

TEST REPORT FROM RFI GLOBAL SERVICES LTD

Test of: Flaik Tag
Personal Tracking Device

To: FCC Part 15: 2007 Subpart B Clause 15.109 Radiated Emissions

Test Report Serial No:
RFI/EMC1/RP73656JD01A

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



Checked By:	Claire Ashman
Signature:	
Date of Issue:	27 October 2008

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1. Customer Information

Company Name:	Flaik Pty Ltd
Address:	Suite 42, Level 2, Benson House 2 Benson Street Toowong Queensland 4066

2. Summary of Testing

2.1. General Information

Specification Reference:	FCC Part 15: 2007 Subpart B Clause 15.109 Radiated Emissions
Specification Title:	Code of Federal Regulations, Part 15 (47CFR15) Radio Frequency Devices: Digital Devices.
Comments:	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.
Site Registration No:	209735
Location of Testing:	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.
Test Dates:	13 October 2008

2.2. Summary of Test Results

Clause	Measurement	Applicability	Result				
15.109	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)

Description:	Personal Tracking Device
Brand Name:	Flaik Tag
Model Name or Number:	Sample #2
Serial Number:	None Stated
IMEI Number:	35380601016660-4-32
Hardware Version Number:	None Stated
Software Version Number:	None Stated
FCC ID Number:	WL5FLAIKGSM200
Country of Manufacture:	None Stated

3.2. Description of EUT

The equipment under test was a GSM 850 and 1900 enabled Personal 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

Equipment Class:	Class B
Type of Unit:	Digital Cellular Radio Telecommunications
Highest Operating Frequency:	1910MHz
Power Supply Requirement:	Internal Battery Supply of 4.2V
Weight:	Approx 300g
Dimensions:	75 x 30 x 20mm

3.5. Port Identification

Port	Description	Type	Applicable
1	Enclosure	-	Y

3.6. Support Equipment

No support equipment was used to exercise the EUT during testing:

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 and GSM 1900 Idle Modes

This mode 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.

4.2. Configuration and Peripherals

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

- Powered by an internal battery in a standalone configuration.

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*.

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

Test Summary:

Port:	Enclosure
Basic Standard:	FCC Part 15.109
Test Method:	ANSI C63.4 Section 8
Measurement Distance:	3 metres
Frequency Range:	30 MHz to 12.75 GHz
Operating Mode:	GSM 850 Idle Mode

Environmental Conditions:

Temperature Variation (°C):	22 to 23
Relative Humidity Variation (%):	49 to 46
Atmospheric Pressure Variation (mb):	1011 to 1011

Results:

Frequency (MHz)	Antenna Polarity	Quasi Peak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Note(s)	Result
30.801	Vertical	14.3	40.0	25.7	-	Complied
39.254	Horizontal	11.3	40.0	28.7	-	Complied
52.815	Horizontal	2.0	40.0	38.0	-	Complied
285.597	Horizontal	4.5	46.0	41.5	-	Complied
632.991	Vertical	13.9	46.0	32.1	-	Complied
876.061	Vertical	23.8	46.0	22.2	-	Complied

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 measurement and (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 40 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

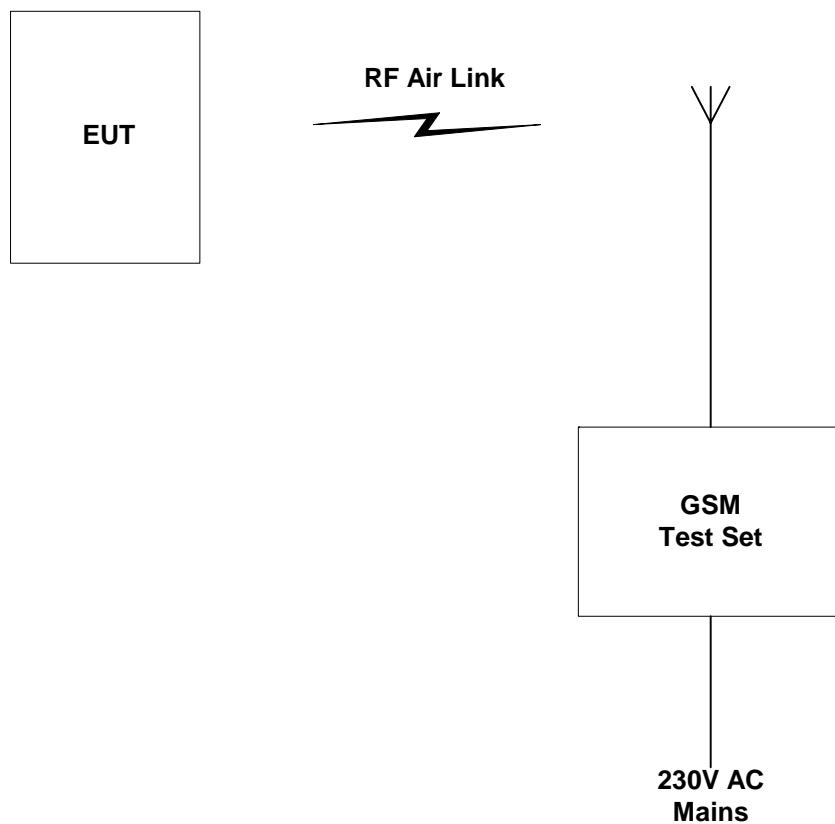
RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
A1792	Pre Amplifier	A.H. Systems Inc	PAM-0118	182	Calibrated as part of system	-
A1817	Antenna	EMCO	3115	00075694	06 Oct 2006	36
A259	Antenna	Chase	CBL6111	1513	25 Jul 2008	12
A276	OATS Positioning Controller	Rohde & Schwarz	HCC		Calibration not required	12
C1116	Cable	UtiFlex	ufa 210A-1-0360-50x50	1409	20 Apr 2008	12
C1160	Cable	Rosenberger	FA210A10 50005050	3305 42449-2	20 Apr 2008	12
C1302	Cable	Rosenberger	FA210A10 30005050	59153-01	04 Aug 2008	12
C1303	Cable	Rosenberger	FA210A10 80005050	59155-01	01 Aug 2008	12
C1306	Cable	Rosenberger	FA210A00 15005050	59152-01	01 Aug 2008	12
K0001	5 metre Semi Anechoic Chamber	Rainford EMC	N/A	N/A	13 Aug 2008	12
M1273	Test Receiver	Rhode & Schwarz	ESIB 26	100275	26 Feb 2008	12
M1391	Thermometer/ Hygrometer	Oregon Scientific	BAR629H GU	N/A	18 Jun 2008	12

