APPLICATION FOR CERTIFICATION
On Behalf of
Philips Lighting(China) Investment Co., Ltd.
LED Lamp

Model No. : 9290012575A
Brand : Philips
FCC ID : 2AGBW9290012575AX

Prepared for

Philips Lighting(China) Investment Co., Ltd.
Building 9, Lane 888, Tian Lin Road, Minhang district, Shanghai, China

Prepared by

Audix Technology (Wujiang) Co., Ltd. EMC Dept.
No. 1289 Jiangxing East Road, the Part of Wujiang Economic Development Zone
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Report Number : ACWE-F1703008
Date of Test : Feb.11~Mar.30, 2017
Date of Report : Apr.01, 2017

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TEST REPORT CERTIFICATION

Applicant	:	Philips Lighting(China) Investment Co., Ltd.
Manufacturer	:	Philips Lighting(China) Investment Co., Ltd.
EUT Description	:	LED Lamp
FCC ID	:	2AGBW9290012575AX
(A) Model No.	:	9290012575A
(B) Brand	:	Philips
(C) Power Supply	:	AC 110-130V, 50/60Hz
(D) Test Voltage	:	AC 120V, 60Hz

Applicable Standards:

FCC RULES AND REGULATIONS PART 15 SUBPART C, Oct. 2015
ANSI C63.10: 2013

The device described above was tested by Audix Technology (Wujiang) Co., Ltd. EMC Dept. to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15 subpart C section 15.207, 15.209&15.247 limits.

The measurement results are contained in this test report and Audix Technology (Wujiang) Co., Ltd. EMC Dept. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this test report shows that the EUT to be technically compliant with the FCC limits.

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

Date of Test: Feb.11~Mar.30, 2017 Date of Report: Apr.01, 2017

Prepared by : Emma Hu
(Emma Hu/Assistant Administrator)

Reviewer : Danny Sun
(Danny Sun/ Deputy Manager)

Approved & Authorized Signer : Ken Lu
(Ken Lu/Assistant General Manager)

1. SUMMARY OF MEASUREMENTS AND RESULTS

The EUT has been tested according to the applicable standards and test results are referred as below.

Description of Test Item	Standard	Results	Remark
CONDUCTED EMISSION	FCC 47 CFR Part 15 Subpart C/ Section 15.207 And ANSI C63.10:2013	PASS	Minimum passing margin is 4.59 dB at 0.15 MHz
RADIATED EMISSION	FCC 47 CFR Part 15 Subpart C/ Section 15.209& Section 15.205 And ANSI C63.10:2013	PASS	Minimum passing margin is 6.84 dB at 59.10 MHz
6 dB BANDWIDTH	FCC 47 CFR Part 15 Subpart C/ Section 15.247(a)(2) And ANSI C63.10:2013	PASS	＞500kHz
OUTPUT POWER	FCC 47 CFR Part 15 Subpart C/ Section 15.247(b)(3) And ANSI C63.10:2013	PASS	Minimum passing margin is 25.81 dB at CH 20
BAND EDGES	FCC 47 CFR Part 15 Subpart C/ Section 15.247(d) And ANSI C63.10:2013	PASS	---
POWER SPECTRAL DENSITY	FCC 47 CFR Part 15 Subpart C/ Section 15.247(e) And ANSI C63.10:2013	PASS	Minimum passing margin is 19.295 dB at CH 25
EMISSION LIMITATIONS	FCC 47 CFR Part 15 Subpart C/ Section 15.247(d) And ANSI C63.10:2013	PASS	---

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Description	:	LED Lamp
Model No.	:	9290012575A
FCC ID	:	2AGBW9290012575AX
Brand	:	Philips
Applicant	:	Philips Lighting(China) Investment Co., Ltd. Building 9, Lane 888, Tian Lin Road, Minhang district, Shanghai, China
Manufacturer	:	Philips Lighting(China) Investment Co., Ltd. Building 9, Lane 888, Tian Lin Road, Minhang district, Shanghai, China
Radio Technology	:	IEEE 802.15.4 (ZigBee®)
Antenna Gain	:	3.1dBi
Fundamental Range	:	2405 MHz -2480MHz
Tested Frequency	:	2405MHz (CH11) 2450MHz (CH20) 2475MHz (CH25) 2480MHz (CH26)
Channel Setting Method	:	Channel is changed via atmel production test application.
Highest Working Frequency	:	2.4GHz
Modulation type	:	O-QPSK
Date of Receipt of Sample	:	Jan.16, 2017
Date of Test	:	Feb.11~Mar.30, 2017

2.2. Description of Test Facility

Name of Firm	:	**Audix Technology (Wujiang) Co., Ltd. EMC Dept.**
Site Location	:	No. 1289 Jiangxing East Road, the Eastern Part of Wujiang Economic Development Zone Jiangsu China 215200
Test Facilities	:	**No.1 Conducted Shielding Enclosure** **No.1 3m Semi-anechoic Chamber** Date of Validity: Mar.30, 2018 FCC Registration No.**:** 897661 IC Registration No.:5183D-2 **RF Fully Chamber**
NVLAP Lab Code	:	200786-0 Valid until on Sep.30, 2017 (NVLAP is a signatory member of ILAC MRA) Remark: This report shall not be imply endorsement, certification or approval by NVLAP, NIST, or any agency of the U.S. Federal Government.

2.3. Measurement Uncertainty

Test Item	Range Frequency	Uncertainty
No.1 Conducted Disturbance Measurement	0.15MHz ~ 30MHz	± 2.65dB
Radiated Disturbance Measurement (At 3m Chamber)	30MHz ~ 300MHz	± 3.18dB
	300MHz ~ 1GHz	± 3.12dB
Radiated Disturbance Measurement (At 3m Chamber)	1GHz ~ 6GHz	± 4.56dB
	6GHz ~ 18GHz	± 5.03dB

Remark: Uncertainty = $ku_c(y)$

Test Item	Uncertainty
6 dB Bandwidth	± 0.16 MHz
Maximum Peak Output Power	± 0.12dB
Band Edges	± 0.38dB
Power Spectral Density	± 0.38dB
Emission Limitations	± 0.38dB

Remark: Uncertainty = $ku_c(y)$

3. ANTENNA REQUIREMENTS

According to FCC 47 CFR §15.203:

“ An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

* The antennas of this E.U.T are permanently attached.

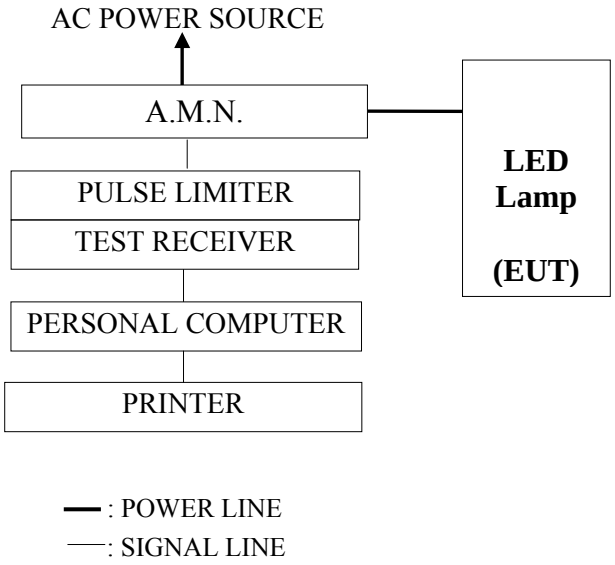
*The E.U.T Complies with the requirement of §15.203

4. CONDUCTED EMISSION MEASUREMET

4.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R & S	ESCI	100351	2016-07-03	2017-07-02
2.	A.M.N	R&S	ESH2-Z5	100153	2016-05-15	2017-05-14
3.	Pulse Limiter	R&S	ESH3-Z2	100605	2017-01-05	2018-01-04
4.	RF Cable	Shengxuan	RG400	Cable 50/1+Switch	2017-01-05	2018-01-04
5.	Software	Audix/e3(6.7.0313)				

4.2. Block Diagram of Test Setup



4.3. Power line Conducted Emission Limit

(FCC Part 15, Section 15.207, Class B)

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dBμV	56 ~ 46 dBμV
500kHz ~ 5MHz	56 dBμV	46 dBμV
5MHz ~ 30MHz	60 dBμV	50 dBμV

Remark1: If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.

2: The lower limit applies at the band edges.

4.4. Test Procedure

The measuring process is according to ANSI C63.10-2013 and laboratory internal procedure TKC-301-004. (For FCC Part15 Subpart C)

In the conducted emission measurement, the EUT and all peripheral devices were set up on a non-metallic table which was 0.8 meter height above the ground plane, and 0.4 meter far away from the vertical plane. The mains cable of the EUT connected to one Artificial Main Network(AMN). All other unit of the EUT and AE connected to a second Line Impedance Stabilization Network(L.I.S.N.). The telecommunication cable connected to the AE through a Impedance Stabilization Network(ISN) which terminated a 50Ω resistor. For the measurement, the A.M.N measuring port was terminated by a 50Ω measuring equipment and the second L.I.S.N measuring port was terminated by a 50Ω terminator. All measurements were done between the phase lead and the reference ground, and between the neutral lead and the reference ground. All cables or wires placement were verified to find out the maximum emission.

The bandwidth of measuring receiver was set at 9 kHz.

The required frequency band (0.15 MHz ~ 30 MHz) was pre-scanned with peak detector; the final measurement was measured with quasi-peak detector and average detector. (If the average limit is met when using a quasi-peak detector, the average detector is unnecessary).

The emission level is calculated automatically by the test system which uses the following equation:

Emission level (dBμV) = Reading (dBμV) + A.M.N factor (dB) + Cable loss (dB).
(Cable loss includes pulse limiter loss)

4.5. Conducted Emission Measurement Results

For FCC Part15 Subpart C

PASSED.

EUT was performed during this section testing and all the test results are attached in next pages.

Test Date：Mar.30, 2017 Temperature：23.3℃ Humidity：58%

Mode	Test Condition	Reference Test Data No.	
		Neutral	Line
1	TX CH11 2405MHz	# 3	# 4
2	**TX CH20 2450MHz**	**# 6**	**※# 5**
3	TX CH25 2475MHz	# 7	# 8

NOTE 1- '※'means the worst test mode**.**

NOTE 2- The worst emission is detected at 0.15 MHz with emission level of 61.19 dB (μV) and with QP detector (Limit is 65.78 dB (μV)), when the Line of the EUT is connected to AMN.

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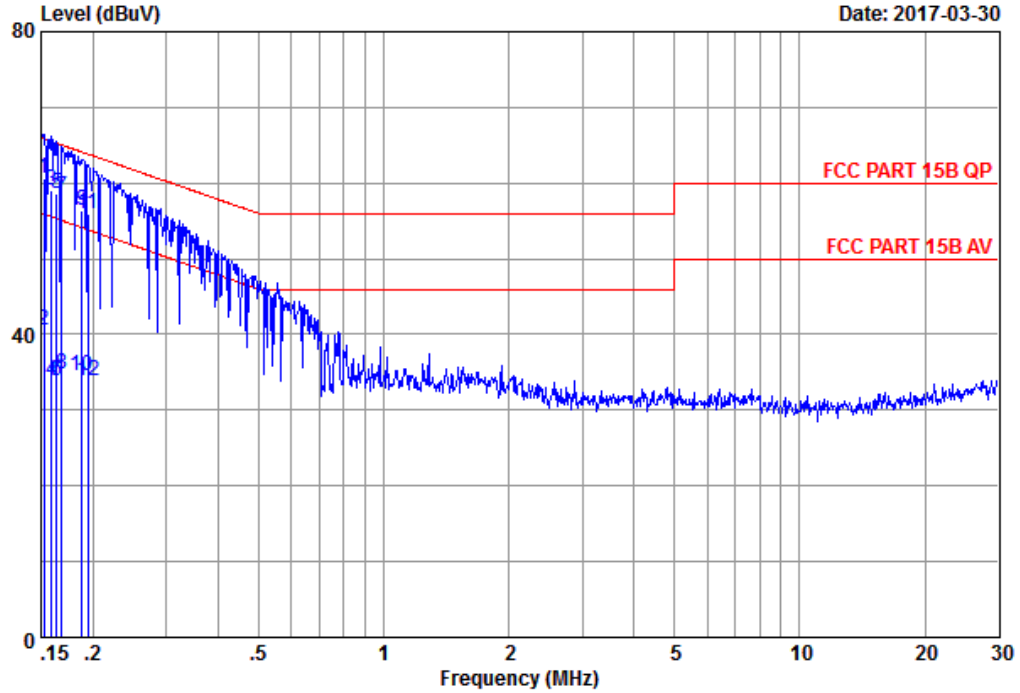
Data: 3 File: F:\2017Test Data\Report\1\C1W1701036.EM6 (8)



Site no.	: No.1 Conducted shielding Enclosure	Data no.	: 3
AMN/LISN .	: ESH2-Z5-1605	Phase	: NEUTRAL
Limit	: FCC PART 15B QP		
Env. / Ins.	: 23.3C&58%/ESCI	Engineer	: KM.Tong
EUT	: LED Lamp		
M/N	: 92900012575A		
Power Rating	: 120Vac/60Hz		
Test mode	: TX CH11 2405MHZ		
Test Port	: LED board for APT		
memo	:		

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Aux (dB)	Emission Reading (dBuV)	Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15	0.15	0.02	9.91	50.50	60.58	65.87	5.29	QP
2	0.15	0.15	0.02	9.91	30.50	40.58	55.87	15.29	Average
3	0.16	0.15	0.02	9.91	49.00	59.08	65.52	6.44	QP
4	0.16	0.15	0.02	9.91	23.70	33.78	55.52	21.74	Average
5	0.16	0.15	0.02	9.91	48.50	58.58	65.30	6.72	QP
6	0.16	0.15	0.02	9.91	23.80	33.88	55.30	21.42	Average
7	0.17	0.15	0.02	9.91	48.00	58.08	65.03	6.95	QP
8	0.17	0.15	0.02	9.91	24.60	34.68	55.03	20.35	Average
9	0.19	0.15	0.02	9.91	46.30	56.38	64.11	7.73	QP
10	0.19	0.15	0.02	9.91	24.50	34.58	54.11	19.53	Average
11	0.19	0.15	0.02	9.91	45.80	55.88	63.84	7.96	QP
12	0.19	0.15	0.02	9.91	23.70	33.78	53.84	20.06	Average

Remarks:
1.Emission Level= AMN factor + Cable loss+ Pulse Att+ Reading .

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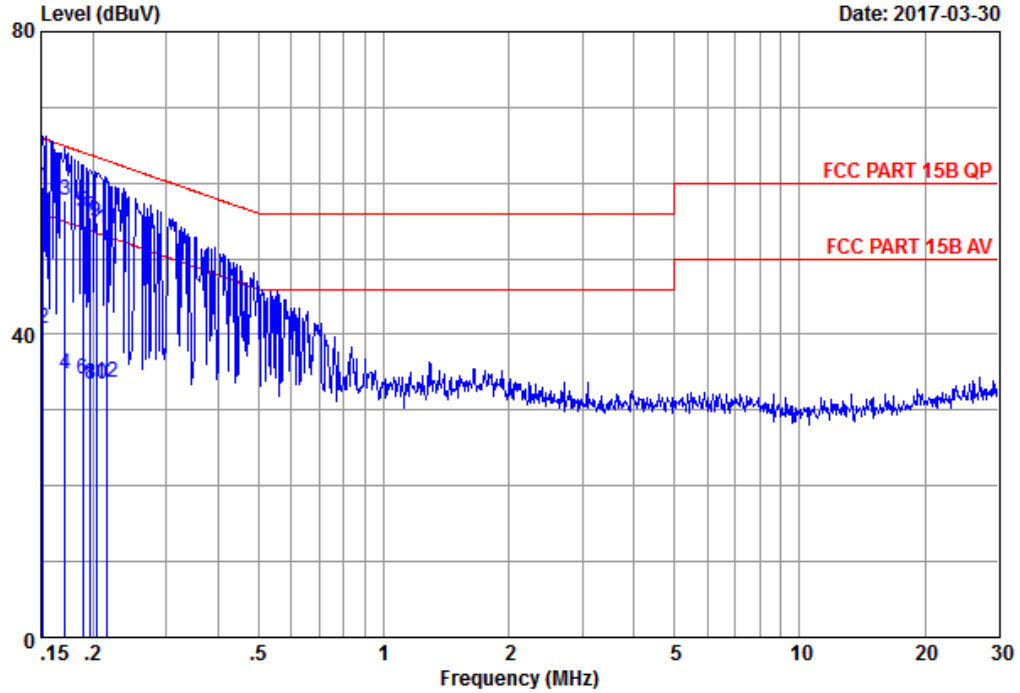

Site no.	: No.1 Conducted shielding Enclosure	Data no.	: 4
AMN/LISN .	: ESH2-Z5-1605	Phase	: LINE
Limit	: FCC PART 15B QP		
Env. / Ins.	: 23.3C&58%/ESCI	Engineer	: KM.Tong
EUT	: LED Lamp		
M/N	: 9290012575A		
Power Rating	: 120Vac/60Hz		
Test mode	: TX CH11 2405MHZ		
Test Port	: LED board for APT		
memo	:		

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Aux (dB)	Emission Reading (dBuV)	Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15	0.16	0.02	9.91	49.51	59.60	65.91	6.31	QP
2	0.15	0.16	0.02	9.91	30.70	40.79	55.91	15.12	Average
3	0.17	0.16	0.02	9.91	47.60	57.69	64.90	7.21	QP
4	0.17	0.16	0.02	9.91	24.60	34.69	54.90	20.21	Average
5	0.19	0.16	0.02	9.91	46.00	56.09	64.06	7.97	QP
6	0.19	0.16	0.02	9.91	24.00	34.09	54.06	19.97	Average
7	0.20	0.16	0.02	9.91	45.30	55.39	63.71	8.32	QP
8	0.20	0.16	0.02	9.91	23.30	33.39	53.71	20.32	Average
9	0.20	0.16	0.02	9.91	44.81	54.90	63.45	8.55	QP
10	0.20	0.16	0.02	9.91	23.31	33.40	53.45	20.05	Average
11	0.22	0.16	0.02	9.91	43.81	53.90	62.96	9.06	QP
12	0.22	0.16	0.02	9.91	23.51	33.60	52.96	19.36	Average

Remarks:
1.Emission Level= AMN factor + Cable loss+ Pulse Att+ Reading .

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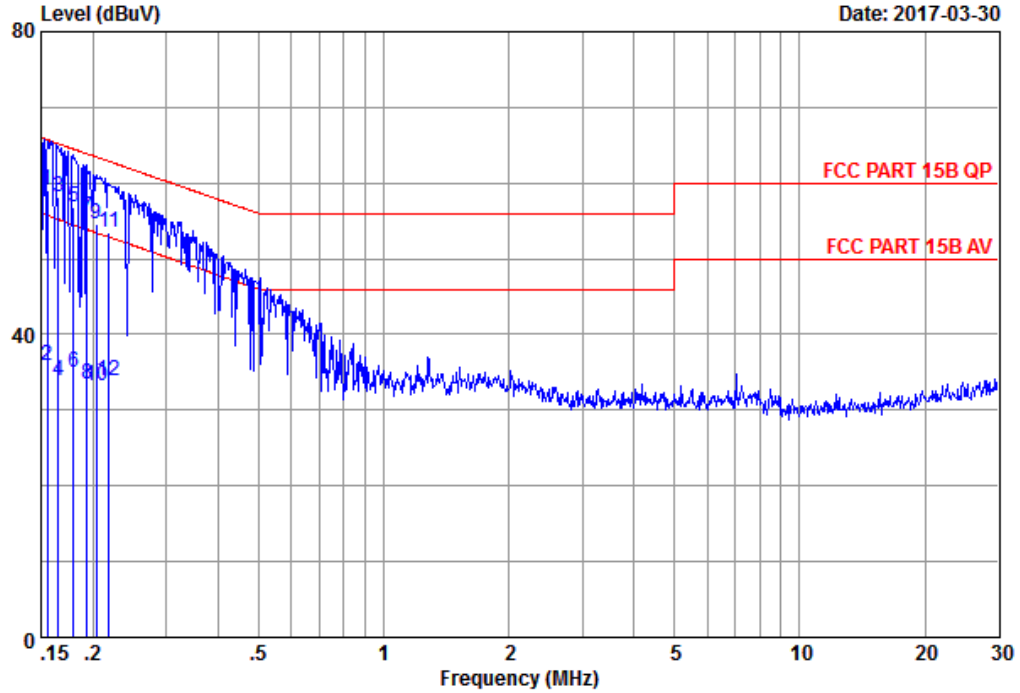

Site no.	: No.1 Conducted shielding Enclosure	Data no.	: 6
AMN/LISN .	: ESH2-Z5-1605	Phase	: NEUTRAL
Limit	: FCC PART 15B QP		
Env. / Ins.	: 23.3C&58%/ESCI	Engineer	: KM.Tong
EUT	: LED Lamp		
M/N	: 9290012575A		
Power Rating	: 120Vac/60Hz		
Test mode	: TX CH20 2450MHZ		
Test Port	: LED board for APT		
memo	:		

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Aux (dB)	Emission Reading (dBuV)	Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.16	0.15	0.02	9.91	48.90	58.98	65.69	6.71	QP
2	0.16	0.15	0.02	9.91	25.70	35.78	55.69	19.91	Average
3	0.17	0.15	0.02	9.91	48.10	58.18	65.21	7.03	QP
4	0.17	0.15	0.02	9.91	23.70	33.78	55.21	21.43	Average
5	0.18	0.15	0.02	9.91	46.80	56.88	64.50	7.62	QP
6	0.18	0.15	0.02	9.91	25.00	35.08	54.50	19.42	Average
7	0.19	0.15	0.02	9.91	45.50	55.58	63.89	8.31	QP
8	0.19	0.15	0.02	9.91	23.40	33.48	53.89	20.41	Average
9	0.20	0.15	0.02	9.91	44.61	54.69	63.45	8.76	QP
10	0.20	0.15	0.02	9.91	23.11	33.19	53.45	20.26	Average
11	0.22	0.15	0.02	9.91	43.50	53.58	62.88	9.30	QP
12	0.22	0.15	0.02	9.91	23.80	33.88	52.88	19.00	Average

Remarks:
1.Emission Level= AMN factor + Cable loss+ Pulse Att+ Reading .

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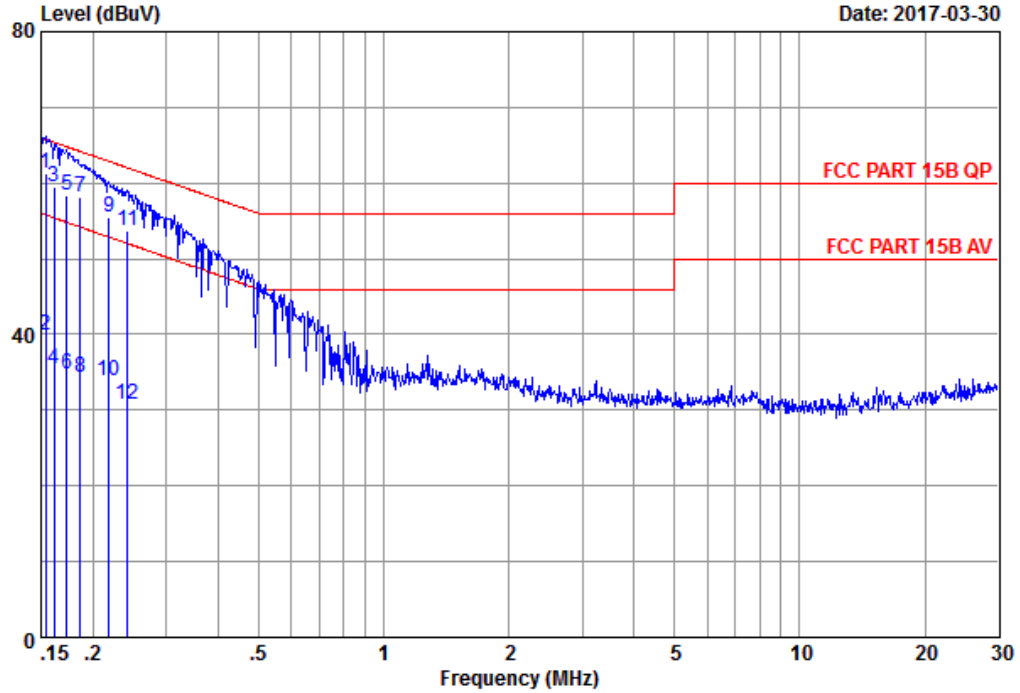

Site no.	: No.1 Conducted shielding Enclosure	Data no.	: 5
AMN/LISN .	: ESH2-Z5-1605	Phase	: LINE
Limit	: FCC PART 15B QP		
Env. / Ins.	: 23.3C&58%/ESCI	Engineer	: KM.Tong
EUT	: LED Lamp		
M/N	: 9290012575A		
Power Rating	: 120Vac/60Hz		
Test mode	: TX CH20 2450MHZ		
Test Port	: LED board for APT		
memo	:		

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Aux (dB)	Emission Reading (dBuV)	Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15	0.16	0.02	9.91	51.10	61.19	65.78	4.59	QP
2	0.15	0.16	0.02	9.91	29.70	39.79	55.78	15.99	Average
3	0.16	0.16	0.02	9.91	49.40	59.49	65.38	5.89	QP
4	0.16	0.16	0.02	9.91	25.40	35.49	55.38	19.89	Average
5	0.17	0.16	0.02	9.91	48.40	58.49	64.81	6.32	QP
6	0.17	0.16	0.02	9.91	24.70	34.79	54.81	20.02	Average
7	0.19	0.16	0.02	9.91	48.10	58.19	64.20	6.01	QP
8	0.19	0.16	0.02	9.91	24.20	34.29	54.20	19.91	Average
9	0.22	0.16	0.02	9.91	45.51	55.60	62.88	7.28	QP
10	0.22	0.16	0.02	9.91	23.81	33.90	52.88	18.98	Average
11	0.24	0.16	0.03	9.91	43.60	53.70	62.04	8.34	QP
12	0.24	0.16	0.03	9.91	20.70	30.80	52.04	21.24	Average

Remarks:
1.Emission Level= AMN factor + Cable loss+ Pulse Att+ Reading .

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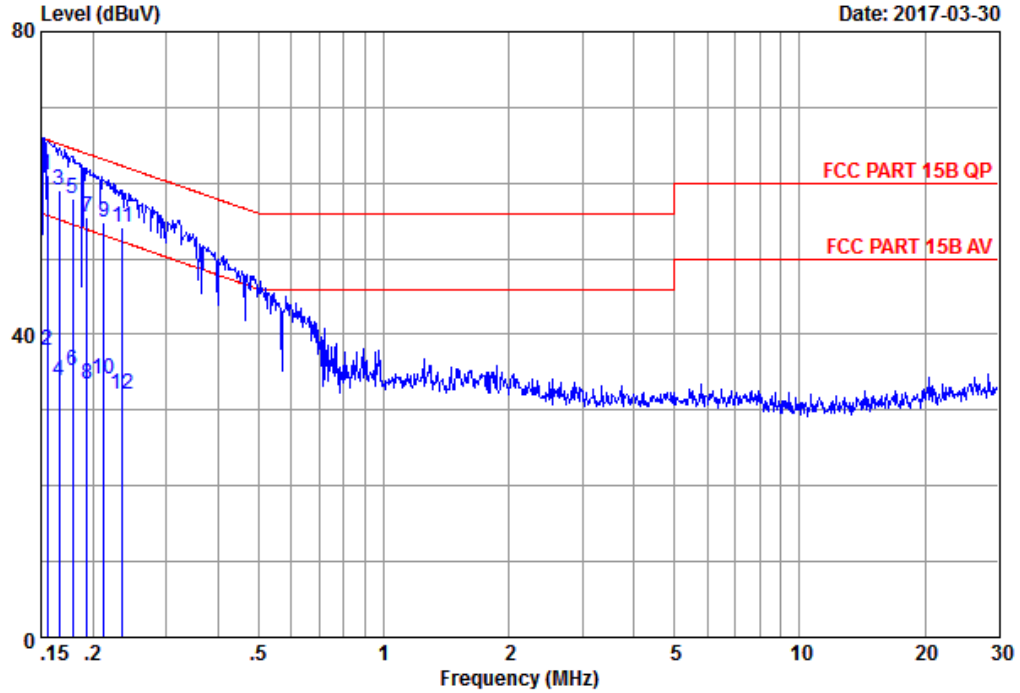

Site no.	: No.1 Conducted shielding Enclosure	Data no.	: 7
AMN/LISN	: ESH2-Z5-1605	Phase	: NEUTRAL
Limit	: FCC PART 15B QP		
Env. / Ins.	: 23.3C&58%/ESCI	Engineer	: KM.Tong
EUT	: LED Lamp		
M/N	: 9290012575A		
Power Rating	: 120Vac/60Hz		
Test mode	: TX CH25 2475MHZ		
Test Port	: LED board for APT		
memo	:		

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Aux (dB)	Emission Reading (dBuV)	Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.16	0.15	0.02	9.91	50.90	60.98	65.69	4.71	QP
2	0.16	0.15	0.02	9.91	27.70	37.78	55.69	17.91	Average
3	0.17	0.15	0.02	9.91	48.90	58.98	65.16	6.18	QP
4	0.17	0.15	0.02	9.91	23.80	33.88	55.16	21.28	Average
5	0.18	0.15	0.02	9.91	47.80	57.88	64.55	6.67	QP
6	0.18	0.15	0.02	9.91	25.10	35.18	54.55	19.37	Average
7	0.19	0.15	0.02	9.91	45.40	55.48	63.89	8.41	QP
8	0.19	0.15	0.02	9.91	23.40	33.48	53.89	20.41	Average
9	0.21	0.15	0.02	9.91	44.80	54.88	63.10	8.22	QP
10	0.21	0.15	0.02	9.91	23.91	33.99	53.10	19.11	Average
11	0.24	0.15	0.03	9.91	44.10	54.19	62.26	8.07	QP
12	0.24	0.15	0.03	9.91	22.10	32.19	52.26	20.07	Average

Remarks:
1.Emission Level= AMN factor + Cable loss+ Pulse Att+ Reading .

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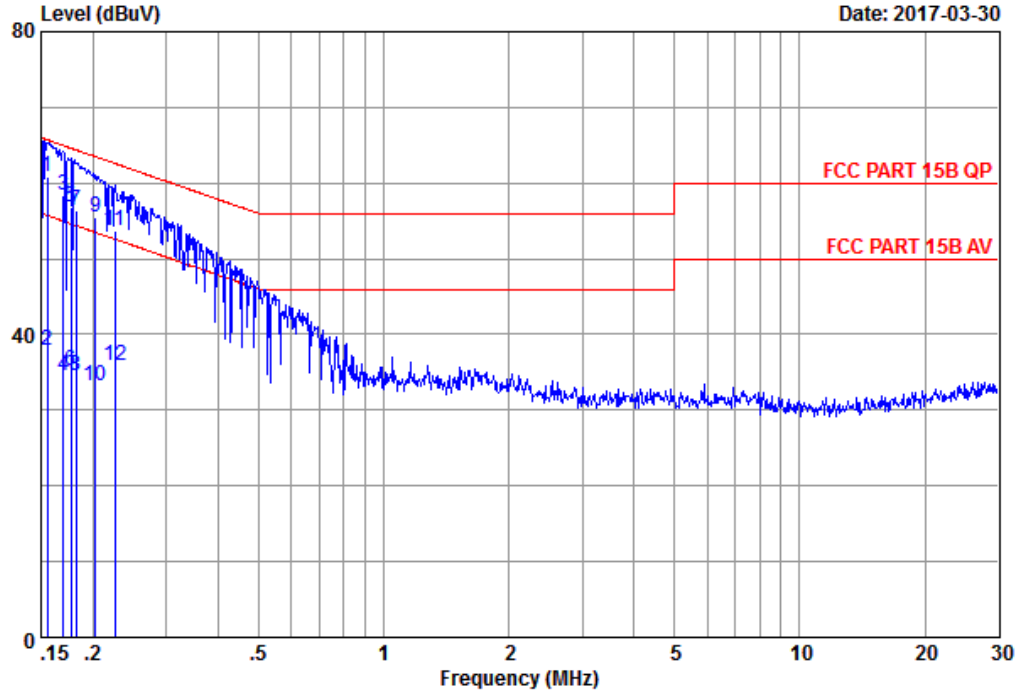


Site no.	: No.1 Conducted shielding Enclosure	Data no.	: 8
AMN/LISN	: ESH2-Z5-1605	Phase	: LINE
Limit	: FCC PART 15B QP		
Env. / Ins.	: 23.3C&58%/ESCI	Engineer	: KM.Tong
EUT	: LED Lamp		
M/N	: 92900012575A		
Power Rating	: 120Vac/60Hz		
Test mode	: TX CH25 2475MHZ		
Test Port	: LED board for APT		
memo	:		

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Aux (dB)	Emission Reading (dBuV)	Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.16	0.16	0.02	9.91	50.70	60.79	65.69	4.90	QP
2	0.16	0.16	0.02	9.91	27.70	37.79	55.69	17.90	Average
3	0.17	0.16	0.02	9.91	48.40	58.49	64.99	6.50	QP
4	0.17	0.16	0.02	9.91	24.51	34.60	54.99	20.39	Average
5	0.18	0.16	0.02	9.91	46.80	56.89	64.64	7.75	QP
6	0.18	0.16	0.02	9.91	25.20	35.29	54.64	19.35	Average
7	0.18	0.16	0.02	9.91	46.30	56.39	64.37	7.98	QP
8	0.18	0.16	0.02	9.91	24.50	34.59	54.37	19.78	Average
9	0.20	0.16	0.02	9.91	45.50	55.59	63.49	7.90	QP
10	0.20	0.16	0.02	9.91	23.00	33.09	53.49	20.40	Average
11	0.23	0.16	0.02	9.91	43.70	53.79	62.61	8.82	QP
12	0.23	0.16	0.02	9.91	25.81	35.90	52.61	16.71	Average

Remarks:
1.Emission Level= AMN factor + Cable loss+ Pulse Att+ Reading .

