

Nemko Test Report No.: 4L0008RUS1

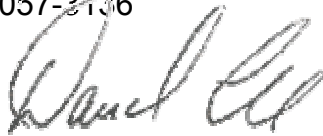
Applicant: Enfora Inc.
661 E. 18th St.
Plano, Texas 75074

Equipment Under Test: Small Portfolio Quad Band Radio
GSM0108 Radio Module

In Accordance With: FCC Part 22, Subpart H
800 MHz Cellular Subscriber Units

Tested By: Nemko Dallas Inc.
802 N. Kealy
Lewisville, TX
75057-3136

Authorized By:

A handwritten signature in black ink, appearing to read "David Light", is positioned above the printed name of the authorized person.

David Light, Production Manager

Date: 1/23/04

Table of Contents

Section 1. Summary of Test Results..... 3

Section 2. General Equipment Specification..... 5

Section 3. Field Strength of Spurious 7

Section 4. Test Equipment List 12

ANNEX A - TEST DETAILS 13

ANNEX B - TEST DIAGRAMS 15

EQUIPMENT:GSM3208

Section 1. Summary of Test Results

Manufacturer: Enfora Inc.

Model No.: GSM3208

Serial No.: None

General: All measurements are traceable to national standards.

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 22, Subpart H.



New Submission



Production Unit



Class II Permissive Change



Pre-Production Unit

This test report relates only to the item(s) tested.

The following deviations from, additions to, or exclusions from the test specifications have been made. None
See " Summary of Test Data".

Nemko USA Inc. authorizes the above named company to reproduce this report provided it is reproduced in its entirety and for use by the company's employees only.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Nemko USA Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. This report applies only to the items tested.

*EQUIPMENT:GSM3208***Summary Of Test Data**

NAME OF TEST	PARA. NO.	RESULT
RF Power Output	2.1046	N/A
Audio Frequency Response	2.1047	N/A
Audio Low Pass Filter Response	2.1047	N/A
Modulation Limiting	2.1047	N/A
Occupied Bandwidth (Voice & SAT)	2.1049	N/A
Occupies Bandwidth (WB Data & SAT)	2.1049	N/A
Occupied Bandwidth (ST)	2.1049	N/A
Occupied Bandwidth (SAT)	2.1049	N/A
Occupied Bandwidth (SAT)	2.1049	N/A
Spurious Emissions at Antenna Terminals	2.1051	N/A
Field Strength of Spurious Emissions	2.1053	Complies
Frequency Stability	2.1055	N/A

Footnotes:

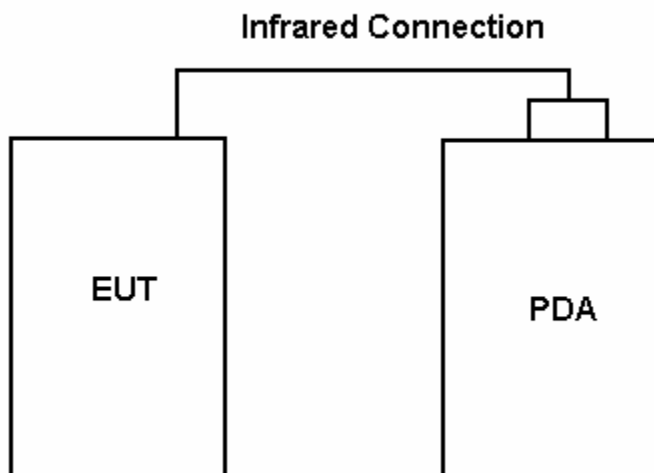
Section 2. General Equipment Specification

Frequency Range:	824.2 to 848.8 MHz
Tunable Bands:	824.2 to 848.8 MHz
Necessary Bandwidth:	270 kHz
Emission Designator:	270K0GXW
Output Impedance:	50 ohms
Duty Cycle:	Continuous
Channel Spacing:	200 kHz
Operator Selection of Frequency:	Software Controlled
Power Output Adjustment Capability:	Software Controlled

Operational Description

This is a wireless modem for a PDA that communicates via infrared connection.

System Diagram



EQUIPMENT:GSM3208

Section 3. Field Strength of Spurious

NAME OF TEST: Field Strength of Spurious	PARA. NO.: 2.1053
TESTED BY: Art Ruvalcaba	DATE: 1/19/04

Test Results: Complies.

Measurement Data: See attached table.

Nemko USA, Dallas Facility

EQUIPMENT: GSM3208

FCC PART 22, SUBPART H
800 MHz CELLULAR SUBSCRIBER UNITS
TEST REPORT NO.: 4L0008RUS1

Test Data - Radiated Emissions



Nemko Dallas, Inc.

