TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 15, Subpart C (Section 15.247)**
Report No.:	RFBBUI-WTW-P23070201-1 R1
FCC ID:	TX2-RTL8922AE
Product:	11be RTL8922AE Combo module
Brand:	REALTEK
Model No.:	RTL8922AE
Received Date:	2023/6/27
Test Date:	2023/6/27 ~ 2023/8/22
Issued Date:	2023/12/1
Applicant:	Realtek Semiconductor Corp.
Address:	No. 2, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

Approved by: _____ , **Date:** 2023/12/1

May Chen / Manager

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Prepared by : Phoenix Huang / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBBUI-WTW-P23070201-1	Original release.	2023/10/24
RFBBUI-WTW-P23070201-1 R1	Add antenna (Model: RFA-57-JP805-4B-300) information.	2023/12/1

1 Certificate

Product:	11be RTL8922AE Combo module
Brand:	REALTEK
Test Model:	RTL8922AE
Sample Status:	Engineering sample
Applicant:	Realtek Semiconductor Corp.
Test Date:	2023/6/27 ~ 2023/8/22
Standard:	47 CFR FCC Part 15, Subpart C (Section 15.247)
Measurement procedure:	ANSI C63.10-2013 KDB 558074 D01 15.247 Meas Guidance v05r02

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
Standard / Clause	Test Item	Result	Remark
15.247 (a)(1)	RF Output Power	Pass	Meet the requirement of limit.
15.247(a)(1) (iii)	Number of Hopping Frequency Used	Pass	Meet the requirement of limit.
15.247(a)(1) (iii)	Dwell Time on Each Channel	Pass	Meet the requirement of limit.
15.247(a)(1)	Hopping Channel Separation	Pass	Meet the requirement of limit.
15.247(a)(1)	20 dB Bandwidth	-	Refer to Note 1
15.247(d)	Conducted Out of Band Emissions	Pass	Meet the requirement of limit.
15.207	AC Power Conducted Emissions	Pass	Minimum passing margin is -12.74 dB at 0.18906 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -3.7 dB at 142.18 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -8.3 dB at 2382.04 and 2483.50 MHz
15.203	Antenna Requirement	Pass	Antenna connector is IPEX, MHF4 not a standard connector.

Notes:

1. If the Frequency Hopping System operating in 2400-2483.5 MHz band and the output power less than 125 mW. The hopping channel carrier frequencies separated by a minimum of 25 kHz or two-thirds of the 20 dB bandwidth of hopping channel whichever is greater.
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 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:

Parameter	Specification	Uncertainty (±)
Conducted Out of Band Emissions	9 kHz ~ 40 GHz	2.5 dB
AC Power Conducted Emissions	150 kHz ~ 30 MHz	1.9 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.1 dB
	30 MHz ~ 1 GHz	5.1 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	5.1 dB
	18 GHz ~ 40 GHz	5.3 dB

The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and no modifications required for compliance.

3 General Information

3.1 General Description

Product	11be RTL8922AE Combo module
Brand	REALTEK
Test Model	RTL8922AE
Status of EUT	Engineering sample
Power Supply Rating	3.3 Vdc from host equipment
Modulation Type	GFSK, π/4-DQPSK, 8DPSK
Modulation Technology	FHSS
Transfer Rate	Up to 3 Mbps
Operating Frequency	2.402 GHz ~ 2.48 GHz
Number of Channel	79
Output Power	20.417 mW (13.1 dBm)

Note:

1. There are Bluetooth and WLAN (2.4 GHz & 5 GHz & 6 GHz) technology used for the EUT.
2. Simultaneously transmission condition.

1TX		
Condition	Technology	
	S0 (Chain 1)	S1 (Chain 0)
1	WLAN (5 GHz)_H	Bluetooth + WLAN (5 GHz)_L
2	WLAN (5 GHz)_L	Bluetooth + WLAN (5 GHz)_H
3	WLAN (5 GHz)_L	Bluetooth + WLAN (6 GHz)
4	WLAN (6 GHz)	Bluetooth + WLAN (5 GHz)_L
5	WLAN (6 GHz)	Bluetooth + WLAN (5 GHz)_H
6	WLAN (5 GHz)_H	Bluetooth + WLAN (6 GHz)
7	WLAN (2.4 GHz)	WLAN (5 GHz) Full
8	WLAN (2.4 GHz)	WLAN (6 GHz)
9	WLAN (5 GHz) Full	Bluetooth
10	WLAN (6 GHz)	Bluetooth
2TX		
1	WLAN (5 GHz)_L	WLAN (5 GHz)_L + Bluetooth
2	WLAN (5 GHz)_H	WLAN (5 GHz)_H + Bluetooth
3	WLAN (6 GHz)	WLAN (6 GHz) + Bluetooth
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.		

3. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna Set	RF Port No.	Chain No.	Brand	Model	Antenna Net Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connector Type	Cable Length (mm)
1	1/2	Chain0/1	REALTEK	RTK-ANT-0022	3.4	2.4~2.4835	PIFA	IPEX, MHF4	300
					5	5.15~5.895			
					5	5.925~7.125			
2	1/2	Chain0/1	ARISTOTLE	RFA-57-JP805-4B-300	-1.87	5.15~5.895	PIFA	IPEX, MHF4	300
					-1.88	5.925~7.125			
Note: The antenna set 1 was selected for the final test.									

* Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.

3.3 Channel List

79 channels are provided for BT-EDR:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2422	40	2442	60	2462
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468
7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480
19	2421	39	2441	59	2461		

3.4 Test Mode Applicability and Tested Channel Detail

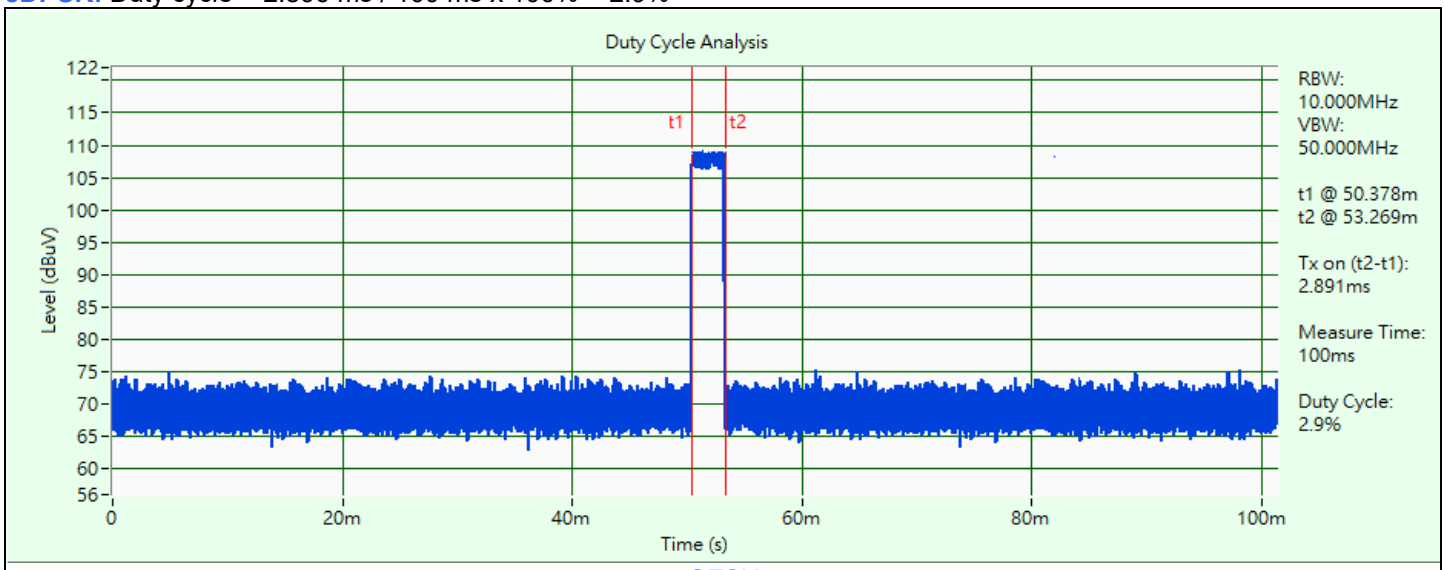
Pre-Scan:	1. PIFA antenna can be used in the following ways: X / Y / Z axis. Pre-scan in these ways and find the worst case as a representative test condition. 2. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates.
Worst Case:	1. PIFA antenna the worst case was found when positioned on (X / Y / Z axis): ➢ Unwanted Emissions below 1 GHz: Z axis ➢ Unwanted Emissions above 1 GHz: Z axis

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

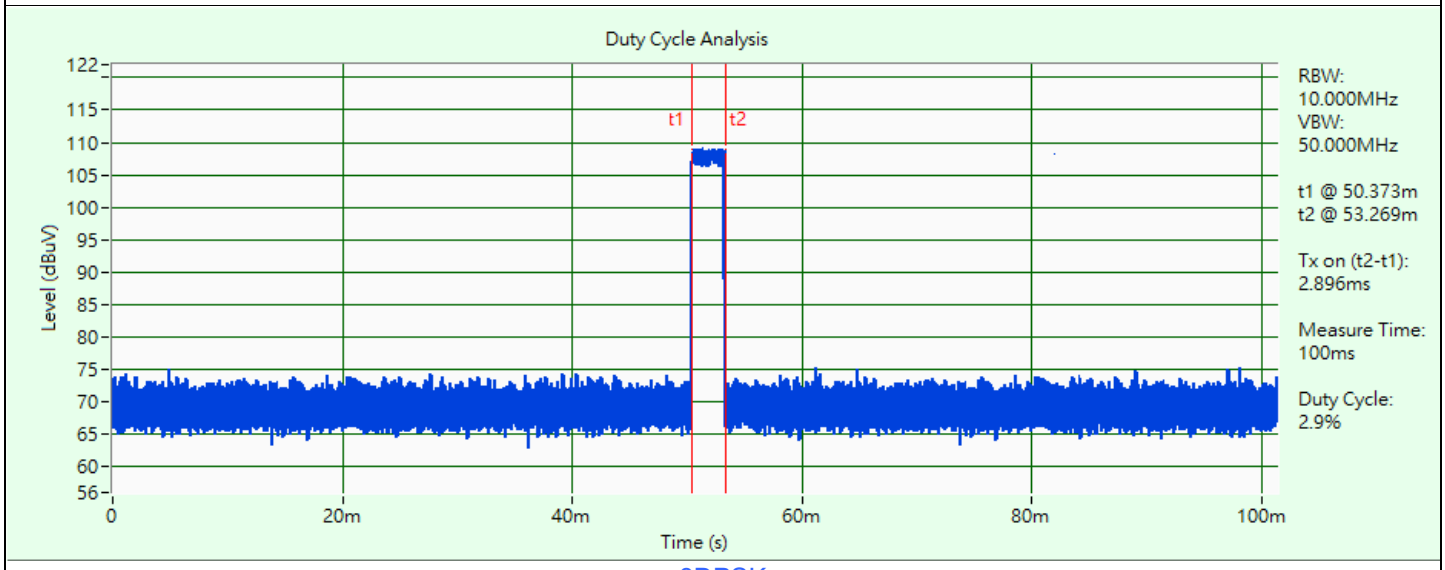
Test Item	Power Profile	Tested Channel	Transmitter Configuration	Modulation	Data Rate Parameter
RF Output Power	Low	0, 39, 78	Fixed Tx Chain 0	GFSK	DH5
				8DPSK	3DH5
	High			GFSK	DH5
				8DPSK	3DH5
Number of Hopping Frequency Used	Low	Hopping	Fixed Tx Chain 0	GFSK	DH5
				8DPSK	3DH5
	High			GFSK	DH5
				8DPSK	3DH5
Dwell Time on Each Channel	Low	Hopping	Fixed Tx Chain 0	GFSK	DH1/DH3/DH5
				8DPSK	3DH1/3DH3/3DH5
	High			GFSK	DH1/DH3/DH5
				8DPSK	3DH1/3DH3/3DH5
Hopping Channel Separation / 20 dB Bandwidth	Low	0, 39, 78	Fixed Tx Chain 0	GFSK	DH5
				8DPSK	3DH5
	High			GFSK	DH5
				8DPSK	3DH5
Conducted Out of Band Emissions	Low	Hopping 0, 78	Fixed Tx Chain 0	GFSK	DH5
				8DPSK	3DH5
	High			GFSK	DH5
				8DPSK	3DH5
AC Power Conducted Emissions	Low	0	Fixed Tx Chain 0	GFSK	DH5
	High	39		GFSK	DH5
Unwanted Emissions below 1 GHz	Low	0	Fixed Tx Chain 0	GFSK	DH5
	High	39		GFSK	DH5
Unwanted Emissions above 1 GHz	Low	0, 39, 78	Fixed Tx Chain 0	GFSK	DH5
				8DPSK	3DH5
	High			GFSK	DH5
				8DPSK	3DH5
Note: Bluetooth's power profile has Low/ High of two configurations. All of the test items were performed to be tested.					

3.5 Duty Cycle of Test Signal

GFSK: Duty cycle = 2.891 ms / 100 ms x 100% = 2.9%
8DPSK: Duty cycle = 2.896 ms / 100 ms x 100% = 2.9%



GFSK

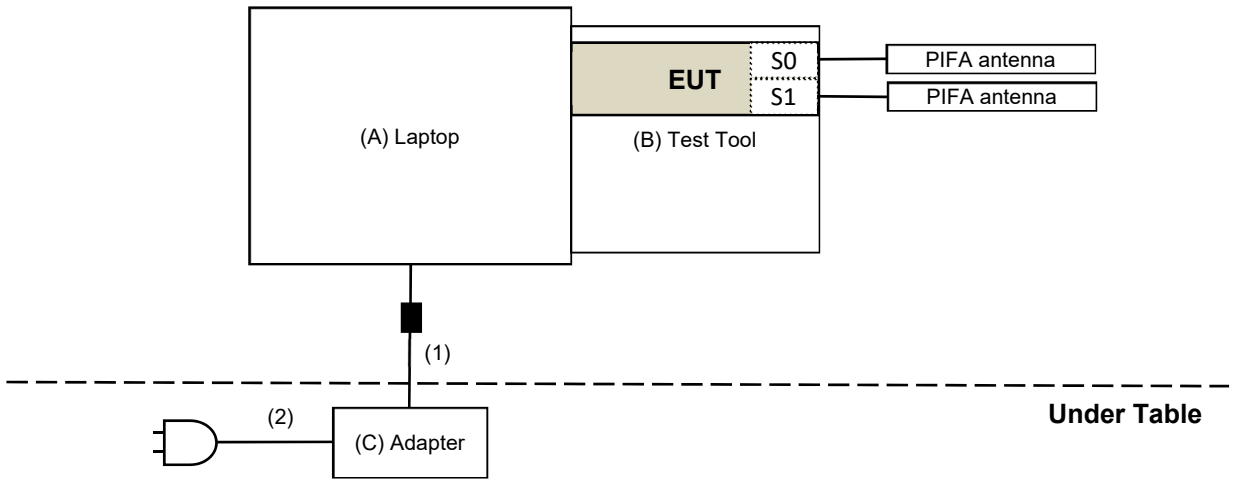


8DPSK

3.6 Test Program Used and Operation Descriptions

Controlling software (Bluetooth RF test tool (5.2.3.79)) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Laptop	Dell	E5420	FHNS4S1	N/A	Provided by Lab
B	Test Tool	Realtek	N/A	N/A	N/A	Supplied by applicant
C	Adapter	Dell	LA65NS1-00	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	DC Cable	1	1.8	No	1	Provided by Lab
2	AC Cable	1	1	No	0	Provided by Lab

4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Power Meter Anritsu	ML2495A	1529002	2023/6/17	2024/6/16
Pulse Power Sensor Anritsu	MA2411B	1726434	2023/6/19	2024/6/18

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2023/6/27

4.2 Number of Hopping Frequency Used

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
MXA Signal Analyzer Keysight	N9020B	MY60112409	2023/2/18	2024/2/17
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2023/6/27

4.3 Dwell Time on Each Channel

Refer to section 4.2 to get information of the instruments.

4.4 Hopping Channel Separation

Refer to section 4.2 to get information of the instruments.

4.5 20 dB Bandwidth

Refer to section 4.2 to get information of the instruments.

4.6 Conducted Out of Band Emissions

Refer to section 4.2 to get information of the instruments.

4.7 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance	N/A	EMC-01	2022/9/27	2023/9/26
EMI Test Receiver R&S	ESCS 30	847124/029	2022/10/14	2023/10/13
Fixed Attenuator STI	STI02-2200-10	005	2023/7/1	2024/6/30
LISN R&S	ESH3-Z5	848773/004	2022/10/18	2023/10/17
RF Coaxial Cable JYEBAO	5D-FB	COCCAB-001	2023/7/1	2024/6/30
Software BVADT	BVADT_Cond_V7.3.7.4	N/A	N/A	N/A

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2023/8/22

4.8 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-0842	2022/10/24	2023/10/23
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
EMI Test Receiver R&S	ESR3	102528	2023/2/10	2024/2/9
Fixed Attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-02	2022/12/28	2023/12/27
Loop Antenna Electro-Metrics	EM-6879	264	2023/2/21	2024/2/20
MXA Signal Analyzer Keysight	N9020B	MY60112410	2023/3/6	2024/3/5
Preamplifier EMCI	EMC330N	980538	2023/4/6	2024/4/5
	EMC001340	980142	2023/5/8	2024/5/7
PXA Signal Analyzer Keysight	N9030B	MY57141948	2023/5/19	2024/5/18
RF Coaxial Cable JYEBAO	5D-FB	LOOPCAB-001	2022/12/19	2023/12/18
		LOOPCAB-002	2022/12/19	2023/12/18
RF Coaxial Cable PEWC	8D	966-5-1	2023/4/6	2024/4/5
		966-5-2	2023/4/6	2024/4/5
		966-5-3	2023/4/6	2024/4/5
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 5.
2. Tested Date: 2023/8/16

4.9 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
EMI Test Receiver R&S	ESR3	102528	2023/2/10	2024/2/9
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-1819	2022/11/13	2023/11/12
	BBHA 9170	9170-739	2022/11/13	2023/11/12
MXA Signal Analyzer Keysight	N9020B	MY60112410	2023/3/6	2024/3/5
Preamplifier EMCI	EMC12630SE	980509	2023/4/7	2024/4/6
	EMC184045SE	980387	2022/12/28	2023/12/27
RF Coaxial Cable EMCI	EMC-KM-KM-4000	200214	2023/2/20	2024/2/19
	EMC102-KM-KM-1200	160924	2022/12/28	2023/12/27
	EMC104-SM-SM-1500	180503	2023/4/7	2024/4/6
	EMC104-SM-SM-2000	180501	2023/4/7	2024/4/6
	EMC104-SM-SM-6000	180506	2023/4/7	2024/4/6
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 5.
2. Tested Date: 2023/7/26 ~ 2023/8/11

5 Limits of Test Items

5.1 RF Output Power

The Maximum Output Power Measurement is 125 mW (21 dBm).

5.2 Number of Hopping Frequency Used

At least 15 channels frequencies, and should be equally spaced.

5.3 Dwell Time on Each Channel

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

5.4 Hopping Channel Separation

At least 25 kHz or two-third of 20 dB hopping channel bandwidth (whichever is greater).

5.5 20 dB Bandwidth

Maximum bandwidth is not specified.

5.6 Conducted Out of Band Emissions

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

5.7 AC Power Conducted Emissions

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Notes:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

5.8 Unwanted Emissions below 1 GHz

Radiated emissions up to 1 GHz which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20 dB below the highest level of the desired power:

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

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

5.9 Unwanted Emissions above 1 GHz

Radiated emissions above 1 GHz which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20 dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
Above 960	500	3

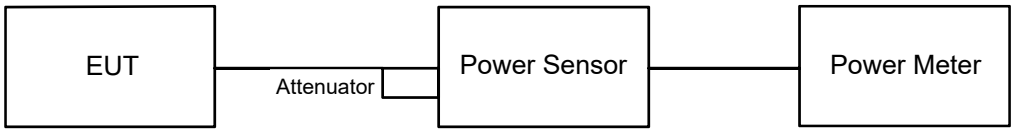
Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, 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 20 dB under any condition of modulation.

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup



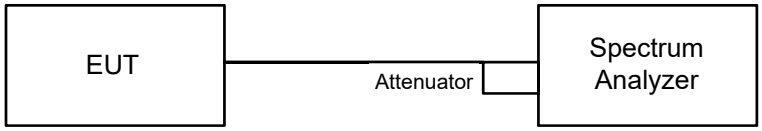
6.1.2 Test Procedure

Peak Power:
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.

Average Power:
Average power sensor was used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

6.2 Number of Hopping Frequency Used

6.2.1 Test Setup

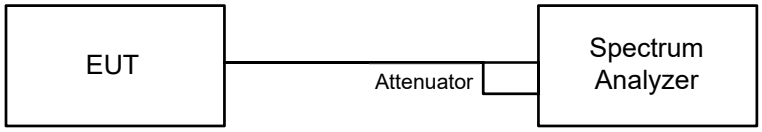


6.2.2 Test Procedure

a. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
b. Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
c. Set the SA on MaxHold Mode, and then keep the EUT in hopping mode. Record all the signals from each channel until each one has been recorded.
d. Set the SA on View mode and then plot the result on SA screen.
e. Repeat above procedures until all frequencies measured were complete.

6.3 Dwell Time on Each Channel

6.3.1 Test Setup

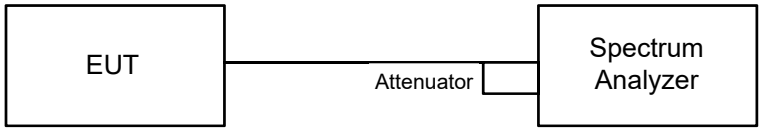


6.3.2 Test Procedure

a. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
b. Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
c. Adjust the center frequency of SA on any frequency be measured and set SA to zero span mode. And then, set RBW and VBW of spectrum analyzer to proper value.
d. Measure the time duration of one transmission on the measured frequency. And then plot the result with time difference of this time duration.
e. Repeat above procedures until all different time-slot modes have been completed.

6.4 Hopping Channel Separation

6.4.1 Test Setup

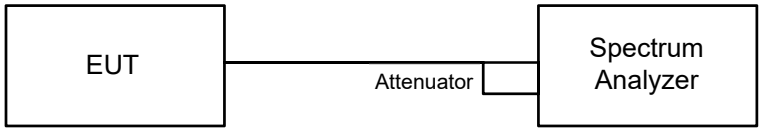


6.4.2 Test Procedure

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.
c. By using the MaxHold function record the separation of two adjacent channels.
d. Measure the frequency difference of these two adjacent channels by SA MARK function. And then plot the result on SA screen.
e. Repeat above procedures until all frequencies measured were complete.

6.5 20 dB Bandwidth

6.5.1 Test Setup

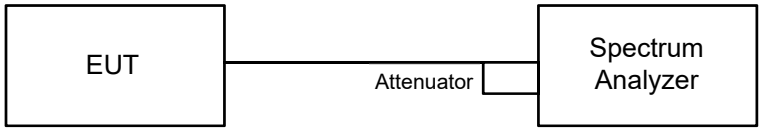


6.5.2 Test Procedure

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 20 dB from the reference level. Record the frequency difference as the emission bandwidth.
d. Repeat above procedures until all frequencies measured were complete.

6.6 Conducted Out of Band Emissions

6.6.1 Test Setup



6.6.2 Test Procedure

MEASUREMENT PROCEDURE REF

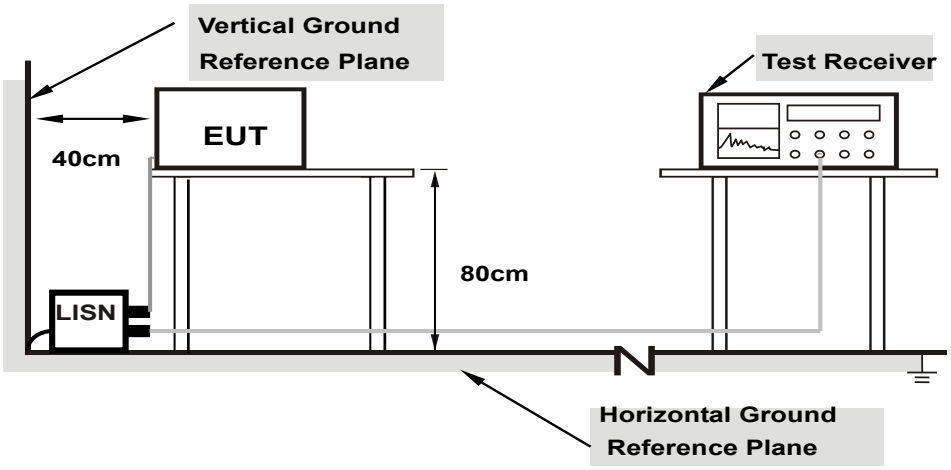
a. Set the RBW = 100 kHz.
b. Set the VBW ≥ 300 kHz.
c. Detector = peak.
d. Sweep time = auto couple.
e. Trace mode = max hold.
f. Allow trace to fully stabilize.
g. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

a. Set RBW = 100 kHz.
b. Set VBW ≥ 300 kHz.
c. Detector = peak.
d. Sweep = auto couple.
e. Trace Mode = max hold.
f. Allow trace to fully stabilize.
g. Use the peak marker function to determine the maximum amplitude level.