5. RADIATED EMISSION MEASUREMENT

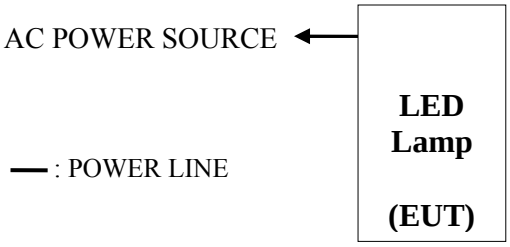
5.1. Test Equipment

The following test equipment was used during the radiated emission measurement:
At 3m Semi-Anechoic Chamber

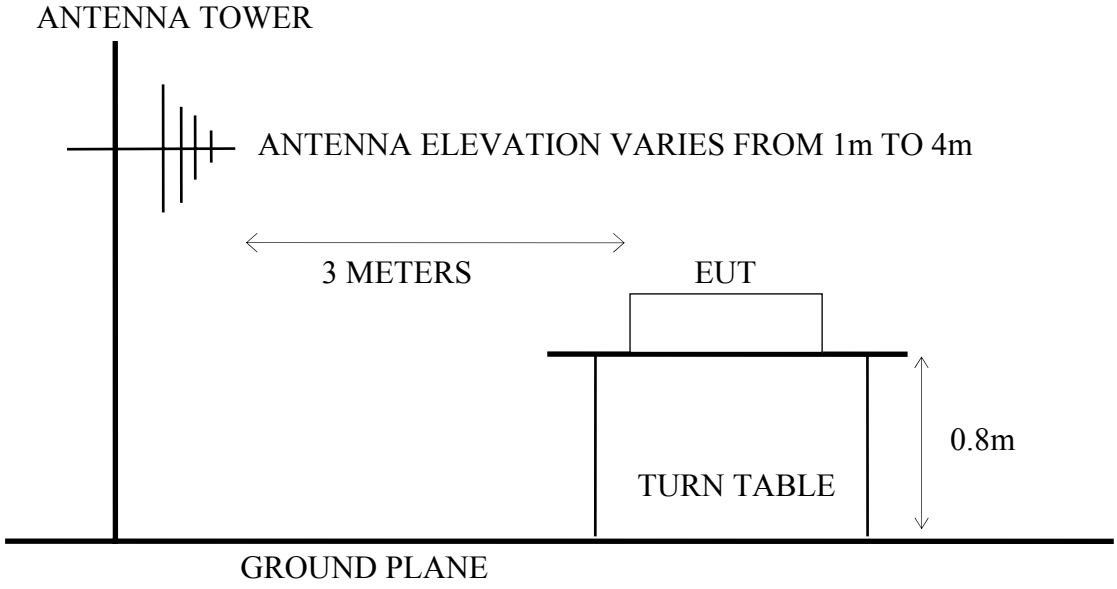
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Preamplifier	Chengyi dianzi	EMC9135	980374	2017-01-04	2018-01-03
2.	Preamplifier	Chengyi dianzi	EMC9135	980373	2017-01-04	2018-01-03
3.	PXA Signal Analyzer	Agilent	N9030A	MY53120367	2016-05-15	2017-05-14
4.	Test Receiver	R&S	ESCI	100361	2017-01-05	2018-01-04
5.	Bi-log Antenna	Seibersdorf	VULB 9168	705	2016-07-20	2017-07-19
6.	Horn Antenna	EMCO	3115	62959	2016-06-20	2017-06-19
7.	Horn Antenna	ETS	3116	62641	2016-09-30	2017-09-29
8.	RF Cable #1	Yuhang CSRH	cable-3m	001(0.5m)	2017-01-05	2018-01-04
9.	RF Cable #2	Yuhang CSRH	cable-3m	002(0.5m)	2017-01-05	2018-01-04
10.	RF Cable #3	Yuhang CSRH	cable-3m	003(3.0m)	2017-01-05	2018-01-04
11.	Software	Audix/e3(6.7.0313)				

5.2. Block Diagram of Test Setup

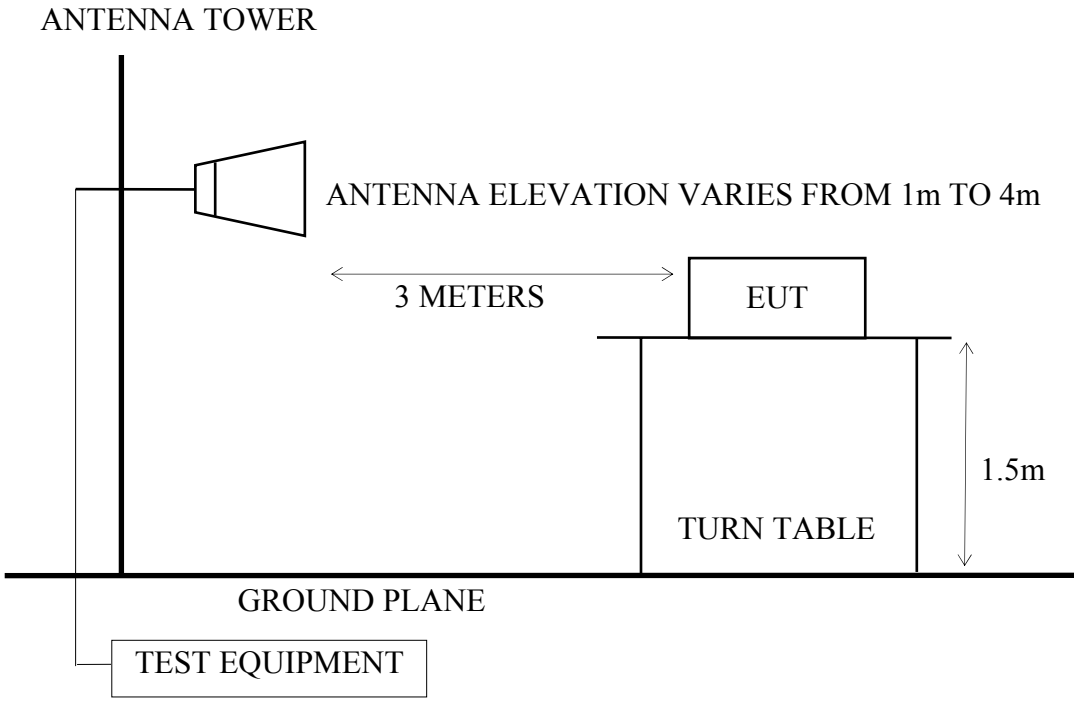
5.2.1. Block Diagram of Test Setup between EUT and simulators



5.2.2. No. 1 3m Semi-Anechoic Chamber Setup Diagram (Test distance:3m) for 30-1000MHz



5.2.3. No. 1 3m Semi-Anechoic Chamber Setup Diagram (Test distance: 3m) for above 1GHz



5.3. Radiated Emission Limits

Radiated Emission Limits (FCC Part15 C, section 15.209, CISPR22)

Frequency MHz	Distance Meters	Field Strengths Limits dBμV/m
30 ~ 88	3	40
88 ~ 216	3	43.5
216 ~ 960	3	46
Above 960	3	54
Above 1000	3	74 (Peak) 54 (Average)

Remark： (1) Emission level (dBμV/m) = 20 log Emission level (μV/m)
(2)The tighter limit applies at the edge between two frequency bands.

5.4. Test Procedure

The measuring process is according to ANSI C63.10-2013 and laboratory internal procedure TKC-301-001. (For FCC Part15 Subpart C)

In the radiated disturbance measurement, the EUT and all simulators were set up on a non-metallic turn table which was 0.8 meter above the ground plane. Measurement distance between EUT and receiving antennas was set at 3 meters at 30MHz~1GHz and 3 meters at 1GHz~6GHz. The measurement distance is the shortest horizontal distance between an imaginary circular periphery which consists of EUT periphery and cables and the reference point of the antenna. During the radiated measurement, the EUT was rotated 360° and receiving antennas were moved from 1 ~ 4 meters for finding maximum emission. Two receiving antennas were used for both horizontal and vertical polarization detection for 30MHz~1GHz, One receiving antennas was used for both horizontal and vertical polarization detection for 1GHz~6GHz (the absorbing material was added when testing of 1GHz~6GHz was done). All cables or wires placement were verified to find out the maximum emission.

The bandwidth of measuring receiver (or spectrum analyzer) was set to:

RBW (120 kHz), VBW (300 kHz) for QP detector below 1GHz
RBW (1 MHz), VBW (1MHz) for Peak detector above 1GHz
RBW (1 MHz), VBW (10Hz) for AV detector above 1GHz

The frequency range from 30MHz to 10^{th} harmonic(25GHz) are checked, and no any emissions were found from 18GHz to 25GHz.

The emission level is calculated automatically by the test system which uses the following equation：

1. For 30MHz-1GHz measurement:
   Emission Level (dBμV/m) = Reading (dBμV)+Antenna Factor (dB/m)+Cable Loss (dB)
2. For Above 1GHz measurement:
   Emission Level (dBμV/m) = Reading (dBμV)+Antenna Factor (dB/m)+Cable Loss(dB)
   -Pre-amplifier factor (dB)

The three orthogonal planes have been all tested, and the data of the worst mode XZ plan(in Horizontal) & XY plan(in Vertical) is shown in the report.

5.5. Measurement Results

PASSED

5.5.1. For Restricted Bands:

The EUT was tested in restricted bands and all the test results are listed in section 5.7 & 5.8. (The restricted bands defined in part 15.205(a))

For Frequency range：below 1GHz

No.	Test Mode and Frequency		Reference Test Data No.	
			Horizontal	Vertical
1.	Transmitting	2405MHz (Channel 11)	# 5	# 6
2.		2450MHz (Channel 20)	# 7	# 8
3.		2475MHz (Channel 25)	# 9	# 10

For Frequency range：above 1GHz

No.	Test Mode and Frequency		Reference Test Data No.	
			Horizontal	Vertical
1.	Transmitting	2405MHz (Channel 11)	# 11	# 12
2.		2450MHz (Channel 20)	# 13	# 14
3.		2475MHz (Channel 25)	# 15	# 16

5.5.2. For Band Edge Emission

The EUT was tested in restricted bands and all the test results are listed in section 5.9. The restricted bands defined in part 15.205(a)

No.	Test Mode and Frequency		Reference Test Data No.	
			Horizontal	Vertical
1.	Transmitting	2405MHz (Channel 11)	# 17, # 19	# 18, # 20
2.		2475MHz (Channel 25)	# 21, # 23	# 22, # 24
3.		2480MHz (Channel 26)	# 25, # 27	# 26, # 28

5.6. Restricted Bands Measurement Results (For Below 1GHz)

Audix Technology(Wujiang)Co.,Ltd.
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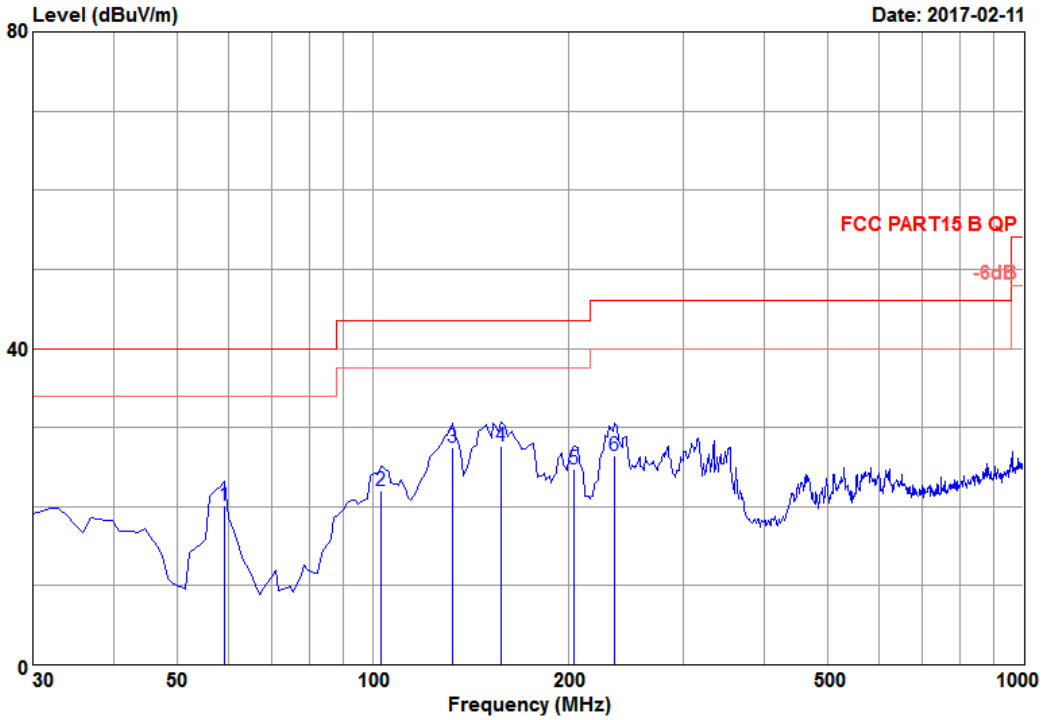
Economic Development Zone,JiangSu,China
Tel:(0512)63403993 Fax:(0512)63403993

Data: 5 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 6198(705)-160720
Limit : FCC PART15 B QP
Env. / Ins. : 16.5*C&40%/ESCI
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH11 2405MHz
Memo : LED Board for APT

Data NO. : 5
Ant. pol. : HORIZONTAL

Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m	Limits (dBuV/m)	Margin (dB)	Remark
1	59.10	6.20	0.88	40.36	27.28	20.16	40.00	19.84	QP
2	102.75	11.57	1.19	36.47	27.19	22.04	43.50	21.46	QP
3	132.82	12.38	1.34	40.81	27.07	27.46	43.50	16.04	QP
4	157.07	10.91	1.47	42.31	26.97	27.72	43.50	15.78	QP
5	203.63	10.36	1.72	39.37	26.79	24.66	43.50	18.84	QP
6	234.67	11.76	1.84	39.65	26.73	26.52	46.00	19.48	QP

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

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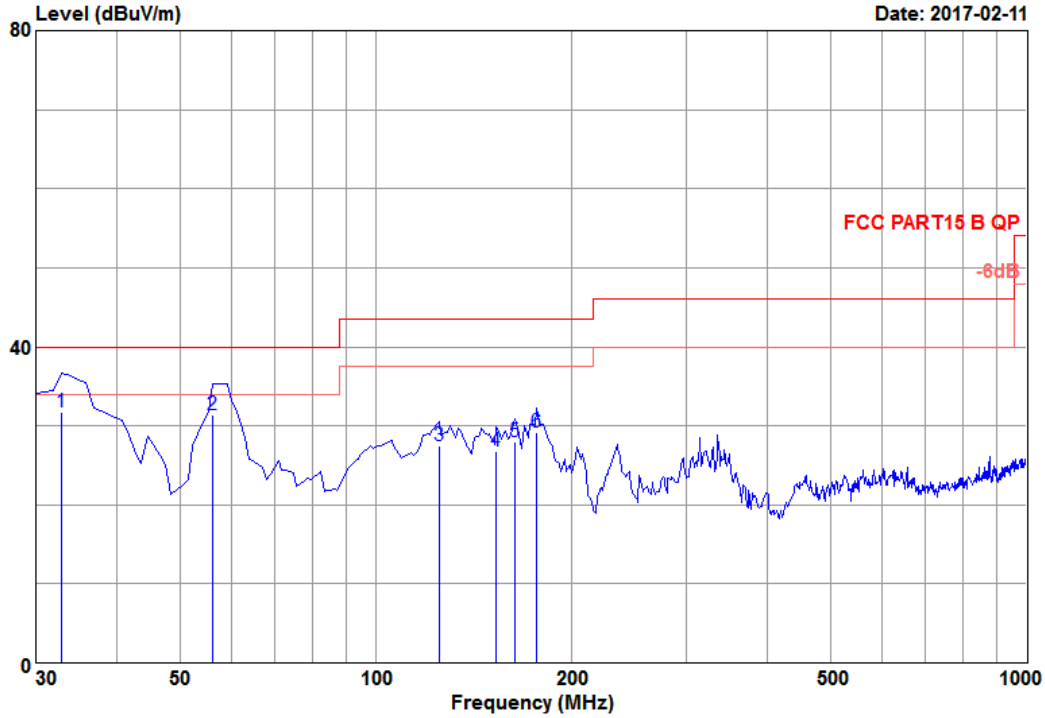
Data: 6 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 6198(705)-160720
Limit : FCC PART15 B QP
Env. / Ins. : 16.5*C&40%/ESCI
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH11 2405MHz
Memo : LED Board for APT

Data NO. : 6
Ant. pol. : VERTICAL

Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	32.91	18.83	0.66	39.54	27.34	31.69	40.00	8.31	QP
2	56.19	7.32	0.86	50.47	27.29	31.36	40.00	8.64	QP
3	125.06	12.86	1.30	40.49	27.10	27.55	43.50	15.95	QP
4	153.19	11.13	1.45	41.19	26.99	26.78	43.50	16.72	QP
5	163.86	10.62	1.51	42.72	26.95	27.90	43.50	15.60	QP
6	176.47	10.08	1.57	44.45	26.89	29.21	43.50	14.29	QP

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

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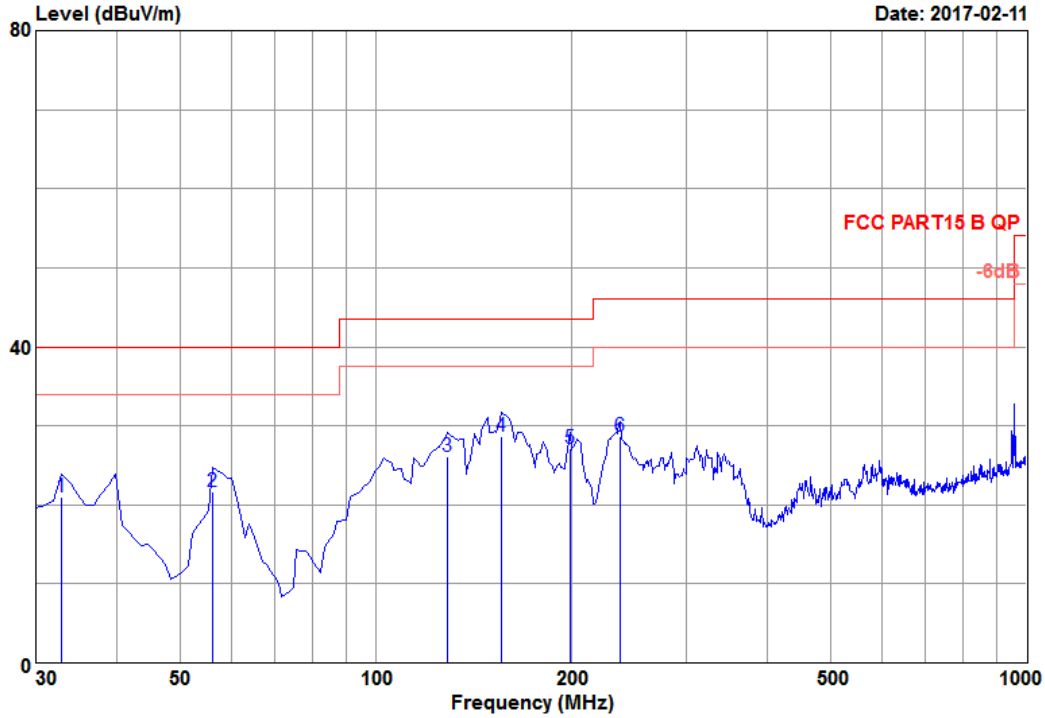
Data: 7 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 6198(705)-160720
Limit : FCC PART15 B QP
Env. / Ins. : 16.5*C&40%/ESCI
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH20 2450MHz
Memo : LED Board for APT

Data NO. : 7
Ant. pol. : HORIZONTAL

Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	32.91	18.83	0.66	28.81	27.34	20.96	40.00	19.04	QP
2	56.19	7.32	0.86	40.82	27.29	21.71	40.00	18.29	QP
3	128.94	12.62	1.32	39.26	27.09	26.11	43.50	17.39	QP
4	156.10	11.02	1.47	43.22	26.98	28.73	43.50	14.77	QP
5	198.78	10.30	1.69	41.98	26.81	27.16	43.50	16.34	QP
6	237.58	11.91	1.85	41.54	26.72	28.58	46.00	17.42	QP

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

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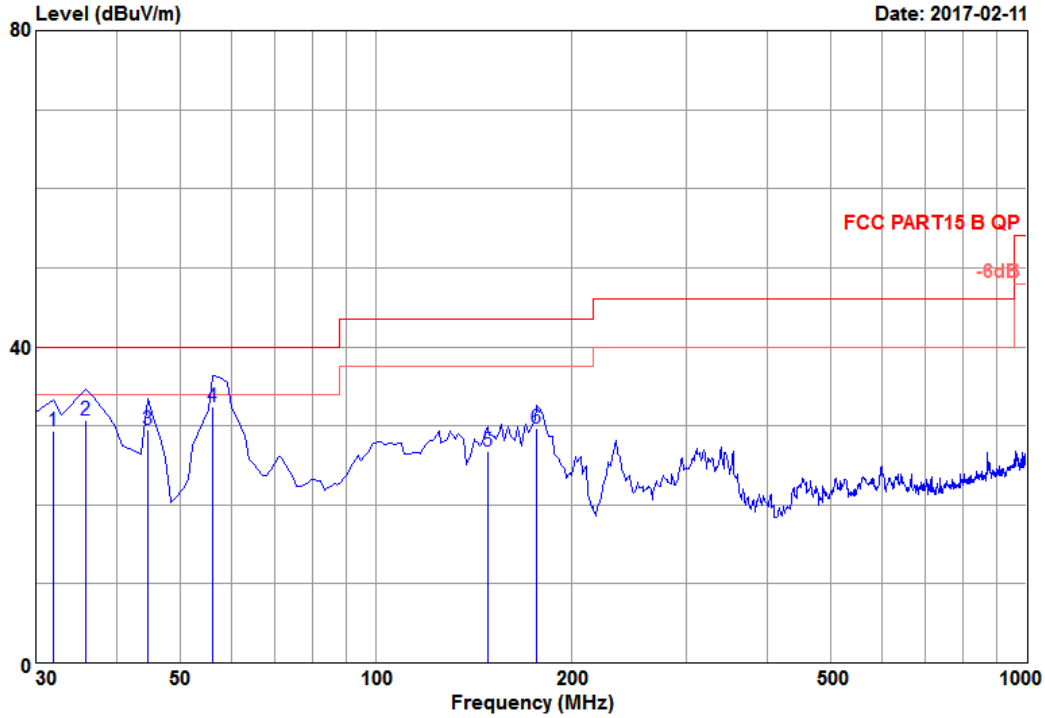

Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 6198(705)-160720
Limit : FCC PART15 B QP
Env. / Ins. : 16.5*C&40%/ESCI
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH20 2450MHz
Memo : LED Board for APT

Data NO. : 8
Ant. pol. : VERTICAL
Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	31.94	18.83	0.65	37.20	27.35	29.33	40.00	10.67	QP
2	35.82	17.10	0.68	40.20	27.34	30.64	40.00	9.36	QP
3	44.55	12.47	0.76	43.59	27.31	29.51	40.00	10.49	QP
4	56.19	7.32	0.86	51.52	27.29	32.41	40.00	7.59	QP
5	148.34	11.46	1.42	41.00	27.01	26.87	43.50	16.63	QP
6	176.47	10.08	1.57	44.90	26.89	29.66	43.50	13.84	QP

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

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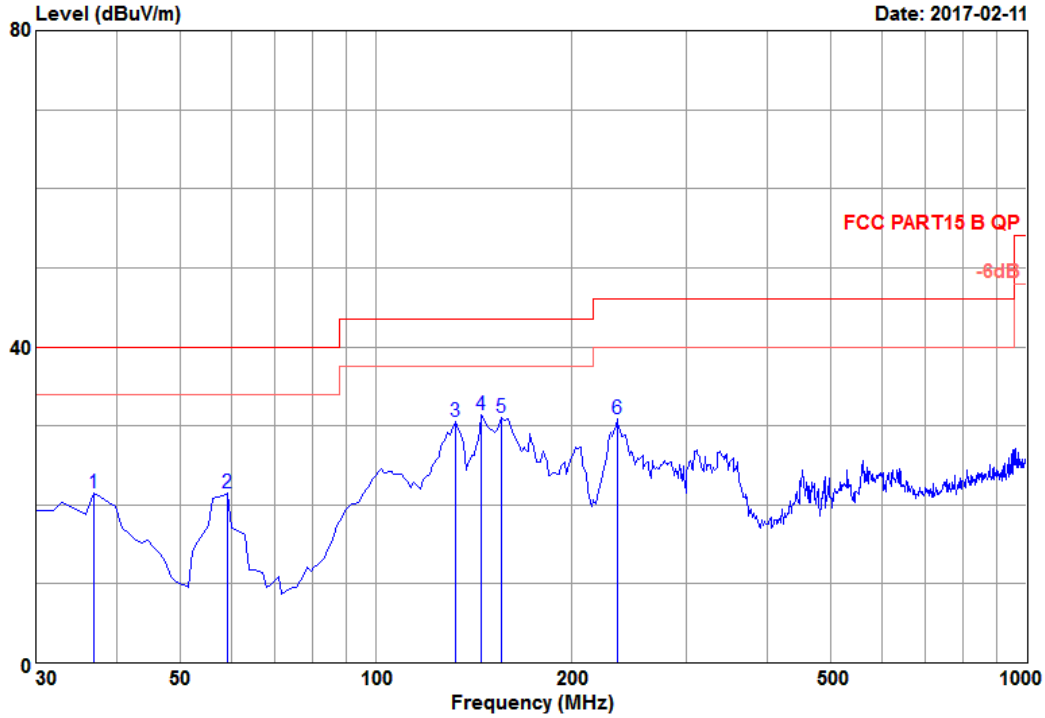
Data: 9 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 6198(705)-160720
Limit : FCC PART15 B QP
Env. / Ins. : 16.5*C&40%/ESCI
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH25 2475MHz
Memo : LED Board for APT

Data NO. : 9
Ant. pol. : HORIZONTAL

Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	36.79	17.10	0.69	31.12	27.33	21.58	40.00	18.42	QP
2	59.10	6.20	0.88	41.63	27.28	21.43	40.00	18.57	QP
3	132.82	12.38	1.34	43.95	27.07	30.60	43.50	12.90	QP
4	145.43	11.57	1.41	45.45	27.02	31.41	43.50	12.09	QP
5	156.10	11.02	1.47	45.56	26.98	31.07	43.50	12.43	QP
6	234.67	11.76	1.84	44.01	26.73	30.88	46.00	15.12	QP

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

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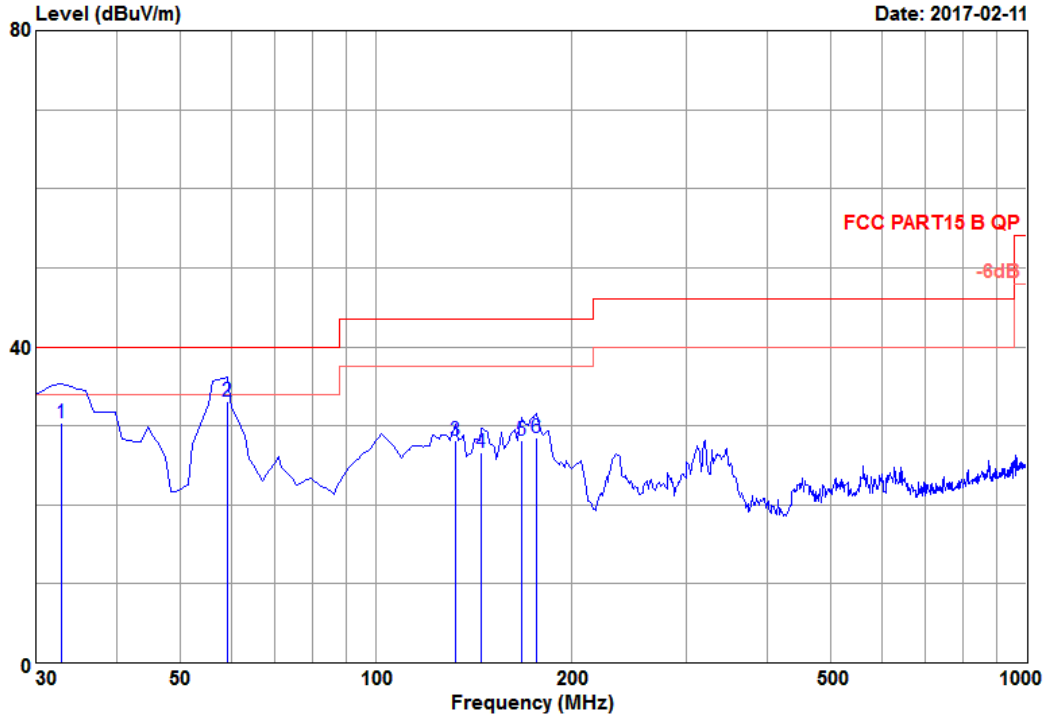
Data: 10 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 6198(705)-160720
Limit : FCC PART15 B QP
Env. / Ins. : 16.5*C&40%/ESCI
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH25 2475MHz
Memo : LED Board for APT

Data NO. : 10
Ant. pol. : VERTICAL

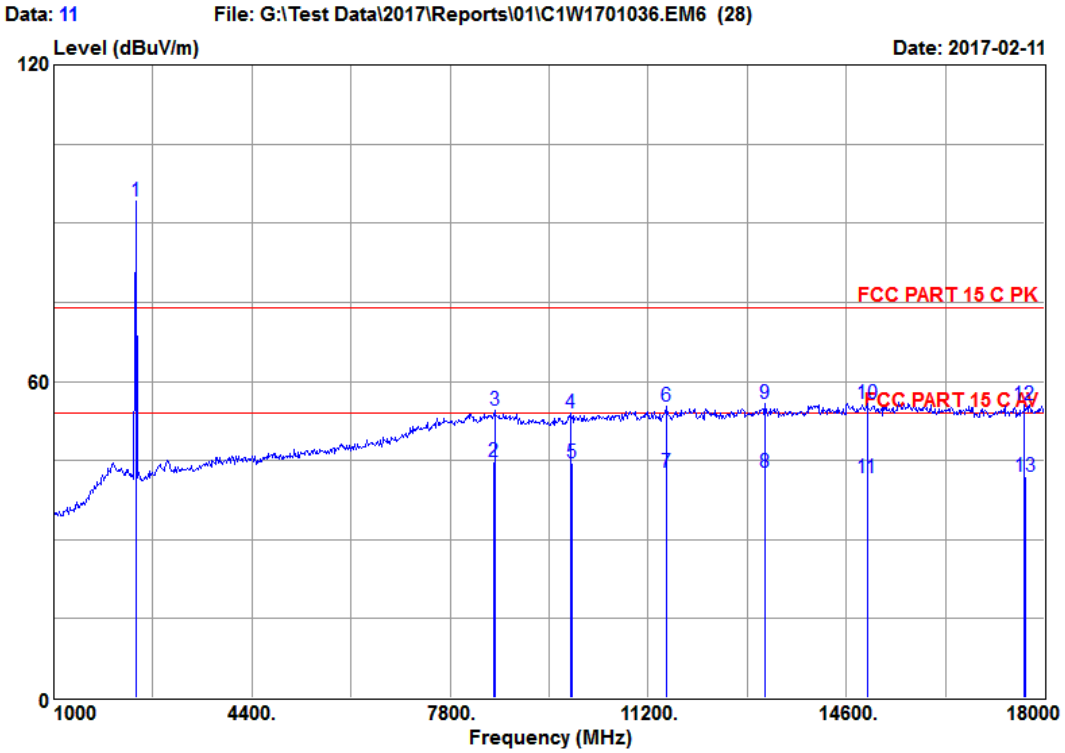
Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	32.91	18.83	0.66	38.16	27.34	30.31	40.00	9.69	QP
2	59.10	6.20	0.88	53.36	27.28	33.16	40.00	6.84	QP
3	132.82	12.38	1.34	41.48	27.07	28.13	43.50	15.37	QP
4	145.43	11.57	1.41	40.72	27.02	26.68	43.50	16.82	QP
5	167.74	10.44	1.53	43.08	26.93	28.12	43.50	15.38	QP
6	176.47	10.08	1.57	43.78	26.89	28.54	43.50	14.96	QP

