FCC TEST REPORT

Report No.:	FVC-ESH-P20112382B-15
FCC ID:	T2C-A30
Product:	Video Conferencing Endpoint
Test Model:	MeetingBar A30
Received:	Dec.30, 2020
ISSUED:	Jan.23, 2021

Applicant:	YEALINK(XIAMEN) NETWORK TECHNOLOGY CO.,LTD.
Address:	309, 3rd Floor, No.16, Yun Ding North Road, Huli District, Xiamen City, Fujian, P.R. China

Issued By:	BUREAU VERITAS ADT (Shanghai) Corporation
Lab Location:	No. 829, Xinzhuan Road, Shanghai, P.R.China (201612)

Test Lab
Cert 2343.01

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1. TEST PROGRAM

PRODUCT: Video Conferencing Endpoint
TEST MODEL: MeetingBar A30
APPLICANT: YEALINK(XIAMEN) NETWORK TECHNOLOGY CO.,LTD.
TESTED: Jan.02 to Jan.22, 2021
STANDARDS: **47 CFR FCC Part15, Subpart B, Class B**
ANSI C63.4:2014

We, BUREAU VERITAS ADT (Shanghai) Corporation, declare that the equipment above has been tested and found compliance with the requirement limits of applicable standards. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate under the standards herein specified.

PREPARED BY : Yuan Zhang , **DATE:** Jan.23, 2021
Yuan ZHANG
Project Engineer

APPROVED BY : , **DATE:** Jan.23, 2021
Daniel Sun
EMC Lab Manager

2. Summary of Test Procedure and Test Results

EMISSION (47 CFR FCC Part15, Subpart B)		
Test Item	Normative References	Test Result
Conducted Emission	47 CFR FCC Part15, Subpart B 15.107	Meets the Class B requirements
Radiated Emission	47 CFR FCC Part15, Subpart B 15.109	Meets the Class B requirements

3. Test Configuration of Equipment under Test

3.1 Manufacturer information

Manufacturer : YEALINK(XIAMEN) NETWORK TECHNOLOGY CO.,LTD.

Address : 309, 3rd Floor, No.16, Yun Ding North Road, Huli District, Xiamen City, Fujian, P.R. China

3.2 Feature of Equipment under Test

Product Name:	Video Conferencing Endpoint
Brand:	Yealink
Test Model:	MeetingBar A30
Model Discrepancy:	--
EUT Power Rating:	I/P: 48V ⎓, 0.7A for Video Conferencing Endpoint; I/P: 100-240Vac, 50/60Hz, 1.0A; O/P: 48V ⎓, 0.7A for AC Adapter.

Note:
1. Please refer to user manual.

3.3 Description of support units

NO.	PRODUCT	BRAND/ Manufacturer	MODEL NO.
1	PC	ThinkPad	L470
2	Network Cable	--	--
3	LCD Monitor	Lenovo	T2054pC

3.4 Measurement Uncertainty

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

This 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		Value
Conducted emissions		2.55 dB
Radiated emissions	30 MHz ~ 1GHz	3.22 dB
	Above 1GHz	2.89 dB

4 Test of Conducted Emission

4.1 Test Limit

TEST STANDARD:

CFR 47 FCC Part 15, Subpart B (Section: 15.107)

FREQUENCY (MHz)	Class A (dBµV)		Class B (dBµV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

NOTES: 1.The lower limit shall apply at the transition frequencies.

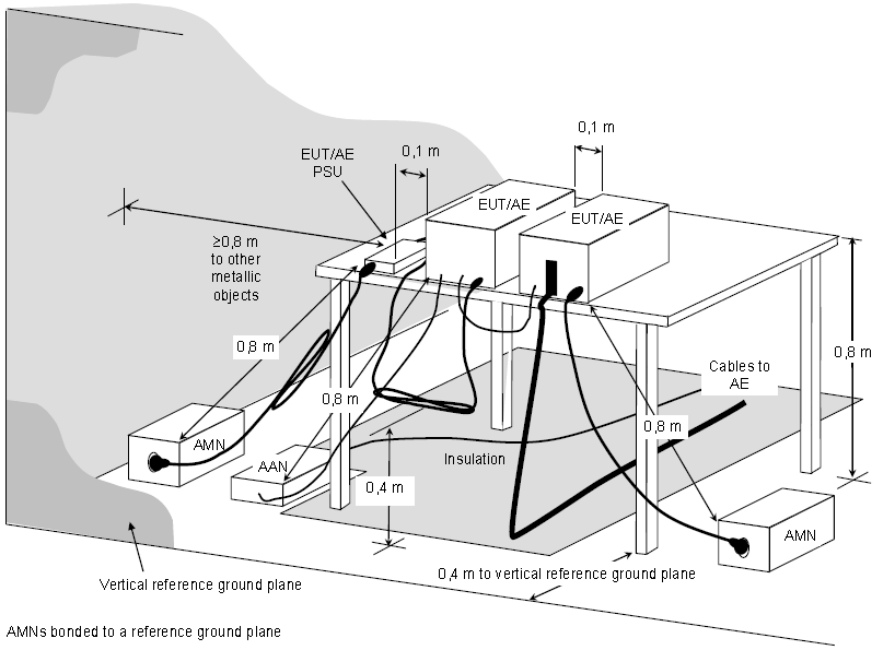
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

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.

