Registration
No.788871

TEST REPORT FOR BLUETOOTH TESTING

Report No: SRTC2018-9004(F)-18030601(D)

Product Name: Mobile Phone

Product Model: H1A1000

Applicant: RED Technologies LLC

Manufacturer: RED Technologies LLC

Specification: FCC Part 15, Subpart C (2018)

FCC ID: 2AOYWH1A1000

The State Radio_monitoring_center Testing Center (SRTC)

15th Building, No.30, Shixing Street, Shijingshan District,

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1. GENERAL INFORMATION

1.1 Notes of the test report

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written permission of The State Radio_monitoring_center Testing Center (SRTC).
The test results relate only to individual items of the samples which have been tested.

1.2 Information about the testing laboratory

Company:	The State Radio_monitoring_center Testing Center (SRTC)
Address:	15th Building, No.30 Shixing Street, Shijingshan District, P.R.China
City:	Beijing
Country or Region:	P.R.China
Contacted person:	Liu Jia
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1.3 Applicant's details

Company:	RED Technologies LLC
Address:	34 Parker, Irvine, California, United States
City:	Irvine
Country or Region:	United States
Contacted person:	Doug Kwon
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Fax:	---
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1.4 Manufacturer's details

Company:	RED Technologies LLC
Address:	34 Parker, Irvine, California, United States
City:	Irvine
Country or Region:	United States
Contacted person:	Doug Kwon
Tel:	9492067900 ext 7794
Fax:	---
Email:	Doug.kwon@Red.com

1.5 Test Environment

Date of Receipt of test sample at SRTC:	2018-03-06
Testing Start Date:	2018-04-12
Testing End Date:	2018-05-09

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient	25	30

Normal Supply Voltage (V d.c.):	3.85

2 DESCRIPTION OF THE DEVICE UNDER TEST

2.1 Final Equipment Build Status

Frequency Range	2.402GHz~2.480GHz
Number of Channel	79
Modulation Type	GFSK, π/4DQPSK, 8DPSK
Duplex Mode	TDD
Channel Spacing	1MHz
Data Rate	1Mbps, 2 Mbps, 3 Mbps
Power Supply	Battery/AC adapter
Rated Power Supply Voltage	3.85V
HW Version	EVT2.1
SW Version	HiA1000.005ho.01.00.01d.403
IMEI	355929090014854
Antenna type	Refer to Note
Antenna connector	Refer to Note

Note:

The antenna provide to the EUT, please refer to the following table:

Brand	Model	Antenna gain	Frequency range(GHz)	Antenna type	Connecter Type
N/A	N/A	-1.5dBi	2.402GHz~2.480GHz	PIFA Antenna	N/A
Manufacturers ensure that their designs will not be modified by the user or third parties arbitrary antenna parameters and performance.					

2.2 Description of Test Modes

79 channels are provided to this EUT:

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

2.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE ≥ 1G	RE<1G	PLC	APCM	-
GFSK, π/4DQPSK, 8DPSK	√	√	√	√	-

Where **RE 1G:** Radiated Emission above 1GHz **RE<1G:** Radiated Emission below 1GHz

PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

Radiated Emission Test (Above 1GHz):

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

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

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE	DATA RATE (Mbps)
0 to 78	39	GFSK, π/4DQPSK, 8DPSK	1Mbps, 2 Mbps, 3 Mbps

Radiated Emission Test (Below 1GHz):

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

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

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE	DATA RATE (Mbps)
0 to 78	39	GFSK, π/4DQPSK, 8DPSK	1Mbps, 2 Mbps, 3 Mbps

Power Line Conducted Emission Test:

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

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

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE	DATA RATE (Mbps)
0 to 78	39	GFSK, π/4DQPSK, 8DPSK	1Mbps, 2 Mbps, 3 Mbps

Antenna Port Conducted Measurement:

This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

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

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

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE	DATA RATE (Mbps)
0 to 78	0, 39, 78	GFSK, π/4DQPSK, 8DPSK	1Mbps, 2 Mbps, 3 Mbps

2.3 Duty Cycle of Test Signal

Modulation Type	Duty Cycle
GFSK(DH1)	29.84%
GFSK(DH3)	43.44%
GFSK(DH5)	45.92%
π/4DQPSK(DH1)	30.29%
π/4DQPSK(DH3)	43.52%
π/4DQPSK(DH5)	45.78%
8DPSK(DH1)	30.12%
8DPSK(DH3)	43.53%
8DPSK(DH5)	45.27%

2.4 EUT operating conditions

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

2.5 Support Equipment

The following support equipment was used to exercise the DUT during testing:

Equipment	Charger
Manufacturer	TEN PAO INDUSTRIAL CO., LTD
Model Number	S018CDU1200150
Serial Number	---

Equipment	Battery
Manufacturer	DONGGUAN DRN NEW ENERGY CO.,LTD
Model Number	RED-A2H-4500
Serial Number	---

Equipment	Notebook
Manufacturer	LENOVO
Model Number	ThinkPad E420
Serial Number	---

3 REFERENCE SPECIFICATION

Specification	Version	Title
15.35	2018	Measurement detector functions and bandwidths.
15.209	2018	Radiated emission limits; general requirements.
15.247	2018	Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.
15.203	2018	Antenna requirement
ANSI C63.10	2013	Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

4 KEY TO NOTES AND RESULT CODES

Code	Meaning
PASS	Test result shows that the requirements of the relevant specification have been met.
FAIL	Test result shows that the requirements of the relevant specification have not been met.
N/T	Test case is not tested.
NTC	Nominal voltage, Normal Temperature
HV	High voltage, Normal Temperature
LV	Low voltage, Normal Temperature
HTHV	high voltage, High Temperature
LTHV	High voltage, Low Temperature
HTLV	Low voltage, High Temperature
LTLV	Low voltage, Low Temperature

5 RESULT SUMMARY

No.	Test case	Reference	Verdict
1	Occupied Bandwidth	15.247(a)(1)	Pass
2	Channel Separation	15.247(a)(1)	Pass
3	Output Power	15.247(b)(1)	Pass
4	Dwell Time	15.247(a)(1)(iii)	Pass
5	Number of Hopping Frequencies	15.247(a)(1)(iii)	Pass
6	Conducted out of band emission measurement	15.247(d)	Pass
7	Band-edge	15.247(d)	Pass
8	Spurious Radiated Emissions	15.247(d)/15.35(b)/15.209	Pass
9	AC Power line Conducted Emission	15.207	Pass
10	Antenna requirement	15.203	Pass（refer to section 2.1）

This Test Report Is Issued by: Mr. Peng Zhen	Checked by: Mr. Li Bin
Tested by: Mr. HeDengshun	Issued date: 20180719

6 TEST RESULT

6.1 Occupied Bandwidth

6.1.1 Ambient condition

Temperature	Relative humidity	Pressure
25°C	30%	101.5kPa

6.1.2 Test Description

The bandwidth at 20dB down from the highest in-band spectral density is measured with a spectrum analyzer and Bluetooth test set via a power splitter with a known loss which connected to the transmitter antenna terminal of the EUT while the EUT is operating at maximum power and at the appropriate frequencies. All modes of operation were investigated and the worst case configuration results are reported in this section.

6.1.3 Test limit

FCC Part15.247 (a)

For frequency hopping system operating in the 2400-2483.5MHz, If the 20dB bandwidth of hopping channel is greater than 25kHz, two-thirds 20dB bandwidth of hopping channel shell be a minimum limit for the hopping channel separation.

6.1.4 Test settings

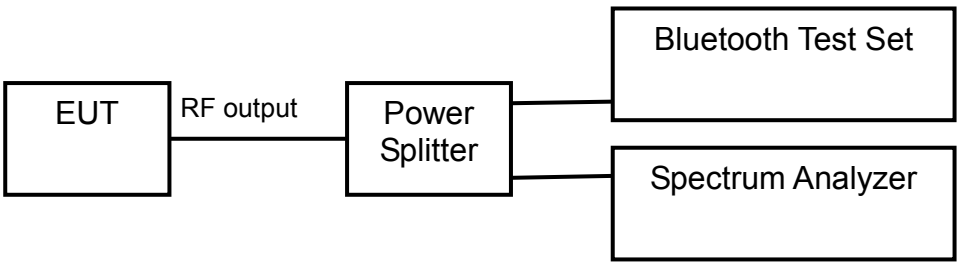
a. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.

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 30dB from the reference level. Record the frequency difference as the emission bandwidth.

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

6.1.5 Test Setup



6.1.6 Test result

The test results are shown in Appendix A .

6.2 Channel Separation

6.2.1 Ambient condition

Temperature	Relative humidity	Pressure
25°C	30%	101.5kPa

6.2.2 Test Description

The Equipment Under Test (EUT) was set up in a shielded room to perform the channel separation measurements. The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss.

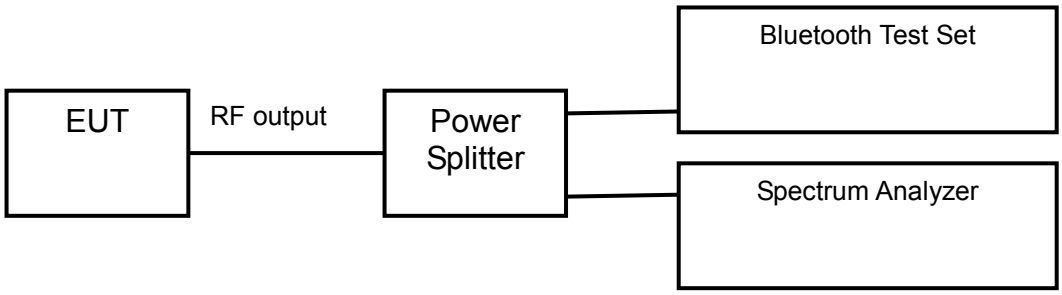
6.2.3 Test limit

FCC Part15.247 (a)(1)
Measurement is made with EUT operating in hopping mode. The minimum permissible channel separation for this system is 2/3 the value of the 20dB BW.

6.2.4 Test Settings

ANSI C63.10-2013 Section 7.8.2
The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:
a) Span: Wide enough to capture the peaks of two adjacent channels.
b) RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.
c) Video (or average) bandwidth (VBW) ≥ RBW.
d) Sweep: Auto.
e) Detector function: Peak.
f) Trace: Max hold.
g) Allow the trace to stabilize.
Use the marker-delta function to determine the separation between the peaks of the adjacent channels. Compliance of an EUT with the appropriate regulatory limit shall be determined. A plot of the data shall be included in the test report.

6.2.5 Test Setup



6.2.6 Test result

The test results are shown in Appendix A .

6.3 Output Power

6.3.1 Ambient condition

Temperature	Relative humidity	Pressure
25°C	30%	101.5kPa

6.3.2 Test Description

Measurement is made while the EUT is operating in non-hopping transmission mode. The powers shown below were measured using a spectrum analyzer with a Bluetooth signalling test set used only to maintain a Bluetooth link with the EUT.

6.3.3 Test limit

FCC Part15.247(b)(1)

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt.

Used conversion factor: Limit (dBm) = 10 log (Limit (W)/1mW) ➔

Modulation type	GFSK	π/4DQPSK	8DPSK
Maximum Output Power	30.0dBm	30.0dBm	30.0dBm

For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

Used conversion factor: Limit (dBm) = 10 log (Limit (W)/1mW) ➔

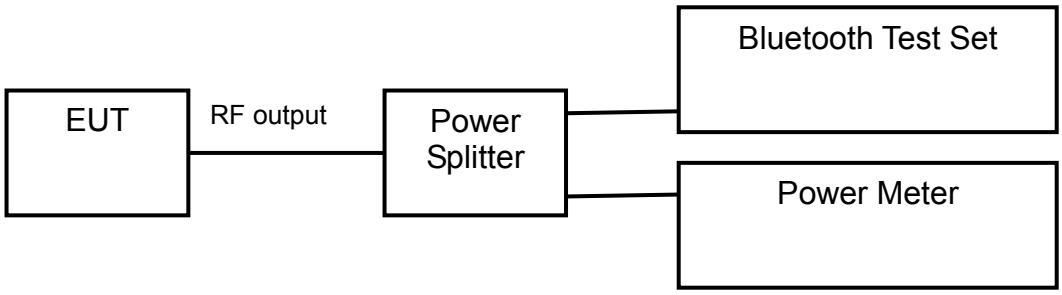
Modulation type	GFSK	π/4DQPSK	8DPSK
Maximum Output Power	21.0dBm	21.0dBm	21.0dBm

6.3.4 Test Settings

ANSI C63.10-2013 Section 7.8.5

The transmitter output is connected to a wideband peak and average power meter.

6.3.5 Test Setup



6.3.6 Test result

The test results are shown in Appendix A .

6.4 Dwell Time

6.4.1 Ambient condition

Temperature	Relative humidity	Pressure
25°C	30%	101.5kPa

6.4.2 Test Description

The Equipment Under Test (EUT) was set up in a shielded room to perform the dwell time measurements.
The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss.
The time slot length is measured of three different packet types which are available in the Bluetooth technology. Those are DH1, DH3 and DH5 packets. The dwell time is calculated by:
Dwell time = time slot length * hop rate * 31.6/ number of hopping channels with:
- hop rate=1600/2 * 1/s for DH1 packets =800
- hop rate=1600/4 * 1/s for DH3 packets =400
- hop rate=1600/6 * 1/s for DH5 packets =266.67
- number of hopping channels=79
- 31.6 s=0.4 seconds multiplied by the number of hopping channels=0.4s * 79

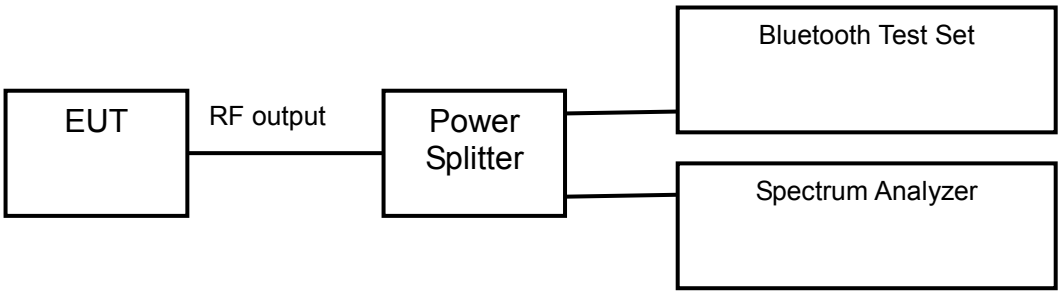
6.4.3 Test limit

FCC Part15.247(a)(1)(iii)
Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. 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.

6.4.4 Test Settings

ANSI C63.10-2013 Section 7.8.4
The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:
a) Span: Zero span, centered on a hopping channel.
b) RBW shall be ≤ channel spacing and where possible RBW should be set >> 1 / T, where T is the expected dwell time per channel.
c) Sweep: As necessary to capture the entire dwell time per hopping channel; where possible use a video trigger and trigger delay so that the transmitted signal starts a little to the right of the start of the plot. The trigger level might need slight adjustment to prevent triggering when the system hops on an adjacent channel; a second plot might be needed with a longer sweep time to show two successive hops on a channel.
d) Detector function: Peak.
e) Trace: Max hold.
Use the marker-delta function to determine the transmit time per hop. If this value varies with different modes of operation (data rate, modulation format, number of hopping channels, etc.), then repeat this test for each variation in transmit time.

6.4.5 Test Setup



6.4.6 Test result

The test results are shown in Appendix A .

6.5 Number of Hopping Frequencies

6.5.1 Ambient condition

Temperature	Relative humidity	Pressure
25°C	30%	101.5kPa

6.5.2 Test Description

The Equipment Under Test (EUT) was set up in a shielded room to perform the number of hopping frequencies measurement. The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss.

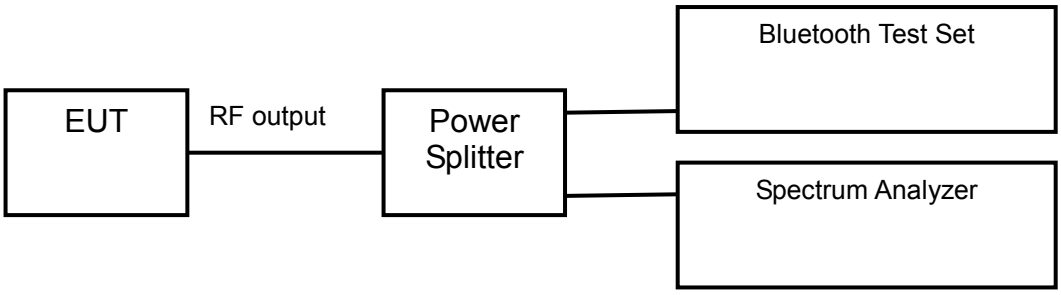
6.5.3 Test limit

FCC Part15.247(a)(1)(iii)
Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

6.5.4 Test Settings

ANSI C63.10-2013 Section 7.8.3
The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:
a) Span: The frequency band of operation. Depending on the number of channels the device supports, it may be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen.
b) RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.
c) VBW ≥ RBW.
d) Sweep: Auto.
e) Detector function: Peak.
f) Trace: Max hold.
g) Allow the trace to stabilize.

