FCC RADIO TEST REPORT

FCC ID	**:**	**2AGOZ-R2KM**
Equipment	**:**	**VR HEADSET**
Brand Name	**:**	**oculus**
Model Name	**:**	**DX45JH**
Applicant	**:**	**Facebook Technologies, LLC** **1 Hacker Way, Menlo Park, CA 94025, USA**
Standard	**:**	**FCC Part 15 Subpart C §15.247**

The product was received on Sep. 27, 2018 and testing was started from Oct. 01, 2018 and completed on Nov. 16, 2018. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Joseph Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issued Date
FR892722	01	Initial issue of report	Dec. 10, 2018
FR892722	02	Revising the test procedures.	Dec. 13, 2018

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.247(a)(2)	6dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.247(b)(3)	Peak Output Power	Pass	-
3.3	15.247(e)	Power Spectral Density	Pass	-
3.4	15.247(d)	Conducted Band Edges and Spurious Emission	Pass	-
3.5	15.247(d)	Radiated Band Edges and Spurious Emission	Pass	Under limit 6.14 dB at 30.000 MHz
3.6	15.207	AC Conducted Emission	Pass	Under limit 10.68 dB at 0.164 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	Pass	-

Declaration of Conformity:
The judgment of conformity in the report is based on the measurement results excluding the measurement uncertainty.
Comments and Explanations:
None

Reviewed by: Wii Chang

Report Producer: Maggie Chiang

1 General Description

1.1 Product Feature of Equipment Under Test

GFSK

Product Specification subjective to this standard	
Antenna Type	GFSK: Dipole Antenna

1.2 Modification of EUT

No modifications are made to the EUT during all test items.

1.3 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978		
Test Site No.	**Sporton Site No.**		
	TH05-HY	CO05-HY	03CH07-HY

Note: The test site complies with ANSI C63.4 2014 requirement.

1.4 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05
- FCC KDB 414788 D01 Radiated Test Site v01r01.
- ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

2.1 Carrier Frequency Channel

Frequency Band	Freq. (MHz)	Freq. (MHz)
2400-2483.5 MHz	2402	2444
	2404	2446
	2406	2448
	2408	2450
	2410	2452
	2412	2454
	2414	2456
	2416	2458
	2418	2460
	2420	2462
	2422	2464
	2424	2466
	2426	2468
	2428	2470
	2430	2472
	2432	2474
	2434	2476
	2436	2478
	2438	-
	2440	-
	2442	-

2.2 Test Mode

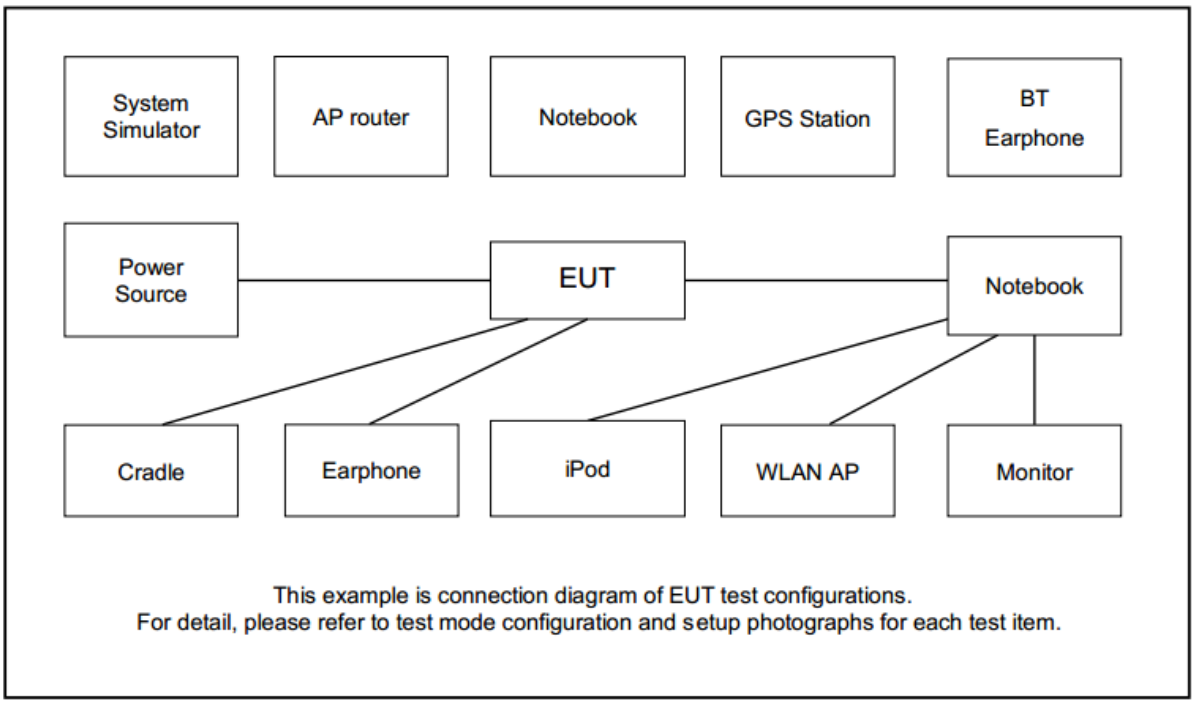
a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Z plane) were recorded in this report.

b. AC power line Conducted Emission was tested under maximum output power.

The following summary table is showing all test modes to demonstrate in compliance with the standard.

Summary table of Test Cases	
Test Item	**Data Rate / Modulation**
	GFSK
Conducted Test Cases	Mode 1: GFSK Tx_2402 MHz Mode 2: GFSK Tx_2438 MHz Mode 3: GFSK Tx_2478 MHz
Radiated Test Cases	Mode 1: GFSK Tx_2402 MHz Mode 2: GFSK Tx_2438 MHz Mode 3: GFSK Tx_2478 MHz
AC Conducted Emission	Mode 1: GFSK Link + Display On + Camera On + Speaker On + DP Adapter + DP Cable (Data Link with Notebook)
Remark: Data Linking with Notebook means data application transferred mode between EUT and Notebook	

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	iPhone Earphone	Apple	N/A	Verification	Unshielded, 1.2 m	N/A
2.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
3.	Notebook	DELL	P20G	FCC DoC/ Contains FCC ID: QDS-BRCM1051	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	Notebook	DELL	Latitude E3340	FCC DoC/ Contains FCC ID: PD97260NGU	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2.5 EUT Operation Test Setup

The GFSK test items, utility “Quail_Hill_RD_Test_Tool” was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.2 + 10 = 14.2 (dB)

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

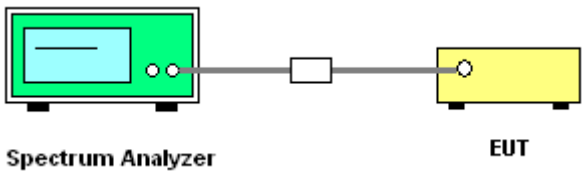
3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

3.1.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 6.9.3 (OBW) and 11.8.1 (6dB BW).
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1-5% of the emission bandwidth and set the Video bandwidth (VBW) ≥ 3 * RBW.
6. Measure and record the results in the test report.

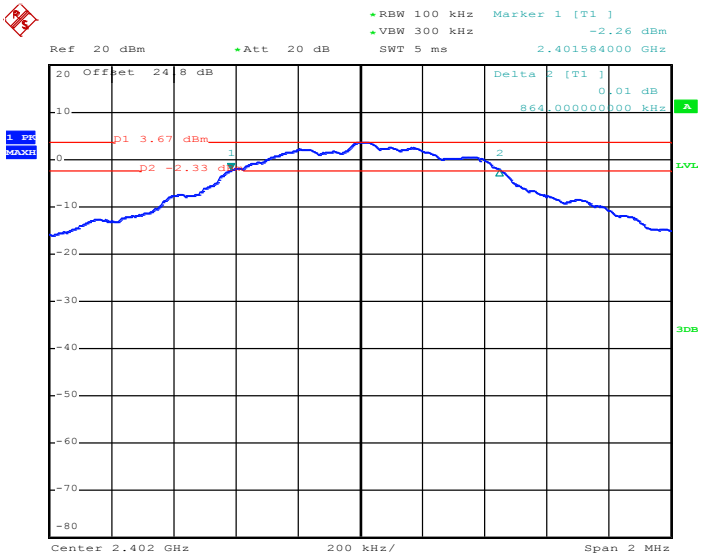
3.1.4 Test Setup



3.1.5 Test Result of 6dB Bandwidth

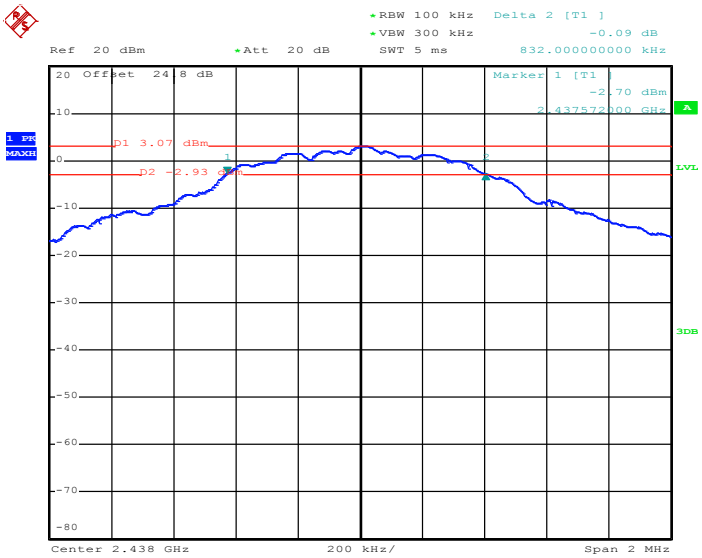
Please refer to Appendix A.

