

Application for FCC Certificate
On Behalf of
Jiaxing Shufude Electric Bed Co. Ltd.

Remote Controller

Model No.: SFD-Y-14, SFD-Y-18

FCC ID : WKZDSDDCSY005A

Prepared For : Jiaxing Shufude Electric Bed Co. Ltd.
East No.07 Provincial Road, Tengyun Village
Wangjiangjing Development Zone,
Jiaxing, Zhejiang, China

Prepared By : Audix Technology (Shanghai) Co., Ltd.
3F and 4F, 34Bldg 680 Guiping Rd,
Caohejing Hi-Tech Park,
Shanghai 200233, China

Tel : +86-21-64955500
Fax : +86-21-64955491

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Date of Report : Jul. 22, 2016

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TEST REPORT FOR FCC CERTIFICATION

Applicant : Jiaxing Shufude Electric Bed Co. Ltd.
Manufacturer : Jiaxing YINUO Electronics Technology Co., Ltd.

EUT Description : Remote Controller
(A) Model No. : SFD-Y-14, SFD-Y-18
(B) Power Supply : DC 4.5V (AAA Battery *3)

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART C OCTOBER 2015
AND ANSI C63.10:2013*

The device described above is tested by Audix Technology (Shanghai) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits radiated emission.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report shows that the EUT (M/N: Refer to Sec. 2.1), which was tested in 3m anechoic chamber on Jul. 20-21, 2016 to be technically compliant with the FCC official limits also.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government by the client.

Date of Test : Jul. 20-21, 2016 Date of Report : Jul. 22, 2016

Producer : Alan He
ALAN HE / Assistant

Review : Sammy Chen
SAMMY CHEN / Manager

 For and on behalf of
Audix Technology (Shanghai) Co., Ltd.

Signatory : Byron Kwo
Authorized Signature EM BYRON KWO/Assistant General Manager

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Description / Test Item	Test Standard	Meets Limit	Results
Conducted Emission at the Mains Terminal	FCC RULES AND REGULATIONS PART 15 SUBPART C OCTOBER 2015 AND ANSI C63.10:2013	15.207	N/A
Radiated Emission	FCC RULES AND REGULATIONS PART 15 SUBPART C OCTOBER 2015 AND ANSI C63.10:2013	15.209	Pass
Fundamental and Harmonics Emission	FCC RULES AND REGULATIONS PART 15 SUBPART C OCTOBER 2015 AND ANSI C63.10:2013	15.249	Pass
Band-Edge Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C OCTOBER 2015 AND ANSI C63.10:2013	15.249	Pass
Bandwidth Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C OCTOBER 2015 AND ANSI C63.10:2013	15.215	Pass
N/A is an abbreviation for Not Applicable.			

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description	:	Remote Controller
Type of EUT	:	☒ Production ☐ Pre-product ☐ Pro-type
Model No.	:	SFD-Y-14, SFD-Y-18
Note	:	The above models are all the same except for the number of the keys, SFD-Y-14 has full keys while SFD-Y-18 has 6 keys. Both of them have 2 colors of shell, silver and black. The SFD-Y-14 was tested and recorded in the report.
Applicant	:	Jiaxing Shufude Electric Bed Co. Ltd. East No.07 Provincial Road, Tengyun Village, Wangjiangjing Development Zone, Jiaxing, Zhejiang, China
Manufacturer	:	Same as the Applicant
Factory	:	Same as the Applicant
Modulation	:	MSK 500kbps
Frequency Channel	:	Total 4 Channel 2402.94MHz, 2422.94MHz, 2442.94MHz, 2462.94MHz
Tested Frequency	:	2402.94MHz, 2442.49MHz, 2462.94MHz
Tested Key	:	All of the keys were evaluated. Their duty cycle were same. The FLAT key was tested and recorded in this report.
Antenna Location	:	Top of the RF module Please see Figure 7 in APPENDIX III “Photographs of EUT”.
Antenna Type	:	Internal permanently attached antenna

2.2 Description of Test Facility

Site Description (Semi-Anechoic Chamber)	:	Sept. 17, 1998 file on Jan. 15, 2015 Renewed Federal Communications Commission FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046, USA
Name of Firm	:	Audix Technology (Shanghai) Co., Ltd.
Site Location	:	3F 34Bldg 680 Guiping Rd., Caohejing Hi-Tech Park, Shanghai 200233, China
FCC registration Number	:	91789
Accredited by NVLAP, Lab Code	:	200371-0

2.3 Measurement Uncertainty

Radiated Emission Expanded Uncertainty (30-200MHz):

U = 4.3dB (Horizontal)

U = 4.6dB (Vertical)

Radiated Emission Expanded Uncertainty (200M-1GHz):

U = 4.5dB (Horizontal)

U = 5.4dB (Vertical)

Radiated Emission Expanded Uncertainty (Above 1GHz):