6.5.5 Test Setup



6.5.6 Test result

The test results are shown in Appendix A.

6.6 Conducted out of band emission measurement

6.6.1 Ambient condition

Temperature	Relative humidity	Pressure
25°C	30%	101.5kPa

6.6.2 Test Description

The Equipment Under Test (EUT) was set up in a shielded room to perform the spurious emissions measurements. The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss.

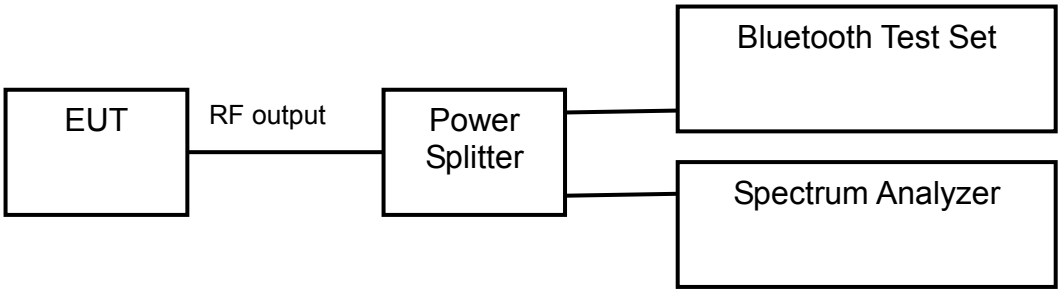
6.6.3 Test limit

FCC Part15.247(d)
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

6.6.4 Test Settings

ANSI C63.10-2013 Section 7.8.8
Connect the primary antenna port through an attenuator to the spectrum analyzer input; in the results, account for all losses between the unlicensed wireless device output and the spectrum analyzer. The instrument shall span 30 MHz to 10 times the operating frequency in GHz, with a resolution bandwidth of 100 kHz, video bandwidth of 300 kHz, and a coupled sweep time with a peak detector. The band 30 MHz to the highest frequency may be split into smaller spans, as long as the entire spectrum is covered.

6.6.5 Test Setup



6.6.6 Test result

The test results are shown in Appendix A .

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

6.7 Band-edge measurement

6.7.1 Ambient condition

Temperature	Relative humidity	Pressure
25°C	30%	101.5kPa

6.7.2 Test Description

The Equipment Under Test (EUT) was set up in a shielded room to perform the spurious emissions measurements. The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss.

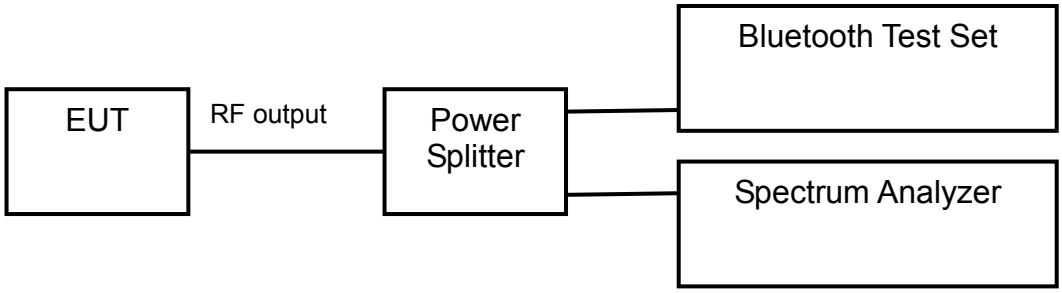
6.7.3 Test limit

FCC Part15.247(d)
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

6.7.4 Test Settings

ANSI C63.10-2013 Section 6.10.4

6.7.5 Test Setup



6.7.6 Test result

The test results are shown in Appendix A .

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

6.8 Spurious Radiated Emissions

6.8.1 Ambient condition

Temperature	Relative humidity	Pressure
25°C	30%	101.5kPa

6.8.2 Test Description

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at maximum power and at the appropriate frequencies. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section. The measurements shall be repeated with orthogonal polarization of the test antenna. The results shall be showed the worst case of the three orthogonal axes of EUT.

6.8.3 Test limit

Part15.205, 15.209, 15.247(d)

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in below Table per Section 15.209.

Frequency [MHz]	Field strength [μV/m]	Measured 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

Radiated Limits

Part15.35(b):

there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit

Used conversion factor: Limit (dBμV/m) = 20 log (Limit (μV/m)/1μV/m)

Frequency [MHz]	Detector	Unit (dBμV/m)
30～88	Quasi-peak	40.0
88～216	Quasi-peak	43.5
216～960	Quasi-peak	46.0
960～1000	Quasi-peak	54.0
1000～5th harmonic of the highest frequency or 40GHz, whichever is lower	Average	54.0
	Peak	74.0

Conversion Radiated limits

6.8.4 Test Procedure Used

ANSI C63.10-2013 Section 6.3&6.5&6.6
The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. 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. Both X and Y axes 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.

NOTE:
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The 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.
f. The test-receiver system was set to peak and average detect 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.

For the radiated emission test above 1GHz:

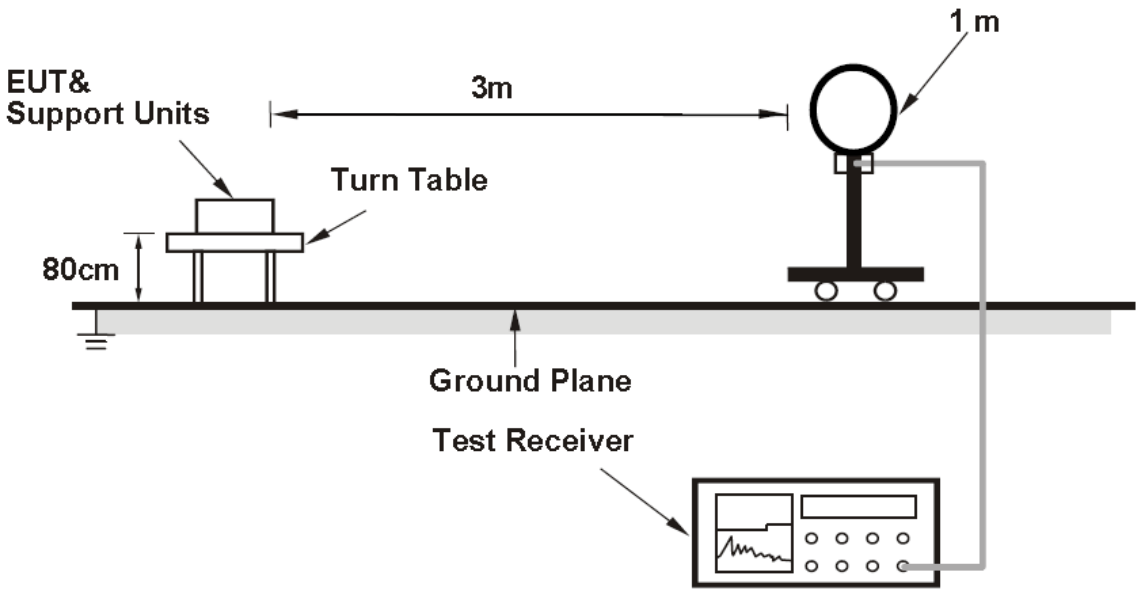
Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which

maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

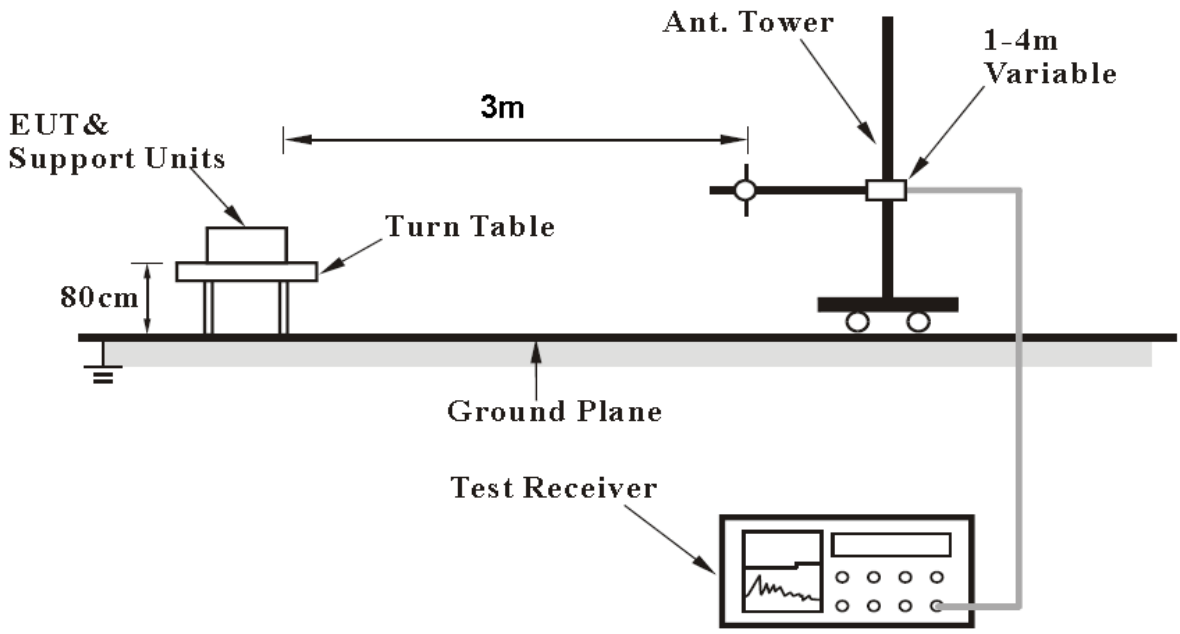
NOTE:
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Average detection (AV) at frequency above 1GHz. If duty cycle of test signal is < 98%, the duty factor need added to measured value.
4. All modes of operation were investigated and the worst-case emissions are reported.

6.8.5 Test Setup

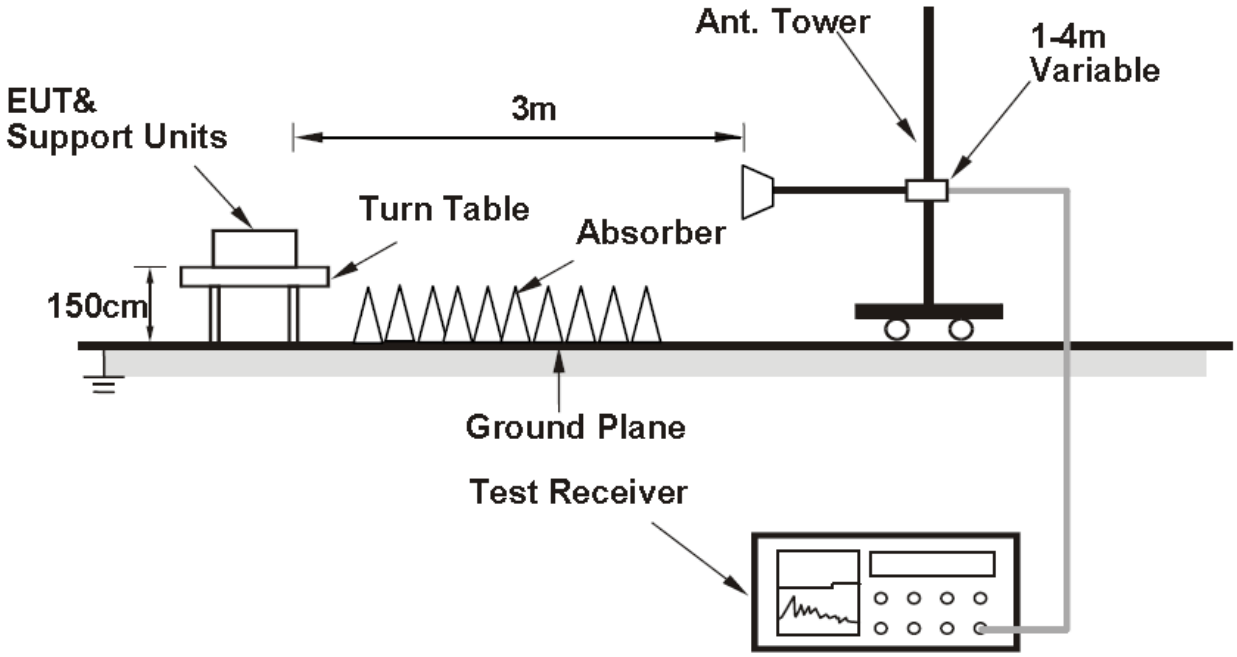
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



6.8.6 Test result

The test results are shown in Appendix B.

6.9 AC Power line Conducted Emission

6.9.1 Ambient condition

Temperature	Relative humidity	Pressure
25°C	30%	101.5kPa

6.9.2 Test limit

FCC Part15.207

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

The measurement is made according to ANSI C63.10-2013

6.9.3 Test Procedures

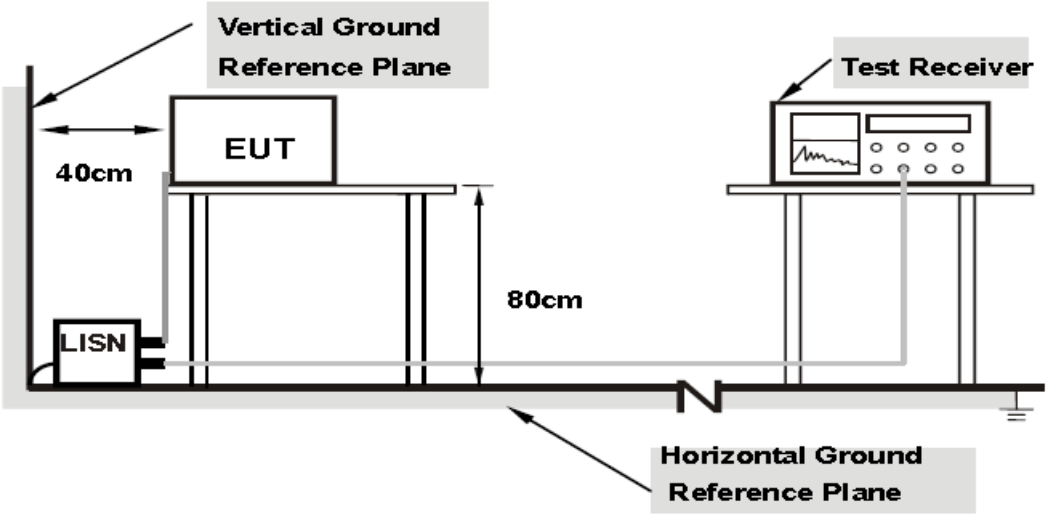
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

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

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

NOTE: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.
The EUT shall test under the power AC120V/60Hz.

6.9.4 Test Setup



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

6.9.5 Test result

The test results are shown in AppendixB .

7 MEASUREMENT UNCERTAINTIES

Items	Uncertainty	
Occupied Bandwidth	3kHz	
Peak power output	0.67dB	
Band edge compliance	1.20dB	
Spurious emissions	30MHz～1GHz	2.83dB
	1GHz～12.75GHz	2.50dB
	12.75GHz～25GHz	2.75dB

8 TEST EQUIPMENTS

No.	Name/ Model	Manufacturer	S/N	Cal date	Cal Due date
1.	Spectrum Analyzer FSV	ROHDE&SCHWARZ	101065	2017.08.20	2018.08.19
2.	Bluetooth Test Set MT8852B	Anritsu	1142010	2018.03.01	2019.02.28
3.	Power Meter E4416A	Agilent	MY52370013	2018.03.01	2019.02.28
4.	Power Sensor E9327A	Agilent	MY52420006	2018.03.01	2019.02.28
5.	12.65m×8.03m×7.50m Fully-Anechoic Chamber	FRANKONIA	-----	-----	-----
6.	23.18m×16.88m×9.60m Semi-Anechoic Chamber	FRANKONIA	---	-----	-----
7.	Turn table Diameter:1m	HD	-----	-----	-----
8.	Turn table Diameter:5m	HD	-----	-----	-----
9.	Antenna master FAC(MA4.0)	MATURO	-----	-----	-----
10.	Antenna master SAC(MA4.0)	MATURO	-----	-----	-----
11.	9.080m×5.255m×3.525m Shielding room	FRANKONIA	-----	-----	-----
12.	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100030	2017.08.20	2018.08.19
13.	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100029	2017.08.20	2018.08.19
14.	HL562 Ultra log antenna	R&S	100016	2017.08.20	2018.08.19
15.	3160-09 Receive antenna	SCHWARZ-BECK	002058-002	2017.08.20	2018.08.19
16.	ESI 40 EMI test receiver	R&S	100015	2017.08.20	2018.08.19
17.	ESCS30 EMI test receiver	R&S	100029	2017.08.20	2018.08.19
18.	HL562 Receive antenna	R&S	100167	2017.08.20	2018.08.19
19.	ESH3-Z5 LISN	R&S	100020	2017.08.20	2018.08.19

APPENDIX A – TEST DATA OF CONDUCTED EMISSION

Please refer to the attachment.

