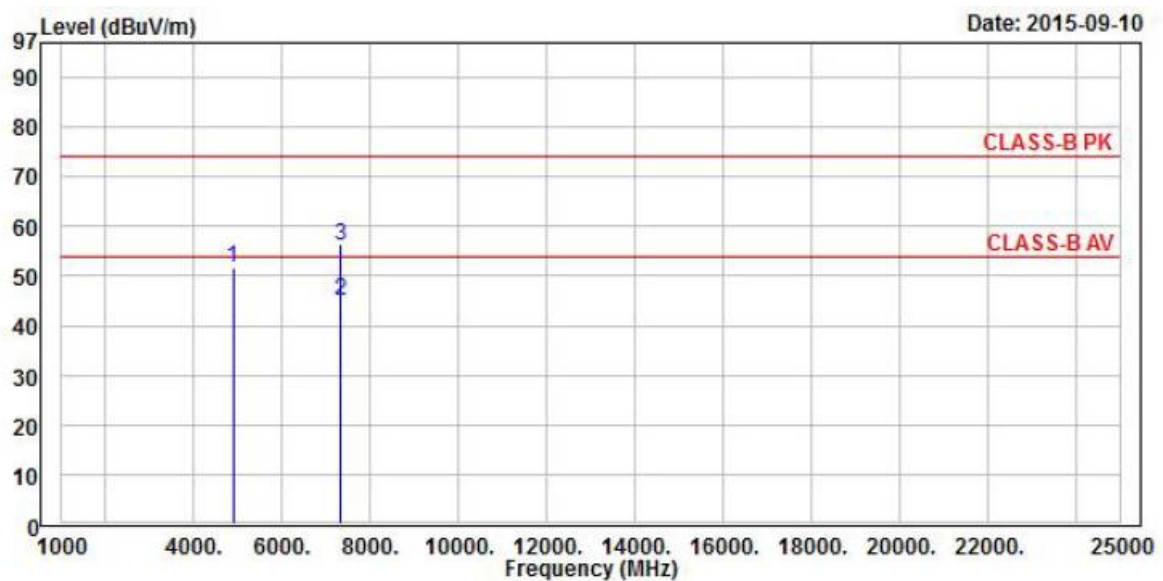




Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode 1	: pi/4-DQPSK CH39	Temperature	: 30 °C
Test Date	: Sep. 10, 2015	Humidity	: 68 %
Memo	: Z axis		



Condition: CLASS-B PK 3m Horizontal

EUT : 1508021

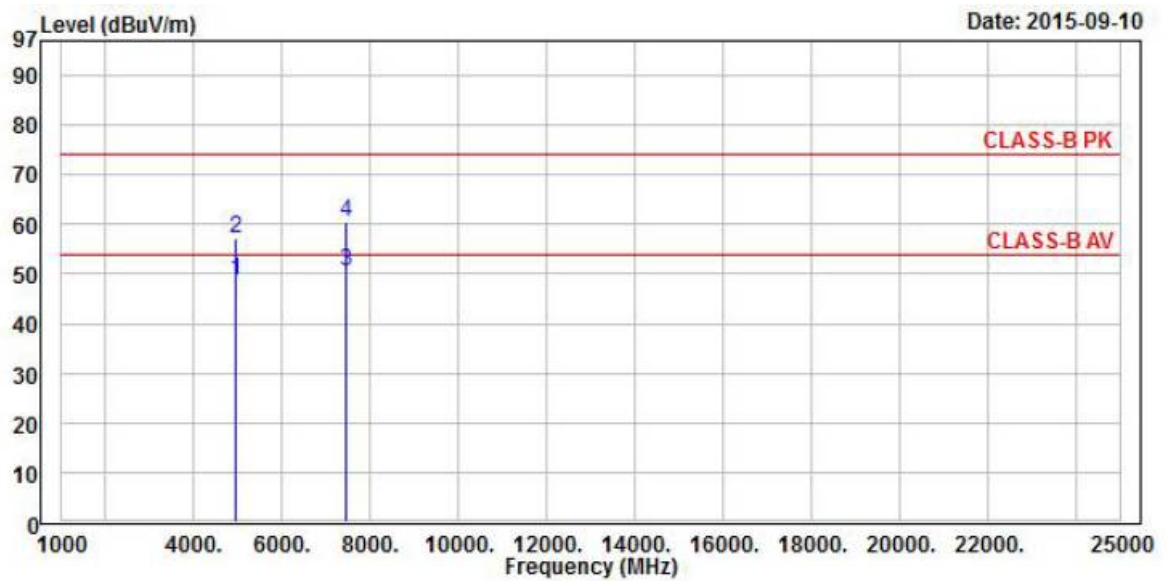
Mode : Transmit

Note : pi/4-DQPSK CH39

		Read			Limit	Over	
	Freq	Level	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4882.33	59.70	-7.91	51.79	74.00	-22.21	Peak
2	7323.32	47.33	-2.46	44.87	54.00	-9.13	Average
3	7323.32	58.69	-2.46	56.23	74.00	-17.77	Peak