U = 5.1 dB

3 RADIATED EMISSION TEST

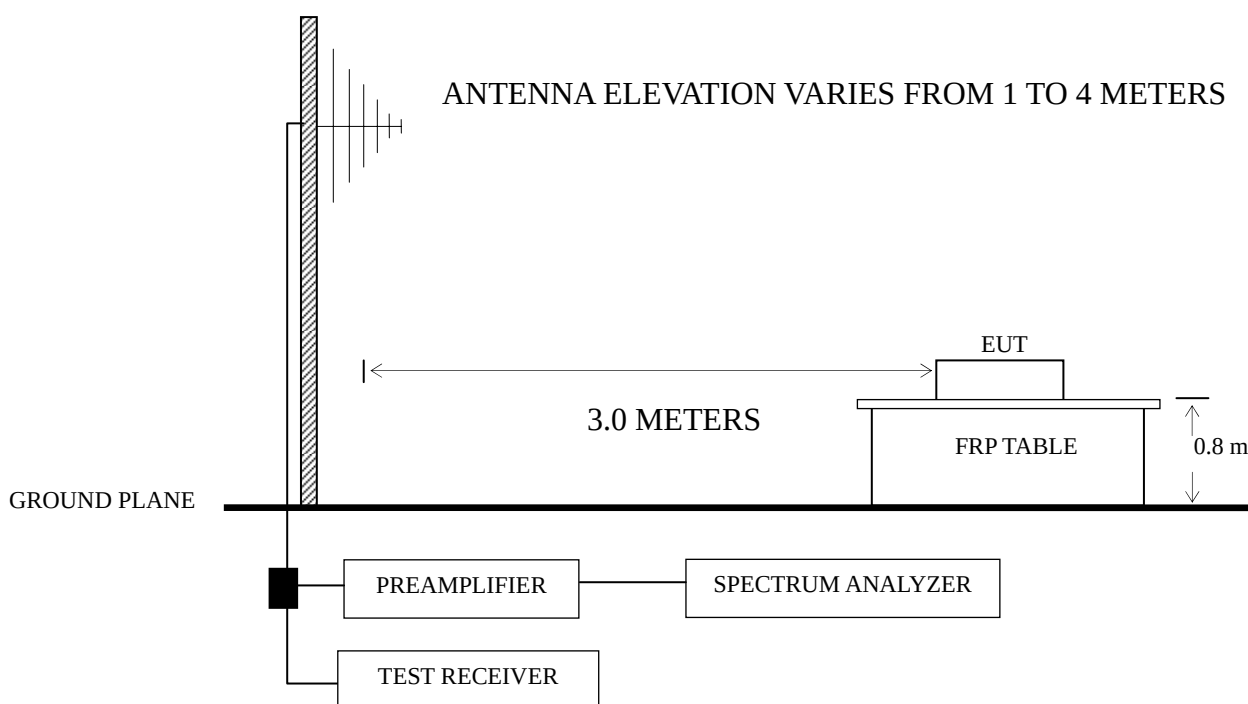
3.1 Test Equipment

The following test equipments are used during the radiated emission test in a semi-anechoic chamber:

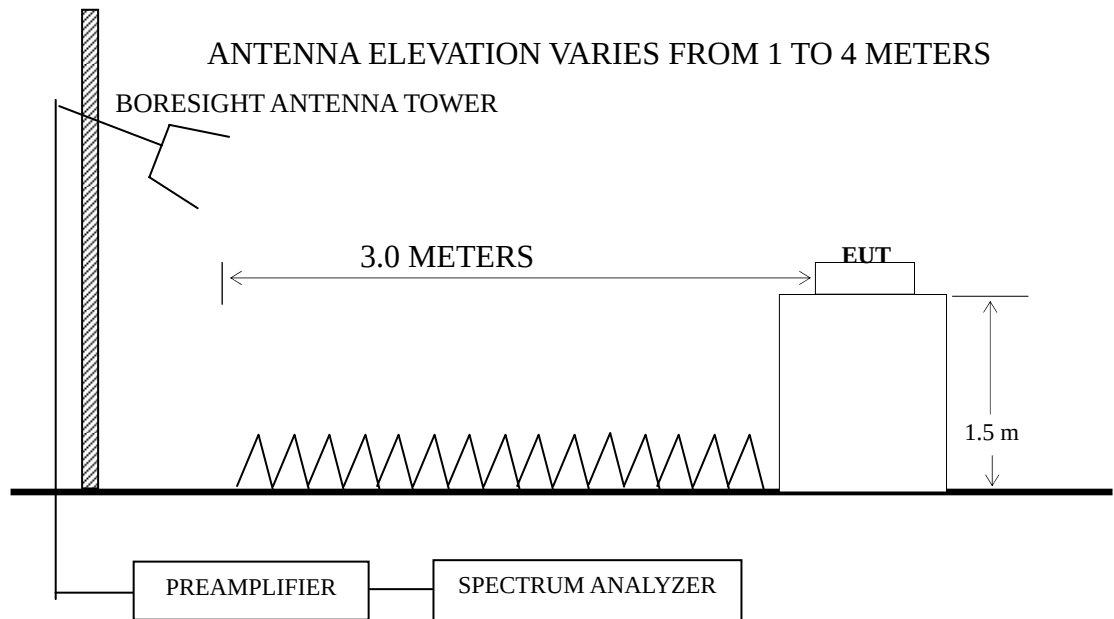
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E7405A	MY45106600	Feb 26, 2016	Feb 25, 2017
2.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 10, 2016	May 09, 2017
3.	Horn Antenna	EMCO	3115	9607-4878	May 31, 2016	May 30, 2017
4.	Horn Antenna	EMCO	3116	00062643	Sep 08, 2015	Sep 07, 2017
5.	Test Receiver	R&S	ESCI	101303	May 07, 2016	May 06, 2017
6.	Preamplifier	HP	8447D	2944A06664	Apr 27, 2016	Apr 26, 2017
7.	Preamplifier	HP	8449B	3008A00864	Mar 20, 2016	Sep 19, 2017
8.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426390	Mar 18, 2016	Sep 17, 2016
9.	Software	Audix	E3	SET00200 9912M295-2	--	--

3.2 Block Diagram of Test Setup

3.2.1 Below 1GHz



3.2.2 Above 1GHz



3.3 Radiated Emission Limit [FCC Part 15 Subpart C 15.209]

Frequency (MHz)	Distance (m)	Field strength limits ($\mu\text{V/m}$)	
		($\mu\text{V/m}$)	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

NOTE 1 - Emission Level dB ($\mu\text{V/m}$) = $20 \lg$ Emission Level ($\mu\text{V/m}$)

NOTE 2 - The tighter limit applies at the band edges.

NOTE 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.

NOTE 4 - The limits shown are based on Quasi-peak value detector below or equal to 1GHz and Average value detector above 1GHz.

NOTE 5 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT

3.4 Test Configuration

The EUT was installed as show on Sec. 3.2 in radiated emission test to meet FCC requirement and operating in a manner, which tend to maximize emission level in a normal application.

3.5 Operating Condition of EUT

3.5.1 Setup the EUT as shown in Sec. 3.2.

3.5.2 Turn on the power of all equipment.

3.5.3 Set the EUT on the test mode (Transmitting) and then test.

3.6 Test Procedures

Radiated emission test applies to harmonics/spurs that fall in the restricted bands listed in Section 15.205. The maximum permitted average field strength is listed in Section 15.209. A pre-amp is necessary for this measurement. For measurement above 1 GHz, set RBW = 1 MHz, VBW = 3 MHz, Sweep: Auto. If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.

The EUT was placed on a turntable. Below 1 GHz, the table height is 80 cm above the reference ground plane. Above 1 GHz, the table height is 1.5 m. The turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (Calibrated Bilog Antenna) or Horn antenna was used as receiving antenna. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to ANSI C63.10: 2013 requirements during radiated emission test.