APPENDIX B – TEST DATA OF RADIATED EMISSION

Please refer to the attachment.

APPENDIX A – TEST DATA OF CONDUCTED EMISSION

20dB Bandwidth

Offset 6.5dB = Attenuator 6dB+ Temporary antenna connector loss 0.2dB+ Cable loss 0.3dB

Modulation type: GFSK

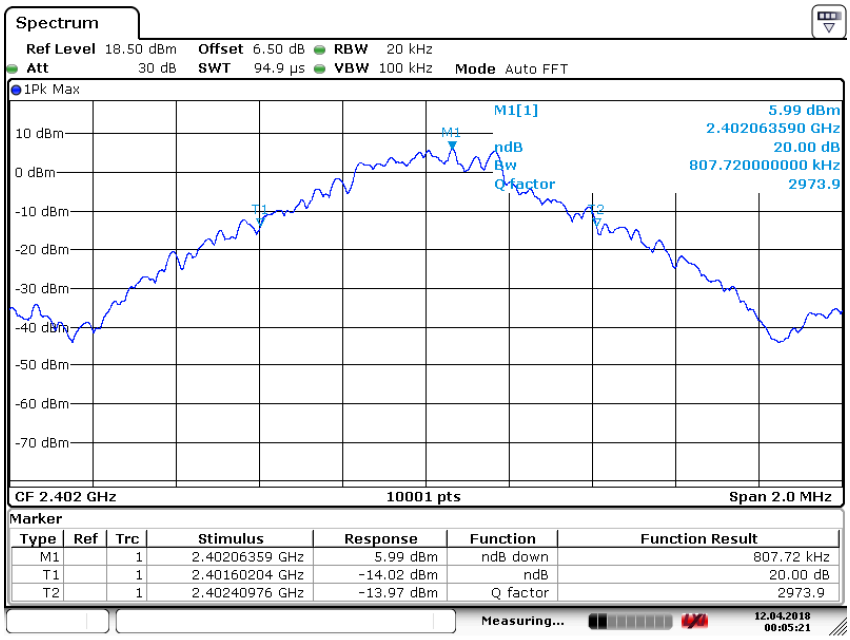
Carrier frequency (MHz)	Channel No.	20 dB bandwidth(kHz)
2402	0	807.72
2441	39	807.12
2480	78	807.92

Modulation type: π/4DQPSK

Carrier frequency (MHz)	Channel No.	20 dB bandwidth(kHz)
2402	0	1236.28
2441	39	1236.48
2480	78	1237.48

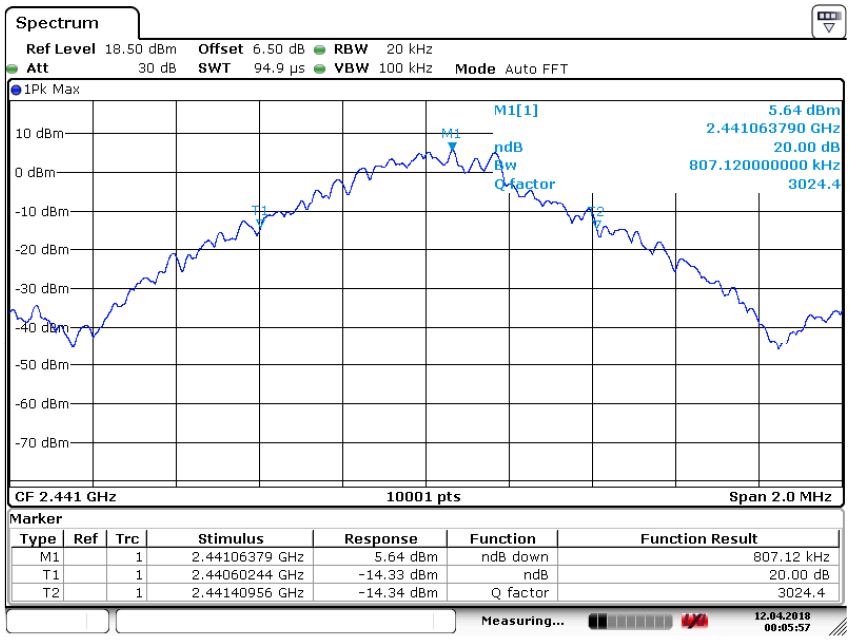
Modulation type: 8DPSK

Carrier frequency (MHz)	Channel No.	20 dB bandwidth(kHz)
2402	0	1269.07
2441	39	1268.07
2480	78	1269.47



