



RF Exposure Evaluation

Report Prepared for: Exegin Technologies Limited
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Port Coquitlam BC,
V3C 6N2
Canada

Equipment Under Test (EUT): Model: Q51, Q52, Q53R6, Q70, Q71


FCC ID: VD4Q53R6

IC Certification number: 7162A-Q53R6

FCC Rule Part(s): Part 15B, 15C

Industry Canada Rule Part(s) RSS-210

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FCC OATS registration number: 386117

Industry Canada OATS registration number: 9578B-1

1.1 RF EXPOSURE EVALUATION

FCC 1.1310 states the criteria listed in the table below shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in Section 1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of Section 2.1093. Further information on evaluating compliance with these limits can be found in the FCC's OST/OET Bulletin Number 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation".

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (s)
(A) Limits for Occupational/Control Exposures				
300-1500	-	-	F/300	6
1500-100,000	-	-	5	6
(B) Limits for General Population/Uncontrolled Exposures				
300-1500	-	-	F/1500	6
1500-100,000	-	-	1	30

TABLE 1 - POWER DENSITY LIMITS

1.2 EUT OPERATING CONDITION

Nominal antenna gain (2.4 GHz Transmitter) = 2 dBi (1/4 wavelength dipole)

Nominal antenna gain (2.4 GHz Transmitter) = 3 dBi (Pheonix Contact RAD-ISM-2400-ANT-VAN- 3-0-SMA)

Nominal antenna gain (915 MHz Transmitter) = 2 dBi (1/2 wavelength dipole)

1.3 RF EXPOSURE EVALUATION DISTANCE CALCULATION (2.4 GHz TRANSMITTER (I))

Frequency (MHz)	Conducted Output Power (dBm)	Max Antenna Gain (dBi)	Max EIRP (W)	Power Density Limit (mW/cm ²)	R (cm)
2.405	2.4	2	0.003	1	0.49
2.440	2.3	2	0.003	1	0.49
2.480	1.1	2	0.002	1	0.40

TABLE 2 - DISTANCE CALCULATIONS

1.4 RF EXPOSURE EVALUATION DISTANCE CALCULATION (2.4 GHz TRANSMITTER (II))

Frequency (MHz)	Conducted Output Power (dBm)	Max Antenna Gain (dBi)	Max EIRP (W)	Power Density Limit (mW/cm ²)	R (cm)
2.405	2.4	3	0.003	1	0.49
2.440	2.3	3	0.003	1	0.49
2.480	1.1	3	0.003	1	0.49

TABLE 3 - DISTANCE CALCULATIONS

1.5 RF EXPOSURE EVALUATION DISTANCE CALCULATION (915 MHz TRANSMITTER)

Frequency (MHz)	Conducted Output Power (dBm)	Max Antenna Gain (dBi)	Max EIRP (W)	Power Density Limit (mW/cm ²)	R (cm)
906	9.6	2	0.015	0.6	1.4
914	9.6	2	0.015	0.6	1.4
924	9.6	2	0.015	0.6	1.4

TABLE 4 - DISTANCE CALCULATIONS

where: S = Allowable Power density Limit (mW/cm²)
EIRP = Equivalent (or effective) isotropically radiated power (mW)
R = Distance to the center of radiation of the antenna (cm)

$$R = \sqrt{\frac{EIRP}{4 \cdot \pi \cdot S}}$$

As shown above, the minimum distance where the MPE limit is reached is 1.4 cm from the EUT.