FCC Radio Test Report

FCC ID: 2AC23-WCT3EM2611

FCC 47 CFR Part 15 Subpart C

Product： WIFI Module

Trade Name： GSD

Model Number： WCT3EM2611

Firmware Version Identification Number (FVIN): 1.0

Issued for

Hui Zhou Gaoshengda Technology Co.,LTD

NO.75 Zhongkai Development Area, Huizhou, Guangdong, China

Issued by

Shenzhen ATL Testing Technology Co., Ltd.

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TEST RESULT CERTIFICATION

Product	:	WIFI Module
Applicant	:	Hui Zhou Gaoshengda Technology Co.,LTD
Address	:	NO.75 Zhongkai Development Area, Huizhou, Guangdong, China
Manufacturer	:	Hui Zhou Gaoshengda Technology Co.,LTD
Address	:	NO.75 Zhongkai Development Area, Huizhou, Guangdong, China
Model No.	:	WCT3EM2611
Standards	:	FCC Part 15 Subpart C (15.247)
Test Method	:	ANSI C63.10: 2013

The above equipment has been tested by Shenzhen ATL Testing Technology Co., Ltd. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Test.....:

Date of receipt of test item 2016-09-20

Date(s) of performance of test ..... 2016-09-21 to 2016-10-31

Test Result.....: Pass

Testing by	:	Sifeifei	Date	:	2016-10-31
		(Si feifei)			
Check by	:	XieLingling	Date	:	2016-11-04
		(Xie Lingling)			
Approved by	:	Xu Peng	Date	:	2016-11-04
		(Xu Peng)			

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1. TEST SUMMARY

Test procedures according to the technical standards:

FCC Part 15 Subpart C (15.247)				
Standard Section		Test Item	Judgment	Remark
15.207	RSS Gen 7.2.4	AC Power Conducted Emission	PASS	
15.247(c)	RSS 247 5.5	Transmitter Radiated Emissions	PASS	
15.247(b)(1)	RSS 247 5.1	Output Power	PASS	
15.247(a)(1)	RSS 247 5.1	20dB RF Bandwidth	PASS	
15.247(a)(1)(iii)	RSS 247 5.1	Carrier Frequency Separation	PASS	
15.247(a)(1)(iii)	RSS 247 5.1	Hopping Number	PASS	
15.247(a)(1)(iii)	RSS 247 5.1	Dwell Time	PASS	
15.247(c)	RSS 247 5.1	Occupied Bandwidth Measurement	PASS	
15.247(c)	RSS 247 5.5	Out of Band Conducted Spurious Emission	PASS	
15.247(c)	RSS 247 5.5	Band Edge Measurement	PASS	
15.203		Antenna Requirement	PASS	

NOTE:

(1)” N/A” denotes test is not applicable in this Test Report

(2)The test results of this report relate only to the tested sample(s) identified in this report.

1.1 TEST FACILITY

Shenzhen ATL Testing Technology Co., Ltd.
Add. : F/4, Building 10, Dayuan Industrial Zone, Xili Town, Nanshan District, Shenzhen, China

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y ± U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95** %.

A. Conducted Emission :

The measurement uncertainty is evaluated as ± 3.2 dB.

B. Radiated Measurement :

The measurement uncertainty is evaluated as ± 3.7 dB.

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	WIFI Module
Model Name	WCT3EM2611
Additional Model Number(s)	N/A
Model Difference	N/A
Frequency Range	Bluetooth 4.2 Bluetooth V2.0+EDR: 2402~2480 MHz
Modulation Type	Bluetooth: GFSK/ π /4-DQPSK/8-DPSK
RF Output Power	Bluetooth: GFSK: 0.58 dBm 8-DPSK: 0.71 dBm
Antenna Type	PIFA Antenna (Gain: 2.0 dBi)
Power Source	DC Powered by host system.
Power Rating	DC 5V from USB interference.
Remark	More details EUT technical specifications, please refer to the User's Manual.

Note:

(1) This Test Report is FCC Part 15 Subpart C, 15.247 for Bluetooth. And the Test procedure follows the FCC Public Notice DA 00-705-Filing and Measurement Guidance for Frequency Hopping Spectrum Systems.

(2) More information about the 802.11b/g/n/ac and BLE, please refer to other test report.

(3) Transmitting mode with antennas

Mode	TX Antenna (s)
Bluetooth	1

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	BT TX(GFSK) Mode
Mode 2	BT TX(π /4-DQPSK) Mode
Mode 3	BT TX(8-DPSK) Mode

For Conducted Test	
Final Test Mode	Description
Mode 1	BT TX(GFSK) Mode

For Radiated Test	
Final Test Mode	Description
Mode 1	BT TX(GFSK) Mode
Mode 2	BT TX(8-DPSK) Mode

Note:

(1) Software used to control the EUT for staying in continuous transmitting mode was programmed. After verification, all tests were carried out with the worst case test modes as shown below.

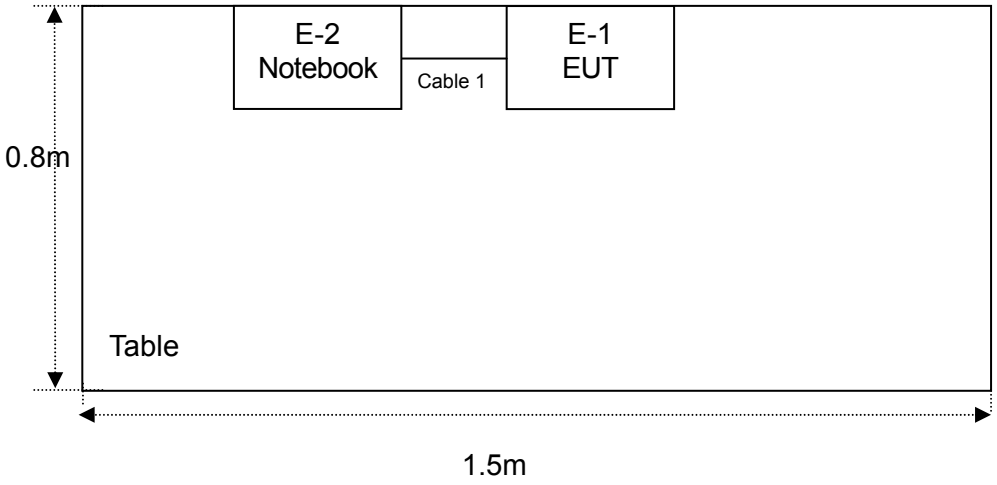
(2) GFSK Mode:
Channel (2402/2441/2480 MHz) with DH1 data packet were chosen for full testing.

(3) 8-DPSK Mode:
Channel (2402/2441/2480 MHz) with DH1 data packet were chosen for full testing.

(4) By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that “X axis” position was the worst, then the final test was executed the worst condition and test data were recorded in this report.

2.3 DESCRIPTION OF TEST SETUP

Radiated Emission



2.4 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	WIFI Module	GSD	WCT3EM2611	N/A	EUT
E-2	Notebook	LENOVO	P405	DOC	

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	15cm	

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.
(3) “YES” means “shielded” “with core”; “NO” means “unshielded” “without core”.

2.5 EUT Exercise Software

Test Software: Media Tek BT Tool.exe

GFSK: The command set for RF power-DEF
8-DPSK:The command set for RF power-DEF

3. CONDUCTED EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Quasi-peak	Average
	dBuV	dBuV
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.2 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

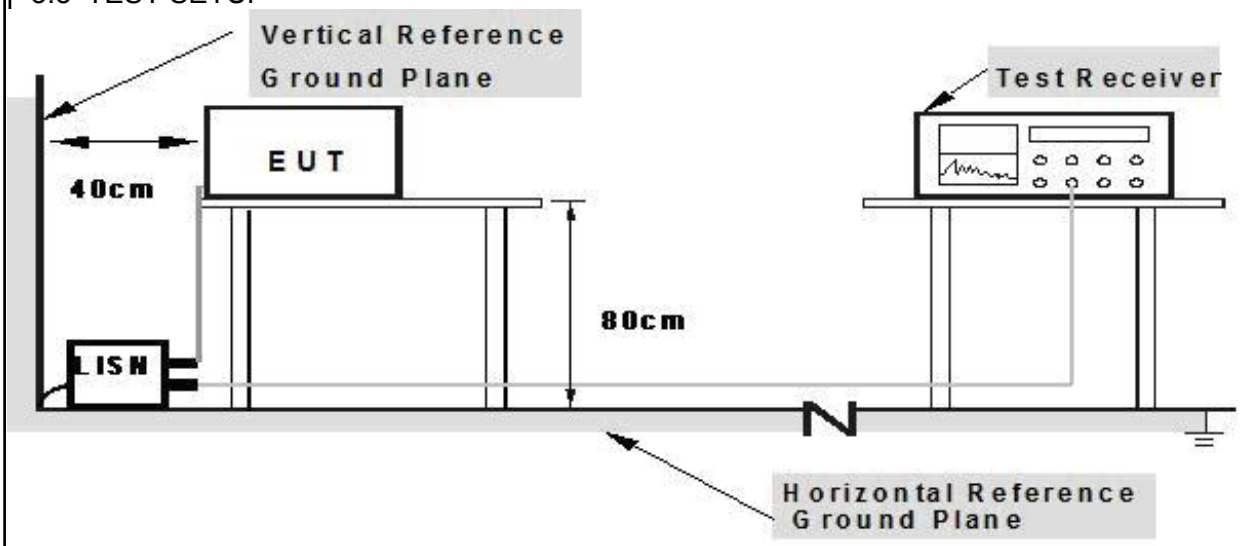
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

d. LISN at least 80 cm from nearest part of EUT chassis.

e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.3 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
LISN	R&S	NSLK81	8126466	Jul. 04. 2016	Jul. 03. 2017	1 year
LISN	R&S	NSLK81	8126487	Dec. 23, 2015	Dec. 22, 2016	1 year
50Ω Switch	ANRITSU CORP	MP59B	6200983704	Jul. 04. 2016	Jul. 03. 2017	1 year
Test Cable	N/A	C01	N/A	Jul. 04. 2016	Jul. 03. 2017	1 year
Test Cable	N/A	C02	N/A	Jul. 04. 2016	Jul. 03. 2017	1 year
Test Cable	N/A	C03	N/A	Jul. 04. 2016	Jul. 03. 2017	1 year
EMI Test Receiver	R&S	ESCI	1166.595	Jul. 04. 2016	Jul. 03. 2017	1 year
Passive Voltage Probe	ESH2-Z3	R&S	100196	Jul. 04. 2016	Jul. 03. 2017	1 year

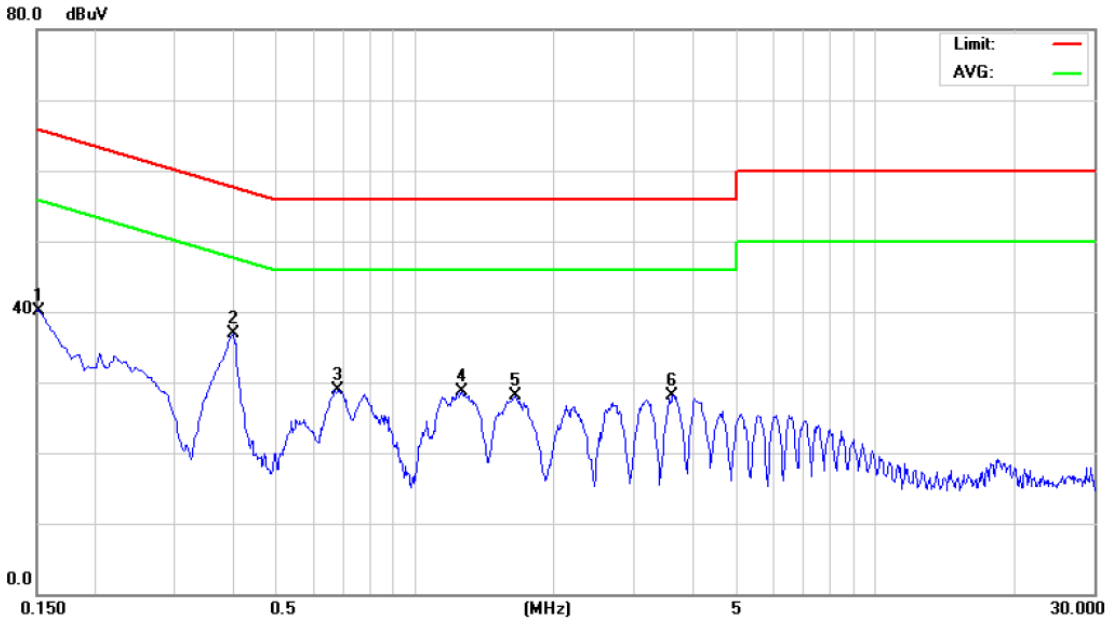
3.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.

3.6 TEST RESULTS

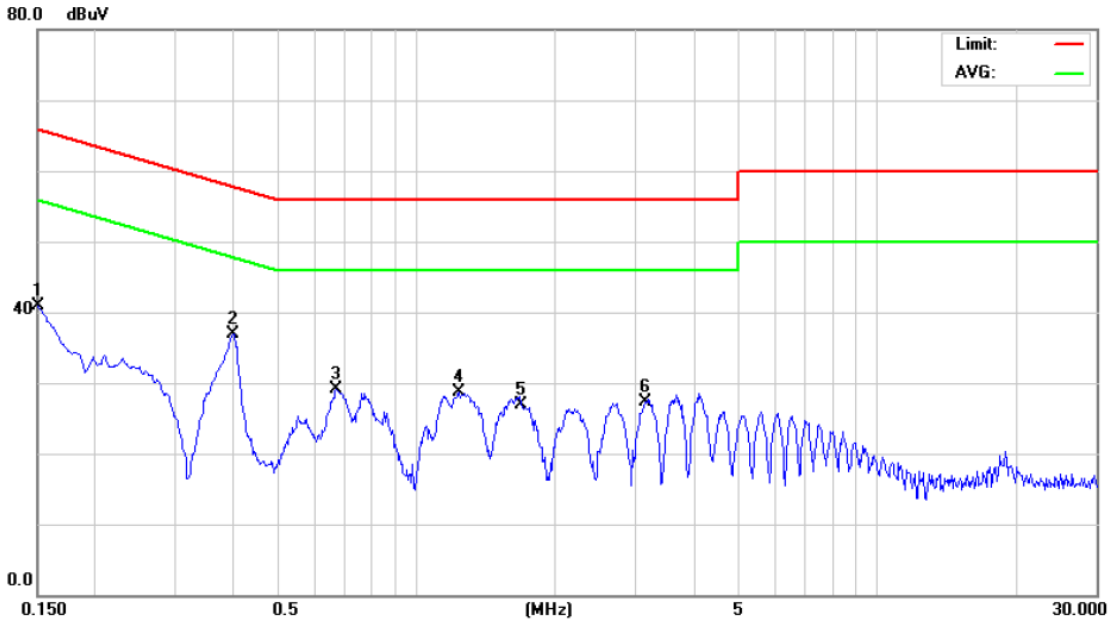
EUT：	WIFI Module	Model Name. ：	WCT3EM2611
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2016-09-26
Test Mode：	Mode 1	Phase：	Line
Test Voltage ：	120V/ 60Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1516	30.15	9.92	40.07	65.91	-25.84	peak
2	*	0.4020	26.81	10.02	36.83	57.81	-20.98	peak
3		0.6820	18.81	10.11	28.92	56.00	-27.08	peak
4		1.2660	18.58	10.06	28.64	56.00	-27.36	peak
5		1.6580	18.01	10.06	28.07	56.00	-27.93	peak
6		3.6340	18.06	10.01	28.07	56.00	-27.93	peak



EUT：	WIFI Module	Model Name. ：	WCT3EM2611
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2016-09-26
Test Mode：	Mode 1	Phase：	Neutral
Test Voltage ：	120V/ 60Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1500	30.69	10.12	40.81	66.00	-25.19	peak
2	*	0.3980	26.79	10.05	36.84	57.90	-21.06	peak
3		0.6700	19.02	10.02	29.04	56.00	-26.96	peak
4		1.2420	18.50	10.14	28.64	56.00	-27.36	peak
5		1.6900	16.76	10.09	26.85	56.00	-29.15	peak
6		3.1420	17.21	10.06	27.27	56.00	-28.73	peak



4. RADIATED EMISSION MEASUREMENT

4.1 RADIATED EMISSION LIMIT (Frequency Range 9KHz-1000MHz)

20 dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table bellow has to be followed.

FREQUENCY (MHz)	Field Strength (uV/m at 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

RADIATED EMISSION LIMITS (Above 1000MHz)

FREQUENCY (MHz)	Class A (dBuV/m)(at 3 M)		Class B (dBuV/m)(at 3 M)	
	Peak	Average		Peak
Above 1000	80	60	74	54

Note:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(2) Emission Level(dBuV/m)=20log Emission Level(uV/m)

The following table is the setting of the receiver

Receiver Parameter	Setting
Attenuation	Auto
Start Frequency~ Stop Frequency	9kHz~150kHz/ RB 200Hz for QP
Start Frequency~ Stop Frequency	150kHz~30MHz/ RB 9kHz for QP
Start Frequency~ Stop Frequency	30MHz~1000MHz/ RB120kHz for QP

The following table is the setting of the spectrum

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10^{th} carrier harmonic
RB/ VB (emission in restricted band)	1MHz/ 3 MHz for Peak, 1MHz/ 10Hz for Average

4.2 TEST PROCEDURE

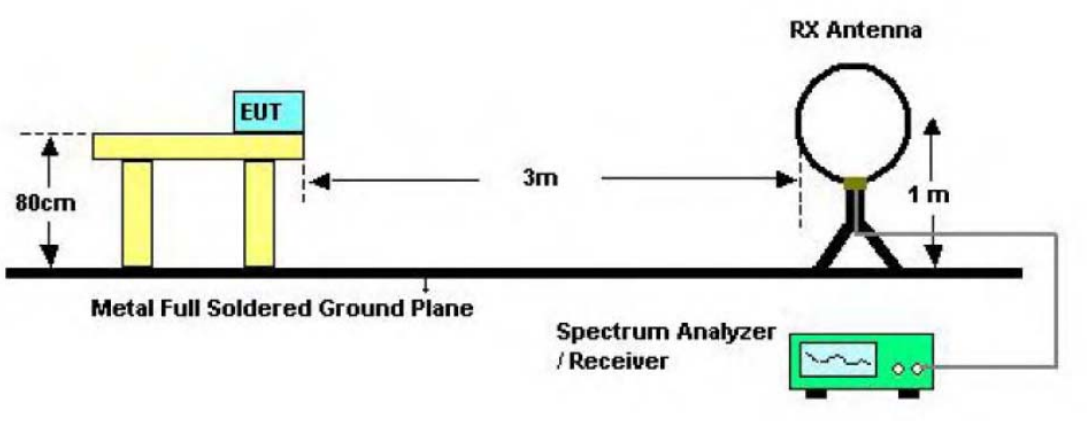
a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.

b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

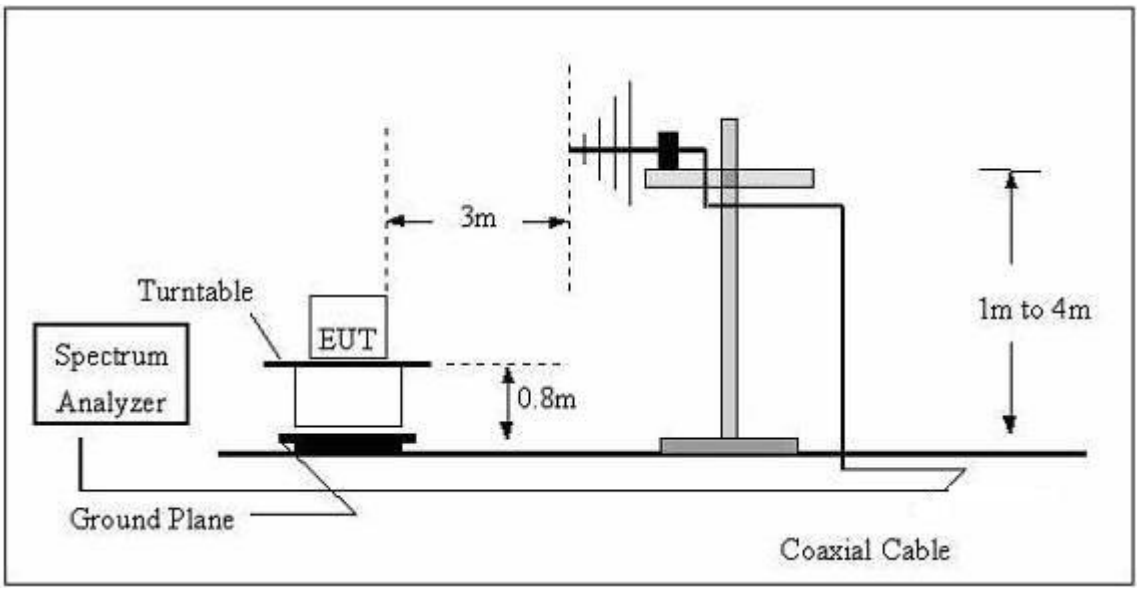
c. The height of the equipment or of the substitution antenna shall be 1.5 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured, above 1G Average detector mode will be instead.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.
Note:
Both horizontal and vertical antenna polarities were tested.
And performed pretest to three orthogonal axis. The worst case emissions were reported.