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode 1	: pi/4-DQPSK CH78	Temperature	: 30 °C
Test Date	: Sep. 10, 2015	Humidity	: 68 %
Memo	: Z axis		



Condition: CLASS-B PK 3m Vertical

EUT : 1508021

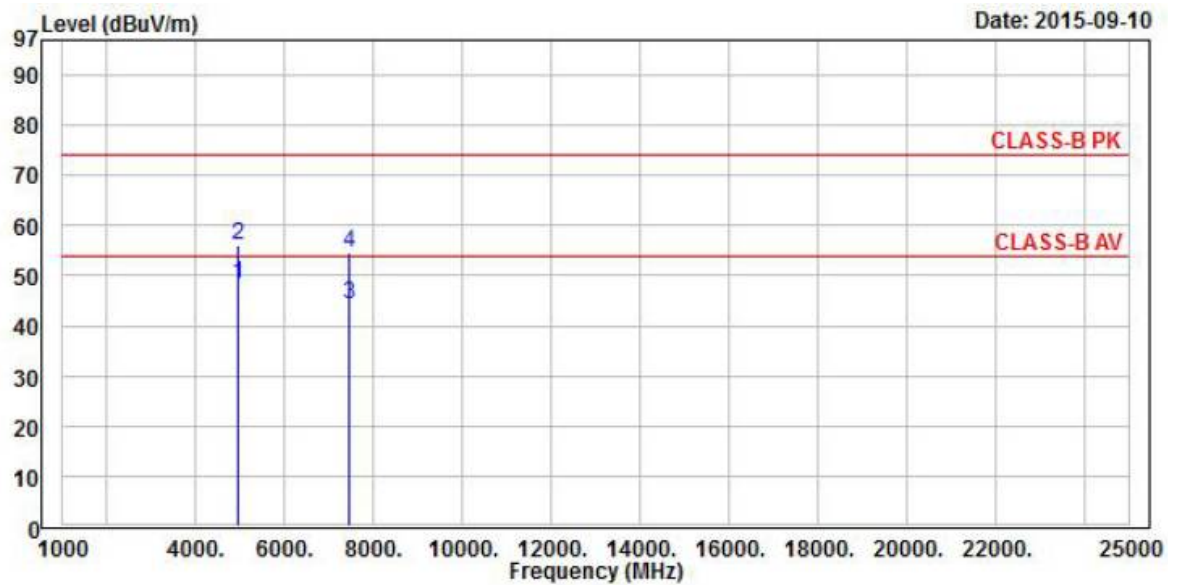
Mode : Transmit

Note : pi/4-DQPSK CH78

		Read			Limit	Over	
	Freq	Level	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4959.57	56.09	-7.58	48.51	54.00	-5.49	Average
2	4959.57	64.71	-7.58	57.13	74.00	-16.87	Peak
3	7440.48	52.85	-2.16	50.69	54.00	-3.31	Average
4	7440.48	62.55	-2.16	60.39	74.00	-13.61	Peak



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode 1	: pi/4-DQPSK CH78	Temperature	: 30 °C
Test Date	: Sep. 10, 2015	Humidity	: 68 %
Memo	: Z axis		