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\73656JD01\001	Schematic diagram of the EUT, support equipment and interconnecting cables used for the test

DRG\73656JD01\001**Configuration of EUT and Local Support Equipment**

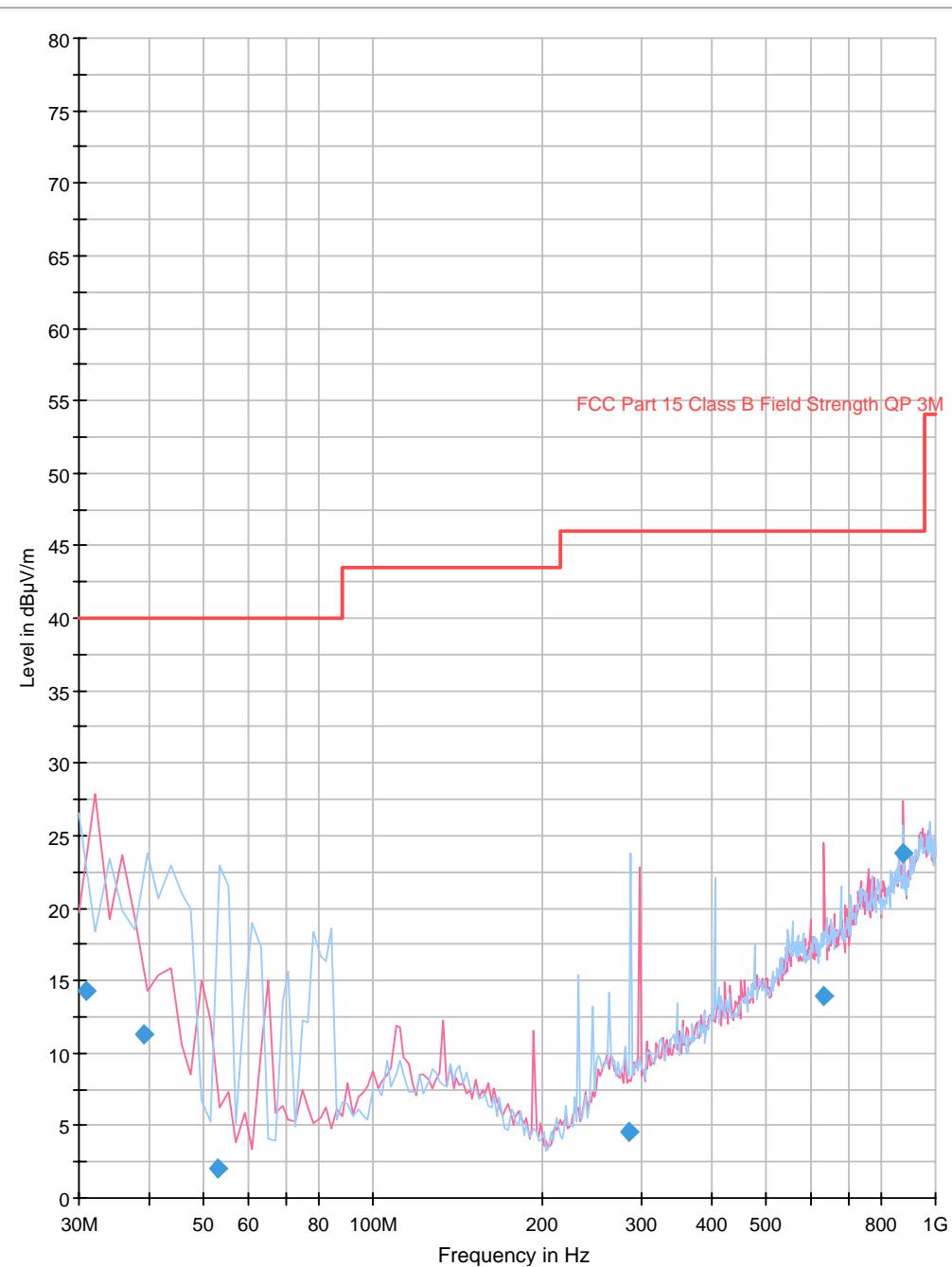
Appendix 3. Graphical Test Results

This Appendix contains the following graphs:

Graph Reference Number	Title
GPH\73656JD01\001	Radiated Emissions Pre-Scan (30 MHz to 1 GHz) GSM 850 idle mode
GPH\73656JD01\002	Radiated Emissions Pre-Scan (1 GHz to 4 GHz) GSM 850 idle mode
GPH\73656JD01\003	Radiated Emissions Pre-Scan (4 GHz to 7 GHz) GSM 850 idle mode
GPH\73656JD01\004	Radiated Emissions Pre-Scan (7 GHz to 10 GHz) GSM 850 idle mode
GPH\73656JD01\005	Radiated Emissions Pre-Scan (10 GHz to 12.75 GHz) GSM 850 idle mode
GPH\73656JD01\006	Radiated Emissions Pre-Scan (30 MHz to 1 GHz) GSM 1900 idle mode
GPH\73656JD01\007	Radiated Emissions Pre-Scan (1 GHz to 4 GHz) GSM 1900 idle mode
GPH\73656JD01\008	Radiated Emissions Pre-Scan (4 GHz to 7 GHz) GSM 1900 idle mode
GPH\73656JD01\009	Radiated Emissions Pre-Scan (7GHz to 10GHz) GSM 1900 idle mode
GPH\73656JD01\010	Radiated Emissions Pre-Scan (10 GHz to 12.75 GHz) GSM 1900 idle mode

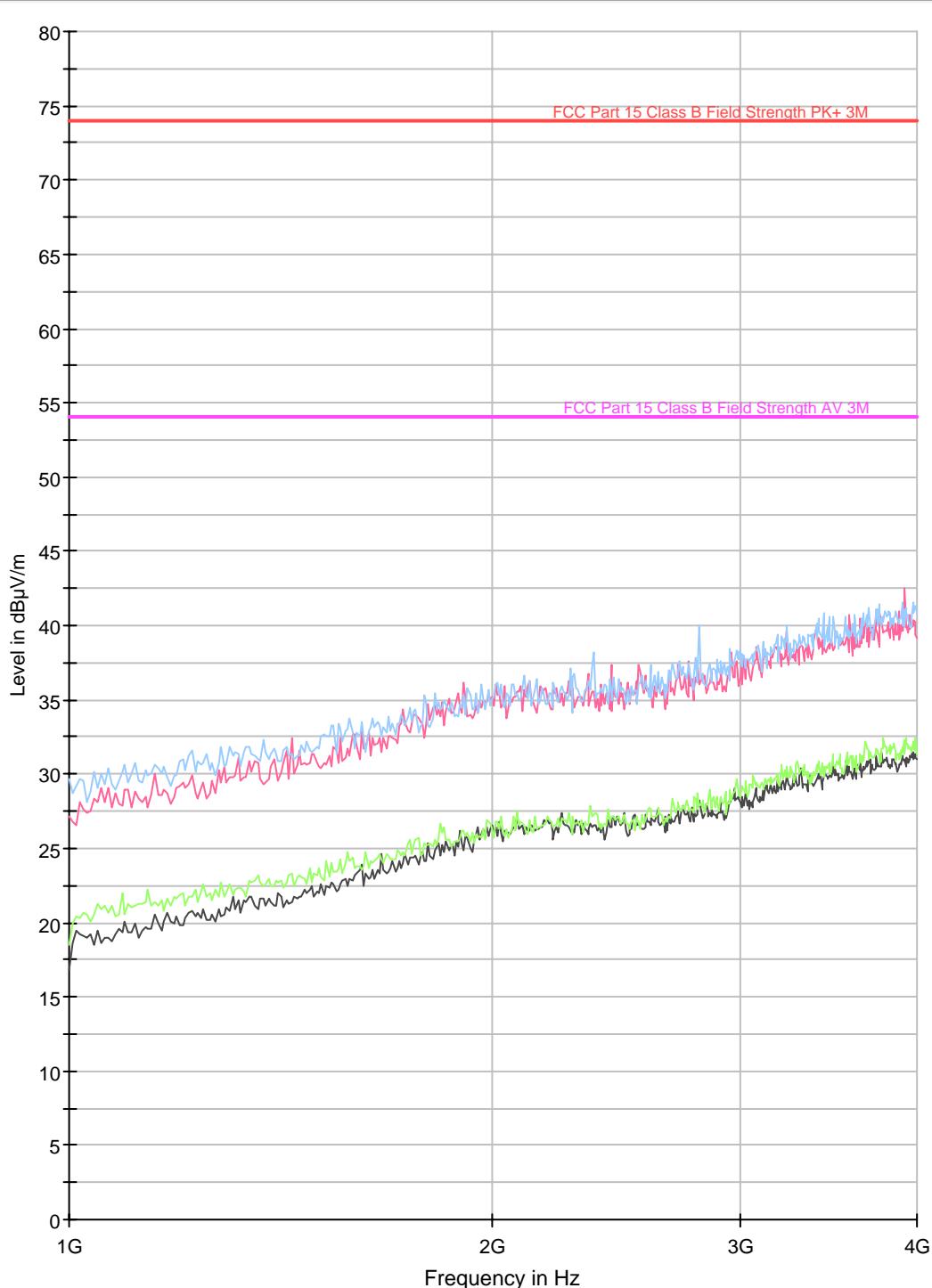
GPH\73656JD01\001**Radiated Emissions Pre-Scan (30 MHz to 1000 MHz) GSM 850 Mode**

