

FCC Test Report

Product Name : TWO WAY RADIO/TRANSCEIVER
Trade Name : Wireless Pacific
Model No. : X10DRSM-AU2, X10DRSM-PU2, X10DRSM-LU2,
X10DRSM-EU2, X10DRSM-AX2, X10DRSM-EX2,
X10DRSM-XU2, X10DRSM-XX2, X10DRSM-SU2,
X10DRSM-SX2, PTT500SM2, SMWRSM2, NCXSM
FCC ID. : 2AGEY-XH2

Applicant : Wireless Corporation Limited
Address : 503, Tower 2, Lippo Center 89 Queensway,
Admiralty, Hong Kong

Date of Receipt : Jun. 30, 2016
Issued Date : Jan. 17, 2017
Report No. : 1670088R-RFUSP01V00
Report Version : V1.0



The test results relate only to the samples tested.

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Test Report Certification

Issued Date : Jan. 17, 2017

Report No. : 1670088R-RFUSP01V00

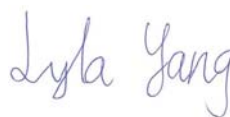


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X10DRSM-XU2, X10DRSM-XX2, X10DRSM-SU2,
X10DRSM-SX2, PTT500SM2, SMWRSM2, NCXSM
FCC ID. : 2AGEY-XH2
EUT Voltage : DC 3.7V (Power by Battery)
Testing Voltage : DC 3.7V (Power by Battery)
Trade Name : Wireless Pacific
Applicable Standard : FCC CFR Title 47 Part 15 Subpart C Section 15.247: 2015
Test Lab : Hsin Chu Laboratory
Test Result : Complied

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Documented By :



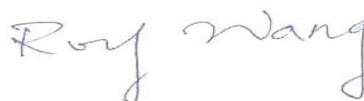
(Lyla Yang / Engineering Adm. Assistant)

Tested By :



(Elwin Lin / Assistant Engineer)

Approved By :



(Roy Wang / Director)

Revision History

Report No.	Version	Description	Issued Date
1670088R-RFUSP01V00	V1.0	Initial issue of report.	Jan. 17, 2017

Laboratory Information

We, **DEKRA Testing and Certification Co., Ltd.**, are an independent RF consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted (audited or listed) by the following related bodies in compliance with ISO 17025 specified testing scopes:

Taiwan R.O.C.	: TAF, Accreditation Number: 3024
USA	: FCC, Registration Number: 834100
Canada	: IC, Submission No: 181665 / IC Registration Number: 4075C-4

The related certificate for our laboratories about the test site and management system can be downloaded from DEKRA Testing and Certification Co., Ltd. Web Site:

<http://www.dekra.com.tw/english/about/certificates.aspx?bval=5>

The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site : http://www.dekra.com.tw/index_en.aspx

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TABLE OF CONTENTS

Description	Page
1. General Information.....	7
1.1. EUT Description	7
1.2. Test Mode	9
1.3. Tested System Details	10
1.4. Configuration of tested System	11
1.5. EUT Exercise Software	11
1.6. Test Facility.....	12
2. Conducted Emission	13
2.1. Test Equipment.....	13
2.2. Test Setup	13
2.3. Limits	14
2.4. Test Procedure	14
2.5. Test Specification.....	14
2.6. Uncertainty	14
2.7. Test Result.....	14
3. The maximum peak conducted output power.....	15
3.1. Test Equipment.....	15
3.2. Test Setup	15
3.3. Test procedures	15
3.4. Limits	15
3.5. Test Specification.....	15
3.6. Test Result.....	16
4. Radiated Emission	17
4.1. Test Equipment.....	17
4.2. Test Setup	17
4.3. Limits	18
4.4. Test Procedure	18
4.5. Test Specification.....	18
4.6. Test Result.....	19
5. RF antenna conducted test	43
5.1. Test Equipment.....	43
5.2. Test Setup	43
5.3. Limits	44
5.4. Test Procedure	44
5.5. Test Specification.....	44
5.6. Test Result.....	45
6. Band Edge.....	54
6.1. Test Equipment.....	54
6.2. Test Setup	54
6.3. Limits	54
6.4. Test Procedure	55

6.5.	Test Specification.....	55
6.6.	Test Result.....	56
7.	Number of hopping frequency	80
7.1.	Test Equipment.....	80
7.2.	Test Setup	80
7.3.	Limits	81
7.4.	Test Procedures	81
7.5.	Test Specification.....	81
7.6.	Test Result.....	82
8.	Carrier Frequency Separation	86
8.1.	Test Equipment.....	86
8.2.	Test Setup	86
8.3.	Limits	86
8.4.	Test Procedures	86
8.5.	Test Specification.....	86
8.6.	Test Result.....	87
9.	Occupied Bandwidth	96
9.1.	Test Equipment.....	96
9.2.	Test Setup	96
9.3.	Limits	97
9.4.	Test Procedures	97
9.5.	Test Specification.....	97
9.6.	Test Result.....	98
10.	Dwell Time.....	107
10.1.	Test Equipment.....	107
10.2.	Test Setup	107
10.3.	Limits	108
10.4.	Test Procedures	108
10.5.	Test Specification.....	108
10.6.	Test Result.....	109
Attachment 1		118
	Test Setup Photograph.....	118
Attachment 2		120
	EUT External Photograph.....	120
Attachment 3		123
	EUT Internal Photograph.....	123

1. General Information

1.1. EUT Description

Product Name	TWO WAY RADIO/TRANSCEIVER
Trade Name	Wireless Pacific
Model No.	X10DRSM-AU2, X10DRSM-PU2, X10DRSM-LU2, X10DRSM-EU2, X10DRSM-AX2, X10DRSM-EX2, X10DRSM-XU2, X10DRSM-XX2, X10DRSM-SU2, X10DRSM-SX2, PTT500SM2, SMWRSM2, NCXSM
Frequency Range	2402~2479MHz
Channel Number	78 Channels
Type of Modulation	GFSK / π /4DQPSK / 8DPSK

Antenna Information	
Model Name	XSMA, XSMA2
Antenna Type	Dipole Antenna
Antenna Gain	2.0dBi

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 00	2402 MHz	Channel 20	2422 MHz	Channel 40	2442 MHz	Channel 60	2462 MHz
Channel 01	2403 MHz	Channel 21	2423 MHz	Channel 41	2443 MHz	Channel 61	2463 MHz
Channel 02	2404 MHz	Channel 22	2424 MHz	Channel 42	2444 MHz	Channel 62	2464 MHz
Channel 03	2405 MHz	Channel 23	2425 MHz	Channel 43	2445 MHz	Channel 63	2465 MHz
Channel 04	2406 MHz	Channel 24	2426 MHz	Channel 44	2446 MHz	Channel 64	2466 MHz
Channel 05	2407 MHz	Channel 25	2427 MHz	Channel 45	2447 MHz	Channel 65	2467 MHz
Channel 06	2408 MHz	Channel 26	2428 MHz	Channel 46	2448 MHz	Channel 66	2468 MHz
Channel 07	2409 MHz	Channel 27	2429 MHz	Channel 47	2449 MHz	Channel 67	2469 MHz
Channel 08	2410 MHz	Channel 28	2430 MHz	Channel 48	2450 MHz	Channel 68	2470 MHz
Channel 09	2411 MHz	Channel 29	2431 MHz	Channel 49	2451 MHz	Channel 69	2471 MHz
Channel 10	2412 MHz	Channel 30	2432 MHz	Channel 50	2452 MHz	Channel 70	2472 MHz
Channel 11	2413 MHz	Channel 31	2433 MHz	Channel 51	2453 MHz	Channel 71	2473 MHz
Channel 12	2414 MHz	Channel 32	2434 MHz	Channel 52	2454 MHz	Channel 72	2474 MHz
Channel 13	2415 MHz	Channel 33	2435 MHz	Channel 53	2455 MHz	Channel 73	2475 MHz
Channel 14	2416 MHz	Channel 34	2436 MHz	Channel 54	2456 MHz	Channel 74	2476 MHz
Channel 15	2417 MHz	Channel 35	2437 MHz	Channel 55	2457 MHz	Channel 75	2477 MHz
Channel 16	2418 MHz	Channel 36	2438 MHz	Channel 56	2458 MHz	Channel 76	2478 MHz
Channel 17	2419 MHz	Channel 37	2439 MHz	Channel 57	2459 MHz	Channel 77	2479 MHz
Channel 18	2420 MHz	Channel 38	2440 MHz	Channel 58	2460 MHz		
Channel 19	2421 MHz	Channel 39	2441 MHz	Channel 59	2461 MHz		

Note:

1. This device is a TWO WAY RADIO/TRANSCEIVER including BT 3.0 transmitting and receiving function.
2. These test results on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.247 for spread spectrum devices.
3. The variation of model number is for different strategy of marketing.
4. Regards to the frequency band operation; the lowest 、middle and highest frequency of channel were selected to perform the test, and then shown on this report.
5. It is a Class B personal computer and peripheral. Its test report number is 1670088R-RFUSP01V00-A under part 15B with Declaration of Conformity.

1.2. Test Mode

DEKRA has verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Pre-Test Mode	
TX	Mode 1: Transmit Mode
Final Test Mode	
TX	Mode 1: Transmit Mode

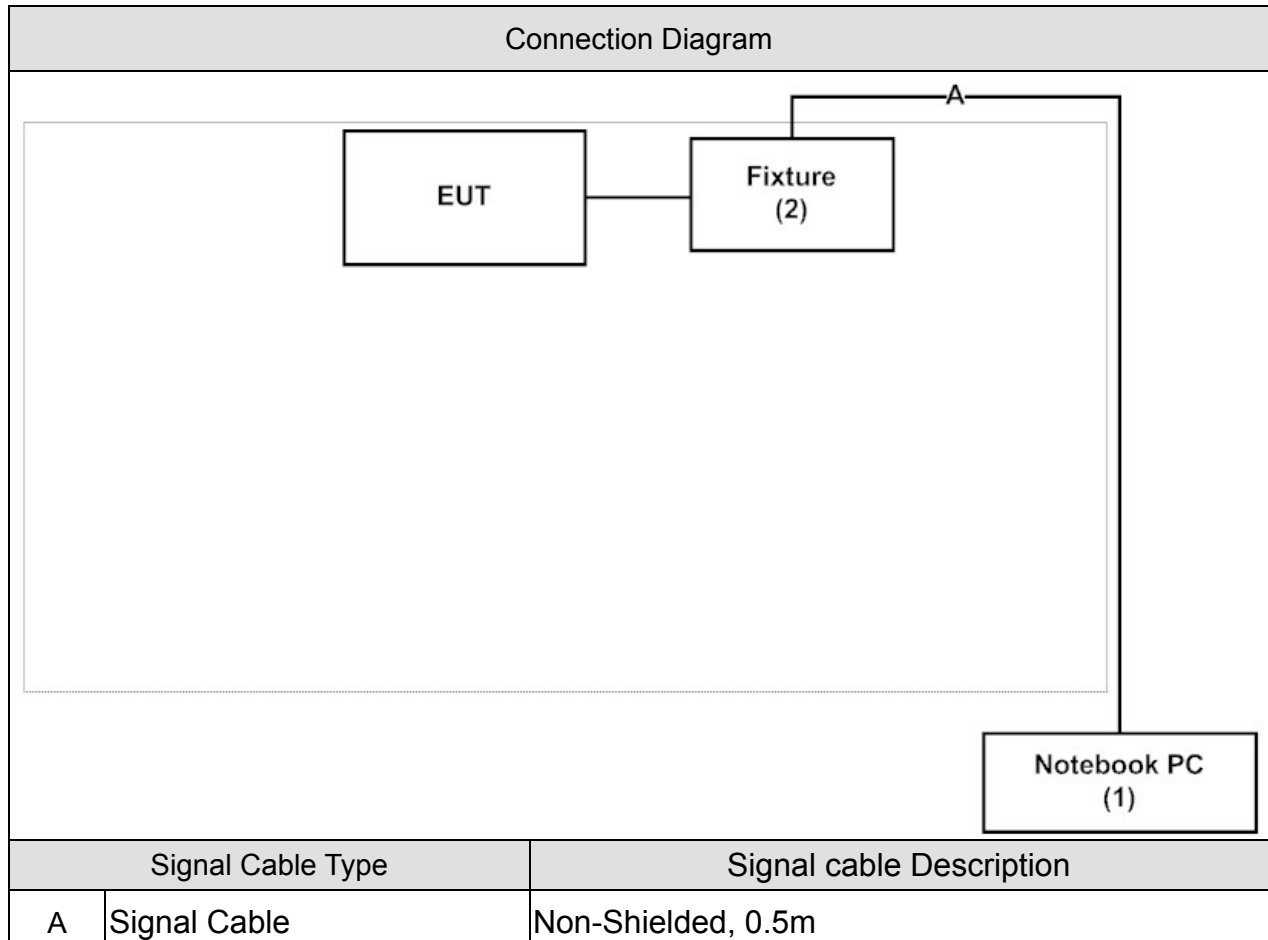
Emission	Mode 1
Conducted Emission	No
The maximum peak conducted output power	Yes
Radiated Emission	Yes
RF antenna conducted test	Yes
Band Edge	Yes
Number of hopping Frequency	Yes
Carrier Frequency Separation	Yes
Occupied Bandwidth	Yes
Dwell Time	Yes

1.3. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	Notebook PC	ACER	PAV70	LUSEW0D037 1105FE221601	DoC	Non-Shielded, 2.5m one ferrite core bonded
2	Fixture	OpenRoad Solutions Inc.	N/A	N/A	DoC	--

1.4. Configuration of tested System



1.5. EUT Exercise Software

1	Setup the EUT as shown in Section 1.4.
2	Turn on the EUT and tested equipment power.
3	Execute the test program software of "BuleTest 3".
4	The RF signal's status will continue transmit through EUT.
5	Repeat the above procedure.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	FCC PART 15 C 15.247	15 - 35	24
Humidity (%RH)	The maximum peak conducted output power	25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Radiated Emission (FHSS)	15 - 35	25
Humidity (%RH)		25 - 75	54
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Band Edge (FHSS)	15 - 35	25
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Number of hopping Frequency (FHSS)	15 - 35	24
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Carrier Frequency Separation (FHSS)	15 - 35	24
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Occupied Bandwidth (FHSS)	15 - 35	24
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 RF antenna conducted test (FHSS)	15 - 35	24
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Dwell Time (FHSS)	15 - 35	24
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000

2. Conducted Emission

2.1. Test Equipment

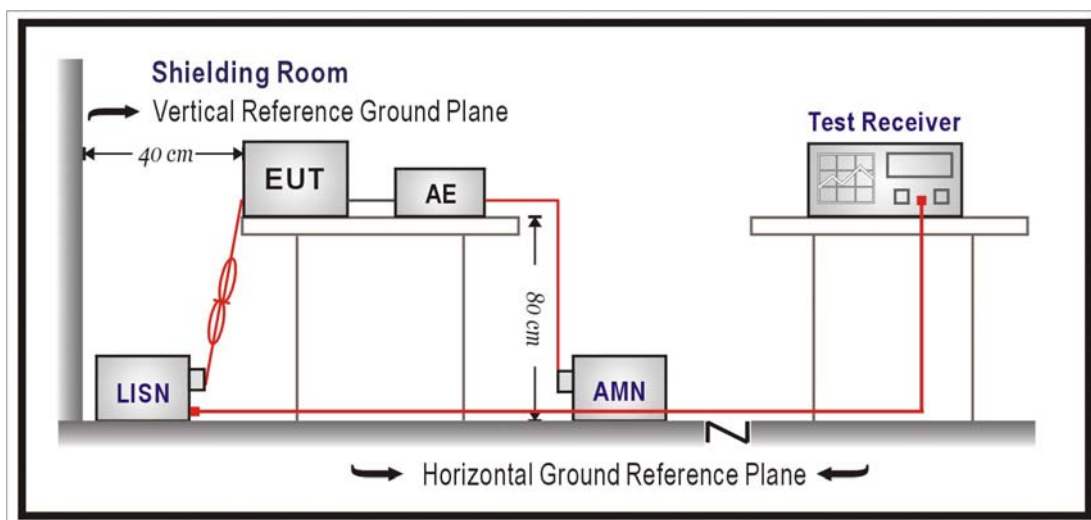
The following test equipments are used during the test:

Conducted Emission / SR3

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
LISN	R&S	ENV216	100096	2017/08/22
LISN	R&S	ESH3-Z5	836679/022	2016/11/30
Test Receiver	R&S	ESCS 30	825442/017	2017/01/04

Note: All equipments that need to calibrate are with calibration period of 1 year.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 Limits (dBuV)		
Frequency MHz	QP	AV
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges.

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

2.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015

2.6. Uncertainty

The measurement uncertainty is defined as ± 2.26 dB.

2.7. Test Result

Owing to the DC operation of EUT, this test item is not performed.

3. The maximum peak conducted output power

3.1. Test Equipment

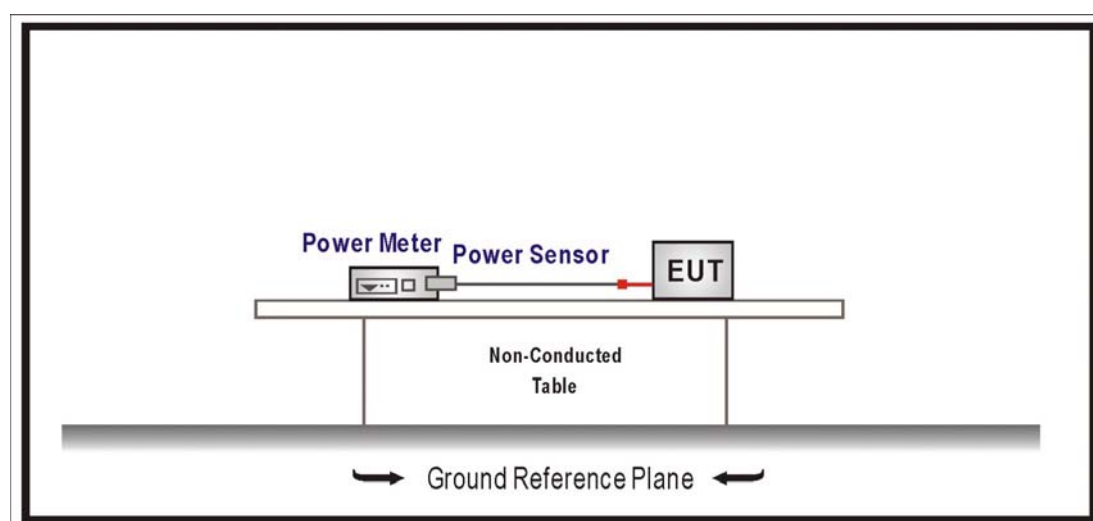
The following test equipment is used during the test:

The maximum peak conducted output power / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Power Meter	Agilent	N1911A	MY45101353	2017/09/29
Power Sensor	Agilent	N1921A	MY45241670	2017/09/28
USB Power Sensor	Keysight	U2021XA	MY54070005	NCR
Temperature & Humidity Chamber	WIT	TH-1S-B	1082101	2017/01/18

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

3.2. Test Setup



3.3. Test procedures

The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of FCC KDB 558074 D01 for compliance to FCC 47CFR 15.247 requirements.

3.4. Limits

(1) For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

(2) For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels.

3.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015

3.6. Test Result

Product	TWO WAY RADIO/TRANSCEIVER		
Test Item	The maximum peak conducted output power		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2016/10/04	Test Site	SR7

GFSK

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402	17.710	≤ 30	Pass
39	2441	17.780	≤ 30	Pass
77	2479	17.880	≤ 30	Pass

$\pi/4$ -DQPSK

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402	19.060	≤ 30	Pass
39	2441	19.090	≤ 30	Pass
77	2479	19.300	≤ 30	Pass

8-DPSK

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402	19.100	≤ 30	Pass
39	2441	19.180	≤ 30	Pass
77	2479	19.350	≤ 30	Pass

4. Radiated Emission

4.1. Test Equipment

The following test equipments are used during the test:

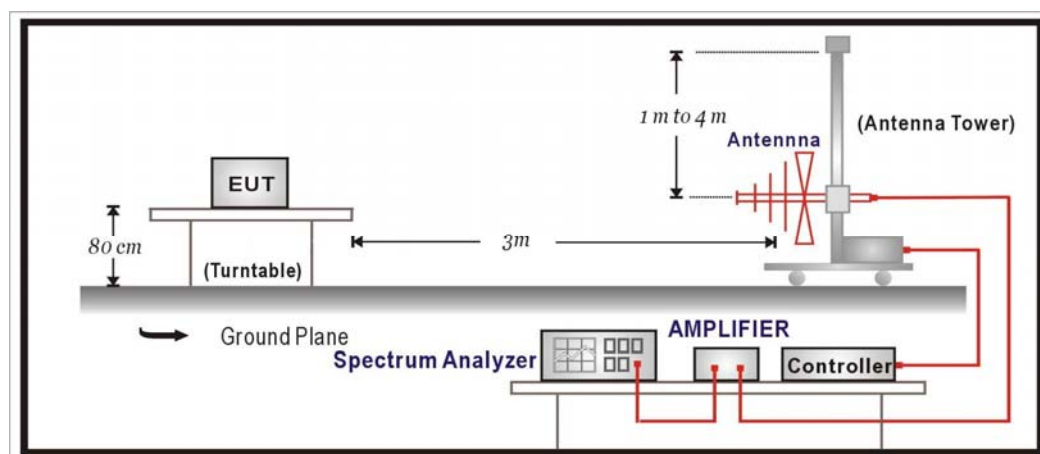
Radiated Emission / CB1

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Bilog Antenna	Schaffner	CBL6112B	2895	2017/08/14
Double Ridged Guide Horn Antenna	Schwarzbeck	BBHA 9120	D743	2017/01/14
Pre-Amplifier	EMCI	EMC0031835	4583/10/13	2017/01/26
Pre-Amplifier	DEKRA	AP-025C	CHM-0706049	2017/01/03
Spectrum Analyzer	Agilent	E4440A	MY46187335	2016/12/24
k Type Cable	Huber+Suhner	SF 102	25623/2	2017/01/11
Horn Antenna	Schwarzbeck	BBHA 9170	203	2017/08/28
Signal & Spectrum Analyzer	R&S	FSV40	101049	2017/01/05

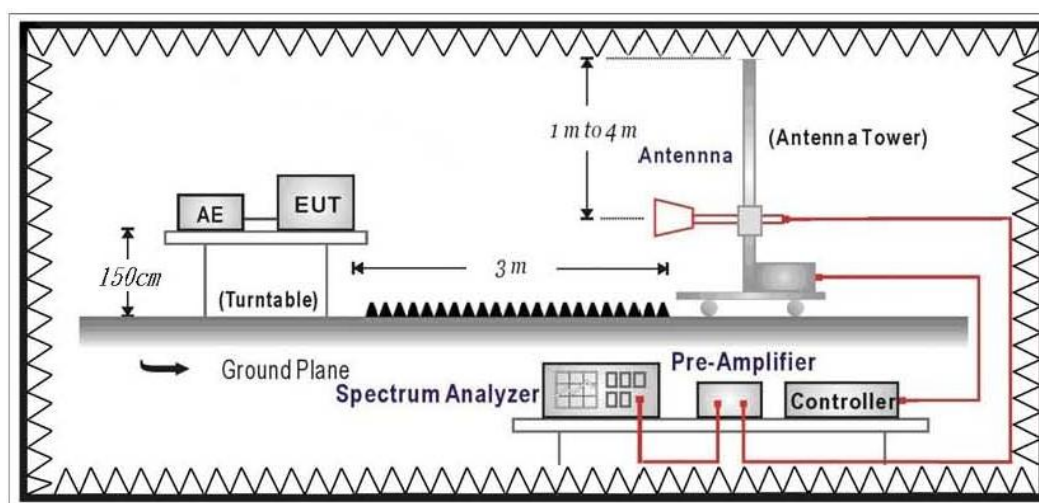
Note: All equipments that need to calibrate are with calibration period of 1 year.

4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	uV/m	dBuV/m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

Remarks : 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)

2. In the Above Table, the tighter limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

4.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of FCC KDB 558074 D01 for compliance to FCC 47CFR 15.247 requirements. The EUT and its simulators are placed on a turn table which is 0.8 meter or 1.5m above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

On any frequency or frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a quasi-peak detector function and on any frequency or frequencies above 1000 MHz the radiated limits shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission measurement are included emission measurement below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit. The bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

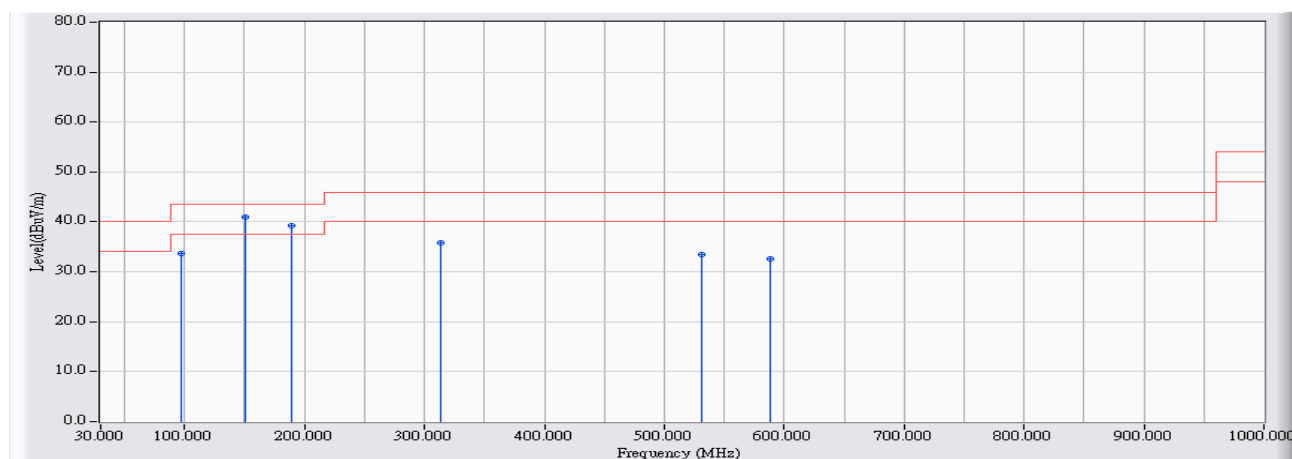
4.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015

4.6. Test Result

30MHz-1GHz Spurious

Site : CB1	Time : 2016/10/07 - 11:00
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_30M-1G-4_9161 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : DH5_2441MHz

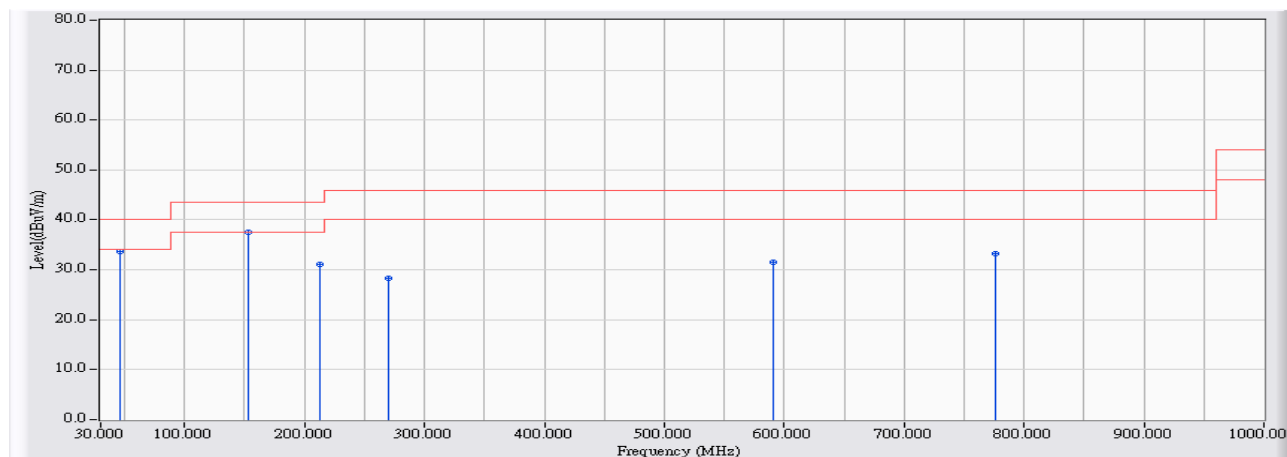


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	96.535	12.236	21.485	33.722	-9.778	43.500	QUASIPeAK
2	* 150.947	17.798	23.168	40.966	-2.534	43.500	QUASIPeAK
3	189.258	12.940	26.278	39.217	-4.283	43.500	QUASIPeAK
4	314.085	14.002	21.768	35.770	-10.230	46.000	QUASIPeAK
5	531.149	18.360	15.056	33.416	-12.584	46.000	QUASIPeAK
6	588.082	19.471	13.130	32.601	-13.399	46.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : CB1	Time : 2016/10/07 - 11:01
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_30M-1G-4_9161 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : DH5_2441MHz

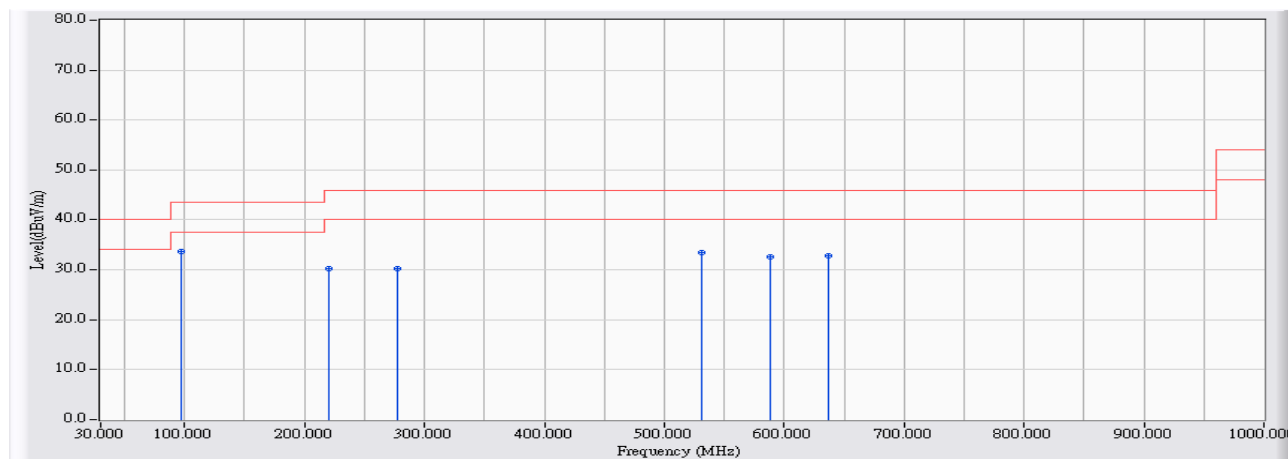


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		45.712	11.953	21.716	33.669	-6.331	40.000	QUASIPeAK
2	*	152.984	17.838	19.608	37.446	-6.054	43.500	QUASIPeAK
3		212.827	12.343	18.670	31.013	-12.487	43.500	QUASIPeAK
4		270.342	12.935	15.356	28.291	-17.709	46.000	QUASIPeAK
5		590.701	19.522	11.962	31.484	-14.516	46.000	QUASIPeAK
6		776.534	22.028	11.319	33.347	-12.653	46.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : CB1	Time : 2016/10/07 - 11:01
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_30M-1G-4_9161 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 2DH5_2441MHz

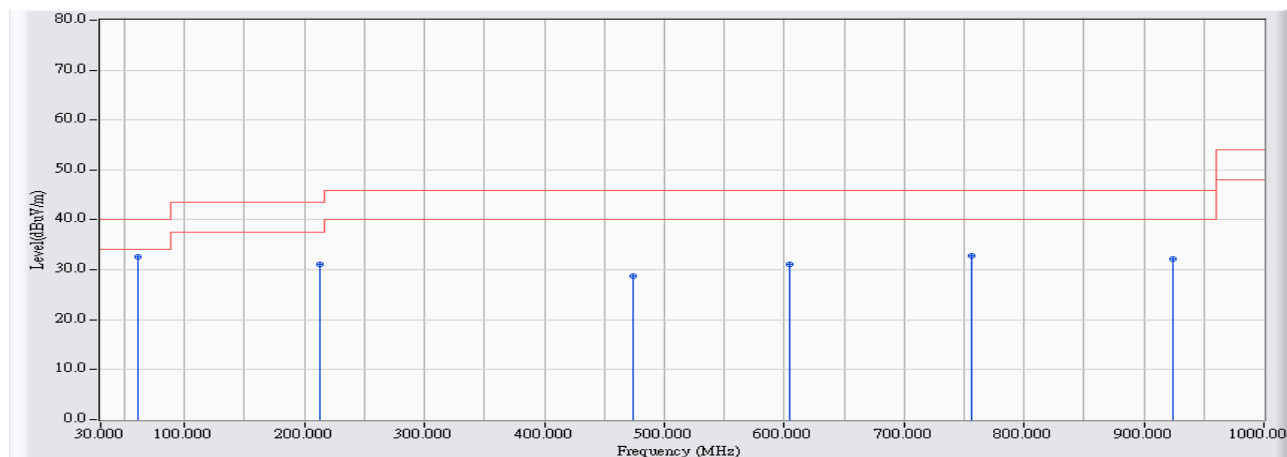


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	96.535	12.236	21.485	33.722	-9.778	43.500	QUASIPeAK
2		220.101	12.246	17.987	30.232	-15.768	46.000	QUASIPeAK
3		277.907	13.166	17.086	30.253	-15.747	46.000	QUASIPeAK
4		531.149	18.360	15.056	33.416	-12.584	46.000	QUASIPeAK
5		588.082	19.471	13.130	32.601	-13.399	46.000	QUASIPeAK
6		637.256	20.210	12.504	32.714	-13.286	46.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : CB1	Time : 2016/10/07 - 11:02
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_30M-1G-4_9161 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 2DH5_2441MHz

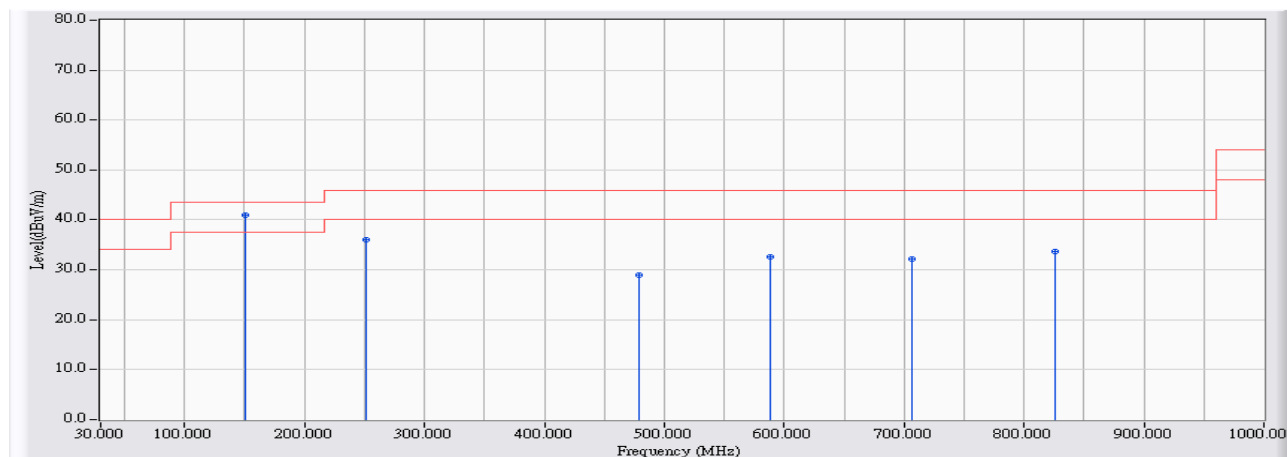


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	60.746	10.921	21.628	32.549	-7.451	40.000	QUASIPeAK
2		212.827	12.343	18.670	31.013	-12.487	43.500	QUASIPeAK
3		474.022	17.441	11.277	28.718	-17.282	46.000	QUASIPeAK
4		604.280	19.761	11.371	31.133	-14.867	46.000	QUASIPeAK
5		756.166	21.770	11.074	32.845	-13.155	46.000	QUASIPeAK
6		923.572	23.678	8.483	32.161	-13.839	46.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : CB1	Time : 2016/10/07 - 11:02
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_30M-1G-4_9161 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCIVER	Note : 3DH5_2441MHz

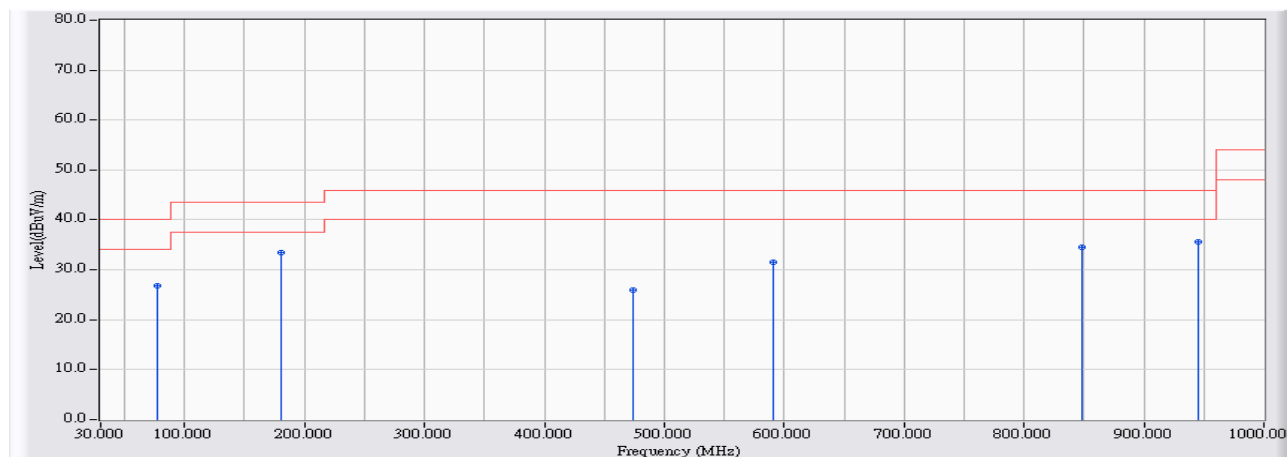


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	150.947	17.798	23.168	40.966	-2.534	43.500	QUASIPeAK
2		251.138	12.357	23.590	35.947	-10.053	46.000	QUASIPeAK
3		479.453	17.506	11.422	28.929	-17.071	46.000	QUASIPeAK
4		588.082	19.471	13.130	32.601	-13.399	46.000	QUASIPeAK
5		706.410	21.143	11.079	32.222	-13.778	46.000	QUASIPeAK
6		825.417	22.610	10.995	33.606	-12.394	46.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : CB1	Time : 2016/10/07 - 11:03
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_30M-1G-4_9161 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 3DH5_2441MHz



