



FCC Test Report

FCC ID: 2AC8IFTLSTM

(Verification of Conformity)

For

Electromagnetic Interference

Of

Product : Non-Wifi Touch Screen

Trade Name : faytech

Model Number : FT15TM, FT156TM, FT17TM, FT185TM,
FT19TM, FT215TM, FT22TM

Prepared for

faytech Tech. Co., Ltd.

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Prepared by

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TEST RESULT CERTIFICATION

Applicant's name faytech Tech. Co., Ltd.
Address Fl. 4, Hongmen Tech Zone, Jihua Road, Longgang District, Shenzhen,
China
Manufacturer's Name faytech Tech. Co., Ltd.
Address Fl. 4, Hongmen Tech Zone, Jihua Road, Longgang District, Shenzhen,
China

Product description

Product name Non-Wifi Touch Screen
Model and/or type FT15TM, FT156TM, FT17TM, FT185TM, FT19TM, FT215TM,
reference FT22TM
Standards FCC Part15B:2012
ANSI C63.4:2003

This device described above has been tested by ATT, and the test results show that the equipment under test (EUT) is in compliance with Part 15 of FCC Rules. And it is applicable only to the tested sample identified in the report.

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Date of Test

Date (s) of performance of tests 26 Aug. 2014 ~12 Sep. 2014

Date of Issue..... 12 Sep. 2014

Test Result..... **Pass**

Testing Engineer :

Eric Wang

(Eric Wang)

Technical Manager :

Jerry You

(Jerry You)

Authorized Signatory :

Jack Yu

(Jack Yu)

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1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
FCC Part15B:2012 ANSI C63.4: 2003	Conducted Emission	Class B	PASS	
	Radiated Emission	Class B	PASS	

NOTE:

- (1) 'N/A' denotes test is not applicable in this Test Report
- (2) For client's request and manual description, the test will not be executed.



1.1 TEST FACILITY

Shenzhen STONE Testing Technology Co.,Ltd.

Add. : F/1, Bldg.12, Zhongxing Industrial City, Chuangye Rd., Nanshan District
Shenzhen China

FCC Registration No.: 323508; IC Registration No.: 11043A

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately **95 %**.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U , (dB)	NOTE
ATTC01	ANSI	150 KHz ~ 30MHz	3.2	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	U , (dB)	NOTE
ATTA01	ANSI	30MHz ~ 1000MHz	4.7	
		1GHz ~6GHz	5.0	



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Non-Wifi Touch Screen	
Model Name	FT15TM	
Additional Model Number(s)	FT156TM, FT17TM, FT185TM, FT19TM, FT215TM, FT22TM	
Model Difference	All models are identical except model names and screen sizes 15 ~ 22 inch. image refresh rate:800*600(Min); 1920*1200(Max).	
Product Description	The EUT is a Non-Wifi Touch Screen	
	oscillator frequency:	14.318MHz
	Connecting I/O port:	USB/VGA/DVI/RS-232
	Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.	
Power Source	AC Voltage	
Power Rating	12V $\overline{\text{---}}$, 6A	
Adapter	M/N:FJ-SW1203000 Input:100-240V~, 50/60H, 1.5A Max. Output:12V $\overline{\text{---}}$, 3000mA	

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

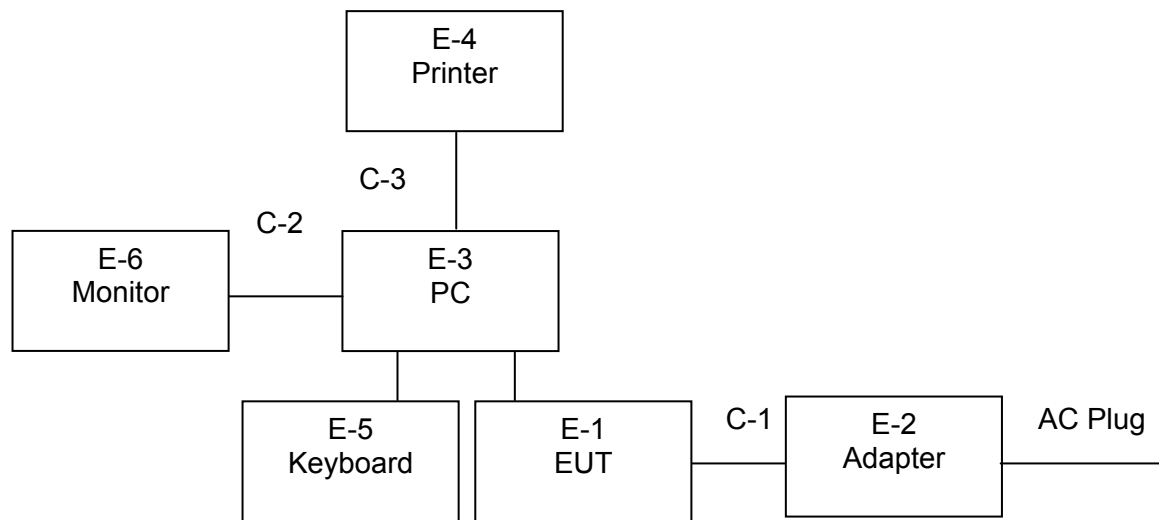
Pretest Mode	Description
Mode 1	VGA, 800*600,60Hz
	VGA, 1024*768,60Hz
	VGA, 1920*1200,60Hz
Mode 2	DVI, 800*600,60Hz
	DVI, 1024*768,60Hz
	DVI, 1920*1200,60Hz

For Conducted Test	
Final Test Mode	Description
Mode 1	VGA, 1920*1200,60Hz
Mode 2	DVI, 1920*1200,60Hz

For Radiated Test	
Final Test Mode	Description
Mode 1	VGA, 1920*1200,60Hz
Mode 2	DVI, 1920*1200,60Hz

NOTE: The measurements are performed at the highest, middle, lowest resolution.the worst type has been reported.