6 dB Bandwidth Plot on 2402 MHz



Date: 16.NOV.2018 08:33:44

6 dB Bandwidth Plot on 2438 MHz



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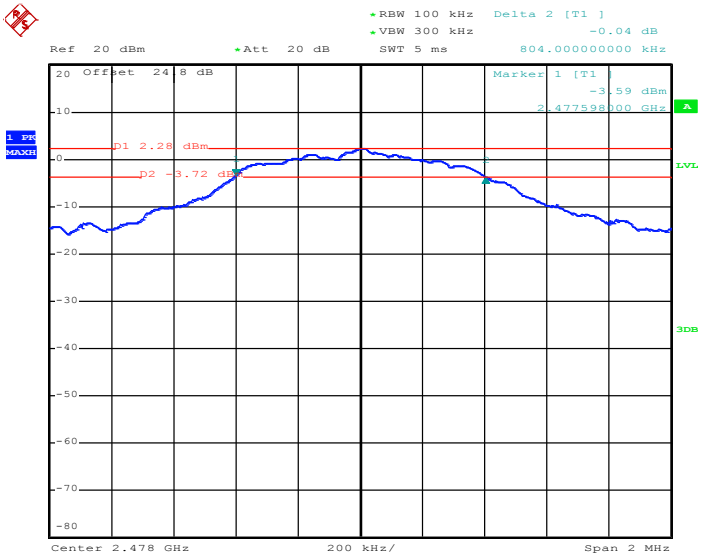
6 dB Bandwidth Plot on 2478 MHz



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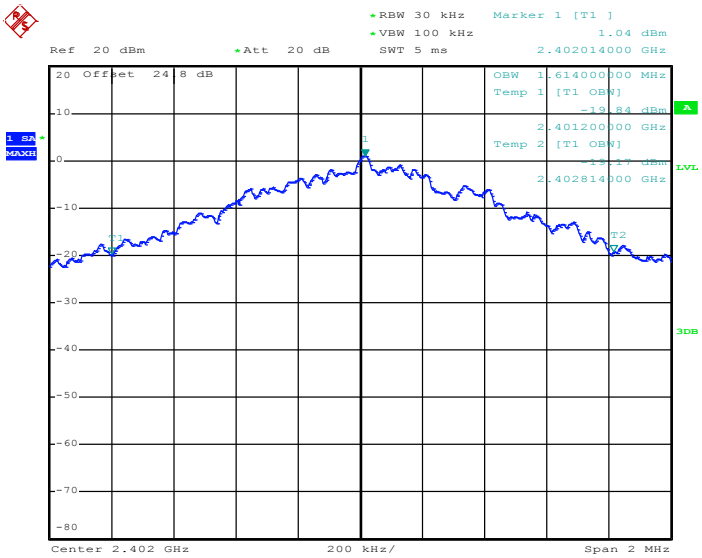
3.1.6 Test Result of 99% Occupied Bandwidth

Please refer to Appendix A.

99% Bandwidth Plot on 2402 MHz



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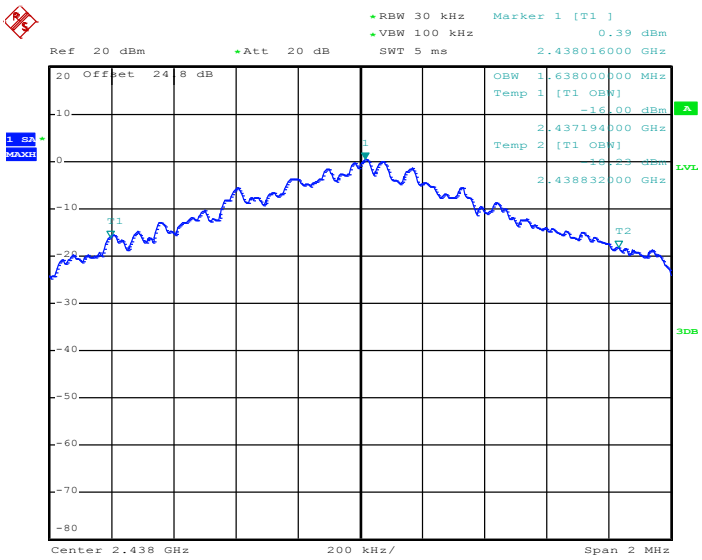
99% Occupied Bandwidth Plot on 2438 MHz



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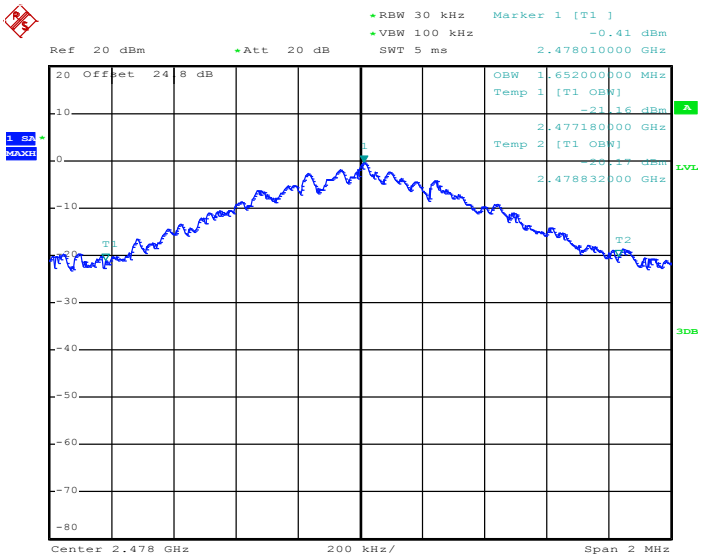
99% Occupied Bandwidth Plot on 2478 MHz



Date: 16.NOV.2018 09:09:05

Note : The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna of directional gain greater than 6dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

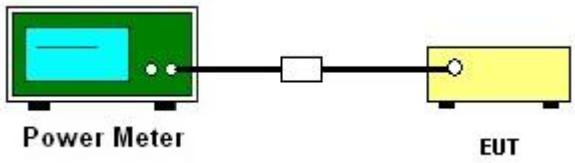
3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

3.2.3 Test Procedures

1. For Peak Power, the testing follows ANSI C63.10 Section 11.9.1.3 PKPM1
2. For Average Power, the testing follows the ANSI C63.10 Section 11.9.2.3.1 Method AVGPM.
3. The RF output of EUT was connected to the power meter by RF cable and attenuator.
4. The path loss was compensated to the results for each measurement.
5. Set to the maximum power setting and enable the EUT transmit continuously.
6. Measure the conducted output power and record the results in the test report.

3.2.4 Test Setup



3.2.5 Test Result of Peak Output Power

Please refer to Appendix A.

3.2.6 Test Result of Average Output Power (Reporting Only)

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

3.3.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 11.10.2 Method PKPSD.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.
7. The Measured power density (dBm)/ 100kHz is a reference level and used as 20dBc down limit line for Conducted Band Edges and Conducted Spurious Emission.

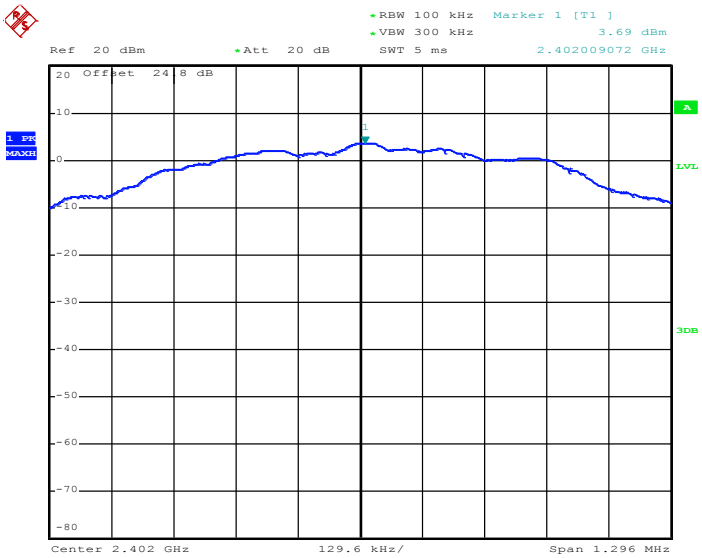
3.3.4 Test Setup

3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

3.3.6 Test Result of Power Spectral Density Plots (100kHz)

PSD 100kHz Plot on 2402 MHz



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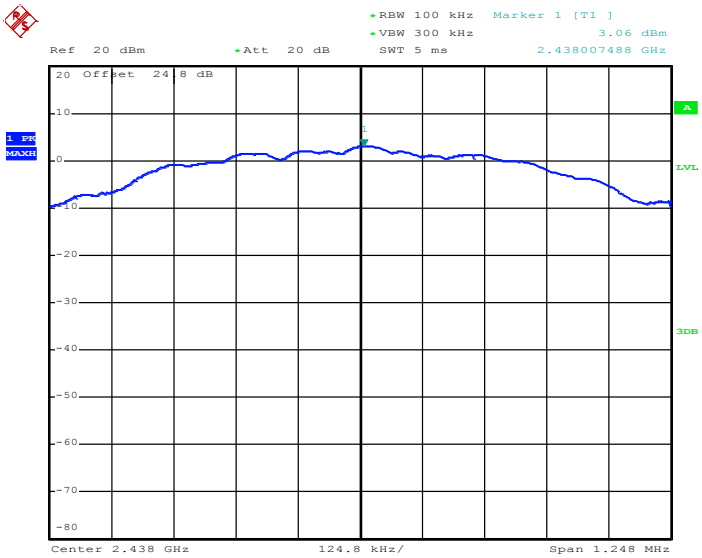
PSD 100kHz Plot on 2438 MHz



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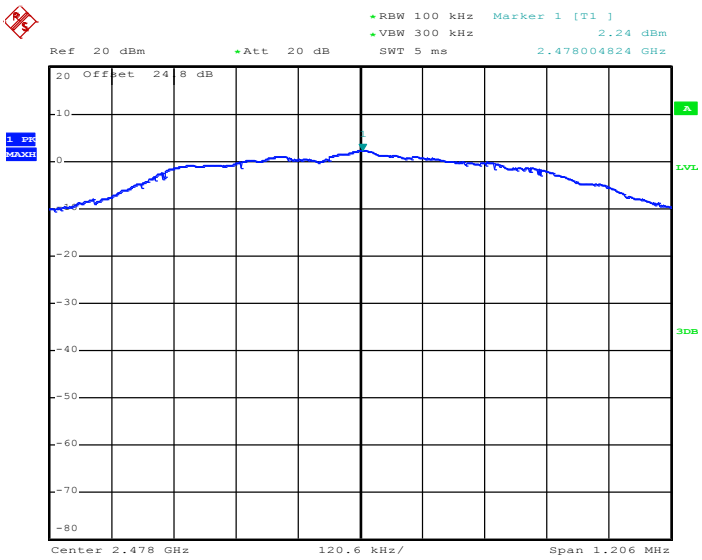
PSD 100kHz Plot on 2478 MHz