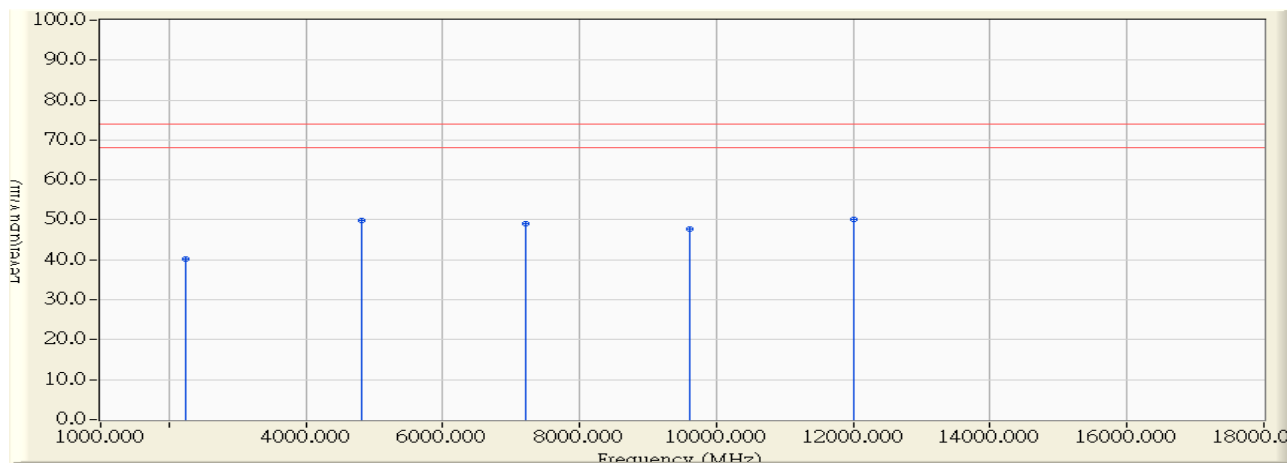
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		77.719	8.951	17.920	26.871	-13.129	40.000	QUASIPeAK
2	*	180.723	14.323	19.220	33.543	-9.957	43.500	QUASIPeAK
3		473.634	17.437	8.618	26.055	-19.945	46.000	QUASIPeAK
4		590.701	19.522	11.962	31.484	-14.516	46.000	QUASIPeAK
5		848.889	22.875	11.642	34.518	-11.482	46.000	QUASIPeAK
6		945.879	23.891	11.702	35.593	-10.407	46.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Above 1GHz Spurious:

Site : CB1	Time : 2016/10/05 - 14:38
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : DH5_2402MHz

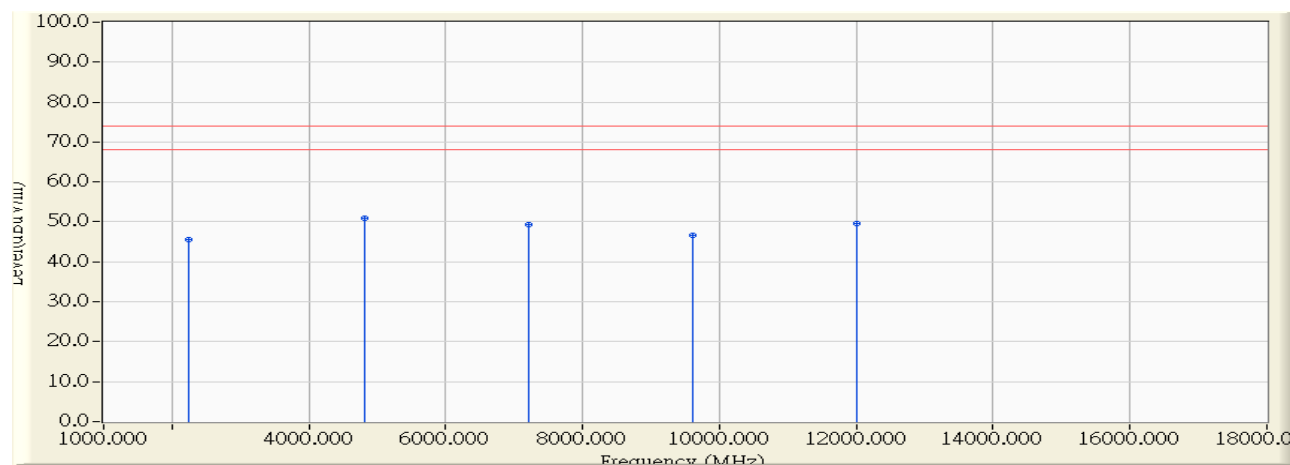


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2249.000	-6.989	47.130	40.141	-33.859	74.000	PEAK
2		4804.000	-2.613	52.440	49.827	-24.173	74.000	PEAK
3		7205.000	5.865	43.110	48.975	-25.025	74.000	PEAK
4		9611.000	7.458	40.280	47.738	-26.262	74.000	PEAK
5	*	12010.000	10.398	39.680	50.077	-23.923	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	Time : 2016/10/05 - 14:23
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : DH5_2402MHz

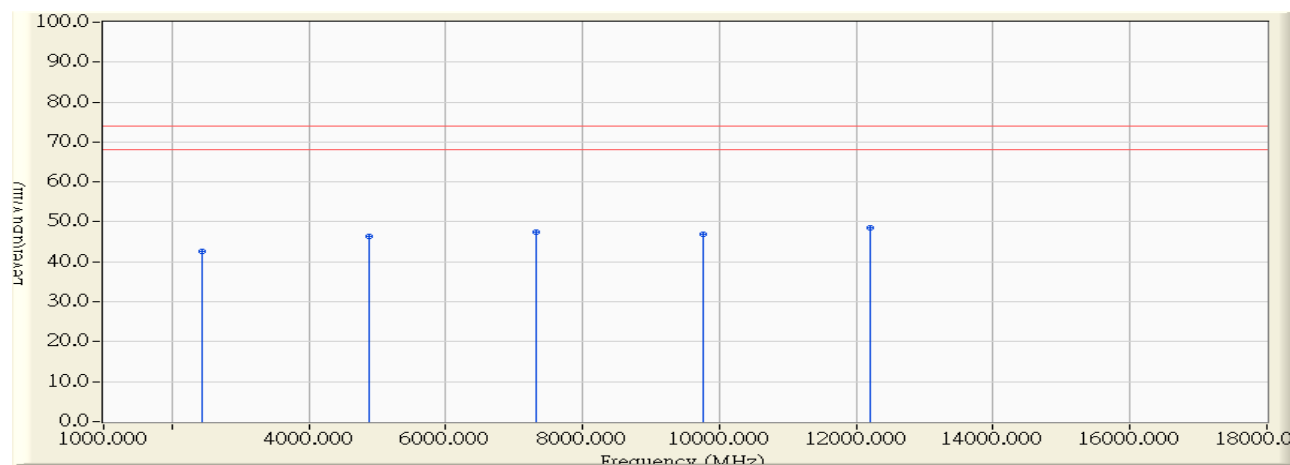


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2249.500	-6.452	51.960	45.509	-28.491	74.000	PEAK
2	*	4803.000	-1.666	52.720	51.054	-22.946	74.000	PEAK
3		7206.000	5.366	43.850	49.217	-24.783	74.000	PEAK
4		9605.000	6.993	39.570	46.563	-27.437	74.000	PEAK
5		12007.000	9.924	39.730	49.654	-24.346	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	Time : 2016/10/05 - 14:52
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : DH5_2441MHz

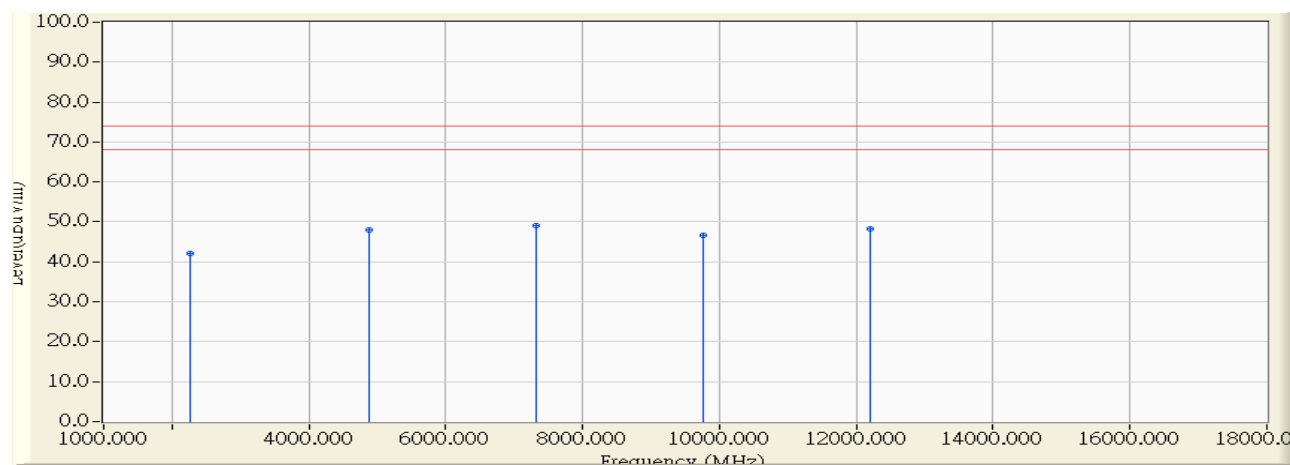


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2445.000	-5.100	47.700	42.601	-31.399	74.000	PEAK
2		4881.000	-2.407	48.670	46.263	-27.737	74.000	PEAK
3		7323.000	6.097	41.460	47.557	-26.443	74.000	PEAK
4		9764.000	8.287	38.530	46.817	-27.183	74.000	PEAK
5	*	12206.000	10.163	38.490	48.653	-25.347	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	Time : 2016/10/05 - 15:01
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1 FCC EFS 1-18G H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : DH5_2441MHz

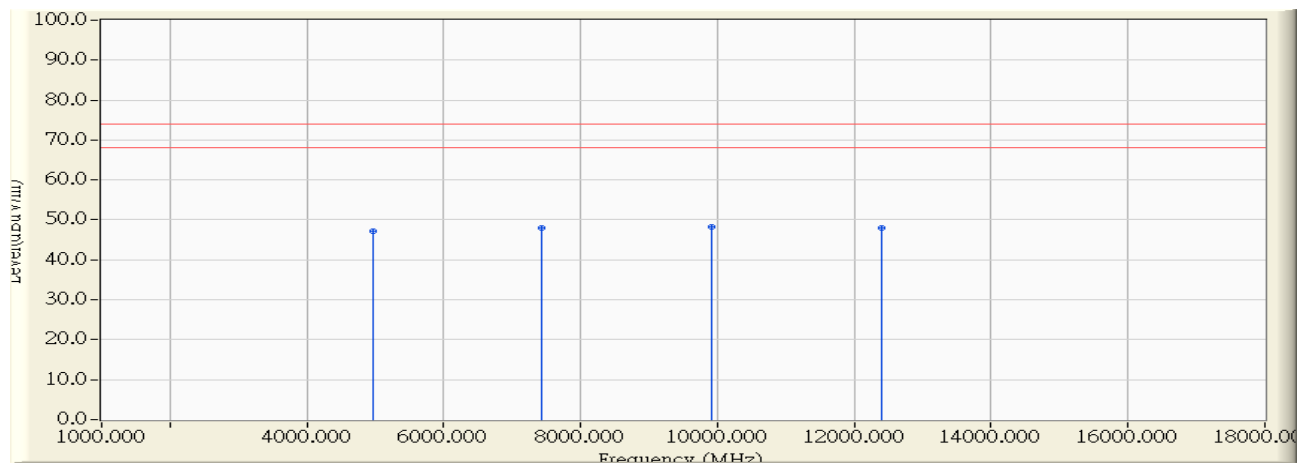


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2258.000	-6.353	48.570	42.218	-31.782	74.000	PEAK
2	4882.000	-1.651	49.690	48.039	-25.961	74.000	PEAK
3	* 7323.000	5.597	43.570	49.167	-24.833	74.000	PEAK
4	9764.000	7.615	39.030	46.645	-27.355	74.000	PEAK
5	12205.000	9.887	38.250	48.136	-25.864	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	Time : 2016/10/06 - 21:40
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : DH5_2479MHz

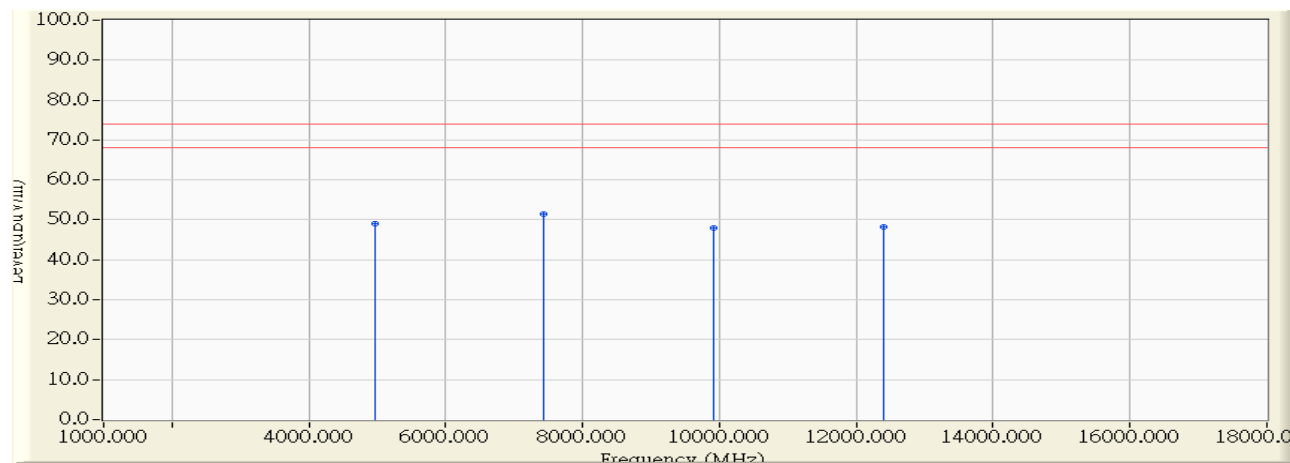


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	4957.000	-2.203	49.310	47.107	-26.893	74.000	PEAK
2	7437.000	6.321	41.780	48.101	-25.899	74.000	PEAK
3	* 9915.000	9.105	39.090	48.195	-25.805	74.000	PEAK
4	12399.000	9.934	38.050	47.983	-26.017	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	Time : 2016/10/06 - 21:27
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : DH5_2479MHz

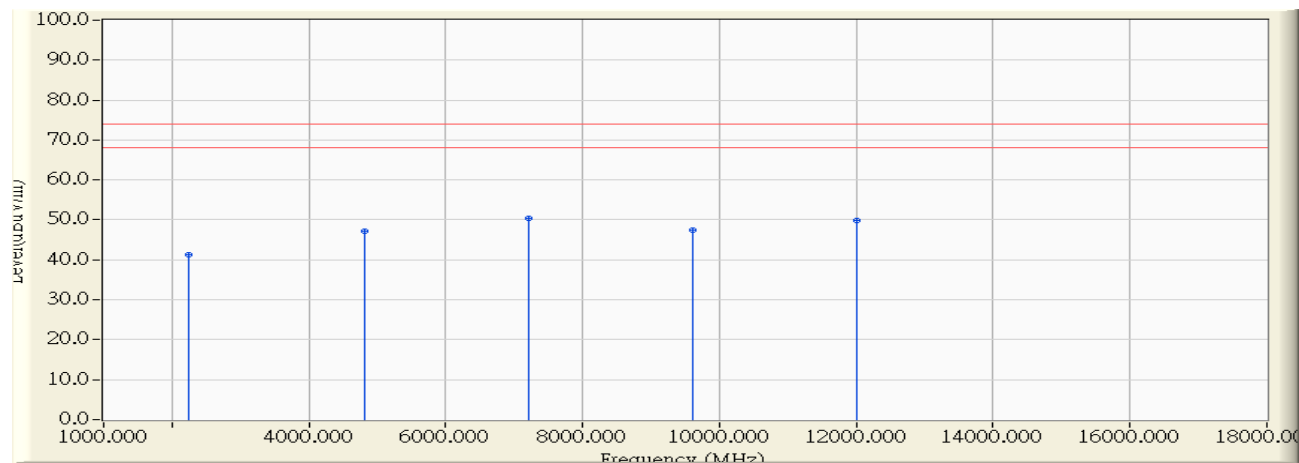


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4957.000	32.867	50.670	49.032	-24.968	74.000	PEAK
2	*	7436.000	40.610	45.530	51.350	-22.650	74.000	PEAK
3		9915.000	43.034	39.740	47.947	-26.053	74.000	PEAK
4		12396.000	43.719	38.290	48.140	-25.860	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	Time : 2016/10/06 - 22:06
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 2DH5_2402MHz

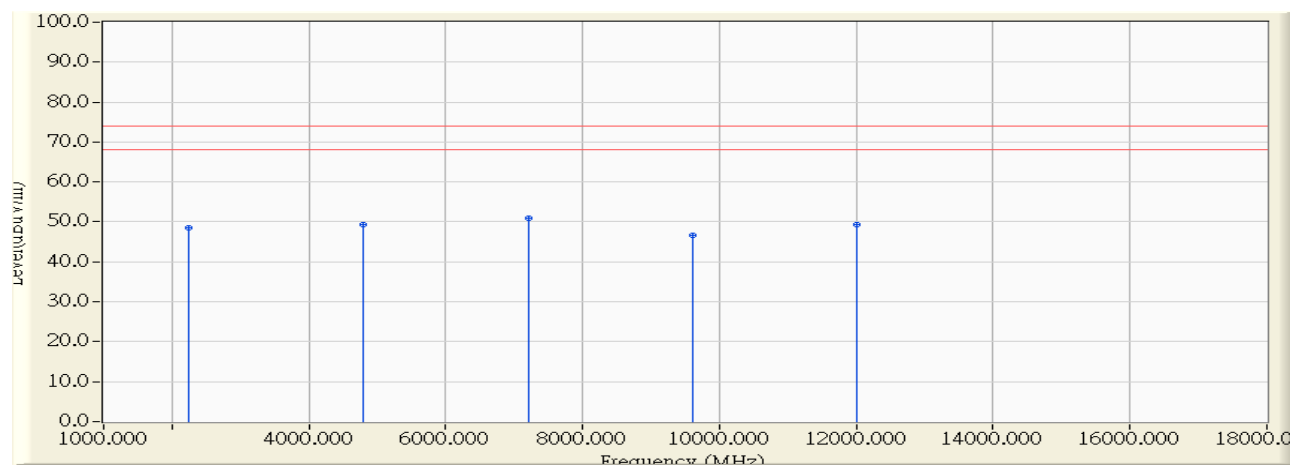


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2249.000	-6.989	48.320	41.331	-32.669	74.000	PEAK
2	4803.000	-2.613	49.670	47.057	-26.943	74.000	PEAK
3	* 7205.000	5.865	44.530	50.395	-23.605	74.000	PEAK
4	9611.000	7.458	40.010	47.468	-26.532	74.000	PEAK
5	12010.000	10.398	39.440	49.837	-24.163	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	Time : 2016/10/06 - 21:54
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 2DH5_2402MHz

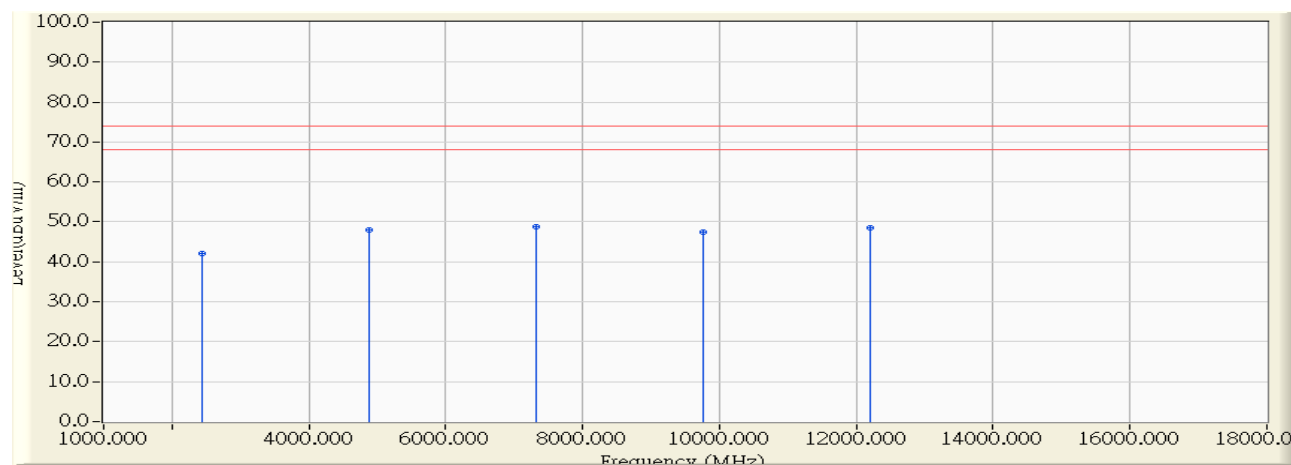


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2249.000	-6.457	55.060	48.603	-25.397	74.000	PEAK
2	4803.000	-1.666	50.910	49.244	-24.756	74.000	PEAK
3	* 7205.000	5.365	45.670	51.035	-22.965	74.000	PEAK
4	9604.000	6.988	39.740	46.729	-27.271	74.000	PEAK
5	12011.000	9.923	39.370	49.294	-24.706	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	Time : 2016/10/06 - 22:19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 2DH5_2441MHz

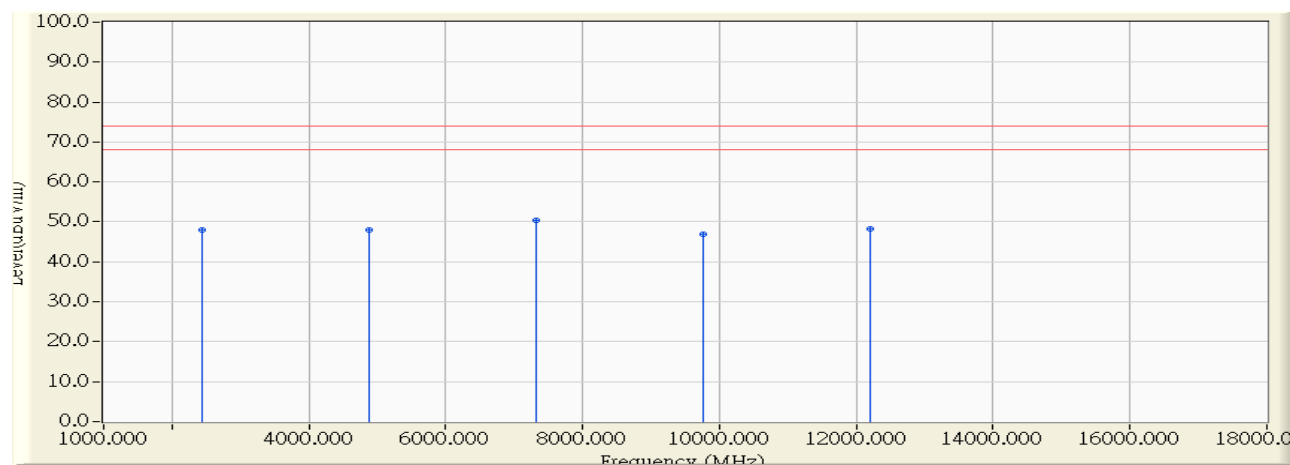


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2445.000	-5.100	47.060	41.961	-32.039	74.000	PEAK
2	4882.000	-2.404	50.300	47.896	-26.104	74.000	PEAK
3	* 7323.000	6.097	42.660	48.757	-25.243	74.000	PEAK
4	9764.000	8.287	39.270	47.557	-26.443	74.000	PEAK
5	12205.000	10.165	38.270	48.434	-25.566	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	Time : 2016/10/06 - 22:32
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 2DH5_2441MHz

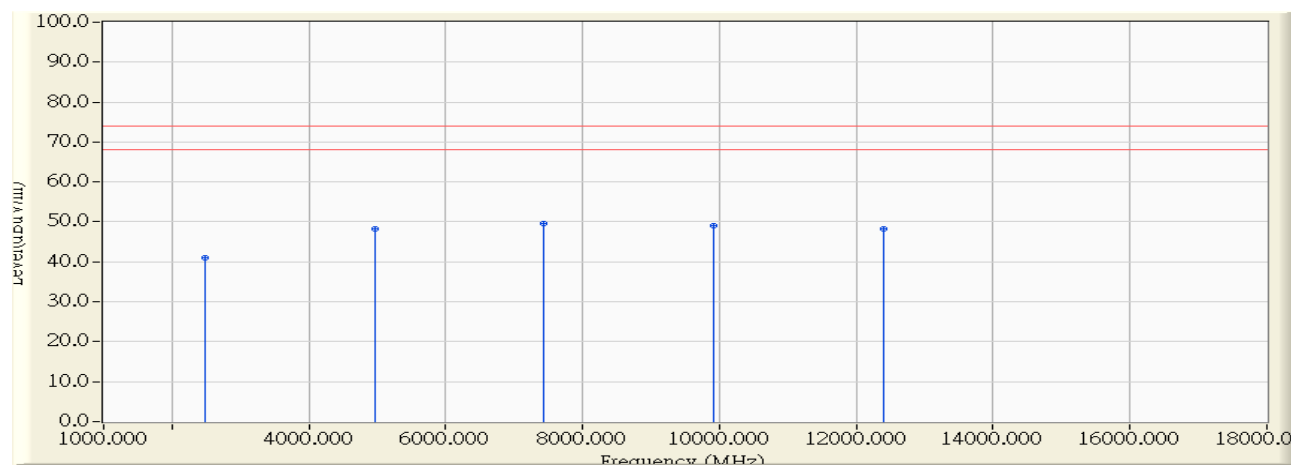


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2445.000	-4.176	52.230	48.055	-25.945	74.000	PEAK
2	4882.000	-1.651	49.610	47.959	-26.041	74.000	PEAK
3	* 7323.000	5.597	44.840	50.437	-23.563	74.000	PEAK
4	9764.000	7.615	39.310	46.925	-27.075	74.000	PEAK
5	12209.000	9.886	38.390	48.276	-25.724	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	Time : 2016/10/06 - 22:53
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 2DH5_2479MHz

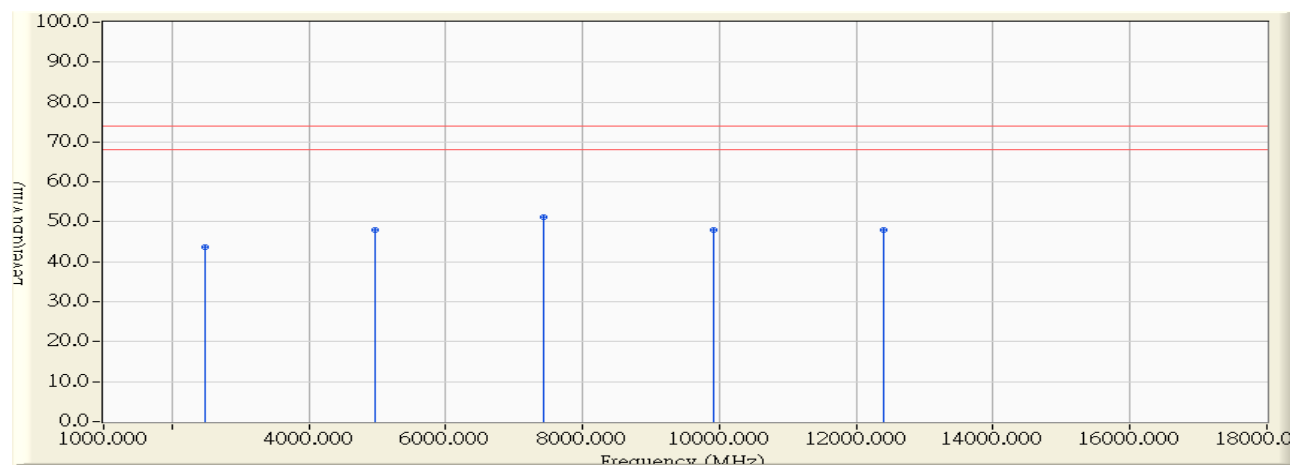


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2479.000	-4.771	45.900	41.128	-32.872	74.000	PEAK
2	4958.000	-2.200	50.510	48.310	-25.690	74.000	PEAK
3	* 7437.000	6.321	43.210	49.531	-24.469	74.000	PEAK
4	9918.000	9.121	39.890	49.011	-24.989	74.000	PEAK
5	12394.000	9.939	38.200	48.139	-25.861	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	Time : 2016/10/06 - 22:45
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 2DH5_2479MHz

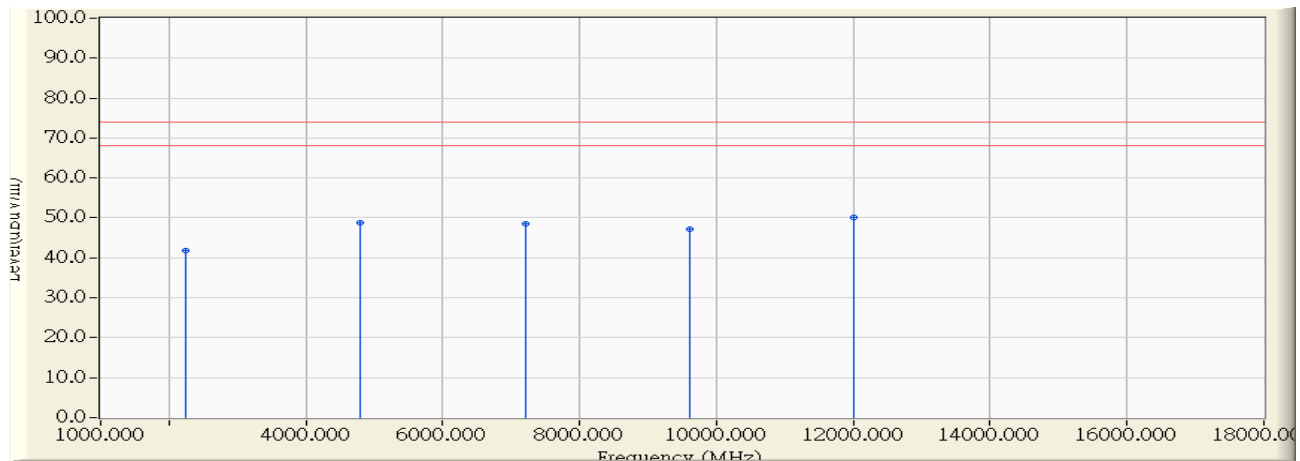


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2479.000	-3.779	47.410	43.630	-30.370	74.000	PEAK
2	4958.000	-1.638	49.750	48.112	-25.888	74.000	PEAK
3	* 7437.000	5.821	45.390	51.211	-22.789	74.000	PEAK
4	9916.000	8.211	39.870	48.081	-25.919	74.000	PEAK
5	12395.000	9.850	38.230	48.080	-25.920	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	Time : 2016/10/06 - 23:04
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 3DH5_2402MHz

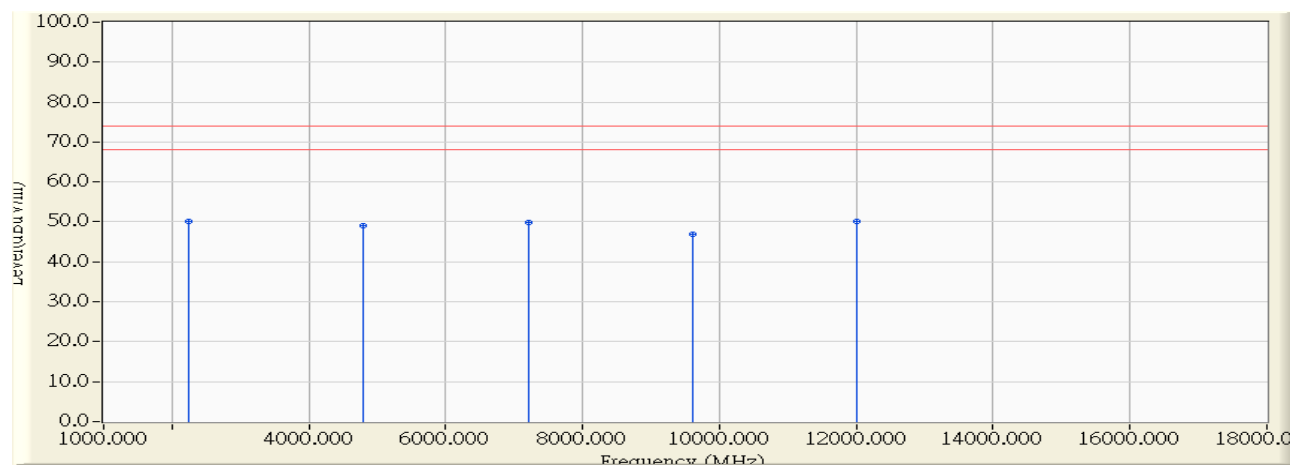


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2249.000	-6.989	48.760	41.771	-32.229	74.000	PEAK
2		4803.000	-2.616	51.440	48.824	-25.176	74.000	PEAK
3		7206.000	5.866	42.580	48.447	-25.553	74.000	PEAK
4		9603.000	7.415	39.780	47.195	-26.805	74.000	PEAK
5	*	12013.000	10.393	39.800	50.193	-23.807	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	Time : 2016/10/06 - 23:16
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 3DH5_2402MHz

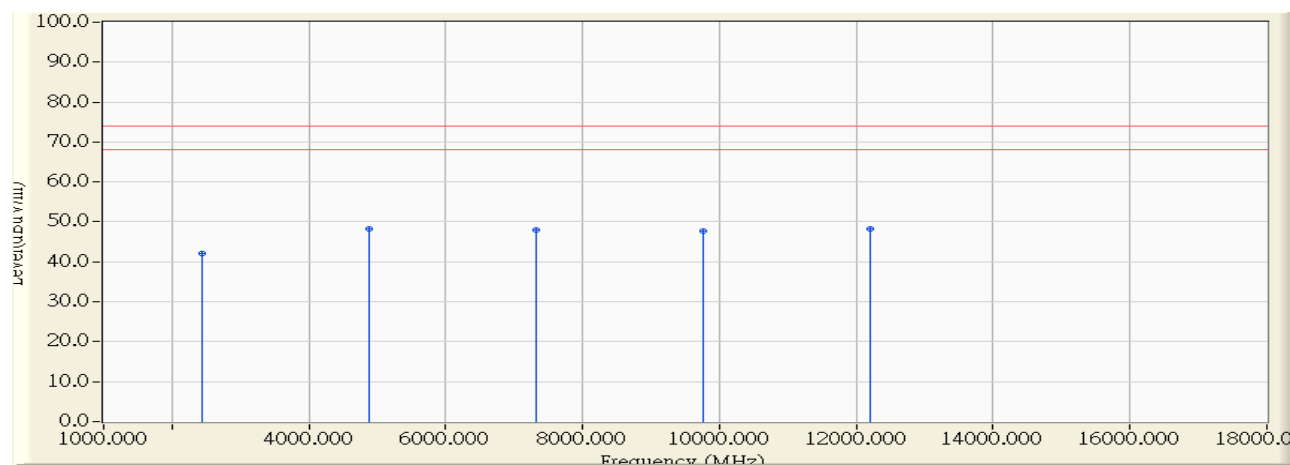


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2249.000	-6.457	56.650	50.193	-23.807	74.000	PEAK
2		4803.000	-1.666	50.790	49.124	-24.876	74.000	PEAK
3		7206.000	5.366	44.560	49.927	-24.073	74.000	PEAK
4		9606.000	6.996	39.980	46.977	-27.023	74.000	PEAK
5		12013.000	9.923	40.150	50.073	-23.927	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	Time : 2016/10/06 - 23:47
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 3DH5_2441MHz

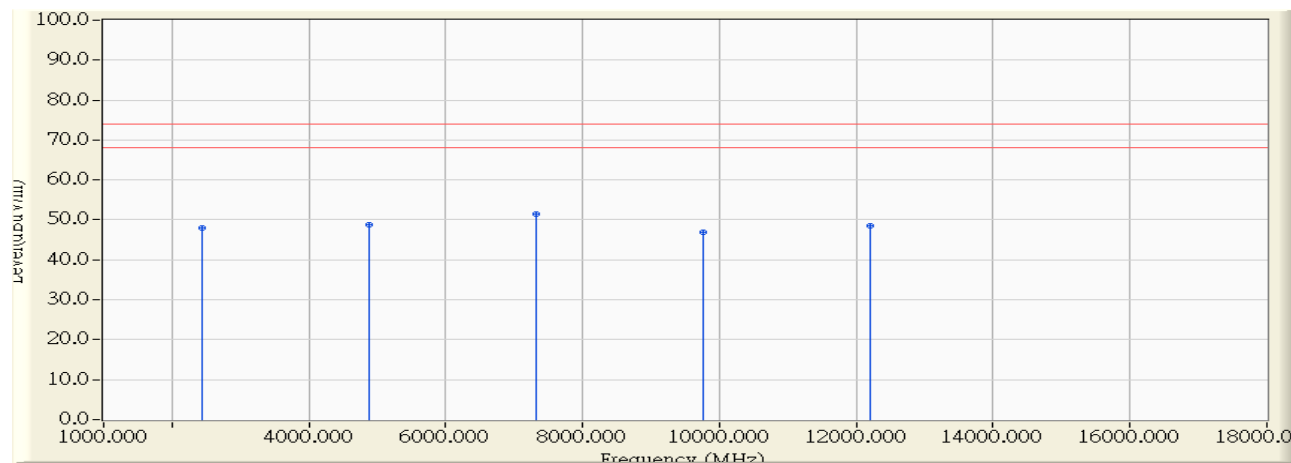


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2445.000	-5.100	47.080	41.981	-32.019	74.000	PEAK
2	*	4881.000	-2.407	50.790	48.383	-25.617	74.000	PEAK
3		7322.000	6.095	41.910	48.005	-25.995	74.000	PEAK
4		9764.000	8.287	39.450	47.737	-26.263	74.000	PEAK
5		12201.000	10.169	38.100	48.269	-25.731	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	Time : 2016/10/06 - 23:38
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 3DH5_2441MHz

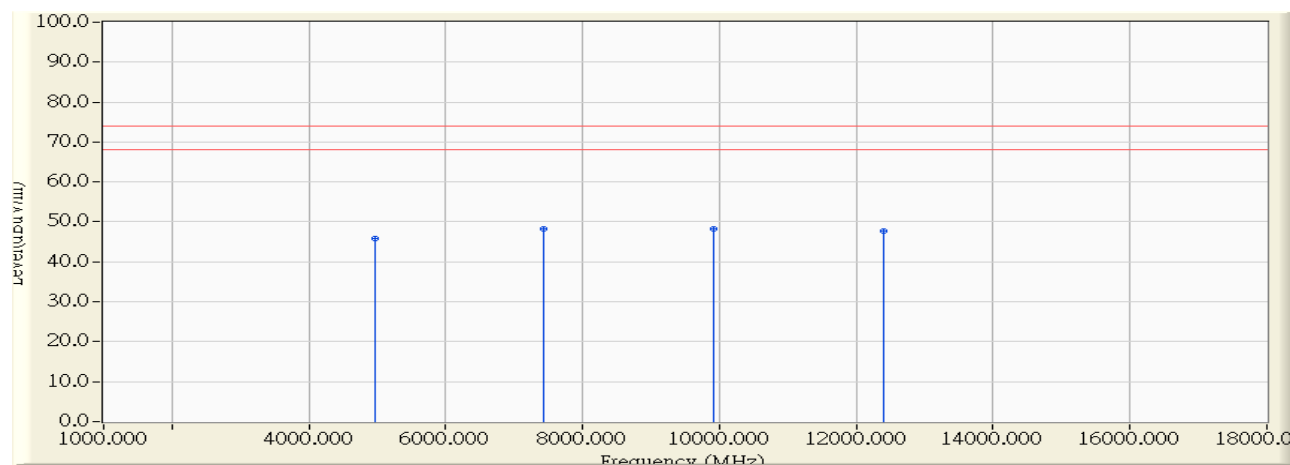


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2445.000	-4.176	52.290	48.115	-25.885	74.000	PEAK
2	4882.000	-1.651	50.570	48.919	-25.081	74.000	PEAK
3	* 7323.000	5.597	45.940	51.537	-22.463	74.000	PEAK
4	9764.000	7.615	39.320	46.935	-27.065	74.000	PEAK
5	12202.000	9.887	38.710	48.597	-25.403	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	Time : 2016/10/06 - 23:58
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 3DH5_2479MHz

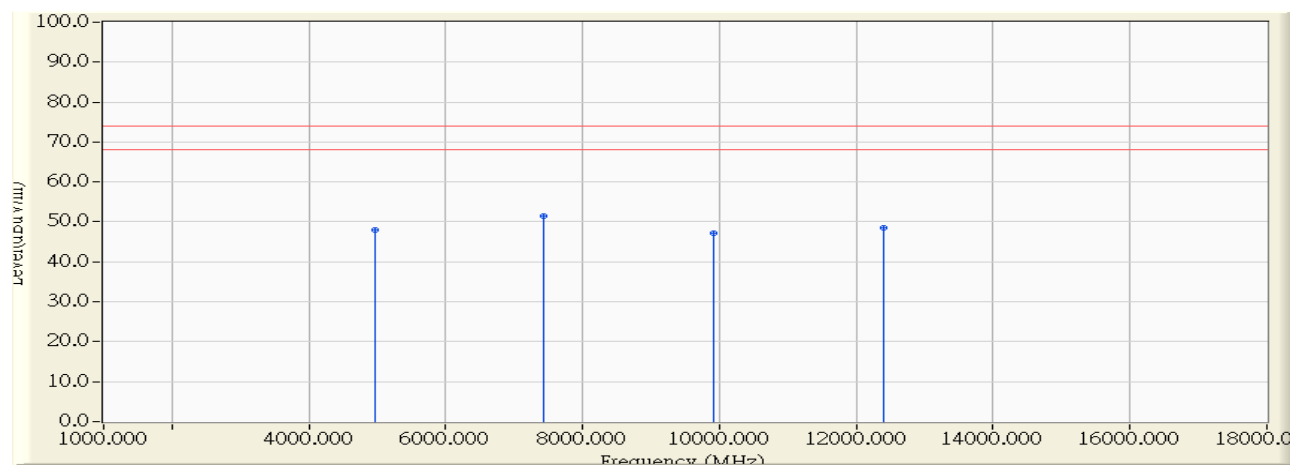


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4958.000	-2.200	47.960	45.760	-28.240	74.000	PEAK
2	*	7437.000	6.321	42.030	48.351	-25.649	74.000	PEAK
3		9918.000	9.121	39.120	48.241	-25.759	74.000	PEAK
4		12397.000	9.935	37.800	47.736	-26.264	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	Time : 2016/10/07 - 00:07
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 3DH5_2479MHz



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4958.000	-1.638	49.660	48.022	-25.978	74.000	PEAK
2	*	7437.000	5.821	45.690	51.511	-22.489	74.000	PEAK
3		9917.000	8.215	39.070	47.285	-26.715	74.000	PEAK
4		12396.000	9.849	38.710	48.560	-25.440	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

5. RF antenna conducted test

5.1. Test Equipment

The following test equipment is used during the test:

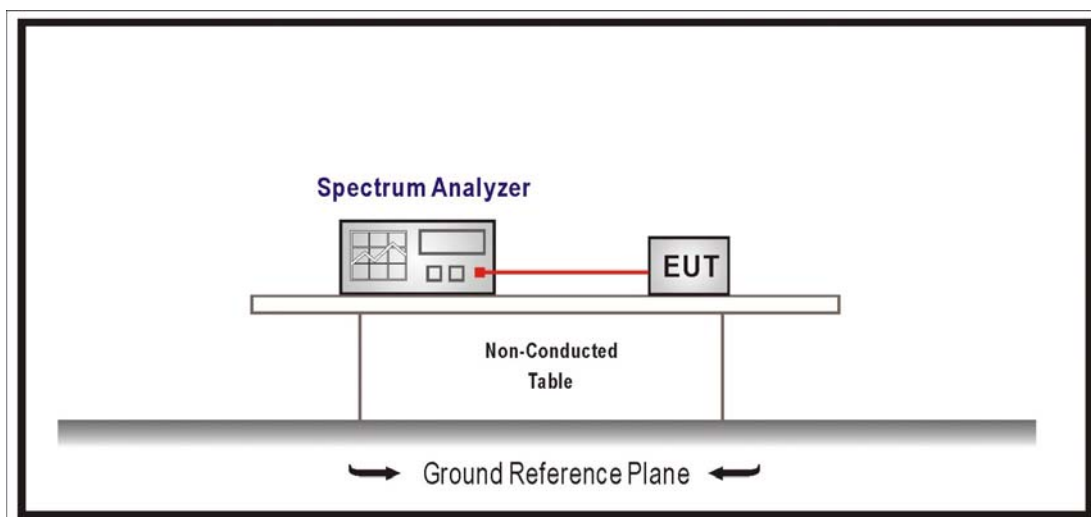
RF antenna conducted test / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A	US47140172	2017/08/08
Signal & Spectrum Analyzer	R&S	FSV40	101049	2017/01/05
Signal Analyzer	R&S	FSV7	101650	2016/11/30

Note: All equipments that need to calibrate are with calibration period of 1 year.

