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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 15 Part B

COMMERCIAL-IN-CONFIDENCE

FCC ID: YRKDCS400R

Document 57010087 Report 03 Issue 1 September 2010

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REPORT ON

FCC CRF 47 Parts 15 B: 2008 Testing of the
GENERAL TOOLS & INSTRUMENTS COMPANY LLC.
Short Range Device Wireless Video Receiver DCS400R

Document 57010087 Report 03 Issue 1

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SECTION 1

REPORT SUMMARY

FCC Testing of the GENERAL TOOLS & INSTRUMENTS COMPANY LLC.
Short Range Device Wireless Video Receiver DCS400R
in accordance with FCC CFR 47 Part 15B

1.1 INTRODUCTION

The information contained in this report is intended to show verification of the GENERAL TOOLS & INSTRUMENTS COMPANY LLC. Short Range Device Wireless Video Receiver DCS400R to the requirements of FCC CFR 47 Part 15B: 2008.

Testing was carried out in support of an application for Grant of Equipment Authorisation of Short Range Device Wireless Video Receiver DCS400R.

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 DCS400R
Serial Number(s)	Engineering sample
Antenna Gain	0dBi
Number of Samples Tested	1
Test Specification/Issue/Date	FCC CFR 47 Part 15B: 2008
Incoming Release Date	Declaration of Build Status 24 August 2010
Start of Test	31 August 2010
Finish of Test	14 September 2010
Related Document(s)	ANSI C63.4:2003

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1.2 BRIEF SUMMARY OF RESULTS

A brief summary of results in accordance with FCC CFR 47 Part 15B: 2008 is shown below.

Configuration - Short Range Device Wireless Video Receiver						
Section	FCC Clause	Test Description	Mode	Mod State	Result	Comments
2.1	15.107	Conducted Emissions on Power Line	Idle/receive	0	Pass	
2.2	15.109	Enclosure Radiated Emissions	Idle/receive	0	Pass	

Product Service

1.3 DECLARATION OF BUILD STATUS

MAIN EUT	
MANUFACTURING DESCRIPTION	Short Range Device Wireless Video Receiver
MANUFACTURER	GENERAL TOOLS & INSTRUMENTS COMPANY LLC.
TYPE	DCS400R
SERIAL NUMBER	Engineering sample
COUNTRY OF ORIGIN	America
FCC ID	YRKDCS400T
TECHNICAL DESCRIPTION (a brief description of the intended use and operation)	DCS400R is a Short Range Device Wireless Video Receiver
MANUFACTURING DESCRIPTION	The Wireless Video Receiver DCS400R was powered by by Polymer lithium battery; The batteries could be charged by the adaptor: Input: AC 100 – 240V, 50/60Hz Output: DC 5.5V 1.5A It has standard USB connection.

No responsibility will be accepted by TÜV Product Service Beijing Branch as to the accuracy of the information declared in this document by the manufacturer.

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1.4 PRODUCT INFORMATION

1.4.1 Technical Description

The Equipment Under Test (EUT) DCS400R was a GENERAL TOOLS & INSTRUMENTS COMPANY LLC.Short Range Device Wireless Video Receiveras shown in the photograph below. A full technical description can be found in the Manufacturer's documentation.

Equipment Under Test

Product Service

1.4.2 Test Configuration

The EUT was configured in accordance with FCC CFR 47 Part 15: 2008.

1.4.3 Modes of Operation

Operation Modes

Mode 1 – Idle / receiver

Information on the specific test modes utilised are detailed in the test procedure for each individual test.

Product Service

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 laboratories or an open test area as appropriate.

1.6 DEVIATIONS FROM THE STANDARD

No deviations from the applicable test standards or test plan were made during testing.

1.7 MODIFICATION RECORD

Modification State	Description of Modification fitted to EUT	Sample S/N
0	Initial sample supplied by customer	Engineering sample

No modifications were made to the EUT during testing.

