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Report On

FCC Testing of the GENERAL TOOLS & INSTRUMENTS COMPANY LLC.
Short Range Device Wireless Video Transmitter DCS500T
In accordance with FCC CFR 47 Part 15C

COMMERCIAL-IN-CONFIDENCE

FCC ID: YRKDCS500T

Document 708881427602 Report 02 Issue 1 May 2014

Product Service

TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
No.88 Heng Tong Road, Shanghai 200070, P.R. China
Tel: +86-(0)21 6141 0123. Website: www.tuv-sud.cn

COMMERCIAL-IN-CONFIDENCE

REPORT ON

FCC Testing of the
GENERAL TOOLS & INSTRUMENTS COMPANY LLC.
Short range device wireless video transmitter DCS500T
In accordance with FCC CFR 47 Part 15C

Document 708881427602 Report 02 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 15C. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineer(s);

Hui TONG

Product Service

CONTENTS

Product Service

SECTION 1

REPORT SUMMARY

FCC Testing of the
GENERAL TOOLS & INSTRUMENTS COMPANY LLC.
Short range device wireless video transmitter DCS500T
In accordance with FCC CFR 47 Part 15C

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 LCC Short range device wireless video transmitter DCS500T to the requirements of FCC CFR 47 Part 15C.

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.
	Short range device
Model Number(s)	Wireless Video Transmitter DCS500T
Serial Number(s)	Engineering sample
Number of Samples Tested	1
Test Specification/Issue/Date	FCC CFR 47 Part 15C (2014)
Incoming Release	Application Form
Date	25 February 2014
Order Number	Quote Acceptance Form
Date	25 February 2014
Start of Test	6 March 2014
Finish of Test	6 March 2014
Name of Engineer(s)	Hui TONG
Related Document(s)	ANSI C63.10: 2009

Product Service

1.2 BRIEF SUMMARY OF RESULTS

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

Section	FCC	Test Description	Result	Comments/Base Standard
Short range device wireless video transmitter DCS500T				
2.1	15.207	AC Line Conducted Emissions	Pass	
2.2	15.249 (a)	Field Strength of Fundamental	Pass	
2.3	15.249 (a)(d), 15.209	Field Strength of Spurious 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 Transmitter
MANUFACTURER	GENERAL TOOLS & INSTRUMEN TS COMPANY LLC.
TYPE	DCS500T
SERIAL NUMBER	Engineering sample
TRANSMITTER OPERATING RANGE	2468MHz
COUTRY OF ORIGIN	America
ITU DESIGNATION OF EMISSION	6M63F1F
Modulation Type	Frequency modulation
Antenna Gain	0dbi
FCC ID	YRKDCS500T
TECHNICAL DESCRIPTION (a brief description of the intended use and operation)	DCS400T is a Short Range Device Wireless Video Transmitter
MANUFACTURING DESCRIPTION	The Wireless Video Transmitter DCS500T was powered by 7.4V Polymer lithium battery. The batteries could be charged by the adaptor: Input: AC 100-240V, 50/60Hz Output: DC 9V 1.3A

Product Service

1.4 PRODUCT INFORMATION

1.4.1 Technical Description

The Equipment Under Test (EUT) DCS500T was a GENERAL TOOLS & INSTRUMENTS COMPANY LLC Short Range Device Wireless Video Transmitter. 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.

The EUT was powered from a 7.4V Polymer lithium battery and charged by AC adaptor.

Test Site 1:
FCC Accreditation 767285
Test Firm Name: TÜV SÜD Certification and Testing (China) Co., Ltd.
Location: 10 Huaxia M. Rd., Wuxi, Jiangsu, 214100, China

Test Site 2:
FCC Accreditation 800392
QuieTek Technology (Suzhou) Co., Ltd.
No.99 Hongye RD.Suzhou Industrial Park Loufeng Hi-New-Tech Development Area,Suzhou,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 Transmitter DCS500T
In accordance with FCC CFR 47 Part 15C

Product Service

2.1 AC LINE CONDUCTED EMISSIONS

2.1.1 Specification Reference

FCC CFR 47 Part 15C, Clause 15.207

2.1.2 Equipment Under Test and Modification State

Short Range Device Wireless Video Transmitter DCS500T - 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.

