FCC Test Report

Product Name	:	Lyra mini
Trade Name	:	ASUS
Model No.	:	MAP-AC1300
FCC ID.	:	MSQ-RTACBV00

Applicant : ASUSTeK COMPUTER INC.

Address : 4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan

: Nov. 17, 2016
: Jan. 25, 2017
: 16B0409R-RFUSP03V00
: V1.0



The test results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of DEKRA Testing and Certification Co., Ltd.



Te	est Report Certification Issued Date : Jan. 25, 2017 Report No. : 16B0409R-RFUSP03V00			
	DEKRA			
Product Name	: Lyra mini			
Applicant	ASUSTeK COMPUTER INC.			
Address	· 4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan			
Manufacturer	ASUSTeK COMPUTER INC.			
Model No.	: MAP-AC1300			
FCC ID.	: MSQ-RTACBV00			
EUT Voltage	: AC 100-240V, 50-60Hz			
Testing Voltage	: AC 120V/60Hz			
Trade Name	: ASUS			
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C Section 15.247: 2015			
Test Lab	: Hsin Chu Laboratory			
Test Result	: Complied			
The test results relate only to	the samples tested.			
The test report shall not be re	produced except in full without the written approval of DEKRA Testing and			
Certification Co., Ltd.				
Documented By	De-Clauy.			
	(Demi Chang / Senior Engineering Adm. Specialist)			
Tested By	Scott Chang			
	(Scott Chang / Assistant Engineer)			
Approved By	Roy Wang			
	(Roy Wang / Director)			



Revision History

Report No.	Version	Description	Issued Date
16B0409R-RFUSP03V00	V1.0	Initial issue of report	Jan. 25, 2017

Laboratory Information

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

Taiwan R.O.C.	:	TAF, Accreditation Number: 3024
USA	:	FCC, Registration Number: 834100
Canada		IC, Submission No: 181665 /
Ganada	•	IC Registration Number: 22397-1 / 22397-2 / 22397-3

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

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

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

If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

Hsin Chu Laboratory:

No.75-2, 3rd Lin, WangYe Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan (R.O.C.) TEL:+886-3-592-8858 / FAX:+886-3-592-8859 No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 310, Taiwan No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 310, Taiwan TEL:+886-3-582-8001 / FAX:+886-3-5828-958 E-Mail : info.tw@dekra.com

Lin Kou Laboratory:

 No. 5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan (R.O.C.)

 TEL : +886-2-8601-3788 / FAX : +886-2-8601-3789
 E-Mail : info.tw@dekra.com



TABLE OF CONTENTS

Description

Page

1.	General Information	7
1.1.	EUT Description	7
1.2.	Test Mode	9
1.3.	Tested System Details	
1.4.	Configuration of tested System	
1.5.	EUT Exercise Software	
1.6.	Test Facility	11
2.	Conducted Emission	
2.1.	Test Equipment	
2.2.	Test Setup	
2.3.	Limits	
2.4.	Test Procedure	
2.5.	Test Specification	
2.6.	Uncertainty	
2.7.	Test Result	
3.	Peak Power Output	
3.1.	Test Equipment	
3.2.	Test Setup	
3.3.	Test procedures	
3.4.	Limits	
3.5.	Test Specification	
3.6.	Test Result	
4.	Radiated Emission	
4.1.	Test Equipment	
4.2.	Test Setup	21
4.3.	Limits	
4.4.	Test Procedure	
4.5.	Test Specification	
4.6.	Test Result	
5.	RF antenna conducted test	
5.1.	Test Equipment	
5.2.	Test Setup	52
5.3.	Limits	53
5.4.	Test Procedure	53
5.5.	Test Specification	53
5.6.	Test Result	
6.	Band Edge	66
6.1.	Test Equipment	66
6.2.	Test Setup	66
6.3.	Limits	67
6.4.	Test Procedure	67

DEKRA

6.5.	Test Specification	67
6.6.	Test Result	68
7.	Number of hopping frequency	
7.1.	Test Equipment	
7.2.	Test Setup	104
7.3.	Limits	
7.4.	Test Procedures	
7.5.	Test Specification	
7.6.	Test Result	
8.	Carrier Frequency Separation	110
8.1.	Test Equipment	110
8.2.	Test Setup	110
8.3.	Limits	110
8.4.	Test Procedures	110
8.5.	Test Specification	110
8.6.	Test Result	111
9.	Occupied Bandwidth	120
9.1.	Test Equipment	120
9.2.	Test Setup	120
9.3.	Limits	121
9.4.	Test Procedures	121
9.5.	Test Specification	121
9.6.	Test Result	122
10.	Dwell Time	131
10.1.	Test Equipment	131
10.2.	Test Setup	131
10.3.	Limits	132
10.4.	Test Procedures	132
10.5.	Test Specification	132
10.6.	Test Result	133
Attachment 1.		
	Test Setup Photograph	
Attachment 2.		
	EUT External Photograph	
Attachment 3.		
	EUT Internal Photograph	



1. General Information

1.1. EUT Description

Product Name	Lyra mini
Trade Name	ASUS
Model No.	MAP-AC1300
Frequency Range/Channel Number	2402~2480MHz / 79 Channels
Type of Modulation	GFSK, π/4-DQPSK, 8-DPSK

Antenna Information		
Antenna Type	PCB Antenna	
Antenna Gain	2.02 dBi	
Beamforming Gain	1.77 dBi	

Accessories Information		
USB Cable	Non-Shielded, 2m	
LAN Cable	Non-Shielded, 2m	
Power Adapter	ASUS, AD2037320910LF	
	I/P: 100-240V~50/60Hz, 0.3A	
	O/P: 5V===2A	
	Cable Out: Non-Shielded, 2m	
Power Adapter	ASUS, W12-010N3A	
	I/P: 100-240V~50/60Hz, 0.3A	
	O/P: 5V===2A	
	Cable Out: Non-Shielded, 2m	



Working F	Working Frequency of Each Channel						
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 00	2402 MHz	Channel 20	2422 MHz	Channel 40	2442 MHz	Channel 60	2462 MHz
Channel 01	2403 MHz	Channel 21	2423 MHz	Channel 41	2443 MHz	Channel 61	2463 MHz
Channel 02	2404 MHz	Channel 22	2424 MHz	Channel 42	2444 MHz	Channel 62	2464 MHz
Channel 03	2405 MHz	Channel 23	2425 MHz	Channel 43	2445 MHz	Channel 63	2465 MHz
Channel 04	2406 MHz	Channel 24	2426 MHz	Channel 44	2446 MHz	Channel 64	2466 MHz
Channel 05	2407 MHz	Channel 25	2427 MHz	Channel 45	2447 MHz	Channel 65	2467 MHz
Channel 06	2408 MHz	Channel 26	2428 MHz	Channel 46	2448 MHz	Channel 66	2468 MHz
Channel 07	2409 MHz	Channel 27	2429 MHz	Channel 47	2449 MHz	Channel 67	2469 MHz
Channel 08	2410 MHz	Channel 28	2430 MHz	Channel 48	2450 MHz	Channel 68	2470 MHz
Channel 09	2411 MHz	Channel 29	2431 MHz	Channel 49	2451 MHz	Channel 69	2471 MHz
Channel 10	2412 MHz	Channel 30	2432 MHz	Channel 50	2452 MHz	Channel 70	2472 MHz
Channel 11	2413 MHz	Channel 31	2433 MHz	Channel 51	2453 MHz	Channel 71	2473 MHz
Channel 12	2414 MHz	Channel 32	2434 MHz	Channel 52	2454 MHz	Channel 72	2474 MHz
Channel 13	2415 MHz	Channel 33	2435 MHz	Channel 53	2455 MHz	Channel 73	2475 MHz
Channel 14	2416 MHz	Channel 34	2436 MHz	Channel 54	2456 MHz	Channel 74	2476 MHz
Channel 15	2417 MHz	Channel 35	2437 MHz	Channel 55	2457 MHz	Channel 75	2477 MHz
Channel 16	2418 MHz	Channel 36	2438 MHz	Channel 56	2458 MHz	Channel 76	2478 MHz
Channel 17	2419 MHz	Channel 37	2439 MHz	Channel 57	2459 MHz	Channel 77	2479 MHz
Channel 18	2420 MHz	Channel 38	2440 MHz	Channel 58	2460 MHz	Channel 78	2480 MHz
Channel 19	2421 MHz	Channel 39	2441 MHz	Channel 59	2461 MHz		

- 1. This device is a Lyra mini including 2.4GHz b/g/n (2x2), BT2.0, BT4.0 and 5GHz a/n/ac (2x2) transmitting and receiving function.
- 2. Regards to the frequency band operation; the lowest

 middle and highest frequency of channel were selected to perform the test, and then shown on this report.
- 3. This device is a composite device in accordance with Part 15 regulations. The receiving function was tested and its number is 16B0409R-RFUSP12V00.
- 4. The function BT 4.0 was measured and made a test report that the report number is 16B0409R-RFUSP03V00-A.
- 5. The function of the 2.4GHz & 5GHz transmitting is measured. The test report of the number is 16B0409R-RFUSP07V00 & 16B0409R-RFUSP05V00.

1.2. Test Mode

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

Test Mode		
тх	Mode 1: Tx-AD2037320910LF	
	Mode 2: Tx-W12-010N3A	

Emission	Mode 1	Mode 2
Conducted Emission	Yes	Yes
Peak Power Output	Yes	No
Radiated Emission	Yes	Yes
RF antenna conducted test	Yes	No
Band Edge	Yes	No
Number of hopping Frequency	Yes	No
Carrier Frequency Separation	Yes	No
Occupied Bandwidth	Yes	No
Dwell Time	Yes	No

1.3. Tested System Details

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

Product		Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	Notebook PC	ASUS	X522EP	E5N0CV04	DoC	Non-Shielded, 1.8m,
				3264197		one ferrite core bonded

1.4. Configuration of tested System

Connectio	on Diagram
EUT	
	Notebook PC(1)
Signal Cable Type	Signal cable Description
A LAN Cable	Non-Shielded, 3m

1.5. EUT Exercise Software

1	Setup the EUT as shown in Section 1.4.
2	Execute the test program "QCA Radio Control Toolkit".
3	Configure the test mode, the test channel, and the data rate.
4	Press "Start TX" to start the continuous transmitting.
5	Verify that the EUT works properly.



1.6. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)		15 - 35	23
Humidity (%RH)	FCC PART 15 C 15.207	25 - 75	50
Barometric pressure (mbar)	Conducted Emission (FHSS)	860 - 1060	950-1000
Temperature (°C)		15 - 35	24
Humidity (%RH)	FCC PART 15 C 15.247	25 - 75	45
Barometric pressure (mbar)	Peak Power Output (FHSS)	860 - 1060	950-1000
Temperature (°C)		15 - 35	25
Humidity (%RH)	FCC PART 15 C 15.247	25 - 75	54
Barometric pressure (mbar)	Radiated Emission (FHSS)	860 - 1060	950-1000
Temperature (°C)		15 - 35	25
Humidity (%RH)	FCC PART 15 C 15.247	25 - 75	50
Barometric pressure (mbar)	Band Edge (FHSS)	860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247	15 - 35	24
Humidity (%RH)	Number of hopping Frequency	25 - 75	45
Barometric pressure (mbar)	(FHSS)	860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247	15 - 35	24
Humidity (%RH)	Carrier Frequency Separation	25 - 75	45
Barometric pressure (mbar)	(FHSS)	860 - 1060	950-1000
Temperature (°C)		15 - 35	24
Humidity (%RH)	FCC PART 15 C 15.247	25 - 75	45
Barometric pressure (mbar)	Occupied Bandwidth (FHSS)	860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247	15 - 35	24
Humidity (%RH)	RF antenna conducted test	25 - 75	45
Barometric pressure (mbar)	(FHSS)	860 - 1060	950-1000
Temperature (°C)		15 - 35	24
Humidity (%RH)	FCC PART 15 C 15.247 Dwell Time (FHSS)	25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000

2. Conducted Emission

2.1. Test Equipment

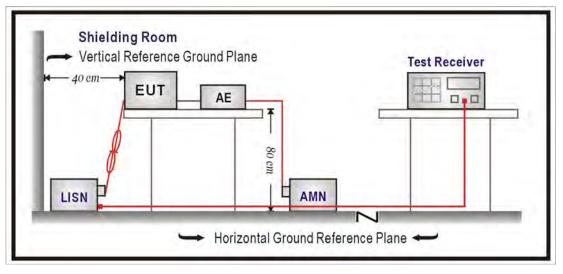
The following test equipments are used during the test:

Conducted Emission / SR2-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Artificial Mains Network	R&S	ENV4200	848411/010	2017/01/20
LISN	R&S	ENV216	100092	2017/08/16
Test Receiver	R&S	ESCS 30	836858/022	2018/01/14

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

2.2. Test Setup



2.3. Limits

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

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

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs.) Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2009 on conducted measurement. Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

2.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.207: 2015

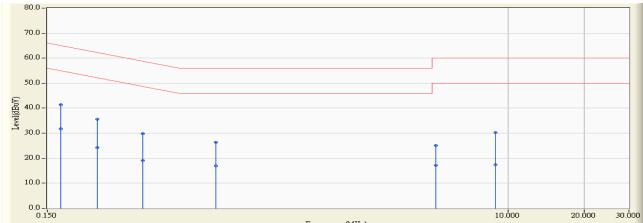
2.6. Uncertainty

The measurement uncertainty is defined as \pm 2.26 dB.



2.7. Test Result

Site : SR2-H	Time : 2017/01/18
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR2-H_LISN(16A)-6_0712 - Line1	Power : AC 120V / 60Hz
EUT : Lyra mini	Note : 802.1.15_DH5_2441MHz
	Mode 1: Tx-AD2037320910LF



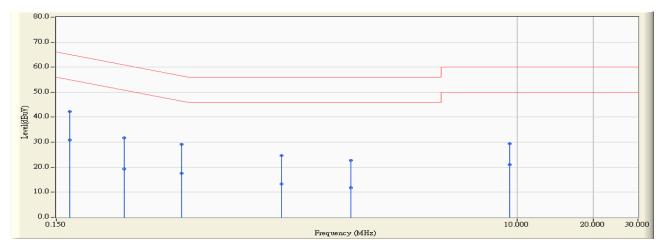
Frequency	(MHz)

		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV)	(dB)	(dBuV)	
1		0.170	9.753	31.620	41.373	-23.610	64.983	QUASIPEAK
2	*	0.170	9.753	21.950	31.703	-23.280	54.983	AVERAGE
3		0.236	9.746	25.960	35.706	-26.532	62.238	QUASIPEAK
4		0.236	9.746	14.590	24.336	-27.902	52.238	AVERAGE
5		0.357	9.734	20.080	29.814	-28.983	58.797	QUASIPEAK
6		0.357	9.734	9.270	19.004	-29.793	48.797	AVERAGE
7		0.697	9.764	16.640	26.404	-29.596	56.000	QUASIPEAK
8		0.697	9.764	7.280	17.044	-28.956	46.000	AVERAGE
9		5.181	9.929	15.240	25.169	-34.831	60.000	QUASIPEAK
10		5.181	9.929	7.280	17.209	-32.791	50.000	AVERAGE
11		8.869	10.083	20.100	30.183	-29.817	60.000	QUASIPEAK
12		8.869	10.083	7.280	17.363	-32.637	50.000	AVERAGE

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



Site : SR2-H	Time : 2017/01/18
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR2-H_LISN(16A)-6_0712 - Line2	Power : AC 120V / 60Hz
EUT : Lyra mini	Note : 802.1.15_DH5_2441MHz
	Mode 1: Tx-AD2037320910LF



		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV)	(dB)	(dBuV)	
1	*	0.170	9.753	32.400	42.153	-22.830	64.983	QUASIPEAK
2		0.170	9.753	21.060	30.813	-24.170	54.983	AVERAGE
3		0.279	9.750	22.080	31.830	-29.018	60.848	QUASIPEAK
4		0.279	9.750	9.570	19.320	-31.528	50.848	AVERAGE
5		0.470	9.746	19.460	29.206	-27.302	56.508	QUASIPEAK
6		0.470	9.746	7.800	17.546	-28.962	46.508	AVERAGE
7		1.166	9.825	14.840	24.665	-31.335	56.000	QUASIPEAK
8		1.166	9.825	3.370	13.195	-32.805	46.000	AVERAGE
9		2.197	9.849	12.800	22.649	-33.351	56.000	QUASIPEAK
10		2.197	9.849	2.000	11.849	-34.151	46.000	AVERAGE
11		9.318	10.110	19.280	29.390	-30.610	60.000	QUASIPEAK
12		9.318	10.110	10.880	20.990	-29.010	50.000	AVERAGE

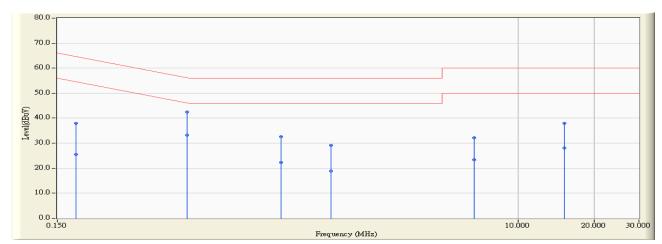
1. All Reading Levels are Quasi-Peak and average value.

2. " * ", means this data is the worst emission level.

3. Measurement Level = Reading Level + Correct Factor.



Site : SR2-H	Time : 2017/01/18
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR2-H_LISN(16A)-6_0712 - Line1	Power : AC 120V / 60Hz
EUT : Lyra mini	Note : 802.1.15DH5_2441MHz
	Mode 2: Tx-W12-010N3A



		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV)	(dB)	(dBuV)	
1		0.177	9.752	28.280	38.032	-26.577	64.609	QUASIPEAK
2		0.177	9.752	15.760	25.512	-29.097	54.609	AVERAGE
3		0.490	9.728	32.700	42.429	-13.742	56.170	QUASIPEAK
4	*	0.490	9.728	23.560	33.289	-12.882	46.170	AVERAGE
5		1.150	9.826	22.800	32.626	-23.374	56.000	QUASIPEAK
6		1.150	9.826	12.410	22.236	-23.764	46.000	AVERAGE
7		1.810	9.852	19.360	29.212	-26.788	56.000	QUASIPEAK
8		1.810	9.852	8.950	18.802	-27.198	46.000	AVERAGE
9		6.677	9.991	22.200	32.192	-27.808	60.000	QUASIPEAK
10		6.677	9.991	13.450	23.442	-26.558	50.000	AVERAGE
11		15.213	10.225	27.720	37.945	-22.055	60.000	QUASIPEAK
12		15.213	10.225	17.950	28.175	-21.825	50.000	AVERAGE

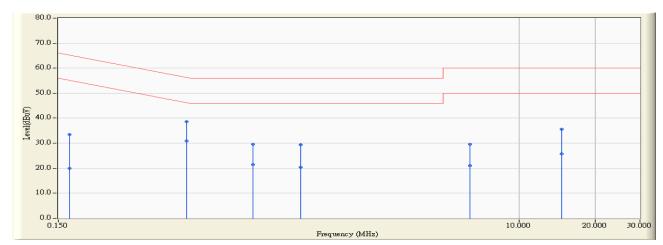
1. All Reading Levels are Quasi-Peak and average value.

2. " * ", means this data is the worst emission level.

3. Measurement Level = Reading Level + Correct Factor.



Site : SR2-H	Time : 2017/01/18
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR2-H_LISN(16A)-6_0712 - Line2	Power : AC 120V / 60Hz
EUT : Lyra mini	Note : 802.1.15DH5_2441MHz
	Mode 2: Tx-W12-010N3A



		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV)	(dB)	(dBuV)	
1		0.166	9.753	23.600	33.353	-31.824	65.177	QUASIPEAK
2		0.166	9.753	10.190	19.943	-35.234	55.177	AVERAGE
3		0.482	9.746	28.840	38.586	-17.718	56.304	QUASIPEAK
4	*	0.482	9.746	21.180	30.926	-15.378	46.304	AVERAGE
5		0.884	9.803	19.820	29.622	-26.378	56.000	QUASIPEAK
6		0.884	9.803	11.700	21.502	-24.498	46.000	AVERAGE
7		1.369	9.831	19.480	29.311	-26.689	56.000	QUASIPEAK
8		1.369	9.831	10.570	20.401	-25.599	46.000	AVERAGE
9		6.388	9.940	19.700	29.639	-30.361	60.000	QUASIPEAK
10		6.388	9.940	11.130	21.069	-28.931	50.000	AVERAGE
11		14.681	10.300	25.200	35.500	-24.500	60.000	QUASIPEAK
12		14.681	10.300	15.350	25.650	-24.350	50.000	AVERAGE

1. All Reading Levels are Quasi-Peak and average value.

2. " * ", means this data is the worst emission level.