The bandwidth of Test Receiver R&S ESCI was set at 120 kHz for frequency range from 30MHz to 1000MHz.

The bandwidth of the VBW was set at 1MHz and RBW was set at 1MHz for peak emission measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emission above 1GHz for Spectrum Agilent E7405A.

The frequency range from 30 MHz to 25 GHz (Up to 10th harmonics from fundamental frequency) was checked.

The test mode (Transmitting) was done on radiated emission test.

Please refer to Sec.3.7.

3.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

NOTE 1 – Level = Read Level + Antenna Factor + Cable Loss (<1GHz)

NOTE 2 – Level = Read Level + Antenna Factor + Cable Loss
- Preamp Factor (>1GHz)

NOTE 3 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 4 – EUT configured in Lying, Side & Stand direction were all evaluated. The emission levels recorded below is data of EUT configured in **Lying** direction, for Lying direction was the maximum emission direction during the test.

NOTE 5 – The emission levels which not reported are too low against the official limit.

NOTE 6 – All reading are Quasi-Peak values below or equal to 1GHz and Peak values and Average values above 1GHz. For above 1GHz test, if the peak measured value complies with the average limit, it is unnecessary to perform an average measurement.

Radiated Emission below 1GHz

EUT : Remote Controller Temperature : 24°C

Model No. : SFD-Y-14 Humidity : 51% RH

Test Mode : Transmitting
2402.94MHz(worst case
below 1GHz) Date of Test : Jul 20, 2016

Polarization	Frequency (MHz)	Read Level dB (μV)	Cable Loss (dB)	Antenna Factor (dB/m)	Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	36.001	4.53	0.61	15.10	20.24	40.00	19.76	QP
	134.088	4.45	1.20	12.81	18.46	43.50	25.04	
	260.144	5.34	1.66	13.40	20.40	46.00	25.60	
	389.355	7.46	2.02	16.05	25.53	46.00	20.47	
	429.523	6.01	2.12	16.40	24.53	46.00	21.47	
	636.134	5.75	2.59	19.15	27.49	46.00	18.51	
Vertical	32.979	2.84	0.59	16.67	20.10	40.00	19.90	QP
	39.994	3.67	0.64	13.65	17.96	40.00	22.04	
	94.098	3.96	0.97	11.47	16.40	43.50	27.10	
	129.015	4.99	1.18	12.77	18.94	43.50	24.56	
	260.144	5.12	1.66	13.40	20.18	46.00	25.82	
	446.414	4.23	2.15	16.73	23.11	46.00	22.89	

TEST ENGINEER: CAESAR WU

Radiated Emission above 1GHz

EUT	:	Remote Controller	Temperature	:	24°C
Model No.	:	SFD-Y-14	Humidity	:	51% RH
Test Mode	:	Transmitting	Date of Test	:	Jul. 20, 2016

Transmitting 2402.94 MHz

Polarization	Frequency (MHz)	Read Level dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	1816.036	45.37	26.85	4.47	35.38	41.31	74.00	32.69	PK
	2999.209	45.13	30.50	5.82	35.20	46.25	74.00	27.75	
	4200.482	41.95	33.14	7.12	34.13	48.08	74.00	25.92	
Vertical	1080.091	48.80	23.91	3.40	36.35	39.76	74.00	34.24	PK
	1937.036	45.72	27.29	4.59	35.26	42.34	74.00	31.66	
	3952.228	42.63	32.66	6.87	34.25	47.91	74.00	26.09	

Transmitting 2442.94 MHz

Polarization	Frequency (MHz)	Read Level dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	1599.1	45.53	26.02	4.20	35.62	40.13	74.00	33.87	PK
	2184.107	45.60	27.85	4.93	35.20	43.18	74.00	30.82	
	3924.004	43.60	32.61	6.82	34.27	48.76	74.00	25.24	
Vertical	1943.99	45.30	27.31	4.62	35.26	41.97	74.00	32.03	PK
	2988.48	44.91	30.47	5.82	35.20	46.00	74.00	28.00	
	5283.267	42.39	34.56	8.13	33.96	51.12	74.00	22.88	

Transmitting 2462.94 MHz

Polarization	Frequency (MHz)	Read Level dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	1553.908	46.19	25.83	4.14	35.68	40.48	74.00	33.52	PK
	2259.742	45.06	27.99	5.02	35.20	42.87	74.00	31.13	
	3889.006	42.96	32.52	6.76	34.30	47.94	74.00	26.06	
Vertical	1573.52	45.23	25.92	4.17	35.65	39.67	74.00	34.33	PK
	2988.48	44.80	30.47	5.82	35.20	45.89	74.00	28.11	
	4133.289	43.32	33.02	7.06	34.16	49.24	74.00	24.76	

TEST ENGINEER: CAESAR WU

4 FUNDAMENTAL AND HARMONICS EMISSIONS TEST

4.1 Test Equipment

The following test equipments are used during the fundamental and spurious emission test in a semi-anechoic chamber:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Preamplifier	HP	8449B	3008A00864	Mar 20, 2016	Sep 19, 2017
2.	Spectrum Analyzer	Agilent	E7405A	MY45106600	Feb 26, 2016	Feb 25, 2017
3.	Horn Antenna	EMCO	3115	9607-4878	May 31, 2016	May 30, 2017
4.	Horn Antenna	EMCO	3116	00062643	Sep 08, 2015	Sep 07, 2017

4.2 Block Diagram of Test Setup

Same as Sec 3.2

4.3 Fundamental and Harmonics Emission Limit [FCC Part 15 Subpart C 15.249(a)]

Fundamental Frequency (MHz)	Distance (m)	Field Strength of Fundamental		Field Strength of Harmonics	
		(millivolts/meter)	dB ($\mu\text{V/m}$)	(microvolts/meter)	dB ($\mu\text{V/m}$)
2400 ~ 2483.5	3	50	94	500	54
NOTE 1 - Emission Level dB ($\mu\text{V/m}$) = 20 lg Emission Level ($\mu\text{V/m}$) NOTE 2 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system. NOTE 3 - The limits shown are based on Average value detector. NOTE 4 - The limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT					

4.4 Test Configuration

The EUT was installed as show on Sec. 3.2 in fundamental and spurious emission test to meet ANSI C63.10:2013 requirements and operating in a manner that tend to maximize emission level in a normal application.

