



A D T

Test Report No.: FV160817W003



EMC TEST REPORT

Applicant:	Lenovo(Shanghai) Electronics Technology Co., Ltd.
Address:	NO.68 BUILDING, 199 FENJU RD, China (Shanghai) Pilot Free Trade Zone, 200131, CHINA

Manufacturer or Supplier	Lenovo PC HK Limited
Address	23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong
Product	Portable Tablet Computer
Brand Name	Lenovo
Model Name	Lenovo YB-Q501F
FCC ID	O57YBQ501F
Date of tests	Aug. 18, 2016 ~ Sep. 07, 2016

The submitted sample of the above equipment has been tested for according to the requirements of the following standards:

- ☒ FCC Part 15, Subpart B, Class B
- ☒ ANSI C63.4:2014

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Issued by Eric Shi Engineer / Mobile Department	Approved by Bill Yao Manager / Mobile Department
	
	Date: Sep. 08, 2016

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Test Report No.: FV160817W003

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FV160817W003	Original release	Sep. 08, 2016

1 GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Portable Tablet Computer	
MODEL NAME	Lenovo YB-Q501F	
NOMINAL VOLTAGE	5.2Vdc (adapter or host equipment) 3.8Vdc (Li-ion, battery)	
MODULATION TYPE	WLAN	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
	Bluetooth	GFSK, $\pi/4$ -DQPSK, 8DPSK
	GPS/Glonass	C/A code
OPERATING FREQUENCY	WLAN	2412 ~ 2462MHz for 11b/g/n(HT20)
	Bluetooth	2402MHz ~ 2480MHz
	GPS	1575.42MHz
	Glonass	1602MHZ
HW Version	T2000A_MB_PCB_V3.0_HF	
SW Version	YB-Q501F_USR_S000007_201608060429_WW12_ROW	
I/O PORTS	Refer to user's manual	
CABLE	USB cable: non-shielded, detachable, 1.2meter	
ACCESSORY DEVICES	Refer to note as below	

NOTE:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- There were Sample A, B, C and D for this project, the difference is as below:

SAMPLE	EUT CONFIGURATION INFORMATION
A	LCD 1+ Battery 1+(Emmc1+DDR1) (32+2G) +speaker 1+motor1+PCB1+ Camera 1
B	LCD 1+ Battery 1+(Emmc2+DDR1) (32+2G) +speaker 1+motor1+PCB2+ Camera 2
C	LCD 1+ Battery 1+(Emmc3+DDR2) (64+4G)+speaker 1+motor1+PCB1+ Camera 1
D	LCD 1+ Battery 1+(Emmc4+DDR3) (64+4G)+speaker 1+motor1+PCB2+ Camera 2

- For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.



LIST OF ACCESSORIES:

ACCESSORIES	BRAND	MODEL	SPECIFICATION
AC Adapter 1	Acbel	SC-12	I/P:100-240Vac, 600mA O/P: 5.2Vdc, 2000mA 7Vdc, 2000mA 9Vdc, 2000mA 12Vdc, 2000mA
Battery 1	Sunwoda	Yogi A0	Rating: 3.8Vdc, 10500mAh
USB Cable 1	FUKANGYUAN	F45B-242000100	1.0m non-shielded cable w/o core
USB Cable 2	LIQI	L45B-242000100	1.0m non-shielded cable w/o core
LCD Panel1	BOE	TV122WXM-AL0	12.2"
Emmc 1	Samsung	KLMBG4WEBD-B031	32G
Emmc 2	Toshiba	THGBMFG8C2LBAIL	32G
Emmc 3	Samsung	KLMCG4JENB-B041	64G
Emmc 4	Toshiba	THGBMFG9C4LBAIR	64G
DDR1	Samsung	K3QF1F10EM-AGCE	2G
DDR2	Micron	MT52L256M64D2PP-107WT	4G
DDR3	Samsung	K3QF2F20EM-AGCE	4G
Speaker 1	HAOSHENG	XHB171215B08-08-B-RH	-
Speaker 2	KEYSOUND	QM171219AW06	-
motor1	AWA	LZ-C024	
Photo Camera 1	Chicony	CNFEH7221005802LH	1M
Photo Camera 2	Guangdong Lite Array Co.,Ltd	GNCH160076R	1M
CPU	Intel	Z8550	1380PIN
Main Broad 1	RED BOARD LTD	H103C	-
Main Broad 2	SHENZHEN WUZHU TECH CO LTD	WH-1	-
BT/WLAN Module	BROADCOM	BCM43438KUBG	-



1.2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart B				
Standard Section	Test Item	Result	Remark	Test Lab*
FCC Part 15, Subpart B, Class B ANSI C63.4:2014	Conducted Test	PASS	Meets limits minimum passing margin is 13.16dB at 2.084000MHz.	A
	Radiated Emission Test (30MHz ~ 1GHz)	PASS	Meets Class B Limit Minimum passing margin is -4.26dB at 225.94MHz	B
	Radiated Emission Test (Above 1GHz)	PASS	Meets Class B Limit Minimum passing margin is -13.22dB at 5850MHz	A

*Test Lab Information Reference

Lab A:

Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

Lab Address:

No. 19, Hwa Ya 2nd Rd., Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

Lab B:

Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch.

