

FCC TEST REPORT

Report No.: FVC-ESH-P20112379B-15
FCC ID: T2C-A20
Product: Video Conferencing Endpoint
Test Model: MeetingBar A20
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)

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1. TEST PROGRAM

PRODUCT: Video Conferencing Endpoint
TEST MODEL: MeetingBar A20
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 : Daniel Sun, **DATE:** Jan.23, 2021
Daniel Sun
EMC Lab Manager





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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 A20
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 (dB μ V)		Class B (dB μ V)	
	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.



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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



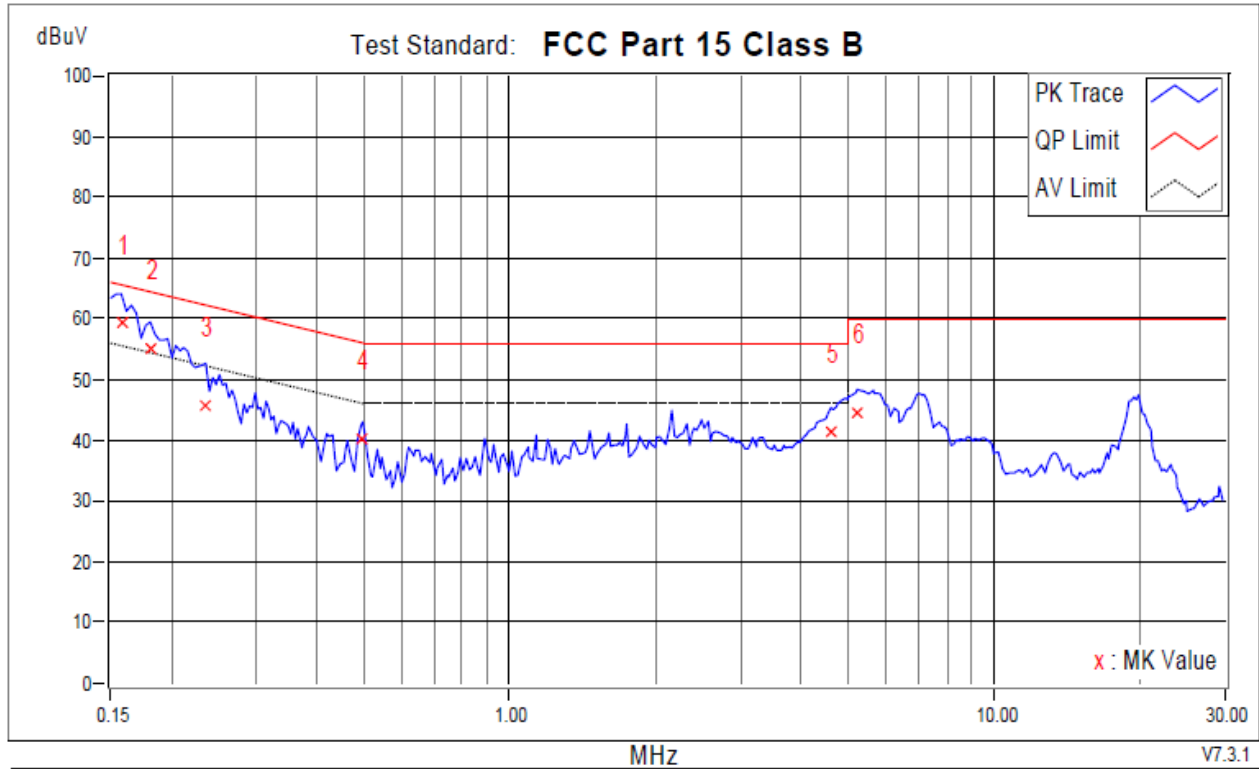
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4.5 Test Result and Data