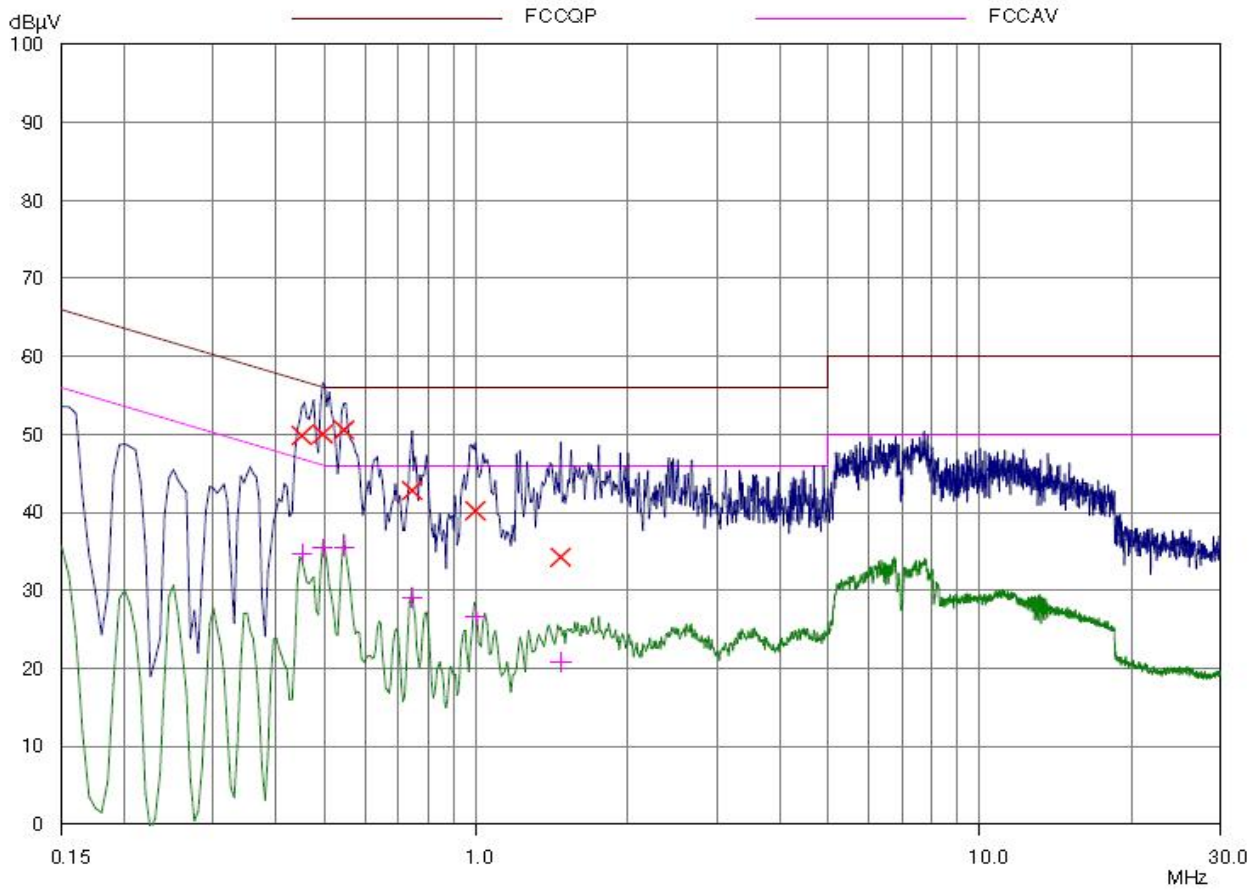
2.1.6 Environmental Conditions

Ambient Temperature	20.0°C
Relative Humidity	50.0%

Product Service

2.1.7 Test Results

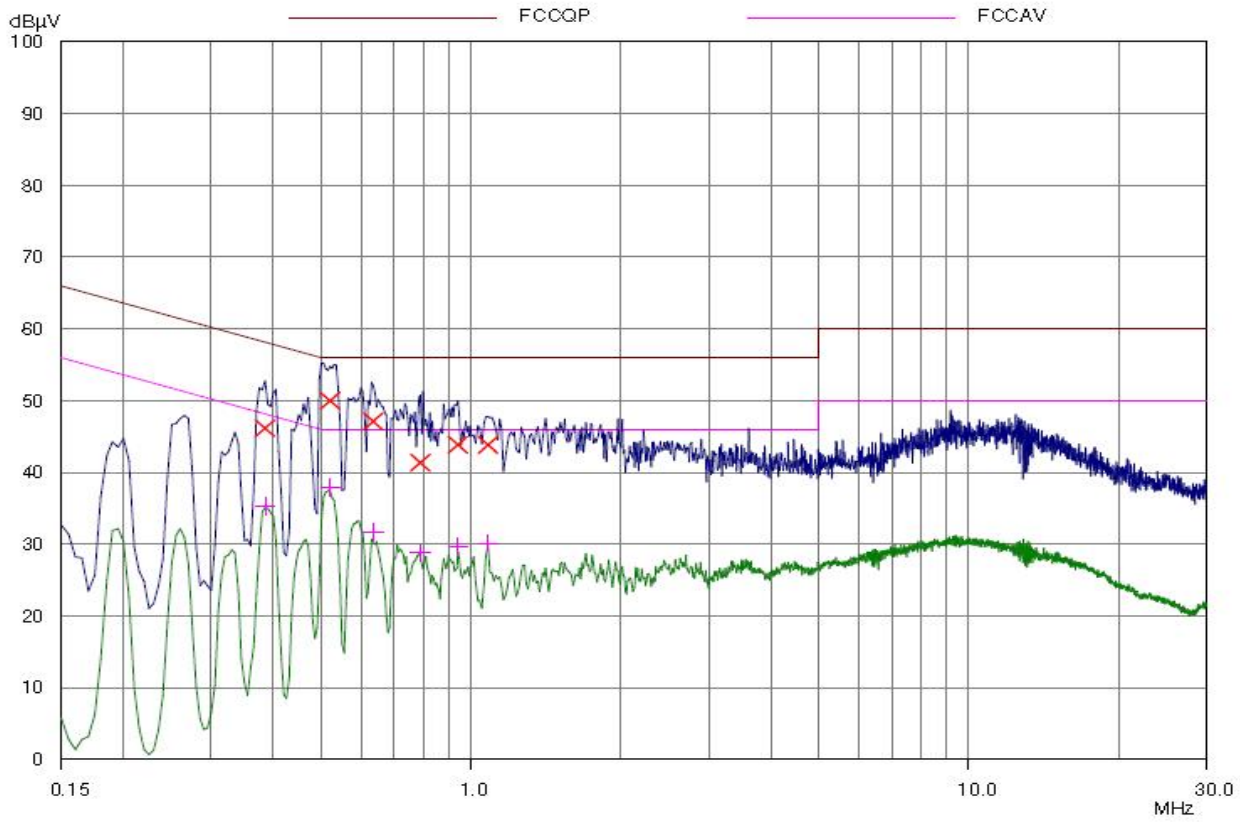
Live Line



Frequency (MHz)	QP Level (dBµV)	QP Limit (dBµV)	QP Margin (dBµV)	AV Level (dBµV)	AV Limit (dBµV)	AV Margin (dBµV)
0.45	49.86	56.88	-7.02	34.79	46.88	-12.09
0.495	50.06	56.08	-6.02	35.39	46.08	-10.69
0.545	50.56	56.00	-5.44	35.61	46.00	-10.39
0.745	42.80	56.00	-13.20	29.05	46.00	-16.95
0.995	40.22	56.00	-15.78	26.59	46.00	-19.41
1.47	34.27	56.00	-21.73	20.83	46.00	-25.17

Product Service

Neutral Line



Frequency (MHz)	QP Level (dBµV)	QP Limit (dBµV)	QP Margin (dBµV)	AV Level (dBµV)	AV Limit (dBµV)	AV Margin (dBµV)
0.385	46.16	58.17	-12.01	35.32	48.17	-12.85
0.52	50.00	56.00	-6.00	37.87	46.00	-8.13
0.635	47.12	56.00	-8.88	31.68	46.00	-14.32
0.79	41.38	56.00	-14.62	28.80	46.00	-17.20
0.94	43.88	56.00	-12.12	29.73	46.00	-16.27
1.08	43.83	56.00	-12.17	30.13	46.00	-15.87

Product Service

2.2 FIELD STRENGTH OF FUNDAMENTAL

2.2.1 Specification Reference

FCC CFR 47 Part 15C, Clause 15.249 (a)

2.2.2 Equipment Under Test and Modification State

Short Range Device Wireless Video Transmitter DCS500T - Modification State 0

2.2.3 Date of Test

17 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

The EUT is placed on a test table 800mm above the ground plane.

