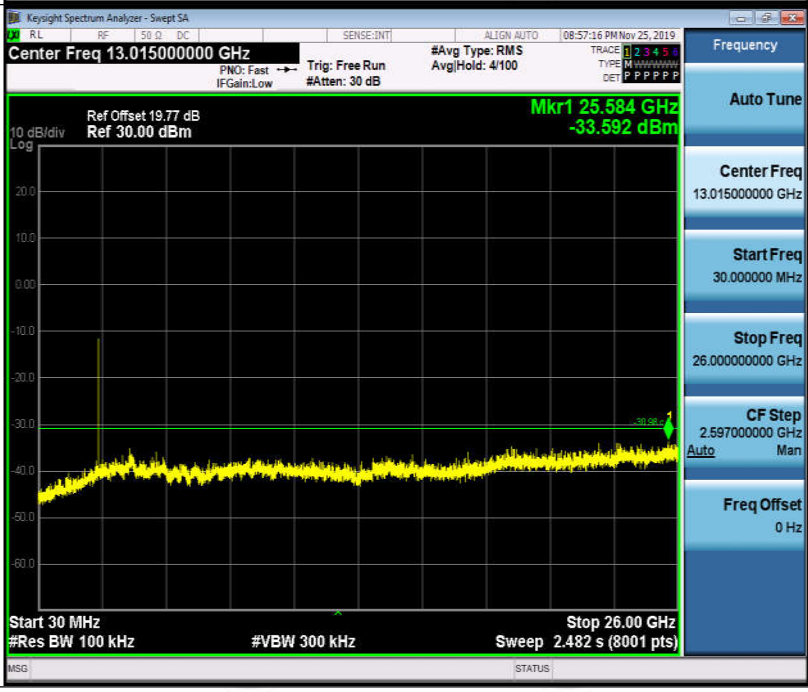
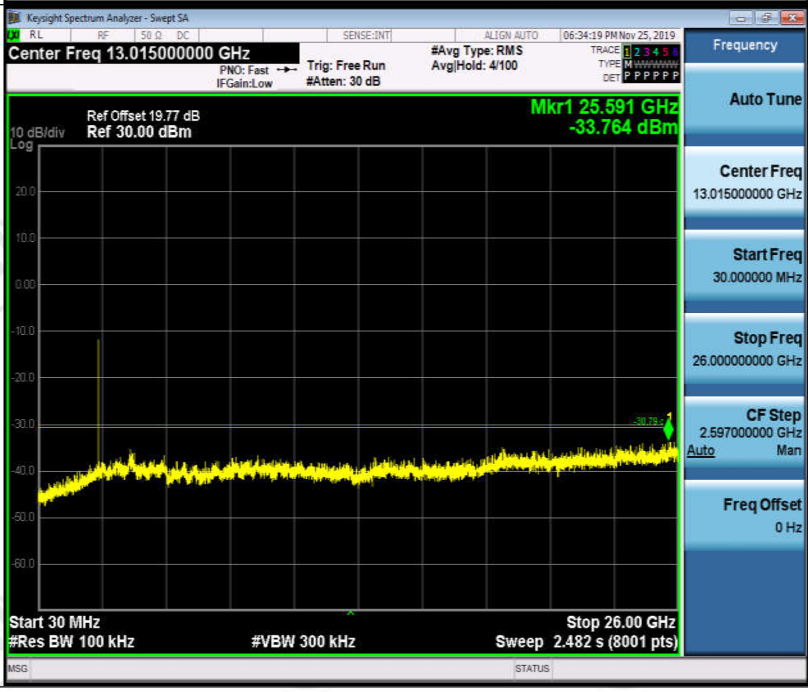
π/4DQPSK_HCH_Graphs		
Pref		
Puw		

8DPSK_LCH_Graphs		
Pref		
Puw		

<table>
<tr><th colspan="4">8DPSK_MCH_Graphs</th></tr>
<tr><td>Pref</td><td></td><td>
</td><td></td></tr>
<tr><td>Puw</td><td></td><td>
</td><td></td></tr>
</table>

8DPSK_HCH_Graphs	
Pref	
Puw	

Appendix H) Pseudorandom Frequency Hopping Sequence

Test Requirement:	47 CFR Part 15**C Section 15.247 (a)(1) requirement:**

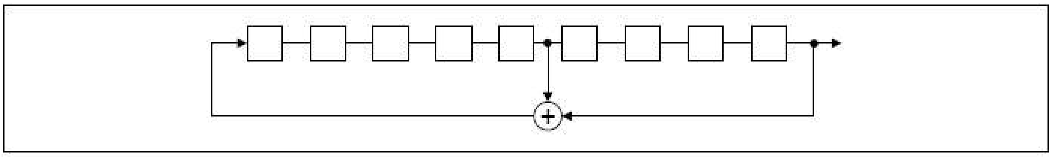
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

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. The system shall hop to channel frequencies that are selected at the system hopping rate from a Pseudorandom ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

EUT Pseudorandom Frequency Hopping Sequence

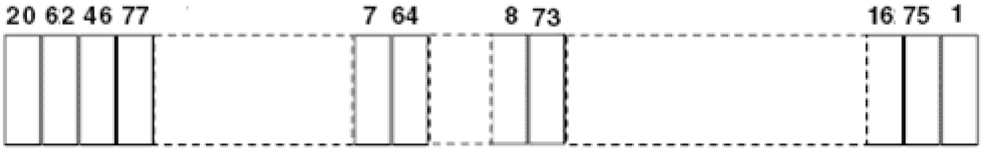
The pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONEs; i.e. the shift register is initialized with nine ones.

- Number of shift register stages: 9
- Length of pseudo-random sequence: 2^9 -1 = 511 bits
- Longest sequence of zeros: 8 (non-inverted signal)



Linear Feedback Shift Register for Generation of the PRBS sequence

An example of Pseudorandom Frequency Hopping Sequence as follow:

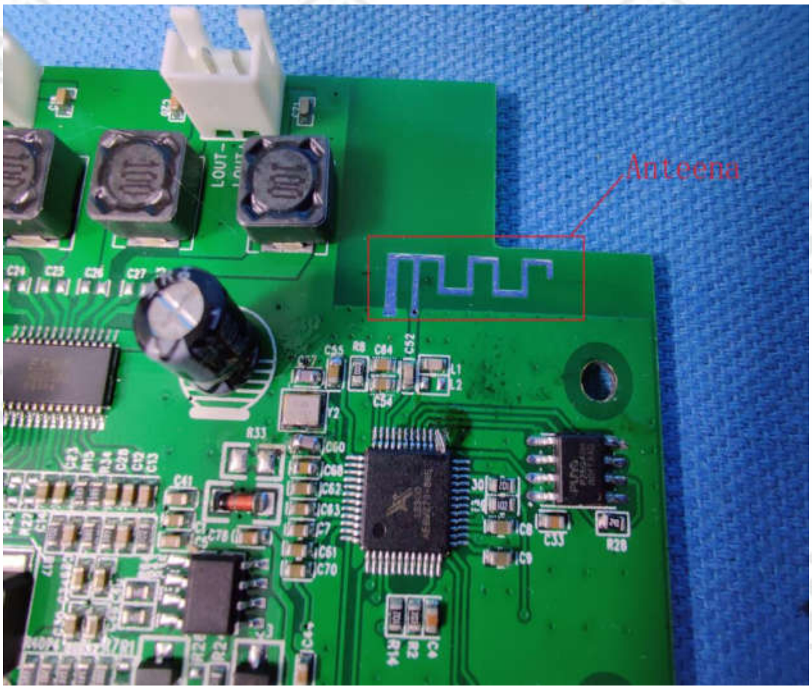


Each frequency used equally on the average by each transmitter.

The system receivers have input bandwidths that match the hopping channel bandwidths of their Corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

The device does not have the ability to be coordinated with other FHSS systems in an effort to avoid the simultaneous occupancy of individual hopping frequencies by multiple transmitters.

