

# TEST REPORT FROM RFI GLOBAL SERVICES LTD

Test of: GTX Corp Mobile1

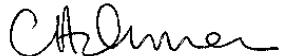
To: FCC Part 15: 2007 Subpart B  
Clause 15.109 Radiated Emissions &  
RSS-Gen Issue 2 June 2007

**Test Report Serial No:**  
RFI/EMC2/RP72563JD06A

**Supersedes Test Report Serial No:**  
RFI/EMC1/RP72563JD06A

This Test Report Is Issued Under The Authority  
Of Steve Flooks, Service Leader:



Checked By:	Claire Ashman
Signature:	
Date of Issue:	16 July 2008

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## **1. Customer Information**

<b>Company Name:</b>	GTX Corp
<b>Address:</b>	117 W. 9th Street, Number 1214 Los Angeles California 90015

## 2. Summary of Testing

### 2.1. General Information

<b>Specification Reference:</b>	FCC Part 15: 2007 Subpart B Clause 15.109 Radiated Emissions & RSS-Gen Issue 2 June 2007
<b>Specification Title:</b>	Code of Federal Regulations, Part 15 (47CFR15) Radio Frequency Devices: Digital Devices.
<b>Specification Reference:</b>	RSS-210 Issue 7 June 2007
<b>Specification Title:</b>	Low-power Licence-exempt Radio communication Devices (All Frequency Bands): Category I Equipment.
<b>Specification Reference:</b>	RSS-Gen Issue 2 June 2007
<b>Specification Title:</b>	General Requirements and Information for the Certification of Radio communication Equipment.
<b>Comments:</b>	A description of the test facility used for this test is on file with, and has been accepted by, the Federal Communications Commission as required by Section 2.948 of Federal Rules.
<b>Site Registration No:</b>	<ul style="list-style-type: none"> <li>• 90895 (FCC)</li> <li>• 3485 (Industry Canada)</li> </ul>
<b>Location of Testing:</b>	RFI Global Services Ltd, Ewhurst Park, Basingstoke, Hampshire, RG26 5RQ.
<b>Test Dates:</b>	12 June to 13 June 2008

### 2.2. Summary of Test Results

FCC Clause	IC Clause	Measurement	Applicability	Result
15.109	RSS-Gen §4.10 RSS-Gen §6.0	Radiated Emissions Electric Field Strength	Y	✓

**Key to Results**

 = Complied  
  = Complied, within uncertainty  
  = Did not comply, within uncertainty  
  = Did not comply

### 2.3. 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, nor from the requirements defined in the basic standards called up within it.

### **3. Equipment Under Test (EUT)**

#### **3.1. Identification of Equipment Under Test (EUT)**

<b>Description:</b>	GSM Tracking Device
<b>Brand Name:</b>	GTX Corp
<b>Model Name or Number:</b>	Mobile1 (Refer to Note 1)
<b>Serial Number:</b>	Sample 92
<b>FCC ID Number:</b>	WFRGC226142
<b>Country of Manufacture:</b>	USA

#### **Note(s):**

1. The equipment was tested under the model name XPLORER Tracking Engine. The customer has now informed RFI that the model name has been changed to Mobile1. No physical modifications have been made to the EUT as part of this change.

#### **3.2. Description of EUT**

The equipment under test was a GSM Tracking Device.

#### **3.3. Modifications Incorporated in the EUT**

No modifications were applied to the EUT during testing.

#### **3.4. Additional Information Related to Testing**

<b>Intended Operating Environment:</b>	Within GSM Coverage
<b>Equipment Category:</b>	GSM/GPRS
<b>Equipment Class:</b>	Class B
<b>Type of Unit:</b>	Portable (Standalone battery powered device)
<b>Highest Operating Frequency:</b>	1990 MHz
<b>Power Supply Requirement:</b>	Internal battery supply of 3.7 V
<b>Weight:</b>	<100 g
<b>Dimensions:</b>	15 cm x 4 cm x 2 cm

#### **3.5. Port Identification**

Port	Description	Type	Applicable
1	Enclosure	-	Y

### **3.6. Support Equipment**

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

<b>Description:</b>	Charger
<b>Brand Name:</b>	Global Trex Xploration Corp
<b>Model Name or Number:</b>	CH – ANL K 84
<b>Serial Number:</b>	None Stated
<b>Cable Length and Type:</b>	Not Applicable
<b>Connected to Port:</b>	Connected to battery during charging process only

<b>Description:</b>	Battery
<b>Brand Name:</b>	Global Trex Xploration Corp
<b>Model Name or Number:</b>	R - ANLK84
<b>Serial Number:</b>	None Stated
<b>Cable Length and Type:</b>	Not Applicable
<b>Connected to Port:</b>	Directly attached to EUT

## **4. Operation and Monitoring of the EUT during Testing**

### **4.1. Operating Modes**

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

- GSM 850 Allocated & Idle Mode
- GSM 1900 Allocated & Idle Mode

These modes were chosen because they were defined by the customer as being typical of normal use and likely to be a worst case with regard to EMC.

### **4.2. Configuration and Peripherals**

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

- Standalone battery powered.

This configuration was chosen because it was defined by the customer as being typical of normal use and likely to be a worst case with regard to EMC.

Please refer to *Appendix 2. Test Configuration Drawings* for a schematic drawing(s) of the test configuration(s) employed in the course of testing.

## **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. Radiated Emissions**

### **5.2.1. Electric Field Strength Measurements**

Plots of the initial scans can be found in *Appendix 3. Graphical Test Results*.

#### **Test Summary:**

<b>Port:</b>	Enclosure
<b>Basic Standard:</b>	FCC Part 15.109 RSS-Gen §4.10 RSS-Gen §6.0
<b>Test Method:</b>	ANSI C63.4 Section 8
<b>Measurement Distance:</b>	3 metres
<b>Frequency Range:</b>	30 MHz to 1 GHz
<b>Operating Mode</b>	GSM 1900 Idle Mode <sup>1</sup>

#### **Environmental Conditions:**

<b>Temperature Variation (°C):</b>	18
<b>Relative Humidity Variation (%):</b>	44
<b>Atmospheric Pressure Variation (mb):</b>	1003

#### **Results:**

Frequency (MHz)	Antenna Polarity	Quasi Peak Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Note(s)	Result
33.3066	Vertical	21.2	40.0	18.8	-	Complied
110.861	Vertical	14.0	43.5	29.5	-	Complied
128.597	Vertical	20.4	43.5	23.1	-	Complied
140.621	Vertical	14.1	43.5	29.4	-	Complied
175.190	Vertical	12.0	43.5	31.5	-	Complied
267.094	Vertical	16.0	46.0	30.0	-	Complied
988.496	Vertical	33.5	54.0	20.5	-	Complied

#### **Note(s):**

2. Pre-scans were performed in both GSM 850 and 1900 modes. From these scans it was determined that GSM 1900 mode was the worst case and final measurements were performed in this mode only.