Dallas Headquarters:

802 N. Kealy
Lewisville, TX 75057
Tel: (972) 436-9600
Fax: (972) 436-2667

EIRP Substitution Method

Page 1 of 1
Job No.: 4L0008R Date: 1/19/04 Complete X
Specification Pt22: Temperature(°C): 23 Preliminary _____
Tested By: Art Ruvalcaba Relative Humidity(%) 40
E.U.T.: Small Portfolio quad band radio with GSM0108 radio module (GSM3208)
Configuration: transmitting middle band 836.6 MHz, tested on end (worstcase)
Sample No: 1
Location: AC3 RBW: 1 MHz Measurement
Detector Type: Peak VBW: 1 MHz Distance: 3 m

Test Equipment Used

Antenna: 1304 Directional Coupler: _____
Pre-Amp: 1016 Cable #1: 1484
Filter: Cable #2: 1485
Receiver: 1464 Cable #3: _____
Attenuator #1: Cable #4: _____
Attenuator #2: Mixer: _____
Additional equipment used: _____
Measurement Uncertainty: +/- 3.6 dB

Frequency (MHz)	Meter Reading (dBm)	Correction Factor (dB)		Pre-Amp Gain (dB)	Substitution Antenna Gain (dBi)	Limit (dBm)	EIRP (dBm)	EIRP (mW)	Polarity	Comments
1673.2	-63.3	31.0		0	9.4	-13	-22.9	0.0051	V	
2509.8	-54.3	35.5		33	10.1	-13	-41.7	0.0001	V	
3346.4	-48.0	39.8		32.7	10.1	-13	-30.8	0.0008	V	
4183	-57.2	45.3		33	10.3	-13	-34.5	0.0004	V	
5019.6	-53.2	41.3		32.7	10.3	-13	-34.2	0.0004	V	
5856.2	-51.5	39.8		31.9	11.4	-13	-32.2	0.0006	V	
6692.8	-56.3	41.3		31.6	11.5	-13	-35.1	0.0003	V	
7529.4	-60.5	41.8		32.5	11.3	-13	-39.9	0.0001	V	
8366	-63.3	42.8		33.6	11.2	-13	-42.9	0.0001	V	
1673.2	-66.0	33.0		0	9.4	-13	-23.6	0.0044	H	
2509.8	-52.8	35.5		33	10.1	-13	-40.2	0.0001	H	
3346.4	-47.2	36.3		32.7	10.1	-13	-33.4	0.0005	H	
4183	-59.5	34.8		33	10.3	-13	-47.4	0.0000	H	
5019.6	-53.8	38.3		32.7	10.3	-13	-37.9	0.0002	H	
5856.2	-52.7	37.8		31.9	11.4	-13	-35.3	0.0003	H	
6692.8	-56.2	39.2		31.6	11.5	-13	-37.1	0.0002	H	
7529.4	-57.0	41.5		32.5	11.3	-13	-36.7	0.0002	H	
8366	-59.5	42.5		33.6	11.2	-13	-39.4	0.0001	H	

Notes: Scanned spectrum to the 10th harmonic.

Photographs of Test Setup

On End Position (AS TESTED WORST CASE)



On Edge Position



Flat Position



*EQUIPMENT:GSM3208***Section 4. Test Equipment List**

Asset #	Manufacturer	Model #	S/N	Cal Date	Cal Due
1464	Hewlett Packard Spectrum Analyzer	8563E	3551A04428	2/11/03	2/11/04
1016	Hewlett Packard Pre Amp	8449A	2749A00159	8/23/03	8/23/04
1033	EMCO Horn Antenna	3115	8812-3035	9/22/03	9/22/04
1482	K&L Filter	N/A	2	N/A	N/A
1481	K&L Filter	N/A	4	N/A	N/A

Nemko USA, Dallas Facility

EQUIPMENT:GSM3208

FCC PART 22, SUBPART H
800 MHz CELLULAR SUBSCRIBER UNITS
TEST REPORT NO.: 4L0008RUS1

ANNEX A - TEST DETAILS

EQUIPMENT:GSM3208

NAME OF TEST: Field Strength of Spurious Radiation	PARA. NO.: 2.1053
--	-------------------

Minimum Standard:

22.917 Emission limitations for cellular equipment. - The rules in this section govern the spectral characteristics of emissions in the Cellular Radiotelephone Service.

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

Test Method:

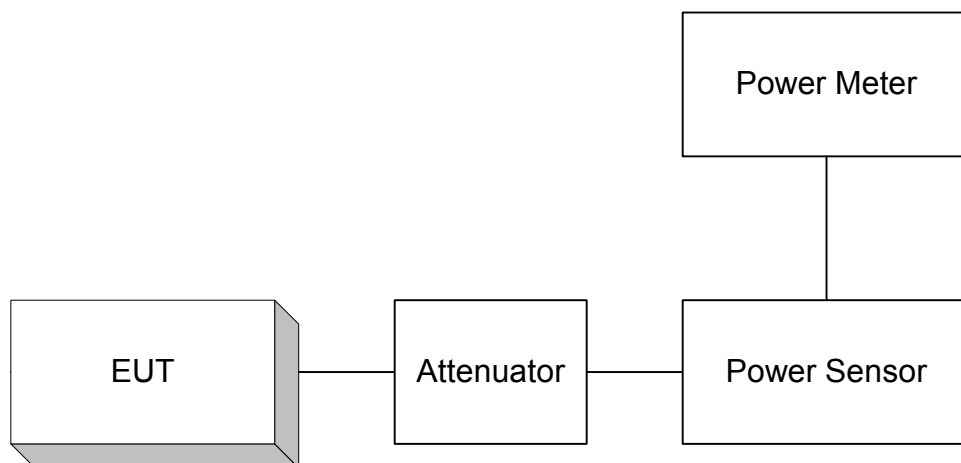
TIA/EIA-603-1992, Section 2.2.12

The antenna substitution method was used to determine the equivalent radiated power at spurious frequencies. The spurious emissions were measured at a distance of 3 meters. The EUT was then replaced with a reference substitution antenna with a known gain referenced to a dipole. This antenna was fed with a signal at the spurious frequency. The level of the signal was adjusted to repeat the previously measured level. The resulting erp is the signal level fed to the reference antenna corrected for gain referenced to a dipole.

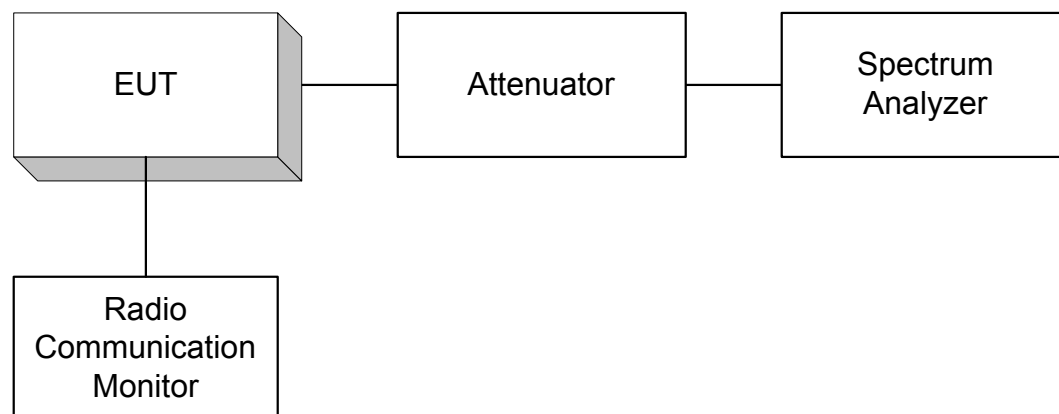
The spectrum is searched to 10 GHz.