3. Measurement Level = Reading Level + Correct Factor.

3. Peak Power Output

3.1. Test Equipment

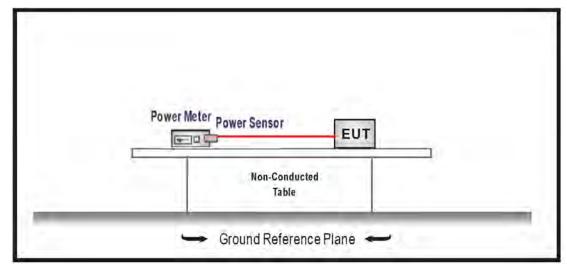
The following test equipment is used during the test:

Peak	Power	Output /	SR10-H
г сал	LOMEL	Output /	

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
High Speed Peak Power	Anritsu	ML2496A	1602004	2017/02/09
Meter Dual Input				
Pulse Power Sensor	Anritsu	MA2411B	1531043	2017/01/13
Pulse Power Sensor	Anritsu	MA2411B	1531044	2017/01/13

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

3.2. Test Setup



3.3. Test procedures

The EUT was setup according to ANSI C63.10:2013 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements

3.4. Limits

For frequency hopping systems operating in the 902-928 MHz band: 1 Watt for systems employing at least 50 hopping channels; and, 0.25 Watts for systems employing less than 50 hopping channels.

For frequency hopping systems in the 2400-2483.5 MHz band employing at least 75 hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1Watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 Watt.

3.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015.



3.6. Test Result

Product	Lyra mini			
Test Item	Peak Power Output			
Test Mode	Mode 1: Tx-AD2037320910LF			
Date of Test	2016/12/25	Test Site	SR10-H	

GFSK

Channel No.	Frequency	Measure Level	Limit	Result
Channel No.	(MHz)	(dBm)	(dBm)	Result
00	2402	7.530	30	Pass
39	2441	8.410	30	Pass
78	2480	8.520	30	Pass

π/4-DQPSK

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402	9.660	30	Pass
39	2441	10.350	30	Pass
78	2480	10.540	30	Pass

8-DPSK

Channel No.	Frequency	Measure Level	Limit	Result
ondriner No.	(MHz)	(dBm)	(dBm)	Result
00	2402	10.300	30	Pass
39	2441	11.050	30	Pass
78	2480	11.120	30	Pass

4. Radiated Emission

4.1. Test Equipment

The following test equipments are used during the test:

Radiated Emission / CB4-H

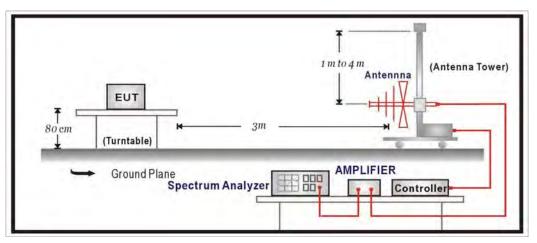
Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Bilog Antenna	Schaffner	CBL6112B	2891	2017/08/14
Horn Antenna	Schwarzbeck	BBHA 9120	D312	2017/10/25
Pre-Amplifier	EMCI	EMC0031835	980233	2017/01/26
Pre-Amplifier	Schwarzbeck	DBL-1840N506	013	2017/09/29
Pre-Amplifier	Miteq	JS41-001040000	1573954	2017/10/04
		-58-5P		
Horn Antenna	Schwarzbeck	BBHA 9170	203	2017/08/28
Signal & Spectrum	R&S	FSV40	101049	2018/01/05
Analyzer				

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

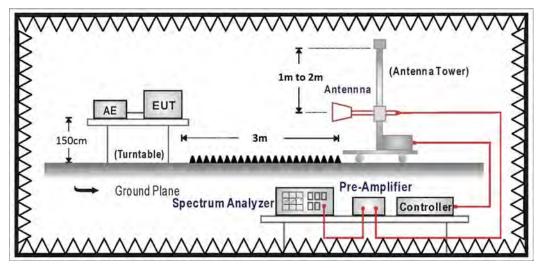


4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limits

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

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

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

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

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

4.4. Test Procedure

The EUT was setup according to ANSI C63.10:2013 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

The EUT and its simulators are placed on a turn table which is 0.8 or 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.

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

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

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

4.5. Test Specification

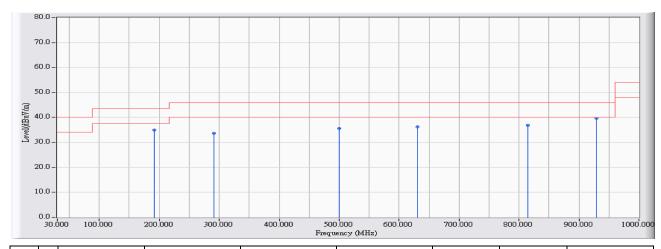
According to FCC Part 15 Subpart C Paragraph 15.247: 2015



4.6. Test Result

30MHz-1GHz Spurious

Site : CB4-H	Time : 2017/01/22
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB4-H_FCC_EFS_S2_30M-1GHz_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.1.15_DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

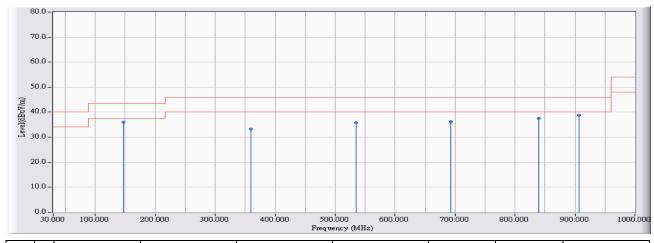


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
		191.295	20.579	14.378	34.957	-8.543	43.500	QUASIPEAK
2	2	291.001	24.014	9.757	33.771	-12.229	46.000	QUASIPEAK
3	3	500.500	28.345	7.326	35.671	-10.329	46.000	QUASIPEAK
4	ļ	630.467	29.423	6.747	36.170	-9.830	46.000	QUASIPEAK
Ę	5	814.167	30.867	6.098	36.965	-9.035	46.000	QUASIPEAK
e	*	929.488	31.994	7.606	39.600	-6.400	46.000	QUASIPEAK

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



Site : CB4-H	Time : 2017/01/22
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB4-H_FCC_EFS_S2_30M-1GHz_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.1.15_DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

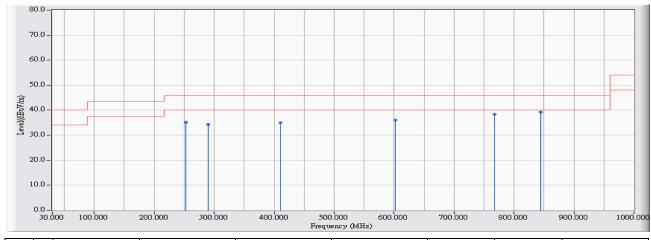


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		146.582	22.512	13.426	35.938	-7.562	43.500	QUASIPEAK
2		359.476	25.805	7.507	33.312	-12.688	46.000	QUASIPEAK
3		534.544	28.651	7.091	35.742	-10.258	46.000	QUASIPEAK
4		692.735	29.796	6.398	36.194	-9.806	46.000	QUASIPEAK
5		839.578	31.096	6.363	37.459	-8.541	46.000	QUASIPEAK
6	*	906.501	31.718	7.026	38.744	-7.256	46.000	QUASIPEAK

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



Site : CB4-H	Time : 2017/01/22
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB4-H_FCC_EFS_S2_30M-1GHz_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.1.15DH5_2441MHz
	Mode 2: Tx-W12-010N3A

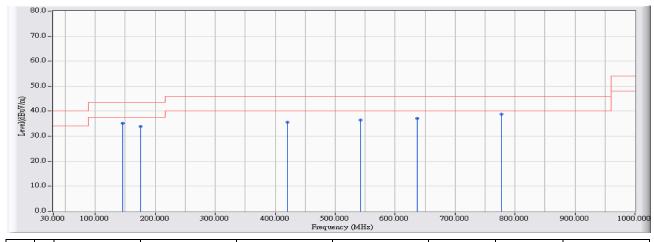


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		252.884	23.480	11.658	35.138	-10.862	46.000	QUASIPEAK
2		290.516	24.007	10.205	34.212	-11.788	46.000	QUASIPEAK
3		410.784	27.091	7.898	34.989	-11.011	46.000	QUASIPEAK
4		602.146	29.253	6.737	35.990	-10.010	46.000	QUASIPEAK
5		767.029	30.443	7.973	38.416	-7.584	46.000	QUASIPEAK
6	*	845.106	31.146	8.079	39.225	-6.775	46.000	QUASIPEAK

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



Site : CB4-H	Time : 2017/01/22
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB4-H_FCC_EFS_S2_30M-1GHz_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.1.15DH5_2441MHz
	Mode 2: Tx-W12-010N3A



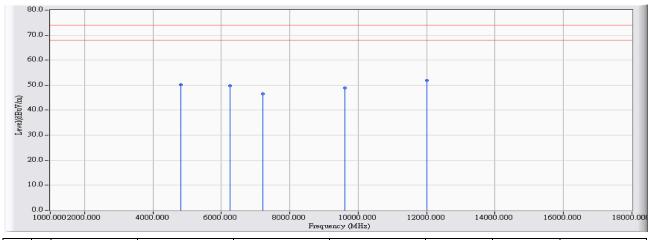
		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		145.224	22.600	12.680	35.280	-8.220	43.500	QUASIPEAK
2		174.904	20.597	13.190	33.787	-9.713	43.500	QUASIPEAK
3		420.289	27.224	8.433	35.657	-10.343	46.000	QUASIPEAK
4		542.400	28.722	7.766	36.488	-9.512	46.000	QUASIPEAK
5		637.062	29.462	7.629	37.091	-8.909	46.000	QUASIPEAK
6	*	777.116	30.534	8.207	38.741	-7.259	46.000	QUASIPEAK

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



Harmonic & Spurious:

Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

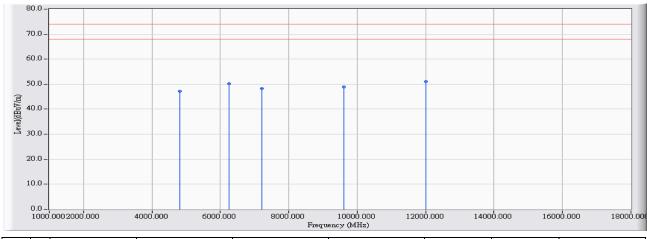


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		4804.305	-0.375	50.460	50.085	-23.915	74.000	PEAK
2		6250.000	3.445	46.210	49.655	-24.345	74.000	PEAK
3		7208.595	7.044	39.600	46.645	-27.355	74.000	PEAK
4		9605.870	12.050	36.840	48.890	-25.110	74.000	PEAK
5	*	12013.815	17.175	34.670	51.845	-22.155	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

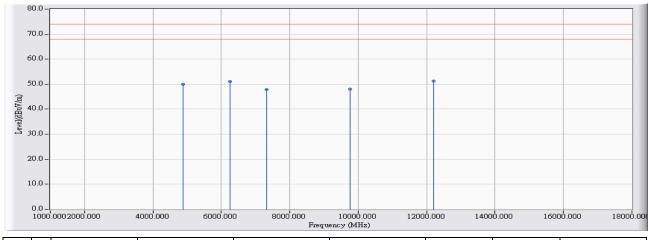


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		4803.975	-0.376	47.620	47.244	-26.756	74.000	PEAK
2		6250.090	3.445	46.800	50.245	-23.755	74.000	PEAK
3		7202.450	7.014	41.320	48.334	-25.666	74.000	PEAK
4		9603.453	12.046	36.770	48.816	-25.184	74.000	PEAK
5	*	12014.535	17.174	33.790	50.964	-23.036	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

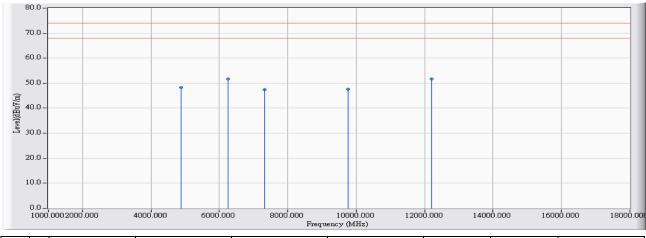


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
	1	4881.705	-0.183	50.130	49.947	-24.053	74.000	PEAK
	2	6249.860	3.444	47.530	50.974	-23.026	74.000	PEAK
3	3	7319.130	7.593	40.150	47.743	-26.257	74.000	PEAK
4	1	9764.360	12.300	35.710	48.010	-25.990	74.000	PEAK
ę	5 *	12207.800		34.360				

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

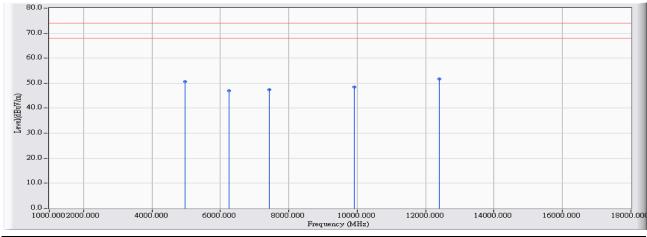


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		4881.000	-0.186	48.350	48.165	-25.835	74.000	PEAK
2	*	6250.000	3.445	48.220	51.665	-22.335	74.000	PEAK
3		7326.000	7.627	39.840	47.467	-26.533	74.000	PEAK
4		9767.000	12.304	35.240	47.544	-26.456	74.000	PEAK
5		12202.000	16.833	34.800	51.634	-22.366	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

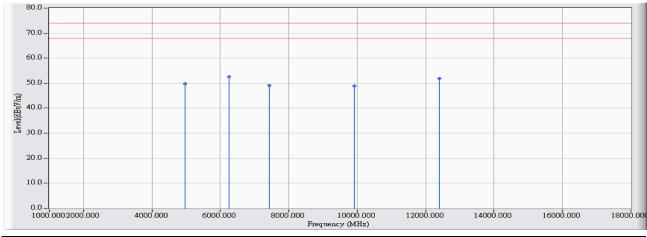


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		4959.000	0.009	50.710	50.718	-23.282	74.000	PEAK
2		6250.000	3.445	43.630	47.075	-26.925	74.000	PEAK
3		7439.000	8.195	39.170	47.365	-26.635	74.000	PEAK
4		9920.000	12.520	35.860	48.380	-25.620	74.000	PEAK
5	*	12395.000	16.427	35.350	51.777	-22.223	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

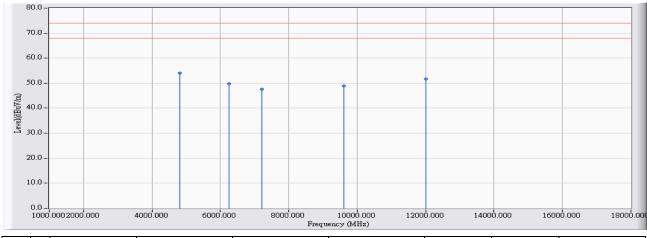


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		4959.835	0.011	49.700	49.710	-24.290	74.000	PEAK
2	*	6250.030	3.445	49.110	52.555	-21.445	74.000	PEAK
3		7437.815	8.189	40.820	49.009	-24.991	74.000	PEAK
4		9917.925	12.516	36.480	48.997	-25.003	74.000	PEAK
5		12399.945	16.417	35.480	51.897	-22.103	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

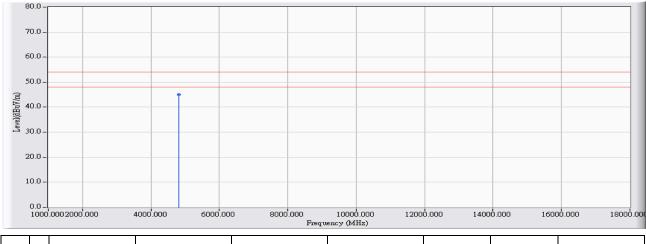


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1	*	4803.685	-0.377	54.380	54.004	-19.996	74.000	PEAK
2		6249.735	3.444	46.210	49.654	-24.346	74.000	PEAK
3		7202.640	7.015	40.640	47.655	-26.345	74.000	PEAK
4		9607.265	12.053	36.940	48.992	-25.008	74.000	PEAK
5		12013.630	17.175	34.420	51.596	-22.404	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

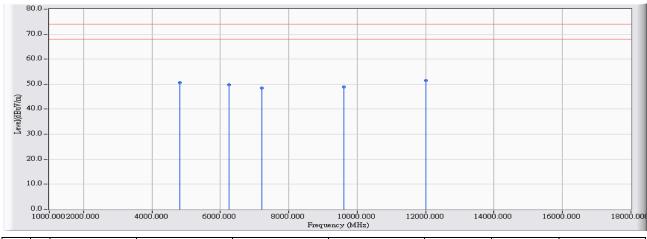


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1	*	4803.910	-0.376	45.520	45.144	-8.856	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19		
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6		
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz		
VERTICAL			
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2402MHz		
	Mode 1: Tx-AD2037320910LF		

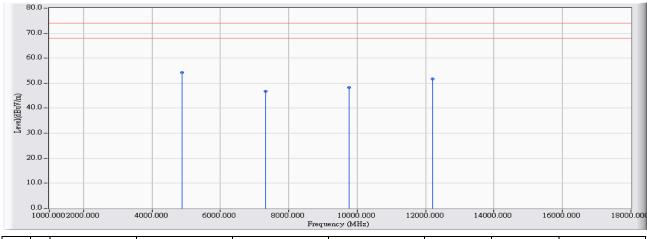


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		4804.245	-0.375	51.090	50.715	-23.285	74.000	PEAK
2		6250.150	3.446	46.420	49.866	-24.134	74.000	PEAK
3		7203.335	7.019	41.420	48.438	-25.562	74.000	PEAK
4		9608.080	12.053	36.830	48.884	-25.116	74.000	PEAK
5	*	12014.635				-22.546	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19 - 16:17		
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6		
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz		
HORIZONTAL			
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2441MHz		
	Mode 1: Tx-AD2037320910LF		

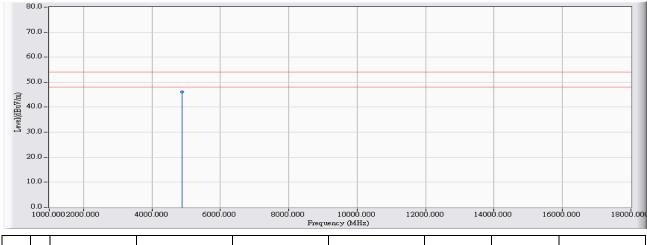


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1	*	4881.715	-0.183	54.460	54.277	-19.723	74.000	PEAK
2		7322.565	7.610	39.080	46.690	-27.310	74.000	PEAK
3		9768.495	12.306	35.940	48.246	-25.754	74.000	PEAK
4		12202.770	16.832	34.790	51.622	-22.378	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

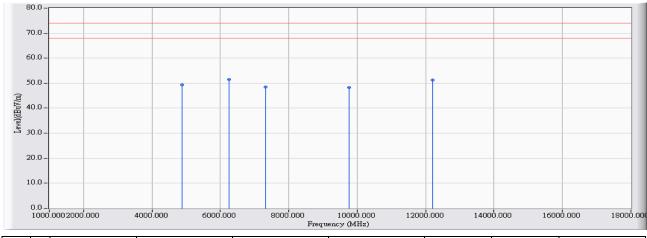


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1	*	4881.875	-0.183	46.370	46.187	-7.813	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

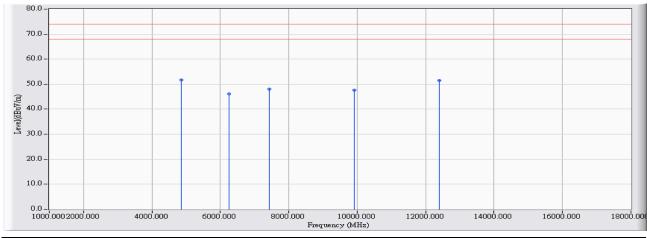


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		4881.000	-0.186	49.450	49.265	-24.735	74.000	PEAK
2	*	6250.000	3.445	48.120	51.565	-22.435	74.000	PEAK
3		7324.000	7.617	40.820	48.437	-25.563	74.000	PEAK
4		9767.000	12.304	35.920	48.224	-25.776	74.000	PEAK
5		12202.000	16.833			-22.706	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

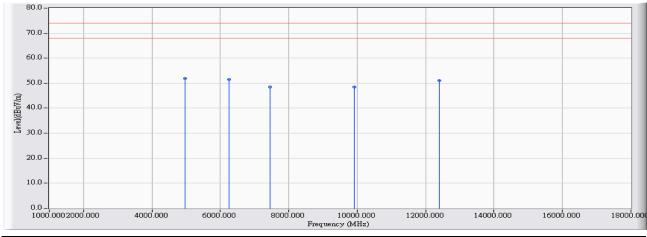


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1	*	4859.000	-0.239	51.870	51.630	-22.370	74.000	PEAK
2		6250.000	3.445	42.690	46.135	-27.865	74.000	PEAK
3		7436.000	8.179	39.830	48.010	-25.990	74.000	PEAK
4		9921.000	12.521	35.080	47.601	-26.399	74.000	PEAK
5		12398.000	16.421	35.160	51.581	-22.419	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

