

FCC/IC - TEST REPORT

Report Number : **68.760.15.041.01** Date of Issue: February 3, 2015

Model : See Page 4

Product Type : LED Interactive Multi-Touch Display

Applicant : SHENZHEN Hitevision Technology Co., Ltd.

Address : 1th-3th floor and 6th floor No.1 Building 1th floor No.2 Building,
1th floor No.4 Building, HongHui Industrial Park, Liu Xian No.2
Road, Xin An District, Shenzhen

Production Facility : SHENZHEN Hitevision Technology Co., Ltd.

Address : 1th-3th floor and 6th floor No.1 Building 1th floor No.2 Building,
1th floor No.4 Building, HongHui Industrial Park, Liu Xian No.2
Road, Xin An District, Shenzhen

Test Result : **Positive** **Negative**

Total pages including Appendices : 17

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2 Details about the Test Laboratory

Details about the Test Laboratory

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
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Shenzhen City, 518052,
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Telephone: 86 755 8828 6998
Fax: 86 755 8828 5299

Test Site 2

Company name: Shenzhen CTL Testing Technology Co., Ltd
Floor 1-A, Baisha Technology Park, No.3011, Shahehexi Road, Nanshan District,
Shenzhen, China 518055

FCC Registration
No: 970318

Telephone: 86 755 8948 6194

3 Description of the Equipment Under Test

Product: LED Interactive Multi-Touch Display

Model no.: 84GT-X,EPR8AX0084,QIT1X84,TWB-N84,TWB-NB84,
TWB-N84X,TWB-NB84X,OTS-84VX,OTS-84V2,OTS-84X,
P-84,X-84,P-84X,TID-84,TID-84X,Avtek TouchScreen 84P,Avtek
TouchScreen 84X,84GT,84GT-X(standard),
84GT-X(deluxe),84GT(standard),84GT(deluxe),
CCS-TS-8400X-CA,HD-I84XXE,WS-Z84XX ,WB-E84X,
WB-L84X,WB-N84X,WB-K84X,WB-Z84X,TT-8414X
(X= A-Z or 0-9 ,stands for customer)

FCC ID: 2ACYT-90184

Brand Name: Hitevision

Options and accessories: 1KHz Color Bar and the program of “H”

Rating: 100-240VAC~50/60Hz, Max 4.5A

Description of the EUT: Class B Equipment

4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart B 10-1-13 Edition	Unintentional Radiators
ICES-003 Issue 5 August 2012	Information Technology Equipment (ITE) – Limits and methods of measurement

5 Summary of Test Results

Emission Tests				
FCC Part 15 Subpart B 10-1-13 Edition/ICES-003 Issue 5				
Test Condition	Pages	Test Result		
		Pass	Fail	N/A
Conducted Emission on AC 150kHz to 30MHz	9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Radiated Emission 30MHz to 1000MHz	13	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Radiated Emission 1GHz to 6GHz	15	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6 General Remarks

Remarks

The model 84GT-X and other models are identical except the model name, so all the EMC requirements were applied on 84GT-X and other models are deemed to fulfill the relevant EMC requirements without further testing.

SUMMARY:

All tests according to the regulations cited on page 5 were

■ - Performed

□ - **Not** Performed

The Equipment under Test

■ - **Fulfills** the general approval requirements.

□ - **Does not** fulfill the general approval requirements.

Sample Received Date: 23 December 2014

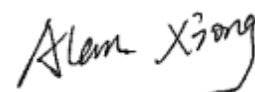
Testing Start Date: 23 December 2014

Testing End Date: 2 February 2015

- TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch -

Reviewed by:

Prepared by:



John Zhi
EMC Project Manager

Alan Xiong
EMC Project Engineer

7 Systems test configuration

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Configuration List:

TEST MODE	DESCRIPTION	REMARK
TC1	VGA In	Connect to Notebook
TC2	HDMI In	Connect to Notebook
TC3	VGA Out	Connect to Notebook
TC4	USB In	Connect to U-Disk
TC5	SD Card In	SD-Card
TC6	Audio & Video In	Connect to DVD Player
TC7	YPbPr In	Connect to DVD Player
TC8	S-Video In	Connect to analog signal

Auxiliary Equipment Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
PC	DELL	INSPIRON 3420	---

Auxiliary Cable List and Details:

CABLE DESCRIPTION	LENGTH (M)	SHIELDED/ UNSHIELDED	WITH CORE/ WITHOUT CORE
HDMI Cable	1.6	Shielded	Without Core
AV Cable	1.65	Unshielded	Without Core
VGA Cable	1.6	Shielded	Without Core
S-Video Cable	1.75	Shielded	Without Core
WAN Cable	1.5	Unshielded	Without Core

The EUT has been tested under two frequencies of input voltage (50Hz, 60Hz) and eight operational models (VGA In, HDMI In, VGA Out, USB In, SD Card In, AV In, YPbPr In and S-Video In), the worst test result are listed in the report.