ANNEX B - TEST DIAGRAMS

Para. No. 2.1046 - R.F. Power Output

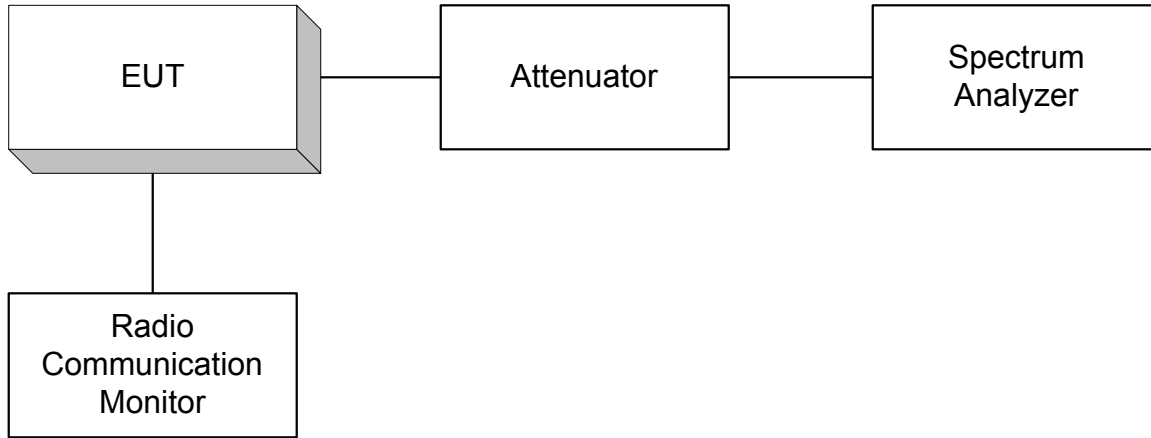


Para. No. 2.1049 - Occupied Bandwidth

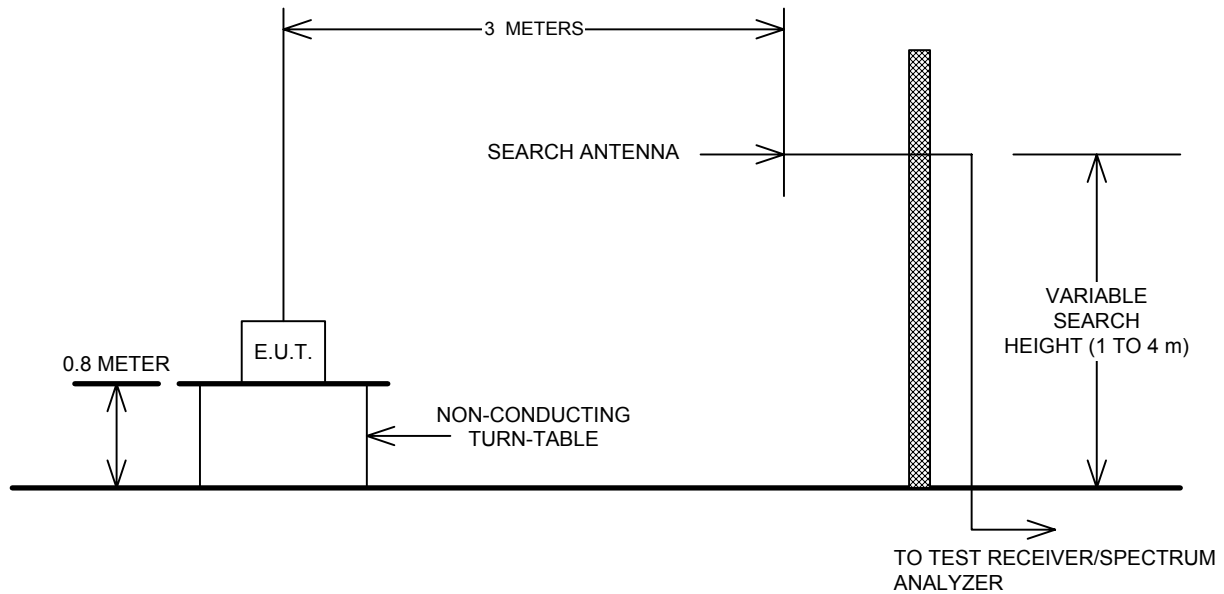


EQUIPMENT: GSM3208

Para. No. 2.1051 Spurious Emissions at Antenna Terminals

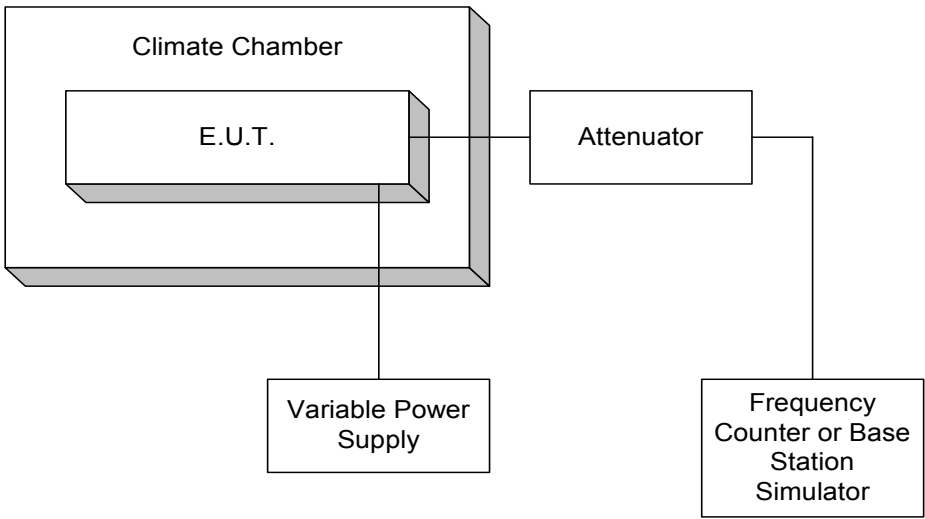


Para. No. 2.1053 - Field Strength of Spurious Radiation



EQUIPMENT:GSM3208

Para. No. 2.1055 - Frequency Stability



Para. No. 2.1045 – Audio Frequency Response, Audio Low Pass Filter Response
And Modulation Limiting

