



01/06/2010

Model: PICO-O-3.5-C-1W-DC

FCC ID: XYMPICO351WDC

Restricted Contention Protocol

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1.1.1. 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.

RESPONSE:

See 1.4 Below

1.1.2. 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.

RESPONSE:

In addition to the Ranging method stated below, there are 2 more techniques that allow the separation of transmissions/reception to/of different subscribers. The first is by transmitting data in different resources (either time resources, frequency resources or both). The second technique is to multiply each information stream (bit stream) by a different pseudo random binary sequence (PRBS). This way each receiver decodes its data by multiplying the received signal by the same PRBS, causing all other received signals to be seen as noise.

These techniques allow recognizing like-systems assuming they comply with the standard.

1.2. Describe the method to permit occupancy

RESPONSE:

In the UL, the subscribers transmit their request (to connect / request BW) on a **special contention area**, using the slotted ALOHA algorithm. Each subscriber decides to retransmit its request after decoding the DL information over a predefined interval and checking whether its request had been approved or lost/denied. The Base-Station scheduler allocates resources to identified subscribers that transmitted over this contention area. The allocation is done for both the UL and the DL.



1.3. Describe the action taken if two or more transmitters simultaneously access the same channel by the master and the client devices.

RESPONSE:

The above UL contention area uses a CDMA over OFDM method allowing more than one subscriber to access the channel in order to request resources. This can be done if each subscriber uses a different code. In the DL, each Base-Station uses a different Cell-ID (a number that identifies it from other nearby Base-Stations) that helps subscribers in the decoding process.

1.4. 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.

RESPONSE:

The above method described in 1.3 allows subscribers of different vendors to access the same channel and connect to the same Base-Station provided each one transmits a different code. Other than that, the BW/time separation also enables other like-systems to operate in the same band provided they use different frequency/time resources.

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