AT4 wireless, S.A.
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FCC LISTED, REGISTRATION NUMBER: 720267

Informe de ensayo nº:
Test report No:

NIE: 42929RRF.001A1

Test report (Modification 1)

USA FCC Part 15.247

Radio Frequency Devices. Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, and 5725 - 5850 MHz.

Identificación del objeto ensayado.....: Identification of item tested	In-ceiling FM tuner and Bluetooth audio receiver
Marca .....: Trade	KBSOUND
Modelo y/o referencia tipo .....: Model and /or type reference	52593
Other identification of the product .....:	Commercial name: KBSOUND Bluetooth Accessory FCC ID: 2AB6X52593
Final HW version .....:	1.3
Final SW version .....:	1.9
Serial number .....:	---
Características .....: Features	Bluetooth EDR audio receiver, FM tuner, AC power supply.
Peticionario .....: Applicant	Electrónica Integral de Sonido, S.A. Pol. Malpica G. Quejido 87-88, 50016. Zaragoza. SPAIN. CIF: A50836204 Contact person: Luis Abós Telephone: +34 976 465 550 e-mail: labosl@eissound.com
Método de ensayo solicitado, norma.....: Test method requested, standard	USA FCC Part 15.247 10-1-12 Edition: Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, and 5725 - 5850 MHz. -Conducted tests: FCC 15.247 Subclause (a) (1). 20 dB Bandwidth and Carrier frequency separation FCC 15.247 Subclause (a) (1) (iii). Number of hopping channels FCC 15.247 Subclause (a) (1) (iii). Time of occupancy (Dwell Time) FCC 15.247 Subclause (b). Maximum peak output power and antenna gain FCC 15.247 Subclause (d). Emission limitations conducted (Transmitter) FCC part 15.247 and Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum System DA 00-705 Released March 30, 2000. ANSI C63.10-2009: American National Standard for Testing Unlicensed Wireless Devices.
Resultado.....:	IN COMPLIANCE

Summary	
Aprobado por (nombre / cargo y firma) .....: Approved by (name / position & signature)	A. Llamas RF Lab. Manager  Firmado digitalmente por Alejandro Llamas Rodríguez Fecha: 2014.07.23 12:17:15 +02'00'
Fecha de realización .....: Date of issue	2014-07-23
Formato de informe No. .....: Report template No	FDT11_15

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Competences and guarantees

AT4 wireless is a laboratory with a measurement facility in compliance with the requirements of Section 2.948 of the FCC rules and has been added to the list of facilities whose measurements data will be accepted in conjuction with applications for Certification under Parts 15 or 18 of the Commission's Rules. Registration Number: 720267.

In order to assure the traceability to other national and international laboratories, AT4 wireless has a calibration and maintenance program for its measurement equipment.

AT4 wireless guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at AT4 wireless at the time of performance of the test.

AT4 wireless is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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General conditions

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
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Uncertainty

Uncertainty (factor k=2) was calculated according to the AT4 wireless internal document PODT000.

Usage of samples

Samples undergoing test have been selected by: **the client**

Sample M/01 is composed of the following elements:

Control Nº	Description	Model	Serial Nº	Date of reception
42929B/005	Bluetooth device with antenna connector	52593	---	2014-06-19
41489/067	SPI Adaptor board	---	---	2014-05-05
41489/052	Electronic module	52391	---	2014-05-05

1. Sample M/01 has undergone the test(s) specified in subclause “Test method requested”.

   All conducted tests indicated in appendix A.

Test sample description

The test sample consists of an in-ceiling FM tuner and Bluetooth audio receiver, handled from IR remote control unit, connected to a pair of 2,5" in-ceiling speakers.

Test samples supplier

Electrónica Integral de Sonido, S.A.

Pol. Malpica G. Guejido 87-88, 50016. Zaragoza. SPAIN.

CIF: A50836204

Contact person: Luis Abós

Telephone: +34 976 465 550

e-mail: labosl@eissound.com

Testing period

The performed test started on 2014-07-01 and finished on 2014-07-02.

The tests have been performed at AT4 wireless.

Environmental conditions

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 24.7 ºC Max. = 26.8 ºC
Relative humidity	Min. = 34.5 % Max. = 45.1 %
Air pressure	Min. = 1016 mbar Max. = 1017 mbar
Shielding effectiveness	> 100 dB
Electric insulation	> 10 kΩ
Reference resistance to earth	< 0,5 Ω

Modifications to the reference test report

The following modifications have been introduced to the test report number 42929RRF.001, which corresponds to the same samples, in the next clauses and sub-clauses:

Clauses / Sub-clauses	Modification	Justification
Test report cover - Model and /or type reference Usage of samples -Model	Model denomination is 52593	Modification requested by Applicant
Test report cover - Other identification of the product. Commercial name	Commercial name is KBSOUND Bluetooth Accessory	Modification requested by Applicant

This modification test report cancels and replaces the test report 42929RRF.001.

Remarks and comments

1: Used instrumentation:

		Last Cal. date	Cal. due date
1.	Spectrum analyser Rohde & Schwarz FSW50	2013/10	2015/10
2.	AC power supply ELGAR CS-AC35(351SL)	2013/04	2016/04

2: Test not requested. Only conducted tests were requested. Radiated spurious emissions results are shown in a separated exhibit.

Testing verdicts

Not applicable ..... :	N/A
Pass ..... :	P
Fail ..... :	F
Not measured ..... :	N/M

FCC PART 15 PARAGRAPH	VERDICT			
	NA	**P**	**F**	**NM**
FCC 15.247 Subclause (a) (1). 20 dB Bandwidth and Carrier frequency separation		P		
FCC 15.247 Subclause (a) (1) (iii). Number of hopping channels		P		
FCC 15.247 Subclause (a) (1) (iii). Time of occupancy (Dwell Time)		P		
FCC 15.247 Subclause (b). Maximum peak output power and antenna gain		P		
FCC 15.247 Subclause (d). Emission limitations conducted (Transmitter)		P		
FCC 15.247 Subclause (d). Emission limitations radiated (Transmitter)				NM[2]

2: See point “Remarks and comments”

Appendix A – Test result

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TEST CONDITIONS

Power supply (V):

$V_{nominal}$ = 120 Vac

Type of power supply = AC voltage from ac source.

Type of antenna = Integral antenna.

Declared Gain for antenna (maximum) = 2.5 dBi

TEST FREQUENCIES:

Lowest channel: 2402 MHz

Middle channel: 2441 MHz

Highest channel: 2480 MHz

CONDUCTED MEASUREMENTS

The equipment under test was set up in a shielded room and it is connected to the spectrum analyser using a low loss calibrated RF cable. The reading of the spectrum analyser is corrected with the cable attenuation.

FCC Section 15.247 Subclause (a) (1). 20 dB Bandwidth and Carrier frequency separation

SPECIFICATION

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.

RESULTS

(See next plots)

Modulation: GFSK

	Lowest frequency 2402 MHz	Middle frequency 2441 MHz	Highest frequency 2480 MHz
20 dB Spectrum bandwidth (kHz)	935.10	877.10	927.10
Measurement uncertainty (kHz)	±11		

Modulation: Π/4-DQPSK (2Mbps)

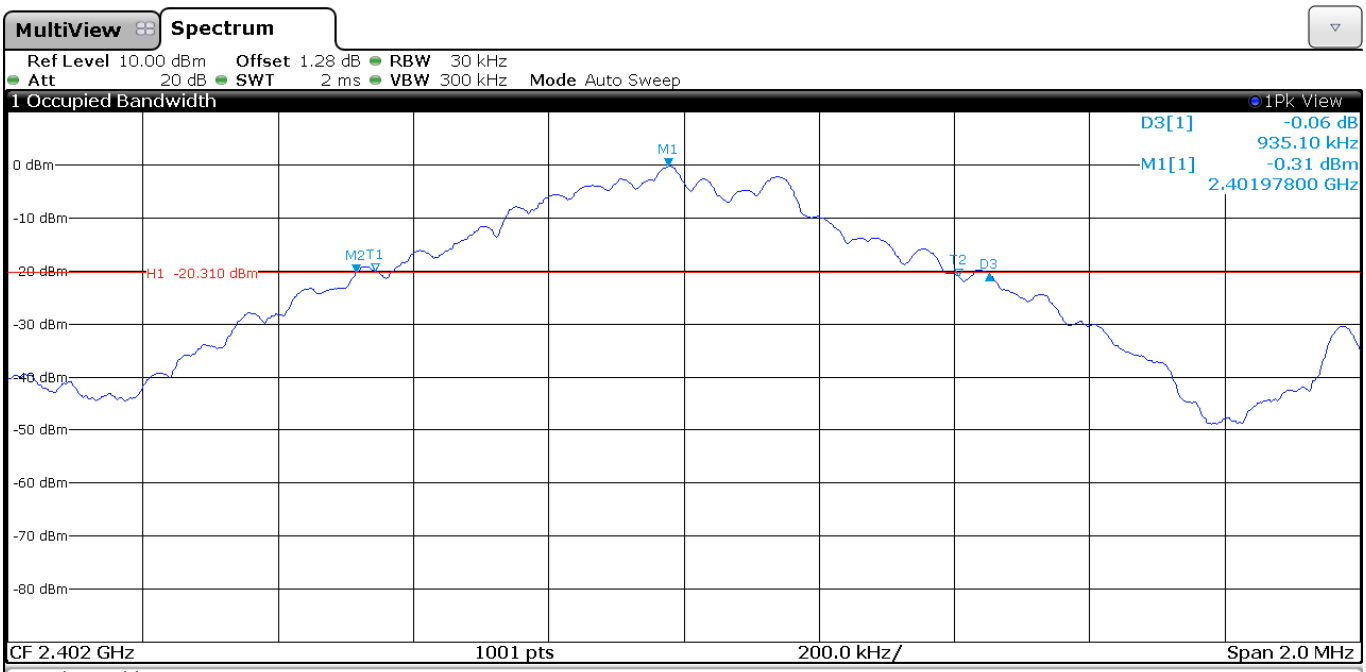
	Lowest frequency 2402 MHz	Middle frequency 2441 MHz	Highest frequency 2480 MHz
20 dB Spectrum bandwidth (kHz)	1232.80	1236.80	1234.80
Measurement uncertainty (kHz)	±11		

Modulation: 8-DPSK (3Mbps)

	Lowest frequency 2402 MHz	Middle frequency 2441 MHz	Highest frequency 2480 MHz
20 dB Spectrum bandwidth (kHz)	1250.80	1254.70	1254.70
Measurement uncertainty (kHz)	±11		

Modulation: GFSK

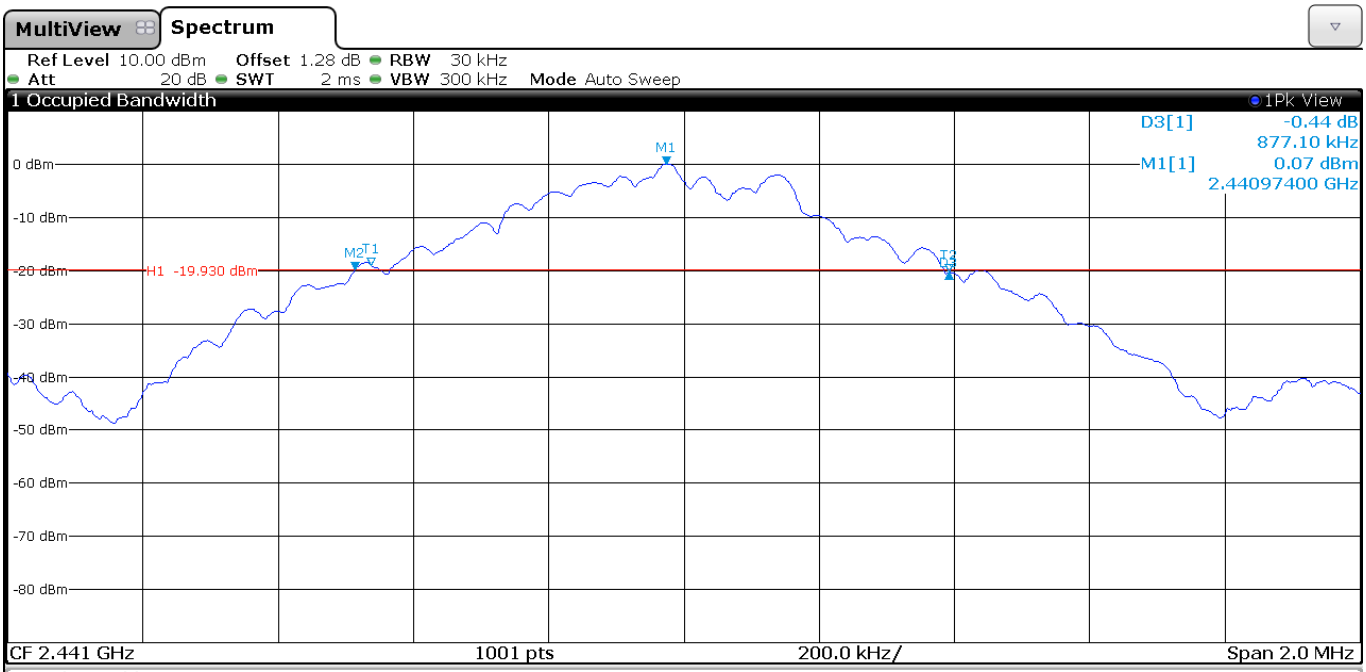
20 dB BANDWIDTH. Lowest Channel: 2402 MHz.



2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.401978 GHz**	**-0.31 dBm**		
T1		1	2.40154446 GHz	-19.96 dBm	Occ Bw	**861.138861139 kHz**
T2		1	2.40240559 GHz	-21.08 dBm		
M2		1	**2.4015154 GHz**	**-20.46 dBm**		
D3	M2	1	**935.1 kHz**	**-0.06 dB**		

20 dB BANDWIDTH Middle Channel: 2441 MHz.

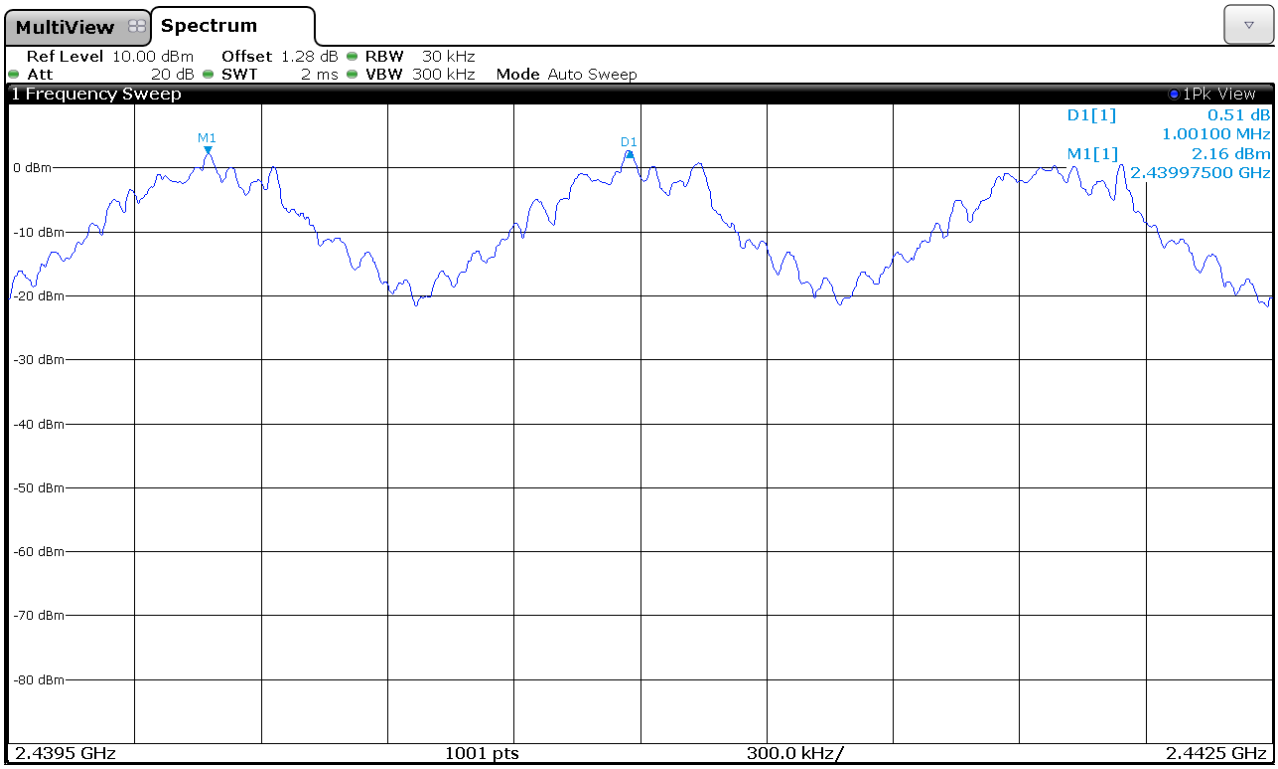


2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.440974 GHz**	**0.07 dBm**		
T1		1	2.44053846 GHz	-19.06 dBm	Occ Bw	**853.146853147 kHz**
T2		1	2.44139161 GHz	-20.28 dBm		
M2		1	**2.4405145 GHz**	**-19.84 dBm**		
D3	M2	1	**877.1 kHz**	**-0.44 dB**		

20 dB BANDWIDTH Highest Channel: 2480 MHz.

Carrier frequency separation

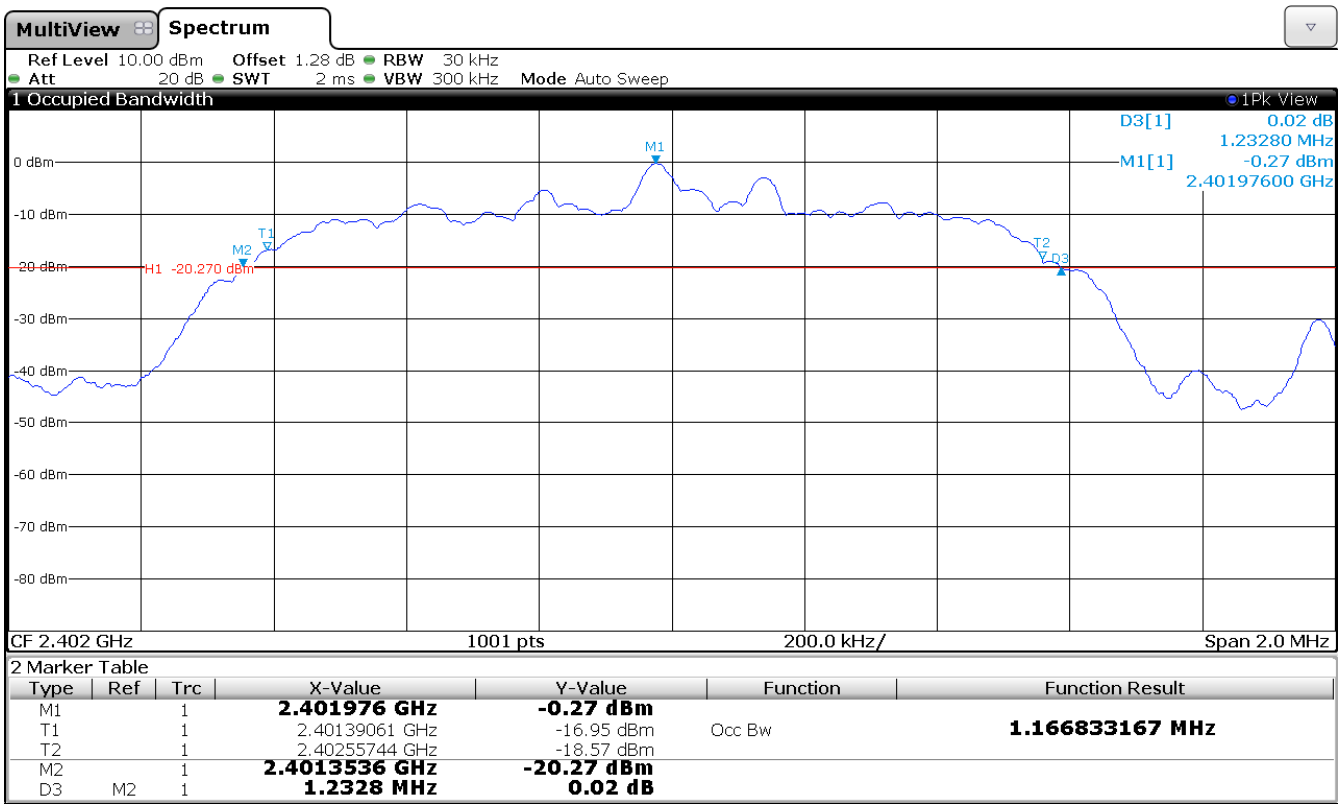


The hopping channel carrier frequencies are separated by a minimum of the 20 dB bandwidth of the hopping channel.

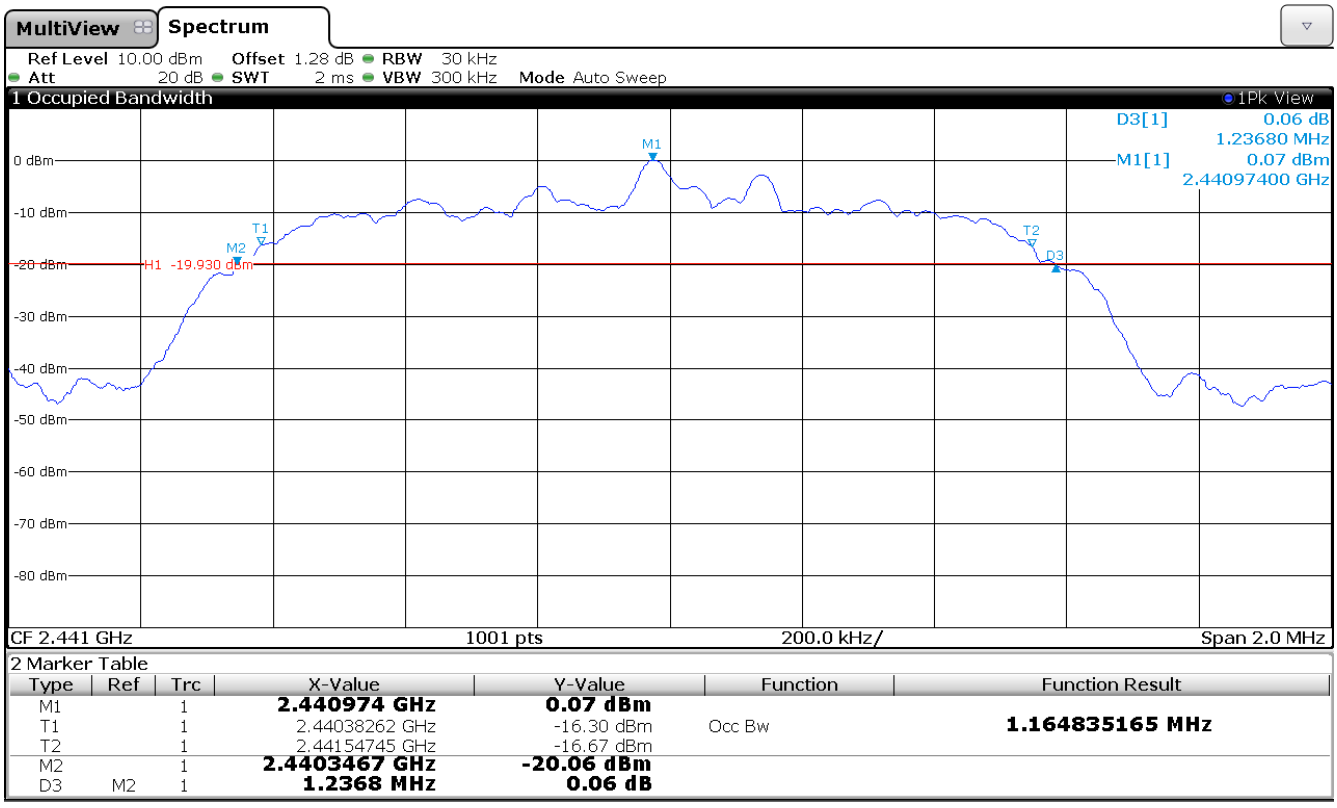
Verdict: PASS

Modulation: Π/4-DQPSK

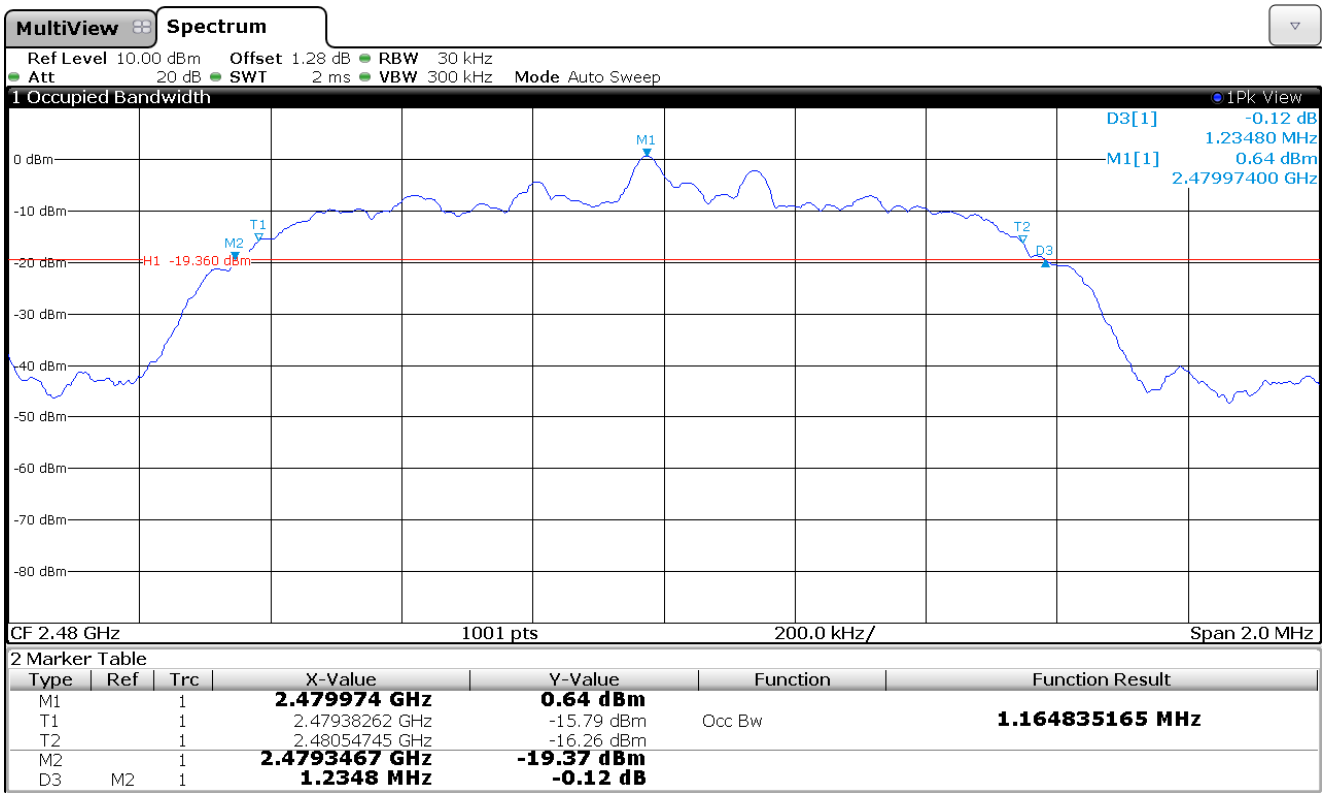
20 dB BANDWIDTH. Lowest Channel: 2402 MHz.



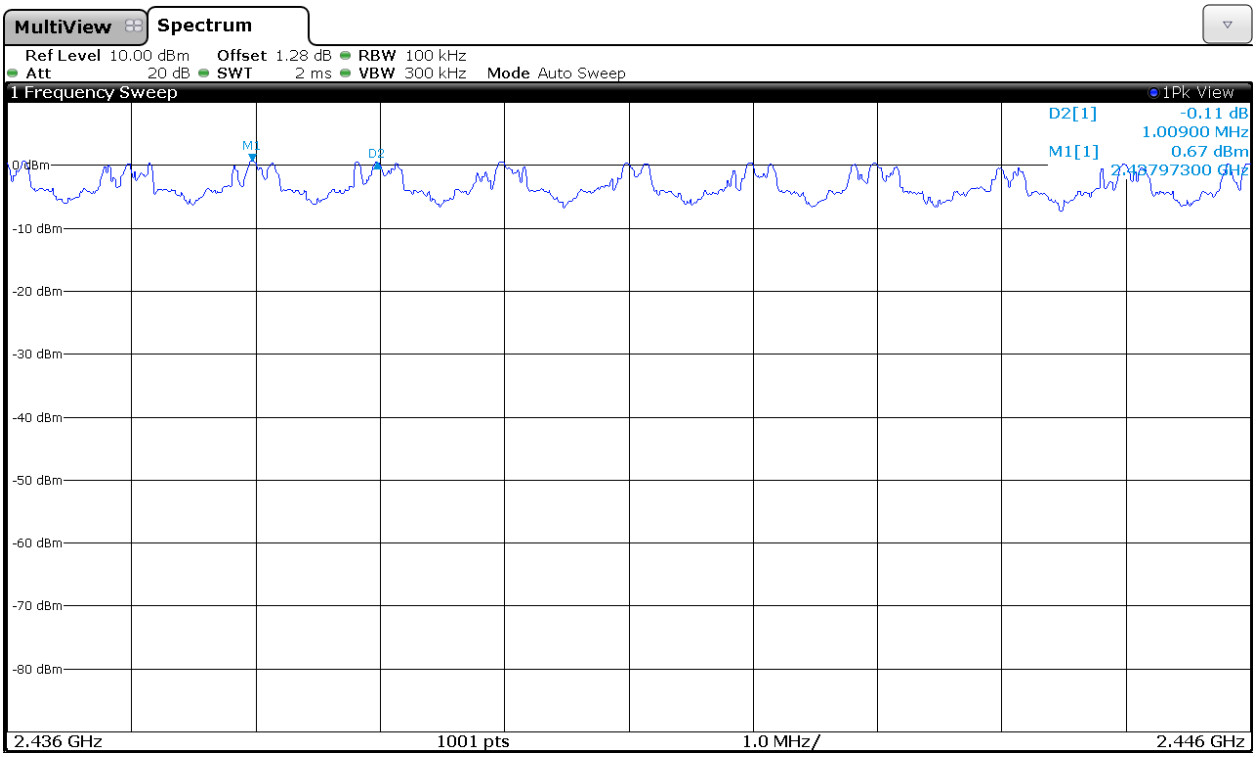
20 dB BANDWIDTH Middle Channel: 2441 MHz.



20 dB BANDWIDTH Highest Channel: 2480 MHz.



Carrier frequency separation

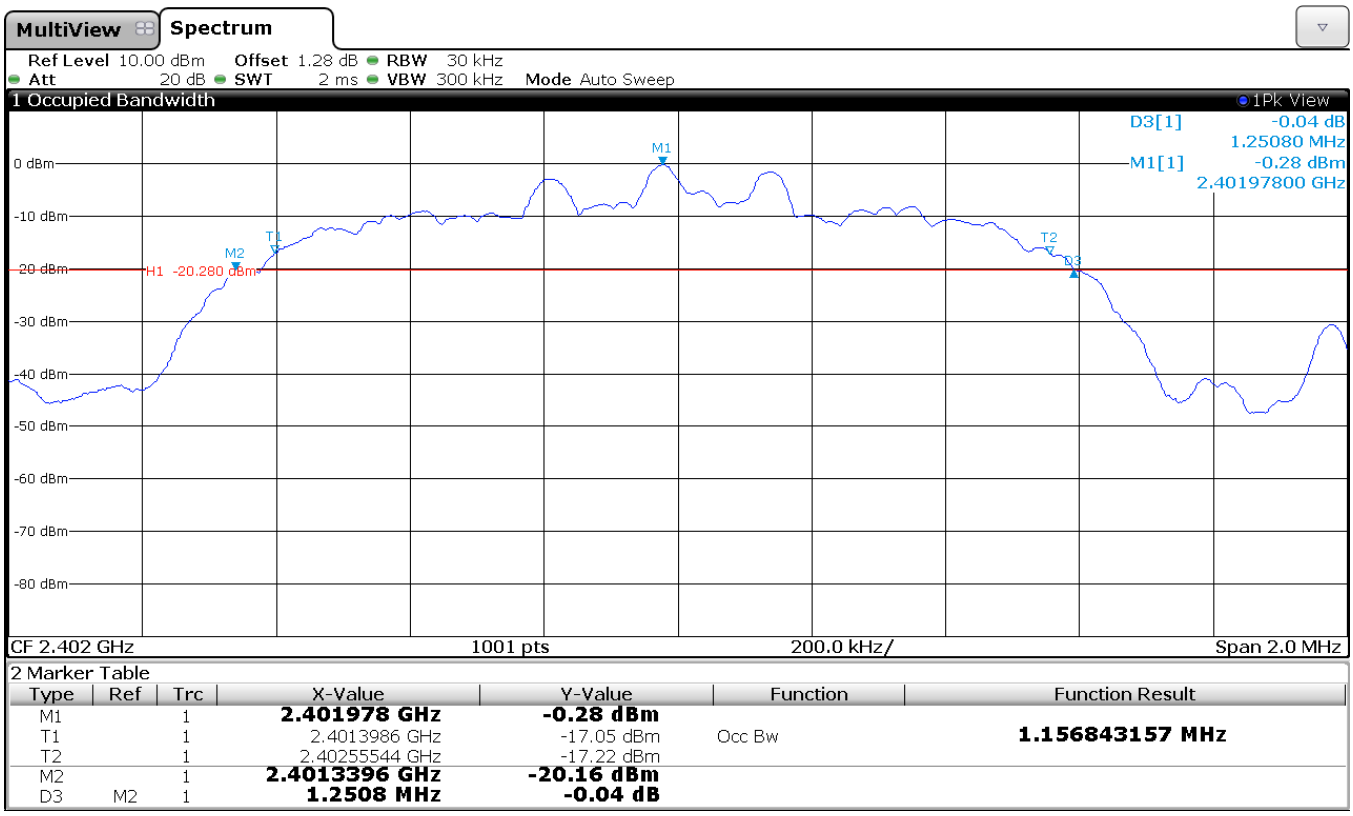


The hopping channel carrier frequencies are separated by a minimum of the two-thirds of the 20 dB bandwidth of the hopping channel

Verdict: PASS

Modulation: 8-DPSK

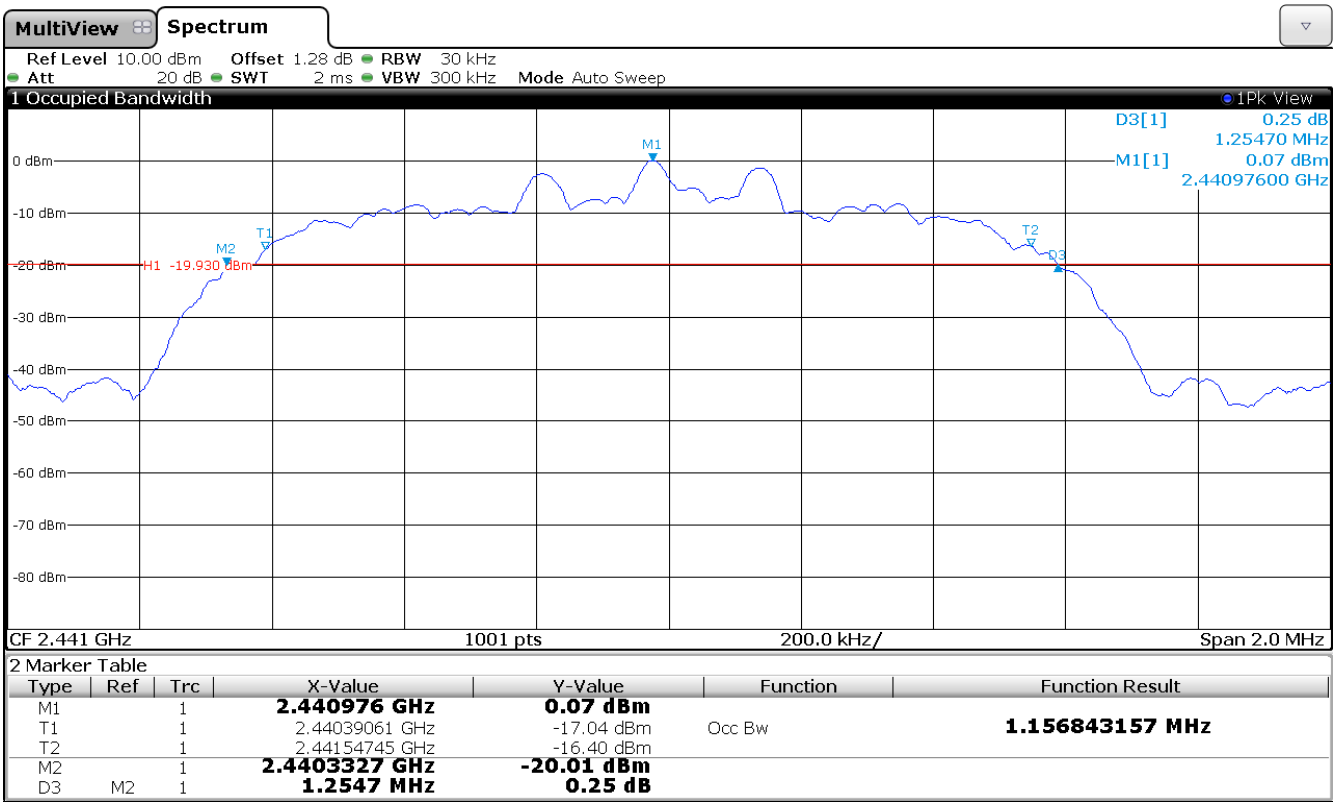
20 dB BANDWIDTH Lowest Channel: 2402 MHz.



2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.401978 GHz**	**-0.28 dBm**		
T1		1	2.4013986 GHz	-17.05 dBm	Occ Bw	**1.156843157 MHz**
T2		1	2.40255544 GHz	-17.22 dBm		
M2		1	**2.4013396 GHz**	**-20.16 dBm**		
D3	M2	1	**1.2508 MHz**	**-0.04 dB**		

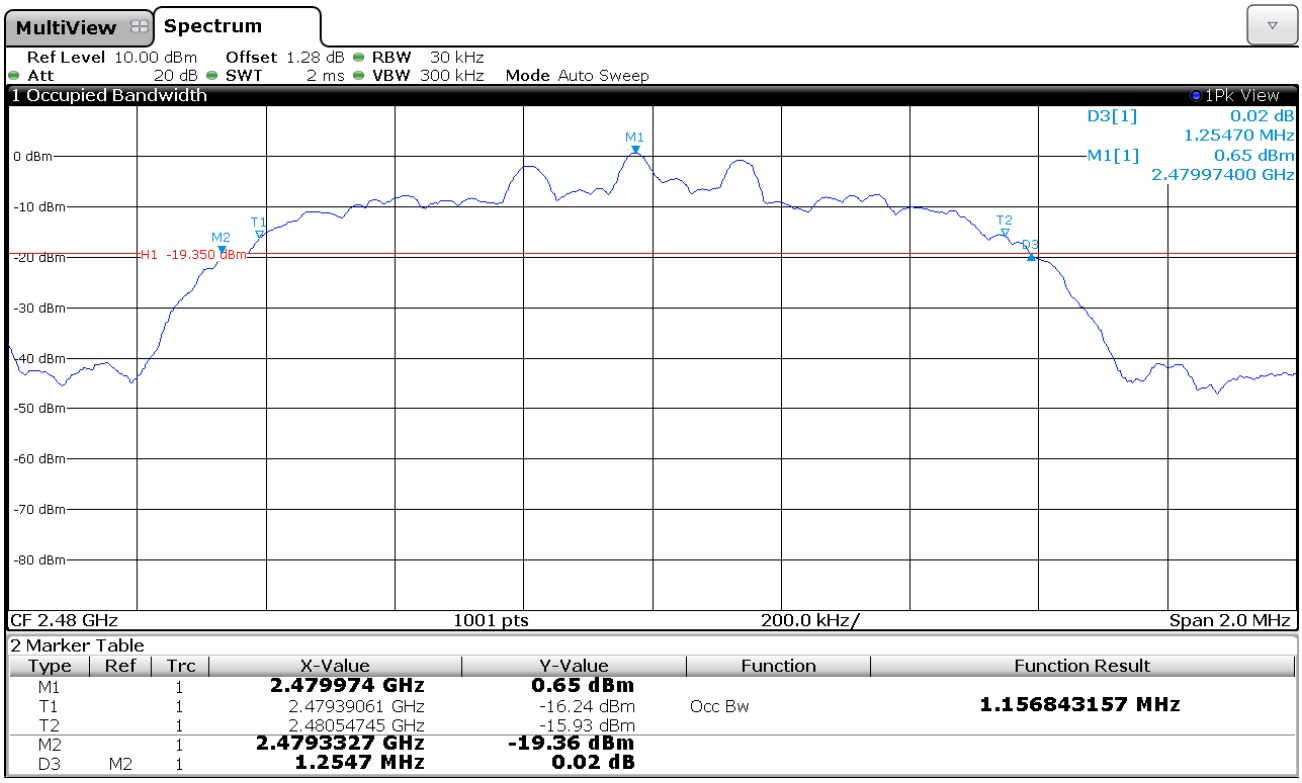
20 dB BANDWIDTH Middle Channel: 2441 MHz.



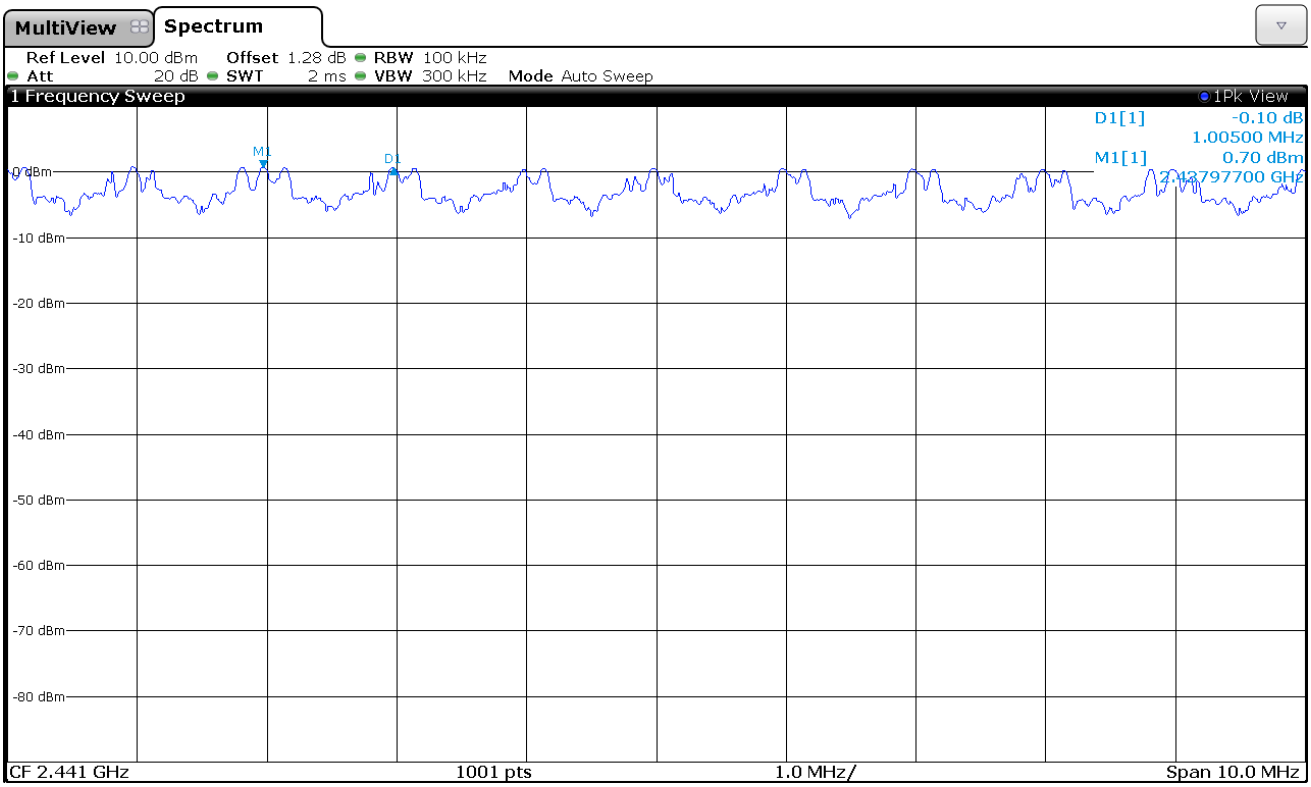
2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.440976 GHz**	**0.07 dBm**		
T1		1	2.44039061 GHz	-17.04 dBm	Occ Bw	**1.156843157 MHz**
T2		1	2.44154745 GHz	-16.40 dBm		
M2		1	**2.4403327 GHz**	**-20.01 dBm**		
D3	M2	1	**1.2547 MHz**	**0.25 dB**		

20 dB BANDWIDTH Highest Channel: 2480 MHz.



Carrier frequency separation



The hopping channel carrier frequencies are separated by a minimum of the two-thirds of the 20 dB bandwidth of the hopping channel.

Verdict: PASS

FCC Section 15.247 Subclause (a) (1) (iii). Number of hopping channels

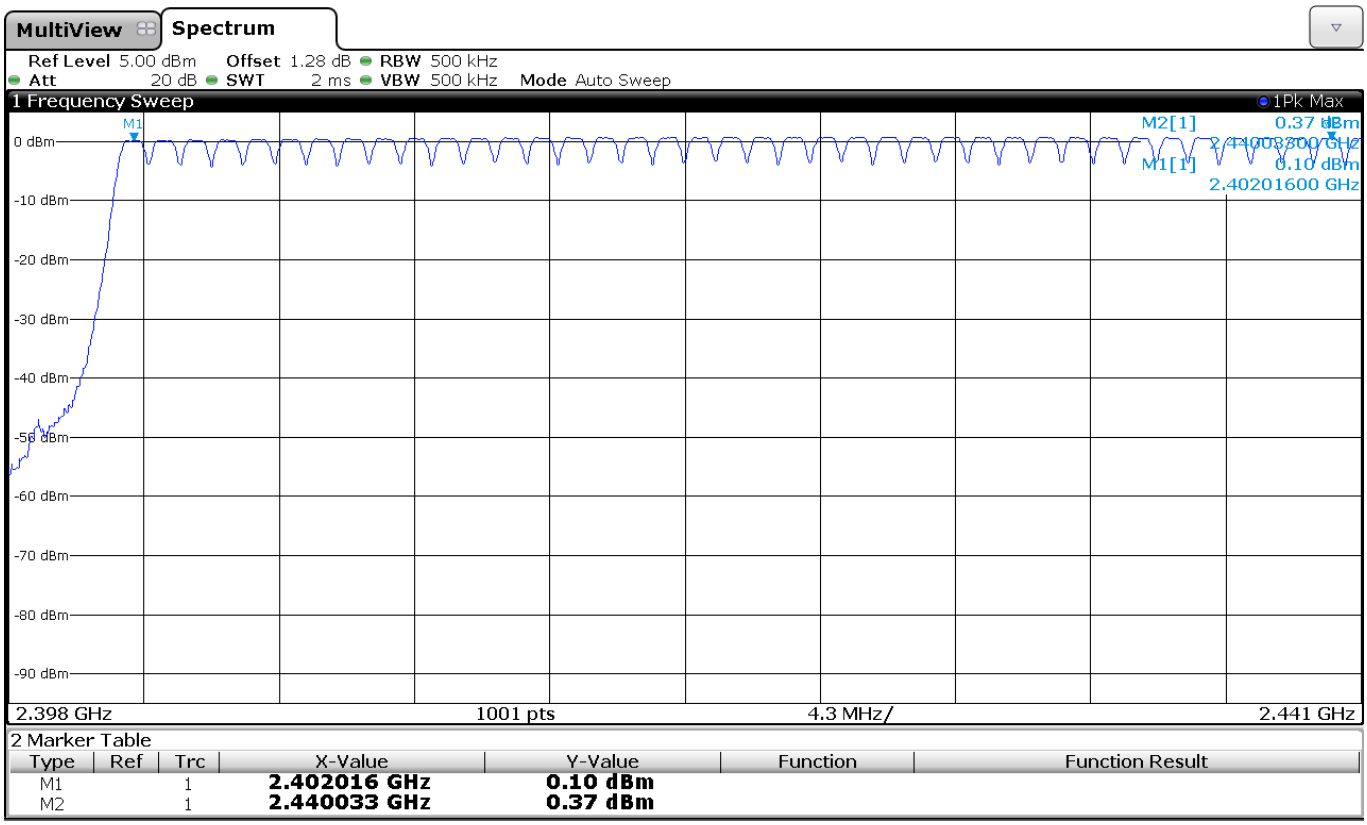
SPECIFICATION

Frequency hopping system in the 2400-2483.5 MHz band shall use at least 15 channels.

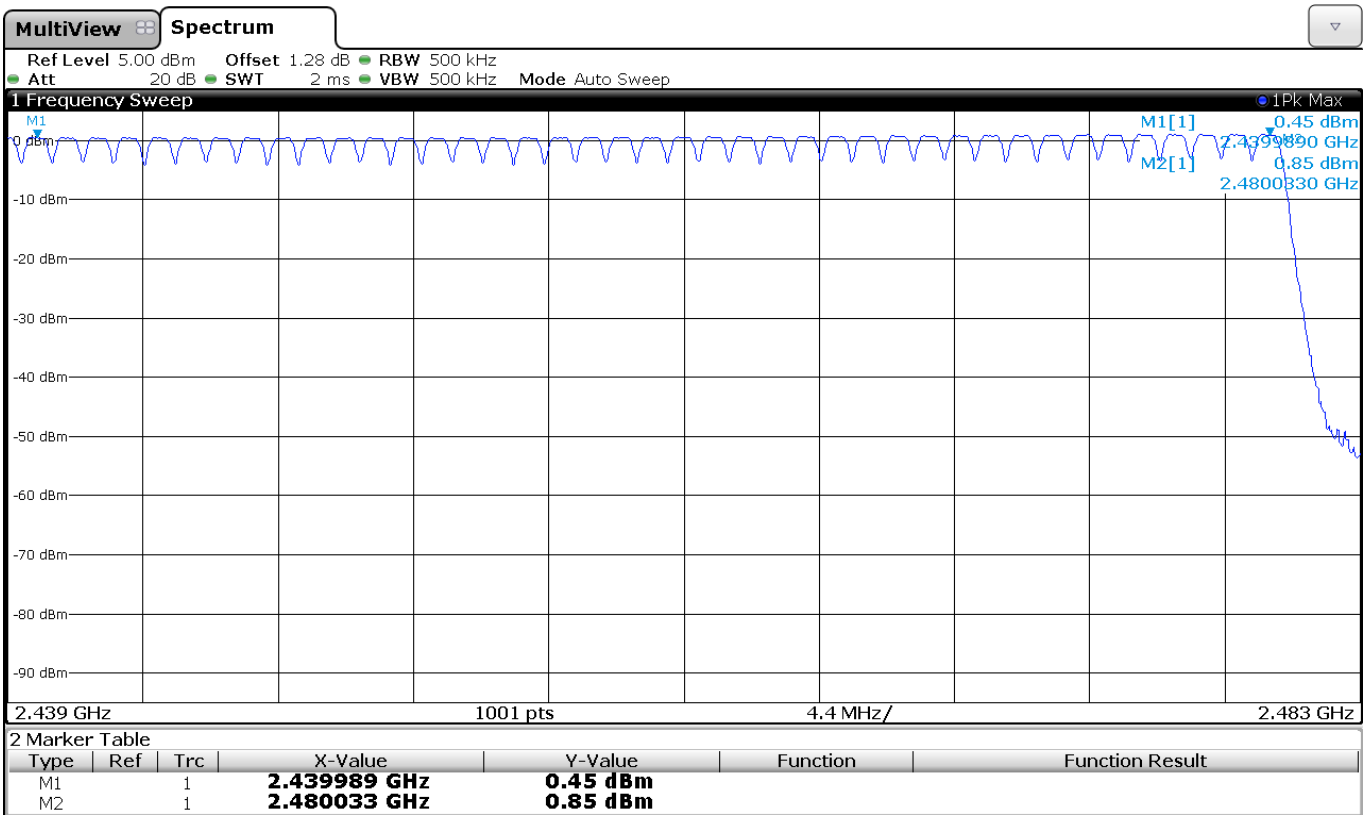
RESULTS

The number of hopping channels is 79 for all three modes (see next plots).

Modulation: GFSK



Number of hopping frequencies: 39

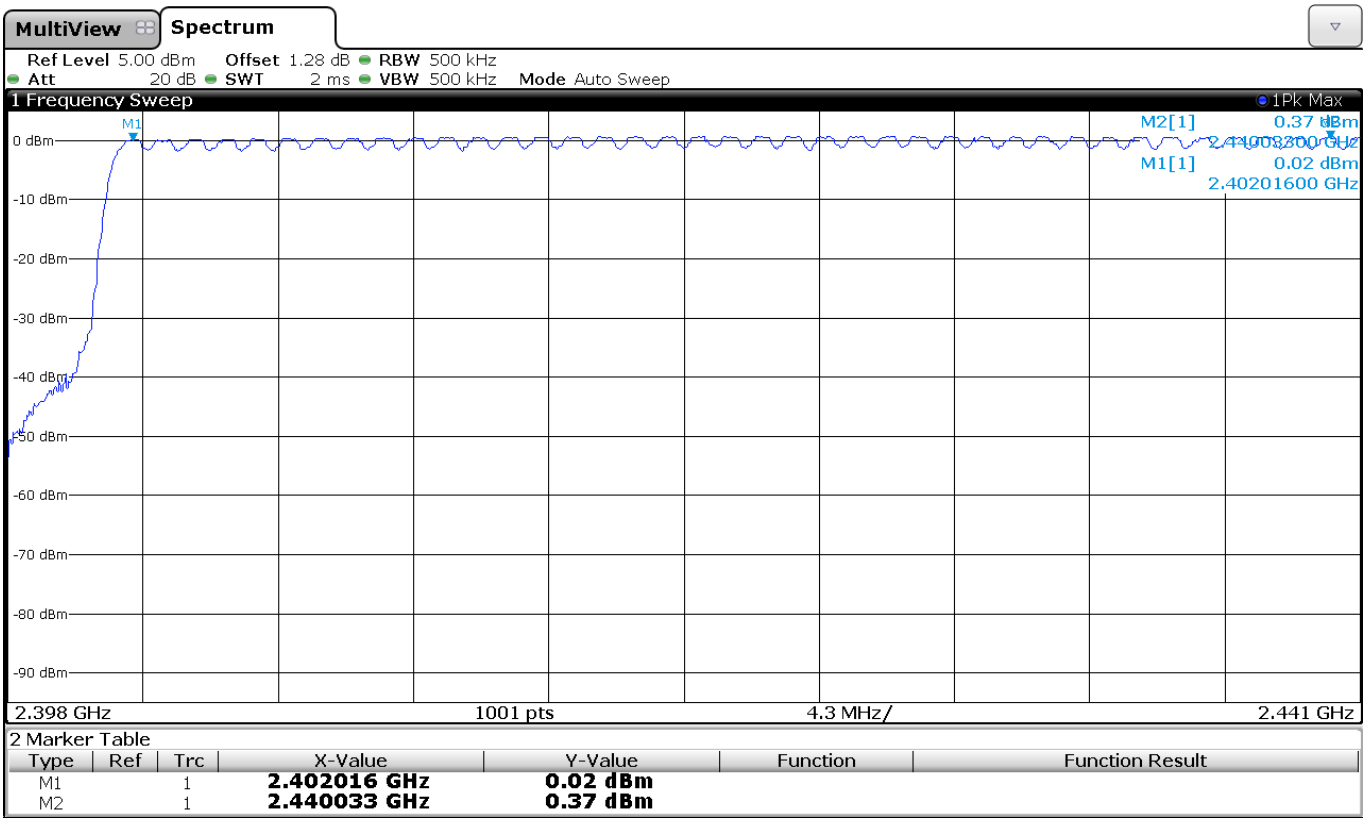


Number of hopping frequencies: 40

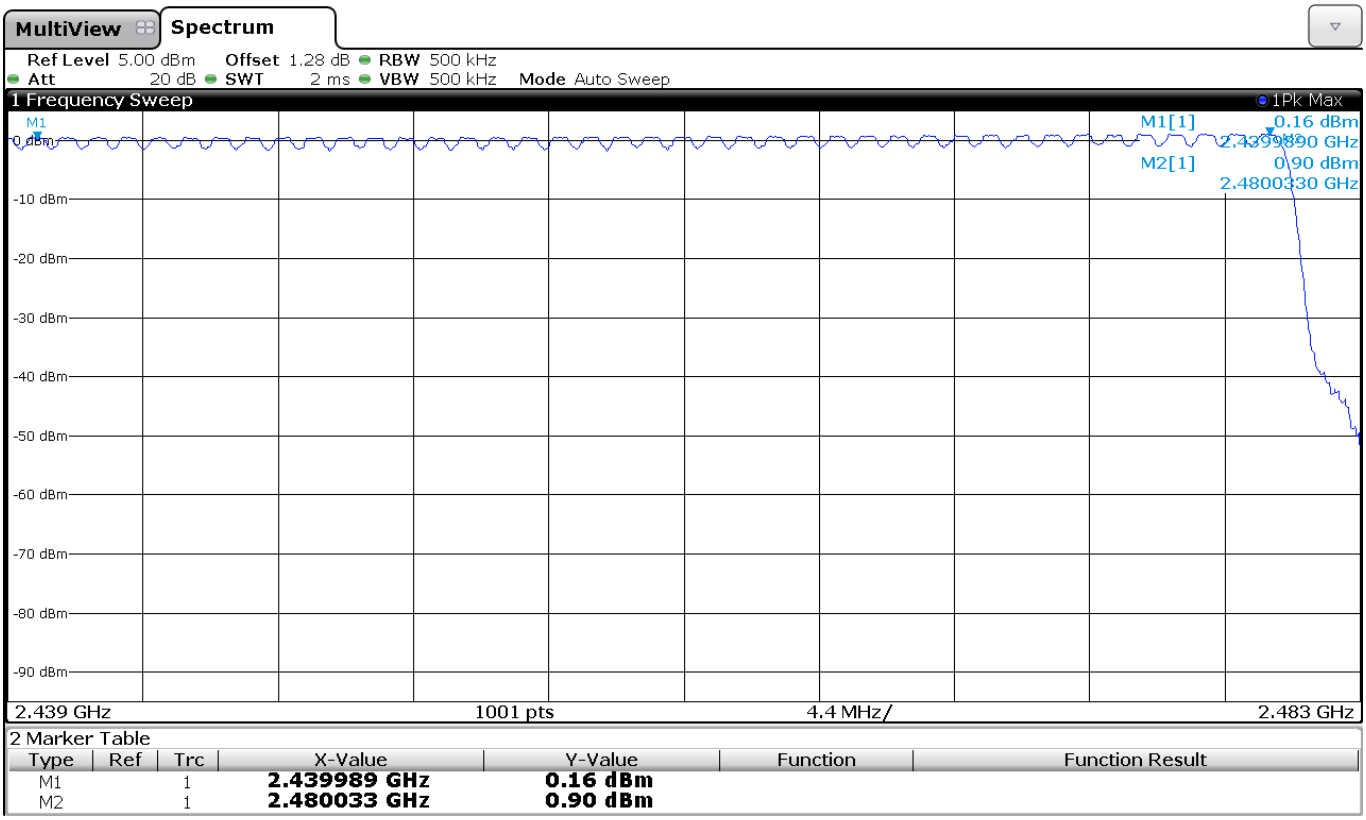
Total number of hopping frequencies: 79

Verdict: PASS

Modulation: II/4-DQPSK



Number of hopping frequencies: 39

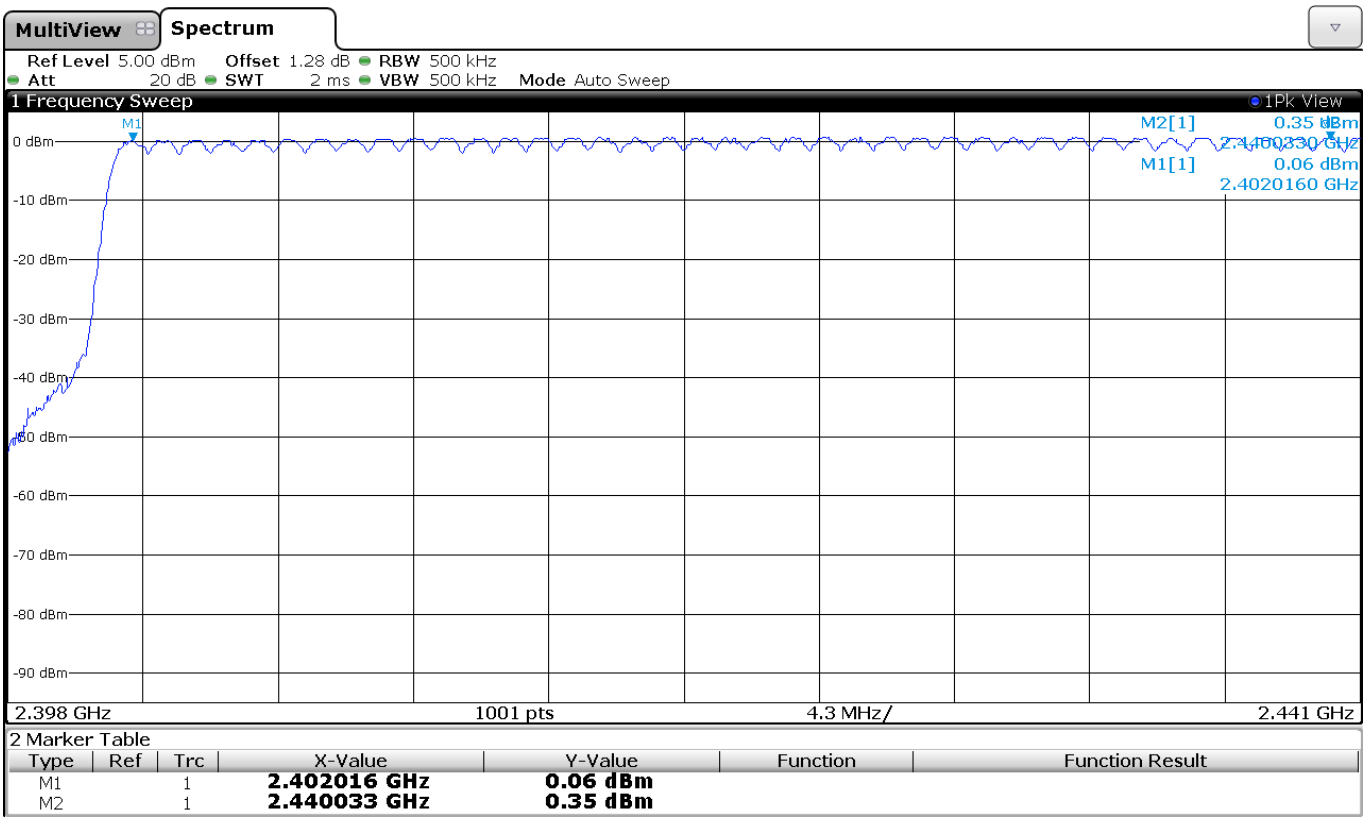


Number of hopping frequencies: 40

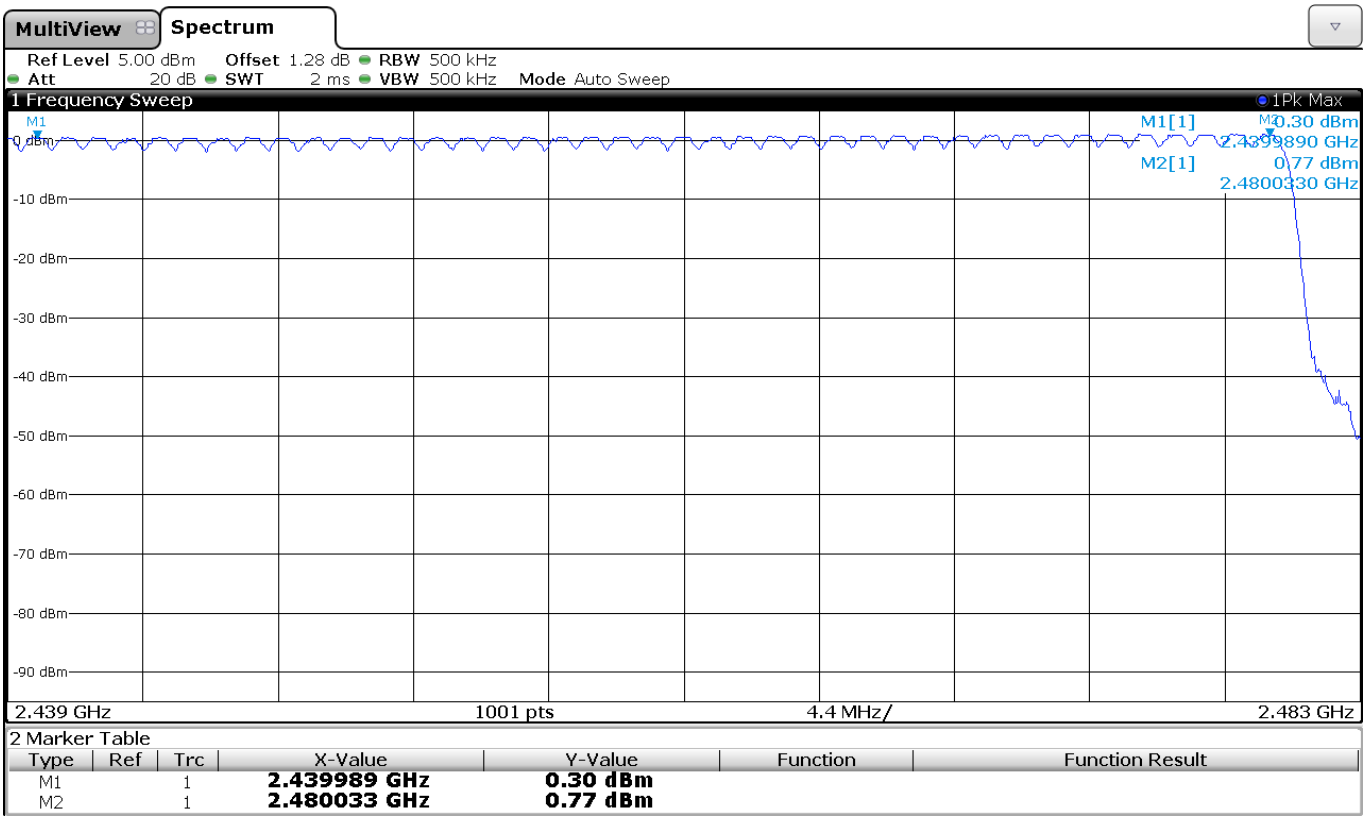
Total number of hopping frequencies: 79

Verdict: PASS

Modulation: 8-DPSK



Number of hopping frequencies: 39



Number of hopping frequencies: 40

Total number of hopping frequencies: 79

Verdict: PASS

FCC Section 15.247 Subclause (a) (1) (iii). Time of occupancy (Dwell Time)

SPECIFICATION

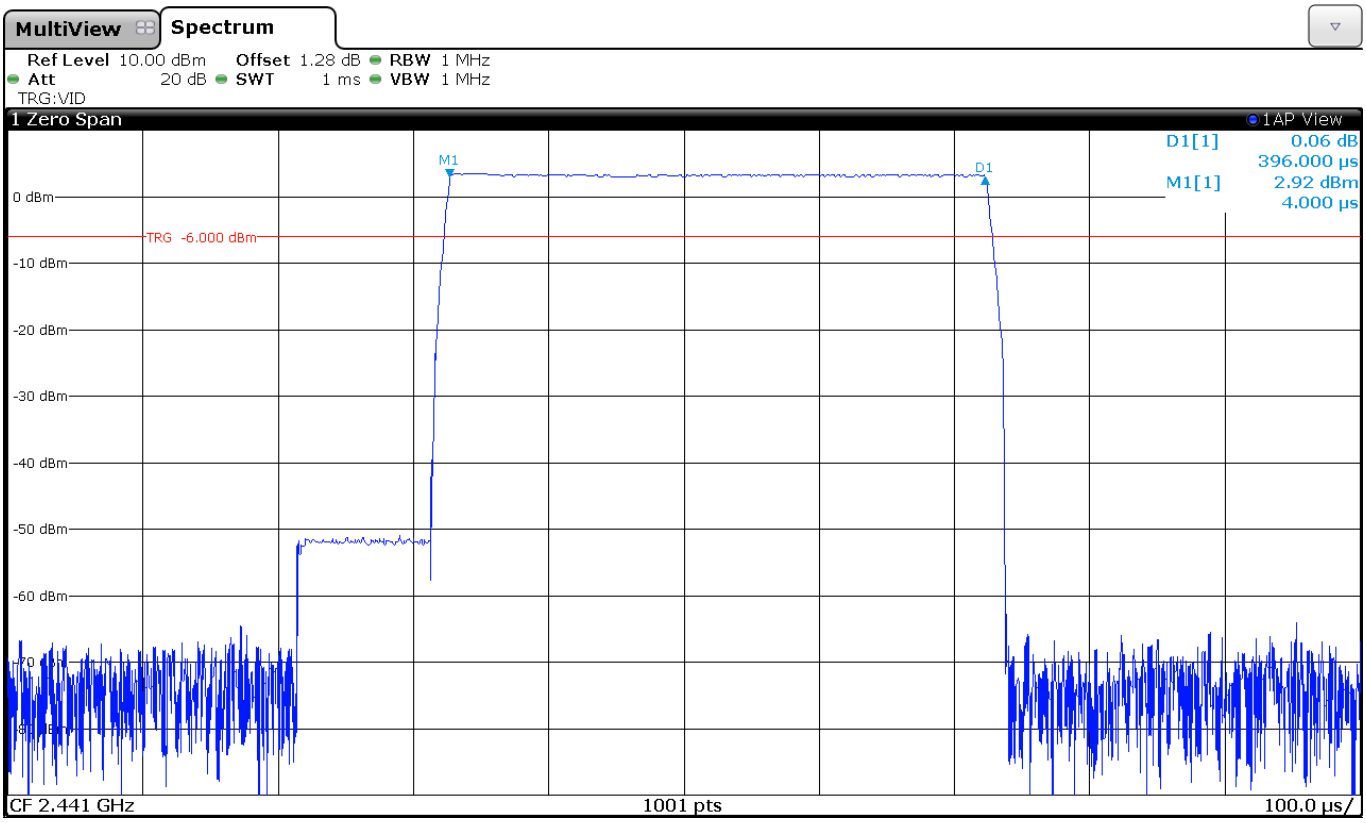
The average time of occupancy on any channel shall not be greater than 0.4 seconds (400 ms) within a period of 0.4 seconds multiplied by the number of hopping channels employed = 0.4 x 79= 31.6 seconds.

RESULTS

Modulation: GFSK

1. TIME OF OCCUPANCY (DWELL TIME) FOR PACKET TYPE DH1.

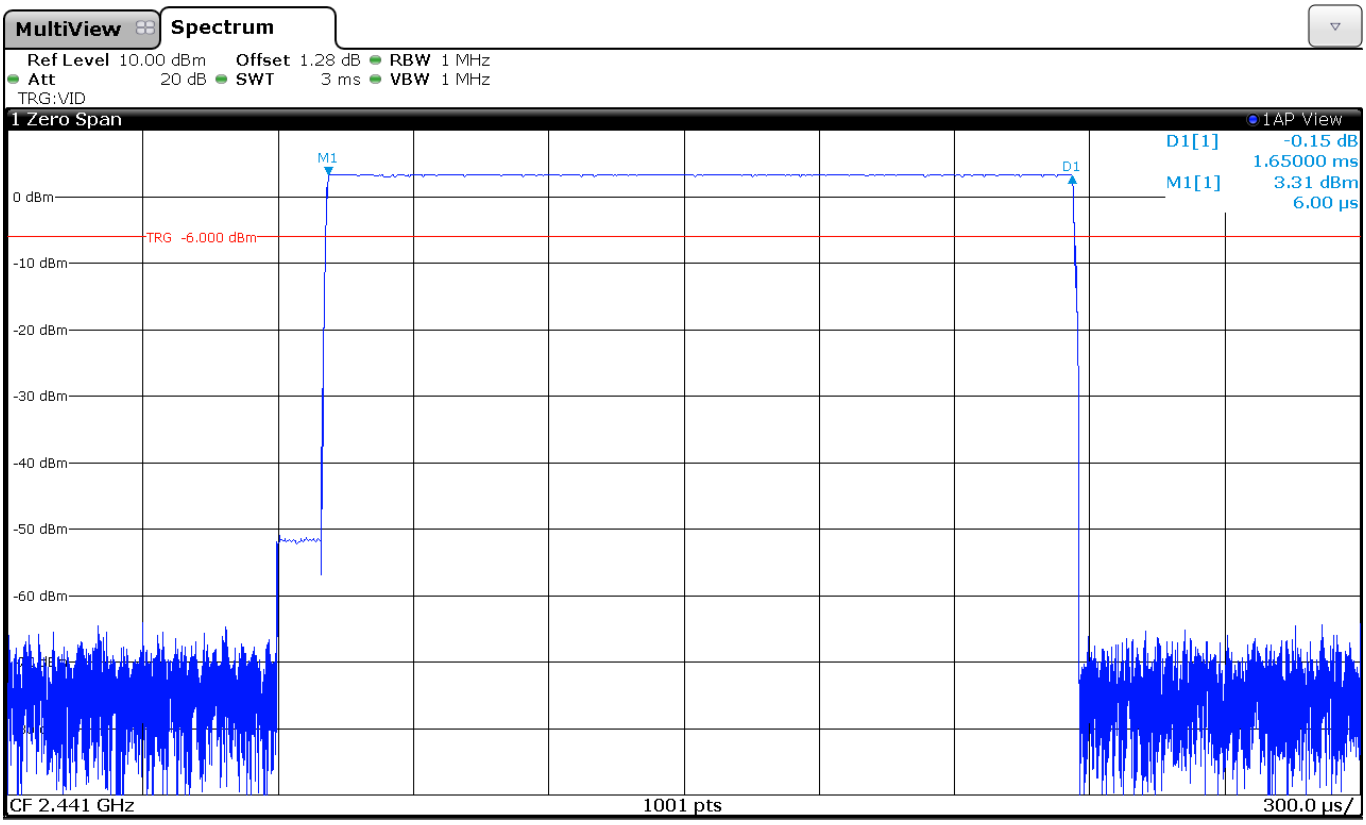
The system makes worst case 1600 hops per second or 1 time slot has a length of 625µs with 79 channels. A DH1 Packet need 1 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 1600/2 = 800 hops per second with 79 channels. So you have each channel 800/79 = 10.13 times per second and so for a period of 0.4 x 79 = 31.6 seconds you have 10.13 x 31.6 = 320.11 times of appearance.
Each Tx-time per appearance is 396.0 µs (see next plot).
So we have 320.11 x 396.0 µs = 126.76 ms per 31.6 seconds.



Verdict: PASS

2. TIME OF OCCUPANCY (DWELL TIME) FOR PACKET TYPE DH3.

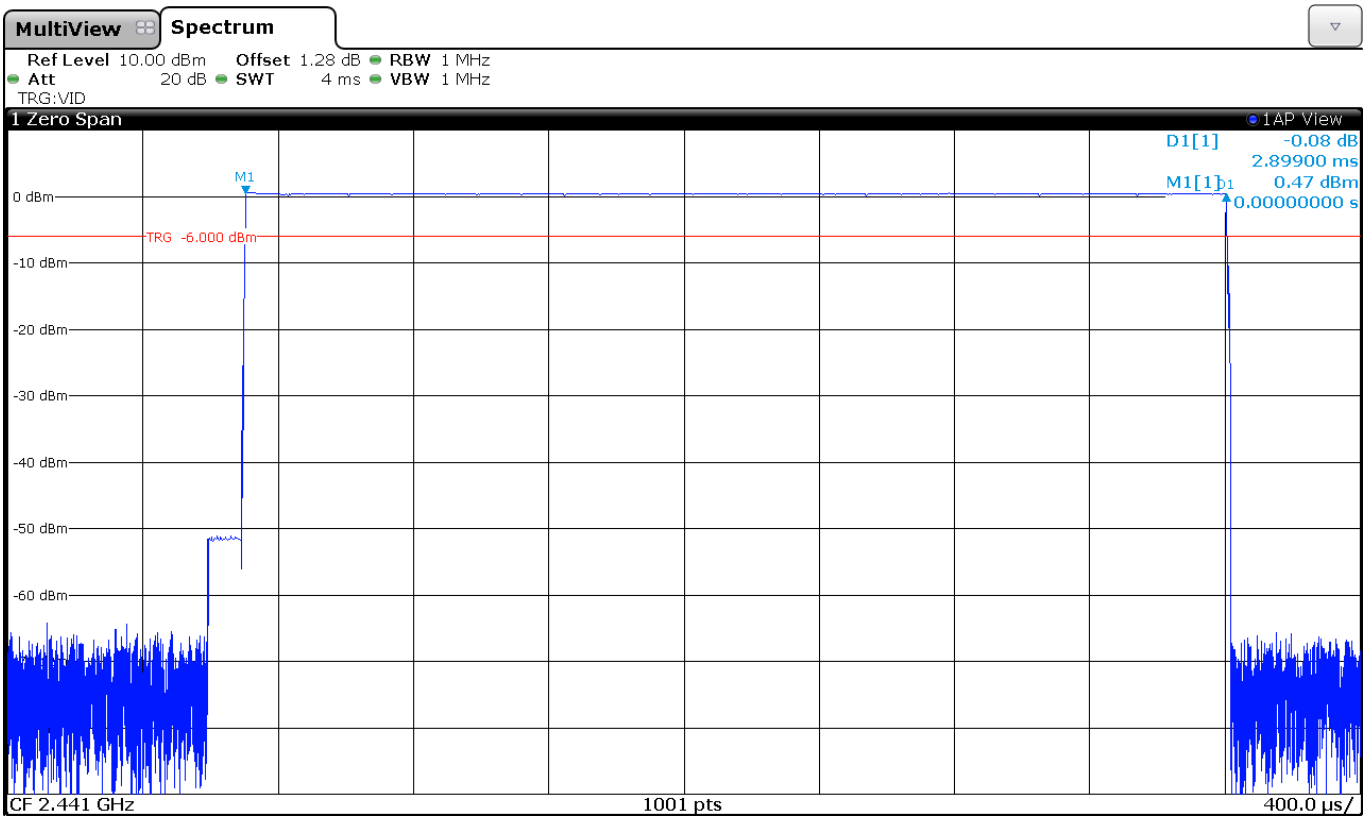
A DH3 Packet needs 3 time slots for transmitting and 1 time slot for receiving. Then the system makes worst case 1600/4 = 400 hops per second with 79 channels. So you have each channel 400/79 = 5.1 times per second and so for a period of 0.4 x 79 = 31.6 seconds you have 5.1 x 31.6 = 161.16 times of appearance.
Each Tx-time per appearance is 1.650 ms (see next plot).
So we have 161.16 x 1.650 ms = 265.91 ms per 31.6 seconds.



Verdict: PASS

3. TIME OF OCCUPANCY (DWELL TIME) FOR PACKET TYPE DH5.

A DH5 Packet needs 5 time slots for transmitting and 1 time slot for receiving. Then the system makes worst case 1600/6 = 266.67 hops per second with 79 channels. So you have each channel 266.67/79 = 3.37 times per second and so for a period of 0.4 x 79 = 31.6 seconds you have 3.37 x 31.6 = 106.49 times of appearance.
Each Tx-time per appearance is 2.899 ms (see next plot).
So we have 106.49 x 2.899 ms = 308.71 ms per 31.6 seconds.

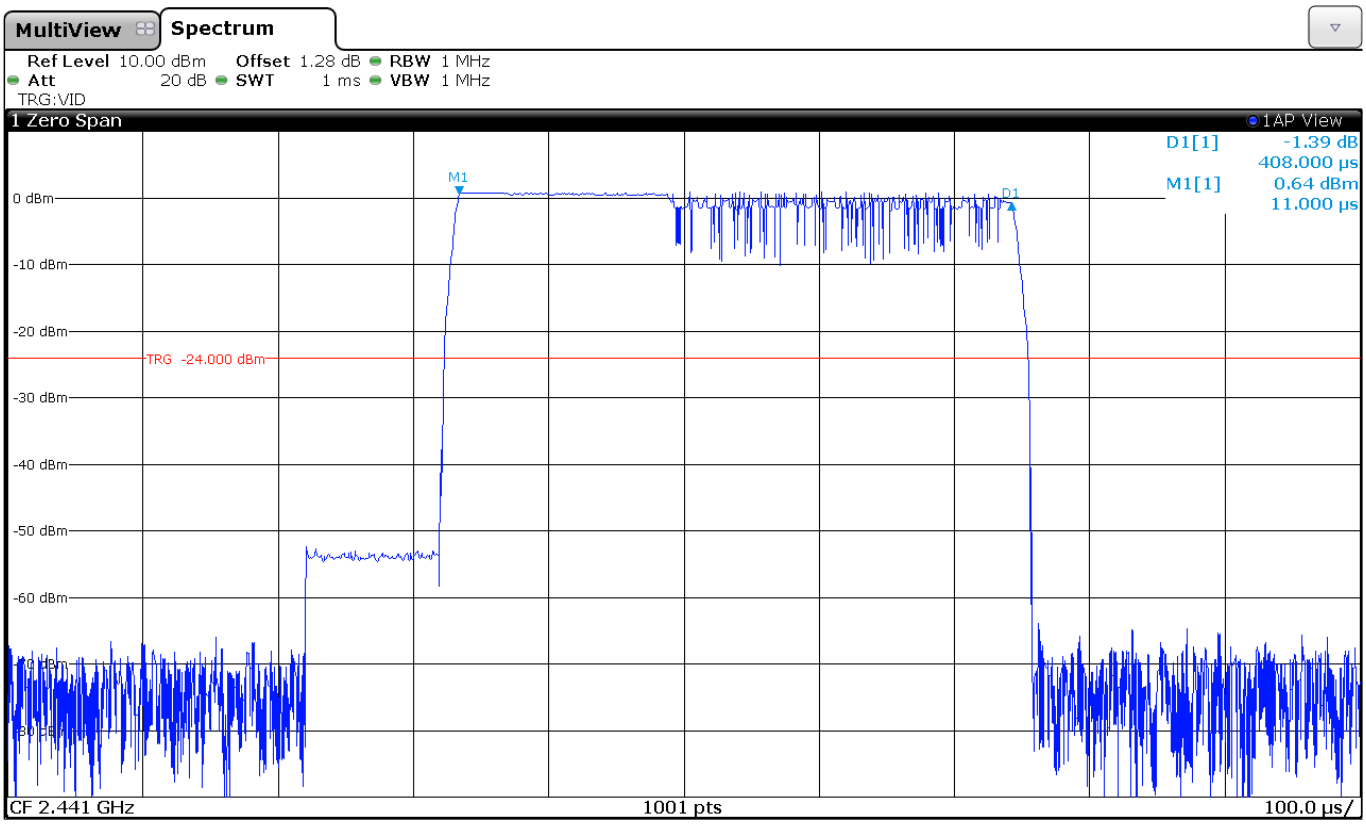


Verdict: PASS

Modulation: Π/4-DQPSK

1. TIME OF OCCUPANCY (DWELL TIME) FOR PACKET TYPE DH1.

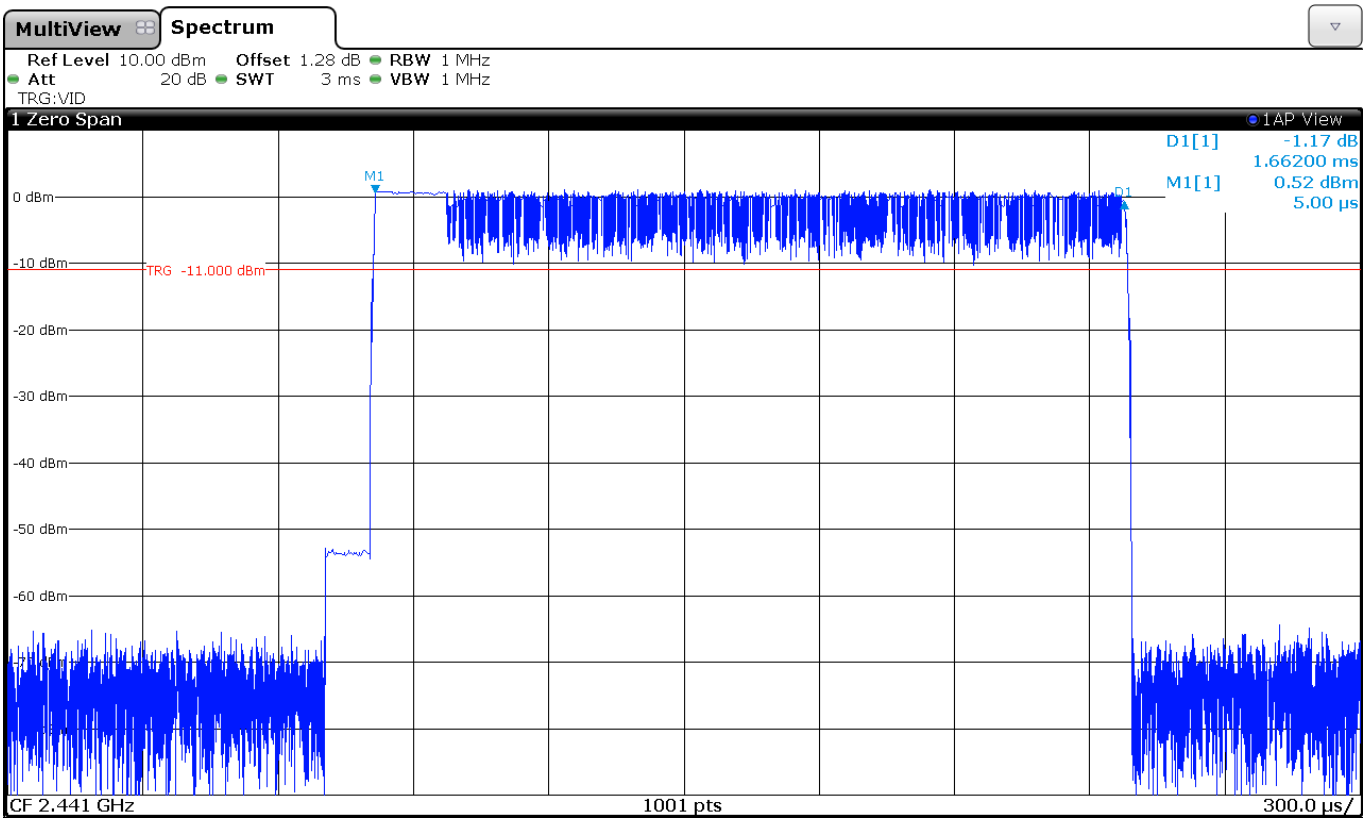
The system makes worst case 1600 hops per second or 1 time slot has a length of 625µs with 79 channels. A DH1 Packet need 1 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 1600/2 = 800 hops per second with 79 channels. So you have each channel 800/79 = 10.13 times per second and so for a period of 0.4 x 79 = 31.6 seconds you have 10.13 x 31.6 = 320.11 times of appearance.
Each Tx-time per appearance is 408.0 µs (see next plot).
So we have 320.11 x 408.0 µs =130.60 ms per 31.6 seconds.



Verdict: PASS

2. TIME OF OCCUPANCY (DWELL TIME) FOR PACKET TYPE DH3.

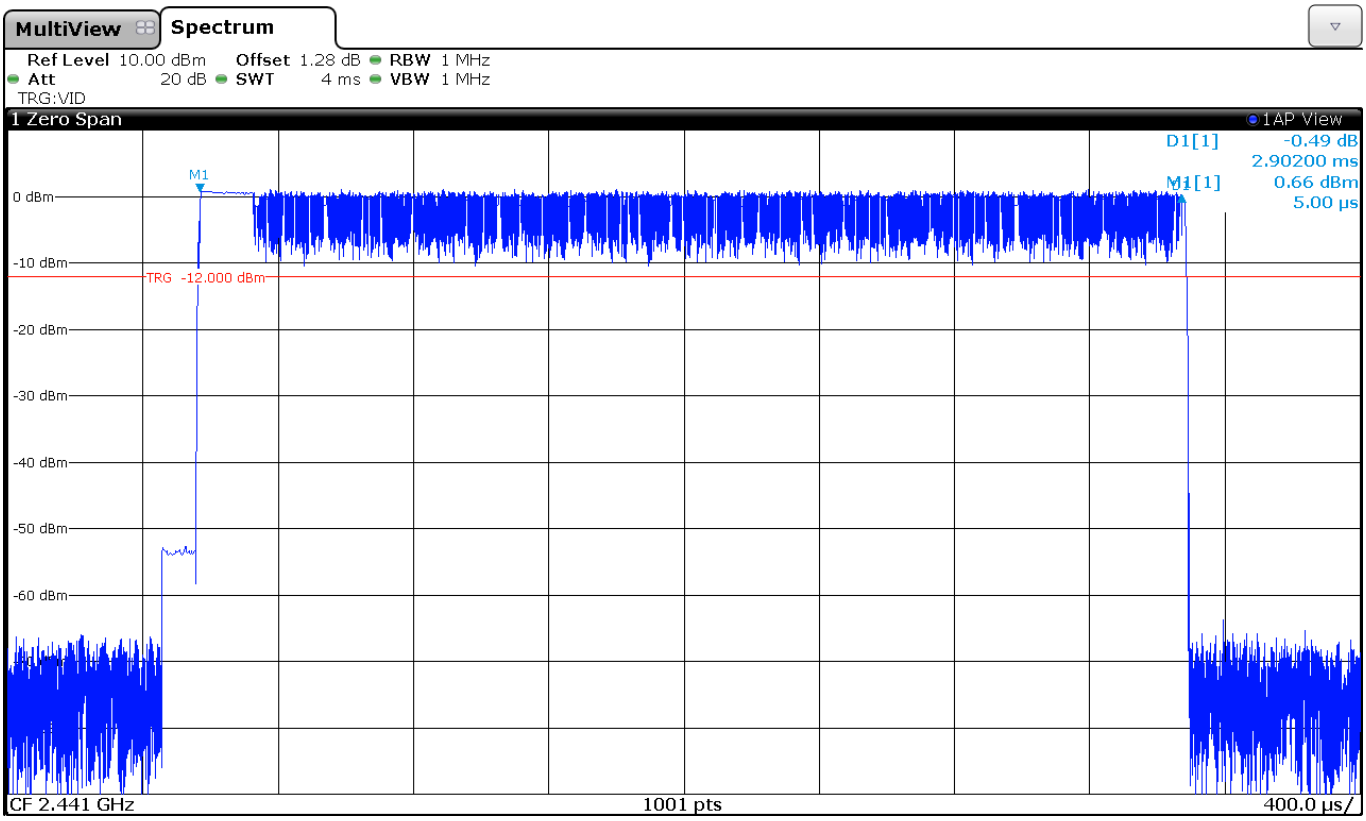
A DH3 Packet needs 3 time slots for transmitting and 1 time slot for receiving. Then the system makes worst case 1600/4 = 400 hops per second with 79 channels. So you have each channel 400/79 = 5.1 times per second and so for a period of 0.4 x 79 = 31.6 seconds you have 5.1 x 31.6 = 161.16 times of appearance.
Each Tx-time per appearance is 1.662 ms (see next plot).
So we have 161.16 x 1.662 ms = 267.85 ms per 31.6 seconds.



Verdict: PASS

3. TIME OF OCCUPANCY (DWELL TIME) FOR PACKET TYPE DH5.

A DH5 Packet needs 5 time slots for transmitting and 1 time slot for receiving. Then the system makes worst case 1600/6 = 266.67 hops per second with 79 channels. So you have each channel 266.67/79 = 3.37 times per second and so for a period of 0.4 x 79 = 31.6 seconds you have 3.37 x 31.6 = 106.49 times of appearance.
Each Tx-time per appearance is 2.902 ms (see next plot).
So we have 106.49 x 2.902 ms = 309.03 ms per 31.6 seconds.

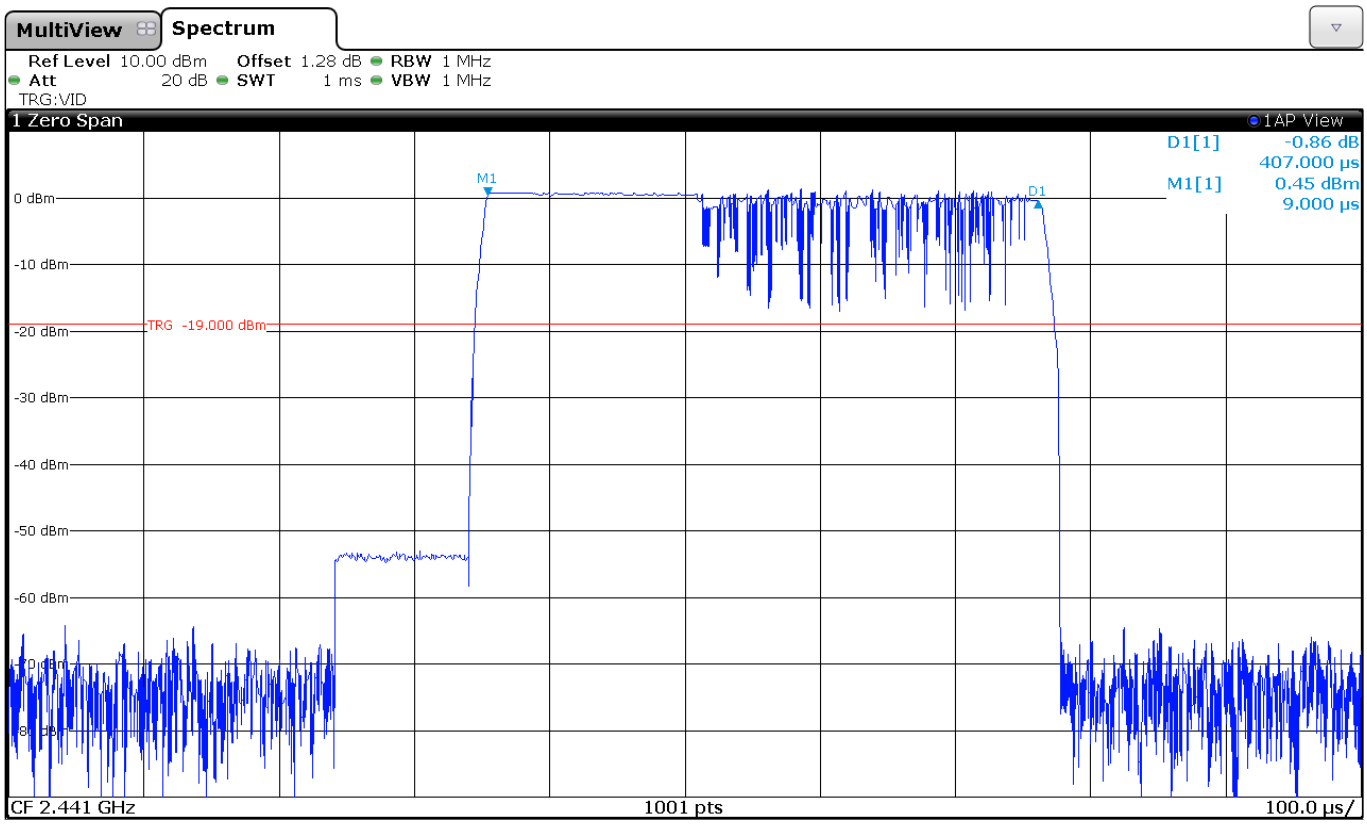


Verdict: PASS

Modulation: 8-DPSK

1. TIME OF OCCUPANCY (DWELL TIME) FOR PACKET TYPE DH1.

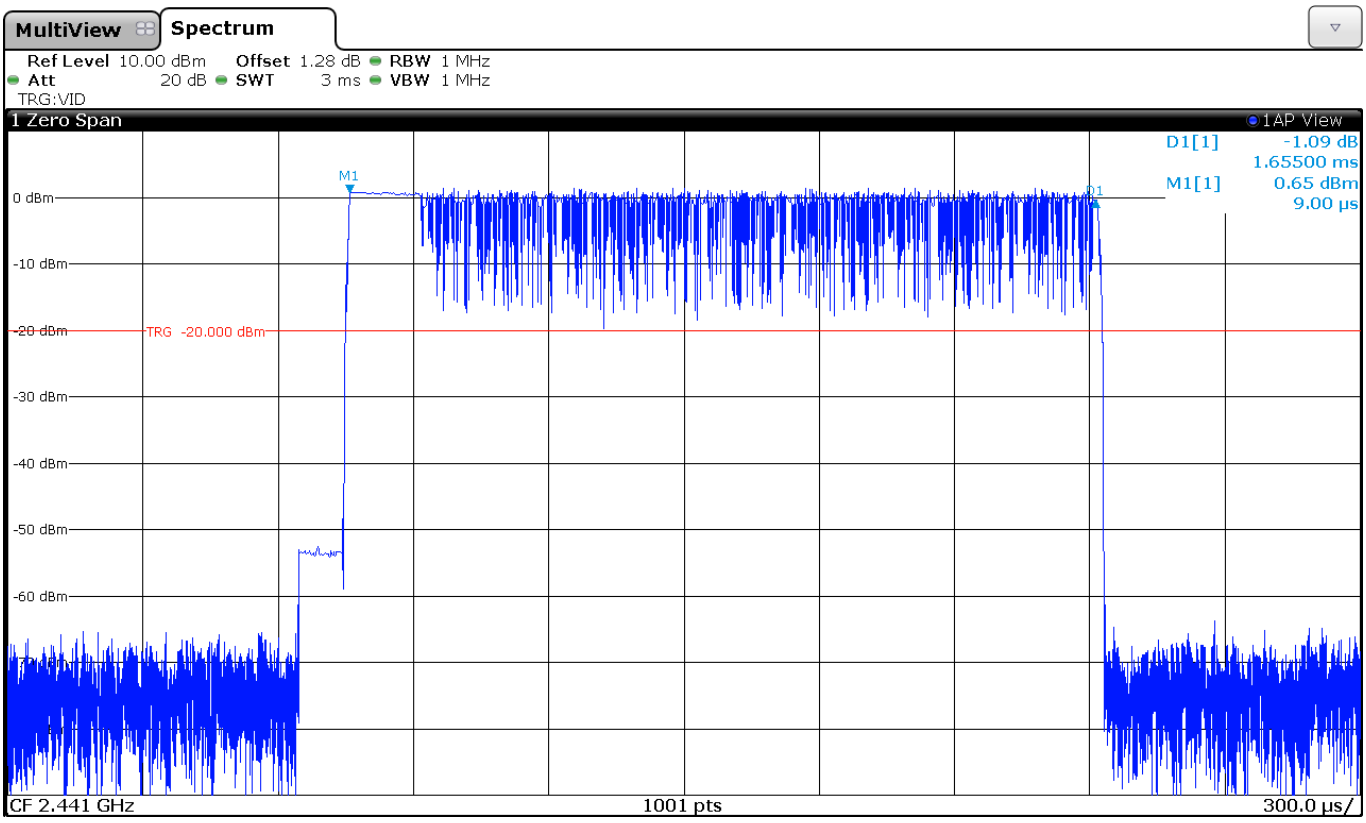
The system makes worst case 1600 hops per second or 1 time slot has a length of 625µs with 79 channels. A DH1 Packet need 1 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 1600/2 = 800 hops per second with 79 channels. So you have each channel 800/79 = 10.13 times per second and so for a period of 0.4 x 79 = 31.6 seconds you have 10.13 x 31.6 = 320.11 times of appearance.
Each Tx-time per appearance is 407.0 µs (see next plot).
So we have 320.11 x 407.0 µs =130.28 ms per 31.6 seconds.



Verdict: PASS

2. TIME OF OCCUPANCY (DWELL TIME) FOR PACKET TYPE DH3.

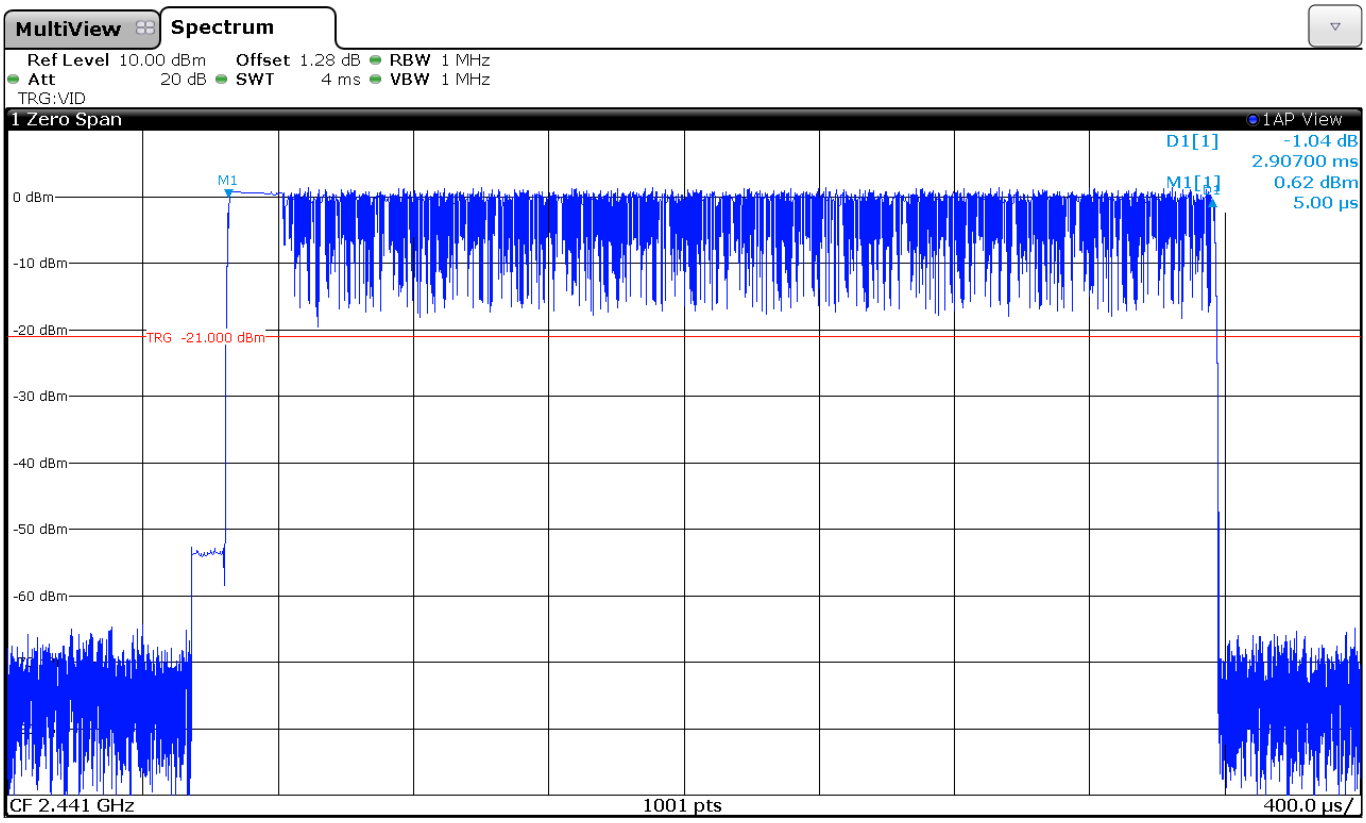
A DH3 Packet needs 3 time slots for transmitting and 1 time slot for receiving. Then the system makes worst case 1600/4 = 400 hops per second with 79 channels. So you have each channel 400/79 = 5.1 times per second and so for a period of 0.4 x 79 = 31.6 seconds you have 5.1 x 31.6 = 161.16 times of appearance.
Each Tx-time per appearance is 1.655 ms (see next plot).
So we have 161.16 x 1.655 ms = 266.72 ms per 31.6 seconds.



Verdict: PASS

3. TIME OF OCCUPANCY (DWELL TIME) FOR PACKET TYPE DH5.

A DH5 Packet needs 5 time slots for transmitting and 1 time slot for receiving. Then the system makes worst case 1600/6 = 266.67 hops per second with 79 channels. So you have each channel 266.67/79 = 3.37 times per second and so for a period of 0.4 x 79 = 31.6 seconds you have 3.37 x 31.6 = 106.49 times of appearance.
Each Tx-time per appearance is 2.907 ms (see next plot).
So we have 106.49 x 2.907 ms = 309.57 ms per 31.6 seconds.



Verdict: PASS

FCC Section 15.247 Subclause (b). Maximum peak output power and antenna gain

SPECIFICATION

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 hopping channels: 1 watt (30 dBm).

MAXIMUM OUTPUT POWER. See next plots.

Declared maximum antenna gain: 2.5 dBi.

The EIRP power (dBm) is calculated by adding the declared maximum antenna gain to the measured conducted power.

Modulation: GFSK

	Lowest frequency 2402 MHz	Middle frequency 2441 MHz	Highest frequency 2480 MHz
Maximum peak power (dBm)	0.52	3.48	1.38
Maximum EIRP power (dBm)	3.02	5.98	3.88
Measurement uncertainty (dB)	±1.5		

Modulation: Π/4-DQPSK (2Mbps)

	Lowest frequency 2402 MHz	Middle frequency 2441 MHz	Highest frequency 2480 MHz
Maximum peak power (dBm)	1.36	1.80	2.24
Maximum EIRP power (dBm)	3.86	4.30	4.74
Measurement uncertainty (dB)	±1.5		

Modulation: 8-DPSK (3Mbps)

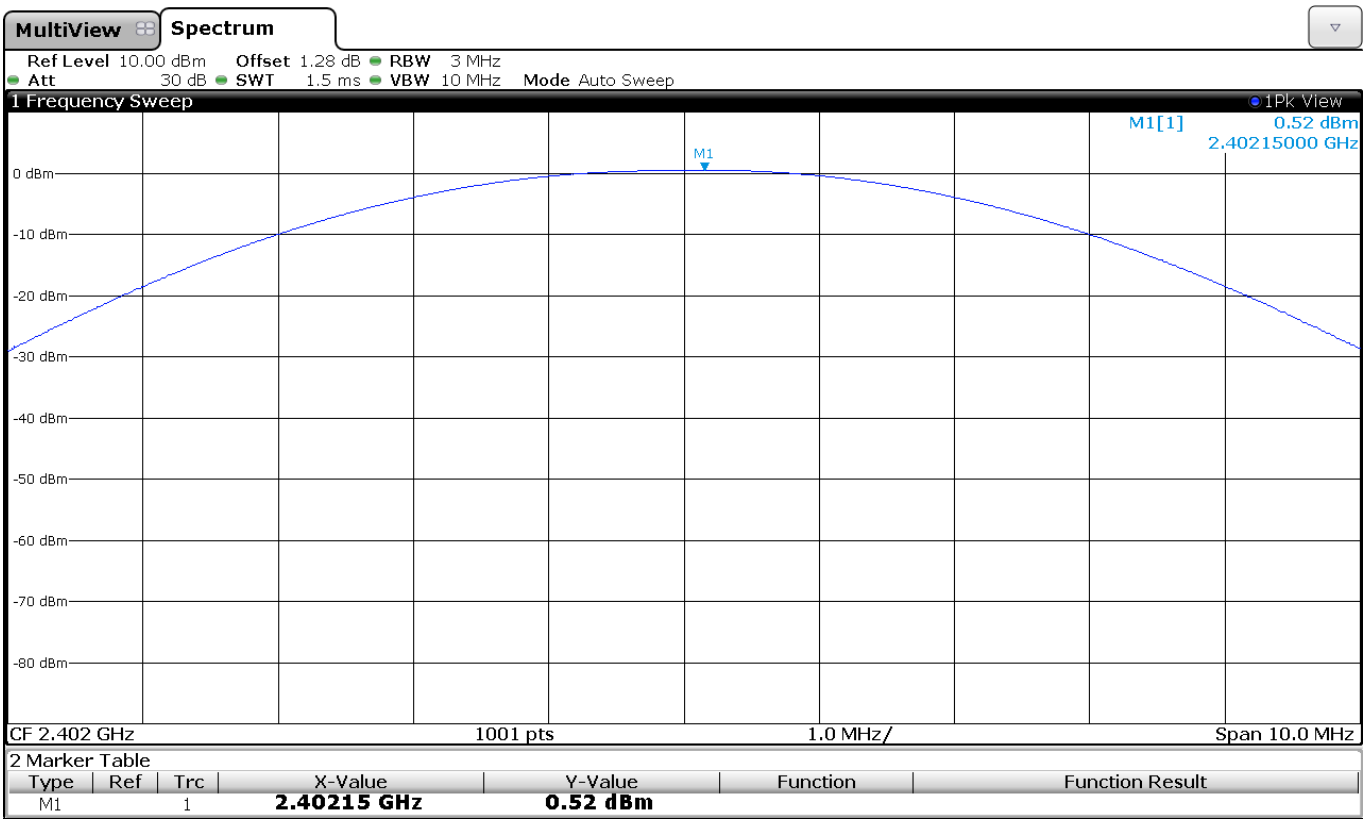
	Lowest frequency 2402 MHz	Middle frequency 2441 MHz	Highest frequency 2480 MHz
Maximum peak power (dBm)	1.78	2.11	2.55
Maximum EIRP power (dBm)	4.28	4.61	5.05
Measurement uncertainty (dB)	±1.5		

The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

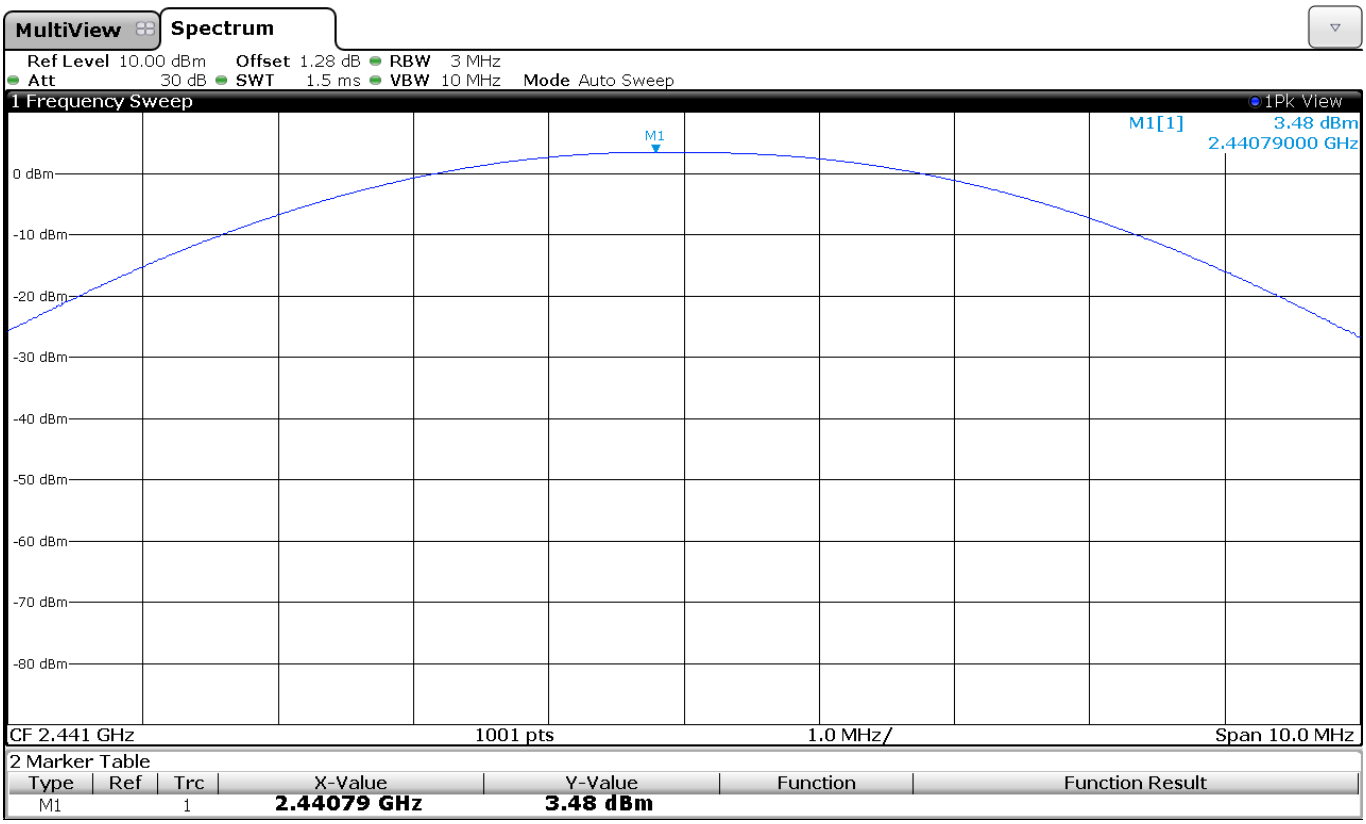
Verdict: PASS

PEAK OUTPUT POWER (CONDUCTED).

Modulation: GFSK Lowest Channel: 2402 MHz.

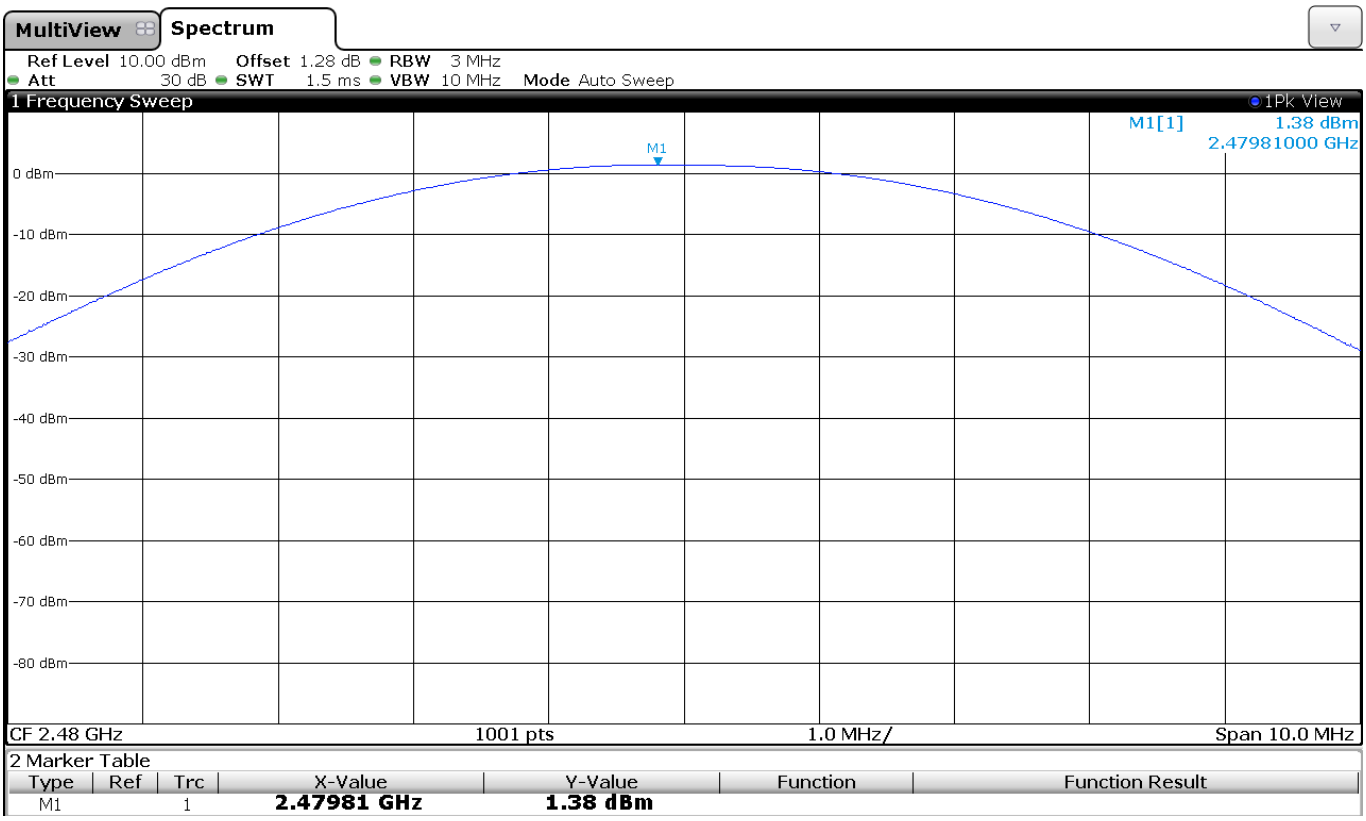


Modulation: GFSK Middle Channel: 2441 MHz.

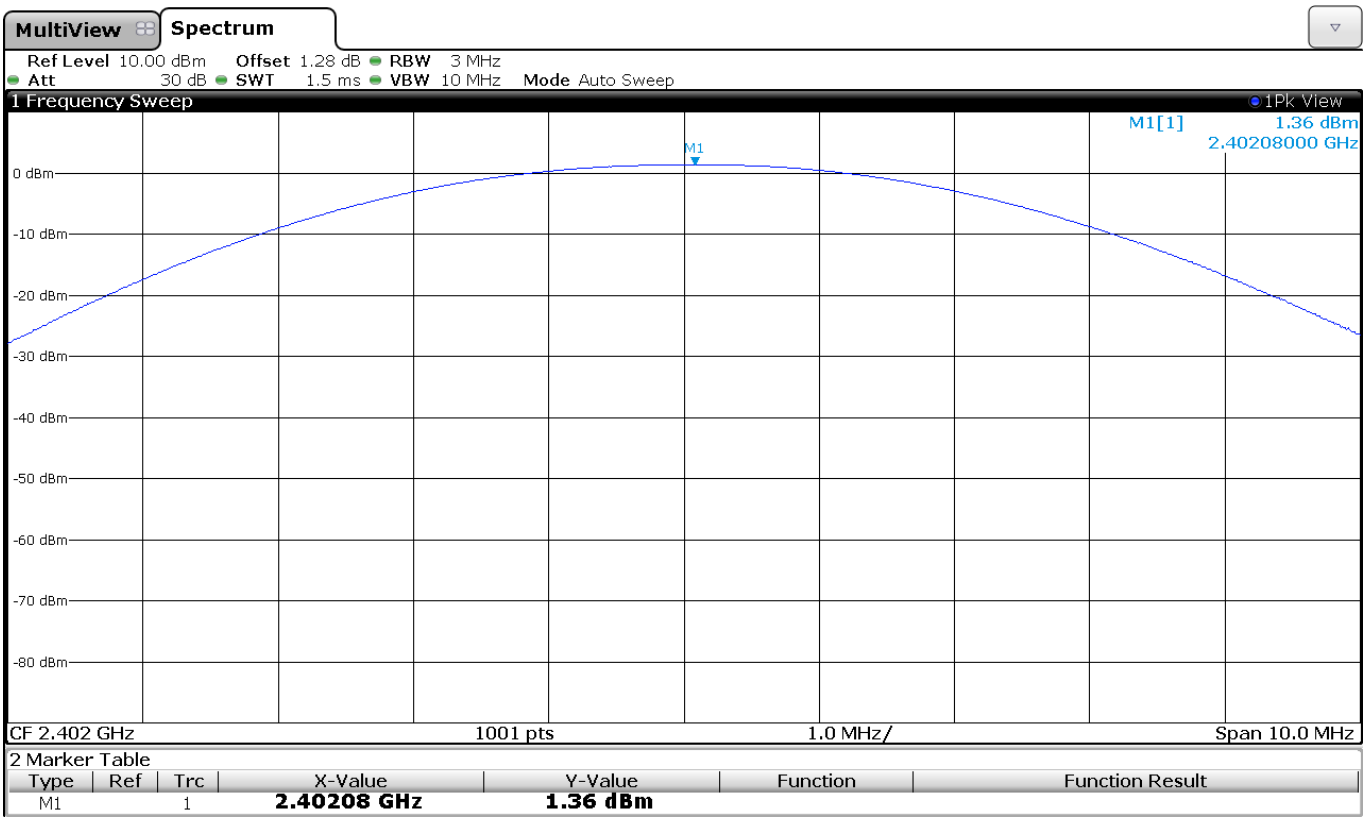


PEAK OUTPUT POWER (CONDUCTED).

Modulation: GFSK Highest Channel: 2480 MHz.

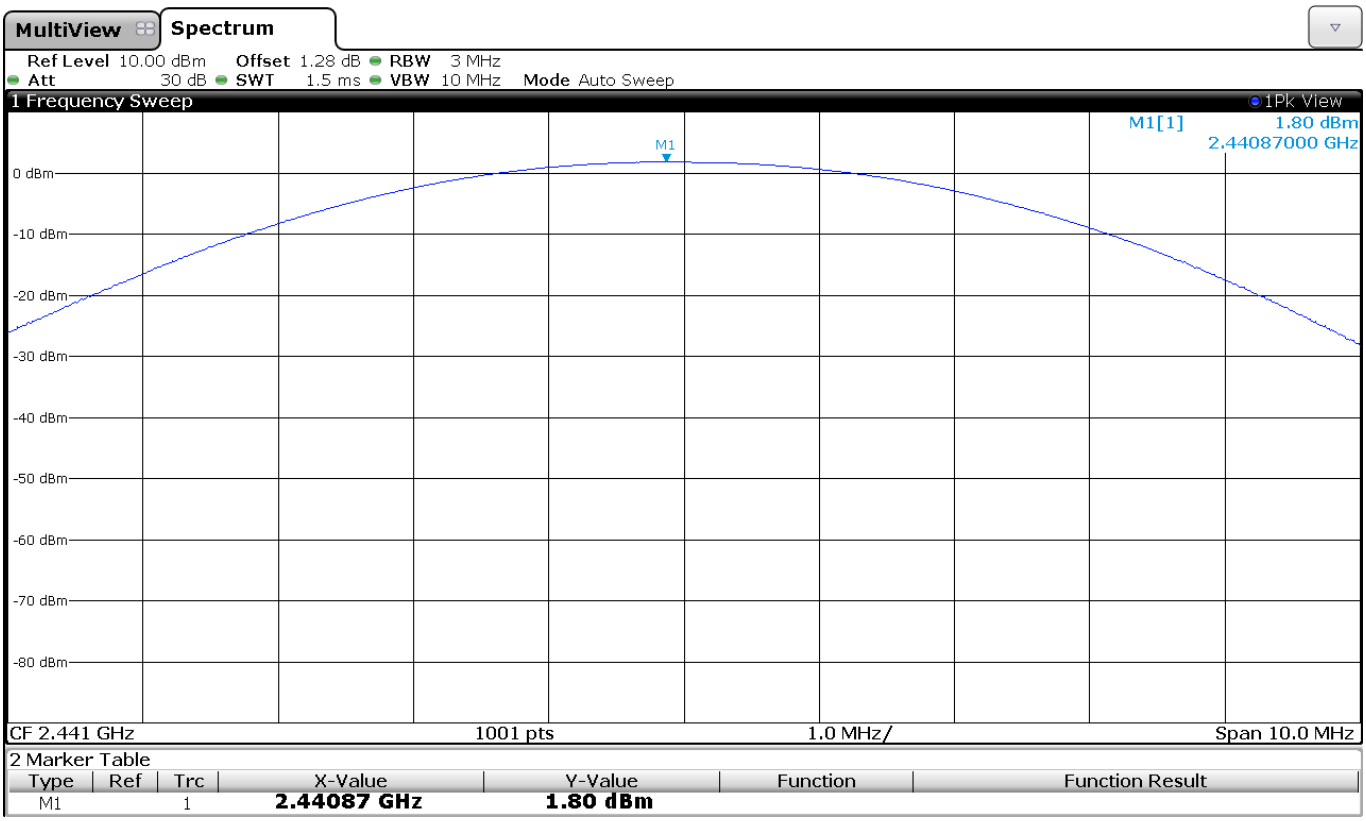


Modulation: Π/4-DQPSK Lowest Channel: 2402 MHz

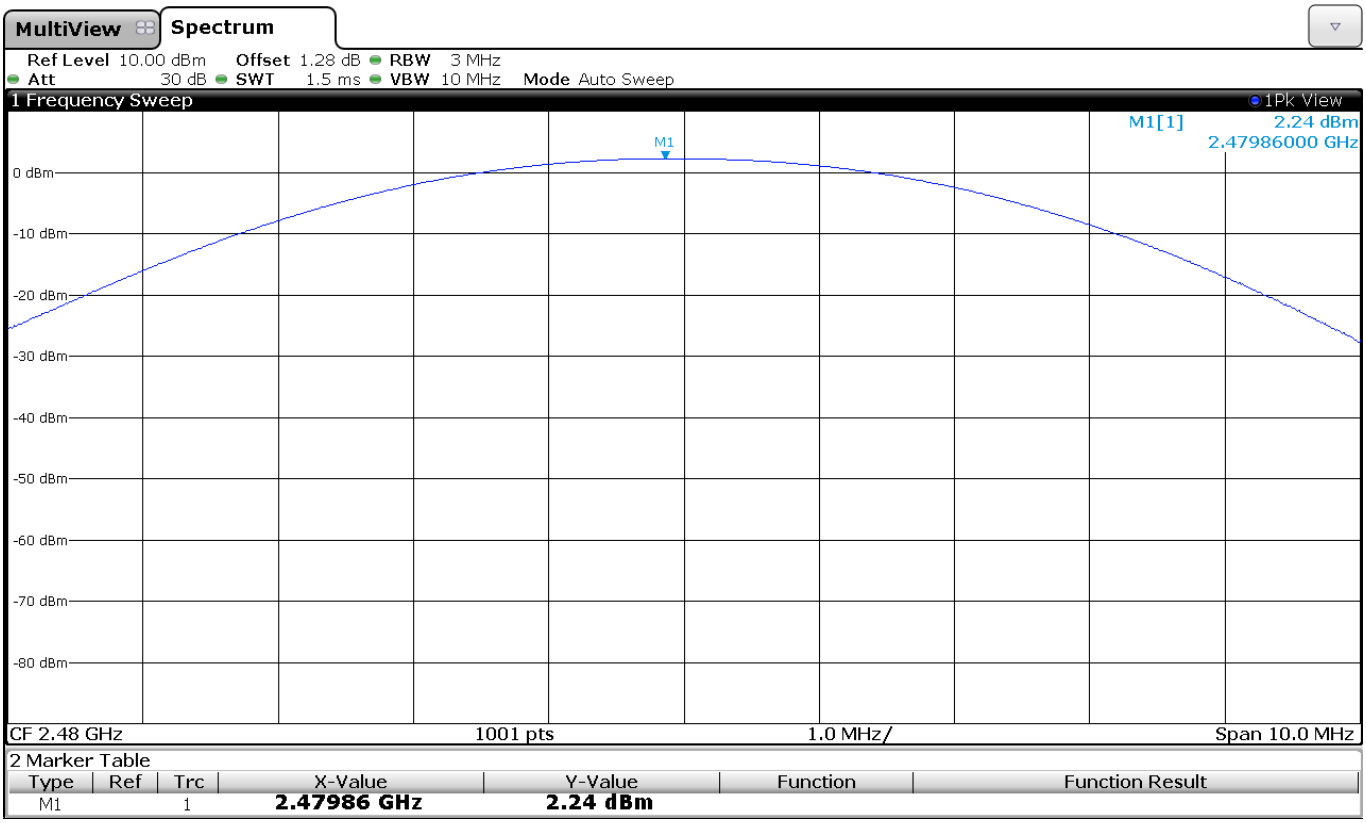


PEAK OUTPUT POWER (CONDUCTED)

Modulation: Π/4-DQPSK Middle Channel: 2441 MHz.

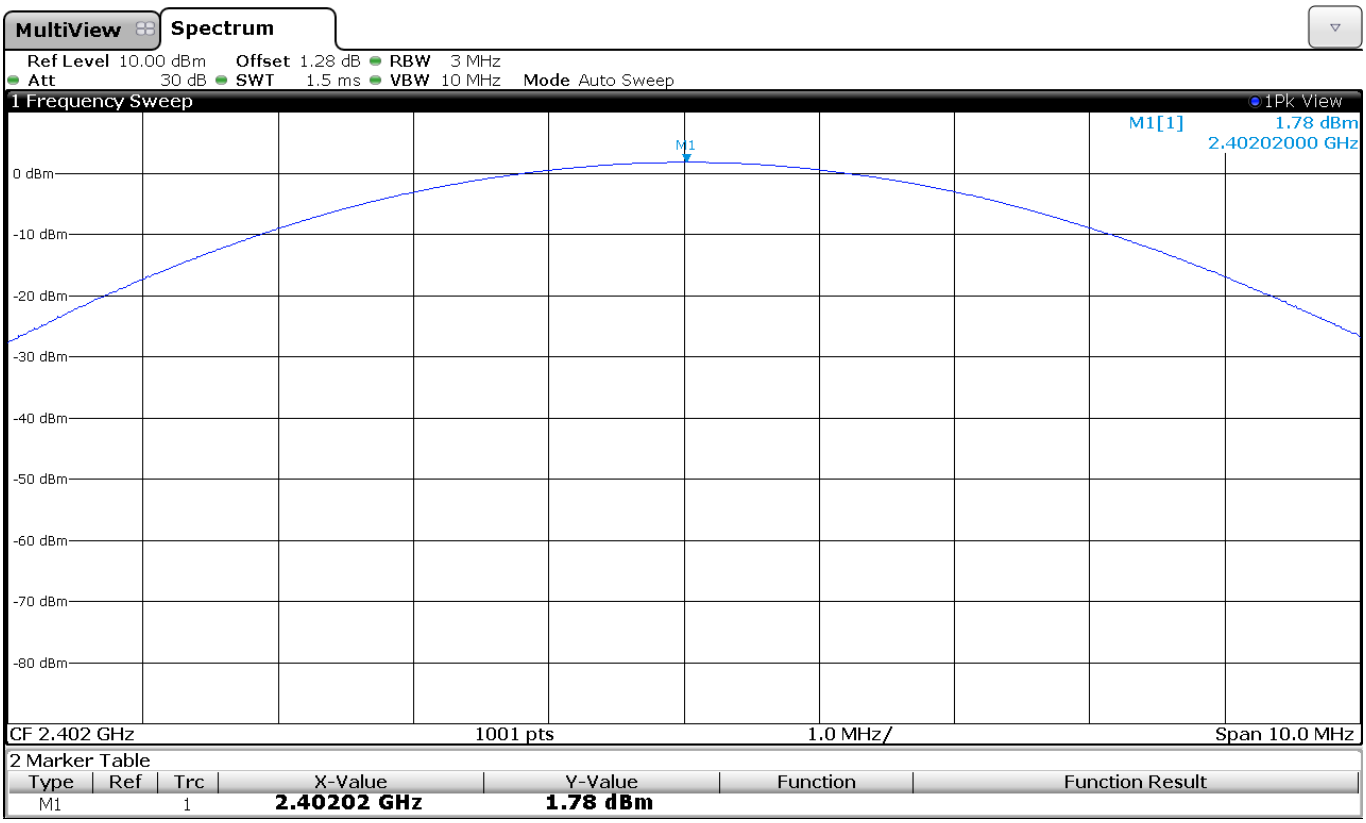


Modulation: Π/4-DQPSK Highest Channel: 2480 MHz.

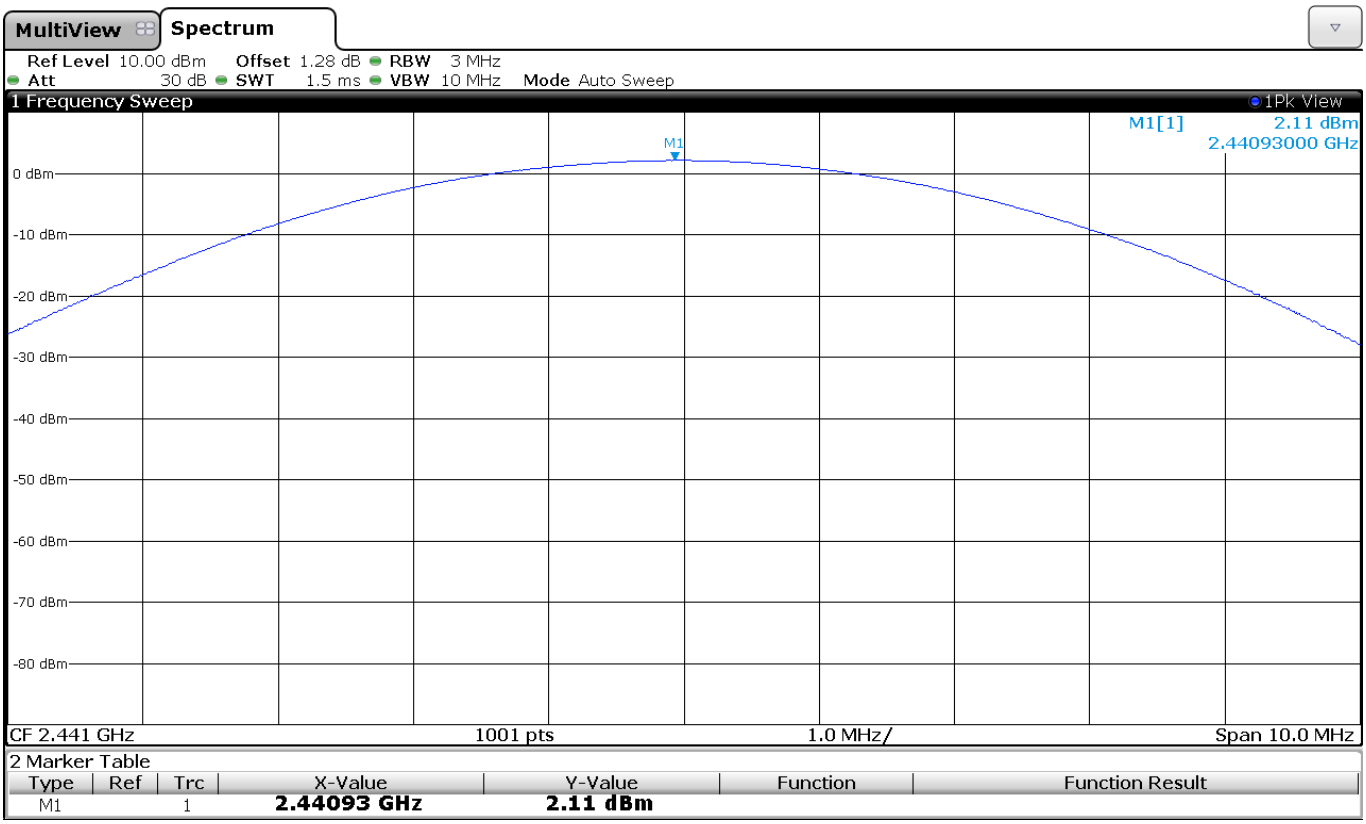


PEAK OUTPUT POWER (CONDUCTED).

Modulation: 8-DPSK Lowest Channel: 2402 MHz

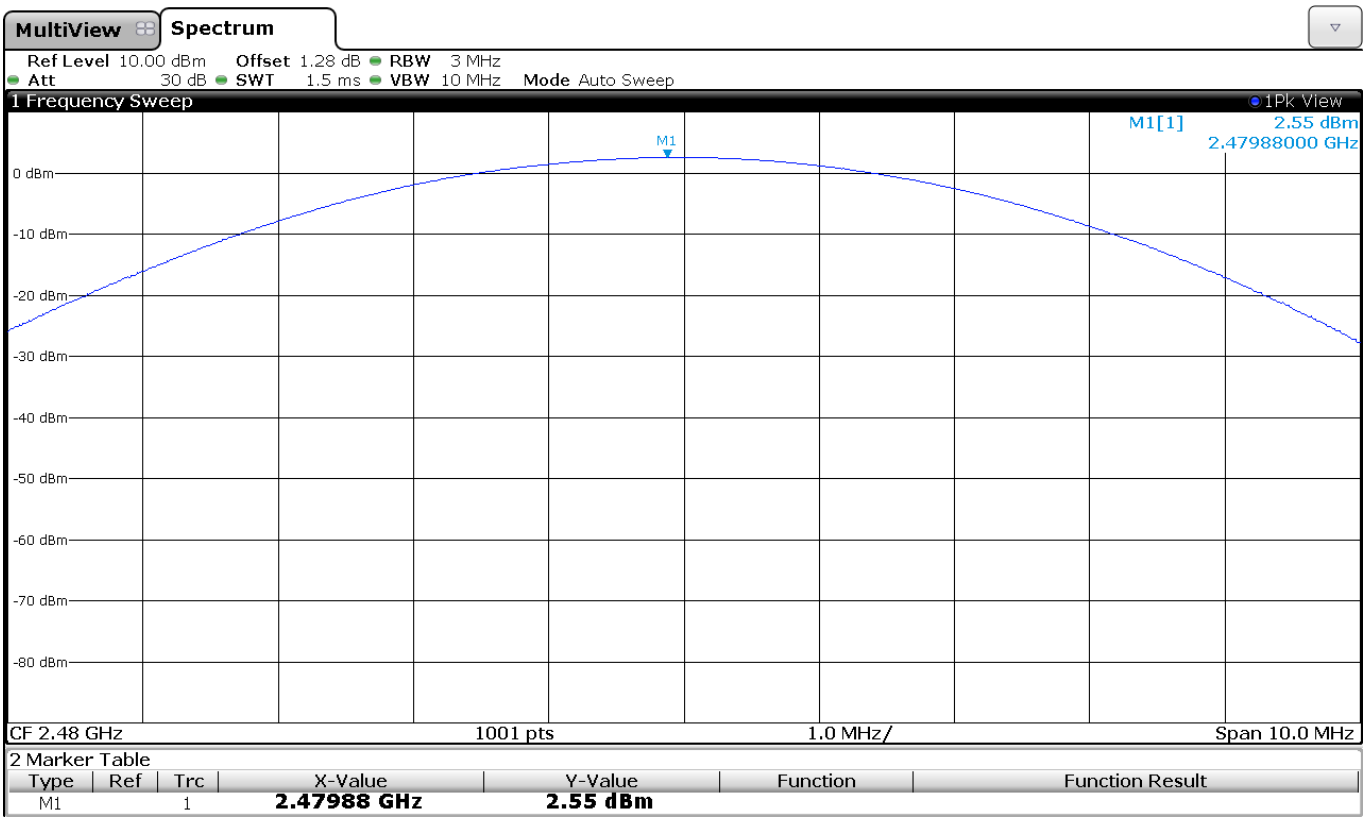


Modulation: 8-DPSK Middle Channel: 2441 MHz.



PEAK OUTPUT POWER (CONDUCTED).

Modulation: 8-DPSK Highest Channel: 2480 MHz.



FCC Section 15.247 Subclause (d). Band-edge compliance of conducted emissions (Transmitter)

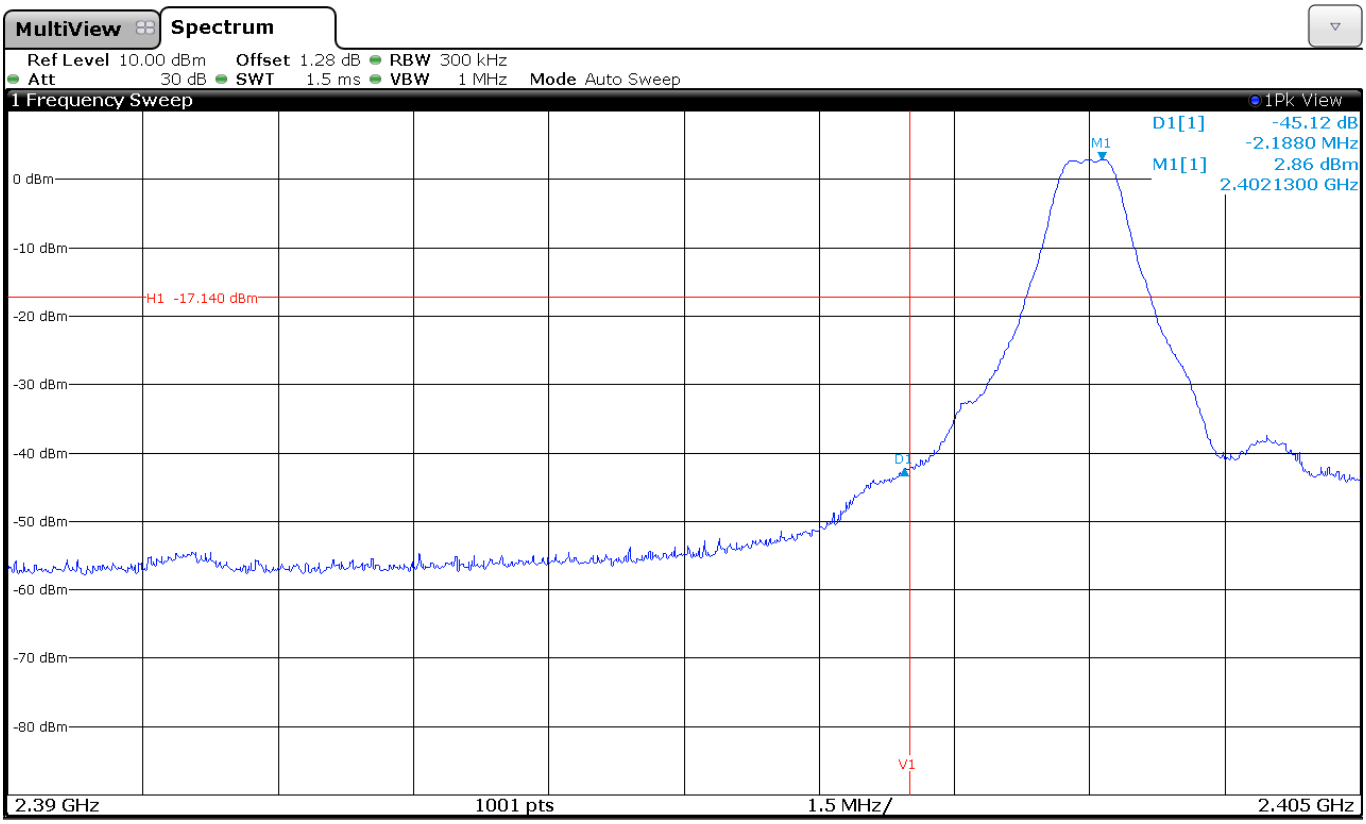
SPECIFICATION

Emissions outside the frequency band in which the intentional radiator is operating shall be at least 20dB below the highest level of the desired power.

RESULTS:

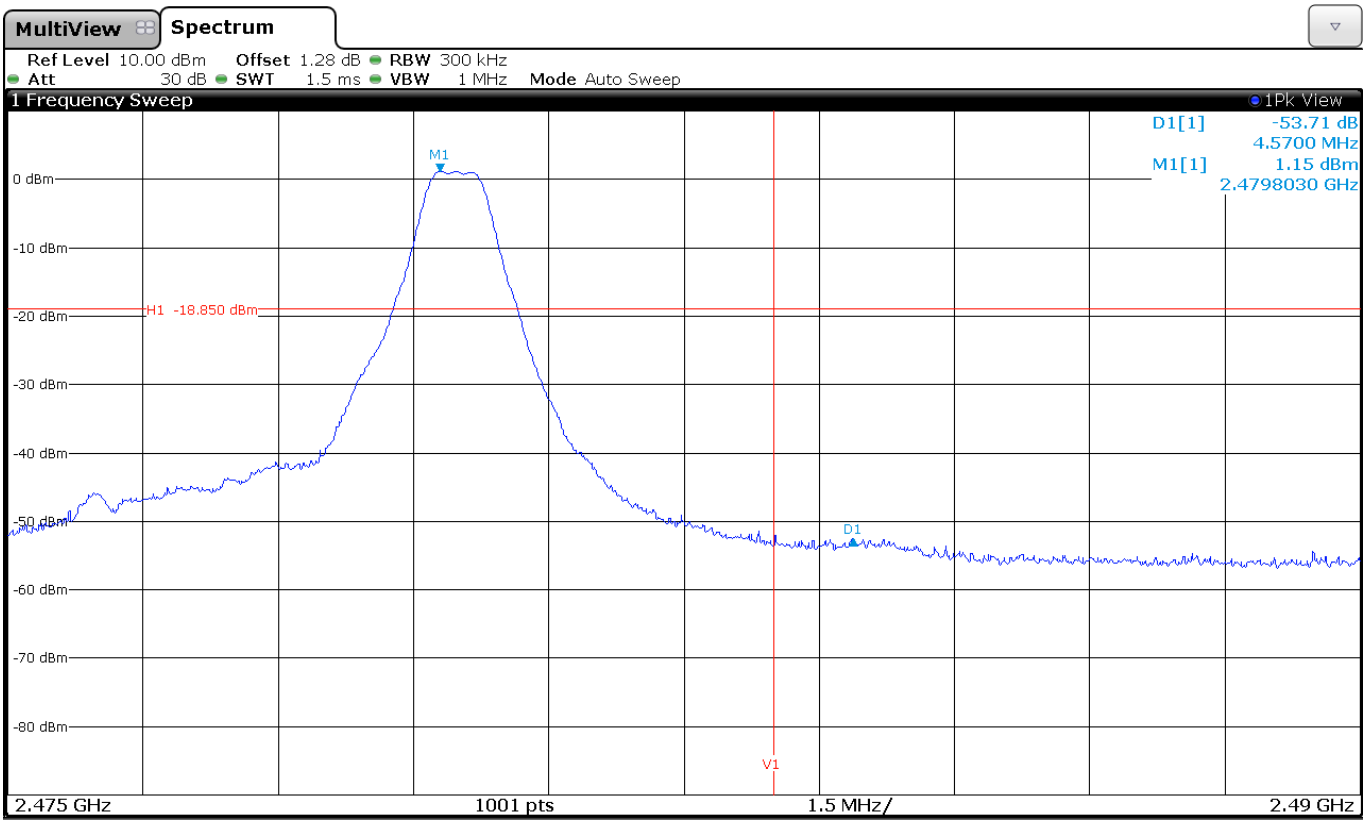
Modulation: GFSK

1. LOW FREQUENCY SECTION 2402 MHz (HOPPING OFF). See next plot.



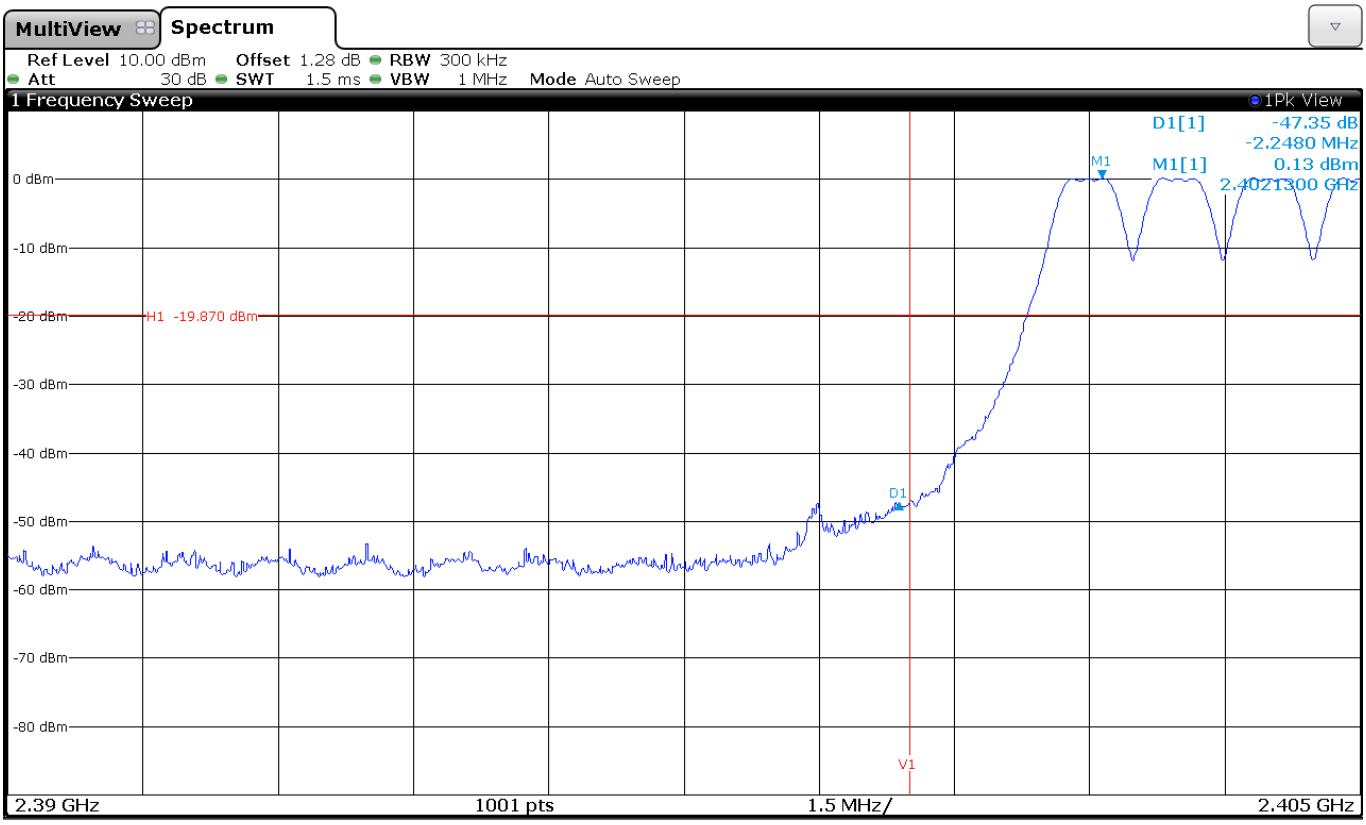
Verdict: PASS

2. HIGH FREQUENCY SECTION 2480 MHz (HOPPING OFF). See next plot.



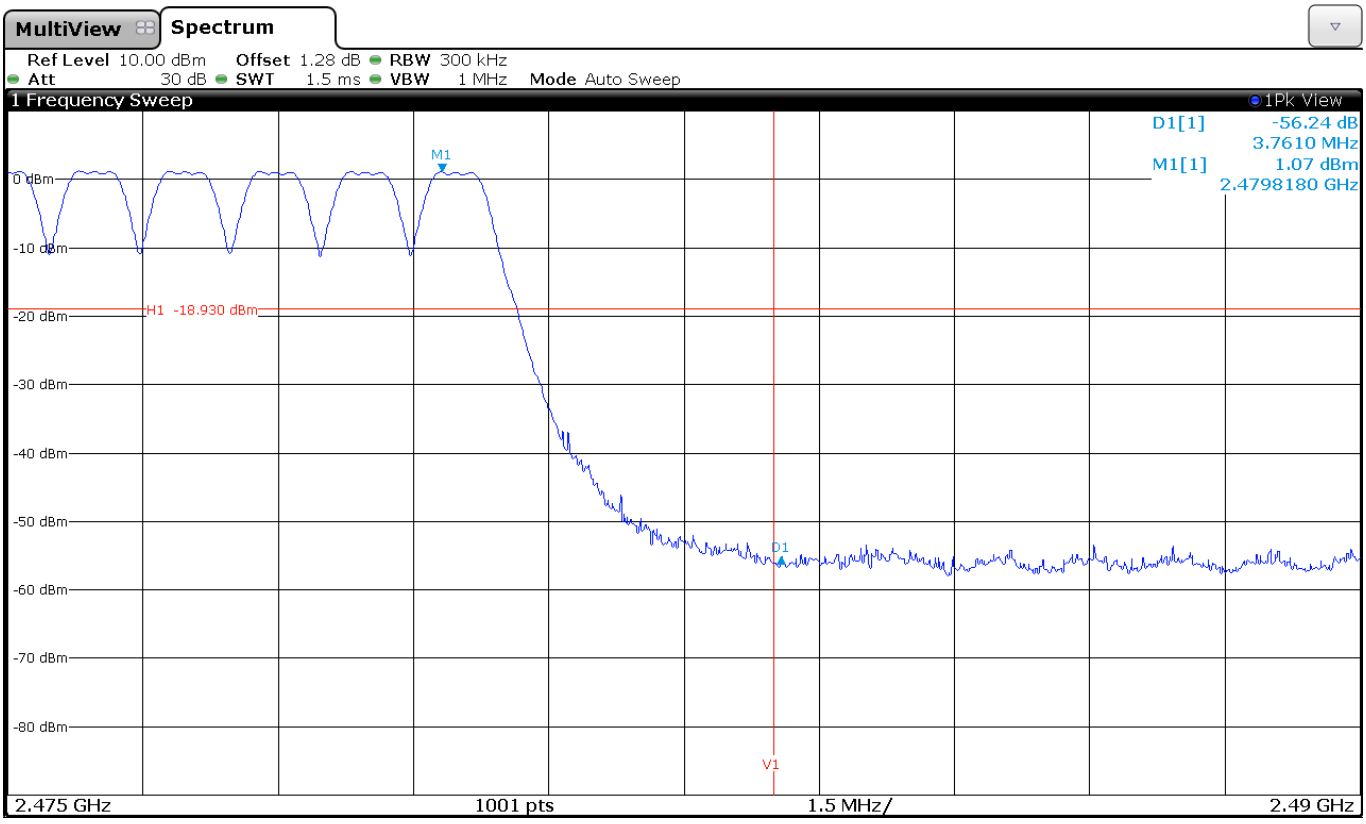
Verdict: PASS

3. LOW FREQUENCY SECTION (HOPPING ON). See next plot.



Verdict: PASS

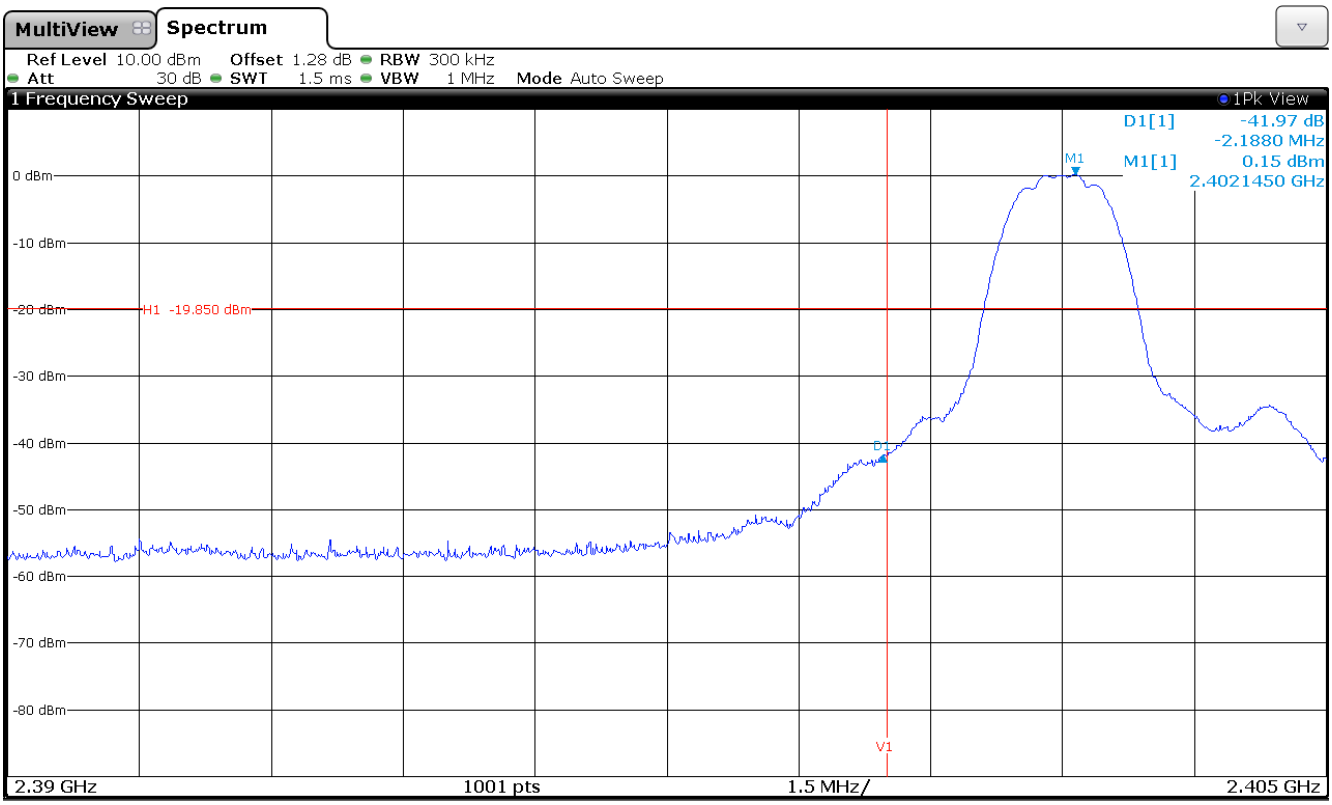
4. HIGH FREQUENCY SECTION (HOPPING ON). See next plot.



Verdict: PASS

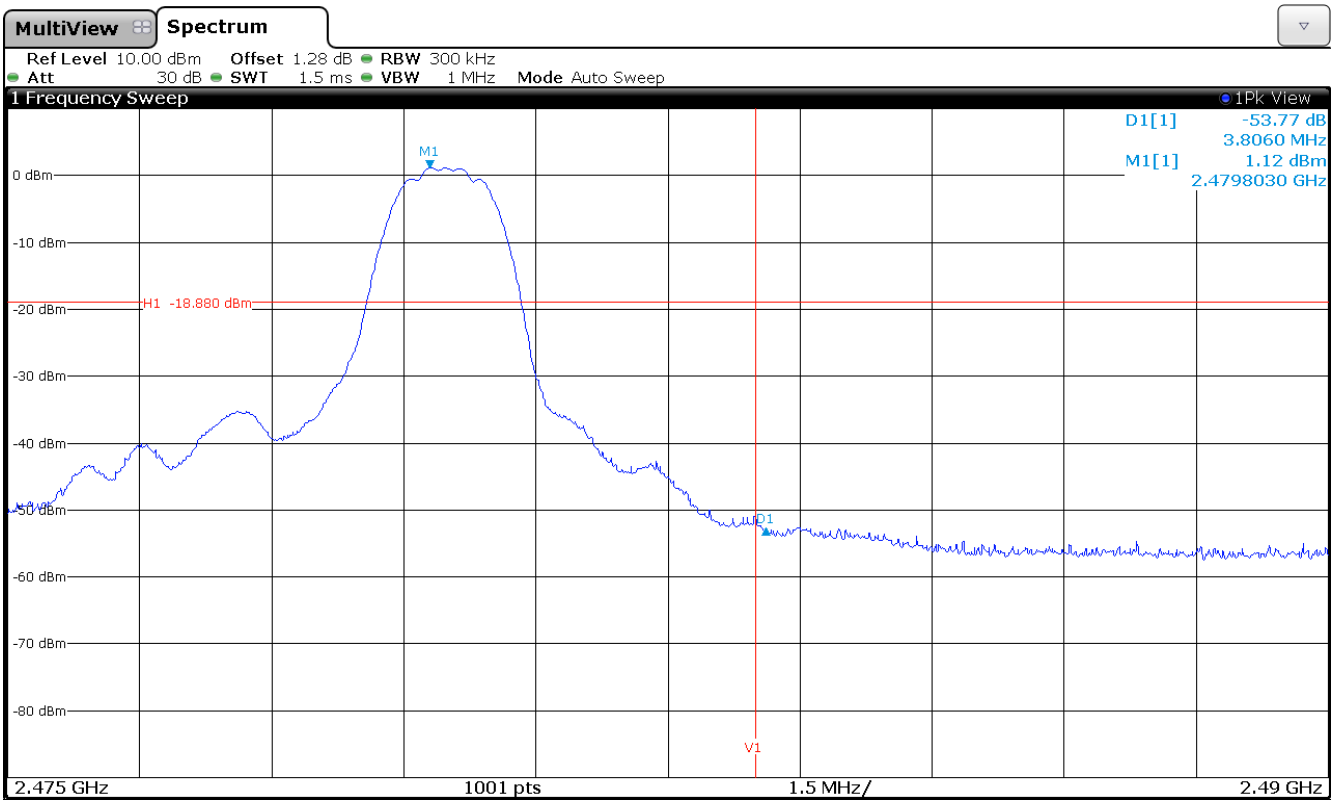
Modulation: Π/4-DQPSK

1. LOW FREQUENCY SECTION 2402 MHz (HOPPING OFF). See next plot.



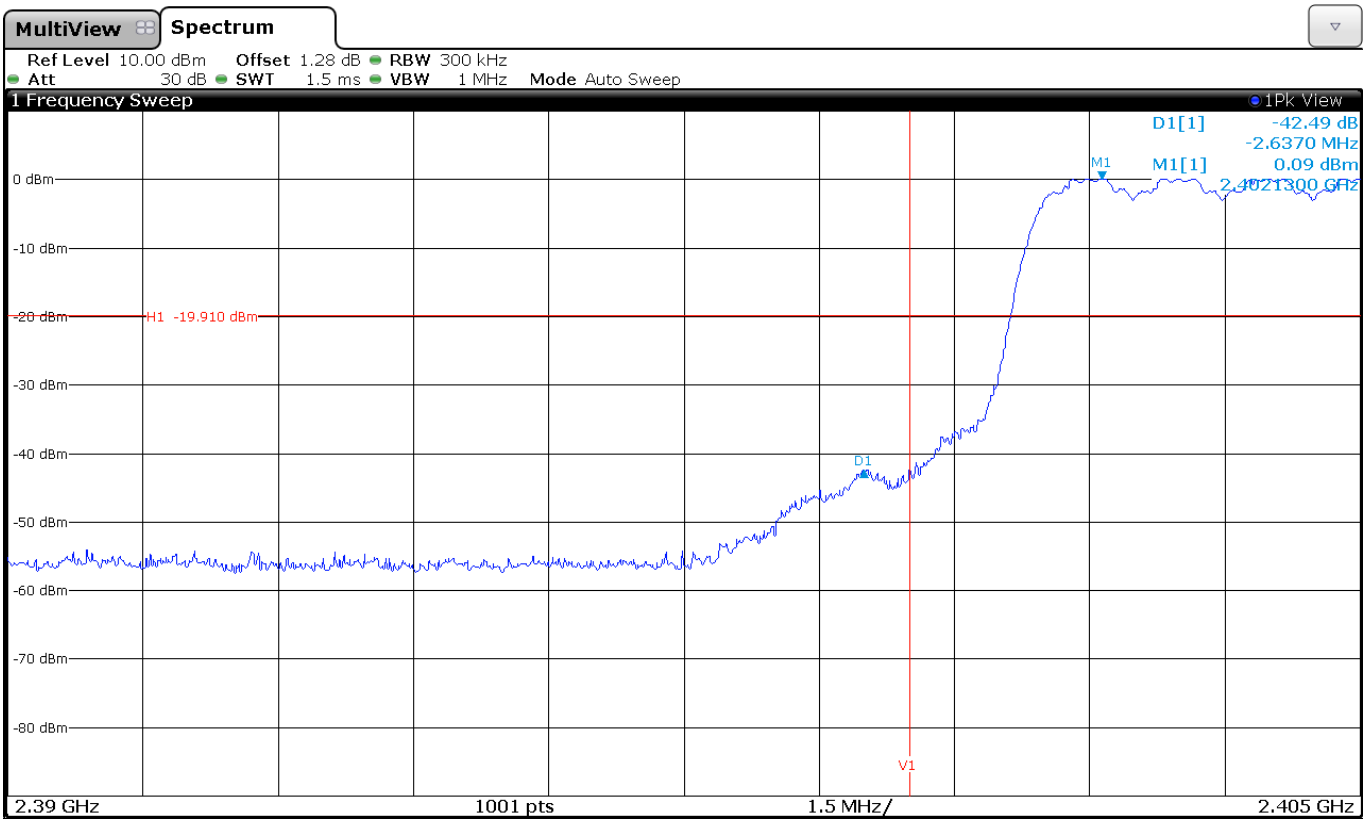
Verdict: PASS

2. HIGH FREQUENCY SECTION 2480 MHz (HOPPING OFF). See next plot.



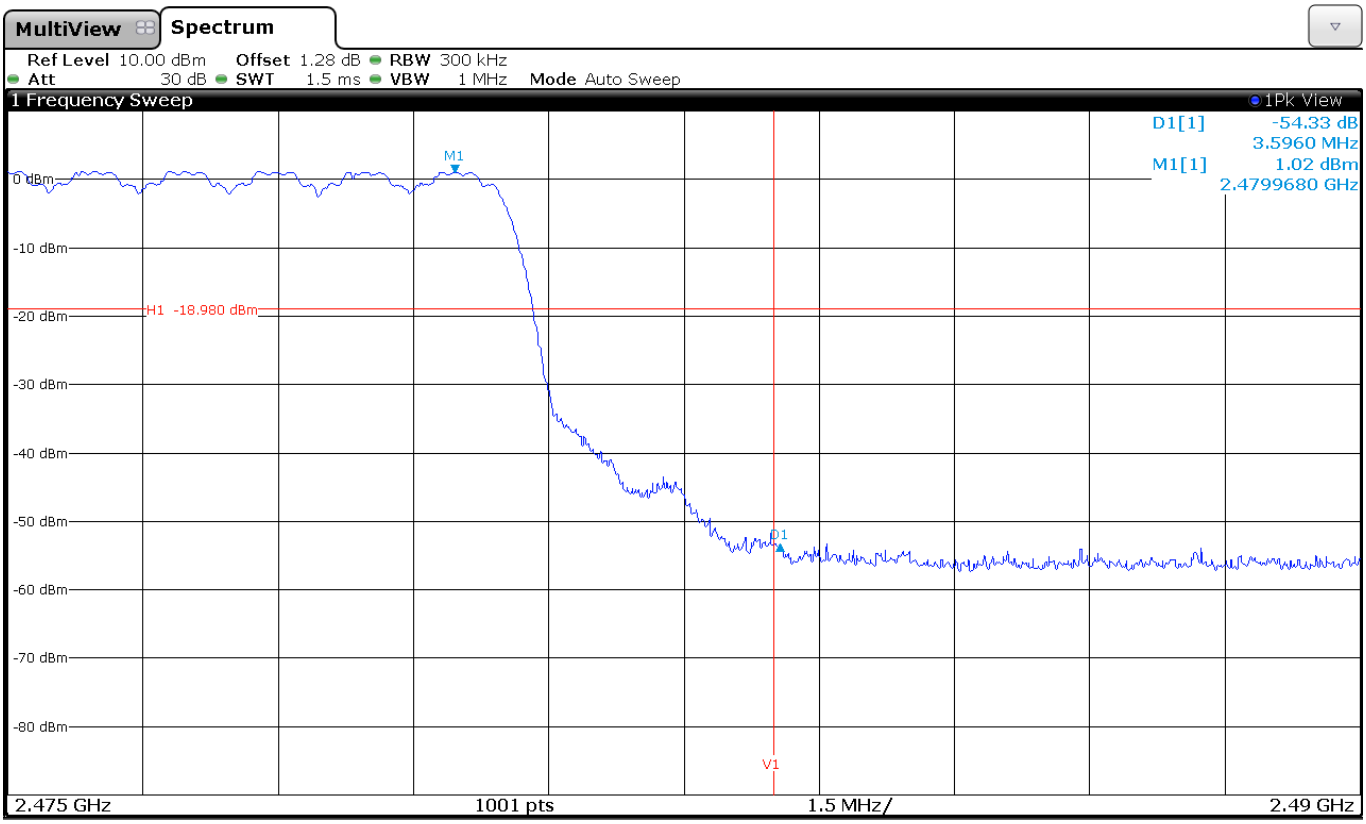
Verdict: PASS

3. LOW FREQUENCY SECTION (HOPPING ON). See next plot.



Verdict: PASS

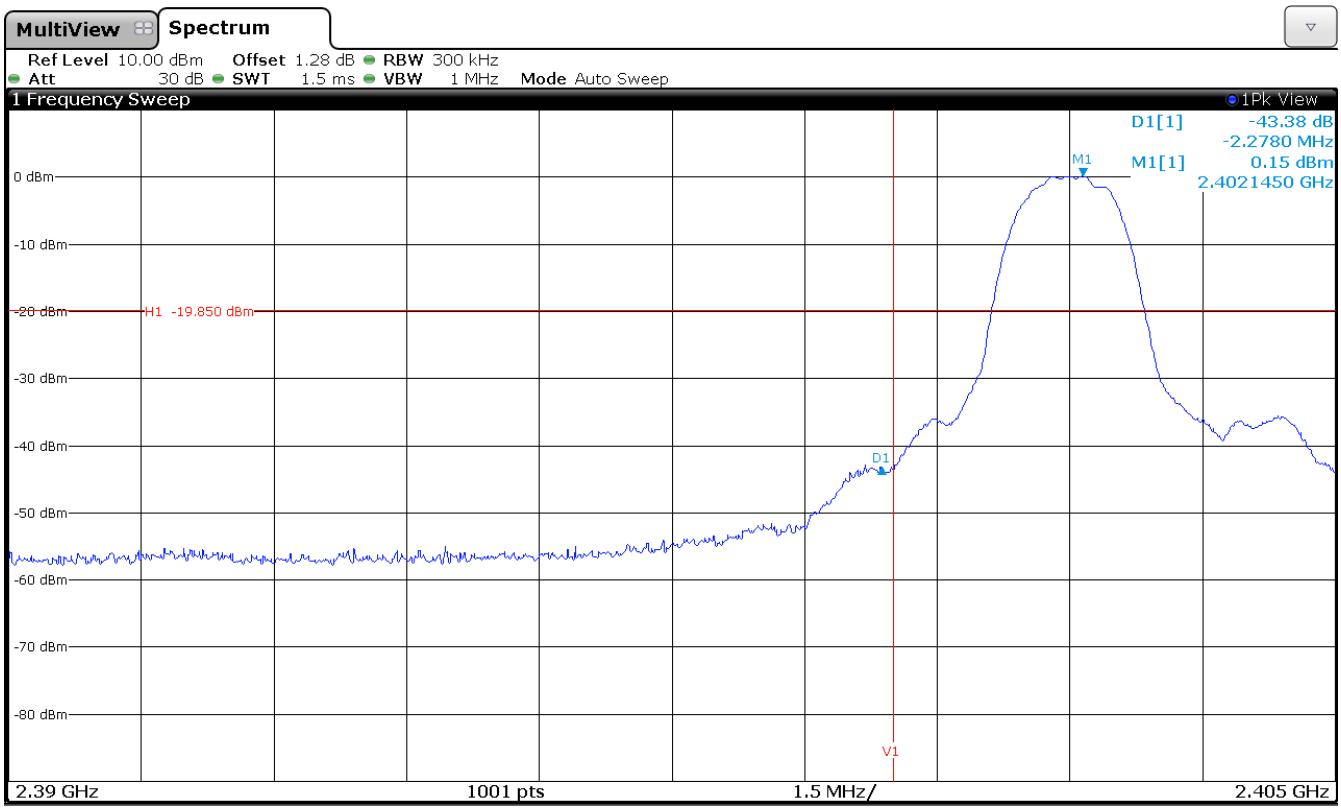
4. HIGH FREQUENCY SECTION (HOPPING ON). See next plot.



Verdict: PASS

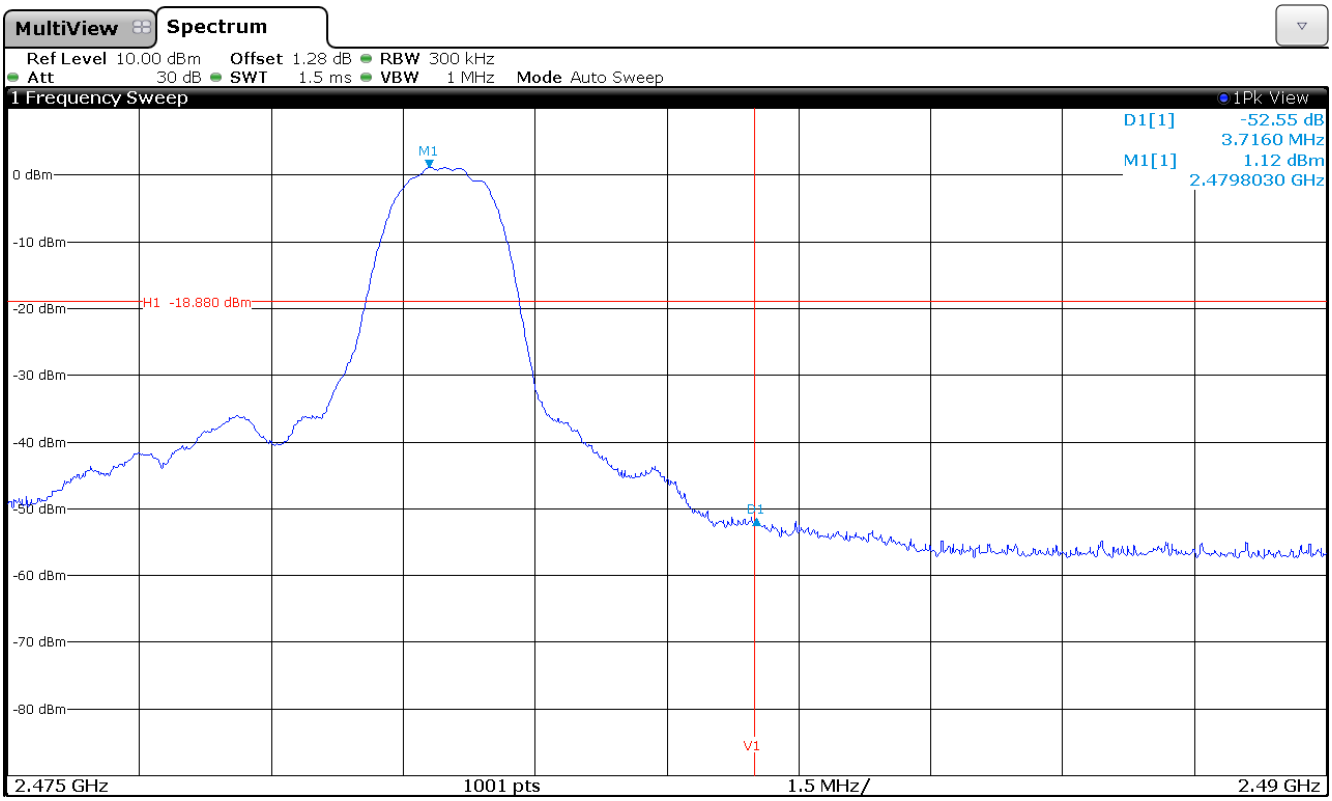
Modulation: 8-DPSK

1. LOW FREQUENCY SECTION 2402 MHz (HOPPING OFF). See next plot.



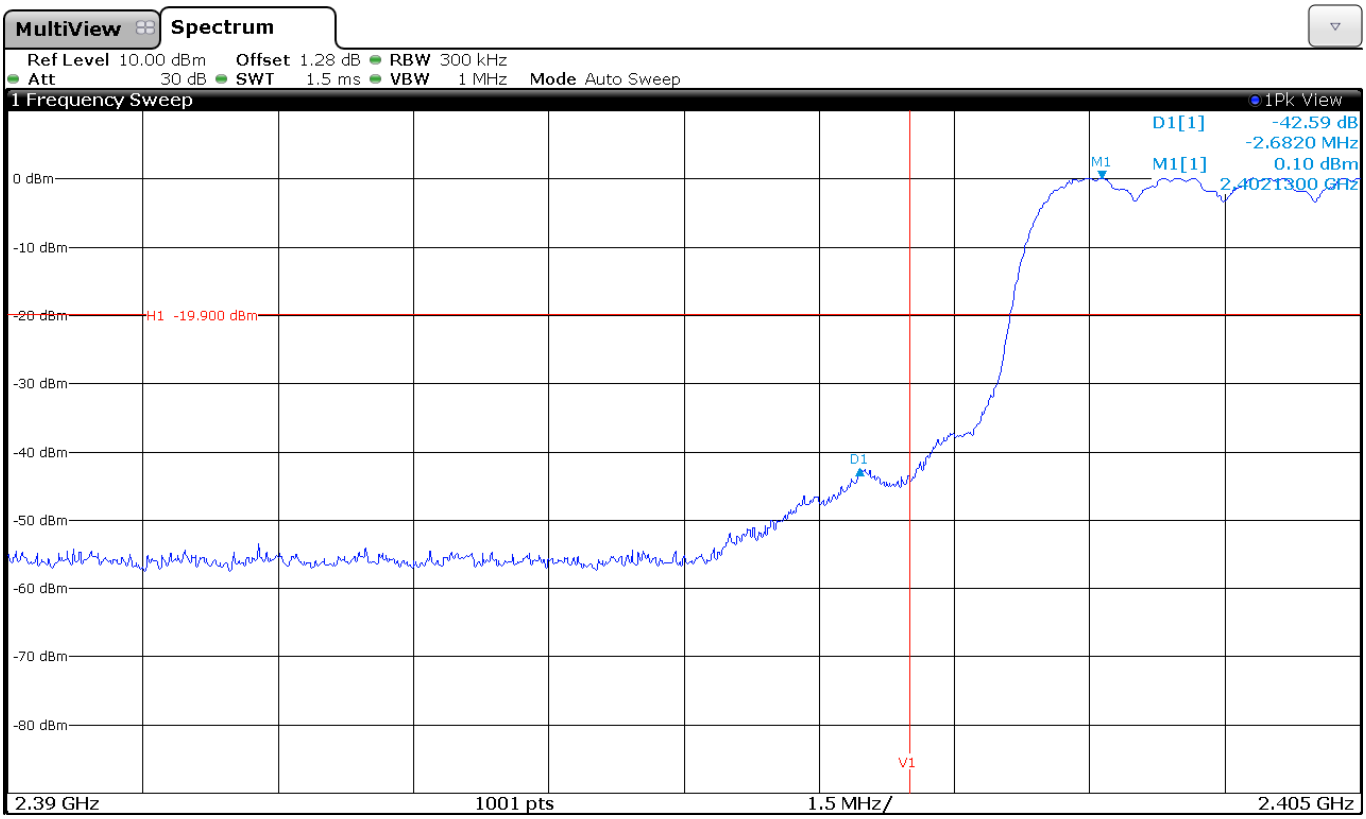
Verdict: PASS

2. HIGH FREQUENCY SECTION 2480 MHz (HOPPING OFF). See next plot.



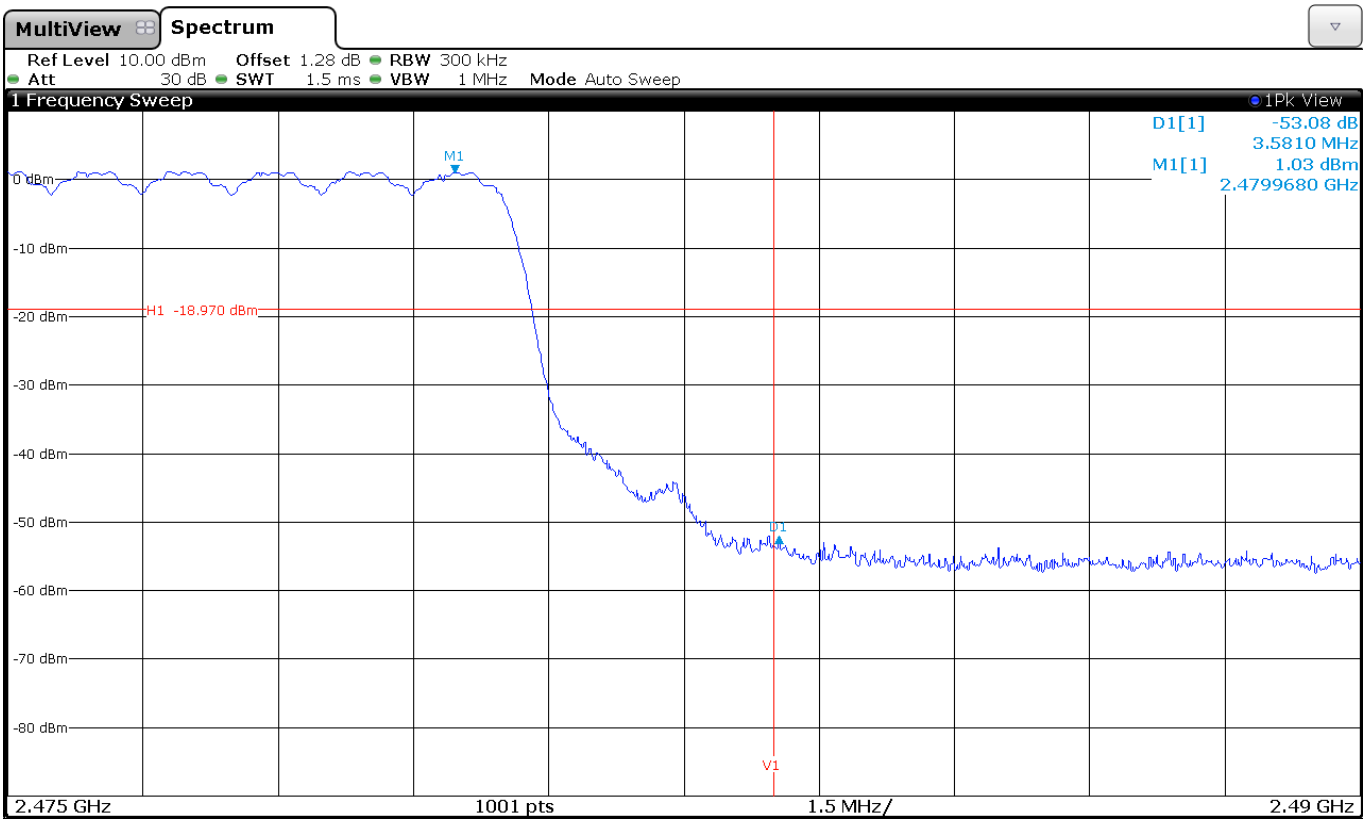
Verdict: PASS

3. LOW FREQUENCY SECTION (HOPPING ON). See next plot.



Verdict: PASS

4. HIGH FREQUENCY SECTION (HOPPING ON). See next plot.



Verdict: PASS

FCC Section 15.247 Subclause (d). Emission limitations conducted (Transmitter)

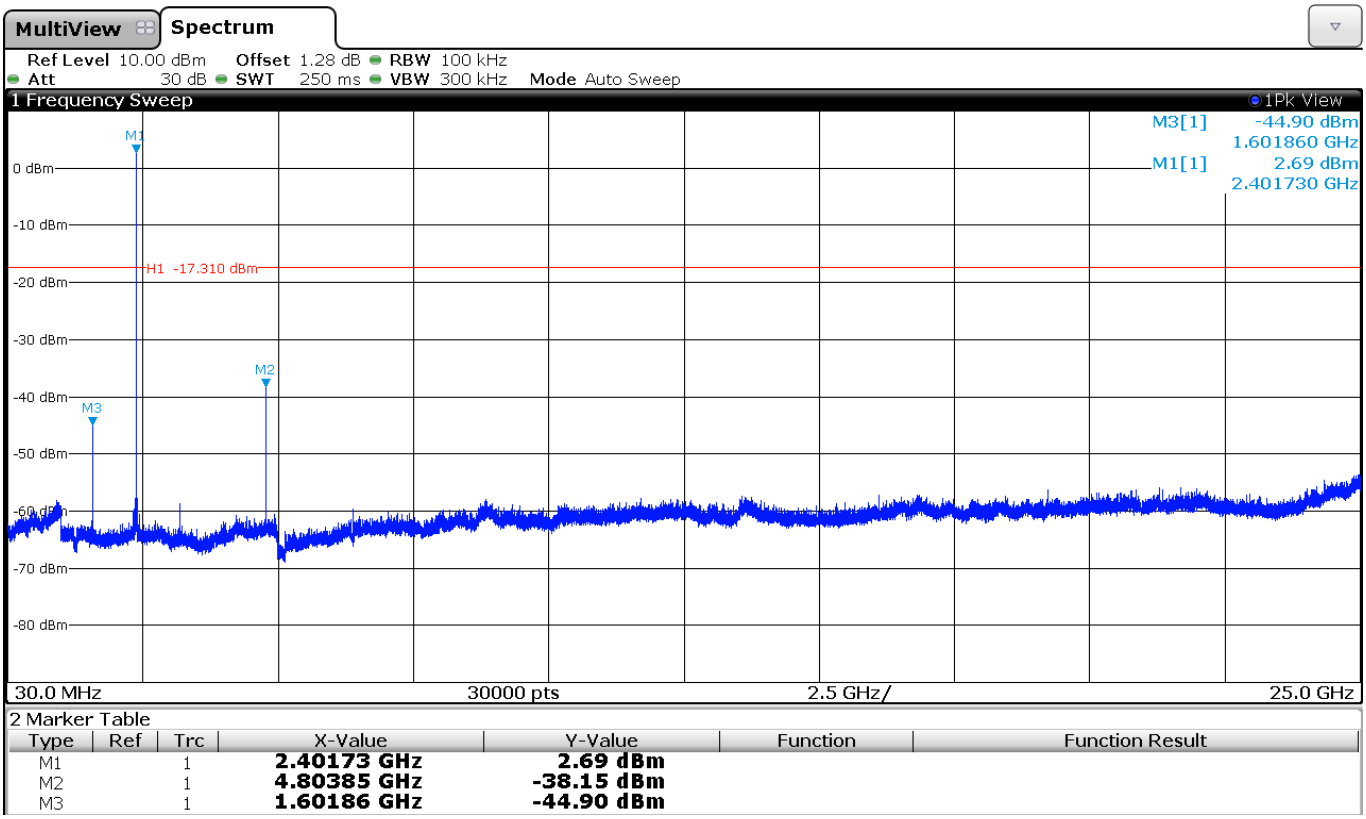
SPECIFICATION

In any 100 kHz bandwidths outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

RESULTS:

Modulation: GFSK

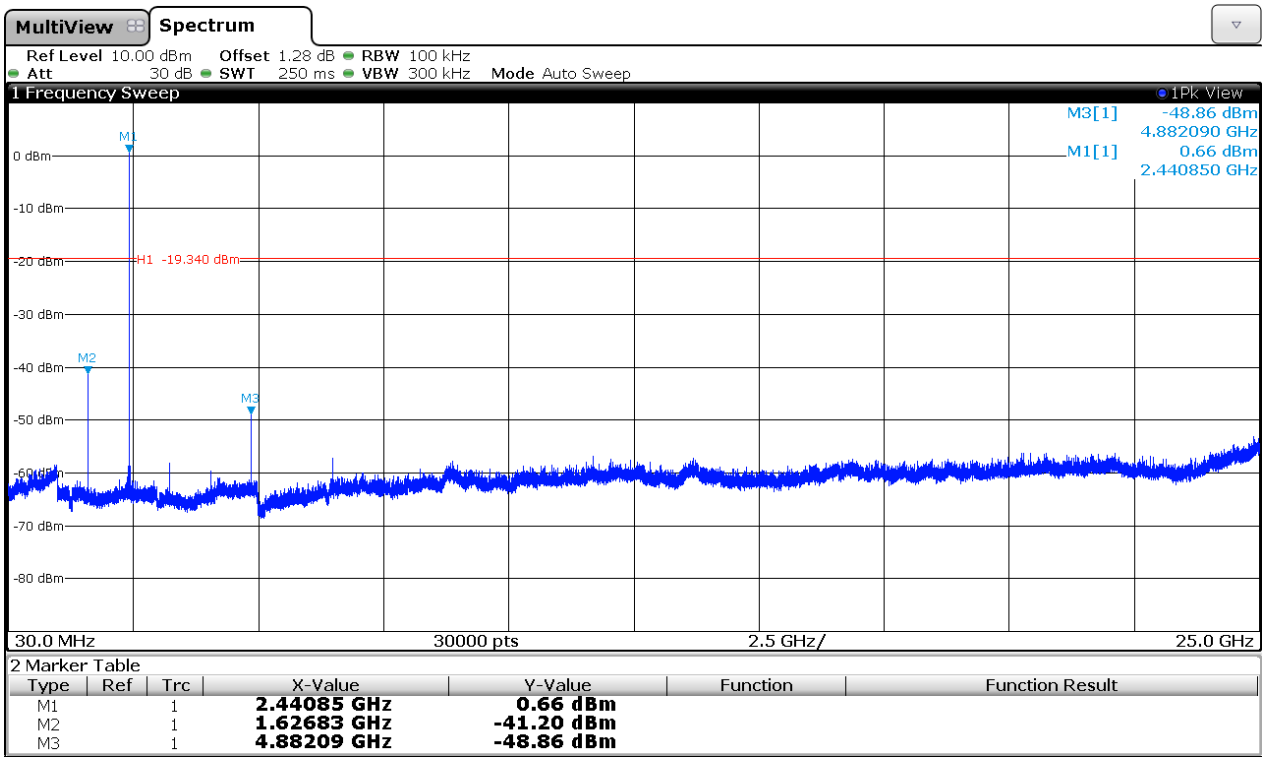
1. LOWEST CHANNEL (2402 MHz): 30 MHz-25 GHz (see next plot).



Note: The peak above the limit is the carrier frequency.

Verdict: PASS

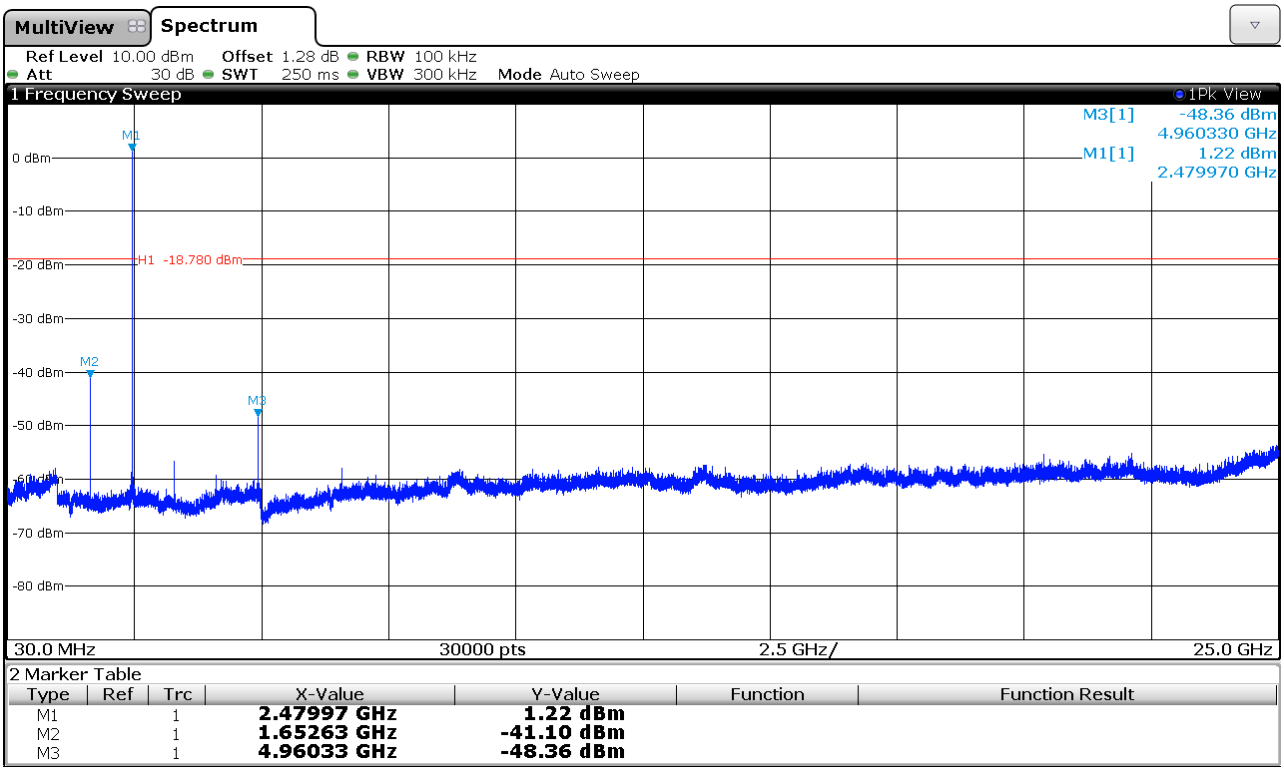
2. MIDDLE CHANNEL (2441 MHz): 30 MHz-25 GHz (see next plot).



Note: The peak above the limits is the carrier frequency.

Verdict: PASS

3. HIGH CHANNEL (2480 MHz): 30 MHz-25 GHz (see next plot).

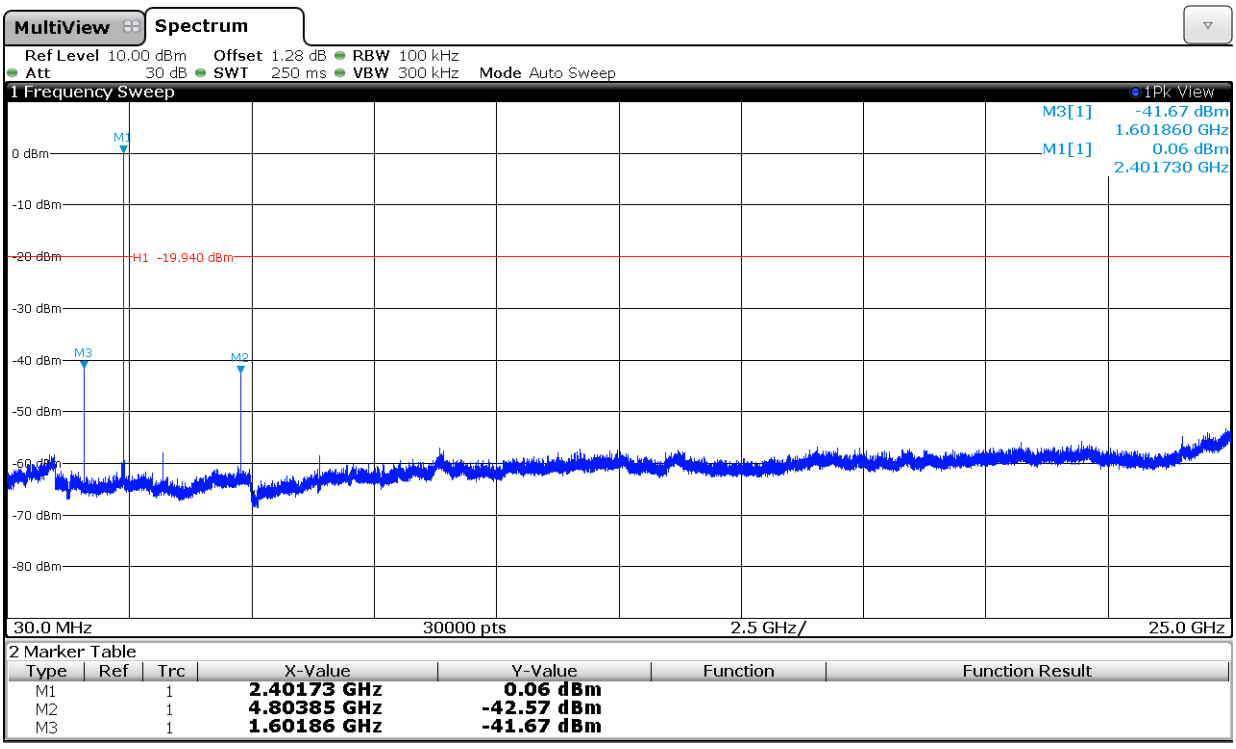


Note: The peak above the limits is the carrier frequency.

Verdict: PASS

Modulation: Π/4-DQPSK

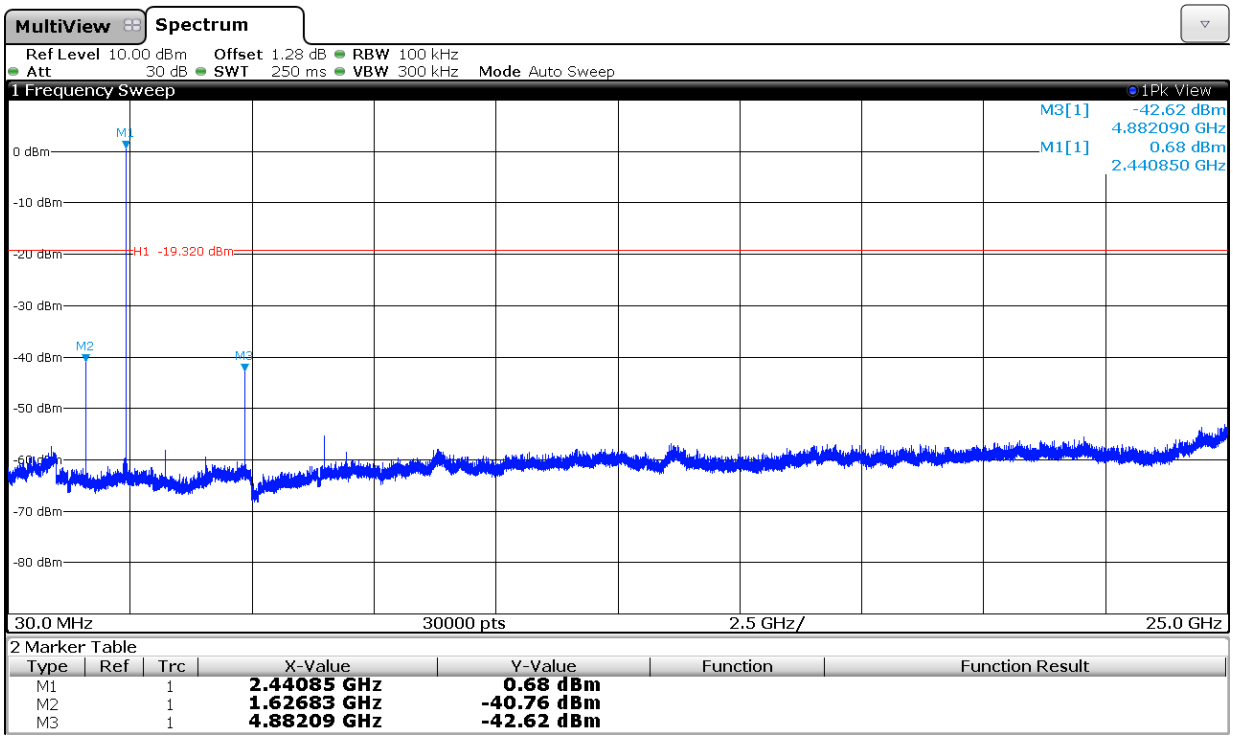
1. LOWEST CHANNEL (2402 MHz): 30 MHz-25 GHz (see next plot).



Note: The peak above the limits is the carrier frequency.

Verdict: PASS

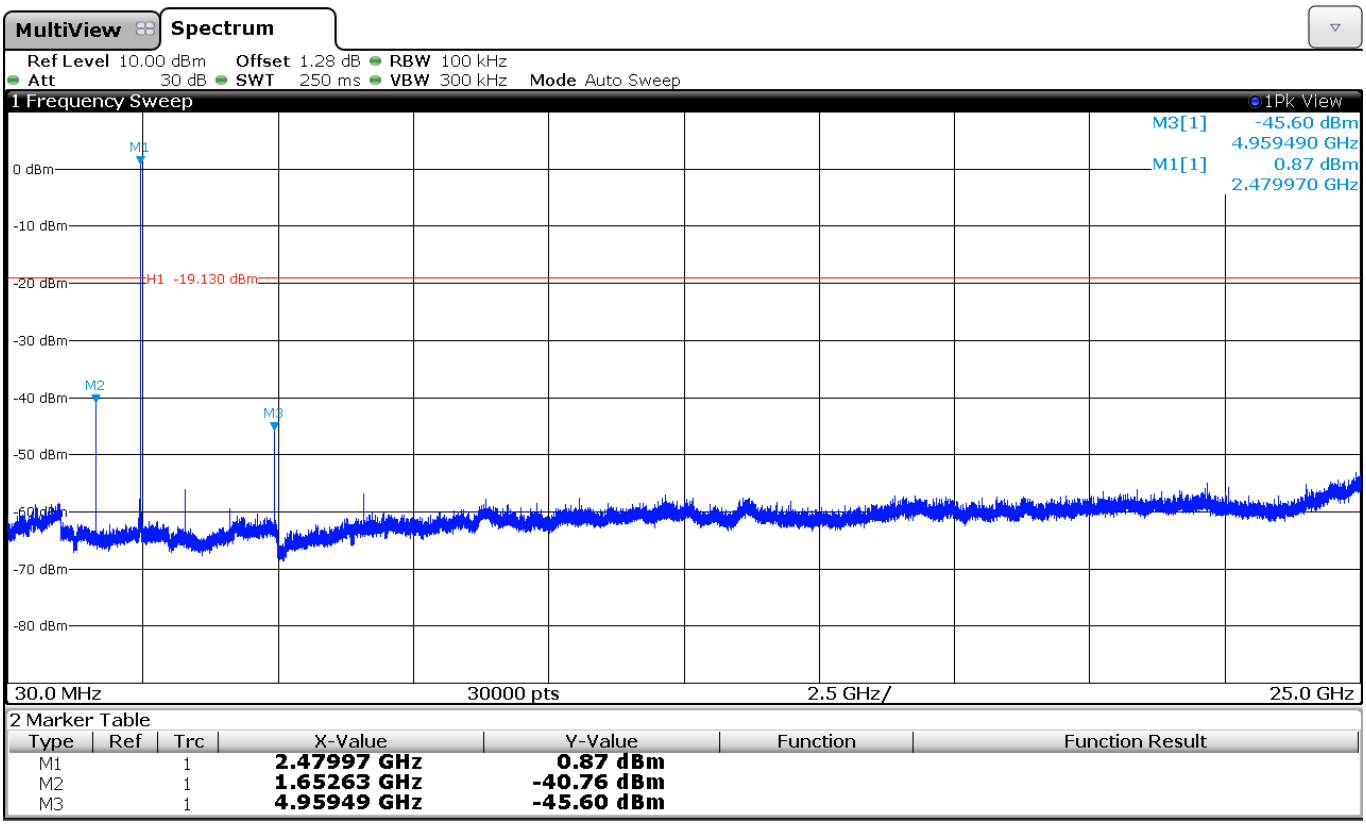
2. MIDDLE CHANNEL (2441 MHz): 30 MHz-25 GHz (see next plot).



Note: The peaks above the limits are the carrier frequencies.

Verdict: PASS

3. HIGH CHANNEL (2480 MHz): 30 MHz-25 GHz (see next plot).

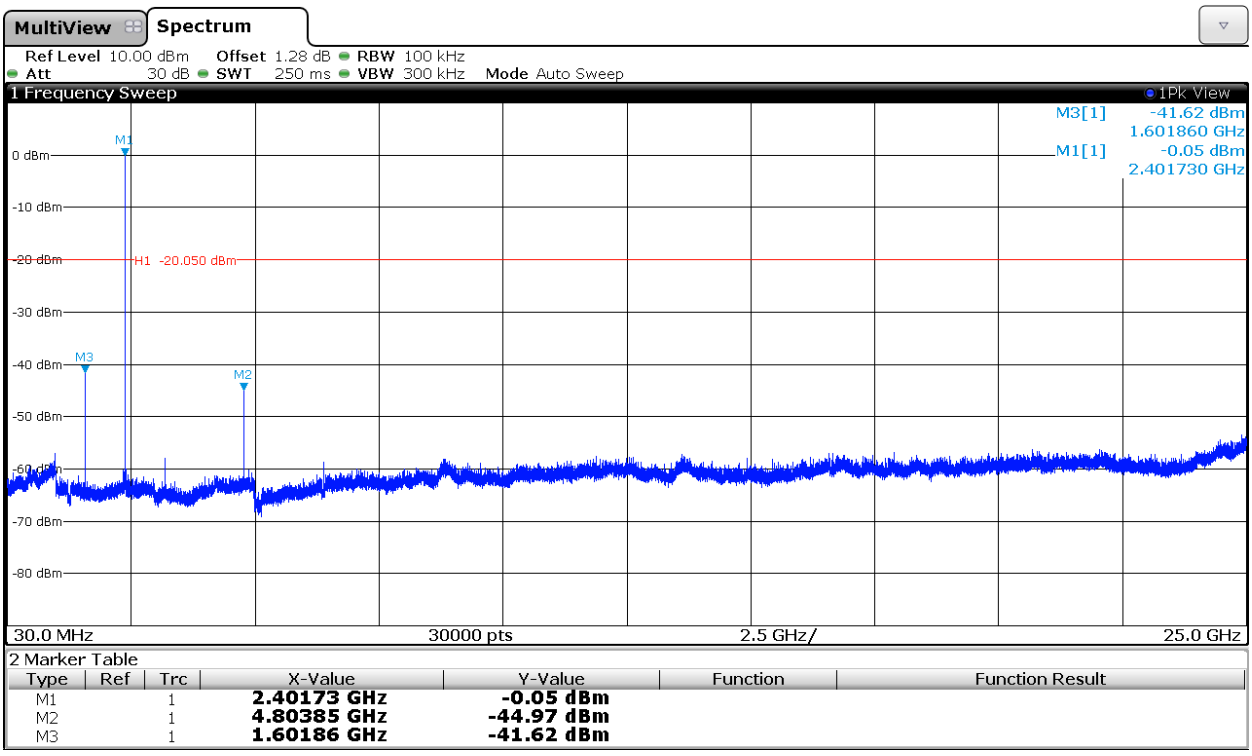


Note: The peak above the limit is the carrier frequency.

Verdict: PASS

Modulation: 8-DPSK

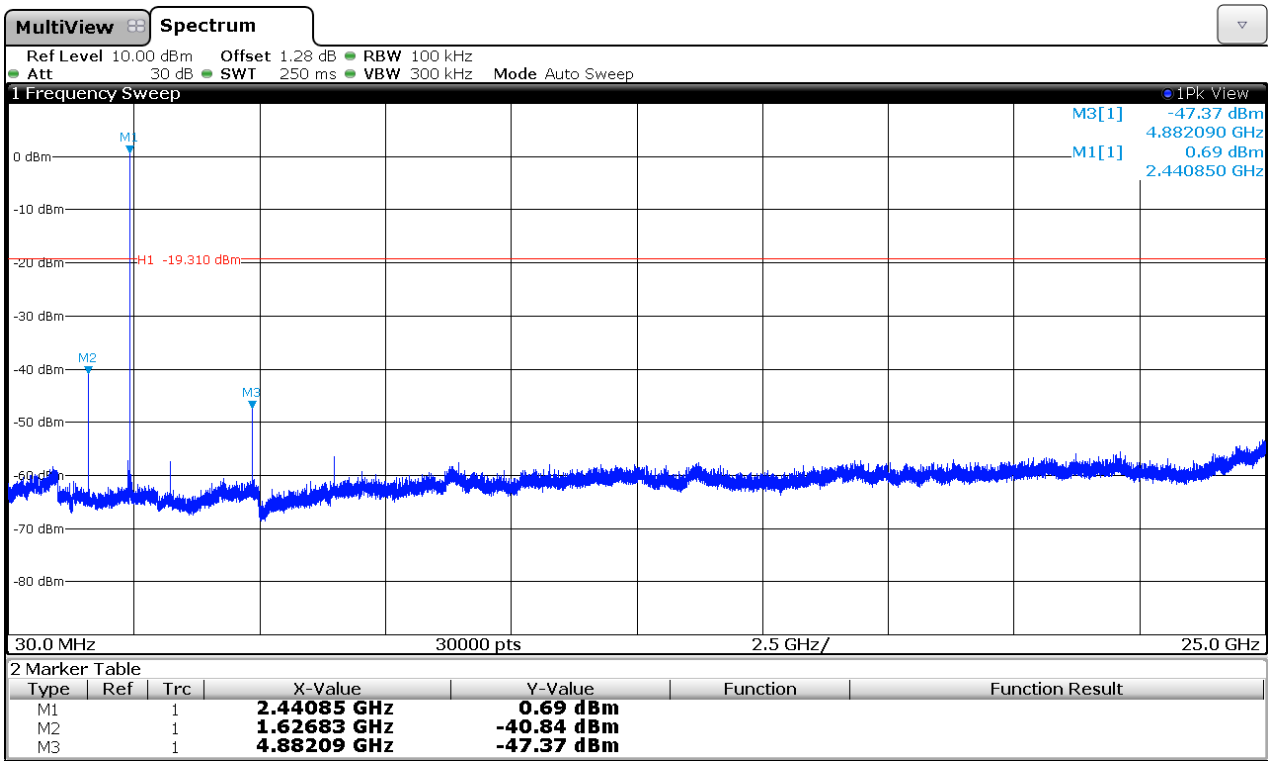
1. LOWEST CHANNEL (2402 MHz): 30 MHz-25 GHz (see next plot).



Note: The peak above the limits is the carrier frequency.

Verdict: PASS

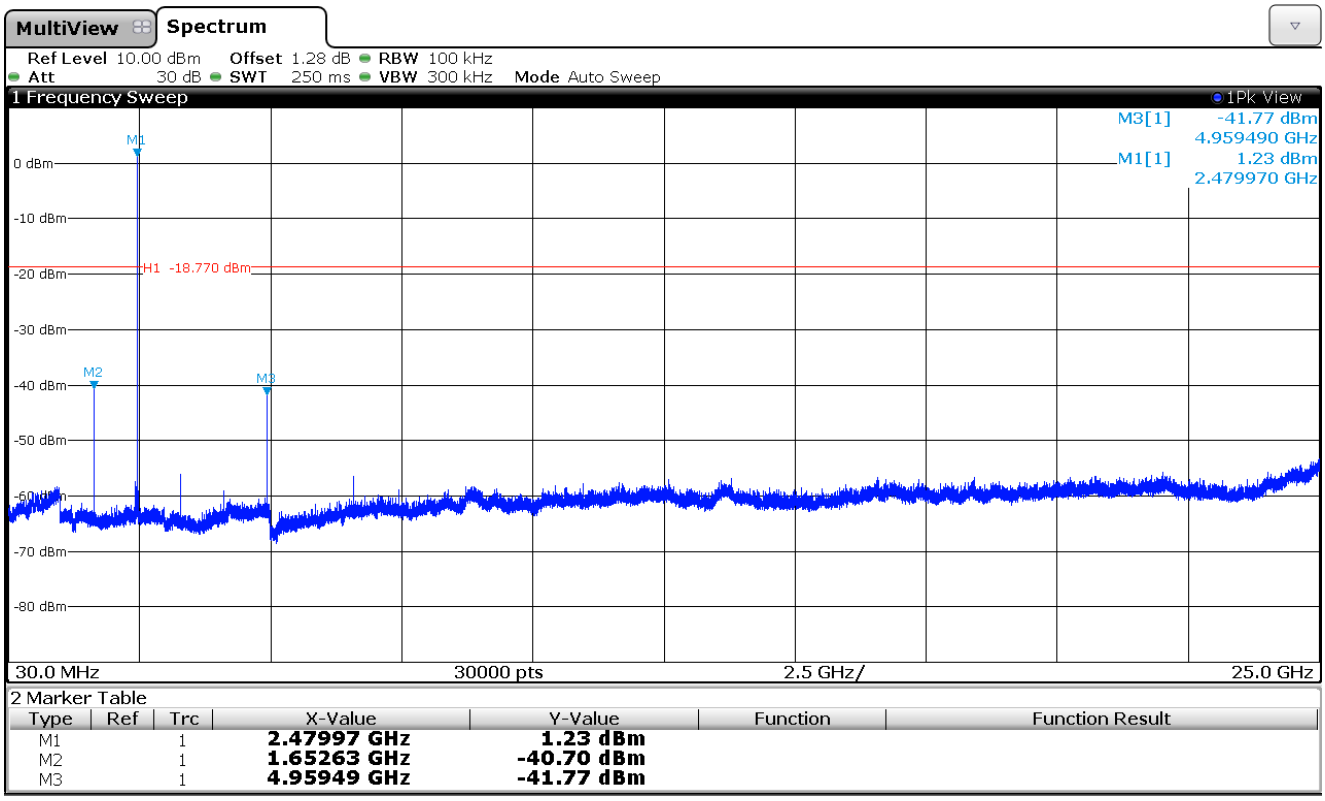
2. MIDDLE CHANNEL (2441 MHz): 30 MHz-25 GHz (see next plot).



Note: The peaks above the limit are the carrier frequencies.

Verdict: PASS

3. HIGH CHANNEL (2480 MHz): 30 MHz-25 GHz (see next plot).



Note: The peak above the limit is the carrier frequency.

Verdict: PASS