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Applicant: Airspan Communications Ltd
FCC ID: O2J-365T
Form 731 Confirmation Number: EA686827

Dear Steven,

Thank you for your email dated 16th November 2007 (ref. 34293). I am pleased to provide the answers to your questions as follows:

1. Submit an explanation of the methodology used for contention (90.203(O)(1)):

Applications for all transmitters must describe the methodology used to meet the requirement that each transmitter employ a contention based protocol (see §§ 90.7, 90.1305 and 90.1321); For either restricted or unrestricted contention declarations, please submit the following for devices using the same protocol and for devices using different protocols. Two descriptions are required:

i. The method used and events that must occur when two or more transmitters attempt to simultaneously access the same channel before and during a communication session.

As described in [1], The HiperMAX employs a “listen before transmit” function as an addition to the standard WiMAX protocol. This is the basis of the “Detect and Protect” mechanism referred to in FCC07-99. The purpose of this is to detect co-channel transmissions and prevent frame transmissions that would otherwise interfere with the detected transmission. In the Airspan implementation, the “listen before transmit” function is executed at the start of every air-frame, which is typically configured to be 5ms or 10ms, and transmission is suspended up to the start of the next frame.

Note that as WiMAX uses a scheduled air-interface protocol, all Subscriber Stations require MAP information from the Base Station in order to schedule uplink transmissions. In the case the Base

Station ceases transmission, the Subscriber Station will receive no MAP information, and therefore will not transmit any signals.

In the case a different system is present, e.g. WiFi, or another unsynchronised WiMAX based system, the “listen before transmit” function will be active, and will, from time to time, result in cessation of transmission. Likewise, the WiFi equipment also implements a “listen before transmit” function. Because the WiFi contention protocol implements random back-off, we expect that the two systems will co-exist “fairly”.

ii. The conditions (detection thresholds levels, bandwidth, timing sequences, etc) necessary to actively take steps and not to interfere with other.

The detection threshold is configurable through SNMP commands supported by the network element manager – programmable using the Netspan management software. The levels set are in dBm and represent the detected in-band power at the receiver antenna port. This is measured across the bandwidth of the operational channel, ie. 5MHz or 10MHz. Carrier sensing is always performed at the start of the WiMAX frame prior to the transmit zone. This will typically occur every 5ms or 10ms depending on the frame duration configured by the operator.

iii. Provide an appraisal of the opportunity for other devices to operate. At this time no specific test data is required

The carrier sensing function is executed at the start of every air-frame, which is typically configured to be 5ms or 10ms, and transmission is suspended up to the start of the next frame. This provides other systems to operate in the remainder of the frame.

2. Submit a description for compliance to an enabling signal (90.203(O)(2), 90.1333)

Method used by mobile transmitters to identify the base stations with which they are designed to communicate. Describe how the requirement to positively receive and decode an enabling signal is incorporated (see § 90.1333 of this part);

Not Applicable – the equipment being submitted will run software for delivering fixed wireless services. The submission does not include software required for Mobile services.

3. Indicate what standard the above contention protocol implementation is based on. E.g. WiMax, WiFi.

The base protocols are compliant with WiMAX standards (as defined by IEEE802.16-2004). The contention protocol is proprietary but carrier sensing thresholds are based on IEEE802.11j requirements.

References:

[1] Airspan Document: “Carrier Sense – Unrestricted Contention Based Protocol”

Yours Sincerely,

Charles Blackham
For & On Behalf of Airspan Communications