Appendix I)Antenna Requirement

15.203 requirement: 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(b) (4) requirement: The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.	
EUT Antenna:	
The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 1.08443 dBi	

Appendix J) AC Power Line Conducted Emission

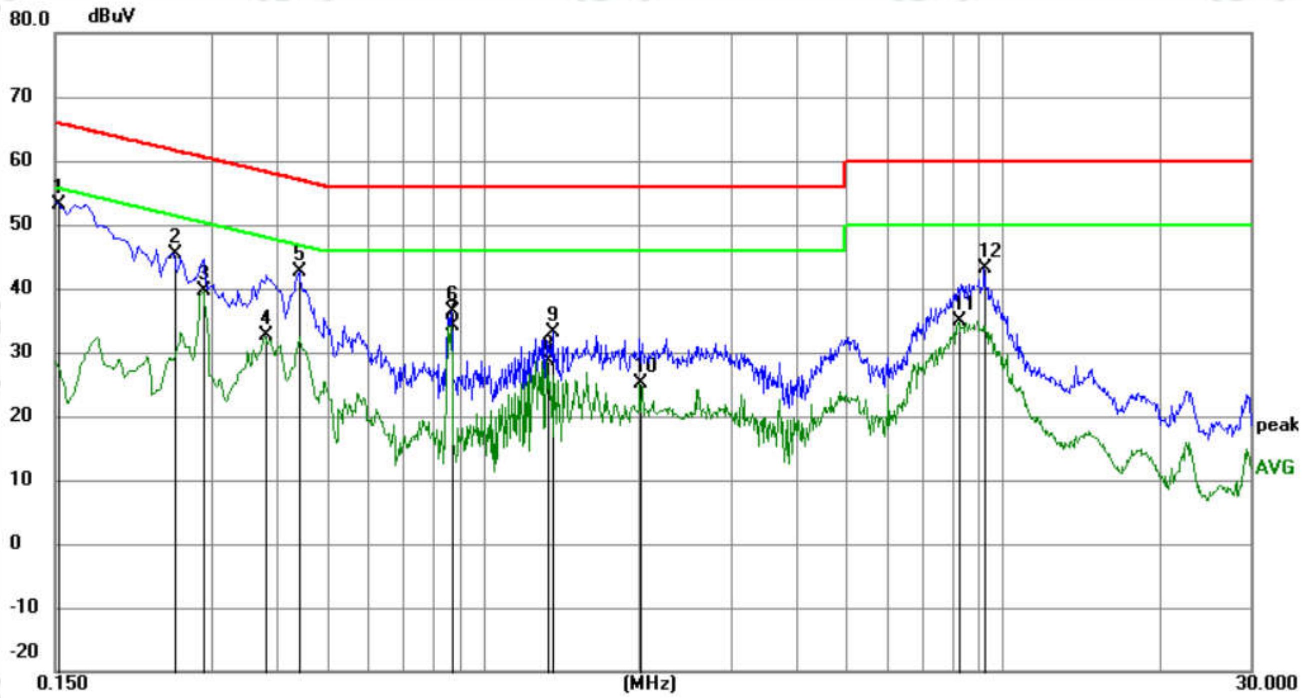
<table>
<tr><td>Test Procedure:</td><td>Test frequency range :150KHz-30MHz
1) The mains terminal disturbance voltage test was conducted in a shielded room.
2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
</table>
* The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.
NOTE : The lower limit is applicable at the transition frequency</td></tr>
</table>

Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

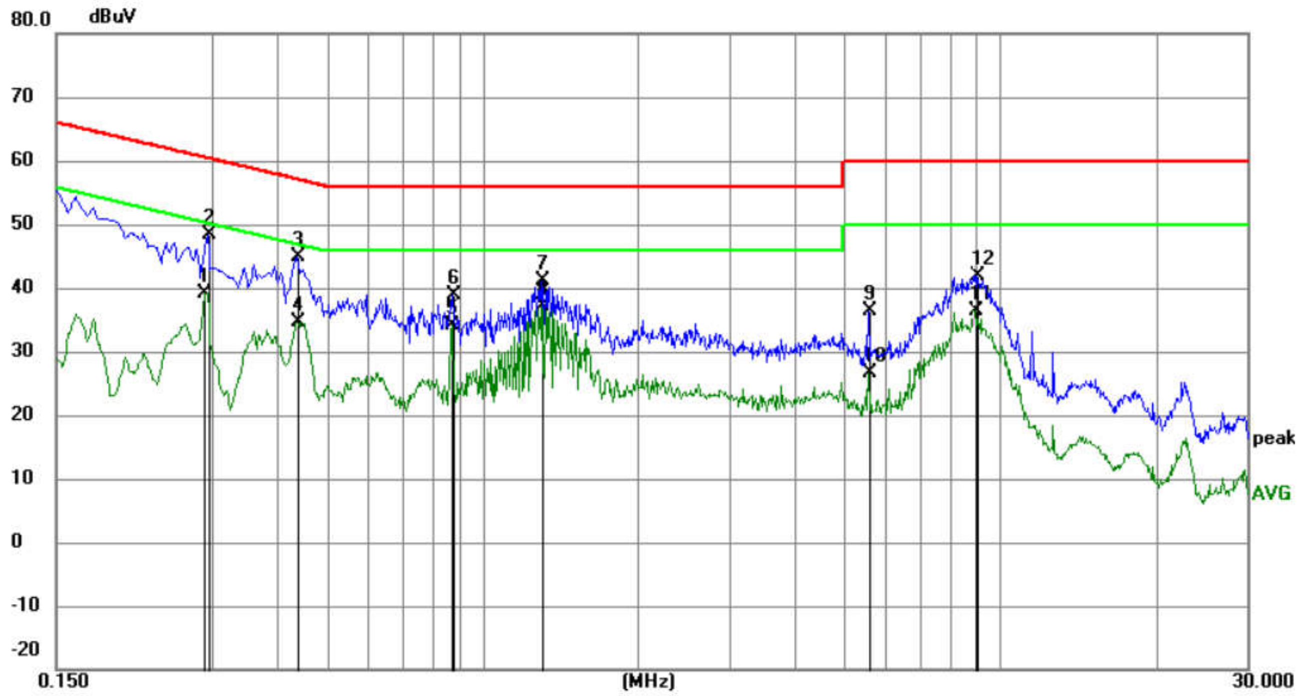
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Live line:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1524	43.26	9.98	53.24	65.87	-12.63	QP	
2		0.2535	35.29	10.06	45.35	61.64	-16.29	QP	
3	*	0.2895	29.46	10.09	39.55	50.54	-10.99	AVG	
4		0.3795	22.61	10.02	32.63	48.29	-15.66	AVG	
5		0.4425	32.63	10.00	42.63	57.01	-14.38	QP	
6		0.8700	26.35	9.92	36.27	56.00	-19.73	QP	
7		0.8700	24.31	9.92	34.23	46.00	-11.77	AVG	
8		1.3289	18.81	9.88	28.69	46.00	-17.31	AVG	
9		1.3604	23.21	9.88	33.09	56.00	-22.91	QP	
10		2.0039	15.19	9.83	25.02	46.00	-20.98	AVG	
11		8.2455	24.90	9.90	34.80	50.00	-15.20	AVG	
12		9.2084	33.27	9.93	43.20	60.00	-16.80	QP	

Neutral line:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.2895	29.04	10.09	39.13	50.54	-11.41	AVG	
2		0.2940	38.22	10.10	48.32	60.41	-12.09	QP	
3		0.4380	34.89	10.00	44.89	57.10	-12.21	QP	
4		0.4380	24.56	10.00	34.56	47.10	-12.54	AVG	
5		0.8745	24.26	9.92	34.18	46.00	-11.82	AVG	
6		0.8790	29.03	9.92	38.95	56.00	-17.05	QP	
7		1.2975	31.21	9.89	41.10	56.00	-14.90	QP	
8	*	1.2975	27.29	9.89	37.18	46.00	-8.82	AVG	
9		5.5770	26.57	9.84	36.41	60.00	-23.59	QP	
10		5.5770	16.84	9.84	26.68	50.00	-23.32	AVG	
11		8.9340	26.41	9.92	36.33	50.00	-13.67	AVG	
12		9.0285	31.98	9.92	41.90	60.00	-18.10	QP	

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

Appendix K) Restricted bands around fundamental frequency (Radiated)

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Quasi-peak	120 kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Test Procedure:

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.

