

APPLICATION FOR CERTIFICATION

On Behalf of
FUTABA Corporation
Radio Control
Model No. : T4GRS
FCC ID : AZPT4GRS-24G
Brand: Futaba

Prepared for : FUTABA Corporation
1080 Yabutsuka Chosei-son Chosei-gun
Chiba, 299-4395 Japan.

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TEST REPORT CERTIFICATION

Applicant : FUTABA Corporation
Manufacturer : FUTABA Corporation
EUT Description : Radio Control
FCC ID : AZPT4GRS-24G
(A) Model No. : T4GRS
(B) Serial No. : N/A
(C) Brand : Futaba
(D) Power Supply : DC 6V
(E) Test Voltage : DC 6V (Via Battery)

Measurement Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART C, Oct. 2013
AND ANSI C63.4/2003

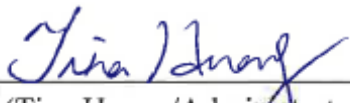
(FCC CFR 47 Part 15C, §15.207 and §15.209 and §15.247)

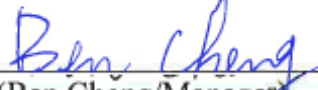
The device described above was tested by AUDIX Technology Corporation to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15 subpart C limits.

The measurement results are contained in this test report and AUDIX Technology Corporation is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the FCC official limits.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX Technology Corporation.

Date of Test : 2014. 10. 13 ~ 12. 26 Date of Report : 2014. 12. 26

Producer : 
(Tina Huang/Administrator)

Signatory : 
(Ben Cheng/Manager)

1. DESCRIPTION OF VERSION

Edition No.	Date of Rev.	Revision Summary	Report No.
0	2014. 12. 26	Original Report.	EM-F140632

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Product	Radio Control	
Model Number	T4GRS	
Serial Number	N/A	
Brand Name	Futaba	
Applicant	FUTABA Corporation 1080 Yabutsuka Chosei-son Chosei-gun Chiba, 299-4395 Japan.	
Manufacturer	FUTABA Corporation 1080 Yabutsuka Chosei-son Chosei-gun Chiba, 299-4395 Japan.	
FCC ID	AZPT4GRS-24G	
Battery	Futaba, M/N: HT5F1700B (6.0VDC, 1700mAh)	
Radio Technology	(1)S-FHSS device (FHSS System) (2)T-FHSS device (FHSS System)	
Fundamental Range	(1)S-FHSS device: 2403.25MHz to 2447.50MHz (2)T-FHSS device: 2407.50MHz to 2467.50MHz	
Frequency Channel	(1)S-FHSS device: 60 Channels (2)T-FHSS device: 31 Channels	
Antenna	1/2λ Di-Pole Antenna Gain: 2.14dBi	
Tested Frequency	(1)S-FHSS device:	
	Channel No.	Frequency
	CH 01	2403.25MHz
	CH 30	2425.00MHz
	CH 60	2447.50MHz
	(2)T-FHSS device:	
	Channel No.	Frequency
	CH 01	2407.50MHz
	CH 15	2435.50MHz
CH 31	2467.50MHz	
Date of Receipt of Sample	2014. 09. 03	
Date of Test	2014. 10. 13 ~ 12. 26	

2.2. Tested Supporting System Details

2.2.1. Support Peripheral Unit

No.	Product	Brand	Model No.	Serial No.	Approval
1.	Notebook PC	DELL	P20G	P20G001	By DoC
2.	USB Jig	Futaba	CIU-2	N/A	N/A
3.	DC Power Supply	TOP WARD	3303A	721773	N/A

2.2.2. Cable Lists

No.	Cable Description Of The Above Support Units
1.	AC Adapter ACBEL, M/N AA90PM111, Power Cord : I/P: Non-Shielded, Detachable, 1.8m O/P: Shielded, Undetachable, 1.8m, Bonded a ferrite core
2.	USB JIG Cable: Non-Shielded, Detachable, 1.1m
3.	DC Power Cord*2: Non-Shielded, Detachable, 0.6m AC Power Cord: Non-Shielded, Undetachable, 1.8m

2.3. Description of Test Facility

Name of Firm : **AUDIX Technology Corporation**
EMC Department
 No. 53-11, Dingfu, Linkou Dist.,
 New Taipei City 244, Taiwan

Test Location & Facility (AC) : **Semi-Anechoic Chamber**
 No. 53-11, Dingfu, Linkou Dist.,
 New Taipei City 244, Taiwan
 May 11, 2012 File on
 Federal Communication Commission
 Registration Number: 90993

NVLAP Lab. Code : 200077-0

TAF Accreditation No : 1724

2.4. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty
Radiation Test (Distance: 3m)	30MHz~300MHz	± 3.64dB
	300MHz~1000MHz	± 4.70dB
	Above 1GHz	± 2.94dB

Remark : Uncertainty = $k_{uc}(y)$

Test Item	Uncertainty
20dB Bandwidth	± 0.2kHz
Carrier Frequency Separation	± 0.2kHz
Time Of Occupancy	± 0.03sec
Maximum peak Output power	± 0.52dB
Emission Limitations	± 0.13dB
Band Edges	± 0.13dB

3. CONDUCTED EMISSION MEASUREMENT

【The EUT only employs DC power for operation, no conductive emission limits are required according to FCC Part 15 Section §15.207】

4. RADIATED EMISSION MEASUREMENT

4.1. Test Equipment

The following test equipment was used during the radiated emission measurement:

4.1.1. For Frequency Range 30MHz~1000MHz (at Semi-Anechoic Chamber)

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A-526	MY53400071	2014. 09. 15	1 Year
		Agilent	N9030A-544	US51350140	2014. 07. 24	1 Year
2.	Test Receiver	R & S	ESCS30	100338	2014. 06. 24	1 Year
3.	Amplifier	HP	8447D	2944A06305	2014. 02. 18	1 Year
4.	Bilog Antenna	CHASE	CBL6112D	33821	2014. 08. 02	1 Year

4.1.2. For Frequency Above 1GHz (at Semi-Anechoic Chamber)

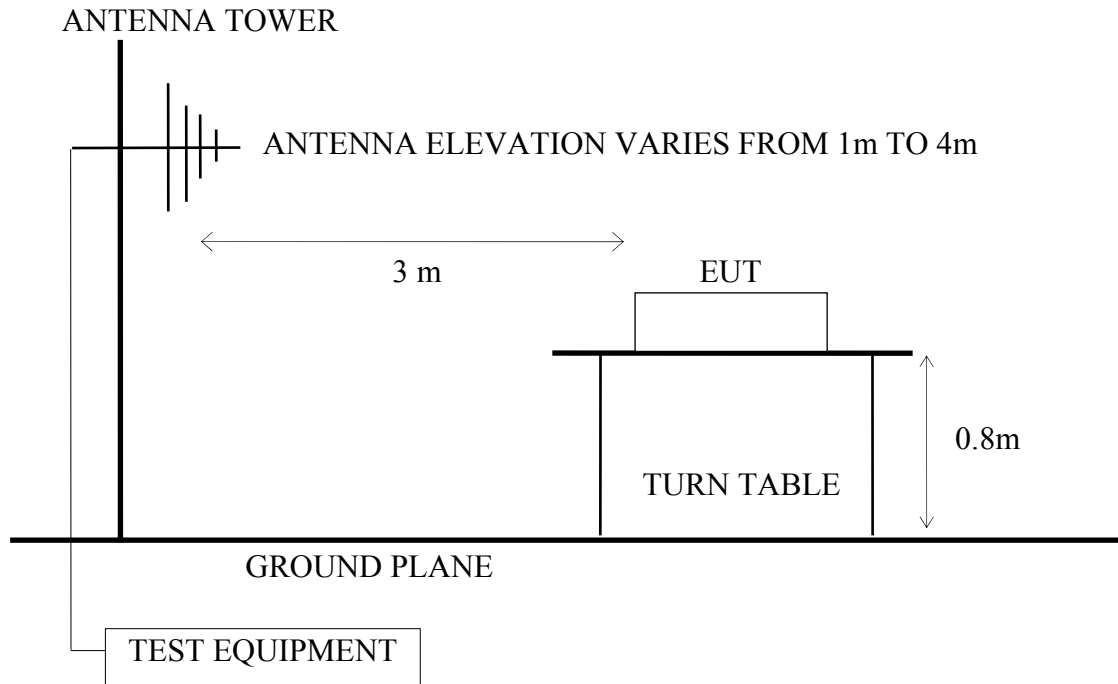
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A-526	MY53400071	2014. 09. 15	1 Year
		Agilent	N9030A-544	US51350140	2014. 07. 24	1 Year
2.	Test Receiver	R & S	ESCS30	100338	2014. 06. 24	1 Year
3.	Amplifier	Agilent	8449B	3008A02676	2014. 02. 21	1 Year
4.	2.4GHz Notch Filter	K&L	7NSL10-244 1.5E130.5-00	1	2014. 06. 12	1 Year
5.	3G High Pass Filter	Microwave Circuits	H3G018G1	484796	2014. 06. 12	1 Year
6.	Horn Antenna	EMCO	3115	9609-4927	2014. 06. 16	1 Year
7.	Horn Antenna	EMCO	3116	2653	2014. 10. 10	1 Year

4.2. Test Setup

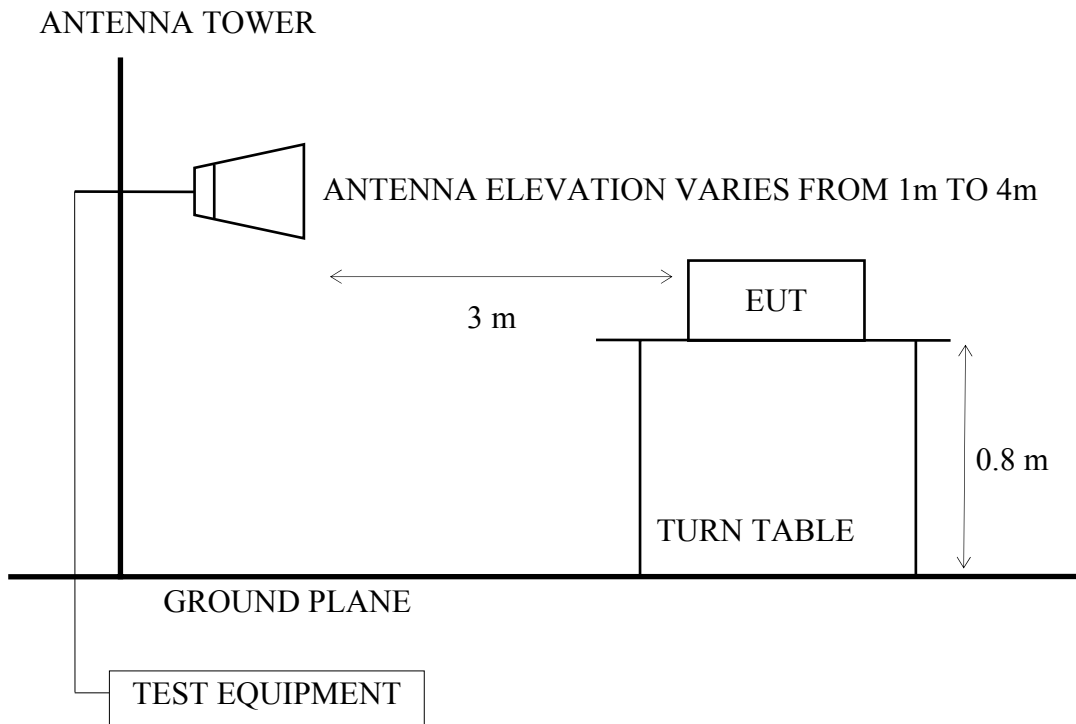
4.2.1. Block Diagram of connection between EUT and simulators

RADIO CONTROL (EUT)

4.2.2. Semi-Anechoic Chamber (3m) Setup Diagram for 30-1000MHz



4.2.3. Semi-Anechoic Chamber (3m) Setup Diagram for above 1GHz



4.3. Radiated Emission Limits (§15.209)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMITS	
		$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0
Above 1000	3	74.0 $\text{dB}\mu\text{V/m}$ (Peak) 54.0 $\text{dB}\mu\text{V/m}$ (Average)	

- Remark :
- (1) Emission level ($\text{dB}\mu\text{V/m}$) = 20 log Emission level ($\mu\text{V/m}$)
 - (2) The tighter limit applies at the edge between two frequency bands.
 - (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) The limits in this table are based on CFR 47 Part 15.205(a)(b) and Part 15.209 (a).
 - (5) The over 1GHz limit, FCC limit is used based on CFR 47 Part 15.35 (b) and Part 15.205(b) & Part 15.209(e) and Part 15.207(c).

4.4. Operating Condition of EUT

- 4.4.1. Set up the EUT (**Radio Control**) as shown on 4.2.
- 4.4.2. To turn on the power of all equipment.
- 4.4.3. The EUT was set the Notebook PC using test program “Futaba Term”.
(Note: The Notebook PC is not EUT’s accessory, It’s only used to setup EUT.)
- 4.4.4. The EUT was set to continuously transmit signals at 2403.25MHz, 2425.00MHz and 2447.50MHz at S-FHSS modulation during testing.
- 4.4.5. The EUT was set to continuously transmit signals at 2407.50MHz, 2435.50MHz and 2467.50MHz at T-FHSS modulation during testing.

4.5. Test Procedure

The EUT and its simulators were placed on a turn table which was 0.8 meter above the ground. The turn table rotated 360 degrees to determine the position of the maximum emission level. EUT was set 3 meters away from the receiving antenna which was mounted on an antenna tower. The antenna could be moved up and down between 1 to 4 meters to find out the maximum emission level. Broadband antennas such as calibrated biconical and log-periodical antenna or horn antenna were used as a receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to FCC ANSI C63.4-2003 regulation.

The bandwidth of the R&S Test Receiver ESCS30 was set at 120kHz. (For 30MHz to 1000MHz)

The resolution bandwidth and video bandwidth of test spectrum analyzer is 1MHz for peak detection (PK) at frequency above 1GHz.

The resolution bandwidth of test spectrum analyzer is 1MHz and the video bandwidth is 10Hz for average detection (AV) at frequency above 1GHz.

The frequency range from 30MHz to 25GHz (Up to 10th harmonics from fundamental frequency) was checked. 30MHz to 1000MHz was measured with Quasi-Peak detector.

Pursuant to ANSI 63.4: 4.2, peak detector is an alternate option for frequency from 30MHz to 1000MHz.

Above 1GHz was measured with peak and average detector. For frequency from 7500MHz to 25000MHz, we checked it in 1 meter distance and with a shorter cable 2 meter instead of original's. There is no signal exist.

Pursuant to ANSI C63.4 8.3.1.2, when peak value complies with the average limit, we didn't perform measurement in average detector.

4.6. Radiated Emission Measurement Results

PASSED.

(All emissions not reported below are too low against the prescribed limits.)

EUT : Radio Control M/N : T4GRS

Test Date : 2014. 10. 17 Temperature : 23°C Humidity : 42%

Test Date : 2014. 12. 24 Temperature : 22°C Humidity : 47%

For Frequency Range 30MHz~1000MHz:

The EUT emitted the fundamental frequency with data code at the stand, side and lying conditions.

The EUT select **worst position “stand”** and with following test modes was performed during this section testing and all the test results are listed in section 4.6.1.

※Radio Technology: S-FHSS Modulation※

Mode	Channel No.	Frequency	Test Mode	Position	Reference Test Data	
					Horizontal	Vertical
1.	CH 01	2403.25MHz	Transmit	Stand	# 2	# 1
2.	CH 30	2425.00MHz		Stand	# 2	# 1
3.	CH 60	2447.50MHz		Stand	# 2	# 1

Note 1: Above all final readings were measured with Peak detector.

※Radio Technology: T-FHSS Modulation※

Mode	Channel No.	Frequency	Test Mode	Position	Reference Test Data	
					Horizontal	Vertical
1.	CH 01	2407.50MHz	Transmit	Stand	# 1	# 2
2.	CH 15	2435.50MHz		Stand	# 1	# 2
3.	CH 31	2467.50MHz		Stand	# 1	# 2

Note 1: Above all final readings were measured with Peak detector.

For Frequency above 1GHz:

The EUT select **worst position “stand ”** and with following test modes was performed during this section testing and all the test results are listed in section 4.6.2.

※Radio Technology: S-FHSS Modulation※

Mode	Chnnel	Frequency	Test Mode	Position	Test Frequency Range
1.	CH 01	2403.25MHz	Transmit	Stand	1000-2680MHz
2.					2680-4000MHz
3.					4000-5500MHz*
4.					5500-7500MHz*
5.					7500-18000MHz
6.					18000-25000MHz
7.	CH 30	2425.00MHz	Transmit	Stand	1000-2680MHz
8.					2680-4000MHz
9.					4000-5500MHz*
10.					5500-7500MHz*
11.					7500-18000MHz
12.					18000-25000MHz
13.	CH 60	2447.50MHz	Transmit	Stand	1000-2680MHz
14.					2680-4000MHz
15.					4000-5500MHz*
16.					5500-7500MHz
17.					7500-18000MHz
18.					18000-25000MHz

Note: 1. Above all final readings were measured with Peak and Average detector.

2. The emissions (up to 25GHz) not reported are too low to be measured.

3.”*” means there is spurious emission falling the frequency band and be measures.

※Radio Technology: T-FHSS Modulation※

Mode	Chnnel	Frequency	Test Mode	Position	Test Frequency Range
1.	CH 01	2407.500MH	Transmit	Stand	1000-2680MHz
2.					2680-4000MHz
3.					4000-5500MHz*
4.					5500-7500MHz*
5.					7500-18000MHz
6.					18000-25000MHz
7.	CH 15	2435.500MHz	Transmit	Stand	1000-2680MHz
8.					2680-4000MHz
9.					4000-5500MHz*
10.					5500-7500MHz*
11.					7500-18000MHz
12.					18000-25000MHz
13.	CH 31	2467.500MHz	Transmit	Stand	1000-2680MHz
14.					2680-4000MHz
15.					4000-5500MHz*
16.					5500-7500MHz
17.					7500-18000MHz
18.					18000-25000MHz

Note: 1. Above all final readings were measured with Peak and Average detector.

2. The emissions (up to 25GHz) not reported are too low to be measured.

3.”*” means there is spurious emission falling the frequency band and be measures.

For Restricted Bands:

The EUT was tested in restricted bands and all the test results are listed in section 4.6.3. (The restricted bands defined in part 15.205(a))

※Radio Technology: S-FHSS Modulation※

Mode	Channel No.	Frequency	Test Mode	Reference Test Data	
				Horizontal	Vertical
1.	CH 01	2403.25MHz	Transmit	# 2	# 1
2.	CH 60	2447.50MHz	Transmit	# 4	# 3

※Radio Technology: T-FHSS Modulation※

Mode	Channel No.	Frequency	Test Mode	Reference Test Data	
				Horizontal	Vertical
1.	CH 01	2407.500MHz	Transmit	# 2	# 1
2.	CH 31	2467.500MHz	Transmit	# 4	# 3

4.6.1. Frequency Range 30-1000MHz

※Radio Technology: S-FHSS Modulation※

Frequency: 2403.25MHz

Site no.	: Audix NO.1 Chamber	Data no.	: 2
Dis. / Ant.	: 3m CBL6112D 33821	Ant. pol.	: HORIZONTAL
Limit	: 30M-1G		
Env. / Ins.	: 22°C/47% N9010A	Engineer	: Johnny_Hsueh
EUT	: T4GRS		
Power Rating	: DC 6V		
Test Mode	: Tx2403.25MHz(S-FHSS)		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	224.97	10.93	4.17	21.31	36.41	46.00	9.59	Peak
2	359.80	14.64	5.28	17.56	37.48	46.00	8.52	Peak
3	497.54	16.93	6.43	11.62	34.98	46.00	11.02	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 2. The emission levels that are 20dB below the official limit are not reported.

Site no.	: Audix NO.1 Chamber	Data no.	: 1
Dis. / Ant.	: 3m CBL6112D 33821	Ant. pol.	: VERTICAL
Limit	: 30M-1G		
Env. / Ins.	: 22°C/47% N9010A	Engineer	: Johnny_Hsueh
EUT	: T4GRS		
Power Rating	: DC 6V		
Test Mode	: Tx2403.25MHz(S-FHSS)		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	150.28	10.51	3.61	25.73	39.85	43.50	3.65	Peak
2	450.98	16.31	6.08	14.19	36.58	46.00	9.42	Peak
3	497.54	16.93	6.43	18.71	42.07	46.00	3.93	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency: 2425.00MHz

Site no. : Audix NO.1 Chamber
 Dis. / Ant. : 3m CBL6112D 33821
 Limit : 30M-1G
 Env. / Ins. : 22°C/47% N9010A
 EUT : T4GRS
 Power Rating : DC 6V
 Test Mode : Tx2425MHz(S-FHSS)

Data no. : 2
 Ant. pol. : HORIZONTAL
 Engineer : Johnny_Hsueh

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	71.71	6.79	2.91	21.85	31.55	40.00	8.45	Peak
2	224.97	10.93	4.17	22.14	37.24	46.00	8.76	Peak
3	359.80	14.64	5.28	21.88	41.80	46.00	4.20	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : Audix NO.1 Chamber
 Dis. / Ant. : 3m CBL6112D 33821
 Limit : 30M-1G
 Env. / Ins. : 22°C/47% N9010A
 EUT : T4GRS
 Power Rating : DC 6V
 Test Mode : Tx2425MHz(S-FHSS)

Data no. : 1
 Ant. pol. : VERTICAL
 Engineer : Johnny_Hsueh

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	104.69	11.25	3.26	21.66	36.17	43.50	7.33	Peak
2	153.19	10.33	3.63	23.03	36.99	43.50	6.51	Peak
3	498.51	16.93	6.43	19.81	43.17	46.00	2.83	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency: 2447.50MHz

Site no. : Audix NO.1 Chamber
 Dis. / Ant. : 3m CBL6112D 33821
 Limit : 30M-1G
 Env. / Ins. : 22°C/47% N9010A
 EUT : T4GRS
 Power Rating : DC 6V
 Test Mode : Tx2447.5MHz(S-FHSS)

Data no. : 2
 Ant. pol. : H HORIZONTAL
 Engineer : Johnny_Hsueh

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	225.94	10.98	4.17	22.28	37.43	46.00	8.57	Peak
2	359.80	14.64	5.28	18.79	38.71	46.00	7.29	Peak
3	497.54	16.93	6.43	11.72	35.08	46.00	10.92	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : Audix NO.1 Chamber
 Dis. / Ant. : 3m CBL6112D 33821
 Limit : 30M-1G
 Env. / Ins. : 22°C/47% N9010A
 EUT : T4GRS
 Power Rating : DC 6V
 Test Mode : Tx2447.5MHz(S-FHSS)

Data no. : 1
 Ant. pol. : VERTICAL
 Engineer : Johnny_Hsueh

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	151.25	10.47	3.61	25.66	39.74	43.50	3.76	Peak
2	232.73	11.37	4.22	22.49	38.08	46.00	7.92	Peak
3	498.51	16.93	6.43	18.19	41.55	46.00	4.45	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 2. The emission levels that are 20dB below the official limit are not reported.