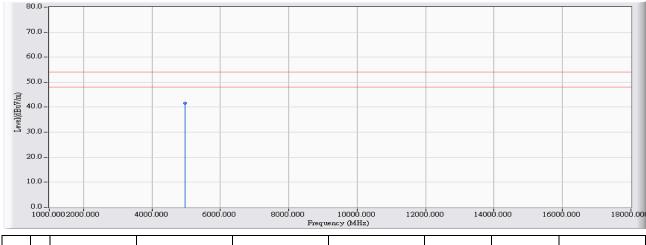


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1	*	4959.715	0.011	51.980	51.990	-22.010	74.000	PEAK
2		6250.110	3.445	48.110	51.556	-22.444	74.000	PEAK
3		7440.550	8.203	40.310	48.513	-25.487	74.000	PEAK
4		9921.880	12.524	35.890	48.413	-25.587	74.000	PEAK
5		12402.600	16.412	34.690	51.101	-22.899	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

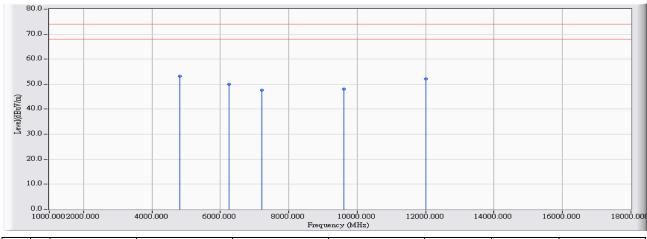


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1	*	4959.800	0.011	41.590	41.600	-12.400	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

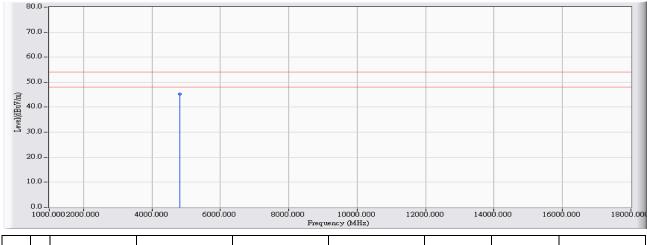


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1	*	4803.800	-0.376	53.650	53.274	-20.726	74.000	PEAK
2		6250.030	3.445	46.490	49.935	-24.065	74.000	PEAK
3		7206.230	7.033	40.490	47.523	-26.477	74.000	PEAK
4		9608.655	12.054	36.030	48.085	-25.915	74.000	PEAK
5		12011.935	17.178	34.960		-21.862	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

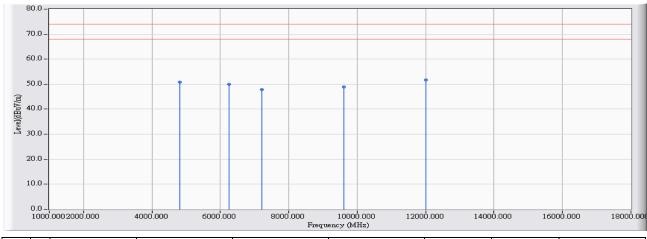


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1	*	4803.930	-0.376	45.680	45.304	-8.696	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

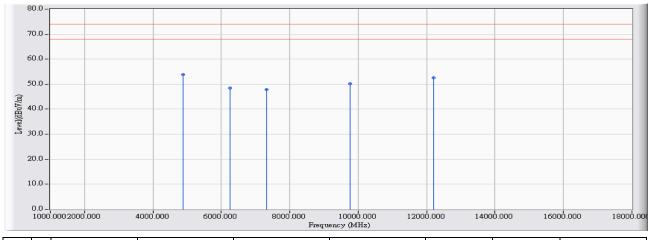


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		4803.485	-0.377	51.310	50.933	-23.067	74.000	PEAK
2		6249.840	3.444	46.580	50.024	-23.976	74.000	PEAK
3		7208.270	7.043	40.740	47.783	-26.217	74.000	PEAK
4		9610.620	12.057	36.850	48.908	-25.092	74.000	PEAK
5	*	12007.610	17.185	34.510	51.695	-22.305	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

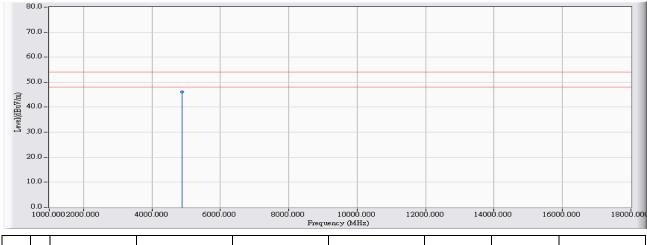


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1	*	4881.670	-0.183	53.950	53.767	-20.233	74.000	PEAK
2		6249.000	3.439	45.090	48.529	-25.471	74.000	PEAK
3		7327.000	7.632	40.220	47.852	-26.148	74.000	PEAK
4		9768.000	12.305	37.960	50.265	-23.735	74.000	PEAK
5		12200.000	16.838	35.730	52.567	-21.433	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

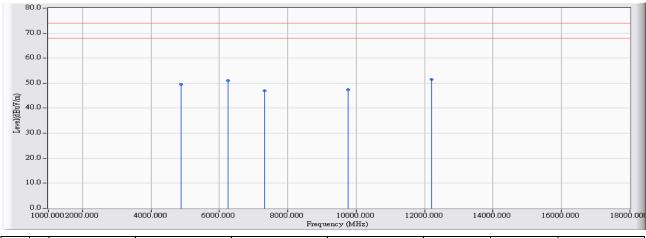


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1	*	4881.900	-0.183	46.350	46.167	-7.833	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

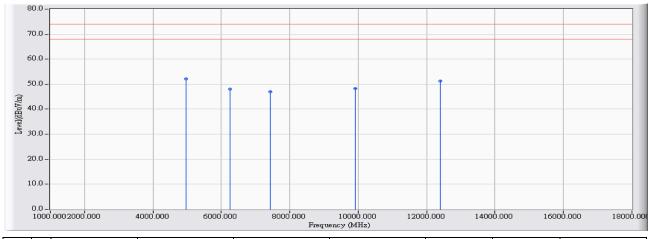


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		4881.000	-0.186	49.710	49.525	-24.475	74.000	PEAK
2		6250.000	3.445	47.510	50.955	-23.045	74.000	PEAK
3		7323.000	7.611	39.370	46.982	-27.018	74.000	PEAK
4		9765.000	12.301	35.170	47.471	-26.529	74.000	PEAK
5	*	12203.000	16.832	34.660	51.492	-22.508	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

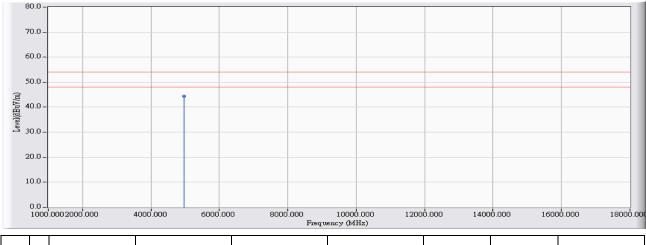


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1	*	4959.000	0.009	52.180	52.188	-21.812	74.000	PEAK
2		6250.000	3.445	44.650	48.095	-25.905	74.000	PEAK
3		7439.000	8.195	38.720	46.915	-27.085	74.000	PEAK
4		9924.000	12.526	35.660	48.186	-25.814	74.000	PEAK
5		12399.000	16.420	34.880	51.299	-22.701	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

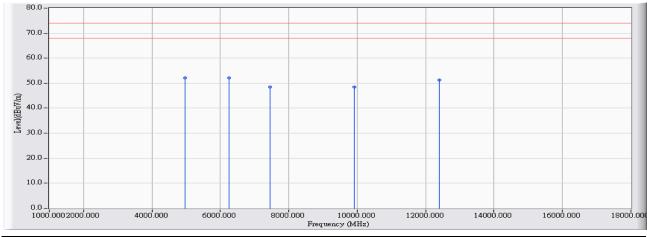


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz) (dB)		(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1	*	4959.000	0.009	44.370	44.378	-9.622	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

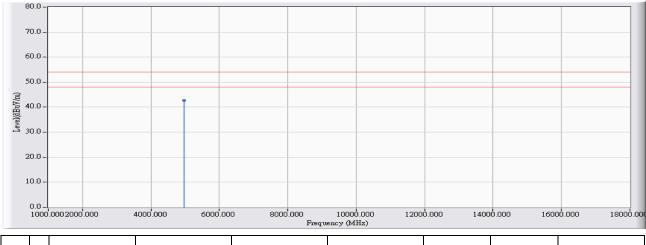


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		4959.690	0.011	52.170	52.180	-21.820	74.000	PEAK
2	*	6250.350	3.446	48.770	52.217	-21.783	74.000	PEAK
3		7440.825	8.205	40.320	48.525 -25.47		74.000	PEAK
4		9921.635	12.522	35.910	48.432	-25.568	74.000	PEAK
5		12398.600	16.419	34.800	51.220	-22.780	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2480MHz
	Mode 1: Tx-AD2037320910LF



		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz) (dB)		(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1	*	4959.910	0.011	42.690	42.701	-11.299	54.000	AVERAGE

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

5. **RF** antenna conducted test

5.1. Test Equipment

The following test equipment is used during the test:

RF antenna conducted test / SR10-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Signal & Spectrum	R&S	FSV40	101049	2018/01/22
Analyzer				

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

5.2. Test Setup

RF Conducted Measurement:

	Service Case	
Spec	trum Analyzer	
	EUT	
L		
	Non-Conducted Table	

5.3. Limits

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

5.4. Test Procedure

The EUT was setup according to ANSI C63.10:2013 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements

Set RBW = 100 kHz, Set VBW> RBW, scan up through 10th harmonic.

5.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015



5.6. Test Result

Product	oduct Lyra mini												
Test Item	RF antenna conducted test												
Test Mode	Mode 1: Tx-AD2037320910LF												
Date of Test	2016/12/25	016/12/25 Test Site SR10-H											
GFSK													
Channel	Frequency	Measure Level	Limit	Result									
Channel	(MHz)	(dBc)	(dBc)	Result									
00	2402	≧20	Pass										
78	2480	≧20	Pass										

		t Spec		Analyzer													
	nter	· Fr	RF eq			DC 000 G]	ENSE			Туре	ALIGN AUTO : Log-Pwr :>100/100	TR/	PM Dec 25, 2016 ACE 1 2 3 4 5 6 YPE M MWWWW	
							PNO: Fas Gain:Lo		Trig: Fr #Atten:					-1.00 dB	1		1
	IB/di	iv	Re	f 20.0	0 dE	ßm								Δ		.23 MHz 1.030 dB	
Log 10.(2∆3						Center Fre
0.00																	2.400000000 GH
-10.0											 						
-20.0)									+							Start Fre 2.350000000 GF
-30.0										╁							
-40.0										\parallel							Stop Fre 2.450000000 GH
-50.0		بارز س	للوانين	hailainna		the state of the s			فيتجم والمجلوب والمجلوب والمحافظ	Ж 3	i hann	·····	ليعيشه			والمتحد المتاوية المتحد الم	CF Ste
-70.0										_							10.000000 MH Auto Ma
Cei	L nter	2.4	000	0 GH	 z										Span	100.0 MHz	
#Re	es B	W '	100	kHz			#\	/BW	300 kH	z			S	weep 1.3	333 ms (10001 pts)	Freq Offs
MKR 1	MOD N	E TRO	f				23 GHz		Y 7.170 (NCTION	FUN	ICTION WIDTH	FUNCT		U F
2	<u>Δ3</u> F	1	f f	(Δ)			<u>23 MHz</u> 00 GHz	<u>(</u> Δ)	61.03 -53.860 c								
4 5 6																	
I C		+	+	1				ł			1		1			•	
MSG														STATUS	5		



		Spect	rum /	Analyzer - Si	•											
	۲L		RF						SEN	SE:INT		ALIGN /			M Dec 25, 2016	Frequency
Cer	nter	Fre	ed i	2.4835	00000	GHZ PNO: Fasi		Tria	: Free	Run		ype: Log- old:>100/			E 1 2 3 4 5 6	
						IFGain:Lov			en: 30			in: -1.00 d		Di	TPPNNNN	
													A 1	1420 1	48 MHz	Auto Tune
			_												276 dB	
10 c Log	B/div	V	Re	f 20.00	dBm									00	.270 UB	
I -									▲2∆	3						Contor From
10.0	- I		-						T		-					Center Freq
0.00																2.483500000 GHz
0.00									1							
-10.0) <u> </u>		_		_				H							Otort From
]]							Start Freq
-20.0																2.433500000 GHz
-30.0									44							
																01
-40.0) <u> </u>		-						+							Stop Freq
-50.0								[1							2.533500000 GHz
-50.0	,							لکر	<u>Vui</u>	and the second s					h	
-60.0) ****** *	wint		ulas Maria	and the state of the second	بجيانه ويبارويه	adiated	¢,la)e ^{stan}		AN SURAL AND LA		with the second	urband hill		ation lipter we	CF Step
																10.000000 MHz
-70.0) — I		-													<u>Auto</u> Man
				0 GHz											00.0 MHz	
#Re	es B	W 1	00	kHz		#\	/BW	300	kHz			Sweep) 1.3	33 ms (1	0001 pts)	Freq Offset
MKR	MODE	TRC	SCL		х			Y		FUN	CTION	FUNCTION	WIDTH	FUNCTI	DN VALUE	0 Hz
1	Ν	1	f			0 06 GHz			98 dB						_	
2 3	Δ3 F	1	f	(Δ)		<u>4.48 MHz</u> 4 54 GHz	<u>(</u> Δ)	<u>63.</u> -55.17	.276 d							
4	_ F				2.40	4 04 GHZ		-00.11								
5																
6								11	1							
									,			L	TATUS		,	
MSG												2	STATUS			

2480

78



Pass

Product	Lyra mini												
Test Item	RF antenna conducte	RF antenna conducted test											
Test Mode	Mode 1: Tx-AD20373	Mode 1: Tx-AD2037320910LF											
Date of Test	2016/12/25	-	Fest Site SR		0-H								
π/4-DQPSK													
Channel	Frequency	Measure Level	Limit		Result								
Channel	(MHz)	(dBc)	(dBc)		Result								
00	2402	59.838	≧20		Pass								

Channel 00

63.854

≧20

🎉 Keysight Spectrum Analyzer - Sw	•				
K RL RF 50 Ω Center Freq 2.40000	00000 GHz	SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>100/100	02:41:09 PM Dec 25, 2016 TRACE 1 2 3 4 5 6 TYPE M MWWWW	Frequency
	PNO: Fast Ģ IFGain:Low	#Atten: 30 dB	Ext Gain: -1.00 dB	Mkr2 2.06 MHz	Auto Tune
10 dB/div Ref 20.00 (10.0 0.00		2∆3		59.838 dB	Center Freq 2.40000000 GHz
-10.0					Start Freq 2.350000000 GHz
-40.0		, 1 1			Stop Freq 2.450000000 GHz
-60.0 Tencification and the motion of the second s	rausynausen allandau der arte	And the first an	44444444444444444444444444444444444444	herten oppisation in a state of the state of the	CF Step 10.000000 MHz <u>Auto</u> Man
Center 2.40000 GHz #Res BW 100 kHz	#VBW	/ 300 kHz	Sweep 1.3	Span 100.0 MHz 333 ms (10001 pts)	Freq Offset
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	X 2.402 06 GHz 2.06 MHz (Δ) 2.400 00 GHz	Y FUN 7.173 dBm 59.838 dB -52.665 dBm -52.665 dBm	CTION FUNCTION WIDTH	FUNCTION VALUE	0 Hz
MSG			STATUS	3	



_		t Spect		Analyzer - Sw	ept SA											- 6 💌
	nter	Fre	RF 2 q		00000 GH		 .		NSE:INT	Г		ype:	LIGN AUTO	TRA	MDec 25, 2016 DE 1 2 3 4 5 6	Frequency
10 c	IB/di	v	Re	f 20.00	IF	NO: Fast C Gain:Low		g: Free tten: 3					•100/100 1.00 dB ∆I	□ Mkr2 -3.	45 MHz .854 dB	Auto Tune
Log 10.0								♦ ²	3							Center Freq 2.483500000 GHz
-10.0 -20.0 -30.0)															Start Freq 2.433500000 GHz
-40.0 -50.0)								//							Stop Freq 2.533500000 GHz
-60.0 -70.0		, Ana, ya,	****	water a harrist	****	a	addendramed 4.	//	1.1494.44m		*****	****	le y den men fan serek ferske		and the second	CF Step 10.000000 MHz <u>Auto</u> Man
#Re	es B	W 1	00			#VB	N 300	kHz					-	333 ms (1	00.0 MHz 0001 pts)	Freq Offset 0 Hz
MKR 1 2 3 4 5 6	MODE N Δ3 F	1 1 1	f f f	(Δ)	× 2.480 0 -3.4 2.483 5	5 MHz (Δ) 6: -55.7	090 dE 3.854 768 dE	dB	FUNC		FUNC	CTION WIDTH	FUNCTI		
MSG													STATUS	3		



Product	Lyra mini	_yra mini											
Test Item	RF antenna conducte	RF antenna conducted test											
Test Mode	Mode 1: Tx-AD20373	Node 1: Tx-AD2037320910LF											
Date of Test	2016/12/25		Test Site	SR10-H									
8-DPSK													
Ohannal	Frequency	Measure Level	Limit	Result									
Channel	(MHz)	(dBc)	(dBc)	Result									
00	2402	60.145	≧20	Pass									
78	2480	61.732	≧20	Pass									

🎉 Keysight Spectrum Analyzer - Swep	ot SA				
RL RF 50 Ω Center Freq 2.400000	0000 GHz	ENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	02:45:14 PM Dec 25, 2016 TRACE 1 2 3 4 5 6 TYPE M MWWWW	Frequency
	PNO: Fast Trig: Fro IFGain:Low #Atten:		Avg Hold:>100/100 Ext Gain: -1.00 dΒ Δ	Mkr2 2.06 MHz	Auto Tune
10 dB/div Ref 20.00 d	Bm			60.145 dB	
10.0		≜ 2∆3			Center Freq
0.00					2.400000000 GHz
-10.0					Start Freq
-20.0					2.350000000 GHz
-30.0					Stop Freq
-40.0					2.450000000 GHz
-60.0 have the second strategy and strategy	112-20 ¹⁴ - 12-2014 - 12-201	3 .	white descence of the second	, is the product of the first of the second	CF Step
-70.0					10.000000 MHz <u>Auto</u> Man
Center 2.40000 GHz #Res BW 100 kHz	#VBW 300 kH	z	Sweep 1.3	Span 100.0 MHz 33 ms (10001 pts)	Freq Offset
MKR MODE TRC SCL	X Y 2.402 06 GHz 7.207 0	FUNCT	ON FUNCTION WIDTH	FUNCTION VALUE	0 Hz
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	2.402 06 GHZ 7.207 0 2.06 MHz (Δ) 60.144 2.400 00 GHz -52.938 c	5 dB		=	
5 6 4					
MSG			STATUS		<u> </u>



		Spect	rum /	Analyzer - S	•																	
	l ter	Fre	RF	50 2.4835)0 GH	7			SEN	SE:IN	Т	Avg		ALIGN AU		02:43:3 Ti		ec 25, 2 1 2 3 4		Fr	equency
10 d				f 20.00		PN IFC	NO: Fast Sain:Lov			Free en: 30			Avg	lold:	>100/10 -1.00 dE	0	lkr2 -	TYPE DET	M MWW PPNN			Auto Tune
Log 10.0						-				24	3											Center Freq 3500000 GHz
-10.0 -20.0)																			_	2.433	Start Freq 3500000 GHz
-40.0 -50.0)																				2.533	Stop Freq 3500000 GHz
-60.0 -70.0			*****	fredere the sold by	, yill b irde ar	47.1.4		بال و ن _ا یور او			a hara hat	here want is to		in ei Henne		enjille	n, ka ya kwa wa sa kwa wa sa	yendarik	,**#*#***#*	<u>А</u>	10 <u>Auto</u>	CF Step .000000 MHz Man
#Re	es B	W 1	00				#V	/BW	300 H	٢Hz		FUN					Span 33 ms	(10	001 p		F	Freq Offset 0 Hz
MKR 1 2 3 4 5 6 <	MODE N Δ3 F		f f	(Δ)		x 2.480 2: -3.39 2.483 6 ⁻	9 MHz	<u>(</u> Δ)			B	FUNC		FUN	CTION WI		FUNG		VALUE			
MSG															ST	ATUS						