6.7 AC Power Conducted Emissions

6.7.1 Test Setup



Note: 1.Support units were connected to second LISN.

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

6.7.2 Test Procedure

a. The EUT was placed on a 0.8 meter to the top of table and 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/ 50 uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

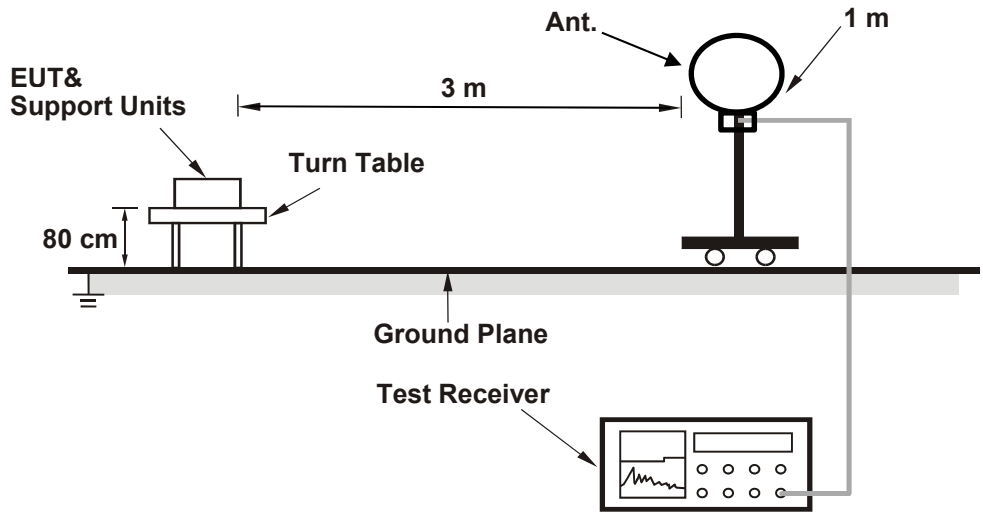
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9 kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15 MHz-30 MHz.

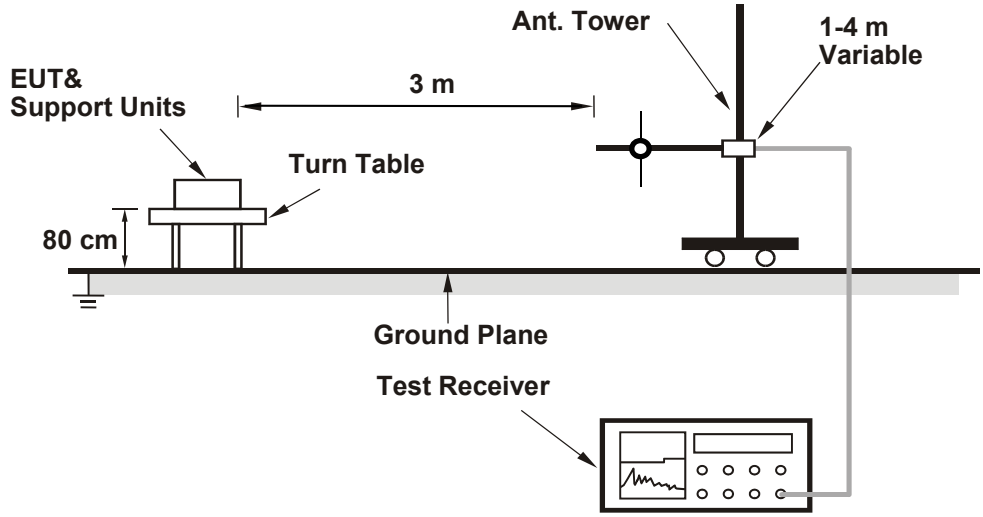
6.8 Unwanted Emissions below 1 GHz

6.8.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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

6.8.2 Test Procedure

For Radiated emission below 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters 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. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case 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 Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode, except for the frequency band (9 kHz to 90 kHz and 110 kHz to 490 kHz) set to average detect function and peak detect function.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200 Hz at frequency below 150 kHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz or 10 kHz at frequency (150 kHz to 30 MHz).
3. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated emission above 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters 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 height of antenna 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.

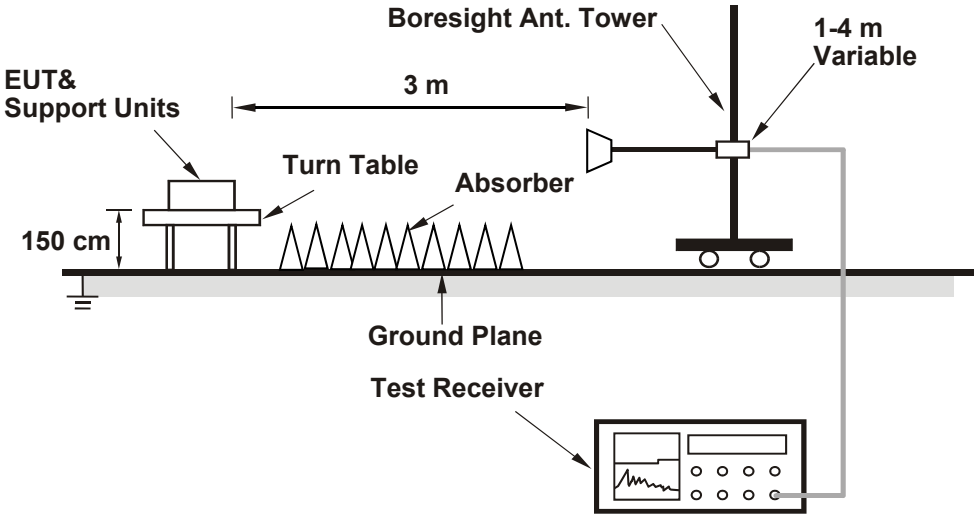
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

6.9 Unwanted Emissions above 1 GHz

6.9.1 Test Setup



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

6.9.2 Test Procedure

a. The EUT was placed on the top of a rotating table 1.5 meters 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 height of antenna 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 and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Notes:

1. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) and Average detection (AV) at frequency above 1 GHz.
2. According to ANSI C63.10 section 6.6.4 and 4.1.4.2.2. For fundamental and harmonic signal measurement, according to ANSI C63.10 section 7.5, the average value = peak value + duty cycle correction factor. For duty cycle correction factor values, see the Test Signal Duty Cycle section in this report.
3. All modes of operation were investigated and the worst-case emissions are reported.

7 Test Results of Test Item

7.1 RF Output Power

Low Power

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Dolly Chung

For Peak Power

GFSK

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Power Limit (dBm)	Test Result
0	2402	4.624	6.65	21	Pass
39	2441	4.365	6.40	21	Pass
78	2480	4.56	6.59	21	Pass

Note: The antenna gain is 3.4 dBi < 6 dBi, so the output power limit shall not be reduced.

8DPSK

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Power Limit (dBm)	Test Result
0	2402	8.166	9.12	21	Pass
39	2441	7.691	8.86	21	Pass
78	2480	8.128	9.10	21	Pass

Note: The antenna gain is 3.4 dBi < 6 dBi, so the output power limit shall not be reduced.

For Average Power

GFSK

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
0	2402	4.276	6.31
39	2441	3.99	6.01
78	2480	4.198	6.23

8DPSK

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
0	2402	4.178	6.21
39	2441	3.99	6.01
78	2480	4.121	6.15

High Power

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Dolly Chung

For Peak Power

GFSK

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Power Limit (dBm)	Test Result
0	2402	18.707	12.72	21	Pass
39	2441	20.091	13.03	21	Pass
78	2480	18.836	12.75	21	Pass

Note: The antenna gain is 3.4 dBi < 6 dBi, so the output power limit shall not be reduced.

8DPSK

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Power Limit (dBm)	Test Result
0	2402	20.417	13.10	21	Pass
39	2441	19.143	12.82	21	Pass
78	2480	19.907	12.99	21	Pass

Note: The antenna gain is 3.4 dBi < 6 dBi, so the output power limit shall not be reduced.

For Average Power

GFSK

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
0	2402	17.947	12.54
39	2441	19.32	12.86
78	2480	17.989	12.55

8DPSK

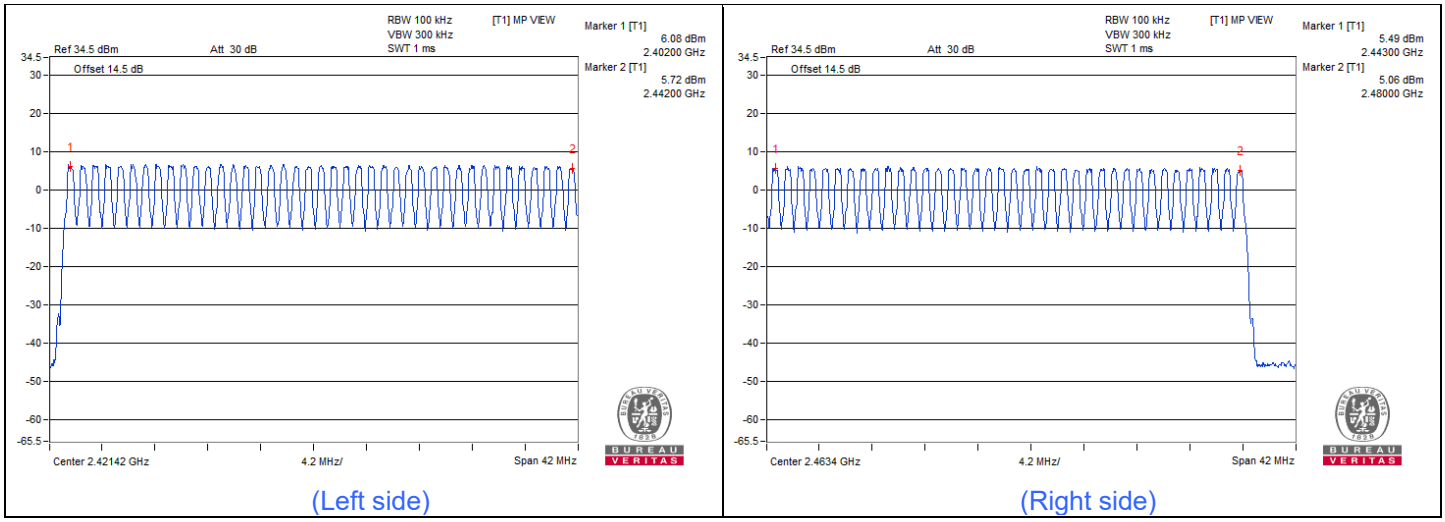
Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
0	2402	11.194	10.49
39	2441	10.52	10.22
78	2480	11.066	10.44

7.2 Number of Hopping Frequency Used

Low Power

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Dolly Chung

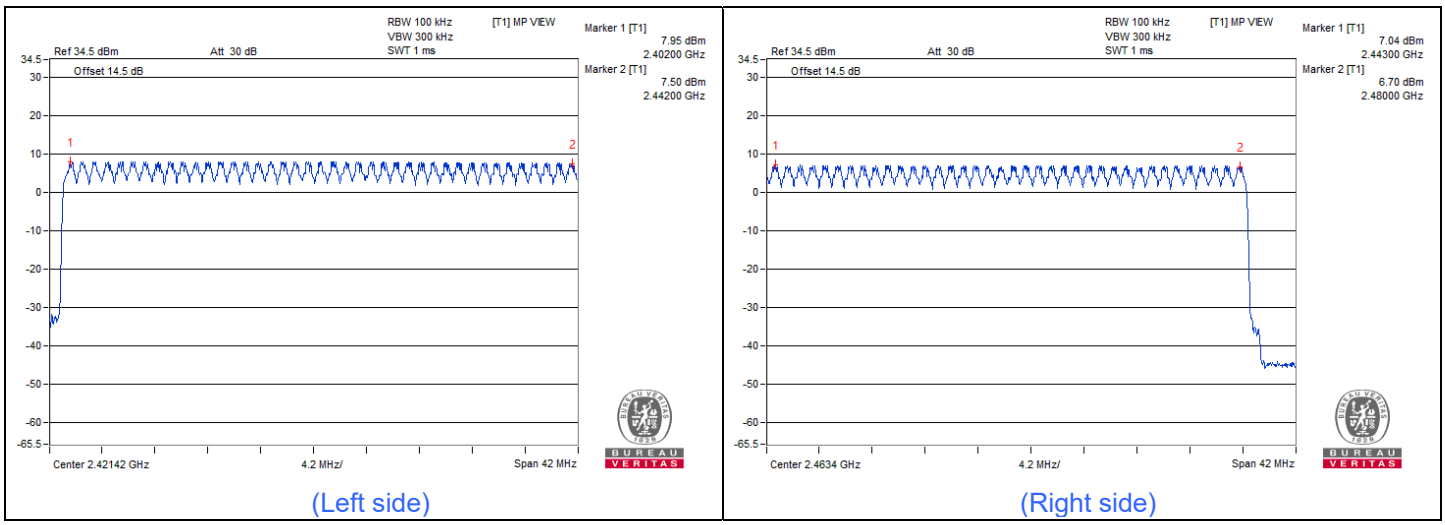
GFSK



(Left side) (Right side)

Note: There are 79 hopping frequencies in the hopping mode. On the plots, it shows that the hopping frequencies are equally spaced.

8DPSK



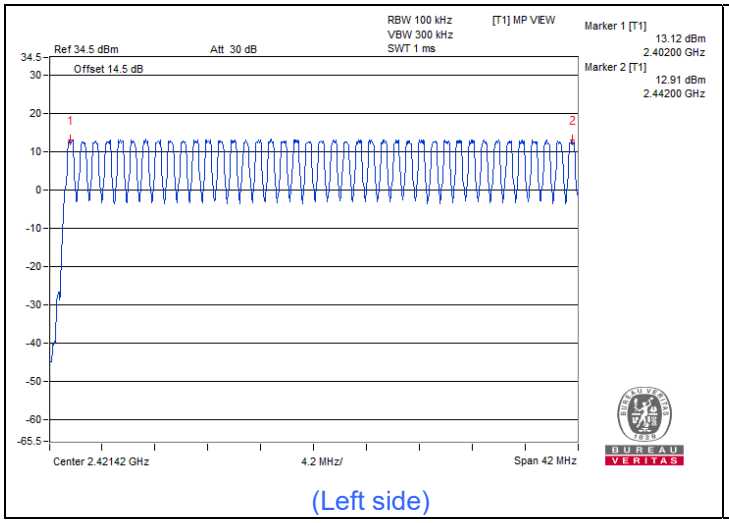
(Left side) (Right side)

Note: There are 79 hopping frequencies in the hopping mode. On the plots, it shows that the hopping frequencies are equally spaced.

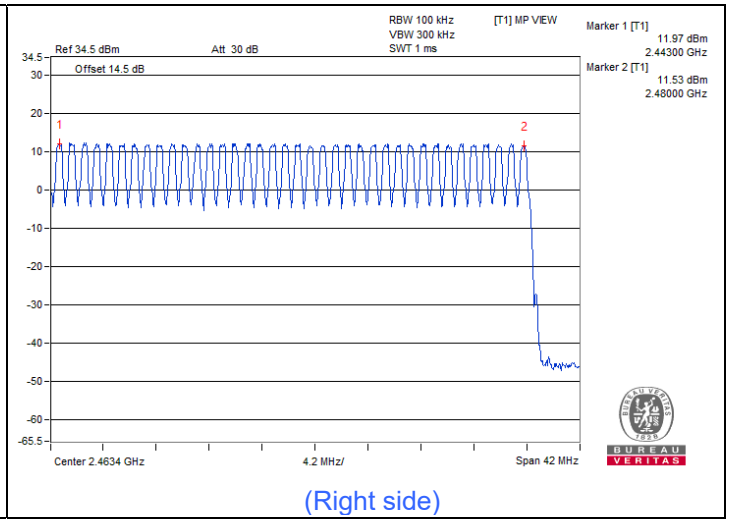
High Power

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Dolly Chung

GFSK



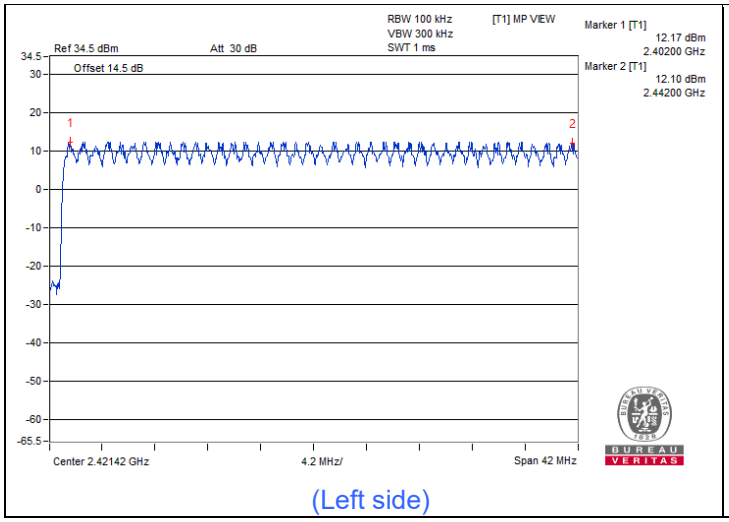
(Left side)



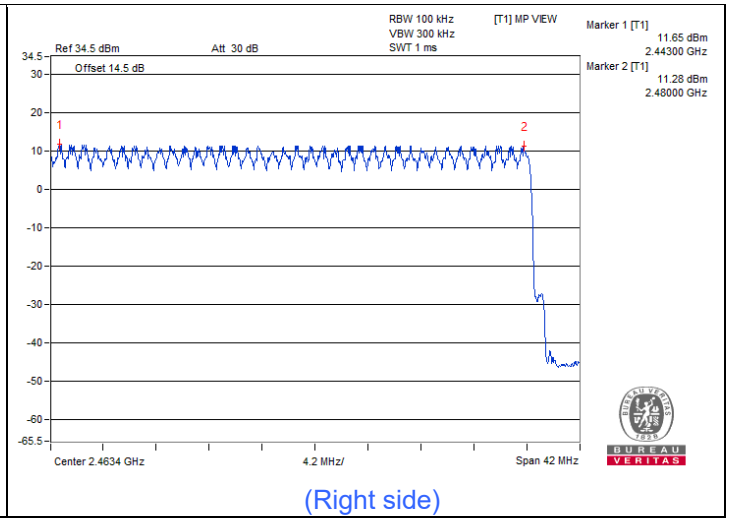
(Right side)

Note: There are 79 hopping frequencies in the hopping mode. On the plots, it shows that the hopping frequencies are equally spaced.

8DPSK



(Left side)



(Right side)

Note: There are 79 hopping frequencies in the hopping mode. On the plots, it shows that the hopping frequencies are equally spaced.

7.3 Dwell Time on Each Channel

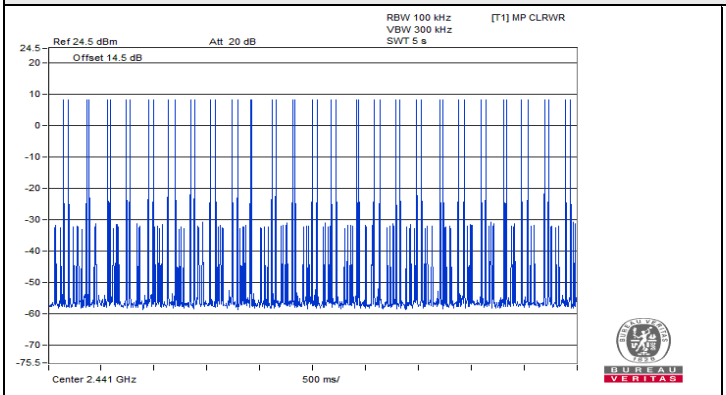
Low Power

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Dolly Chung

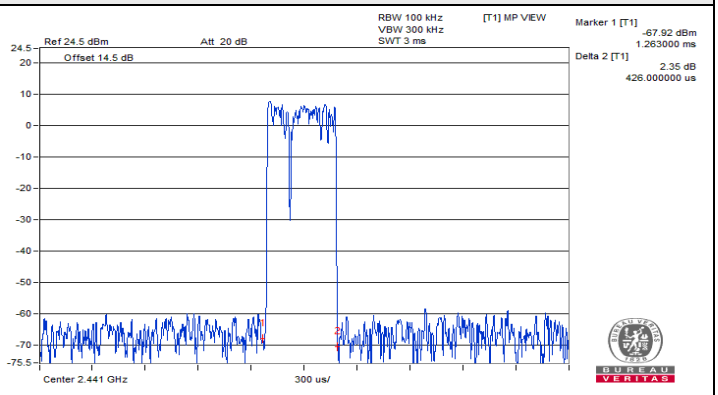
GFSK

Mode	Number of transmission in 31.6 sec	Length of transmission time (msec)	Result (msec)	Limit (msec)	Test Result
DH1	50 (times / 5 sec) * 6.32 = 316 times	0.426	134.62	400	Pass
DH3	27 (times / 5 sec) * 6.32 = 171 times	1.69	288.99	400	Pass
DH5	16 (times / 5 sec) * 6.32 = 102 times	2.976	303.55	400	Pass

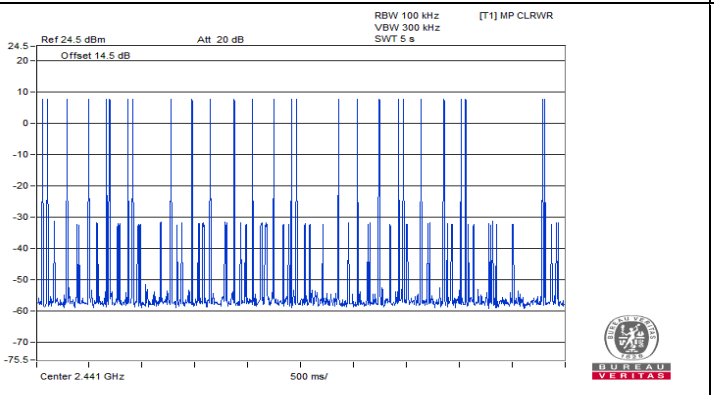
Spectrum plots of Dwell Time



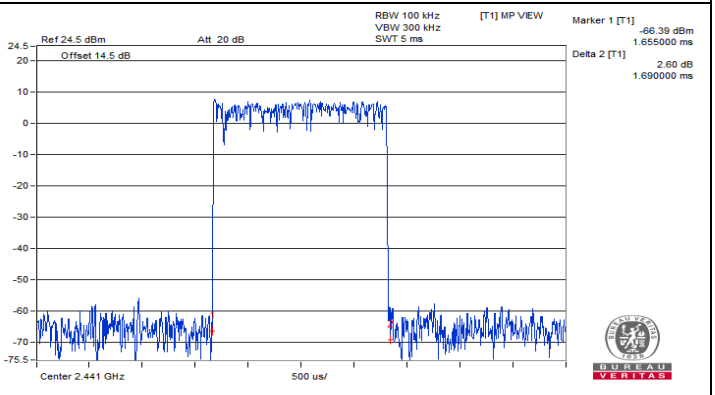
GFSK DH1



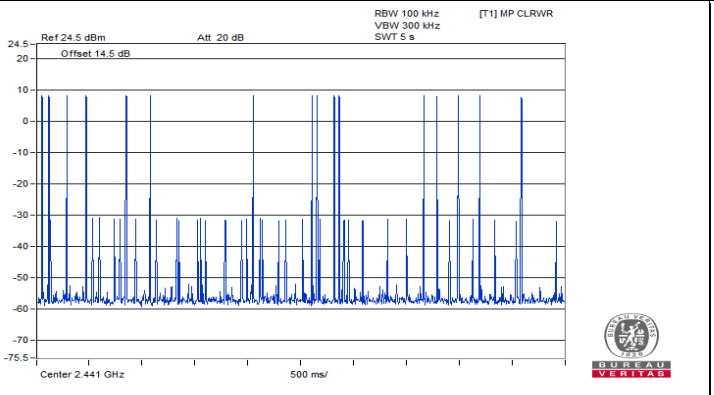
GFSK DH1



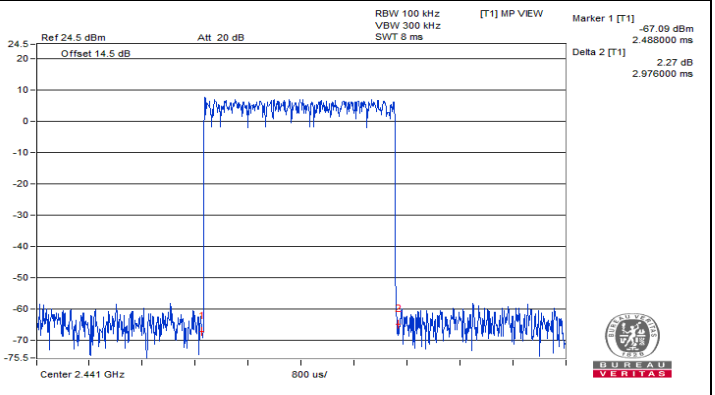
GFSK DH3



GFSK DH3



GFSK DH5

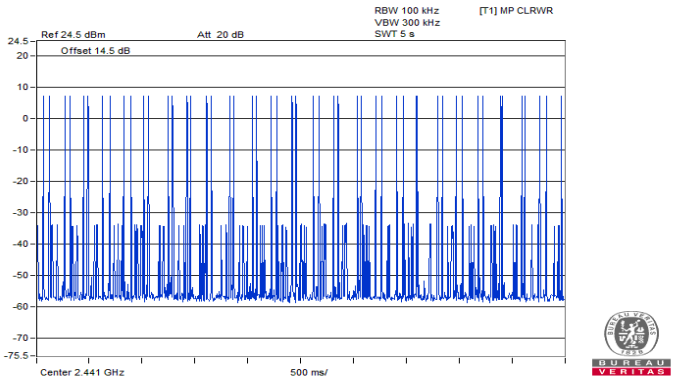


GFSK DH5

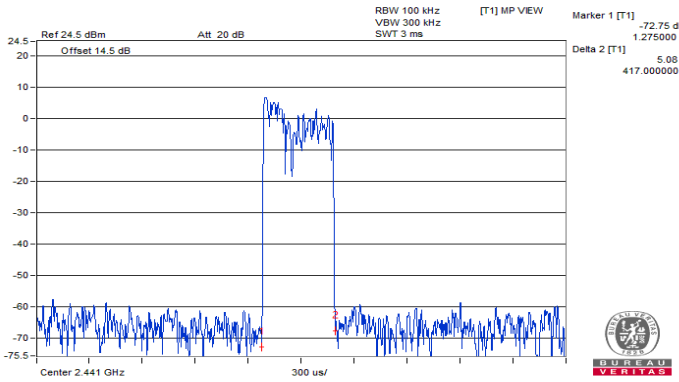
8DPSK

Mode	Number of transmission in 31.6 sec	Length of transmission time (msec)	Result (msec)	Limit (msec)	Test Result
3DH1	51 (times / 5 sec) * 6.32 = 323 times	0.417	134.69	400	Pass
3DH3	27 (times / 5 sec) * 6.32 = 171 times	1.685	288.14	400	Pass
3DH5	16 (times / 5 sec) * 6.32 = 102 times	2.992	305.18	400	Pass