4.2 Test Procedures

1. The EUT was placed on a desk 0.8 meter height from the metal ground plane and 0.4 meter from the conducting wall of the shielding room and it was kept at least 0.8 meters from any other grounded conducting surface.
2. Connect EUT to the power mains through a Artificial Mains Network (AMN).
3. All the support units are connecting to the other AMN.
4. The AMN provides 50 ohm coupling impedance for the measuring instrument.
5. The CISPR states that a 50 ohm, 50 micro-Henry AMN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched
8. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

4.3 Typical Test Setup



NOTE The 0,8 m distance specified between EUT/AE/PSU and AMN/AAN, is applicable only to the EUT being measured. If the device is AE then it shall be ≥0,8 m.

Figure D.2 – Example measurement arrangement for table-top EUT (Conducted emission measurement – alternative 1)

4.4 Measurement Equipment

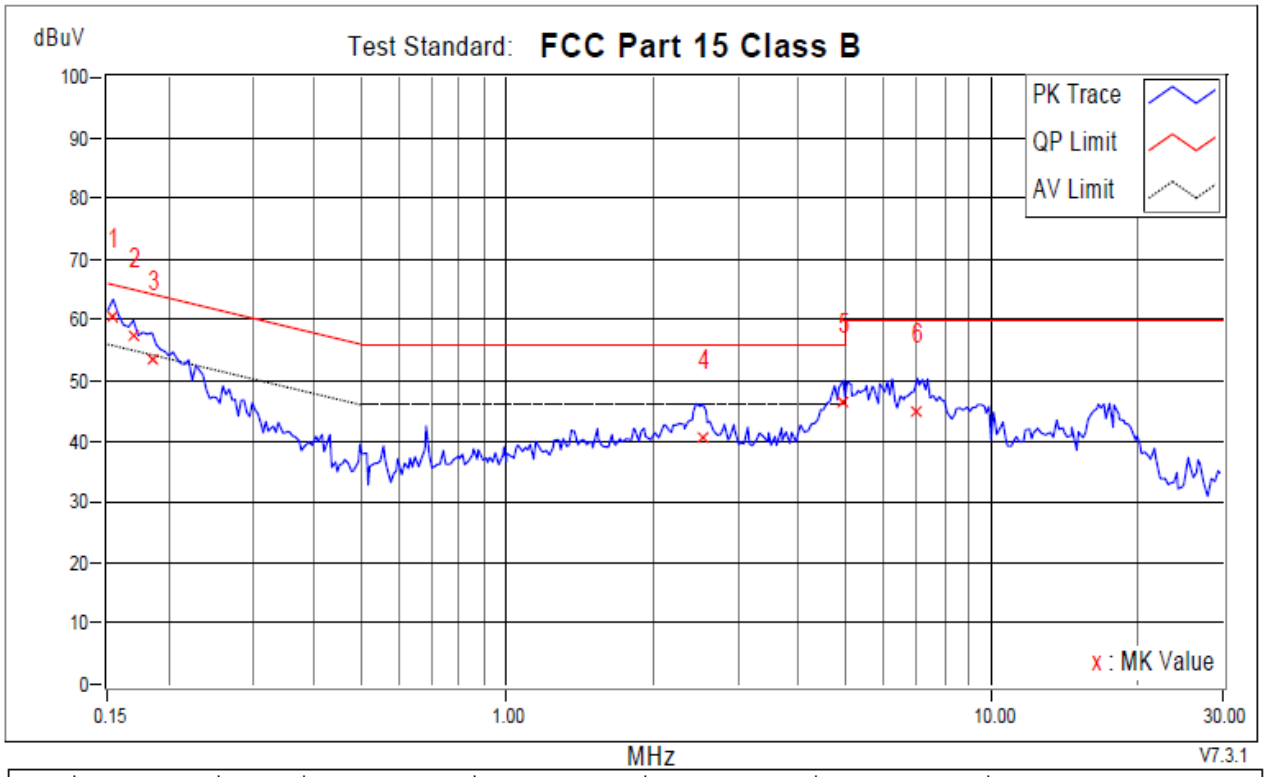
DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	E1R1001	Mar.11, 2021
LISN ROHDE & SCHWARZ	ENV216	E1L1011	Mar.11, 2021
Software ADT	ADT_Cond_V7.3.0	N/A	N/A

