FCC / IC RADIO TEST REPORT

REPORT NO.: RPA-17AP0008VNTY

MODEL NO.: BH1010

RECEIVED: Apr. 11, 2017

ISSUED: Apr.17, 2017

APPLICANT: Blue Microphones

ADDRESS: 5706 Corsa Avenue, Westlake Village CA 91362

ISSUED BY: BUREAU VERITAS ADT (Shanghai) Corporation

ADDRESS: 2F, Building C, No.1618, Yishan rd., 201103, Shanghai, P.R.CHINA

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History of this test report

■ ORIGINAL

☐ Additional attachment as following record:

Attachment No.	Issue Date	Description
RPA-17AP0008VNTY	2017-04-17	Initial Issue

1.CERTIFICATION

PRODUCT:	Satellite
MODEL NO.:	BH1010
TRADE MARK:	Blue
APPLICANT:	Blue Microphones
TESTED:	Apr.17, 2017
STANDARDS:	FCC Part 15: 2015, Subpart C

PREPARED BY : _____ , **DATE:** Apr.17, 2017

Bing YE

Testing Engineer

TECHNICAL ACCEPTANCE : _____ , **DATE:** Apr.17, 2017

Joy ZHU

Testing Manager

APPROVED BY : _____ , **DATE:** Apr.17, 2017

Zhaoqian YU

Lab Manager

2.Report of Measurements and Examinations

2.1 List of Measurements and Examinations

FCC Part 15 subpart C/RSS-247 Issue 2/RSS-Gen

Reference STD		Description of Test	Compliance results
1	FCC Rules §15.207(a); RSS-GEN Section 8.8	AC Conducted Emission	PASS
2	FCC Rules §15.209(a); RSS-247 Issue 2 Section 5.5	Radiated Emission	PASS
3	FCC Rules §15.247(a)(1); RSS-247 Issue 2 Section5.1(a)	20dB Bandwidth	PASS
4	FCC Rules §15.247(a)(1); RSS-247 Issue 2 Section5.1(b)	Channel Carrier Frequencies Separation	PASS
5	FCC Rules§15.247(a)(1); RSS-247 Issue 2 Section5.1(c)	Dwell Time	PASS
6	FCC Rules§15.247(b); RSS-247 Issue 2 Section5.1(b)	Number of Hopping Channels	PASS
7	FCC Rules §15.247(b); RSS-247 Issue 2 Section5.1(b)	Peak Output Power	PASS
8	FCC Rules §15.247(d)	Band-edge Compliance & Conducted Spurious Emissions	PASS
9	FCC Rules §15.247(d); RSS-247 Issue 2 Section 5.5	Radiated Emission Band Edges	PASS

3. Test Configuration of Equipment under Test

3.1 Feature of Equipment under Test

Product Name:	Satellite
Model Name:	BH1010
Series Model:	N/A
Model Discrepancy:	N/A
Frequency	2.402GHz~2.480GHz
Number of Channel	79 channel
Modulation type	GFSK, π/4 DQPSK,8DPSK
Transmit Power	GFSK: 10.103dBm
	π/4 DQPSK: 8.721dBm
	8DPSK：9.058dBm
Antenna type	PCB antenna with -0.14dBi
EUT Power Rating:	DC 3.7V Supplied by battery DC 5V charged by USB port

Note: 1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

3.2 Carrier Frequency of Channels

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

3.3 Test Mode & Test Software

a. During testing, the interface cables and equipment positions were varied according to ANSI C63.10

b. The complete test system included EUT,Notebook,USB Mouse for RF test.

c. Run the test software “CSR BlueTest3”, input RF test command and set the test mode and channel, then press OK to start continue transmit.

d. The following test mode was performed for conduction and radiation test:

Test Mode 1: GFSK: CH 00: 2402MHz, CH 39: 2441MHz, CH 78: 2480MHz.

Test Mode 2: π/4 DQPSK：CH 00: 2402MHz, CH 39: 2441MHz, CH 78: 2480MHz.

Test Mode 3: 8DPSK: CH 00: 2402MHz, CH 39: 2441MHz, CH 78: 2480MHz.

3.4 Description of Test System

No	Device	Manufacturer	Model No.	Description
1	Notebook	SONY	PCG-71811P	R33021
2	USB Mouse	DELL	OXN967	R41108

Cable:

No.	Cable	Quantity	Description
A	USB Cable	1	0.8m Shielding
B	USB Mouse Cable	1	1.8m Non Shielding

3.5 General Information of Test

☒	Test Site	**Cerpass Technology Corporation Test Laboratory** Address: No.10, Ln. 2, Lianfu St., Luzhu Dist., Taoyuan City 33848, Taiwan (R.O.C.) Tel:+886-3-3226-888 Fax:+886-3-3226-881 Address: No.68-1, Shihbachongsi, Shihding Township, New Taipei City 223, Taiwan, R.O.C. Tel: +886-2-2663-8582
	FCC	TW1079, TW1061,390316, 228391, 641184
	IC	4934B-1, 4934E-1, 4934E-2
	VCCI	T-2205 for Telecommunication Test C-4663 for Conducted emission test R-3428, R-4218 for Radiated emission test G-812, G-813 for radiated disturbance above 1GHz
☐	Test Site	**Cerpass Technology (Suzhou) Co.,Ltd** Address: No.66,Tangzhuang Road, Suzhou Industrial Park, Jiangsu 215006, China Tel: +86-512-6917-5888 Fax: +86-512-6917-5666
	FCC	916572, 331395
	IC	7290A-1, 7290A-2
	VCCI	T-343 for Telecommunication Test C-2919 for Conducted emission test R-2670 for Radiated emission test G-227 for radiated disturbance above 1GHz
Frequency Range Investigated:		Conducted: from 150kHz to 30 MHz Radiation: from 30 MHz to 25000MHz
Test Distance:		The test distance of radiated emission from antenna to EUT is 3 M.

3.6 Measurement Uncertainty

Measurement Item	Measurement Uncertainty
Conducted Emission	±2.71 dB
Radiation test (10m) below 1GHz	Vertical : ±3.89 dB
	Horizontal: ±4.11 dB
Radiation test (3m) below 1GHz	Vertical : ±4.11 dB
	Horizontal: ±4.10 dB
20 dB Bandwidth	7500 Hz
Maximum Peak Output Power	±1.4 dB
100kHz Bandwidth of Frequency Band Edges	±2.2 dB
Power Spectral Density	±1.3870 dB

4. Test Equipment and Ancillaries Used for Tests

Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Test Receiver	R&S	ESCI	100564	2017.02.14	2018.02.13
LISN	SCHWARZBECK	NSLK 8127	8127748	2017.02.14	2018.02.13
LISN	SCHWARZBECK	NSLK 8127	8127749	2017.02.14	2018.02.13
Pulse Limiter with 10dB Attenuation	SCHWARZBECK	VTSD 9561-F	9561-F106	2017.02.14	2018.02.13
Temperature/ Humidity Meter	mingle	ETH529	N/A	2017.02.14	2018.02.13
AMPLIFIER	HP	8447F	3113A05915	2017.02.14	2018.02.13
Loop Antenna	R&S	HFH2-Z2	100150	2016.04.16	2017.04.15
BILOG Antenna	SCHAFFNER	CBL6112D	22241	2017.02.14	2018.02.13
Horn Antenna	Sunol	DRH-118	A072913	2016.10.12	2017.10.11
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	9170-347	2016.04.16	2017.04.15
Preamplifier	COM-POWER	PA-840	711885	2017.02.14	2018.02.13
Temp&Humidity&barometer	mingle	ETH529	N/A	2017.02.14	2018.02.13
Preamplifier	Fleld	AFS44-00101800-25-10P-44	1579008	2016.09.30	2017.09.29
ESG VECTOR SIGNAL GENERATOR	Agilent	E4438C	MY45092582	2016.06.06	2017.06.05
MXG VECTOR SIGNAL GENERATOR	Agilent	N5182B	MY53050127	2016.06.06	2017.06.05
EXA Signal Analyzer	Agilent	N9020A	US46220290	2016.06.06	2017.06.05
Power sensor	e-channel	ERS-180T-24	TW5451026	2016.06.25	2017.06.24
Series Power Meter	ANRITSU	ML24958A	1224005	2017.02.14	2018.02.13

5. Antenna Requirements

5.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

5.2 Antenna Construction and Directional Gain

Antenna type: PCB antenna

Antenna Gain: -0.14dBi

6. Test of Conducted Emission

6.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.10. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 6.2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions

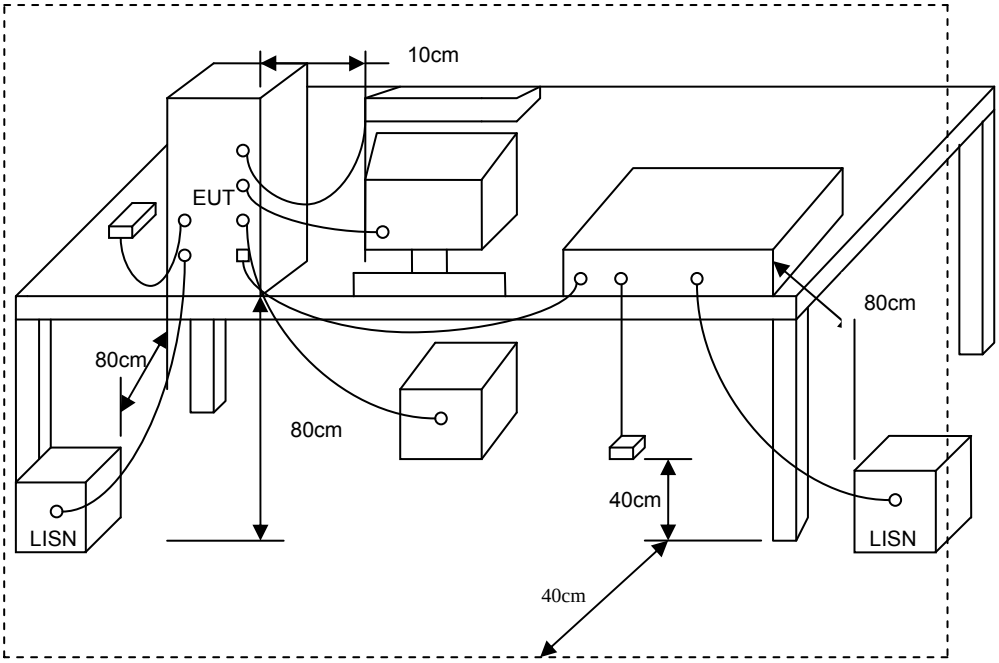
Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

*Decreases with the logarithm of the frequency.

6.2 Test Procedures

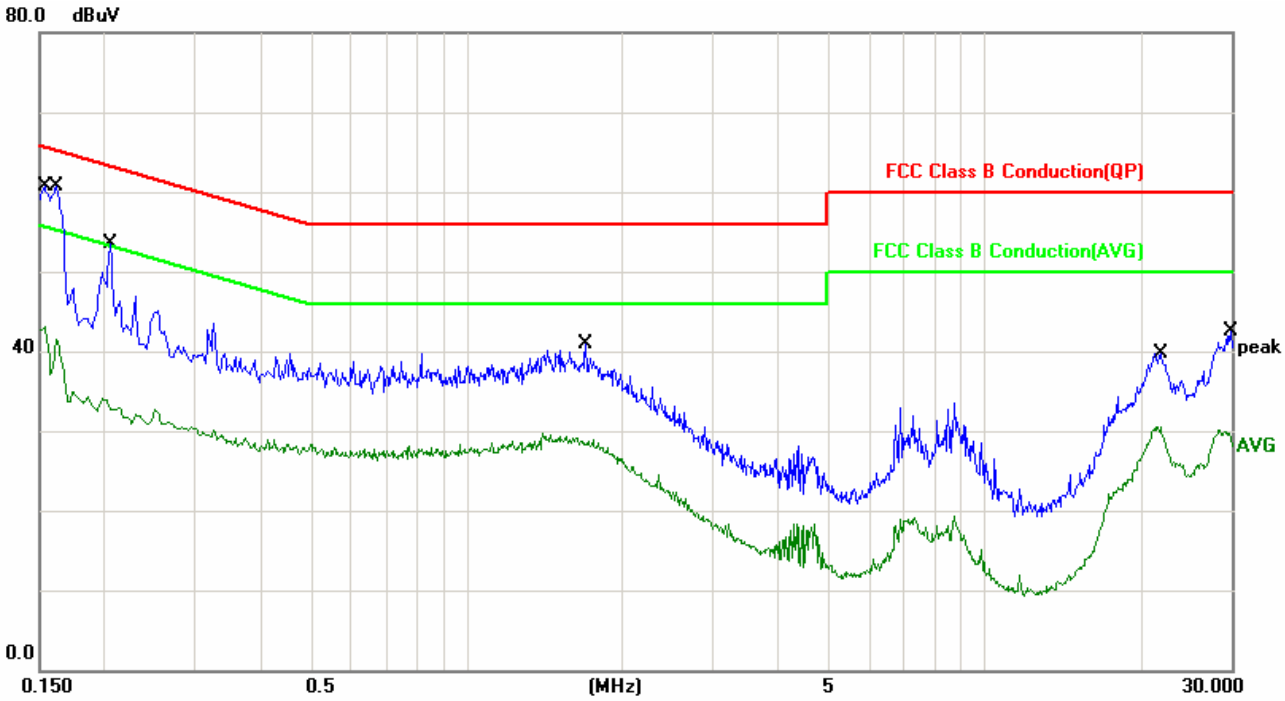
a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
c. All the support units are connecting to the other LISN.
d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
e. The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
f. Both sides of AC line were checked for maximum conducted interference.
g. The frequency range from 150 kHz to 30 MHz was searched.
h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

6.3 Typical Test Setup



6.4 Test Result and Data

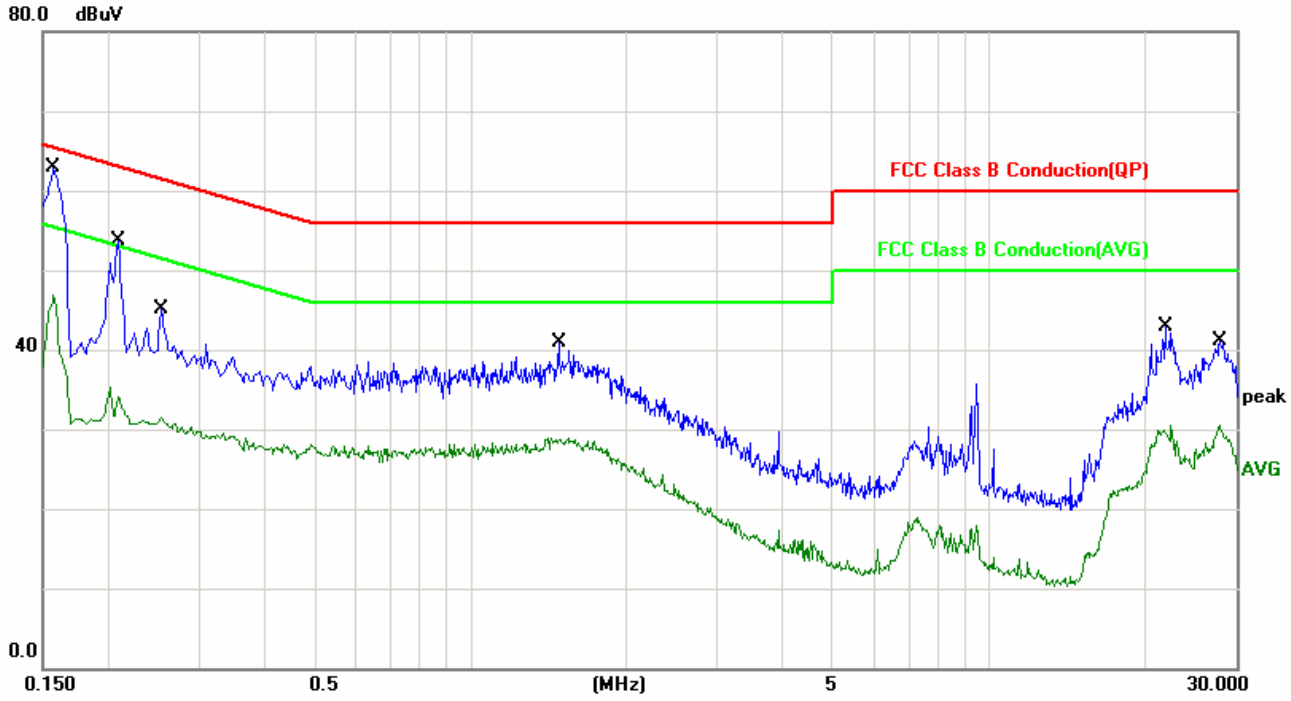
Test Mode :	Normal Link	Phase :	Line
Temperature :	20°C	Humidity:	51%
Pressur(mbar) :	1002	Date:	2017/03/31



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1539	10.06	48.22	58.28	65.78	-7.50	QP
2	0.1539	10.06	31.59	41.65	55.78	-14.13	AVG
3	0.1620	10.06	43.57	53.63	65.36	-11.73	QP
4	0.1620	10.06	26.77	36.83	55.36	-18.53	AVG
5	0.2060	10.06	36.09	46.15	63.36	-17.21	QP
6	0.2060	10.06	22.53	32.59	53.36	-20.77	AVG
7	1.7060	10.79	22.34	33.13	56.00	-22.87	QP
8	1.7060	10.79	17.24	28.03	46.00	-17.97	AVG
9	21.8620	10.58	22.65	33.23	60.00	-26.77	QP
10	21.8620	10.58	17.52	28.10	50.00	-21.90	AVG
11	29.8500	10.64	25.31	35.95	60.00	-24.05	QP
12	29.8500	10.64	18.07	28.71	50.00	-21.29	AVG

Note: Measurement Level = Reading Level + Correct Factor+ Attenuator

Test Mode :	Normal Link	Phase :	Neutral
Temperature :	20°C	Humidity :	51%
Pressur(mbar) :	1002	Date :	2017/03/31



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1580	10.06	48.14	58.20	65.56	-7.36	QP
2	0.1580	10.06	31.28	41.34	55.56	-14.22	AVG
3	0.2100	10.05	36.49	46.54	63.20	-16.66	QP
4	0.2100	10.05	22.72	32.77	53.20	-20.43	AVG
5	0.2540	10.03	31.19	41.22	61.62	-20.40	QP
6	0.2540	10.03	21.42	31.45	51.62	-20.17	AVG
7	1.4860	10.14	23.27	33.41	56.00	-22.59	QP
8	1.4860	10.14	18.10	28.24	46.00	-17.76	AVG
9	21.8779	10.58	22.99	33.57	60.00	-26.43	QP
10	21.8779	10.58	17.59	28.17	50.00	-21.83	AVG
11	27.8860	10.62	24.36	34.98	60.00	-25.02	QP
12	27.8860	10.62	18.74	29.36	50.00	-20.64	AVG

Note: Measurement Level = Reading Level + Correct Factor+ Attenuator

7. Test of Radiated Emission

7.1 Test Limit

Radiated emissions from 30 MHz to 25 GHz were measured according to the methods defines in ANSI C63.4-2014. The EUT was placed, 0.8 meter above the ground plane, as shown in section 5.6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions
For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency (MHz)	Distance Meters	Radiated (μ V / M)	Radiated (dB μ V/ M)
30-88	3	100	40.0
88-216	3	150	43.5
216-960	3	200	46.0
Above 960	3	500	54.0

For unintentional device, according to CISPR PUB.22, for Class B digital devices, the general requirement of field strength of radiated emissions from intentional radiators at a distance of 10 meters shall not exceed the above table.

Frequency (MHz)	Distance Meters	Radiated (dB μ V/ M)
30-230	10	30
230-1000	10	37

7.2 Test Procedures

a. The EUT was placed on a rotatable table top 0.8 meter above ground; above 1GHz, the height was 1.5m.

b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.

c. The table was rotated 360 degrees to determine the position of the highest radiation.

d. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.

e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.

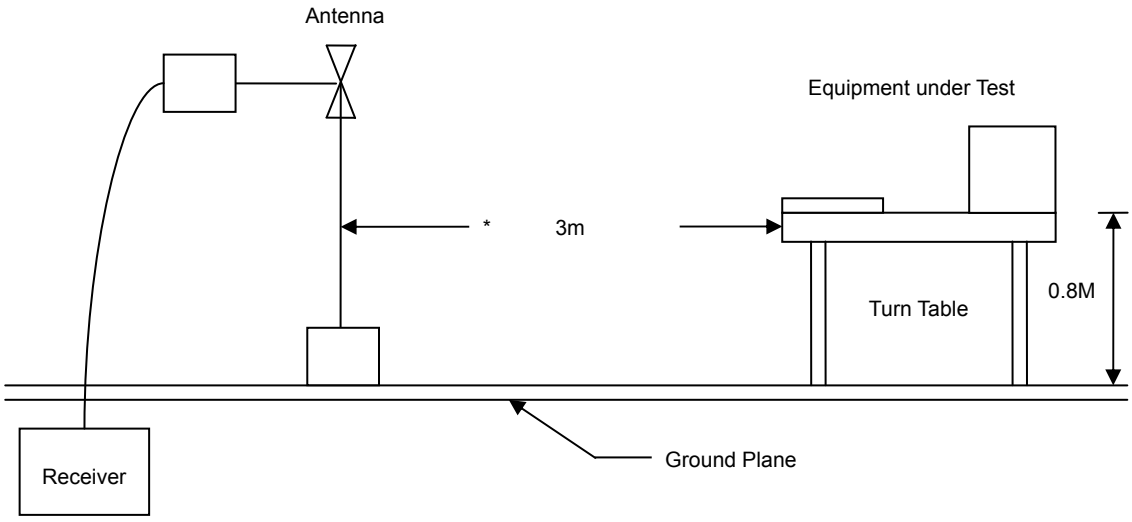
f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.

g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.

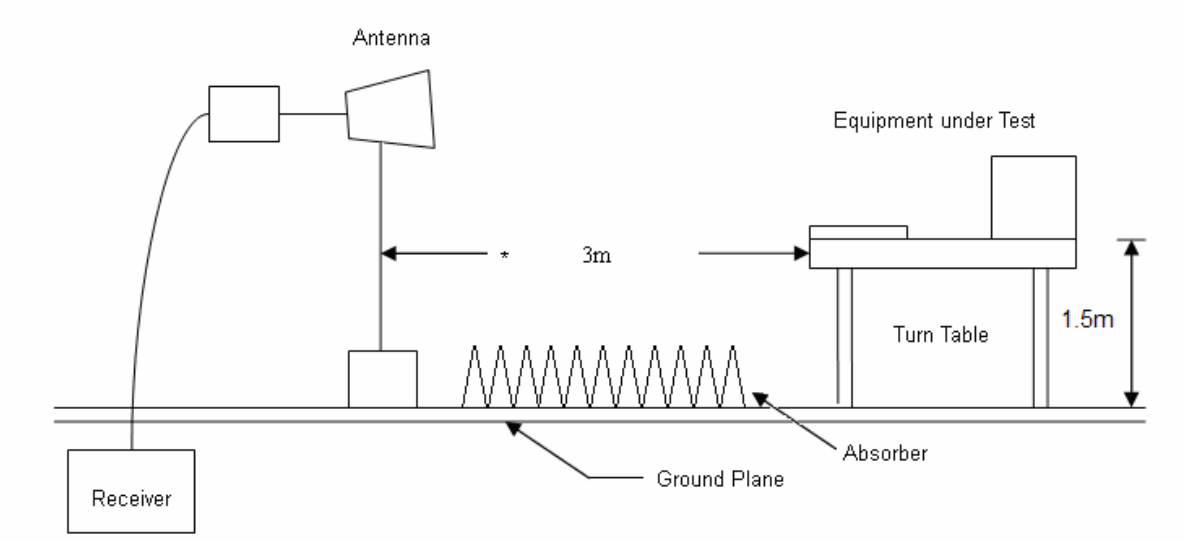
h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

7.3 Typical Test Setup

Below 1GHz Test Setup



Above 1GHz Test Setup



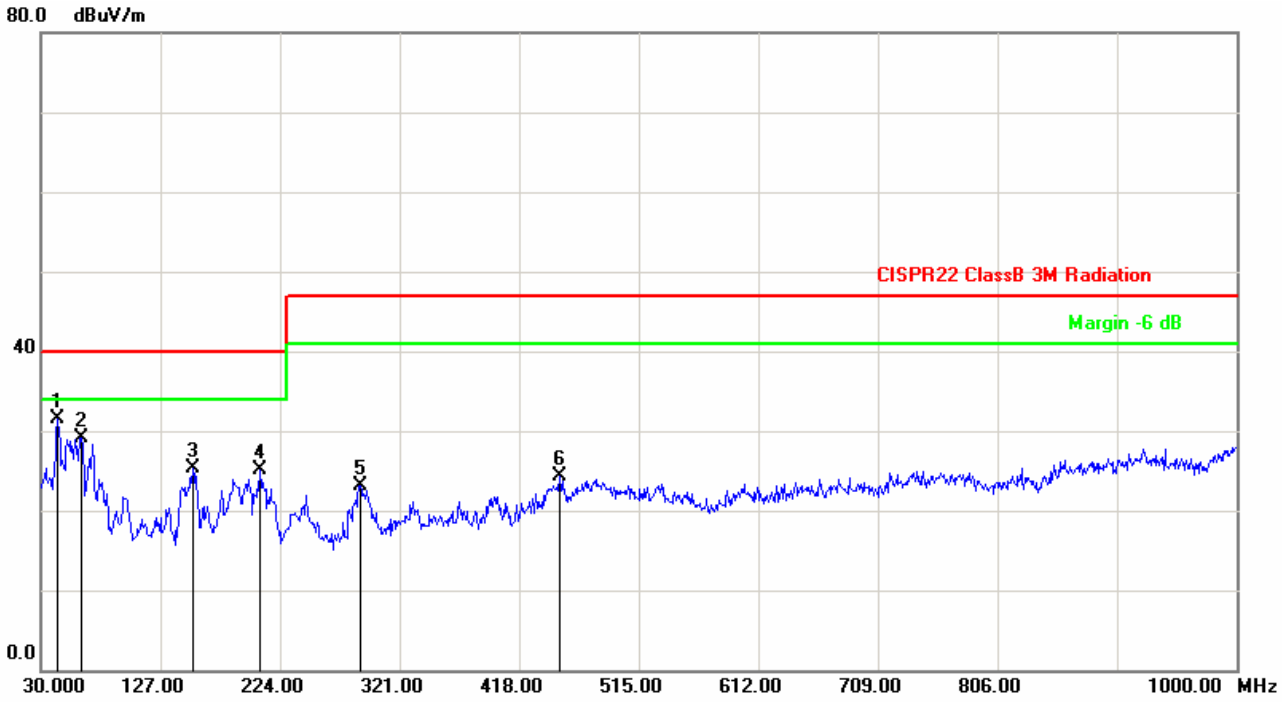
7.4 Test Result and Data (9kHz~30MHz)

The 9kHz-30MHz spurious emission is under limit 20dB more.

7.5 Test Result and Data (30MHz~1GHz)

7.5.1 Test Result and Data of Transmitter

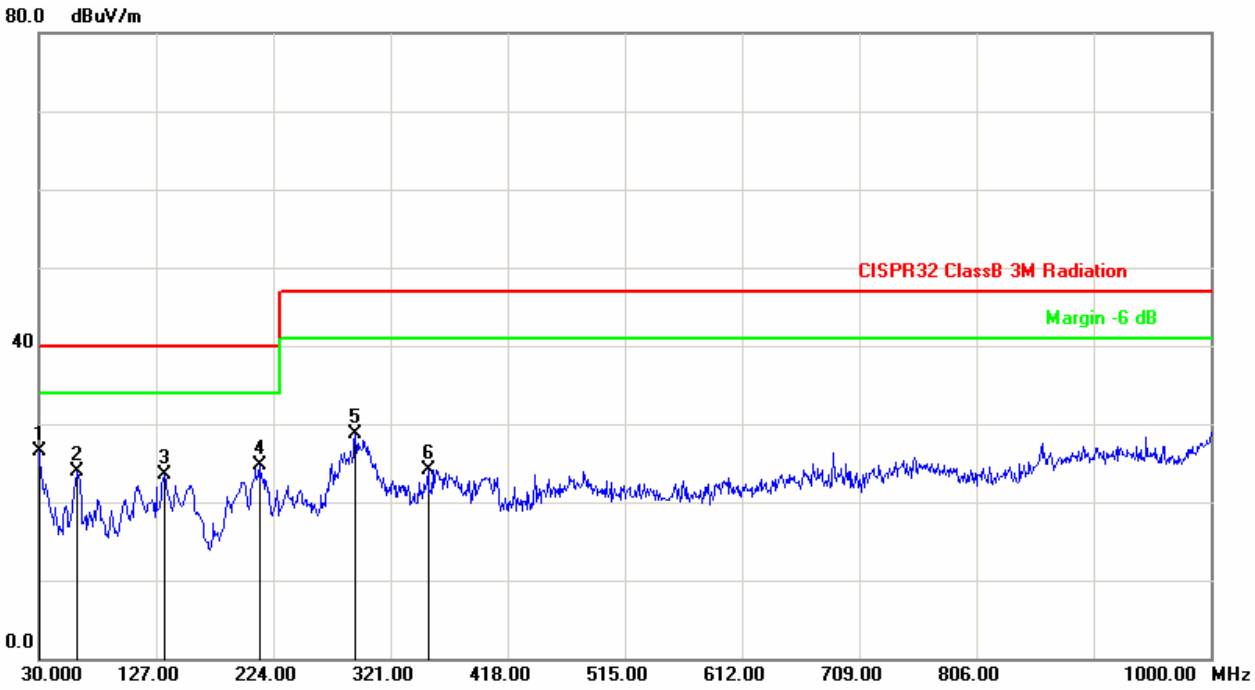
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 00	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	43.5800	-11.77	43.32	31.55	40.00	-8.45	QP	100	53
2	62.9800	-15.64	44.73	29.09	40.00	-10.91	QP	200	214
3	153.1898	-11.36	36.71	25.35	40.00	-14.65	QP	100	0
4	207.5100	-9.50	34.63	25.13	40.00	-14.87	QP	100	318
5	288.9900	-7.92	31.04	23.12	47.00	-23.88	QP	200	12
6	450.9800	-3.37	27.58	24.21	47.00	-22.79	QP	100	59

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 00	Atmospheric Pressure	:	1008 hpa

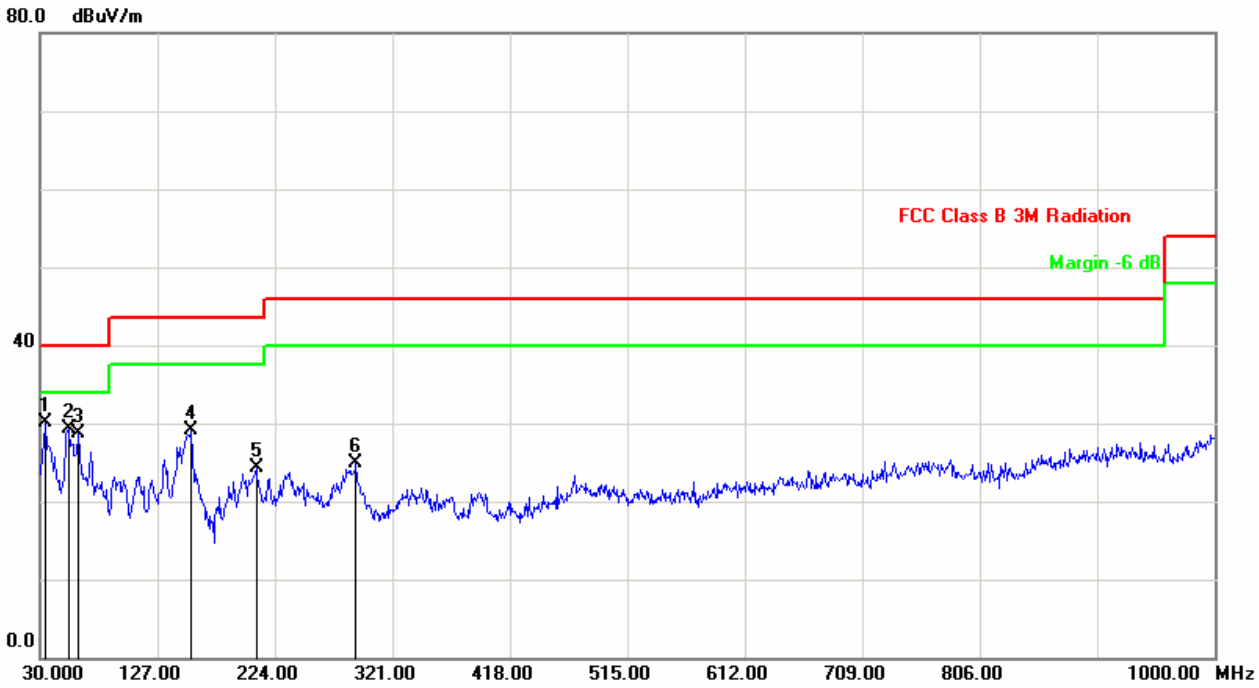


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	30.0000	-3.01	29.49	26.48	40.00	-13.52	QP	200	318
2	62.0100	-15.58	39.53	23.95	40.00	-16.05	QP	300	24
3	133.7899	-9.38	32.89	23.51	40.00	-16.49	QP	101	269
4	212.3600	-9.55	34.31	24.76	40.00	-15.24	QP	200	224
5	291.9000	-8.05	36.71	28.66	47.00	-18.34	QP	200	358
6	352.0400	-4.26	28.42	24.16	47.00	-22.84	QP	100	26

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

7.5.2 Test Result and Data of receiver

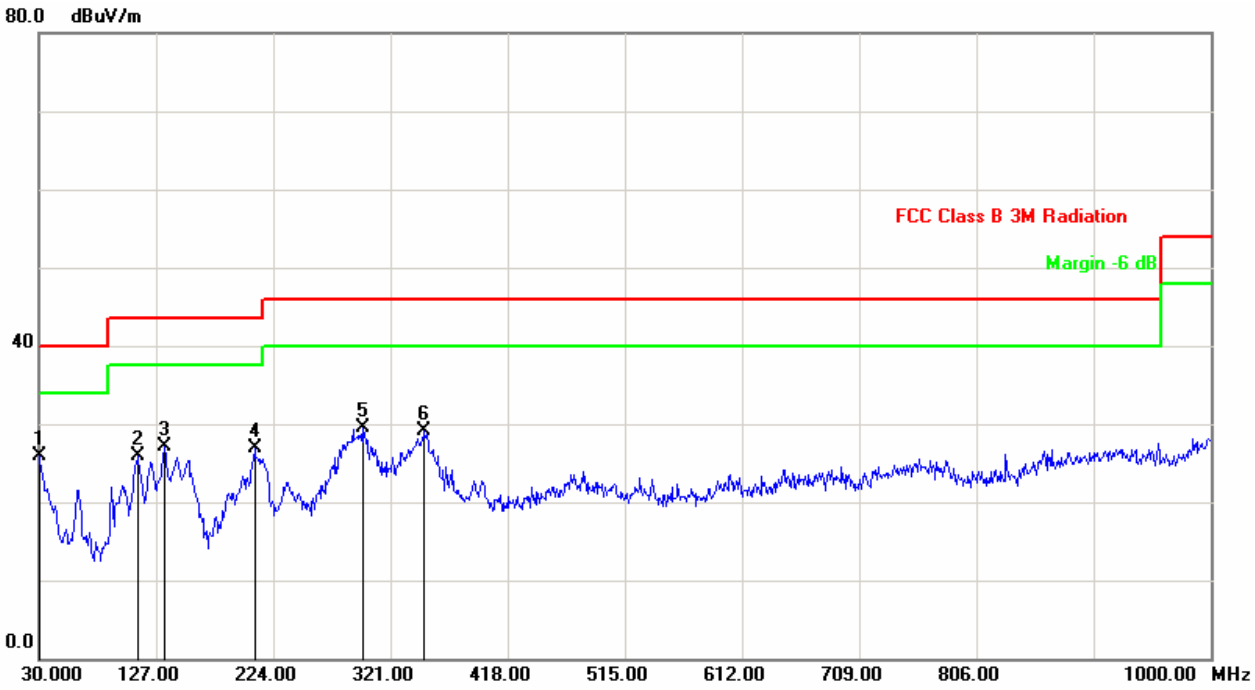
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 00	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	33.8800	-5.41	35.56	30.15	40.00	-9.85	QP	100	62
2	53.2800	-14.73	43.98	29.25	40.00	-10.75	QP	200	334
3	62.0100	-15.58	44.26	28.68	40.00	-11.32	QP	100	5
4	155.1300	-11.69	40.85	29.16	43.50	-14.34	QP	100	108
5	208.4800	-9.51	33.89	24.38	43.50	-19.12	QP	100	104
6	290.9300	-7.97	32.96	24.99	46.00	-21.01	QP	100	67

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 00	Atmospheric Pressure	:	1008 hpa



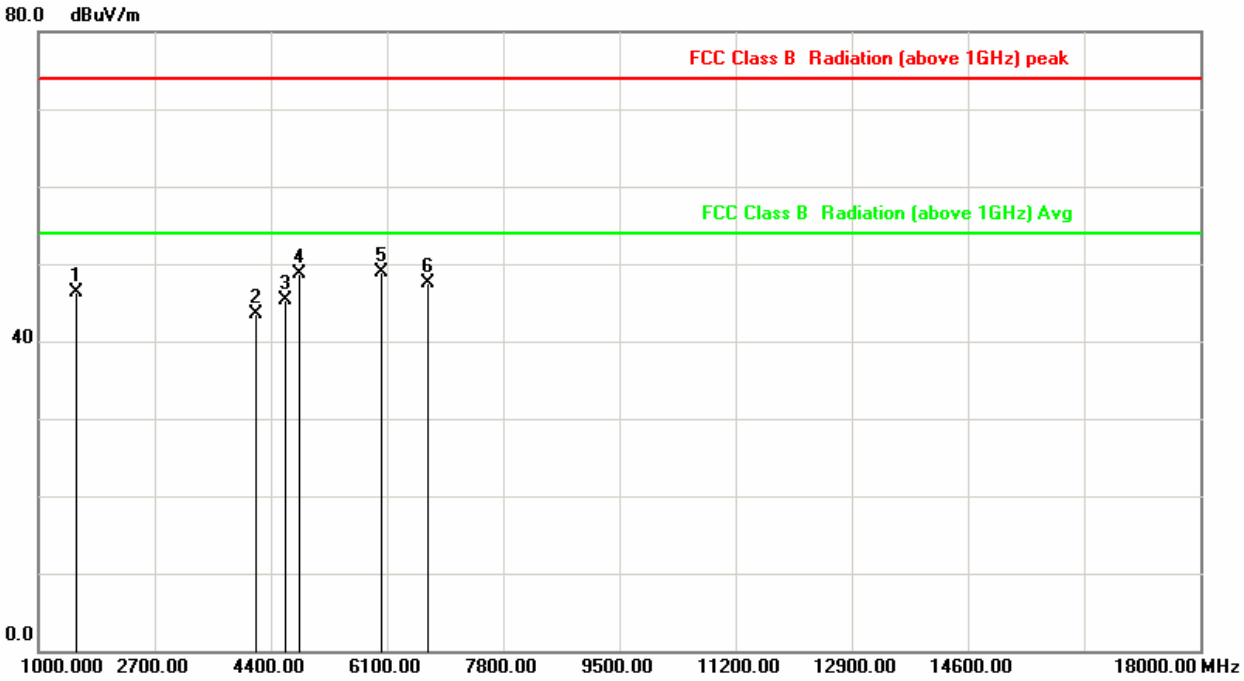
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	30.0000	-3.01	28.82	25.81	40.00	-14.19	QP	200	11
2	112.4500	-8.37	34.23	25.86	43.50	-17.64	QP	100	6
3	133.7899	-9.38	36.39	27.01	43.50	-16.49	QP	200	270
4	208.4800	-9.51	36.50	26.99	43.50	-16.51	QP	400	96
5	297.7200	-8.59	38.01	29.42	46.00	-16.58	QP	300	359
6	349.1300	-4.24	33.33	29.09	46.00	-16.91	QP	200	5

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

7.6 Test Result and Data (1GHz~25GHz)

7.6.1 Test Result and Data of Transmitter

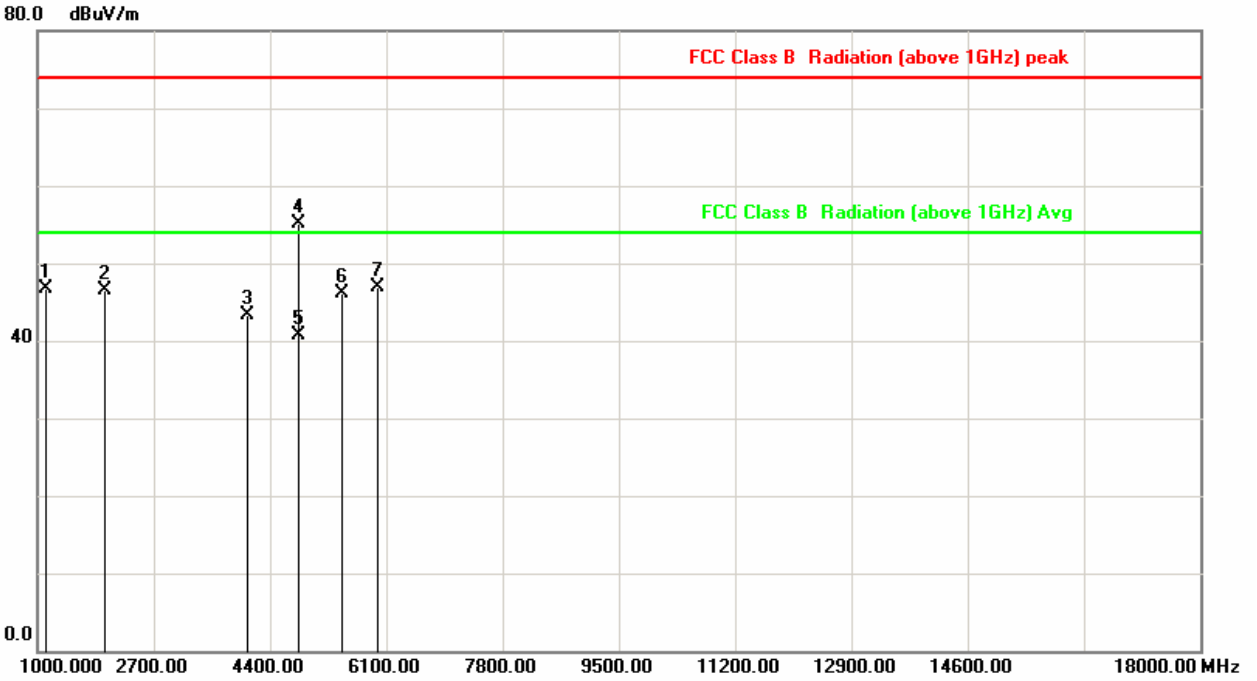
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1	Temperature	:	25 °C
Test Date	:	Mar. 29, 2017	Humidity	:	52 %
Memo	:	CH 00	Atmospheric Pressure	:	1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1552.500	-7.31	53.63	46.32	74.00	-27.68	peak
2	4187.500	6.07	37.35	43.42	74.00	-30.58	peak
3	4612.500	7.87	37.40	45.27	74.00	-28.73	peak
4	4825.000	8.27	40.39	48.66	74.00	-25.34	peak
5	6015.000	10.27	38.58	48.85	74.00	-25.15	peak
6	6695.000	11.09	36.50	47.59	74.00	-26.41	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

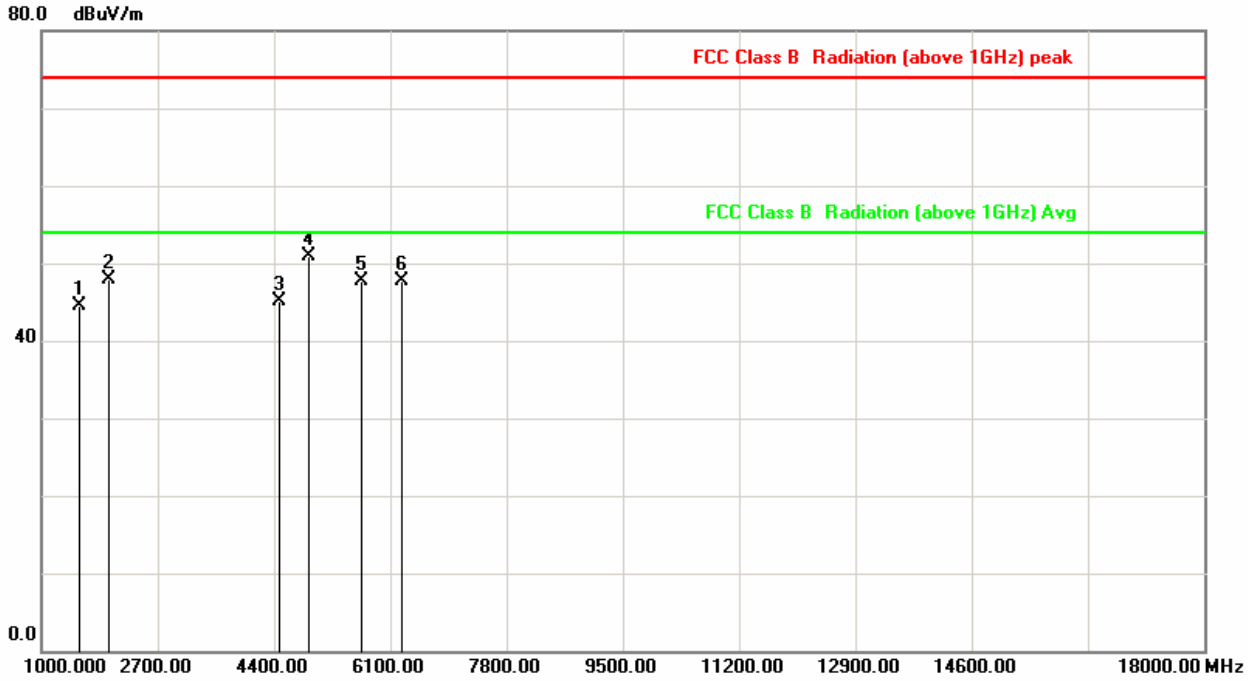
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1	Temperature	:	25 °C
Test Date	:	Mar. 29, 2017	Humidity	:	52 %
Memo	:	CH 00	Atmospheric Pressure	:	1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1127.500	-11.01	57.67	46.66	74.00	-27.34	peak
2	1977.500	-4.86	51.30	46.44	74.00	-27.56	peak
3	4060.000	5.42	37.93	43.35	74.00	-30.65	peak
4	4825.000	8.27	46.91	55.18	74.00	-18.82	peak
5	4825.000	8.27	32.35	40.62	54.00	-13.38	AVG
6	5462.500	8.99	37.02	46.01	74.00	-27.99	peak
7	5972.500	10.19	36.64	46.83	74.00	-27.17	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

