

Question 7: Purpose of Experiment

3M Company, Inc. (3M) is developing an intersection control system that will be used to control traffic lights at road intersections. The equipment eventually will be certificated under Part 15 of the Commission's Rules. Meanwhile, 3M requests an Experimental Radio Service authorization in connection with the development and testing of the equipment.

**System Description:**

A controlled intersection has a transceiver connected to the intersection signaling control. When not controlling the intersection, the transceiver will transmit a 3 mSec signal once per second. When in communication with a vehicle, the intersection transceiver will transmit a 3 mSec signal three times per second.

**Test Description:**

Testing will consist of range testing of the system. System performance will be tested under non-LOS conditions such as showing by large vehicles, shadowing by buildings and signal attenuation due to foliage. Testing will also include multi-vehicle scenarios. Applicant requests authorization for temporary base/mobile operations to allow testing of the equipment under various terrain conditions.

**General RF Description:**

Transmit Bandwidth: 800 kHz  
RF Power output: 29 dBm  
EIRP: 31.2 dBm (dipole antenna)  
Operating Frequency Range: 2.4-2.483 GHz  
Channel Spacing: 1.024 MHz  
Duty Cycle: 0.3 to 1%

Intersection Mounting: 2-6 meters on free standing temporary mount  
Vehicle Mounting: 1-3 meters on roof of vehicle