

FCC 15.247 & RSS-247 2.4GHz Report

for

FUTABA Corporation

**1080 Yabutsuka Chosei-son Chosei-gun
Chiba, 299-4395 Japan.**

Brand : Futaba
Product Name : Radio Control
Model Name : T16SZ
FCC ID : AZP-T16SZ-24G
IC : 2914D-T16SZ

**Prepared by: : AUDIX Technology Corporation,
EMC Department**



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TEST REPORT CERTIFICATION

Applicant : FUTABA Corporation
Manufacture : FUTABA Corporation
EUT Description
(1) Product : Radio Control
(2) Model : T16SZ
(3) Brand : F170450

Applicable Standards:

47 CFR FCC Part 15 Subpart C
RSS-Gen (Issue 4), November 2014
RSS-247 (Issue 2), February 2017
ANSI C63.10:2013
FCC Public Notice DA 00-705

Audix Technology Corp. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.

Audix Technology Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens and samples.

Date of Report: 2017. 07. 21

Reviewed by:

Annie Yu (Annie Yu/Administrator)

Approved by:

Ben Cheng (Ben Cheng/Manager)

1. REPORT HISTORY

Revision	Date	Revision Summary	Report Number
0	2017. 07. 21	Original Report.	EM-F170450

2. SUMMARY OF TEST RESULTS

Rule		Description	Results
FCC	IC		
15.207	RSS-Gen §8.8	Conducted Emission	N/A, NOTE
15.247(d)/ 15.205	RSS-Gen §8.9 RSS-247 §5.5	Radiated Band Edge and Radiated Spurious Emission	PASS
15.247(a)(1)	RSS-247 §5.1(2)	20dB Bandwidth	PASS
15.247(a)(1)	RSS-247 §5.1(2)	Carrier Frequency Separation	PASS
15.247(a)(1)(iii)	RSS-247 §5.1(4)	Time of Occupancy	PASS
15.247(a)(1)(iii)	RSS-247 §5.1(4)	Number of Hopping Channels	PASS
15.247(b)(1)	RSS-247 §5.1(2)	Maximum Peak Output Power	PASS
15.247(d)	RSS-247 §5.5	Conducted Band Edges and Conducted Spurious Emission	PASS
15.203	---	Antenna Requirement	PASS
Note: The EUT only employs battery power for operation, so it is unnecessary to test.			

3. GENERAL INFORMATION

3.1. Description of Application

Applicant	FUTABA Corporation 1080 Yabutsuka Chosei-mura Chosei-gun Chiba-ken, 299-4395 Japan.
Manufacturer	FUTABA Corporation 1080 Yabutsuka Chosei-mura Chosei-gun Chiba-ken, 299-4395 Japan.
Product	Radio Control
Model	T16SZ
Brand	Futaba

3.2. Description of Application

Test Model	T16SZ
Serial Number	N/A
Power Rating	6.6Vdc
RF Features	S-FHSS and T-FHSS
Transmit Type	1T1R
Date of Receipt	2017. 06. 09
Date of Test	2017. 06. 26 ~ 07. 14

3.3. Antenna Information

No.	Antenna Part Number	Manufacture	Antenna Type	Frequency (MHz)	Max Gain (dBi)
1	ANTB18-186A0	SANSEI ELECTRIC CO., LTD	1/2λ Sleeve antenna	2400 ~ 2500	2.14

3.4. EUT Specifications Assessed in Current Report

Fundamental Range (MHz)	Channel Number	Modulation	Data Rate (kbps)
2403.250 to 2447.500	60	S-FHSS	128
2407.500 to 2467.500	31	T-FHSS	128

Modulation: S-FHSS					
Channel List					
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
1	2403.25	21	2418.25	41	2433.25
2	2404.00	22	2419.00	42	2434.00
3	2404.75	23	2419.75	43	2434.75
4	2405.50	24	2420.50	44	2435.50
5	2406.25	25	2421.25	45	2436.25
6	2407.00	26	2422.00	46	2437.00
7	2407.75	27	2422.75	47	2437.75
8	2408.50	28	2423.50	48	2438.50
9	2409.25	29	2424.25	49	2439.25
10	2410.00	30	2425.00	50	2440.00
11	2410.75	31	2425.75	51	2440.75
12	2411.50	32	2426.50	52	2441.50
13	2412.25	33	2427.25	53	2442.25
14	2413.00	34	2428.00	54	2443.00
15	2413.75	35	2428.75	55	2443.75
16	2414.50	36	2429.50	56	2444.50
17	2415.25	37	2430.25	57	2445.25
18	2416.00	38	2431.00	58	2446.00
19	2416.75	39	2431.75	59	2446.75
20	2417.50	40	2432.50	60	2447.50

Modulation: T-FHSS			
Channel List			
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
1	2407.5	17	2439.5
2	2409.5	18	2441.5
3	2411.5	19	2443.5
4	2413.5	20	2445.5
5	2415.5	21	2447.5
6	2417.5	22	2449.5
7	2419.5	23	2451.5
8	2421.5	24	2453.5
9	2423.5	25	2455.5
10	2425.5	26	2457.5
11	2427.5	27	2459.5
12	2429.5	28	2461.5
13	2431.5	29	2463.5
14	2433.5	30	2465.5
15	2435.5	31	2467.5
16	2437.5		

3.5. Test Configuration

Modulation	T _{on} (ms)	Duty Cycle Factor (dB)
S-FHSS	3.04	-30.34
T-FHSS	1.58	-36.03

Item		Modulation	Test Channel
Radiated Test Case	Radiated Band Edge ^{Note1}	S-FHSS	1/60
		T-FHSS	1/31
	Radiated Spurious Emission ^{Note1}	S-FHSS	1/30/60
		T-FHSS	1/15/31
Conducted Test Case	20dB Bandwidth	S-FHSS	1/30/60
		T-FHSS	1/15/31
	Carrier Frequency Separation	S-FHSS	1/30/60
		T-FHSS	1/15/31
	Time of Occupancy	S-FHSS	1/30/60
		T-FHSS	1/15/31
	Number of Hopping Channels	S-FHSS	1/30/60
		T-FHSS	1/15/31
	Maximum Peak Output Power	S-FHSS	1/30/60
		T-FHSS	1/15/31
	Band Edges	S-FHSS	1/60
		T-FHSS	1/31
	Spurious Emission	S-FHSS	1/30/60
		T-FHSS	1/15/31

Note 1:

☐ Mobile Device

☒ Portable Device, and 3 axis were assessed. The worst scenario for Radiated Spurious Emission as follow:

☒ Lie

☐ Side

☐ Stand

3.6. Tested Supporting System List

3.6.1. Support Peripheral Unit

No.	Product	Brand	Model No.	Serial No.	FCC ID
1.	DC Power Supply	TOP WARD	3303A	N/A	N/A

3.6.2. Cable Lists

No.	Cable Description Of The Above Support Units
1.	DC Power Cord*2: Unshielded, Detachable, 0.5m AC Power Cord: Unshielded, Undetachable, 1.8m

3.7. Setup Configuration

3.7.1. EUT Configuration for Power Line Emission



3.7.2. EUT Configuration for Conducted Test Items



3.8. Operating Condition of EUT

Test program “Futaba Term” is used for enabling EUT RF function under continues transmitting and choosing data rate/ channel.

3.9. Description of Test Facility

Name of Test Firm	Audix Technology Corporation / EMC Department No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan Tel: +886-2-26092133 Fax: +886-2-26099303 Website : www.audixtech.com Contact e-mail: sales@audixtech.com
Accreditations	The laboratory is accredited by following organizations under ISO/IEC 17025:2005 (1) NVLAP(USA) NVLAP Lab Code 200077-0 (2) TAF(Taiwan) No. 1724 (3) FCC OET Designation No. TW1004 & TW1090
Test Facilities	(1) Semi-Anechoic Chamber (IC Test Site Registration No.: 5183B-1)

3.10. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty
Radiation Test (Distance: 3m)	30MHz~1000MHz	± 3.68dB
	Above 1GHz	± 5.82dB

Remark : Uncertainty = $ku_c(y)$

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

4. MEASUREMENT EQUIPMENT LIST

4.1. Radiated Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A-526	MY53400071	2016. 09. 19	1 Year
2.	Test Receiver	R & S	ESCS30	100338	2017. 06. 19	1 Year
3.	Amplifier	HP	8447D	2944A06305	2017. 02. 16	1 Year
4.	Amplifier	HP	8449B	3008A00529	2017. 02. 08	1 Year
5.	Bilog Antenna	CHASE	CBL6112D	33821	2017. 01. 21	1 Year
6.	Horn Antenna	EMCO	3115	9609-4927	2017. 06. 27	1 Year
7.	Double-Ridged Waveguide Horn	ETS-Lindgren	3117	00135902	2017. 03. 08	1 Year
8.	2.4GHz Notch Filter	K&L	7NSL10-244 1.5E130.5-00	1	2016. 07. 28	1 Year
9.	3GHz Notch Filter	Microwave	H3G018G1	484798	2016. 07. 28	1 Year
10	Test Software	Audix	e3	V.6.110601	N.C.R.	N.C.R.

4.2. RF Conducted Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9030A-526	MY53310269	2017. 01. 03	1 Year

5. CONDUCTED EMISSION MEASUREMENT

【The EUT only employs battery power for operation, no conductive emission limits are required according to FCC 15.207 and RSS-Gen §8.8】

6. RADIATED EMISSION MEASUREMENT

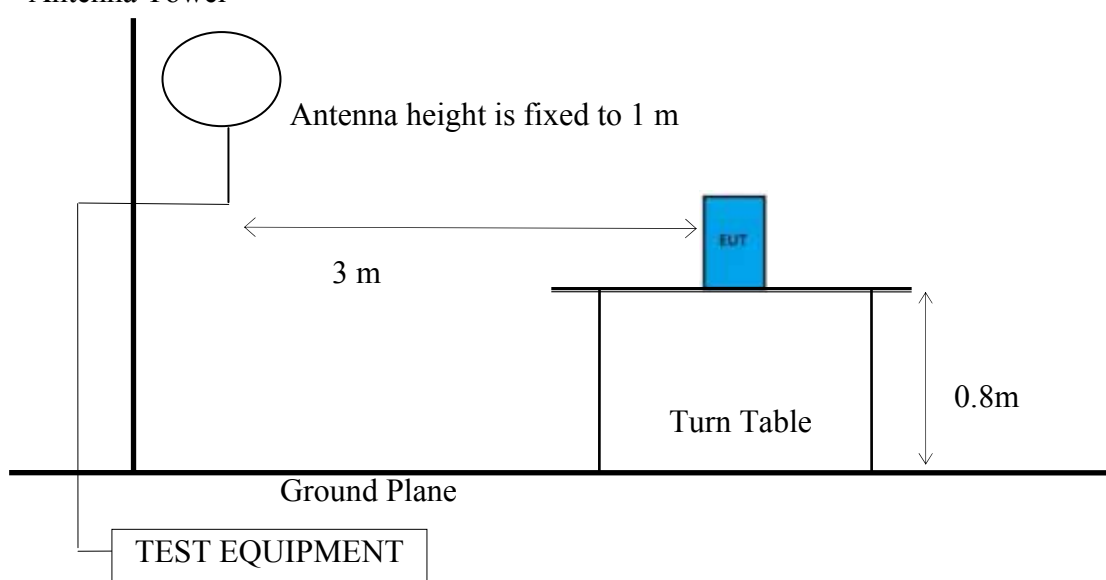
6.1. Block Diagram of Test Setup

6.1.1. Block Diagram of connection between EUT and simulators

Indicated as section 3.7

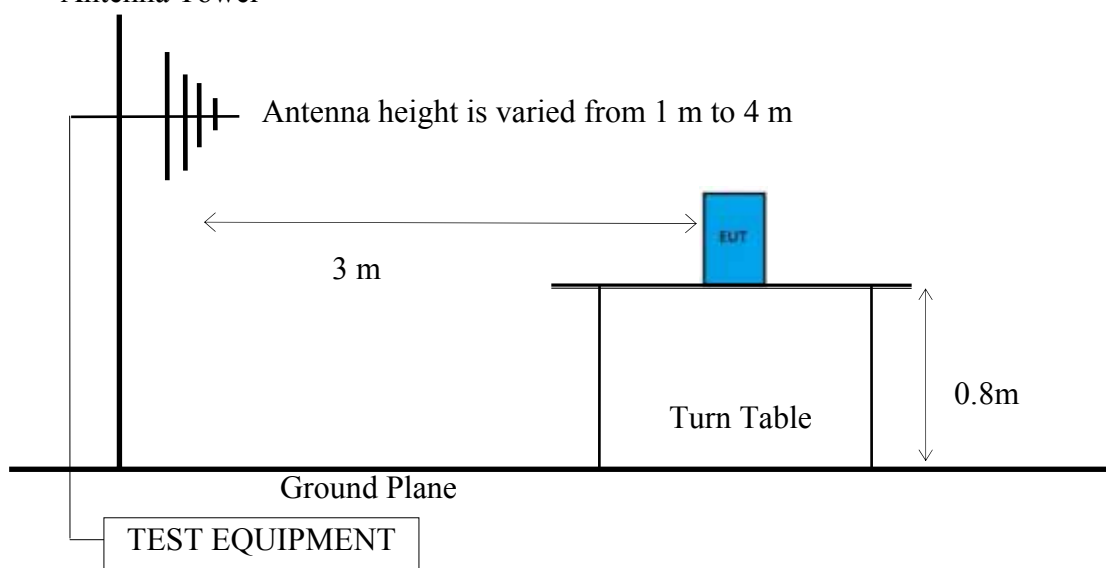
6.1.2. Setup Diagram for 9kHz-30MHz

Antenna Tower

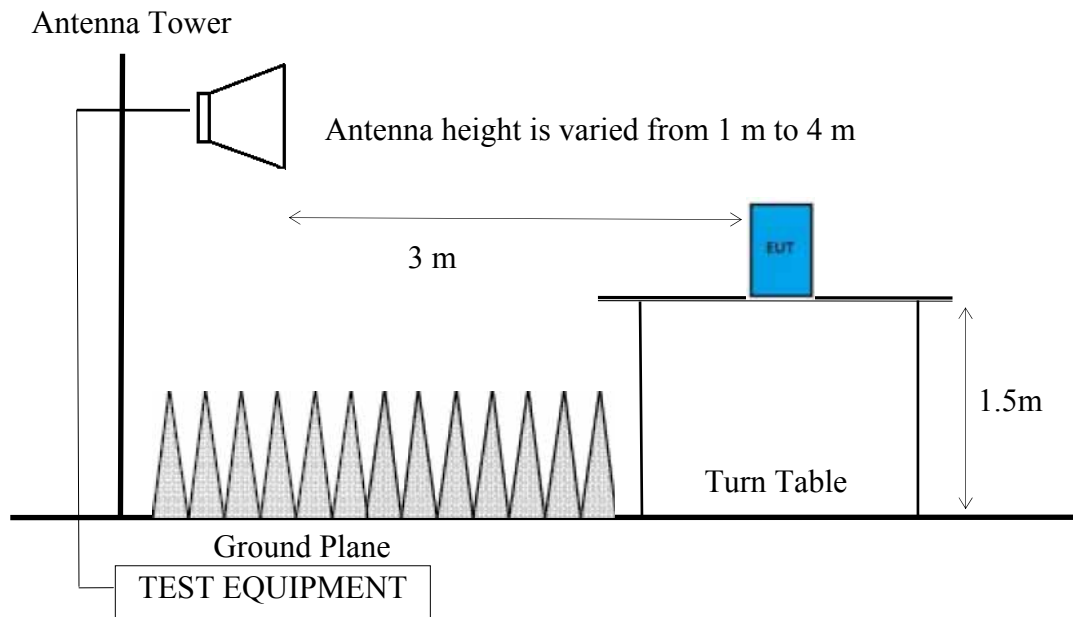


6.1.3. Setup Diagram for 30-1000 MHz

Antenna Tower



6.1.4. Setup Diagram for above 1GHz



6.2. Radiated Emission Limits

In any 100kHz bandwidth outside the frequency band, the radio frequency power produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205/RSS-Gen Section 8.10 table 6, must also comply with the radiated emission limits specified as below.