Conducted Emission Test Data

120Vac/60Hz

Phase : LINE



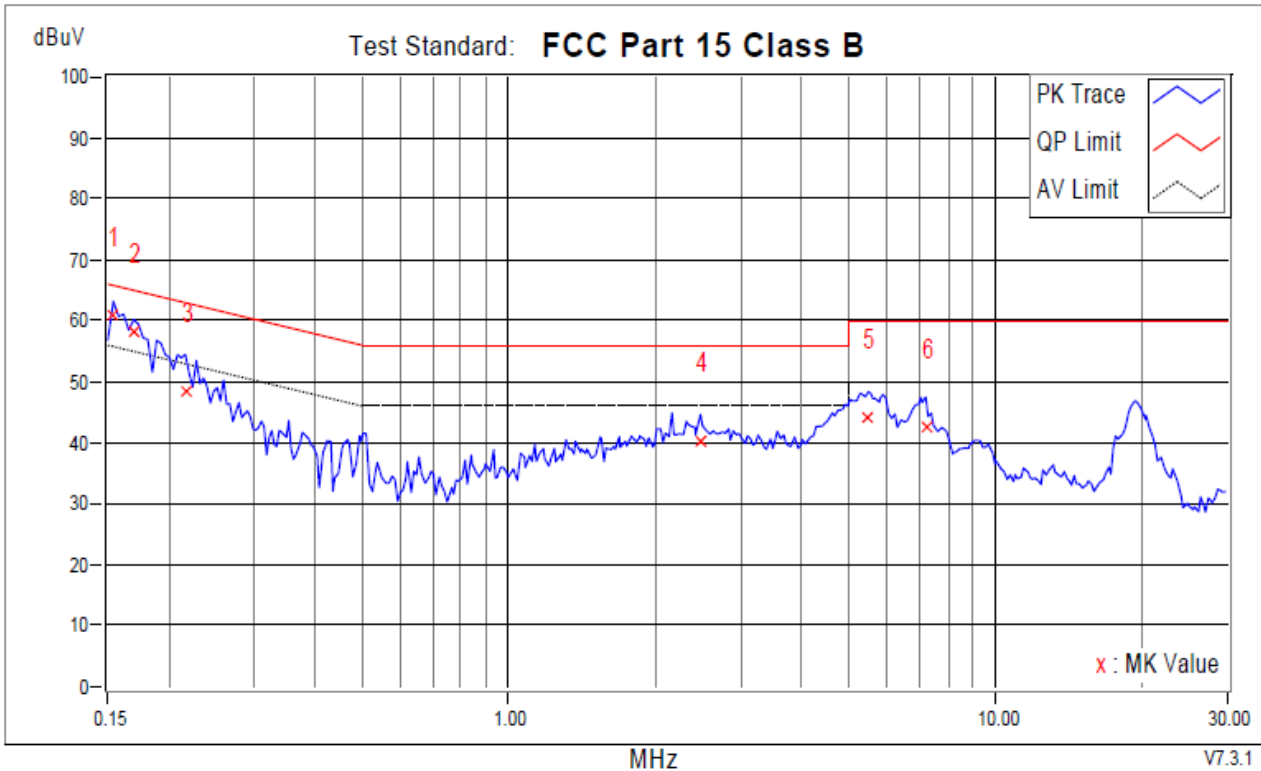
No.	Frequency	Corr. Factor	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
	MHz		QP	AV	QP	AV	QP	AV	QP	AV	
+1	0.15782	9.86	49.43	31.45	59.29	41.31	65.58	55.58	-6.28	-14.26	
2	0.18128	9.87	45.08	24.29	54.95	34.16	64.43	54.43	-9.47	-20.26	
3	0.23602	9.82	35.71	19.32	45.53	29.14	62.24	52.24	-16.70	-23.09	
4	0.49799	9.74	30.58	25.05	40.32	34.79	56.03	46.03	-15.71	-11.24	
5	4.61284	9.84	31.52	22.15	41.36	31.99	56.00	46.00	-14.64	-14.01	
6	5.22280	9.86	34.69	25.35	44.55	35.21	60.00	50.00	-15.45	-14.79	

