



dresden elektronik ingenieurtechnik gmbh • Enno-Heidebroek-Str. 12 • D-01237 Dresden

Federal Communications Commission  
Equipment Authorization Branch  
7435 Oakland Mills Rd  
Columbia MD 21046-1609

Dresden, 12 December 2011

### RF Exposure Calculation

**dresden elektronik ingenieurtechnik gmbh**  
**FCC ID: XVV-ARM725A02**  
**FCC Part 15 Certification**

Dear Sir or Madam,

End-users may not be provided with the module installation instructions. OEM integrators and end users must be provided with transmitter operating conditions for satisfying RF exposure compliance.

For portable applications OEM integrators need no SAR evaluation. The max source-based time-averaged output of 2.14 mW is below the low threshold of 24 mW for distance < 2.5 cm.

#### Section 15.203: Antenna requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.



The Following calculation is the reference data for distance < 2.5cm.

name		Value	log value	
maximum conducted power		2.14 mW	3.30 dBm	
maximum antenna gain		1.00	0.00 dBi	
cable loss			0.20 dB	
calculated radiated power		2.04 mW	3.10 dBm	
<b>duty cycle factor</b>				
frequency		2.4 GHz		
dwell time		100 ms		
time of occupancy / pulse-train time		100 ms		
duty cycle factor		100 %	0.00 dB	
<b>maximum source-based time-averaged power</b>				
conducted power		2.14 mW	3.30 dB	
calculated radiated power		2.04 mW	3.10 dB	
<b>Specific power</b>				
calculated with max source-based time-averaged power				
measured conducted power				
$S = \frac{P \cdot G}{4 \cdot \pi \cdot r^2} \left[ \frac{mW}{cm^2} \right]$				
r [cm]	20.00	2.50	1.50	0.41
S [mW/cm <sup>2</sup> ]	0.0004	0.0272	0.0756	1.0
limit general population [mW/cm <sup>2</sup> ]	1.0			
limit occupational population [mW/cm <sup>2</sup> ]	5.0			
calculated with max source-based time-averaged power				
measured radiated power				
$S = \frac{EIRP}{4 \cdot \pi \cdot r^2} \left[ \frac{mW}{cm^2} \right]$				
r [cm]	20.00	2.50	1.50	n.a.
S [mW/cm <sup>2</sup> ]	n.a.	n.a.	n.a.	1.0

Sincerely,



Signature

Name

Michael Fleischmann

Title

Test Engineer

Company

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