5.2. Test Setup

RF Conducted Measurement:



5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on an RF conducted or radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of FCC KDB 558074 D01 for compliance to FCC 47CFR 15.247 requirements Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

5.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015

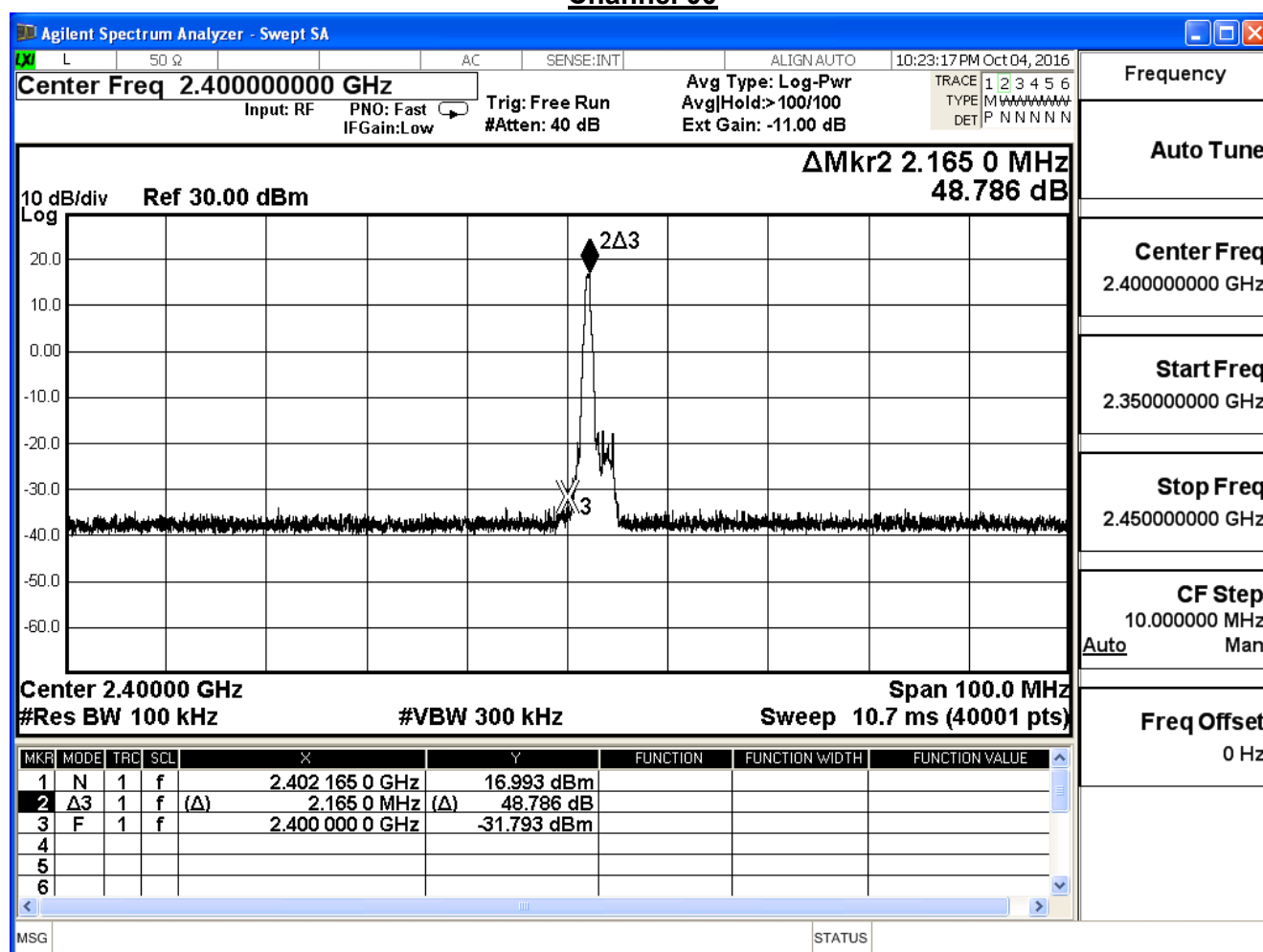
5.6. Test Result

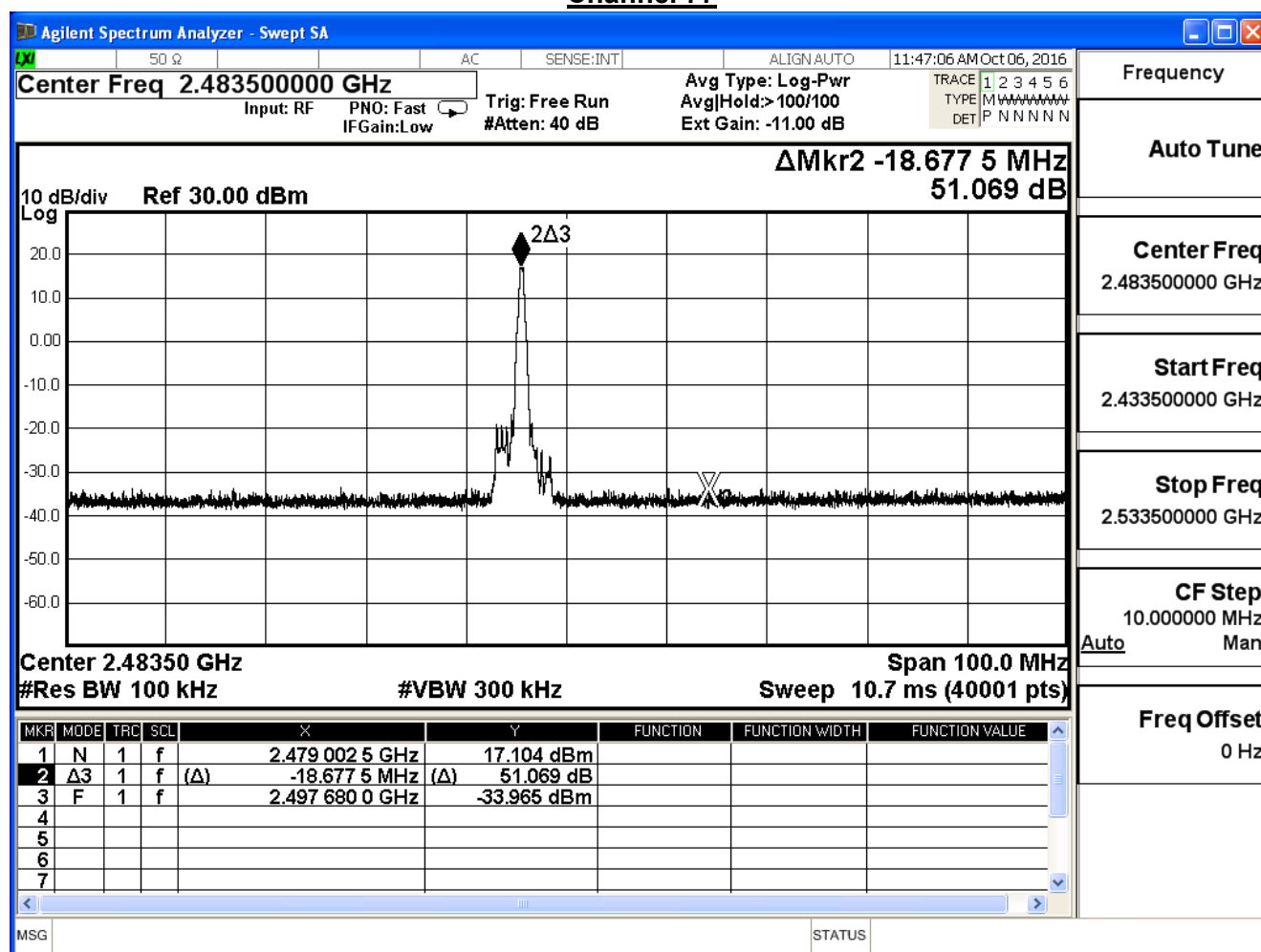
Product	TWO WAY RADIO/TRANSCEIVER		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2016/10/06	Test Site	SR7

GFSK

Channel	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)	Result
00	2402	48.786	≥ 20	Pass
77	2479	51.069	≥ 20	Pass

Channel 00

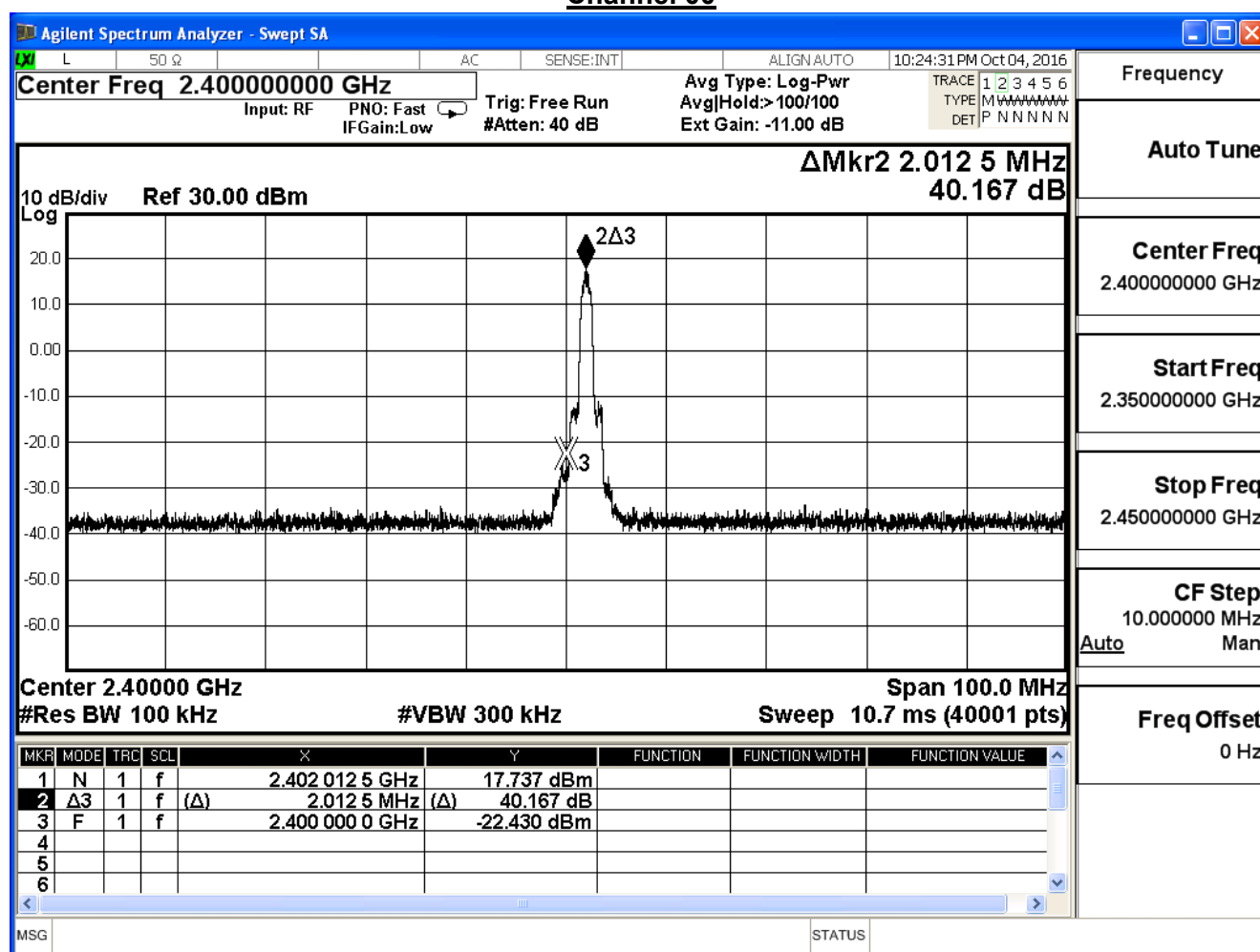


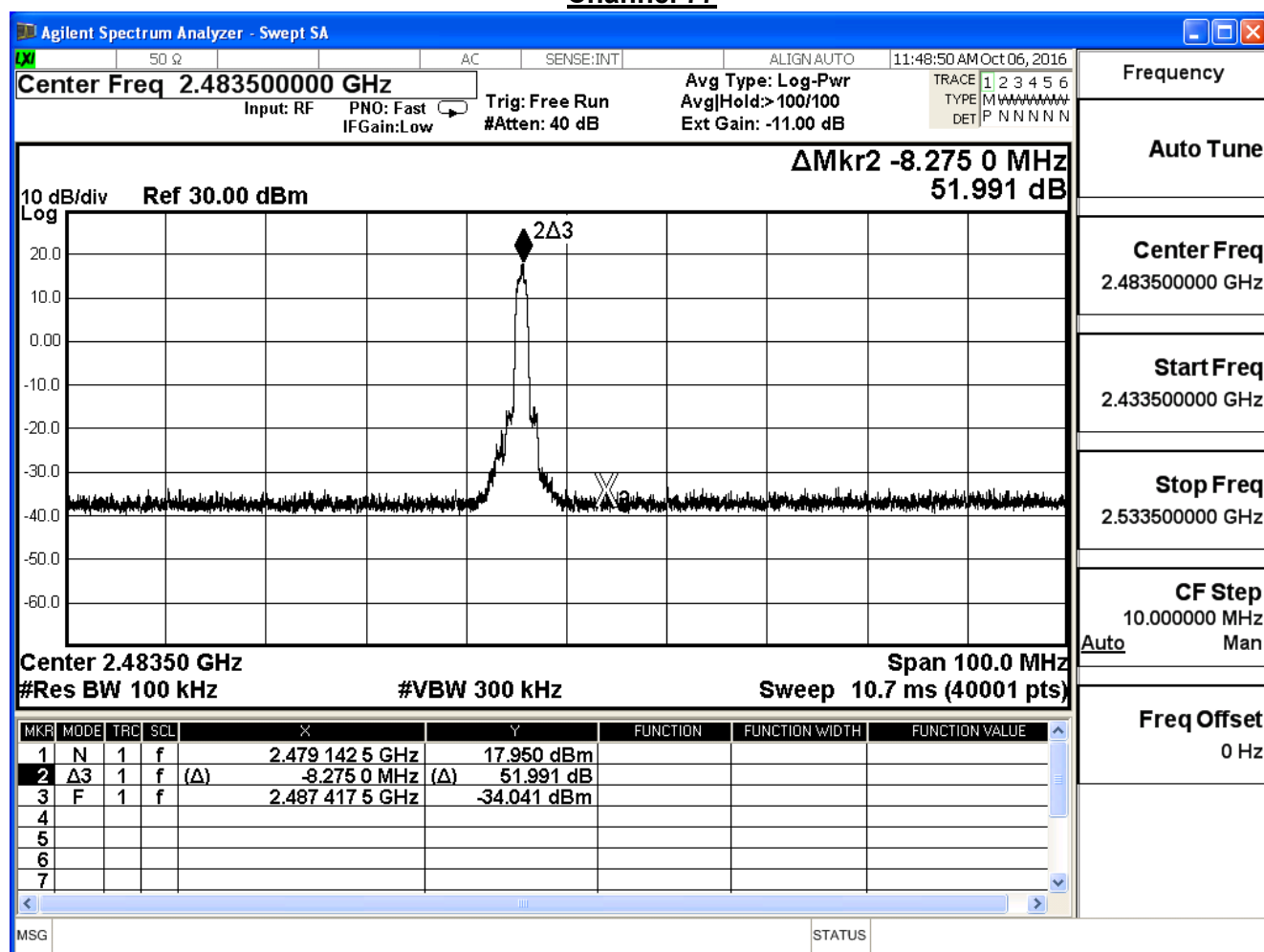
Channel 77

Product	TWO WAY RADIO/TRANSCEIVER		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2016/10/06	Test Site	SR7

 $\pi/4$ -DQPSK

Channel	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)	Result
00	2402	40.167	≥ 20	Pass
77	2479	51.991	≥ 20	Pass

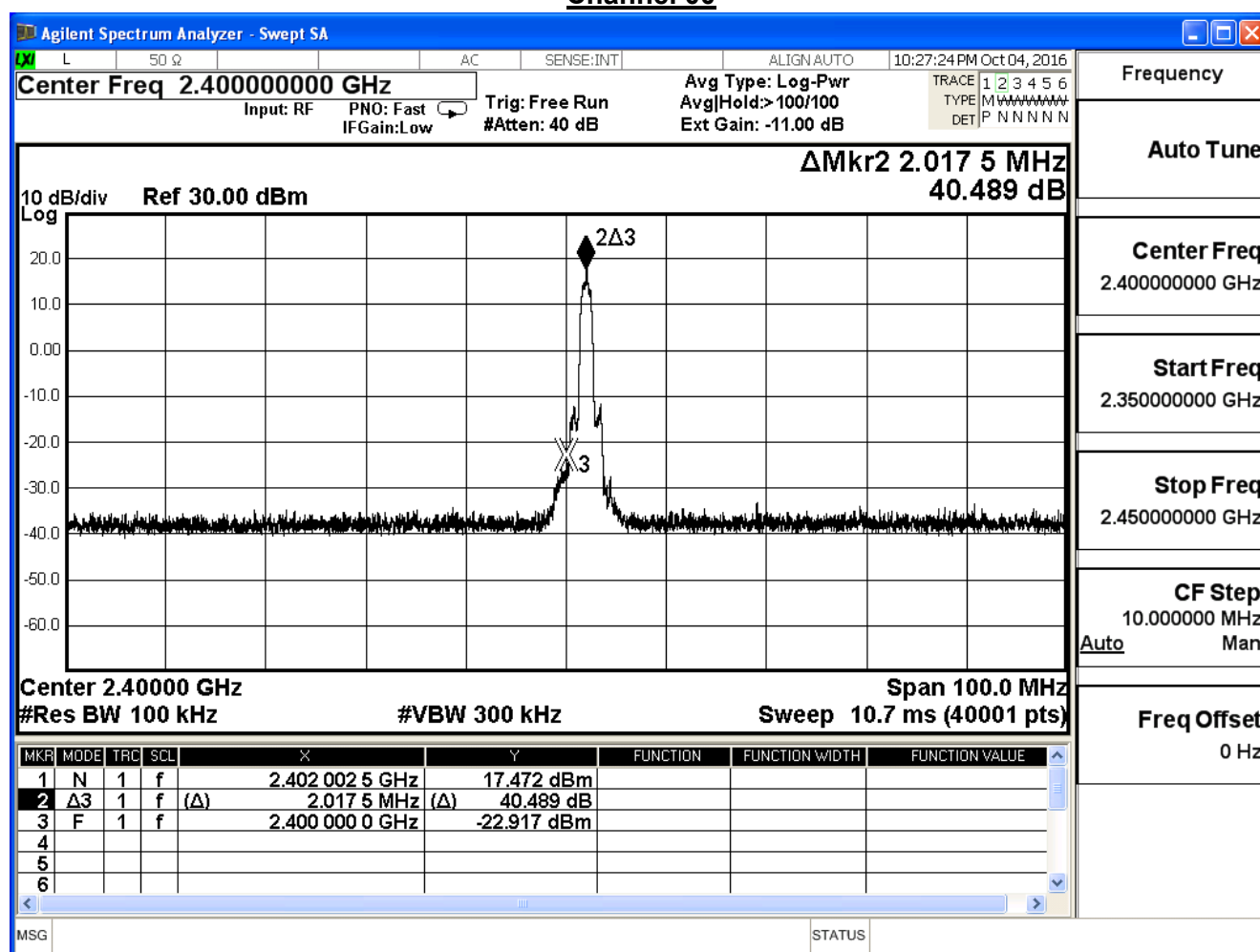
Channel 00

Channel 77

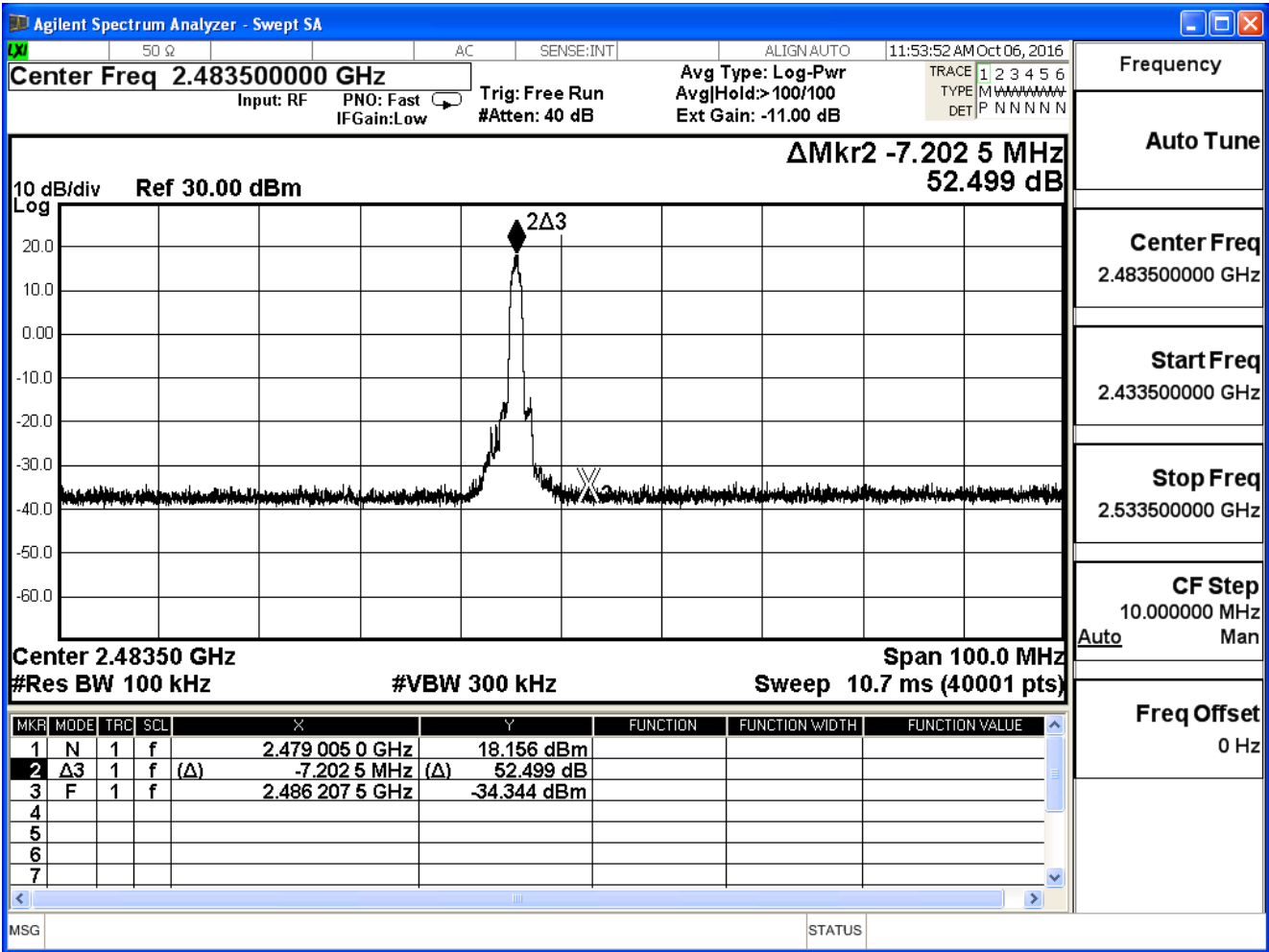
Product	TWO WAY RADIO/TRANSCEIVER		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2016/10/06	Test Site	SR7

8-DPSK

Channel	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)	Result
00	2402	40.489	≥ 20	Pass
77	2479	52.499	≥ 20	Pass

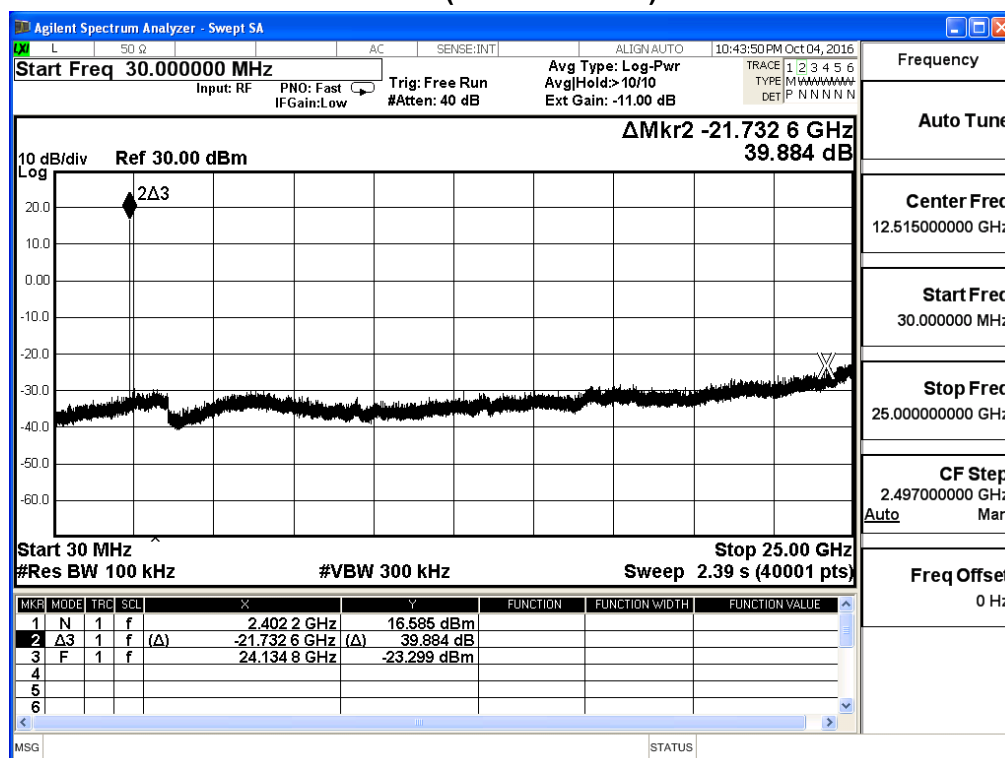
Channel 00

Channel 77

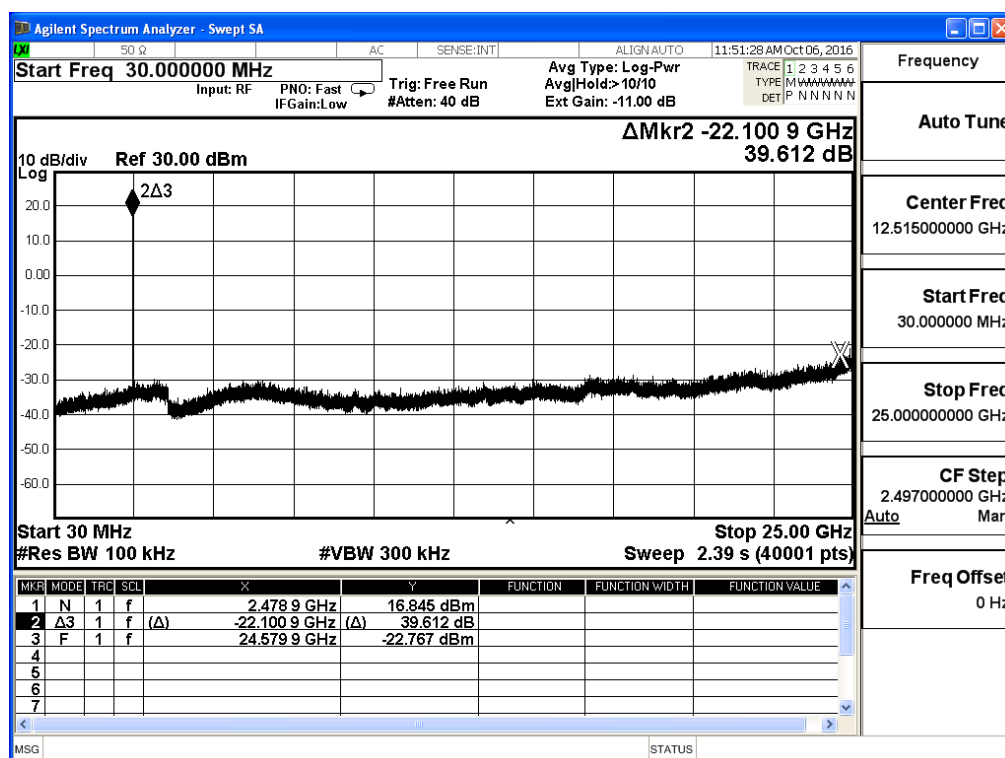


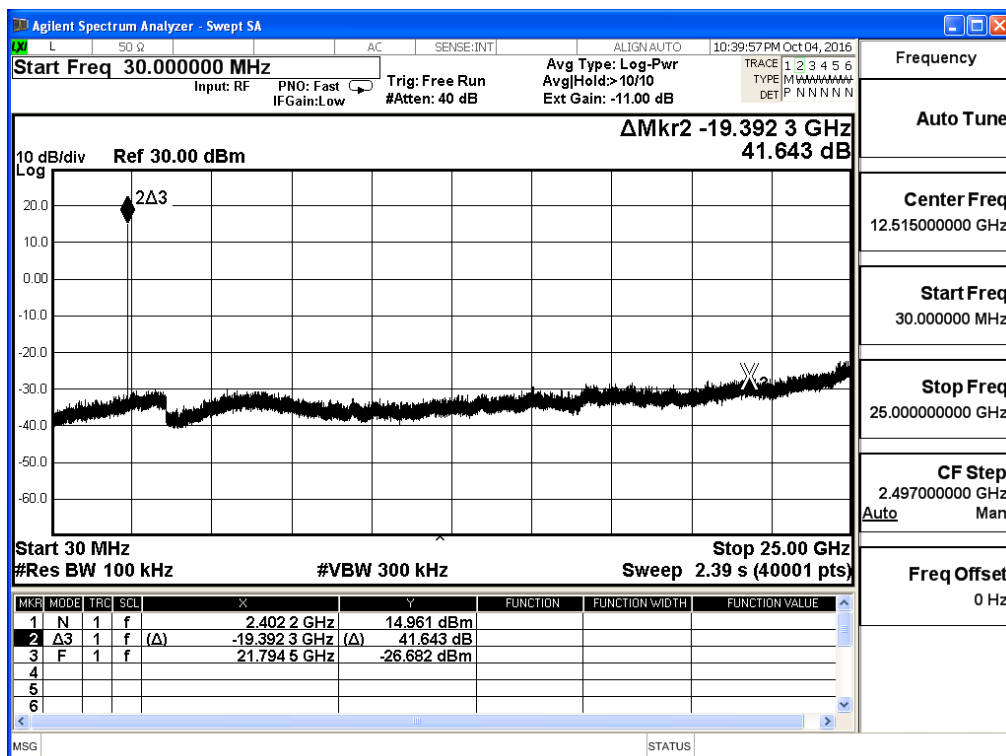
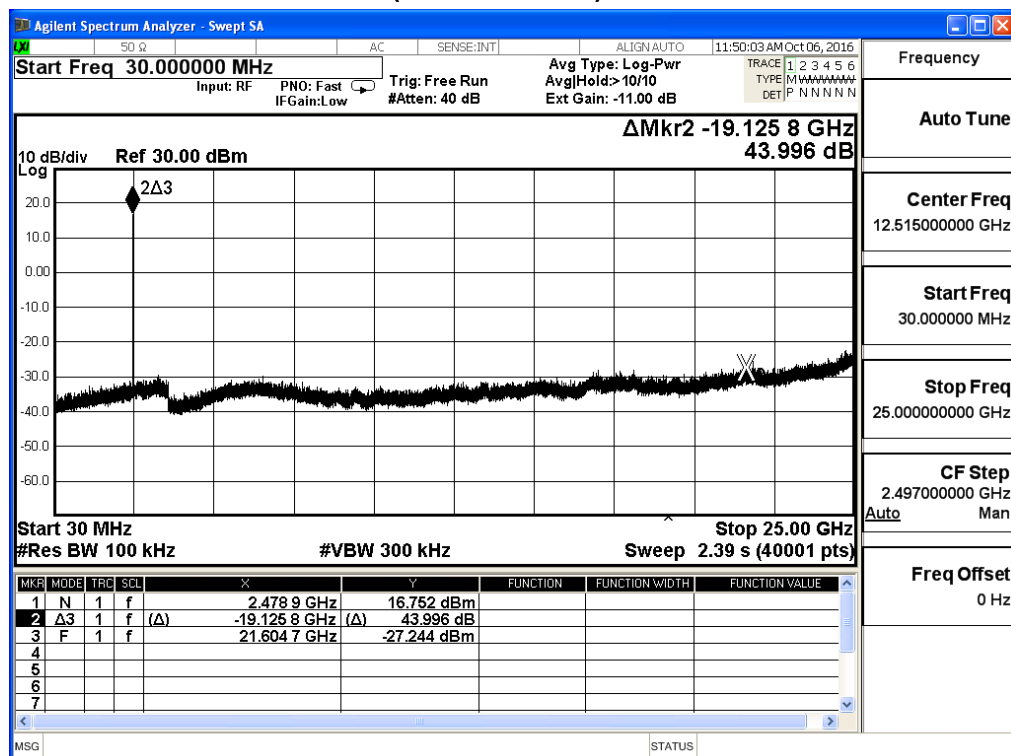
Product	TWO WAY RADIO/TRANSCIEVER		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2016/10/06	Test Site	SR7

Channel 00 (30MHz-25GHz)- GFSK

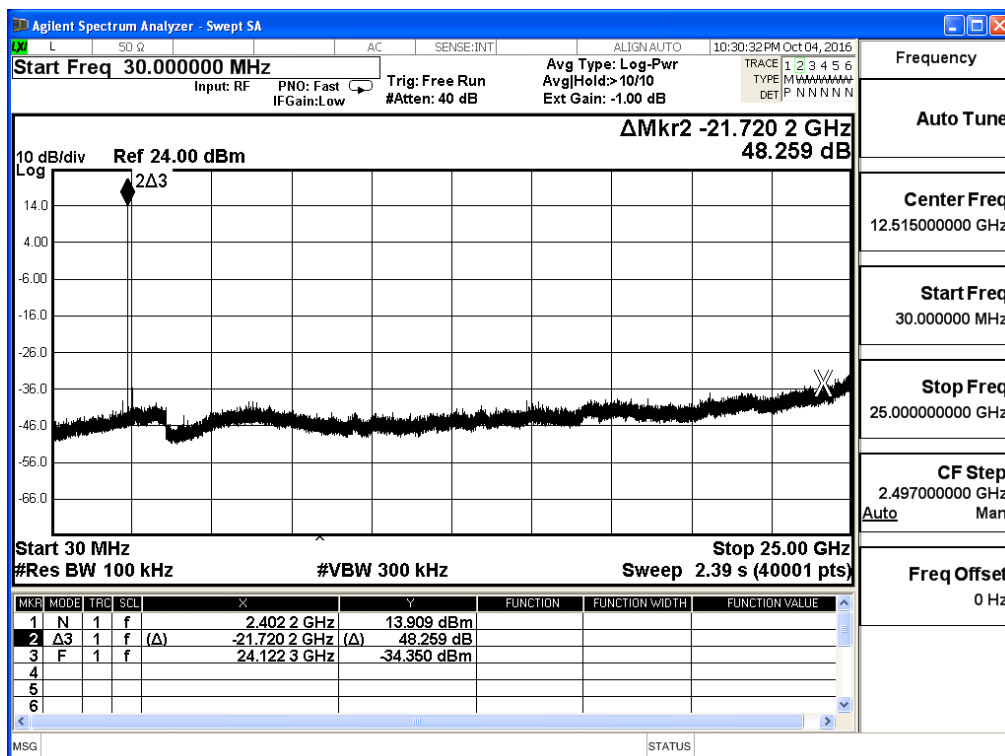


Channel 77(30MHz-25GHz)- GFSK

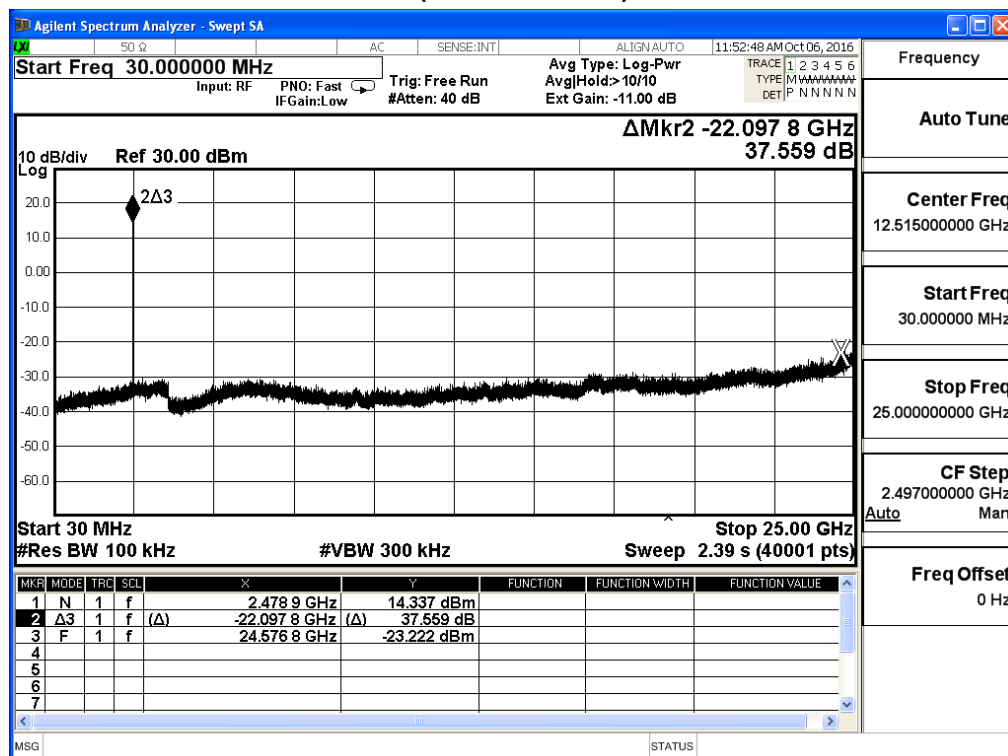


Channel 00 (30MHz-25GHz)- $\pi/4$ -DQPSKChannel 77(30MHz-25GHz)- $\pi/4$ -DQPSK

Channel 00 (30MHz-25GHz)- 8-DPSK



Channel 77(30MHz-25GHz)- 8-DPSK



6. Band Edge

6.1. Test Equipment

The following test equipments are used during the test:

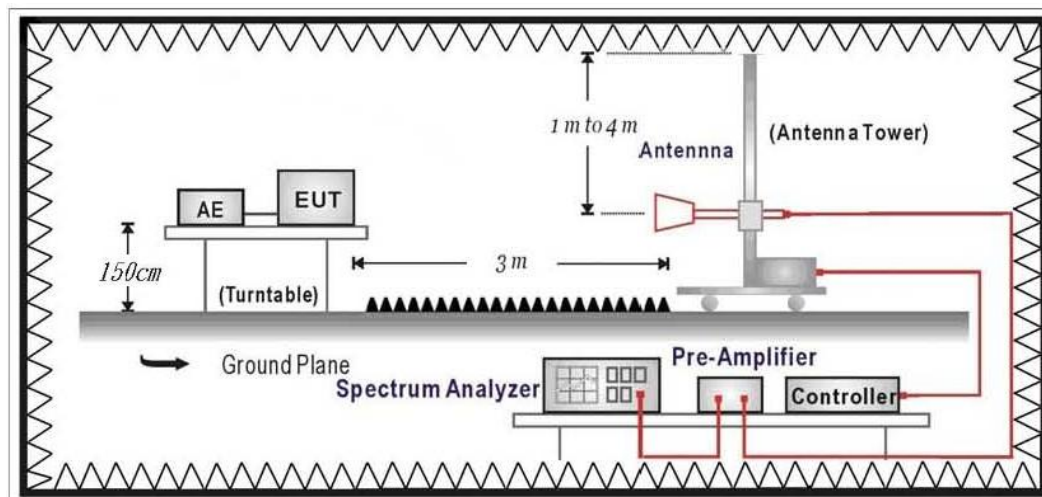
Band Edge / CB1

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Double Ridged Guide Horn Antenna	Schwarzbeck	BBHA 9120	D743	2017/01/14
Spectrum Analyzer	Agilent	E4440A	MY46187335	2016/12/24
k Type Cable	Huber+Suhner	SF 102	25623/2	2017/01/11
Signal & Spectrum Analyzer	R&S	FSV40	101049	2017/01/05

Note: All equipments that need to calibrate are with calibration period of 1 year.