2.3 DESCRIPTION OF TEST SETUP



2.4 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Brand	Model/Type No.	Series No.	Note
E-1	Non-Wifi Touch Screen	N/A	FT15TM	N/A	EUT
E-2	Adapter	N/A	FJ-SW1203000	N/A	
E-3	Notebook	Lenovo	LE-51247	N/A	Notebook
E-4	Printer	Canon	L11121E	LBP2900	Printer
E-5	Keyboard	DELL	SK-8185	OY526KUS	E-5
E-6	Mouse	DELL	MS111-P	cn-011d3v-71581-11e-1th7	E-6

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	YES	120cm	
C-2	YES	YES	120cm	
C-3	NO	NO	100cm	

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” means “shielded” “with core”; “NO” means “unshielded” “without core”.

2.5 MEASUREMENT INSTRUMENTS LIST

2.5.1 CONDUCTED TEST SITE

Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2014.07.06	2015.07.05	1 year
2	Test Receiver	R&S	ESPI	101318	2014.06.07	2015.06.06	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2014.07.06	2015.07.05	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2014.06.07	2015.06.06	1 year
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	2014.06.07	2015.06.06	1 year
6	Horn Antenna	EM	EM-AH-10180	2011071402	2014.07.06	2015.07.05	1 year
7	Amplifier	EM	EM-30180	060538	2013.12.22	2014.12.21	1 year
8	Loop Antenna	ARA	PLA-1030/B	1029	2014.06.08	2015.06.07	1 year
9	Cable 30-1000MHz	R&S	ATT-R01	201309R001	2014.06.08	2015.06.07	1 year
10	Cable 1-18GHz	R&S	ATT-R02	201309R048	2014.06.08	2015.06.07	1 year

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2014.06.06	2015.06.05	1 year
2	LISN	R&S	ENV216	101313	2014.08.24	2015.08.23	1 year
3	LISN	EMCO	3816/2	00042990	2014.08.24	2015.08.23	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2014.06.07	2015.06.06	1 year
5	Passive Voltage Probe	R&S	ESH2-Z3	100196	2014.06.07	2015.06.06	1 year
6	Absorbing clamp	R&S	MOS-21	100423	2014.06.08	2015.06.07	1 year
7	Cable 0.009-30MHz	R&S	ATT-C01	201309C006	2014.06.08	2015.06.07	1 year

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

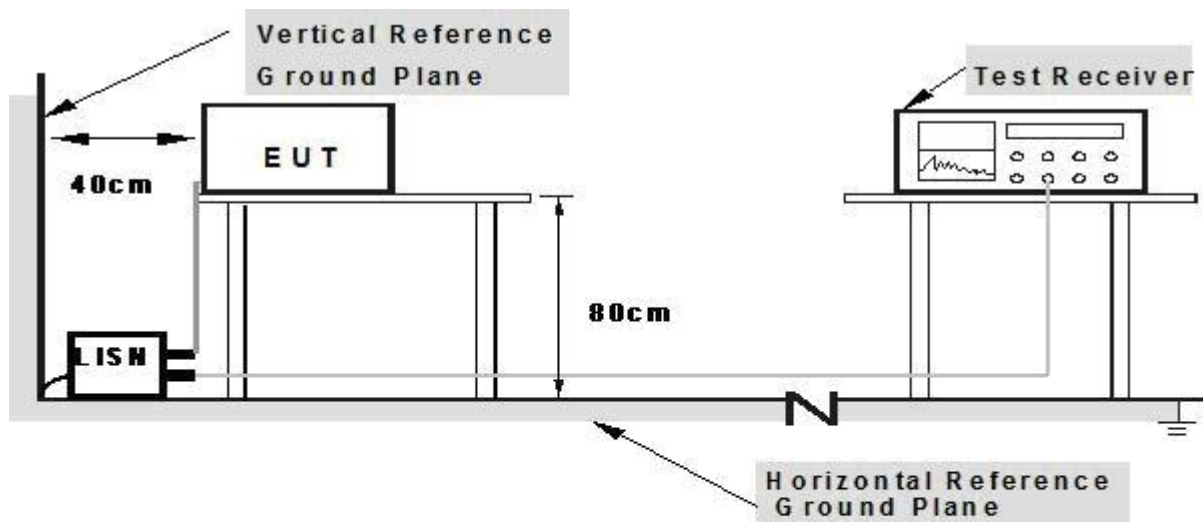
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 TEST PROCEDURE

