Warning Antenna Installation Instructions: FCC RF Exposure Limits

The WJ SX1126A and SX1127 transverters, used in conjunction with their respective antennas are to be employed in point-to-multipoint applications only. The antenna used for the SX1127 shall be professionally installed on a permanent structure for outdoor operations. The installer is responsible for ensuring that the systems using high-gain, directional antennas are used exclusively for fixed, point-to-multipoint operations.

The installer shall mount all transmit antennas so as to comply with the limits for human exposure to radio frequency (RF) fields per paragraph 1.1307 of the Federal Communications Commission (FCC) Regulations. The FCC requirements incorporate limits for Maximum Permissible Exposure (MPE) in terms of electric field strength, magnetic field strength, and power density.

The WJ SX1126A and SX1127 transverters are intended to be installed in customer premises areas. Table 3 below specifies the **minimum** distance that must be maintained, under all conditions of operation, between the antenna and any areas where persons may have access, including rooftop walkways, sidewalks, as well as through windows and other RF-transparent areas behind which persons may be located.

Table 3. Antenna Radiation Hazard

Max. Power output, dBm	Antenna gain, dBi	MPE Distance, cm
SX1126:		
19.0	22.5	33.5
14.0	22.5	18.9
14.0	28.0	35.5
14.0	31.0	50.2
13.8	34.0	69.2
SX1127:		
13.3	16	8.2
15.0	8.0	4.0

Table 3a. Maximum transceiver output power as a function of signal bandwidth and antenna gain.

Antenna	Antenna Gain (dBi)	Po (dBm) 1.5 MHz channel	Po (dBm) 3.0 MHz channel	Po (dBm) 6.0 MHz channel
Integrated	22.5	14.0	14.0	14.0
2' Dish	28.0	13.8	14.0	14.0
3 ' Dish	31.0	10.8	13.8	14.0
4’ Dish	34.0	7.8	10.8	13.8

Regardless of calculated MPE, a minimum distance of 1.5m shall be maintained between the antenna and all persons. Antenna manufacturer-supplied installation instructions for specific models generally contain information regarding antenna mounting, aiming, lightning protection, and other relevant factors. In addition to meeting these requirements, the antenna system installer is responsible for installing antennas so that they comply with FCC RF exposure requirements. The FCC RF exposure requirements at a given location are based on the sum total of contributions from all radio sources. For WJ system antennas placed in close proximity to other transmitters (e.g., on a shared rooftop or tower installation), installers shall take steps to insure that MPE guidelines in 1.1307 of the Rules continue to be met with the inclusion of the contribution from the new antenna. Further information and guidance can be found in FCC Bulletin OET 65, available for download at http://www.fcc.gov/oet/rfsafety/.