

FCC Test Report

Report No.: FDBGSN-WTW-P20110615

Test Model: FL44TE

Received Date: Jul. 29, 2020

Test Date: Dec. 08, 2020 ~ Dec. 09, 2020

Issued Date: Dec. 14, 2020

Applicant: Amazon.com Services LLC

Address: 410 Terry Ave N Seattle, WA 98109 650 694 8333

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lin Kou Laboratories

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

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33383, TAIWAN

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



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Release Control Record

Issue No.	Description	Date Issued
FDBGSN-WTW-P20110615	Original Release	Dec. 14, 2020



1 Certificate of Conformity

Product: Fleet Edge
Brand: N/A
Test Model: FL44TE
Sample Status: Engineering Sample
Applicant: Amazon.com Services LLC
Test Date: Dec. 08, 2020 ~ Dec. 09, 2020
Standards: 47 CFR FCC Part 15, Subpart B, Class A
ANSI C63.4:2014

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : Vera Huang , **Date:** Dec. 14, 2020
Vera Huang / Specialist

Approved by : Carl Chen , **Date:** Dec. 14, 2020
Carl Chen / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart B, Class A

ANSI C63.4:2014

FCC Clause	ICES-003 Clause	Test Item	Result/Remarks	Verdict
15.107	6.1	AC Power Line Conducted Emissions	Without AC power port of the EUT	N/A
15.109	6.2.1	Radiated Emissions up to 1 GHz	Minimum passing Class A margin is -3.46 dB at 349.87 MHz	Pass
	6.2.2	Radiated Emissions above 1 GHz	Minimum passing Class A margin is -18.78 dB at 1780.15 MHz	Pass

Note:

1. There is no deviation to the applied test methods and requirements covered by the scope of this report.
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (\pm)
Radiated Emissions up to 1 GHz	30 MHz ~ 1 GHz	4.14 dB
Radiated Emissions above 1 GHz	Above 1 GHz	5.04 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Fleet Edge
Brand	N/A
Test Model	FL44TE
Status of EUT	Engineering Sample
Operating Software	N/A
Power Supply Rating	12 Vdc (Power Supply)
Accessory Device	N/A
Data Cable Supplied	N/A

3.2 Features of EUT

The tests reported herein were performed according to the method specified by Amazon.com Services LLC, for detailed feature description, please refer to the manufacturer's specifications or user's manual.

3.3 Operating Modes of EUT and Determination of Worst Case Operating Mode

Test modes are presented in the report as below.

Mode	Test Condition
	Radiated Emission
1	WCDMA850 Link + WLAN 2.4G Link + BT Link + GPS Rx + Ant*2 + HDMI with Monitor + USB with Keyboard + USB with Mouse + LAN Link*3 + Real SIM
2	LTE Band 12 Link + WLAN 5G Link + BT Link + GPS Rx + Ant*2 + HDMI with Monitor + USB with Keyboard + USB with Mouse + LAN Link*3 + Real SIM
3	WCDMA850 Link + WLAN 2.4G Link + BT Link + GPS Rx + Ant*2 + HDMI with Monitor + USB with Keyboard + USB with Mouse + LAN Link*3 + eSIM
4	WCDMA850 low channel Link + WLAN 2.4G Link + BT Link + GPS Rx + Ant*2 + HDMI with Monitor + USB with Keyboard + USB with Mouse + LAN Link*3 + Real SIM
5	WCDMA850 middle channel Link + WLAN 2.4G Link + BT Link + GPS Rx + Ant*2 + HDMI with Monitor + USB with Keyboard + USB with Mouse + LAN Link*3 + Real SIM
6	WCDMA850 high channel Link + WLAN 2.4G Link + BT Link + GPS Rx + Ant*2 + HDMI with Monitor + USB with Keyboard + USB with Mouse + LAN Link*3 + Real SIM
7	LTE Band 13 low channel Link + WLAN 2.4G Link + BT Link + GPS Rx + Ant*2 + HDMI with Monitor + USB with Keyboard + USB with Mouse + LAN Link*3 + Real SIM
8	LTE Band 13 middle channel Link + WLAN 2.4G Link + BT Link + GPS Rx + Ant*2 + HDMI with Monitor + USB with Keyboard + USB with Mouse + LAN Link*3 + Real SIM
9	LTE Band 13 high channel Link + WLAN 2.4G Link + BT Link + GPS Rx + Ant*2 + HDMI with Monitor + USB with Keyboard + USB with Mouse + LAN Link*3 + Real SIM
10	LTE Band 26 low channel Link + WLAN 2.4G Link + BT Link + GPS Rx + Ant*2 + HDMI with Monitor + USB with Keyboard + USB with Mouse + LAN Link*3 + Real SIM
11	LTE Band 26 middle channel Link + WLAN 2.4G Link + BT Link + GPS Rx + Ant*2 + HDMI with Monitor + USB with Keyboard + USB with Mouse + LAN Link*3 + Real SIM
12	LTE Band 26 high channel Link + WLAN 2.4G Link + BT Link + GPS Rx + Ant*2 + HDMI with Monitor + USB with Keyboard + USB with Mouse + LAN Link*3 + Real SIM