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



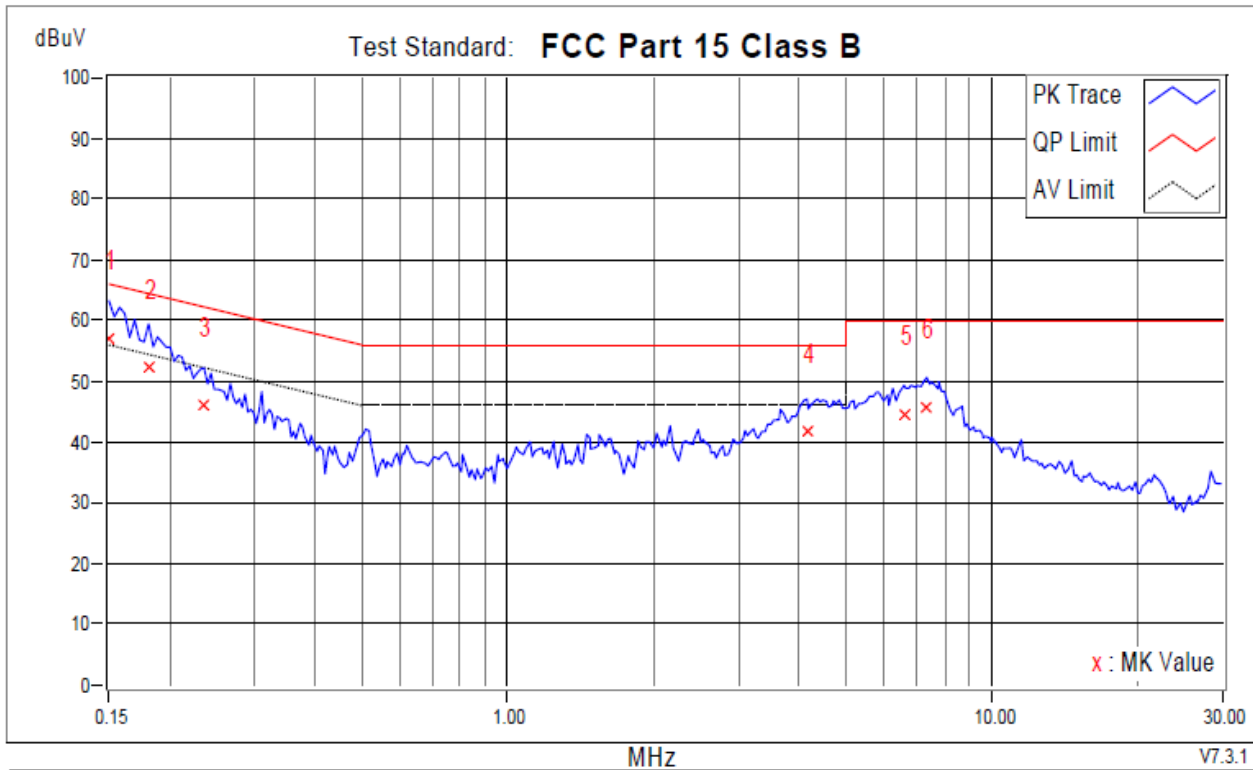
No.	Frequency MHz	Corr. Factor dB	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
			QP	AV	QP	AV	QP	AV	QP	AV	
+1	0.15391	9.87	51.14	32.47	61.01	42.34	65.79	55.79	-4.78	-13.45	
2	0.16955	9.85	48.45	27.68	58.30	37.53	64.98	54.98	-6.68	-17.45	
3	0.21647	9.83	38.60	23.23	48.43	33.06	62.95	52.95	-14.52	-19.89	
4	2.48189	9.95	30.47	23.23	40.42	33.18	56.00	46.00	-15.58	-12.82	
5	5.49259	9.61	34.71	25.30	44.32	34.91	60.00	50.00	-15.68	-15.09	
6	7.20908	9.91	32.53	23.36	42.44	33.27	60.00	50.00	-17.56	-16.73	

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



No.	Frequency	Corr. Factor	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
	MHz		QP	AV	QP	AV	QP	AV	QP	AV	
+1	0.15000	9.87	47.35	26.29	57.22	36.16	66.00	56.00	-8.78	-19.84	
2	0.18128	9.88	42.50	22.86	52.38	32.74	64.43	54.43	-12.04	-21.68	
3	0.23602	9.83	36.36	19.69	46.19	29.52	62.24	52.24	-16.04	-22.71	
4	4.15928	9.99	31.92	23.35	41.91	33.34	56.00	46.00	-14.09	-12.66	
5	6.59521	10.18	34.27	28.26	44.45	38.44	60.00	50.00	-15.55	-11.56	
6	7.34984	10.24	35.28	29.26	45.52	39.50	60.00	50.00	-14.48	-10.50	