FCC Part 15.109 Radiated Emissions Class B 30MHz-1GHz



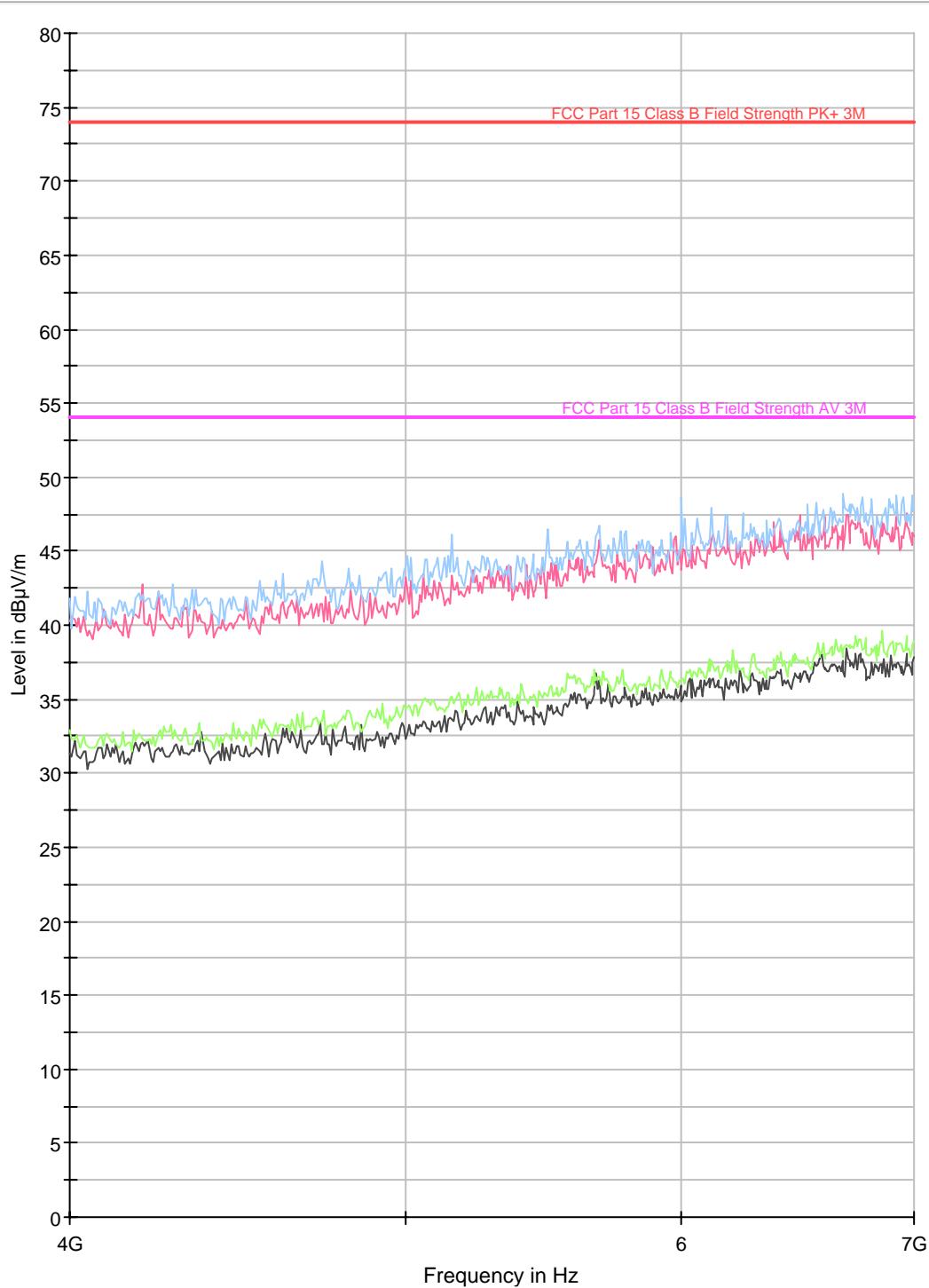
GPH\73656JD01\002**Radiated Emissions Pre-Scan (1 Hz to 4 GHz) GSM 850 Mode**

FCC Part 15.109 Radiated Emissions Class B 1-4GHz



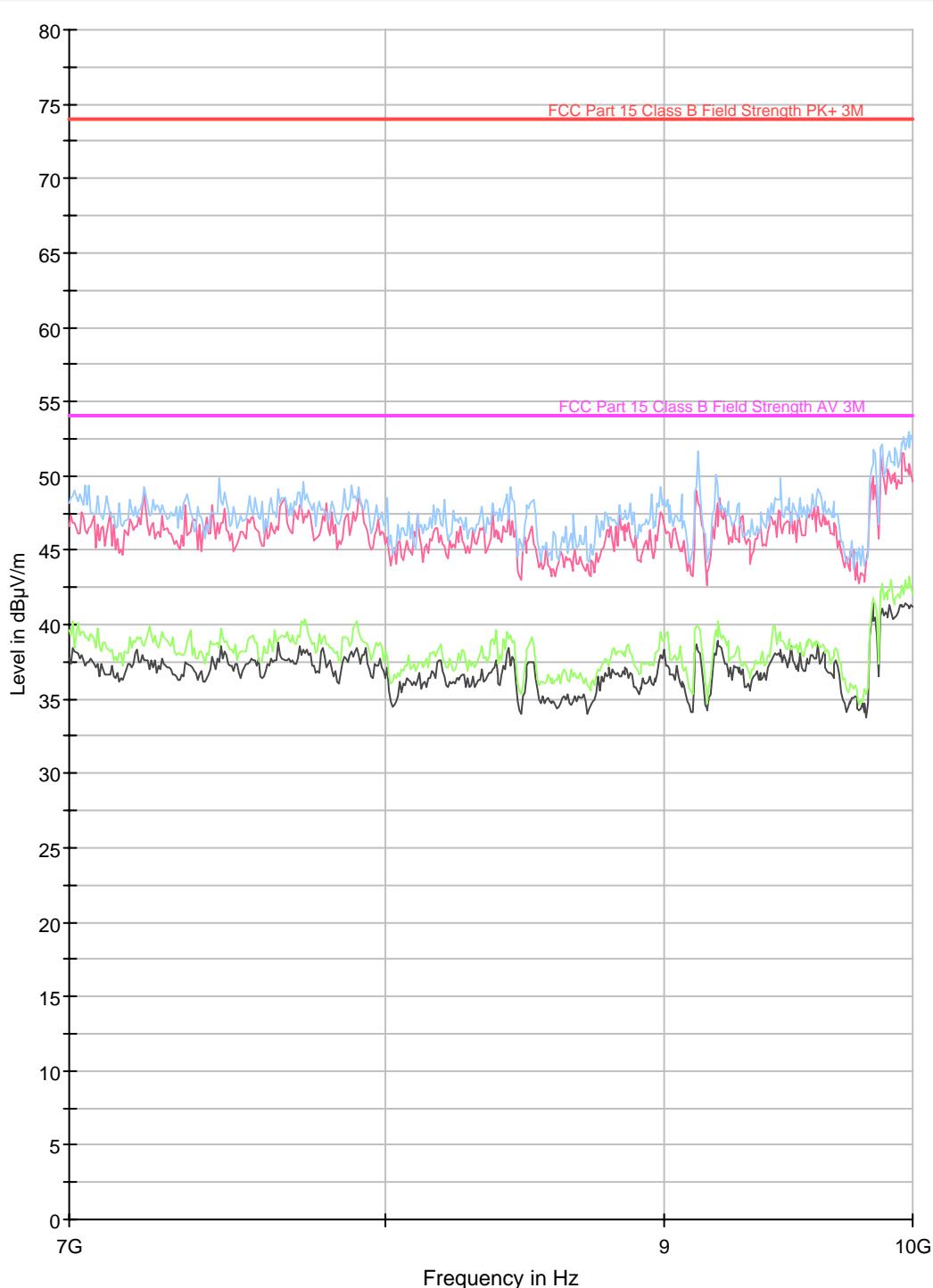
GPH\73656JD01\003**Radiated Emissions Pre-Scan (4 GHz to 7 GHz) GSM 850 Mode**