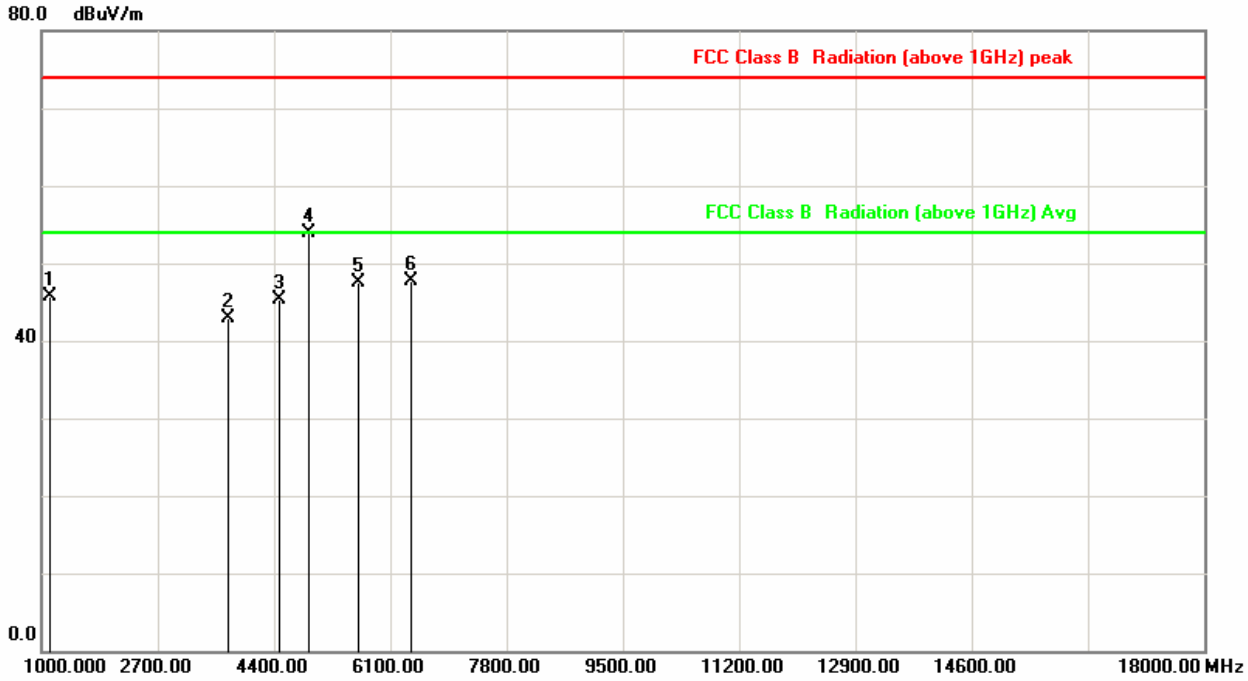
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1	Temperature	:	25 °C
Test Date	:	Mar. 29, 2017	Humidity	:	52 %
Memo	:	CH 39	Atmospheric Pressure	:	1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1552.500	-7.31	51.73	44.42	74.00	-29.58	peak
2	1977.500	-4.86	52.67	47.81	74.00	-26.19	peak
3	4485.000	7.58	37.49	45.07	74.00	-28.93	peak
4	4910.000	8.43	42.52	50.95	74.00	-23.05	peak
5	5675.000	9.45	38.18	47.63	74.00	-26.37	peak
6	6270.000	10.37	37.34	47.71	74.00	-26.29	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

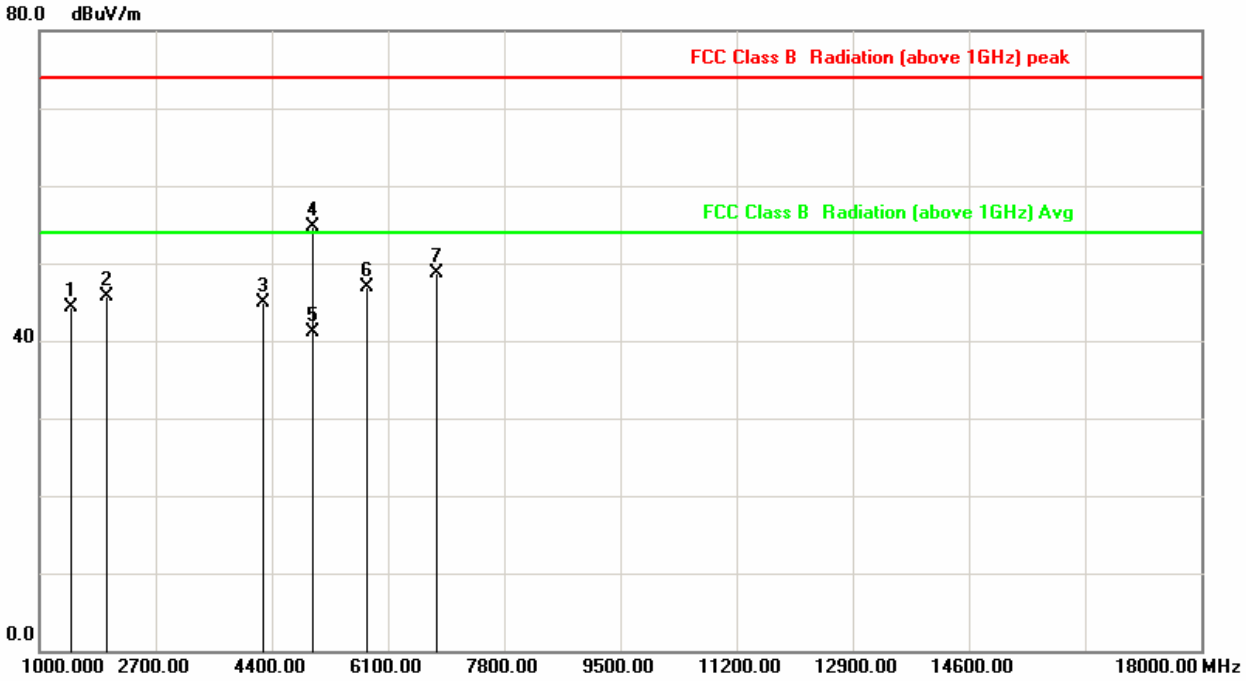
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1	Temperature	:	25 °C
Test Date	:	Mar. 29, 2017	Humidity	:	52 %
Memo	:	CH 39	Atmospheric Pressure	:	1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1127.500	-11.01	56.72	45.71	74.00	-28.29	peak
2	3720.000	4.15	38.67	42.82	74.00	-31.18	peak
3	4485.000	7.58	37.67	45.25	74.00	-28.75	peak
4	4910.000	8.43	45.45	53.88	74.00	-20.12	peak
5	5632.500	9.35	38.14	47.49	74.00	-26.51	peak
6	6397.500	10.42	37.24	47.66	74.00	-26.34	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

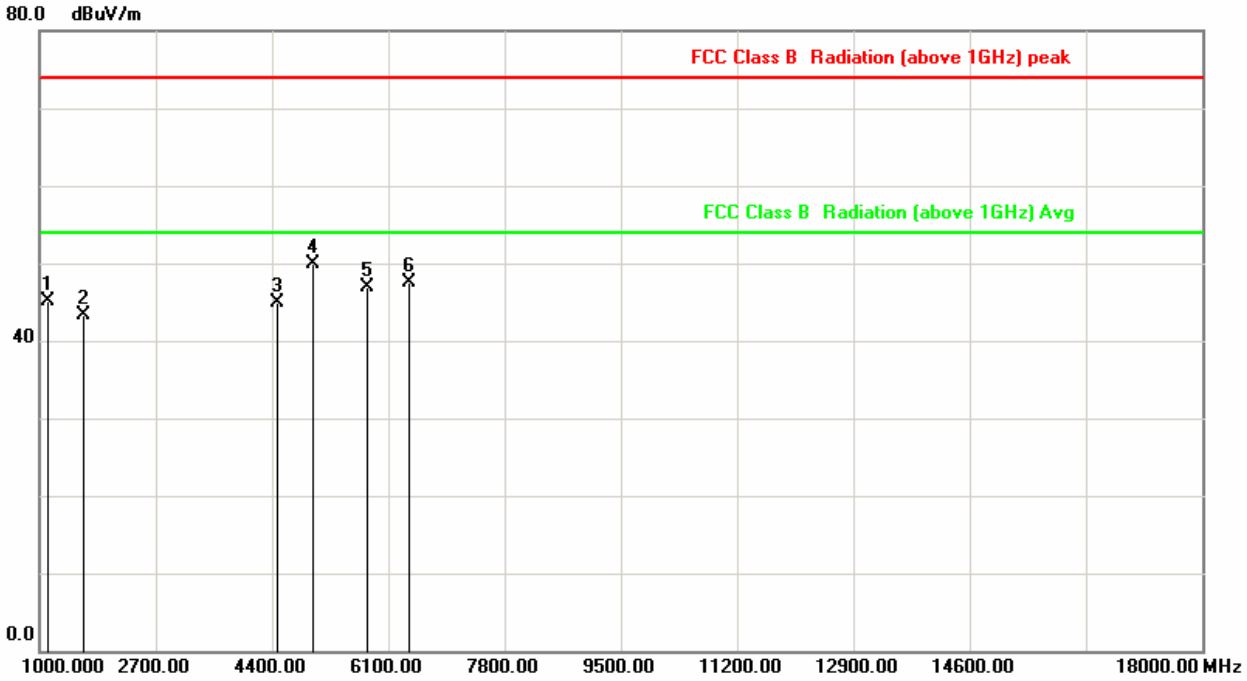
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1	Temperature	:	25 °C
Test Date	:	Mar. 29, 2017	Humidity	:	52 %
Memo	:	CH 78	Atmospheric Pressure	:	1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1467.500	-7.91	52.15	44.24	74.00	-29.76	peak
2	1977.500	-4.86	50.48	45.62	74.00	-28.38	peak
3	4272.500	6.50	38.46	44.96	74.00	-29.04	peak
4	4995.000	8.59	46.02	54.61	74.00	-19.39	peak
5	4995.000	8.59	32.51	41.10	54.00	-12.90	AVG
6	5802.500	9.77	37.13	46.90	74.00	-27.10	peak
7	6822.500	11.50	37.18	48.68	74.00	-25.32	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

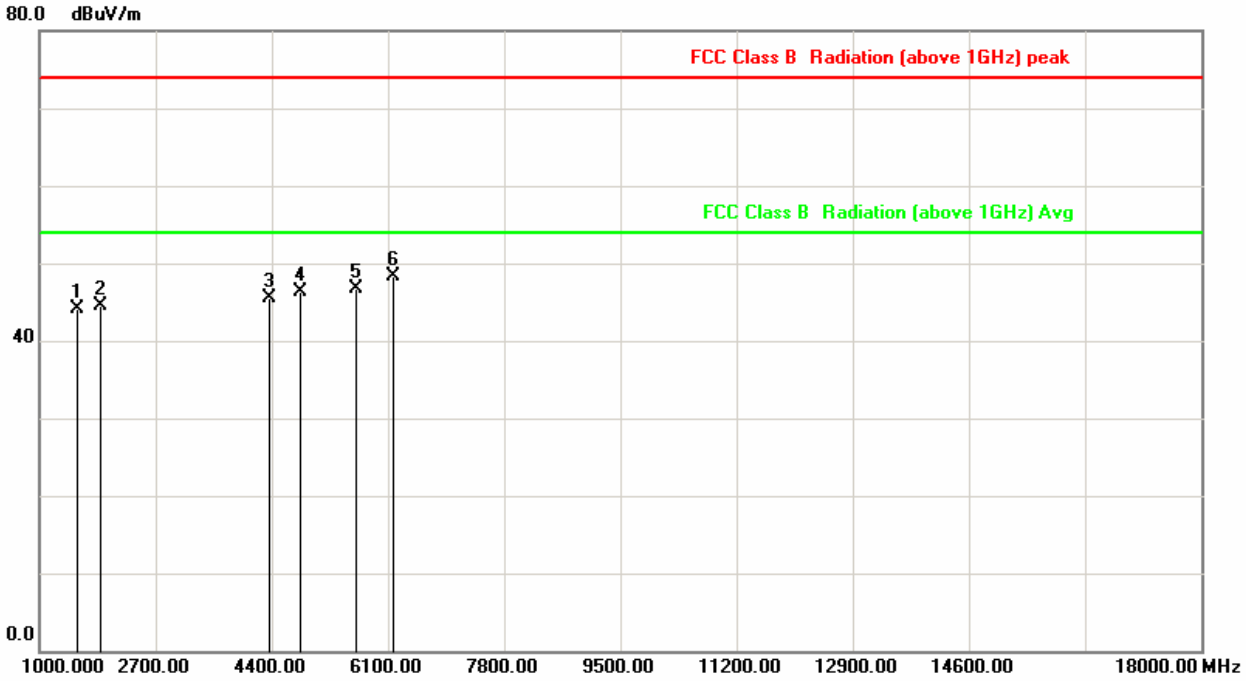
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1	Temperature	:	25 °C
Test Date	:	Mar. 29, 2017	Humidity	:	52 %
Memo	:	CH 78	Atmospheric Pressure	:	1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1127.500	-11.01	56.17	45.16	74.00	-28.84	peak
2	1637.500	-6.82	50.22	43.40	74.00	-30.60	peak
3	4485.000	7.58	37.26	44.84	74.00	-29.16	peak
4	4995.000	8.59	41.36	49.95	74.00	-24.05	peak
5	5802.500	9.77	37.13	46.90	74.00	-27.10	peak
6	6397.500	10.42	37.08	47.50	74.00	-26.50	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

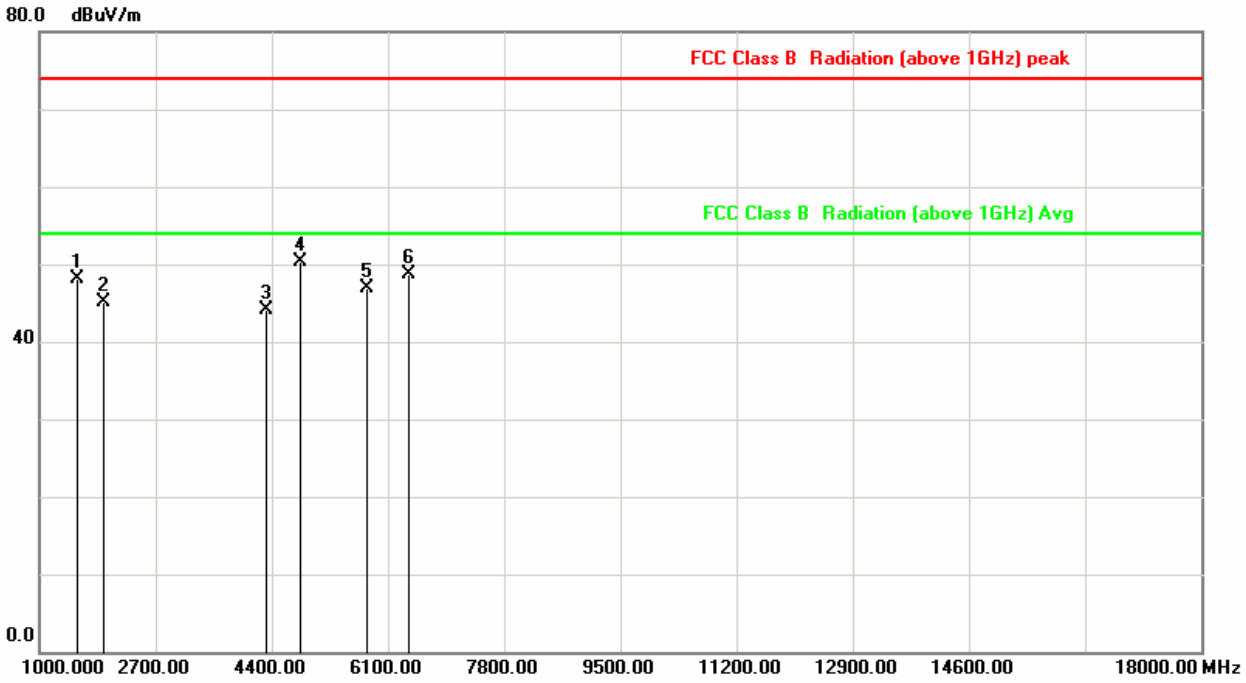
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2	Temperature	:	25 °C
Test Date	:	Mar. 29, 2017	Humidity	:	52 %
Memo	:	CH 00	Atmospheric Pressure	:	1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1552.500	-7.31	51.42	44.11	74.00	-29.89	peak
2	1892.500	-5.35	49.78	44.43	74.00	-29.57	peak
3	4357.500	6.93	38.66	45.59	74.00	-28.41	peak
4	4825.000	8.27	38.13	46.40	74.00	-27.60	peak
5	5632.500	9.35	37.31	46.66	74.00	-27.34	peak
6	6185.000	10.33	37.92	48.25	74.00	-25.75	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

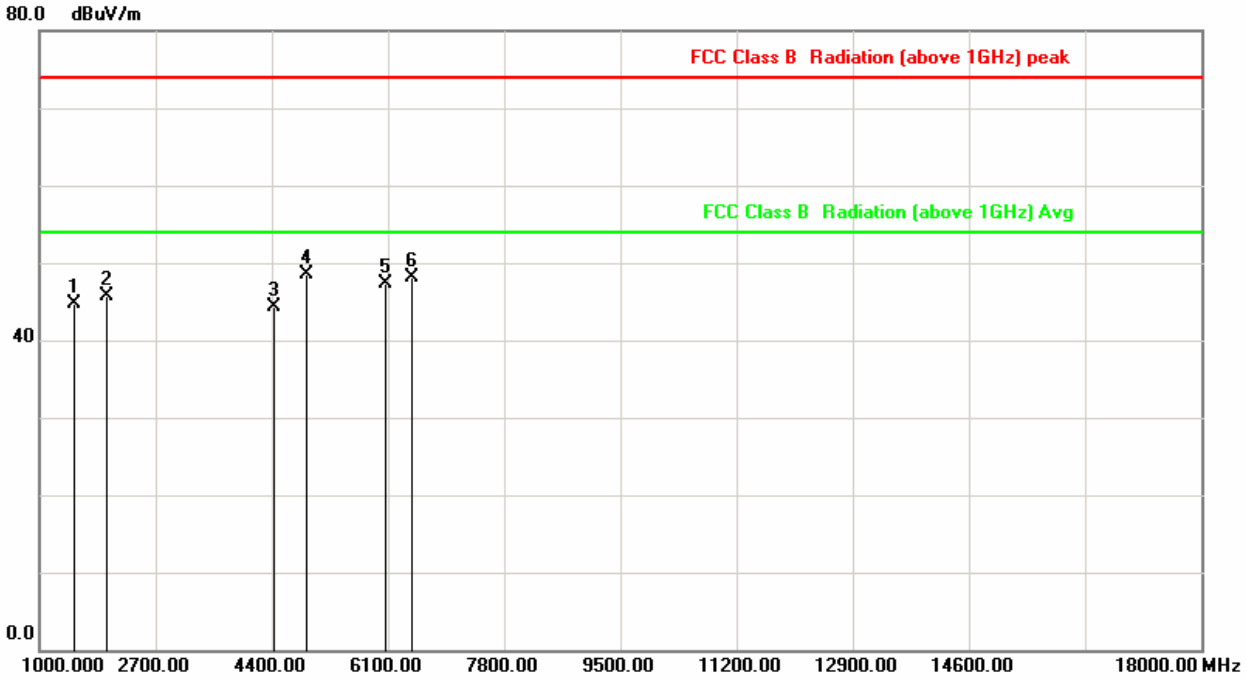
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2	Temperature	:	25 °C
Test Date	:	Mar. 29, 2017	Humidity	:	52 %
Memo	:	CH 00	Atmospheric Pressure	:	1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1552.500	-7.31	55.40	48.09	74.00	-25.91	peak
2	1935.000	-5.10	50.15	45.05	74.00	-28.95	peak
3	4315.000	6.72	37.33	44.05	74.00	-29.95	peak
4	4825.000	8.27	42.11	50.38	74.00	-23.62	peak
5	5802.500	9.77	37.17	46.94	74.00	-27.06	peak
6	6397.500	10.42	38.33	48.75	74.00	-25.25	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

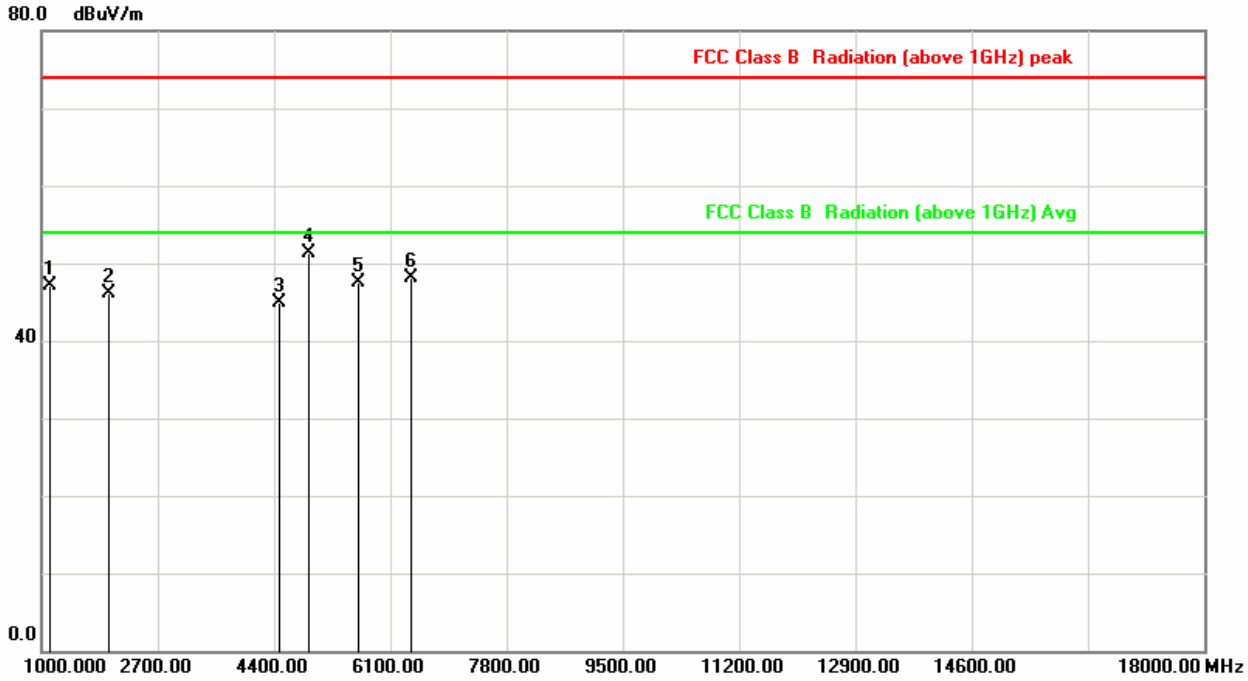
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2	Temperature	:	25 °C
Test Date	:	Mar. 29, 2017	Humidity	:	52 %
Memo	:	CH 39	Atmospheric Pressure	:	1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1510.000	-7.55	52.26	44.71	74.00	-29.29	peak
2	1977.500	-4.86	50.61	45.75	74.00	-28.25	peak
3	4442.500	7.37	37.03	44.40	74.00	-29.60	peak
4	4910.000	8.43	40.12	48.55	74.00	-25.45	peak
5	6057.500	10.28	37.04	47.32	74.00	-26.68	peak
6	6440.000	10.44	37.61	48.05	74.00	-25.95	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

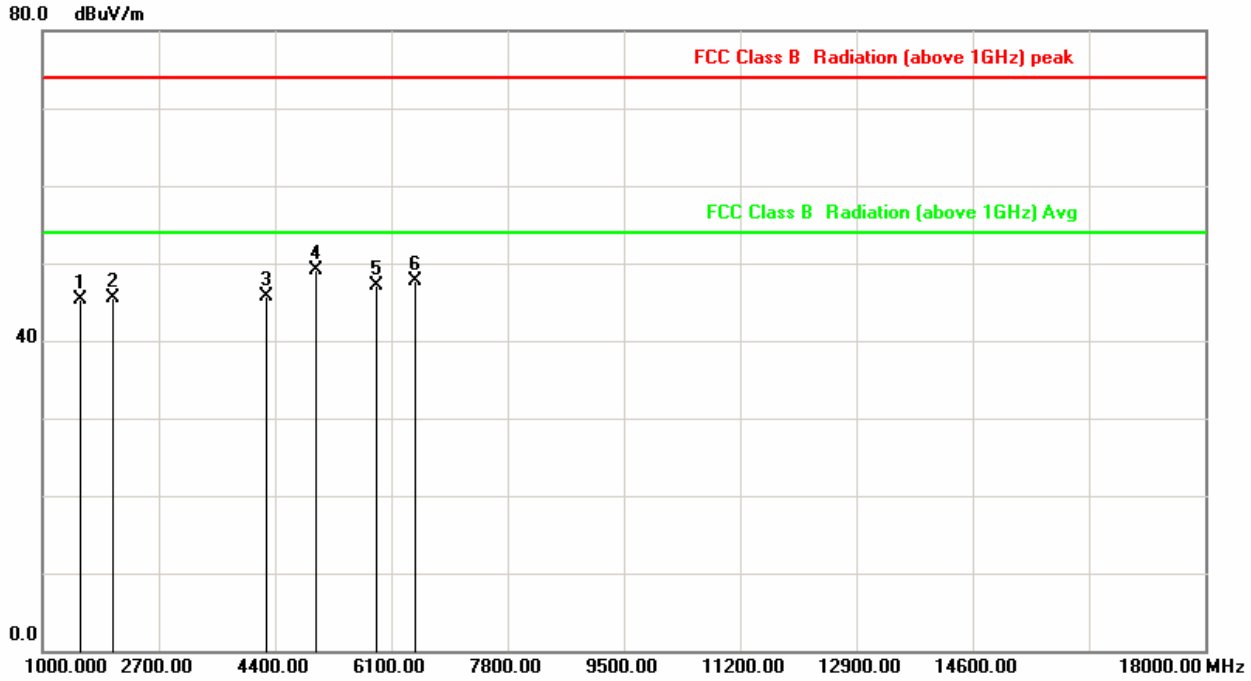
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2	Temperature	:	25 °C
Test Date	:	Mar. 29, 2017	Humidity	:	52 %
Memo	:	CH 39	Atmospheric Pressure	:	1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1127.500	-11.01	58.12	47.11	74.00	-26.89	peak
2	1977.500	-4.86	50.89	46.03	74.00	-27.97	peak
3	4485.000	7.58	37.31	44.89	74.00	-29.11	peak
4	4910.000	8.43	42.93	51.36	74.00	-22.64	peak
5	5632.500	9.35	38.21	47.56	74.00	-26.44	peak
6	6397.500	10.42	37.76	48.18	74.00	-25.82	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

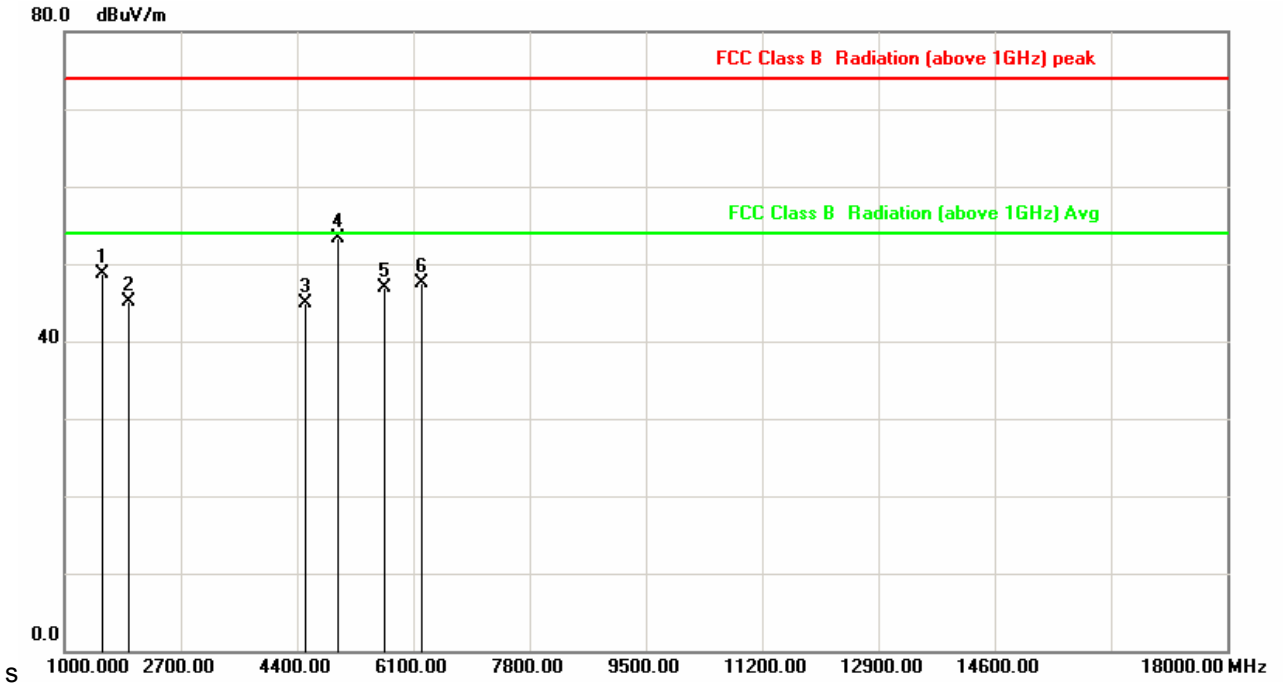
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2	Temperature	:	25 °C
Test Date	:	Mar. 29, 2017	Humidity	:	52 %
Memo	:	CH 78	Atmospheric Pressure	:	1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1552.500	-7.31	52.66	45.35	74.00	-28.65	peak
2	2020.000	-4.64	50.05	45.41	74.00	-28.59	peak
3	4272.500	6.50	39.15	45.65	74.00	-28.35	peak
4	4995.000	8.59	40.50	49.09	74.00	-24.91	peak
5	5887.500	9.98	37.08	47.06	74.00	-26.94	peak
6	6440.000	10.44	37.22	47.66	74.00	-26.34	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

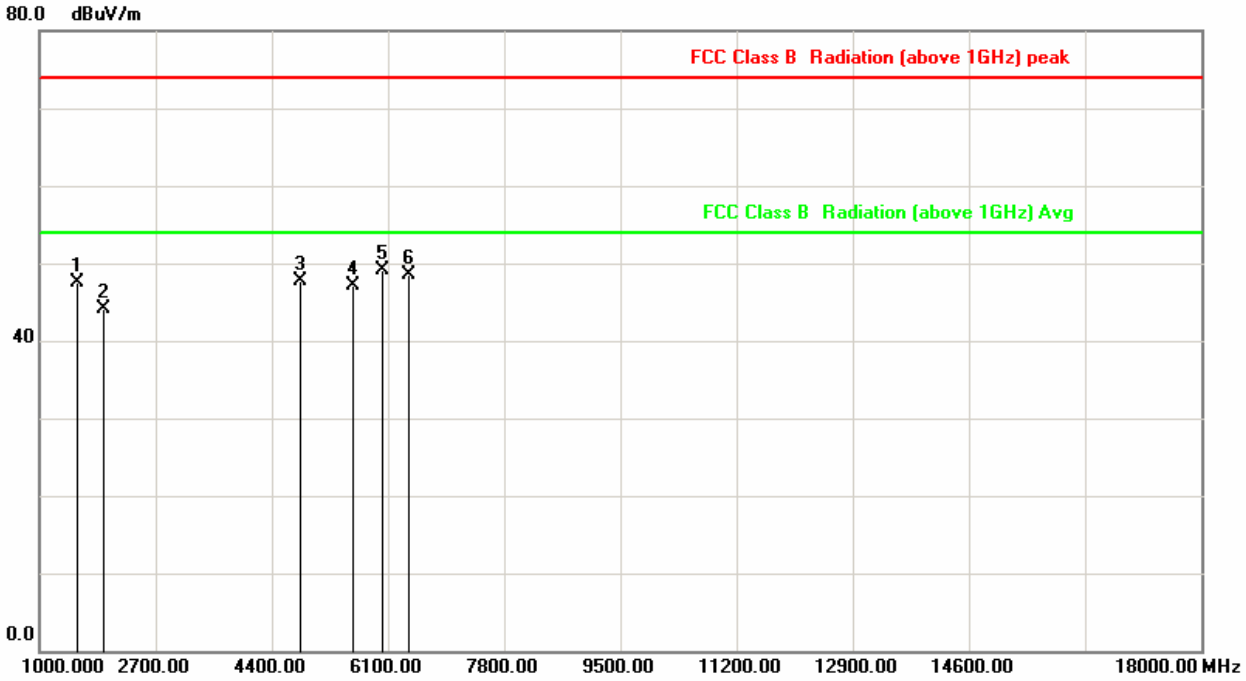
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2	Temperature	:	25 °C
Test Date	:	Mar. 29, 2017	Humidity	:	52 %
Memo	:	CH 78	Atmospheric Pressure	:	1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1552.500	-7.31	56.09	48.78	74.00	-25.22	peak
2	1935.000	-5.10	50.14	45.04	74.00	-28.96	peak
3	4527.500	7.71	37.25	44.96	74.00	-29.04	peak
4	4995.000	8.59	44.64	53.23	74.00	-20.77	peak
5	5675.000	9.45	37.38	46.83	74.00	-27.17	peak
6	6227.500	10.35	37.22	47.57	74.00	-26.43	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

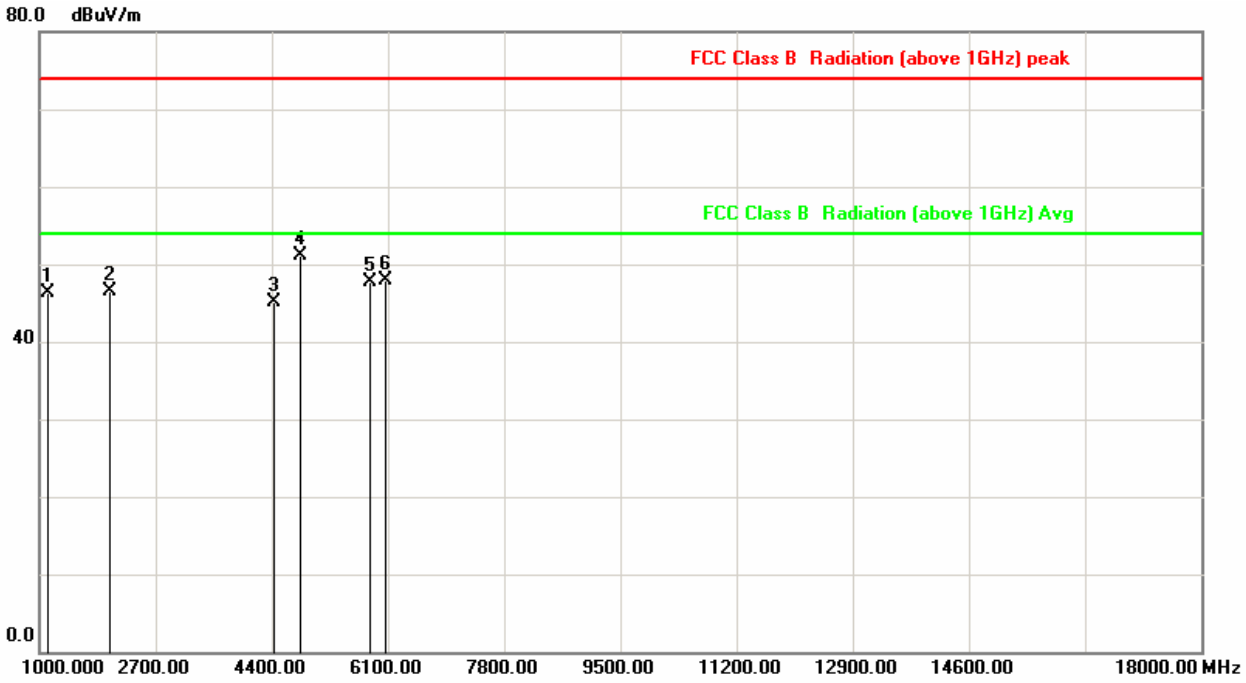
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 3	Temperature	:	25 °C
Test Date	:	Mar. 29, 2017	Humidity	:	52 %
Memo	:	CH 00	Atmospheric Pressure	:	1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1552.500	-7.31	54.72	47.41	74.00	-26.59	peak
2	1935.000	-5.10	49.18	44.08	74.00	-29.92	peak
3	4825.000	8.27	39.52	47.79	74.00	-26.21	peak
4	5590.000	9.24	37.94	47.18	74.00	-26.82	peak
5	6015.000	10.27	38.92	49.19	74.00	-24.81	peak
6	6397.500	10.42	38.15	48.57	74.00	-25.43	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

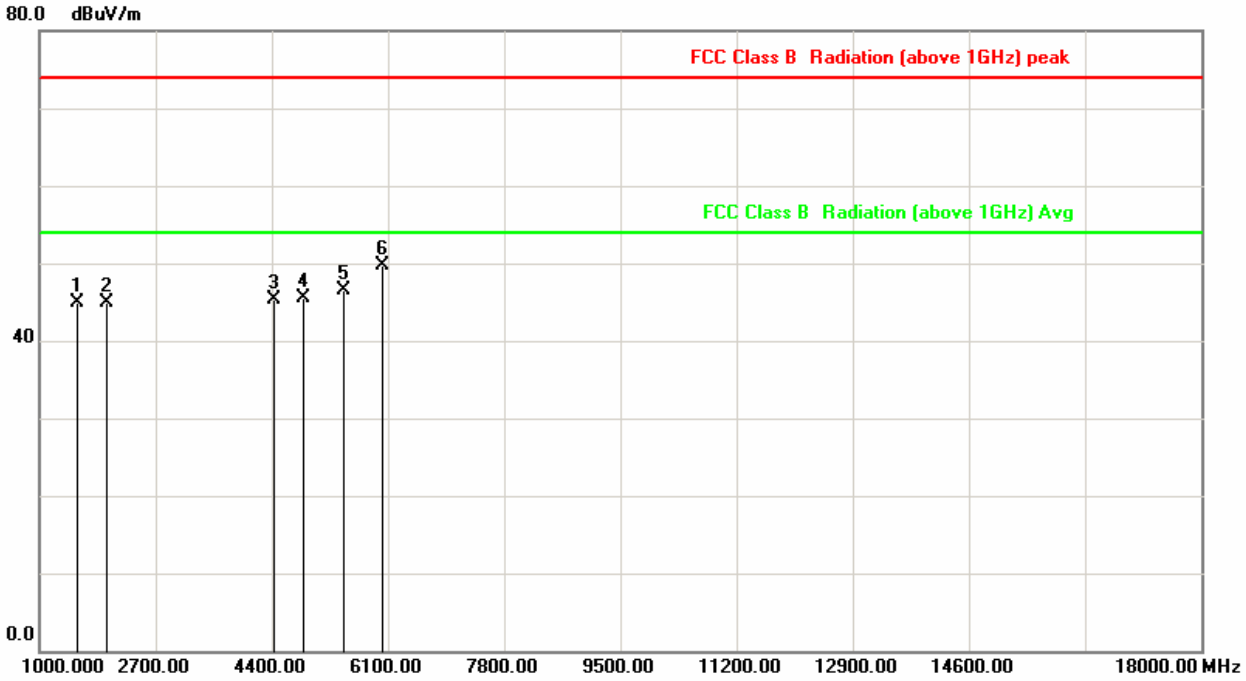
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 3	Temperature	:	25 °C
Test Date	:	Mar. 29, 2017	Humidity	:	52 %
Memo	:	CH 00	Atmospheric Pressure	:	1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1127.500	-11.01	57.31	46.30	74.00	-27.70	peak
2	2020.000	-4.64	51.07	46.43	74.00	-27.57	peak
3	4442.500	7.37	37.82	45.19	74.00	-28.81	peak
4	4825.000	8.27	42.89	51.16	74.00	-22.84	peak
5	5845.000	9.88	37.76	47.64	74.00	-26.36	peak
6	6057.500	10.28	37.65	47.93	74.00	-26.07	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

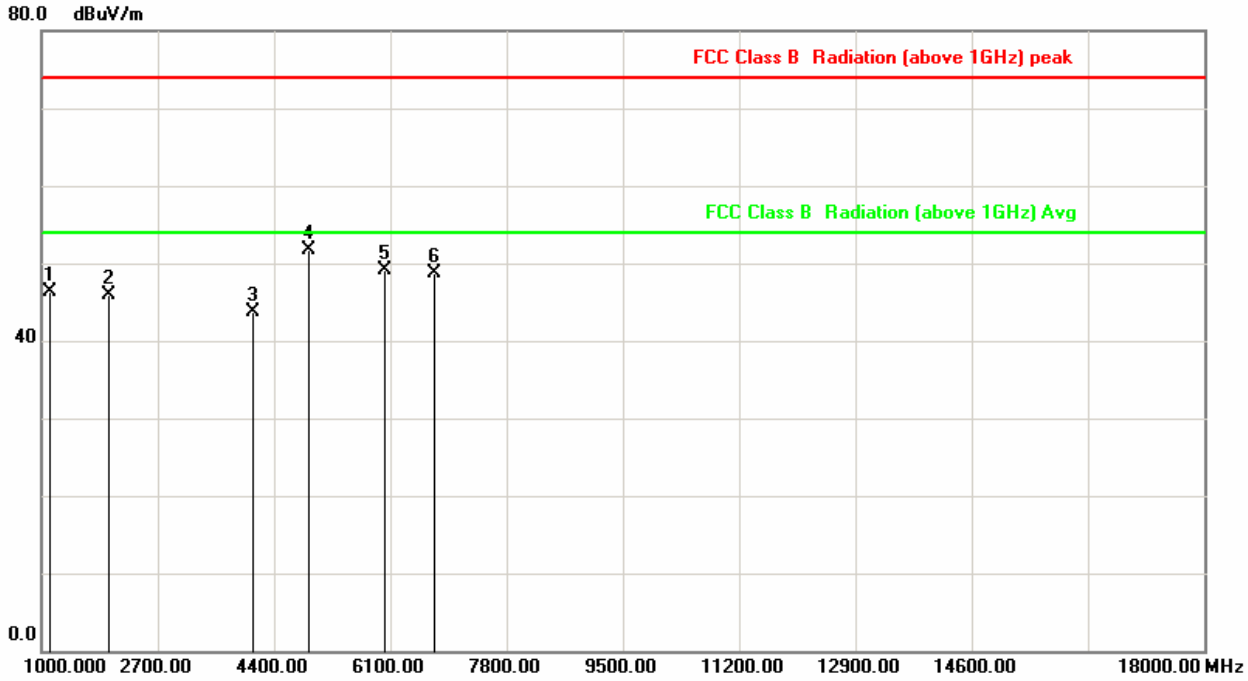
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 3	Temperature	:	25 °C
Test Date	:	Mar. 29, 2017	Humidity	:	52 %
Memo	:	CH 39	Atmospheric Pressure	:	1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1552.500	-7.31	52.14	44.83	74.00	-29.17	peak
2	1977.500	-4.86	49.68	44.82	74.00	-29.18	peak
3	4442.500	7.37	37.89	45.26	74.00	-28.74	peak
4	4867.500	8.35	37.19	45.54	74.00	-28.46	peak
5	5462.500	8.99	37.50	46.49	74.00	-27.51	peak
6	6015.000	10.27	39.41	49.68	74.00	-24.32	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