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

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel

Above 1GHz test procedure as below:

g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 metre to 1.5 metre(Above 18GHz the distance is 1 meter and table is 1.5 metre).

h. b. Test the EUT in the lowest channel , the Highest channel

i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.

j. Repeat above procedures until all frequencies measured was complete.

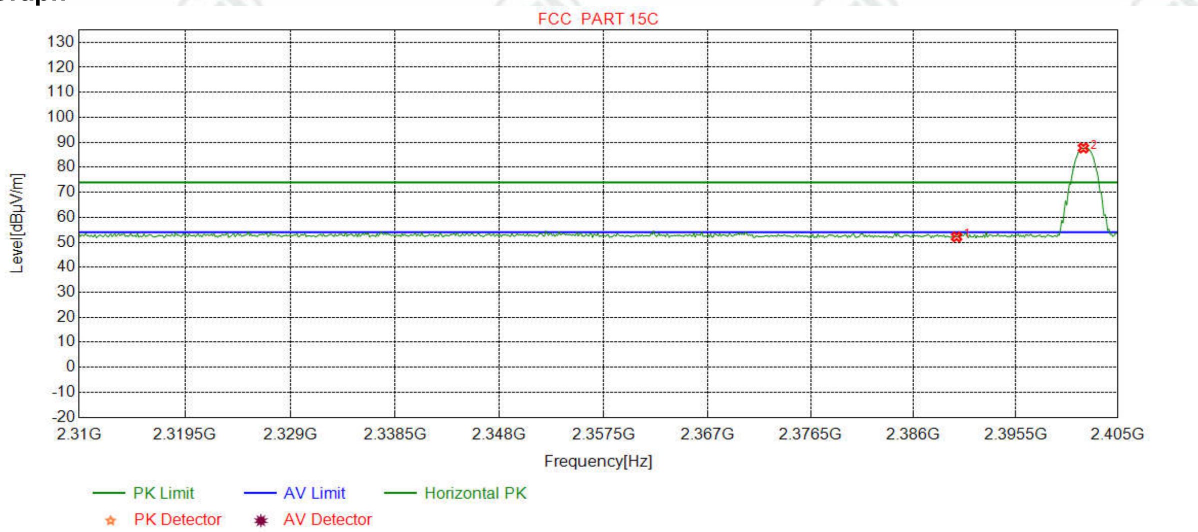
Limit:

Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
	74.0	Peak Value

Test plot as follows:

Mode:	GFSK Transmitting	Channel:	2402
Remark:	PK		

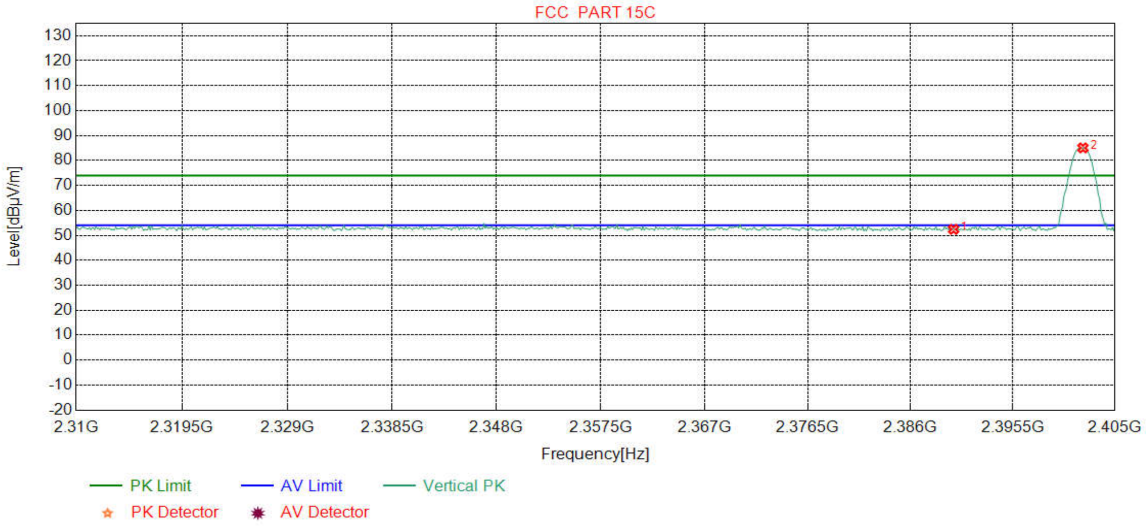
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	49.00	52.18	74.00	21.82	Pass	Horizontal
2	2401.7897	32.26	13.31	-42.43	84.58	87.72	74.00	-13.72	Pass	Horizontal

Mode:	GFSK Transmitting	Channel:	2402
Remark:	PK		

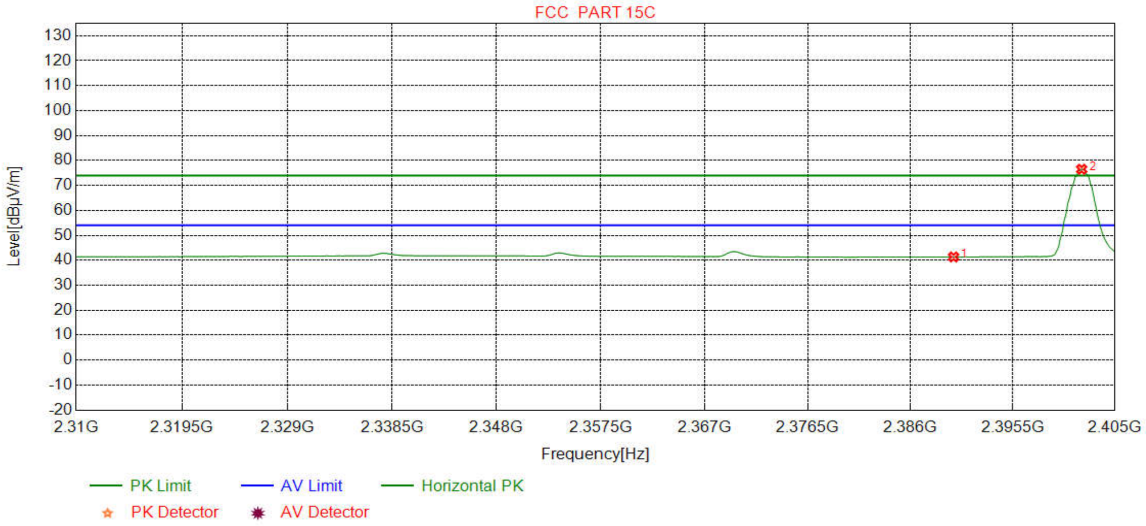
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	49.22	52.40	74.00	21.60	Pass	Vertical
2	2402.0275	32.26	13.31	-42.43	81.90	85.04	74.00	-11.04	Pass	Vertical