4.5 Test Result and Data

Conducted Emission Test Data

120Vac/60Hz

Phase : LINE

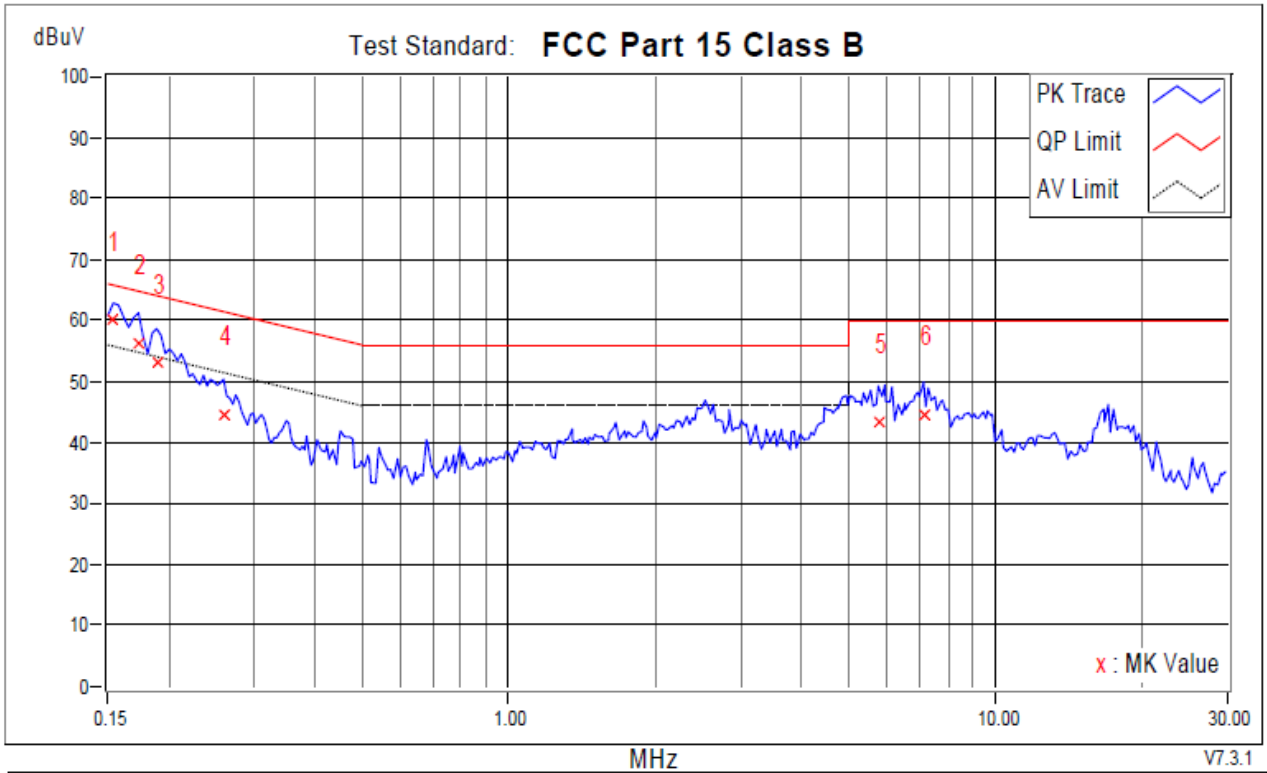


No.	Frequency MHz	Corr. Factor dB	Reading dBuV QP	Reading dBuV AV	Emission dBuV QP	Emission dBuV AV	Limit dBuV QP	Limit dBuV AV	Margins dB QP	Margins dB AV	Notes
+1	0.15391	9.87	50.51	28.37	60.38	38.24	65.79	55.79	-5.40	-17.54	
2	0.16955	9.88	47.63	27.99	57.51	37.87	64.98	54.98	-7.47	-17.11	
3	0.18519	9.88	43.75	24.15	53.63	34.03	64.25	54.25	-10.62	-20.22	
4	2.53663	9.84	30.86	23.49	40.70	33.33	56.00	46.00	-15.30	-12.67	
5	4.94910	10.07	36.34	28.08	46.41	38.15	56.00	46.00	-9.59	-7.85	
6	7.04486	10.21	34.66	24.75	44.87	34.96	60.00	50.00	-15.13	-15.04	

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

Phase : NEUTRAL



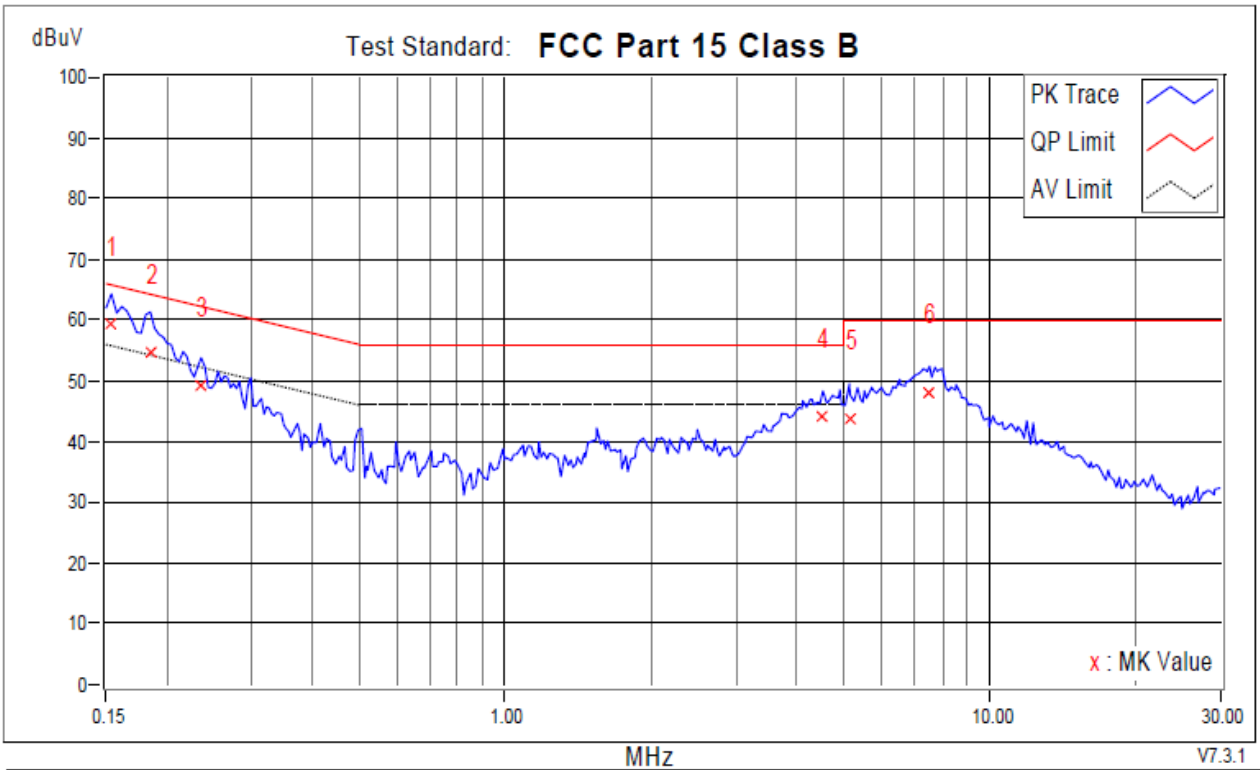
	Frequency	Corr. Factor	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
No.	MHz	dB	QP	AV	QP	AV	QP	AV	QP	AV	
+1	0.15391	9.88	50.18	29.58	60.06	39.46	65.79	55.79	-5.73	-16.33	
2	0.17346	9.86	46.57	28.34	56.43	38.20	64.79	54.79	-8.37	-16.60	
3	0.18910	9.84	43.31	25.32	53.15	35.16	64.08	54.08	-10.93	-18.92	
4	0.25948	9.87	34.61	16.50	44.48	26.37	61.45	51.45	-16.97	-25.08	
5	5.75456	9.91	33.29	22.71	43.20	32.62	60.00	50.00	-16.80	-17.38	
6	7.13088	10.21	34.30	23.86	44.51	34.07	60.00	50.00	-15.49	-15.93	