During formal measurement the spectrum analyser is tuned to the frequency of the fundamental. The turntable azimuth is adjusted from 0 to 360 degrees to determine the point at which the maximum 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 level occurs. Once the point of maximum emission has been determined the emission is measured.

2.2.6 Environmental Conditions

Ambient Temperature	21.4°C
Relative Humidity	25.0%

Product Service

2.2.7 Test Results

2468 MHz

Fundamental

Fundamental Frequency (MHz)	Polarisation (Vertical/ Horizontal)	Reading Level	Factor	Field Strength	Over Limit	Limit		Type
		(dBµV/)	(dB)	dBµV/m	(dB)	(dBµV/m)	mV/m	AV/PK
2468.300	H	53.925	38.341	92.266	-1.734	94.0	50	AV
2468.125	H	65.718	38.339	104.057	-9.943	114.0	500	PK
2468.225	V	53.696	37.063	91.063	-2.937	94.0	50	AV
2468.050	V	67.085	30.451	104.451	-9.549	114.0	500	PK

Limit Clause 15.249 (a) and A2.9

Fundamental Frequency (MHz)	Field Strength of Fundamental (millivolts/meter)
902 to 928	50
2400 to 2483.5	50
5725 to 5875	50
24000 to 24250	250

Product Service

2.3 FIELD STRENGTH OF SPURIOUS EMISSIONS

2.3.1 Specification Reference

FCC CFR 47 Part 15C, Clause 15.249 (a)(d), 15.209

2.3.2 Equipment Under Test and Modification State

Short Range Device Wireless Video Transmitter DCS500T - Modification State 0

2.3.3 Date of Test

9 March 2014 to 17 March 2014

2.3.4 Test Equipment Used

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

2.3.5 Test Procedure

A preliminary profile of the Spurious Radiated Emissions is obtained up to the 10th harmonic of the EUT's 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 oa 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.

2.3.6 Environmental Conditions

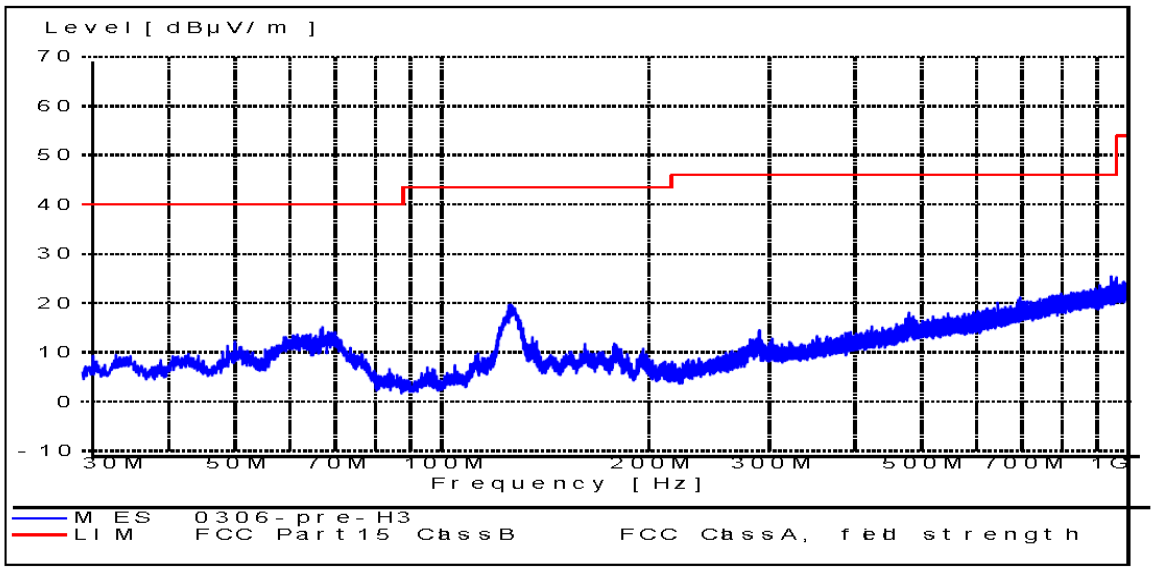
Ambient Temperature	21.4°C
Relative Humidity	25.0%

