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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 04 Issue 1 September 2010

TÜV Product Service Ltd Beijing Branch
9th Floor, Landmark Tower 2, No.8 North Dongsanhuan Road, Beijing 100004, P.R. China
Tel: +86-10 6590 6186. Website: www.tuv-sud.cn

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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PREPARED FOR

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

PREPARED BY

Chen Jie
Project Engineer

APPROVED BY

ZHANG Changxin
Manager

DATED

27 Sep. 10

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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	Declaration of Build Status
Date	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	

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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	YRKDCS400R
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 Notebook Computer; Model Type: 200 Manufacturer: DELL Serial Number: 110MF2X It has Polymer lithium battery The batteries could be charged by the adaptor: Input: AC 100 – 240V, 50/60Hz Output: DC 5.5V 1.5A

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

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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 USB port of the EUT being connected to a notebook which was connected to the AC power mains of 120V/60Hz through an artificial 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 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

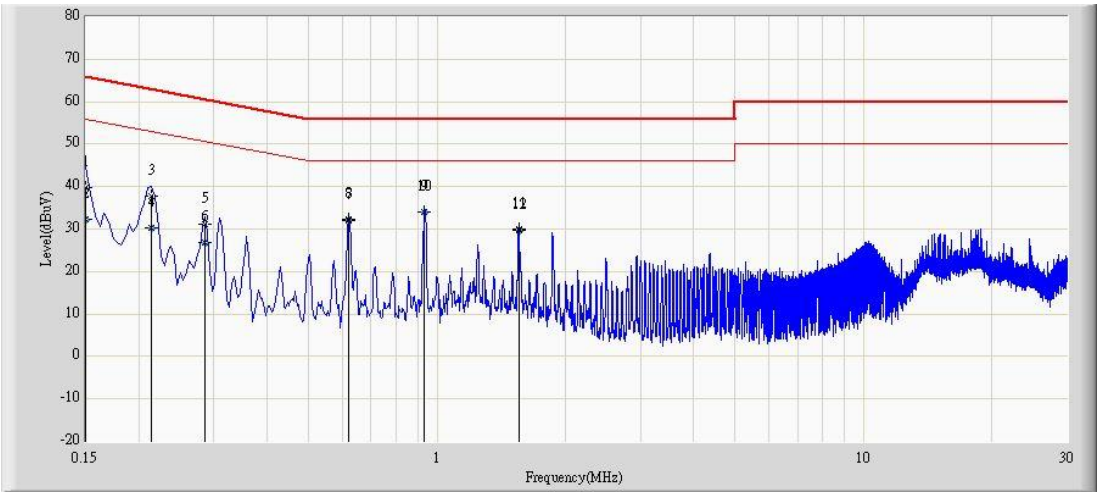
2.1.7 Test Results

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.

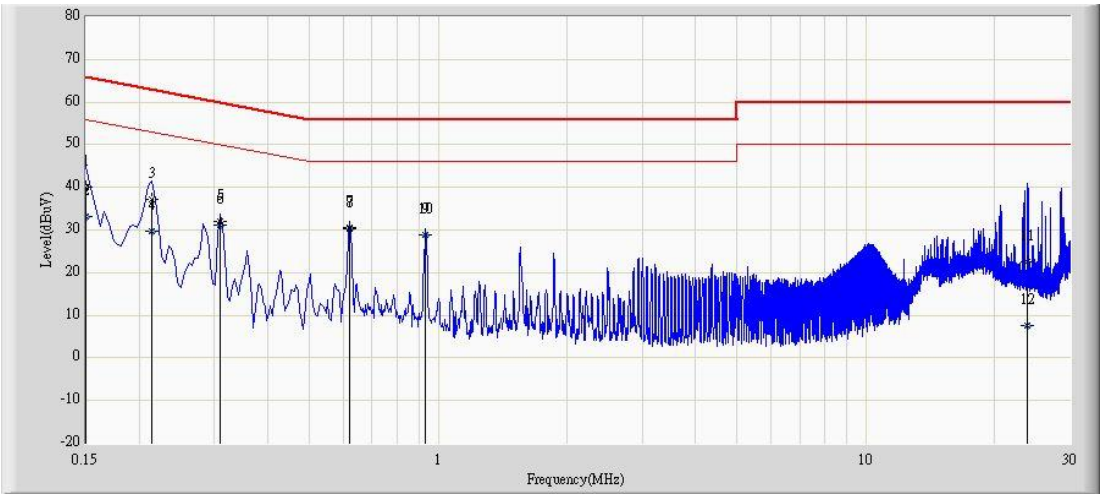
Configuration 1 - Mode 1

Live Line



Emission Frequency (MHz)	Measure Level	Margin	Limit	Type
	dBµV	dB	dBµV µV	AV/QP
0.150	39.657	-26.343	66.000	QP
0.150	32.298	-23.702	56.000	AV
0.214	37.714	-25.335	63.049	QP
0.214	30.152	-22.896	53.049	AV
0.286	31.064	-29.576	60.640	QP
0.286	26.919	-23.721	50.640	AV
0.622	32.143	-23.857	56.000	QP
0.622	32.196	-13.804	46.000	AV
0.934	34.131	-21.869	56.000	QP
0.934	34.068	-11.932	46.000	AV
1.554	30.109	-25.891	56.000	QP
1.554	29.824	-16.176	46.000	AV

Neutral Line



Emission Frequency (MHz)	Measure Level	Margin	Limit	Type
	dBµV	dB	dBµV µV	AV/QP
0.150	39.920	-26.080	66.000	QP
0.150	33.097	-22.903	56.000	AV
0.214	37.303	-25.746	63.049	QP
0.214	29.671	-23.377	53.049	AV
0.310	31.883	-28.087	59.970	QP
0.310	31.246	-18.724	49.970	AV
0.622	30.436	-25.564	56.000	QP
0.622	30.426	-15.574	46.000	AV
0.934	28.847	-27.153	56.000	QP
0.934	28.844	-17.156	46.000	AV
23.766	22.523	-37.477	60.000	QP
23.766	7.638	-42.362	50.000	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, with the USB port of the EUT being connected to a notebook which was connected to the AC power mains of 120V/60Hz.