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

240Vac/50Hz

Phase: LINE

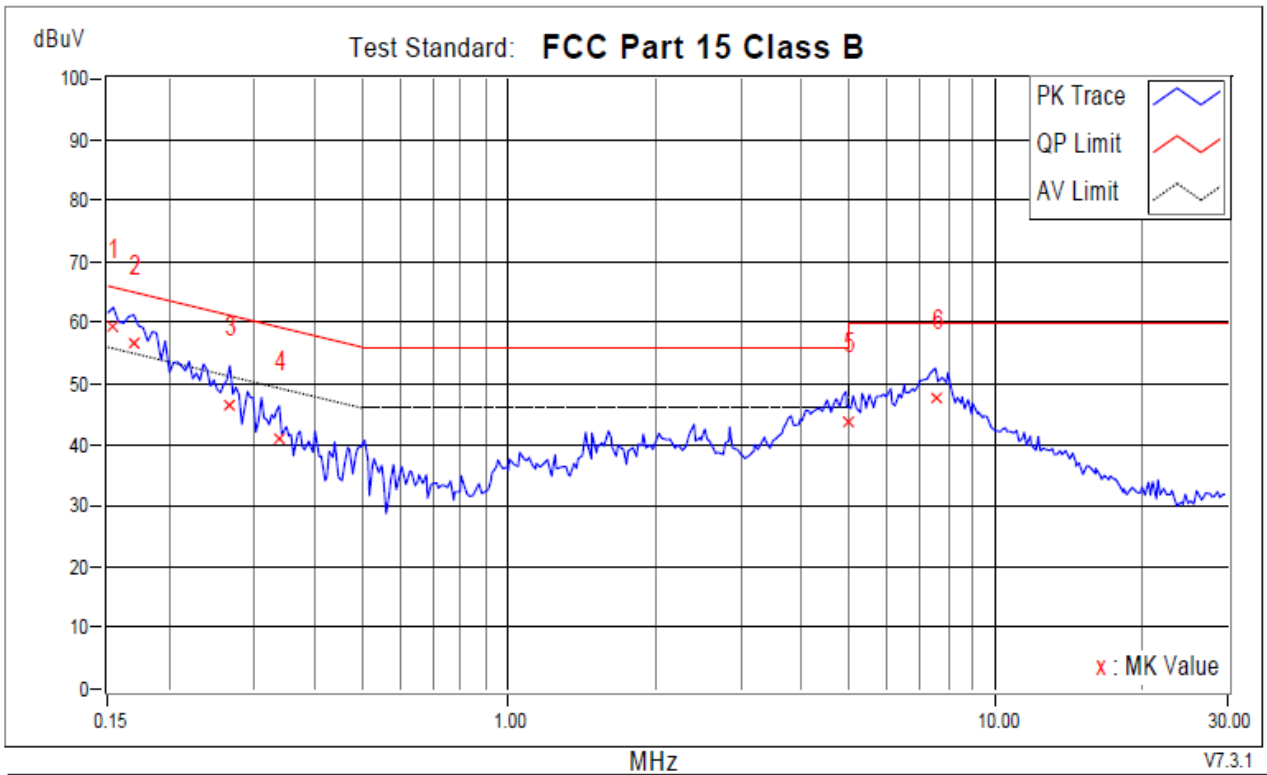


	Frequency	Corr. Factor	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
No.	MHz	dB	QP	AV	QP	AV	QP	AV	QP	AV	
+1	0.15391	9.87	49.64	27.44	59.51	37.31	65.79	55.79	-6.27	-18.47	
2	0.18519	9.88	44.78	25.13	54.66	35.01	64.25	54.25	-9.59	-19.24	
3	0.23602	9.83	39.53	21.36	49.36	31.19	62.24	52.24	-12.87	-21.04	
4	4.53855	10.03	34.17	23.88	44.20	33.91	56.00	46.00	-11.80	-12.09	
5	5.14851	10.08	33.58	24.38	43.66	34.46	60.00	50.00	-16.34	-15.54	
6	7.53361	10.25	37.69	28.33	47.94	38.58	60.00	50.00	-12.06	-11.42	