### **5.2.2. Electric Field Strength Measurements**

Plots of the initial scans can be found in *Appendix 3. Graphical Test Results*.

#### **Test Summary:**

<b>Port:</b>	Enclosure
<b>Basic Standard:</b>	FCC Part 15.109 RSS-Gen §4.10 RSS-Gen §6.0
<b>Test Method:</b>	ANSI C63.4 Section 8
<b>Measurement Distance:</b>	3 metres
<b>Frequency Range:</b>	1 GHz to 12 GHz
<b>Operating Mode</b>	GSM 850 Idle Mode GSM 1900 Idle Mode

#### **Environmental Conditions:**

<b>Temperature Variation (°C):</b>	18
<b>Relative Humidity Variation (%):</b>	44
<b>Atmospheric Pressure Variation (mb):</b>	1003

#### **Results:**

Frequency (MHz)	Antenna Polarity	Peak Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Note(s)	Result
Refer to Note 1						

#### **Note(s):**

1. No emissions from the EUT were observed above 1 GHz.

## **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
Radiated Emissions Electric Field Strength	30 to 1000 MHz	95%	± 4.68 dB
	1 GHz to 12 GHz	95%	± 4.93 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 Last Calibrated	Cal. Interval (Months)
A028	Antenna	Eaton	91888-2	304	08 Jun 2006	36
A1037	Antenna	Chase EMC Ltd	CBL6112B	2413	29 May 2008	12
A1362	Antenna	Stoddart Aircraft Radio Co., Inc.	91889-1	N/A	08 Jun 2006	36
A1515	Horn Antenna	Stoddart Aircraft Radio Co., Inc	92341-1	0436	17 Nov 2006	36
A1516	Universal Radio Communications Tester	Rohde & Schwarz	CMU200	1100.0008.02	Calibration not required	-
A1534	Pre Amplifier	Hewlett Packard	8449B OPT H02	3008A00405	Calibrated before use	-
A253	Antenna	Flann Microwave	12240-20	128	17 Nov 2006	36
A254	Antenna	Flann Microwave	14240-20	139	17 Nov 2006	36
A255	Antenna	Flann Microwave	16240-20	519	17 Nov 2006	36
A276	OATS Positioning Controller	Rohde & Schwarz	HCC		Calibration not required	-
A553	Antenna	Chase	CBL6111A	1593	04 Jun 2008	12
C1086	Cable	Radio Frequency Investigation Ltd	C1086	C1086-14072003	Calibrated before use	-
C1140	Cable	Suhner	SUCOFLEX 104A	37016 14A	Calibrated as part of system	-
C1158	Cable	Rosenberger	FA210A1010005G 5G	3305 42447-1	20 Apr 2008	12
C1165	Cable	Rosenberger Micro-Coax	FA210A1020007070	43189-1	20 Apr 2008	12
C151	Cable	Rosenberger	UFA210A-1-1181-70x70	None	20 Apr 2008	12
C160	Cable	Rosenberger	UFA210A-1-1181-70x70	None	20 Apr 2008	12
C340	Cable	Andrews	None	None	24 Apr 2008	12
C341	Cable	Andrews	None	None	24 Apr 2008	12
C348	Cable	Rosenberger	UFA210A-1-1181-70x70	2993	20 Apr 2008	12
C363	Cable	Rosenberger	RG142	None	20 Apr 2008	12
C460	Cable	Rosenberger	UFA210A-1-1182-704704	98H0304	20 Apr 2008	12
C461	Cable	Rosenberger	UFA210A-1-1182-704704	98H0305	20 Apr 2008	12

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
M023	Test Receiver	Rohde & Schwarz	ESVP	872 991/027	28 May 2008	12
M024	Spectrum Monitor	Rohde & Schwarz	EZM	873 952/006	Calibrated before use	-
M1140	Radio Communications Analyser	Anritsu	MT8820A	6K0000647	Calibration not required	-
M1263	Test Receiver	Rohde & Schwarz	ESIB7	100265	06 Feb 2008	12
M1265	Thermometer/Hygrometer	RS	212-124	0	18 Jun 2008	12
M173	Turntable Controller	R.H.Electrical Services	RH351	3510020	Calibration not required	-
S201	Open Area Test Site	RFI	1	-	09 May 2008	12
S212	Emissions Screened Room	RFI	12	-	Calibration not required	-

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

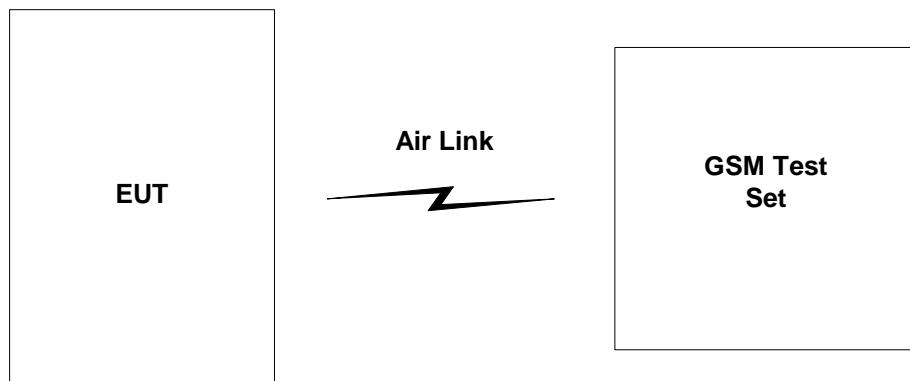
## **Appendix 2. Test Configuration Drawings**

This Appendix contains the following drawings:

Drawing Reference Number	Title
DRG\72563JD06\001	Schematic diagram of the EUT, support equipment and interconnecting cables used for the test