6.2. Test Setup

RF Radiated Measurement:



6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

6.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of FCC KDB 558074 D01 for compliance to FCC 47CFR 15.247 requirements

The EUT and its simulators are placed on a turn table which is 1.5 meter above ground.

The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

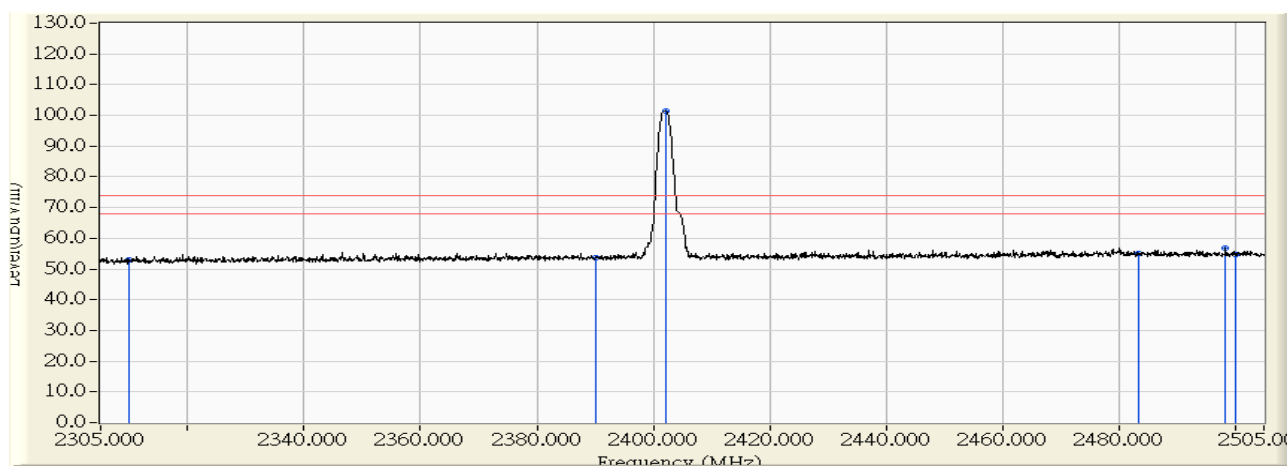
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

6.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015

6.6. Test Result

Site : CB1	Time : 2016/10/05 - 15:38
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : DH5_2402MHz

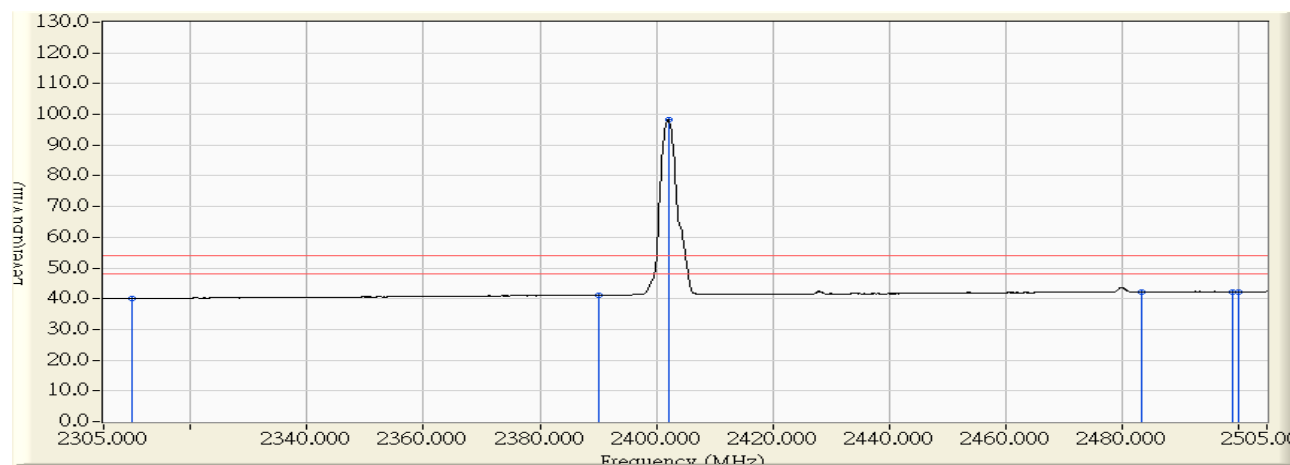


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.130	24.988	53.118	-20.882	74.000	PEAK
2	2390.000	28.933	24.759	53.692	-20.308	74.000	PEAK
3	* 2402.200	29.055	72.517	101.573	27.573	74.000	PEAK
4	2483.500	29.829	25.121	54.950	-19.050	74.000	PEAK
5	2498.400	29.829	27.022	56.851	-17.149	74.000	PEAK
6	2500.000	29.826	24.872	54.697	-19.303	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 15:39
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB1 FCC EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : DH5_2402MHz

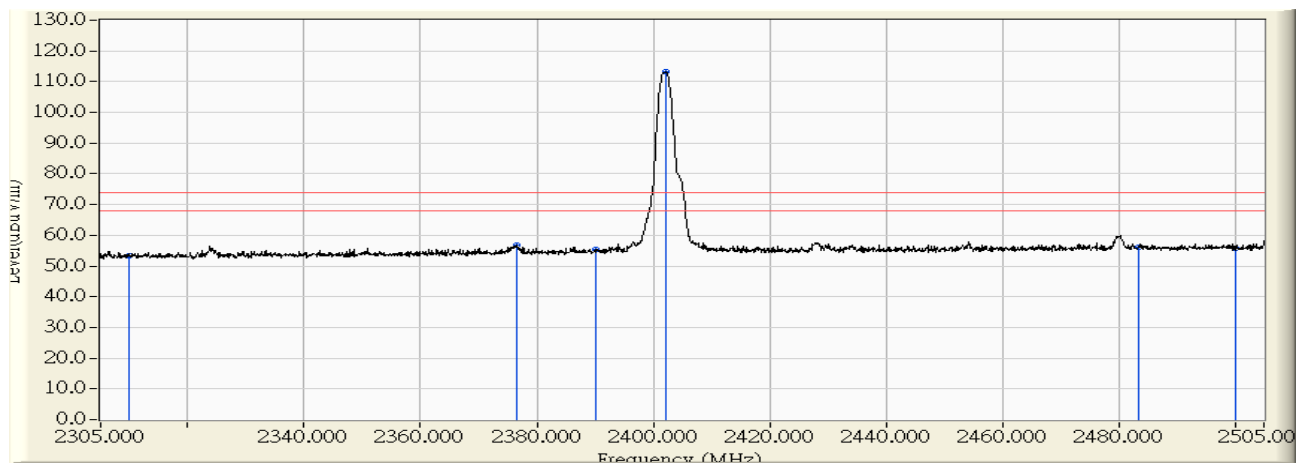


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.130	11.948	40.078	-13.922	54.000	AVERAGE
2	2390.000	28.933	12.226	41.159	-12.841	54.000	AVERAGE
3	* 2402.100	29.054	69.130	98.185	44.185	54.000	AVERAGE
4	2483.500	29.829	12.455	42.284	-11.716	54.000	AVERAGE
5	2499.200	29.827	12.410	42.237	-11.763	54.000	AVERAGE
6	2500.000	29.826	12.425	42.250	-11.750	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 15:33
Limit : FCC_SpartC_15.247_03M_PK	Margin : 6
Probe : CB1 FCC EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : DH5_2402MHz

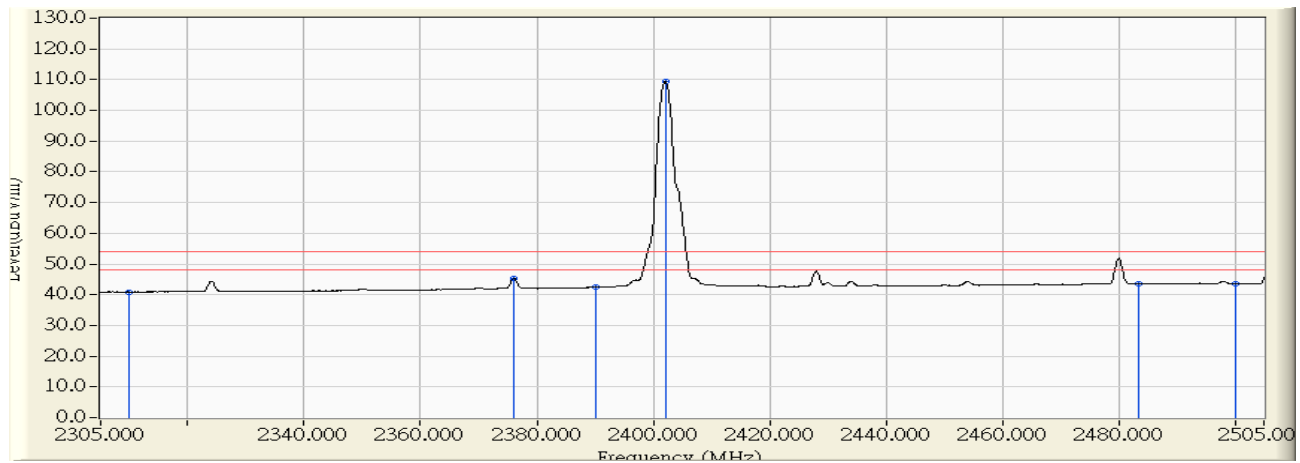


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.784	24.384	53.168	-20.832	74.000	PEAK
2	2376.500	29.585	27.383	56.967	-17.033	74.000	PEAK
3	2390.000	29.747	25.773	55.520	-18.480	74.000	PEAK
4	* 2402.200	29.894	83.239	113.133	39.133	74.000	PEAK
5	2483.500	30.830	25.361	56.191	-17.809	74.000	PEAK
6	2500.000	30.860	24.866	55.725	-18.275	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 15:31
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : DH5_2402MHz

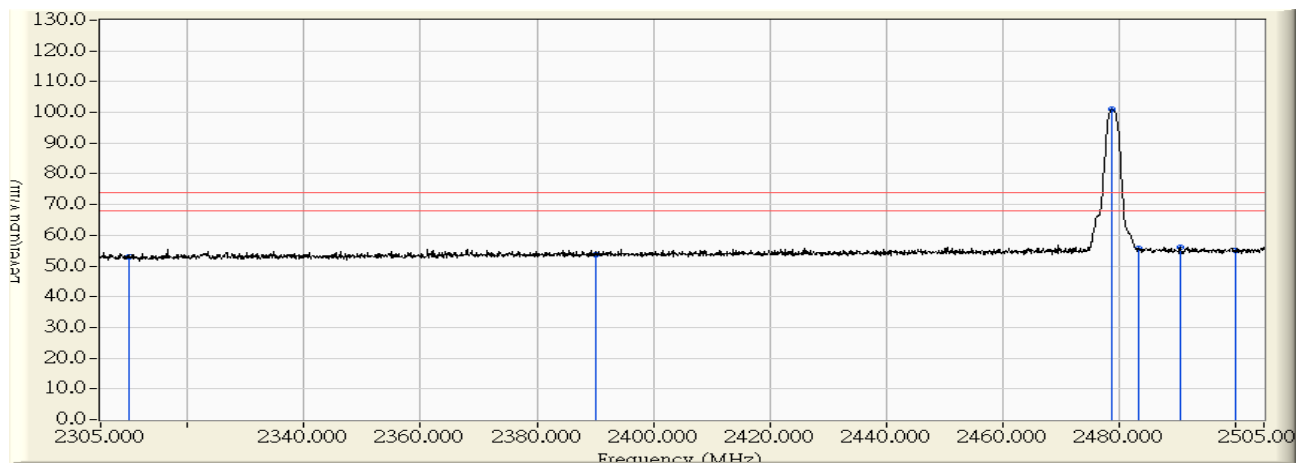


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.784	12.137	40.921	-13.079	54.000	AVERAGE
2		2376.000	29.578	15.786	45.364	-8.636	54.000	AVERAGE
3		2390.000	29.747	12.678	42.425	-11.575	54.000	AVERAGE
4	*	2402.100	29.892	79.461	109.354	55.354	54.000	AVERAGE
5		2483.500	30.830	12.654	43.484	-10.516	54.000	AVERAGE
6		2500.000	30.860	12.719	43.578	-10.422	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 16:33
Limit : FCC_SpartC_15.247_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : DH5_2479MHz

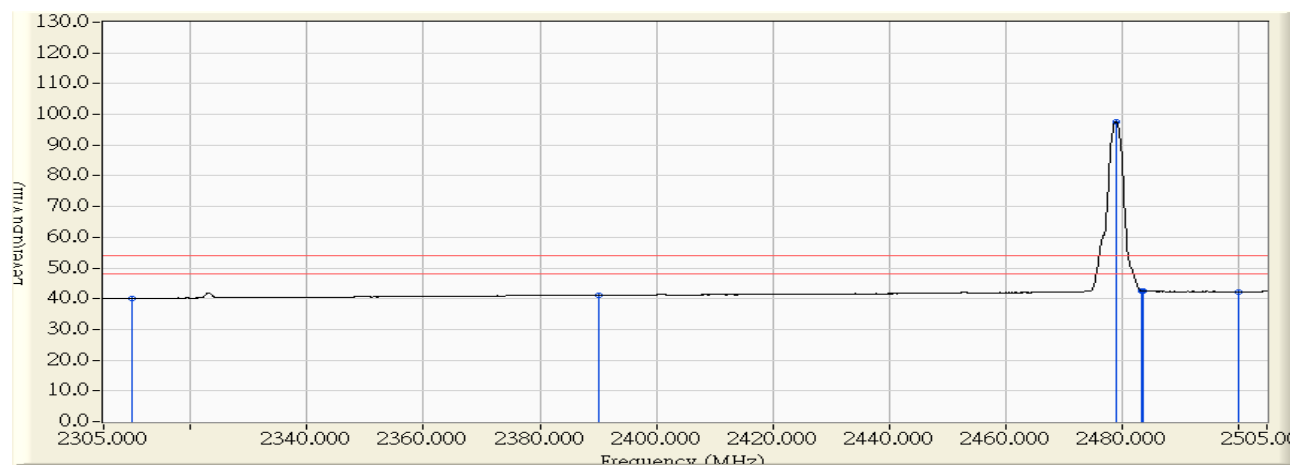


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.130	24.679	52.809	-21.191	74.000	PEAK
2	2390.000	28.933	24.617	53.550	-20.450	74.000	PEAK
3	* 2478.800	29.825	71.097	100.922	26.922	74.000	PEAK
4	2483.500	29.829	25.968	55.797	-18.203	74.000	PEAK
5	2490.600	29.833	26.286	56.119	-17.881	74.000	PEAK
6	2500.000	29.826	25.126	54.951	-19.049	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 16:31
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB1 FCC EFS 1-18G H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : DH5_2479MHz

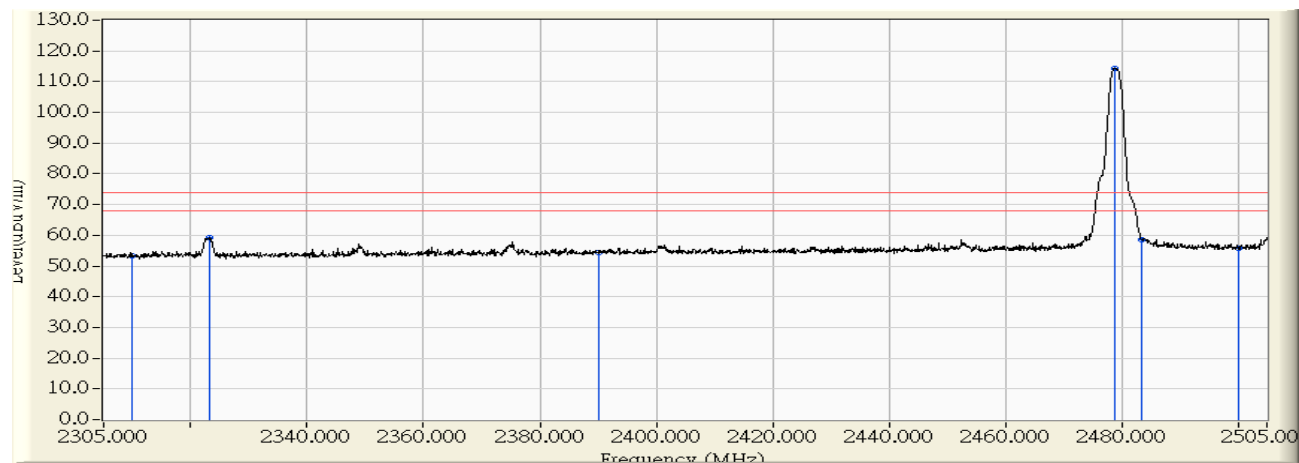


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.130	12.016	40.146	-13.854	54.000	AVERAGE
2	2390.000	28.933	12.221	41.154	-12.846	54.000	AVERAGE
3	* 2479.100	29.827	67.787	97.614	43.614	54.000	AVERAGE
4	2483.500	29.829	12.737	42.566	-11.434	54.000	AVERAGE
5	2483.600	29.829	12.699	42.528	-11.472	54.000	AVERAGE
6	2500.000	29.826	12.424	42.249	-11.751	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 16:26
Limit : FCC_SpartC_15.247_03M_PK	Margin : 6
Probe : CB1 FCC EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : DH5_2479MHz

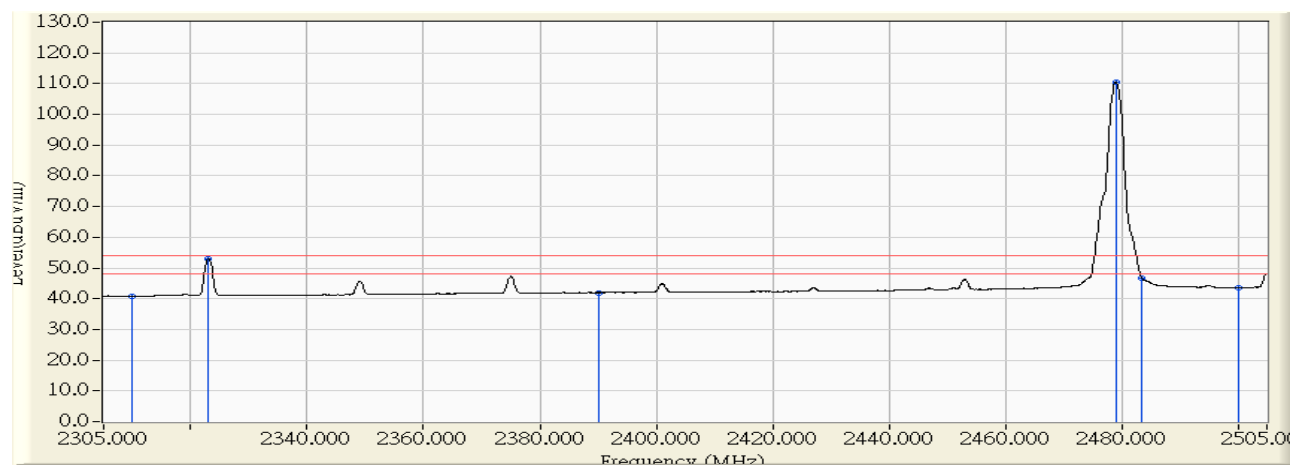


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.784	24.544	53.328	-20.672	74.000	PEAK
2	2323.100	28.941	30.164	59.105	-14.895	74.000	PEAK
3	2390.000	29.747	24.716	54.463	-19.537	74.000	PEAK
4	* 2478.800	30.817	83.581	114.397	40.397	74.000	PEAK
5	2483.500	30.830	27.892	58.722	-15.278	74.000	PEAK
6	2500.000	30.860	24.876	55.735	-18.265	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 16:16
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB1 FCC EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : DH5_2479MHz

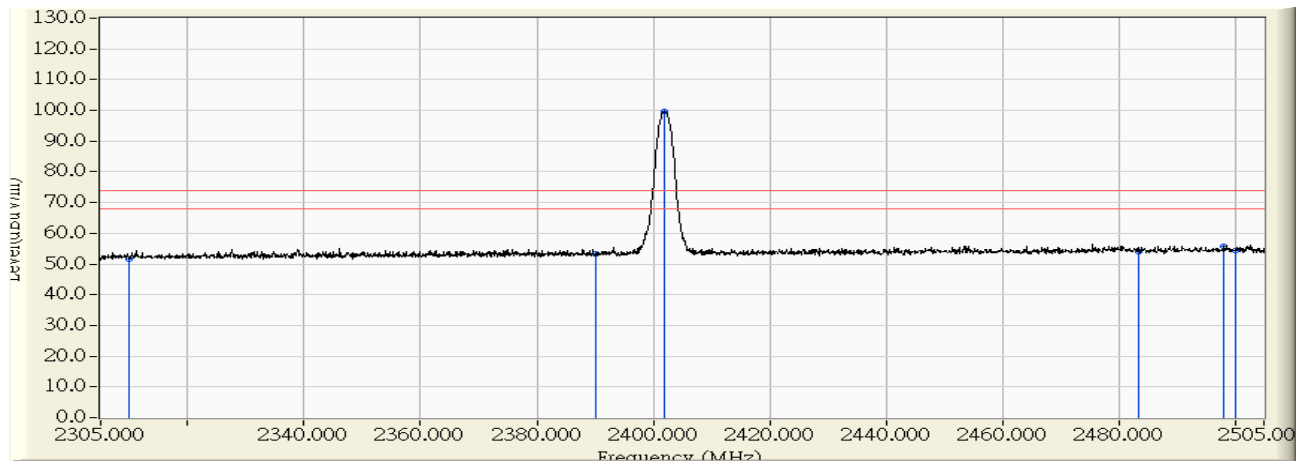


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.784	12.002	40.786	-13.214	54.000	AVERAGE
2		2323.000	28.940	24.177	53.117	-0.883	54.000	AVERAGE
3		2390.000	29.747	12.218	41.965	-12.035	54.000	AVERAGE
4	*	2479.100	29.827	80.820	110.647	56.647	54.000	AVERAGE
5		2483.500	30.830	15.759	46.589	-7.411	54.000	AVERAGE
6		2500.000	30.860	12.750	43.609	-10.391	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 16:51
Limit : FCC_SpartC_15.247_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 2DH5_2402MHz

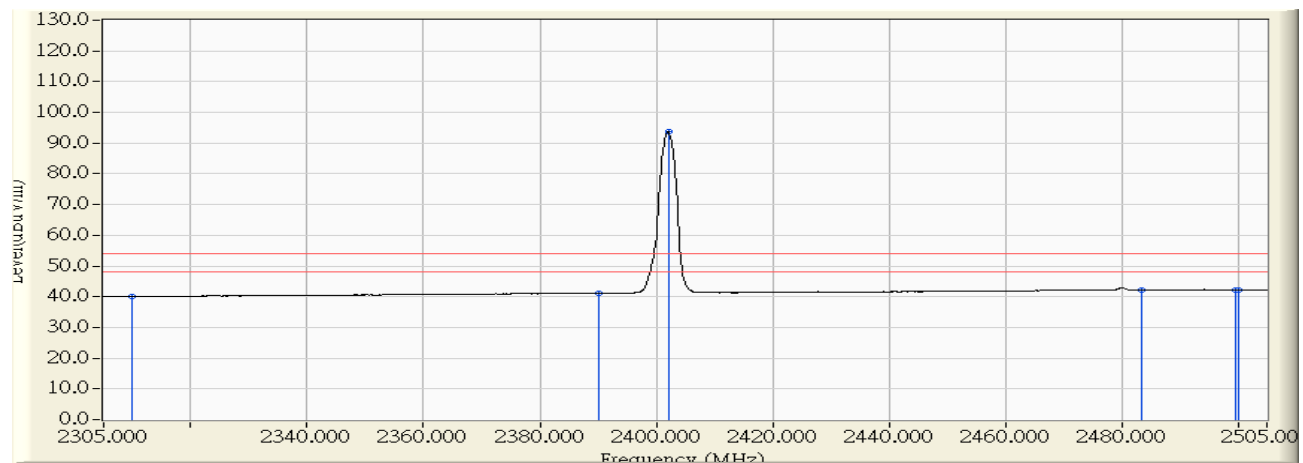


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.130	23.573	51.703	-22.297	74.000	PEAK
2	2390.000	28.933	24.471	53.404	-20.596	74.000	PEAK
3	* 2401.900	29.052	70.584	99.637	25.637	74.000	PEAK
4	2483.500	29.829	24.276	54.105	-19.895	74.000	PEAK
5	2498.200	29.830	25.951	55.781	-18.219	74.000	PEAK
6	2500.000	29.826	24.484	54.309	-19.691	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 16:52
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 2DH5_2402MHz

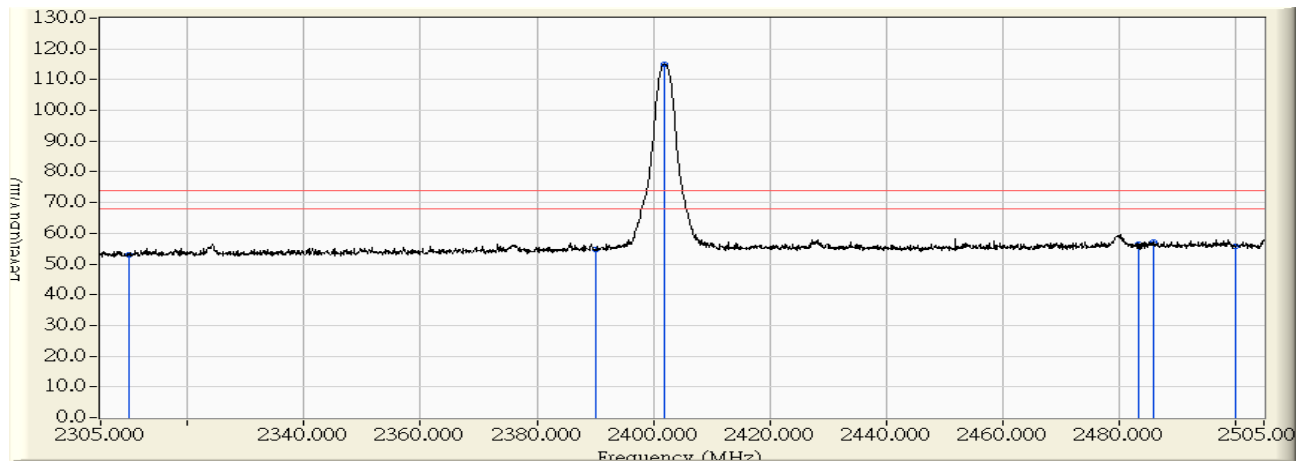


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.130	12.018	40.148	-13.852	54.000	AVERAGE
2	2390.000	28.933	12.284	41.217	-12.783	54.000	AVERAGE
3	* 2402.100	29.054	64.762	93.817	39.817	54.000	AVERAGE
4	2483.500	29.829	12.412	42.241	-11.759	54.000	AVERAGE
5	2499.700	29.827	12.464	42.290	-11.710	54.000	AVERAGE
6	2500.000	29.826	12.438	42.263	-11.737	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 16:47
Limit : FCC_SpartC_15.247_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 2DH5_2402MHz

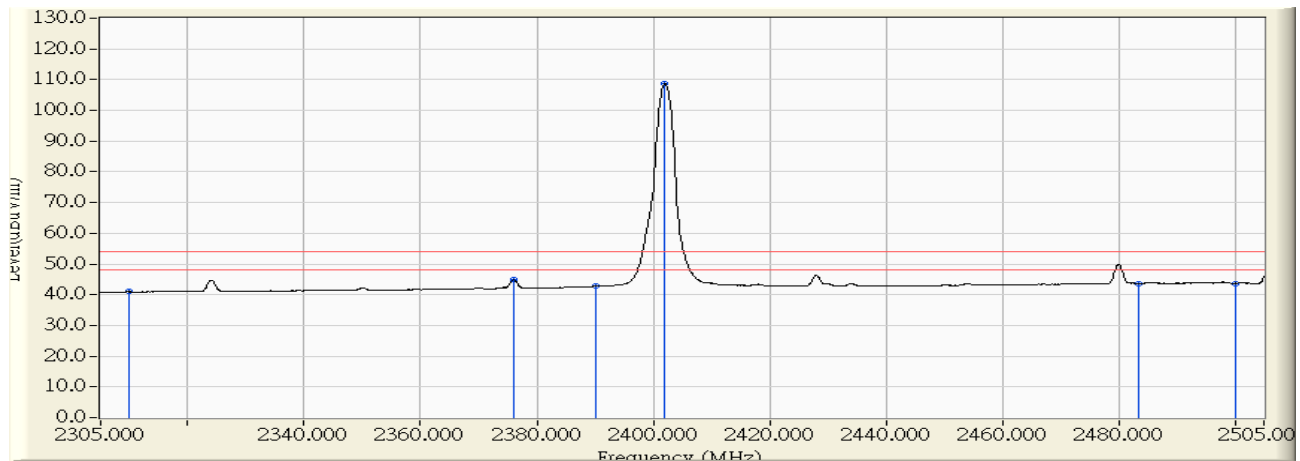


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.784	24.055	52.839	-21.161	74.000	PEAK
2	2390.000	29.747	24.985	54.732	-19.268	74.000	PEAK
3	* 2401.900	29.890	85.205	115.095	41.095	74.000	PEAK
4	2483.500	30.830	25.572	56.402	-17.598	74.000	PEAK
5	2485.900	30.836	26.461	57.297	-16.703	74.000	PEAK
6	2500.000	30.860	24.971	55.830	-18.170	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 16:44
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 2DH5_2402MHz

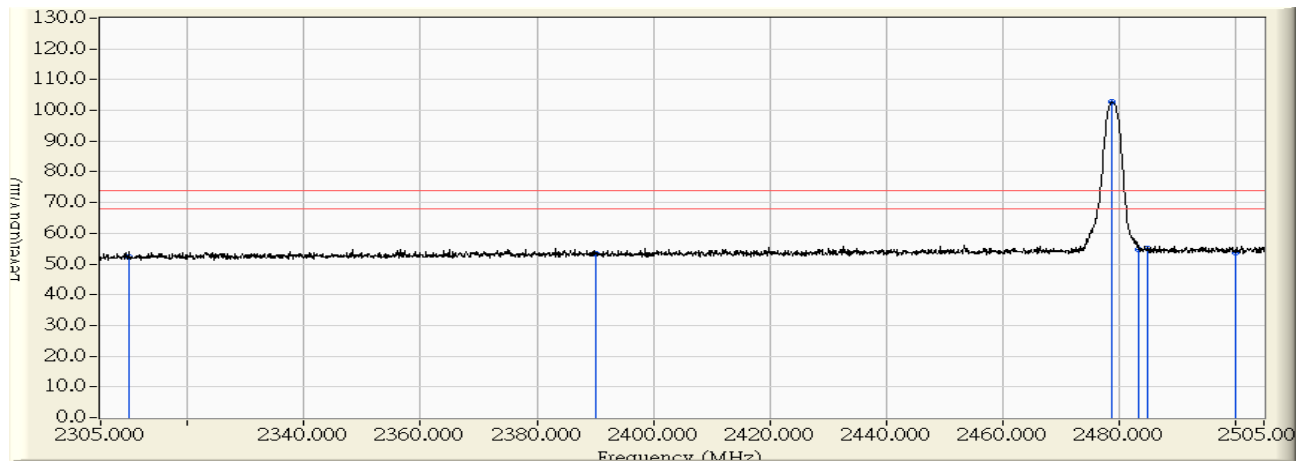


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.784	12.223	41.007	-12.993	54.000	AVERAGE
2	2376.000	29.578	15.276	44.854	-9.146	54.000	AVERAGE
3	2390.000	29.747	12.970	42.717	-11.283	54.000	AVERAGE
4	* 2402.000	29.891	78.943	108.835	54.835	54.000	AVERAGE
5	2483.500	30.830	12.867	43.697	-10.303	54.000	AVERAGE
6	2500.000	30.860	12.863	43.722	-10.278	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 17:04
Limit : FCC_SpartC_15.247_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 2DH5_2479MHz

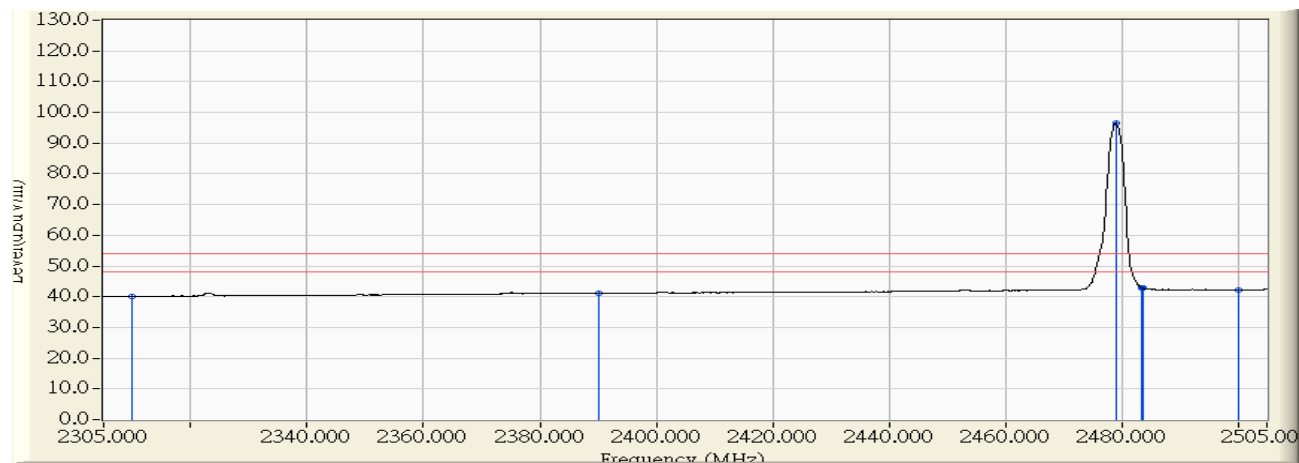


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.130	24.180	52.310	-21.690	74.000	PEAK
2	2390.000	28.933	24.268	53.201	-20.799	74.000	PEAK
3	* 2478.900	29.826	72.837	102.663	28.663	74.000	PEAK
4	2483.500	29.829	24.847	54.676	-19.324	74.000	PEAK
5	2485.100	29.830	25.282	55.112	-18.888	74.000	PEAK
6	2500.000	29.826	23.914	53.739	-20.261	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 17:05
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 2DH5_2479MHz