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

5.7. Restricted Bands Measurement Results (For Above 1GHz)

Audix Technology(Wujiang)Co.,Ltd.
No.1289,Jiang Xing East Road,The Eastern Part of Wu Jiang
Economic Development Zone,JiangSu,China
Tel:(0512)63403993 Fax:(0512)63403993



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62959-160620
Limit : FCC PART 15 C PK
Env. / Ins. : 16.5*C&40%/E4407B
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH11 2405MHz
Memo : LED Board for APT

Data NO. : 11
Ant. pol. : HORIZONTAL

Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m	Limits (dBuV/m)	Margin (dB)	Remark
1	2411.00	29.05	5.09	94.65	34.50	94.29	74.00	-20.29	Peak
2	8556.64	39.21	9.81	30.01	34.28	44.75	54.00	9.25	Average
3	8565.00	39.21	9.82	39.72	34.28	54.47	74.00	19.53	Peak
4	9874.00	38.18	10.74	39.52	34.46	53.98	74.00	20.02	Peak
5	9883.32	38.18	10.74	30.18	34.46	44.64	54.00	9.36	Average
6	11506.00	40.70	11.43	36.77	33.73	55.17	74.00	18.83	Peak
7	11508.92	40.70	11.43	24.29	33.73	42.69	54.00	11.31	Average
8	13202.60	40.63	12.42	21.89	32.28	42.66	54.00	11.34	Average
9	13206.00	40.63	12.42	34.93	32.28	55.70	74.00	18.30	Peak
10	14957.00	41.34	13.15	34.19	32.93	55.75	74.00	18.25	Peak
11	14960.25	41.34	13.15	20.19	32.93	41.75	54.00	12.25	Average
12	17660.00	44.95	13.83	29.72	32.88	55.62	74.00	18.38	Peak
13	17664.25	44.95	13.83	16.18	32.89	42.07	54.00	11.93	Average

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

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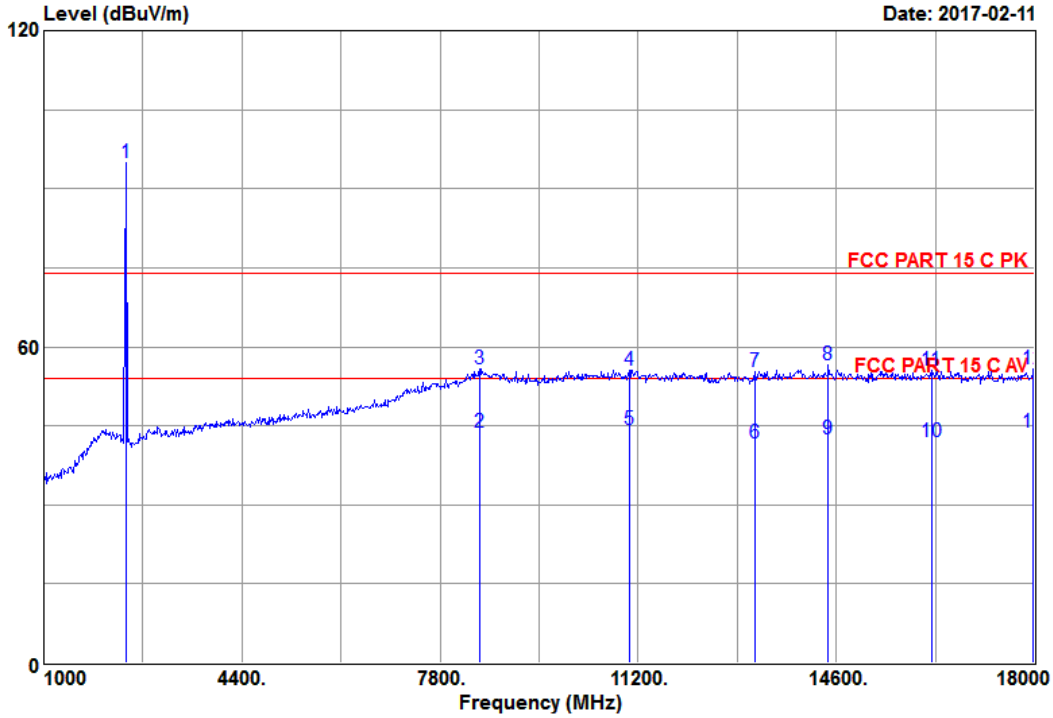
Data: 12 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62959-160620
Limit : FCC PART 15 C PK
Env. / Ins. : 16.5*C&40%/E4407B
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH11 2405MHz
Memo : LED Board for APT

Data NO. : 12
Ant. pol. : VERTICAL
Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2411.00	29.05	5.09	95.30	34.50	94.94	74.00	-20.94	Peak
2	8474.74	39.23	9.77	29.03	34.25	43.78	54.00	10.22	Average
3	8480.00	39.23	9.77	40.98	34.25	55.73	74.00	18.27	Peak
4	11047.00	38.81	11.35	39.14	33.65	55.65	74.00	18.35	Peak
5	11053.46	38.81	11.35	27.84	33.65	44.35	54.00	9.65	Average
6	13204.76	40.63	12.42	20.82	32.28	41.59	54.00	12.41	Average
7	13206.00	40.63	12.42	34.41	32.28	55.18	74.00	18.82	Peak
8	14464.00	43.43	13.00	32.40	32.24	56.59	74.00	17.41	Peak
9	14465.28	43.43	13.00	18.19	32.24	42.38	54.00	11.62	Average
10	16231.45	39.56	14.34	21.85	33.71	42.04	54.00	11.96	Average
11	16232.00	39.56	14.34	35.38	33.71	55.57	74.00	18.43	Peak
12	17983.00	46.33	13.78	28.52	32.92	55.71	74.00	18.29	Peak
13	17985.63	46.33	13.78	16.49	32.92	43.68	54.00	10.32	Average

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

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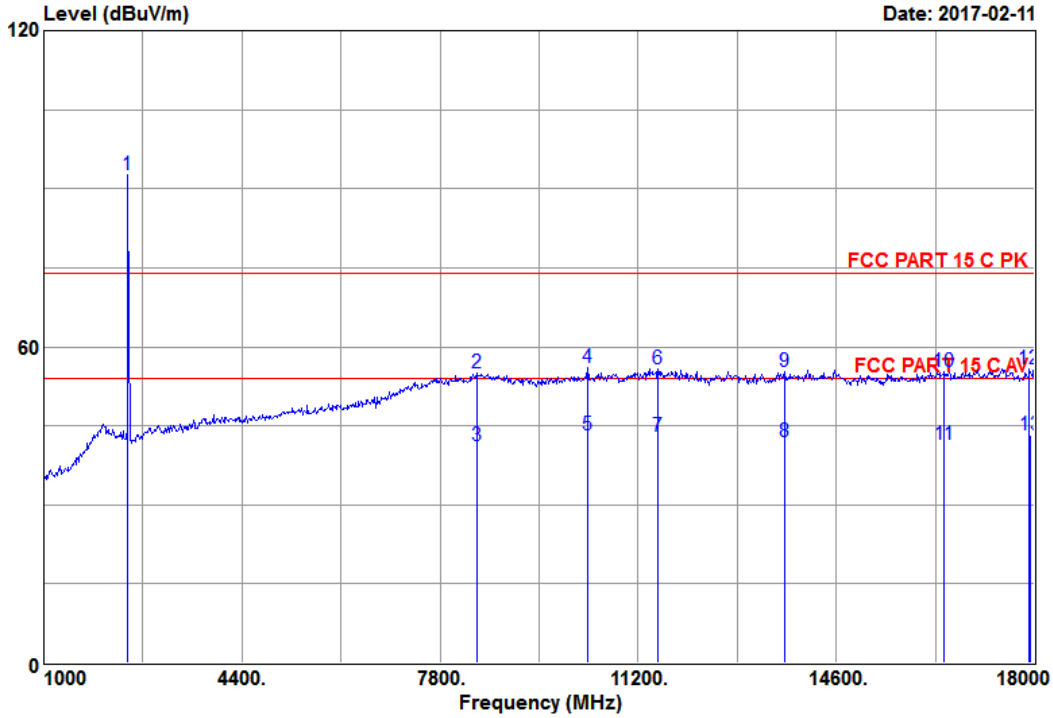
Data: 13 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62959-160620
Limit : FCC PART 15 C PK
Env. / Ins. : 16.5*C&40%/E4407B
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH20 2450MHz
Memo : LED Board for APT

Data NO. : 13
Ant. pol. : HORIZONTAL

Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2445.00	28.83	5.15	93.20	34.50	92.68	74.00	-18.68	Peak
2	8429.00	39.02	9.75	40.55	34.24	55.08	74.00	18.92	Peak
3	8430.67	39.02	9.75	26.68	34.24	41.21	54.00	12.79	Average
4	10333.00	38.20	11.01	40.97	34.19	55.99	74.00	18.01	Peak
5	10335.85	38.20	11.01	28.15	34.19	43.17	54.00	10.83	Average
6	11540.00	40.78	11.43	37.24	33.73	55.72	74.00	18.28	Peak
7	11545.87	40.78	11.44	24.48	33.74	42.96	54.00	11.04	Average
8	13714.65	41.71	12.70	19.47	31.84	42.04	54.00	11.96	Average
9	13716.00	41.71	12.70	32.76	31.84	55.33	74.00	18.67	Peak
10	16453.00	40.08	14.22	34.38	33.44	55.24	74.00	18.76	Peak
11	16455.21	40.08	14.22	20.58	33.44	41.44	54.00	12.56	Average
12	17915.00	46.04	13.79	28.99	32.91	55.91	74.00	18.09	Peak
13	17918.64	46.04	13.79	16.27	32.91	43.19	54.00	10.81	Average

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

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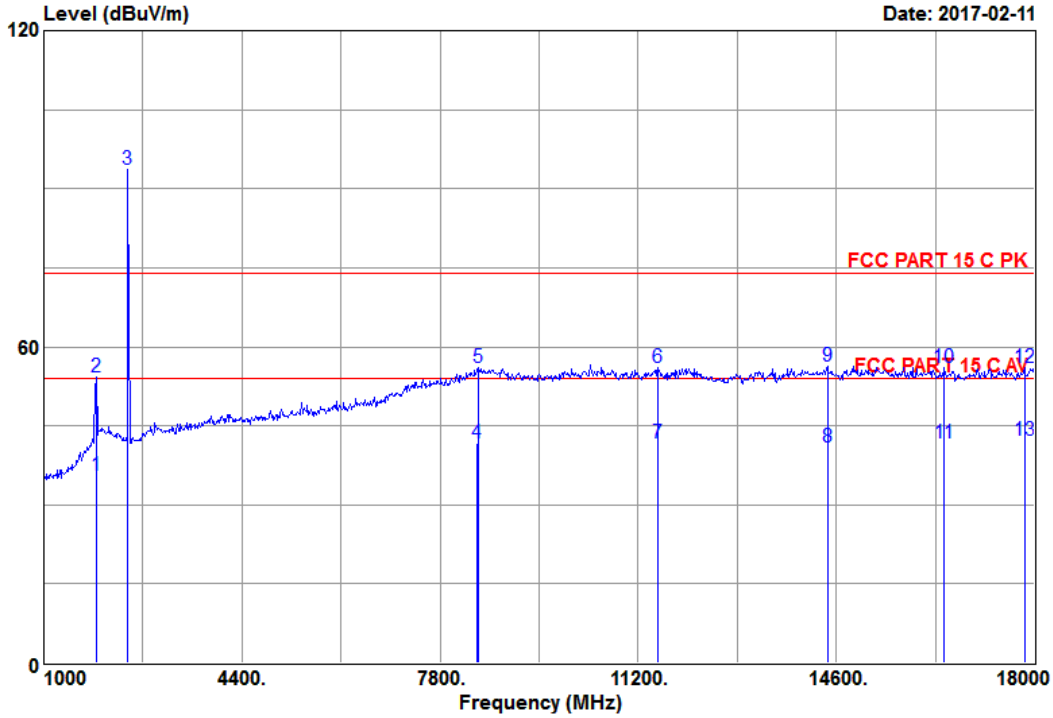
Data: 14 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62959-160620
Limit : FCC PART 15 C PK
Env. / Ins. : 16.5*C&40%/E4407B
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH20 2450MHz
Memo : LED Board for APT

Data NO. : 14
Ant. pol. : VERTICAL
Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1897.94	30.40	4.46	35.46	34.67	35.65	54.00	18.35	Average
2	1901.00	30.40	4.46	54.06	34.67	54.25	74.00	19.75	Peak
3	2445.00	28.83	5.15	94.26	34.50	93.74	74.00	-19.74	Peak
4	8443.29	39.09	9.76	27.20	34.25	41.80	54.00	12.20	Average
5	8446.00	39.09	9.76	41.50	34.25	56.10	74.00	17.90	Peak
6	11540.00	40.78	11.43	37.54	33.73	56.02	74.00	17.98	Peak
7	11542.69	40.78	11.43	23.15	33.73	41.63	54.00	12.37	Average
8	14445.67	43.40	12.99	16.86	32.20	41.05	54.00	12.95	Average
9	14447.00	43.40	12.99	32.10	32.20	56.29	74.00	17.71	Peak
10	16453.00	40.08	14.22	35.30	33.44	56.16	74.00	17.84	Peak
11	16455.28	40.08	14.22	20.86	33.44	41.72	54.00	12.28	Average
12	17830.00	45.68	13.80	29.44	32.90	56.02	74.00	17.98	Peak
13	17835.94	45.68	13.80	15.75	32.90	42.33	54.00	11.67	Average

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

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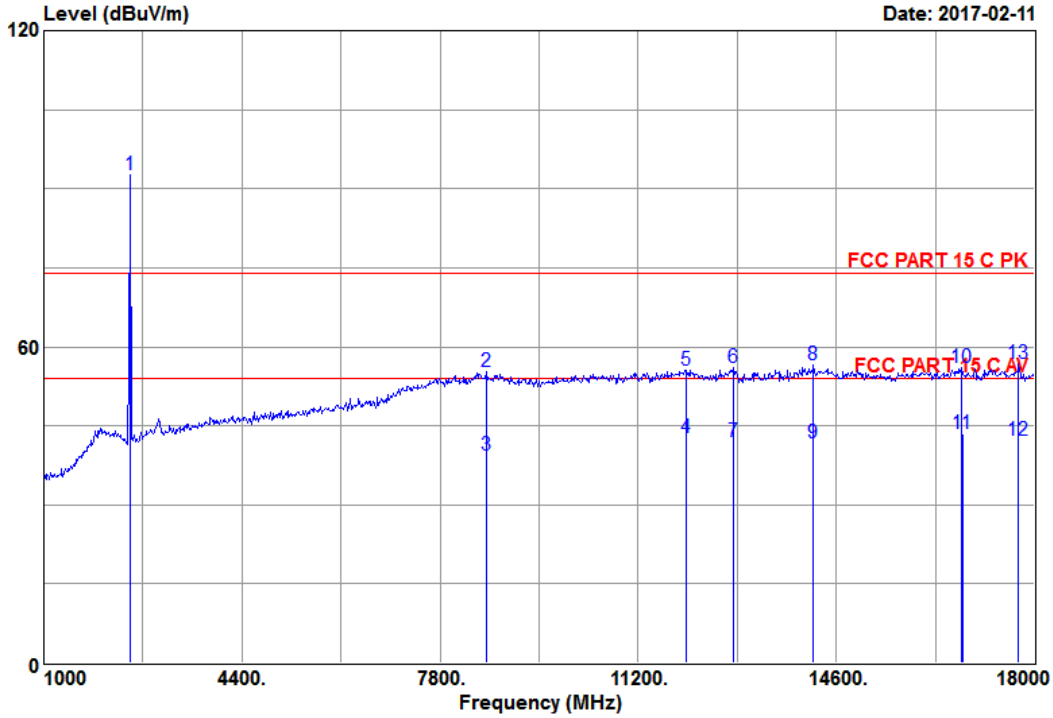
Data: 15 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62959-160620
Limit : FCC PART 15 C PK
Env. / Ins. : 16.5*C&40%/E4407B
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH25 2475MHz
Memo : LED Board for APT

Data NO. : 15
Ant. pol. : HORIZONTAL
Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2479.00	28.61	5.18	93.26	34.49	92.56	74.00	-18.56	Peak
2	8599.00	39.16	9.83	40.57	34.29	55.27	74.00	18.73	Peak
3	8600.27	39.16	9.83	24.75	34.29	39.45	54.00	14.55	Average
4	12015.34	41.82	11.53	23.19	33.78	42.76	54.00	11.24	Average
5	12016.00	41.82	11.53	35.86	33.78	55.43	74.00	18.57	Peak
6	12832.00	40.03	12.17	36.56	32.70	56.06	74.00	17.94	Peak
7	12834.17	40.03	12.17	22.47	32.70	41.97	54.00	12.03	Average
8	14209.00	42.91	12.92	32.69	31.88	56.64	74.00	17.36	Peak
9	14211.32	42.91	12.92	17.67	31.88	41.62	54.00	12.38	Average
10	16759.00	40.98	14.05	34.04	33.09	55.98	74.00	18.02	Peak
11	16761.25	40.98	14.05	21.66	33.09	43.60	54.00	10.40	Average
12	17724.33	45.24	13.82	15.97	32.89	42.14	54.00	11.86	Average
13	17728.00	45.24	13.82	30.52	32.89	56.69	74.00	17.31	Peak

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

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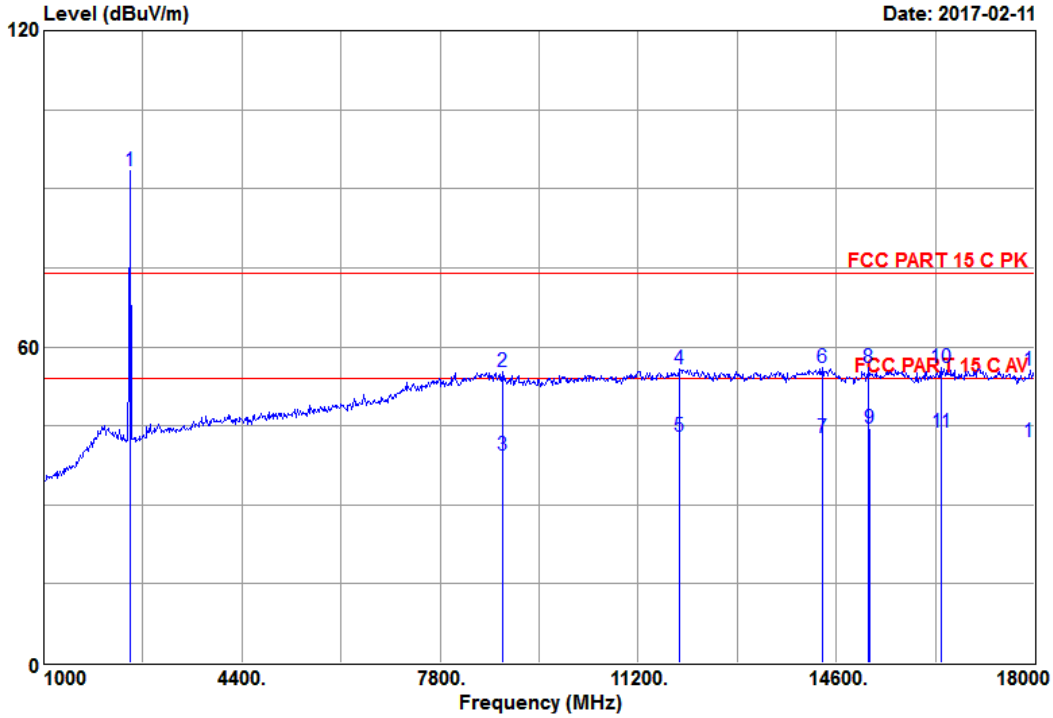
Data: 16 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62959-160620
Limit : FCC PART 15 C PK
Env. / Ins. : 16.5*C&40%/E4407B
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH25 2475MHz
Memo : LED Board for APT

Data NO. : 16
Ant. pol. : VERTICAL
Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2479.00	28.61	5.18	93.98	34.49	93.28	74.00	-19.28	Peak
2	8871.00	38.79	9.94	41.03	34.38	55.38	74.00	18.62	Peak
3	8875.49	38.79	9.94	25.14	34.38	39.49	54.00	14.51	Average
4	11914.00	41.69	11.50	36.30	33.80	55.69	74.00	18.31	Peak
5	11915.48	41.69	11.50	23.58	33.80	42.97	54.00	11.03	Average
6	14362.00	43.22	12.96	32.00	32.10	56.08	74.00	17.92	Peak
7	14365.27	43.22	12.96	18.76	32.10	42.84	54.00	11.16	Average
8	15161.00	40.54	13.37	35.30	33.15	56.06	74.00	17.94	Peak
9	15165.27	40.54	13.40	23.76	33.18	44.52	54.00	9.48	Average
10	16402.00	39.96	14.24	35.42	33.50	56.12	74.00	17.88	Peak
11	16405.28	39.96	14.24	23.18	33.50	43.88	54.00	10.12	Average
12	17998.27	46.40	13.78	14.64	32.92	41.90	54.00	12.10	Average
13	18000.00	46.40	13.78	28.17	32.92	55.43	74.00	18.57	Peak

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

5.8. Spurious Emission Measurement Results in Band Edge Emission (FCC Part 15, 15.205)

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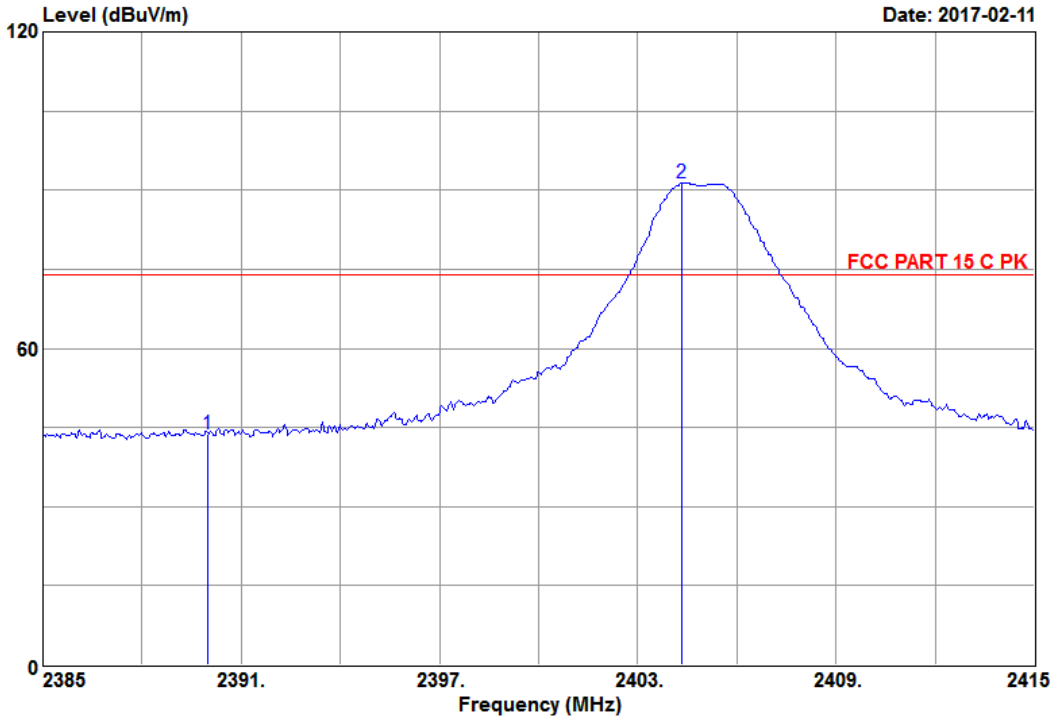
Data: 17 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62959-160620
Limit : FCC PART 15 C PK
Env. / Ins. : 16.5*C&40%/E4407B
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH11 2405MHz
Memo : LED Board for APT

Data NO. : 17
Ant. pol. : HORIZONTAL
Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	29.16	5.09	44.00	34.50	43.75	74.00	30.25	Peak
2	2404.32	29.05	5.09	91.76	34.50	91.40	74.00	-17.40	Peak

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

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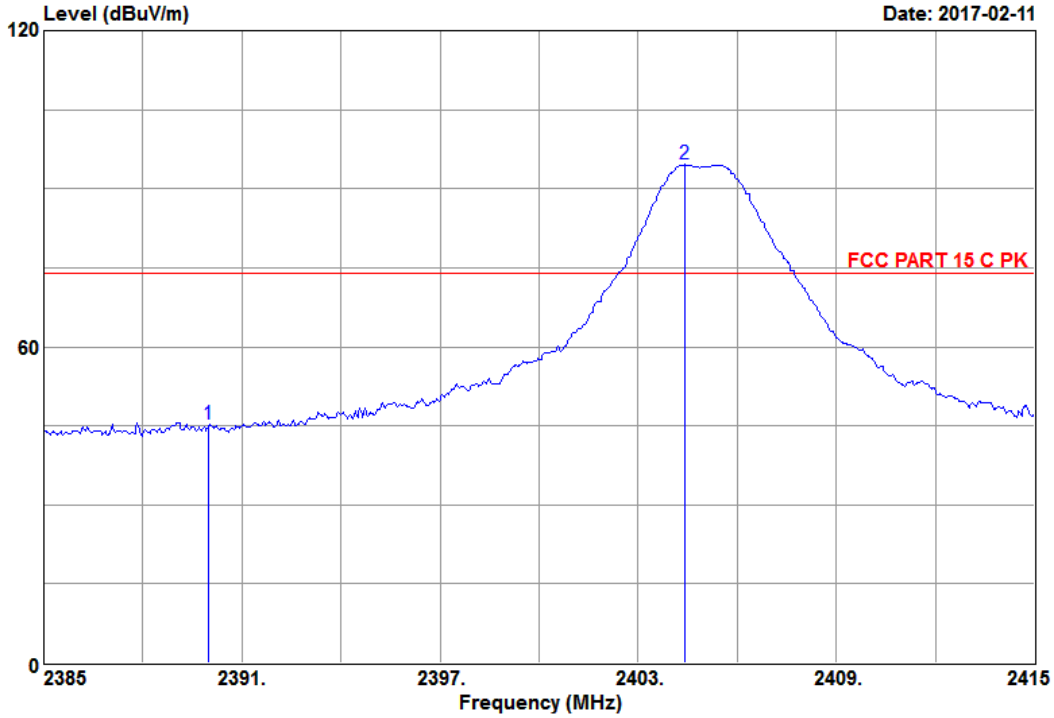
Data: 18 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62959-160620
Limit : FCC PART 15 C PK
Env. / Ins. : 16.5*C&40%/E4407B
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH11 2405MHz
Memo : LED Board for APT

Data NO. : 18
Ant. pol. : VERTICAL
Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	29.16	5.09	45.48	34.50	45.23	74.00	28.77	Peak
2	2404.41	29.05	5.09	94.92	34.50	94.56	74.00	-20.56	Peak

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

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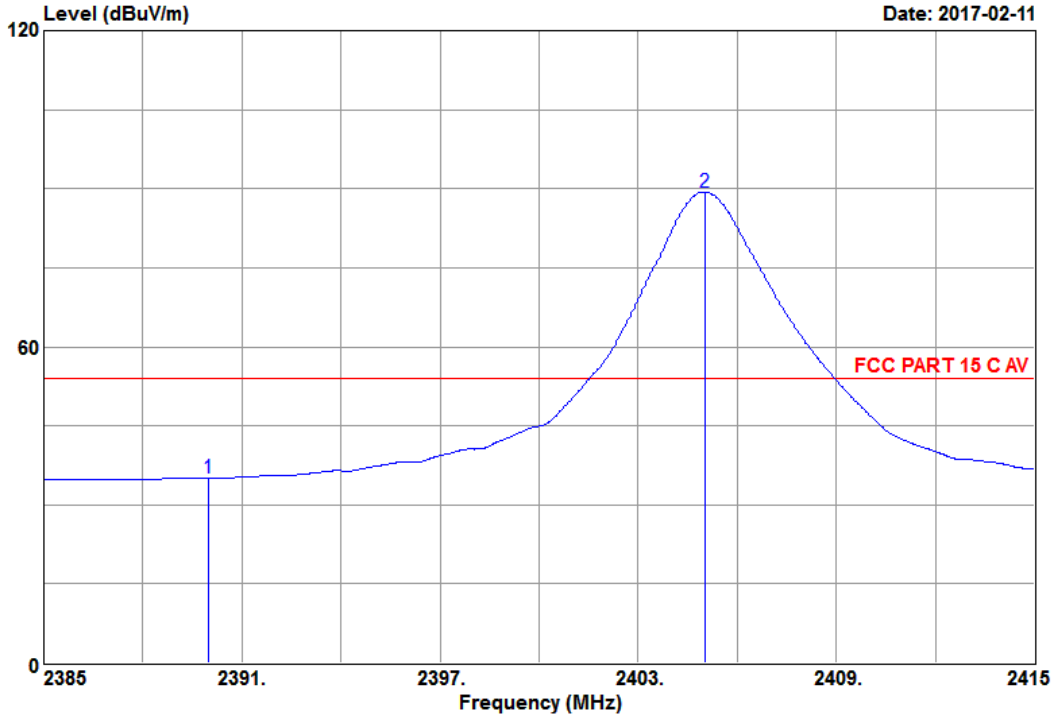
Data: 19 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62959-160620
Limit : FCC PART 15 C AV
Env. / Ins. : 16.5*C&40%/E4407B
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH11 2405MHz
Memo : LED Board for APT

Data NO. : 19
Ant. pol. : HORIZONTAL
Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	29.16	5.09	35.29	34.50	35.04	54.00	18.96	Average
2	2405.01	29.05	5.09	89.72	34.50	89.36	54.00	-35.36	Average

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

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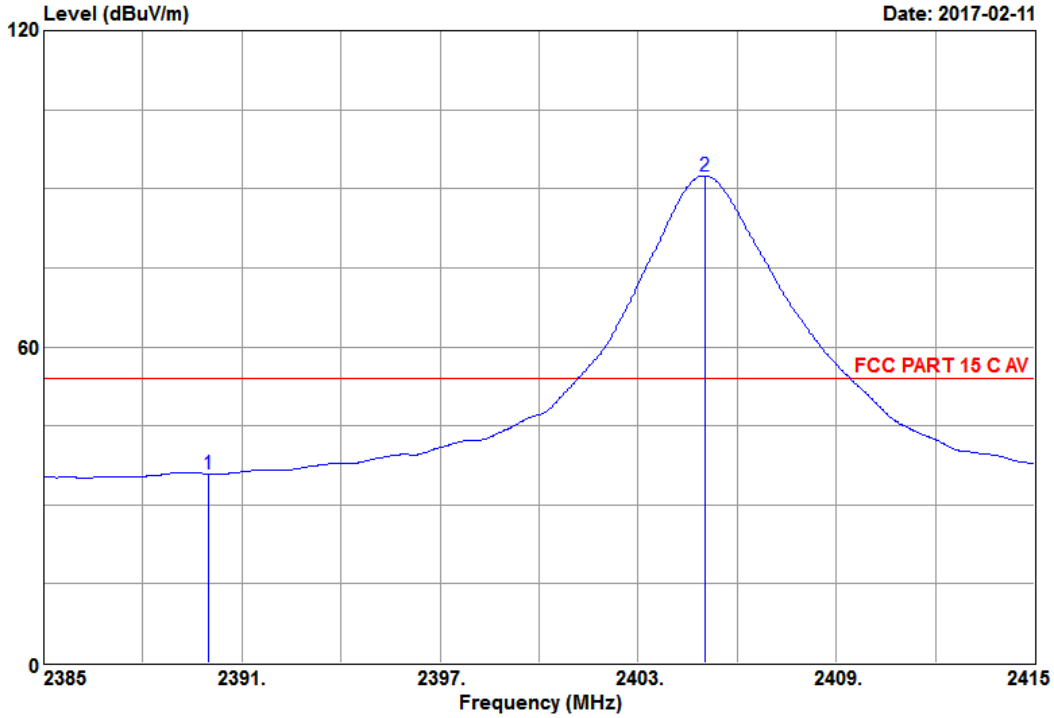
Data: 20 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62959-160620
Limit : FCC PART 15 C AV
Env. / Ins. : 16.5*C&40%/E4407B
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH11 2405MHz
Memo : LED Board for APT