Mode:	GFSK Transmitting	Channel:	2402
Remark:	AV		

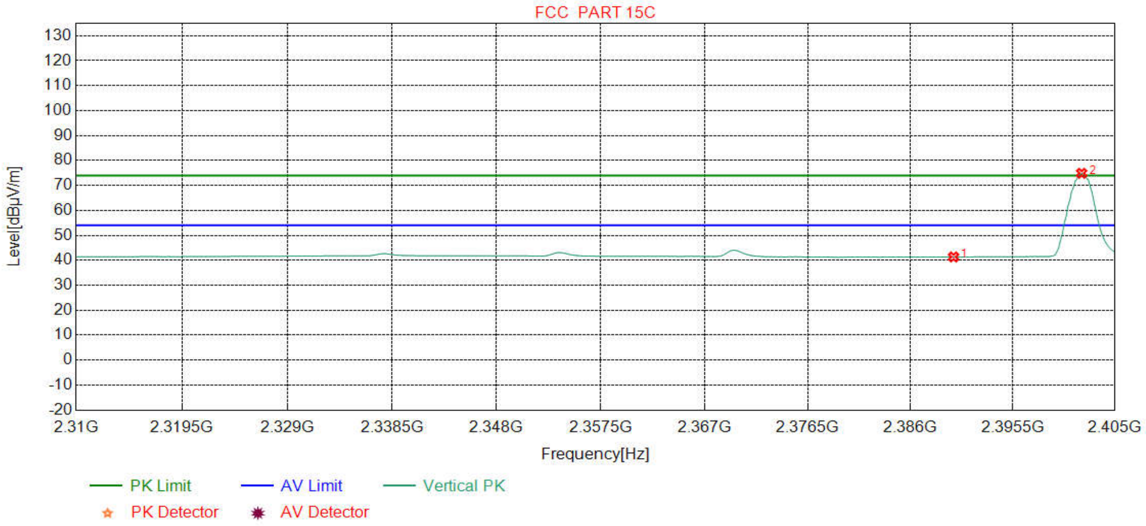
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	38.15	41.33	54.00	12.67	Pass	Horizontal
2	2401.9086	32.26	13.31	-42.43	73.35	76.49	54.00	-22.49	Pass	Horizontal

Mode:	GFSK Transmitting	Channel:	2402
Remark:	AV		

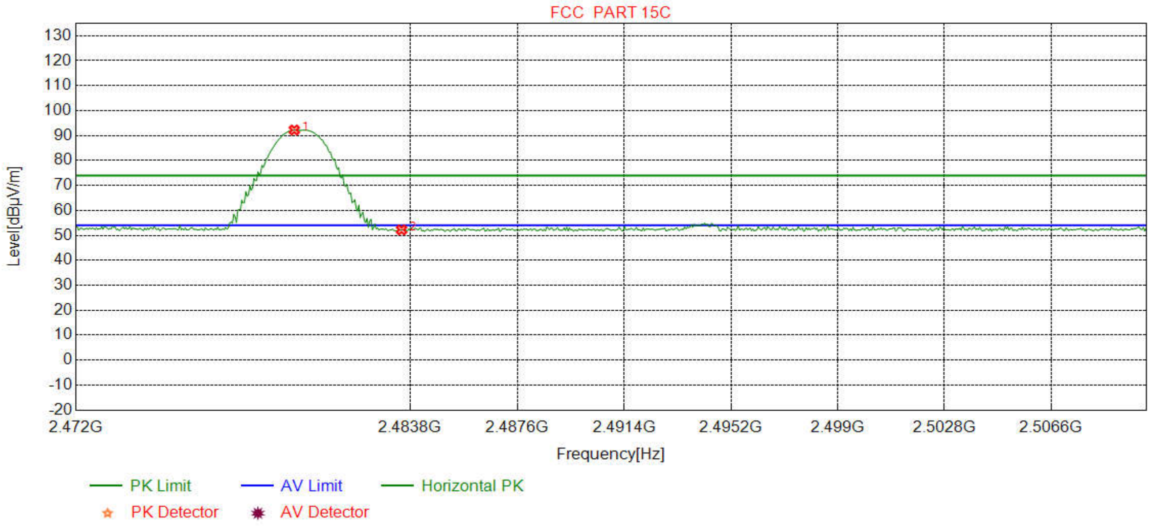
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	38.15	41.33	54.00	12.67	Pass	Vertical
2	2401.9086	32.26	13.31	-42.43	71.73	74.87	54.00	-20.87	Pass	Vertical

Mode:	GFSK Transmitting	Channel:	2480
Remark:	PK		

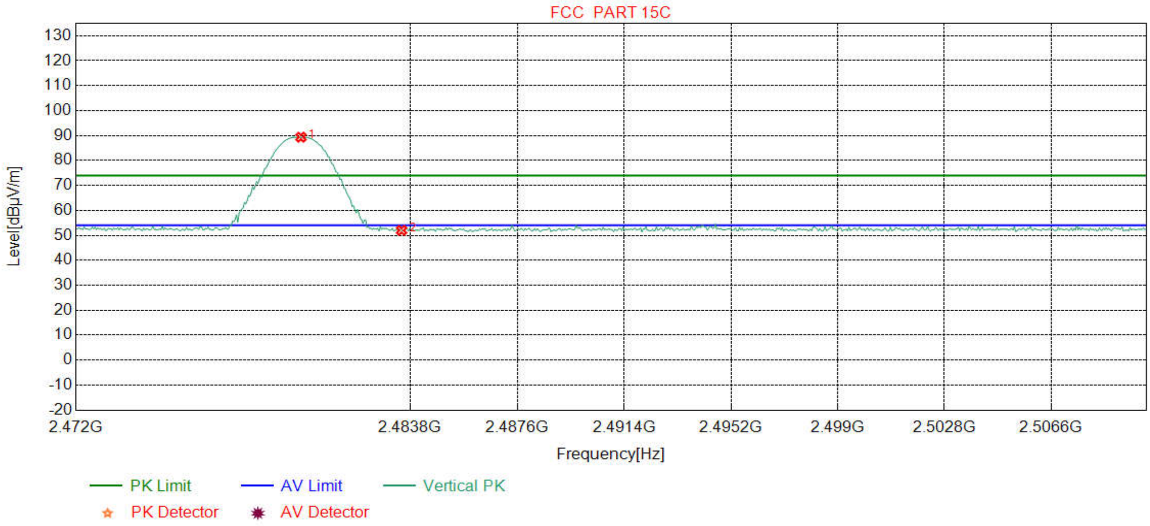
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2479.7046	32.37	13.39	-42.39	88.85	92.22	74.00	-18.22	Pass	Horizontal
2	2483.5000	32.38	13.38	-42.40	48.83	52.19	74.00	21.81	Pass	Horizontal

Mode:	GFSK Transmitting	Channel:	2480
Remark:	PK		

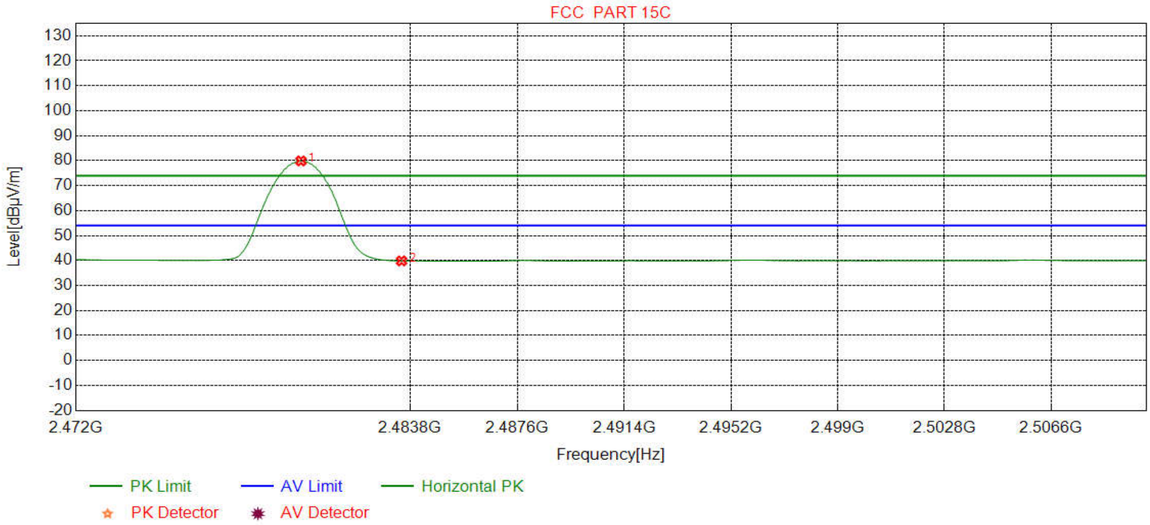
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2479.9424	32.37	13.39	-42.39	85.96	89.33	74.00	-15.33	Pass	Vertical
2	2483.5000	32.38	13.38	-42.40	48.62	51.98	74.00	22.02	Pass	Vertical