8 Technical Requirement

8.1 Conducted Emission Test

Test Method

1. The EUT was placed on a table, which is 0.8m above ground plane
2. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.).
3. Maximum procedure was performed to ensure EUT compliance
4. A EMI test receiver is used to test the emissions from both sides of AC line

Limit

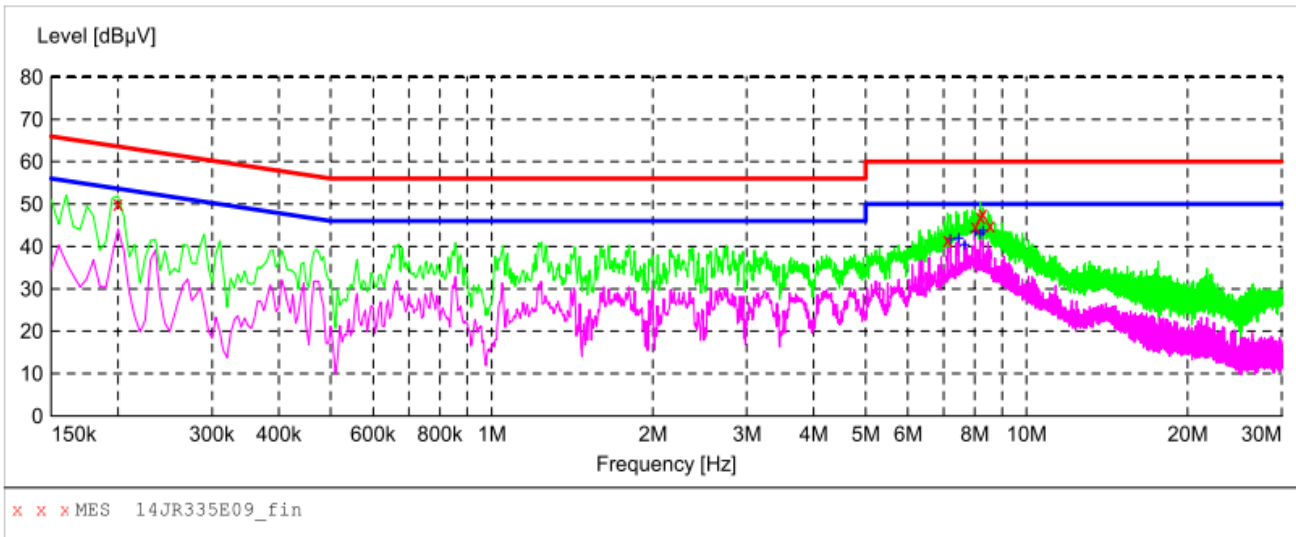
According to §15.107, conducted emissions limit as below:

Frequency MHz	QP Limit dB μ V	AV Limit dB μ V
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

Decreasing linearly with logarithm of the frequency

Conducted Emission

Product Type : LED Interactive Multi-Touch Display
 M/N : 84GT-X
 Operating Condition : YPbPr Mode
 Test Specification : Line
 Comment : AC 120V/60Hz



MEASUREMENT RESULT: "14JR335E09_fin"

1/26/2014 15:42

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.200000	50.20	11.3	64	13.4	QP	L1	GND
7.105000	41.60	10.5	60	18.4	QP	L1	GND
8.010000	44.80	10.6	60	15.2	QP	L1	GND
8.195000	47.10	10.6	60	12.9	QP	L1	GND
8.275000	47.80	10.6	60	12.2	QP	L1	GND
8.545000	45.00	10.6	60	15.0	QP	L1	GND