Product	Lyra mini			
Test Item	RF antenna conducted test			
Test Mode	Mode 1: Tx-AD2037320910LF			
Date of Test	2016/12/25	Test Site	SR10-H	

Channel 00 (30MHz-25GHz)- GFSK

🔰 Keysight Spectrum Analyzer - Swept SA	
M RL RF 50 Ω DC SENSE:INT ALIGN AUTO 02:52:30 PM Dec	
	2 3 4 5 6 MWWWW
PNO: Fast Trig: Free Run Avg Hold:>10/10 TYPE M IFGain:Low #Atten: 30 dB Ext Gain: -1.00 dB DET P	PNNNN
	Auto Tune
ΔMkr2 2.402 7	GHZ
10 dB/div Ref 20.00 dBm -47.51	0 dB
	Center Freq
	12.515000000 GHz
	12.515000000 GH2
-10.0	
	Start Freq
-20.0	30.00000 MHz
-30.0 ▲2Δ1	
-40.0	Stop Freq
-40.0	25.000000000 GHz
-50.0	23.00000000 GH2
	CF Step
	2.497000000 GHz
-70.0	Auto Man
	<u>, are</u>
Start 0.03 GHz Stop 25.0	0 GHZ
#Res BW 100 kHz #VBW 300 kHz Sweep 82.67 ms (4000	
•	
MKR MODE TRC SCL X Y FUNCTION VIDTH FUNCTION VID	
1 F 1 f 2.402 2 GHz 6.372 dBm	
2 Δ1 1 f (Δ) 2.402 7 GHz (Δ) -47.510 dB	
5	
6	
MSG STATUS	

Channel 39 (30MHz-25GHz)- GFSK

		Spectru		nalyzer - Swe									
lx∥ ℝ Sta		req :	RF 30.	50 Ω	0 MHz		- · -	NSE:INT	Avg Typ Avg Hold	ALIGN AUTO e: Log-Pwr d:>10/10	TRAC	MDec 25, 2016 CE 1 2 3 4 5 6 PE MMWWWW	Frequency
		—			1	PNO: Fast 🔾 FGain:Low	#Atten: 3			: -1.00 dB	r2 2.44	0 8 GHz	Auto Tune
10 d Log 10.0	-		Ref X1	' 20.00 c 1									Center Freq 12.515000000 GHz
-10.0 -20.0			+		<u> </u>		<u> </u>			<u> </u>	<u> </u>		Start Freq 30.000000 MHz
-30.0 -40.0 -50.0					2∆1						services - Lyber av min set	a bha gaite Lite said bha aire sa	Stop Freq 25.000000000 GHz
-60.0 -70.0			Å										CF Step 2.497000000 GHz <u>Auto</u> Man
		03 G W 10				#VBV	V 300 kHz		<u>s</u>	Sweep 82		25.00 GHz 0001 pts)	Freq Offset
1			f	(Δ)		1 5 GHz 0 8 GHz (Δ)		Bm	FUNCTION	INCTION WIDTH		ON VALUE	0 Hz
I < □ MSG							III			STATUS	s	•	

	eysight Spe											
	rt Fre	 q 30		00 MHz			NSE:INT		ALIGN AUTO	TRAC	M Dec 25, 2016 E 1 2 3 4 5 6 PE M MWWWW	Frequency
					PNO: Fast C IFGain:Low	Trig: Fre #Atten: 3		Avg Hold Ext Gain:	-1.00 dB	r2 2.48	0 1 GHz	Auto Tune
10 ¢ Log 10.		Rei		0 dBm						-47	.510 06	Center Freq 12.515000000 GHz
0.0 -10.1 -20.1	-)											Start Freq 30.000000 MHz
-30,1 -40,1 -50,1										h a b	fe water a state of a set of a	Stop Freq 25.00000000 GHz
-60.1 -70.1			<u>, 19</u>									CF Step 2.497000000 GHz <u>Auto</u> Man
#R	rt 0.03 es BW	100	kHz		#VB	W 300 kHz		s	weep 82	.67 ms (4		Freq Offset
MKE 1 2 3 4 5		rc scl f f	(Δ)		80 2 GHz 80 1 GHz (Δ	7.646 d) -47.510	Bm	CTION FUI	NCTION WIDTH	FUNCTION	DN VALUE	0.12
6 MSG						III			STATUS	\$	•	

Channel 78 (30MHz-25GHz)- GFSK



Start Freq 30.000000 MHz Trig: Free Run IFGain:Low Trig: Free Run #Atten: 30 dB AvglHold:>10/10 Ext Gain: -1.00 dB Trig: MHWHWW DET/P P NNNN 10 dB/div Ref 20.00 dBm -46.384 dB -46.384 dB<	Auto Tune
PROF PASI LIGA #Atten: 30 dB Ext Gain: -1.00 dB DET[P P N N N N] 10 dB/div Ref 20.00 dBm -46.384 dB	
	Center Freg
	15000000 GHz
30.0	Start Freq 0.000000 MHz
-40.0 Δ	Stop Freq
-60.0 -70.0	CF Step 97000000 GHz Man
	Freq Offset
MKR MODE TRC SCI X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE A 1 F 1 f 2.402.2 GHz 5.714 dBm Here	

Channel 00 (30MHz-25GHz)- π/4-DQPSK

Channel 39 (30MHz-25GHz)- π/4-DQPSK

				r - Swept SA								
	^{RL} art Fre			50 Ω DC		1	NSE:INT		ALIGN AUTO	TRAC	M Dec 25, 2016	Frequency
_					PNO: Fast 🕞 IFGain:Low	#Atten: 3		Ext Gain:	-1.00 dB			Auto Tune
10	dB/div	R	ef 20.	00 dBm) 8 GHz .453 dB	
Lō: 10			,									Center Freq
0.0)/	<u>1</u>									12.515000000 GHz
-10.	o —											Start Freq
-20.	0											30.000000 MHz
-30.	-			_2∆1								Stop Freq
-40. -50.												25.000000000 GHz
-60.			الاينجيا	WWW		بر المقدر الأحديث المراجع . مرجع المحديث المحديث						CF Step
-70.	0	and the second se										2.497000000 GHz <u>Auto</u> Man
	art 0.0									Stop 2	5.00 GHz	
	es BW			×	#VBW	300 kHz	EUN		weep 82 ICTION WDTH		0001 pts)	Freq Offset 0 Hz
1	F Δ1	1 f 1 f			441 5 GHz 440 8 GHz (Δ)	7.087 dl -48.453	3m				=	
3 4 5												
6			-		 	m						
MSG									STATUS	5		

🎉 Keysight Spectrum Analyzer - Swept SA					
XX RL RF 50 Ω DC Start Freq 30.000000 N	Hz	SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>10/10	03:05:35 PM Dec 25, 2016 TRACE 1 2 3 4 5 6 TYPE M MWWWW	Frequency
10 dB/div Ref 20.00 dBr	PNO: Fast 🖵 IFGain:Low	#Atten: 30 dB	Ext Gain: -1.00 dB	r2 2.480 1 GHz -48.785 dB	Auto Tune
					Center Freq 12.515000000 GHz
-10.0					Start Freq 30.000000 MHz
-30.0 -40.0 -50.0	<u>1</u>			er (a	Stop Freq 25.000000000 GHz
-60.0 -70.0					CF Step 2.497000000 GHz <u>Auto</u> Man
Start 0.03 GHz #Res BW 100 kHz	#VBW	300 kHz	Sweep 82	Stop 25.00 GHz .67 ms (40001 pts)	Freq Offset
$\begin{array}{ c c c c c c c c c c c c c c c c c c $	X 2.480 2 GHz 2.480 1 GHz (Δ)	Y FUNC 7.568 dBm -48.785 dB	FUNCTION WIDTH	FUNCTION VALUE	0 Hz
MSG			STATUS		

Channel 78 (30MHz-25GHz)- π/4-DQPSK



🎉 Keysight S	pectrum Ar	nalyzer - Swe	ept SA								
Start Fr	RF eq 30.	50 Ω 000000	DC D MHz				Avg Typ Avg Hold	ALIGN AUTO	TRAC	M Dec 25, 2016 DE 1 2 3 4 5 6 DE M MWWWW	Frequency
10 dB/div	Ref	20.00 c	IF	PNO: Fast G Gain:Low	#Atten: 3		Ext Gain:	-1.00 dB	r2 2.40	2 1 GHz .323 dB	Auto Tune
10.0 0.00	¥1										Center Freq 12.515000000 GHz
-10.0 -20.0											Start Freq 30.000000 MHz
-40.0		•	2∆1			وق ماد بار		و وجوع و مان بالله الله و و و و	le hot, is the his state	lis oot is at the sur	Stop Freq 25.000000000 GHz
-60.0 -70.0											CF Step 2.497000000 GHz <u>Auto</u> Man
Start 0.0 #Res BV		Hz		#VBV	V 300 kHz		S	weep 82		5.00 GHz 0001 pts)	Freq Offset
MKR MODE 1 F 2 Δ1 3 4 5 6 4 MSG	1 f	(Δ)		2 GHz 1 GHz (Δ)	¥ 6.755 dE -49.323 ™	3m	NCTION FU	NCTION WIDTH		DN VALUE	0.12

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

Channel 39 (30MHz-25GHz)- 8-DPSK

	Spectrum /	Analyzer - S	wept SA								
KM RL Start Fi	req 30		00 MHz] _ · · _	Run		ALIGN AUTO : Log-Pwr	TRAC	MDec 25, 2016 E 1 2 3 4 5 6 E MMWWWW	Frequency
				PNO: Fast 🕞 FGain:Low	#Atten: 3		Ext Gain:	-1.00 dB	DI		Auto Tune
10 dB/div	v Rei	f 20.00	dBm) 8 GHz .786 dB	
10.0		,									Center Freq
0.00		1									12.515000000 GHz
-10.0											Start Freq
-20.0											30.000000 MHz
-30.0			▲2∆1								Stop Freq
-40.0											25.000000000 GHz
-60.0					l, daffall far og av so				الاعداد و معنونات الاعداد و معنونات		CF Step
-70.0											2.497000000 GHz Auto Man
Start 0.	03 GH:	7							Stop 2	5.00 GHz	
#Res B				#VBW	/ 300 kHz		S	weep 82		0001 pts)	Freq Offset 0 Hz
	TRC SCI	(Δ)		1 5 GHz 0 8 GHz (Δ)	Y 7.140 dl -47.786	3m	ICTION FUN	ICTION WIDTH	FUNCTION		
3 4		(Δ)	2.44		-47.780						
5											
MSG								STATUS	3		

💓 Keysight Spectrum Analyzer - :	Swept SA				
X RL RF 50 Start Freq 30.0000			ALIGN AUTO	03:08:38 PM Dec 25, 2016 TRACE 1 2 3 4 5 6 TYPE M MWWWW	Frequency
10 dB/div Ref 20.0 0	IFGain:	Fast 😱 Trig: Free Low #Atten: 3	Hold:>10/10 Gain: -1.00 dB ΔMk	r2 2.480 1 GHz -49.225 dB	Auto Tune
10.0					Center Freq 12.515000000 GHz
-10.0					Start Freq 30.000000 MHz
-30.0	•2∆1			errore, jezzy, szekiska kala zákist temper	Stop Freq 25.000000000 GHz
-60.0 -70.0		a ar the Allow and a field of the second			CF Step 2.497000000 GHz <u>Auto</u> Mar
Start 0.03 GHz #Res BW 100 kHz		#VBW 300 kHz	Sweep 82	Stop 25.00 GHz .67 ms (40001 pts)	Freq Offset
MKR MODE TRC SCI 1 F 1 f 2 Δ1 1 f 3	X 2.480 2 GF 2.480 1 GF			FUNCTION VALUE	0 Hz
MSG			STATUS	• · · · · · · · · · · · · · · · · · · ·	

Channel 78 (30MHz-25GHz)- 8-DPSK

6. Band Edge

6.1. Test Equipment

The following test equipments are used during the test:

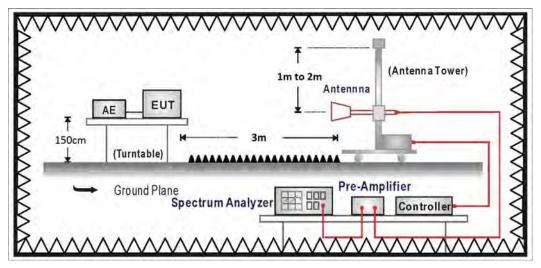
Band Edge / CB4-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date	
Horn Antenna	Schwarzbeck	BBHA 9120	D312	2017/10/25	
Signal & Spectrum	R&S	FSV40	101049	2018/01/05	
Analyzer					

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

6.2. Test Setup

RF Radiated Measurement:



6.3. Limits

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

6.4. Test Procedure

The EUT was setup according to ANSI C63.10:2013 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements

The EUT and its simulators are placed on a turn table which is 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

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

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

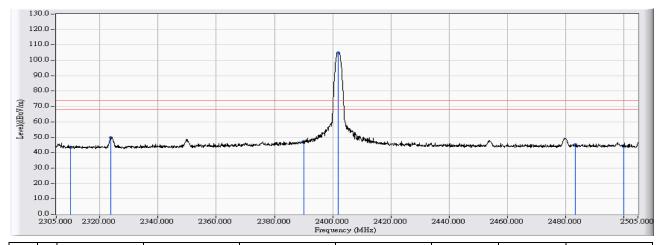
6.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015



6.6. Test Result

Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

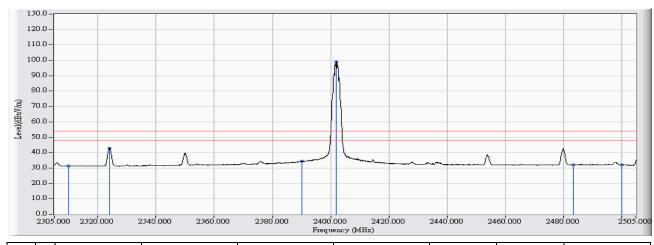


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	30.247	43.593	-30.407	74.000	PEAK
2		2323.600	13.431	36.537	49.967	-24.033	74.000	PEAK
3		2390.000	13.840	33.412	47.252	-26.748	74.000	PEAK
4	*	2401.800	13.913	91.151	105.064	31.064	74.000	PEAK
5		2483.500	14.417	30.724	45.142	-28.858	74.000	PEAK
6		2500.000	14.518	29.490	44.009	-29.991	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

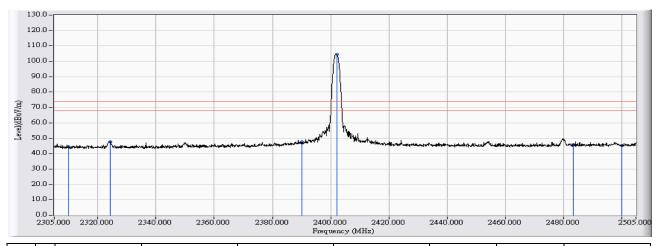


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	17.999	31.345	-22.655	54.000	AVERAGE
2		2324.000	13.432	29.494	42.926	-11.074	54.000	AVERAGE
3		2390.000	13.840	20.560	34.400	-19.600	54.000	AVERAGE
4	*	2402.000	13.914	85.077	98.991	44.991	54.000	AVERAGE
5		2483.500	14.417	17.670	32.088	-21.912	54.000	AVERAGE
6		2500.000	14.518	17.648	32.167	-21.833	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

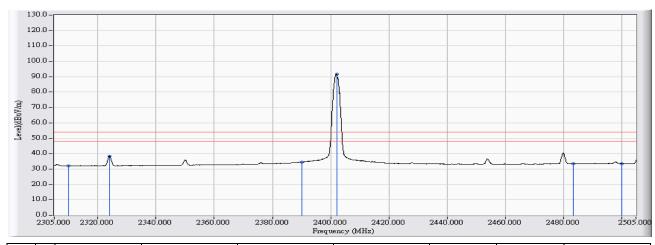


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	31.423	44.769	-29.231	74.000	PEAK
2		2324.200	13.434	34.378	47.812	-26.188	74.000	PEAK
3		2390.000	13.840	33.834	47.674	-26.326	74.000	PEAK
4	*	2402.100	13.915	90.706	104.621	30.621	74.000	PEAK
5		2483.500		31.543	45.961	-28.039	74.000	PEAK
6		2500.000			45.221	-28.779		

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

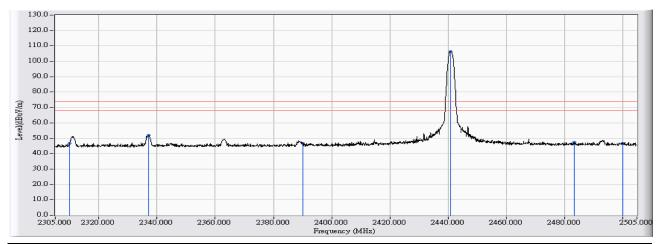


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	18.821	32.167	-21.833	54.000	AVERAGE
2		2323.900	13.431	24.947	38.379	-15.621	54.000	AVERAGE
3		2390.000	13.840	20.671	34.511	-19.489	54.000	AVERAGE
4	*	2402.100	13.915	77.875	91.790	37.790	54.000	AVERAGE
5		2483.500	14.417	19.091	33.509	-20.491	54.000	AVERAGE
6		2500.000	14.518	19.047	33.566	-20.434	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19			
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6			
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz			
HORIZONTAL				
EUT : Lyra mini	Note : 802.15.1_EDR_DH5_2441MHz			
	Mode 1: Tx-AD2037320910LF			

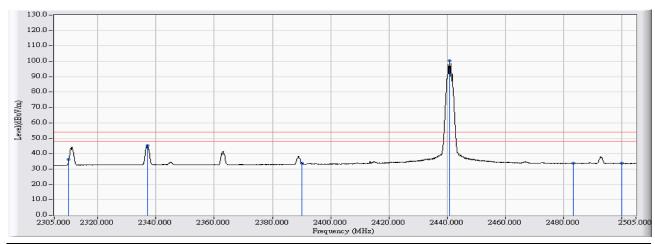


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	33.499	46.845	-27.155	74.000	PEAK
2		2337.100	13.513	38.342	51.855	-22.145	74.000	PEAK
3		2390.000	13.840	32.834	46.674	-27.326	74.000	PEAK
4	*	2440.800	14.155	92.154	106.308	32.308	74.000	PEAK
5		2483.500	14.417	32.965			74.000	PEAK
6		2500.000				-27.323	74.000	

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

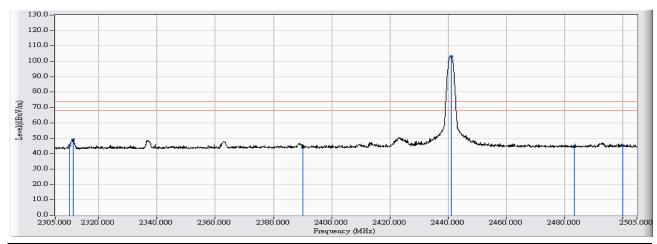


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	22.863	36.209	-17.791	54.000	AVERAGE
2		2337.000	13.513	31.836	45.349	-8.651	54.000	AVERAGE
3		2390.000	13.840	20.111	33.951	-20.049	54.000	AVERAGE
4	*	2441.000	14.155	86.177	100.332	46.332	54.000	AVERAGE
5		2483.500	14.417	19.286	33.704	-20.296	54.000	AVERAGE
6		2500.000	14.518	19.425	33.944	-20.056	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

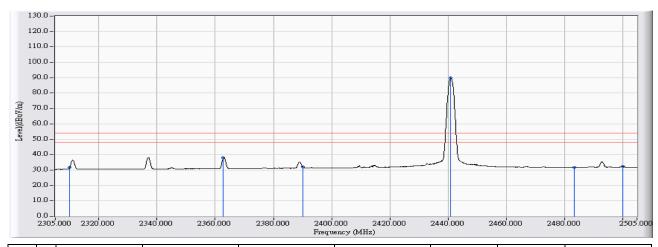


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	32.064	45.410	-28.590	74.000	PEAK
2		2311.100	13.353	35.701	49.054	-24.946	74.000	PEAK
3		2390.000	13.840	29.955	43.795	-30.205	74.000	PEAK
4	*	2441.100	14.156	89.139	103.295	29.295	74.000	PEAK
5		2483.500	14.417	30.140	44.558	-29.442	74.000	PEAK
6		2500.000				-28.798	74.000	