Condition: CLASS-B PK 3m Horizontal

EUT : 1508021

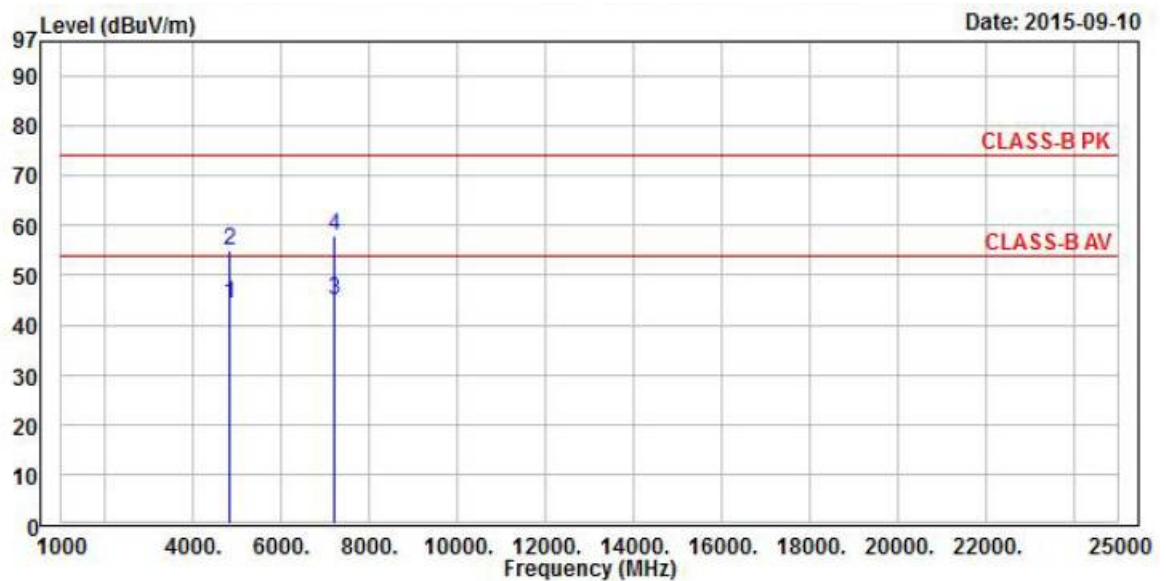
Mode : Transmit

Note : pi/4-DQPSK CH78

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4959.68	55.81	-7.58	48.23	54.00	-5.77	Average
2	4959.68	63.70	-7.58	56.12	74.00	-17.88	Peak
3	7440.00	46.37	-2.16	44.21	54.00	-9.79	Average
4	7440.00	56.73	-2.16	54.57	74.00	-19.43	Peak



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode 1	: 8DPSK CH0	Temperature	: 30 °C
Test Date	: Sep. 10, 2015	Humidity	: 68 %
Memo	: Z axis		



Condition: CLASS-B PK 3m Vertical

EUT : 1508021

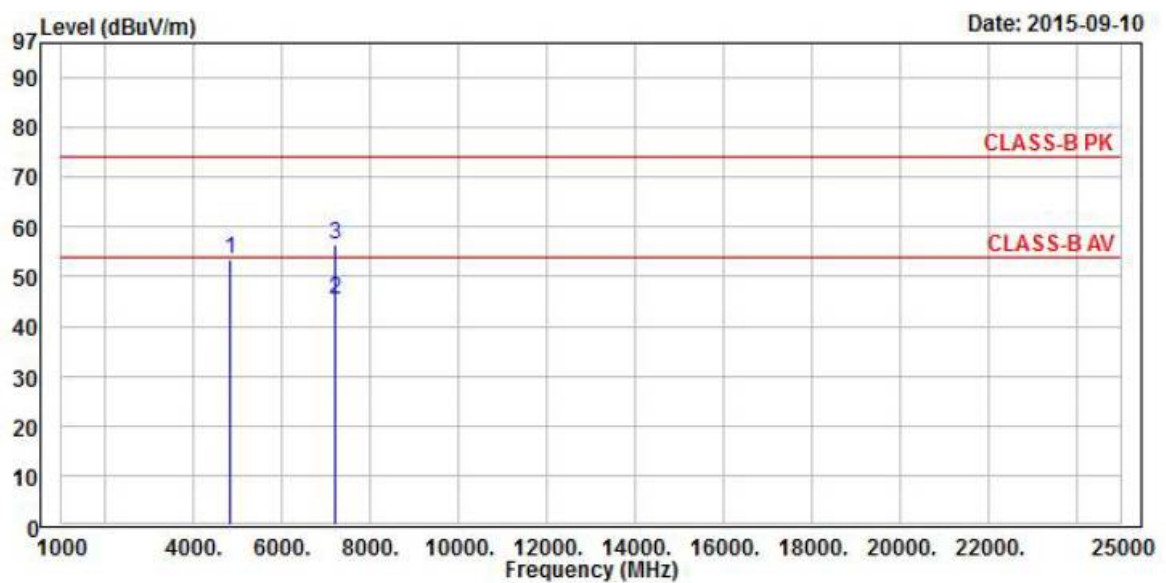
Mode : Transmit

Note : 8DPSK CH0

		Read			Limit	Over	
	Freq	Level	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4804.31	52.53	-8.25	44.28	54.00	-9.72	Average
2	4804.31	63.38	-8.25	55.13	74.00	-18.87	Peak
3	7205.58	47.86	-2.76	45.10	54.00	-8.90	Average
4	7205.58	60.60	-2.76	57.84	74.00	-16.16	Peak



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode 1	: 8DPSK CH0	Temperature	: 30 °C
Test Date	: Sep. 10, 2015	Humidity	: 68 %
Memo	: Z axis		



