

Produkte
Products

Prüfbericht - Nr.: 19660241 001		Seite 1 von 49	
<i>Test Report No.:</i>		<i>Page 1 of 49</i>	
Auftraggeber: <i>Client:</i>		HANDHELD GROUP AB Kinnegatan 17 A 531 33 Lidköping Sweden Tel: +46 (0) 510-54 71 70	
Gegenstand der Prüfung: <i>Test item:</i>		Rugged 7" Tablet	
Bezeichnung: <i>Identification:</i>	118207	Serien-Nr.: <i>Serial No.</i>	Engineering Sample
Wareneingangs-Nr.: <i>Receipt No.:</i>	1803156247	Eingangsdatum: <i>Date of receipt:</i>	20.07.2016
Prüfart: <i>Testing location:</i>		Refer Page 4 of 49 for test facilities	
Prüfgrundlage: <i>Test specification:</i>		FCC Part 15: Subpart C & RSS 247 Issue 1 ANSI C63.10-2013	
Prüfergebnis: <i>Test Result:</i>		Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n). <i>The test items passed the test specification(s).</i>	
Prüflaboratorium: <i>Testing Laboratory:</i>		TÜV Rheinland (India) Pvt. Ltd. 82/A, 3rd Main, West Wing, Electronic City Phase 1 Hosur Road, Bangalore – 560 100. India FCC Registration No.: 176555 & IC OATS Reg. Number.: 3466E	
geprüft / tested by:		kontrolliert / reviewed by:	
28.07.2016 Girish Kumar G Engineer		01.08.2016 Saibaba Siddapur Assistant Manager	
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Unterschrift <i>Signature</i>
			
Sonstiges / Other Aspects:		FCC ID: YY3-118207 & IC: 11695A-118207	
Abkürzungen:	P(ass) = entspricht Prüfgrundlage F(ail) = entspricht nicht Prüfgrundlage N/A = nicht anwendbar N/T = nicht getestet	Abbreviations:	P(ass) = passed F(ail) = failed N/A = not applicable N/T = not tested
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i>			

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 Tel.: +9180 6723 3500 • Fax: +9180 6723 3542 • Web: www.tuv.com

Test Result Summary

Test Item	Clause		Result
	FCC	IC	
Peak Output Power	FCC 15.247(b) (1)	RSS-247 Section 5.1(2)	Pass
20dB Bandwidth	FCC 15.247(a)(1)	RSS-247 Section 5.1(2)	Pass
Number of Hopping Channels	FCC 15.247(a)(1)(ii)	RSS-247 Section 5.1(4)	Pass
Carrier Frequency Separation	FCC 15.247(a)(1)	RSS-247 Section 5.1(2)	Pass
Time of Occupancy (Dwell Time)	FCC 15.247 (a)(1)(iii)	RSS-247 Section 5.1(4)	Pass
Band-edge compliance of RF Conducted Emissions	FCC 15.247(d)	RSS-247 Section 5.5	Pass
Radiated Spurious Emissions and Restricted bands of operation	FCC 15.209 & 15.205	RSS-247 Section 5.5 RSS-Gen Section 8.9	Pass
Conducted Emissions on A.C Power Lines	FCC Part 15.207	RSS-Gen Issue 4 section 8.8	Pass

Note: Conducted measurements are done according to the procedure given in KDB No. **DA 00-705**
March 2000

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List of Test and Measurement Instruments