Remark: For radiated emission test, test mode 1 was the worst case and only this mode was presented in the report.

3.4 Test Program Used and Operation Descriptions

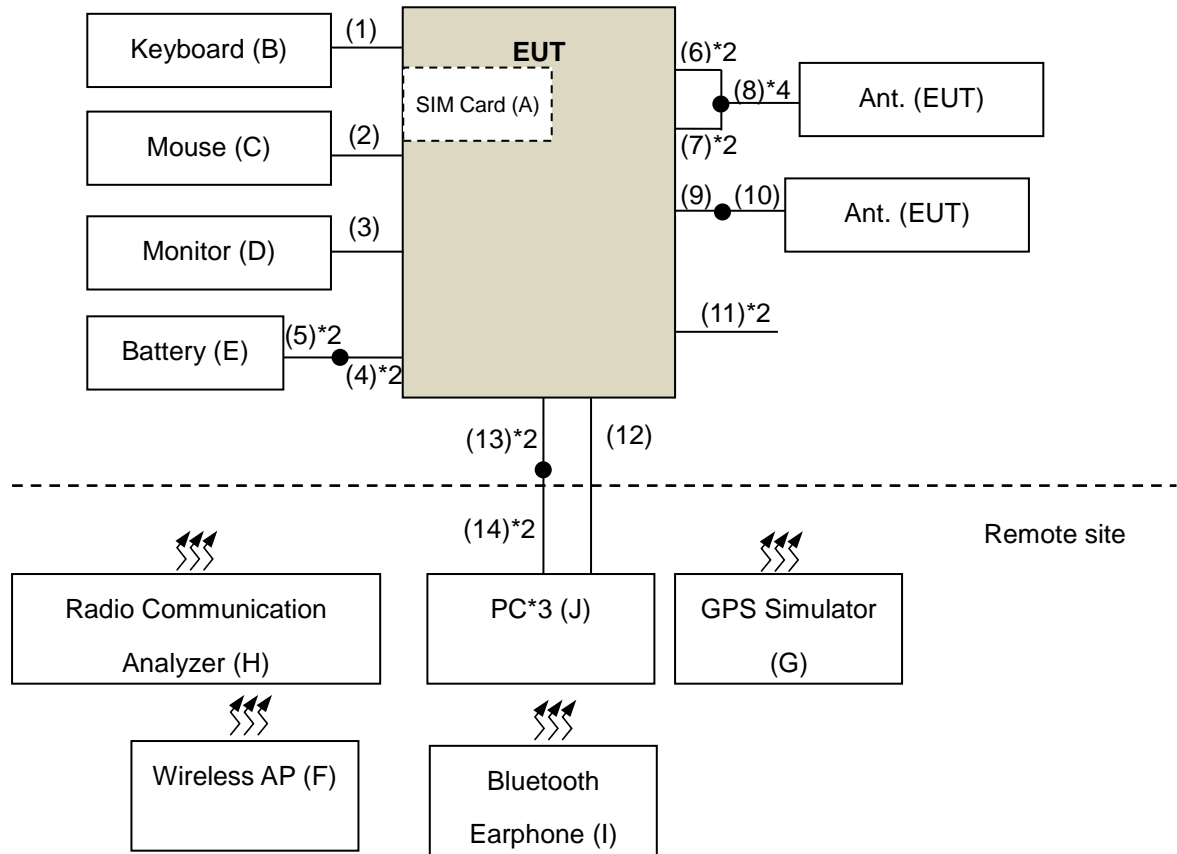
- a. The EUT linked with Bluetooth earphone.
- b. The EUT linked with monitor via HDMI Cable.
- c. The EUT communicated data with PCs via LAN cables.
- d. The EUT communicated data with the Radio Communication Analyzer, GPS Simulator, and Wireless AP, which acted as communication partners.

