RADIO TEST REPORT

For

Bag Tracking Systems SA.

LUGGAGE LOCATOR

Model No.: LUGLOC 002

Prepared for	:	Bag Tracking Systems SA.
Address	:	Ruta 8 KM 17,500 Zonamerica Local 003-010 Edificio Synergia CP91600 Montevideo, Uruguay
Prepared by	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Address	:	1F., Xingyuan Industrial Park, Tongda Road, Bao'an Blvd., Bao'an District, Shenzhen, Guangdong, China
Date of receipt of test sample	:	July 05, 2012
Number of tested samples	:	1
Serial number	:	Prototype
Date of Test	:	July 05, 2012 – September 10, 2012
Date of Report	:	September 10, 2012

RADIO TEST REPORT
FCC CFR 47 PART 22 SUBPART H
FCC CFR 47 PART 24 SUBPART E

Report Reference No.	**:**	**LCS120705043TF**
Date of Issue	:	September 10, 2012
Testing Laboratory Name.....	**:**	**Shenzhen LCS Compliance Testing Laboratory Ltd.**
Address	:	1F., Xingyuan Industrial Park, Tongda Road, Bao'an Blvd., Bao'an District, Shenzhen, Guangdong, China
Testing Location/ Procedure.....	:	Full application of Harmonised standards ■ Partial application of Harmonised standards ☐ Other standard testing method ☐
Applicant's Name.....	**:**	**Bag Tracking Systems SA.**
Address	:	Ruta 8 KM 17,500 Zonamerica Local 003-010 Edificio Synergia CP91600 Montevideo, Uruguay
Test Specification		
Standard	:	FCC CFR 47 PART 22 SUBPART H FCC CFR 47 PART 24 SUBPART E
Test Report Form No.....	**:**	LCSEMC-1.0
TRF Originator	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF	:	Dated 2011-03

Test Item Description.	**:**	**LUGGAGE LOCATOR**
Trade Mark	:	LUG LOC LUGGAGE LOCATOR
Manufacturer.....	:	Huizhou Light Of Science Technology Co., Ltd
Model/ Type reference.....	:	LUGLOC 002
Ratings	:	DC 3.7V, Rated current: 2.5mA
Result	:	**Positive**

Compiled by:	**Supervised by:**	**Approved by:**
Ada Liang	Vito Cao	Gavin Liang
Ada Liang / File administrators	Vito Cao/ Technique principal	Gavin Liang/ Manager

RADIO -- TEST REPORT

Test Report No. : LCS120705043TF	September 10, 2012 Date of issue

Type / Model.....	: LUGGAGE LOCATOR
EUT.....	: LUGLOC 002
Applicant.....	**: Bag Tracking Systems SA.**
Address.....	: Ruta 8 KM 17,500 Zonamerica Local 003-010 Edificio Synergia CP91600 Montevideo, Uruguay
Telephone.....	: /
Fax.....	: /
Manufacturer.....	**: Huizhou Light Of Science Technology Co.,Ltd**
Address.....	: 3/F., Hongye Building, 2 Yunshan Garden Road, Jiangbei, Huizhou City, Guangdong, China.
Telephone.....	: /
Fax.....	: /
Factory.....	**: Huizhou Light Of Science Technology Co.,Ltd**
Address.....	: 3/F., Hongye Building, 2 Yunshan Garden Road, Jiangbei, Huizhou City, Guangdong, China.
Telephone.....	: /
Fax.....	: /

Test Result:	**Positive**

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

TABLE OF CONTENTS

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT : LUGGAGE LOCATOR

Model Number : LUGLOC 002

Serial No.(SN) : 356

Revision : 01

Software Version : V 1.1.0.10

Type of Modulation and Designator : GSM (GXW) ■
GSM EDGE (G7W) □
CDMA (F9W) □
W-CDMA (F9W) □

Power Supply : DC 3.7V, Rated current: 2.5mA

Frequency Range : Uplink : 1850.2 – 1909.8 MHz (GPRS 1900)
824.2 – 848.8MHz (GPRS 850)
Downlink : 1930.2 – 1989.8 MHz (GPRS 1900)
869.2 – 893.8 MHz (GPRS 850)

Modulation Technology : GMSK

RF Output Power : 32dBm

Antenna Type : Integral Antenna, Gain:1dBi

1.2. Host System Configuration List and Details

Manufacturer	Description	Model	Serial Number	Certificate
N/A	N/A	N/A	N/A	N/A

1.3. External I/O Cable

Cable Description	Length (M)	From/Port	To
USB	0.9	EUT	Adapter

1.4. Power Supply and Line Filters

Manufacturer	Description	Model	Serial Number
Huizhou Light Of Science Technology Co., Ltd	AC input DC output	CYSK05-050500	01

1.5. Description of Test Facility

Site Description EMC Lab. : Accredited by CNAS, June 04, 2010

The Certificate Registration Number. is L4595.

Accredited by FCC, July 14, 2011

The Certificate Registration Number. is 899208.

Accredited by Industry Canada, May. 02, 2011

The Certificate Registration Number. is 9642A-1

1.6. Statement of The Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

1.7. Measurement Uncertainty

Test Item		Frequency Range	Uncertainty	Note
Radiation Uncertainty	:	30MHz~200MHz	±2.96dB	(1)
		200MHz~1000MHz	±3.10dB	(1)
		1GHz~26.5GHz	±3.80dB	(1)
Conduction Uncertainty	:	150kHz~30MHz	±1.63dB	(1)
Power disturbance	:	30MHz~300MHz	±1.60dB	(1)

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.8. Test environment

All tests were performed under the following environmental conditions:

Condition	**Minimum value**	**Maximum value**
Barometric pressure	86kPa	106kPa
Temperature	15°C	30°C
Relative Humidity	20 %	75 %
Power supply range	±5% of rated voltages	

2. TEST METHODOLOGY

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2, Sub-part J as well as the following parts:

Part 22 Subpart H - Public Mobile Services

Part 24 Subpart E – PCS

Applicable Standards: TIA/EIA603-C, ANSI C63.4-2003.The radiated testing was performed at an antenna-to-EUT distance of 3 meters. All radiated and conducted emissions measurement was performed at Shenzhen LCS Compliance Testing Laboratory Ltd..

2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2. Objective

This type approval report is prepared on behalf of Bag Tracking Systems SA. in accordance with Part 2, Subpart J, Part 22 Subpart H, Part 24 Subpart E and Part 27 of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC rules for RF output power, modulation characteristics, occupied bandwidth, spurious emissions at antenna terminal, field strength of spurious radiation, frequency stability, band edge, and conducted and radiated margin.

2.3. General Test Procedures

2.3.1 Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using Quasi-peak and average detector modes.

2.3.2 Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4

3. SYSTEM TEST CONFIGURATION

3.1. Justification

The EUT was configured for testing according to TIA/EIA-603-C.

The final qualification test was performed with the EUT operating at normal mode.

3.2. EUT Exercise Software

N/A.

3.3. Special Accessories

N/A.

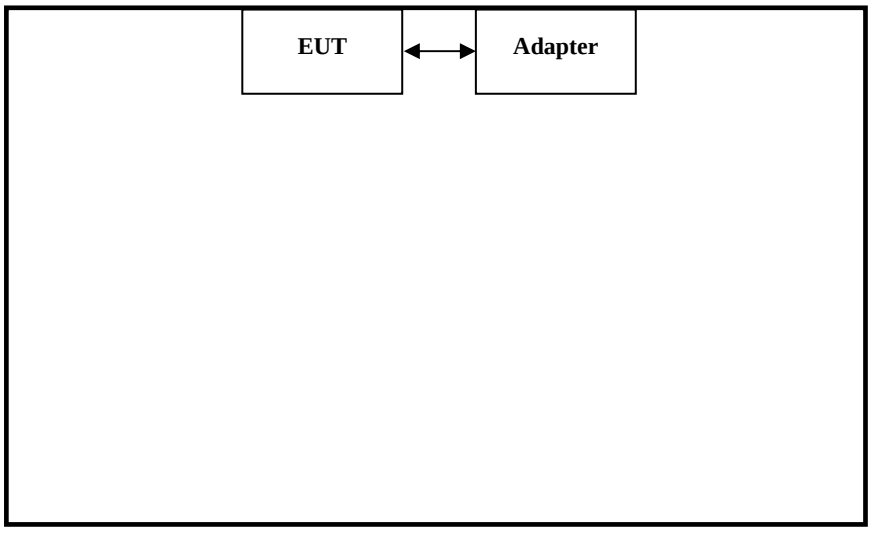
3.4. Block Diagram/Schematics

Please refer to the report.

3.5. Equipment Modifications

No modification on the EUT.

3.6. Block Diagram of Test Setup



4. SUMMARY OF TEST RESULTS

Applied Standard: 47 CFR FCC Part 22 Subpart H, Part 24 Subpart E		
FCC Rules	**Description of Test**	**Result**
§2.1046, §22.913, §24.232	RF Power Output	Compliant
§22.913(a)(2)	Effective Radiated Power(< 7 Watts)	Compliant
§24.232(c)	Equivalent Isotropic Radiated Power(< 2Watts)	Compliant
§2.1047	Modulation Characteristics	N/A*
§2.1049, §22.917, §24.238	Occupied Bandwidth	Compliant
§2.1053, §22.917, §24.238	Radiated Spurious Emissions	Compliant
§2.1051, §22.917, §24.238	Spurious Emissions at Antenna Terminals	Compliant
§24.238, §22.917	Band Edge	Compliant
§2.1055; §22.355, §24.235	Frequency Stability	Compliant
§2.1091	RF Exposure Information	Compliant

N/A: According to FCC §2.1047(d), Part 22H and Part 24E, there is no specific requirement for digital modulation and no oscillator circuit, therefore modulation characteristic is not presented.*

5. TEST RESULT

5.1. RF Output Power

5.1.1. Standard Applicable

§ 2.1046 Measurements required: RF power output:

§ 2.1046 (a) For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in § 2.1033(c)(8). The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.

§ 2.1046 (b) For single sideband, independent sideband, and single channel, controlled carrier radiotelephone transmitters, the procedure specified in paragraph (a) of this section shall be employed and, in addition, the transmitter shall be modulated during the test as specified and as applicable in § 2.1046 (b) (1-5). In all tests, the input level of the modulating signal shall be such as to develop rated peak envelope power or carrier power, as appropriate, for the transmitter.

§ 2.1046 (c) For measurements conducted pursuant to paragraphs (a) and (b) of this section, all calculations and methods used by the applicant for determining carrier power or peak envelope power, as appropriate, on the basis of measured power in the radio frequency load attached to the transmitter output terminals shall be shown. Under the test conditions specified, no components of the emission spectrum shall exceed the limits specified in the applicable rule parts as necessary for meeting occupied bandwidth or emission limitations.

§ 22.913 Effective radiated power limits.

The effective radiated power (ERP) of transmitters in the Cellular Radiotelephone Service must not exceed the limits in this section.

(a) Maximum ERP. In general, the effective radiated power (ERP) of base transmitters and cellular repeaters must not exceed 500 Watts.

§ 24.232 Power and antenna height limits.

(c) Mobile/portable stations are limited to 2 watts EIRP peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

5.1.2. Measuring Instruments and Setting

Please refer to section 6 of equipments list in this report.

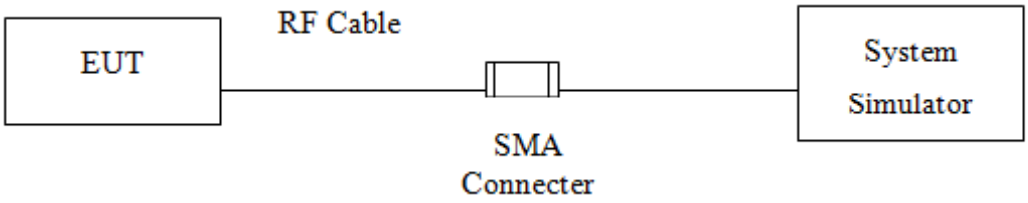
5.1.3. Test Procedures

1. The transmitter output port was connected to base station.

2. Set EUT at maximum power through base station.

3. Select lowest, middle, and highest channels for each band and different modulation.

5.1.4. Test Setup Layout



5.1.5. Test Results

Temperature	25℃	Humidity	60%
ATM Pressure	101.4kPa	Test Engineer	Vito Cao

GPRS 850

Carrier Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)
Low	824.2	30.10	1.02
Middle	836.4	30.82	1.21
High	848.8	31.97	1.57

GPRS 1900

Carrier Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)
Low	1850.2	29.06	0.81
Middle	1880.0	29.19	0.83
High	1909.8	29.06	0.81

5.2. Effective Radiated Power and Effective Isotropic Radiated Power

5.2.1. Standard Applicable

ERP/EIRP is measured by substitution method according to ANSI / TIA / EIA-603-C-2004. The ERP of mobile transmitters must not exceed 7 Watts and the EIRP of mobile transmitters are limited to 2 Watts.

5.2.2. Measuring Instruments and Setting

Please refer to section 6 of equipments list in this report.

5.2.3. Test Procedures

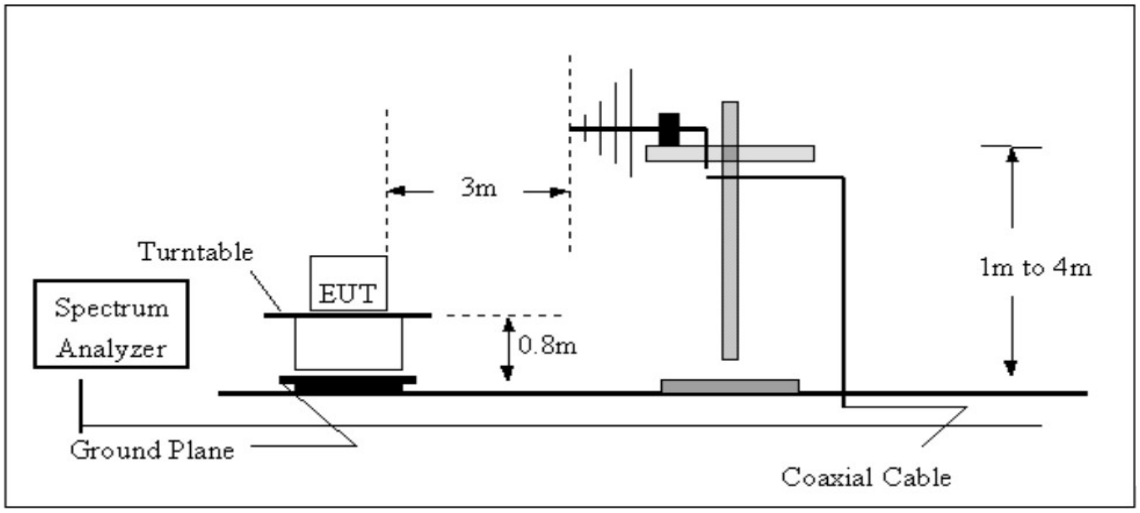
1. The EUT was placed on an non-conductive rotating platform with 0.8 meter height in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RBW= 3MHz,VBW= 3MHz, and peak detector settings.

