



Shenzhen Huaxin Information Technology Service Co., Ltd

101, R & D Building, No.3 guansheng 4th Road, Luhua Community, Guanhu Street, Longhua District, Shenzhen, Guangdong, China

Tel: +86-755-21018313 Http: //www.tecovo.net

Maximum Permissible Exposure Evaluation

FCC ID: 2BFJO-S2-2-4G

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

EUT Specification

Product Name:	GPS Tracker
Trade Mark:	/
Model/Type reference:	S2-2-4G
Listed Model(s):	S2-1-4G, TW4
Model Different:	All these models are identical in the same PCB, layout and electrical circuit, The difference is model name.
Frequency band (Operating):	GSM 850: UL: 824MHz~849MHz, DL: 869MHz~894MHz PCS 1900: UL: 1850MHz~1910, DL: 1930MHz~1990MHz FDD Band 2: UL: 1850.7MHz~1909.3MHz, DL: 1930.7MHz~1989.3MHz FDD Band 4: UL: 1710.7MHz~1754.3MHz, DL: 2110.7MHz~2154.3MHz FDD Band 5: UL: 824.7MHz~848.3MHz, DL: 869.7MHz~893.3MHz FDD Band 7: UL: 2502.5MHz~2567.5MHz, DL: 2622.5MHz~2687.5MHz FDD Band 66: UL: 1710.7MHz~1779.3MHz, DL: 2110.7MHz~2179.3MHz
Device category:	☐ Portable (<5mm separation) ☐ Mobile (>20cm separation) ☒ Fixed (>20cm separation) ☐ Others ____
Exposure classification:	☐ Occupational/Controlled exposure (S=5mW/cm ²) ☒ General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna diversity:	☒ Single antenna ☐ Multiple antennas
Antenna gain:	GSM 850: -2.80dBi PCS 1900: -1.13dBi FDD Band 2: -1.13dBi FDD Band 4: 0.10dBi FDD Band 5: -2.80dBi FDD Band 7: -0.26dBi FDD Band 66: 0.10dBi
Evaluation applied:	☒ MPE Evaluation ☐ SAR Evaluation

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm ²)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6



1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	F/1500	30
1500-100000	--	--	1	30

F = frequency in MHz

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = Power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d the limit of MPE 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, We will know the distance where the MPE limit is reached.

Measurement Result

Band	Maximum conducted power (dBm)	Division Factors (dB)	Maximum conducted AVG power (dBm)
GSM 850	35.64	-9.03	26.61
DCS 1900	30.11	-9.03	21.08

Note:

Division Factors

To average the power, the division factor is as follows:

1Tx slot = 1 transmit time slot out of 8 time slots

=> conducted power divided by (8/1) => -9.03 dB

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)	Verdict
GSM 850	836.6	-2.80	26.61	27±1	28	0.06588	0.558	PASS
DCS 1900	1909.8	-1.13	21.08	21±1	22	0.02431	1.000	PASS
FDD Band 2	1880	-1.13	23.20	23±1	24	0.03853	1.000	PASS
FDD Band 4	1754.3	0.10	23.24	23±1	24	0.05114	1.000	PASS
FDD Band 5	826.5	-2.80	23.91	24±1	25	0.06588	0.551	PASS
FDD Band 7	2535	-0.26	22.12	22±1	23	0.03739	1.000	PASS
FDD Band 66	1712.5	-0.10	22.51	23±1	24	0.04884	1.000	PASS

Note:

For a more detailed features description, Please refer to the RF Test Report.

*****THE END*****