**DRG\72563JD06\001**

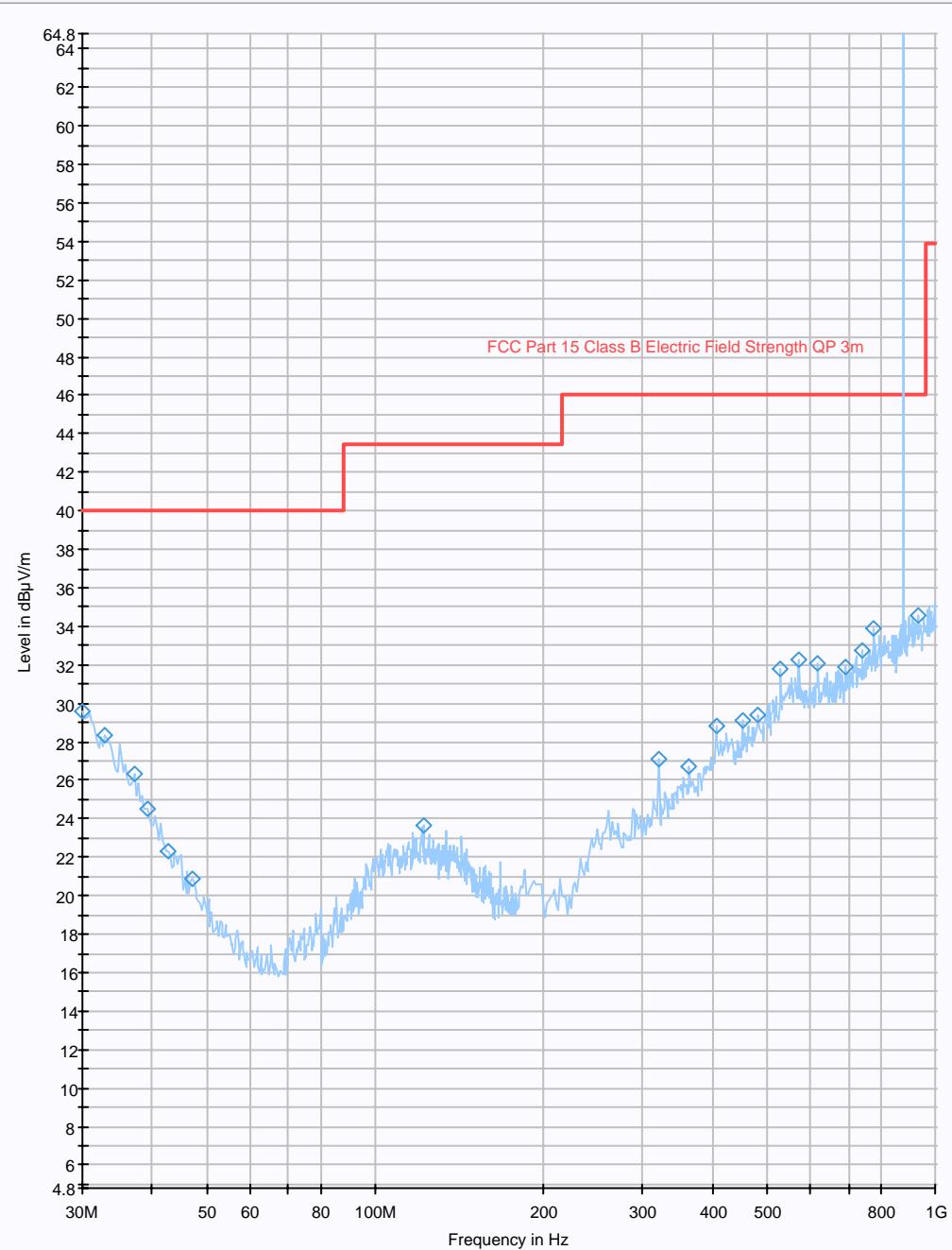
**Configuration of EUT and Local Support Equipment**

