

TEST REPORT

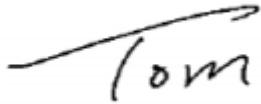

Applicant:	ARKON ELECTRONICS (HUIZHOU) CO., LIMITED
Address:	NO.4 Taihao Road, High-tech Industrial Park, Sandong Town, Huicheng District, Huizhou, Guangdong, China

Manufacturer or Supplier	ARKON ELECTRONICS (HUIZHOU) CO., LIMITED
Address	NO.4 Taihao Road, High-tech Industrial Park, Sandong Town, Huicheng District, Huizhou, Guangdong, China
Product:	912MHz Wireless Headphone
Brand Name:	ARKON/RCA/MONODEAL
Model:	HP4790C
Additional Models & Model Difference	WHP145; MD863; HP4790
Date of tests:	Jun. 01, 2021 ~ Jun 12, 2021

the tests have been carried out according to the requirements of the following standard:

FCC Part 15, Subpart C, Section 15.249

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

Tested by Tom Chen Project Engineer / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
	
	Date: Jul. 12, 2021

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EUT BY THE LAB 35



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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF2106WDG0046	Original release	Jul. 12, 2021

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.249)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
§15.203	Antenna Requirement	PASS	No antenna connector is used
§15.207 (a)	Conducted Emission	PASS	Compliant
§15.205	Restricted Band of Operation	PASS	Compliant
§15.209 §15.249(a)	Radiated Emission	PASS	Compliant
§15.215(c)	20dB Bandwidth Test	PASS	Compliant

2 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:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9KHz-30MHz	2.66dB
Radiated emissions	9KHz ~ 30MHz	2.16dB
	30MHz ~ 1GMHz	3.47dB
	1GHz ~ 18GHz	4.84dB
	18GHz ~ 40GHz	4.67dB

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

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	912MHz Wireless Headphone
MODEL NO.	HP4790C
ADDITIONAL MODELS	WHP145; MD863; HP4790
FCC ID	2APBSHP4791P-001T
NOMINAL VOLTAGE	TX: DC 8.0V 0.4A from Adapter RX: DC 2.4V from battery
MODULATION TECHNOLOGY	FM
OPERATING FREQUENCY	CH1: 912MHz; CH2: 912.5MHz; CH3: 913MHz
ANTENNA TYPE	Integral Antenna, with 0dBi gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	Aux Cable: Unshielded, Undetachable, 1.8m

NOTES:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions, but only the worst case was shown in test report.
3. Please refer to the EUT photo document (Reference No.: 2106WDG0046) for detailed product photo.
4. The additional models are difference for the appearance colors and brand name.
5. The EUT was powered by the following adapter:

ADAPTER	
BRAND:	N/A
MODEL:	YLJXA-T080040
INPUT:	100-240V ~ 50/60HZ 0.5A
OUTPUT:	8.0V=0.4A
DC LINE:	Unshielded, Detachable, 1.8m

3.2 DESCRIPTION OF TEST MODES

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and packet type. The worst case was found when the EUT was positioned on X axis for radiated emission. The EUT was tested under the following mode.

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE<1G	RE≥1G	PLC	BW	
A	√	√	√	√	DC 8.0V from Adapter

Where **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission

RE≥1G: Radiated Emission above 1GHz
BW: 20db bandwidth

Following channel(s) was (were) selected for the test as listed below.

TESTED CHANNEL	TESTED FREQUENCY
1	912MHz
2	912.5MHz
3	913MHz

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE	25deg. C, 53%RH	DC 8.0V from Adapter	Tank
BW	25deg. C, 53%RH	DC 8.0V from Adapter	Tank
PLC	25deg. C, 53%RH	DC 8.0V from Adapter	Tank

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C, Section 15.249

ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

3.4 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.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Mobile Phone	HTC	htc_a53ml_dtul	LC61LYH00003	N/A

4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	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.

4.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
EMI Test Receiver (10kHz~7GHz)	Rohde&Schwarz	ESR 7	101961	2022/01/05
Artificial Mains Network	Rohde&Schwarz	ENV216	3560.6550.15	2021/09/16
Test software	FARAD	EZ_EMV V1.1.4.2	N/A	N/A
Line impedance stabilization network	HAMEG	HM6050	47700001	2022/3/14
Netznachbildung artificial main LISN	Schwarzbeck	NSLK8126	8126425	2022/3/14

- 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 Shielded Room 553.

4.1.3 TEST PROCEDURES

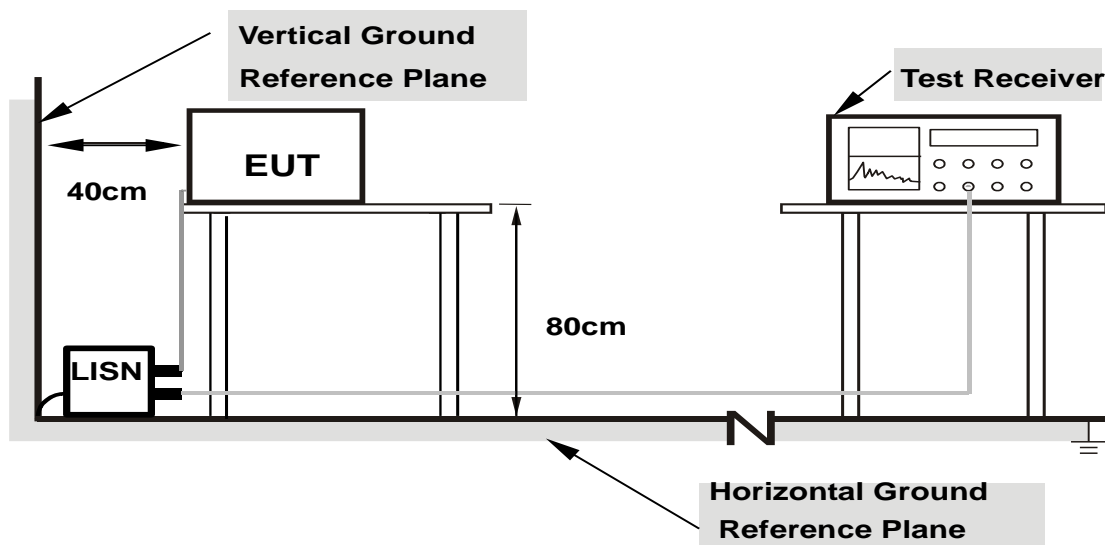
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

4.1.5 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 from other units and other metal planes

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

4.1.6 EUT OPERATING CONDITIONS

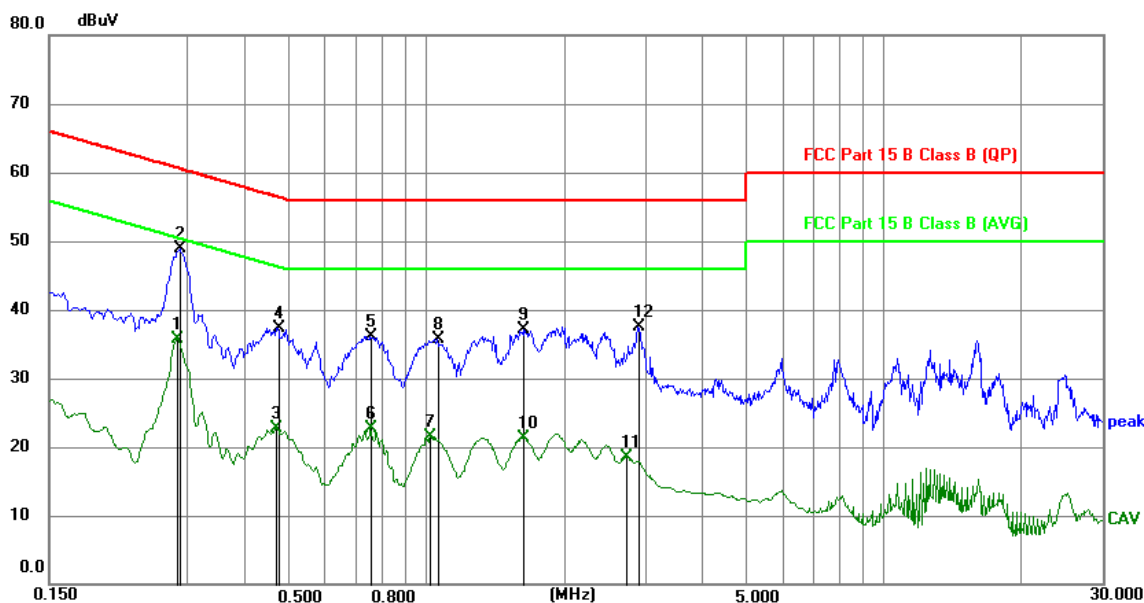
- Set the EUT under full load condition and placed them on a testing table.
- Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.
- The necessary accessories enable the EUT in full functions.

4.1.7 TEST RESULTS

TEST MODE	See section 2.2	6DB BANDWIDTH	9 kHz
TEST VOLTAGE	See section 2.2	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	26.5deg.C, 52% RH	TESTED BY	Benson

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2850	25.90	9.79	35.69	50.67	-14.98	AVG
2*	0.2895	39.07	9.79	48.86	60.54	-11.68	peak
3	0.4695	12.86	9.82	22.68	46.52	-23.84	AVG
4	0.4740	27.55	9.82	37.37	56.44	-19.07	peak
5	0.7575	26.27	9.89	36.16	56.00	-19.84	peak
6	0.7575	12.76	9.89	22.65	46.00	-23.35	AVG
7	1.0252	11.67	9.83	21.50	46.00	-24.50	AVG
8	1.0545	25.93	9.83	35.76	56.00	-20.24	peak
9	1.6350	27.19	9.83	37.02	56.00	-18.98	peak
10	1.6372	11.57	9.83	21.40	46.00	-24.60	AVG
11	2.7465	8.84	9.73	18.57	46.00	-27.43	AVG
12	2.9108	27.71	9.70	37.41	56.00	-18.59	peak

REMARKS: The emission levels of other frequencies were very low against the limit.

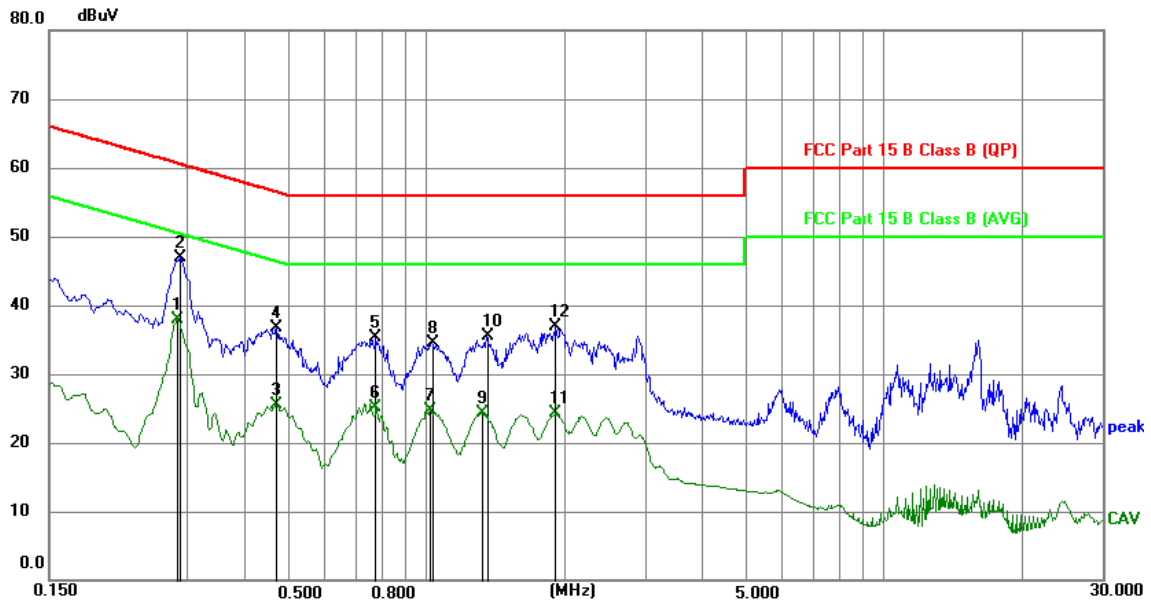


Test Report No.: RF2106WDG0046

TEST MODE	See section 2.2	6DB BANDWIDTH	9 kHz
TEST VOLTAGE	See section 2.2	PHASE	Line (N)
ENVIRONMENTAL CONDITIONS	26.5deg.C, 52% RH	TESTED BY	Benson

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2850	28.12	9.76	37.88	50.67	-12.79	AVG
2	0.2895	37.24	9.76	47.00	60.54	-13.54	peak
3	0.4695	15.81	9.74	25.55	46.52	-20.97	AVG
4	0.4717	26.91	9.74	36.65	56.48	-19.83	peak
5	0.7777	25.48	9.76	35.24	56.00	-20.76	peak
6	0.7777	15.41	9.76	25.17	46.00	-20.83	AVG
7	1.0252	14.96	9.70	24.66	46.00	-21.34	AVG
8	1.0275	24.71	9.70	34.41	56.00	-21.59	peak
9	1.3223	14.57	9.73	24.30	46.00	-21.70	AVG
10	1.3583	25.77	9.73	35.50	56.00	-20.50	peak
11	1.9118	14.51	9.72	24.23	46.00	-21.77	AVG
12	1.9185	27.11	9.73	36.84	56.00	-19.16	peak

REMARKS: The emission levels of other frequencies were very low against the limit.



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

According to §15.249(a), the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency	Field strength of fundamental (milli-volts/meter)	Field strength of harmonics (micro-volts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

The emission limit in this paragraph is based on measurement instrumentation employing an quasi-peak(Below 1GHz)/average(Above 1GHz) detector. The provisions in §15.35 for limiting peak emissions apply.

NOTES:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/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.

4.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal. Date
Spectrum (10kHz~26.5GHz)	Keysight	N9020A	MY51240612	2021/09/16
Power Meter 10Hz~18GHz	Tonscend	JS0806-2	188060126	2021/09/16
Spectrum Analyzer	Rohde&Schwarz	FSV-40N	101783	2021/09/16
Signal generator	Keysight	N4421B	GB40051020	2021/09/16
Signal generator	Keysight	N5182A	MY47420944	2021/09/16
Test Software	Tonscend	JS0806-2	NA	NA
Power Meter 10Hz~18GHz	Tonscend	JS0806-2	188060126	2021/09/16
Test Software	Tonscend	JS0806-3	NA	NA
Humidity tester (- 40 to 150°C)	SanShun	SS-HWHS-800	NA	NA
Universal Switch Control Unit	Rohde&Schwarz	CMW500	12010002K50	2021/09/16
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	2022/03/14
Test Software	ADT	ADT_Radiated_ V7.6.15.9.2	N/A	N/A
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	N/A

NOTES:

1. The test was performed in 966 Chamber of Hwa-Hsing (Dongguan).
2. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to CEPREI/CHINA.
3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is CN1255.

4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 1.5 meters (above 1GHz) and 0.8 meters (below 1GHz) above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. 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.
- 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 Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.
- g. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

NOTES:

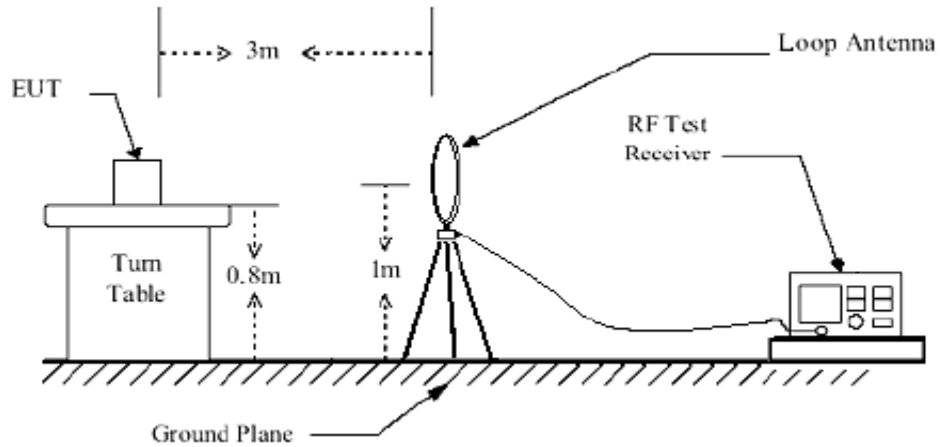
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.
5. The testing of the EUT was performed on all 3 orthogonal axes; the worst-case test configuration was reported on the file test setup photo.

4.2.4 DEVIATION FROM TEST STANDARD

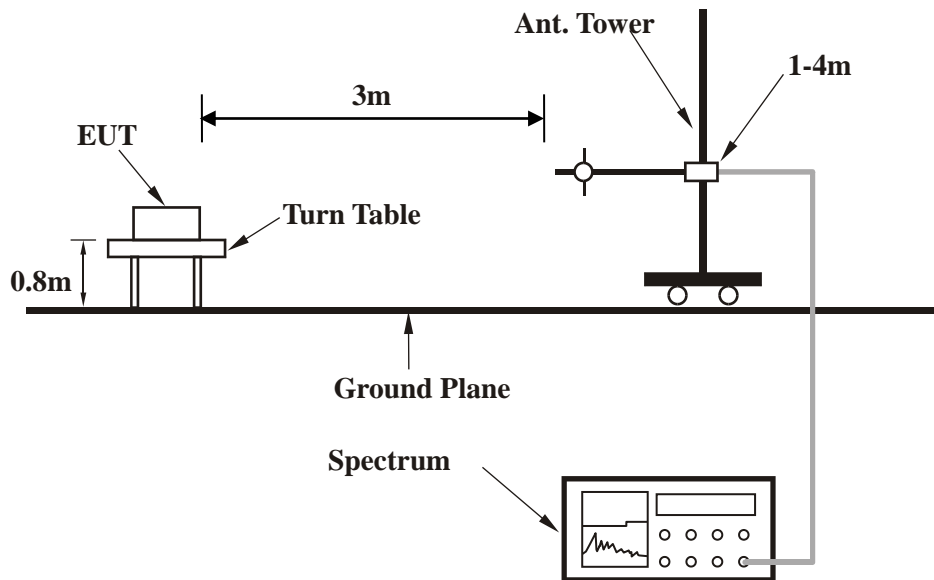
No deviation.

4.2.5 TEST SETUP

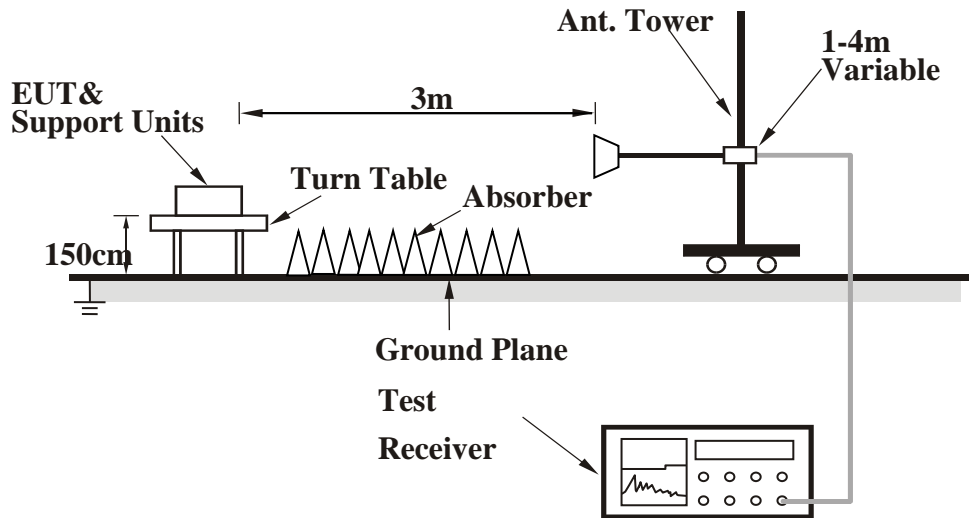
Below 30MHz test setup



Below 1GHz test setup



Above 1GHz test setup



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

4.2.6 EUT OPERATING CONDITIONS

- a) Turned on the power of all equipment.
- b) EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.

4.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

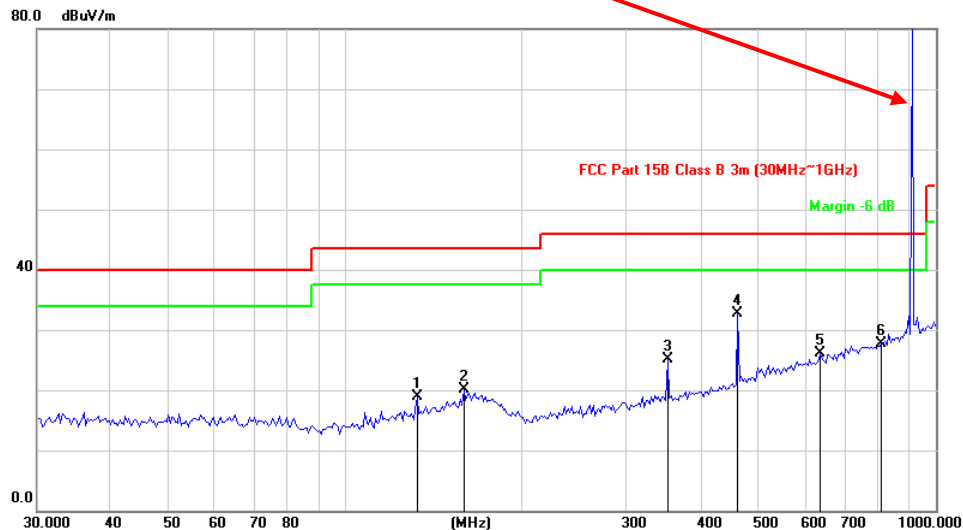
CHANNEL	1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9KHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	132.1489	34.51	43.50	-24.53	200	157	34.51	-15.54
2	158.6399	33.23	43.50	-23.49	200	287	33.23	-13.22
3	350.9722	37.83	46.00	-20.90	200	115	37.83	-12.73
4	461.6313	42.68	46.00	-13.36	300	36	42.68	-10.04
5	637.7947	32.13	46.00	-19.87	200	228	32.13	-6.00
6	809.9238	30.64	46.00	-18.34	200	174	30.64	-2.98

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 emission levels of other frequencies were greater than 20dB margin.
4. 9KHz~30MHz have been test and test data more than 20dB margin.
5. Margin value = Emission level – Limit value.

The emission is fundamental frequency signal which can be ignored.



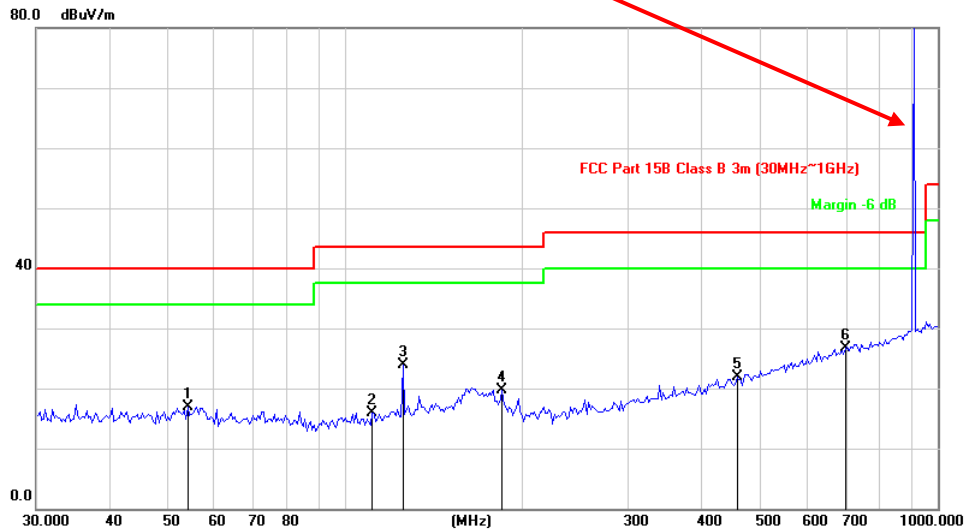
CHANNEL	1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9KHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	54.1349	16.95	40.00	-23.05	100	137	33.77	-16.82
2	110.8581	15.98	43.50	-27.52	200	269	32.94	-16.96
3	124.9249	23.95	43.50	-19.55	100	118	39.83	-15.88
4	183.8660	19.66	43.50	-23.84	100	314	34.33	-14.67
5	458.3987	21.93	46.00	-24.07	100	172	32.05	-10.12
6	698.8035	26.70	46.00	-19.30	100	287	31.44	-4.74

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 emission levels of other frequencies were greater than 20dB margin.
4. 9KHz~30MHz have been test and test data more than 20dB margin.
5. Margin value = Emission level – Limit value.

The emission is fundamental frequency signal which can be ignored.

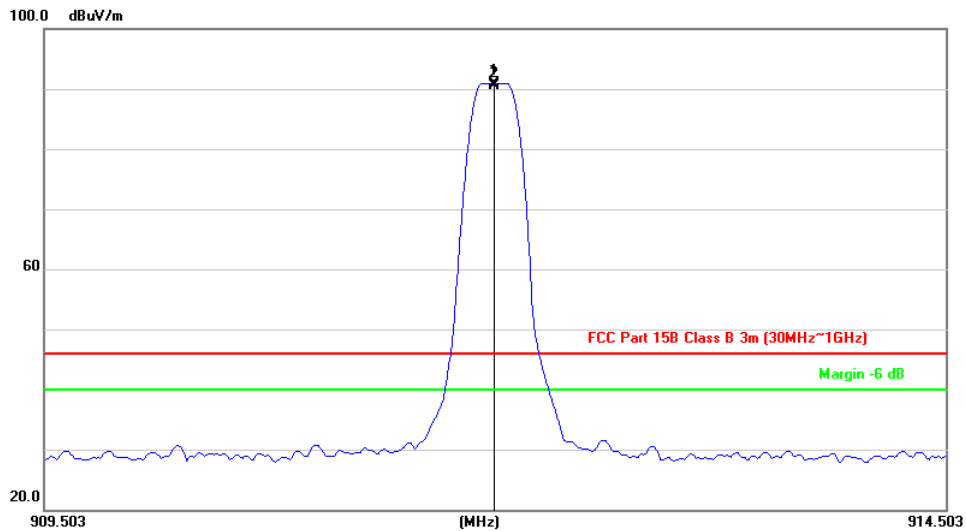


FUNDAMENTAL FREQUENCY.

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	911.9950	90.94	94.00	-3.06	100	89	91.69	-0.75

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 emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.

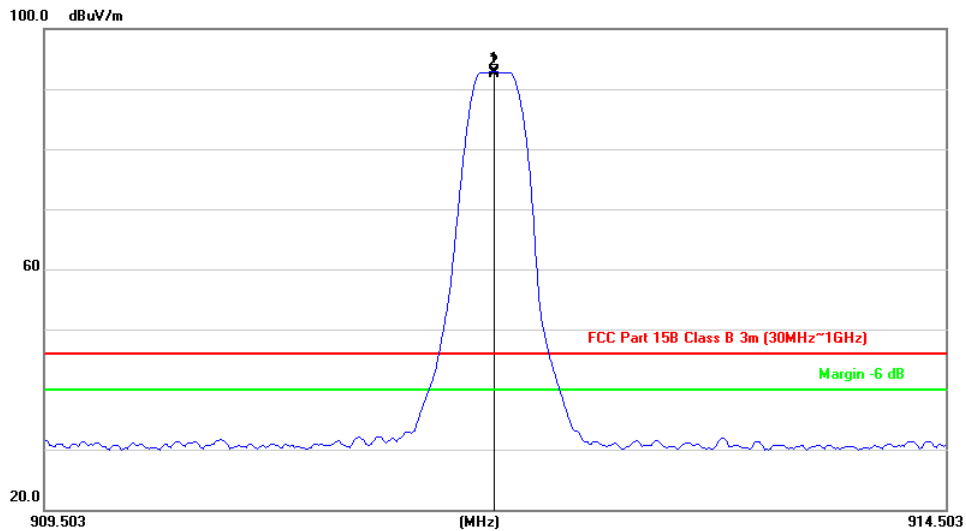


FUNDAMENTAL FREQUENCY.

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	911.9950	92.83	94.00	-1.17	115	245	93.58	-0.75

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 emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.

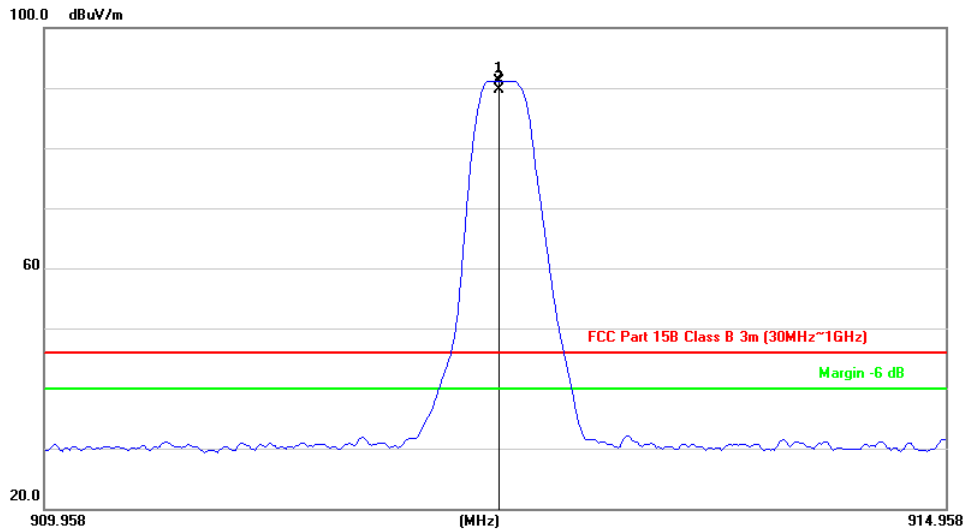


FUNDAMENTAL FREQUENCY.

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	912.4801	91.18	94.00	-2.82	100	82	91.93	-0.75

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 emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.

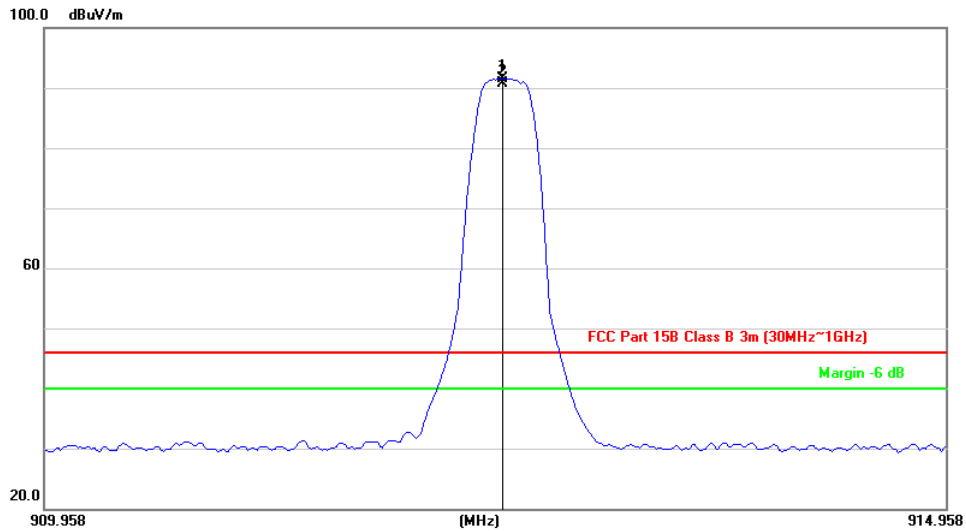


FUNDAMENTAL FREQUENCY.

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	912.5001	91.53	94.00	-2.47	120	71	92.27	-0.74

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 emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.

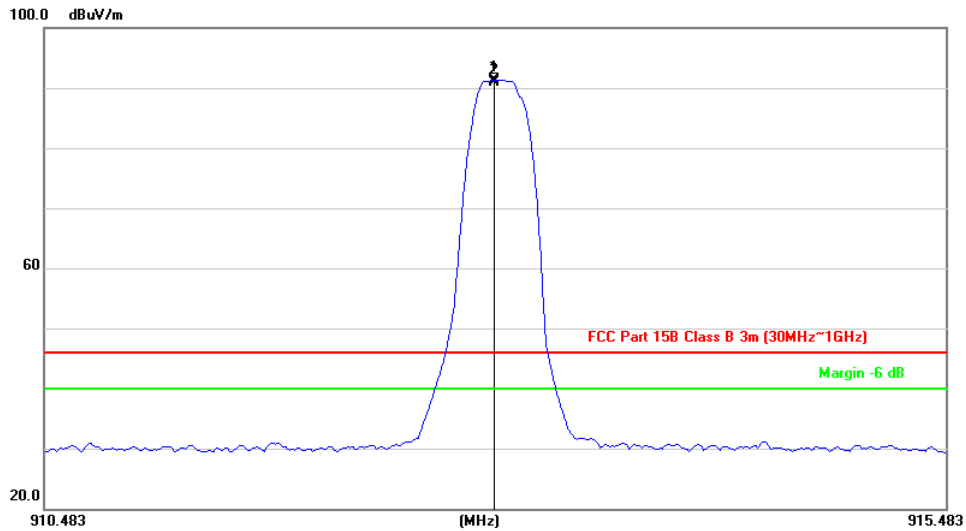


FUNDAMENTAL FREQUENCY.

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	912.9750	91.28	94.00	-2.72	100	87	92.02	-0.74

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 emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.

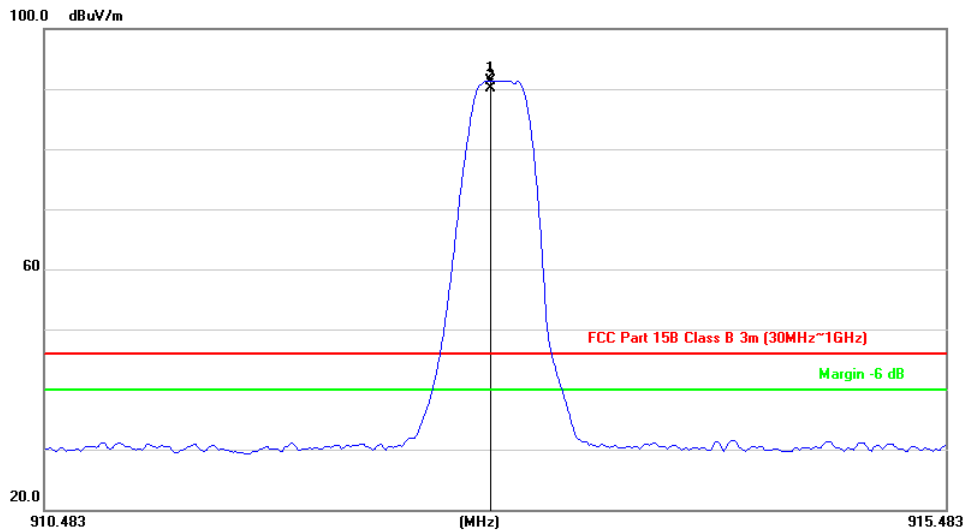


FUNDAMENTAL FREQUENCY.

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	912.9550	91.28	94.00	-2.72	100	70	92.02	-0.74

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 emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.



ABOVE 1GHZ WORST-CASE DATA:

CHANNEL	1 : 912MHz	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1824.000	46.83PK	74.00	-27.17	237	147	50.76	-3.93
2	1824.000	43.62AV	54.00	-10.38	237	147	47.55	-3.93
3	2736.000	49.01PK	74.00	-24.99	241	85	50.70	-1.69
4	2736.000	39.20AV	54.00	-14.80	241	85	40.89	-1.69
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1824.000	48.28PK	74.00	-25.72	337	237	52.21	-3.93
2	1824.000	44.31AV	54.00	-9.69	337	237	48.24	-3.93
3	2736.000	45.90PK	74.00	-28.10	100	64	47.59	-1.69
4	2736.000	38.10AV	54.00	-15.90	100	64	39.79	-1.69

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 emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.

Test Report No.: RF2106WDG0046

CHANNEL	2 : 912.5MHz	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1825.000	48.30PK	74.00	-25.70	320	87	52.23	-3.93
2	1825.000	44.91AV	54.00	-9.09	320	87	48.84	-3.93
3	2737.500	44.59PK	74.00	-29.41	240	153	46.28	-1.69
4	2737.500	33.50AV	54.00	-20.50	240	153	35.19	-1.69
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1825.000	46.80PK	74.00	-27.20	100	223	50.73	-3.93
2	1825.000	41.80AV	54.00	-12.20	100	223	45.73	-3.93
3	2737.500	45.56PK	74.00	-28.44	100	65	47.25	-1.69
4	2737.500	37.17AV	54.00	-16.83	100	65	38.86	-1.69

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 emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.

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CHANNEL	3: 913MHz	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1826.000	48.20PK	74.00	-25.80	240	151	52.11	-3.91
2	1826.000	40.30AV	54.00	-13.70	240	151	44.21	-3.91
3	2739.000	44.50PK	74.00	-29.50	241	147	46.19	-1.69
4	2739.000	35.20AV	54.00	-18.80	241	147	36.89	-1.69
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	1826.000	46.80PK	74.00	-27.20	100	63	50.71	-3.91
2	1826.000	41.81AV	54.00	-12.19	100	63	45.72	-3.91
3	2739.000	45.64PK	74.00	-28.36	100	66	47.33	-1.69
4	2739.000	38.50AV	54.00	-15.50	100	66	40.19	-1.69

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 emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.

4.3 20dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 20dB BANDWIDTH MEASUREMENT

According to FCC 15.215(c), must be designed to ensure that the 20dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

4.3.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal. Date
Spectrum (10kHz~26.5GHz)	Keysight	N9020A	MY51240612	2021/09/16
Power Meter 10Hz~18GHz	Tonscend	JS0806-2	188060126	2021/09/16
Spectrum Analyzer	Rohde&Schwarz	FSV-40N	101783	2021/09/16
Signal generator	Keysight	N4421B	GB40051020	2021/09/16
Signal generator	Keysight	N5182A	MY47420944	2021/09/16
Test Software	Tonscend	JS0806-2	NA	NA
Power Meter 10Hz~18GHz	Tonscend	JS0806-2	188060126	2021/09/16
Test Software	Tonscend	JS0806-3	NA	NA
Humidity tester (- 40 to 150℃)	SanShun	SS-HWHS-800	NA	NA
Universal Switch Control Unit	Rohde&Schwarz	CMW500	12010002K50	2021/09/16

NOTES:

1. The test was performed in RF Oven room of Hwa-Hsing (Donguan).
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA.

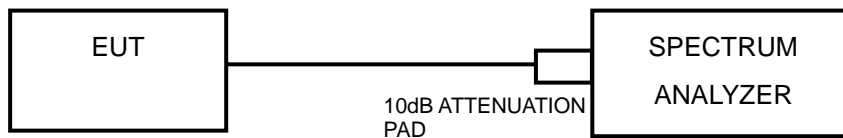
4.3.3 TEST PROCEDURE

- a. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
- c. Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
- d. Repeat above procedures until all frequencies measured were complete.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation.

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

- a) Turned on the power of all equipment.
- b) EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.

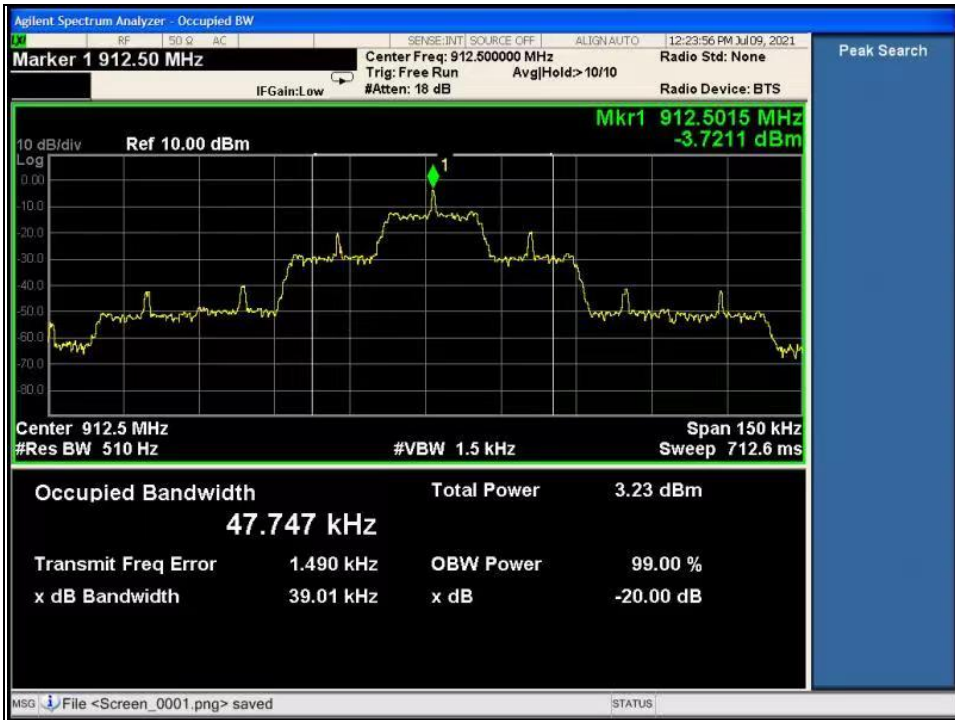
4.3.7 TEST RESULTS

CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (MHz)
1	912	0.03895
2	912.5	0.03901
3	913	0.03876

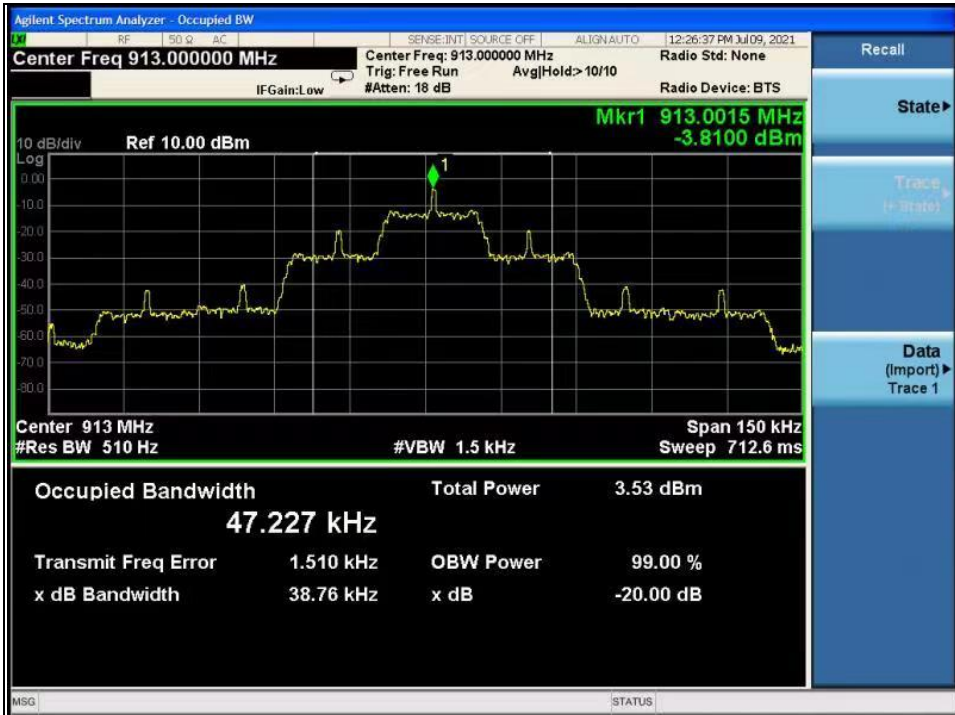
Test Data: 912MHz



912.5MHz



913MHz





Test Report No.: RF2106WDG0046

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

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

---END---