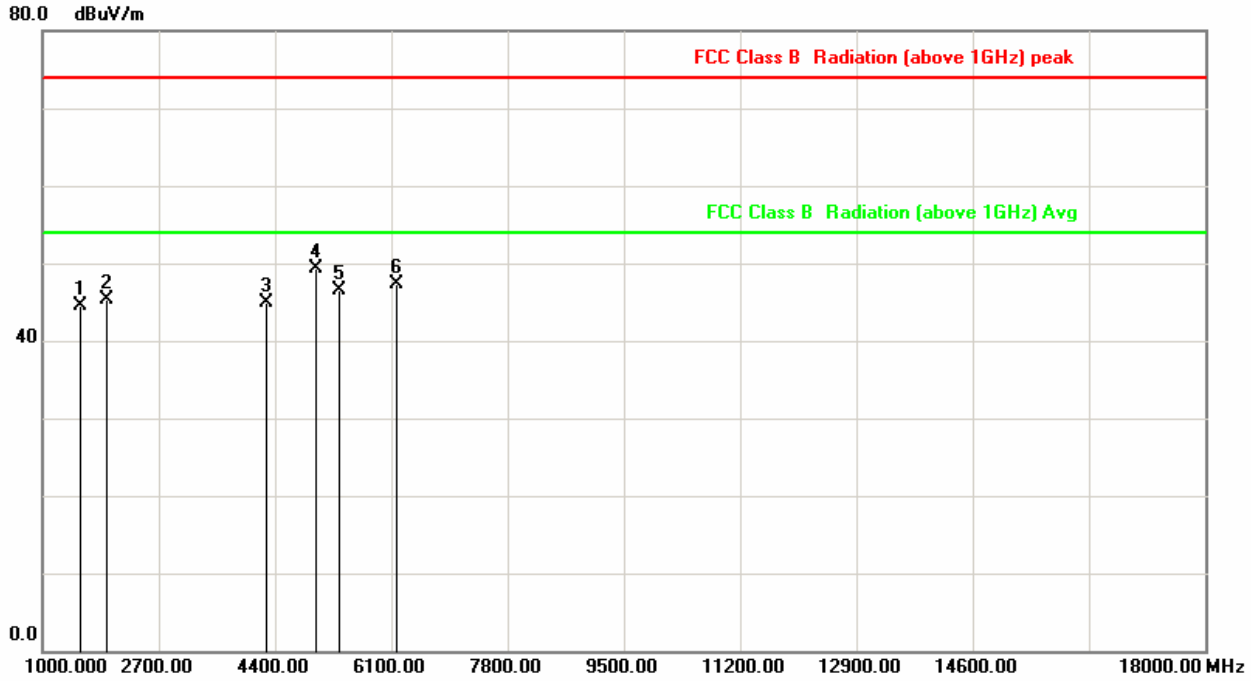
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 3	Temperature	:	25 °C
Test Date	:	Mar. 29, 2017	Humidity	:	52 %
Memo	:	CH 39	Atmospheric Pressure	:	1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1127.500	-11.01	57.28	46.27	74.00	-27.73	peak
2	1977.500	-4.86	50.73	45.87	74.00	-28.13	peak
3	4102.500	5.63	38.07	43.70	74.00	-30.30	peak
4	4910.000	8.43	43.19	51.62	74.00	-22.38	peak
5	6015.000	10.27	38.85	49.12	74.00	-24.88	peak
6	6737.500	11.23	37.38	48.61	74.00	-25.39	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

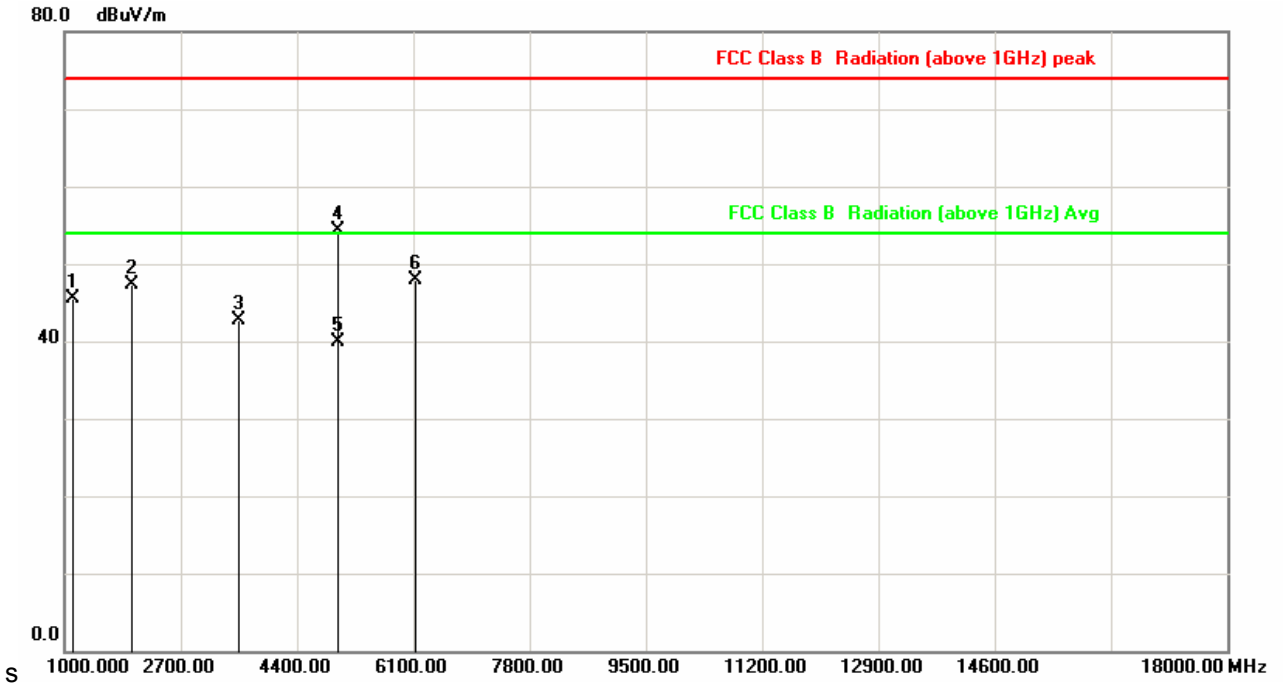
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 3	Temperature	:	25 °C
Test Date	:	Mar. 29, 2017	Humidity	:	52 %
Memo	:	CH 78	Atmospheric Pressure	:	1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1552.500	-7.31	51.76	44.45	74.00	-29.55	peak
2	1935.000	-5.10	50.42	45.32	74.00	-28.68	peak
3	4272.500	6.50	38.42	44.92	74.00	-29.08	peak
4	4995.000	8.59	40.77	49.36	74.00	-24.64	peak
5	5335.000	8.88	37.56	46.44	74.00	-27.56	peak
6	6185.000	10.33	37.07	47.40	74.00	-26.60	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 3	Temperature	:	25 °C
Test Date	:	Mar. 29, 2017	Humidity	:	52 %
Memo	:	CH 78	Atmospheric Pressure	:	1010 hpa

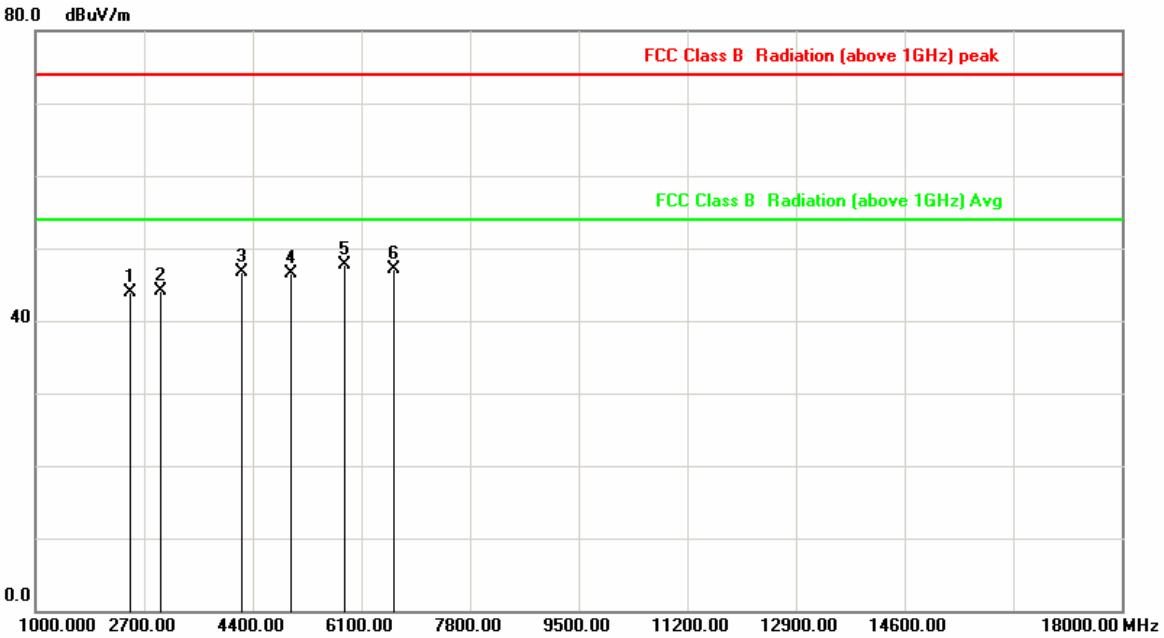


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1127.500	-11.01	56.48	45.47	74.00	-28.53	peak
2	1977.500	-4.86	52.23	47.37	74.00	-26.63	peak
3	3550.000	3.57	39.19	42.76	74.00	-31.24	peak
4	4995.000	8.59	45.75	54.34	74.00	-19.66	peak
5	4995.000	8.59	31.35	39.94	54.00	-14.06	AVG
6	6142.500	10.32	37.59	47.91	74.00	-26.09	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

7.6.2 Test Result and Data of receiver

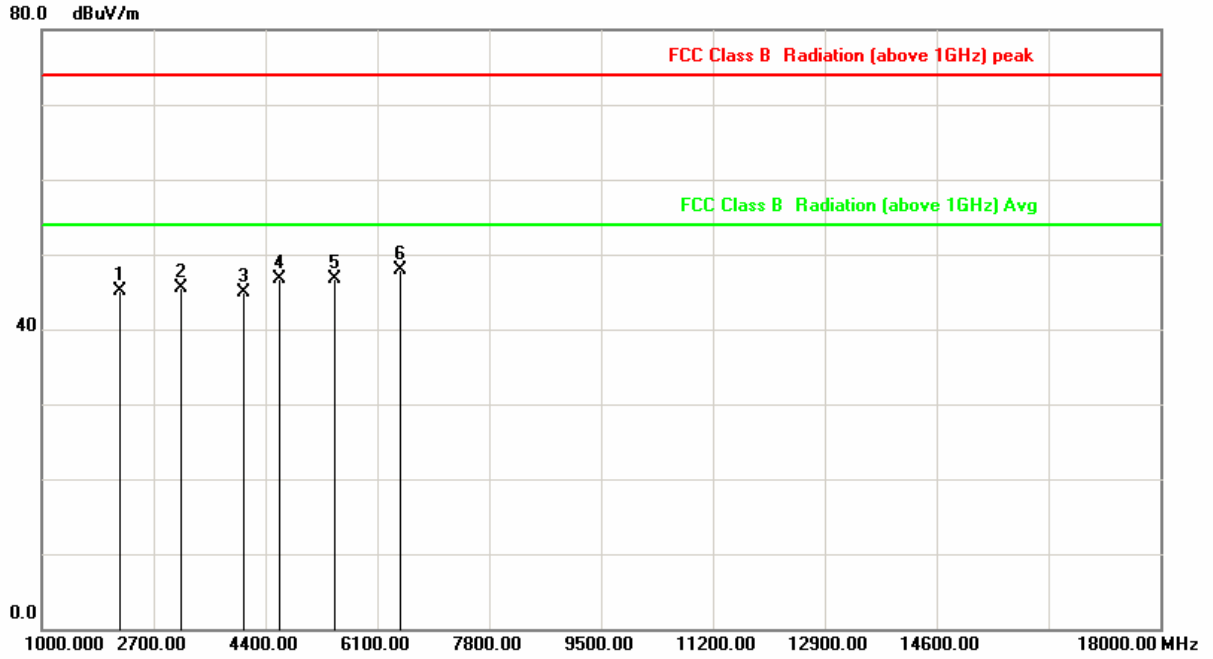
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 00	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2487.500	-2.63	46.58	43.95	74.00	-30.05	peak
2	2955.000	0.47	43.66	44.13	74.00	-29.87	peak
3	4230.000	6.28	40.34	46.62	74.00	-27.38	peak
4	4995.000	8.59	37.95	46.54	74.00	-27.46	peak
5	5845.000	9.88	37.85	47.73	74.00	-26.27	peak
6	6610.000	10.82	36.23	47.05	74.00	-26.95	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

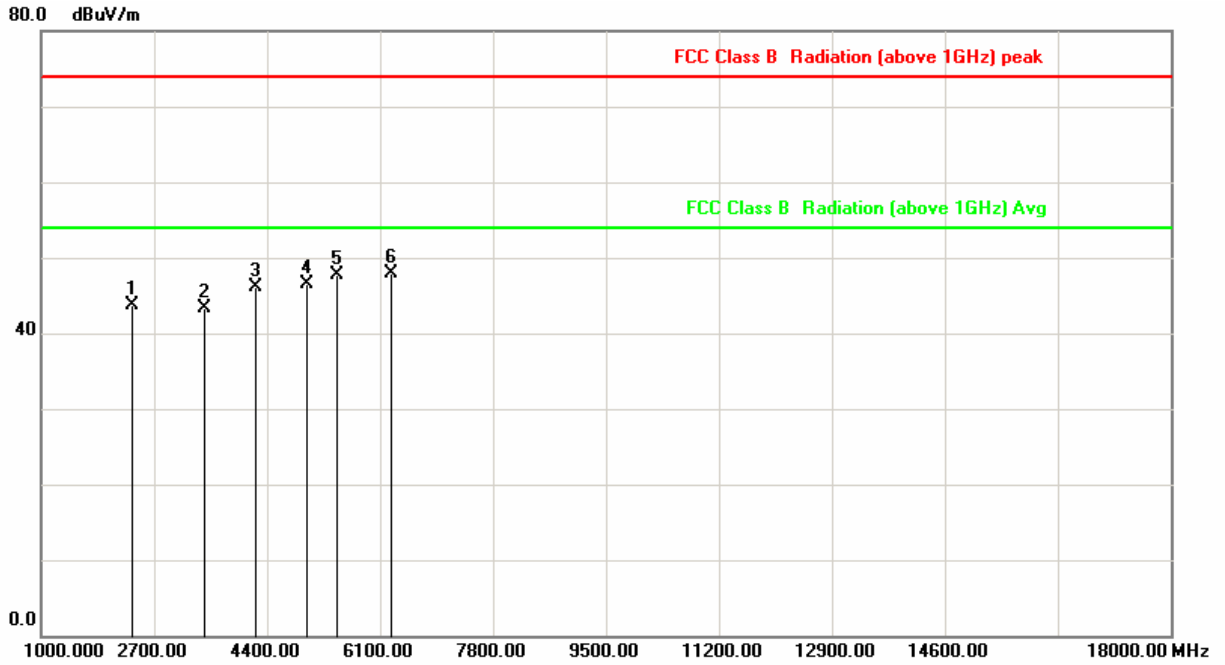
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 00	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2190.000	-3.91	49.01	45.10	74.00	-28.90	peak
2	3125.000	1.43	44.08	45.51	74.00	-28.49	peak
3	4060.000	5.42	39.43	44.85	74.00	-29.15	peak
4	4612.500	7.87	38.80	46.67	74.00	-27.33	peak
5	5462.500	8.99	37.75	46.74	74.00	-27.26	peak
6	6440.000	10.44	37.56	48.00	74.00	-26.00	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

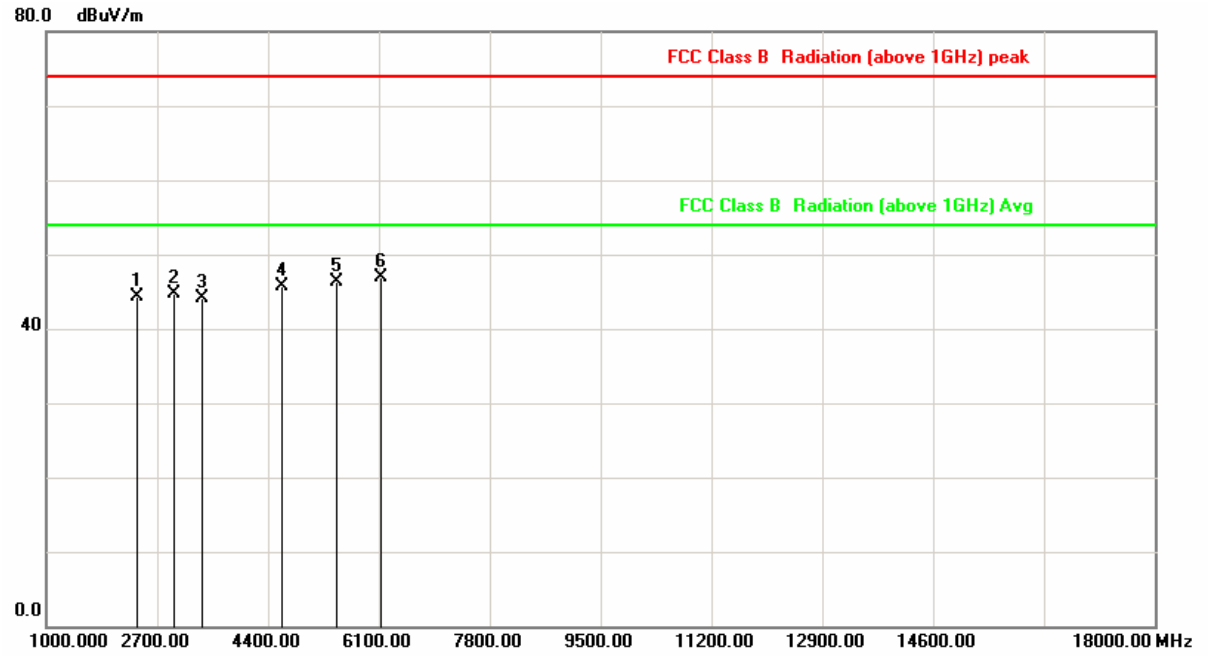
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 39	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2360.000	-3.18	46.96	43.78	74.00	-30.22	peak
2	3465.000	3.22	40.16	43.38	74.00	-30.62	peak
3	4230.000	6.28	39.84	46.12	74.00	-27.88	peak
4	4995.000	8.59	37.95	46.54	74.00	-27.46	peak
5	5462.500	8.99	38.75	47.74	74.00	-26.26	peak
6	6270.000	10.37	37.45	47.82	74.00	-26.18	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

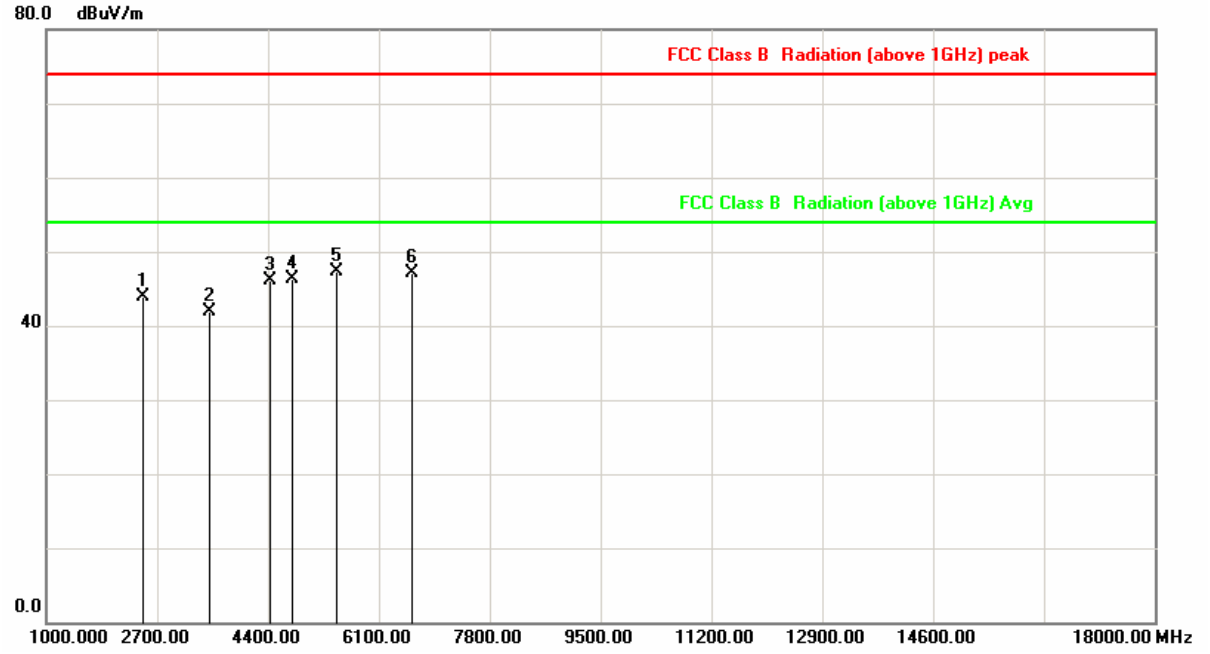
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 39	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2402.500	-3.00	47.25	44.25	74.00	-29.75	peak
2	2955.000	0.47	44.17	44.64	74.00	-29.36	peak
3	3380.000	2.77	41.40	44.17	74.00	-29.83	peak
4	4612.500	7.87	37.80	45.67	74.00	-28.33	peak
5	5462.500	8.99	37.25	46.24	74.00	-27.76	peak
6	6142.500	10.32	36.59	46.91	74.00	-27.09	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

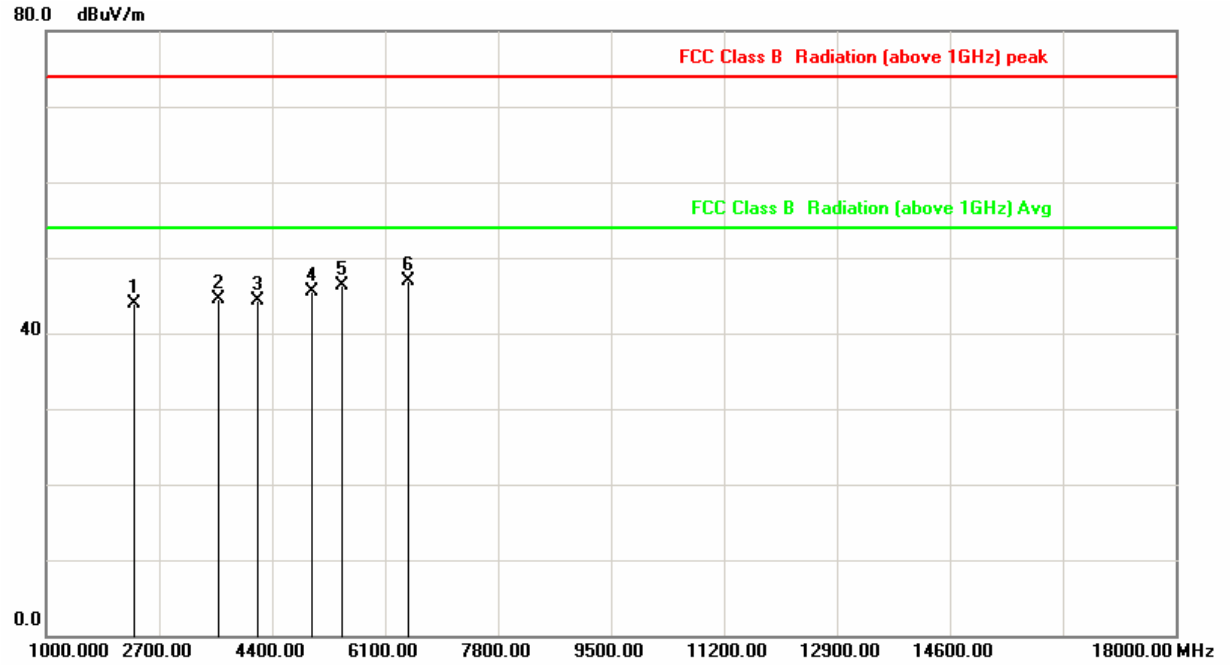
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 78	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2487.500	-2.63	46.58	43.95	74.00	-30.05	peak
2	3507.500	3.43	38.53	41.96	74.00	-32.04	peak
3	4442.500	7.37	38.65	46.02	74.00	-27.98	peak
4	4782.500	8.19	38.04	46.23	74.00	-27.77	peak
5	5462.500	8.99	38.25	47.24	74.00	-26.76	peak
6	6610.000	10.82	36.23	47.05	74.00	-26.95	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

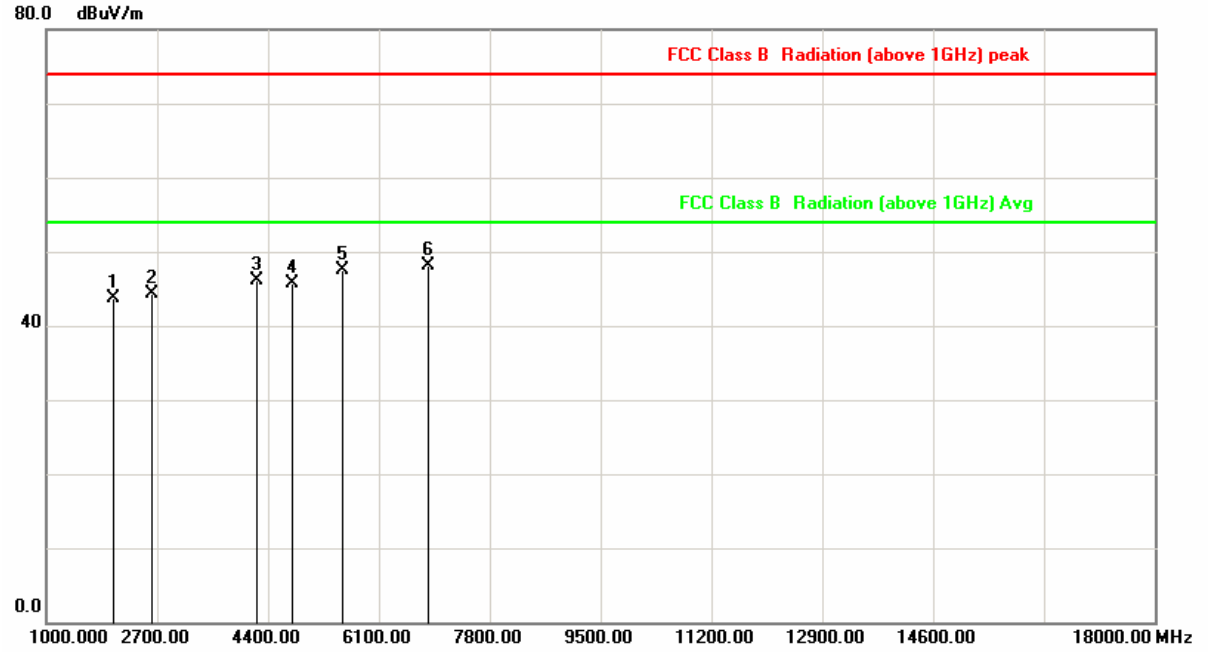
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 78	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2317.500	-3.36	47.34	43.98	74.00	-30.02	peak
2	3592.500	3.72	40.76	44.48	74.00	-29.52	peak
3	4187.500	6.07	38.20	44.27	74.00	-29.73	peak
4	4995.000	8.59	36.95	45.54	74.00	-28.46	peak
5	5462.500	8.99	37.25	46.24	74.00	-27.76	peak
6	6440.000	10.44	36.56	47.00	74.00	-27.00	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

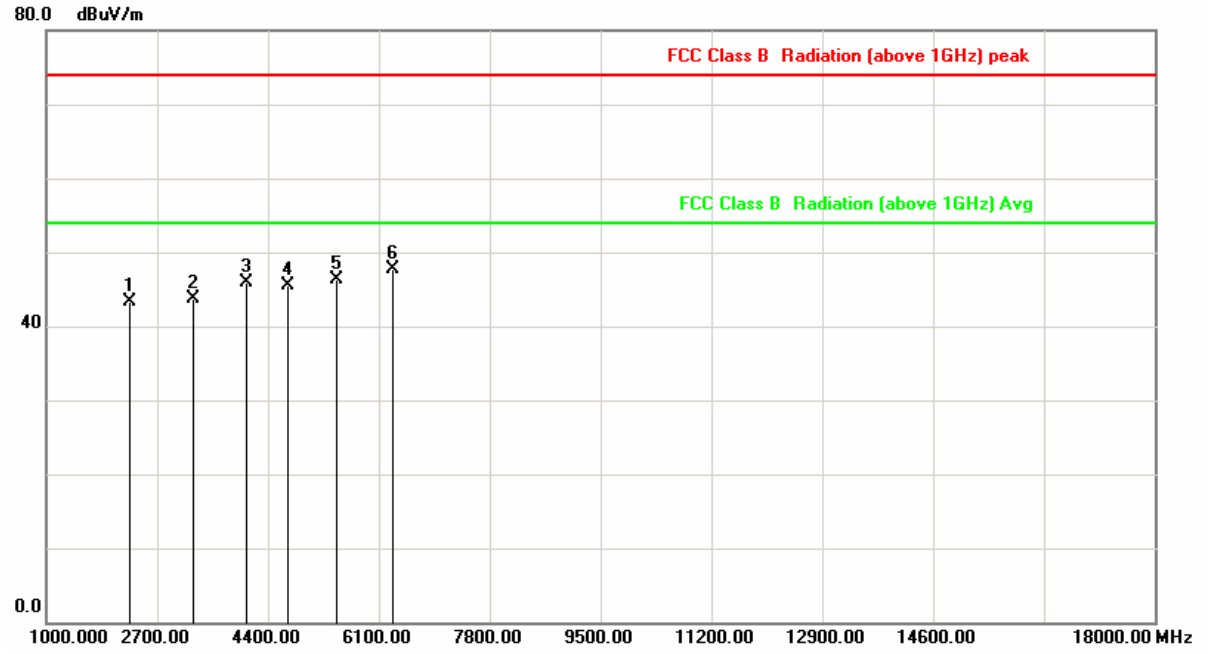
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 00	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2020.000	-4.64	48.30	43.66	74.00	-30.34	peak
2	2615.000	-1.81	46.09	44.28	74.00	-29.72	peak
3	4230.000	6.28	39.84	46.12	74.00	-27.88	peak
4	4782.500	8.19	37.54	45.73	74.00	-28.27	peak
5	5547.500	9.14	38.35	47.49	74.00	-26.51	peak
6	6865.000	11.64	36.48	48.12	74.00	-25.88	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

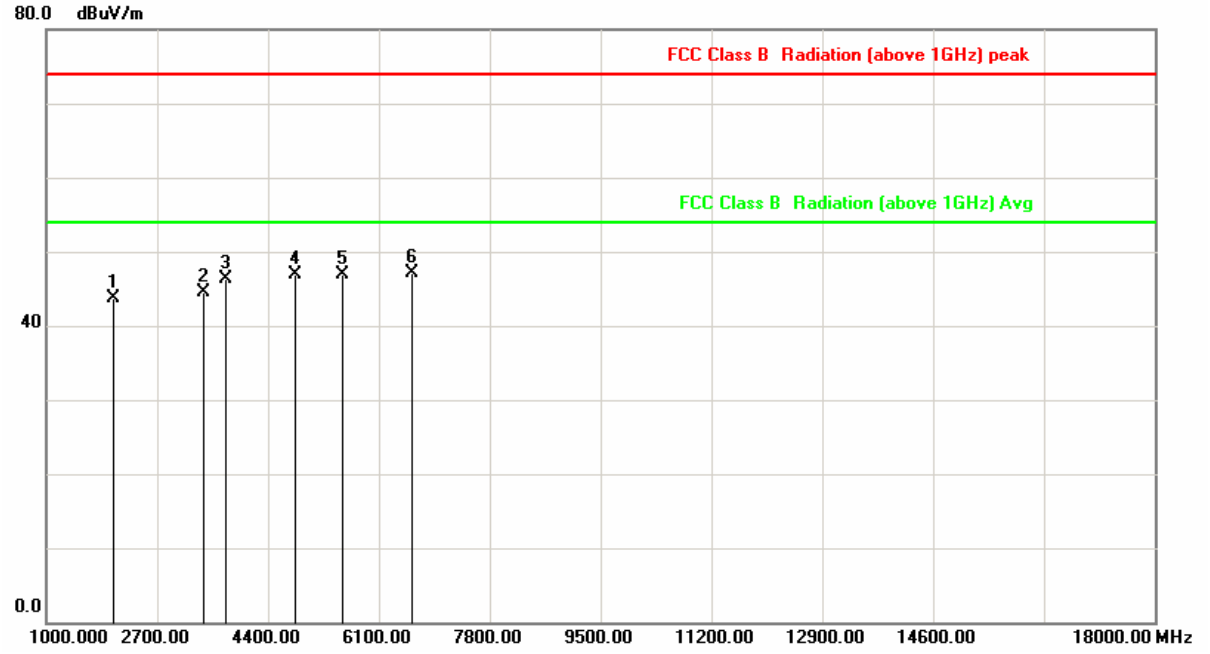
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 00	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2275.000	-3.55	46.93	43.38	74.00	-30.62	peak
2	3252.500	2.10	41.63	43.73	74.00	-30.27	peak
3	4060.000	5.42	40.43	45.85	74.00	-28.15	peak
4	4697.500	8.03	37.56	45.59	74.00	-28.41	peak
5	5462.500	8.99	37.25	46.24	74.00	-27.76	peak
6	6312.500	10.38	37.28	47.66	74.00	-26.34	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

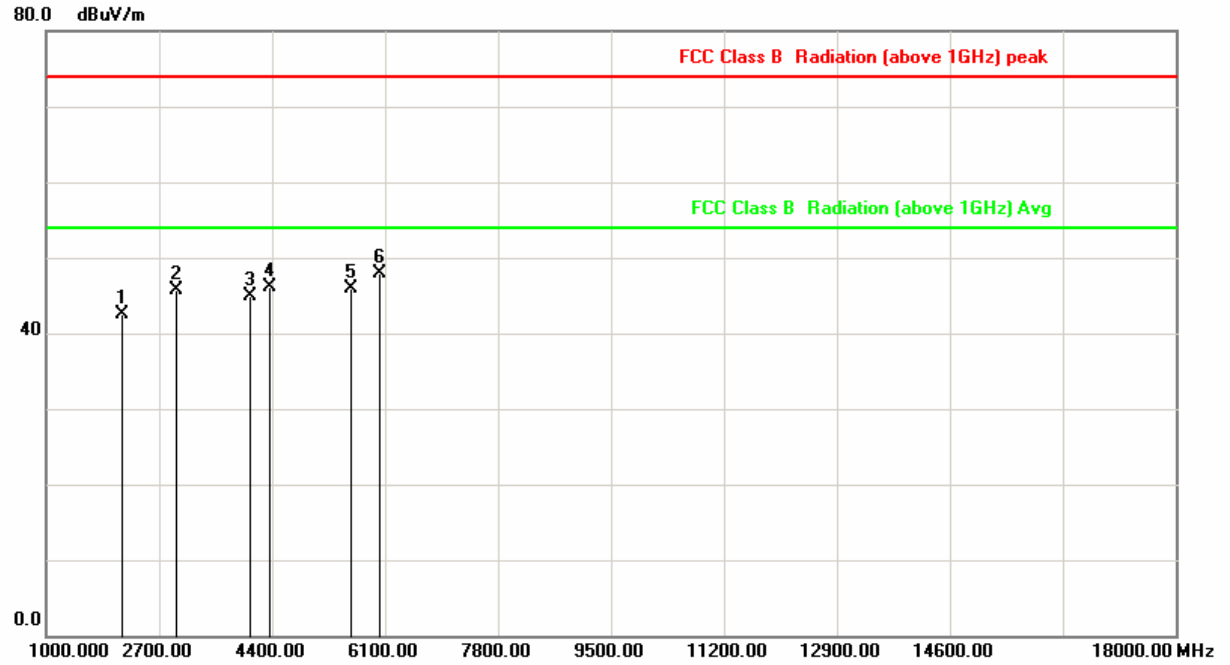
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 39	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2020.000	-4.64	48.30	43.66	74.00	-30.34	peak
2	3422.500	2.99	41.42	44.41	74.00	-29.59	peak
3	3762.500	4.30	41.96	46.26	74.00	-27.74	peak
4	4825.000	8.27	38.66	46.93	74.00	-27.07	peak
5	5547.500	9.14	37.85	46.99	74.00	-27.01	peak
6	6610.000	10.82	36.23	47.05	74.00	-26.95	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

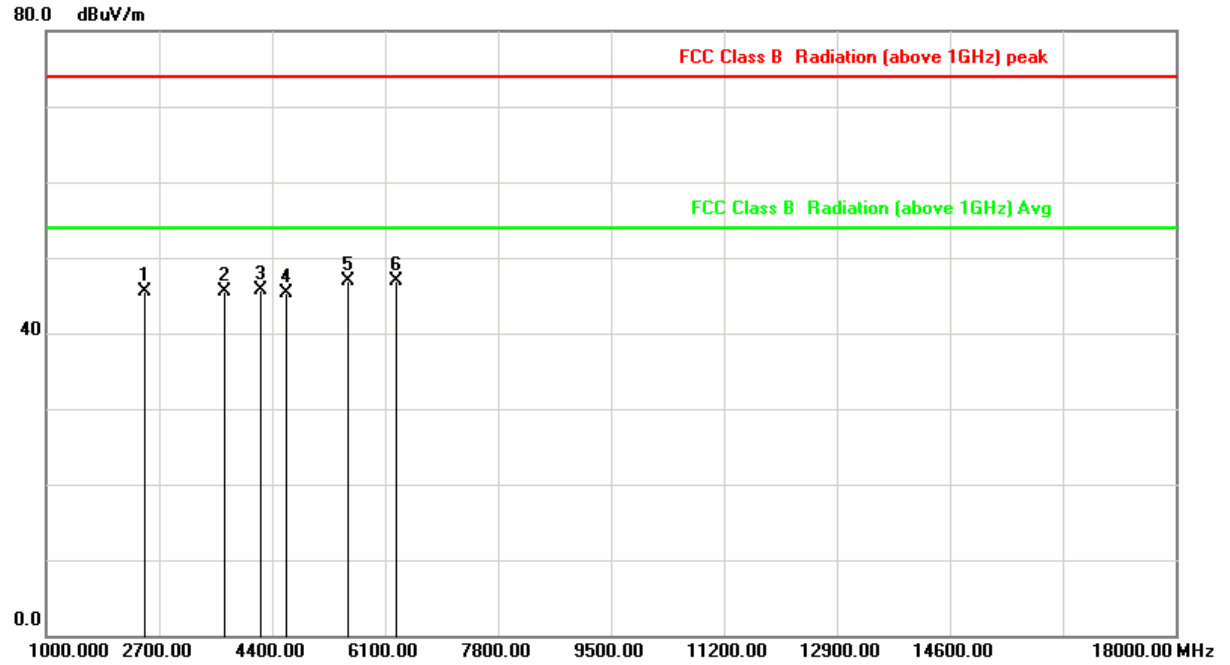
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 39	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2147.500	-4.10	46.57	42.47	74.00	-31.53	peak
2	2955.000	0.47	45.17	45.64	74.00	-28.36	peak
3	4060.000	5.42	39.43	44.85	74.00	-29.15	peak
4	4357.500	6.93	39.17	46.10	74.00	-27.90	peak
5	5590.000	9.24	36.66	45.90	74.00	-28.10	peak
6	6015.000	10.27	37.69	47.96	74.00	-26.04	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

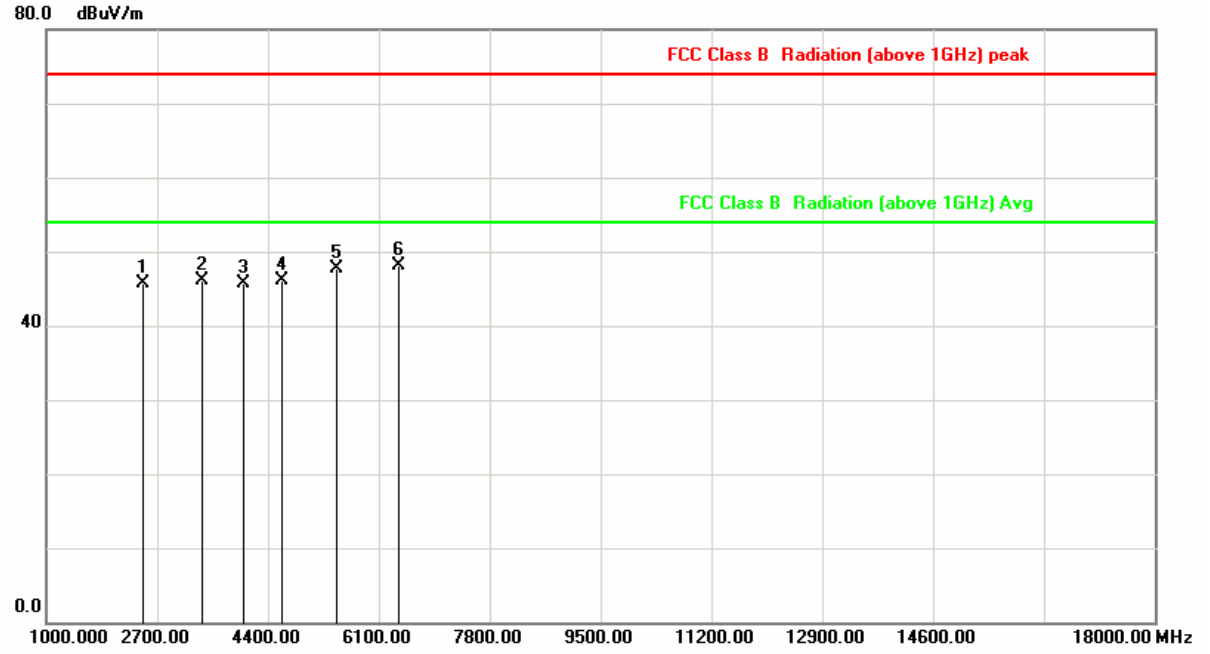
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 78	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2487.500	-2.63	48.08	45.45	74.00	-28.55	peak
2	3677.500	4.01	41.52	45.53	74.00	-28.47	peak
3	4230.000	6.28	39.34	45.62	74.00	-28.38	peak
4	4612.500	7.87	37.40	45.27	74.00	-28.73	peak
5	5547.500	9.14	37.85	46.99	74.00	-27.01	peak
6	6270.000	10.37	36.45	46.82	74.00	-27.18	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

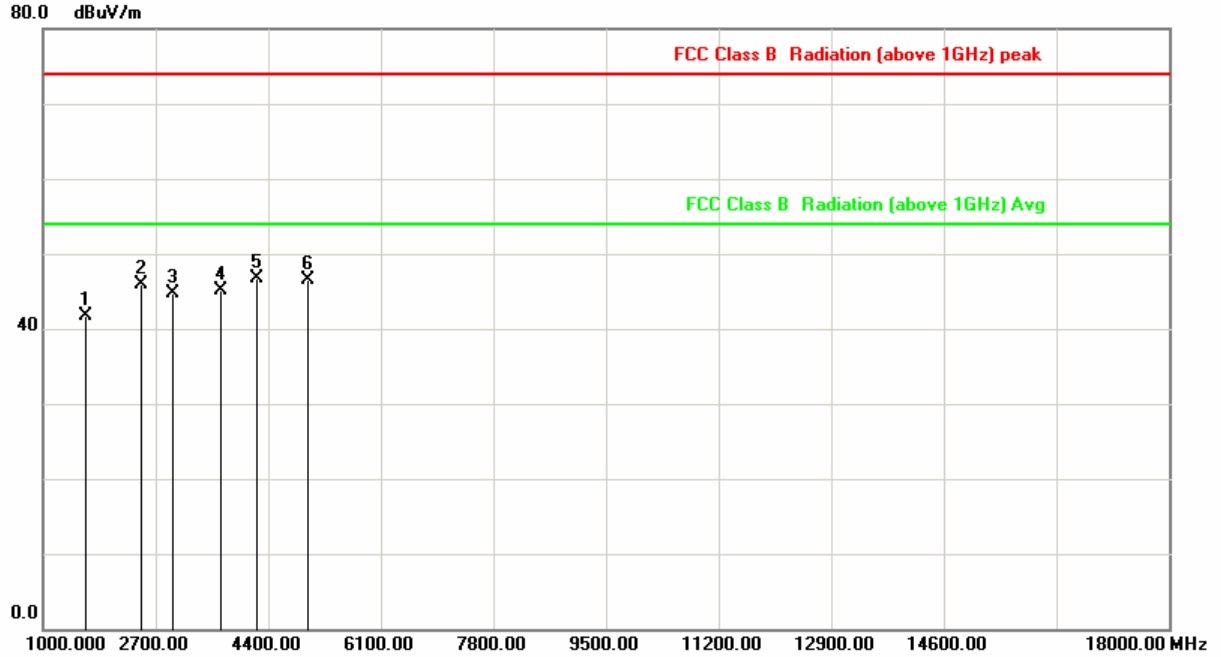
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 78	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2487.500	-2.63	48.35	45.72	74.00	-28.28	peak
2	3380.000	2.77	43.40	46.17	74.00	-27.83	peak
3	4017.500	5.20	40.47	45.67	74.00	-28.33	peak
4	4612.500	7.87	38.30	46.17	74.00	-27.83	peak
5	5462.500	8.99	38.75	47.74	74.00	-26.26	peak
6	6397.500	10.42	37.73	48.15	74.00	-25.85	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