4.3 TEST SETUP

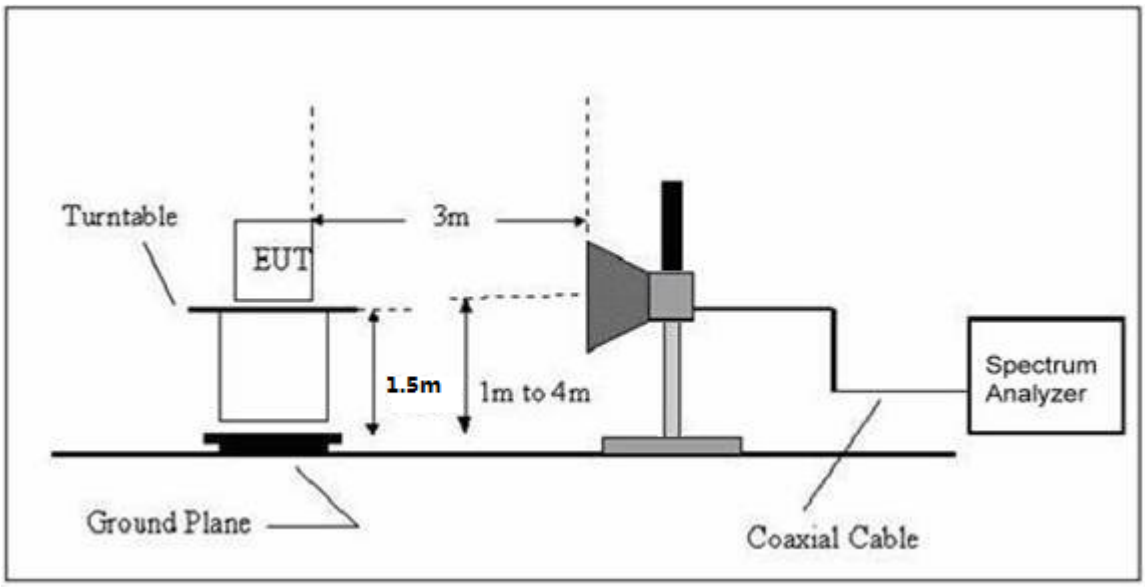
(A) Radiated Emission Test Set-Up Frequency Below 30MHz



(B) Radiated Emission Test Set-Up Frequency Below 1 GHz



(C) Radiated Emission Test Set-Up Frequency Above 1GHz



4.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Broadband Antenna	R&S	VULB 9168	VULB 9168-456	Jul. 04. 2016	Jul. 03. 2017	1 year
Test Cable	N/A	R-01	N/A	Dec. 23, 2015	Dec. 22, 2016	1 year
Test Cable	N/A	R-02	N/A	Dec. 23, 2015	Dec. 22, 2016	1 year
EMI Test Receiver	R&S	ESCI	101324	Jul. 04. 2016	Jul. 03. 2017	1 year
Antenna Mast	EM	SC100_1	N/A	N/A	N/A	N/A
Turn Table	EM	SC100	060531	N/A	N/A	N/A
50Ω Switch	Anritsu Corp	MP59B	6200983705	Jul. 04. 2016	Jul. 03. 2017	1 year
Spectrum Analyzer	R&S	FSP40	100154	Jul. 04. 2016	Jul. 03. 2017	1 year
Horn Antenna	R&S	HF906	10029	Jul. 04. 2016	Jul. 03. 2017	1 year
Amplifier	EM	EM-30180	060538	Jul. 04. 2016	Jul. 03. 2017	1 year

4.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.

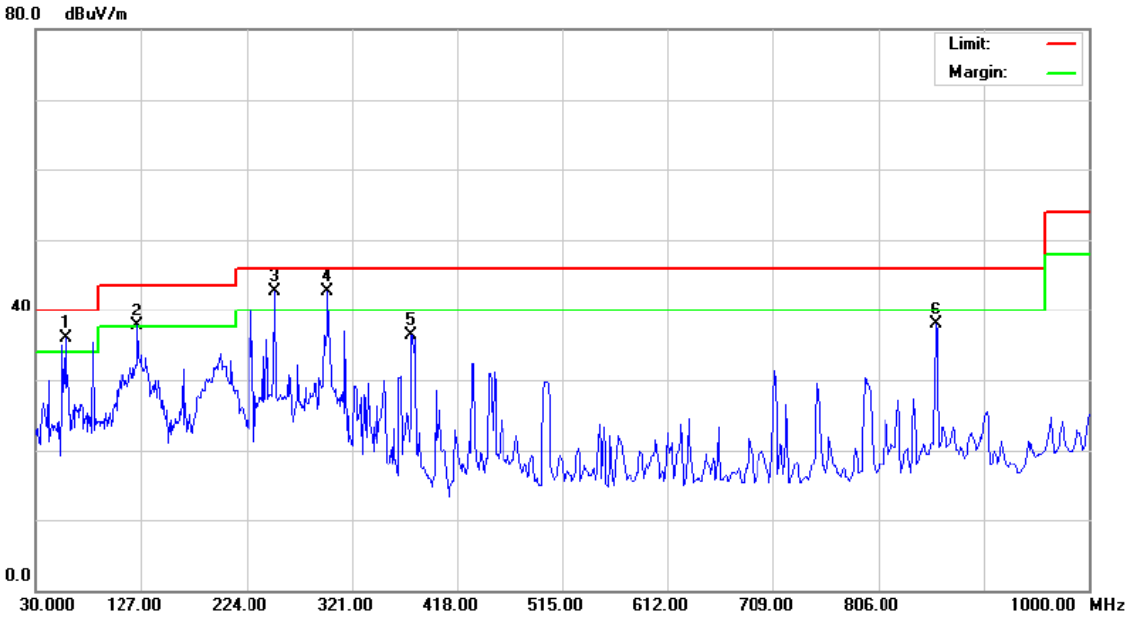
4.6 TEST RESULTS

4.6.1 TEST RESULTS (Bellow 1GHz)

EUT：	WIFI Module	Model Name. ：	WCT3EM2611
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date：	2016-10-30
Test Mode ：	BT TX Mode	Polarization：	Horizontal
Test Power ：	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	!	57.9992	56.90	-20.97	35.93	40.00	-4.07	peak
2	!	125.0066	56.84	-19.20	37.64	43.50	-5.86	peak
3	*	250.3010	61.19	-18.40	42.79	46.00	-3.21	peak
4	!	299.3158	59.34	-16.73	42.61	46.00	-3.39	peak
5		377.2590	52.14	-15.92	36.22	46.00	-9.78	peak
6		860.0352	49.13	-11.19	37.94	46.00	-8.06	peak

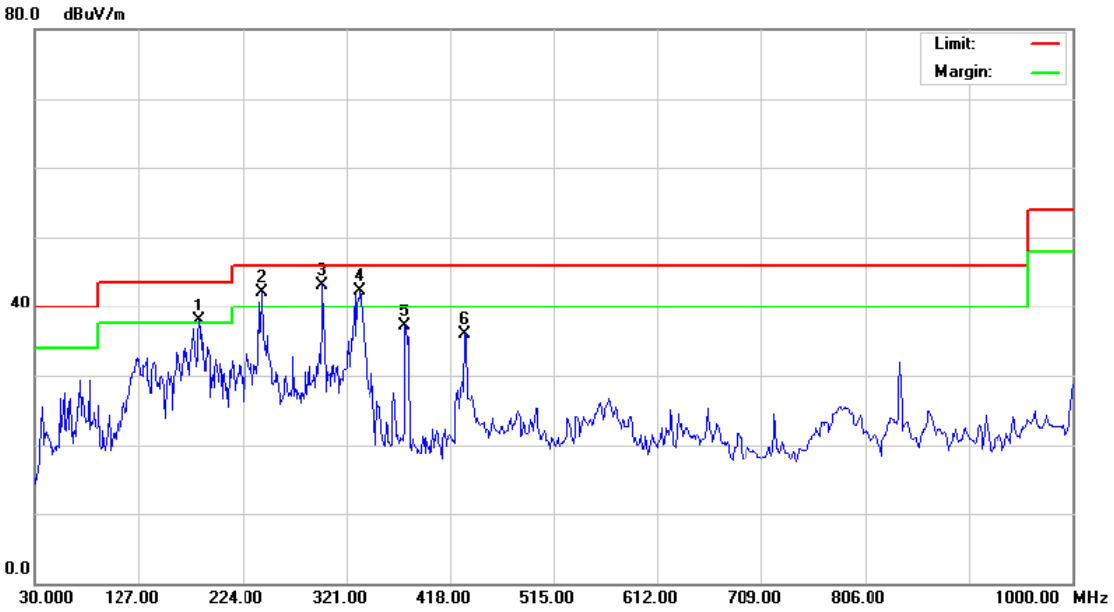
Remark:
Factor = Antenna Factor + Cable Loss.



EUT：	WIFI Module	Model Name. ：	WCT3EM2611
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date：	2016-10-30
Test Mode ：	BT TX Mode	Polarization：	Vertical
Test Power ：	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	!	183.8440	56.83	-19.00	37.83	43.50	-5.67	peak
2	!	243.3771	60.72	-18.56	42.16	46.00	-3.84	peak
3	*	299.3158	59.93	-16.73	43.20	46.00	-2.80	peak
4	!	333.6865	58.72	-16.34	42.38	46.00	-3.62	peak
5		377.2590	53.09	-15.92	37.17	46.00	-8.83	peak
6		432.5457	51.28	-15.28	36.00	46.00	-10.00	peak

Remark:
Factor = Antenna Factor + Cable Loss.



4.6.2 TEST RESULTS (Above 1GHz)

EUT：	WIFI Module	Model Name. ：	WCT3EM2611
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date：	2016-10-30
Test Mode ：	GFSK TX 2402MHz	Polarization：	Horizontal
Test Power ：	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	67.05	0.77	67.82	74.00	-6.18	peak	
2		2390.000	39.01	0.77	39.78	54.00	-14.22	AVG	
3	*	2401.800	92.13	0.82	92.95	54.00	38.95	AVG	FUNDAMENTAL FREQUENCY
4	X	2402.200	100.7	0.82	101.55	74.00	27.55	peak	FUNDAMENTAL FREQUENCY

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4804.009	52.38	8.18	60.56	74.00	-13.44	peak	
2	*	4804.203	40.90	8.18	49.08	54.00	-4.92	AVG	

EUT：	WIFI Module	Model Name. ：	WCT3EM2611
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date：	2016-10-30
Test Mode ：	GFSK TX 2402MHz	Polarization：	Vertical
Test Power ：	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	59.46	0.77	60.23	74.00	-13.77	peak	
2		2390.000	37.08	0.77	37.85	54.00	-16.15	AVG	
3	*	2401.900	89.14	0.82	89.96	54.00	35.96	AVG	FUNDAMENTAL FREQUENCY
4	X	2402.000	97.05	0.82	97.87	74.00	23.87	peak	FUNDAMENTAL FREQUENCY

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4803.896	40.94	8.18	49.12	54.00	-4.88	AVG	
2		4803.958	54.36	8.18	62.54	74.00	-11.46	peak	

EUT：	WIFI Module	Model Name. ：	WCT3EM2611
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date：	2016-10-30
Test Mode ：	GFSK TX 2441MHz	Polarization：	Horizontal
Test Power ：	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4881.956	53.79	8.21	62.00	74.00	-12.00	peak	
2	*	4881.964	40.88	8.21	49.09	54.00	-4.91	AVG	

EUT：	WIFI Module	Model Name. ：	WCT3EM2611
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date：	2016-10-30
Test Mode ：	GFSK TX 2441MHz	Polarization：	Vertical
Test Power ：	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4882.113	40.59	8.21	48.80	54.00	-5.20	AVG	
2		4882.117	54.11	8.21	62.32	74.00	-11.68	peak	

EUT：	WIFI Module	Model Name. ：	WCT3EM2611
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date：	2016-10-30
Test Mode ：	GFSK TX 2480MHz	Polarization：	Horizontal
Test Power ：	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2479.900	97.04	1.15	98.19	74.00	24.19	peak	FUNDAMENTAL FREQUENCY
2	*	2479.900	88.53	1.15	89.68	54.00	35.68	AVG	FUNDAMENTAL FREQUENCY
3		2483.500	68.54	1.17	69.71	74.00	-4.29	peak	
4		2483.500	49.34	1.17	50.51	54.00	-3.49	AVG	

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4959.908	38.08	8.23	46.31	54.00	-7.69	AVG	
2		4960.020	52.48	8.23	60.71	74.00	-13.29	peak	

EUT：	WIFI Module	Model Name. ：	WCT3EM2611
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date：	2016-10-30
Test Mode ：	GFSK TX 2480MHz	Polarization：	Vertical
Test Power ：	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2479.800	89.46	1.15	90.61	54.00	36.61	AVG	FUNDAMENTAL FREQUENCY
2	X	2480.000	98.30	1.15	99.45	74.00	25.45	peak	FUNDAMENTAL FREQUENCY
3		2483.500	69.60	1.17	70.77	74.00	-3.23	peak	
4		2483.500	50.48	1.17	51.65	54.00	-2.35	AVG	

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4960.057	40.00	8.23	48.23	54.00	-5.77	AVG	
2		4960.252	53.72	8.23	61.95	74.00	-12.05	peak	

EUT：	WIFI Module	Model Name. ：	WCT3EM2611
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date：	2016-10-30
Test Mode ：	8DPSK TX 2402MHz	Polarization：	Horizontal
Test Power ：	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	64.32	0.77	65.09	74.00	-8.91	peak	
2		2390.000	39.00	0.77	39.77	54.00	-14.23	AVG	
3	X	2401.900	99.17	0.82	99.99	74.00	25.99	peak	FUNDAMENTAL FREQUENCY
4	*	2402.000	86.26	0.82	87.08	54.00	33.08	AVG	FUNDAMENTAL FREQUENCY

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4804.112	37.59	8.18	45.77	54.00	-8.23	AVG	
2		4804.123	50.43	8.18	58.61	74.00	-15.39	peak	

EUT：	WIFI Module	Model Name. ：	WCT3EM2611
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date：	2016-10-30
Test Mode ：	8DPSK TX 2402MHz	Polarization：	Vertical
Test Power ：	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	55.34	0.77	56.11	74.00	-17.89	peak	
2		2390.000	36.47	0.77	37.24	54.00	-16.76	AVG	
3	X	2402.020	98.06	0.82	98.88	74.00	24.88	peak	FUNDAMENTAL FREQUENCY
4	*	2402.020	86.12	0.82	86.94	54.00	32.94	AVG	FUNDAMENTAL FREQUENCY

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4803.904	38.80	8.18	46.98	54.00	-7.02	AVG	
2		4803.916	53.93	8.18	62.11	74.00	-11.89	peak	

EUT：	WIFI Module	Model Name. ：	WCT3EM2611
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date：	2016-10-30
Test Mode ：	8DPSK TX 2441MHz	Polarization：	Horizontal
Test Power ：	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4882.117	52.87	8.21	61.08	74.00	-12.92	peak	
2	*	4882.118	38.23	8.21	46.44	54.00	-7.56	AVG	

EUT：	WIFI Module	Model Name. ：	WCT3EM2611
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date：	2016-10-30
Test Mode ：	8DPSK TX 2441MHz	Polarization：	Vertical
Test Power ：	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4882.004	54.00	8.21	62.21	74.00	-11.79	peak	
2	*	4882.106	38.52	8.21	46.73	54.00	-7.27	AVG	

EUT：	WIFI Module	Model Name. ：	WCT3EM2611
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date：	2016-10-30
Test Mode ：	8DPSK TX 2480MHz	Polarization：	Horizontal
Test Power ：	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2480.200	96.83	1.15	97.98	74.00	23.98	peak	FUNDAMENTAL FREQUENCY
2	*	2480.200	84.62	1.15	85.77	54.00	31.77	AVG	FUNDAMENTAL FREQUENCY
3		2483.500	69.42	1.17	70.59	74.00	-3.41	peak	
4		2483.500	47.30	1.17	48.47	54.00	-5.53	AVG	

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4959.940	52.82	8.23	61.05	74.00	-12.95	peak	
2	*	4959.967	38.86	8.23	47.09	54.00	-6.91	AVG	

EUT：	WIFI Module	Model Name. ：	WCT3EM2611
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010 hPa	Test Date：	2016-10-30
Test Mode ：	8DPSK TX 2480MHz	Polarization：	Vertical
Test Power ：	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2480.100	97.97	1.15	99.12	74.00	25.12	peak	FUNDAMENTAL FREQUENCY
2	*	2480.200	86.10	1.15	87.25	54.00	33.25	AVG	FUNDAMENTAL FREQUENCY
3		2483.500	69.60	1.17	70.77	74.00	-3.23	peak	
4		2483.500	48.62	1.17	49.79	54.00	-4.21	AVG	

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4959.980	51.98	8.23	60.21	74.00	-13.79	peak	
2	*	4960.009	37.85	8.23	46.08	54.00	-7.92	AVG	

5. CONDUCTED OUTPUT POWER MEASUREMENT

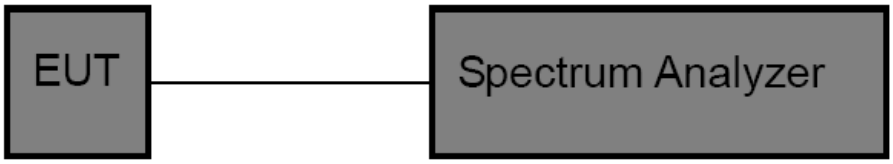
5.1 LIMITS

Peak Output Power	For frequency Hopping systems in 2400~2483.5MHz band and employing at least 75 non-overlapping hopping channels< 1 watt (30 dBm).