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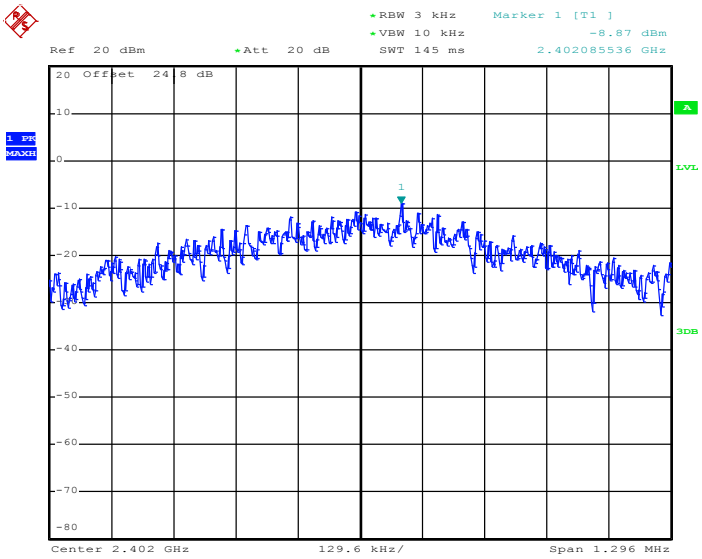
3.3.7 Test Result of Power Spectral Density Plots (3kHz)

PSD 3kHz Plot on 2402 MHz



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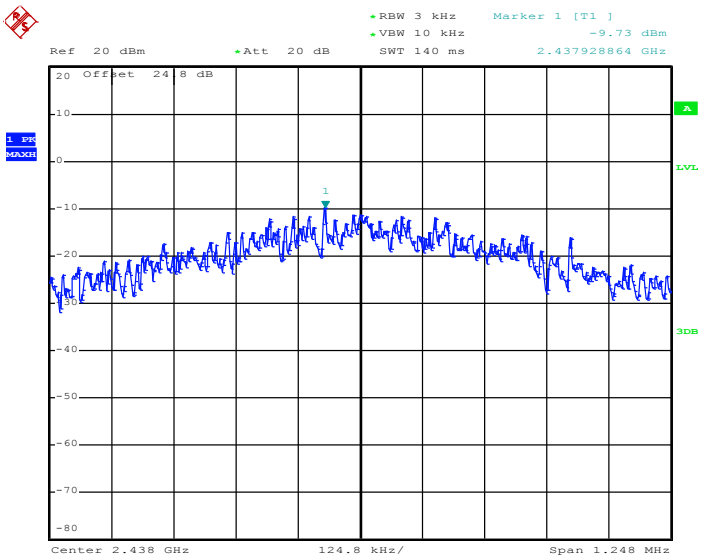
PSD 3kHz Plot on 2438 MHz



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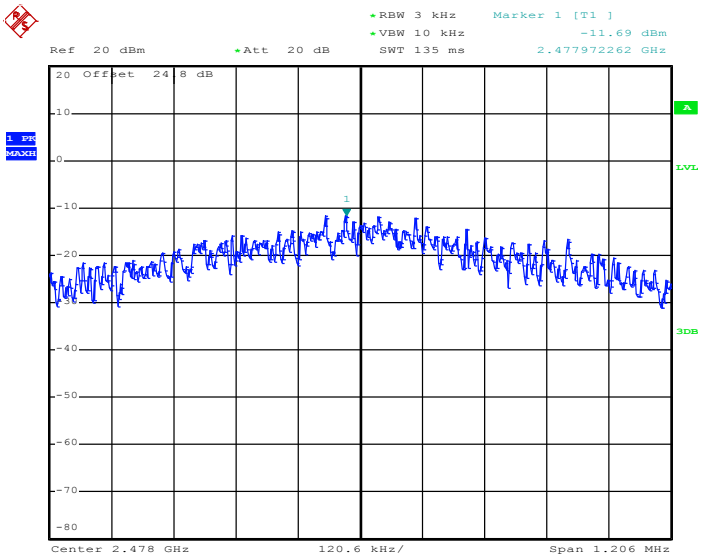
PSD 3kHz Plot on 2478 MHz



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3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission

All harmonics/spurious must be at least 20 dB down from the highest emission level within the authorized band.

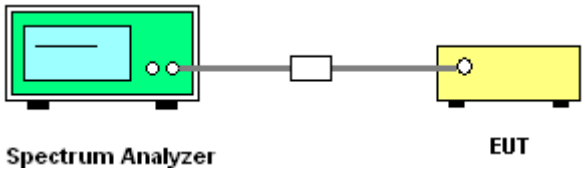
3.4.2 Measuring Instruments

See list of measuring equipment of this test report.

3.4.3 Test Procedure

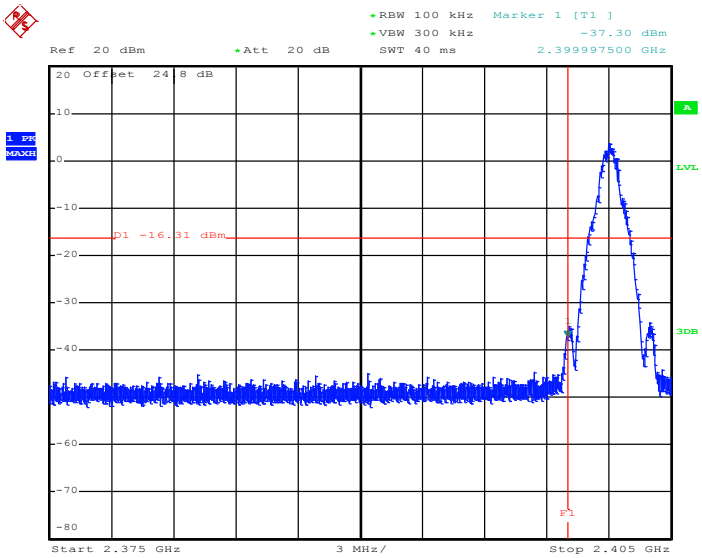
1. The testing follows the ANSI C63.10 Section 11.11.3 Emission level measurement
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup



3.4.5 Test Result of Conducted Band Edges Plots

Low Band Edge Plot on 2402 MHz



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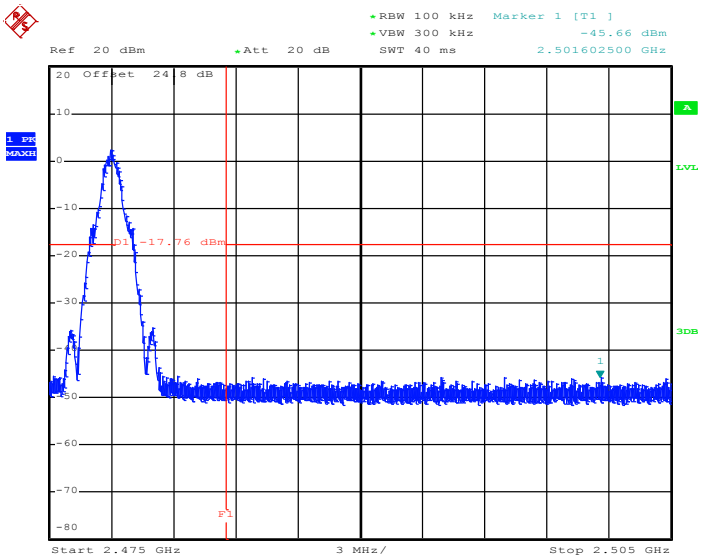
High Band Edge Plot on 2478 MHz



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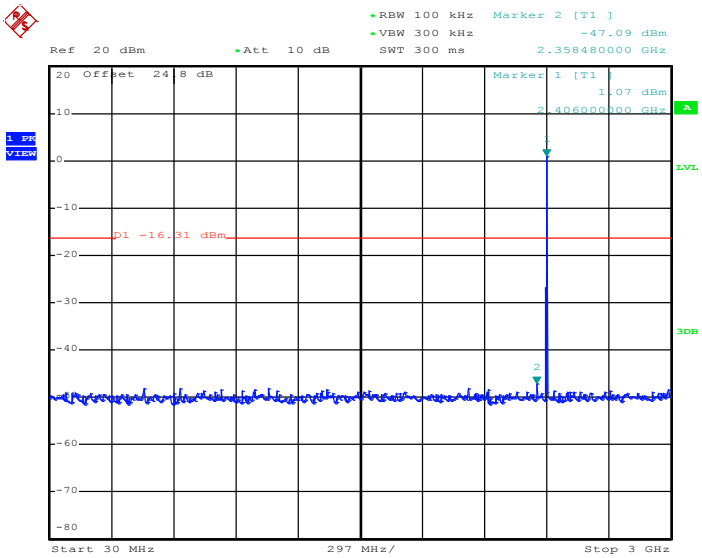
3.4.6 Test Result of Conducted Spurious Emission Plots