1.8 ALTERNATIVE TEST SITE

The testing was conducted at following site registrations:

FCC Accreditation 800392
QuieTek Technology (Suzhou) Co., Ltd.
No.99 Hongye RD.Suzhou Industrial Park Loufeng Hi-New-Tech Development Area,Suzhou,China

Product Service

SECTION 2

TEST DETAILS

FCC Testing of the GENERAL TOOLS & INSTRUMENTS COMPANY LLC.
Short Range Device Wireless Video Receiver DCS400R
in accordance with FCC CFR 47 Part 15B

2.1 CONDUCTED EMISSIONS ON POWER LINE

2.1.1 Specification Reference

FCC CFR 47 Part 15: 2008, Subpart B, Clause 15.107

2.1.2 Equipment Under Test

Short Range Device Wireless Video ReceiverDCS400R

2.1.3 Date of Test and Modification State

31 August 2010– Modification State 0

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 Method and Operating Modes

The test was applied in accordance with the test method requirements of ANSI C63.4.

The EUT was placed 0.4 meters from the conducting wall of the shield room with the power mains 120V/60Hz through an artificical mains network (AMN). The distance between the computer and AMN was 80cm.

Emissions were formally measured using a Quasi-Peak and Average Detectors, which meet the CISPR requirements. The details of the worst-case emissions for the Live and Neutral Lines are presented in the tables below.

Conducted Emission were measured on Live and Neutral Lines in turn.

Measurements were made over the frequency range 0.15MHz to 30MHz.

The EUT was supplied from a AC/DC Adatptor.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 1

2.1.6 Environmental Conditions

	31 August 2010
Ambient Temperature	23.2°C
Relative Humidity	24.1%

Product Service

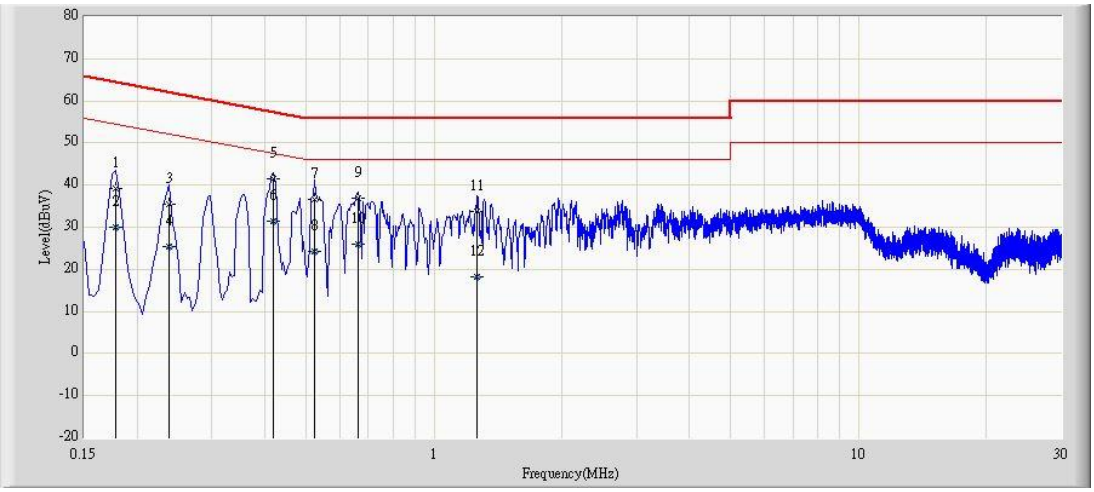
2.1.7 Test Results

For the period of test the EUT met the Class B requirements of FCC CFR 47 Part 15: 2008 for Conducted Emissions on AC Power Ports.

Test results are shown in the following tables.