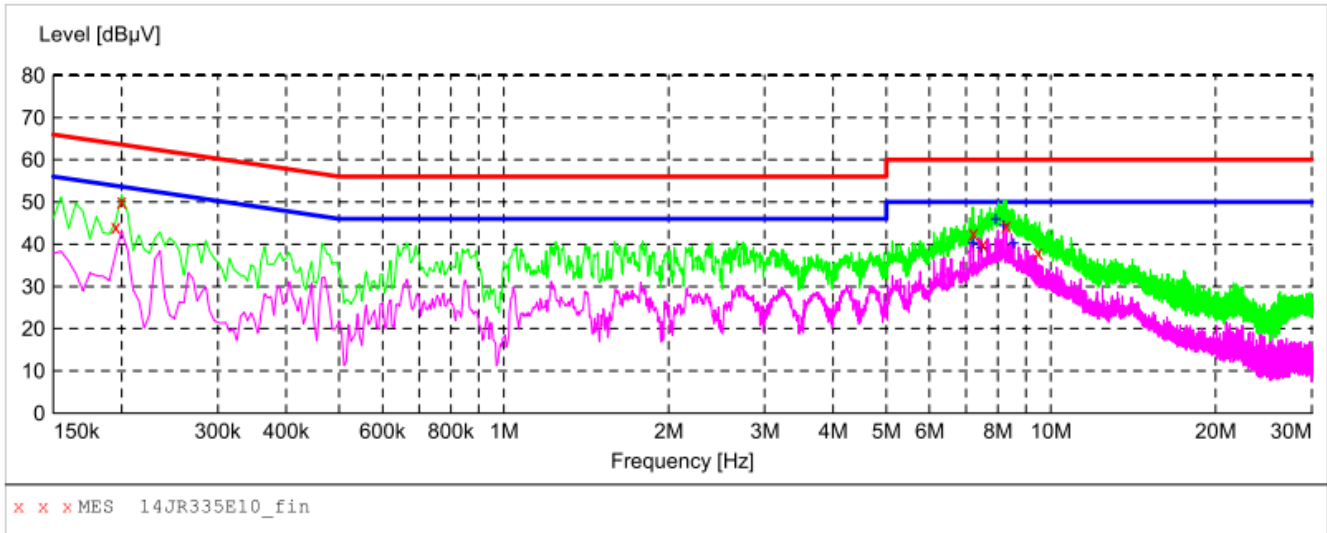
MEASUREMENT RESULT: "14JR335E09_fin2"

1/26/2014 15:42

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
7.195000	41.70	10.5	50	8.3	AV	L1	GND
7.465000	42.00	10.5	50	8.0	AV	L1	GND
7.655000	40.40	10.5	50	9.6	AV	L1	GND
8.005000	43.50	10.6	50	6.5	AV	L1	GND
8.195000	43.00	10.6	50	7.0	AV	L1	GND
8.275000	43.70	10.6	50	6.3	AV	L1	GND

Conducted Emission

Product Type : LED Interactive Multi-Touch Display
 M/N : 84GT-X
 Operating Condition : YPbPr Mode
 Test Specification : Neutral
 Comment : AC 120V/60Hz



MEASUREMENT RESULT: "14JR335E10_fin"

1/26/2014 15:47

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.195000	44.10	11.5	64	19.7	QP	N	GND
0.200000	50.20	11.3	64	13.4	QP	N	GND
7.210000	42.70	10.5	60	17.3	QP	N	GND
7.505000	40.00	10.5	60	20.0	QP	N	GND
8.280000	44.50	10.6	60	15.5	QP	N	GND
9.465000	38.10	10.6	60	21.9	QP	N	GND

MEASUREMENT RESULT: "14JR335E10_fin2"

1/26/2014 15:47

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
7.195000	40.40	10.5	50	9.6	AV	N	GND
7.465000	39.10	10.5	50	10.9	AV	N	GND
7.925000	46.00	10.6	50	4.0	AV	N	GND
8.195000	44.50	10.6	50	5.5	AV	N	GND
8.545000	40.20	10.6	50	9.8	AV	N	GND