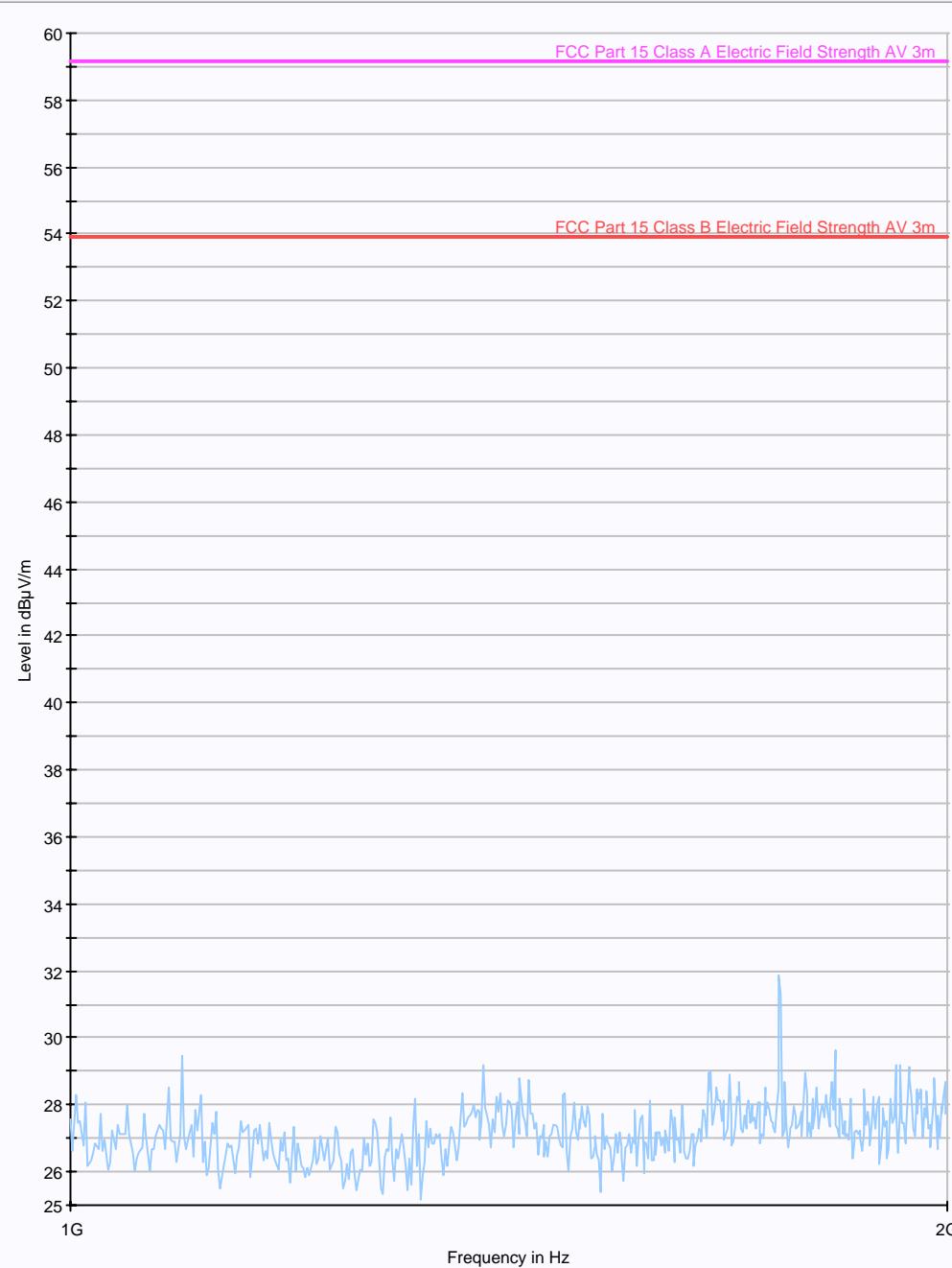


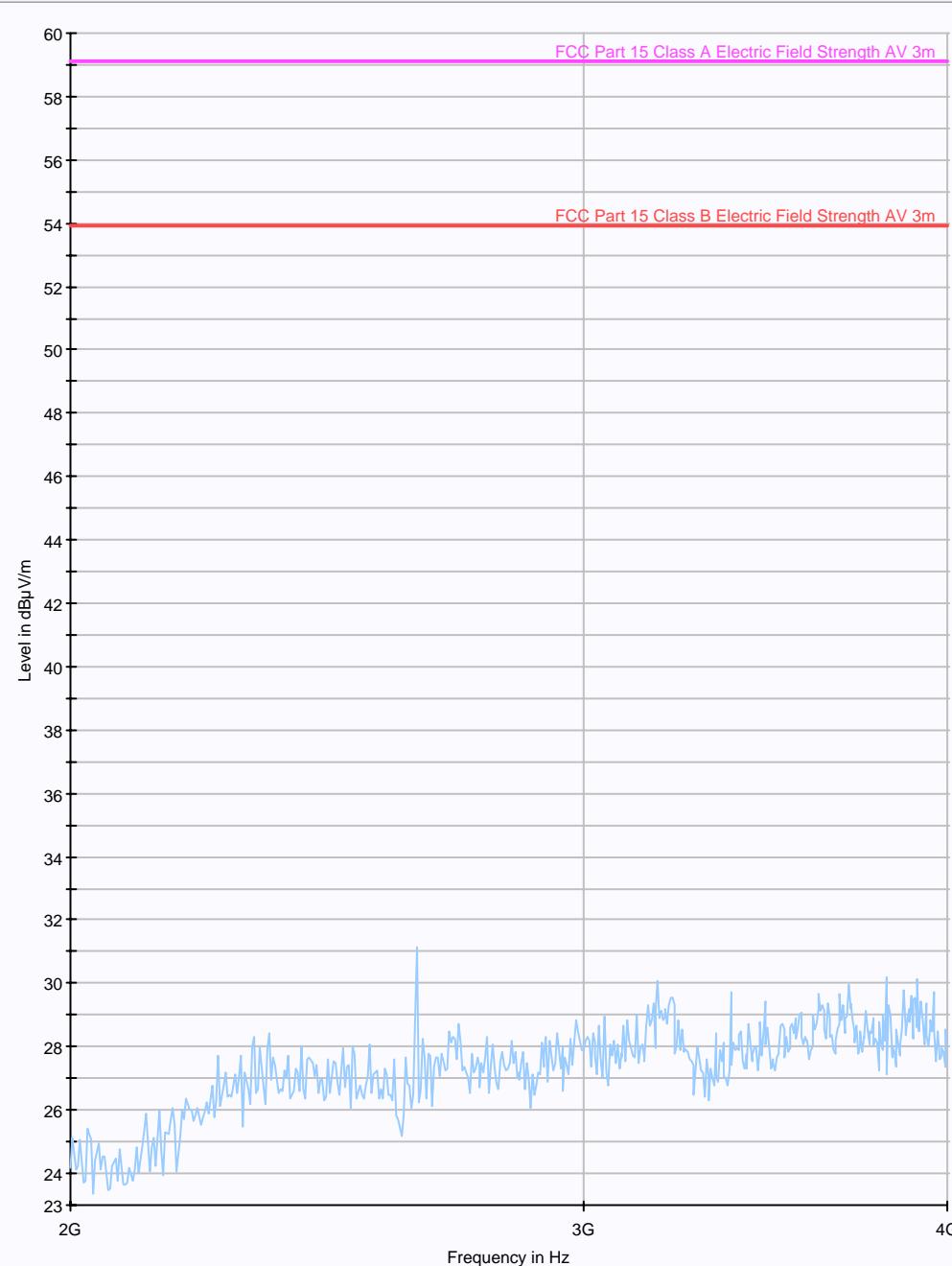
## **Appendix 3. Graphical Test Results**