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

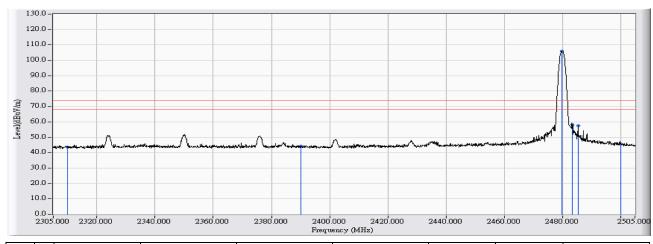


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	18.284	31.630	-22.370	54.000	AVERAGE
2		2362.800	13.673	24.162	37.834	-16.166	54.000	AVERAGE
3		2390.000	13.840	18.081	31.921	-22.079	54.000	AVERAGE
4	*	2441.000	14.155	75.605	89.760	35.760	54.000	AVERAGE
5		2483.500	14.417	17.327	31.745	-22.255	54.000	AVERAGE
6		2500.000	14.518	17.963	32.482	-21.518	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

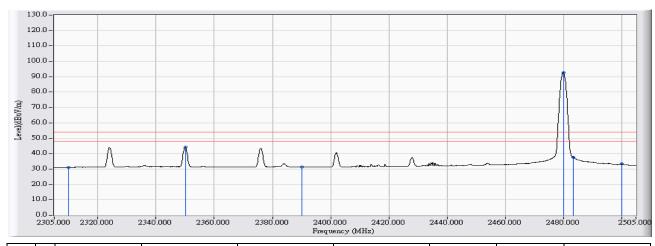


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	30.175	43.521	-30.479	74.000	PEAK
2		2390.000	13.840	30.578	44.418	-29.582	74.000	PEAK
3	*	2479.800	14.396	91.470	105.865	31.865	74.000	PEAK
4		2483.500	14.417	43.953	58.371	-15.629	74.000	PEAK
5		2485.400	14.429	43.049	57.479	-16.521	74.000	PEAK
6		2500.000	14.518	31.157	45.676		74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

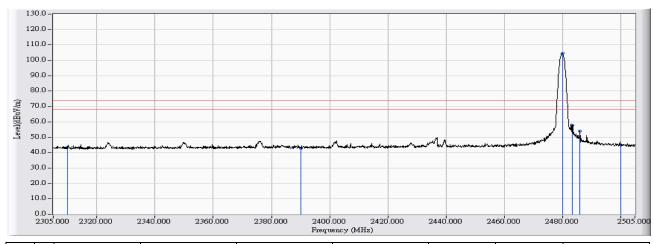


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	17.771	31.117	-22.883	54.000	AVERAGE
2		2350.100	13.593	30.769	44.363	-9.637	54.000	AVERAGE
3		2390.000	13.840	17.618	31.458	-22.542	54.000	AVERAGE
4	*	2480.000	14.396	78.296	92.692	38.692	54.000	AVERAGE
5		2483.500	14.417	23.154	37.572	-16.428	54.000	AVERAGE
6		2500.000	14.518	18.772	33.291	-20.709	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

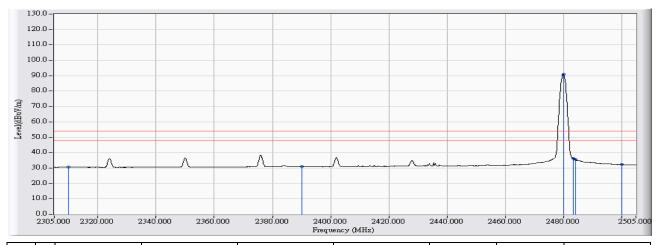


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	30.052	43.398	-30.602	74.000	PEAK
2		2390.000	13.840	29.149	42.989	-31.011	74.000	PEAK
3	*	2480.000	14.396	89.999	104.395	30.395	74.000	PEAK
4		2483.500	14.417	43.463	57.881	-16.119	74.000	PEAK
5		2486.100	14.435	39.420	53.854	-20.146	74.000	PEAK
6		2500.000	14.518	30.560	45.079	-28.921	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

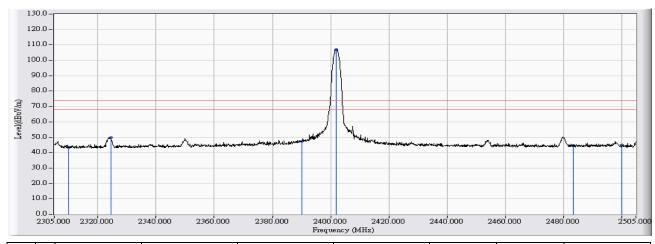


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	17.215	30.561	-23.439	54.000	AVERAGE
2		2390.000	13.840	17.110	30.950	-23.050	54.000	AVERAGE
3	*	2480.000	14.396	76.561	90.957	36.957	54.000	AVERAGE
4		2483.500	14.417	21.849	36.267	-17.733	54.000	AVERAGE
5		2484.200	14.422	21.052	35.474	-18.526	54.000	AVERAGE
6	5	2500.000	14.518	17.768	32.287	-21.713	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

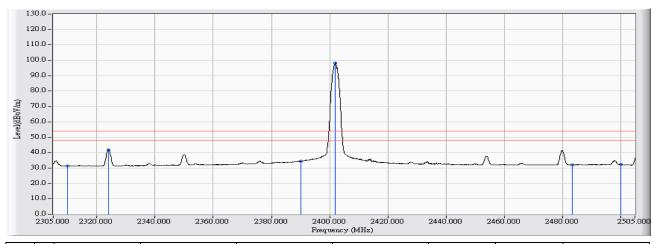


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	29.717	43.063	-30.937	74.000	PEAK
2		2324.400	13.435	36.485	49.920	-24.080	74.000	PEAK
3		2390.000	13.840	33.660	47.500	-26.500	74.000	PEAK
4	*	2402.000	13.914	93.188	107.102	33.102	74.000	PEAK
5		2483.500	14.417	30.301	44.719	-29.281	74.000	PEAK
6		2500.000		30.402	44.921	-29.079	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

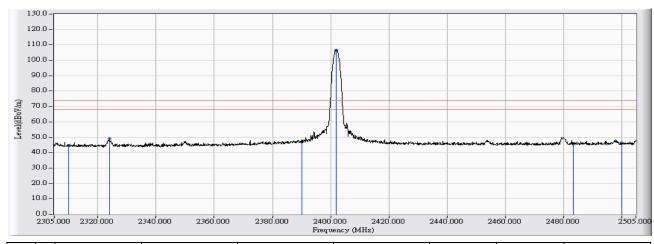


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	18.080	31.426	-22.574	54.000	AVERAGE
2		2324.100	13.434	28.464	41.897	-12.103	54.000	AVERAGE
3		2390.000	13.840	20.494	34.334	-19.666	54.000	AVERAGE
4	*	2402.000	13.914	84.200	98.114	44.114	54.000	AVERAGE
5		2483.500	14.417	17.706	32.124	-21.876	54.000	AVERAGE
6		2500.000	14.518	17.792	32.311	-21.689	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

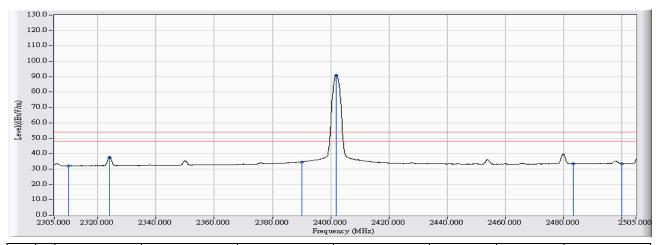


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	31.097	44.443	-29.557	74.000	PEAK
2		2324.000	13.432	35.621	49.053	-24.947	74.000	PEAK
3		2390.000	13.840	33.385	47.225	-26.775	74.000	PEAK
4	*	2401.900	13.914	92.712	106.626	32.626	74.000	PEAK
5		2483.500	14.417	31.228	45.646	-28.354	74.000	PEAK
6		2500.000	14.518	31.789	46.308	-27.692	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

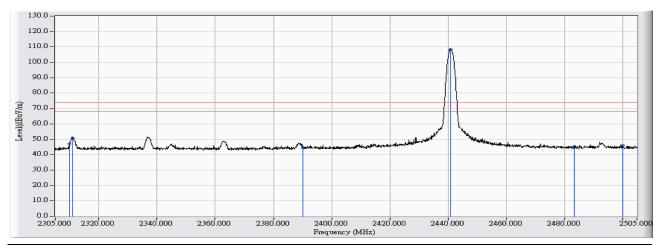


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	18.832	32.178	-21.822	54.000	AVERAGE
2		2323.900	13.431	24.290	37.722	-16.278	54.000	AVERAGE
3		2390.000	13.840	20.816	34.656	-19.344	54.000	AVERAGE
4	*	2402.000	13.914	77.108	91.022	37.022	54.000	AVERAGE
5		2483.500	14.417	19.030	33.448	-20.552	54.000	AVERAGE
6		2500.000	14.518	19.044	33.563	-20.437	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

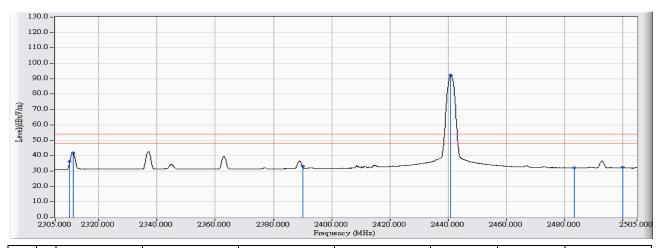


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	33.869	47.215	-26.785	74.000	PEAK
2		2310.800	13.351	37.452	50.803	-23.197	74.000	PEAK
3		2390.000	13.840	30.911	44.751	-29.249	74.000	PEAK
4	*	2440.800	14.155	94.226	108.380	34.380	74.000	PEAK
5		2483.500	14.417	30.801	45.219	-28.781	74.000	PEAK
6		2500.000			45.976		74.000	

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

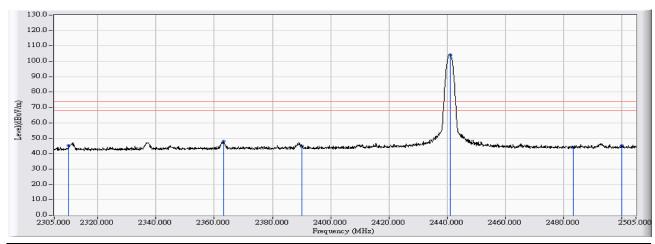


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	22.779	36.125	-17.875	54.000	AVERAGE
2		2311.100	13.353	28.605	41.958	-12.042	54.000	AVERAGE
3		2390.000	13.840	19.163	33.003	-20.997	54.000	AVERAGE
4	*	2441.000	14.155	78.144	92.299	38.299	54.000	AVERAGE
5		2483.500	14.417	17.758	32.176	-21.824	54.000	AVERAGE
6		2500.000	14.518	17.910	32.429	-21.571	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

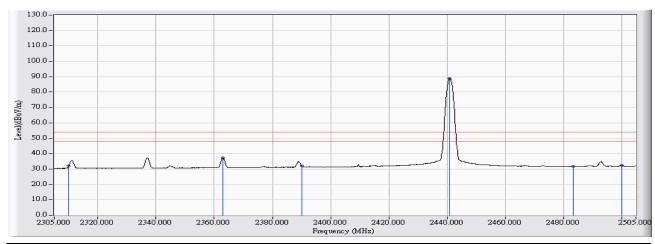


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	31.970	45.316	-28.684	74.000	PEAK
2		2363.100	13.674	34.437	48.111	-25.889	74.000	PEAK
3		2390.000	13.840	31.022	44.862	-29.138	74.000	PEAK
4	*	2441.100	14.156	90.222	104.378	30.378	74.000	PEAK
5		2483.500	14.417	29.452	43.870	-30.130	74.000	PEAK
6		2500.000	14.518	30.645	45.164	-28.836	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

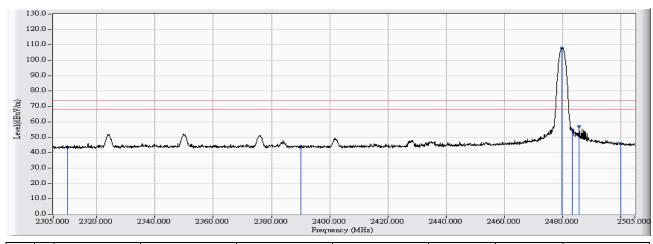


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	18.634	31.980	-22.020	54.000	AVERAGE
2		2362.900	13.673	23.544	37.217	-16.783	54.000	AVERAGE
3		2390.000	13.840	18.199	32.039	-21.961	54.000	AVERAGE
4	*	2441.000	14.155	74.811	88.966	34.966	54.000	AVERAGE
5		2483.500	14.417	17.356	31.774	-22.226	54.000	AVERAGE
6		2500.000	14.518	17.932	32.451	-21.549	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

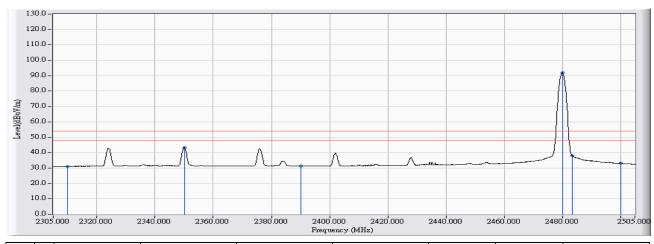


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	29.945	43.291	-30.709	74.000	PEAK
2		2390.000	13.840	29.789	43.629	-30.371	74.000	PEAK
3	*	2479.900	14.396	93.474	107.870	33.870	74.000	PEAK
4		2483.500	14.417	40.395	54.813	-19.187	74.000	PEAK
5		2485.800	14.432	42.691	57.123	-16.877	74.000	PEAK
6		2500.000	14.518	31.656	46.175	-27.825	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

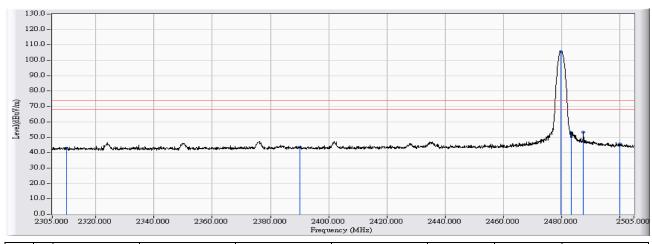


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	17.755	31.101	-22.899	54.000	AVERAGE
2		2350.100	13.593	29.753	43.347	-10.653	54.000	AVERAGE
3		2390.000	13.840	17.616	31.456	-22.544	54.000	AVERAGE
4	*	2480.000	14.396	77.499	91.895	37.895	54.000	AVERAGE
5		2483.500	14.417	23.557	37.975	-16.025	54.000	AVERAGE
6		2500.000	14.518	18.739	33.258	-20.742	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

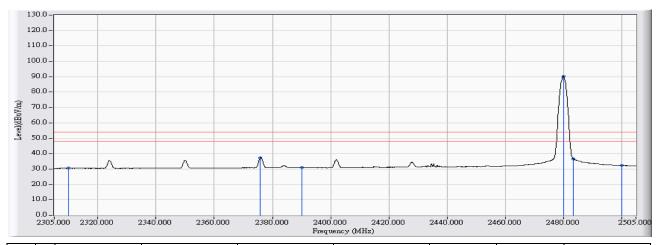


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	29.463	42.809	-31.191	74.000	PEAK
2		2390.000	13.840	29.691	43.531	-30.469	74.000	PEAK
3	*	2479.800	14.396	91.377	105.772	31.772	74.000	PEAK
4		2483.500	14.417	38.525	52.943	-21.057	74.000	PEAK
5		2487.600	14.443	38.970	53.413	-20.587	74.000	PEAK
6		2500.000	14.518	31.290	45.809	-28.191	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_2DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

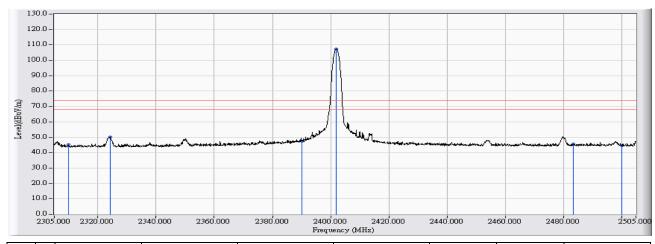


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	17.251	30.597	-23.403	54.000	AVERAGE
2		2375.800	13.752	23.423	37.175	-16.825	54.000	AVERAGE
3		2390.000	13.840	17.171	31.011	-22.989	54.000	AVERAGE
4	*	2480.000	14.396	75.804	90.200	36.200	54.000	AVERAGE
5		2483.500	14.417	22.242	36.660	-17.340	54.000	AVERAGE
6		2500.000	14.518	17.873	32.392	-21.608	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

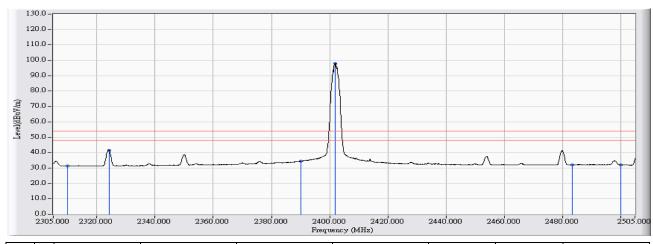


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	31.887	45.233	-28.767	74.000	PEAK
2		2324.200	13.434	36.776	50.210	-23.790	74.000	PEAK
3		2390.000	13.840	33.651	47.491	-26.509	74.000	PEAK
4	*	2402.000	13.914	93.398	107.312	33.312	74.000	PEAK
5		2483.500	14.417	31.287	45.705	-28.295	74.000	PEAK
6		2500.000	14.518	30.113	44.632	-29.368	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

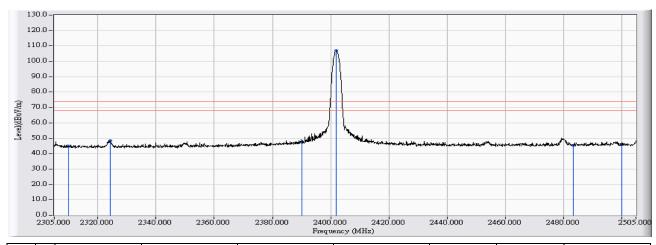


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	17.930	31.276	-22.724	54.000	AVERAGE
2		2324.200	13.434	28.105	41.539	-12.461	54.000	AVERAGE
3		2390.000	13.840	20.513	34.353	-19.647	54.000	AVERAGE
4	*	2402.000	13.914	84.137	98.051	44.051	54.000	AVERAGE
5		2483.500		17.676	32.094	-21.906	54.000	AVERAGE
6		2500.000	14.518	17.656	32.175		54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

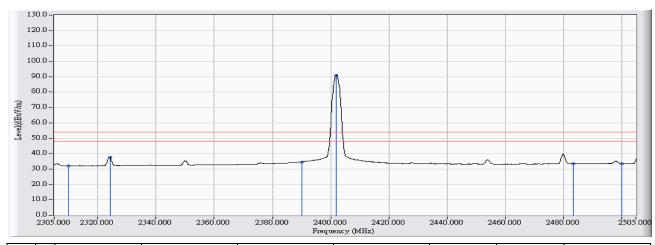


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	31.601	44.947	-29.053	74.000	PEAK
2		2324.300	13.434	35.107	48.541	-25.459	74.000	PEAK
3		2390.000	13.840	33.718	47.558	-26.442	74.000	PEAK
4	*	2402.000	13.914	92.918	106.832	32.832	74.000	PEAK
5		2483.500		30.801	45.219	-28.781	74.000	PEAK
6		2500.000						

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2402MHz
	Mode 1: Tx-AD2037320910LF

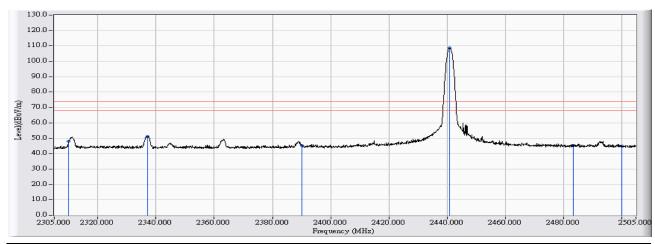


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	18.801	32.147	-21.853	54.000	AVERAGE
2		2324.200	13.434	24.214	37.648	-16.352	54.000	AVERAGE
3		2390.000	13.840	20.790	34.630	-19.370	54.000	AVERAGE
4	*	2401.900	13.914	77.060	90.974	36.974	54.000	AVERAGE
5		2483.500	14.417	19.073	33.491	-20.509	54.000	AVERAGE
6		2500.000	14.518	19.000	33.519	-20.481	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

