

RF EXPOSURE EVALUATION

EUT Specification

EUT	Vest Robot Terminal, Vest Door Robot
Model Number	VRTA1H
Series Model	VDRA1H
Product Discrepancy	VRTA1H and VDRA1H have identical hardware, with inconsistent firmware.
FCC ID	2BBEG-VRTA1H
Antenna Type	External Antenna
Antenna gain (Max)	Ant. 1: 1.72dBi; Ant. 2: 1.72dBi
Operation Frequency	915MHz
Modulation	GFSK
Rating	DC 24V
Max. output power	Ant. 1: 91.73 dBμV/m(-3.57dBm); Ant. 2: 91.72 dBμV/m(-3.58dBm)

Test Requirement:

According to §15.247(i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:

$$\left[\frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \right] \cdot \left[\sqrt{f_{(\text{GHz})}} \right] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR,}^{24} \text{ where}$$

- $f_{(\text{GHz})}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation²⁵
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum *test separation distance* is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum *test separation distance* is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

Routine SAR evaluation refers to that specifically required by §2.1093, using measurements or computer simulation. When routine SAR evaluation is not required, portable transmitters with output power greater than the applicable low threshold require SAR evaluation to qualify for TCB approval.

One antenna is available for the EUT. The minimum separation distance is 5mm.

11.2 Measurement Result

Antenna gain 1: 1.72dBi, Antenna gain 2: 1.72dBi

Mode	Ant.	Channel Freq. (MHz)	Measured power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Calculation Result	1-g SAR
GFSK	1	915	-3.57	-4 ± 1	-3	0.095882	3
GFSK	2	915	-3.58	-4 ± 1	-3	0.095882	3

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