5.2 TEST PROCEDURE

The EUT was directly connected to the power meter and antenna output port as show in the block diagram as bellow.

5.3 TEST SETUP



5.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Spectrum Analyzer	R&S	FSP40	100154	Jul. 04, 2016	Jul. 03. 2017	1 year

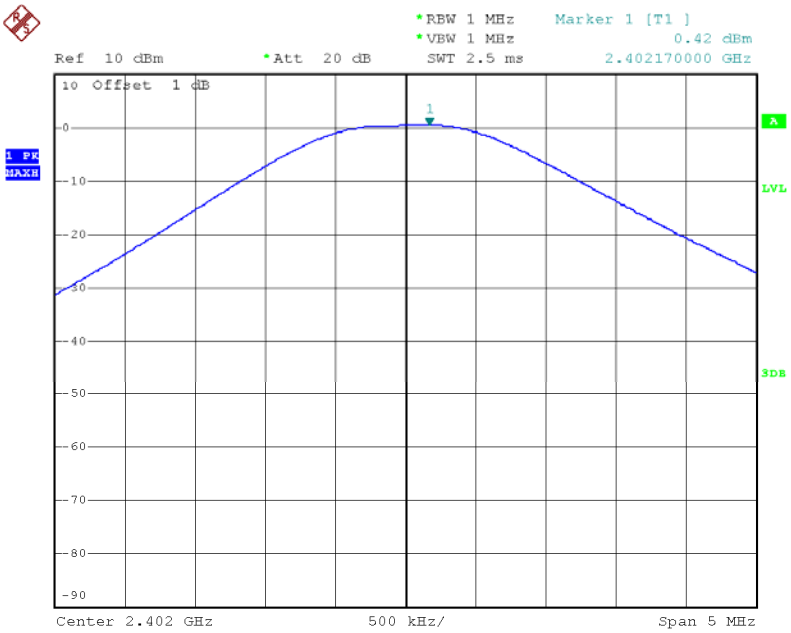
5.5 EUT OPERATING CONDITIONS

The EUT was set to continuously transmitting in the maximum power during the test.

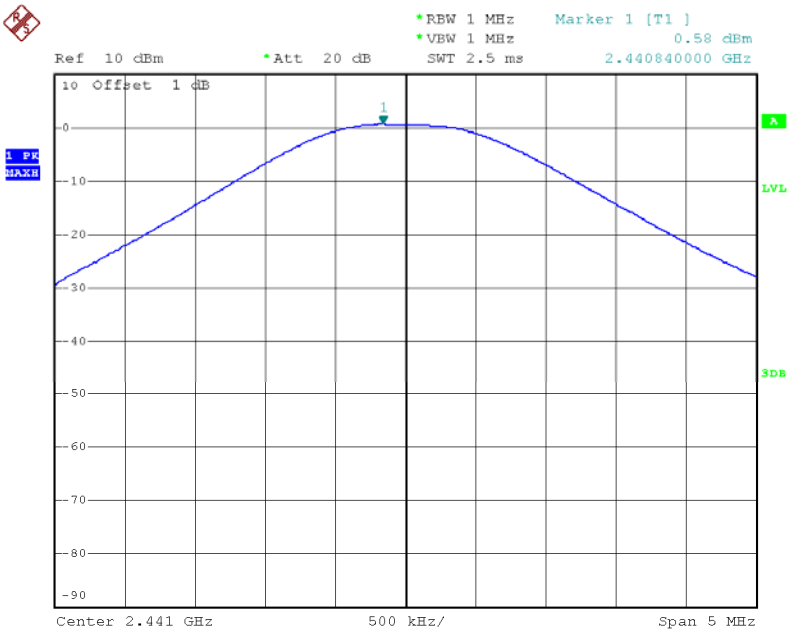
5.6 TEST RESULTS

GFSK (1Mbps)		
Frequency (MHz)	**Peak Output Power (dBm)**	**Limit (dBm)**
2402	0.42	<30
2441	0.58	
2480	0.39	

2402 MHz



2441 MHz



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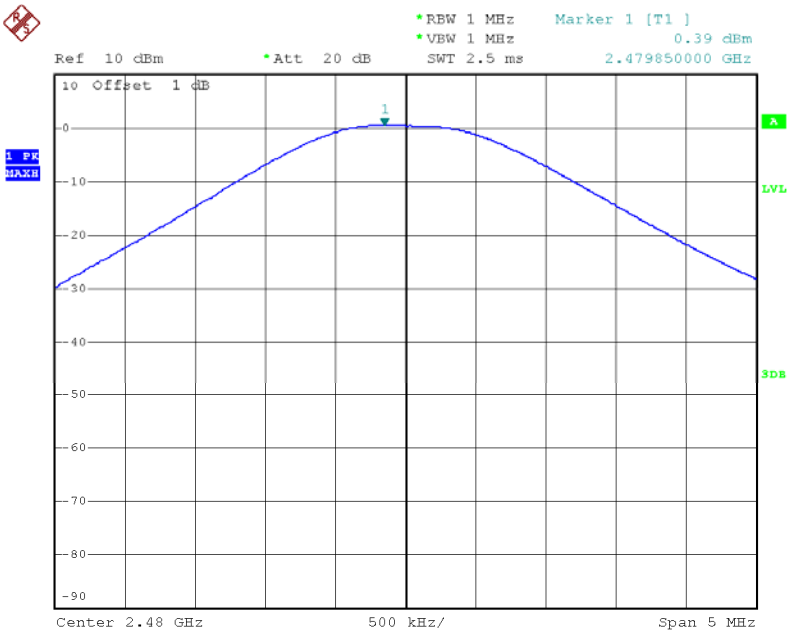
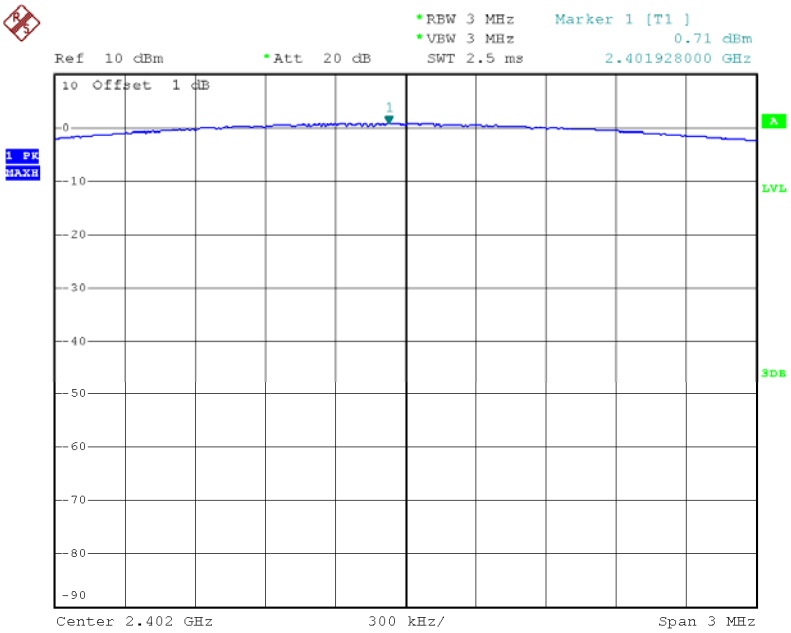
2480 MHz



Date: 17.OCT.2016 17:03:56

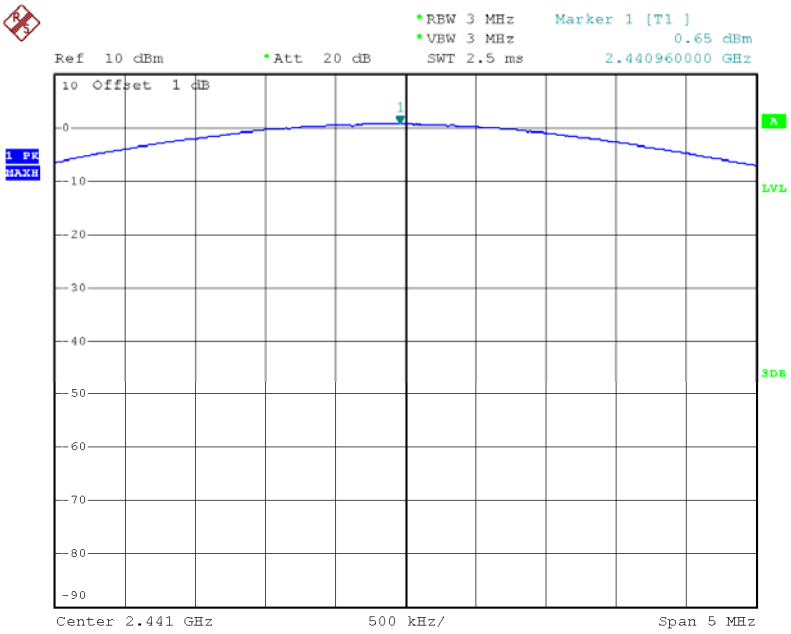
8-DPSK (3Mbps)		
Frequency (MHz)	**Peak Output Power (dBm)**	**Limit (dBm)**
2402	0.71	<30
2441	0.65	
2480	0.15	

2402 MHz



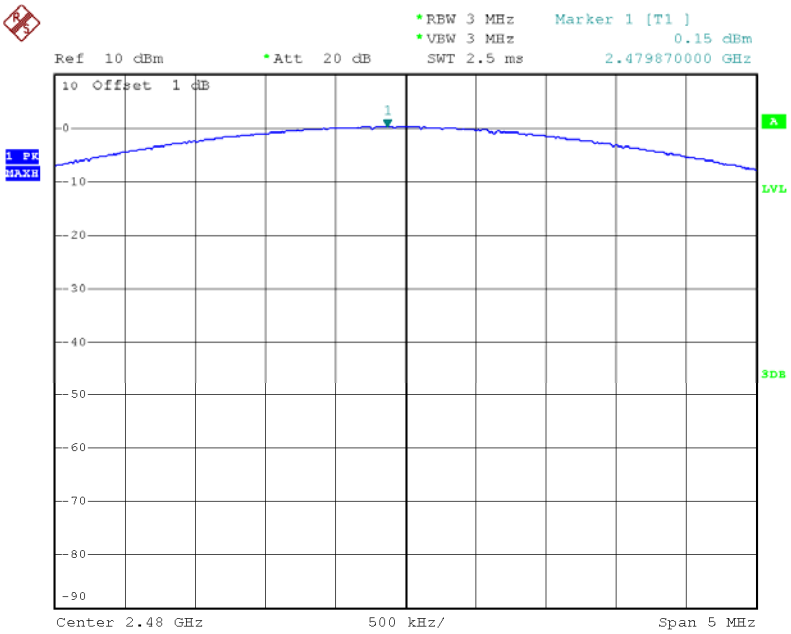
Date: 17.OCT.2016 17:14:47

2441 MHz



Date: 17.OCT.2016 17:17:36

2480 MHz



Date: 17.OCT.2016 17:20:15

6. OCCUPIED BANDWIDTH MEASUREMENT

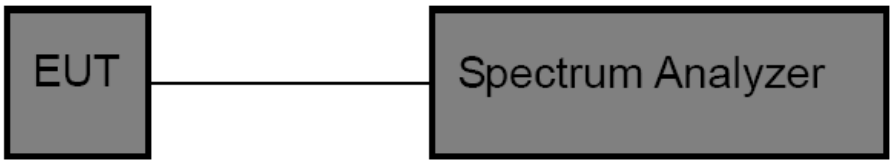
6.1 LIMITS

20dB Bandwidth	N/A
99% Occupied Bandwidth	N/A

6.2 TEST PROCEDURE

The EUT was directly connected to the power meter and antenna output port as show in the block diagram as bellow.

6.3 TEST SETUP



6.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Spectrum Analyzer	R&S	FSP40	100154	Jul. 04, 2016	Jul. 03. 2017	1 year

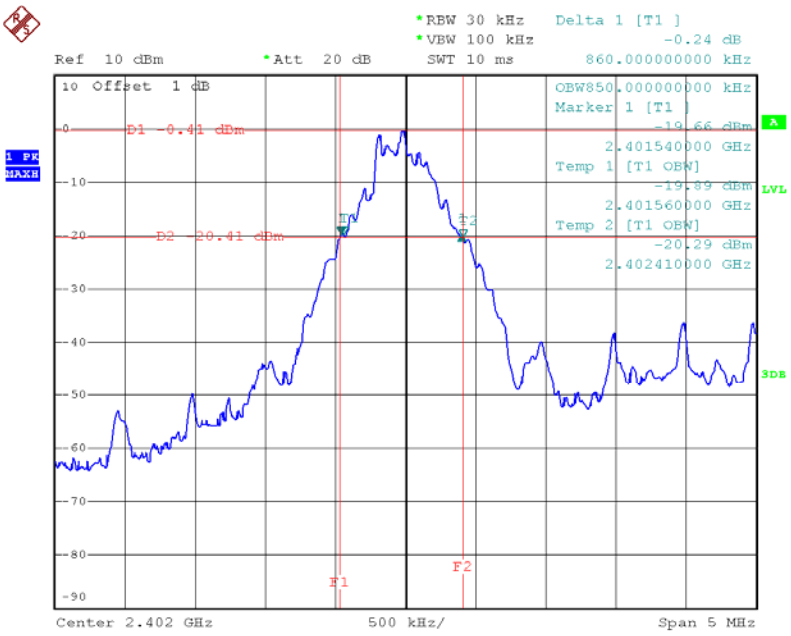
6.5 EUT OPERATING CONDITIONS

The EUT was set to continuously transmitting in the maximum power during the test.

6.6 TEST RESULTS

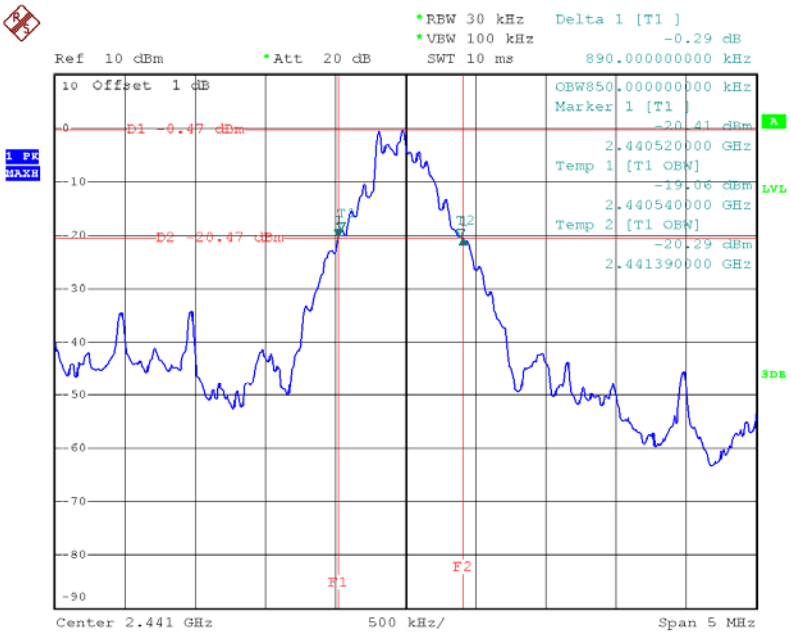
GFSK Mode (1Mbps)			
Frequency (MHz)	**20dB Bandwidth (kHz)**	**99% OBW (kHz)**	**Limit**
2402	860.00	850.00	N/A
2441	890.00	850.00	
2480	890.00	850.00	
8-DPSK Mode (3Mbps)			
Frequency (MHz)	**20dB Bandwidth (kHz)**	**99% OBW (kHz)**	**Limit**
2402	1210.00	1150.00	N/A
2441	1210.00	1140.00	
2480	1200.00	1140.00	
Note: Test plots please refer following pages.			

