



RF exposure Estimation

1. Introduction

PDV1800 is a Panoramic View Camera with WIFI, which contain WIFI function inside.

2. Limit and Guidelines on Exposure to Electromagnetic Fields

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

According to KDB 447498 D01, no SAR required if power is lower than the flowing threshold: 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:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})]$

$[\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- 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.

3. Calculation method

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$

Channel	Channel Frequency	Max Output Power (dBm)	Tolerance	Max Tune-UP Power (mW)	Calculation Value	Threshold Value	Result
11b							
Low	2412	8.89	± 1.06	7.74	2.40	3.0	Pass
Middle	2437	9.12	± 1.06	8.17	2.55	3.0	Pass
High	2462	9.52	± 1.06	8.95	2.81	3.0	Pass
11g							
Low	2412	6.59	± 1.06	4.56	1.42	3.0	Pass
Middle	2437	7.35	± 1.06	5.43	1.70	3.0	Pass
High	2462	7.54	± 1.06	5.68	1.78	3.0	Pass
11n (HT20)							
Low	2412	6.99	± 1.06	5.00	1.55	3.0	Pass
Middle	2437	7.47	± 1.06	5.58	1.72	3.0	Pass
High	2462	7.63	± 1.06	5.79	1.82	3.0	Pass

According to KDB447498 D01 v05, threshold at which no SAR required is ≤ 3.0 for 1-g SAR, separation distance is 5mm, and no simultaneous SAT measurement is required.

TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch

Reviewed by:

Prepared By:

Cookies Bu/EMC Project Manager
Date: 2016-03-02

Aaron Lai/EMC Project Engineer
Date: 2016-03-02