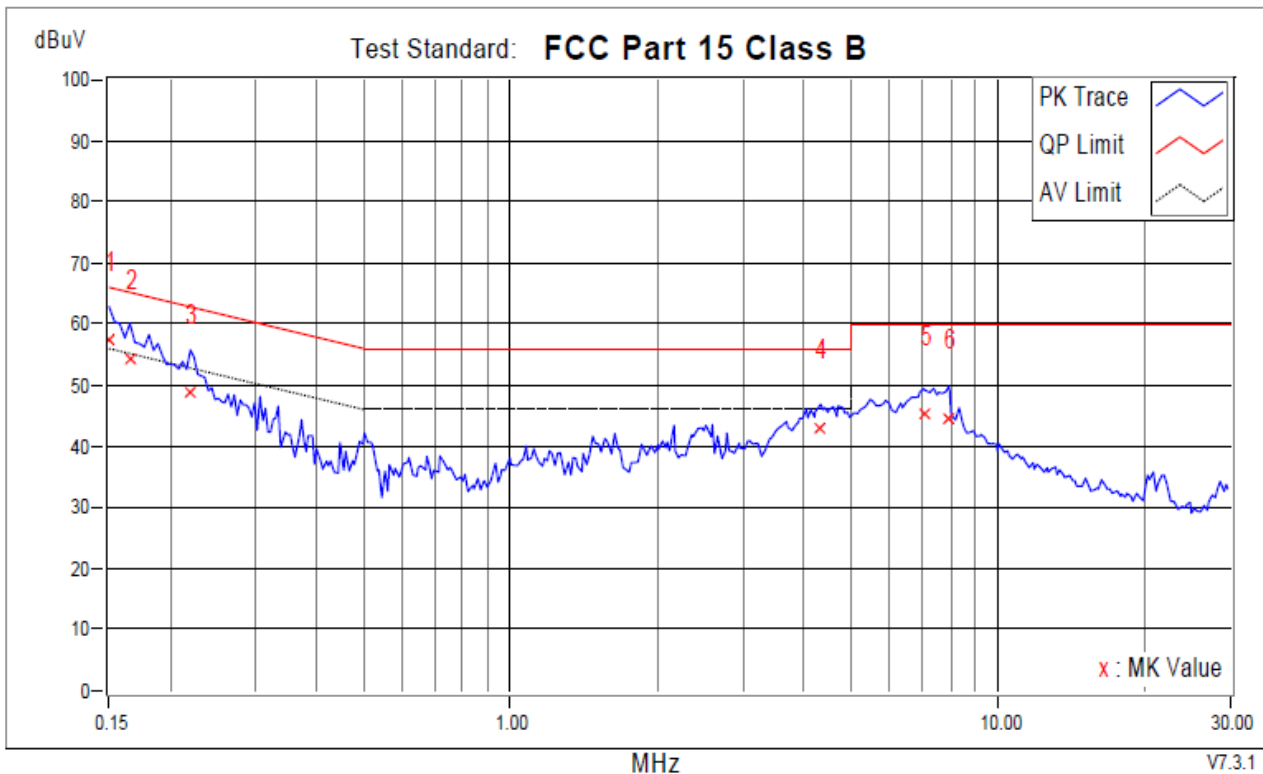
REMARKS:

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.



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Phase: NEUTRAL



No.	Frequency MHz	Corr. Factor dB	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
			QP	AV	QP	AV	QP	AV	QP	AV	
+1	0.15000	9.88	47.65	27.29	57.53	37.17	66.00	56.00	-8.47	-18.83	
2	0.16564	9.86	44.39	23.30	54.25	33.16	65.18	55.18	-10.92	-22.01	
3	0.22038	9.84	39.00	22.64	48.84	32.48	62.80	52.80	-13.96	-20.32	
4	4.33523	9.84	33.32	25.67	43.16	35.51	56.00	46.00	-12.84	-10.49	
5	7.05659	10.20	35.28	28.87	45.48	39.07	60.00	50.00	-14.52	-10.93	
6	7.93634	10.21	34.51	27.89	44.72	38.10	60.00	50.00	-15.28	-11.90	

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)	
	$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$	$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$
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