FCC Part 15.109 Radiated Emissions Class B 4-7GHz



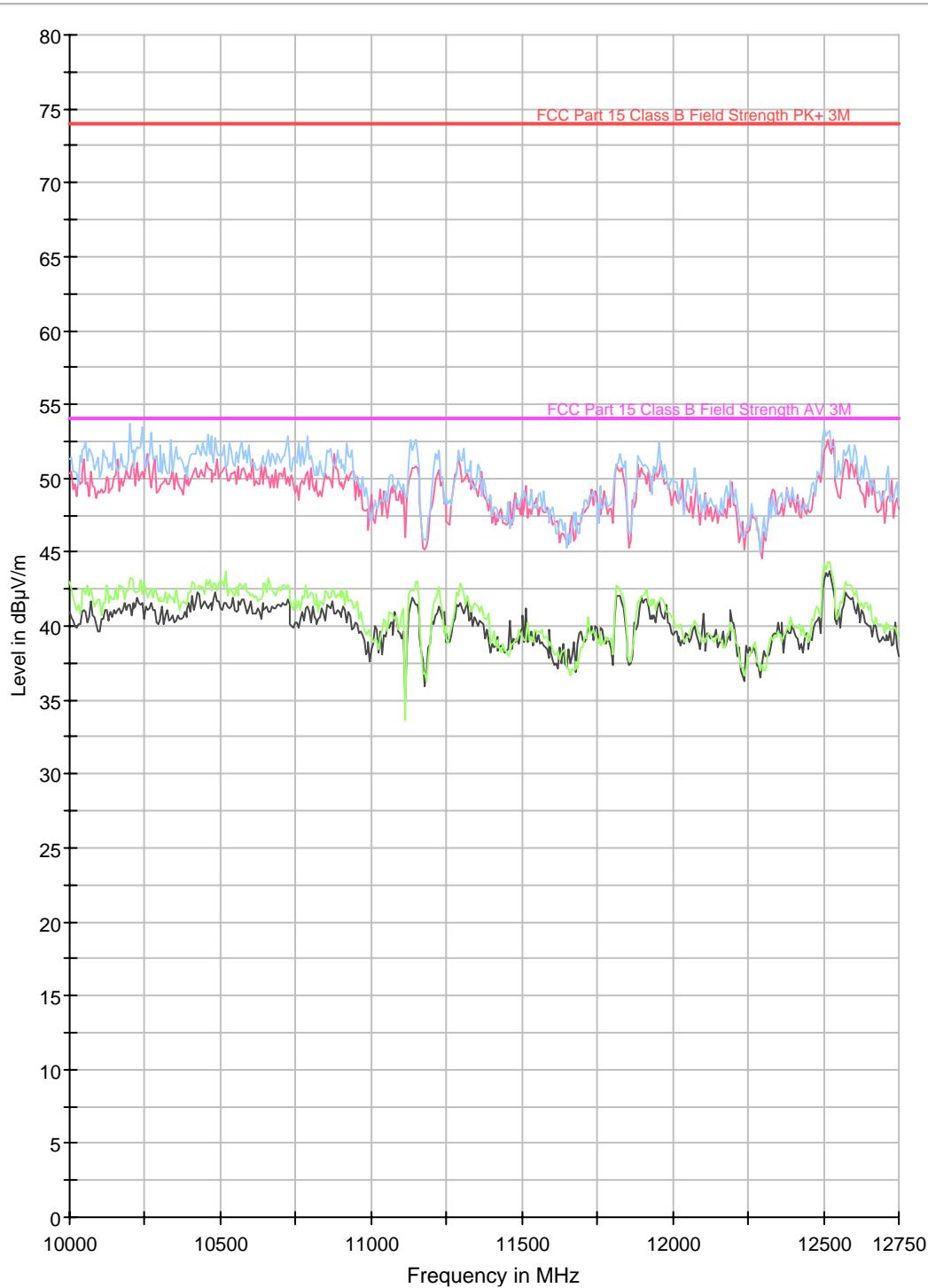
GPH\73656JD01\004**Radiated Emissions Pre-Scan (7 GHz to 10 GHz) GSM 850 Mode**

