

## FCC/IC - TEST REPORT

Report Number	: <b>68.760.14.211.01</b>	Date of Issue: <u>August 05, 2014</u>
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	: <input checked="" type="checkbox"/> <b>Positive</b> <input type="checkbox"/> <b>Negative</b>	
Total pages including Appendices	: <u>17</u>	

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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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P. R. China

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, Shahexi 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.: 70GT-X、EPR8AX0070、QIT1X70、TWB-N70、TWB-NB70、TWB-N70X、TWB-NB70X、OTS-70VX、OTS-70V2、OTS-70X、P-70、X-70、P-70X、TID-70、TID-70X、Avtek TouchScreen 70P、Avtek TouchScreen 70X、70GT、70GT-X (standard)、70GT-X (deluxe)、70GT(standard)、70GT(deluxe)、CCS-TS-700X-CA、HD-I70XXE、WS-Z70XX、WS-Z70AX、WB-E70X、WB-L70X、WB-N70X、WB-K70X、WB-Z70X、TT-7014X ("X" represent 0-9 random numbers or A-Z random letters)

FCC ID: 2ACYT-90170

IC ID: NIL

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 Result		
Test Condition	Pages	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 70GT-X and other models are identical except the model name, so all the EMC requirements were applied on 70GT-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: Jane 13, 2014

Testing Start Date: Jane 16, 2014

Testing End Date: August 05, 2014

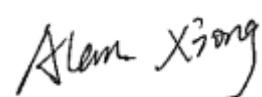
- TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch -

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

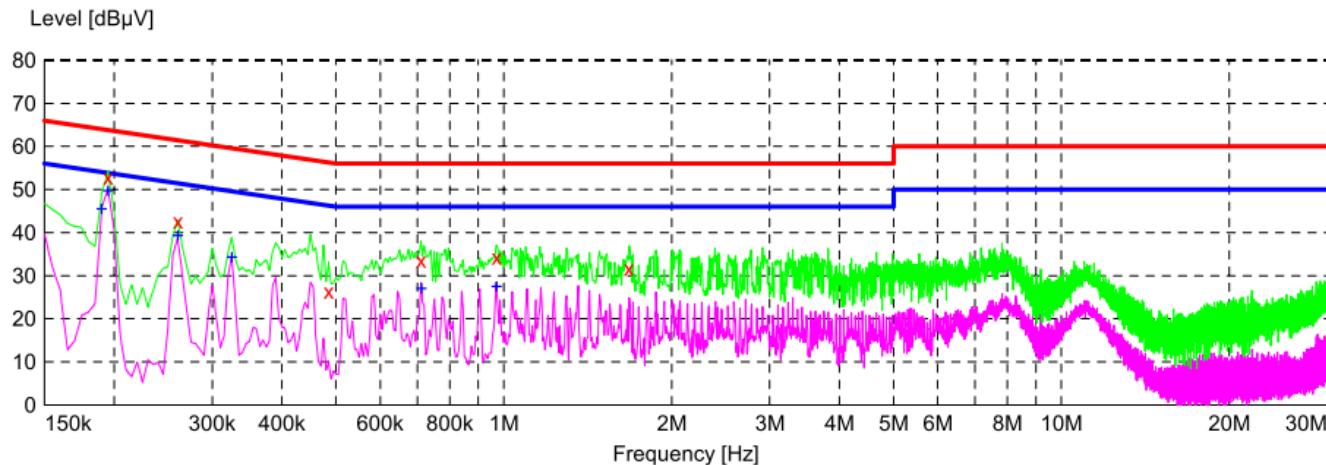
According to §15.107, conducted emissions limit as below:

Frequency MHz	QP Limit dB $\mu$ V	AV Limit dB $\mu$ 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 : 70GT-X  
 Operating Condition : VGA In  
 Test Specification : Neutral  
 Comment : AC 120V/60Hz



### **MEASUREMENT RESULT: "072603\_fin"**

7/26/2014 13:18

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.195000	52.90	11.5	64	10.9	QP	N	GND
0.260000	42.70	11.1	61	18.7	QP	N	GND
0.485000	26.40	10.5	56	29.9	QP	N	GND
0.710000	33.60	10.4	56	22.4	QP	N	GND
0.970000	34.30	10.4	56	21.7	QP	N	GND
1.675000	31.70	10.4	56	24.3	QP	N	GND

