RF Exposure Calculation

Applicant: SOKKIA CO.,LTD.
FCC ID: S6MZ1

The antenna shown in this filing must not be co-located or operated in conjunction with any other antenna or transmitter. 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.

This kind of equipment is below 60/frequency[GHz] mW(TCB Exclusion List)so that SAR testing is excluded. The Following calculation is the reference data for 20cm distance.

integral Antenna requirement § 15.203).

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 following information provides the minimum separation distance for the highest gain antenna provided with the "Z1" as calculated from FCC OET Bulletin 65 Appendix A, Table (B) Limits for General Population / Uncontrolled Exposure. This calculation is based on the highest EIRP possible from the system, considering maximum power and antenna gain, and considering a 1.0mW/cm² uncontrolled exposure limit.

name			nature value		log value	
max conducted power			0,49 mW		-3,08 dBm	
max Antenna gain dBi			2,00		3,00 dBi	
calculated radiated power		EIRP	0,98 mW		-0,08 dBm	
radiated (EIRP) and conducted outputs to the threshold values, using source-based time-averaged power						
frequency			2400 MHz			
dwell time			46,41 ms			
Time of occupancy/puls-train time			100,00 ms			
duty cycle factor	10log(dwell time/100 ms)		46,41%		-3,33 dB	
max source-based time-averaged power						
source-based time-averaged power		conducted	0,23 mW		-6,41 dB	
calculated source-based time-averaged power		EIRP	0,46 mW		-3,41 dB	
$S = \frac{PG}{4\pi R^2}$		r in cm	20	2,5	1,5	**0,19**
	calculated	S in mW/cm²	**0,000**	**0,006**	**0,016**	1
	Limit general population	in mW/cm²	1,000			
	Limit occupational population	in mW/cm²	5,00	for f =	2400	MHz