FCC Part 15.109 Radiated Emissions Class B 7-10GHz



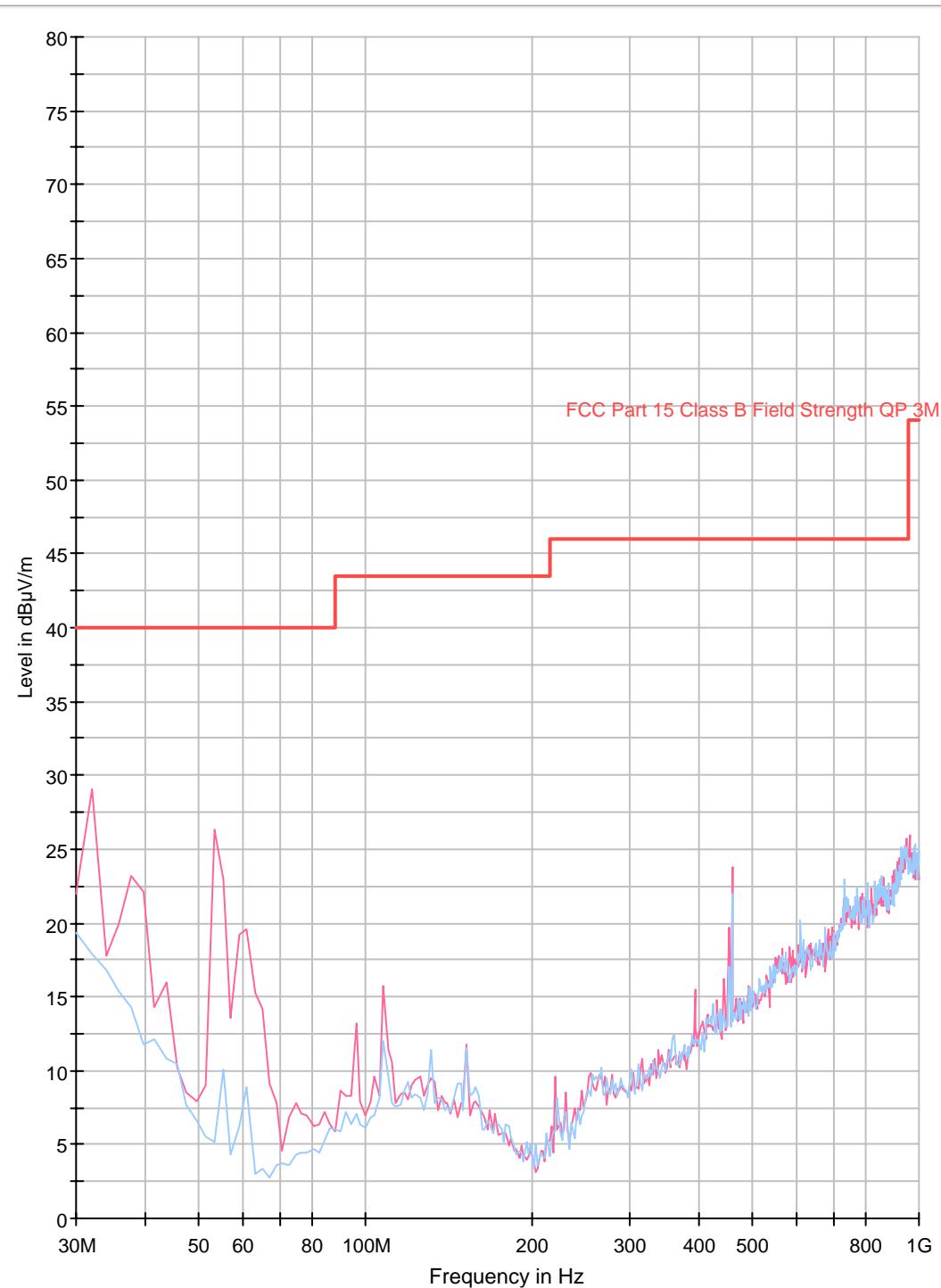
GPHV73656JD01\005**Radiated Emissions Pre-Scan (10 GHz to 12.75 GHz) GSM 850 Mode**

FCC Part 15.109 Radiated Emissions Class B 10-12.75GHz



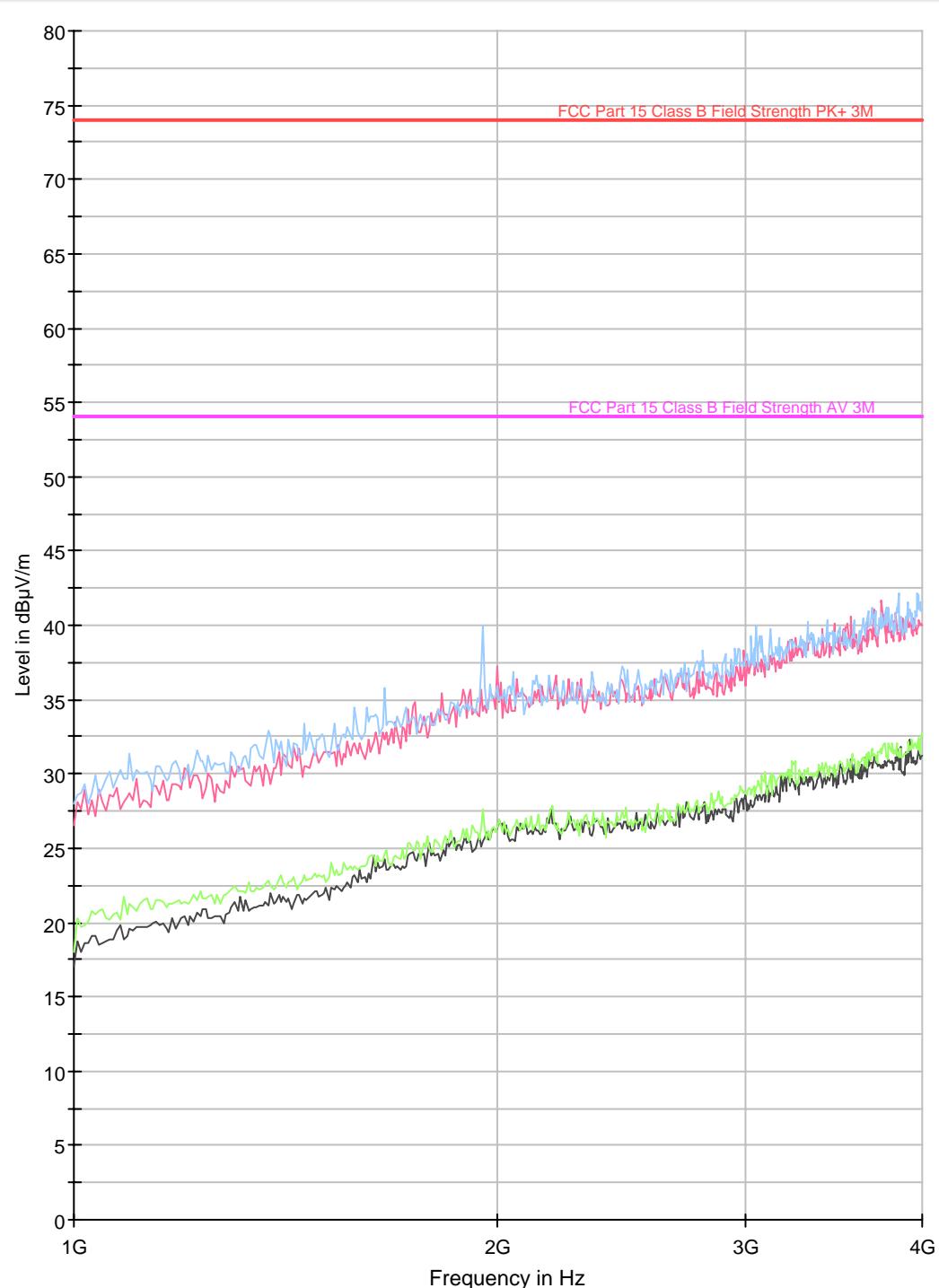
GPHV73656JD01\006**Radiated Emissions Pre-Scan (30 MHz to 1000 MHz) GSM 1900 Mode**

FCC Part 15.109 Radiated Emissions Class B 30MHz-1GHz



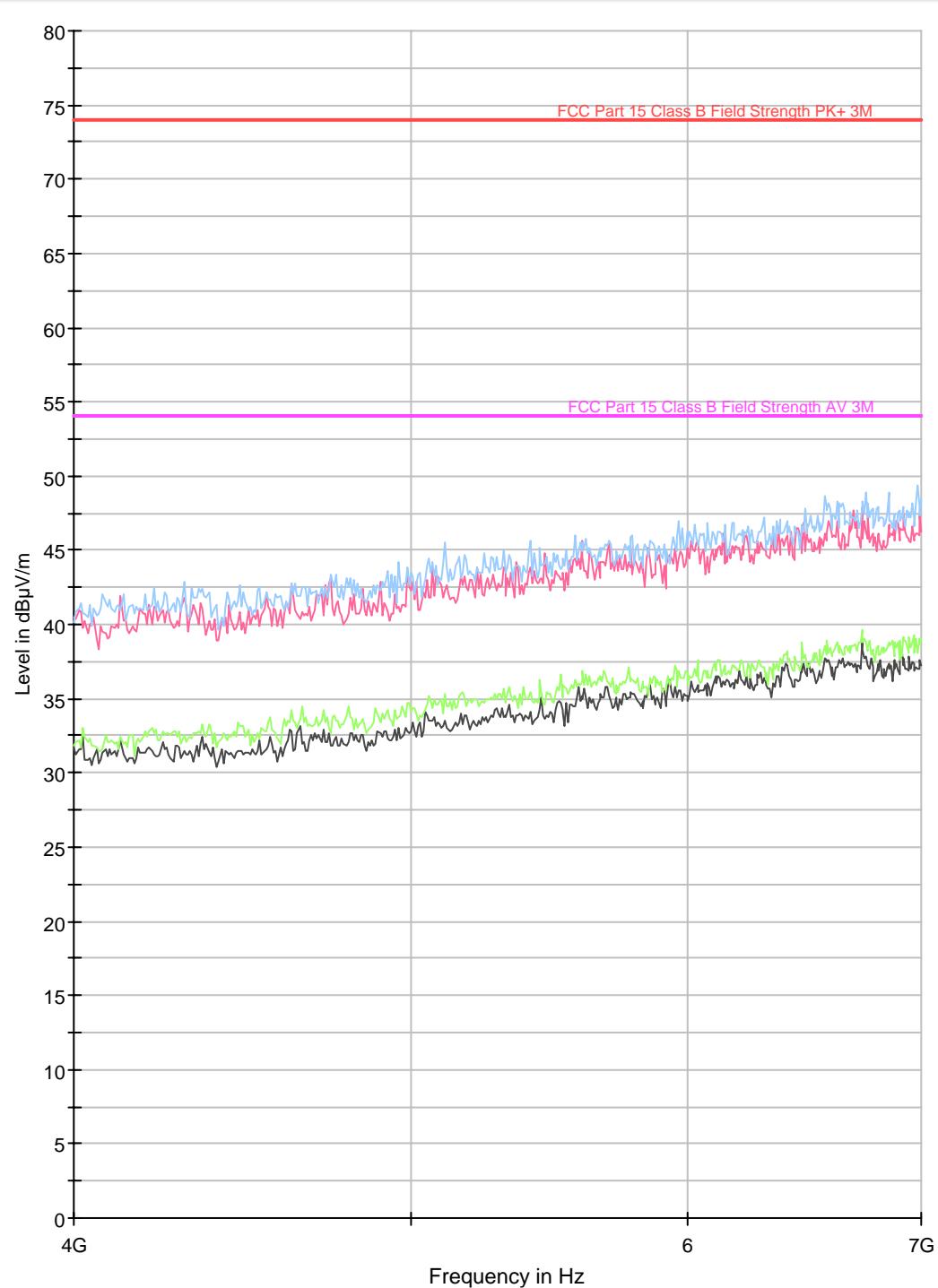
GPH\73656JD01\007**Radiated Emissions Pre-Scan (1 GHz to 4 GHz) GSM 1900 Mode**