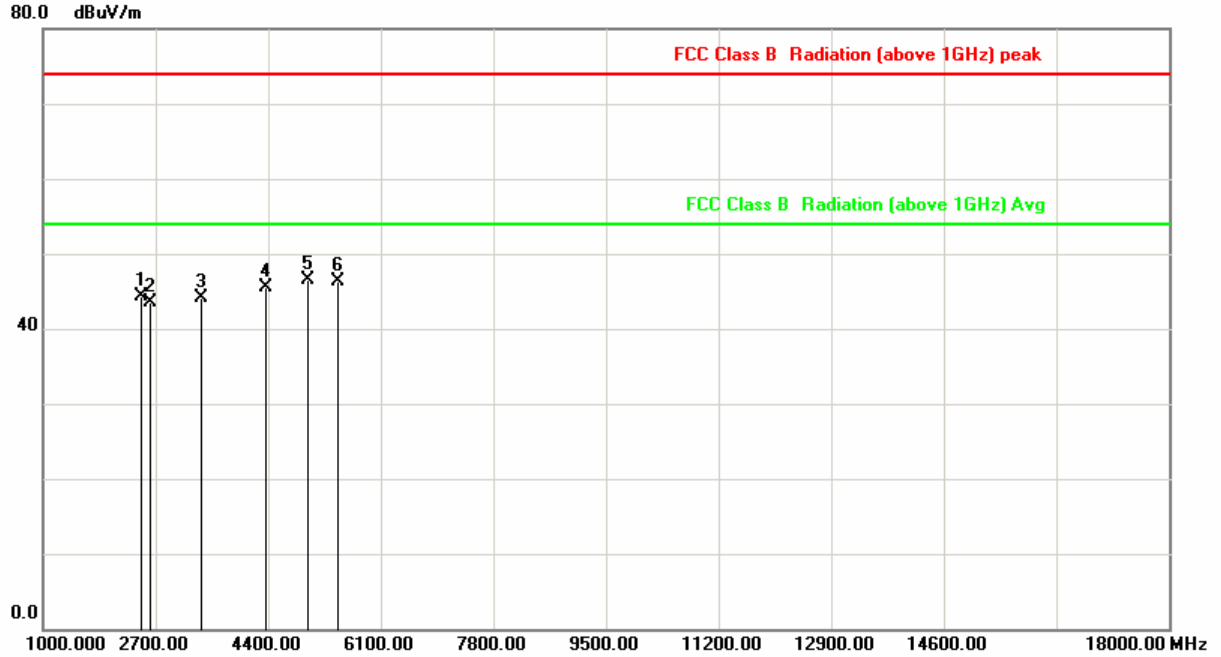
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 3	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 00	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1637.500	-6.82	48.61	41.79	74.00	-32.21	peak
2	2487.500	-2.63	48.58	45.95	74.00	-28.05	peak
3	2955.000	0.47	44.16	44.63	74.00	-29.37	peak
4	3677.500	4.01	41.02	45.03	74.00	-28.97	peak
5	4230.000	6.28	40.34	46.62	74.00	-27.38	peak
6	4995.000	8.59	37.95	46.54	74.00	-27.46	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

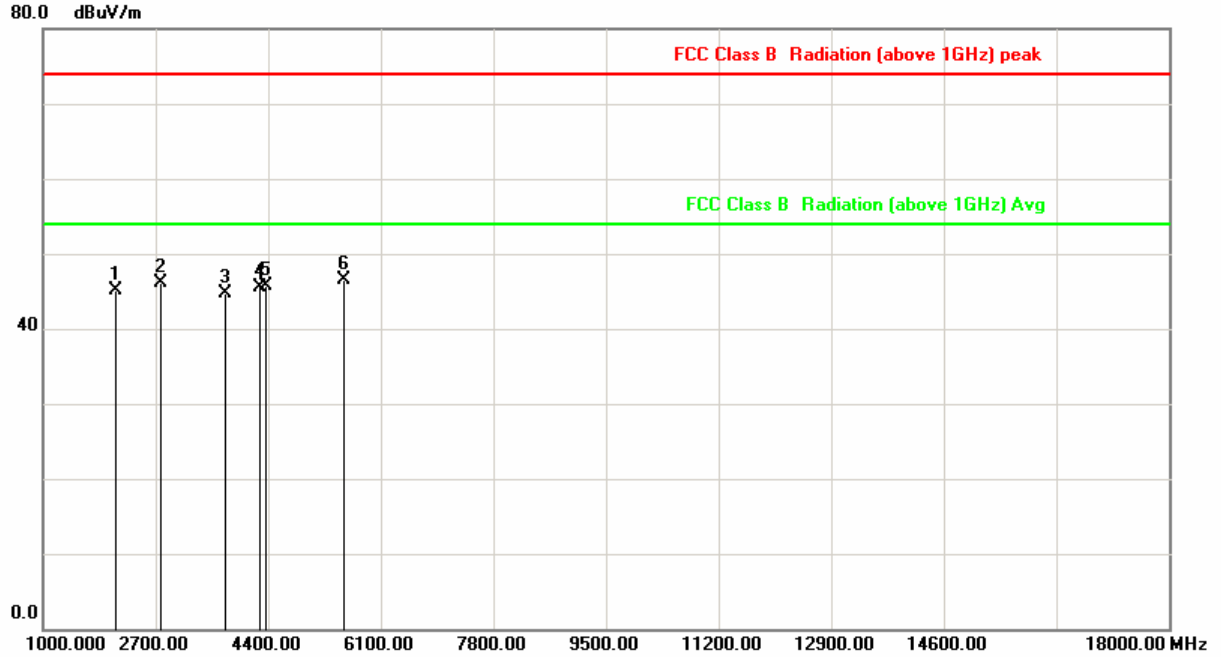
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 3	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 00	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2487.500	-2.63	46.85	44.22	74.00	-29.78	peak
2	2615.000	-1.81	45.37	43.56	74.00	-30.44	peak
3	3380.000	2.77	41.40	44.17	74.00	-29.83	peak
4	4357.500	6.93	38.67	45.60	74.00	-28.40	peak
5	4995.000	8.59	37.95	46.54	74.00	-27.46	peak
6	5462.500	8.99	37.25	46.24	74.00	-27.76	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

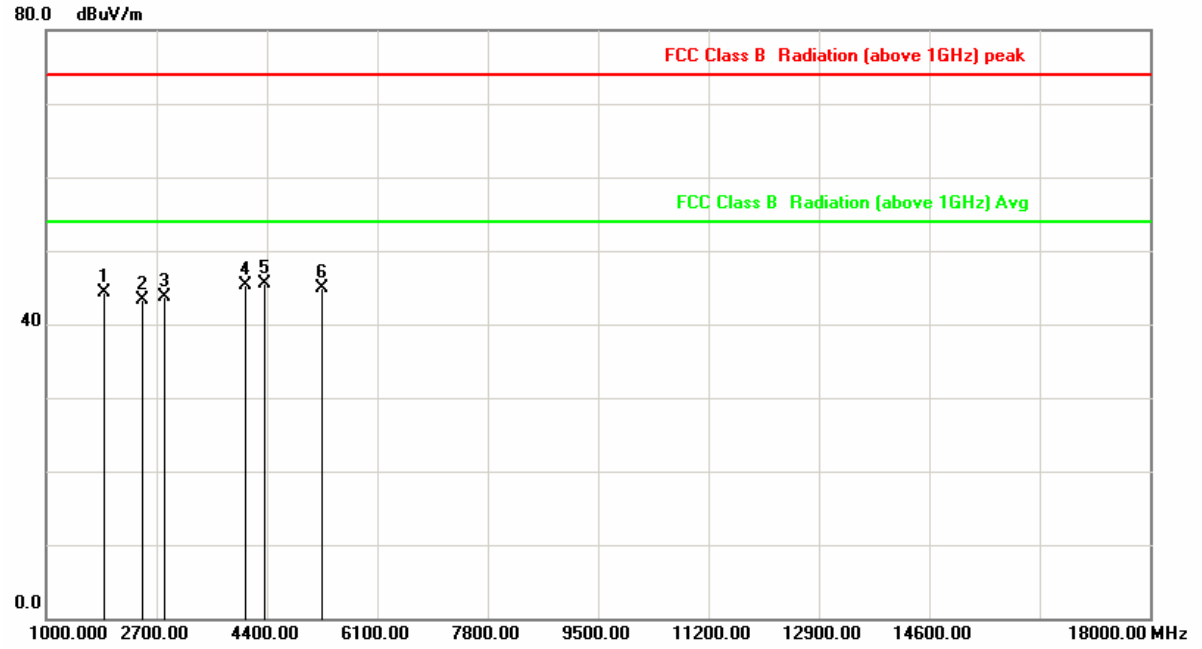
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 3	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 39	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2105.000	-4.28	49.40	45.12	74.00	-28.88	peak
2	2785.000	-0.67	46.71	46.04	74.00	-27.96	peak
3	3762.500	4.30	40.46	44.76	74.00	-29.24	peak
4	4272.500	6.50	38.97	45.47	74.00	-28.53	peak
5	4357.500	6.93	38.78	45.71	74.00	-28.29	peak
6	5547.500	9.14	37.35	46.49	74.00	-27.51	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

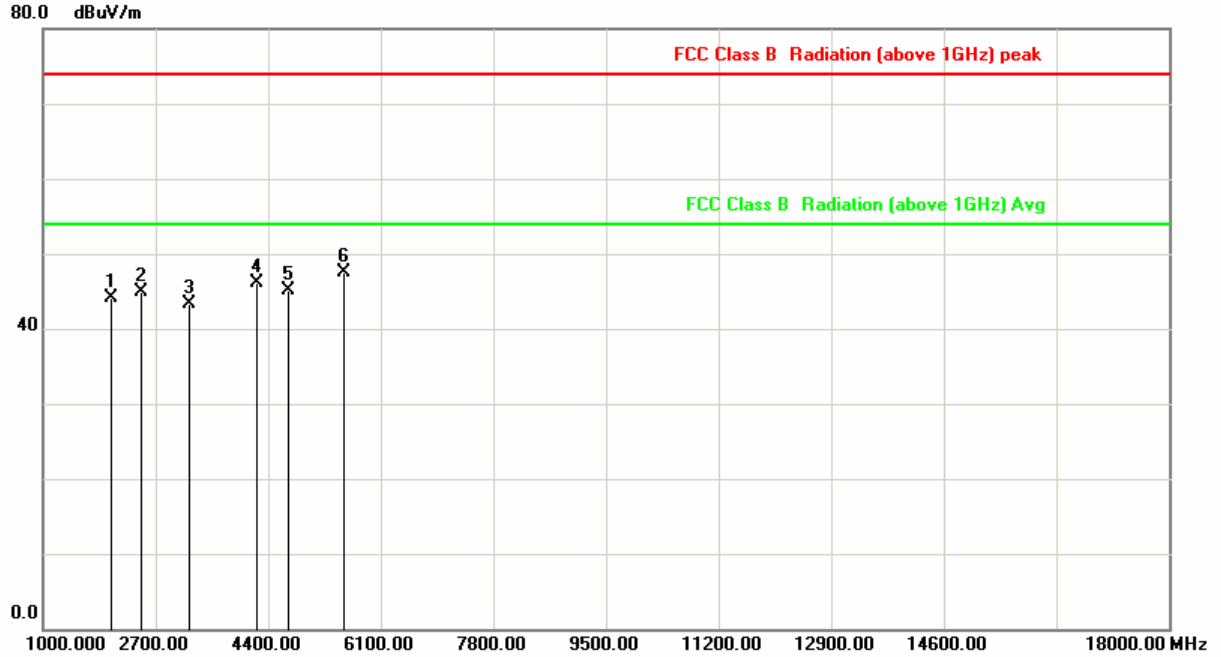
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 3	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 39	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1892.500	-5.35	49.66	44.31	74.00	-29.69	peak
2	2487.500	-2.63	45.85	43.22	74.00	-30.78	peak
3	2827.500	-0.39	44.11	43.72	74.00	-30.28	peak
4	4060.000	5.42	39.93	45.35	74.00	-28.65	peak
5	4357.500	6.93	38.67	45.60	74.00	-28.40	peak
6	5250.000	8.81	36.04	44.85	74.00	-29.15	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

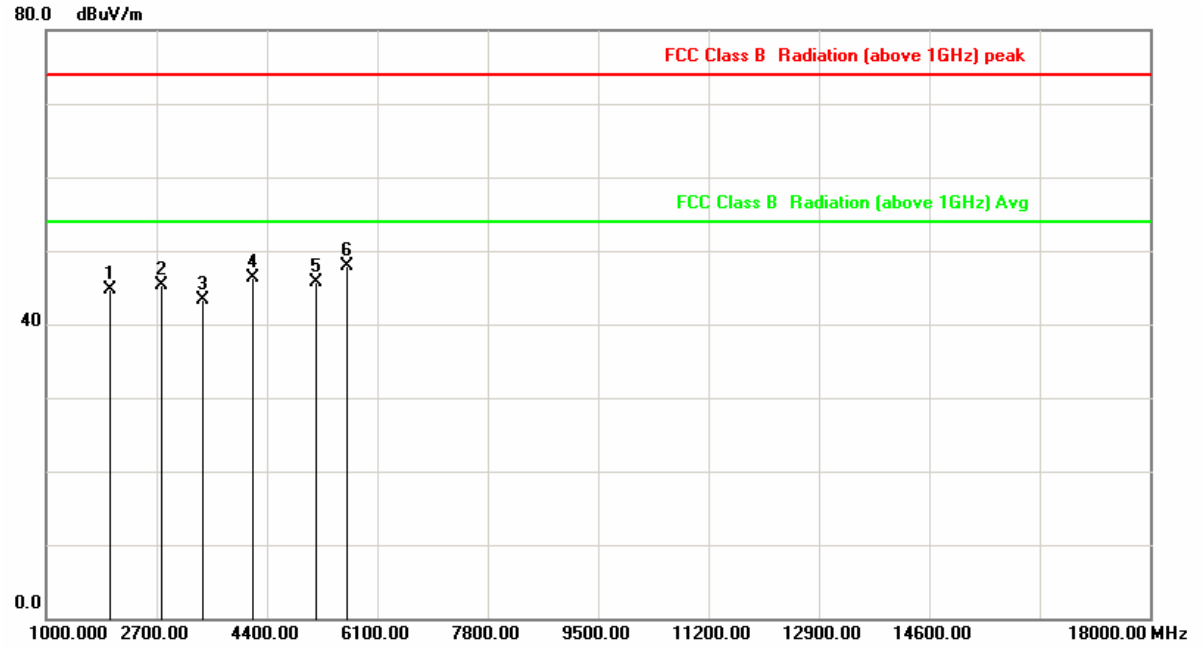
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 3	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 78	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2020.000	-4.64	48.80	44.16	74.00	-29.84	peak
2	2487.500	-2.63	47.58	44.95	74.00	-29.05	peak
3	3210.000	1.87	41.53	43.40	74.00	-30.60	peak
4	4230.000	6.28	39.84	46.12	74.00	-27.88	peak
5	4697.500	8.03	37.11	45.14	74.00	-28.86	peak
6	5547.500	9.14	38.35	47.49	74.00	-26.51	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 3	Temperature	:	18 °C
Test Date	:	Mar. 29, 2017	Humidity	:	49 %
Memo	:	CH 78	Atmospheric Pressure	:	1008 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1977.500	-4.86	49.60	44.74	74.00	-29.26	peak
2	2785.000	-0.67	45.94	45.27	74.00	-28.73	peak
3	3422.500	2.99	40.34	43.33	74.00	-30.67	peak
4	4187.500	6.07	40.20	46.27	74.00	-27.73	peak
5	5165.000	8.74	37.06	45.80	74.00	-28.20	peak
6	5632.500	9.35	38.64	47.99	74.00	-26.01	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

8. 20dB Bandwidth Measurement Data

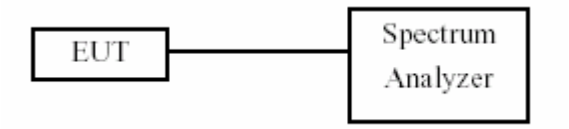
8.1 Test Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than125 mW.

8.2 Test Procedures

a. The transmitter output was connected to the spectrum analyzer.
b. Set RBW of spectrum analyzer to 30 KHz and VBW to 100 KHz.
c. The 20 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20 dB.

8.3 Test Setup Layout



8.4 Test Result and Data

Test Date: Mar. 29, 2017 Temperature: 25℃

Atmospheric pressure: 1020 hPa Humidity: 55%

1M

Channel	Frequency (MHz)	20dB Bandwidth (MHz)	2/3 of 20dB Bandwidth (MHz)
00	2402	0.866	0.577
39	2441	0.865	0.577
78	2480	0.861	0.574

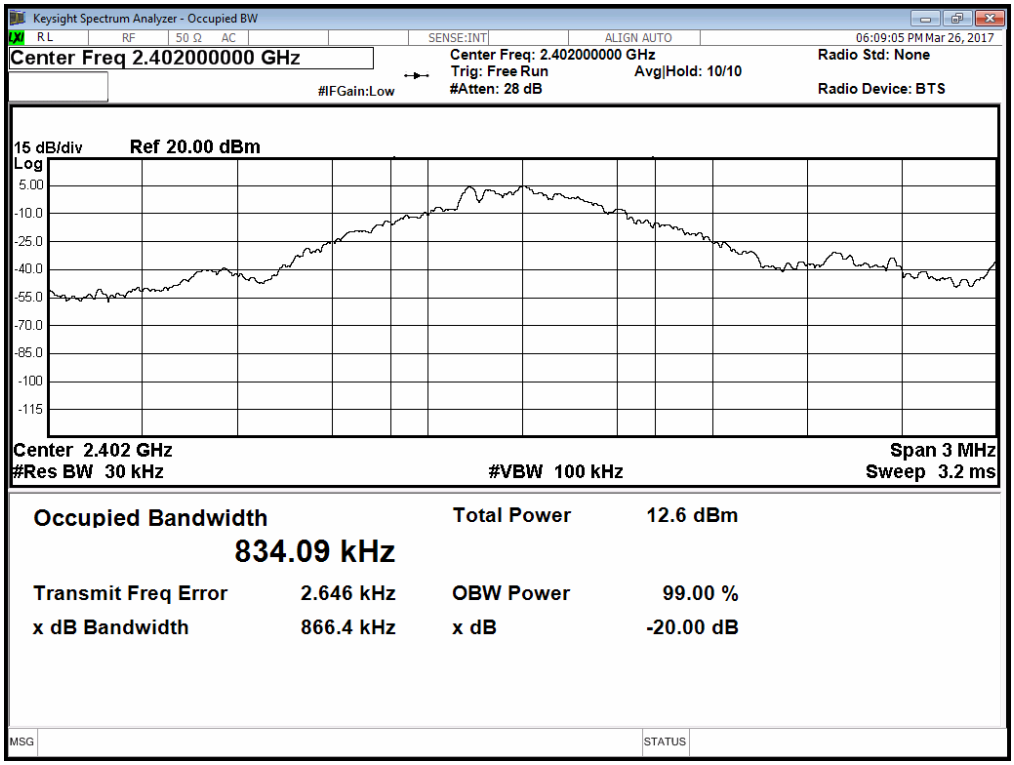
2M

Channel	Frequency (MHz)	20dB Bandwidth (MHz)	2/3 of 20dB Bandwidth (MHz)
00	2402	1.197	0.798
39	2441	1.218	0.812
78	2480	1.206	0.804

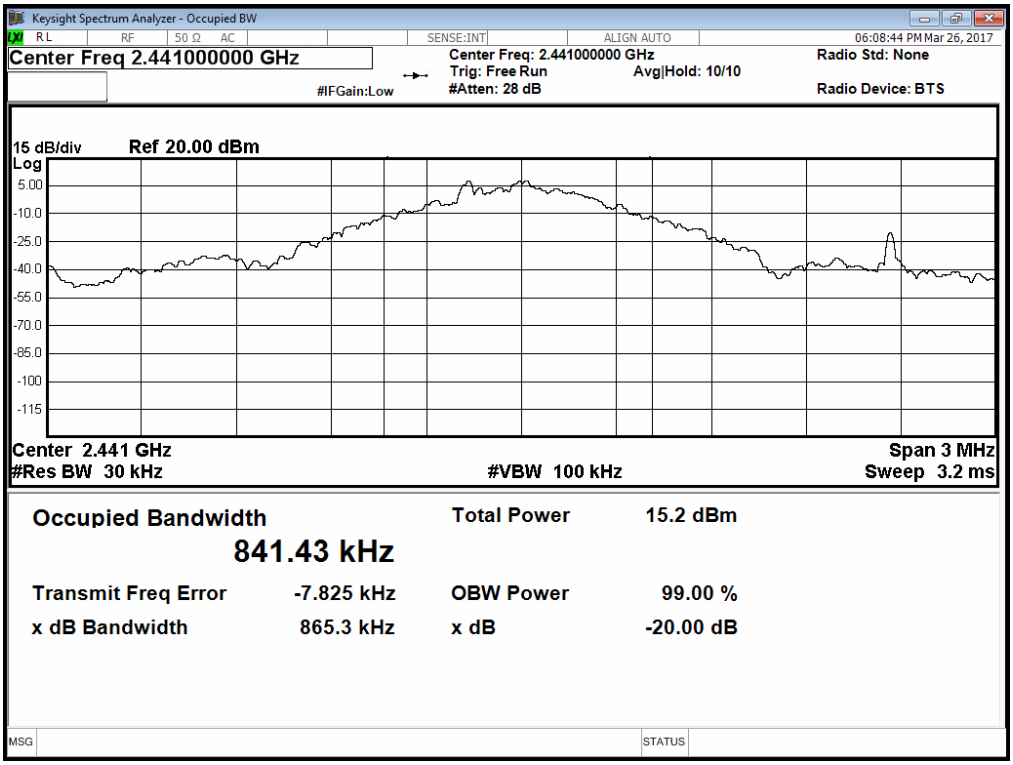
3M

Channel	Frequency (MHz)	20dB Bandwidth (MHz)	2/3 of 20dB Bandwidth (MHz)
00	2402	1.207	0.805
39	2441	1.207	0.805
78	2480	1.206	0.804

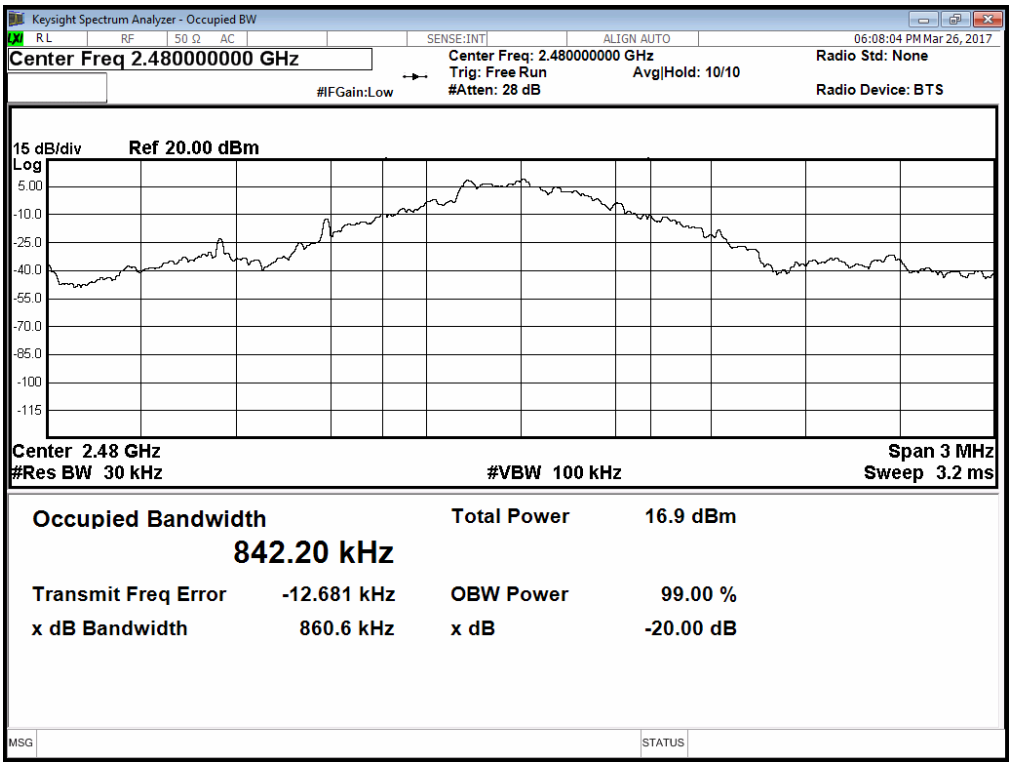
Modulation Standard: GFSK (1Mbps)
Channel: 00



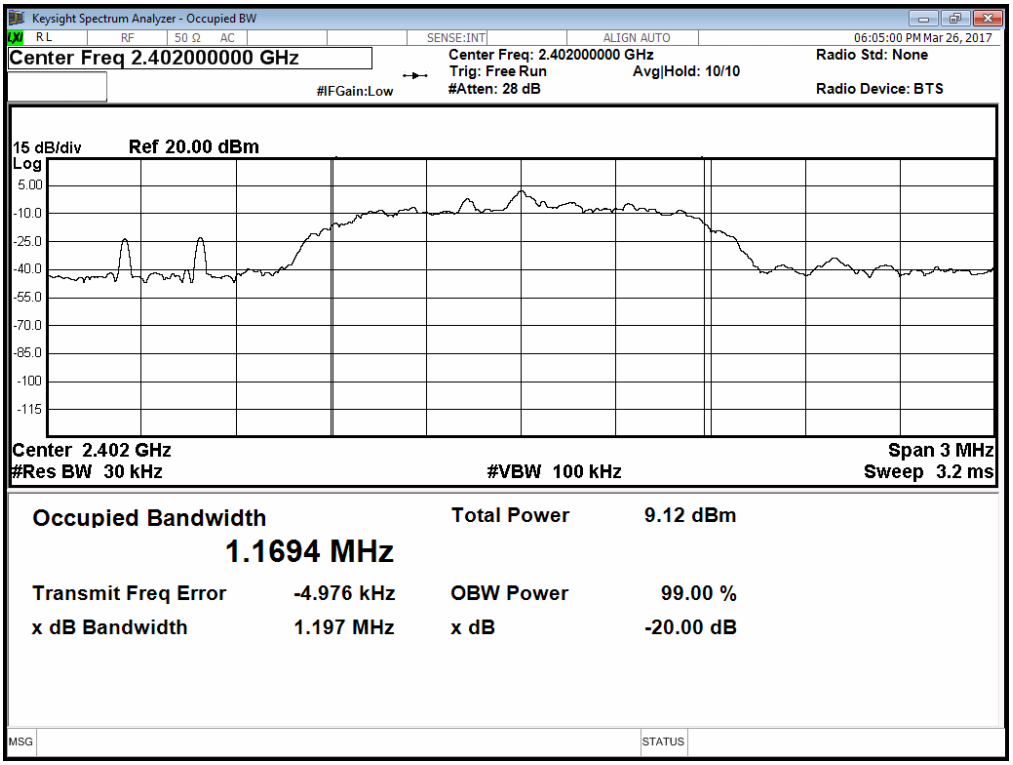
Modulation Standard: GFSK (1Mbps)
Channel: 39



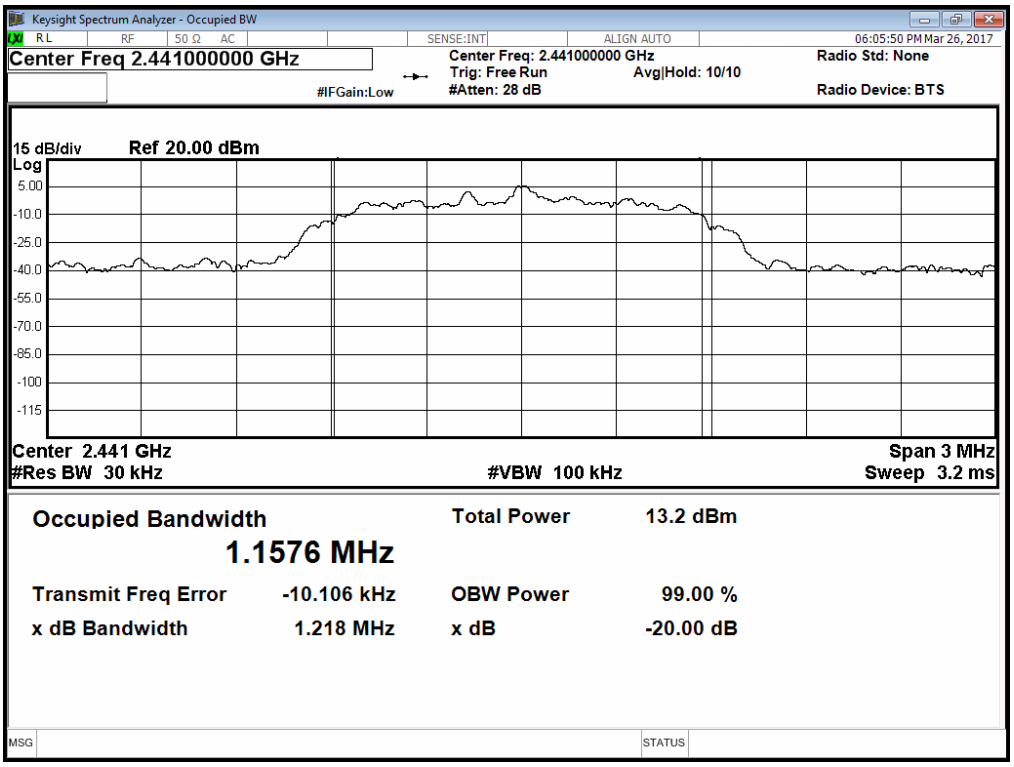
Modulation Standard: GFSK (1Mbps)
Channel: 78



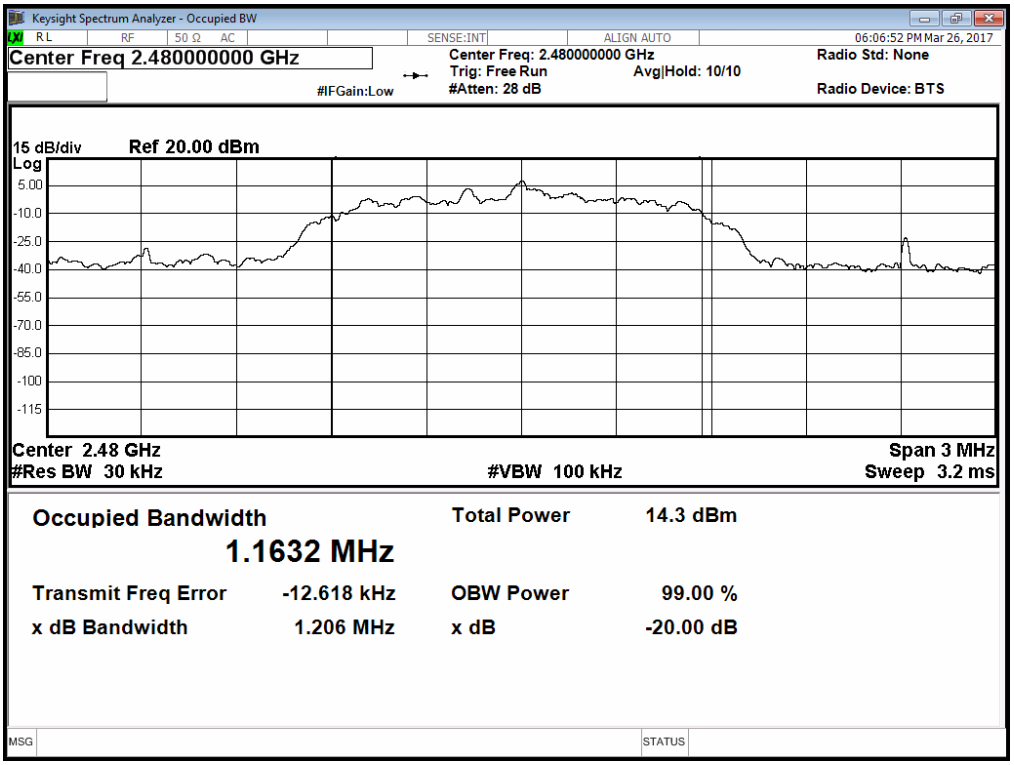
Modulation Standard: π/4 DQPSK (2Mbps)
Channel: 00



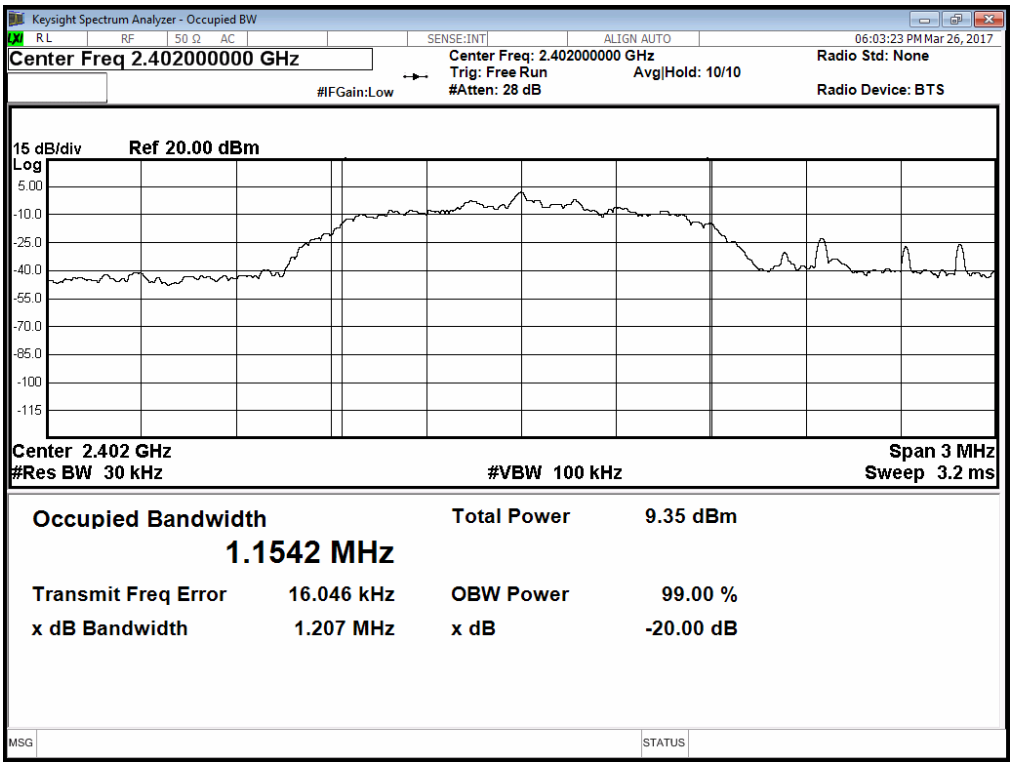
Modulation Standard: π/4 DQPSK (2Mbps)
Channel: 39



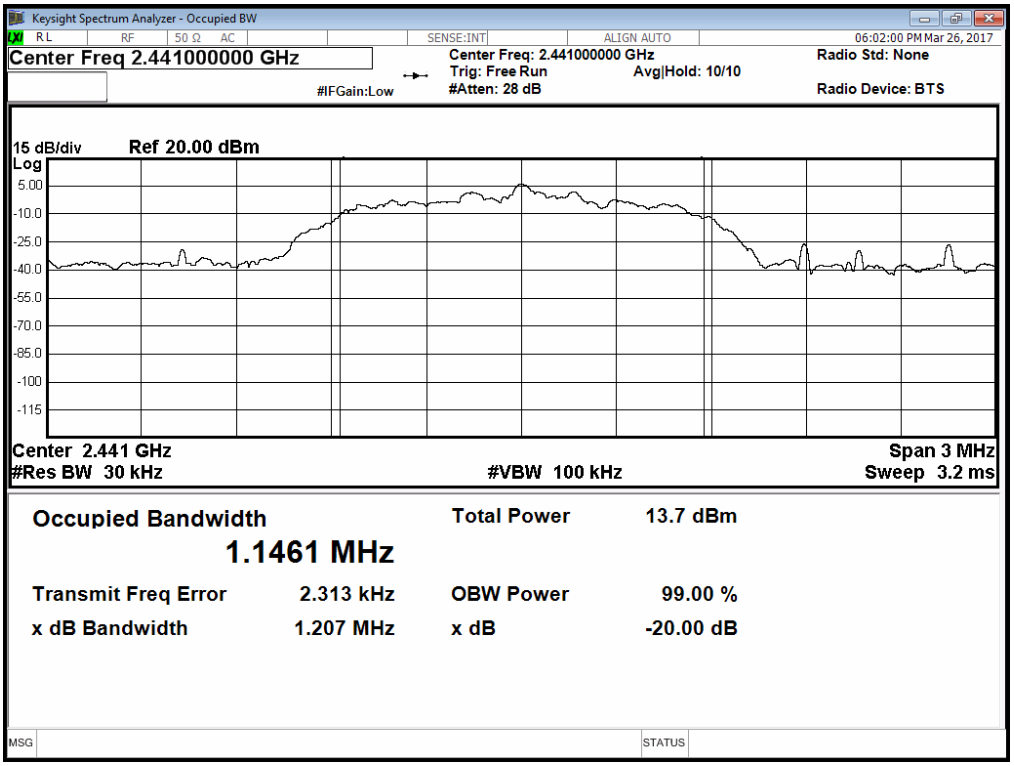
Modulation Standard: π/4 DQPSK (2Mbps)
Channel: 78



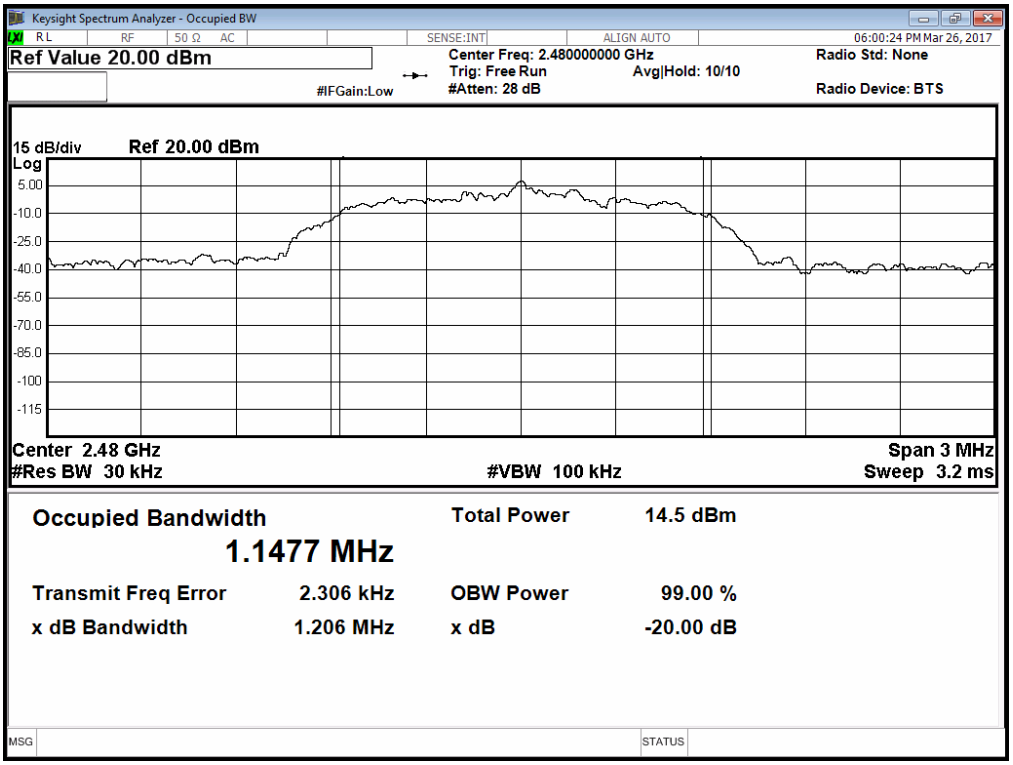
Modulation Standard: 8DPSK (3Mbps)
Channel: 00



Modulation Standard: 8DPSK (3Mbps)
Channel: 39



Modulation Standard: 8DPSK (3Mbps)
Channel: 78



9. Frequencies Separation

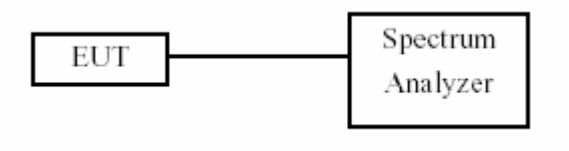
9.1 Test Limit

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

9.2 Test Procedures

a. The transmitter output was connected to the spectrum analyzer.
b. Set RBW of spectrum analyzer to 30 KHz and VBW to 100 KHz.
c. By using the MaxHold function record the separation of two adjacent channels.
d. Measure the frequency difference of these two adjacent channels.