Data NO. : 20
Ant. pol. : VERTICAL
Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	29.16	5.09	36.16	34.50	35.91	54.00	18.09	Average
2	2405.01	29.05	5.09	92.82	34.50	92.46	54.00	-38.46	Average

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

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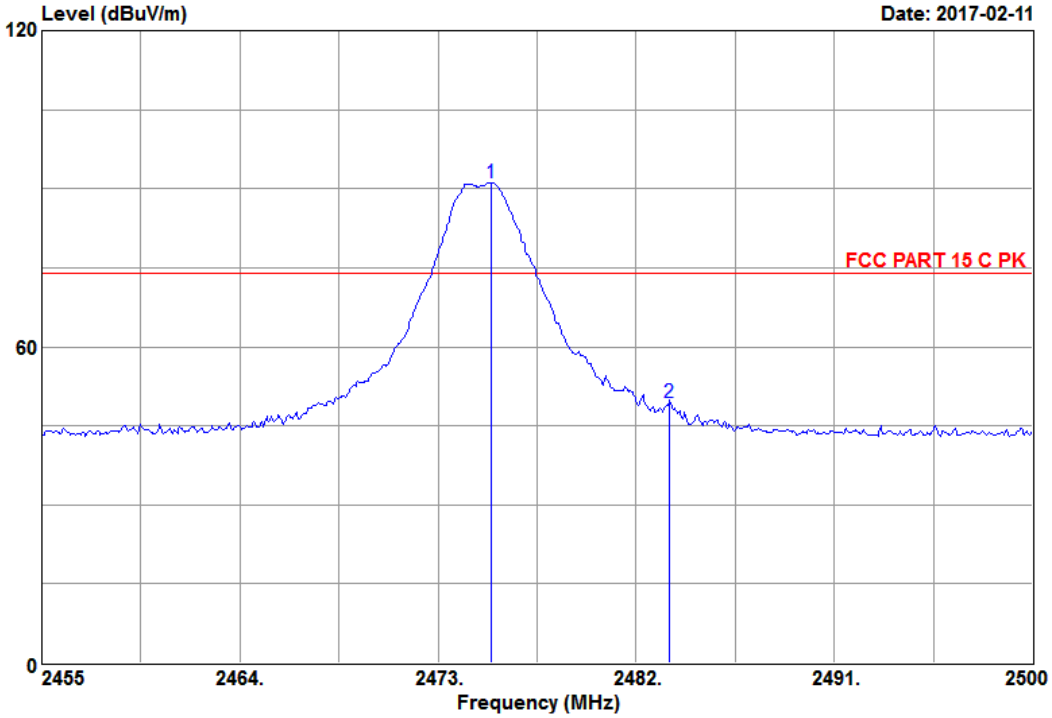
Data: 21 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62959-160620
Limit : FCC PART 15 C PK
Env. / Ins. : 16.5*C&40%/E4407B
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH25 2475MHz
Memo : LED Board for APT

Data NO. : 21
Ant. pol. : HORIZONTAL
Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2475.43	28.61	5.18	91.83	34.49	91.13	74.00	-17.13	Peak
2	2483.50	28.61	5.18	50.10	34.49	49.40	74.00	24.60	Peak

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

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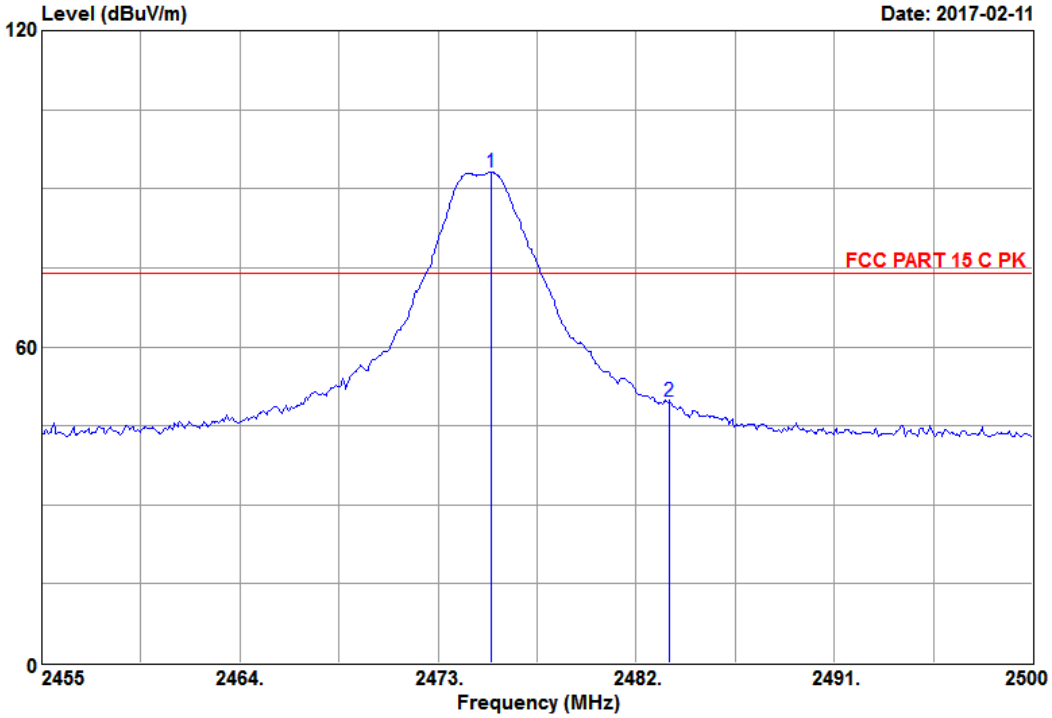
Data: 22 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62959-160620
Limit : FCC PART 15 C PK
Env. / Ins. : 16.5*C&40%/E4407B
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH25 2475MHz
Memo : LED Board for APT

Data NO. : 22
Ant. pol. : VERTICAL

Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2475.43	28.61	5.18	93.80	34.49	93.10	74.00	-19.10	Peak
2	2483.50	28.61	5.18	50.33	34.49	49.63	74.00	24.37	Peak

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

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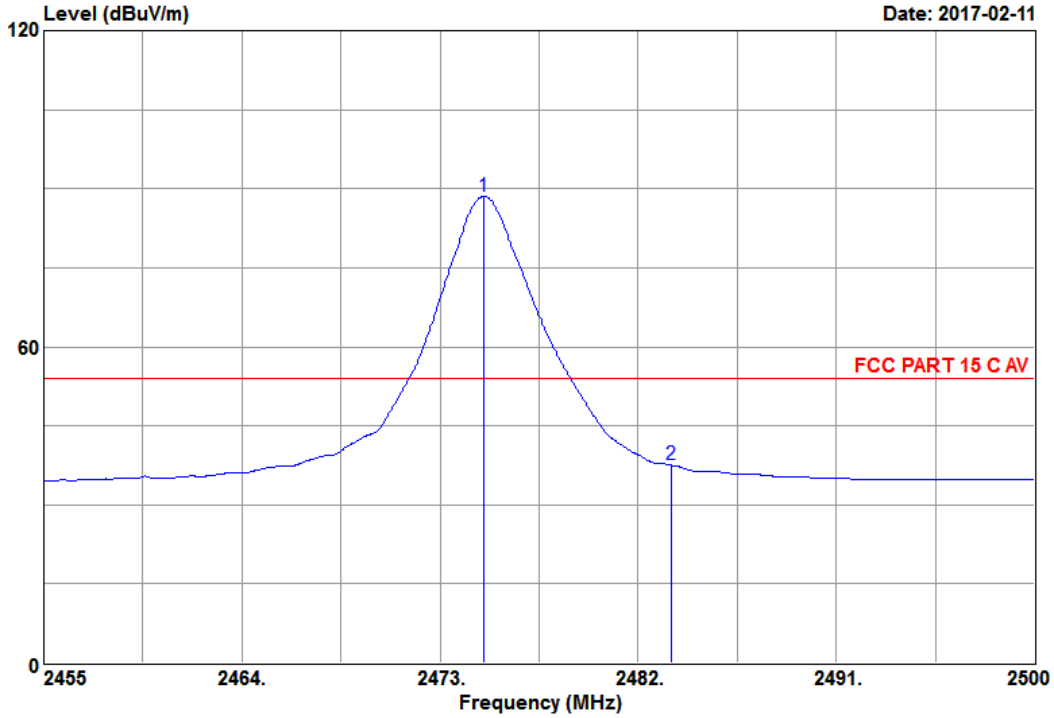
Data: 23 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62959-160620
Limit : FCC PART 15 C AV
Env. / Ins. : 16.5*C&40%/E4407B
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH25 2475MHz
Memo : LED Board for APT

Data NO. : 23
Ant. pol. : HORIZONTAL
Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2474.98	28.61	5.18	89.18	34.49	88.48	54.00	-34.48	Average
2	2483.50	28.61	5.18	38.25	34.49	37.55	54.00	16.45	Average

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

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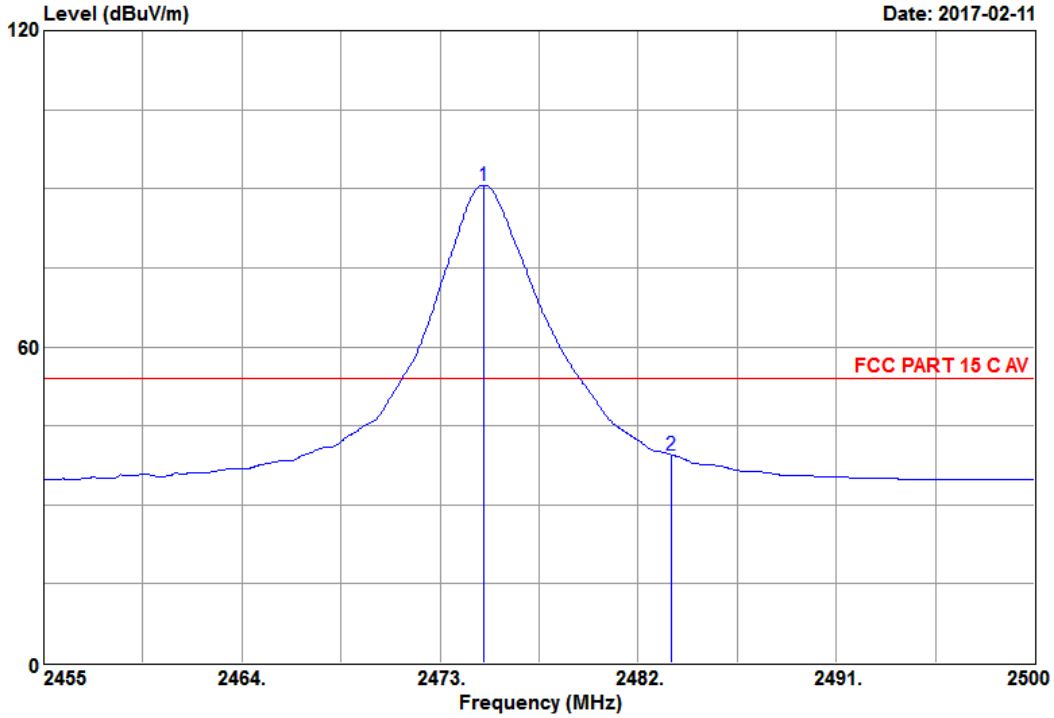
Economic Development Zone,JiangSu,China
Tel:(0512)63403993 Fax:(0512)63403993

Data: 24 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62959-160620
Limit : FCC PART 15 C AV
Env. / Ins. : 16.5*C&40%/E4407B
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH25 2475MHz
Memo : LED Board for APT

Data NO. : 24
Ant. pol. : VERTICAL
Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2474.98	28.61	5.18	91.38	34.49	90.68	54.00	-36.68	Average
2	2483.50	28.61	5.18	40.24	34.49	39.54	54.00	14.46	Average

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

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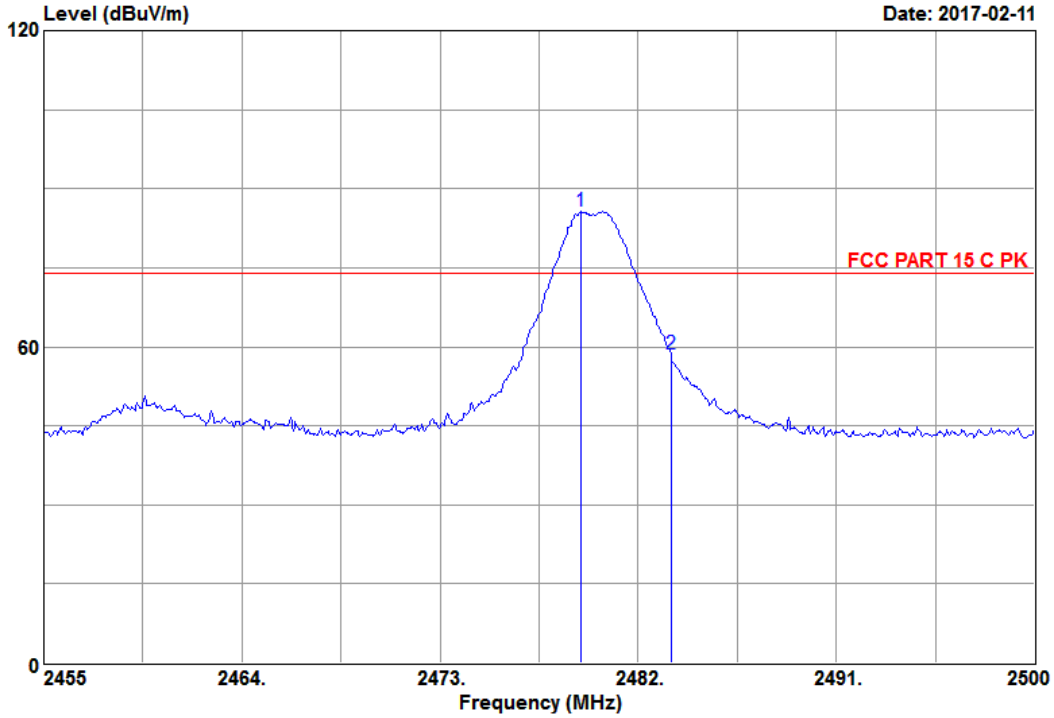
Data: 25 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62959-160620
Limit : FCC PART 15 C PK
Env. / Ins. : 16.5*C&40%/E4407B
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH26 2480MHz
Memo : LED Board for APT

Data NO. : 25
Ant. pol. : HORIZONTAL
Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2479.39	28.61	5.18	86.30	34.49	85.60	74.00	-11.60	Peak
2	2483.50	28.61	5.18	59.24	34.49	58.54	74.00	15.46	Peak

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

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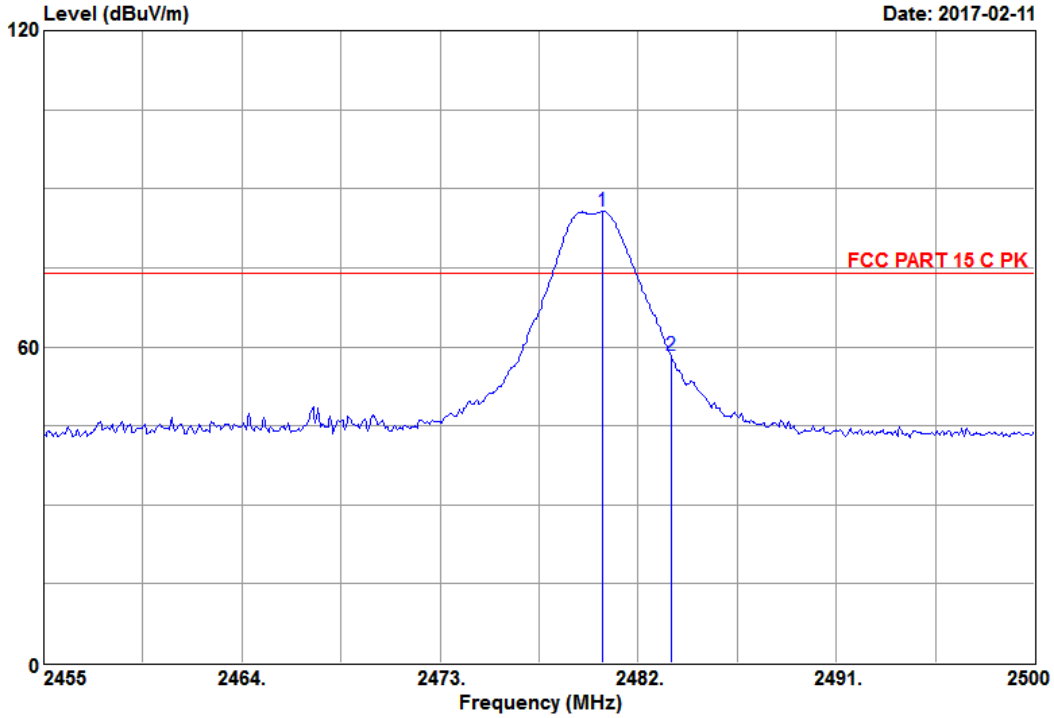
Data: 26 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62959-160620
Limit : FCC PART 15 C PK
Env. / Ins. : 16.5*C&40%/E4407B
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH26 2480MHz
Memo : LED Board for APT

Data NO. : 26
Ant. pol. : VERTICAL
Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.38	28.61	5.18	86.37	34.49	85.67	74.00	-11.67	Peak
2	2483.50	28.61	5.18	59.04	34.49	58.34	74.00	15.66	Peak

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

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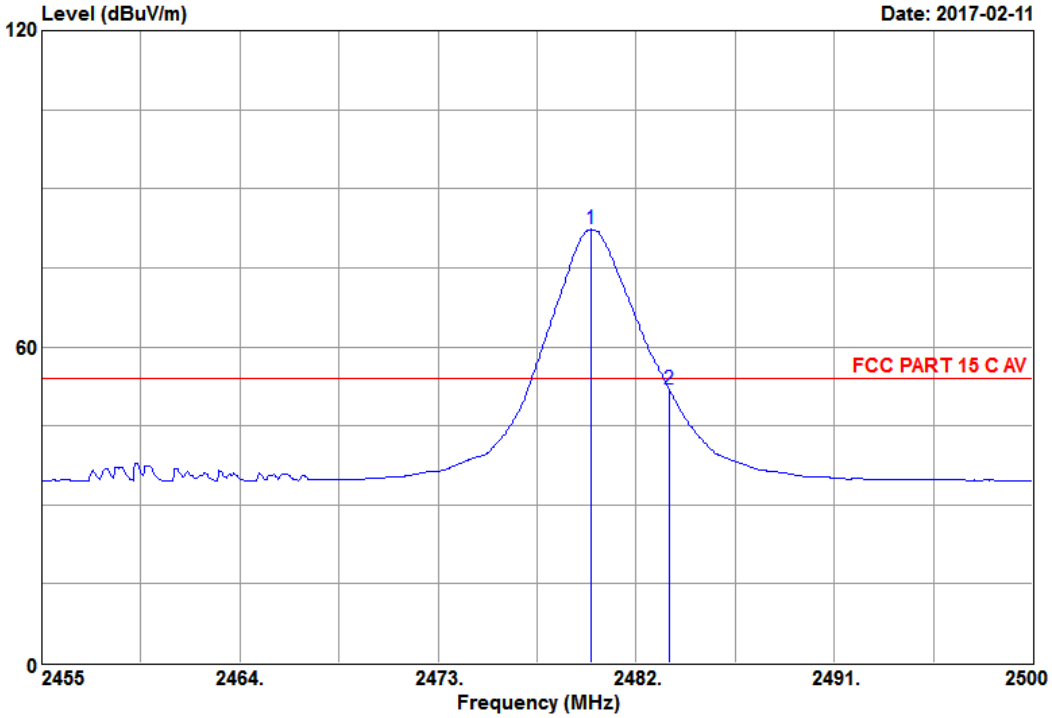
Data: 27 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62959-160620
Limit : FCC PART 15 C AV
Env. / Ins. : 16.5*C&40%/E4407B
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH26 2480MHz
Memo : LED Board for APT

Data NO. : 27
Ant. pol. : HORIZONTAL

Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2479.93	28.61	5.18	82.98	34.49	82.28	54.00	-28.28	Average
2	2483.50	28.61	5.18	52.77	34.49	52.07	54.00	1.93	Average

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

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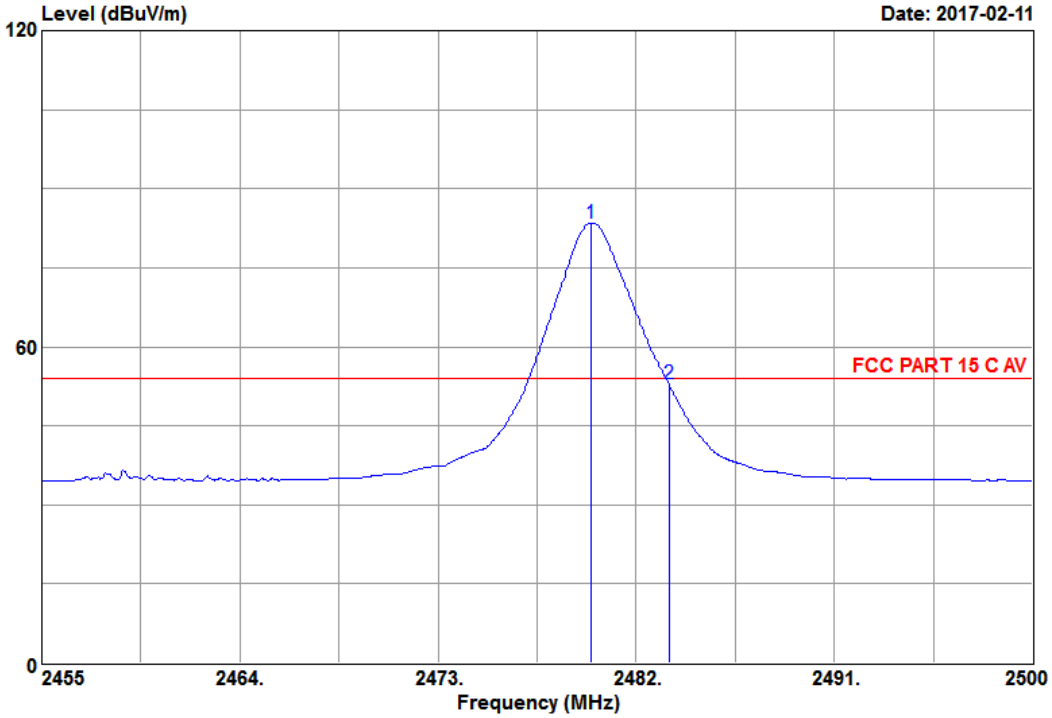
Data: 28 File: G:\Test Data\2017\Reports\01\C1W1701036.EM6 (28)



Site NO. : 3m Semi-Anechoic Chamber
Dis. / Ant. : 3m 3115-62959-160620
Limit : FCC PART 15 C AV
Env. / Ins. : 16.5*C&40%/E4407B
EUT : LED lamp
M/N : 9290012575A
Power Rating: 120Vac/60Hz
Test Mode : TX CH26 2480MHz
Memo : LED Board for APT

Data NO. : 28
Ant. pol. : VERTICAL
Engineer : Mickey

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2479.93	28.61	5.18	84.16	34.49	83.46	54.00	-29.46	Average
2	2483.50	28.61	5.18	53.61	34.49	52.91	54.00	1.09	Average

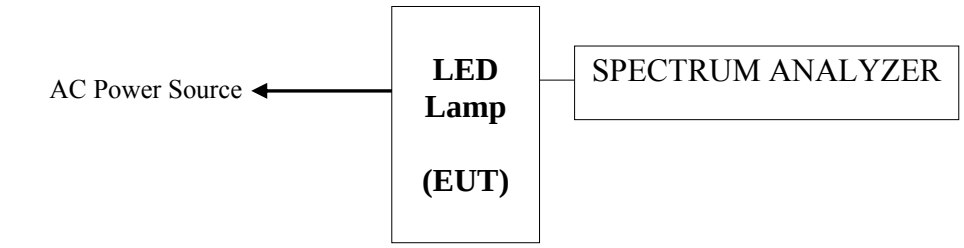
Remarks: 1. Emission Level= Ant.Factor + Cable Loss + Reading - Preamp.Factor.
2. The emission levels that are 20dB below the official limit are not reported.

6. 6 dB BANDWIDTH MEASUREMENT

6.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	PXA Signal Analyzer	Agilent	N9030A	MY53120367	2016-05-15	2017-05-14

6.2. Block Diagram of Test Setup



—— : SIGNAL LINE

—— : POWER LINE

6.3. Specification Limits (§15.247(a)(2))

Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500kHz.

6.4. Test Procedure

The steps for the first option are as bellow:

a) Set RBW = 100 kHz.
b) Set the VBW≥[3×RBW].
c) Detector = peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

6.5. Test Results

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

Channel	Center Frequency(MHz)	6 dB Bandwidth(MHz)
11	2405	**1.259**
20	2450	**1.389**
25	2475	**1.380**

CH 11


Center Freq 2.405000000 GHz
Center Freq: 2.405000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 10 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
08:49:51 AM Mar 03, 2017
Frequency
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Center Freq
2.405000000 GHz
CF Step
2.000000 MHz
Auto
Man
Center 2.405 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 20 MHz
Sweep 2.533 ms
Occupied Bandwidth
2.2282 MHz
Total Power
4.15 dBm
Transmit Freq Error
-96.206 kHz
OBW Power
99.00 %
x dB Bandwidth
1.259 MHz
x dB
-6.00 dB
Freq Offset
0 Hz
MSG
STATUS

CH 20


Center Freq 2.450000000 GHz
Center Freq: 2.450000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 20 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
09:32:34 AM Mar 03, 2017
Frequency
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Center Freq
2.450000000 GHz
CF Step
2.000000 MHz
Auto
Man
Center 2.45 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 20 MHz
Sweep 2.533 ms
Occupied Bandwidth
2.2467 MHz
Total Power
4.27 dBm
Transmit Freq Error
-107.86 kHz
OBW Power
99.00 %
x dB Bandwidth
1.389 MHz
x dB
-6.00 dB
Freq Offset
0 Hz
MSG
STATUS

CH 25

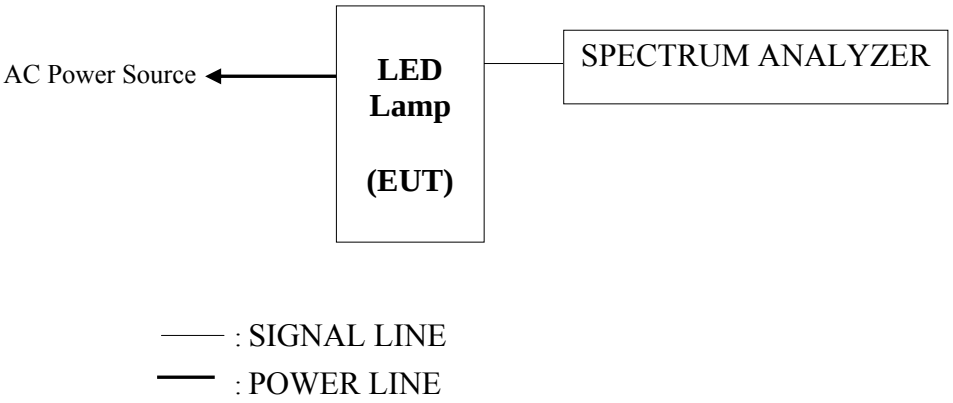

x dB -6.00 dB
Center Freq: 2.475000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 20 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
10:38:38 AM Mar 02, 2017
Meas Setup
Avg/Hold Num
10
On
Off
Avg Mode
Exp
Repeat
OBW Power
99.00 %
x dB
-6.00 dB
More
1 of 2
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Center 2.475 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 20 MHz
Sweep 2.533 ms
Occupied Bandwidth
2.4176 MHz
Total Power
4.11 dBm
Transmit Freq Error
-63.805 kHz
OBW Power
99.00 %
x dB Bandwidth
1.380 MHz
x dB
-6.00 dB
File <CH25-13_0130.png> saved

7. OUTPUT POWER MEASUREMENT

7.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	PXA Signal Analyzer	Agilent	N9030A	MY53120367	2016-05-15	2017-05-14

7.2. Block Diagram of Test Setup



7.3. Specification Limits (§15.247(b)(3))

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

7.4. Test Procedure

a) Set span to at least 1.5 times the OBW.
b) Set RBW = 1-5% of the OBW, not to exceed 1 MHz.
c) Set VBW ≥ 3 x RBW.
d) Number of points in sweep ≥ 2 × span / RBW. (This gives bin-to-bin spacing ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
e) Sweep time = auto.
f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
g) If transmit duty cycle < 98 %, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 %, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run".
h) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
i) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

7.5. Test Results

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

Channel	Frequency	Power(dBm)	Limit(dBm)
11	2405	4.10	30
20	2450	4.19	30
25	2475	3.96	30
26	2480	-3.50	30

8. BAND EDGES MEASUREMENT

8.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	PXA Signal Analyzer	Agilent	N9030A	MY53120367	2016-05-15	2017-05-14

8.2. Block Diagram of Test Setup

The same as section 5.2.

8.3. Specification Limits (§15.247(d))

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. 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)).

8.4. Test Procedure

The transmitter output was connected to the test receiver / spectrum analyzer. Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz with suitable frequency span including 100kHz bandwidth from band edge.