3.5 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 Amazon.com Services LLC, 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.	SIM Card	N/A	N/A	N/A	N/A	Provided by Client
B.	Keyboard	DELL	KB216t	CN-0W33XP-LO300-79R-OUG6-A03	N/A	--
C.	Mouse	DELL	MOCZUL	CN-049TWY-PRC00-79E-02GE	N/A	--
D.	Monitor	MX27UQ	N/A	N/A	N/A	--
E.	Battery	YUASA	75D23R	N/A	N/A	--
F.	Wireless AP	D-LINK	DIR826L	QBQ91C9000416	N/A	--
G.	GPS Simulator	PENDULUM	GSG-54	191121	N/A	--
H.	Radio Communication Analyzer	Anritsu	MT8820C	6201010284	N/A	--
I.	Bluetooth Earphone	ELECOM	LBT-MPHS400	N/A	N/A	--
J.	PC*3	ASUS	BM1AF	EAPFAG00075Y	N/A	--
		ACER	Aspire M1935-M39	1236TDT01603	N/A	--
		ACER	Aspire M1935-M39	1236TDT01420	N/A	--

Note:

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

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB Cable	1	1.8	Y	0	--
2.	USB Cable	1	1.8	Y	0	--
3.	HDMI Cable	1	1.8	Y	0	HDMI 2.0 (Brand: Amber / Model: HDMI-AA120)
4.	DC Cable	1	0.7	N	0	Provided by Client
5.	DC Cable	1	1	N	0	--
6.	RF Cable	1	5	Y	0	Accessory of the EUT
7.	RF Cable	1	5	Y	0	Accessory of the EUT
8.	RF Cable	1	0.5	Y	0	Accessory of the EUT
9.	RF Cable	1	4.2	Y	0	Accessory of the EUT
10.	RF Cable	1	0.5	Y	0	Accessory of the EUT
11.	Cable	1	0.6	N	0	Provided by Client
12.	LAN Cable	1	10	N	0	RJ45, Cat5e
13.	LAN Cable	1	3	Y	0	Provided by Client
14.	LAN Cable	1	10	N	0	RJ45, Cat5e

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 μ 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 μ 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 μ V/m) = 20 log Emission level (μ 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. 30, 2020	Oct. 29, 2021
Test Receiver ROHDE & SCHWARZ (H)	ESR	101264	Apr. 16, 2020	Apr. 15, 2021
BILOG Antenna SCHWARZBECK (V)	VULB9168	9168-148	Nov. 05, 2020	Nov. 04, 2021
BILOG Antenna SCHWARZBECK (H)	VULB9168	9168-156	Nov. 05, 2020	Nov. 04, 2021
Preamplifier Sonoma (V)	310N	352924	Jun. 08, 2020	Jun. 07, 2021
Preamplifier Sonoma (H)	310N	352923	Jun. 08, 2020	Jun. 07, 2021
RF signal cable (with 5dB PAD) Times (V)	LMR-600 (18M) +LMR-400 (7M)	CABLE-CH1 (VER) -01	Sep. 04, 2020	Sep. 03, 2021
RF signal cable (with 5dB PAD) Times (H)	LMR-600 (11.8M) +LMR-400 (7M)	CABLE-CH1 (HOR) -01	Sep. 04, 2020	Sep. 03, 2021
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.

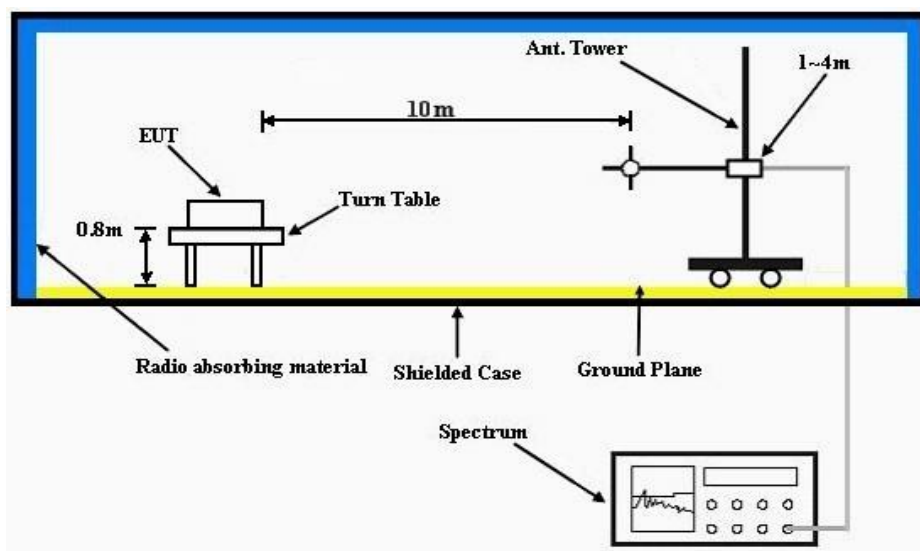
2. The test was performed in HwaYa Chamber 1.