2402 MHz(GFSK) Bandwidth



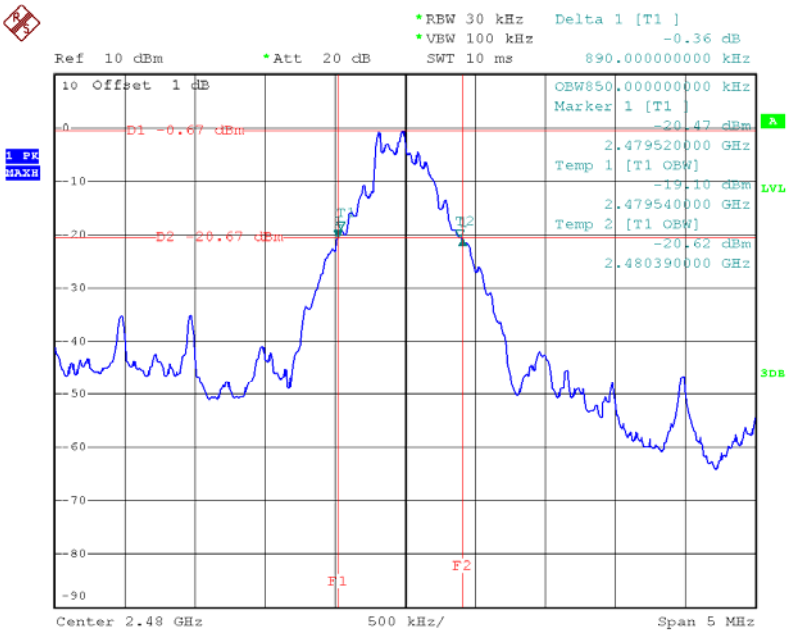
Date: 17.OCT.2016 16:58:01

2441 MHz(GFSK) Bandwidth



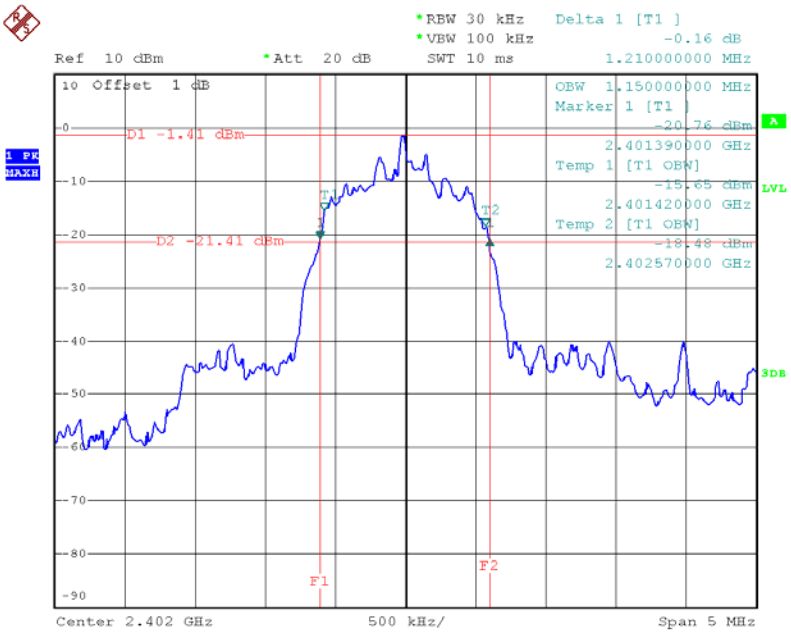
Date: 17.OCT.2016 17:02:16

2480 MHz(GFSK) Bandwidth



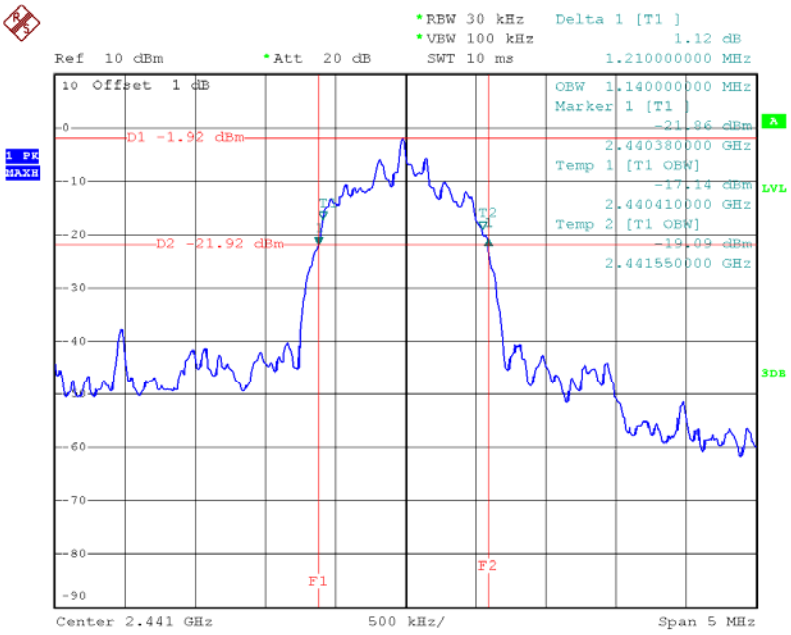
Date: 17.OCT.2016 17:04:35

2402 MHz(8-DPSK) Bandwidth



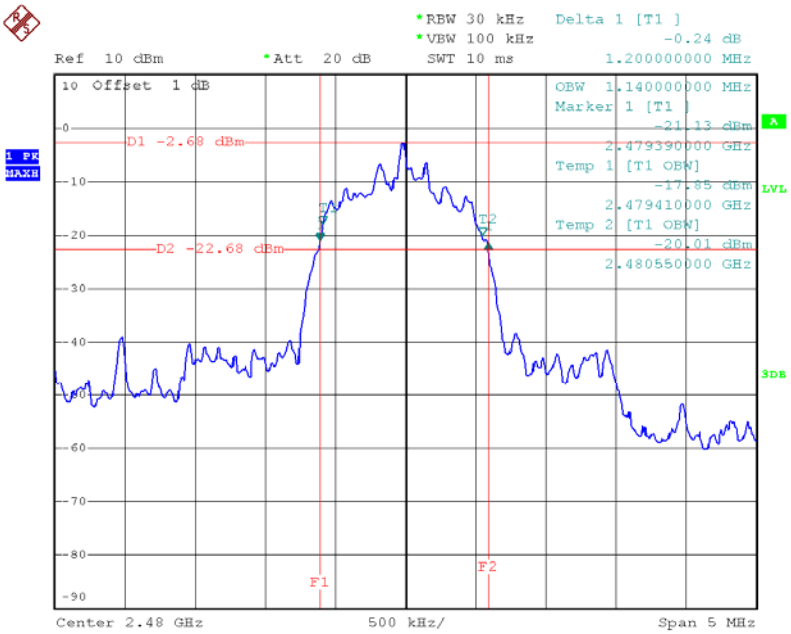
Date: 17.OCT.2016 17:15:28

2441 MHz(8-DPSK) Bandwidth



Date: 17.OCT.2016 17:18:27

2480 MHz(8-DPSK) Bandwidth



Date: 17.OCT.2016 17:21:02

7. CARRIER FREQUENCY SEPARATION MEASUREMENT

7.1 LIMITS

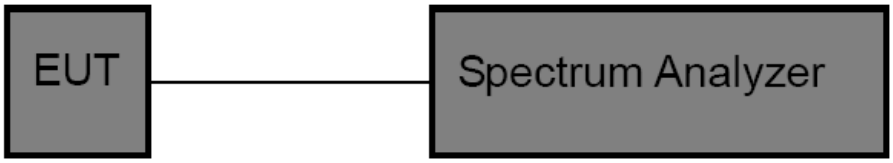
Frequency Separation	The channel spacing shall be a minimum of 25 kHz or two-thirds of the 20 dB Bandwidth

7.2 TEST PROCEDURE

The EUT was directly connected to the power meter and antenna output port as show in the block diagram as bellow.

a. Set span= wide enough to capture the peaks of two adjacent channels.
b. Set the RBW≥1% of the span
c. Set the VBW≥3 RBW (30kHz/ 100kHz)
d. Detector= Peak.
e. Sweep time= auto couple
f. Trace mode= max hold.
g. Allow trace to fully stabilize.
h. Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

7.3 TEST SETUP



7.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Spectrum Analyzer	R&S	FSP40	100154	Jul. 04, 2016	Jul. 03. 2017	1 year

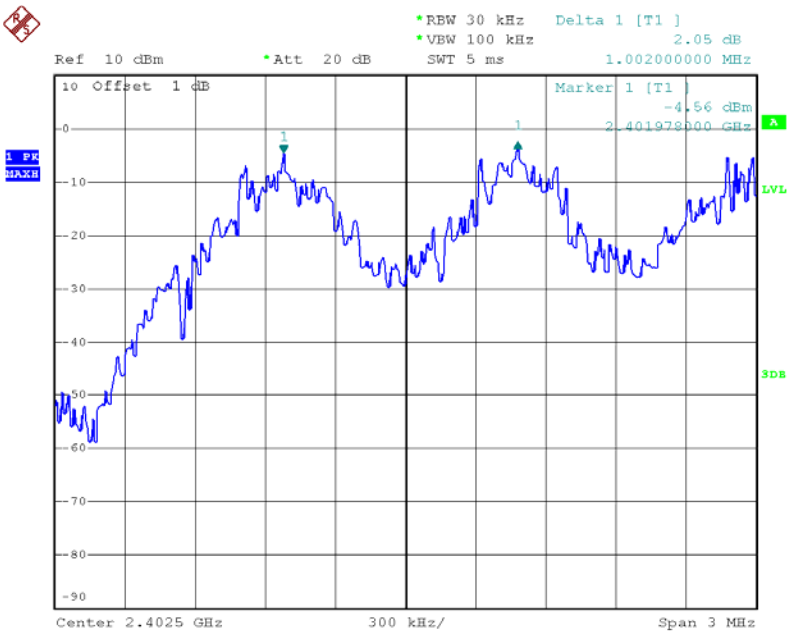
7.5 EUT OPERATING CONDITIONS

The EUT was set to continuously transmitting in the maximum power during the test.

7.6 TEST RESULTS

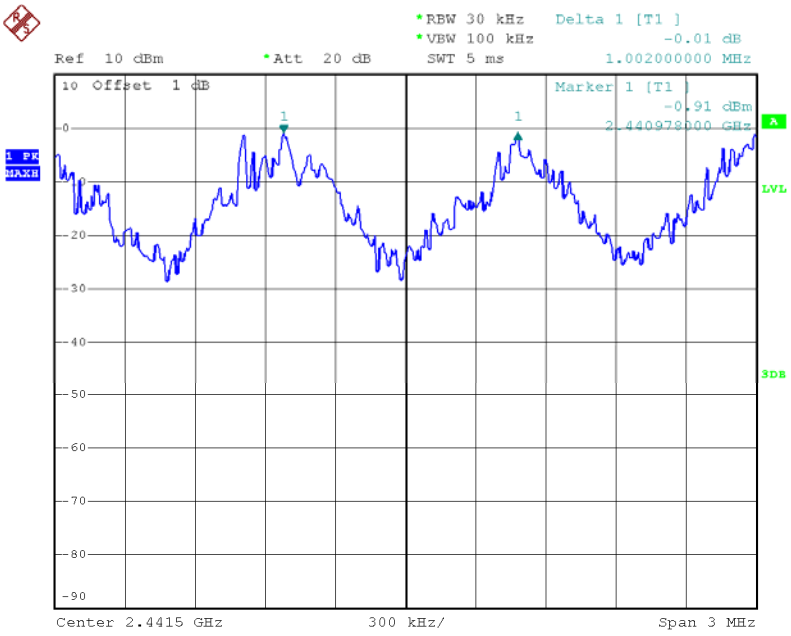
GFSK Mode (1Mbps)		
Frequency (MHz)	**Channel Separation (kHz)**	**Limit (kHz)**
2402	1002.00	>593.3
2441	1002.00	
2480	1008.00	
GFSK Mode (1Mbps)		
Frequency (MHz)	**Frequency (kHz)**	**Frequency (kHz)**
2402	1008.00	>806.6
2441	984.00	
2480	984.00	
Note: Test plots please refer following pages.		

2402 MHz(GFSK)-Channel Separation



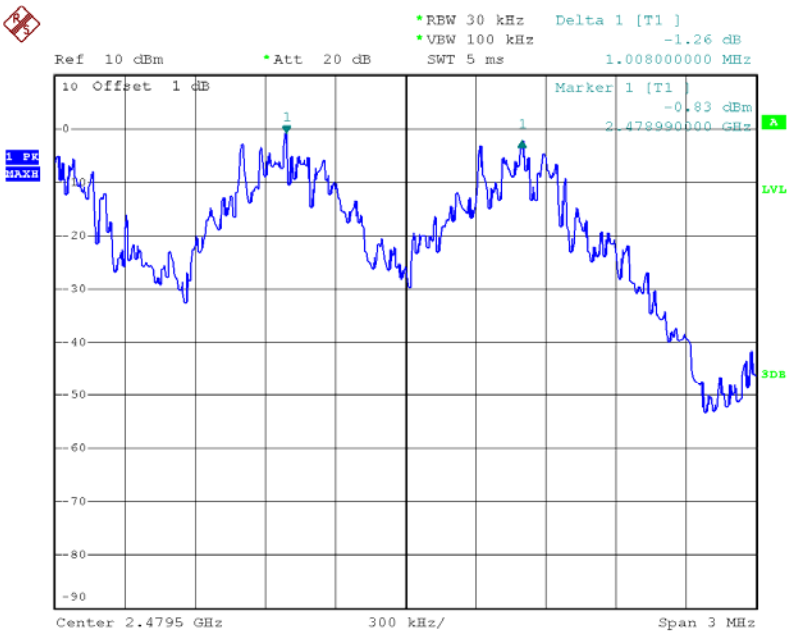
Date: 17.OCT.2016 17:11:40

2441 MHz(GFSK)-Channel Separation



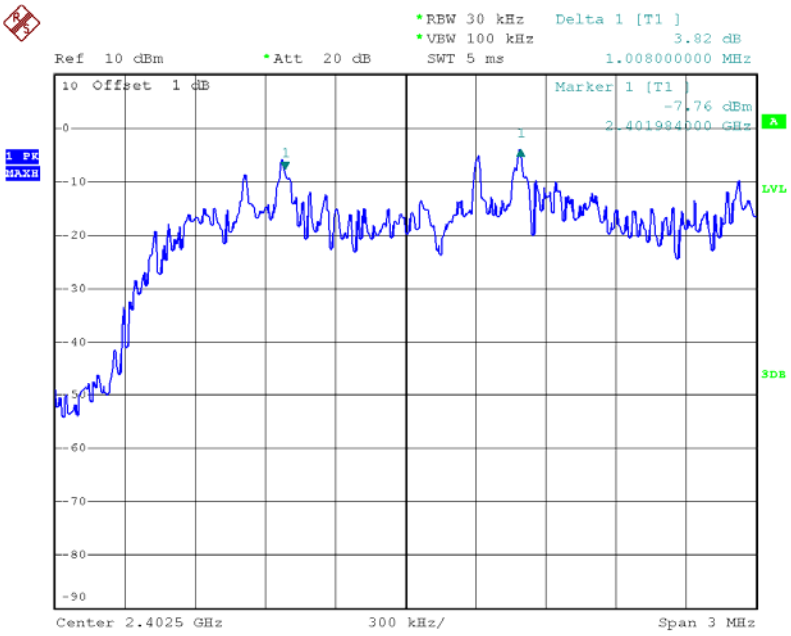
Date: 17.OCT.2016 17:12:24

2480 MHz(GFSK)-Channel Separation



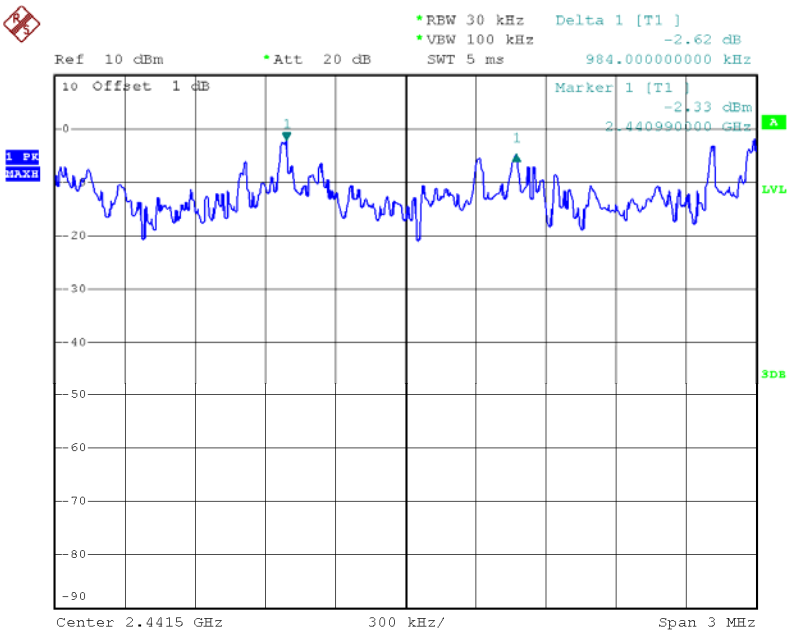
Date: 17.OCT.2016 17:12:57

2402 MHz(8-DPSK)-Channel Separation



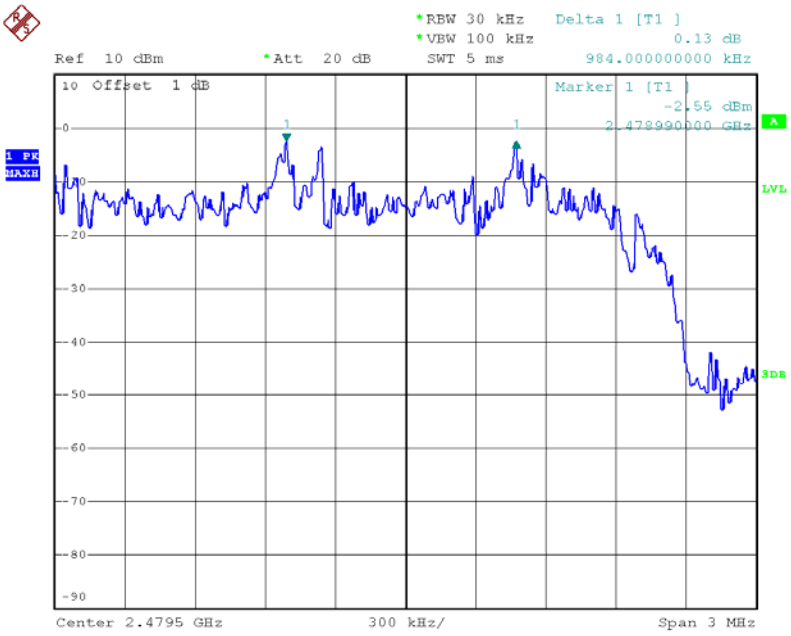
Date: 17.OCT.2016 17:27:55

2441 MHz(8-DPSK)-Channel Separation



Date: 17.OCT.2016 17:28:56

2480 MHz(8-DPSK)-Channel Separation



Date: 17.OCT.2016 17:29:36

8. NUMBER OF HOPPING

8.1 LIMITS

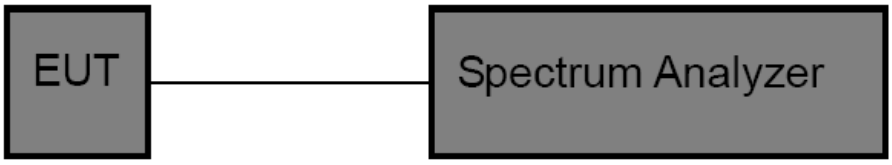
Hopping Number	Frequency hopping systems in 2400-2483.5 MHz band shall use at least 15 channels.

8.2 TEST PROCEDURE

The EUT was directly connected to the power meter and antenna output port as show in the block diagram as bellow.

a. Set span= the frequency band of operation.
b. Set the RBW≥1% of the span
c. Set the VBW≥3 RBW (100kHz/ 300kHz)
d. Detector= Peak.
e. Sweep time= auto couple
f. Trace mode= max hold.
g. Allow trace to fully stabilize.

