FCC TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Test of: Datalogic Scanning
Power Scan PBT7100 Wireless Base station and Barcode Reader Base station Class: BC7030 (RS Base), ZP0002815 Barcode Reader, ZP0002754

To: FCC Part 15: 2007 Subpart B Clause 15.107 Conducted Emissions and Clause 15.109 Radiated Emissions and RSS-Gen Issue 2 June 2007

Test Report Serial No:
RFI/EMC1/RP74225JD17A

This Test Report Is Issued Under The Authority Of Scott D'Adamo, EMC Service Leader:	
Checked By:	Brian Watson
Signature:	
Date of Issue:	24 December 2008

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1. Customer Information

1.1. Contact Information

Company Name:	Datalogic Scanning, Inc
Address:	959 Terry Street Eugene Oregon 97402-9150 USA

1.2. Manufacturer #1 Information

Company Name:	Datalogic Scanning
Address:	959 Terry Street Eugene Oregon 97402-9150 USA

1.3. Manufacturer #2 Information

Company Name:	Datalogic Scanning Slovakia s.r.o.
Address:	Priloy 588/47-919/26 Zavar Trnava Slovak Republic

2. Summary of Testing

2.1. General Information

Specification Reference:	FCC Part 15: 2007 Subpart B Clause 15.107 Conducted Emissions and Clause 15.109 Radiated Emissions and RSS-Gen Issue 2 June 2007
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.
Specification Reference:	RSS-Gen Issue 2 June 2007
Specification Title:	General Requirements and Information for the Certification of Radio communication Equipment.
FCC Site Registration No:	209735
IC Site Registration No:	3245
Location of Testing:	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.
Test Dates:	20 December 2008

2.2. Summary of Test Results

Clause	Measurement	Applicability	Result
15.107	Conducted Emissions (Class B Limits)	Y	✓
15.109	Radiated Emissions Electric Field Strength (Class B Limits)	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:	*Bluetooth* Base Station BC7030 (RS)
Brand Name:	PowerScan
Model Name or Number:	PBT7100
Serial Number:	ZP0002815
FCC ID Number:	O9N-PBT7K
Industry Canada Certification Number:	3862A-PBT7K

Description:	*Bluetooth* Barcode Reader
Brand Name:	PowerScan
Model Name or Number:	PBT7100
Serial Number:	ZP0002754
FCC ID Number:	O9N-PBT7K
Industry Canada Certification Number:	3862A-PBT7K

Description:	AC/DC Adaptor
Brand Name:	Datalogic
Model Name or Number:	SA06-12S05-V-3A
Serial Number:	R00084100995

3.2. Description of EUT

The equipment under test was a *Bluetooth* Barcode Reader Base Station and *Bluetooth* Barcode Reader.

3.3. Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.4. Additional Information Related to Testing

Equipment Category:	2.4GHz Wideband Transmission System		
Type of Unit:	Transceiver: Bluetooth Class 1		
Highest Operating Frequency:	16 MHz (excluding Bluetooth)		
Power Supply Requirement:	Base station: 5.2 V DC Power Adaptor: Touch SA06-12S05-V-3A Serial Number: R00084100995 Input: 115V, 60Hz AC Mains Supply Output: 5.2V DC 2.4A Reader: Internal Battery Supply of 3.7V		
Weight:	Basestation: 0.4kg Reader: 0.4kg		
Dimensions:	Basestation: *239x117x48mm* Reader: *203x76x115mm*		
Frequency Range:	2402 to 2480 MHz		
Channel Frequency:	**Channel ID**	**Channel Number**	**Channel Frequency (MHz)**
	Bottom	0	2402
	Middle	39	2441
	Top	78	2480

3.5. Port Identification

Port	Description	Type	Applicable
1	Enclosure Base Station	-	Y
2	Enclosure Scanner	-	Y
3	Charging Contacts Scanner/Base	Contacts x 4	N
4	RJ45 Base Station	RJ45 to RS232 Coiled Cable	N
5	DC Input Base Station	2 Core DC	N
6	AC Input AC / DC Adaptor	3 Pin	Y

3.6. Support Equipment

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

Description:	Laptop
Brand Name:	Dell
Model Name or Number:	D600
Serial Number:	CN-0G5152-48643-49L-1010
Cable Length and Type:	RJ45 to RS232
Connected to Port:	Base Station

4. Operation and Monitoring of the EUT during Testing

4.1. Operating Modes

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

- During testing both the base station and the scanner were in idle state, during which the scanner was charging in the base station.

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):

- The PBT7100 Scanner was located in the PBT 7100 Base Station, with the Base Station powered via its dedicated AC/DC adaptor supplied by 115 V AC mains supply. The RS232 output of the Base Station was then terminated into a supporting Laptop using the RJ45 to RS232 lead supplied.