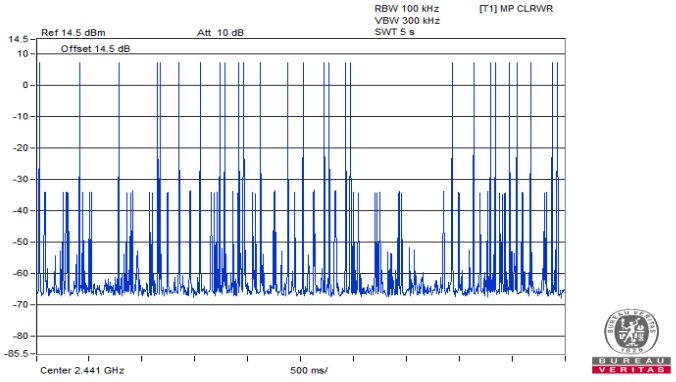
Spectrum plots of Dwell Time



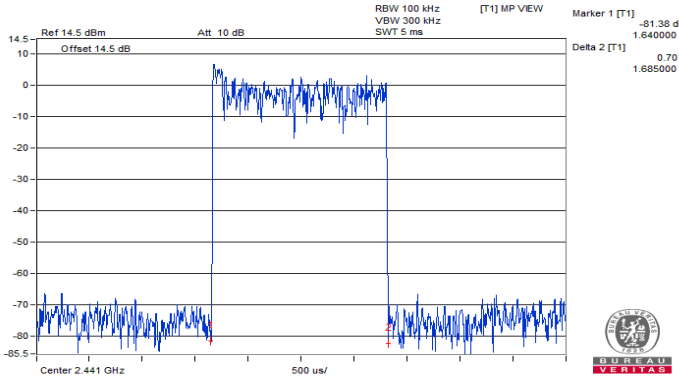
8DPSK 3DH1



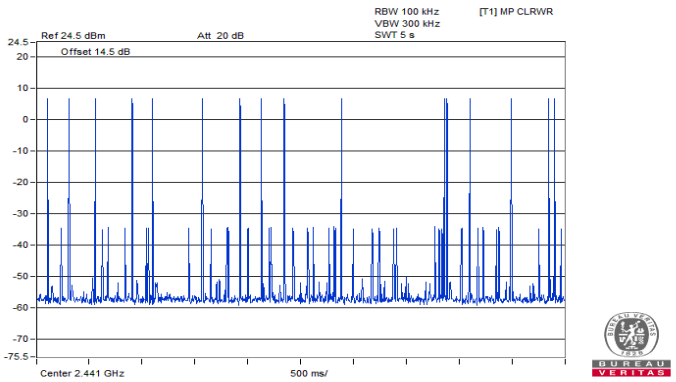
8DPSK 3DH1



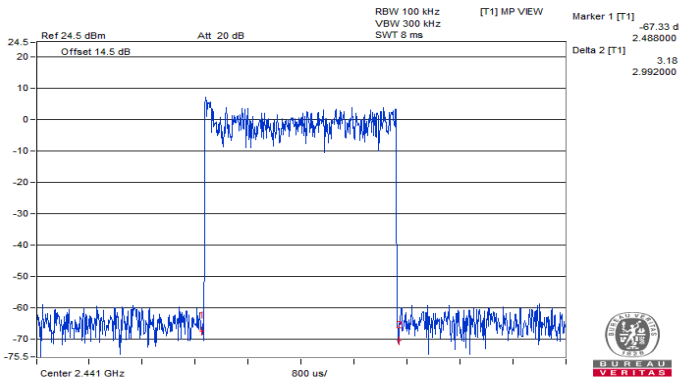
8DPSK 3DH3



8DPSK 3DH3



8DPSK 3DH5



8DPSK 3DH5

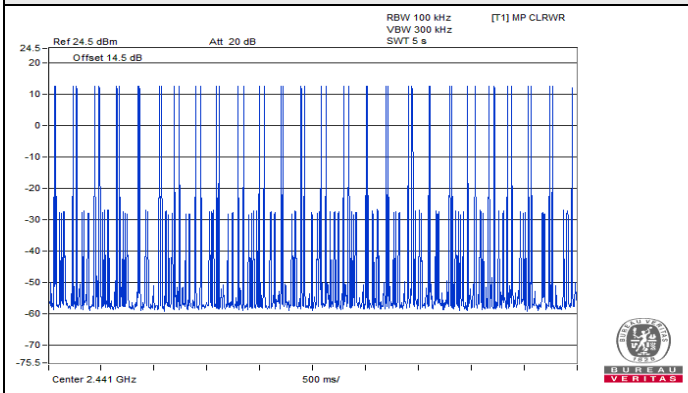
High Power

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Dolly Chung

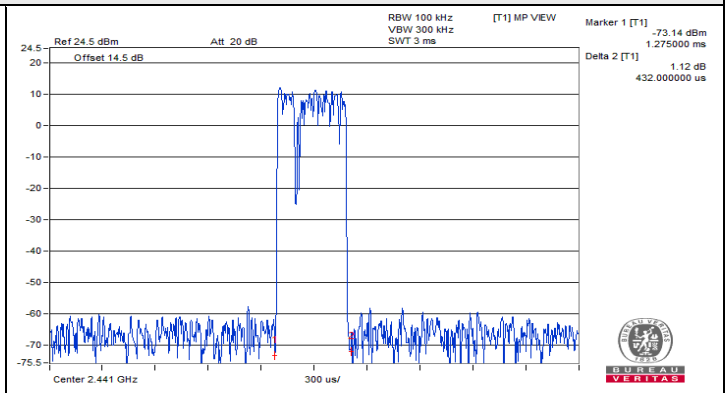
GFSK

Mode	Number of transmission in 31.6 sec	Length of transmission time (msec)	Result (msec)	Limit (msec)	Test Result
DH1	51 (times / 5 sec) * 6.32 = 323 times	0.432	139.54	400	Pass
DH3	27 (times / 5 sec) * 6.32 = 171 times	1.69	288.99	400	Pass
DH5	18 (times / 5 sec) * 6.32 = 114 times	2.984	340.18	400	Pass

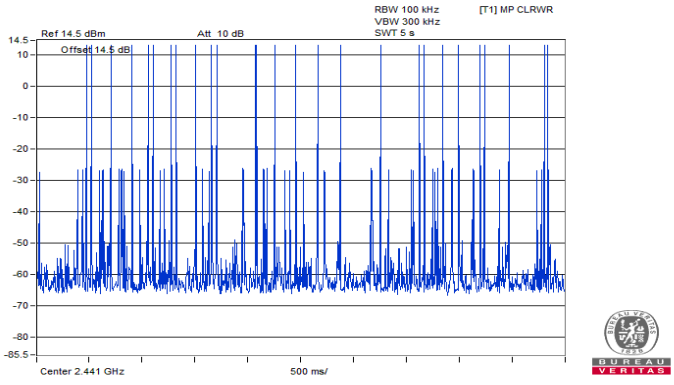
Spectrum plots of Dwell Time



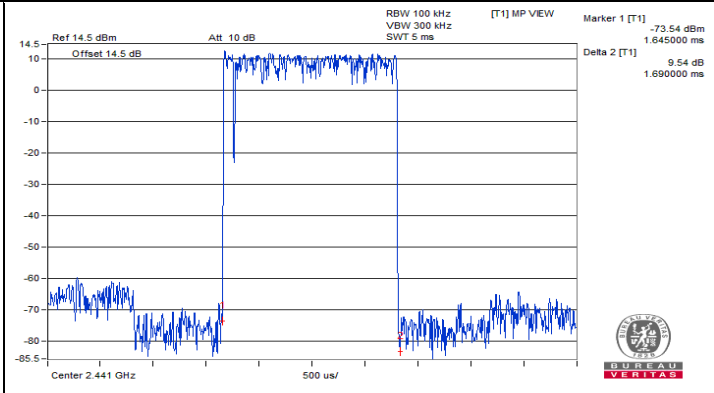
GFSK DH1



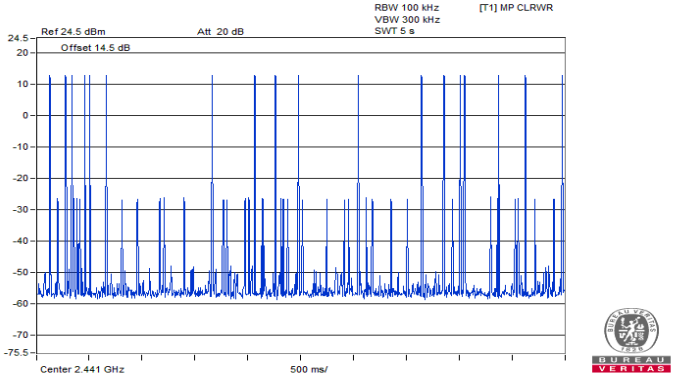
GFSK DH1



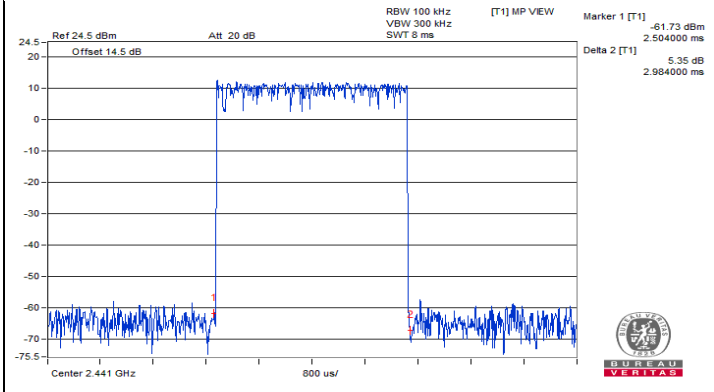
GFSK DH3



GFSK DH3



GFSK DH5

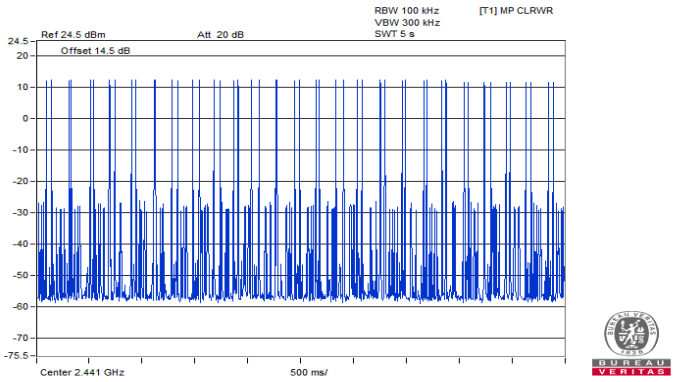


GFSK DH5

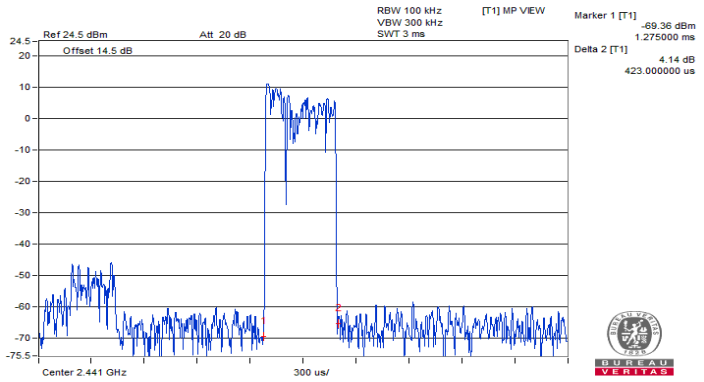
8DPSK

Mode	Number of transmission in 31.6 sec	Length of transmission time (msec)	Result (msec)	Limit (msec)	Test Result
3DH1	50 (times / 5 sec) * 6.32 = 316 times	0.423	133.67	400	Pass
3DH3	25 (times / 5 sec) * 6.32 = 158 times	1.695	267.81	400	Pass
3DH5	17 (times / 5 sec) * 6.32 = 108 times	2.936	317.09	400	Pass

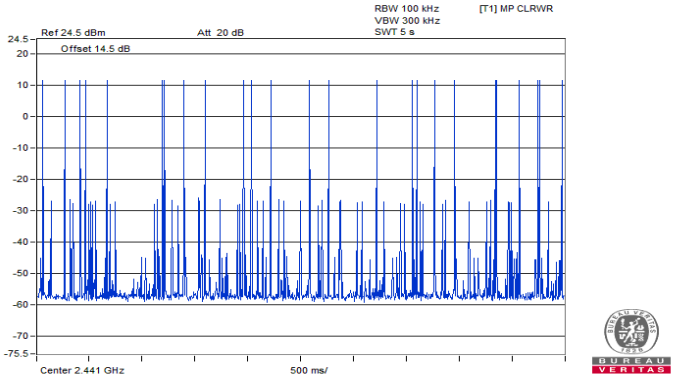
Spectrum plots of Dwell Time



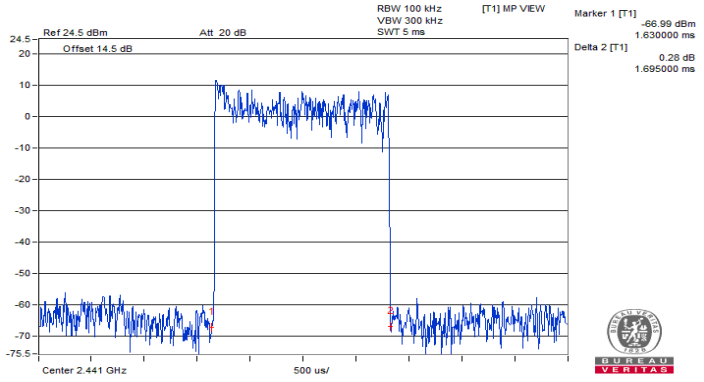
8DPSK 3DH1



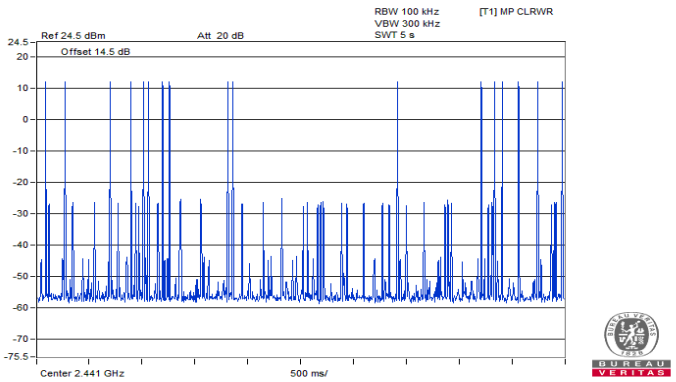
8DPSK 3DH1



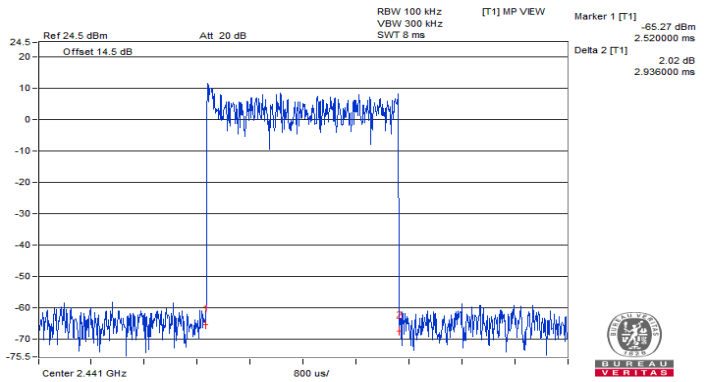
8DPSK 3DH3



8DPSK 3DH3



8DPSK 3DH5



8DPSK 3DH5

7.4 Hopping Channel Separation

Low Power

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Dolly Chung

GFSK

Channel	Frequency (MHz)	Hopping Channel Separation (MHz)	Minimum Limit (MHz)	Test Result
0	2402	1.00	0.64	Pass
39	2441	1.00	0.64	Pass
78	2480	1.00	0.64	Pass

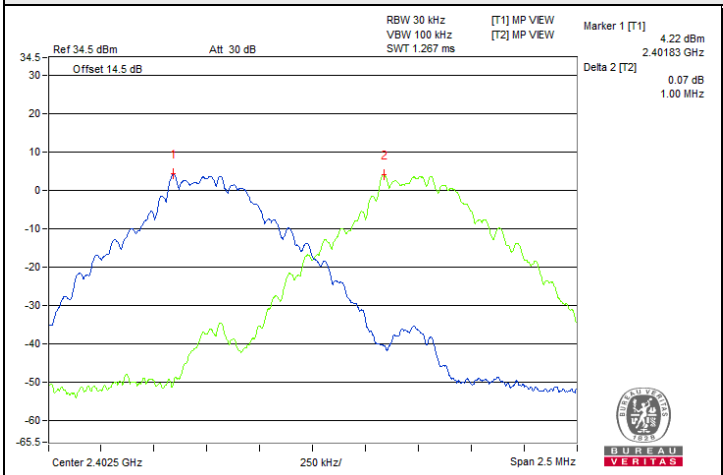
Note: The minimum limit is two-third 20dB bandwidth.

8DPSK

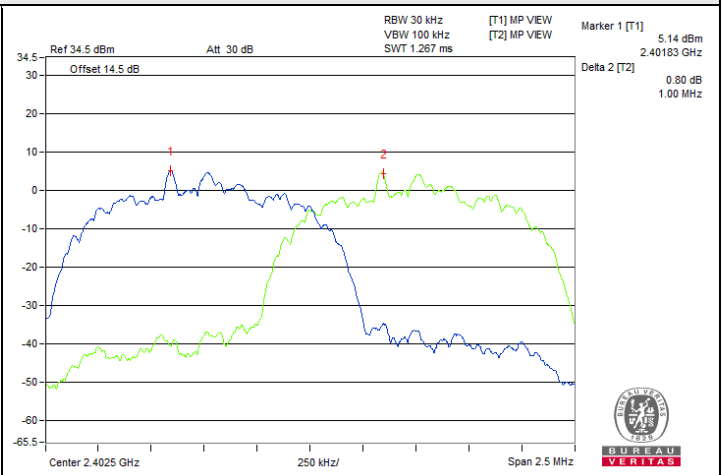
Channel	Frequency (MHz)	Hopping Channel Separation (MHz)	Minimum Limit (MHz)	Test Result
0	2402	1.00	0.87	Pass
39	2441	1.00	0.86	Pass
78	2480	1.00	0.87	Pass

Note: The minimum limit is two-third 20dB bandwidth.

Spectrum Plot of Minimum Value



GFSK : CH 0



8DPSK : CH 0

High Power

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Dolly Chung

GFSK

Channel	Frequency (MHz)	Hopping Channel Separation (MHz)	Minimum Limit (MHz)	Test Result
0	2402	1.00	0.64	Pass
39	2441	1.00	0.64	Pass
78	2480	1.00	0.64	Pass

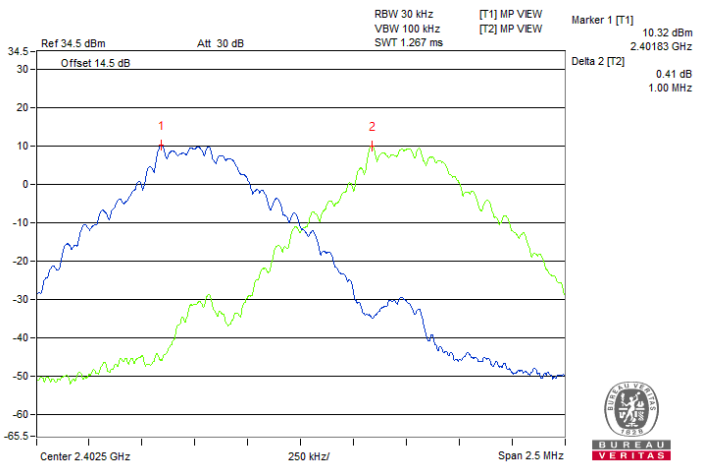
Note: The minimum limit is two-third 20dB bandwidth.

8DPSK

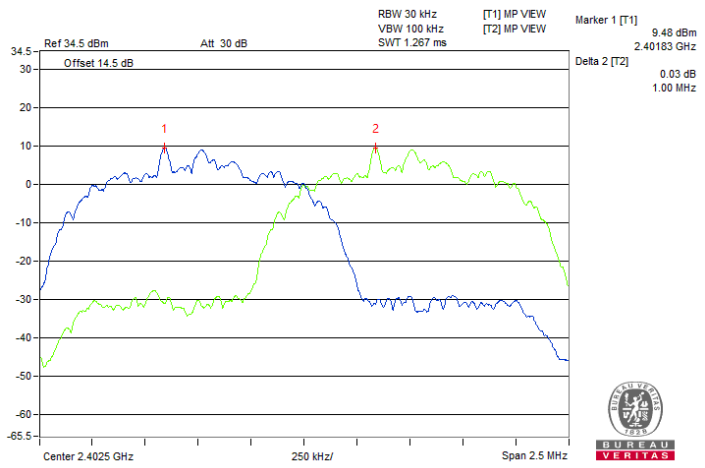
Channel	Frequency (MHz)	Hopping Channel Separation (MHz)	Minimum Limit (MHz)	Test Result
0	2402	1.00	0.86	Pass
39	2441	1.00	0.89	Pass
78	2480	1.00	0.88	Pass

Note: The minimum limit is two-third 20dB bandwidth.