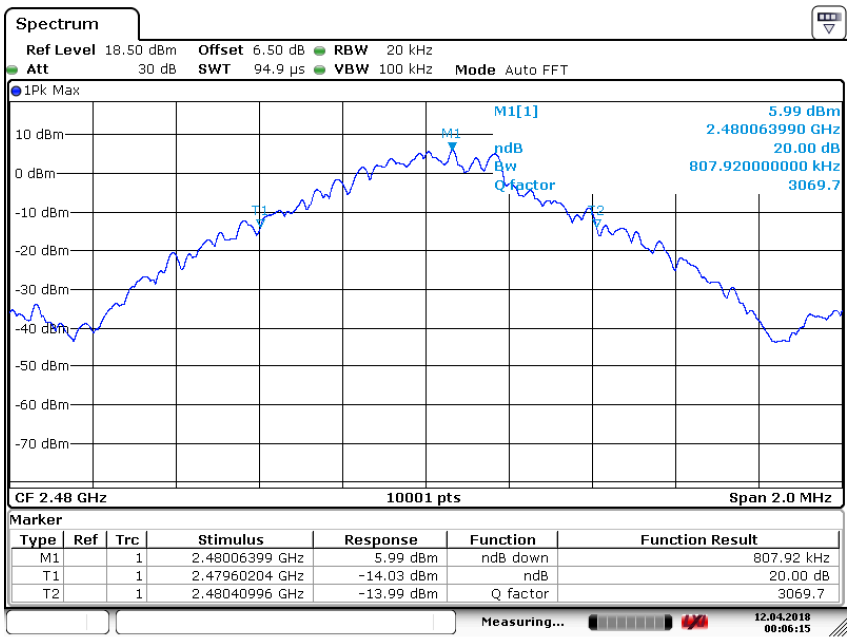
Date: 12.APR.2018 00:05:21

Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: GFSK



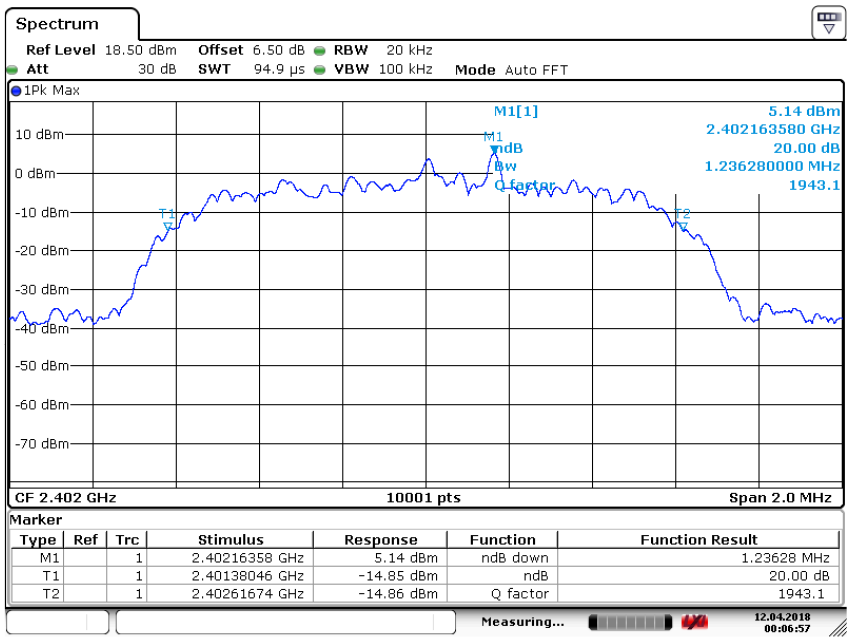
Date: 12.APR.2018 00:05:57

Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: GFSK



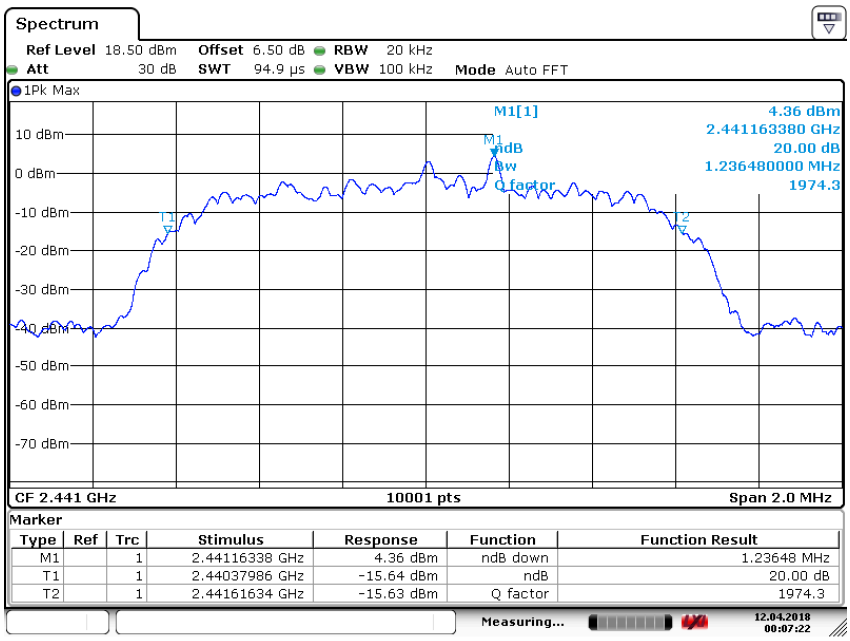
Date: 12.APR.2018 00:06:16

Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: GFSK



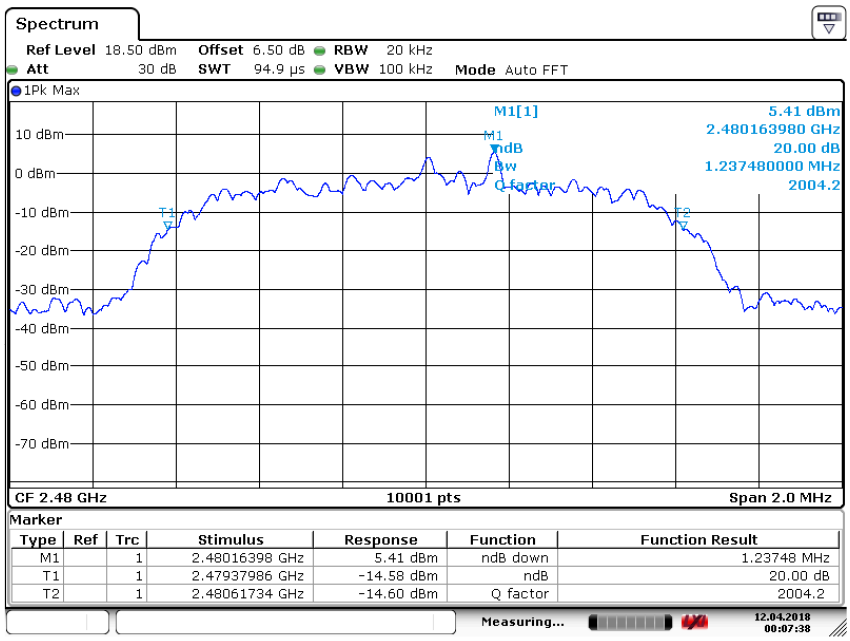
Date: 12.APR.2018 00:06:57

Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: π/4DQPSK



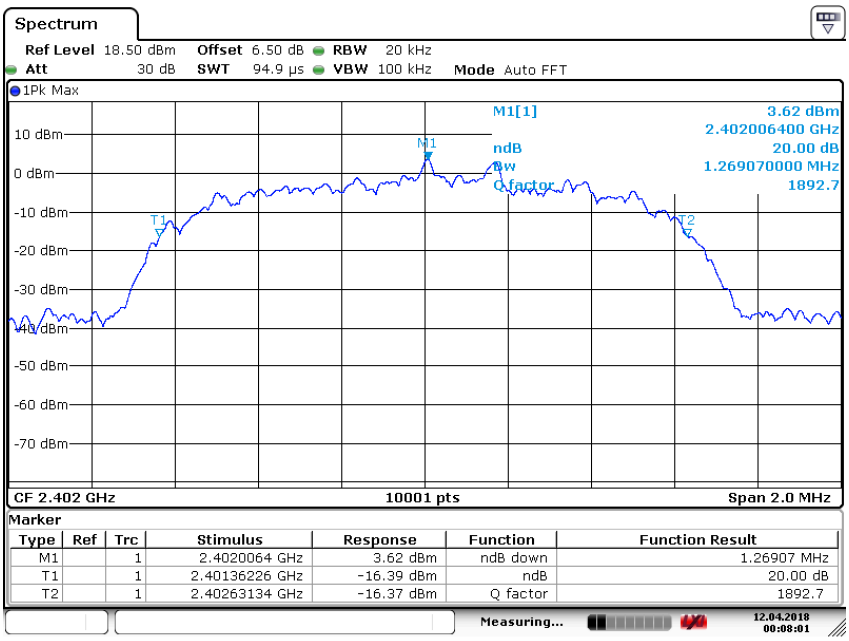
Date: 12.APR.2018 00:07:22

Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: π/4DQPSK



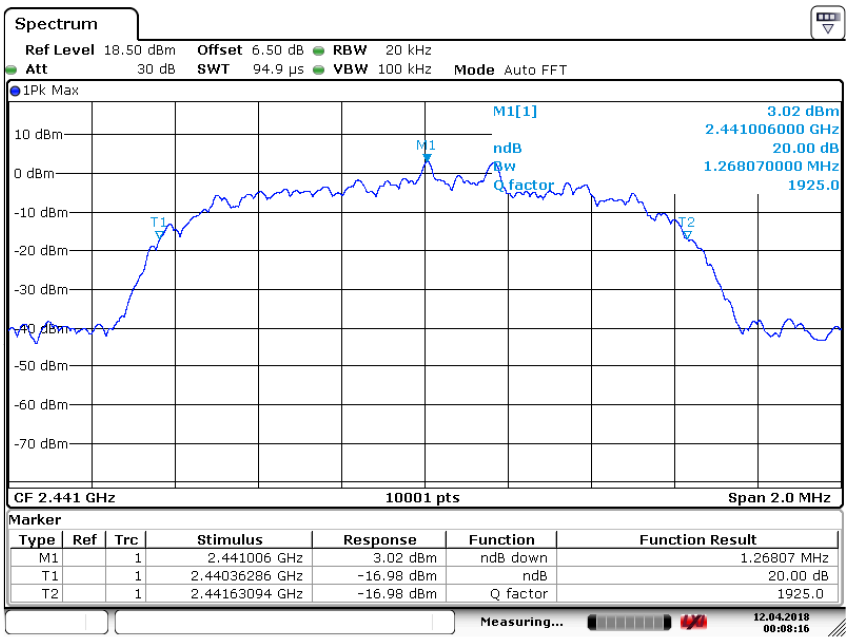
Date: 12.APR.2018 00:07:38

Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: π/4DQPSK



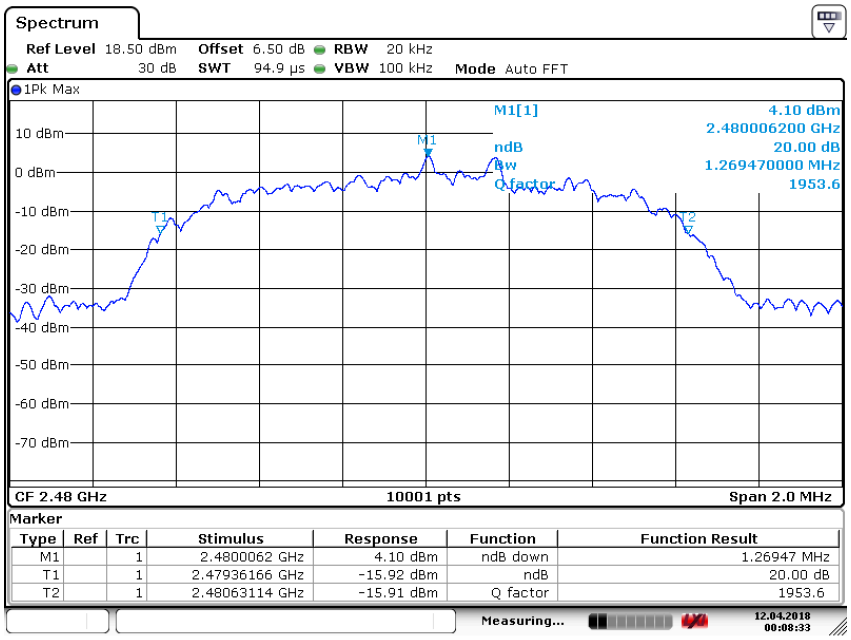
Date: 12.APR.2018 00:08:01

Carrier frequency (MHz): 2402
Channel No.:0
Modulation type: 8DPSK



Date: 12.APR.2018 00:08:16

Carrier frequency (MHz): 2441
Channel No.:39
Modulation type: 8DPSK



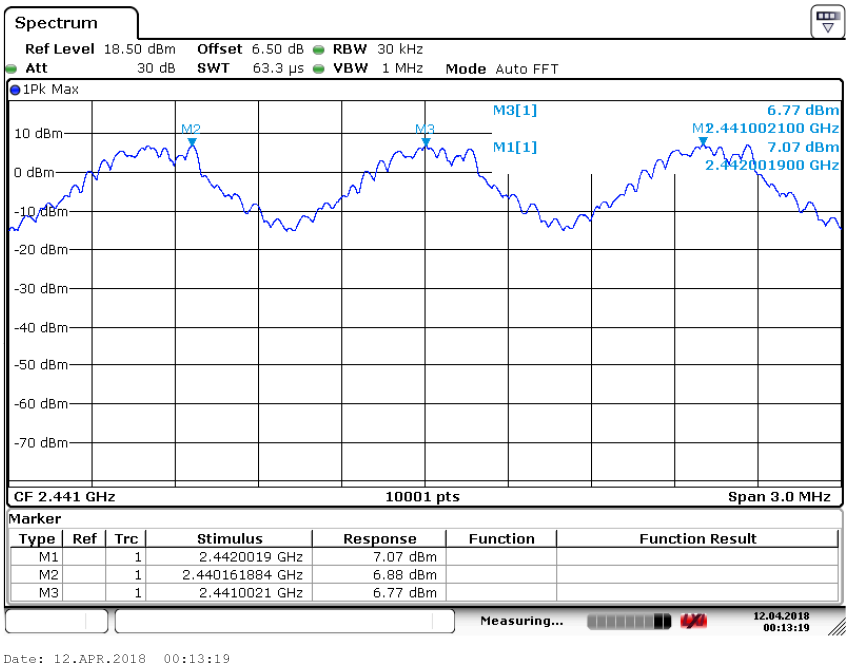
Date: 12.APR.2018 00:08:33

Carrier frequency (MHz): 2480
Channel No.:78
Modulation type: 8DPSK

Channel Separation

Offset 6.5dB = Attenuator 6dB+ Temporary antenna connector loss 0.2dB+ Cable loss 0.3dB

Op-mode	Channel separation MHz
Hopping mode	1



Op-mode: Hopping mode

Peak Power Output

Offset 6.5dB = Attenuator 6dB+ Temporary antenna connector loss 0.2dB+ Cable loss 0.3dB

Modulation type	Average Power Output (dBm)		
	2402MHz (Ch0)	2441MHz (Ch39)	2480MHz (Ch78)
GFSK	7.48	7.19	7.50
π/4DQPSK	4.97	4.87	5.28
8DPSK	4.82	4.25	5.32

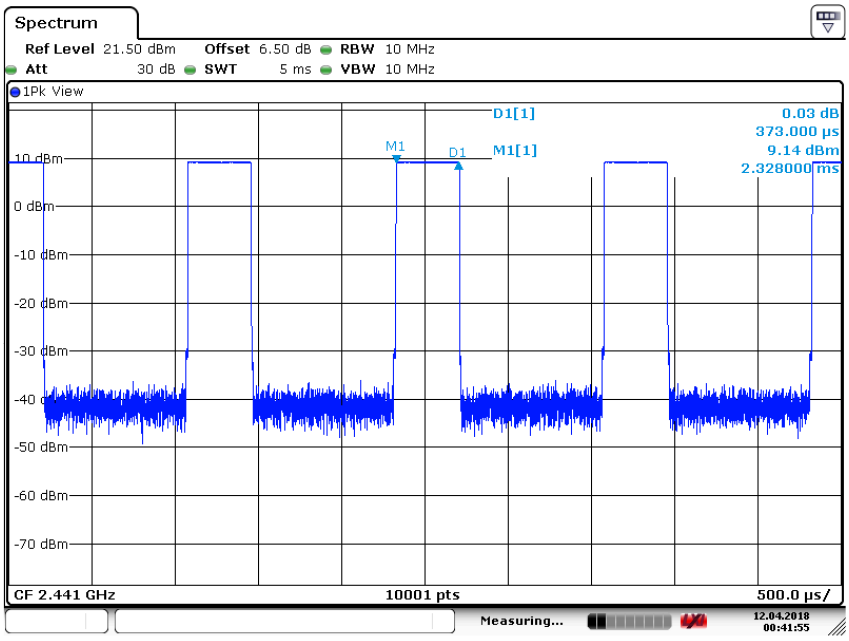
Modulation type	Peak Power Output (dBm)		
	2402MHz (Ch0)	2441MHz (Ch39)	2480MHz (Ch78)
GFSK	10.67	10.38	10.63
π/4DQPSK	10.16	9.80	10.31
8DPSK	10.20	10.05	10.48

Dwell Time

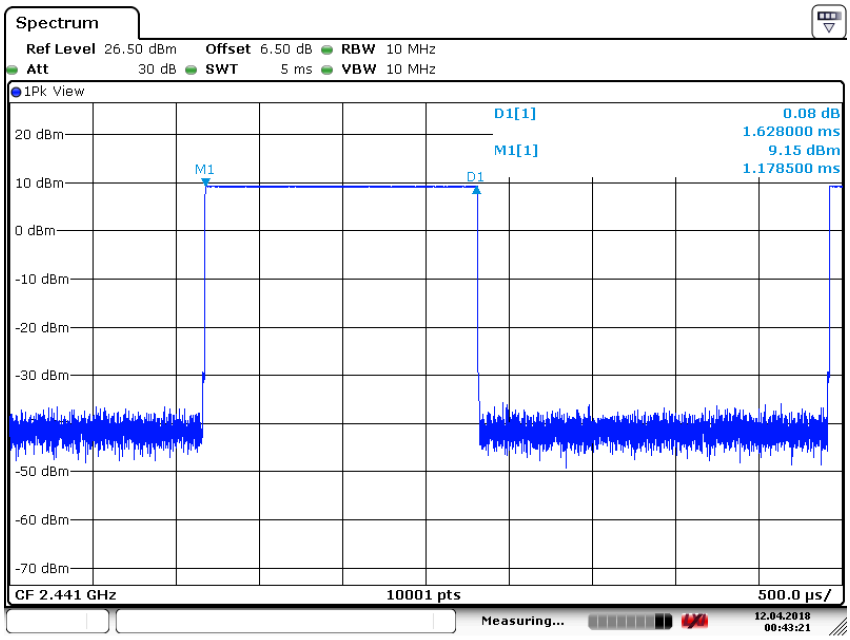
Offset 6.5dB = Attenuator 6dB+ Temporary antenna connector loss 0.2dB+ Cable loss 0.3dB

Modulation type: GFSK

Packet type	Time slot length μs	Dwell time	Dwell time ms
DH1	373	time slot length * 31.6 *1600/2 /79	119
DH3	1628	time slot length * 31.6 *1600/4 /79	260
DH5	2872	time slot length * 31.6 *1600/6 /79	306

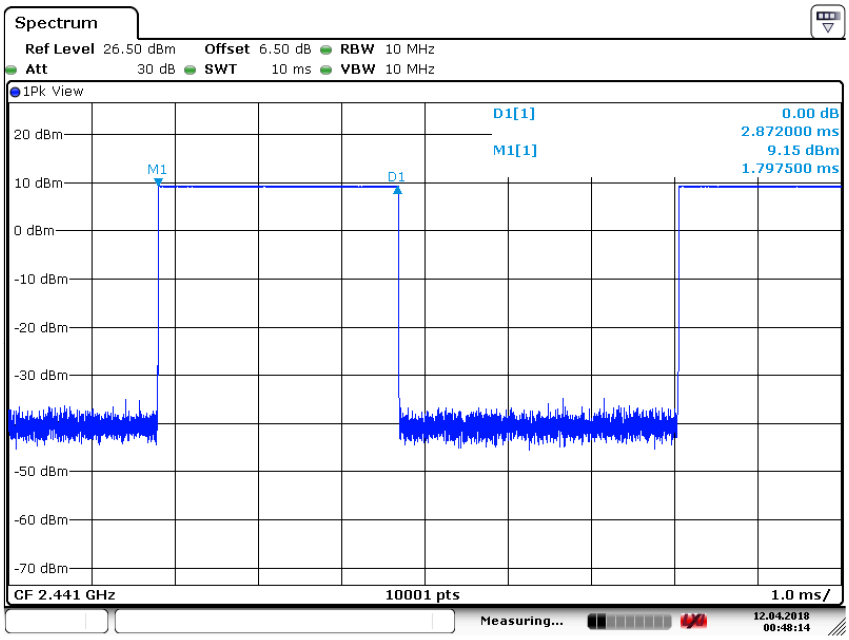


Carrier frequency (MHz): 2441
Packet type: DH1
Modulation type: GFSK



Date: 12.APR.2018 00:43:21

Carrier frequency (MHz): 2441
Packet type: DH3
Modulation type: GFSK

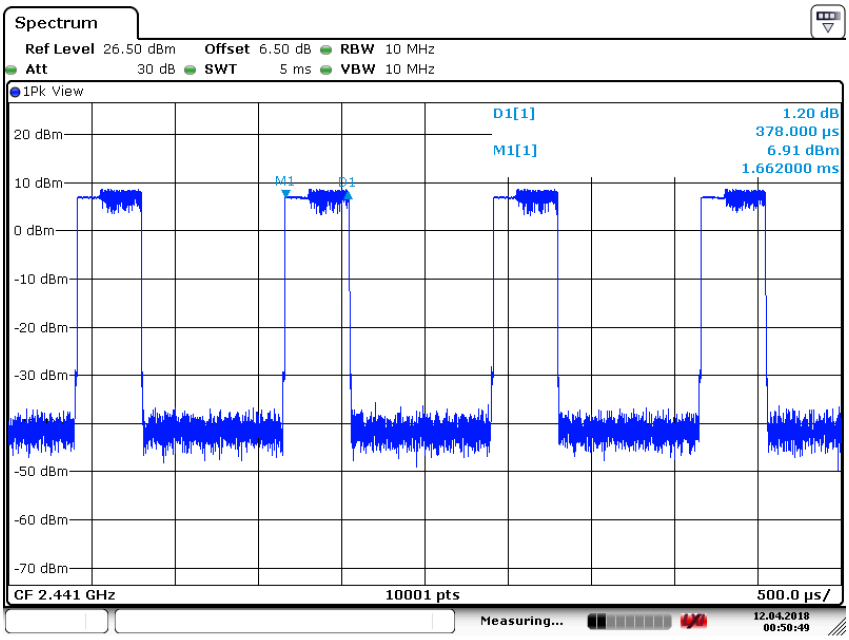


Date: 12.APR.2018 00:48:14

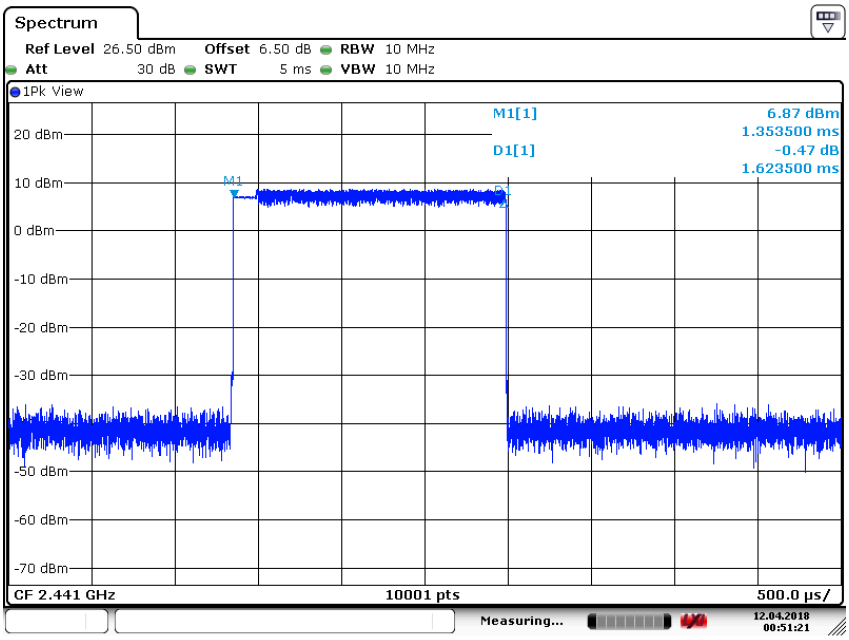
Carrier frequency (MHz): 2441
Packet type: DH5
Modulation type: GFSK

Modulation type: π/4DQPSK

Packet type	Time slot length μs	Dwell time	Dwell time ms
DH1	378	time slot length * 31.6 *1600/2 /79	121
DH3	1624	time slot length * 31.6 *1600/4 /79	260
DH5	2871	time slot length * 31.6 *1600/6 /79	306

