wi-lan.com slightfoot@wi-lan.com
Re:	This is an updated contribution to the IEEE 802.16 TGa document IEEE P802.16a/D2-2002.
Abstract	The contribution provides suggested text and Table 194 data for P802.16a/D2-2002 section 8.3.5.2.7.1 Receiver Sensitivity.
Purpose	To provide section 8.3.5.2.7.1 input, Table 203 data, and change the text for this section to match completed Table 203.
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Suggested Text for Document IEEE P802.16a/D2-2002, section 8.3.5.2.7.1 Receiver Sensitivity

The following individuals have provided input to this contribution

Gordon Antonello

Shane Rogers

Shawn Taylor

Shawn Lightfoot

1 Introduction

This document Provides information towards completion of Table 203 in section 8.3.5.2.7.1 and makes changes to the text to reflect the updated table. The table is expanded to include most other channel bandwidths known by the authors to be relevant to the IEEE 802.16a standard.

2 Reference

[TG1/D5] IEEE P802.16/D5 - 2001.
[TG3&4/D2] IEEE 802.16a/D2 - 2002.
IEEE C802.16a-02/31r1

3 Suggested Text for Section 8.3.5.2.7.1

8.3.5.2.7.1 Receiver Sensitivity

The packet error rate (PER) shall be less than 10% at the power levels shown in Table 203 for standard message and test conditions. The measurement shall be taken at the antenna port or through a calibrated radiated test environment using standardized packet formats.

Table 203 – Receiver Sensitivity (dBm)

Channel Bandwidth (MHz)	QPSK		16QAM		64QAM	
	Rate ½	Rate ¾	Rate ½	Rate ¾	Rate ½	Rate ¾
1.5	-94.8	-93.1	-87.8	-86.1	-81.6	-79.8
1.75	-94.2	-92.4	-87.2	-85.4	-80.9	-79.1
3.0	-91.8	-90.1	-84.8	-83.0	-78.5	-76.8
3.5	-91.2	-89.4	-84.1	-82.4	-77.9	-76.1
5.0	-89.6	-87.8	-82.6	-80.8	-76.3	-74.6
6.0	-88.8	-87.0	-81.8	-80.0	-75.5	-73.8
7.0	-88.1	-86.4	-81.1	-79.4	-74.9	-73.1
10.0	-86.6	-84.8	-79.6	-77.8	-73.3	-71.6
12.0	-85.8	-84.0	-78.8	-77.0	-72.5	-70.8

Channel Bandwidth (MHz)	QPSK		16QAM		64QAM	
	Rate ½	Rate ¾	Rate ½	Rate ¾	Rate ½	Rate ¾
14.0	-85.1	-83.4	-78.1	-76.4	-71.9	-70.1
15.0	-84.8	-83.1	-77.8	-76.1	-71.6	-69.8
20.0	-83.6	-81.8	-76.6	-74.8	-70.3	-68.5

Standard test messages:

Test messages for measuring Receiver Sensitivity shall be based on a MAC PDU with defined payloads.

Short test message payload:

Short test message payload packets are 288 Bytes in length

QPSK: continuous stream of packets each containing the sequence REPEAT (n, [0xE4, 0xB1, 0xE1, 0xB4]) where n = 72

16QAM: continuous stream of packets each containing the sequence REPEAT (n, [0xA8, 0x20, 0xB9, 0x31, 0xEC, 0x64, 0xFD, 0x75]) where n = 36

64QAM: continuous stream of packets each containing sequence REPEAT (n, [0xB6, 0x93, 0x49, 0xB2, 0x83, 0x08, 0x96, 0x11, 0x41, 0x92, 0x01, 0x00, 0xBA, 0xA3, 0x8A, 0x9A, 0x21, 0x82, 0xD7, 0x15, 0x51, 0xD3, 0x05, 0x10, 0xDB, 0x25, 0x92, 0xF7, 0x97, 0x59, 0xF3, 0x87, 0x18, 0xBE, 0xB3, 0xCB, 0x9E, 0x31, 0xC3, 0xDF, 0x35, 0xD3, 0xFB, 0xA7, 0x9A, 0xFF, 0xB7, 0xDB]) where n = 6

Long test message payload:

Long test message payload packets are 1536 Bytes in length

QPSK: continuous stream of packets each containing the sequence REPEAT (n, [0xE4, 0xB1, 0xE1, 0xB4]) where n = 384

16QAM: continuous stream of packets each containing the sequence REPEAT (n, [0xA8, 0x20, 0xB9, 0x31, 0xEC, 0x64, 0xFD, 0x75]) where n = 192

64QAM: continuous stream of packets each containing sequence REPEAT (n, [0xB6, 0x93, 0x49, 0xB2, 0x83, 0x08, 0x96, 0x11, 0x41, 0x92, 0x01, 0x00, 0xBA, 0xA3, 0x8A, 0x9A, 0x21, 0x82, 0xD7, 0x15, 0x51, 0xD3, 0x05, 0x10, 0xDB, 0x25, 0x92, 0xF7, 0x97, 0x59, 0xF3, 0x87, 0x18, 0xBE, 0xB3, 0xCB, 0x9E, 0x31, 0xC3, 0xDF, 0x35, 0xD3, 0xFB, 0xA7, 0x9A, 0xFF, 0xB7, 0xDB]) where n = 32

Test Conditions:

Ambient room temperature, shielded room, conducted measurement at the RF port if available, radiated measurement in a calibrated test environment if the antenna is integrated, and RS FEC is enabled.