9.3 Test Setup Layout



9.4 Test Result and Data

Test Date: Mar. 29, 2017 Temperature: 25℃

Atmospheric pressure: 1020 hPa Humidity: 55%

1M

Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)	2/3 of 20dB Bandwidth (MHz)
2402	1.000	≥ 2/3 of 20dB Bandwidth	0.577
2441	1.000	≥ 2/3 of 20dB Bandwidth	0.577
2480	1.000	≥ 2/3 of 20dB Bandwidth	0.574

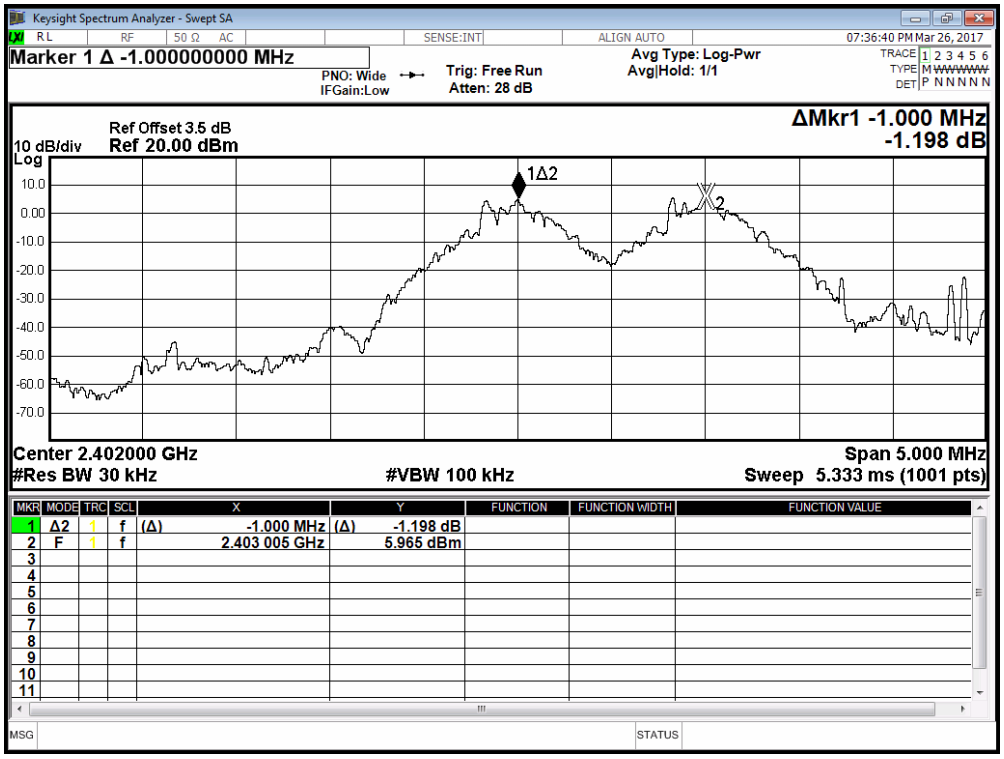
2M

Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)	2/3 of 20dB Bandwidth (MHz)
2402	1.000	≥ 2/3 of 20dB Bandwidth	0.798
2441	1.000	≥ 2/3 of 20dB Bandwidth	0.812
2480	1.000	≥ 2/3 of 20dB Bandwidth	0.804

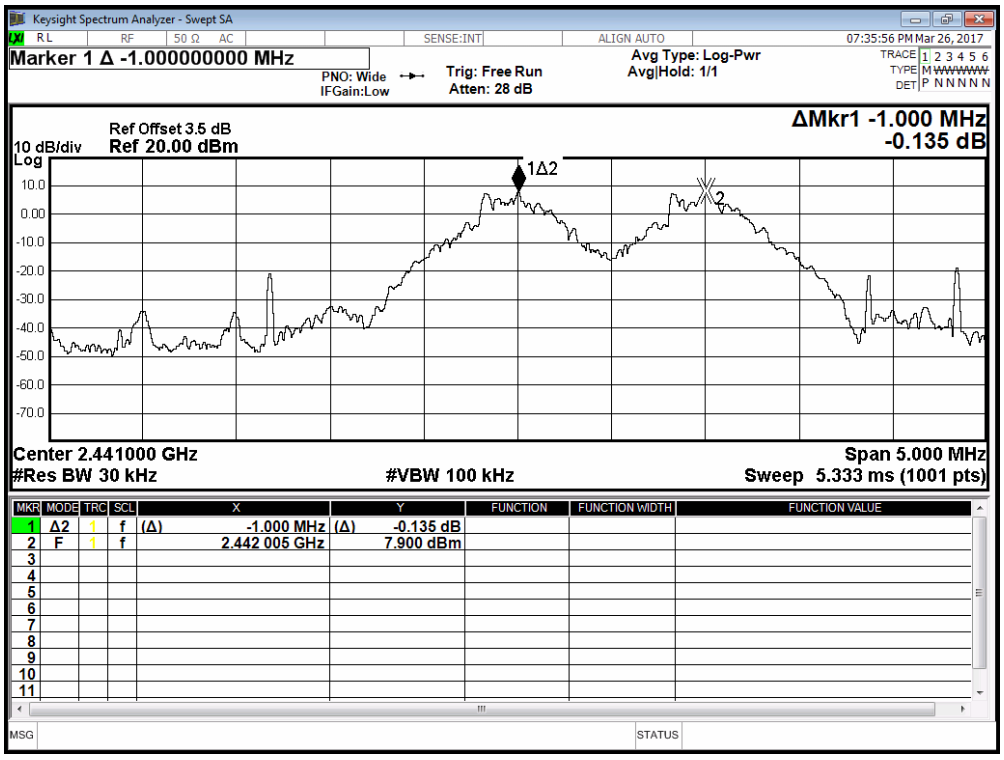
3M

Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)	2/3 of 20dB Bandwidth (MHz)
2402	1.000	≥ 2/3 of 20dB Bandwidth	0.805
2441	1.000	≥ 2/3 of 20dB Bandwidth	0.805
2480	1.000	≥ 2/3 of 20dB Bandwidth	0.804

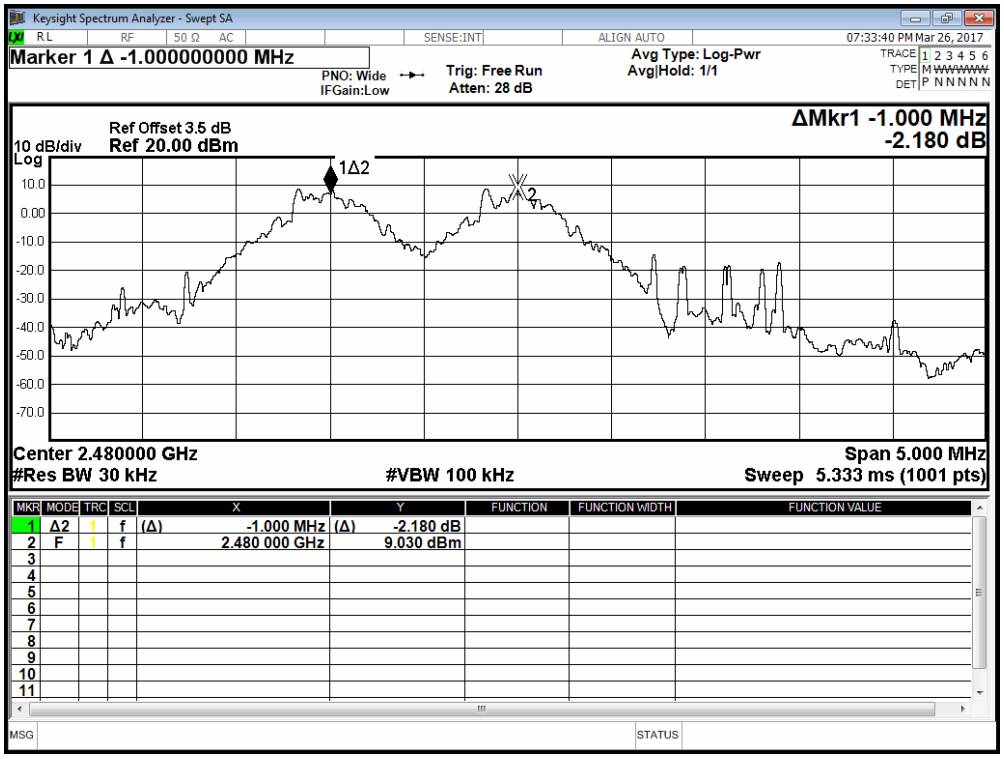
Modulation Standard: GFSK (1Mbps)
Channel: 00



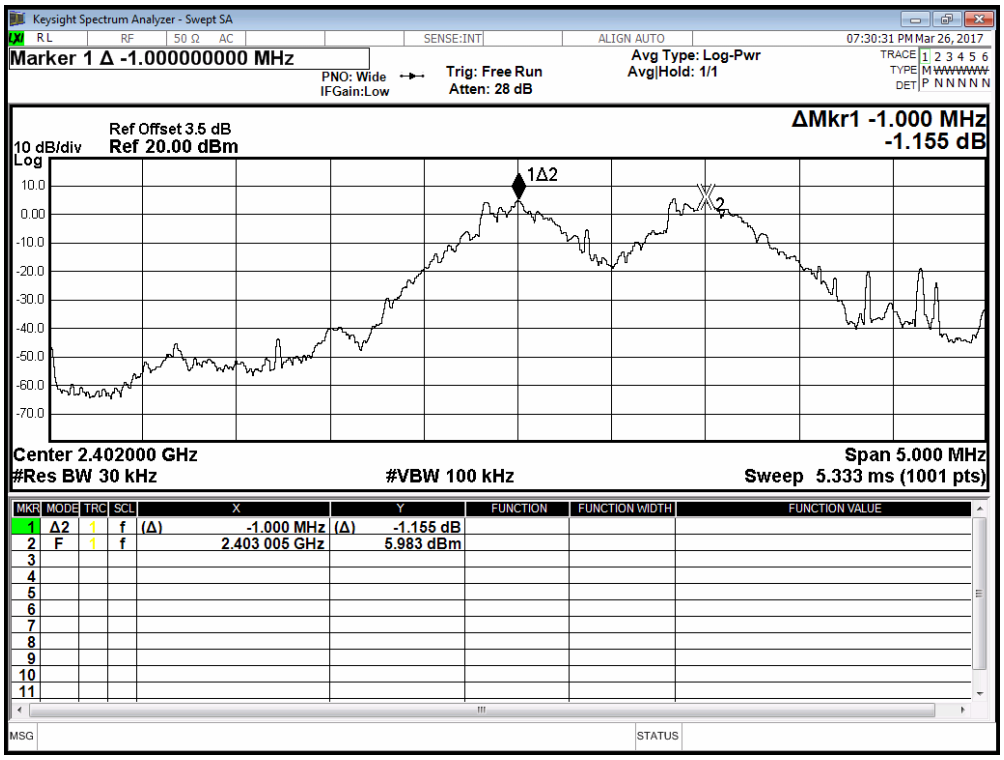
Modulation Standard: GFSK (1Mbps)
Channel: 39



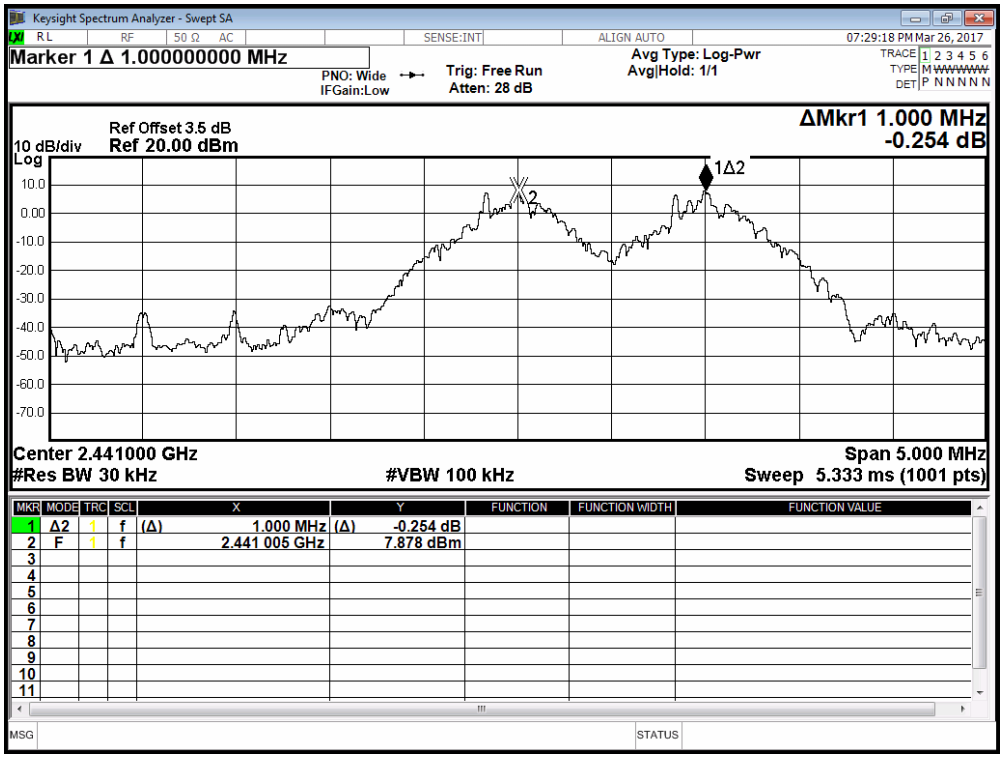
Modulation Standard: GFSK (1Mbps)
Channel: 78



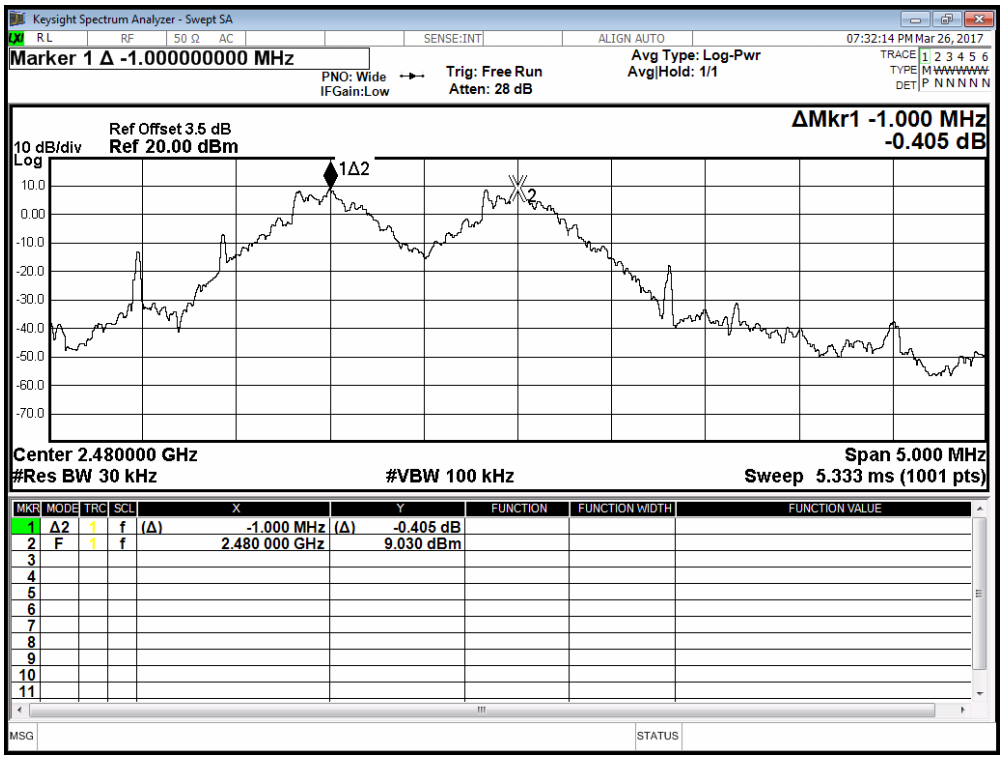
Modulation Standard: π/4-DQPSK (2Mbps)
Channel: 00



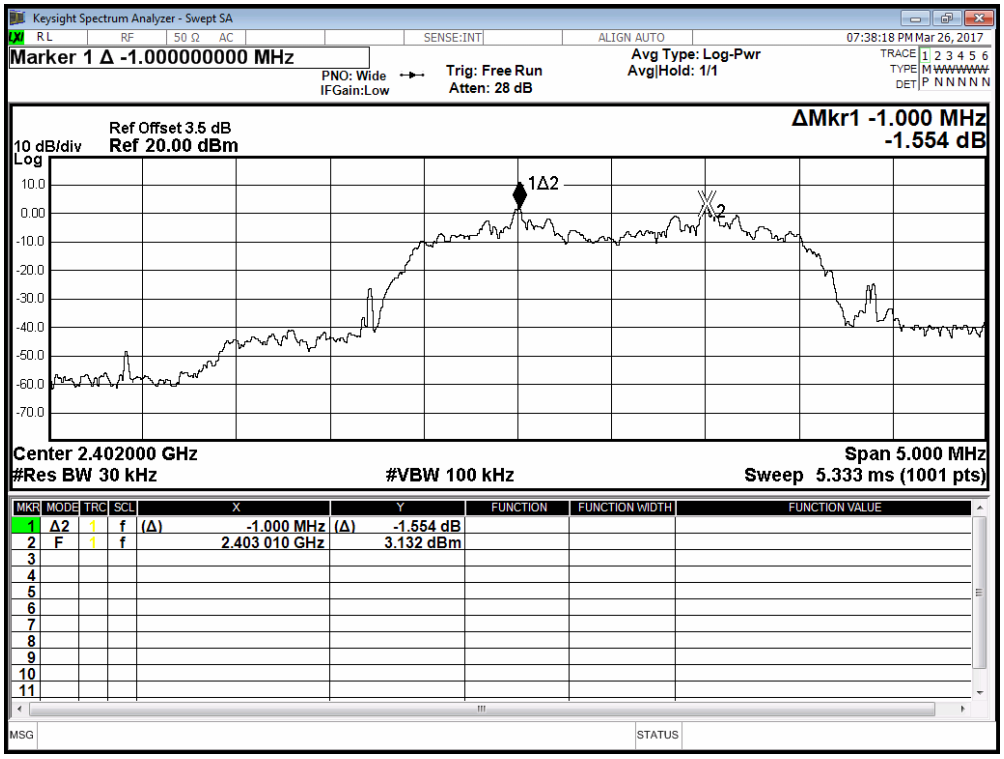
Modulation Standard: π/4-DQPSK (2Mbps)
Channel: 39



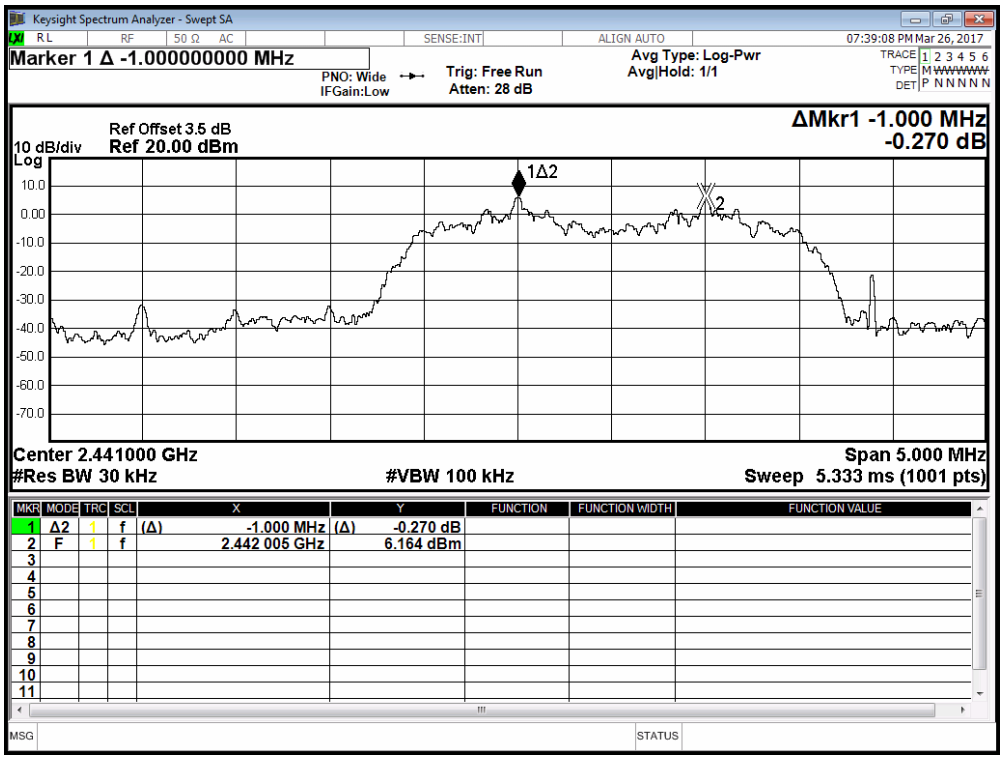
Modulation Standard: π/4-DQPSK (2Mbps)
Channel: 78



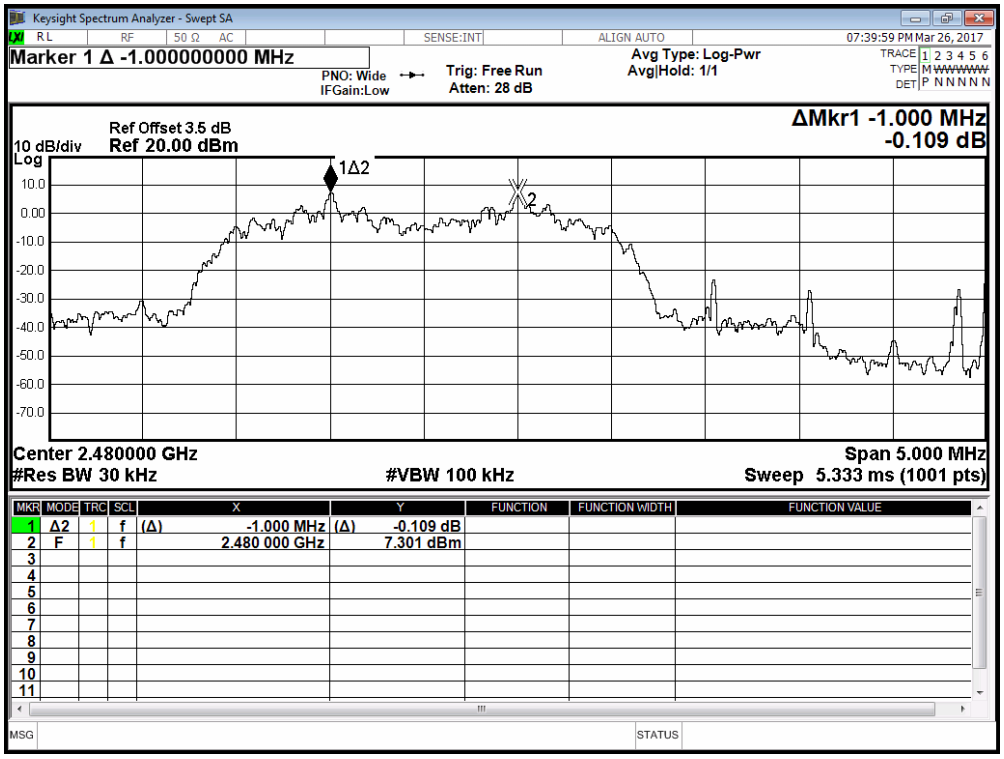
Modulation Standard: 8DPSK (3Mbps)
Channel: 00



Modulation Standard: 8DPSK (3Mbps)
Channel: 39



Modulation Standard: 8DPSK (3Mbps)
Channel: 78



10. Dwell Time on each channel

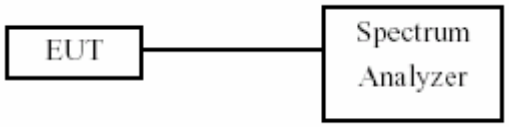
10.1 Test Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

10.2 Test Procedures

1. The transmitter output was connected to the spectrum analyzer.
2. Adjust the center frequency to measure frequency, then set zero span mode.
2. Set RBW of spectrum analyzer to 1 MHz and VBW to 1 MHz.
4. Measure the time duration of one transmission on the measured frequency.

10.3 Test Setup Layout



10.4 Test Result and Data

Test Date	: Mar. 29, 2017	Temperature	: 22C
Atmospheric pressure	: 1017 hPa	Humidity	: 60 %

Test Period = 0.4 (second/ channel) x 79 Channel = 31.6 sec

Modulation Standard: GFSK(1Mbps)

DH 1

0.402 * (1600/2)/79 * 31.6 = 128.64(ms)

Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
0.402	128.64	31.6	400	PASS

DH 3

1.668 * (1600/4)/79 * 31.6 = 266.88(ms)

Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
1.668	266.88	31.6	400	PASS

DH 5

2.920 * (1600/6)/79 * 31.6 = 311.47(ms)

Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
2.920	311.47	31.6	400	PASS

Modulation Standard: π/4 DQPSK(2Mbps)

DH 1

0.417 * (1600/2)/79 * 31.6 = 133.44(ms)

Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
0.417	133.44	31.6	400	PASS

DH 3

1.668 * (1600/4)/79 * 31.6 = 266.88(ms)

Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
1.668	266.88	31.6	400	PASS

DH 5

2.920 * (1600/6)/79 * 31.6 = 311.47 (ms)

Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
2.920	311.47	31.6	400	PASS

Modulation Standard: 8DPSK(3Mbps)
DH 1
0.432 * (1600/2)/79 * 31.6 = 133.44(ms)

Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
0.417	133.44	31.6	400	PASS

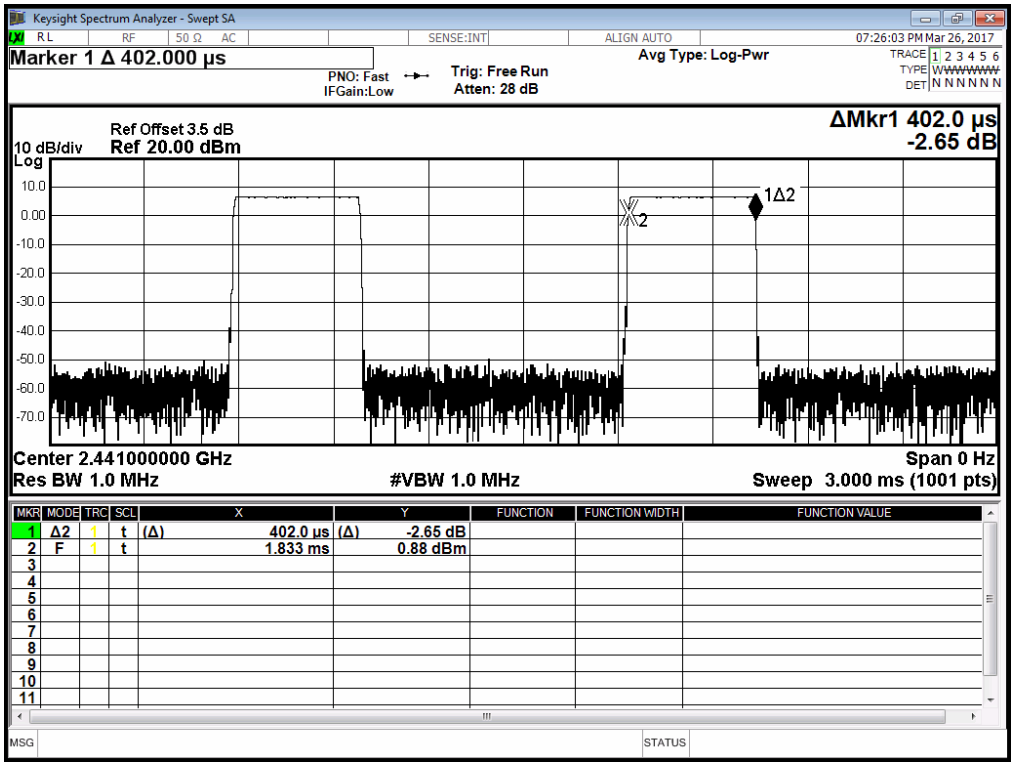
DH 3
1.668 * (1600/4)/79 * 31.6 =266.88(ms)

Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
1.668	266.88	31.6	400	PASS

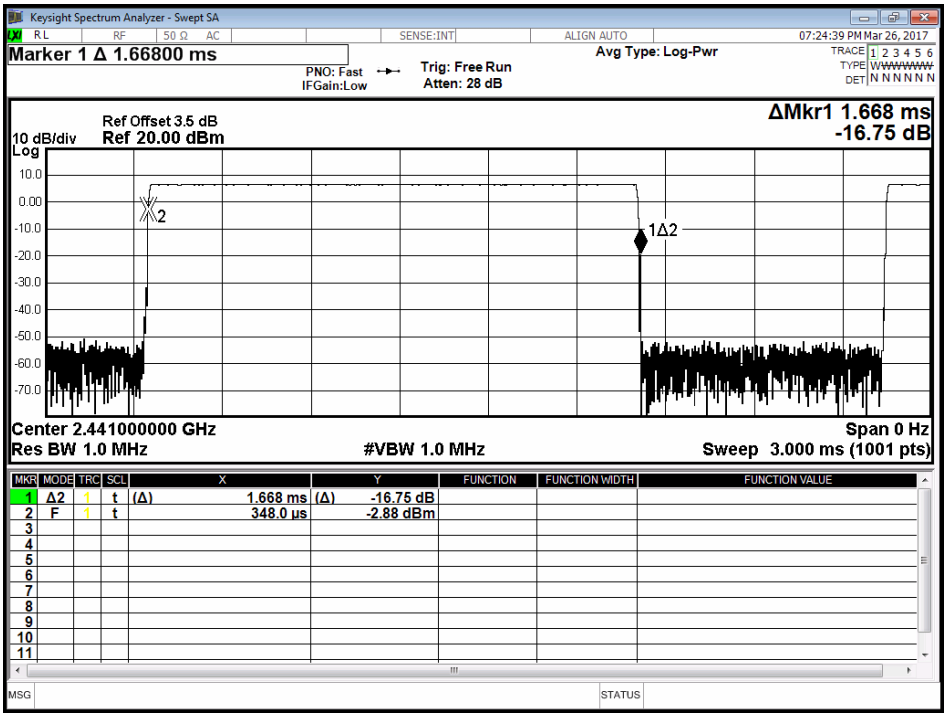
DH 5
2.920 * (1600/6)/79 * 31.6 = 311.47 (ms)

Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
2.92	311.47	31.6	400	PASS

Modulation Standard: GFSK (1Mbps)
DH1

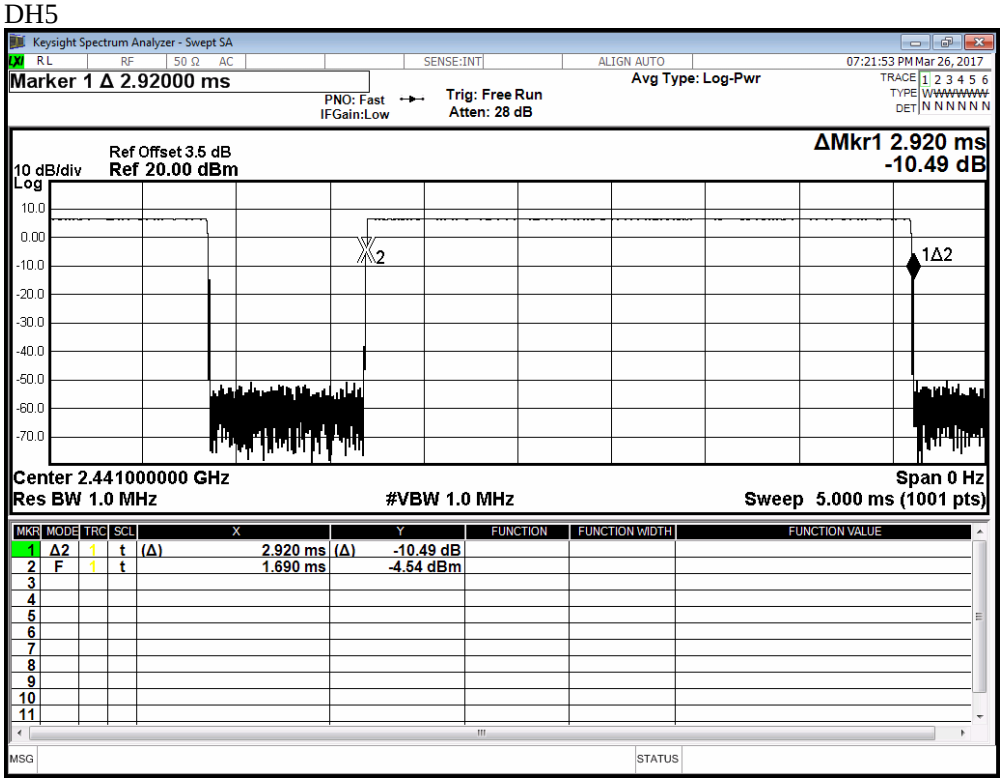


Modulation Standard: GFSK (1Mbps)
DH3



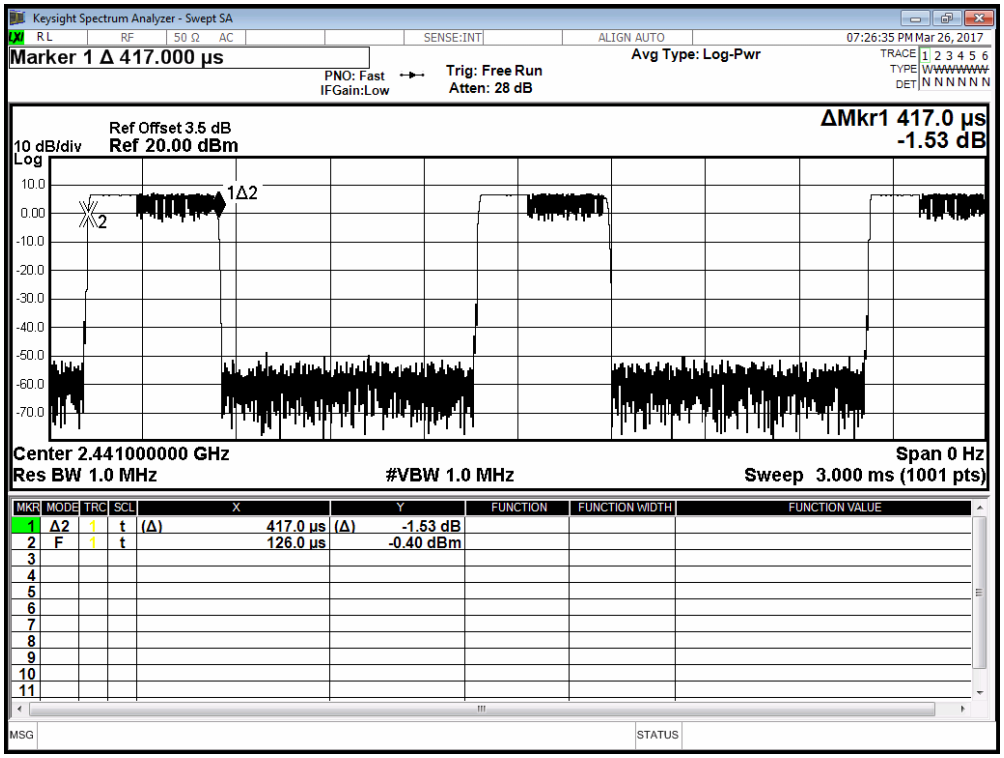
Modulation Standard: GFSK (1Mbps)

DH5

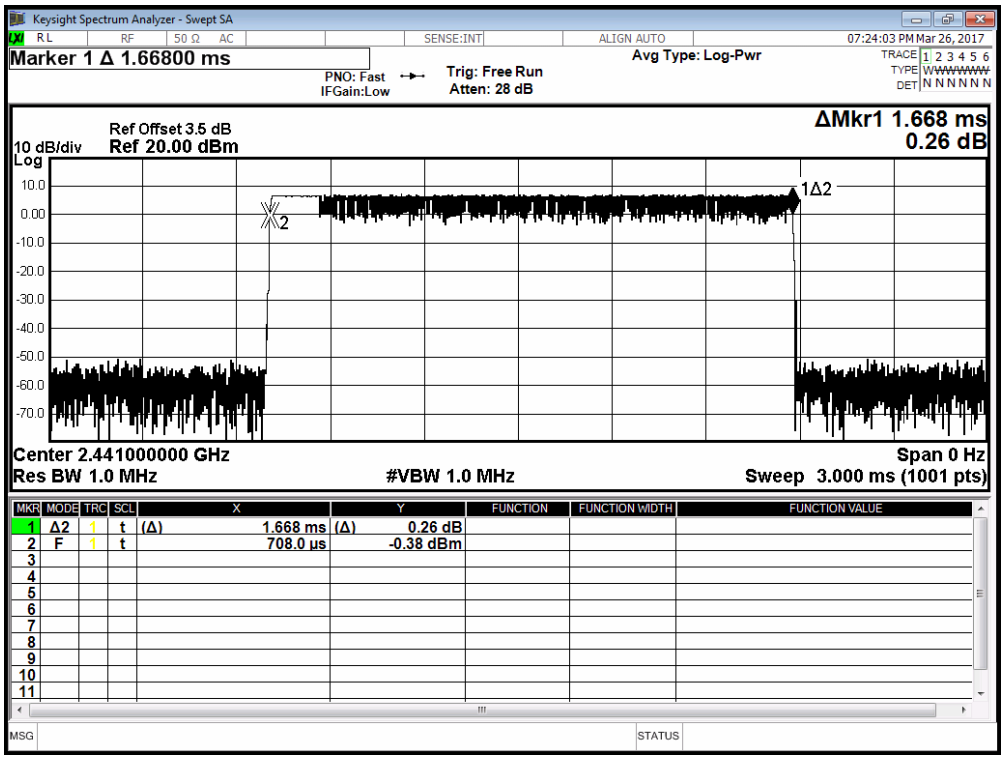


Modulation Standard: π /4 DQPSK (2Mbps)

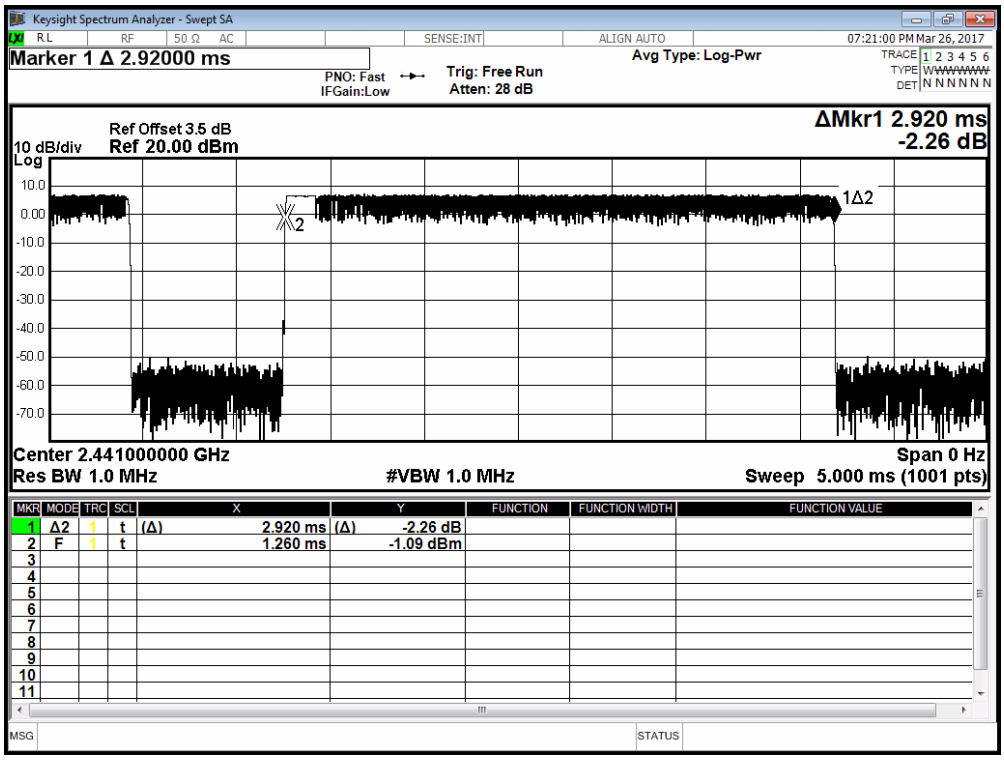
DH1



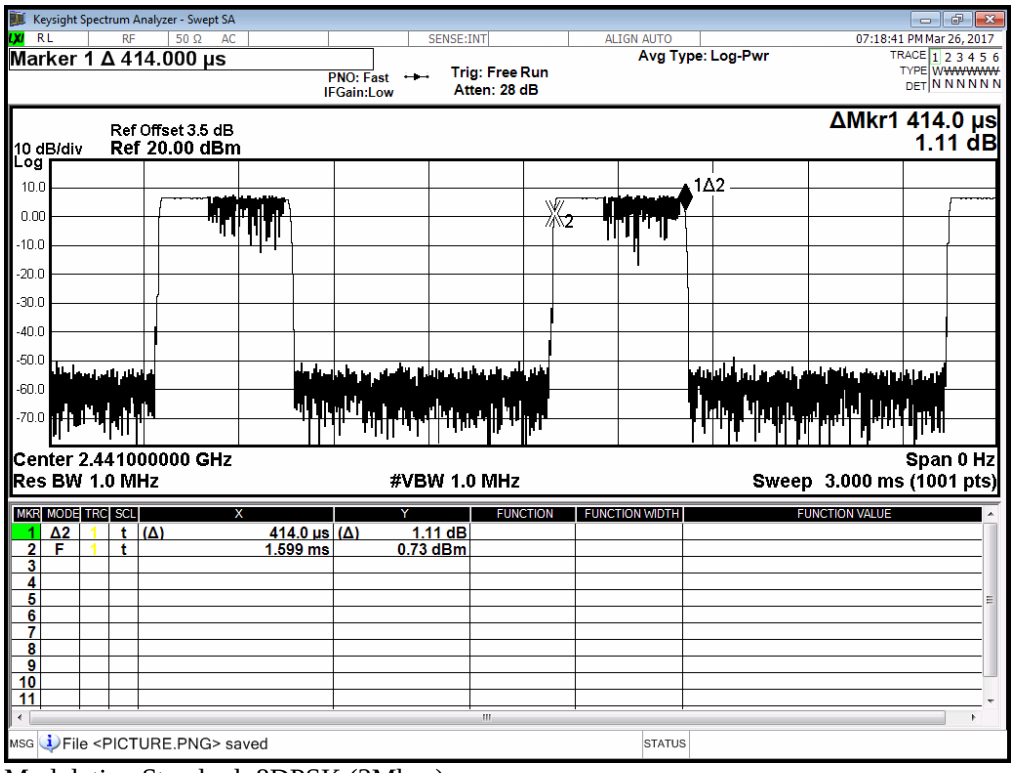
Modulation Standard: π /4 DQPSK (2Mbps)
DH3



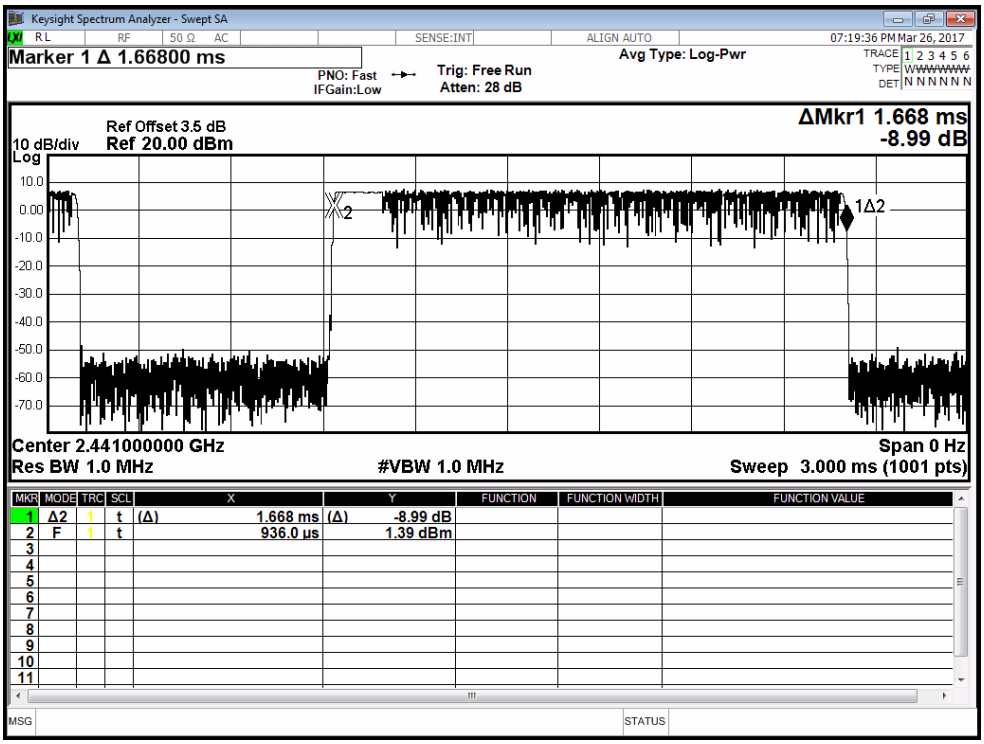
Modulation Standard: π /4 DQPSK (2Mbps)
DH5



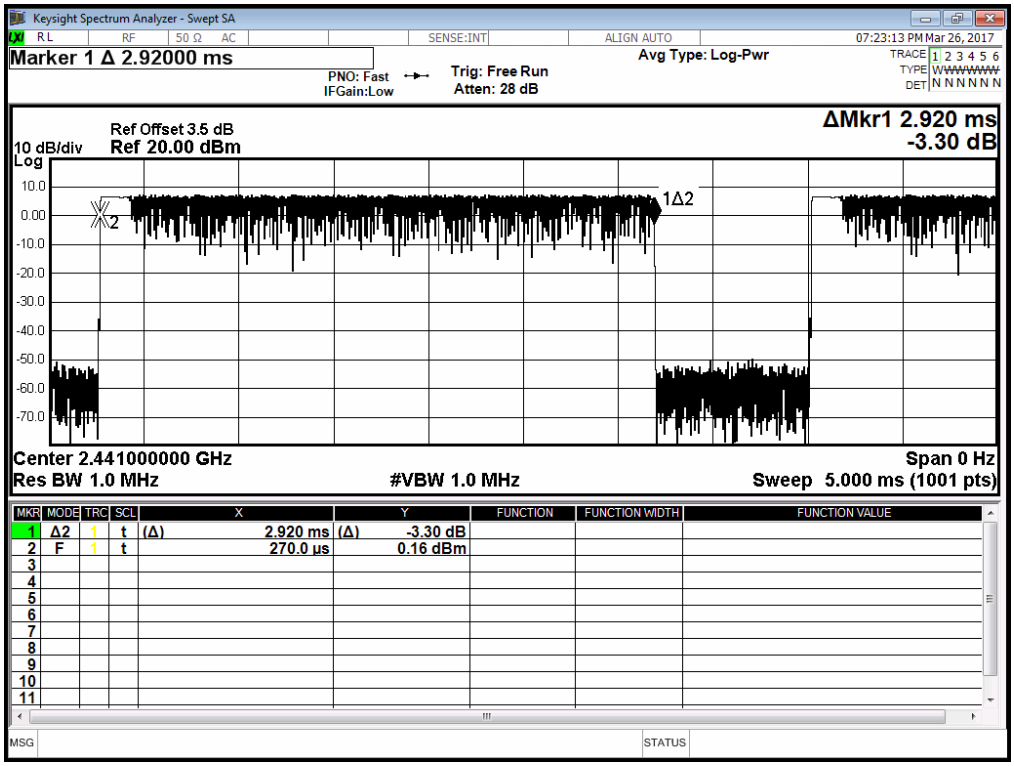
Modulation Standard: 8DPSK (3Mbps)
DH1



Modulation Standard: 8DPSK (3Mbps)
DH3



Modulation Standard: 8DPSK (3Mbps)
DH5



11. Number of Hopping Channels

11.1 Test Limit

Frequency hopping systems in the 2400 ~ 2483.5 MHz band shall use at least 15 channels.

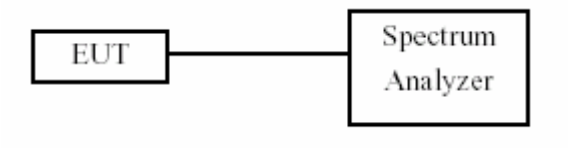
11.2 Test Procedures

a. The transmitter output was connected to the spectrum analyzer.

b. 2. Set RBW of spectrum analyzer to 300 KHz and VBW to 300 KHz.

c. 3. Set the MaxHold function, and then keep the EUT in hopping mode. Record all the signals from each channel until each one has been record.