8.3 TEST SETUP



8.4 TEST INSTRUMENTS

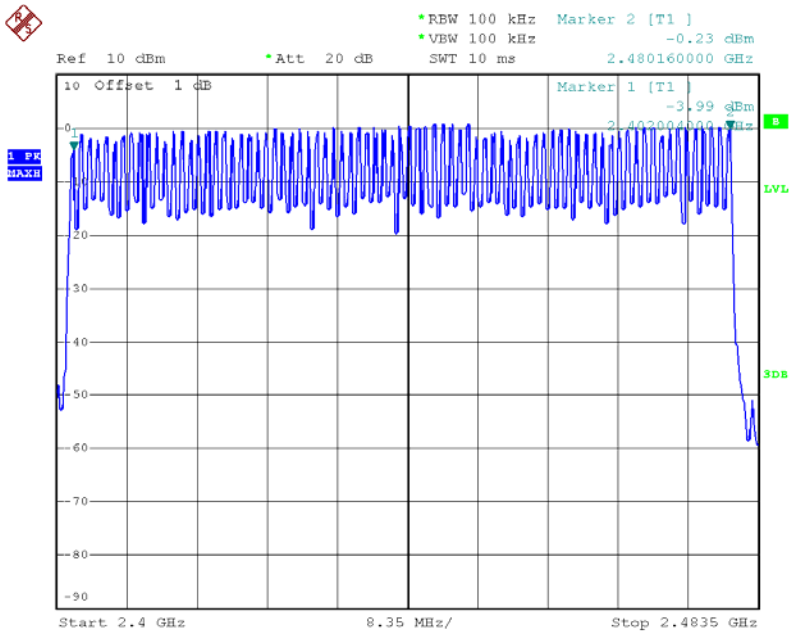
Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Spectrum Analyzer	R&S	FSP40	100154	Jul. 04, 2016	Jul. 03. 2017	1 year

8.5 EUT OPERATING CONDITIONS

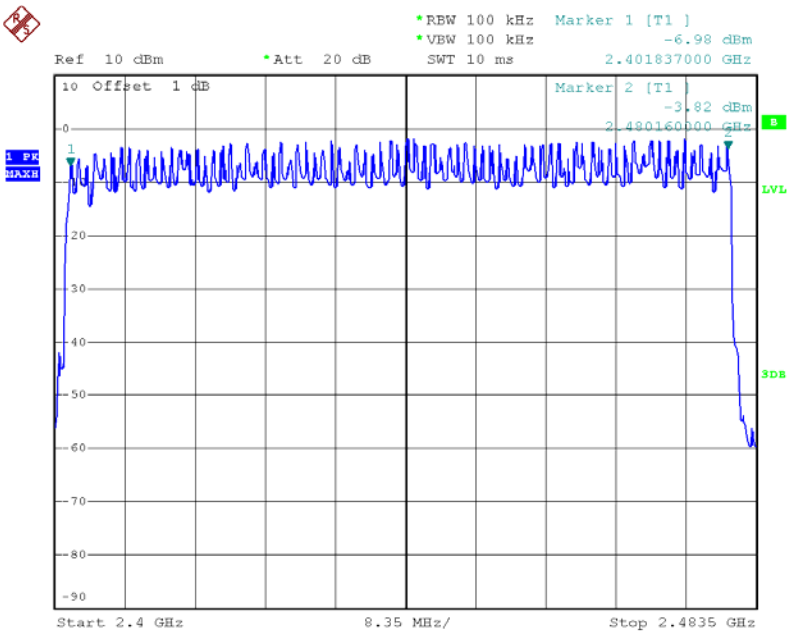
The EUT was set to continuously transmitting in the maximum power during the test.

8.6 TEST RESULTS

GFSK Mode (1Mbps)	
Measurement Number	**Limit**
79	>15



8-DPSK Mode (3Mbps)	
Measurement Number	**Limit**
79	>15



Date: 17.OCT.2016 17:24:05

9. DWELL TIME

9.1 LIMITS

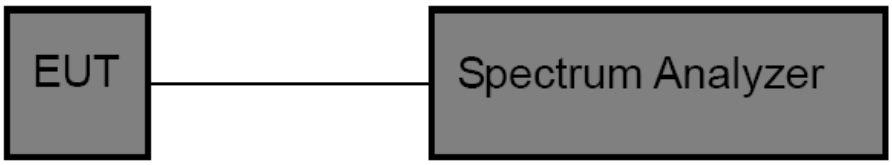
Dwell Time	The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied the number of hopping channels employed.

9.2 TEST PROCEDURE

The EUT was directly connected to the power meter and antenna output port as show in the block diagram as bellow.

a. Set span= zero
b. Set the RBW= 1 MHz
c. Set the VBW≥ RBW
d. Detector= Peak.
e. Sweep time= as necessary to capture the entire dwell time per hopping channel
f. Trace mode= max hold
g. Use the marker-delta function to determine the dwell time

9.3 TEST SETUP



9.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Spectrum Analyzer	R&S	FSP40	100154	Jul. 04, 2016	Jul. 03. 2017	1 year

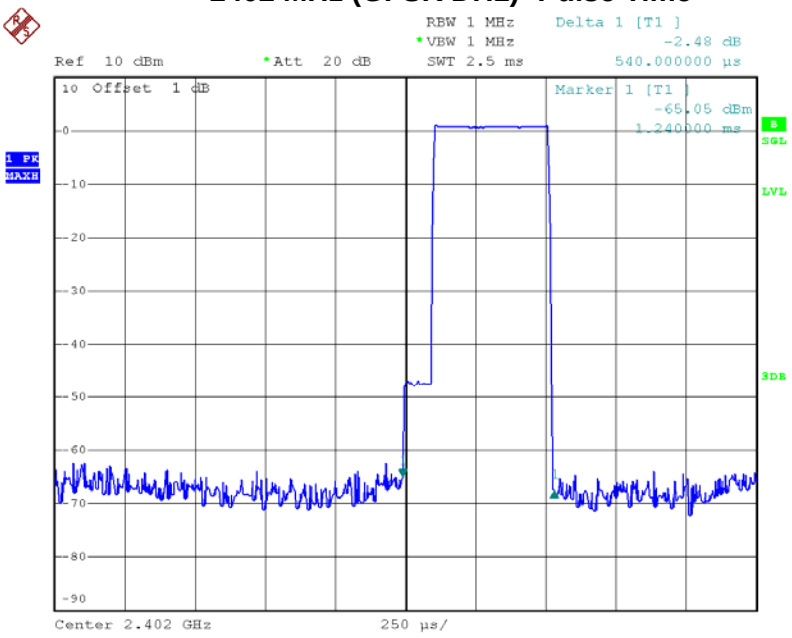
9.5 EUT OPERATING CONDITIONS

The EUT was set to continuously transmitting in the maximum power during the test.

9.6 TEST RESULTS

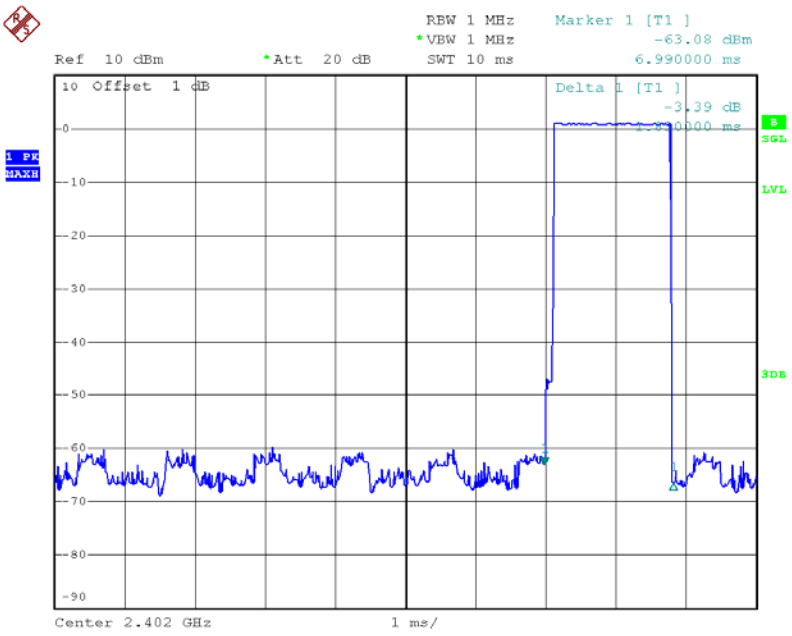
GFSK Mode (1Mbps)				
Frequency: 2402 MHz				
Packet Type	**Pulse Time (ms)**	**Total of Dwell (ms)**	**Period Time (s)**	**Limit (ms)**
DH1	0.54	172.80	31.60	<400
DH3	1.83	292.80	31.60	
DH5	3.12	332.80	31.60	
Frequency: 2441 MHz				
Packet Type	**Pulse Time (ms)**	**Total of Dwell (ms)**	**Period Time (s)**	**Limit (ms)**
DH1	0.54	172.80	31.60	<400
DH3	1.84	294.40	31.60	
DH5	3.08	328.53	31.60	
Frequency: 2480 MHz				
Packet Type	**Pulse Time (ms)**	**Total of Dwell (ms)**	**Period Time (s)**	**Limit (ms)**
DH1	0.54	172.80	31.60	<400
DH3	1.84	294.40	31.60	
DH5	3.12	332.80	31.60	