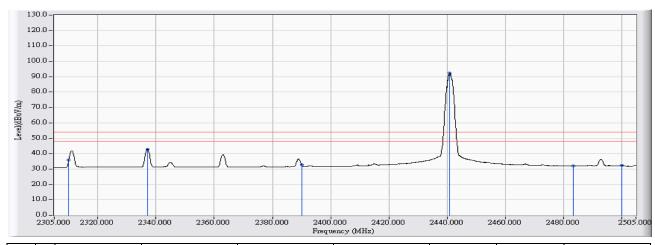


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	34.647	47.993	-26.007	74.000	PEAK
2		2337.100	13.513	37.718	51.231	-22.769	74.000	PEAK
3		2390.000	13.840	31.452	45.292	-28.708	74.000	PEAK
4	*	2441.000	14.155	94.480	108.635	34.635	74.000	PEAK
5		2483.500	14.417	31.007	45.425	-28.575	74.000	PEAK
6		2500.000	14.518	30.415	44.934	-29.066	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

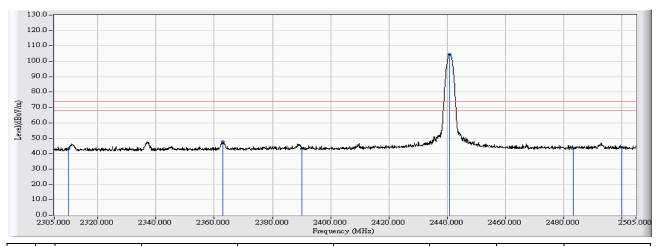


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	22.468	35.814	-18.186	54.000	AVERAGE
2		2337.000	13.513	29.213	42.726	-11.274	54.000	AVERAGE
3		2390.000	13.840	19.058	32.898	-21.102	54.000	AVERAGE
4	*	2441.000	14.155	78.109	92.264	38.264	54.000	AVERAGE
5		2483.500	14.417	17.769	32.187	-21.813	54.000	AVERAGE
6		2500.000	14.518	17.877	32.396	-21.604	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

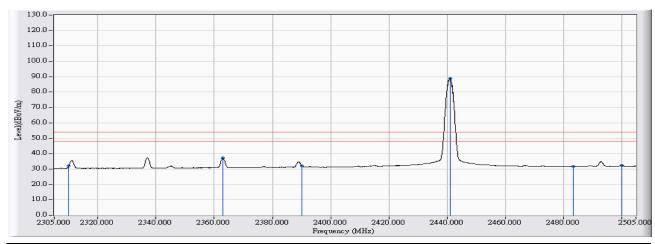


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	29.752	43.098	-30.902	74.000	PEAK
2	2	2363.000	13.673	34.132	47.805	-26.195	74.000	PEAK
3	5	2390.000	13.840	29.538	43.378	-30.622	74.000	PEAK
4	*	2441.000	14.155	90.463	104.618	30.618	74.000	PEAK
5	5	2483.500	14.417	29.313	43.731	-30.269	74.000	PEAK
6	;	2500.000	14.518	29.488		-29.993	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2441MHz
	Mode 1: Tx-AD2037320910LF

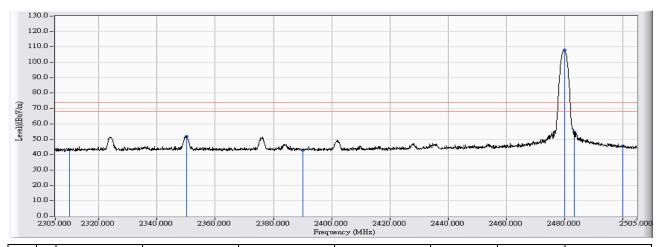


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	18.677	32.023	-21.977	54.000	AVERAGE
2		2362.900	13.673	23.456	37.129	-16.871	54.000	AVERAGE
3		2390.000	13.840	18.247	32.087	-21.913	54.000	AVERAGE
4	*	2441.100	14.156	74.750	88.906	34.906	54.000	AVERAGE
5		2483.500	14.417	17.323	31.741	-22.259	54.000	AVERAGE
6		2500.000	14.518	17.928	32.447	-21.553	54.000	AVERAGE

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

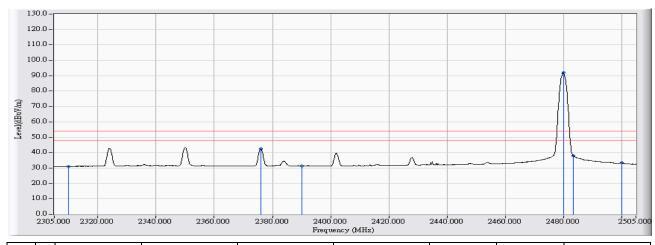


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	29.700	43.046	-30.954	74.000	PEAK
2		2350.100	13.593	38.173	51.767	-22.233	74.000	PEAK
3		2390.000	13.840	29.077	42.917	-31.083	74.000	PEAK
4	*	2480.000	14.396	93.713	108.109	34.109	74.000	PEAK
5		2483.500	14.417	40.311	54.729	-19.271	74.000	PEAK
6		2500.000		31.074	45.593	-28.407	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
HORIZONTAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

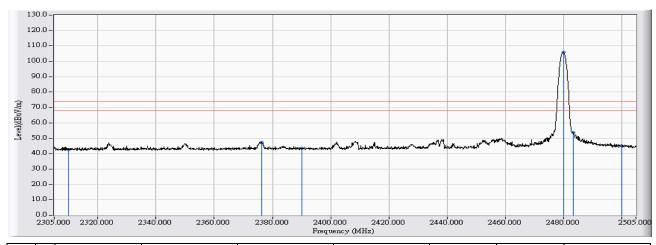


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	17.757	31.103	-22.897	54.000	PEAK
2		2375.900	13.753	28.781	42.534	-11.466	54.000	PEAK
3	5	2390.000	13.840	17.621	31.461	-22.539	54.000	PEAK
4	*	2480.000	14.396	77.497	91.893	37.893	54.000	PEAK
5	5	2483.500	14.417	23.409	37.827	-16.173	54.000	PEAK
6	5	2500.000	14.518	18.850	33.369	-20.631	54.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2480MHz
	Mode 1: Tx-AD2037320910LF

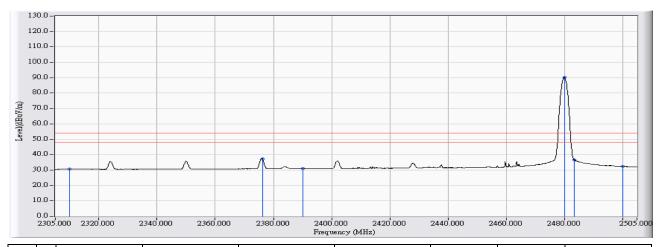


		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	29.158	42.504	-31.496	74.000	PEAK
2		2376.200	13.755	33.652	47.407	-26.593	74.000	PEAK
3		2390.000	13.840	29.677	43.517	-30.483	74.000	PEAK
4	*	2480.000	14.396	91.643	106.039	32.039	74.000	PEAK
5		2483.500	14.417	39.128	53.546	-20.454	74.000	PEAK
6		2500.000	14.518	30.493	45.012	-28.988	74.000	PEAK

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



Site : CB4-H	Time : 2016/12/19
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
Probe : CB4-H_FCC_EFS_B432_1-18GHz_3M_1116 -	Power : AC 120V / 60Hz
VERTICAL	
EUT : Lyra mini	Note : 802.15.1_EDR_3DH5_2480MHz
	Mode 1: Tx-AD2037320910LF



		Frequency	Correct Factor	Reading Level	Measure Level	Margin	Limit	Detector Type
		(MHz)	(dB)	(dBuV)	(dBuV/m)	(dB)	(dBuV/m)	
1		2310.000	13.346	17.199	30.545	-23.455	54.000	AVERAGE
2		2376.200	13.755	23.603	37.358	-16.642	54.000	AVERAGE
3		2390.000	13.840	17.146	30.986	-23.014	54.000	AVERAGE
4	*	2480.000	14.396	75.795	90.191	36.191	54.000	AVERAGE
5		2483.500	14.417	22.152	36.570	-17.430	54.000	AVERAGE
6		2500.000	14.518	17.886	32.405	-21.595	54.000	AVERAGE

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

7. Number of hopping frequency

7.1. Test Equipment

The following test equipment is used during the test:

Number of hopping frequency / SR10-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Signal & Spectrum	R&S	FSV40	101049	2018/01/22
Analyzer				

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

7.2. Test Setup

Spectrum Analyzer	
EUT	
Non-Conducted Table	

7.3. Limits

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

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

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

7.4. Test Procedures

The EUT was setup according to ANSI C63.10:2013 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements ,

Span = the frequency band of operation $RBW \ge 1\%$ of the span , VBW $\ge RBW$, Sweep = auto, Detector function = peak, Trace = max hold.

7.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015



7.6. Test Result

Product	Lyra mini				
Test Item	Number of hopping frequency				
Test Mode	Mode 1: Tx-AD2037320910				
Date of Test	2016/12/25	Test Site	SR10-H		

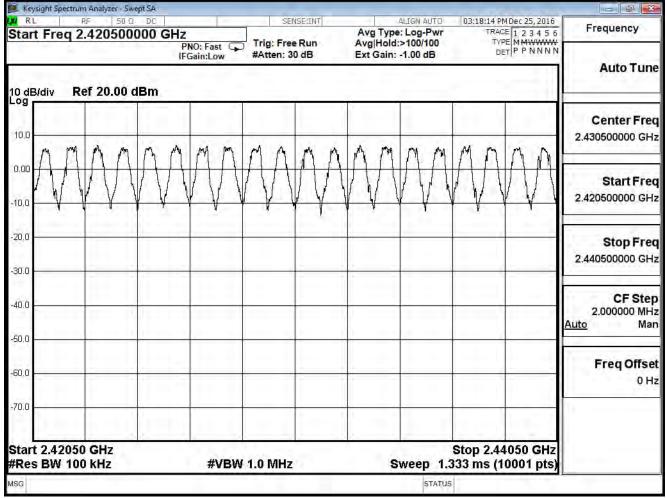
Frequency Range	Measure Level	Limit	Result
(MHz)	(Channels)	(Channels)	
2402 - 2480	79	≧ 75	Pass

2401.5-2420.5MHz

Keysight Spectrum Analyzer - Swept SA		T. Summer	1		
RL RF 50 02 DC		SENSERINT	ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>100/100	03:17:25 PM Dec 25, 2016 TRACE 1 2 3 4 5 6 TVPE M MWWWW	Frequency
10 dB/div Ref 20.00 dBm	PNO: Fast 😱 IFGain:Low	#Atten: 30 dB	Ext Gain: -1.00 dB	TYPE M MWWWW DET P P N N N N	Auto Tune
	~ ~ ~	mmm			Center Freq 2.411000000 GHz
-10.0	VVV				Start Freq 2.401500000 GHz
30.0					Stop Fred 2.420500000 GH;
-40.0					CF Step 1.900000 MH Auto Mar
60,0					Freq Offse 0 Hi
-70.0					
Start 2.401500 GHz #Res BW 100 kHz	#VBW	1.0 MHz	Sweep 1.	Stop 2.420500 GHz 333 ms (10001 pts)	
MSG			STATU	5	

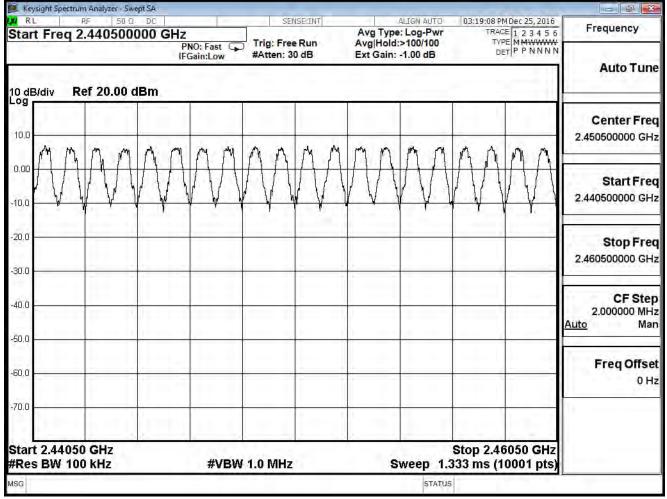


2420.5-2440.5MHz



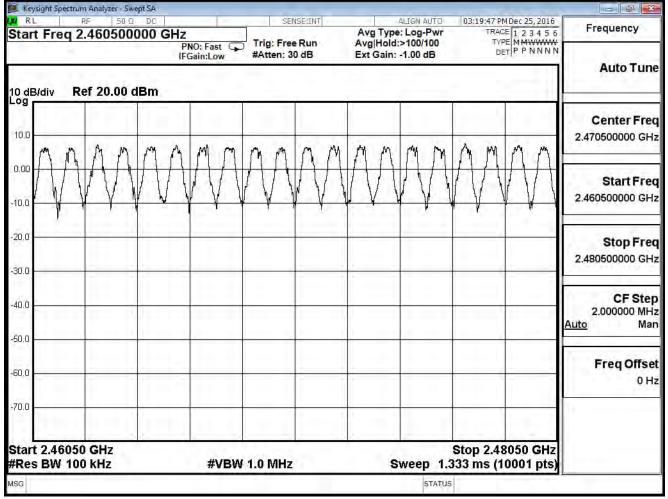


2440.5-2460.5MHz





2460.5-2480.5MHz



8. Carrier Frequency Separation

8.1. Test Equipment

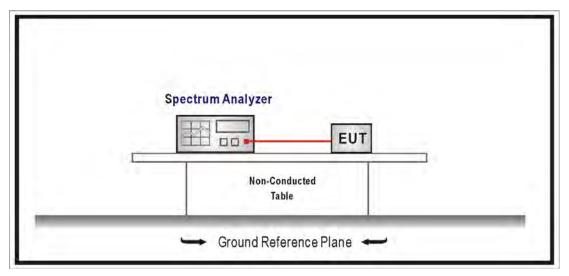
The following test equipment is used during the test:

Carrier Frequency Separation / SR10-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Signal & Spectrum	R&S	FSV40	101049	2018/01/22
Analyzer				

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

8.2. Test Setup



8.3. Limits

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

8.4. Test Procedures

The EUT was setup according to ANSI C63.10:2013 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements Span = wide enough to capture the peaks of two adjacent channels Resolution Bandwidth (RBW) \geq 1% of the span, VBW \geq RBW Sweep = auto, Detector function = peak, Trace = max hold

8.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015



8.6. Test Result

Product	uct Lyra mini									
Test Item	Carrier Frequency Separation									
Test Mode	Mode 1: Tx-AD2037320910LF									
Date of Test	2016/12/25		Test Site	SR10-H						
GFSK										
Channel No	Frequency	Measure Level	Limit	Decult						
Channel No.	(MHz)	(MHz)	(MHz)	Result						
00	2402	1.002	0.729	Pass						
39	2441 1.00		0.725	Pass						
78	2480	1.014	0.719	Pass						

X RL RF 50 Ω DC SENSE:INT ALIGN AUTO 01:35:49 PMDec 25, 2016 Frequency Center Freq 2.402500000 GHz PNO: Fast Trig: Free Run Avg Type: Log-Pwr TxPE MMWWWW TxPE MMWWWW Tree Frequency TxPE MMWWWW TxPE MMWWWW Tree Run Avg Hold:>100/100 TYPE MMWWWW Auto Tu I OdB/div Ref 20.00 dBm Outo Tu Outo Tu Outo Tu Auto Tu Auto Tu 10 dB/div Ref 20.00 dBm Image: Comparison of the taxet of tax
PNO: Fast Ingritication Ingritication Ingritication Det P P NNNN IFGain:Low #Atten: 30 dB Ext Gain: -1.00 dB Det P P NNNN Auto Tu 10 dB/div Ref 20.00 dBm 0.021 dB
10 dB/div Ref 20.00 dBm Log 10.0
$\begin{array}{c c c c c c c c c c c c c c c c c c c $
-20.0 Start Fr -20.0 2.392500000 G
-30.0
-40.0 -50.0
-60.0 CF St 2.000000 M
Center 2.40250 GHz Span 20.00 MHz #Res BW 1.0 MHz #VBW 1.0 MHz Sweep 1.333 ms (10001 pts) Freq Offs
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE A
1 N 1 f 2.402 146 GHz 7.371 dBm
MSG STATUS



				Analyzer - S									
<mark>الابا</mark> Cer	ıter	Fre	RF q 2	50 2.4415	Ω DC	0 GHz		ISE:INT		ALIGN AUTO	TRAC	M Dec 25, 2016 E 1 2 3 4 5 6	Frequency
						PNO: Fast 📮 IFGain:Low	Trig: Free #Atten: 3		Avg Hold Ext Gain:		D		Auto Tune
10 d	B/div	,	Ref	f 20.00	dBm					ΔN		04 MHz .020 dB	Auto Tune
Log 10.0							\\1					*	Center Freq
0.00) 						\square	\frown					2.441500000 GHz
-10.0									N N				Start Freq
-20.0			+			_ /			\mathbf{N}				2.431500000 GHz
-30.0 -40.0													Stop Freq
-50.0	, milita							4					2.451500000 GHz
-60.0													CF Step 2.000000 MHz
-70.0													<u>Auto</u> Man
Cen #Re				0 GHz ЛHz		#VBW	/ 1.0 MHz		s	weep 1.3	Span 2 333 ms (1	0.00 MHz 0001 pts)	Freq Offset
MKR 1	MODE N	TRC	SCL f		X	41 114 GHz	Y 7.792 di		CTION FU	NCTION WIDTH	FUNCTI	DN VALUE	0 Hz
2	Δ1	2	f	<u>(</u> Δ)	2.4	1.004 MHz (Δ)	-0.020					=	
4 5 6													
							m			07471		Þ	
MSG										STATUS	1		



					Analyzer -															- 6 💌
ιx/⊮ Cer	nte	er F	- re	RF q	50 2.479	Ω 500	DC	GH	z		7	ISE:INT		ј Туре	ALIGN AUTO	02:1	TRAC	M Dec 25, 2016 E 1 2 3 4 5	6	Frequency
								PN	IO: Fas iain:Lo	t⊊ w	Trig: Free #Atten: 3				>100/100 -1.00 dB		D		N	Auto Tune
10 d	IB/e	div		Rei	f 20.0) di	Зm								Δι	Mkr2		14 MHz .195 dE		
Log 10.0											1	≜ ^{2∆1}						*		Center Freq
0.00											\square	$\left\{ \cdot \right\}$								2.479500000 GHz
-10.0				_						,			\bigvee							Start Freq
-20.0										\neg			\wedge							2.469500000 GHz
-30.0 -40.0]	۱ ۱		l har en h						Stop Freq
-50.0					ikan ting di ba		2401.00 212 4 1 1									(here de filme de filme				2.489500000 GHz
-60.0				_		_														CF Step 2.000000 MHz
-70.0																				Auto Man
Cer #Re					0 GHz VIHz				#\	/BW	1.0 MHz			S	weep 1.		an 2 1s (1	0.00 MHz 0001 pts		Freq Offset
MKR 1		DE 1					X	0.060	GHz		Y 8.131 di		NCTION		CTION WIDTH			ON VALUE		0 Hz
2 3	Δ		2	f	<u>(Δ)</u>		2.41				0.195							=		
4 5 6			_																	
•		1	1		1						m	ł						•		
MSG															STATU	s				



Product	Product Lyra mini									
Test Item	Carrier Frequency Se	Carrier Frequency Separation								
Test Mode	Mode 1: Tx-AD20373									
Date of Test	2016/12/25	Г	Test Site	SR10-H						
π/4-DQPSK										
Channel Ne	Frequency	Measure Level	Limit	Decult						
Channel No.	(MHz)	(MHz)	(MHz)	Result						
00	2402	1.004	0.925	Pass						
39	2441	1.004	0.923	Pass						
78	2480	1.004	0.924	Pass						