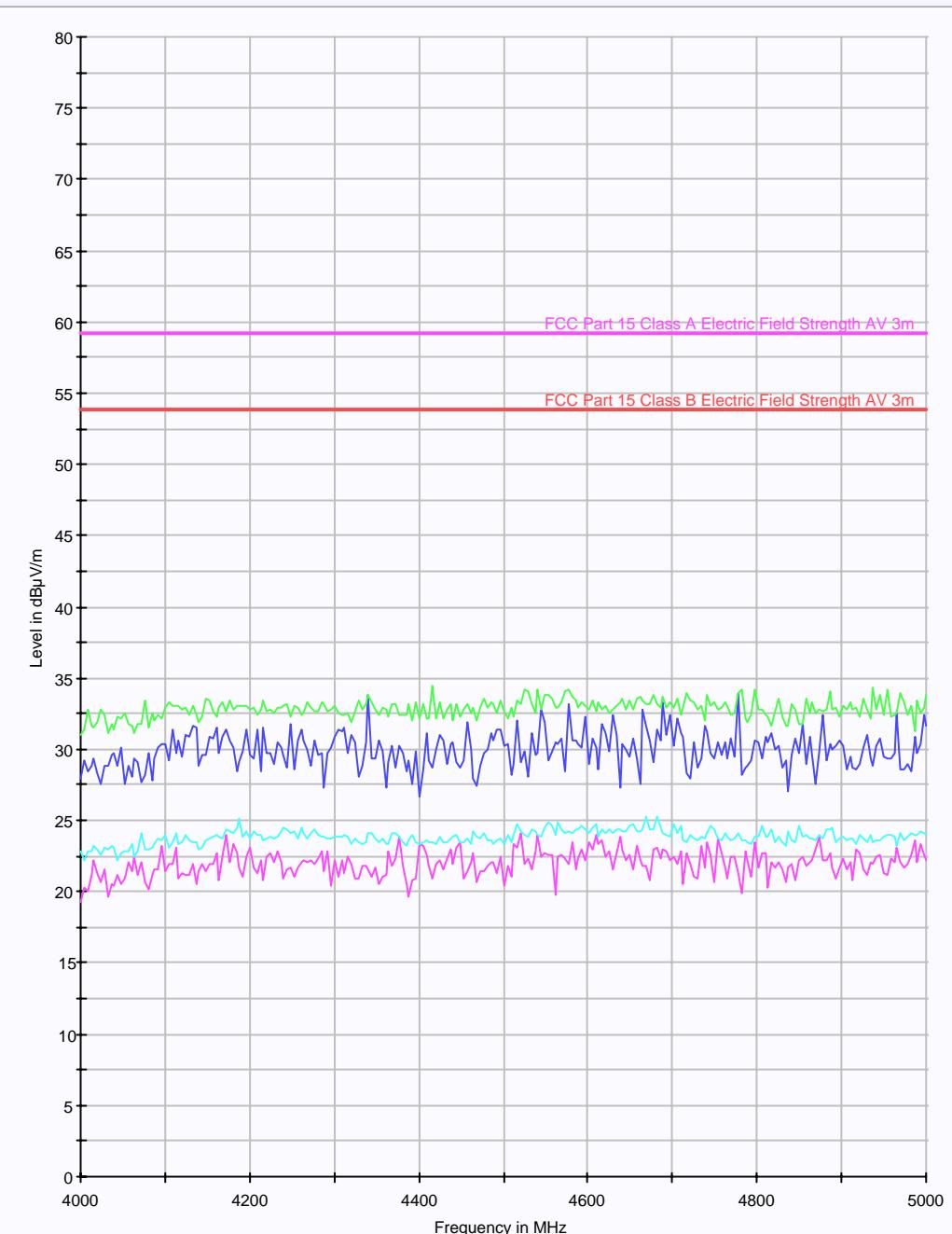
This Appendix contains the following graphs:

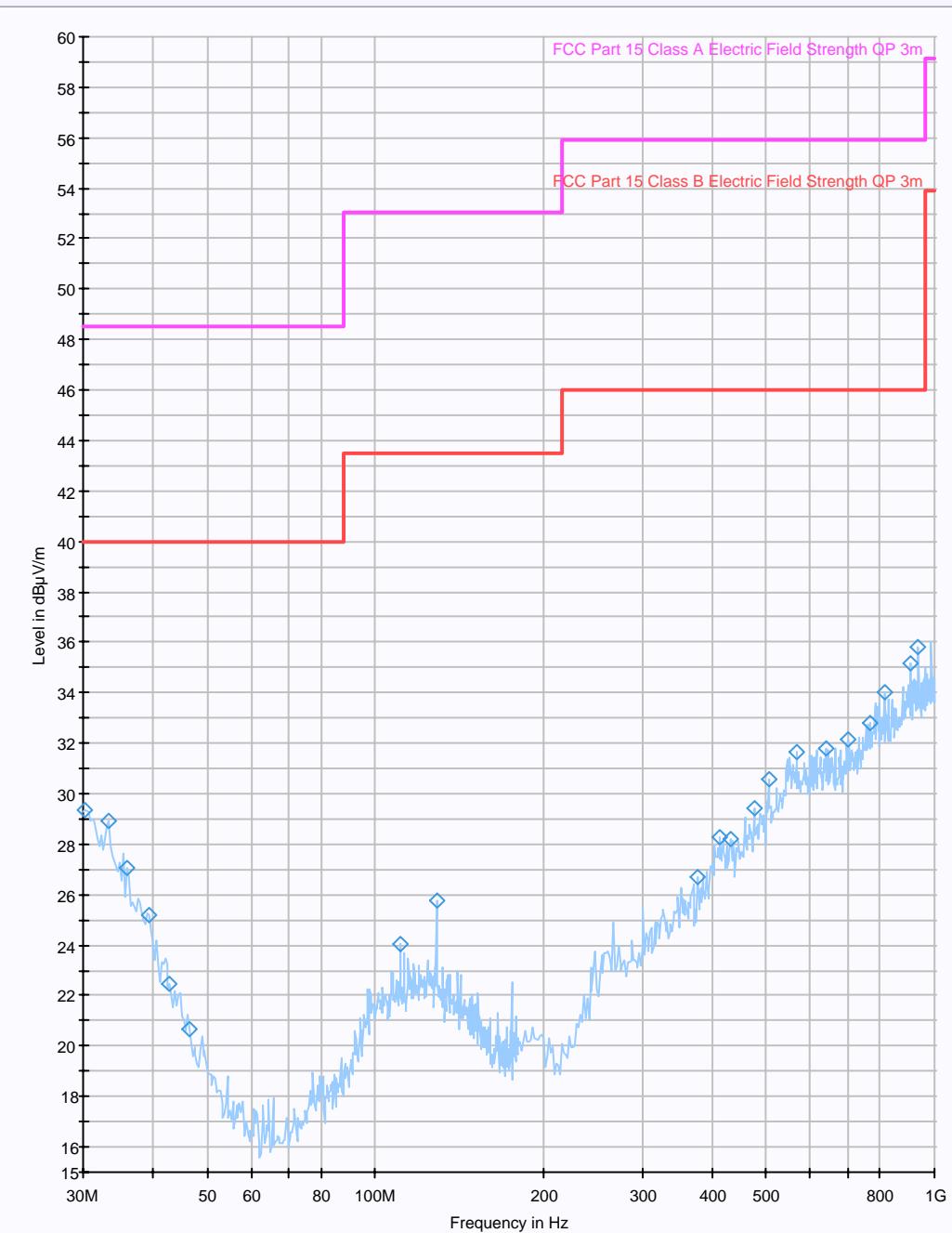
Graph Reference Number	Title
GPH\72563JD06\001	Radiated Emissions: GSM 850 Idle Mode Pre-Scan (30 MHz to 1000 MHz)
GPH\72563JD06\002	Radiated Emissions: GSM 850 Idle Mode Pre-Scan (1 GHz to 2 GHz)
GPH\72563JD06\003	Radiated Emissions: GSM 850 Idle Mode Pre-Scan (2 GHz to 4 GHz)
GPH\72563JD06\004	Radiated Emissions: GSM 850 Idle Mode Pre-Scan (4 GHz to 5 GHz)
GPH\72563JD06\005	Radiated Emissions: GSM 1900 Idle Mode Pre-Scan (30 MHz to 1000 MHz)
GPH\72563JD06\006	Radiated Emissions: GSM 1900 Idle Mode Pre-Scan (1 GHz to 2 GHz)
GPH\72563JD06\007	Radiated Emissions: GSM 1900 Idle Mode Pre-Scan (2 GHz to 4 GHz)
GPH\72563JD06\008	Radiated Emissions: GSM 1900 Idle Mode Pre-Scan (4 GHz to 6 GHz)
GPH\72563JD06\009	Radiated Emissions: GSM 1900 Idle Mode Pre-Scan (6 GHz to 8 GHz)
GPH\72563JD06\010	Radiated Emissions: GSM 1900 Idle Mode Pre-Scan (8 GHz to 10 GHz)