4.5 Operating Condition of EUT

- 4.5.1 Setup the EUT as shown in Sec. 3.2.
- 4.5.2 Turn on the power of all equipment.
- 4.5.3 Set the EUT on the test mode (Transmitting) and then test.

4.6 Test Procedures

The EUT was placed on a turntable. Above 1 GHz, the table height is 1.5 m. The turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Horn antenna was used as receiving antenna. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to ANSI C63.10: 2013 requirements during radiated emission test.

The bandwidth of the VBW was set at 3MHz and RBW was set at 1MHz for peak emission measurement above 1GHz for Spectrum Agilent E7405A.

The frequency range from 2.4 GHz to 25 GHz (Up to 10th harmonics from fundamental frequency) was checked.

The test mode (Transmitting) was done on Fundamental and Harmonics Emission test.

4.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

NOTE 1 - All readings are Peak values.

NOTE 2 - The harmonics emission levels which not reported are too low against the official limit.

NOTE 3 - EUT configured in Lying, Side & Stand direction were all evaluated.

The emission levels recorded below is data of EUT configured in **Lying** direction, for Lying direction was the maximum emission direction during the test.

NOTE 4 - PK Level = Read Level + Factor

AV Level = PK Level – Correction Factor.

NOTE 5 - Factor = Antenna Factor + Cable Loss - Preamp Factor

NOTE 6 - Correction factor is measured as follows:

$\text{Duty Cycle } x = \text{Tx on} / (\text{Tx on} + \text{Tx off})$ $= 0.810\text{ms} * 15 / 100\text{ms} = 0.1215$
$\text{Correction Factor} = 20\log(\text{Duty Cycle}) = 18.31 \text{ dB}$

NOTE 7 - The duty cycle was calculated according to the plot in Appendix I

EUT : Remote Controller Temperature : 25°C

Model No. : SFD-Y-14 Humidity : 52% RH

Test Mode Transmitting 2402.94 MHz Date of Test : Jul. 20, 2016

Polarization	Frequency (MHz)	Read Level dB (μV)	Factor (dB/m)	Correction factor (dB)	Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2402.94	91.06	-1.77	-	89.29	114.00	24.71	PK
	4805.88	53.32	7.65	-	60.97	74.00	13.03	
	2402.94	--	--	18.31	70.98	94	23.02	AV
	4805.88	--	--	18.31	42.66	54	11.34	
Vertical	2402.94	66.86	-1.77	-	65.09	114	48.91	PK
	4805.88	45.03	7.65	-	52.68	74	21.32	
	2402.94	--	--	18.31	46.78	94	47.22	AV
	4805.88	--	--	18.31	34.37	54	19.63	

TEST ENGINEER: CAESAR WU

EUT : Remote Controller Temperature : 25°C

Model No. : SFD-Y-14 Humidity : 52% RH

Test Mode Transmitting 2442.94 MHz Date of Test : Jul. 20, 2016

Polarization	Frequency (MHz)	Read Level dB (μV)	Factor (dB/m)	Correction factor (dB)	Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2442.94	89.97	-1.66	-	88.31	114.00	25.69	PK
	4885.88	51.23	7.81	-	59.04	74.00	14.96	
	2442.94	--	--	18.31	70.00	94.00	24.00	AV
	4885.88	--	--	18.31	40.73	54.00	13.27	
Vertical	2442.94	73.66	-1.66	-	72.00	114.00	48.91	PK
	4885.88	46.81	7.81	-	54.62	74.00	21.32	
	2442.94	--	--	18.31	53.69	94.00	40.31	AV
	4885.88	--	--	18.31	36.31	54.00	17.69	

TEST ENGINEER: CAESAR WU

EUT : Remote Controller Temperature : 25°C

Model No. : SFD-Y-14 Humidity : 52% RH

Test Mode Transmitting 2462.94 MHz Date of Test : Jul. 20, 2016

Polarization	Frequency (MHz)	Read Level dB (μV)	Factor (dB/m)	Correction factor (dB)	Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2462.94	88.34	-1.59	-	86.75	114.00	27.25	PK
	4925.88	54.48	7.93	-	62.41	74.00	11.59	
	2462.94	--	--	18.31	68.44	94.00	25.56	AV
	4925.88	--	--	18.31	44.10	54.00	9.90	
Vertical	2462.94	72.58	-1.59	-	70.99	114.00	48.91	PK
	4925.88	46.79	7.93	-	54.72	74.00	21.32	
	2462.94	--	--	18.31	52.68	94.00	41.32	AV
	4925.88	--	--	18.31	36.41	54.00	17.59	

TEST ENGINEER: CAESAR WU

5 BAND-EDGE MEASUREMENT

5.1 Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E7405A	MY45106600	Nov 11, 2013	Nov 10, 2014
2.	Horn Antenna	EMCO	3115	9607-4878	May 11, 2014	May 10, 2015
3.	Preamplifier	HP	8449B	3008A00864	Mar 20, 2014	Mar 19, 2015
4.	Software	Audix	E3	SET00200 9912M295-2	--	--

5.2 Band-Edge Limit [FCC Part 15 Subpart C 15.249(d)]

Emissions radiated outside of the specified frequency bands, except for harmonic, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209 whichever is the lesser attenuation.

For peak value, The RBW of Spectrum Analyzer Agilent E7405A was set at 1MHz and the VBW was set at 3MHz.