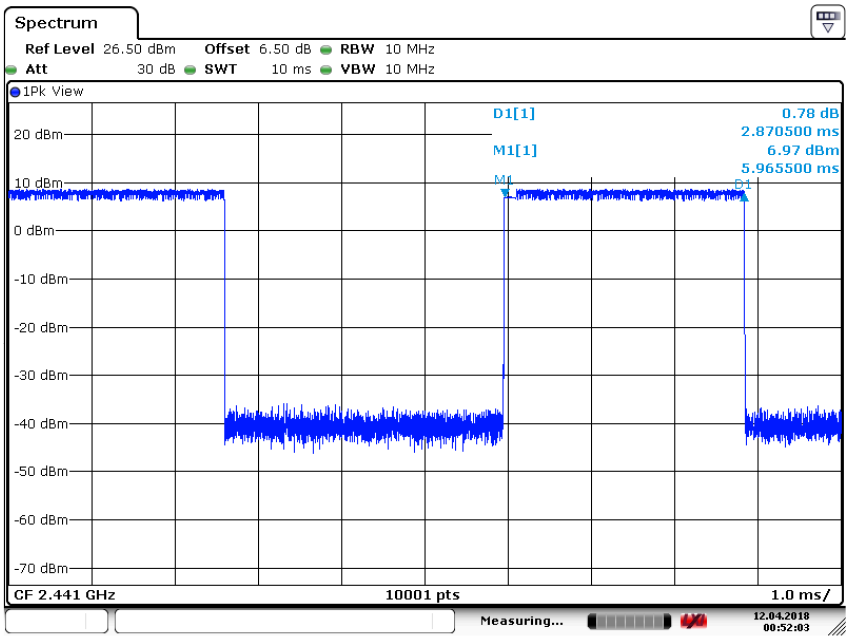


Carrier frequency (MHz): 2441
Packet type: DH1
Modulation type: π/4DQPSK



Date: 12.APR.2018 00:51:21

Carrier frequency (MHz): 2441
Packet type: DH3
Modulation type: π/4DQPSK

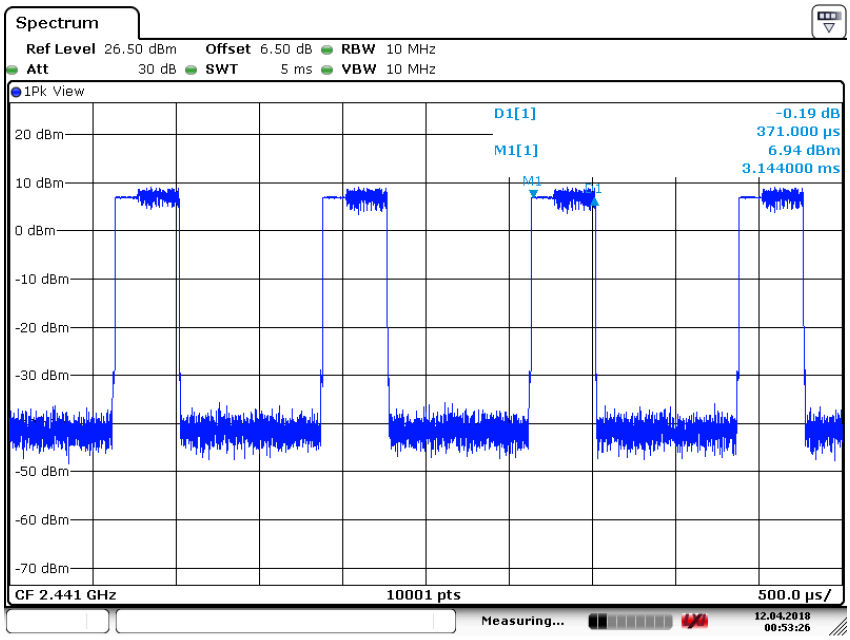


Date: 12.APR.2018 00:52:03

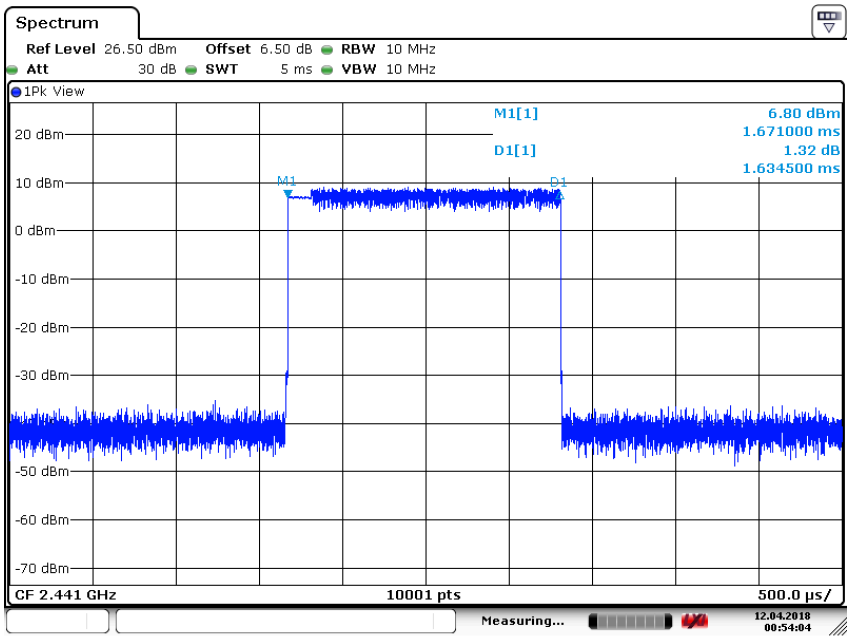
Carrier frequency (MHz): 2441
Packet type: DH5
Modulation type: π/4DQPSK

Modulation type: 8DPSK

Packet type	Time slot length μs	Dwell time	Dwell time ms
DH1	371	time slot length * 31.6 *1600/2 /79	119
DH3	1635	time slot length * 31.6 *1600/4 /79	262
DH5	2861	time slot length * 31.6 *1600/6 /79	305

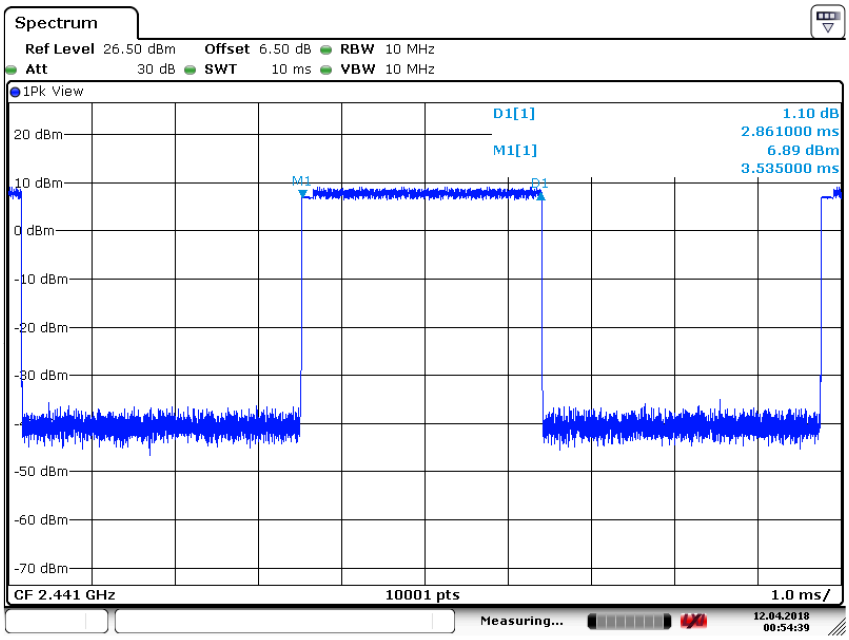


Carrier frequency (MHz): 2441
Packet type:DH1
Modulation type: 8DPSK



Date: 12.APR.2018 00:54:04

Carrier frequency (MHz): 2441
Packet type:DH3
Modulation type: 8DPSK



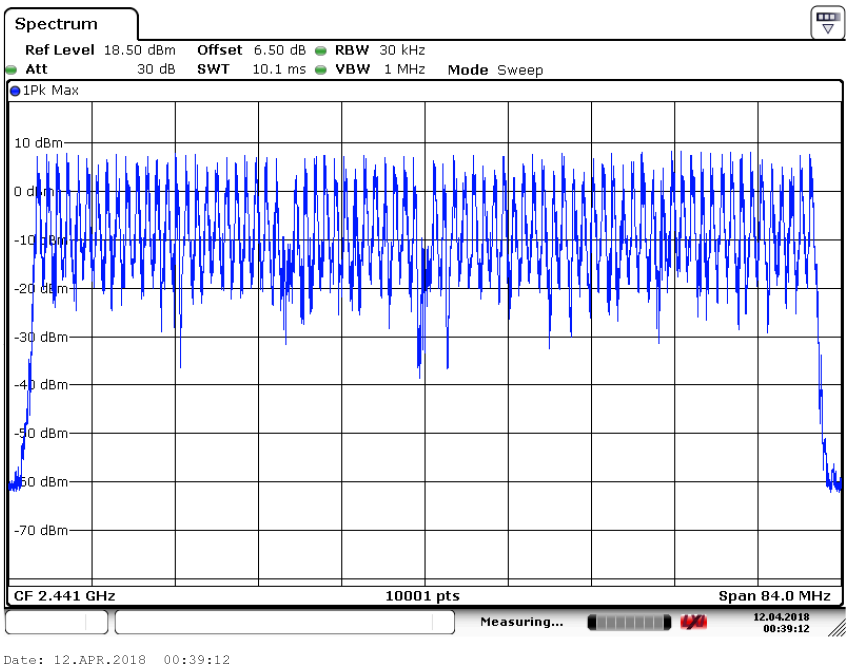
Date: 12.APR.2018 00:54:39

Carrier frequency (MHz): 2441
Packet type:DH5
Modulation type: 8DPSK

Number of Hopping Frequencies

Offset 6.5dB = Attenuator 6dB+ Temporary antenna connector loss 0.2dB+ Cable loss 0.3dB

Op-mode	Result
Hopping mode	79



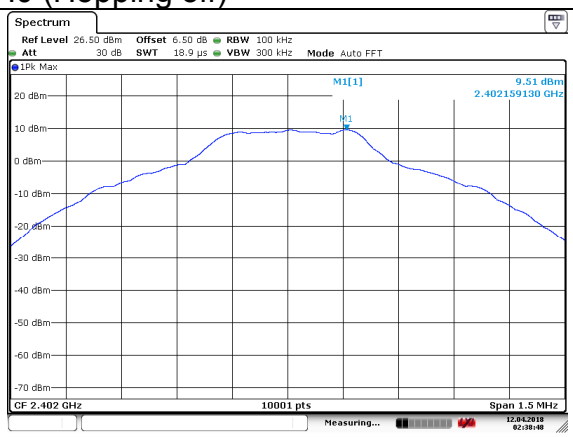
Op-mode: Hopping mode

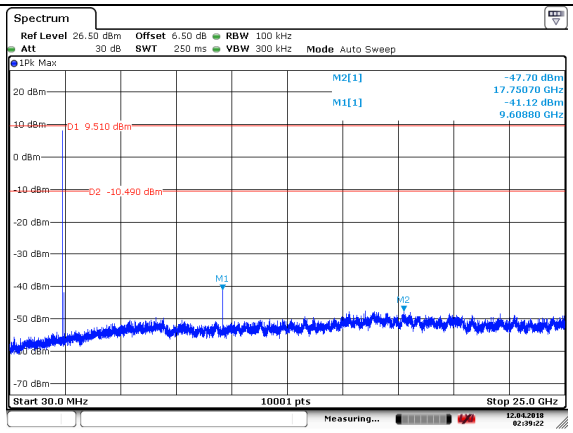
Conducted out of band emission measurement

Offset 6.5dB = Attenuator 6dB+ Temporary antenna connector loss 0.2dB+ Cable loss 0.3dB

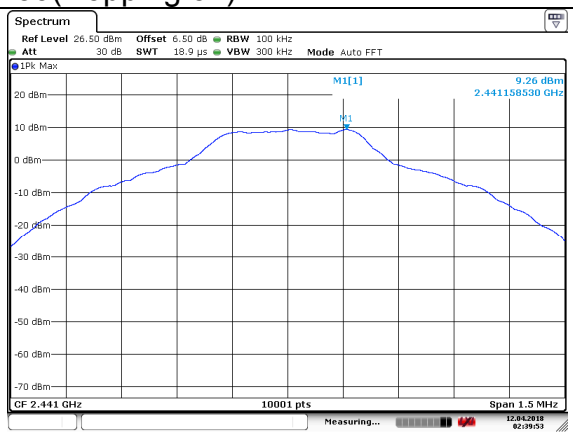
GFSK

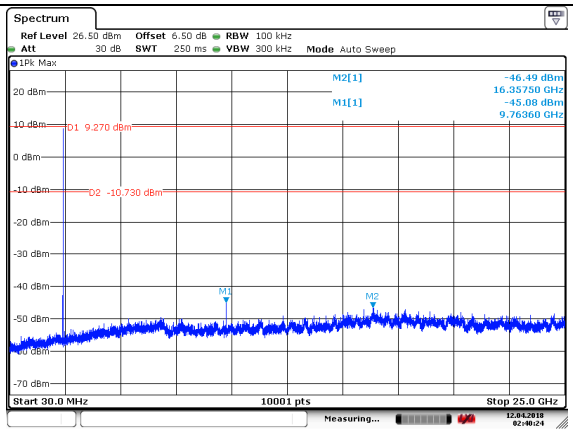
CH0 (Hopping off)



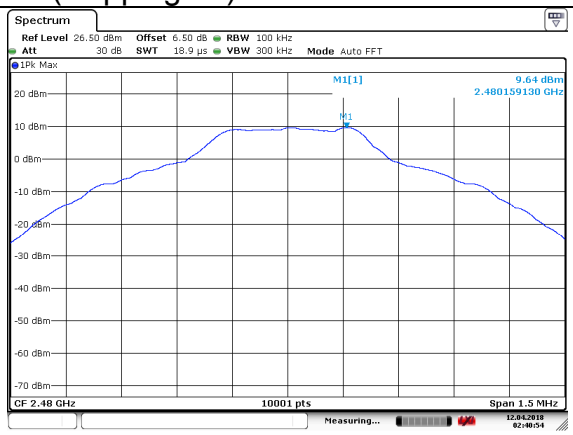


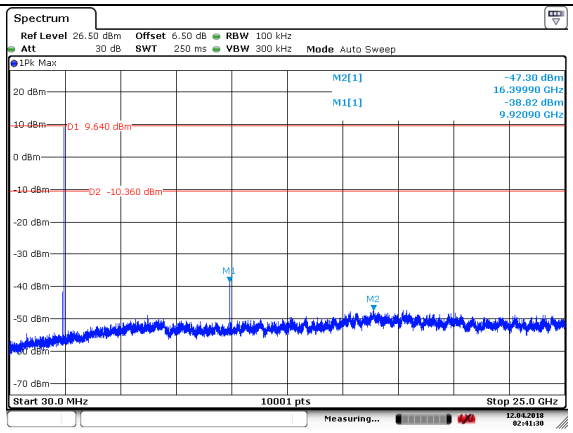
CH39(Hopping off)





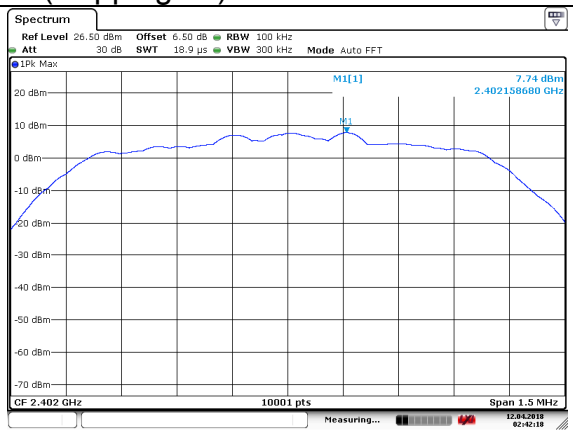
CH78(Hopping off)

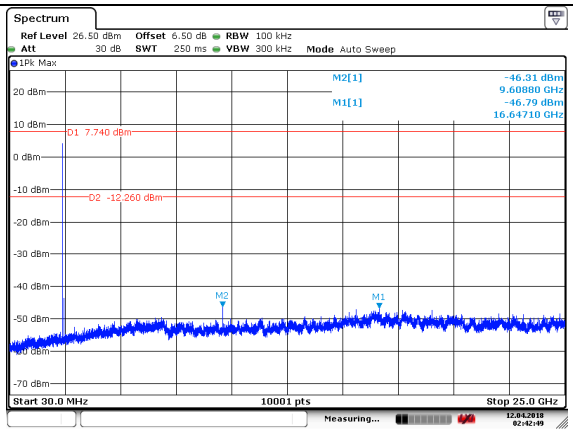




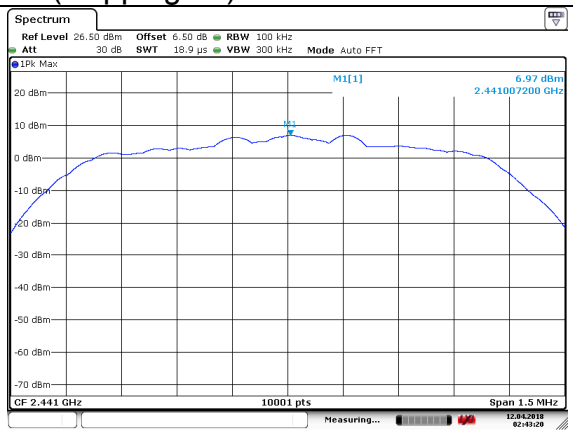
π/4DQPSK

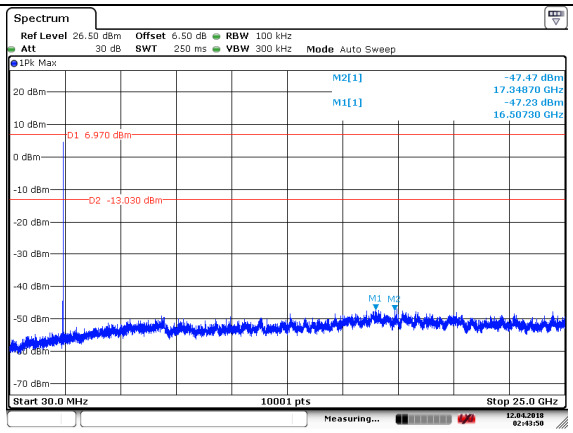
CH0 (Hopping off)



