RF Exposure Measured (Part 25), Calculated Part 15

Maximum Permissible Exposure at 100 cm

1. Declaration of RF exposure compliance

Transmitter(s) Installed	Security and surveillance radar operating from 24.45 – 24.65 GHz
Model number:	700-0005-203_SSRB
Manufacturer:	Echodyne Corporation
Judgement of Compliance	Compliant
Compliance Distance	100 cm
Radiated Transmitter Power (EIRP) Conducted Transmitter Power (dBm)	46.20 dBm (EIRP, worst case, measured)
4.3.1. Maximum Permissible Exposure considerations are:	During normal operation, user and user extremities must be at least 100 cm removed from any transmitting antenna. Standalone operation on one of 3 possible channels (24.49 GHz, 24.55 GHz, 24.61 GHz)
Verdict	Compliant with 100 cm zone

2. Attestation

ATTESTATION: I attest that the calculations were performed or supervised by me; that the calculations were based on the worst-case power output at the worst-case frequency of the transmitting device. All possible configurations have been considered when calculating the worst case Maximum Permissible Exposure requirements as detailed below.

Signature:	
Date:	August 31, 2020
Name:	James Cunningham, EMC/MIL/WL Supervisor

Both the MPE limits listed in Table 1 of paragraph (e) of this section and the SAR limits as set forth in paragraph (a) through (c) of this section and in §2.1093 of this chapter are for continuous exposure, that is, for indefinite time periods. Exposure levels higher than the limits are permitted for shorter exposure times, as long as the average exposure over the specified averaging time in Table 1 is less than the limits. Detailed information on our policies regarding procedures for evaluating compliance with all of these exposure limits can be found in the FCC's *OET Bulletin 65,* "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields," and in supplements to *Bulletin 65,* all available at the FCC's Internet Web site: *http://www.fcc.gov/oet/rfsafety.*

Table 1 below sets forth limits for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	$*900/f^2$	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	$*180/f^2$	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

Measured and Calculated Result

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Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density
P = power input to the antenna
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna

Maximum peak output power at device output terminal:	46.20	dBm
Cable and Jumper loss:	0.0	dB
Maximum peak output power at antenna input terminal:	46.20	dBm
	41686.93835	mW
Single Antenna gain (typical):	0	dBi
Number of Antennae:	1	
Total Antenna gain (typical):	0	dBi
	1	(numeric)
Prediction distance:	100	cm
Prediction frequency:	24610	MHz
MPE limit for uncontrolled exposure at prediction frequency:	1	mW/cm^2

Power density at prediction frequency:	**0.331734**	**mW/cm^2**
	3.317341	W/m^2
Tx On time:	1.000000	ms
Tx period time:	1.000000	ms
Average Factor:	100.000000	%
Average Power density at prediction frequency:	3.317341	W/m^2