5.3 Test Results

<PASS>

EUT : Remote Controller Temperature : 25°C

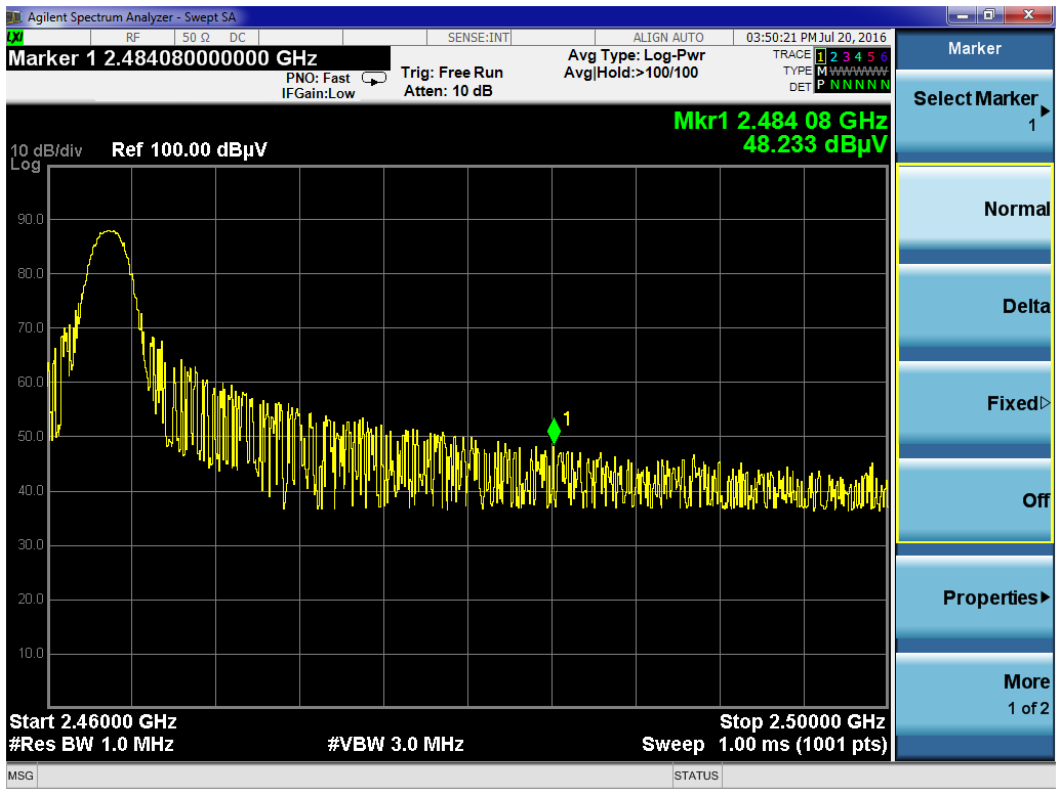
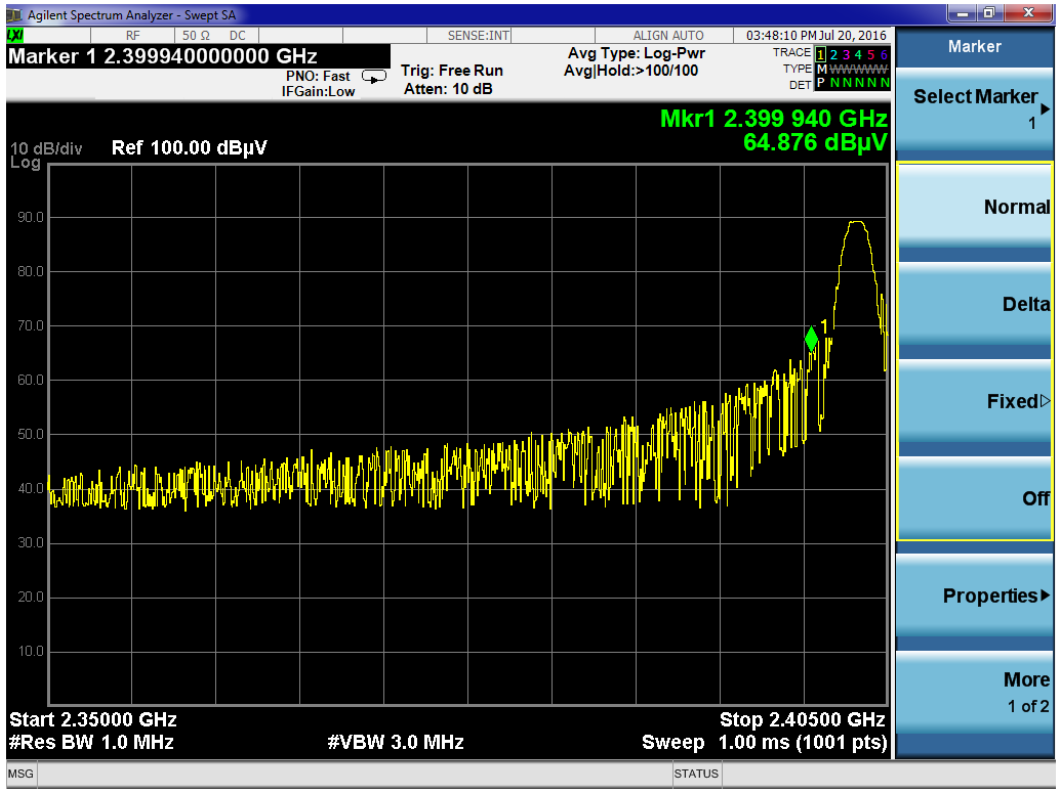
Model No. : SFD-Y-14 Humidity : 52% RH

Test Mode : Transmitting 2402.94 MHz
and 2462.94 MHz Date of Test : Jul. 20-21, 2016