2. During the measurement, the EUT was enforced in maximum power and linked with a base station. The highest emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.

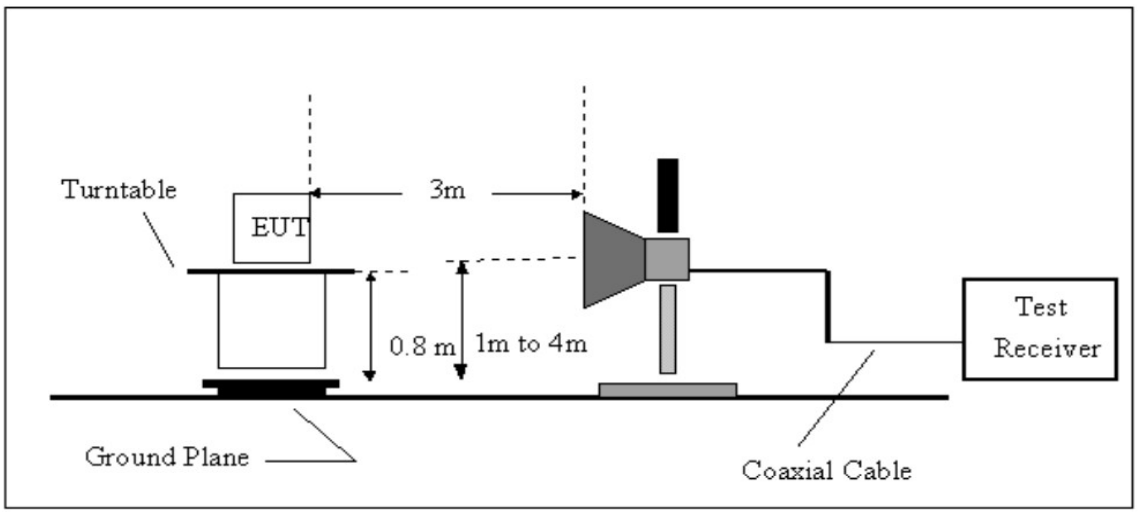
3. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by dipole antenna (substitution antenna) at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The Path Loss(dB)= S.G. Power-TX Cable loss+ TX Antenna Gain-SPA. Reading.

Then the EUT's EIRP and ERP was calculated with the Path Loss(dB), EIRP=SPA. Reading+ Path Loss. ERP= SPA. Reading+ Path Loss-2.15

5.2.4. Test Setup



Below 1000MHz



Above 1000MHz

5.2.5. Test Results of ERP

GPRS 850 (GSM) Radiated Power ERP							
Frequency (MHz)	SPA. Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	ERP (dBm)	ERP (W)	Polarization (H/V)
824.2	-1.42	30.52	0.85	0.23	27.63	0.58	H
836.4	-1.41	30.01	0.85	0.51	27.52	0.54	H
848.8	-1.29	30.18	0.86	0.74	27.8	0.60	H
824.2	-11.18	24.21	0.85	0.23	21.38	0.14	V
836.4	-10.18	25.13	0.85	0.51	22.64	0.18	V
848.8	-10.38	24.47	0.86	0.74	22.17	0.16	V

ERP= SPA. Reading+ Path Loss-2.15

Path Loss						
Frequency (MHz)	Path Loss(dB)	SPA. Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
824.2	31.2	-31.82	0	0.85	0.23	H
836.4	31.08	-31.42	0	0.85	0.51	H
848.8	31.24	-31.36	0	0.86	0.74	H
824.2	34.71	-35.33	0	0.85	0.23	V
836.4	34.97	-35.31	0	0.85	0.51	V
848.8	34.7	-34.82	0	0.86	0.74	V

Path Loss(dB)= S.G. Power-TX Cable loss+ TX Antenna Gain-SPA. Reading

5.2.6. Test Results of EIRP

GPRS 1900 (GSM) Radiated Power EIRP							
Frequency (MHz)	SPA. Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	ERP (dBm)	ERP (W)	Polarization (H/V)
1850.2	-5.45	29.42	1.64	1.25	26.88	0.49	H
1880.0	-5.92	28.76	1.64	1.56	26.53	0.45	H
1909.8	-5.81	29.08	1.64	1.79	27.08	0.51	H
1850.2	-11.35	27.53	1.64	1.25	24.99	0.32	V
1880.0	-11.18	27.49	1.64	1.56	25.26	0.34	V
1909.8	-11.64	26.22	1.64	1.79	24.22	0.26	V

ERP= SPA. Reading+ Path Loss

Path Loss						
Frequency (MHz)	Path Loss(dB)	SPA. Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
1850.2	32.33	-32.72	0	1.64	1.25	H
1880.0	32.45	-32.53	0	1.64	1.56	H
1909.8	32.89	-32.74	0	1.64	1.79	H
1850.2	36.34	-36.73	0	1.64	1.25	V
1880.0	36.44	-36.52	0	1.64	1.56	V
1909.8	35.86	-35.71	0	1.64	1.79	V

Path Loss(dB)= S.G. Power-TX Cable loss+ TX Antenna Gain-SPA. Reading

5.3. Occupied Bandwidth

5.3.1. Standard Applicable

§2.1049 Measurements required: Occupied bandwidth: The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured under the specified conditions of § 2.1049 (a) through (i) as applicable. The emission bandwidth is defined as the width of the signal between two points, located at the 2 sides of the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

5.3.2. Measuring Instruments and Setting

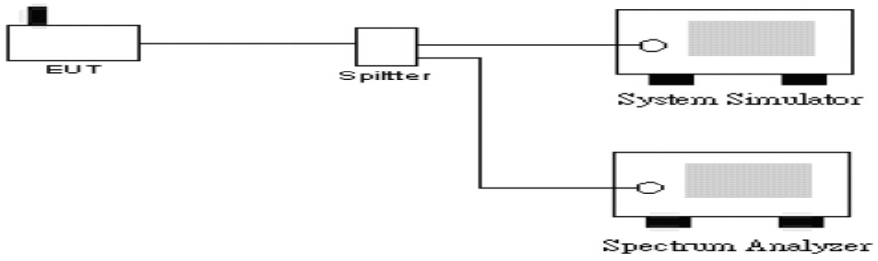
Please refer to section 6 of equipments list in this report. The following table is the setting of Spectrum Analyzer.

5.3.3. Test Procedures

1 .The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

2. The 99% and 26 dB occupied bandwidth (BW) of the highest /middle /lowest channel for the highest RF powers were measured.

5.3.4. Test Setup Layout



5.3.5. Test Results

Temperature	25℃	Humidity	60%
ATM Pressure	101.4kPa	Test Engineer	Vito Cao

GPRS 850

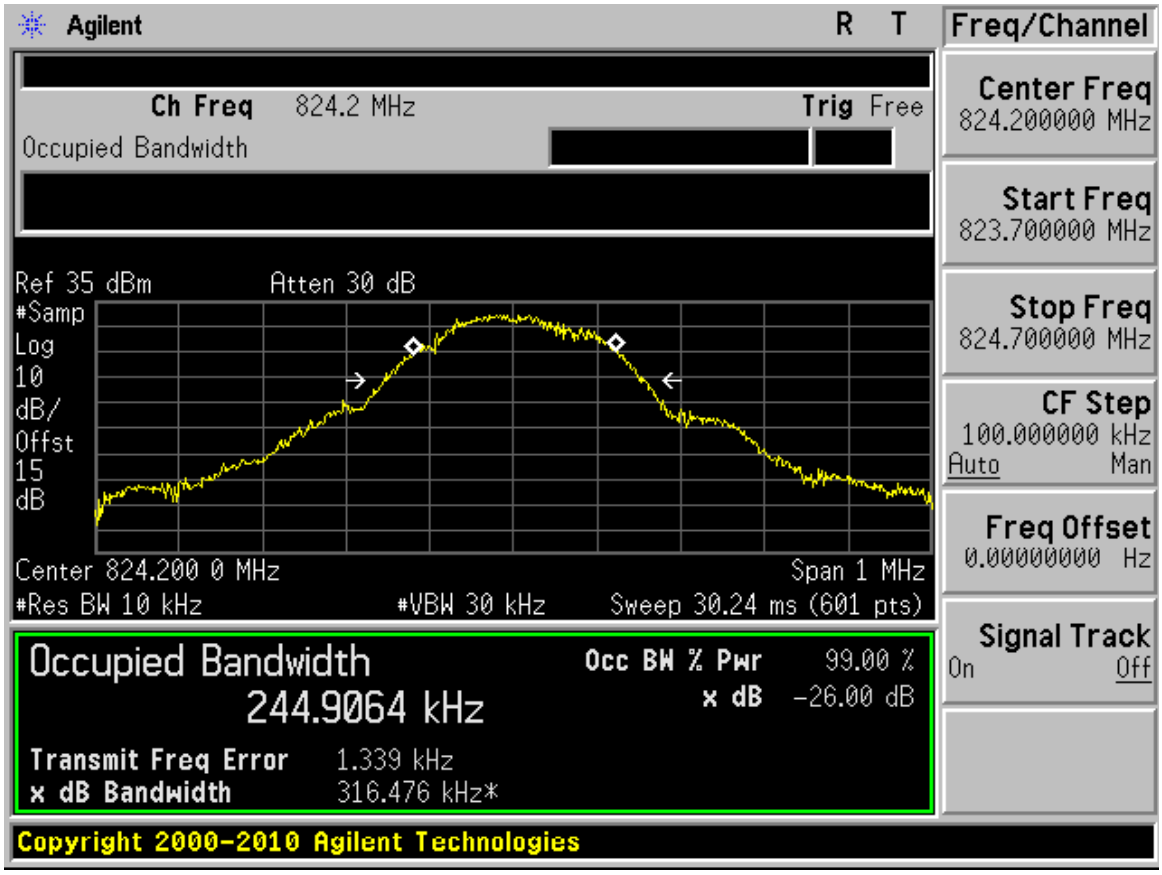
Carrier Channel	Frequency (MHz)	99%Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)
Low	824.2	244.9064	316.476
Middle	836.4	250.0181	322.860
High	848.8	248.9223	319.739

GPRS 1900

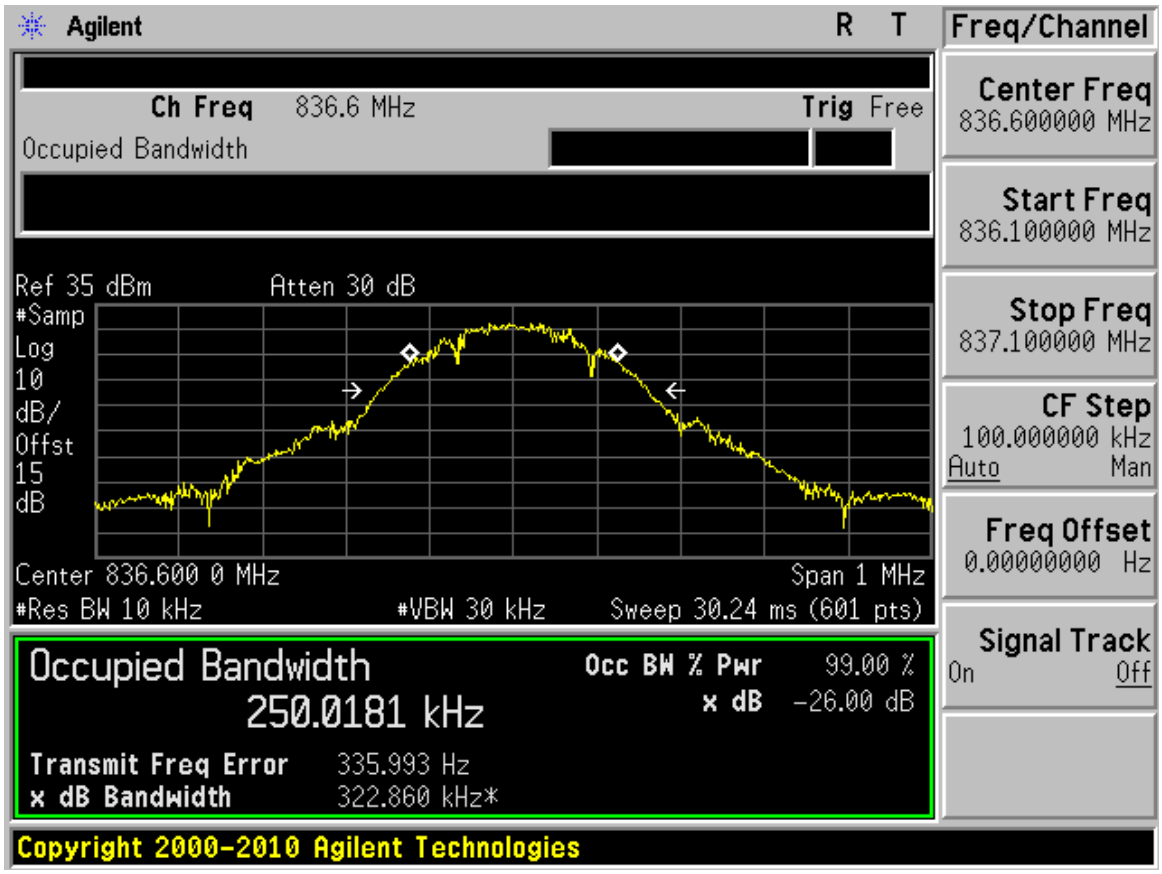
Carrier Channel	Frequency (MHz)	99%Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)
Low	1850.2	245.7709	314.394
Middle	1880.0	241.8918	312.376
High	1909.8	245.1425	312.063