Condition: CLASS-B PK 3m Horizontal

EUT : 1508021

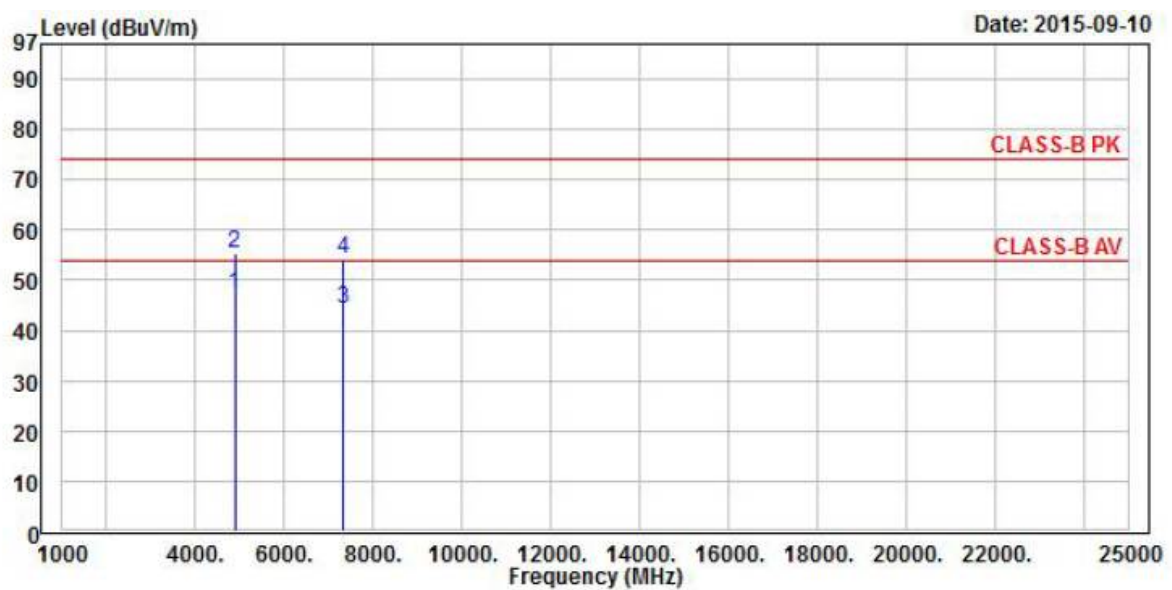
Mode : Transmit

Note : 8DPSK CH0

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4804.37	61.85	-8.25	53.60	74.00	-20.40	Peak
2	7206.45	48.19	-2.76	45.43	54.00	-8.57	Average
3	7206.45	59.11	-2.76	56.35	74.00	-17.65	Peak



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode 1	: 8DPSK CH39	Temperature	: 30 °C
Test Date	: Sep. 10, 2015	Humidity	: 68 %
Memo	: Z axis		



Condition: CLASS-B PK 3m Vertical

EUT : 1508021

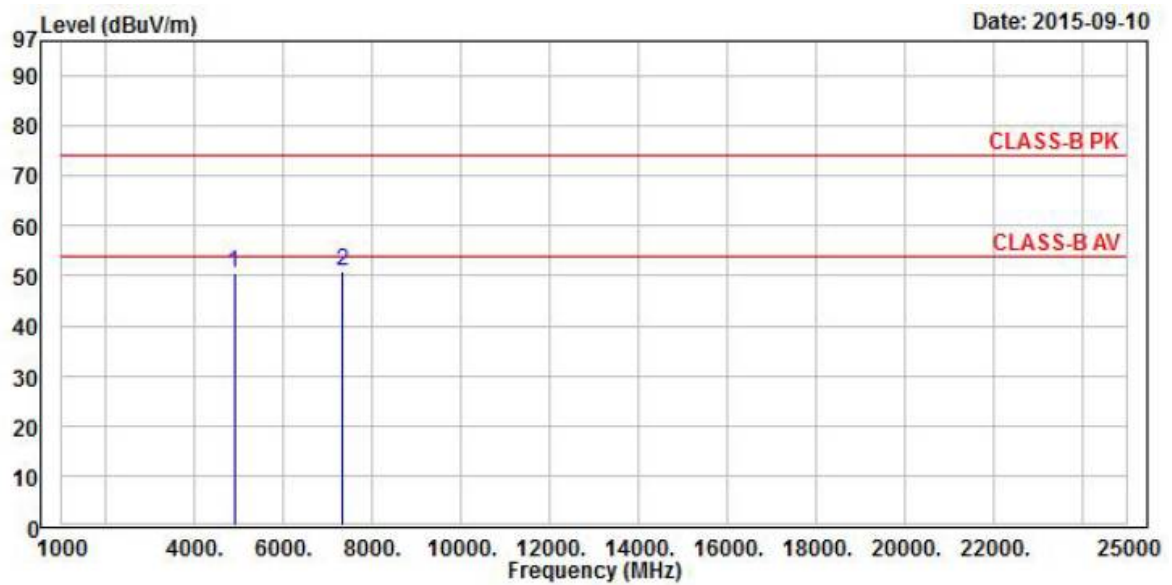
Mode : Transmit

Note : 8DPSK CH39

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4881.95	55.29	-7.91	47.38	54.00	-6.62	Average
2	4881.95	63.22	-7.91	55.31	74.00	-18.69	Peak
3	7322.73	46.59	-2.46	44.13	54.00	-9.87	Average
4	7322.73	56.74	-2.46	54.28	74.00	-19.72	Peak