2402 MHz (GFSK DH1)- Pulse Time



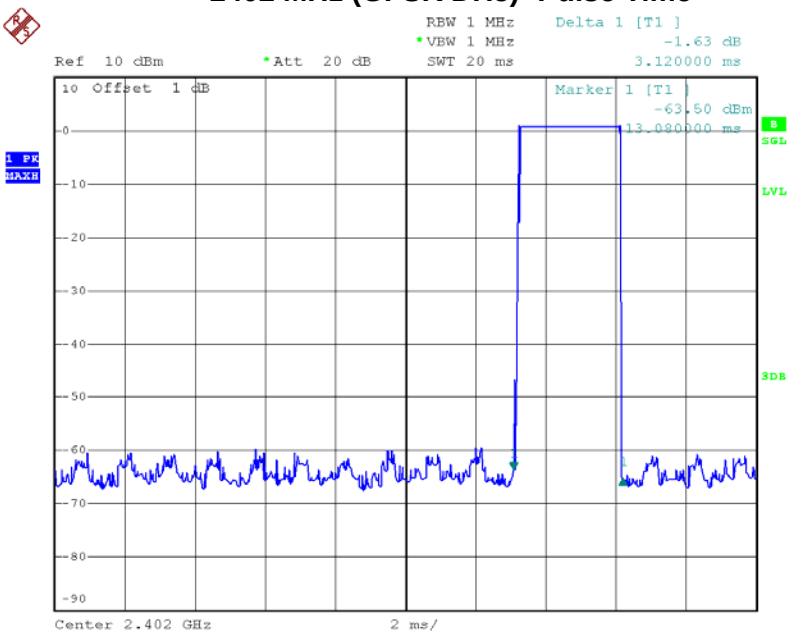
Date: 17.OCT.2016 15:23:00

2402 MHz (GFSK DH3)- Pulse Time



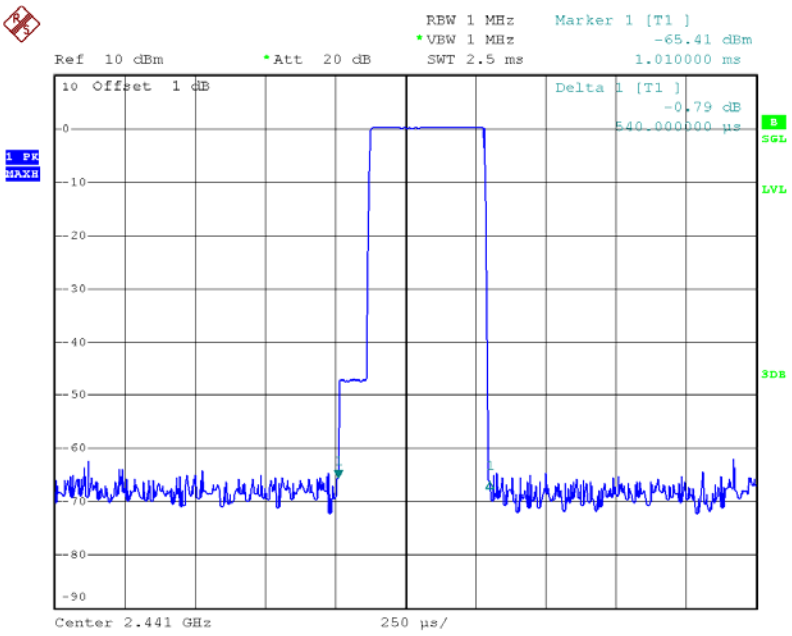
Date: 17.OCT.2016 15:27:06

2402 MHz (GFSK DH5)- Pulse Time



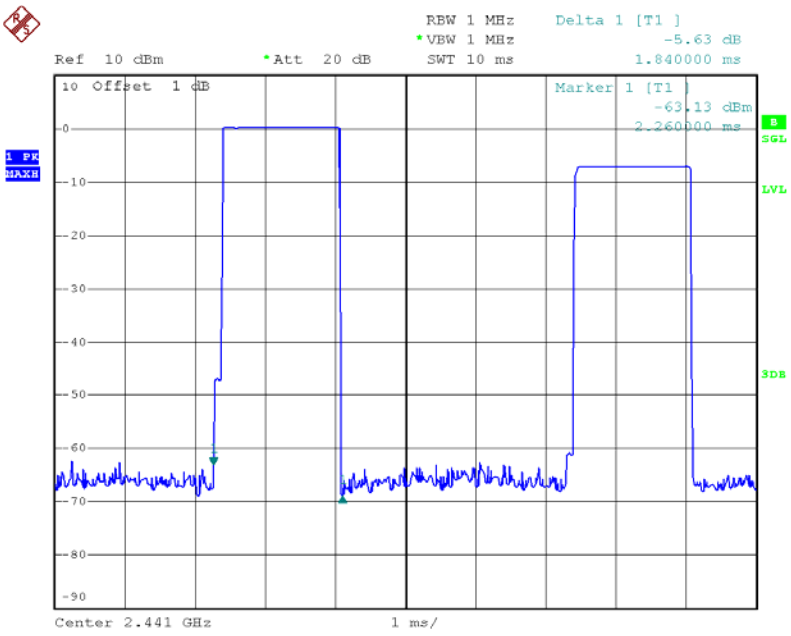
Date: 17.OCT.2016 15:29:52

2441 MHz (GFSK DH1)- Pulse Time



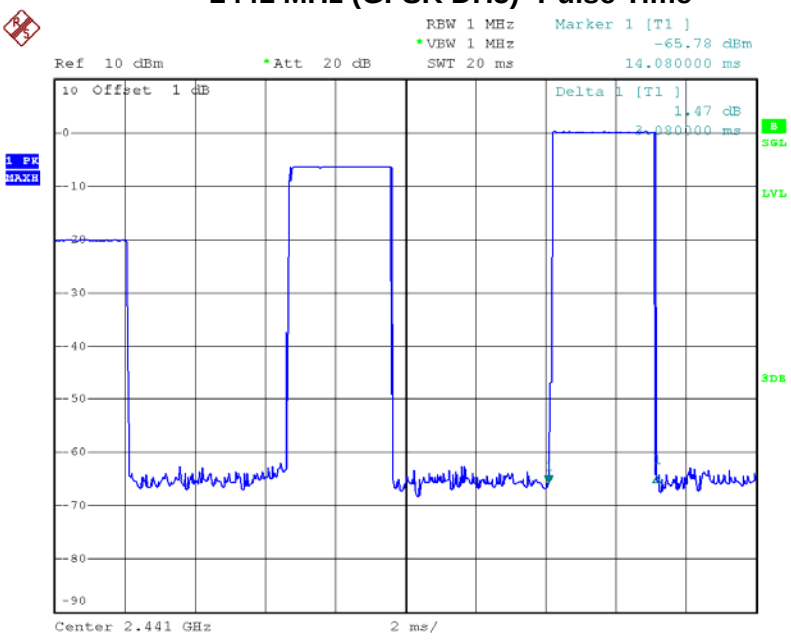
Date: 17.OCT.2016 15:23:30

2441 MHz (GFSK DH3)- Pulse Time



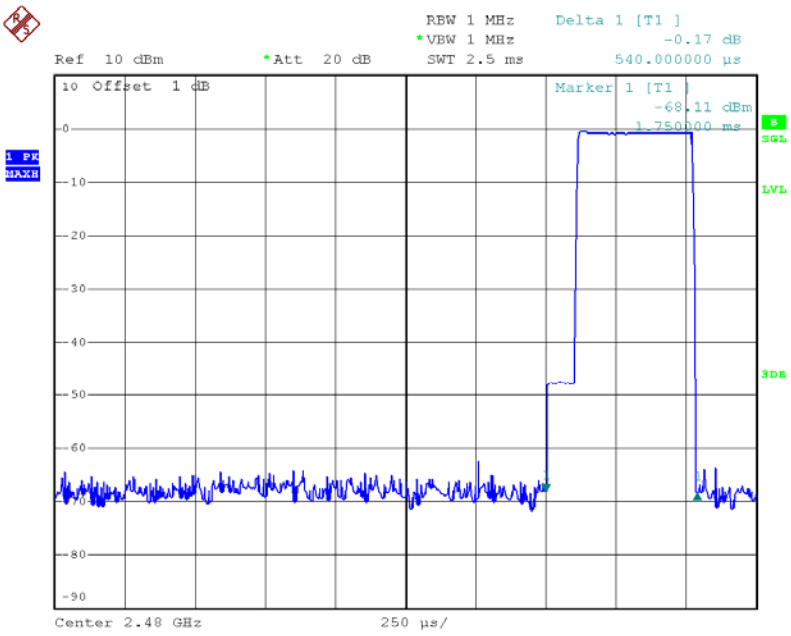
Date: 17.OCT.2016 15:27:44

2441 MHz (GFSK DH5)- Pulse Time



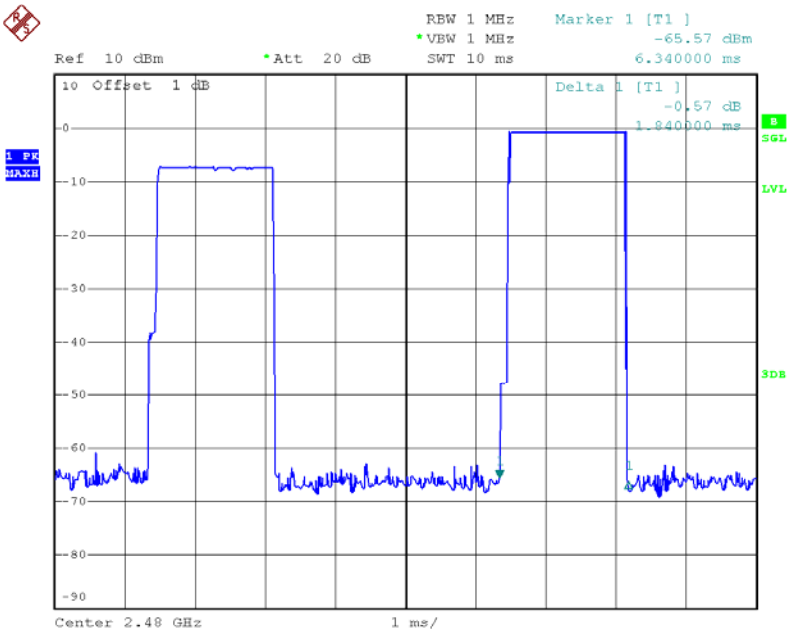
Date: 17.OCT.2016 15:30:42

2480 MHz (GFSK DH1)- Pulse Time



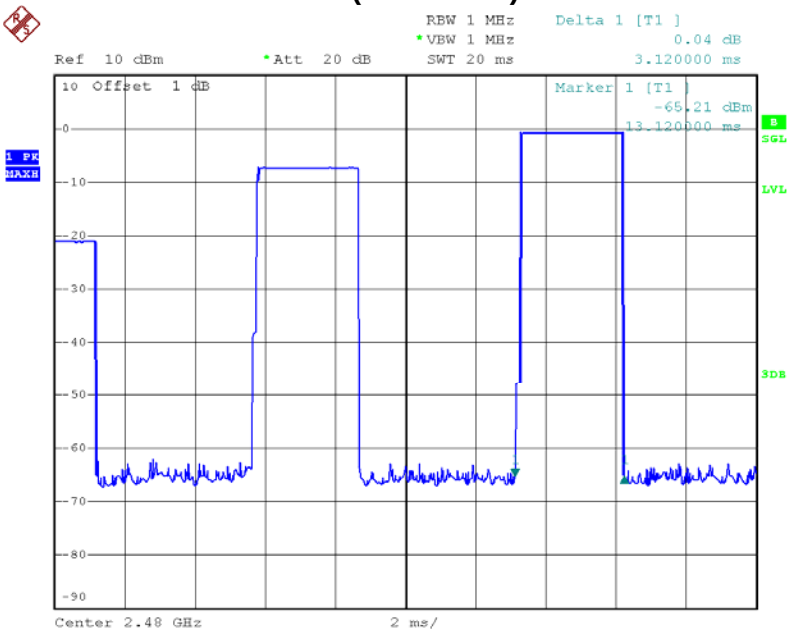
Date: 17.OCT.2016 15:25:10

2480 MHz (GFSK DH3)- Pulse Time



Date: 17.OCT.2016 15:28:18

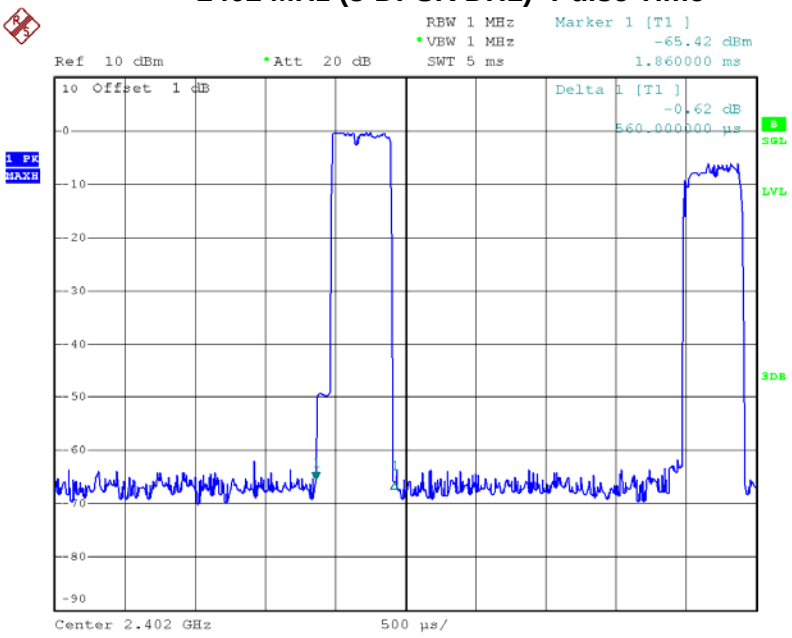
2480 MHz (GFSK DH5)- Pulse Time



Date: 17.OCT.2016 15:31:06

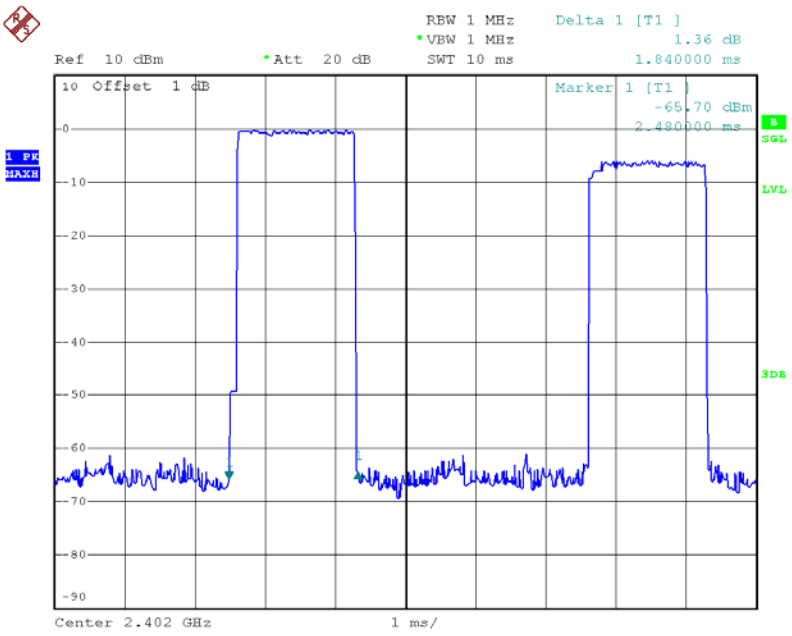
8-DPSK Mode (3Mbps)				
Frequency: 2402 MHz				
Packet Type	**Pulse Time (ms)**	**Total of Dwell (ms)**	**Period Time (s)**	**Limit (ms)**
DH1	0.56	179.20	31.60	<400
DH3	1.84	294.40	31.60	
DH5	3.12	332.80	31.60	
Frequency: 2441 MHz				
Packet Type	**Pulse Time (ms)**	**Total of Dwell (ms)**	**Period Time (s)**	**Limit (ms)**
DH1	0.56	179.20	31.60	<400
DH3	1.82	291.20	31.60	
DH5	3.12	332.80	31.60	
Frequency: 2480 MHz				
Packet Type	**Pulse Time (ms)**	**Total of Dwell (ms)**	**Period Time (s)**	**Limit (ms)**
DH1	0.57	182.40	31.60	<400
DH3	1.82	291.20	31.60	
DH5	3.12	332.80	31.60	

2402 MHz (8-DPSK DH1)- Pulse Time



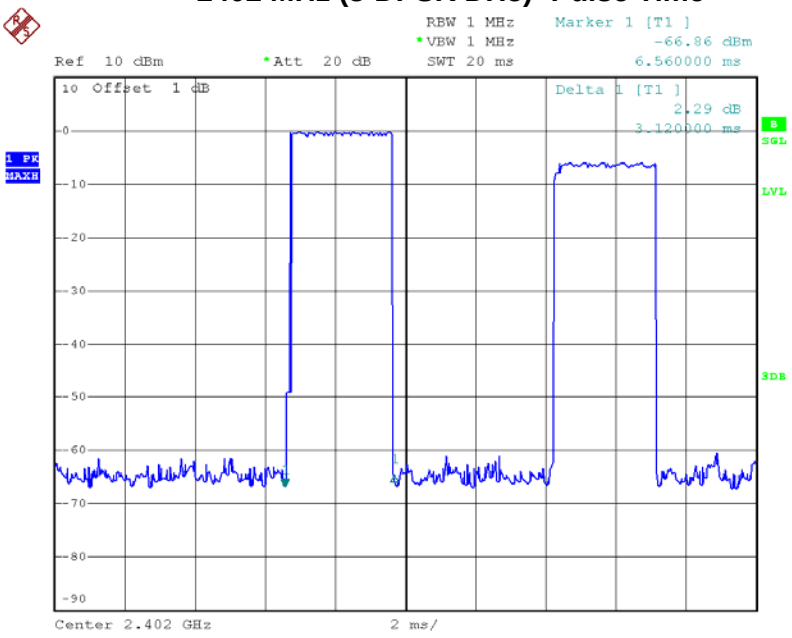
Date: 17.OCT.2016 15:50:12

2402 MHz (8-DPSK DH3)- Pulse Time



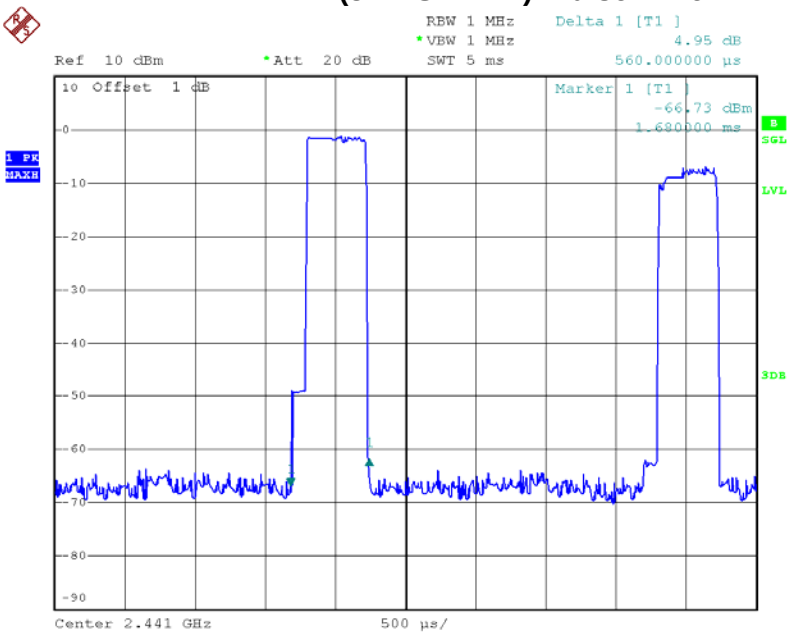
Date: 17.OCT.2016 15:52:33

2402 MHz (8-DPSK DH5)- Pulse Time



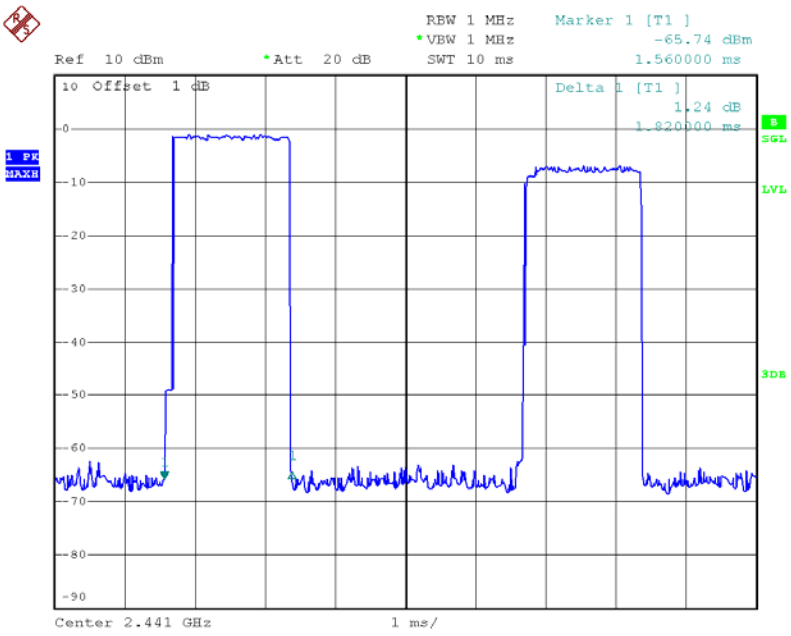
Date: 17.OCT.2016 15:55:37

2441 MHz (8-DPSK DH1)- Pulse Time



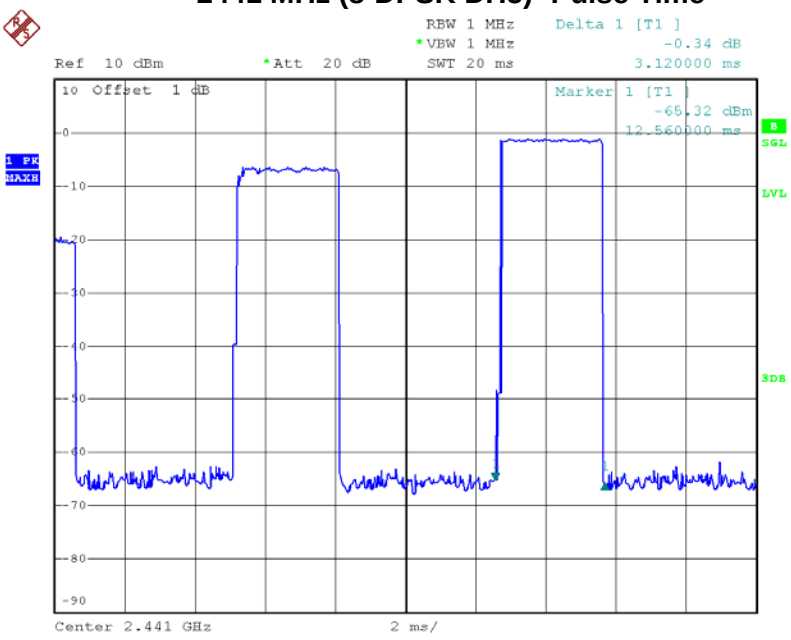
Date: 17.OCT.2016 15:50:36

2441 MHz (8-DPSK DH3)- Pulse Time



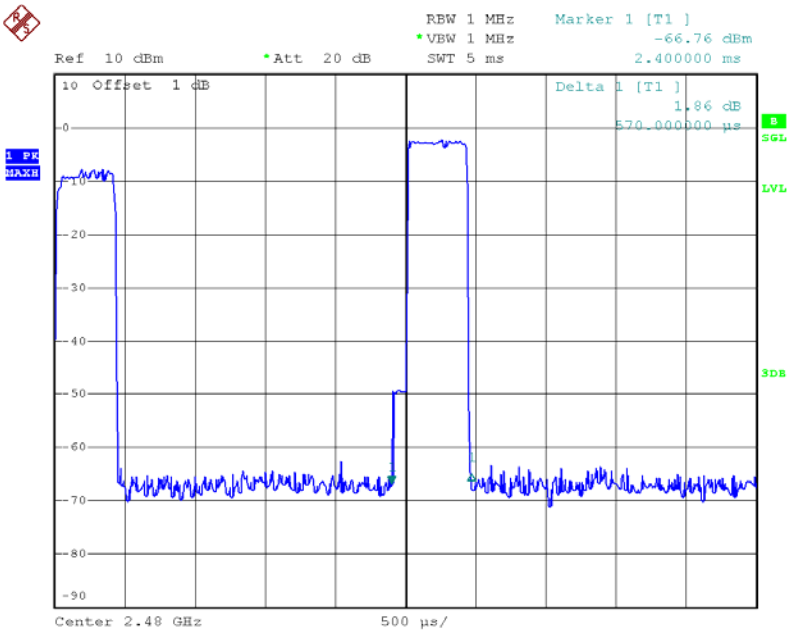
Date: 17.OCT.2016 15:53:15

2441 MHz (8-DPSK DH5)- Pulse Time



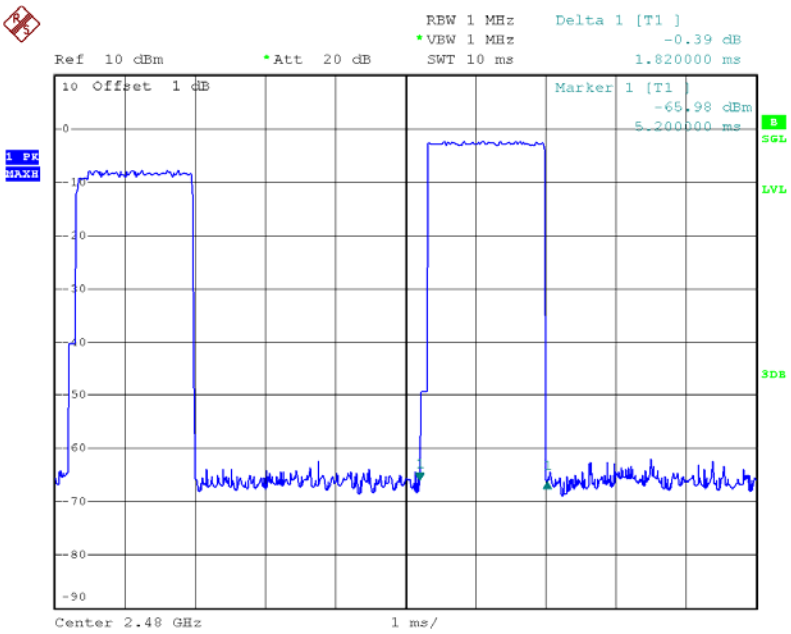
Date: 17.OCT.2016 15:55:06

2480 MHz (8-DPSK DH1)- Pulse Time



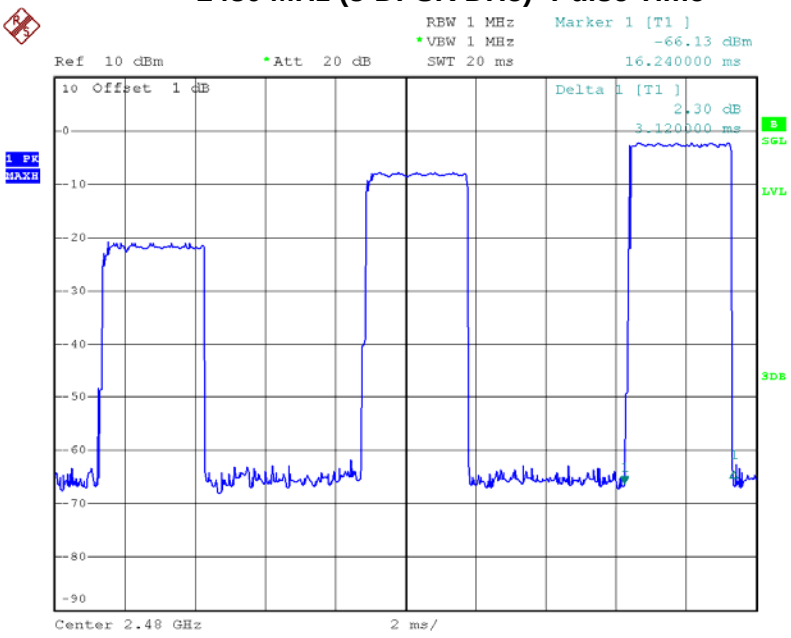
Date: 17.OCT.2016 15:51:17

2480 MHz (8-DPSK DH3)- Pulse Time



Date: 17.OCT.2016 15:53:47

2480 MHz (8-DPSK DH5)- Pulse Time



Date: 17.OCT.2016 15:54:42

10. BAND EDGES MEASUREMENT

10.1 LIMITS

Band Edges Requirement	In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

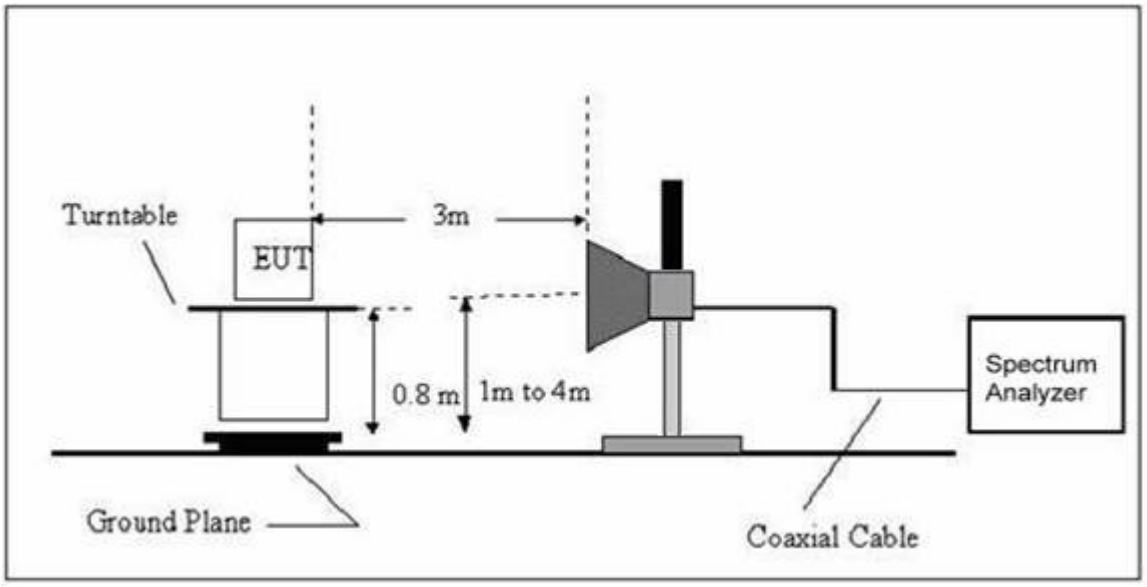
10.2 TEST PROCEDURE

The EUT was directly connected to the power meter and antenna output port as show in the block diagram as bellow.