Product Service

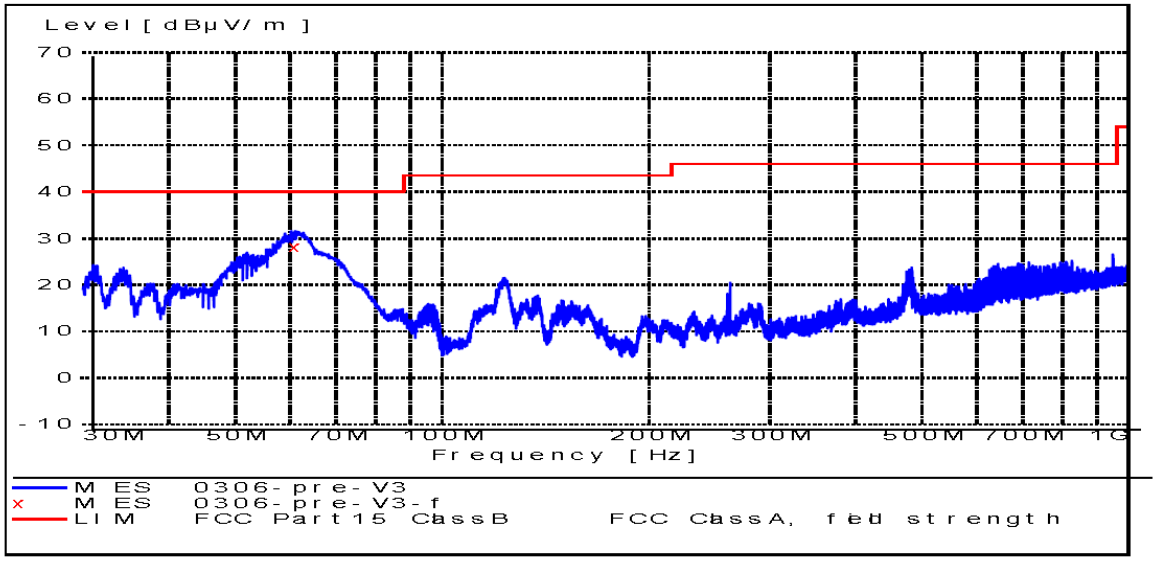
2.3.7 Test Results

30 MHz to 1 GHz

Horizontal Polarisation



Vertical Polarisation

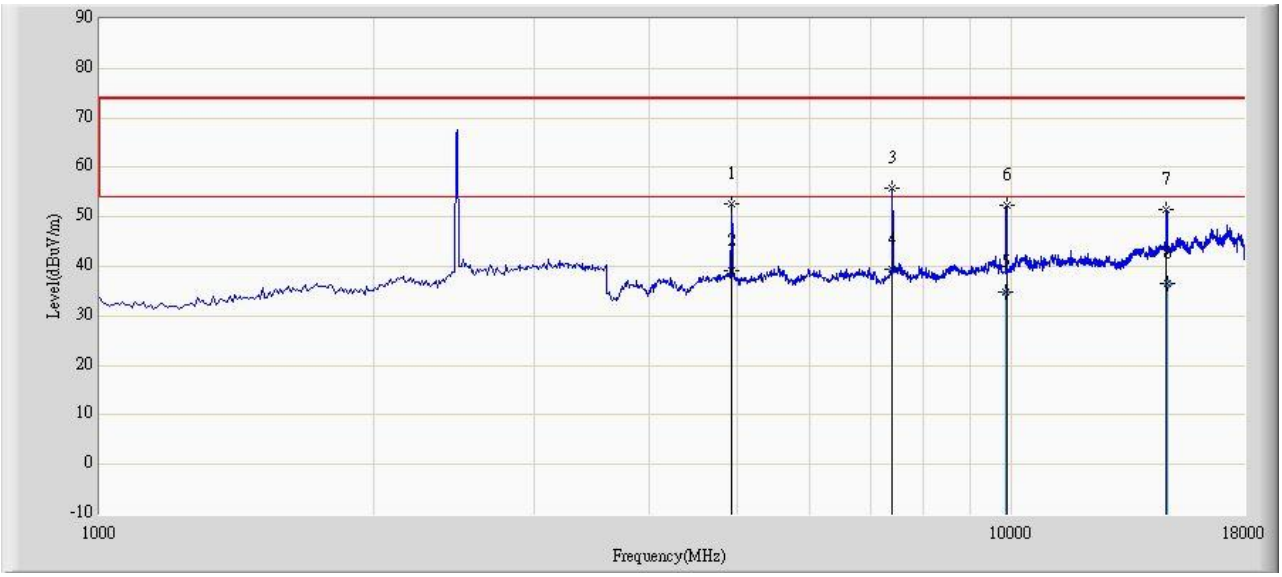


Frequency (MHz)	Polarisation (Vertical/ Horizontal)	Field Strength	Over Limit	Limit	Type
61.05	V	28.16	-11.84	40.0	QP

Product Service

1 GHz to 18 GHz

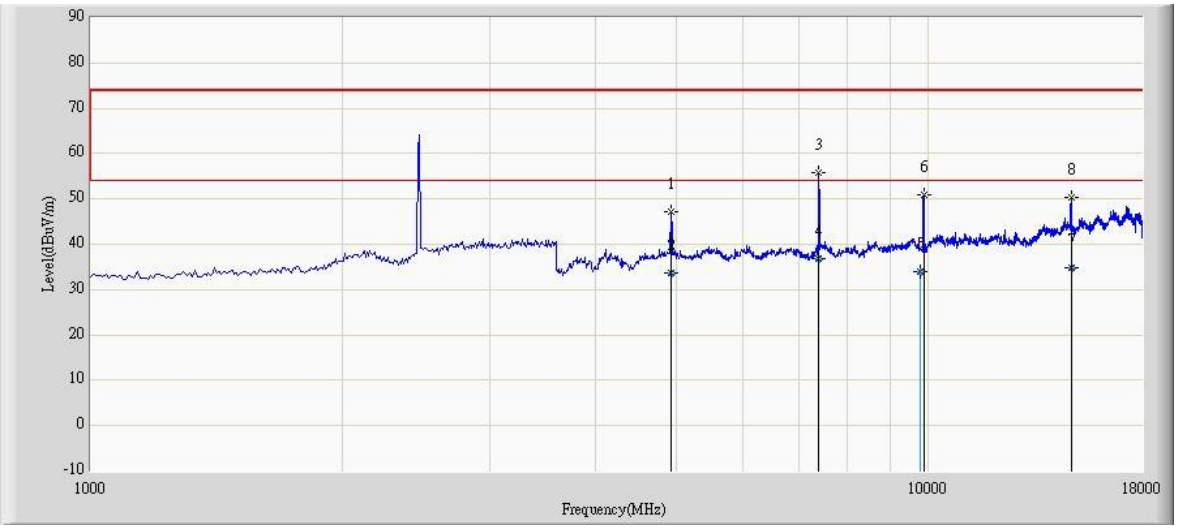
Horizontal Polarisation



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			4935.500	52.763	44.608	-21.237	74.000	8.156	PK
2			4935.975	39.252	31.096	-34.748	74.000	8.156	PK
3			7400.500	55.756	44.847	-18.244	74.000	10.908	PK
4		*	7404.150	39.468	28.553	-14.532	54.000	10.915	AV
5			9871.850	34.707	21.654	-19.293	54.000	13.054	AV
6			9874.000	52.221	39.156	-21.779	74.000	13.065	PK
7			14804.000	51.573	30.597	-22.427	74.000	20.976	PK
8			14806.825	36.503	15.522	-17.497	54.000	20.981	AV

Product Service

Vertical Polarisation



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			4935.500	47.325	39.073	-26.675	74.000	8.252	PK
2			4935.925	33.535	25.282	-20.465	54.000	8.254	AV
3			7409.000	55.851	44.928	-18.149	74.000	10.923	PK
4		*	7409.000	36.896	25.973	-17.104	54.000	10.923	AV
5			9782.075	34.045	21.176	-19.955	54.000	12.868	AV
6			9874.000	50.987	37.871	-23.013	74.000	13.116	PK
7			14806.700	34.812	13.877	-19.188	54.000	20.936	AV
8			14812.500	50.335	29.396	-23.665	74.000	20.939	PK

Product Service

Limit Clause

15.249 (a) and A2.9

Fundamental Frequency (MHz)	Field Strength of Harmonics (microvolts/meter)
902 to 928	500
2400 to 2483.5	500
5725 to 5875	500
24000 to 24250	2500