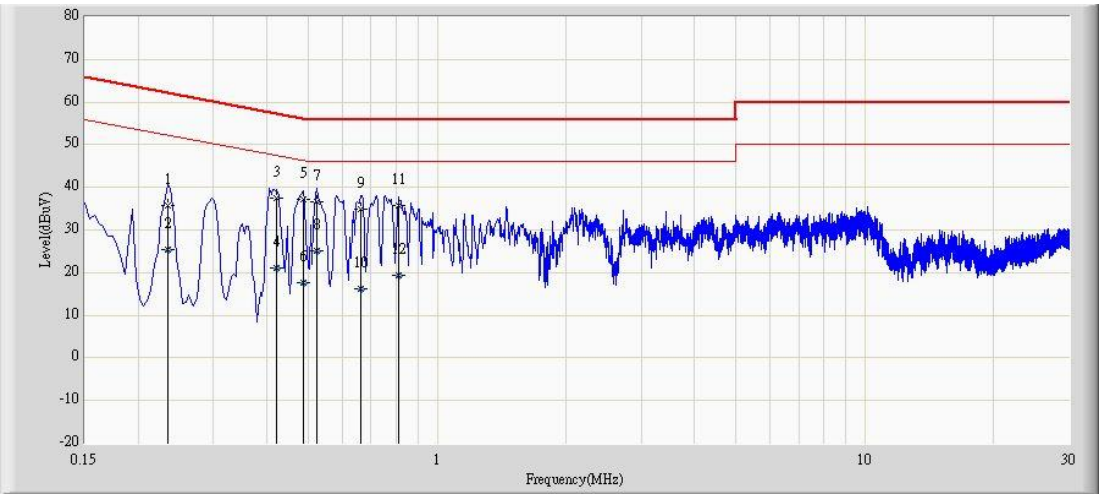
Configuration 1 - Mode 1

Live Line



Emission Frequency (MHz)	Measure Level	Margin	Limit	Type
	dBµV	dB	dBµV µV	AV/QP
0.178	39.290	-25.289	64.578	QP
0.178	29.977	-24.601	54.578	AV
0.238	35.480	-26.686	62.166	QP
0.238	25.521	-26.644	52.166	AV
0.418	41.618	-15.870	57.488	QP
0.418	31.508	-15.980	47.488	AV
0.522	36.663	-19.337	56.000	QP
0.522	24.221	-21.779	46.000	AV
0.662	36.996	-19.004	56.000	QP
0.662	25.874	-20.126	46.000	AV
1.266	33.752	-22.248	56.000	QP
1.266	18.334	-27.666	46.000	AV

Neutral Line



Emission Frequency (MHz)	Measure Level	Margin	Limit	Type
	dBµV	dB	dBµV µV	AV/QP
0.234	35.832	-26.475	62.307	QP
0.234	25.443	-26.863	52.307	AV
0.422	37.501	-19.907	57.409	QP
0.422	21.226	-26.183	47.409	AV
0.486	37.098	-19.138	56.236	QP
0.486	17.574	-28.662	46.236	AV
0.522	36.496	-19.504	56.000	QP
0.522	24.982	-21.018	46.000	AV
0.662	34.974	-21.026	56.000	QP
0.662	16.345	-29.655	46.000	AV
0.810	35.757	-20.243	56.000	QP
0.810	19.453	-26.547	46.000	AV

Limit

Emission Frequency (MHz)	Limit ---dBµV	
	QP	Average
0.15---0.5	❖ 66 to 56	❖ 56 to 46
0.5---5	56	46
5---30	60	50
❖	Decreases with the logarithm of the frequency	

2.2 ENCLOSURE RADIATED EMISSIONS

2.2.1 Specification Reference

FCC CFR 47 Part 15: 2008, Subpart B, Clause 15.109

2.2.2 Equipment Under Test

Short Range Device Wireless Video Receiver DCS400R

2.2.3 Date of Test and Modification State

31 August 2010 – Modification State 0

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 Method and Operating Modes

The test was applied in accordance with ANSI C63.4.