11.3 Test Setup Layout



11.4 Test Result and Data

Test Date: Mar. 29, 2017 Temperature: 25℃

Atmospheric pressure: 1020 hPa Humidity: 55%

Modulation Standard: GFSK (1Mbps)

Number of hopping channels:	79	Channels

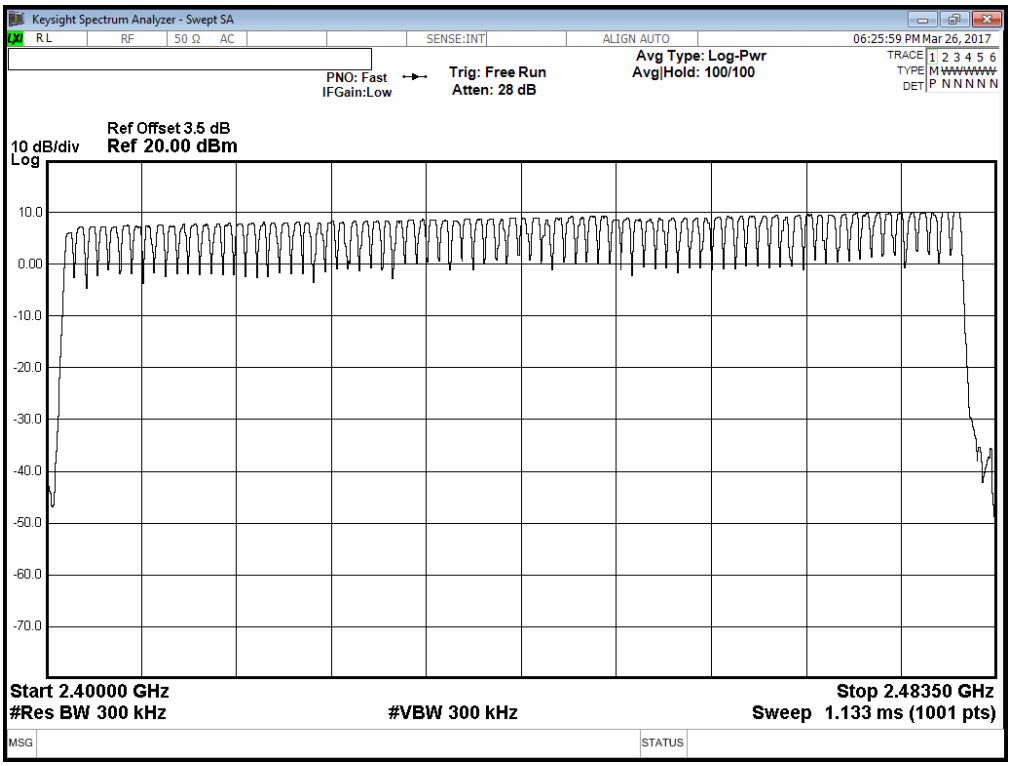
Modulation Standard: π/4 DQPSK (2Mbps)

Number of hopping channels:	79	Channels

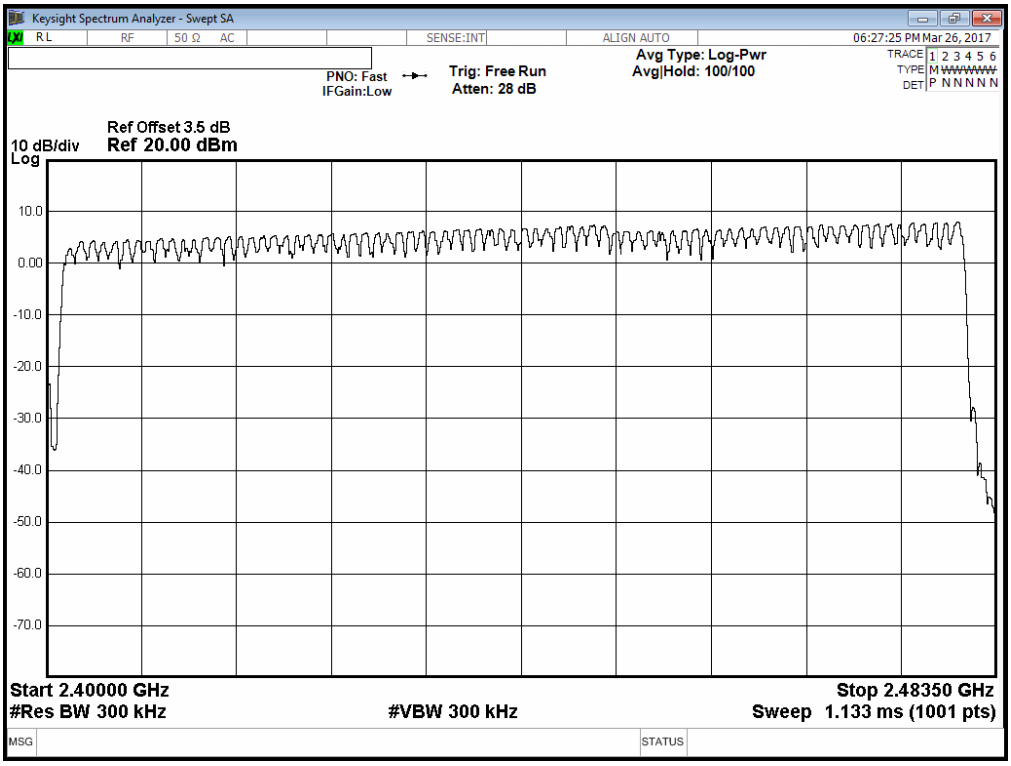
Modulation Standard: 8DPSK (3Mbps)

Number of hopping channels:	79	Channels

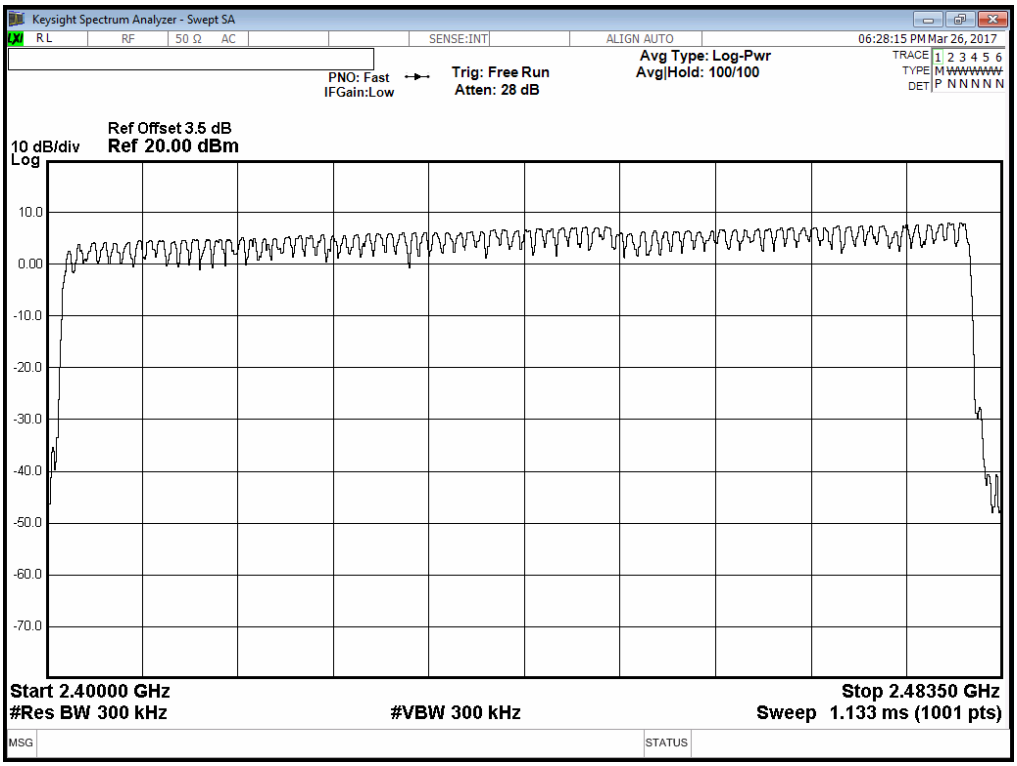
Modulation Standard: GFSK (1Mbps)



Modulation Standard: π/4 DQPSK (2Mbps)



Modulation Standard: 8DPSK (3Mbps)



12. Maximum Peak Output Power

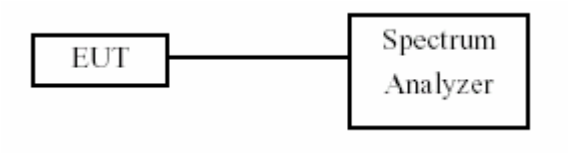
12.1 Test Limit

The Maximum Peak Output Power Measurement is 30dBm.

12.2 Test Procedures

The antenna port(RF output)of the EUT was connected to the input(RF input)of a power meter. Power was read directly from the meter and cable loss connection was added to the reading to obtain power at the EUT antenna terminal. The EUT Output Power was set to maximum to produce the worse case test result.

12.3 Test Setup Layout



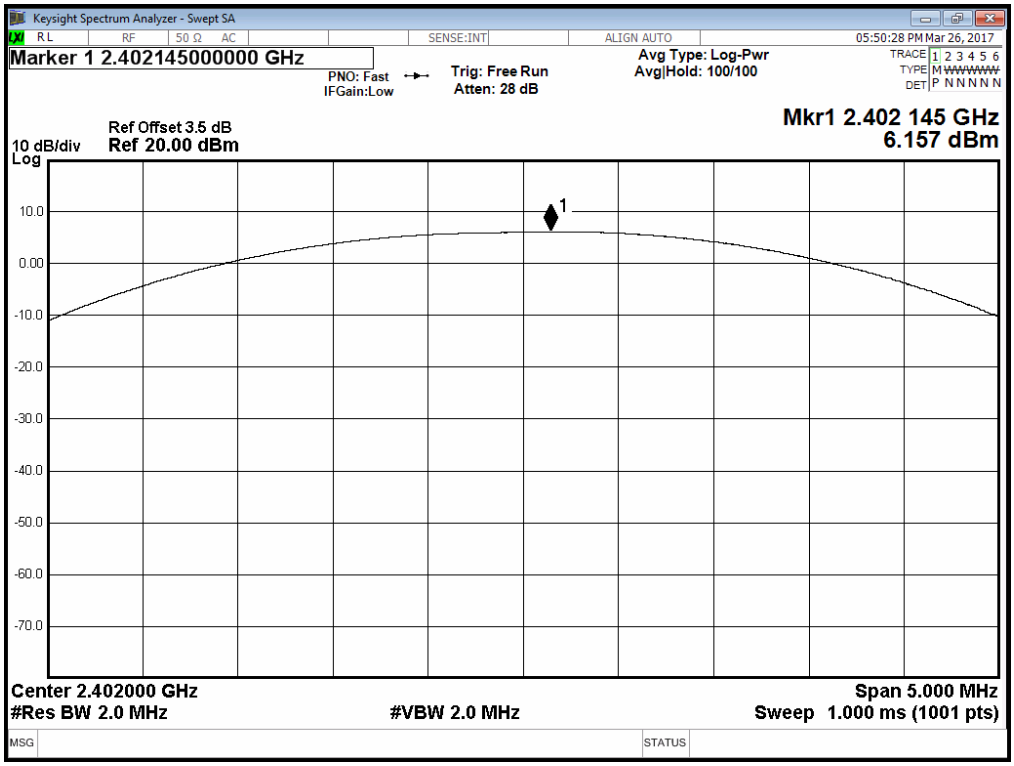
12.4 Test Result and Data

Test Date:Mar. 29, 2017 Temperature: 25℃

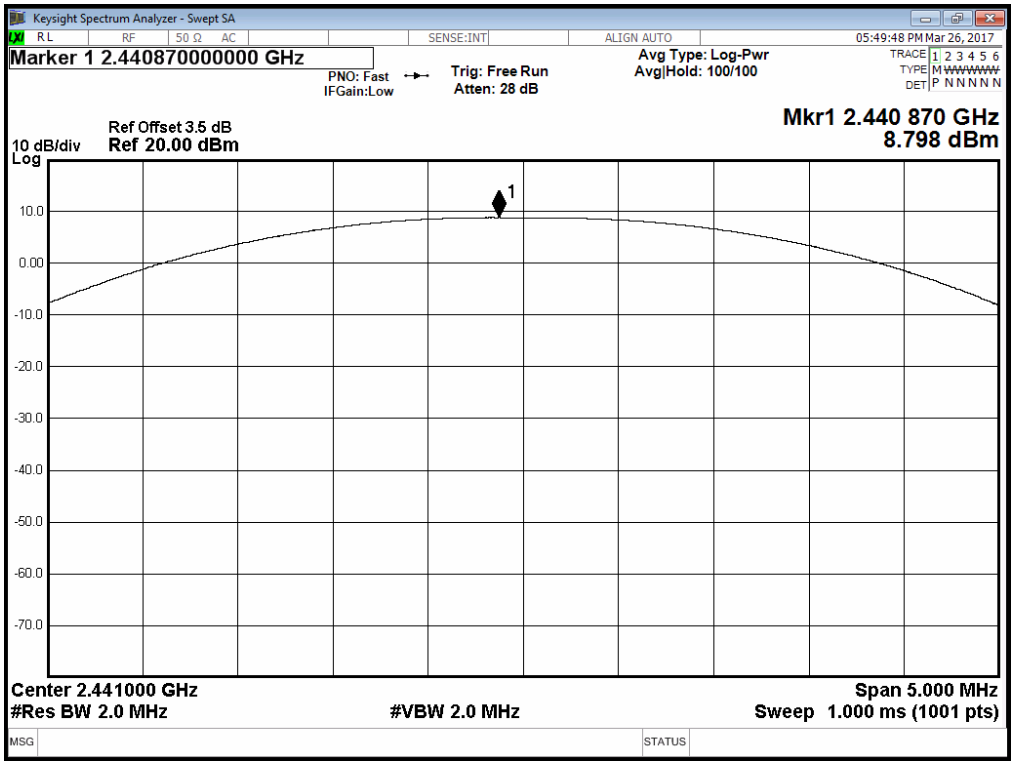
Atmospheric pressure: 1020 hPa Humidity: 55%

Modulation Type	Channel	Frequency (MHz)	Peak Power Output (dBm)	Peak Power Output (mW)
GFSK (1Mbps)	00	2402	10.103	10.240
	39	2441	3.77	2.382
	78	2480	7.502	5.626
π/4 DQPSK (2Mbps)	00	2402	8.721	7.449
	39	2441	4.363	2.731
	78	2480	7.862	6.112
8DPSK (3Mbps)	00	2402	9.058	8.050
	39	2441	6.157	4.128
	78	2480	8.798	7.582

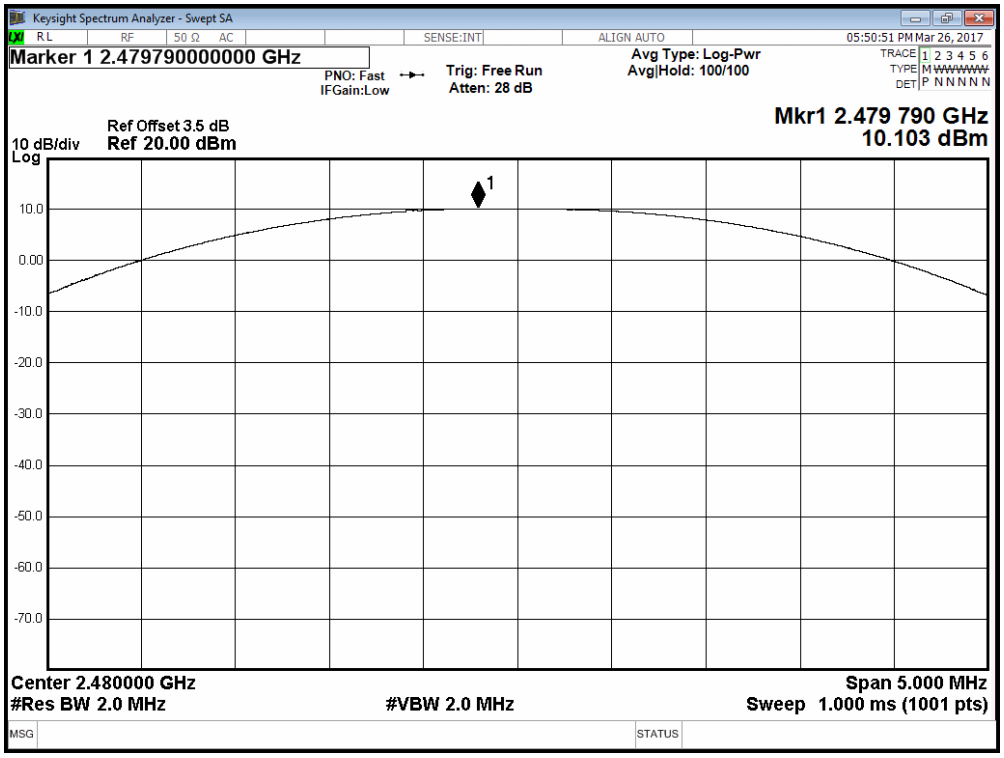
Modulation Standard: GFSK (1Mbps)
Channel: 00



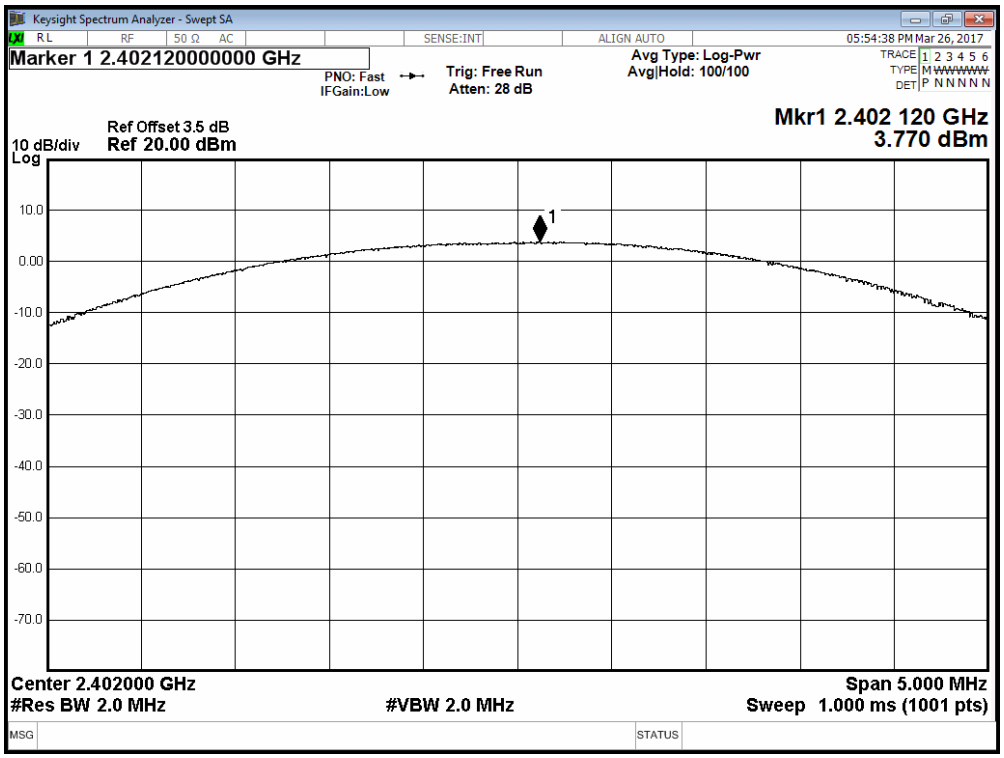
Modulation Standard: GFSK (1Mbps)
Channel: 39



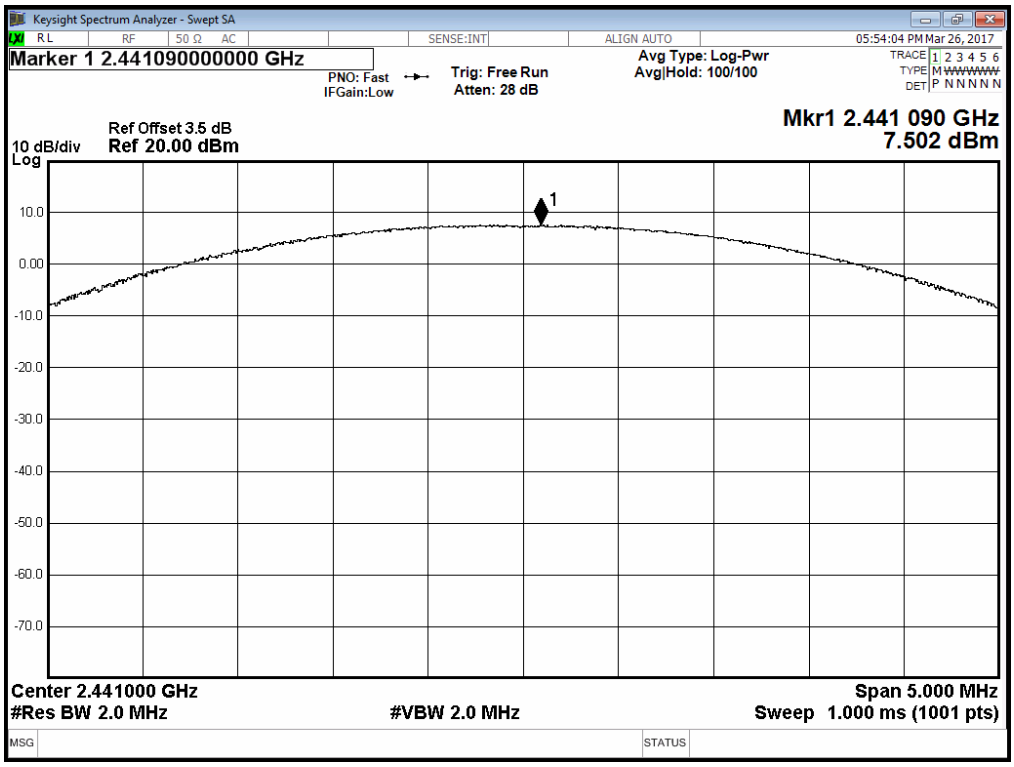
Modulation Standard: GFSK (1Mbps)
Channel: 78



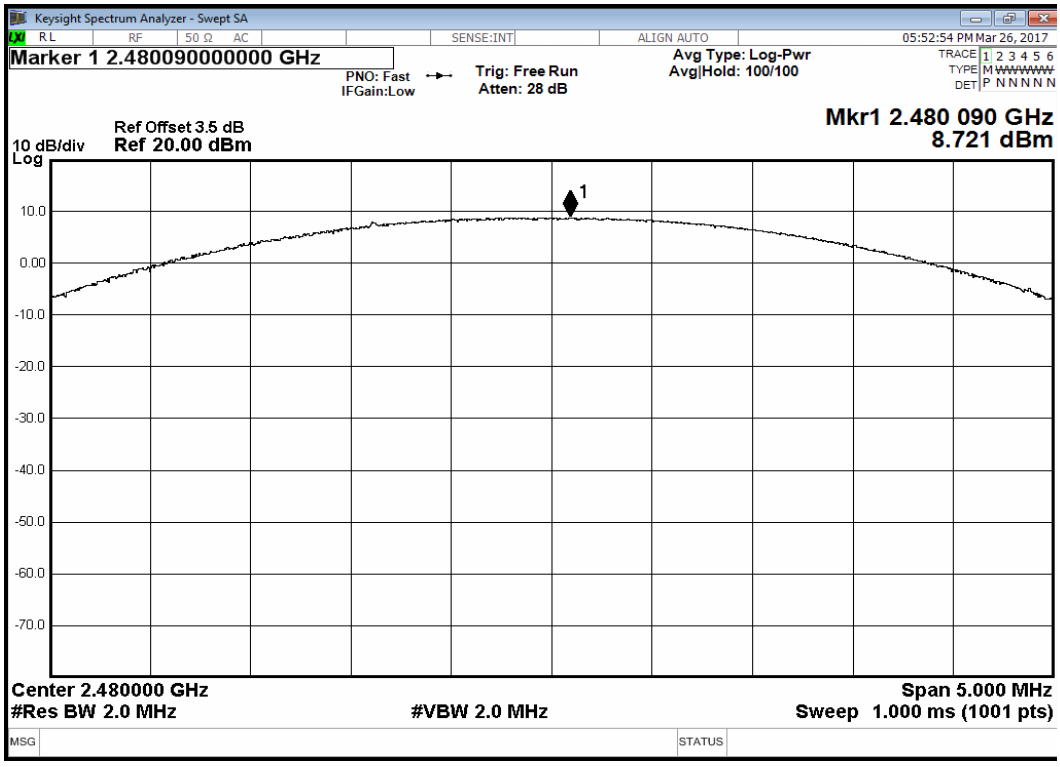
Modulation Standard: π/4 DQPSK (2Mbps)
Channel: 00



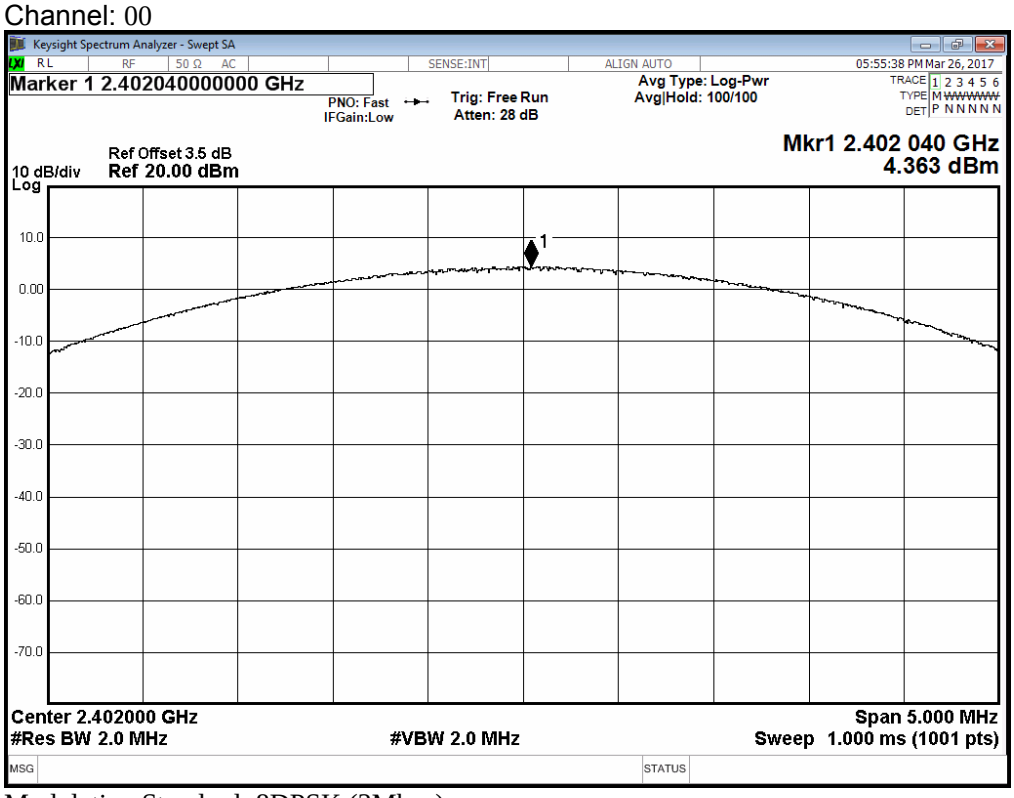
Modulation Standard: π/4 DQPSK (2Mbps)
Channel: 39



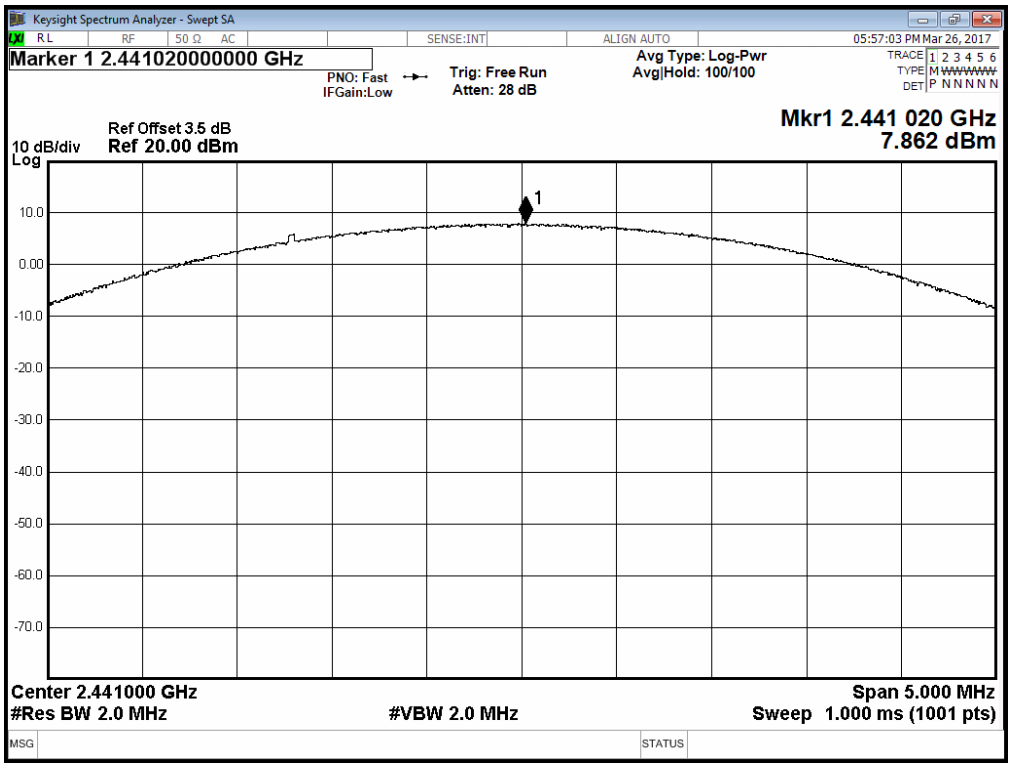
Modulation Standard: π/4 DQPSK (2Mbps)
Channel: 78



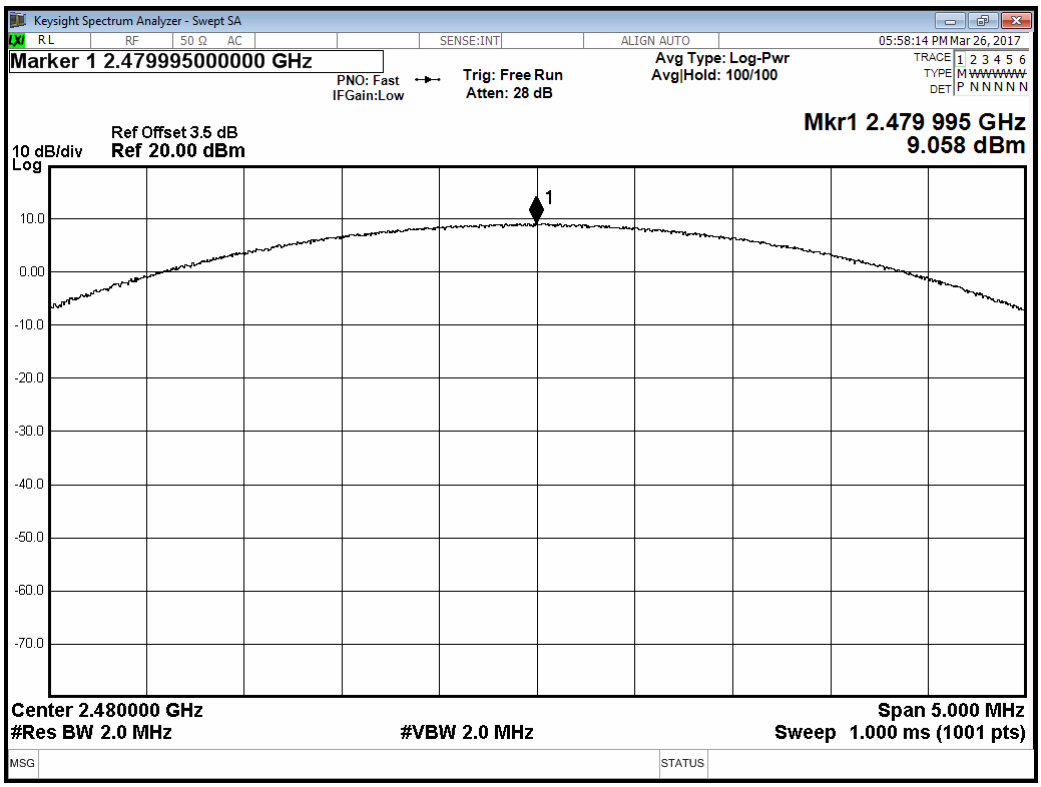
Modulation Standard: 8DPSK (3Mbps)
Channel: 00



Modulation Standard: 8DPSK (3Mbps)
Channel: 39



Modulation Standard: 8DPSK (3Mbps)
Channel: 78



13. Band Edges Measurement

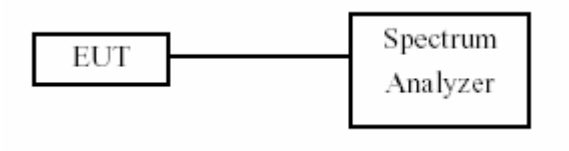
13.1 Test Limit

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

13.2 Test Procedure

a. The transmitter output was connected to the spectrum analyzer via a low lose cable.
b. Set both RBW and VBW of spectrum analyzer to 100 KHz with convenient frequency span including 100 KHz bandwidth from band edge.
c. The band edges was measured and recorded.

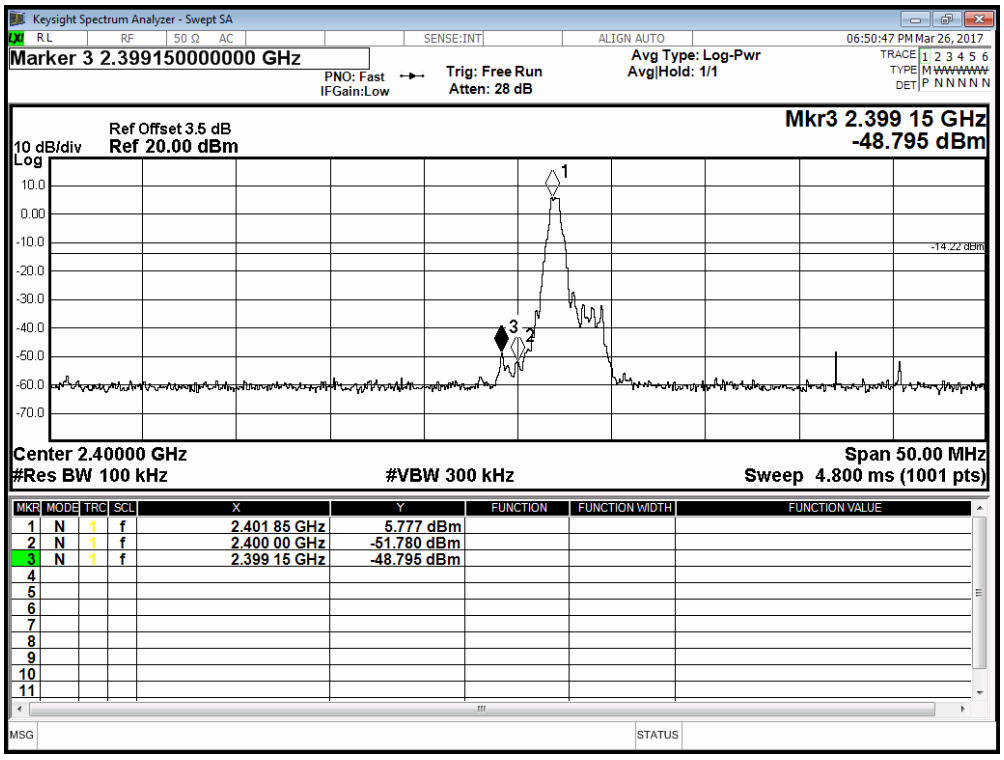
13.3 Test Setup Layout

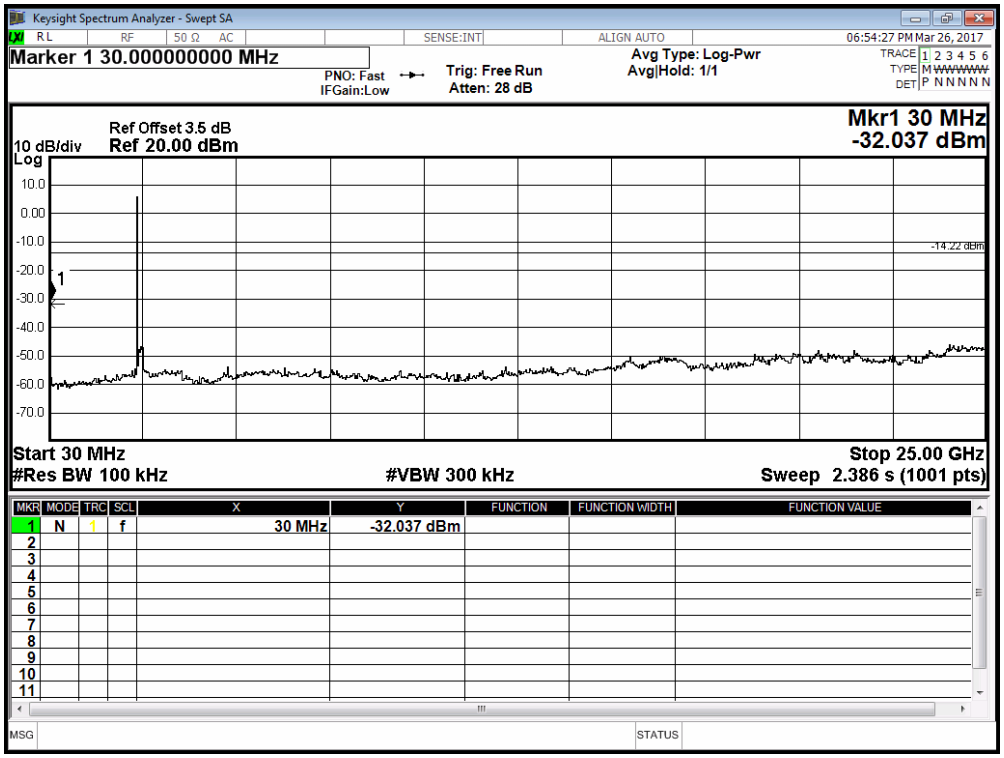


13.4 Test Result and Data

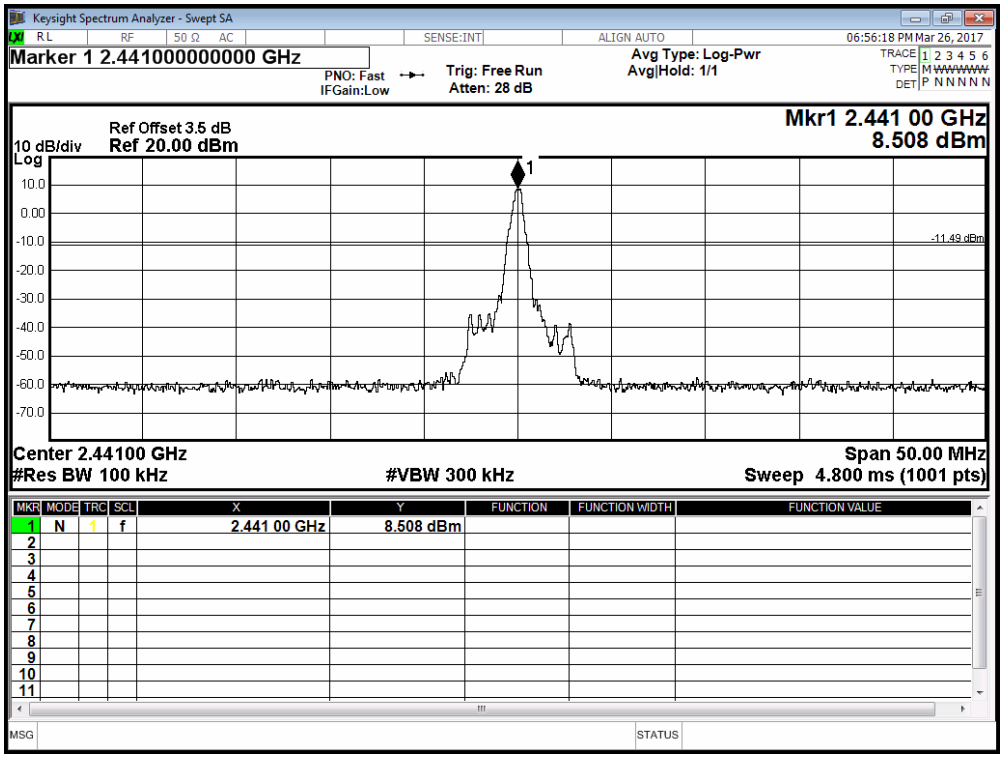
Single test

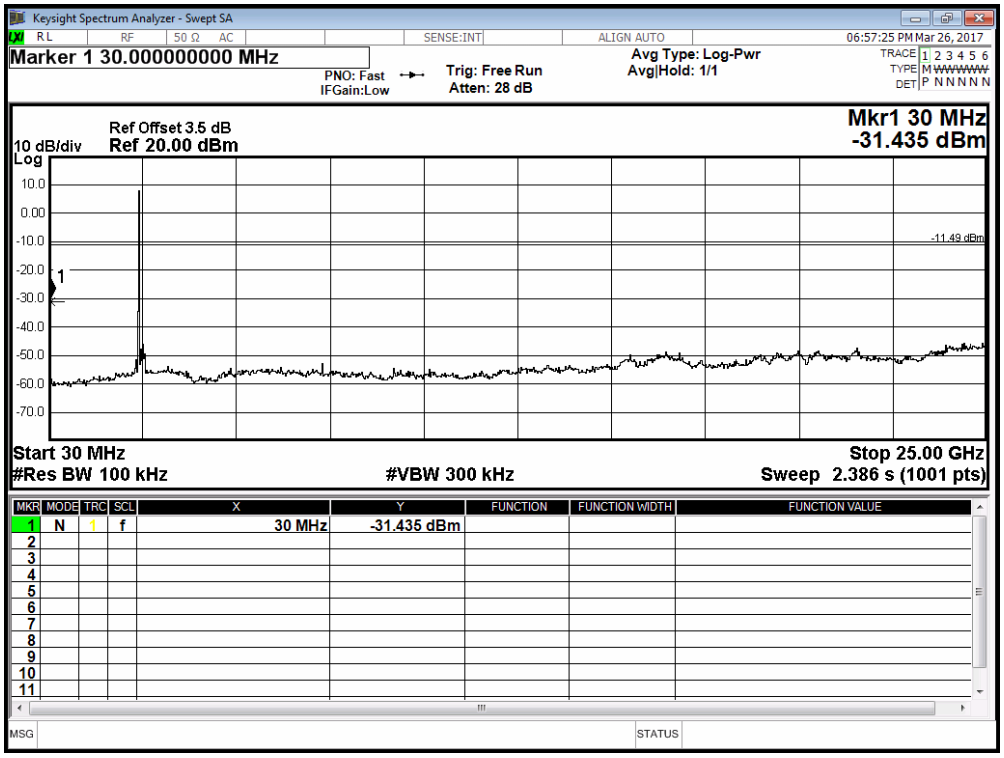
Modulation Standard: GFSK (1Mbps)
Channel: 00



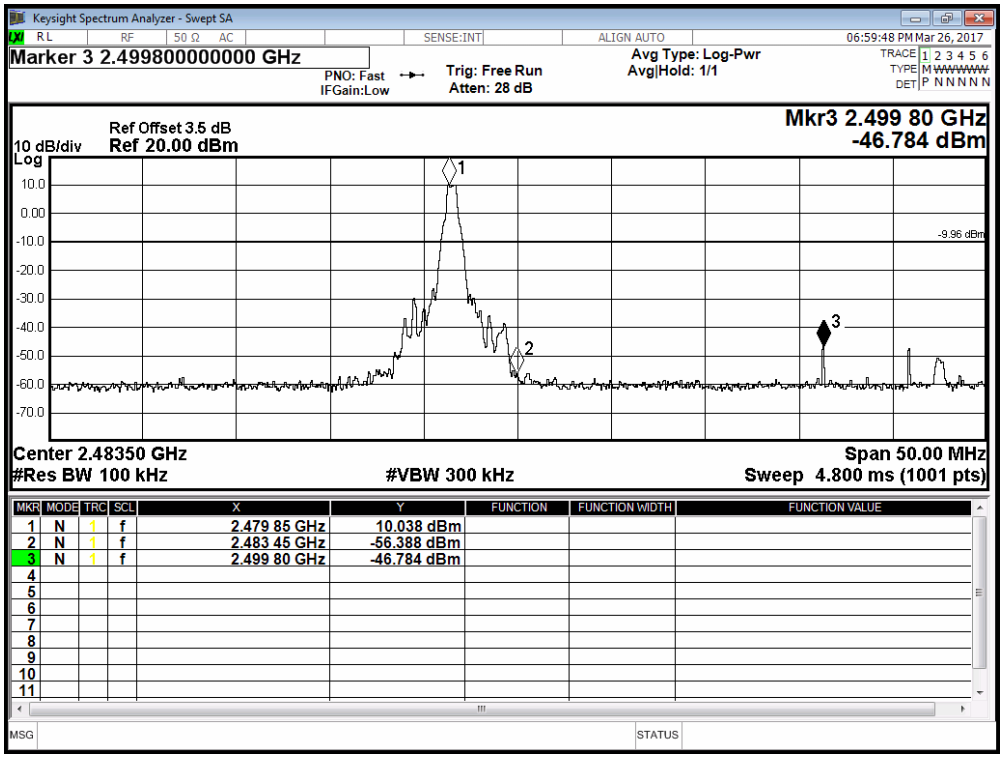


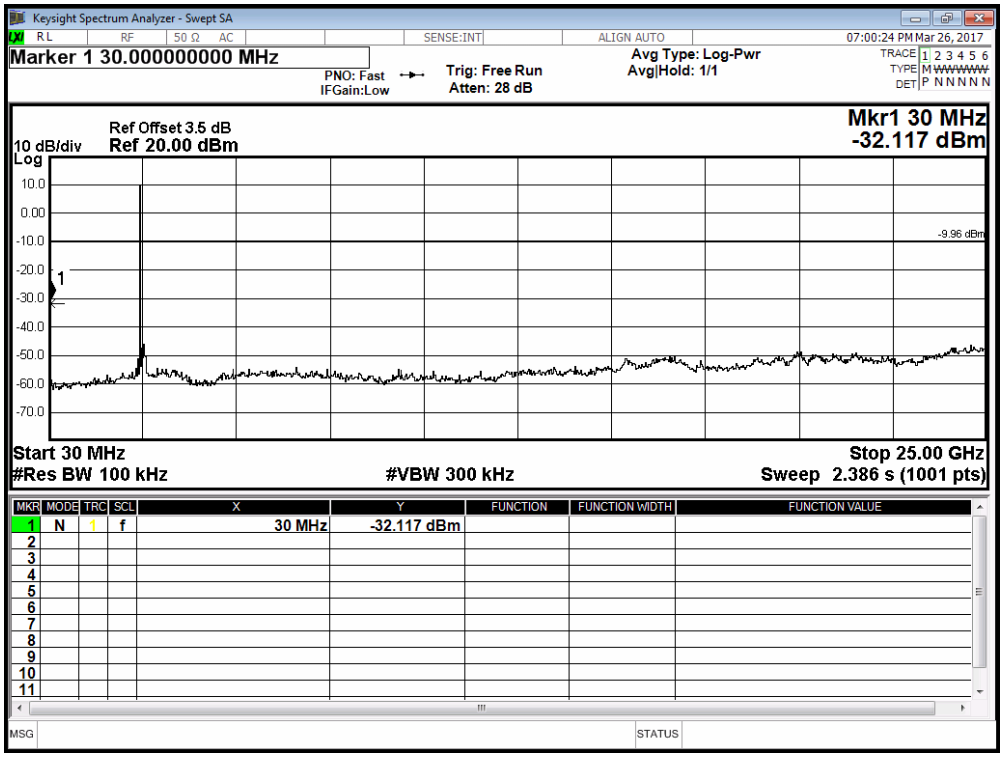
Modulation Standard: GFSK (1Mbps)
Channel: 39