Spectrum Plot of Minimum Value



GFSK : CH 0



8DPSK : CH 0

7.5 20 dB Bandwidth

Low Power

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Dolly Chung

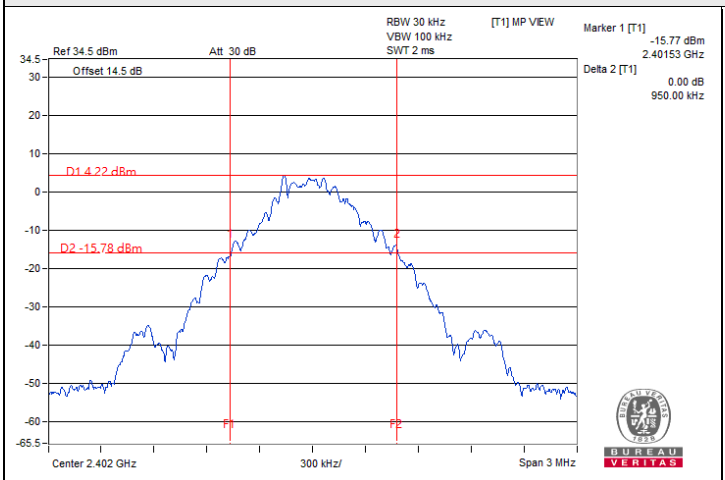
GFSK

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
0	2402	0.95
39	2441	0.95
78	2480	0.96

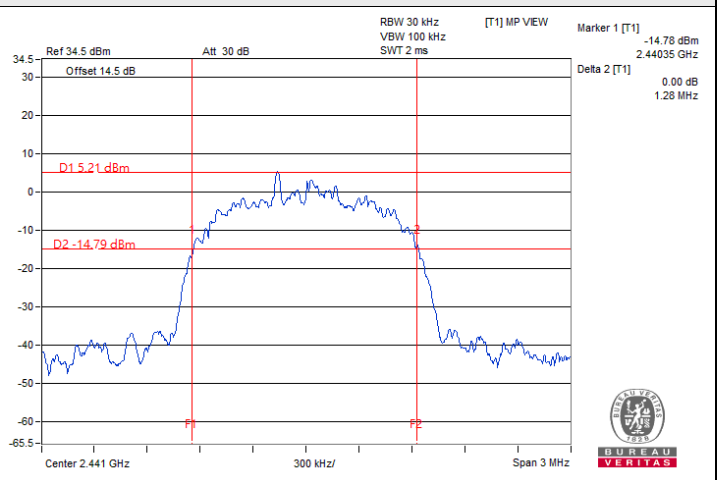
8DPSK

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
0	2402	1.3
39	2441	1.28
78	2480	1.3

Spectrum Plot of Minimum Value



GFSK : CH 0



8DPSK : CH 39

High Power

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Dolly Chung

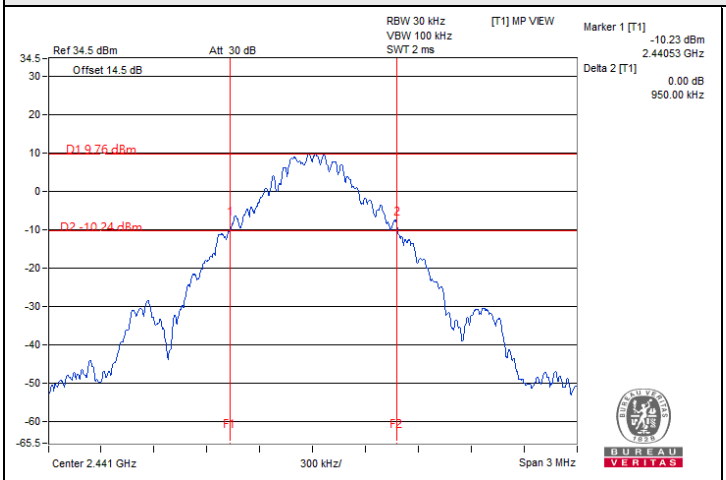
GFSK

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
0	2402	0.96
39	2441	0.95
78	2480	0.95

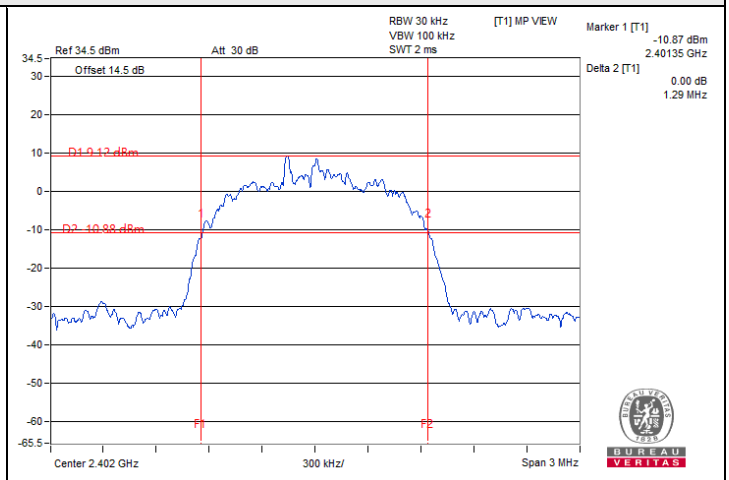
8DPSK

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
0	2402	1.29
39	2441	1.33
78	2480	1.31

Spectrum Plot of Minimum Value



GFSK : CH 39



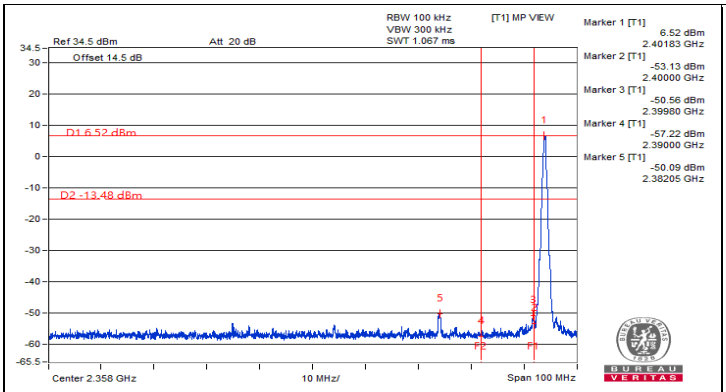
8DPSK : CH 0

7.6 Conducted Out of Band Emissions

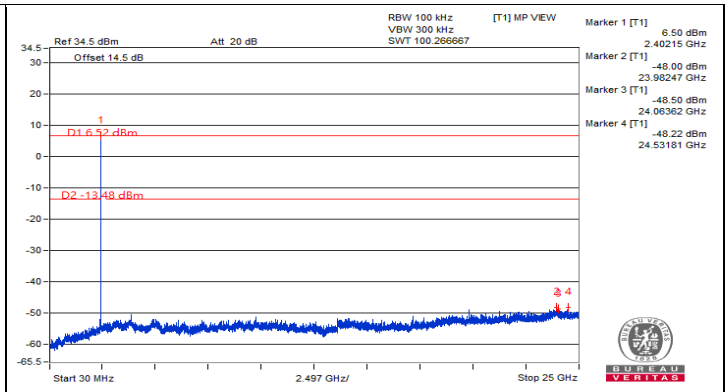
Low Power

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Dolly Chung

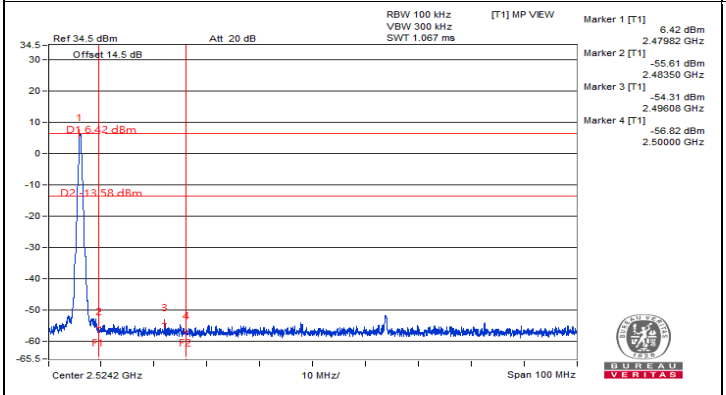
GFSK



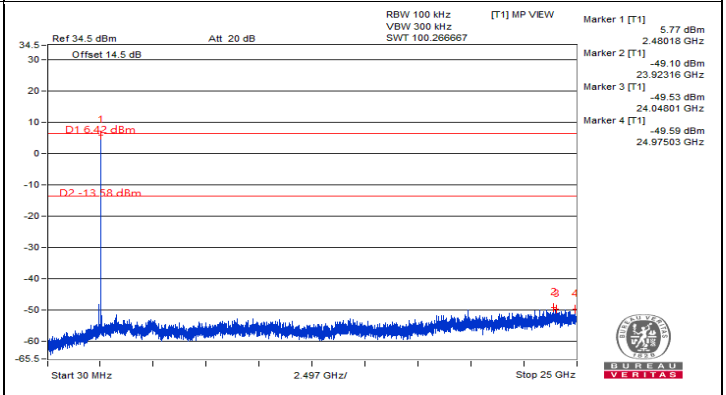
Hopping disabled (Low Channel)



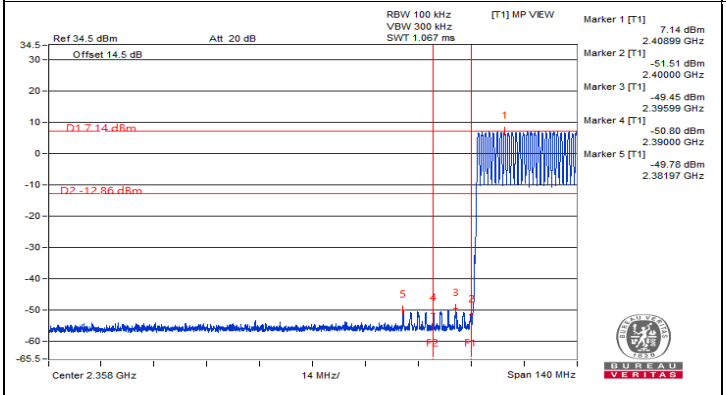
Hopping disabled (Low Channel)



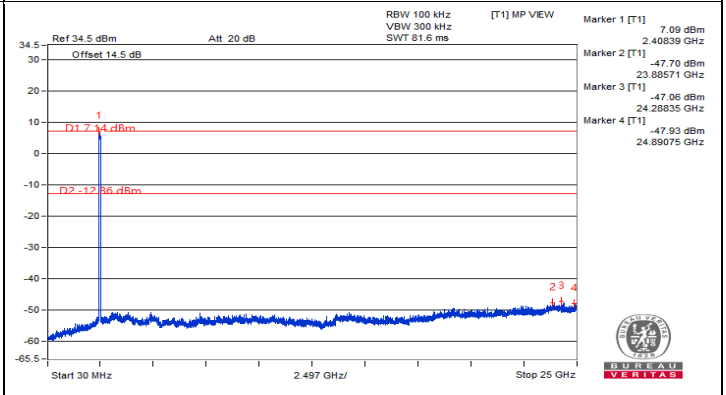
Hopping disabled (High Channel)



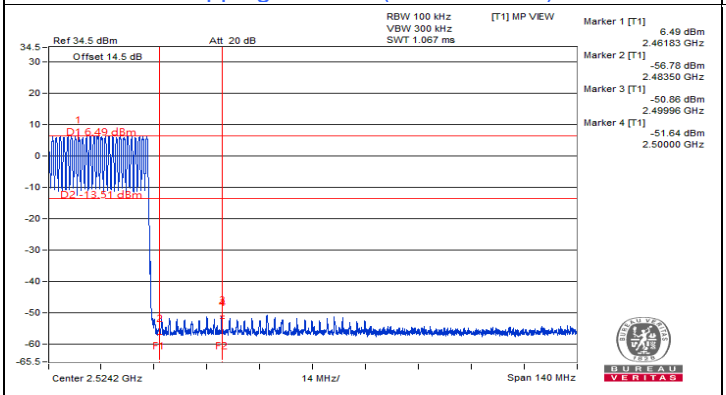
Hopping disabled (High Channel)



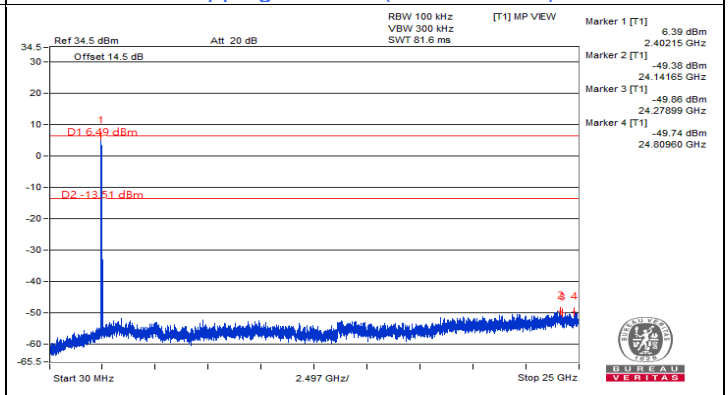
Hopping enabled (Low Channel)



Hopping enabled (Low Channel)

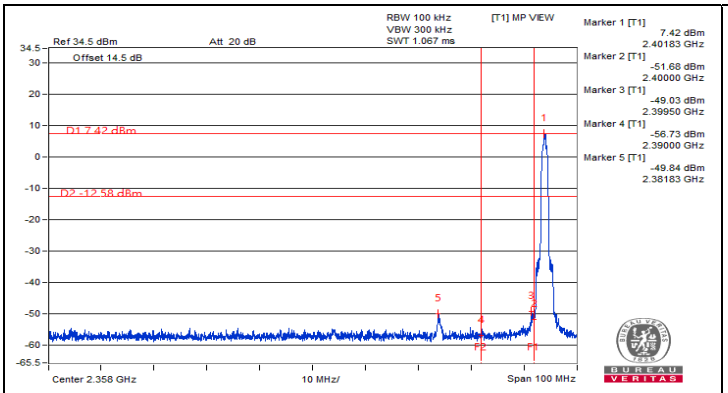


Hopping enabled (High Channel)

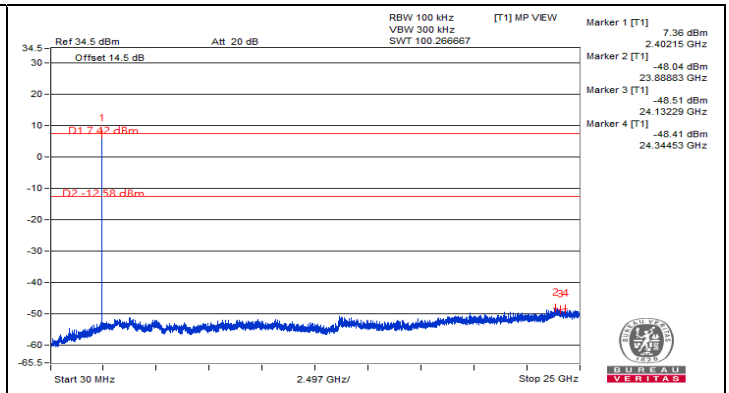


Hopping enabled (High Channel)

8DPSK



Hopping disabled (Low Channel)



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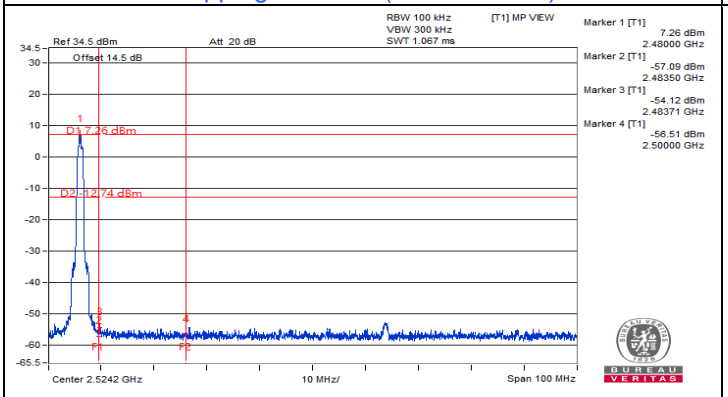
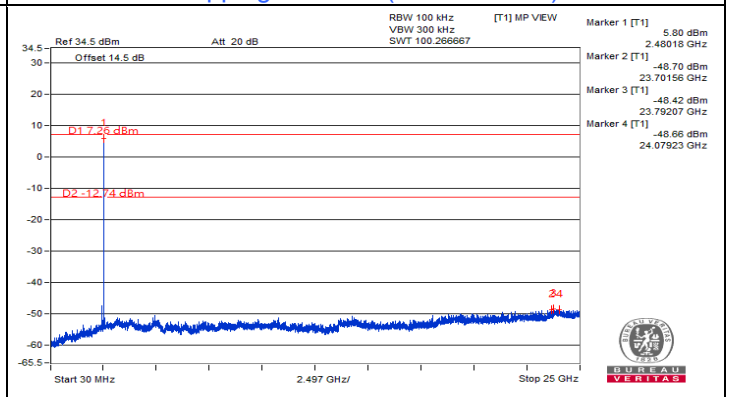


Hopping disabled (High Channel)



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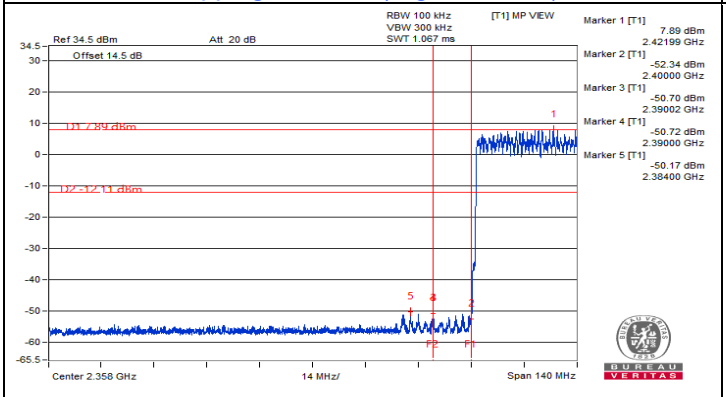
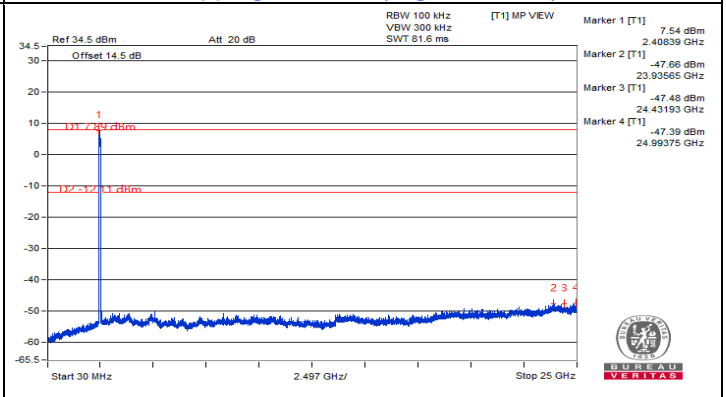


Hopping enabled (Low Channel)



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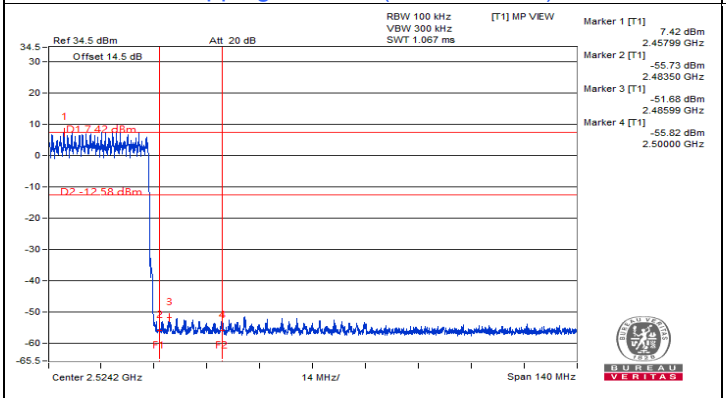
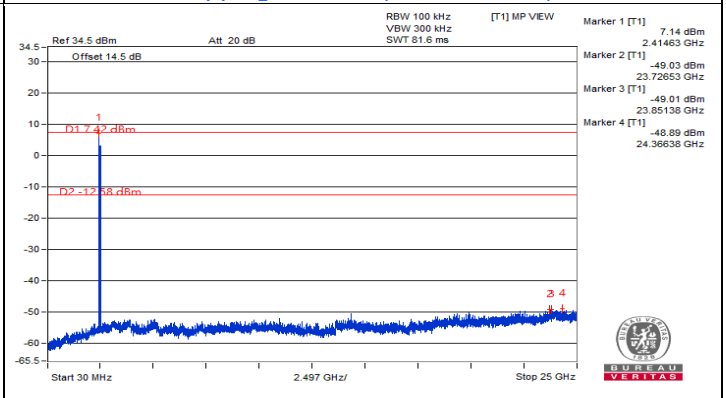


Hopping enabled (High Channel)

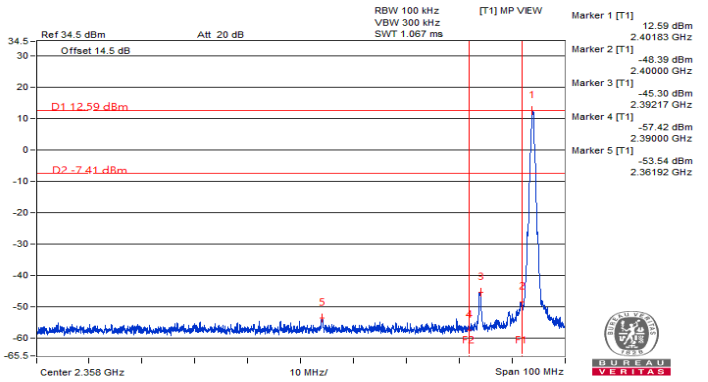


Hopping enabled (High Channel)

High Power

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Dolly Chung

GFSK



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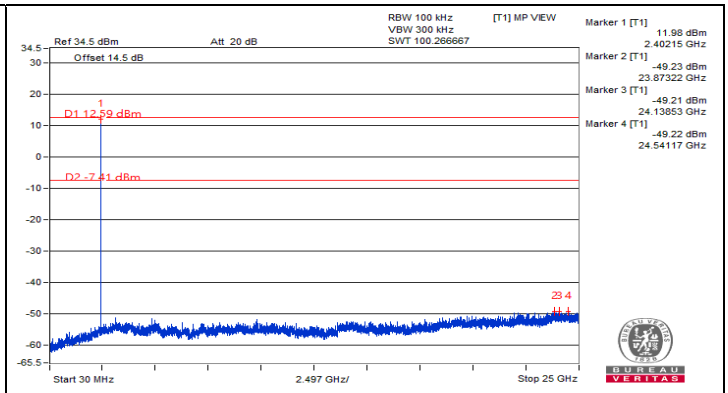

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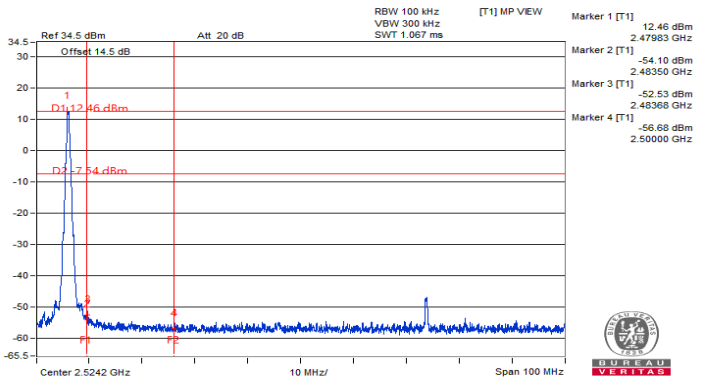

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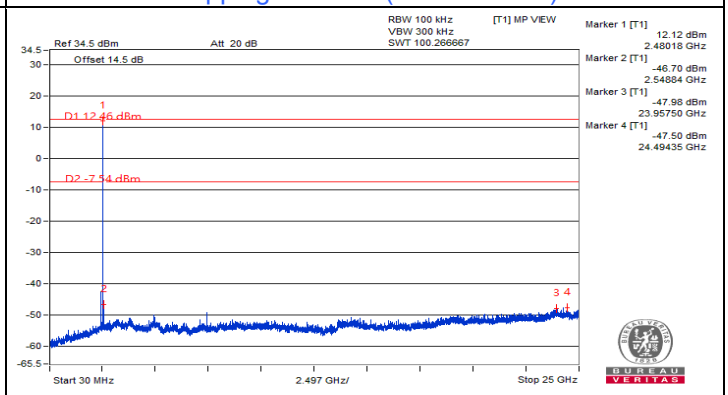

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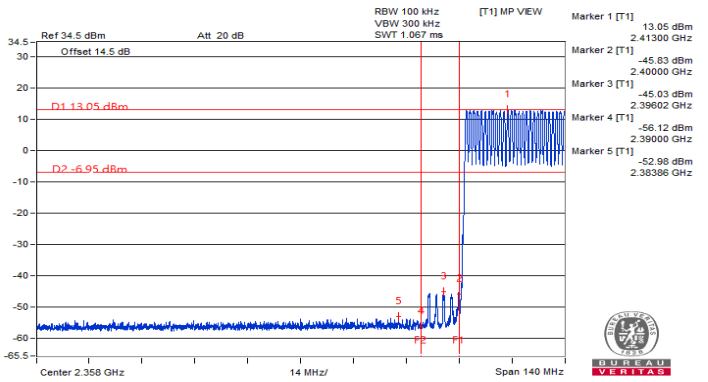

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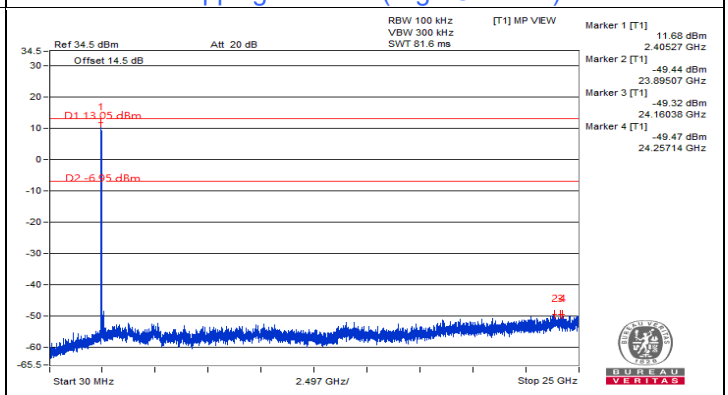
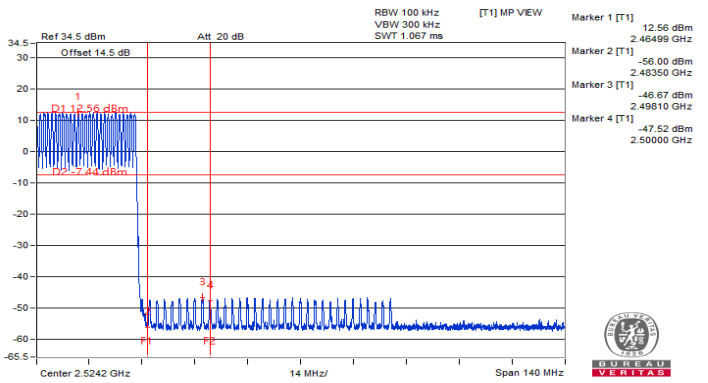
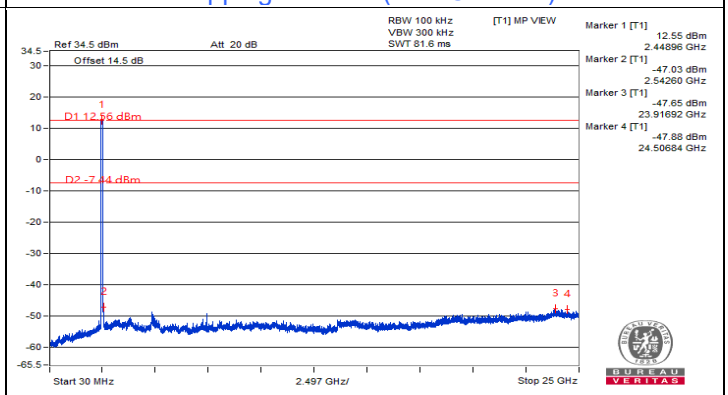