Conducted Spurious Emission Plot on 1Mbps GFSK 2402 MHz



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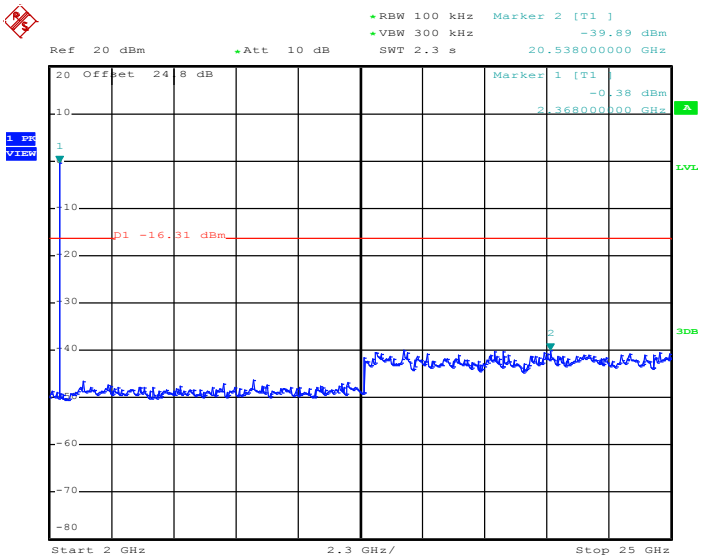
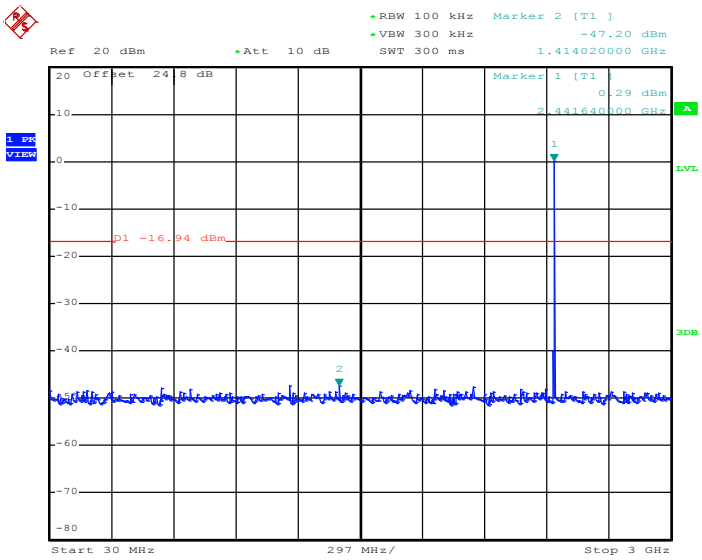
Conducted Spurious Emission Plot on 1Mbps GFSK 2402 MHz



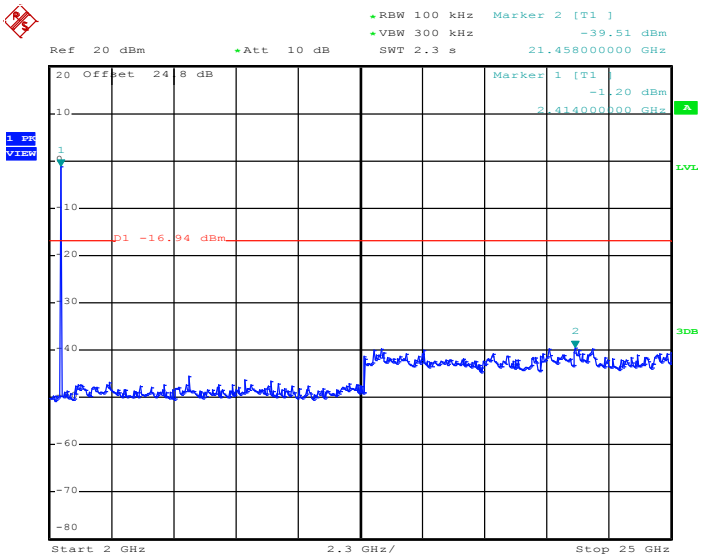
Date: 16.NOV.2018 14:01:55

Conducted Spurious Emission Plot on 1Mbps GFSK 2438 MHz



Date: 16.NOV.2018 14:02:38

Conducted Spurious Emission Plot on 1Mbps GFSK 2438 MHz



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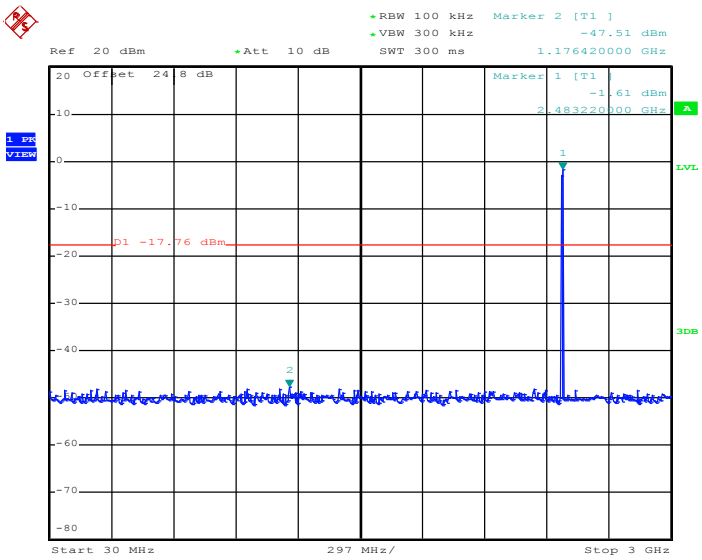
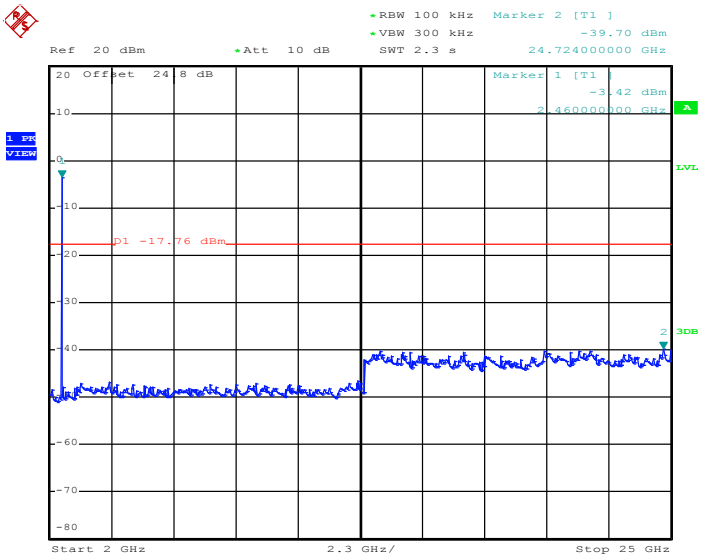
Conducted Spurious Emission Plot on 1Mbps GFSK 2478 MHz



Date: 16.NOV.2018 14:03:38

Conducted Spurious Emission Plot on 1Mbps GFSK 2478 MHz



Date: 16.NOV.2018 14:03:53

3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated Band Edges and Spurious Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

Frequency (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

3.5.2 Measuring Instruments

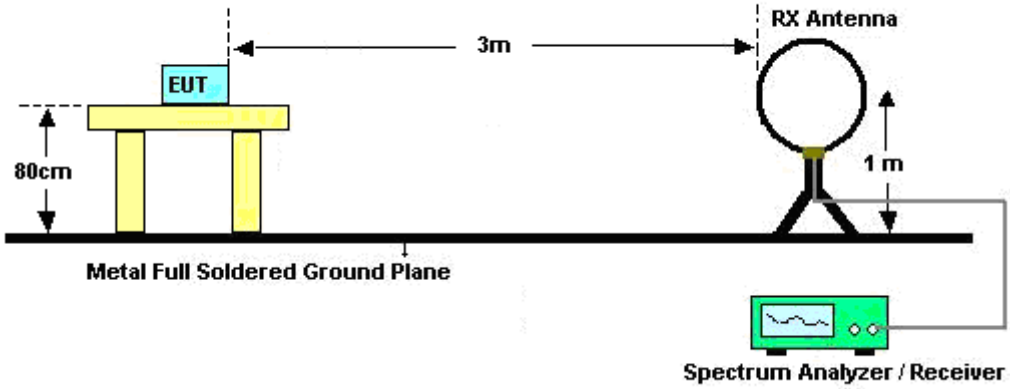
See list of measuring equipment of this test report.

3.5.3 Test Procedures

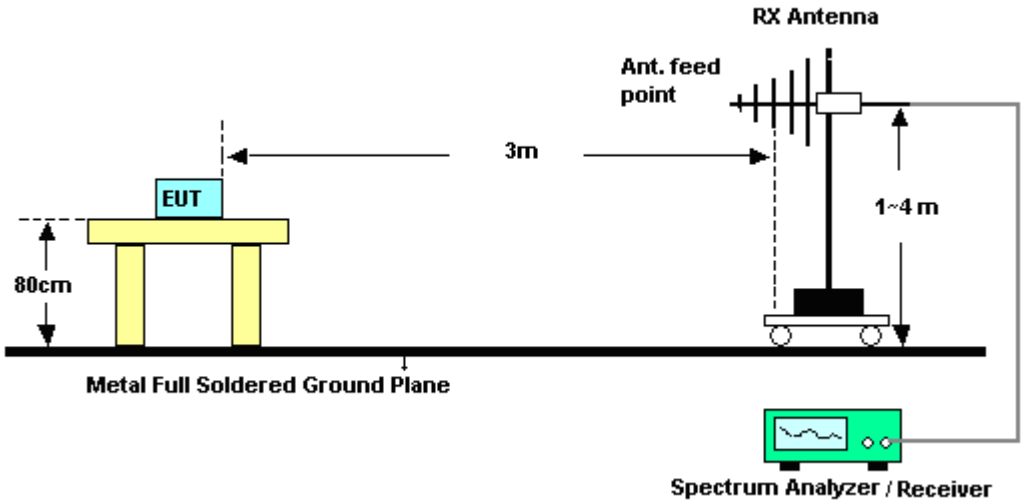
1. The testing follows the ANSI C63.10 Section 11.12.1 Radiated emission measurements
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
8. Use the following spectrum analyzer settings:
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Set RBW=100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
   (3) Set RBW = 1 MHz, VBW= 3MHz for f ≥ 1 GHz for peak measurement.
   For average measurement:
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

