FCC - TEST REPORT

Report Number	:	**68.760.15.461.01**	Date of Issue:	October 26 2015
Model	:	**TWB-I65, TWB-I65X, TWB-I65AX, TT-6515X, QIT1265 10IN, QIT1X65, VI-65X1, We-Touch 65, Wowb65i-65 inch, 65G-Touch Slim-STND,TWB-IC65, TWB-IC65X, TWB-IC65AX, P-65, P-65X , P65, P65X, HD-I6XXXE, HD-IXXXE, WS-Z6XXX, OTS-65/S1, Predia Start 65" ("X" could be any number "0-9" or "A-Z" indicate for different market purpose)**		
Product Type	:	LED Interactive Multi-Touch Display		
Applicant	:	SHENZHEN Hitevision Technology Co., Ltd.		
Address	:	No. 8, Qinglan 1st Road, Pingshan, Shenzhen, Guangdong 518118, P.R.China.		
Production Facility	:	SHENZHEN Hitevision Technology Co., Ltd.		
Address	:	No. 8, Qinglan 1st Road, Pingshan, Shenzhen, Guangdong 518118, P.R.China.		
Test Result	:	■ **Positive** ☐ **Negative**		
Total pages including Appendices	:	19		

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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 Building 12&13, Zhiheng Wisdomland Business Park, Nantou Checkpoint Road 2, Nanshan District, Shenzhen City, 518052, P. R. China
FCC Registration No.:	502708
Telephone:	86 755 8828 6998
Fax:	86 755 8828 5299

3 Description of the Equipment Under Test

Product:	LED Interactive Multi-Touch Display
Model no.:	TWB-I65, TWB-I65X, TWB-I65AX, TT-6515X, QIT1265 10IN, QIT1X65, VI-65X1, We-Touch 65, Wowb65i-65 inch, 65G-Touch Slim-STND,TWB-IC65, TWB-IC65X, TWB-IC65AX, P-65, P-65X , P65, P65X, HD-I6XXXE, HD-IXXXE, WS-Z6XXX, OTS-65/S1， Predia Start 65" ("X" could be any number "0-9" or "A-Z" indicate for different market purpose)
FCC ID:	2ACYT-AHH15V69-65
Brand Name:	Newline Razr PREDIA HiteVision
Options and accessories:	1KHz Color Bar and the program of “H”
Rating:	100-240VAC~50/60Hz, Max 2.5A
Description of the EUT:	Class B Equipment

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4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart B 10-1-2014 Edition	Unintentional Radiators

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5 Summary of Test Results

Emission Tests				
FCC Part 15 Subpart B 10-1-2014 Edition				
Test Condition	Pages	Test Result		
		Pass	Fail	N/A
Conducted Emission on AC 150kHz to 30MHz	9	☒	☐	☐
Radiated Emission 30MHz to 1000MHz	13	☒	☐	☐
Radiated Emission 1GHz to 6GHz	16	☒	☐	☐

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6 General Remarks

Remarks

The model TWB-I65 and other models are identical except the appearance, so all the EMC requirements were applied on TWB-I65 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: July 20, 2015

Testing Start Date: July 21, 2015

Testing End Date: August 4, 2015

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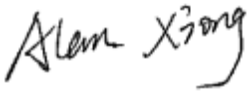
Reviewed by:

John Zhi
EMC Project Manager

Prepared by:



Alan Xiong
EMC Project Engineer

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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
TM1	VGA Input	Connect to PC
TM2	HDMI Input	Connect to PC
TM3	USB Input	Connect to U-Disk
TM4	Audio &Video Input	Connect to DVD Player

Auxiliary Equipment Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
PC	LENOVO	X240	---
PC	DELL	INSPIRON 3420	---

Auxiliary Cable List and Details:

CABLE DESCRIPTION	LENGTH (M)	SHIELDED/ UNSHIELDED	WITH CORE/ WITHOUT CORE
HDMI Cable	3.0	Shielded	With Core
USB Cable	5.0	Shielded	With Core

The EUT has been tested under two frequencies of input voltage (50Hz, 60Hz) and eight operational models (VGA Input, HDMI Input, USB Input, AV Input), the worst test result are listed in the report.