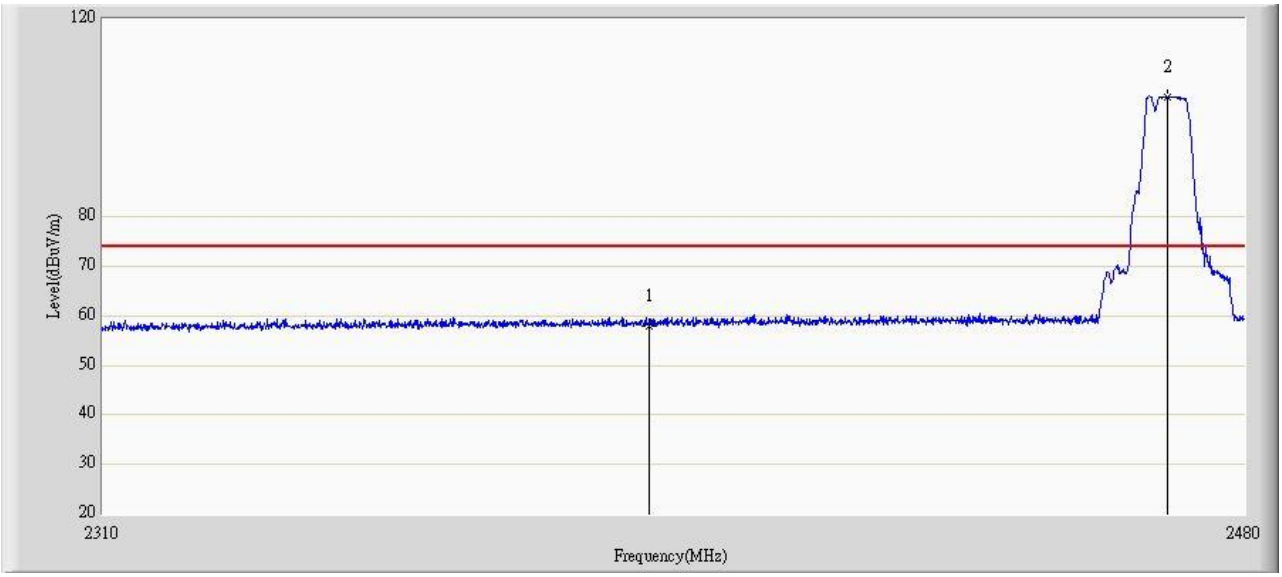
15.249 (d), 15.209

Frequency (MHz)	Field Strength (microvolts/meter)
0.009 to 0.490	2400/F (kHz)
0.490 to 1.705	24000/F (kHz)
1.705 to 30.0	30
30 to 88	100
88 to 216	150
216 to 960	200
Above 960	500

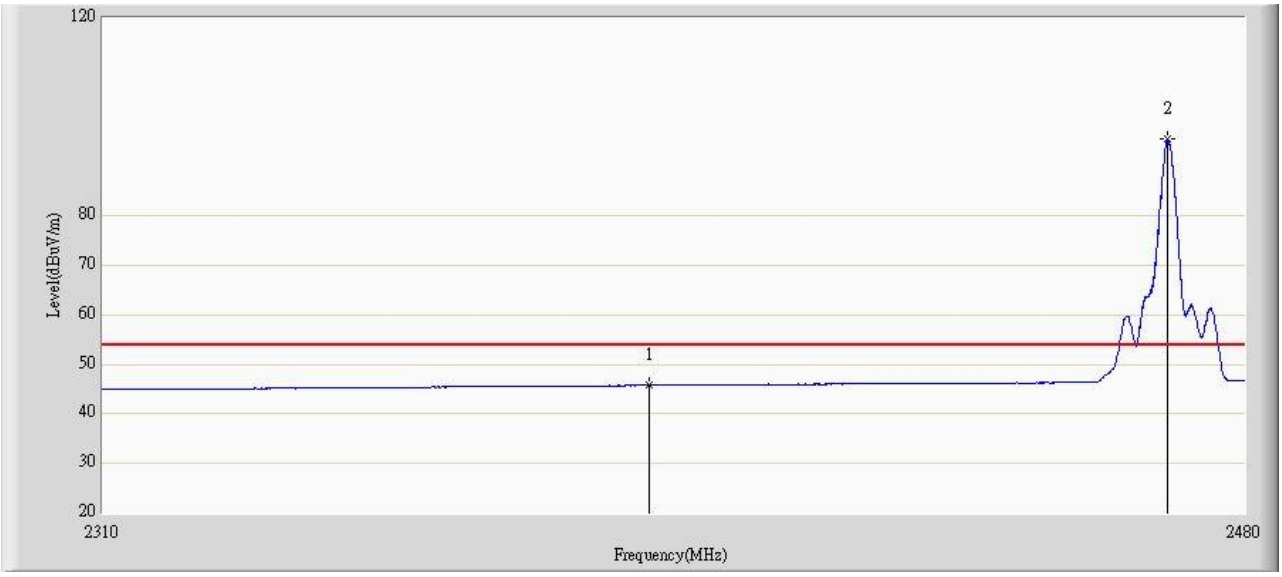
Product Service

Band Edge Emissions

Horizontal Polarisation

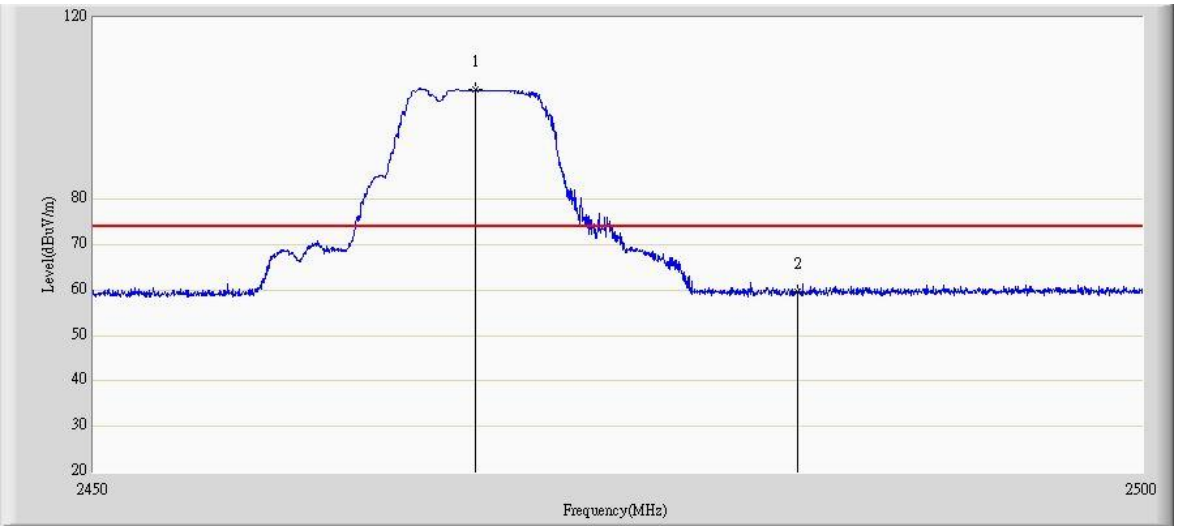


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	58.025	20.378	-15.975	74.000	37.648	PK