Frequency (MHz)	Distance (m)	Limits	
		dBμV/m	μV/m
0.009 - 0.490	300	67.6	2400/kHz
0.490 - 1.705	30	87.6	24000/kHz
1.705 - 30	30	29.5	30
30 - 88	3	40.0	100
88- 216	3	43.5	150
216- 960	3	46.0	200
Above 960	3	54.0	500
Above 1000	3	74.0 dBμV/m (Peak) 54.0 dBμV/m (Average)	

Remark : (1) $\text{dB}\mu\text{V/m} = 20 \log (\mu\text{V/m})$

- (2) The tighter limit applies to 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) Fundamental and emission fall within operation band are exempted from this section.
- (5) Pursuant to ANSI C63.10: 6.6.4.3, if the maximized peak measured value complies with the average limit, then it is unnecessary to perform an average measurement

6.3. Test Procedure

Frequency Range 9kHz~30MHz:

The EUT setup on the turn table which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna fixed to 1 m to find the maximum emission level. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

- (1) RBW = 9kHz with peak and average detector.
- (2) Detector: average and peak (9kHz-490kHz)
Q.P. (490kHz-30MHz)

Frequency Range 30MHz ~ 25GHz:

The EUT setup on the turn find table which has 80 cm (for 30-1000 MHz) and 1.5m (for above 1GHz) height to the ground. The turn table rotated 360 degrees and antenna varied from 1 m to 4 m to find the maximum emission level. Both horizontal and vertical polarization are required. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

Frequency below 1GHz:

Spectrum Analyzer is used for pre-testing with following setting:

- (1) RBW = 120KHz
- (2) VBW $\geq 3 \times$ RBW.
- (3) Detector = Peak.
- (4) Sweep time = auto.
- (5) Trace mode = max hold.
- (6) Allow sweeps to continue until the trace stabilizes.
- (7) When peak-detected value is lower than limit that the measurement using the Q.P. detector is not required. Otherwise using Q.P. for finally measurement.

Frequency above 1GHz to 10th harmonic:

Peak Measurement:

- (1) RBW = 1 MHz
- (2) VBW $\geq 3 \times$ RBW.
- (3) Detector = Peak.
- (4) Sweep time = auto.
- (5) Trace mode = max hold.
- (6) Allow sweeps to continue until the trace stabilizes.
- (7) When peak-detected value is lower than limit that the measurement using the average detector is not required. Otherwise using average for finally measurement.

Average Measurement:**■ Option 1:**

- (1) RBW = 1 MHz
- (2) VBW = 1/T, where T is Tx-on presented in Appendix A.3.
- (3) Detector = Peak.
- (4) Sweep time = auto.
- (5) Trace mode = max hold.
- (6) Allow sweeps to continue until the trace stabilizes.

□ Option 2:

Average Emission Level = Peak Emission Level + D.C.C.F.

6.4. Measurement Result Explanation

■ Peak Emission Level = Antenna Factor + Cable Loss + Meter Reading

■ Average Emission Level = Antenna Factor + Cable Loss + Meter Reading

□ Average Emission Level = Peak Emission Level + DCCF

Duty Cycle Correction Factor (DCCF) = $20\log(TX_{on}/100ms)$ presented in section 3.4

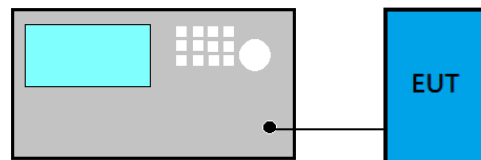
□ ERP = Peak Emission Level - 95.2 dB - 2.14 dB

6.5. Test Results

Please refer to Appendix A.

7. 20dB BANDWIDTH MEASUREMENT

7.1. Block Diagram of Test Setup



7.2. Specification Limits

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.

7.3. Test Procedure

Following measurement procedure is reference to DA00-705:

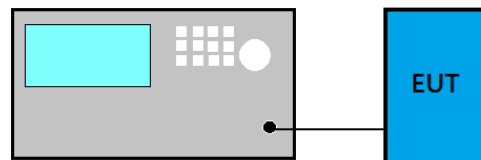
- (1) Set RBW close to 1% of OBW.
- (2) Set $VBW \geq RBW$.
- (3) Detector = Peak.
- (4) Trace mode = max hold.
- (5) Sweep = auto couple.
- (6) Allow the trace to stabilize.
- (7) Setting channel bandwidth function x dB to -20 dB to record the final bandwidth.

7.4. Test Results

Please refer to Appendix A

8. CARRIER FREQUENCY SEPARATION MEASUREMENT

8.1. Block Diagram of Test Setup



8.2. Specification Limits

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.

8.3. Test Procedure

Following measurement procedure is reference to DA00-705:

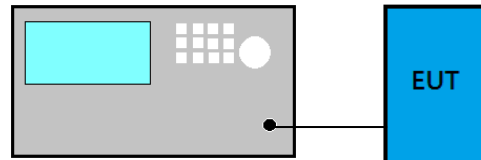
- (1) Span = wide enough to capture the peaks of two adjacent channels
- (2) RBW $\geq$ 1% of the span
- (3) VBW $\geq$ RBW
- (4) Sweep = auto
- (5) Detector function = peak
- (6) Trace = max hold

8.4. Test Results

Please refer to Appendix A

9. TIME OF OCCUPANCY MEASUREMENT

9.1. Block Diagram of Test Setup



9.2. Specification Limits

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.

9.3. Test Procedure

Following measurement procedure is reference to DA00-705:

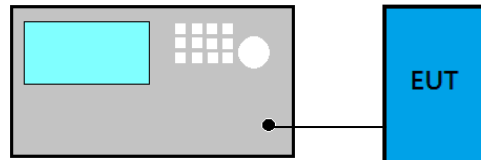
- (1) Span = zero span, centered on a hopping channel
- (2) RBW = 1 MHz
- (3) VBW $\geq$ RBW
- (4) Sweep = as necessary to capture the entire dwell time per hopping channel
- (5) Detector function = peak
- (6) Trace = max hold

9.4. Test Results

Please refer to Appendix A

10. NUMBER OF HOPPING CHANNELS MEASUREMENT

10.1. Block Diagram of Test Setup



10.2. Specification Limits

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.

10.3. Test Procedure

Following measurement procedure is reference to DA00-705:

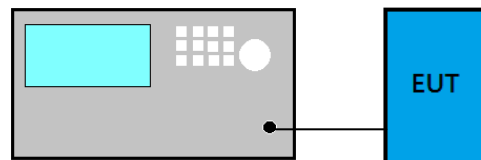
- (1) Span = the frequency band of operation
- (2) RBW $\geq$ 1% of the span
- (3) VBW $\geq$ RBW
- (4) Sweep = auto
- (5) Detector function = peak
- (6) Trace = max hold

10.4. Test Results

Please refer to Appendix A

11. MAXIMUM PEAK OUTPUT POWER MEASUREMENT

11.1. Block Diagram of Test Setup



11.2. Specification Limits

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

11.3. Test Procedure

Following measurement procedure is reference to DA00-705:

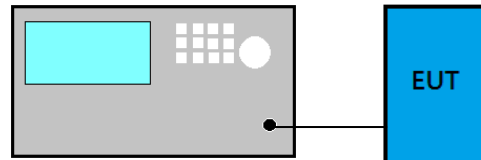
- (1) Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel
- (2) RBW $\geq$ 1% of the span
- (3) VBW $\geq$ RBW
- (4) Sweep = auto
- (5) Detector function = peak
- (6) Trace = max hold

11.4. Test Results

Please refer to Appendix A

12. EMISSION LIMITATIONS MEASUREMENT

12.1. Block Diagram of Test Setup



12.2. Specification Limits

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)

12.3. Test Procedure

Following measurement procedure is reference to DA00-705:

- (1) Set span wide enough to capture the peak level of the in-band emission and all spurious emissions; up to 10th harmonic.
- (2) RBW = 100 kHz
- (3) VBW ≥ RBW
- (4) Sweep = auto
- (5) Detector function = peak
- (6) Trace = max hold

12.4. Test Results

Please refer to Appendix A

13. DEVIATION TO TEST SPECIFICATIONS

【NONE】



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APPENDIX A

TEST PLOTS

(Model: T16SZ)

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A.1 RADIATED EMISSION

Test Date	2017/07/14	Temp./Hum.	22°C/61%
Test Voltage	DC 6.6V (Via DC Power Supply)		

A.1.1 Emissions within Restricted Frequency Bands

A.2.1.1 Frequency 9kHz~30MHz

The emissions (9kHz~30MHz) not reported for there is no emission be found.

A.2.1.2 Frequency Below 1 GHz

Mode	S-FHSS	Frequency	TX 2403.250MHz
------	--------	-----------	----------------

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
229.82	17.88	3.63	7.45	28.96	46.00	17.04	Peak
299.66	19.48	4.30	14.31	38.09	46.00	7.91	Peak
329.73	20.34	4.72	12.06	37.12	46.00	8.88	Peak
532.46	23.66	6.53	2.10	32.29	46.00	13.71	Peak
689.60	24.85	7.05	1.95	33.85	46.00	12.15	Peak
938.89	27.22	8.43	0.91	36.56	46.00	9.44	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
134.76	18.07	2.66	16.80	37.53	43.50	5.97	Peak
237.58	18.36	3.70	11.00	33.06	46.00	12.94	Peak
331.67	20.37	4.74	6.75	31.86	46.00	14.14	Peak
480.08	22.95	6.27	3.76	32.98	46.00	13.02	Peak
670.20	24.81	6.99	2.48	34.28	46.00	11.72	Peak
879.72	26.62	8.05	3.34	38.01	46.00	7.99	Peak

Mode	S-FHSS	Frequency	TX 2425.000MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
229.82	17.88	3.63	12.05	33.56	46.00	12.44	Peak
299.66	19.48	4.30	15.31	39.09	46.00	6.91	Peak
370.47	21.38	5.22	6.18	32.78	46.00	13.22	Peak
730.34	25.20	7.24	2.05	34.49	46.00	11.51	Peak
821.52	26.12	7.73	1.58	35.43	46.00	10.57	Peak
974.78	27.59	8.68	1.09	37.36	54.00	16.64	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
134.76	18.07	2.66	16.81	37.54	43.50	5.96	Peak
234.67	18.20	3.68	9.47	31.35	46.00	14.65	Peak
367.56	21.31	5.19	5.81	32.31	46.00	13.69	Peak
510.15	23.31	6.46	3.81	33.58	46.00	12.42	Peak
701.24	24.90	7.09	2.59	34.58	46.00	11.42	Peak
897.18	26.78	8.15	1.42	36.35	46.00	9.65	Peak

Mode	S-FHSS	Frequency	TX 2447.500MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
216.24	16.92	3.50	6.98	27.40	46.00	18.60	Peak
289.96	19.43	4.21	12.47	36.11	46.00	9.89	Peak
329.73	20.34	4.72	14.06	39.12	46.00	6.88	Peak
542.16	23.80	6.57	1.55	31.92	46.00	14.08	Peak
636.25	24.73	6.88	1.94	33.55	46.00	12.45	Peak
903.97	26.84	8.19	0.58	35.61	46.00	10.39	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
164.83	16.11	2.98	18.51	37.60	43.50	5.90	Peak
229.82	17.88	3.63	8.90	30.41	46.00	15.59	Peak
333.61	20.43	4.77	5.85	31.05	46.00	14.95	Peak
440.31	22.53	5.93	3.62	32.08	46.00	13.92	Peak
730.34	25.20	7.24	1.53	33.97	46.00	12.03	Peak
901.06	26.81	8.17	1.53	36.51	46.00	9.49	Peak

Mode	T-FHSS	Frequency	TX 2407.500MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
229.82	17.88	3.63	9.10	30.61	46.00	15.39	Peak
329.73	20.34	4.72	12.90	37.96	46.00	8.04	Peak
399.57	22.04	5.54	5.23	32.81	46.00	13.19	Peak
615.88	24.68	6.81	1.17	32.66	46.00	13.34	Peak
820.55	26.12	7.73	1.17	35.02	46.00	10.98	Peak
881.66	26.65	8.07	2.09	36.81	46.00	9.19	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
145.43	17.40	2.78	17.03	37.21	43.50	6.29	Peak
334.58	20.47	4.78	6.90	32.15	46.00	13.85	Peak
370.47	21.38	5.22	6.65	33.25	46.00	12.75	Peak
665.35	24.80	6.97	0.87	32.64	46.00	13.36	Peak
866.14	26.52	7.99	1.25	35.76	46.00	10.24	Peak
974.78	27.59	8.68	0.80	37.07	54.00	16.93	Peak

Mode	T-FHSS	Frequency	TX 2437.500MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
289.96	19.43	4.21	13.85	37.49	46.00	8.51	Peak
329.73	20.34	4.72	14.41	39.47	46.00	6.53	Peak
407.33	22.15	5.63	3.06	30.84	46.00	15.16	Peak
824.43	26.15	7.75	1.15	35.05	46.00	10.95	Peak
875.84	26.60	8.04	2.12	36.76	46.00	9.24	Peak
959.26	27.42	8.57	1.06	37.05	46.00	8.95	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
174.53	15.68	3.08	17.73	36.49	43.50	7.01	Peak
229.82	17.88	3.63	9.36	30.87	46.00	15.13	Peak
370.47	21.38	5.22	5.11	31.71	46.00	14.29	Peak
577.08	24.32	6.68	1.29	32.29	46.00	13.71	Peak
747.80	25.39	7.34	0.74	33.47	46.00	12.53	Peak
906.88	26.88	8.21	0.68	35.77	46.00	10.23	Peak

Mode	T-FHSS	Frequency	TX 2467.500MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
229.82	17.88	3.63	7.37	28.88	46.00	17.12	Peak
318.09	19.99	4.55	12.59	37.13	46.00	8.87	Peak
399.57	22.04	5.54	5.26	32.84	46.00	13.16	Peak
727.43	25.17	7.23	0.95	33.35	46.00	12.65	Peak
866.14	26.52	7.99	1.04	35.55	46.00	10.45	Peak
954.41	27.39	8.54	1.16	37.09	46.00	8.91	Peak

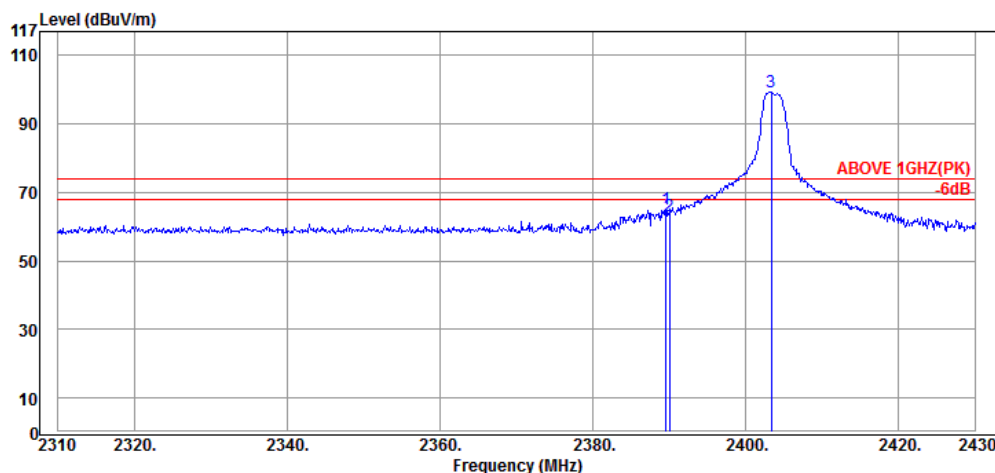
Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
177.44	15.54	3.11	20.33	38.98	43.50	4.52	Peak
331.67	20.37	4.74	5.90	31.01	46.00	14.99	Peak
561.56	24.09	6.63	0.91	31.63	46.00	14.37	Peak
761.38	25.53	7.41	-0.03	32.91	46.00	13.09	Peak
875.84	26.60	8.04	0.23	34.87	46.00	11.13	Peak
951.50	27.35	8.52	0.27	36.14	46.00	9.86	Peak