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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 dBµV	AV Limit dBµV
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

Decreasing linearly with logarithm of the frequency

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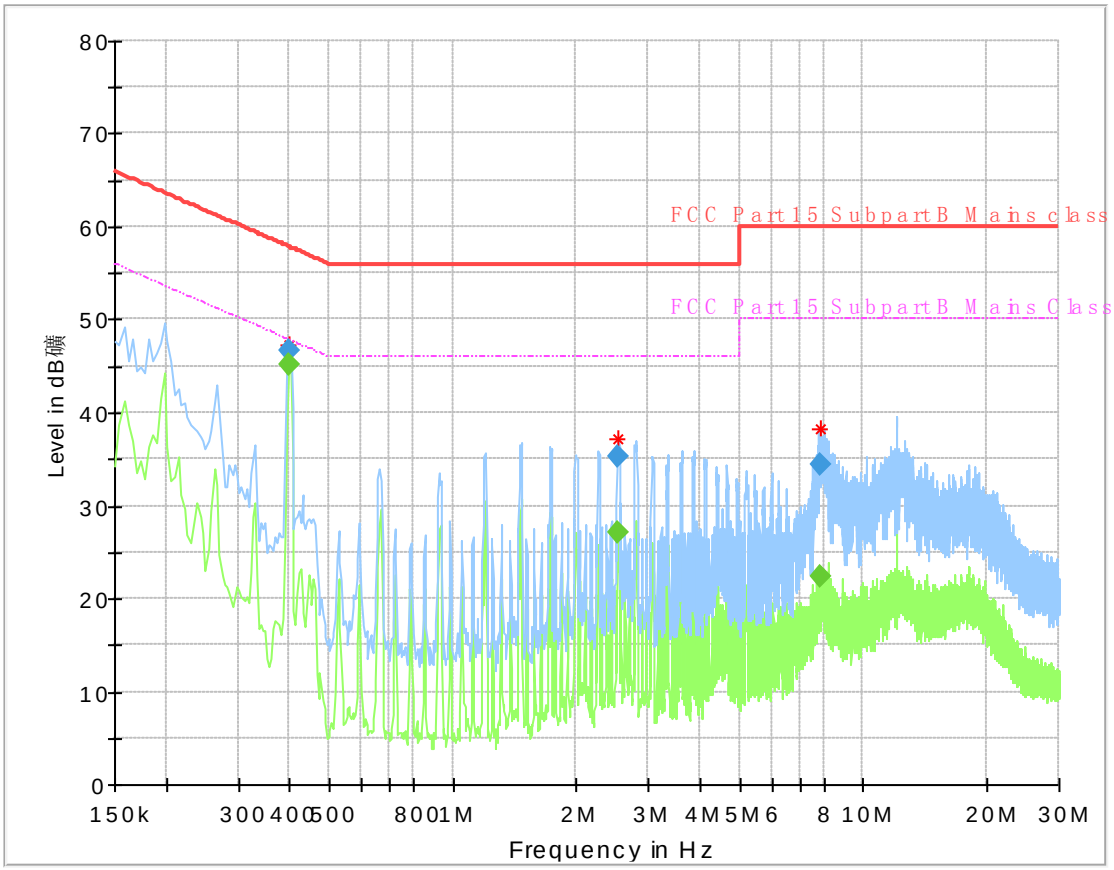
Conducted Emission Test 150kHz – 30MHz

Product Type: LED Interactive Multi-Touch Display
M/N: TWB-I65
Operating Condition: TM2; HDMI Input Mode
Test Specification: Power Line, Live
Comment: AC 120V/50Hz



Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.397500	---	45.10	47.91	2.81	L1	10.1
0.397500	46.65	---	57.91	11.26	L1	10.1
2.537500	---	27.04	46.00	18.96	L1	9.8
2.537500	35.36	---	56.00	20.64	L1	9.8
7.873500	---	22.38	50.00	27.62	L1	10.0
7.873500	34.48	---	60.00	25.52	L1	10.0

