Microwave Antenna Radiation Warning

Designed for point-to-point operation,an N2-4XE1 microwave radio system will use directional antennas to transmit and receive microwave signals.These directional antennas are usually circular or rectangular n shape,are generally located outdoors,and are usually mounted on a tower or mast.

Referencing OET Bulletin 65 (Edition 97-01,August 1997)from the Federal Communication Commission ’s Office of Engineering &Technology,limits for maximum permissible exposure (MPE)to microwave signals have been adopted by the FCC for both Occupational/Controlled environments and General Population/Uncontrolled environments. These limits are 5.0 mW/ cm2 and 1.0 mW/cm2 respectively.

The closer you are to the front center-point of a microwave antenna,the greater the power density of its transmitted microwave signal.Unless you are very close,however,microwave exposure levels will fall far below the MPE limits.To determine how close to a microwave antenna you can be and still remain below the MPE limits noted above,“worst case ”predictions of the field strength and power density levels in the vicinity of an N2-4XE1 ™ microwave antenna
can be made from the following calculations.The equation is generally accurate in the far-field of an antenna,and will over-predict power density n the near-field (i.e.close to the antenna).

$S = PG/4\pi R2$
where:

S =power density (in mW/cm2)
P =power input to the antenna (mW)
G =power gain of the antenna in the direction of nterest relative to an isotropic radiator
R =distance to the center of radiation of the antenna (cm)

Note that G,the power gain factor,is usually expressed in logarithmic terms (i.e.,dB),and must be converted using the following equation:

$G = 10^{dB/10}$

In order to satisfy FCC RF ezposure requirements, the antennas used with this product must be installed in such a way as to insure a minum separation distance between the antennas and all persons of the amounts shown in the table below:

RF Exposure Safety Information

Max RF Power	TX Antenna	**Uncontrolled Environment**	Controlled MPE 1 mW/cm2
P, dBm	G, dBi	**MPE 1 mW/cm2**	MPE 5 mW/cm2

P, dBm	G, dBi	**Safe Distance, cm**	Safe Distance, cm
12.0	18.0	**20***	20*
12.0	23.0	**20***	20*
12.0	26.0	**22.4**	20*
12.0	28.5	**29.9**	20*

* For fixed and mobile antenna installations, FCC requires a minimum separation distance of 20 cm, regardless of whether calculations would indicate a lesser distance.

Wireless,Inc.fully supports the FCC ’s adopted MPE limits,and recommends that personnel maintain appropriate distances from the front of all directional microwave antennas.Should you have questions about N2-4XE1 ™ microwave signal radiation,please contact the Wireless,Inc. Customer Service Department.