Equipment	Manufacturer	Model Name	Serial Number	Calibration Due Date	Periodicity	Used for Test Items
EMI Test Receiver	Rohde & Schwarz	ESU 40	100288	23.11.2016	Yearly	Spurious Radiated Emissions
Broadband Antenna	Frankonia	ALX-4000	ALX-4000-806	20.01.2017	Yearly	
Active Loop Antenna	Frankonia	LAX-10	LAX-10-800	22.12.2016	Yearly	
Broadband Horn Antenna	Frankonia	HAX-18	HAX18-802	14.03.2017	Yearly	
Double-Ridged Waveguide Horn Antenna	ETS Lindgren	116706	00107323	02.11.2016	Yearly	
Anechoic Chamber	Frankonia	-	-		-	
Spectrum Analyser	Agilent Technologies	E4407B	US41192772	23.04.2017	Yearly	Antenna - Port Conducted Tests
Signal Analyzer	Rohde & Schwarz	FSV7	101644	07.12.2016	Yearly	
LISN	Rohde & Schwarz	ENV4200	100163	03.02.2017	Yearly	Conducted Emission test on AC power lines
EMI Receiver	Rohde & Schwarz	ESR7	101133	19.11.2016	Yearly	

Testing Facilities

TUV Rheinland (India) Private Limited
 108 , Beside ISBR Business School,
 Electronic city Phase I
 Bangalore - 560 100.

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General Product Information

Product Function and Intended Use

The Algiz RT7 is a rugged tablet, designed for use by field personnel in demanding conditions. It integrates best-in-class connectivity with efficient computing and multimedia features. The tablet runs Android Lollipop (5.1.1) operating system, and comes pre-installed with many Google applications, including Google Play.

Ratings and System Details

Operating Frequency Range	2400MHz – 2483.50MHz	
No. of channel	79	
Channel Spacing	1MHz	
Modulation	1Mbps	GFSK
	2Mbps	$\pi/4$ -DQPSK
	3Mbps	8DPSK
Transmitted Power	9.11 dBm / 8.1470mW	
Number of antenna	One	
Antenna Gain	0dBi	
Antenna Type	Integrated Antenna	
Supply Voltage to Product	Internal Battery Pack -> 3.7- 4.2 VDC & Adaptor 5VDC to EUT	
Environmental conditions	Storage Temperature -> -40°C to +70 °C Operating Temperature-> -20°C to 50°C in a humidity up to 95% noncondensing	

Test Conditions:

Supply Voltage: 3.7- 4.2 VDC & Adaptor 5VDC to EUT

Environmental conditions:

Temperature: +24.6 °C RH: 56%

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Test Set-up and Operation Mode

Principle of Configuration Selection

Transmission was enabled with duty cycle more than 98% on low, mid and high channel.

Test Operation and Test Software

QRCT test software (from QUALCOMM) was used to enable continuous transmission with duty cycle more than 98%, changing channels (low/mid/high) and select data rates on the EUT for the tests in this report.

Special Accessories and Auxiliary Equipment

- None

Countermeasures to achieve EMC Compliance

-Testing was conducted with the Power adaptor (Adaptor image attached in external photos) cable connected to the AC mains & a ferrite bead was used on the USB cable which is connected to the adaptor (accessory). The ferrite was strapped closer to the DUT during testing. Refer appendix 1 for test setup photos. Ferrite no. 742 711 12 & 742 717 33 (make: Wurth Electronics).

Test Modes – Data Rates and Modulations

For Radiated spurious emissions, the tests were performed for all data rates and only worst case results are reported in this report.

Note: Bluetooth supports both Class 1 (9 Power) & class 2 (7 Power), all the conducted & radiated test cases are performed with Highest 9 power setting i.e with Class 1.

List of Centre Frequencies: Table 2

Frequency Band (MHz)	Channel No.	Channel Frequency (MHz)
2400 – 2483.5 BT(BDR+EDR)	0	2402
	1	2403
	2	2404
	3	2405
	:	:
	:	:
	:	:
	37	2439
	38	2440
	39	2441
	40	2442
	:	:
	:	:
	:	:
	74	2476
	75	2477
	76	2478
	77	2479
	78	2480

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Operational description

Whether you're collecting data, crunching numbers or viewing graphics, the Algiz RT7's powerful Qualcomm quad-core processor provides reliable, uninterrupted work performance.

And the Algiz RT7 doesn't just run Android flawlessly — its capacitive touchscreen also enhances the Android experience with five-point multi-touch capability, 600-nit high-brightness sunlight readability and chemically strengthened glass.