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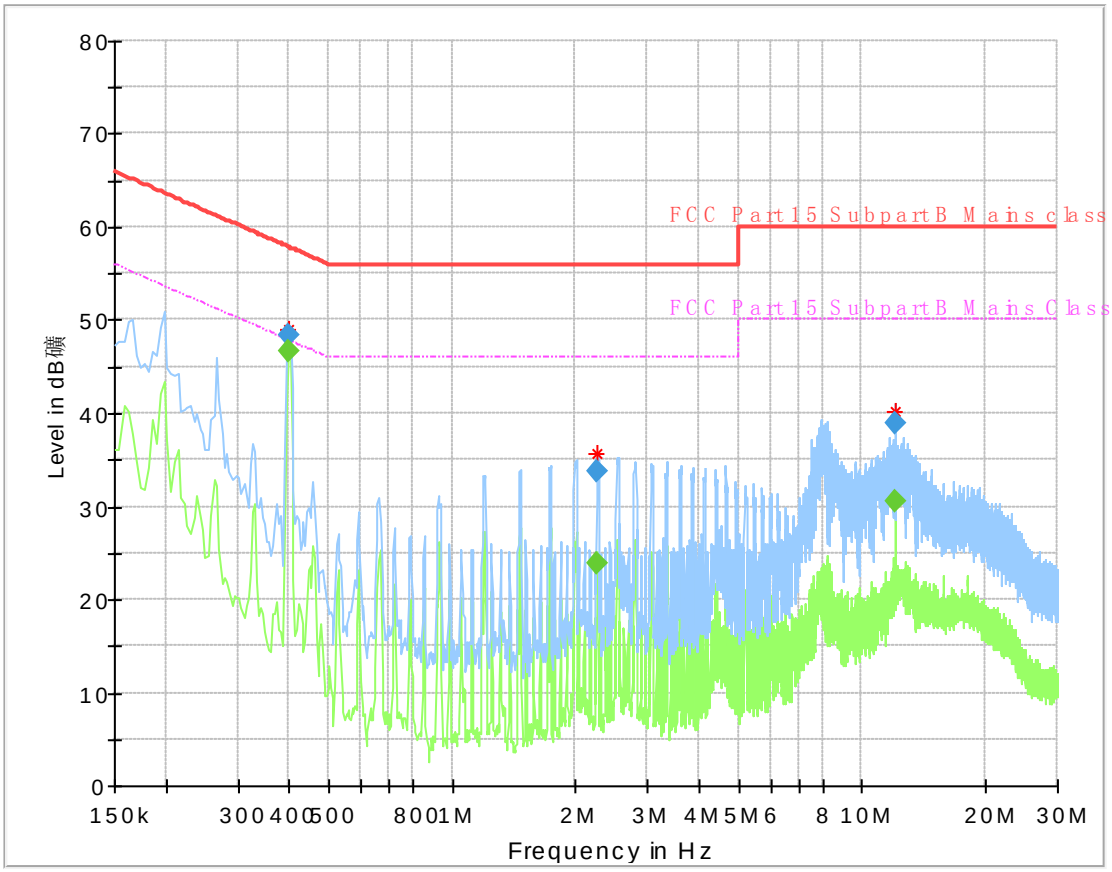
Conducted Emission Test 150kHz – 30MHz

Product Type: LED Interactive Multi-Touch Display
M/N: TWB-I65
Operating Condition: TM2; HDMI Input Mode
Test Specification: Power Line, Neutral
Comment: AC 120V/50Hz



Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.397500	---	46.63	47.91	1.28	N	10.1
0.397500	48.42	---	57.91	9.49	N	10.1
2.265500	---	23.80	46.00	22.20	N	9.8
2.265500	33.72	---	56.00	22.28	N	9.8
12.034500	---	30.57	50.00	19.43	N	10.0
12.034500	38.96	---	60.00	21.04	N	10.0

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

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Test Equipment List

Conducted emission test

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 3	101782	2016-7-24
LISN	Rohde & Schwarz	ENV4200	100249	2016-7-24
LISN	Rohde & Schwarz	ENV216	100326	2016-7-24
ISN	Rohde & Schwarz	ENY81	100177	2016-7-24
ISN	Rohde & Schwarz	ENY81-CA6	101664	2016-7-24
High Voltage Probe	Rohde & Schwarz	TK9420(VT9420)	9420-58	2016-7-24
RF Current Probe	Rohde & Schwarz	EZ-17	100816	2016-7-24