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

Phase: NEUTRAL



No.	Frequency MHz	Corr. Factor dB	Reading dBuV QP	Reading dBuV AV	Emission dBuV QP	Emission dBuV AV	Limit dBuV QP	Limit dBuV AV	Margins dB QP	Margins dB AV	Notes
+1	0.15391	9.88	49.52	28.49	59.40	38.37	65.79	55.79	-6.39	-17.42	
2	0.16955	9.86	46.70	27.63	56.56	37.49	64.98	54.98	-8.42	-17.49	
3	0.26730	9.88	36.53	20.16	46.41	30.04	61.20	51.20	-14.79	-21.16	
4	0.33768	9.90	31.20	18.57	41.10	28.47	59.26	49.26	-18.16	-20.79	
5	5.00000	9.73	33.86	23.72	43.59	33.45	56.00	46.00	-12.41	-12.55	
6	7.54143	10.22	37.58	28.26	47.80	38.48	60.00	50.00	-12.20	-11.52	

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

4.6 Test Photographs

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

5 Test of Radiated Emission

5.1 Test Limit

TEST STANDARD:

CFR 47 FCC Part 15, Subpart B (Section: 15.109)

FOR FREQUENCY BELOW 1000 MHz

FREQUENCY (MHz)	Class A (at 10m)		Class B (at 3m)	
	μV/m	dBμV/m	μV/m	dBμV/m
30 – 88	90	39.1	100	40.0
88 – 216	150	43.5	150	43.5
216 – 960	210	46.4	200	46.0
960 – 1000	300	49.5	500	54.0

LIMIT OF RADIATED EMISSION OF FCC PART 15, SUBPART B FOR FREQUENCY ABOVE 1000 MHz

FREQUENCY (MHz)	Class A (dBμV/m) (at 3m)		Class B (dBμV/m) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80.0	60.0	74.0	54.0

Note: 1.The lower limit shall apply at the transition frequencies.

2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

3. All emanation 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.

5.2 Test Procedures

1. The EUT was placed on a rotatable table top 0.8 meter above ground.
2. The EUT was set 3/10 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a half wave dipole and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
5. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.

5.3 Typical Test Setup

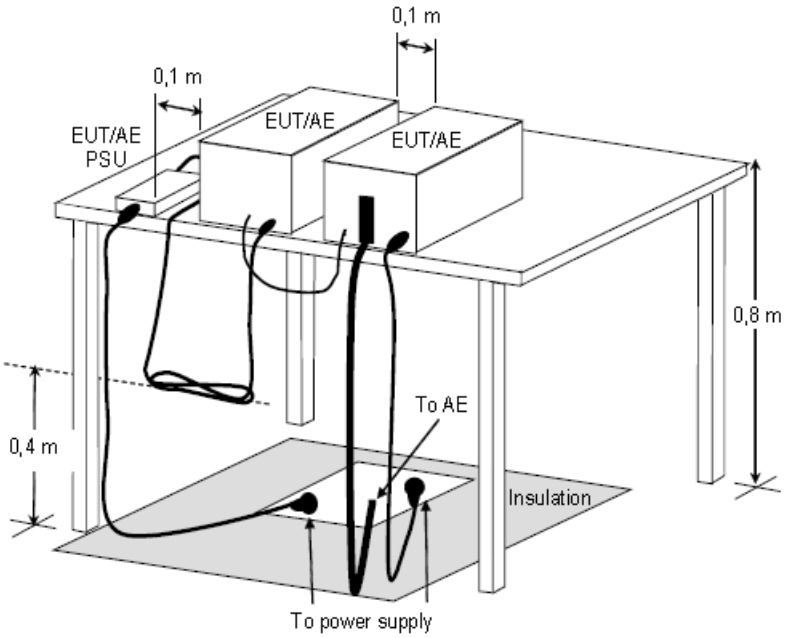


Figure D.8 – Example measurement arrangement for table-top EUT (Radiated emission measurement)

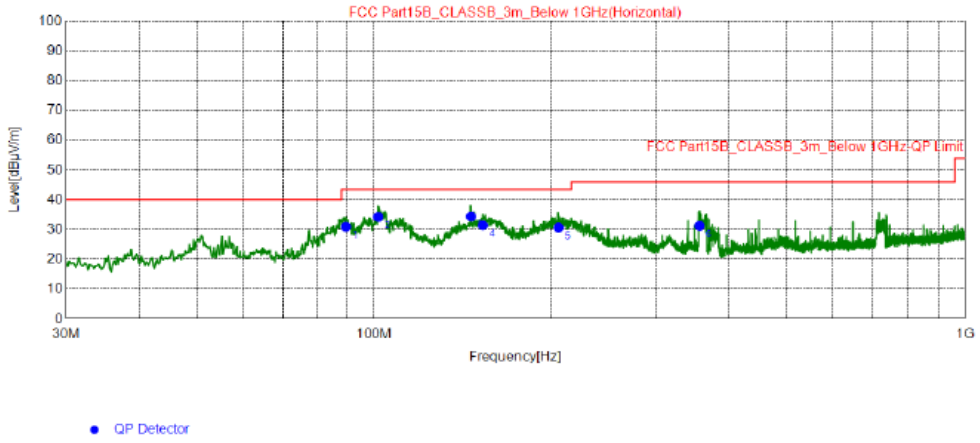
5.4 Measurement Equipment

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
EMI Test Spectrum ROHDE & SCHWARZ	ESR7	E1R1005	May.11, 2021
Spectrum Analyzer Keysight	N9030B	E1S1003	Aug.03, 2021
Broad-Band Antenna Schwarzbeck	VULB9168	E1A1012	Jul.27, 2021
Double Riaged Vroadband Horn Antenna Schwarzbeck	BBHA9120D	E1A1017	Jan.25, 2021
Preamplifier Agilent	8447D	E1A2001	Apr.19, 2021
Preamplifier Agilent	EMC051845SE	E1A2009	Jul.05, 2021