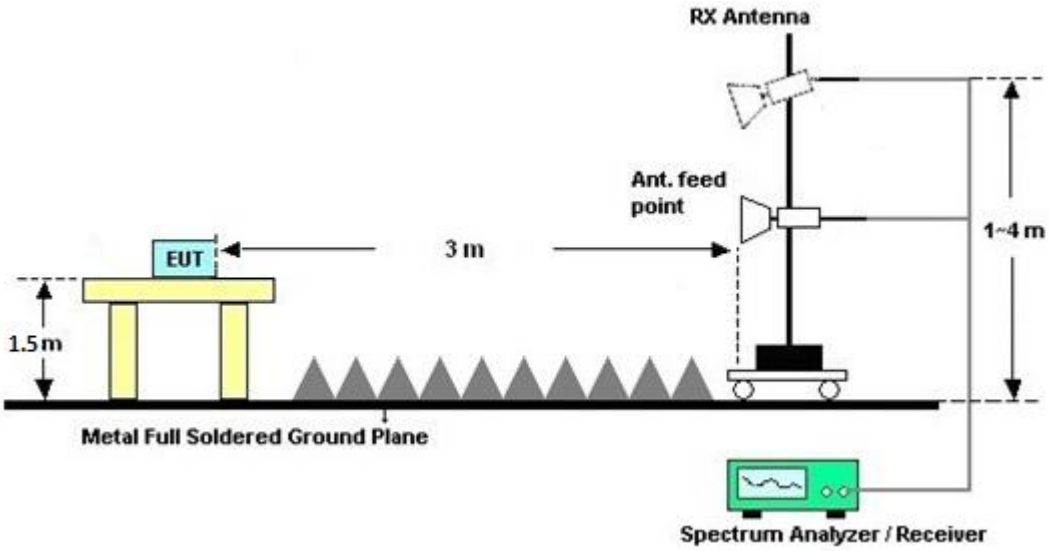
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.5.7 Duty Cycle

Please refer to Appendix E.

3.5.8 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix C and D.

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

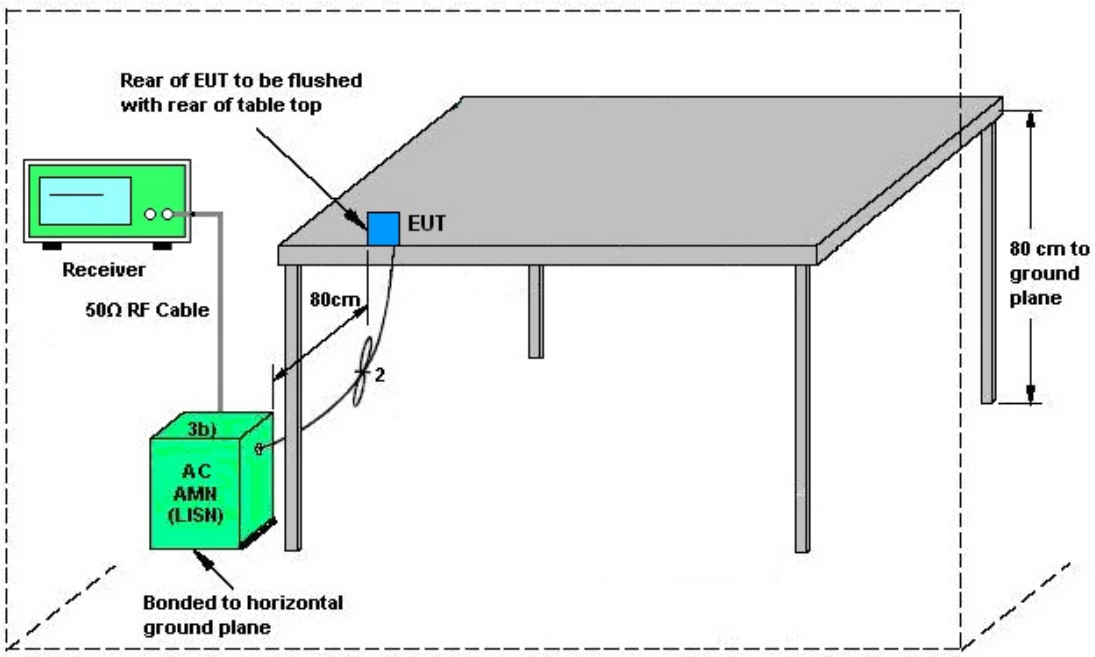
3.6.2 Measuring Instruments

See list of measuring equipment of this test report.

3.6.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

3.6.4 Test Setup



AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network

3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Power Meter	Agilent	E4416A	GB41292344	N/A	Dec. 20, 2017	Oct. 01, 2018~ Nov. 16, 2018	Dec. 19, 2018	Conducted (TH05-HY)
Power Sensor	Agilent	E9327A	US40441548	50MHz~18GHz	Dec. 20, 2017	Oct. 01, 2018~ Nov. 16, 2018	Dec. 19, 2018	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100057	9kHz-40GHz	Nov. 21, 2017	Oct. 01, 2018~ Nov. 16, 2018	Nov. 20, 2018	Conducted (TH05-HY)
Switch Box & RF Cable	Burgeon	ETF-058	EC1300484	N/A	Mar. 01, 2018	Oct. 01, 2018~ Nov. 16, 2018	Feb. 28, 2019	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Oct. 06, 2018	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9KHz~3.6GHz	Dec. 08, 2017	Oct. 06, 2018	Dec. 07, 2018	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 30, 2017	Oct. 06, 2018	Nov. 29, 2018	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Oct. 06, 2018	N/A	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Jan. 03, 2018	Oct. 06, 2018	Jan. 02, 2019	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Jan. 03, 2018	Oct. 06, 2018	Jan. 02, 2019	Conduction (CO05-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800 N1D01N-06	35419&03	30MHz to 1GHz	Dec. 18, 2017	Nov. 14, 2018	Dec. 17, 2018	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00211469	1GHz ~ 18GHz	Aug. 06, 2018	Nov. 14, 2018	Aug. 05, 2019	Radiation (03CH07-HY)
EMI Test Receiver	Agilent	N9038A (MXE)	MY53290053	20Hz to 26.5GHz	Jan. 16, 2018	Nov. 14, 2018	Jan. 15, 2019	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590075	1GHz ~ 18GHz	Apr. 25, 2018	Nov. 14, 2018	Apr. 24, 2019	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz-1GHz	May 21, 2018	Nov. 14, 2018	May 20, 2019	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Nov. 02, 2018	Nov. 14, 2018	Nov. 01, 2019	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	Nov. 14, 2018	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Nov. 14, 2018	N/A	Radiation (03CH07-HY)
Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz, VSWR : 2.5:1 max	Jul. 16, 2018	Nov. 14, 2018	Jul. 15, 2019	Radiation (03CH07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Nov. 23, 2017	Nov. 14, 2018	Nov. 22, 2018	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170576	18GHz ~ 40GHz	May 08, 2018	Nov. 14, 2018	May 07, 2019	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Apr. 17, 2018	Nov. 14, 2018	Apr. 16, 2019	Radiation (03CH07-HY)
Software	Audix	E3 6.2009-8-24	N/A	N/A	N/A	Nov. 14, 2018	N/A	Radiation (03CH07-HY)

5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.2

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.7

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.5

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.2

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Shiming Liu / Howard Lin	Temperature:	21~25	°C
Test Date:	2018/10/1~2018/11/16	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

Mod.	NTX	CH.	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
GFSK	1	L	2402	1.614	0.864	0.50	Pass
GFSK	1	M	2438	1.638	0.832	0.50	Pass
GFSK	1	H	2478	1.652	0.804	0.50	Pass

TEST RESULTS DATA
Peak Power Table

Mod.	NTX	CH.	Freq. (MHz)	Peak Conducted Power (dBm)	Conducted Power Limit (dBm)	DG (dBi)	EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail
GFSK	1	L	2402	4.18	30.00	4.70	8.88	36.00	Pass
GFSK	1	M	2438	3.66	30.00	4.70	8.36	36.00	Pass
GFSK	1	H	2478	2.83	30.00	4.70	7.53	36.00	Pass

TEST RESULTS DATA
Average Power Table
(Reporting Only)

Mod.	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)
GFSK	1	L	2402	0.48	3.88
GFSK	1	M	2438	0.48	3.27
GFSK	1	H	2478	0.48	2.39

TEST RESULTS DATA
Peak Power Density

Mod.	NTX	CH.	Freq. (MHz)	Peak PSD (dBm /100kHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
GFSK	1	L	2402	3.69	-8.87	4.70	8.00	Pass
GFSK	1	M	2438	3.06	-9.73	4.70	8.00	Pass
GFSK	1	H	2478	2.24	-11.69	4.70	8.00	Pass

Note: PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 20dBc limit.

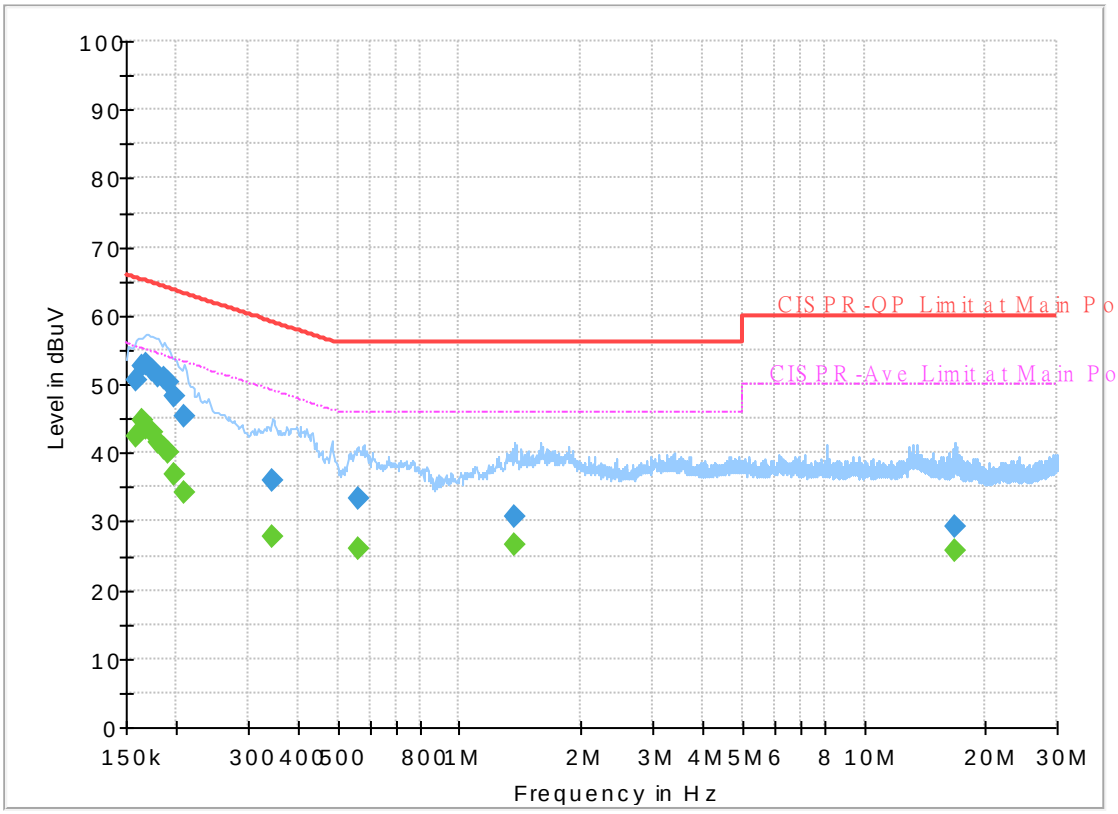
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Rick Lin	**Temperature :**	23~24℃
		Relative Humidity :	58~59%