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 Drawing* 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. Conducted Emissions

5.2.1. Quasi Peak Detector Measurements

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

Test Summary:

Port:	AC Mains
Basic Standard:	FCC Part 15.107
Test Method:	ANSI C63.4 Section 7
Operating Mode:	EUT Idle and Charging

Environmental Conditions:

Temperature Variation (°C):	22 to 22
Relative Humidity Variation (%):	55 to 55
Atmospheric Pressure Variation (mb):	1018 to 1018

Results:

Frequency (MHz)	Line	Quasi Peak Level (dBμV)	Limit (dBμV)	Margin (dB)	Note(s)	Result
0.168	Neutral	54.0	65.1	11.1	-	Complied
0.200	Neutral	51.1	63.6	12.5	-	Complied
0.236	Live 1	49.3	62.3	13.0	-	Complied
0.294	Live 1	45.6	60.4	14.8	-	Complied
0.317	Live 1	43.9	59.8	15.9	-	Complied
0.357	Live 1	41.6	58.8	17.2	-	Complied
0.416	Live 1	38.6	57.5	18.9	-	Complied
0.429	Live 1	37.7	57.3	19.6	-	Complied
0.470	Live 1	35.7	56.5	20.8	-	Complied
0.528	Live 1	33.4	56.0	22.6	-	Complied

5.2.2. Average Detector Measurements

Following the initial scans and quasi peak measurements, further measurements were made at the relevant frequencies using an average detector. The measured levels were as follows:

Test Summary:

Port:	AC Mains
Basic Standard:	FCC Part 15.107
Test Method:	ANSI C63.4 Section 7
Operating Mode:	EUT Idle and Charging

Environmental Conditions:

Temperature Variation (°C):	22 to 22
Relative Humidity Variation (%):	55 to 55
Atmospheric Pressure Variation (mb):	1018 to 1018

Results:

Frequency (MHz)	Line	Average Level (dBμV)	Limit (dBμV)	Margin (dB)	Note(s)	Result
0.209	Neutral	40.7	53.3	12.6	-	Complied
0.281	Neutral	33.5	50.8	17.3	-	Complied
0.416	Live 1	23.2	47.5	24.3	-	Complied
0.488	Neutral	30.6	46.2	15.6	-	Complied
0.555	Neutral	27.4	46.0	18.6	-	Complied
10.113	Neutral	18.3	50.0	31.7	-	Complied
10.253	Neutral	16.8	50.0	33.2	-	Complied
10.325	Neutral	14.2	50.0	35.8	-	Complied
22.664	Neutral	25.1	50.0	24.9	-	Complied
22.871	Neutral	24.8	50.0	25.2	-	Complied

5.3. Radiated Emissions

5.3.1. Electric Field Strength Measurements

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

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 1 GHz
Operating Mode:	EUT Idle and Charging

Environmental Conditions:

Temperature Variation (°C):	35 to 35
Relative Humidity Variation (%):	22 to 23
Atmospheric Pressure Variation (mb):	1018 to 1018

Results:

Frequency (MHz)	Antenna Polarity	Quasi Peak Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Note(s)	Result
35.343	Vertical	25.4	40.0	14.6	-	Complied
58.965	Vertical	11.9	40.0	28.1	-	Complied
58.980	Vertical	13.3	40.0	26.7	-	Complied
119.857	Vertical	28.5	43.5	15.0	-	Complied
127.161	Vertical	26.5	43.5	17.0	-	Complied
171.957	Vertical	29.0	43.5	14.5	-	Complied
186.263	Vertical	32.9	43.5	10.6	-	Complied
229.728	Horizontal	29.4	46.0	16.6	-	Complied
458.804	Vertical	26.1	46.0	19.9	-	Complied
944.245	Vertical	23.2	46.0	22.8	-	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 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
Conducted Emissions	150 kHz to 30 MHz	95%	± 3.99 dB
Radiated Emissions Electric Field Strength[1]	30 to 1000 MHz	95%	± 4.68 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.

Note(s):

1. Where it has been necessary to perform measurements using the substitution method, it has not been possible to calculate an uncertainty for this measurement. Due to the complex effects on the emissions levels measured within a screened room with either a signal source or the equipment under test, the calculation of a general measurement uncertainty for this process would be unrepresentative for all possible measured results.