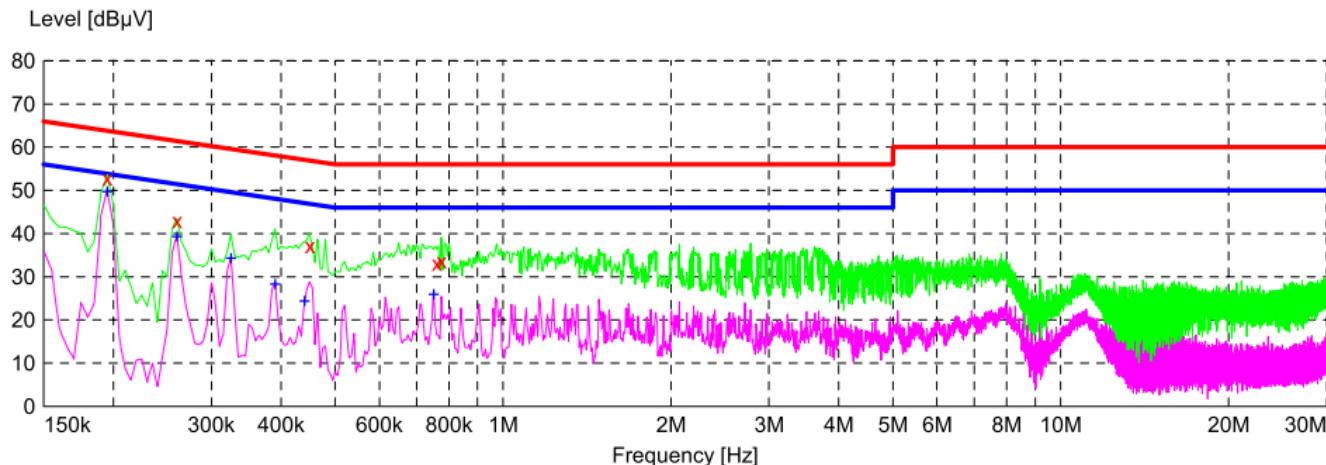
### **MEASUREMENT RESULT: "072603\_fin2"**

7/26/2014 13:18

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.190000	45.50	11.7	54	8.5	AV	N	GND
0.195000	49.70	11.5	54	4.1	AV	N	GND
0.260000	39.30	11.1	51	12.1	AV	N	GND
0.325000	34.30	10.9	50	15.3	AV	N	GND
0.710000	27.00	10.4	46	19.0	AV	N	GND
0.970000	27.50	10.4	46	18.5	AV	N	GND

## Conducted Emission

Product Type : LED Interactive Multi-Touch Display  
 M/N : 70GT-X  
 Operating Condition : VGA In  
 Test Specification : Live  
 Comment : AC 120V/60Hz



### **MEASUREMENT RESULT: "072604\_fin"**

7/26/2014 13:20

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.195000	52.90	11.5	64	10.9	QP	L1	GND
0.260000	43.00	11.1	61	18.4	QP	L1	GND
0.450000	37.20	10.6	57	19.7	QP	L1	GND
0.760000	33.10	10.4	56	22.9	QP	L1	GND
0.775000	33.70	10.4	56	22.3	QP	L1	GND

### **MEASUREMENT RESULT: "072604\_fin2"**

7/26/2014 13:20

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.195000	49.70	11.5	54	4.1	AV	L1	GND
0.260000	39.30	11.1	51	12.1	AV	L1	GND
0.325000	34.30	10.9	50	15.3	AV	L1	GND
0.390000	28.30	10.7	48	19.8	AV	L1	GND
0.440000	24.40	10.6	47	22.7	AV	L1	GND
0.750000	25.90	10.4	46	20.1	AV	L1	GND