Mode:	GFSK Transmitting	Channel:	2480
Remark:	AV		

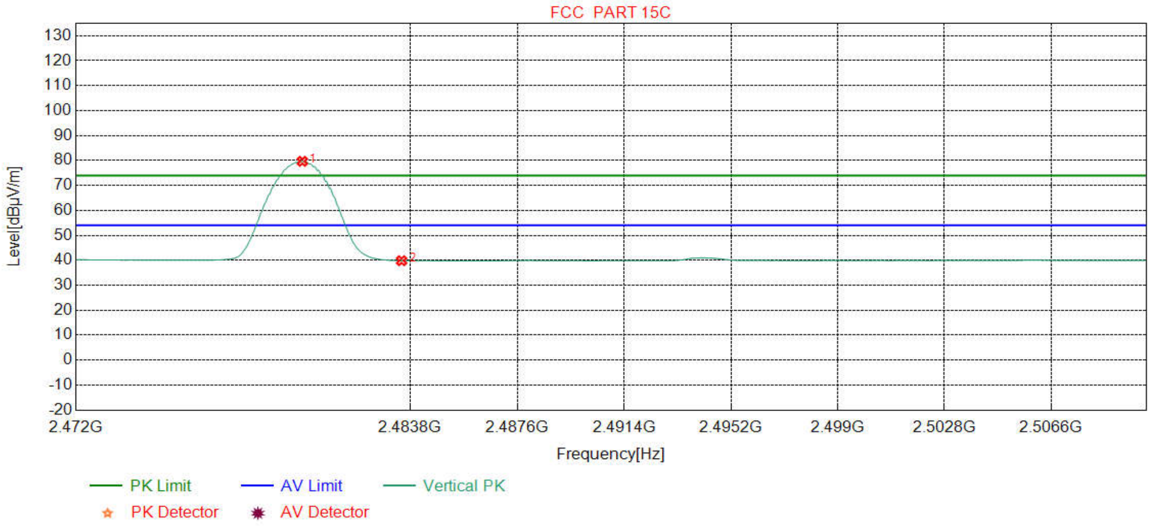
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2479.9424	32.37	13.39	-42.39	76.52	79.89	54.00	-25.89	Pass	Horizontal
2	2483.5000	32.38	13.38	-42.40	36.49	39.85	54.00	14.15	Pass	Horizontal

Mode:	GFSK Transmitting	Channel:	2480
Remark:	AV		

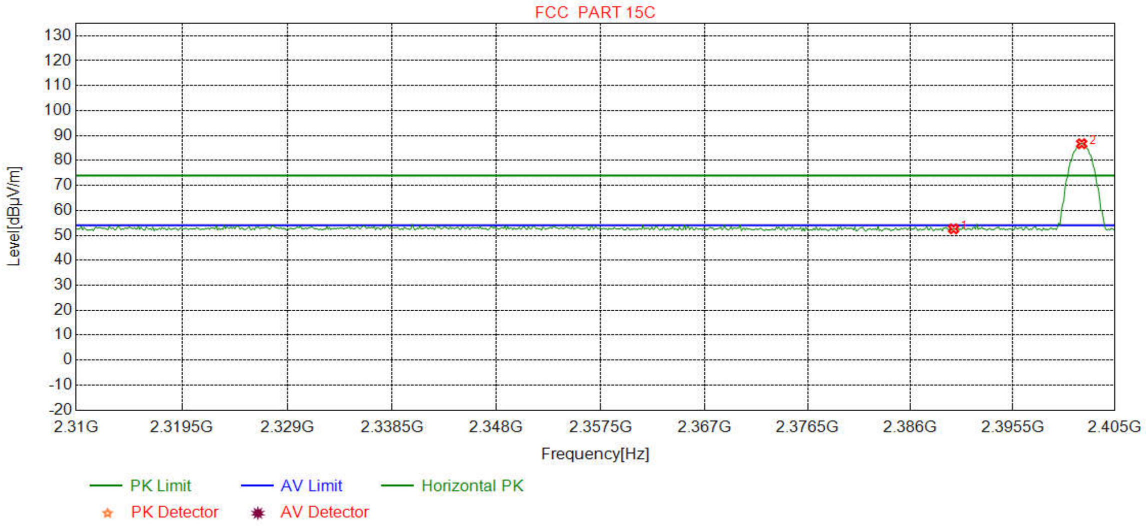
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2479.9900	32.37	13.39	-42.39	76.29	79.66	54.00	-25.66	Pass	Vertical
2	2483.5000	32.38	13.38	-42.40	36.47	39.83	54.00	14.17	Pass	Vertical

Mode:	8DPSK Transmitting	Channel:	2402
Remark:	PK		

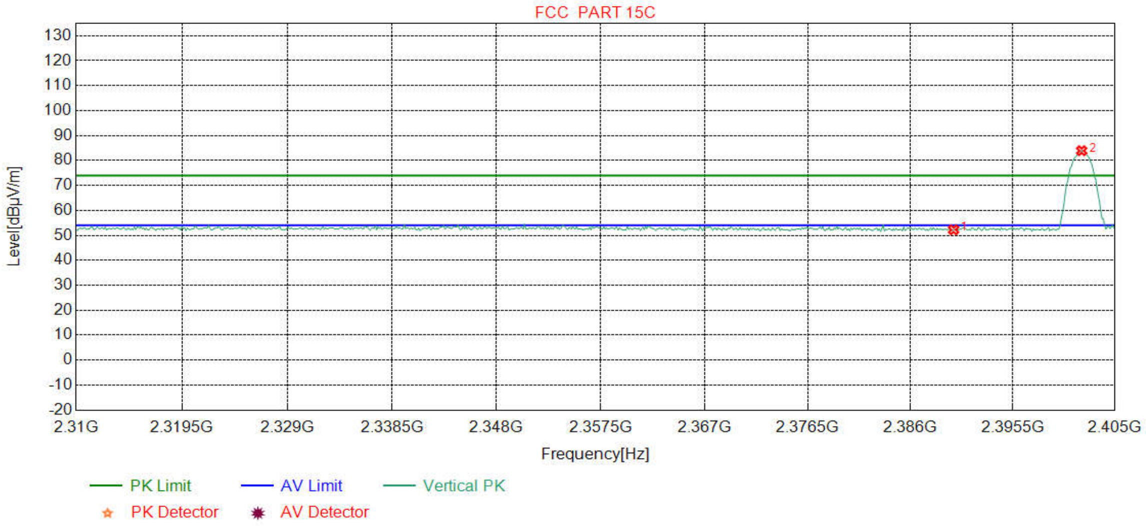
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	49.42	52.60	74.00	21.40	Pass	Horizontal
2	2401.9086	32.26	13.31	-42.43	83.58	86.72	74.00	-12.72	Pass	Horizontal