🎉 Keysight Spectrum Analyzer - Swep	ot SA				
גו RF 50 Ω Center Freq 2.402500	0000 GHz	Avg Type	: Log-Pwr TRAC	M Dec 25, 2016 DE 1 2 3 4 5 6 PE M M WWWW	Frequency
	PNO: Fast p Trig: Fro IFGain:Low #Atten:			ETPPNNNN	.
10 dB/div Ref 20.00 d	Bm		ΔMkr2 1.0 0	04 MHz .032 dB	Auto Tune
Log		1 ♦2Δ1		*	Center Freq
0.00		\sim			2.402500000 GHz
-10.0					
-20.0	/ /				Start Freq 2.392500000 GHz
-30.0	///	$ \rangle \rangle$			
-40.0			b 11		Stop Freq
-50.0					2.412500000 GHz
-60.0					CF Step
-70.0					2.000000 MHz <u>Auto</u> Man
Center 2.40250 GHz			Span 2	0.00 MHz	
#Res BW 1.0 MHz	#VBW 1.0 MH	z Si	weep 1.333 ms (1		Freq Offset
MKR MODE TRC SCL	X Y 2.402 120 GHz 9.453 c		CTION WIDTH FUNCTION	ON VALUE	0 Hz
$\begin{array}{c c} 1 & 1 & 1 \\ 2 & \Delta 1 & 2 & \mathbf{f} & (\Delta) \\ 3 & 1 & 1 \\ \end{array}$	1.004 MHz (Δ) 0.032			=	
4					
6					
MSG			STATUS		



		nt Spec	trum	Analyzer -	Swept SA										
<mark>w</mark> . Cer	≀∟ nte	r Fr	RF eq		Ω DC	0 GHz		7	ISE:INT		ype:	LIGN AUTO	TRAC	MDec 25, 2016 DE 1 2 3 4 5 6	Frequency
						PNO: Fas IFGain:Lo	st 🖵 ow	Trig: Free #Atten: 3				100/100 1.00 dB	D	PE MM WWW ET P P N N N N	Auto Tune
10 d	iB/d	iv	Re	f 20.0() dBm							ΔN		04 MHz .007 dB	
Lõg 10.0	Γ							\ ¹						*	Center Freq
0.00								\square	\sum						2.441500000 GHz
-10.0								(/		\mathbb{N}					Start Freq
-20.0							+	/	\rightarrow	$\left \right\rangle$	_				2.431500000 GHz
-30.0			_				\vdash	/			-				
-40.0 -50.0)	المادر منادأ		المالية الم	أحط رقط المحس			•			lilini.		te di a statut se vet	المرابع مرابع مرابع المرابع	Stop Freq 2.451500000 GHz
-50.0															CF Step
-70.0															2.000000 MHz Auto Man
Cer	L	2.4	415	0 GHz									Span 2	0.00 MHz	
#Re	es E	3W /	1.0	MHz		#	VBW	1.0 MHz				-	33 ms (1	0001 pts)	Freq Offset 0 Hz
MKR 1 2	MO N Δ1		f	(Δ)	× 2.4	41 088 GHz 1.004 MHz		9.735 dE -0.007	3m	CTION	FUNC	TION WIDTH	FUNCTI		
3		-				1.004 MIN2		-0.007							
5 6 ∢														v	
MSG												STATUS			<u></u>



		Spect	rum A	Analyzer - S	Swept SA								
<mark>⊮</mark> ℝ Cer	iter	Fre	RF eq 2	50 2.479		0 GHz	7	ISE:INT		ALIGN AUTO e: Log-Pwr	TRAC	MDec 25, 2016 E 1 2 3 4 5 6	Frequency
						PNO: Fast 🕞 IFGain:Low	Trig: Free #Atten: 3		Avg Hold Ext Gain:	:>100/100 -1.00 dB	DI		A
10 d	Bidis	,	Ref	f 20.00	l dBm					ΔN		04 MHz .286 dB	Auto Tune
Lõg 10.0		•		20.00				2∆1				*	Center Freq
0.00							\square	\sum					2.479500000 GHz
-10.0						/	(_/		\				Start Freq
-20.0							/						2.469500000 GHz
-30.0 -40.0							/	\\		1			Stop Freq
-50.0	undi		h								desta star tellar.		2.489500000 GHz
-60.0	-												CF Step 2.000000 MHz
-70.0													<u>Auto</u> Man
Cer #Re				0 GHz ⁄IHz		#VBW	1.0 MHz		s	weep 1.3		0.00 MHz 0001 pts)	Freq Offset
MKR 1	MODE N	TRC	SCL f		X	79 124 GHz	Y 10.178 di		TION FU	NCTION WIDTH	FUNCTI		0 Hz
2 3	Δ1	2	f	(Δ)	2.4	1.004 MHz (Δ)	-0.286					=	
4 5 6													
				•		•	m	•	·	'	I	Þ	
MSG										STATUS	5		

78

2480



Pass

Product Lyra mini											
FIUUUCI											
Test Item	Carrier Frequency Separation										
Test Mode	Mode 1: Tx-AD2037320910LF										
Date of Test 2016/12/25 Test Site SR10-H											
8-DPSK											
Channel No.	Frequency	Measure Level	Limit	Deput							
Channel No.	(MHz)	(MHz)	(MHz)	Result							
00	2402	1.002	0.896	Pass							
39	2441	1.002	0.913	Pass							

Channel 00

1.010

0.917

📜 Keysight Spectrum Analyzer - Swe	ept SA				
₩ RL RF 50 Ω Center Freq 2.40250		SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	02:22:13 PM Dec 25, 2016 TRACE 1 2 3 4 5 6	Frequency
	PNO: Fast 😱 IFGain:Low	┘ Trig: Free Run #Atten: 30 dB	Avg Hold:>100/100 Ext Gain: -1.00 dB	TYPE MMWWW DET P P NNN N Mkr2 1.002 MHz -0.018 dB	Auto Tune
10 dB/div Ref 20.00 c 10.0 0.00				*	Center Freq 2.402500000 GHz
-10.0					Start Freq 2.392500000 GHz
					Stop Freq 2.412500000 GHz
-60.0					CF Step 2.000000 MHz <u>Auto</u> Mar
Center 2.40250 GHz #Res BW 1.0 MHz	#VBW	1.0 MHz	-	Span 20.00 MHz 333 ms (10001 pts)	Freq Offset
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	X 2.402 016 GHz 1.002 MHz (Δ)	Y FU 9.609 dBm -0.018 dB	NCTION FUNCTION WIDTH		
MSG			STATU	s	L



		it Spec	trum /	Analyzer -	Swept SA									
<mark>⊮</mark> ∦ Cer	ntei	r Fre	RF eq 2		ο <u>Ω</u> DC 50000				NSE:INT		ALIGN AUTO	TRA	M Dec 25, 2016 DE 1 2 3 4 5 6 PE M M WWWW	Frequency
							D:Fast ⊂ ain:Low	Trig: Fre #Atten: 3			ld:>100/100 n: -1.00 dB	D	ET P P N N N N	Auto Tune
10 d Log		iv	Re	f 20.0	0 dBm						Δι		02 MHz .015 dB	
10.0			_						●2∆1				*	Center Freq
0.00			_		_			\square						2.441500000 GHz
-10.0			+					$\wedge / -$	\vdash	\mathbb{N}				Start Freq
-20.0)		-				-+	+/-						2.431500000 GHz
-30.0								/	1					Stop Freq
-40.0						الطعابيا							linkanis instantia (d.)	2.451500000 GHz
-60.C			_		_									CF Step
-70.0			_											2.000000 MHz <u>Auto</u> Man
				0 GHz	 :							Span 2	0.00 MHz	
#Re		SW 1			x		#VB\	N 1.0 MHz			Sweep 1.		0001 pts)	Freq Offset 0 Hz
1	Ν Δ1	1	f f	(Δ)		40 986	GHz MHz (Δ	9.942 d -0.015	Bm				=	
3 4 5		-												
6														
MSG											STATU	s		u]



		ght Sp	pectr	um A	Analyzer	r - Swe	ept SA														- 6 💌
<mark>w</mark> . Cer	≀∟ nte	er F	- re	RF q 2		50 Ω 950	DC	0 GH	łz		<u> </u>	ISE:INT			Гуре	LIGN AUTO	02:25	TRAC	MDec 25, 2016 E 1 2 3 4 5	6	Frequency
								P IF	NO: Fas Gain:Lo	st ⊊ ow	Trig: Free #Atten: 3					>100/100 -1.00 dB		DE		N	Auto Tune
10 c		div	I	Ref	f 20.	00 c	iBm									ΔΝ	/kr2		10 MHz .009 dE		
Log 10.(<u>1</u>	♦ ²	1						*		Center Freq
0.00											\square	\bigwedge	\downarrow								2.479500000 GHz
-10.0				+						-/	(_/			\setminus						ł	Start Freq
-20.0				+						+	/		+	\setminus							2.469500000 GHz
-30.0				+						f	/										Stop Freq
-40.0 -50.0		itala dagi		(Josef)	i - i - i - i - i - i - i - i - i - i -	وبإيراره	i al da							Walk					Mata Sing and and the second		2.489500000 GHz
-60.0				_																	CF Step
-70.0				+																	2.000000 MHz <u>Auto</u> Man
					0 GH	łz			<u> </u>								Spa	in 2	0.00 MHz		
#Re MKR							×		#	VBW	1.0 MHz		FUNC	TION		weep 1.3 сполжитн		· ·	0001 pts		Freq Offset 0 Hz
1	N A		1 2	f f	<u>(Δ)</u>			78 98	0 GHz 0 MHz		10.338 dE -0.009								=		
3 4 5																					
- <mark>6</mark> ∢																					
, MSG																STATUS	5				

9. Occupied Bandwidth

9.1. Test Equipment

The following test equipment is used during the test:

Occupied Bandwidth / SR10-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Signal & Spectrum	R&S	FSV40	101049	2018/01/22
Analyzer				

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

9.2. Test Setup

Analyzer EUT	
EUT	
Non-Conducted Table	

9.3. Limits

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

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

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

9.4. Test Procedures

The EUT was setup according to ANSI C63.10:2013 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements

Use the following spectrum analyzer settings:

Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel RBW \geq 1% of the 20 dB bandwidth, VBW \geq RBW , Sweep = auto, Detector function = peak, Trace = max hold , The EUT should be transmitting at its maximum data rate.

9.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015



9.6. Test Result

Product	Lyra mini		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Tx-AD2037320910LF		
Date of Test	2016/12/25	Test Site	SR10-H

π/4-DQPSK

Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
00	2402	1.116		Pass
39	2441	1.111		Pass
78	2480	1.113		Pass

				Channe						
🎉 Keysight Spectr	rum Analyzer - Occupied BV	V								
LXI RL	RF 50 Ω DC			NSE:INT		LIGN AUTO		M Dec 25, 2016	Free	quency
Center Fre	q 2.40200000	GHz	Trig: Fre	req: 2.40200	Avg Hold:>	100/100	Radio Std	: None		lacito
		#IFGain:Low	#Atten: 3		Ext Gain: -		Radio Dev	ice: BTS		
10 dB/div Log	Ref 20.00 dBn	<u>n</u>		1						
10.0									6	enter Freq
0.00				$\uparrow \sim$						-
			al and the second s						2.4020	00000 GHz
-10.0										
-20.0					\parallel \searrow \mid					
-30.0						h				
-40.0		U								
	a source of the					7	amental a			
-50.0	And and a							marmore		
-60.0										
-70.0										
Center 2.4								an 4 MHz		CF Step
#Res BW 1	100 kHz		#VI	BW 300 k	Hz		Sweep	1.333 ms	4	00.000 kHz
•		•		Total D		40.7	dDm		<u>Auto</u>	Man
Occupi	ied Bandwidt	n		Total P	ower	12.1	′ dBm			
	9	65.59 k	Hz						I с.	eq Offset
									I	0 Hz
Transm	it Freq Error	-35.788	kHz	% of O	BW Powe	r 99	.00 %			0 112
x dB Ba	ndwidth	1.116 I	MHz	x dB		-20	00 dB			
	nawiatii	1.1101		A GD		-20.				
MSG						STATUS	3		Ľ	



📁 Keysight Spectrum Analy	•								[- 6 -
Center Freq 2.4		HZ Gain:Low					Radio Sto	AM Dec 25, 2016 d: None evice: BTS	Fre	equency
10 dB/div Ref	20.00 dBm	, <u>,</u> ,		1	, i					
10.0									c	enter Freq
0.00									2.441	000000 GHz
-10.0										
-20.0										
-30.0	- ww				1 VA	harrow and the second s				
-40.0	sand the second					بر <u>بر</u>	Mun where			
-50.0								mary war		
-60.0										
-70.0										
Center 2.441 GH #Res BW 100 kH			#\/F	3W 300 k	· U 7		Sween	oan 4 MHz 1.333 ms		CF Step
WKC3 DW 100 KI	12		#¥L	WY JOOK	112		Sweep	1.555 113	Auto	400.000 kHz Man
Occupied E	Bandwidth			Total P	ower	13.0	dBm			
	962	2.47 k <mark>⊢</mark>	z						F	req Offset
Transmit Fre	q Error	-36.727 k	Hz	% of OE	BW Power	r 99	.00 %			0 Hz
x dB Bandwi	dth	1.111 M	Hz	x dB		-20.0	00 dB			
мsg 🗼 File <pictur< td=""><td>RE.PNG> saved</td><td></td><td></td><td></td><td></td><td>STATUS</td><td></td><td></td><td></td><td></td></pictur<>	RE.PNG> saved					STATUS				



	pectrum Analyzer - Occu										×
Center F	RF 50 Ω Freq 2.480000	000 GHz	Z ain:Low					Radio Sto	AM Dec 25, 2016 1: None vice: BTS	Frequency	
10 dB/div Log	Ref 20.00										
10.0										Center Fr	eq
0.00										2.480000000 G	Hz
-20.0			\square								
-30.0							Married Married				
50.0	www.www.ww						n	Murray Marry	mm. r.m. M		
-60.0	www.								"Winner Nine V w		
-70.0											
Center 2		I							an 4 MHz	CF St	ер
#Res BW	/ 100 kHz			#VE	3W 300 k	Hz		Sweep	1.333 ms	400.000 k	ίΗz
Occu	pied Bandv	vidth			Total P	ower	13.4	dBm		<u>Auto</u> M	lan
		966.	46 kł	Ηz						Freq Offs	set
Trans	mit Freq Erro	or –S	37.917 H	κHz	% of OE	BW Powe	r 99	.00 %		0	Hz
x dB E	Bandwidth		1.113 N	IHz	x dB		-20.	00 dB			
MSG							STATUS				
							SIAIUS				



Product	Lyra mini		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Tx-AD2037320910LF		
Date of Test	2016/12/25	Test Site	SR10-H

π/4-DQPSK

Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
00	2402	1.387		Pass
39	2441	1.385		Pass
78	2480	1.386		Pass

-					-		<u> </u>					
	rum Analyzer - Occuj	•										
LXI RL	RF 50 Ω				NSE:INT			ALIGN AUTO		M Dec 25, 2016	E	requency
Center Fre	q 2.402000	000 GHz			reg: 2.4020				Radio Std	: None		equency
	•		Ģ	Trig: Fre				>100/100				
		#IFGai	n:Low	#Atten: 3	30 dB	Ext	Gain:	-1.00 dB	Radio Dev	/ice: BTS		
10 dB/div	Ref 20.00	dBm										
Log												
10.0			-	~~~~								Center Freq
0.00			10000			<u>~</u> ~~					2.40	2000000 GHz
-10.0			X									
-10.0		1										
-20.0						_	\rightarrow					
-30.0		~					\	4m.				
-30.0	Non warman	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						* "Anna				
-40.0	<i>m</i>					_						
-50.0												
"I'Vator"										Www.hardton		
-60.0												
-70.0			_									
Center 2.40	02 GHz								 Sn	an 4 MHz		
#Res BW 1				#\/	BW 300					1.333 ms		CF Step
#RES DVV				#V	DAA 200	КПД			oweep	1.333 115		400.000 kHz
						_					<u>Auto</u>	Man
Occupi	ied Bandv	vidth			Total	Powe	er	14.3	dBm			
		1.208	2 14	1-								
		1.200		12								Freq Offset
Transmi	it Ere a Erre		4 220 1	-LI-	0/		D		00.0/			0 Hz
Transmi	it Freq Erro	or -4	1.330	(HZ	% of C	BW	rowe	99	.00 %			
x dB Ba	ndwidth	1	.387 N	147	x dB			-20	00 dB			
	nawiun				X UD			-20.				
MSG								STATUS	5			



	Spectrum Analyzer - Occupi	ied BW					
LXI RL		DC DC	SENSE:INT	ALIGN AUT		M Dec 25, 2016	Frequency
Center	Freq 2.4410000	000 GHz	Center Freq: 2.44100 Trig: Free Run	Avg Hold:>100/100	Radio Std:	None	riequeriey
		#IFGain:Low	#Atten: 30 dB	Ext Gain: -1.00 dB	Radio Dev	ice: BTS	
10 dB/div Log	Ref 20.00 c	dBm		, <u>,</u> ,			
10.0							Contor From
			m	-			Center Freq
0.00							2.441000000 GHz
-10.0							
-20.0							
-30.0				- have			
-40.0	and the second s				- Contraction of the second se		
						V y	
-50.0	P					W. www.	
-60.0							
-70.0							
	2.441 GHz					an 4 MHz	CF Step
#Res B∖	N 100 kHz		#VBW 300 k	Hz	Sweep	1.333 ms	400.000 kHz
							<u>Auto</u> Man
Occi	upied Bandw	idth	Total P	ower 14	l.6 dBm		
		1.2088 MH	7				
		1.2000 Milli	L				Freq Offset
Trans	smit Freq Error	-42.386 kl	lz % of Of	3W Power	99.00 %		0 Hz
R dR	Bandwidth	1.385 MI	lz xdB	-2	0.00 dB		
~ 4	Bunawiath	1.000 mi		-2	0.00 08		
MSG				STA	TUS		<u> </u>
					1		



	pectrum Analyzer - Occupied	BW					
LXI RL	RF 50 Ω DC		SENSE:INT			M Dec 25, 2016	Frequency
Center F	Freq 2.4800000	0 GHz	enter Freq: 2.48000 'ig: Free Run	00000 GHz Avg Hold:>10	Radio Std	: None	riequency
			Atten: 30 dB	Ext Gain: -1.00		vice: BTS	
	D = 6 00 00 dD						
10 dB/div Log	Ref 20.00 dE	sm		, i , , , , , , , , , , , , , , , , , ,			
10.0							Center Freq
0.00			m how how	~~~~~~			2.480000000 GHz
							2.48000000 GH2
-10.0							
-20.0				$ \chi $			
-30.0				- North All	mar		
-40.0							
-50.0	/						
-60.0						My My My	
-70.0							
Center 2	2.49.647				Qr	an 4 MHz	
	V 100 kHz		#VBW 300 k	(H7		1.333 ms	CF Step
<i>"</i> лео В л			**BH 0001		Uncep		400.000 kHz Auto Man
Осси	ipied Bandwid	lth	Total P	ower	15.0 dBm		<u>Auto</u> Man
	-						
	1	.2116 MHz					Freq Offset
Trans	mit Freq Error	-43.635 kHz	% of O	BW Power	99.00 %		0 Hz
	-						
x dB l	Bandwidth	1.386 MHz	x dB		-20.00 dB		
					07.171.0		
MSG					STATUS		



Product	Lyra mini		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Tx-AD2037320910LF		
Date of Test	2016/12/25	Test Site	SR10-H

8-DPSK

Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
00	2402	1.385		Pass
39	2441	1.383		Pass
78	2480	1.383		Pass

	rum Analyzer - Occu	•										
Center Fre			7		ENSE:INT Freg: 2.402	000000 (ALIGN AUTO	11:59:08 A Radio Std	M Dec 25, 2016 : None	Frequ	lency
	q 2.402000		<u> </u>	Trig: Fr	ee Run	Avg	Hold:	>100/100				
		#IFG	Gain:Low	#Atten:	30 dB	Ext	Gain: -	-1.00 dB	Radio Dev	/ice: BTS		
10 dB/div Log	Ref 20.00	dBm										
10.0											Cer	nter Freq
0.00			m		$\sim\sim$	~~						0000 GHz
-10.0						~					2.40200	0000 0112
-20.0							\setminus					
							N					
-30.0	and When and the	www.good						- when the second	a var war	~		
-40.0										λ		
-50.0										Mungaria		
-60.0												
-70.0												
Center 2.4	02 GHz								Sn	an 4 MHz		
#Res BW 1				#V	BW 300	kHz			Sweep	1.333 ms		CF Step 0.000 kHz
											Auto 40	Man
Occupi	ed Bandv	vidth			Total	Powe	r	14.3	dBm			
		1.22	01 MI	Ηz							Erd	eq Offset
_							_					0 Hz
Transmi	it Freq Erro	or -	39.318	kHz	% of C	DBW F	owe	r 99	.00 %			0112
x dB Ba	ndwidth		1.385 N	1Hz	x dB			-20.	00 dB			
MSG								STATUS				
								oio				



	Spectrum Analyzer - Oc	cupied BW									
LXI RL	RF 50 Ω				NSE:INT			ALIGN AUTO		M Dec 25, 2016	Frequency
Center	Freq 2.44100	00000 GHz	<u> </u>	Trig: Fre	req: 2.4410 e Run			>100/100	Radio Std	I: None	, requeries
		#IFGa	ain:Low	#Atten: 3				1.00 dB	Radio Dev	vice: BTS	
	v Ref 20.0	0 dBm									
10 dB/div Log	<u>v kei 20.0</u>		- <u>i</u>								
10.0			_								Center Freq
0.00			m		1-m-	\sim					2.441000000 GHz
-10.0							$\langle $				2.44 1000000 0112
-20.0											
-30.0									~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
-40.0										rh	
-50.0											
-60.0										how	
-70.0											
Center	2.441 GHz								Sn	an 4 MHz	
	W 100 kHz			#VE	300 W	kHz				1.333 ms	CF Step 400.000 kHz
											Auto Man
Occ	upied Band	lwidth			Total F	owe	r	14.7	′ dBm		
	•		90 MF	J							
		1.213		12							Freq Offset
Tran	smit Freq Er	ror -4	l0.119 k	Hz	% of O	BW F	owe	r 99	.00 %		0 Hz
A dB	Bandwidth		1.383 M	Hz	x dB			-20	00 dB		
	Bunawiath		1.000 m		A GD			20.			
MSG								STATUS	6		