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 TEST SETUP



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

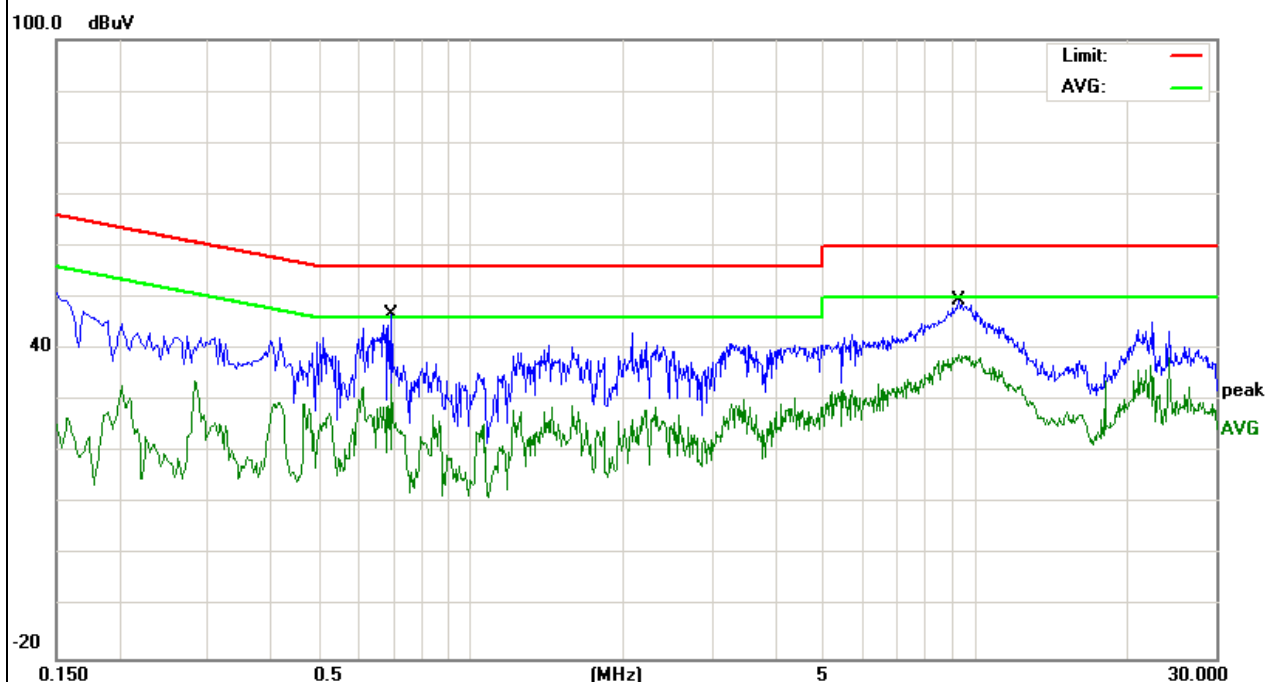
3.1.5 TEST RESULTS

EUT :	Non-Wifi Touch Screen	Model Name. :	FT15TM
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2014-9-5
Test Mode :	VGA, 1920*1200,60Hz	Phase :	L
Test Voltage :	DC 12V from adapter AC 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
0.694	36.22	10.41	46.63	56	-9.37	QP
0.694	22.72	10.41	33.13	46	-12.87	AVG
9.298	38.75	10.61	49.36	60	-10.64	QP
9.298	28.3	10.61	38.91	50	-11.09	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. N/A means All Data have pass Limit