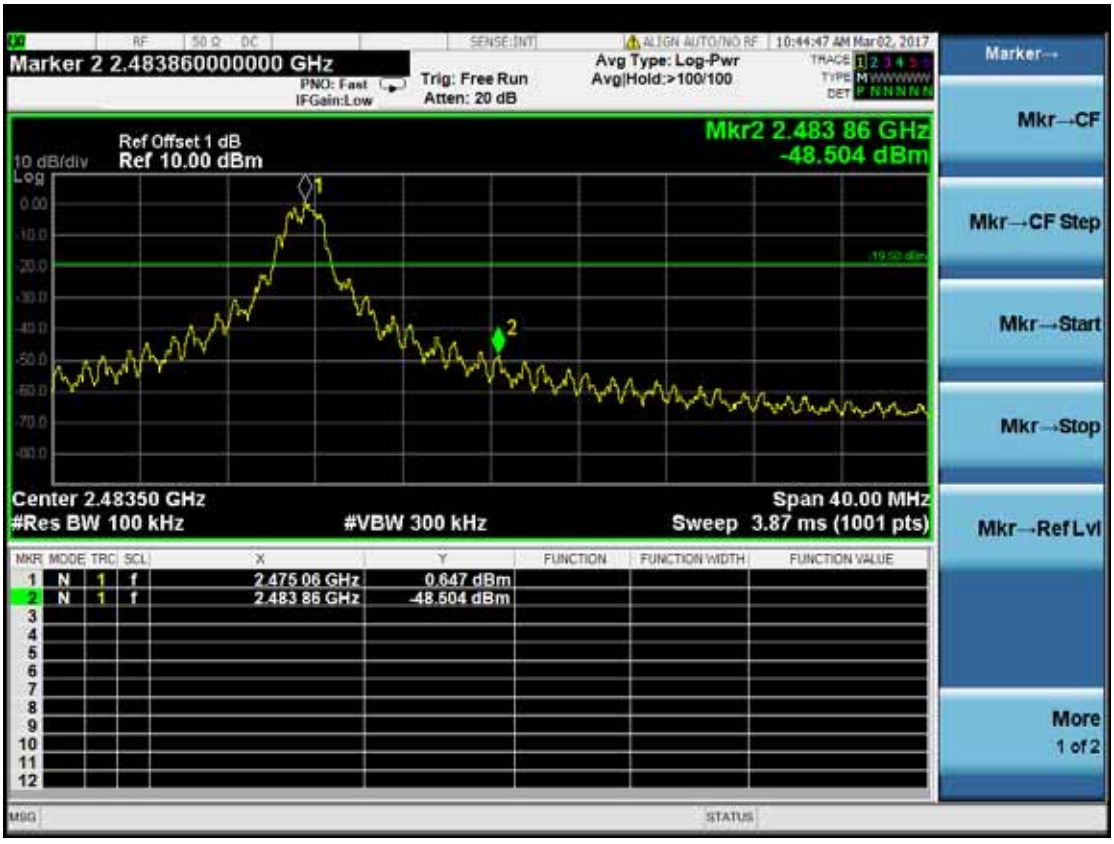
8.5. Test Results

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

CH11


Marker 2 2.389840000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
08:54:07 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr2 2.389 84 GHz
-57.059 dBm
Center 2.39000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40.00 MHz
Sweep 3.87 ms (1001 pts)
1 N 1 f 2.405 08 GHz 1.390 dBm
2 N 1 f 2.389 84 GHz -57.059 dBm
Marker→
Mkr→CF
Mkr→CF Step
Mkr→Start
Mkr→Stop
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

CH25


Marker 2 2.483860000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
10:44:47 AM Mar 02, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr2 2.483 86 GHz
-48.504 dBm
Center 2.48350 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40.00 MHz
Sweep 3.87 ms (1001 pts)
1 N 1 f 2.475 06 GHz 0.647 dBm
2 N 1 f 2.483 86 GHz -48.504 dBm
Marker→
Mkr→CF
Mkr→CF Step
Mkr→Start
Mkr→Stop
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

CH26


Center Freq 2.483500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:37:33 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Mkr2 2.484 10 GHz
-44.259 dBm
Center 2.48350 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40.00 MHz
Sweep 3.87 ms (1001 pts)
1 N 1 f 2.480 06 GHz -6.838 dBm
2 N 1 f 2.484 10 GHz -44.259 dBm
Frequency
Auto Tune
Center Freq
2.483500000 GHz
Start Freq
2.463500000 GHz
Stop Freq
2.503500000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz

9. POWER SPECTRAL DENSITY MEASUREMENT

9.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	PXA Signal Analyzer	Agilent	N9030A	MY53120367	2016-05-15	2017-05-14

9.2. Block Diagram of Test Setup

The same as section 5.2.

9.3. Specification Limits (§15.247(e))

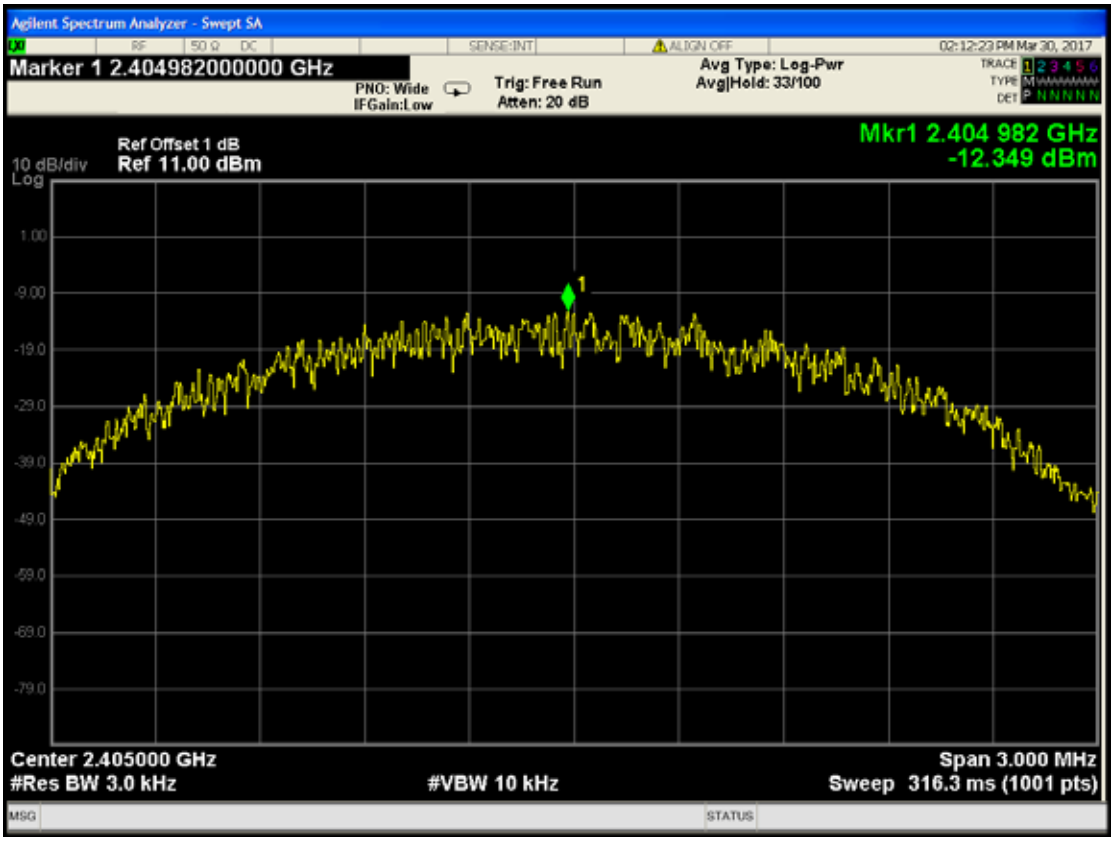
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

9.4. Test Results

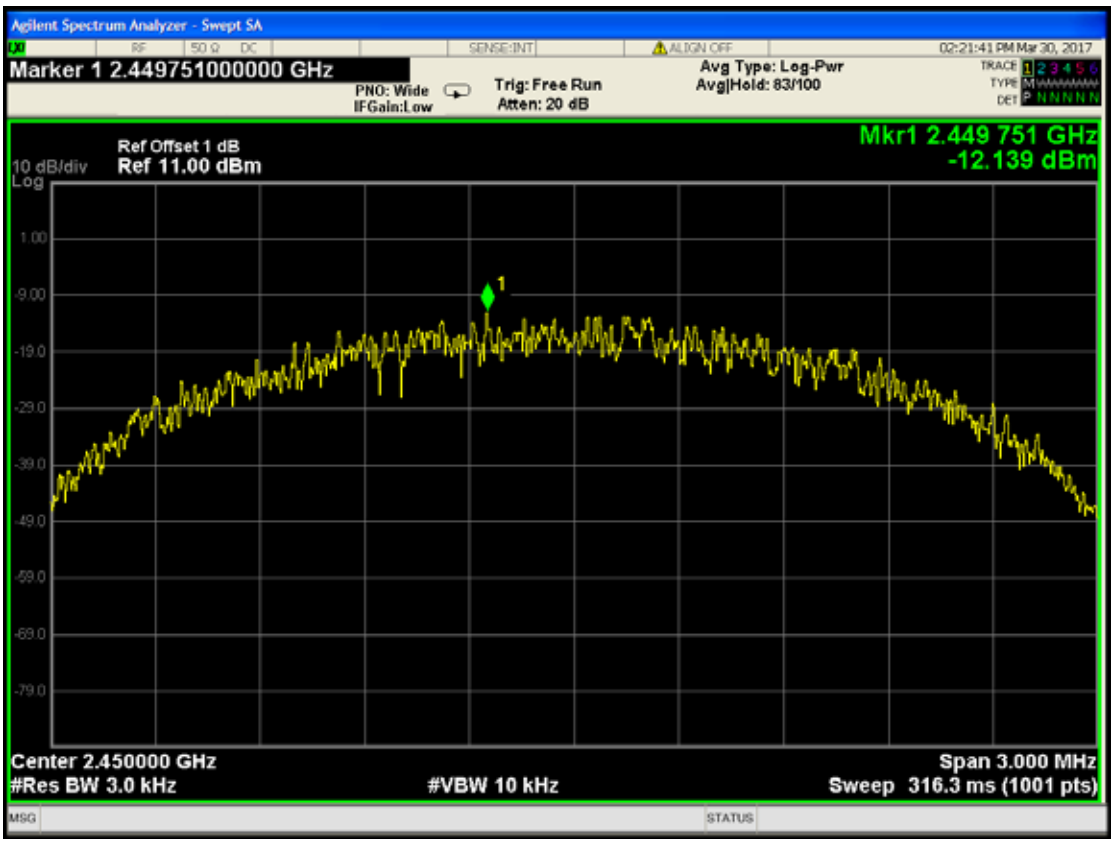
PASSED. All the test results are attached in next page.

Channel	Frequency(GHz)	Value(dBm/3kHz)
11	2.405	-12.349
20	2.450	-12.139
25	2.475	-11.295

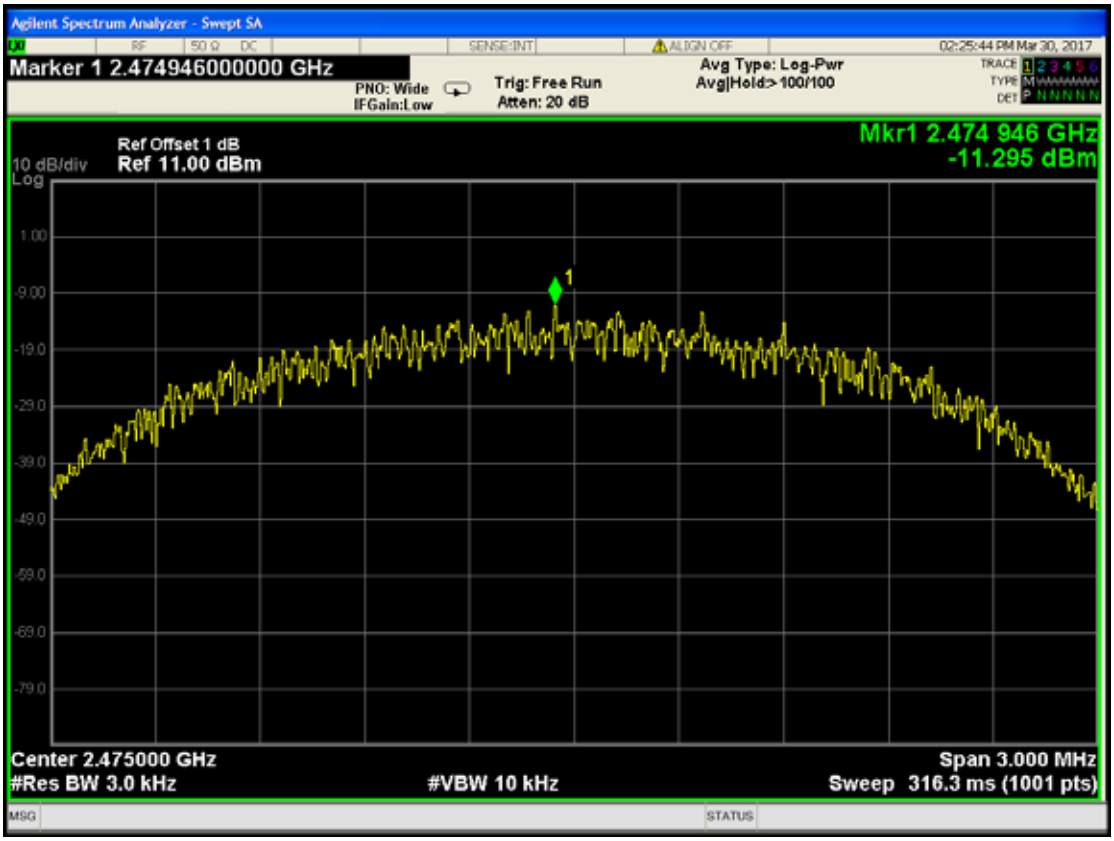
CH 11


Agilent Spectrum Analyzer - Swept SA
Marker 1 2.404982000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 33/100
02:12:23 PM Mar 30, 2017
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Log
Mkr1 2.404 982 GHz
-12.349 dBm
Center 2.405000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 3.000 MHz
Sweep 316.3 ms (1001 pts)

CH 20


Agilent Spectrum Analyzer - Swept SA
Marker 1 2.449751000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 83/100
02:21:41 PM Mar 30, 2017
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Log
Mkr1 2.449 751 GHz
-12.139 dBm
Center 2.450000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 3.000 MHz
Sweep 316.3 ms (1001 pts)

CH 25


Agilent Spectrum Analyzer - Swept SA
Marker 1 2.474946000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
02:25:44 PM Mar 30, 2017
Ref Offset 1 dB
10 dB/div
Log
Ref 11.00 dBm
Mkr1 2.474 946 GHz
-11.295 dBm
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
Center 2.475000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 3.000 MHz
Sweep 316.3 ms (1001 pts)
MSG
STATUS

10. EMISSION LIMITATIONS MEASUREMENT

10.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	PXA Signal Analyzer	Agilent	N9030A	MY53120367	2015-05-15	2017-05-14

10.2. Block Diagram of Test Setup

The same as section 5.2.

10.3. Specification Limits (§15.247(d))

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. 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)).

10.4. Test Procedure

The transmitter output was connected to the spectrum analyzer. Set RBW = 100kHz, VBW ≥ 300 kHz, scan up through 10^{th} harmonic. All harmonics/spurs must be at least 30 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW. The measurement guideline was according to KDB558074 v03r05.

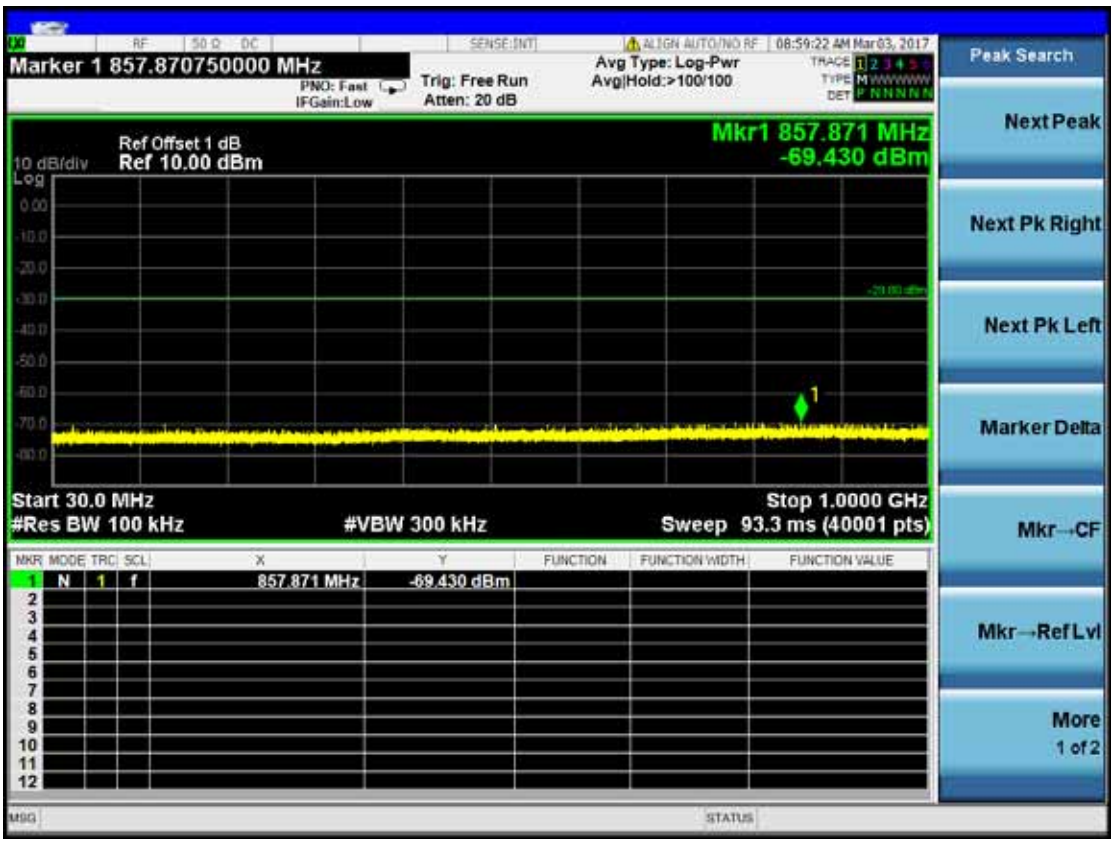
10.5. Test Results

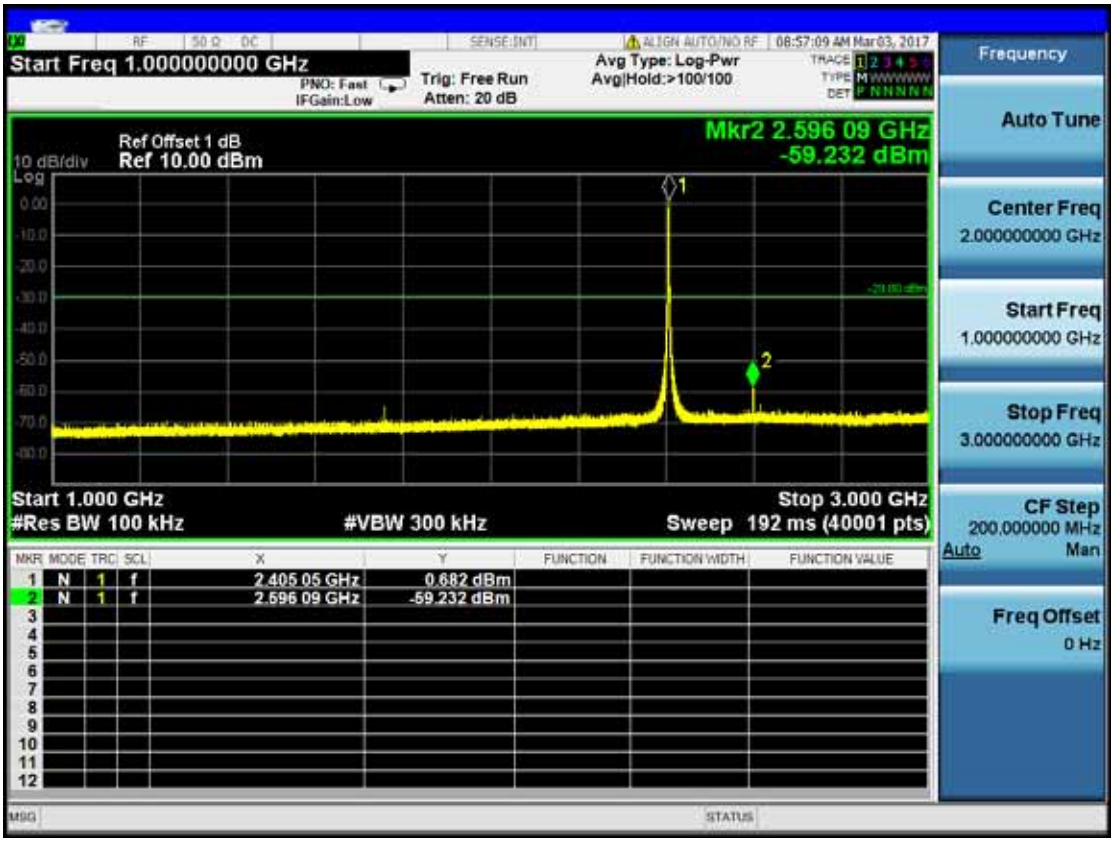
PASSED. All the test results are attached in next pages.

Channel	Frequency(MHz)	Amplitude(dBm)
11	857.871	-69.430
	2405.05	0.682
	2596.09	-59.232
	4810.95	-56.980
	5067.65	-64.896
	7216.45	-63.941
	10082.10	-66.727
	11492.00	-65.303
	13715.15	-65.249
	16031.70	-64.451
	18316.05	-64.115
	20231.90	-63.684
	21698.40	-62.842
	23882.50	-61.766
20	721.222	-69.509
	2450.05	1.040
	2330.55	-65.950
	4900.95	-58.261
	5063.15	-65.647
	7351.70	-63.944
	10356.80	-65.779
	12251.85	-65.776
	14825.75	-65.219
	15457.15	-64.092
	18715.35	-64.001
	20227.30	-62.602
	22294.65	-61.696
	23687.85	-62.695
25	844.242	-68.603
	2475.06	0.394
	2084.30	-66.955
	3831.05	-63.029

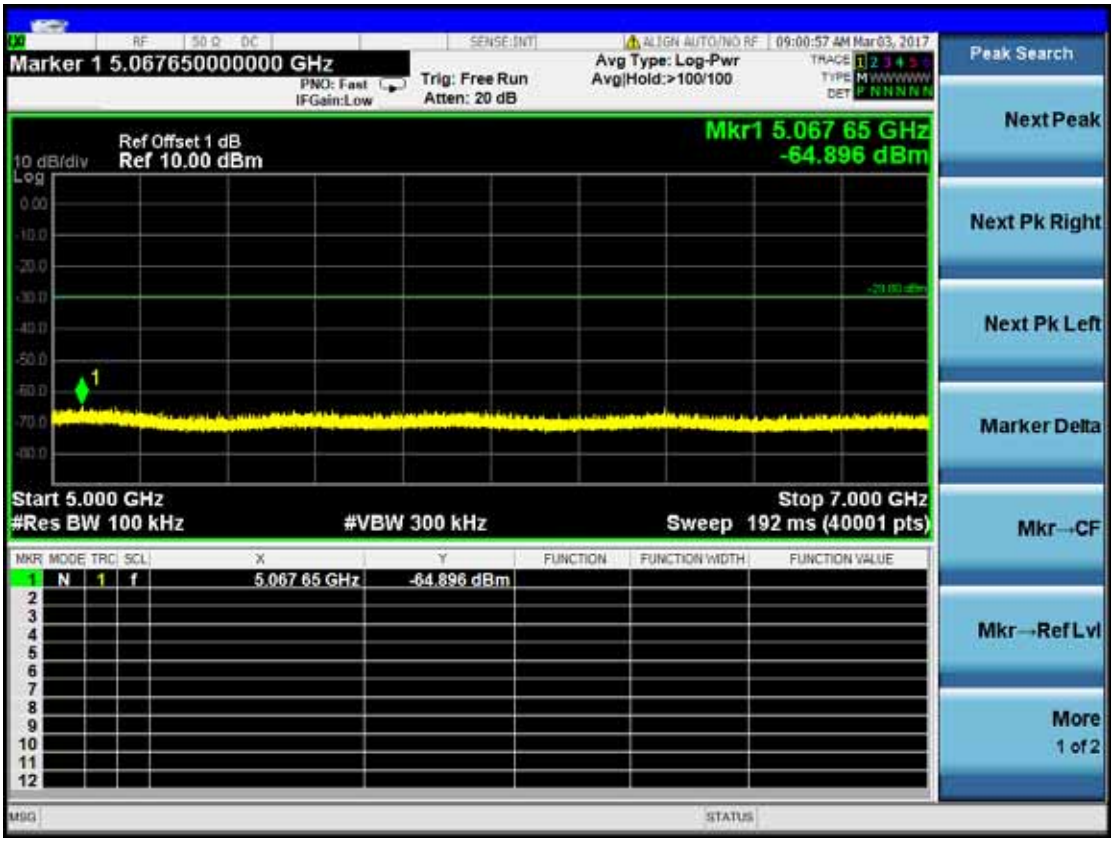
	5122.70	-64.991
	8946.10	-65.024
	10244.80	-64.285
	12377.20	-64.764
	14476.80	-64.273
	15867.00	-64.539
	18847.80	-63.144
	19377.90	-63.044
	22040.10	-62.402
	23670.05	-61.813

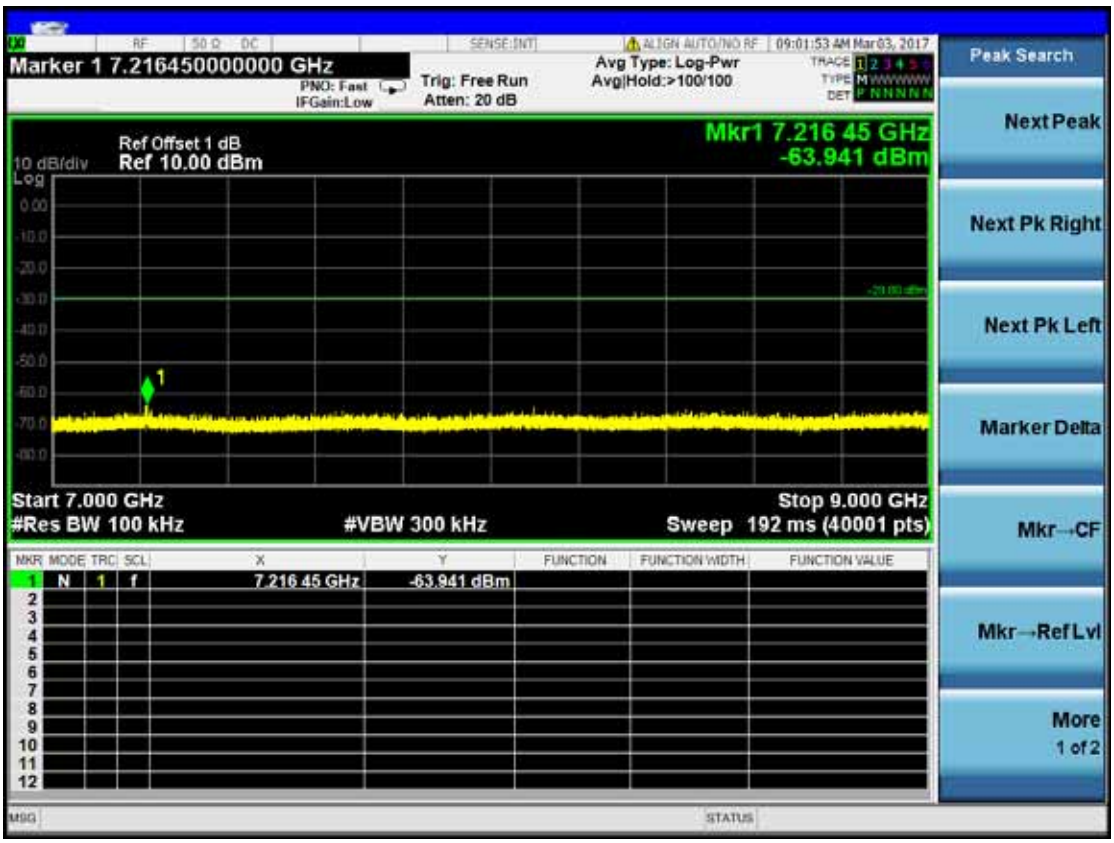
CH 11

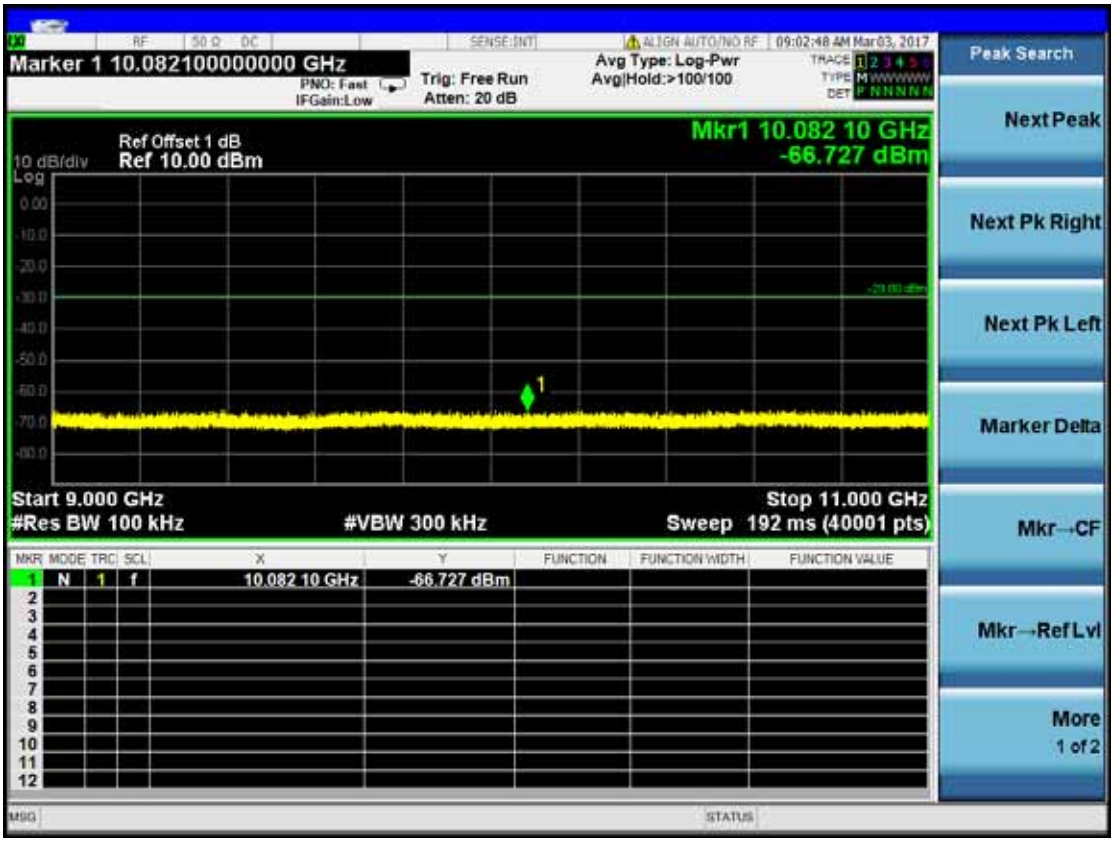

Marker 1 857.870750000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
08:59:22 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 857.871 MHz
-69.430 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 93.3 ms (40001 pts)
1 N 1 f 857.871 MHz -69.430 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

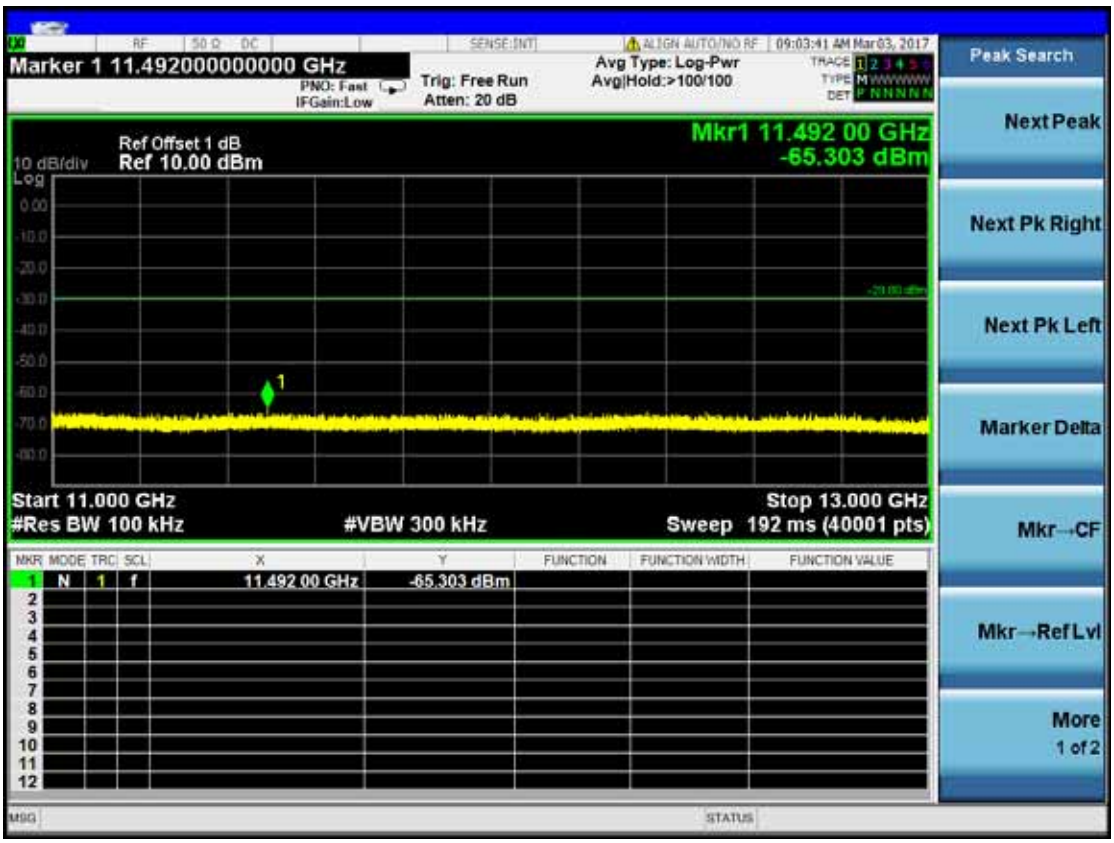

Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
08:57:09 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr2 2.596 09 GHz
-59.232 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 3.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 2.405 05 GHz 0.682 dBm
2 N 1 f 2.596 09 GHz -59.232 dBm
Frequency
Auto Tune
Center Freq
2.000000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
3.000000000 GHz
CF Step
200.000000 MHz
Auto
Man
Freq Offset
0 Hz