Mode:	8DPSK Transmitting	Channel:	2402
Remark:	PK		

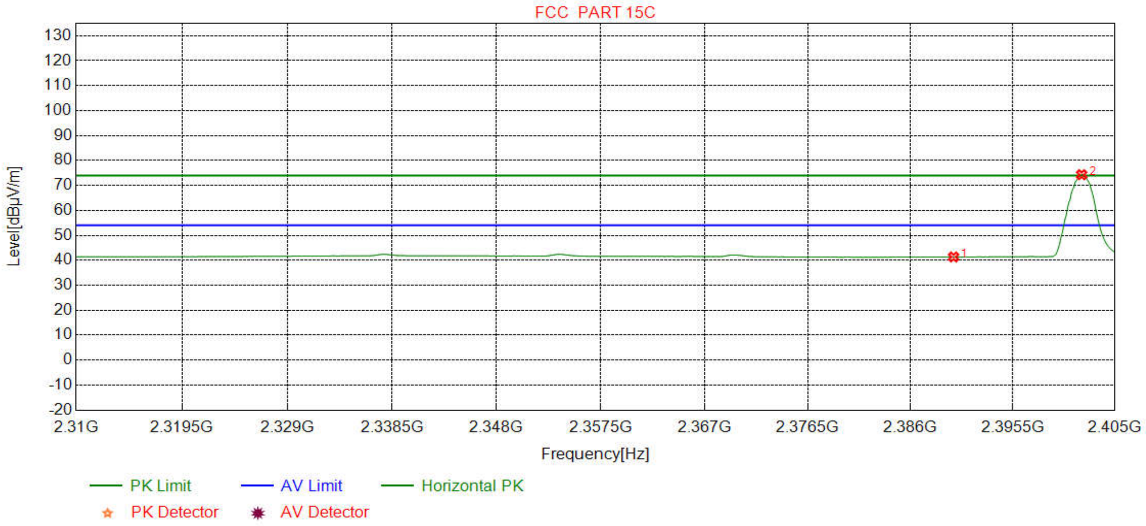
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	49.05	52.23	74.00	21.77	Pass	Vertical
2	2401.9086	32.26	13.31	-42.43	80.79	83.93	74.00	-9.93	Pass	Vertical

Mode:	8DPSK Transmitting	Channel:	2402
Remark:	AV		

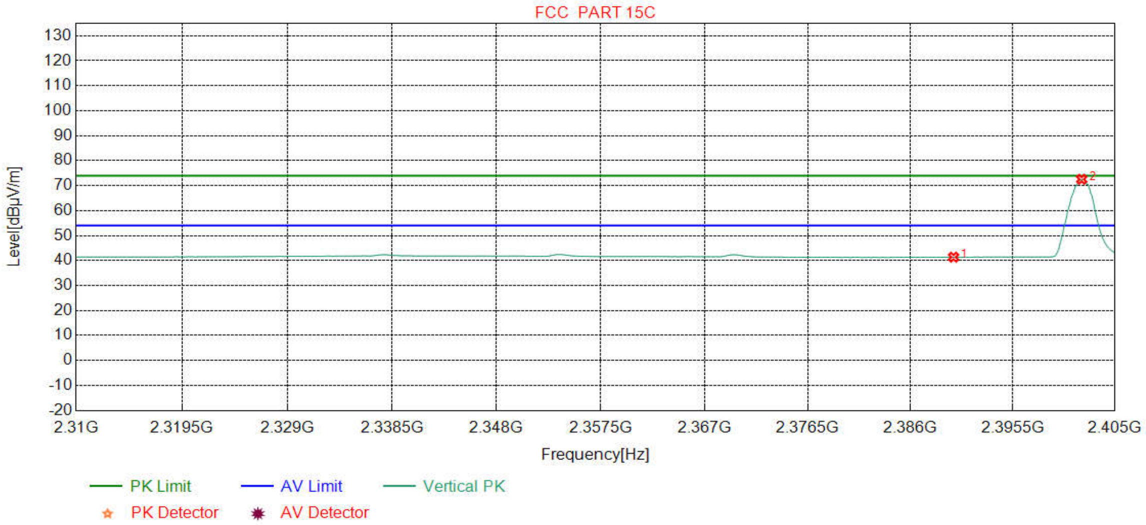
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	38.15	41.33	54.00	12.67	Pass	Horizontal
2	2401.9086	32.26	13.31	-42.43	71.16	74.30	54.00	-20.30	Pass	Horizontal

Mode:	8DPSK Transmitting	Channel:	2402
Remark:	AV		

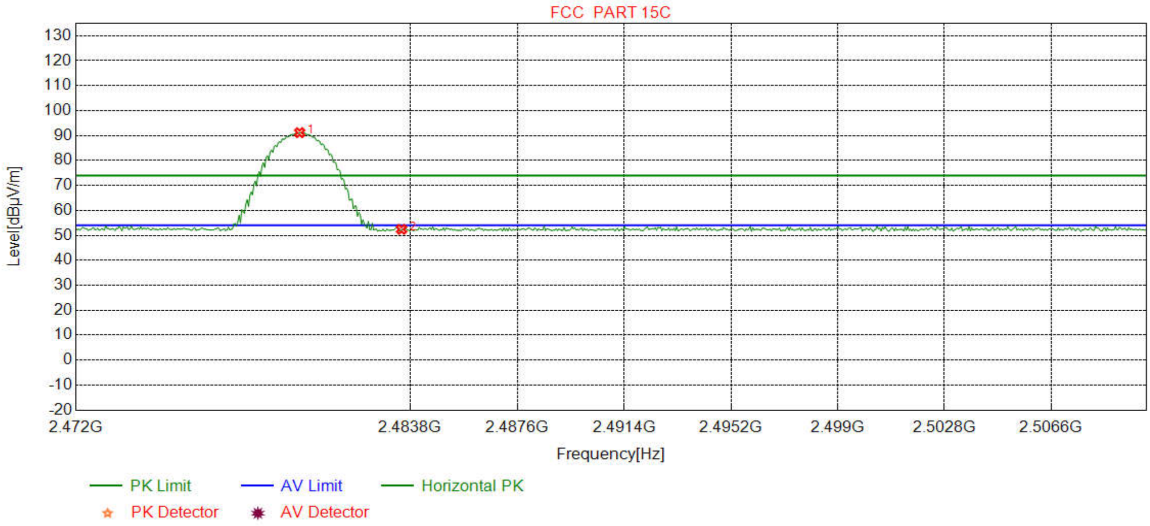
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-42.44	38.17	41.35	54.00	12.65	Pass	Vertical
2	2401.9086	32.26	13.31	-42.43	69.40	72.54	54.00	-18.54	Pass	Vertical

Mode:	8DPSK Transmitting	Channel:	2480
Remark:	PK		

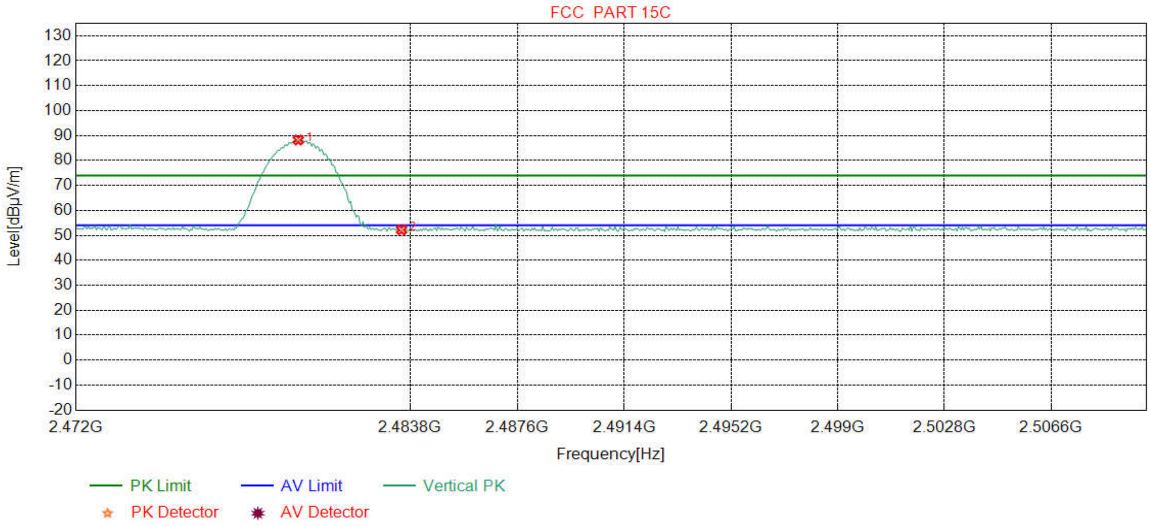
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2479.8949	32.37	13.39	-42.39	87.78	91.15	74.00	-17.15	Pass	Horizontal
2	2483.5000	32.38	13.38	-42.40	49.05	52.41	74.00	21.59	Pass	Horizontal