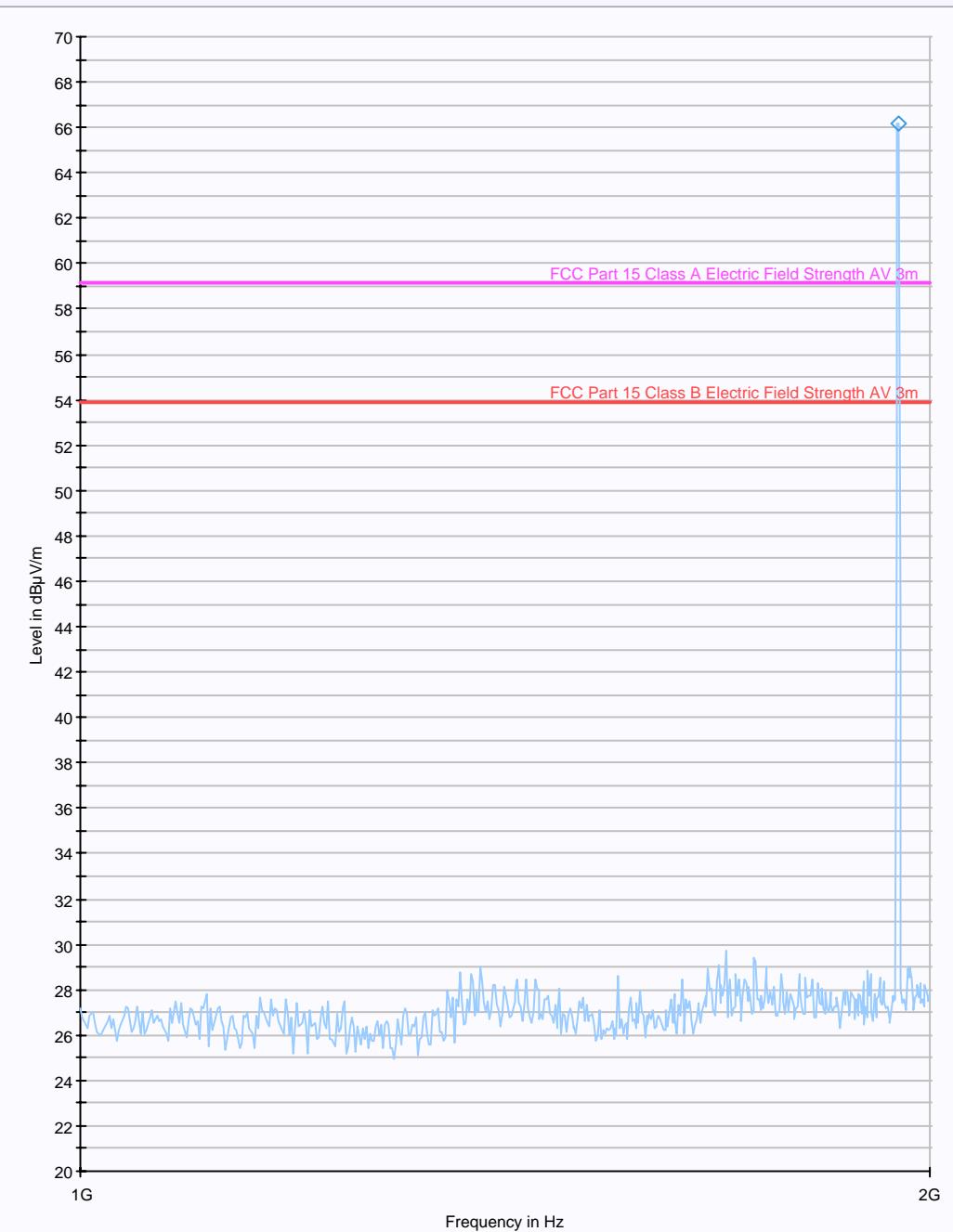
**GPH72563JD06\001****Radiated Emissions: GSM 850 Idle Mode****Pre-Scan (30 MHz to 1000 MHz)**

