

RADIO FREQUENCY RADIATION EXPOSURE REPORT

Mobiles /Fixed Base Station Maximum Permissible Exposure (MPE)

OF

Product Name: Basic Function tracking system

Brand Name: PORTMAN

Model Name: GT3200XT, GT3010XT, GT3200XT-KP,
GT3200XT-100

Model Difference: Functional difference. Please refer to next
page for detail.

FCC ID: TBQGT-3200XT

Report No.: EH/2008/80029-01

Issue Date: Sep. 09, 2008

Prepared for: PORTMAN ELECTRONICS (SHENZHEN)
CO., LTD.
9th Building, Tong Fuyu Industrial Park,
Longhua, Baoan, Shenzhen 518109, China

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VERIFICATION OF COMPLIANCE

Applicant: PORTMAN ELECTRONICS(SHENZHEN)CO., LTD.
 9th Building, Tong Fuyu Industrial Park, Longhua, Baoan, Shenzhen
 518109, China

Product Name: Basic Function tracking system

FCC ID Number: TBQGT-3200XT

Brand Name: PORTMAN

Model No.: GT3200XT, GT3010XT, GT3200XT-KP, GT3200XT-100

Model Difference: Functional difference: GT3010XT can not optional handfree and MIC in accordance with GT3200XT. GT3200XT-KP can optional Infrared Keypad/hand free/MIC in accordance with GT3200XT. GT3200XT-100 can optional HS100/hand free/MIC in accordance with GT3200XT

Modular Report Number: 2-20722858c/07

File Number: EH/2008/80029-01

Date of test: Aug. 26, 2008 ~ Sep. 07, 2008

Date of EUT Received: Aug. 26, 2008

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd., Electronics & Communication Laboratory. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in FCC OET Bulletin 65 Supplement C and 47 CFR §2.1091.

The test results of this report relate only to the tested sample identified in this report.

Test By:		Date	Sep. 09, 2008
	_____ <i>Sky Wang/Asst. Supervisor</i>		_____
Prepared By:		Date	Sep. 09, 2008
	_____ <i>Elisa Chen/Asst. Supervisor</i>		_____
Approved By:		Date	Sep. 09, 2008
	_____ <i>Vincent Su/Manager</i>		_____

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Version

Version No.	Date	Description
00	Sep. 09, 2008	Initial creation of document

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1. GENERAL INFORMATION

Product Name:	Basic Function tracking system
Brand Name:	PORTMAN
Model Name:	GT3200XT, GT3010XT, GT3200XT-KP, GT3200XT-100
Model Difference:	Functional difference: GT3010XT can not optional handfree and MIC in accordance with GT3200XT. GT3200XT-KP can optional Infrared Keypad/hand free/MIC in accordance with GT3200XT. GT3200XT-100 can optional HS100/hand free/MIC in accordance with GT3200XT
Power Supply	12V from Car battery

GSM:

GSM Modular Report:	CETECOM Report Number: 2-20722858c/07 Model Number: MC55i		
Cellular Phone Standards Frequency Range and Power	GSM/GPRS 850, class 10	824 MHz– 849MHz	33 dBm
	GSM/GPRS 1900, class 10	1850MHz – 1910MHz	30 dBm
Type of Emission	GSM: 300KGXW		
IMEI	352024020314460		

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1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended to comply with Section Part 22, subpart H and part 15.247 of the FCC CFR 47 Rules. For 47 CFR 1.1310 Radio frequency Radiation Exposure requirement.

1.3 Special Accessories

Not available for this EUT intended for grant.

1.4 Equipment Modifications

Not available for this EUT intended for grant.

1.5 Limitation

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	F/1500	30
1500-15000	/	/	1.0	30

F = frequency in MHz

* = Plane-wave equipment power density

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1.6 Maximum Permissible Exposure (MPE) Evaluation

In this application we seek approval to the GT3200XT GSM/GPRS class10 tracking system. Based on the FCC OET Bulletin 65 Supplement C and 47 CFR §2.1091, we have concluded that the GT3200XT will comply with the FCC rules on RF exposure for mobile devices if the antenna gain does not exceed 2.00 dBi in cellular band and 2.00 dBi in PCS band. The following analysis will demonstrate such compliance. The analysis will be done in two US bands.

Operation in cellular band (824 – 849 MHz)

The peak conducted output power of GT3200XT in cellular band is 32.91 dBm at GSM/GPRS mode. Take the worst case as an example, in which an antenna with 2.00 dBi gain is used. The resulted power density at a distance of 20 cm can be deducted as follows:

$$\text{EIRP} = 32.91 + 2.00 = 34.91 \text{ dBm} = 3097.42 \text{ mW}$$

$$\begin{aligned} \text{Power Density} &= \text{EIRP} * \text{Duty Cycle} / (4 \pi R^2) \\ &= 3097.42 * 0.25 / (4 * \pi * 20^2) = 0.154 \text{ mW/cm}^2 \end{aligned}$$

where Duty Cycle is 0.25 for GPRS operation (class 10) and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

$$\text{MPE limit} = 824 / 1500 = 0.55 \text{ mW/cm}^2$$

As we can see the resulted power density is below the MPE limit, therefore GT3200XT in cellular band is compliant with the FCC rules on RF exposure.

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Operation in PCS band (1850 – 1910 MHz)

The peak conducted output power of GT3200XT in PCS band is 29.62 dBm. Take the worst case as an example, in which an antenna with 2.00 dBi gain is used. The resulted ERP can be expressed as follows:

$$\text{ERP} = 29.62 + 2.00 - 2.14 = 29.48 \text{ dBm} (0.8871 \text{ W}) < 3 \text{ W}$$

The FCC OET Bulletin 65 Supplement C states that mobile devices identified in 47 CFR §2.1091 that operate at frequencies above 1.5 GHz with an ERP of 3.0 watts or more are required to perform routine environmental evaluation for RF exposure prior to equipment authorization or use; otherwise, they are categorically excluded.

As we can see this resulted ERP is below 3 W, therefore routine environmental evaluation for RF exposure prior to equipment authorization or use for GT3200XT in PCS band is categorically excluded.

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APPENDIX 1

PHOTOGRAPHS OF EUT

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All of EUT



GPS Antenna



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Front View of EUT



Back View of EUT



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Side View of EUT – 1



Side View of EUT – 2



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Side View of EUT – 3

~ End of Report ~

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