MET Laboratories, Inc. *Safety Certification - EMI - Telecom Environmental Simulation*
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February 7, 2008

Reviewer Steven Dayhoff
Federal Communications Commission
7435 Oakland Mills Road
Columbia, MD 21046

RE: Ubiquiti Networks, FCC ID: SWX-XR3, Correspondence Reference Number: 34437

Hello Mr. Dayhoff,

Please see our response to your inquiry below:

1. You have submitted parts of the 802.11 standard, but it is not clear how you are fully implementing 802.11y, since it is still being finalized.

A.) What is the longest TX frame duration:

-The PHY header (17 Bytes: 12B PLCP preamble, 3B signal, and 2B service) + MAC header (30 Bytes) + Data (up to 2312 Bytes) + CRC (4 Bytes) + Tail (6 bit) + Pad (number of bits that make the data field a multiple of the number of coded bits in an OFDM symbol (48, 96, 192, or 288)). The PLCP preamble and signal field are always sent at 6 Mbps while the rest can be sent at 6 ~ 54 Mbps. Based on the total number of bits in the longest frame and lowest bit-rate (6Mbps), you can easily calculate the duration of the frame. Using the above, 17Bytes+30Bytes+2312Bytes+4Bytes+6Bit+288Bit= 19,198bit if full frame is sent at 6Mbps (longest duration case), this would mean .019198Mb/6Mbps = .00319sec. So, 3.19 ms is the absolute longest TX frame duration possible

A.) How long is the carrier sense/collision avoidance mechanism active?:

When CA detects the channel is busy, it will choose a backoff interval in the range [0,cw], where cw is contention window, 31. It will count down the backoff interval when medium is idle, and the Count-down is suspended if medium becomes busy (and resumed after the channel is idle again). It will transmit the frame after backoff interval reaches 0 and the channel is free. If collision, then double the cw up to a maximum of 1024.

So, CA keeps detecting the channel status no matter it's in count-down phase or transmission phase. The time to wait for a transmission can be mutiple backoff windows, and the longest backoff window is 1024 time slots.

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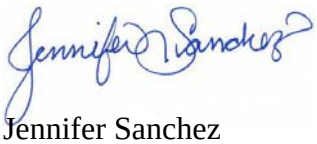
2. The first sentence of the standard raises a question :
"*The basic medium access protocol is a DCF that allows for automatic medium sharing between compatible PHYs through th e use of CSMA/CA and a random backoff time following a busy medium condition."* **Please explain what happens if there is a system with non-compatible PHY? How does the system do sharing? Also, it is not clear from the specification if the devices have enhanced threshold detection or frame size limits.**

The 802.11 standard calls for automatic medium sharing between compatible PHY's, but XR3 (based on Atheros AR5414 Chipset) employs a carrier sense mechanism through use of an energy detector that will conclude a busy medium condition if energy (from compatible PHY or non-compatible PHY) is present 15dB above noise floor (typically -80dBm or higher signal level).

If you need any additional information, please let me know.

Thanks!



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