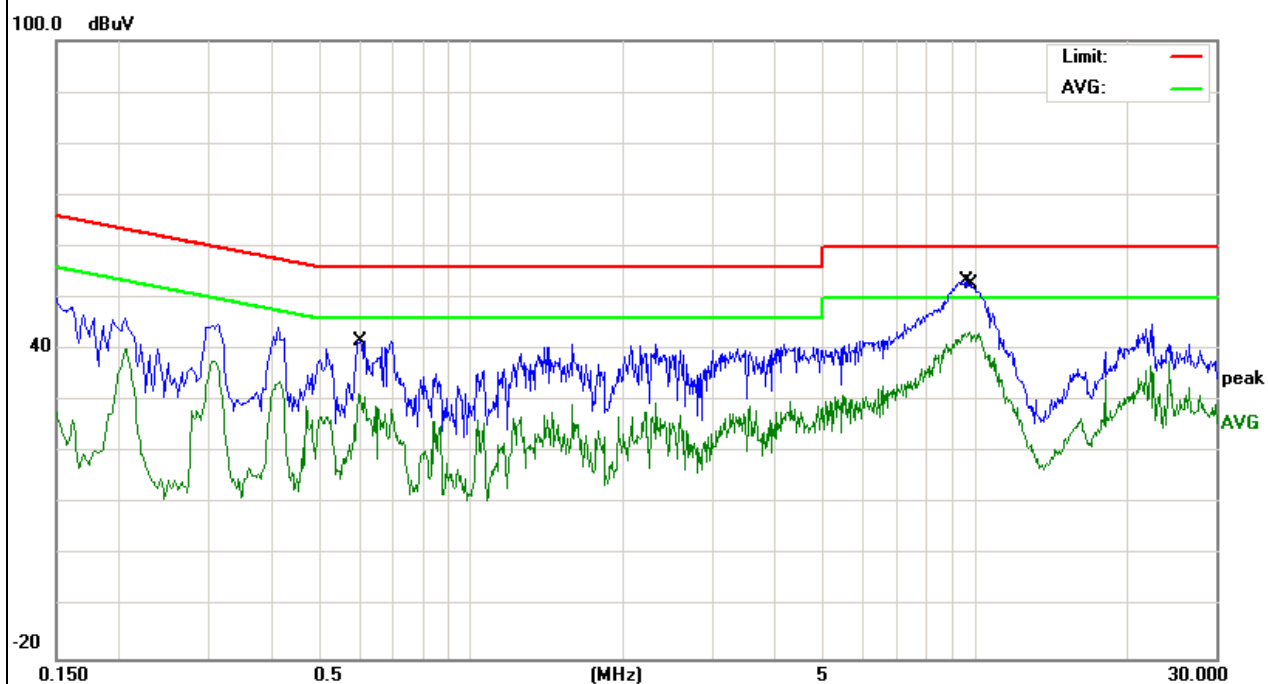


EUT :	Non-Wifi Touch Screen	Model Name. :	FT15TM
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2014-9-5
Test Mode :	VGA, 1920*1200,60Hz	Phase :	N
Test Voltage :	DC 12V from adapter AC 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
0.598	21.02	10.4	31.42	46	-14.58	AVG
0.602	31.34	10.4	41.74	56	-14.26	QP
9.618	42.84	10.58	53.42	60	-6.58	QP
9.706	32.9	10.59	43.49	50	-6.51	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. N/A means All Data have pass Limit



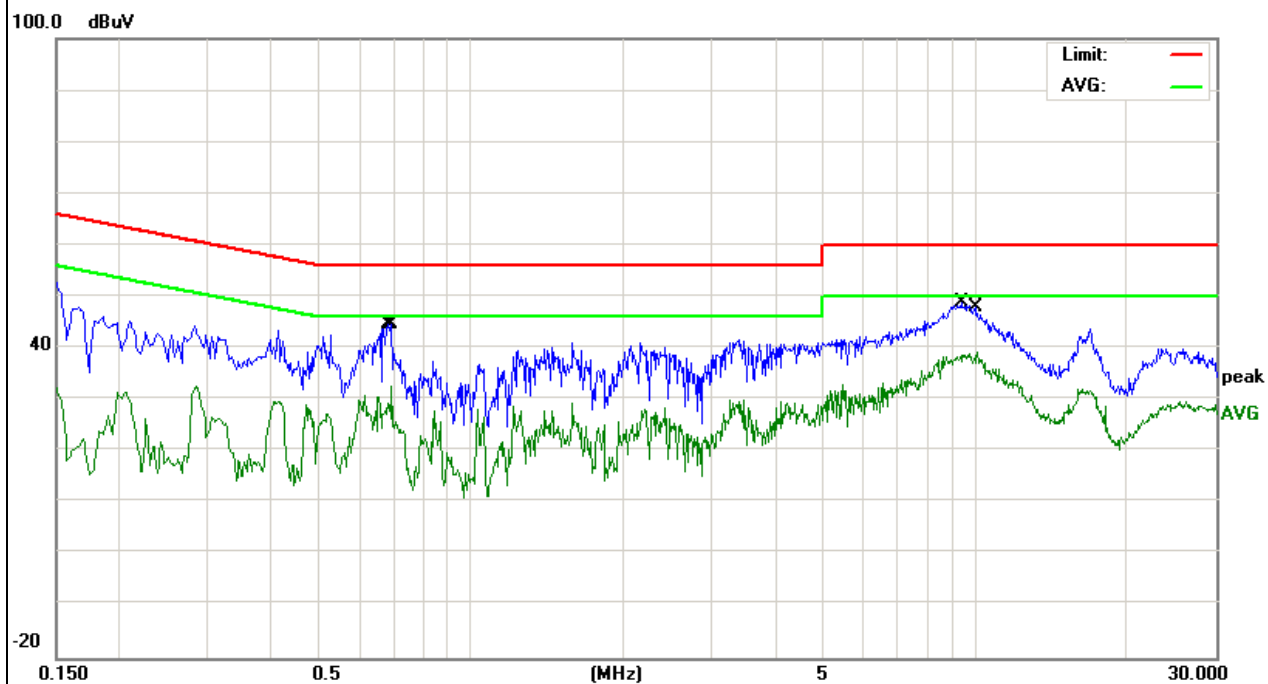


EUT :	Non-Wifi Touch Screen	Model Name. :	FT15TM
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2014-9-5
Test Mode :	DVI, 1920*1200,60Hz	Phase :	L
Test Voltage :	DC 12V from adapter AC 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
0.686	34.32	10.41	44.73	56	-11.27	QP
0.694	22.26	10.41	32.67	46	-13.33	AVG
9.3979	38.37	10.59	48.96	60	-11.04	QP
10.098	28.5	10.61	39.11	50	-10.89	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. N/A means All Data have pass Limit