5.5 Test Result and Data (30MHz ~ 1GHz)

120Vac/60Hz

Position: Horizontal

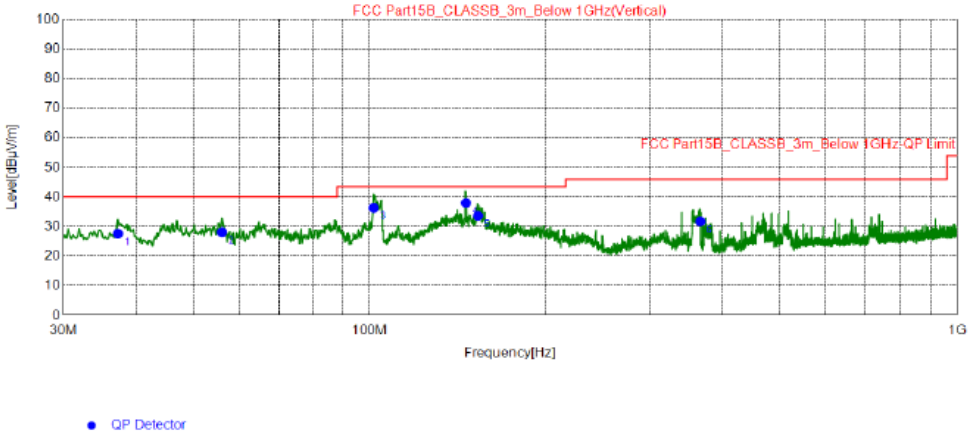


Final Data List									
NO.	Freq. [MHz]	QP Reading [dBµV/m]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	89.55	46.81	-15.83	30.98	43.50	12.52	200	139	Horizontal
2	101.5	49	-14.77	34.23	43.50	9.27	200	94	Horizontal
3	146.0	44.54	-10.15	34.39	43.50	9.11	200	103	Horizontal
4	152.8	41.4	-9.96	31.44	43.50	12.06	200	201	Horizontal
5	205.3	42.76	-12.03	30.73	43.50	12.77	200	188	Horizontal
6	356.3	38.55	-7.29	31.26	46.00	14.74	200	161	Horizontal

REMARKS:

1. Q.P. is abbreviation of quasi-peak individually.
2. The emission levels of other frequencies were very low against the limit.
3. QP Margin value = QP Limit value – QP value.
4. Factor = Antenna Factor + Amplifier Factor + Cable loss.
5. QP value = Factor + Reading Value.

Position: Vertical



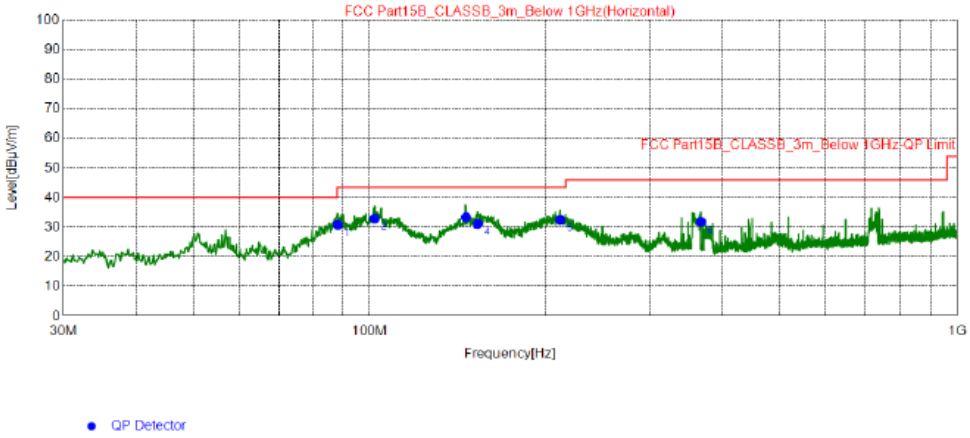
Final Data List									
NO.	Freq. [MHz]	QP Reading [dBμV/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	37.17	38.43	-10.78	27.65	40.00	12.35	100	86	Vertical
2	55.99	38.18	-10.05	28.13	40.00	11.87	100	173	Vertical
3	101.5	51.08	-14.77	36.31	43.50	7.19	100	42	Vertical
4	146.0	48.17	-10.15	38.02	43.50	5.48	100	95	Vertical
5	152.9	43.61	-9.96	33.65	43.50	9.85	100	186	Vertical
6	366.3	38.72	-7.02	31.70	46.00	14.30	100	297	Vertical

REMARKS:

1. Q.P. is abbreviation of quasi-peak individually.
2. The emission levels of other frequencies were very low against the limit.
3. QP Margin value = QP Limit value – QP value
4. Factor = Antenna Factor + Amplifier Factor + Cable loss
5. QP value = Factor + Reading Value.

