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(54) ANTENNA RF TRANSMISSION SAFETY SYSTEM AND METHOD

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(57) **ABSTRACT**

An RF emission hazard zone of an RF transceiver is controlled to ensure that RF energy density limits for humans is not exceeded when a human body part enters the RF hazard zone near an antenna reflector and feedhorn. In a first aspect, a transmitter duty cycle is reduced to effectively reduce the average power transmitted from the antenna whenever a signal level of a received signal is reduced below a threshold value. The reduction in average transmitter power reduces the RF emission hazard zone near the antenna, and limits the exposure of any person who has intruded into the hazard zone. In a second aspect, the transmitter is disabled whenever a received signal is affected so that signal quality, bit-energy-to-noise ratio (E_b/N_o), synchronized state in a demodulator, lock condition in a FLL, or received signal strength are degraded, indicating that a human has intruded into the RF hazard zone.

ANTENNA RF HAZARD ZONE

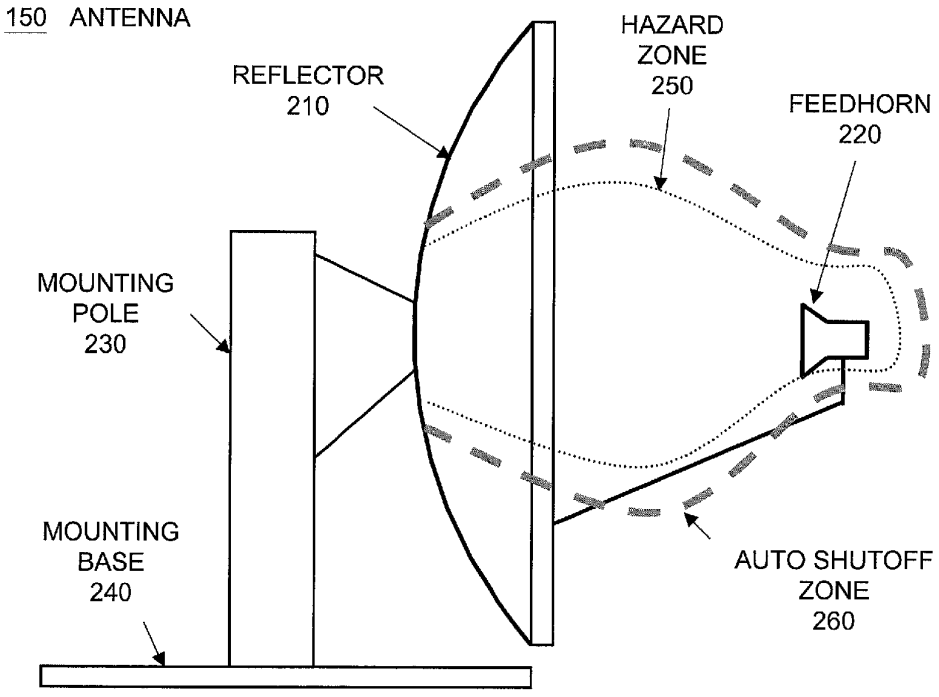


FIG. 1 - SATELLITE COMMUNICATION SYSTEM

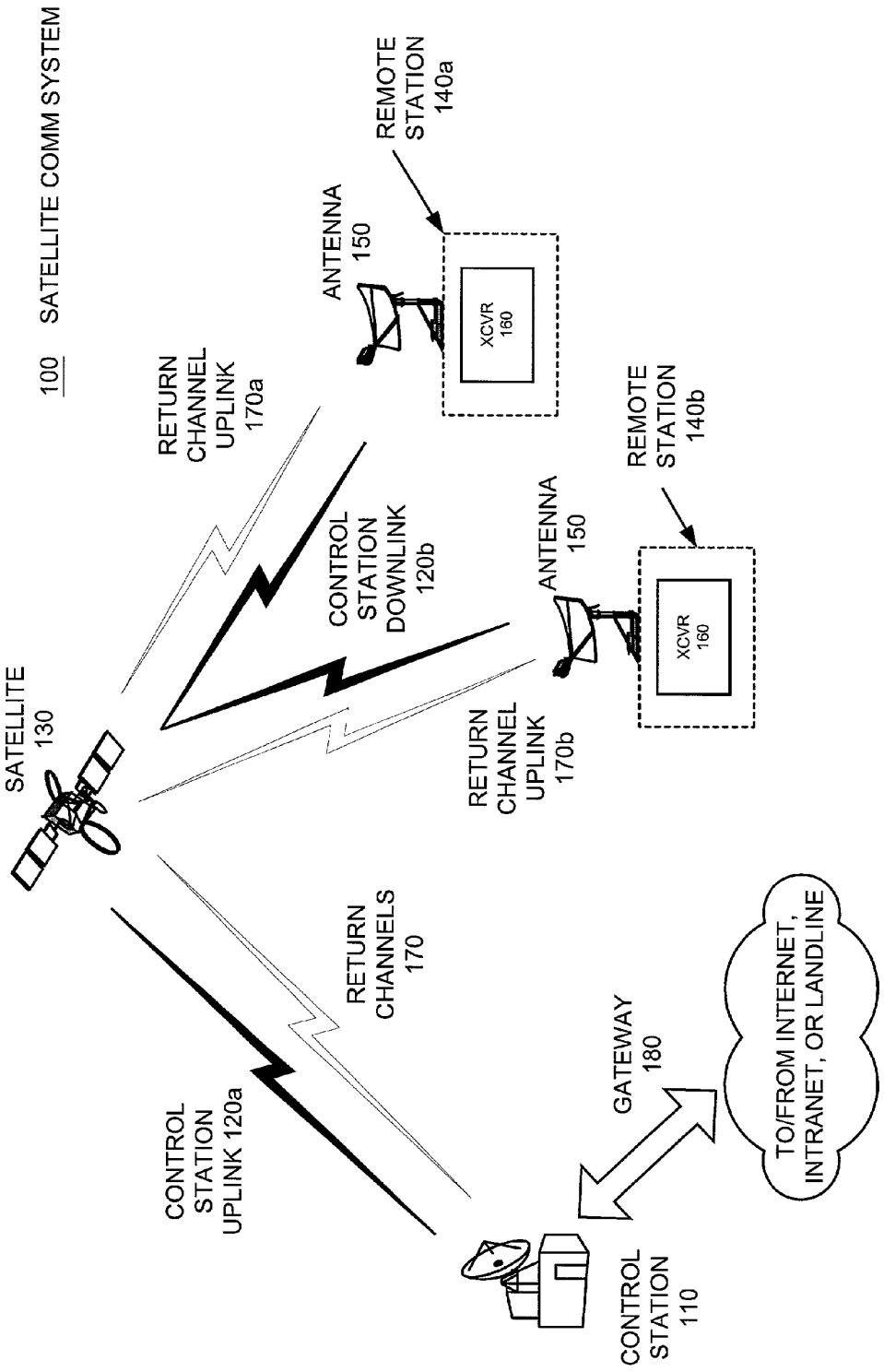