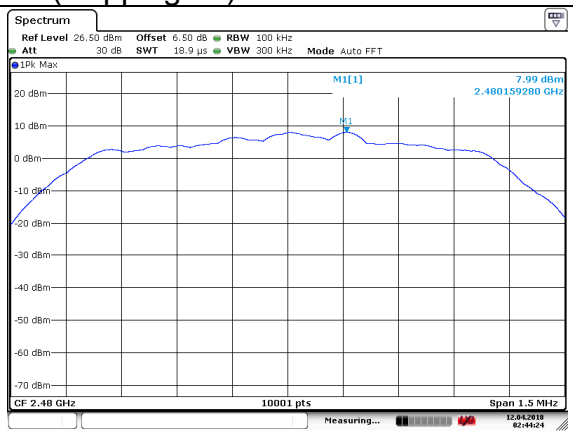


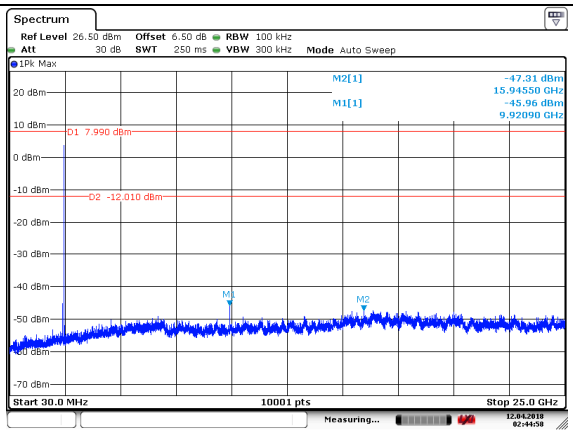
CH39(Hopping off)





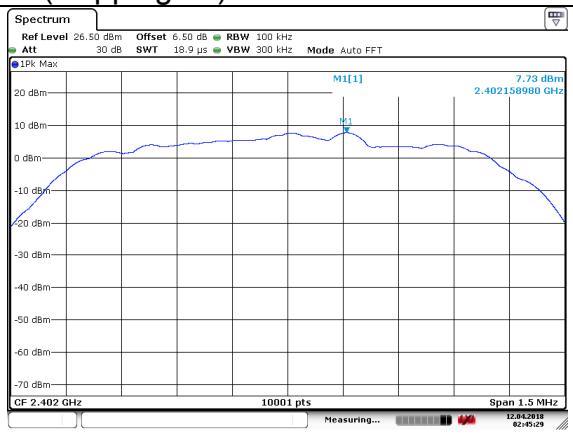
CH78(Hopping off)

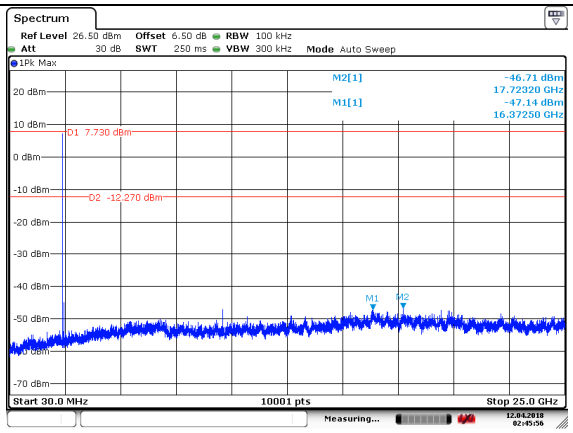




8DPSK

CH0 (Hopping off)





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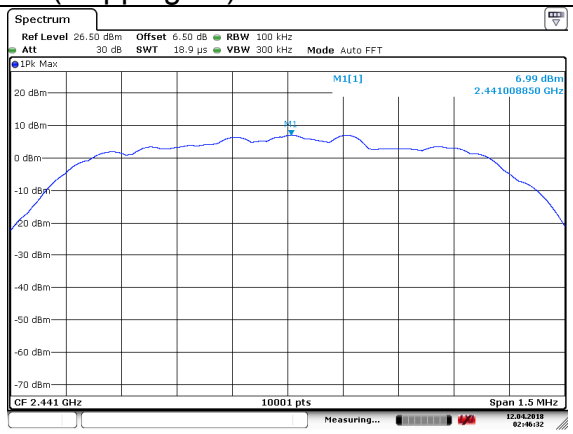

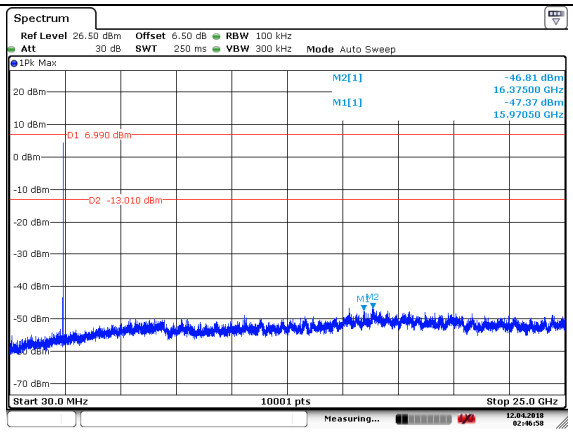

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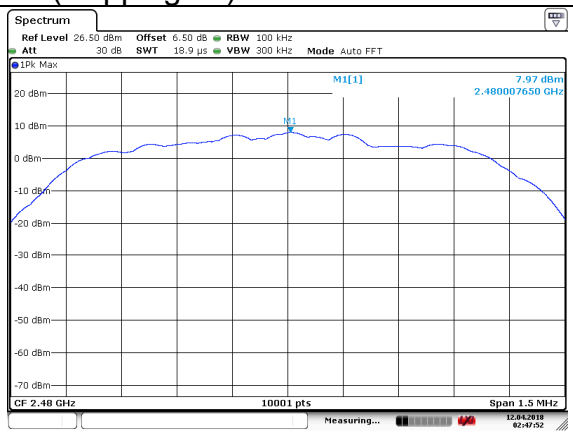
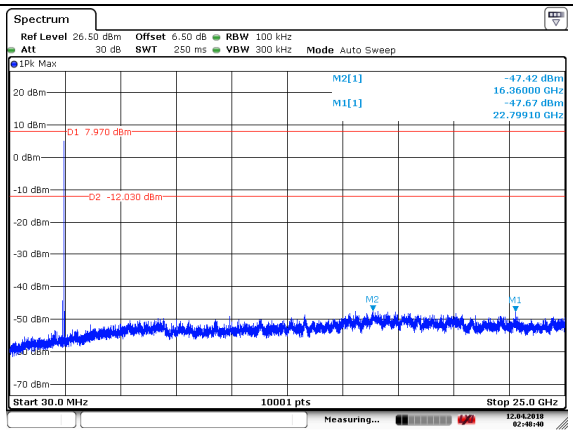


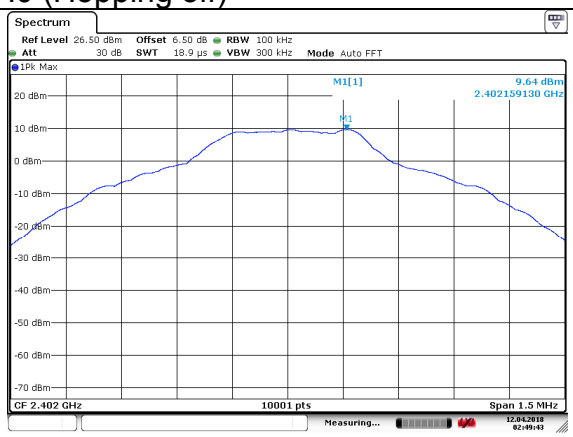


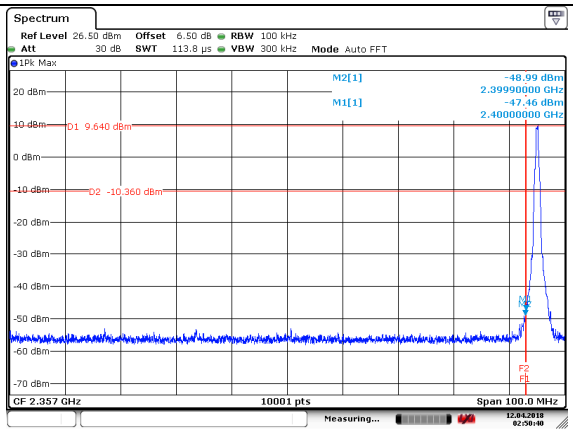
Band Edge measurement

Offset 6.5dB = Attenuator 6dB+ Temporary antenna connector loss 0.2dB+ Cable loss 0.3dB

GFSK

CH0 (Hopping off)





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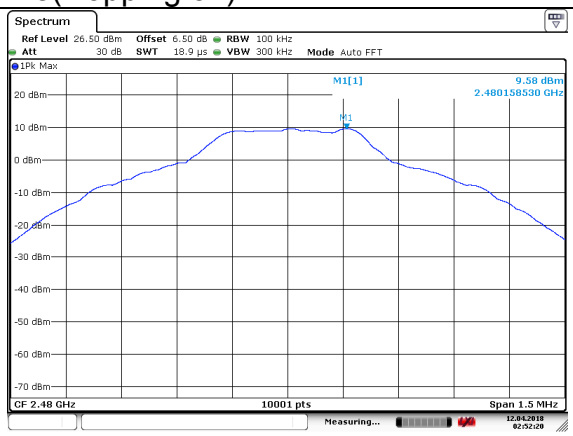

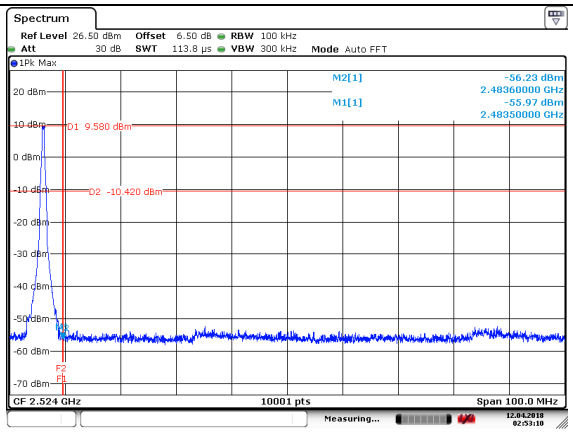

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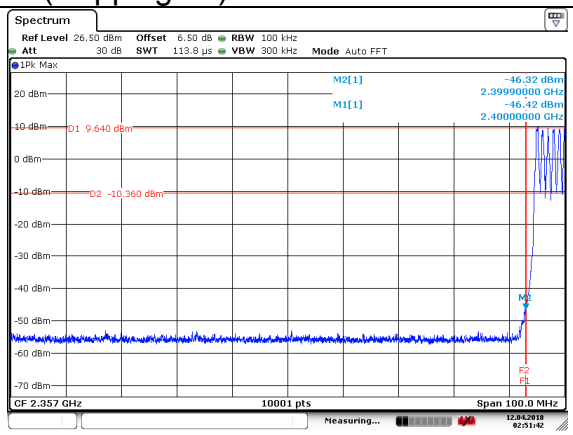

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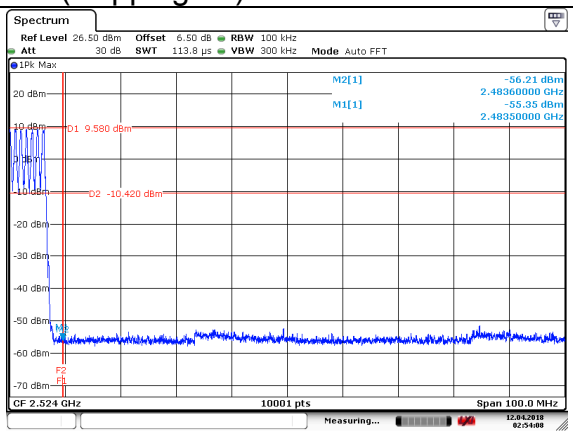
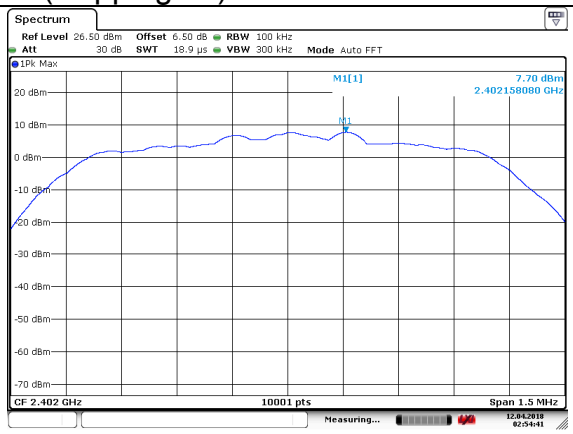
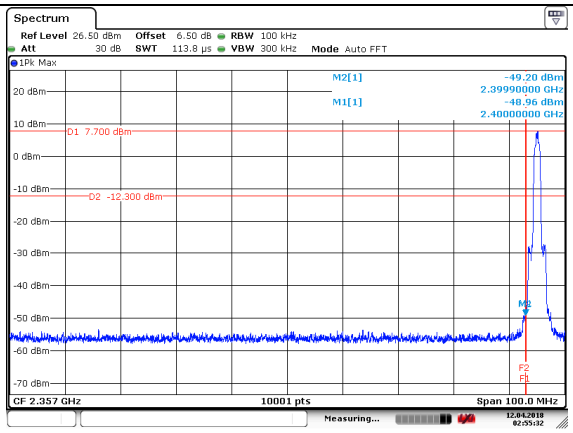


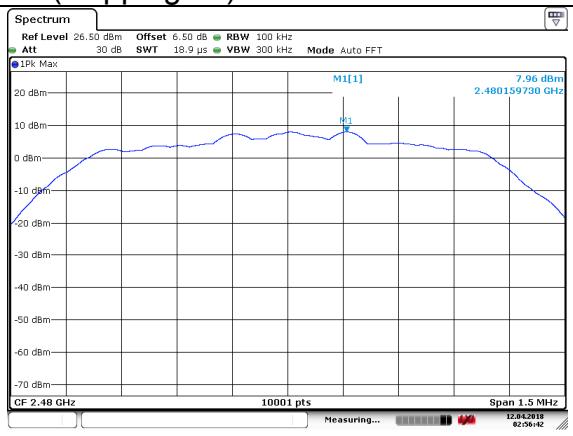
π/4DQPSK

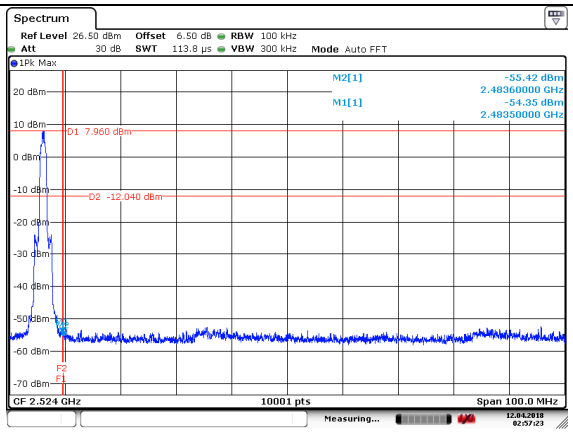
CH0 (Hopping off)



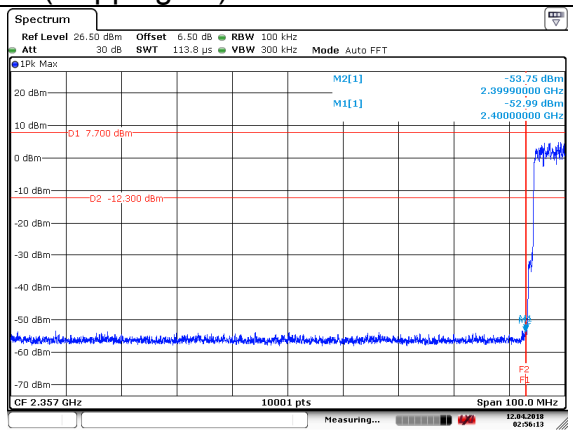


CH78(Hopping off)

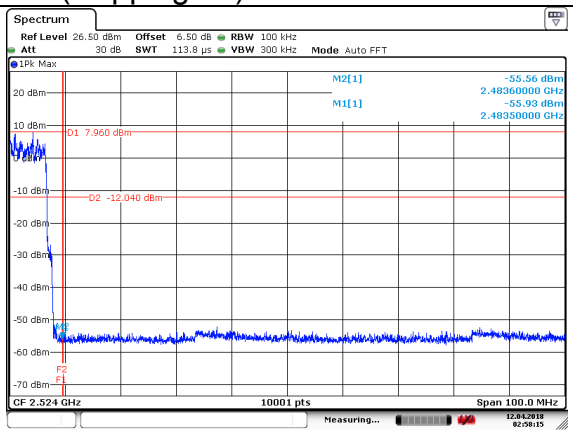




CH0 (Hopping on)