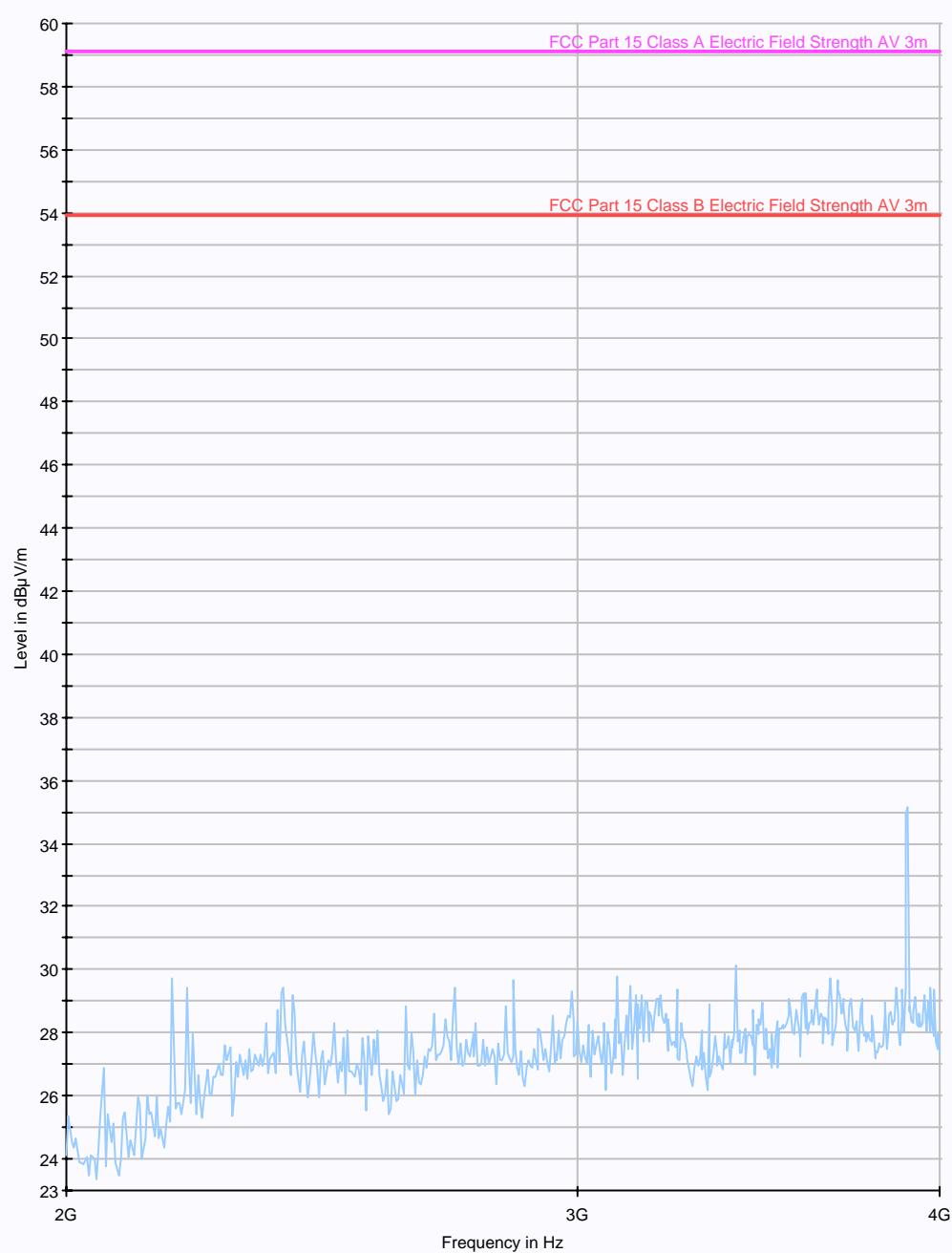
**GPHV72563JD06\002****Radiated Emissions: GSM 850 Idle Mode****Pre-Scan (1 GHz to 2 GHz)**

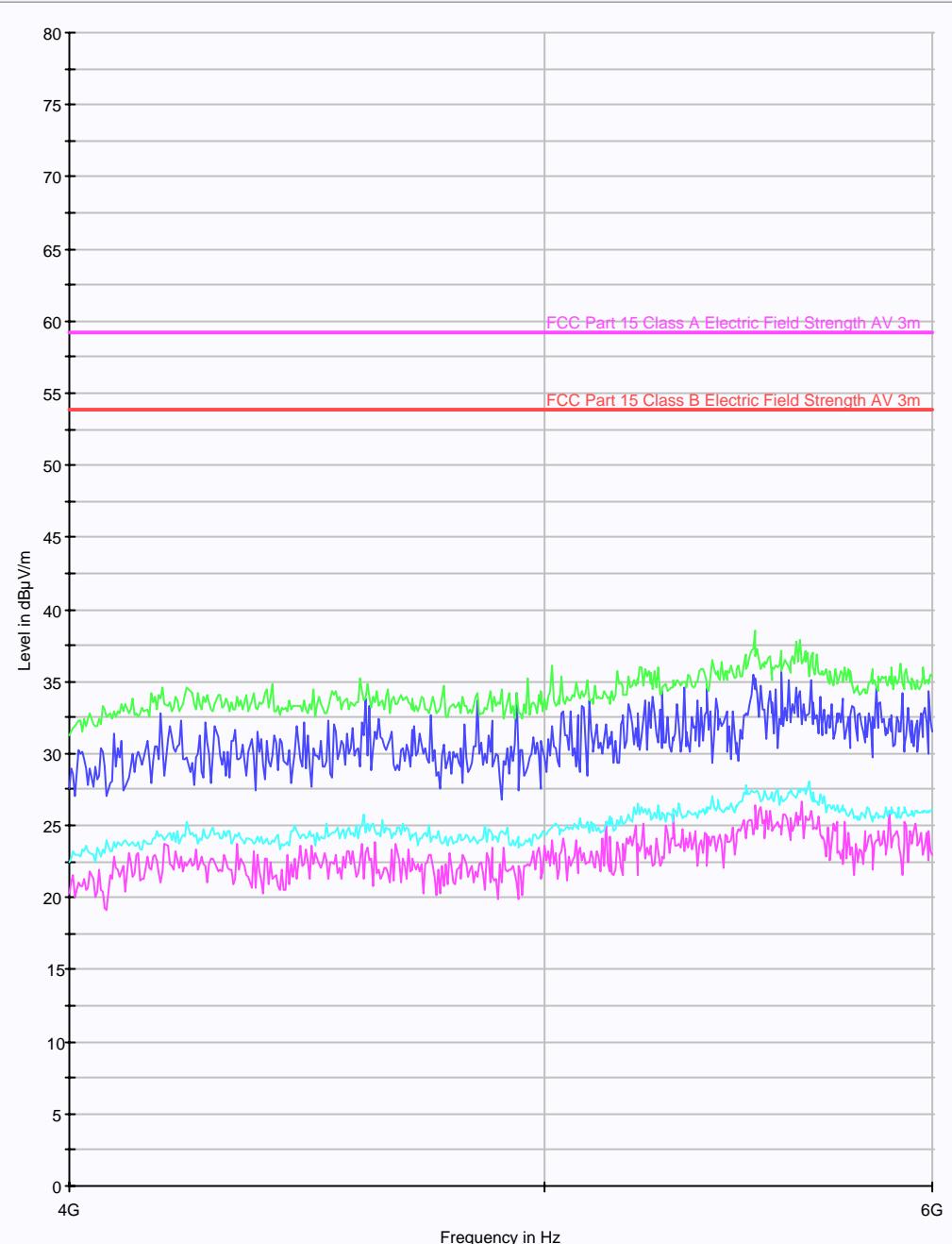
**GPHV72563JD06\003****Radiated Emissions: GSM 850 Idle Mode****Pre-Scan (2 GHz to 4 GHz)**