Lab Address:

No. 34, Guantai Rd., Houjie Town, Dongguan, Guangdong 523942, China



1.3 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	150kHz ~ 30MHz	+/-2.66dB
Radiated emissions	30MHz ~ 1GHz	+/-4.06dB
	1GHz ~ 18GHz	+/-4.58dB



1.4 DESCRIPTION OF TEST MODES

Sample	Test Mode	Test Condition
Radiated emission test		
A	1	Adapter+ Earphone+ USB cable+ BT Idle+ WIFI Idle(2.4G)+ Glonass Rx
A	2	Adapter+ Earphone+ USB cable+ BT Idle + WIFI Idle(2.4G)+ GPS Rx+ Camera on+ SD Card(DATA Link)
A	3	Adapter+ Earphone+ USB cable+ BT Idle + WIFI Idle(2.4G)+ Type-C Connect HDMI+ Type-C Connect U Disk (DATA Link) + Glonass Rx+ Mpeg4 + SD Card(DATA Link)
B	4	Adapter+ Earphone+ USB cable+ BT Idle + WIFI Idle(2.4G)+ Type-C Connect HDMI+ Type-C Connect U Disk (DATA Link) + GPS Rx+ Mpeg4 + SD Card(DATA Link)
C	5	Adapter+ Earphone+ USB cable+ BT Idle + WIFI Idle(2.4G)+ Type-C Connect HDMI+ Type-C Connect U Disk (DATA Link) + Glonass Rx+ Mpeg4 + SD Card(DATA Link)
D	6	Adapter+ Earphone+ USB cable+ BT Idle + WIFI Idle(2.4G)+ Type-C Connect HDMI+ Type-C Connect U Disk (DATA Link) + GPS Rx+ Mpeg4 + SD Card(DATA Link)
Conducted emission test		
A	1	Adapter+ Earphone+ USB cable+ BT Idle+ WIFI Idle(2.4G)+ Glonass Rx
A	2	Adapter+ Earphone+ USB cable+ BT Idle + WIFI Idle(2.4G)+ GPS Rx+ Camera on+ SD Card(DATA Link)
A	3	Adapter+ Earphone+ USB cable+ BT Idle + WIFI Idle(2.4G)+ Type-C Connect HDMI+ Type-C Connect U Disk (DATA Link) + Glonass Rx+ Mpeg4 + SD Card(DATA Link)
B	4	Adapter+ Earphone+ USB cable+ BT Idle + WIFI Idle(2.4G)+ Type-C Connect HDMI+ Type-C Connect U Disk (DATA Link) + GPS Rx+ Mpeg4 + SD Card(DATA Link)
C	5	Adapter+ Earphone+ USB cable+ BT Idle + WIFI Idle(2.4G)+ Type-C Connect HDMI+ Type-C Connect U Disk (DATA Link) + Glonass Rx+ Mpeg4 + SD Card(DATA Link)
D	6	Adapter+ Earphone+ USB cable+ BT Idle + WIFI Idle(2.4G)+ Type-C Connect HDMI+ Type-C Connect U Disk (DATA Link) + GPS Rx+ Mpeg4 + SD Card(DATA Link)

NOTE:

1. For conducted emission test, test mode 2 was the worst case and only this mode was presented in this report.
2. For radiated emission test, test mode 3 was the worst case and only this mode was presented in this report.



1.5 DESCRIPTION OF SUPPORT UNITS

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.

FOR EMISSION TESTS

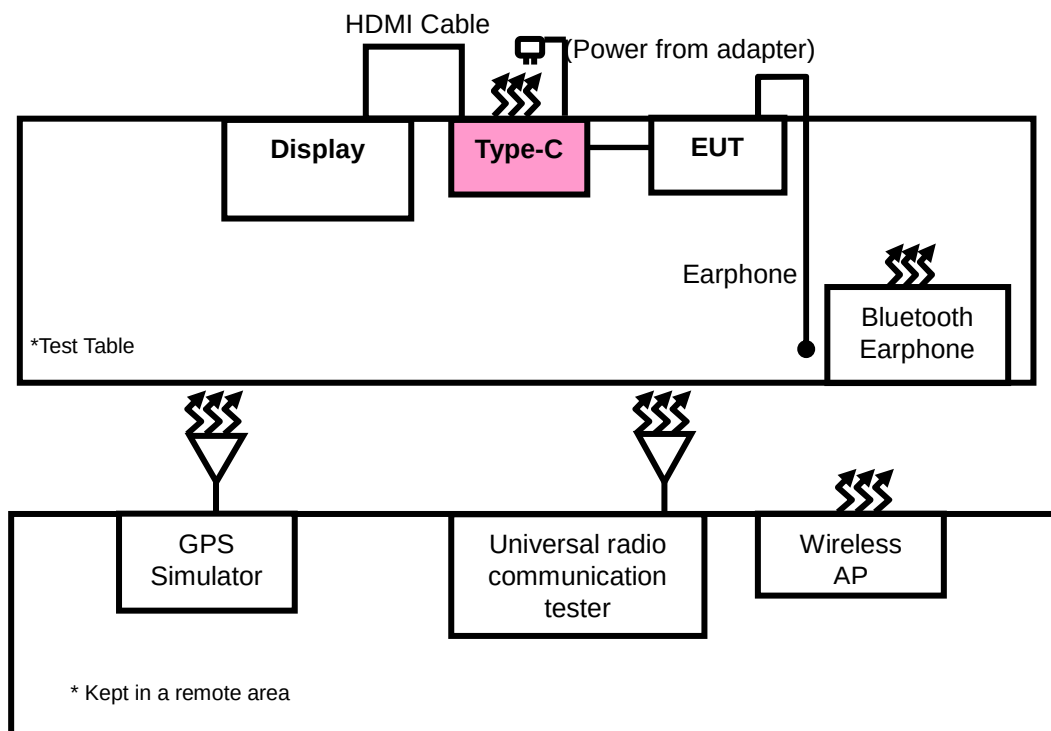
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Bluetooth Earphone	FAP00	H6080	12098	N/A
2	Display	DELL	U2410	N/A	N/A
3	Earphone	Lenovo	P-320	N/A	N/A
4	TYPE-C	JIESHUNTONG	3.2.01.0253	N/A	N/A
5	HDMI cable	N/A	N/A	N/A	N/A
6	Router	TP-Link	TL-WDR5600	N/A	N/A
7	CMW500	Rohde&Schwarz	CMW500	153084	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	N/A
2	N/A
3	Earphone Line: Unshielded, Detachable, 1.2m
4	N/A
5	1.5m
6	N/A
7	N/A