240Vac/50Hz

Position: Horizontal

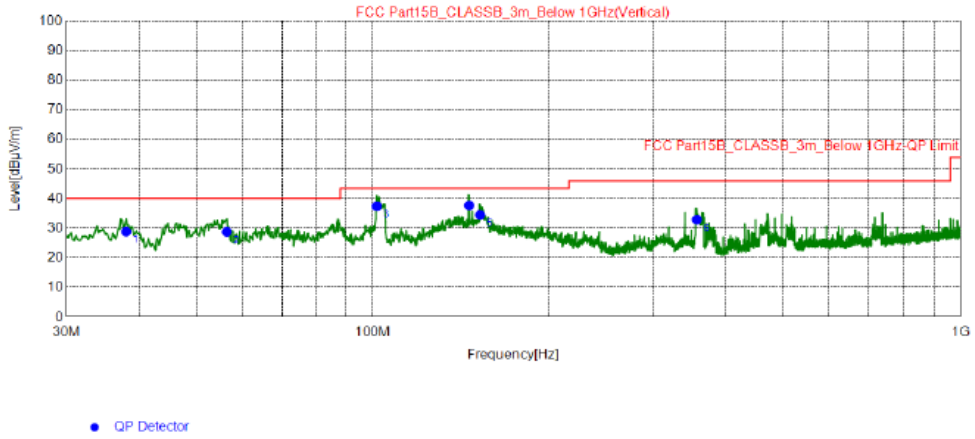


Final Data List									
NO.	Freq. [MHz]	QP Reading [dBµV/m]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	88.20	46.46	-15.61	30.85	43.50	12.65	200	163	Horizontal
2	101.9	47.7	-14.73	32.97	43.50	10.53	200	96	Horizontal
3	146.0	43.53	-10.15	33.38	43.50	10.12	200	127	Horizontal
4	152.9	41.11	-9.96	31.15	43.50	12.35	200	176	Horizontal
5	211.3	44.4	-11.91	32.49	43.50	11.01	200	204	Horizontal
6	367.3	38.77	-6.99	31.78	46.00	14.22	200	168	Horizontal

REMARKS:

1. Q.P. is abbreviation of quasi-peak individually.
2. The emission levels of other frequencies were very low against the limit.
3. QP Margin value = QP Limit value – QP value.
4. Factor = Antenna Factor + Amplifier Factor + Cable loss.
5. QP value = Factor + Reading Value.

Position: Vertical



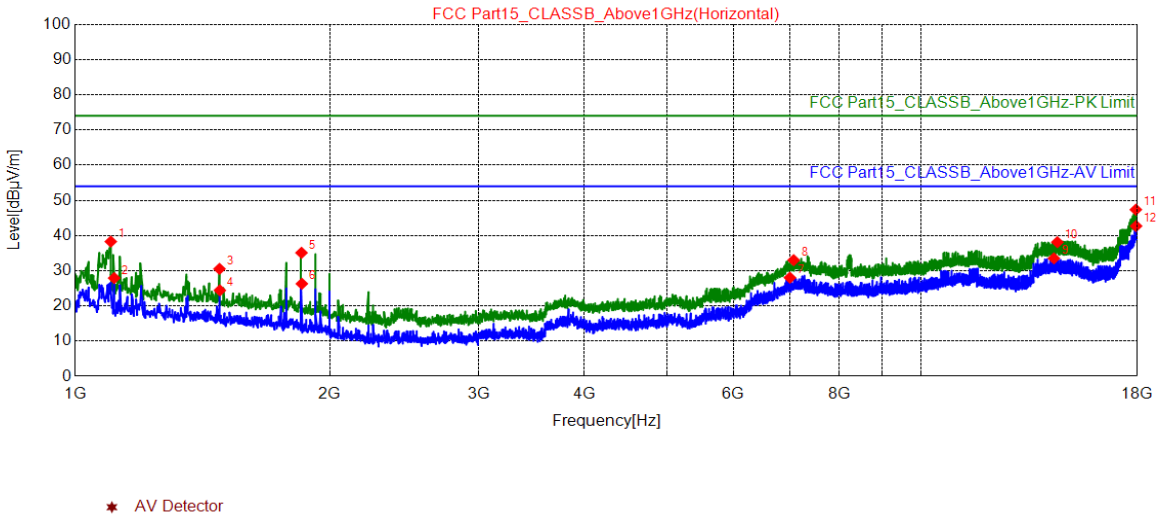
Final Data List									
NO.	Freq. [MHz]	QP Reading [dBµV/m]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	37.95	39.54	-10.69	28.85	40.00	11.15	100	67	Vertical
2	56.38	38.85	-10.07	28.78	40.00	11.22	100	152	Vertical
3	101.5	52.23	-14.77	37.46	43.50	6.04	100	98	Vertical
4	146.0	47.9	-10.15	37.75	43.50	5.75	100	75	Vertical
5	152.4	44.47	-9.97	34.50	43.50	9.00	100	165	Vertical
6	357.0	40.22	-7.27	32.95	46.00	13.05	100	187	Vertical

REMARKS:

1. Q.P. is abbreviation of quasi-peak individually.
2. The emission levels of other frequencies were very low against the limit.
3. QP Margin value = QP Limit value – QP value
4. Factor = Antenna Factor + Amplifier Factor + Cable loss
5. QP value = Factor + Reading Value.

