

Modulating Signal

The transmitter uses a 100% pulsed RF modulation technique. The data rate is less than 1000 bits per second. A certified 303.875 MHz superregenerative receiver of a similar design was measured to have a bandwidth of less than 1 MHz; hence, the necessary bandwidth requested is 1 MHz.

The message starts with a 12.3 millisecond preamble followed by 48 bits of information. Each bit is 4430 microseconds long. A logic one bit is encoded as a 1350 microsecond pulse of RF followed by a 2980 microsecond pause. A logic zero is encoded as a 460 microsecond pulse of RF followed by a 3870 microsecond pause.

The preamble starts with a 6 millisecond pulse of RF followed by a 2100 microsecond pause. The preamble continues with a 2100 microsecond pulse of RF followed by a second pause of 2100 microseconds.

The total message length is a little over 220 milliseconds. The RF carrier is on for a maximum of 77.1 milliseconds during this time.

Explanation of Proposed Operation

United Technologies Automotive seeks authorization for the testing necessary in connection with the development of a Remote Vehicle Entry System which would be operated under Part 15 of the Commission's rules. The System consists of a small hand-held radio frequency transmitter mounted on a key chain, that will enable the user to lock and unlock an automobile's doors and trunk from up to 30 feet away. The System sends a pulse width modulated radio frequency signal at a carrier frequency of 315 MHz.

Most of the testing of the transmitter will be done in Michigan and Florida, but some testing will also be performed in Ohio, Arizona, New York City and possibly other locations throughout the country. Accordingly, a nationwide authorization is desired.

In view of the low power level of the System and the short communications range, it is anticipated that no harmful interference will be caused to the primary users of the frequency requested.