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Report On

FCC Testing of the GENERAL TOOLS & INSTRUMENTS COMPANY LLC.
Short Range Device Wireless Video Receiver DCS500R
In accordance with FCC CFR 47 Part 15B

COMMERCIAL-IN-CONFIDENCE

FCC ID: YRKDCS500R

Document 708881427602 Report 01 Issue 1 May 2014

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TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
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COMMERCIAL-IN-CONFIDENCE

REPORT ON

FCC Testing of the
GENERAL TOOLS & INSTRUMENTS COMPANY LLC.
Short range device wireless video receiver DCS400R
In accordance with FCC CFR 47 Part 15B

Document 708881427602 Report 01 Issue 1

May 2014

PREPARED FOR

GENERAL TOOLS & INSTRUMENTS COMPANY LLC.
80 WHITE STREET, NEW YORK,NY 10013, USA

PREPARED BY

Hui TONG
Project Engineer

APPROVED BY

Zhining ZHANG
Project Engineer

DATED 6 May, 2014

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Part 15B. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineer(s);

Hui TONG

Product Service

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SECTION 1

REPORT SUMMARY

FCC Testing of the GENERAL TOOLS & INSTRUMENTS COMPANY LLC.
Short Range Device Wireless Video Receiver DCS500R
In accordance with FCC CFR 47 Part 15B

Product Service

1.1 INTRODUCTION

The information contained in this report is intended to show verification of the FCC Testing of the GENERAL TOOLS & INSTRUMENTS COMPANY LLC. Short Range Device Wireless Video Receiver DCS500R to the requirements of FCC CFR 47 Part 15B.

Objective	To perform FCC Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out.
Manufacturer	GENERAL TOOLS & INSTRUMENTS COMPANY LLC.
Model Number(s)	Wireless Video Receiver DCS500R
Serial Number(s)	Engineering sample
Number of Samples Tested	1
Test Specification/Issue/Date	FCC CFR 47 Part 15B (2014)
Incoming Release Date	Application Form 25 February 2014
Order Number Date	Quote Acceptance Form 25 February 2014
Start of Test	6 March 2014
Finish of Test	6 March 2014
Name of Engineer(s)	Hui TONG

Product Service

1.2 BRIEF SUMMARY OF RESULTS

A brief summary of the tests carried out in accordance with FCC CFR 47 Part 15B:2012 is shown below.

Configuration - Short Range Device Wireless USB Receiver				
Section	FCC Clause	Test Description	Result	Comments/Base Standard
2.1	15.107	AC Line Conducted Emissions	Pass	
2.2	15.109	Radiated Emissions	Pass	

Product Service

1.3 APPLICATION FORM

APPLICANT'S DETAILS	
COMPANY NAME :	GENERAL TOOLS & INSTRUMENTS COMPANY LLC.
ADDRESS :	80 WHITE STREET, NEW YORK, 10013 United States
NAME FOR CONTACT PURPOSES : Karen Kwong	
TELEPHONE NO: +212-431-6100 FAX NO:	E-MAIL: k.kwong@generaltools.com

EQUIPMENT INFORMATION	
MANUFACTURING DESCRIPTION	Short Range Device Wireless Video Receiver
MANUFACTURING	GENERAL TOOLS & INSTRUMENTS COMPANY LLC.
TYPE	DCS500R
SERIAL NUMBER	Engineering sample
CONUTRY OF ORIGIN	America
FCC ID	YRKDCS500R
TECHNICAL DESCRIPTION (a brief description of the intended used and operation)	DCS500R is a Short Range Device Wireless Video Receiver
WORKING MODE	The Wireless Video Receiver DCS500R was powered by Polymer lithium battery; DCS500R has standard USB connection can be communication with Notebook Computer. The batteries could be charged by the adaptor: Input: AC 100-240V, 50/60Hz Output: DC 9V 1.3A

No responsibility will be accepted by TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch as to the accuracy of the information declared in this document by the manufacturer.

Product Service

1.4 PRODUCT INFORMATION

1.4.1 Technical Description

The Equipment Under Test (EUT) DCS500R was a GENERAL TOOLS & INSTRUMENTS COMPANY LLC Short Range Device Wireless Video Receiver. A full technical description can be found in the manufacturer's documentation.

1.5 TEST CONDITIONS

For all tests the EUT was set up in accordance with the relevant test standard and to represent typical operating conditions. Tests were applied with the EUT situated in a shielded enclosure.

Test Mode:
Test mode 1: Idle / receiver & charging mode;
Test mode 2: Desktop computer connect mode;

FCC Accreditation 767285
Test Firm Name: TÜV SÜD Certification and Testing (China) Co., Ltd.
Location: 10 Huaxia M. Rd., Wuxi, Jiangsu, 214100, China

1.6 DEVIATIONS FROM THE STANDARD

No deviations from the applicable test standard were made during testing.

1.7 MODIFICATION RECORD

Modification 0 - No modifications were made to the test sample during testing.

