



January 28, 2010

MT2090 SAR RF Exposure Statement, FCC

MT2090 Handheld Scanner with FCC ID: H9P2090

1. Standard Applicable

According to FCC's 47 CFR Part 2.1091: OET Bulletin 65c, 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. A mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. The MT2090 meets the requirement to be classified as a Mobile device operating with Bluetooth and 802.11abg WLAN Transceivers; normal operation is greater than 20 cm. from the users body.

2. Measurement Result:

This is a Mobile device operating in the 2402-2480MHz band.

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 is the limit of MPE, 1 mW/cm². If we know the maximum Gain of the antenna and the total power input to the antenna, through the calculation, we will know the MPE value at distance 20cm.



Regulatory Engineering

For 2.4GHz

802.11b:

Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density (mW/cm ²)	Limit of Power Density (mW/cm ²)
1	2412	43.652	0.015	1.0
6	2437	43.652	0.015	1.0
11	2462	44.668	0.016	1.0

802.11g:

Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density (mW/cm ²)	Limit of Power Density (mW/cm ²)
1	2412	60.256	0.021	1.0
2	2417	85.114	0.030	1.0
6	2437	107.152	0.038	1.0
10	2457	77.625	0.027	1.0
11	2462	58.884	0.021	1.0



Regulatory Engineering

For 5GHz

Operated in 5150MHz ~ 5350MHz: (15.407)

Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density (mW/cm ²)	Limit of Power Density (mW/cm ²)
1	5180	15.524	0.0059	1.0
4	5240	27.040	0.0103	1.0
5	5260	34.834	0.0132	1.0
8	5320	16.520	0.0063	1.0

Operated in 5470MHz ~ 5725MHz: (15.407)

Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density (mW/cm ²)	Limit of Power Density (mW/cm ²)
9	5500	17.378	0.0066	1.0
14	5600	25.351	0.0096	1.0
19	5700	6.607	0.0025	1.0

Operated in 5725 ~ 5850MHz band: (15.247)

Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density (mW/cm ²)	Limit of Power Density (mW/cm ²)
1	5745	102.329	0.0388	1.0
3	5785	104.713	0.0397	1.0
5	5825	102.329	0.0388	1.0

Respectfully,

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