Mode:	8DPSK Transmitting	Channel:	2480
Remark:	PK		

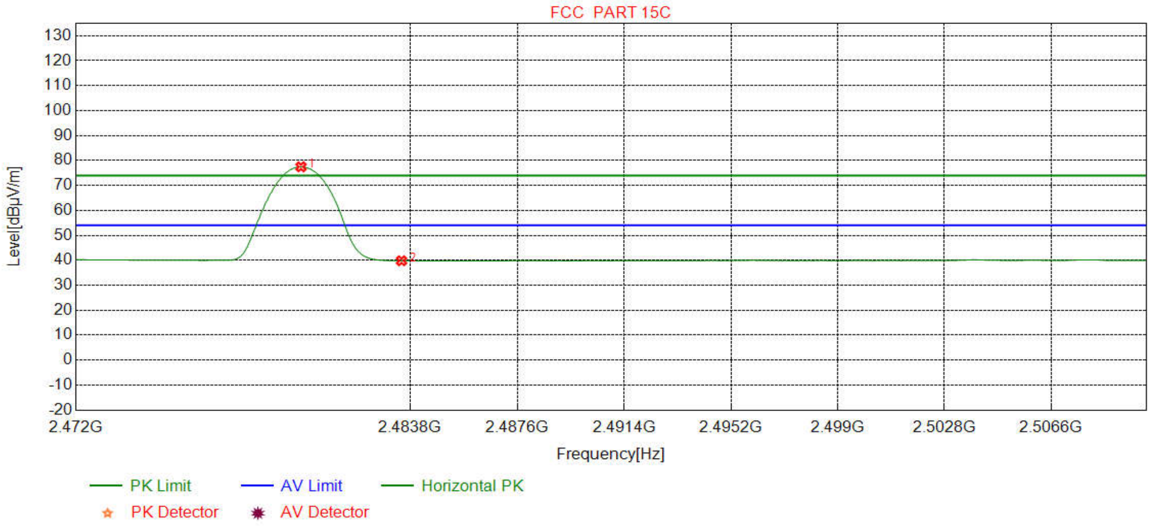
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2479.8473	32.37	13.39	-42.39	84.85	88.22	74.00	-14.22	Pass	Vertical
2	2483.5000	32.38	13.38	-42.40	48.80	52.16	74.00	21.84	Pass	Vertical

Mode:	8DPSK Transmitting	Channel:	2480
Remark:	AV		

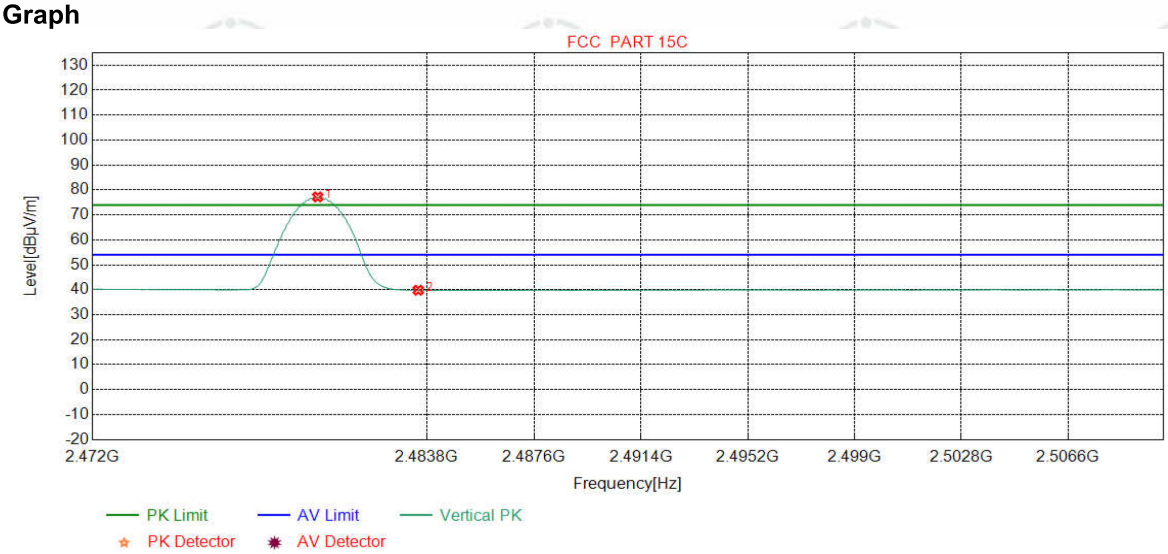
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2479.9424	32.37	13.39	-42.39	74.10	77.47	54.00	-23.47	Pass	Horizontal
2	2483.5000	32.38	13.38	-42.40	36.45	39.81	54.00	14.19	Pass	Horizontal

Mode:	8DPSK Transmitting	Channel:	2480
Remark:	AV		

Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2479.9424	32.37	13.39	-42.39	73.86	77.23	54.00	-23.23	Pass	Vertical
2	2483.5000	32.38	13.38	-42.40	36.46	39.82	54.00	14.18	Pass	Vertical

Note:

1) Through Pre-scan Non-hopping transmitting mode and charge+transmitter mode with all kind of modulation and all kind of data type, find the DH5 of data type is the worse case of GFSK modulation type in charge + transmitter mode.

2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

Appendix L) Radiated Spurious Emissions

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120 kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Test Procedure:

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 20 cm above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.

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

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 metre to 1.5 metre(Above 18GHz the distance is 1 meter and table is 1.5 metre).

h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel

i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.

j. Repeat above procedures until all frequencies measured was complete.

Limit:

Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	54.0	Average	3

Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

Radiated Spurious Emissions test Data:

Radiated Emission below 1GHz

Mode:		8DPSK Transmitting					Channel:		2441		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity	Remark
1	83.7434	7.96	1.05	-32.07	57.04	33.98	40.00	6.02	Pass	H	PK
2	131.6662	7.62	1.34	-32.02	46.63	23.57	43.50	19.93	Pass	H	PK
3	261.2711	12.43	1.93	-31.88	53.84	36.32	46.00	9.68	Pass	H	PK
4	376.3246	14.88	2.31	-31.88	52.03	37.34	46.00	8.66	Pass	H	PK
5	480.0280	16.68	2.61	-31.90	51.73	39.12	46.00	6.88	Pass	H	PK
6	960.0320	22.46	3.71	-31.09	34.49	29.57	54.00	24.43	Pass	H	PK
7	83.2583	7.85	1.05	-32.07	57.78	34.61	40.00	5.39	Pass	V	PK
8	145.0535	7.38	1.42	-32.00	51.32	28.12	43.50	15.38	Pass	V	PK
9	201.8042	10.95	1.68	-31.95	52.54	33.22	43.50	10.28	Pass	V	PK
10	368.0788	14.70	2.29	-31.87	50.38	35.50	46.00	10.50	Pass	V	PK
11	480.0280	16.68	2.61	-31.90	51.36	38.75	46.00	7.25	Pass	V	PK
12	836.7327	21.34	3.49	-31.92	46.86	39.77	46.00	6.23	Pass	V	PK

Transmitter Emission above 1GHz

Mode:		GFSK Transmitting					Channel:		2402		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	3946.0631	33.76	4.34	-40.90	49.66	46.86	74.00	27.14	Pass	H	PK
2	4804.0000	34.50	4.55	-40.66	51.00	49.39	74.00	24.61	Pass	H	PK
3	6357.2238	35.87	5.44	-41.16	49.16	49.31	74.00	24.69	Pass	H	PK
4	7206.0000	36.31	5.81	-41.02	47.33	48.43	74.00	25.57	Pass	H	PK
5	9608.0000	37.64	6.63	-40.76	47.07	50.58	74.00	23.42	Pass	H	PK
6	12010.0000	39.31	7.60	-41.21	46.78	52.48	74.00	21.52	Pass	H	PK
7	3877.0585	33.70	4.35	-41.03	49.82	46.84	74.00	27.16	Pass	V	PK
8	4804.0000	34.50	4.55	-40.66	52.24	50.63	74.00	23.37	Pass	V	PK
9	5997.1998	35.80	5.34	-41.09	50.00	50.05	74.00	23.95	Pass	V	PK
10	7206.0000	36.31	5.81	-41.02	46.87	47.97	74.00	26.03	Pass	V	PK
11	9608.0000	37.64	6.63	-40.76	46.71	50.22	74.00	23.78	Pass	V	PK
12	12010.0000	39.31	7.60	-41.21	46.32	52.02	74.00	21.98	Pass	V	PK