FCC Part 15.109 Radiated Emissions Class B 1-4GHz



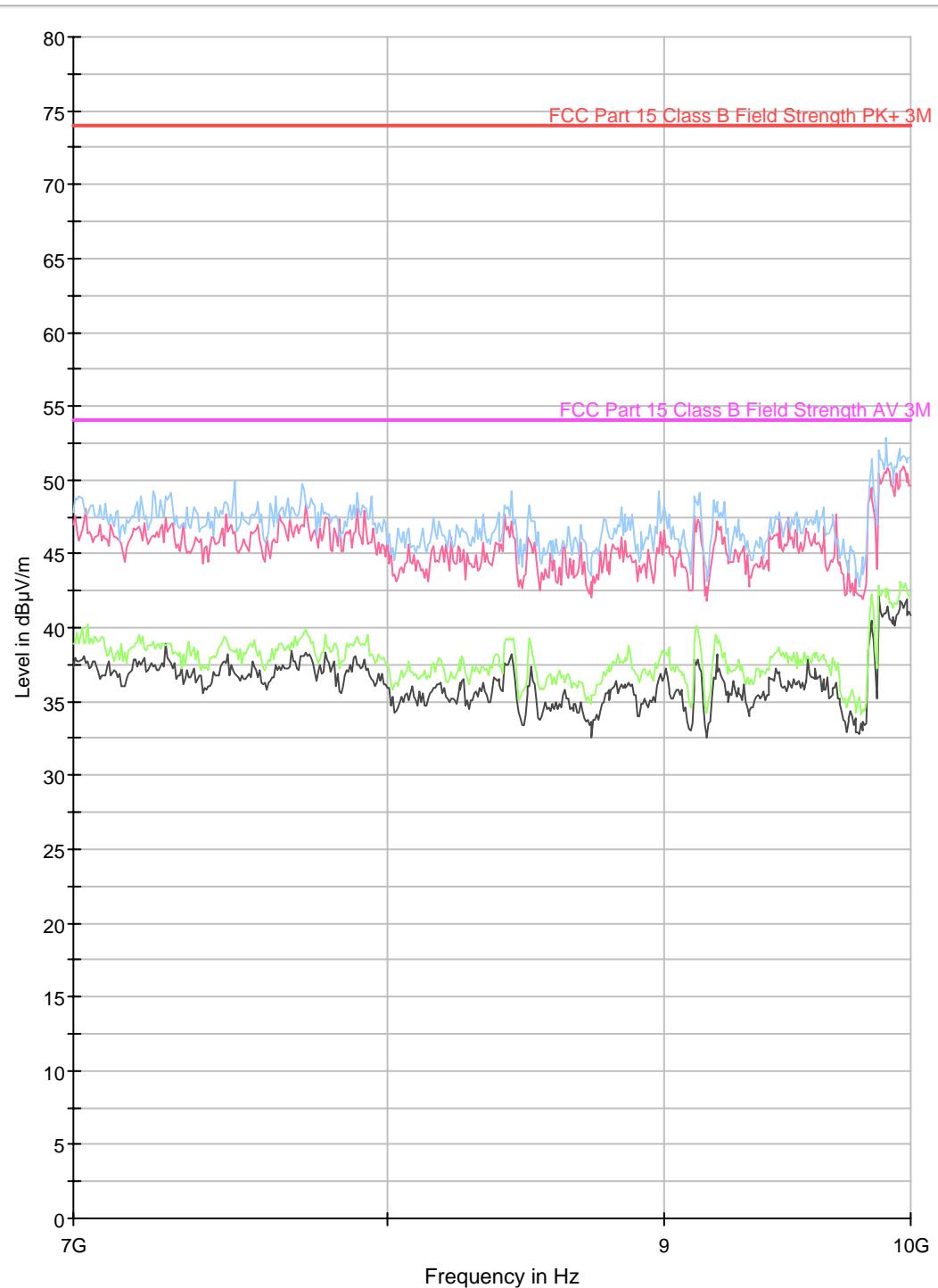
GPH\73656JD01\008**Radiated Emissions Pre-Scan (7 GHz to 10 GHz) GSM 1900 Mode**

FCC Part 15.109 Radiated Emissions Class B 4-7GHz



GPH\73656JD01\009**Radiated Emissions Pre-Scan (4 GHz to 7 GHz) GSM 1900 Mode**

FCC Part 15.109 Radiated Emissions Class B 7-10GHz



GPH\73656JD01\010**Radiated Emissions Pre-Scan (10 GHz to 12.75 GHz) GSM 1900 Mode**

FCC Part 15.109 Radiated Emissions Class B 10-12.75GHz