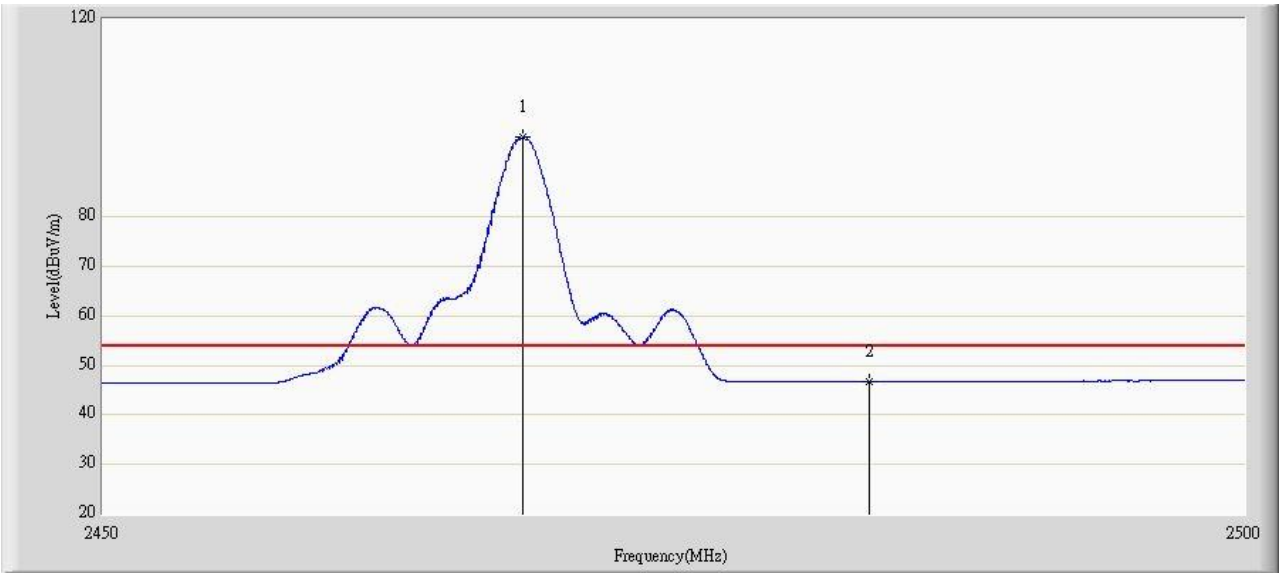


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	45.762	8.115	-8.238	54.000	37.648	AV
2		*	2468.185	91.657	53.317	41.657	54.000	38.340	AV

Product Service



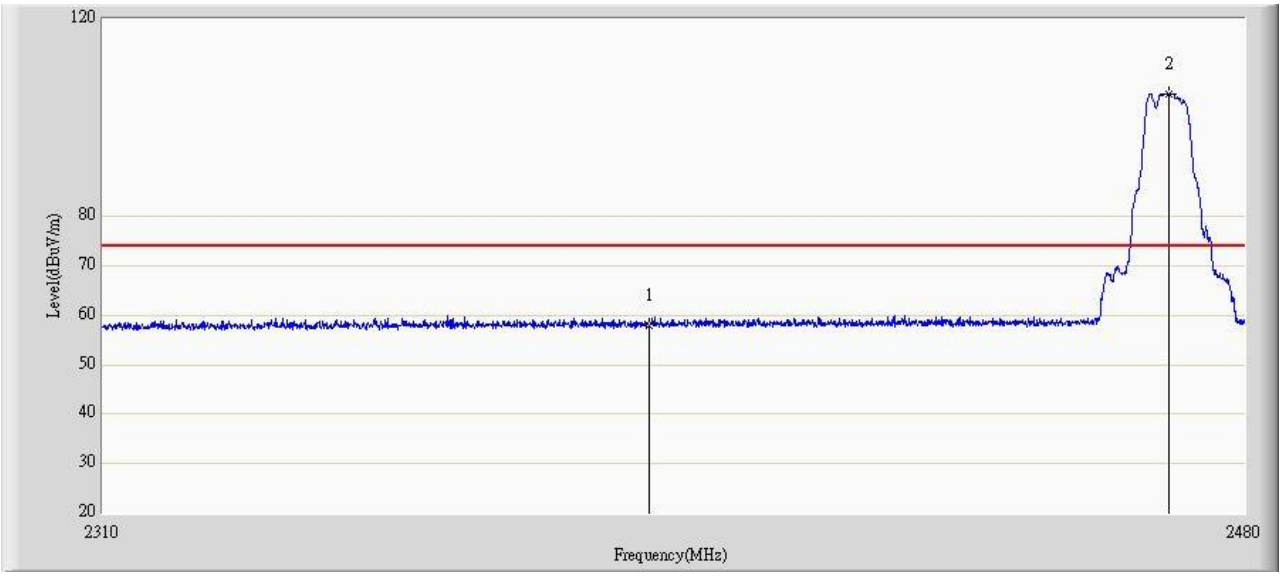
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
2			2483.500	59.629	21.154	-14.371	74.000	38.475	PK