3. The VCCI Site Registration No. is R-11893.

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

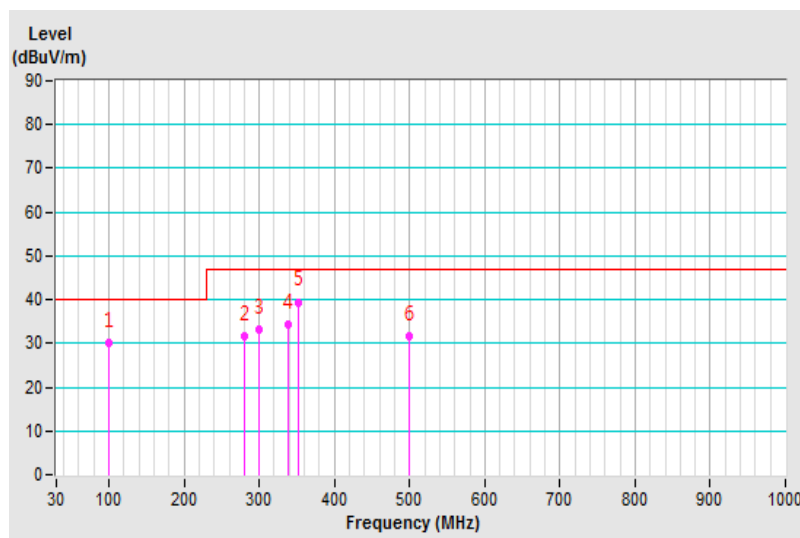
Frequency Range	30MHz ~ 1GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120kHz
Input Power	DC 12V	Environmental Conditions	21°C, 73%RH
Tested By	Jim Lee	Test Date	2020/12/9
Test Mode	Mode 1		

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	99.79	30.05 QP	40.00	-9.95	4.00 H	288	47.76	-17.71
2	280.66	31.78 QP	47.00	-15.22	3.50 H	117	44.63	-12.85
3	298.70	33.25 QP	47.00	-13.75	3.50 H	60	45.65	-12.40
4	337.51	34.35 QP	47.00	-12.65	3.00 H	92	45.84	-11.49
5	351.67	39.46 QP	47.00	-7.54	2.50 H	231	50.77	-11.31
6	499.99	31.74 QP	47.00	-15.26	2.00 H	98	39.29	-7.55

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

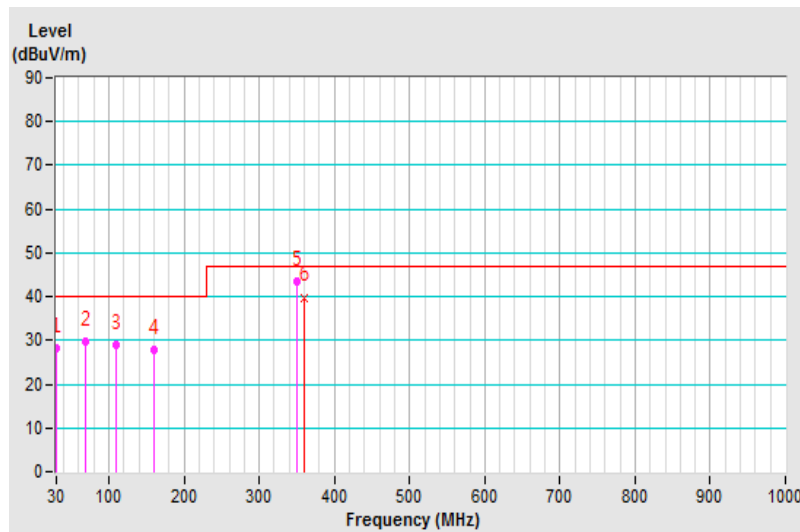


Frequency Range	30MHz ~ 1GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120kHz
Input Power	DC 12V	Environmental Conditions	21°C, 73%RH
Tested By	Jim Lee	Test Date	2020/12/9
Test Mode	Mode 1		

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	30.29	28.27 QP	40.00	-11.73	1.50 V	294	43.59	-15.32
2	68.27	29.58 QP	40.00	-10.42	3.50 V	76	44.78	-15.20
3	108.57	28.94 QP	40.00	-11.06	1.00 V	79	45.65	-16.71
4	159.70	27.91 QP	40.00	-12.09	1.00 V	349	41.16	-13.25
5	349.87	43.54 QP	47.00	-3.46	1.00 V	55	54.34	-10.80
6	359.77	39.83 QP	47.00	-7.17	1.00 V	12	50.25	-10.42

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 μ 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 μ 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 μ 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.

