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(54) **WIRELESS ACCESS SYSTEM AND ASSOCIATED METHOD USING MULTIPLE MODULATION FORMATS IN TDD FRAMES ACCORDING TO SUBSCRIBER SERVICE TYPE**

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(60) Provisional application No. 60/262,712, filed on Jan. 19, 2001. Provisional application No. 60/262,825, filed on Jan. 19, 2001. Provisional application No. 60/262,698, filed on Jan. 19, 2001. Provisional application No. 60/262,827, filed on Jan. 19, 2001. Provisional application No. 60/262,826, filed on Jan. 19, 2001. Provisional application No. 60/262,951, filed on Jan. 19, 2001. Provisional application No. 60/262,824, filed on Jan. 19, 2001. Provisional application No. 60/263,101, filed on Jan. 19, 2001. Provisional application No. 60/263,097, filed on Jan. 19, 2001. Provisional ap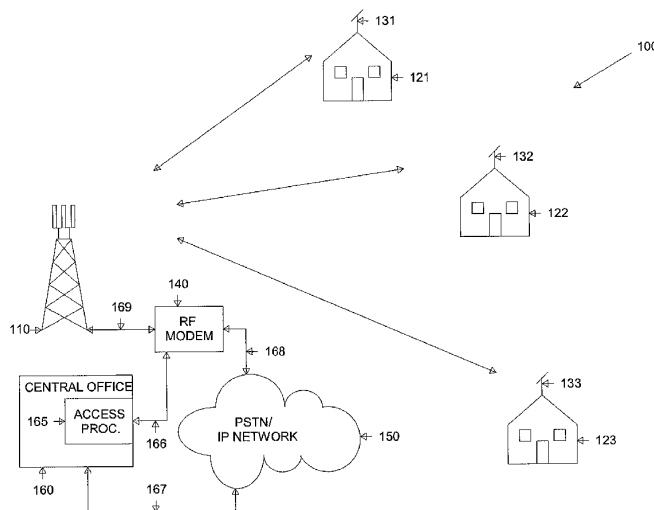plication No. 60/273,579, filed on Mar. 5, 2001. Provisional application No. 60/262,955, filed on Jan. 19, 2001. Provisional application No. 60/262,708, filed on Jan. 19, 2001. Provisional application No. 60/273,689, filed on Mar. 5, 2001. Provisional application No. 60/270,378, filed on Feb. 21, 2001. Provisional application No. 60/270,385, filed on Feb. 21, 2001. Provisional application No. 60/270,430, filed on Feb. 21, 2001.