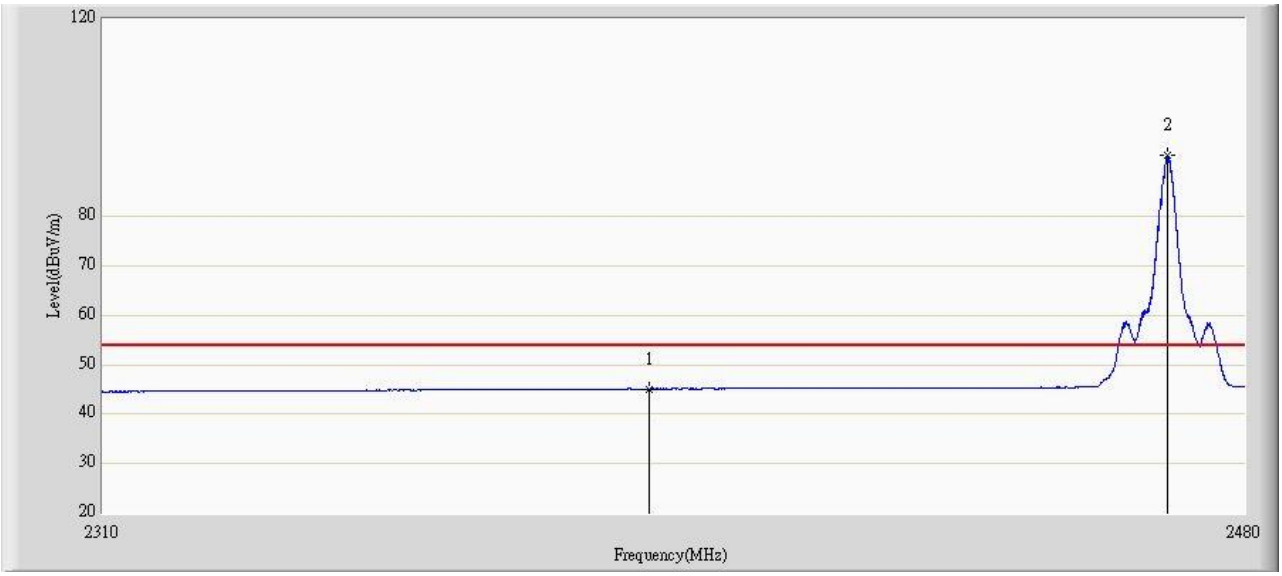
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
2			2483.500	46.691	8.216	-7.309	54.000	38.475	AV

Product Service

Vertical Polarisation

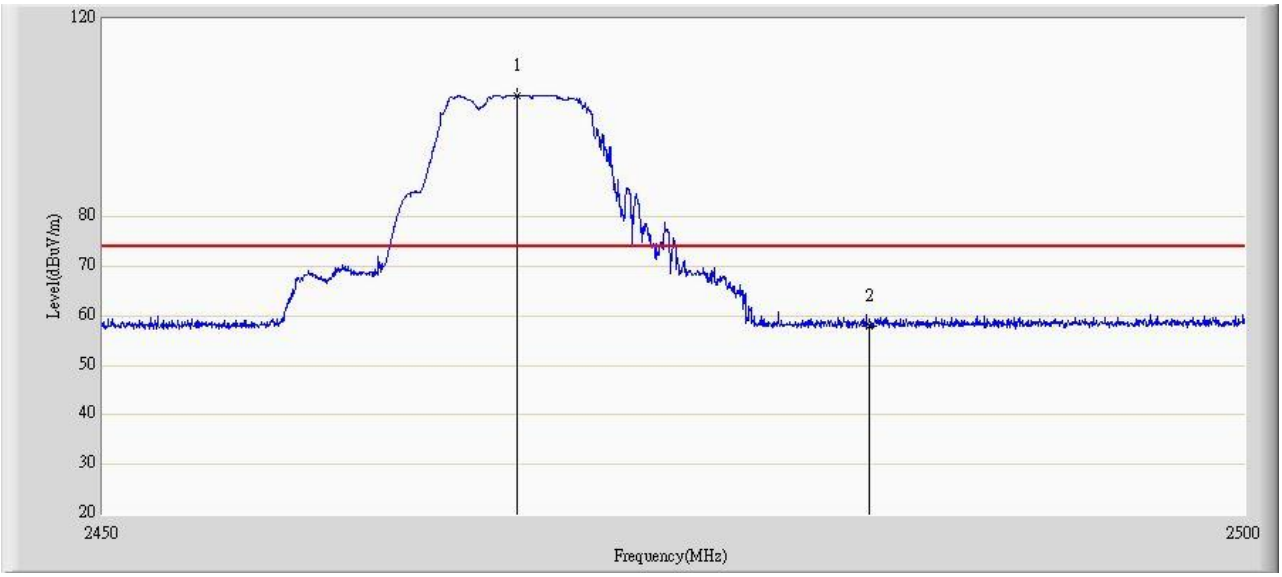


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	57.873	20.886	-16.127	74.000	36.988	PK

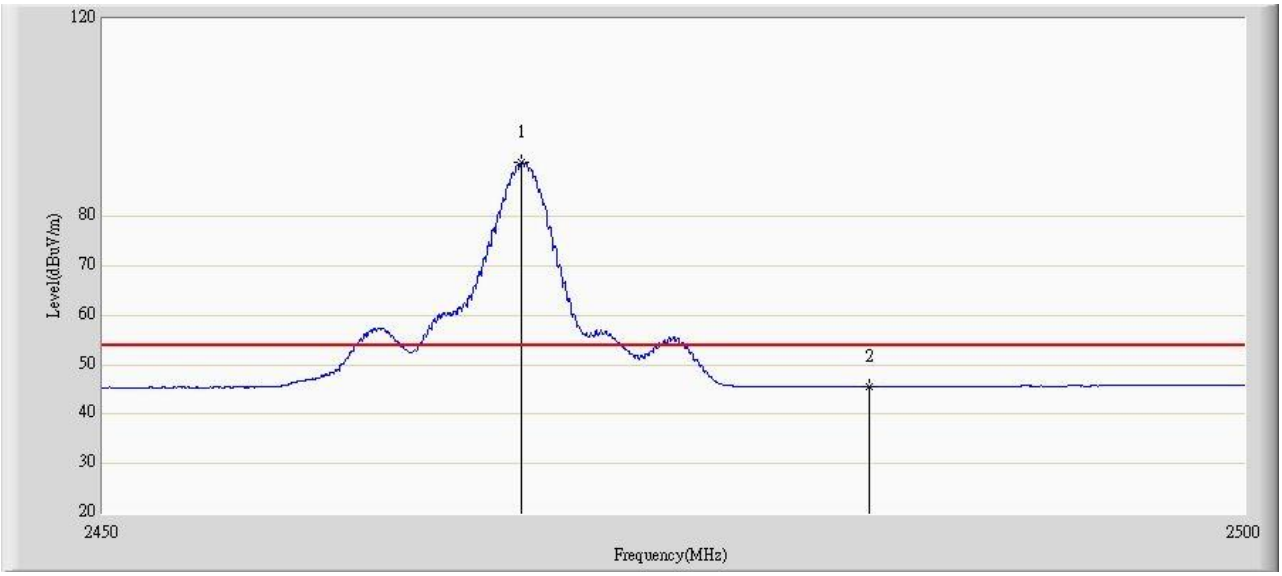


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	45.122	8.135	-8.878	54.000	36.988	AV

Product Service



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
2			2483.500	57.950	20.509	-16.050	74.000	37.441	PK



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
2			2483.500	45.618	8.177	-8.382	54.000	37.441	AV

Product Service

2.4 OCCUPIED BANDWIDTH

2.4.1 Specification Reference

FCC CFR 47 Part 2: 2008, Clause 2.1049(h)

2.4.2 Equipment Under Test and Modification State

Short Range Device Wireless Video Transmitter DCS500T - Modification State 0

2.4.3 Date of Test

17 March 2014

2.4.4 Test Equipment Used

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

2.4.5 Test Procedure

The test was applied in accordance with the test method requirements of FCC CFR 47 Part 2: 2008.