※Radio Technology: T-FHSS Modulation※

Frequency: 2407.50MHz

Site no.	: Audix NO.1 Chamber	Data no.	: 1
Dis. / Ant.	: 3m CBL6112D 33821	Ant. pol.	: HORIZONTAL
Limit	: 30W-1G		
Env. / Ins.	: 23°C/42% N9030A(140)	Engineer	: Ken_chen
EUT	: T4GRS		
Power Rating	: DC 6V		
Test Mode	: T×2407.5(T-FHSS)		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	54.25	7.43	2.68	6.85	16.96	40.00	23.04	Peak
2	100.81	10.98	3.23	6.12	20.33	43.50	23.17	Peak
3	186.17	9.17	3.88	3.74	16.79	43.50	26.71	Peak
4	415.09	15.78	5.78	2.71	24.27	46.00	21.73	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no.	: Audix NO.1 Chamber	Data no.	: 2
Dis. / Ant.	: 3m CBL6112D 33821	Ant. pol.	: VERTICAL
Limit	: 30W-1G		
Env. / Ins.	: 23°C/42% N9030A(140)	Engineer	: Ken_chen
EUT	: T4GRS		
Power Rating	: DC 6V		
Test Mode	: T×2407.5(T-FHSS)		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	182.29	9.14	3.85	7.97	20.96	43.50	22.54	Peak
2	206.54	9.71	4.03	8.02	21.76	43.50	21.74	Peak
3	415.09	15.78	5.78	4.10	25.66	46.00	20.34	Peak
4	718.70	19.00	6.81	1.98	27.79	46.00	18.21	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency: 2435.50MHz

Site no.	: Audix NO.1 Chamber	Data no.	: 1
Dis. / Ant.	: 3m CBL6112D 33821	Ant. pol.	: HORIZONTAL
Limit	: 30W-1G		
Env. / Ins.	: 23°C/42% N9030A(140)	Engineer	: Ken_chen
EUT	: T4GRS		
Power Rating	: DC 6V		
Test Mode	: Tx2435.5(T-FHSS)		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	101.78	11.03	3.23	5.14	19.40	43.50	24.10	Peak
2	290.93	13.00	4.60	0.84	18.44	46.00	27.56	Peak
3	415.09	15.78	5.78	3.06	24.62	46.00	21.38	Peak
4	830.25	20.20	7.28	1.33	28.81	46.00	17.19	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no.	: Audix NO.1 Chamber	Data no.	: 2
Dis. / Ant.	: 3m CBL6112D 33821	Ant. pol.	: VERTICAL
Limit	: 30W-1G		
Env. / Ins.	: 23°C/42% N9030A(140)	Engineer	: Ken_chen
EUT	: T4GRS		
Power Rating	: DC 6V		
Test Mode	: Tx2435.5(T-FHSS)		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	218.18	10.49	4.12	6.77	21.38	46.00	24.62	Peak
2	363.68	14.76	5.33	3.80	23.89	46.00	22.11	Peak
3	415.09	15.78	5.78	3.04	24.60	46.00	21.40	Peak
4	970.90	20.95	7.96	1.94	30.85	54.00	23.15	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency: 2467.50MHz

Site no.	: Audix NO.1 Chamber	Data no.	: 1
Dis. / Ant.	: 3m CBL6112D 33821	Ant. pol.	: HORIZONTAL
Limit	: 30M-1G		
Env. / Ins.	: 23°C/42% N9030A(140)	Engineer	: Ken_chen
EUT	: T4GRS		
Power Rating	: DC 6V		
Test Mode	: Tx2467.5(T-FHSS)		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	100.81	10.98	3.23	4.92	19.13	43.50	24.37	Peak
2	338.46	14.14	5.07	1.45	20.66	46.00	25.34	Peak
3	415.09	15.78	5.78	2.21	23.77	46.00	22.23	Peak
4	720.64	19.04	6.82	0.35	26.21	46.00	19.79	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no.	: Audix NO.1 Chamber	Data no.	: 2
Dis. / Ant.	: 3m CBL6112D 33821	Ant. pol.	: VERTICAL
Limit	: 30M-1G		
Env. / Ins.	: 23°C/42% N9030A(140)	Engineer	: Ken_chen
EUT	: T4GRS		
Power Rating	: DC 6V		
Test Mode	: Tx2467.5(T-FHSS)		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	142.52	11.07	3.54	5.42	20.03	43.50	23.47	Peak
2	207.51	9.81	4.04	9.41	23.26	43.50	20.24	Peak
3	363.68	14.76	5.33	3.69	23.78	46.00	22.22	Peak
4	444.19	16.22	6.03	4.95	27.20	46.00	18.80	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

4.6.2. Above 1GHz Frequency Range Measurement Results

✽Radio Technology: S-FHSS Modulation✽

Date of Test : 2014. 12. 24 Temperature : 22°C

EUT : Radio Control Humidity : 47%

Test Mode : Transmit, Channel No.: 01, Frequency: 2403.25MHz

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Horizontal (dBμV)	Emission Level Horizontal (dBμV/m)	Limits (dBμV/m)	Margin (dB)
4807.00	32.76	8.09	25.67	66.52	74.00	7.48
7210.00	35.60	9.96	13.13	58.69	74.00	15.31

Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Horizontal (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4807.00	66.53	-30.173	36.357	54.00	17.643
7210.00	58.69	-30.173	28.517	54.00	25.483

Remarks: 1. Duty Cycle Correction Factor=20log (dwell time/100ms)
 =20log (3.1ms/100ms) = -30.173
 2. Average value=Peak value+ Duty Cycle Correction Factor

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Vertical (dBμV)	Emission Level Vertical (dBμV/m)	Limits (dBμV/m)	Margin (dB)
4807.00	32.76	8.09	21.41	62.26	74.00	11.74

Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Vertical (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4807.00	62.26	-30.173	32.087	54.00	21.913

Remarks: 1. Duty Cycle Correction Factor=20log (dwell time/100ms)
 =20log (3.1ms/100ms) = -30.173
 2. Average value=Peak value+ Duty Cycle Correction Factor

Date of Test : 2014. 12. 24 Temperature : 22°C

EUT : Radio Control Humidity : 47%

Test Mode : Transmit, Channel No.: 30, Frequency: 2425.00MHz

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Horizontal (dBμV)	Emission Level Horizontal (dBμV/m)	Limits (dBμV/m)	Margin (dB)
4850.50	32.83	8.14	32.09	73.06	74.00	0.94
7274.00	35.80	10.00	15.88	61.68	74.00	12.32

Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Horizontal (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4850.50	73.06	-30.458	42.602	54.00	11.398
7274.00	61.68	-30.458	31.222	54.00	22.778

Remarks: 1. Duty Cycle Correction Factor=20log (dwell time/100ms)
=20log (3ms/100ms) = -30.458
2. Average value=Peak value+ Duty Cycle Correction Factor

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Vertical (dBμV)	Emission Level Vertical (dBμV/m)	Limits (dBμV/m)	Margin (dB)
4850.50	32.83	8.14	30.04	71.01	74.00	2.99
7274.00	35.80	10.00	12.42	58.22	74.00	15.78

Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Vertical (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4850.50	71.01	-30.458	40.552	54.00	13.448
7274.00	58.22	-30.458	27.762	54.00	26.238

Remarks: 1. Duty Cycle Correction Factor=20log (dwell time/100ms)
=20log (3ms/100ms) = -30.458
2. Average value=Peak value+ Duty Cycle Correction Factor

Date of Test : 2014. 12. 24 Temperature : 22°C

EUT : Radio Control Humidity : 47%

Test Mode : Transmit, Channel No.: 60, Frequency: 2447.50MHz

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Horizontal (dBμV)	Emission Level Horizontal (dBμV/m)	Limits (dBμV/m)	Margin (dB)
4895.50	32.93	8.18	31.61	72.72	74.00	1.28

Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Horizontal (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4895.50	72.72	-30.173	42.547	54.00	11.453

Remarks: 1. Duty Cycle Correction Factor=20log (dwell time/100ms)
 =20log (3.1ms/100ms) = -30.173
 2. Average value=Peak value+ Duty Cycle Correction Factor

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Vertical (dBμV)	Emission Level Vertical (dBμV/m)	Limits (dBμV/m)	Margin (dB)
4895.50	32.93	8.18	31.54	72.65	74.00	1.35

Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Vertical (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4895.50	72.65	-30.173	42.477	54.00	11.523

Remarks: 1. Duty Cycle Correction Factor=20log (dwell time/100ms)
 =20log (3.1ms/100ms) = -30.173
 2. Average value=Peak value+ Duty Cycle Correction Factor

※Radio Technology: T-FHSS Modulation※

Date of Test : 2014. 12. 26 Temperature : 22°C

EUT : Radio Control Humidity : 28%

Test Mode : Transmit, Channel No.: 01, Frequency: 2407.50MHz

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Horizontal (dBμV)	Emission Level Horizontal (dBμV/m)	Limits (dBμV/m)	Margin (dB)
4816.00	32.78	8.10	32.37	73.25	74.00	0.75
7224.00	35.65	9.98	16.96	62.59	74.00	11.41

Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Horizontal (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4816.00	73.25	-42.537	30.713	54.00	23.287
7224.00	62.59	-42.537	20.053	54.00	33.947

Remarks: 1. Duty Cycle Correction Factor=20log (dwell time/60.264ms)
=20log (0.45ms/60.264ms) = -42.537
2. Average value=Peak value+ Duty Cycle Correction Factor

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Vertical (dBμV)	Emission Level Vertical (dBμV/m)	Limits (dBμV/m)	Margin (dB)
4816.00	32.78	8.10	29.31	70.19	74.00	3.81
7224.00	35.65	9.98	12.35	57.98	74.00	16.02

Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Vertical (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4816.00	70.19	-42.537	27.653	54.00	26.347
7224.00	57.98	-42.537	15.443	54.00	38.557

Remarks: 1. Duty Cycle Correction Factor=20log (dwell time/60.264ms)
=20log (0.45ms/60.264ms) = -42.537
2. Average value=Peak value+ Duty Cycle Correction Factor

Date of Test : 2014. 12. 26 Temperature : 22°C

EUT : Radio Control Humidity : 28%

Test Mode : Transmit, Channel No.: 15, Frequency: 2435.50MHz

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Horizontal (dBμV)	Emission Level Horizontal (dBμV/m)	Limits (dBμV/m)	Margin (dB)
4871.50	32.88	8.17	30.57	71.62	74.00	2.38
7306.00	35.85	10.03	8.47	54.35	74.00	19.65

Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Horizontal (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4871.50	71.62	-42.537	29.083	54.00	24.917
7306.00	54.35	-42.537	11.813	54.00	42.187

Remarks: 1. Duty Cycle Correction Factor=20log (dwell time/60.264ms)
 =20log (0.45ms/60.264ms) = -42.537
 2. Average value=Peak value+ Duty Cycle Correction Factor

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Vertical (dBμV)	Emission Level Vertical (dBμV/m)	Limits (dBμV/m)	Margin (dB)
4871.50	32.88	8.17	27.69	68.74	74.00	5.26

Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Vertical (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4871.50	68.74	-42.537	26.203	54.00	27.797

Remarks: 1. Duty Cycle Correction Factor=20log (dwell time/60.264ms)
 =20log (0.45ms/60.264ms) = -42.537
 2. Average value=Peak value+ Duty Cycle Correction Factor

Date of Test : 2014. 12. 26 Temperature : 22°C

EUT : Radio Control Humidity : 28%

Test Mode : Transmit, Channel No.: 31, Frequency: 2467.50MHz

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Horizontal (dBμV)	Emission Level Horizontal (dBμV/m)	Limits (dBμV/m)	Margin (dB)
4934.50	32.98	8.23	25.79	67.00	74.00	7.00

Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Horizontal (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4934.50	67.00	-42.537	24.463	54.00	29.537

Remarks: 1. Duty Cycle Correction Factor=20log (dwell time/60.264ms)
 =20log (0.45ms/60.264ms) = -42.537
 2. Average value=Peak value+ Duty Cycle Correction Factor

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Vertical (dBμV)	Emission Level Vertical (dBμV/m)	Limits (dBμV/m)	Margin (dB)
4934.50	32.98	8.23	23.56	64.77	74.00	9.23

Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Vertical (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4934.50	64.77	-42.537	22.233	54.00	31.767

Remarks: 1. Duty Cycle Correction Factor=20log (dwell time/60.264ms)
 =20log (0.45ms/60.264ms) = -42.537
 2. Average value=Peak value+ Duty Cycle Correction Factor

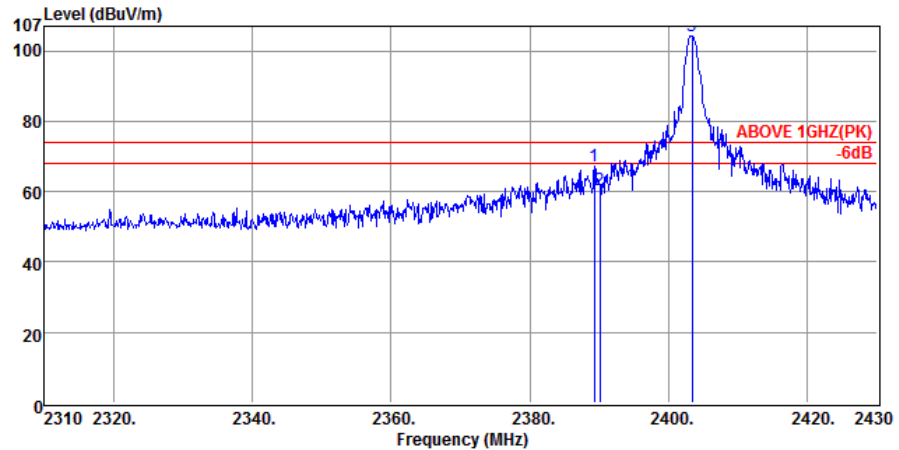
4.6.3. Restricted Bands Measurement Results

※Radio Technology: S-FHSS Modulation※

Date of Test : 2014. 12. 24 Temperature : 22°C

EUT : Radio Control Humidity : 47%

Test Mode : Transmit, Channel No.: 01, Frequency: 2403.25MHz



Site no. : Audix NO.1 Chamber Data no. : 2
 Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
 Limit : ABOVE 1GHZ(PK)
 Env. / Ins. : 22°C/47% N9010A Engineer : Johnny_Hsueh
 EUT : T4GRS
 Power Rating : DC 6W
 Test Mode : Tx2403.25MHz(S-FHSS)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB μV)	Emission Level (dB μV/m)	Limits (dB μV/m)	Margin (dB)	Remark
1	2389.32	28.20	5.24	33.95	67.39	74.00	6.61	Peak
2	2390.04	28.20	5.24	26.96	60.40	74.00	13.60	Peak
@ 3	2403.36	28.21	5.26	70.85	104.32	74.00	-30.32	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 2. The emission levels that are 20dB below the official limit are not reported.
 3. '@' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

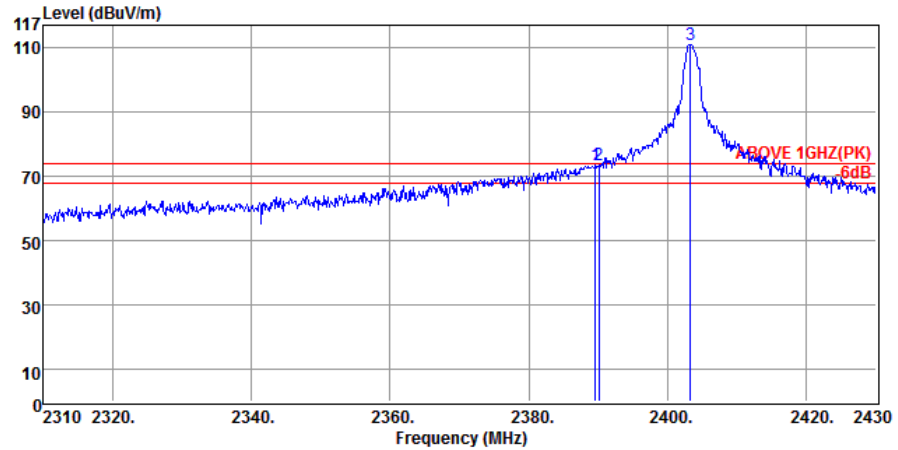
Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Vertical (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2389.32	67.39	-30.173	37.217	54.00	16.783
2390.04	60.40	-30.173	30.227	54.00	23.773

Remarks: 1. Duty Cycle Correction Factor=20log (dwell time/100ms) = 20log (3.1ms/100ms) = -30.173
 2. Average value=Peak value+ Duty Cycle Correction Factor
 3. Low frequency section (spurious in the restricted band 2420-2530MHz).

Date of Test : 2014. 12. 24 Temperature : 22°C

EUT : Radio Control Humidity : 47%

Test Mode : Transmit, Channel No.: 01, Frequency: 2403.25MHz



Site no. : Audix NO.1 Chamber Data no. : 1
 Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
 Limit : ABOVE 1GHZ(PK)
 Env. / Ins. : 22°C/47% N9010A Engineer : Johnny_Hsueh
 EUT : T4GRS
 Power Rating : DC 6V
 Test Mode : Tx2403.25MHz(S-FHSS)

	Freq. (MHz)	Ant. Cable Factor (dB/m)	Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	2389.56	28.20	5.24	39.92	73.36	74.00	0.64	Peak
2	2390.04	28.20	5.24	39.98	73.42	74.00	0.58	Peak
@ 3	2403.24	28.21	5.26	77.62	111.09	74.00	-37.09	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 2. The emission levels that are 20dB below the official limit are not reported.
 3. '@' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

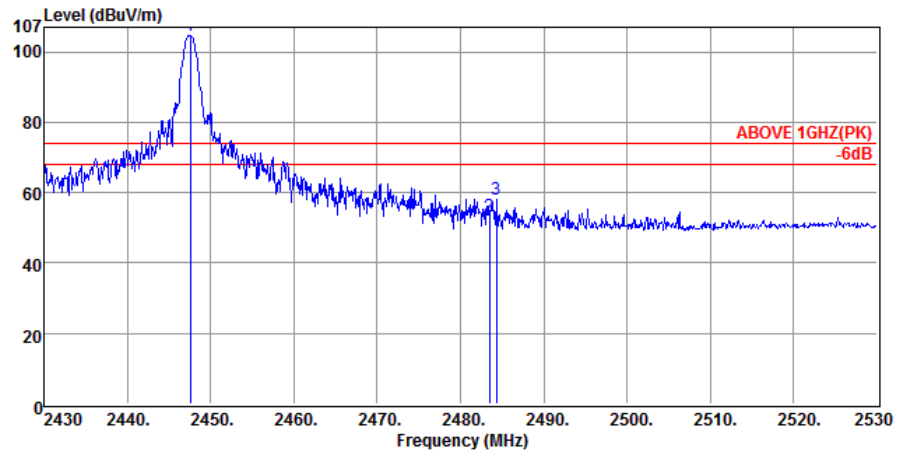
Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Vertical (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
2389.56	73.36	-30.173	43.187	54.00	10.813
2390.04	73.42	-30.173	43.247	54.00	10.753

Remarks: 1. Duty Cycle Correction Factor=20log (dwell time/100ms) = 20log (3.1ms/100ms) = -30.173
 2. Average value=Peak value+ Duty Cycle Correction Factor
 3. Low frequency section (spurious in the restricted band 2420-2530MHz).

Date of Test : 2014. 12. 24 Temperature : 22°C

EUT : Radio Control Humidity : 47%

Test Mode : Transmit, Channel No.: 60, Frequency: 2447.50MHz



Site no. : Audix NO.1 Chamber Data no. : 4
 Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
 Limit : ABOVE 1GHZ(PK)
 Env. / Ins. : 22°C/47% N9010A Engineer : Johnny_Hsueh
 EUT : T4GRS
 Power Rating : DC 6V
 Test Mode : Tx2447.5MHz(S-FHSS)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
@ 1	2447.60	28.25	5.32	71.05	104.62	74.00	-30.62	Peak
2	2483.50	28.29	5.37	19.77	53.43	74.00	20.57	Peak
3	2484.30	28.29	5.37	24.57	58.23	74.00	15.77	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 2. The emission levels that are 20dB below the official limit are not reported.
 3. '@' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

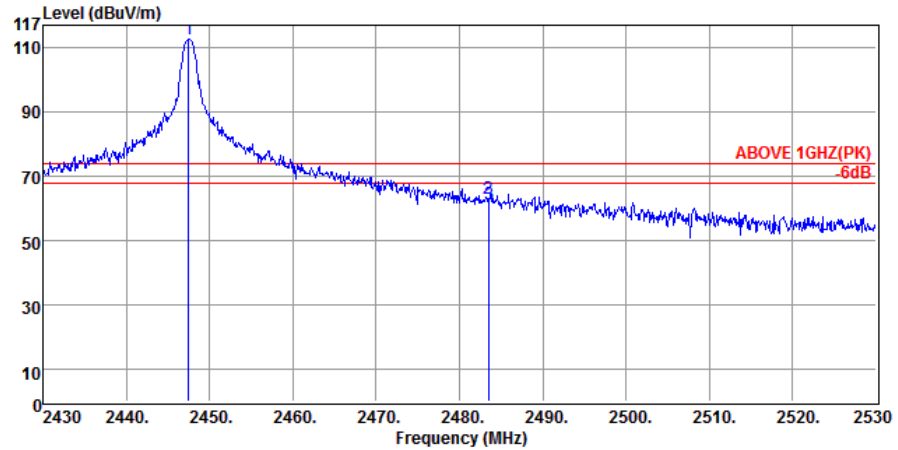
Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Vertical (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2483.50	53.43	-30.173	23.257	54.00	30.743
2484.30	58.23	-30.173	28.057	54.00	25.943

Remarks: 1. Duty Cycle Correction Factor=20log (dwell time/100ms) = 20log (3.1ms/100ms) = -30.173
 2. Average value=Peak value+ Duty Cycle Correction Factor
 3. Low frequency section (spurious in the restricted band 2420-2530MHz).

Date of Test : 2014. 12. 24 Temperature : 22°C

EUT : Radio Control Humidity : 47%

Test Mode : Transmit, Channel No.: 60, Frequency: 2447.50MHz



Site no. : Audix NO.1 Chamber Data no. : 3
 Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
 Limit : ABOVE 1GHZ(PK)
 Env. / Ins. : 22°C/47% N9010A Engineer : Johnny_Hsueh
 EUT : T4GRS
 Power Rating : DC 6V
 Test Mode : Tx2447.5MHz(S-FHSS)

	Freq. (MHz)	Ant. Cable Factor (dB/m)	Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
@1	2447.50	28.25	5.32	79.00	112.57	74.00	-38.57	Peak
2	2483.50	28.29	5.37	29.37	63.03	74.00	10.97	Peak
3	2483.60	28.29	5.37	27.77	61.43	74.00	12.57	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 2. The emission levels that are 20dB below the official limit are not reported.
 3. '@' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Vertical (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
2483.50	63.03	-30.173	32.857	54.00	21.143
2483.60	61.43	-30.173	31.257	54.00	22.743

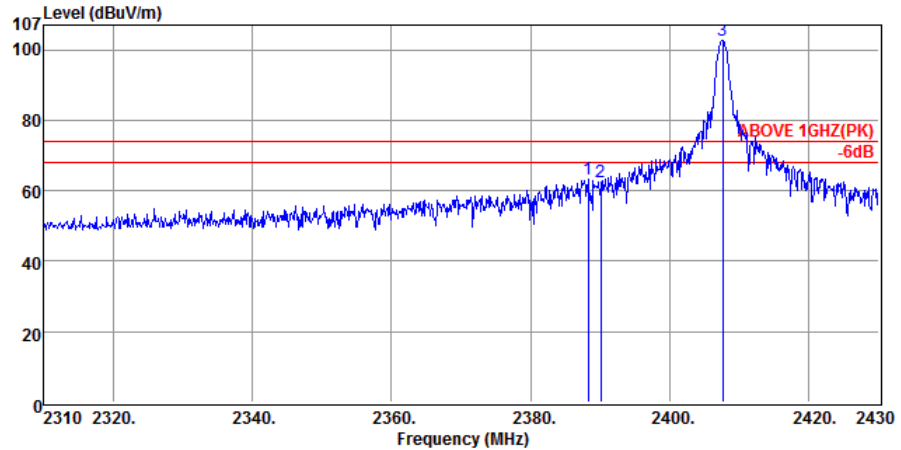
Remarks: 1. Duty Cycle Correction Factor=20log (dwell time/100ms) = 20log (3.1ms/100ms) = -30.173
 2. Average value=Peak value+ Duty Cycle Correction Factor
 3. Low frequency section (spurious in the restricted band 2420-2530MHz).

※Radio Technology: T-FHSS Modulation※

Date of Test : 2014. 12. 26 Temperature : 22°C

EUT : Radio Control Humidity : 28%

Test Mode : Transmit, Channel No.: 01, Frequency: 2407.50MHz



Site no. : Audix NO.1 Chamber Data no. : 2
 Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
 Limit : ABOVE 1GHZ(PK)
 Env. / Ins. : 22°C/28% N9010A Engineer : Johnny_Hsueh
 EUT : T4GRS
 Power Rating : DC 6V
 Test Mode : Tx2407.5MHz(T-FHSS)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2388.24	28.20	5.24	29.63	63.07	74.00	10.93	Peak
2	2390.04	28.20	5.24	28.83	62.27	74.00	11.73	Peak
@ 3	2407.56	28.22	5.26	69.05	102.53	74.00	-28.53	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 2. The emission levels that are 20dB below the official limit are not reported.
 3. '@' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Vertical (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2388.24	63.07	-42.537	20.533	54.00	33.467
2390.04	62.27	-42.537	19.733	54.00	34.267

Remarks: 1. Duty Cycle Correction Factor= 20log (dwell time/60.264ms)

$$= 20\log (0.45\text{ms}/60.264\text{ms}) = -42.537$$

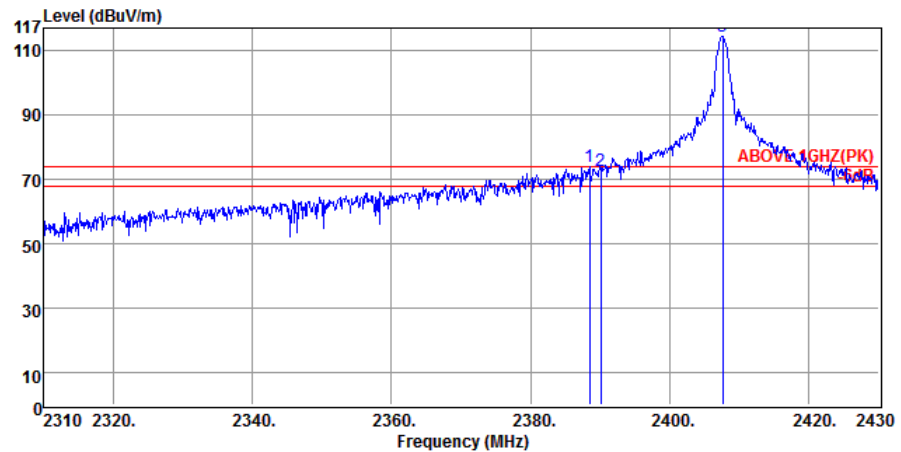
2. Average value=Peak value+ Duty Cycle Correction Factor

3. Low frequency section (spurious in the restricted band 2420-2530MHz).

Date of Test : 2014. 12. 26 Temperature : 22°C

EUT : Radio Control Humidity : 28%

Test Mode : Transmit, Channel No.: 01, Frequency: 2407.50MHz



Site no. : Audix NO.1 Chamber Data no. : 1
 Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
 Limit : ABOVE 1GHZ(PK)
 Env. / Ins. : 22°C/28% N9010A Engineer : Johnny_Hsueh
 EUT : T4GRS
 Power Rating : DC 6V
 Test Mode : Tx2407.5MHz(T-FHSS)

	Freq. (MHz)	Ant. Cable Factor (dB/m)	Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
1	2388.48	28.20	5.24	40.30	73.74	74.00	0.26	Peak
2	2390.04	28.20	5.24	39.38	72.82	74.00	1.18	Peak
@3	2407.56	28.22	5.26	80.75	114.23	74.00	-40.23	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 2. The emission levels that are 20dB below the official limit are not reported.
 3. '@' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

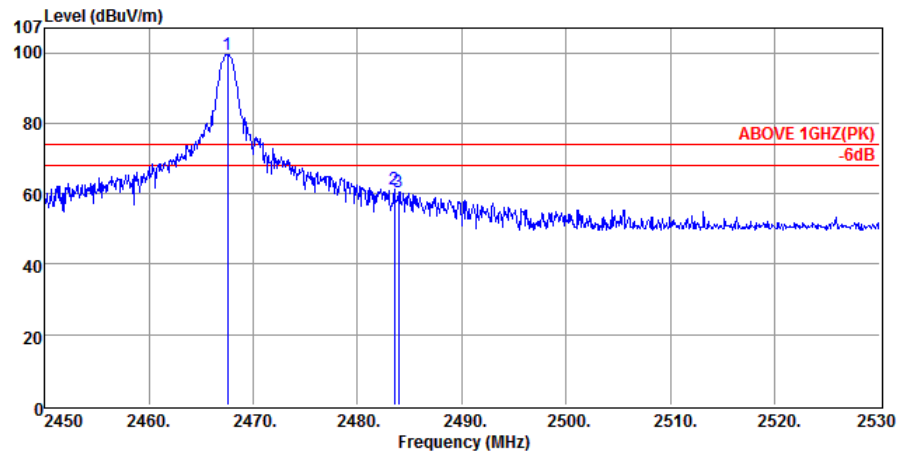
Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Vertical (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
2388.48	73.74	-42.537	31.203	54.00	22.797
2390.04	72.82	-42.537	30.283	54.00	23.717

Remarks: 1. Duty Cycle Correction Factor= $20\log(\text{dwell time}/60.264\text{ms})$
 $= 20\log(0.45\text{ms}/60.264\text{ms}) = -42.537$
 2. Average value=Peak value+ Duty Cycle Correction Factor
 3. Low frequency section (spurious in the restricted band 2420-2530MHz).