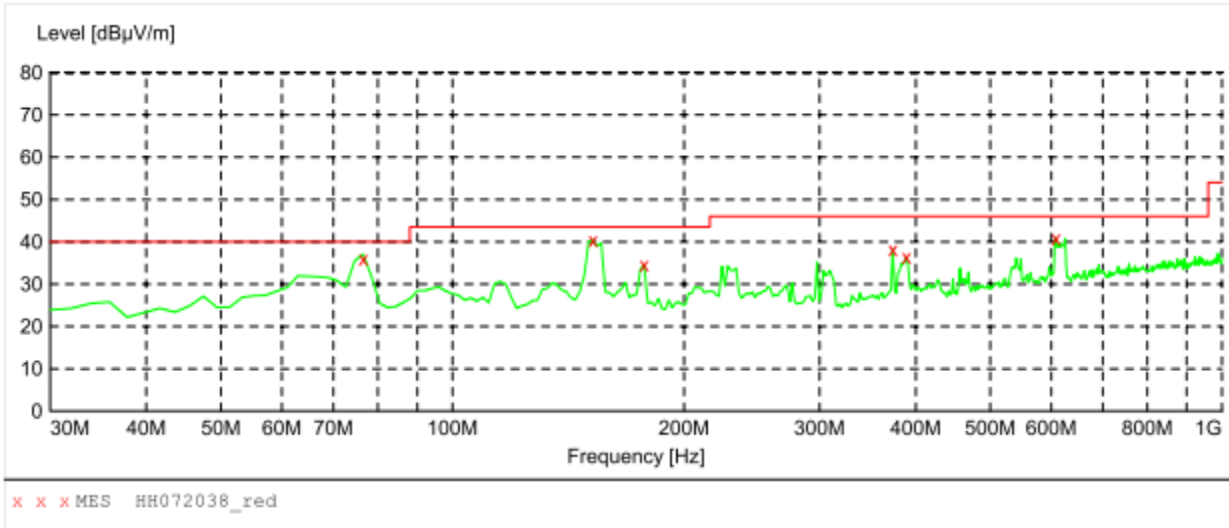
Remark: The testing was applied on all the modes, only the worst case data was shown in the report.

Test Equipment List**Conducted emission test**

Equipment	Manufacturer	Model No.	Serial No.	Cal. due. date
EMI Test Receiver	R&S	ESCI	100687	2015-6-12
Teo Line Single Phase Module	R&S	ENV216	8128247	2015-11-6
10dB attenuator	SCHWARZCECK	VTSD 9561F	836	2015-6-12

8.2 Radiated Emission Test 30MHz – 1000MHz

Product Type : LED Interactive Multi-Touch Display
 M/N : 84GT-X
 Operating Condition : VGA Out
 Ant. Polarity : Vertical
 Comment : 30-1000MHz



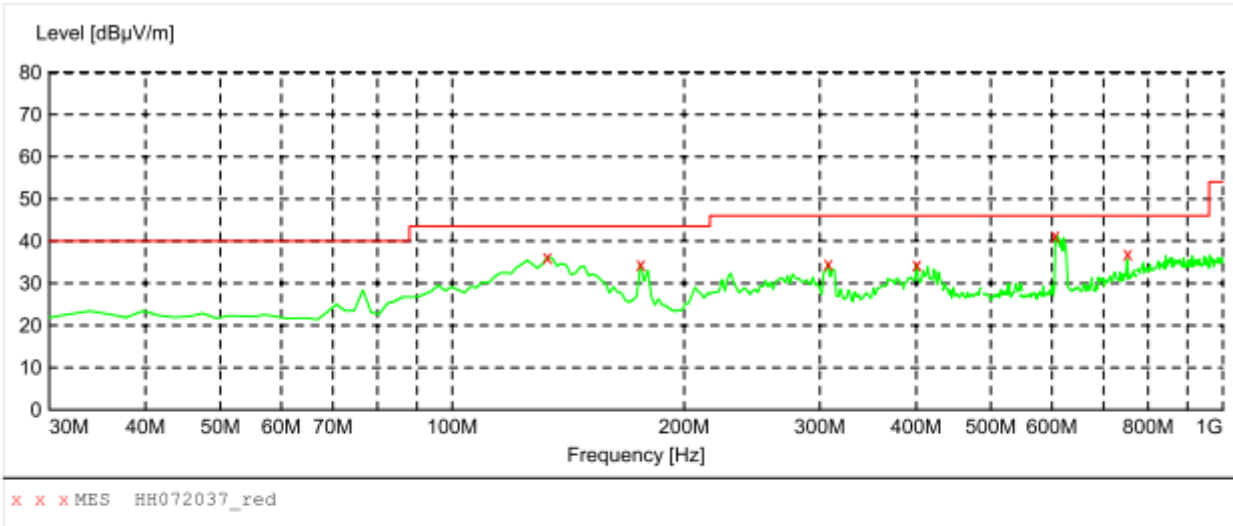
MEASUREMENT RESULT: "HH072038_red"