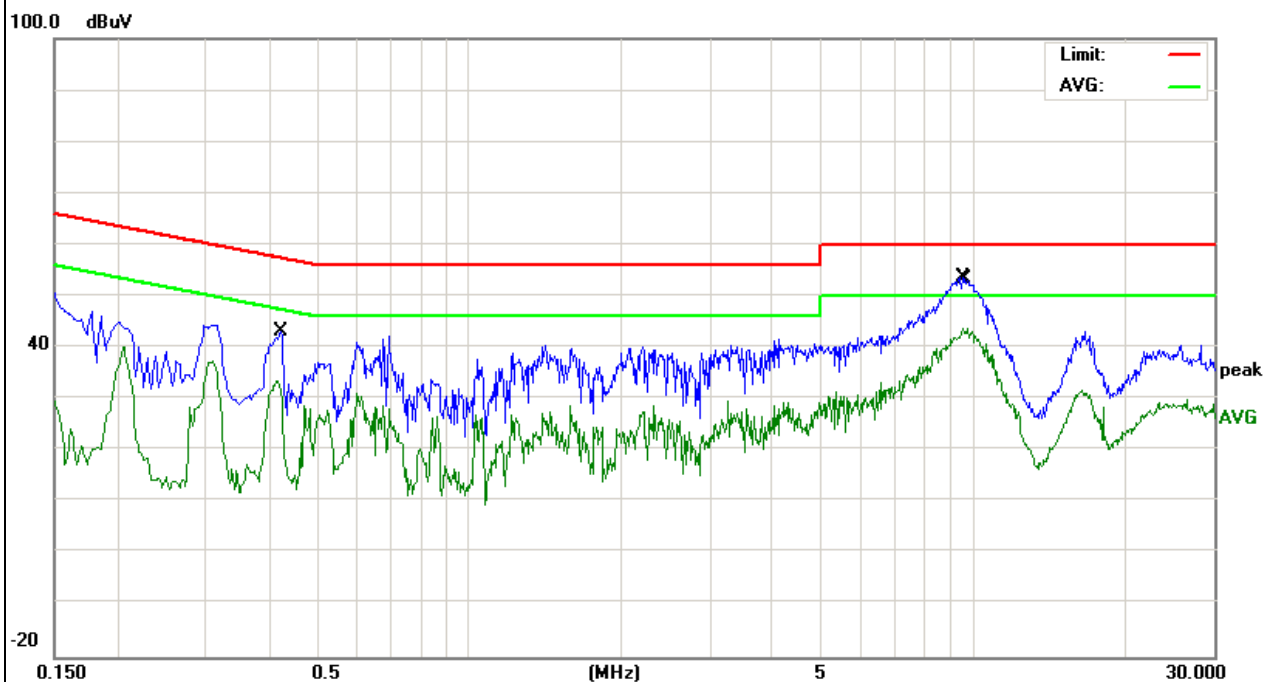


EUT :	Non-Wifi Touch Screen	Model Name. :	FT15TM
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2014-9-5
Test Mode :	DVI, 1920*1200,60Hz	Phase :	N
Test Voltage :	DC 12V from adapter AC 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
0.418	23.15	10.42	33.57	47.49	-13.92	AVG
0.422	32.71	10.42	43.13	57.41	-14.28	QP
9.502	43.01	10.57	53.58	60	-6.42	QP
9.714	33.18	10.59	43.77	50	-6.23	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. N/A means All Data have pass Limit



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class A (at 10m)	Class B (at 3m)
	dBuV/m	dBuV/m
30 ~ 88	39.0	40.0
88 ~ 216	43.5	43.5
216 ~ 960	46.5	46.0
Above 960	49.5	54.0

Notes:

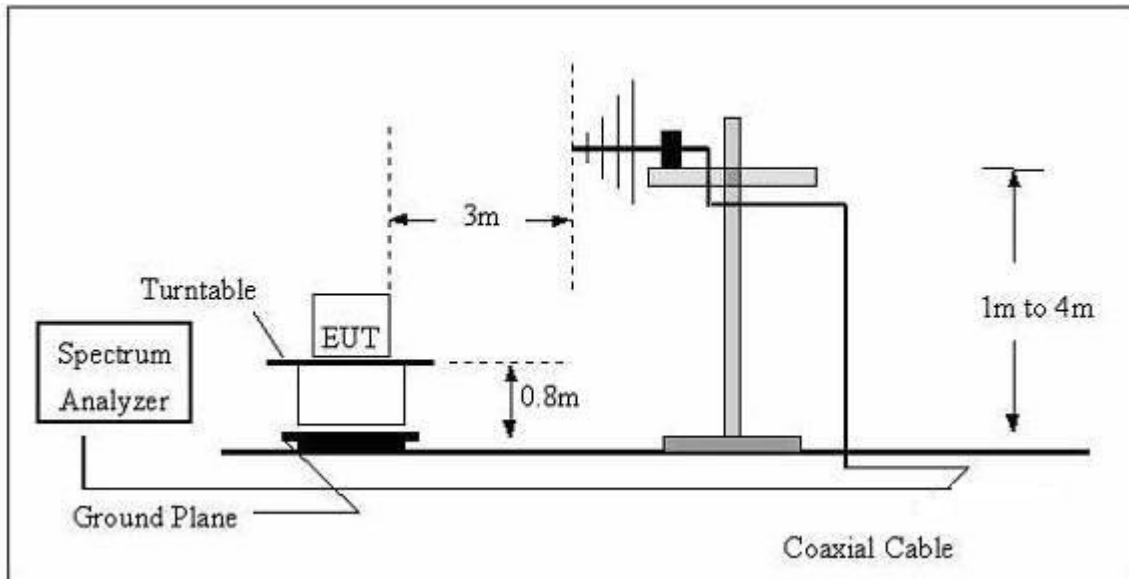
- (1) The limit for radiated test was performed according to as following:
FCC PART 15B /ICES-003.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