Product Service

SECTION 2

TEST DETAILS

FCC Testing of the GENERAL TOOLS & INSTRUMENTS COMPANY LLC
Short Range Device Wireless Video Receiver DCS500R
In accordance with FCC CFR 47 Part 15B

Product Service

2.1 AC LINE CONDUCTED EMISSIONS

2.1.1 Specification Reference

FCC CFR 47 Part 15B, Clause 15.107

2.1.2 Equipment Under Test and Modification State

DCS500R S/N: N/A - Modification State 0

2.1.3 Date of Test

6 March 2014

2.1.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.1.5 Test Procedure

The EUT is set up on a test table 800mm above a horizontal ground plane. A vertical ground plane is also required and is placed 400mm from the EUT. Where a EUT is floor standing it will be stood on but insulated from the ground plane by up to 12mm.

The EUT is powered through a Line Impedance Stabilisation Network (LISN) which is bonded to the ground plane. The EUT is located so that the distance between the EUT and the LISN is no less than 800mm. Where possible the cable between the mains input of the EUT and the LISN is 1m. Where this is not possible the cable is non inductively bundled with the bundle not exceeding 400mm in length.

A preliminary profile of the Conducted Emissions is obtained over the frequency range 150kHz to 30MHz. Any points of interest are noted for formal measurements.

During formal measurements, the measuring receiver is tuned to the emission of interest where Quasi – Peak and Average measurements are performed in a 9kHz Video and Resolution Bandwidth.

2.1.6 Environmental Conditions

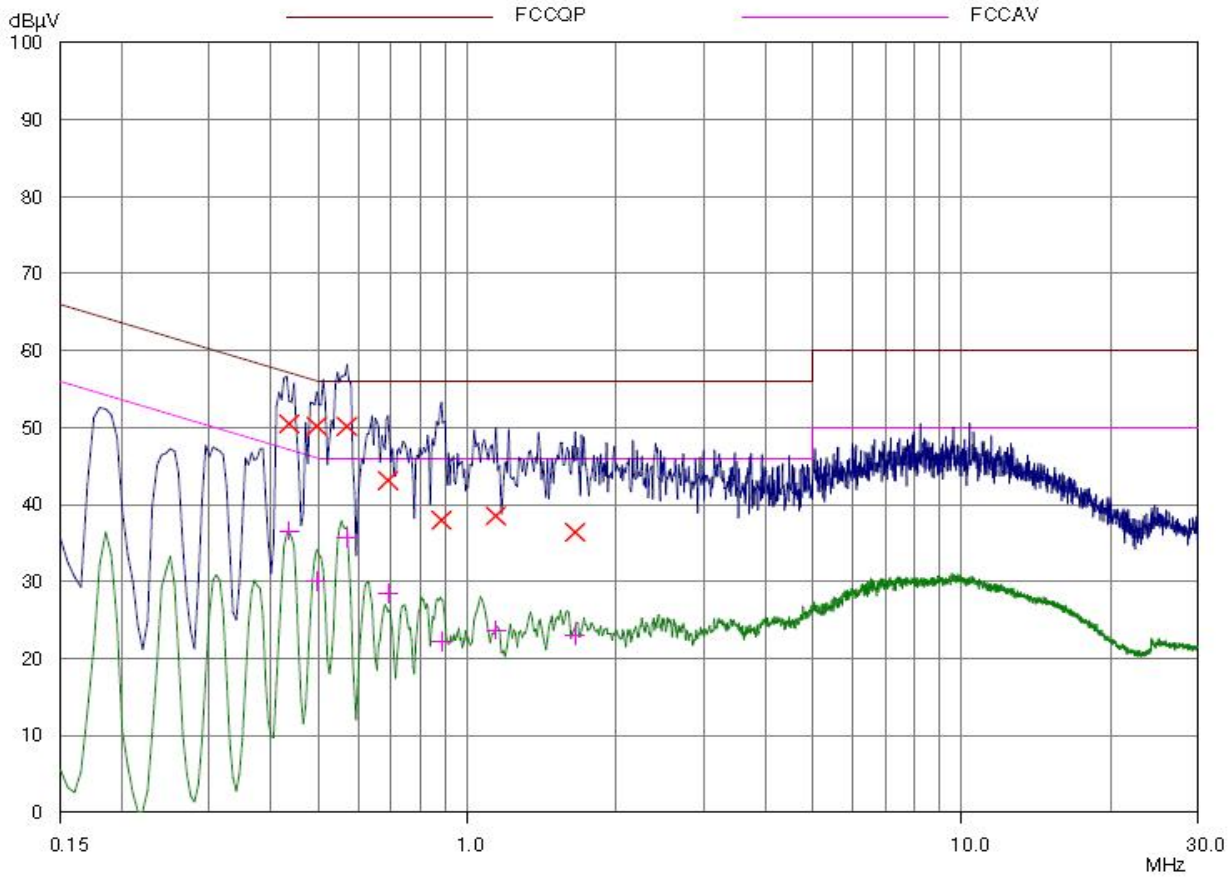
Ambient Temperature	20.0°C
Relative Humidity	50.0%