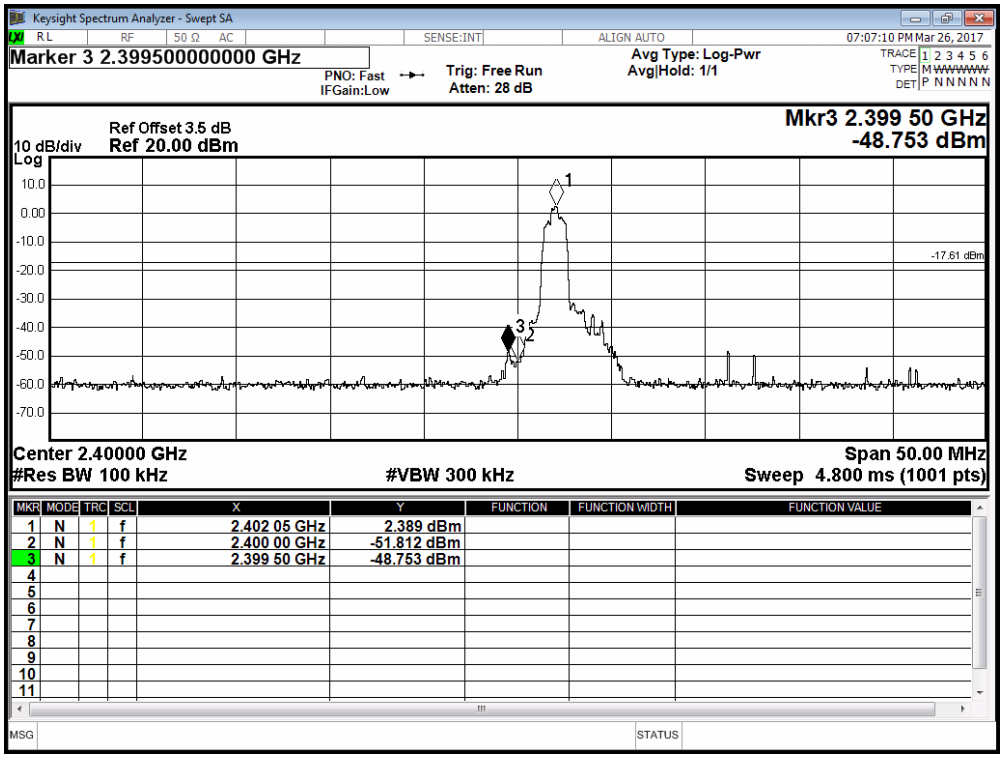


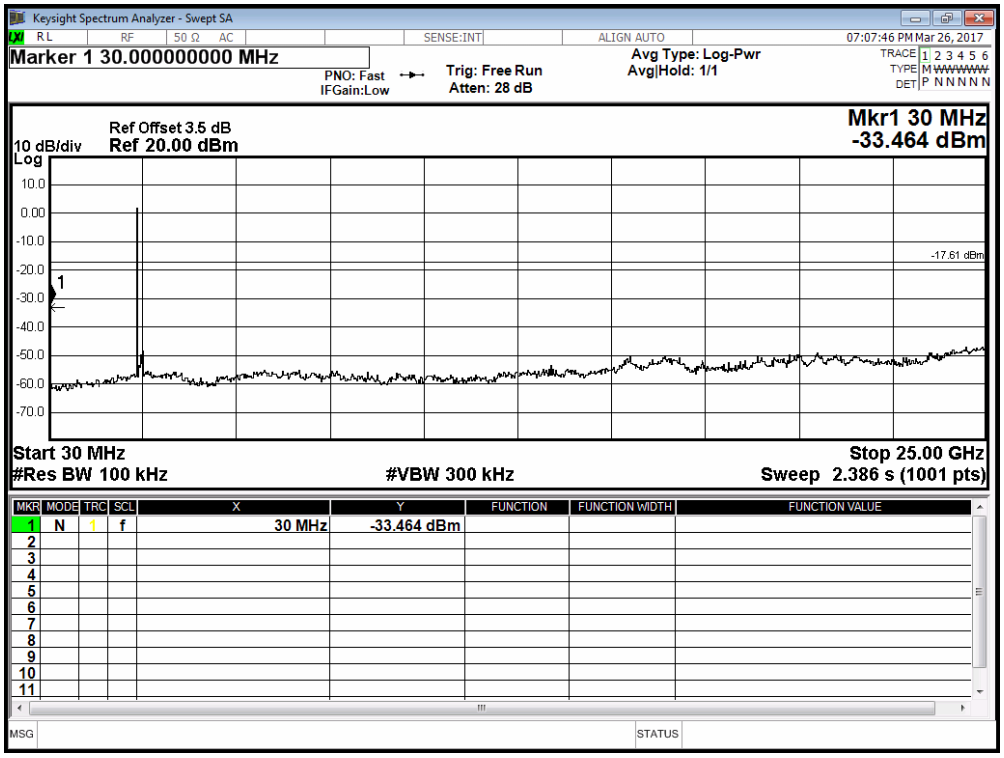
Modulation Standard: GFSK (1Mbps)
Channel: 78



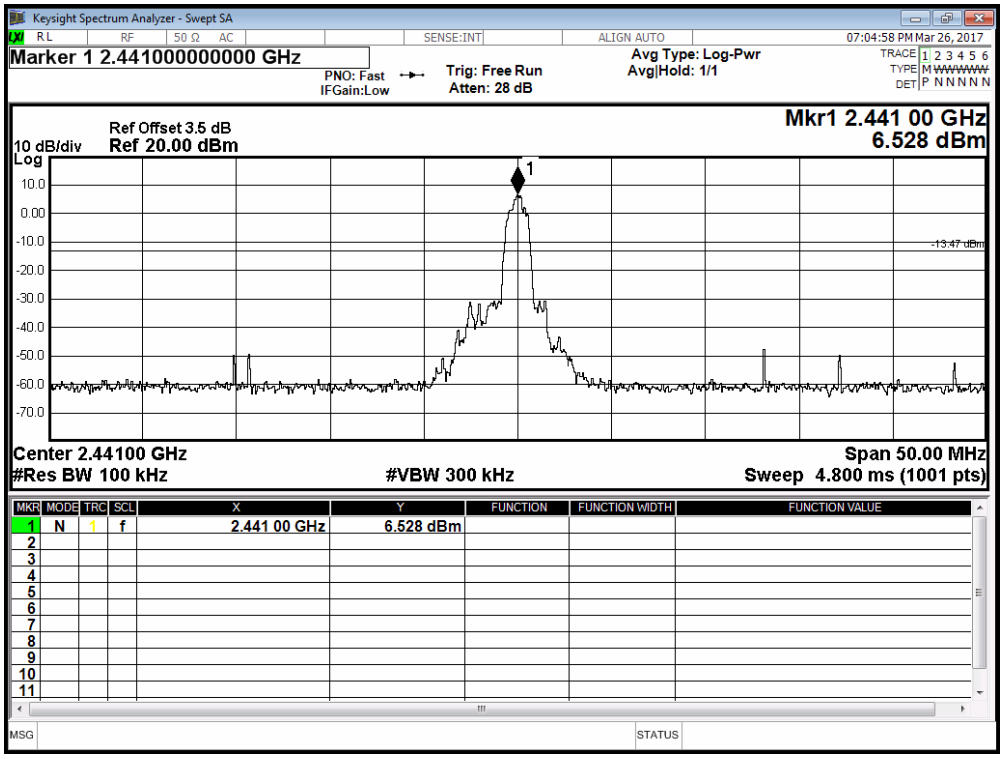


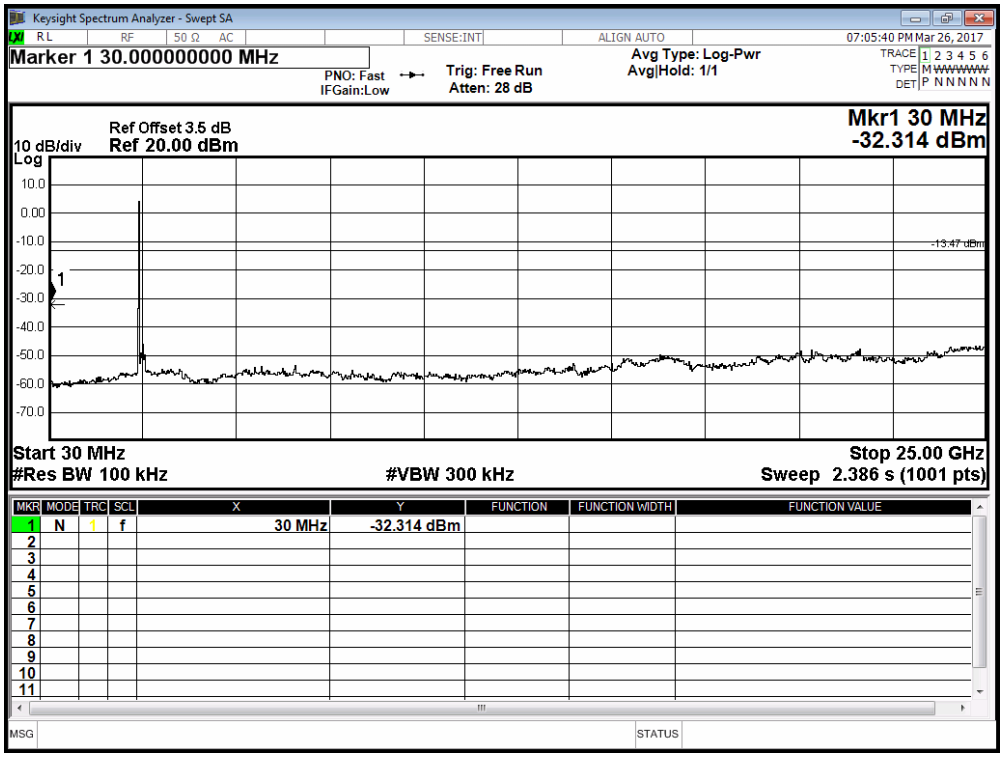
Modulation Standard: π/4-DQPSK (2Mbps)
Channel: 00



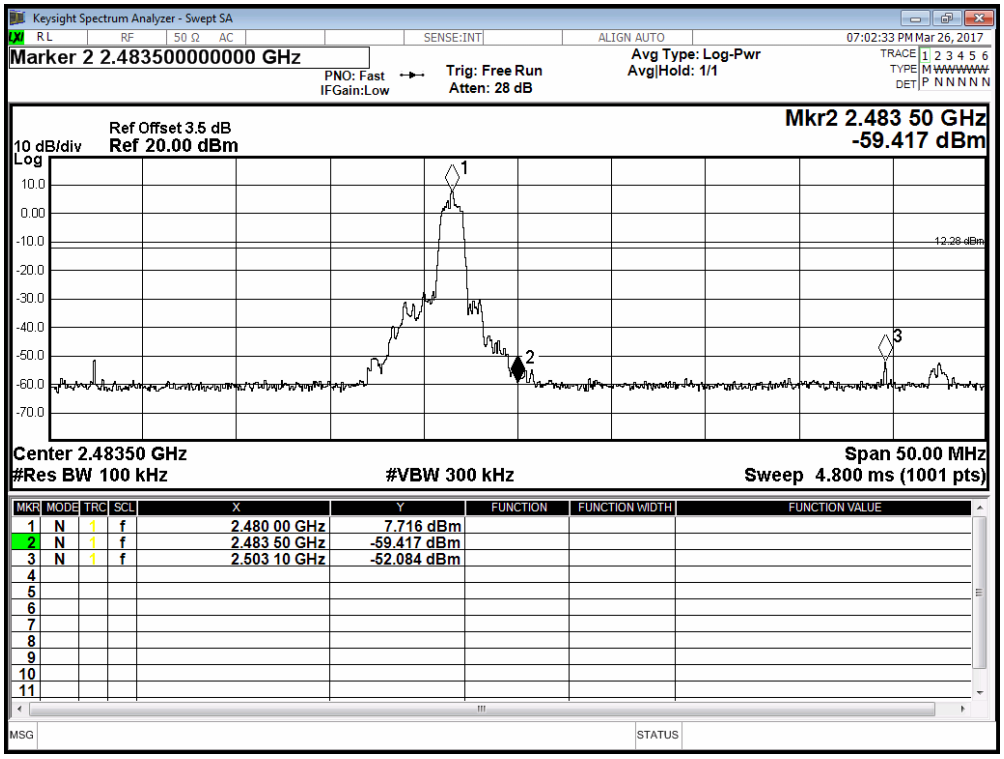


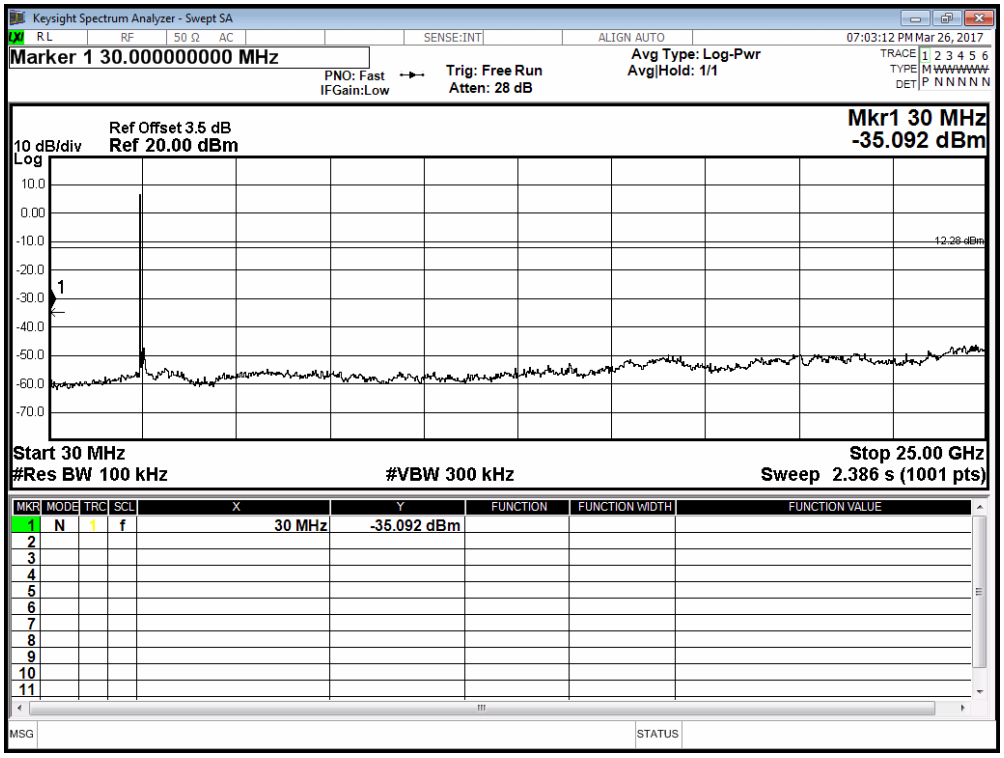
Modulation Standard: π/4-DQPSK (2Mbps)
Channel: 39



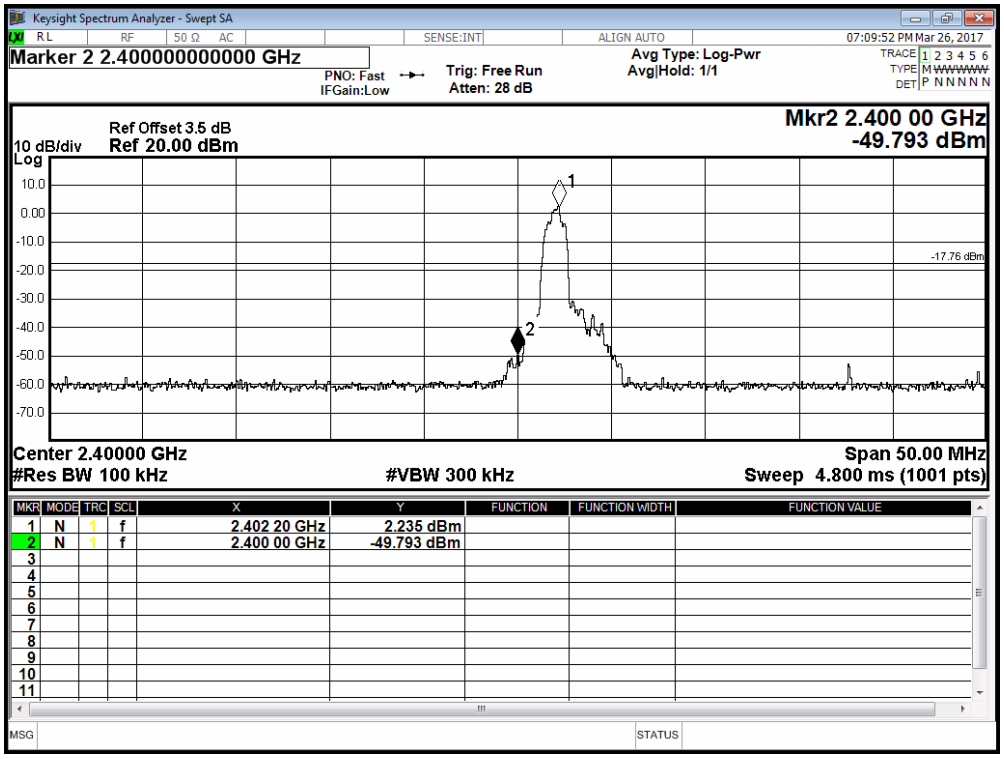


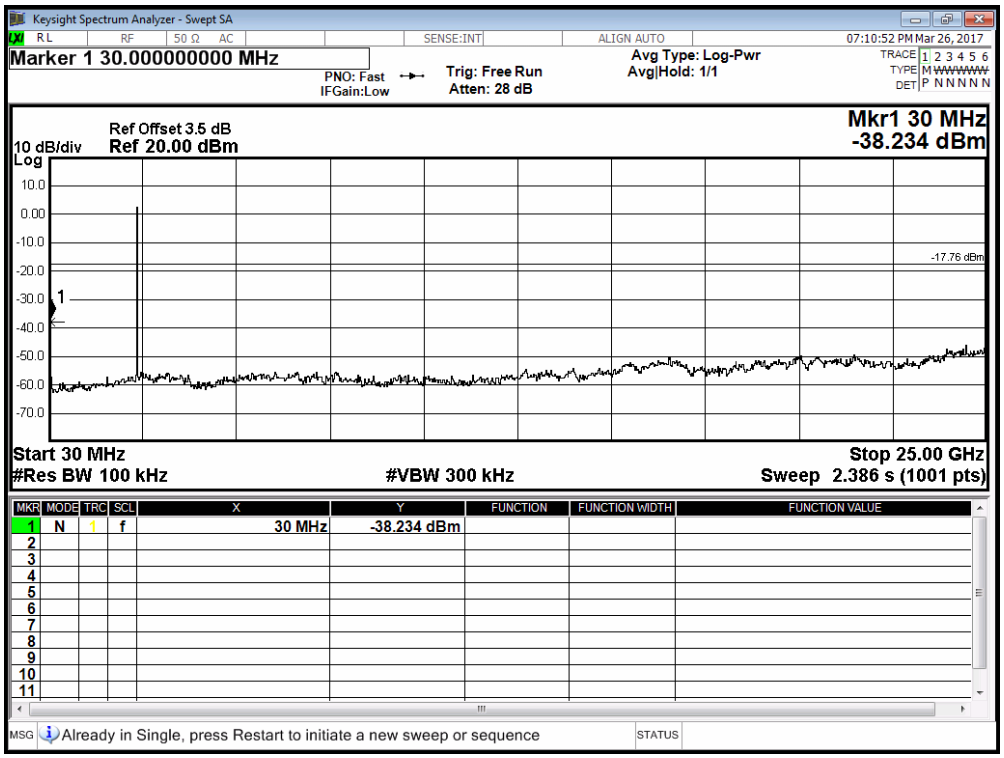
Modulation Standard: π/4-DQPSK (2Mbps)
Channel: 78



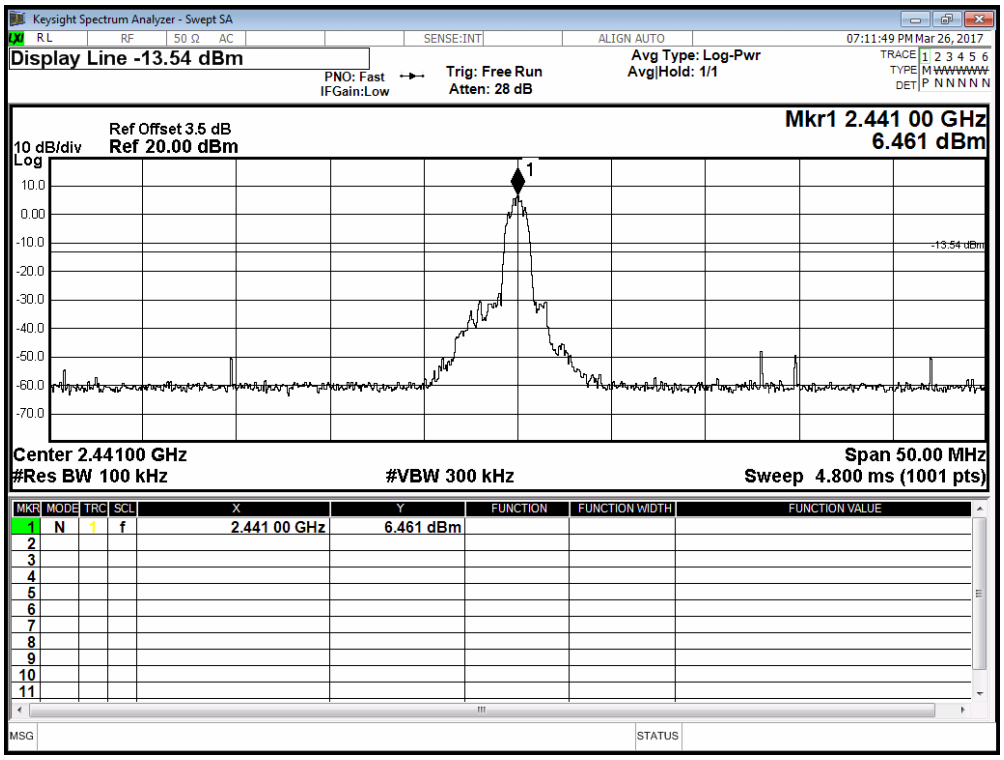


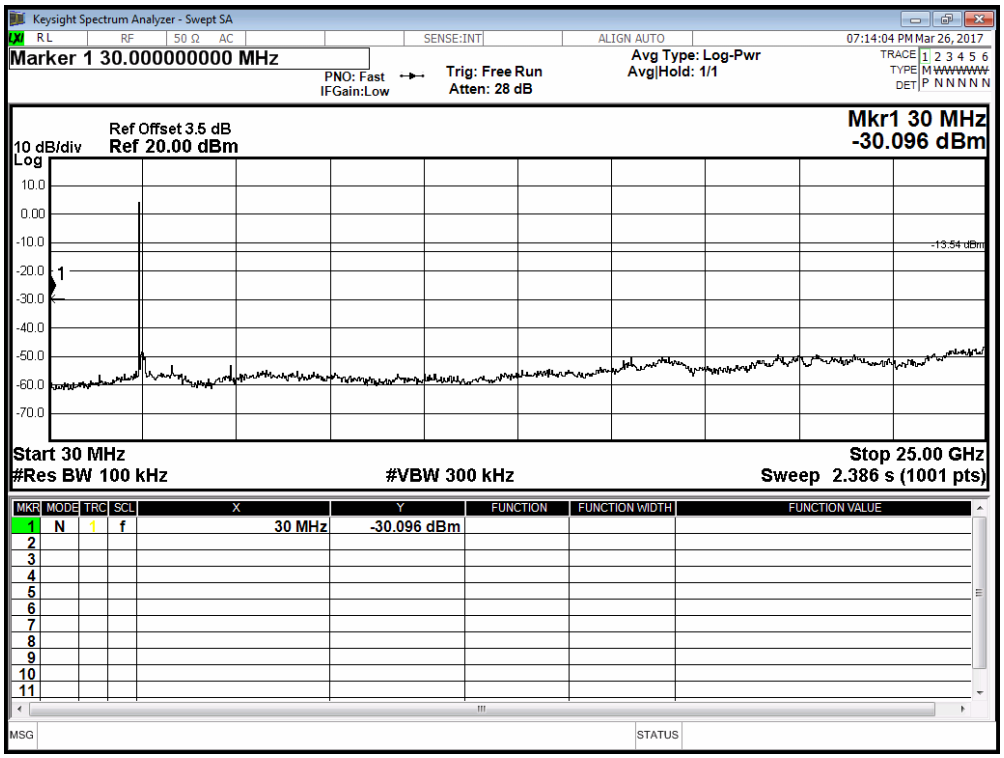
Modulation Standard: 8DPSK (3Mbps)
Channel: 00



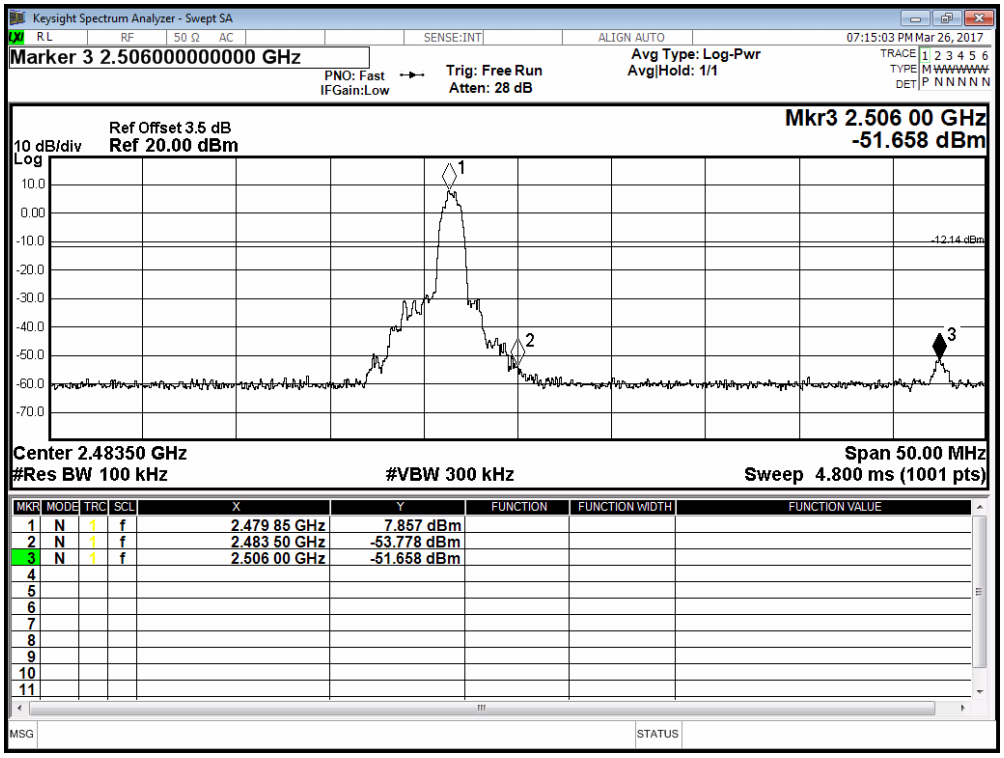


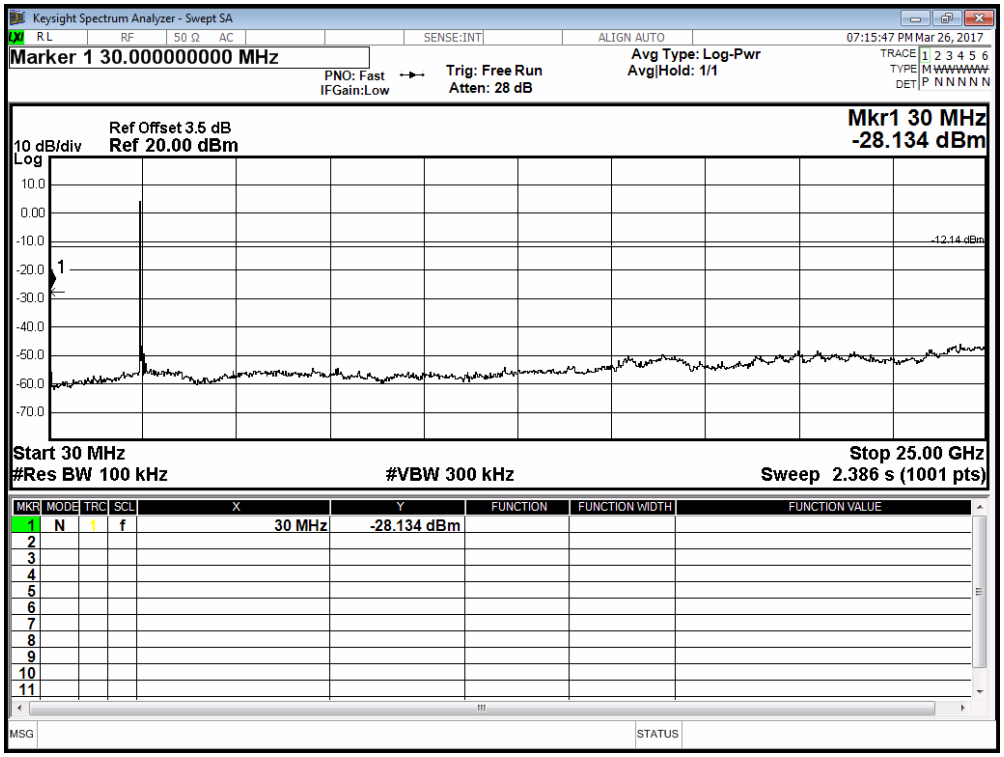
Modulation Standard: 8DPSK (3Mbps)
Channel: 39





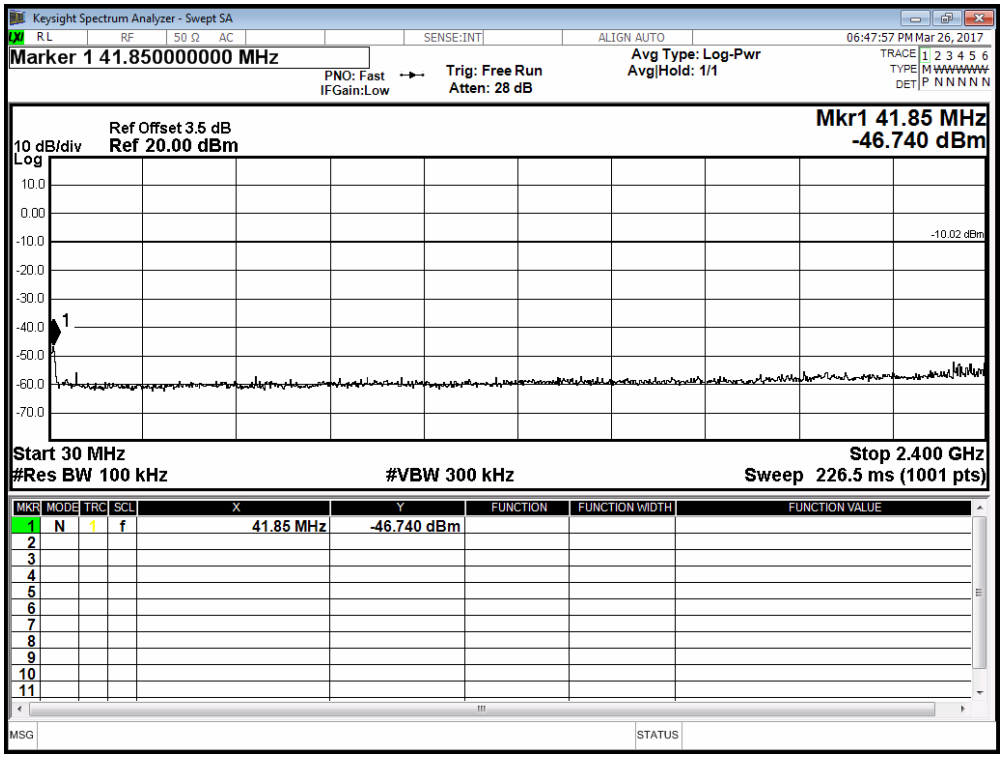
Modulation Standard: 8DPSK (3Mbps)
Channel: 78

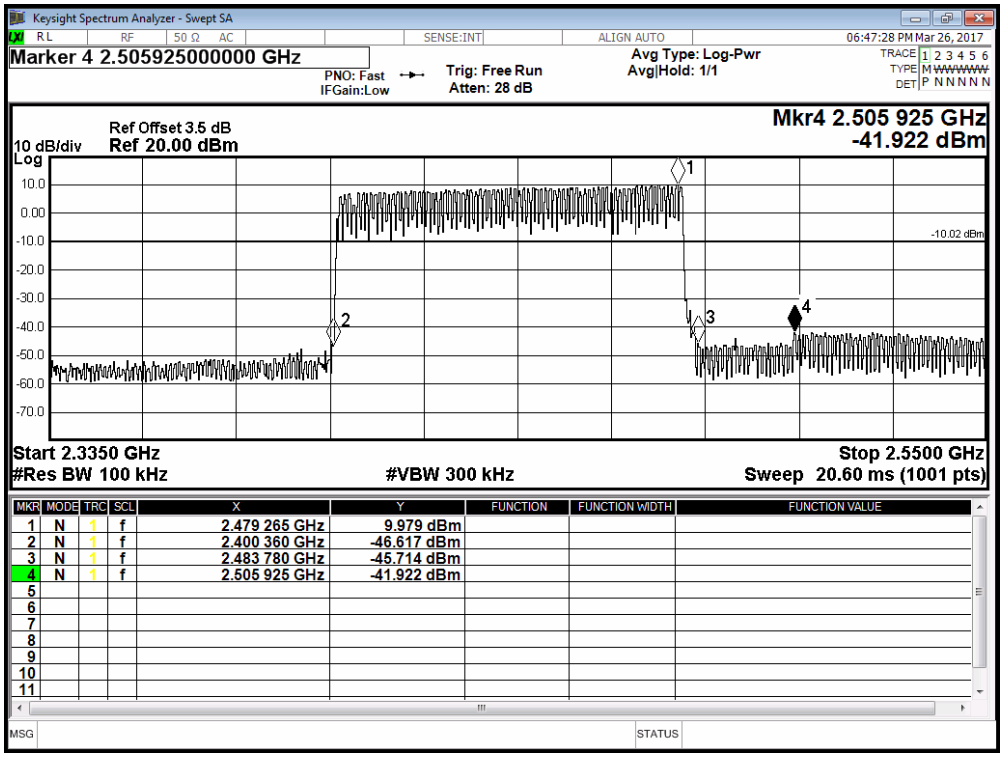


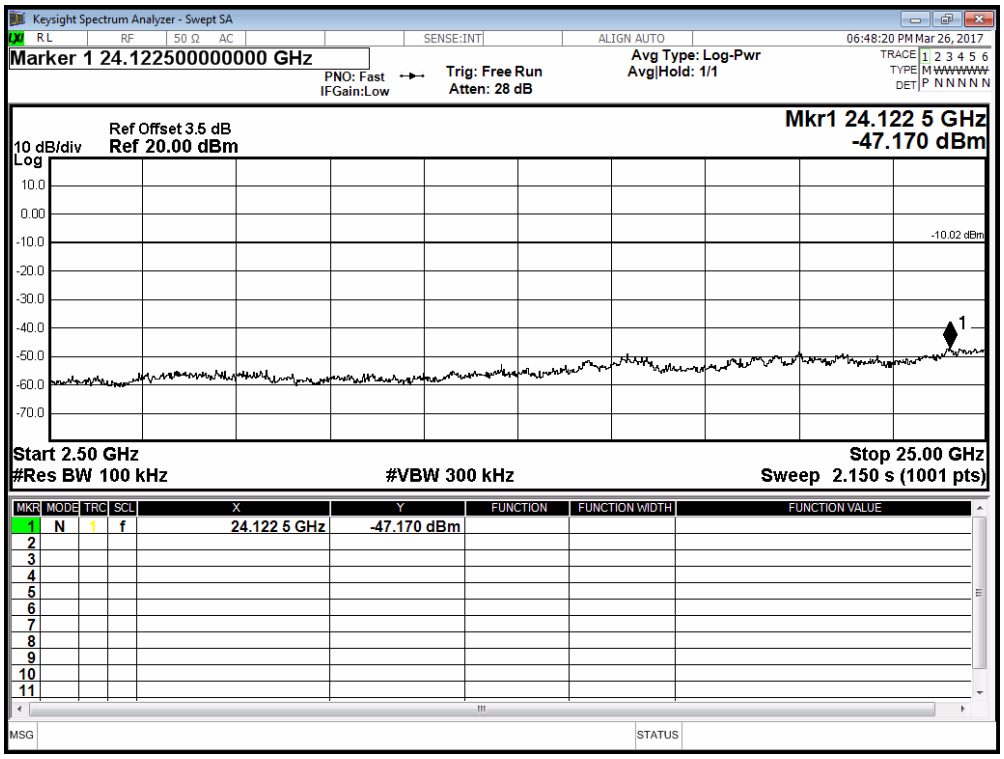


Hopping test

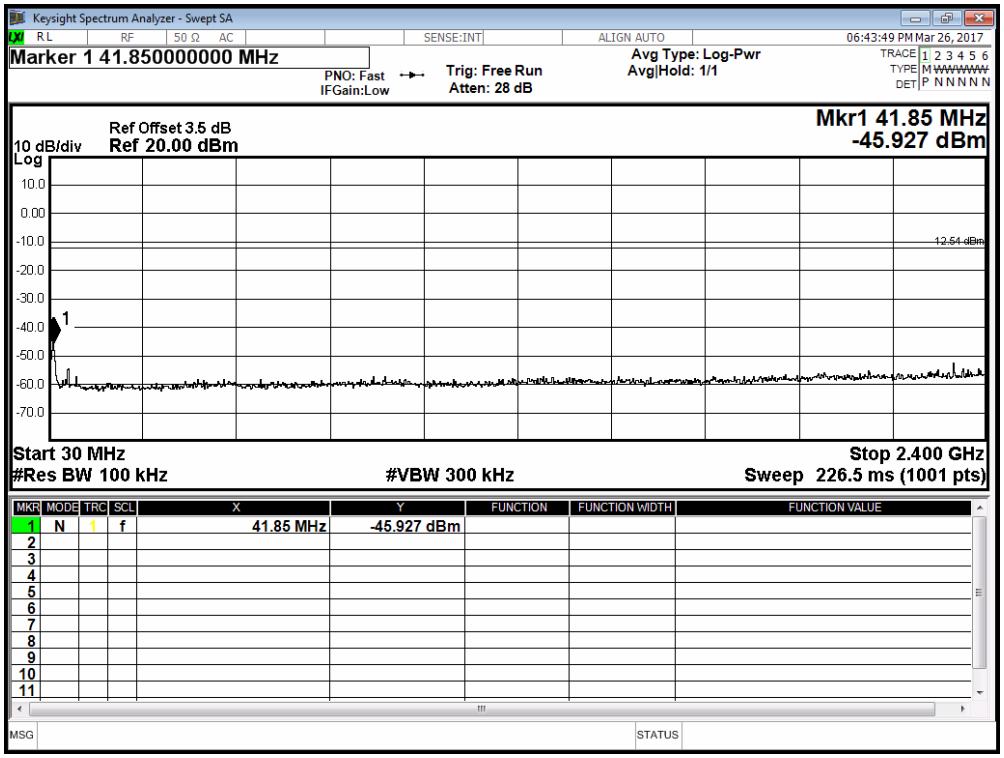
Modulation Standard: GFSK (1Mbps)

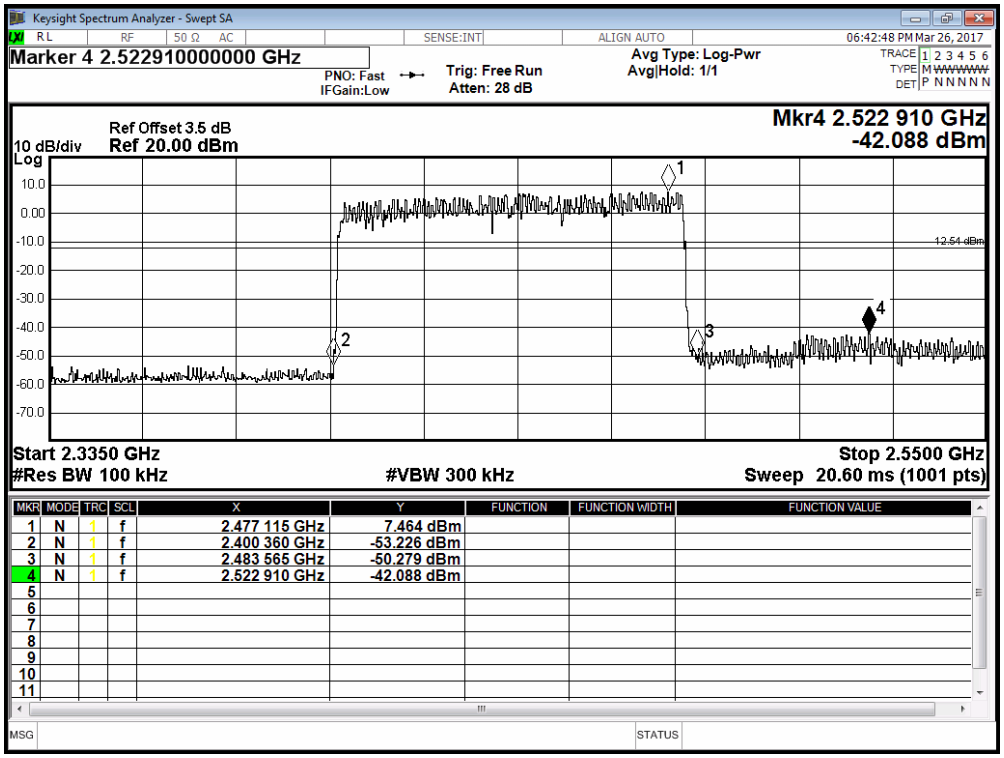


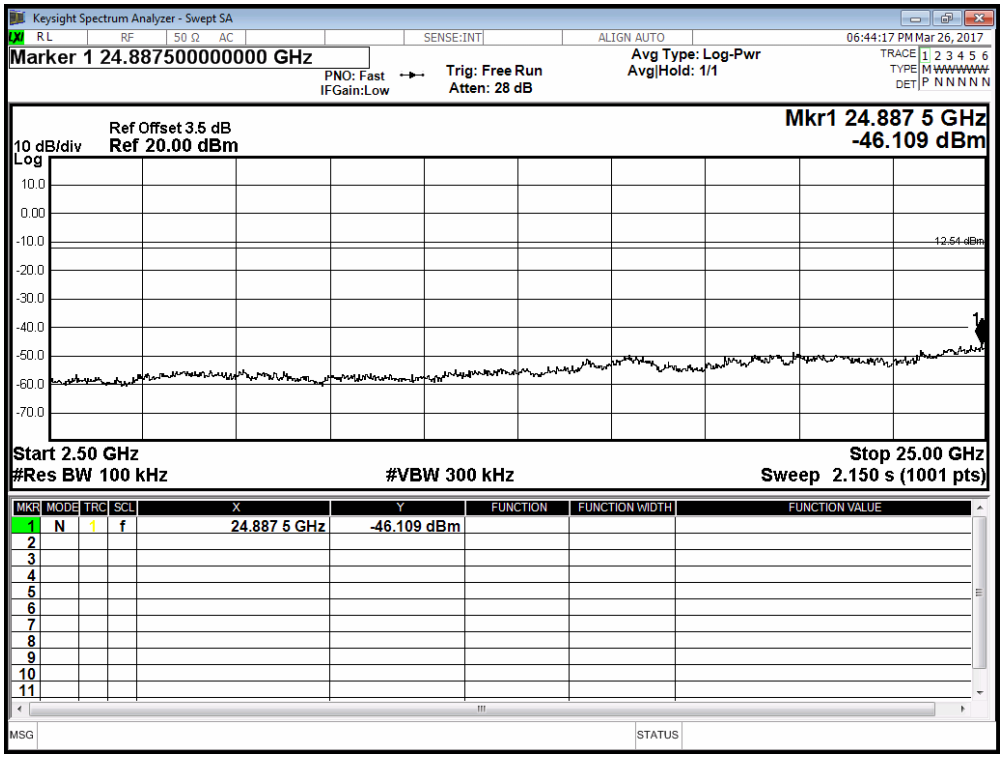




Modulation Standard: π/4-DQPSK (2Mbps)