3.2.2 TEST PROCEDURE

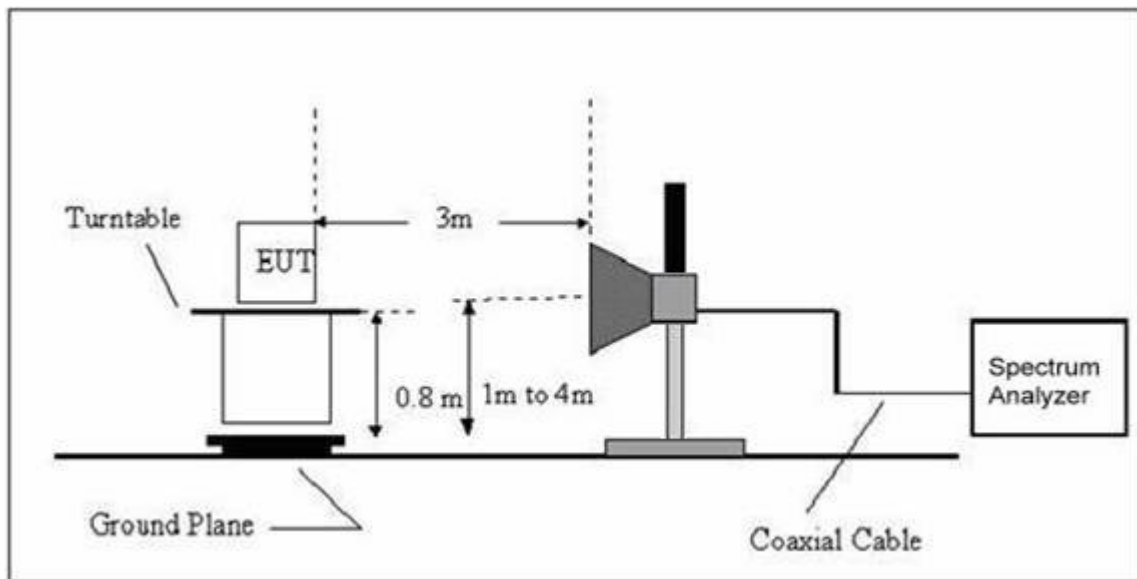
- a. The measuring distance of at 10 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured, above 1G Average detector mode will be instead.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP(AV) Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.2.3 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1GHz



3.2.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

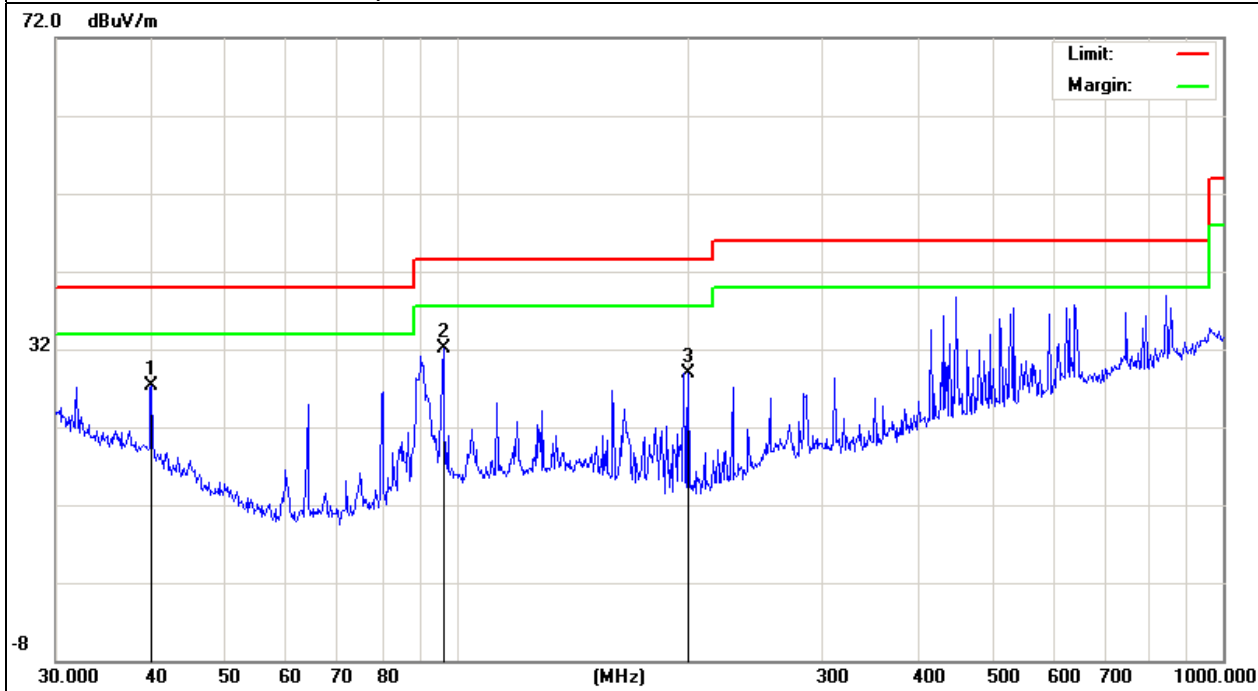
3.2.5 TEST RESULTS

EUT :	Non-Wifi Touch Screen	Model Name :	FT15TM
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2014-9-5
Test Mode :	VGA, 1920*1200,60Hz	Polarization :	Horizontal
Test Power :	DC 12V from adapter AC 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
39.9942	13.89	13.35	27.24	40	-12.76	QP
96.0986	22.12	10.03	32.15	43.5	-11.35	QP
200.6881	20.18	8.74	28.92	43.5	-14.58	QP

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Antenna Factor + Cable Loss.
3. N/A means All Data have pass Limit