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode 1	: 8DPSK CH39	Temperature	: 30 °C
Test Date	: Sep. 10, 2015	Humidity	: 68 %
Memo	: Z axis		



Condition: CLASS-B PK 3m Horizontal

EUT : 1508021

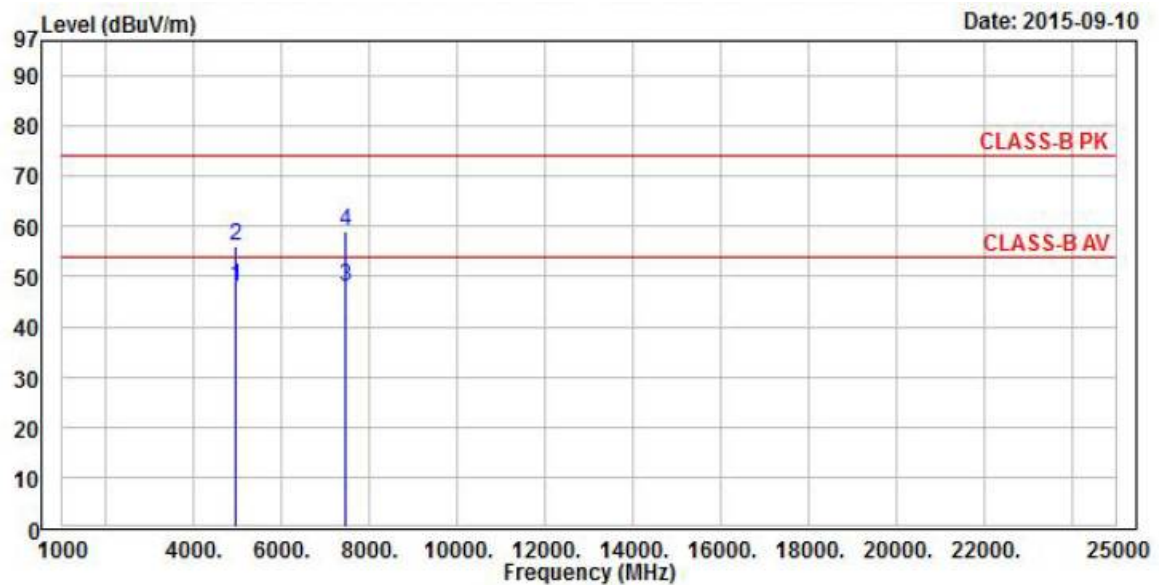
Mode : Transmit

Note : 8DPSK CH39

		Read		Limit	Over	
	Freq	Level	Factor	Level	Line	Limit Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB
1	4882.00	58.44	-7.91	50.53	74.00	-23.47 Peak
2	7322.64	53.45	-2.46	50.99	74.00	-23.01 Peak



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode 1	: 8DPSK CH78	Temperature	: 30 °C
Test Date	: Sep. 10, 2015	Humidity	: 68 %
Memo	: Z axis		