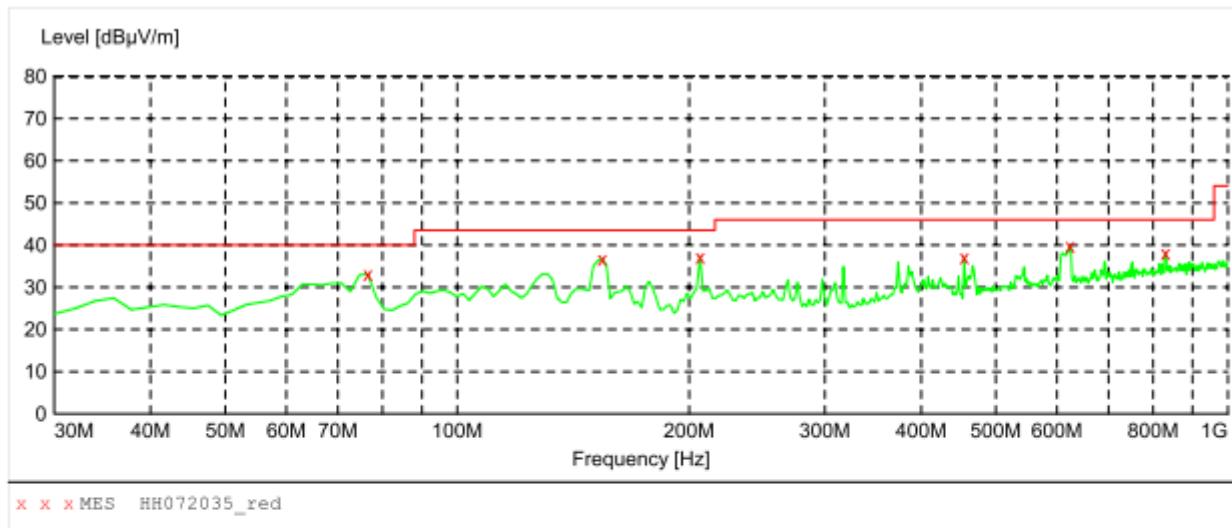
## Test Equipment List

### Conducted emission test

Equipment	Manufacturer	Model No.	Serial No.	Cal. due. date
EMI Test Receiver	R&S	ESCI	100687	2014.11.21
Teo Line Single Phase Module	R&S	ENV216	8128247	2014.11.21
10dB attenuator	SCHWARZCECK	VTSD 9561F	836	2014.11.21

## 8.2 Radiated Emission Test 30MHz – 1000MHz

Product Type : LED Interactive Multi-Touch Display  
 M/N : 70GT-X  
 Operating Condition : VGA In  
 Ant. Polarity : Vertical  
 Comment : 30-1000MHz



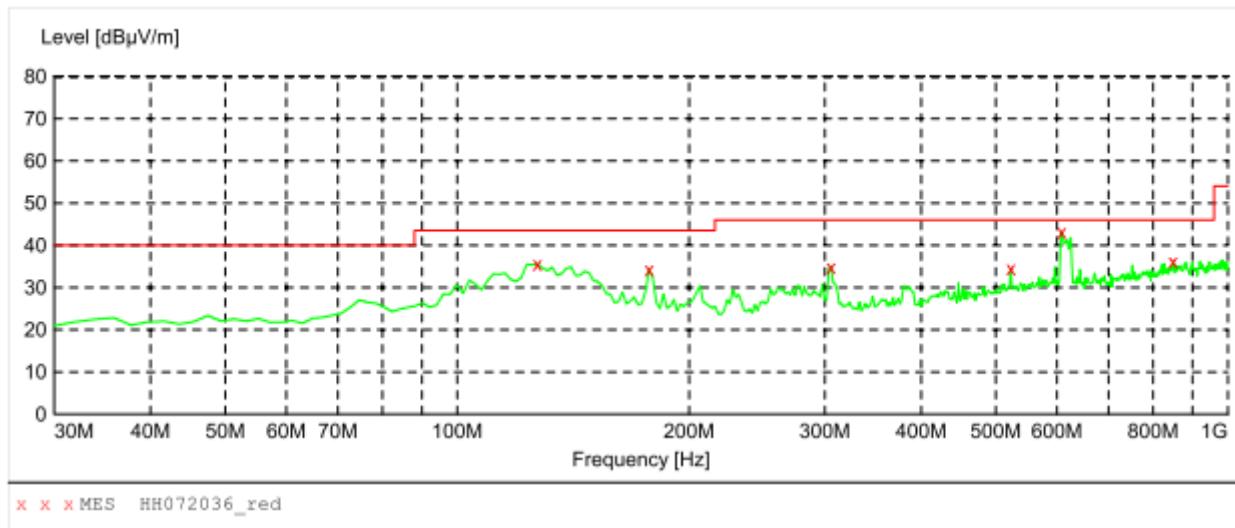
### MEASUREMENT RESULT: "HH072035\_red"