Mode:		GFSK Transmitting					Channel:		2441		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1998.0998	31.69	3.47	-42.62	55.27	47.81	74.00	26.19	Pass	H	PK
2	3929.0619	33.74	4.34	-40.92	49.21	46.37	74.00	27.63	Pass	H	PK
3	4882.0000	34.50	4.81	-40.60	49.42	48.13	74.00	25.87	Pass	H	PK
4	7323.0000	36.42	5.85	-40.92	47.51	48.86	74.00	25.14	Pass	H	PK
5	9764.0000	37.71	6.71	-40.62	47.47	51.27	74.00	22.73	Pass	H	PK
6	12205.0000	39.42	7.67	-41.16	46.01	51.94	74.00	22.06	Pass	H	PK
7	1327.8328	28.23	2.79	-42.76	59.28	47.54	74.00	26.46	Pass	V	PK
8	3189.0126	33.28	4.63	-42.01	49.99	45.89	74.00	28.11	Pass	V	PK
9	4882.0000	34.50	4.81	-40.60	51.10	49.81	74.00	24.19	Pass	V	PK
10	7323.0000	36.42	5.85	-40.92	47.08	48.43	74.00	25.57	Pass	V	PK
11	9764.0000	37.71	6.71	-40.62	46.73	50.53	74.00	23.47	Pass	V	PK
12	12205.0000	39.42	7.67	-41.16	46.63	52.56	74.00	21.44	Pass	V	PK

Mode:		GFSK Transmitting					Channel:		2480		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1998.8999	31.69	3.47	-42.61	56.11	48.66	74.00	25.34	Pass	H	PK
2	3196.0131	33.28	4.64	-42.00	49.78	45.70	74.00	28.30	Pass	H	PK
3	4960.0000	34.50	4.82	-40.53	50.31	49.10	74.00	24.90	Pass	H	PK
4	7440.0000	36.54	5.85	-40.82	47.09	48.66	74.00	25.34	Pass	H	PK
5	9920.0000	37.77	6.79	-40.48	46.73	50.81	74.00	23.19	Pass	H	PK
6	12400.0000	39.54	7.86	-41.12	46.01	52.29	74.00	21.71	Pass	H	PK
7	1329.2329	28.23	2.79	-42.75	60.21	48.48	74.00	25.52	Pass	V	PK
8	2996.3996	33.19	4.54	-42.12	54.18	49.79	74.00	24.21	Pass	V	PK
9	4960.0000	34.50	4.82	-40.53	52.36	51.15	74.00	22.85	Pass	V	PK
10	7440.0000	36.54	5.85	-40.82	47.43	49.00	74.00	25.00	Pass	V	PK
11	9920.0000	37.77	6.79	-40.48	46.26	50.34	74.00	23.66	Pass	V	PK
12	12400.0000	39.54	7.86	-41.12	46.91	53.19	74.00	20.81	Pass	V	PK

Mode:		8DPSK Transmitting					Channel:		2402		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1327.8328	28.23	2.79	-42.76	55.79	44.05	74.00	29.95	Pass	H	PK
2	3003.0002	33.20	4.92	-42.11	50.59	46.60	74.00	27.40	Pass	H	PK
3	4804.0000	34.50	4.55	-40.66	50.58	48.97	74.00	25.03	Pass	H	PK
4	7206.0000	36.31	5.81	-41.02	46.57	47.67	74.00	26.33	Pass	H	PK
5	9608.0000	37.64	6.63	-40.76	45.99	49.50	74.00	24.50	Pass	H	PK
6	12010.0000	39.31	7.60	-41.21	46.32	52.02	74.00	21.98	Pass	H	PK
7	1329.8330	28.23	2.79	-42.75	58.30	46.57	74.00	27.43	Pass	V	PK
8	3000.0000	33.20	4.93	-42.12	52.80	48.81	74.00	25.19	Pass	V	PK
9	4804.0000	34.50	4.55	-40.66	51.75	50.14	74.00	23.86	Pass	V	PK
10	7206.0000	36.31	5.81	-41.02	46.50	47.60	74.00	26.40	Pass	V	PK
11	9608.0000	37.64	6.63	-40.76	46.95	50.46	74.00	23.54	Pass	V	PK
12	12010.0000	39.31	7.60	-41.21	45.91	51.61	74.00	22.39	Pass	V	PK

Mode:		8DPSK Transmitting					Channel:		2441		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1328.8329	28.23	2.79	-42.76	54.02	42.28	74.00	31.72	Pass	H	PK
2	1997.0997	31.68	3.47	-42.61	57.36	49.90	74.00	24.10	Pass	H	PK
3	4882.0000	34.50	4.81	-40.60	50.74	49.45	74.00	24.55	Pass	H	PK
4	7323.0000	36.42	5.85	-40.92	46.46	47.81	74.00	26.19	Pass	H	PK
5	9764.0000	37.71	6.71	-40.62	48.19	51.99	74.00	22.01	Pass	H	PK
6	12205.0000	39.42	7.67	-41.16	45.64	51.57	74.00	22.43	Pass	H	PK
7	1327.4327	28.23	2.79	-42.76	60.02	48.28	74.00	25.72	Pass	V	PK
8	2998.9999	33.20	4.55	-42.13	53.20	48.82	74.00	25.18	Pass	V	PK
9	4882.0000	34.50	4.81	-40.60	51.93	50.64	74.00	23.36	Pass	V	PK
10	7323.0000	36.42	5.85	-40.92	46.80	48.15	74.00	25.85	Pass	V	PK
11	9764.0000	37.71	6.71	-40.62	46.26	50.06	74.00	23.94	Pass	V	PK
12	12205.0000	39.42	7.67	-41.16	45.97	51.90	74.00	22.10	Pass	V	PK

Mode:		8DPSK Transmitting					Channel:		2480		
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1333.0333	28.23	2.80	-42.75	56.00	44.28	74.00	29.72	Pass	H	PK
2	1998.4999	31.69	3.47	-42.61	57.33	49.88	74.00	24.12	Pass	H	PK
3	4988.1325	34.50	4.82	-40.51	54.58	53.39	74.00	20.61	Pass	H	PK
4	7440.0000	36.54	5.85	-40.82	47.00	48.57	74.00	25.43	Pass	H	PK
5	9920.0000	37.77	6.79	-40.48	46.30	50.38	74.00	23.62	Pass	H	PK
6	12400.0000	39.54	7.86	-41.12	47.08	53.36	74.00	20.64	Pass	H	PK
7	1332.0332	28.23	2.79	-42.74	60.35	48.63	74.00	25.37	Pass	V	PK
8	4037.0691	33.85	4.33	-40.79	50.17	47.56	74.00	26.44	Pass	V	PK
9	4960.0000	34.50	4.82	-40.53	51.33	50.12	74.00	23.88	Pass	V	PK
10	7440.0000	36.54	5.85	-40.82	47.53	49.10	74.00	24.90	Pass	V	PK
11	9920.0000	37.77	6.79	-40.48	45.41	49.49	74.00	24.51	Pass	V	PK
12	12400.0000	39.54	7.86	-41.12	46.41	52.69	74.00	21.31	Pass	V	PK

Note:

1) Through Pre-scan Non-hopping transmitting mode and charge+transmitter mode with all kind of modulation and all kind of data type, find the DH5 of data type is the worse case of GFSK modulation type in charge + transmitter mode.

2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

3) Scan from 9kHz to 25GHz, the disturbance above 17GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.