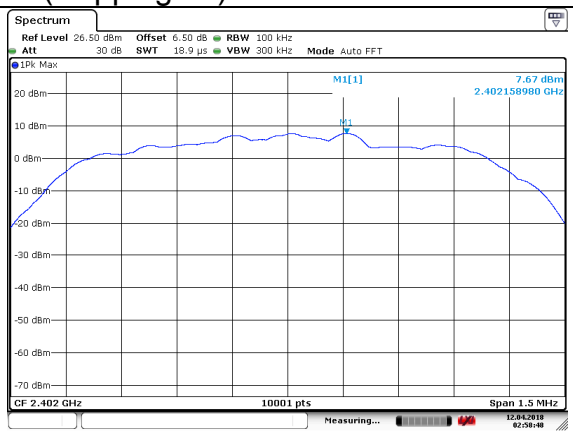


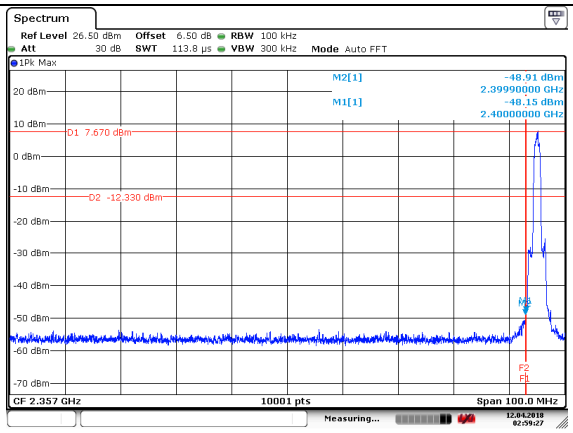
CH78 (Hopping on)



8DPSK

CH0 (Hopping off)





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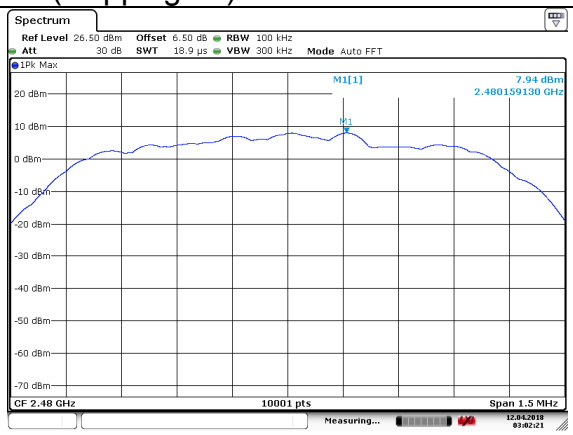

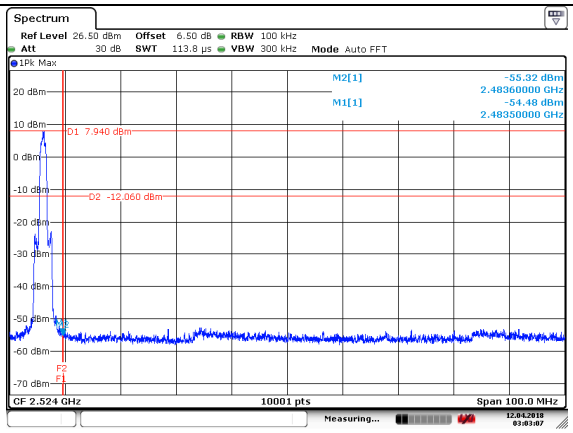

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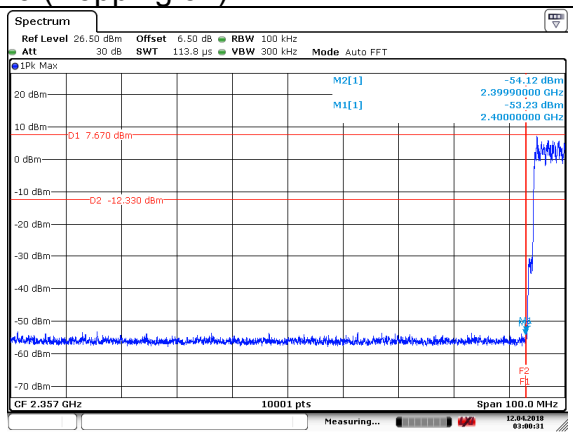

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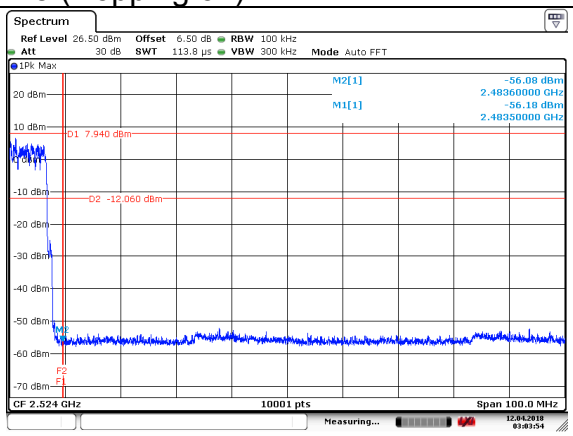


APPENDIX B – TEST DATA OF RADIATED EMISSION

Spurious Radiated Emissions

The worst case attitude: The mobile lay down.
Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK
Polarity: Vertical
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2402	98.90	64.90	N/A	N/A	8.90	25.10
2	2390	45.85	11.85	-28.15	74.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK
Polarity: Horizontal
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2402	95.08	61.08	N/A	N/A	8.90	25.10
2	2390	42.03	8.03	-31.97	74.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK
Polarity: Vertical
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2402	86.13	52.13	N/A	N/A	8.90	25.10
2	2390	34.65	0.65	-19.35	54.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK
Polarity: Horizontal
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2402	83.34	49.34	N/A	N/A	8.90	25.10
2	2390	32.86	-1.14	-21.14	54.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:39
Test Mode: GFSK
Polarity: Vertical
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2480	98.17	64.17	N/A	N/A	8.90	25.10
2	2483.5	44.88	10.88	-29.12	74.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:39
Test Mode: GFSK
Polarity: Horizontal
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2480	92.06	58.06	N/A	N/A	8.90	25.10
2	2483.5	41.22	7.22	-32.78	74.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:39
Test Mode: GFSK
Polarity: Vertical
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2480	83.90	49.90	N/A	N/A	8.90	25.10
2	2483.5	34.08	0.08	-19.92	54.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:39
Test Mode: GFSK
Polarity: Horizontal
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2480	82.54	48.54	N/A	N/A	8.90	25.10
2	2483.5	32.16	-1.84	-21.84	54.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: π/4DQPSK
Polarity: Vertical
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2402	98.36	64.36	N/A	N/A	8.90	25.10
2	2390	46.64	12.64	-27.36	74.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: π/4DQPSK
Polarity: Horizontal
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2402	93.95	59.95	N/A	N/A	8.90	25.10
2	2390	43.24	9.24	-30.76	74	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: π/4DQPSK
Polarity: Vertical
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2402	84.62	50.62	N/A	N/A	8.90	25.10
2	2390	33.69	-0.31	-20.31	54.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: π/4DQPSK
Polarity: Horizontal
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2402	81.99	47.99	N/A	N/A	8.90	25.10
2	2390	33.85	-0.15	-20.15	54.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: π/4DQPSK
Polarity: Vertical
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2480	99.52	65.52	N/A	N/A	8.90	25.10
2	2483.5	45.89	11.89	-28.11	74.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: π/4DQPSK
Polarity: Horizontal
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2480	93.33	59.33	N/A	N/A	8.90	25.10
2	2483.5	42.23	8.23	-31.77	74.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: π/4DQPSK
Polarity: Vertical
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2480	87.28	53.28	N/A	N/A	8.90	25.10
2	2483.5	34.81	0.81	-19.19	54.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: π/4DQPSK
Polarity: Horizontal
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2480	83.80	49.80	N/A	N/A	8.90	25.10
2	2483.5	33.74	-0.26	-20.26	54.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: 8DPSK
Polarity: Vertical
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2402	99.36	65.36	N/A	N/A	8.90	25.10
2	2390	46.37	12.37	-27.63	74.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: 8DPSK
Polarity: Horizontal
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2402	94.43	60.43	N/A	N/A	8.90	25.10
2	2390	39.59	5.59	-34.41	74.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: 8DPSK
Polarity: Vertical
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2402	85.80	51.80	N/A	N/A	8.90	25.10
2	2390	32.92	-1.08	-21.08	54.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: 8DPSK
Polarity: Horizontal
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2402	83.90	49.90	N/A	N/A	8.90	25.10
2	2390	32.03	-1.97	-21.97	54.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: 8DPSK
Polarity: Vertical
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2480	98.30	64.30	N/A	N/A	8.90	25.10
2	2483.5	44.09	10.09	-29.91	74.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: 8DPSK
Polarity: Horizontal
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2480	92.94	58.94	N/A	N/A	8.90	25.10
2	2483.5	39.95	5.95	-34.05	74.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: 8DPSK
Polarity: Vertical
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2480	83.97	49.97	N/A	N/A	8.90	25.10
2	2483.5	33.03	-0.97	-20.97	54.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: 8DPSK
Polarity: Horizontal
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2480	82.73	48.73	N/A	N/A	8.90	25.10
2	2483.5	33.39	-0.61	-20.61	54.00	8.90	25.10

Sample Calculations

Determining Spurious Emissions Levels

A "reference path loss" is established and the A_{Rpl} is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss.
The measurement results are obtained as described below:
Result= $P_{mea} + A_{Rpl}$

The worst case attitude: The mobile lay down.
For GFSK
Channel No.:39

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
39.659583	19.42	12.1	7.32	Horizontal	40
42.97375	25.1	10.2	14.9	Vertical	40
84.724167	12.54	6.5	6.04	Horizontal	40
100.0825	26.14	8.1	18.04	Vertical	43.5
102.426667	24.7	8.2	16.5	Vertical	43.5
167.9825	29.74	6.9	22.84	Vertical	43.5
204.640417	19.73	7.6	12.13	Vertical	43.5
249.987917	13.37	9.8	3.57	Horizontal	46
482.424167	12.04	17	-4.96	Vertical	46
656.700833	15.76	20.2	-4.44	Vertical	46
929.149583	15.37	24.9	-9.53	Vertical	46

For π/4DQPSK
Channel No.:39

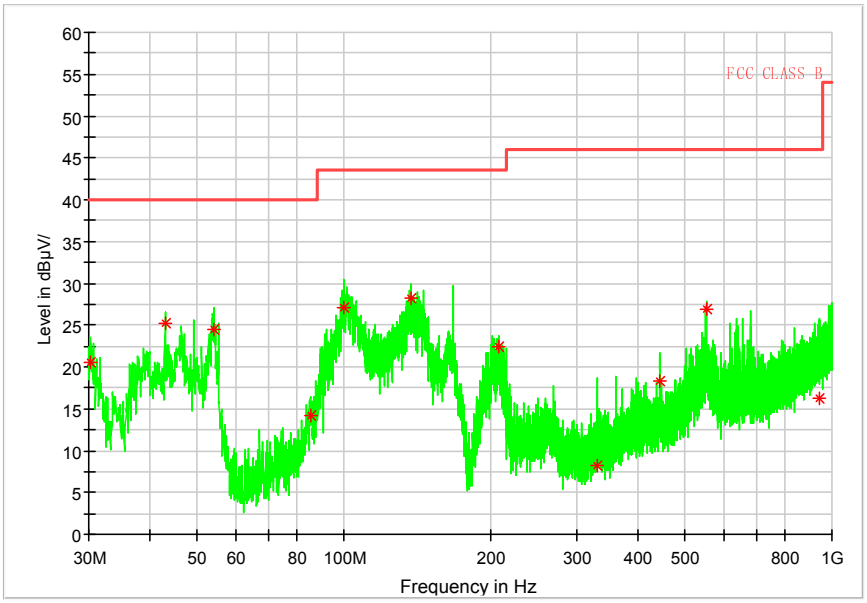
Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
38.891667	22.53	12.4	10.13	Horizontal	40
42.97375	25.03	10.2	14.83	Vertical	40
45.802917	22.6	8.4	14.2	Horizontal	40
53.88625	23.58	4.7	18.88	Vertical	43.5
85.249583	15.85	6.6	9.25	Vertical	43.5
103.679583	27.31	8.2	19.11	Vertical	43.5
167.9825	29.34	6.9	22.44	Vertical	43.5
207.792917	20.31	7.8	12.51	Vertical	43.5
324.435417	8.22	12.3	-4.08	Horizontal	46
444.836667	19.25	15.9	3.35	Vertical	46
551.98125	27.12	18.4	8.72	Vertical	46
902.717083	14.86	24.4	-9.54	Vertical	46

For 8DPSK
Channel No.:39

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
38.891667	22.76	12.4	10.36	Horizontal	40
47.09625	24.78	7.6	17.18	Vertical	40
53.805417	23.43	4.8	18.63	Horizontal	40
85.451667	14.64	6.6	8.04	Vertical	43.5
102.062917	25.58	8.2	17.38	Vertical	43.5
167.9825	29.72	6.9	22.82	Vertical	43.5
207.712083	22.55	7.8	14.75	Vertical	43.5
346.139167	13.91	12.9	1.01	Horizontal	46
447.059583	17.77	15.9	1.87	Vertical	46
551.98125	27.12	18.4	8.72	Vertical	46
900.292083	15	24.4	-9.4	Vertical	46

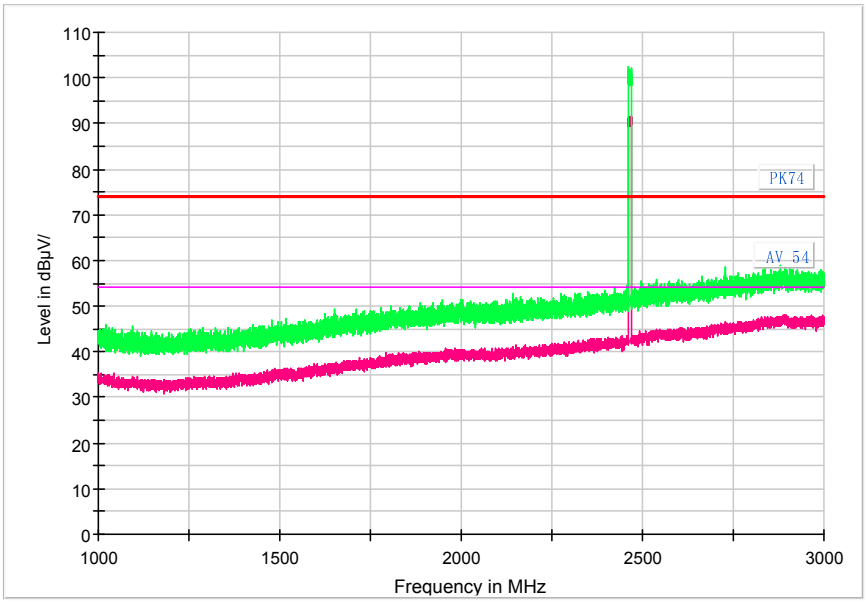
Carrier frequency (MHz): 2441
Channel No.:39

Full Spectrum



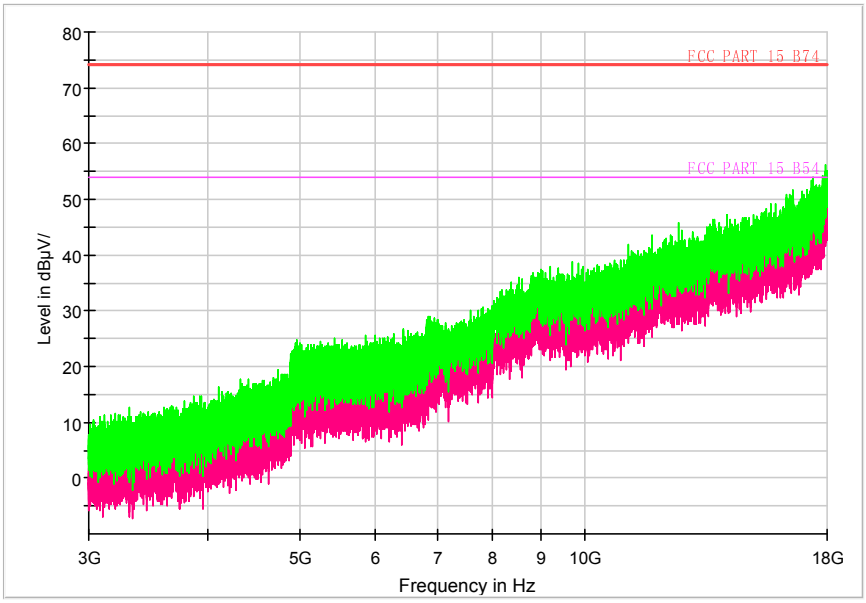
Frequency Range: 30MHz-1000MHz
Detector: QP mode
Modulation type: GFSK