1/27/2015 23:11

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
76.560000	36.00	12.0	40.0	4.0	---	100.0	0.00	VERTICAL
152.220000	40.40	12.4	43.5	3.1	---	100.0	0.00	VERTICAL
177.440000	34.60	13.7	43.5	8.9	---	100.0	0.00	VERTICAL
373.380000	38.20	20.8	46.0	7.8	---	100.0	0.00	VERTICAL
388.900000	36.40	21.2	46.0	9.6	---	100.0	0.00	VERTICAL
608.120000	40.80	26.0	46.0	5.2	---	100.0	0.00	VERTICAL

Radiated Emission Test 30MHz – 1000MHz

Product Type : LED Interactive Multi-Touch Display
 M/N : 84GT-X
 Operating Condition : VGA Out
 Ant. Polarity : Horizontal
 Comment : 30-1000MHz



MEASUREMENT RESULT: "HH072037_red"

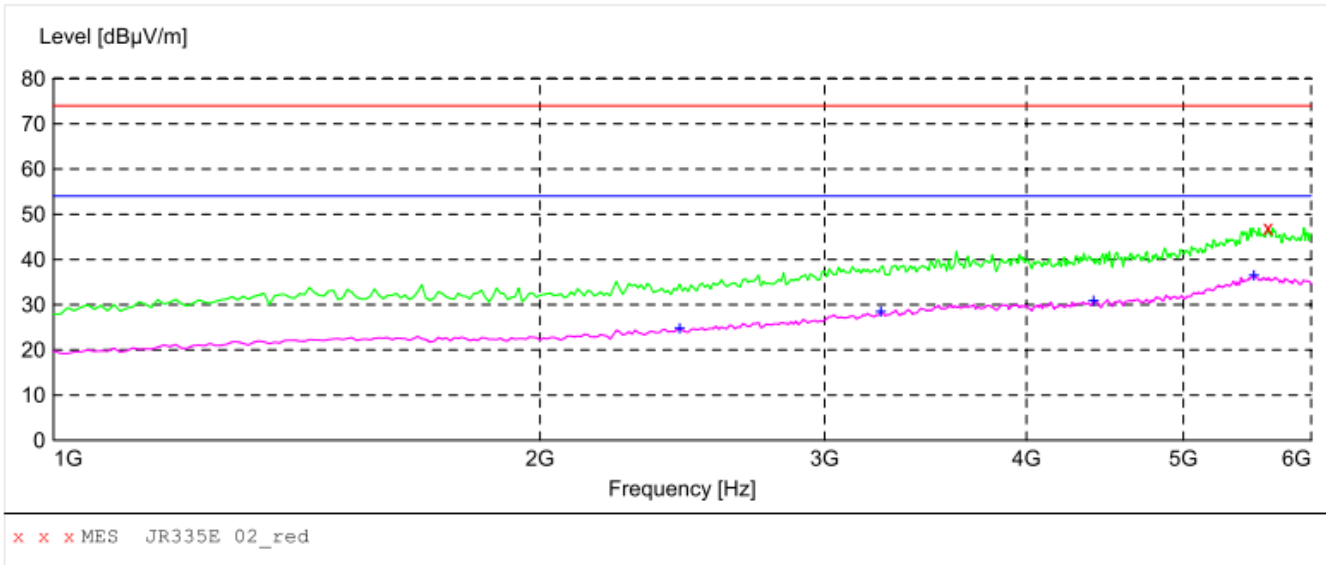
1/27/2015 23:07

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
132.820000	36.20	12.8	43.5	7.3	---	300.0	0.00	HORIZONTAL
175.500000	34.50	13.5	43.5	9.0	---	300.0	0.00	HORIZONTAL
307.420000	34.60	18.9	46.0	11.4	---	100.0	0.00	HORIZONTAL
400.540000	34.40	21.5	46.0	11.6	---	100.0	0.00	HORIZONTAL
610.060000	41.10	26.0	46.0	4.9	---	100.0	0.00	HORIZONTAL
751.680000	37.00	27.3	46.0	9.0	---	100.0	0.00	HORIZONTAL

Remark: The testing was applied on all the modes, only the worst case data was shown in the report.

