

MPE CALCULATION

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EUT DESCRIPTION RADIO EQUIPMENT FOR INVERTER CHECK

EUT TRADEMARK Power-One

EUT MODEL PVI-DESKTOP-BT-US

DERIVED MODEL PVI-DESKTOP-US

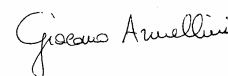
REFERENCE STANDARDS : 47 CFR FCC part 15.247
47 CFR FCC part 1.1310
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TEST REPORT NUMBER MPETR_100137-1

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|| The calculation results reported in this document shall refer only to Test Report above indicated and relevant tested sample

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1. EUT TECHNICAL DATA

Brand name: POWER-ONE
Manufacturer: POWER-ONE ITALY SPA
Equipment : Radio Equipment for inverter check
Serial number : Not present
Basic Model PVI-DESKTOP-BT-US
Derived Model: PVI-DESKTOP-US
FCC ID : X6W-DESK
FCC class: 47 CFR FCC Part 15 Subpart C § 15.247
Radio type: Intentional radiators
Type Modulation: FHSS
Modulation : GFSK
Data Rate (Mbps) : 50 Kbps
Frequency range : 902 – 928 MHz
Channel number : 63
Channel Band Width (20dB) : 334 KHz
Channel space: 400KHz
Carrier Frequency: Channel No.1: 902,65 MHz Channel No.63: 927,45 MHz
Field Antenna : Antenna Type: wired integrated mod. 91531888100G
Gain: 0 dBi

2. ASSESSMENT METHOD

EM reference level: Power flux density calculation in the Far Field region

3. MEASUREMENTS AND CALCULATION RESULTS

3.1 Calculation Method

Far Field Power flux Calculation model.

This model is applicable in the far-field region and over-estimates in the radiating near-field region. The far-field calculations are accurate when the distance, r , from an antenna of length D to a point of investigation is greater than

$$r = \frac{2D^2}{\lambda}$$

The Power Flux is

$$S = \frac{PG}{4\pi r^2} \quad \text{or equivalent} \quad S = \frac{EIRP}{4\pi r^2}$$

where

P = input power of the antenna

G = antenna gain relative to an isotropic antenna

r = distance from the antenna to the point of investigation.

EIRP = Effective Isotropic Radiated Power

3.2 Limits

The FCC's MPE limits for field strength and power density are given in Table 1 (and in 47 CFR § 1.1310)

Table 1. LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
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
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
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
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

3.3 Calculation Results

Reference Test Report: FCCTR_100137-2 issued by Prima Ricerca&Sviluppo on 26/03/2010

Channel 0 (worst case)

	Conducted (Antenna Connector)		Radiated	
Power at the Antenna	n.a. (integrated antenna)		0.000336 W	
Antenna Gain in dB	0 dBi		n.a.	
Distance to the Area of Interest	0.656 feet 0.1999 metres		0.656 feet 0.1999 metres	
Frequency of Operation	902.65 MHz		902.65 MHz	
Are Ground reflections Calculated	Yes		n.a.	
Estimated RF Power Density	---		0.0001 mW/cm ²	
	Controlled Environment	Uncontrolled Environment	Controlled Environment	Uncontrolled Environment
Maximum Permissible Exposure (MPE)	---	---	3.0138 W/cm ²	0.6068 mW/cm ²
Distance to Compliance From Centre of Antenna	---	---	0.0531 feet 0.0162 m	0.0569 feet 0.0173 m
Does the Area of Interest Appear to be in Compliance	---	---	yes	yes

4. EUT PHOTOGRAPHIC DOCUMENTATION

PHOTO N° 1 – SYSTEM IDENTIFICATION

