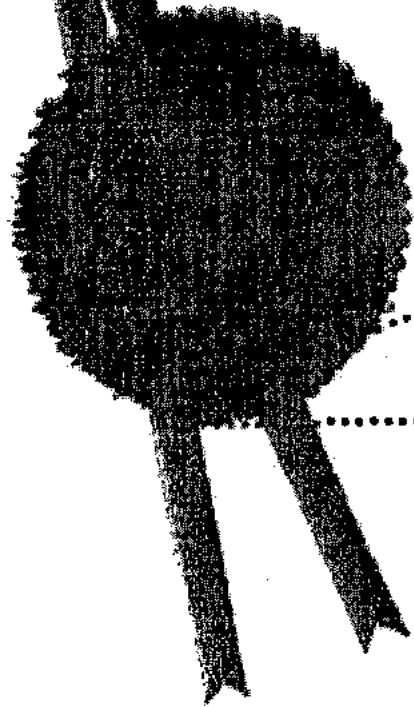


This Certificate is issued under the powers vested in me under Section 147 (1) of the Patents Act, 1970.



Dated this 25th day of November, 2010.

(PANKAJ BORIKAR)
ASSISTANT CONTROLLER OF PATENTS & DESIGNS

FENXC Wireless Inc., A corporation organized and existing under the laws of Canada,
of 11 Hines Road, Suite 200, Ottawa, Ontario K2K 2X1, Canada

The following specification particularly describes the invention and the manner in which it is
to be performed.

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subscribers that could be simultaneously served. To increase the number of subscribers, multiple access techniques have been introduced in the past.

The most common are: Frequency Division Multiple Access (FDMA), wherein only a small portion of the available spectrum is allocated to a subscriber; Time Division Multiple Access (TDMA), wherein a subscriber is not allowed to transmit continuously, but instead, the subscriber is only allowed to transmit during short non-overlapping periods of time called bursts; and Code Division Multiple Access (CDMA), wherein the total spectrum is allocated to all of the subscribers, who are differentiated by the use of allocated orthogonal codes.

Such and other multiple access techniques are combined in existing wireless systems to maximize the number of subscribers for a finite amount of resources (time, frequency, code, etc.).

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together, there is an increased risk of co-channel interference, which will decrease the link quality and commensurately, the number of subscribers.

A number of techniques for combating co-channel interference have been proposed and implemented. These are generally specific to a particular multiple access scheme.

For example, with CDMA, the signals of all of the subscribers within a cell are sent by a base station transmitter in the downlink direction at the same time, so that each specific subscriber may decode its signal and cancel out the intra-cell interference. In the uplink direction, a subscriber's signal is typically scrambled by a long code with good correlation properties, so that the contribution of other subscribers to an individual subscriber's signal will more likely behave as white noise rather than significantly degrade single user detection.

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small in order to maximize the number of subscribers, as more frequencies may be allocated within a frequency subset.

Given the recent increase in the number of Base Station System (BSS) features introduced for use by base transceiver stations such as, power control, discontinuous transmission, fractional frequency loading and frequency hopping, an optimal frequency re-use factor may be $K=3$, with 100% frequency loading.

In any event, to further improve spectrum efficiency of cellular systems, a sectorization concept has been introduced in which an omni-directional antenna, traditionally placed in the centre of a cell, has been replaced by a plurality of N directional antennas, each defining a symmetrical coverage area. Thus, for the same area, the number of cells, and consequently, the number of subscribers within the network, has been increased by a factor of N .

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