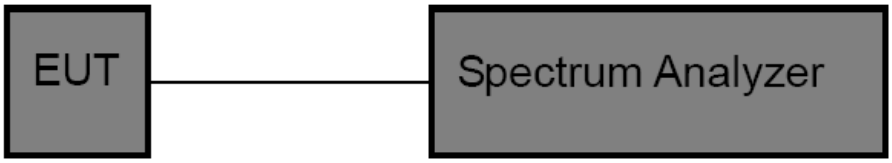
a. Set frequency range to capture low band-edge from 2310 MHz up to 2390 MHz, and for up band-edge from 2483.5 MHz up to 2500 MHz
b. For low band-edge set the equipment transmit at the lowest channel, and for up band-edge set the equipment transmit at the highest channel
c. Set the VBW≥3 RBW (100kHz/ 300kHz) for conducted measurement
d. For radiated measurements the RBW set to 1 MHz, and the VBW set to 1 MHz for peak measurements and 10 Hz for average measurement

10.3 TEST SETUP

(A) Radiated Emission Test Set-Up



(B) Conducted Emission Test Setup



10.4 TEST INSTRUMENTS

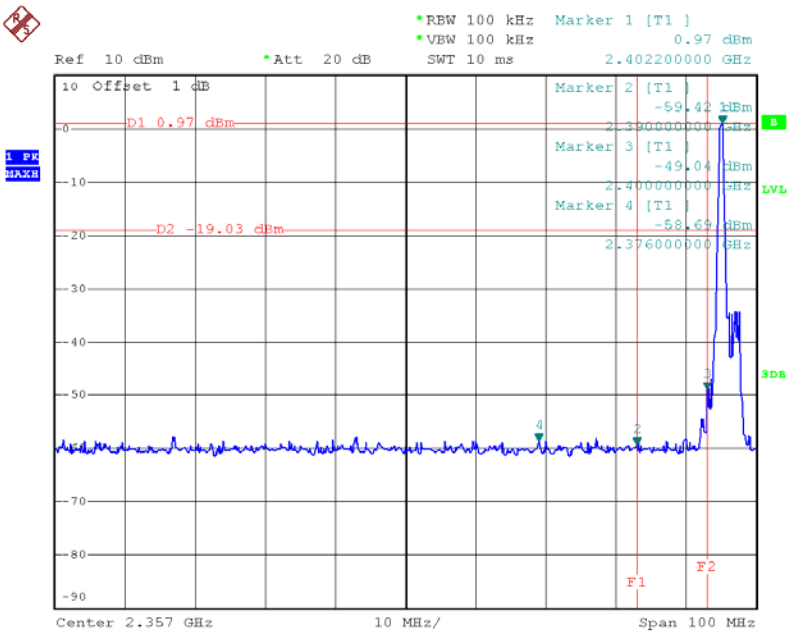
Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Spectrum Analyzer	R&S	FSP40	100154	Jul. 04, 2016	Jul. 03. 2017	1 year

10.5 EUT OPERATING CONDITIONS

The EUT was set to continuously transmitting in the maximum power during the test.

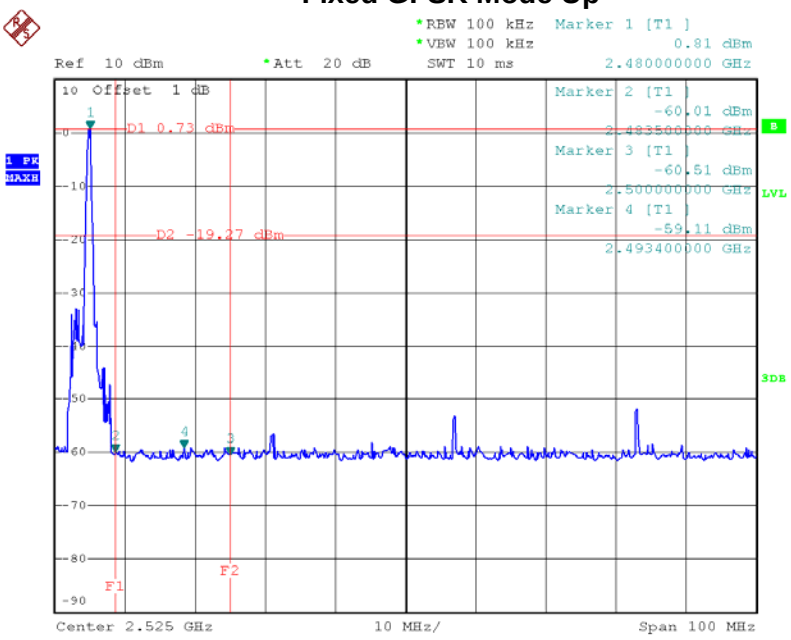
10.6 TEST RESULTS

Fixed GFSK Mode Low



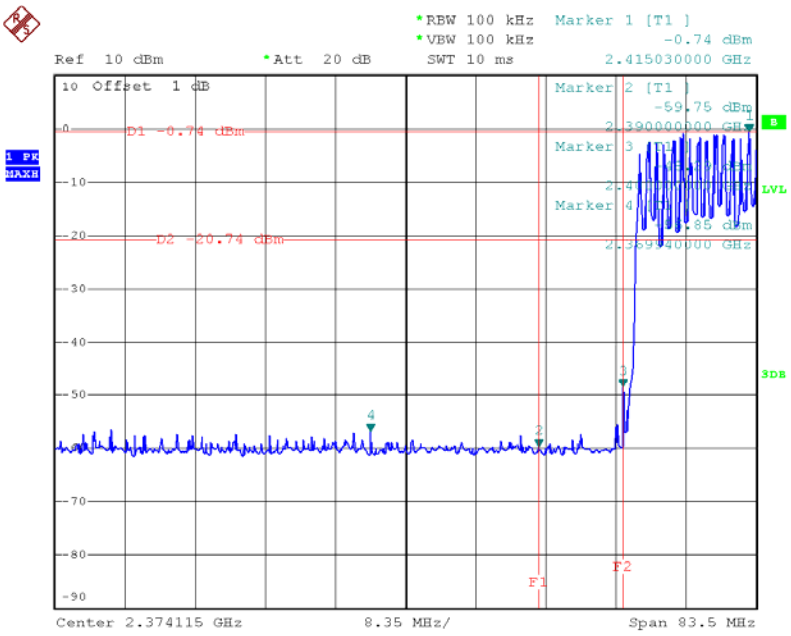
Date: 17.OCT.2016 16:56:41

Fixed GFSK Mode Up



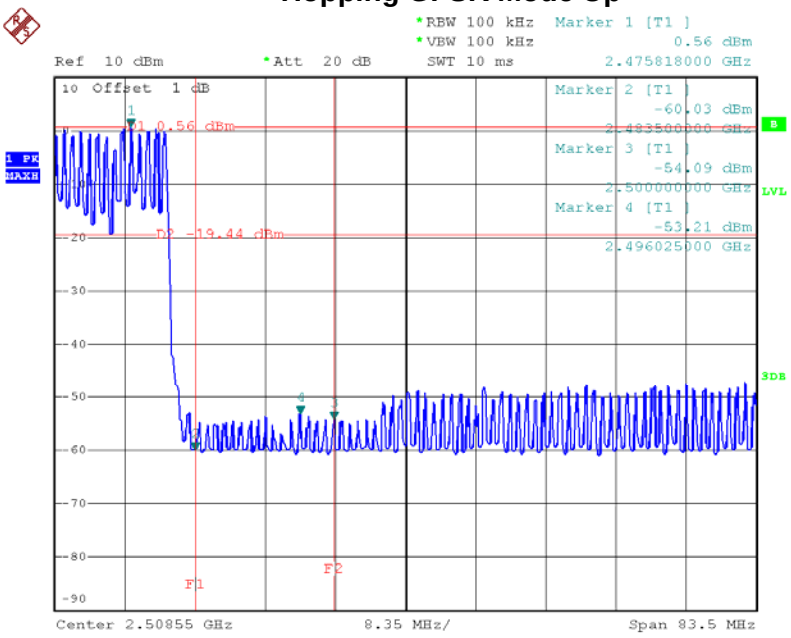
Date: 17.OCT.2016 17:05:18

Hopping GFSK Mode Low



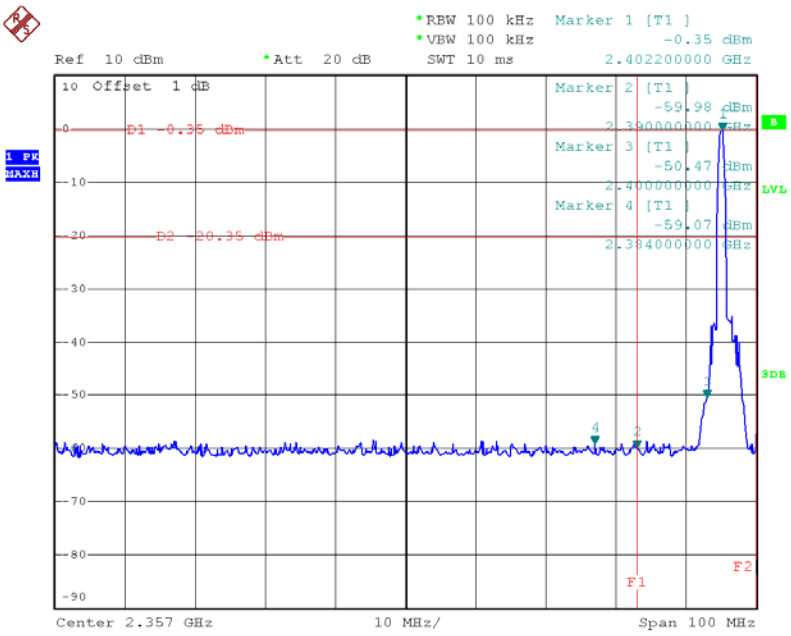
Date: 17.OCT.2016 17:09:02

Hopping GFSK Mode Up



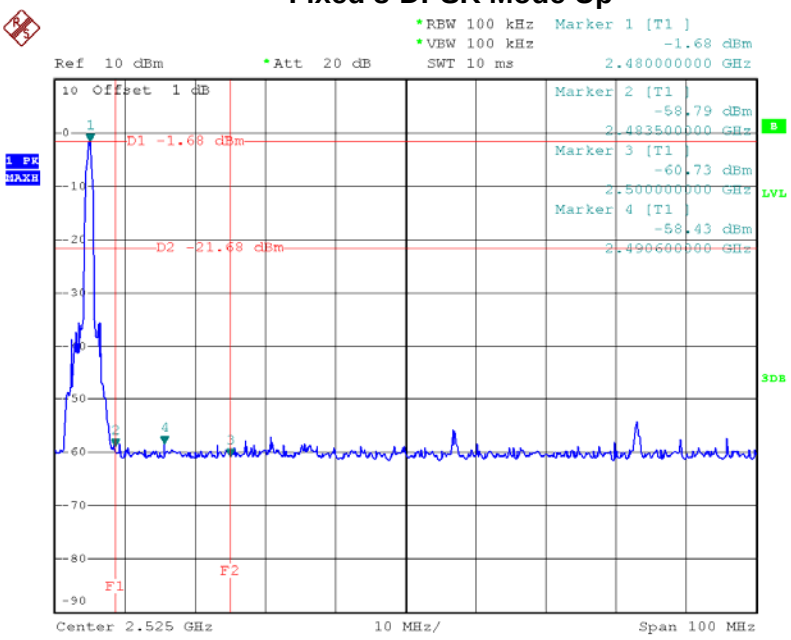
Date: 17.OCT.2016 17:10:30

Fixed 8-DPSK Mode Low



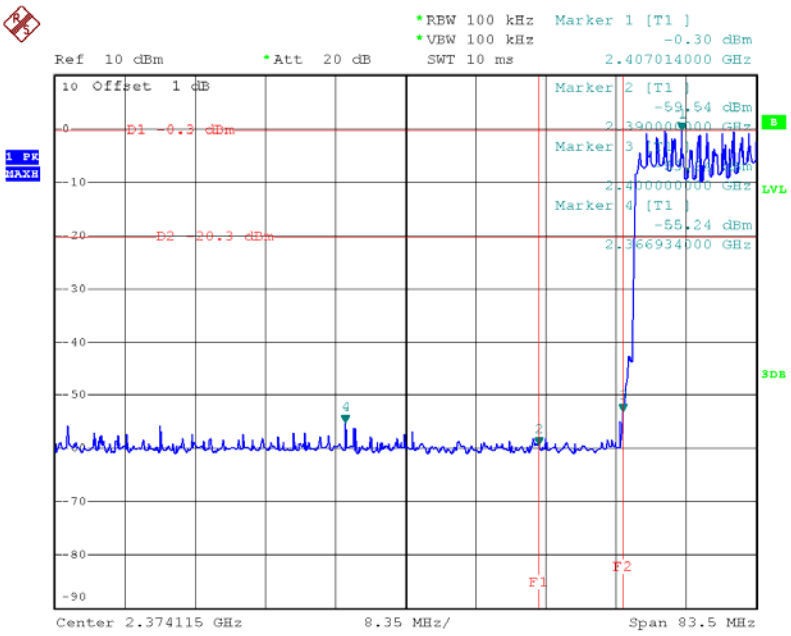
Date: 17.OCT.2016 17:16:08

Fixed 8-DPSK Mode Up



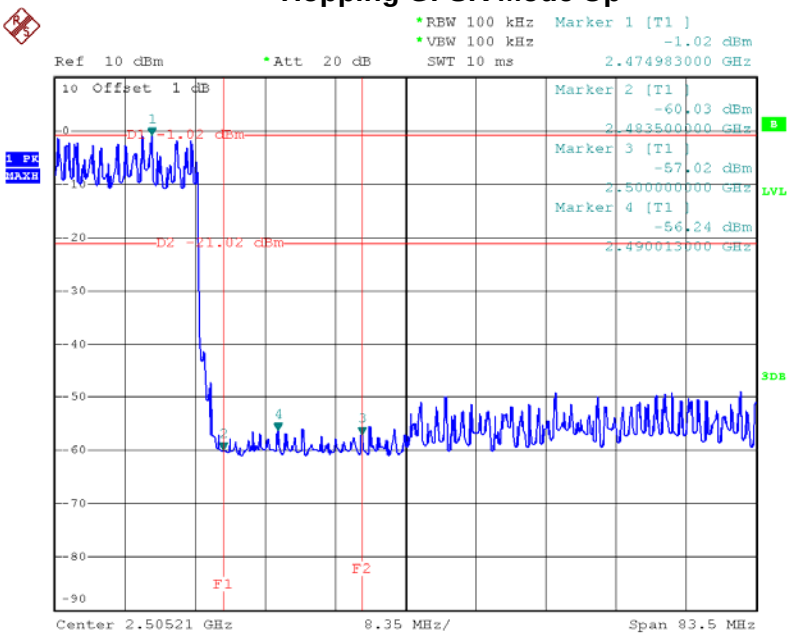
Date: 17.OCT.2016 17:21:48

Hopping 8-DPSK Mode Low



Date: 17.OCT.2016 17:25:19

Hopping GFSK Mode Up



Date: 17.OCT.2016 17:26:42

11. OUT OF BAND CONDUCTED EMISSIONS MEASUREMENT

11.1 LIMITS

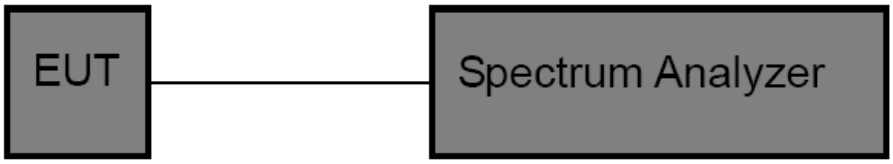
Requirement	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

11.2 TEST PROCEDURE

The EUT was directly connected to the power meter and antenna output port as show in the block diagram as bellow.

a. Set spectrum frequency range from 30 MHz~26.5 GHz.
b. Set spectrum RBW=100 kHz, RBW=300 kHz.
c. Detector= Peak.
d. Sweep time= auto couple
e. Trace mode= maxhold.
f. Allow trace to fully stabilize.
g. Use the peak marker function to determine the maximum amplitude level within the RBW.

11.3 TEST SETUP



11.4 TEST INSTRUMENTS

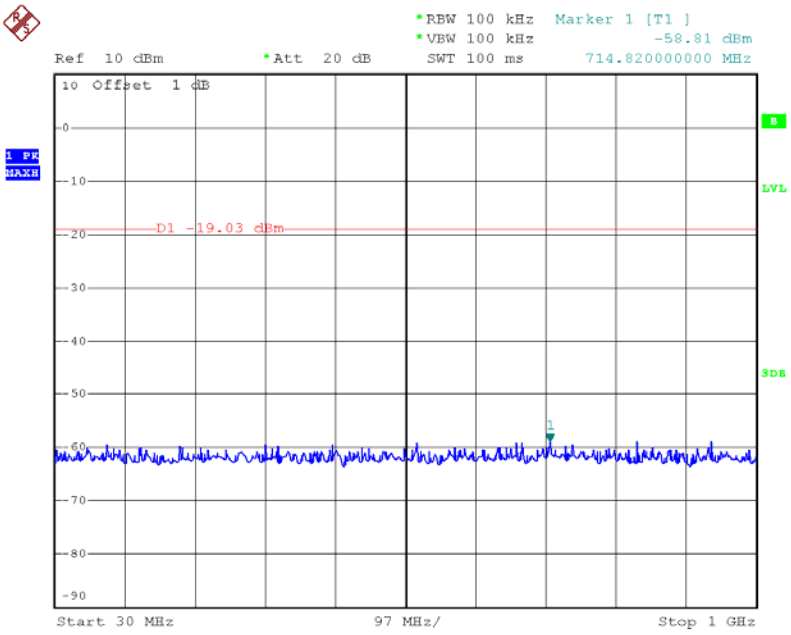
Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Spectrum Analyzer	R&S	FSP40	MY45108040	Jul. 04, 2016	Jul. 03. 2017	1 year

11.5 EUT OPERATING CONDITIONS

The EUT was set to continuously transmitting in the maximum power during the test.