Date of Test : 2014. 12. 26 Temperature : 22°C

EUT : Radio Control Humidity : 28%

Test Mode : Transmit, Channel No.: 31, Frequency: 2467.50MHz



Site no. : Audix NO.1 Chamber Data no. : 4
 Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
 Limit : ABOVE 1GHZ(PK)
 Env. / Ins. : 22°C/28% N9010A Engineer : Johnny_Hsueh
 EUT : T4GRS
 Power Rating : DC 6W
 Test Mode : Tx2467.5MHz(T-FHSS)

	Freq. (MHz)	Ant. Cable Factor (dB/m)	Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
@ 1	2467.52	28.27	5.35	65.85	99.47	74.00	-25.47	Peak
2	2483.52	28.29	5.37	27.41	61.07	74.00	12.93	Peak
3	2483.92	28.29	5.37	26.96	60.62	74.00	13.38	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 2. The emission levels that are 20dB below the official limit are not reported.
 3. '@' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Vertical (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2483.52	61.07	-42.537	18.533	54.00	35.467
2483.92	60.62	-42.537	18.083	54.00	35.917

Remarks: 1. Duty Cycle Correction Factor= $20\log(\text{dwell time}/60.264\text{ms})$
 $= 20\log(0.45\text{ms}/60.264\text{ms}) = -42.537$

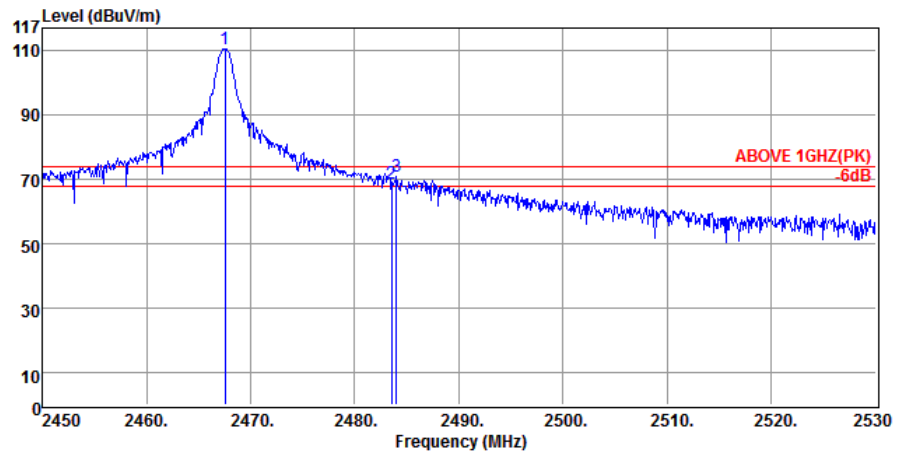
2. Average value=Peak value+ Duty Cycle Correction Factor

3. Low frequency section (spurious in the restricted band 2420-2530MHz).

Date of Test : 2014. 12. 26 Temperature : 22°C

EUT : Radio Control Humidity : 28%

Test Mode : Transmit, Channel No.: 31, Frequency: 2467.50MHz



Site no. : Audix NO.1 Chamber Data no. : 3
 Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
 Limit : ABOVE 1GHZ(PK)
 Env. / Ins. : 22°C/28% N9010A Engineer : Johnny_Hsueh
 EUT : T4GRS
 Power Rating : DC 6V
 Test Mode : Tx2467.5MHz(T-FHSS)

	Freq. (MHz)	Ant. Cable Factor (dB/m)	Loss (dB)	Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Remark
@1	2467.52	28.27	5.35	76.95	110.57	74.00	-36.57	Peak
2	2483.52	28.29	5.37	35.26	68.92	74.00	5.08	Peak
3	2484.00	28.29	5.37	37.18	70.84	74.00	3.16	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 2. The emission levels that are 20dB below the official limit are not reported.
 3. '@' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

Emission Frequency (MHz)	Peak Value (dB)	Duty Cycle Correction Factor (dB)	Average Value Vertical (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
2483.52	68.92	-42.537	26.383	54.00	27.617
2484.00	70.84	-42.537	28.303	54.00	25.697

Remarks: 1. Duty Cycle Correction Factor= $20\log(\text{dwell time}/60.264\text{ms})$
 $= 20\log(0.45\text{ms}/60.264\text{ms}) = -42.537$
 2. Average value=Peak value+ Duty Cycle Correction Factor
 3. Low frequency section (spurious in the restricted band 2420-2530MHz).

5. 20dB BANDWIDTH MEASUREMENT

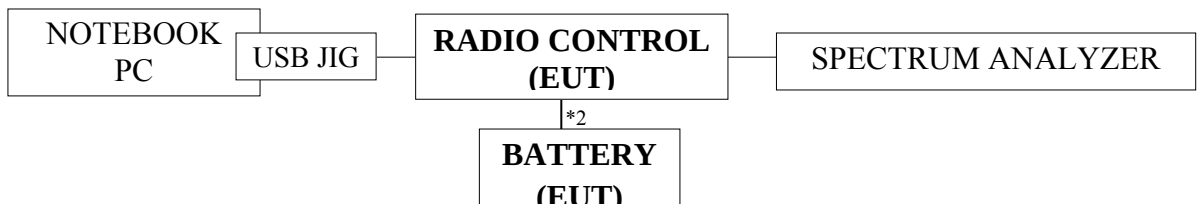
5.1. Test Equipment

The following test equipment was used during the 20dB bandwidth measurement:

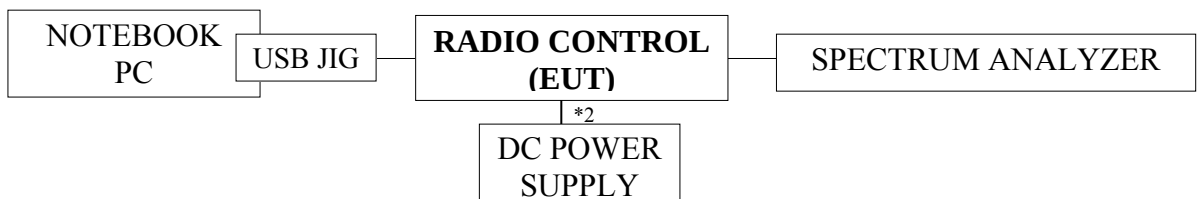
Item	Equipment	Manufacturer	Model	Serial Number	Cal. Date	Cal. Interval
1	Spectrum Analyzer	R&S	FSV30	101181	2014. 03. 04	1 Year
		Agilent	N9030A-544	US51350140	2014. 07. 25	1 Year

5.2. Block Diagram of Test Setup

[S-FHSS Modulation]



[FHSS Modulation:]



5.3. Specification Limits (§15.247(a)(1))

Alternatively, frequency hopping systems operating in the 2400-2483.5MHz band may have hopping channel carrier frequencies that are separated by 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater.

5.4. Operating Condition of EUT

- 5.4.1. Set up the EUT and simulator as shown on 4.2.
- 5.4.2. To turn on the power of all equipment.
- 5.4.3. EUT (Radio Control) was on transmitting frequency function during the testing.

5.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. The RBW of the fundamental frequency was measure by spectrum analyzer 1% of the 20dB bandwidth and the setting equal to RBW and VBW is equal to RBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

The measurement guideline was according to FCC Public Notice DA 00-705.

5.6. Test Results

PASSED. All the test results are attached in next pages.

5.6.1. Radio Technology: S-FHSS Modulation

Test Date : 2014. 12. 09 Temperature : 22°C Humidity : 55%

No.	Channel	Test Frequency	20dB Bandwidth	2/3 (20dB Bandwidth)
1.	01	2403.25MHz	0.26050 MHz	0.174MHz
2.	30	2425.00MHz	0.26050 MHz	0.174MHz
3.	60	2447.50MHz	0.26050 MHz	0.174MHz

The maximum two-thirds of the 20dB bandwidth shall be at maximum **0.845MHz**.

Channel No. 01, Frequency: 2403.25MHz



Channel No. 30, Frequency: 2425.00MHz



Channel No. 60, Frequency: 2447.50MHz



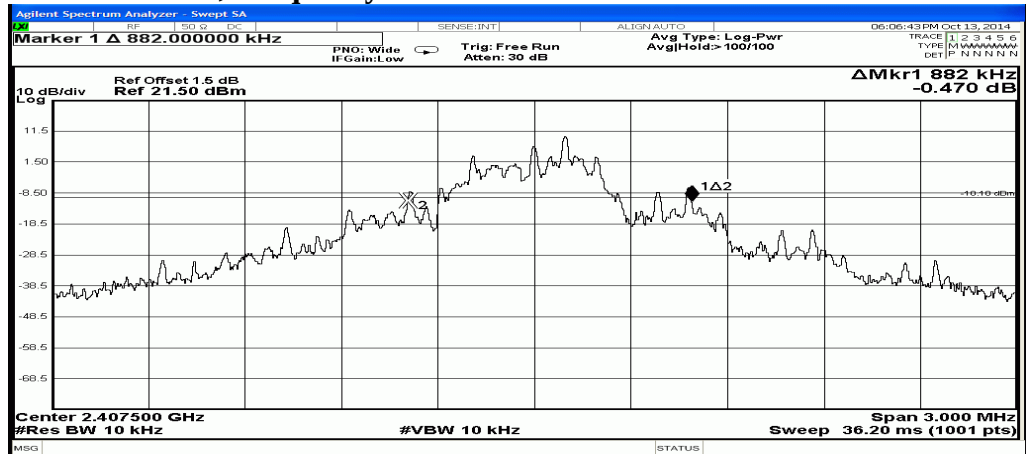
5.6.2. Radio Technology: FHSS Modulation

Test Date : 2014. 10. 13 Temperature : 20°C Humidity : 62%

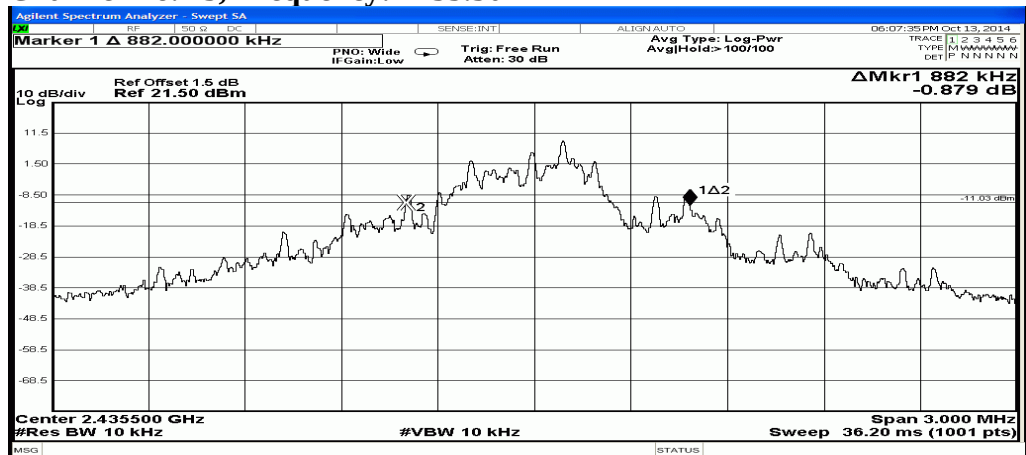
No.	Channel	Test Frequency	20dB Bandwidth	2/3 (20dB Bandwidth)
1.	01	2407.50MHz	1.882 MHz	1.255MHz
2.	15	2435.50MHz	1.882 MHz	1.255MHz
3.	31	2467.50MHz	1.888 MHz	1.259MHz

The maximum two-thirds of the 20dB bandwidth shall be at maximum 1.259MHz.

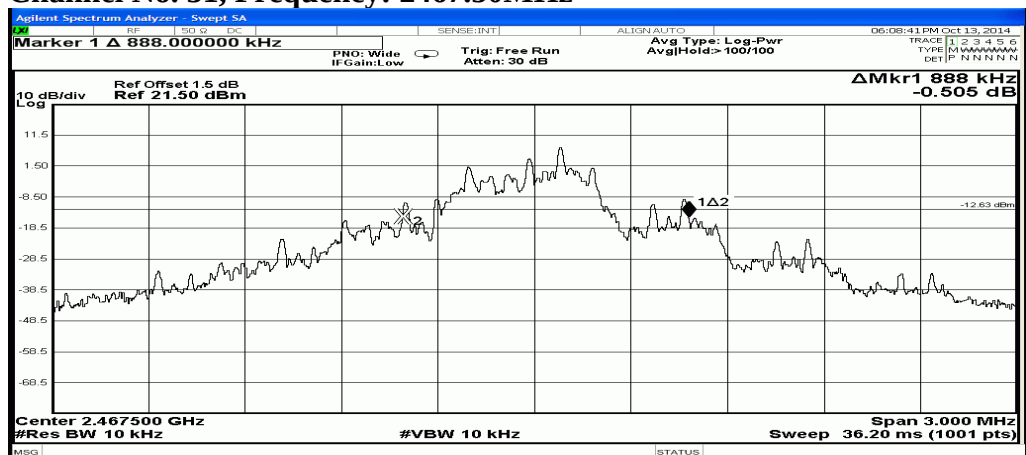
Channel No. 01, Frequency: 2407.50MHz



Channel No. 15, Frequency: 2435.50MHz



Channel No. 31, Frequency: 2467.50MHz



6. CARRIER FREQUENCY SEPARATION MEASUREMENT

6.1. Test Equipment

The following test equipment was used during the carrier frequency separation measurement:

Item	Equipment	Manufacturer	Model	Serial Number	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	R&S	FSV30	101181	2014. 03. 04	1 Year
		Agilent	N9030A-544	US51350140	2014. 07. 25	1 Year

6.2. Block Diagram of Test Setup

The same as section.5.2.

6.3. Specification Limits (§15.247(a)(1))

Alternatively, frequency hopping systems operating in the 2400-2483.5MHz band may have hopping channel carrier frequencies that are separated by 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output no greater than 125mW.

6.4. Operating Condition of EUT

Same as 20dB bandwidth measurement which was listed in section 4.4.

6.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. The channel separation was measure by spectrum analyzer with RBW equal to 1% of the span. The video bandwidth not to be smaller than resolution bandwidth, the peak was mark on adjacent bandwidth, the between of peak is carrier frequency separation. The measurement guideline was according to FCC Public Notice DA 00-705.

6.6. Test Results

PASSED. All the test results are attached in next pages.

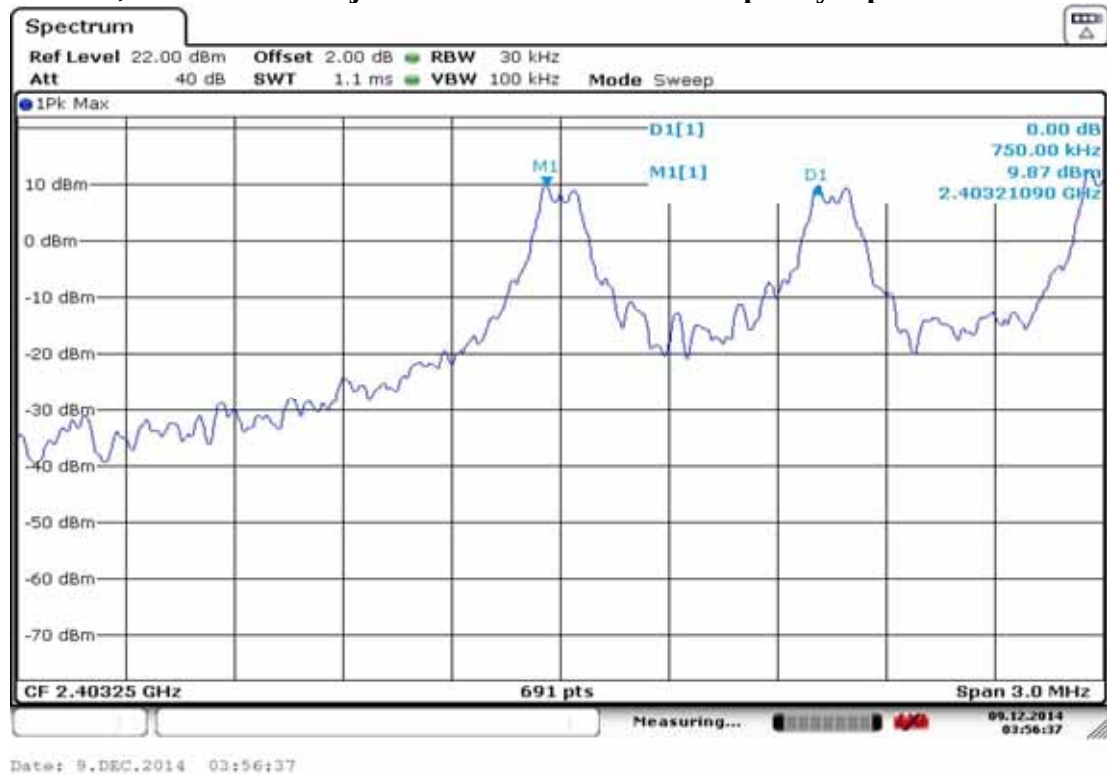
6.6.1. Radio Technology: S-FHSS Modulation

Test Date : 2014. 12. 09 Temperature : 22°C Humidity : 55%

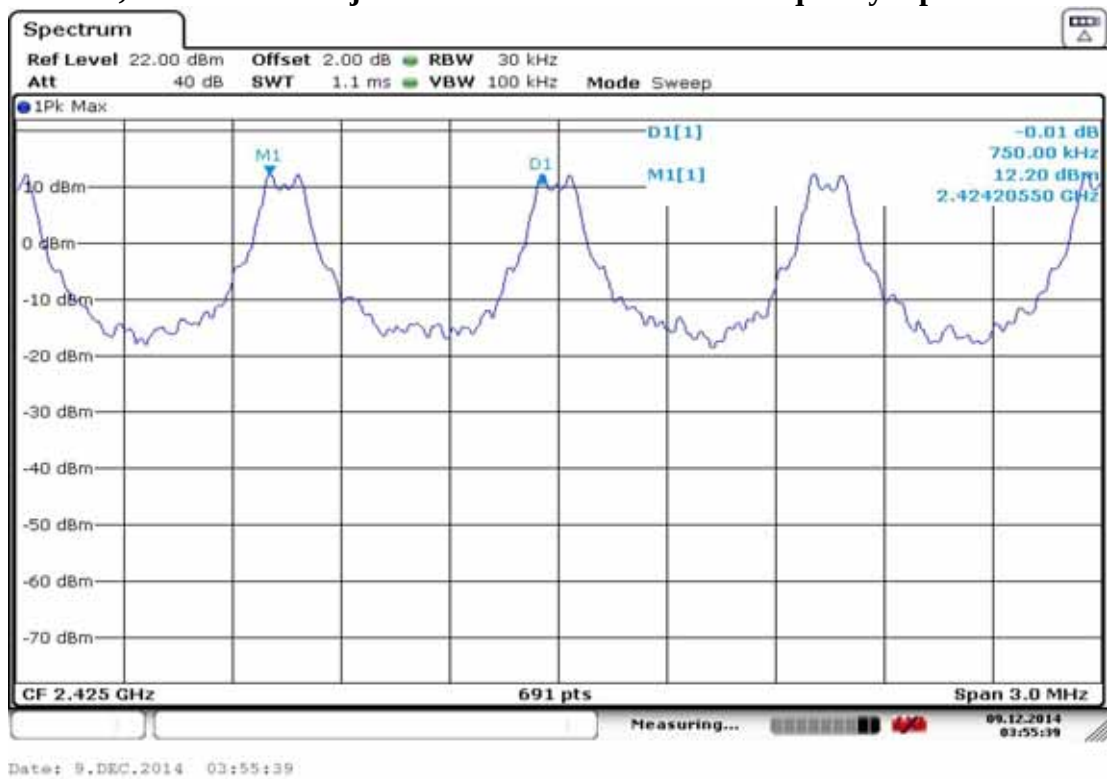
1. 2403.25MHz adjacent channel of carrier frequency separation:
0.750MHz_o
2. 2425.00MHz adjacent channel of left carrier frequency separation:
0.750MHz_o
3. 2425.00MHz adjacent channel of right carrier frequency separation:
0.750MHz_o
4. 2447.50MHz adjacent channel of carrier frequency separation:
0.750MHz_o

[Above values have met the requirement as specified in section 4.3: frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.]

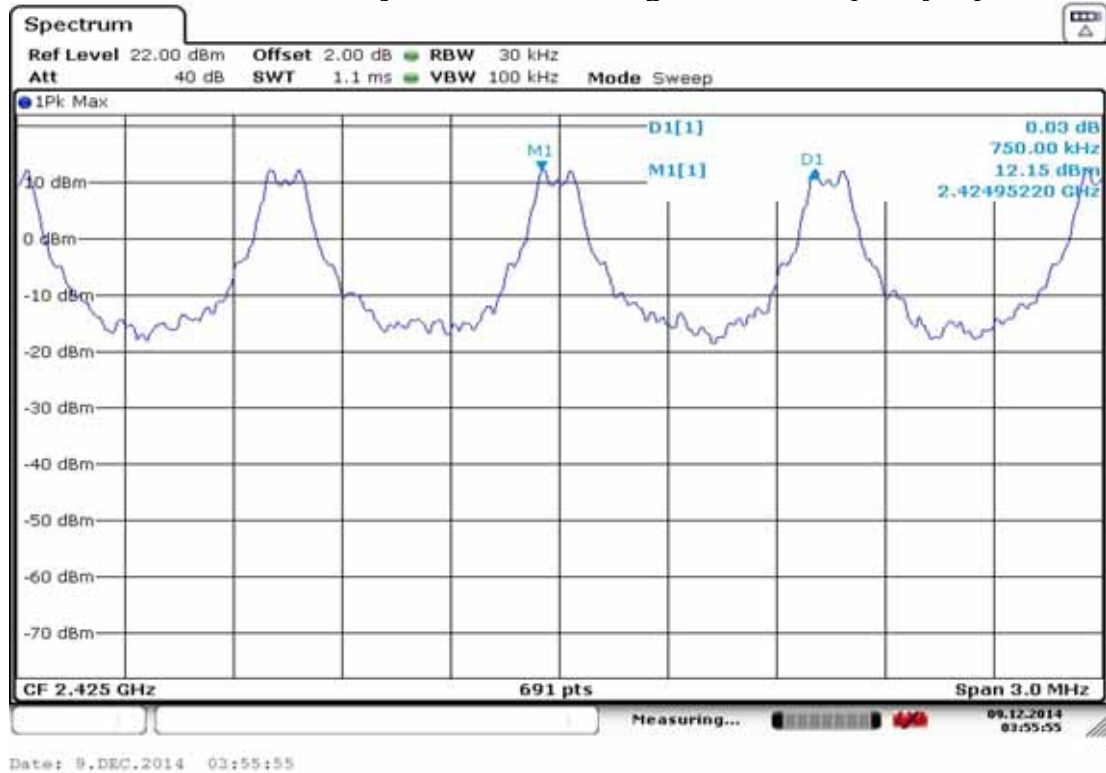
S-FHSS, 2403.25MHz adjacent channel of carrier frequency separation



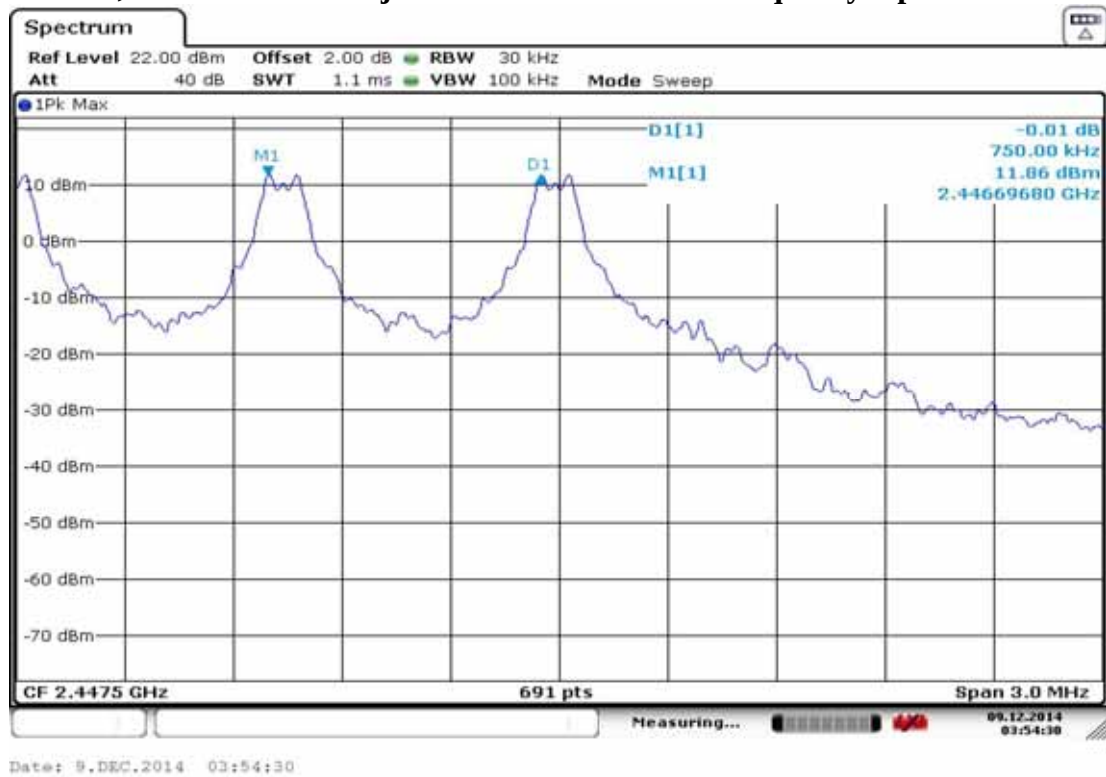
S-FHSS, 2425.00MHz adjacent channel of left carrier frequency separation



S-FHSS, 2425.0000MHz adjacent channel of right carrier frequency separation



S-FHSS, 2447.5000MHz adjacent channel of carrier frequency separation



6.6.2. Radio Technology: T-FHSS Modulation

Test Date : 2014. 10. 13 Temperature : 20°C Humidity : 62%

1. 2407.50MHz adjacent channel of carrier frequency separation:
2MHz_o
2. 2435.50MHz adjacent channel of left carrier frequency separation:
2MHz_o
3. 2435.50MHz adjacent channel of right carrier frequency separation:
2MHz_o
4. 2467.50MHz adjacent channel of carrier frequency separation:
2MHz_o

[Above values have met the requirement as specified in section 4.3: frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.]

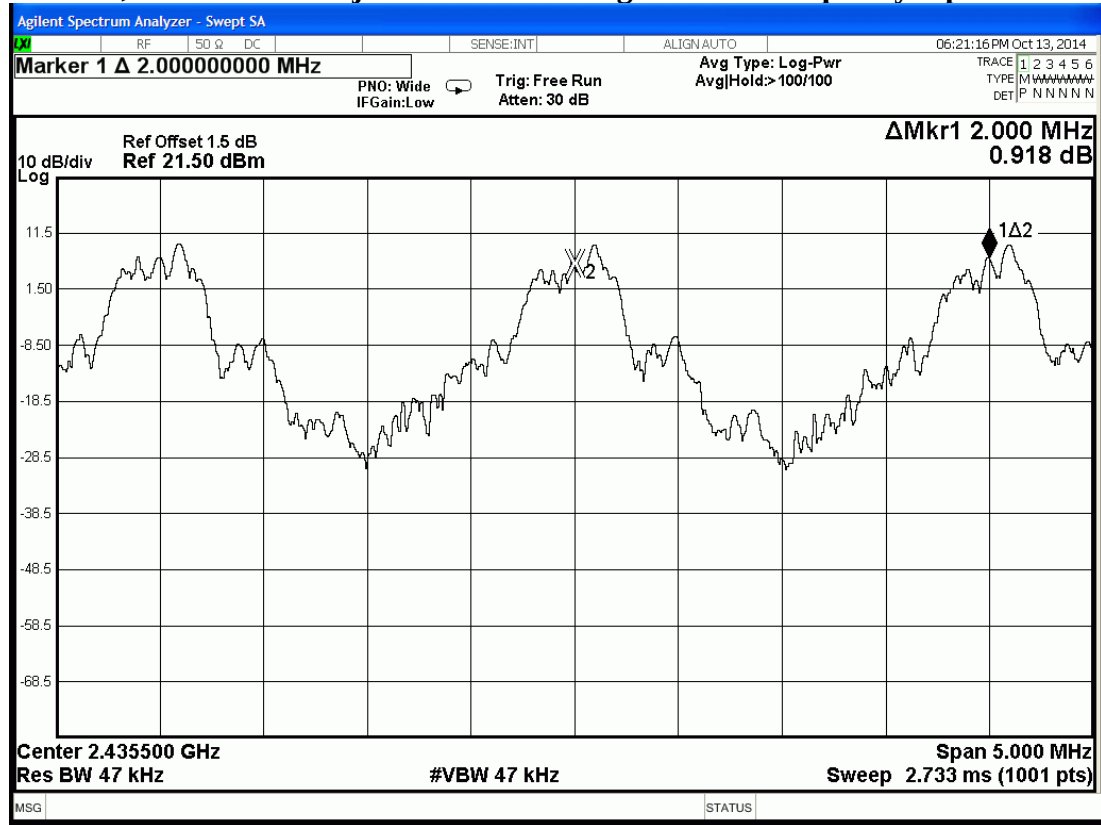
T-FHSS, 2407.50MHz adjacent channel of carrier frequency separation



T-FHSS, 2435.50MHz adjacent channel of left carrier frequency separation



T-FHSS, 2435.50MHz adjacent channel of right carrier frequency separation



S-FHSS, 2467.50MHz adjacent channel of carrier frequency separation



7. TIME OF OCCUPANCY MEASUREMENT

7.1. Test Equipment

The following test equipment was used during the time of occupancy measurement:

Item	Equipment	Manufacturer	Model	Serial Number	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	R&S	FSV30	101181	2014. 03. 04	1 Year
		Agilent	N9030A-544	US51350140	2014. 07. 25	1 Year

7.2. Block Diagram of Test Setup

The same as section.5.2.

7.3. Specification Limits (§15.247(a)(1)(iii))

Frequency hopping systems in the 2400-2483.5MHz shall use at least 15 non-overlapping channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by number of hopping channels employed.

7.4. Operating Condition of EUT

Same as 20dB bandwidth measurement which was listed in section 4.4.

7.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer with 1MHz RBW and 1MHz VBW. $VBW \geq RBW$; Span=zero span.

Centred on a hopping channel sweep=as necessary to capture the entire dwell time per hopping channel ; Detector function=peak ; Trace=Max hold

The measurement guideline was according to FCC Public Notice DA 00-705.

7.6. Test Results

PASSED. All the test results are attached in next pages.

7.6.1. Radio Technology: S-FHSS Modulation

Test Date : 2014. 12. 09 Temperature : 22°C Humidity : 55%

Observation Period: 60 channels*0.4 seconds = 24 seconds

Test Frequency: 2403.25MHz

For each 1 seconds of 5 channels appearance, the longest time of occupancy for each of 24 seconds is:

5 channels*24 seconds * 3.1ms = 372.0ms (<400ms)

Test Frequency: 2425.00MHz

For each 1 seconds of 5 channels appearance, the longest time of occupancy for each of 24 seconds is:

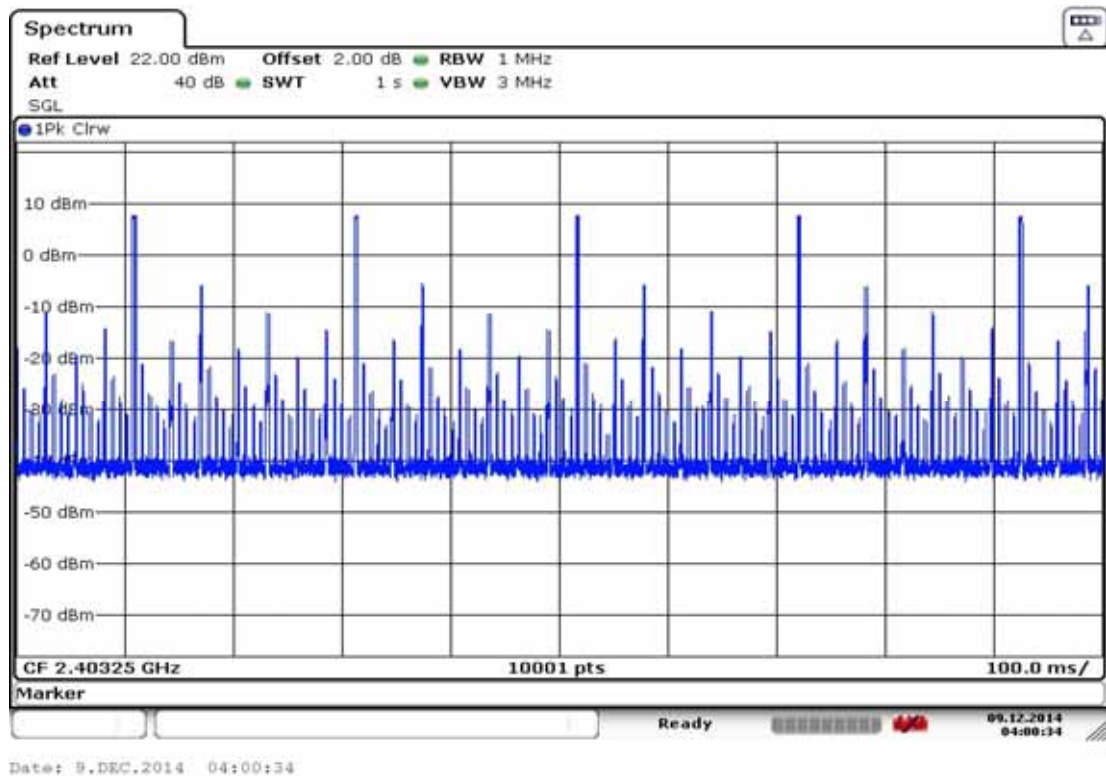
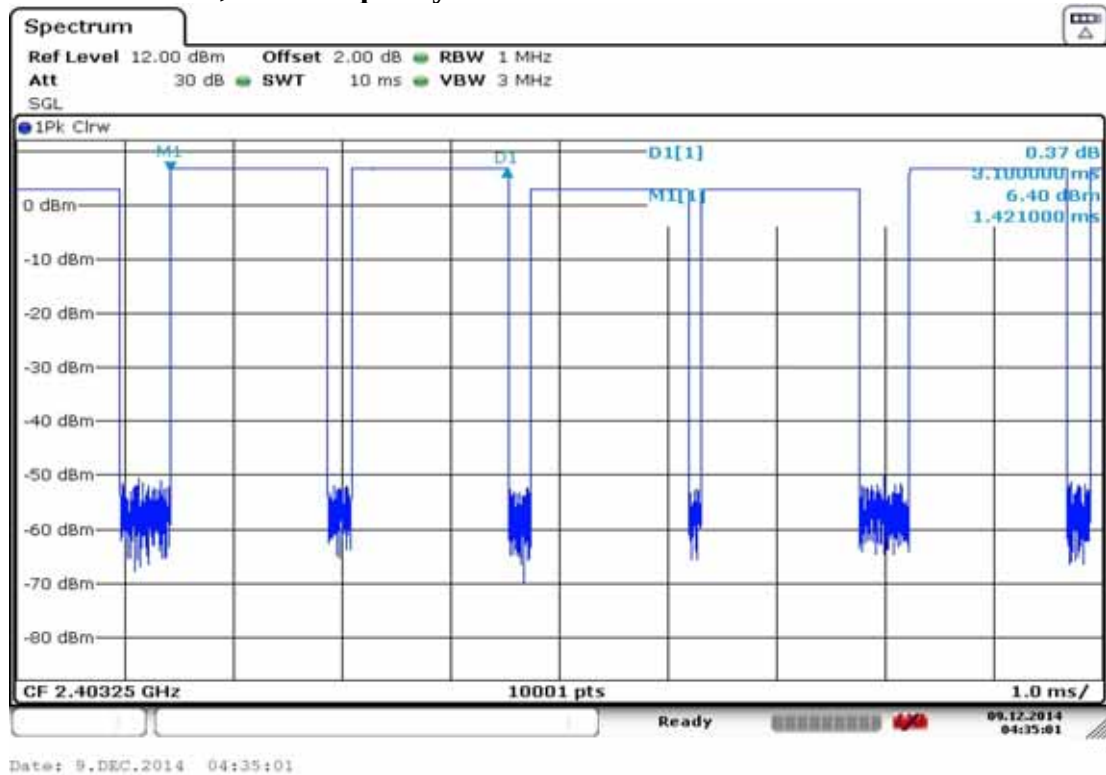
5 channels*24 seconds * 3.0ms = 360.0ms (<400ms)

Test Frequency: 2447.50MHz

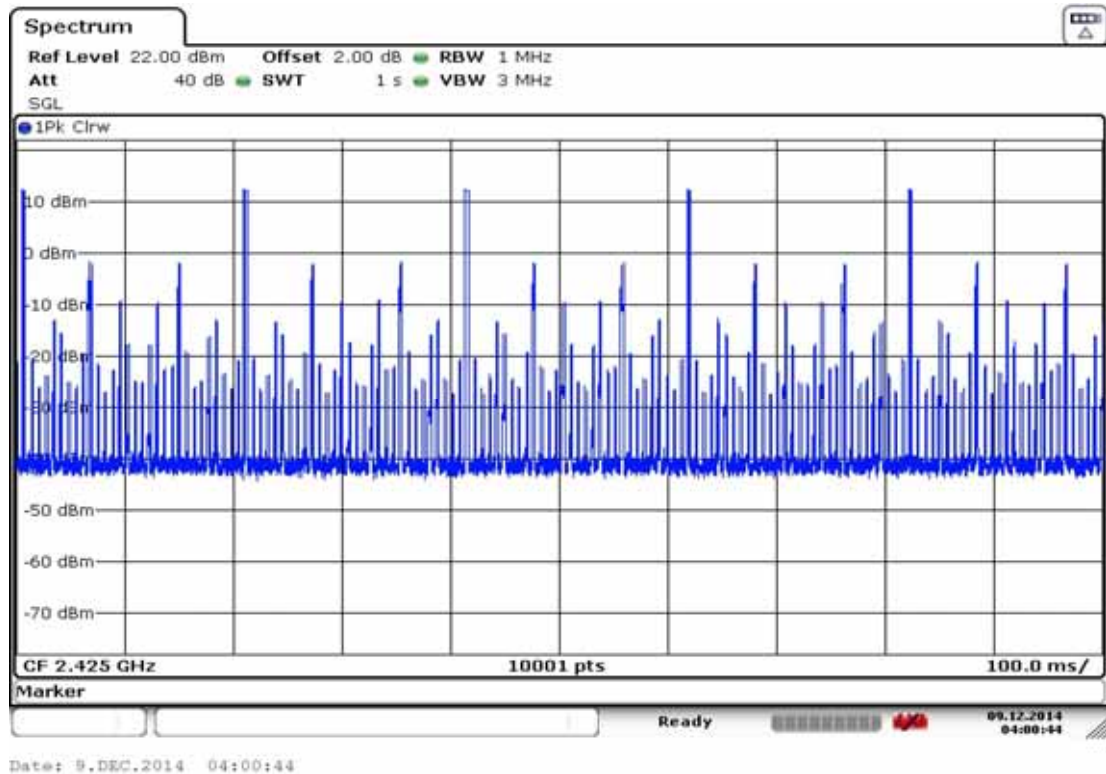
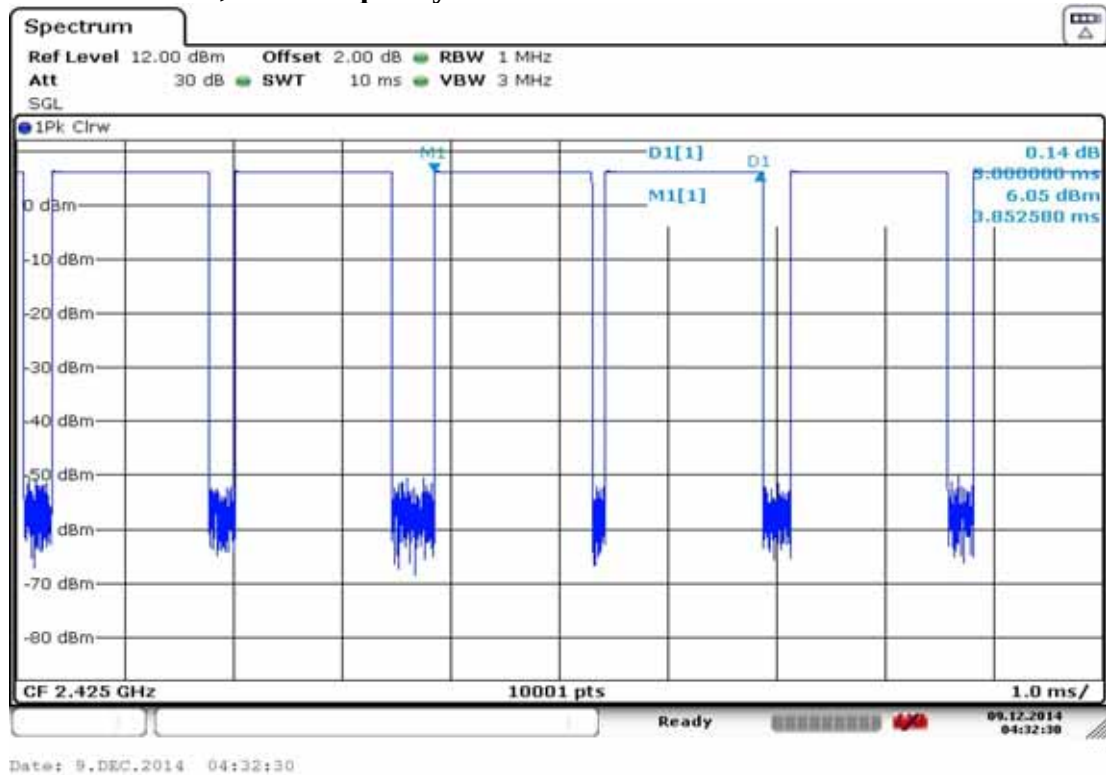
For each 1 seconds of 5 channels appearance, the longest time of occupancy for each of 24 seconds is:

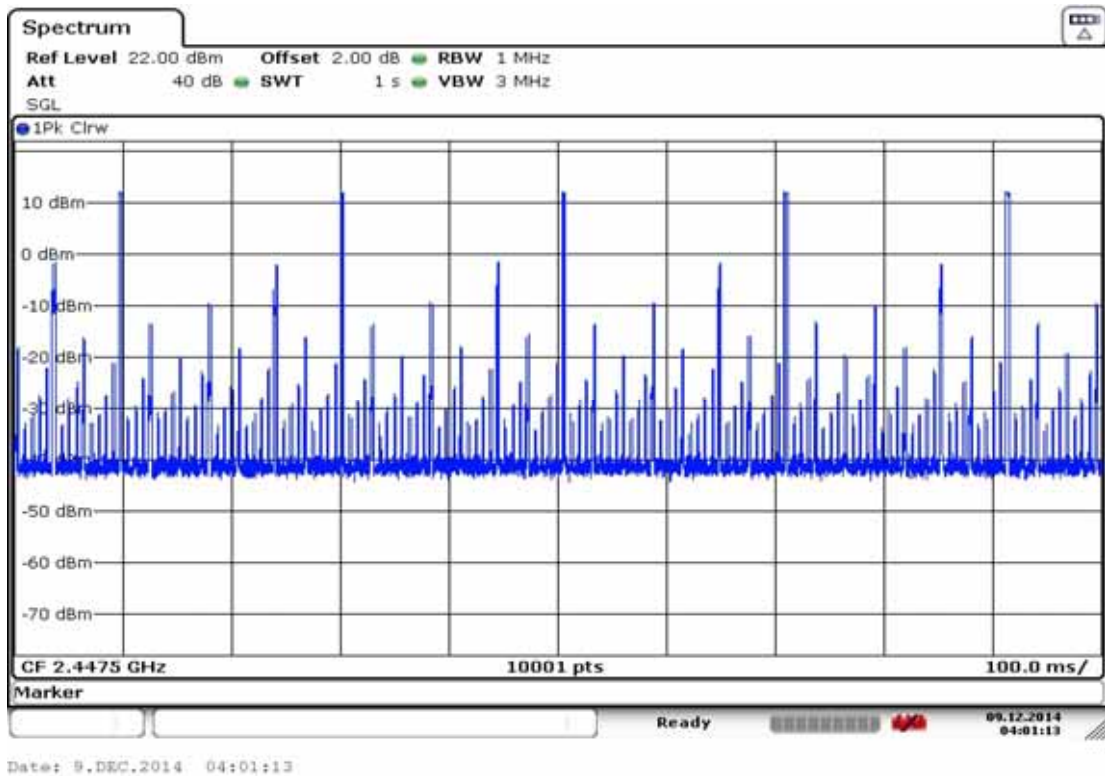
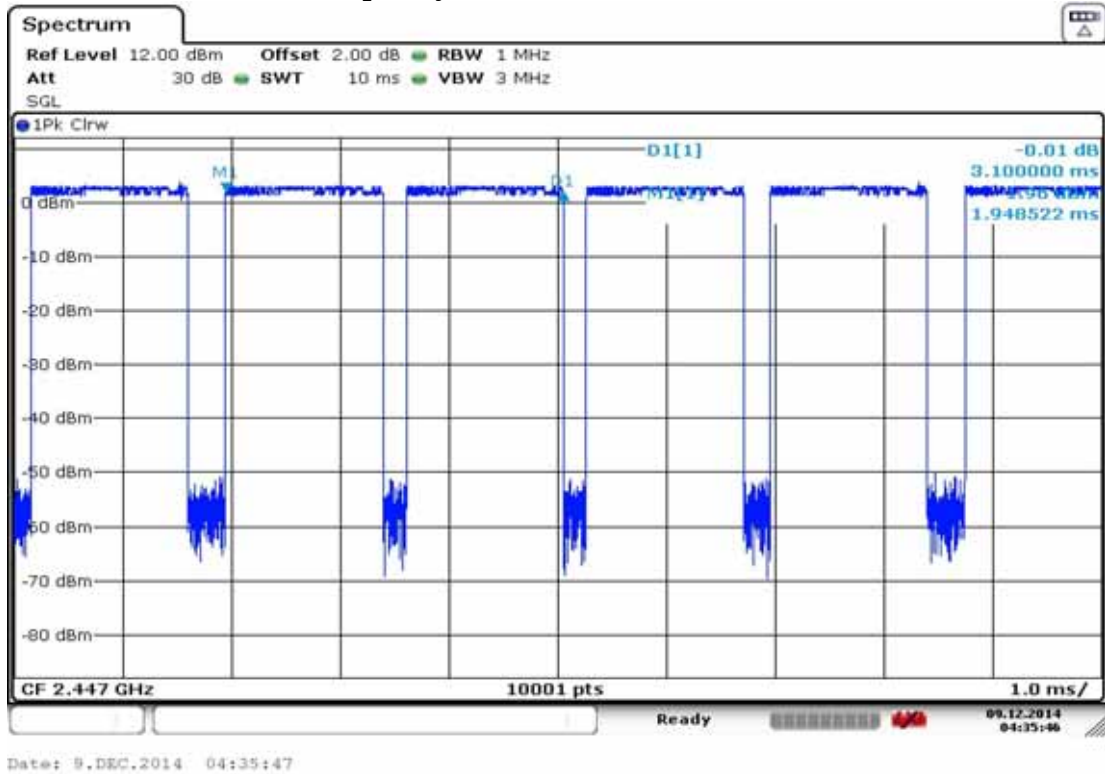
5 channels*24 seconds * 3.1ms = 372.0ms (<400ms)

Channel No. 01, Test Frequency: 2403.25MHz



Channel No. 30, Test Frequency: 2425.00MHz



Channel No. 60, Test Frequency: 2447.50MHz

7.6.2. Radio Technology: T-FHSS Modulation

Duty cycle: 31 channels*0.4 seconds = 12.4 seconds

Test Frequency: 2407.50MHz

For each 5 seconds of 54 channels appearance, the longest time of occupancy for each of 12.4 seconds is:

$$54 \text{ channels} * 12.4 \text{ seconds} \div 5 * 0.45\text{ms} = 60.26\text{ms} (<400\text{ms})$$

Test Frequency: 2435.50MHz

For each 5 seconds of 54 channels appearance, the longest time of occupancy for each of 12.4 seconds is:

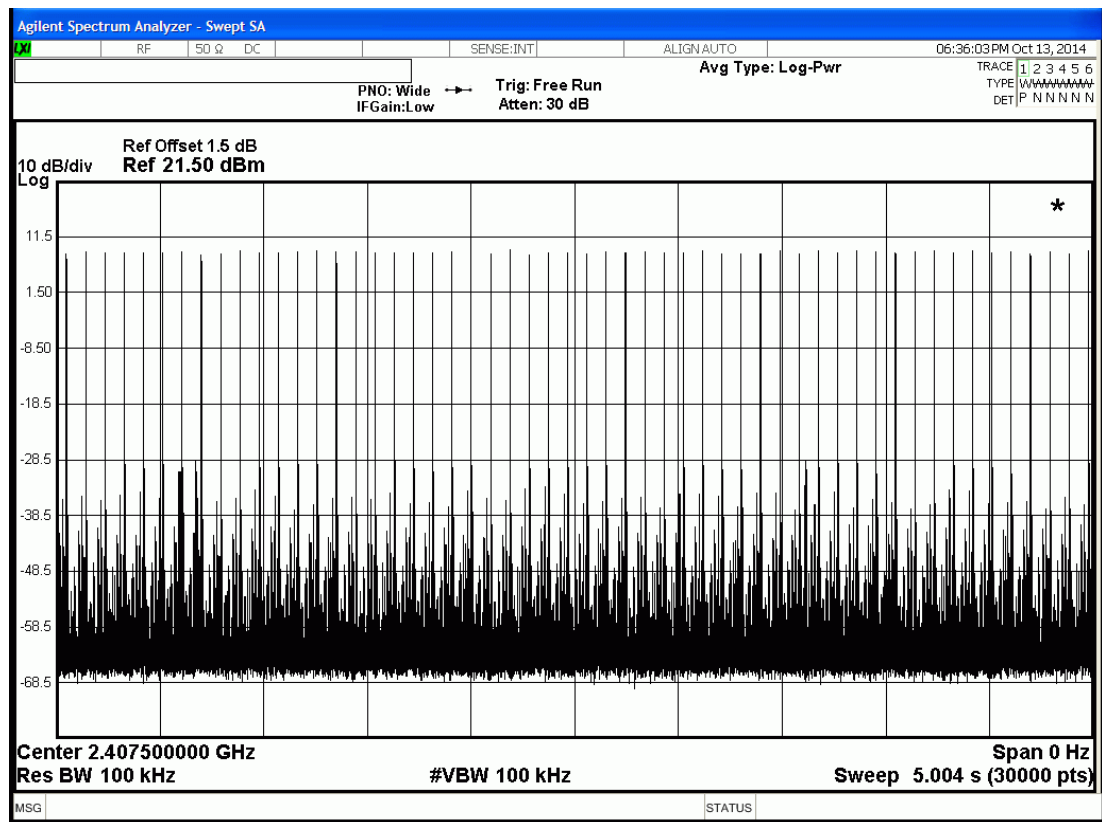
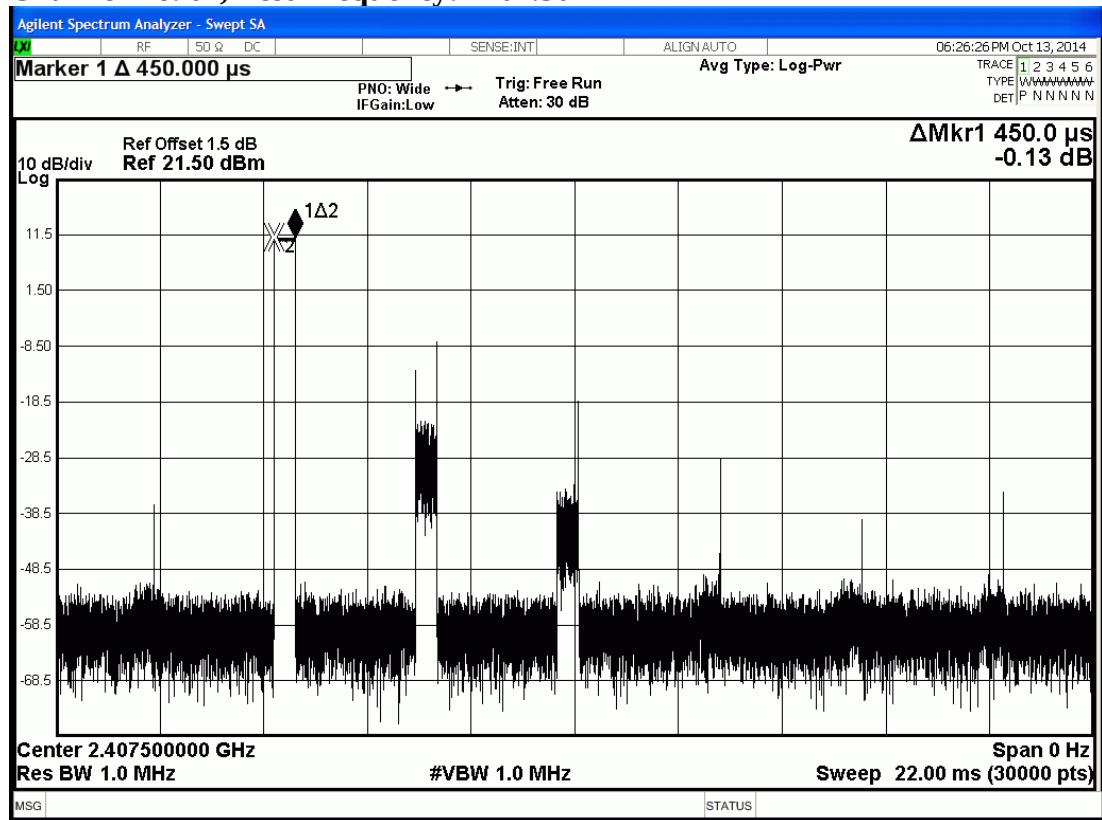
$$54 \text{ channels} * 12.4 \text{ seconds} \div 5 * 0.45\text{ms} = 60.26\text{ms} (<400\text{ms})$$

Test Frequency: 2467.50MHz

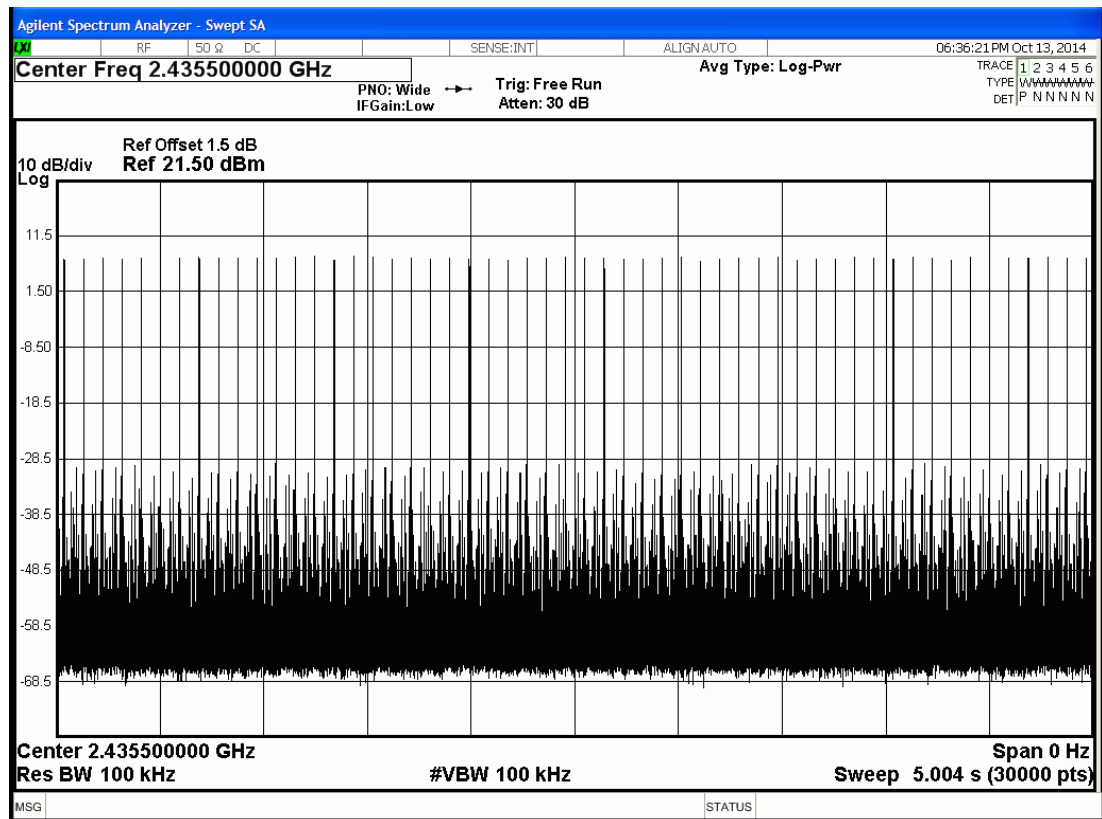
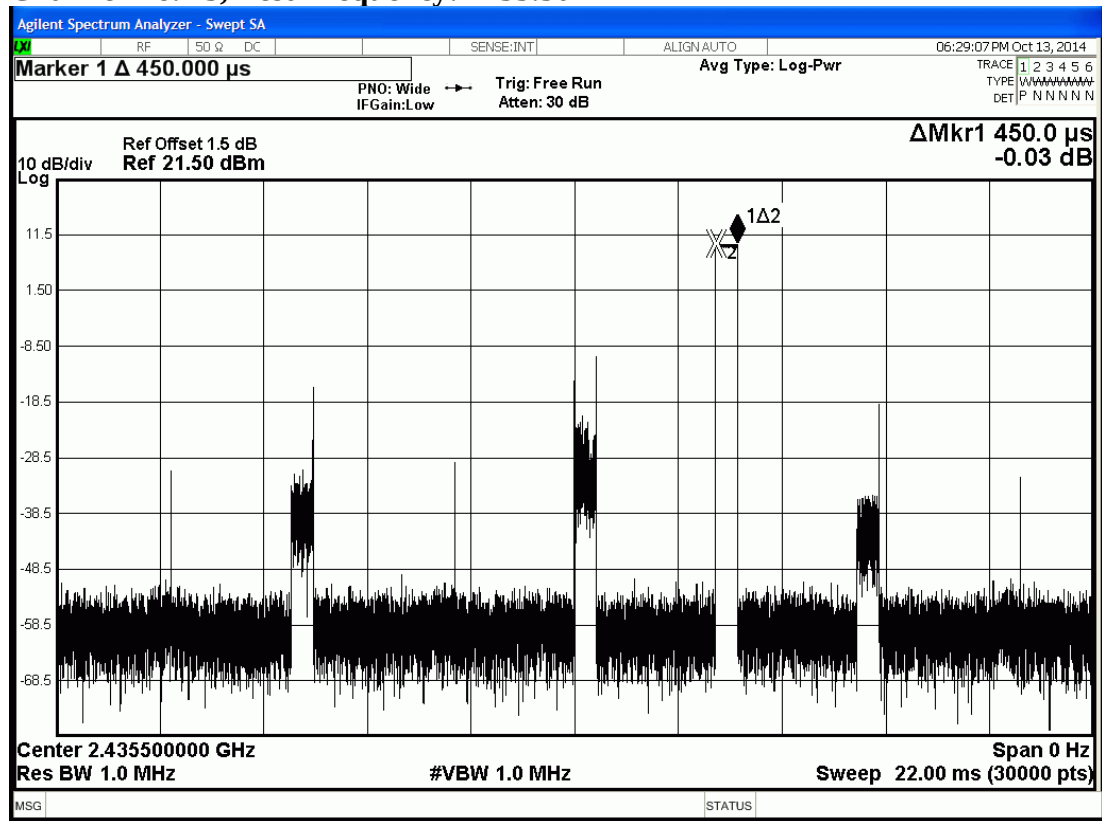
For each 5 seconds of 54 channels appearance, the longest time of occupancy for each of 12.4 seconds is:

$$54 \text{ channels} * 12.4 \text{ seconds} \div 5 * 0.45\text{ms} = 60.26\text{ms} (<400\text{ms})$$

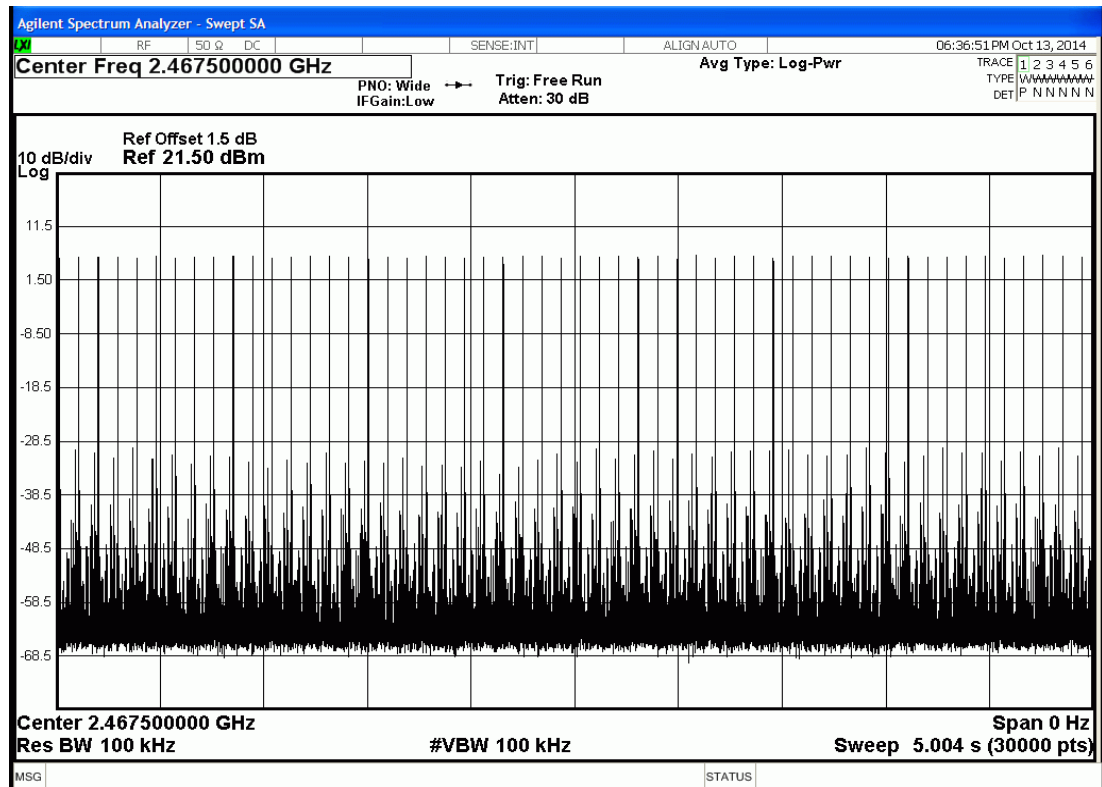
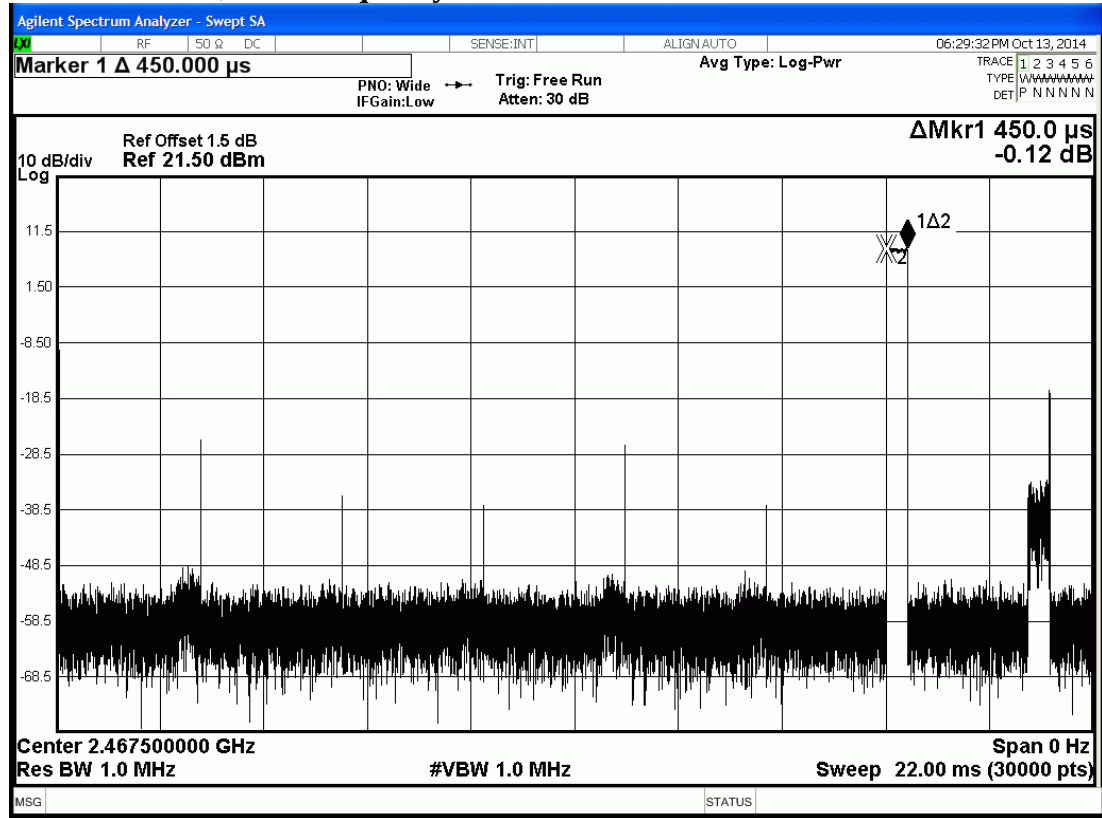
Channel No. 01, Test Frequency: 2407.50MHz



Channel No. 15, Test Frequency: 2435.50MHz



Channel No. 60, Test Frequency: 2467.50MHz



8. NUMBER OF HOPPING CHANNELS MEASUREMENT

8.1. Test Equipment

The following test equipment was used during the number of hopping channels measurement:

Item	Equipment	Manufacturer	Model	Serial Number	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	R&S	FSV30	101181	2014. 03. 04	1 Year
		Agilent	N9030A-544	US51350140	2014. 07. 25	1 Year

8.2. Block Diagram of Test Setup

The same as section.5.2.

8.3. Specification Limits (§15.247(a)(1)(iii))

Frequency hopping systems which use fewer than 20 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.

8.4. Operating Condition of EUT

Same as 20dB bandwidth measurement which was listed in section 4.4.

8.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer with 100kHz RBW and 100kHz VBW. Sweep=Auto ; Detector function=peak ; Trace=Max hold
The measurement guideline was according to FCC Public Notice DA 00-705.

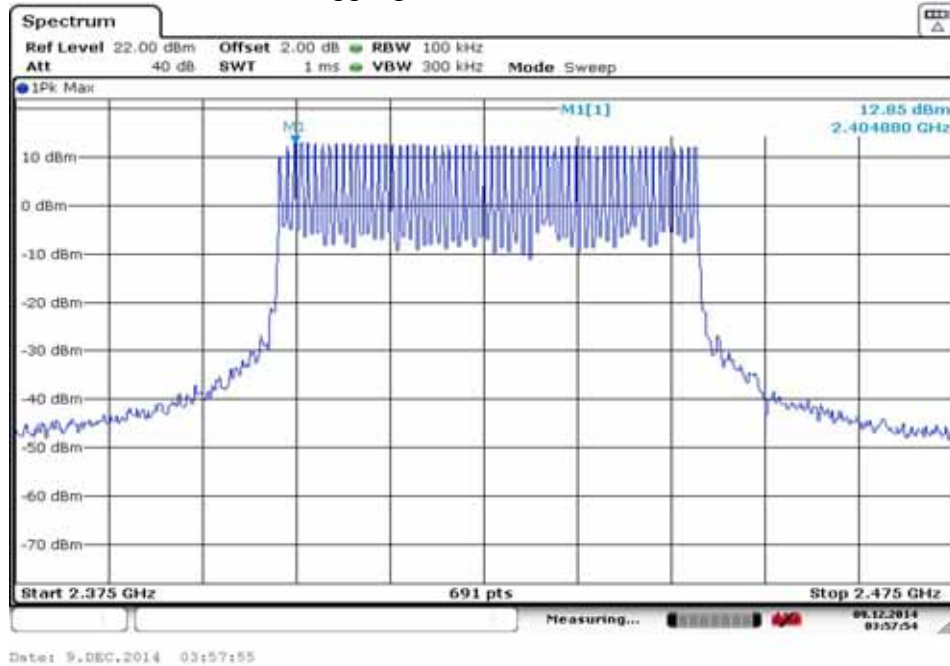
8.6. Test Results

PASSED. All the test results are attached in next page.

8.6.1. Radio Technology: S-FHSS Modulation

Test Date : 2014. 12. 09 Temperature : 22°C Humidity : 55%

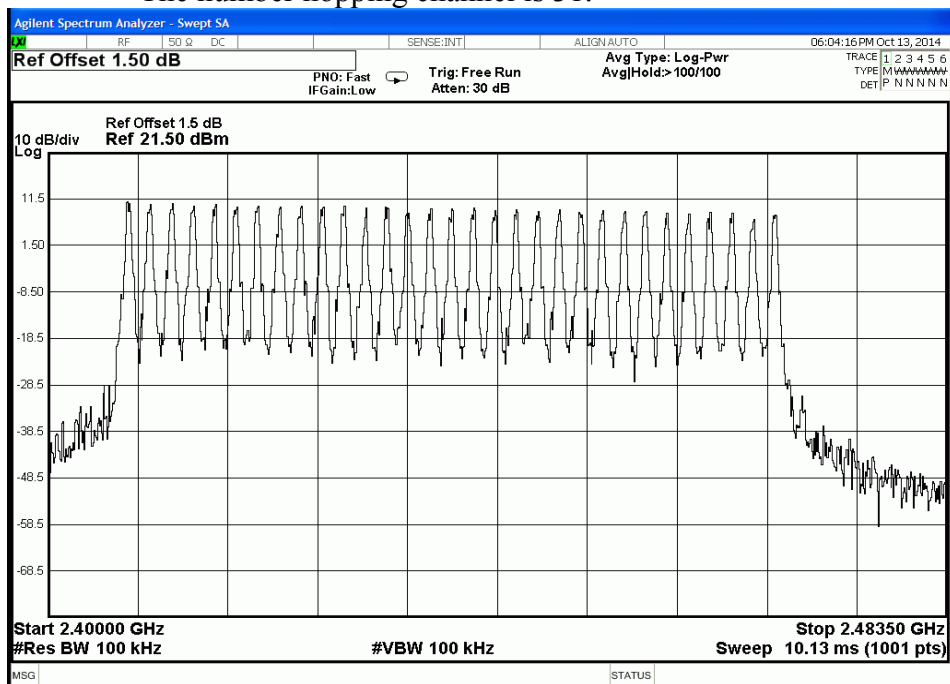
The number hopping channel is 60.



8.6.2. Radio Technology: T-FHSS Modulation

Test Date : 2014. 10. 13 Temperature : 20°C Humidity : 62%

The number hopping channel is 31.



9. MAXIMUM PEAK OUTPUT POWER MEASUREMENT

9.1. Test Equipment

The following test equipment was used during the maximum peak output power measurement:

Item	Equipment	Manufacturer	Model	Serial Number	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	R&S	FSV30	101181	2014. 03. 04	1 Year
		Agilent	N9030A-544	US51350140	2014. 07. 25	1 Year

9.2. Block Diagram of Test Setup

The same as section.5.2.

9.3. Specification Limits (§15.247(b)-(1))

The Limits of maximum Peak Output Power for frequency hopping systems in 2400-2483.5MHz is: 0.125Watt. (21dBm)

9.4. Operating Condition of EUT

Same as 20dB bandwidth measurement which was listed in section 4.4.

9.5. Test Procedure

The transmitter output was connected to the spectrum analyzer.

Span can encompass the waveform

$RBW > EBW$

$VBW \geq RBW$

Sweep=5MHz

The measurement guideline was according to FCC Public Notice DA 00-705.

9.6. Test Results

PASSED. All the test results are listed below.

9.6.1. Radio Technology: S-FHSS Modulation

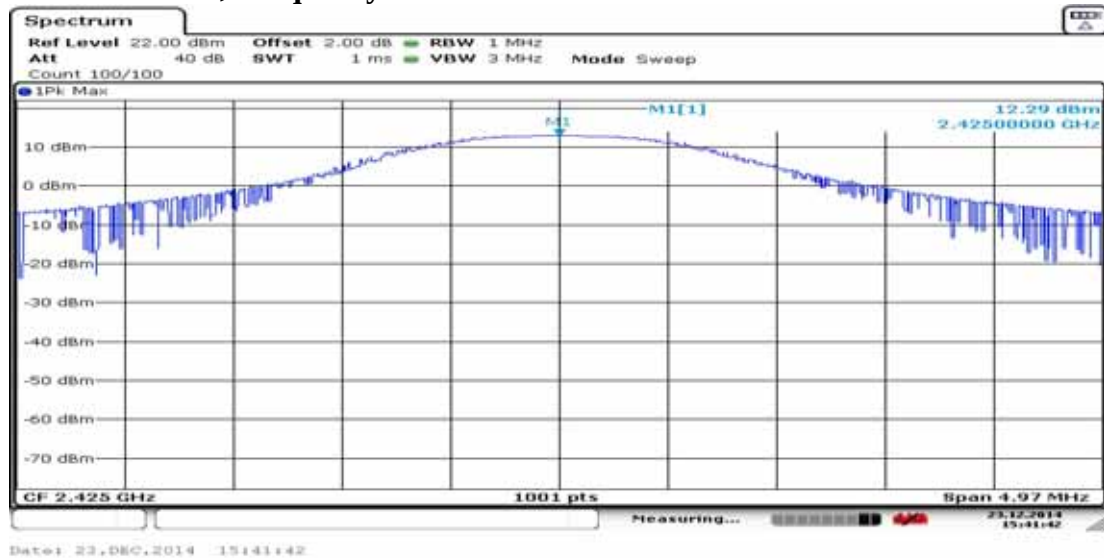
Test Date : 2014. 12. 09 Temperature : 22°C Humidity : 55%

No.	Channel No.	Test Frequency	Peak Output Power	Limit
1.	01	2403.25MHz	11.62 dBm	21dBm
2.	30	2425.00MHz	12.29 dBm	21dBm
3.	60	2447.50MHz	11.99 dBm	21dBm

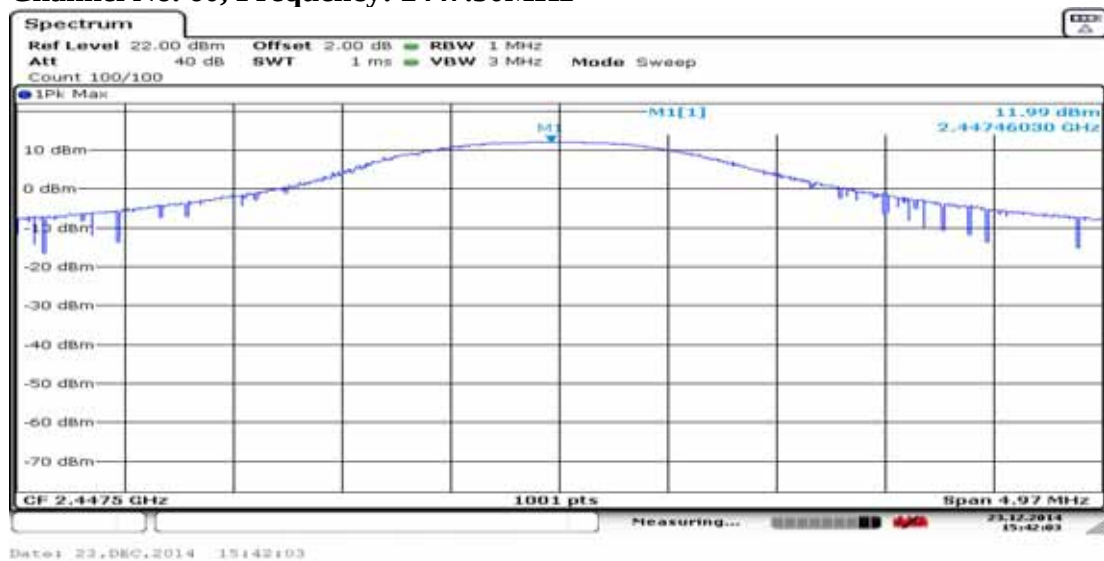
Channel No. 01, Frequency: 2403.25MHz



Channel No. 30, Frequency: 2425.00MHz



Channel No. 60, Frequency: 2447.50MHz

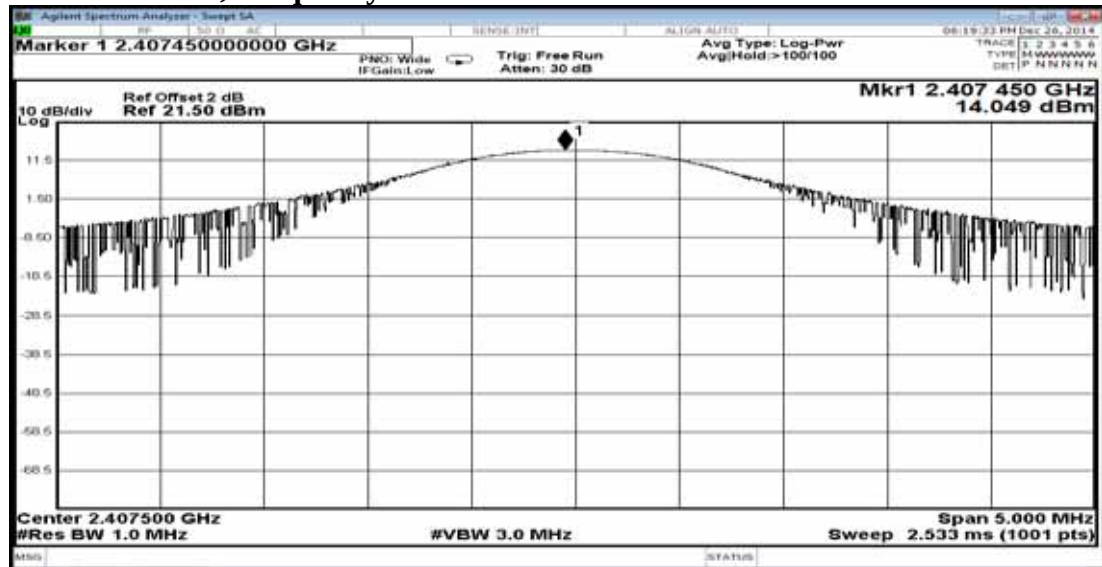


9.6.2. Radio Technology: T-FHSS Modulation

Test Date : 2014. 12. 26 Temperature : 22°C Humidity : 62%

No.	Channel No.	Test Frequency	Peak Output Power	Limit
1.	01	2407.50MHz	14.049 dBm	21dBm
2.	15	2435.50MHz	12.942 dBm	21dBm
3.	31	2467.50MHz	12.038 dBm	21dBm

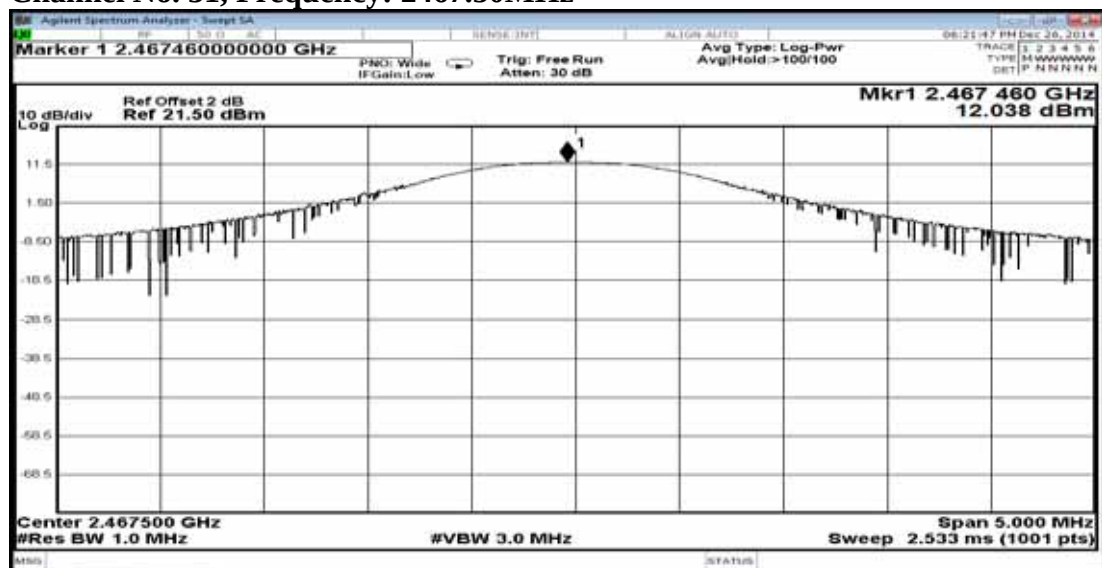
Channel No. 01, Frequency: 2407.50MHz



Channel No. 15, Frequency: 2435.50MHz



Channel No. 31, Frequency: 2467.50MHz



10.EMISSION LIMITATIONS MEASUREMENT

10.1.Test Equipment

The following test equipment was used during the emission limitations test:

Item	Equipment	Manufacturer	Model	Serial Number	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	R&S	FSV30	101181	2014. 03. 04	1 Year
		Agilent	N9030A-544	US51350140	2014. 07. 25	1 Year

10.2.Block Diagram of Test Setup

The same as section.5.2.

10.3.Specification Limits (§15.247(c))

10.3.1.In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in 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)).(※This test result attaching to §3.6.3)

10.3.2.The reference level for determining limit of emission limitations is according to the value measured indicated in plots at section 8.6.

10.4.Operating Condition of EUT

Same as 20dB bandwidth measurement which was listed in section 4.4.

10.5.Test Procedure

The transmitter output was connected to the spectrum analyzer. Set both RBW and VBW of spectrum analyzer to 100kHz with frequency range from 30MHz to 25GHz.

The measurement guideline was according to FCC Public Notice DA 00-705.

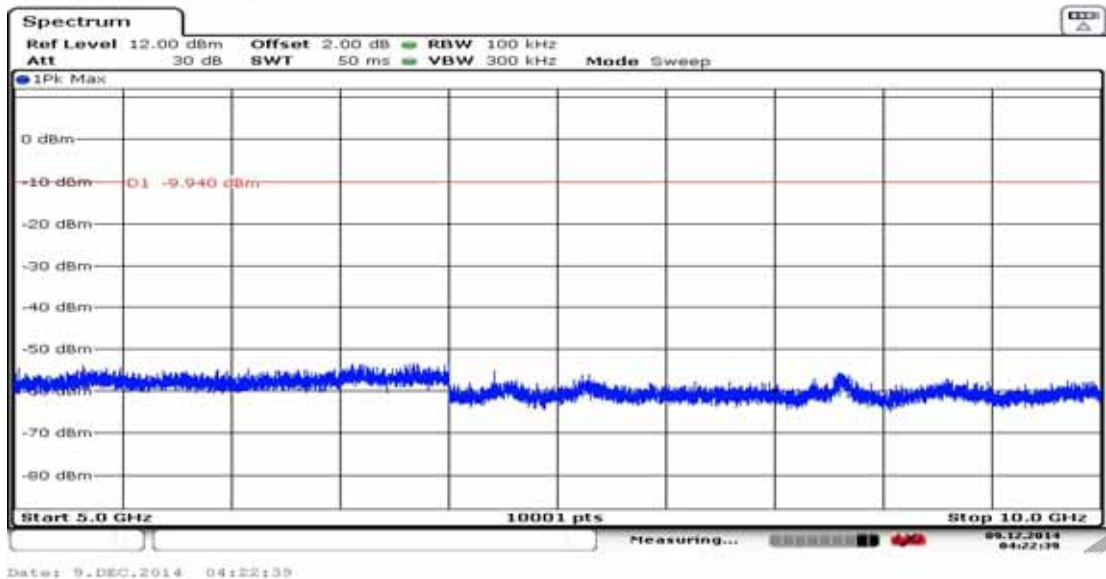
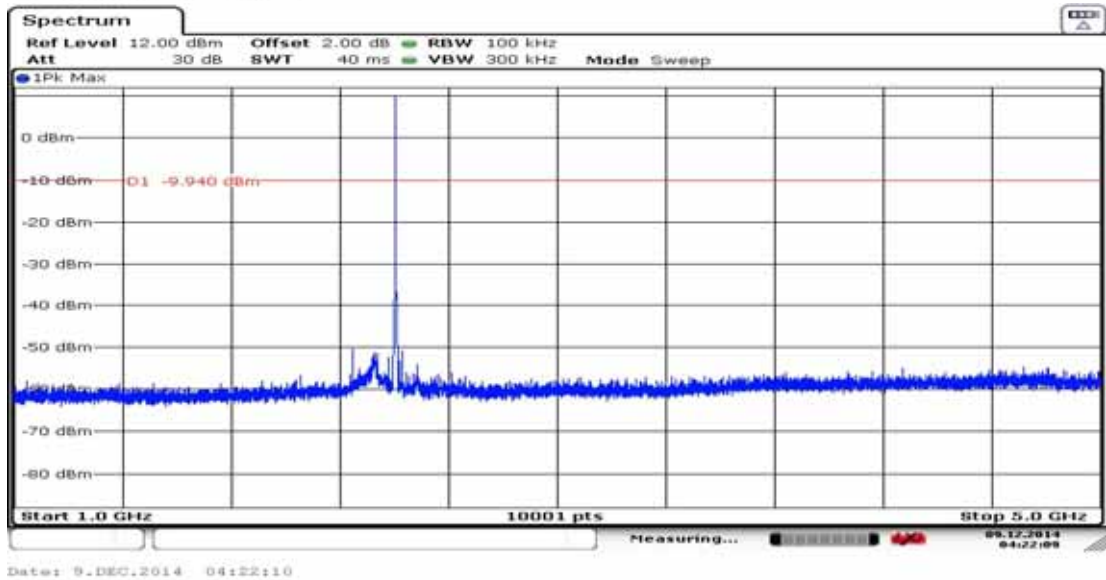
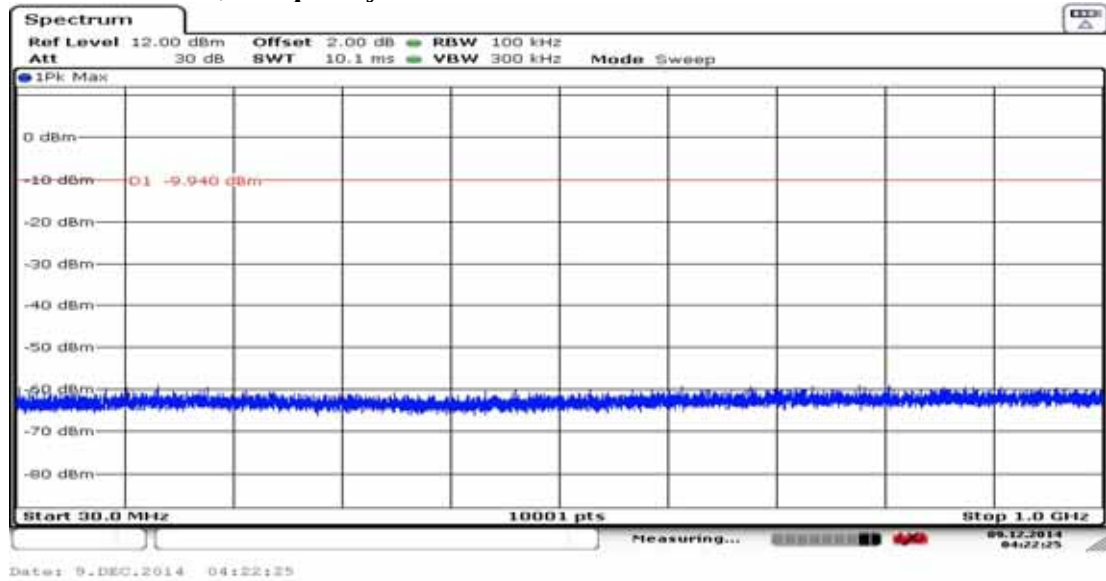
10.6.Test Results

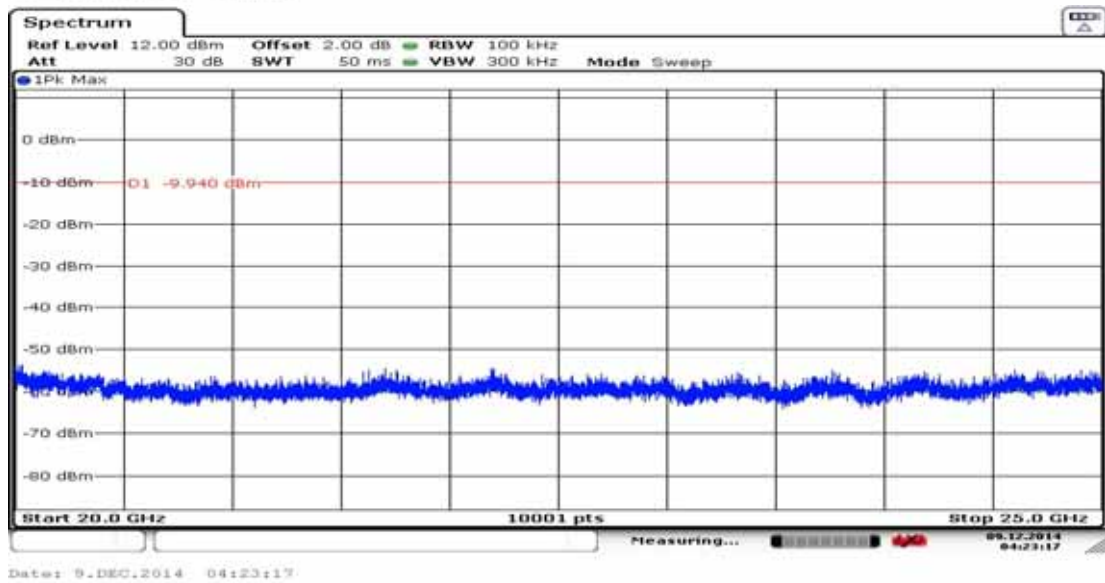
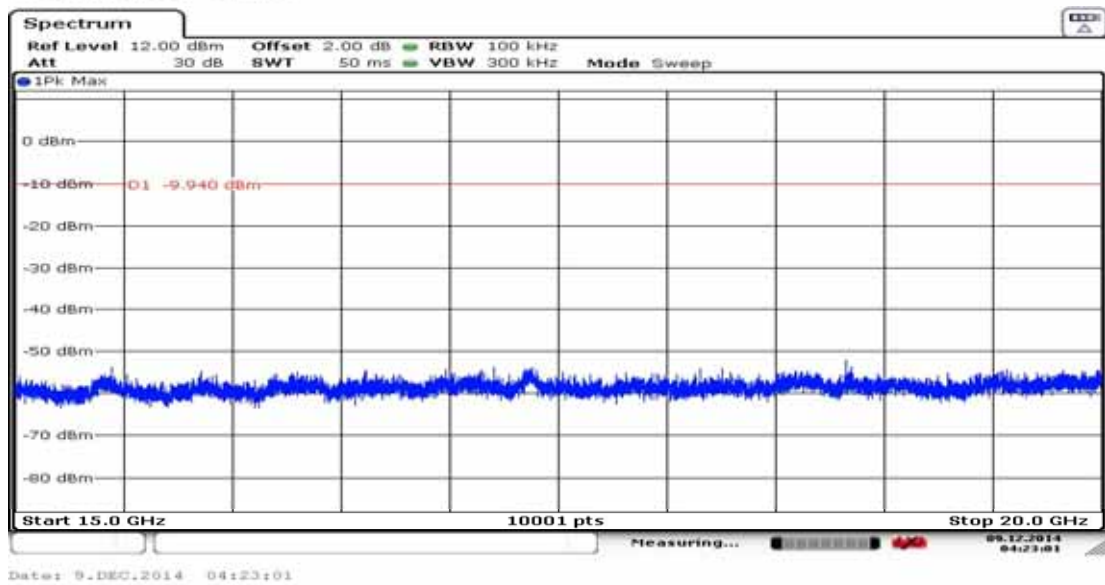
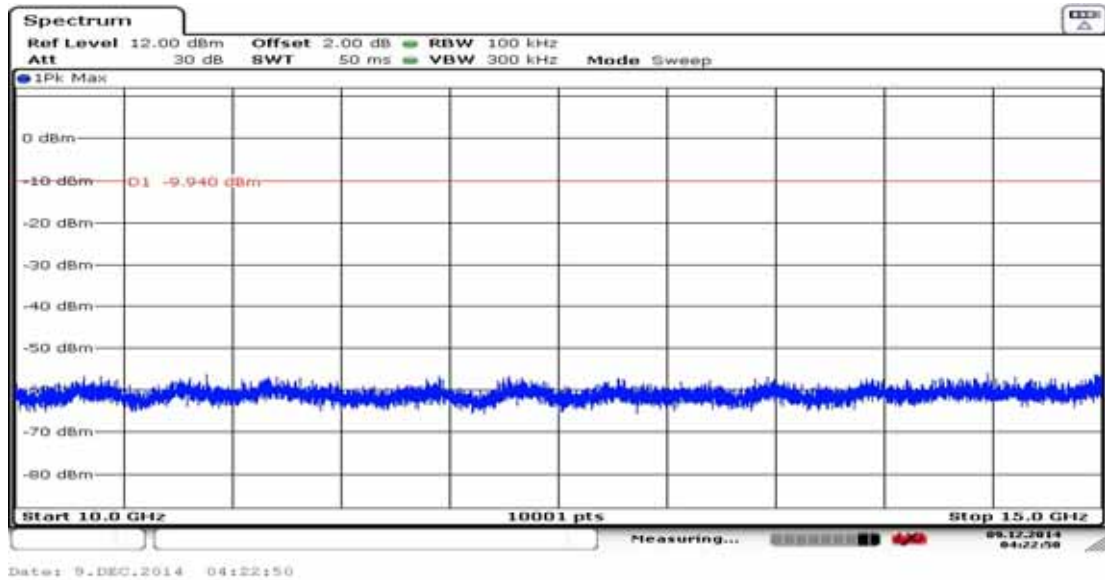
PASSED. The testing data was attached in the next pages.

10.6.1. Radio Technology: S-FHSS Modulation

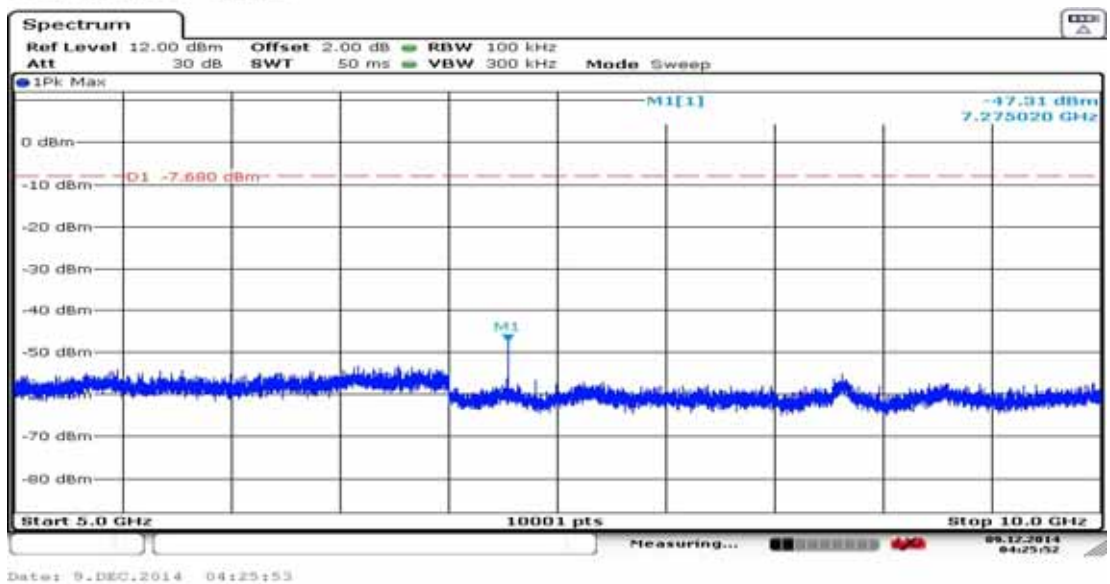
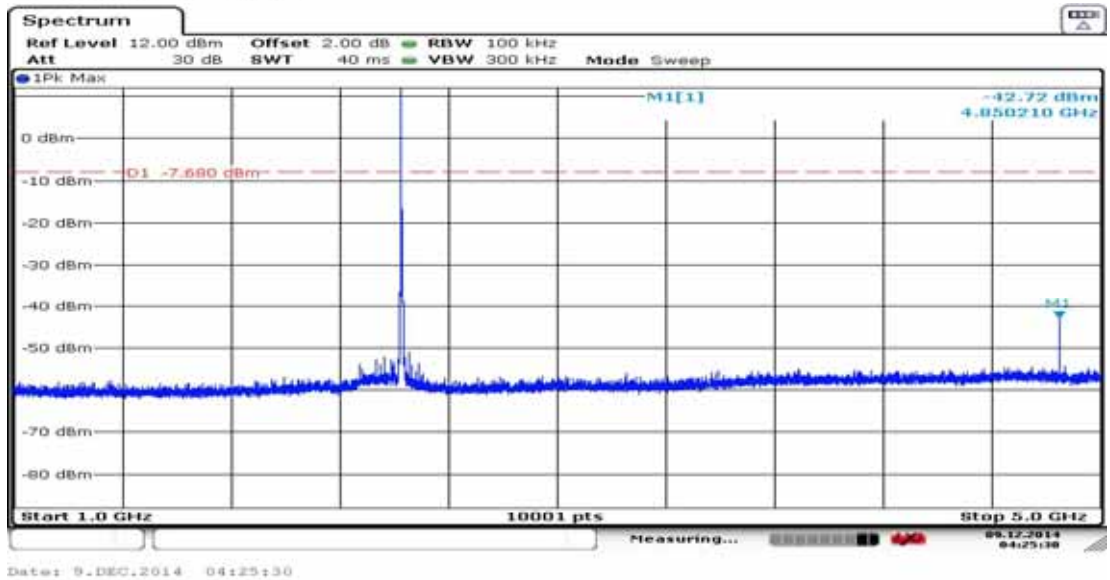
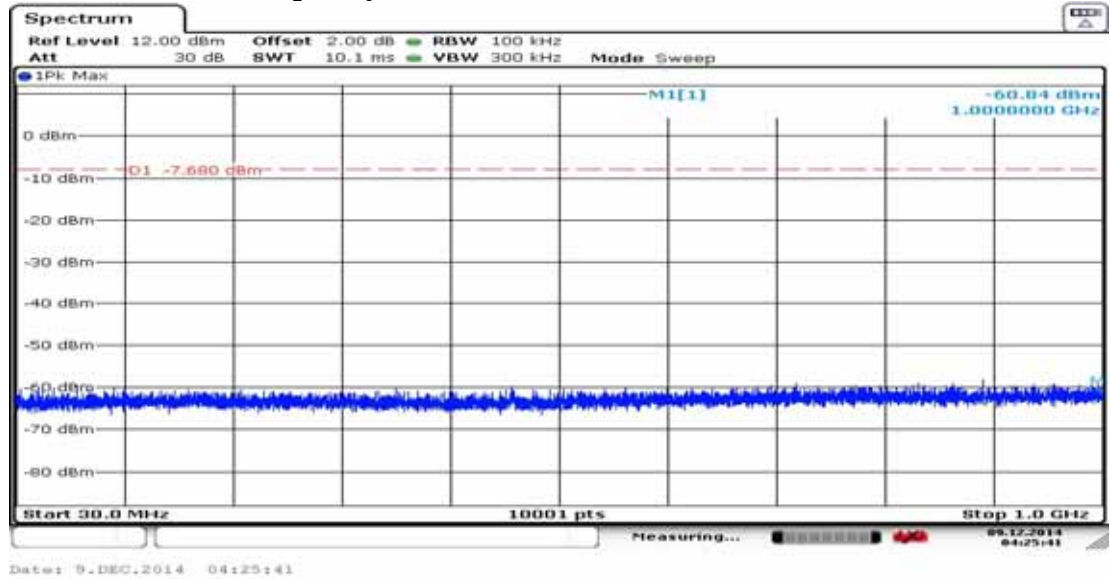
Test Date : 2014. 12. 09 Temperature : 22°C Humidity : 55%

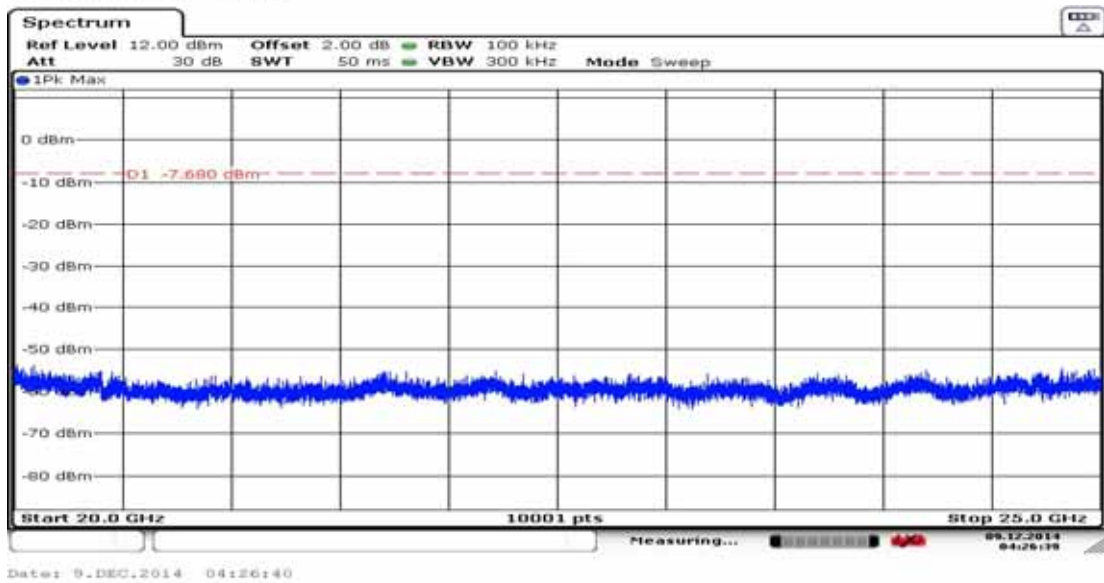
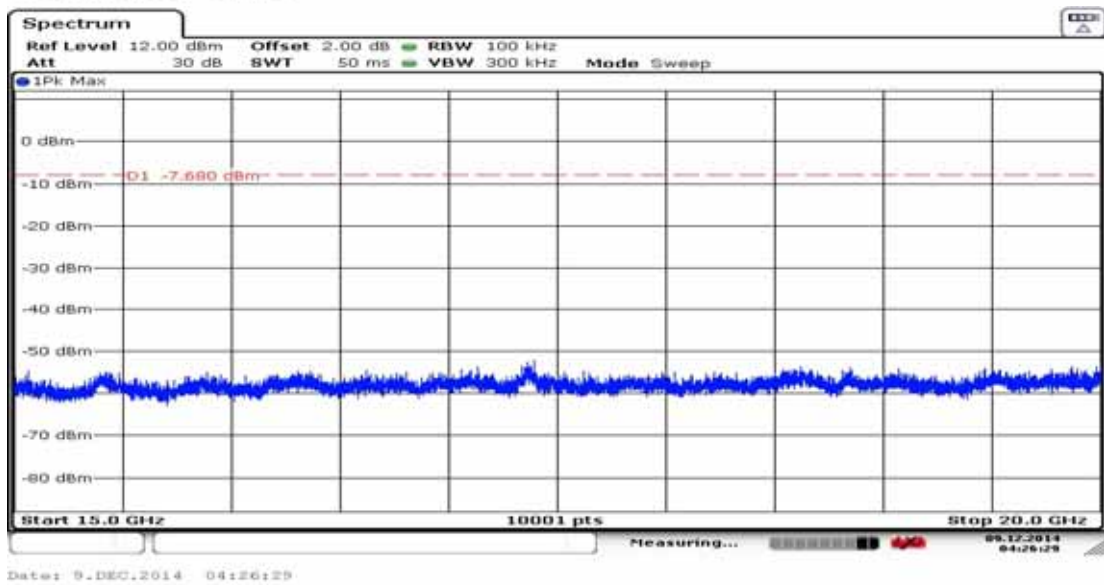
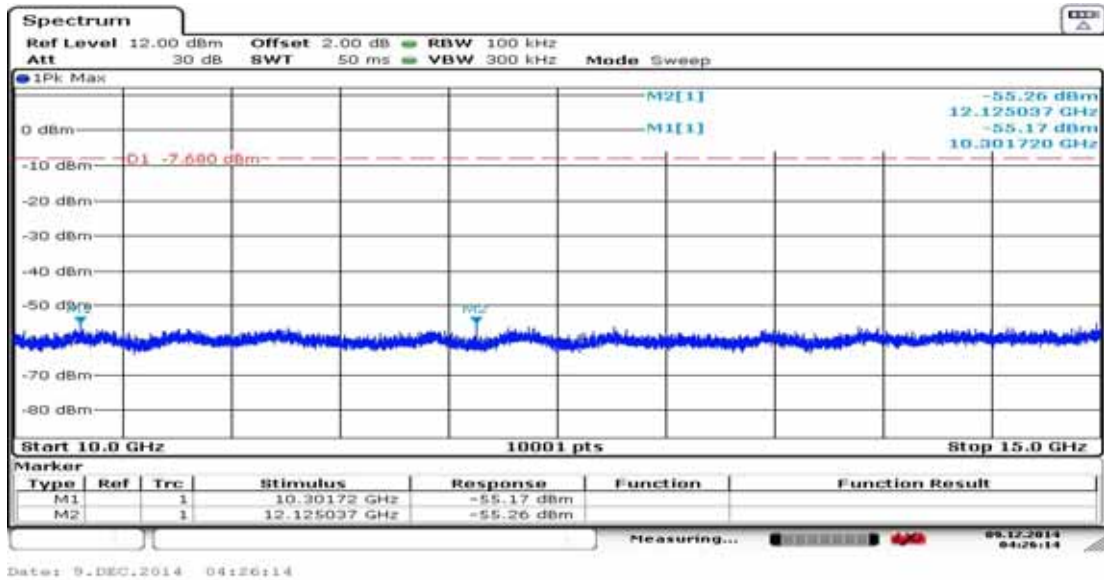
Channel No. 01, Frequency: 2403.25MHz



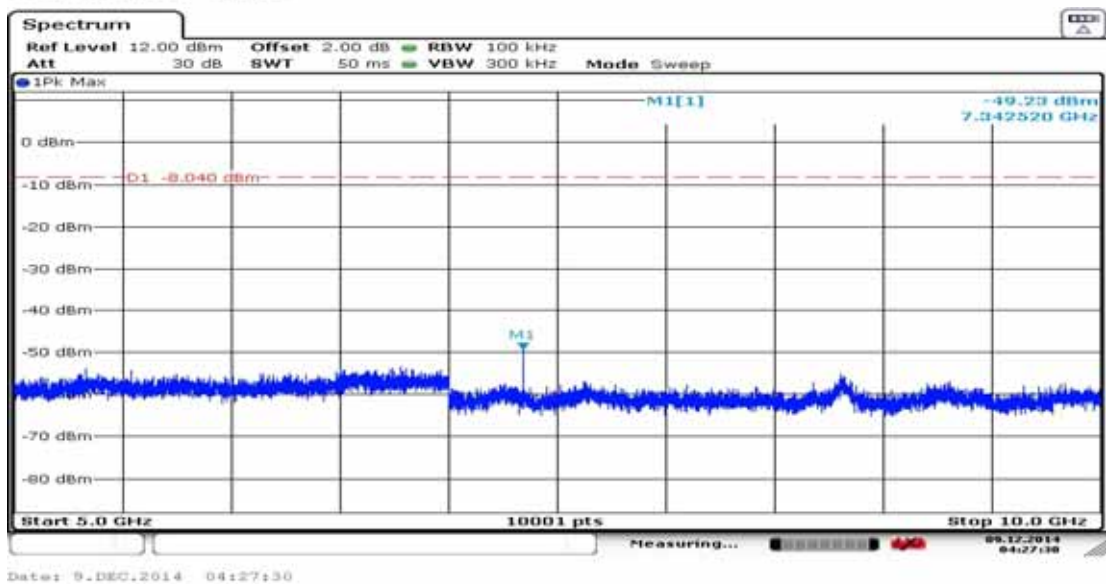
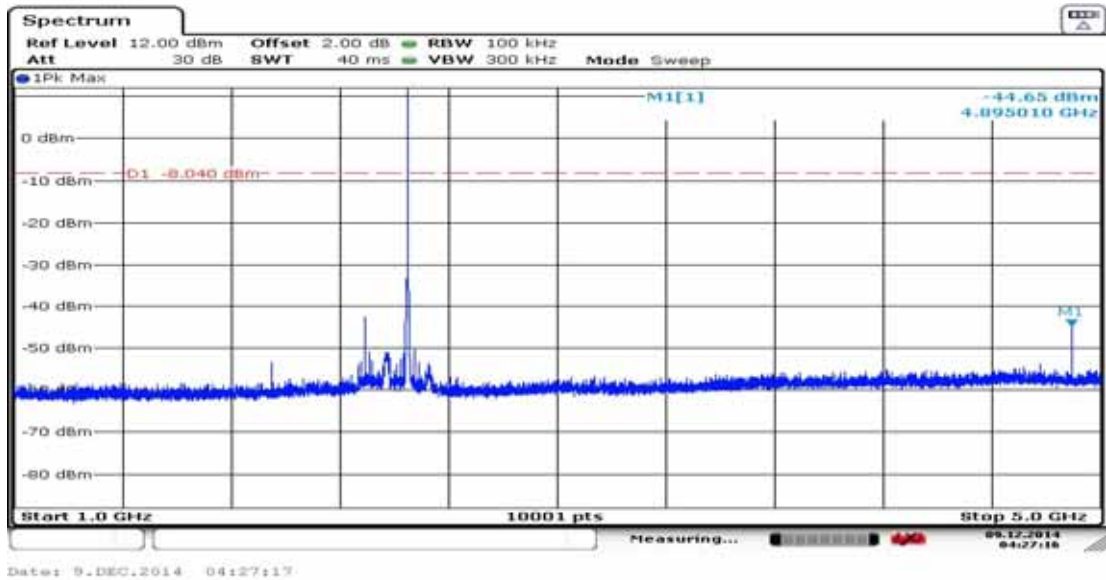
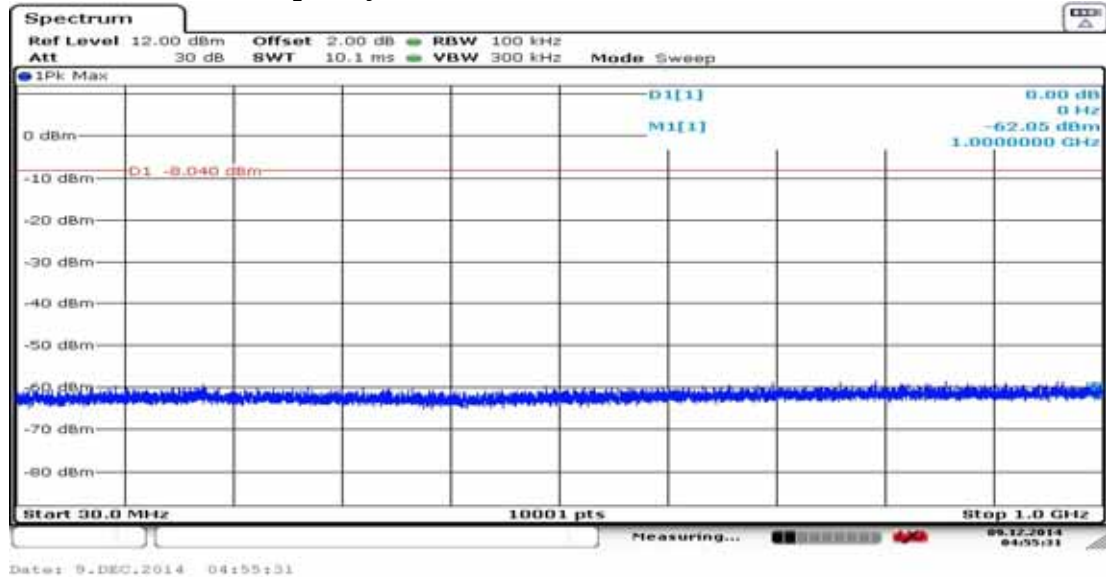


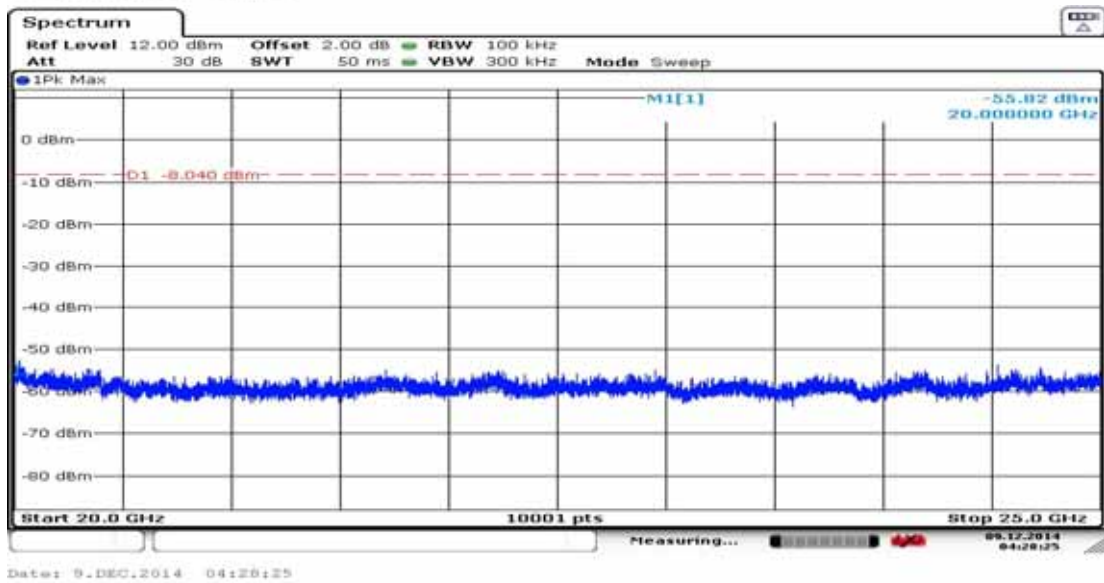
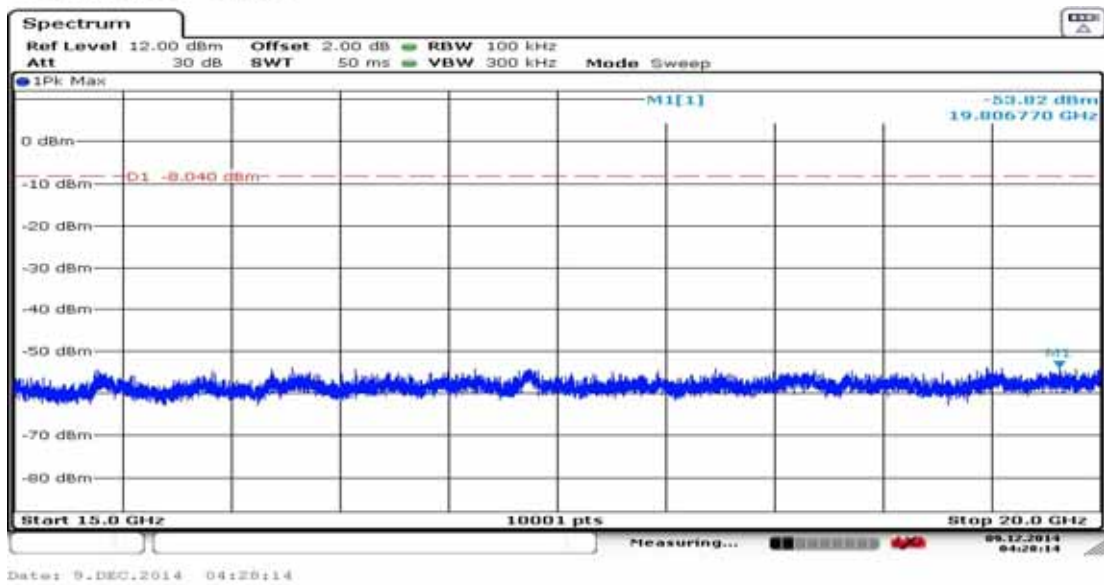
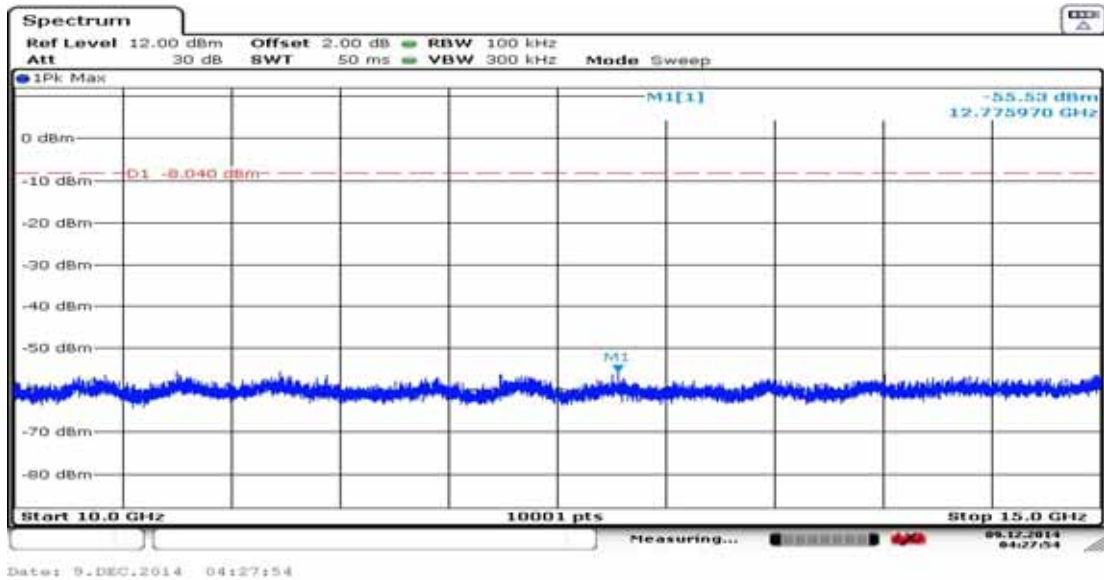
Channel No. 30, Frequency: 2425.00MHz





Channel No. 60, Frequency: 2447.50MHz

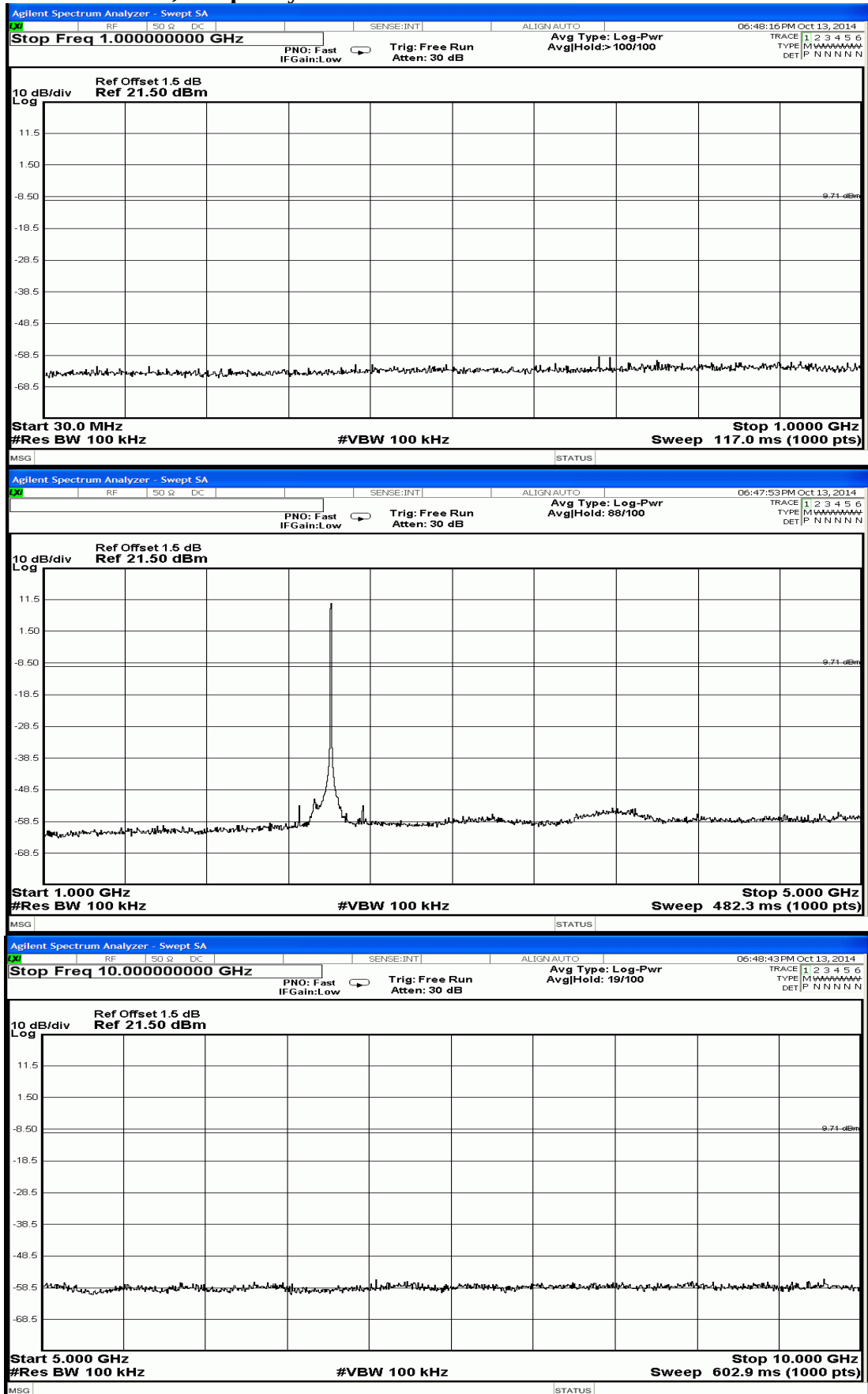


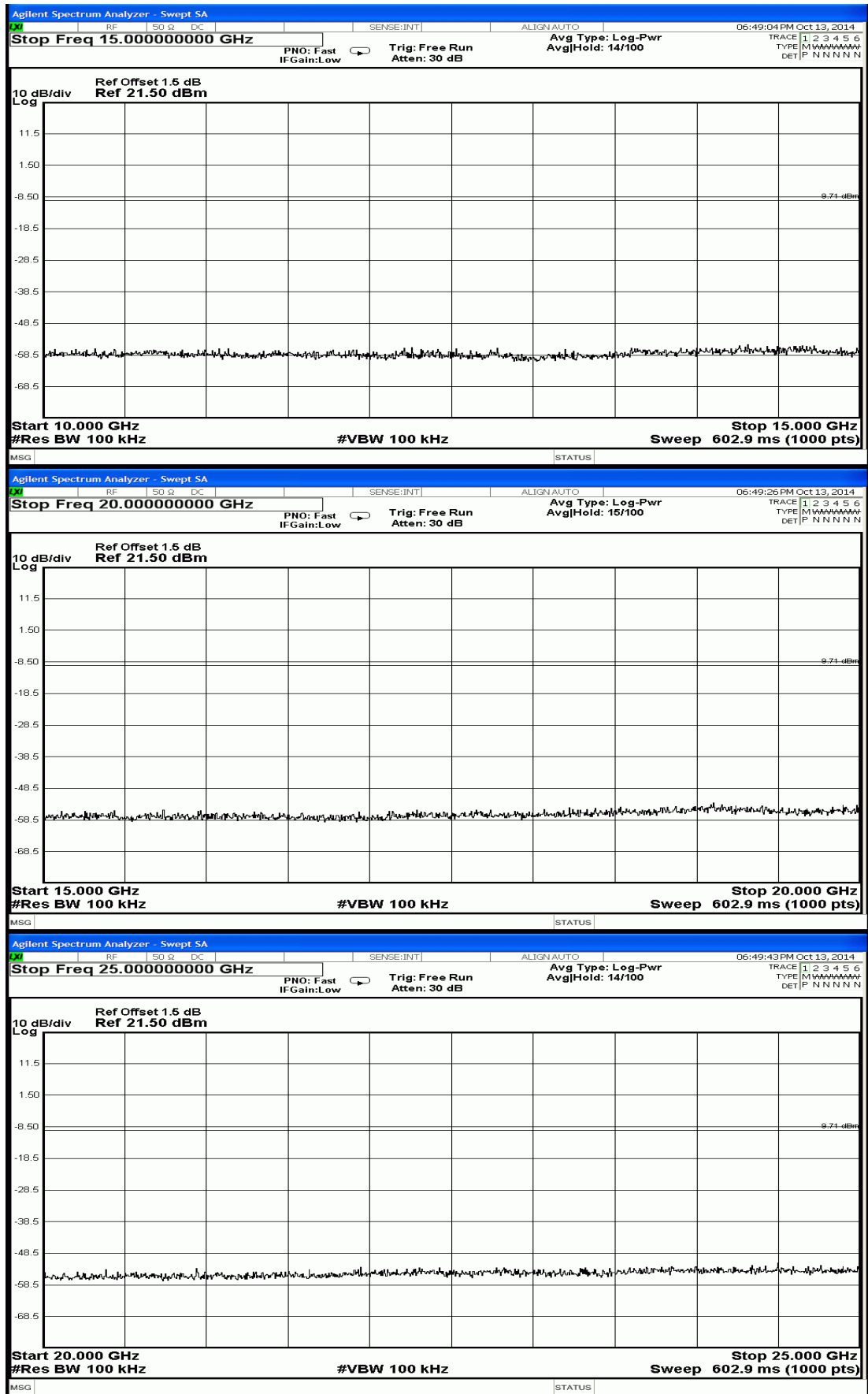


10.6.2. Radio Technology: T-FHSS Modulation

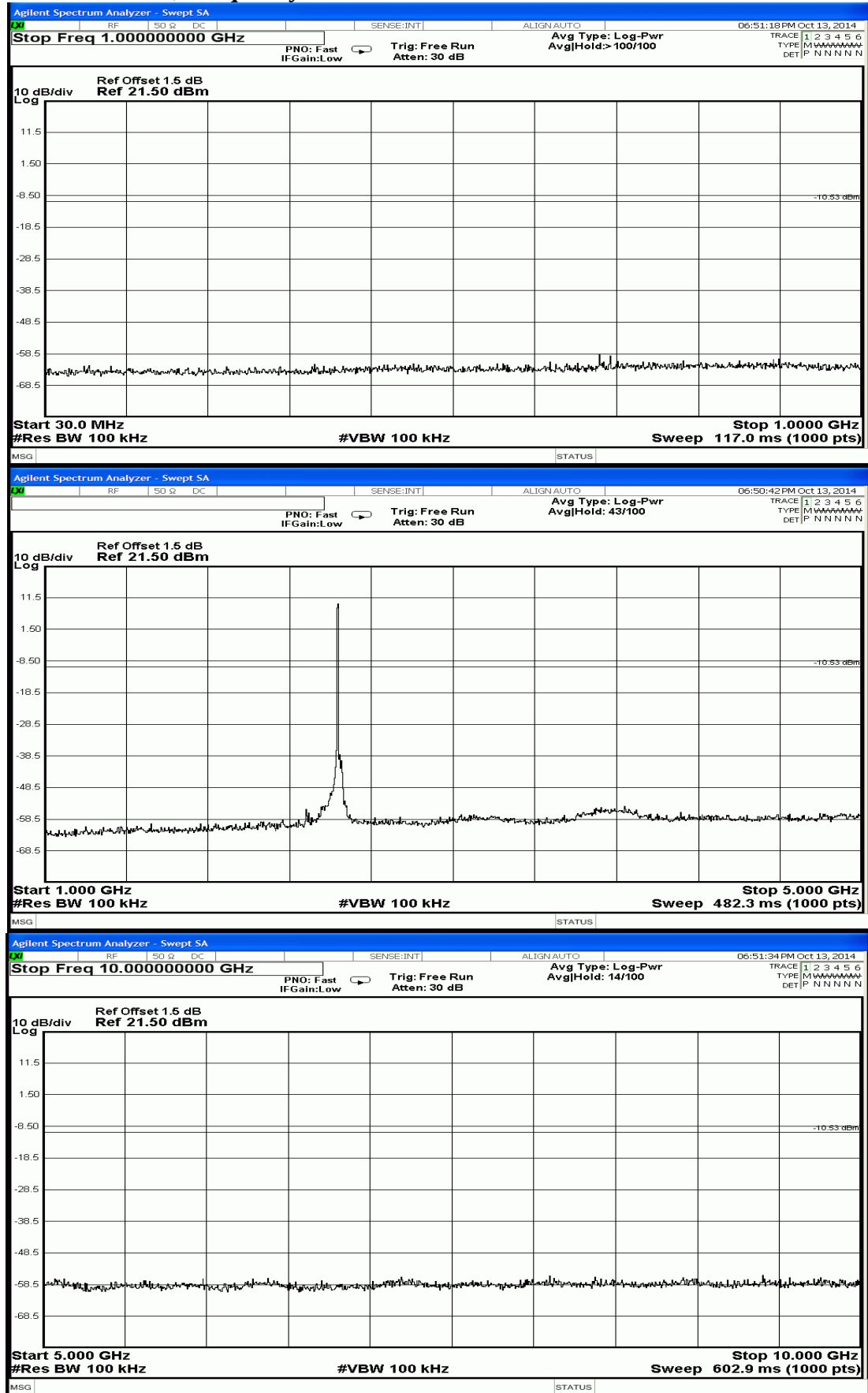
Test Date : 2014. 10. 13 Temperature : 20°C Humidity : 62%