Condition: CLASS-B PK 3m Vertical

EUT : 1508021

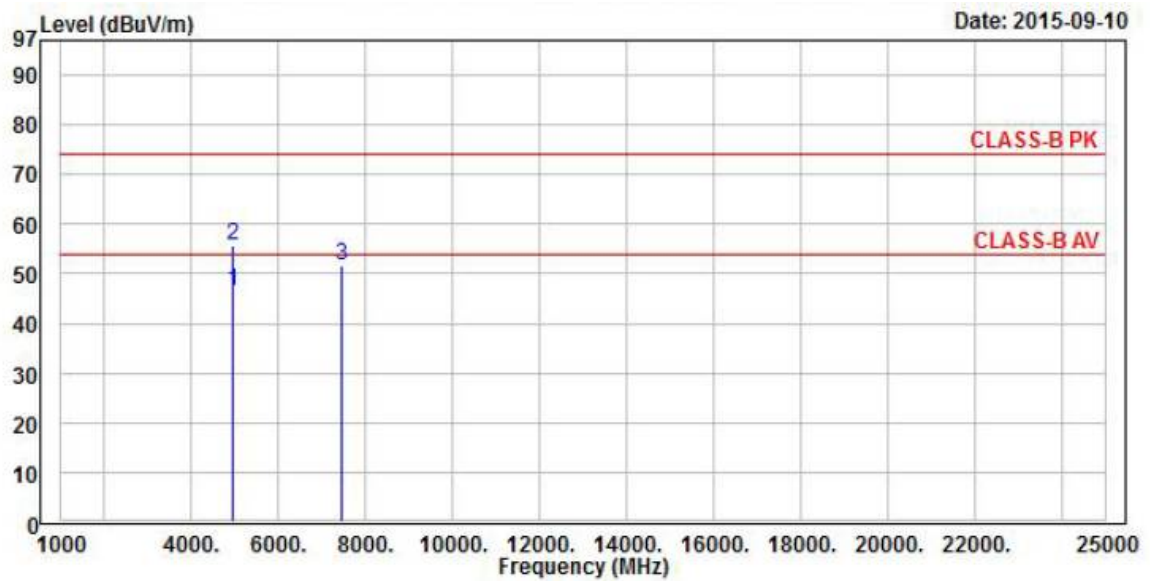
Mode : Transmit

Note : 8DPSK CH78

		Read		Limit	Over	
	Freq	Level	Factor	Level	Line	Limit Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB
1	4960.29	55.52	-7.58	47.94	54.00	-6.06 Average
2	4960.29	63.60	-7.58	56.02	74.00	-17.98 Peak
3	7439.47	49.92	-2.16	47.76	54.00	-6.24 Average
4	7439.47	61.07	-2.16	58.91	74.00	-15.09 Peak



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode 1	: 8DPSK CH78	Temperature	: 30 °C
Test Date	: Sep. 10, 2015	Humidity	: 68 %
Memo	: Z axis		



Condition: CLASS-B PK 3m Horizontal

EUT : 1508021

Mode : Transmit

Note : 8DPSK CH78

		Read			Limit	Over	
	Freq	Level	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	4960.32	53.93	-7.58	46.35	54.00	-7.65	Average
2	4960.32	63.32	-7.58	55.74	74.00	-18.26	Peak
3	7440.59	53.66	-2.16	51.50	74.00	-22.50	Peak



Notes:

1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120 KHz and video bandwidth is 300 KHz for Quasi-peak detection at frequency 30 MHz~1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3 MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz Peak detector for Average Value at frequency above 1GHz
6. All emissions as described above were determining by rotating the EUT through three orthogonal axes to maximizing the emissions if the EUT belongs to hand-held or body-worn devices.
7. Where limits are specified for both average and peak detector functions, if the peak measured value complies with the average limit, it is unnecessary to perform an average measurement at frequency above 1GHz.

8. 20dB Bandwidth Measurement Data

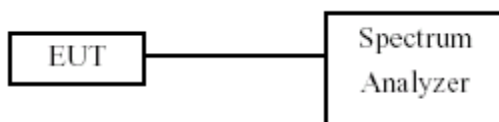
8.1 Test Limit

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 than 125 mW.

8.2 Test Procedures

- The transmitter output was connected to the spectrum analyzer.
- Set RBW of spectrum analyzer to 30 KHz and VBW to 100 KHz.
- 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: Sep. 18, 2015

Temperature: 25 °C

Atmospheric pressure: 1010 hPa

Humidity: 50 %

Modulation Type	Channel	Frequency (MHz)	20dB Bandwidth (KHz)	2/3 20dB Bandwidth (KHz)
GFSK (1Mbps)	00	2402	934.00	622.67
	39	2441	930.00	620.00
	78	2480	924.00	616.00
$\pi/4$ -DQPSK (2 Mbps)	00	2402	1230.00	820.00
	39	2441	1226.00	817.33
	78	2480	1228.00	818.67
8DPSK (3Mbps)	00	2402	1266.00	844.00
	39	2441	1266.00	844.00
	78	2480	1262.00	841.33



