TEST REPORT

TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Test of: Honeywell Scanning and Mobility, Voyager 1202g and CCB00-010BT

To: 47CFR15.107, 47CFR15.109 and ICES-003 Issue 4 February 2004

Test Report Serial No: RFI-EMC-RP83519JD04A 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:	**Nicholas Jones**
Signature:	
Date of Issue:	**03 October 2011**

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1. CUSTOMER DETAILS

Company Name:	Honeywell International Inc
Address:	Honeywell Scanning and Mobility 9680 Old Bailes Rd Fort Mill, South Carolina 29707 USA

2. SUMMARY OF TESTING

2.1. Test Specification

Reference:	47CFR15.107 and 47CFR15.109
Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2010: Part 15 Subpart B (Radio Frequency Devices) – Section 15.107 and 15.109.
Reference:	ICES-003 Issue 4 February 2004
Title:	Spectrum Management and Telecommunications Policy Interference-Causing Equipment Standard Digital Apparatus
Site Registration:	FCC: 209735 Industry Canada: 3245B-2

2.2. Summary of Test Results

FCC Reference	IC Reference	Measurement Type	Applicability	Result
EMISSIONS				
15.109	7.1	Radiated Emissions (Enclosure)	Y	✓
15.107	7.1	Conducted Emissions (AC Mains Input / Output Ports)	Y	✓

KEY: ✓ = Complied ✗ = Did not comply

2.3. Location of Testing

All the measurements described in this report were performed at the premises of RFI Global Services Ltd, Unit 3 Horizon, Wade Road, Kingsland Business Park, Basingstoke, Hampshire RG24 8AH.

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

3. EQUIPMENT UNDER TEST (EUT)

3.1. Description of EUT

The EUT was laser barcode scanner with a charging and communications base unit. The scanner communicates with the base or other compatible devices using Bluetooth.

3.2. Identification of Equipment under Test (EUT)

ID#	Description	Brand Name	Model No	Serial No	Bluetooth Address
E1	Barcode Scanner	Honeywell	Voyager 1202g	6911000109	000CA7D01916
E2	Charge and Communication Base	Honeywell	CCB00-010BT	2T11390043	000CA7D01BB0
E3	Power supply	ENG	3A-052WP05	None Stated	Not Applicable

3.3. Port Identification

Port	Description	Type
P1	Enclosure	-
P2	DC Power Supply Input	Co-axial
P3	Data IO and Alternative Power Input	RJ45

3.4. Operating Modes

Mode Reference	Definition
Charging	The scanner was placed into the docking cradle and charging. The cradle was terminated into a supporting notebook PC and keyboard.

3.5.Radio characteristics

Technology type	Bluetooth
Transmit Frequency Range (MHz):	2402 to 2480
Transmit Channel Tested (MHz):	2402 to 2480 (Frequency Hopping Spread Spectrum)
Rated Output Power (dBm):	Class 2
Receive Frequency Range (MHz):	2402 to 2480
Receive Channel Tested (MHz):	2402 to 2480 (Frequency Hopping Spread Spectrum)

3.6. Configuration and Peripherals

Description:	Please refer to the Test Configuration and Photograph section for schematic drawing(s) and/or photograph(s) of the test configuration(s) employed in the course of testing.

3.7. Modifications

NOTE: No modifications were made during the course of testing

3.8. Additional Information Related to Testing

Equipment Category:	Information Technology Equipment
Intended Operating Environment:	Commercial / Light Industrial
Cycle Time:	< 1 s
Power Supply Requirement(s):	110 VAC Nominal
Weight:	Voyager 1202g: 0.180 kg CCB00-0101BT: 0.185 kg
Dimensions:	Voyager 1202g: 180 mm x 66 mm x 92 mm CCB00-0101BT: 200 mm x 67 mm x 97 mm
FCC ID:	LW5BT010M
Industry Canada Certification Number:	3114A-BT010M

4. SUPPORT EQUIPMENT

4.1. Identification of Support Equipment

Description	Manufacturer	Model No	Serial No
Laptop PC (for port termination only)	Dell, Inc	PP01X	CN-03J010-12961-371-2107
PC Keyboard (for port termination only)	Dell, Inc	RT7D20	CN-05N292-37172-45I-098L

4.2. Interconnecting Cables

Cable Type	Shielded	Length (m)	Ferrite	Connection 1	Connection 2
2-Core	No	1.8	No	AC Adapter	Charging and Communication Base (EUT)
PS2 and Keyboard Wedge	No	4.6	No	Keyboard	PS2 Input port on keyboard wedge cable
Keyboard Wedge	No	2.6	No	Laptop	PS2 Output port on keyboard wedge cable

5. MONITORING PERFORMANCE

5.1. Overview

Only emissions tests were performed. Therefore performance criteria were not applicable.

5.2. Monitoring EUT Performance during Testing

For the purposes of testing, the term "*operate as intended*" was defined as:	The EUT had a blinking LED that was monitored to indicate it continued charging.
For the purposes of testing, an "*unintentional response*" was defined as:	Not Applicable
Method used to determine whether user control functions and stored data were lost after the EMC exposure:	Not Applicable
Method used to verify that a communications link was established and maintained (if appropriate):	Not Applicable
Method of assessment of level of performance or degradation of performance during and/or after EMC exposure:	Not Applicable

6. MEASUREMENT UNCERTAINTY

6.1. Overview

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 regarding the uncertainty of approximation.

The measurement uncertainty may need to be taken into account when interpreting the test results included within this test report.