A preliminary profile of the Spurious Radiated Emissions was obtained by operating the EUT on a remotely controlled turntable within a semi-anechoic chamber. Measurements of emissions from the EUT were obtained with the Measurement Antenna in both Horizontal and Vertical Polarisations. The profiling produced a list of the worst-case emissions together with the EUT azimuth and antenna polarisation.

Emissions identified within the range 30MHz – 1GHz were formally measured using a CISPR Quasi-Peak detector.

The measurements were performed at a 3m distance unless otherwise stated.

The test was performed with the EUT in the following modes of operation:

Configuration 1 - Mode 1

2.2.6 Environmental Conditions

	31 August 2010
Ambient Temperature	23.2°C
Relative Humidity	24.1%

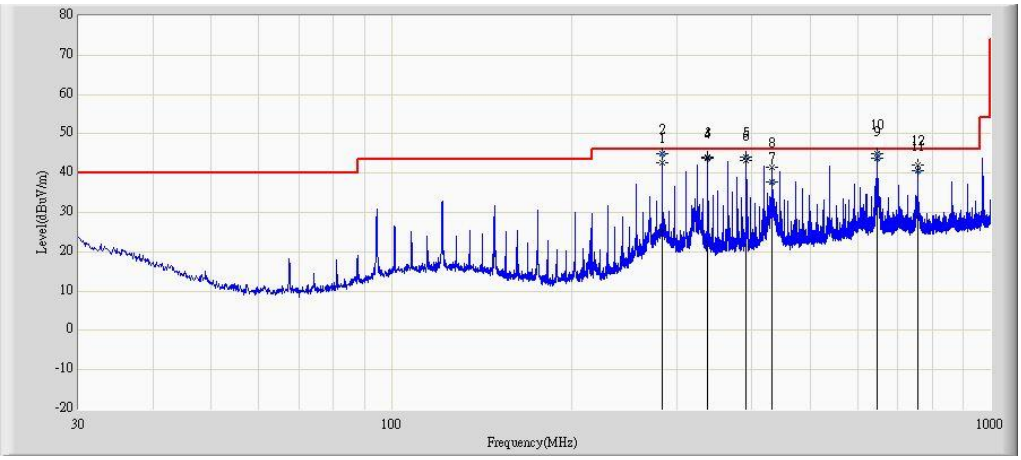
Product Service

2.2.7 Test Results

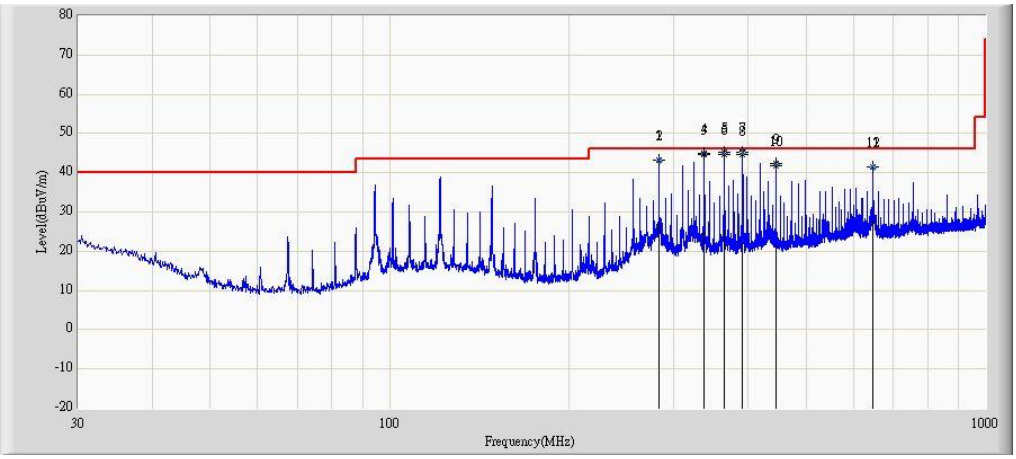
For the period of test the EUT met the Class B requirements of FCC CFR 47 Part 15: 2008 Subpart B for Spurious Radiated Emissions (30MHz – 1GHz).