Full Spectrum



Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: GFSK

Full Spectrum

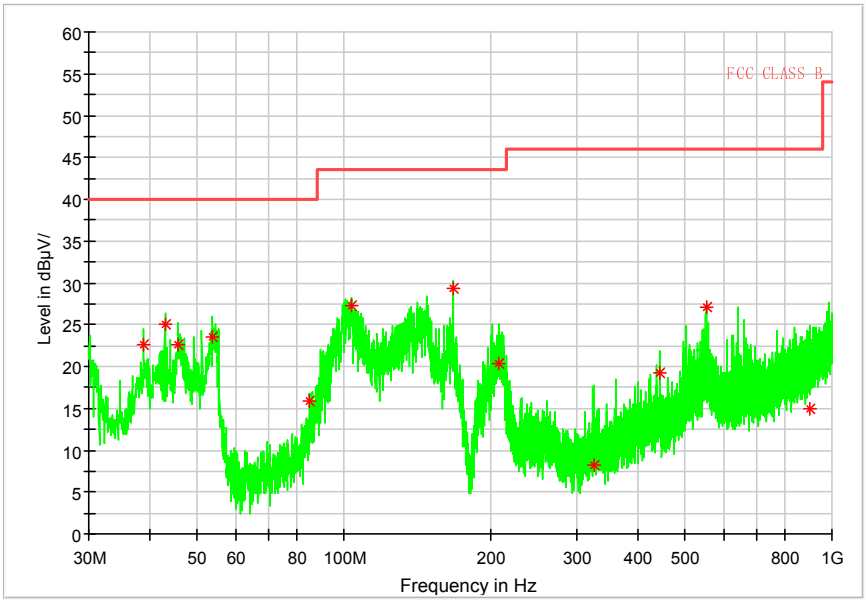


Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: GFSK

Full Spectrum

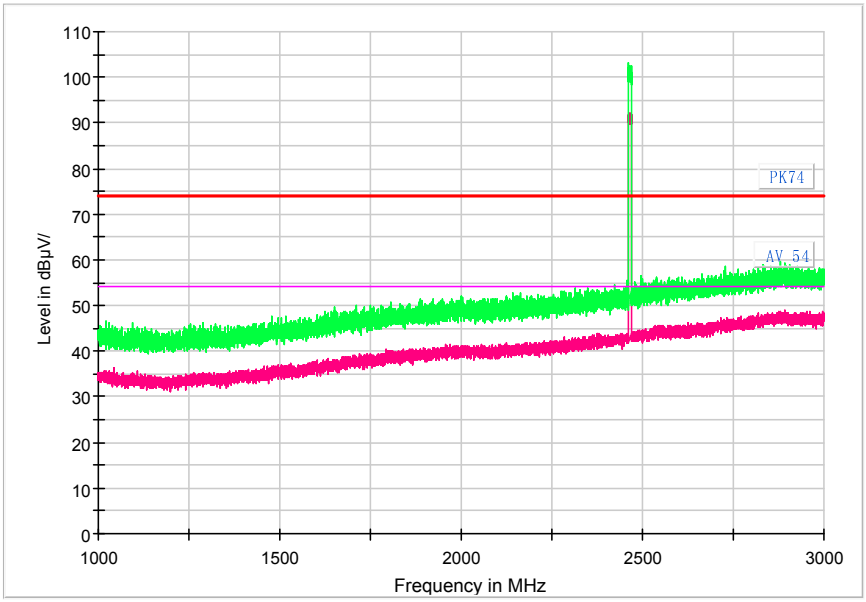
Frequency Range: 18GHz-26.5GHz
Detector: Av mode and PK mode
Modulation type: GFSK

Full Spectrum



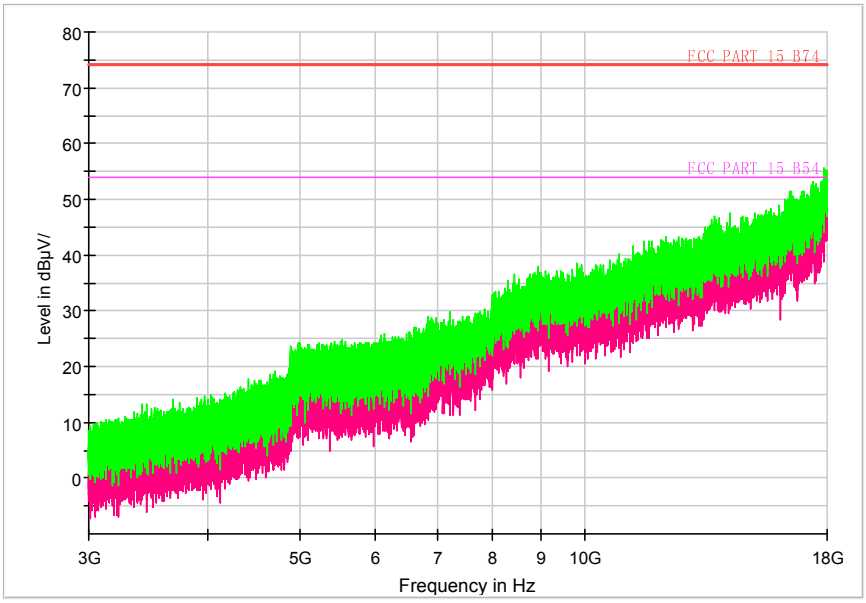
Frequency Range: 30MHz-1000 MHz
Detector: QP mode
Modulation type: π/4DQPSK

Full Spectrum



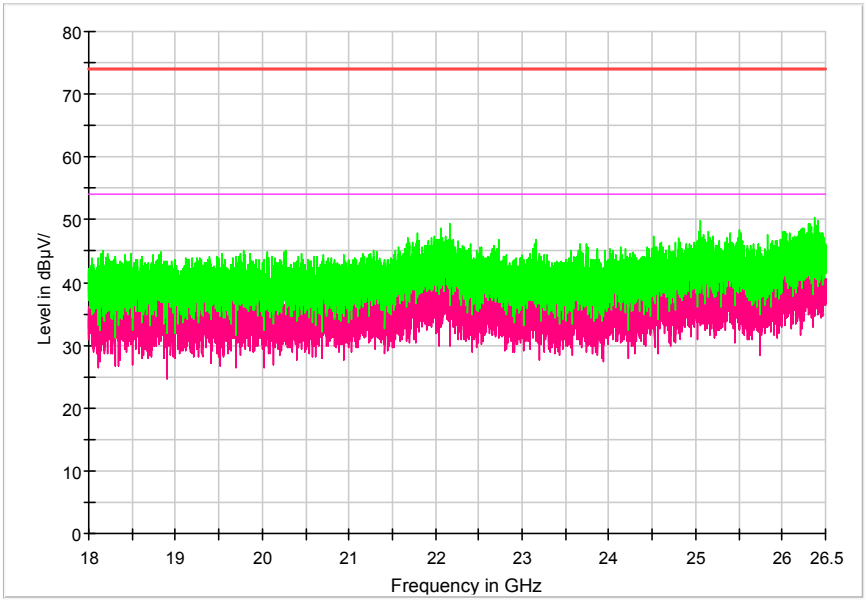
Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK

Full Spectrum



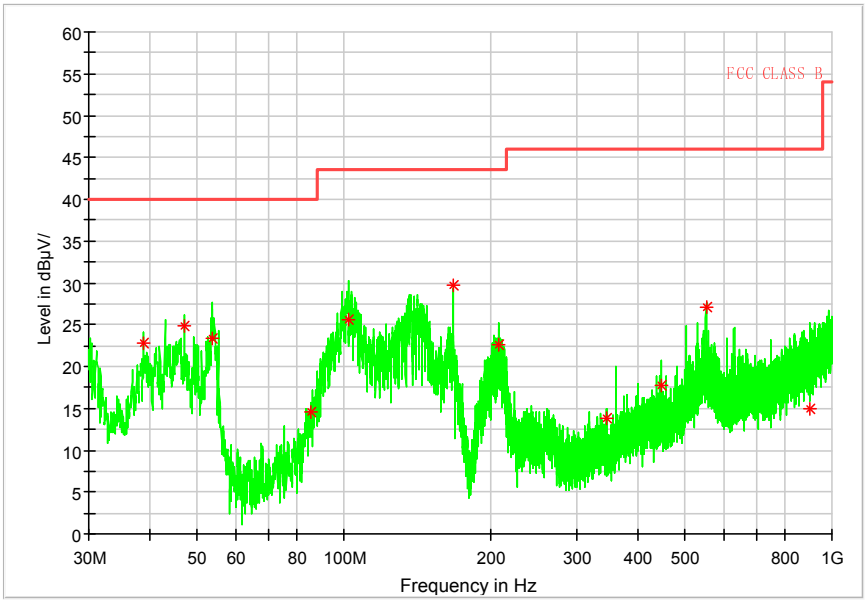
Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK

Full Spectrum



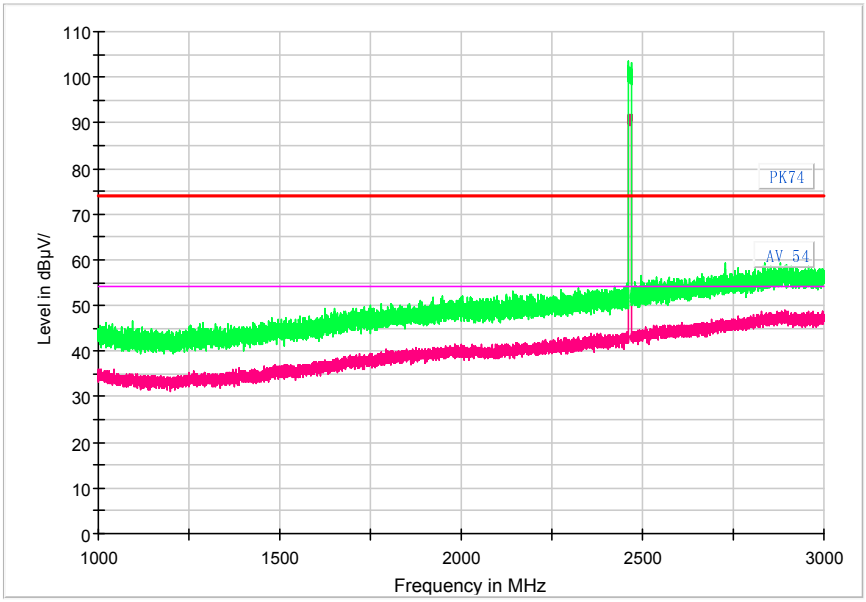
Frequency Range: 18GHz-26.5GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK

Full Spectrum



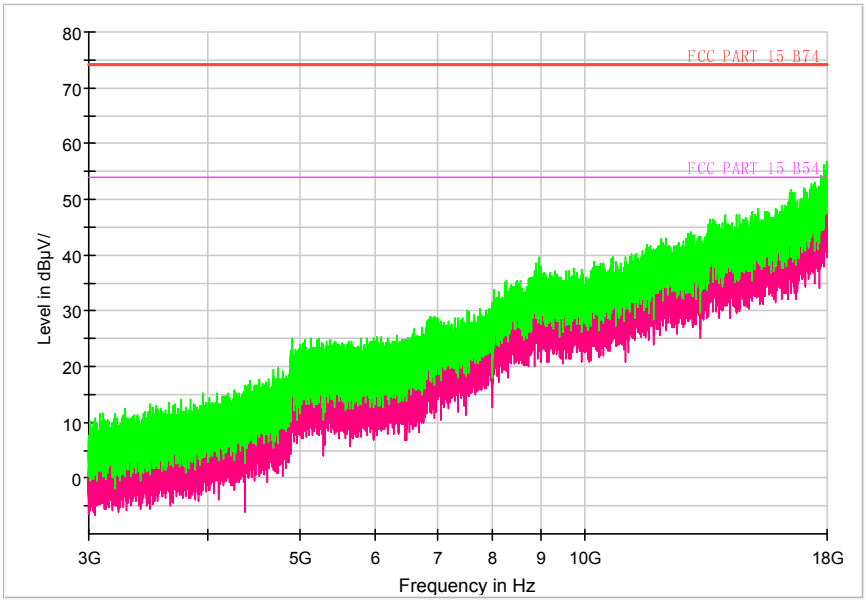
Frequency Range: 30MHz-1000 MHz
Detector: QP mode
Modulation type: 8DPSK

Full Spectrum



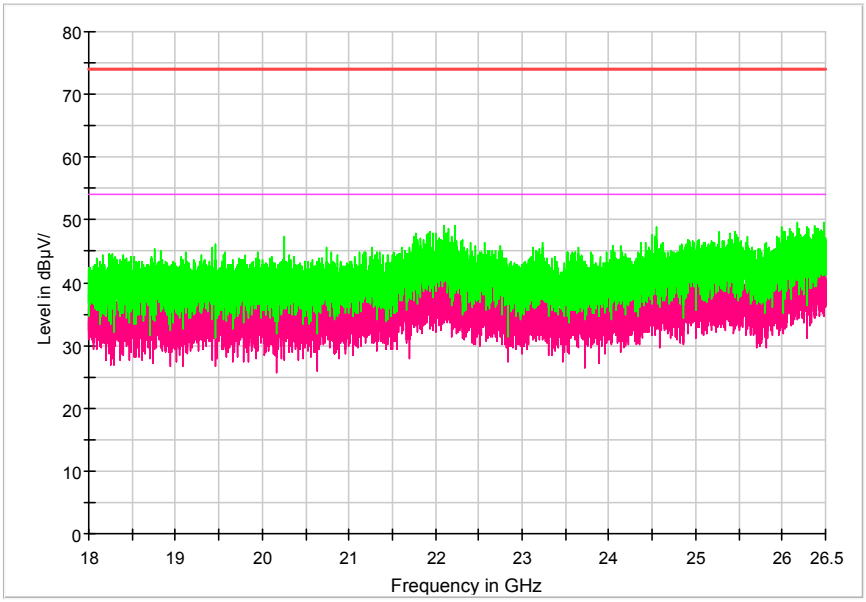
Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

Full Spectrum



Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

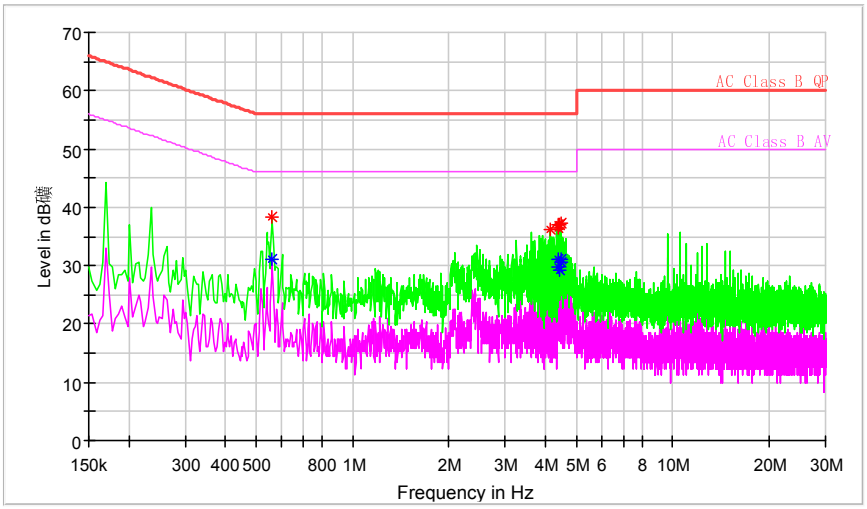
Full Spectrum



Frequency Range: 18GHz-26.5GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

AC Power line Conducted Emission

Full Spectrum



Preview Result 2-AVG
Average-AVG
Preview Result 1-PK+
AC Class B QP
MaxPeak-PK+
AC Class B AV

Comment

L+N Line

MEASUREMENT RESULT:

Frequency (MHz)	MaxPeak (dBuV)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.562000	38.27	---	56.00	17.73	L1	30.1
0.562000	---	31.22	46.00	14.78	L1	30.1
4.150000	36.14	---	56.00	19.86	N	29.8
4.366000	36.41	---	56.00	19.59	N	29.8
4.366000	---	29.83	46.00	16.17	L1	29.8
4.402000	---	31.04	46.00	14.96	L1	29.8
4.406000	36.93	---	56.00	19.07	L1	29.8
4.418000	---	29.23	46.00	16.77	L1	29.8
4.454000	37.06	---	56.00	18.94	N	29.8
4.458000	---	31.04	46.00	14.96	L1	29.8
4.470000	---	30.65	46.00	15.35	L1	29.8
4.474000	37.18	---	56.00	18.82	N	29.8

---End of Test Report---