FIG. 2 - ANTENNA RF HAZARD ZONE

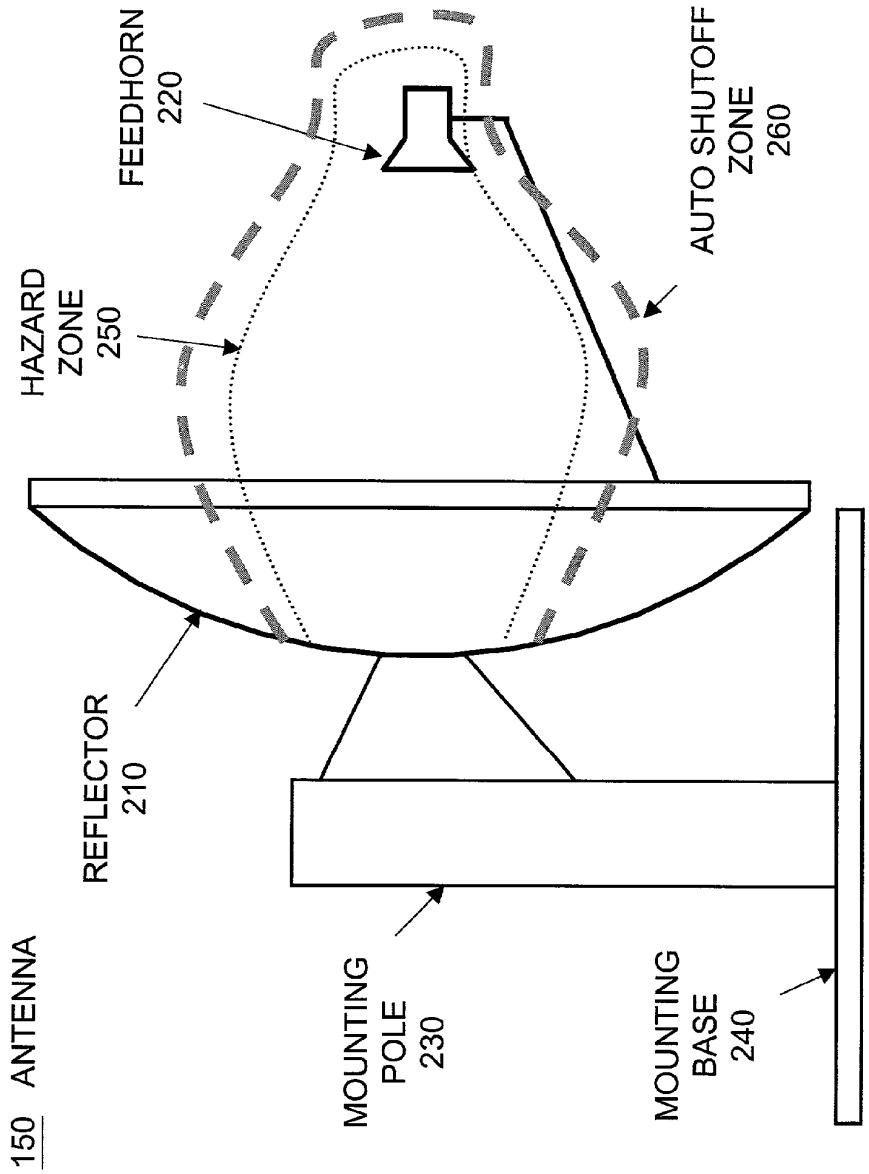


FIG. 3 - REMOTE STATION TRANSCEIVER

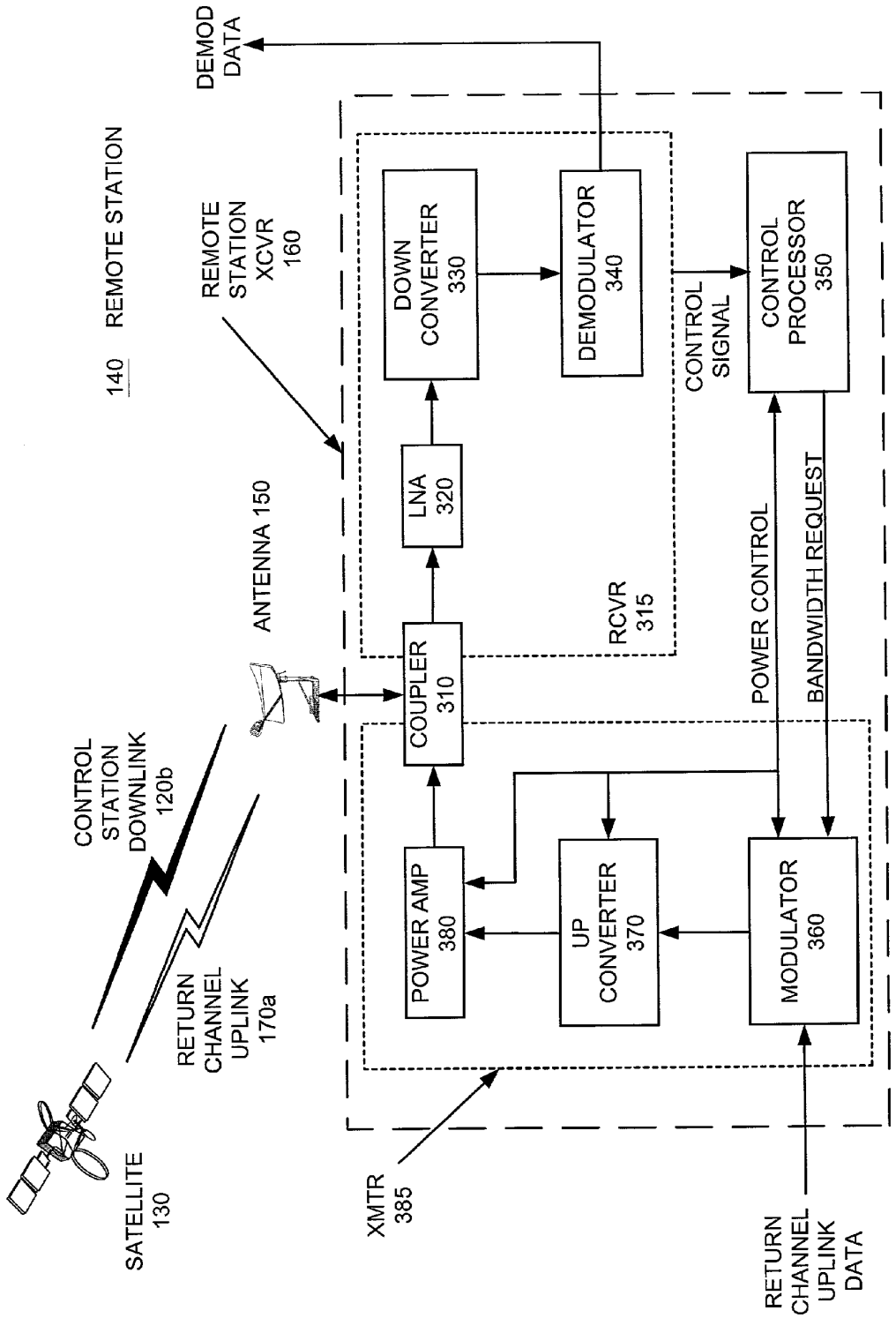


FIG. 4A - RECEIVER/CONTROL PROCESSOR INTERFACE

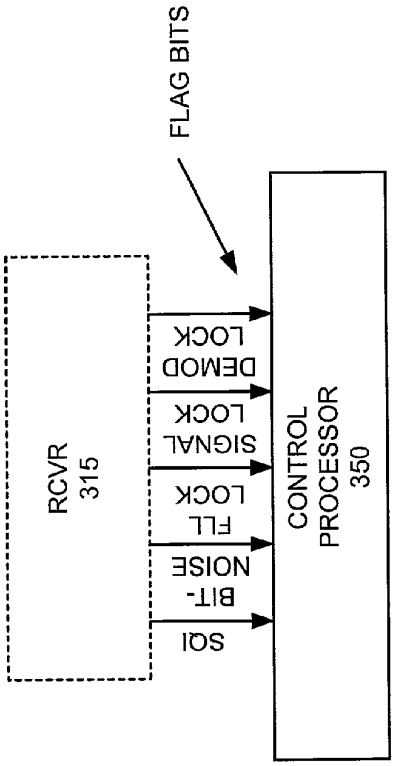
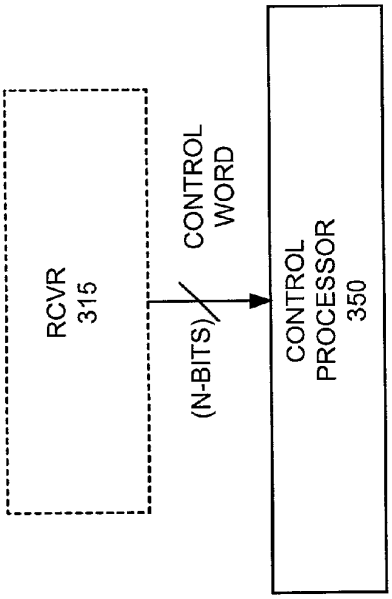


FIG. 4B - RECEIVER/CONTROL PROCESSOR INTERFACE



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