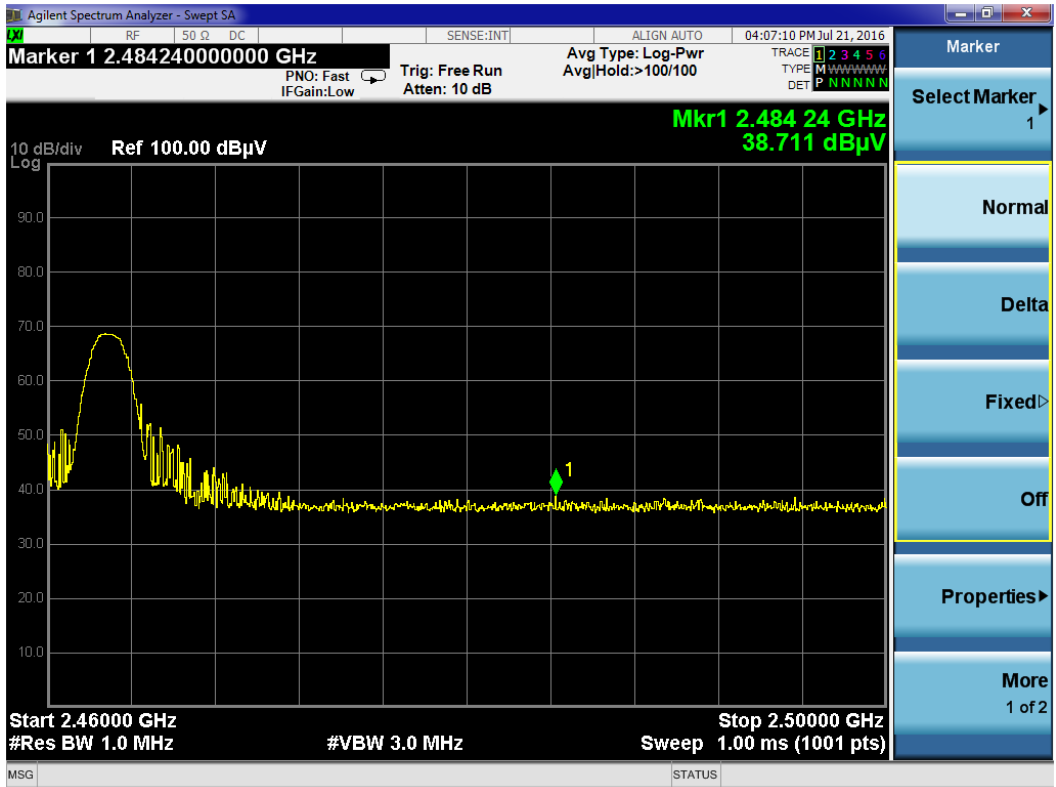
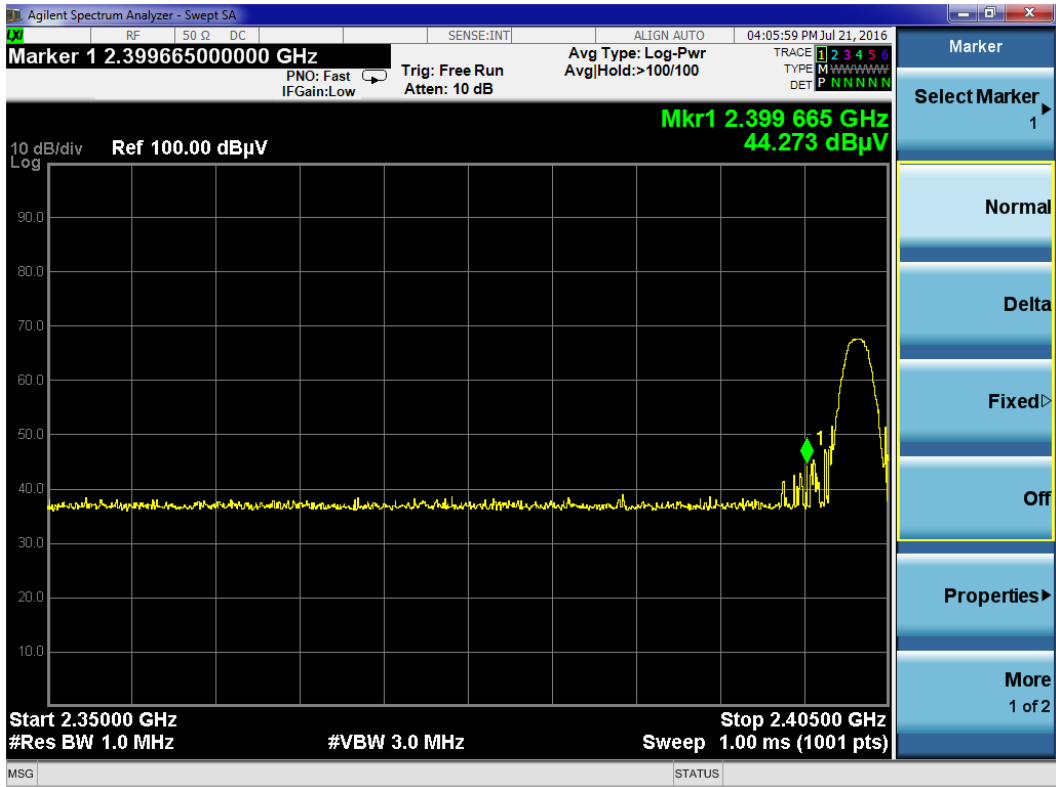
Polarization	Frequency (MHz)	Read Level dB (μV)	Factor (dB/m)	Correction factor (dB)	Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2399.94	64.88	-1.80	-	63.08	74.00	10.92	PK
	2484.08	48.23	-1.55	-	46.68	74.00	27.32	
	2399.94	--	--	18.31	44.77	54.00	9.23	AV
	2484.08	--	--	18.31	28.37	54.00	25.63	
Vertical	2399.67	44.27	-1.80	-	42.47	74.00	31.53	PK
	2484.24	38.71	-1.55	-	37.16	74.00	36.84	
	2399.67	--	--	18.31	24.16	54.00	29.84	AV
	2484.24	--	--	18.31	18.85	54.00	35.15	

TEST ENGINEER: CAESAR WU

HORIZONTAL



VERTICAL



6 BANDWIDTH MEASUREMENT

6.1 Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	N9010A	MY52221182	Jun 12, 2016	Jun 11, 2017