Modulation Standard: GFSK (1Mbps)
Channel: 00



Modulation Standard: GFSK (1Mbps)
Channel: 39





Modulation Standard: GFSK (1Mbps)
Channel: 78

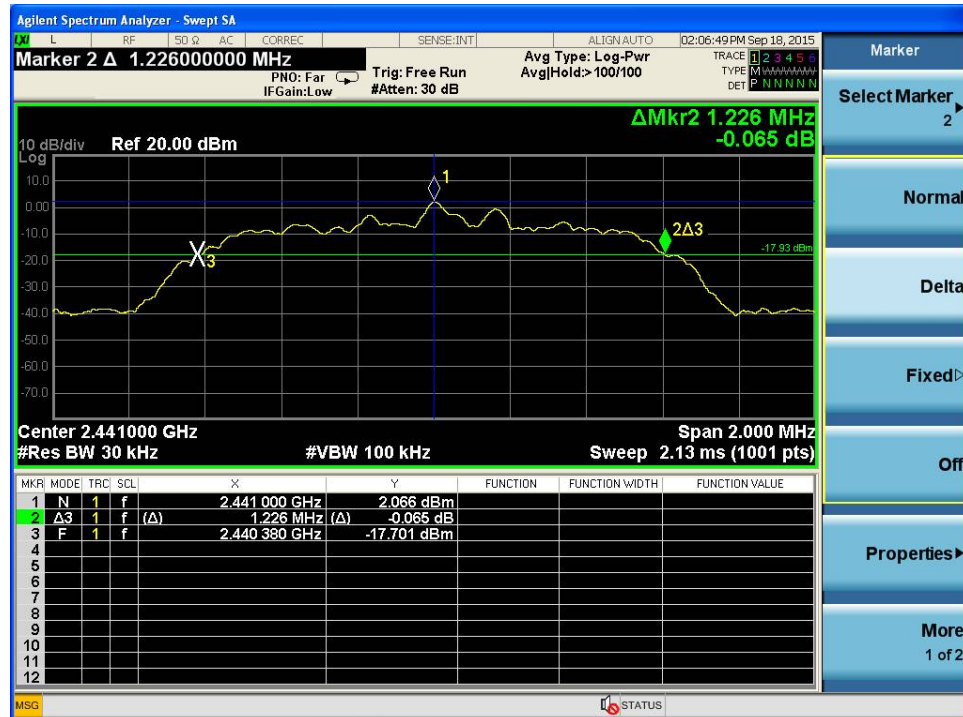


Modulation Standard: $\pi/4$ -DQPSK (2Mbps)
Channel: 00





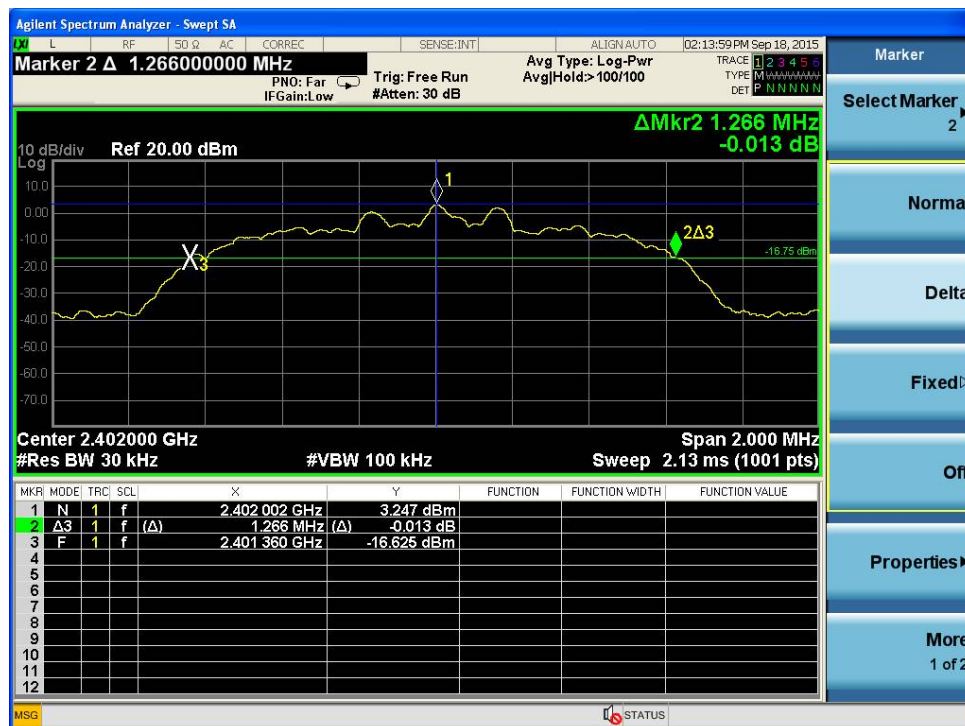
Modulation Standard: $\pi/4$ -DQPSK (2Mbps)
Channel: 39



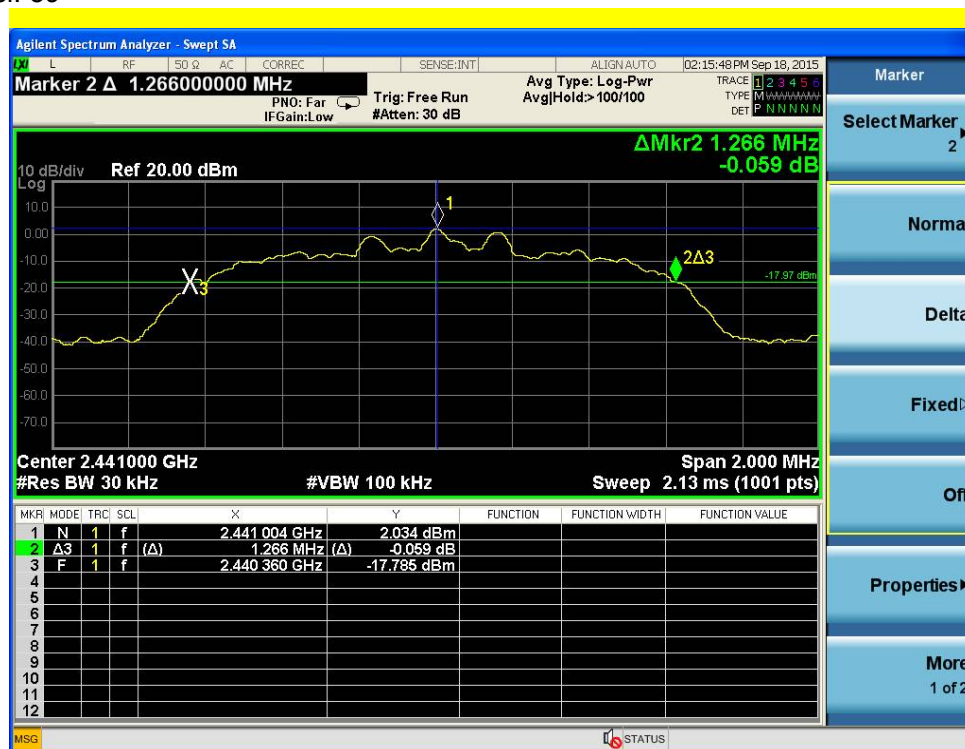
Modulation Standard: $\pi/4$ -DQPSK (2Mbps)
Channel: 78



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

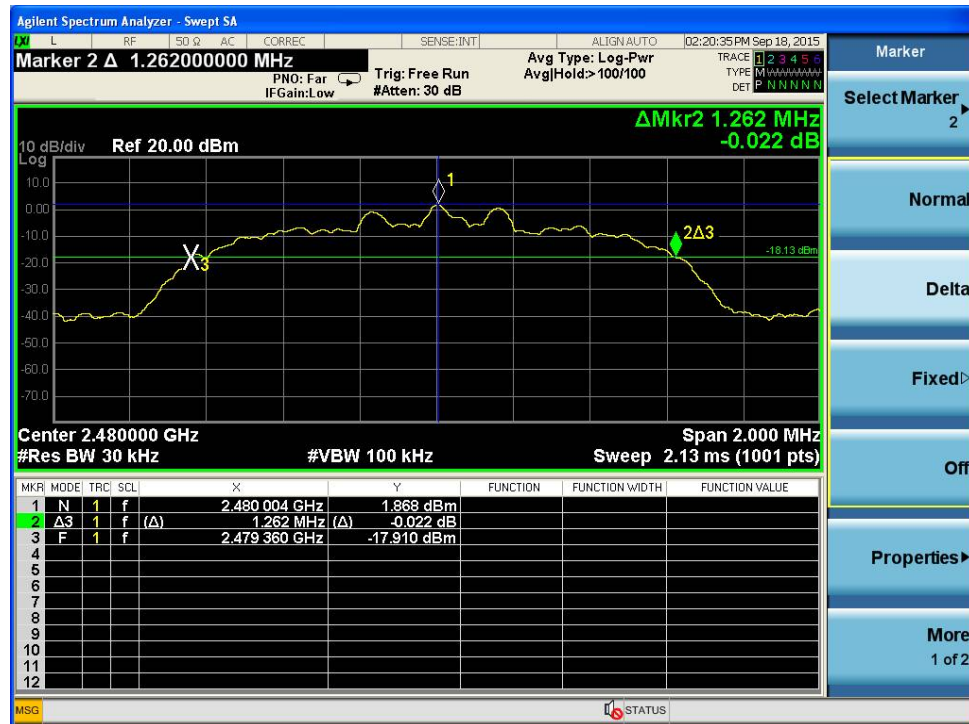


Modulation Standard: 8DPSK (3Mbps)
Channel: 39





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



9. Frequencies Separation

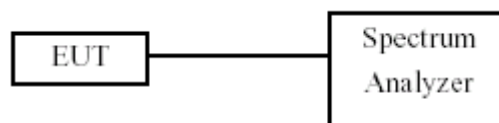
9.1 Test Limit

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

- The transmitter output was connected to the spectrum analyzer.
- Set RBW of spectrum analyzer to 30 KHz and VBW to 100 KHz.
- By using the Max Hold function record the separation of two adjacent channels.
- Measure the frequency difference of these two adjacent channels.

9.3 Test Setup Layout





9.4 Test Result and Data

Test Date: Sep. 07, 2015

Temperature: 26 °C

Atmospheric pressure: 1010 hPa

Humidity: 52 %

Modulation Type	Channel	Frequency (MHz)	Frequency Separation (MHz)
GFSK (1Mbps)	00	2402	1.000
	39	2441	1.002
	78	2480	1.000
$\pi/4$ -DQPSK (2 Mbps)	00	2402	1.002
	39	2441	1.000
	78	2480	1.000
8DPSK (3Mbps)	00	2402	1.000
	39	2441	1.000
	78	2480	1.000

Modulation Standard: GFSK (1Mbps)

Channel: 00



Modulation Standard: GFSK (1Mbps)

Channel: 39