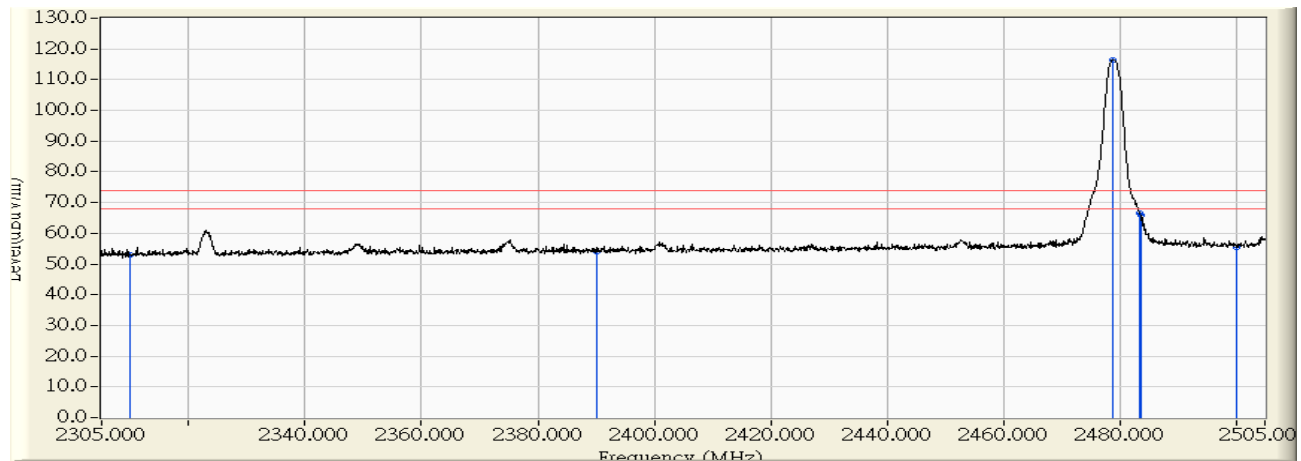


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.130	11.995	40.125	-13.875	54.000	AVERAGE
2	2390.000	28.933	12.242	41.175	-12.825	54.000	AVERAGE
3	* 2479.000	29.827	66.777	96.604	42.604	54.000	AVERAGE
4	2483.500	29.829	13.093	42.922	-11.078	54.000	AVERAGE
5	2483.600	29.829	12.980	42.809	-11.191	54.000	AVERAGE
6	2500.000	29.826	12.399	42.224	-11.776	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 17:00
Limit : FCC_SpartC_15.247_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 2DH5_2479MHz

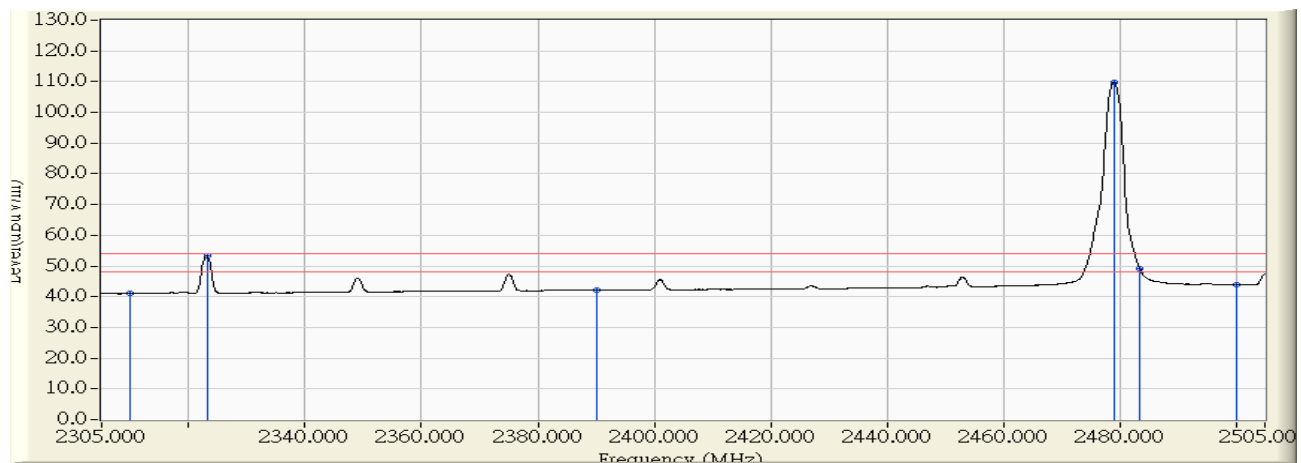


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.784	24.351	53.135	-20.865	74.000	PEAK
2	2390.000	29.747	24.448	54.195	-19.805	74.000	PEAK
3	* 2478.900	30.818	85.693	116.511	42.511	74.000	PEAK
4	2483.500	30.830	35.573	66.403	-7.597	74.000	PEAK
5	2483.600	30.831	35.090	65.920	-8.080	74.000	PEAK
6	2500.000	30.860	24.617	55.476	-18.524	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 16:59
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 2DH5_2479MHz

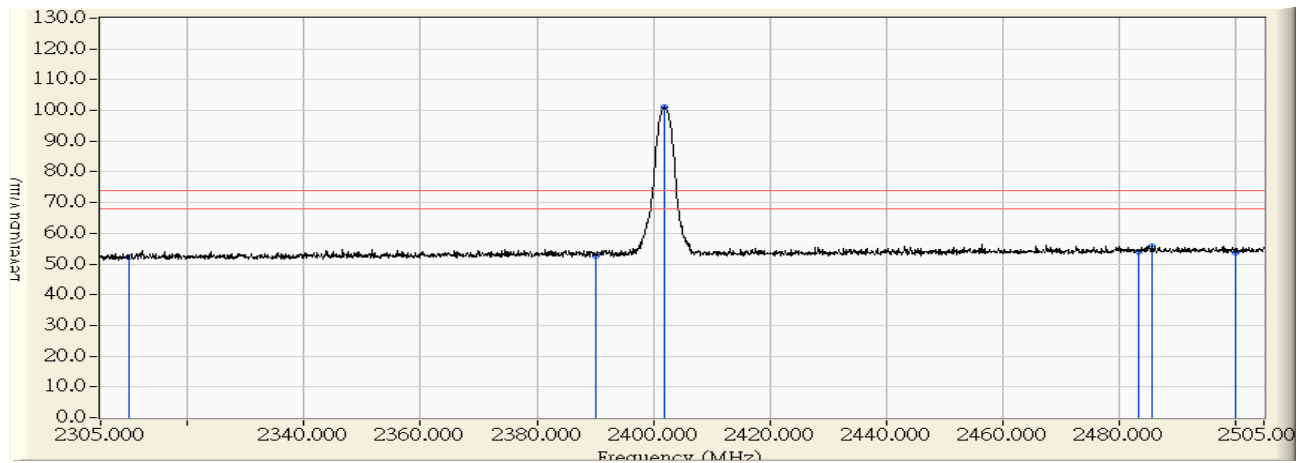


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.784	12.194	40.978	-13.022	54.000	AVERAGE
2	2323.100	28.941	24.428	53.369	-0.631	54.000	AVERAGE
3	2390.000	29.747	12.421	42.168	-11.832	54.000	AVERAGE
4	* 2479.000	30.819	79.104	109.923	55.923	54.000	AVERAGE
5	2483.500	30.830	18.237	49.067	-4.933	54.000	AVERAGE
6	2500.000	30.860	12.920	43.779	-10.221	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 17:16
Limit : FCC_SpartC_15.247_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 3DH5_2402MHz

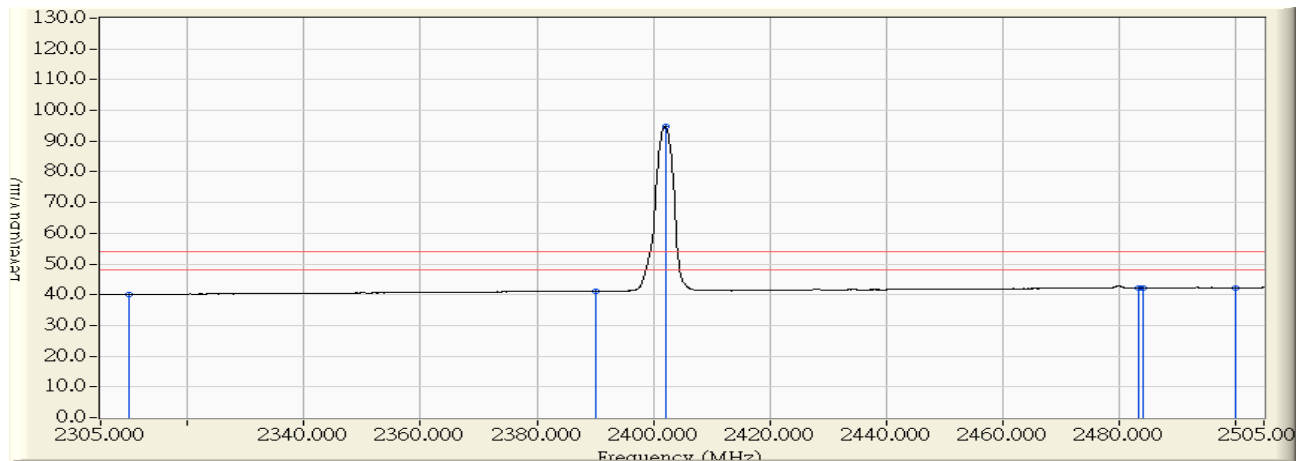


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.130	24.126	52.256	-21.744	74.000	PEAK
2	2390.000	28.933	23.851	52.784	-21.216	74.000	PEAK
3	* 2402.000	29.053	71.850	100.904	26.904	74.000	PEAK
4	2483.500	29.829	24.180	54.009	-19.991	74.000	PEAK
5	2485.800	29.831	25.810	55.640	-18.360	74.000	PEAK
6	2500.000	29.826	23.797	53.622	-20.378	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 17:16
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 3DH5_2402MHz

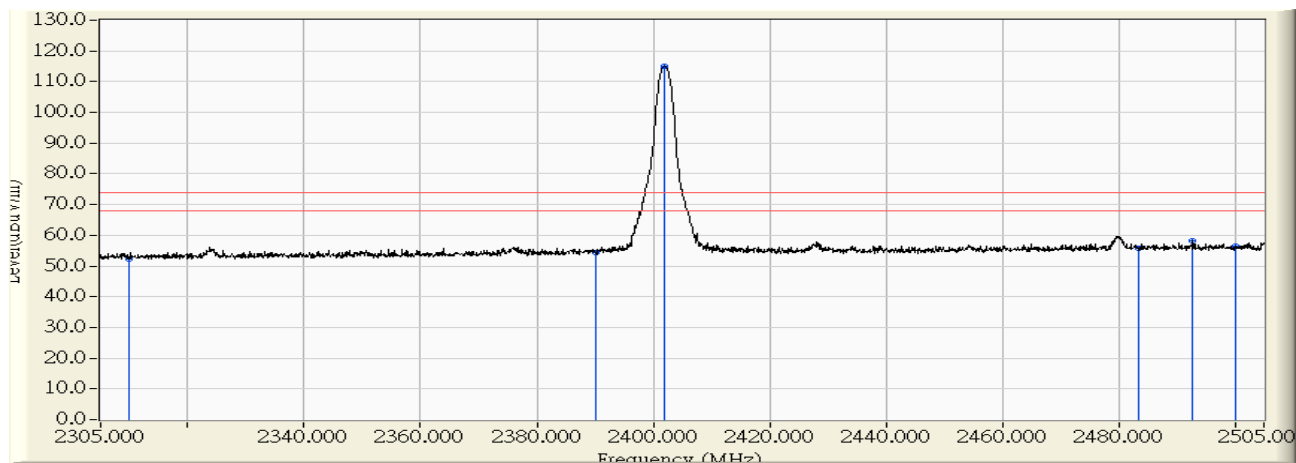


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.130	12.006	40.136	-13.864	54.000	AVERAGE
2	2390.000	28.933	12.231	41.164	-12.836	54.000	AVERAGE
3	* 2402.100	29.054	65.782	94.837	40.837	54.000	AVERAGE
4	2483.500	29.829	12.398	42.227	-11.773	54.000	AVERAGE
5	2484.300	29.830	12.443	42.272	-11.728	54.000	AVERAGE
6	2500.000	29.826	12.438	42.263	-11.737	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 17:11
Limit : FCC_SpartC_15.247_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 3DH5_2402MHz

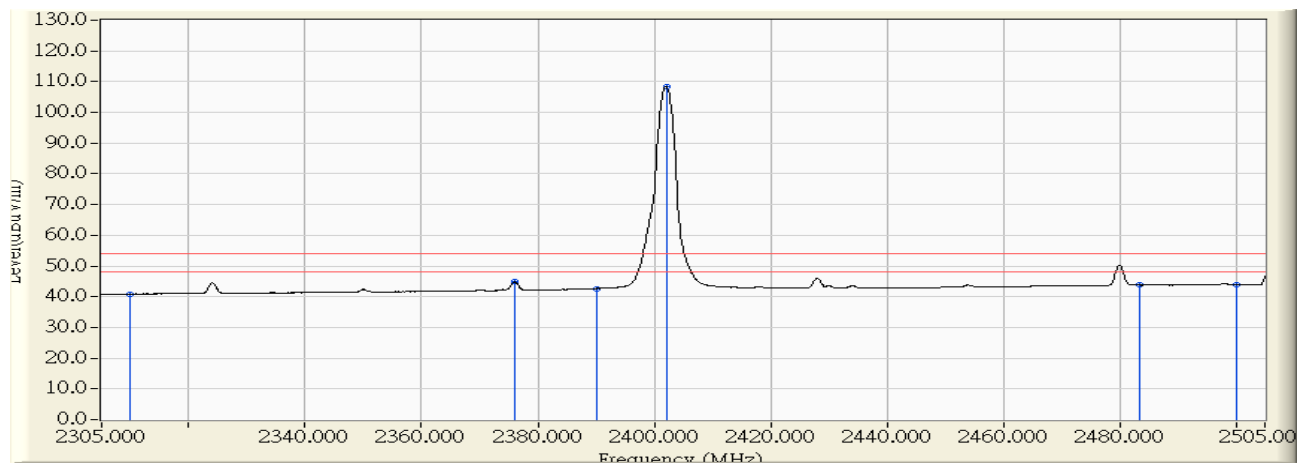


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.784	23.599	52.383	-21.617	74.000	PEAK
2	2390.000	29.747	24.526	54.273	-19.727	74.000	PEAK
3	* 2401.900	29.890	85.177	115.067	41.067	74.000	PEAK
4	2483.500	30.830	25.098	55.928	-18.072	74.000	PEAK
5	2492.800	30.854	27.321	58.174	-15.826	74.000	PEAK
6	2500.000	30.860	25.685	56.544	-17.456	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 17:10
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 3DH5_2402MHz

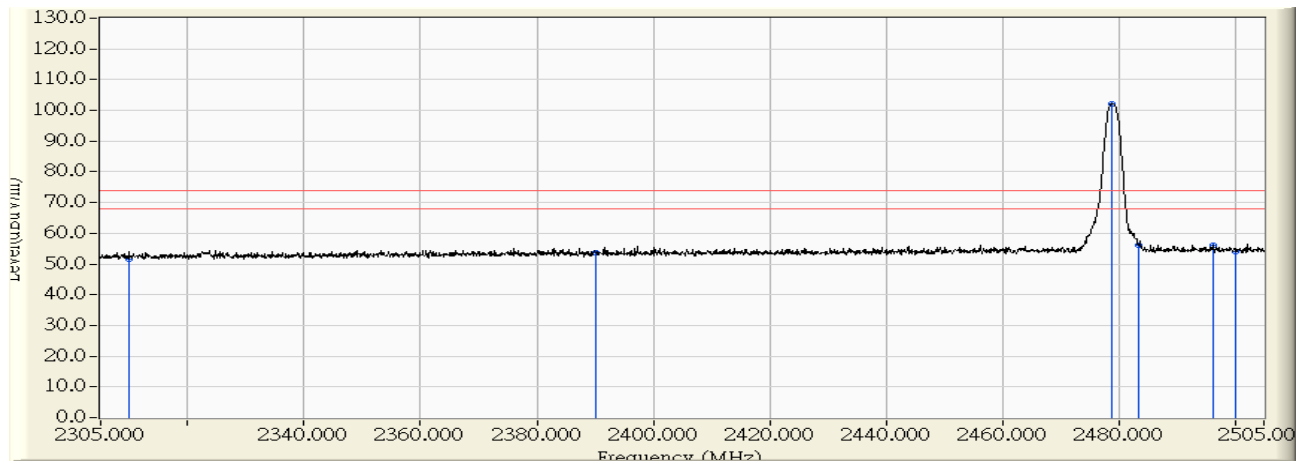


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.784	12.156	40.940	-13.060	54.000	AVERAGE
2		2376.000	29.578	15.251	44.829	-9.171	54.000	AVERAGE
3		2390.000	29.747	12.920	42.667	-11.333	54.000	AVERAGE
4	*	2402.100	29.892	78.651	108.544	54.544	54.000	AVERAGE
5		2483.500	30.830	12.926	43.756	-10.244	54.000	AVERAGE
6		2500.000	30.860	12.956	43.815	-10.185	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 17:31
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 3DH5_2479MHz

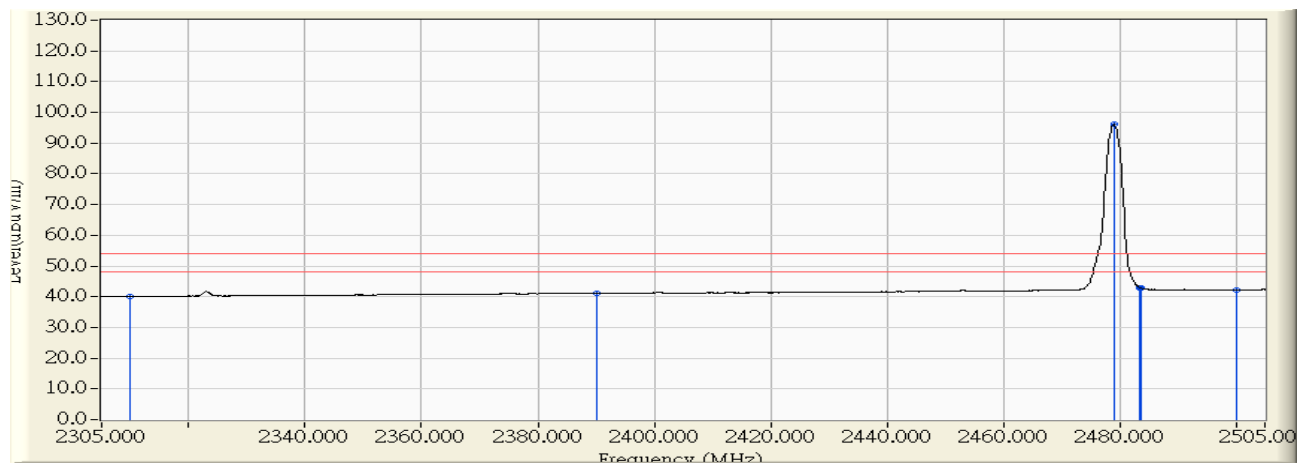


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.130	23.486	51.616	-22.384	74.000	PEAK
2	2390.000	28.933	24.872	53.805	-20.195	74.000	PEAK
3	* 2478.900	29.826	72.459	102.285	28.285	74.000	PEAK
4	2483.500	29.829	26.417	56.246	-17.754	74.000	PEAK
5	2496.400	29.834	26.246	56.080	-17.920	74.000	PEAK
6	2500.000	29.826	24.359	54.184	-19.816	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 17:32
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 3DH5_2479MHz

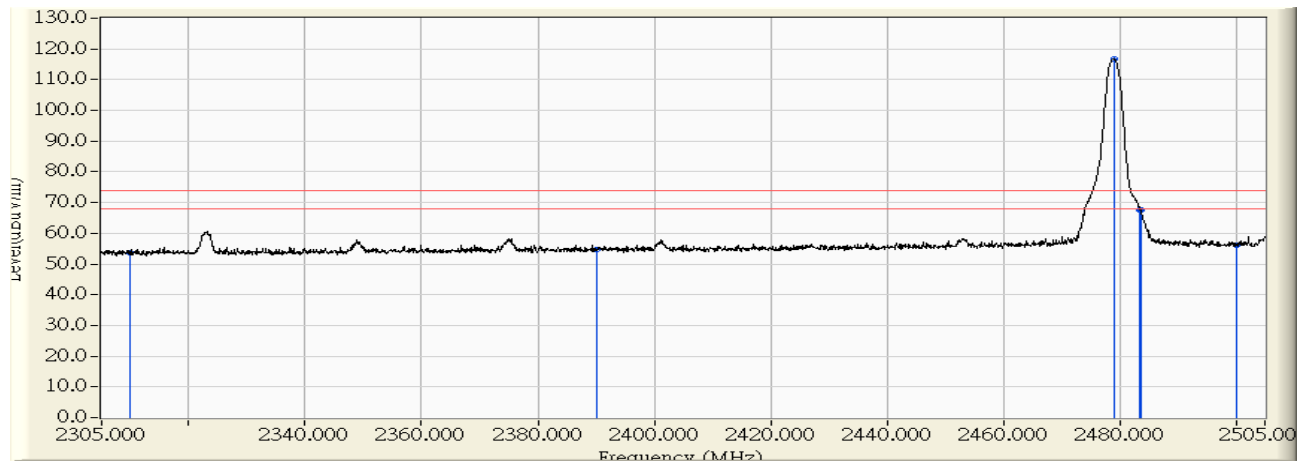


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.130	11.932	40.062	-13.938	54.000	AVERAGE
2	2390.000	28.933	12.189	41.122	-12.878	54.000	AVERAGE
3	* 2479.000	29.827	66.238	96.065	42.065	54.000	AVERAGE
4	2483.500	29.829	13.126	42.955	-11.045	54.000	AVERAGE
5	2483.600	29.829	13.023	42.852	-11.148	54.000	AVERAGE
6	2500.000	29.826	12.367	42.192	-11.808	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 17:25
Limit : FCC_SpartC_15.247_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 3DH5_2479MHz

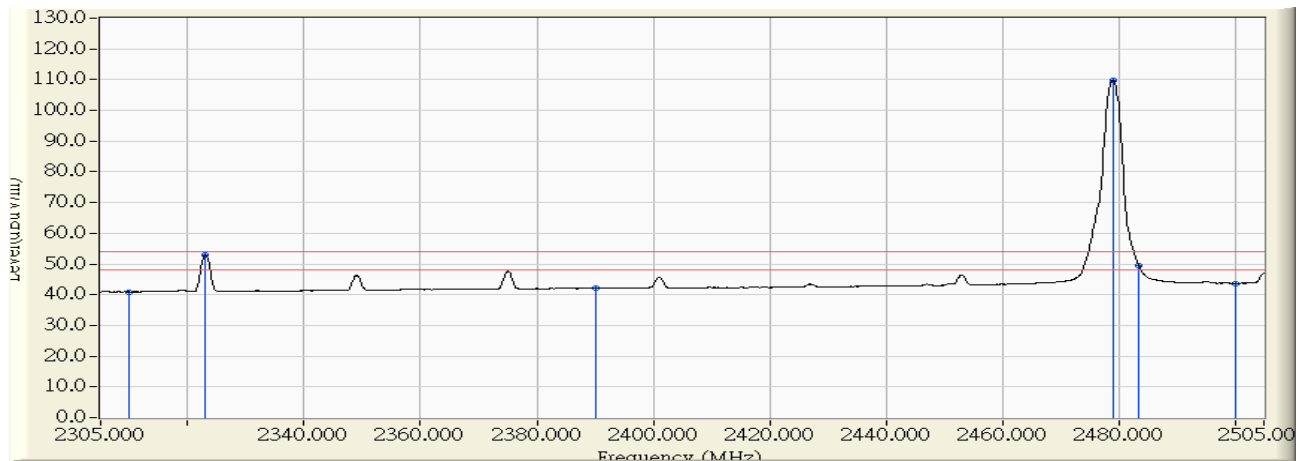


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.784	25.057	53.841	-20.159	74.000	PEAK
2	2390.000	29.747	24.856	54.603	-19.397	74.000	PEAK
3	* 2479.000	30.819	85.874	116.693	42.693	74.000	PEAK
4	2483.500	30.830	36.878	67.708	-6.292	74.000	PEAK
5	2483.600	30.831	36.641	67.471	-6.529	74.000	PEAK
6	2500.000	30.860	25.335	56.194	-17.806	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	Time : 2016/10/05 - 17:24
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB1 FCC EFS_1-18G_H2 - VERTICAL	Power : DC 3.7V (Power By Battery)
EUT : TWO WAY RADIO/TRANSCEIVER	Note : 3DH5_2479MHz



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.784	12.153	40.937	-13.063	54.000	AVERAGE
2		2323.000	28.940	23.963	52.903	-1.097	54.000	AVERAGE
3		2390.000	29.747	12.382	42.129	-11.871	54.000	AVERAGE
4	*	2479.000	30.819	79.102	109.921	55.921	54.000	AVERAGE
5		2483.500	30.830	18.586	49.416	-4.584	54.000	AVERAGE
6		2500.000	30.860	12.858	43.717	-10.283	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

7. Number of hopping frequency

7.1. Test Equipment

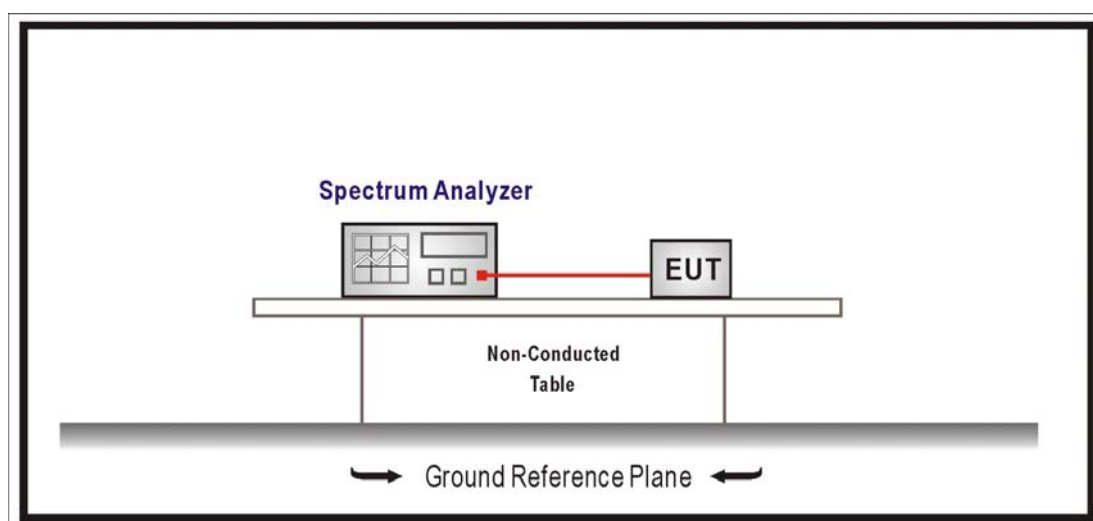
The following test equipment is used during the test:

Number of hopping frequency / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A	US47140172	2017/08/08
Signal & Spectrum Analyzer	R&S	FSV40	101049	2017/01/05
Signal Analyzer	R&S	FSV7	101650	2016/11/30

Note: All equipments that need to calibrate are with calibration period of 1 year.

7.2. Test Setup



7.3. Limits

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

For frequency hopping systems operating in the 2400-2483.5 MHz bands, which use fewer than 75 hopping frequencies, may employ intelligent hopping techniques to avoid interference to other transmissions. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 non-overlapping channels are used.

For frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies.

7.4. Test Procedures

The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of FCC KDB 558074 D01 for compliance to FCC 47CFR 15.247 requirements ,
Span = the frequency band of operation ,RBW $\geq$ 1% of the span , VBW $\geq$ RBW ,
Sweep = auto, Detector function = peak, Trace = max hold.

7.5. Test Specification

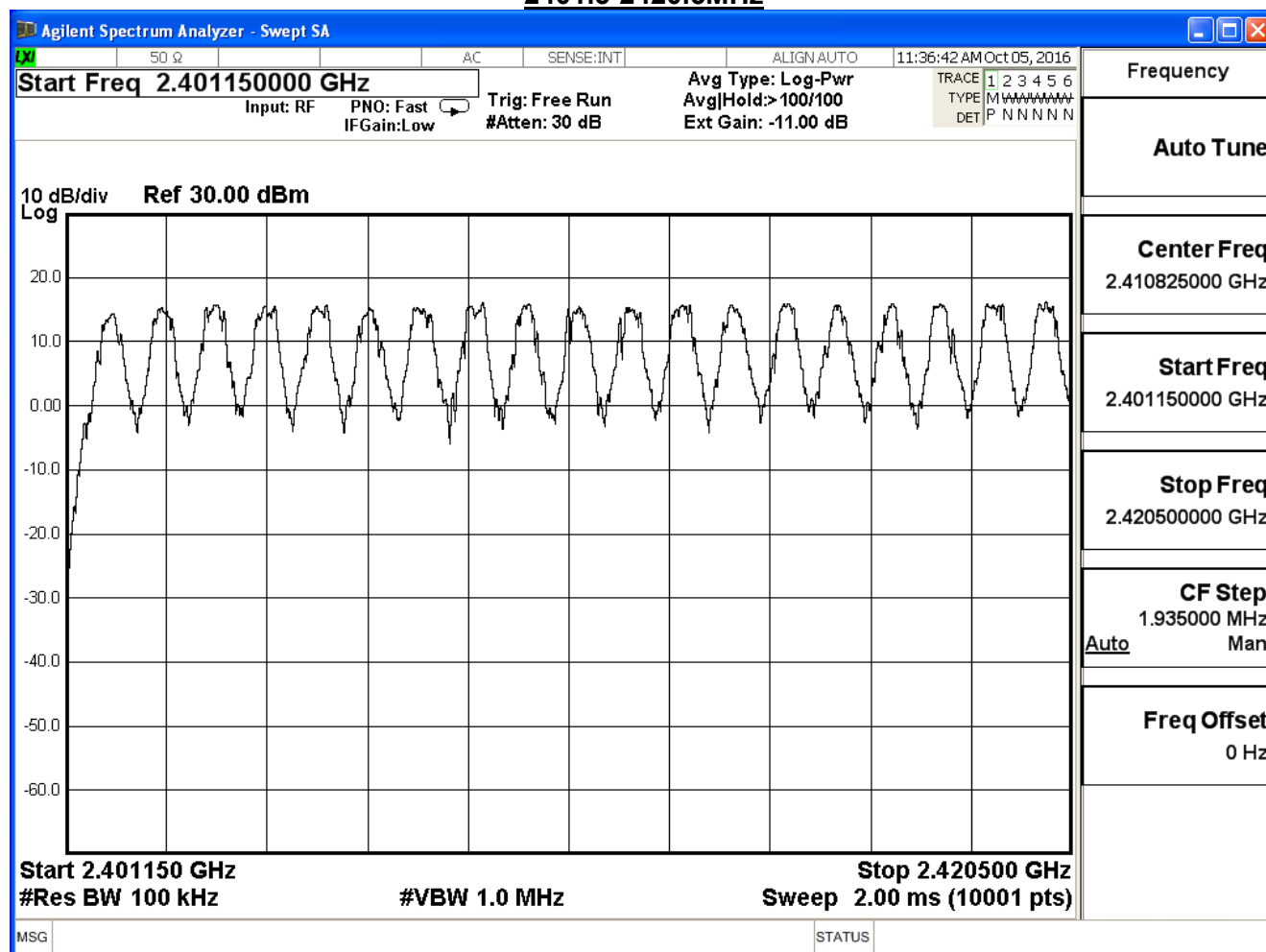
According to FCC Part 15 Subpart C Paragraph 15.247: 2015

7.6. Test Result

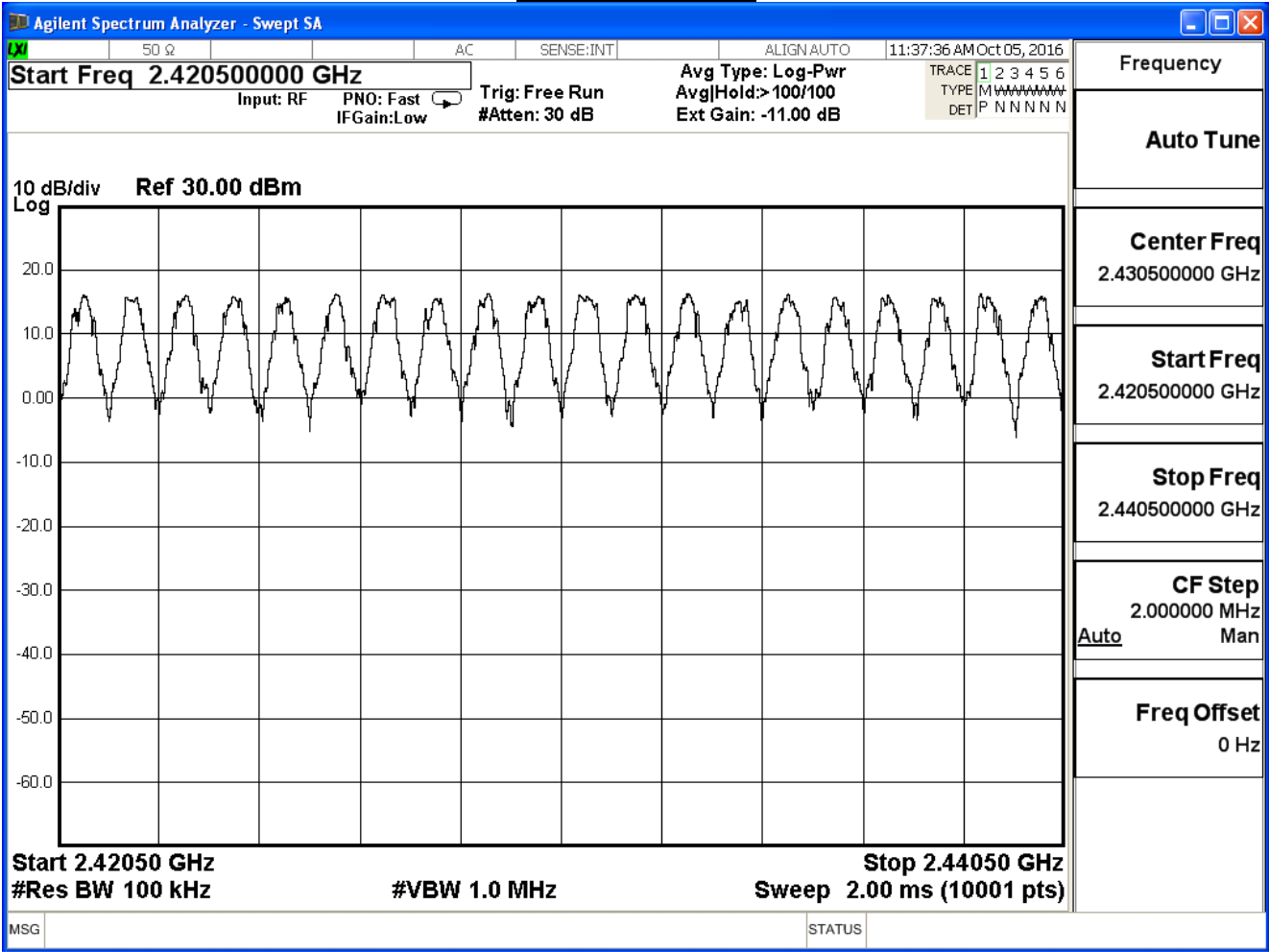
Product	TWO WAY RADIO/TRANSCEIVER		
Test Item	Number of hopping frequency		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2016/10/04	Test Site	SR7

Frequency Range (MHz)	Measure Level (Channels)	Limit (Channels)	Result
2402 - 2479	78	≥ 75	Pass

