FCC TEST REPORT

(Part 15, Subpart C)

Applicant:	PAX Technology Limited
Address:	Room 2416, 24/F., Sun Hung Kai Centre, 30 Harbour Road, Wanchai, Hong Kong

Manufacturer or Supplier:	PAX Computer Technology (Shenzhen) Co., Ltd.
Address:	401 and 402,Building 3, Shenzhen Software Park, Nanshan District, Shenzhen City, Guangdong Province, P.R.C
Product:	Smart Mobile Payment Terminal
Brand Name:	PAX
Model Name:	A960
FCC ID:	V5PA960
Date of tests:	Nov. 30, 2022 ~ Dec. 12, 2022

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

☒ **FCC Part 15, Subpart C, Section 15.247**

☒ **ANSI C63.10-2013**

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

Prepared by Simon Wang	Approved by Luke Lu
Engineer / Mobile Department	Manager / Mobile Department
Simon Wang	Luke Lu
Date: Dec. 12, 2022	Date: Dec. 12, 2022

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P22110037RF02	Original release	Dec. 12, 2022

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)		
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**
15.207	AC Power Conducted Emission	Compliance
15.205 15.209	Radiated Emissions	Compliance
15.247(d)	Out of band Emission Measurement	Compliance
15.247(a)(2)	6dB bandwidth	Compliance
15.247(b)	Conducted Output power	Compliance
15.247(e)	Power Spectral Density	Compliance
15.203	Antenna Requirement	Compliance

Note：1.Except RSE, other data please refer to Appendix 1 (for WIFI-2.4G) and Appendix 2 (for BLE).

2. Only the worse data were report.

1.1 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	UNCERTAINTY
AC Power Conducted emissions	±2.70dB
Radiated emissions (9KHz~30MHz)	±2.68dB
Radiated emissions (30MHz~1GMHz)	±4.98dB
Radiated emissions (1GMHz ~6GMHz)	±4.70dB
Radiated emissions (6GMHz ~18GMHz)	±4.60dB
Radiated emissions (18GMHz ~40GMHz)	±4.12dB
Conducted emissions	±4.01dB
Occupied Channel Bandwidth	±43.58KHz
Conducted Output power	±2.06dB
Power Spectral Density	±0.85 dB

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

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Smart Mobile Payment Terminal
BRAND NAME	PAX
MODEL NAME	A960
NOMINAL VOLTAGE	5.0Vdc(adapter or host equipment) 3.7Vdc (Li-ion, battery)
MODULATION	DSSS, OFDM, GFSK
TRANSMISSION RATE	802.11b: 11/ 5.5/ 2.0 / 1.0 Mbps 802.11g: 54/ 48/ 36 / 24 / 18 / 9/ 6 Mbps 802.11n20: up to 72.2 Mbps BT_LE: 1 Mbps
OPERATING FREQUENCY	2412-2462MHz for 11b/g/n(HT20) 2402-2480MHz for BT-LE(GFSK)
MAX. OUTPUT POWER	WLAN: 119.95mW (Maximum) BT-LE: 6.76mW (Maximum)
ANTENNA TYPE	Monopole Antenna with 1.47dBi gain
HW VERSION	A960
SW VERSION	N/A
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB cable: non-shielded cable, with w/o ferrite core, 1.0 meter

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. The EUT incorporates a SISO function. Physically, the EUT provides one transmitter and one receiver.

MODULATION MODE	TX/RX FUNCTION
802.11b	1TX /1RX
802.11g	1TX /1RX
802.11n (20MHz)	1TX /1RX
BT_LE(1MHz)	1TX /1RX

3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

List of Accessory:

ACCESSORIES	BRAND	MANUFACTURER	MODEL	SPECIFICATION
Battery	VEKEN	N/A	YW-029	Capacity：3.7Vdc, 5150mAh
AC Adapter	PAX	Shenzhen Sorghum red Electronics Technology Co.,Ltd	GLH50D2000HW	I/P: 100-240Vac, 0.4A, O/P: 5.0Vdc, 2A
USB Cable	N/A	N/A	N/A	Signal Line,1.0meter

2.2 DESCRIPTION OF TEST MODES

11 channels are provided for 802.11b, 802.11g and 802.11n (HT20):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412 MHz	7	2442 MHz
2	2417 MHz	8	2447 MHz
3	2422 MHz	9	2452 MHz
4	2427 MHz	10	2457 MHz
5	2432 MHz	11	2462 MHz
6	2437 MHz		

40 channels are provided for BT-LE (GFSK):

CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

2.2.1 CONFIGURATION OF SYSTEM UNDER TEST

Please see section 5 photographs of the test configuration for reference.

2.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports.
The worst case was found when positioned on Y axis for radiated emission. Following test modes were selected for the final test, and the final worst case is marked in boldface and recorded in the report:

EUT CONFIGURE MODE	APPLICABLE TO				MODE
	RE<1G	RE≥1G	PLC	APCM	
-	√	√	√	√	-

Where **RE<1G:** Radiated Emission below 1GHz **RE≥1G:** Radiated Emission above 1GHz
PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

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

RADIATED EMISSION TEST (BELOW 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11n HT20	1 to 11	1	OFDM	MCS0
BT-LE	0 to 39	39	GFSK	1.0

RADIATED EMISSION TEST (ABOVE 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	1.0
802.11g	1 to 11	1, 6, 11	OFDM	6.0
802.11n HT20	1 to 11	1, 6, 11	OFDM	MCS0
BT-LE	0 to 39	0,19, 39	GFSK	1

POWER LINE CONDUCTED EMISSION TEST

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11n HT20	1 to 11	1	OFDM	MCS0

BANDEDGE MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	1.0
802.11g	1 to 11	1, 6, 11	OFDM	6.0
802.11n HT20	1 to 11	1, 6, 11	OFDM	MCS0
BT-LE	0 to 39	0,19, 39	GFSK	1

ANTENNA PORT CONDUCTED MEASUREMENT:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	1.0
802.11g	1 to 11	1, 6, 11	OFDM	6.0
802.11n HT20	1 to 11	1, 6, 11	OFDM	MCS0
BT-LE	0 to 39	0,19, 39	GFSK	1

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE	TESTED BY
RE<1G	23deg. C, 56%RH	DC 5V By Adapter	Jace Hu
RE≥1G	23deg. C, 56%RH	DC 5V By Adapter	Jace Hu
PLC	25deg. C, 52%RH	DC 5V By Adapter	Carl Xie
APCM	25deg. C, 60%RH	DC 3.7V By Battery	James Fu

2.3 Duty Cycle of Test Signal

Please Refer to Appendix1/2 Of this test report.

WORST-CASE DATA:

Measured Duty Cycle		
Mode		Duty Cycle [%]
		ANT1
WIFI 2.4GHz	11B	99.12
	11G	98.57
	11N20	97.96
BT LE	BT4.0	61.90

Note:
Duty cycle of test signal is < 98%, duty factor shall be considered.

2.4 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 15.247

KDB 558074 D01 DTS Meas Guidance v05r02

ANSI C63.10-2013

Note：

1. All test items have been performed and recorded as per the above standards.
2. The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (Certification). The test report has been issued separately.

2.5 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	Desktop	Lenovo	M73 SFF	PC04GRQV	N/A
2	Desktop	Lenovo	M73 SFF	PC06CS27	N/A
3	Laptop	Lenovo	Thnikpad T450	PC-049PT1	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	AC Line: Unshielded, Detachable 1.5m
2	AC Line: Unshielded, Detachable 1.5m
3	AC Line: Unshielded, Detachable 1.5m

3 TEST TYPES AND RESULTS

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	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.

3.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR3	101900	Feb. 15,22	Feb. 14,23
EMC32 test software	Rohde&Schwarz	EMC32	NA	NA	NA
LISN network	Rohde&Schwarz	ENV216	101922	Mar. 04,22	Mar. 03,23

NOTE:

1. The test was performed in CE shielded room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

3.1.3 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.

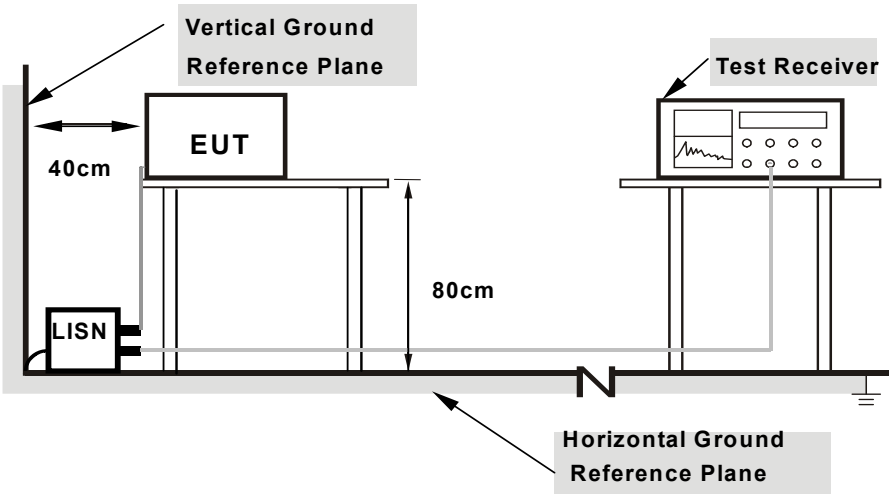
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

3.1.4 DEVIATION FROM TEST STANDARD

No deviation.

3.1.5 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).

3.1.6 EUT OPERATING CONDITIONS

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

3.1.7 TEST RESULTS

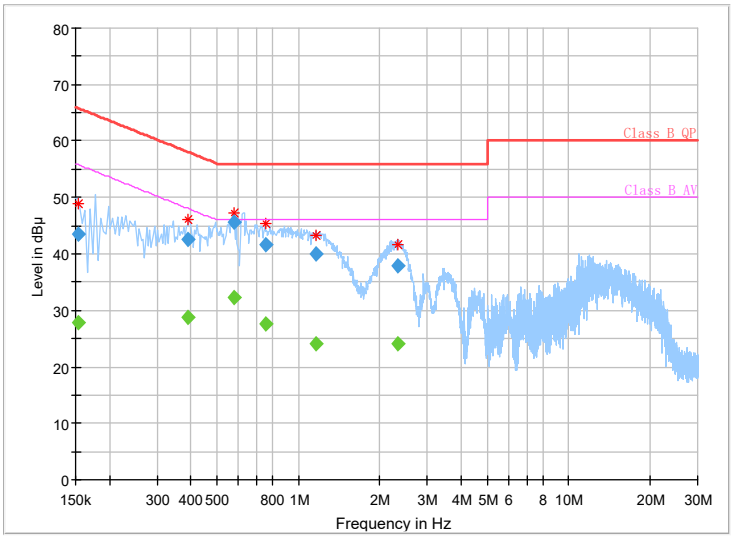
CONDUCTED WORST-CASE DATA:

Frequency Range	150KHz ~ 30MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	**Environmental Conditions**	26deg. C, 51%RH
Tested By	Carl Xie		

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.154000	---	27.87	55.78	27.91	L1	ON	9.7
0.154000	43.53	---	65.78	22.25	L1	ON	9.7
0.392000	---	28.66	48.02	19.36	L1	ON	9.7
0.392000	42.48	---	58.02	15.54	L1	ON	9.7
0.576000	---	32.35	46.00	13.65	L1	ON	9.7
0.576000	45.66	---	56.00	10.34	L1	ON	9.7
0.760000	---	27.63	46.00	18.37	L1	ON	9.7
0.760000	41.54	---	56.00	14.46	L1	ON	9.7
1.168000	---	24.07	46.00	21.93	L1	ON	9.7
1.168000	40.02	---	56.00	15.98	L1	ON	9.7
2.328000	---	24.09	46.00	21.91	L1	ON	9.7
2.328000	37.88	---	56.00	18.12	L1	ON	9.7

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Limit value -Emission level
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.

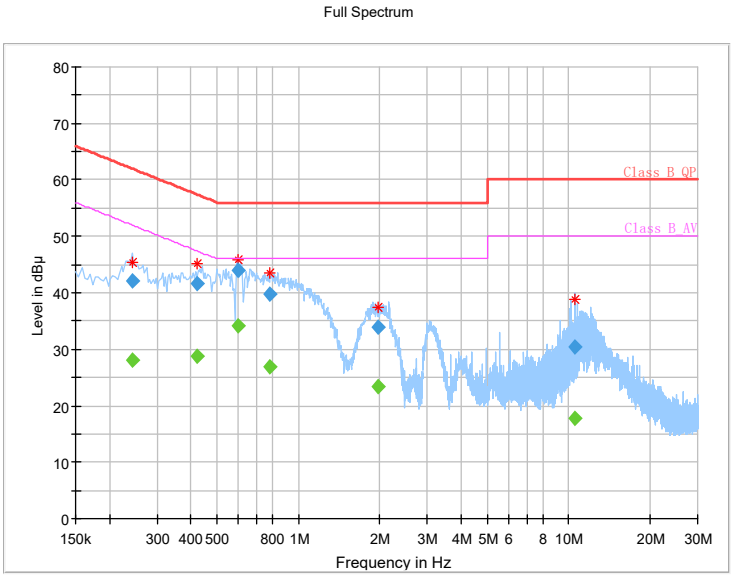
Full Spectrum



Frequency Range	150KHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	Environmental Conditions	26deg. C, 51%RH
Tested By	Carl Xie		

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.244000	---	28.06	51.96	23.90	N	ON	9.7
0.244000	42.07	---	61.96	19.89	N	ON	9.7
0.424000	---	28.67	47.37	18.70	N	ON	9.7
0.424000	41.63	---	57.37	15.74	N	ON	9.7
0.596000	---	34.07	46.00	11.93	N	ON	9.7
0.596000	43.90	---	56.00	12.10	N	ON	9.7
0.780000	---	26.85	46.00	19.15	N	ON	9.7
0.780000	39.71	---	56.00	16.29	N	ON	9.7
1.980000	---	23.39	46.00	22.61	N	ON	9.8
1.980000	33.81	---	56.00	22.19	N	ON	9.8
10.596000	---	17.69	50.00	32.31	N	ON	9.8
10.596000	30.52	---	60.00	29.48	N	ON	9.8

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Limit value -Emission level
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

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

NOTE:

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.

3.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 19,20	May. 18,23
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Mar. 06,22	Mar. 05,23
Horn Antenna	ETS-LINDGREN	3117	00168692	Mar. 06,22	Mar. 05,23
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Aug. 27, 22	Aug. 26, 23
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	JS1120-3	3.2.06	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jun. 02,22	Jun. 01,23
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Feb. 21,22	Feb. 20,23
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May.12,22	May.11,23
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May.12,22	May.11,23
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Feb. 21,22	Feb.20,23
DC Source	Kikusui/JP	PMX18-5A	0000001	Aug. 24,22	Aug. 23,23
Power Meter	Anritsu	ML2495A	1506002	Feb. 22,22	Feb. 21,23
Power Sensor	Anritsu	MA2411B	1339352	May. 14,22	May. 13,23
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep. 04,22	Sep. 03,23

NOTE: 1. The calibration interval of the above test instruments is 12 months or 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

2. The test was performed in 3m Chamber.

3. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

3.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. 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. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using fresh batteries. The turntable was rotated to maximize the emission level.

Note:

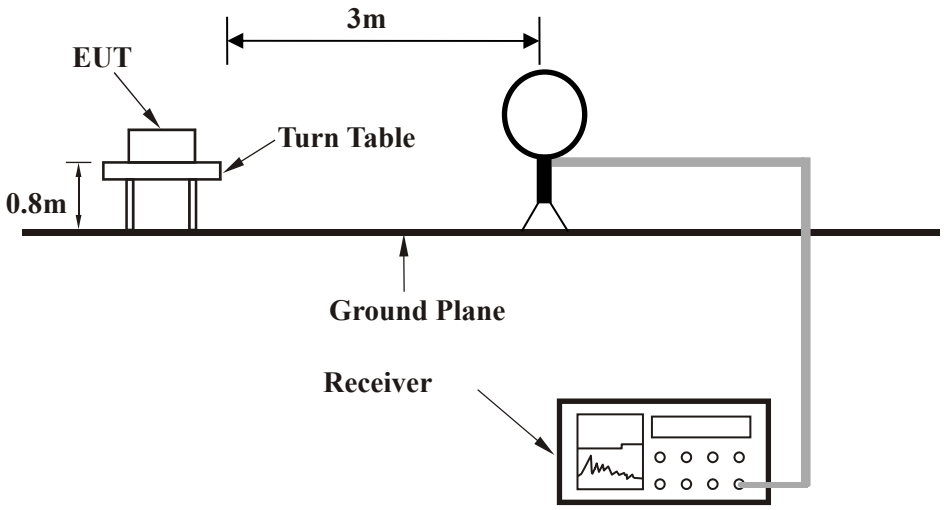
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (10 log(1/duty cycle)).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

3.2.4 DEVIATION FROM TEST STANDARD

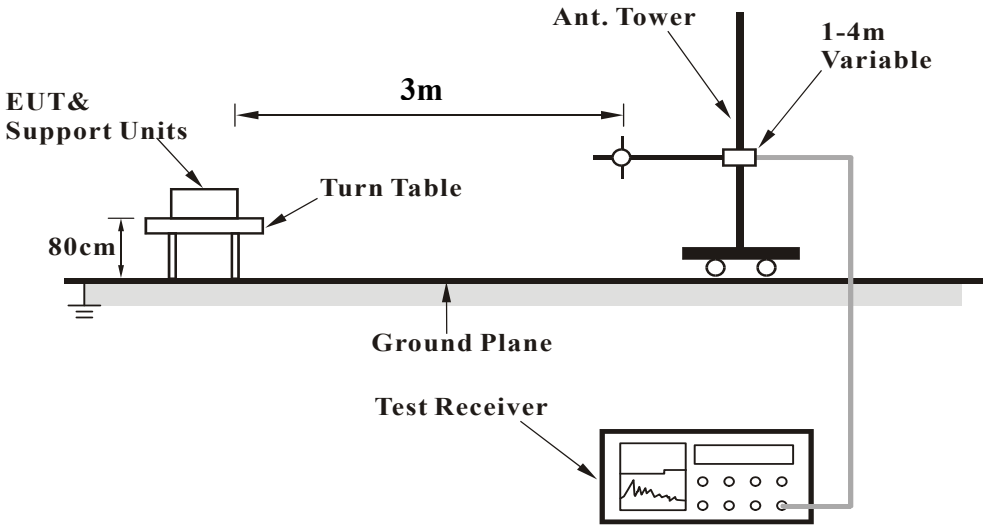
No deviation

3.2.5 TEST SETUP

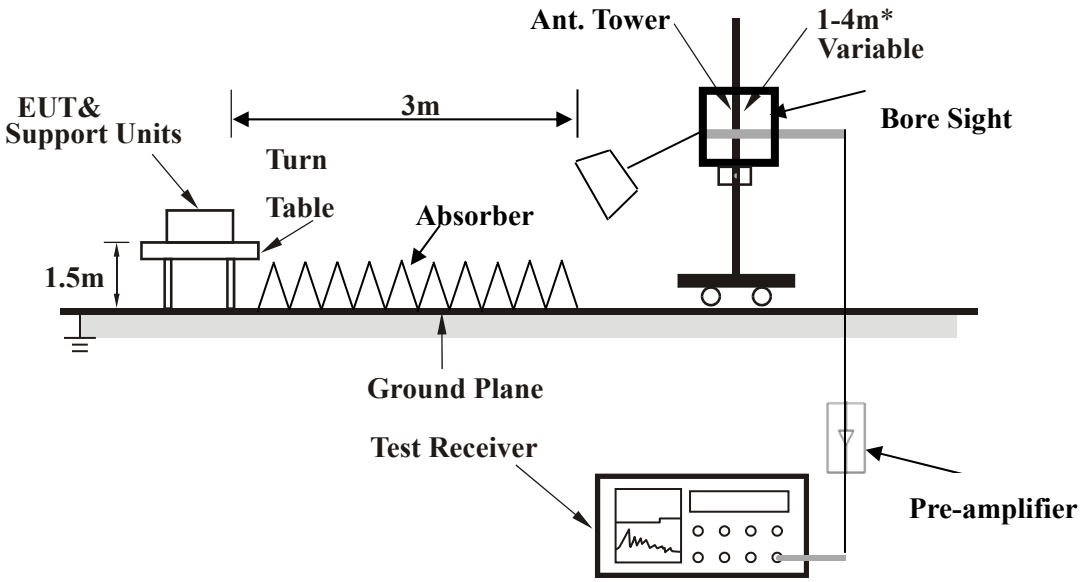
<Frequency Range 9KHz~30MHz >



< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna

Depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

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

3.2.6 EUT OPERATING CONDITIONS

a. Set the EUT under full load condition and placed them on a testing table.

b. Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.

c. The necessary accessories enable the EUT in full functions.

3.2.7 TEST RESULTS

NOTE : The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

BELOW 1GHz WORST-CASE DATA:

30 MHz – 1GHz data:

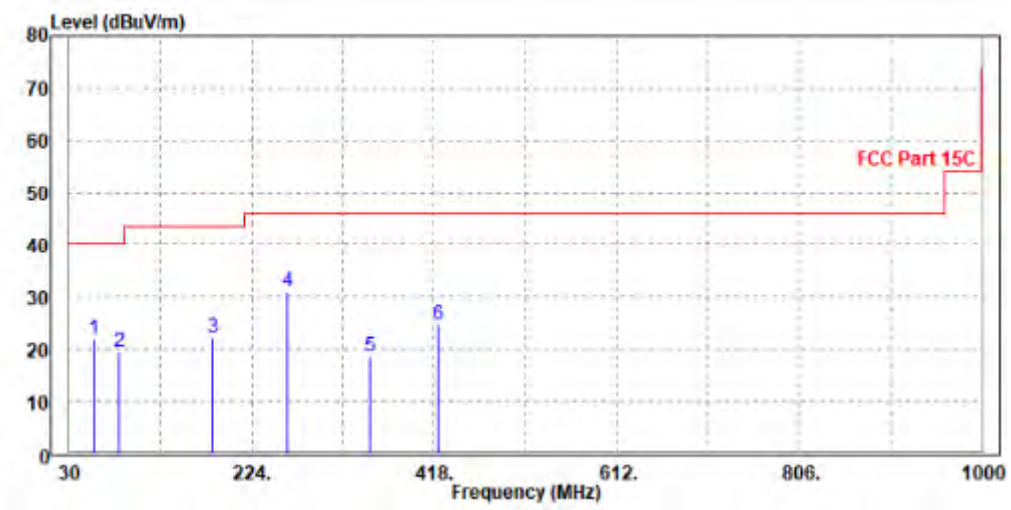
802.11n (20MHz)

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
56.19	21.97	48.92	40	-18.03	9.58	0.43	36.96	187	162	QP
83.35	19.48	47.84	40	-20.52	8.1	0.5	36.96	190	254	QP
182.29	22.25	46.54	43.5	-21.25	11.39	0.71	36.39	185	78	QP
262.8	31.18	52.97	46	-14.82	13.63	0.85	36.27	125	159	QP
349.13	18.47	38.74	46	-27.53	15.08	0.99	36.34	135	107	QP
422.85	24.69	43.42	46	-21.31	16.63	1.11	36.47	115	328	QP

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.

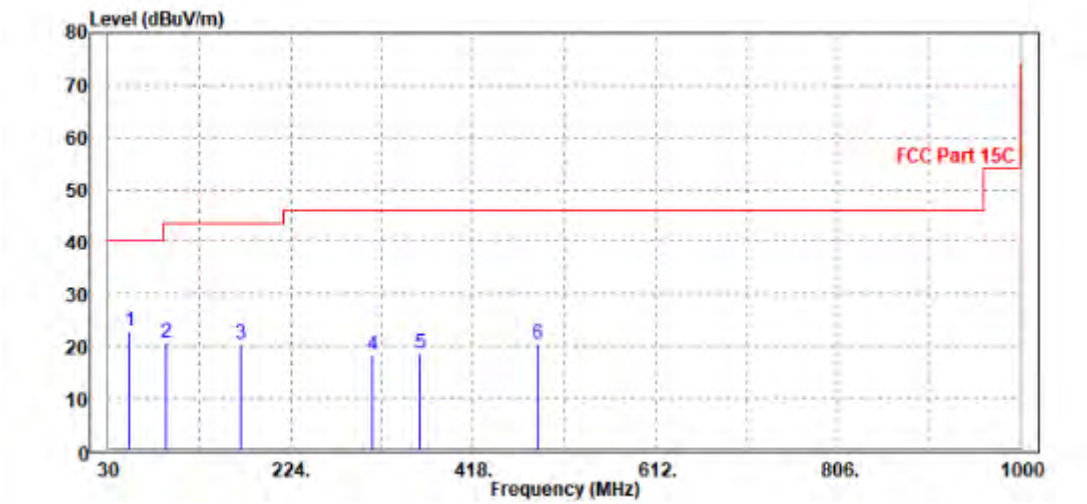


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
52.31	22.95	50.08	40	-17.05	9.45	0.41	36.99	135	32	QP
91.11	20.68	48.42	43.5	-22.82	8.66	0.51	36.91	151	357	QP
171.62	20.35	45.03	43.5	-23.15	11.07	0.69	36.44	171	164	QP
310.33	18.36	39.47	46	-27.64	14.24	0.93	36.28	186	166	QP
361.74	18.65	38.58	46	-27.35	15.42	1.01	36.36	152	171	QP
486.87	20.4	38.36	46	-25.6	17.43	1.2	36.59	179	204	QP

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.



ABOVE 1GHz WORST-CASE DATA:

Note: 1. For radiated emissions testing，the full testing range of different modes have been scanned，only the worst case harmonic data is reported in the sheet.

2. All other emissions were greater than 20dB below the limit was not recorded

802.11b:

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	53.29	61.33	74	-20.71	31.75	6.18	45.97	115	90	Peak
2390	46.22	54.26	54	-7.78	31.75	6.18	45.97	115	90	Average
2412	104.08	112.01	/	/	31.82	6.21	45.96	115	90	Peak
2412	102.67	110.6	/	/	31.82	6.21	45.96	115	90	Average
2483.5	50.8	58.37	74	-23.2	32.05	6.31	45.93	115	90	Peak
2483.5	43.86	51.43	54	-10.14	32.05	6.31	45.93	115	90	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	54.76	62.41	74	-19.24	32.14	6.18	45.97	100	205	Peak
2390	47.01	54.66	54	-6.99	32.14	6.18	45.97	100	205	Average
2412	103.42	110.98	/	/	32.19	6.21	45.96	100	205	Peak
2412	101.54	109.1	/	/	32.19	6.21	45.96	100	205	Average
2483.5	51.85	59.11	74	-22.15	32.36	6.31	45.93	100	205	Peak
2483.5	43.89	51.15	54	-10.11	32.36	6.31	45.93	100	205	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2412MHz: Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.1	60.14	74	-21.9	31.75	6.18	45.97	115	90	Peak
2390	45.48	53.52	54	-8.52	31.75	6.18	45.97	115	90	Average
2437	104.15	111.96	/	/	31.9	6.24	45.95	115	90	Peak
2437	102.61	110.42	/	/	31.9	6.24	45.95	115	90	Average
2483.5	52.39	59.96	74	-21.61	32.05	6.31	45.93	115	90	Peak
2483.5	44.02	51.59	54	-9.98	32.05	6.31	45.93	115	90	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	53.81	61.46	74	-20.19	32.14	6.18	45.97	100	205	Peak
2390	46.66	54.31	54	-7.34	32.14	6.18	45.97	100	205	Average
2437	104.37	111.83	/	/	32.25	6.24	45.95	100	205	Peak
2437	102.94	110.4	/	/	32.25	6.24	45.95	100	205	Average
2483.5	52.63	59.89	74	-21.37	32.36	6.31	45.93	100	205	Peak
2483.5	44.74	52	54	-9.26	32.36	6.31	45.93	100	205	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2437MHz: Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.95	59.99	74	-22.05	31.75	6.18	45.97	115	90	Peak
2390	44.19	52.23	54	-9.81	31.75	6.18	45.97	115	90	Average
2462	103.94	111.62	/	/	31.98	6.28	45.94	115	90	Peak
2462	102.53	110.21	/	/	31.98	6.28	45.94	115	90	Average
2483.5	53.01	60.58	74	-20.99	32.05	6.31	45.93	115	90	Peak
2483.5	44.65	52.22	54	-9.35	32.05	6.31	45.93	115	90	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	55.61	63.26	74	-18.39	32.14	6.18	45.97	100	205	Peak
2390	45.6	53.25	54	-8.4	32.14	6.18	45.97	100	205	Average
2462	103.72	111.07	/	/	32.31	6.28	45.94	100	205	Peak
2462	102.4	109.75	/	/	32.31	6.28	45.94	100	205	Average
2483.5	52.99	60.25	74	-21.01	32.36	6.31	45.93	100	205	Peak
2483.5	44.92	52.18	54	-9.08	32.36	6.31	45.93	100	205	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2462MHz: Fundamental frequency.

802.11g

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	60.53	68.57	74	-13.47	31.75	6.18	45.97	115	90	Peak
2390	50.05	58.09	54	-3.95	31.75	6.18	45.97	115	90	Average
2412	105.59	113.52	/	/	31.82	6.21	45.96	115	90	Peak
2412	97.86	105.79	/	/	31.82	6.21	45.96	115	90	Average
2483.5	51.84	59.41	74	-22.16	32.05	6.31	45.93	115	90	Peak
2483.5	43.16	50.73	54	-10.84	32.05	6.31	45.93	115	90	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	61.69	69.34	74	-12.31	32.14	6.18	45.97	100	205	Peak
2390	50.69	58.34	54	-3.31	32.14	6.18	45.97	100	205	Average
2412	104.9	112.46	/	/	32.19	6.21	45.96	100	205	Peak
2412	97.12	104.68	/	/	32.19	6.21	45.96	100	205	Average
2483.5	52.74	60	74	-21.26	32.36	6.31	45.93	100	205	Peak
2483.5	43.63	50.89	54	-10.37	32.36	6.31	45.93	100	205	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2412MHz: Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.13	60.17	74	-21.87	31.75	6.18	45.97	115	90	Peak
2390	43.51	51.55	54	-10.49	31.75	6.18	45.97	115	90	Average
2437	107.1	114.91	/	/	31.9	6.24	45.95	115	90	Peak
2437	99.06	106.87	/	/	31.9	6.24	45.95	115	90	Average
2483.5	52.21	59.78	74	-21.79	32.05	6.31	45.93	115	90	Peak
2483.5	43.23	50.8	54	-10.77	32.05	6.31	45.93	115	90	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	54.72	62.37	74	-19.28	32.14	6.18	45.97	100	205	Peak
2390	45.13	52.78	54	-8.87	32.14	6.18	45.97	100	205	Average
2437	107.84	115.3	/	/	32.25	6.24	45.95	100	205	Peak
2437	99.77	107.23	/	/	32.25	6.24	45.95	100	205	Average
2483.5	51.86	59.12	74	-22.14	32.36	6.31	45.93	100	205	Peak
2483.5	43.7	50.96	54	-10.3	32.36	6.31	45.93	100	205	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
   2. 2437MHz: Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.59	59.63	74	-22.41	31.75	6.18	45.97	115	90	Peak
2390	43.13	51.17	54	-10.87	31.75	6.18	45.97	115	90	Average
2462	105.8	113.48	/	/	31.98	6.28	45.94	115	90	Peak
2462	97.71	105.39	/	/	31.98	6.28	45.94	115	90	Average
2483.5	57.25	64.82	74	-16.75	32.05	6.31	45.93	115	90	Peak
2483.5	47.25	54.82	54	-6.75	32.05	6.31	45.93	115	90	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	54.86	62.51	74	-19.14	32.14	6.18	45.97	100	205	Peak
2390	44.81	52.46	54	-9.19	32.14	6.18	45.97	100	205	Average
2462	106.24	113.59	/	/	32.31	6.28	45.94	100	205	Peak
2462	98.31	105.66	/	/	32.31	6.28	45.94	100	205	Average
2483.5	58.37	65.63	74	-15.63	32.36	6.31	45.93	100	205	Peak
2483.5	48.01	55.27	54	-5.99	32.36	6.31	45.93	100	205	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2462MHz: Fundamental frequency.

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	60.5	68.54	74	-13.5	31.75	6.18	45.97	115	90	Peak
2390	50.75	58.79	54	-3.25	31.75	6.18	45.97	115	90	Average
2412	104.02	111.95	/	/	31.82	6.21	45.96	115	90	Peak
2412	97	104.93	/	/	31.82	6.21	45.96	115	90	Average
2483.5	51.76	59.33	74	-22.24	32.05	6.31	45.93	115	90	Peak
2483.5	42.95	50.52	54	-11.05	32.05	6.31	45.93	115	90	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	61.38	69.03	74	-12.62	32.14	6.18	45.97	100	205	Peak
2390	50.99	58.64	54	-3.01	32.14	6.18	45.97	100	205	Average
2412	103.27	110.83	/	/	32.19	6.21	45.96	100	205	Peak
2412	96.56	104.12	/	/	32.19	6.21	45.96	100	205	Average
2483.5	51.52	58.78	74	-22.48	32.36	6.31	45.93	100	205	Peak
2483.5	43.33	50.59	54	-10.67	32.36	6.31	45.93	100	205	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2412MHz: Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.94	59.98	74	-22.06	31.75	6.18	45.97	115	90	Peak
2390	43.55	51.59	54	-10.45	31.75	6.18	45.97	115	90	Average
2437	103.73	111.54	/	/	31.9	6.24	45.95	115	90	Peak
2437	96.77	104.58	/	/	31.9	6.24	45.95	115	90	Average
2483.5	51.64	59.21	74	-22.36	32.05	6.31	45.93	115	90	Peak
2483.5	43.48	51.05	54	-10.52	32.05	6.31	45.93	115	90	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	54.19	61.84	74	-19.81	32.14	6.18	45.97	100	205	Peak
2390	44.57	52.22	54	-9.43	32.14	6.18	45.97	100	205	Average
2437	104.82	112.28	/	/	32.25	6.24	45.95	100	205	Peak
2437	97.6	105.06	/	/	32.25	6.24	45.95	100	205	Average
2483.5	52.14	59.4	74	-21.86	32.36	6.31	45.93	100	205	Peak
2483.5	43.81	51.07	54	-10.19	32.36	6.31	45.93	100	205	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
   2. 2437MHz: Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.08	60.12	74	-21.92	31.75	6.18	45.97	115	90	Peak
2390	43.34	51.38	54	-10.66	31.75	6.18	45.97	115	90	Average
2462	103.82	111.5	/	/	31.98	6.28	45.94	115	90	Peak
2462	96.75	104.43	/	/	31.98	6.28	45.94	115	90	Average
2483.5	58.92	66.49	74	-15.08	32.05	6.31	45.93	115	90	Peak
2483.5	47.54	55.11	54	-6.46	32.05	6.31	45.93	115	90	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	53.83	61.48	74	-20.17	32.14	6.18	45.97	100	205	Peak
2390	45.08	52.73	54	-8.92	32.14	6.18	45.97	100	205	Average
2462	104.03	111.38	/	/	32.31	6.28	45.94	100	205	Peak
2462	96.99	104.34	/	/	32.31	6.28	45.94	100	205	Average
2483.5	58.39	65.65	74	-15.61	32.36	6.31	45.93	100	205	Peak
2483.5	47.96	55.22	54	-6.04	32.36	6.31	45.93	100	205	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2462MHz: Fundamental frequency.

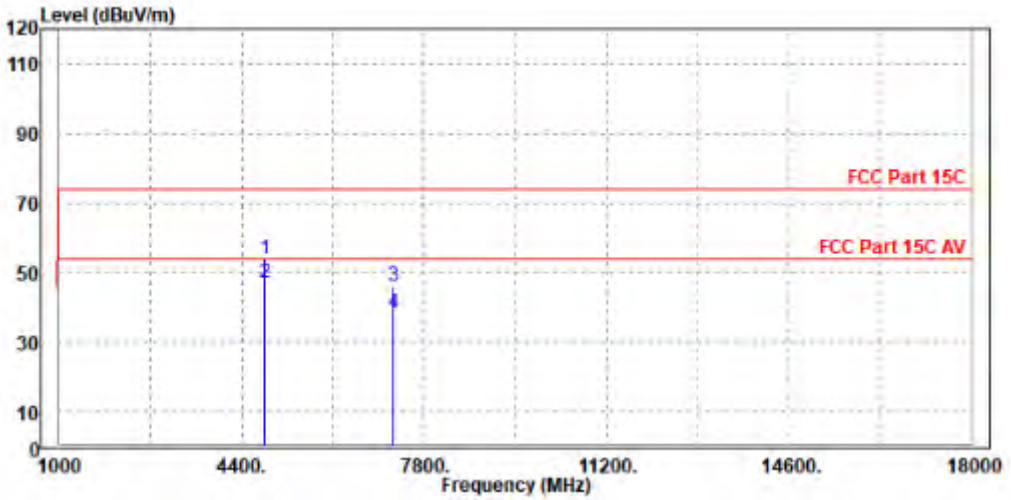
Worst case harmonic:

802.11n (20MHz)

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

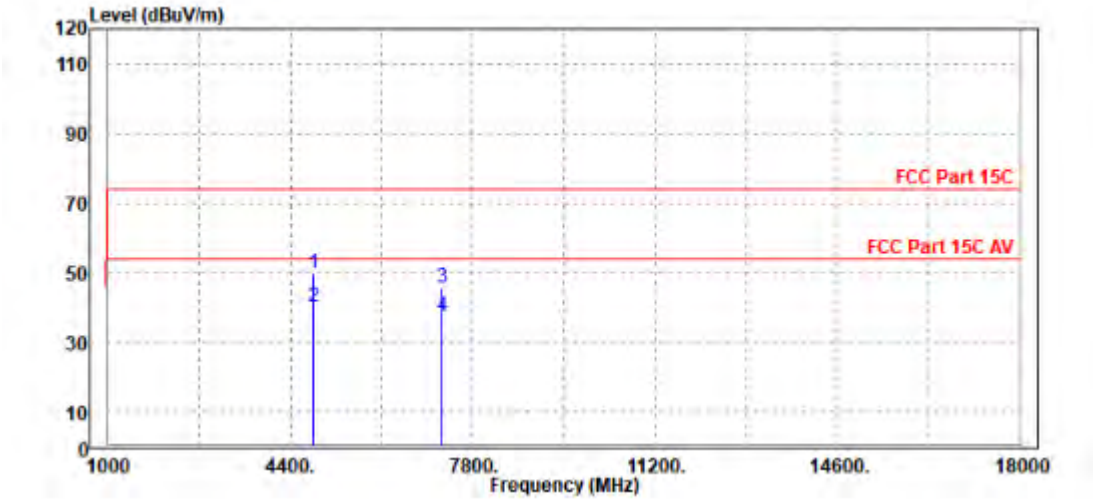
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	PK 4825.000	54.06	55.47	74.00	-19.94	-1.41	Peak	Horizontal
2	PP 4825.000	47.15	48.56	54.00	-6.85	-1.41	Average	Horizontal
3	7236.000	46.06	44.29	74.00	-27.94	1.77	Peak	Horizontal
4	7236.000	38.41	36.64	54.00	-15.59	1.77	Average	Horizontal



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	PK 4825.000	49.55	50.76	74.00	-24.45	-1.21	Peak	Vertical
2	PP 4825.000	40.37	41.58	54.00	-13.63	-1.21	Average	Vertical
3	7236.000	45.74	43.86	74.00	-28.26	1.88	Peak	Vertical
4	7236.000	37.49	35.61	54.00	-16.51	1.88	Average	Vertical



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2412MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.

BELOW 1GHz WORST-CASE DATA:

30 MHz – 1GHz data:

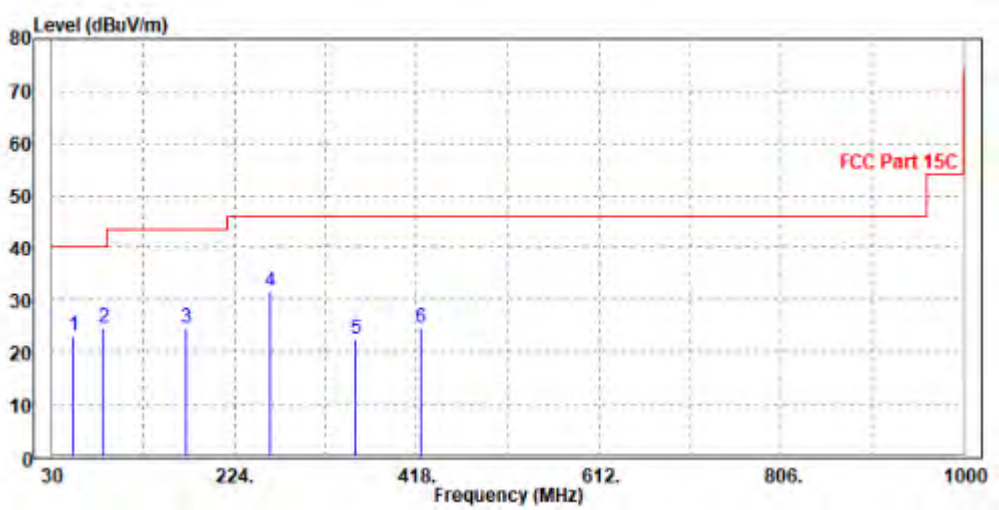
BT-LE _1M

CHANNEL	TX Channel 39	**0DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
52.31	23.25	49.86	40	-16.75	9.97	0.41	36.99	112	305	QP
84.32	24.74	52.97	40	-15.26	8.22	0.5	36.95	105	261	QP
172.59	24.78	49.32	43.5	-18.72	11.21	0.69	36.44	130	53	QP
261.83	31.62	53.42	46	-14.38	13.62	0.85	36.27	165	131	QP
353.01	22.36	42.53	46	-23.64	15.17	1	36.34	116	318	QP
422.85	24.7	43.43	46	-21.3	16.63	1.11	36.47	197	48	QP

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

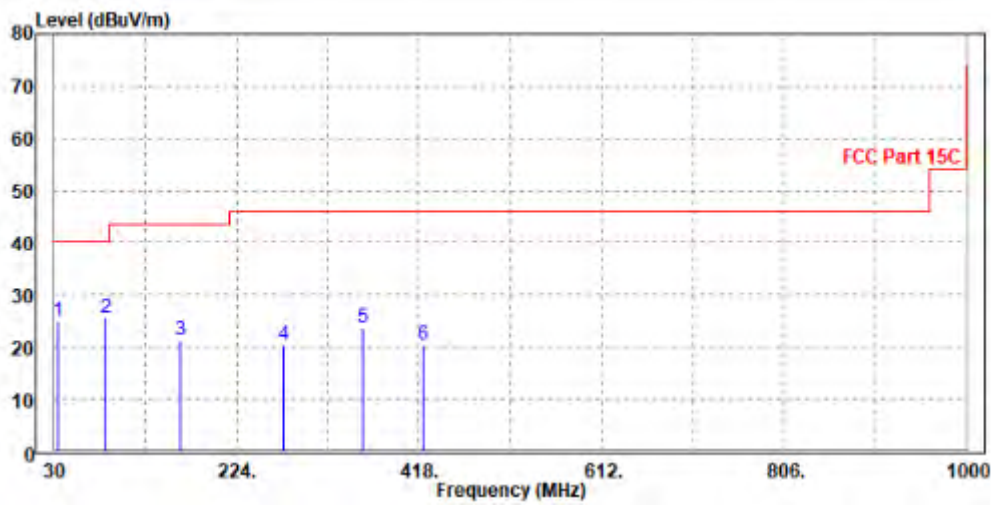


CHANNEL	TX Channel 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
33.88	24.92	43.61	40	-15.08	18.36	0.33	37.38	144	332	QP
84.32	25.52	53.94	40	-14.48	8.03	0.5	36.95	191	92	QP
164.83	21.18	46.01	43.5	-22.32	10.97	0.68	36.48	168	38	QP
274.44	20.52	42.64	46	-25.48	13.28	0.87	36.27	152	20	QP
357.86	23.69	43.71	46	-22.31	15.33	1	36.35	112	238	QP
422.85	20.51	39.27	46	-25.49	16.6	1.11	36.47	145	241	QP

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value



ABOVE 1GHz TEST DATA

Note: 1. For radiated emissions testing，the full testing range of different modes have been scanned，only the worst case harmonic data is reported in the sheet.

2. All other emissions were greater than 20dB below the limit was not recorded

BT-LE _1M

CHANNEL	TX Channel 0	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.63	59.67	74	-22.37	31.75	6.18	45.97	120	65	Peak
2390	44.14	52.18	54	-9.86	31.75	6.18	45.97	120	65	Average
2402	103.57	111.56	/	/	31.79	6.19	45.97	120	65	Peak
2402	103.21	111.2	/	/	31.79	6.19	45.97	120	65	Average
2483.5	51.5	59.07	74	-22.5	32.05	6.31	45.93	120	65	Peak
2483.5	43.85	51.42	54	-10.15	32.05	6.31	45.93	120	65	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.96	60.61	74	-21.04	32.14	6.18	45.97	100	210	Peak
2390	45.12	52.77	54	-8.88	32.14	6.18	45.97	100	210	Average
2402	99.14	106.76	/	/	32.16	6.19	45.97	100	210	Peak
2402	98.75	106.37	/	/	32.16	6.19	45.97	100	210	Average
2483.5	52.41	59.67	74	-21.59	32.36	6.31	45.93	100	210	Peak
2483.5	44.81	52.07	54	-9.19	32.36	6.31	45.93	100	210	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2402MHz: Fundamental frequency.

CHANNEL	TX Channel 19	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.14	59.18	74	-22.86	31.75	6.18	45.97	120	65	Peak
2390	43.82	51.86	54	-10.18	31.75	6.18	45.97	120	65	Average
2440	104.53	112.32	/	/	31.91	6.25	45.95	120	65	Peak
2440	104.05	111.84	/	/	31.91	6.25	45.95	120	65	Average
2483.5	51.65	59.22	74	-22.35	32.05	6.31	45.93	120	65	Peak
2483.5	43.88	51.45	54	-10.12	32.05	6.31	45.93	120	65	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	53.64	61.29	74	-20.36	32.14	6.18	45.97	100	210	Peak
2390	44.76	52.41	54	-9.24	32.14	6.18	45.97	100	210	Average
2440	99.03	106.47	/	/	32.26	6.25	45.95	100	210	Peak
2440	97.97	105.41	/	/	32.26	6.25	45.95	100	210	Average
2483.5	51.85	59.11	74	-22.15	32.36	6.31	45.93	100	210	Peak
2483.5	45.04	52.3	54	-8.96	32.36	6.31	45.93	100	210	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2440MHz: Fundamental frequency.

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.04	60.08	74	-21.96	31.75	6.18	45.97	120	65	Peak
2390	43.31	51.35	54	-10.69	31.75	6.18	45.97	120	65	Average
2480	104.68	112.27	/	/	32.04	6.3	45.93	120	65	Peak
2480	104.12	111.71	/	/	32.04	6.3	45.93	120	65	Average
2483.5	55.8	63.37	74	-18.2	32.05	6.31	45.93	120	65	Peak
2483.5	45.35	52.92	54	-8.65	32.05	6.31	45.93	120	65	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.93	58.58	74	-23.07	32.14	6.18	45.97	100	75	Peak
2390	43.47	51.12	54	-10.53	32.14	6.18	45.97	100	75	Average
2480	99.55	106.83	/	/	32.35	6.3	45.93	100	75	Peak
2480	98.9	106.18	/	/	32.35	6.3	45.93	100	75	Average
2483.5	53.23	60.49	74	-20.77	32.36	6.31	45.93	100	75	Peak
2483.5	45.18	52.44	54	-8.82	32.36	6.31	45.93	100	75	Average

REMARKS:

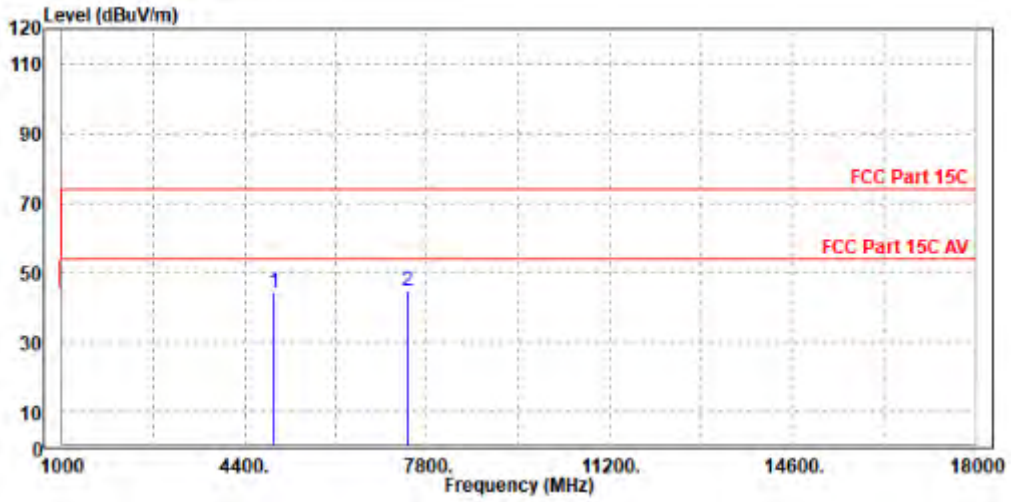
1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2480MHz: Fundamental frequency.

Worst case harmonic:

CHANNEL	TX Channel 39	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

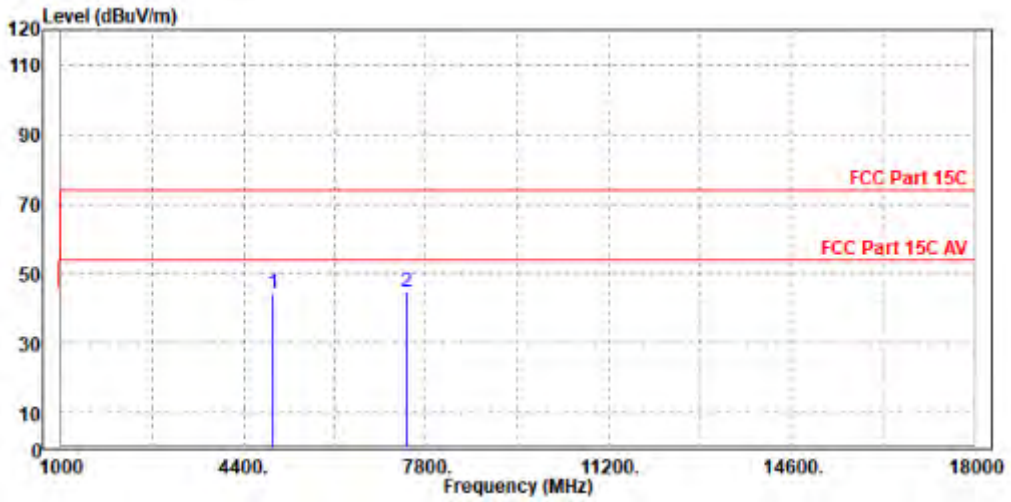
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	4961.000	44.38	45.57	74.00	-29.62	-1.19	Peak	Horizontal
2 PP	7440.000	44.90	42.92	74.00	-29.10	1.98	Peak	Horizontal



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1		4960.000	44.25	45.24	74.00	-29.75	-0.99	Peak	Vertical
2	PP	7443.000	44.58	42.58	74.00	-29.42	2.00	Peak	Vertical



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 2480MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.

3.3 6 dB BANDWIDTH MEASUREMENT

3.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

3.3.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Meter	ANRITSU	ML2495A	1506002	Feb. 22,22	Feb. 21,23
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510322	Feb. 18,22	Feb. 17,23
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	May.15,22	May.14,23
Power Sensor	ANRITSU	MA2411B	1339352	May. 06,22	May. 05,23

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 RF Oven room.

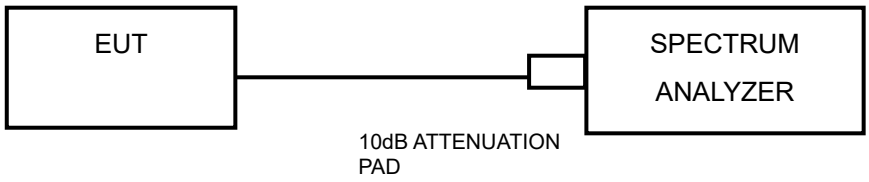
3.3.3 TEST PROCEDURE

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

3.3.4 DEVIATION FROM TEST STANDARD

No deviation.

3.3.5 TEST SETUP



3.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

3.3.7 TEST RESULTS

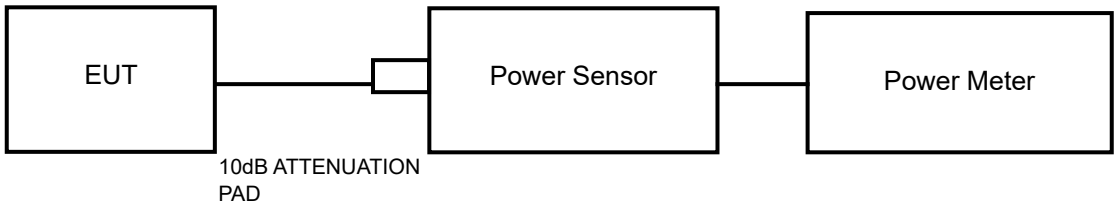
Please Refer to Appendix1/2 Of this test report.

3.4 CONDUCTED OUTPUT POWER

3.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

For systems using digital modulation in the 2400–2483.5 MHz band: 1 Watt (30dBm)

3.4.2 TEST SETUP



3.4.3 TEST INSTRUMENTS

Refer to section 3.3.2 to get information of above instrument.

3.4.4 TEST PROCEDURES

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

3.4.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

3.4.7 TEST RESULTS

3.4.7.1 MAXIMUM PEAK OUTPUT POWER

Please Refer to Appendix1/2 Of this test report.

3.4.7.2 AVERAGE OUTPUT POWER (FOR REFERENCE)

The average power sensor was used on the output port of the EUT. A power meter was used to read the response of the power sensor. Record the power level.

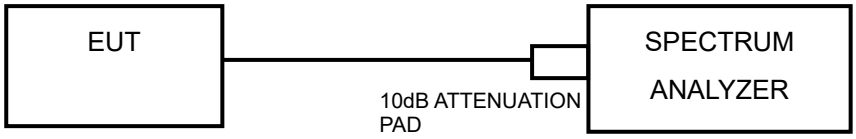
Please Refer to Appendix1/2 Of this test report.

3.5 POWER SPECTRAL DENSITY MEASUREMENT

3.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm/3KHz.

3.5.2 TEST SETUP



3.5.3 TEST INSTRUMENTS

Refer to section 3.3.2 to get information of above instrument.

3.5.4 TEST PROCEDURE

1. Set the span to 1.5 times the DTS bandwidth
2. Set the RBW = 3 kHz, VBW ≥ 3 x RBW, Detector = peak.
3. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
4. Use the peak marker function to determine the maximum amplitude level.

3.5.5 DEVIATION FROM TEST STANDARD

No deviation.

3.5.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

3.5.7 TEST RESULTS

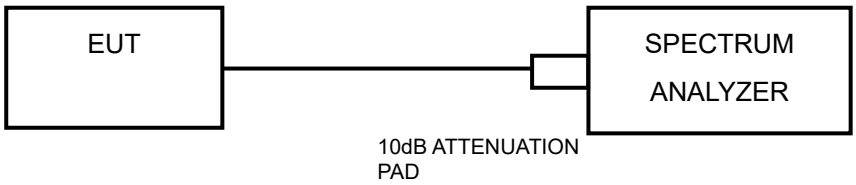
Please Refer to Appendix1/2 Of this test report.

3.6 OUT OF BAND EMISSION MEASUREMENT

3.6.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

3.6.2 TEST SETUP



3.6.3 TEST INSTRUMENTS

Refer to section 3.3.2 to get information of above instrument.

3.6.4 TEST PROCEDURE

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

1. Set RBW = 100 kHz.
2. Set VBW ≥ 300 kHz.
3. Set span to encompass the spectrum to be examined
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.

3.6.5 DEVIATION FROM TEST STANDARD

No deviation.

3.6.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

3.6.7 TEST RESULTS

The spectrum plots are attached on the following images. D1 line indicates the highest level. D2 line indicates the 20dB offset below D1. It shows compliance to the requirement.

Please Refer to Appendix1/2 Of this test report.

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

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

5 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.

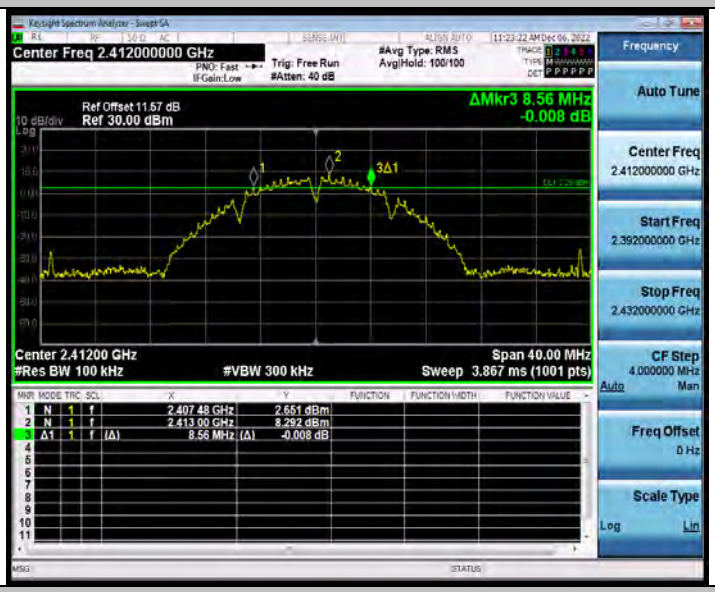
6 Appendix 1 WLAN 2.4G

DTS BANDWIDTH

TEST RESULT

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.560	2407.480	2416.040	0.5	PASS
		2437	8.040	2432.960	2441.000	0.5	PASS
		2462	8.600	2457.920	2466.520	0.5	PASS
11G	Ant1	2412	12.640	2406.920	2419.560	0.5	PASS
		2437	16.280	2428.840	2445.120	0.5	PASS
		2462	16.080	2453.840	2469.920	0.5	PASS
11N20SISO	Ant1	2412	16.160	2403.600	2419.760	0.5	PASS
		2437	17.520	2428.240	2445.760	0.5	PASS
		2462	15.360	2454.120	2469.480	0.5	PASS

TEST GRAPHS

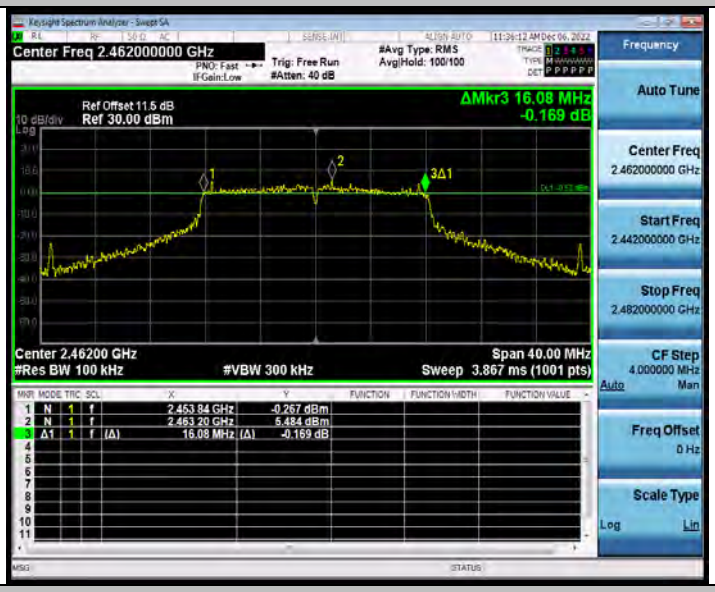
11B_Ant1_2412

11B_Ant1_2437

11B_Ant1_2462

11G_Ant1_2412

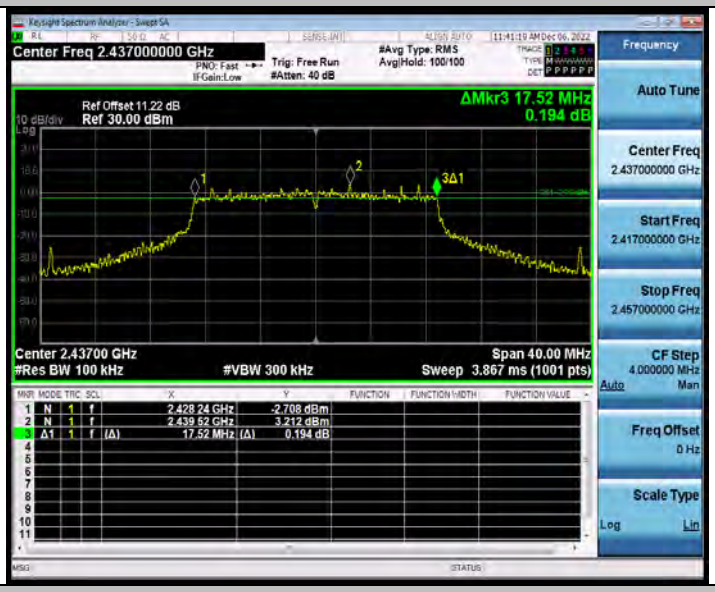
11G_Ant1_2437

11G_Ant1_2462



11N20SISO_Ant1_2412

11N20SISO_Ant1_2437



11N20SISO_Ant1_2462


Center Freq 2.462000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
#Avg Type: RMS
Avg|Hold: 100/100
Ref Offset 11.5 dB
10 dB/div
Ref 30.00 dBm
ΔMkr3 15.36 MHz
1.020 dB
Center 2.46200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40.00 MHz
Sweep 3.867 ms (1001 pts)
1 N 1 f 2.454 12 GHz 0.540 dBm
2 N 1 f 2.460 72 GHz 5.945 dBm
3 Δ1 1 f (Δ) 15.36 MHz (Δ) 1.020 dB
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.442000000 GHz
Stop Freq
2.482000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin

OCCUPIED CHANNEL BANDWIDTH

TEST RESULT

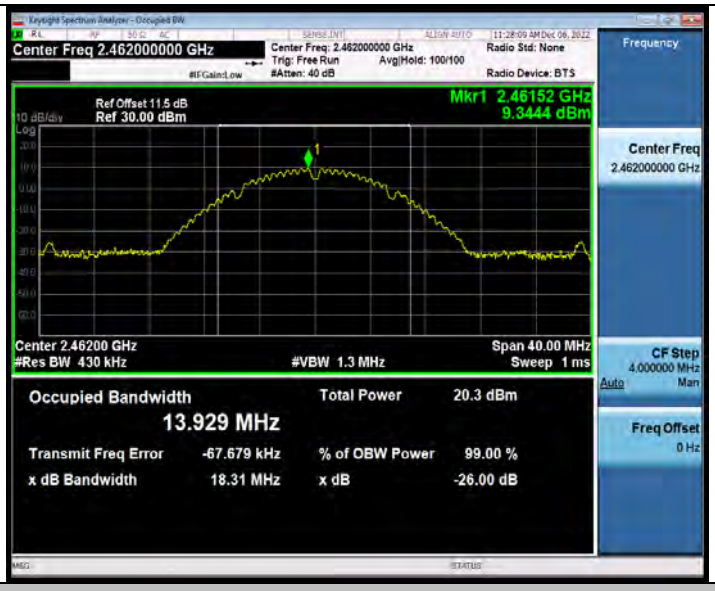
TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	14.013	2405.0225	2419.0355	---	---
		2437	14.099	2430.0191	2444.1181	---	---
		2462	13.929	2454.9678	2468.8968	---	---
11G	Ant1	2412	16.899	2403.5802	2420.4792	---	---
		2437	16.942	2428.5816	2445.5236	---	---
		2462	16.834	2453.5174	2470.3514	---	---
11N20SISO	Ant1	2412	18.020	2403.0163	2421.0363	---	---
		2437	18.127	2427.9948	2446.1218	---	---
		2462	17.988	2452.9448	2470.9328	---	---

TEST GRAPHS

11B_Ant1_2412

11B_Ant1_2437

11B_Ant1_2462



11G_Ant1_2412

11G_Ant1_2437

11G_Ant1_2462

11N20SISO_Ant1_2412

11N20SISO_Ant1_2437

11N20SISO_Ant1_2462


Center Freq 2.462000000 GHz
Center Freq: 2.462000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 40 dB
Radio Std: None
Radio Device: BTS
Ref Offset 11.5 dB
10 dB/div
Ref 30.00 dBm
Mkr1 2.46284 GHz
8.6492 dBm
Center 2.46200 GHz
#Res BW 430 kHz
#VBW 1.3 MHz
Span 40.00 MHz
Sweep 1 ms
Occupied Bandwidth
17.988 MHz
Total Power
21.7 dBm
Transmit Freq Error
-61.214 kHz
% of OBW Power
99.00 %
x dB Bandwidth
24.51 MHz
x dB
-26.00 dB
Frequency
Center Freq
2.462000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz

MAXIMUM CONDUCTED OUTPUT POWER

TEST RESULT

Test Mode	Antenna	Frequency [MHz]	Average Power [dBm]	Peak Power [dBm]	Peak Power [mw]	Conducted Limit [dBm]	EIRP [dBm]	EIRP [mw]	EIRP Limit [dBm]	Verdict	Power Setting
11B	Ant1	2412	15.88	18.12	64.86	≤30.00	19.59	90.99	≤36.00	PASS	17
		2437	15.91	18.39	69.02	≤30.00	19.86	96.83	≤36.00	PASS	17
		2462	16.24	18.77	75.34	≤30.00	20.24	105.68	≤36.00	PASS	18
11G	Ant1	2412	14.29	18.76	75.16	≤30.00	20.23	105.44	≤36.00	PASS	16.5
		2437	16.09	**20.79**	**119.95**	≤30.00	**22.26**	**168.27**	≤36.00	PASS	18
		2462	15.58	20.18	104.23	≤30.00	21.65	146.22	≤36.00	PASS	18
11N20 SISO	Ant1	2412	13.74	18.62	72.78	≤30.00	20.09	102.09	≤36.00	PASS	16
		2437	13.70	18.55	71.61	≤30.00	20.02	100.46	≤36.00	PASS	16
		2462	14.34	18.77	75.34	≤30.00	20.24	105.68	≤36.00	PASS	17

MAXIMUM POWER SPECTRAL DENSITY

TEST RESULT

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-3.16	≤8.00	PASS
		2437	-3.95	≤8.00	PASS
		2462	-2.84	≤8.00	PASS
11G	Ant1	2412	-7.2	≤8.00	PASS
		2437	-8.77	≤8.00	PASS
		2462	-8.12	≤8.00	PASS
11N20SISO	Ant1	2412	-10.36	≤8.00	PASS
		2437	-10.24	≤8.00	PASS
		2462	-8.96	≤8.00	PASS

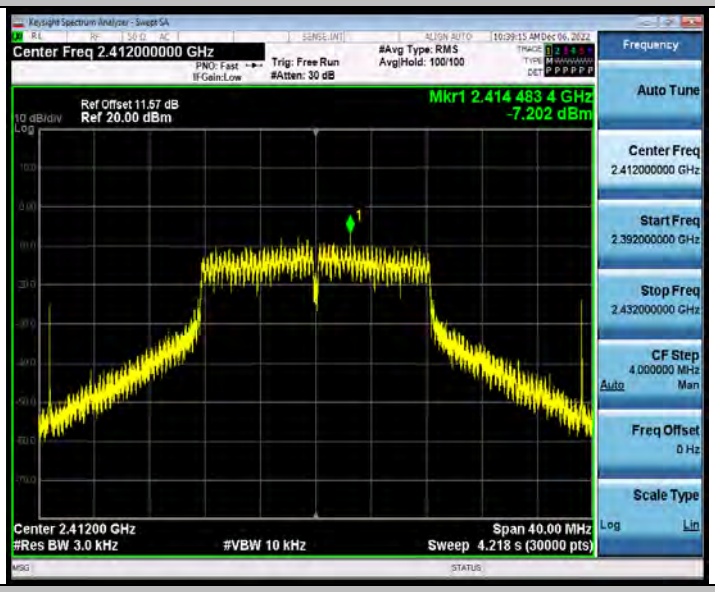
TEST GRAPHS

11B_Ant1_2412

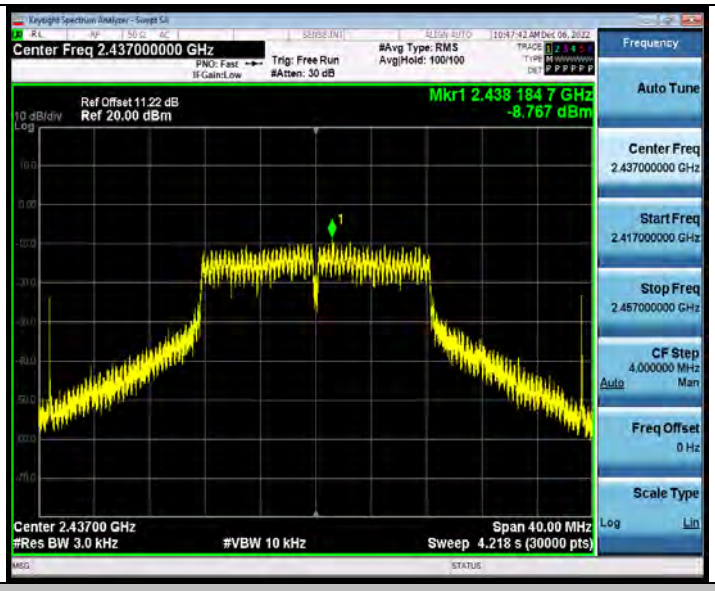
11B_Ant1_2437

11B_Ant1_2462

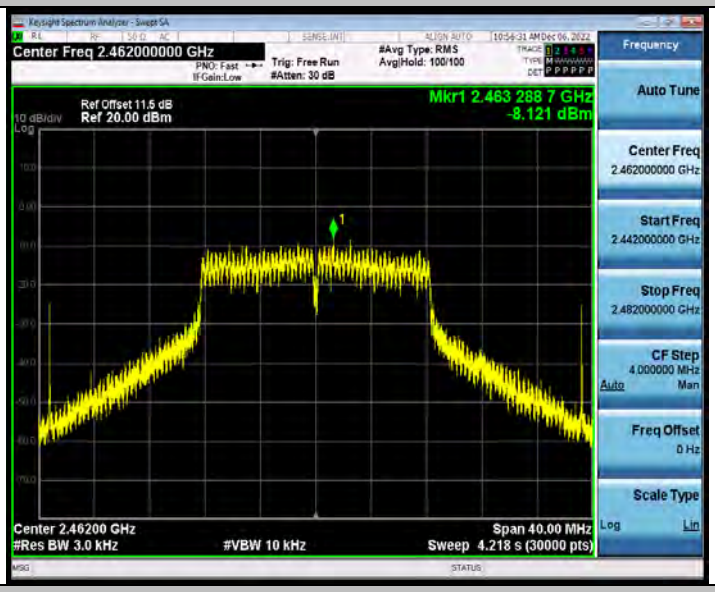
11G_Ant1_2412



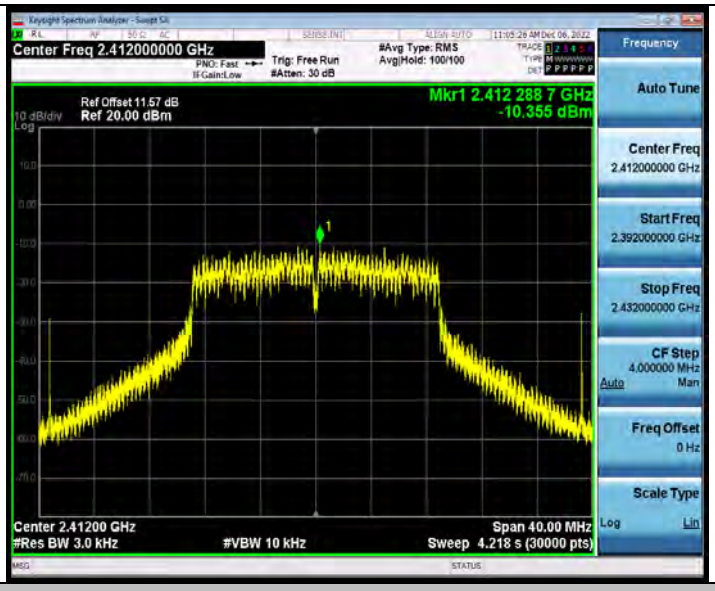
11G_Ant1_2437



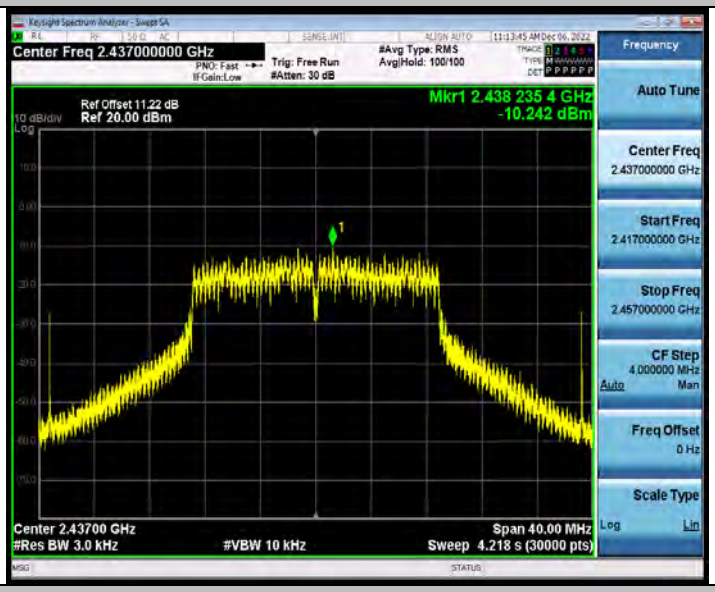
11G_Ant1_2462



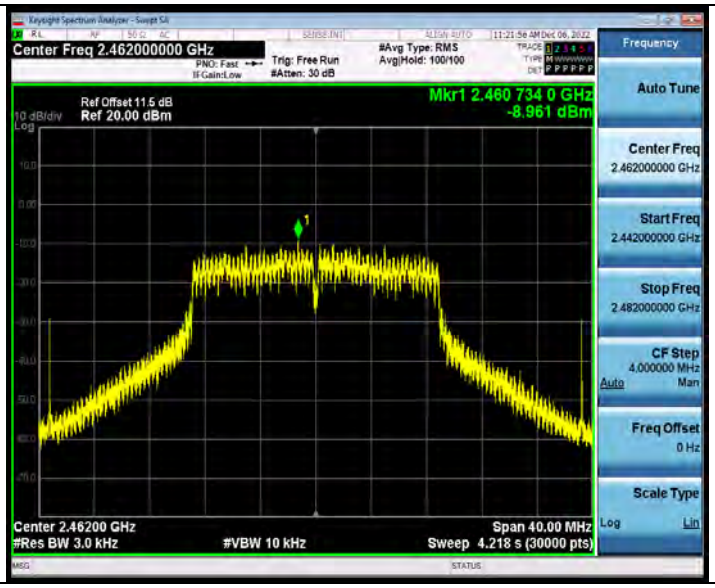
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462

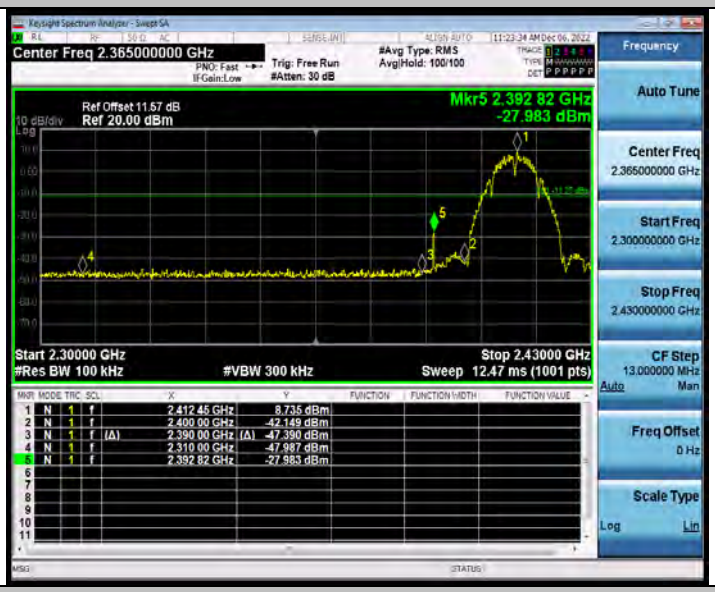
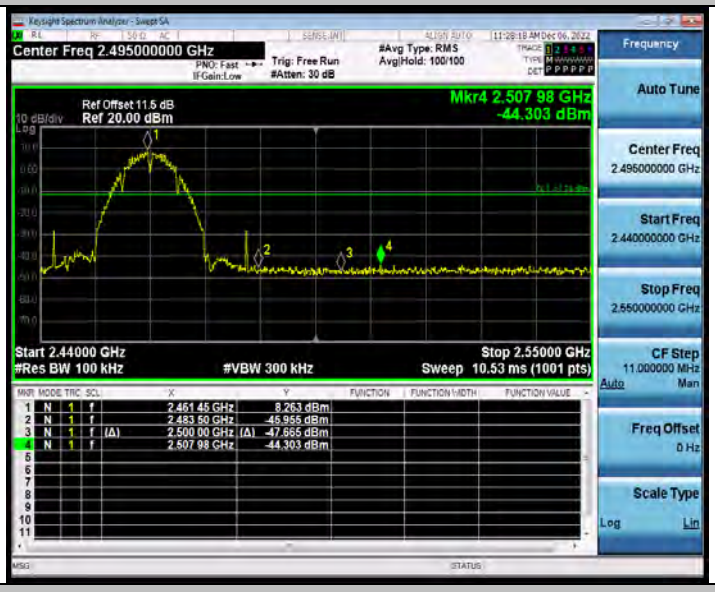

Center Freq 2.462000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 100/100
Ref Offset 11.5 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.460 734 0 GHz
-8.961 dBm
Center 2.46200 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 40.00 MHz
Sweep 4.218 s (30000 pts)
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.442000000 GHz
Stop Freq
2.482000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin

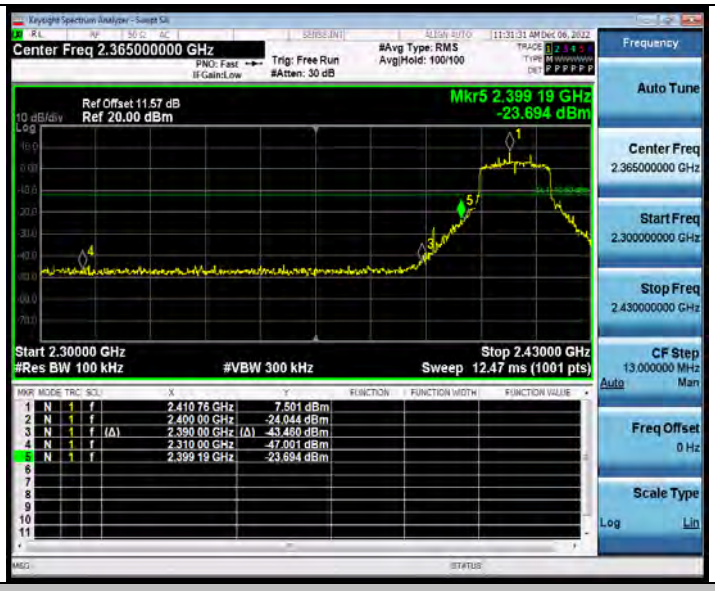
BAND EDGE MEASUREMENTS

TEST RESULT

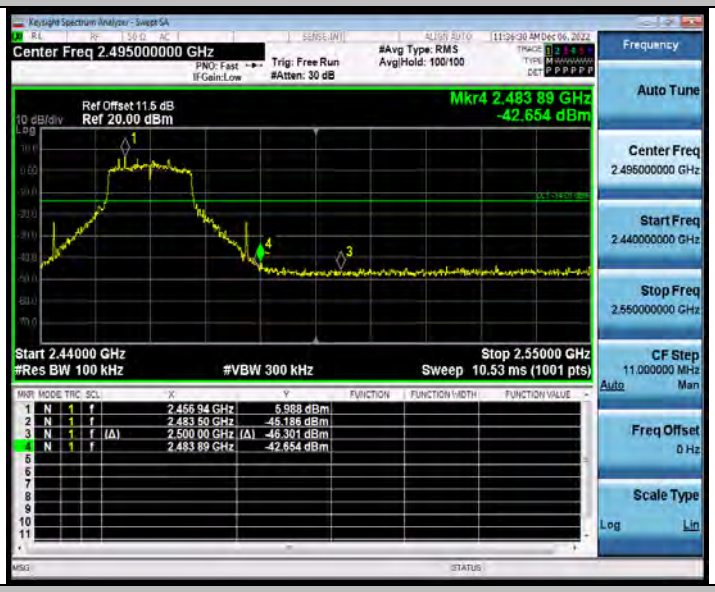
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	8.74	-27.98	≤-11.27	PASS
		High	2462	8.26	-44.3	≤-11.74	PASS
11G	Ant1	Low	2412	7.50	-23.69	≤-12.5	PASS
		High	2462	5.99	-42.65	≤-14.01	PASS
11N20SISO	Ant1	Low	2412	3.91	-24.79	≤-16.09	PASS
		High	2462	5.64	-44.18	≤-14.36	PASS

TEST GRAPHS

11B_Ant1_Low_2412

11B_Ant1_High_2462

11G_Ant1_Low_2412

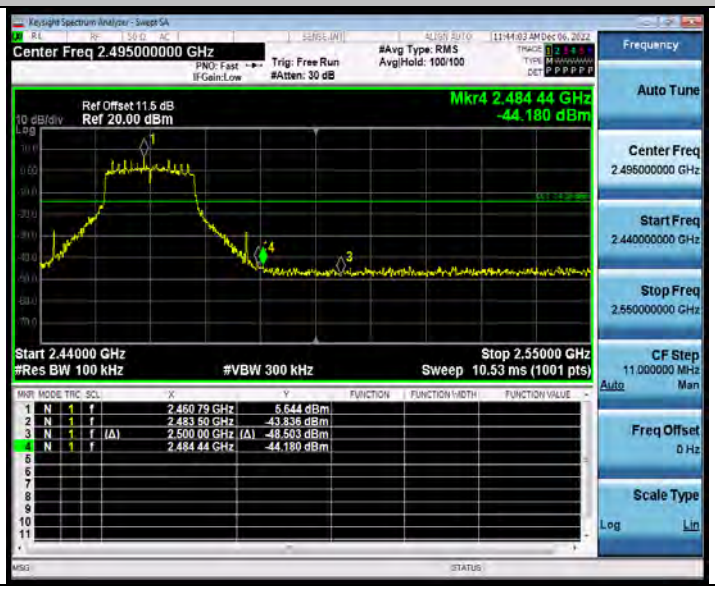


11G_Ant1_High_2462



11N20SISO_Ant1_Low_2412

11N20SISO_Ant1_High_2462



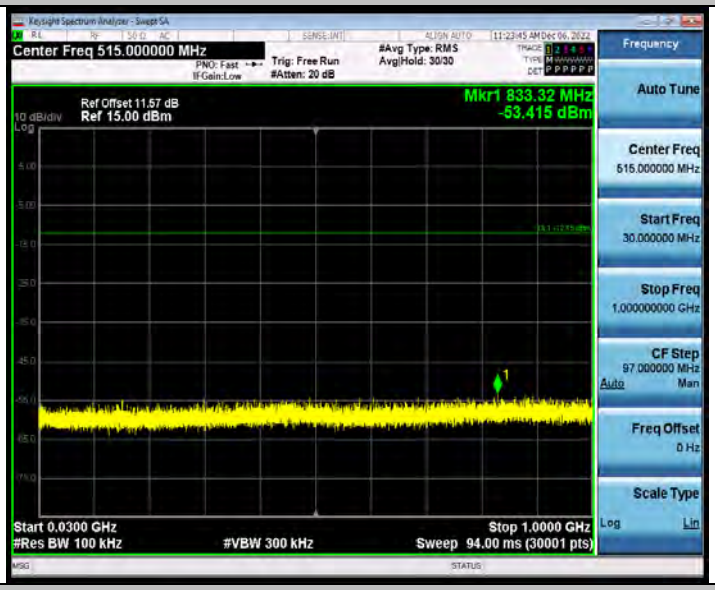
CONDUCTED SPURIOUS EMISSION

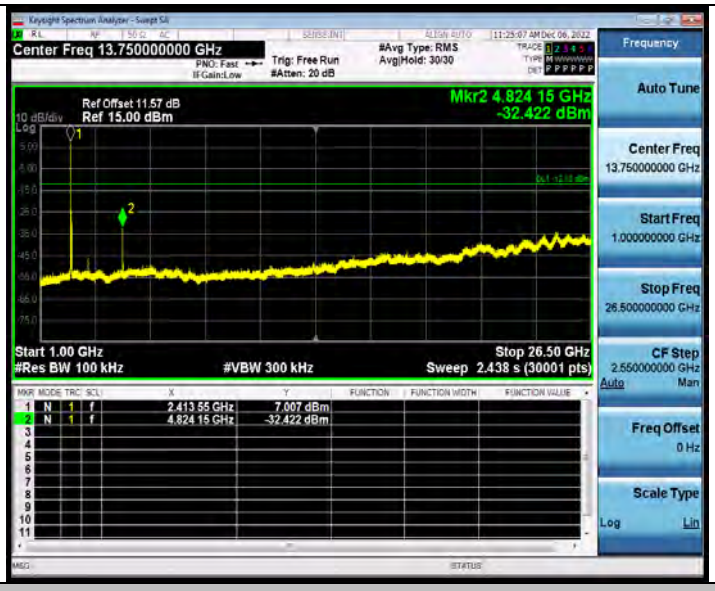
TEST RESULT

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	7.85	7.85	---	PASS
			30~1000	7.85	-53.42	≤-12.15	PASS
			1000~26500	7.85	-32.42	≤-12.15	PASS
		2437	Reference	6.33	6.33	---	PASS
			30~1000	6.33	-53.76	≤-13.67	PASS
			1000~26500	6.33	-32.89	≤-13.67	PASS
		2462	Reference	8.56	8.56	---	PASS
			30~1000	8.56	-52.95	≤-11.44	PASS
			1000~26500	8.56	-34.21	≤-11.44	PASS
11G	Ant1	2412	Reference	5.96	5.96	---	PASS
			30~1000	5.96	-53.13	≤-14.04	PASS
			1000~26500	5.96	-34.12	≤-14.04	PASS
		2437	Reference	6.89	6.89	---	PASS
			30~1000	6.89	-53.6	≤-13.11	PASS
			1000~26500	6.89	-35.13	≤-13.11	PASS
		2462	Reference	2.78	2.78	---	PASS
			30~1000	2.78	-53.56	≤-17.22	PASS
			1000~26500	2.78	-33.87	≤-17.22	PASS
11N20SISO	Ant1	2412	Reference	2.89	2.89	---	PASS
			30~1000	2.89	-53.57	≤-17.11	PASS
			1000~26500	2.89	-34.15	≤-17.11	PASS
		2437	Reference	0.32	0.32	---	PASS
			30~1000	0.32	-54.4	≤-19.68	PASS
			1000~26500	0.32	-35.14	≤-19.68	PASS
		2462	Reference	5.25	5.25	---	PASS
			30~1000	5.25	-53.67	≤-14.75	PASS
			1000~26500	5.25	-33.35	≤-14.75	PASS

TEST GRAPHS

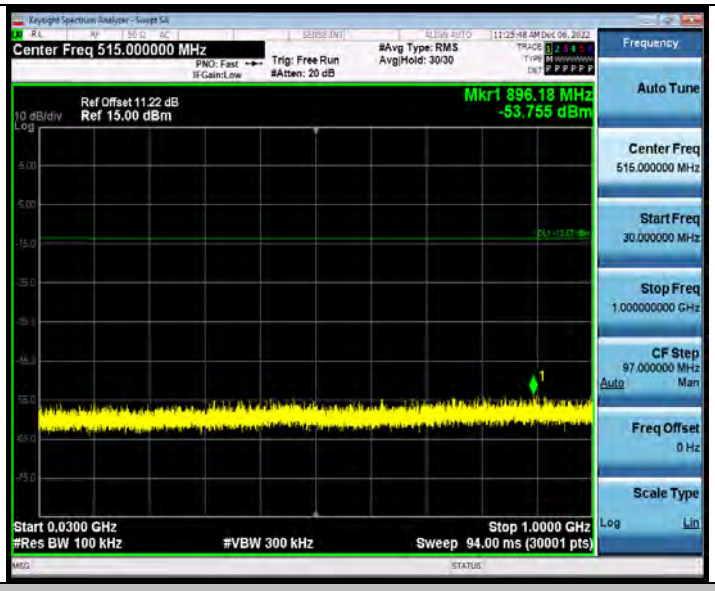
11B_Ant1_2412_0~Reference

11B_Ant1_2412_30~1000

11B_Ant1_2412_1000~26500

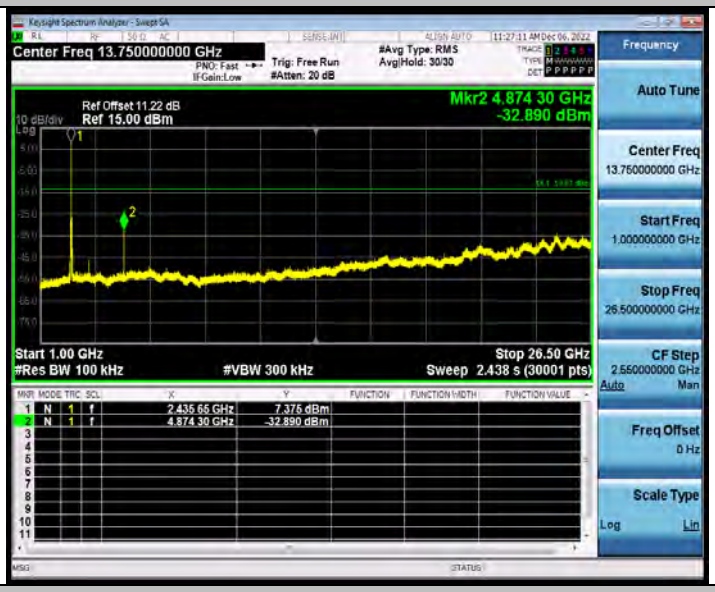


11B_Ant1_2437_0~Reference

11B_Ant1_2437_30~1000

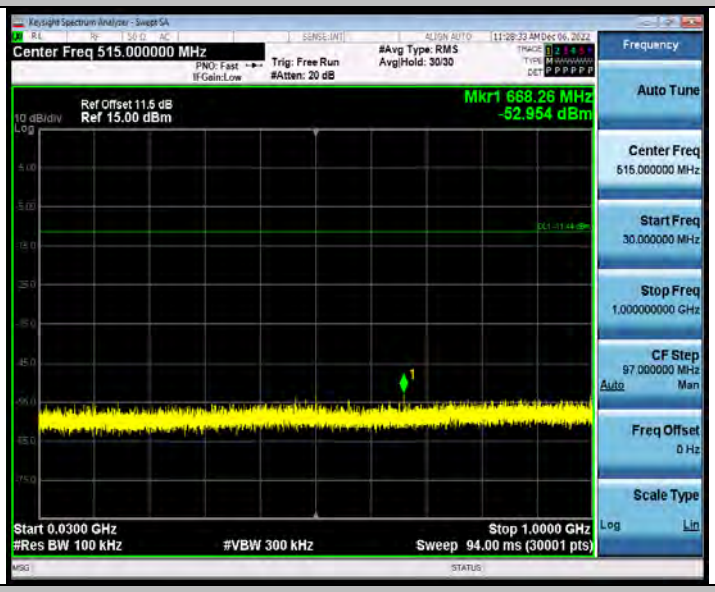


11B_Ant1_2437_1000~26500



11B_Ant1_2462_0~Reference

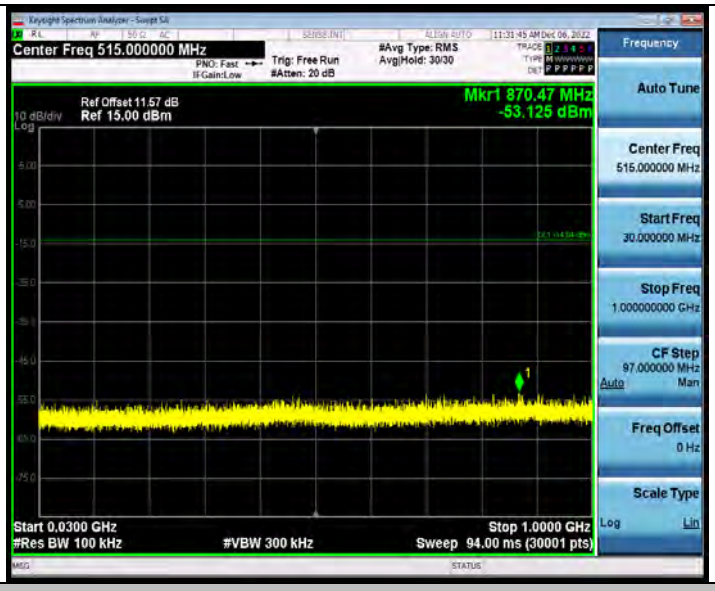
11B_Ant1_2462_30~1000



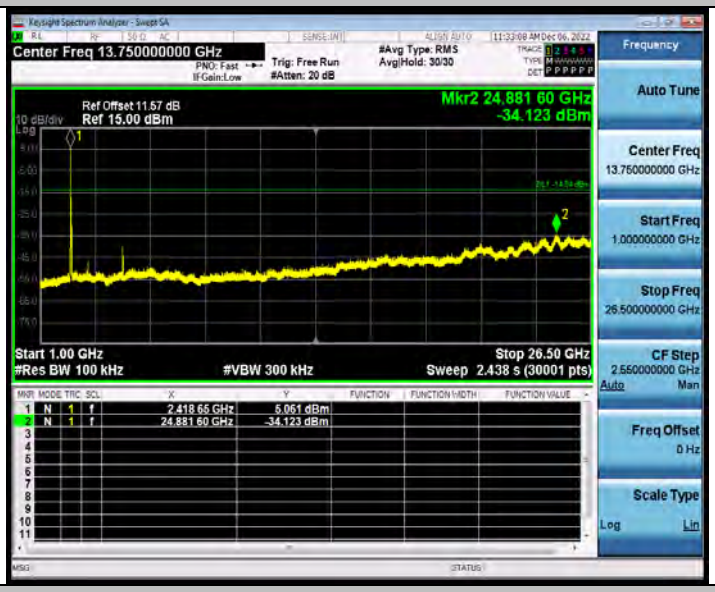
11B_Ant1_2462_1000~26500

11G_Ant1_2412_0~Reference

11G_Ant1_2412_30~1000

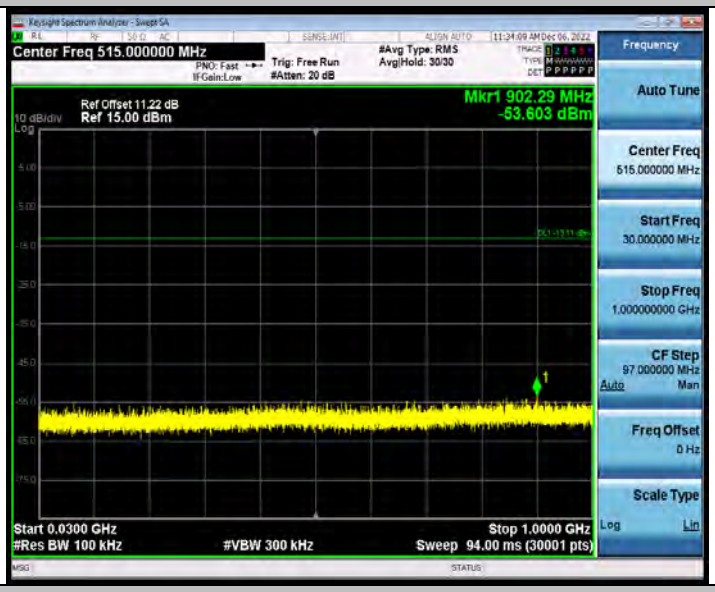


11G_Ant1_2412_1000~26500



11G_Ant1_2437_0~Reference

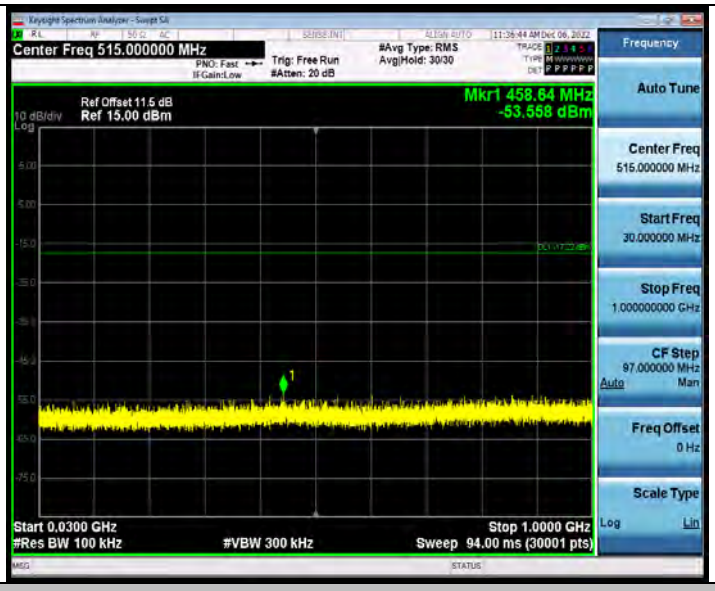
11G_Ant1_2437_30~1000



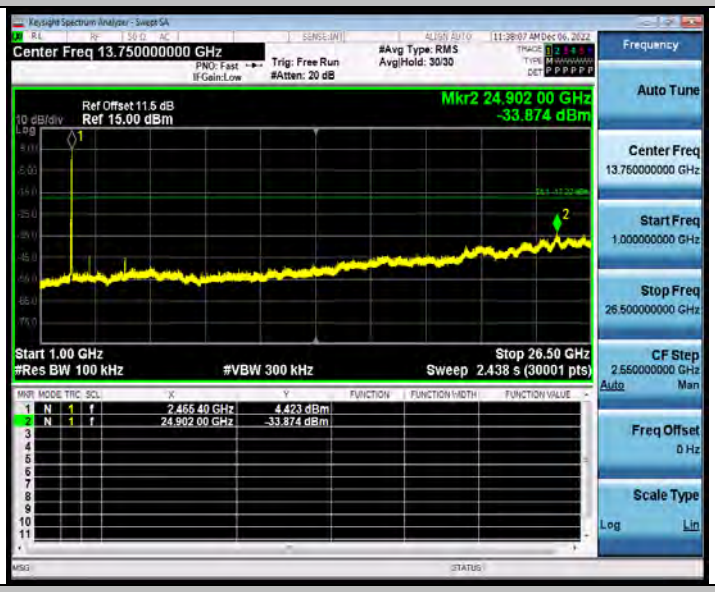
11G_Ant1_2437_1000~26500

11G_Ant1_2462_0~Reference

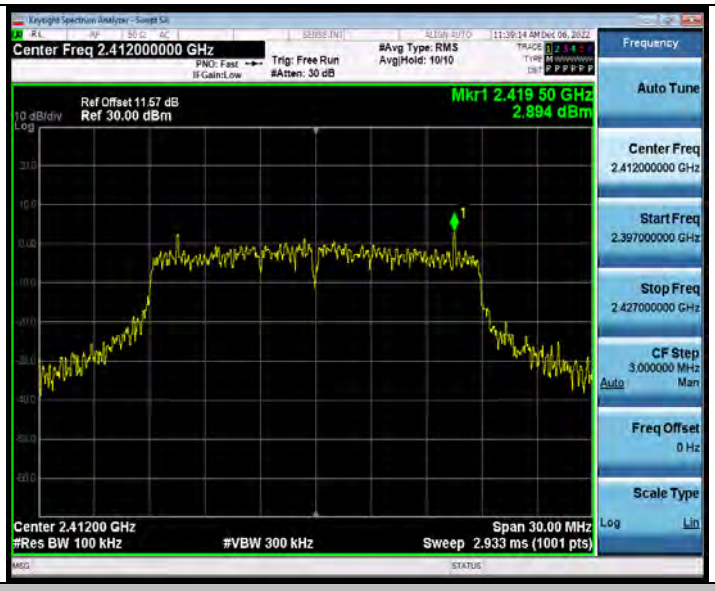
11G_Ant1_2462_30~1000



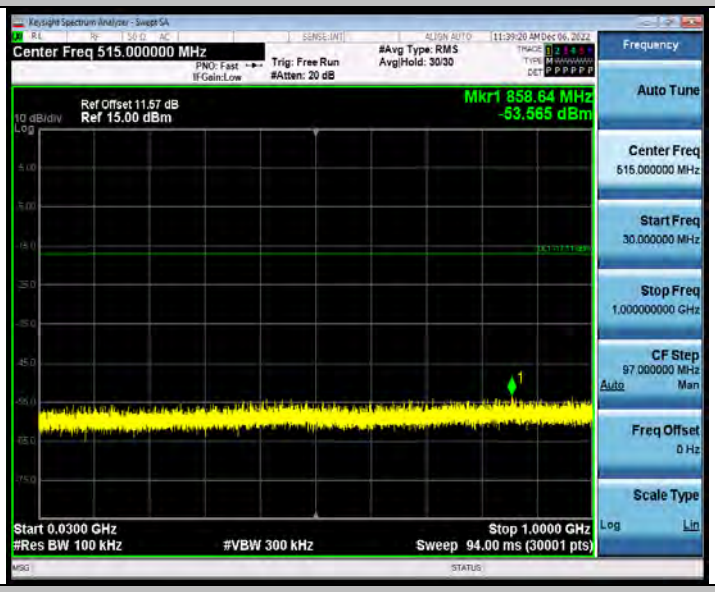
11G_Ant1_2462_1000~26500



11N20SISO_Ant1_2412_0~Reference

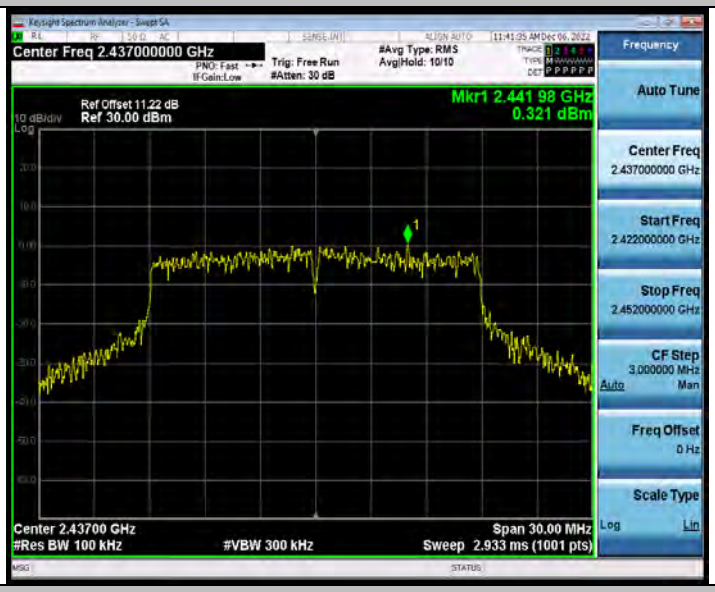


11N20SISO_Ant1_2412_30~1000

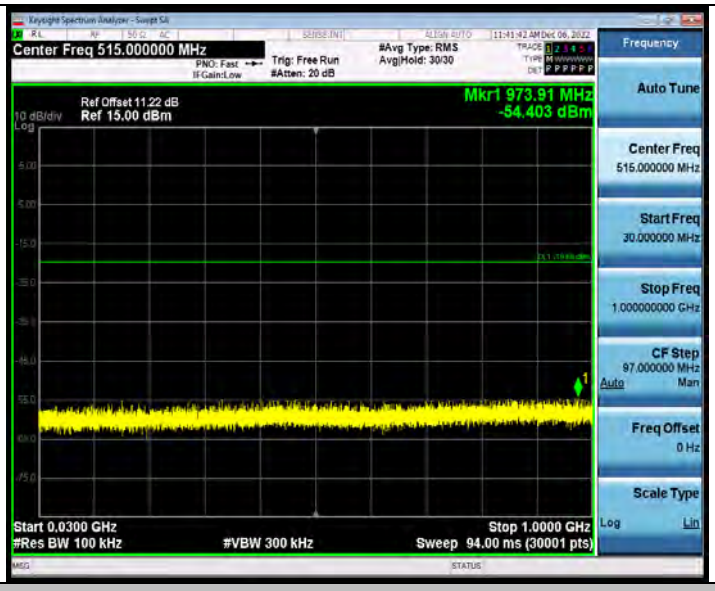


11N20SISO_Ant1_2412_1000~26500

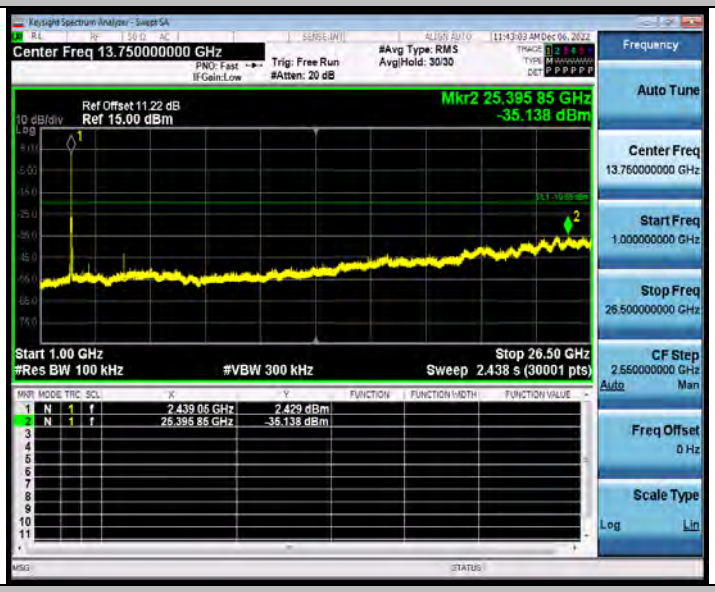
11N20SISO_Ant1_2437_0~Reference



11N20SISO_Ant1_2437_30~1000

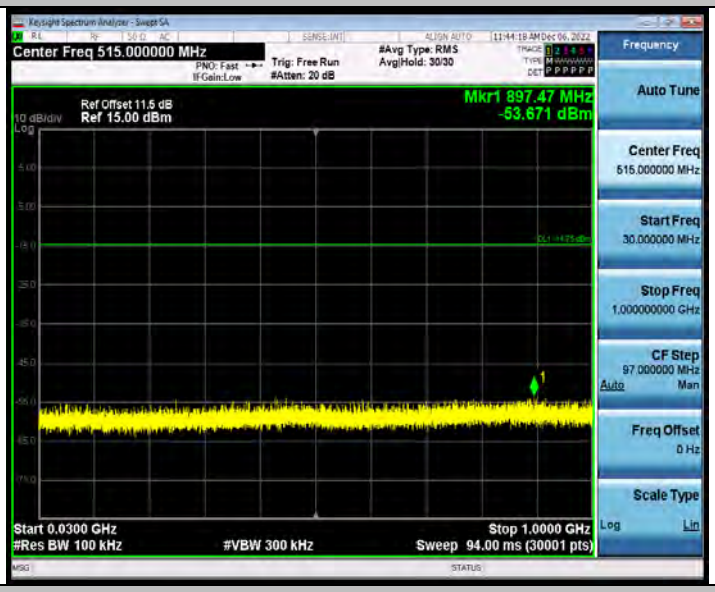


11N20SISO_Ant1_2437_1000~26500



11N20SISO_Ant1_2462_0~Reference

11N20SISO_Ant1_2462_30~1000



11N20SISO_Ant1_2462_1000~26500

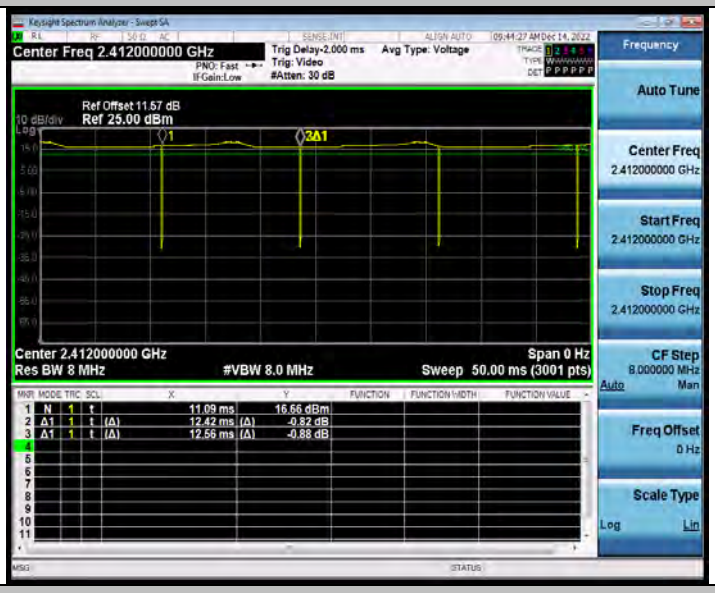
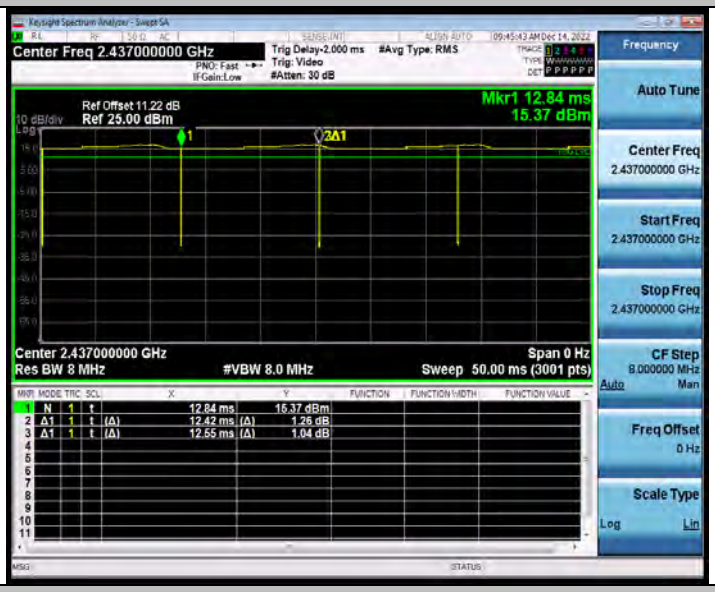

Center Freq 13.750000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 30/30
Ref Offset 11.5 dB
10 dB/div
Ref 15.00 dBm
Log
Mkr2 24.863 75 GHz
-33.352 dBm
Start 1.00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 26.50 GHz
Sweep 2.438 s (30001 pts)
1 N 1 f 2.463 70 GHz 5.999 dBm
2 N 1 f 24.863 75 GHz -33.352 dBm
Frequency
Auto Tune
Center Freq
13.750000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
26.500000000 GHz
CF Step
2.550000000 GHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin

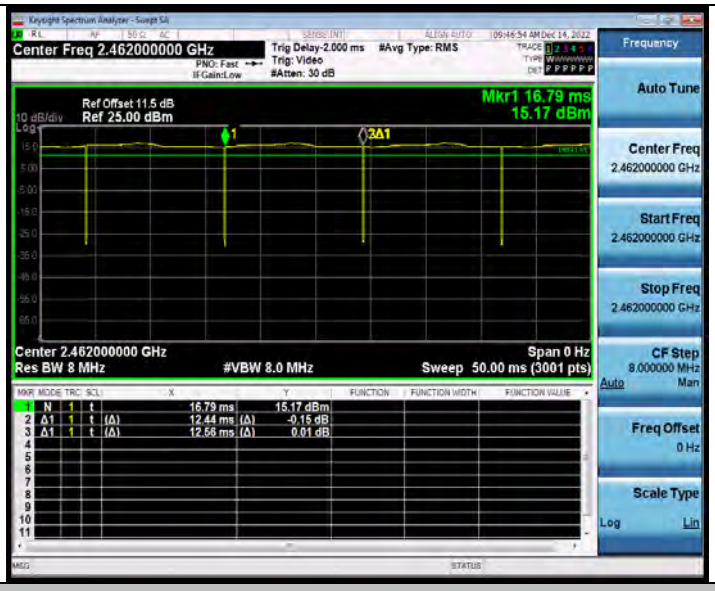
DUTY CYCLE

TEST RESULT

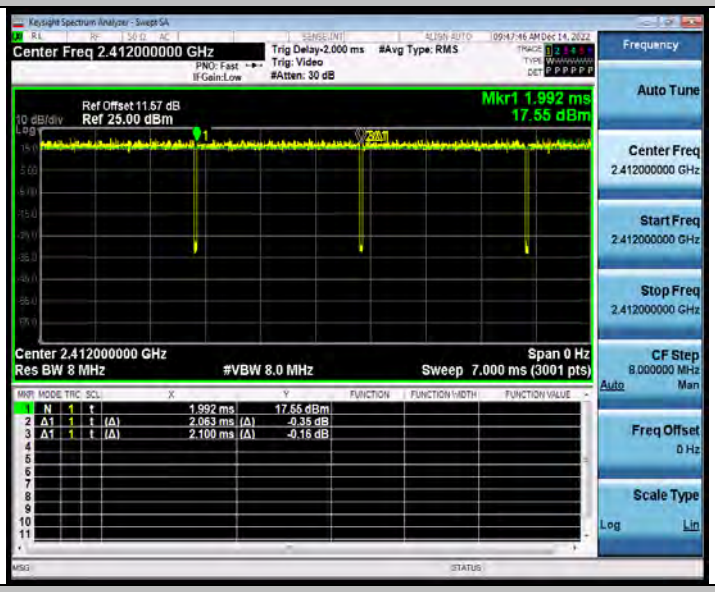
TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor
11B	Ant1	2412	12.44	12.56	99.04	0.04
		2437	12.44	12.55	99.12	0.04
		2462	12.44	12.56	99.04	0.04
11G	Ant1	2412	2.07	2.10	98.57	0.06
		2437	2.06	2.10	98.10	0.08
		2462	2.06	2.10	98.10	0.08
11N20SISO	Ant1	2412	1.92	1.96	97.96	0.09
		2437	1.92	1.96	97.96	0.09
		2462	1.92	1.96	97.96	0.09

TEST GRAPHS

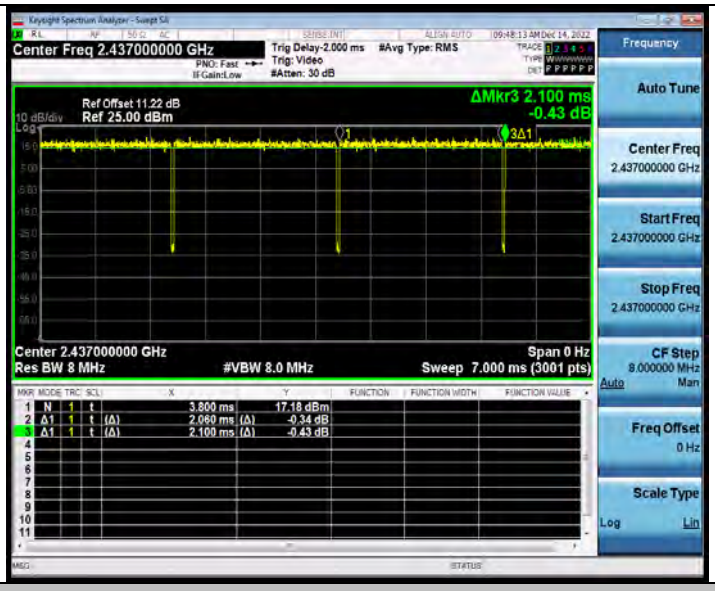
11B_Ant1_2412

11B_Ant1_2437

11B_Ant1_2462



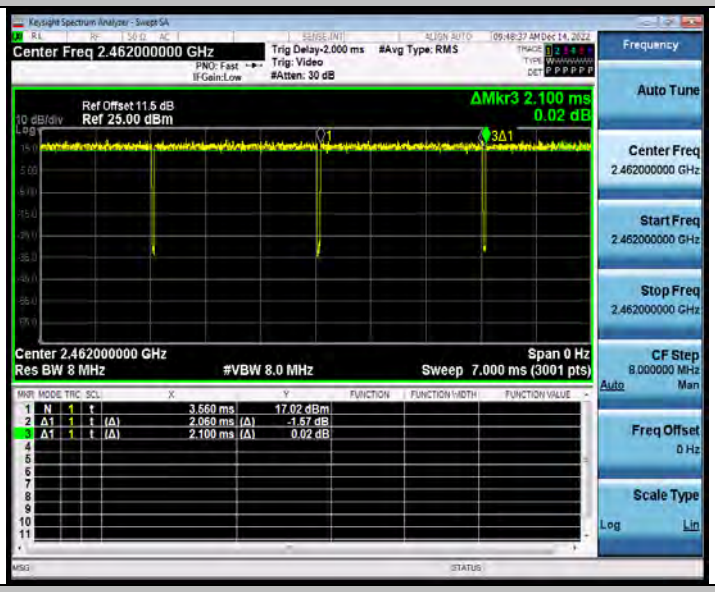
11G_Ant1_2412



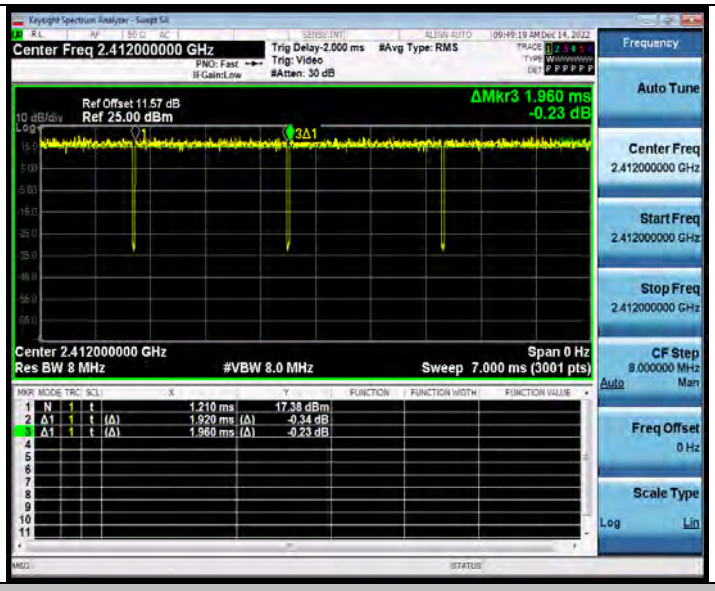
11G_Ant1_2437



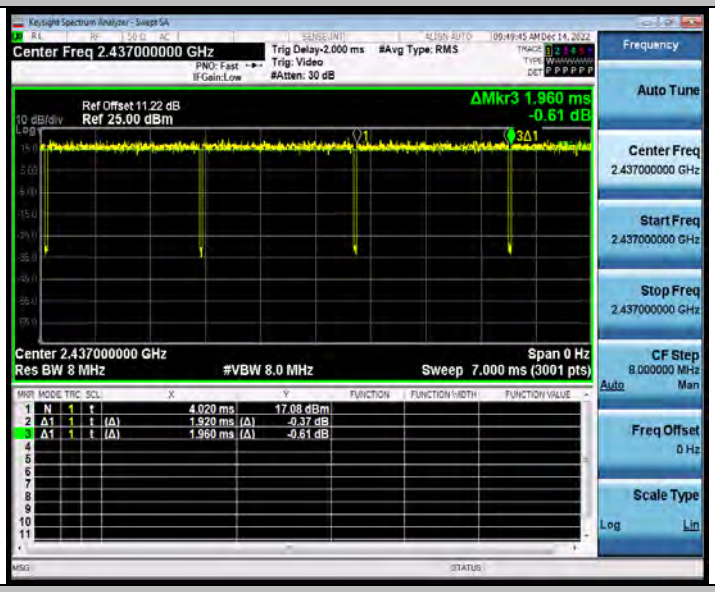
11G_Ant1_2462



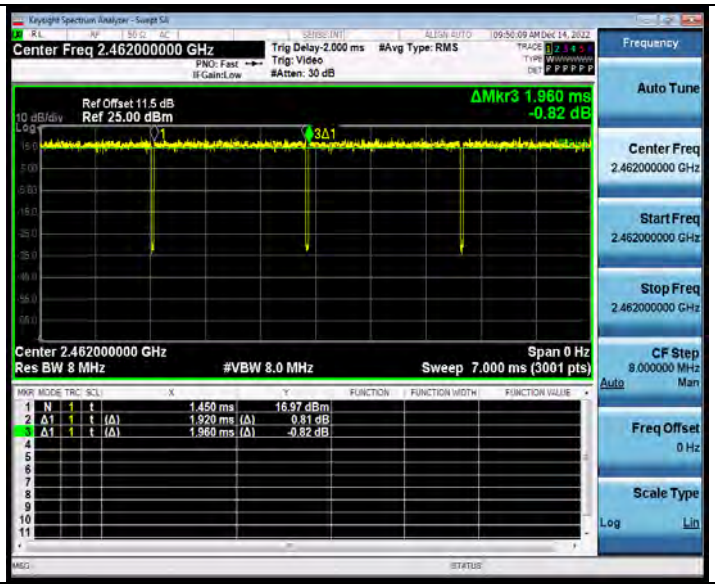
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462


Center Freq 2.462000000 GHz
Trig Delay-2.000 ms
Trig: Video
#Avg Type: RMS
#Atten: 30 dB
Ref Offset 11.5 dB
10 dB/div
Ref 25.00 dBm
ΔMkr3 1.960 ms
-0.82 dB
Center 2.462000000 GHz
Res BW 8 MHz
#VBW 8.0 MHz
Span 0 Hz
Sweep 7.000 ms (3001 pts)
1 N 1 t 1.450 ms 16.97 dBm
2 Δ1 1 t (Δ) 1.920 ms (Δ) 0.81 dB
3 Δ1 1 t (Δ) 1.960 ms (Δ) -0.82 dB
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.462000000 GHz
Stop Freq
2.462000000 GHz
CF Step
8.000000 MHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin

7 Appendix 2 BLE

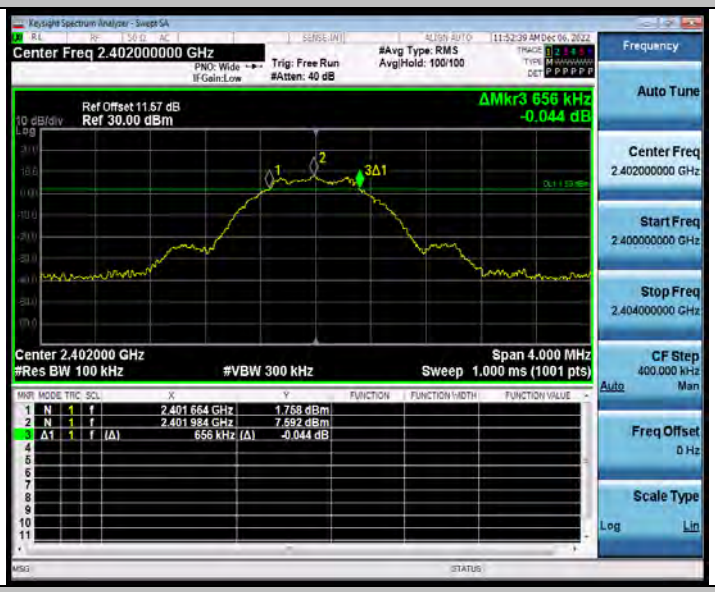
DTS BANDWIDTH

TEST RESULT

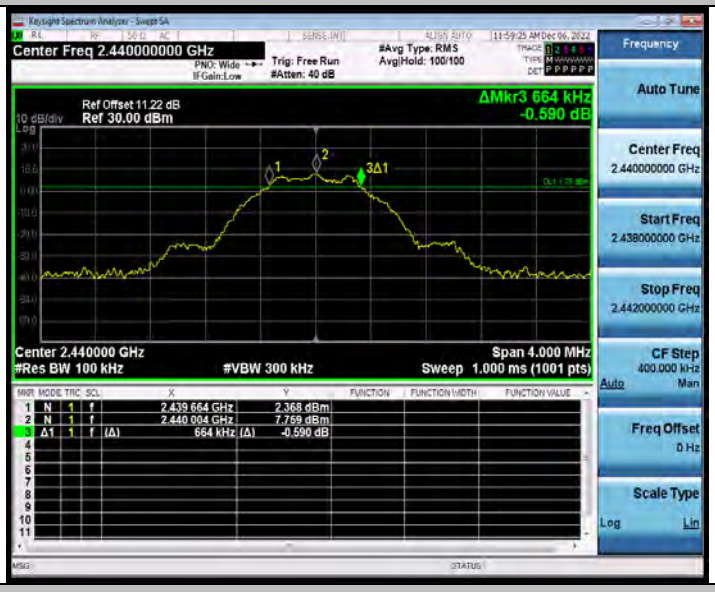
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.656	2401.664	2402.320	0.5	PASS
		2440	0.664	2439.664	2440.328	0.5	PASS
		2480	0.660	2479.664	2480.324	0.5	PASS

TEST GRAPHS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480


Center Freq 2.480000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 40 dB
#Avg Type: RMS
Avg|Hold: 100/100
12:03:12 PM Dec 06, 2022
Ref Offset 11.5 dB
10 dB/div
Ref 30.00 dBm
ΔMkr3 660 kHz
0.124 dB
Center 2.480000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 4.000 MHz
Sweep 1.000 ms (1001 pts)
1 N 1 f 2.479 664 GHz 2.590 dBm
2 N 1 f 2.479 996 GHz 8.517 dBm
3 Δ1 1 f (Δ) 660 kHz (Δ) 0.124 dB
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.478000000 GHz
Stop Freq
2.482000000 GHz
CF Step
400.000 kHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin

OCCUPIED CHANNEL BANDWIDTH

TEST RESULT

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0351	2401.4816	2402.5167	---	---
		2440	1.0396	2439.4859	2440.5255	---	---
		2480	1.0390	2479.4824	2480.5214	---	---

TEST GRAPHS

BLE_1M_Ant1_2402

BLE_1M_Ant1_2440

BLE_1M_Ant1_2480


Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 40 dB
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 11.5 dB
10 dB/div
Ref 30.00 dBm
Mkr1 2.479992 GHz
7.3367 dBm
Center Freq
2.480000000 GHz
Center 2.480000 GHz
#Res BW 43 kHz
#VBW 130 kHz
Span 4.000 MHz
Sweep 2.067 ms
CF Step
400.000 kHz
Auto
Man
Occupied Bandwidth
1.0390 MHz
Total Power
15.3 dBm
Transmit Freq Error
1.873 kHz
% of OBW Power
99.00 %
x dB Bandwidth
1.272 MHz
x dB
-26.00 dB
Freq Offset
0 Hz

MAXIMUM CONDUCTED OUTPUT POWER

TEST RESULT

TestMode	Antenna	Channel	Average power [dBm]	Peak power [dBm]	Conducted Limit [dBm]	EIRP [dBm]	EIRP [mw]	EIRP Limit [dBm]	Verdict	Power Setting
BLE_1M	Ant1	2402	7.61	7.72	≤30	9.19	8.30	≤36	PASS	Defult
		2440	7.88	8.11	≤30	9.58	9.08	≤36	PASS	Defult
		2480	8.06	8.30	≤30	9.77	9.48	≤36	PASS	Defult
Note:EIRP=Peak Power+Gain										

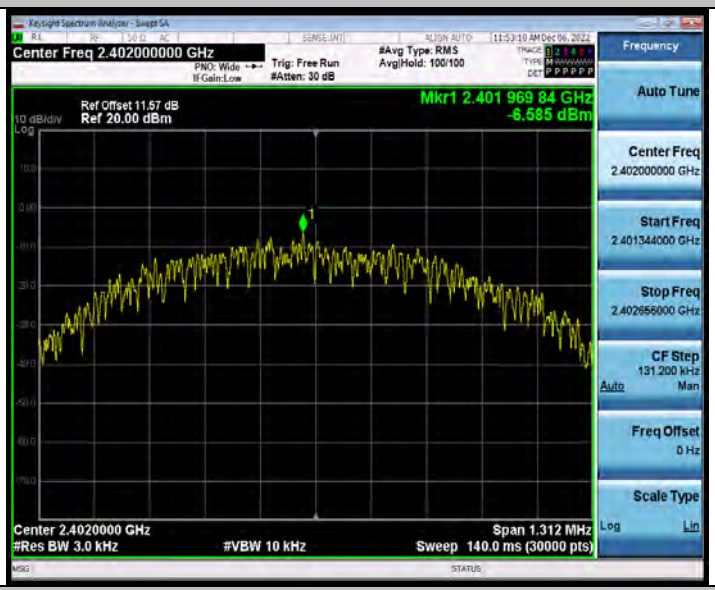
MAXIMUM POWER SPECTRAL DENSITY

TEST RESULT

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-6.59	≤8.00	PASS
		2440	-6.91	≤8.00	PASS
		2480	-6.19	≤8.00	PASS

TEST GRAPHS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440

BLE_1M_Ant1_2480

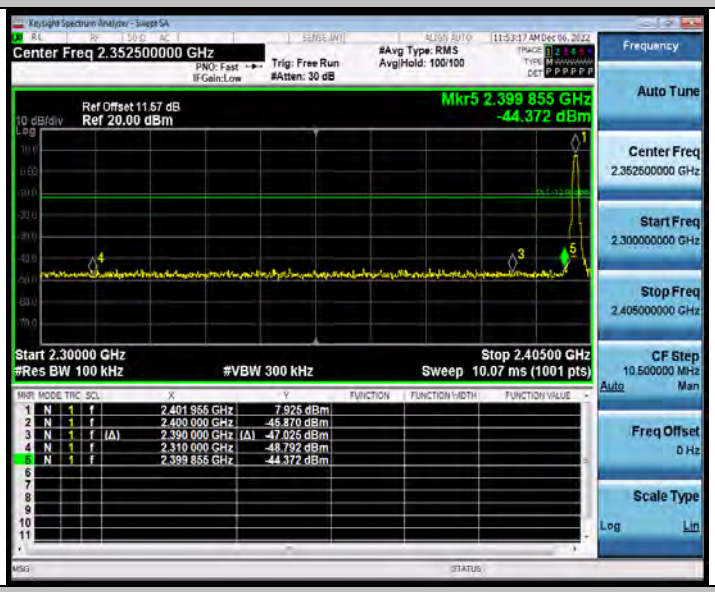
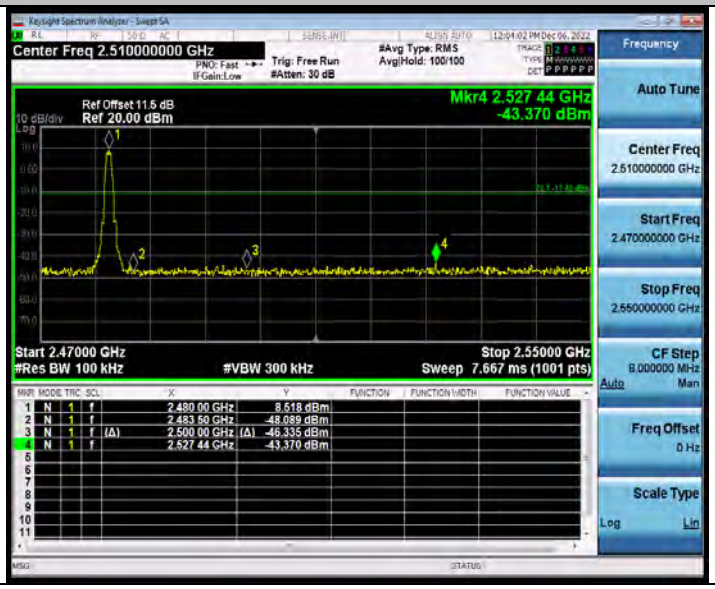

Center Freq 2.480000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 100/100
Ref Offset 11.5 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.479 972 13 GHz
-6.185 dBm
Center 2.4800000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 1.320 MHz
Sweep 140.0 ms (30000 pts)
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.479340000 GHz
Stop Freq
2.480660000 GHz
CF Step
132.000 kHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin

BAND EDGE MEASUREMENTS

TEST RESULT

TestMode	Antenna	ChName	Frequency [MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	7.93	-44.37	≤-12.08	PASS
		High	2480	8.52	-43.37	≤-11.48	PASS

TEST GRAPHS

BLE_1M_Ant1_Low_2402

BLE_1M_Ant1_High_2480


CONDUCTED SPURIOUS EMISSION

TEST RESULT

TestMode	Antenna	Frequency [MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	8.05	8.05	---	PASS
			30~1000	8.05	-52.62	≤-11.95	PASS
			1000~26500	8.05	-33.98	≤-11.95	PASS
		2440	Reference	6.92	6.92	---	PASS
			30~1000	6.92	-53.5	≤-13.08	PASS
			1000~26500	6.92	-34.56	≤-13.08	PASS
		2480	Reference	8.56	8.56	---	PASS
			30~1000	8.56	-52.98	≤-11.44	PASS
			1000~26500	8.56	-34.49	≤-11.44	PASS

TEST GRAPHS

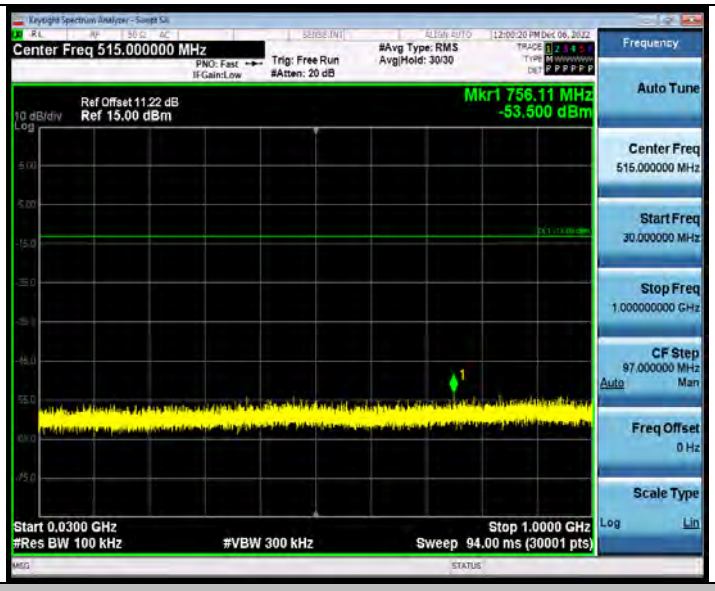
BLE_1M_Ant1_2402_0~Reference

BLE_1M_Ant1_2402_30~1000

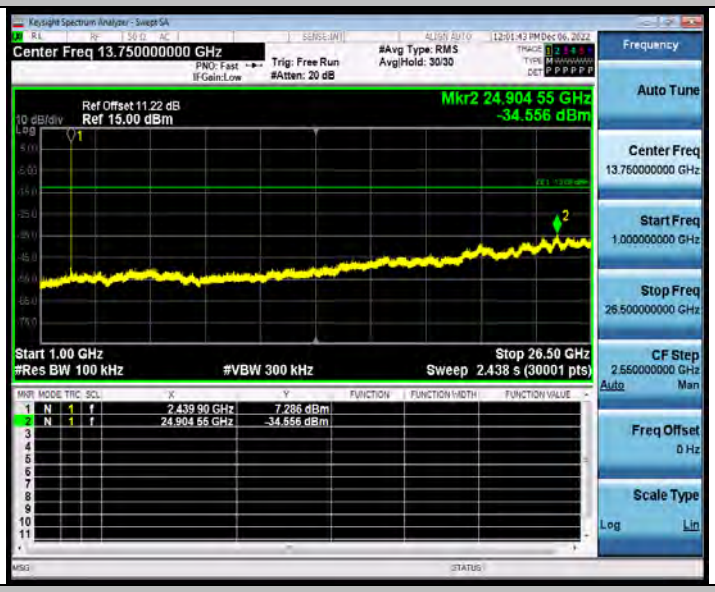
BLE_1M_Ant1_2402_1000~26500

BLE_1M_Ant1_2440_0~Reference

BLE_1M_Ant1_2440_30~1000

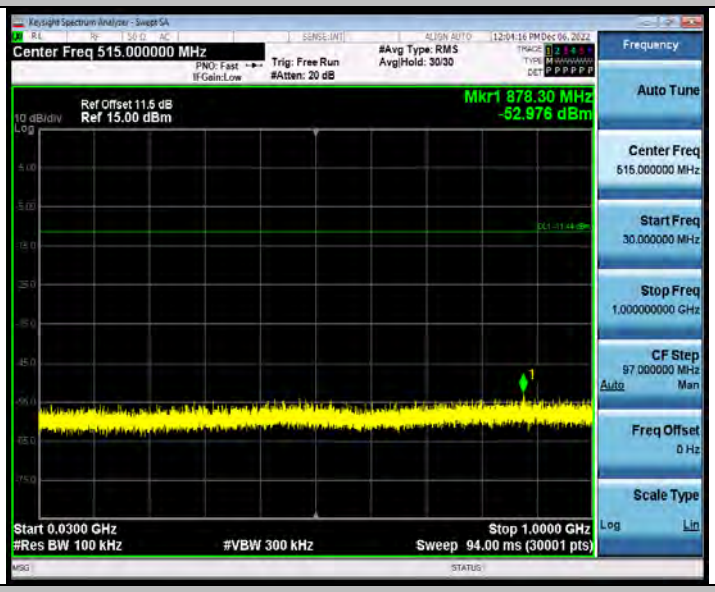


BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference

BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500


Center Freq 13.750000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 30/30
Ref Offset 11.5 dB
10 dB/div
Ref 15.00 dBm
Mkr2 25.470 65 GHz
-34.486 dBm
Start 1.00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 26.50 GHz
Sweep 2.438 s (30001 pts)
1 N 1 f 2.479 85 GHz 7.204 dBm
2 N 1 f 25.470 65 GHz -34.486 dBm
Frequency
Auto Tune
Center Freq
13.750000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
26.500000000 GHz
CF Step
2.550000000 GHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin

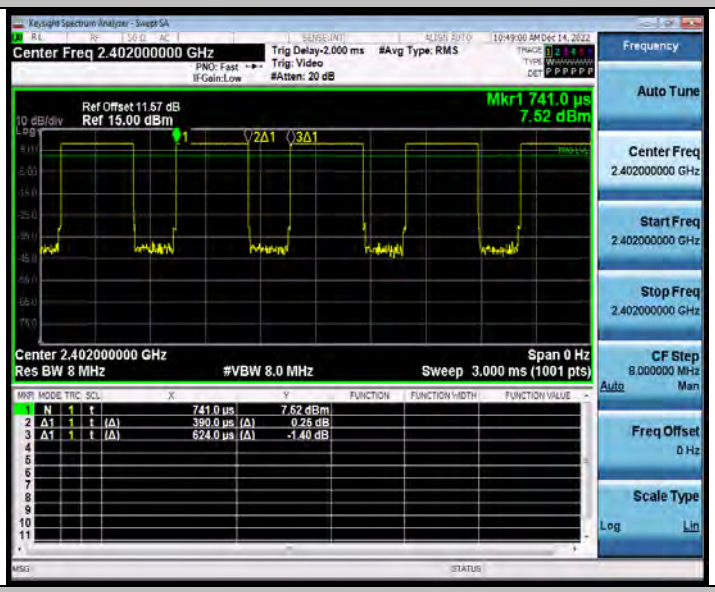
DUTY CYCLE

TEST RESULT

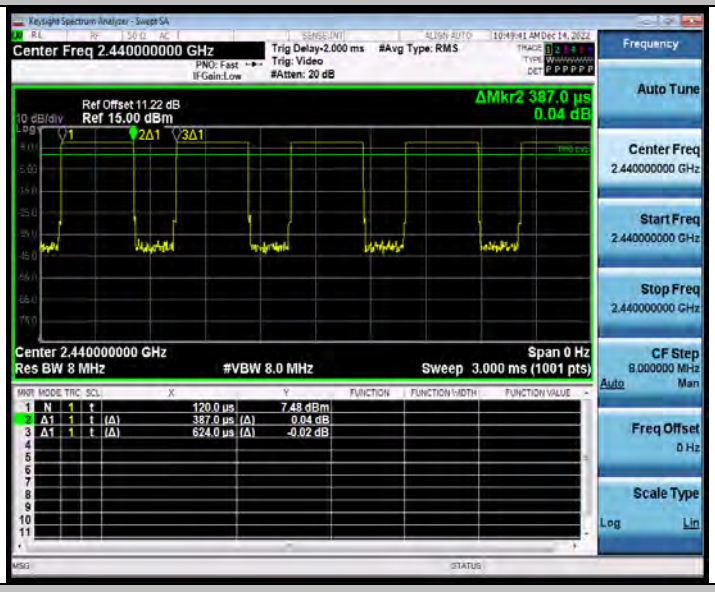
TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	0.39	0.63	61.90	2.08
		2440	0.39	0.63	61.90	2.08
		2480	0.39	0.63	61.90	2.08

TEST GRAPHS

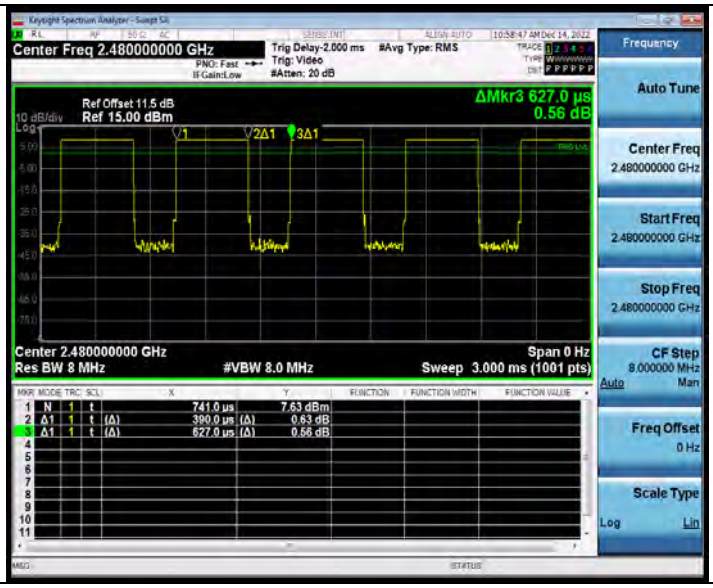
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480


Center Freq 2.480000000 GHz
Trig Delay-2.000 ms
Trig: Video
#Avg Type: RMS
#Atten: 20 dB
Ref Offset 11.5 dB
10 dB/div
Ref 15.00 dBm
ΔMkr3 627.0 µs
0.56 dB
Center 2.480000000 GHz
Res BW 8 MHz
#VBW 8.0 MHz
Span 0 Hz
Sweep 3.000 ms (1001 pts)
1 N 1 t 741.0 µs 7.63 dBm
2 Δ1 1 t (Δ) 390.0 µs (Δ) 0.63 dB
3 Δ1 1 t (Δ) 627.0 µs (Δ) 0.56 dB
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.480000000 GHz
Stop Freq
2.480000000 GHz
CF Step
8.000000 MHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin

---END---