

TEST REPORT FROM RFI GLOBAL SERVICES LTD

Test of: GSM 5218

FCC ID: MIVGSM5218

IC Certification Number: 4160A-GSM5218

To: FCC Part 24.232 and RSS-133 Section 6.4

Test Report Serial No:
RFI-RPT-RP79187JD01B V2.0

Version 2.0 Supersedes All Previous Versions

**This Test Report Is Issued Under The Authority
Of Chris Guy, Head of Global Approvals:**



Checked By:	Richelieu Quoi
Signature:	
Date of Issue:	14 March 2011

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1. Customer Information

Company Name:	Enfora Inc
Address:	251 Renner Parkway Richardson Texas 75080 United States

2. Summary of Testing

2.1. General Information

Specification Reference:	47CFR24
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2010: Part 24 Subpart E (Personal Communication Services)
Specification Reference:	RSS-133 Issue 5 Feb 2009
Specification Title:	2 GHz Personal Communications Services
Specification Reference:	SRSP-510 Issue 5 Feb 2009
Specification Title:	Technical Requirements for Personal Communications Services (PCS) in the Bands 1850-1915 MHz and 1930-1995 MHz
Site Registration:	FCC: 209735; Industry Canada: 3245B-2
Location of Testing:	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.
Test Dates:	11 March 2011

2.2. Summary of Test Results

FCC Reference (47CFR)	IC Reference	Measurement	Result
Part 24.232	RSS-133 6.4 SRSP-510 5.1.2	Transmitter Output Power (EIRP)	✓
Key to Results			
✓ = Complied			✗ = Did not comply

Note 1: The measurement was performed to support SAR tests.

2.3. Methods and Procedures

Reference:	ANSI/TIA-603-C-2004
Title:	Land Mobile Communications Equipment, Measurements and performance Standards

2.4. Deviations from the Test Specification

For the measurements contained within this test report, there were no deviations from, additions to, or exclusions from the test specification identified above.

3. Equipment Under Test (EUT)

3.1. Identification of Equipment Under Test (EUT)

Brand Name:	Enfora
Model Name or Number:	GSM 5218
IMEI:	012586000000079
Hardware Version Number:	A
Software Version Number:	1.1.4
FCC ID:	MIVGSM5218
IC Certification Number:	4160A-GSM5218

3.2. Description of EUT

The equipment under test was a GSM/GPRS/GPS asset tracker

3.3. Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.4. Additional Information Related to Testing

Technology Tested:	PCS1900		
Type of Radio Device:	Transceiver		
Mode:	GSM/GPRS		
Modulation Type:	GMSK		
Channel Spacing:	200 kHz		
Power Supply Requirement(s):	Nominal	4.7 V	
Maximum Output Power (EIRP):	GSM	29.0 dBm	
	GPRS	29.0 dBm	
Transmit Frequency Range:	1850 to 1910 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	512	1850.2
	Middle	660	1879.8
	Top	810	1909.8

3.5. Support Equipment

The following support equipment was used to exercise the EUT during testing:

Description:	Laptop
Brand Name:	Dell
Model Name or Number:	D610
Serial Number:	PC353NT

4. Operation and Monitoring of the EUT during Testing

4.1. Operating Modes

The EUT was tested in the following operating mode(s):

- Constantly transmitting at full power on bottom, middle and top channels as required.
- EIRP were performed with the EUT in GSM single timeslot circuit switched and GPRS Multislot Class 8 with the unit transmitting on one timeslot in the uplink.

4.2. Configuration and Peripherals

The EUT was tested in the following configuration(s):

- Connected to a GSM/GPRS system simulator, operating in transceiver mode

5. Measurements, Examinations and Derived Results

5.1. General Comments

Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to *Section 6. Measurement Uncertainty* for details.

5.2. Test Results

5.2.1. Transmitter Output Power (EIRP)

Test Summary:

Test Engineer:	Naseer Mirza	Test Date:	11 March 2011
Test Sample IMEI:	012586000000079		

FCC Part:	24.232
Test Method Used:	As detailed in ANSI TIA-603-C-2004 Section 2.2.1 referencing FCC CFR Part 2.1046(a)

Environmental Conditions:

Temperature (°C):	23.0
Relative Humidity (%):	40.0

Results: GSM Circuit Switched (Duty Factor 12.5%)

Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	1850.2	29.5	-0.5	29.0	33.0	4.0	Complied
Middle	1879.8	29.3	-0.5	28.8	33.0	4.2	Complied
Top	1909.8	29.2	-0.5	28.7	33.0	4.4	Complied

Results: GPRS Packet Switched (Duty Factor 12.5 % Class 8)

Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	1850.2	29.5	-0.5	29.0	33.0	4.0	Complied
Middle	1879.8	29.3	-0.5	28.8	33.0	4.2	Complied
Top	1909.8	29.2	-0.5	28.7	33.0	4.4	Complied

Note(s):

1. The declared antenna gain in dBi was added to the conducted output power in order to calculate the final EIRP figure.

6. Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor such that a confidence level of approximately 95% is maintained. For the purposes of this document "approximately" is interpreted as meaning "effectively" or "for most practical purposes".

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
Conducted Output Power	1850 to 1910 MHz	95%	±0.27 dB

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty the published guidance of the appropriate accreditation body is followed.

Appendix 1. Test Equipment Used

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
L1021	Comms Test Set	Rohde & Schwarz	CMU200	111379	11 Jan 2011	12
M265	Power Sensor	Rohde & Schwarz	NRV-Z1	893350/017	26 May 2011	12
M263	Power Meter	Rohde & Schwarz	NRVD	826558/004	27 May 2011	12

NB In accordance with UKAS requirements all the measurement equipment is on a calibration schedule.