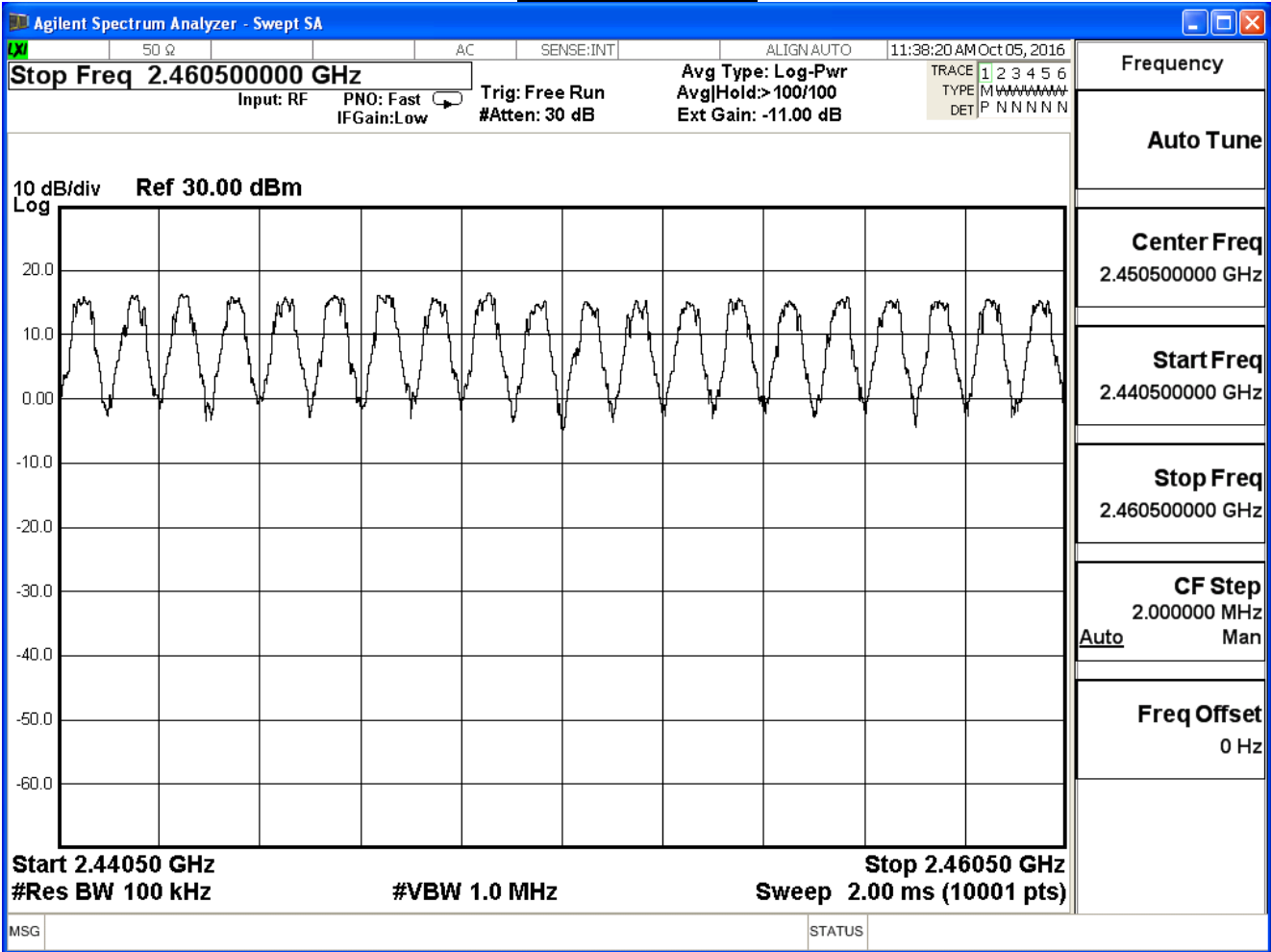
2401.5-2420.5MHz



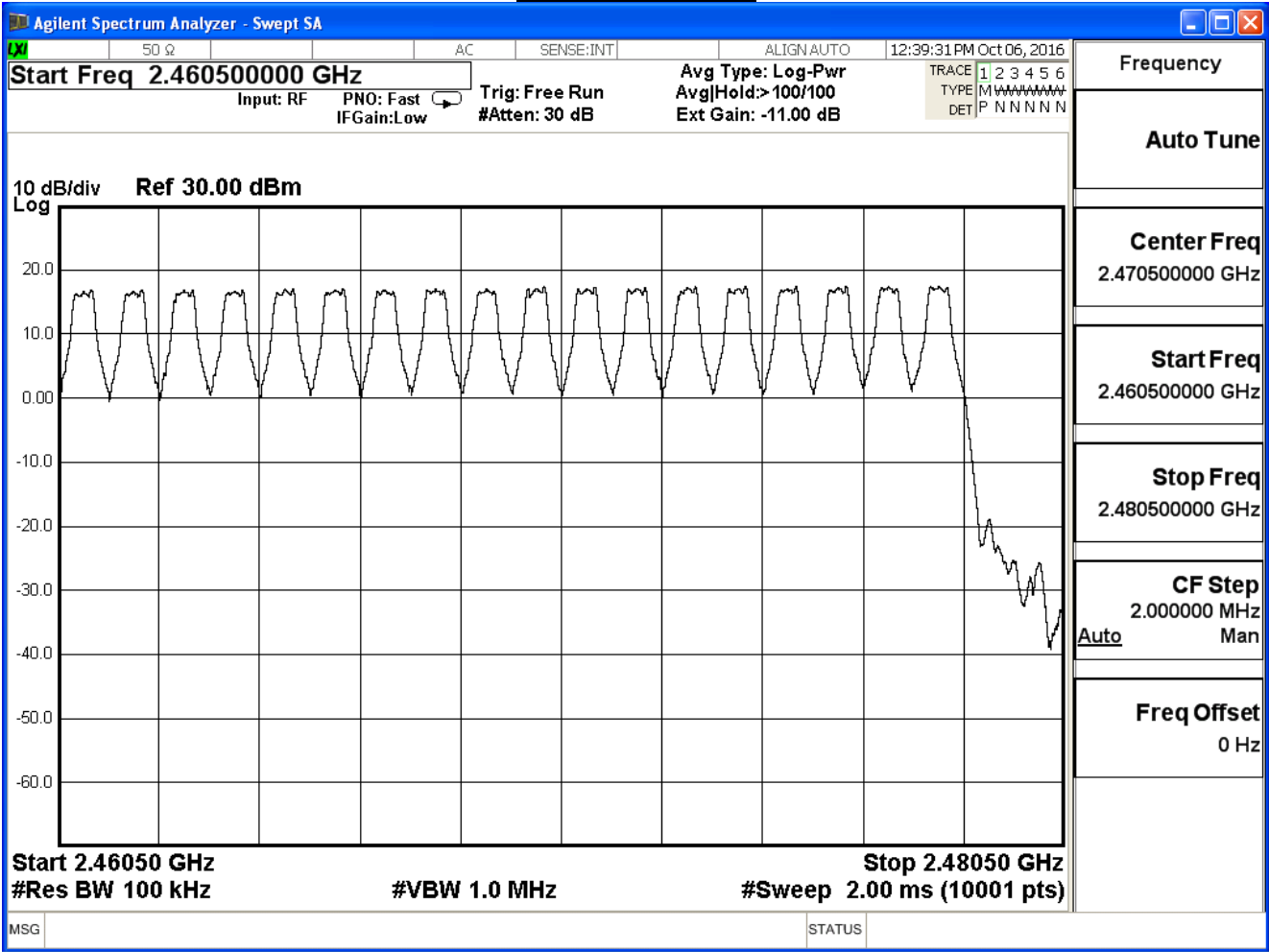
2420.5-2440.5MHz



2440.5-2460.5MHz



2460.5-2480.5MHz



8. Carrier Frequency Separation

8.1. Test Equipment

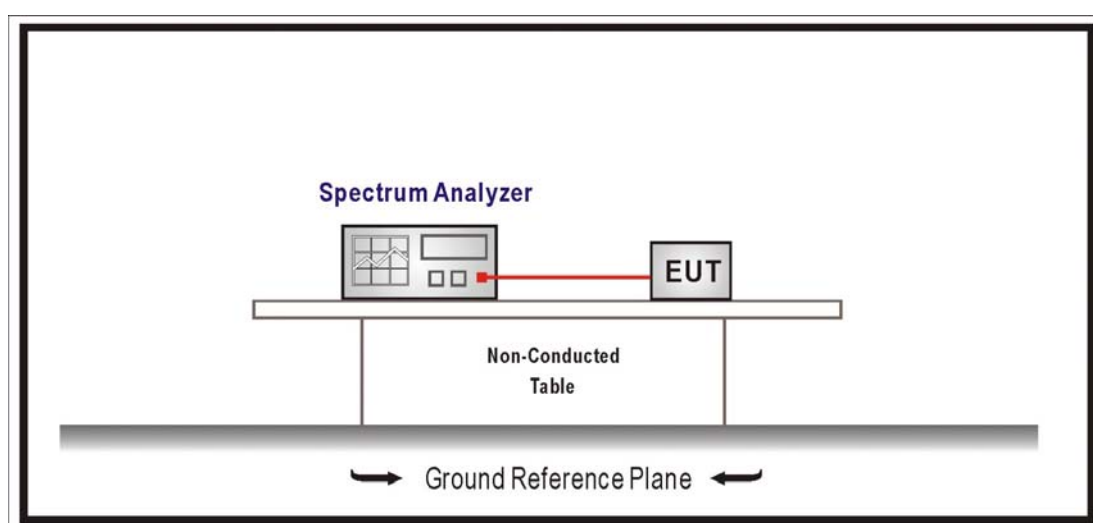
The following test equipment is used during the test:

Carrier Frequency Separation / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A	US47140172	2017/08/08
Signal & Spectrum Analyzer	R&S	FSV40	101049	2017/01/05
Signal Analyzer	R&S	FSV7	101650	2016/11/30

Note: All equipments that need to calibrate are with calibration period of 1 year.

8.2. Test Setup



8.3. Limits

For frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.

8.4. Test Procedures

The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of FCC KDB 558074 D01 for compliance to FCC 47CFR 15.247 requirements

Span = wide enough to capture the peaks of two adjacent channels

Resolution Bandwidth (RBW) $\geq 1\%$ of the span, VBW $\geq$ RBW

Sweep = auto, Detector function = peak, Trace = max hold

8.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015

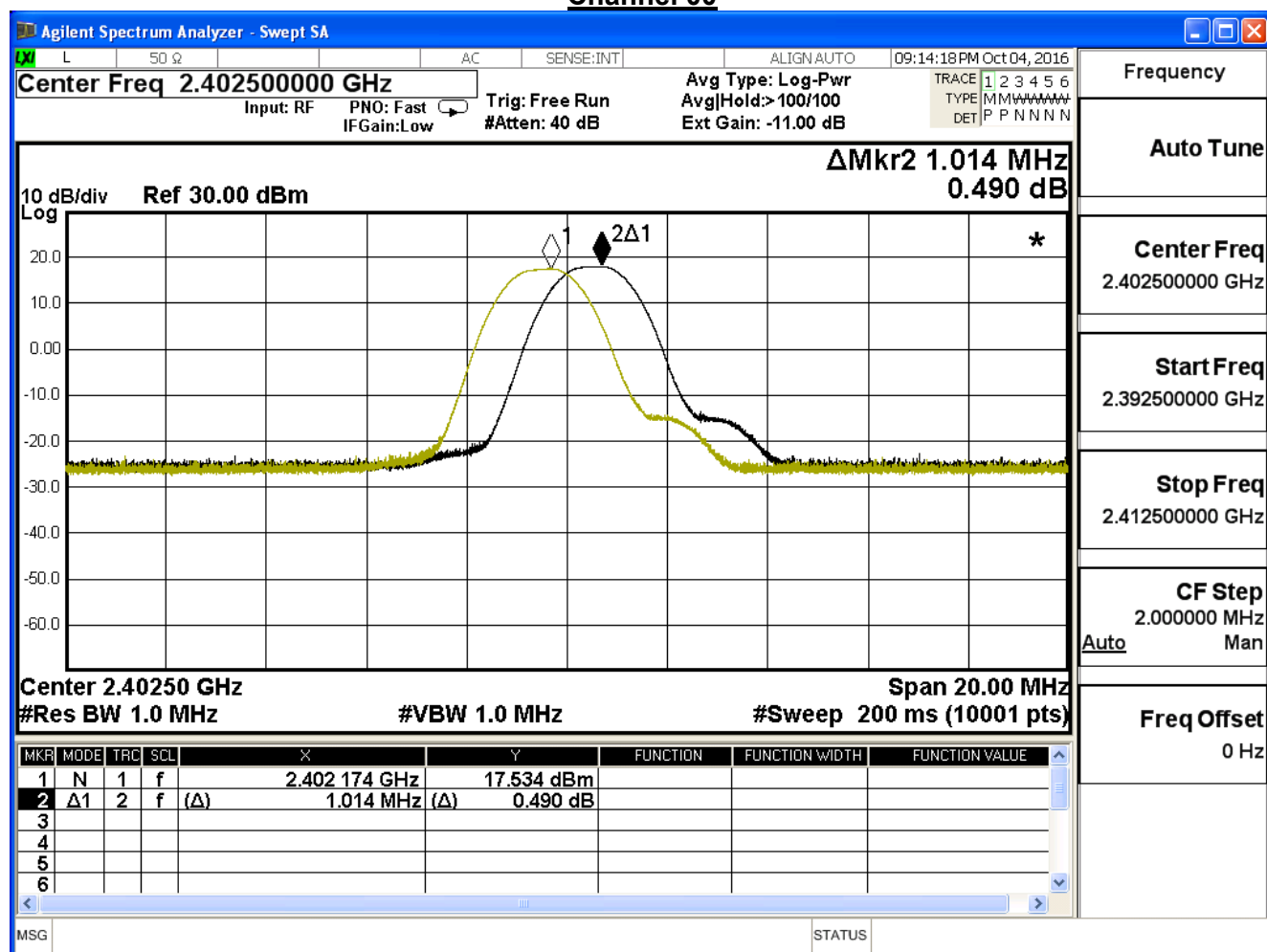
8.6. Test Result

Product	TWO WAY RADIO/TRANSCEIVER		
Test Item	Carrier Frequency Separation		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2016/10/06	Test Site	SR7

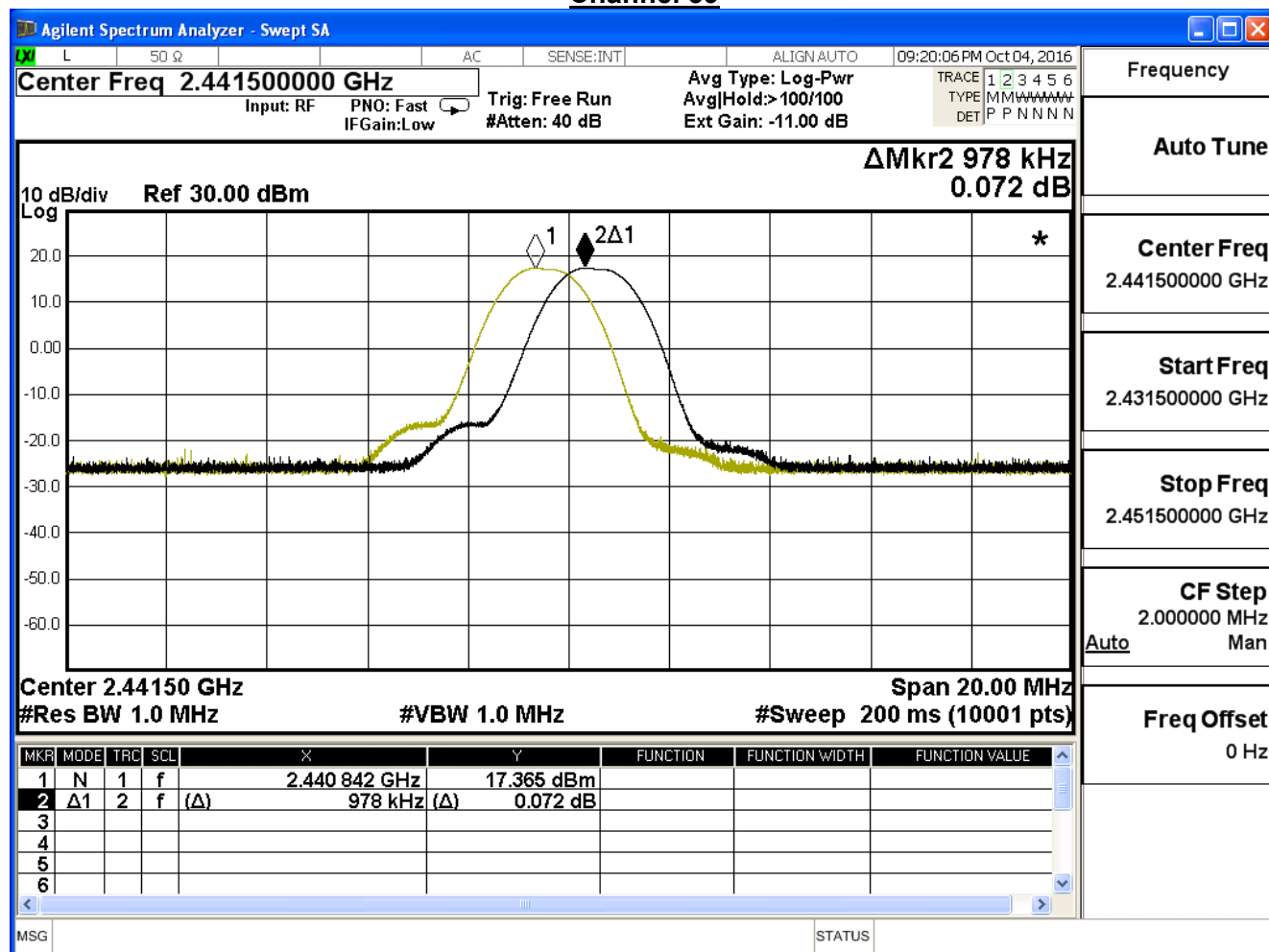
GFSK

Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
00	2402	1.014	>0.741	Pass
39	2441	0.978	>0.738	Pass
77	2479	1.008	>0.644	Pass

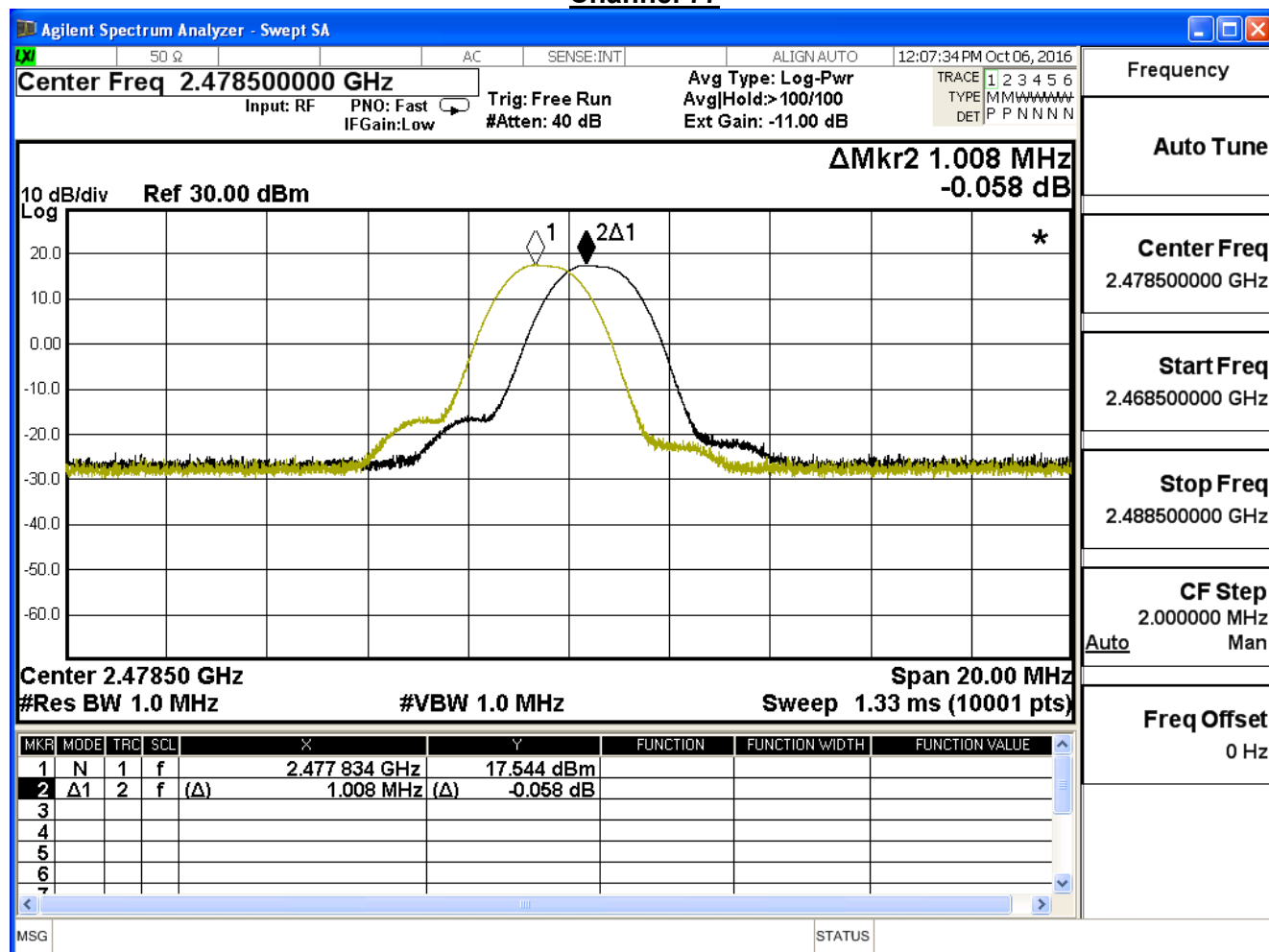
Channel 00



Channel 39



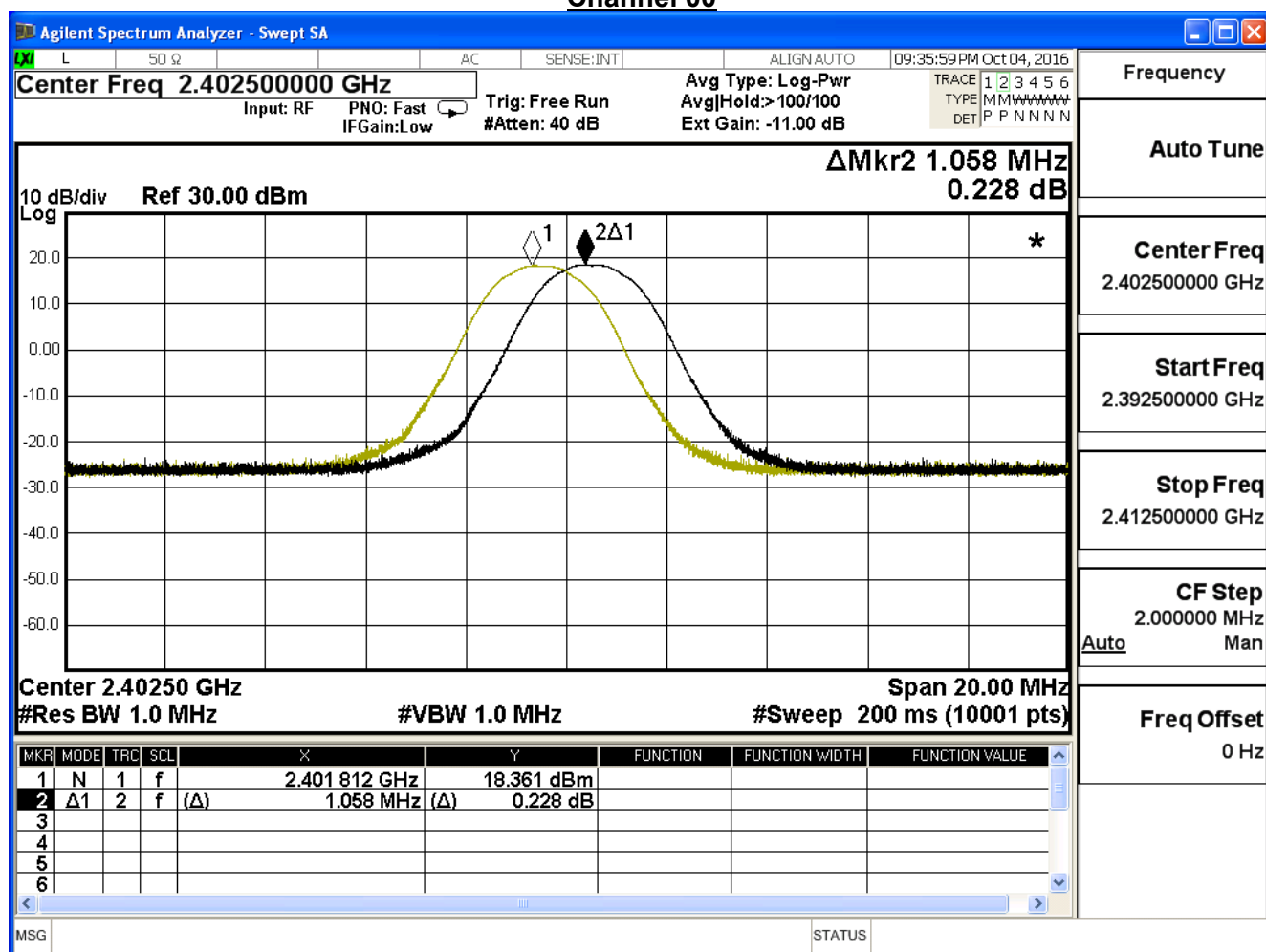
Channel 77



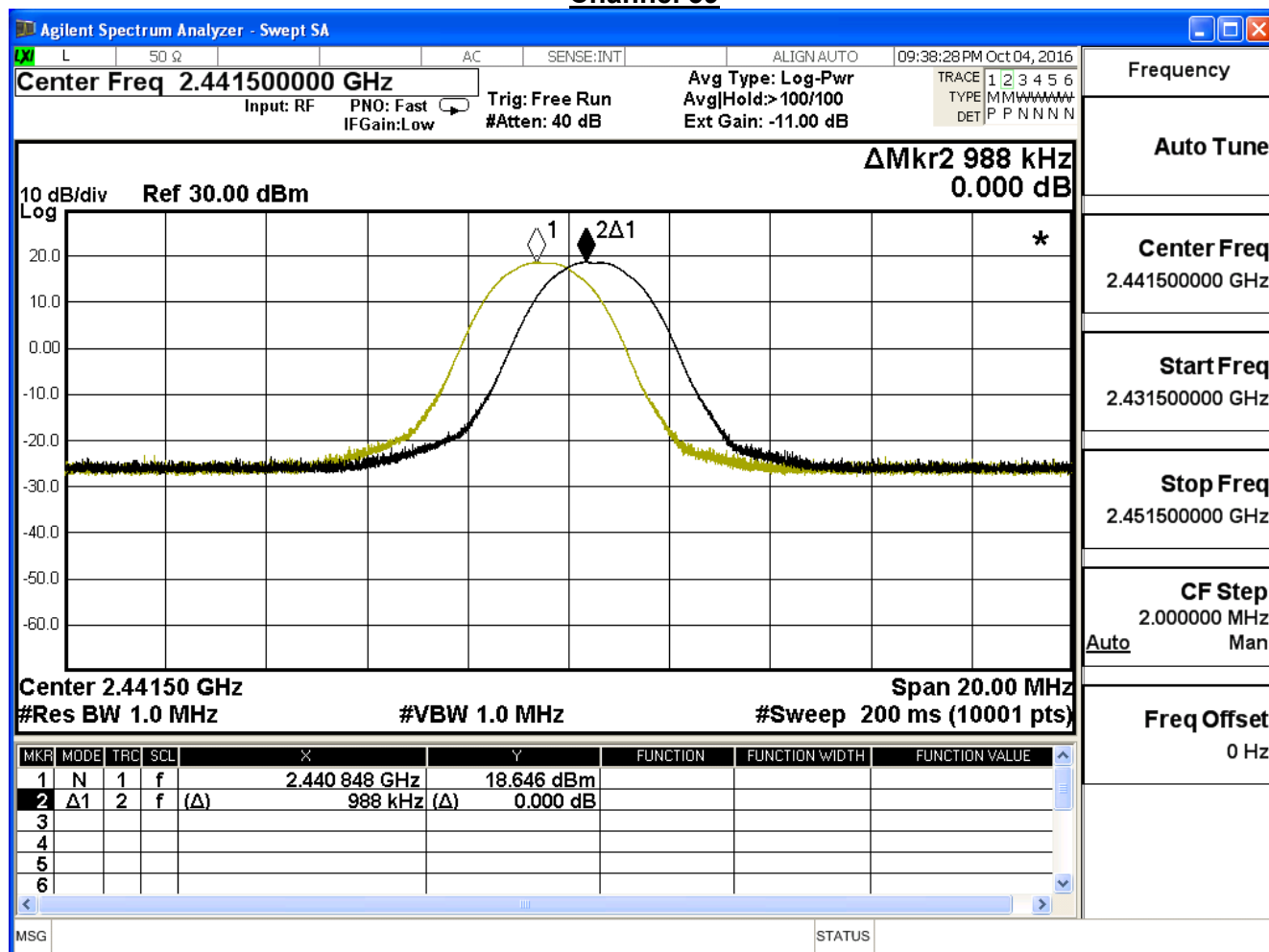
Product	TWO WAY RADIO/TRANSCEIVER		
Test Item	Carrier Frequency Separation		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2016/10/06	Test Site	SR7

 $\pi/4$ -DQPSK

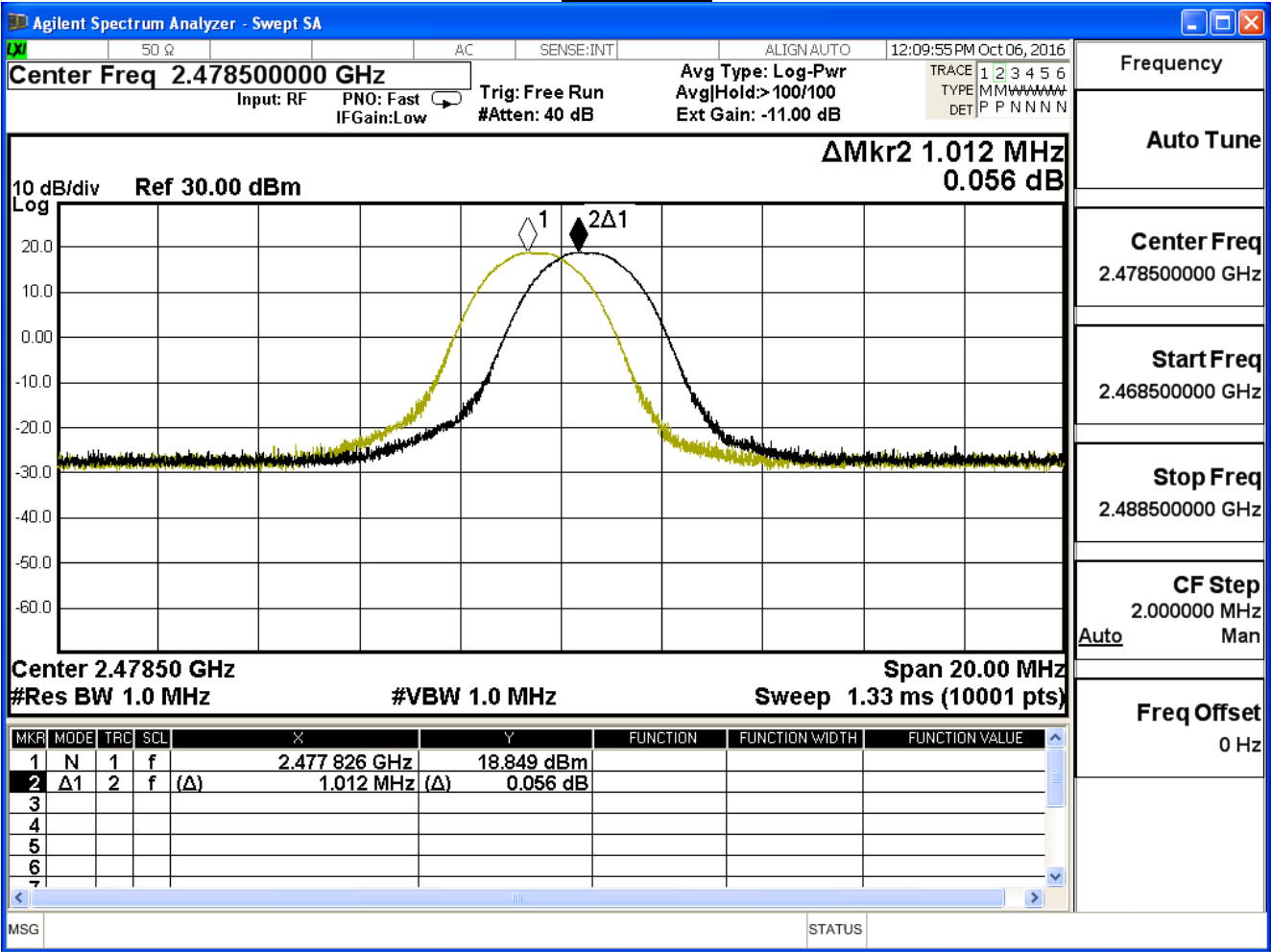
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
00	2402	1.058	>0.925	Pass
39	2441	0.988	>0.914	Pass
77	2479	1.012	>0.946	Pass

Channel 00

Channel 39



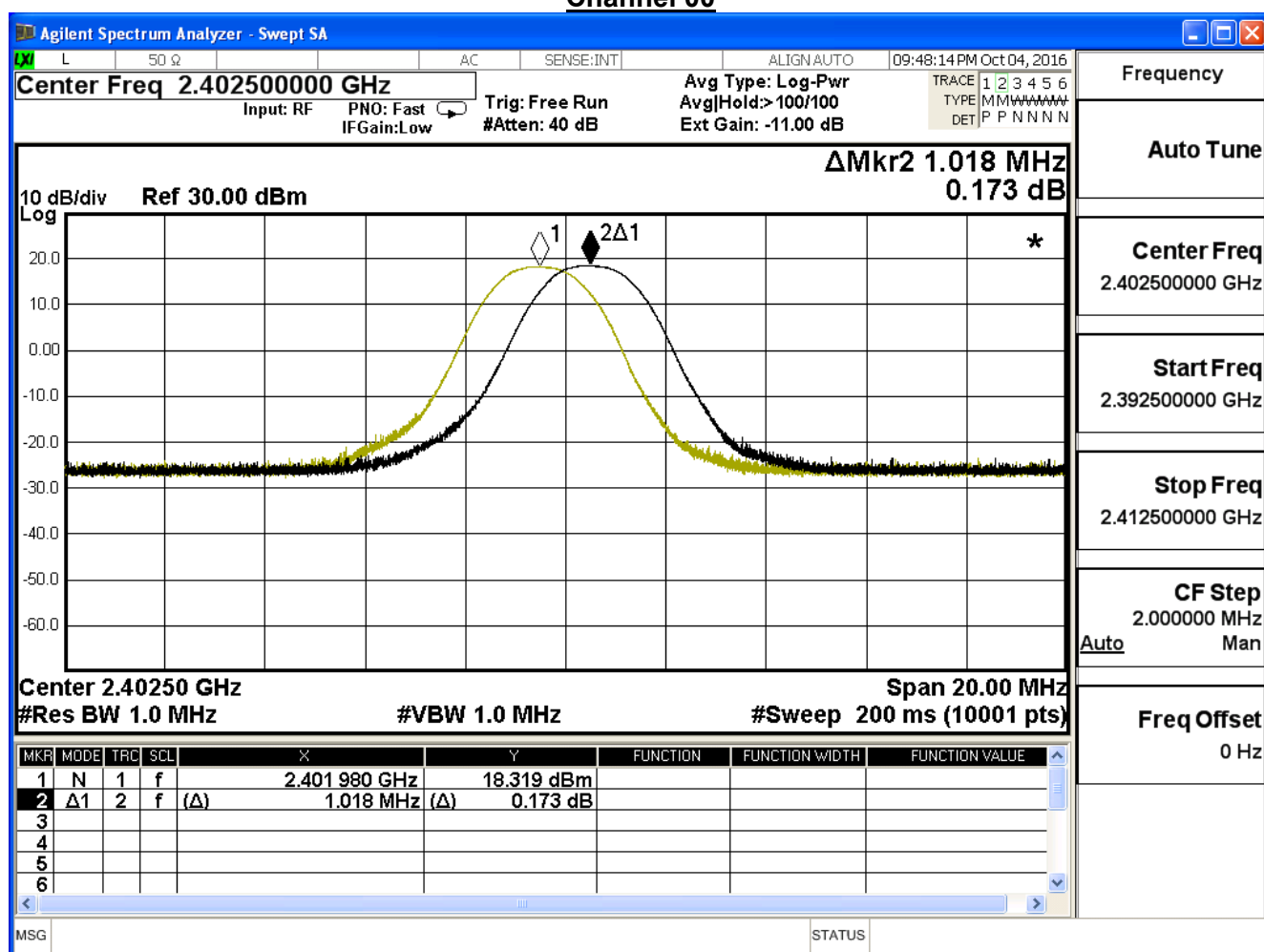
Channel 77



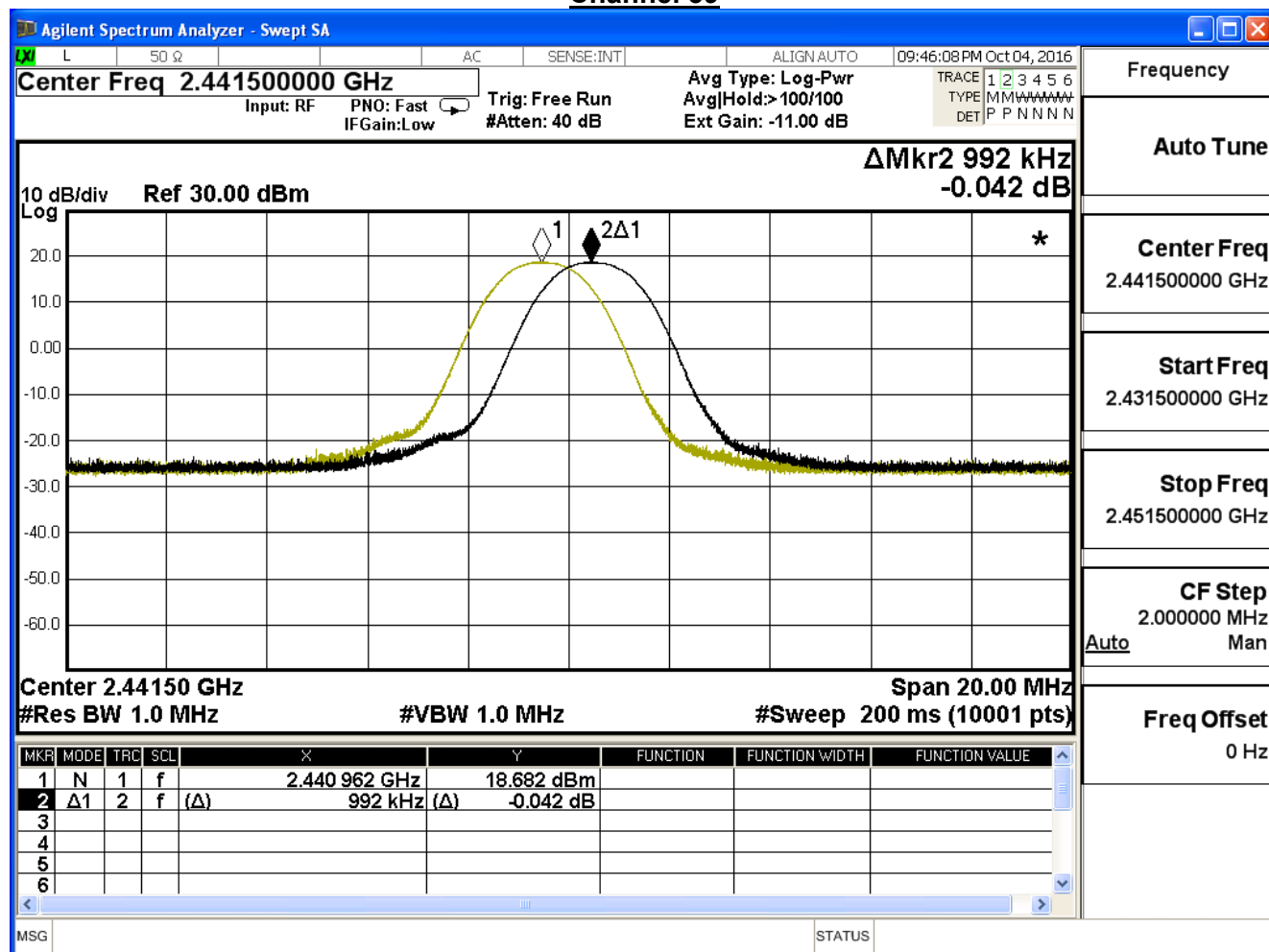
Product	TWO WAY RADIO/TRANSCIEIVER		
Test Item	Carrier Frequency Separation		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2016/10/06	Test Site	SR7

8-DPSK

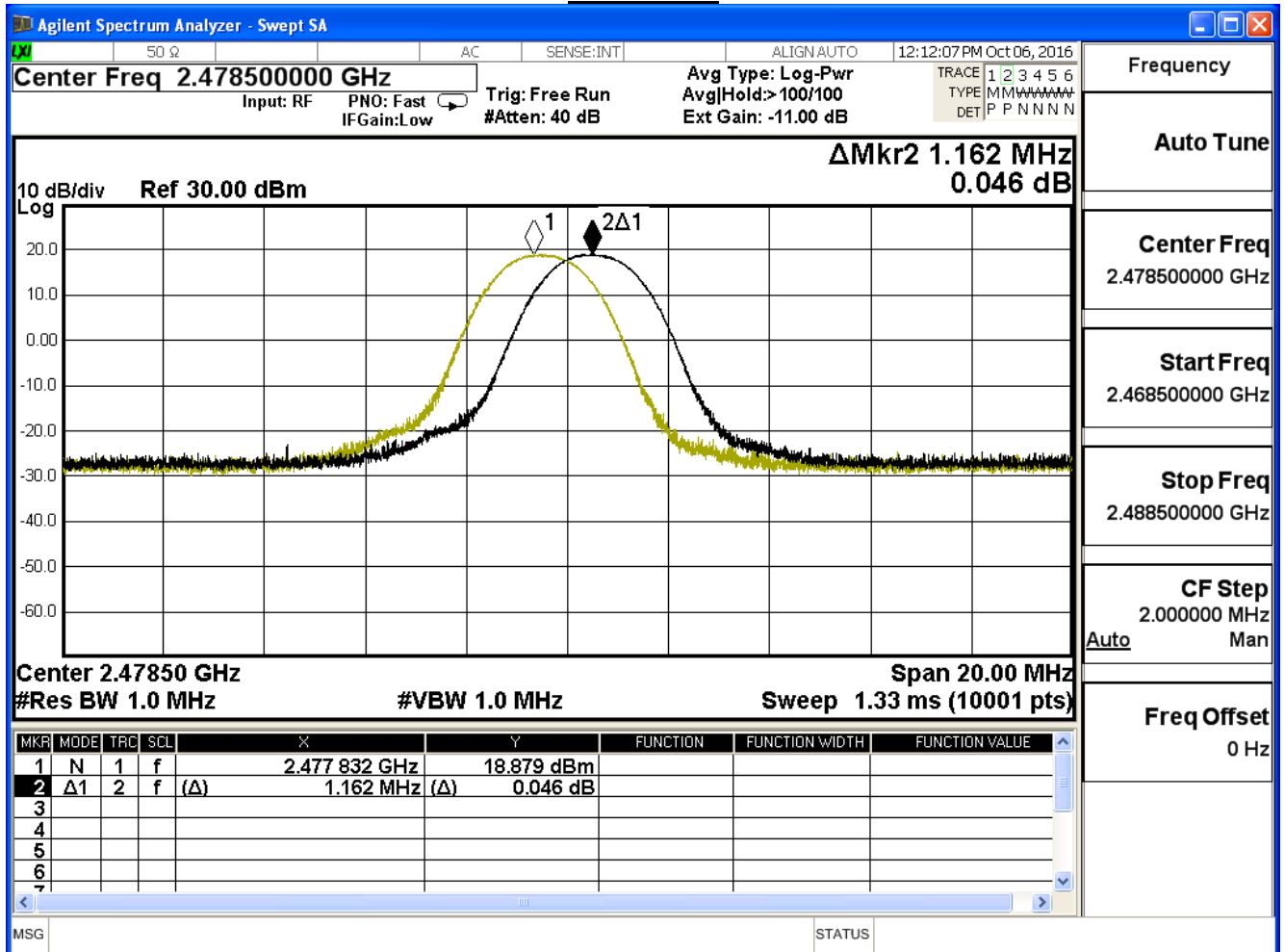
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
00	2402	1.018	>0.920	Pass
39	2441	0.992	>0.917	Pass
77	2479	1.162	>0.950	Pass

Channel 00

Channel 39



Channel 77



9. Occupied Bandwidth

9.1. Test Equipment

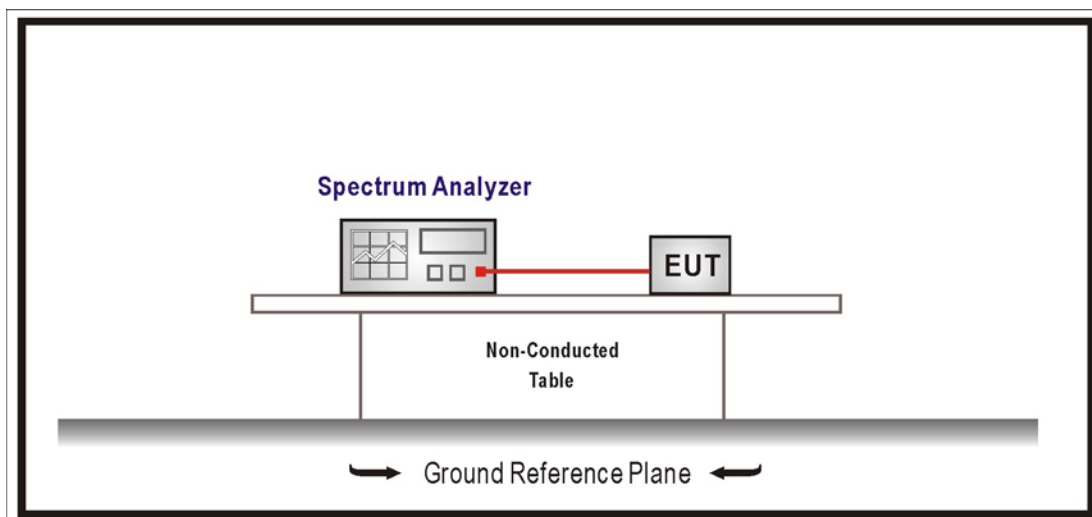
The following test equipment is used during the test:

Occupied Bandwidth / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A	US47140172	2017/08/08
Signal & Spectrum Analyzer	R&S	FSV40	101049	2017/01/05
Signal Analyzer	R&S	FSV7	101650	2016/11/30

Note: All equipments that need to calibrate are with calibration period of 1 year.