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8.2 Radiated Emission Test

Test Method

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
3. Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured, RBW = 1 MHz for f ≥ 1GHz, 100 kHz for f < 1 GHz, VBW ≥ RBW, Sweep = auto, Detector function = peak, Trace = max hold

4. Follow the guidelines in ANSI C63.4-1992 with respect to maximizing the emission by rotating the EUT, adjusting the measurement antenna height and polarization, etc.

The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, submit this data. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

Limit

According to §15.109, conducted emissions limit as below:

Frequency MHz	Field Strength uV/m	Field Strength dBµV/m	Detector
30-88	100	40	QP
88-216	150	43.5	QP
216-960	200	46	QP
960-1000	500	54	QP
Above 1000	500	54	AV
Above 1000	5000	74	PK

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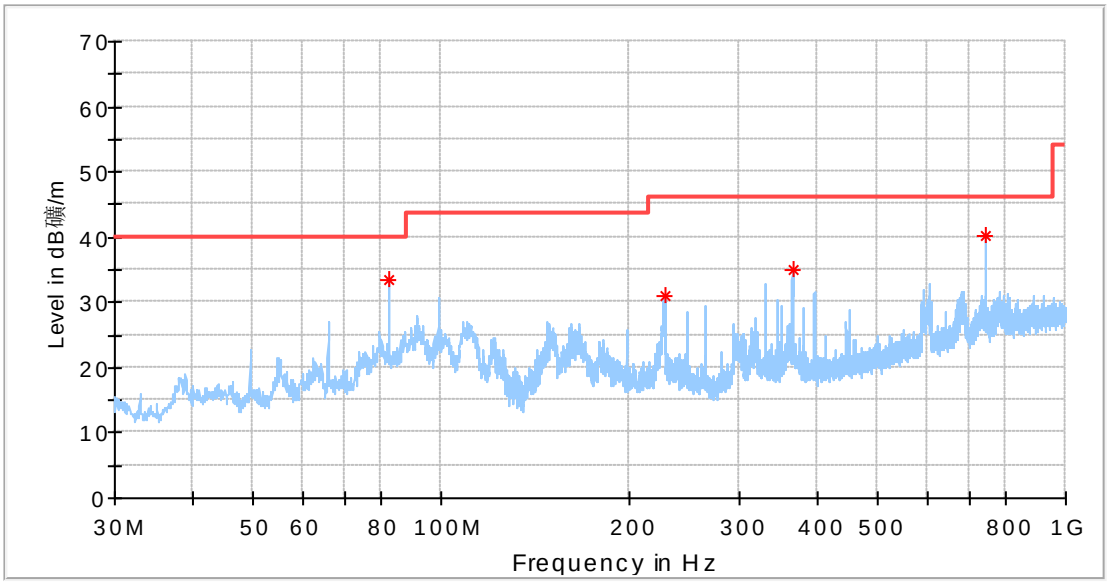
Radiated Emission Test 30MHz – 1000MHz

Product Type	:	LED Interactive Multi-Touch Display
M/N	:	TWB-I65
Operating Condition	:	HDMI Input
Ant. Polarity	:	Horizontal
Comment	:	30-1000MHz



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
82.501250	33.38	40.00	6.62	200.0	H	0.0
228.365000	31.02	40.00	8.98	200.0	H	36.0
366.468750	34.98	47.00	12.02	100.0	H	156.0
742.465000	40.18	47.00	6.82	100.0	H	240.0