Hopping enabled (Low Channel)

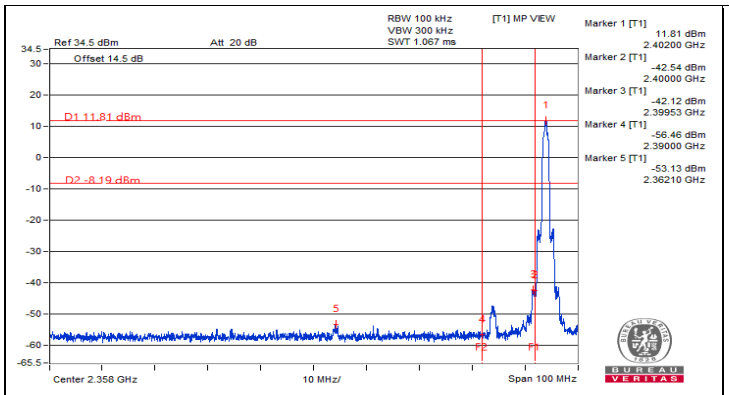


Hopping enabled (High Channel)



Hopping enabled (High Channel)

8DPSK



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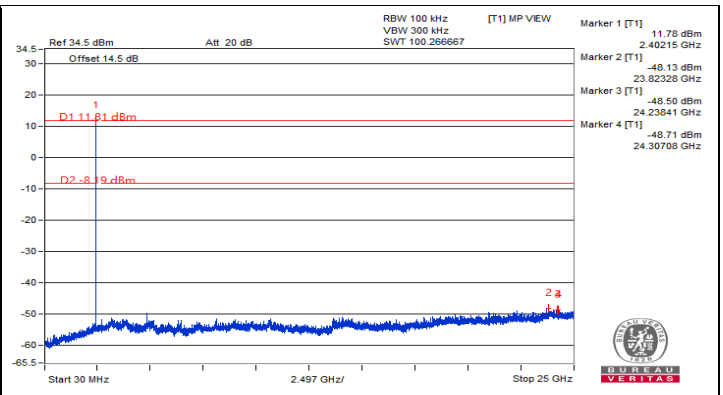

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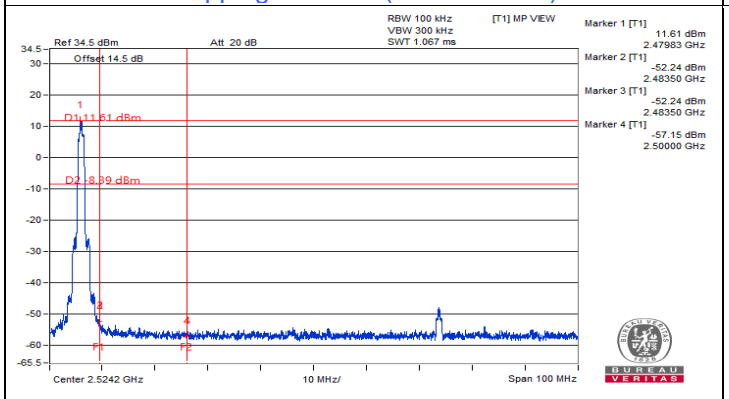
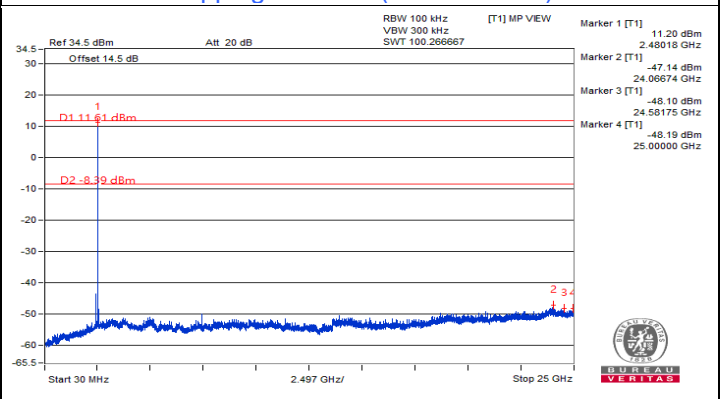
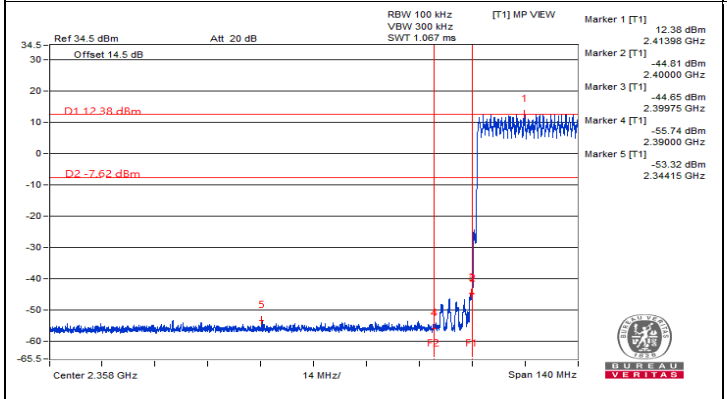


Hopping disabled (High Channel)



Hopping disabled (High Channel)



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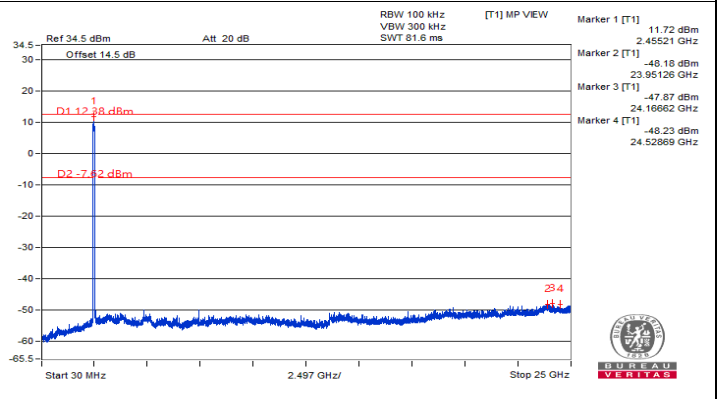
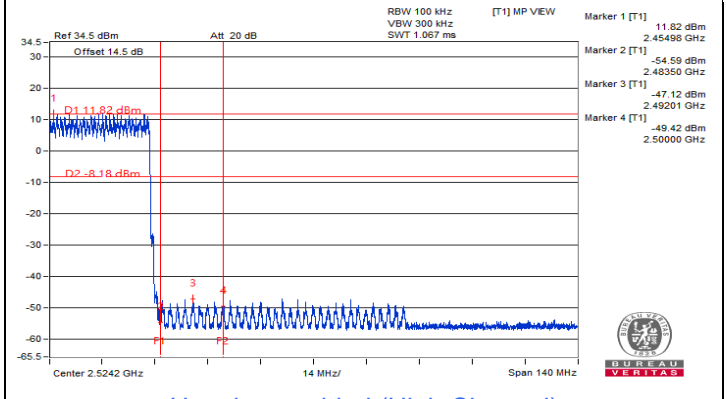
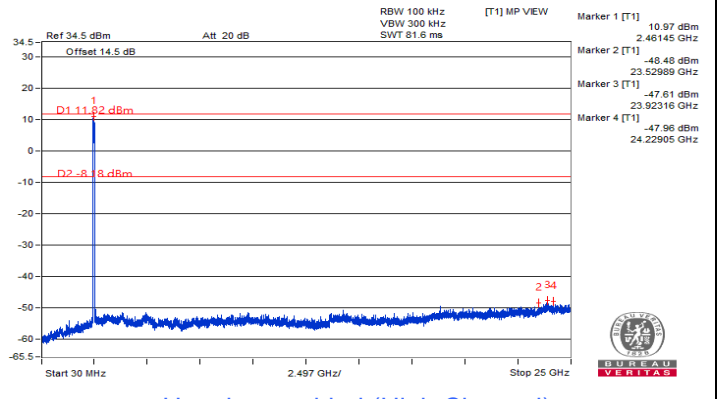


Hopping enabled (Low Channel)



Hopping enabled (High Channel)



Hopping enabled (High Channel)

7.7 AC Power Conducted Emissions

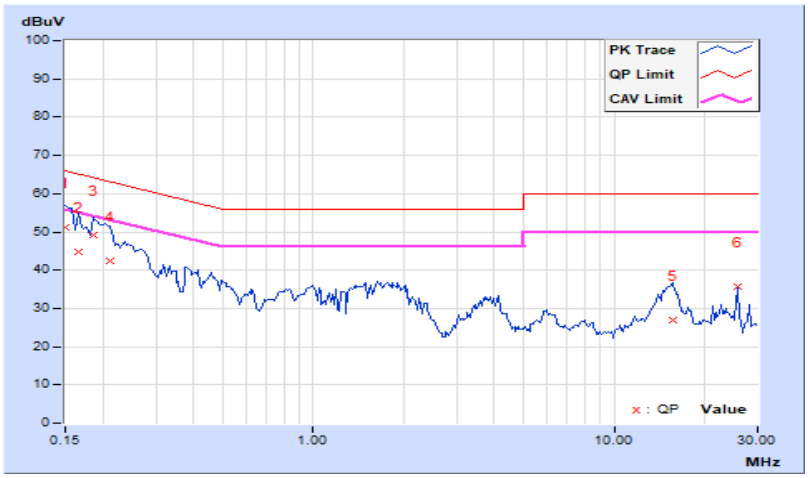
Low Power

RF Mode	BT GFSK	**Channel**	CH 0：2402 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	23°C, 76% RH
Tested By	Andy Ho		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15000	9.95	41.22	28.60	51.17	38.55	66.00	56.00	-14.83	-17.45
2	0.16562	9.94	34.87	19.13	44.81	29.07	65.18	55.18	-20.37	-26.11
3	0.18516	9.94	39.36	24.01	49.30	33.95	64.25	54.25	-14.95	-20.30
4	0.21250	9.94	32.46	17.77	42.40	27.71	63.11	53.11	-20.71	-25.40
5	15.66406	10.76	16.28	9.13	27.04	19.89	60.00	50.00	-32.96	-30.11
6	25.87500	11.19	24.63	23.81	35.82	35.00	60.00	50.00	-24.18	-15.00

Remarks:

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

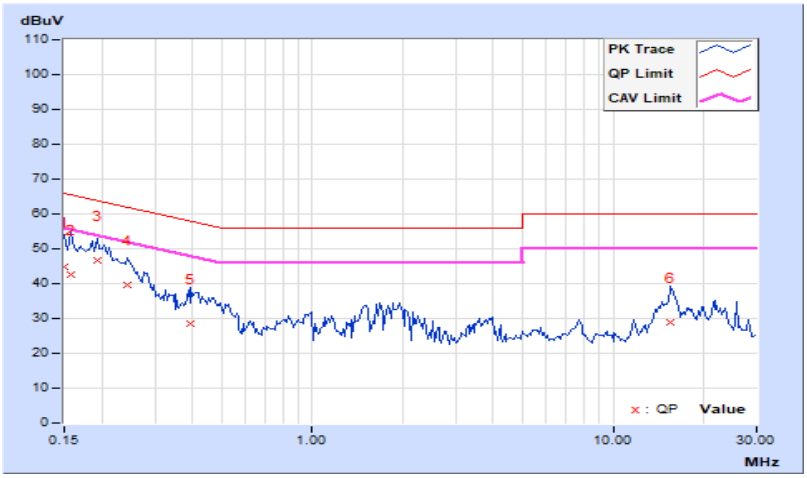


RF Mode	BT GFSK	Channel	CH 0：2402 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	23°C, 76% RH
Tested By	Andy Ho		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.99	34.94	23.28	44.93	33.27	66.00	56.00	-21.07	-22.73
2	0.15781	9.99	32.50	22.96	42.49	32.95	65.58	55.58	-23.09	-22.63
3	0.19297	9.99	36.62	28.38	46.61	38.37	63.91	53.91	-17.30	-15.54
4	0.24375	9.99	29.63	16.69	39.62	26.68	61.97	51.97	-22.35	-25.29
5	0.39609	10.00	18.42	6.01	28.42	16.01	57.93	47.93	-29.51	-31.92
6	15.47266	10.63	18.41	11.29	29.04	21.92	60.00	50.00	-30.96	-28.08

Remarks:

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



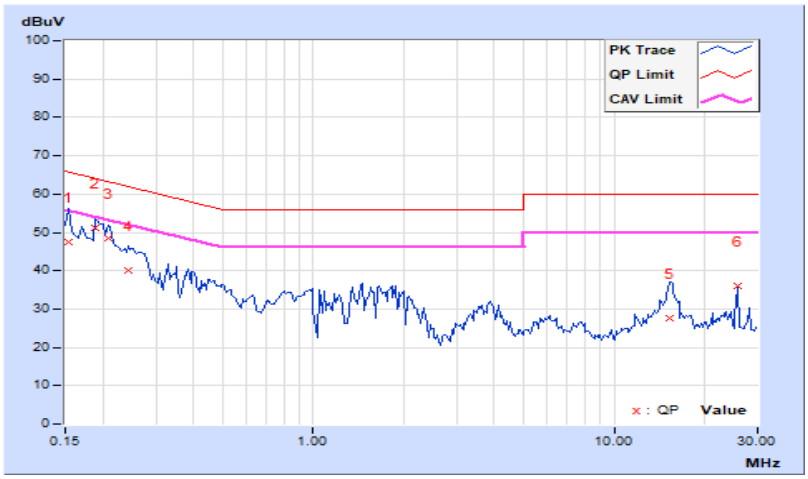
High Power

RF Mode	BT GFSK	Channel	CH 39：2441 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	23°C, 76% RH
Tested By	Andy Ho		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	9.94	37.44	25.03	47.38	34.97	65.79	55.79	-18.41	-20.82
2	**0.18906**	**9.94**	**41.40**	**27.81**	**51.34**	**37.75**	**64.08**	**54.08**	**-12.74**	**-16.33**
3	0.20859	9.94	38.67	19.43	48.61	29.37	63.26	53.26	-14.65	-23.89
4	0.24375	9.94	29.96	16.63	39.90	26.57	61.97	51.97	-22.07	-25.40
5	15.39063	10.74	16.84	9.99	27.58	20.73	60.00	50.00	-32.42	-29.27
6	25.87500	11.19	24.77	23.95	35.96	35.14	60.00	50.00	-24.04	-14.86

Remarks:

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

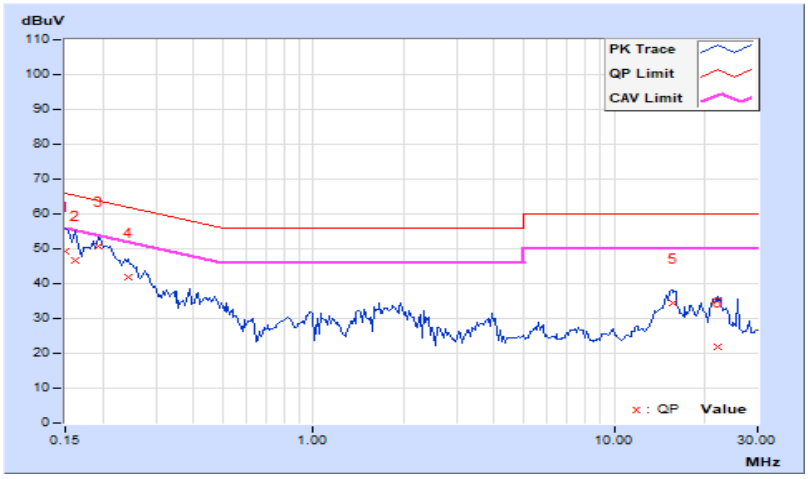


RF Mode	BT GFSK	Channel	CH 39：2441 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	23°C, 76% RH
Tested By	Andy Ho		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.99	39.34	27.39	49.33	37.38	66.00	56.00	-16.67	-18.62
2	0.16172	9.99	36.57	20.62	46.56	30.61	65.38	55.38	-18.82	-24.77
3	0.19297	9.99	40.60	28.82	50.59	38.81	63.91	53.91	-13.32	-15.10
4	0.24375	9.99	31.71	19.90	41.70	29.89	61.97	51.97	-20.27	-22.08
5	15.64063	10.64	23.67	16.70	34.31	27.34	60.00	50.00	-25.69	-22.66
6	21.98047	10.82	11.19	2.65	22.01	13.47	60.00	50.00	-37.99	-36.53

Remarks:

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



7.8 Unwanted Emissions below 1 GHz

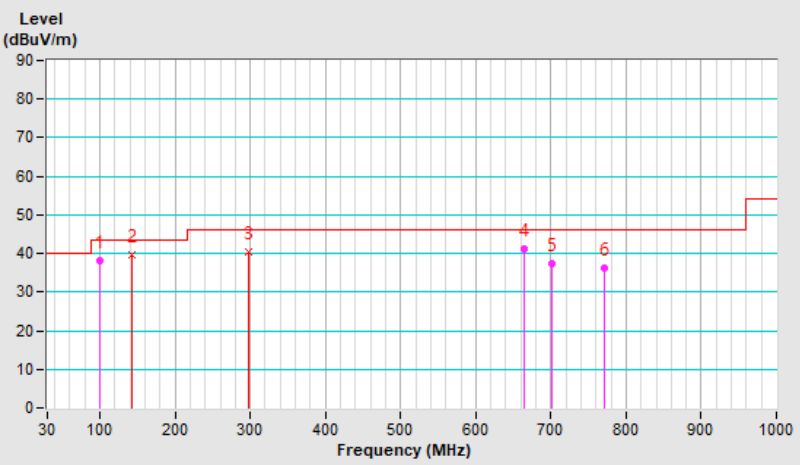
Low Power

RF Mode	BT GFSK	**Channel**	CH 0：2402 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	QP: RB=120kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 65% RH
Tested By	Willy Lin		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	99.55	38.1 QP	43.5	-5.4	2.00 H	205	55.5	-17.4
2	**142.18**	**39.8 QP**	**43.5**	**-3.7**	**2.00 H**	**293**	**53.1**	**-13.3**
3	297.53	40.4 QP	46.0	-5.6	1.50 H	67	53.1	-12.7
4	664.55	41.2 QP	46.0	-4.8	2.50 H	129	45.4	-4.2
5	700.41	37.3 QP	46.0	-8.7	3.00 H	221	41.3	-4.0
6	770.44	36.2 QP	46.0	-9.8	2.50 H	220	38.5	-2.3

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

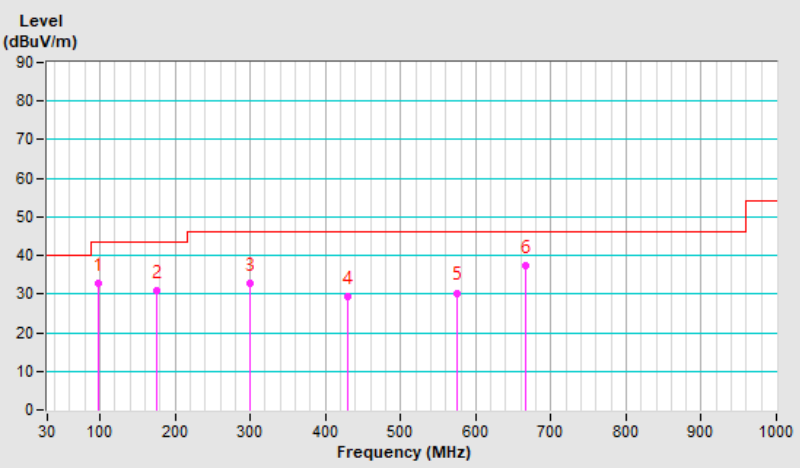


RF Mode	BT GFSK	**Channel**	CH 0：2402 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	QP: RB=120kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 65% RH
Tested By	Willy Lin		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	98.04	32.9 QP	43.5	-10.6	3.00 V	210	50.7	-17.8
2	176.21	30.7 QP	43.5	-12.8	2.50 V	292	45.0	-14.3
3	299.70	32.9 QP	46.0	-13.1	1.00 V	62	45.5	-12.6
4	429.94	29.2 QP	46.0	-16.8	1.00 V	126	38.1	-8.9
5	575.01	30.3 QP	46.0	-15.7	1.00 V	219	36.7	-6.4
6	666.72	37.2 QP	46.0	-8.8	3.00 V	221	41.4	-4.2

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



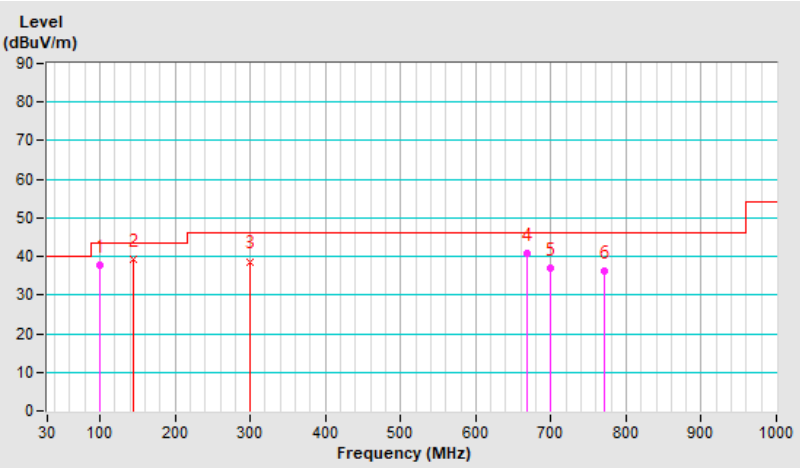
High Power

RF Mode	BT GFSK	Channel	CH 39：2441 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 65% RH
Tested By	Willy Lin		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	99.99	37.6 QP	43.5	-5.9	1.00 H	215	54.9	-17.3
2	144.44	39.3 QP	43.5	-4.2	3.00 H	298	52.5	-13.2
3	298.78	38.7 QP	46.0	-7.3	1.00 H	62	51.3	-12.6
4	667.35	40.8 QP	46.0	-5.2	1.50 H	133	45.1	-4.3
5	698.99	37.0 QP	46.0	-9.0	2.50 H	216	41.0	-4.0
6	771.01	36.3 QP	46.0	-9.7	1.50 H	216	38.6	-2.3

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

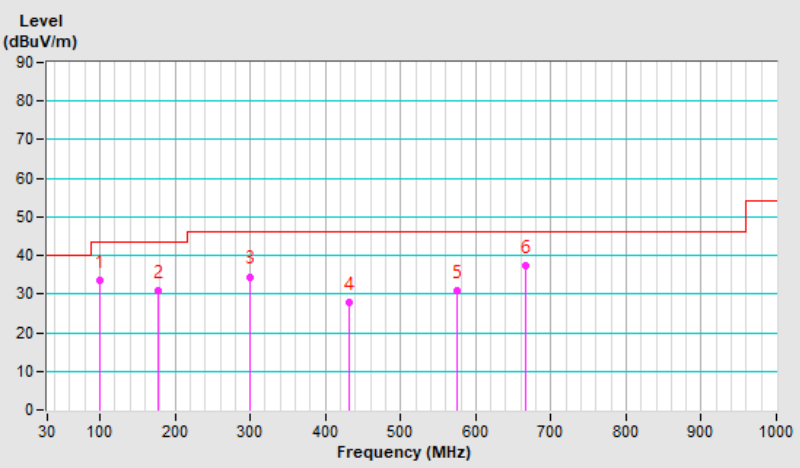


RF Mode	BT GFSK	**Channel**	CH 39：2441 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	QP: RB=120kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 65% RH
Tested By	Willy Lin		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	100.04	33.4 QP	43.5	-10.1	1.00 V	208	50.7	-17.3
2	176.94	30.8 QP	43.5	-12.7	1.50 V	285	45.2	-14.4
3	299.29	34.5 QP	46.0	-11.5	2.50 V	70	47.1	-12.6
4	432.54	27.9 QP	46.0	-18.1	1.00 V	127	36.7	-8.8
5	574.64	30.8 QP	46.0	-15.2	1.00 V	200	37.2	-6.4
6	665.48	37.5 QP	46.0	-8.5	2.00 V	214	41.7	-4.2