NOTE:

- Items 1, 5 acted as communication partners to transfer data.

1.6 CONFIGURATION OF SYSTEM UNDER TEST





2 EMISSION TEST

2.1 CONDUCTED EMISSION MEASUREMENT

2.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

TEST STANDARD: FCC Part 15, Subpart B (Section: 15.107)

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

- NOTE:** 1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

2.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR7	101588	Jan. 22,16	Jan. 21,17
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	Mar. 04,16	Mar. 03,17
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	Apr. 05,16	Apr. 04,17
Voltage probe	SCHWARZBECK	TK 9421	TK 9421-176	Jan. 08,16	Jan. 07,17
Test software	ADT	ADT_Cond_V7.3.7	N/A	N/A	N/A

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
 2. The test was performed in Dongguan shielding room 553.
 3. The FCC Site Registration No. is 477732.
 4. The IC Site Registration No. is IC 7450F-1.
 5. The VCCI Site Registration No. is R-1893.



2.1.3 TEST PROCEDURES

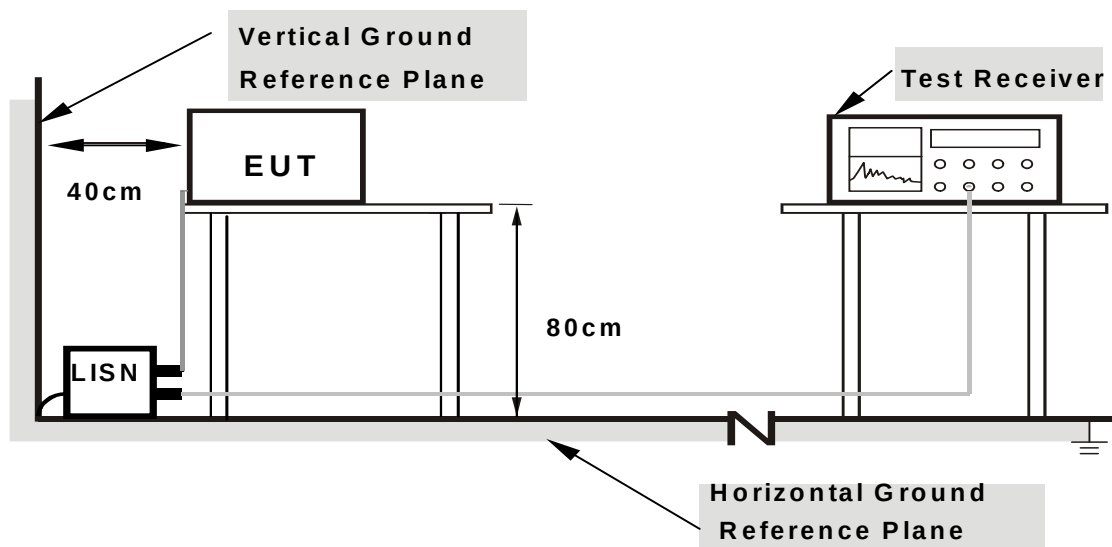
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150 kHz to 30MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

2.1.4 DEVIATION FROM TEST STANDARD

No deviation.

2.1.5 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

For the actual test configuration, please refer to the attached file (Test Setup Photo).

2.1.6 EUT OPERATING CONDITIONS

- a. Turned on the power and connected of all equipment.
- b. EUT was operated according to the use type described in the manufacturer's specifications or the user's manual.



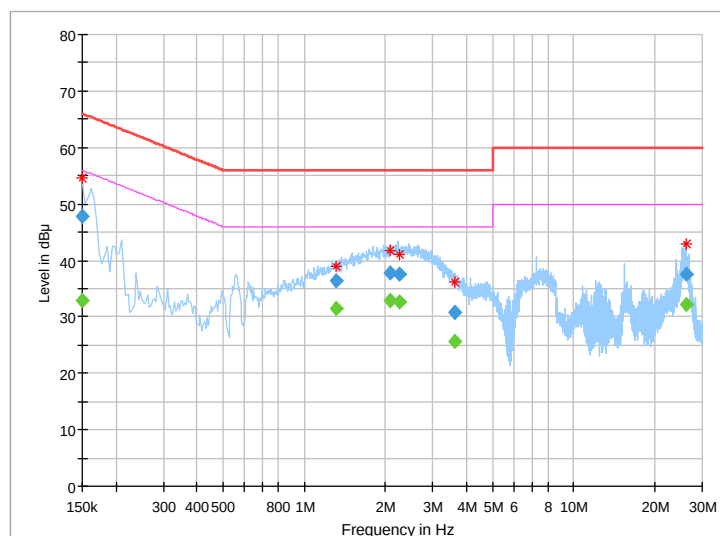
2.1.7 TEST RESULTS

TEST VOLTAGE	Input 230 Vac, 50 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	24deg. C, 55RH	TESTED BY	Eric

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.150000	---	32.87	56.00	23.13	L1	ON	9.6
0.150000	47.87	---	66.00	18.13	L1	ON	9.6
1.318000	---	31.46	46.00	14.54	L1	ON	9.7
1.318000	36.38	---	56.00	19.62	L1	ON	9.7
2.084000	---	32.84	46.00	13.16	L1	ON	9.7
2.084000	37.78	---	56.00	18.22	L1	ON	9.7
2.268000	---	32.57	46.00	13.43	L1	ON	9.7
2.268000	37.54	---	56.00	18.46	L1	ON	9.7
3.616000	---	25.55	46.00	20.45	L1	ON	9.7
3.616000	30.69	---	56.00	25.31	L1	ON	9.7
26.120000	---	32.20	50.00	17.80	L1	ON	10.1
26.120000	37.62	---	60.00	22.38	L1	ON	10.1

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.

Full Spectrum





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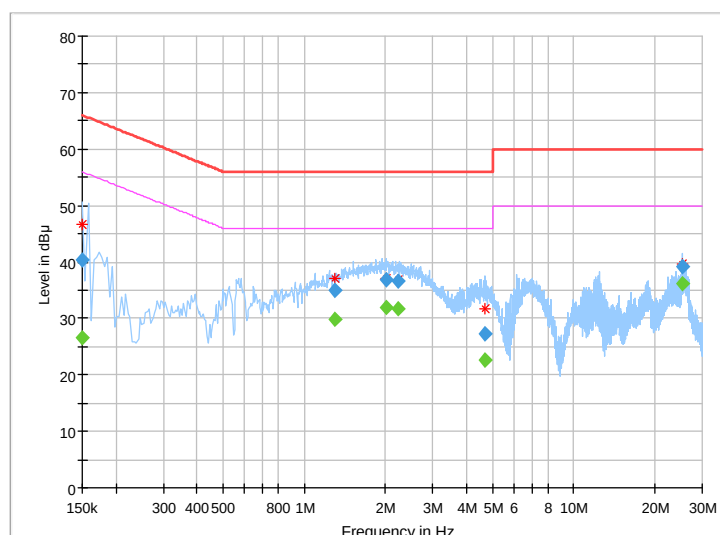
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TEST VOLTAGE	Input 230 Vac, 50 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	24deg. C, 55RH	TESTED BY	Eric

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.150000	---	26.63	56.00	29.37	N	ON	9.8
0.150000	40.45	---	66.00	25.55	N	ON	9.8
1.300000	---	29.88	46.00	16.12	N	ON	9.9
1.300000	35.04	---	56.00	20.96	N	ON	9.9
2.018000	---	31.89	46.00	14.11	N	ON	9.8
2.018000	36.79	---	56.00	19.21	N	ON	9.8
2.232000	---	31.68	46.00	14.32	N	ON	9.8
2.232000	36.64	---	56.00	19.36	N	ON	9.8
4.684000	---	22.55	46.00	23.45	N	ON	9.8
4.684000	27.28	---	56.00	28.72	N	ON	9.8
25.372000	---	36.14	50.00	13.86	N	ON	10.2
25.372000	39.23	---	60.00	20.77	N	ON	10.2

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.

Full Spectrum





2.2 RADIATED EMISSION MEASUREMENT

2.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

TEST STANDARD: FCC Part 15, Subpart B (Section: 15.109)

Emissions radiated outside of the specified bands, shall be according to the general radiated limits as following:

Radiated Emissions Limits at 10 meters (dBμV/m)				
Frequencies (MHz)	FCC 15B/ ICES-003, Class A	FCC 15B / ICES-003, Class B	CISPR 22, Class A	CISPR 22, Class B
30-88	39	29.5	40	30
88-216	43.5	33.1		
216-230	46.4	35.6		
230-960				
960-1000	49.5	43.5	47	37
1000-3000	Avg: 49.5	Avg: 43.5	Not defined	Not defined
3000+	Peak: 69.5	Peak: 63.5	Not defined	Not defined

Radiated Emissions Limits at 3 meters (dBμV/m)				
Frequencies (MHz)	FCC 15B / ICES-003, Class A	FCC 15B / ICES-003, Class B	CISPR 22, Class A	CISPR 22, Class B
30-88	49.5	40	50.5	40.5
88-216	54	43.5		
216-230	56.9	46		
230-960				
960-1000	60	54	57.5	47.5
1000-3000	Avg: 60 Peak: 80	Avg: 54 Peak: 74	Avg: 56 Peak: 76	Avg: 50 Peak: 70
3000+			Avg: 60 Peak: 80	Avg: 54 Peak: 74

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
 2. Emission level (dB μ V/m) = 20 log Emission level (uV/m).
 3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.
 4. QP detector shall be applied if not specified.



2.2.2 TEST INSTRUMENTS

Frequency range below 1GHz

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCI	100962	Mar. 04,16	Mar. 03,17
EMI Test Receiver	Rohde&Schwarz	ESCI	101418	Mar. 04,16	Mar. 03,17
Trilog-Broadband Antenna	SCHWARZBECK	VULB 9168	9168-554	Nov. 20, 15	Nov. 19, 16
Trilog-Broadband Antenna	SCHWARZBECK	VULB 9168	9168-555	Dec. 30, 15	Dec. 29, 16
Signal Amplifier	Agilent	8447D	2944A10488	Jun. 25,16	Jun. 24,17
Signal Amplifier	Agilent	8447D	2944A11174	Jun. 25,16	Jun. 24,17
10m Semi-anechoic Chamber	CHANGLING	21.4m*12.1m*8.8m	NSEMC006	Mar. 12,16	Mar. 11,18
Test Software	ADT	ADT_Radiated_V8.7.x	N/A	N/A	N/A

Frequency range above 1GHz

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Horn Antenna	ETS-Lindgren	3117	00062558	May 30,16	May 29,18
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170242	Mar. 12,16	Mar. 11,17
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Apr. 05,16	Apr. 04,17
Broadband Preamplifier	SCHWARZBECK	BBV9718	305	Mar. 09,16	Mar. 08,17
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 11,15	Nov. 10,16
Test Software	ADT	ADT_Radiated_V 7.6.15.9.2	N/A	N/A	N/A

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Chamber 1.
 3. The FCC Site Registration No. is 477732.
 4. The IC Site Registration No. is IC 7450F-1.
 5. The VCCI Site Registration No. is R-1893.

2.2.3 TEST PROCEDURE

The basic test procedure was in accordance with ANSI C63.4:2014 (section 12).

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 10 meters Semi-anechoic chamber and 3m Fully-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 10 meters (below 1GHz) and 3 meters (above 1GHz) away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. The bore sight should be used during the test above 1GHz.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test receiver/spectrum was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.

NOTE:

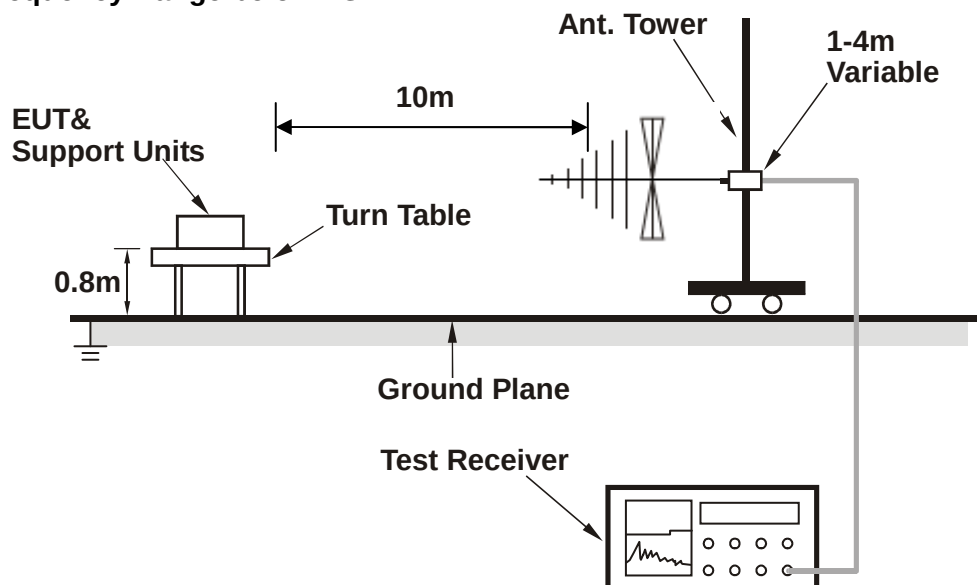
1. The resolution bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth is 1MHz and video bandwidth of test receiver/spectrum analyzer is 3MHz for Peak detection at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth of test receiver/spectrum analyzer is 1Hz for Average detection (AV) at frequency above 1GHz.
3. For measurement of frequency above 1000 MHz, the EUT was set 3 meters away from the receiver antenna.
4. $\text{Emission level(dBuV/m)} = \text{Raw Value(dBuV)} + \text{Correction Factor(dB/m)}$
5. $\text{Correction Factor(dB/m)} = \text{Antenna Factor (dB/m)} + \text{Cable Factor (dB)}$ (if the raw value not contains the amplifier);
6. $\text{Correction Factor(dB/m)} = \text{Antenna Factor (dB/m)} + \text{Cable Factor (dB)} - \text{Amplifier Gain(dB)}$ (if the raw value contains the amplifier).
7. $\text{Margin value} = \text{Emission level} - \text{Limit value}$.

2.2.4 DEVIATION FROM TEST STANDARD

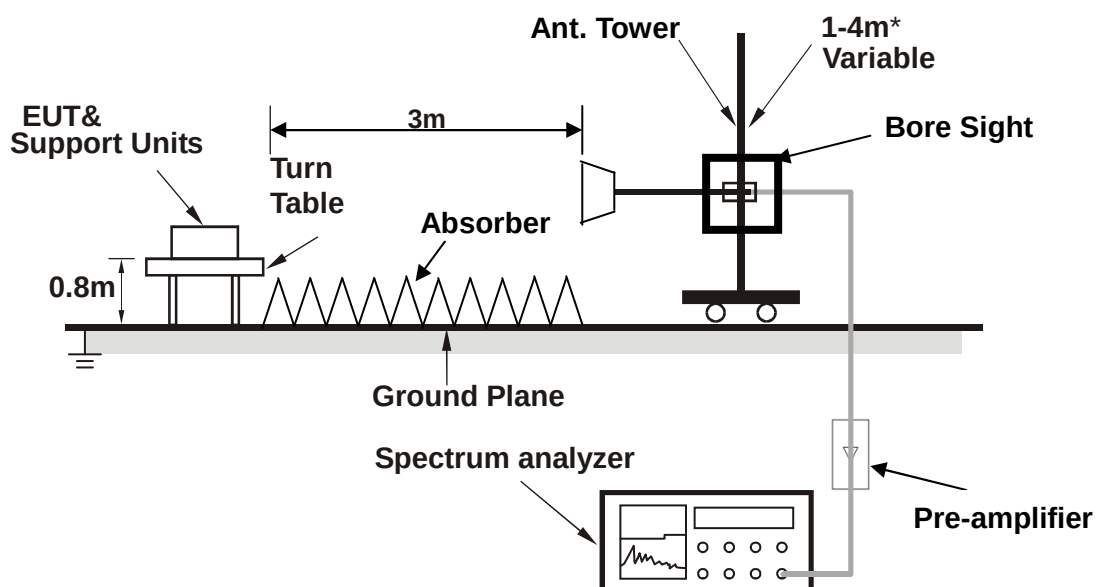
No deviation.

2.2.5 TEST SETUP

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



* : depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

2.2.6 EUT OPERATING CONDITIONS

Same as item 2.1.6.



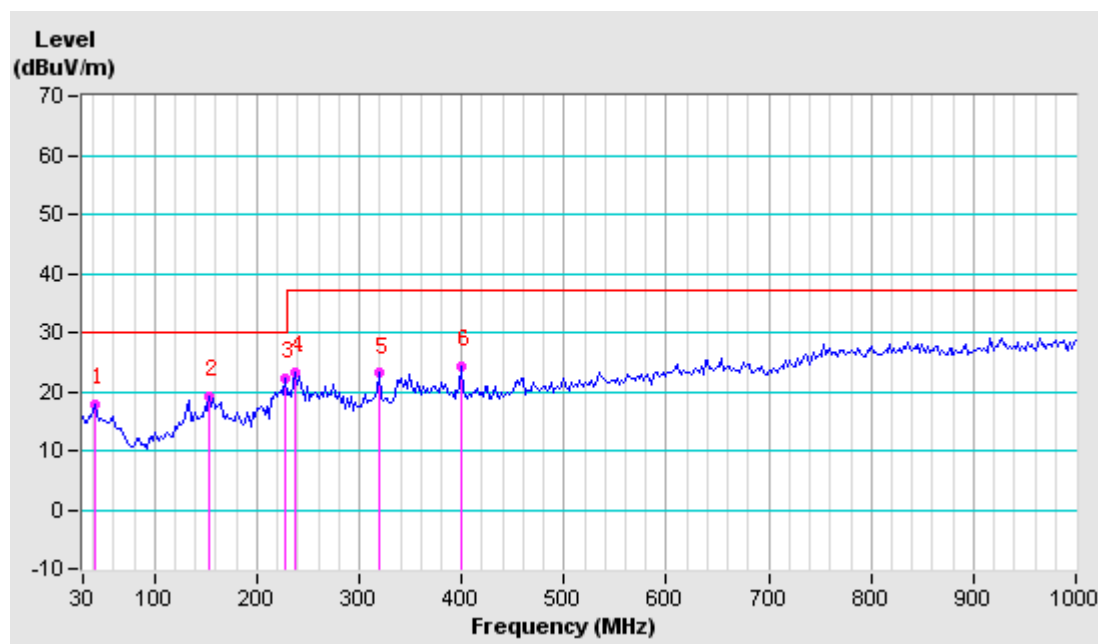
2.2.7 TEST RESULTS

Below 1GHz worst case data

TEST VOLTAGE	Input 230 Vac, 50 Hz	FREQUENCY RANGE	30-1000 MHz
ENVIRONMENTAL CONDITIONS	26deg. C, 61 %RH	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak , 120 kHz
TESTED BY	Wang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 10 M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	41.64	-9.04	26.81	17.77	30.00	-12.23	400	28
2	154.16	-8.59	27.69	19.1	30.00	-10.9	400	62
3	227.88	-10.42	32.55	22.13	30.00	-7.87	400	27
4	237.58	-8.92	32.17	23.25	37.00	-13.75	400	110
5	319.06	-6.88	29.97	23.09	37.00	-13.91	400	62
6	400.54	-5.06	29.43	24.37	37.00	-12.63	400	40

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.