5.6 Test Result and Data (1GHz ~ 18GHz)

Position: Horizontal

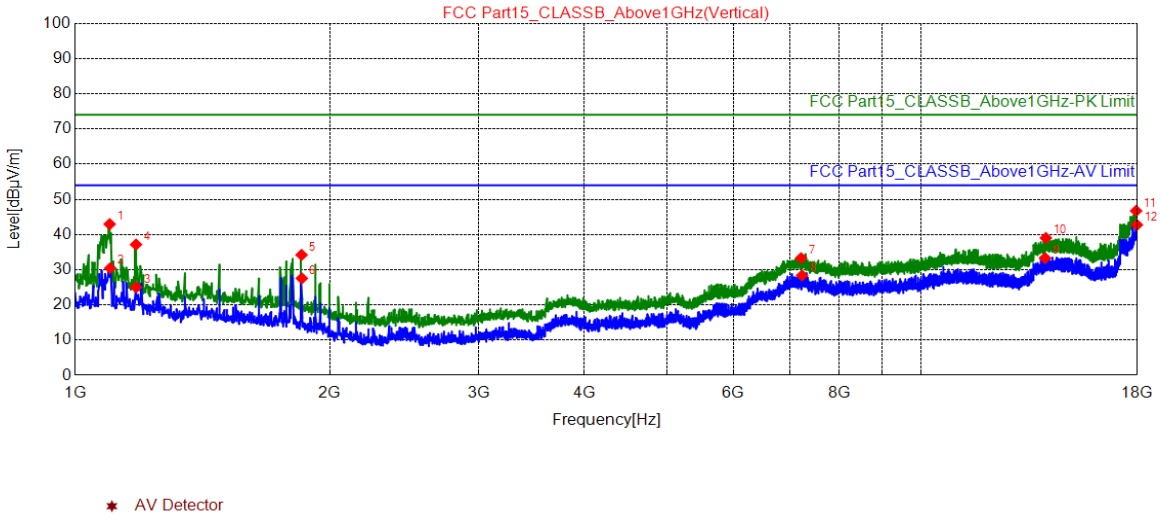


NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle[°]	Polarity	Detector
1	1102.0000	58.46	38.28	74.00	35.72	100	147	Horizont	PK
2	1112.2000	48.06	27.92	54.00	26.08	100	136	Horizont	AV
3	1481.1000	49.45	30.53	74.00	43.47	100	199	Horizont	PK
4	1482.8000	43.34	24.43	54.00	29.57	100	199	Horizont	AV
5	1851.7000	52.81	35.10	74.00	38.90	100	209	Horizont	PK
6	1853.4000	44.00	26.30	54.00	27.70	100	209	Horizont	AV
7	6995.9000	28.11	28.02	54.00	25.98	100	271	Horizont	AV
8	7067.3000	33.24	33.01	74.00	40.99	100	261	Horizont	PK
9	14348.400	30.41	33.52	54.00	20.48	100	63	Horizont	AV
10	14484.400	34.94	38.12	74.00	35.88	100	240	Horizont	PK
11	17933.700	33.24	47.36	74.00	26.64	100	12	Horizont	PK
12	17945.600	28.45	42.69	54.00	11.31	100	188	Horizont	AV

REMARKS:

1. The emission levels of other frequencies were very low against the limit.
2. Margin = Limit –Level

Position: Vertical



NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle[°]	Polarity	Detector
1	1098.6000	63.15	42.96	74.00	31.04	100	203	Vertical	PK
2	1100.3000	50.64	30.46	54.00	23.54	100	203	Vertical	AV
3	1180.2000	44.93	25.02	54.00	28.98	100	193	Vertical	AV
4	1180.2000	57.07	37.16	74.00	36.84	100	193	Vertical	PK
5	1851.7000	51.93	34.22	74.00	39.78	100	224	Vertical	PK
6	1853.4000	45.25	27.55	54.00	26.45	100	213	Vertical	AV
7	7211.8000	33.89	33.30	74.00	40.70	100	307	Vertical	PK
8	7230.5000	29.02	28.38	54.00	25.62	100	255	Vertical	AV
9	14006.700	30.41	33.30	54.00	20.70	100	47	Vertical	AV
10	14037.300	36.11	39.02	74.00	34.98	100	245	Vertical	PK
11	17947.300	32.47	46.73	74.00	27.27	100	26	Vertical	PK
12	17984.700	28.10	42.75	54.00	11.25	100	266	Vertical	AV

REMARKS:

1. The emission levels of other frequencies were very low against the limit.
2. Margin = Limit –Level

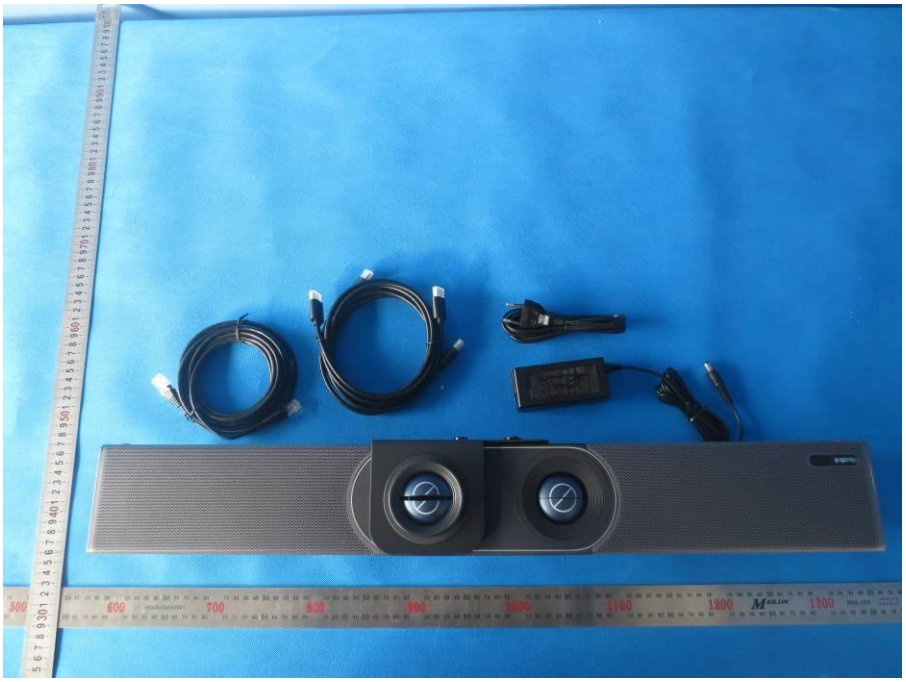
5.7 Test Photographs (30MHz ~ 1000MHz)

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

5.8 Test Photographs (1000MHz ~ 18000MHz)

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

6 Photographs of EUT



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