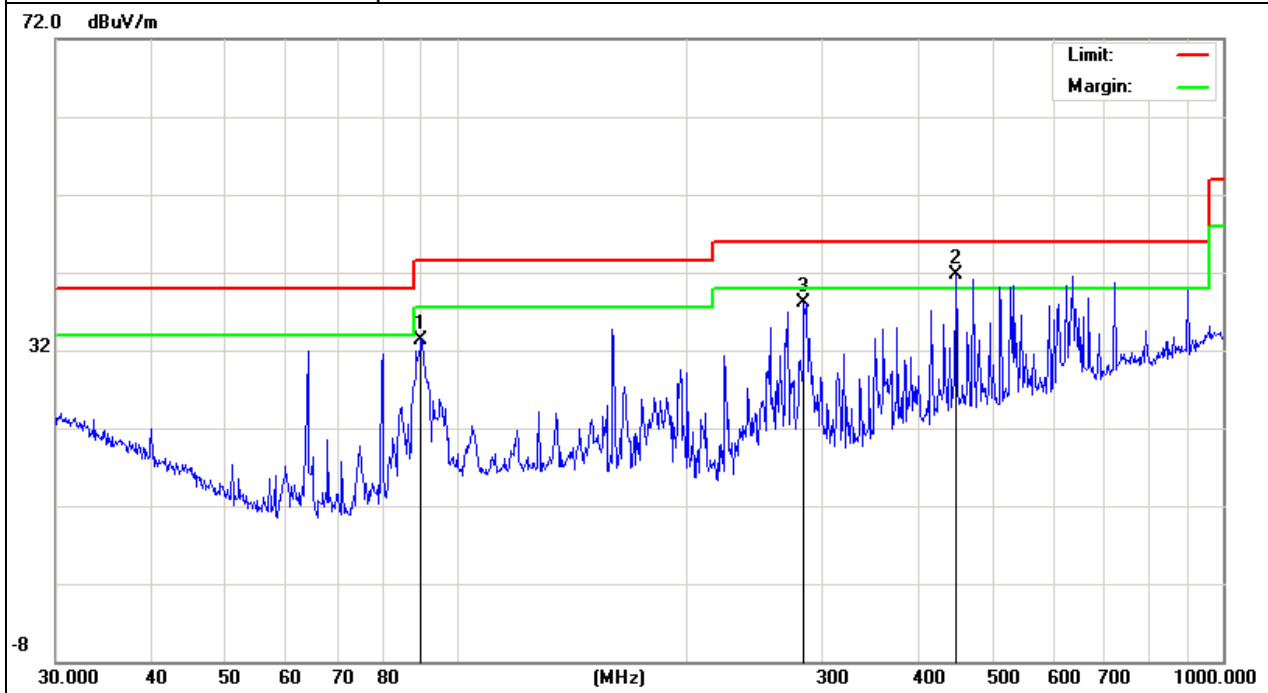


EUT :	Non-Wifi Touch Screen	Model Name :	FT15TM
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2014-9-5
Test Mode :	VGA, 1920*1200,60Hz	Polarization :	Vertical
Test Power :	DC 12V from adapter AC 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
89.9047	24.06	9.34	33.4	43.5	-10.1	QP
447.9821	23.57	18.2	41.77	46	-4.23	QP
283.9791	24.55	13.55	38.1	46	-7.9	QP

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Antenna Factor + Cable Loss.
3. N/A means All Data have pass Limit