Product Service

2.1.7 Test Results

Test mode 1: Idle / receiver & charging mode

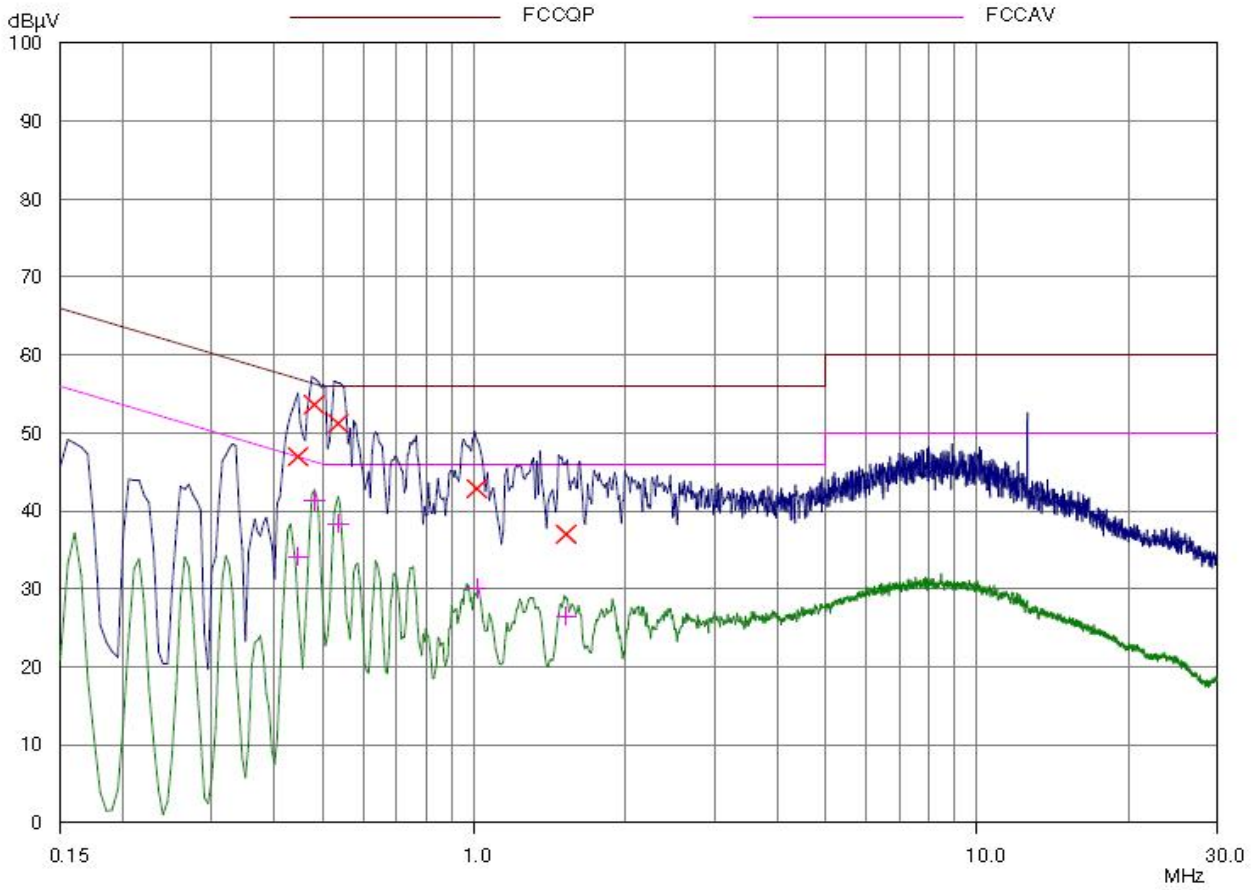
Live Line



Frequency (MHz)	QP Level (dBµV)	QP Limit (dBµV)	QP Margin (dBµV)	AV Level (dBµV)	AV Limit (dBµV)	AV Margin (dBµV)
0.435	50.50	57.16	-6.66	36.55	47.16	-10.61
0.495	50.20	56.08	-5.88	30.04	46.08	-16.04
0.57	50.18	56.00	-5.82	35.71	46.00	-10.29
0.69	43.14	56.00	-12.86	28.43	46.00	-17.57
0.885	37.98	56.00	-18.02	22.23	46.00	-23.77
1.14	38.55	56.00	-17.45	23.70	46.00	-22.30
1.65	36.41	56.00	-10.59	23.05	46.00	-22.95

Product Service

Neutral Line

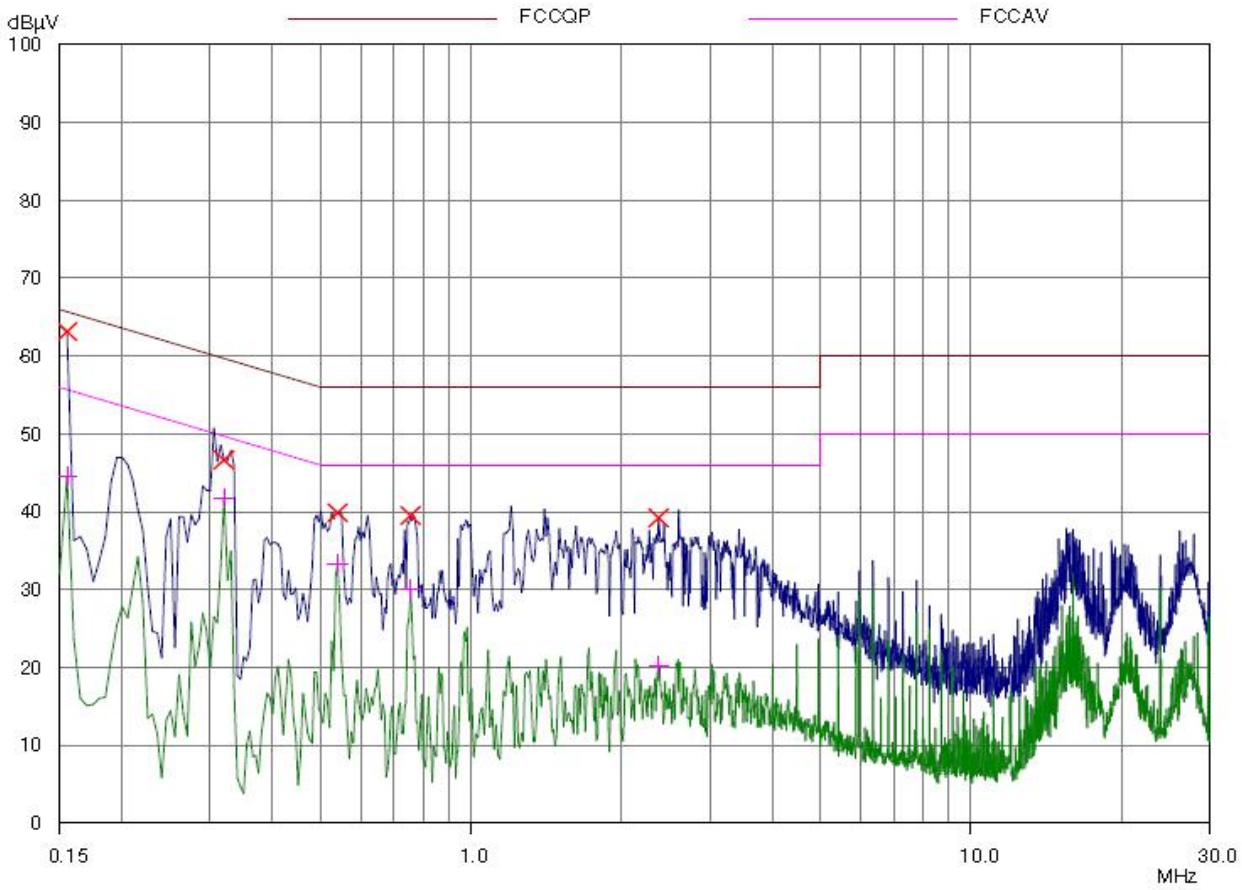


Frequency (MHz)	QP Level (dBµV)	QP Limit (dBµV)	QP Margin (dBµV)	AV Level (dBµV)	AV Limit (dBµV)	AV Margin (dBµV)
0.445	46.96	56.97	-10.01	34.15	46.97	-12.82
0.48	53.66	56.34	-2.68	41.22	46.34	-5.12
0.535	51.22	56.00	-4.78	38.36	46.00	-7.64
1.01	42.87	56.00	-13.13	30.05	46.00	-15.95
1.52	37.03	56.00	-18.97	26.52	46.00	-19.48

Product Service

Test mode 2: Desktop computer connect mode

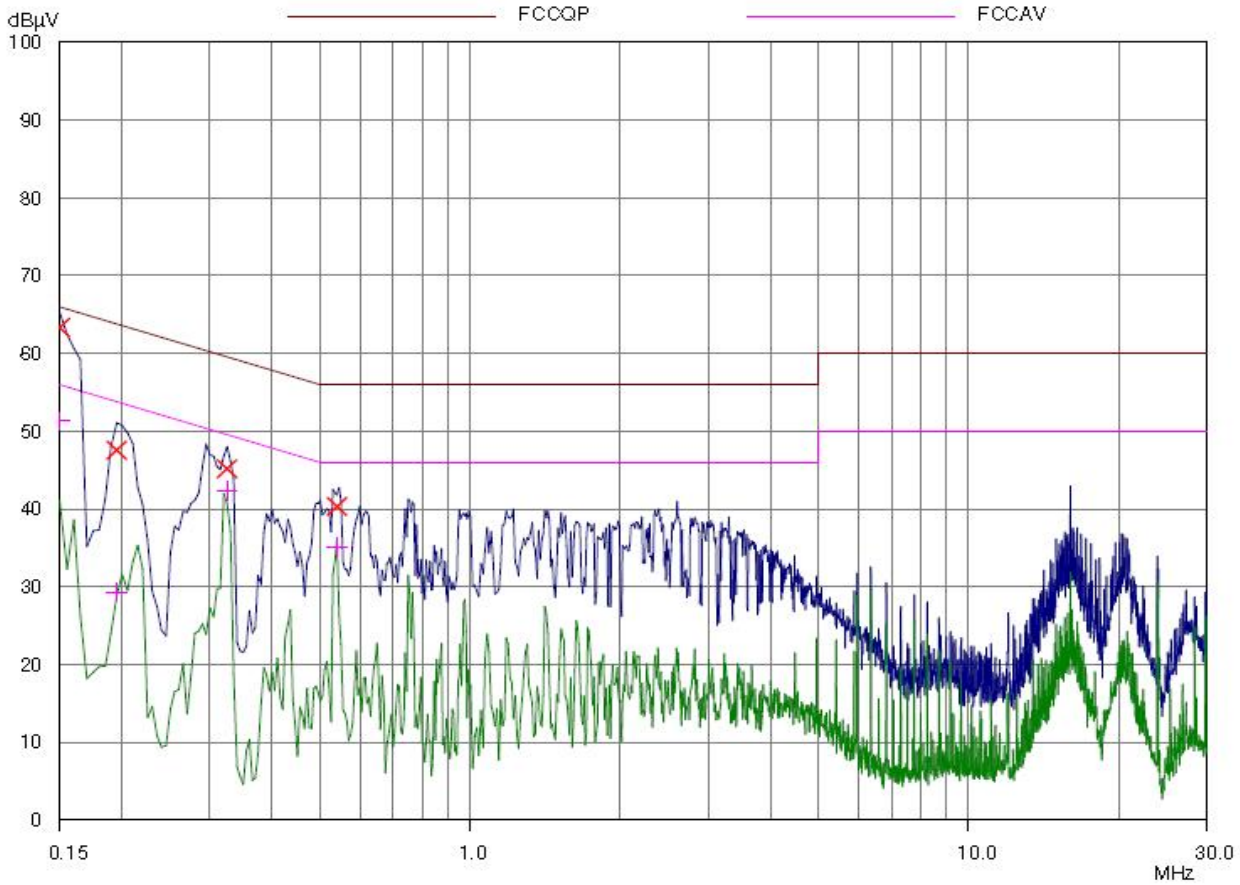
Live Line



Frequency (MHz)	QP Level (dBµV)	QP Limit (dBµV)	QP Margin (dBµV)	AV Level (dBµV)	AV Limit (dBµV)	AV Margin (dBµV)
0.155	63.15	65.73	-2.58	44.57	55.73	-11.16
0.32	46.66	59.71	-13.05	41.78	49.71	-7.93
0.54	39.86	56.00	-16.14	33.33	46.00	-12.67
0.755	39.52	56.00	-16.48	30.10	46.00	-15.90
2.37	39.22	56.00	-16.78	20.15	46.00	-25.85

Product Service

Neutral Line



Frequency (MHz)	QP Level (dBµV)	QP Limit (dBµV)	QP Margin (dBµV)	AV Level (dBµV)	AV Limit (dBµV)	AV Margin (dBµV)
0.15	63.35	66.00	-2.65	51.35	56.00	-4.65
0.195	47.57	63.82	-16.25	29.35	53.82	-24.47
0.325	45.18	59.58	-14.40	42.33	49.58	-7.25
0.54	40.32	56.00	-15.68	35.12	46.00	-10.88

Product Service

2.2 RADIATED EMISSIONS

2.2.1 Specification Reference

FCC CFR 47 Part 15B, Clause 15.109

2.2.2 Equipment Under Test and Modification State

DCS500R S/N: N/A - Modification State 0

2.2.3 Date of Test

6 March 2014

2.2.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.2.5 Test Procedure

A preliminary profile of the Spurious Radiated Emissions is obtained up to the 5th harmonic of the EUT's highest internally generated fundamental frequency. For frequencies from 30MHz to 18GHz the EUT is placed on a test table 800mm above the ground plane. For frequencies above 18GHz, the EUT height is increased by 200mm to a height of 1000mm. This is to ensure the beam width of the measuring antenna gives sufficient vertical coverage of the EUT.

During characterisation the turntable azimuth is adjusted from 0 to 360 degrees with the measuring antenna in one polarity. It is then repeated for the other polarity. Any frequencies of interest are noted for formal measuring later. The distance from the measuring antenna to the boundary of the EUT is 3m. Above 18GHz this distance may be reduced to 1m.

During formal measurement the spectrum analyser is tuned to the frequency of the emission. The turntable azimuth is adjusted from 0 to 360 degrees to determine the point at which the maximum emission level occurs. Then the height of the measuring antenna is adjusted from a height of 1m to 4m to determine the height at which the maximum emission level occurs. Once the point of maximum emission has been determined the emission is measured. Emissions in the 30MHz to 1GHz range are measured using a CISPR Quasi – Peak detector function in a 120kHz bandwidth. Emissions in the range 1GHz to 40GHz require Peak and Average measurements. The Peak measurements are made using a peak detector with 1MHz Resolution and Video bandwidths. The average measurements employ a peak detector with a Resolution bandwidth of 1MHz and a Video bandwidth of 10Hz. If measurements are made at a 1m measuring distance, then 10dB is added to the specification limit.

2.2.6 Environmental Conditions

Ambient Temperature	20.0°C
Relative Humidity	50.0%

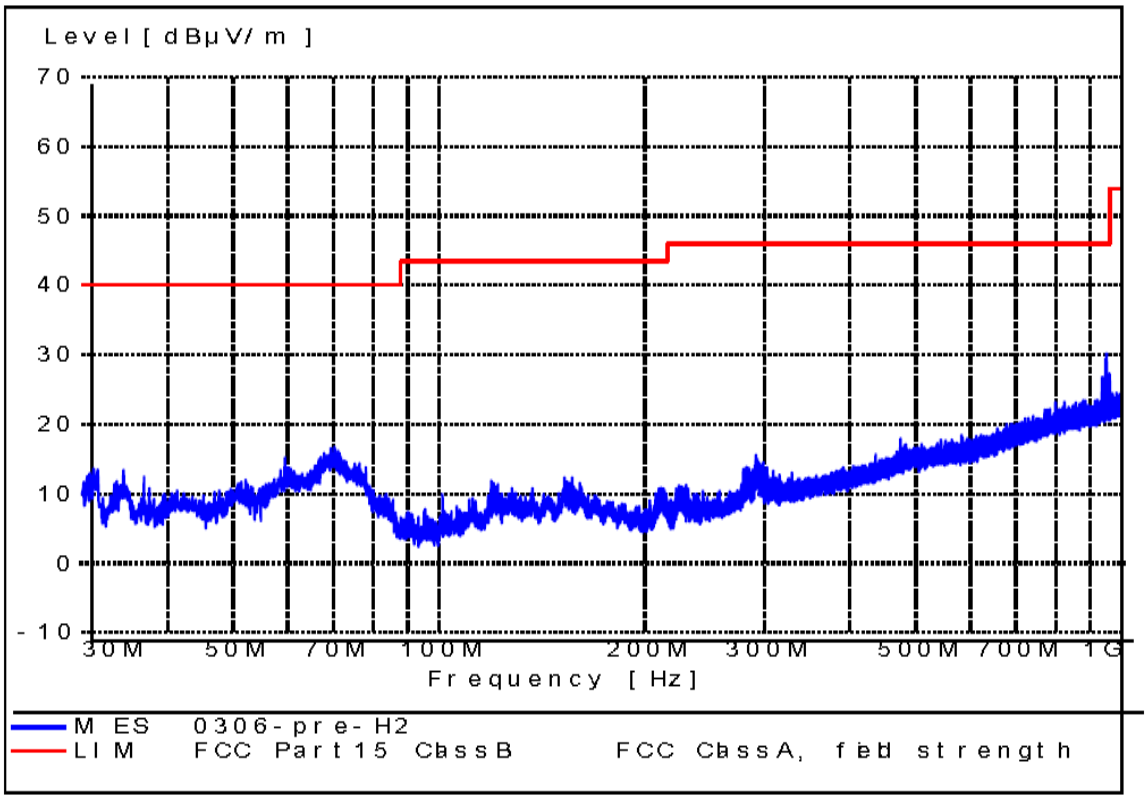
Product Service

2.2.7 Test Results

Test mode 1: Idle / receiver & charging mode

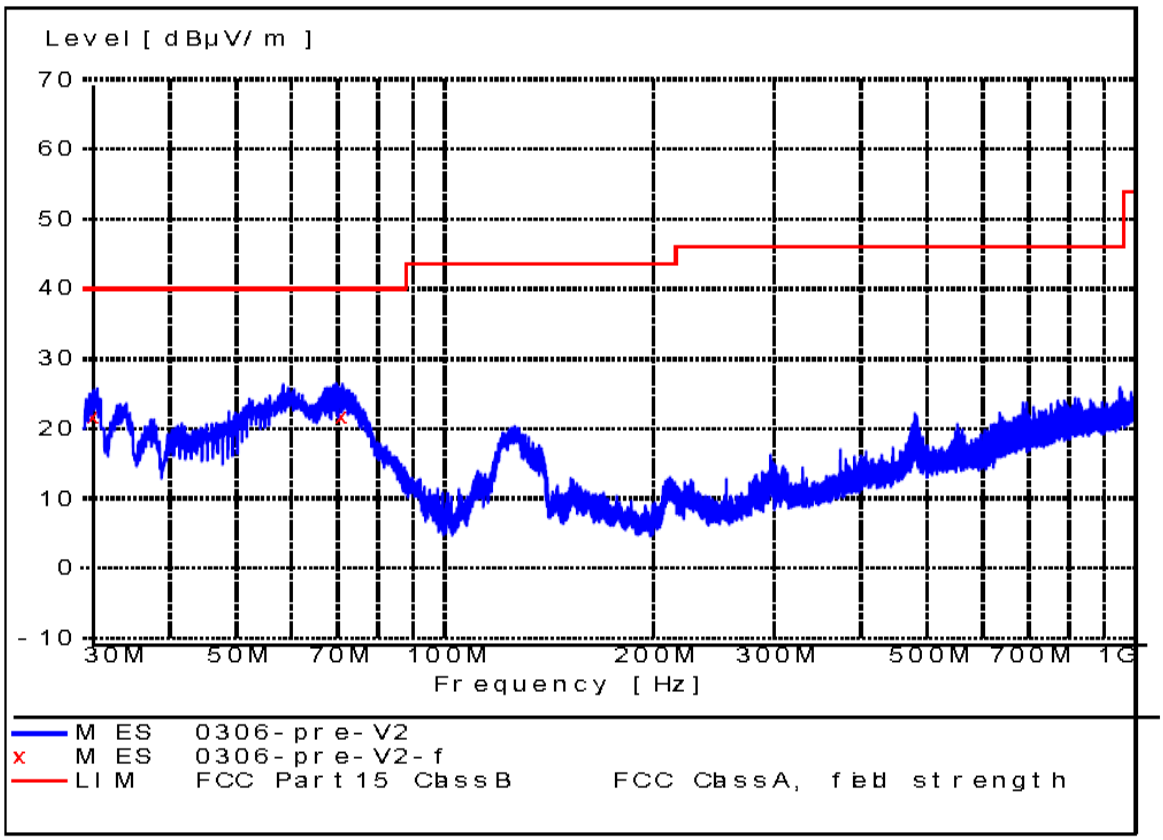
30 MHz to 1 GHz