7/20/2014 23:02

Frequency MHz	Level dB $\mu$ V/m	Transd dB	Limit dB $\mu$ V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
76.560000	33.10	12.0	40.0	6.9	---	100.0	0.00	VERTICAL
154.160000	36.70	12.5	43.5	6.8	---	100.0	0.00	VERTICAL
206.540000	37.20	15.0	43.5	6.3	---	100.0	0.00	VERTICAL
454.860000	37.10	22.2	46.0	8.9	---	100.0	0.00	VERTICAL
623.640000	39.80	26.1	46.0	6.2	---	100.0	0.00	VERTICAL
829.280000	38.10	28.4	46.0	7.9	---	100.0	0.00	VERTICAL

## Radiated Emission Test 30MHz – 1000MHz

Product Type : LED Interactive Multi-Touch Display  
 M/N : 70GT-X  
 Operating Condition : VGA In  
 Ant. Polarity : Horizontal  
 Comment : 30-1000MHz



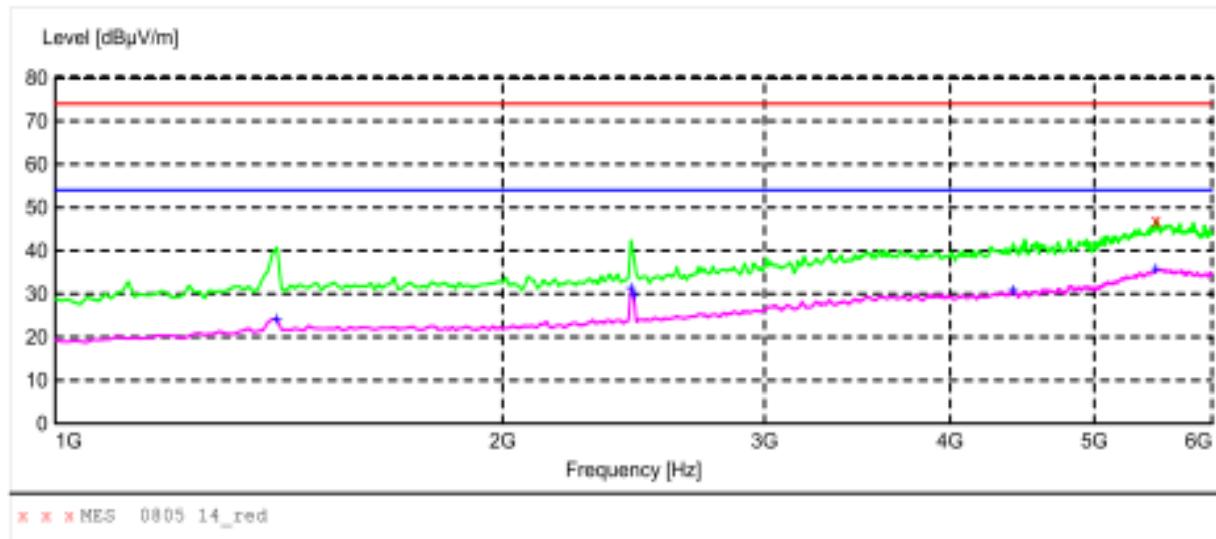
### MEASUREMENT RESULT: "HH072036\_red"

7/20/2014 23:04

Frequency MHz	Level dB $\mu$ V/m	Transd dB	Limit dB $\mu$ V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
127.000000	35.60	13.5	43.5	7.9	---	300.0	0.00	HORIZONTAL
177.440000	34.30	13.7	43.5	9.2	---	300.0	0.00	HORIZONTAL
305.480000	34.80	18.9	46.0	11.2	---	100.0	0.00	HORIZONTAL
522.760000	34.50	24.4	46.0	11.5	---	100.0	0.00	HORIZONTAL
608.120000	42.70	26.0	46.0	3.3	---	100.0	0.00	HORIZONTAL
848.680000	36.20	28.6	46.0	9.8	---	100.0	0.00	HORIZONTAL

## 8.2 Radiated Emission Test 1GHz – 6GHz

Product Type : LED Interactive Multi-Touch Display  
 M/N : 70GT-X  
 Operating Condition : VGA In  
 Ant. Polarity : Vertical  
 Comment : 1GHz-6GHz



### MEASUREMENT RESULT: "0805 14\_red"

8/5/2014 10:18

Frequency MHz	Level dB $\mu$ V/m	Transd dB	Limit dB $\mu$ V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
5500.000000	47.00	3.9	74.0	27.0	---	100.0	0.00	VERTICAL

