

Two-Way Radio Communication Enhancement System Radio Frequency Requirements

The City of Lakeland Fire Department utilizes in-vehicle repeaters. Two-way radio communication enhancement systems will only be required in facilities where the in-vehicle repeaters do not provide sufficient coverage. Fire Department personnel will perform initial radio testing and will advise when a third-party is needed to conduct a radio signal survey. A third-party survey will only be required when the in-vehicle repeaters do not provide sufficient coverage.

The City of Lakeland Public Safety Communications operate a Motorola three-site, simulcast 800 MHz Phase II TDMA/FDMA Trunked Radio System. The three tower sites provide city-wide and Lakeland Electric service area coverage. The radio system has 11 trunked channels transmitting between 854.000 MHz – 860.000 MHz and receiving between 809.000 MHz – 815.000 MHz.

The Motorola radio system uses a digital control channel that typically will be assigned to Channel 1. The system may periodically rotate the control channels between Channels 1, 2, 3, or 4.

When a radio signal coverage test is conducted, the active control channel will need to be the test frequency used to determine the signal levels. The control channel continuously transmits data 24 hours a day, seven days a week.

If a radio communications enhancement system is required to achieve the minimum signal levels, the design and equipment will need to cover the full range of 806.000 – 860.000 MHz as we also operate on national mutual aid channels.

P25 trunked radio system control channel frequencies are as follows:

Channel 1: TX 859.7625/RX 814.7625
 Channel 2: TX 856.4125/RX 811.4125
 Channel 3: TX 858.7625/RX 813.7625
 Channel 4: TX 858.4125/RX 813.4125

City of Lakeland Operational Frequency: 800 MHz Public Safety and 45 MHz Offset – Local
 700 MHz for Federal Mutual Aid

The City of Lakeland has established -110 dBm with a DAQ of 3.4 as the minimum radio signal strength for fire department communications, as allowed in the Florida Fire Prevention Code. Elevator hoistways and shafts are considered critical areas for the purposes of assuring proper in-building radio communications.

System must be installed per the current Florida Fire Prevention Code and associated NFPA Standards. Any exterior antenna must be an omni type. A Two-Way Radio Communication System permit is required prior to installation.

| Lakeland Tower Location | Latitude | Longitude |
|--|--------------|---------------|
| 1109 E. Parker Street Lakeland, FL Polk County | 28-02-56.0 N | 081-56-30.0 W |
| 2221 East 540 A Lakeland, FL Polk County | 27-57-07.5 N | 081-55-19.4 W |
| 450 Old Polk City Road Lakeland, FL Polk County | 28-07-43.5 N | 081-56-36.1 W |

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