8.3 Radiated Emission Test 1GHz – 6GHz

Product Type : LED Interactive Multi-Touch Display
 M/N : 84GT-X
 Operating Condition : VGA In
 Ant. Polarity : Vertical
 Comment : 1GHz-6GHz



MEASUREMENT RESULT: "JR335E 02_red"

1/27/2015 16:54

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
5640.000000	47.00	3.6	74.0	27.0	---	100.0	0.00	VERTICAL

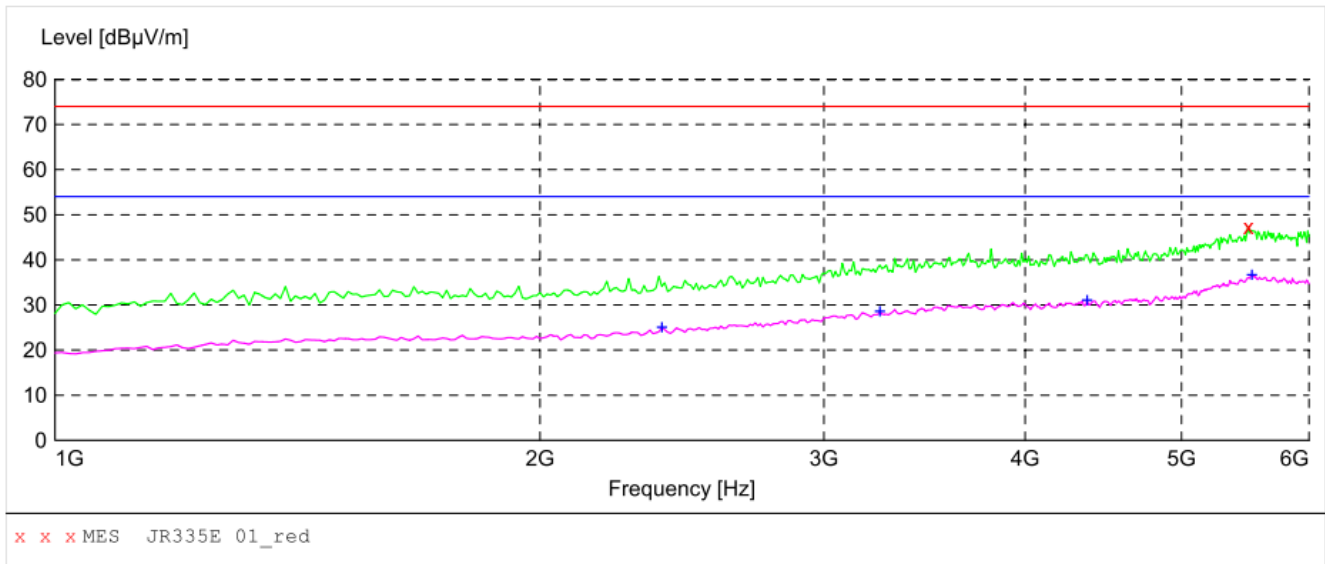
MEASUREMENT RESULT: "JR335E 02_red2"

1/27/2015 16:54

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
2440.000000	24.70	-9.7	54.0	29.3	---	100.0	0.00	VERTICAL
3250.000000	28.40	-6.2	54.0	25.6	---	100.0	0.00	VERTICAL
4400.000000	30.80	-3.0	54.0	23.2	---	100.0	0.00	VERTICAL
5530.000000	36.40	3.9	54.0	17.6	---	100.0	0.00	VERTICAL

Radiated Emission Test 1GHz – 6GHz

Product Type : LED Interactive Multi-Touch Display
 M/N : 84GT-X
 Operating Condition : VGA In
 Ant. Polarity : Horizontal
 Comment : 1GHz-6GHz



MEASUREMENT RESULT: "JR335E 01_red"

1/27/2015 16:53

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
5500.000000	47.30	3.9	74.0	26.7	---	100.0	0.00	HORIZONTAL

MEASUREMENT RESULT: "JR335E 01_red2"

1/27/2015 16:53

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
2380.000000	25.00	-9.9	54.0	29.0	---	100.0	0.00	HORIZONTAL
3250.000000	28.50	-6.2	54.0	25.5	---	100.0	0.00	HORIZONTAL
4370.000000	31.00	-3.1	54.0	23.0	---	100.0	0.00	HORIZONTAL
5530.000000	36.60	3.9	54.0	17.4	---	100.0	0.00	HORIZONTAL

Remark: The testing was applied on all the modes, only the worst case data was shown in the report.

Test Equipment List

Radiated Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	R&S	ESCI	100687	2015-6-12
EMI Test Receiver	R&S	ESPI	100097	2015-11-6
TRILOG Broadband Test-Antenna	SCHWARZBECK	VULB9163	9163-324	2015-2-10
Horn Antenna	SCHWARZBECK	BBHA9120A	0499	2015-2-10
Broadband preamplifier	SCHWARZBECK	BBV9718	9718-182	2015-6-12