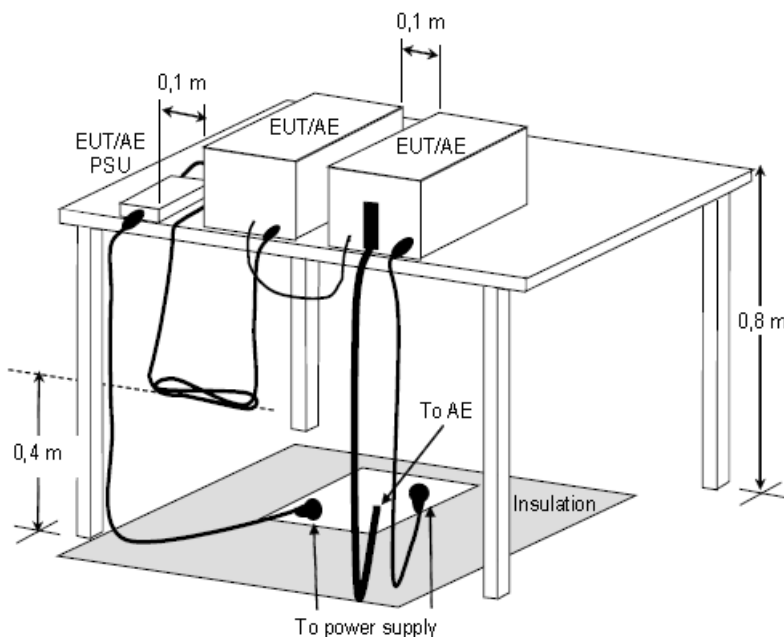
FREQUENCY (MHz)	Class A ($\text{dB}\mu\text{V/m}$) (at 3m)		Class B ($\text{dB}\mu\text{V/m}$) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80.0	60.0	74.0	54.0

- Note:**
1. The lower limit shall apply at the transition frequencies.
 2. Emission level ($\text{dB}\mu\text{V/m}$) = $20 \log$ Emission level ($\mu\text{V/m}$).
 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)**



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5.4 Measurement Equipment

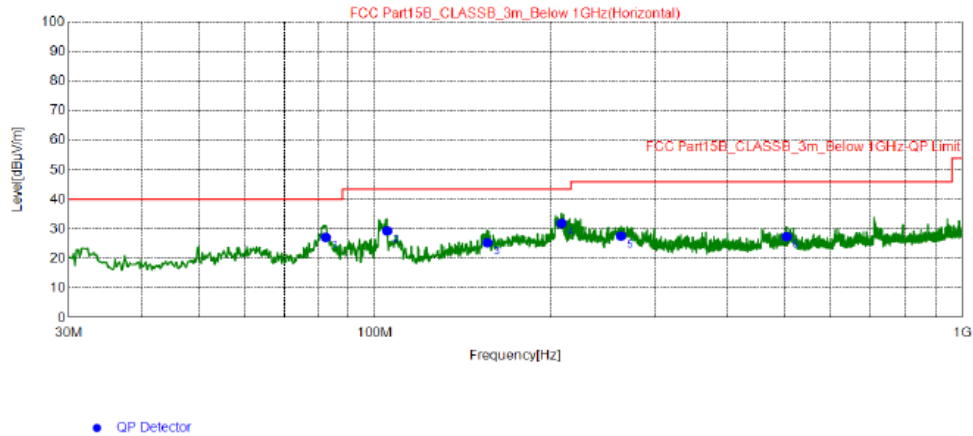
DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
EMI Test Spectrum ROHDE & SCHWARZ	ESR7	E1R1005	May.11, 2021
Spectrum Analyzer Keysight	N9030B	E1S1003	Aug.03, 2021
Broad-Band Antenna Schwarzbeck	VULB9168	E1A1012	Jul.27, 2021
Double Riaged Vroadband Horn Antenna Schwarzbeck	BBHA9120D	E1A1017	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 [dB µV/m]	Factor [dB]	QP Value [dB µV/m]	QP Limit [dB µV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	82.38	41.91	-14.70	27.21	40.00	12.79	200	183	Horizontal
2	104.8	43.73	-14.37	29.36	43.50	14.14	200	301	Horizontal
3	155.5	35.33	-9.88	25.45	43.50	18.05	100	110	Horizontal
4	208.2	43.89	-11.97	31.92	43.50	11.58	100	101	Horizontal
5	262.9	37.64	-9.95	27.69	46.00	18.31	100	141	Horizontal
6	503.9	31.91	-4.47	27.44	46.00	18.56	100	106	Horizontal

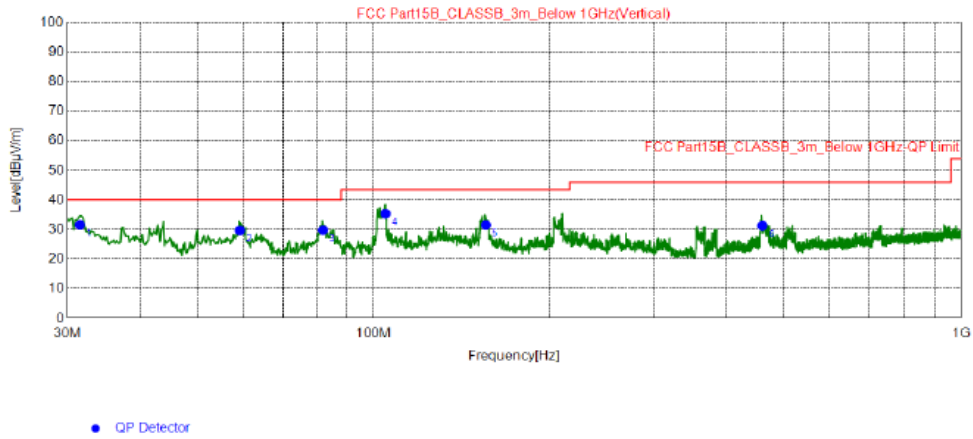
REMARKS:

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.



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Position: Vertical



Final Data List									
NO.	Freq. [MHz]	QP Reading [dB µV/m]	Factor [dB]	QP Value [dB µV/m]	QP Limit [dB µV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	31.55	43.01	-11.47	31.54	40.00	8.46	100	179	Vertical
2	59.10	39.92	-10.22	29.70	40.00	10.30	100	354	Vertical
3	81.99	44.45	-14.64	29.81	40.00	10.19	200	136	Vertical
4	104.6	49.8	-14.39	35.41	43.50	8.09	100	219	Vertical
5	155.3	41.39	-9.89	31.50	43.50	12.00	100	138	Vertical
6	460.0	36.3	-5.01	31.29	46.00	14.71	100	88	Vertical

REMARKS:

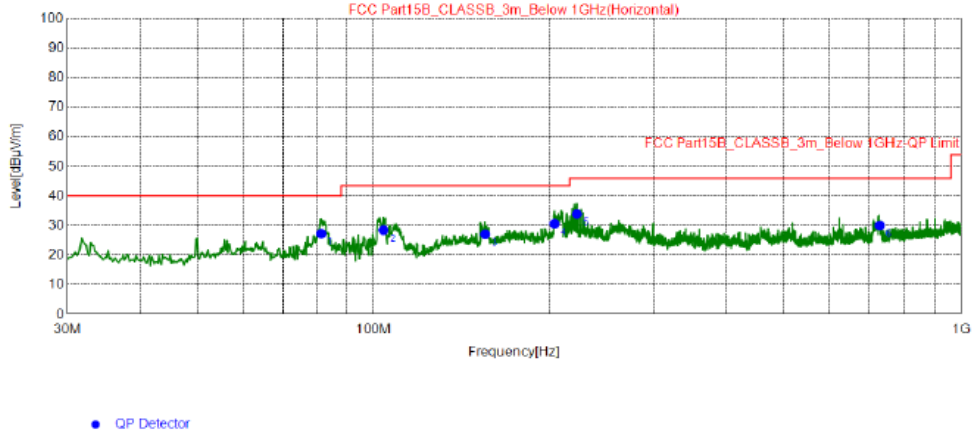
1. Q.P. is abbreviation of quasi-peak individually.
2. The emission levels of other frequencies were very low against the limit.
3. QP Margin value = QP Limit value – QP value
4. Factor = Antenna Factor + Amplifier Factor + Cable loss
5. QP value = Factor + Reading Value.



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240Vac/50Hz

Position: Horizontal



Final Data List									
NO.	Freq. [MHz]	QP Reading [dB µV/m]	Factor [dB]	QP Value [dB µV/m]	QP Limit [dB µV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	81.41	41.82	-14.54	27.28	40.00	12.72	200	200	Horizontal
2	103.9	42.98	-14.49	28.49	43.50	15.01	200	295	Horizontal
3	154.9	36.99	-9.90	27.09	43.50	16.41	200	182	Horizontal
4	203.4	42.74	-12.06	30.68	43.50	12.82	100	183	Horizontal
5	222.0	45.57	-11.68	33.89	46.00	12.11	100	178	Horizontal
6	730.3	31.05	-1.00	30.05	46.00	15.95	200	128	Horizontal

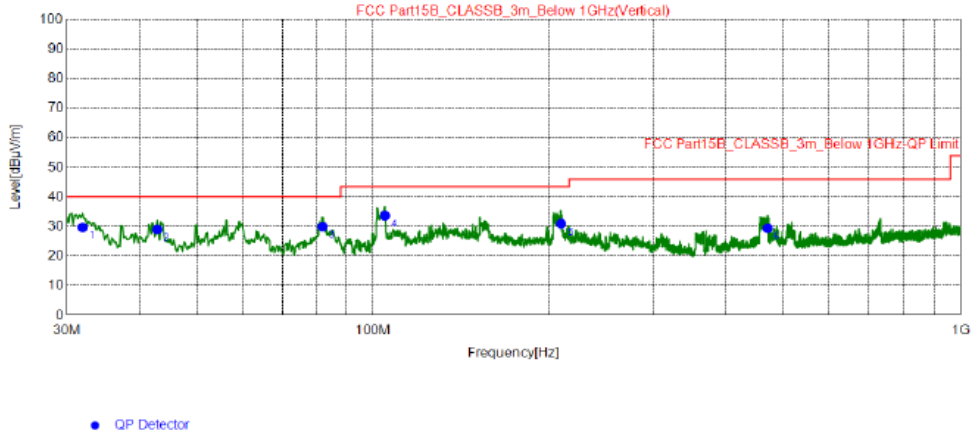
REMARKS:

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.



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Position: Vertical



Final Data List									
NO.	Freq. [MHz]	QP Reading [dB µV/m]	Factor [dB]	QP Value [dB µV/m]	QP Limit [dB µV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	31.94	41.14	-11.43	29.71	40.00	10.29	100	228	Vertical
2	42.80	39.21	-10.23	28.98	40.00	11.02	100	259	Vertical
3	81.99	44.63	-14.64	29.99	40.00	10.01	200	104	Vertical
4	104.6	48.06	-14.39	33.67	43.50	9.83	100	360	Vertical
5	209.2	42.95	-11.95	31.00	43.50	12.50	100	187	Vertical
6	470.9	34.28	-4.88	29.40	46.00	16.60	100	336	Vertical

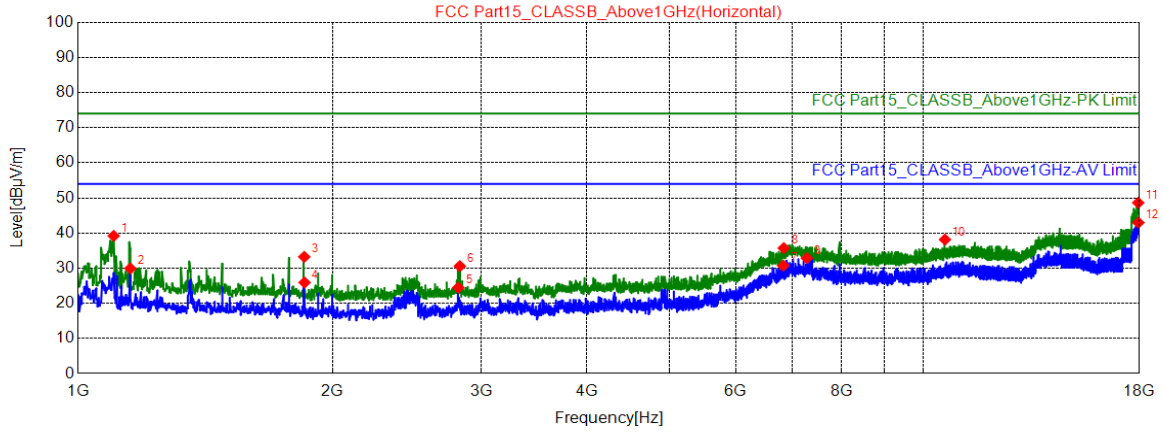
REMARKS:

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



★ AV Detector

NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Detector
1	1102.0000	59.40	39.22	74.00	34.78	100	164	Horizontal	PK
2	1153.0000	49.93	29.93	54.00	24.07	100	153	Horizontal	AV
3	1851.7000	50.95	33.24	74.00	40.76	100	247	Horizontal	PK
4	1853.4000	43.63	25.93	54.00	28.07	100	237	Horizontal	AV
5	2817.3000	38.80	24.49	54.00	29.51	100	247	Horizontal	AV
6	2829.2000	44.86	30.59	74.00	43.41	100	132	Horizontal	PK
7	6827.6000	32.15	30.73	54.00	23.27	100	258	Horizontal	AV
8	6836.1000	37.07	35.72	74.00	38.28	100	237	Horizontal	PK
9	7279.8000	33.65	32.88	54.00	21.12	100	164	Horizontal	AV
10	10603.300	38.48	38.16	74.00	35.84	100	300	Horizontal	PK
11	17949.000	34.35	48.63	74.00	25.37	100	279	Horizontal	PK
12	17955.800	28.63	42.98	54.00	11.02	100	17	Horizontal	AV

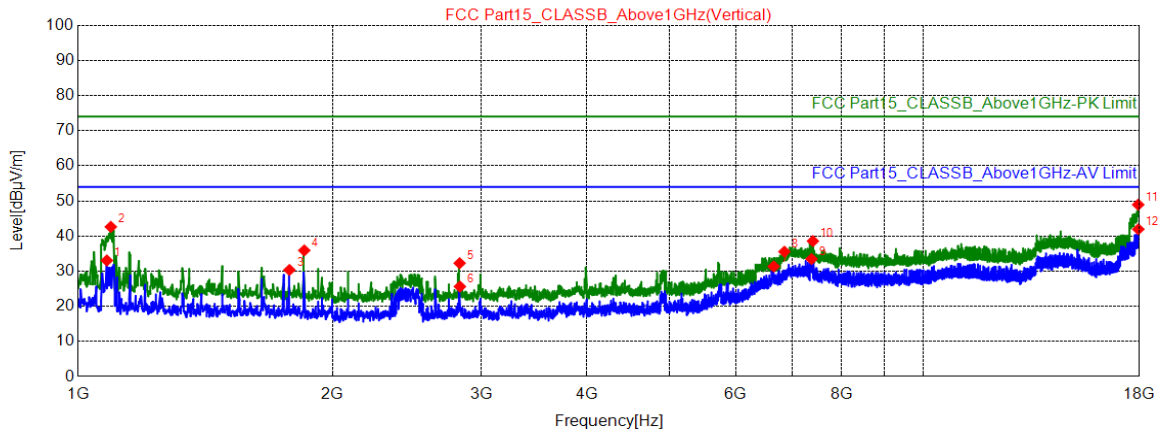
REMARKS:

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



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Position: Vertical



★ AV Detector

NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Detector
1	1081.6000	53.31	33.06	54.00	20.94	100	186	Vertical	AV
2	1093.5000	62.84	42.63	74.00	31.37	100	228	Vertical	PK
3	1778.6000	48.30	30.37	54.00	23.63	100	124	Vertical	AV
4	1851.7000	53.63	35.92	74.00	38.08	100	186	Vertical	PK
5	2827.5000	46.55	32.28	74.00	41.72	100	239	Vertical	PK
6	2829.2000	39.90	25.63	54.00	28.37	100	239	Vertical	AV
7	6652.5000	34.08	31.35	54.00	22.65	100	249	Vertical	AV
8	6848.0000	36.83	35.57	74.00	38.43	100	93	Vertical	PK
9	7373.3000	34.48	33.47	54.00	20.53	100	0	Vertical	AV
10	7400.5000	39.67	38.58	74.00	35.42	100	114	Vertical	PK
11	17947.300	34.68	48.94	74.00	25.06	100	343	Vertical	PK
12	17955.800	27.60	41.95	54.00	12.05	100	354	Vertical	AV

REMARKS:

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



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5.7 Test Photographs (30MHz ~ 1000MHz)

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



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5.8 Test Photographs (1000MHz ~ 18000MHz)

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

6 Photographs of EUT



--- END ---