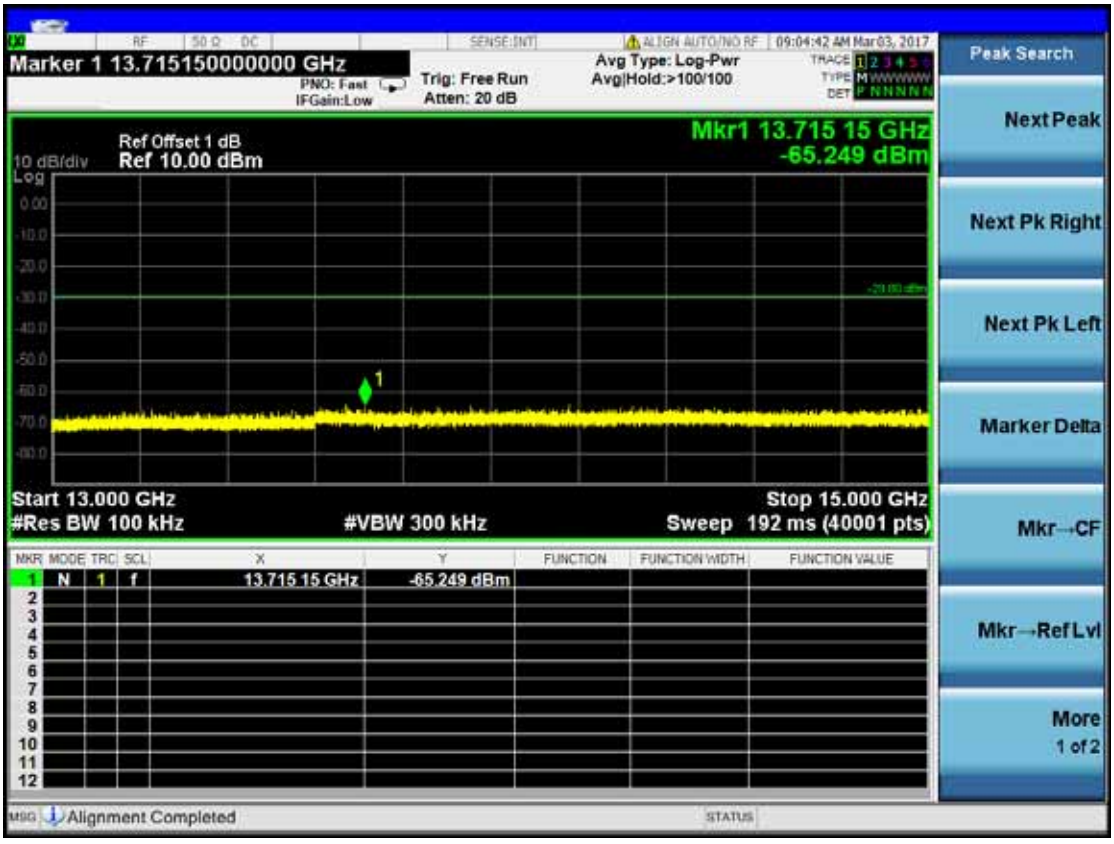

Marker 1 4.810950000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:00:05 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 4.810 95 GHz
-56.980 dBm
Start 3.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 5.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 4.810 95 GHz -56.980 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

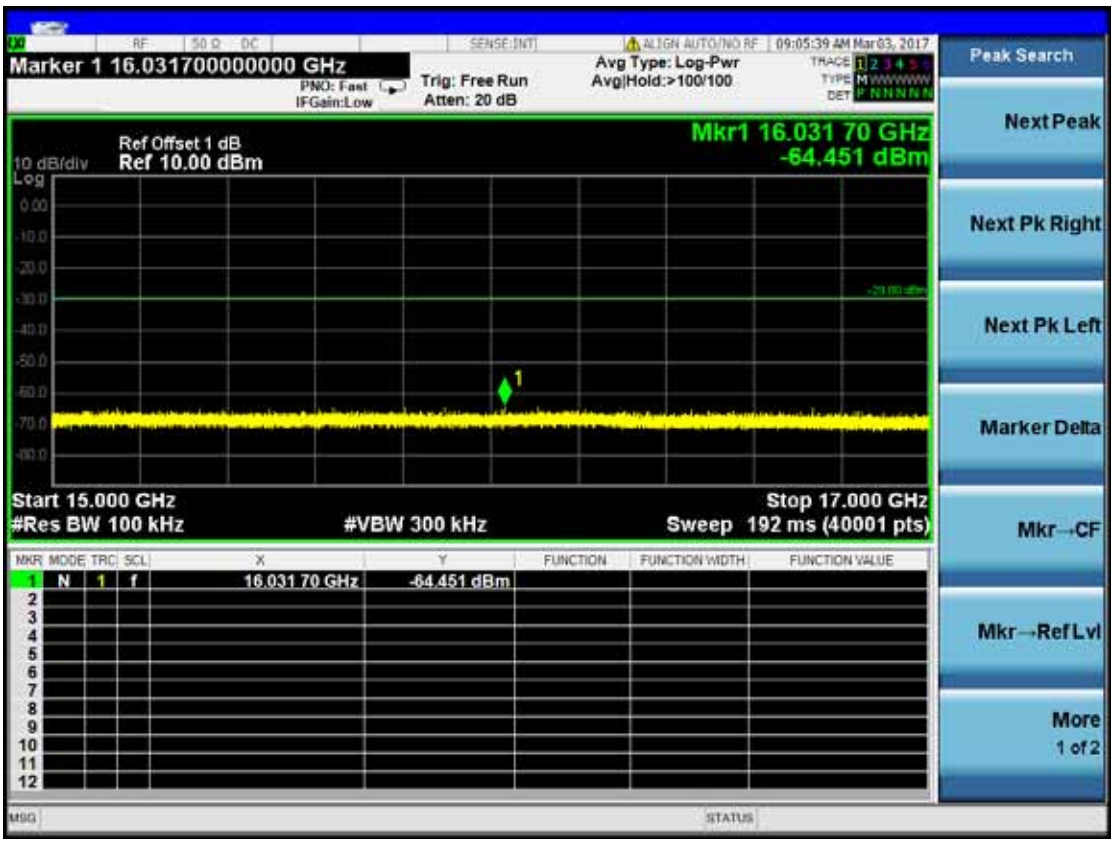

Marker 1 5.067650000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:00:57 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 5.067 65 GHz
-64.896 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 7.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 5.067 65 GHz -64.896 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

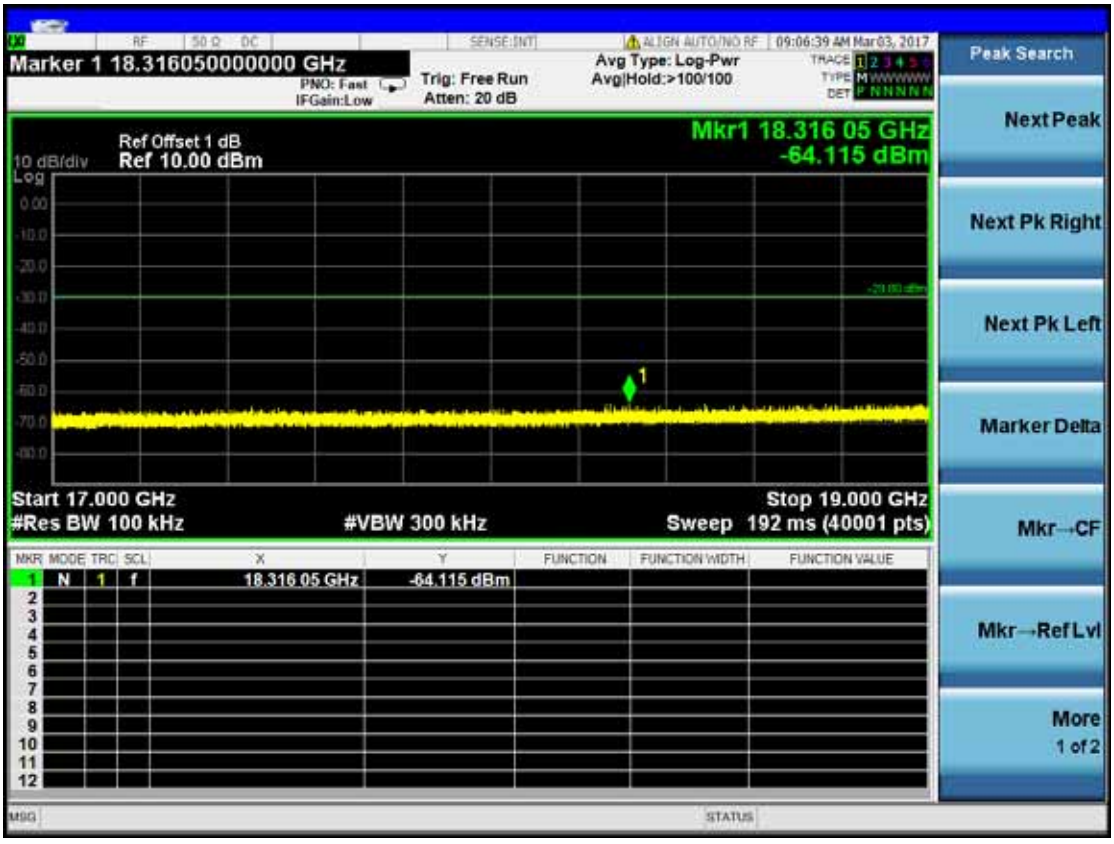

Marker 1 7.216450000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:01:53 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 7.216 45 GHz
-63.941 dBm
Start 7.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 7.216 45 GHz -63.941 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

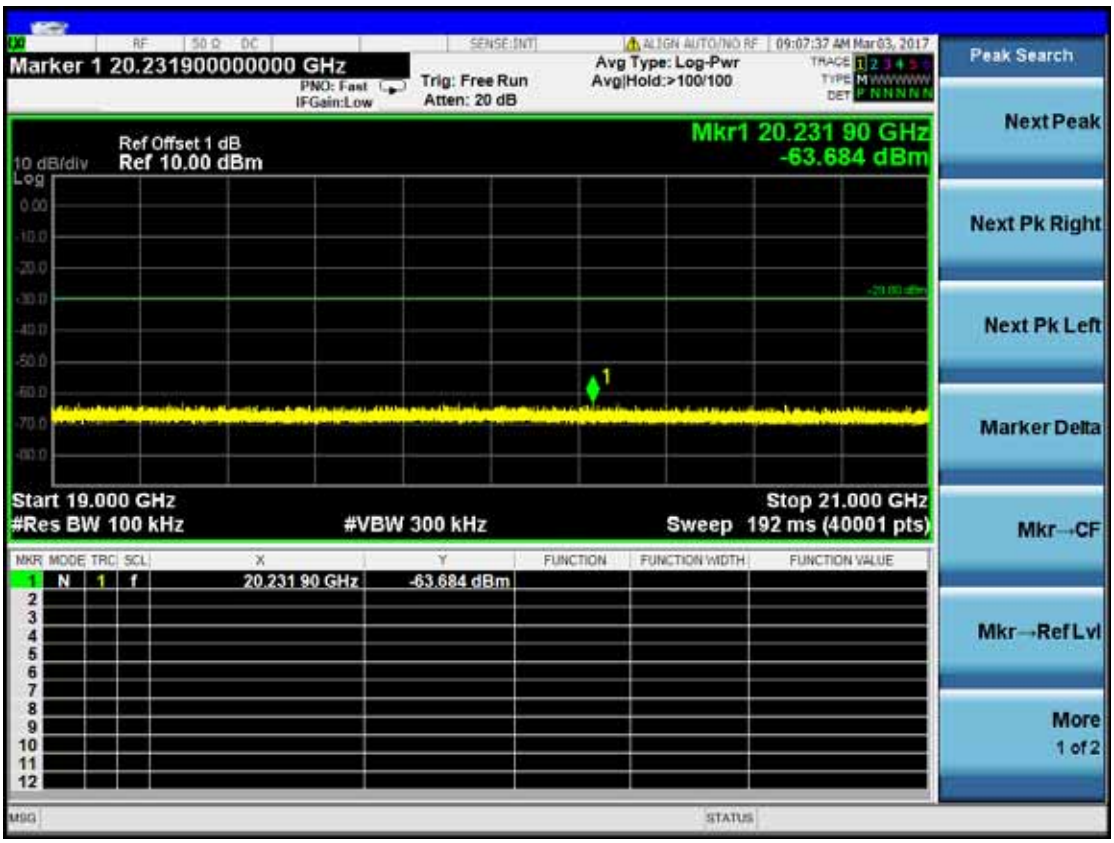

Marker 1 10.082100000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:02:48 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 10.082 10 GHz
-66.727 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 11.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 10.082 10 GHz -66.727 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

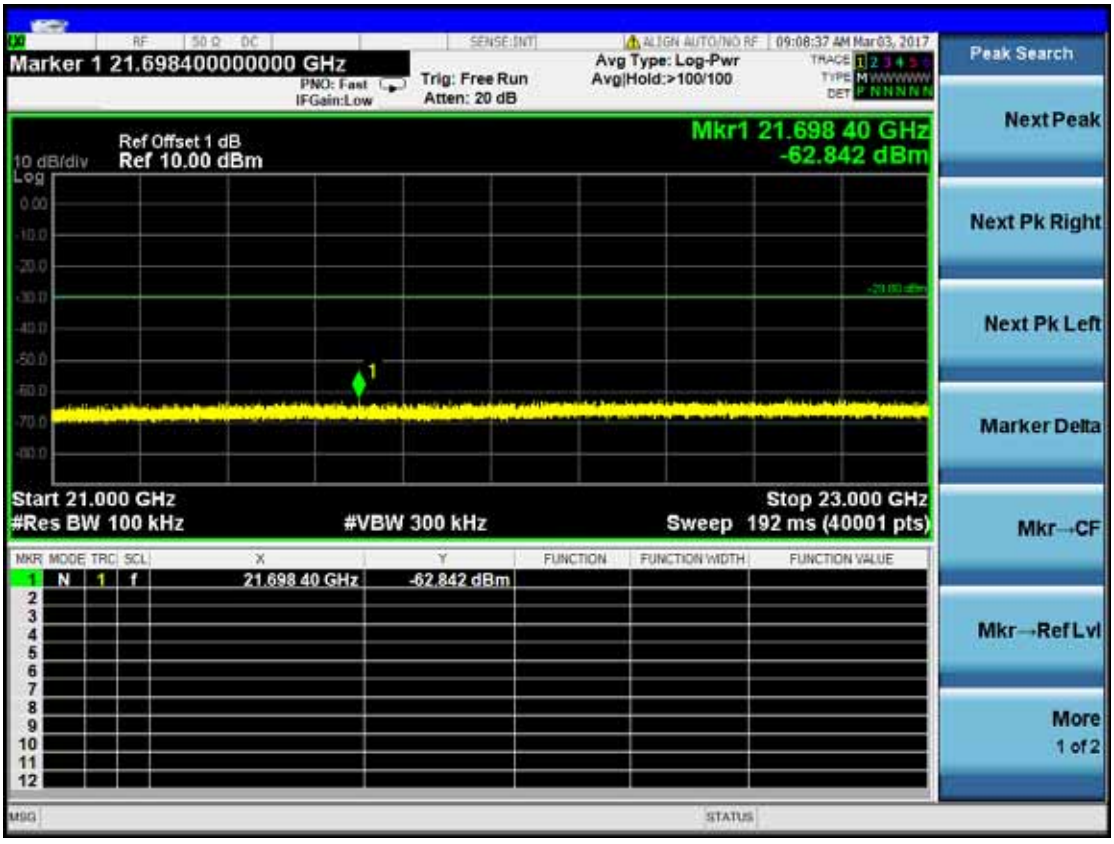

Marker 1 11.492000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:03:41 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 11.492 00 GHz
-65.303 dBm
Start 11.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 11.492 00 GHz -65.303 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

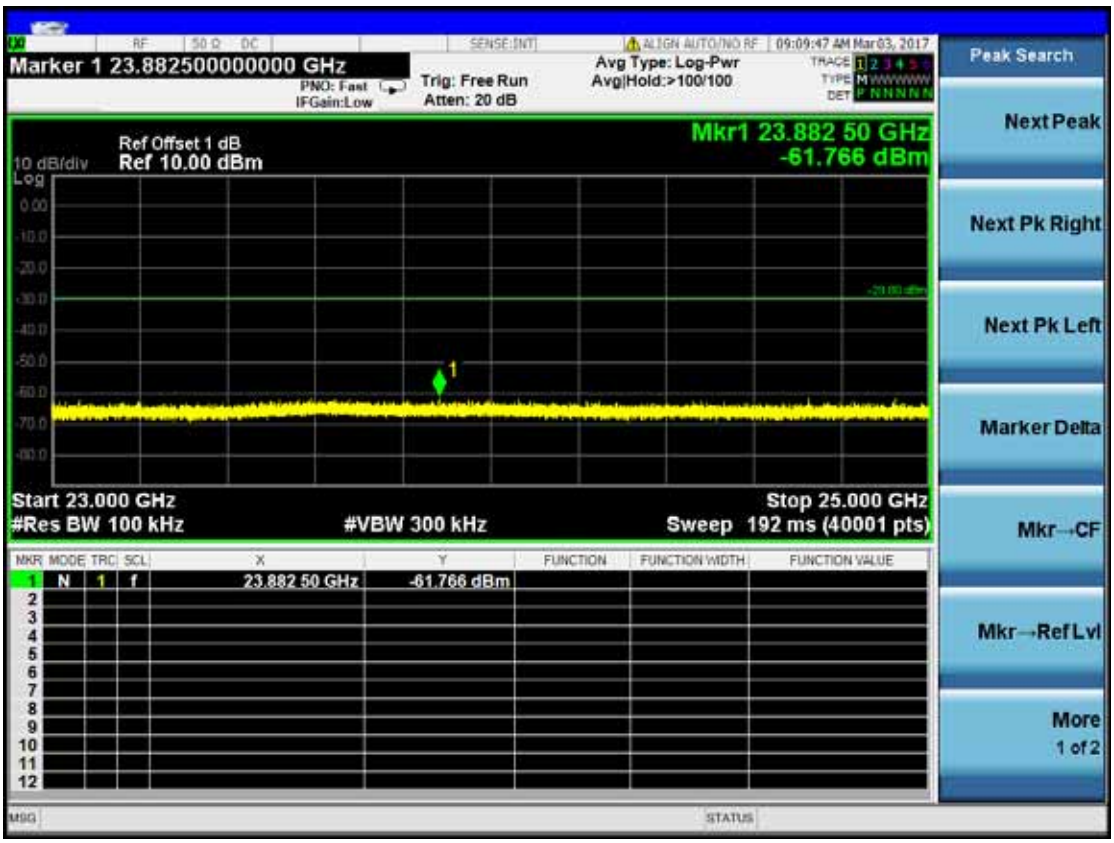

Marker 1 13.715150000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:04:42 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 13.715 15 GHz
-65.249 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 15.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 13.715 15 GHz -65.249 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Alignment Completed


Marker 1 16.031700000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:05:39 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 16.031 70 GHz
-64.451 dBm
Start 15.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 16.031 70 GHz -64.451 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

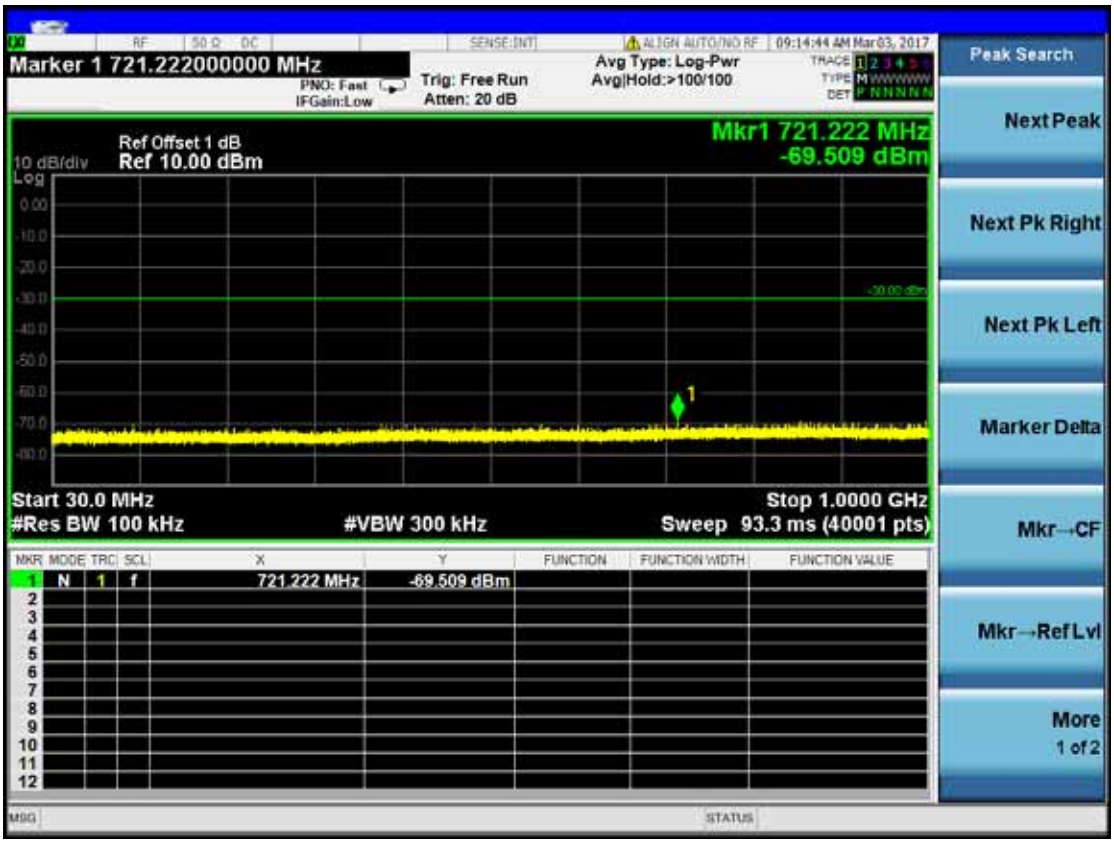

Marker 1 18.316050000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:06:39 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 18.316 05 GHz
-64.115 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 19.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 18.316 05 GHz -64.115 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

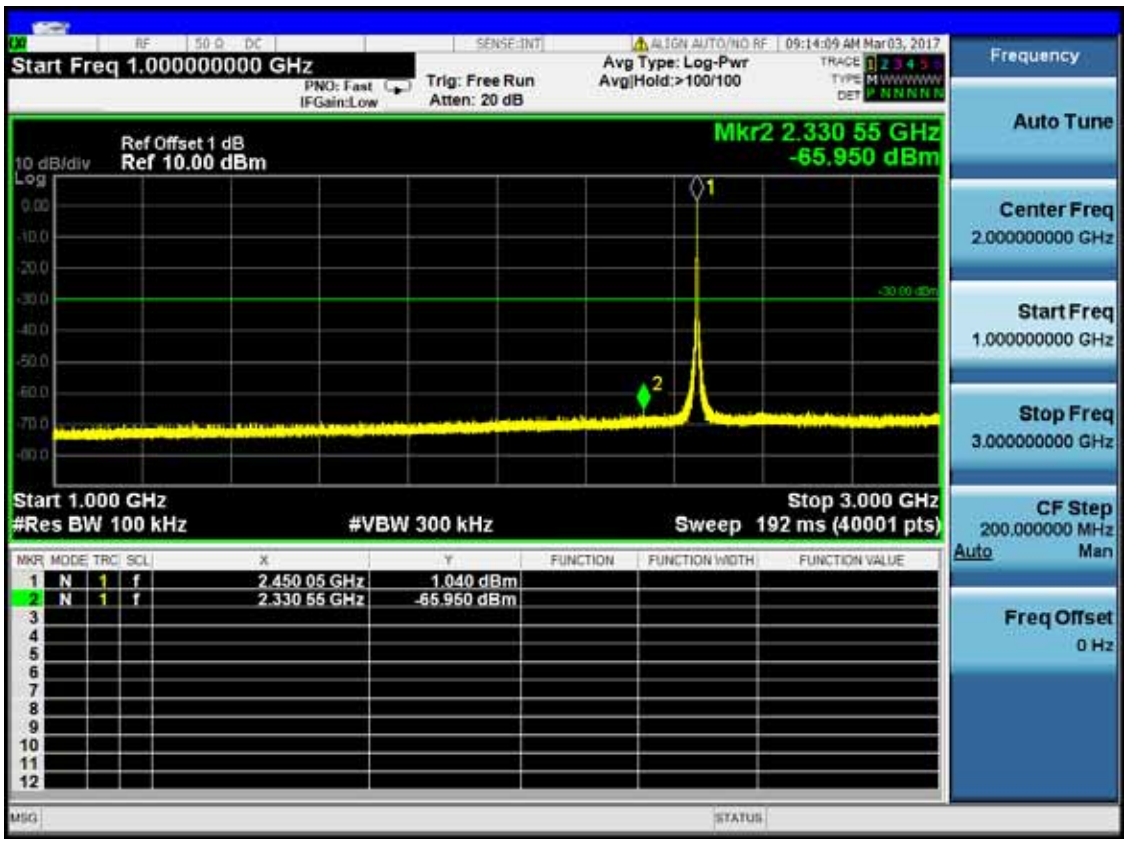

Marker 1 20.231900000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:07:37 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 20.231 90 GHz
-63.684 dBm
Start 19.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 20.231 90 GHz -63.684 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Marker 1 21.698400000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:08:37 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 21.698 40 GHz
-62.842 dBm
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 23.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 21.698 40 GHz -62.842 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

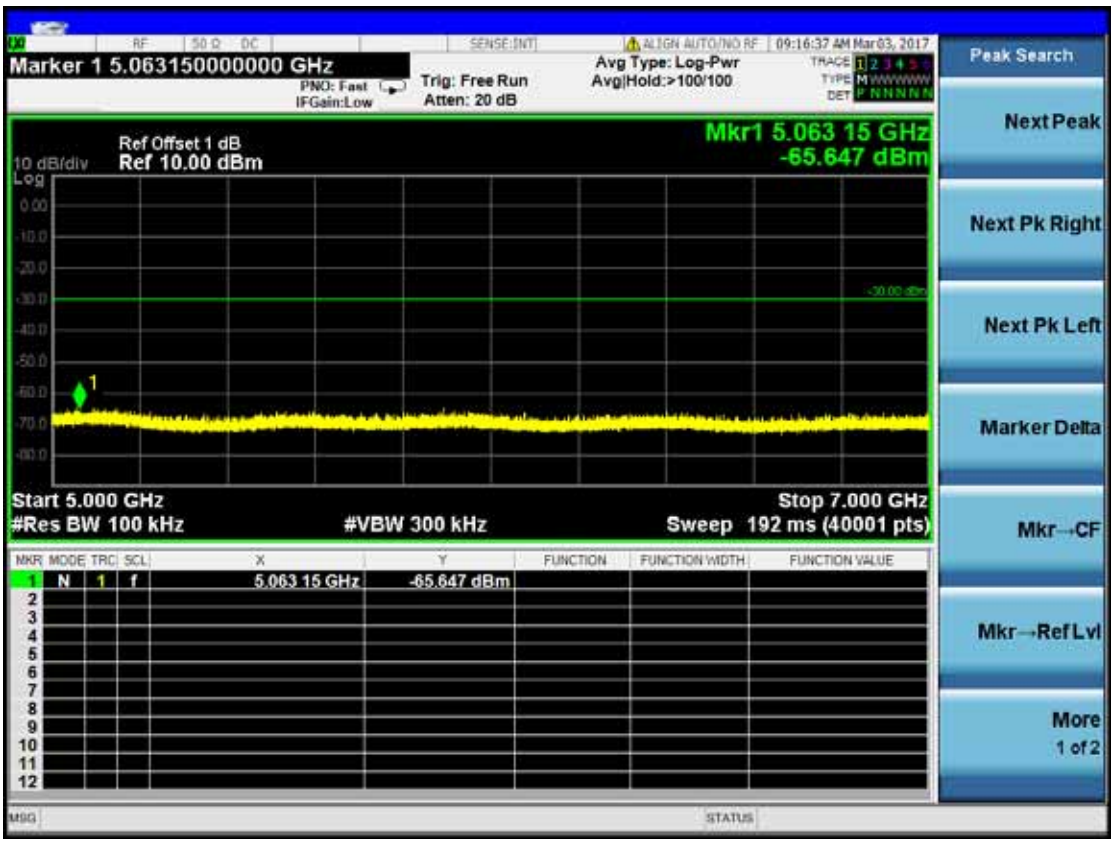

Marker 1 23.882500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:09:47 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 23.882 50 GHz
-61.766 dBm
Start 23.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 23.882 50 GHz -61.766 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

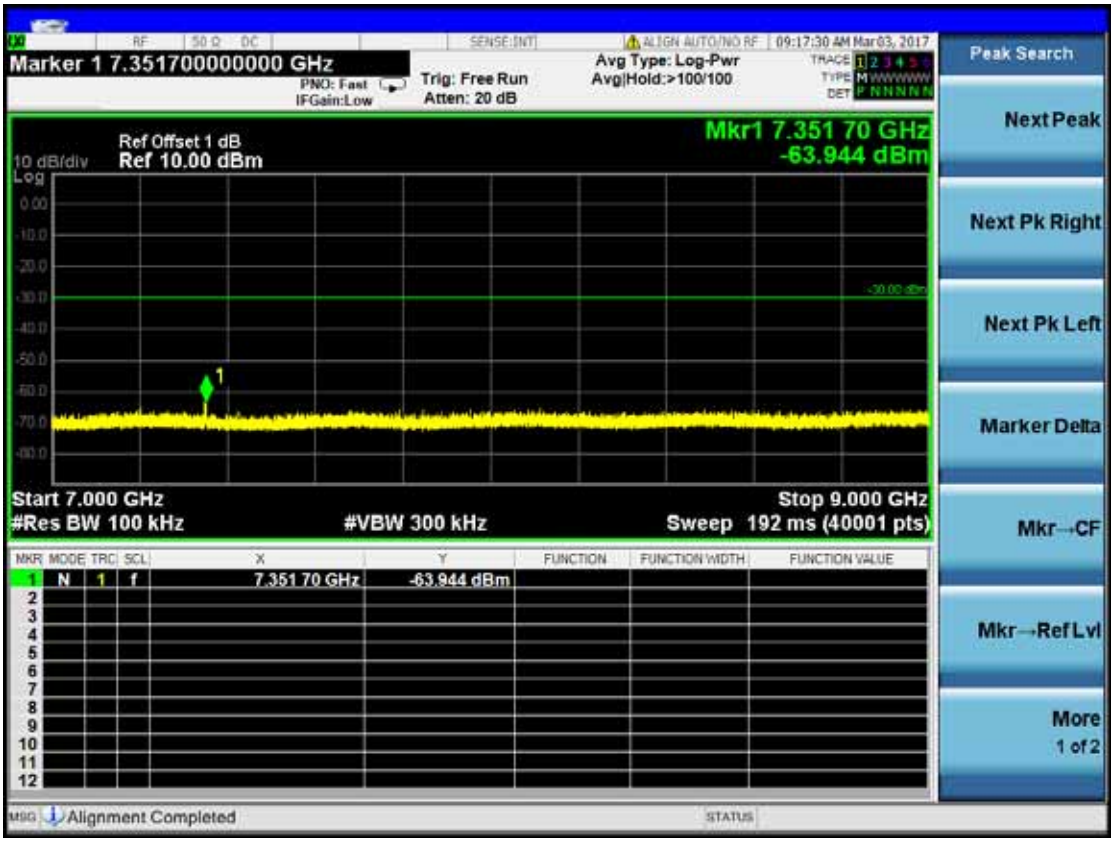
CH 20

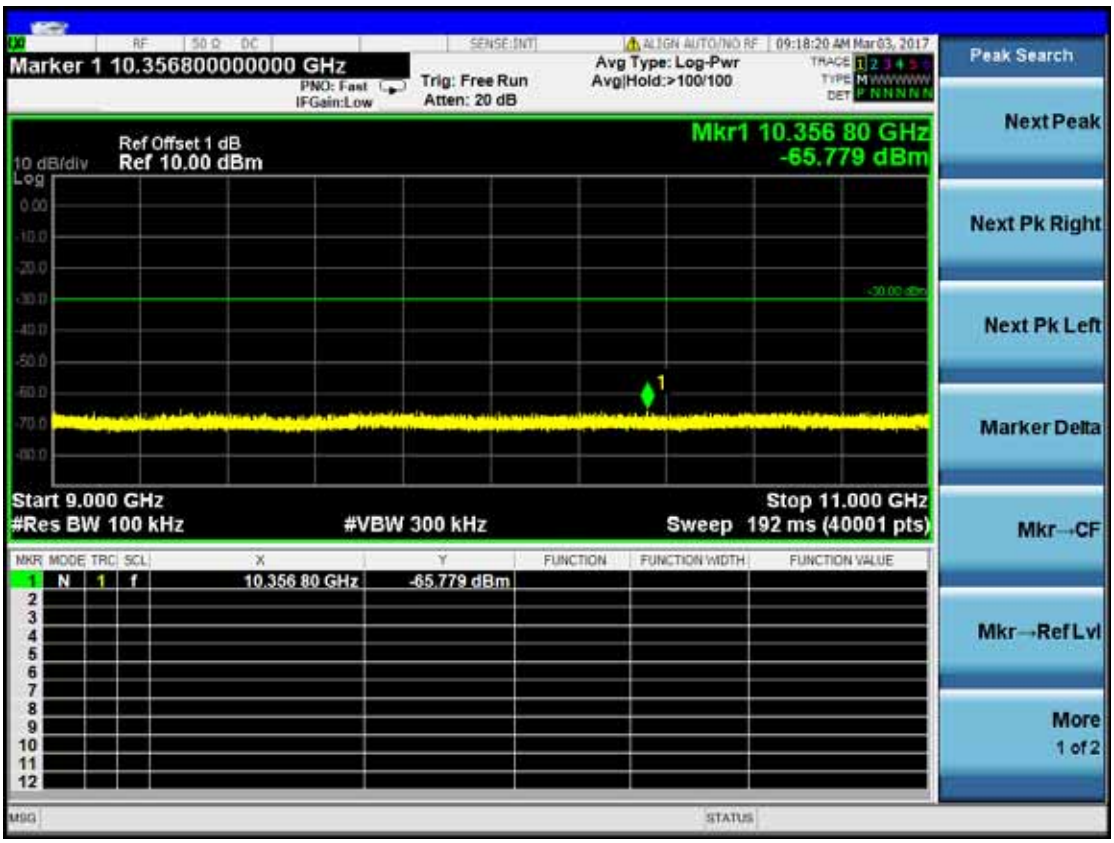

Marker 1 721.222000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:14:44 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 721.222 MHz
-69.509 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 93.3 ms (40001 pts)
1 N 1 f 721.222 MHz -69.509 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