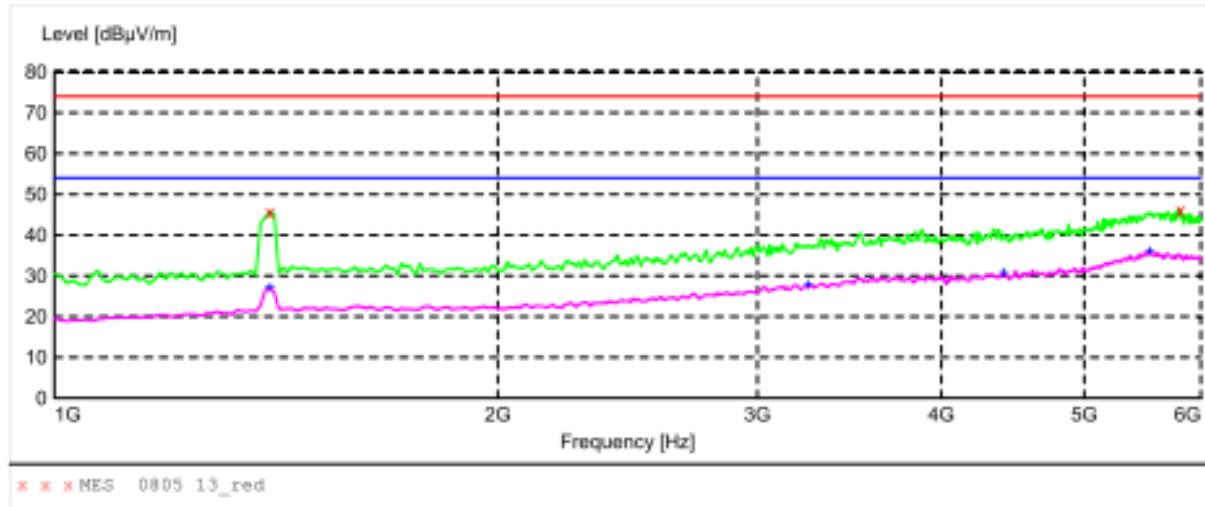
### MEASUREMENT RESULT: "0805 14\_red2"

8/5/2014 10:18

Frequency MHz	Level dB $\mu$ V/m	Transd dB	Limit dB $\mu$ V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
1410.000000	24.10	-12.1	54.0	29.9	---	100.0	0.00	VERTICAL
2440.000000	31.30	-9.7	54.0	22.7	---	100.0	0.00	VERTICAL
2450.000000	29.60	-9.6	54.0	24.4	---	100.0	0.00	VERTICAL
4410.000000	30.80	-3.0	54.0	23.2	---	100.0	0.00	VERTICAL
5500.000000	35.70	3.9	54.0	18.3	---	100.0	0.00	VERTICAL

## Radiated Emission Test 1GHz – 6GHz

Product Type : LED Interactive Multi-Touch Display  
 M/N : 70GT-X  
 Operating Condition : VGA In  
 Ant. Polarity : Horizontal  
 Comment : 1GHz-6GHz



### MEASUREMENT RESULT: "0805 13\_red"

8/5/2014 10:17	Frequency	Level	Transd	Limit	Margin	Det.	Height	Azimuth	Polarization
	MHz	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB		cm	deg	
	1400.000000	45.60	-12.2	74.0	28.4	---	100.0	0.00	HORIZONTAL
	5810.000000	46.10	3.2	74.0	27.9	---	100.0	0.00	HORIZONTAL

### MEASUREMENT RESULT: "0805 13\_red2"

8/5/2014 10:17	Frequency	Level	Transd	Limit	Margin	Det.	Height	Azimuth	Polarization
	MHz	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB		cm	deg	
	1400.000000	27.10	-12.2	54.0	26.9	---	100.0	0.00	HORIZONTAL
	3250.000000	27.80	-6.2	54.0	26.2	---	100.0	0.00	HORIZONTAL
	4410.000000	30.70	-3.0	54.0	23.3	---	100.0	0.00	HORIZONTAL
	5540.000000	36.00	3.8	54.0	18.0	---	100.0	0.00	HORIZONTAL

## Test Equipment List

### Radiated Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	R&S	ESCI	100687	2014.11.21
EMI Test Receiver	R&S	ESPI	100097	2014.11.21
TRILOG Broadband Test-Antenna	Sunol Sciences Corp.	JB1	9163-324	2014.11.21
Horn Antenna	Sunol Sciences Corp.	DRH-118	0499	2014.11.21
EMI Test Receiver	R&S	ESCI	100687	2014.11.21