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



7.9 Unwanted Emissions above 1 GHz

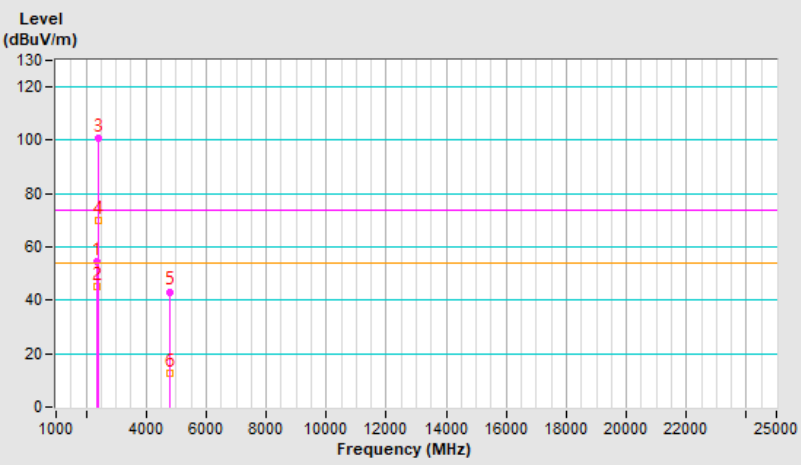
Low Power

RF Mode	BT GFSK	Channel	CH 0：2402 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2381.82	54.7 PK	74.0	-19.3	1.27 H	331	57.4	-2.7
2	2381.82	45.0 AV	54.0	-9.0	1.27 H	331	47.7	-2.7
3	*2402.00	100.7 PK			1.27 H	331	103.5	-2.8
4	*2402.00	69.9 AV			1.27 H	331	72.7	-2.8
5	4804.00	43.2 PK	74.0	-30.8	2.16 H	12	41.1	2.1
6	4804.00	12.4 AV	54.0	-41.6	2.16 H	12	10.3	2.1

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.891 ms / 100 ms) = -30.8 dB

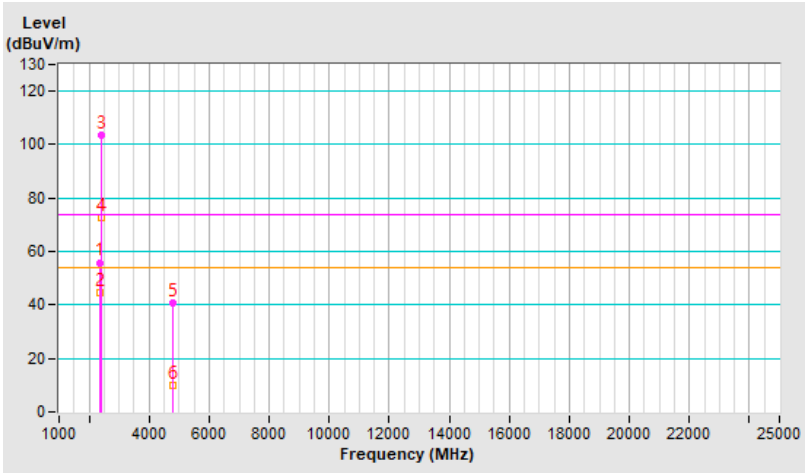


RF Mode	BT GFSK	Channel	CH 0：2402 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2381.82	55.9 PK	74.0	-18.1	1.00 V	360	58.6	-2.7
2	2381.82	44.7 AV	54.0	-9.3	1.00 V	360	47.4	-2.7
3	*2402.00	103.5 PK			1.00 V	360	106.3	-2.8
4	*2402.00	72.7 AV			1.00 V	360	75.5	-2.8
5	4804.00	40.9 PK	74.0	-33.1	1.02 V	33	38.8	2.1
6	4804.00	10.1 AV	54.0	-43.9	1.02 V	33	8.0	2.1

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.891 ms / 100 ms) = -30.8 dB

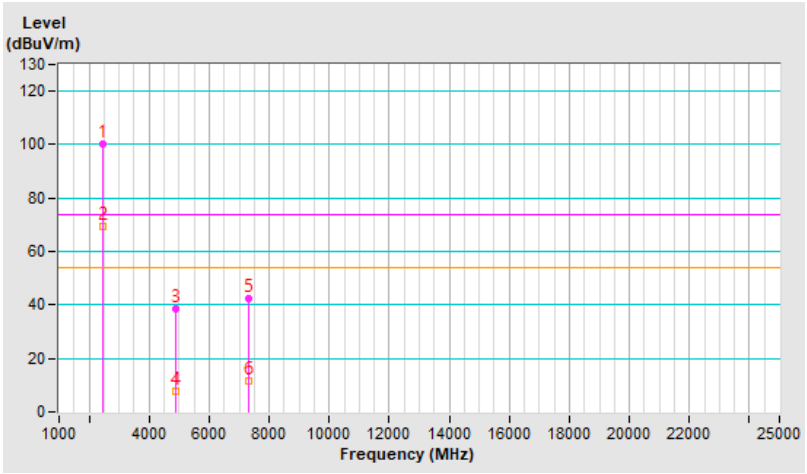


RF Mode	BT GFSK	Channel	CH 39：2441 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2441.00	100.2 PK			1.32 H	344	102.9	-2.7
2	*2441.00	69.4 AV			1.32 H	344	72.1	-2.7
3	4882.00	38.4 PK	74.0	-35.6	1.00 H	183	36.3	2.1
4	4882.00	7.6 AV	54.0	-46.4	1.00 H	183	5.5	2.1
5	7323.00	42.4 PK	74.0	-31.6	1.06 H	129	34.7	7.7
6	7323.00	11.6 AV	54.0	-42.4	1.06 H	129	3.9	7.7

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.891 ms / 100 ms) = -30.8 dB

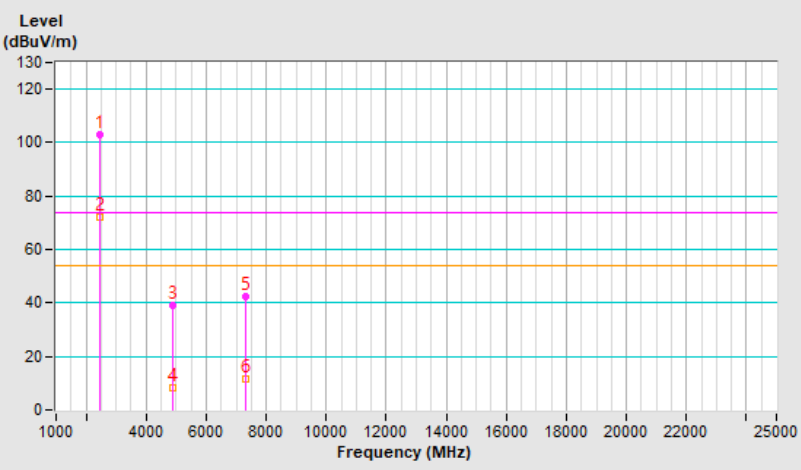


RF Mode	BT GFSK	Channel	CH 39：2441 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2441.00	103.1 PK			1.02 V	360	105.8	-2.7
2	*2441.00	72.3 AV			1.02 V	360	75.0	-2.7
3	4882.00	38.9 PK	74.0	-35.1	1.39 V	136	36.8	2.1
4	4882.00	8.1 AV	54.0	-45.9	1.39 V	136	6.0	2.1
5	7323.00	42.2 PK	74.0	-31.8	1.15 V	322	34.5	7.7
6	7323.00	11.4 AV	54.0	-42.6	1.15 V	322	3.7	7.7

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.891 ms / 100 ms) = -30.8 dB

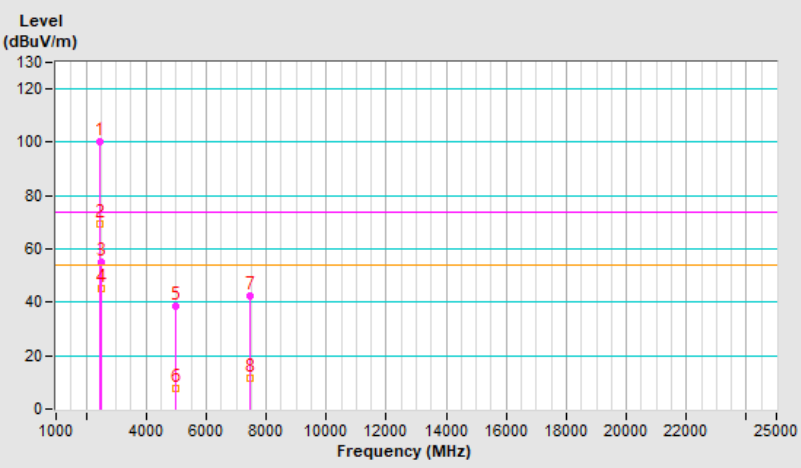


RF Mode	BT GFSK	Channel	CH 78：2480 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	100.1 PK			1.28 H	360	102.7	-2.6
2	*2480.00	69.3 AV			1.28 H	360	71.9	-2.6
3	2483.50	55.0 PK	74.0	-19.0	1.28 H	360	57.6	-2.6
4	2483.50	44.9 AV	54.0	-9.1	1.28 H	360	47.5	-2.6
5	4960.00	38.7 PK	74.0	-35.3	1.03 H	184	36.5	2.2
6	4960.00	7.9 AV	54.0	-46.1	1.03 H	184	5.7	2.2
7	7440.00	42.6 PK	74.0	-31.4	1.01 H	123	34.8	7.8
8	7440.00	11.8 AV	54.0	-42.2	1.01 H	123	4.0	7.8

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.891 ms / 100 ms) = -30.8 dB

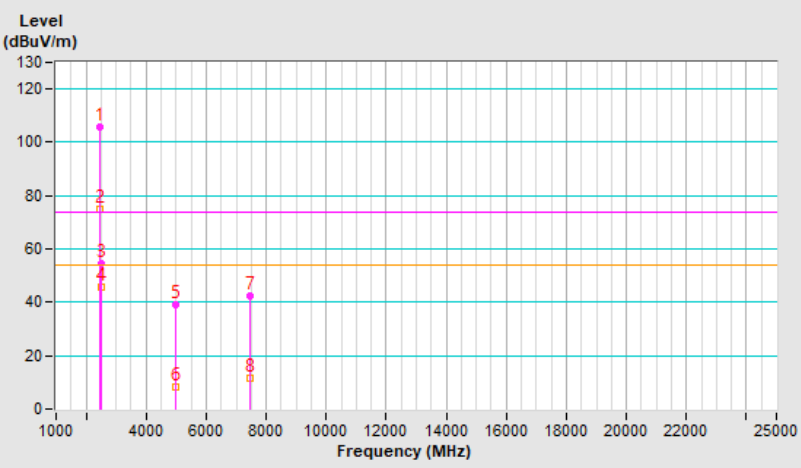


RF Mode	BT GFSK	**Channel**	CH 78：2480 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	*2480.00	105.8 PK			1.27 V	360	108.4	-2.6
2	*2480.00	75.0 AV			1.27 V	360	77.6	-2.6
3	2483.50	54.3 PK	74.0	-19.7	1.27 V	360	56.9	-2.6
4	2483.50	45.6 AV	54.0	-8.4	1.27 V	360	48.2	-2.6
5	4960.00	39.0 PK	74.0	-35.0	1.45 V	138	36.8	2.2
6	4960.00	8.2 AV	54.0	-45.8	1.45 V	138	6.0	2.2
7	7440.00	42.3 PK	74.0	-31.7	1.13 V	316	34.5	7.8
8	7440.00	11.5 AV	54.0	-42.5	1.13 V	316	3.7	7.8

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.891 ms / 100 ms) = -30.8 dB

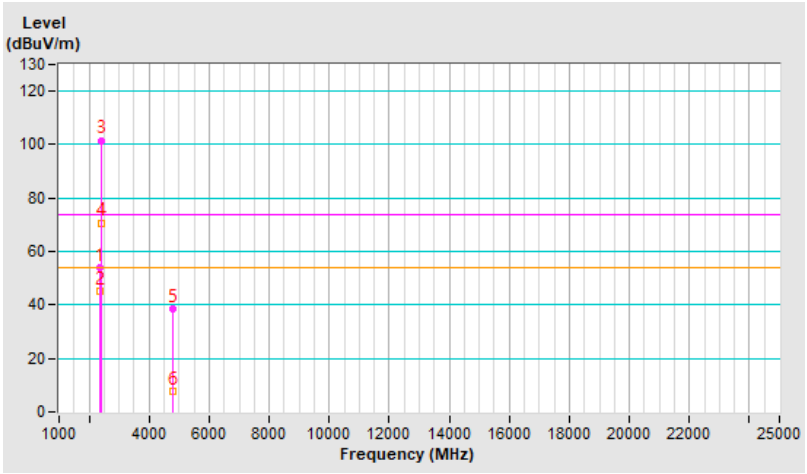


RF Mode	BT 8DPSK	Channel	CH 0：2402 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2382.18	54.0 PK	74.0	-20.0	1.06 H	329	56.7	-2.7
2	2382.18	45.2 AV	54.0	-8.8	1.06 H	329	47.9	-2.7
3	*2402.00	101.6 PK			1.06 H	329	104.4	-2.8
4	*2402.00	70.8 AV			1.06 H	329	73.6	-2.8
5	4804.00	38.7 PK	74.0	-35.3	1.05 H	198	36.6	2.1
6	4804.00	7.9 AV	54.0	-46.1	1.05 H	198	5.8	2.1

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.896 ms / 100 ms) = -30.8 dB

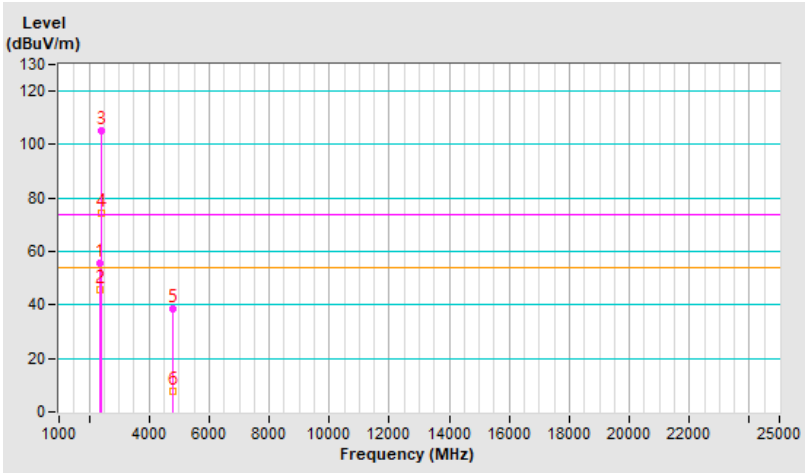


RF Mode	BT 8DPSK	Channel	CH 0：2402 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2382.04	55.4 PK	74.0	-18.6	1.03 V	360	58.1	-2.7
2	**2382.04**	**45.7 AV**	**54.0**	**-8.3**	**1.03 V**	**360**	**48.4**	**-2.7**
3	*2402.00	105.0 PK			1.03 V	360	107.8	-2.8
4	*2402.00	74.2 AV			1.03 V	360	77.0	-2.8
5	4804.00	38.5 PK	74.0	-35.5	1.36 V	141	36.4	2.1
6	4804.00	7.7 AV	54.0	-46.3	1.36 V	141	5.6	2.1

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.896 ms / 100 ms) = -30.8 dB

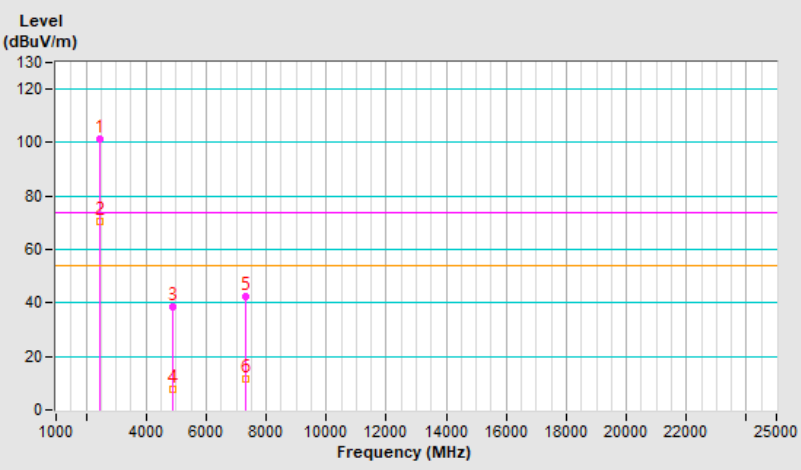


RF Mode	BT 8DPSK	Channel	CH 39：2441 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2441.00	101.5 PK			2.00 H	355	104.2	-2.7
2	*2441.00	70.7 AV			2.00 H	355	73.4	-2.7
3	4882.00	38.6 PK	74.0	-35.4	1.03 H	198	36.5	2.1
4	4882.00	7.8 AV	54.0	-46.2	1.03 H	198	5.7	2.1
5	7323.00	42.2 PK	74.0	-31.8	1.09 H	119	34.5	7.7
6	7323.00	11.4 AV	54.0	-42.6	1.09 H	119	3.7	7.7

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.896 ms / 100 ms) = -30.8 dB

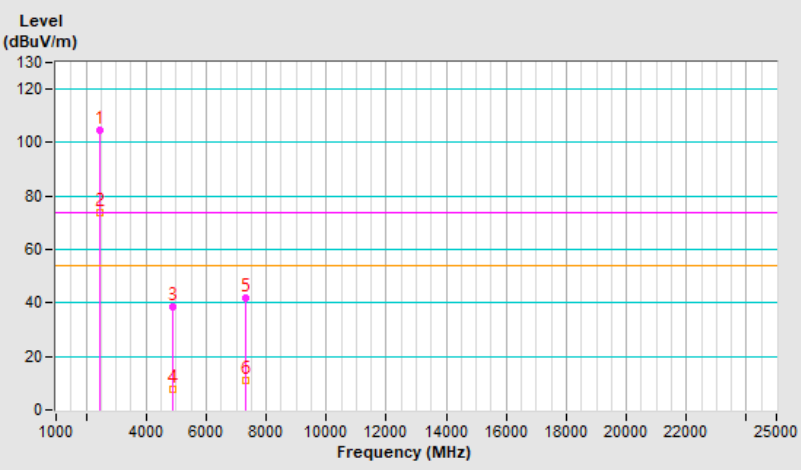


RF Mode	BT 8DPSK	Channel	CH 39：2441 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2441.00	104.4 PK			1.03 V	338	107.1	-2.7
2	*2441.00	73.6 AV			1.03 V	338	76.3	-2.7
3	4882.00	38.6 PK	74.0	-35.4	1.37 V	145	36.5	2.1
4	4882.00	7.8 AV	54.0	-46.2	1.37 V	145	5.7	2.1
5	7323.00	41.6 PK	74.0	-32.4	1.16 V	334	33.9	7.7
6	7323.00	10.8 AV	54.0	-43.2	1.16 V	334	3.1	7.7

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.896 ms / 100 ms) = -30.8 dB

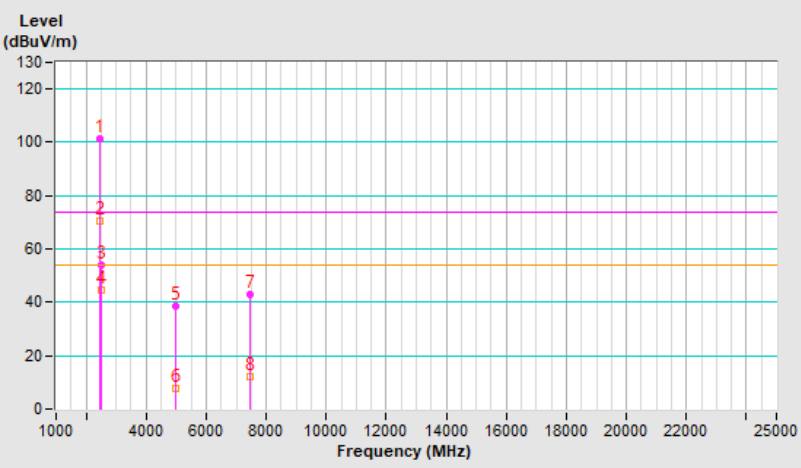


RF Mode	BT 8DPSK	Channel	CH 78：2480 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	101.5 PK			1.07 H	360	104.1	-2.6
2	*2480.00	70.7 AV			1.07 H	360	73.3	-2.6
3	2483.50	54.1 PK	74.0	-19.9	1.07 H	360	56.7	-2.6
4	2483.50	44.7 AV	54.0	-9.3	1.07 H	360	47.3	-2.6
5	4960.00	38.4 PK	74.0	-35.6	1.03 H	189	36.2	2.2
6	4960.00	7.6 AV	54.0	-46.4	1.03 H	189	5.4	2.2
7	7440.00	42.7 PK	74.0	-31.3	1.01 H	116	34.9	7.8
8	7440.00	11.9 AV	54.0	-42.1	1.01 H	116	4.1	7.8

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.896 ms / 100 ms) = -30.8 dB

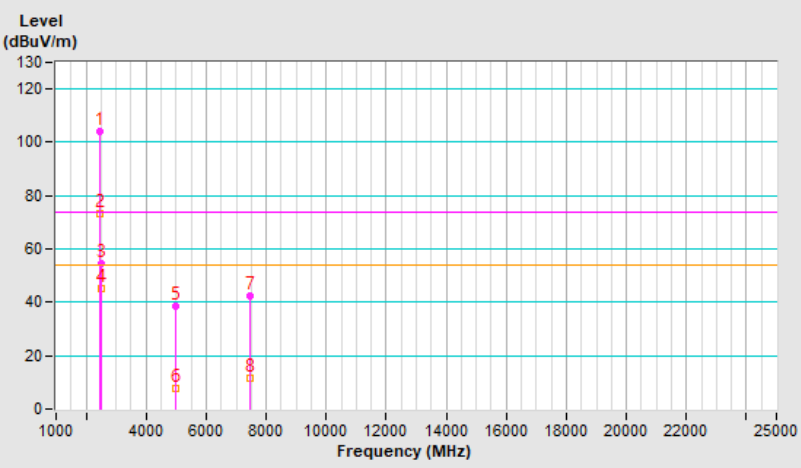


RF Mode	BT 8DPSK	**Channel**	CH 78：2480 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	*2480.00	104.2 PK			1.28 V	360	106.8	-2.6
2	*2480.00	73.4 AV			1.28 V	360	76.0	-2.6
3	2483.50	54.5 PK	74.0	-19.5	1.28 V	360	57.1	-2.6
4	2483.50	45.0 AV	54.0	-9.0	1.28 V	360	47.6	-2.6
5	4960.00	38.6 PK	74.0	-35.4	1.38 V	150	36.4	2.2
6	4960.00	7.8 AV	54.0	-46.2	1.38 V	150	5.6	2.2
7	7440.00	42.2 PK	74.0	-31.8	1.12 V	335	34.4	7.8
8	7440.00	11.4 AV	54.0	-42.6	1.12 V	335	3.6	7.8

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.896 ms / 100 ms) = -30.8 dB



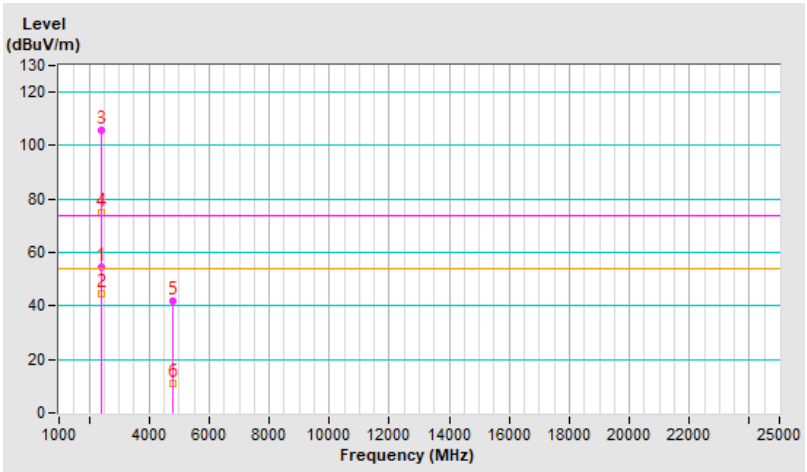
High Power

RF Mode	BT GFSK	Channel	CH 0：2402 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	54.3 PK	74.0	-19.7	1.22 H	360	57.1	-2.8
2	2390.00	44.5 AV	54.0	-9.5	1.22 H	360	47.3	-2.8
3	*2402.00	105.8 PK			1.22 H	360	108.6	-2.8
4	*2402.00	75.0 AV			1.22 H	360	77.8	-2.8
5	4804.00	41.6 PK	74.0	-32.4	1.01 H	173	39.5	2.1
6	4804.00	10.8 AV	54.0	-43.2	1.01 H	173	8.7	2.1

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.891 ms / 100 ms) = -30.8 dB