A.2.1.3 Frequency Above 1 GHz to 10th harmonics

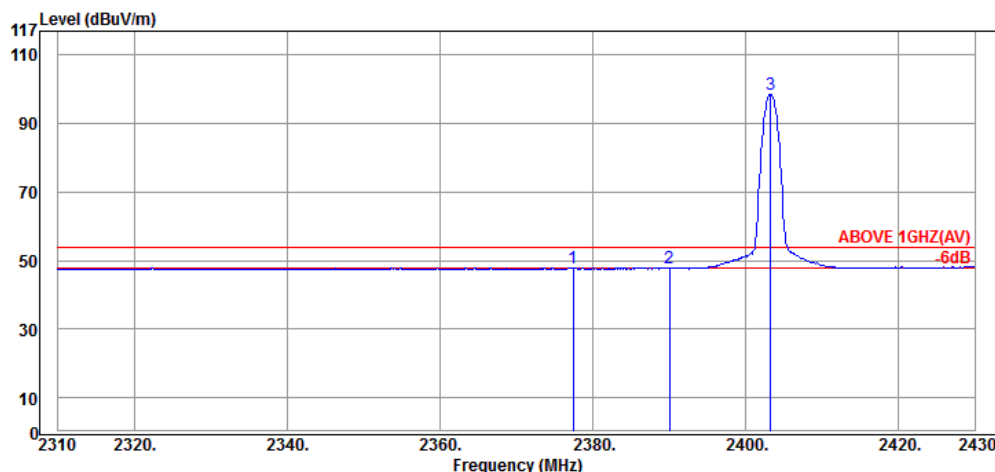
Band Edge:

Mode	S-FHSS	Frequency	TX 2403.250MHz
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Antenna at Horizontal Polarization

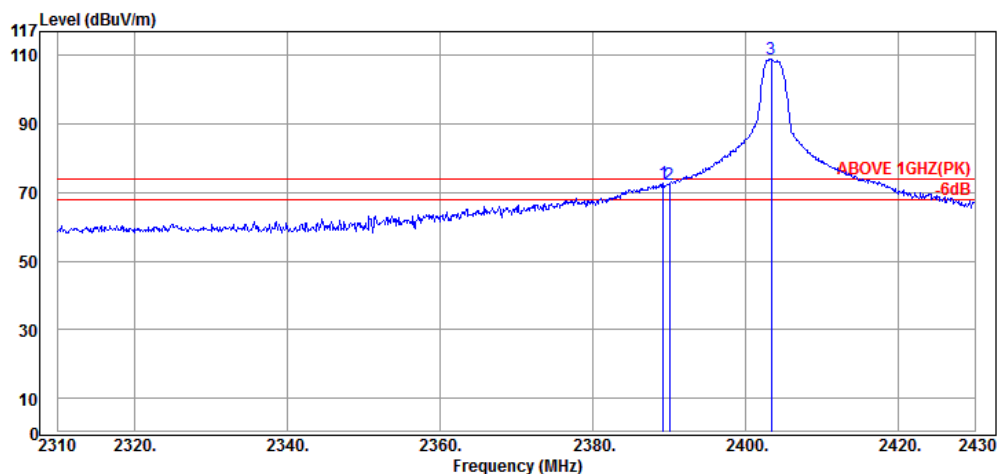
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2389.56	28.34	5.24	31.61	65.19	74.00	8.81	Peak
2390.04	28.34	5.24	29.57	63.15	74.00	10.85	Peak
2403.36	28.35	5.25	65.85	99.45	---	---	Peak



Antenna at Horizontal Polarization

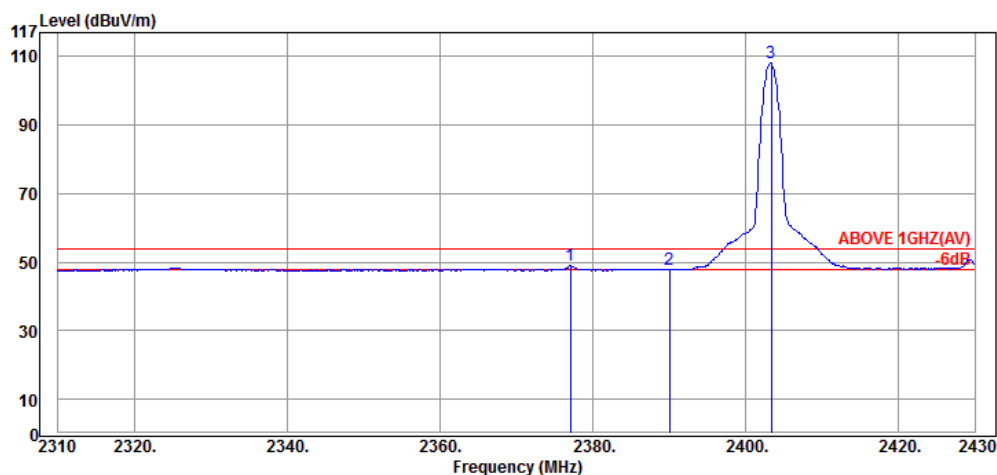
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2377.44	28.33	5.23	14.30	47.86	54.00	6.14	Average
2390.04	28.34	5.24	14.09	47.67	54.00	6.33	Average
2403.24	28.35	5.25	65.09	98.69	---	---	Average

Mode	S-FHSS	Frequency	TX 2403.250MHz
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Antenna at Vertical Polarization

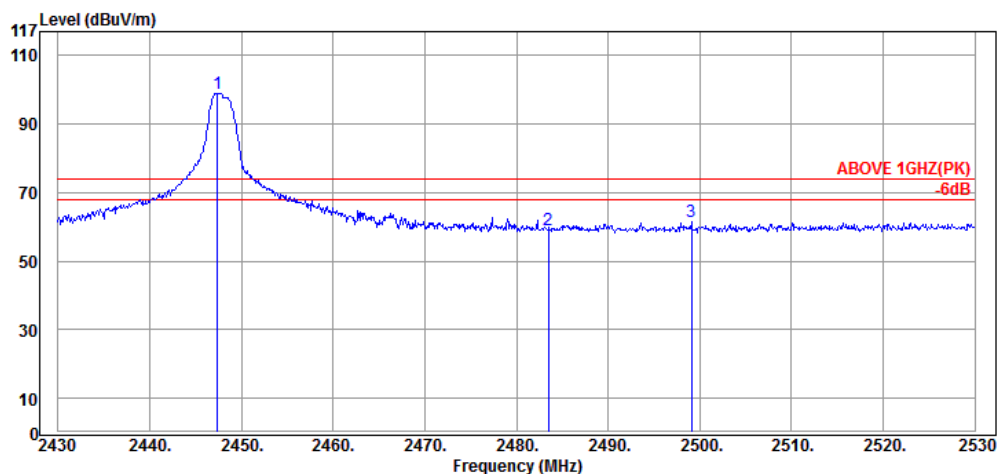
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2389.20	28.34	5.24	39.01	72.59	74.00	1.41	Peak
2390.04	28.34	5.24	38.93	72.51	74.00	1.49	Peak
2403.36	28.35	5.25	75.40	109.00	---	---	Peak



Antenna at Vertical Polarization

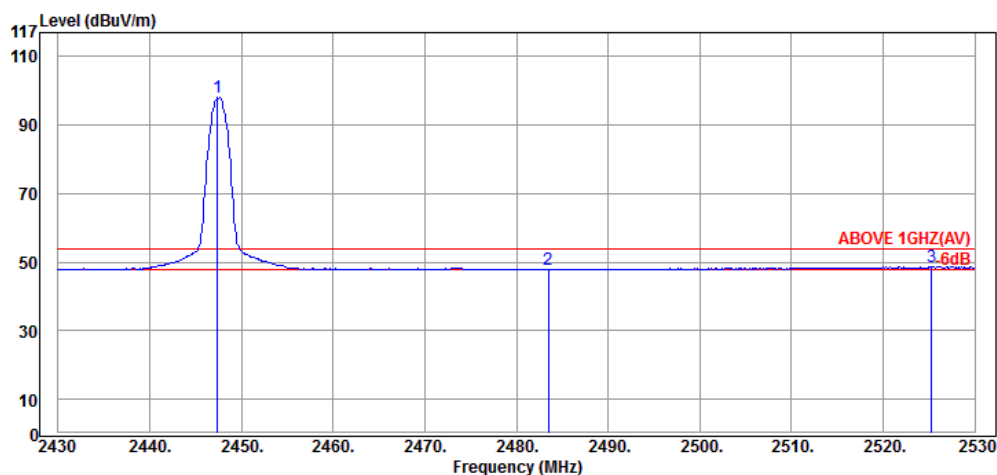
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2377.08	28.33	5.23	15.39	48.95	54.00	5.05	Average
2390.04	28.34	5.24	14.36	47.94	54.00	6.06	Average
2403.36	28.35	5.25	74.60	108.20	---	---	Average

Mode	S-FHSS	Frequency	TX 2447.500MHz
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Antenna at Horizontal Polarization

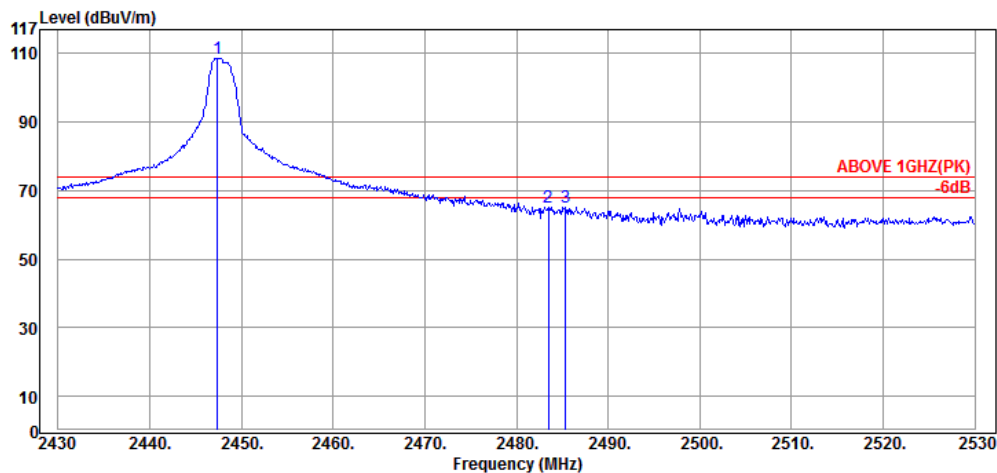
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2447.40	28.37	5.28	65.40	99.05	---	---	Peak
2483.50	28.39	5.31	25.42	59.12	74.00	14.88	Peak
2499.10	28.40	5.32	27.77	61.49	74.00	12.51	Peak



Antenna at Horizontal Polarization

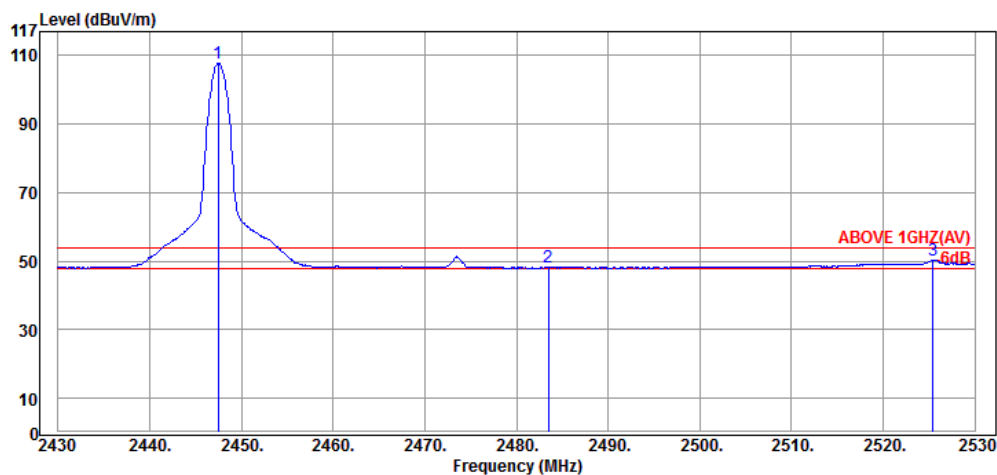
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2447.40	28.37	5.28	64.48	98.13	---	---	Average
2483.50	28.39	5.31	14.14	47.84	54.00	6.16	Average
2525.30	28.53	5.34	14.81	48.68	54.00	5.32	Average

Mode	S-FHSS	Frequency	TX 2447.500MHz
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Antenna at Vertical Polarization

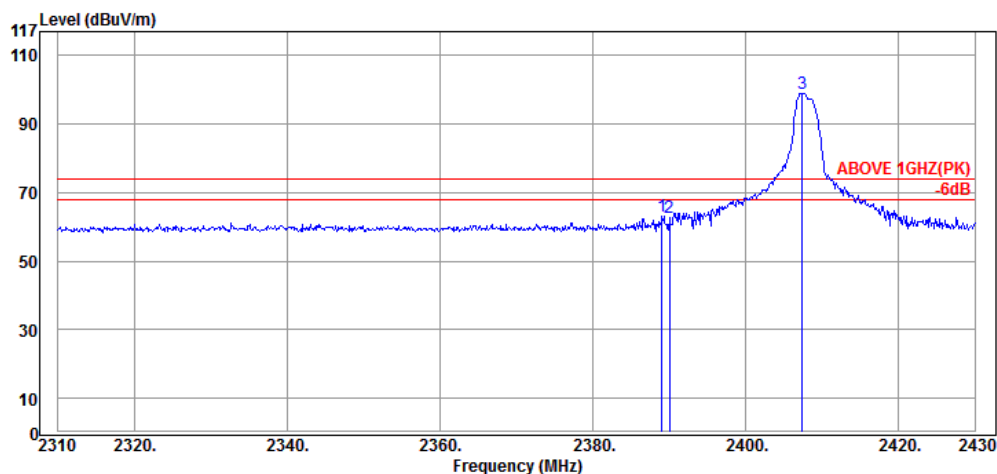
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2447.40	28.37	5.28	75.05	108.70	---	---	Peak
2483.50	28.39	5.31	31.26	64.96	74.00	9.04	Peak
2485.40	28.39	5.31	31.39	65.09	74.00	8.91	Peak



Antenna at Vertical Polarization

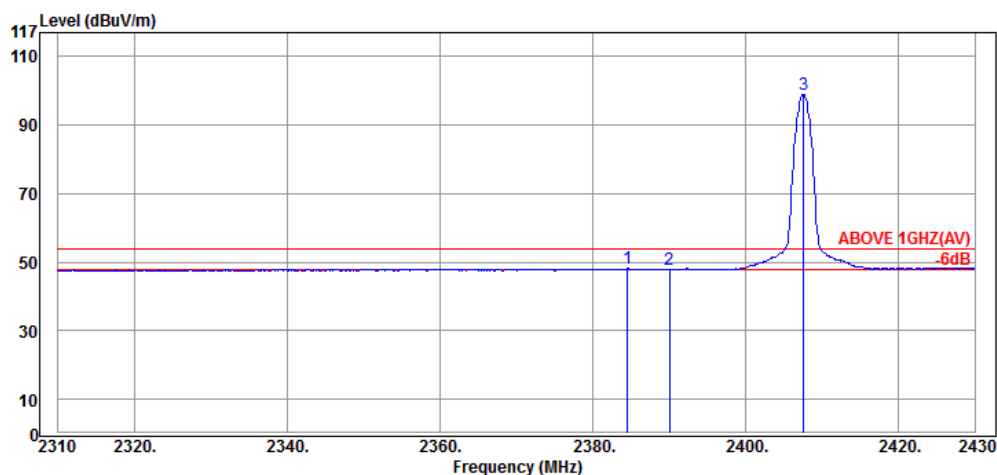
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2447.50	28.37	5.28	74.21	107.86	---	---	Average
2483.50	28.39	5.31	14.37	48.07	54.00	5.93	Average
2525.40	28.53	5.34	16.52	50.39	54.00	3.61	Average

Mode	T-FHSS	Frequency	TX 2407.500MHz
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Antenna at Horizontal Polarization

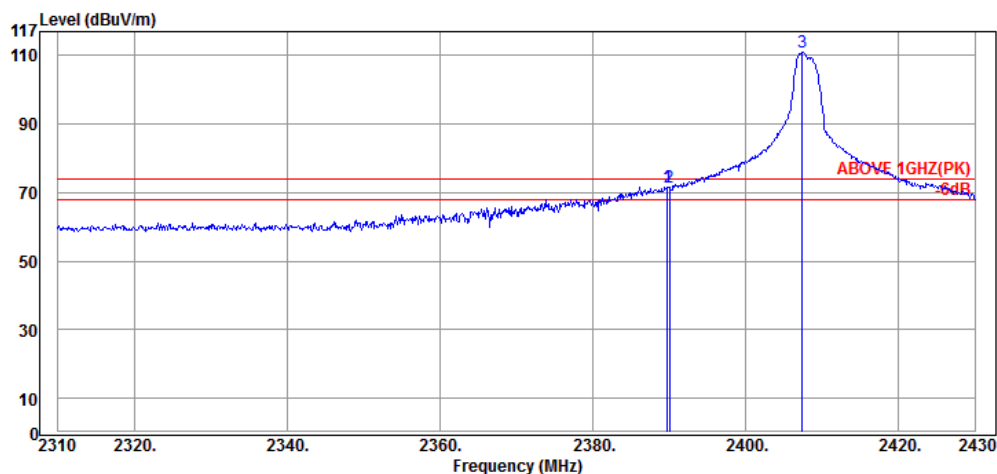
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2389.08	28.34	5.24	29.42	63.00	74.00	11.00	Peak
2390.04	28.34	5.24	28.96	62.54	74.00	11.46	Peak
2407.44	28.35	5.25	65.42	99.02	---	---	Peak



Antenna at Horizontal Polarization

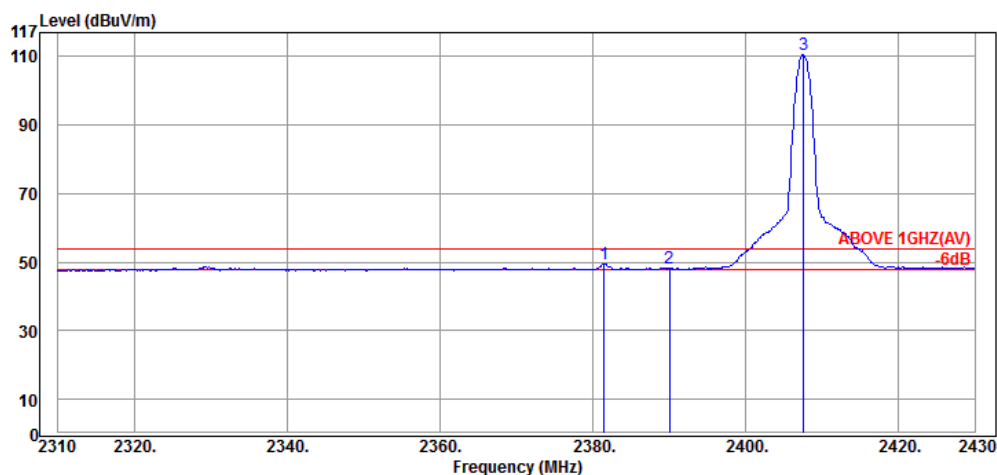
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2384.52	28.33	5.23	14.58	48.14	54.00	5.86	Average
2390.04	28.34	5.24	14.22	47.80	54.00	6.20	Average
2407.56	28.35	5.25	65.29	98.89	---	---	Average

Mode	T-FHSS	Frequency	TX 2407.500MHz
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Antenna at Vertical Polarization

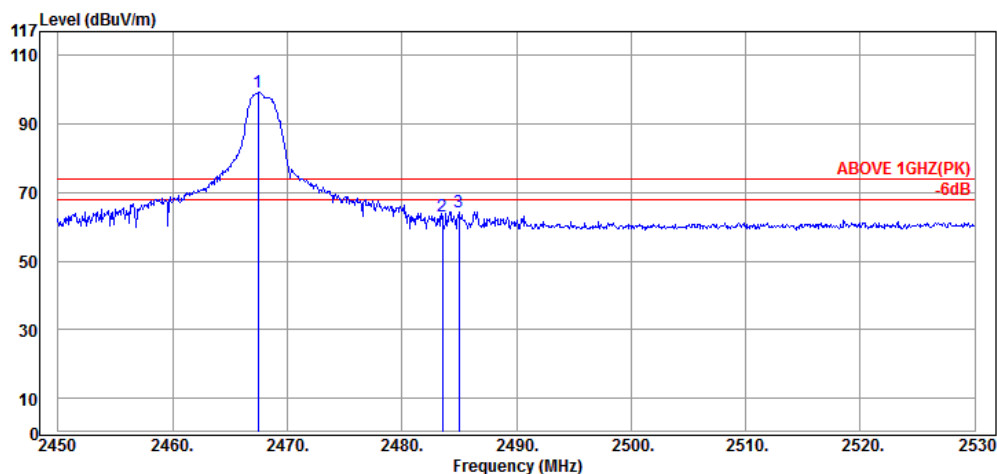
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2389.80	28.34	5.24	37.90	71.48	74.00	2.52	Peak
2390.04	28.34	5.24	37.81	71.39	74.00	2.61	Peak
2407.44	28.35	5.25	77.18	110.78	---	---	Peak



Antenna at Vertical Polarization

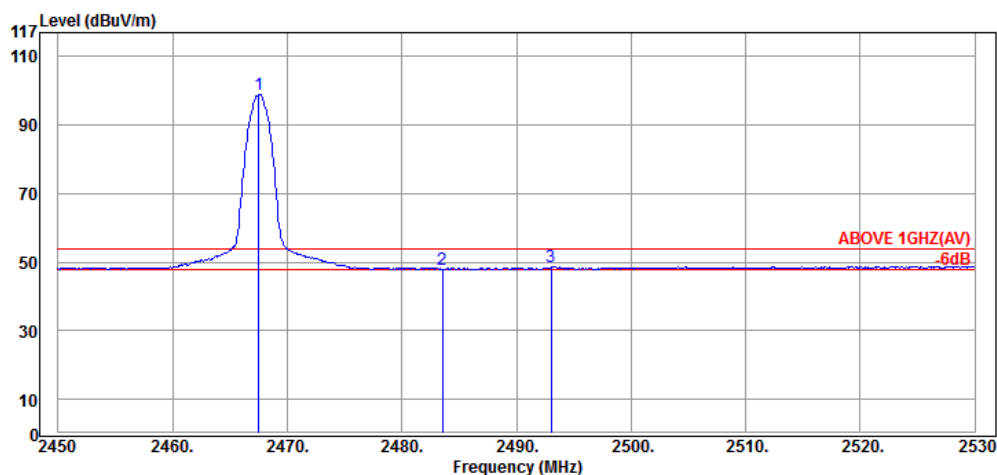
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2381.52	28.33	5.23	15.99	49.55	54.00	4.45	Average
2390.04	28.34	5.24	14.51	48.09	54.00	5.91	Average
2407.56	28.35	5.25	76.99	110.59	---	---	Average

Mode	T-FHSS	Frequency	TX 2467.500MHz
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Antenna at Horizontal Polarization

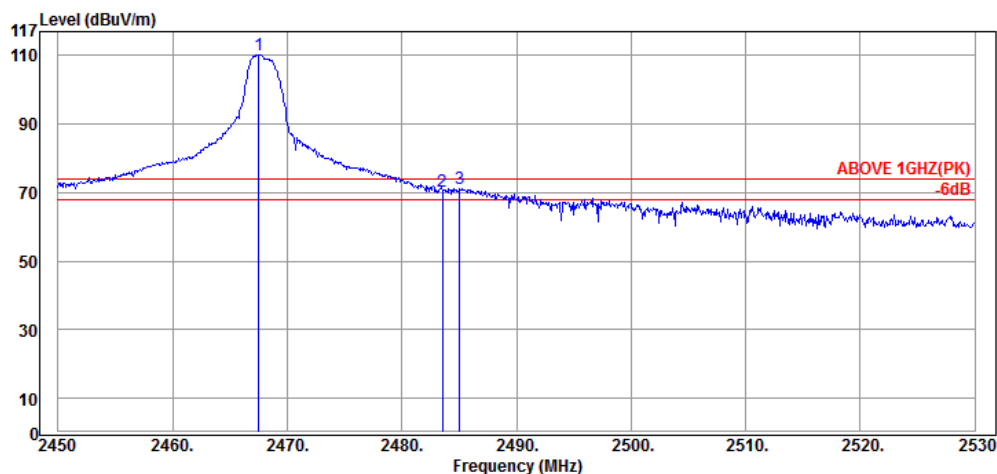
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2467.44	28.38	5.29	65.48	99.15	---	---	Peak
2483.52	28.39	5.31	29.35	63.05	74.00	10.95	Peak
2484.96	28.39	5.31	30.75	64.45	74.00	9.55	Peak



Antenna at Horizontal Polarization

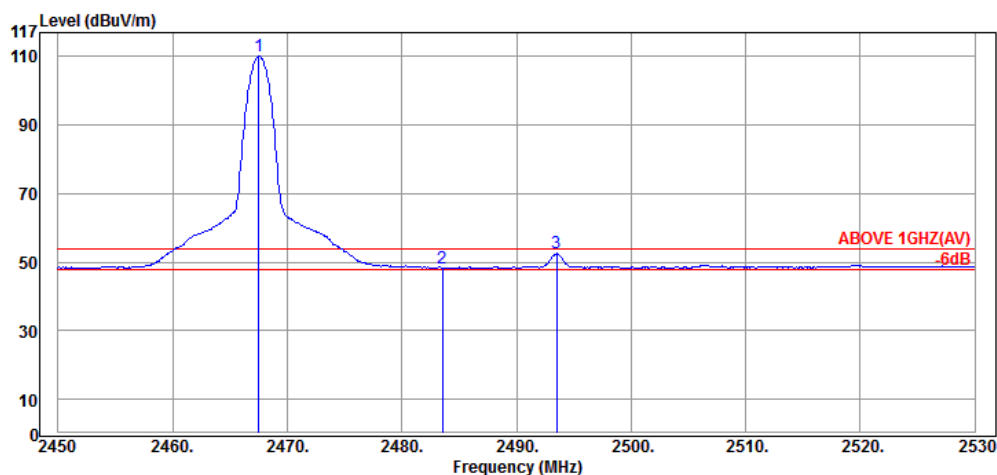
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2467.52	28.38	5.30	65.26	98.94	---	---	Average
2483.52	28.39	5.31	14.32	48.02	54.00	5.98	Average
2493.04	28.40	5.31	14.84	48.55	54.00	5.45	Average

Mode	T-FHSS	Frequency	TX 2467.500MHz
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Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2467.52	28.38	5.30	76.52	110.20	---	---	Peak
2483.52	28.39	5.31	36.73	70.43	74.00	3.57	Peak
2485.04	28.39	5.31	37.63	71.33	74.00	2.67	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2467.52	28.38	5.30	76.35	110.03	---	---	Average
2483.52	28.39	5.31	14.65	48.35	54.00	5.65	Average
2493.52	28.40	5.31	18.79	52.50	54.00	1.50	Average

A.1.2 Emissions outside the frequency band:

The emissions (up to 25GHz) not reported for there is no emission be found.

Mode	S-FHSS	Frequency	TX 2403.250MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4805.00	32.98	8.98	10.54	52.50	54.00	1.50	Average
4805.00	32.98	8.98	12.48	54.44	74.00	19.56	Peak
7210.00	35.84	10.44	6.27	52.55	54.00	1.45	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4805.00	32.98	8.98	8.64	50.60	54.00	3.40	Peak
7210.00	35.84	10.44	7.40	53.68	54.00	0.32	Peak

Mode	S-FHSS	Frequency	TX 2425.000MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4850.00	33.06	9.04	11.07	53.17	54.00	0.83	Average
4850.00	33.06	9.04	13.15	55.25	74.00	18.75	Peak
7275.00	36.02	10.51	6.03	52.56	54.00	1.44	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4850.00	33.06	9.04	9.13	51.23	54.00	2.77	Peak
7275.00	36.02	10.51	6.35	52.88	54.00	1.12	Peak

Mode	S-FHSS	Frequency	TX 2447.500MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
4895.00	33.17	9.10	11.17	53.44	54.00	0.56	Average
4895.00	33.17	9.10	13.06	55.33	74.00	18.67	Peak
7340.00	36.20	10.59	6.69	53.48	54.00	0.52	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
4895.00	33.17	9.10	11.05	53.32	54.00	0.68	Peak
7340.00	36.20	10.59	7.03	53.82	54.00	0.18	Peak

Mode	T-FHSS	Frequency	TX 2407.500MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
4815.00	32.98	9.00	10.84	52.82	54.00	1.18	Average
4815.00	32.98	9.00	12.94	54.92	74.00	19.08	Peak
7220.00	35.88	10.46	5.91	52.25	54.00	1.75	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
4815.00	32.98	9.00	8.95	50.93	54.00	3.07	Peak
7220.00	35.88	10.46	5.75	52.09	54.00	1.91	Peak

Mode	T-FHSS	Frequency	TX 2437.500MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
4875.00	33.13	9.08	11.40	53.61	54.00	0.39	Average
4875.00	33.13	9.08	13.28	55.49	74.00	18.51	Peak
7310.00	36.11	10.56	4.98	51.65	54.00	2.35	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
4875.00	33.13	9.08	11.14	53.35	54.00	0.65	Peak
7310.00	36.11	10.56	5.51	52.18	54.00	1.82	Peak

Mode	T-FHSS	Frequency	TX 2467.500MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
4935.00	33.25	9.16	11.40	53.81	54.00	0.19	Average
4935.00	33.25	9.16	13.63	56.04	74.00	17.96	Peak
7400.00	36.33	10.66	5.20	52.19	54.00	1.81	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
4935.00	33.25	9.16	11.19	53.60	54.00	0.40	Average
4935.00	33.25	9.16	13.26	55.67	74.00	18.33	Peak
7400.00	36.33	10.66	5.89	52.88	54.00	1.12	Peak

A.1.3 Emissions in Non-restricted Frequency Bands:

All emission levels below the 15.209 general radiated emissions limits is not required.

A.2 20dB BANDWIDTH MEASUREMENT

Test Date	2017/06/26	Temp./Hum.	22°C/50%
Cable Loss	N/A	Test Voltage	DC 6.6V

A.2.1 20dB Bandwidth Result

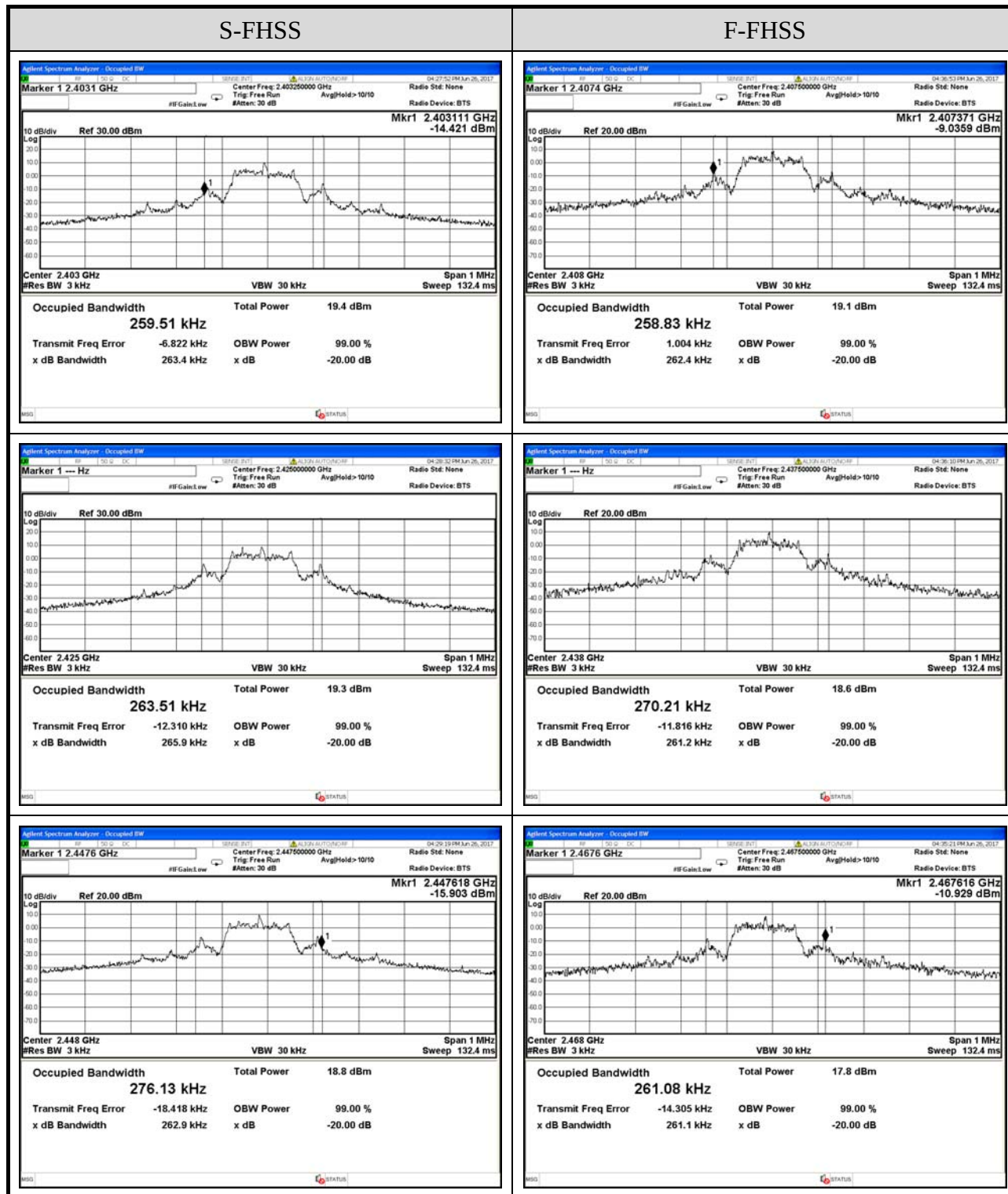
Modulation	Centre Frequency (MHz)	20 dB Bandwidth (MHz)	Limit 2/3 (20dB Bandwidth)
S-FHSS	2403.250	0.2634	0.176
	2425.000	0.2659	0.177
	2447.500	0.2629	0.175

Remark: The maximum two-thirds of the 20dB bandwidth shall be at maximum 0.177MHz.

Modulation	Centre Frequency (MHz)	20 dB Bandwidth (MHz)	Limit 2/3 (20dB Bandwidth)
T-FHSS	2407.5	0.2624	0.175
	2435.5	0.2612	0.174
	2467.5	0.2611	0.174

Remark: The maximum two-thirds of the 20dB bandwidth shall be at maximum 0.175MHz.

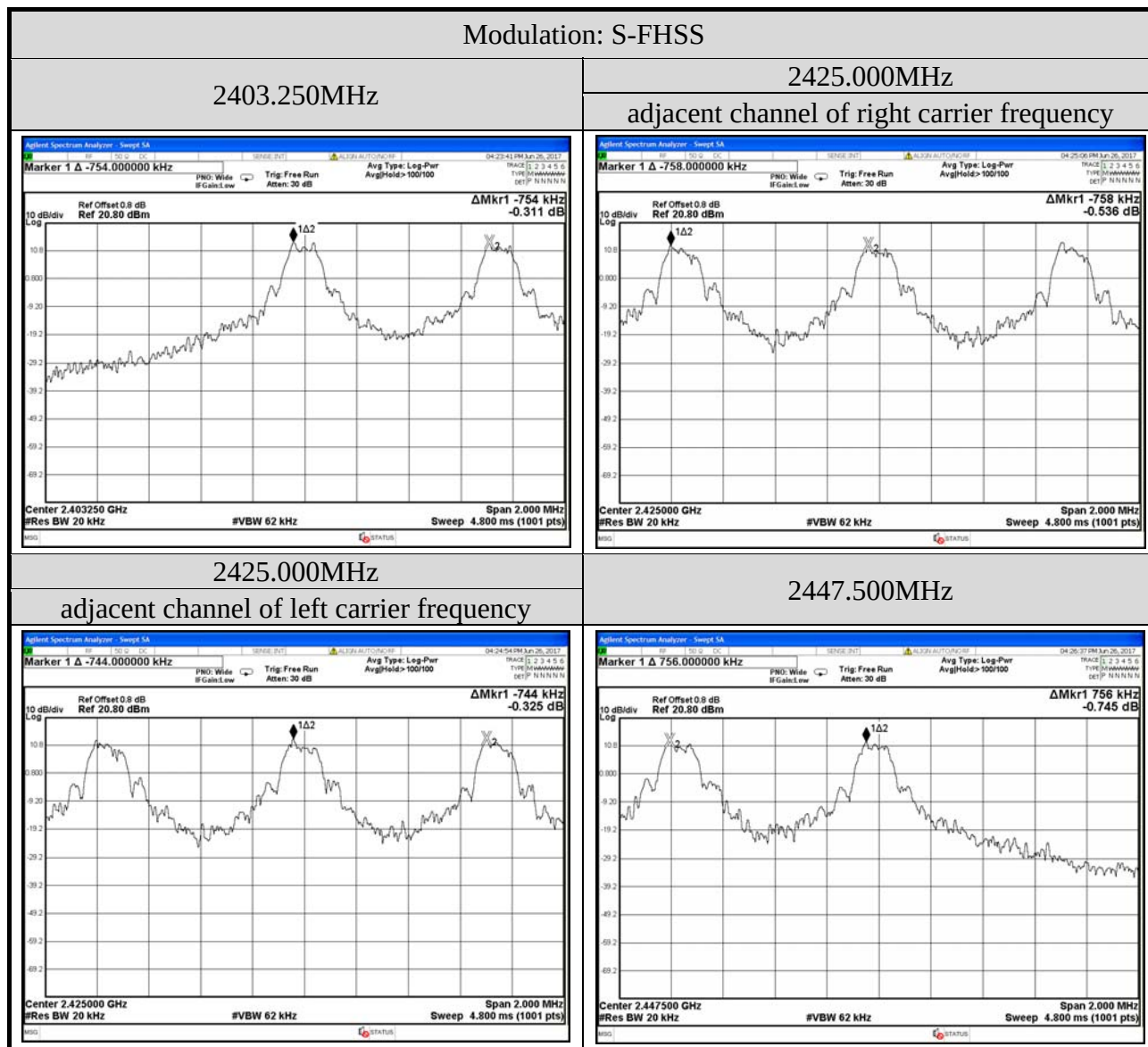
A.2.2 Measurement Plots



A.3 CARRIER FREQUENCY SEPARATION MEASUREMENT

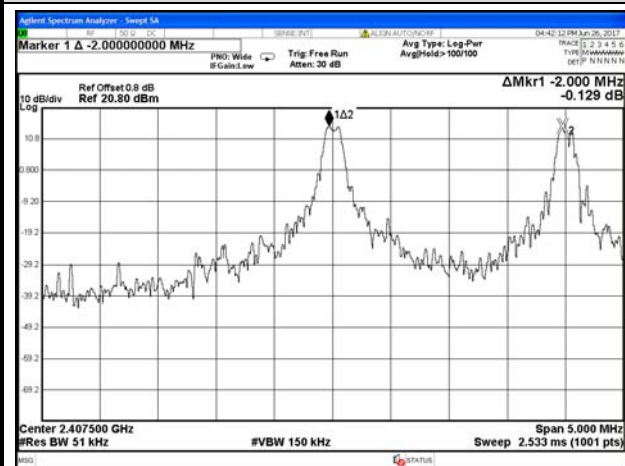
Test Date	2017/06/26	Temp./Hum.	22°C/50%
Cable Loss	0.8dB	Test Voltage	DC 6.6V

A.3.1 Measurement Plots



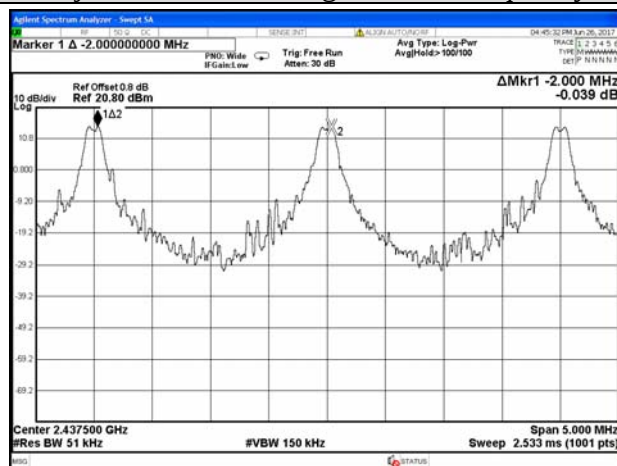
Modulation: T-FHSS

2407.500MHz



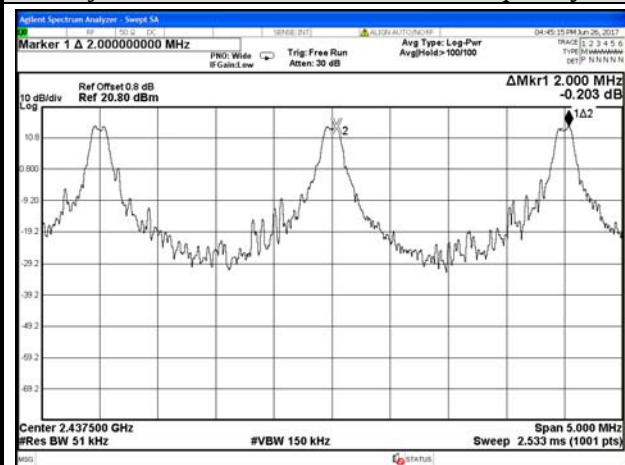
2437.500MHz

adjacent channel of right carrier frequency

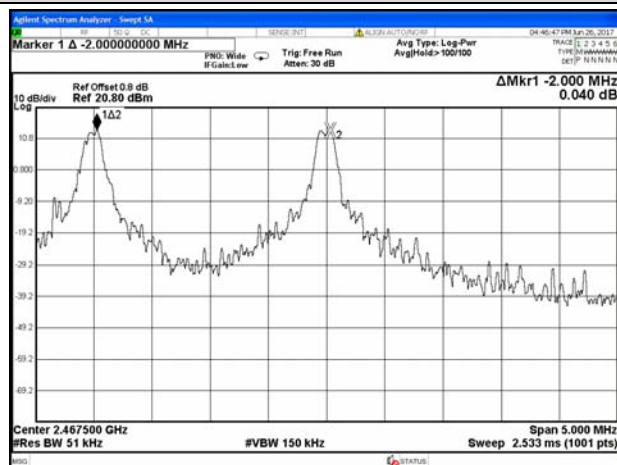


2437.500MHz

adjacent channel of left carrier frequency



2467.500MHz



A.4 TIME OF OCCUPANCY MEASUREMENT

Test Date	2017/06/26	Temp./Hum.	22°C/50%
Cable Loss	0.8dB	Test Voltage	DC 6.6V

A.4.1 Time of Occupancy

Modulation	Centre Frequency (MHz)	Time of Occupancy (ms)	Maximum accumulated Time of Occupancy (ms)	Limit (ms)
S-FHSS	2403.250	3.02	362.400	<400
	2425.000	3.04	364.800	<400
	2447.500	3.02	362.400	<400

Duty cycle: 60 channels*0.4 seconds = 24 seconds

Test Frequency: 2403.250MHz

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

$$5 \text{ channels} * 24 \text{ seconds} / 1 * 3.02\text{ms} = 362.400\text{ms}$$

Test Frequency: 2425.000MHz

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

$$5 \text{ channel} * 24 \text{ seconds} / 1 * 3.04\text{ms} = 364.800\text{ms}$$

Test Frequency: 2447.500MHz

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

$$5 \text{ channel} * 24 \text{ seconds} / 1 * 3.02\text{ms} = 362.400\text{ms}$$

Modulation	Centre Frequency (MHz)	Time of Occupancy (ms)	Maximum accumulated Time of Occupancy (ms)	Limit (ms)
T-FHSS	2407.500	1.560	38.688	<400
	2437.500	1.440	35.712	<400
	2467.500	1.580	39.184	<400

Duty cycle: 31 channels*0.4 seconds = 12.4 seconds

Test Frequency: 2407.500MHz

For each 1 second of 2 channel appearance, the longest time of occupancy for each of 12.4 seconds is:

$$2 \text{ channels} * 12.4 \text{ seconds} / 1 * 1.560 \text{ms} = 38.688 \text{ms}$$

Test Frequency: 2437.500MHz

For each 1 second of 2 channel appearance, the longest time of occupancy for each of 12.4 seconds is:

$$2 \text{ channel} * 12.4 \text{ seconds} / 1 * 1.440 \text{ms} = 35.712 \text{ms}$$

Test Frequency: 2467.500MHz

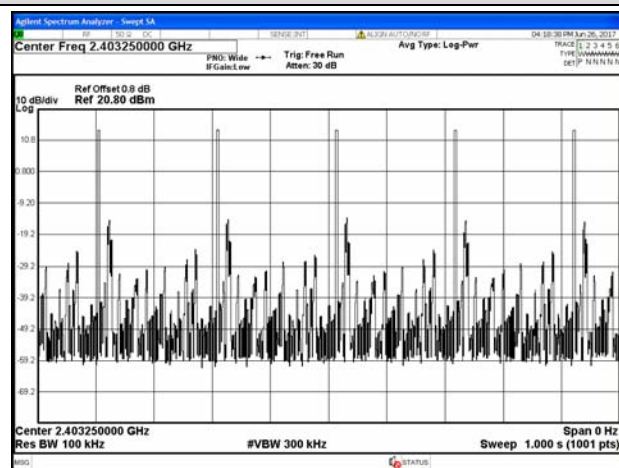
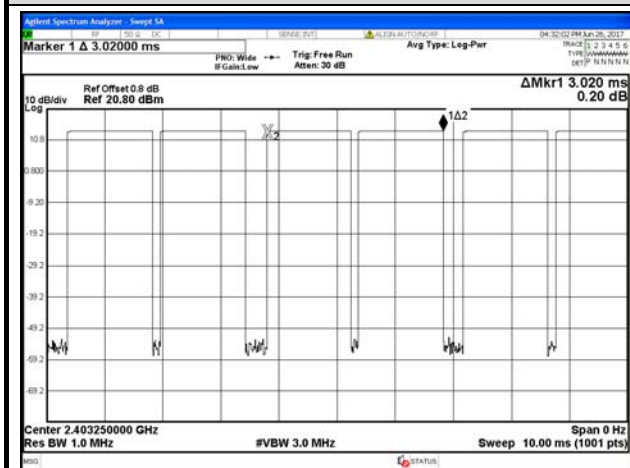
For each 1 second of 2 channel appearance, the longest time of occupancy for each of 12.4 seconds is:

$$2 \text{ channel} * 12.4 \text{ seconds} / 1 * 1.580 \text{ms} = 39.184 \text{ms}$$

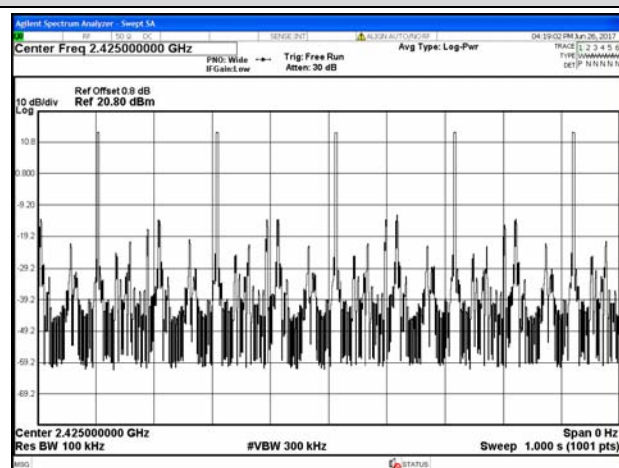
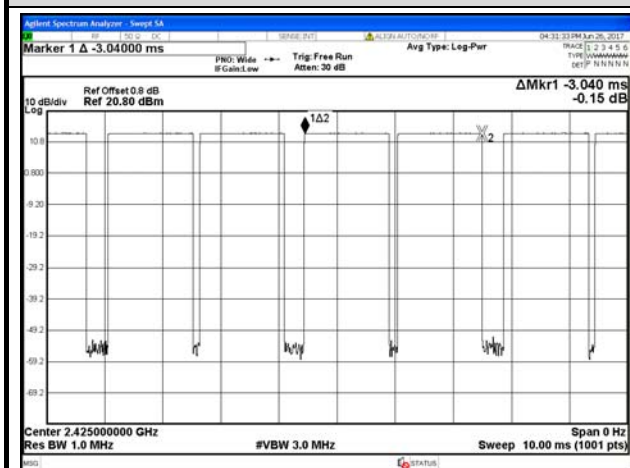
A.4.2 Measurement Plots

Modulation: S-FHSS

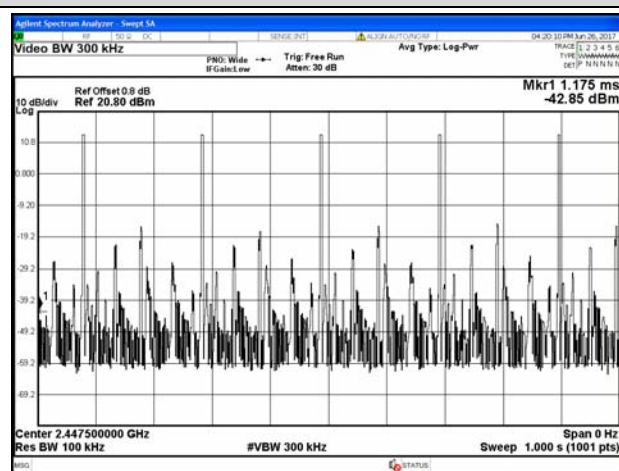
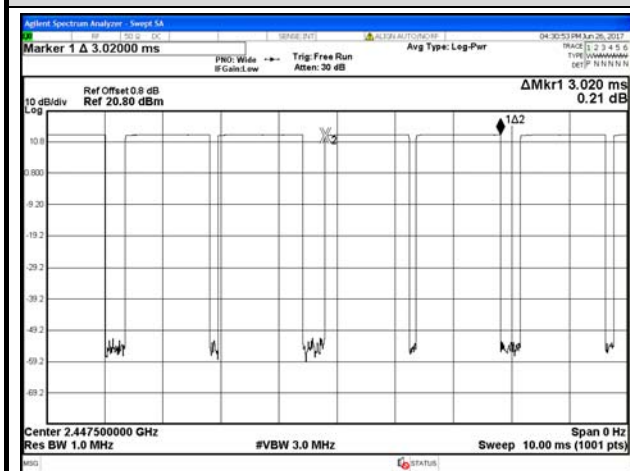
2403.250MHz



2425.000MHz

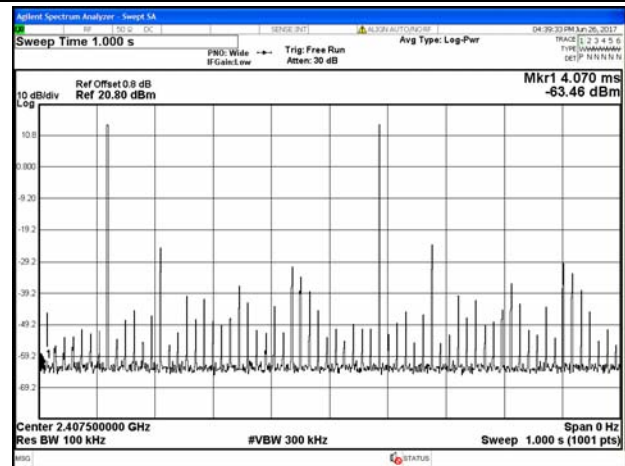
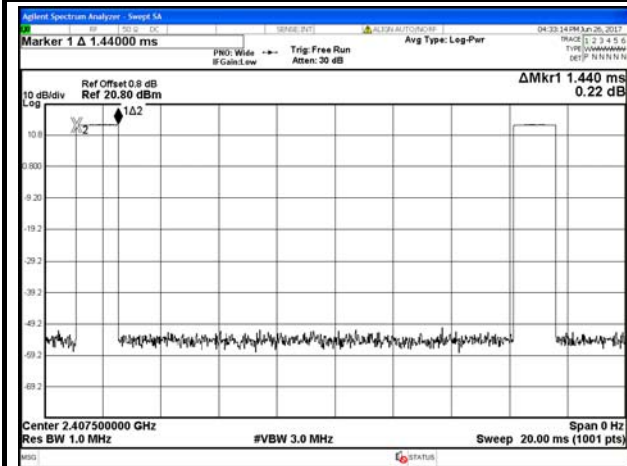


2447.500MHz

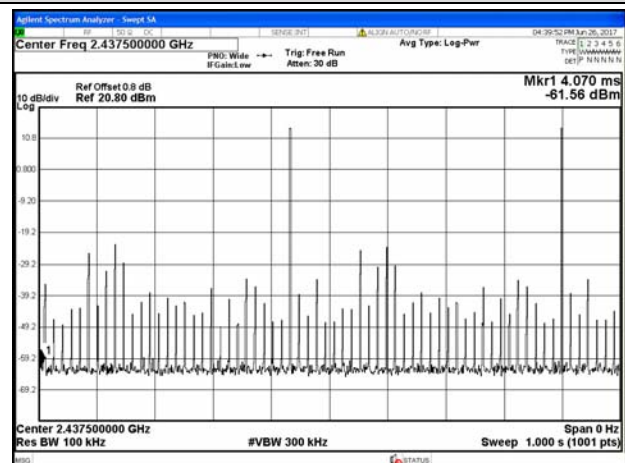
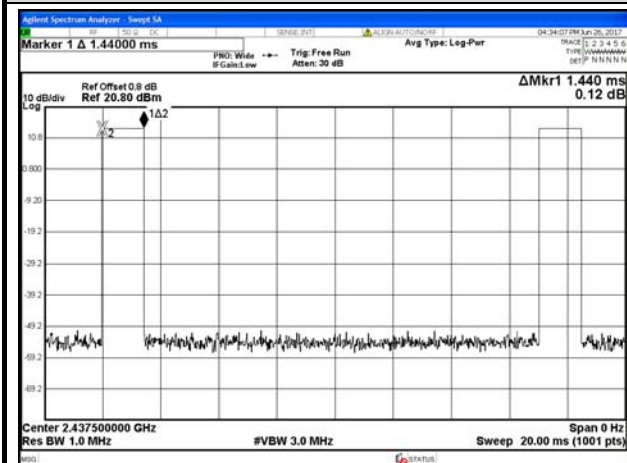


Modulation: T-FHSS

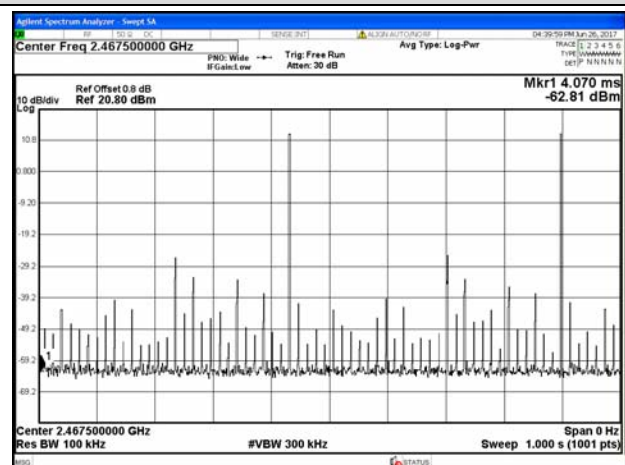
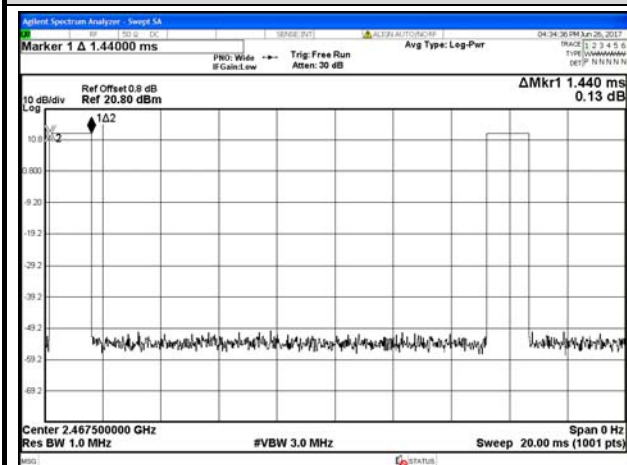
2407.500MHz



2437.500MHz



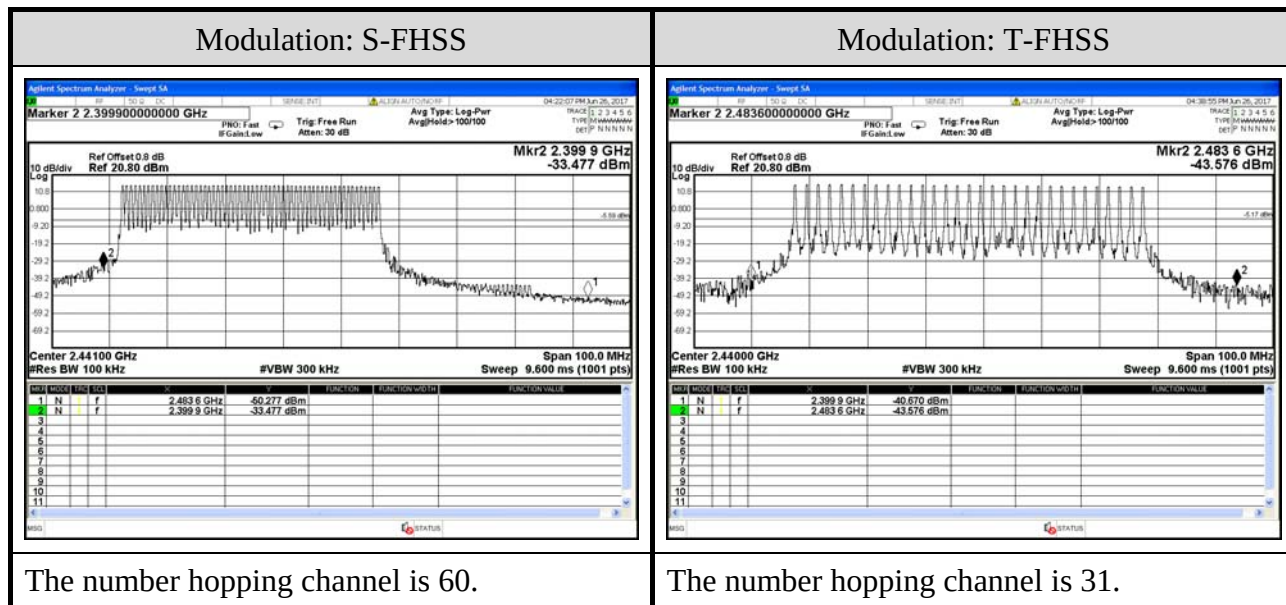
2467.500MHz



A.5 NUMBER OF HOPPING CHANNELS MEASUREMENT

Test Date	2017/06/26	Temp./Hum.	22°C/50%
Cable Loss	0.8dB	Test Voltage	DC 6.6V

A.5.1 Measurement Plots



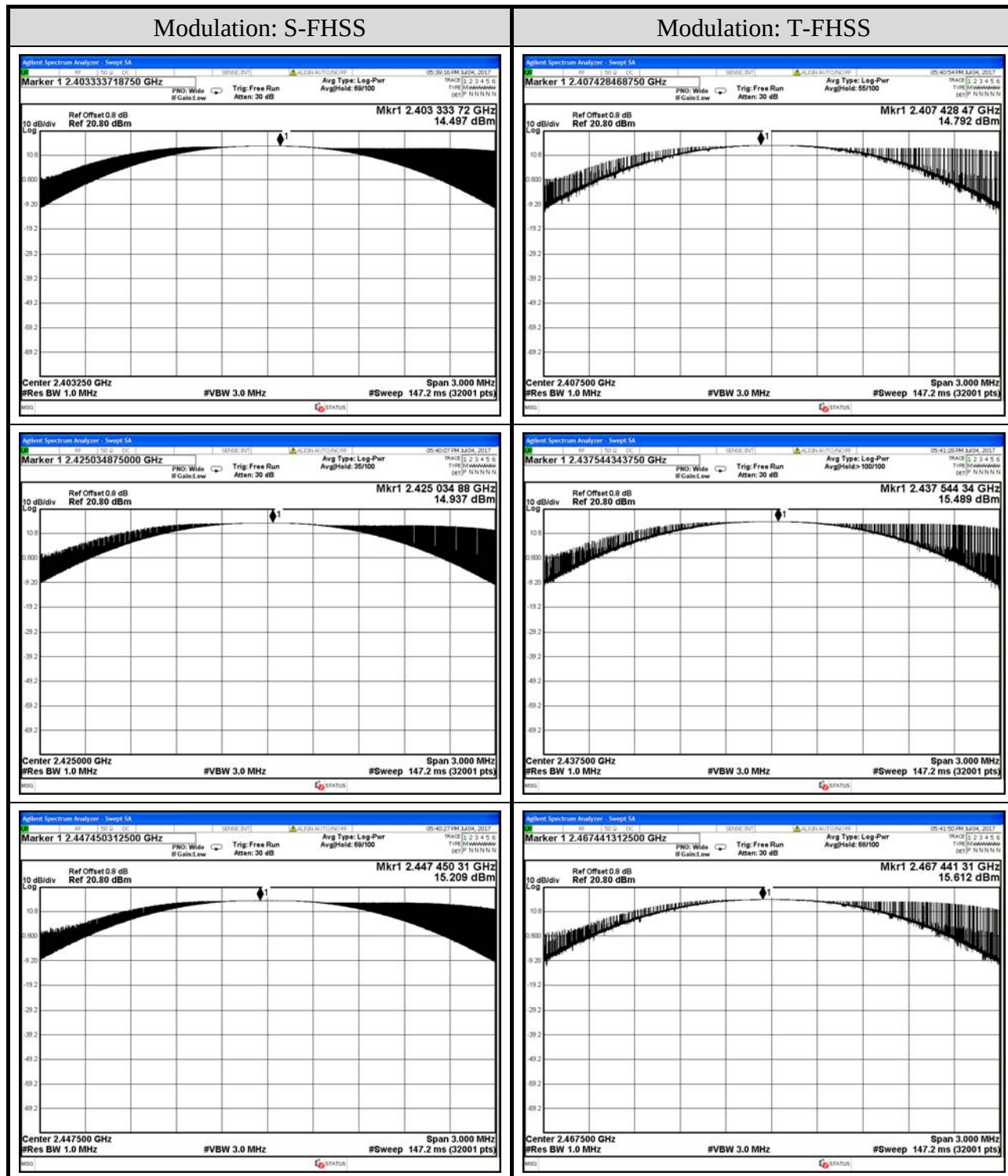
A.6 MAXIMUM PEAK OUTPUT POWER MEASUREMENT

Test Date	2017/06/26	Temp./Hum.	22°C/50%
Cable Loss	0.8dB	Test Voltage	DC 6.6V

Modulation	Centre Frequency (MHz)	Peak Output Power		Limit
		dBm	W	
S-FHSS	2403.250	14.497	0.02816	21dBm (0.125W)
	2425.000	14.937	0.03117	
	2447.500	15.209	0.03318	

Modulation	Centre Frequency (MHz)	Peak Output Power		Limit
		dBm	W	
T-FHSS	2407.50	14.792	0.03014	21dBm (0.125W)
	2437.500	15.489	0.03539	
	2467.50	15.612	0.03641	

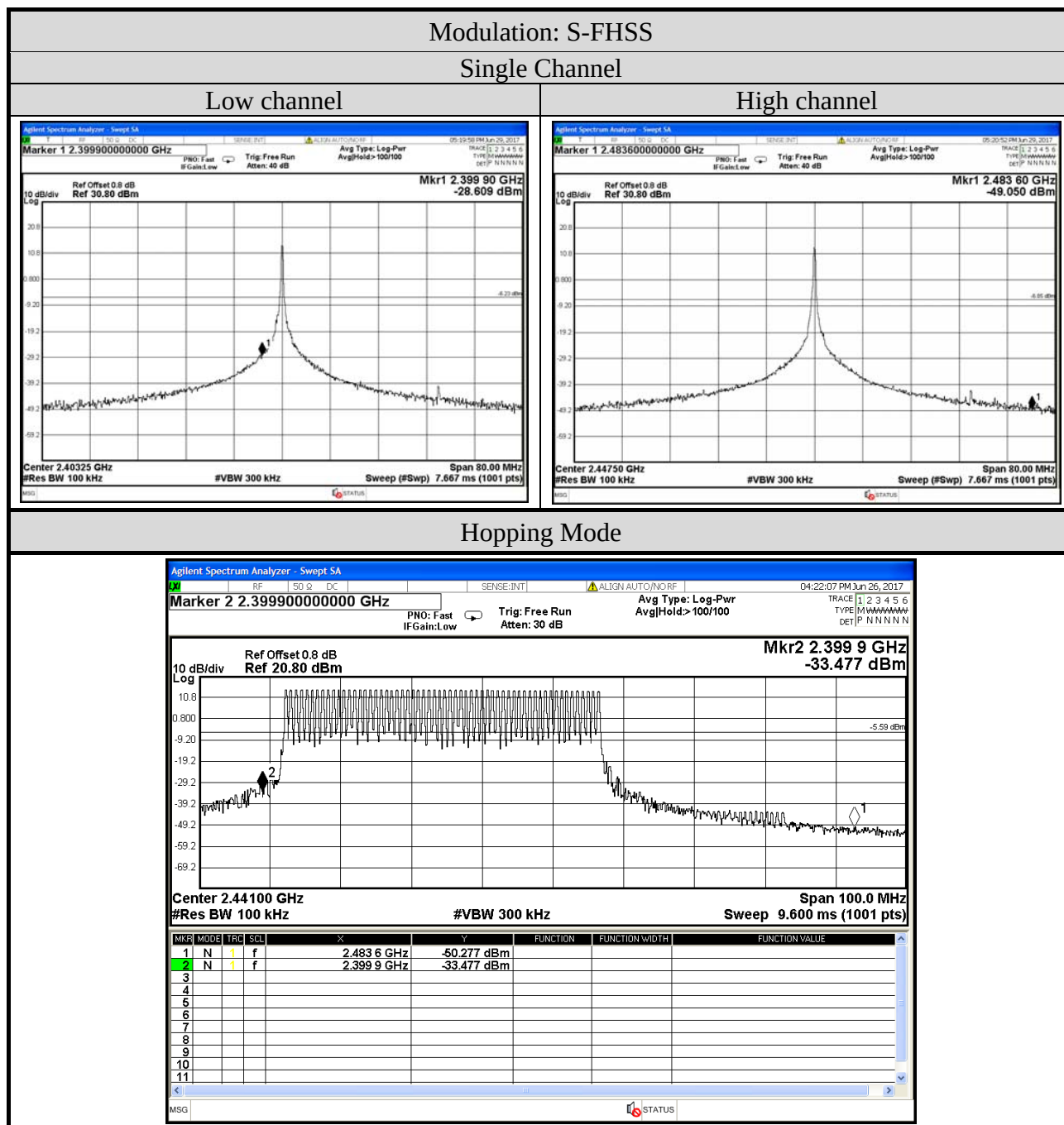
A.6.1 Measurement Plots



A.7 EMISSION LIMITATIONS MEASUREMENT

A.7.1 Band Edge

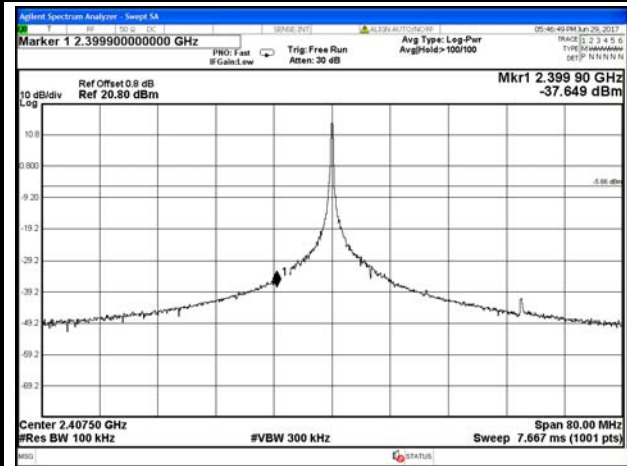
Test Date	2017/06/26 ~ 29	Temp./Hum.	22°C/50%
Cable Loss	0.8dB	Test Voltage	DC 6.6V



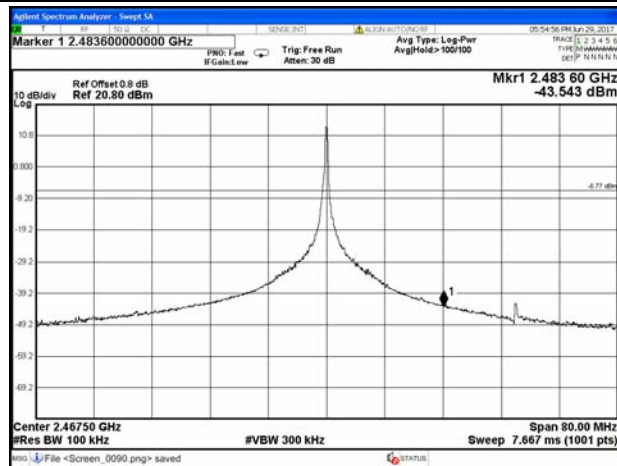
Modulation: T-FHSS

Single Channel

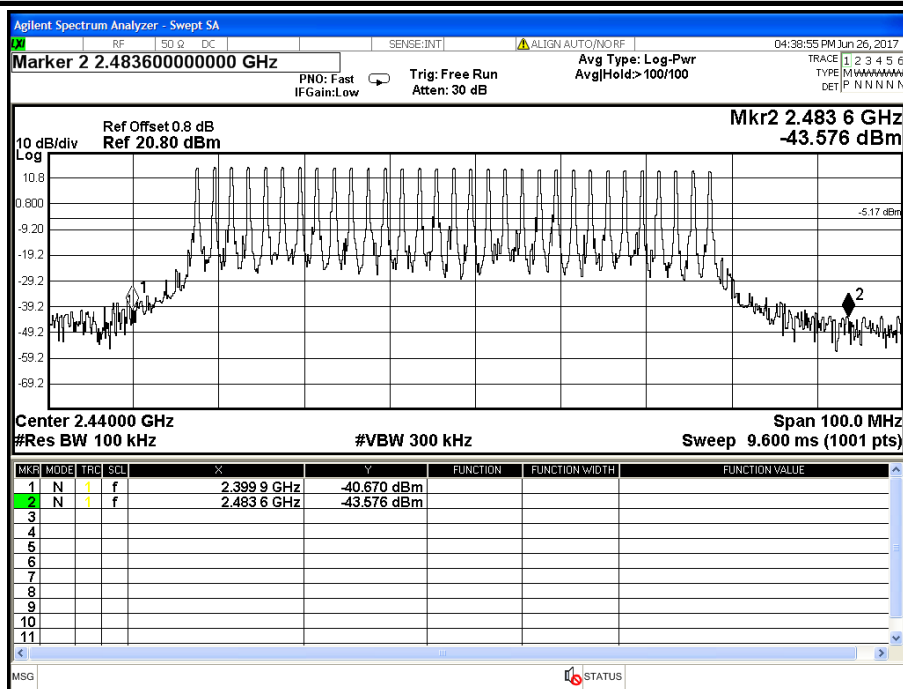
Low channel



High channel

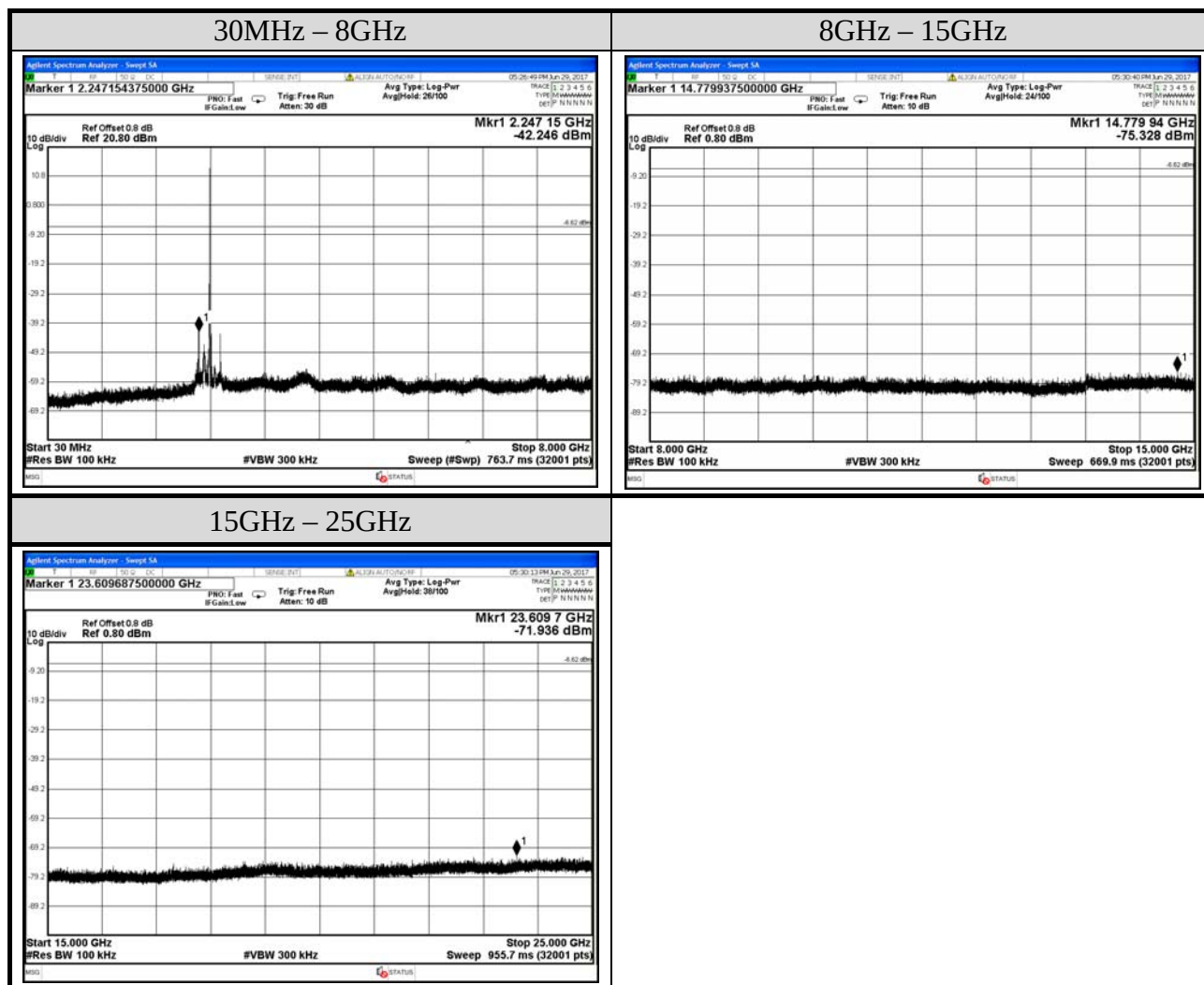


Hopping Mode



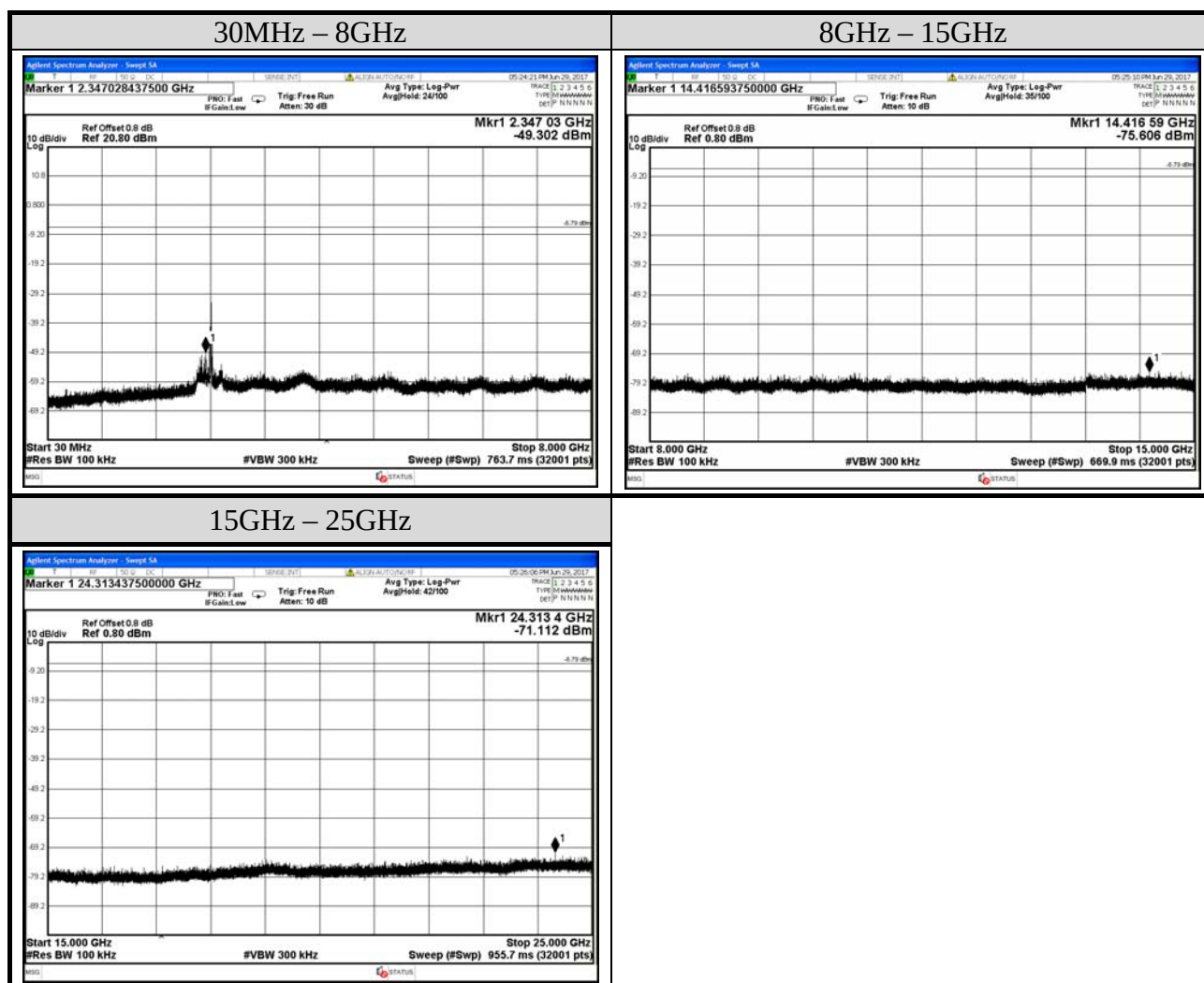
A.7.2 Spurious Emission

Test Date	2017/06/29	Temp./Hum.	22°C/50%
Mode	TX	Modulation	S-FHSS
		Frequency	2403.250MHz
Cable Loss	0.8dB	Test Voltage	DC 6.6V



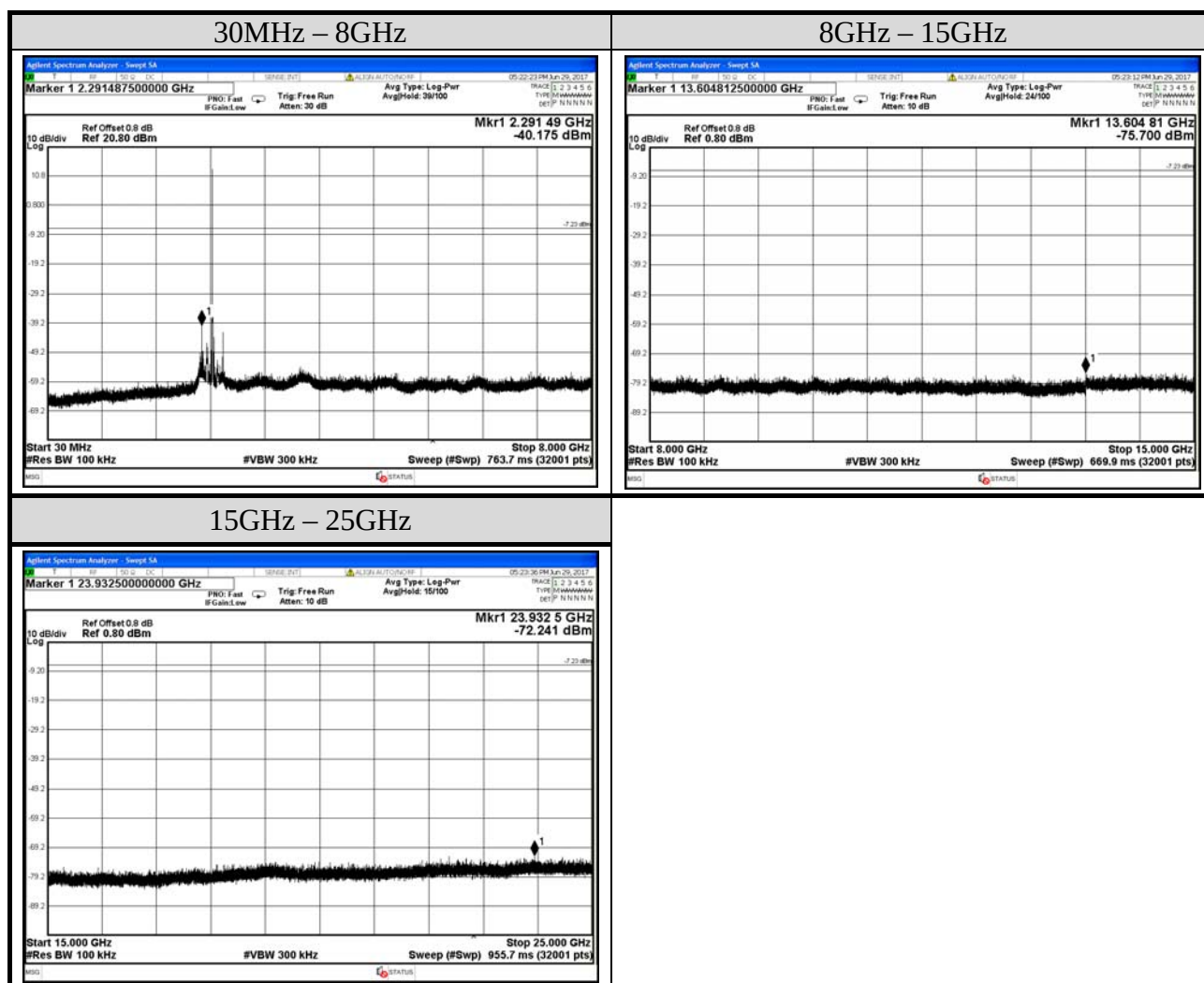
Note: All results have been included cable loss and simultaneous factor.

Test Date	2017/06/29	Temp./Hum.	22°C/50%
Mode	TX	Modulation	S-FHSS
		Frequency	2425.000MHz
Cable Loss	0.8dB	Test Voltage	DC 6.6V



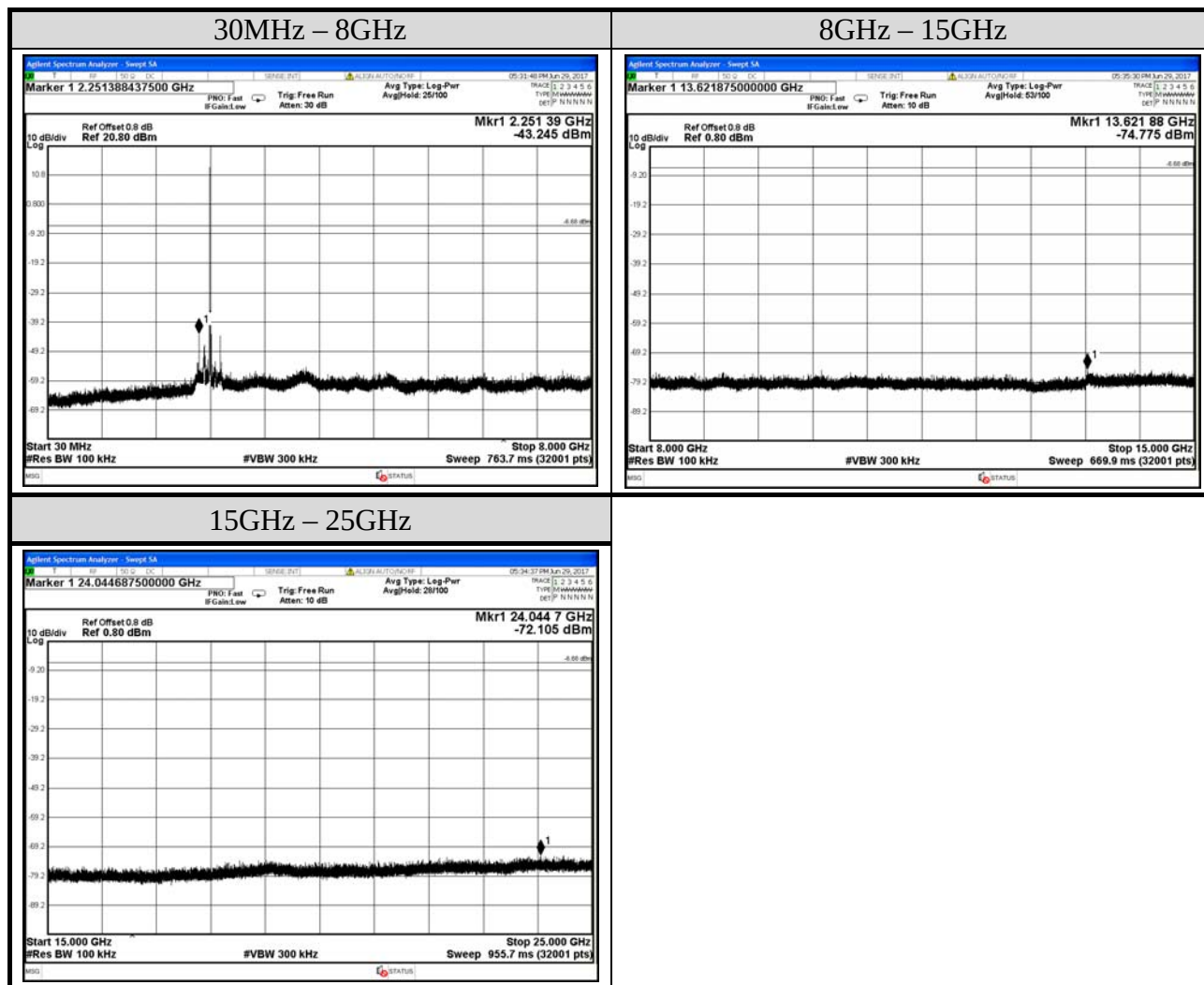
Note: All results have been included cable loss and simultaneous factor.

Test Date	2017/06/29	Temp./Hum.	22°C/50%
Mode	TX	Modulation	S-FHSS
		Frequency	2447.500MHz
Cable Loss	0.8dB	Test Voltage	DC 6.6V



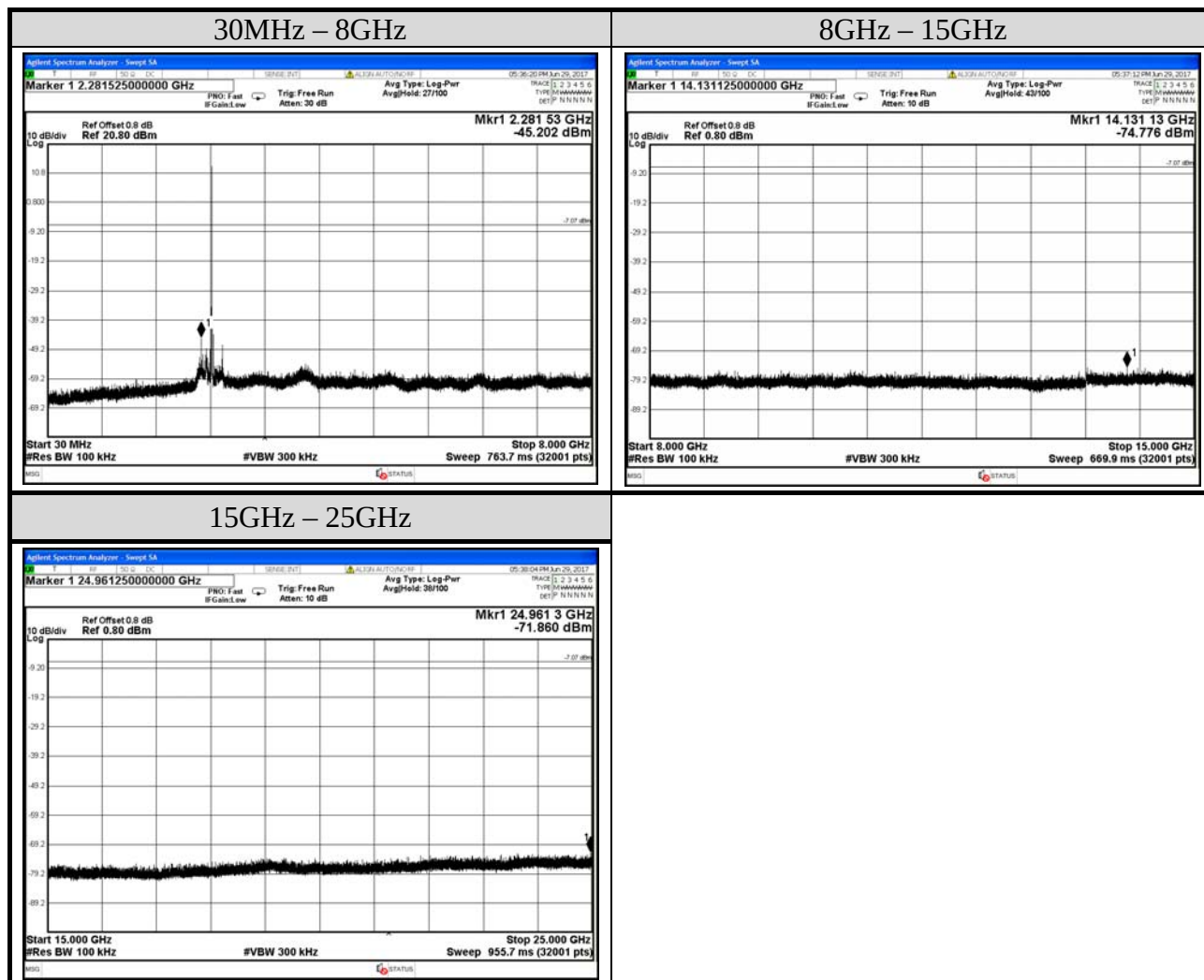
Note: All results have been included cable loss and simultaneous factor.

Test Date	2017/06/29	Temp./Hum.	22°C/50%
Mode	TX	Modulation	T-FHSS
		Frequency	2407.500MHz
Cable Loss	0.8dB	Test Voltage	DC 6.6V



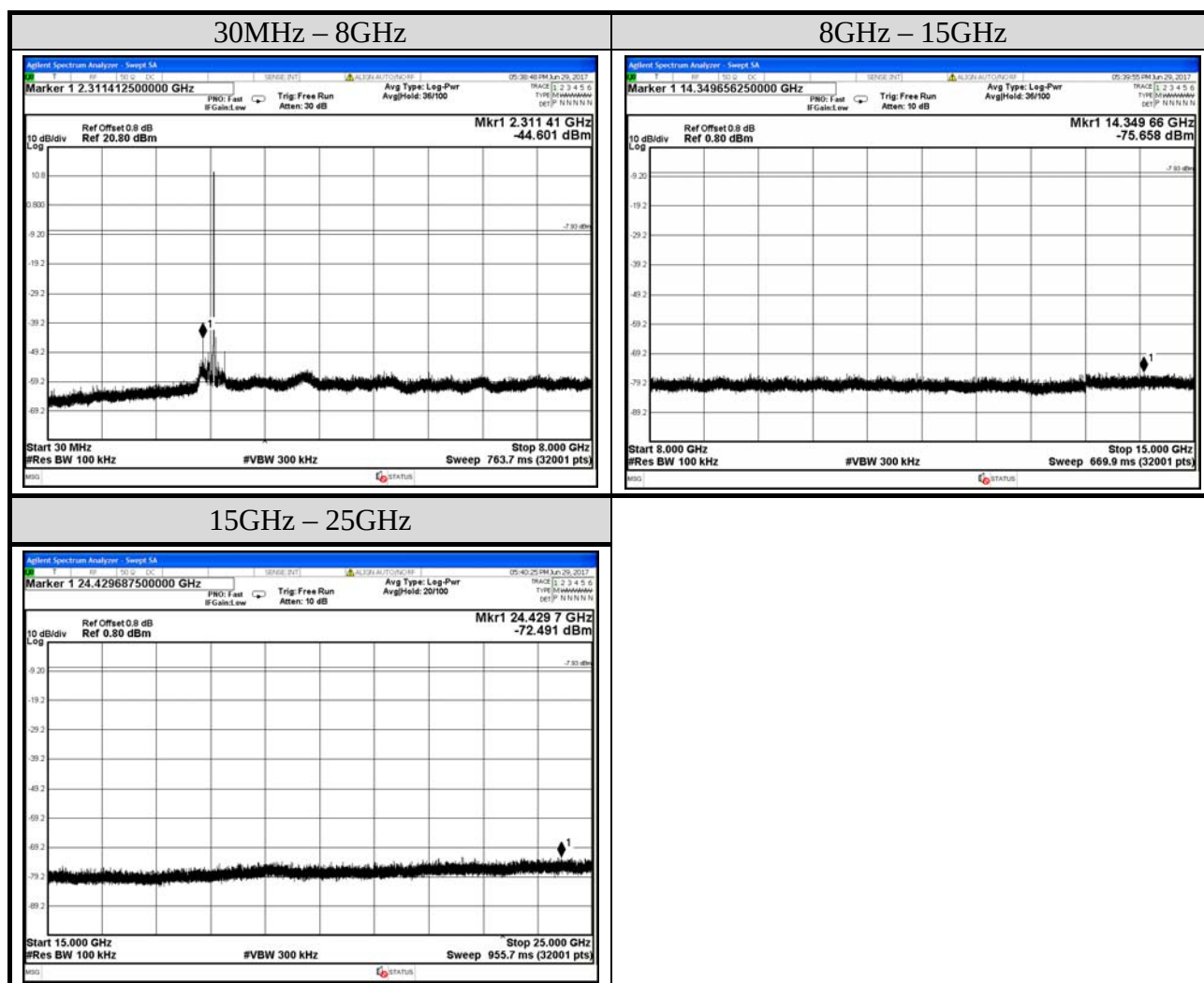
Note: All results have been included cable loss and simultaneous factor.

Test Date	2017/06/29	Temp./Hum.	22°C/50%
Mode	TX	Modulation	T-FHSS
		Frequency	2437.500MHz
Cable Loss	0.8dB	Test Voltage	DC 6.6V



Note: All results have been included cable loss and simultaneous factor.

Test Date	2017/06/29	Temp./Hum.	22°C/50%
Mode	TX	Modulation	T-FHSS
		Frequency	2467.500MHz
Cable Loss	0.8dB	Test Voltage	DC 6.6V



Note: All results have been included cable loss and simultaneous factor.