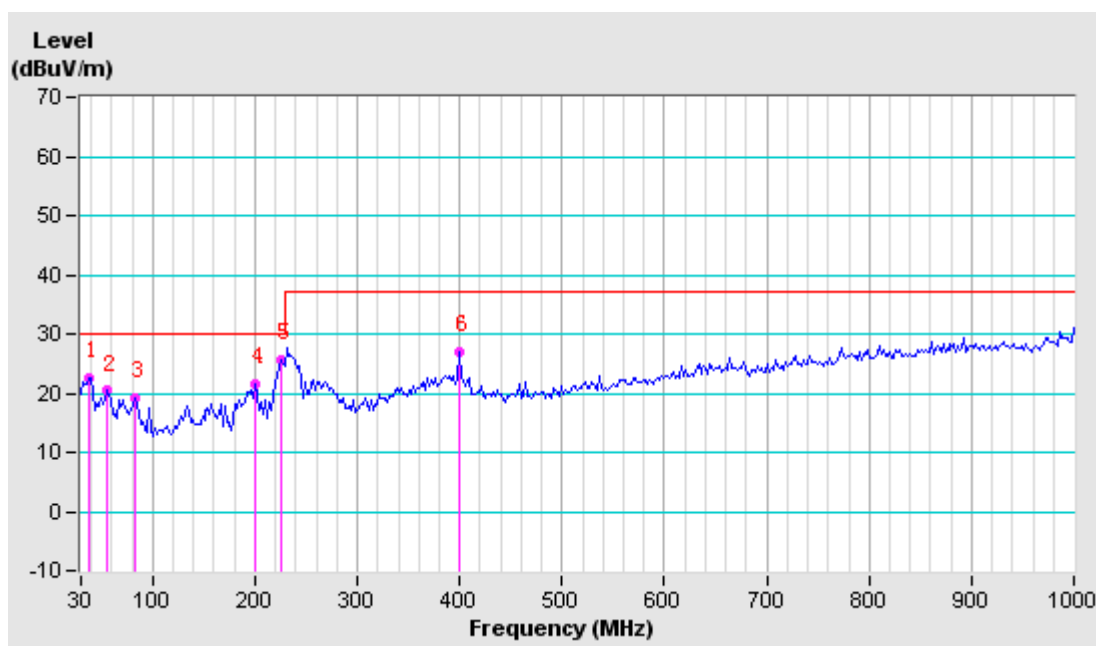
Test Report No.: FV160817W003

A D T

TEST VOLTAGE	Input 230 Vac, 50 Hz	FREQUENCY RANGE	30-1000 MHz
ENVIRONMENTAL CONDITIONS	22deg. C, 57% RH	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak , 120 kHz
TESTED BY	Wang		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 10 M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	37.76	-9.50	32.19	22.69	30.00	-7.31	100	171
2	55.22	-9.12	29.54	20.42	30.00	-9.58	100	337
3	82.38	-13.34	32.55	19.21	30.00	-10.79	100	69
4	200.72	-11.19	32.79	21.60	30.00	-8.40	100	351
5	225.94	-10.25	35.99	25.74	30.00	-4.26	100	128
6	400.54	-4.55	31.59	27.04	37.00	-9.96	100	323

- REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.



Note: Radiated Emission below 1GHz Test was performed in **Lab B**.