9.2. Test Setup



9.3. Limits

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

For frequency hopping systems operating in the 5725-5850 MHz bands. The maximum 20 dB bandwidth of the hopping channel is 1 MHz.

For frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

9.4. Test Procedures

The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of FCC KDB 558074 D01 for compliance to FCC 47CFR 15.247 requirements

Use the following spectrum analyzer settings:

Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel

RBW $\geq$ 1% of the 20 dB bandwidth, VBW $\geq$ RBW , Sweep = auto, Detector function = peak,

Trace = max hold , The EUT should be transmitting at its maximum data rate.

9.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015

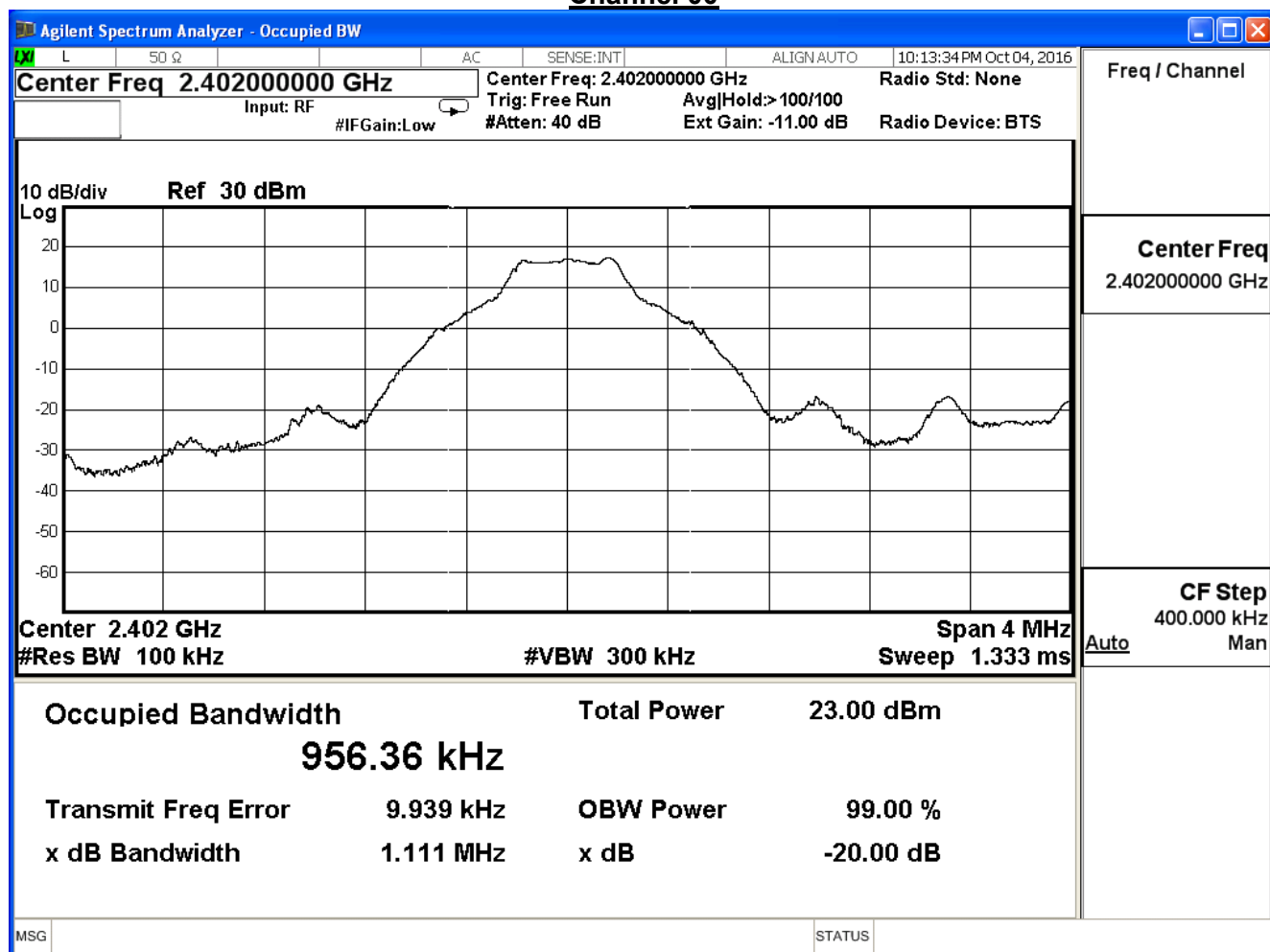
9.6. Test Result

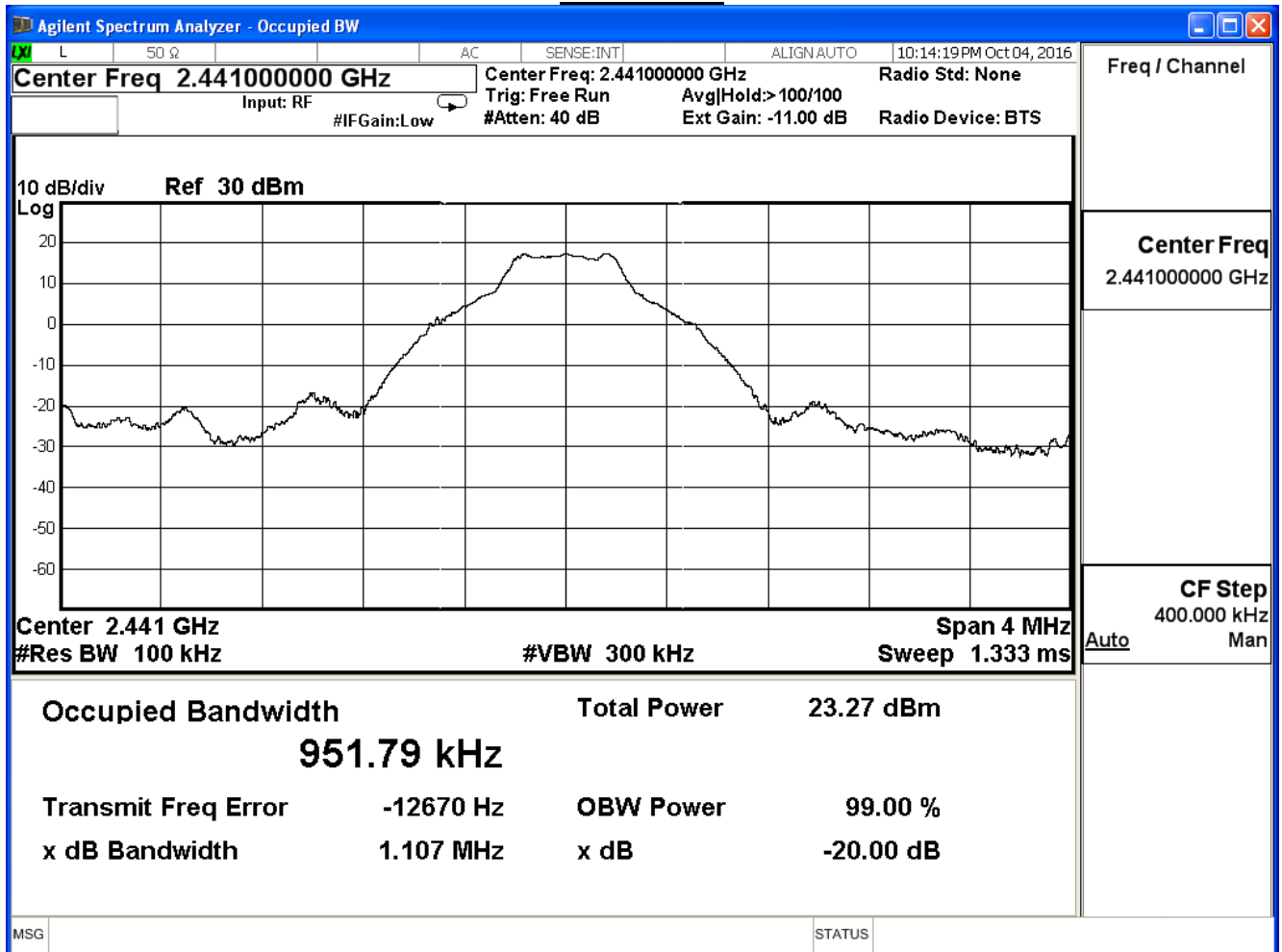
Product	TWO WAY RADIO/TRANSCEIVER		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2016/10/04	Test Site	SR7

GFSK

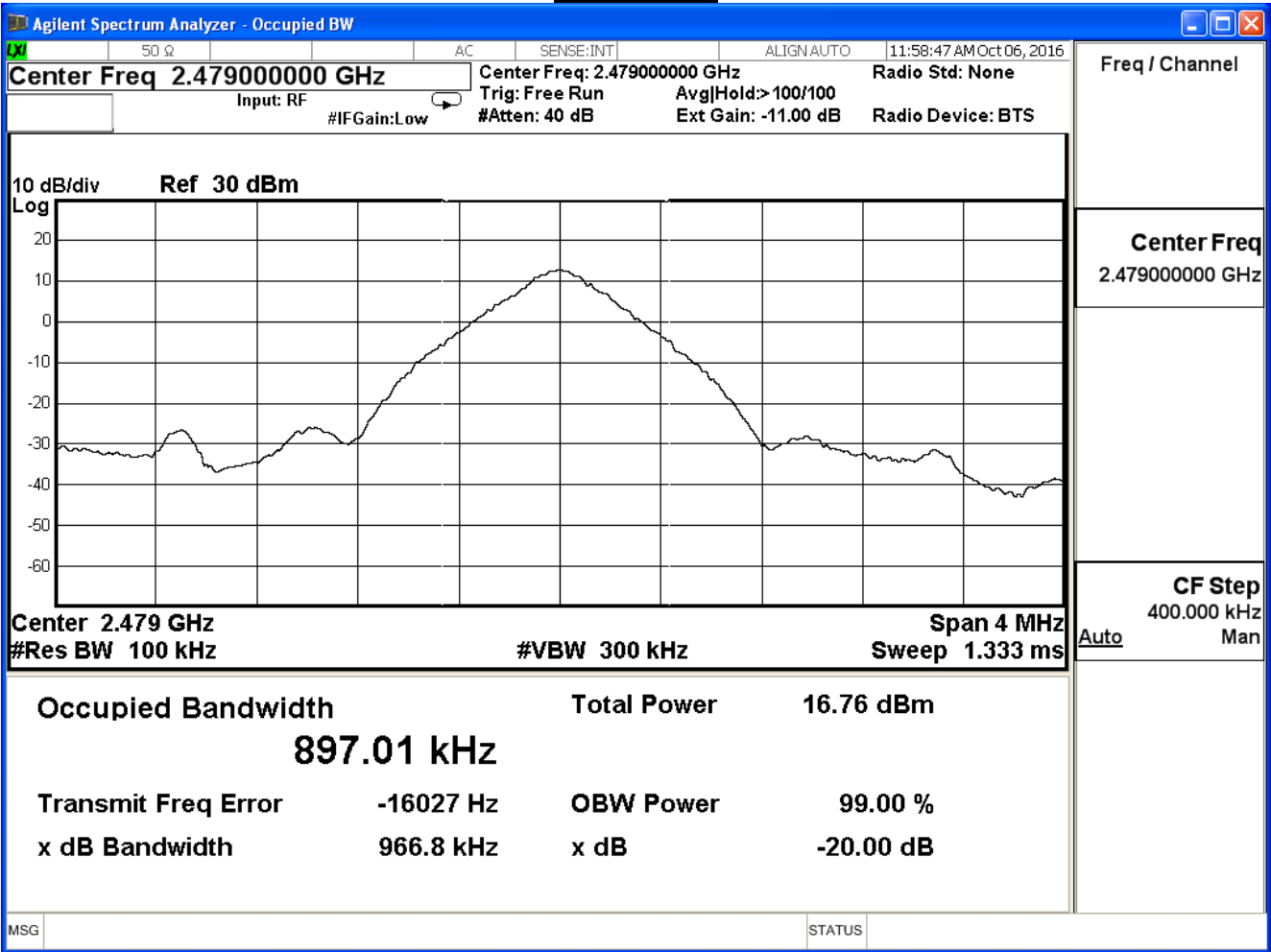
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
00	2402	1.111	--	Pass
39	2441	1.107	--	Pass
77	2479	0.966	--	Pass

Channel 00



Channel 39

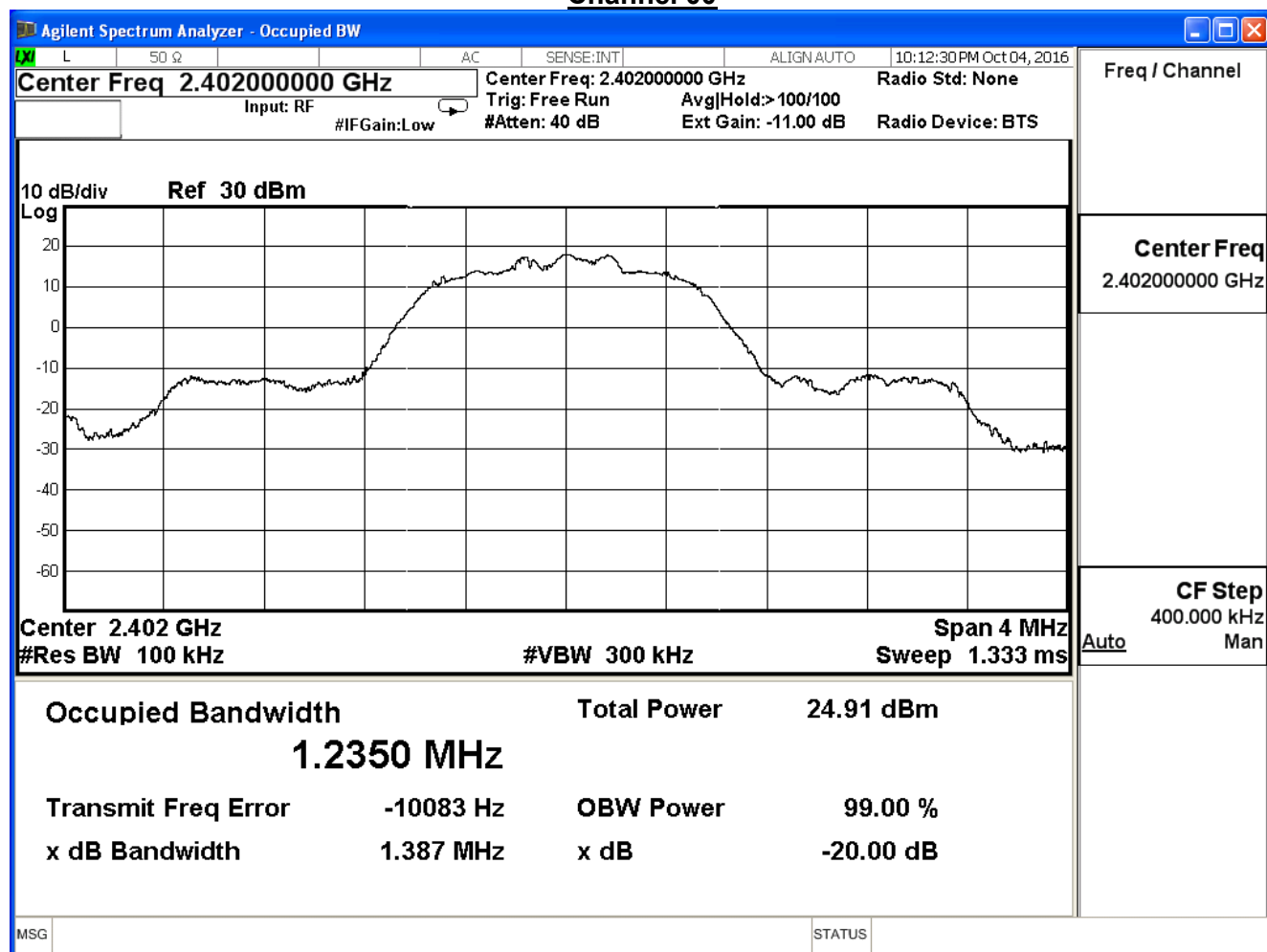
Channel 77

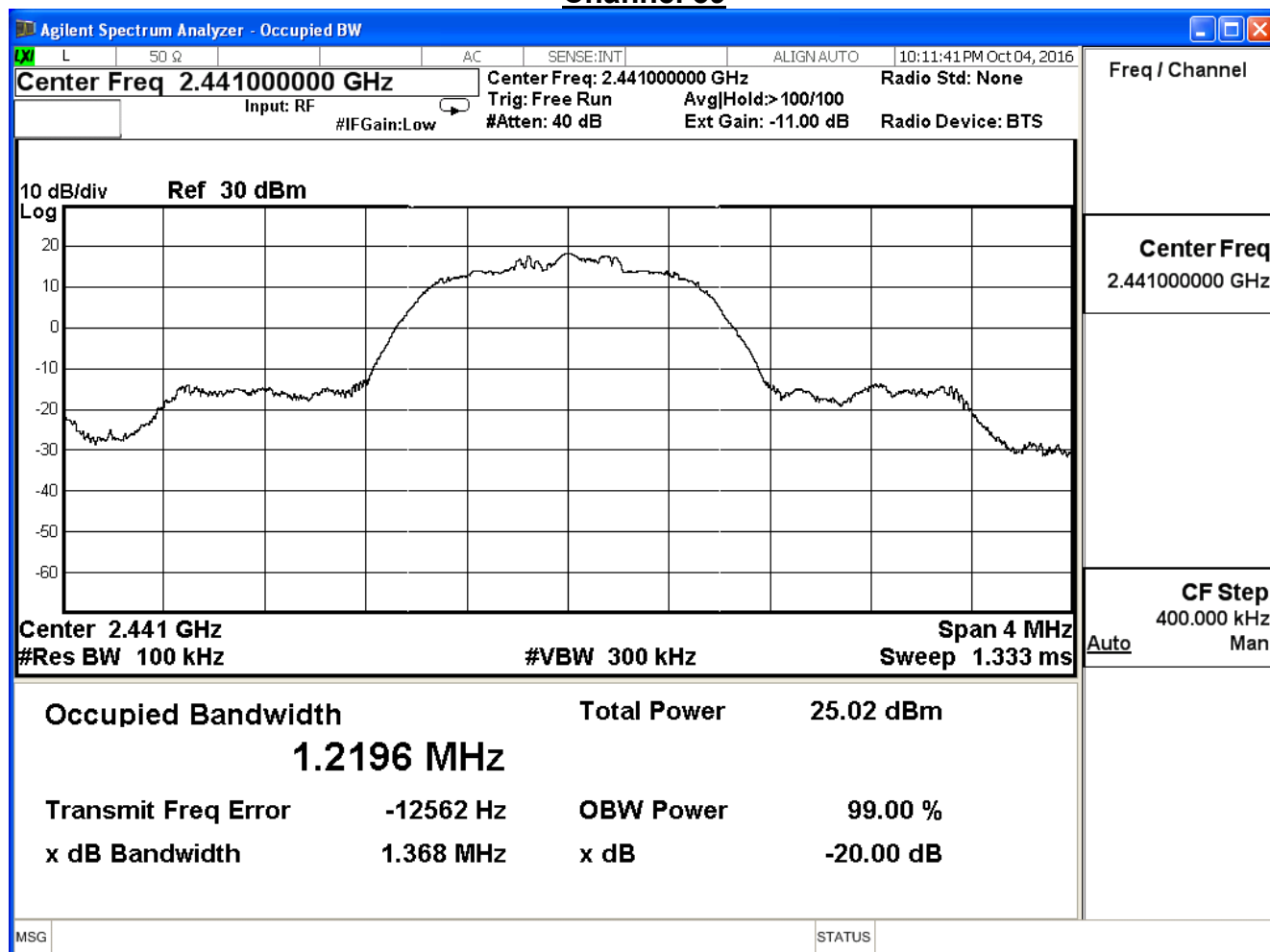


Product	TWO WAY RADIO/TRANSCEIVER		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2016/10/04	Test Site	SR7

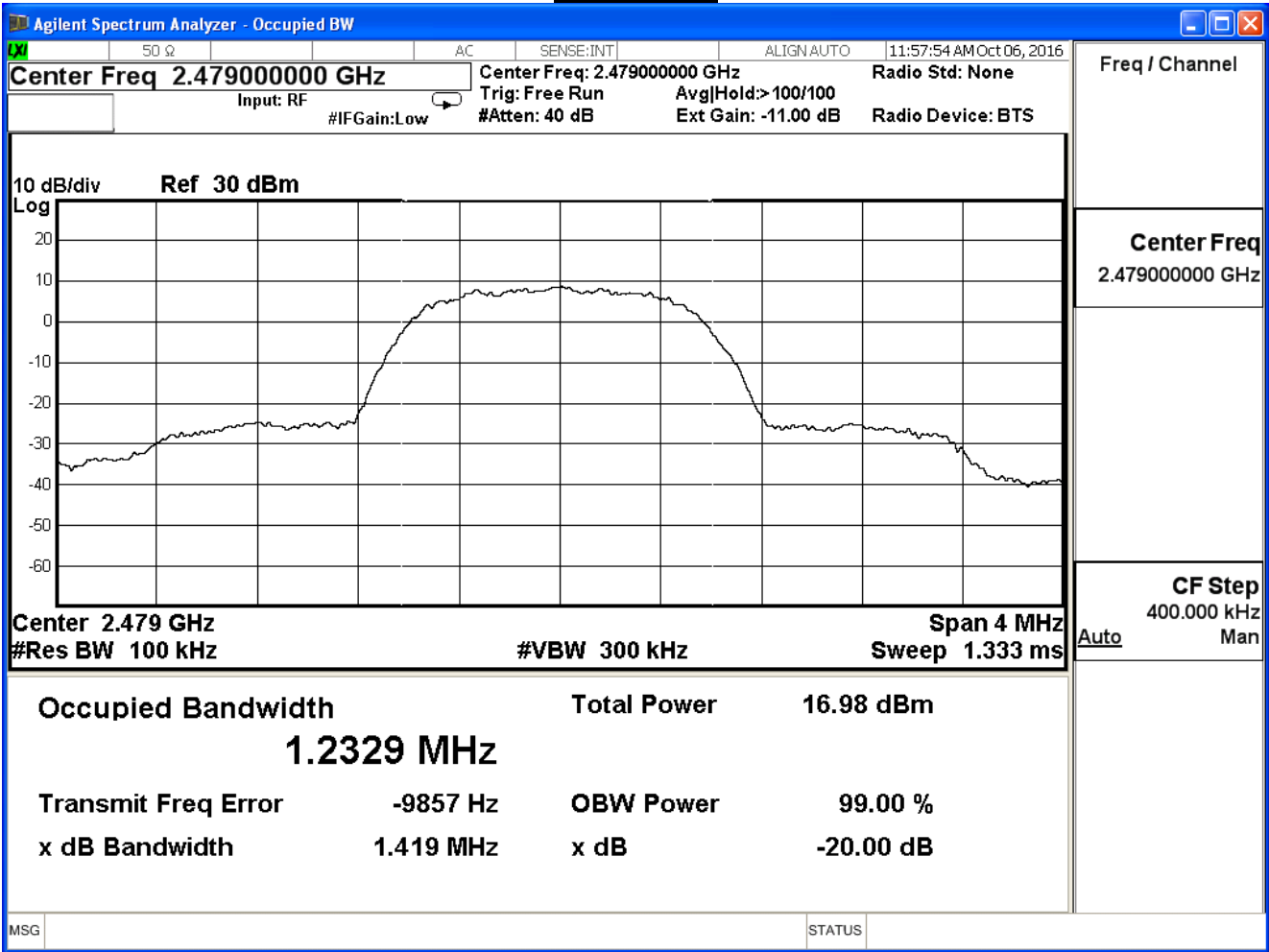
 $\pi/4$ -DQPSK

Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
00	2402	1.387	--	Pass
39	2441	1.368	--	Pass
77	2479	1.419	--	Pass

Channel 00

Channel 39

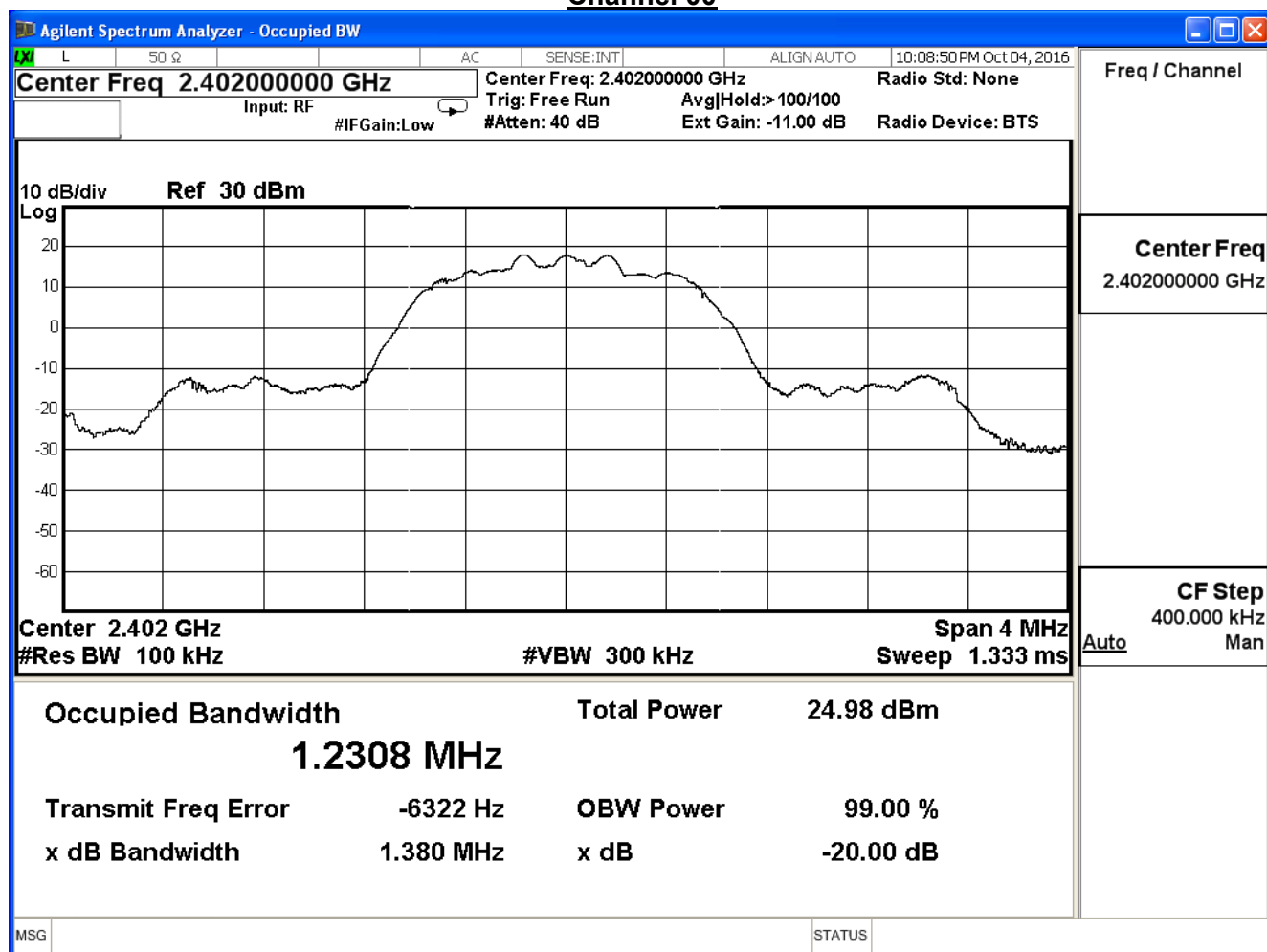
Channel 77



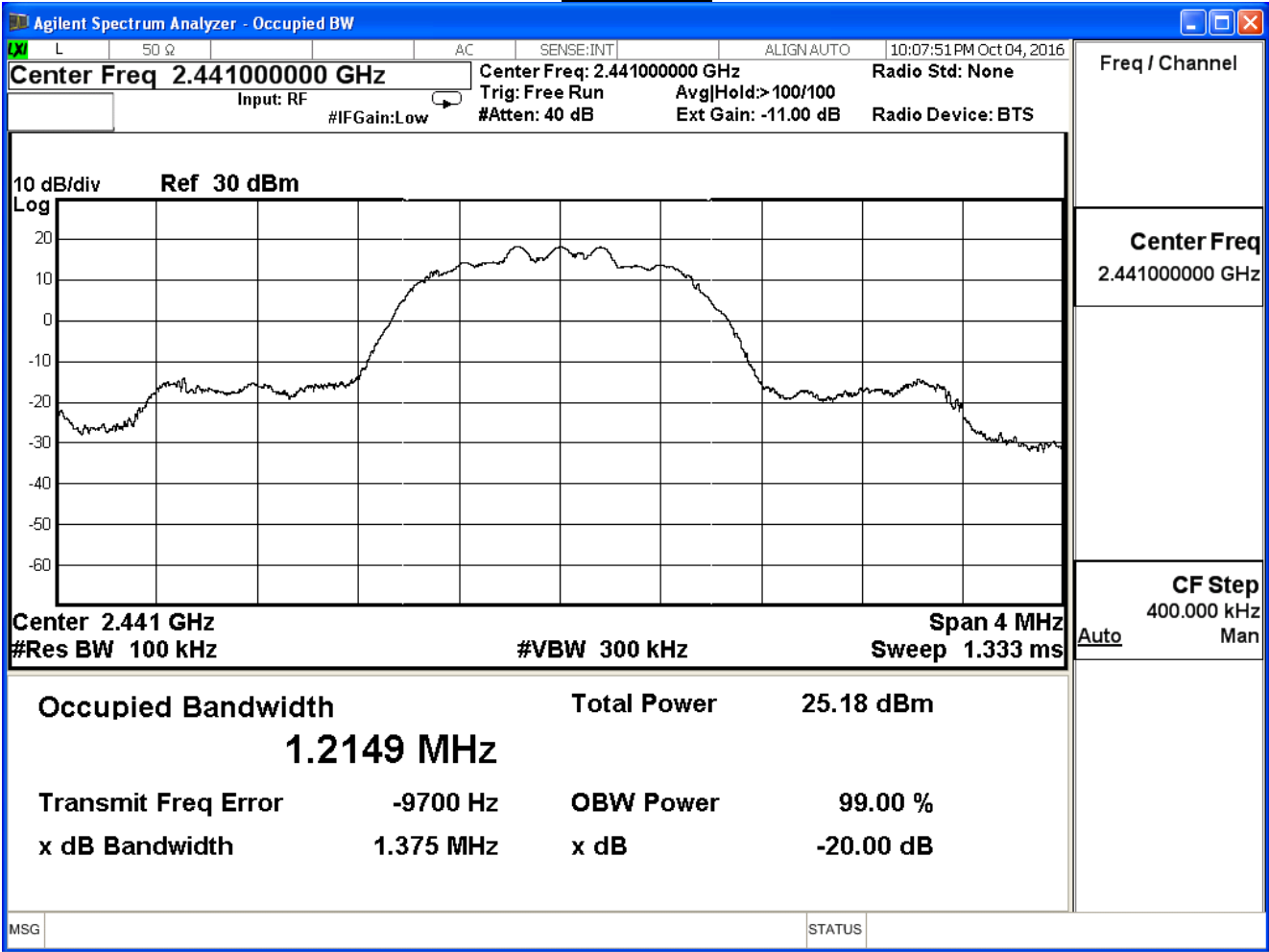
Product	TWO WAY RADIO/TRANSCEIVER		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2016/10/04	Test Site	SR7

8-DPSK

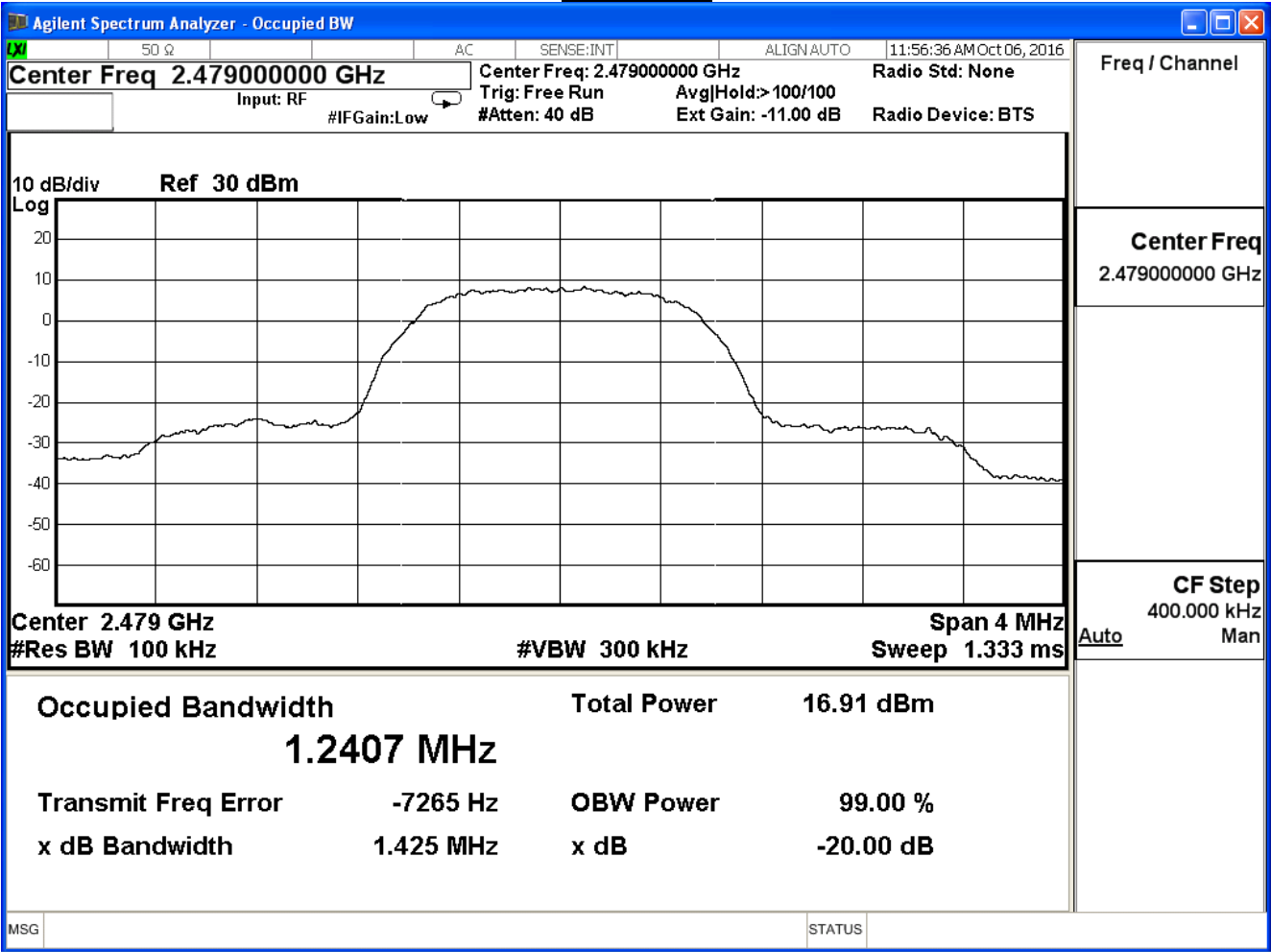
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
00	2402	1.380	--	Pass
39	2441	1.375	--	Pass
77	2479	1.425	--	Pass

Channel 00

Channel 39



Channel 77



10. Dwell Time

10.1. Test Equipment

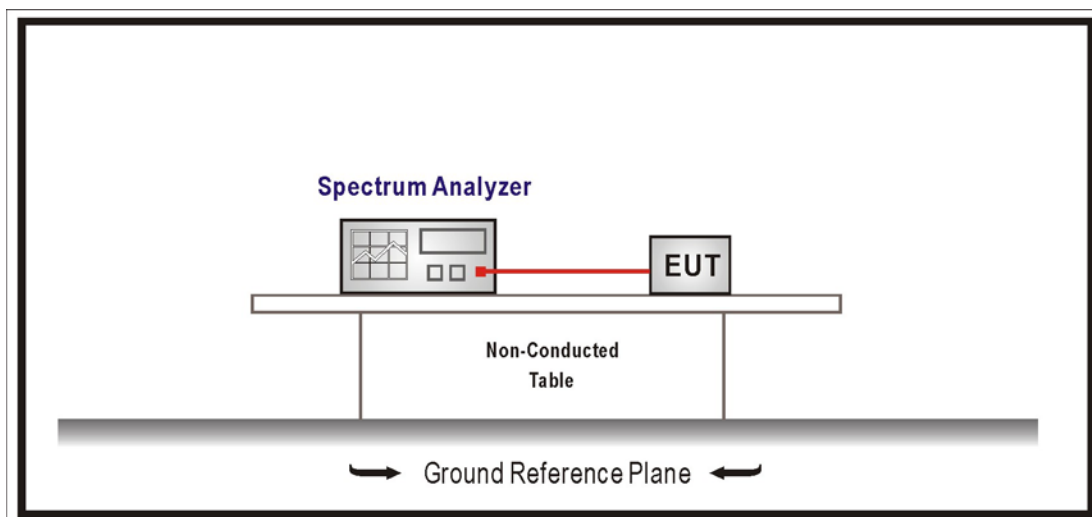
The following test equipment is used during the test:

Dwell Time / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A	US47140172	2017/08/08
Signal & Spectrum Analyzer	R&S	FSV40	101049	2017/01/05
Signal Analyzer	R&S	FSV7	101650	2016/11/30

Note: All equipments that need to calibrate are with calibration period of 1 year.