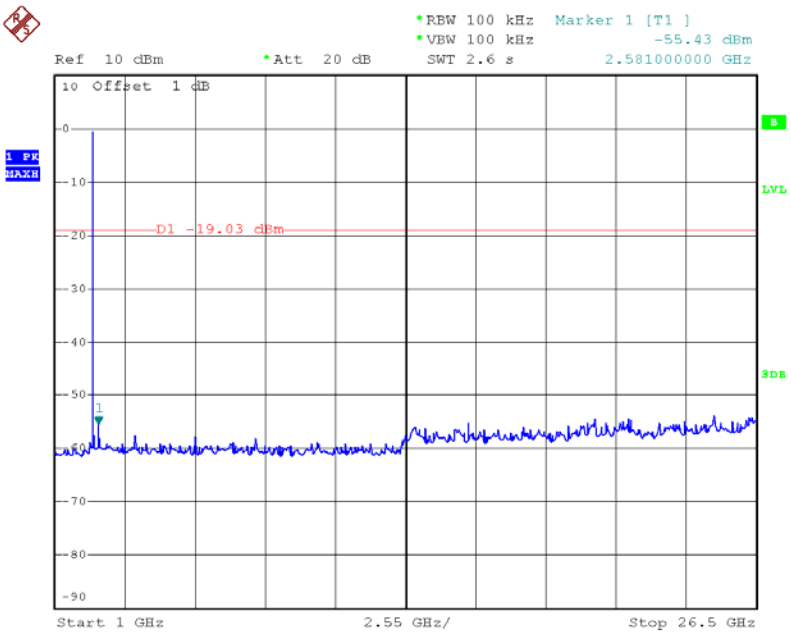
11.6 TEST RESULTS

GFSK 2402 MHz Below 1GHz



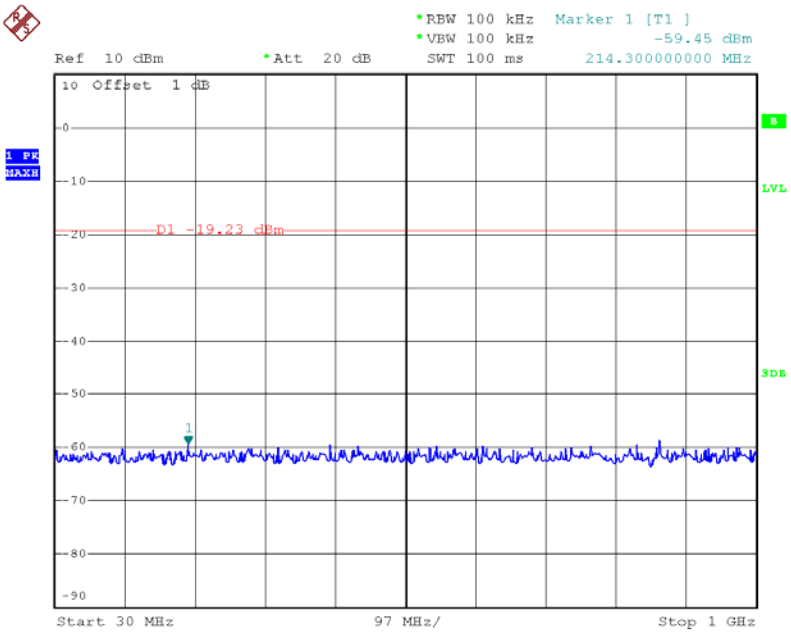
Date: 17.OCT.2016 16:56:50

GFSK 2402 MHz Above 1GHz



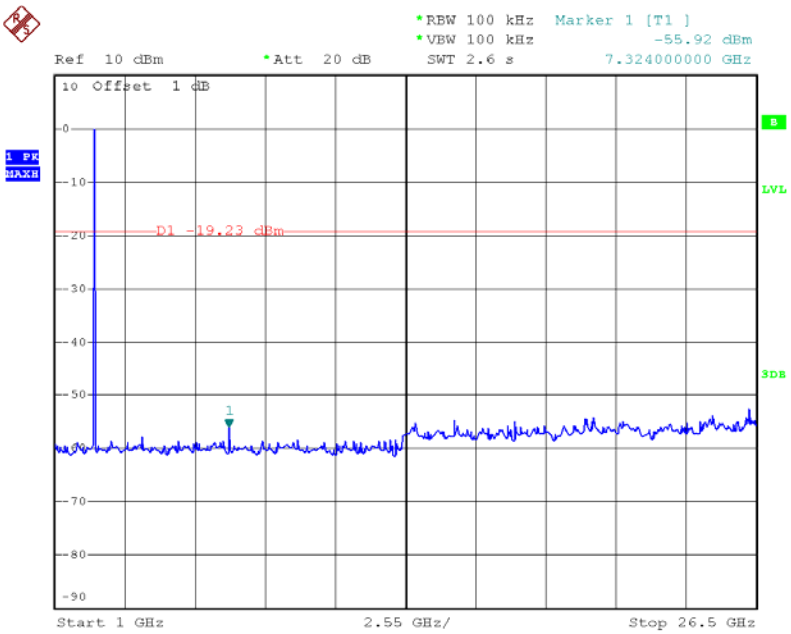
Date: 17.OCT.2016 16:57:09

GFSK 2441 MHz Below 1GHz



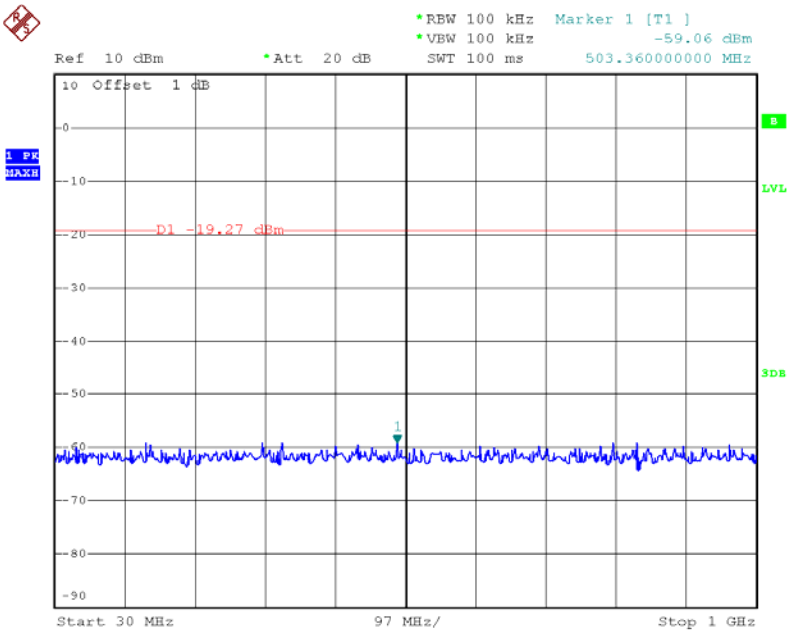
Date: 17.OCT.2016 17:02:39

GFSK 2441 MHz Above 1GHz



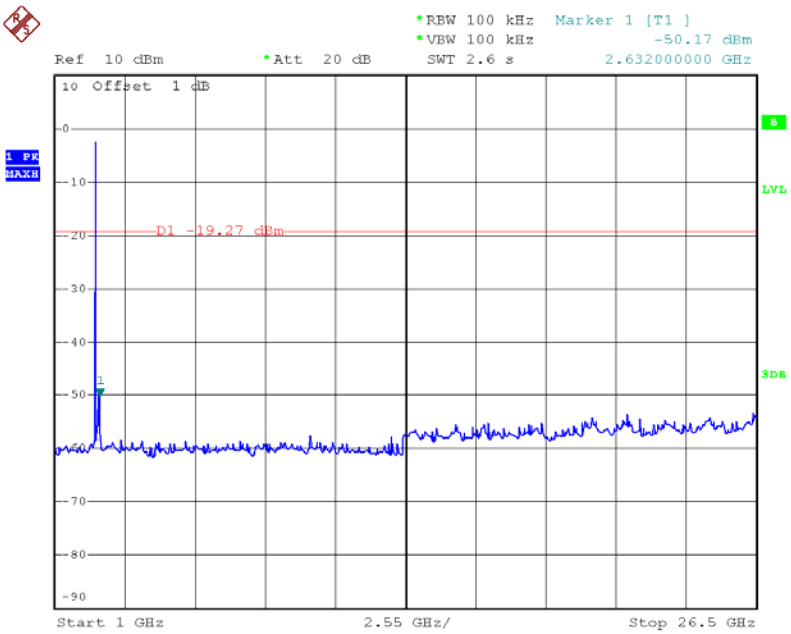
Date: 17.OCT.2016 17:02:57

GFSK 2480 MHz Below 1GHz



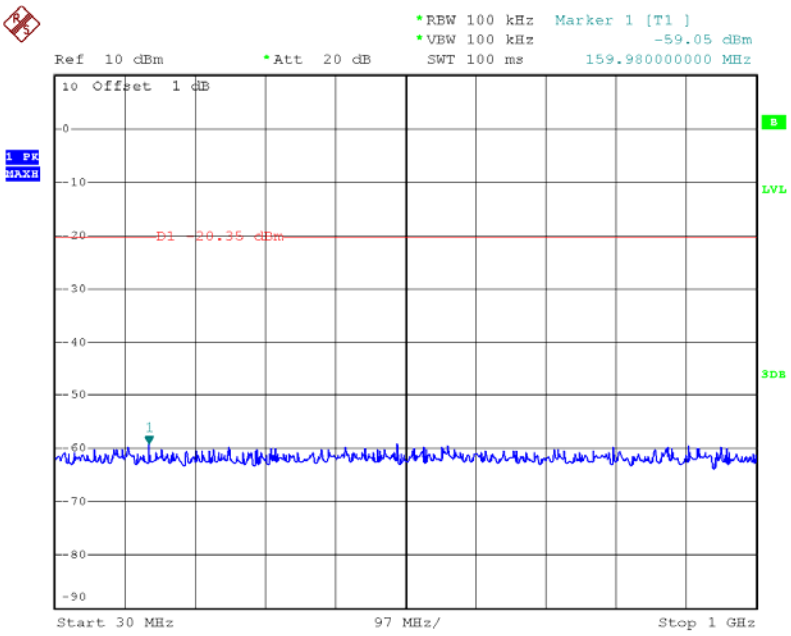
Date: 17.OCT.2016 17:05:33

GFSK 2480 MHz Above 1GHz



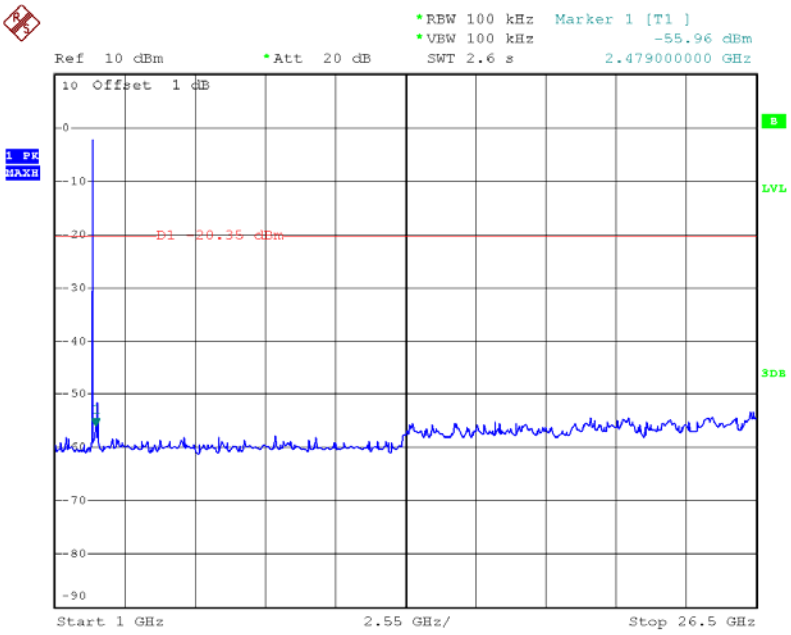
Date: 17.OCT.2016 17:05:55

8-DPSK 2402 MHz Below 1 GHz



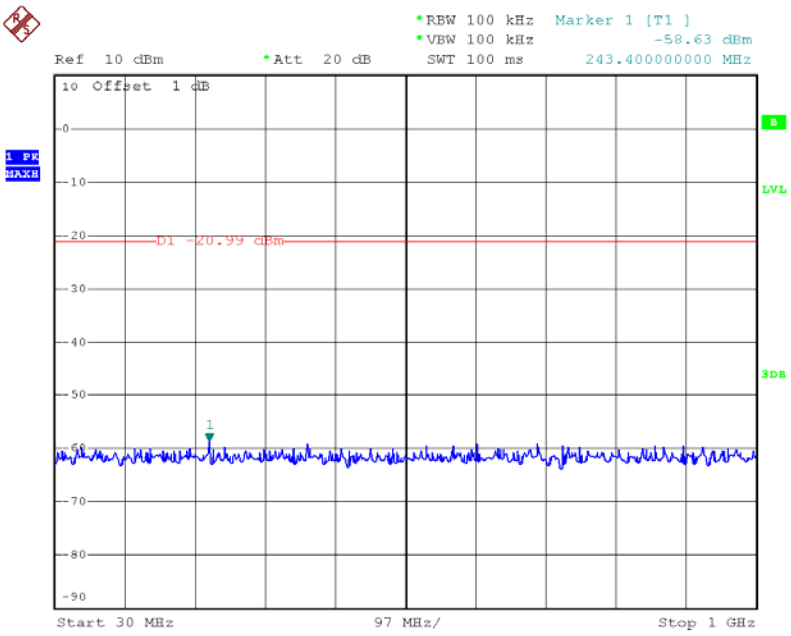
Date: 17.OCT.2016 17:16:19

8-DPSK 2402 MHz Above 1 GHz



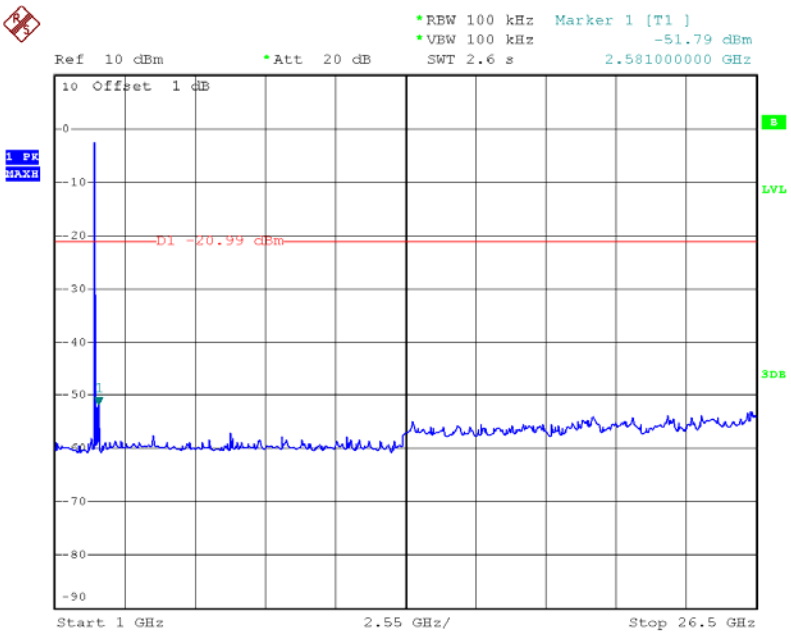
Date: 17.OCT.2016 17:16:40

8-DPSK 2441 MHz Below 1 GHz



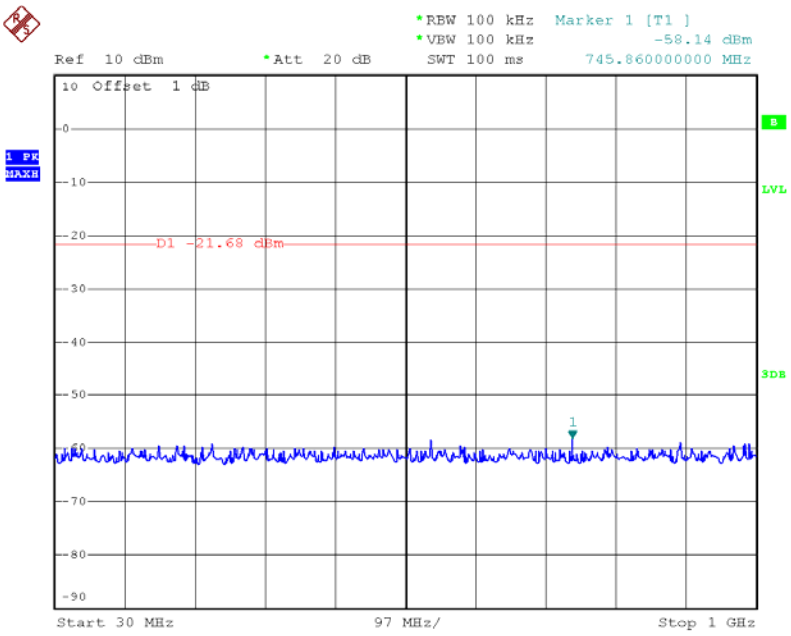
Date: 17.OCT.2016 17:19:03

8-DPSK 2441 MHz Above 1 GHz



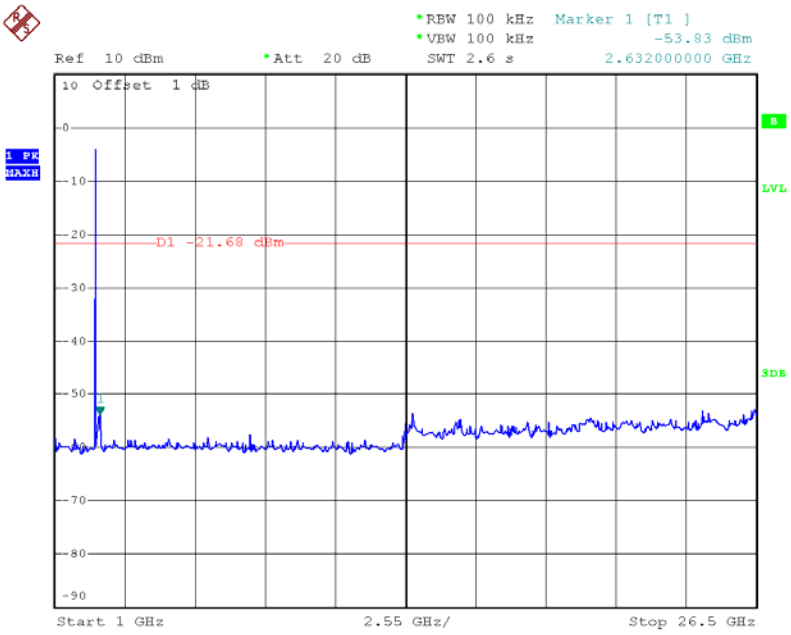
Date: 17.OCT.2016 17:19:36

8-DPSK 2480 MHz Below 1 GHz



Date: 17.OCT.2016 17:21:57

8-DPSK 2480 MHz Above 1 GHz



Date: 17.OCT.2016 17:22:23

12. ANTENNA REQUIREMENT

12.1 REQUIREMENT

Antenna Requirement (15.203)	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. 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 provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
Antenna Requirement (15.247)	If transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

12.2 ANTENNA CONNECTOR CONSTRUCTION

The EUT antenna is a PIFA Antenna. And the maximum gain of this antenna is 2.0 dBi.
It complies with the standard requirement.