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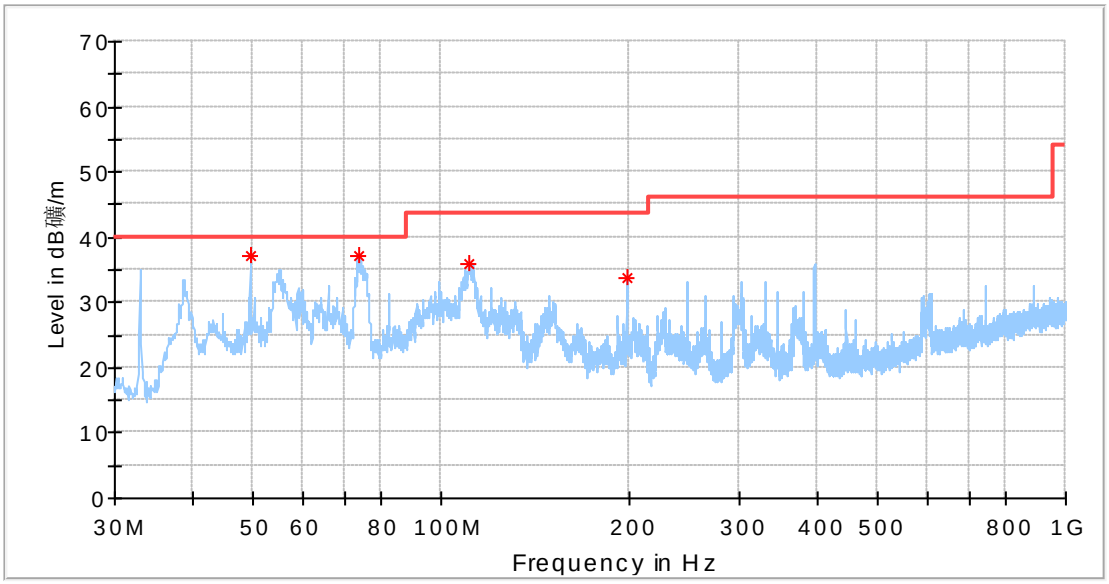
Radiated Emission Test 30MHz – 1000MHz

Product Type	:	LED Interactive Multi-Touch Display
M/N	:	TWB-I65
Operating Condition	:	HDMI Input
Ant. Polarity	:	Vertical
Comment	:	30-1000MHz



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
49.460625	37.20	40.00	2.80	100.0	V	0.0
73.589375	37.20	40.00	2.80	200.0	V	0.0
110.510000	36.04	40.00	3.96	100.0	V	0.0
197.991875	33.87	40.00	6.13	100.0	V	243.0

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

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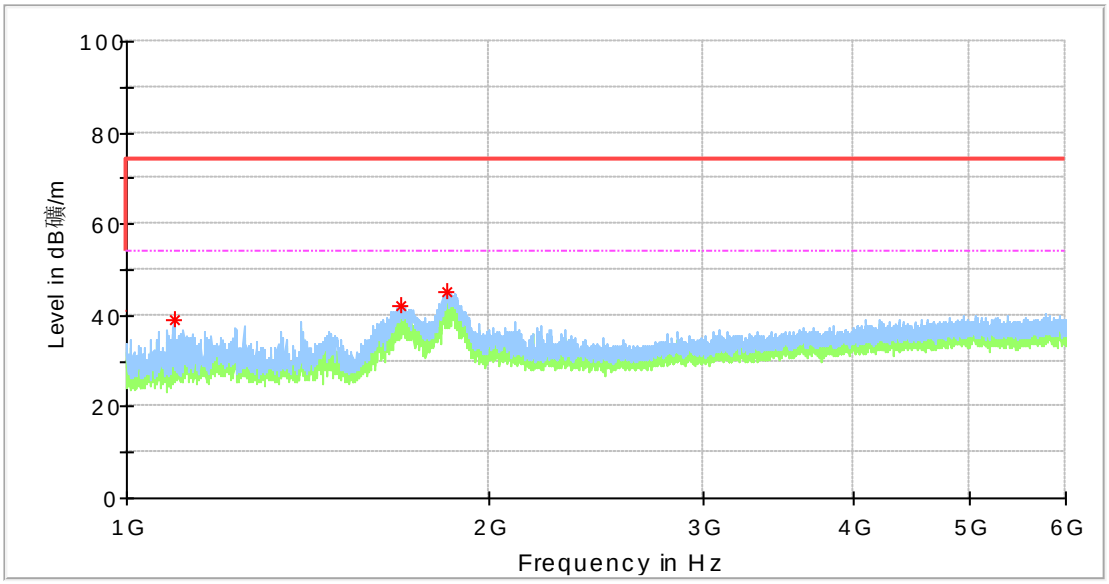
8.3 Radiated Emission Test 1GHz – 6GHz