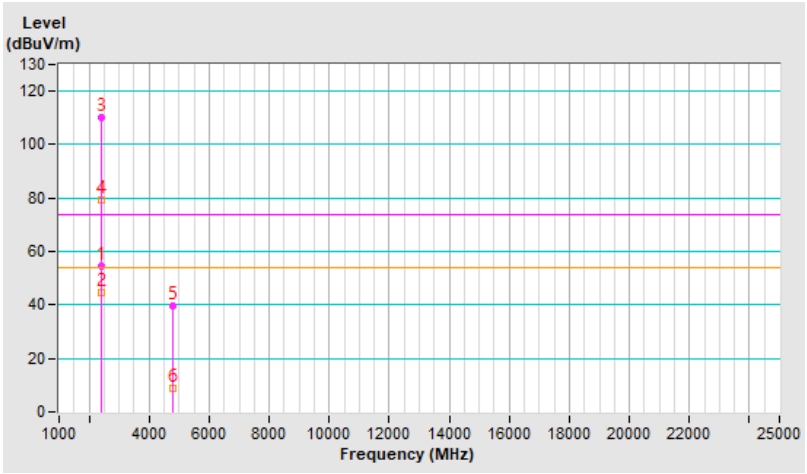


RF Mode	BT GFSK	Channel	CH 0：2402 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	54.4 PK	74.0	-19.6	1.00 V	360	57.2	-2.8
2	2390.00	44.7 AV	54.0	-9.3	1.00 V	360	47.5	-2.8
3	*2402.00	109.9 PK			1.00 V	360	112.7	-2.8
4	*2402.00	79.1 AV			1.00 V	360	81.9	-2.8
5	4804.00	39.4 PK	74.0	-34.6	1.40 V	135	37.3	2.1
6	4804.00	8.6 AV	54.0	-45.4	1.40 V	135	6.5	2.1

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.891 ms / 100 ms) = -30.8 dB

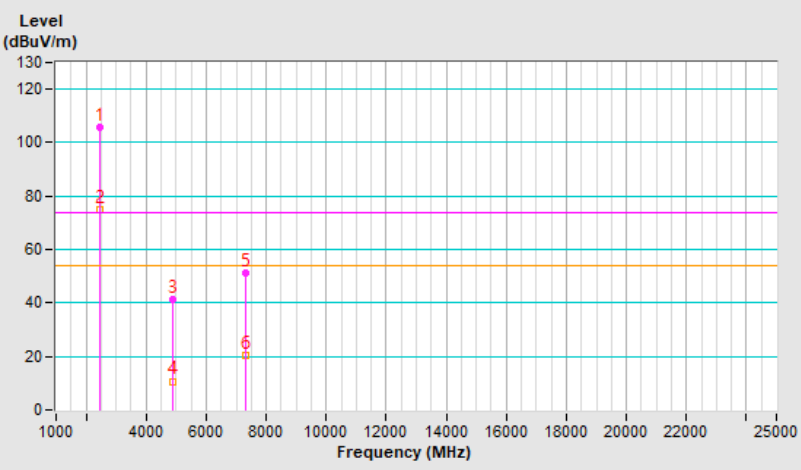


RF Mode	BT GFSK	Channel	CH 39：2441 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2441.00	105.7 PK			1.22 H	360	108.4	-2.7
2	*2441.00	74.9 AV			1.22 H	360	77.6	-2.7
3	4882.00	41.5 PK	74.0	-32.5	1.00 H	180	39.4	2.1
4	4882.00	10.7 AV	54.0	-43.3	1.00 H	180	8.6	2.1
5	7323.00	51.0 PK	74.0	-23.0	1.03 H	179	43.3	7.7
6	7323.00	20.2 AV	54.0	-33.8	1.03 H	179	12.5	7.7

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.891 ms / 100 ms) = -30.8 dB

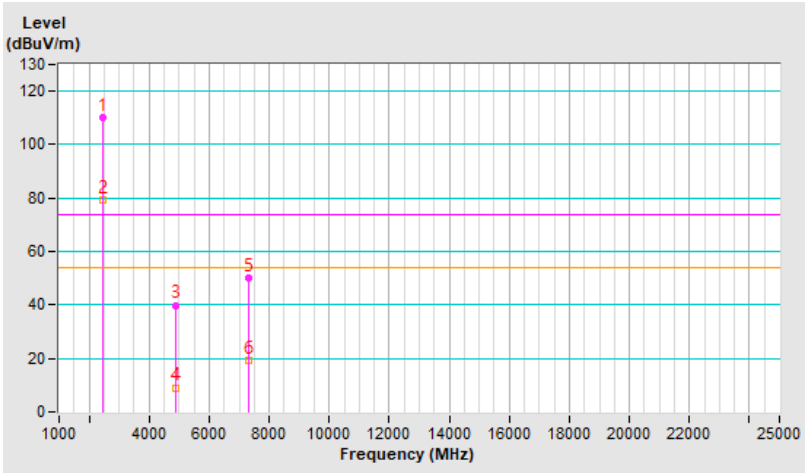


RF Mode	BT GFSK	Channel	CH 39：2441 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2441.00	110.1 PK			1.02 V	360	112.8	-2.7
2	*2441.00	79.3 AV			1.02 V	360	82.0	-2.7
3	4882.00	39.9 PK	74.0	-34.1	1.39 V	136	37.8	2.1
4	4882.00	9.1 AV	54.0	-44.9	1.39 V	136	7.0	2.1
5	7323.00	50.0 PK	74.0	-24.0	1.15 V	322	42.3	7.7
6	7323.00	19.2 AV	54.0	-34.8	1.15 V	322	11.5	7.7

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.891 ms / 100 ms) = -30.8 dB

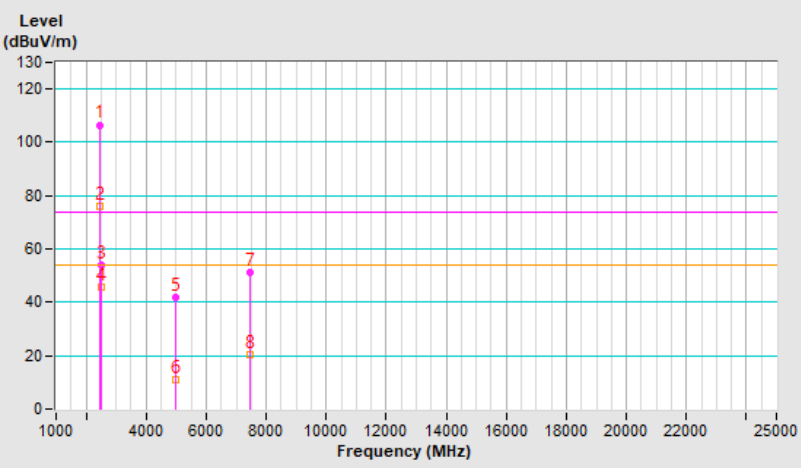


RF Mode	BT GFSK	Channel	CH 78：2480 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	106.6 PK			1.01 H	360	109.2	-2.6
2	*2480.00	75.8 AV			1.01 H	360	78.4	-2.6
3	2483.50	54.2 PK	74.0	-19.8	1.01 H	360	56.8	-2.6
4	**2483.50**	**45.7 AV**	**54.0**	**-8.3**	**1.01 H**	**360**	**48.3**	**-2.6**
5	4960.00	41.9 PK	74.0	-32.1	1.04 H	180	39.7	2.2
6	4960.00	11.1 AV	54.0	-42.9	1.04 H	180	8.9	2.2
7	7440.00	51.1 PK	74.0	-22.9	1.01 H	166	43.3	7.8
8	7440.00	20.3 AV	54.0	-33.7	1.01 H	166	12.5	7.8

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.891 ms / 100 ms) = -30.8 dB

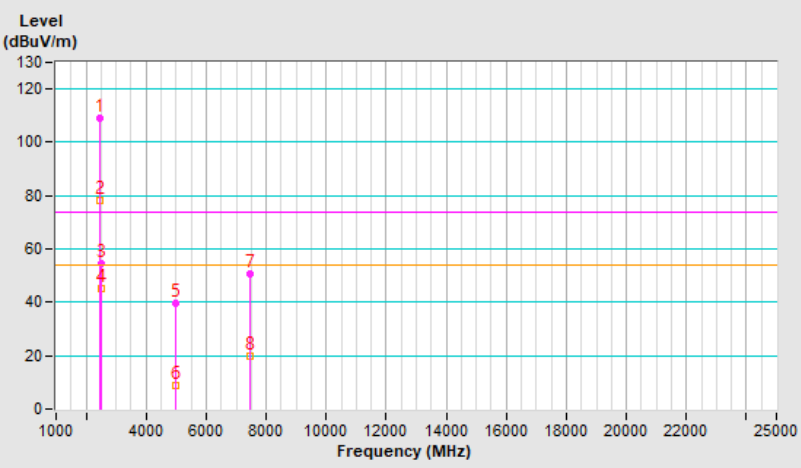


RF Mode	BT GFSK	**Channel**	CH 78：2480 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	*2480.00	109.1 PK			1.27 V	360	111.7	-2.6
2	*2480.00	78.3 AV			1.27 V	360	80.9	-2.6
3	2483.50	54.5 PK	74.0	-19.5	1.27 V	360	57.1	-2.6
4	2483.50	44.9 AV	54.0	-9.1	1.27 V	360	47.5	-2.6
5	4960.00	39.6 PK	74.0	-34.4	1.38 V	145	37.4	2.2
6	4960.00	8.8 AV	54.0	-45.2	1.38 V	145	6.6	2.2
7	7440.00	50.7 PK	74.0	-23.3	1.09 V	338	42.9	7.8
8	7440.00	19.9 AV	54.0	-34.1	1.09 V	338	12.1	7.8

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.891 ms / 100 ms) = -30.8 dB

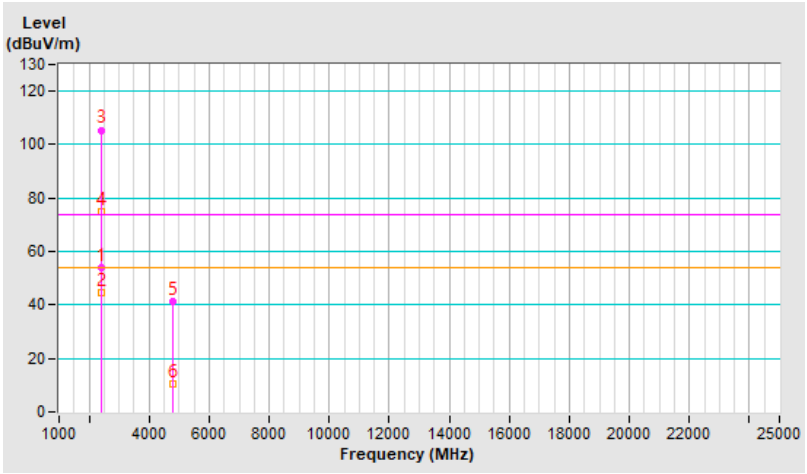


RF Mode	BT 8DPSK	Channel	CH 0：2402 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	54.0 PK	74.0	-20.0	1.05 H	330	56.8	-2.8
2	2390.00	44.8 AV	54.0	-9.2	1.05 H	330	47.6	-2.8
3	*2402.00	105.5 PK			1.05 H	330	108.3	-2.8
4	*2402.00	74.7 AV			1.05 H	330	77.5	-2.8
5	4804.00	41.1 PK	74.0	-32.9	1.06 H	195	39.0	2.1
6	4804.00	10.3 AV	54.0	-43.7	1.06 H	195	8.2	2.1

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.896 ms / 100 ms) = -30.8 dB

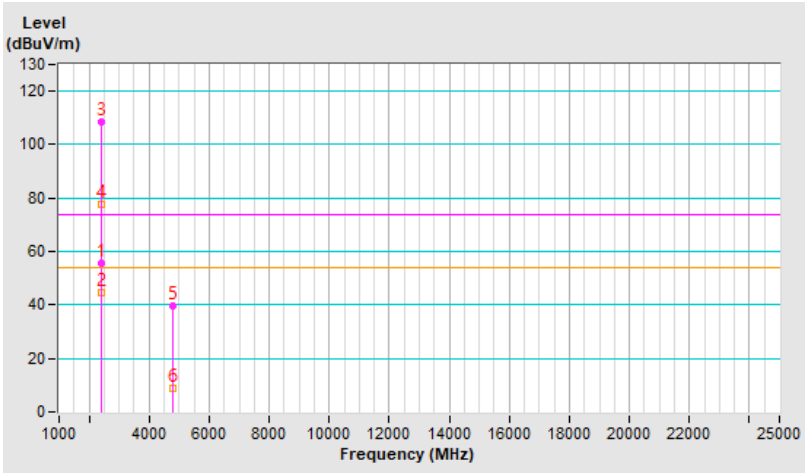


RF Mode	BT 8DPSK	Channel	CH 0：2402 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	55.4 PK	74.0	-18.6	1.00 V	360	58.2	-2.8
2	2390.00	44.6 AV	54.0	-9.4	1.00 V	360	47.4	-2.8
3	*2402.00	108.5 PK			1.00 V	360	111.3	-2.8
4	*2402.00	77.7 AV			1.00 V	360	80.5	-2.8
5	4804.00	39.8 PK	74.0	-34.2	1.42 V	144	37.7	2.1
6	4804.00	9.0 AV	54.0	-45.0	1.42 V	144	6.9	2.1

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.896 ms / 100 ms) = -30.8 dB

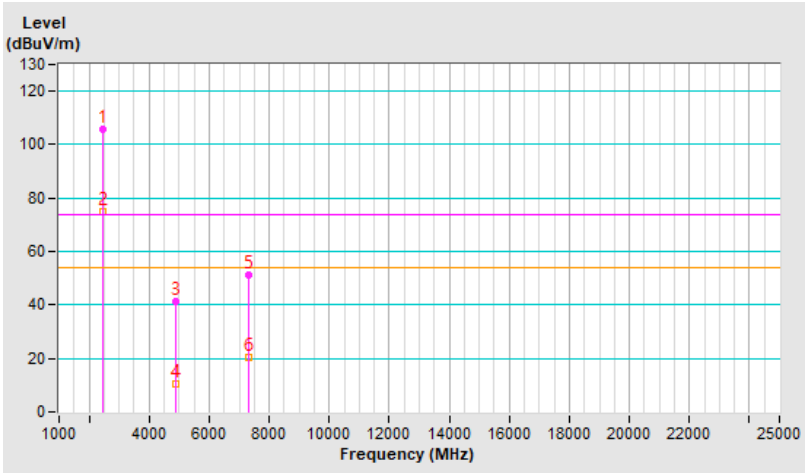


RF Mode	BT 8DPSK	Channel	CH 39：2441 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2441.00	105.8 PK			1.02 H	332	108.5	-2.7
2	*2441.00	75.0 AV			1.02 H	332	77.7	-2.7
3	4882.00	41.1 PK	74.0	-32.9	1.00 H	165	39.0	2.1
4	4882.00	10.3 AV	54.0	-43.7	1.00 H	165	8.2	2.1
5	7323.00	51.2 PK	74.0	-22.8	1.03 H	183	43.5	7.7
6	7323.00	20.4 AV	54.0	-33.6	1.03 H	183	12.7	7.7

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.896 ms / 100 ms) = -30.8 dB

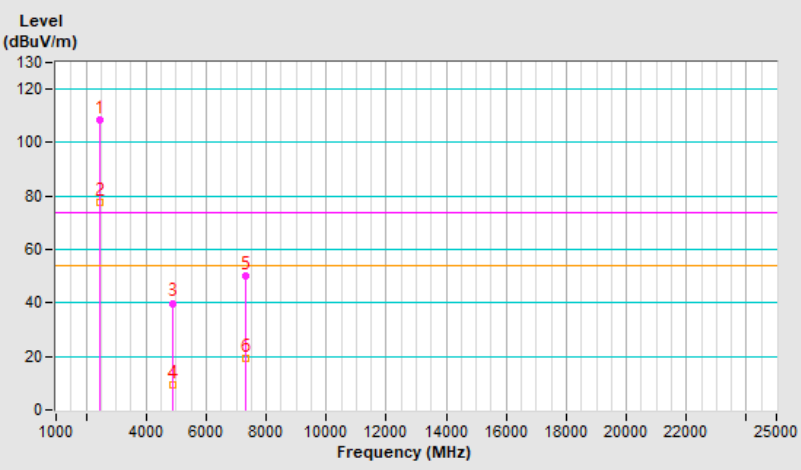


RF Mode	BT 8DPSK	Channel	CH 39：2441 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2441.00	108.6 PK			1.00 V	360	111.3	-2.7
2	*2441.00	77.8 AV			1.00 V	360	80.5	-2.7
3	4882.00	39.9 PK	74.0	-34.1	1.42 V	123	37.8	2.1
4	4882.00	9.1 AV	54.0	-44.9	1.42 V	123	7.0	2.1
5	7323.00	50.1 PK	74.0	-23.9	1.12 V	325	42.4	7.7
6	7323.00	19.3 AV	54.0	-34.7	1.12 V	325	11.6	7.7

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.896 ms / 100 ms) = -30.8 dB

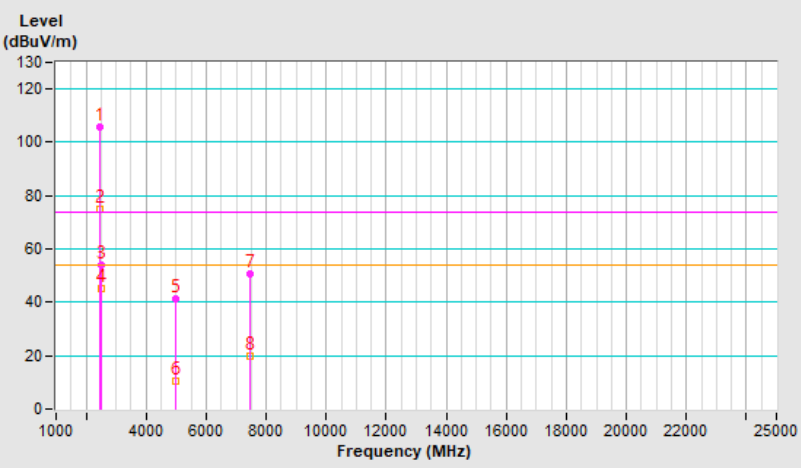


RF Mode	BT 8DPSK	Channel	CH 78：2480 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	105.5 PK			1.01 H	360	108.1	-2.6
2	*2480.00	74.7 AV			1.01 H	360	77.3	-2.6
3	2483.50	54.1 PK	74.0	-19.9	1.01 H	360	56.7	-2.6
4	2483.50	45.0 AV	54.0	-9.0	1.01 H	360	47.6	-2.6
5	4960.00	41.3 PK	74.0	-32.7	1.04 H	180	39.1	2.2
6	4960.00	10.5 AV	54.0	-43.5	1.04 H	180	8.3	2.2
7	7440.00	50.7 PK	74.0	-23.3	1.00 H	167	42.9	7.8
8	7440.00	19.9 AV	54.0	-34.1	1.00 H	167	12.1	7.8

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.896 ms / 100 ms) = -30.8 dB

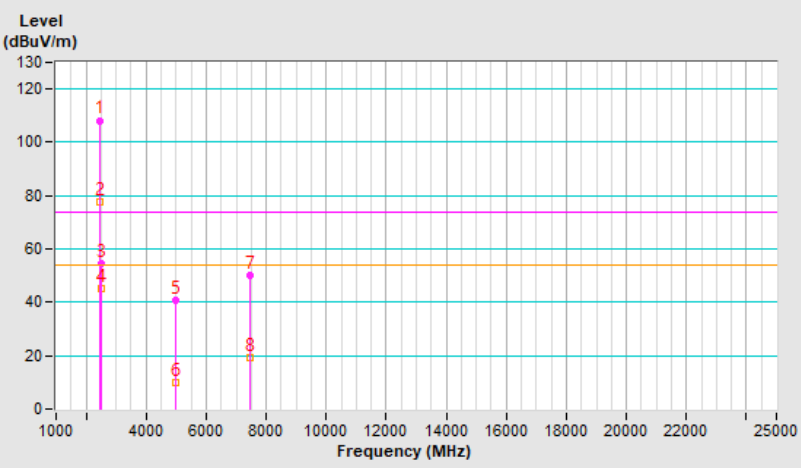


RF Mode	BT 8DPSK	**Channel**	CH 78：2480 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	24°C, 73% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	*2480.00	108.2 PK			1.28 V	360	110.8	-2.6
2	*2480.00	77.4 AV			1.28 V	360	80.0	-2.6
3	2483.50	54.7 PK	74.0	-19.3	1.28 V	360	57.3	-2.6
4	2483.50	44.9 AV	54.0	-9.1	1.28 V	360	47.5	-2.6
5	4960.00	40.5 PK	74.0	-33.5	1.33 V	152	38.3	2.2
6	4960.00	9.7 AV	54.0	-44.3	1.33 V	152	7.5	2.2
7	7440.00	50.3 PK	74.0	-23.7	1.19 V	312	42.5	7.8
8	7440.00	19.5 AV	54.0	-34.5	1.19 V	312	11.7	7.8

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. The average value of fundamental and harmonic frequency is: Average = Peak value + 20 log(Duty cycle) Where the duty cycle correction factor is calculated from following formula:
   20 log(Duty cycle) = 20 log(2.896 ms / 100 ms) = -30.8 dB

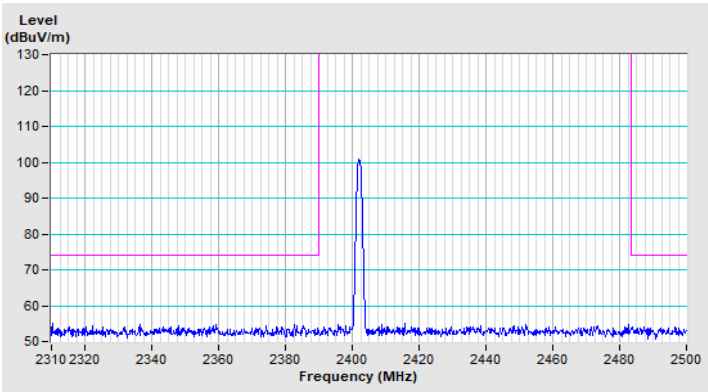


Plot of Band Edge

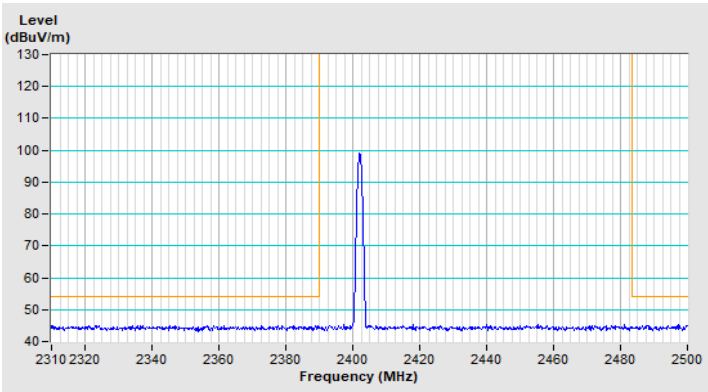
Low Power

Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS

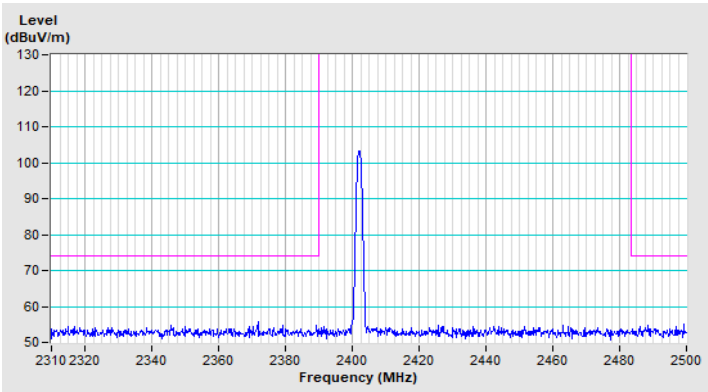
BT GFSK Channel 0



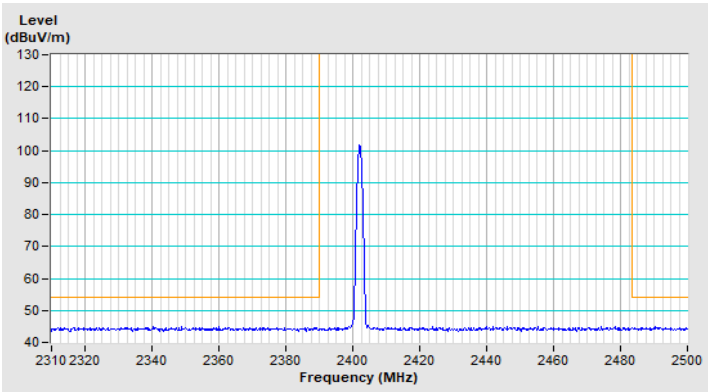
Horizontal (Peak)