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(57) **ABSTRACT**

There is disclosed a radio frequency (RF) modem shelf for use in a fixed wireless access network comprising a plurality of base stations capable of bidirectional time division duplex (TDD) communication with wireless access devices disposed at a plurality of subscriber premises. The radio frequency (RF) modem shelf comprises: 1) a first RF modem capable of communicating with a plurality of the wireless access devices using TDD frames, each TDD frame having an uplink for receiving data and a downlink for transmitting data; and 2) a modulation controller associated with the RF modem shelf capable of determining an optimum modulation configuration for each of the plurality of wireless access devices communicating with the first RF modem, wherein the modulation controller causes the first RF modem to transmit first downlink data to a first wireless access device in a first data block having a first optimum modulation configuration and to transmit second downlink data to the first wireless access device in a second data block having a different second optimum modulation configuration.
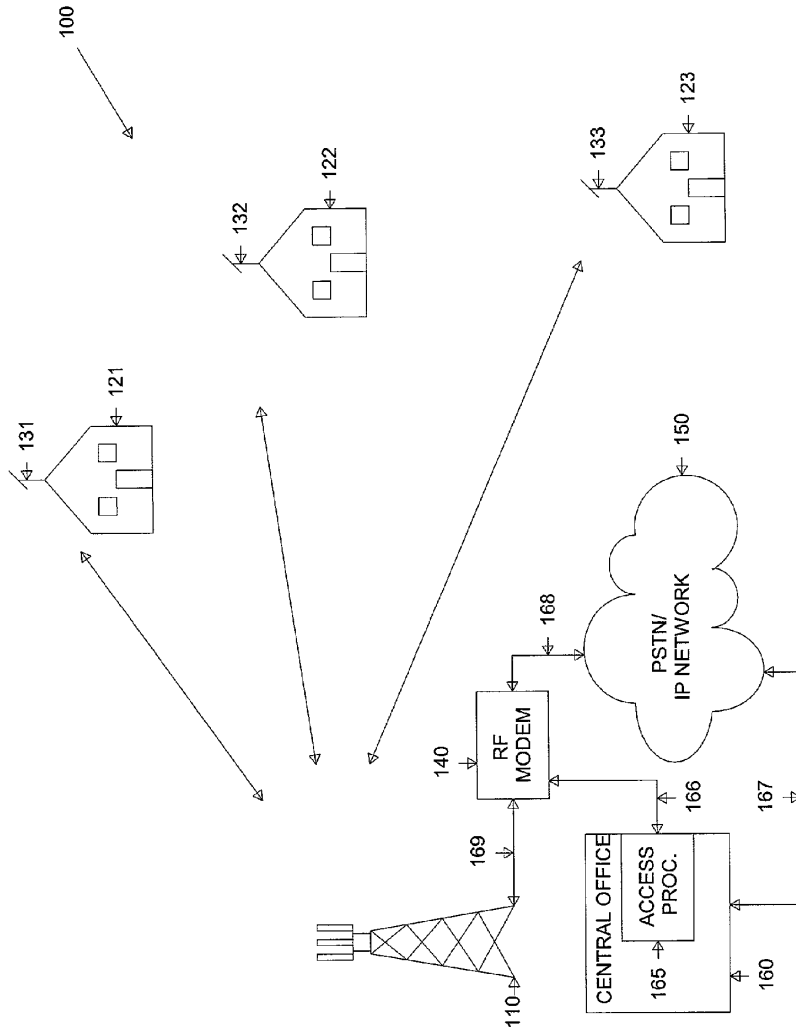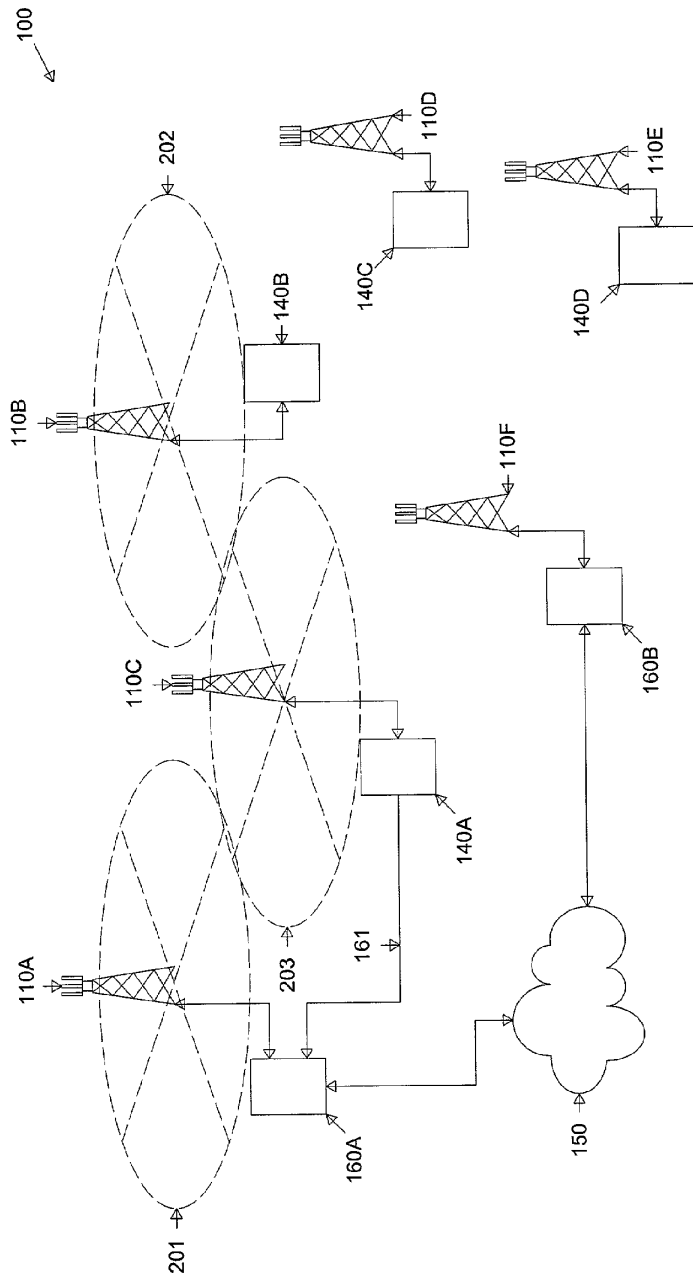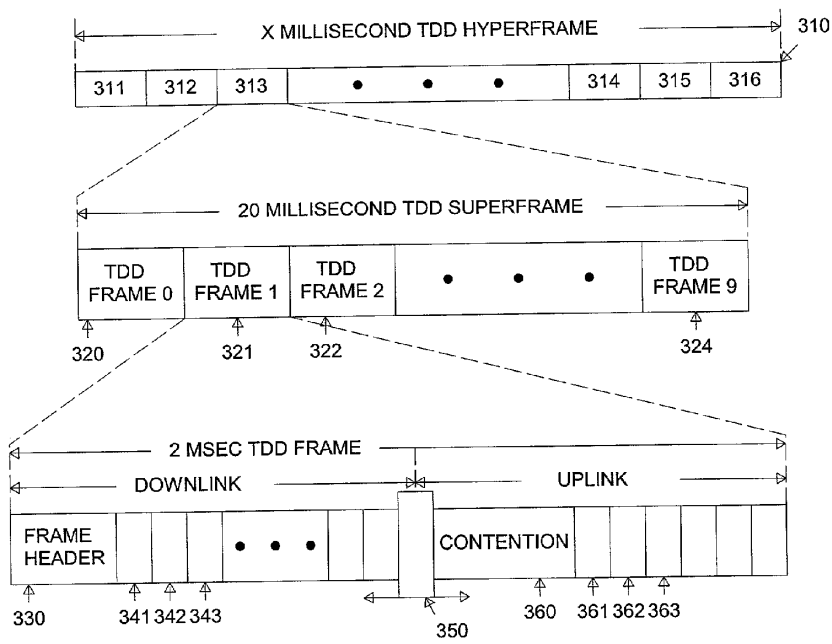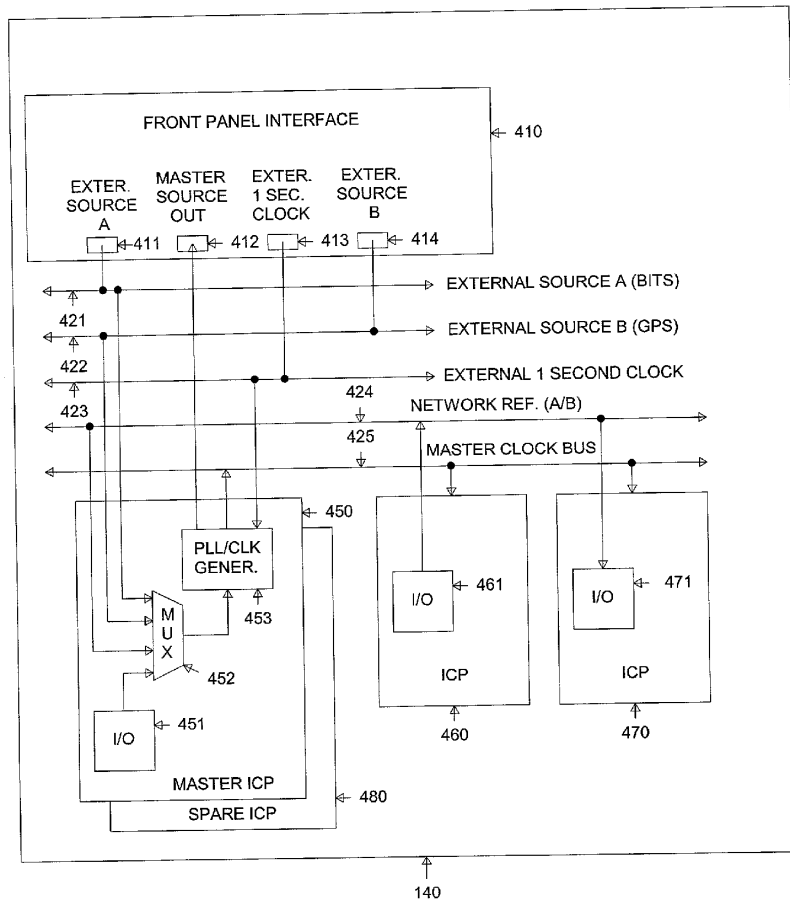
FIGURE 1

FIGURE 2

FIGURE 3

FIGURE 4

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