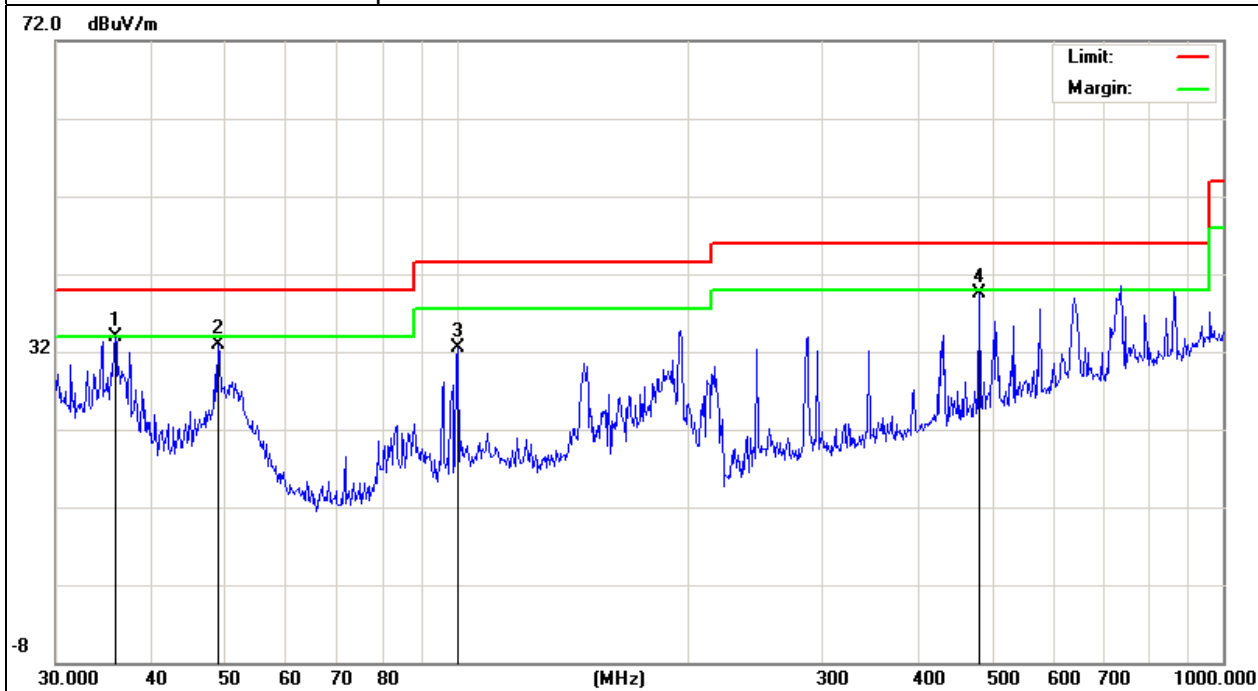


EUT :	Non-Wifi Touch Screen	Model Name :	FT15TM
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2014-9-5
Test Mode :	DVI, 1920*1200,60Hz	Polarization :	Horizontal
Test Power :	DC 12V from adapter AC 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
35.8746	18.75	15.25	34	40	-6	QP
48.8429	24.28	8.72	33	40	-7	QP
100.2286	21.83	10.67	32.5	43.5	-11	QP
480.5276	20.8	18.72	39.52	46	-6.48	QP

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Antenna Factor + Cable Loss.
3. N/A means All Data have pass Limit



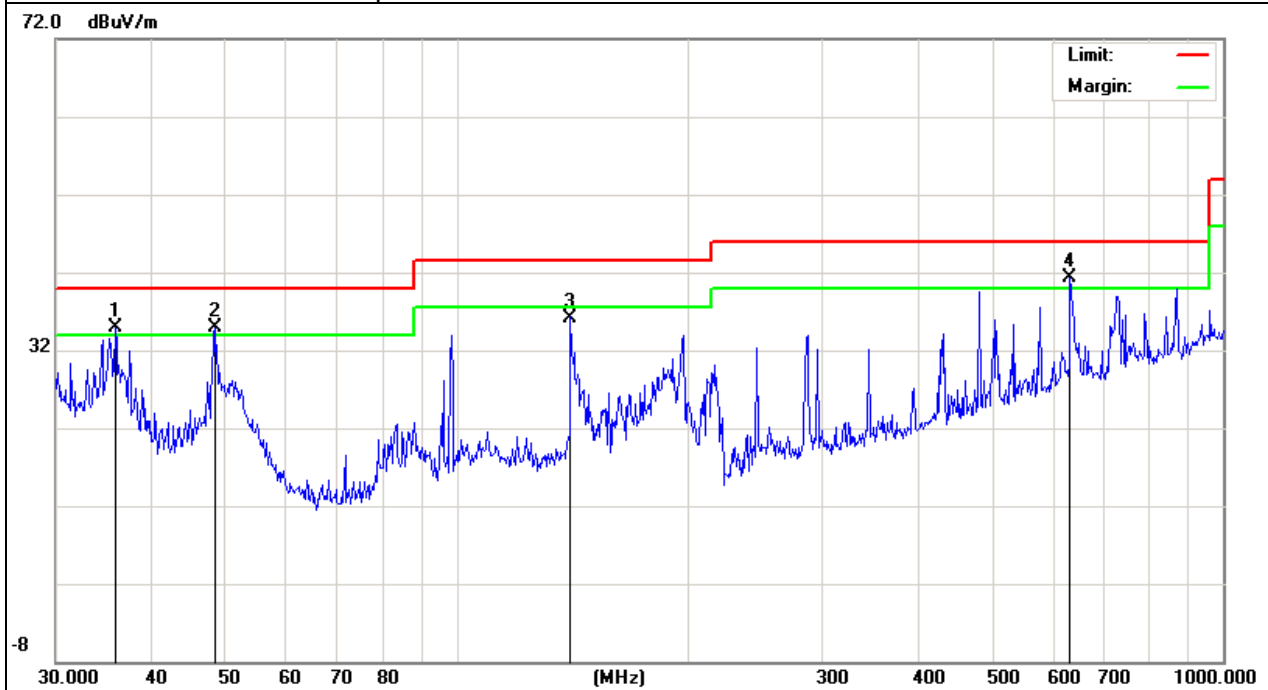


EUT :	Non-Wifi Touch Screen	Model Name :	FT15TM
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2014-9-5
Test Mode :	DVI, 1920*1200,60Hz	Polarization :	Vertical
Test Power :	DC 12V from adapter AC 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
35.8746	19.56	15.25	34.81	40	-5.19	QP
48.3318	26.04	8.96	35	40	-5	QP
140.8351	24.27	11.93	36.2	43.5	-7.3	QP
631.6884	19.48	21.92	41.4	46	-4.6	QP

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Antenna Factor + Cable Loss.
3. N/A means All Data have pass Limit





3.2.6 TEST RESULTS(Above 1GHz)

EUT :	Non-Wifi Touch Screen	Model Name :	FT15TM
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2014-9-5
Test Mode :	VGA, 1920*1200,60Hz		
Test Power :	DC 12V from adapter AC 120V/60Hz		

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	50	--	P
--	--	50	--	P

NOTE:

The amplitude of spurious emissions Test perform up to 3GHz which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance}/\text{test distance})$ (dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.

4. EUT TEST PHOTO

Radiated Measurement Photos



Conducted Measurement Photos