6.2 Bandwidth Limit

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

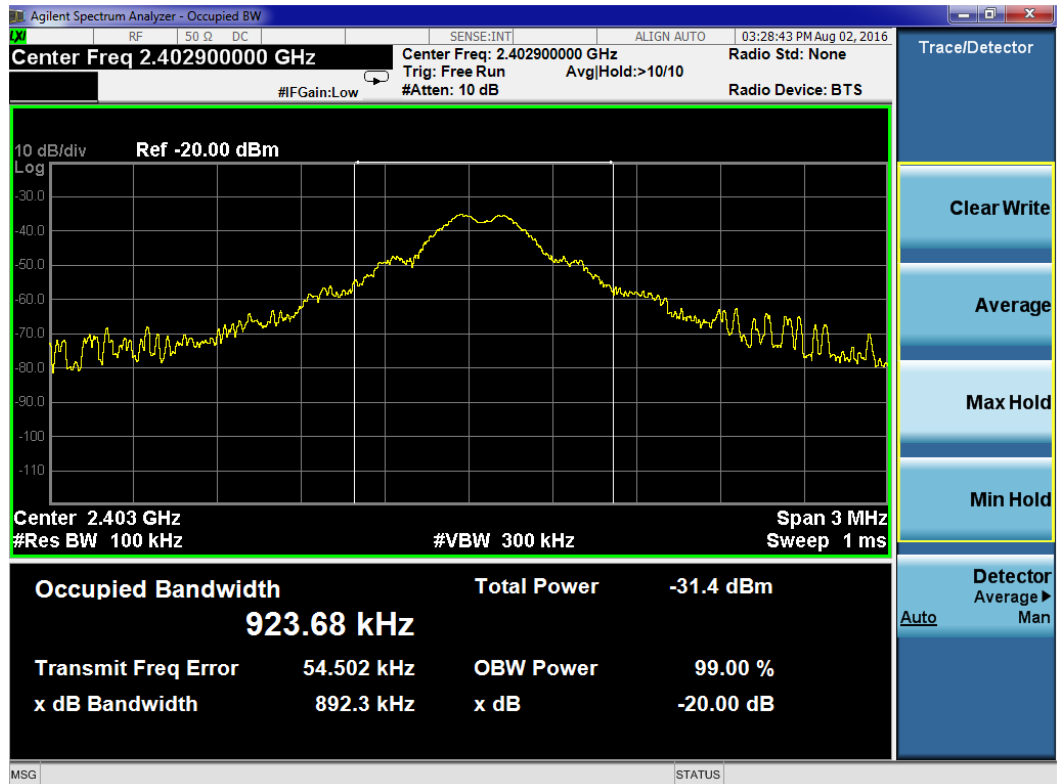
6.3 Test Results

<PASS>

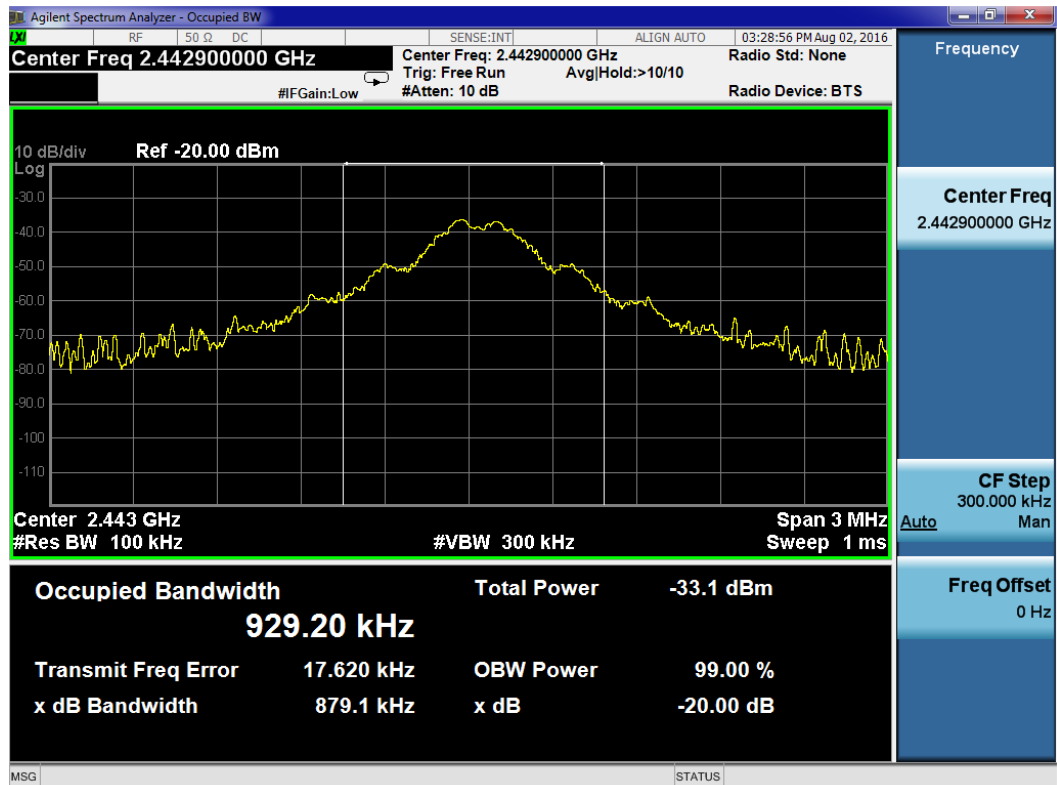
(Test Date: Aug. 02, 2016 Temperature: 25°C Humidity: 34 %)

Frequency	20dB Bandwidth
2402.9 MHz	0.892 MHz
2442.9 MHz	0.879 MHz
2462.9 MHz	1.045 MHz