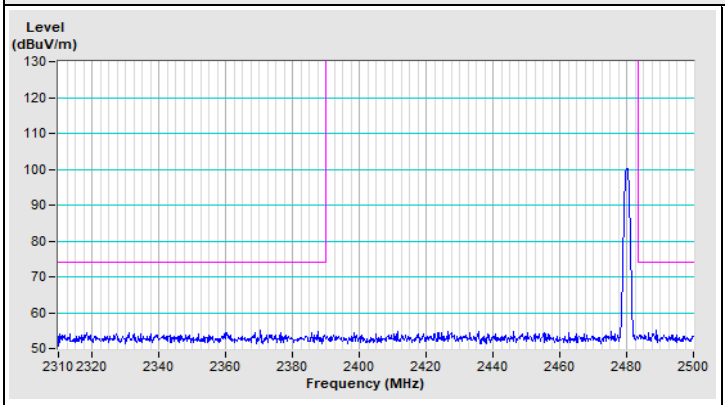
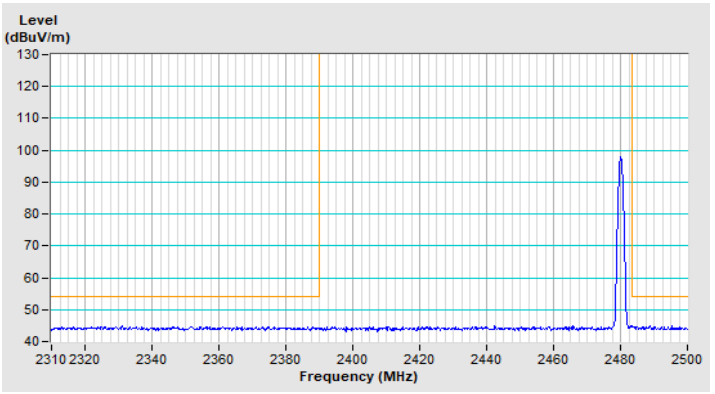
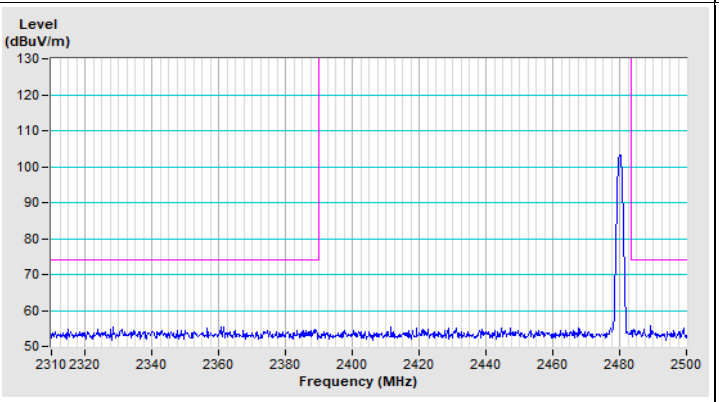
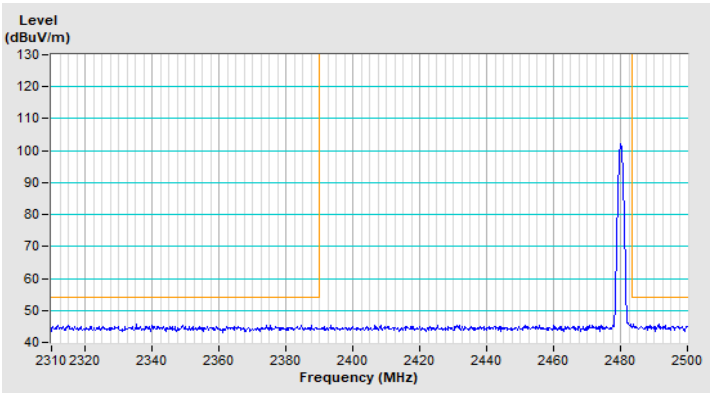
Horizontal (Average)



Vertical (Peak)

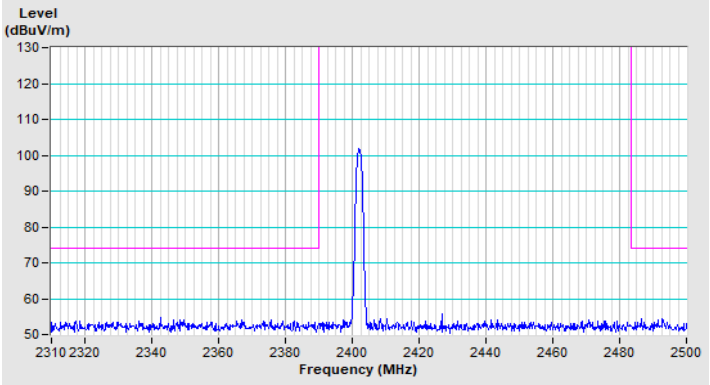


Vertical (Average)

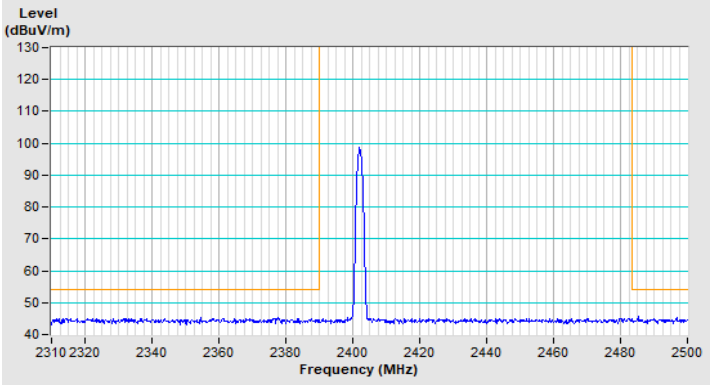
BT GFSK Channel 78	
 Horizontal (Peak)	 Horizontal (Average)
 Vertical (Peak)	 Vertical (Average)

Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS

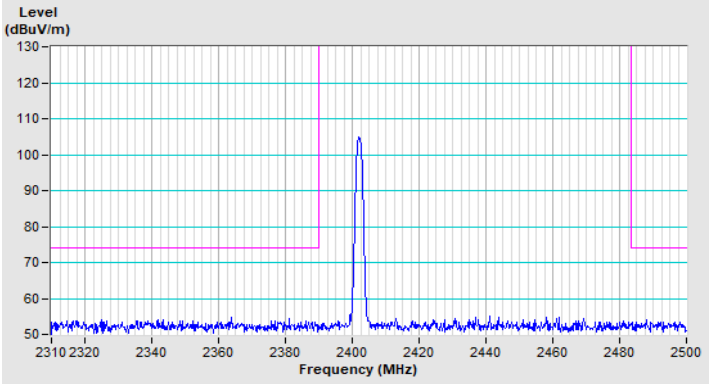
BT 8DPSK Channel 0



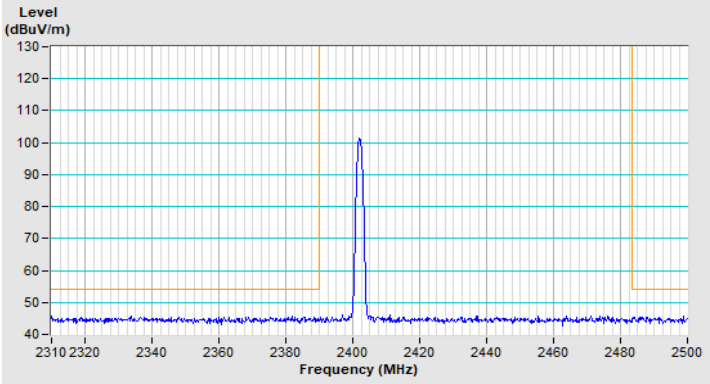
Horizontal (Peak)



Horizontal (Average)

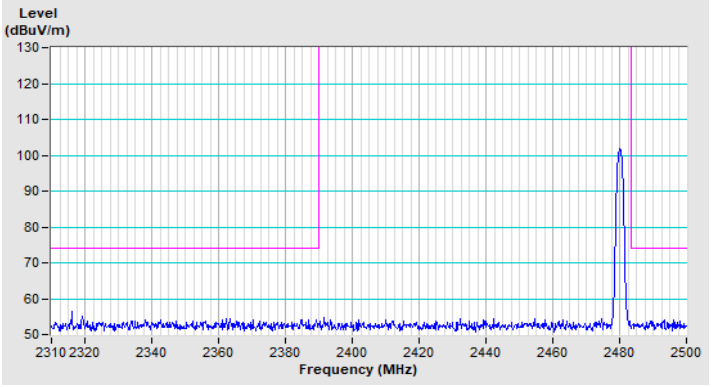


Vertical (Peak)

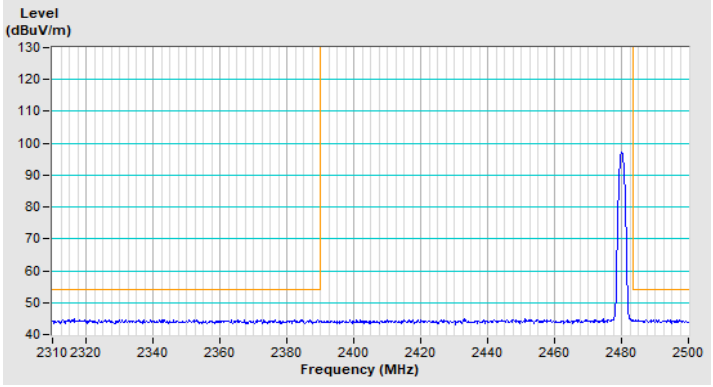


Vertical (Average)

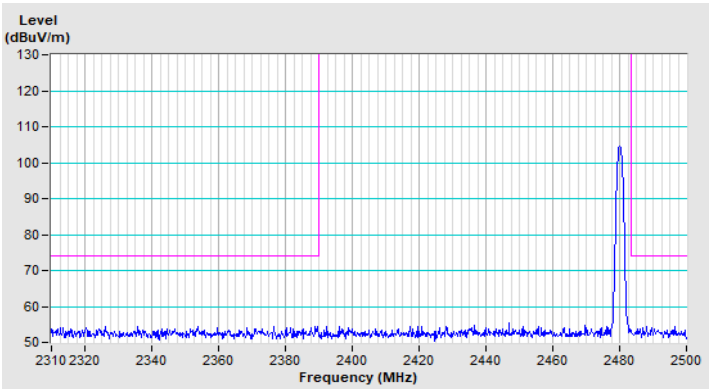
BT 8DPSK Channel 78



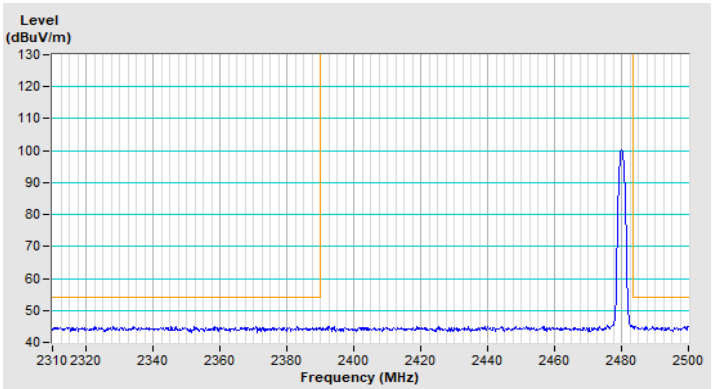
Horizontal (Peak)



Horizontal (Average)



Vertical (Peak)

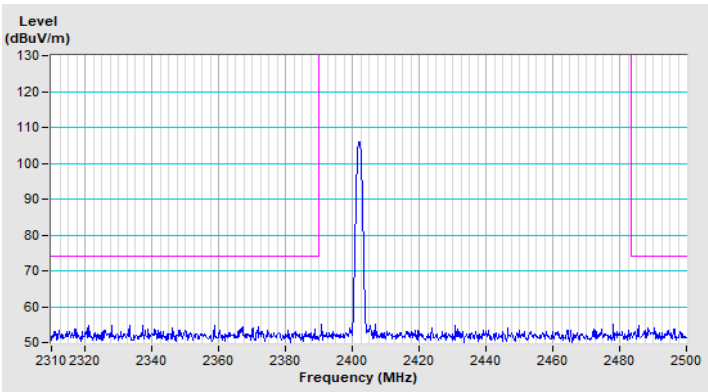


Vertical (Average)

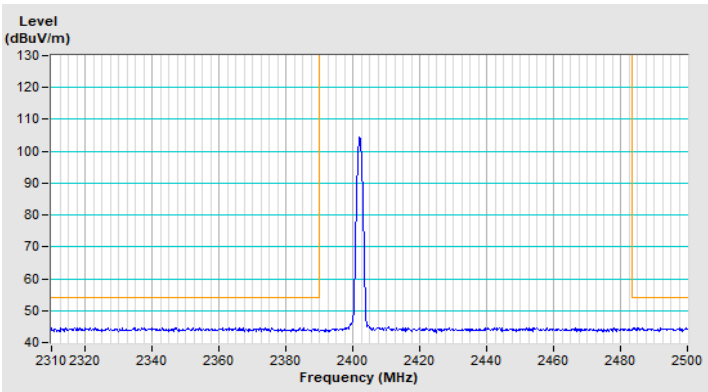
High Power

Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS

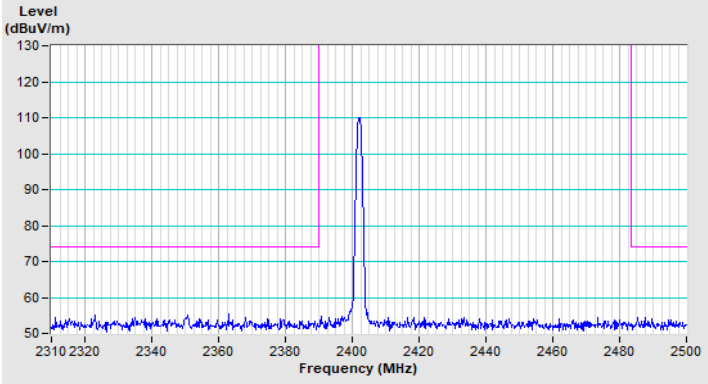
BT GFSK Channel 0



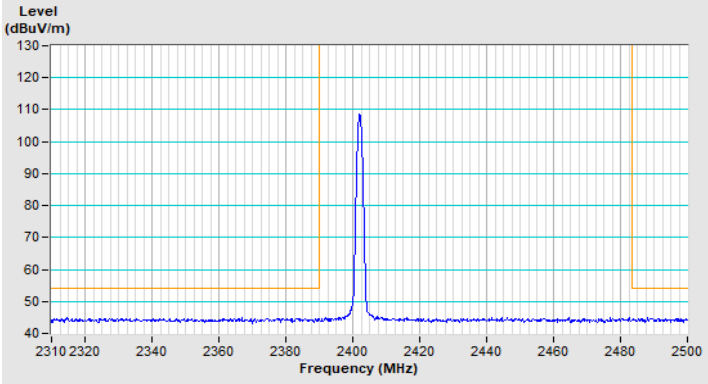
Horizontal (Peak)



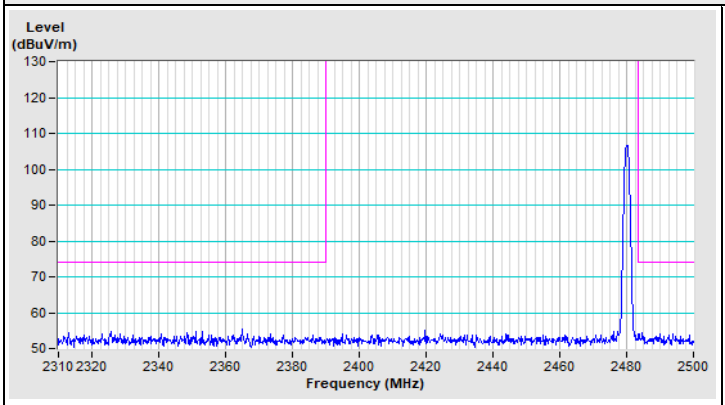
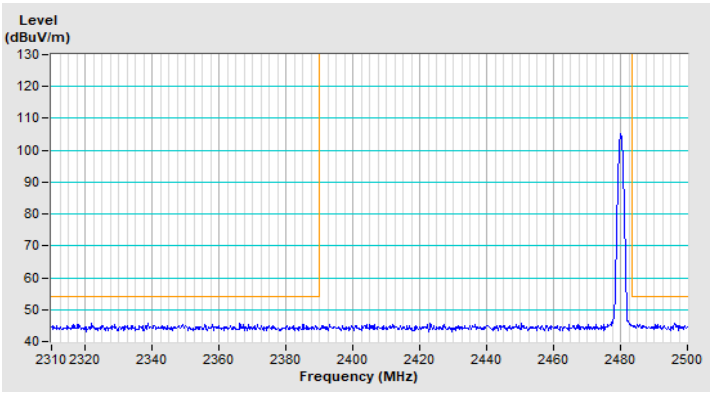
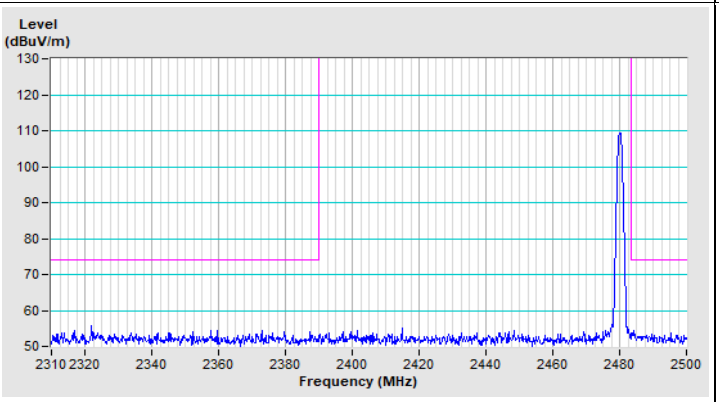
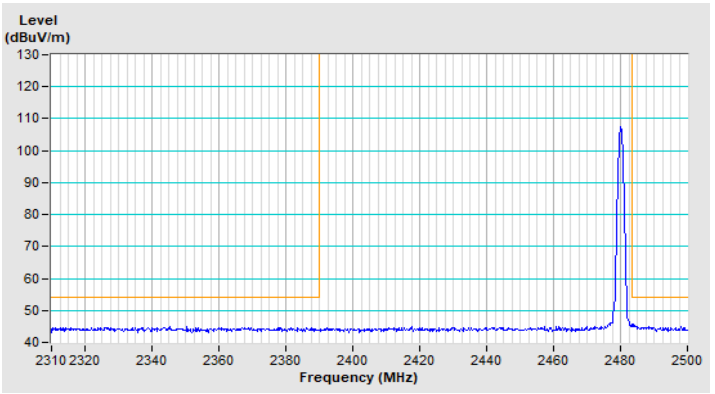
Horizontal (Average)



Vertical (Peak)

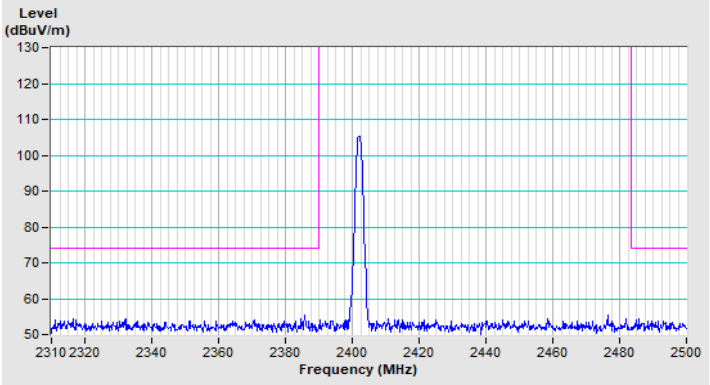


Vertical (Average)

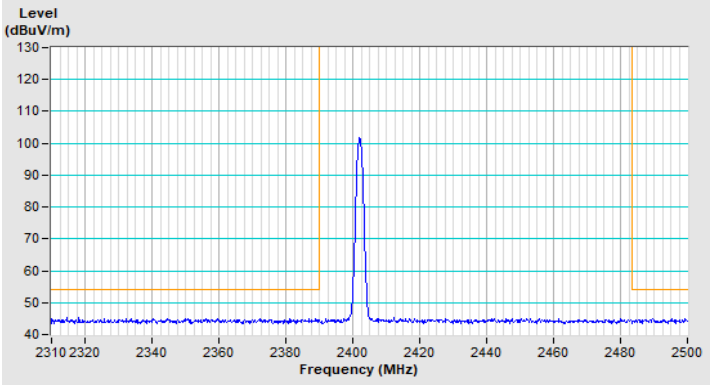
BT GFSK Channel 78	
 Horizontal (Peak)	 Horizontal (Average)
 Vertical (Peak)	 Vertical (Average)

Frequency Range	2.31 GHz ~ 2.5 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS

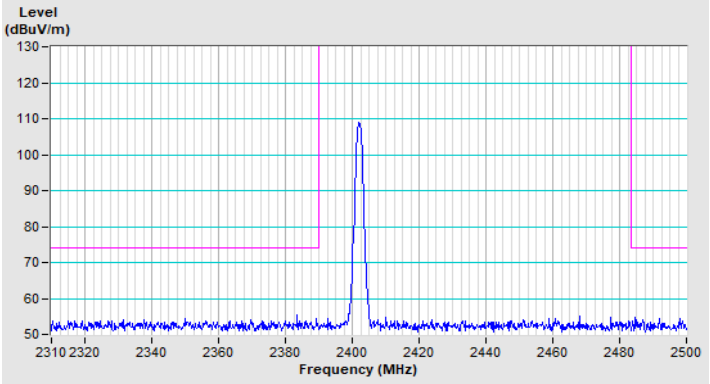
BT 8DPSK Channel 0



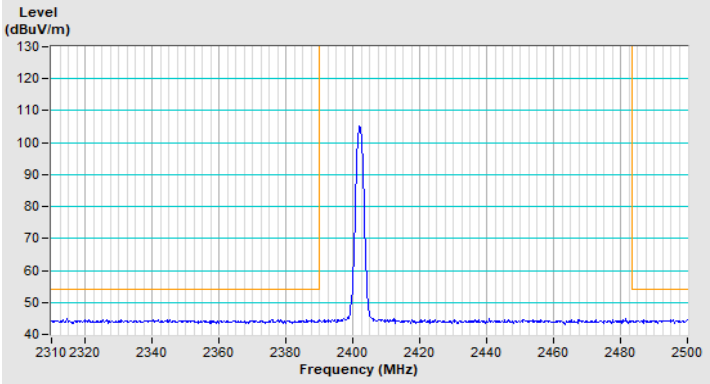
Horizontal (Peak)



Horizontal (Average)

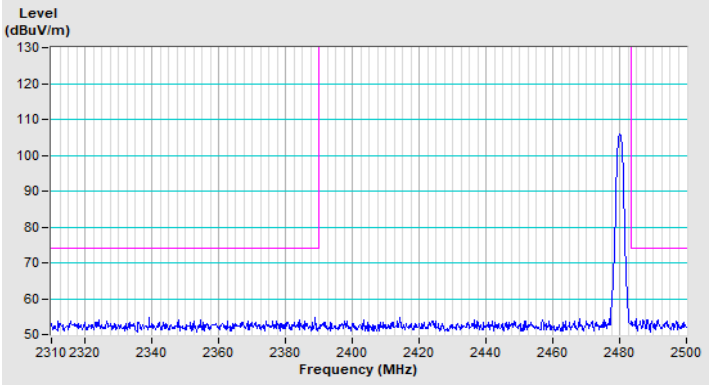


Vertical (Peak)

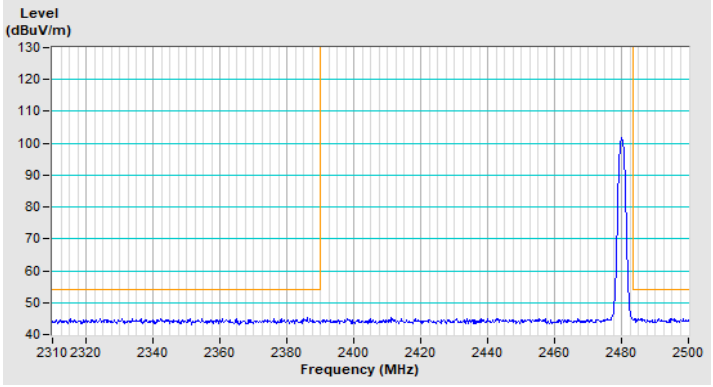


Vertical (Average)

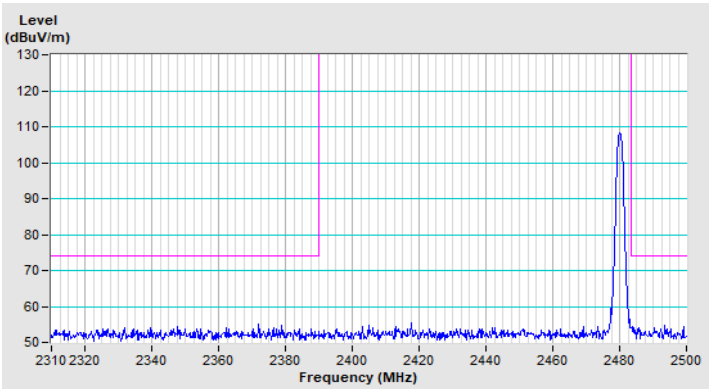
BT 8DPSK Channel 78



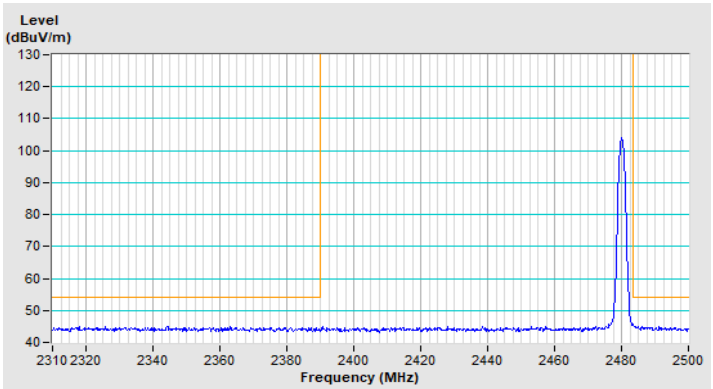
Horizontal (Peak)



Horizontal (Average)



Vertical (Peak)



Vertical (Average)

8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Web Site: http://ee.bureauveritas.com.tw

The address and road map of all our labs can be found in our web site also.

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