6.2. Method of calculation

The methods used to calculate the uncertainties included within this test report 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 United Kingdom Accreditation Service (UKAS) is followed.

7. MEASUREMENTS, EXAMINATIONS AND DERIVED RESULTS

7.1. General Comments

7.1.1. This section contains the test result sheets for the measurements listed in Section *2.2. Summary of Test Results* (above).

7.1.2. The measurement uncertainties stated in the test result sheets were calculated in accordance with documented best practice and represent a confidence level of 95%. Where only confidence level is given, it has been demonstrated that the relevant items of test equipment used meet the specified requirements in the standard with at least this level of confidence.

7.1.3. Please refer to Section *6. Measurement Uncertainty* on page 10 for details of our treatment of measurement uncertainty.

RADIATED EMISSIONS - TEST RESULTS

This test is covered by the scope of RFI's UKAS Accreditation under ISO/IEC 17025: 2005.

GENERAL INFORMATION

RFI JOB NUMBER:	83519JD04	**TEST SITE ID:**	Site 1
EUT:	Voyager 1202g and CCB00-010BT	**TEMPERATURE:**	28 °C to 28 °C
TEST ENGINEER:	Eric Phiri	**RELATIVE HUMIDITY:**	38 % to 38 %
DATE OF TEST:	29 Sep 2011	**ATMOSPHERIC PRESSURE:**	1008mb to 1008 mb
FIELD TYPE:	Electric Field	**MEASUREMENT DISTANCE:**	3 Metres
UNCERTAINTY (±):	±3.99 dB	**EQUIPMENT CLASS:**	Class B
MEASUREMENT UNITS:	dBµV/m	**TEST ENVIRONMENT:**	Test Site

TEST SPECIFICATION DETAILS

The EUT has been configured and tested in accordance with the methods and procedures detailed within the following basic standard:

REFERENCE:	ANSI C63.4:2009
TITLE:	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

COMMENTS

None

DEVIATIONS FROM TEST SPECIFICATION

There were no deviations from the test configuration and measurement arrangements defined in the test specification (identified above).

EUT RELATED

OPERATING MODE:	Charging
FUNCTION(S) MONITORED:	Not Applicable

MEASUREMENT RESULTS

No.	Frequency (MHz)	Polarity	Detector	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Graph No.	Result
1	34.874	Vertical	Quasi-Peak	17.9	40.0	22.1	001	Complied
2	53.206	Vertical	Quasi-Peak	14.3	40.0	25.7	001	Complied
3	120.395	Vertical	Quasi-Peak	17.3	43.5	26.2	001	Complied
4	211.093	Horizontal	Quasi-Peak	25.4	43.5	18.1	001	Complied
5	328.103	Vertical	Quasi-Peak	16.8	46.0	29.2	001	Complied
6	526.706	Horizontal	Quasi-Peak	17.8	46.0	28.2	001	Complied
7	1000 - 12750	Refer to Note 1					002 to 005	Complied

NOTES

1 No emissions were noted above the noise floor of the measurement system. Therefore no further measurements were made.

2 Measurements below 1 GHz were performed in a semi-anechoic chamber at a distance of 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.

Pre-scans and final measurements above 1 GHz were performed in a semi-anechoic chamber at a distance of 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.

TEST EQUIPMENT USED

RFI ID	INSTRUMENT DESCRIPTION	MODEL NUMBER	CALIBRATION DUE	INTERVAL
K0001	5m Semi-Anechoic Chamber	N/A	29 May 2012	12
M1273	20 Hz - 26.6 GHz EMI Test Receiver, Rohde & Schwarz	ESIB 26	04 Feb 2012	12
C1302	3m Rosenberger Cable	FA210A1030005050	31 Mar 2012	12
A553	Bi-log Antenna	CBL6111A	26 Mar 2012	12
A1817	1-18GHz Horn Antenna	3115	03 Feb 2012	12
C1407	15 metre RF cable	262-0941-15M0	15 Apr 2012	12

CONDUCTED EMISSIONS - TEST RESULTS

This test is covered by the scope of RFI's UKAS Accreditation under ISO/IEC 17025: 2005.

GENERAL INFORMATION

RFI JOB NUMBER:	83519JD04	**TEST SITE ID:**	Site 1
EUT:	Voyager 1202g and CCB00-010BT	**TEMPERATURE:**	28 °C to 28 °C
TEST ENGINEER:	Eric Phiri	**RELATIVE HUMIDITY:**	38 % to 38 %
DATE OF TEST:	30 Sep 2011	**ATMOSPHERIC PRESSURE:**	1008 mb to 1008 mb
UNCERTAINTY (±):	±3.99 dB	**EQUIPMENT CLASS:**	Class B
CATEGORY:	Not Applicable	**MEASUREMENT METHOD:**	LISN (AC)

TEST SPECIFICATION DETAILS

The EUT has been configured and tested in accordance with the methods and procedures detailed within the following basic standard:

REFERENCE:	ANSI C63.4:2009
TITLE:	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

COMMENTS

None

DEVIATIONS FROM TEST SPECIFICATION

There were no deviations from the test configuration and measurement arrangements defined in the test specification (identified above).

EUT RELATED

OPERATING MODE:	Charging
FUNCTION(S) MONITORED:	Not Applicable

MEASUREMENT RESULTS

No.	Frequency (MHz)	Line	Detector	Level (dBµV)	Limit (dBµV)	Margin (dB)	Graph No.	Result
1	0.150	Live 1	Quasi-Peak	51.1	66.0	14.9	006	Complied
2	0.150	Live 1	Quasi-Peak	51.0	66.0	15.0	006	Complied
3	0.159	Live 1	Quasi-Peak	50.1	65.5	15.4	006	Complied
4	0.200	Live 1	Quasi-Peak	47.6	63.6	16.1	006	Complied
5	0.258	Live 1	Quasi-Peak	45.1	61.5	16.4	006	Complied
6	0.474	Live 1	Quasi-Peak	37.1	56.4	19.3	006	Complied
7	4.277	Live 1	Quasi-Peak	32.4	56.0	23.6	006	Complied
8	0.182	Live 1	Average (CISPR)	25.8	54.4	28.6	006	Complied
9	0.245	Live 1	Average (CISPR)	30.8	51.9	21.2	006	Complied
10	0.308	Live 1	Average (CISPR)	29.7	50.0	20.3	006	Complied
11	0.429	Live 1	Average (CISPR)	31.5	47.3	15.7	006	Complied
12	0.488	Live 1	Average (CISPR)	31.1	46.2	15.1	006	Complied
13	0.609	Live 1	Average (CISPR)	32.3	46.0	13.7	006	Complied
14	0.735	Live 1	Average (CISPR)	31.7	46.0	14.3	006	Complied
15	4.155	Live 1	Average (CISPR)	22.3	46.0	23.7	006	Complied

MEASUREMENT RESULTS

No.	Frequency (MHz)	Line	Detector	Level (dBµV)	Limit (dBµV)	Margin (dB)	Graph No.	Result
16	0.150	Neutral	Quasi-Peak	48.8	66.0	17.2	007	Complied
17	0.155	Neutral	Quasi-Peak	48.4	65.8	17.3	007	Complied
18	0.191	Neutral	Quasi-Peak	46.4	64.0	17.6	007	Complied
19	0.231	Neutral	Quasi-Peak	43.8	62.4	18.6	007	Complied
20	0.263	Neutral	Quasi-Peak	42.3	61.4	19.1	007	Complied
21	3.989	Neutral	Quasi-Peak	34.7	56.0	21.3	007	Complied
22	0.186	Neutral	Average (CISPR)	32.5	54.2	21.7	007	Complied
23	0.308	Neutral	Average (CISPR)	29.9	50.0	20.1	007	Complied
24	0.492	Neutral	Average (CISPR)	26.2	46.1	19.9	007	Complied
25	0.551	Neutral	Average (CISPR)	27.1	46.0	18.9	007	Complied
26	0.614	Neutral	Average (CISPR)	26.6	46.0	19.4	007	Complied
27	0.735	Neutral	Average (CISPR)	25.0	46.0	21.0	007	Complied
28	3.984	Neutral	Average (CISPR)	22.3	46.0	23.7	007	Complied

NOTES

N/A During measurement the engineer did not record any specific notes relevant to report.

TEST EQUIPMENT USED

RFI ID	INSTRUMENT DESCRIPTION	MODEL NUMBER	CALIBRATION DUE	INTERVAL
K0001	5m Semi-Anechoic Chamber	N/A	29 May 2012	12
M1273	20 Hz - 26.6 GHz EMI Test Receiver, Rohde & Schwarz	ESIB 26	04 Feb 2012	12
C1302	3m Rosenberger Cable	FA210A1030005050	31 Mar 2012	12
A1829	N-Type Pulse Limiter	ESH3-Z2	05 Mar 2012	12
A067	Line Impedance Stabilization Network	ESH3-Z5	02 Jun 2012	12

8. PHOTOGRAPHS OF EUT

This section contains the following photographs:

Photo Reference Number	Title
PHT\83519JD04\001	Test Configuration Photograph - Conducted Emissions
PHT\83519JD04\002	Test Configuration Photograph - Radiated Emissions

PHT\83519JD04\001 - Test Configuration Photograph - Conducted Emissions

PHT\83519JD04\002 - Test Configuration Photograph - Radiated Emissions

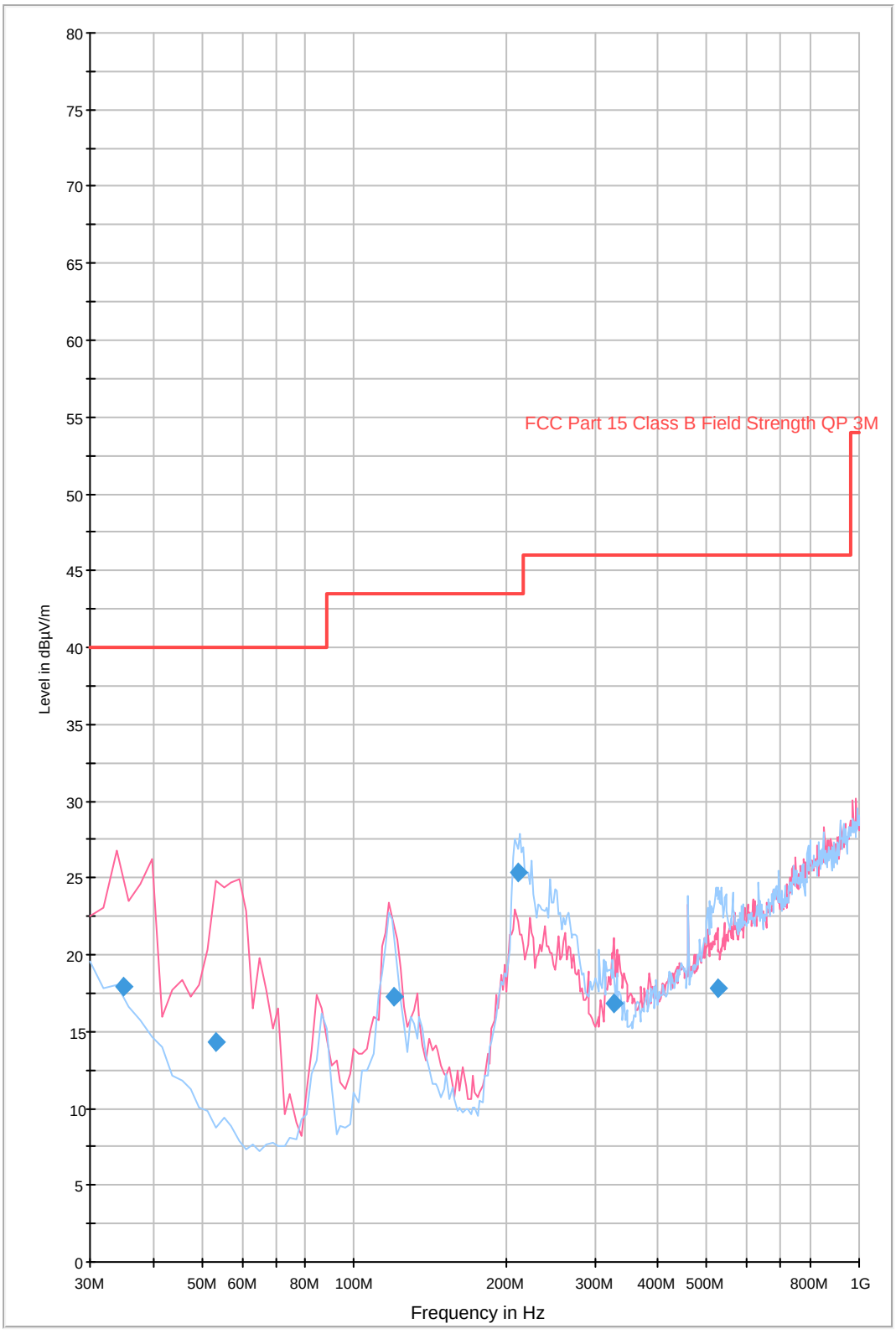
9. GRAPHICAL TEST RESULTS

9.1. This section contains the graphical results for the measurements listed in Section *2.2. Summary of Test Results* (above).

Graph Reference Number	Title
GPH\83519JD04\001	Radiated Emissions (30 MHz to 1000 MHz)
GPH\83519JD04\002	Radiated Emissions (1 GHz to 4 GHz)
GPH\83519JD04\003	Radiated Emissions (4 GHz to 7 GHz)
GPH\83519JD04\004	Radiated Emissions (7 GHz to 10 GHz)
GPH\83519JD04\005	Radiated Emissions (10 GHz to 12.75 GHz)
GPH\83519JD04\006	Conducted Emissions (0.15 MHz to 30 MHz) Live
GPH\83519JD04\007	Conducted Emissions (0.15 MHz to 30 MHz) Neutral

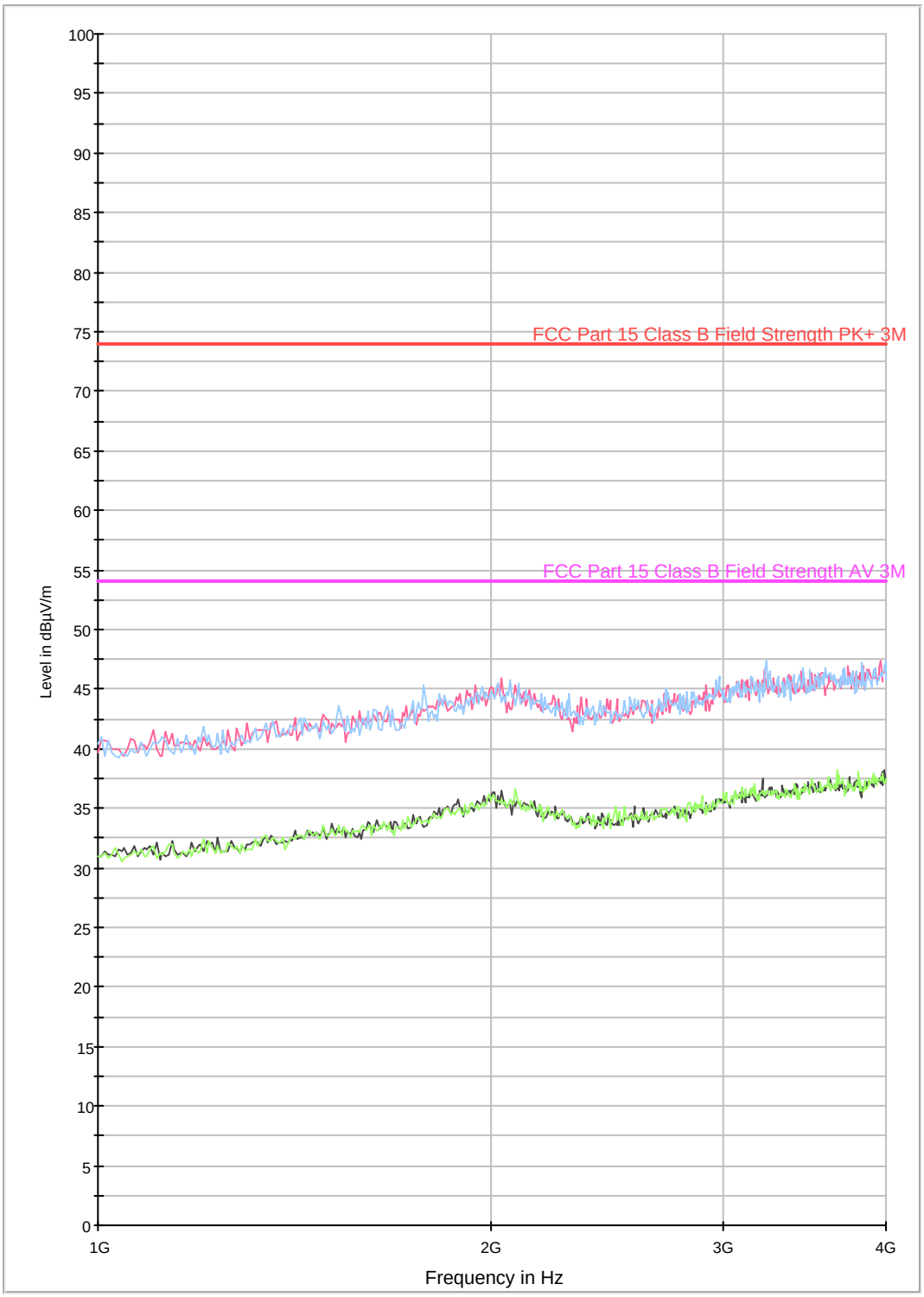
GPH\83519JD04\001

FCC Part 15.109 Radiated Emissions Class B 30MHz-1GHz 3m



GPH\83519JD04\002

FCC Part 15.109 Radiated Emissions Class B 1-4GHz



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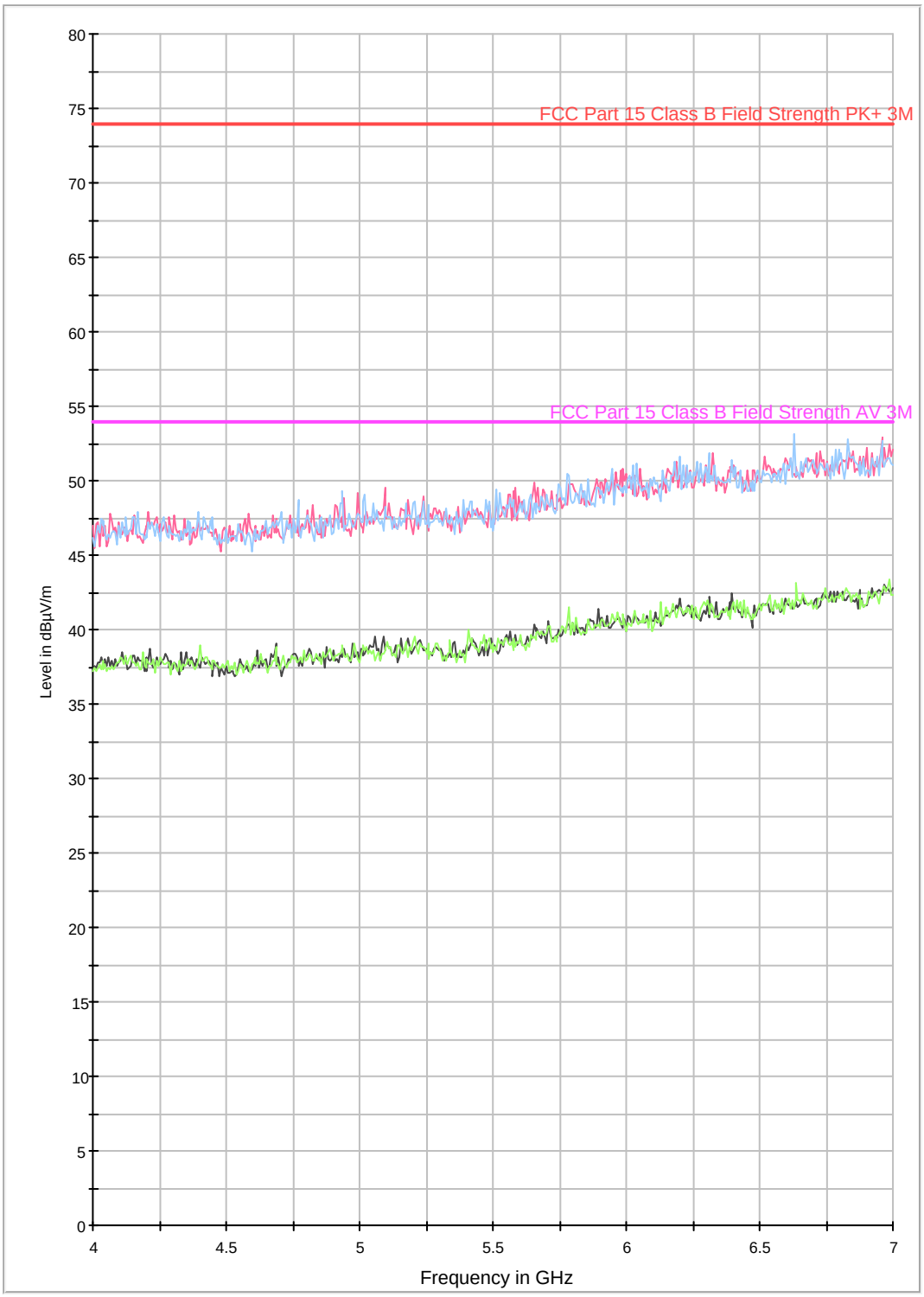
FCC Part 15.109 Radiated Emissions Class B 4-7GHz



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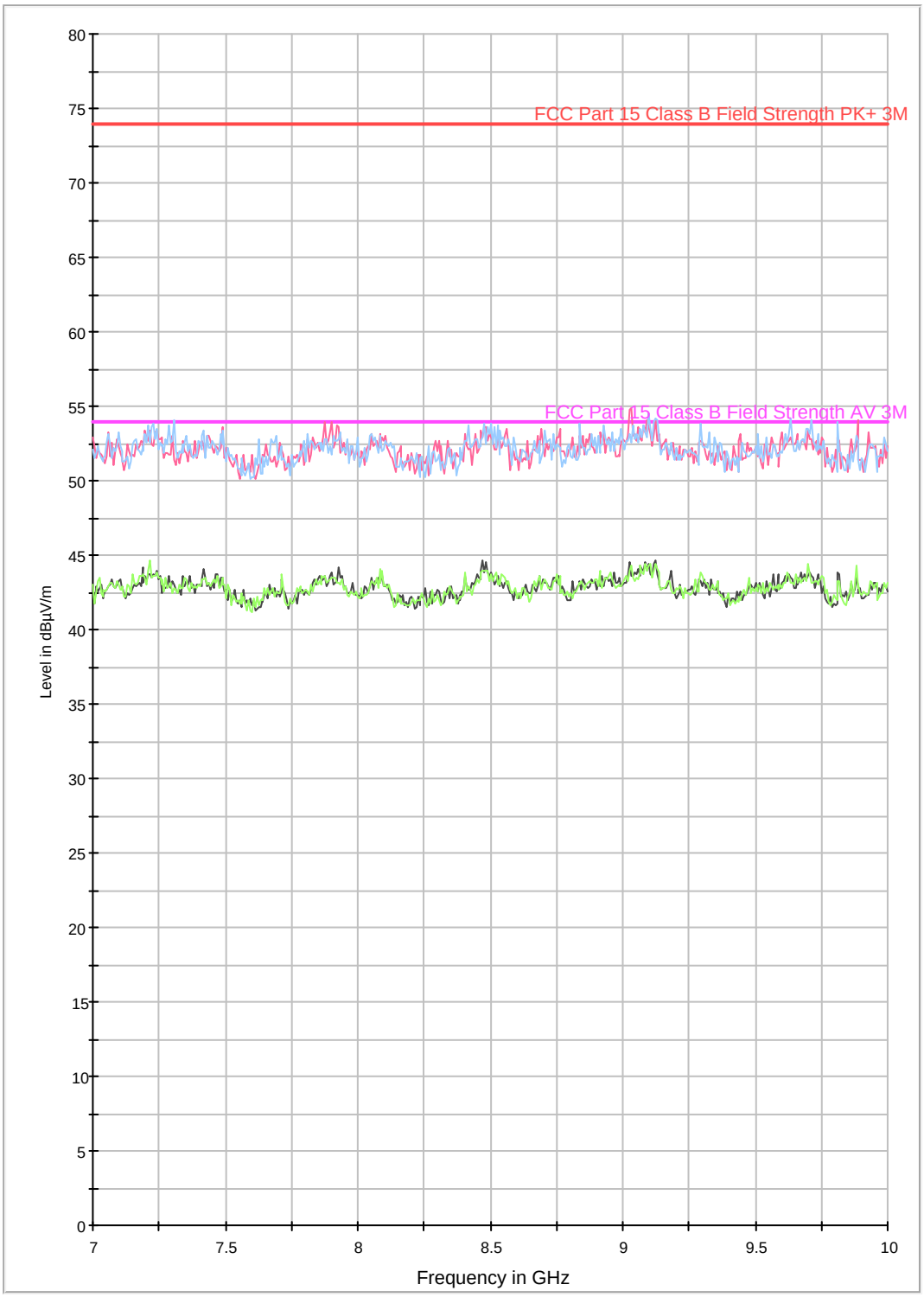
FCC Part 15.109 Radiated Emissions Class B 7-10GHz



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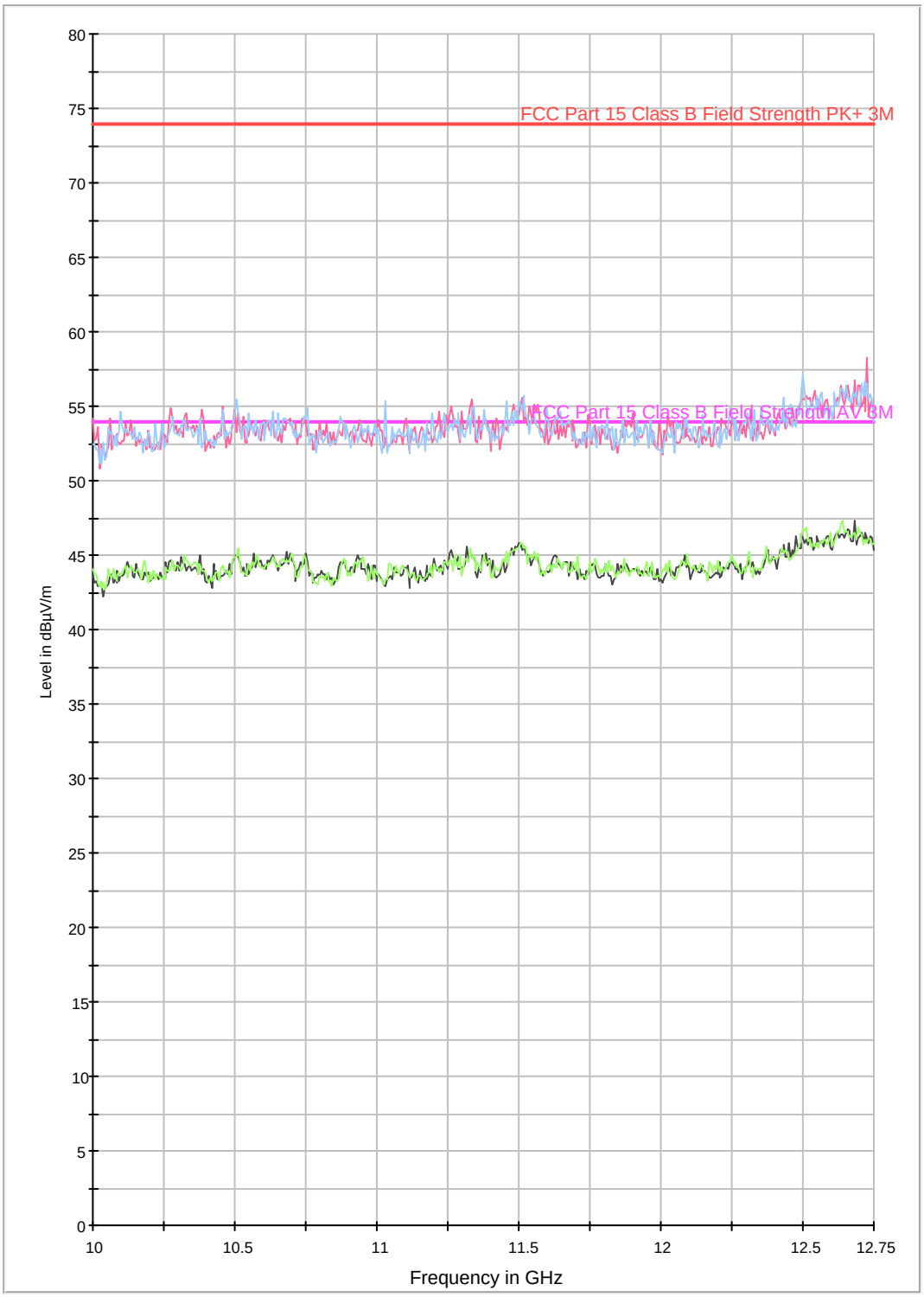
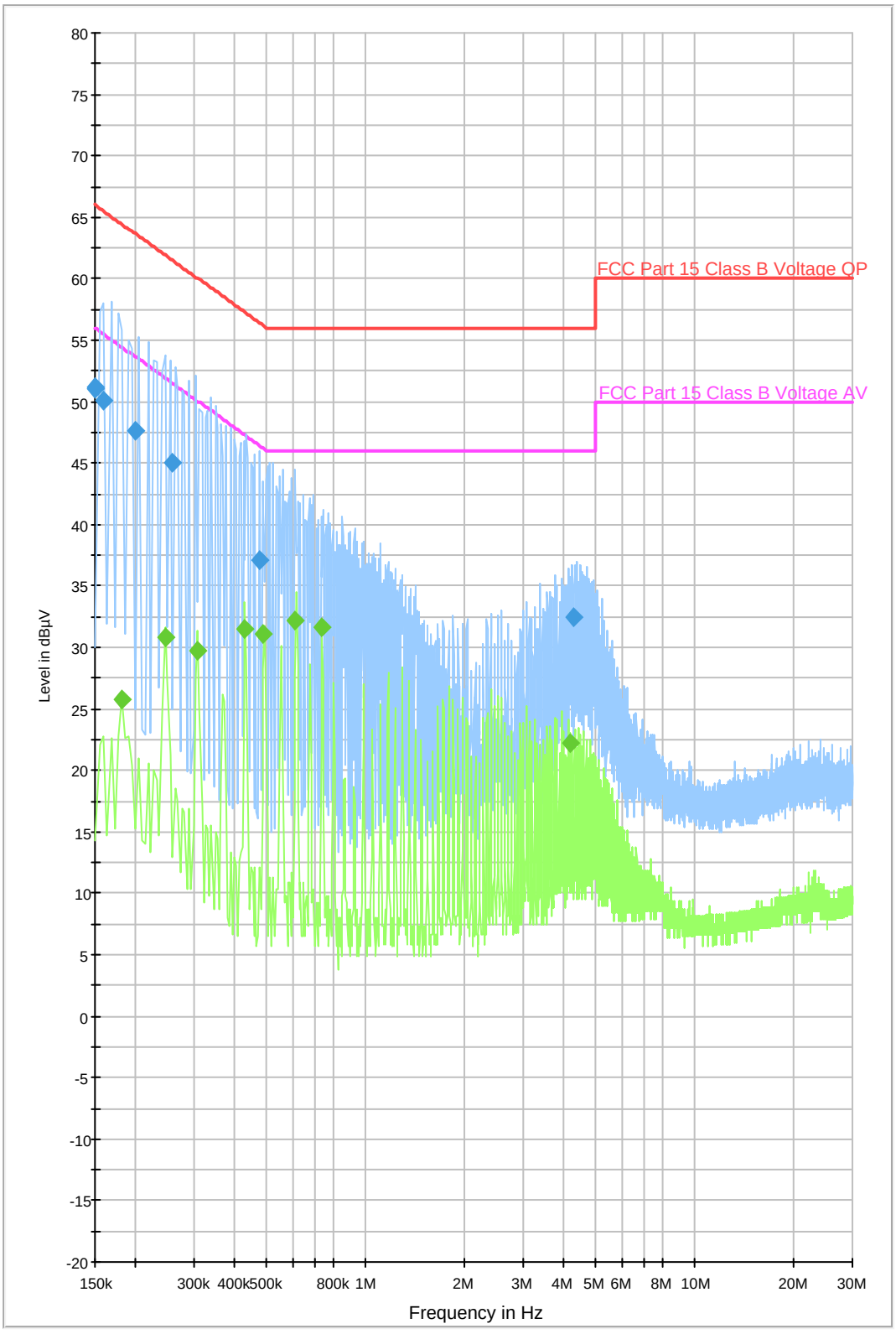
FCC Part 15.109 Radiated Emissions Class B 10-12.75GHz



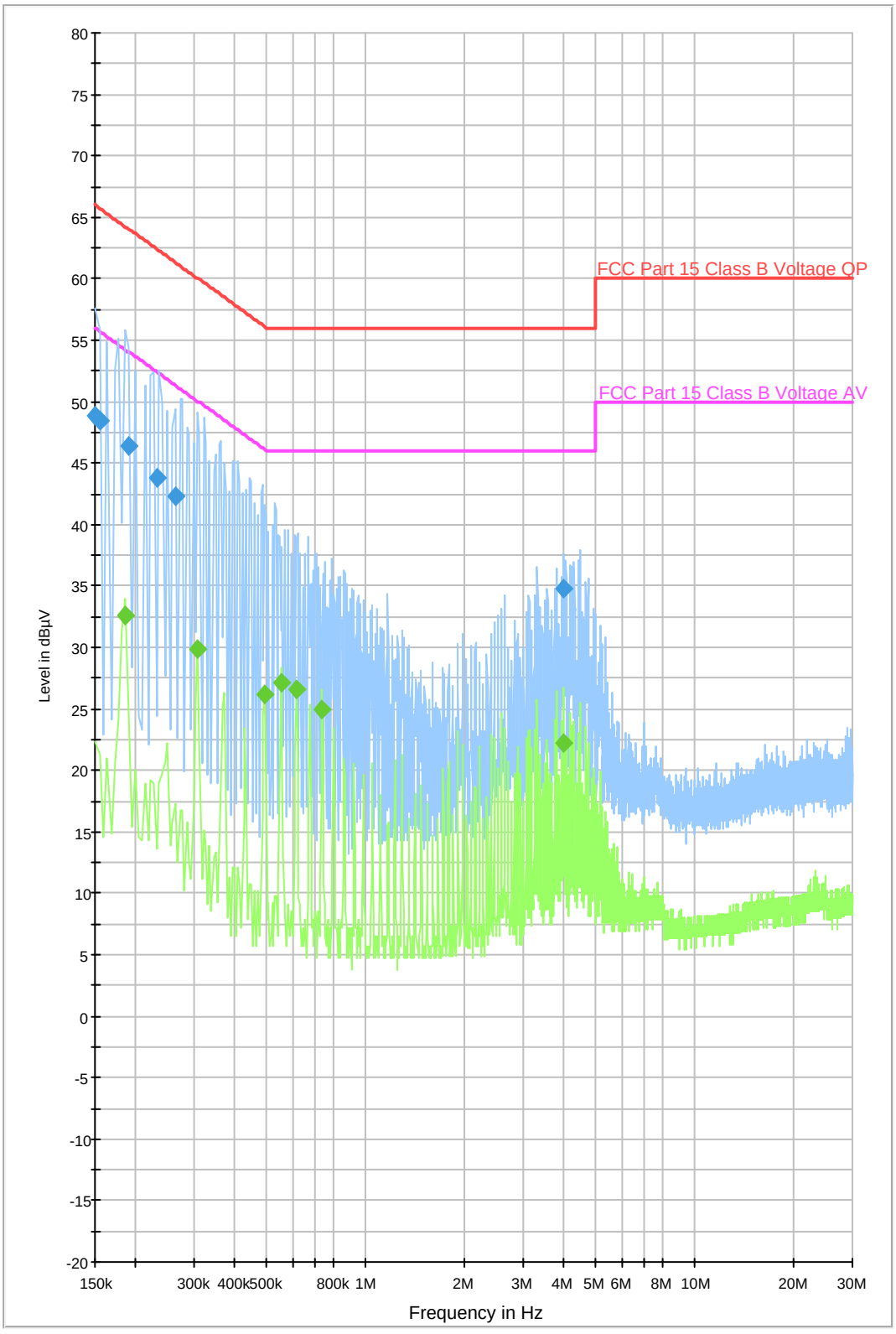
GPH\83519JD04\006

FCC Part 15.107 Conducted Emissions Class B Live



GPH\83519JD04\007

FCC Part 15.107 Conducted Emissions Class B Neutral



10. TEST CONFIGURATION DRAWING

10.1. This section contains the Test Configuration Drawings for the measurements listed in Section 7: Measurements, Examinations and Derived Results.

Test Configuration Reference Number	Title
DRG\83519JD04\001	Schematic diagram of the EUT, support equipment and interconnecting cables used for the test

DRG\83519JD04\001 - Schematic diagram of the EUT, support equipment and interconnecting cables used for the test