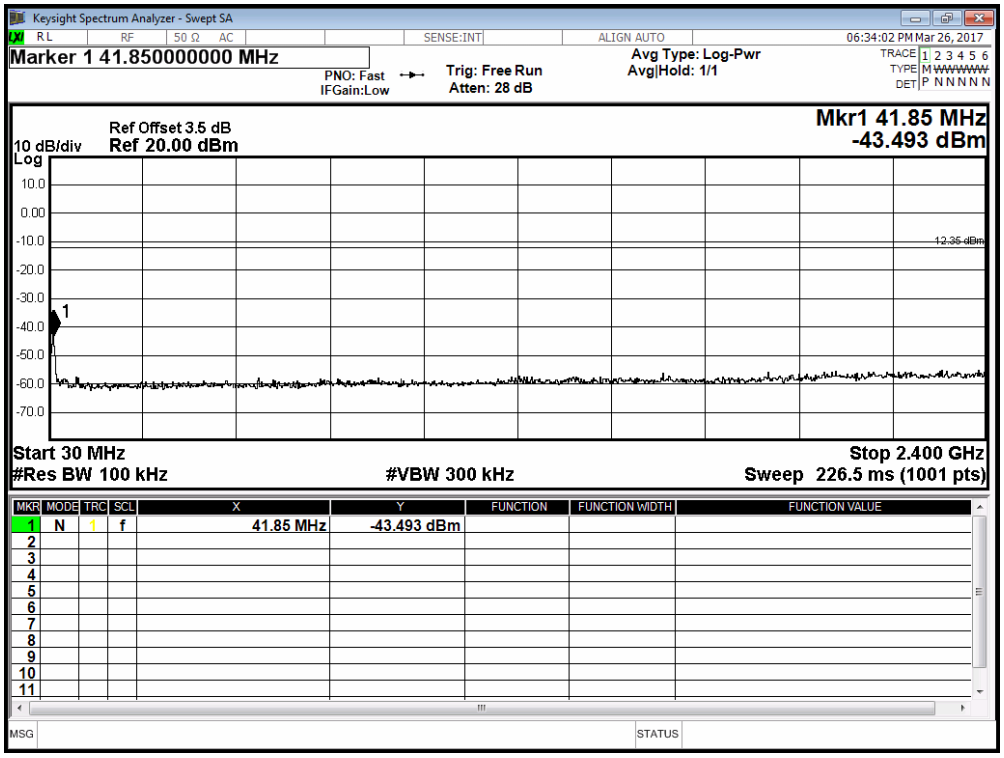


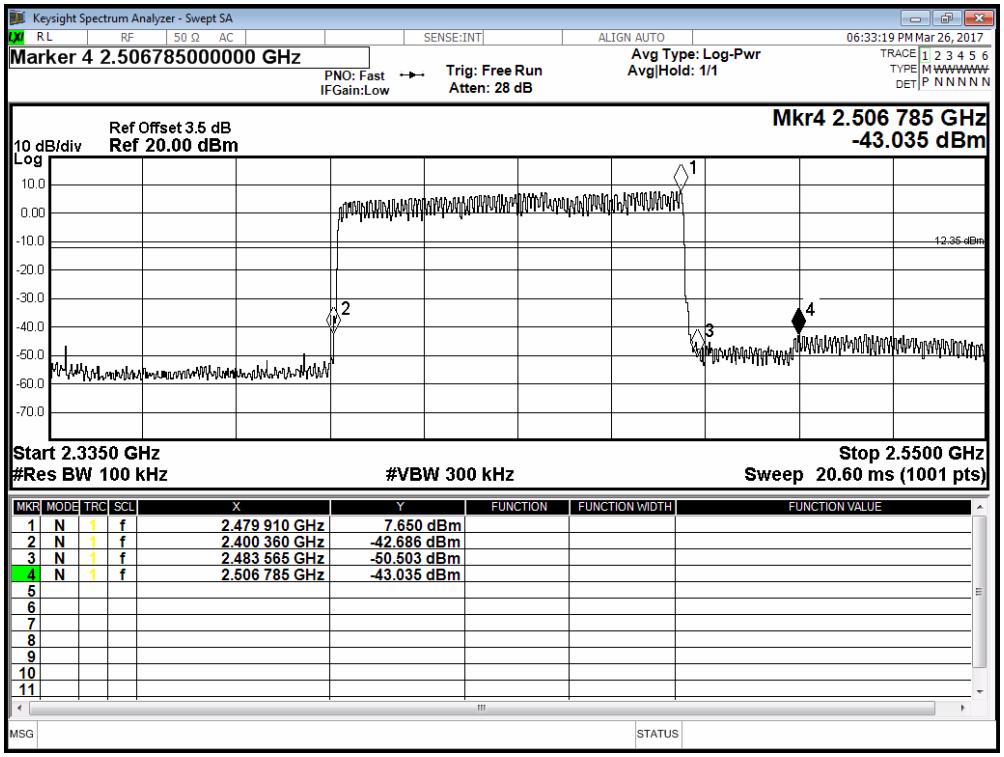

Keysight Spectrum Analyzer - Swept SA
Marker 4 2.522910000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 28 dB
Avg Type: Log-Pwr
Avg|Hold: 1/1
06:42:48 PM Mar 26, 2017
Ref Offset 3.5 dB
10 dB/div
Ref 20.00 dBm
Mkr4 2.522 910 GHz
-42.088 dBm
12.54 dBm
Start 2.3350 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.5500 GHz
Sweep 20.60 ms (1001 pts)
1 N 1 f 2.477 115 GHz 7.464 dBm
2 N 1 f 2.400 360 GHz -53.226 dBm
3 N 1 f 2.483 565 GHz -50.279 dBm
4 N 1 f 2.522 910 GHz -42.088 dBm

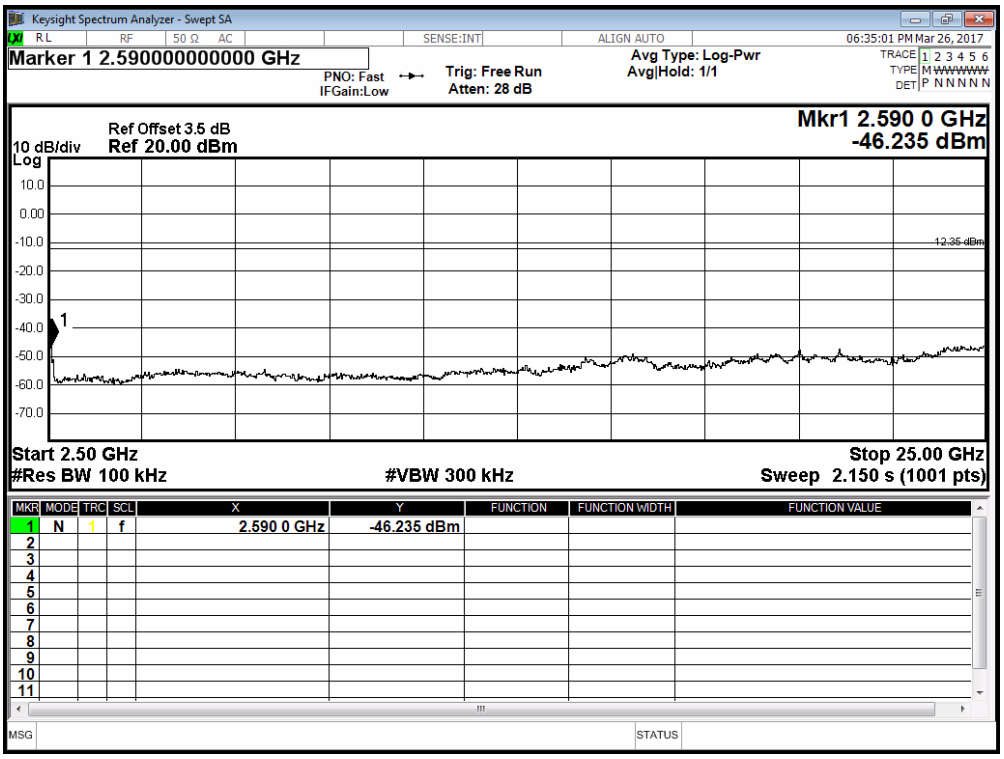

Keysight Spectrum Analyzer - Swept SA
Marker 1 24.887500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 28 dB
Avg Type: Log-Pwr
Avg|Hold: 1/1
06:44:17 PM Mar 26, 2017
Ref Offset 3.5 dB
10 dB/div
Ref 20.00 dBm
Mkr1 24.887 5 GHz
-46.109 dBm
12.54 dBm
Start 2.50 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.150 s (1001 pts)
1 N 1 f 24.887 5 GHz -46.109 dBm

Hopping Mode:

Modulation Standard: 8DPSK (3Mbps)

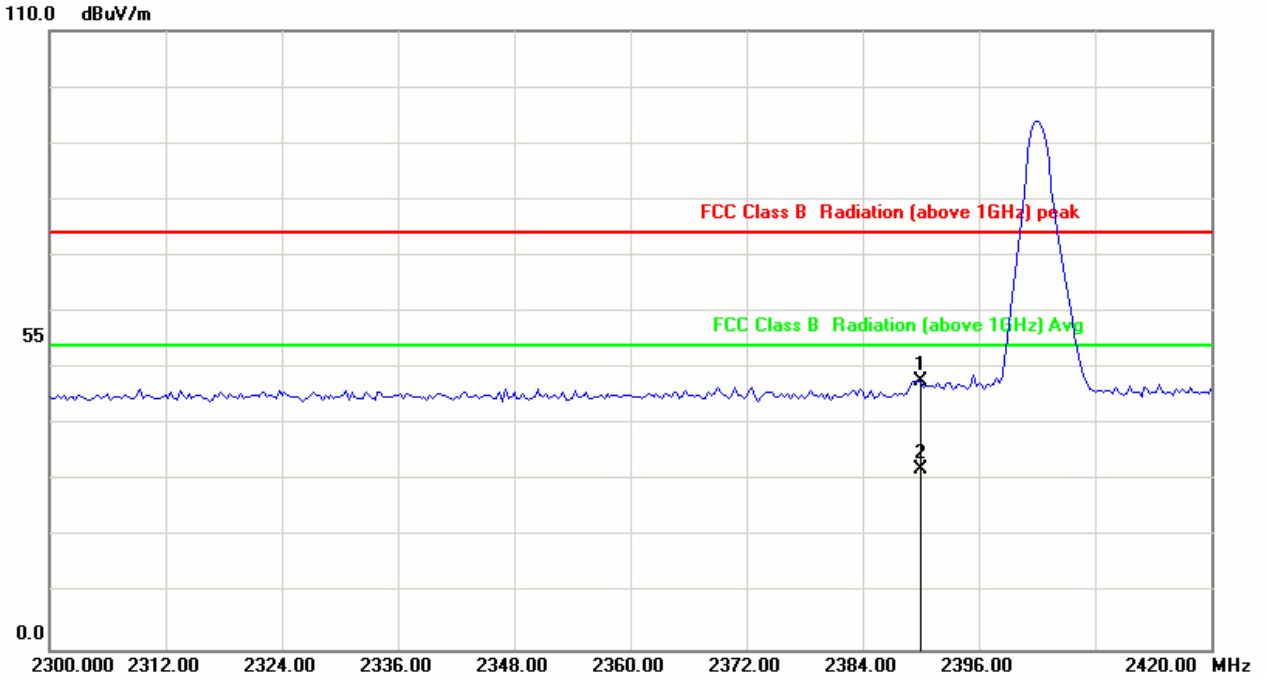





Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
06:35:01 PM Mar 26, 2017
Marker 1 2.590000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 28 dB
Avg Type: Log-Pwr
Avg|Hold: 1/1
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Ref Offset 3.5 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.590 0 GHz
-46.235 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
12.35 dBm
1
Start 2.50 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.150 s (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.590 0 GHz -46.235 dBm
2
3
4
5
6
7
8
9
10
11
MSG
STATUS

13.5 Restrict band emission Measurement Data

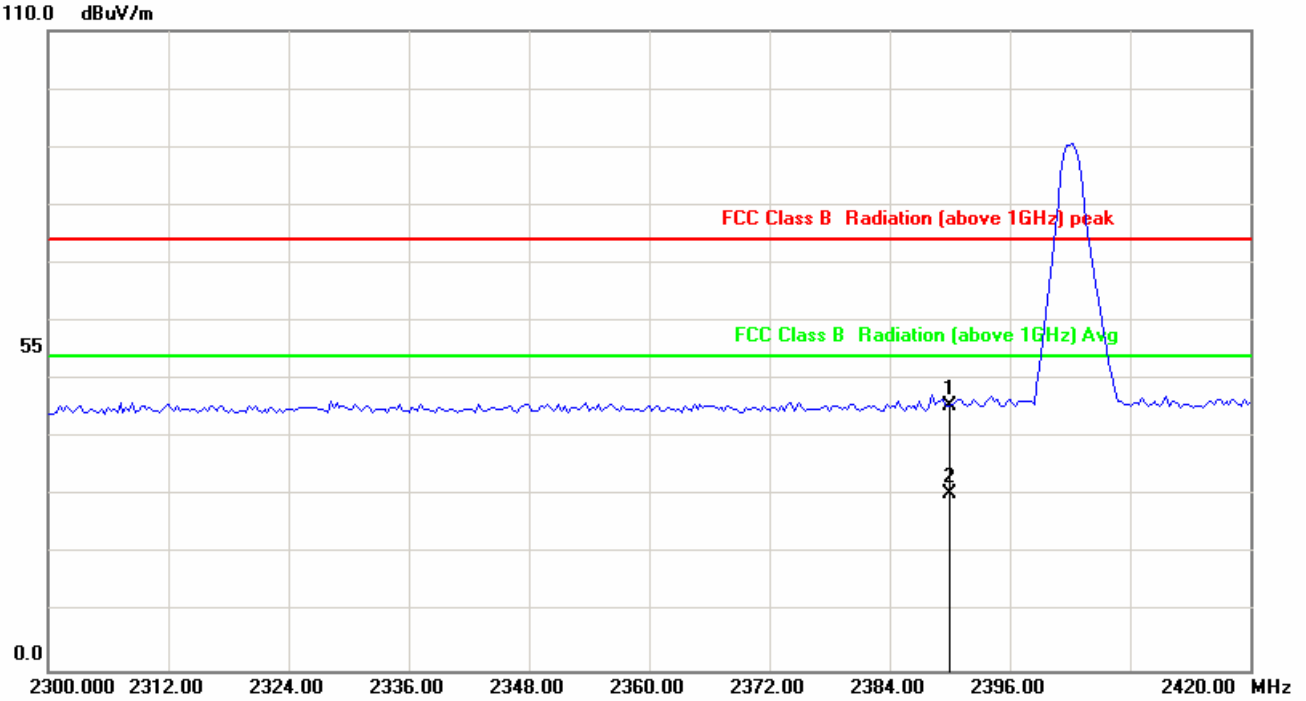
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	GFSK, CH00	Temperature	:	23 °C
Test date	:	Mar. 29, 2017	Humidity	:	65 %



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	-3.05	50.75	47.70	74.00	-26.30	peak
2	2390.000	-3.05	35.21	32.16	54.00	-21.84	AVG

Note: Level=Reading+Factor.
Margin=Level-Limit.

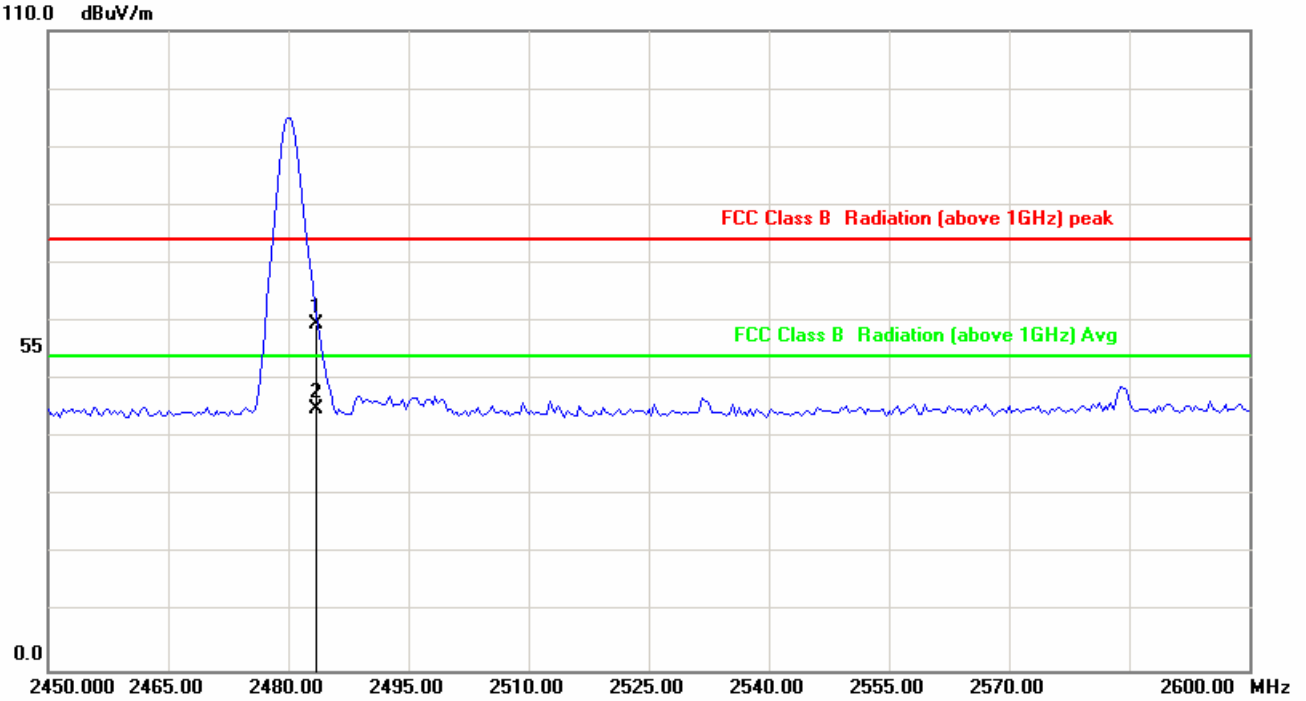
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	GFSK, CH00	Temperature	:	23 °C
Test date	:	Mar. 29, 2017	Humidity	:	65 %



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	-3.05	48.60	45.55	74.00	-28.45	peak
2	2390.000	-3.05	33.57	30.52	54.00	-23.48	AVG

Note: Level=Reading+Factor.
Margin=Level-Limit.

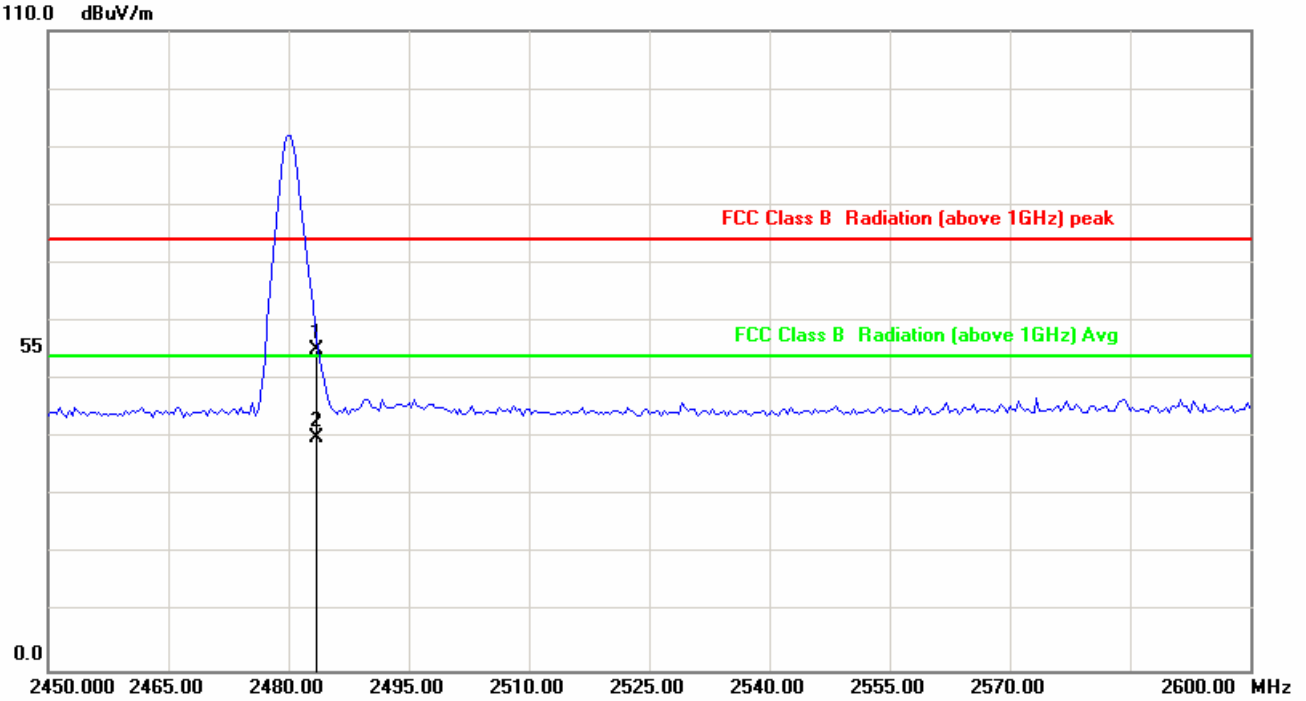
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	GFSK, CH78	Temperature	:	23 °C
Test date	:	Mar. 29, 2017	Humidity	:	65 %



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	-2.65	62.22	59.57	74.00	-14.43	peak
2	2483.500	-2.65	47.53	44.88	54.00	-9.12	AVG

Note: Level=Reading+Factor.
Margin=Level-Limit.

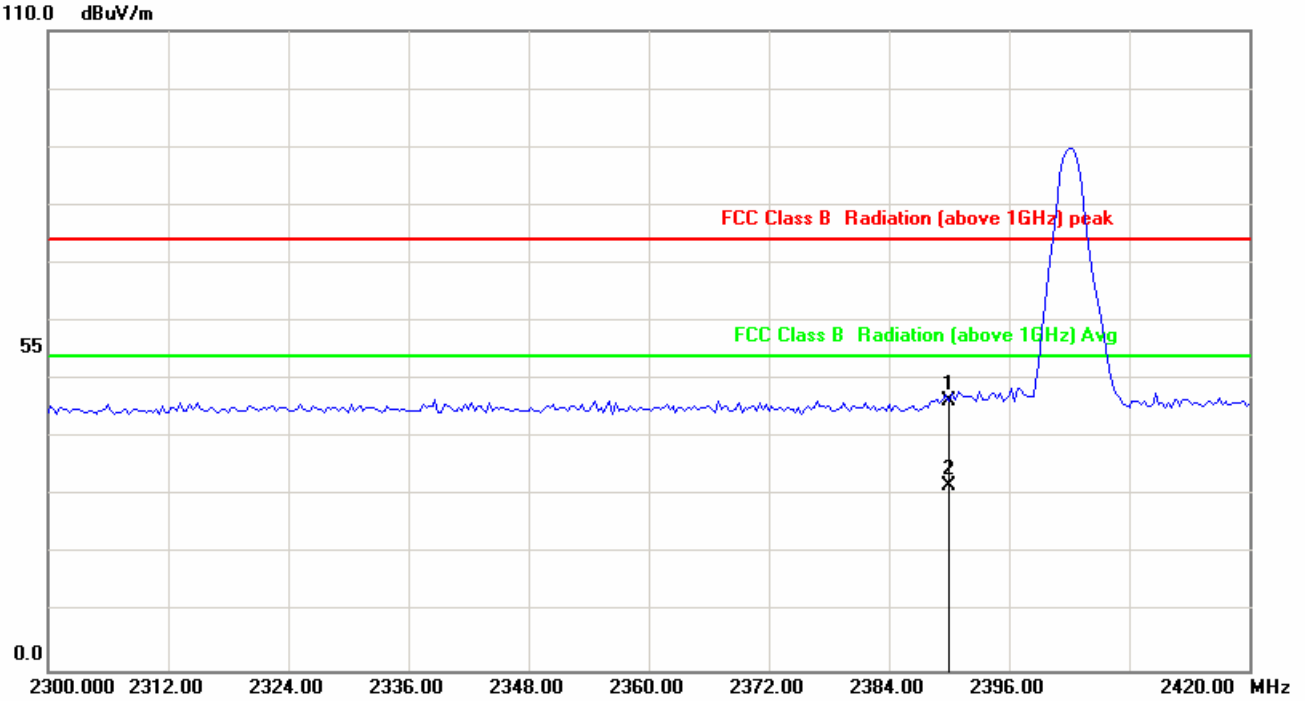
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	GFSK, CH78	Temperature	:	23 °C
Test date	:	Mar. 29, 2017	Humidity	:	65 %



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	-2.65	57.83	55.18	74.00	-18.82	peak
2	2483.500	-2.65	42.68	40.03	54.00	-13.97	AVG

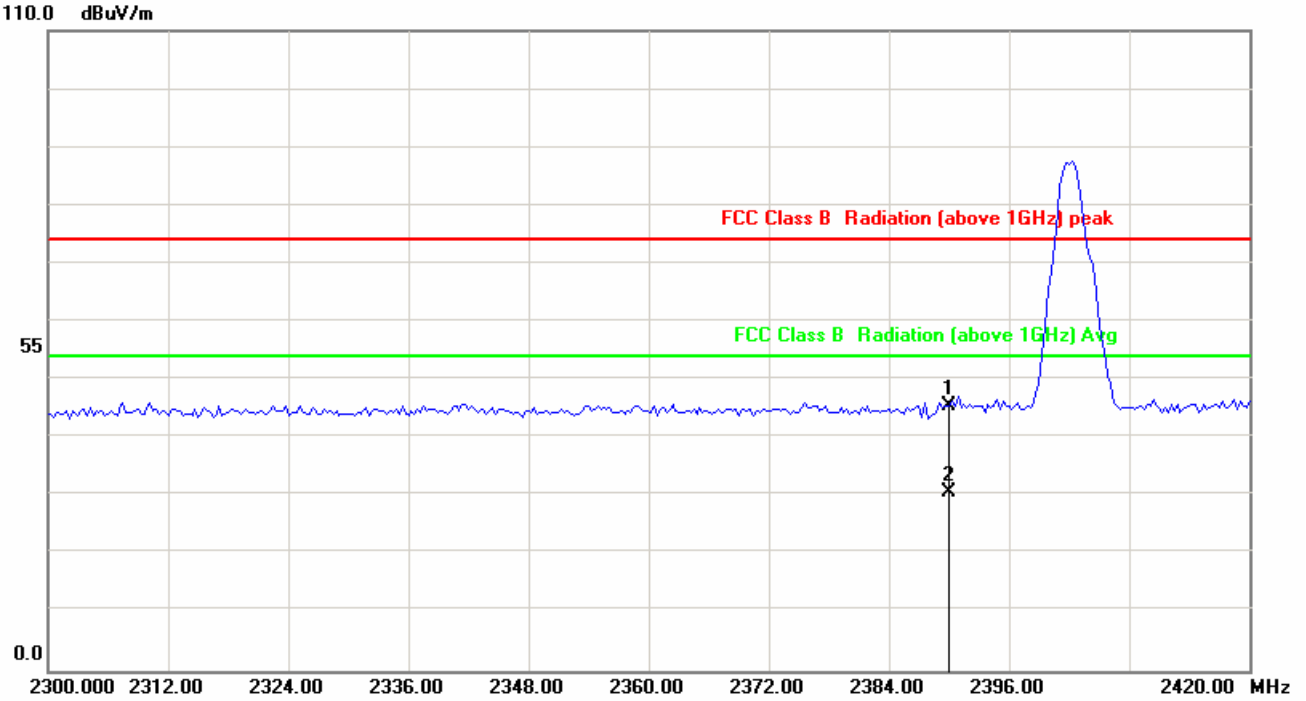
Note: Level=Reading+Factor.
Margin=Level-Limit.

Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	π /4 DQPSK, CH00	Temperature	:	23 °C
Test date	:	Mar. 29, 2017	Humidity	:	65 %



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	-3.05	49.38	46.33	74.00	-27.67	peak
2	2390.000	-3.05	34.72	31.67	54.00	-22.33	AVG

Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	π /4 DQPSK, CH00	Temperature	:	23 °C
Test date	:	Mar. 29, 2017	Humidity	:	65 %

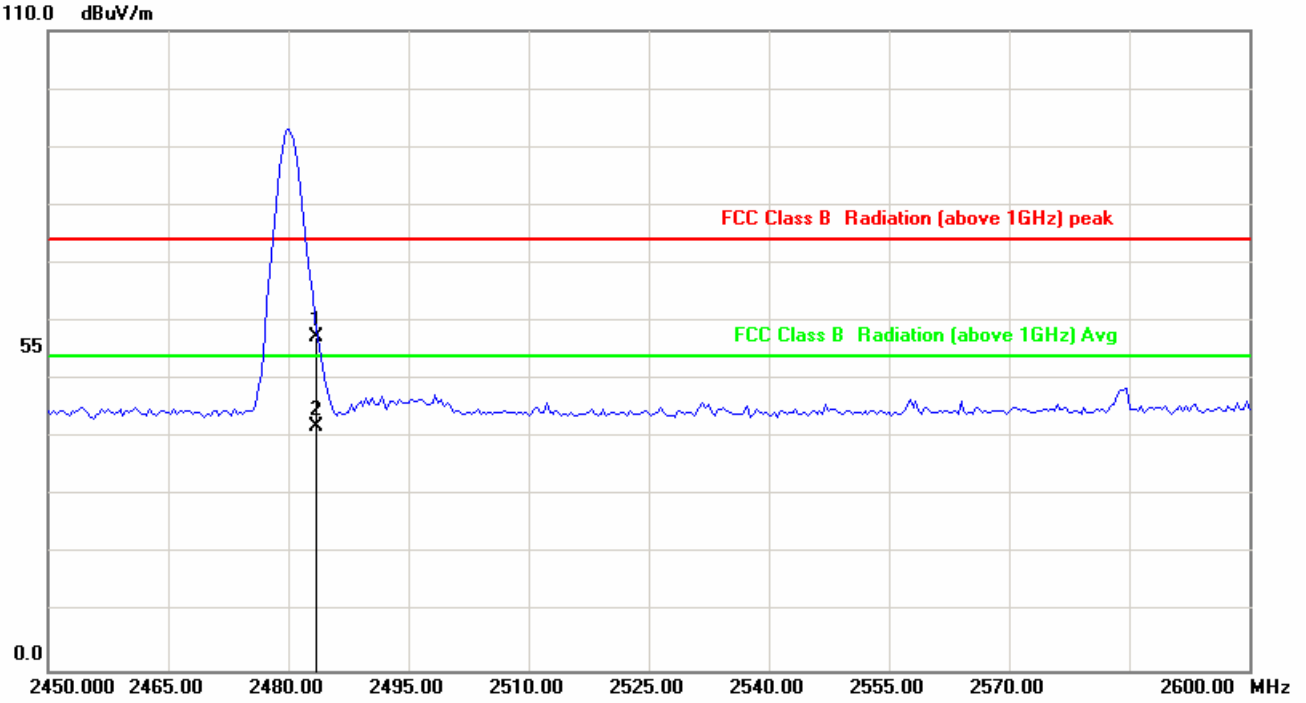


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	-3.05	48.67	45.62	74.00	-28.38	peak
2	2390.000	-3.05	33.75	30.70	54.00	-23.30	AVG

Note: Level=Reading+Factor.
Margin=Level-Limit.

Power	:	120V	Pol/Phase	:	VERTICAL

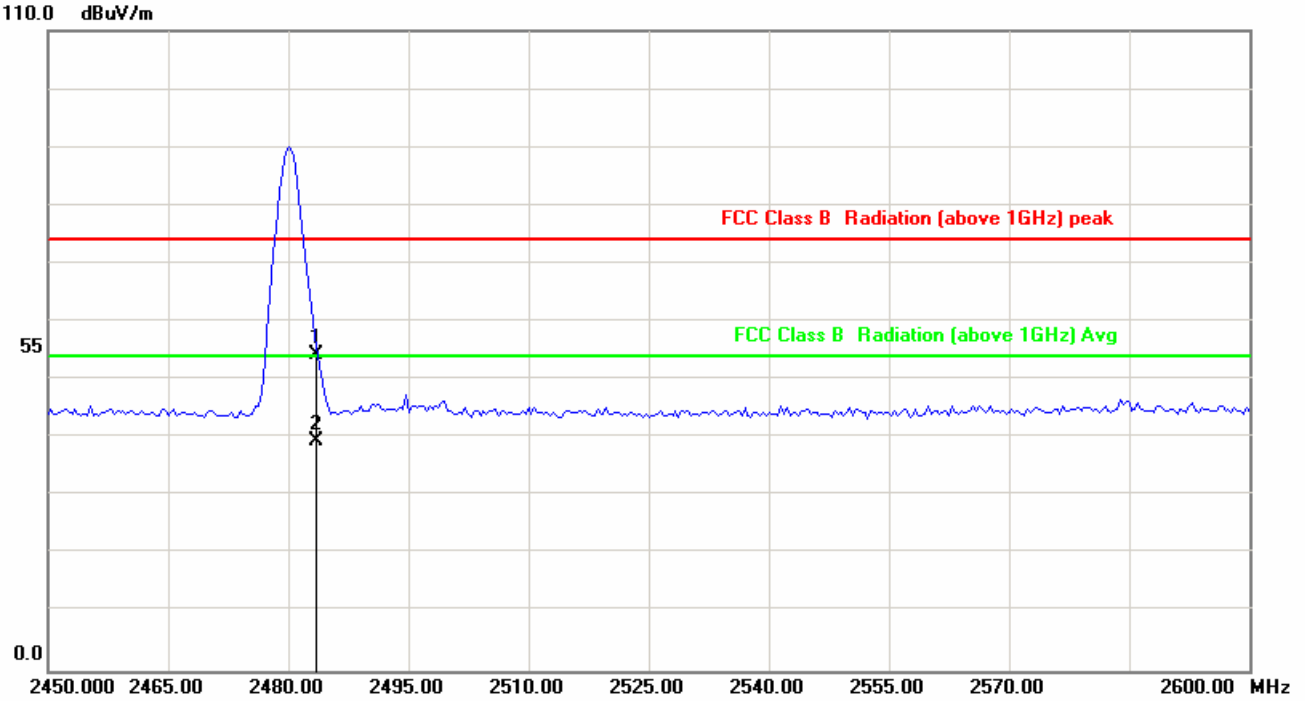
Test Mode	:	π /4 DQPSK, CH78	Temperature	:	23 °C
Test date	:	Mar. 29, 2017	Humidity	:	65 %



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	-2.65	59.88	57.23	74.00	-16.77	peak
2	2483.500	-2.65	44.69	42.04	54.00	-11.96	AVG

Note: Level=Reading+Factor.
Margin=Level-Limit.

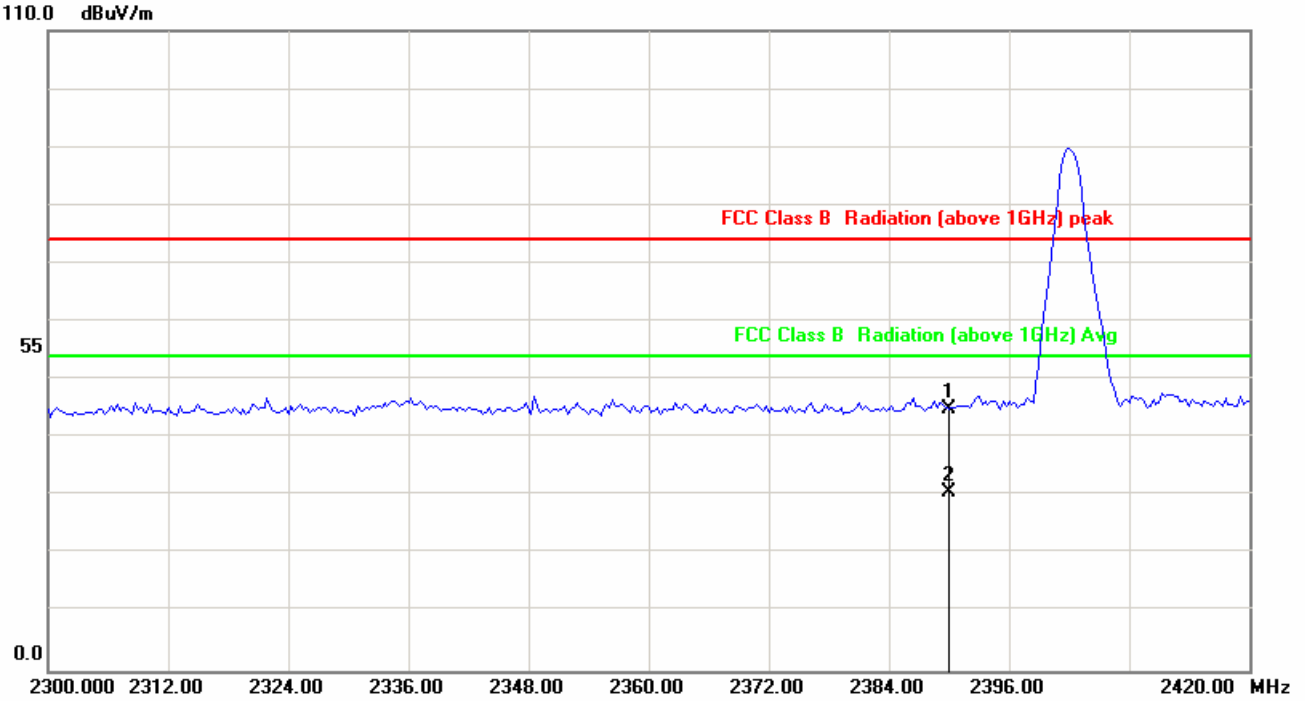
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	π /4 DQPSK, CH78	Temperature	:	23 °C
Test date	:	Mar. 29, 2017	Humidity	:	65 %



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	-2.65	56.85	54.20	74.00	-19.80	peak
2	2483.500	-2.65	42.01	39.36	54.00	-14.64	AVG

Note: Level=Reading+Factor.
Margin=Level-Limit.

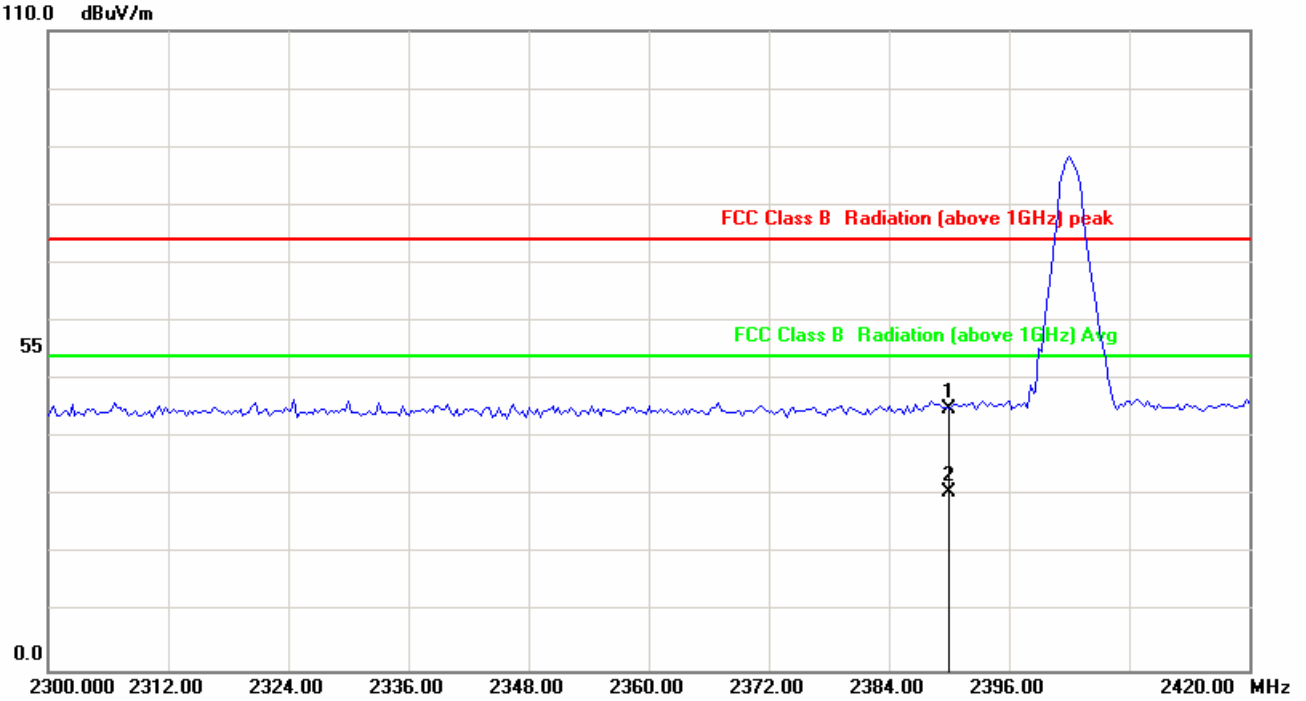
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	8DPSK, CH00	Temperature	:	23 °C
Test date	:	Mar. 29, 2017	Humidity	:	65 %



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	-3.05	48.09	45.04	74.00	-28.96	peak
2	2390.000	-3.05	33.68	30.63	54.00	-23.37	AVG

Note: Level=Reading+Factor.
Margin=Level-Limit.

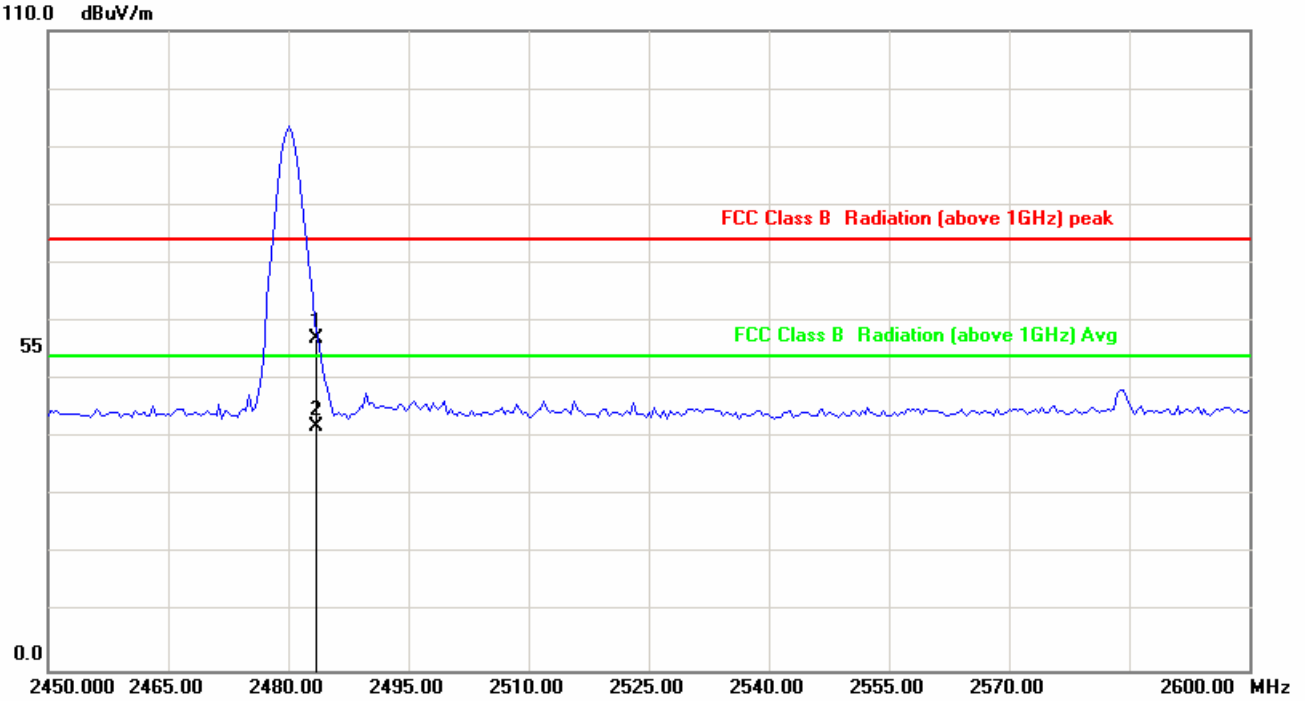
Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	8DPSK, CH00	Temperature	:	23 °C
Test date	:	Mar. 29, 2017	Humidity	:	65 %



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2390.000	-3.05	48.07	45.02	74.00	-28.98	peak
2	2390.000	-3.05	33.62	30.57	54.00	-23.43	AVG

Note: Level=Reading+Factor.
Margin=Level-Limit.

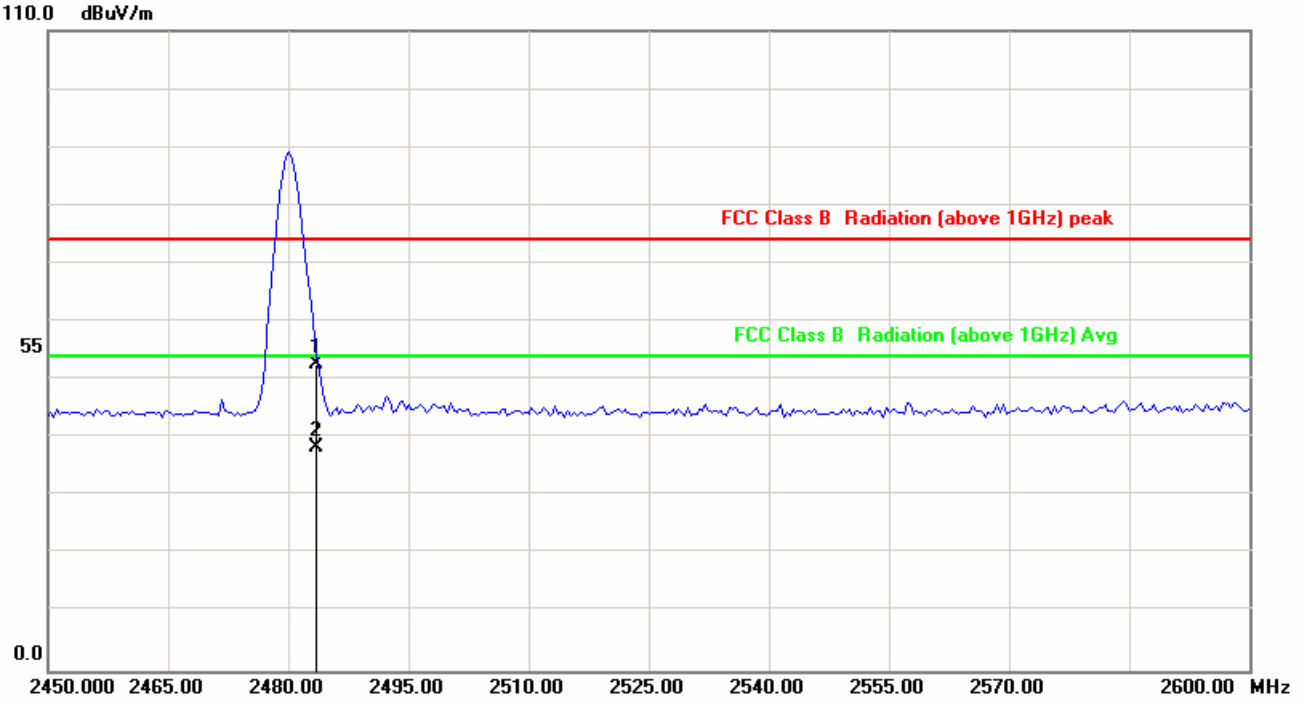
Power	:	120V	Pol/Phase	:	VERTICAL
Test Mode	:	8DPSK, CH78	Temperature	:	23 °C
Test date	:	Mar. 29, 2017	Humidity	:	65 %



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	-2.65	59.85	57.20	74.00	-16.80	peak
2	2483.520	-2.65	44.67	42.02	54.00	-11.98	AVG

Note: Level=Reading+Factor.
Margin=Level-Limit.

Power	:	120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	8DPSK, CH78	Temperature	:	23 °C
Test date	:	Mar. 29, 2017	Humidity	:	65 %



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2483.500	-2.65	55.32	52.67	74.00	-21.33	peak
2	2483.580	-2.65	40.88	38.23	54.00	-15.77	AVG

Note: Level=Reading+Factor.
Margin=Level-Limit.

14. Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.250
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

**: Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

14.1 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device:
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.