The test results are shown below.

- Mode 1



Frequency (MHz)	Polarisation (Vertical/ Horizontal)	Reading Level	Factor	Field Strength	Over Limit	Limit	Type
		(dBuV)	(dB)	dBµV/m	(dB)	dBµV/m	AV/PK
283.413	H	28.678	13.913	42.591	-3.409	46.000	PK
283.500	H	30.900	13.913	44.813	-1.187	46.000	QP
337.490	H	28.789	15.227	44.016	-1.984	46.000	PK
337.490	H	28.700	15.227	43.927	-2.073	46.000	QP
391.500	H	27.100	16.945	44.045	-1.955	46.000	QP
391.568	H	26.183	16.948	43.131	-2.869	46.000	PK
432.000	H	20.100	17.782	37.882	-8.118	46.000	QP
432.065	H	23.747	17.785	41.532	-4.468	46.000	PK
648.011	H	23.774	20.641	44.415	-1.585	46.000	PK
648.015	H	24.818	20.641	45.459	-0.541	46.000	QP
756.010	H	18.700	21.869	40.569	-5.431	46.000	QP
756.045	H	20.313	21.87	42.183	-3.817	46.000	PK



Frequency (MHz)	Polarisation (Vertical/ Horizontal)	Reading Level	Factor	Field Strength	Over Limit	Limit	Type
		(dBuV)	(dB)	dBµV/m	(dB)	dBµV/m	AV/PK
283.413	V	29.336	13.913	43.249	-2.751	46.000	PK
283.500	V	29.300	13.913	43.213	-2.787	46.000	QP
337.490	V	29.508	15.227	44.735	-1.265	46.000	PK
337.500	V	29.700	15.228	44.928	-1.072	46.000	QP
364.500	V	28.900	16.237	45.137	-0.863	46.000	QP
364.529	V	28.437	16.239	44.676	-1.324	46.000	PK
391.500	V	27.810	16.945	44.755	-1.245	46.000	QP
391.568	V	28.333	16.948	45.281	-0.719	46.000	PK
445.500	V	24.800	17.65	42.450	-3.550	46.000	PK
445.524	V	24.051	17.65	41.701	-4.299	46.000	QP
648.000	V	20.800	20.641	41.441	-4.559	46.000	QP
648.011	V	20.936	20.641	41.577	-4.423	46.000	PK

Note: Field Strength =Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

Limit

Frequency (MHz)	Field Strength (µV/m)	Field Strength (dBµV/m)	Measurement Distance (meters)
30 – 88	100	40.0	3
88 – 216	150	43.5	3
216 – 960	200	46.0	3
Above 960	500	54.0	3

Remarks

The EUT does not exceed the limit at the measured frequency.

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SECTION 3

TEST EQUIPMENT USED

Product Service

3.1 TEST EQUIPMENT USED

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

Instrument	Manufacturer	Type No.	Serial No.	Calibration DATE
3m Semi-Anechoic Chamber (AC2)				
EMI Test Receiver	R&S	ESCI	100573	2010.04.23
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2009.11.12
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2010.05.05
Conducted Emisision Testing Room (TR1)				
EMI Test Receiver	R&S	ESCI	100906	2010.01.15
Two-Line V-Network	R&S	ENV 216	101043	2010.06.18

Product Service

3.2 MEASUREMENT UNCERTAINTY

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

Test Discipline	Frequency / Parameter	MU
Radiated Emissions, Bilog Antenna, AOATS	30MHz to 1GHz Amplitude	5.1dB*
Worst case error for both Time and Frequency measurement 12 parts in 10^6.		

* In accordance with CISPR 16-4

Product Service

SECTION 4

DISCLAIMERS AND COPYRIGHT

Product Service

4.1 DISCLAIMERS AND COPYRIGHT

This report relates only to the actual item/items tested.