Yet the Algiz RT7 also meets stringent MIL-STD-810G military standards for withstanding extreme temperatures, drops and vibrations, and its IP65 rating means it's waterproof and fully protected against sand and dust.

Note: Product Rugged 7" Tablet has multiple protocols. All the supported wireless protocols and their respective test report numbers are mentioned in the below table.

Radio Protocol	Report Number
NFC	19660243 001
Wi-Fi (IEEE 802.11bgn)	19660240 001
BLE	19660242 001
GSM	19660244 001
W-CDMA	19660245 001
LTE	19660246 001

Test Methodology

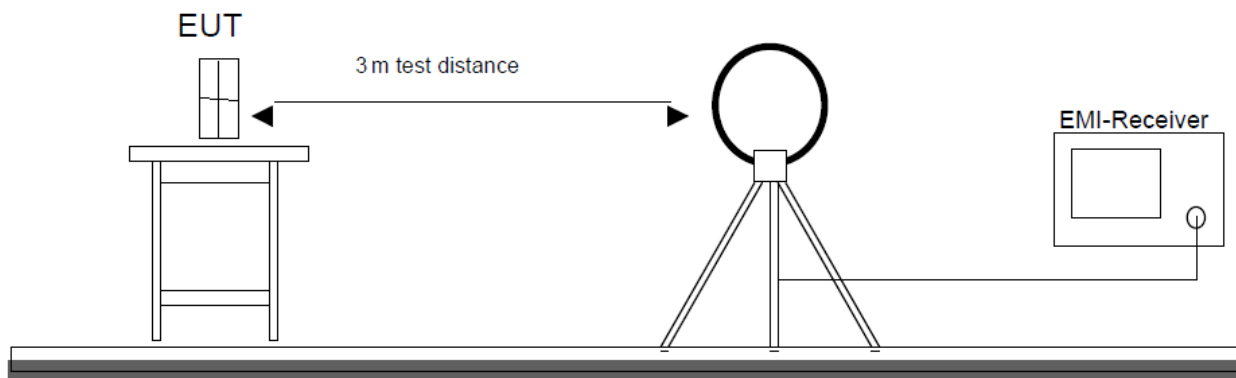
Radiated Emission Test

The radiated emission measurement was performed according to the procedures in ANSI C63.10-2013. The equipment under test (EUT) was placed at the middle of the 80 cm high turntable for below 1GHz & 1.5m height for above 1GHz measurement, and the EUT is 3 meters far from the measuring antenna. The turntable was rotated 360° for obtaining the maximum emission. The height of the measuring antennas was scanned between 1m and 4m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained. The measurement above 1000MHz was performed by horn antenna. The measurement below 30MHz was performed by loop antenna.

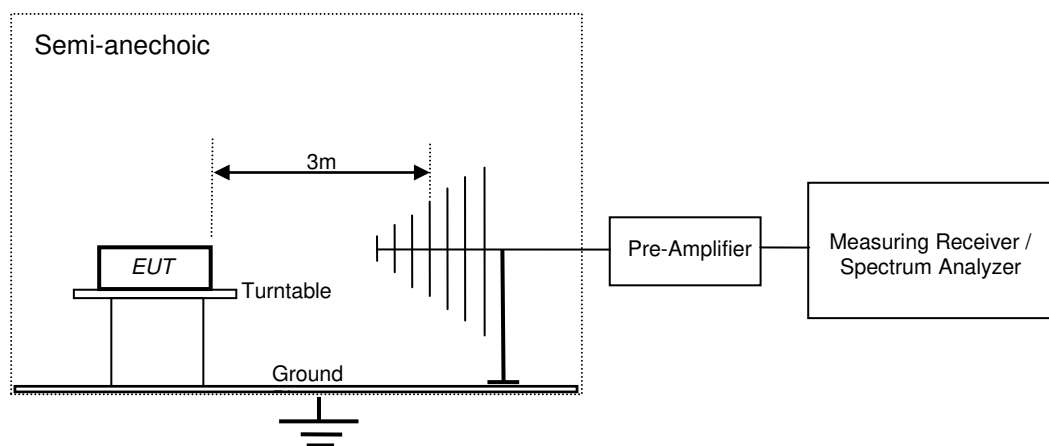
The EUT was rotated around the X-, Y-, and Z-Axis and the results from worst case axis are recorded.

Test Setup Configuration

Frequency Range 9 kHz -30 MHz

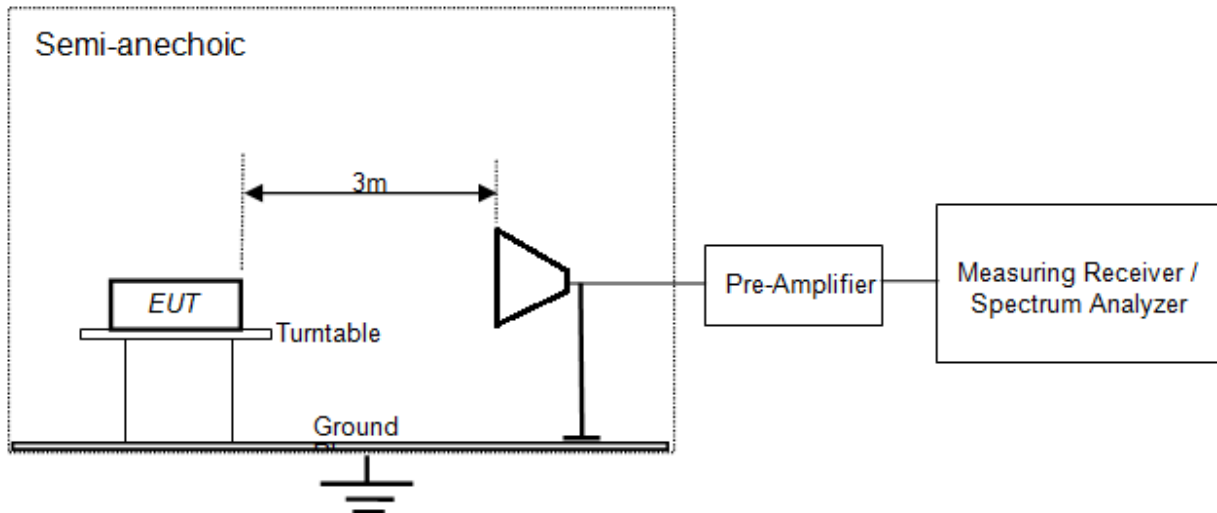


Frequency Range 30MHz -1GHz



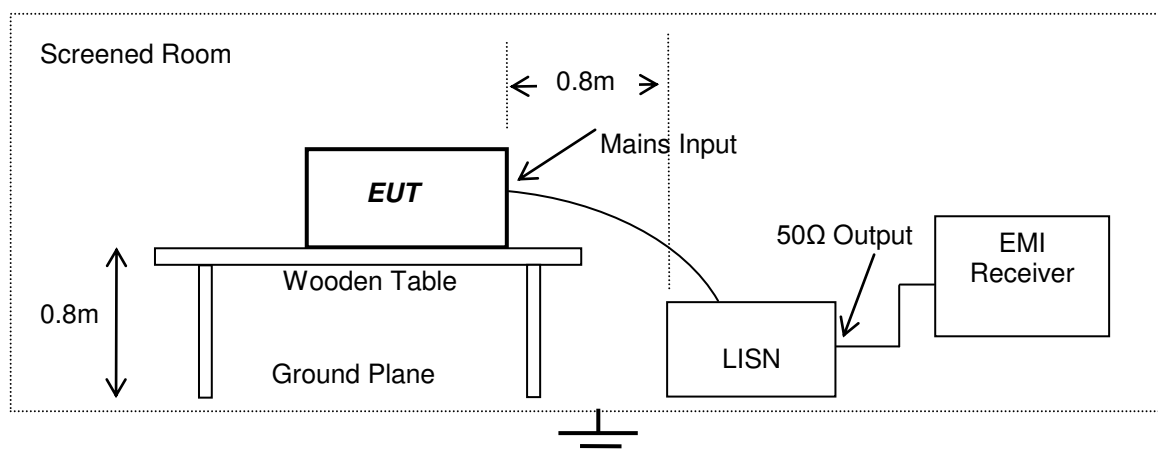
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Frequency above 1GHz