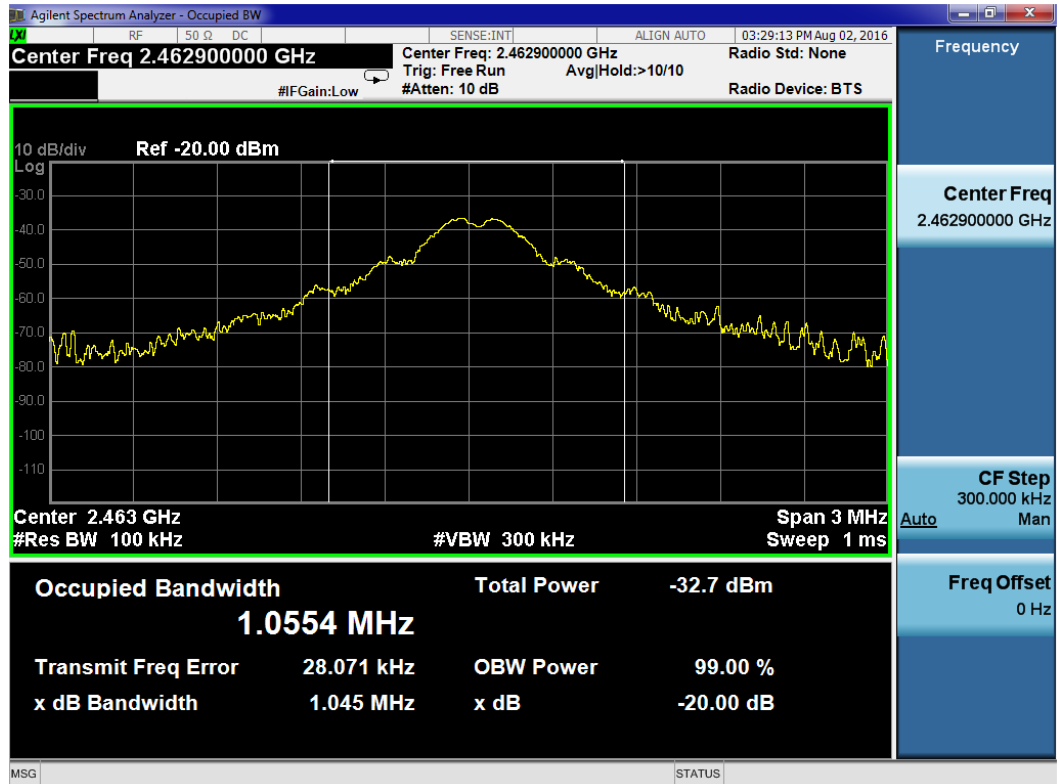
2402.9MHz



2442.9MHz



2462.9MHz

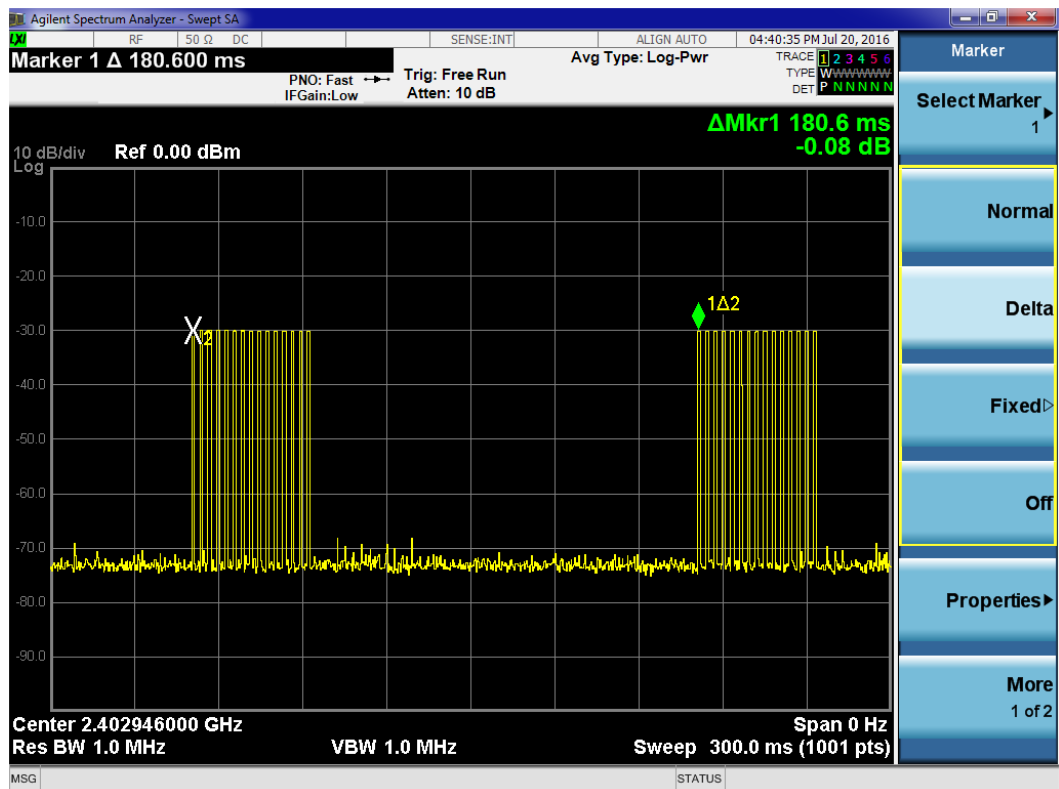


7 DEVIATION TO TEST SPECIFICATIONS

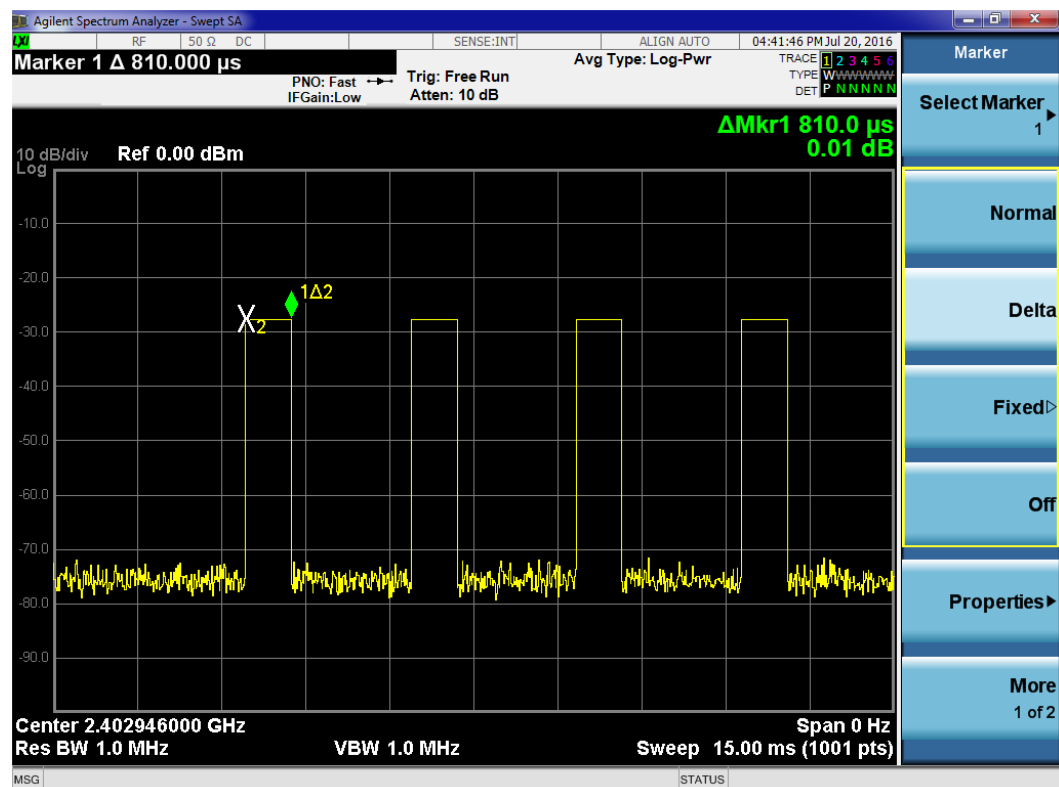
None.

APPENDIX I

PLOT OF DUTY CYCLE



total 15 burst in 1 cycle, 180.6ms for 1cycle



0.810ms for 1 burst

$$\text{Duty Cycle } x = \text{Tx on} / (\text{Tx on} + \text{Tx off})$$

$$= 0.810\text{ms} * 15 / 100\text{ms} = 0.1215$$