Horizontal Polarisation



Product Service

Vertical Polarisation



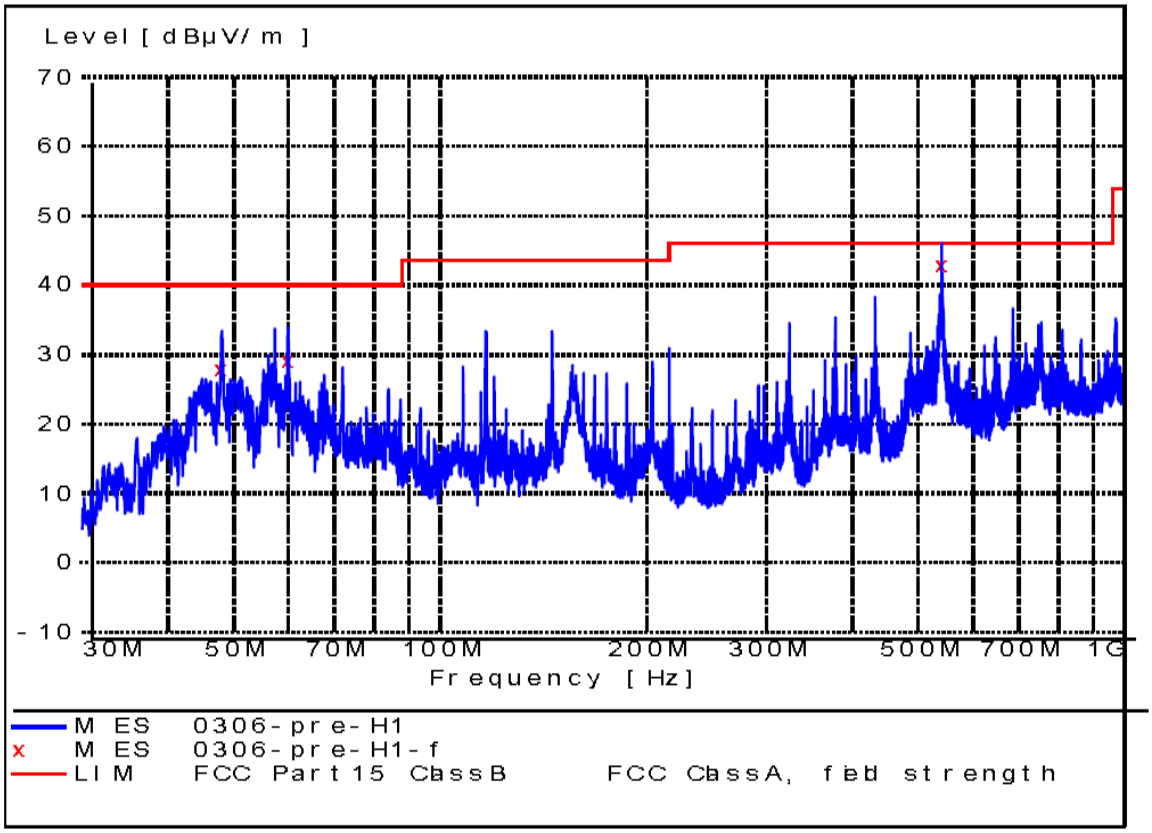
Frequency (MHz)	Polarisation (Vertical/ Horizontal)	Field Strength	Over Limit	Limit	Type
31.05	H	21.67	-19.33	40.0	QP
71.15	H	21.80	-19.20	40.0	QP