EUT Information

Report NO :	892722
Test Mode :	Mode 1
Test Voltage :	Power From System
Phase :	Line

Full Spectrum



Final_Result

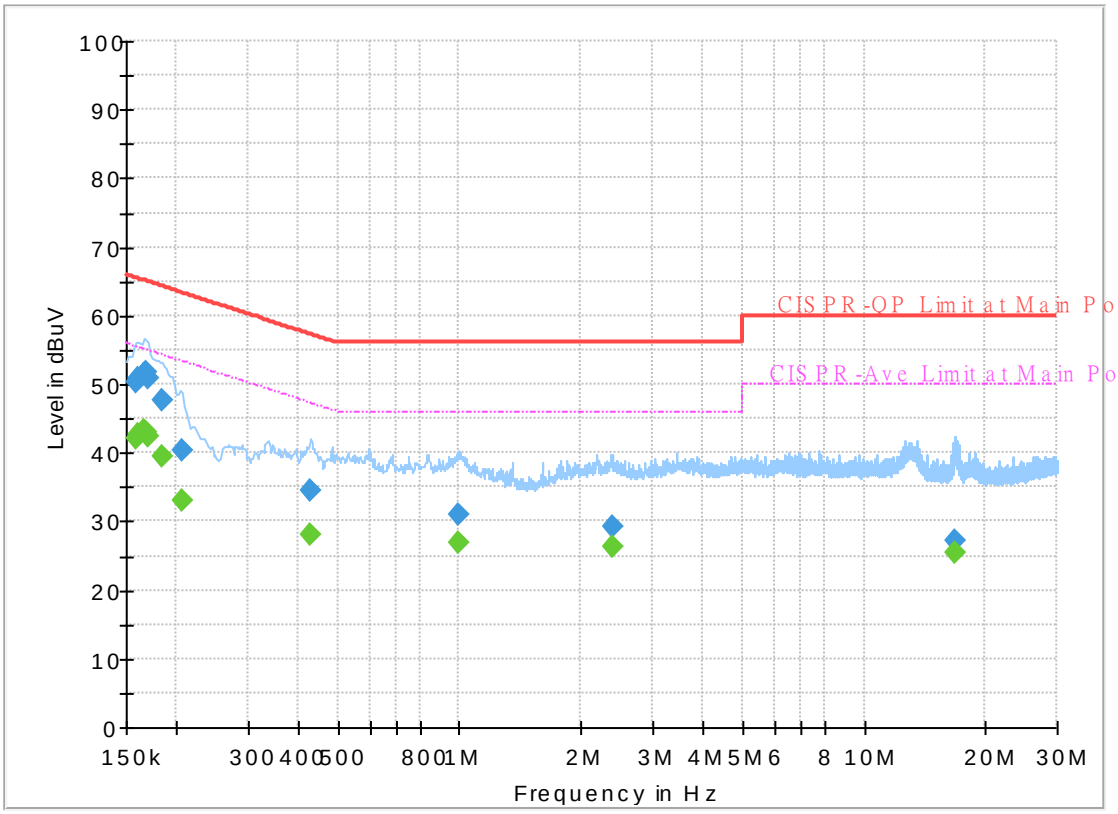
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.159000	---	42.43	55.52	13.09	L1	OFF	19.5
0.159000	50.48	---	65.52	15.04	L1	OFF	19.5
0.163500	---	44.60	55.28	10.68	L1	OFF	19.5
0.163500	52.50	---	65.28	12.78	L1	OFF	19.5
0.168000	---	43.57	55.06	11.49	L1	OFF	19.5
0.168000	52.99	---	65.06	12.07	L1	OFF	19.5
0.174750	---	42.96	54.73	11.77	L1	OFF	19.5
0.174750	51.97	---	64.73	12.76	L1	OFF	19.5
0.179250	---	41.60	54.52	12.92	L1	OFF	19.5
0.179250	51.07	---	64.52	13.45	L1	OFF	19.5
0.186000	---	40.73	54.21	13.48	L1	OFF	19.5
0.186000	50.75	---	64.21	13.46	L1	OFF	19.5
0.190500	---	40.16	54.02	13.86	L1	OFF	19.5
0.190500	50.31	---	64.02	13.71	L1	OFF	19.5
0.197250	---	36.96	53.73	16.77	L1	OFF	19.5
0.197250	48.14	---	63.73	15.59	L1	OFF	19.5
0.208500	---	34.22	53.27	19.05	L1	OFF	19.5
0.208500	45.31	---	63.27	17.96	L1	OFF	19.5
0.345750	---	27.83	49.06	21.23	L1	OFF	19.5
0.345750	36.05	---	59.06	23.01	L1	OFF	19.5
0.561750	---	25.97	46.00	20.03	L1	OFF	19.5

0.561750	33.29	---	56.00	22.71	L1	OFF	19.5
1.371750	---	26.72	46.00	19.28	L1	OFF	19.6
1.371750	30.58	---	56.00	25.42	L1	OFF	19.6
16.721250	---	25.76	50.00	24.24	L1	OFF	20.1
16.721250	29.38	---	60.00	30.62	L1	OFF	20.1

EUT Information

Report NO :	892722
Test Mode :	Mode 1
Test Voltage :	Power From System
Phase :	Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.159000	---	42.18	55.52	13.34	N	OFF	19.5
0.159000	50.35	---	65.52	15.17	N	OFF	19.5
0.161250	---	42.80	55.40	12.60	N	OFF	19.5
0.161250	50.93	---	65.40	14.47	N	OFF	19.5
0.165750	---	43.23	55.17	11.94	N	OFF	19.5
0.165750	51.56	---	65.17	13.61	N	OFF	19.5
0.168000	---	43.04	55.06	12.02	N	OFF	19.5
0.168000	51.63	---	65.06	13.43	N	OFF	19.5
0.170250	---	42.49	54.95	12.46	N	OFF	19.5
0.170250	50.84	---	64.95	14.11	N	OFF	19.5
0.183750	---	39.41	54.31	14.90	N	OFF	19.5
0.183750	47.78	---	64.31	16.53	N	OFF	19.5
0.206250	---	33.04	53.36	20.32	N	OFF	19.5
0.206250	40.46	---	63.36	22.90	N	OFF	19.5
0.429000	---	28.14	47.27	19.13	N	OFF	19.5
0.429000	34.54	---	57.27	22.73	N	OFF	19.5
0.998250	---	26.89	46.00	19.11	N	OFF	19.6
0.998250	30.89	---	56.00	25.11	N	OFF	19.6
2.393250	---	26.42	46.00	19.58	N	OFF	19.6
2.393250	29.20	---	56.00	26.80	N	OFF	19.6
16.737000	---	25.32	50.00	24.68	N	OFF	20.2

16.737000	**27.09**	**---**	**60.00**	**32.91**	**N**	**OFF**	**20.2**

Appendix C. Radiated Spurious Emission

Test Engineer :	Troye Hsieh	Temperature :	24~25°C
		Relative Humidity :	55~56%

2.4GHz 2400~2483.5MHz

GFSK (Band Edge @ 3m)

GFSK	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		2356.515	54.51	-19.49	74	40.15	31.93	17.37	34.94	220	208	P	H
		2389.38	44.15	-9.85	54	29.66	32	17.43	34.94	220	208	A	H
	*	2402	97.72	23.72	-	-	32	17.43	34.95	220	208	P	H
	*	2402	96.96	42.96	-	-	32	17.43	34.95	220	208	A	H
													H
GFSK													H
2402MHz		2385.075	54.14	-19.86	74	39.68	31.97	17.43	34.94	120	177	P	V
		2386.545	44.44	-9.56	54	29.95	32	17.43	34.94	120	177	A	V
	*	2402	103.96	29.96	-	-	32	17.43	34.95	120	177	P	V
	*	2402	103.18	49.18	-	-	32	17.43	34.95	120	177	A	V
													V
													V
		2344.58	53.7	-20.3	74	39.37	31.9	17.37	34.94	215	204	P	H
		2363.34	44.17	-9.83	54	29.81	31.93	17.37	34.94	215	204	A	H
	*	2438	97.15	23.15	-	-	32.2	17.49	34.96	215	204	P	H
	*	2438	96.32	42.32	-	-	32.2	17.49	34.96	215	204	A	H
		2499.16	54.02	-19.98	74	39.15	32.3	17.55	34.98	215	204	P	H
GFSK		2484.6	44.49	-9.51	54	29.64	32.27	17.55	34.97	215	204	A	H
2438MHz		2376.36	53.97	-20.03	74	39.57	31.97	17.37	34.94	139	177	P	V
		2382.94	44.26	-9.74	54	29.8	31.97	17.43	34.94	139	177	A	V
	*	2438	103.28	29.28	-	-	32.2	17.49	34.96	139	177	P	V
	*	2438	102.44	48.44	-	-	32.2	17.49	34.96	139	177	A	V
		2493	54.27	-19.73	74	39.4	32.3	17.55	34.98	139	177	P	V
		2487.96	44.68	-9.32	54	29.8	32.3	17.55	34.97	139	177	A	V

	*	2478	95.98	21.98	-	-	32.27	17.55	34.97	264	219	P	H
	*	2478	95.23	41.23	-	-	32.27	17.55	34.97	264	219	A	H
		2498.12	54.49	-19.51	74	39.62	32.3	17.55	34.98	264	219	P	H
		2484.6	44.73	-9.27	54	29.88	32.27	17.55	34.97	264	219	A	H
													H
GFSK													H
2478MHz	*	2478	102.17	28.17	-	-	32.27	17.55	34.97	116	185	P	V
	*	2478	101.35	47.35	-	-	32.27	17.55	34.97	116	185	A	V
		2483.68	54.33	-19.67	74	39.48	32.27	17.55	34.97	116	185	P	V
		2483.52	45.81	-8.19	54	30.96	32.27	17.55	34.97	116	185	A	V
													V
													V

Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.