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%

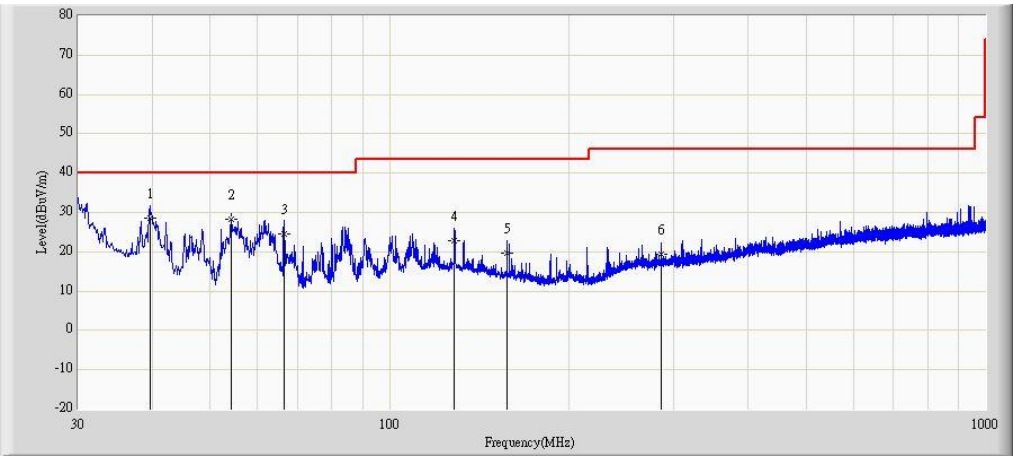
Product Service

2.2.7 Test Results

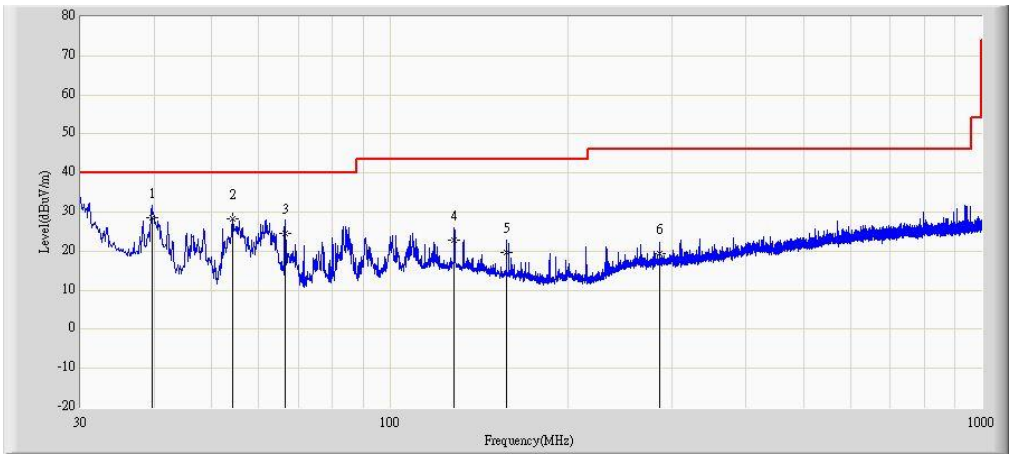
For the period of test the EUT met the Class B requirements of FCC CFR 47 Part 15: 2008 Subpart B for Spurious Radiated Emissions (30MHz – 1GHz).

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
39.579	H	15.354	13.068	28.423	-11.577	40.000	QP
54.129	H	21.015	7.321	28.336	-11.664	40.000	QP
66.618	H	18.597	6.023	24.620	-15.380	40.000	QP
128.212	H	10.214	12.581	22.794	-20.706	43.500	QP
157.434	H	9.103	10.548	19.652	-23.848	43.500	QP
285.837	H	5.647	13.837	19.484	-26.516	46.000	QP



Frequency (MHz)	Polarisation (Vertical/ Horizontal)	Reading Level	Factor	Field Strength	Over Limit	Limit	Type
		(dBuV)	(dB)	dBµV/m	(dB)	dBµV/m	AV/PK
39.579	V	15.354	13.068	28.423	-11.577	46.000	QP
54.129	V	21.015	7.321	28.336	-11.664	46.000	QP
66.618	V	18.597	6.023	24.620	-15.380	46.000	QP
128.212	V	10.214	12.581	22.794	-20.706	46.000	QP
157.434	V	9.103	10.548	19.652	-23.848	46.000	QP
285.837	V	5.647	13.837	19.484	-26.516	46.000	QP

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
Auxiliary Device				
PC	DELL	200	110MF2X	2010.04.26

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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.