Appendix 1. Test Equipment Used

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
A067	Line Impedance Stabilization Network	Rohde & Schwarz	ESH3-Z5	890603/002	19 May 2008	12
A1792	Pre Amplifier	A.H.Systems Inc	PAM-0118	182	28 Nov 2008	12
A1829	N-Type Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100671	16 Jan 2008	12
A259	Antenna	Chase	CBL6111	1513	25 Jul 2008	12
C1158	Cable	Rosenberger	FA210A1010005G5G	3305 42447-1	20 Apr 2008	12
C1262	Cable	Rosenberger	FA210A0075008080	49356-2	20 Apr 2008	12
C1302	3m Cable	Rosenberger	FA210A1030005050	59153-01	04 Aug 2008	12
C1303	8m Cable	Rosenberger	FA210A1080005050	59155-01	01 Aug 2008	12
C1304	3m Cable	Rosenberger	FA210A1030005050	59153-02	04 Aug 2008	12
C1306	15m Cable	Rosenberger	FA210A0015005050	59152-01	01 Aug 2008	12
K0001	5m Semi-Anechoic Chamber	Rainford EMC	N/A	N/A	16 Jan 2008	12
M1273	Test Receiver	Rhode & Schwarz	ESIB 26	100275	26 Feb 2008	12
M1391	Thermo Hygrometer	Oregon Scientific	BAR629HGU	N/A	18 June 2008	12

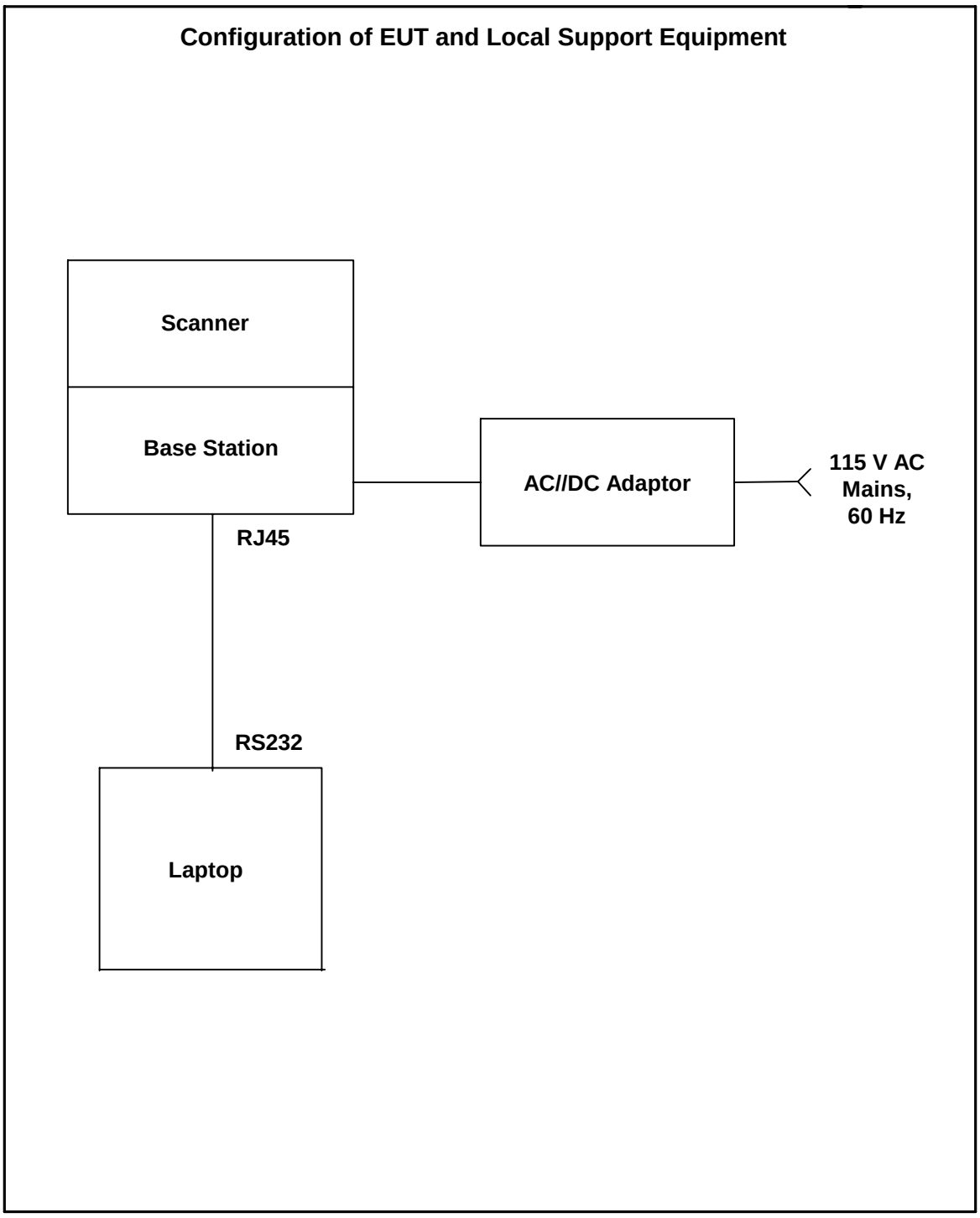
NB In accordance with UKAS requirements, all the measurement equipment is on a calibration schedule.

Appendix 2. Test Configuration Drawing

This Appendix contains the following drawing:

Drawing Reference Number	Title
DRG\74225JD17\001	Schematic diagram of the EUT, support equipment and interconnecting cables used for the test.

DRG\74225JD17\001

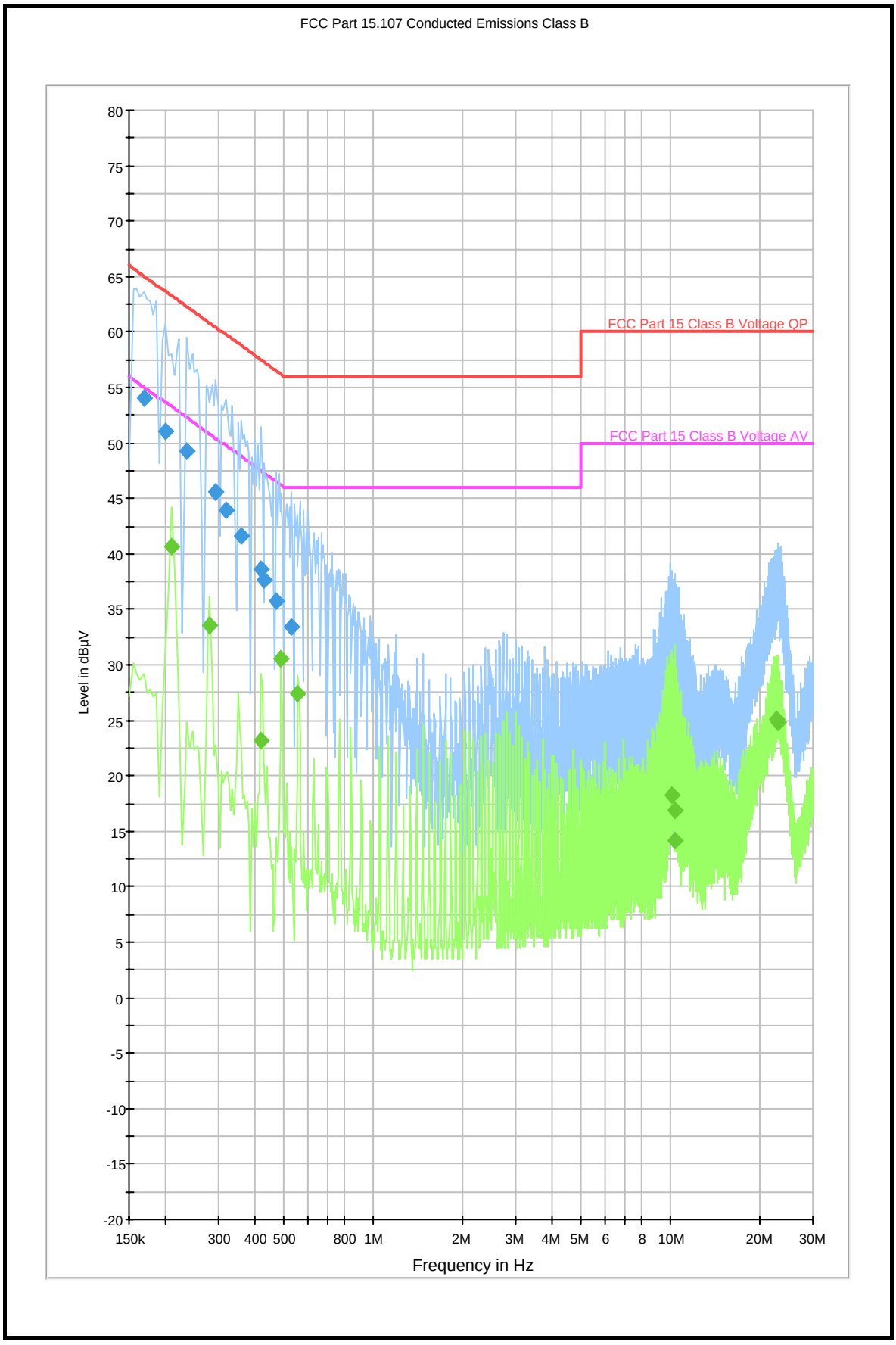


Appendix 3. Graphical Test Results

This Appendix contains the following graphs:

Graph Reference Number	Title
GPH\74225JD17\001	Conducted Emissions Pre-Scan (0.15 MHz to 30 MHz)
GPH\74225JD17\002	Radiated Emissions Pre-Scan (30 MHz to 1000 MHz)

GPH\74225JD17\001
Conducted Emissions Pre-Scan (0.15 MHz to 30 MHz)



GPH\74225JD17\002
Radiated Emissions Pre-Scan (30 MHz to 1000 MHz)