2.4GHz 2400~2483.5MHz

GFSK (Harmonic @ 3m)

GFSK	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		4804	44.42	-29.58	74	58.97	33.9	10.93	59.38	100	0	P	H
		7206	48.55	-25.45	74	57.22	35.8	13.52	57.99	100	0		H
		12010	48.51	-25.49	74	47.87	38.62	18.63	56.61	100	0		H
GFSK													H
2402MHz		4804	47.33	-26.67	74	61.88	33.9	10.93	59.38	100	0	P	V
		7206	45.15	-28.85	74	53.82	35.8	13.52	57.99	100	0	A	V
		12010	49.19	-24.81	74	48.55	38.62	18.63	56.61	100	0	P	V
												A	V
		4876	42.79	-31.21	74	57	34	11.03	59.24	100	0	P	H
		7314	47.32	-26.68	74	56.09	35.7	13.66	58.13	100	0	P	H
		12190	47.79	-26.21	74	47.15	38.7	18.69	56.75	100	0		H
GFSK													H
2438MHz		4876	44.7	-29.3	74	58.91	34	11.03	59.24	100	0	P	V
		7314	45.07	-28.93	74	53.84	35.7	13.66	58.13	100	0	P	V
		12190	47.82	-26.18	74	47.18	38.7	18.69	56.75	100	0	A	V
													V
		4956	42.79	-31.21	74	56.62	34.1	11.14	59.07	100	0	P	H
		7434	47	-27	74	55.78	35.73	13.79	58.3	100	0	P	H
		12390	48.73	-25.27	74	48.12	38.78	18.75	56.92	100	0	A	H
GFSK													H
2478MHz		4956	42.97	-31.03	74	56.8	34.1	11.14	59.07	100	0	P	V
		7434	45.85	-28.15	74	54.63	35.73	13.79	58.3	100	0	P	V
		12390	48.71	-25.29	74	48.1	38.78	18.75	56.92	100	0	A	V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

2.4GHz GFSK (LF)

GFSK	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz GFSK LF		30	31.03	-8.97	40	35.28	24.6	1.33	30.18	100	0	P	H
		221.16	34.26	-11.74	46	46.19	15.41	2.62	29.96	-	-	P	H
		229.8	34.49	-11.51	46	45.6	16.21	2.63	29.95	-	-	P	H
		561.1	27.41	-18.59	46	27.63	25.84	3.81	29.87	-	-	P	H
		846	32.44	-13.56	46	28.18	28.66	4.74	29.14	-	-	P	H
		976.2	35.14	-18.86	54	27.62	30.84	5.06	28.38	-	-	P	H
													H
													H
													H
													H
													H
													H
		30	33.86	-6.14	40	38.11	24.6	1.33	30.18	100	0	P	V
		214.95	35.12	-8.38	43.5	47.48	15.22	2.38	29.96	-	-	P	V
		223.59	33.91	-12.09	46	45.57	15.68	2.62	29.96	-	-	P	V
		465.9	26.51	-19.49	46	29.53	23.25	3.64	29.91	-	-	P	V
		694.8	28.29	-17.71	46	27.44	26.25	4.26	29.66	-	-	P	V
		971.3	35.7	-18.3	54	28.2	30.86	5.06	28.42	-	-	P	V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

Note symbol

*	**Fundamental Frequency** which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is **over limit** line.
P/A	**P**eak or **A**verage
H/V	**H**orizontal or **V**ertical

A calculation example for radiated spurious emission is shown as below:

GFSK	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	TaGFSK	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
GFSK 2402MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = CaGFSK loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) =

Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is "PASS".

Appendix D. Radiated Spurious Emission Plots

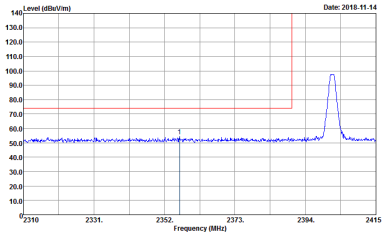
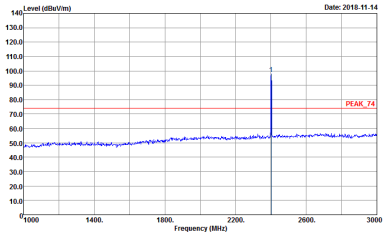
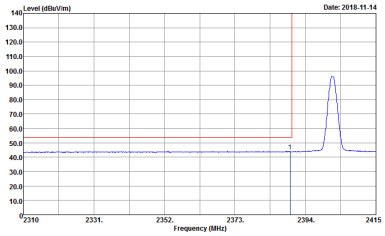
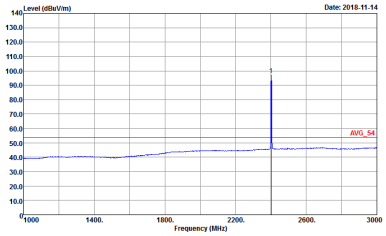
Test Engineer :	Troye Hsieh	**Temperature :**	24~25°C
		Relative Humidity :	55~56%

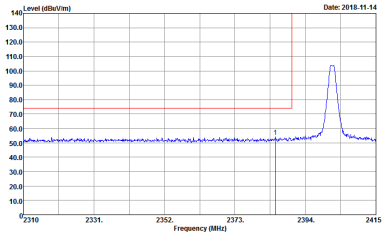
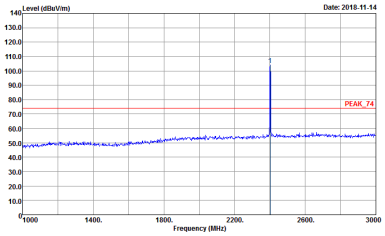
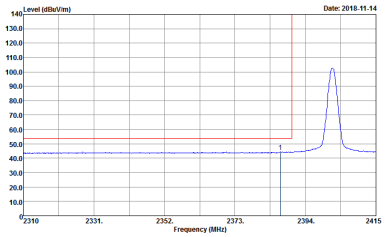
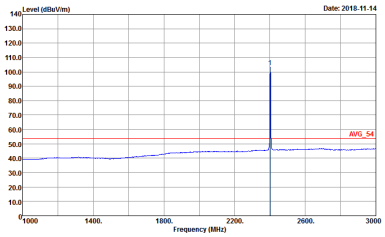
Note symbol

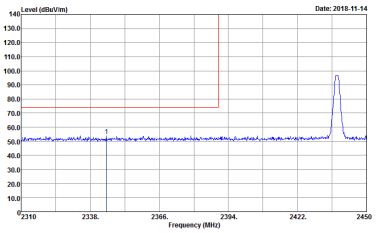
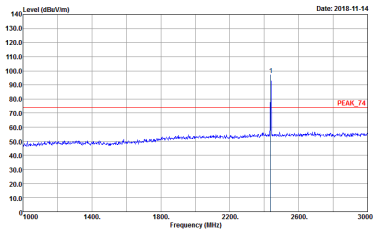
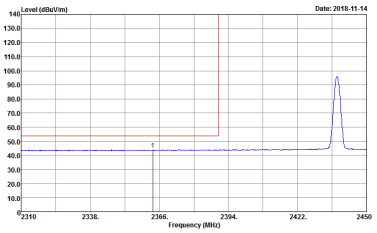
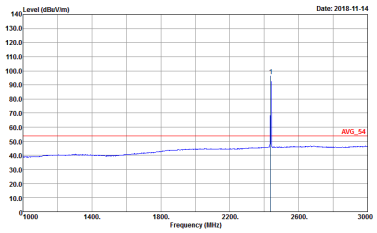
-L	**Low channel location**
-R	**High channel location**

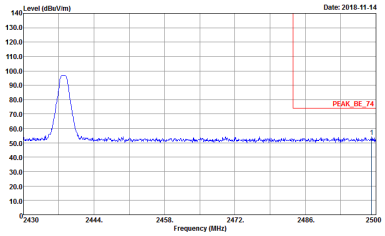
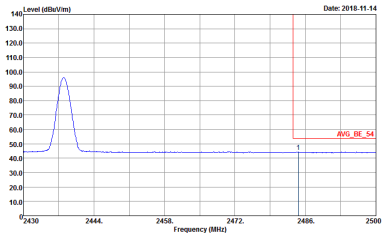
2.4GHz 2400~2483.5MHz

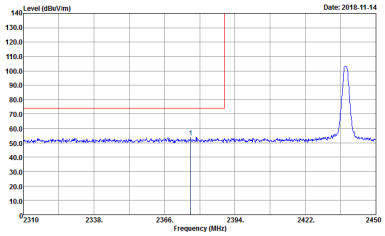
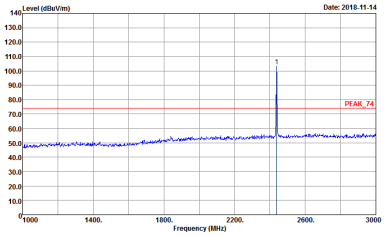
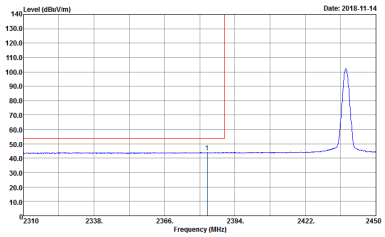
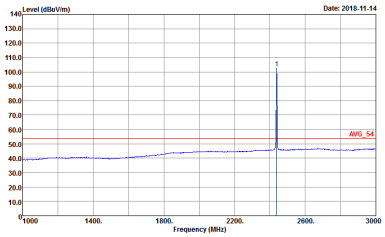
GFSK (Band Edge @ 3m)