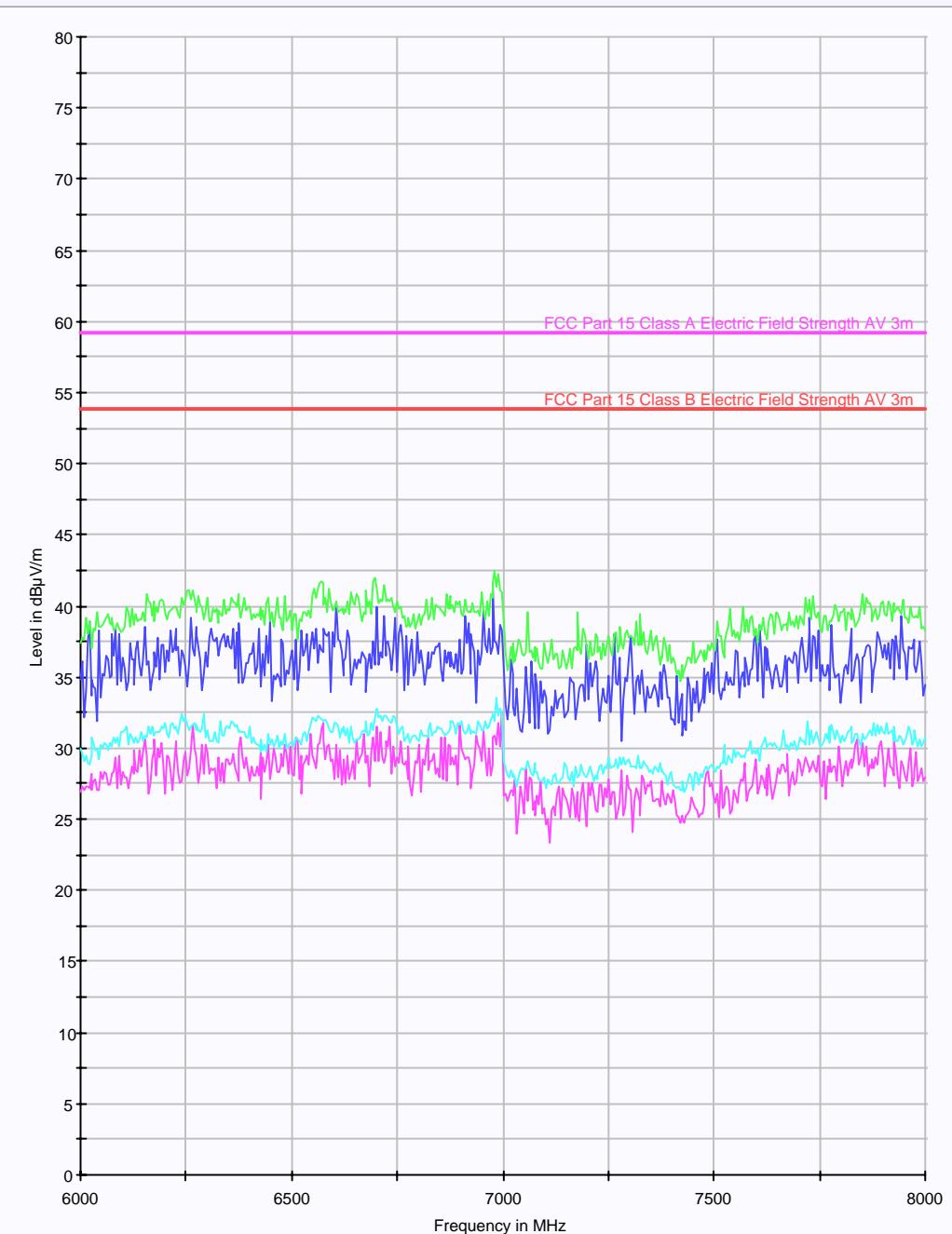
**GPHV72563JD06\004****Radiated Emissions: GSM 850 Idle Mode****Pre-Scan (4 GHz to 5 GHz)**

**GPHV72563JD06\005****Radiated Emissions: GSM 1900 Idle Mode****Pre-Scan (30 MHz to 1000 MHz)**

**GPHV72563JD06\006****Radiated Emissions: GSM 1900 Idle Mode****Pre-Scan (1 GHz to 2 GHz)**

**GPHV72563JD06\007****Radiated Emissions: GSM 1900 Idle Mode****Pre-Scan (2 GHz to 4 GHz)**

**GPHV72563JD06\008****Radiated Emissions: GSM 1900 Idle Mode****Pre-Scan (4 GHz to 6 GHz)**

**GPHV72563JD06\009****Radiated Emissions: GSM 1900 Idle Mode****Pre-Scan (6 GHz to 8 GHz)**

**GPHV72563JD06\010****Radiated Emissions: GSM 1900 Idle Mode****Pre-Scan (6 GHz to 8 GHz)**