10.2. Test Setup



10.3. Limits

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. For frequency hopping systems operating in the 2400-2483.5 MHz bands. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. For frequency hopping systems operating in the 5725-5850 MHz bands. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

10.4. Test Procedures

The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of FCC KDB 558074 D01 for compliance to FCC 47CFR 15.247 requirements
Span = zero span, centered on a hopping channel , RBW = 1 MHz, VBW $\geq$ RBW ,
Sweep = as necessary to capture the entire dwell time per hopping channel ,
Detector function = peak, Trace = max hold.

10.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015

10.6. Test Result

Product	TWO WAY RADIO/TRANSCEIVER		
Test Item	Dwell Time		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2016/10/04	Test Site	SR7

GFSK, DH5

Occupancy Time of Frequency Hopping System

A) 2402MHz Test Time Period: $0.4 \times 78 = 31.20\text{sec}$, Time slot length : 2.888ms = 0.002888 sec

Dwell Time : 0.002888 * (266.67/78) * 31.20 = 0.3081 sec °

B) 2441MHz Test Time Period: $0.4 \times 78 = 31.20\text{sec}$, Time slot length : 2.884ms = 0.002884 sec

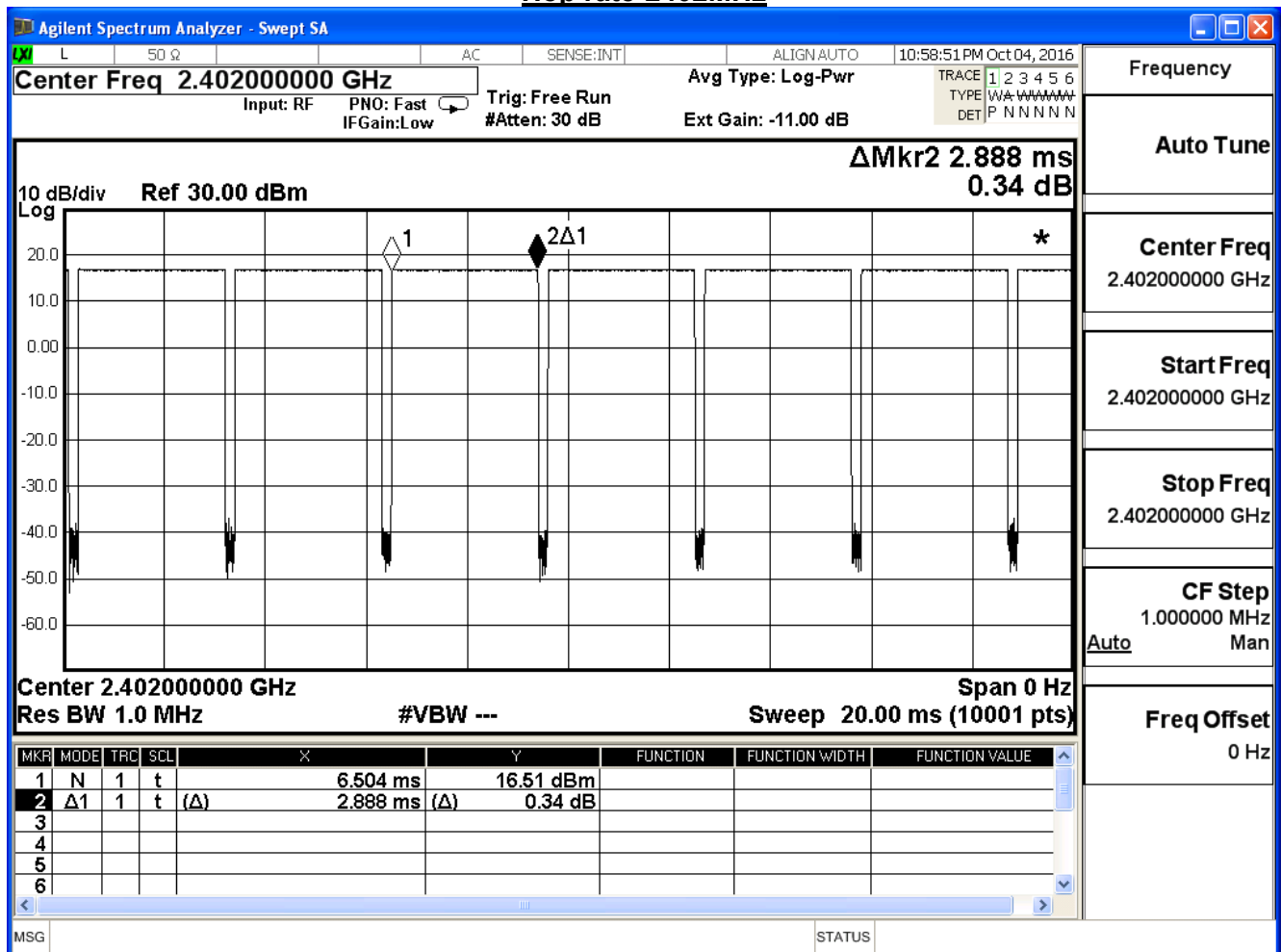
Dwell Time : 0.002884 * (266.67/78) * 31.20 = 0.3076 sec °

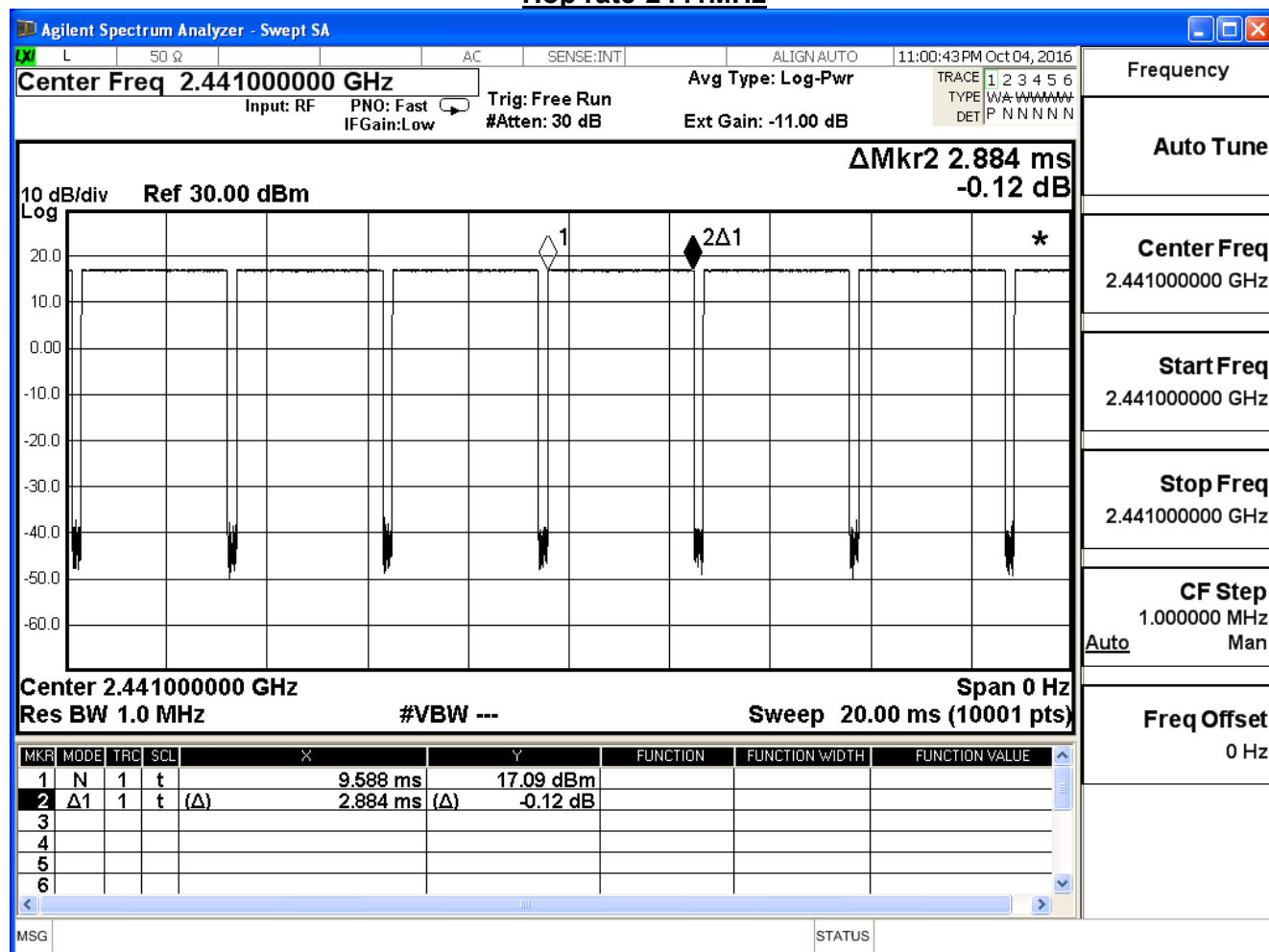
C) 2479MHz Test Time Period: $0.4 \times 78 = 31.20\text{sec}$, Time slot length : 2.888ms = 0.002888 sec

Dwell Time : 0.002888 * (266.67/78) * 31.20 = 0.3081 sec °

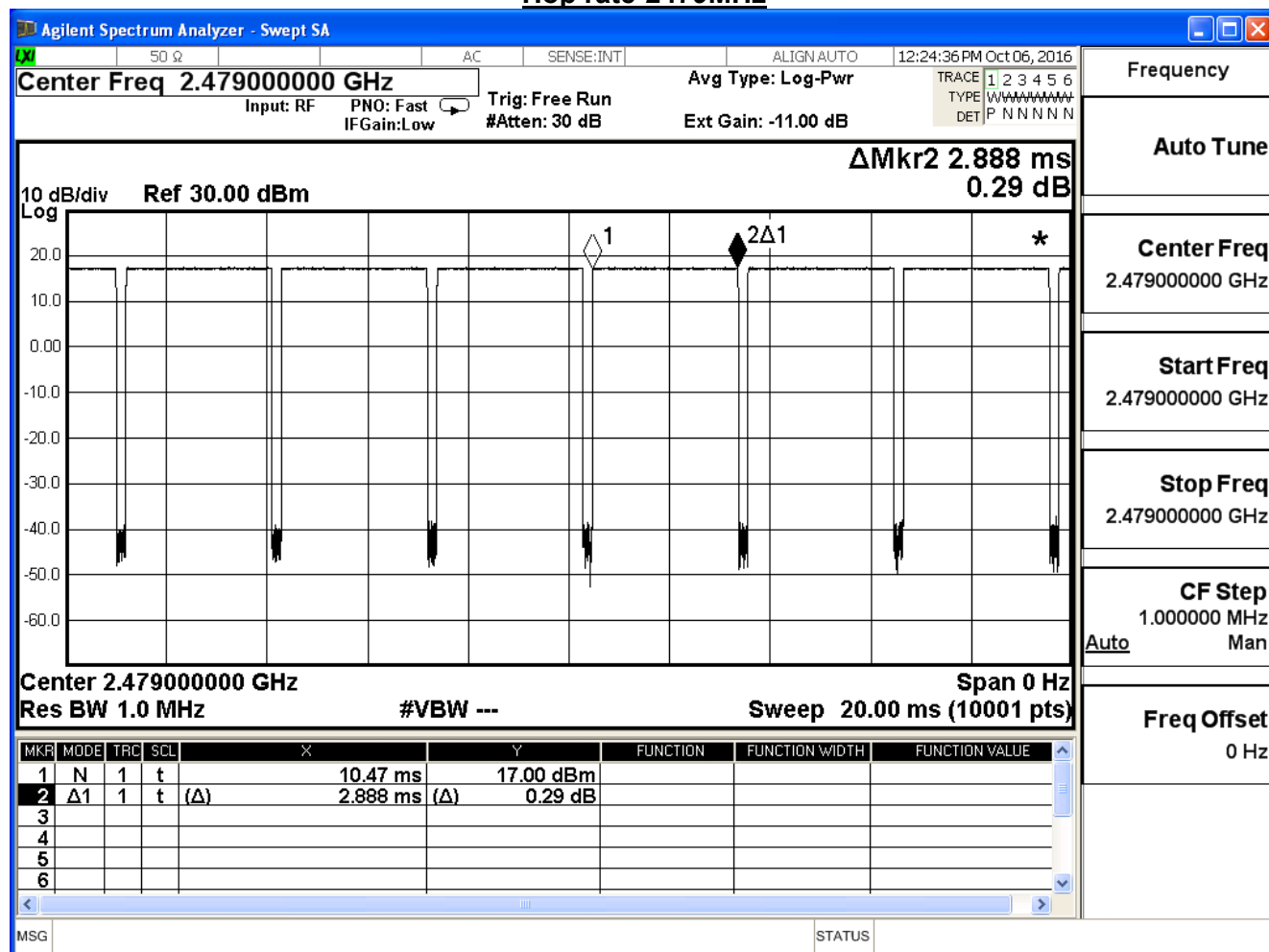
Test Result: The Average Occupancy Time of Each Highest , Middle and Lowest Channel Is Less Than 0.4sec , And Corresponds to The Standard °

Hop rate-2402MHz



Hop rate-2441MHz

Hop rate-2479MHz



Note: Dwell time = time slot length * hop rate / number of hopping channels * period

Product	TWO WAY RADIO/TRANSCEIVER		
Test Item	Dwell Time		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2016/10/04	Test Site	SR7

$\pi/4$ -DQPSK, 2DH5

Occupancy Time of Frequency Hopping System

A) 2402MHz Test Time Period: $0.4 \times 78 = 31.20\text{sec}$, Time slot length : 2.894ms = 0.002894 sec

Dwell Time : 0.002894 * (266.67/78) * 31.20 = 0.3087 sec

B) 2441MHz Test Time Period: $0.4 \times 78 = 31.20\text{sec}$, Time slot length : 2.900ms = 0.002900 sec

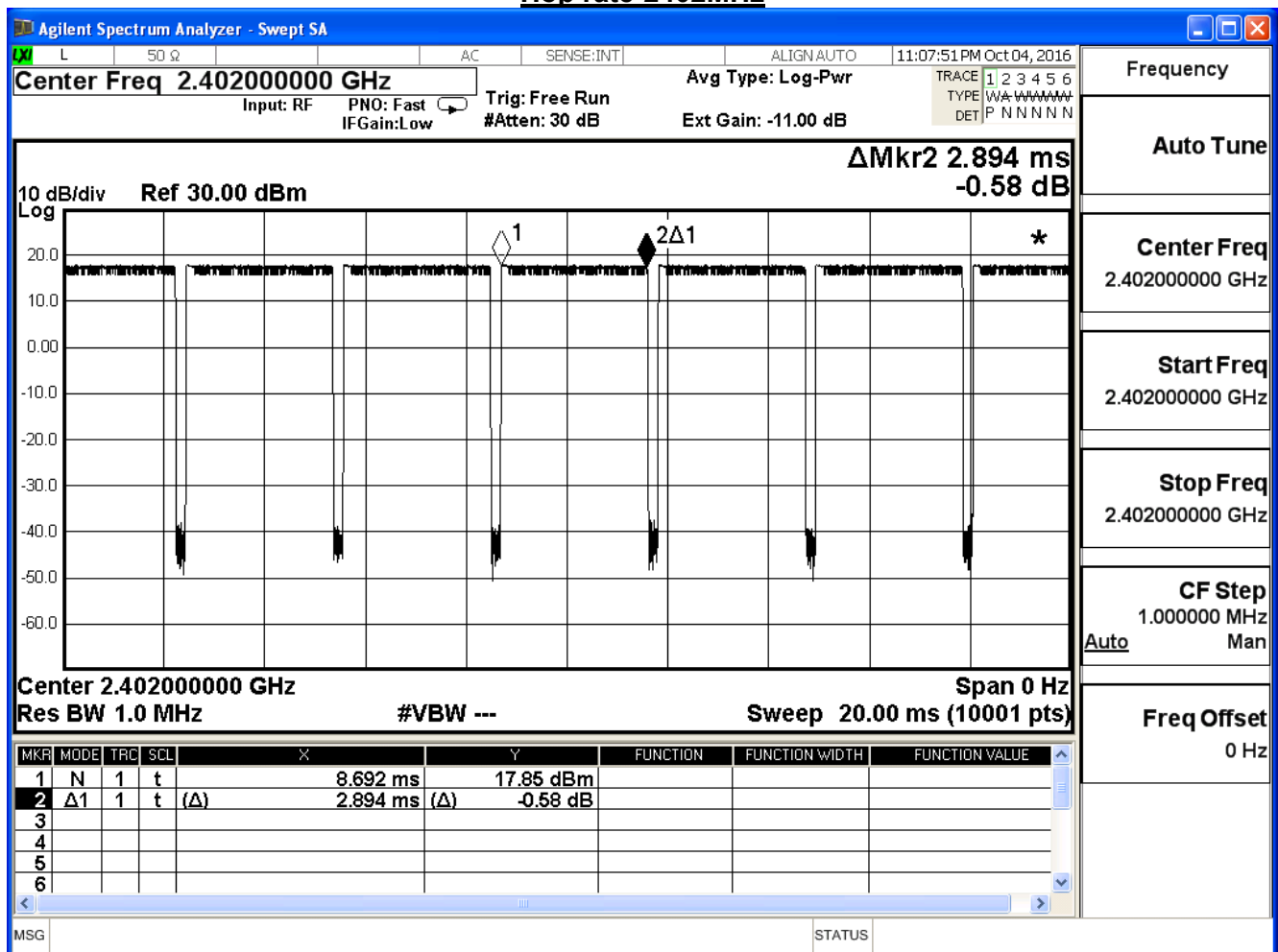
Dwell Time : 0.002900 * (266.67/78) * 31.20 = 0.3093 sec

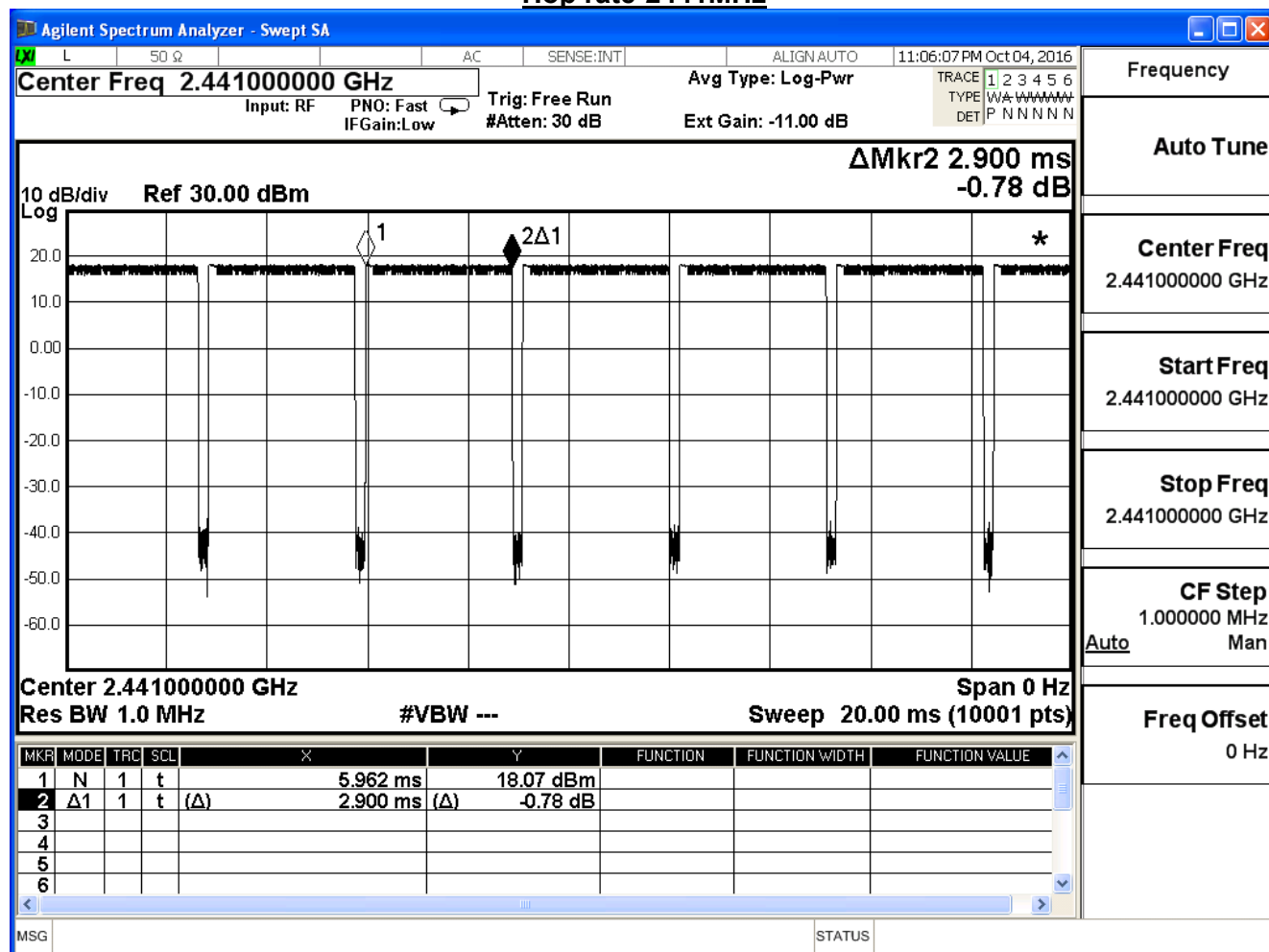
C) 2479MHz Test Time Period: $0.4 \times 78 = 31.20\text{sec}$, Time slot length : 2.902ms = 0.002902 sec

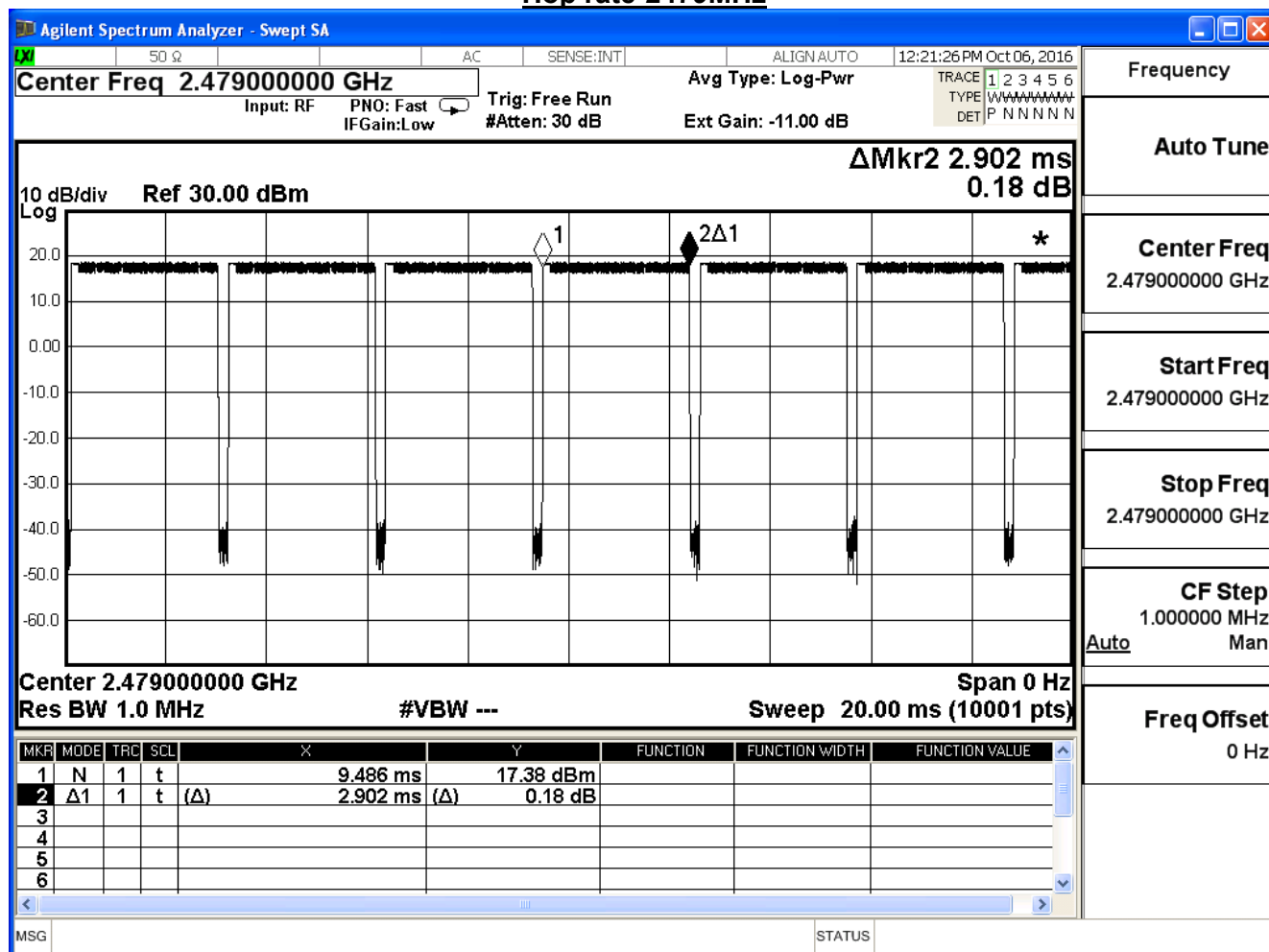
Dwell Time : 0.002902 * (266.67/78) * 31.20 = 0.3095 sec

Test Result: The Average Occupancy Time of Each Highest , Middle and Lowest Channel Is Less Than 0.4sec , And Corresponds to The Standard .

Hop rate-2402MHz



Hop rate-2441MHz

Hop rate-2479MHz

Note: Dwell time = time slot length * hop rate / number of hopping channels * period

Product	TWO WAY RADIO/TRANSCEIVER		
Test Item	Dwell Time		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2016/10/04	Test Site	SR7

8-DPSK, 3DH5

Occupancy Time of Frequency Hopping System

A) 2402MHz Test Time Period: $0.4 \times 78 = 31.20\text{sec}$, Time slot length : 2.888ms = 0.002888 sec

Dwell Time : 0.002888 * (266.67/78) * 31.20 = 0.3081 sec °

B) 2441MHz Test Time Period: $0.4 \times 78 = 31.20\text{sec}$, Time slot length : 2.882ms = 0.002882 sec

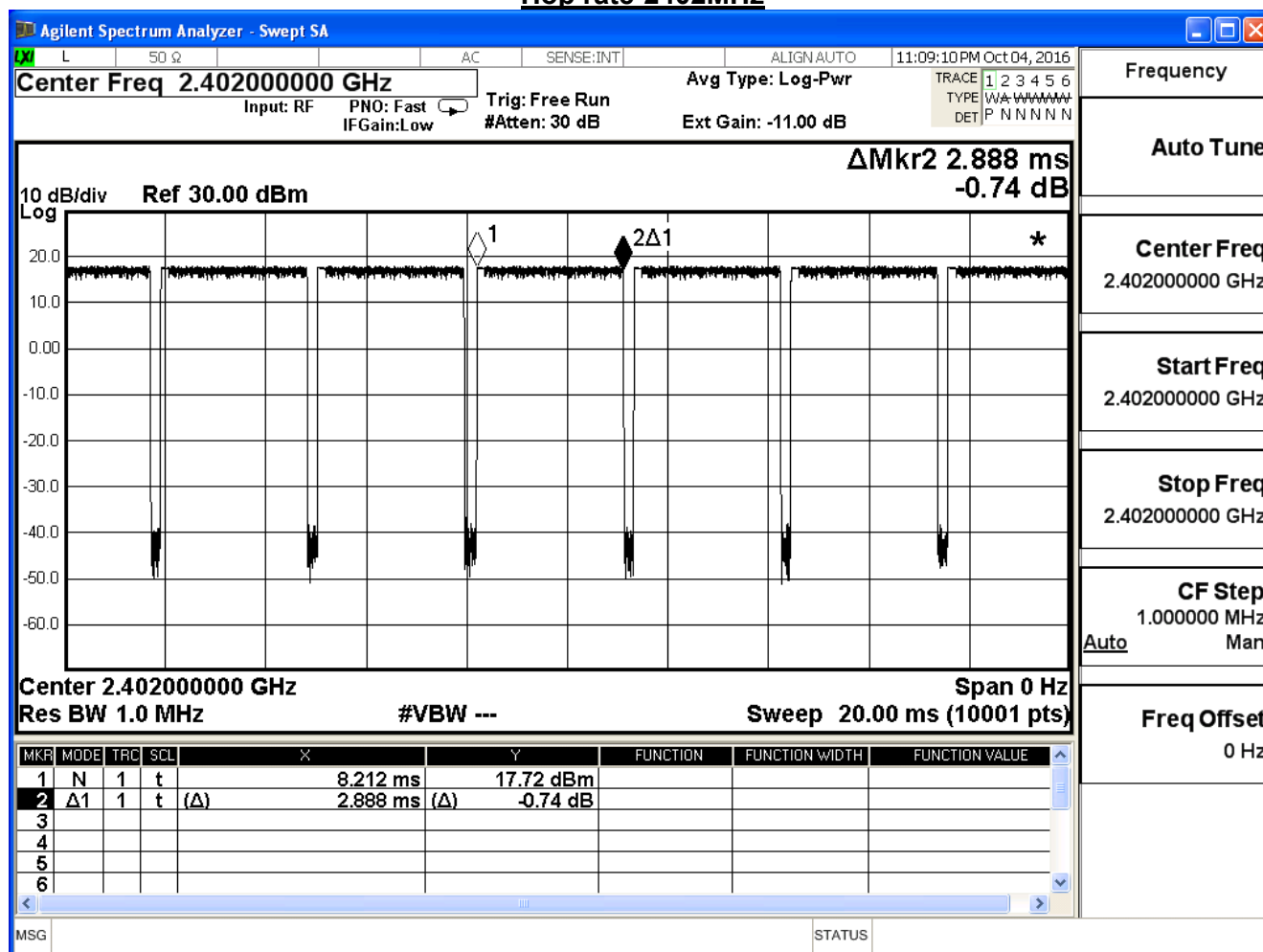
Dwell Time : 0.002882 * (266.67/78) * 31.20 = 0.3074 sec °

C) 2479MHz Test Time Period: $0.4 \times 78 = 31.20\text{sec}$, Time slot length : 2.905ms = 0.002905 sec

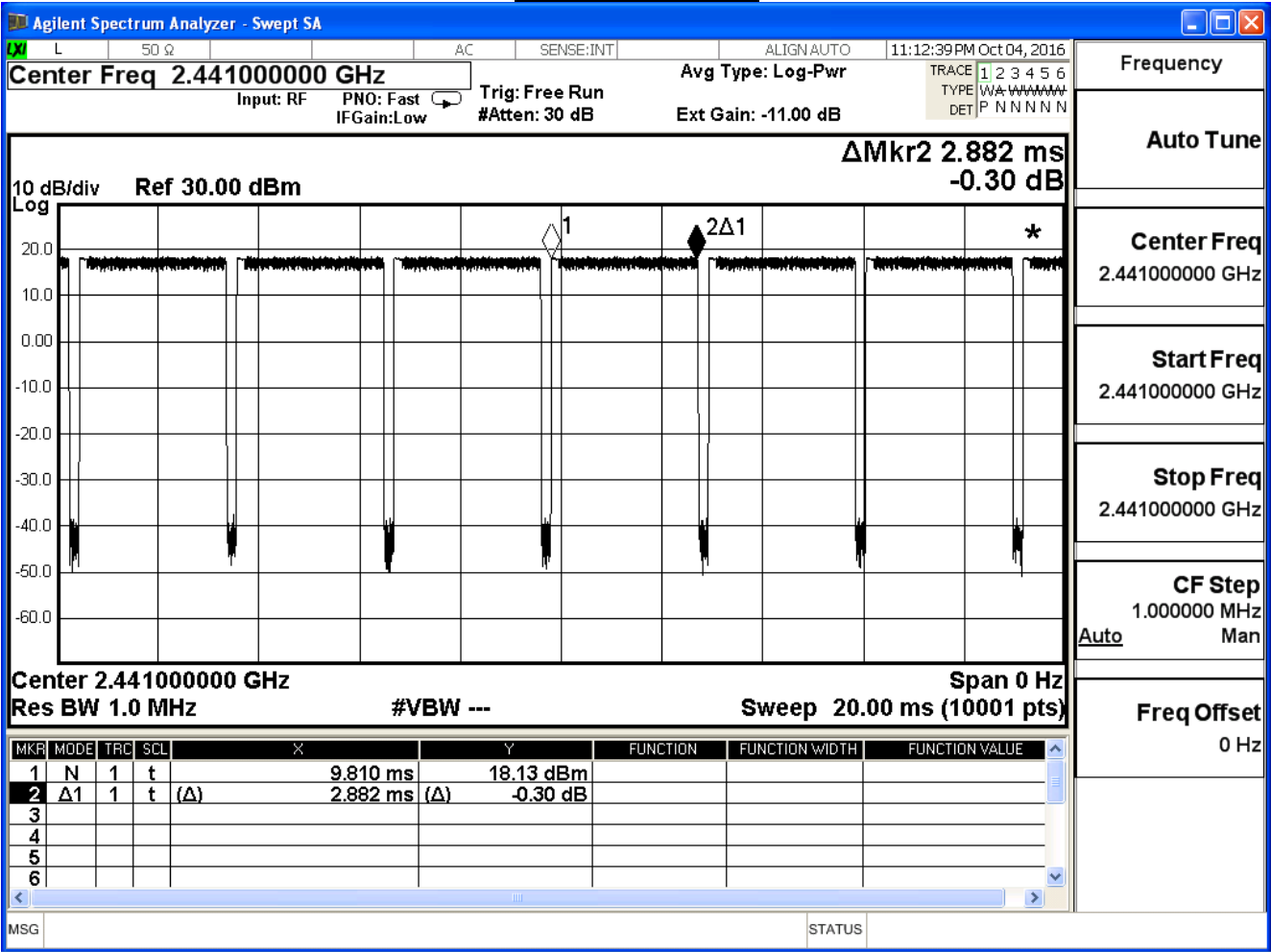
Dwell Time : 0.002905 * (266.67/78) * 31.20 = 0.3099 sec °

Test Result: The Average Occupancy Time of Each Highest , Middle and Lowest Channel Is Less Than 0.4sec , And Corresponds to The Standard °

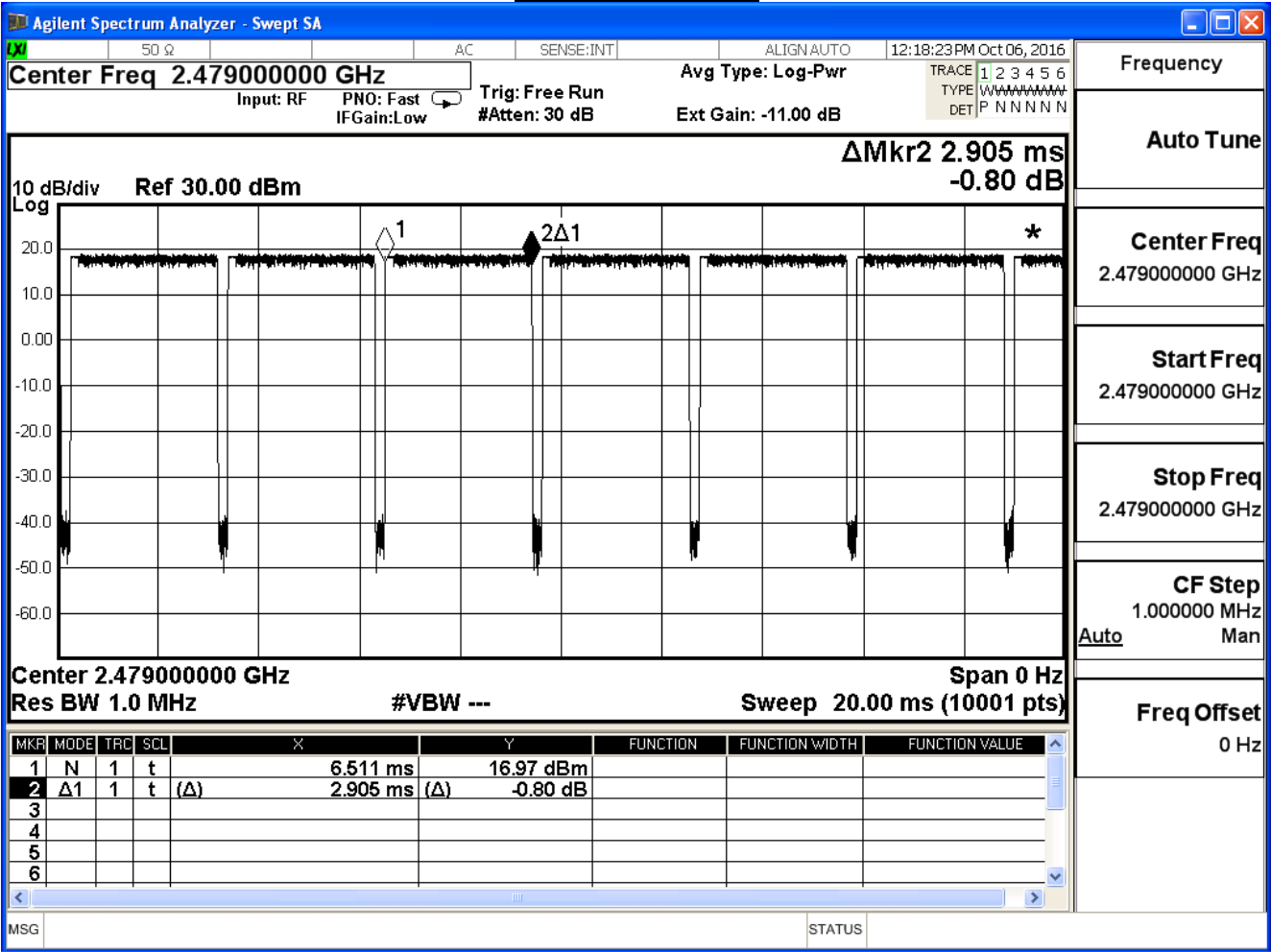
Hop rate-2402MHz



Hop rate-2441MHz



Hop rate-2479MHz



Note: Dwell time = time slot length * hop rate / number of hopping channels * period