Plots of GPRS 850 Occupied Bandwidth

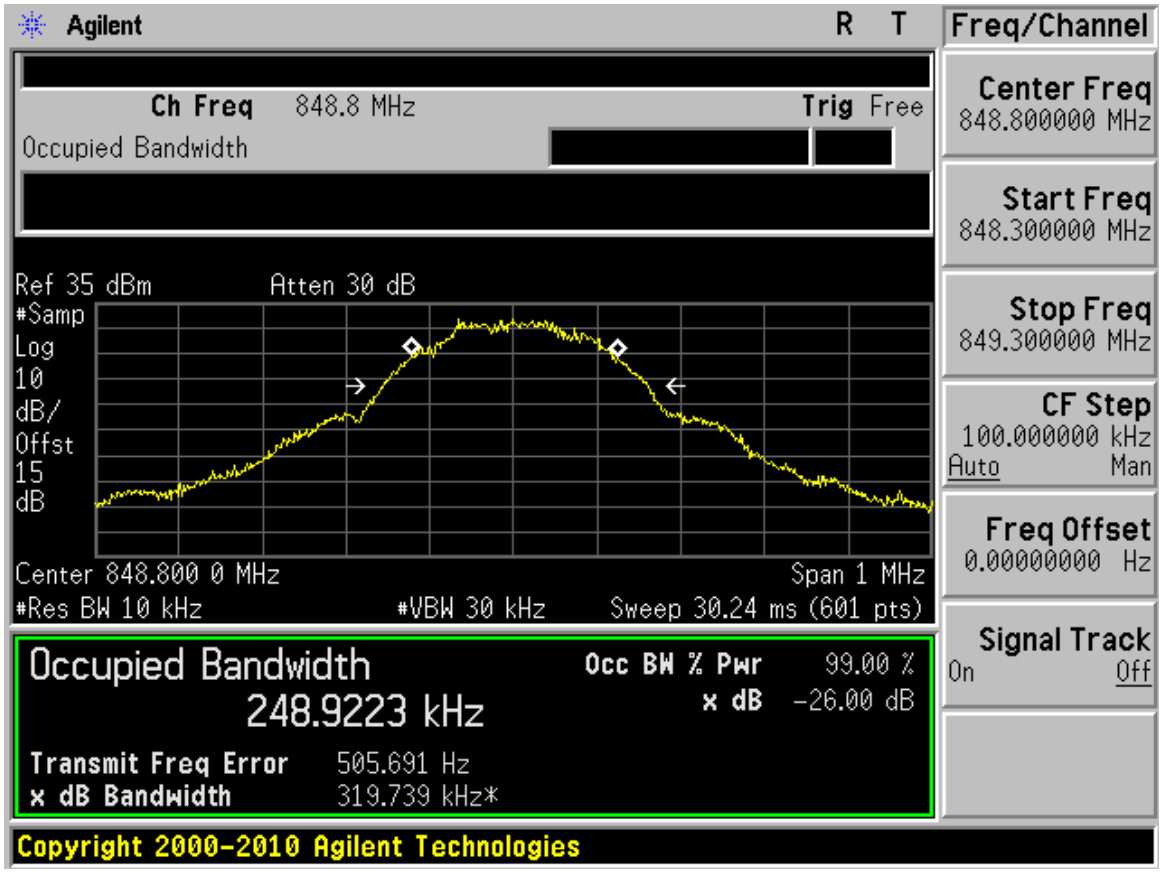
Low CH



Middle CH

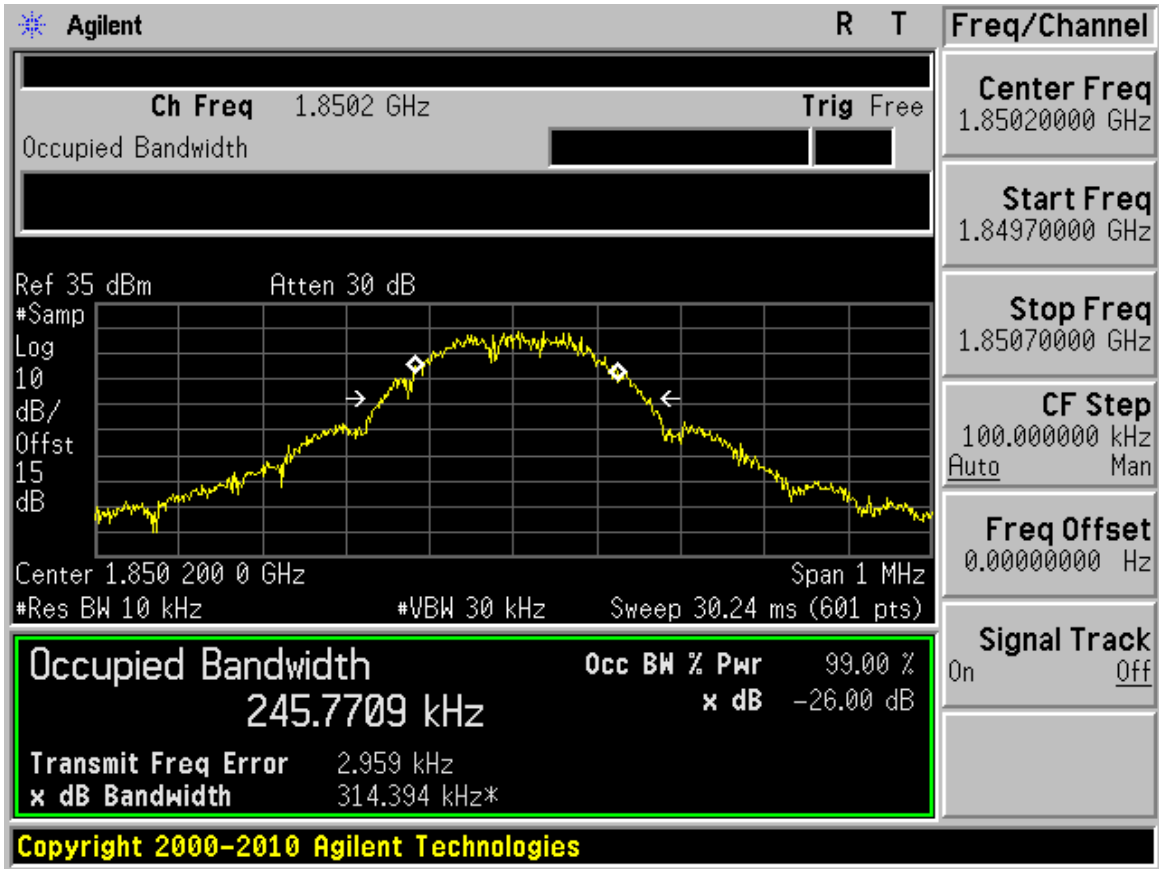


High CH

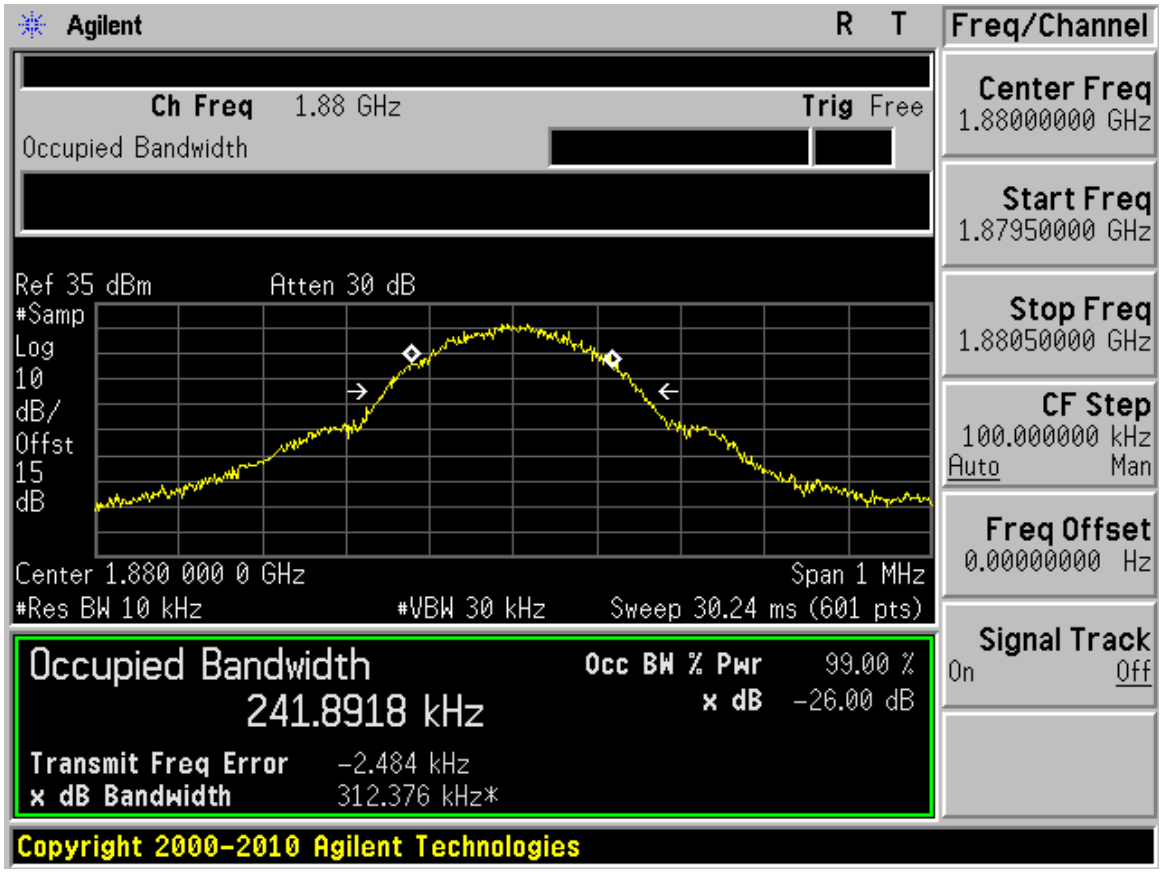


Plots of GPRS 1900 Occupied Bandwidth

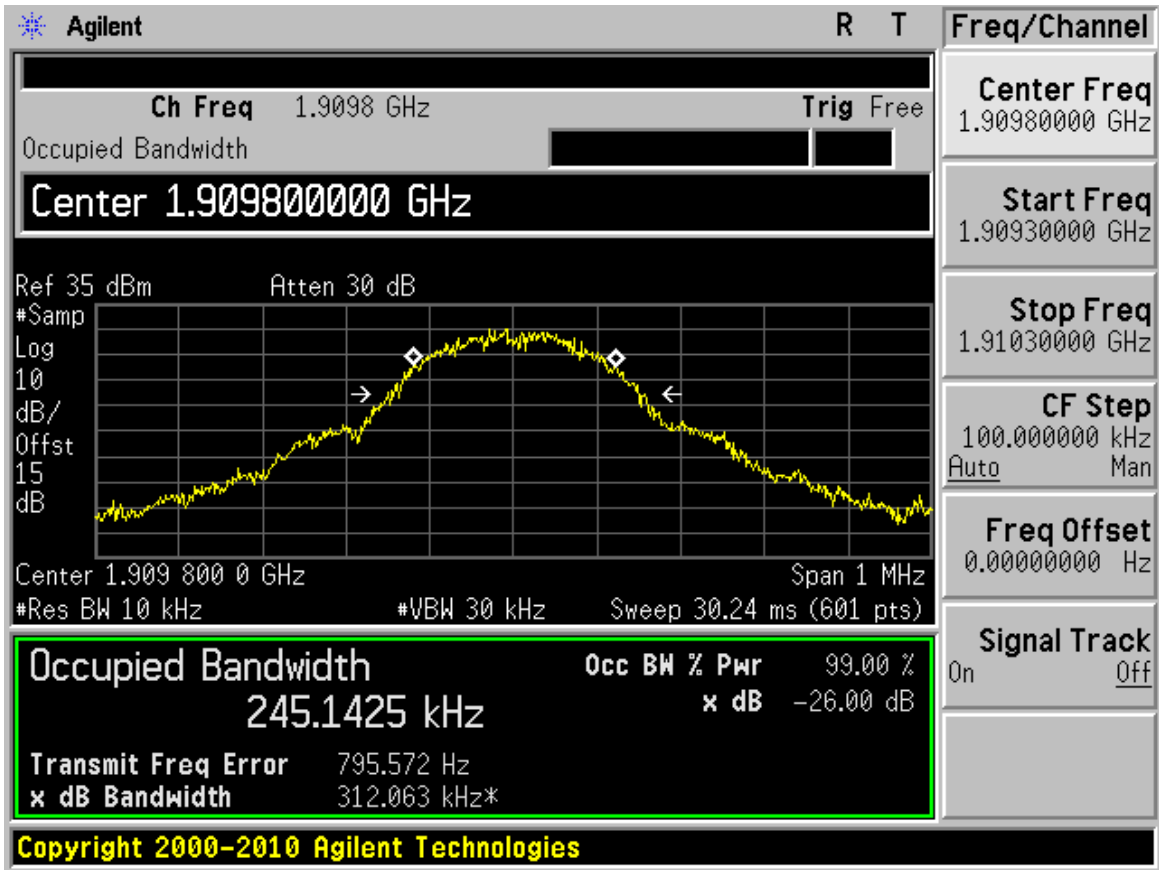
Low CH



Middle CH



High CH



5.4. Spurious And Harmonic Emission At Antenna Terminal

5.4.1. Standard Applicable

§ 2.1051 Measurements required: Spurious emissions at antenna terminals:

The radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of each harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in § 2.1049 as appropriate. The magnitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be specified.

§ 22.917, § 24.238 Emission limitations for Broadband PCS equipment: The rules in this section govern the spectral characteristics of emissions in the Broadband Personal Communications Service. § 22.917 (a), § 24.238 (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, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carriedout.

5.3.2. Measuring Instruments and Setting

Please refer to section 6 of equipments list in this report. The following table is the setting of the Spectrum Analyzer.

5.4.3. Test Procedures

The following steps outline the procedure used to measure the conducted emissions from the EUT. The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

1. Determine frequency range for measurements: From CFR 2.1057 the spectrum should be investigated from the lowest radio frequency generated in the equipment up to at least the 10th harmonic of the carrier frequency. For the equipment of PCS1900 band, this equates to a frequency range of 30 MHz to 19.1 GHz, data taken from 30 MHz to 20 GHz. For GSM850, data taken from 30 MHz to 10 GHz.

2. The sweep time is set automatically by instrument itself. That should be the optimal sweep time for the span and the RBW. If the sweep time is too short, that is sweep is too fast, the sweep result is not accurate; If the sweep time is too long, that is sweep is too low, some frequency components may be lost. The instrument will give a optimal sweep time according the selected span and RBW.

3. The procedure to get the conducted spurious emission is as follows:

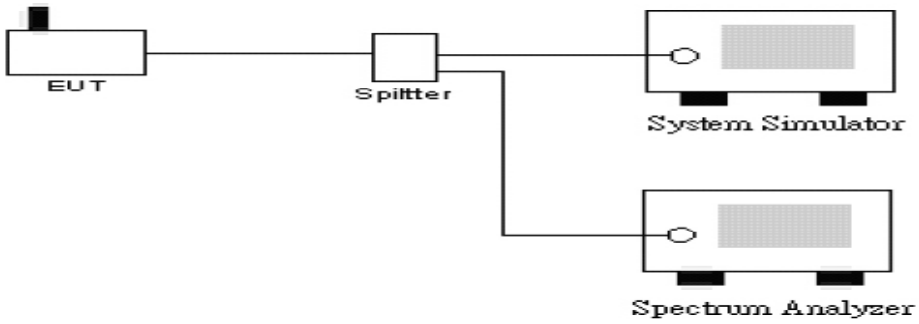
The trace mode is set to MaxHold to get the highest signal at each frequency;

Wait 25 seconds;

Get the result.

4. Determine EUT transmit frequencies: below outlines the band edge frequencies pertinent to conducted emissions testing.

5.4.4. Test Setup Layout

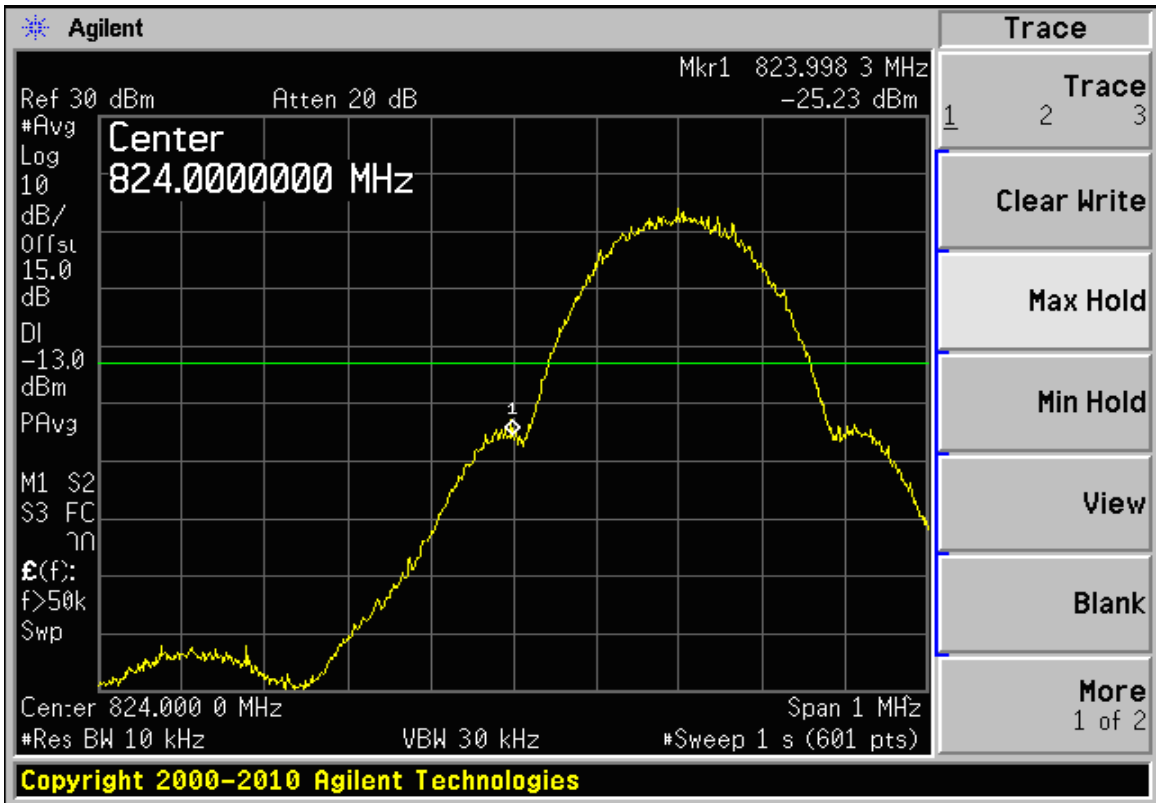


5.3.5. Test Results

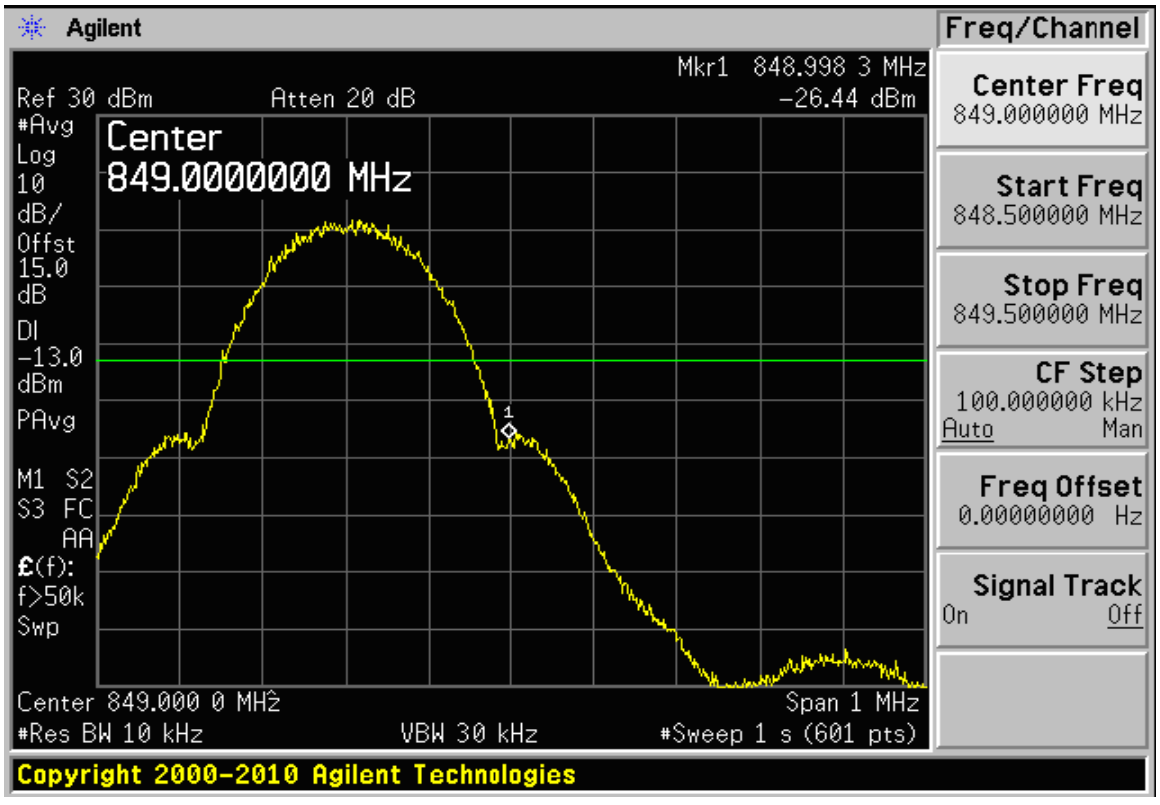
The EUT complies with the requirements of this section. There were no detectable spurious emissions for this EUT.

Plots of GPRS 850 Band Edge

(Low CH)



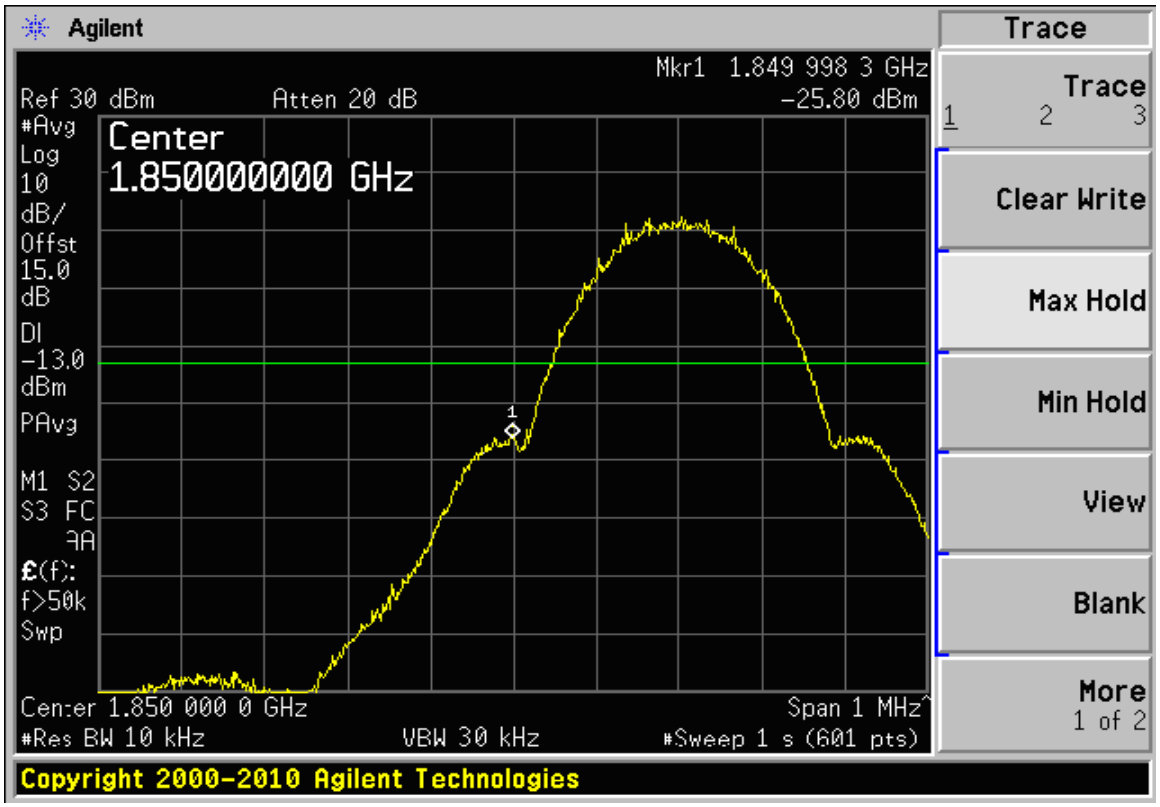
(High CH)



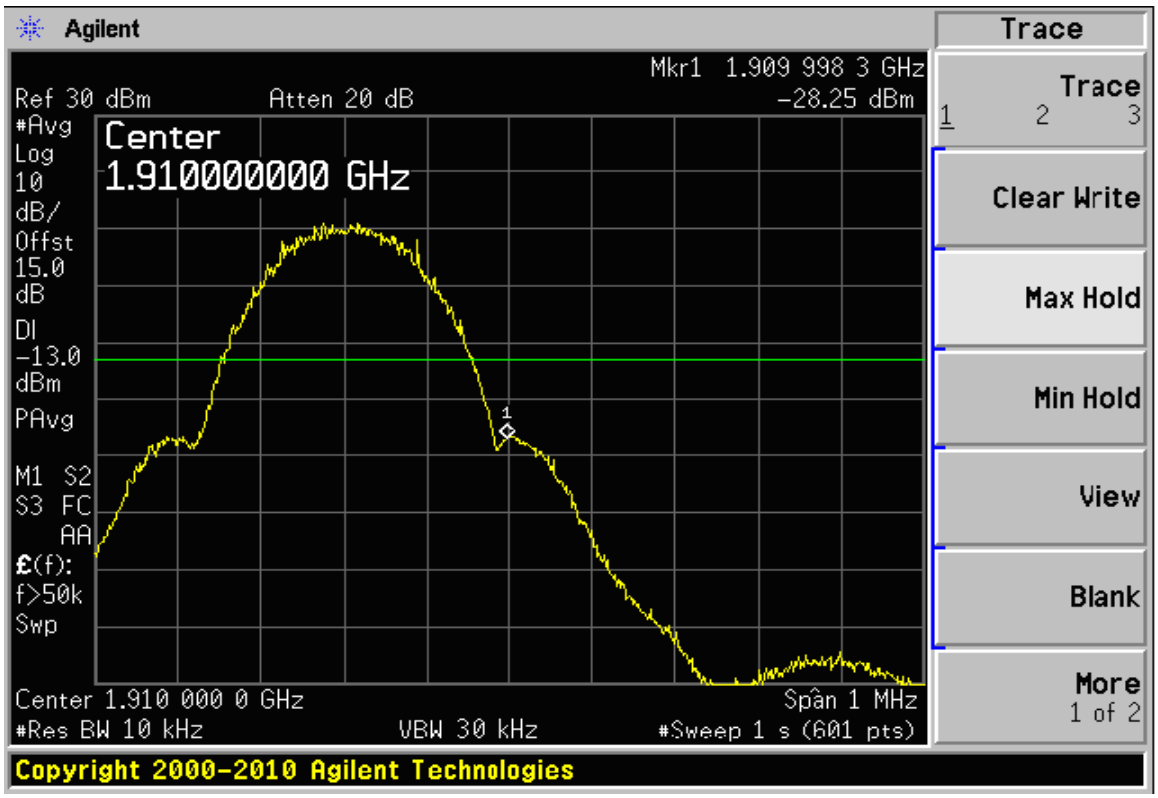
Note: Final evaluation=maker reading evaluation + Offset evaluation (Offset=attenuation (15dB) + cable loss(0.01dB))

Plots of GPRS 1900 Band Edge

(Low CH)



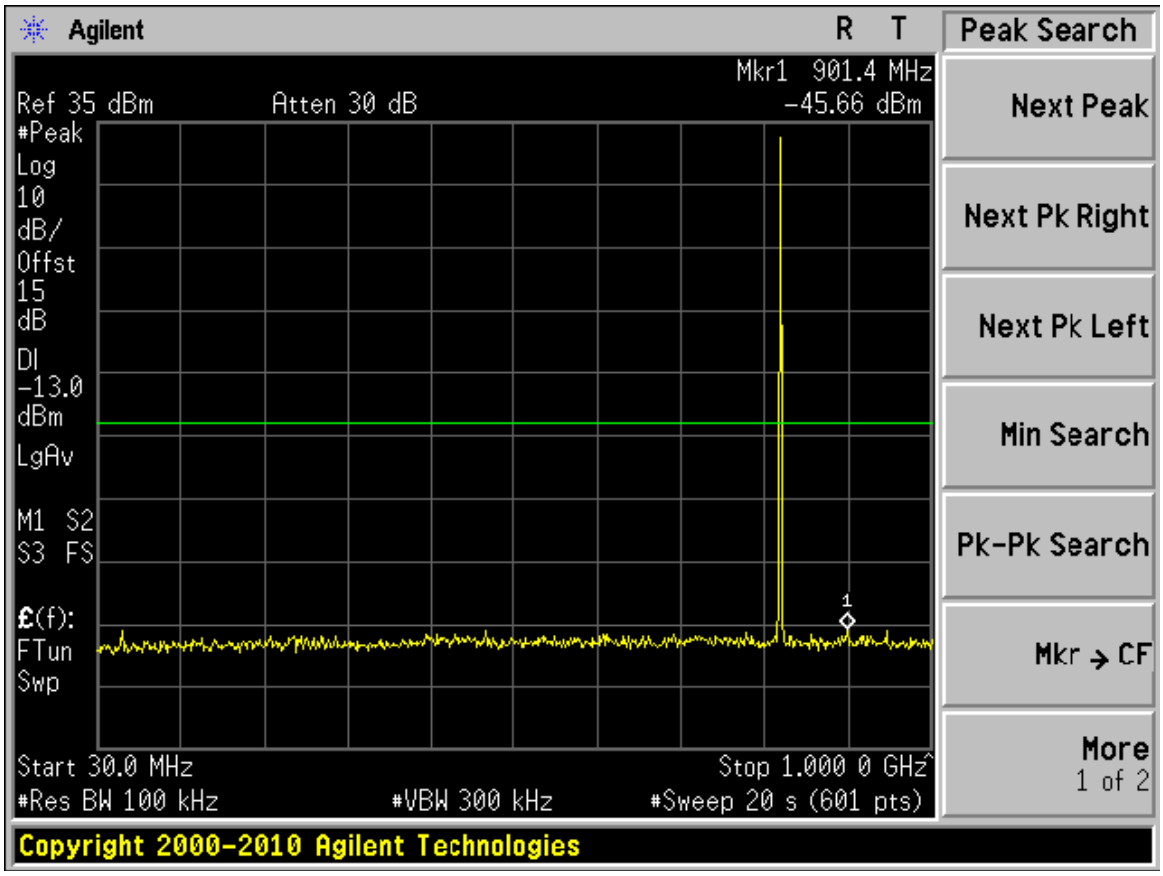
(High CH)



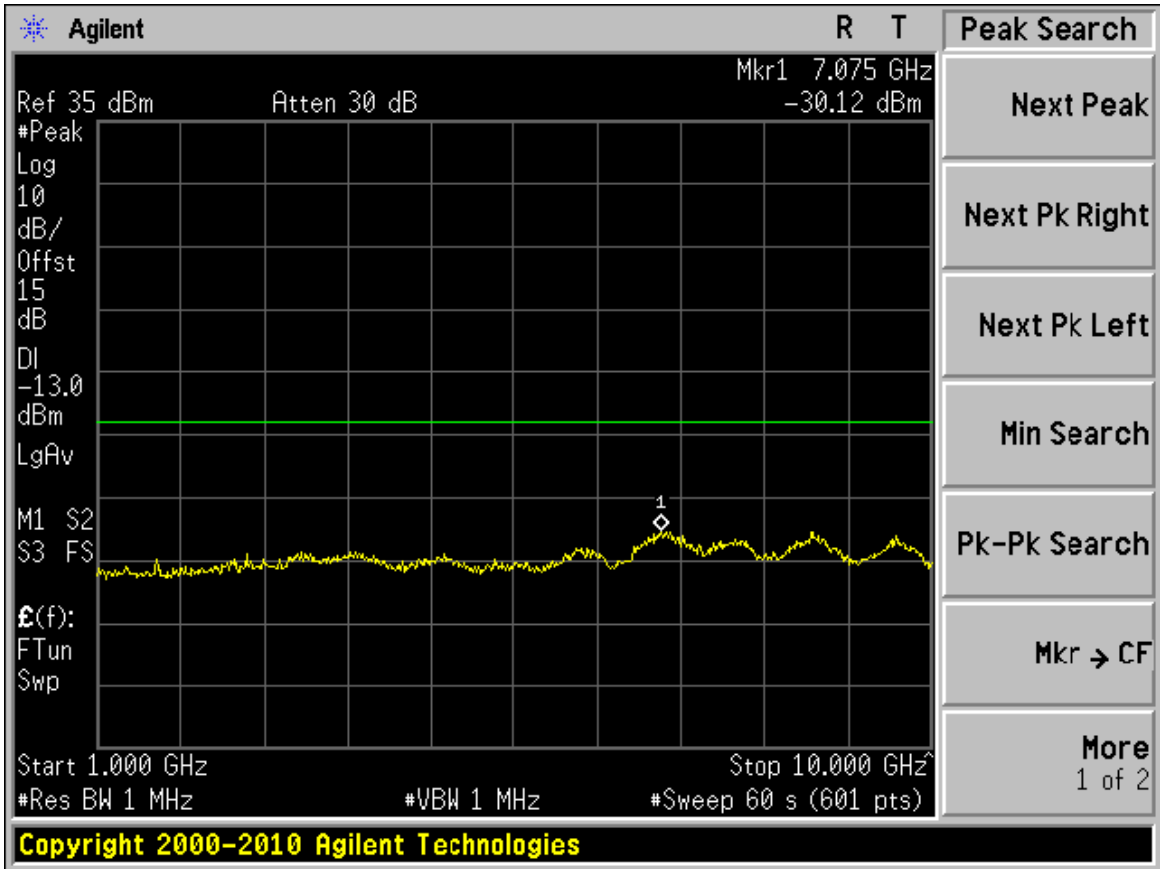
Note: Final evaluation=maker reading evaluation + Offset evaluation (Offset=attenuation(15dB) + cable loss (0.01dB))

Plots of GPRS 850 Spurious Emission

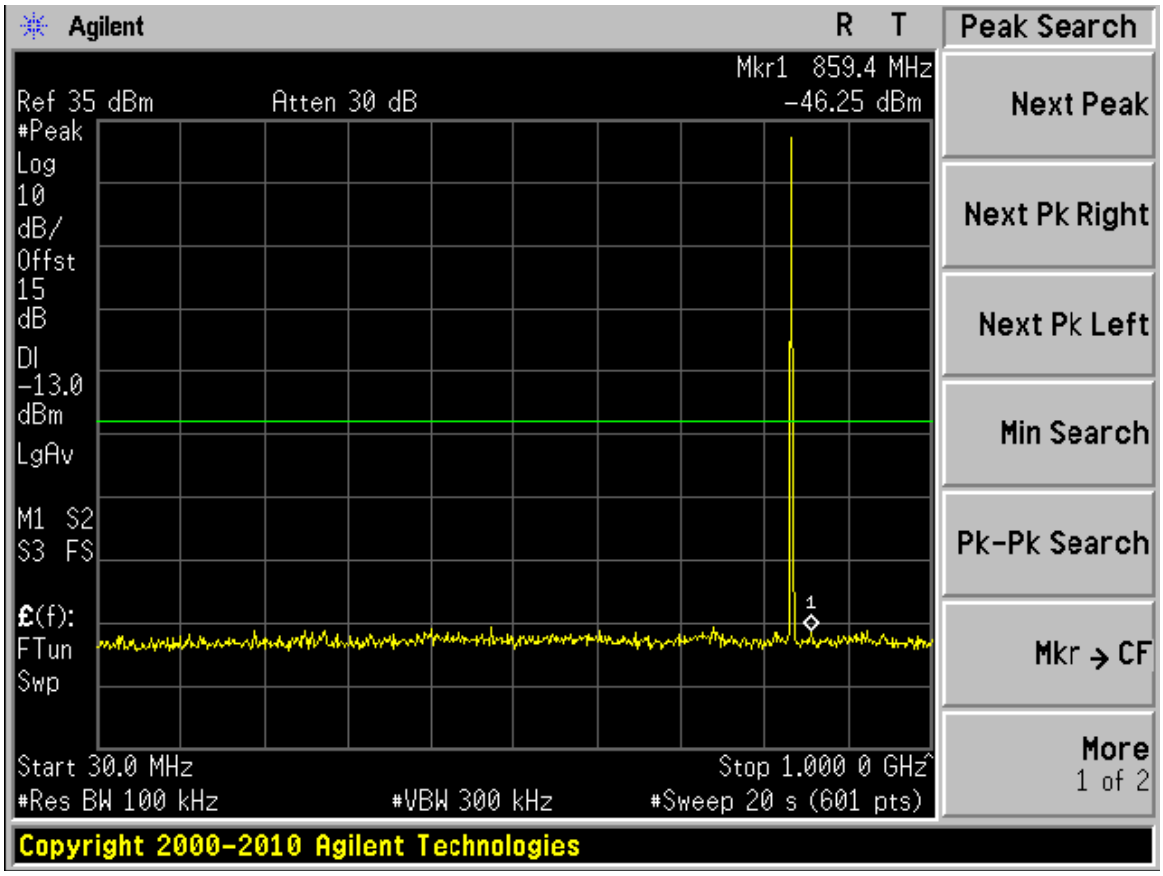
Conducted Spurious Emissions Low CH (30 MHz – 1GHz)



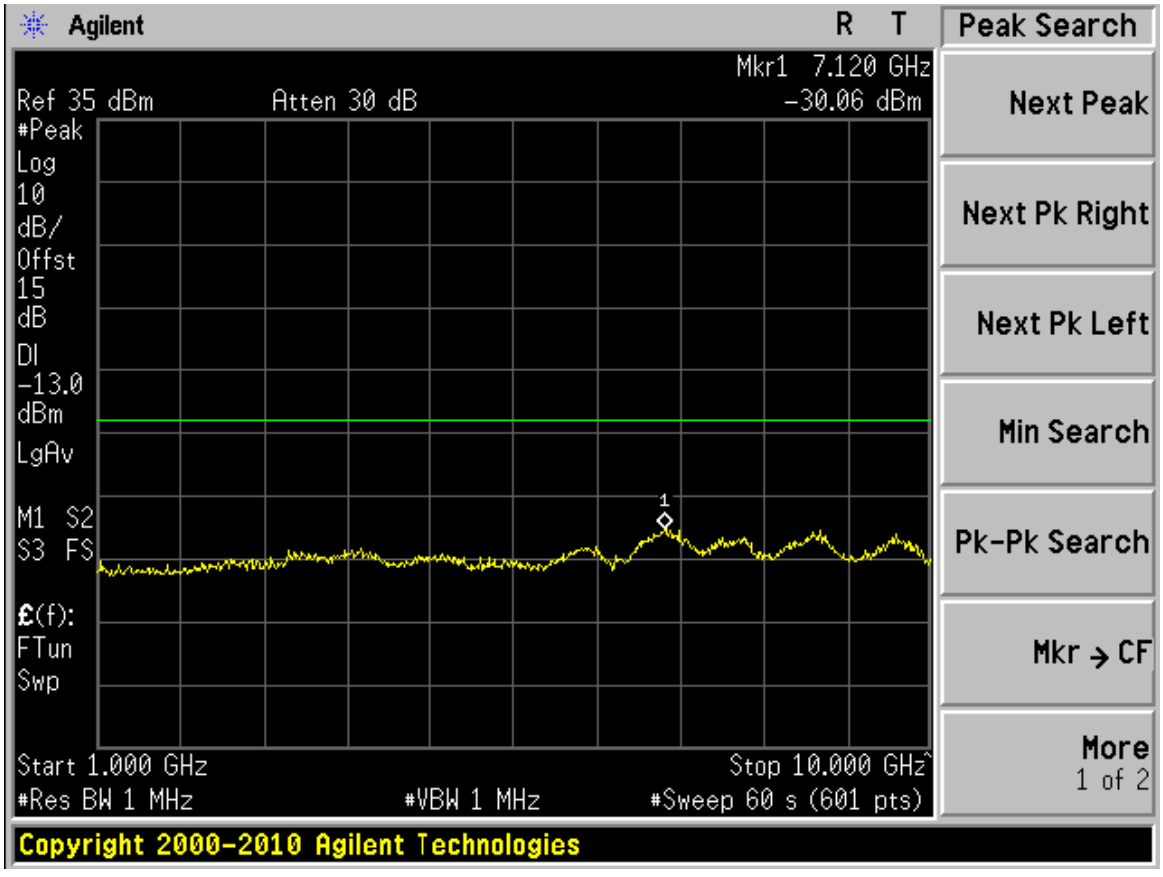
Conducted Spurious Emissions Low CH (1GHz – 10GHz)



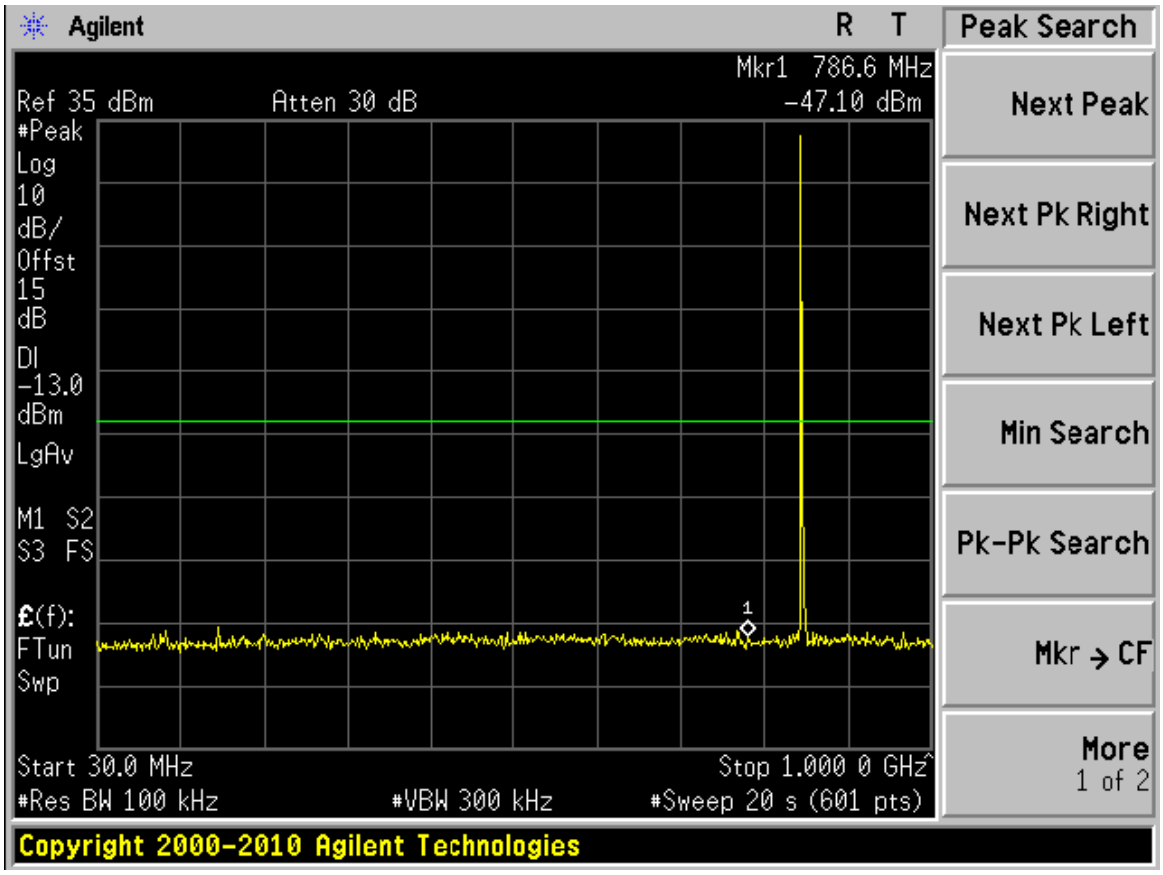
Conducted Spurious Emissions Mid CH (30 MHz – 1GHz)



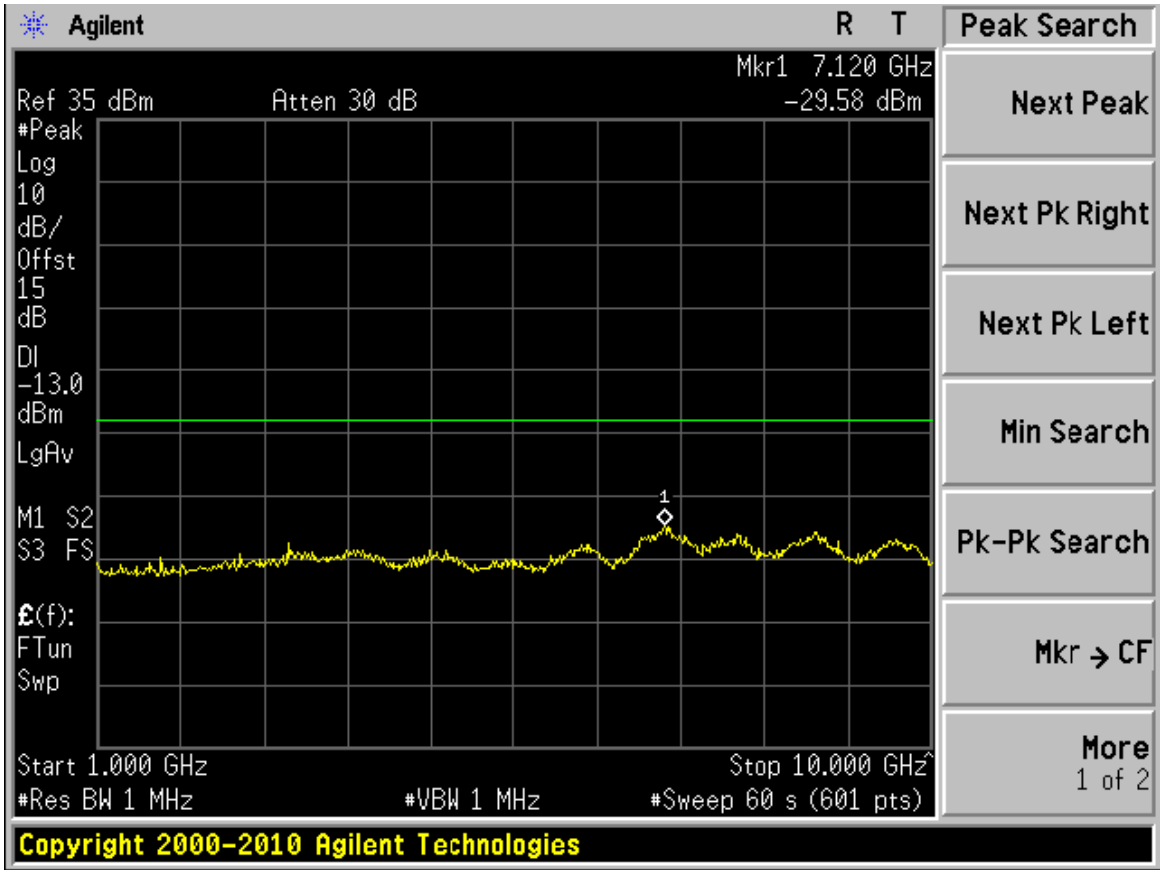
Conducted Spurious Emissions Low CH (1GHz – 10GHz)



Conducted Spurious Emissions High CH (30 MHz – 1GHz)

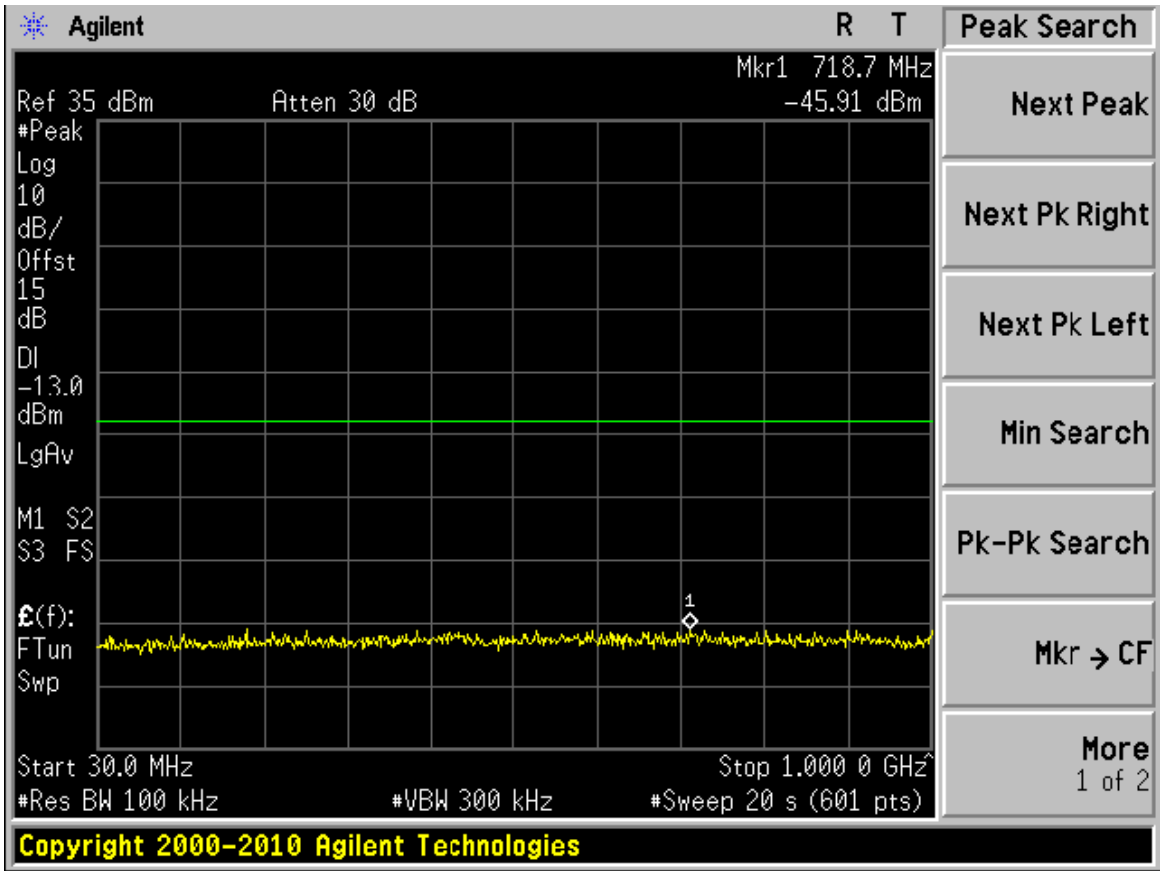


Conducted Spurious Emissions High CH (1GHz – 10GHz)

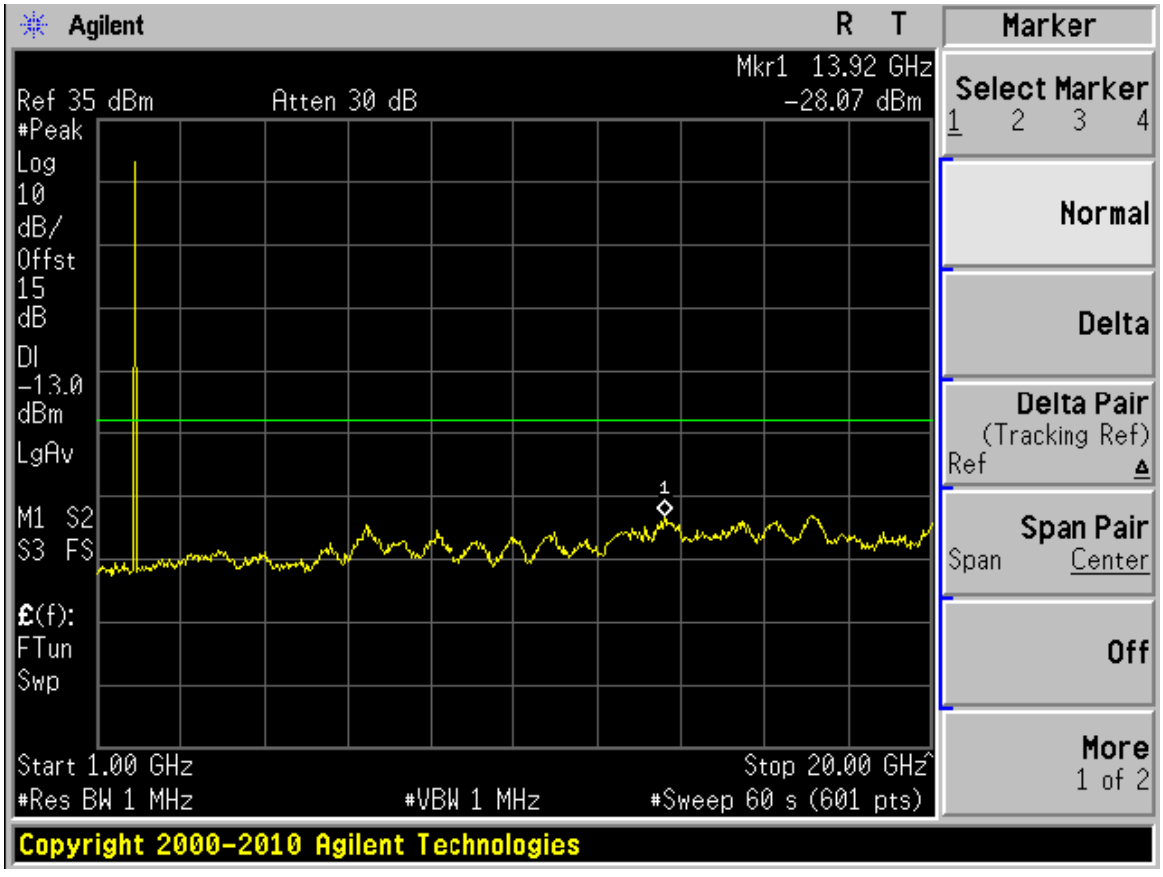


Plots of GPRS 1900 Spurious Emission

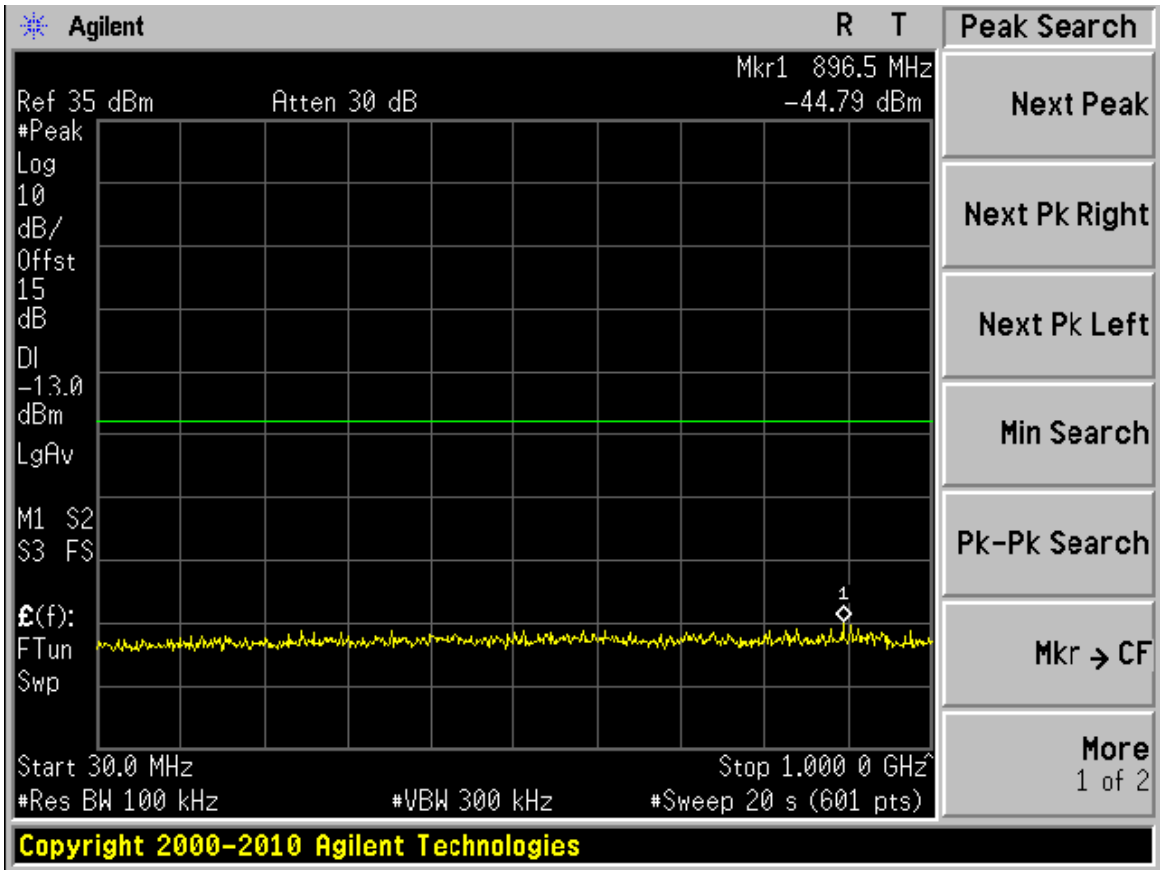
Conducted Spurious Emissions Low CH (30 MHz – 1GHz)



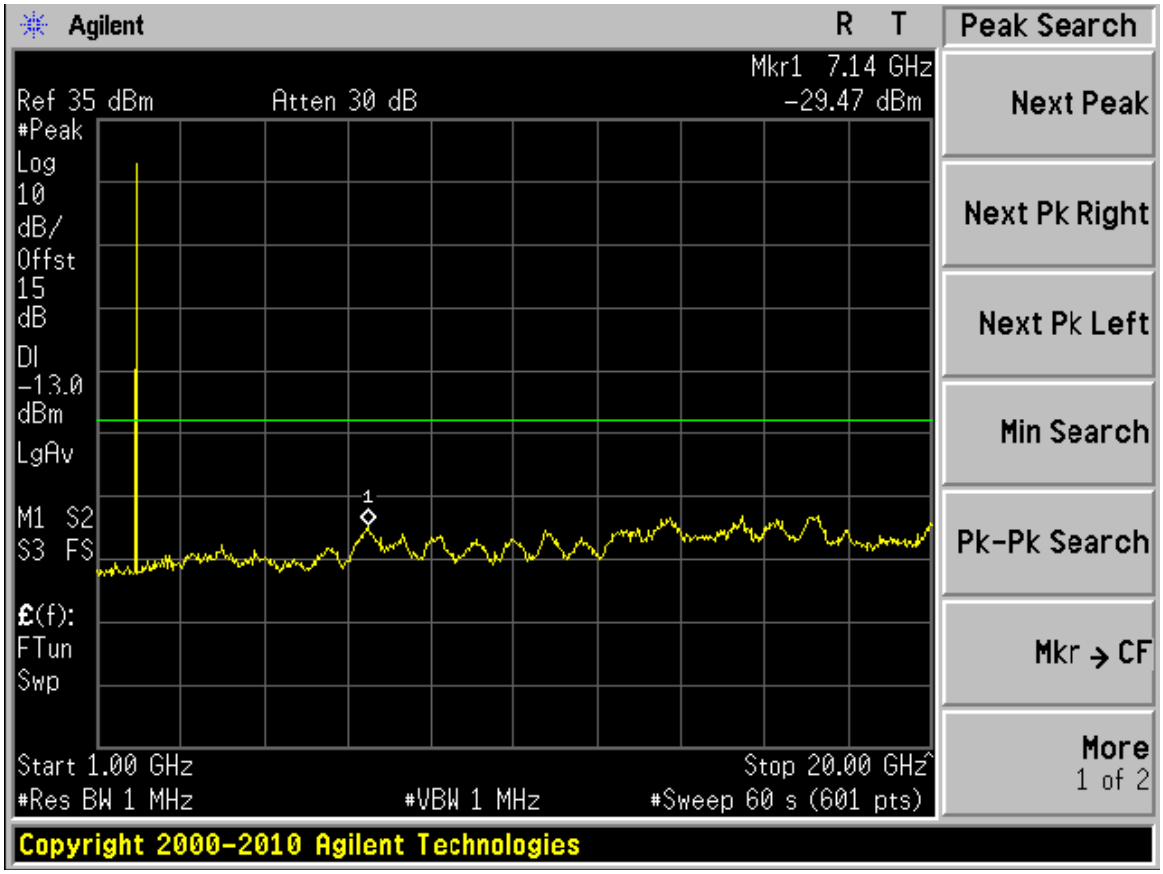
Conducted Spurious Emissions Low CH (1GHz – 20GHz)



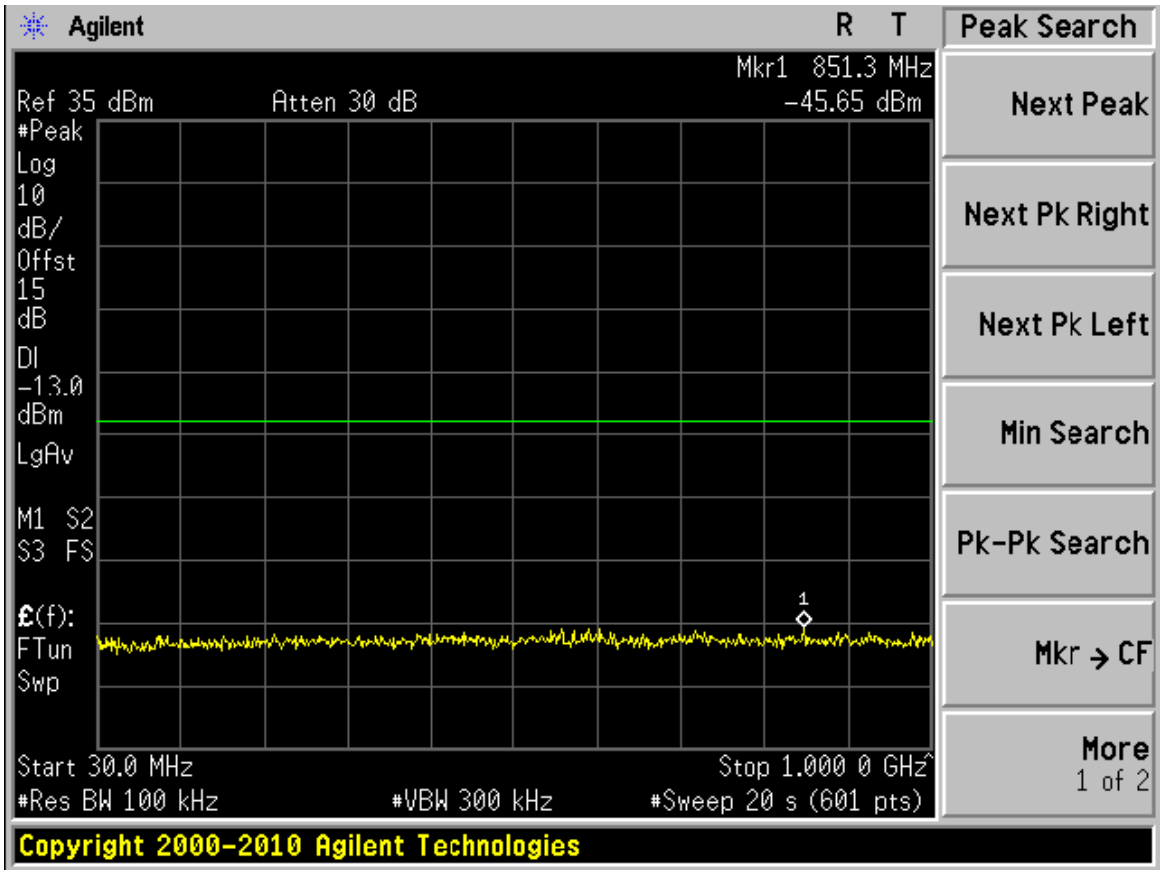
Conducted Spurious Emissions Mid CH (30 MHz – 1GHz)



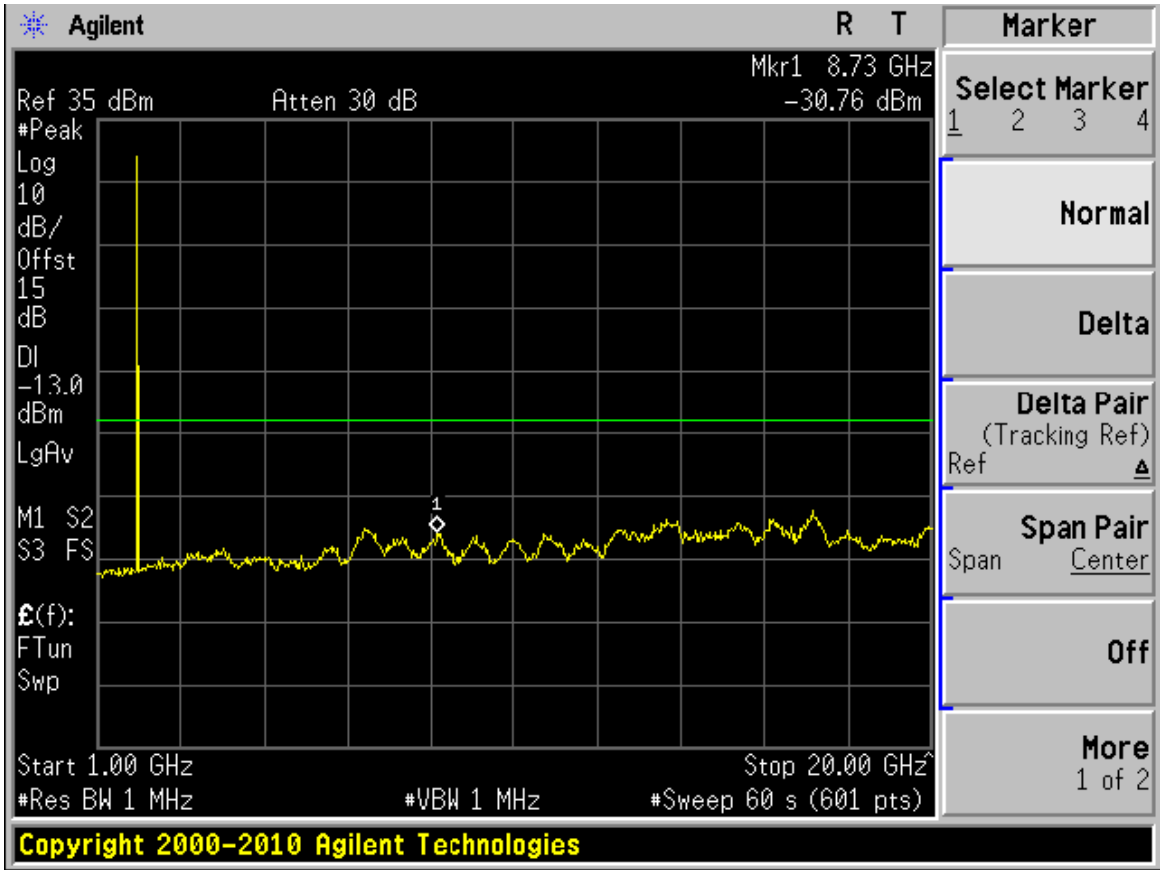
Conducted Spurious Emissions Mid CH (1GHz – 20GHz)



Conducted Spurious Emissions High CH (30 MHz – 1GHz)



Conducted Spurious Emissions High CH (1GHz – 20GHz)



5.5. Radiated Emissions Measurement

5.5.1. Standard Applicable

§ 2.1053 Measurements required: Field strength of spurious radiation.

§ 2.1053 (a) Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation. Curves or equivalent data shall be supplied showing the magnitude of each harmonic and other spurious emission. For this test, single sideband, independent sideband, and controlled carrier transmitters shall be modulated under the conditions specified in paragraph (c) of § 2.1049, as appropriate. For equipment operating on frequencies below 890 MHz, an open field test is normally required with the measuring instrument antenna located in the far-field at all test frequencies. In the event it is either impractical or impossible to make open field measurements (e.g. a broadcast transmitter installed in a building) measurements will be accepted of the equipment as installed. Such measurements must be accompanied by a description of the site where the measurements were made showing the location of any possible source of reflections which might distort the field strength measurements. Information submitted shall include the relative radiated power of each spurious emission with reference to the rated power output of the transmitter, assuming all emissions are radiated from half-wave dipole antennas.

§ 2.1053 (b): The measurements specified in paragraph (a) of this section shall be made for the following equipment:

(1) Those in which the spurious emissions are required to be 60 dB or more below the mean power of the transmitter.

(2) All equipment operating on frequencies higher than 25 MHz.

(3) All equipment where the antenna is an integral part of, and attached directly to the transmitter.

(4) Other types of equipment as required, when deemed necessary by the Commission.

5.5.2. Measuring Instruments and Setting

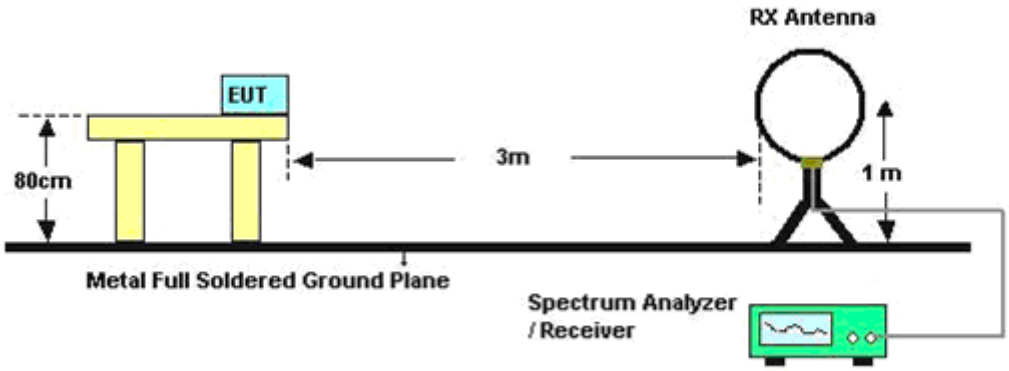
Please refer to section 6 of equipments list in this report.