Connect EUT's antenna terminal to the spectrum analyser via a low loss cable with transmitting mode.

Adjust the centre frequency of the spectrum analyser on the frequency be measured, and set for peak detector mode; max hold trace mode RBW=100 KHz and VBW=300 KHz.

The span of the analyzer approximately 2 to 3 times the channel bandwidth shall be set to capture all products of the modulation process, including the emission skirts. Use the marker-to-peak function to set the marker to the peak of the emission.

Use the OBW function to measure 99%emission bandwidth..

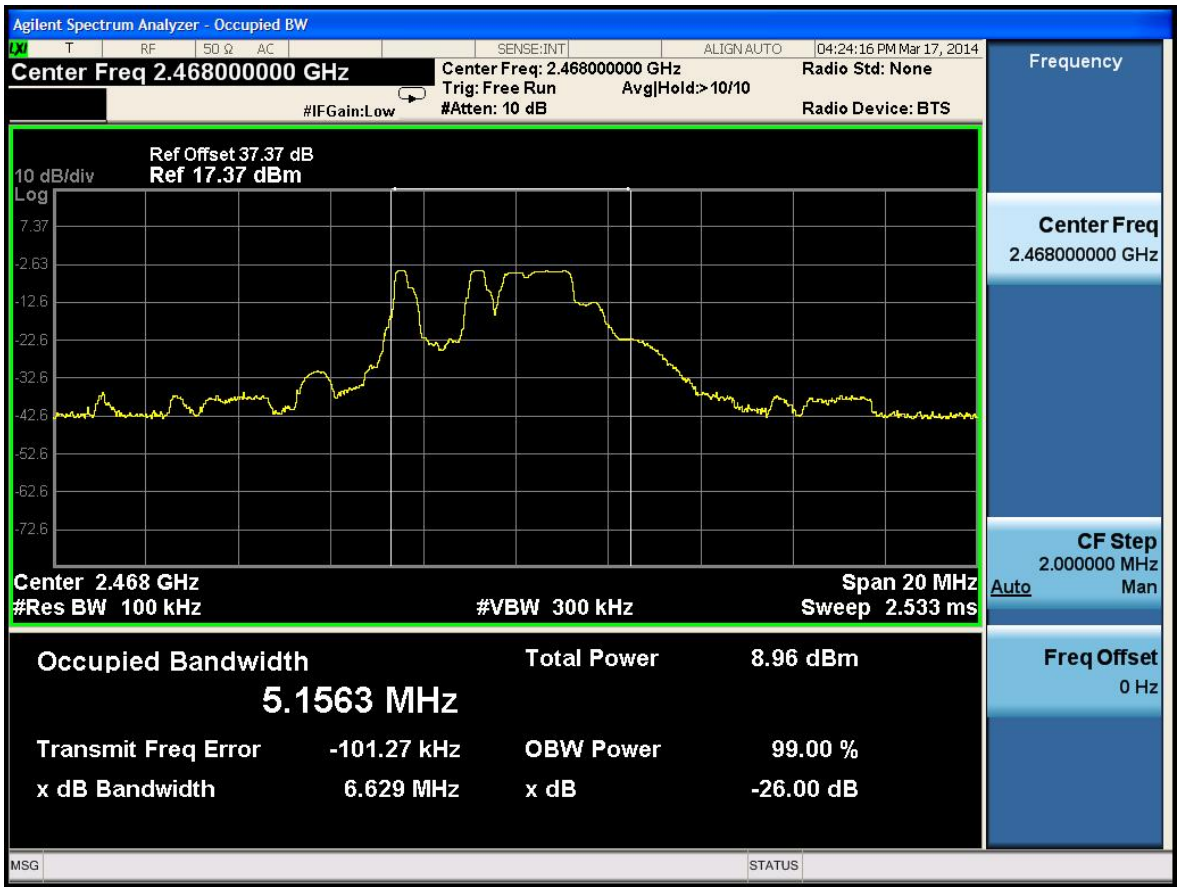
2.4.6 Environmental Conditions

Ambient Temperature	21.4°C
Relative Humidity	25.0%

Product Service

2.4.7 Test Results

Frequency (MHz)	Occupied Bandwidth (MHz)
2468	6.629



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 and 2.3- Field Strength of Fundamental and Field Strength of Spurious 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	2014.02.14	1

Quick Suzhou AC-5

Instrument	Manufacturer	Type No.	Serial No.	Calibration Date	Interval(year)
Spectrum Analyzer	Agilent	N9010A	MY48030494	2013.03.30	1
Preamplifier	Miteq	NSP1800-25	1364185	2013.05.03	1
Preamplifier	QuieTek	AP-040G	CHM-0906001	2013.05.03	1
Bilog Antenna	Teseq GmbH	CBL6112D	27612	2013.10.15	1
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2012.06.08	2
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2013.11.24	2
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2014.03.01	1
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2014.03.01	1
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2014.03.01	1
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC5-TH	2014.01.11	1

Product Service

3.2 MEASUREMENT UNCERTAINTY

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

Test Discipline	MU
Field Strength of Fundamental	30MHz to 1GHz: ± 3.79 dB (Test Site 1) 1GHz to 40GHz: ± 5.4 dB (Test Site 2)
Field Strength of Spurious Emissions	30MHz to 1GHz: ± 3.79 dB (Test Site 1) 1GHz to 40GHz: ± 5.4 dB (Test Site 2)
AC Line Conducted Emissions	± 3.21 dB (Test Site 1)

Product Service

SECTION 4

DISCLAIMERS AND COPYRIGHT

Product Service

4.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT