TEST REPORT

Applicant:	DOUBLEEAGLE INDUSTRY (CHINA)LIMITED
Address:	XINGDA INDUSTRIAL PARK, CHENGHAI, SHANTOU CITY, GUANGDONG PROVINCE, CHINA

Manufacturer or Supplier	DOUBLEEAGLE INDUSTRY (CHINA)LIMITED
Address	XINGDA INDUSTRIAL PARK, CHENGHAI, SHANTOU CITY, GUANGDONG PROVINCE, CHINA
Product:	BUILDING BLOCK SERIES
Brand Name:	N/A
Model:	C51078W
Additional Model & Model Difference	C61003W, C61005W, etc.; see item 3.1
Date of tests:	Apr. 17, 2024 ~ May 03, 2024

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 Loren Luo Project Engineer / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
	 Date: Jun. 18, 2024

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF2403WDG0294	Original release	Jun. 18, 2024

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	N/A	Powered from battery
§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
Radiated emissions	9KHz ~ 30MHz	2.72dB
	30MHz ~ 1GMHz	4.24dB
	1GHz ~ 18GHz	4.10dB
	18GHz ~ 40GHz	4.10dB

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	BUILDING BLOCK SERIES
MODEL NO.	C51078W
ADDITIONAL MODEL	C61003W, C61005W, C61006W, C61007W, C61008W, C61009W, C61010W, C61016W, C61018W, C61019W, C61020W, C61022W, C61023W, C61024W, C61026W, C61027W, C61028W, C61029W, C61030W, C61031W, C61033W, C61034W, C61036W, C61041W, C61042W, C61043W, C61045W, C61048W, C61049W, C61050W, C61051W, C61052W, C61054W, C61056W, C61057W, C61071W, C61072W, C61073W, C61076W, C61081W, C61082W, C61501W, C61503W, C61505W, C61507W, C62001W, C62002W, C62003W, C62004W, C62005W, C62006W, C63001W, C63002W, C63003W, C63004W, C63005W, C63006W, C64001W, C64002W, C64003W, C64004W, C64005W, C65001W, C65002W, C65003W, C65004W, C65005W, C65012W, C66001W, C66002W, C66005W, C66006W, C66007W, C66008W, C66009W, C66010W, C66011W, C66013W
FCC ID	2AAFASY-C51078W-07
NOMINAL VOLTAGE	DC 3V (1.5V*AAA*2) from battery
MODULATION TECHNOLOGY	GFSK
OPERATING FREQUENCY	2426MHz ~ 2474MHz
ANTENNA TYPE	Wire Antenna, with 0dBi gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	N/A

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.: 2403WDG0294) for detailed product photo.

4. Additional models (see above table) are identical with the test model C51078W except the color of the appearance and model number for trading purpose.

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 Y 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 3V from Battery

Where **RE<1G:** Radiated Emission below 1GHz **RE≥1G:** Radiated Emission above 1GHz
PLC: Power Line Conducted Emission **BW:** 20db bandwidth

NOTE: No need to concern of Conducted Emission due to the EUT is powered by battery.

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

TESTED CHANNEL	TESTED FREQUENCY
Low	2426 MHz
Middle	2450 MHz
High	2474 MHz

Channel List

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	**2426**	18	2443	35	2460
2	2427	19	2444	36	2461
3	2428	20	2445	37	2462
4	2429	21	2446	38	2463
5	2430	22	2447	39	2464
6	2431	23	2448	40	2465
7	2432	24	2449	41	2466
8	2433	25	2450	42	2467
9	2434	26	2451	43	2468
10	2435	27	2452	44	2469
11	2436	28	2453	45	2470
12	2437	29	2454	46	2471
13	2438	30	2455	47	2472
14	2439	31	2456	48	2473
15	2440	32	2457	**49**	**2474**
16	2441	33	2458		
17	2442	34	2459		

Note: The more detailed channel, please refer to the product specifications

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE	25deg. C, 55%RH	DC 3V from Battery	Ryker
BW	25deg. C, 56%RH	DC 3V from Battery	Ryker
PLC	-	-	-

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 without any other necessary accessories or support units

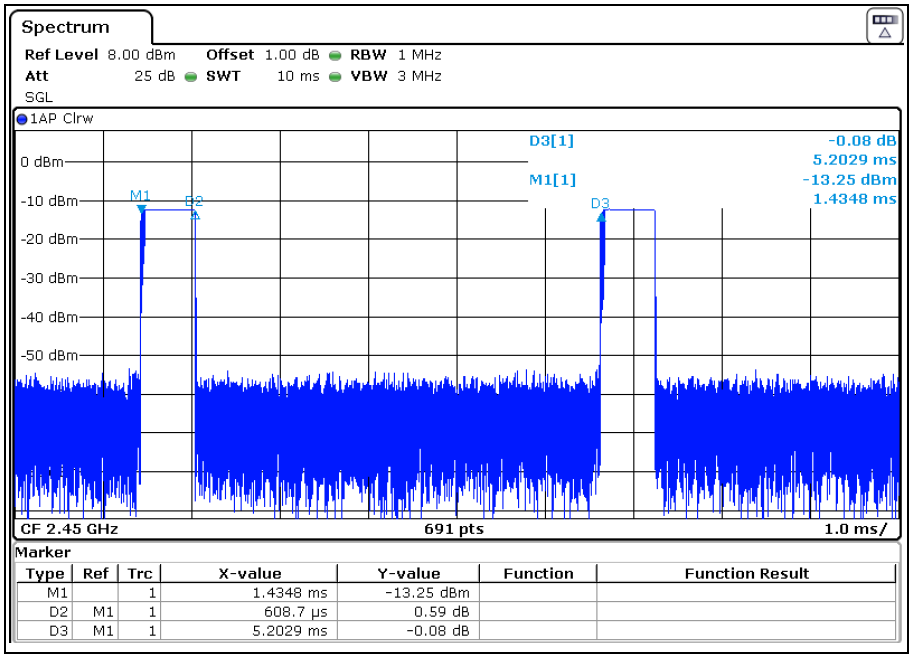
3.5 DUTY CYCLE OF TESET SIGNAL

Tp =5.2029ms

Ton =0.6087ms

Duty Cycle = Ton / Tp * 100% = 0.6087/5.2029≈ 11.7%

AV factor=20 log (Duty cycle) = 20Log(11.7%)≈ -18.64dB



4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 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 average 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.

4.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
Spectrum Analyzer	Rohde&Schwarz	FSV3044	101326	July 13, 24
EMI Test Receiver	Rohde&Schwarz	ESU8	100372	Apr. 06, 25
Bilog Antenna	SCHWARZBECK	VULB 9168	9168-555	Nov. 07, 24
Pre-Amplifier	Agilent	8447D	2944A10488	July. 26, 24
3m Semi-anechoic Chamber	ETS-Lindgren	9m*6m*6m	D3040003DG-1	July 30, 24
Coaxial RF Cable	Joinfront	JFAA6-NMNM-8000	2100033742	July 10, 24
Coaxial RF Cable	Joinfront	JFAR-NMBNCM-2000	2100033742	July 10, 24
Coaxial RF Cable	Joinfront	JFAR-BNCMSMM-500	2100033742	July 10, 24
Test software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A
Horn Antenna	ETS-Lindgren	3117	00240041	May 06, 24
Horn Antenna	SCHWARZBECK	BBHA 9170	01024	Oct. 16, 24
Pre-Amplifier (1GHz-18GHz)	Rohde&Schwarz	SCU18	102265	Aug. 01, 24
Pre-Amplifier (18GHz-40GHz)	Rohde&Schwarz	SCU40	100437	Oct. 10, 24
Coaxial RF Cable	Joinfront	JFAA6-NMNM-8000	2100033742	July 10, 24
Coaxial RF Cable	Joinfront	JFAA6-NMSMM-2000	2100033742	July 10, 24
Coaxial RF Cable	Joinfront	JFAA6-NMSMM-800	2100033742	July 10, 24

NOTES:

1. The test was performed in 966 Chamber.
2. Equipment are calibrated by calibration laboratory accredited to ISO/IEC 17025 by a mutually recognized Accreditation.
3. The horn antenna is used only for the measurement of emission frequency above1GHz if tested.
4. The FCC Site Registration No. is 749762.
5. Test site: No. 122, Houjie Avenue West Houjie Town, Dongguan City Guangdong Province, 523960, People's Republic of China.

4.1.3 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 1.3m 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:

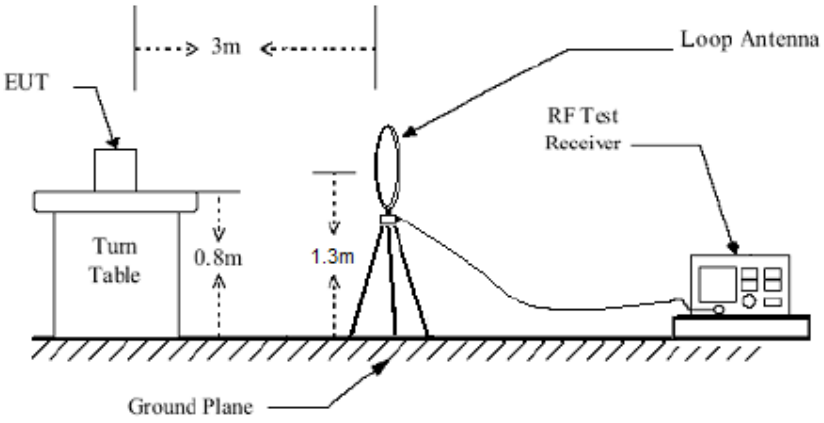
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. Average value =PK Emission +AV Factor.
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.

4.1.4 DEVIATION FROM TEST STANDARD

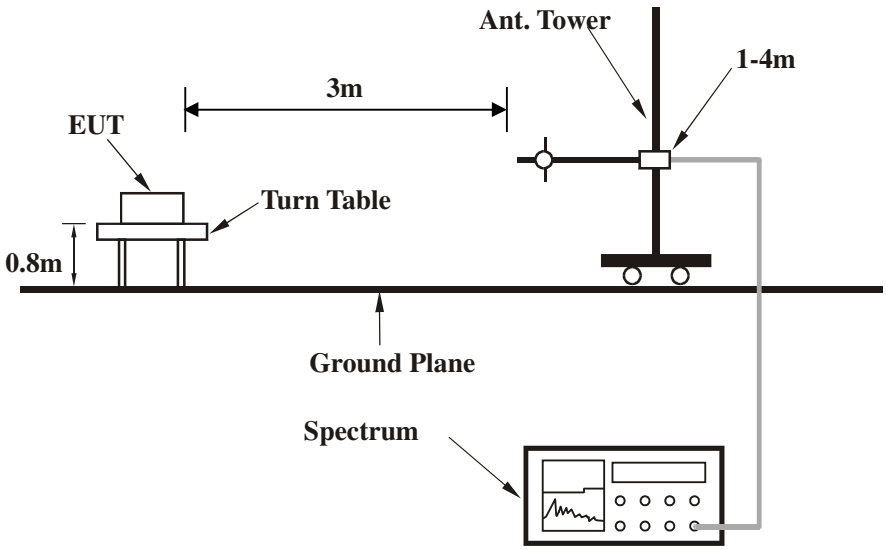
No deviation.

4.1.5 TEST SETUP

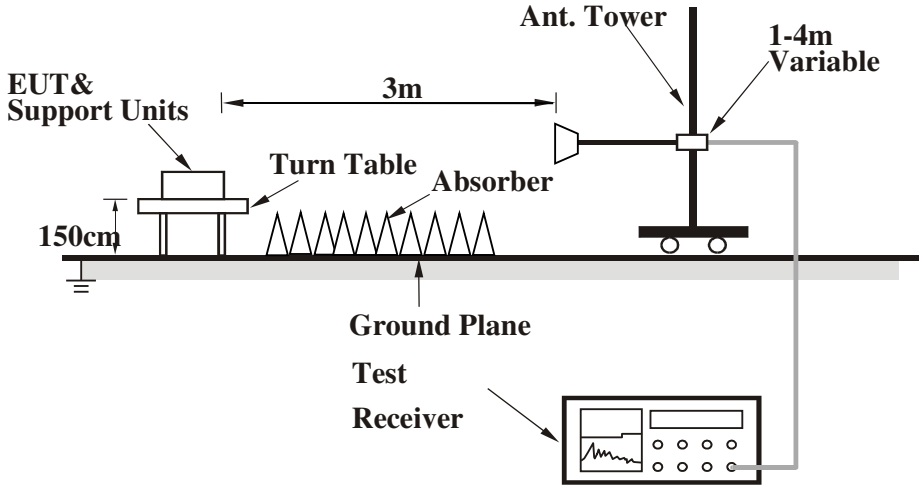
Below 30MHz test setup



Below 1GHz test setup



Above 1GHz test setup



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

4.1.6 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.

4.1.7 TEST RESULTS

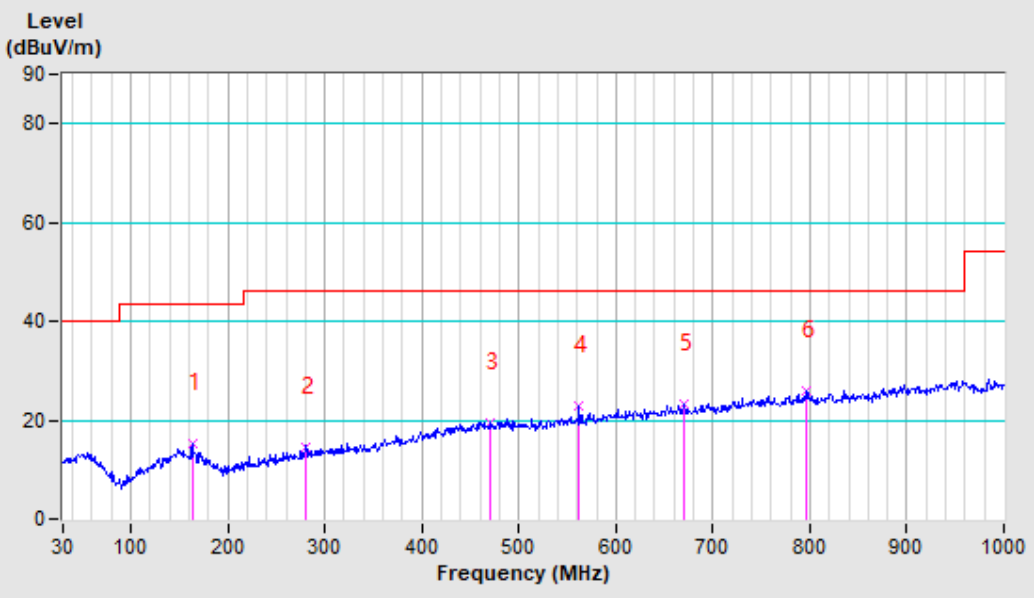
BELOW 1GHz WORST-CASE DATA

CHANNEL	TX Middle Channel	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 (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	162.89	15.07 QP	43.50	-28.43	1.38 H	3	28.96	-13.89
2	279.29	14.59 QP	46.00	-31.41	1.29 H	15	27.84	-13.25
3	470.38	19.57 QP	46.00	-26.43	1.32 H	148	28.29	-8.72
4	562.53	22.93 QP	46.00	-23.07	2.23 H	169	30.45	-7.52
5	670.20	23.08 QP	46.00	-22.92	2.17 H	218	28.40	-5.32
6	795.33	26.01 QP	46.00	-19.99	2.68 H	70	28.95	-2.94

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.

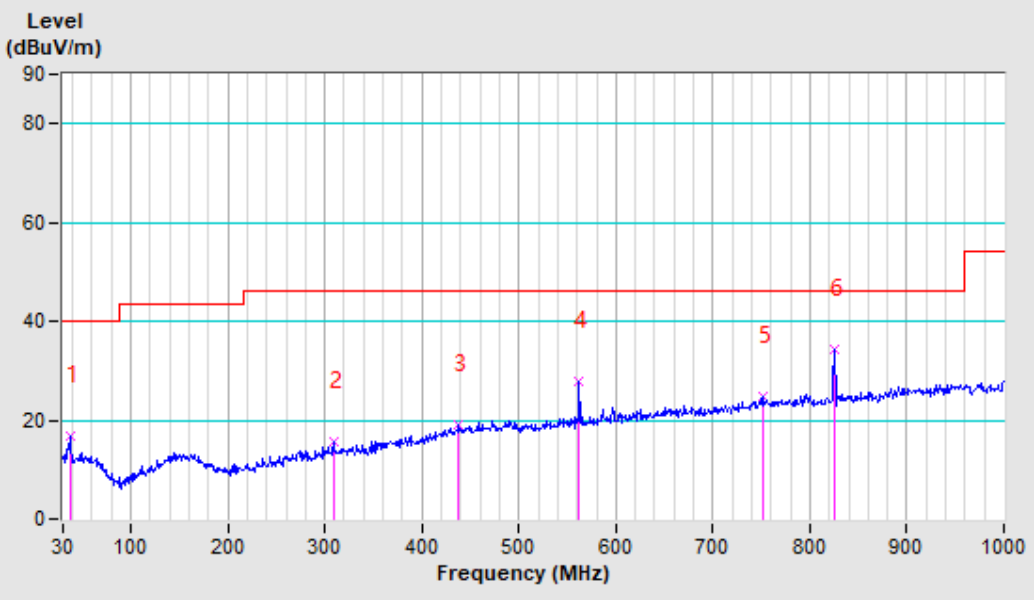


CHANNEL	TX Middle Channel	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9KHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	36.79	16.73 QP	40.00	-23.27	1.29 V	59	31.82	-15.09
2	308.39	15.67 QP	46.00	-30.33	2.11 V	39	27.84	-12.17
3	437.40	18.97 QP	46.00	-27.03	1.29 V	194	27.97	-9.00
4	562.53	27.66 QP	46.00	-18.34	3.00 V	91	35.18	-7.52
5	750.71	24.62 QP	46.00	-21.38	3.19 V	290	28.01	-3.39
6	**825.40**	**34.41 QP**	**46.00**	**-11.59**	**1.79 V**	**170**	**36.89**	**-2.48**

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.



ABOVE 1GHz WORST-CASE DATA:

CHANNEL	TX Low Channel	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

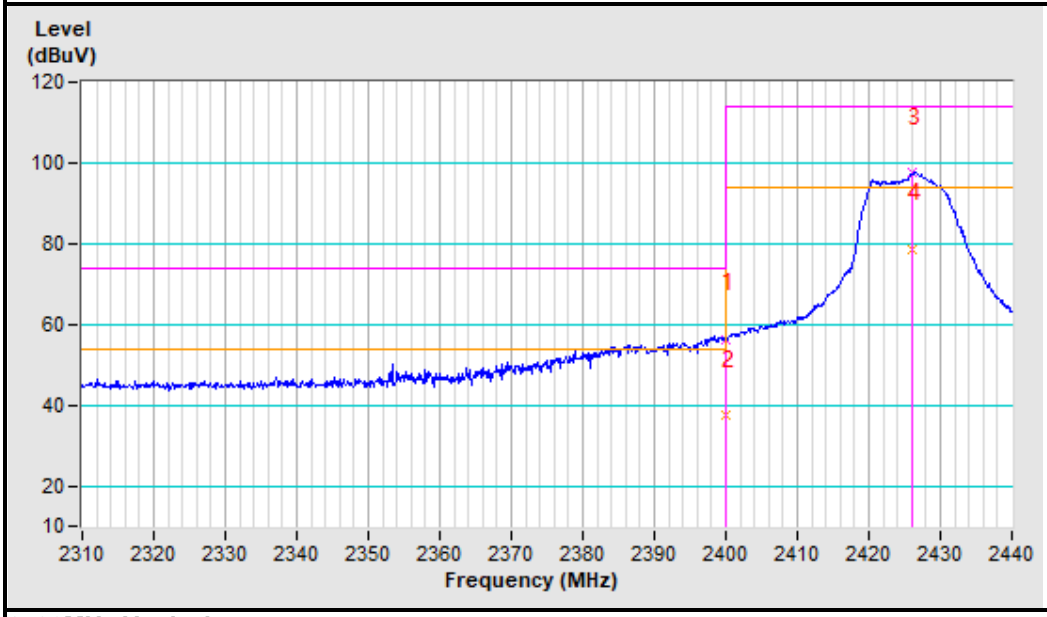
ANTENNA POLARITY & TEST DISTANCE : HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2400.00	56.34 PK	74.00	-17.66	1.20 H	130	60.08	-3.74
2	2400.00	37.70 AV	54.00	-16.30	1.20 H	130	41.44	-3.74
3	*2426.00	97.46 PK	114.00	-16.54	1.20 H	130	101.20	-3.74
4	*2426.00	78.82 AV	94.00	-15.18	1.20 H	130	82.56	-3.74
5	4852.00	54.16 PK	74.00	-19.84	1.50 H	84	47.06	7.10
6	4852.00	35.52 AV	54.00	-18.48	1.50 H	84	28.42	7.10
7	7278.00	56.16 PK	74.00	-17.84	1.50 H	84	45.39	10.77
8	7278.00	37.52 AV	54.00	-16.48	1.50 H	84	26.75	10.77
ANTENNA POLARITY & TEST DISTANCE : VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2400.00	57.96 PK	74.00	-16.04	1.50 V	160	61.70	-3.74
2	2400.00	39.32 AV	54.00	-14.68	1.50 V	160	43.06	-3.74
3	*2426.00	98.83 PK	114.00	-15.17	1.50 V	160	102.57	-3.74
4	*2426.00	80.19 AV	94.00	-13.81	1.50 V	160	83.93	-3.74
5	4852.00	53.16 PK	74.00	-20.84	1.50 V	84	46.06	7.10
6	4852.00	34.52 AV	54.00	-19.48	1.50 V	84	27.42	7.10
7	7278.00	51.16 PK	74.00	-22.84	1.50 V	84	40.39	10.77
8	7278.00	32.52 AV	54.00	-21.48	1.50 V	84	21.75	10.77

REMARK:

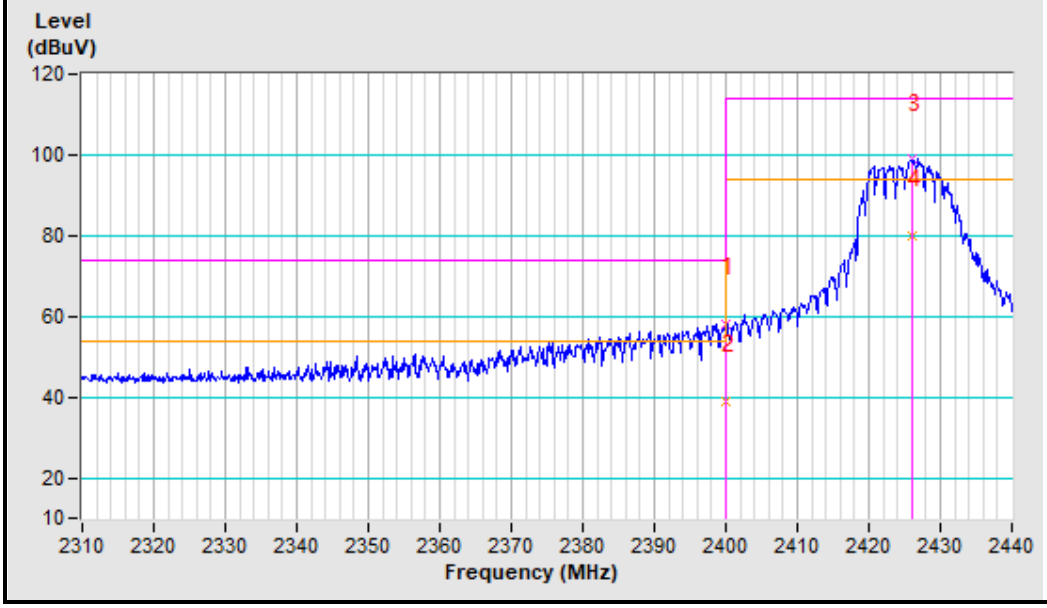
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. Average value =PK Emission +20*log (duty cycle)Where the duty factor is calculated from following formula: 20 log (Duty cycle) = 20Log(11.7%)≈-18.64dB, Please see page 9 for plotted duty.

Band edge Plot

2426MHz Horizontal



2426MHz Vertical



CHANNEL	TX Middle Channel	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 (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2450.00	95.05 PK	114.00	-18.95	1.00 H	152	98.14	-3.09
2	*2450.00	76.41 AV	94.00	-17.59	1.00 H	152	79.50	-3.09
3	4900.00	63.53 PK	74.00	-10.47	2.00 H	145	65.71	-2.18
4	4900.00	44.89 AV	54.00	-9.11	2.00 H	145	47.07	-2.18
5	7350.00	52.11 PK	74.00	-21.89	1.00 H	230	51.38	0.73
6	7350.00	33.47 AV	54.00	-20.53	1.00 H	230	32.74	0.73
ANTENNA POLARITY & TEST DISTANCE : VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2450.00	100.98 PK	114.00	-13.02	2.00 V	263	104.07	-3.09
2	*2450.00	82.34 AV	94.00	-11.66	2.00 V	263	85.43	-3.09
3	4900.00	63.15 PK	74.00	-10.85	1.25 V	245	65.33	-2.18
4	4900.00	44.51 AV	54.00	-9.49	1.25 V	245	46.69	-2.18
5	7350.00	53.64 PK	74.00	-20.36	1.52 V	236	52.91	0.73
6	7350.00	35.00 AV	54.00	-19.00	1.52 V	236	34.27	0.73

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.
5. " * ": Fundamental frequency.
6. Average value =PK Emission +20*log (duty cycle)Where the duty factor is calculated from following formula: 20 log (Duty cycle) = 20Log(11.7%)≈-18.64dB, Please see page 9 for plotted duty.

CHANNEL	TX High Channel	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

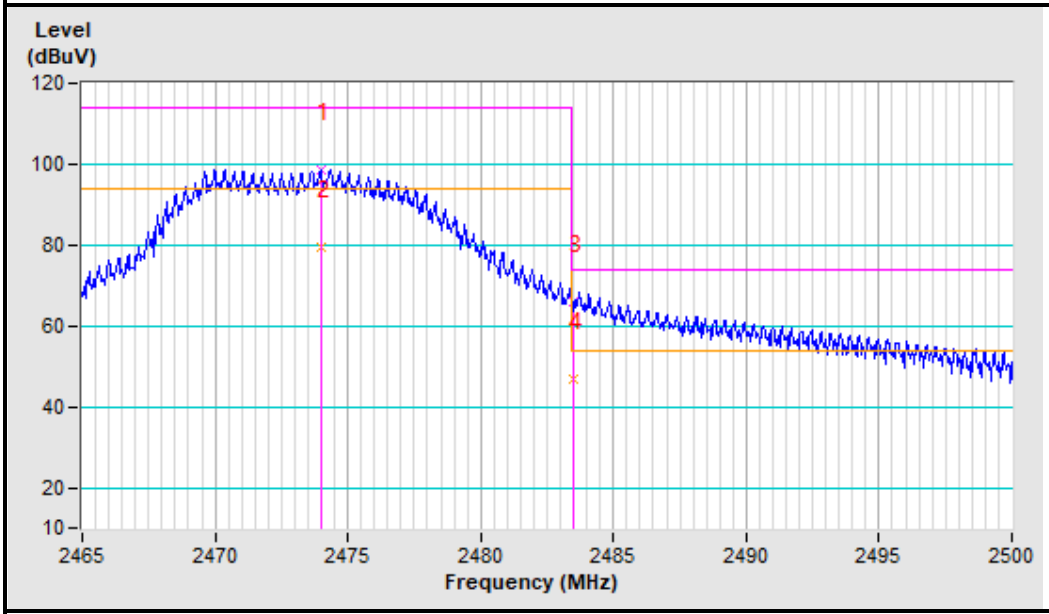
ANTENNA POLARITY & TEST DISTANCE : HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2474.00	98.62 PK	114.00	-15.38	1.55 H	120	102.38	-3.76
2	*2474.00	79.98 AV	94.00	-14.02	1.55 H	120	83.74	-3.76
3	2483.50	65.99 PK	74.00	-8.01	1.55 H	120	69.74	-3.75
4	2483.50	47.35 AV	54.00	-6.65	1.55 H	120	51.10	-3.75
5	4948.00	56.68 PK	74.00	-17.32	1.50 H	84	49.21	7.47
6	4948.00	38.04 AV	54.00	-15.96	1.50 H	84	30.57	7.47
7	7422.00	58.91 PK	74.00	-15.09	1.50 H	48	47.73	11.18
8	7422.00	40.27 AV	54.00	-13.73	1.50 H	48	29.09	11.18
ANTENNA POLARITY & TEST DISTANCE : VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2474.00	98.64 PK	114.00	-15.36	1.30 V	160	102.40	-3.76
2	*2474.00	80.00 AV	94.00	-14.00	1.30 V	160	83.76	-3.76
3	2483.50	69.63 PK	74.00	-4.37	1.30 V	160	73.38	-3.75
4	**2483.50**	50.99 AV	54.00	-3.01	1.30 V	160	54.74	-3.75
5	4948.00	52.28 PK	74.00	-21.72	1.50 V	96	44.81	7.47
6	4948.00	33.64 AV	54.00	-20.36	1.50 V	96	26.17	7.47
7	7422.00	48.16 PK	74.00	-25.84	1.50 V	8	36.98	11.18
8	7422.00	29.52 AV	54.00	-24.48	1.50 V	8	18.34	11.18

REMARK:

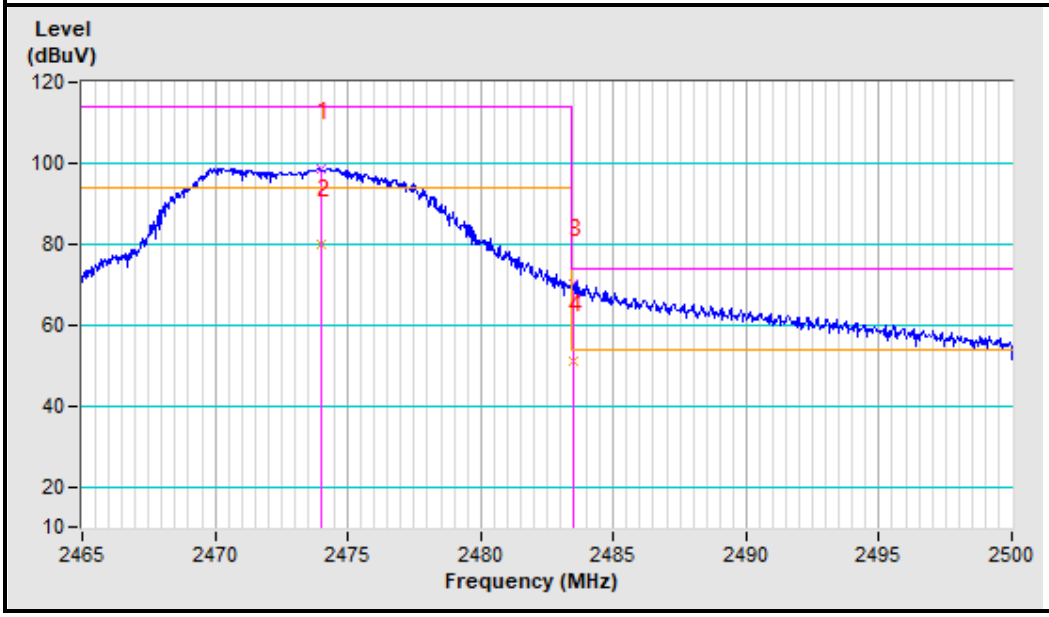
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. Average value =PK Emission +20*log (duty cycle)Where the duty factor is calculated from following formula: 20 log (Duty cycle) = 20Log(11.7%)≈-18.64dB, Please see page 9 for plotted duty.

Band edge Plot

2474MHz Horizontal



2474MHz Vertical



4.2 20dB BANDWIDTH MEASUREMENT

4.2.1 LIMITS OF 20dB BANDWIDTH MEASUREMENT

According to FCC 15.215(c), must be designed to ensure that the 20 dB 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.

4.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
Wireless Connectivity Tester	Rohde&Schwarz	CMW270	101601	Oct. 15, 24
Spectrum Analyzer	Rohde&Schwarz	FSV40	101003	Jan. 01, 25
Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Jan. 01, 25
Frequency Analyzer	Keysight	N9010B	MY60240432	Oct. 10, 24
Power Meter	Rohde&Schwarz	NRX	103107	Apr. 09, 25
Power Sensor	Rohde&Schwarz	NRP6A	103356	Apr. 09, 25
Progammble Temperature&Humidity Chamber	Hongjin	HYC-TH-225DH	DG-180746	Jan. 02, 25
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A
DC Source	Agilent	E3640A	MY40004013	Jan. 01, 25
Test software	ADT	ADT_RF Test Software V6.6.5.3	N/A	N/A
Test software	ADT	ADT_RF Test Software V6.6.5.4	N/A	N/A

NOTES:

1. The test was performed in RF Test Shielded Room.
2. Equipment are calibrated by calibration laboratory accredited to ISO/IEC 17025 by a mutually recognized Accreditation.
3. Test site: No. 122, Houjie Avenue West Houjie Town, Dongguan City Guangdong Province, 523960, People's Republic of China.

4.2.3 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.

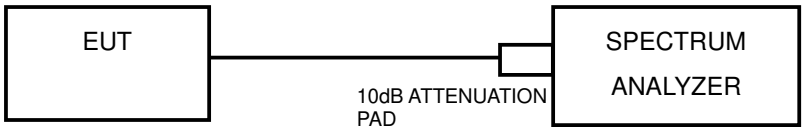
c. Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.

d. Repeat above procedures until all frequencies measured were complete.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



4.2.6 EUT OPERATING CONDITIONS

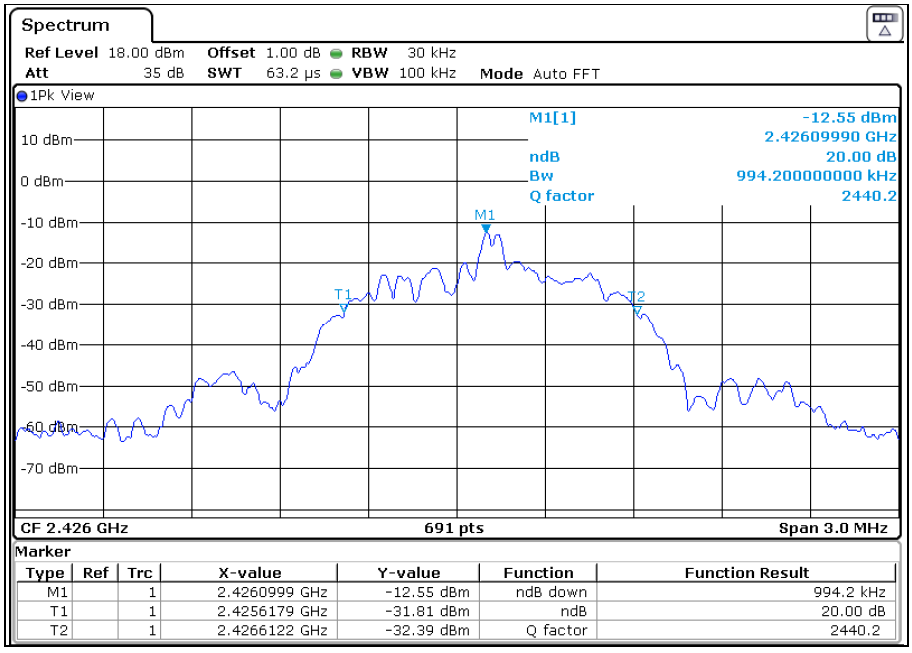
a) Turned on the power of all equipment.

b) EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.

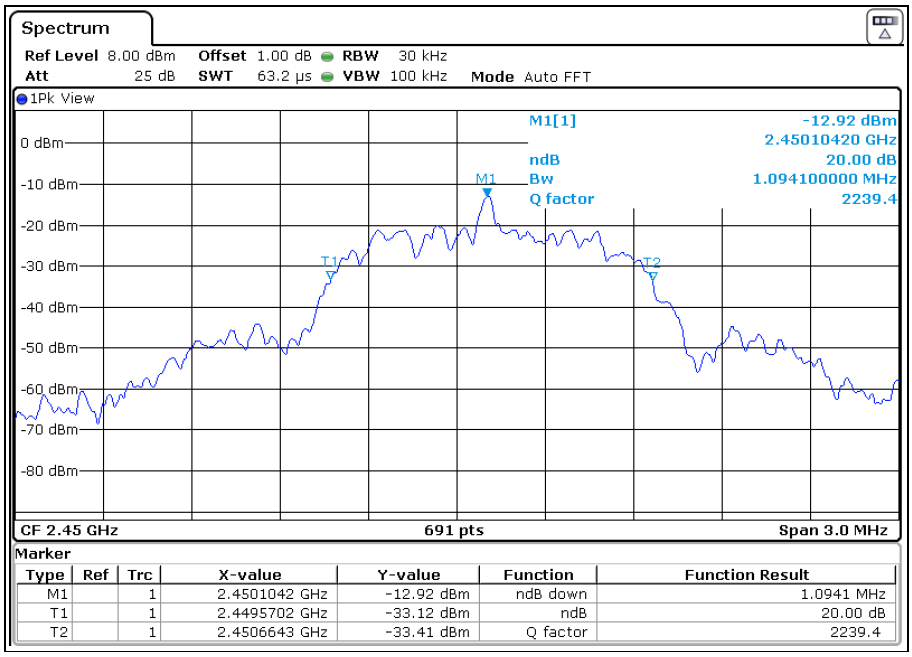
4.2.7 TEST RESULTS

CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (MHz)
Low	2426	0.9942
Middle	2450	1.0941
High	2474	1.0984

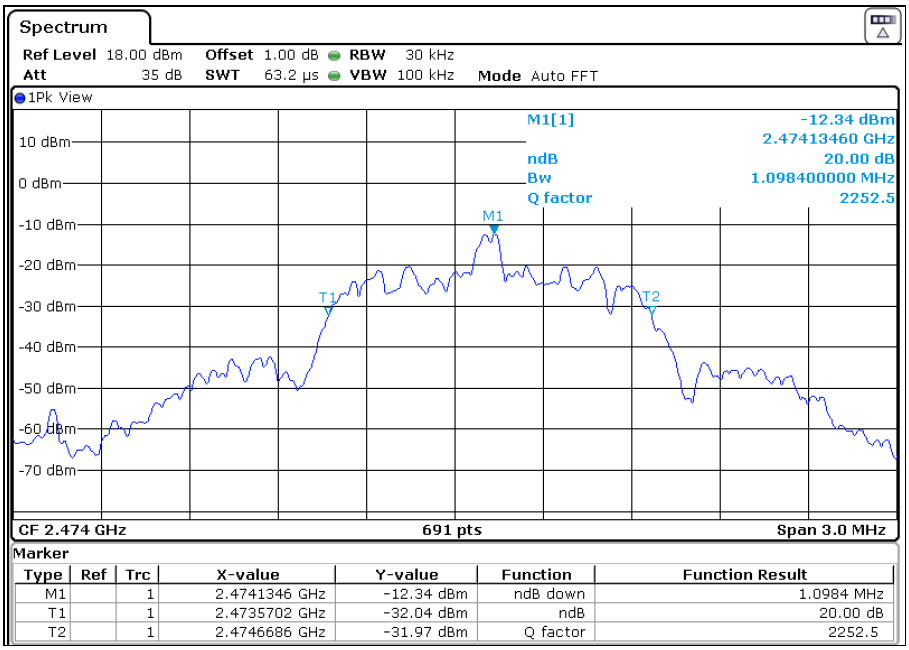
Test Data: Low channel



Test Data: Middle channel



Test Data: High channel



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---