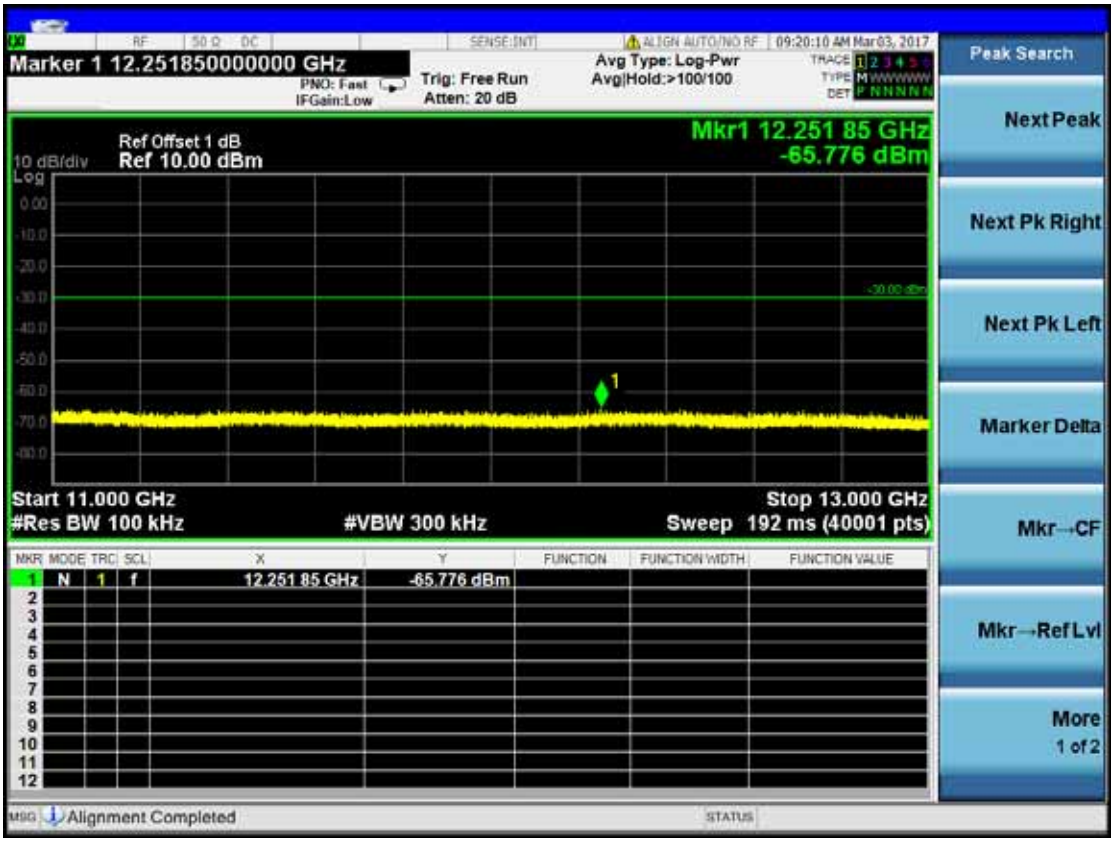

Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:14:09 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Mkr2 2.330 55 GHz
-65.950 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 3.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 2.450 05 GHz 1.040 dBm
2 N 1 f 2.330 55 GHz -65.950 dBm
Frequency
Auto Tune
Center Freq
2.000000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
3.000000000 GHz
CF Step
200.000000 MHz
Auto
Man
Freq Offset
0 Hz

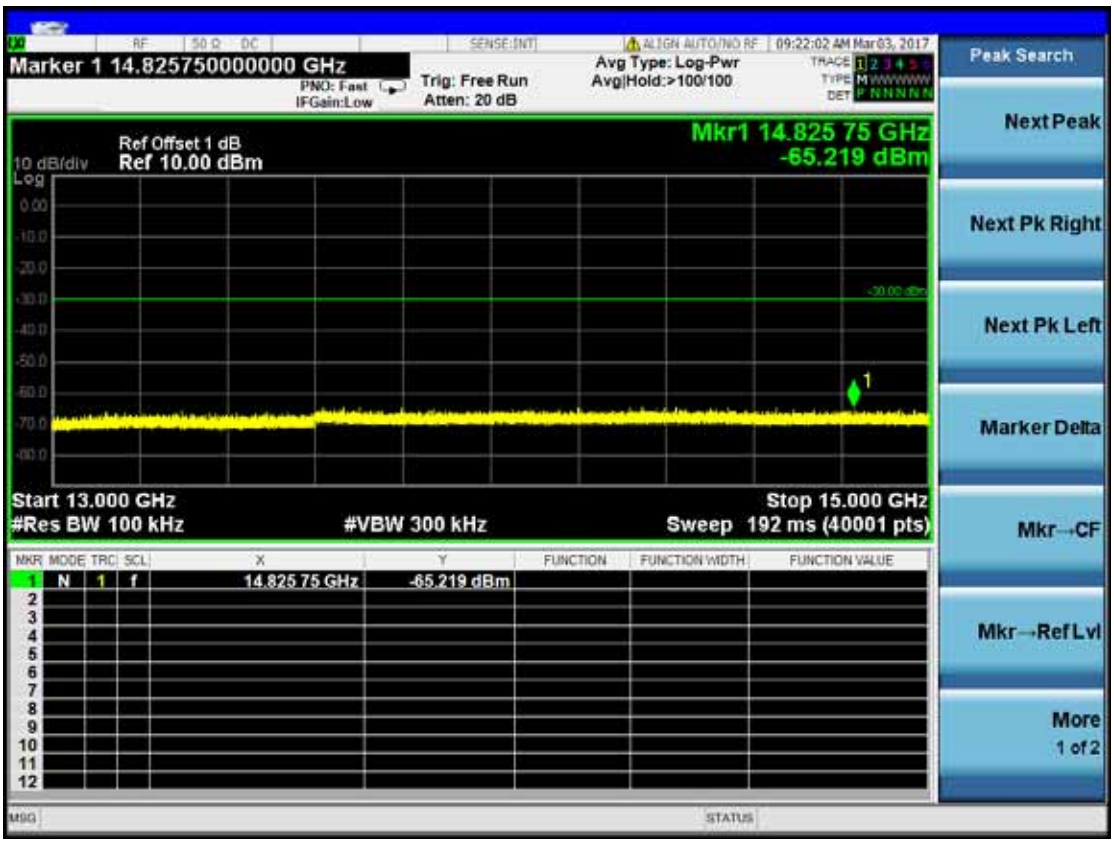

Marker 1 4.900950000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:15:32 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Mkr1 4.900 95 GHz
-58.261 dBm
Start 3.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 5.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 4.900 95 GHz -58.261 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

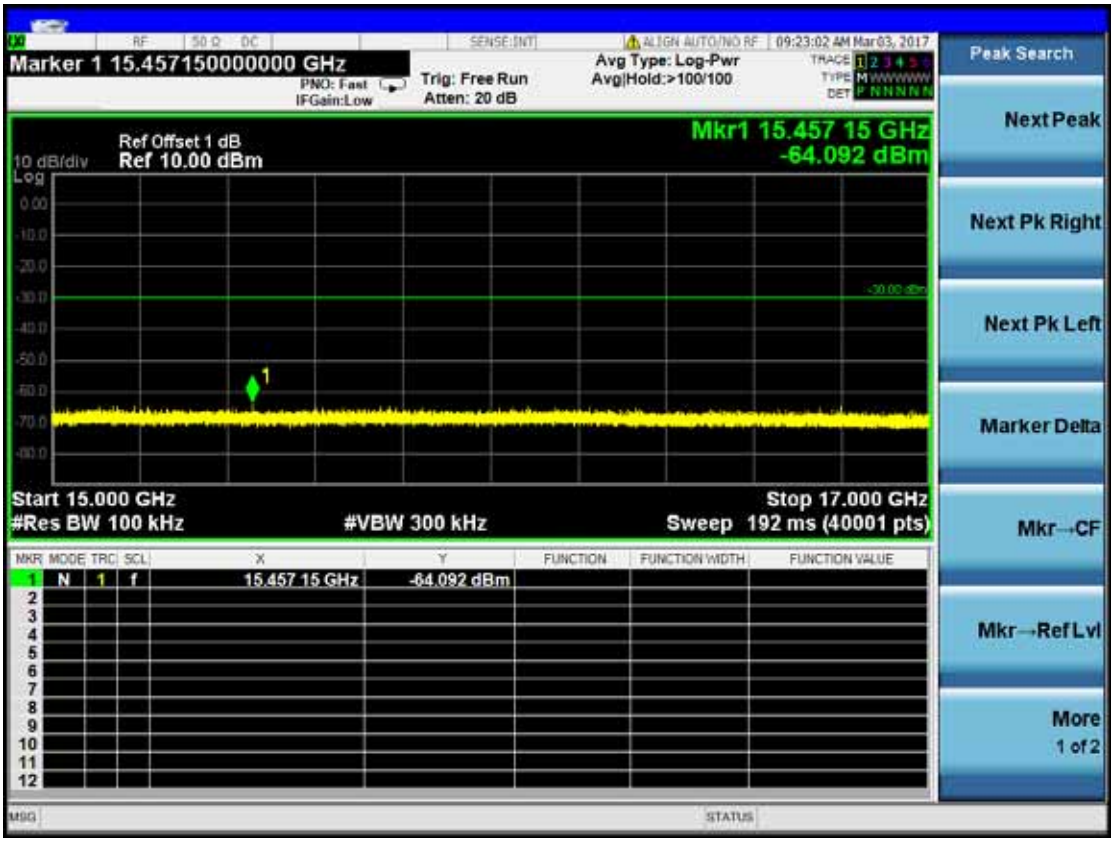

Marker 1 5.063150000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:16:37 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 5.063 15 GHz
-65.647 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 7.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 5.063 15 GHz -65.647 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

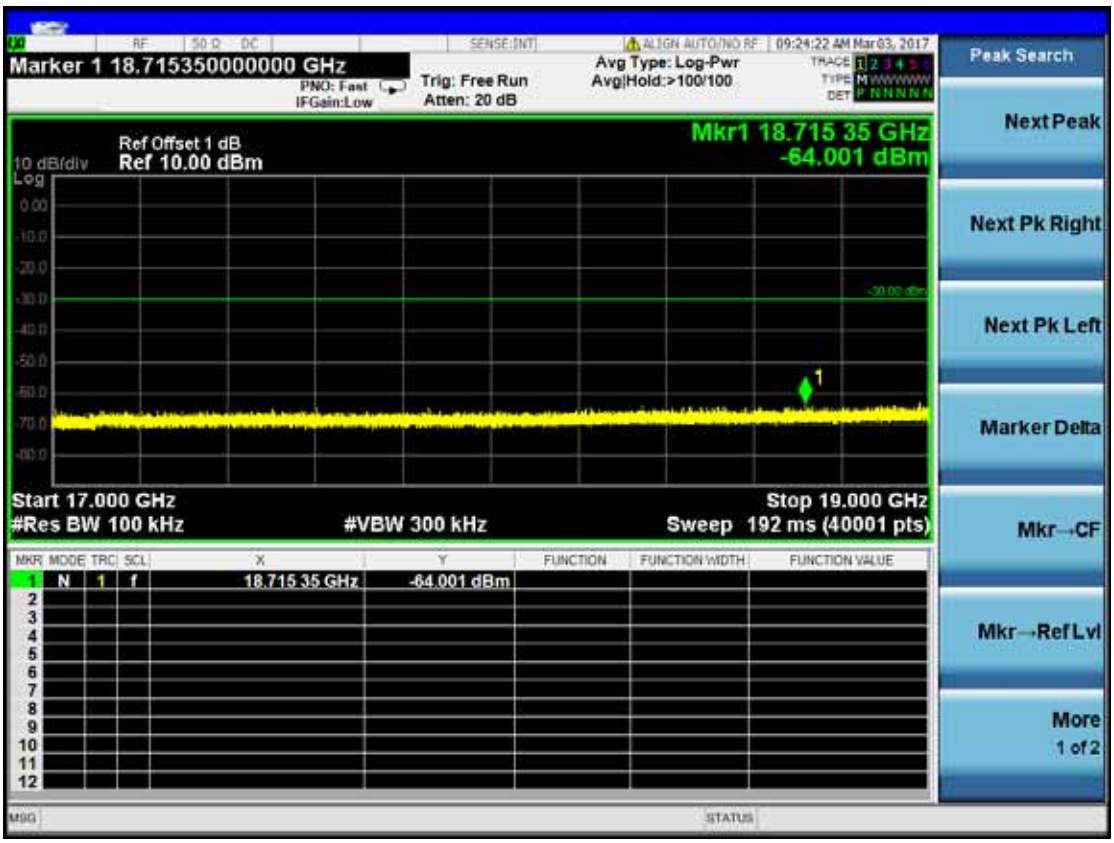

Marker 1 7.351700000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:17:30 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 7.351 70 GHz
-63.944 dBm
Start 7.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 7.351 70 GHz -63.944 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
Alignment Completed
STATUS

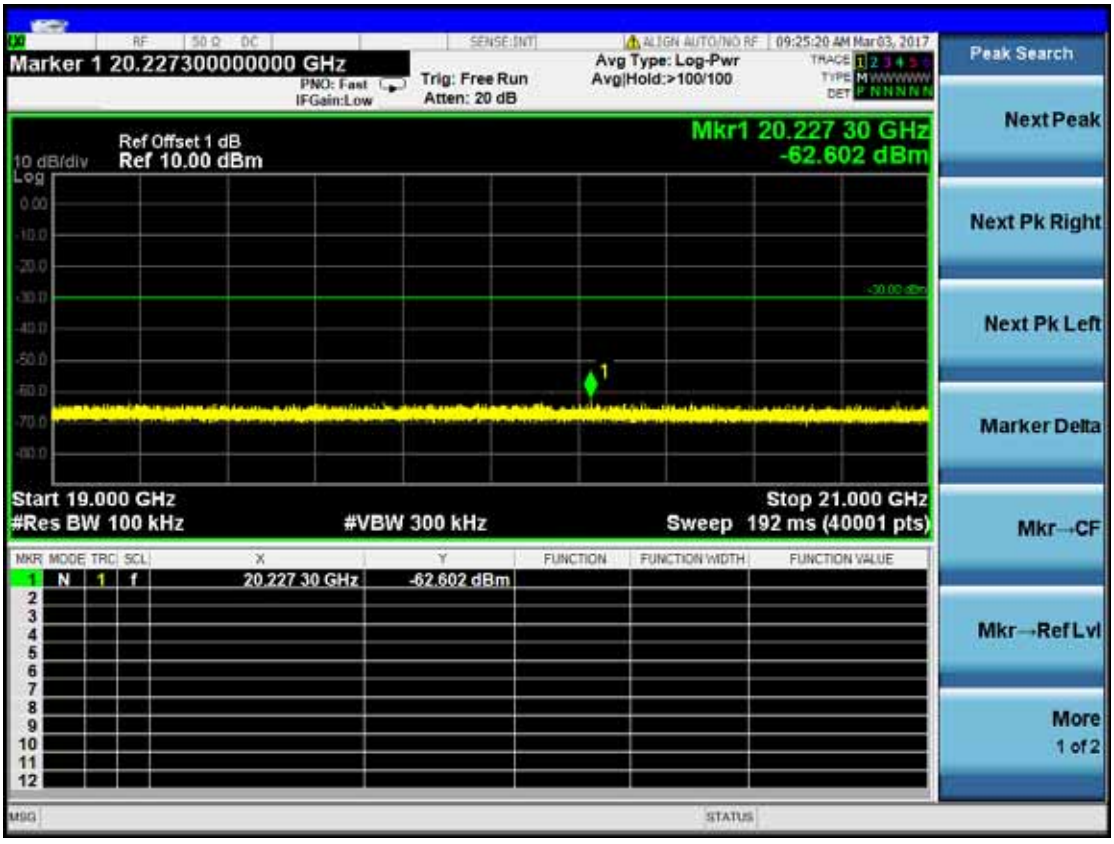

Marker 1 10.356800000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:18:20 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 10.356 80 GHz
-65.779 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 11.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 10.356 80 GHz -65.779 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

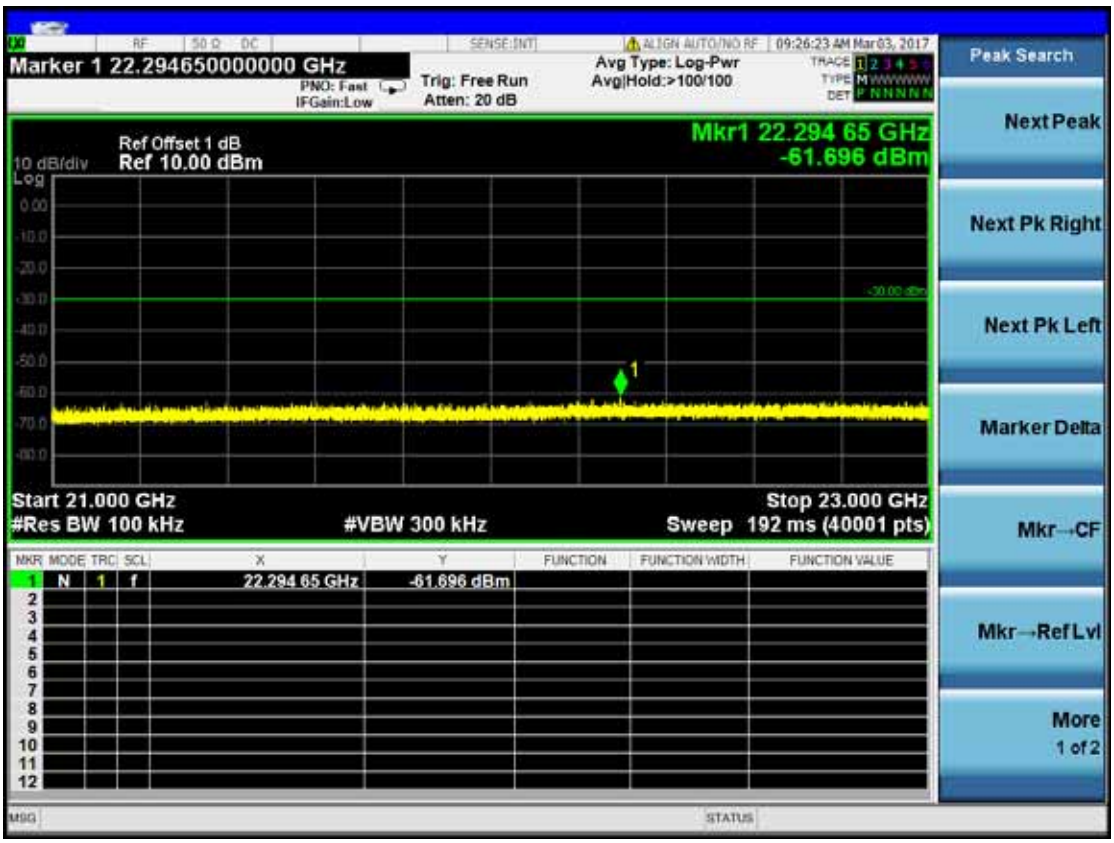

Marker 1 12.251850000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:20:10 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 12.251 85 GHz
-65.776 dBm
Start 11.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 12.251 85 GHz -65.776 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Alignment Completed

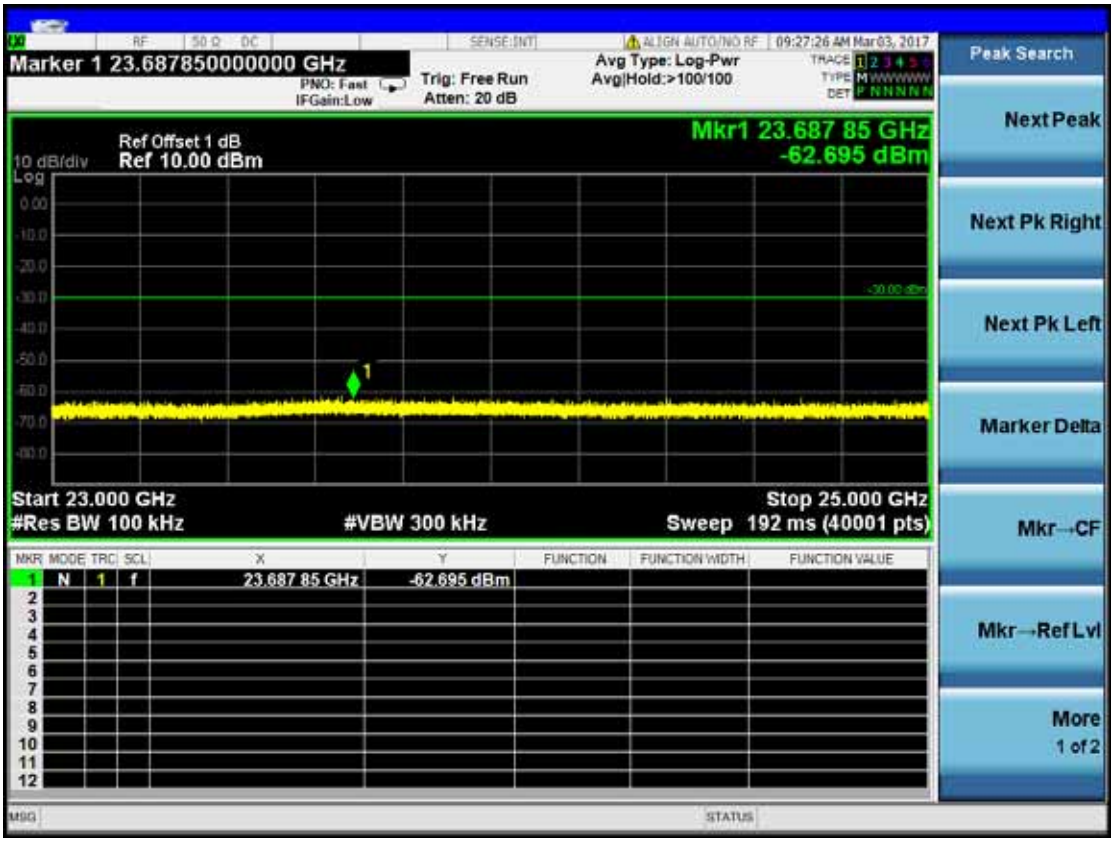

Marker 1 14.825750000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:22:02 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 14.825 75 GHz
-65.219 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 15.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 14.825 75 GHz -65.219 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Marker 1 15.457150000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:23:02 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 15.457 15 GHz
-64.092 dBm
Start 15.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 15.457 15 GHz -64.092 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Marker 1 18.715350000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:24:22 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 18.715 35 GHz
-64.001 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 19.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 18.715 35 GHz -64.001 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Marker 1 20.227300000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:25:20 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 20.227 30 GHz
-62.602 dBm
Start 19.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 20.227 30 GHz -62.602 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Marker 1 22.294650000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:26:23 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 22.294 65 GHz
-61.696 dBm
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 23.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 22.294 65 GHz -61.696 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Marker 1 23.687850000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:27:26 AM Mar 03, 2017
Ref Offset 1 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 23.687 85 GHz
-62.695 dBm
Start 23.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 23.687 85 GHz -62.695 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

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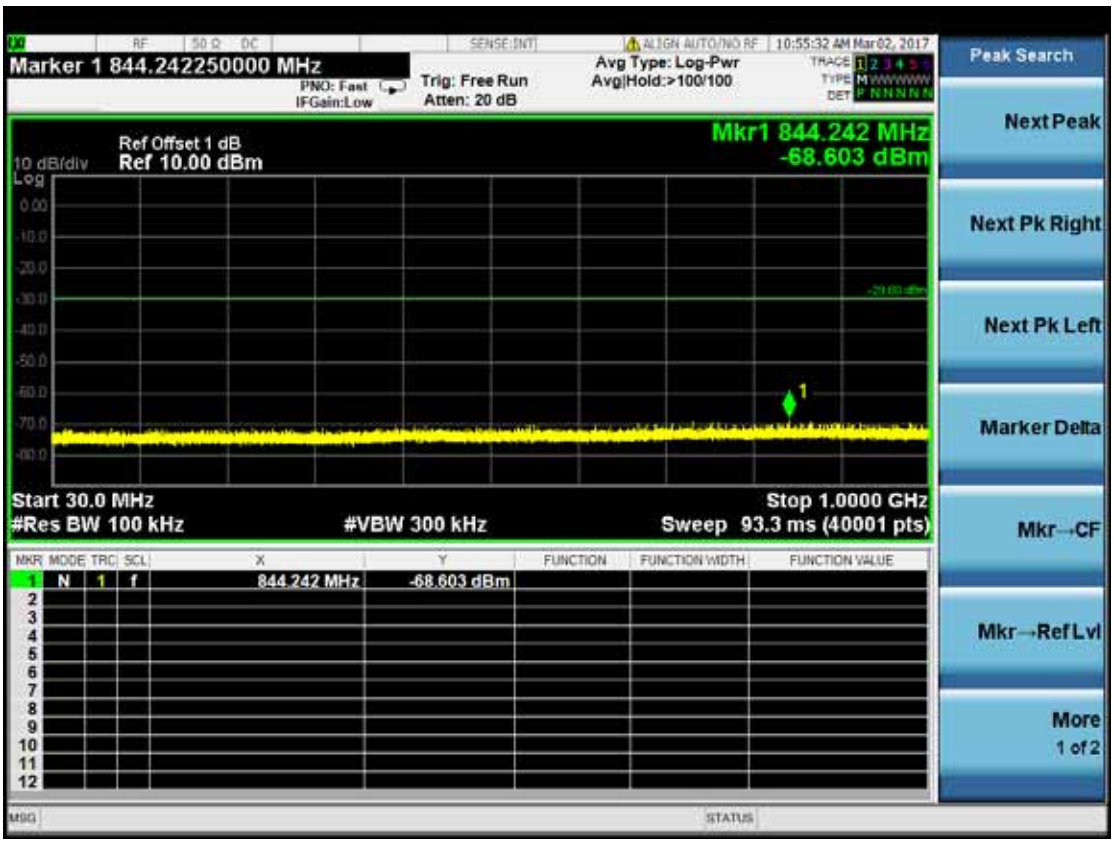
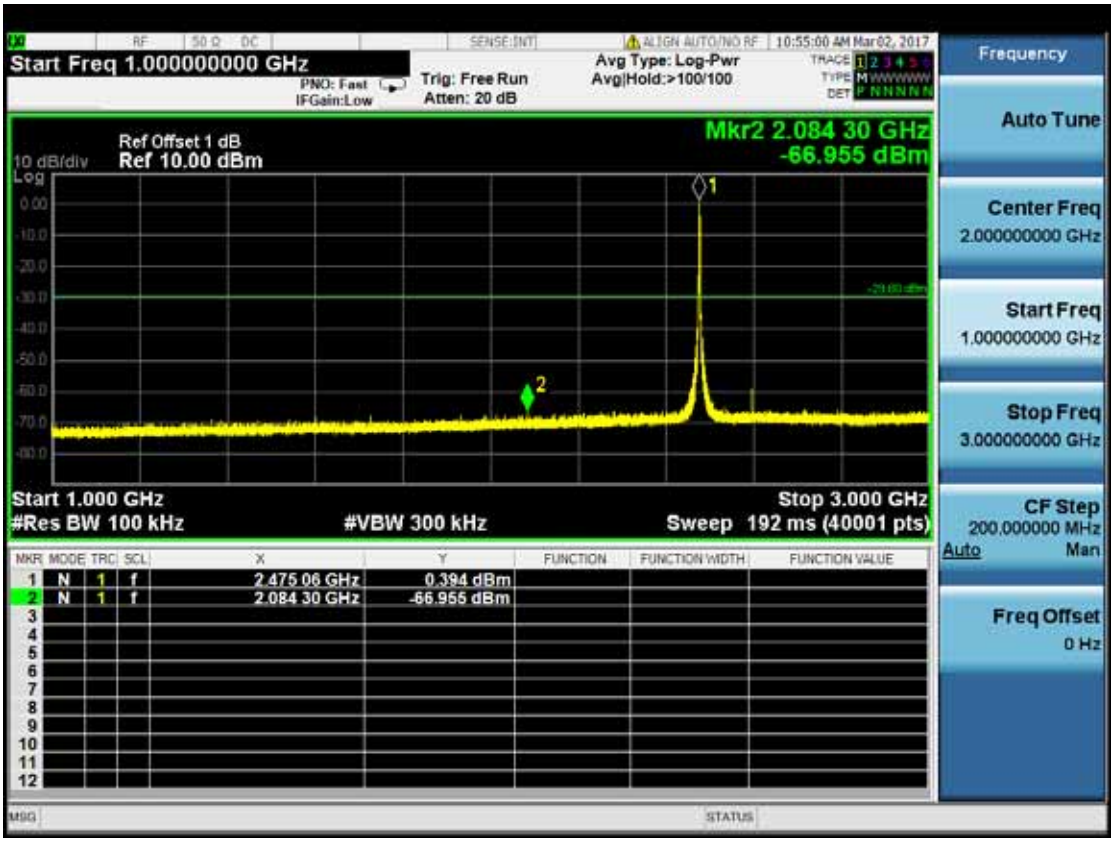
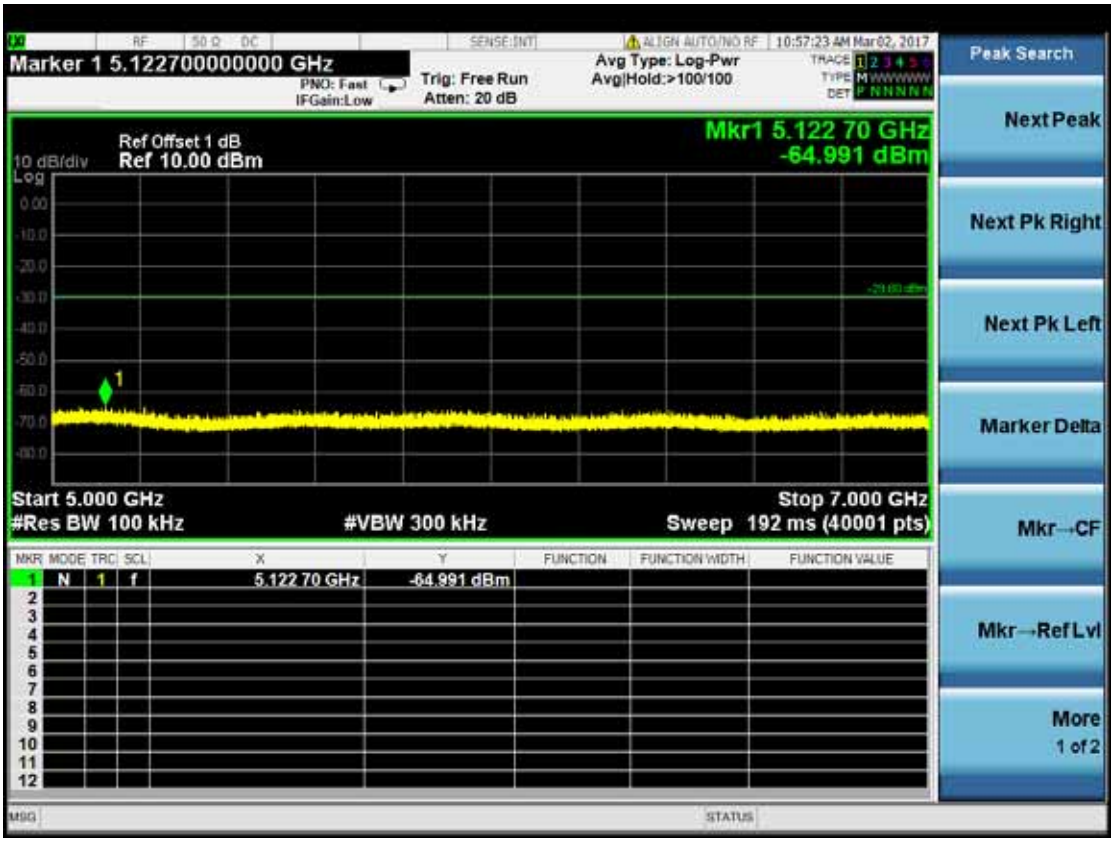
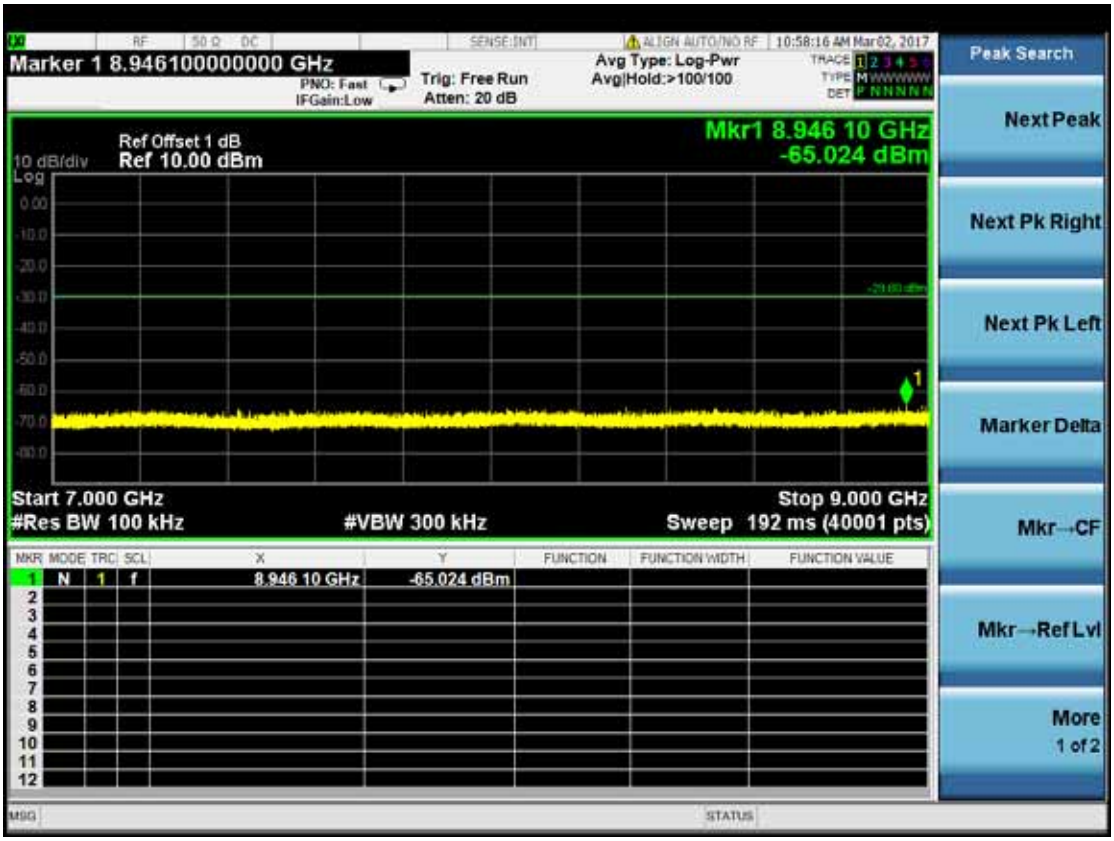
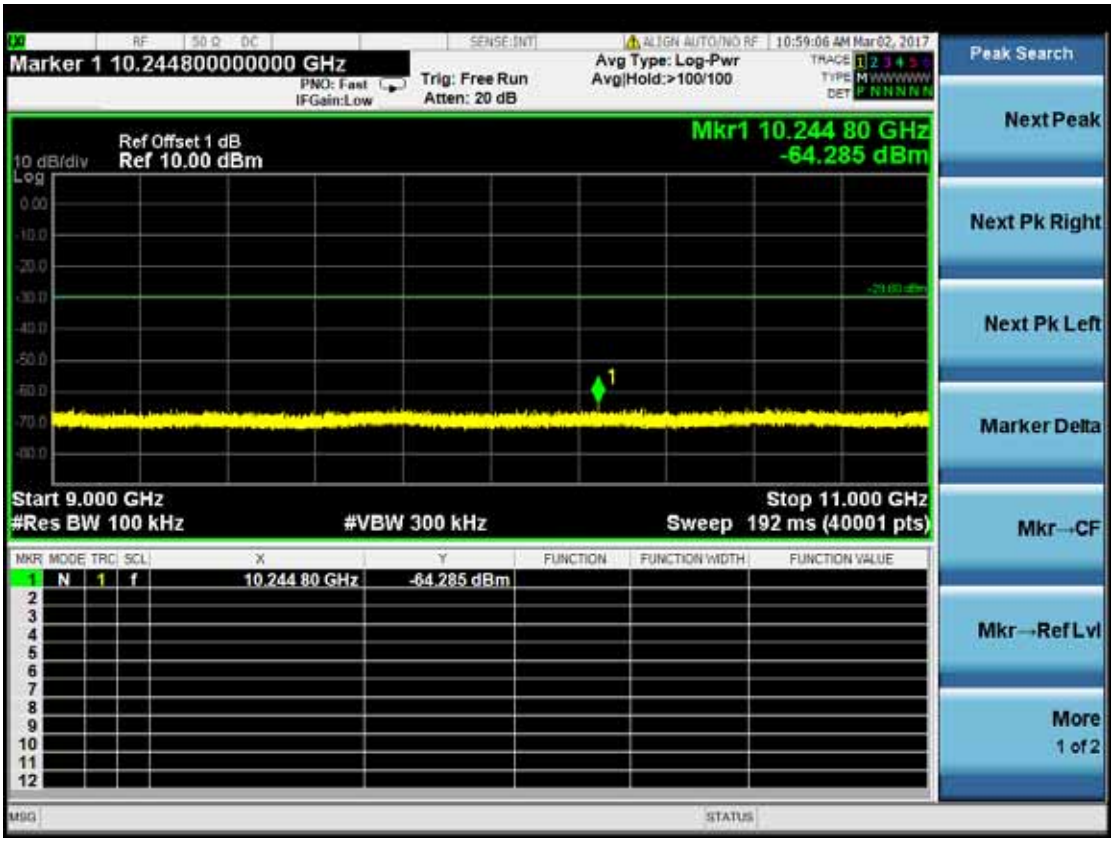

Marker 1 844.242250000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
10:55:32 AM Mar 02, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 844.242 MHz
-68.603 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 93.3 ms (40001 pts)
1 N 1 f 844.242 MHz -68.603 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

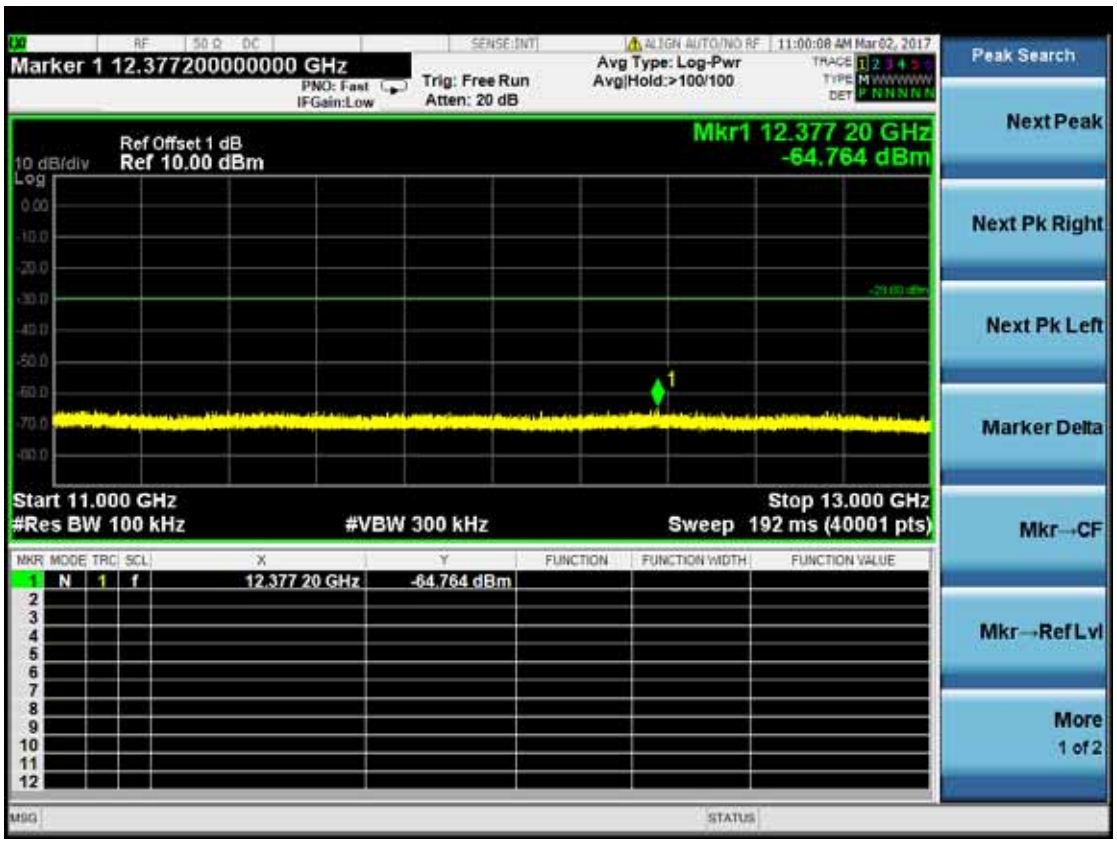

Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
10:55:00 AM Mar 02, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr2 2.084 30 GHz
-66.955 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 3.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 2.475 06 GHz 0.394 dBm
2 N 1 f 2.084 30 GHz -66.955 dBm
Frequency
Auto Tune
Center Freq
2.000000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
3.000000000 GHz
CF Step
200.000000 MHz
Auto
Man
Freq Offset
0 Hz

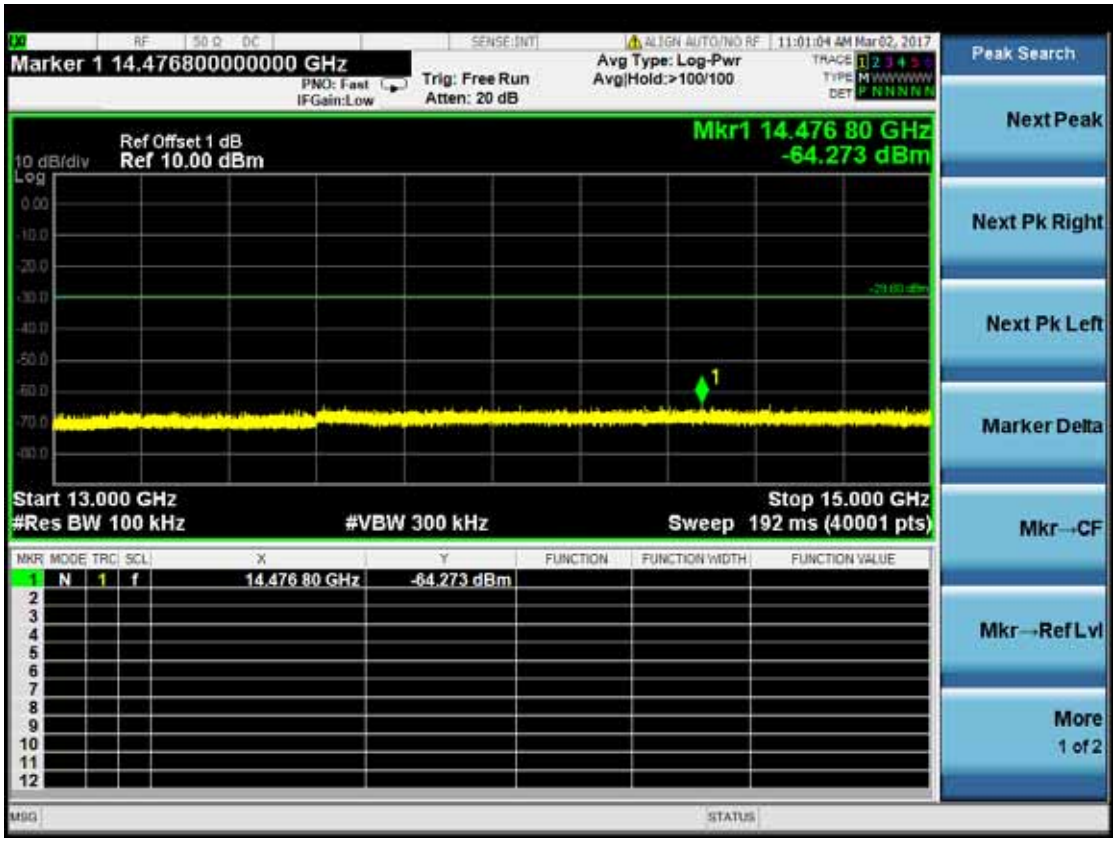

Marker 1 3.831050000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
10:56:33 AM Mar 02, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 3.831 05 GHz
-63.029 dBm
Start 3.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 5.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 3.831 05 GHz -63.029 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

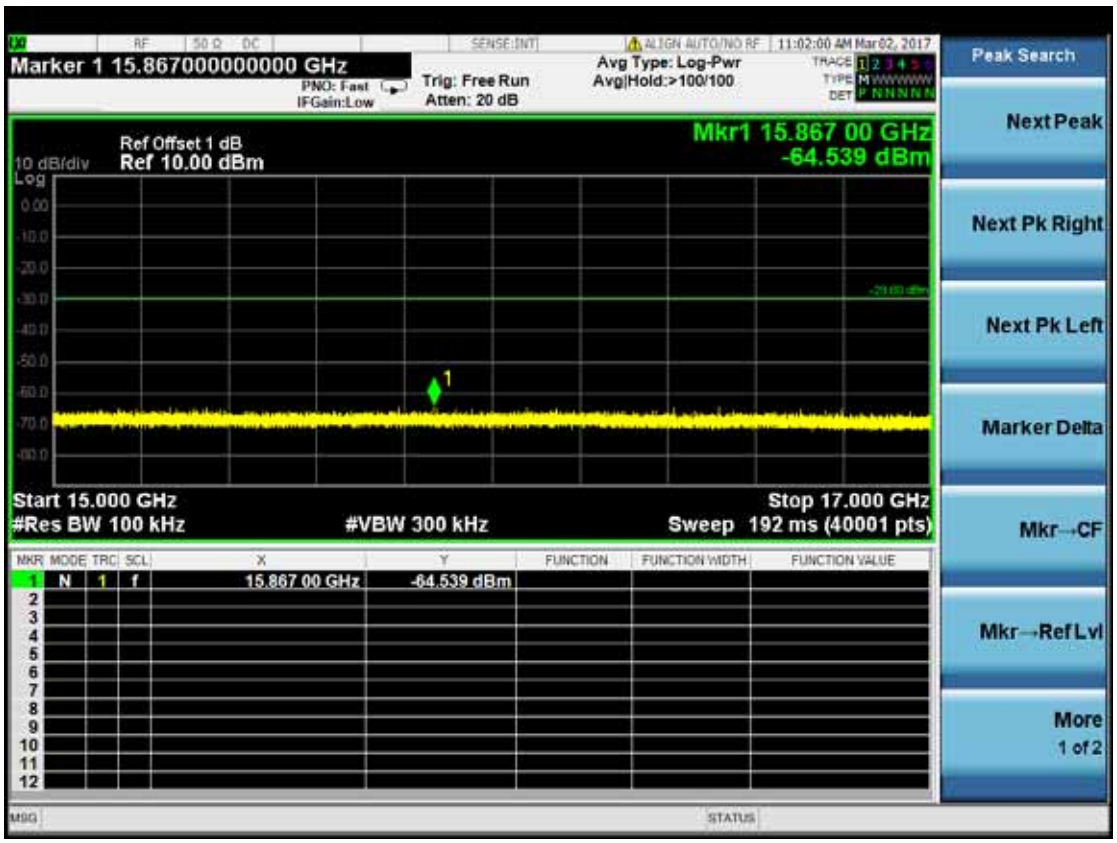

Marker 1 5.122700000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
10:57:23 AM Mar 02, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 5.122 70 GHz
-64.991 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 7.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 5.122 70 GHz -64.991 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

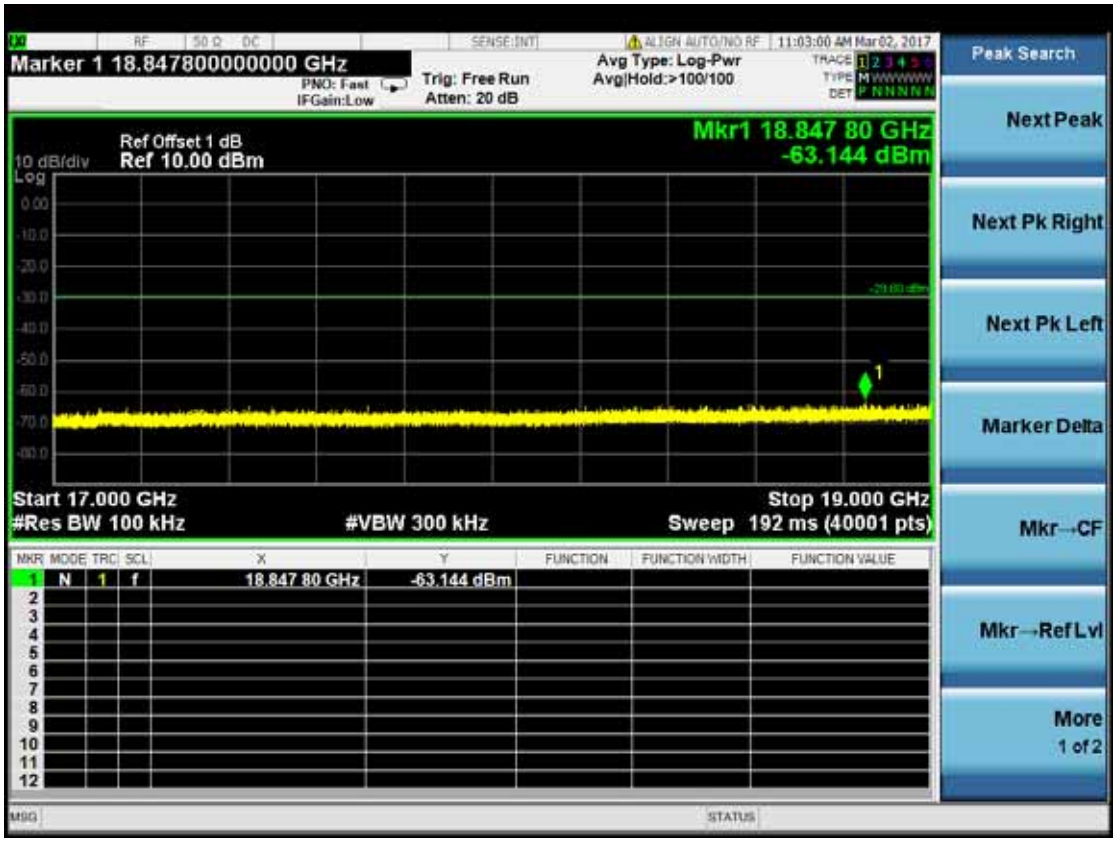

Marker 1 8.946100000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
10:58:16 AM Mar 02, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 8.946 10 GHz
-65.024 dBm
Start 7.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 8.946 10 GHz -65.024 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

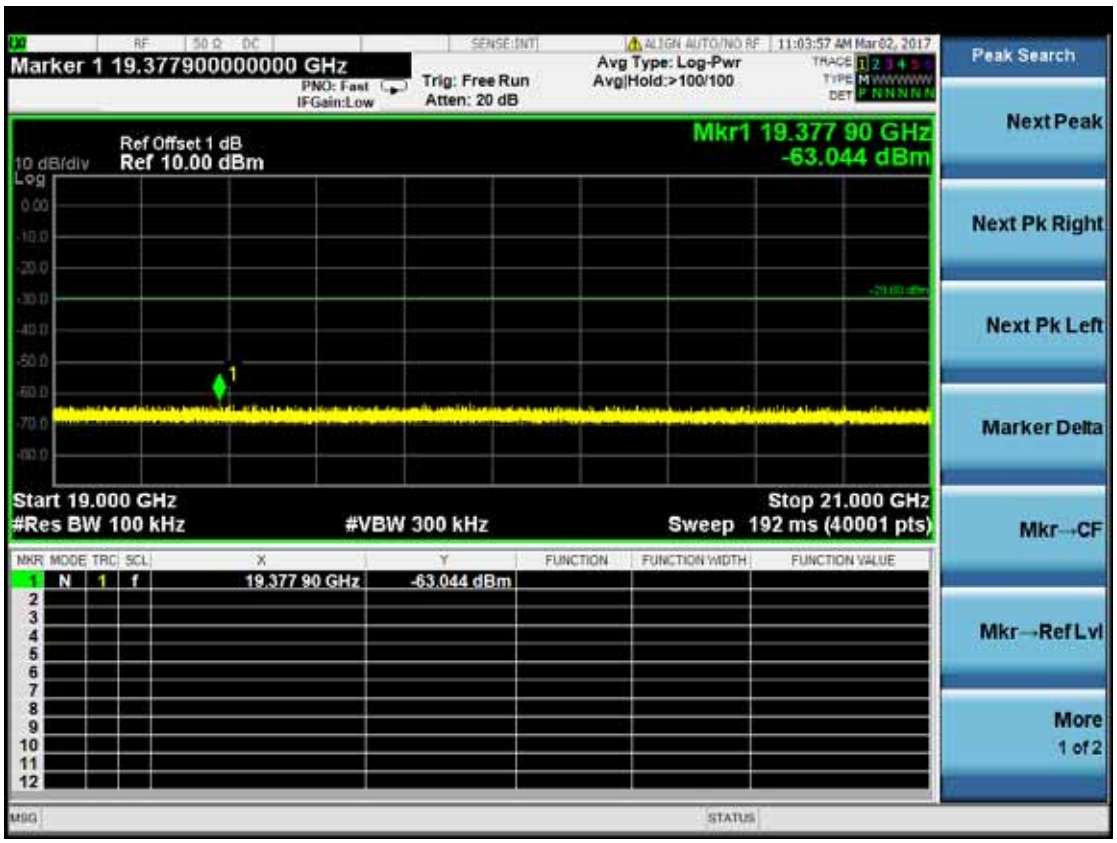

Marker 1 10.244800000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
10:59:06 AM Mar 02, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 10.244 80 GHz
-64.285 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 11.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 10.244 80 GHz -64.285 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

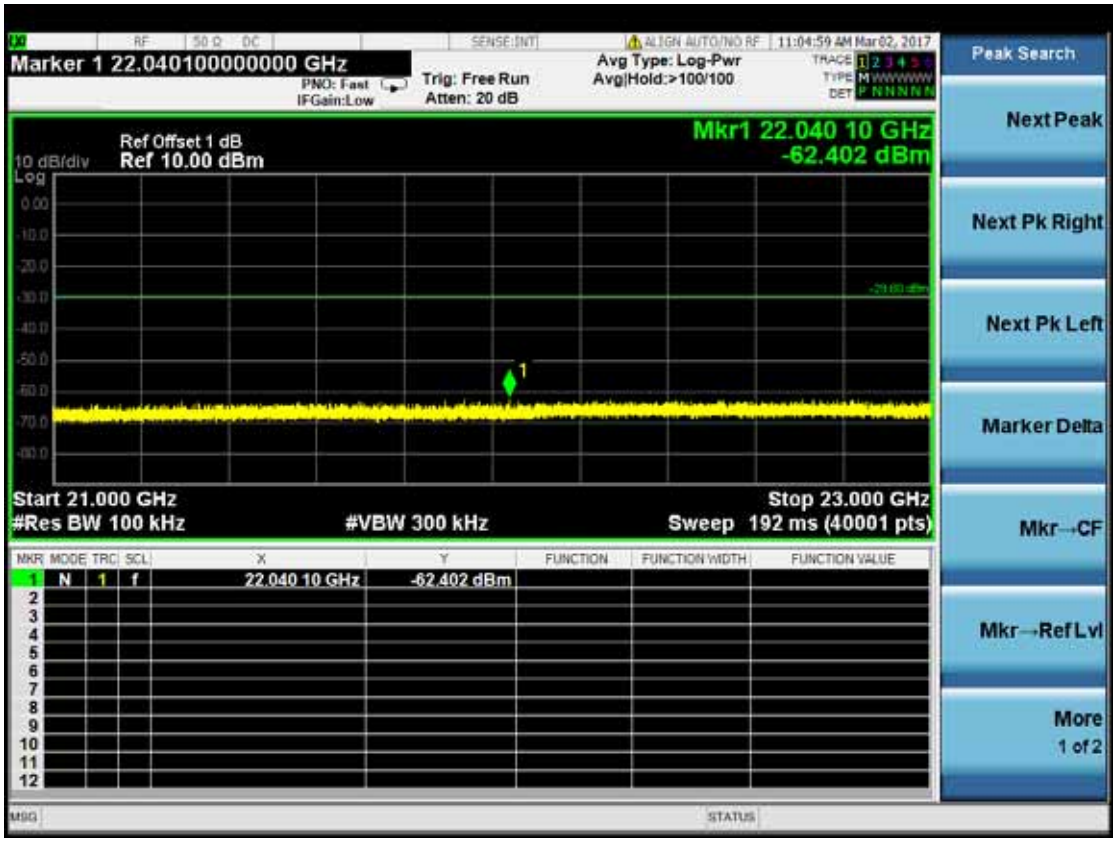

Marker 1 12.377200000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:00:08 AM Mar 02, 2017
Ref Offset 1 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 12.377 20 GHz
-64.764 dBm
Start 11.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 12.377 20 GHz -64.764 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

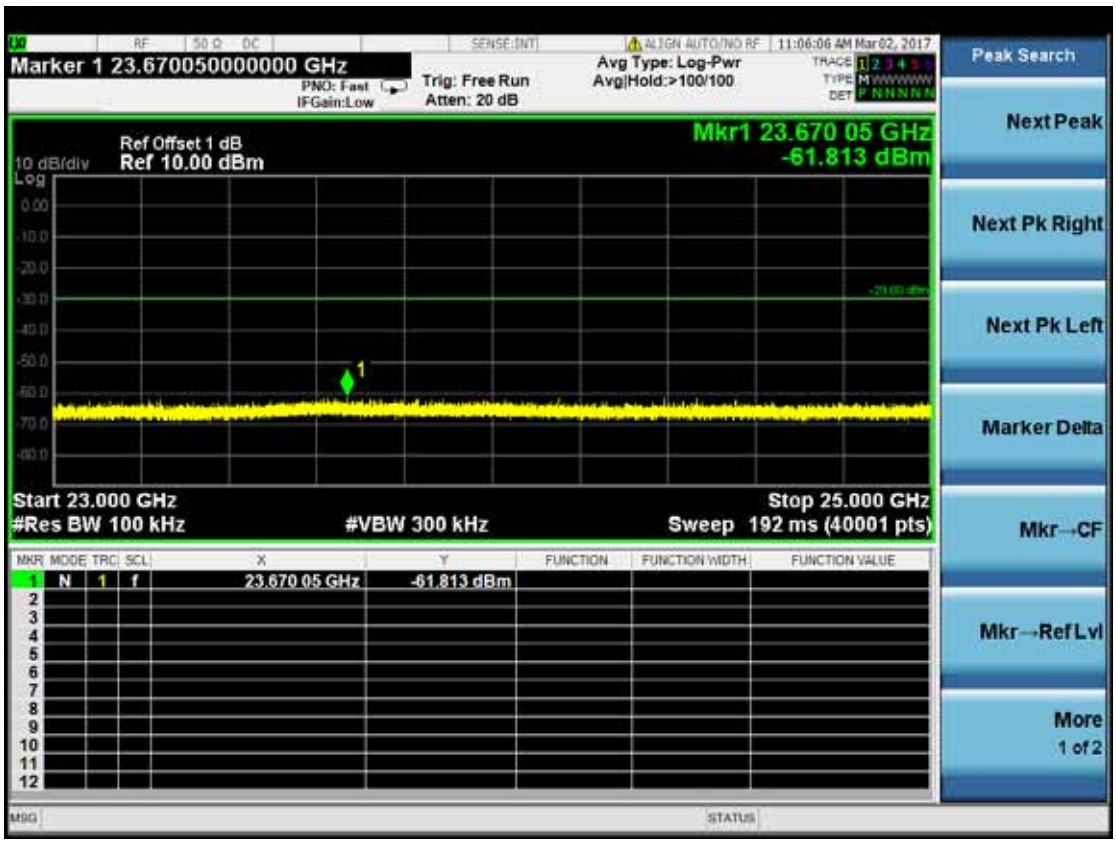

Marker 1 14.476800000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:01:04 AM Mar 02, 2017
Ref Offset 1 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 14.476 80 GHz
-64.273 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 15.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 14.476 80 GHz -64.273 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Marker 1 15.867000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:02:00 AM Mar 02, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 15.867 00 GHz
-64.539 dBm
Start 15.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 15.867 00 GHz -64.539 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Marker 1 18.847800000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:03:00 AM Mar 02, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 18.847 80 GHz
-63.144 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 19.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 18.847 80 GHz -63.144 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Marker 1 19.377900000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:03:57 AM Mar 02, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 19.377 90 GHz
-63.044 dBm
Start 19.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 19.377 90 GHz -63.044 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Marker 1 22.040100000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:04:59 AM Mar 02, 2017
Ref Offset 1 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 22.040 10 GHz
-62.402 dBm
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 23.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 22.040 10 GHz -62.402 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Marker 1 23.670050000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:06:06 AM Mar 02, 2017
Ref Offset 1 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 23.670 05 GHz
-61.813 dBm
Start 23.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 192 ms (40001 pts)
1 N 1 f 23.670 05 GHz -61.813 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

11. DUTY CYCLE

11.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	PXA Signal Analyzer	Agilent	N9030A	MY53120367	2016-05-15	2017-05-14

11.2. Test Results

The measurement of duty cycle is 100%.

CH 25

12. DEVIATION TO TEST SPECIFICATIONS

【NONE】