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 th harmonic of the highest frequency or 40 GHz, whichever is lower

6.2 Test Instruments

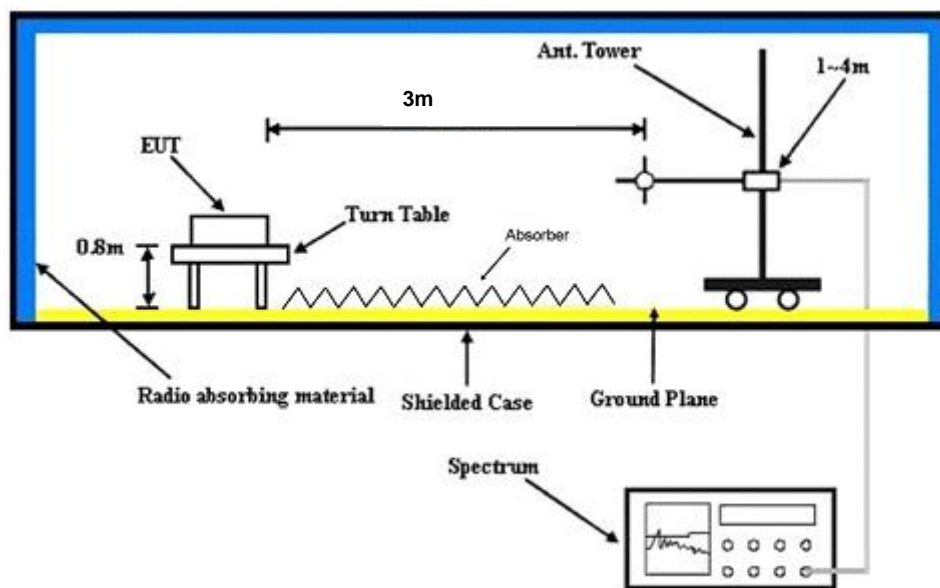
Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ (Above 1GHz)	ESR7	101471	Mar. 11, 2020	Mar. 10, 2021
Spectrum Analyzer Agilent	E4446A	MY51100039	Dec. 01, 2020	Nov. 30, 2021
BILOG Antenna SCHWARZBECK	VULB9168	9168-149	Nov. 04, 2020	Nov. 03, 2021
RF signal cable (with 5dB PAD) Times	LMR-400 (18M)	CABLE-CH2-01	Mar. 23, 2020	Mar. 22, 2021
HORN Antenna (with 4dB PAD) SCHWARZBECK	BBHA 9120 D	9120D-405	Nov. 22, 2020	Nov. 21, 2021
Pre-Amplifier Agilent (Above 1GHz)	8449B	3008A01961	Sep. 04, 2020	Sep. 03, 2021
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
BandPass Filter (2.4G) MICRO-TRONICS	BRM17690-01	003	Sep. 04, 2020	Sep. 03, 2021
BandPass Filter (5G) MICRO-TRONICS	BRM50716-01	G011	Sep. 04, 2020	Sep. 03, 2021
RF Coaxial Cable EMCI	EMC102-KM-KM-1 000	170819	Sep. 04, 2020	Sep. 03, 2021
RF Coaxial Cable Rosnol	K1K50-UP0279-K1 K50-3000	181129-1	Sep. 04, 2020	Sep. 03, 2021
RF Coaxial Cable JUNFLON+EMC	JUNFLON+EMC10 4-SM-SM-6000	Cable-CH2-02(MWX3221308 G003+130710)	Jan. 18, 2020	Jan. 17, 2021
Fix tool for Boresight antenna	BAF-01	2	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 2. (966 Chamber 1)
3. 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.
- 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 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.
- 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.