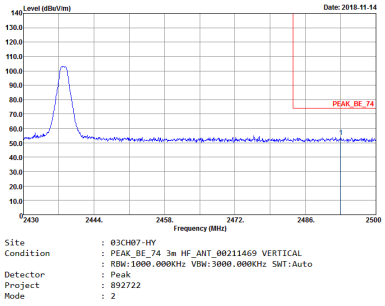
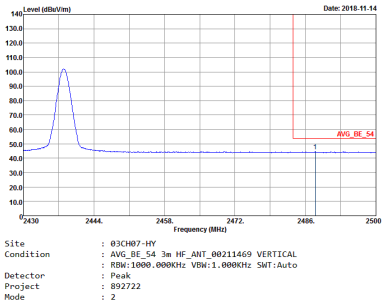
GFSK	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	GFSK 2402MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00211469 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 1	 Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00211469 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 1
Avg.	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00211469 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 1	 Site : 03CH07-HY Condition : AVG_54 3m HF_ANT_00211469 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 1

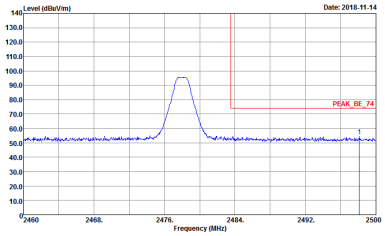
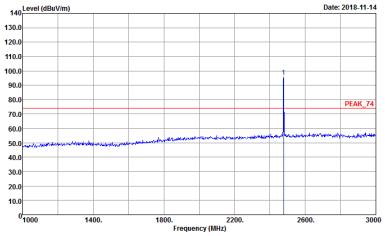
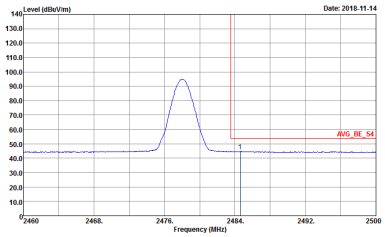
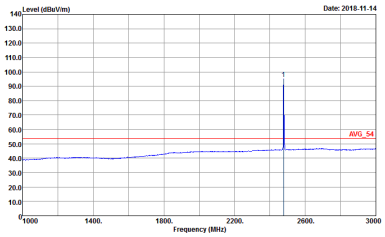
GFSK	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	GFSK 2402MHz	
	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00211469 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 1	 Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00211469 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 1
Avg	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00211469 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 1	 Site : 03CH07-HY Condition : AVG_54 3m HF_ANT_00211469 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 1

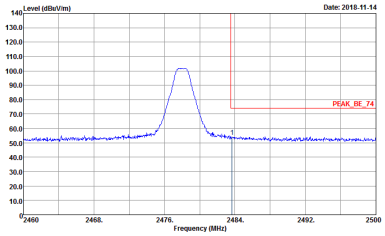
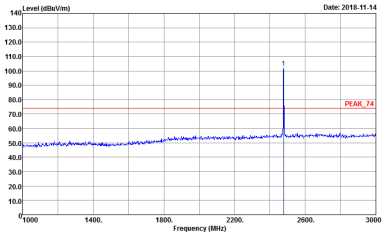
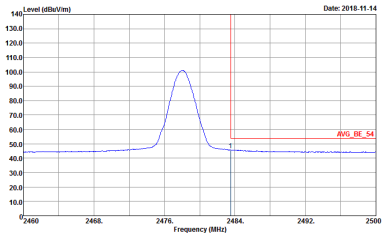
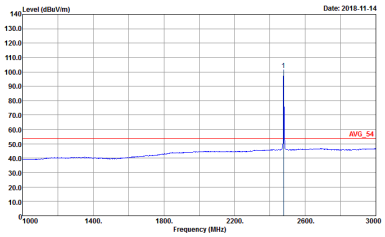
GFSK	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	GFSK 2438MHz - L	
	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00211469 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 2	 Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00211469 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 2
Avg.	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00211469 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 2	 Site : 03CH07-HY Condition : AVG_54 3m HF_ANT_00211469 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 2

GFSK	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	GFSK 2438MHz - R	
	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00211469 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 2	Left blank
Avg.	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00211469 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 2	Left blank

GFSK	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	GFSK 2438MHz - L	
	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00211469 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 2	 Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00211469 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 2
Avg.	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00211469 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 2	 Site : 03CH07-HY Condition : AVG_54 3m HF_ANT_00211469 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 2

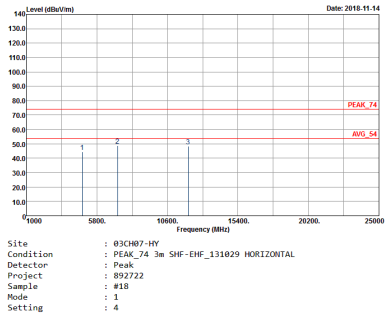
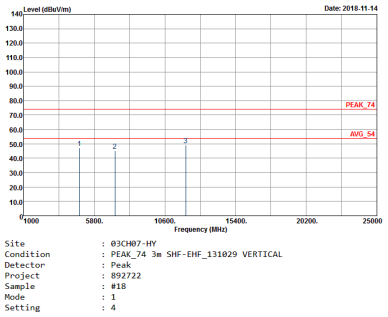
GFSK	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	GFSK 2438MHz - R	
	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

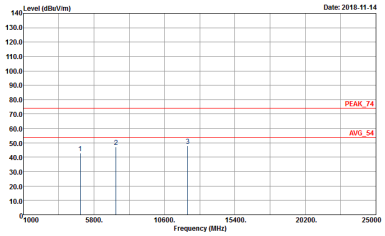
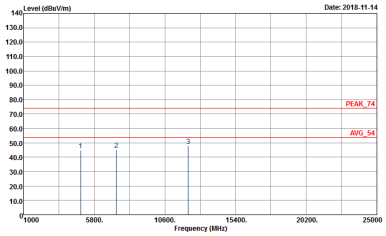
GFSK	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	GFSK 2478MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00211469 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 3	 Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00211469 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 3
Avg.	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00211469 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 3	 Site : 03CH07-HY Condition : AVG_54 3m HF_ANT_00211469 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 3

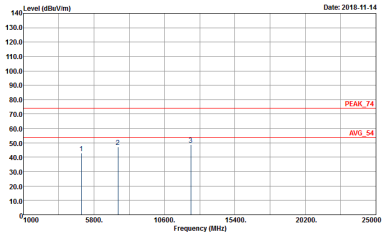
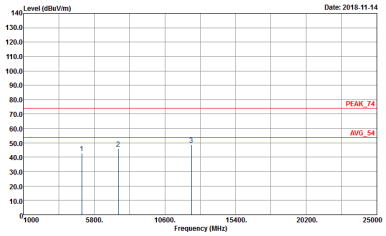
GFSK	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	GFSK 2478MHz	
	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00211469 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 3	 Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00211469 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 3
Avg.	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00211469 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 3	 Site : 03CH07-HY Condition : AVG_54 3m HF_ANT_00211469 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 892722 Mode : 3

2.4GHz 2400~2483.5MHz

GFSK (Harmonic @ 3m)

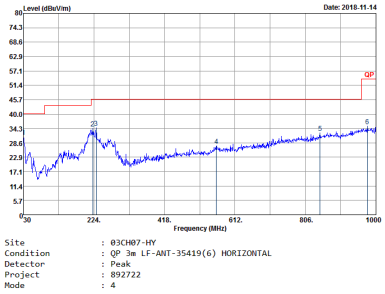
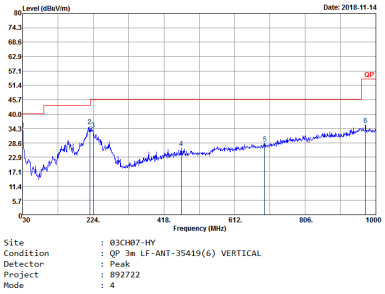
GFSK	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	GFSK 2402MHz	
	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK_74 3m SHF-EHF_131029 HORIZONTAL Detector : Peak Project : 892722 Sample : #18 Mode : 1 Setting : 4	 Site : 03CH07-HY Condition : PEAK_74 3m SHF-EHF_131029 VERTICAL Detector : Peak Project : 892722 Sample : #18 Mode : 1 Setting : 4

GFSK	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	GFSK 2438MHz	
	Horizontal	Vertical
Peak Avg.	 Site : 03CH07-HY Condition : PEAK_74 3m SHF-EHF_131029 HORIZONTAL Detector : Peak Project : 892722 Sample : #18 Mode : 2 Setting : 4	 Site : 03CH07-HY Condition : PEAK_74 3m SHF-EHF_131029 VERTICAL Detector : Peak Project : 892722 Sample : #18 Mode : 2 Setting : 4

GFSK	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	GFSK 2478MHz	
	Horizontal	Vertical
Peak	 Site : 03CH07-HY Condition : PEAK_74 3m SHF-EHF_131029 HORIZONTAL Detector : Peak Project : 892722 Sample : #18 Mode : 3 Setting : 4	 Site : 03CH07-HY Condition : PEAK_74 3m SHF-EHF_131029 VERTICAL Detector : Peak Project : 892722 Sample : #18 Mode : 3 Setting : 4

Emission below 1GHz

2.4GHz GFSK (LF)

GFSK	2.4GHz 2400~2483.5MHz	
	GFSK LF	
	Horizontal	Vertical
QP / Peak		

Appendix E. Duty Cycle Plots

Band	Duty Cycle (%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor (dB)
GFSK	89.57	1056.00	0.95	1kHz	0.48

GFSK