

## Variant FCC Certification Test Report

**Report No.:** FC180528C19B

**Test Model:** Lenovo TB-X705F

**FCC ID:** O57TBX705F

**Received Date:** Sep. 03, 2018

**Test Date:** Sep. 04, 2018

**Issued Date:** Sep. 11, 2018

**Applicant:** Lenovo(Shanghai) Electronics Technology Co., Ltd.

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**Manufacturer:** Lenovo PC HK Limited

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**FCC Registration / Designation Number:** 328930 / TW1050



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## Table of Contents

<b>Release Control Record .....</b>	<b>3</b>
<b>1 Certificate of Conformity .....</b>	<b>4</b>
<b>2 Summary of Test Results .....</b>	<b>5</b>
2.1 Measurement Uncertainty .....	5
2.2 Modification Record .....	5
<b>3 General Information.....</b>	<b>6</b>
3.1 Features of EUT .....	6
3.2 General Description of EUT.....	6
3.3 Construction of EUT .....	7
3.4 Operating Modes of EUT and Determination of Worst Case Operating Mode .....	8
3.5 Test Program Used and Operation Descriptions.....	8
3.6 Primary Clock Frequencies of Internal Source .....	8
<b>4 Configuration and Connections with EUT .....</b>	<b>9</b>
4.1 Connection Diagram of EUT and Peripheral Devices .....	9
4.2 Configuration of Peripheral Devices and Cable Connections .....	9
<b>5 Radiated Emissions up to 1 GHz .....</b>	<b>10</b>
5.1 Limits.....	10
5.2 Test Instruments .....	11
5.3 Test Arrangement .....	12
5.4 Test Results .....	13
<b>6 Radiated Emissions above 1 GHz.....</b>	<b>15</b>
6.1 Limits.....	15
6.2 Test Instruments .....	16
6.3 Test Arrangement .....	17
6.4 Test Results .....	18
<b>7 Pictures of Test Arrangements .....</b>	<b>22</b>
<b>Appendix – Information on the Testing Laboratories .....</b>	<b>23</b>

### Release Control Record

Issue No.	Description	Date Issued
FC180528C19B	Original Release	Sep. 11, 2018

## 1 Certificate of Conformity

**Product:** Portable Tablet Computer  
**Brand:** Lenovo  
**Test Model:** Lenovo TB-X705F  
**Sample Status:** Production Unit  
**Applicant:** Lenovo(Shanghai) Electronics Technology Co., Ltd.  
**Test Date:** Sep. 04, 2018  
**Standards:** 47 CFR FCC Part 15, Subpart B, Class B  
ANSI C63.4:2014

This report is issued as a supplementary report to BV CPS report no.: FC180528C19. This report shall be used by combining with its original report.

**Prepared by :** Rona Chen , **Date:** Sep. 11, 2018  
Rona Chen / Specialist

**Approved by :** Carl Chen , **Date:** Sep. 11, 2018  
Carl Chen / Project Engineer

## 2 Summary of Test Results

47 CFR FCC Part 15, Subpart B, Class B

ANSI C63.4:2014

FCC Clause	Test Item	Result/Remarks	Verdict
15.107	AC Power Line Conducted Emissions	Refer to Note	N/A
15.109	Radiated Emissions up to 1 GHz	Minimum passing Class B margin is -5.67 dB at 41.79 MHz	Pass
	Radiated Emissions above 1 GHz	Minimum passing Class B margin is -17.49 dB at 24152.21 MHz	Pass

Note:

1. N/A: Not Applicable
2. Only Radiated Emission tests were performed for this addendum. Refer to original report for other data.
3. There is no deviation to the applied test methods and requirements covered by the scope of this report.

### 2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

The listed uncertainties are the worst case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

Measurement	Frequency	Expanded Uncertainty (k=2) ( $\pm$ )
Radiated Emissions up to 1 GHz	30 MHz ~ 1 GHz	4.70 dB
Radiated Emissions above 1 GHz	Above 1 GHz	2.26 dB

### 2.2 Modification Record

There were no modifications required for compliance.

### 3 General Information

#### 3.1 Features of EUT

The tests reported herein were performed according to the method specified by Lenovo(Shanghai) Electronics Technology Co., Ltd., for detailed feature description, please refer to the manufacturer's specifications or user's manual.

#### 3.2 General Description of EUT

Product	Portable Tablet Computer
Brand	Lenovo
Test Model	Lenovo TB-X705F
Status of EUT	Production Unit
Operating Software	Android 8.1.0
Power Supply Rating	3.85 Vdc (Battery) 5 Vdc (Adapter or host equipment)
Accessory Device	Refer to Note as below
Data Cable Supplied	Refer to Note as below

Note:

1. This report is issued as a supplementary report to BV CPS report no.: FC180528C19. The difference compared with original report is updating EUT from DVT2 sample to PVT sample. Therefore, only Radiated emission was verified on the worst case of original report and recorded in this report.
2. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter 1	Salom	SC-41	I/P: 100-240 Vac, 50/60 Hz, 0.3 A O/P: 5 Vdc, 2 A
Adapter 2	AcBel	SC-41	I/P: 100-240 Vac, 50/60 Hz, 0.3 A O/P: 5 Vdc, 2 A
Battery 1	SCUD	L16D2P31	3.85 Vdc, 7000 mAh
Battery 2	Celxpert	L16D2P31	3.85 Vdc, 7000 mAh
USB Cable 1 (White)	LiQi	LQ-02300039	1 m shielded cable w/o core
USB Cable 2 (Black)	LiQi	LQ-02300040	1 m shielded cable w/o core
LCD Panel 1	BOE	TV101WUM-LL0/TV101W UM-LL1	10.1 "
LCD Panel 2	INNOLUX	P101KZD-AF0/P101KZD-A F1	10.1 "
Photo Camera 1	O-film	L8856A00	8M AF
Photo Camera 2	Q-tech	F8856CB	8M AF
Photo Camera 3	Lcetron	LE5132FM	5M FF
Photo Camera 4	Holitech	MF80G	5M FF
CPU	Qualcomm	SDA-450-A-792NSP-TR-0 1-0-AA	792nsp

\* USB Cable 1 and USB Cable 2 is electrically identical, difference models are for color distinguished. Therefore, only USB Cable 1 is as a representative for final test.

Product	Brand	Model	Description
EMMC1 + DDR1	SAMSUNG	KMGD6001BM-B421 ( 3+32 )	32G
EMMC2 + DDR2	HYNIX	H9TQ26ADFTBCUR-KUM ( 3+32 )	32G
EMMC3 + DDR3	SAMSUNG	KMRH60014A-B614 ( 4+64 )	64G
EMMC4 + DDR4	HYNIX	H9TQ52ACLTMCUR-KUM ( 4+64 )	64G
Speaker	Keysound	QM171219AM48	--
Motor 1	AWA	YK2455R	--
Motor 2	Baolong	BLX-431320S	--
Main Board 1	huashen	W92ME1B3-3-03	--
Main Board 2	yilianda	W92ME1B3-3-05	--
BT/WLAN Module	Qualcomm	WCN-3680B-0-79BWLNS P	--

### 3.3 Construction of EUT

EUT has been pre-tested under following configurations.

Part	Brand	Model	Specification	Configuration			
				1	2	3	4
Battery 1	SCUD	L16D2P31	3.85 Vdc, 7000 mAh	V	V		
Battery 2	Celxpert	L16D2P31	3.85 Vdc, 7000 mAh			V	V
LCD Panel 1	BOE	TV101WUM-LL0/TV101WUM-LL1	10.1 "	V	V		
LCD Panel 2	INNOLUX	P101KZD-AF0/P101KZD-AF1	10.1 "			V	V
Photo Camera 1	O-film	L8856A00	8M AF	V	V		
Photo Camera 2	Q-tech	F8856CB	8M AF			V	V
Photo Camera 3	Lcetron	LE5132FM	5M FF	V	V		
Photo Camera 4	Holitech	MF80G	5M FF			V	V
CPU	Qualcomm	SDA-450-A-792NSP-TR-01-0-AA	792nsp	V	V	V	V
EMMC1 + DDR1	SAMSUNG	KMGD6001BM-B421 ( 3+32 )	32G	V			
EMMC2 + DDR2	HYNIX	H9TQ26ADFTBCUR-KUM ( 3+32 )	32G			V	
EMMC3 + DDR3	SAMSUNG	KMRH60014A-B614 ( 4+64 )	64G		V		
EMMC4 + DDR4	HYNIX	H9TQ52ACLTMCUR-KUM ( 4+64 )	64G				V
Speaker	Keysound	QM171219AM48	--	V	V	V	V
Motor 1	AWA	YK2455R	--	V	V		
Motor 2	Baolong	BLX-431320S	--			V	V
Main Board 1	huashen	W92ME1B3-3-03	--	V	V		
Main Board 2	yilianda	W92ME1B3-3-05	--			V	V
BT/WLAN Module	Qualcomm	WCN-3680B-0-79BWLNSP	--	V	V	V	V

\* Above EMMC+DDR only which has the maximum capacity was chosen for final test. Therefore, configuration 2 and 4 were the representative sample for final test.

### 3.4 Operating Modes of EUT and Determination of Worst Case Operating Mode

Test modes are presented in the report as below.

Mode	Config.	Test Condition
		Radiated Emission
1	2	BT Link + WLAN (2.4G) Link + MPEG 4 + Earphone + SD Card + USB Cable + Adapter 1

### 3.5 Test Program Used and Operation Descriptions

- The EUT was charged from adapter.
- The EUT linked with Bluetooth earphone.
- The EUT sent audio signal to the earphone.
- The EUT played Camera / MPEG4.
- The EUT communicated data with the Wireless AP which acted as a communication partner.

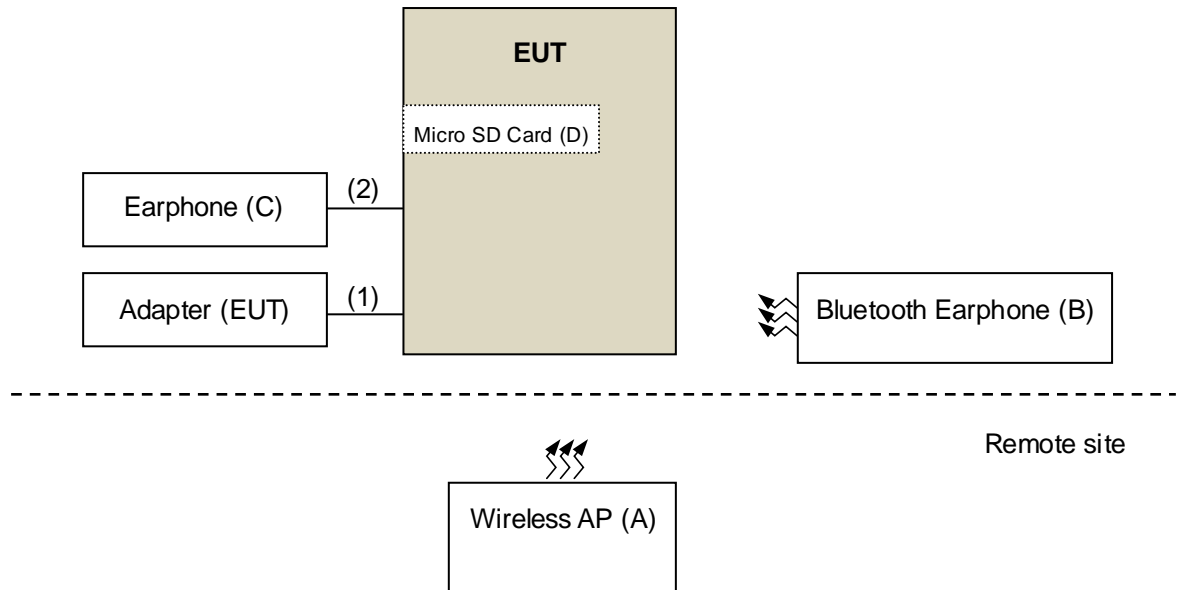
### 3.6 Primary Clock Frequencies of Internal Source

The highest frequency generated or used within the EUT or on which the EUT operates or tunes is 5 GHz, provided by Lenovo(Shanghai) Electronics Technology Co., Ltd., for detailed internal source, please refer to the manufacturer's specifications.



## 4 Configuration and Connections with EUT

### 4.1 Connection Diagram of EUT and Peripheral Devices



### 4.2 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Wireless N Dual band Router	D-LINK	DIR-815	PVK21B5000399	KA21R815A1	--
B.	BLUETOOTH EARPHONE	ELECOM	LBT-MPHS400	N/A	N/A	--
C.	Earphone	PHILIPS	SBC HL150	N/A	N/A	--
D.	Micro SD Card	Transcend	N/A	N/A	N/A	--

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items A-B acted as communication partners to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB Cable	1	1	Y	0	Accessory of the EUT
2.	Earphone Cable	1	1.5	N	0	--

Note: The core(s) is(are) originally attached to the cable(s).

## 5 Radiated Emissions up to 1 GHz

### 5.1 Limits

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

Radiated Emissions Limits at 10 meters (dB $\mu$ V/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			47	37
960-1000	49.5	43.5		

Radiated Emissions Limits at 3 meters (dB $\mu$ V/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			57.5	47.5
960-1000	60	54		

#### Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dB $\mu$ V/m) = 20 log Emission level ( $\mu$ V/m).
3. QP detector shall be applied if not specified.

## 5.2 Test Instruments

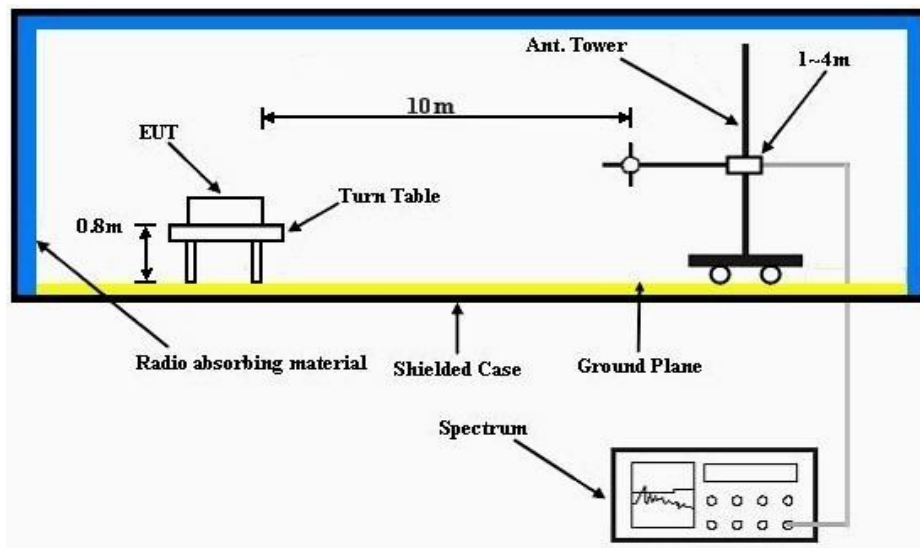
Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ (V)	ESR	101240	Oct. 24, 2017	Oct. 23, 2018
Test Receiver ROHDE & SCHWARZ (H)	ESR	101264	Dec. 25, 2017	Dec. 24, 2018
BILOG Antenna SCHWARZBECK (V)	VULB9168	9168-160	Nov. 29, 2017	Nov. 28, 2018
BILOG Antenna SCHWARZBECK (H)	VULB9168	9168-156	Nov. 29, 2017	Nov. 28, 2018
Preamplifier Sonoma (V)	310N	352924	Jul. 12, 2018	Jul. 11, 2019
Preamplifier Sonoma (H)	310N	352923	Jul. 12, 2018	Jul. 11, 2019
RF signal cable (with 5dB PAD) Times (V)	LMR-600 (18M) +LMR-400 (7M)	CABLE-CH1 (VER) -01	Oct. 24, 2017	Oct. 23, 2018
RF signal cable (with 5dB PAD) Times (H)	LMR-600 (11.8M) +LMR-400 (7M)	CABLE-CH1 (HOR) -01	Oct. 24, 2017	Oct. 23, 2018
Software BV ADT	BV ADT_Radiated_ V8.7.08	NA	NA	NA
Antenna Tower (V)	MFA-440	9707	NA	NA
Antenna Tower (H)	MFA-440	970705	NA	NA
Turn Table	DS430	50303	NA	NA
Controller (V)	MF7802	074	NA	NA
Controller (H)	MF7802	08093	NA	NA

- 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 IC Site Registration No. is IC 7450F-1.
4. The VCCI Site Registration No. is R-1893.

### 5.3 Test Arrangement

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited test facility. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna is a broadband antenna, and its height 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.
- 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.
- 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.

Note: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for quasi-peak detection (QP) at frequency below 1 GHz.



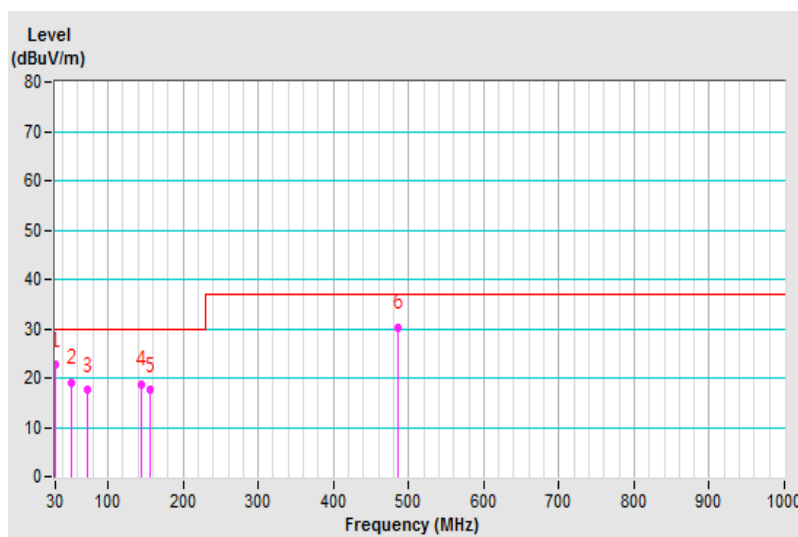
### 5.4 Test Results

Frequency Range	30MHz ~ 1GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Jim Lee	Environmental Conditions	25°C, 67%RH
Test Mode	Mode 1	Test Date	2018/9/4

Antenna Polarity & Test Distance : Horizontal at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	30.53	22.54 QP	30.00	-7.46	3.00 H	148	37.52	-14.98
2	50.37	19.12 QP	30.00	-10.88	4.00 H	183	33.08	-13.96
3	72.68	17.46 QP	30.00	-12.54	3.50 H	156	33.05	-15.59
4	144.22	18.67 QP	30.00	-11.33	1.00 H	66	32.50	-13.83
5	155.57	17.49 QP	30.00	-12.51	2.00 H	34	30.54	-13.05
6	486.60	30.19 QP	37.00	-6.81	1.00 H	16	37.21	-7.02

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) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

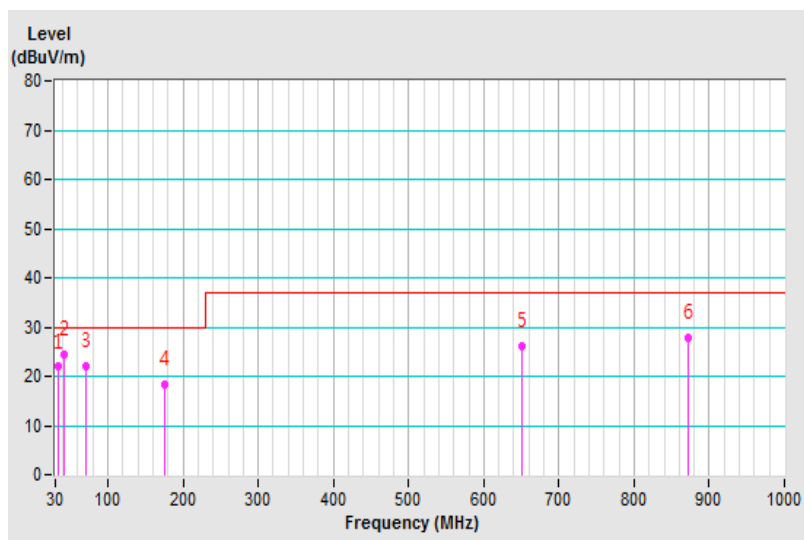


Frequency Range	30MHz ~ 1GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Jim Lee	Environmental Conditions	25°C, 67%RH
Test Mode	Mode 1	Test Date	2018/9/4

Antenna Polarity & Test Distance : Vertical at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	34.61	21.93 QP	30.00	-8.07	1.00 V	343	36.51	-14.58
<b>2</b>	<b>41.79</b>	<b>24.33 QP</b>	<b>30.00</b>	<b>-5.67</b>	<b>3.00 V</b>	<b>2</b>	<b>38.24</b>	<b>-13.91</b>
3	70.01	22.15 QP	30.00	-7.85	1.00 V	135	37.18	-15.03
4	175.99	18.35 QP	30.00	-11.65	2.00 V	155	31.84	-13.49
5	650.54	26.19 QP	37.00	-10.81	2.00 V	52	30.15	-3.96
6	872.88	27.74 QP	37.00	-9.26	1.00 V	121	27.85	-0.11

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) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value



## 6 Radiated Emissions above 1 GHz

### 6.1 Limits

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

Radiated Emissions Limits at 10 meters (dB $\mu$ V/m)				
Frequencies (MHz)	FCC 15B / ICES-003, Class A	FCC 15B / ICES-003, Class B	CISPR 22, Class A	CISPR 22, Class B
1000-3000	Avg: 49.5	Avg: 43.5	Not defined	Not defined
Above 3000	Peak: 69.5	Peak: 63.5	Not defined	Not defined

Radiated Emissions Limits at 3 meters (dB $\mu$ V/m)				
Frequencies (MHz)	FCC 15B / ICES-003, Class A	FCC 15B / ICES-003, Class B	CISPR 22, Class A	CISPR 22, Class B
1000-3000	Avg: 60	Avg: 54	Avg: 56 Peak: 76	Avg: 50 Peak: 70
Above 3000	Peak: 80	Peak: 74	Avg: 60 Peak: 80	Avg: 54 Peak: 74

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dB $\mu$ V/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000 MHz, 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 20 dB under any condition of modulation.

Radiated Emissions Limits at 1.5 meters (dB $\mu$ V/m)		
Frequencies (MHz)	FCC 15B / ICES-003, Class A	FCC 15B / ICES-003, Class B
Above 18000	Avg: 66 Peak: 86	Avg: 60 Peak: 80

Note: Limit@1.5m = Limit@3m + 20log(3/1.5)

Frequency Range (For unintentional radiators)

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705-108	1000
108-500	2000
500-1000	5000
Above 1000	5 <sup>th</sup> harmonic of the highest frequency or 40 GHz, whichever is lower

## 6.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ (Above 1GHz)	ESR7	101471	Mar. 01, 2018	Feb. 28, 2019
Spectrum Analyzer KEYSIGHT	N9030B	MY57141885	May 28, 2018	May 27, 2019
RF signal cable (with 5dB PAD) Times	LMR-400 (18M)	CABLE-CH2-01	Apr. 27, 2018	Apr. 26, 2019
HORN Antenna (with 4dB PAD) SCHWARZBECK	BBHA 9120 D	9120D-405	Dec. 01, 2017	Nov. 30, 2018
Preamplifier Agilent (Above 1GHz)	8449B	3008A01922	Sep. 15, 2017	Sep. 14, 2018
RF Coaxial Cable JUNFLON+EMC	JUNFLON+EMC10 4-SM-SM-6000	Cable-CH2-02(MWX3221308 G003+130710)	Jun. 11, 2018	Jun. 10, 2019
Software BV ADT	BV ADT_Radiated_ V8.7.08	NA	NA	NA
Antenna Tower BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Controller BV ADT	SC100	SC93021702	NA	NA
RF Coaxial Cable EMCI	EMC102-KM-KM-1 000	170820	Aug. 28, 2018	Aug. 27, 2019
RF Coaxial Cable EMCI	EMC102-KM-KM-3 000	150929	Aug. 28, 2018	Aug. 27, 2019
Fix tool for Boresight antenna	BAF-01	2	NA	NA
Pre-amplifier (18GHz-40GHz) EMC	EMC184045B	980175	Nov. 14, 2017	Nov. 13, 2018
HORN Antenna (with 3dB PAD) SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 01, 2017	Nov. 30, 2018

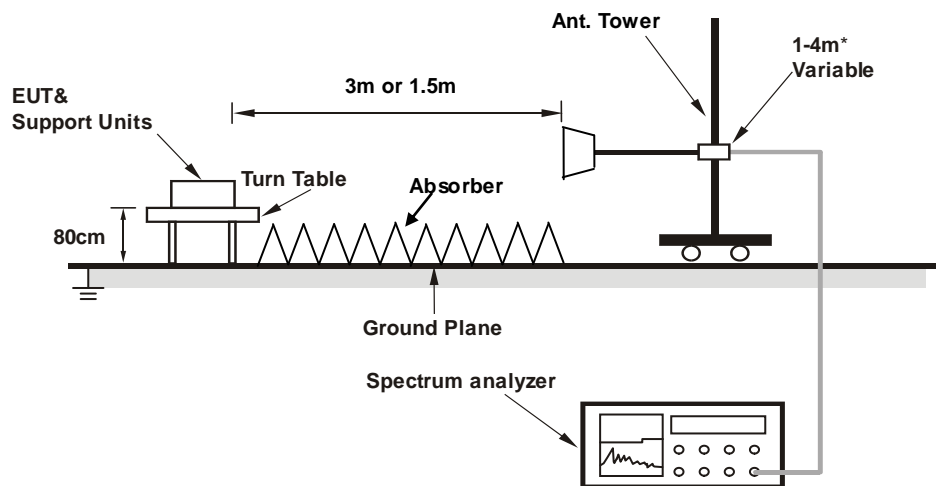
- Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 2.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The IC Site Registration No. is IC 7450F-2.
5. The VCCI Site Registration No. is G-10018.



### 6.3 Test Arrangement

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- For frequency range 1 GHz ~ 18 GHz, the EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- For frequency range 18 GHz ~ 40 GHz, the EUT was set 1.5 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The height of antenna can be varied from one meter to four meters, the height of adjustment depends on the EUT height and the antenna 3 dB beamwidth both, to detect the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The spectrum analyzer system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.

Note: The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for Average detection (AV) at frequency above 1 GHz.



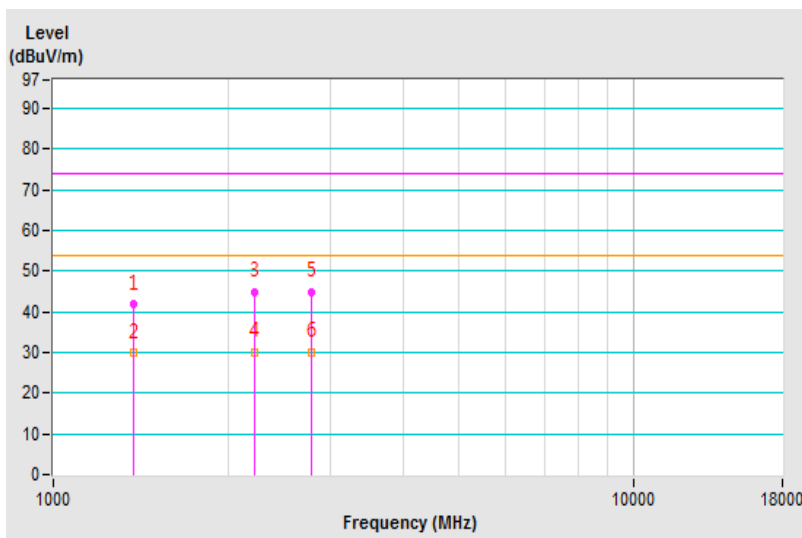
### 6.4 Test Results

Frequency Range	1GHz ~ 18GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Ben Huang	Environmental Conditions	23°C, 62%RH
Test Mode	Mode 1	Test Date	2018/9/4

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1375.36	41.75 PK	74.00	-32.25	1.76 H	288	43.65	-1.90
2	1375.36	29.89 AV	54.00	-24.11	1.76 H	288	31.79	-1.90
3	2220.14	44.95 PK	74.00	-29.05	1.53 H	16	42.73	2.22
4	2220.14	30.15 AV	54.00	-23.85	1.53 H	16	27.93	2.22
5	2790.02	44.95 PK	74.00	-29.05	1.20 H	128	41.95	3.00
6	2790.02	30.17 AV	54.00	-23.83	1.20 H	128	27.17	3.00

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) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

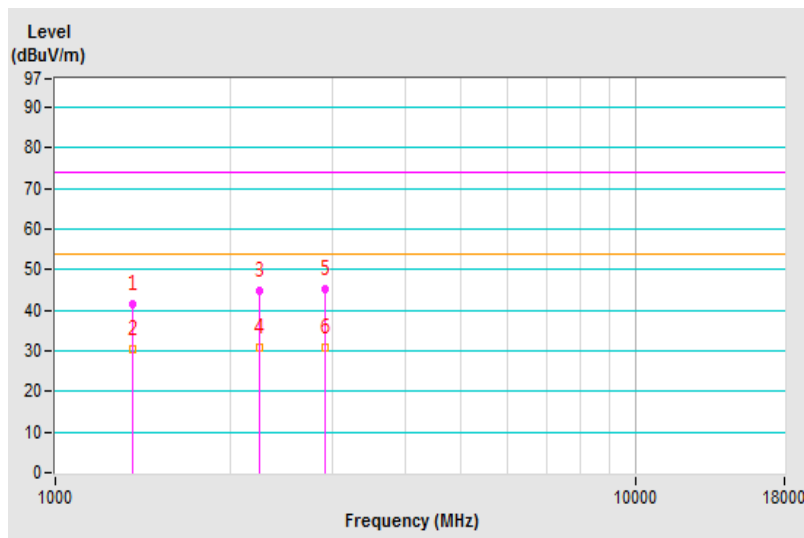


Frequency Range	1GHz ~ 18GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Ben Huang	Environmental Conditions	23°C, 62%RH
Test Mode	Mode 1	Test Date	2018/9/4

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1359.68	41.55 PK	74.00	-32.45	1.00 V	312	43.59	-2.04
2	1359.68	30.37 AV	54.00	-23.63	1.00 V	312	32.41	-2.04
3	2243.12	44.61 PK	74.00	-29.39	1.18 V	345	42.46	2.15
4	2243.12	30.95 AV	54.00	-23.05	1.18 V	345	28.80	2.15
5	2917.83	45.03 PK	74.00	-28.97	1.47 V	251	41.63	3.40
6	2917.83	30.69 AV	54.00	-23.31	1.47 V	251	27.29	3.40

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) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

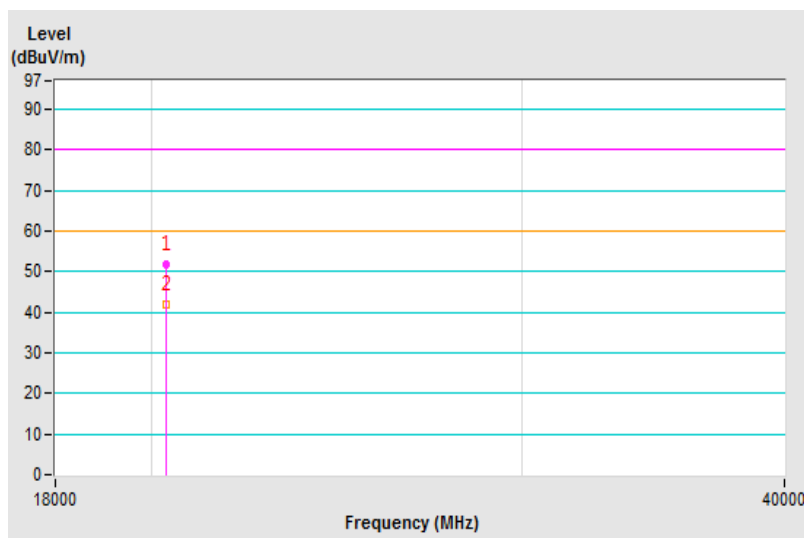


Frequency Range	18GHz ~ 40GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Ben Huang	Environmental Conditions	23°C, 62%RH
Test Mode	Mode 1	Test Date	2018/9/4

Antenna Polarity & Test Distance : Horizontal at 1.5 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	20326.32	51.78 PK	80.00	-28.22	1.03 H	331	54.07	-2.29
2	20326.32	41.98 AV	60.00	-18.02	1.03 H	331	44.27	-2.29

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) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

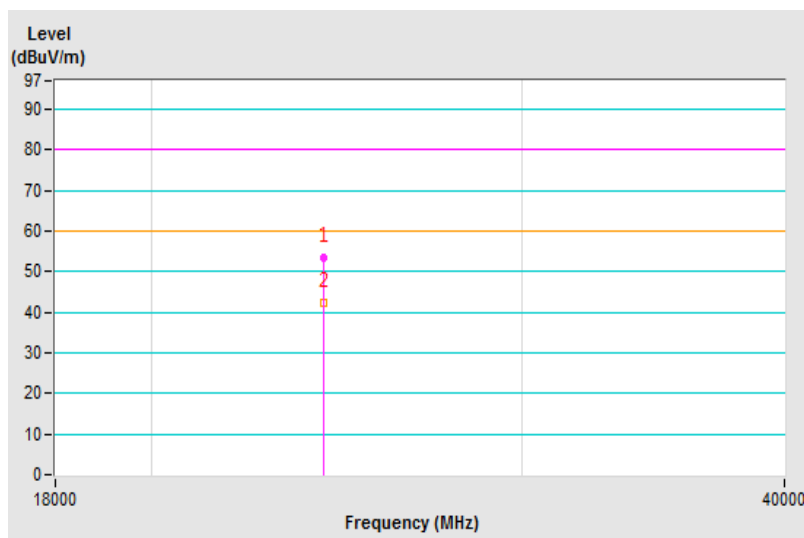


Frequency Range	18GHz ~ 40GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Ben Huang	Environmental Conditions	23°C, 62%RH
Test Mode	Mode 1	Test Date	2018/9/4

Antenna Polarity & Test Distance : Vertical at 1.5 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	24152.21	53.62 PK	80.00	-26.38	1.00 V	166	52.56	1.06
2	24152.21	42.51 AV	60.00	-17.49	1.00 V	166	41.45	1.06

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) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value



## 7 Pictures of Test Arrangements

Refer to Test Set Up Photo.pdf.

## Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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The address and road map of all our labs can be found in our web site also.

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