5.5.3. Test Procedures

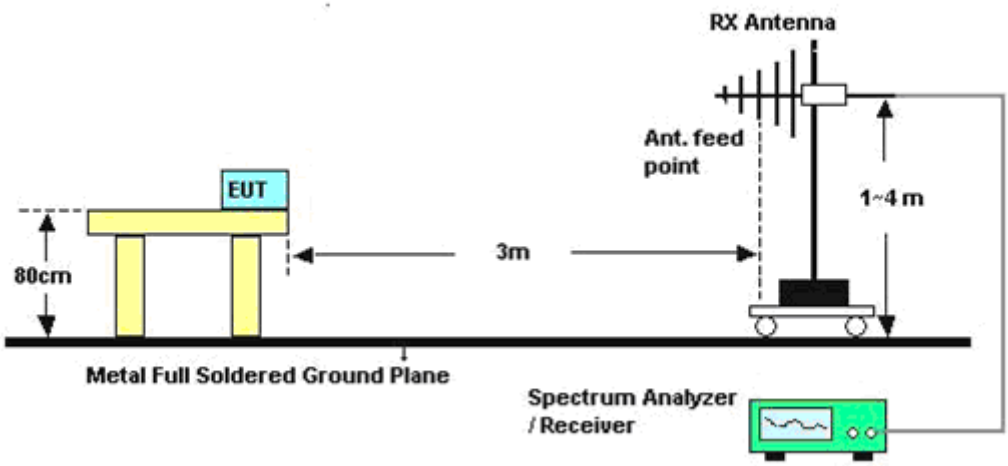
As required by 47 CFR 2.1053, field strength of radiated spurious measurements were made in accordance with the procedures of TIA/EIA-603-C-2004 "Land Mobile FM or PM Communications Equipment Measurement and Performance Standards". Radiated emission measurements were performed inside a 3 meter semi-anechoic chamber. The EUT was set at a distance of 3m from the receiving antenna. The EUT's RF ports were terminated to 50ohm load. The EUT was set to transmit at the low, mid and high channels of the transmitter frequency range at its maximum power level. The EUT was rotated about 360 and the receiving antenna scanned from 1-3m in order to capture the maximum emission. A calibrated antenna source was positioned in place of the EUT and the previously recorded signal was duplicated. The maximum EIRP of the emission was calculated by adding the forward power to the calibrated source plus its appropriate gain value. These steps were carried. out with the receiving antenna in both vertical and horizontal polarization. Harmonic emissions up to the 10th or 40GHz, whichever was the lesser, were investigated.

5.5.4. Test Setup Layout

For radiated emissions below 30MHz



For radiated emissions above 30MHz



5.5.5. Test Results

PASS.

Note:

There were no emissions detected above the noise floor which was at least 20 dB below the limit.

5.6. Frequency Stability Over Temperature And Voltage Variations

5.6.1. Standard Applicable

According to FCC § 2.1055 The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.

5.6.2. Test Procedures

As required by 47 CFR 2.1055, Frequency Stability measurements were made at the RF output terminals using a Spectrum Analyzer.

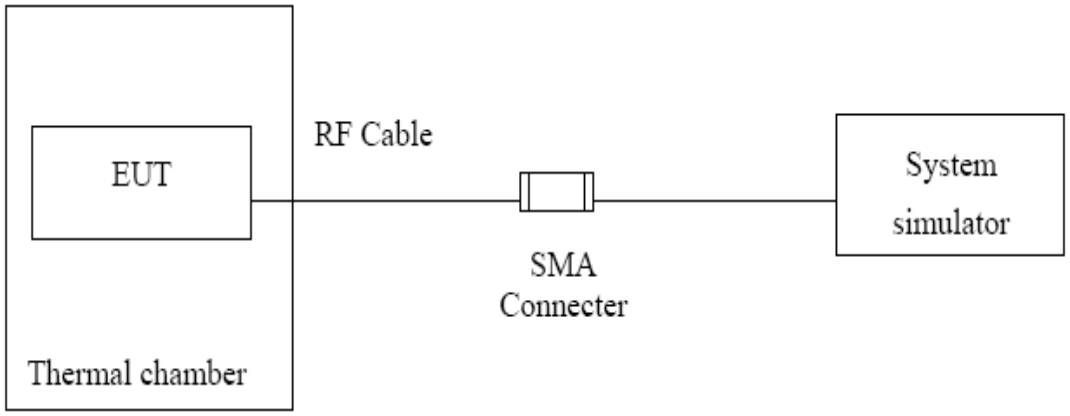
The EUT was placed in the Environmental Chamber.

A CW signal was injected into the EUT at the appropriate RF level. The frequency counter option on the Spectrum Analyzer was used to measure frequency deviations.

The frequency drift was investigated for every 10 °C increment until the unit is stabilized then recorded the reading in tabular format with the temperature range of -30 to 50 °C.

Voltage supplied to EUT is 120 Vac reference temperature was done at 20°C. The voltage was varied by ± 15 % of nominal

5.6.3. Test Setup



5.6.4. Test Results

PASS.

(GPRS 850 Mid CH)

Voltage (%)	Temp (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	PPM	Limit (PPM)
100%	+20%(Ref)	836 600 084	0	0.000 000	0.000	± 2.5
100%	-30	836 600 072	72	0.000 086	0.086	± 2.5
100%	-20	836 600 062	62	0.000 074	0.074	± 2.5
100%	-10	836 600 080	80	0.000 096	0.096	± 2.5
100%	0	836 600 057	57	0.000 068	0.068	± 2.5
100%	+10	836 600 078	78	0.000 093	0.093	± 2.5
100%	+30	836 600 066	66	0.000 079	0.079	± 2.5
100%	+40	836 600 055	55	0.000 066	0.066	± 2.5
100%	+50	836 600 030	30	0.000 036	0.036	± 2.5
115%	+20	836 600 028	28	0.000 033	0.033	± 2.5
85%	+20	836 600 047	47	0.000 056	0.056	± 2.5

(GPRS 1900 Mid CH)

Voltage (%)	Temp (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	PPM	Limit (PPM)
100%	+20%(Ref)	1880 000 048	0	0.000 000	0.000	± 2.5
100%	-30	1880 000 072	72	0.000 004	0.039	± 2.5
100%	-20	1880 000 066	66	0.000 004	0.035	± 2.5
100%	-10	1880 000 057	57	0.000 003	0.030	± 2.5
100%	0	1880 000 022	22	0.000 001	0.011	± 2.5
100%	+10	1880 000 039	39	0.000 002	0.021	± 2.5
100%	+30	1880 000 054	54	0.000 003	0.028	± 2.5
100%	+40	1880 000 058	58	0.000 003	0.031	± 2.5
100%	+50	1880 000 045	45	0.000 002	0.024	± 2.5
115%	+20	1880 000 049	49	0.000 003	0.026	± 2.5
85%	+20	1880 000 079	79	0.000 004	0.042	± 2.5

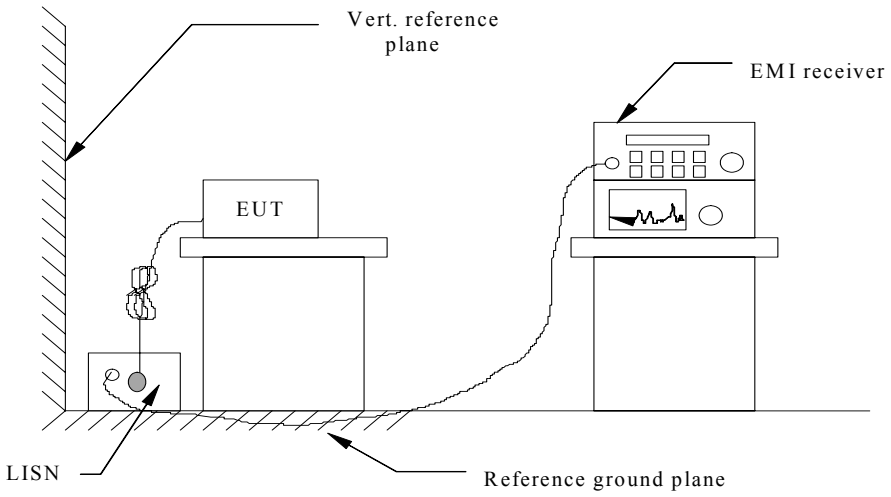
5.7. Power line conducted emissions

5.7.1 Standard Applicable

According to§15.207 (a): For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

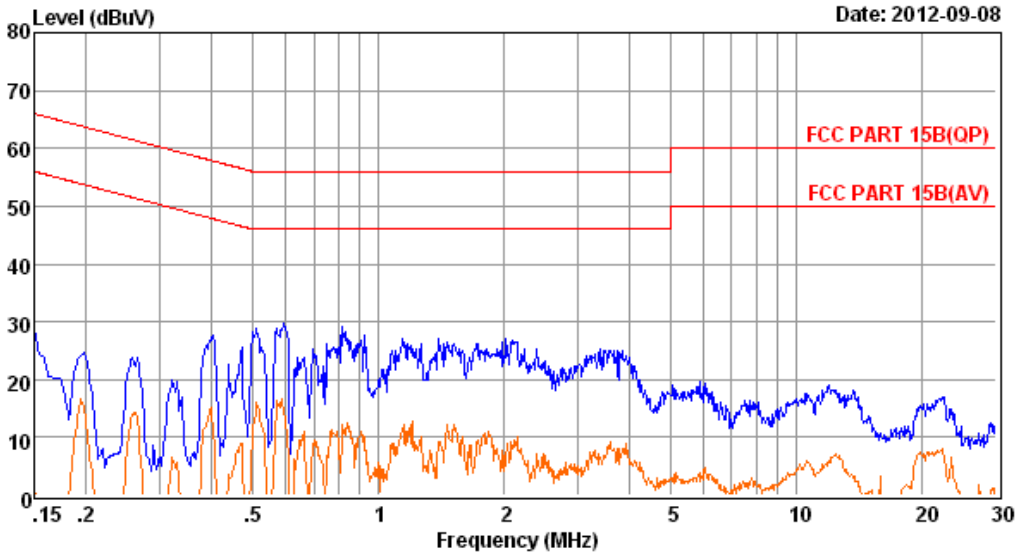
5.7.2 Block Diagram of Test Setup



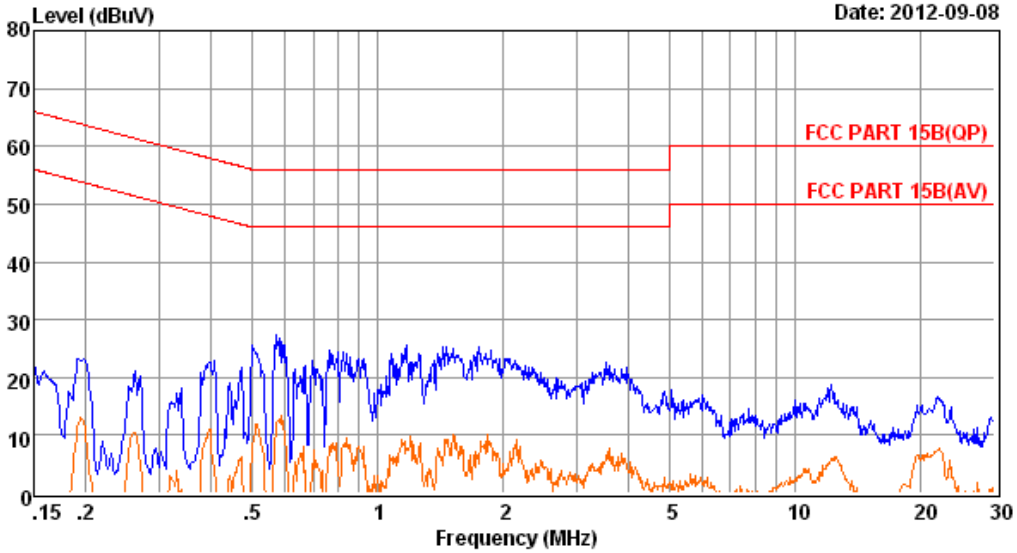
5.7.3 Test Results

PASS.

The test data please refer to following page.



Env. Ins:	24*/56%
EUT:	LUGGAGE LOCATOR
M/N:	LUGLOC 002
Power Rating:	DC 3.7V From Adapter Input AC 120V/60Hz
Test Mode:	On
Operator:	Fox
Memo:	
Pol:	LINE



Env. Ins:	24*/56%
EUT:	LUGGAGE LOCATOR
M/N:	LUGLOC 002
Power Rating:	DC 3.7V From Adapter Input AC 120V/60Hz
Test Mode:	On
Operator:	Fox
Memo:	
Pol:	NEUTRAL

Note: Pre-scan all mode and recorded the worst case results in this report (Normal Link)

5.8. Deviation to test specifications

[NONE]

6. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
Signal Generator	Agilent	E4438C	MY42082646	June 18,2012	June 17,2013
Power Meter	Agilent	E4416A	GB41291412	June 18,2012	June 17,2013
ATTENUATOR	WEINSCHEL	RAXXA005-S-A	BR0534 (OFFset（15dB）	June 18,2012	June 17,2013
Temperature and Humidity Chamber	Korea Eng	KR-1005L	KRAC05063-3CH	June 29,2012	June 28,2013
Universal Radio Communication	R&S	CMU200	100680	June 29,2012	June 28,2013
Signal Analyzer	Agilent	N9020A	US46220219	June 18,2012	June 17,2013
BI-LOG Antenna	Schwarzbeck	VULB 9168	9168-200	June 18,2012	June 17,2013
Antenna Position Tower	HD	MA240	556	N/A	N/A
Turn Table	EMCO	1050	114	N/A	N/A
Controller	HD GmbH	HD 100	13	N/A	N/A
SlideBar	HD GmbH	KMS 560	12	N/A	N/A
Horn Antenna	MITEQ	AFS44-00102650-42-10P44-PS	1532439	June 18,2012	June 17,2013
Horn Antenna	Schwarzbeck	BBHA 9120D	147	July 07,2012	July 06,2013
Loop Antenna	Schwarzbeck	BBHA 9120D	296	July 07,2012	July 06,2013
Signal Generator	EMCO	6502	9009-2536	July 07,2012	July 06,2013

7. MANUFACTURER/ APPROVAL HOLDER DECLARATION

The following identical model(s):

LUGLOC 003	LUGLOC 004	LUGLOC 005	LUGLOC 006
LUGLOC 007	LUGLOC 008	LUGLOC 009	LUGLOC 010

All the models are similar except their appearance and model name.

Belong to the tested device:

Product description : LUGGAGE LOCATOR

Model name : LUGLOC 002

No additional models were tested.

----------THE END OF REPORT----------