

1.0 APPLICANT:

DATE: 10/10/2011

NAME OF APPLICANT: HONEYWELL INTERNATIONAL INC.

FCC ID: CFS8DLNXTXTOUCH1

2.0 FCC RULES CONCERNING MAXIMUM PERMISSIBLE RF EXPOSURE:

§ CFR 47.1.1310 Radiofrequency radiation exposure limits.

The criteria listed in table 1 shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in § 1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of § 2.1093 of this chapter. Further information on evaluating compliance with these limits can be found in the FCC's OST/OET Bulletin Number 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation."

NOTE TO INTRODUCTORY PARAGRAPH: These limits are generally based on recommended exposure guidelines published by the National Council on Radiation Protection and Measurements (NCRP) in "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," NCRP Report No. 86, Sections 17.4.1, 17.4.1.1, 17.4.2 and 17.4.3. Copyright NCRP, 1986, Bethesda, Maryland 20814. In the frequency range from 100 MHz to 1500 MHz, exposure limits for field strength and power density are also generally based on guidelines recommended by the American National Standards Institute (ANSI) in Section 4.1 of "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," ANSI/IEEE C95.1-1992, Copyright 1992 by the Institute of Electrical and Electronics Engineers.

3.0 MPE CALCULATIONS:

FCC GENERAL POPULATION / UNCONTROLLED EXPOSURE LIMITS: for 300 MHz to 1,500 MHz = $F / 1500 \text{ mW/cm}^2$; for 1,500 to 100,000 MHz use 1 mW/cm^2

EQUATIONS:

 $P=20 \times \log E - 95.2289$ THE FRIIS TRANSMISSION EQUATION $= S^2 \times 9 \times \text{EIRP} \times \text{DUTY CYCLE} / (4 \times \pi \times 20 \text{ CM}^2)$

NOTE: THE CELLULAR DUTY CYCLE USED WAS 25% THIS IS THE WORST CASE FROM THE PTCRB REPORT.

BAND:	CHANNEL:	FREQ:	uV/M @ 3M:	MAXIMUM EIRP (dbm):	MAXIMUM EIRP (mW):	FRIIS mW/CM ² :	EXP LIMIT mW/CM ² :	% OF LIMIT:	CO-MPE %:
N/A	N/A	344.94	45,133.60	-2.14	0.611	0.0000122	0.229960	0.0053	
BAND:	CHANNEL No:	FREQ(MHz):	TRP dbm:	MAXIMUM EIRP (dbm):	MAXIMUM EIRP (mW):	FRIIS mW/CM ² :	EXP LIMIT mW/CM ² :	% OF LIMIT:	
GSM 850	128	824.20	24.14	24.14	259.42	0.012902	0.549467	2.3482	2.3535
GSM 850	190	836.60	25.35	25.35	342.77	0.017048	0.557733	3.0566	3.0619
GSM 850	251	848.80	26.98	26.98	498.88	0.024812	0.556587	4.4580	4.4633
GSM 1900	512	1850.20	28.17	28.17	656.15	0.032634	1.000000	3.2634	3.2687
GSM 1900	661	1880.00	28.29	28.29	674.53	0.033548	1.000000	3.3548	3.3601
GSM 1900	810	1909.80	27.65	27.65	582.10	0.028951	1.000000	2.8951	2.9004

MAXIMUM CO-LOCATION MPE % OF LIMIT IS : 4.4633 %

4.0 RESULTS:

TEST RESULT: PASS

In the configuration tested the EUT complied with the standards specified above.

X _____ Kenneth Eskildsen, Engineering Manager DATE: _____

MPE CALCULATION EXPLANATION LETTER

GSM/GPRS is a TDMA technology.

Cinterion module MC55i is a GPRS Multislot Class 10 device. The statement of Air Interface Compliance from Cinterion and the Protocol Implementation Conformance Statement from the certifying lab, for MC55i are attached

From 3GPP TS 45.002, page 17, paragraph 4.3.1:

One TDMA time slot is 577 usec

One TDMA frame consists of 8 time slots with a frame duration of 4.62 msec.

From 3GPP TS 45.002, page 91, Annex B.1:

Multislot Class 10 supports a maximum of 2 MS (mobile station) transmit slots per TDMA frame.

Worst case transmit duty cycle (D), class 10, 2 transmit time slots (TS) per TDMA frame (TF):

$$\%D = (2(TS) / TF)100$$

$$\%D = (2(.577) / 4.62)100$$

$$\%D = 24.98\% \approx 25\%$$

Honeywell

John Brandstetter, Hardware Engineer
Security & Communications
2 Corporate Center Drive, Suite 100
PO Box 9040
Melville, NY 11747
voice: 516 577 5866
John.Brandstetter@[Honeywell.com](mailto:John.Brandstetter@Honeywell.com)