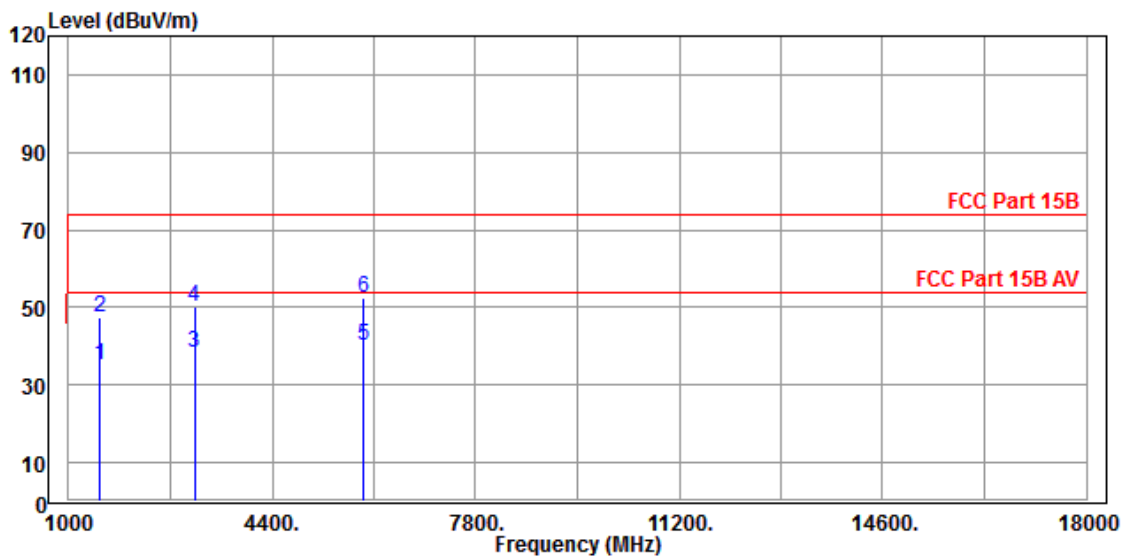


Above 1GHz worst case data

TEST VOLTAGE	Input 230 Vac, 50 Hz	FREQUENCY RANGE	1-18 GHz
ENVIRONMENTAL CONDITIONS	22deg. C, 57% RH	DETECTOR FUNCTION & BANDWIDTH	Peak/Average, 1 MHz
TESTED BY	Alex Chen		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
1520	34.98	48.14	54.00	-19.02	28.83	6.37	48.36	100	25	Average
1520	47.68	60.84	74.00	-26.32	28.83	6.37	48.36	100	25	Peak
3100	38.38	44.45	54.00	-15.62	32.92	9.36	48.35	100	80	Average
3100	50.25	56.32	74.00	-23.75	32.92	9.36	48.35	100	80	Peak
5925	40.23	36.50	54.00	-13.77	35.41	17.48	49.16	100	156	Average
5925	52.36	48.63	74.00	-21.64	35.41	17.48	49.16	100	156	Peak

- REMARKS:**
1. Peak detector quick scan is showed on the graph and final quasi-peak detector data is measured corresponding to relevant limit and recorded in the data table.
 2. Negative sign (-) in the margin column signify levels below the limit.
 3. Frequency range scanned: 1GHz to 18GHz.
 4. Only emissions significantly above equipment noise floor are reported.





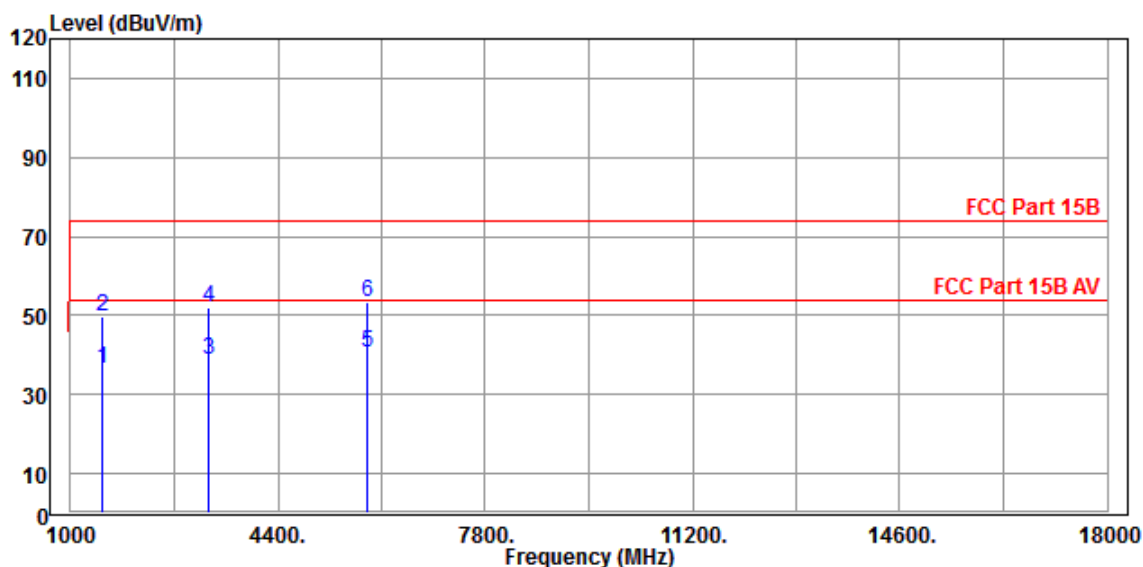
Test Report No.: FV160817W003

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TEST VOLTAGE	Input 230 Vac, 50 Hz	FREQUENCY RANGE	1-18 GHz
ENVIRONMENTAL CONDITIONS	22deg. C, 57% RH	DETECTOR FUNCTION & BANDWIDTH	Peak/Average, 1 MHz
TESTED BY	Alex Chen		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
1520	36.58	49.74	54.00	-17.42	28.83	6.37	48.36	100	36	Average
1520	49.58	62.74	74.00	-24.42	28.83	6.37	48.36	100	36	Peak
3250	38.65	44.49	54.00	-15.35	32.95	9.58	48.37	100	98	Average
3250	52.24	58.08	74.00	-21.76	32.95	9.58	48.37	100	98	Peak
5850	40.78	37.62	54.00	-13.22	35.32	16.99	49.15	100	182	Average
5850	53.24	50.08	74.00	-20.76	35.32	16.99	49.15	100	182	Peak

- REMARKS:**
1. Peak detector quick scan is showed on the graph and final quasi-peak detector data is measured corresponding to relevant limit and recorded in the data table.
 2. Negative sign (-) in the margin column signify levels below the limit.
 3. Frequency range scanned: 1GHz to 18GHz.
 4. Only emissions significantly above equipment noise floor are reported.





Test Report No.: FV160817W003

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3 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications were made to the EUT by the lab during the test.

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