	Spectrum Analyzer - Occupie	ed BW					
LXI RL	RF 50 Ω D		SENSE:INT			M Dec 25, 2016	Frequency
Center	Freq 2.480000	00 GHz	Center Freq: 2.4800 Trig: Free Run	00000 GHz Avg Hold:>10	Radio Sto	i: None	ricqueriey
		#IFGain:Low	#Atten: 30 dB	Ext Gain: -1.0		vice: BTS	
	B - C -	-					
10 dB/div Log	/ Ref 20.00 d	Bm			1		
10.0							Center Freq
0.00		20-	- man - man				-
							2.480000000 GHz
-10.0				$+ \uparrow \uparrow$			
-20.0				+ $+$ $+$ $+$ $+$			
-30.0		min					
-40.0					· · · · · · · · · · · · · · · · · · ·		
-50.0	*					minor	
-60.0							
-70.0							
	2.48 GHz				Sp	an 4 MHz	CF Step
#Res B	W 100 kHz		#VBW 3001	kHz	Sweep	1.333 ms	400.000 kHz
_			T - 4 - 1 F	•			<u>Auto</u> Man
Occ	upied Bandwi	dth	Total F	ower	15.0 dBm		
		1.2218 MH	7				
			-				Freq Offset
Tran	smit Freq Error	-37.447 k	Hz % of O	BW Power	99.00 %		0 Hz
v dD	Bandwidth	1.383 M	Hz xdB		-20.00 dB		
хub	Danuwium	1.303 14			-20.00 uB		
MSG					STATUS		
Mag					514105		

10. Dwell Time

10.1. Test Equipment

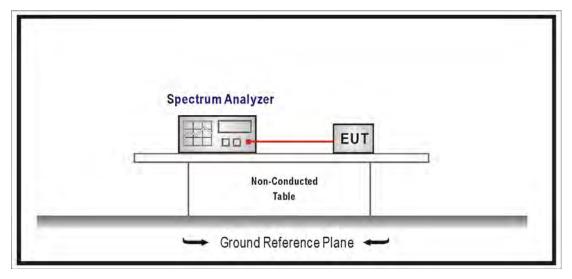
The following test equipment is used during the test:

Dwell Time / SR10-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Signal & Spectrum	R&S	FSV40	101049	2018/01/22
Analyzer				

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

10.2. Test Setup



10.3. Limits

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

For frequency hopping systems operating in the 5725-5850 MHz bands. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

10.4. Test Procedures

The EUT was setup according to ANSI C63.10:2013 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements

Span = zero span, centered on a hopping channel , RBW = 1 MHz, $VBW \ge RBW$, Sweep = as necessary to capture the entire dwell time per hopping channel , Detector function = peak, Trace = max hold.

10.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015



10.6. Test Result

Product	Lyra mini			
Test Item	Dwell Time			
Test Mode	Mode 1: Tx-AD2037320910LF			
Date of Test	2016/12/25	Test Site	SR10-H	

GFSK, DH5

Occupancy Time of Frequency Hopping System

- B) 2441MHz Test Time Period: 0.4*79=31.60sec [→] Time slot length : <u>2.902</u> ms = <u>0.002902</u> sec Dwell Time : <u>0.002902</u> *(266.67/79)* 31.60= <u>0.3095</u> sec [→]
- C) 2480MHz Test Time Period: 0.4*79=31.60sec [,] Time slot length : <u>2.902</u> ms = <u>0.002902</u> sec Dwell Time : <u>0.002902</u> *(266.67/79)* 31.60= <u>0.3095</u> sec [,]

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

A) 2402MHz Test Time Period: 0.4*79=31.60sec [→] Time slot length : <u>2.902</u> ms = <u>0.002902</u> sec Dwell Time : <u>0.002902</u> *(266.67/79)* 31.60= <u>0.3095</u> sec [→]



Hop rate-2402MHz

🊺 Keysig	ght Spect	rum A	Analyzer - S	Swept SA														- 6 -
Cente	er Fre	RF eq 2	50 2.4020			Hz			SENSE:I		Av		ALIGN AUT : Log-Pw		т	8 PM Dec 2 RACE 1 2	3456	
10 dB/	div	Ref	7 20.00) dBn		PNO: Fa IFGain:L			: Free Ru en: 30 dE		Ext	Gain:	-1.00 dB	ΔN	1kr2	2.902 -14.28	mnnn ms	Auto Tun
10.0			·····						1					1				Center Fre 2.402000000 G⊢
-10.0 — -20.0 —											2∆1							Start Fre 2.402000000 G⊢
-30.0 -40.0 -50.0	1 10.4																allukari (Stop Fre 2.402000000 G⊢
-60.0 — -70.0 —	hu bh				ult-lu												1) Ind.	CF Ste 1.000000 MH <u>Auto</u> Ma
Cente Res B			00000 Hz	GHz		#	VBW	1.0 N	/IHz			s	weep	20.0	0 ms	Span (1000′		
MKR MO 1 Ν 2 Δ 3 4 5 6	1	t t	<u>(</u> Δ)			.952 m .902 m			78 dBm 4.28 dB	FUI	NCTION	FUN	NCTION WID		FUN	CTION VAL		0
MSG	-						1	II				-	STA	TUS			Þ.	



🎉 Keysight Spectrum Analyzer - Swept SA K RL RF SENSE:INT ALIGN AUTO 01:15:16 PM Dec 25, 2016 Frequency Center Freq 2.441000000 GHz TRACE 1 2 3 4 5 6 TYPE WMWWWW DET P NNNNN Avg Type: Log-Pwr Trig: Free Run PNO: Fast ↔ IFGain:Low #Atten: 30 dB Ext Gain: -1.00 dB Auto Tune ΔMkr2 2.902 ms -12.46 dB 10 dB/div Log Ref 20.00 dBm Center Freq 10.0 2.441000000 GHz **☆**1 0.00 -10.0 [2∆1 Start Freq -20.0 2.441000000 GHz -30.0 Stop Freq -40.0 2.441000000 GHz -50.0 irarki Kulu цų. ulline and the second se -60.0 CF Step T יויידיי 1.000000 MHz -70.0 Auto Man Center 2.441000000 GHz Span 0 Hz Freq Offset Sweep 20.00 ms (10001 pts) Res BW 1.0 MHz #VBW 1.0 MHz 0 Hz MKR MODE TRC SCL FUNCTION FUNCTION WIDTH FUNCTION VALUE х Y 9.232 ms 2.902 ms (Δ) t t (Δ) -6.94 dBm 1 N **2** Δ1 -12.46 dB 3 4 5 6 < Ш ь STATUS MSG

Hop rate-2441MHz



			-	- Swept SA								
<mark>⊮</mark> R Cer				50 Ω DC D000000	GHz	Trian I	SENSE:INT	Avg	ALIGN AUTO		3 PM Dec 25, 2016 RACE 1 2 3 4 5 6 TYPE WMWWWW	Frequency
					PNO: Fas IFGain:Lo		Free Run n: 30 dB	Ext G	ain: -1.00 dB		DET PNNNNN	Auto Tune
	B/div	Re	ef 20.0	0 dBm					2		2.902 ms -20.41 dB	
Log 10.0												Center Freq
0.00												2.480000000 GHz
-10.0												Start Freq
-20.0												2.480000000 GHz
-30.0												.
-40.0												Stop Freq 2.48000000 GHz
-50.0 -60.0	سلال .			and so it						ninali Linat	العرمر	05.04
-70.0	10.0	111		, in such ,		(lu di th		ulti, Lui	۱۲ 	19 F		CF Step 1.000000 MHz Auto Man
		490	00000	0 GHz							Span 0 Hz	
	BW			U GHZ	#	VBW 1.0 M	Hz		Sweep 20).00 ms	(10001 pts)	Freq Offset
MKR 1	MODE 1	IRC SC		Х	8.936 ms	0.79	dBm	FUNCTION	FUNCTION WIDTH	FUN	CTION VALUE	0 Hz
2 3	Δ1	1 t			2.902 ms		41 dB				=	
4 5 6												
•	ł	1	1							1	•	
MSG									STATU		÷ ' I	

Hop rate-2480MHz

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



Product	Lyra mini			
Test Item	Dwell Time			
Test Mode	Mode 1: Tx-AD2037320910LF			
Date of Test	2016/12/25	Test Site	SR10-H	

π/4-DQPSK, 2DH5

Occupancy Time of Frequency Hopping System

- A) 2402MHz Test Time Period: 0.4*79=31.60sec [,] Time slot length : <u>2.904</u> ms = <u>0.002904</u> sec Dwell Time : <u>0.002904</u>*(266.67/79)* 31.60= <u>0.3098</u> sec [,]
- B) 2441MHz Test Time Period: 0.4*79=31.60sec [→] Time slot length : <u>2.904</u> ms = <u>0.002904</u> sec Dwell Time : <u>0.002904</u>*(266.67/79)* 31.60= <u>0.3098</u> sec [→]
- C) 2480MHz Test Time Period: 0.4*79=31.60sec , Time slot length : <u>2.904</u> ms = <u>0.002904</u> sec Dwell Time : <u>0.002904</u>*(266.67/79)* 31.60= <u>0.3098</u> sec 。

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



Hop rate-2402MHz

	ysight	Spectri	um A	nalyzer - Swe	ept SA																×
LXI R	-		RF	50 Ω	DC				1	SEN	SE:INT		۵ve		ALIGN AUTO	0		M Dec 25, 20		Frequency	
Cer	iter	Fre	q 4	2.40200	0000		1Z NO: Fast			: Free			-		-		TY	PE WMWW	₩₩		_
						IF	Gain:Lov	v	#Att	en: 30	dB		Ext	Gain:	-1.00 dB			et P N N N		Auto Tu	Ino
															4	VWI		.904 m			me
10 d Log	B/div		Ref	20.00 c	lBm												-1	7.61 d	в		
										∧1										Center Fi	nen
10.0		1	.	i de l'An inici e					m (۱			١.	2.402000000	- 11
0.00) <u> </u>		₩						_										\vdash	2.402000000	
-10.0													2∆`	1 							
-10.0		1	'										ĺ	I						Start Fr	eq
-20.0			+		$\left \right $					+									H	2.402000000	βHz
-30.0																					
																				Stop Fr	na
-40.0			Ħ																Η	2.402000000	- 11
-50.0		1.																	H	2.402000000	/1 12
-60.0		l y lut			a de la compañía de l)"AJUT				الماليون						L.		
-00.0		P. I.			N AL	ηr			իկո	"			باللط			Thur			Ψ.	CF St 1.000000 M	ер
-70.0			+						•										-		/lan
	Ļ																		_		
Cen Res				00000 G	Hz		-#14	0147	4 0 8	au-				~				pan 0 H		Freq Off	eat
				ΠZ			#V	DVV	1.0 P						weep 20				5,		Hz
MKR 1	MODE N	TRC	SCL t		Х	0.2	18 ms		Y	70 dB	m	FUNCT	TION	FUI	NCTION WIDTH		FUNCTI	ON VALUE			
2	Δ1	1		(Δ)		2.9	04 ms	(Δ)	-1	7.61 d	B								Ξ		
3 4																			-		
5																					
- 6										1	-					-		•	Ŧ		
MSG															STATU	s				L	



	•	Analyzer - Sw	•													
Center	· Freq	⊧ <u>50 Ω</u> 2.44100				Tric	SEI		Av		ALIGN AUTO : Log-Pwr	0	TRAC	M Dec 25, 2 DE <u>1</u> 2 3 4 PE W MW	156	
10 dB/di	iv Re	ef 20.00 (dBm		O: Fast ↔ ain:Low		ten: 3		Ext	Gain:	-1.00 dB	7W	•• kr2 2.	.904 r 6.38 (n N ns	Auto Tune
10.0 HTT		a hima da la contra contra contra da la contra		-	and the first state of the stat		1		"∎2∆1					a tanggangan ang		Center Freq 2.441000000 GHz
-10.0																Start Freq 2.441000000 GHz
-30.0	. Lahi								الم الم			ا رام ر تقام				Stop Freq 2.441000000 GHz
-60.0	10,000 10,000 10,000						 								10	CF Step 1.000000 MHz <u>Auto</u> Man
Center Res BV)00000 (1Hz	GHz		#VBW	1.0	MHz	I		S	weep 20	0.00		pan 0 0001 p		Freq Offset
MKR MODE 1 Ν 2 Δ1 3 4 5 6	1 t				i2 ms 4 ms (Δ)		. <u>34 d</u> I -6.38	3m	NCTION	FUN	ICTION WIDTH		FUNCTION	ON VALUE		0 Hz
MSG											STATU	s			Þ	

Hop rate-2441MHz



_	Keysight Spectrum Analyzer - Swept SA RL RF 50 Ω DC SENSE:INT ALIGN AUTO 01:20:08 PM Dec 25, 2016																				
		Fre		50 2.480			GH	z			SE	NSE:INT	Av	g Тур	ALIGN AUTO e: Log-Pwr	01:2	TRAC	E 1 2 3 4	156		equency
	nor		Ч·				PI		ast ⊶ ₋ow		g: Fre tten: 3	e Run 30 dB	Ext	Gain:	-1.00 dB		DE		N N N	-	Auto Tune
	B/div	v	Rei	f 20.00) dB	m									Δ	Mkr	r2 2. -18	904 r 8.50 (ns dB		
Log 10.0		h	- 10			h	-01				∂ 1										enter Freq
0.00													▲ 2△							2.480	000000 GHz
-10.0																					Start Freq
-20.0																				2.48	000000 GHz
-40.0																					Stop Freq
-50.0) —	L. Ching				المعاد				- Jake			Lat he is a			1			ير بلغ	2.48	0000000 GHz
-60.0	-	144,141,1														h, il v			14	1	CF Step .000000 MHz
-70.0)																			<u>Auto</u>	Man
	nter s BW			00000 Hz	GH	Z		÷	¢VΒV	/ 1.0	MHz	2		s	weep 20	.00 n		pan 0 0001 p			Freq Offset
MKR 1	MODE	TRC	SCL t			X	Q 1	74 m		7	r .76 d		UNCTION	FU	NCTION WIDTH	F	FUNCTIO	ON VALUE			0 Hz
2 3	Δ1	1	ť	<u>(</u> Δ)					is (Δ)		18.50										
4 5 6																			_		
∢ 📄 MSG									•		III	·			STATUS	2			Þ		
									(1 *			1									

Hop rate-2480MHz

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



Product	Lyra mini			
Test Item	Dwell Time			
Test Mode	Mode 1: Tx-AD2037320910LF			
Date of Test	2016/12/25	Test Site	SR10-H	

8-DPSK, 3DH5

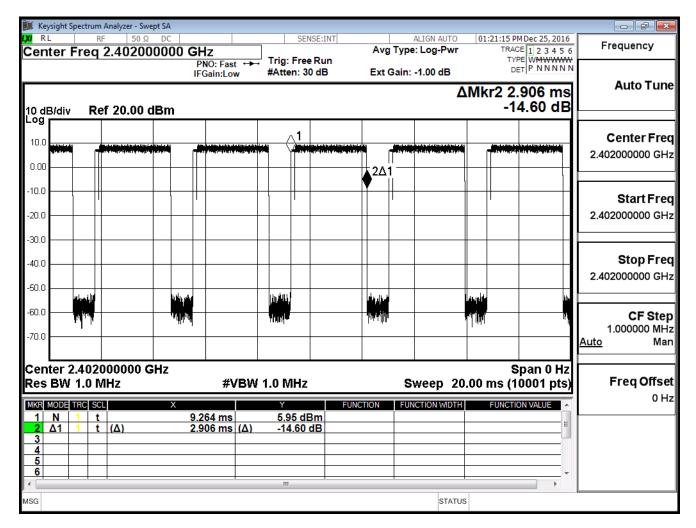
Occupancy Time of Frequency Hopping System

- A) 2402MHz Test Time Period: 0.4*79=31.60sec , Time slot length : 2.906ms = <u>0.002906</u> sec Dwell Time : <u>0.002906</u>*(266.67/79)* 31.60=<u>0.3100</u> sec 。
- B) 2441MHz Test Time Period: 0.4*79=31.60sec [→] Time slot length : 2.906 ms = <u>0.002906</u> sec Dwell Time : <u>0.002906</u>*(266.67/79)* 31.60=<u>0.3100</u> sec [→]
- C) 2480MHz Test Time Period: 0.4*79=31.60sec , Time slot length : 2.906 ms = <u>0.002906</u> sec Dwell Time : <u>0.002906</u>*(266.67/79)* 31.60=<u>0.3100</u> sec .

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



Hop rate-2402MHz





		Spectr		nalyzer - S		A																	_ f	×
<mark>⊮</mark> ℝ Cer		Fre	RF q 2	50 2.4410		-						NSE:INT		Avg	g Туре	ALIGN AU		01:	TRA	M Dec 2	345	6	Frequency	
								Fast ⊷ Low		Trig: #Atte		eRun 0dB		Ext	Gain:	-1.00 dE	_		D		NNNI	N	Auto Ti	une
10 d Log	B/div	v	Ref	20.00	dB	m												VIK		.906 9.24				
10.0				198 (1919) T. (1919)						(∖1												Center F	
0.00			-							•					1								2.441000000	GHz
-10.0		-			+									¢~^								I	Start F	req
-20.0																			-				2.441000000	GHz
-30.0 -40.0																							Stop F	req
-50.0						14																	2.441000000	GHz
-60.0	-	1994) 				יין דו יין								under die Leiter die								▐┢	CF S	
-70.0		.1			-	.1																A	1.000000 M <u>luto</u>	MHz Man
	nter : BW			00000	GH	z	<u> </u>	#VB		0.0	1 17					weep	20.0			Span			Freq Off	fset
	MODE					x		#VD		Y			FUNC	TION		меер истюн wi			·	ION VALU			-	D Hz
1 2 3	Ν Δ1	1	t	(Δ)			76 r 06 r	ns ns (∆)	7.3 -19	82 di 9.24	3m dB					_				=			
4																					_			
6															-						+			
MSG							 									ST	ATUS							

Hop rate-2441MHz



		Spectru	ım A	nalyzer - Sw																	-	- 6 💌
IXI R	L		RF	<u>50 Ω</u>				_	_		SEI	NSE:INT		A.v.e	Tun	ALIGN AUTO e: Log-Pwr	01		M Dec 25, 201		Fre	quency
Cer	Center Freq 2.480000000 GHz													748	тур	e. Log-r wi		TY	PE WMWWW ET P N N N N	₩		
								ain:Low		#Atte	n: 3	0 dB		Ext	Gain:	: -1.00 dB	DET P NNNN					
																Δ	Mk	r2 2.	.906 m	s	· ·	Auto Tune
10 d	B/div	F	Ref	20.00	dBm	1													4.05 di			
Log		_				_														1		
10.0										• - (<u>1</u>			×2Δ	1						C	enter Freq
			Π.	a national transf				and the set of the set of the	100114.0	י ו	(1	1.41.4.4		₹~	n1947				ris bring directions.		2.480	000000 GHz
0.00			╢		+				+													
-10.0			#						_													04 F
											['							Start Freq
-20.0																					2.4800	000000 GHz
-30.0														_								
																						Stop Freq
-40.0			\parallel		1																	000000 GHz
-50.0					_																2.4000	00000 0112
		lai i				لالبال أراس								i pi dista			, k k . Ini					
-60.0			1			i ni nev				, billing				- Inini			n n "			η		CF Step
-70.0					-	1	_		_								ļ .				1.0 <u>Auto</u>	000000 MHz Man
																					Auto	IVIAII
Cer	ter 2	2.48	000	00000	GHz													S	pan 0 H	z		
Res	BW	1.0	MI	Hz				#VB	N 1	.0 M	Hz				S	weep 20	.00 ו	ms (1	0001 pts	5)	F	req Offset
MKR	MODE	TRC	SCL)	<				Y			FUNC	TION	FU	NCTION WIDTH		FUNCTI	ON VALUE	*		0 Hz
1	Ν	1	t					0 ms			8 dl											
2 3	Δ1	1	t	<u>(Δ)</u>		2	.90	<u>6 ms</u> (Δ)	-4	.05	dB			-							
4																						
5 6			_												+					_		
- C															-				- F	~		
MSG																STATUS	6					

Hop rate-2480MHz

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