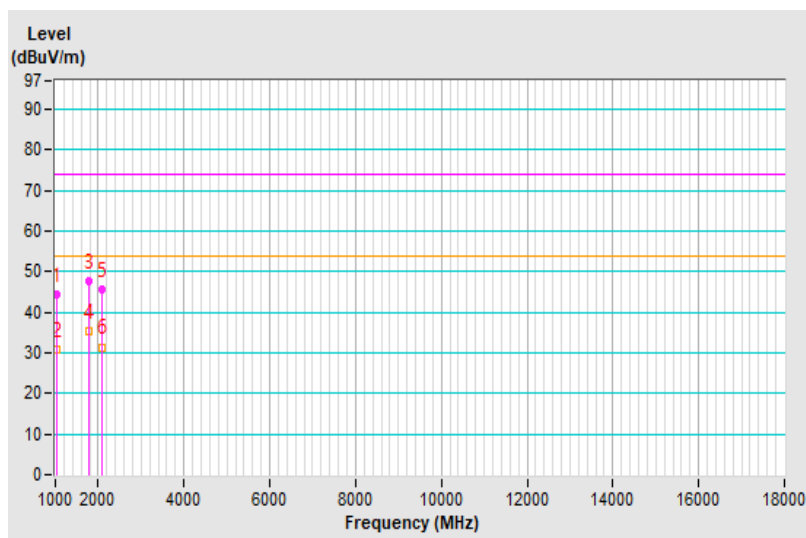
6.4 Test Results

Frequency Range	1GHz ~ 12.5GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Input Power	DC 12V	Environmental Conditions	21°C, 73%RH
Tested By	Fox Chang	Test Date	2020/12/8
Test Mode	Mode 1		

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	1039.27	44.51 PK	74.00	-29.49	1.00 H	238	48.09	-3.58
2	1039.27	30.79 AV	54.00	-23.21	1.00 H	238	34.37	-3.58
3	1780.15	47.81 PK	74.00	-26.19	1.42 H	202	48.33	-0.52
4	1780.15	35.22 AV	54.00	-18.78	1.42 H	202	35.74	-0.52
5	2077.15	45.66 PK	74.00	-28.34	1.00 H	142	43.76	1.90
6	2077.15	31.39 AV	54.00	-22.61	1.00 H	142	29.49	1.90

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



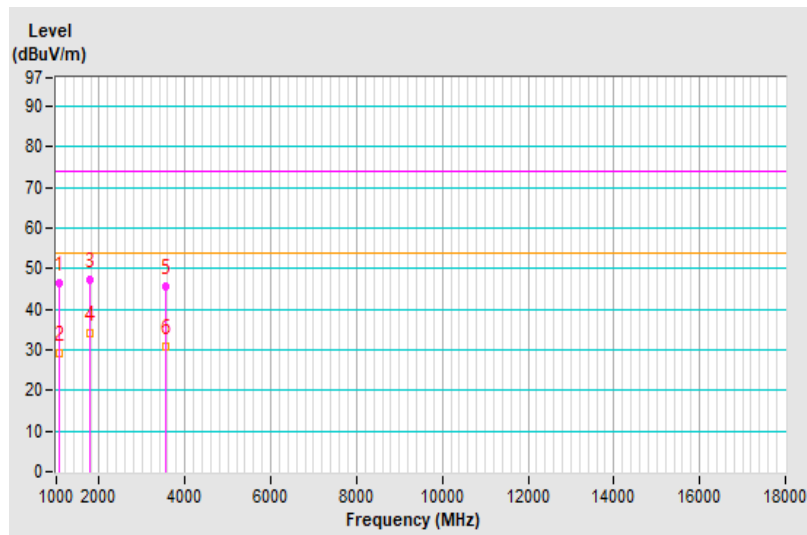
Frequency Range	1GHz ~ 12.5GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Input Power	DC 12V	Environmental Conditions	21°C, 73%RH
Tested By	Fox Chang	Test Date	2020/12/8
Test Mode	Mode 1		

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	1064.43	46.32 PK	74.00	-27.68	1.15 V	305	49.59	-3.27
2	1064.43	29.17 AV	54.00	-24.83	1.15 V	305	32.44	-3.27
3	1780.23	47.13 PK	74.00	-26.87	2.29 V	159	47.64	-0.51
4	1780.23	34.00 AV	54.00	-20.00	2.29 V	159	34.51	-0.51
5	3541.50	45.47 PK	74.00	-28.53	1.00 V	267	40.68	4.79
6	3541.50	30.89 AV	54.00	-23.11	1.00 V	267	26.10	4.79

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

Please refer to the attached file (Test Setup Photo).

Appendix – Information of 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.

If you have any comments, please feel free to contact us at the following:

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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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