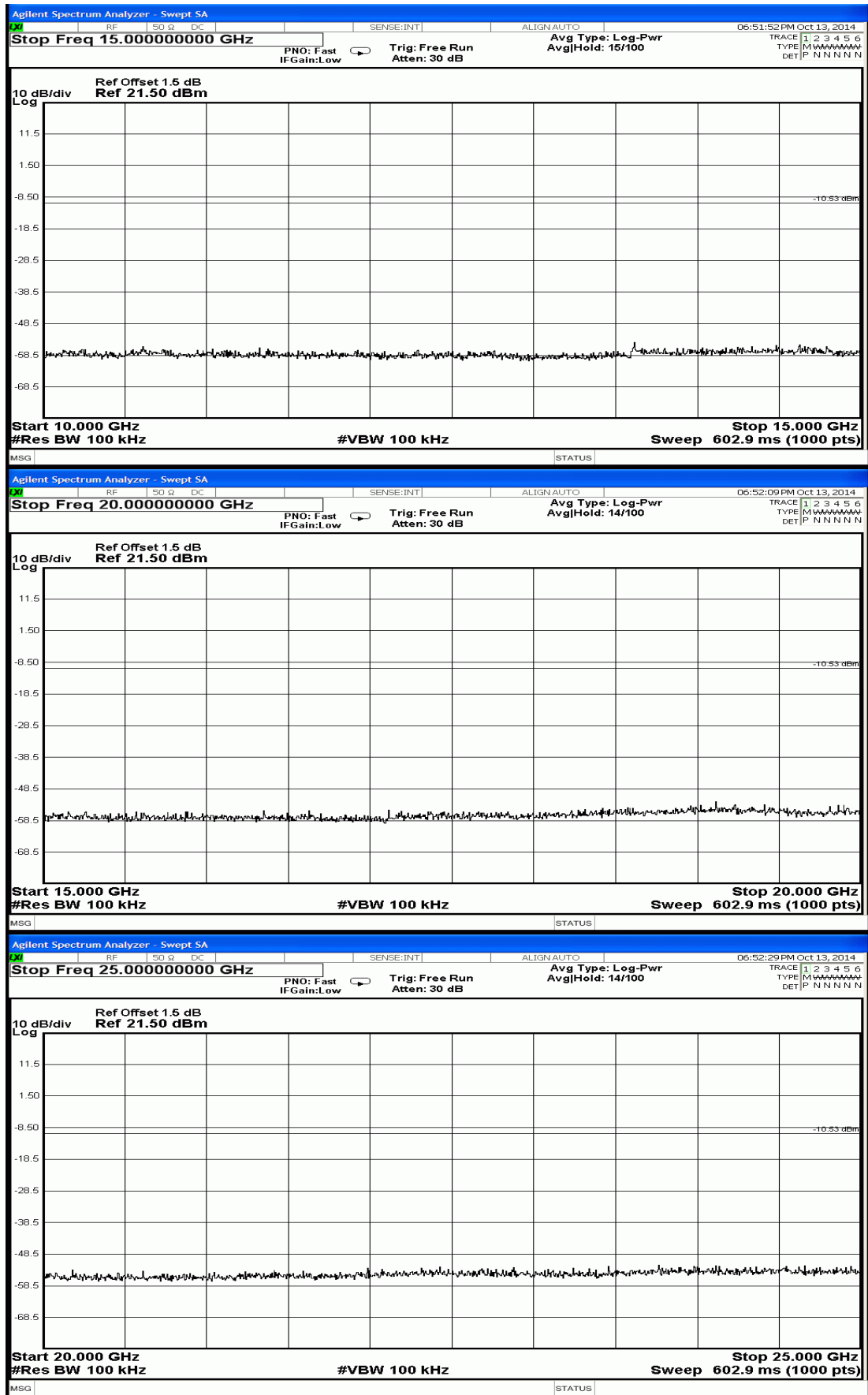
Channel No. 01, Frequency: 2407.50MHz



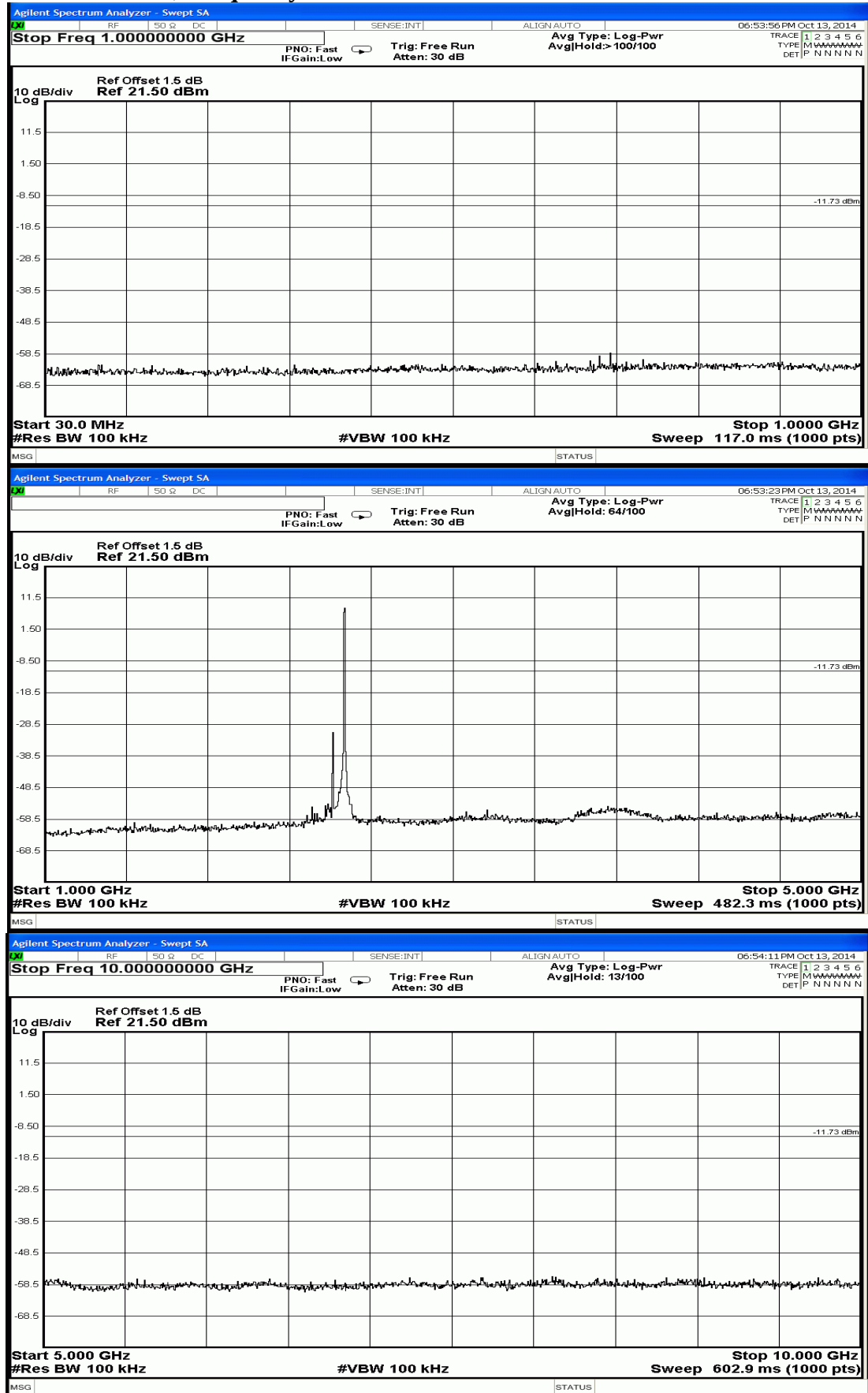


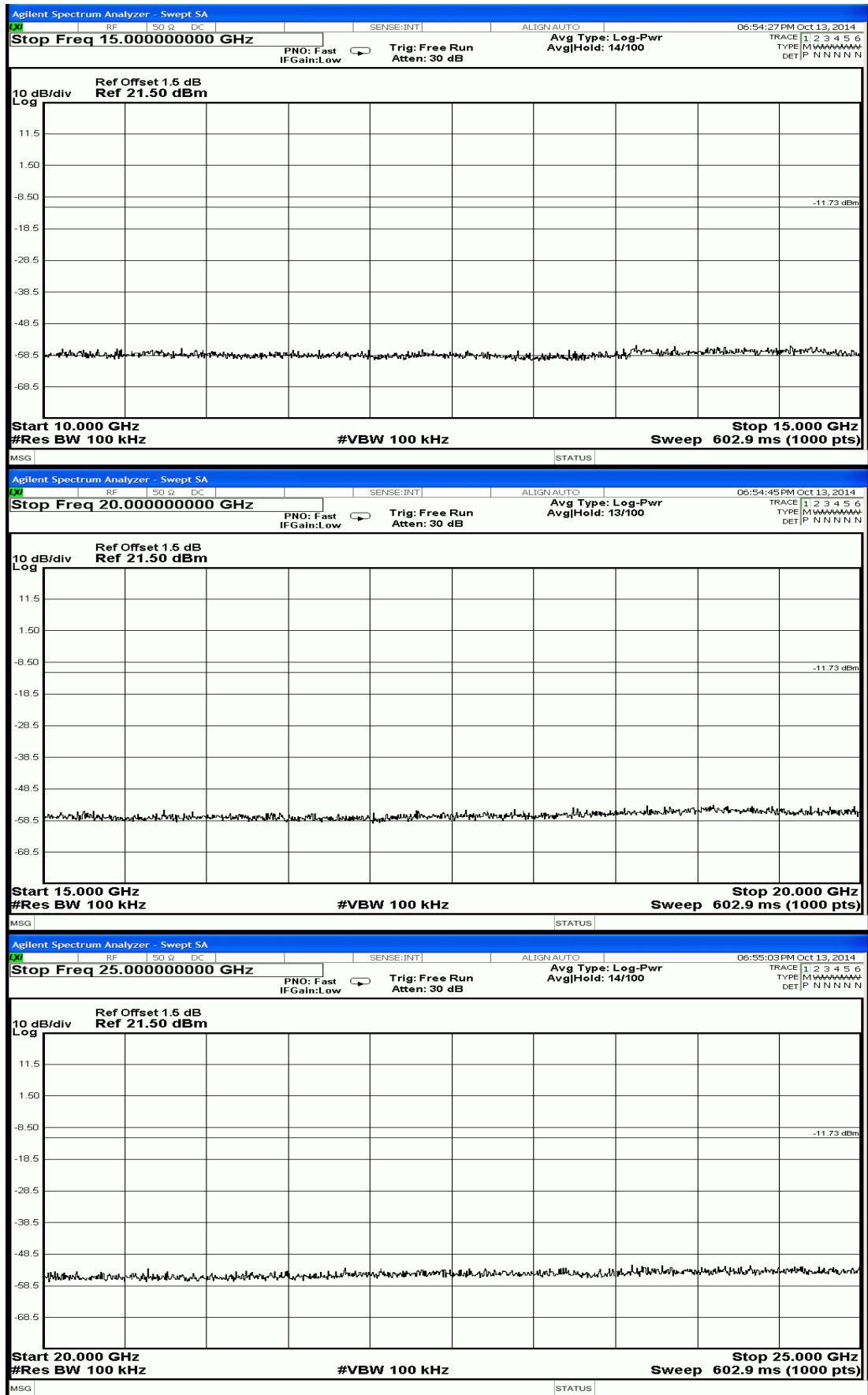
Channel No. 15, Frequency: 2435.50MHz





Channel No. 31, Frequency: 2467.50MHz





11.BAND EDGES MEASUREMENT

11.1.Test Equipment

The following test equipment was used during the band edges measurement:

Item	Equipment	Manufacturer	Model	Serial Number	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	R&S	FSV30	101181	2014. 03. 04	1 Year
		Agilent	N9030A-544	US51350140	2014. 07. 25	1 Year

11.2.Block Diagram of Test Setup

The same as section.5.2.

11.3.Specification Limits (§15.247(c))

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in 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)). (※ This test result attaching to §3.6.3)

11.4.Operating Condition of EUT

Same as 20dB bandwidth measurement which was listed in section 4.4.

11.5.Test Procedure

The transmitter output was connected to the spectrum analyzer. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 100kHz bandwidth from band edge.

The measurement guideline was according to FCC Public Notice DA 00-705.

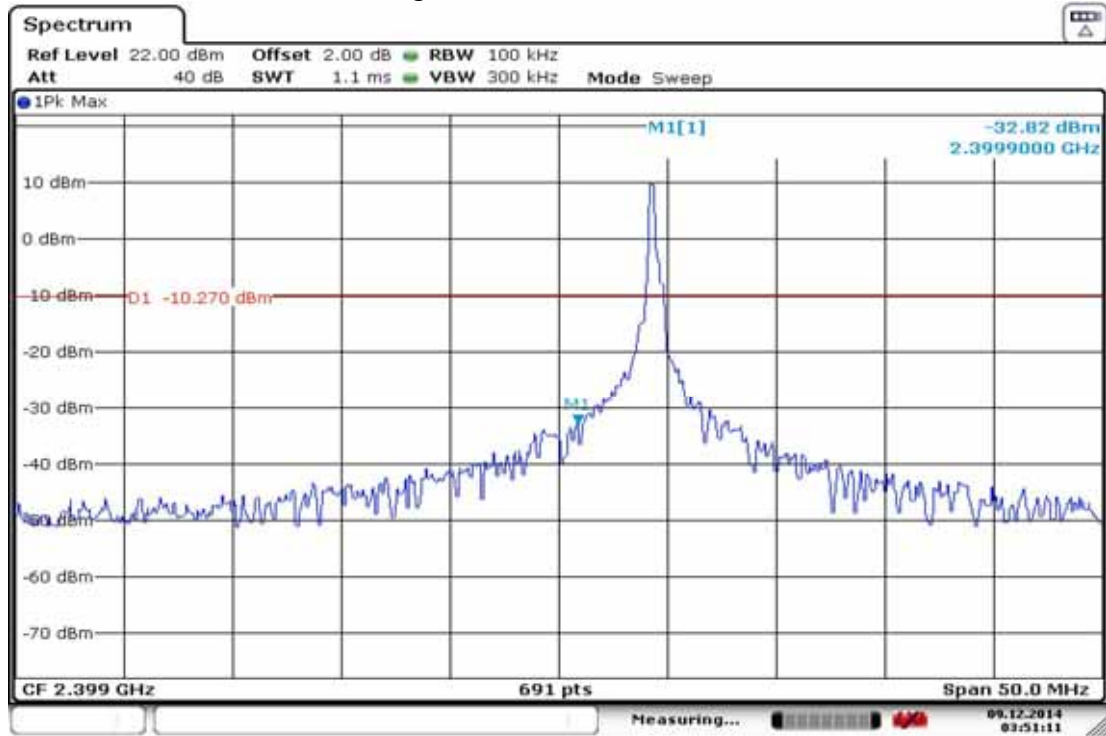
11.6.Test Results

PASSED. The testing data was attached in the next pages.

11.6.1. Radio Technology: S-FHSS Modulation

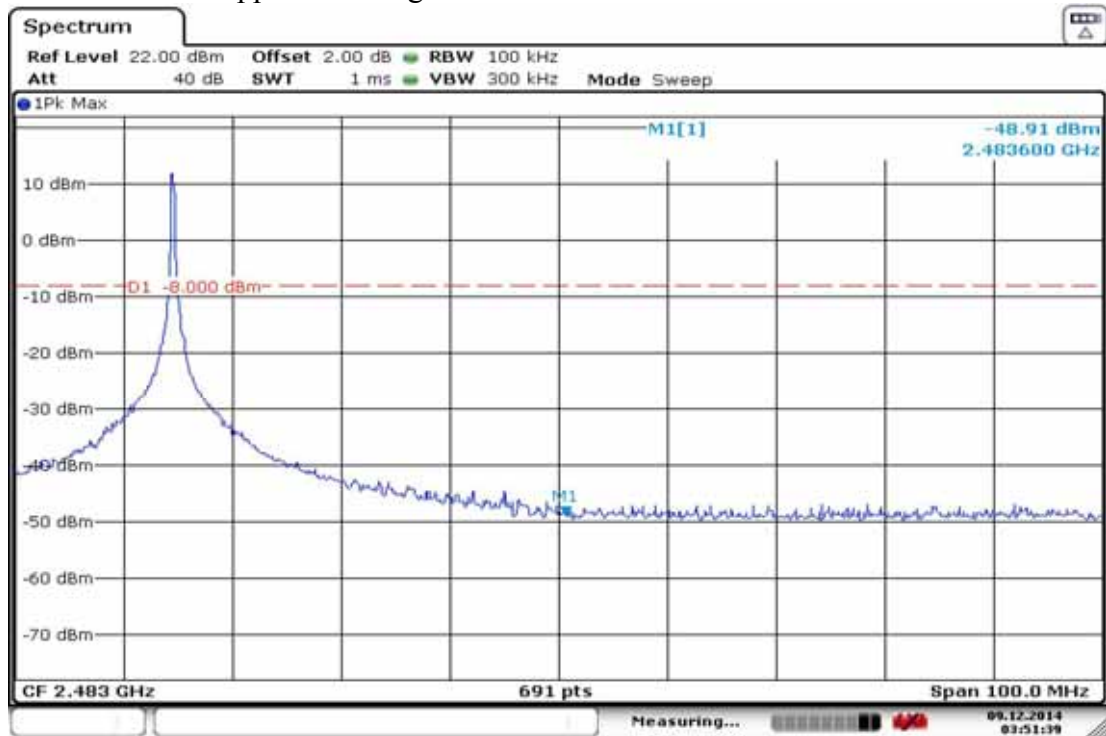
Test Date : 2014. 12. 09 Temperature : 22°C Humidity : 55%

Below Band edge



Date: 9, DEC. 2014 03:51:11

Upper Band edge



Date: 9, DEC. 2014 03:51:39

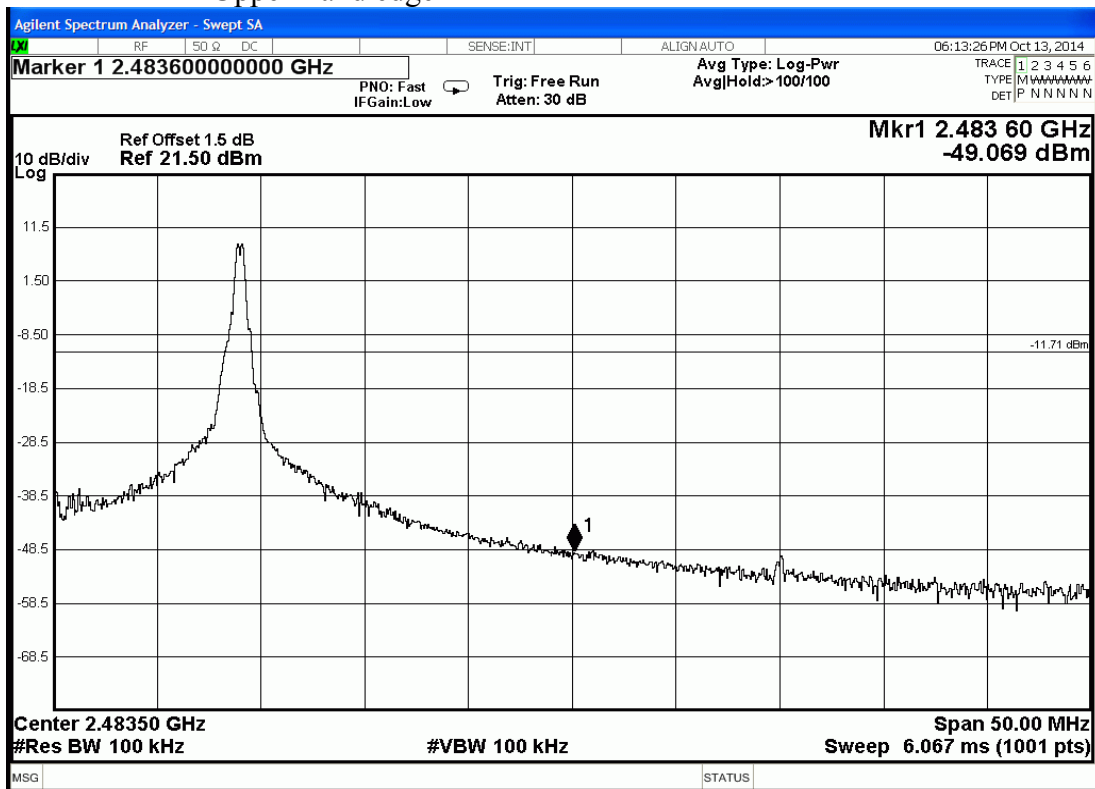
11.6.2. Radio Technology: T-FHSS Modulation

Test Date : 2014. 10. 13 Temperature : 20°C Humidity : 62%

Below Band edge



Upper Band edge



12.DEVIATION TO TEST SPECIFICATIONS

【NONE】

13. PHOTOGRAPHS

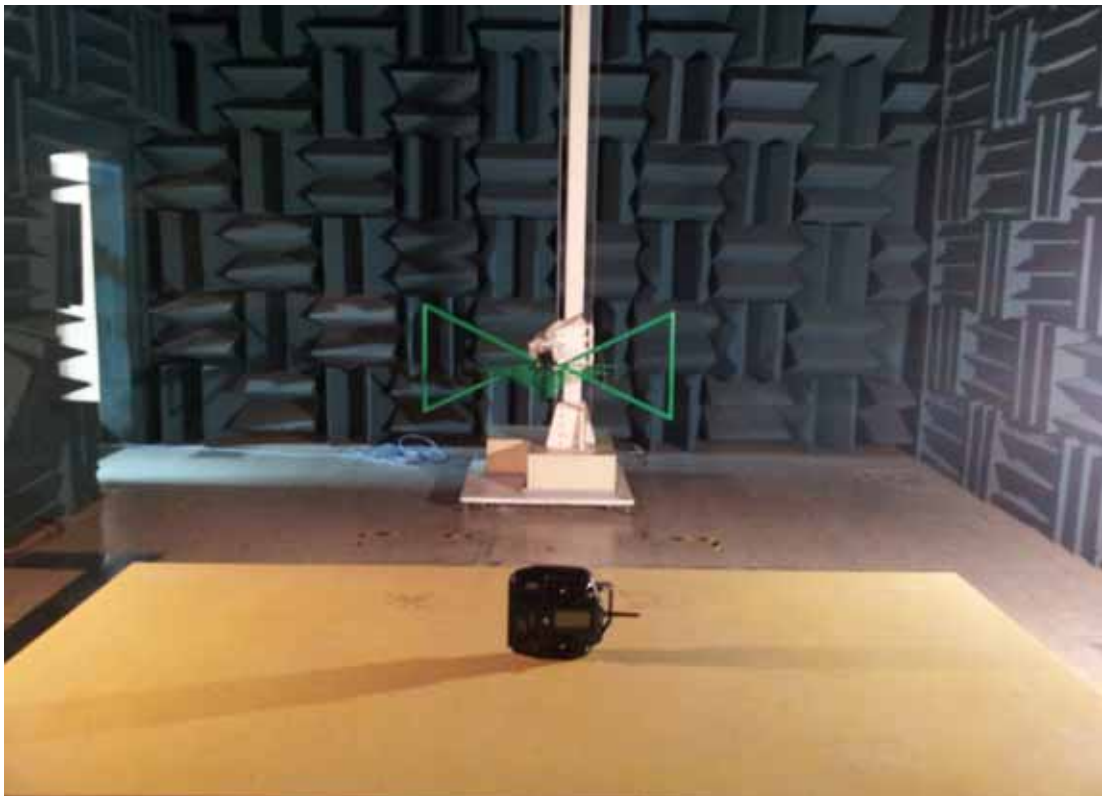
13.1. Photos of Radiated Measurement at Semi-Anechoic Chamber

13.1.1. Frequency Range 30MHz~1GHz

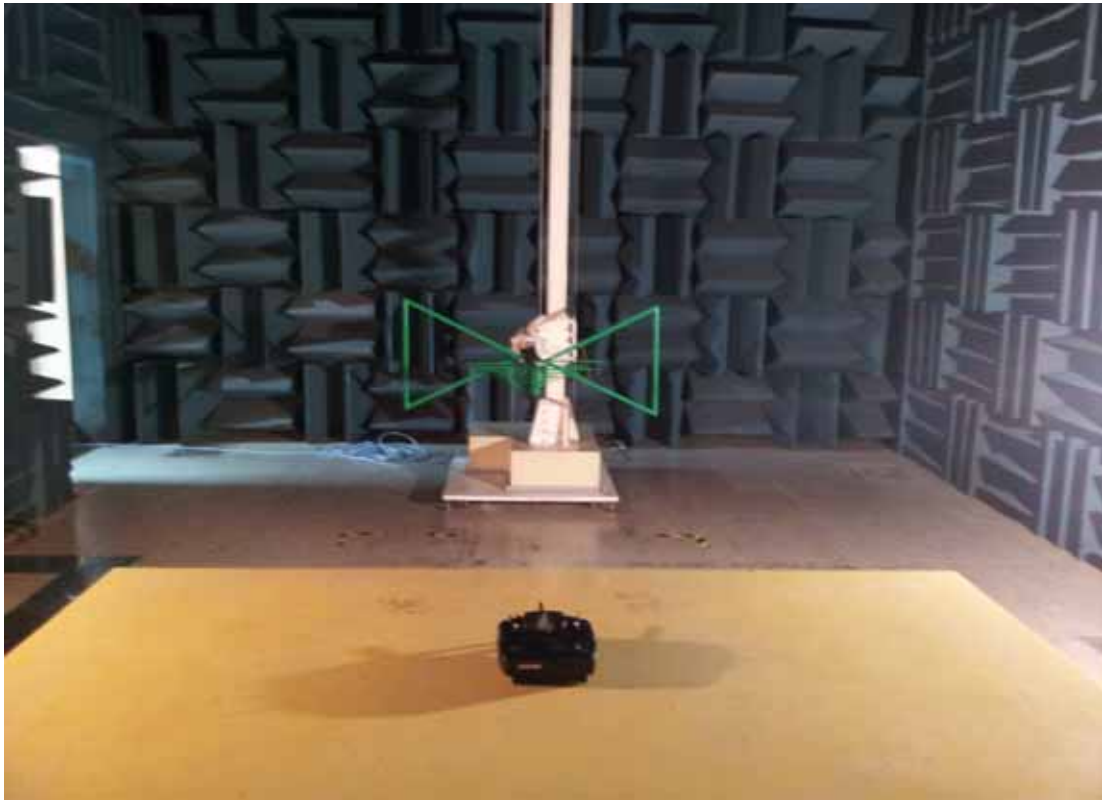
Stand



Side



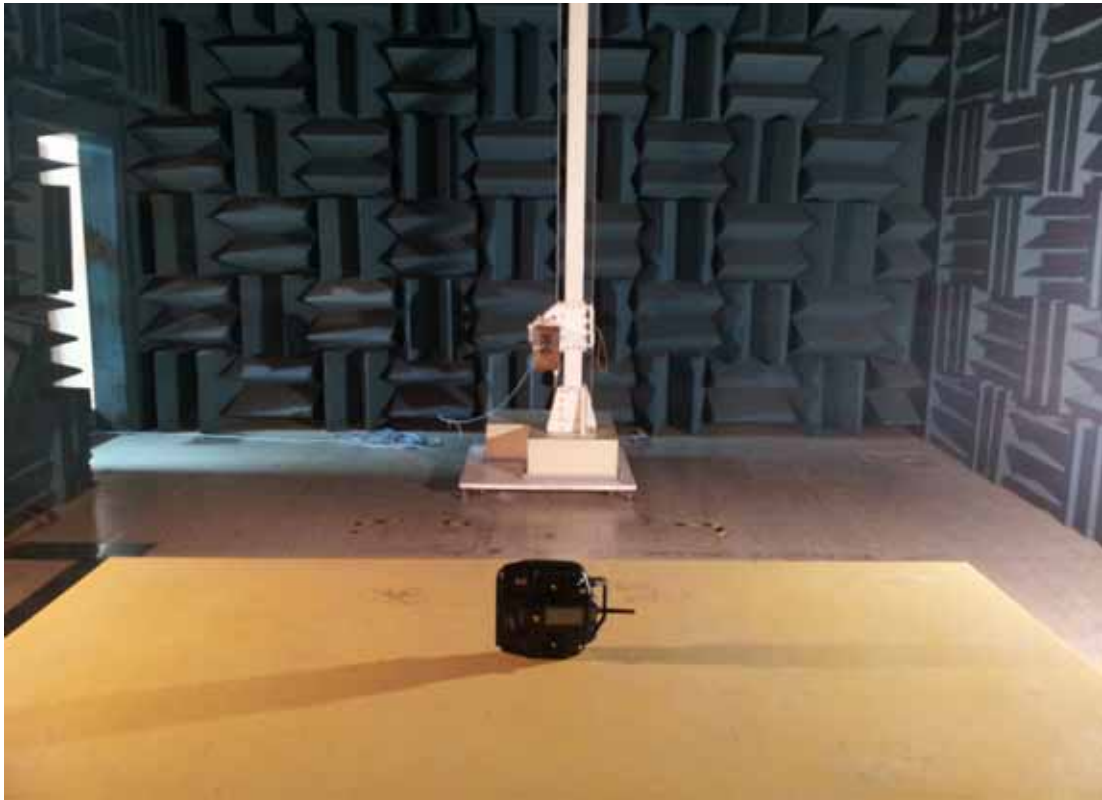
Lie



13.1.2.Frequency Range Above 1GHz,
Stand



Side



Lie



13.2.Photo of RF Conducted Measurement



S-FHSS Modulation:

