Contention based protocol

WIXS-177 (aka 4M-CPE3000-PRO-1D-3.6) is a high capacity, IP services oriented Broadband Wireless Access system.

WIXS-177 is digital modulated TDD system operating in the 3650MHz up to 3675MHz band. The system contains a base station unit and a subscriber unit.

Subscriber units are available as Outdoor CPE.

According to FCC rules, the current Gemtek product WIXS-177 for Alvarion is eligible to operate in the 3650-3675 MHz band in the United States as "restricted contention-based" product, only the lower 25 MHz in the spectrum is assigned for restricted contention-based protocols, like IEEE 802.16d or 802.16e.

The recent FCC publication of "Memorandum Opinion and Order" on June 7, 2007 released 50 MHz spectrum for broadband wireless access applications. The most eminent difference in FCC ruling for this band is that it is "licensed", while allowing both "unrestricted contention-based protocols" and "restricted contention-based protocols." Specifically, the "restricted contention-based protocols" can only operate in the lower 25 MHz band.

Below we address the requirements mentioned in KDB 552295.
Q1: Restricted Protocol Description
Although the restricted protocol does not have the extended requirement to recognize all other systems it is still mandatory to incorporate a contention based protocol that provides satisfactory sharing of spectrum with similar systems. Address the key requirements for operation using restricted contention based protocol opportunities for other transmitters to operate. Please note that this requires recognizing like systems (similar to yours) that permit operation on a co-channel. Provide any additional manuals and operational descriptions to allow the reviewer to understand the product and its operation.
A1: The WIXS-177 is a CPE that is based on the WiMAX 802.16e standard.
The WiMAX protocol is time division duplex were every unit that is associated with the base station gets a fair chance to transmit. The unit transmit time is defined by the base station. The unit can transmit only if it is associated with a base station operating in the authorized frequency. Either the unit does not transmit and remains in receive mode only. In addition the WiMAX protocol as a TDD scheduled protocol provides tools for an affective co-existence between different systems, These tools are operator based defined.

Q2. Describe the method to permit occupancy
Describe the action taken if two or more transmitters simultaneously access the same channel by the master and the client devices.
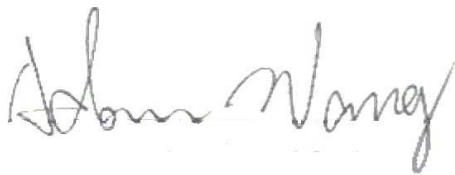Describe opportunities for other similar systems to operate

Address how or if a different system operator using the same technology can operate in the same band

A2: The WiMAX is an OFDMA system that work in different major groups (sub-channels) and different preamble index.

Part of the negotiation between the CPE and BS is defining the major groups and the preamble index of the system.

Different operators working in the same area will work in different major groups and define different preamble index to each system – This is common practice in WiMAX and is part of the system setup.

This technique will reduce the interference between the different operators enabling all operators to work in acceptable link quality and with full fairness.

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