Product Service

Test mode 2: Desktop computer connect mode

30 MHz to 1 GHz

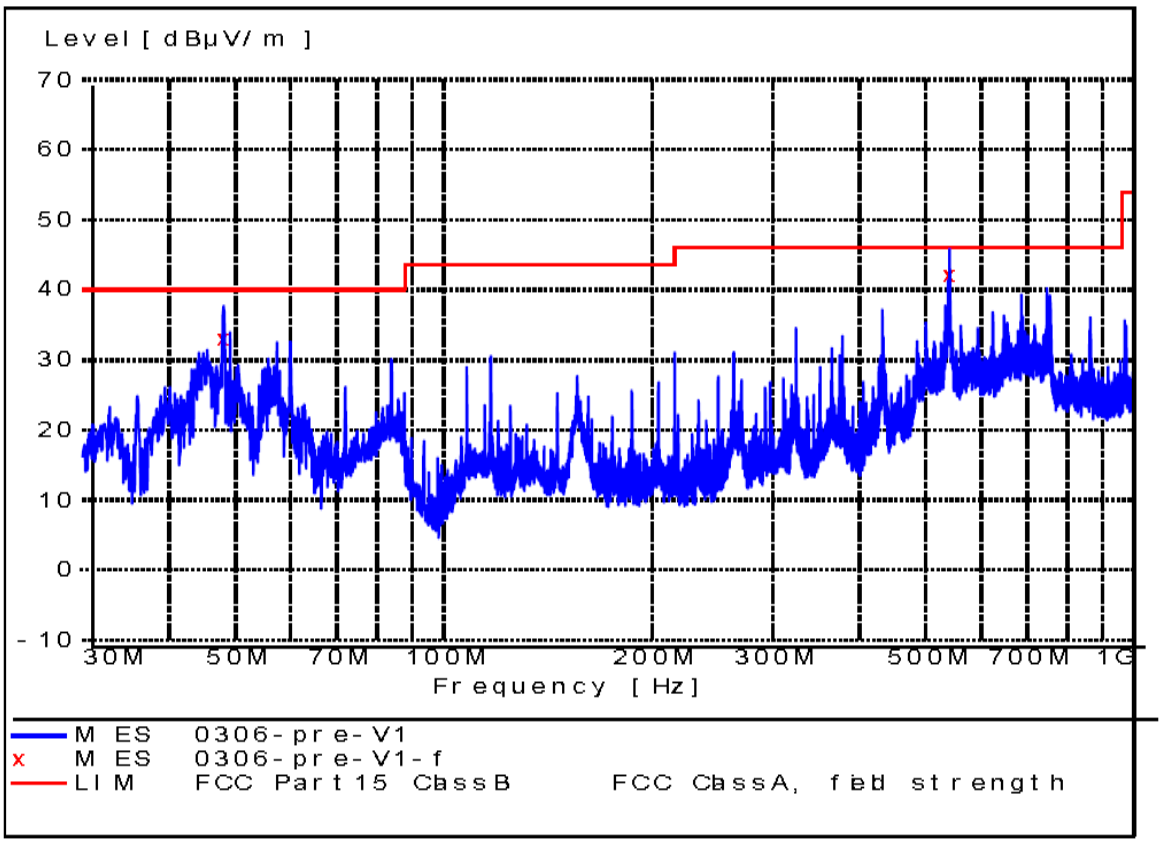
Horizontal Polarisation



Frequency (MHz)	Polarisation (Vertical/ Horizontal)	Field Strength	Over Limit	Limit	Type
47.9	H	27.85	-12.15	40.0	QP
59.95	H	29.14	-10.86	40.0	QP
540.05	H	42.75	-3.25	46.0	QP

Product Service

Vertical Polarisation



Frequency (MHz)	Polarisation (Vertical/ Horizontal)	Field Strength	Over Limit	Limit	Type
47.95	V	32.91	-7.09	40.0	QP
540.05	V	42.27	-3.73	46.0	QP

Product Service

SECTION 3

TEST EQUIPMENT USED

Product Service

3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

Section 2.1 – AC Line Conducted Emissions

	Model Number	Manufacturer	Description	Calibration Date	Interval(year)
■ -	ESHS30	Rohde & Schwarz	EMI Test Receiver	2013.5.27	1
■ -	NSLK8127	Schwarzbeck	LISN	2013.7.14	1
■ -	No.2	Jinlida	Shielding Room	N/A	N/A

Section 2.2 - Radiated Emissions

	Model Number	Manufacturer	Description	Calibration Date	Interval(year)
■ -	ESU8	Rohde & Schwarz	EMI Test Receiver	2014.01.07	1
■ -	VULB9168	Schwarzbeck	Broadband Antenna	2013.12.27	2
■ -		TDK	10m Chamber	2013.02.14	1

Auxiliary Device

	Model Number	Manufacturer	Description
■ -	HP Compaq 6005 Pro Small Form Factor	HEWLETT PACKARD	Desktop Computer
■ -	VS17	HEWLETT PACKARD	17’ LCD

Product Service

3.2 MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:-

Test Discipline	MU
Radiated Emissions	30MHz to 1GHz: ± 3.79 dB 1GHz to 40GHz: ± 3.58 dB
AC Line Conducted Emissions	±3.21 dB

Product Service

SECTION 4

DISCLAIMERS AND COPYRIGHT

Product Service

4.1 DISCLAIMERS AND COPYRIGHT