Product Type : LED Interactive Multi-Touch Display
M/N : TWB-I65
Operating Condition : HDMI Input
Ant. Polarity : Horizontal
Comment : Above 1GHz



Frequency	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1094.000	39.06	---	70.00	30.94	200.0	H	242.0	-14.7
1686.000	42.25	---	70.00	27.75	100.0	H	214.0	-11.6
1841.500	45.05	---	70.00	24.95	100.0	H	258.0	-9.8

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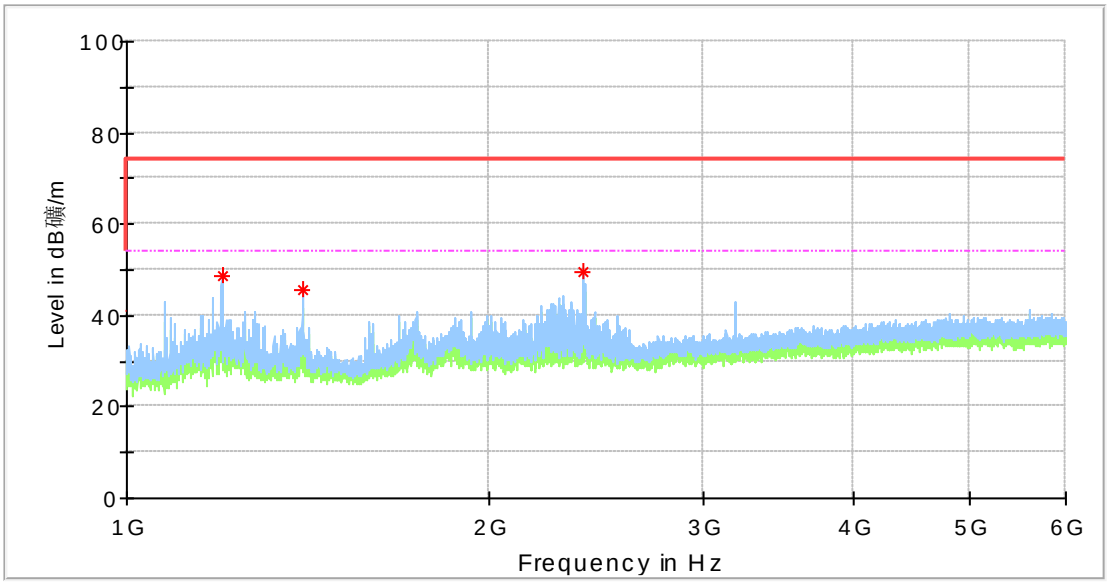
Radiated Emission Test 1GHz – 6GHz

Product Type : LED Interactive Multi-Touch Display
M/N : TWB-I65
Operating Condition : HDMI Input
Ant. Polarity : Vertical
Comment : Above 1GHz



Frequency	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1199.000	48.73	---	70.00	21.27	100.0	V	107.0	-14.3
1398.000	45.54	---	70.00	24.46	100.0	V	188.0	-13.5
2389.500	49.58	---	70.00	20.42	100.0	V	210.0	-8.6

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

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Test Equipment List

Radiated Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	101269	2016-7-24
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	707	2016-8-14
Horn Antenna	Rohde & Schwarz	HF907	102294	2016-7-24
Pre-amplifier	Rohde & Schwarz	SCU 18	102230	2016-7-24
3m Semi-anechoic chamber	TDK	9X6X6	----	2019-5-29

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9 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty	
Test Items	Extended Uncertainty
Uncertainty for Conducted Emission 150kHz-30MHz (for test using AMN ENV216 or ENV4200)	3.50dB
Uncertainty for Radiated Spurious Emission 25MHz-3000MHz	Horizontal: 4.95dB; Vertical: 5.02dB;
Uncertainty for Radiated Spurious Emission 3000MHz-18000MHz	Horizontal: 4.89dB; Vertical: 4.88dB;

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