Conducted Emission Test on A.C. mains line

The equipment under test (EUT) was placed on a wooden table 80cm above the ground plane, the LISN was placed 80cm away from the EUT. The test was performed in accordance with ANSI C63.10 - 2013, with the following: an initial measurement was performed in peak and average detection mode on the live and neutral lines. The pre-scan was performed by peak detection on both live and neutral conductors. Any emissions recorded within 20dB of the relevant limit line were re-measured using quasi-peak and average detections, the 6 worst cases were recorded in the table of results.



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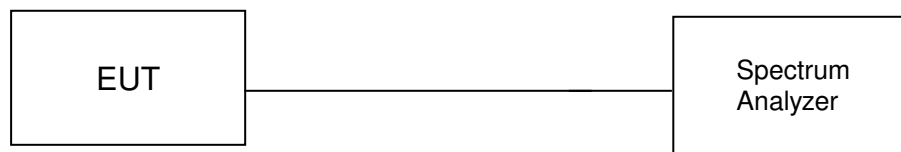
Test Results

Peak Output Power Result

Pass

Test Specification	FCC 15.247 (b) (1) & RSS-247 Section 5.1(2)
Measurement Bandwidth (RBW)	3MHz
Detector	Peak
Requirement	<125 mW

Test Method:



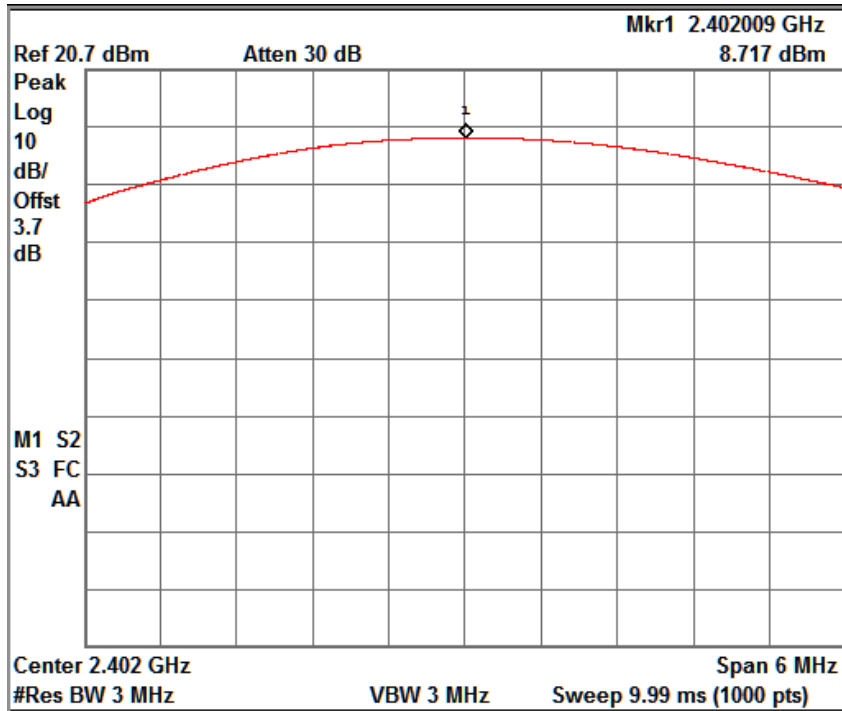
Cable Loss considered in the test results

Test Result:

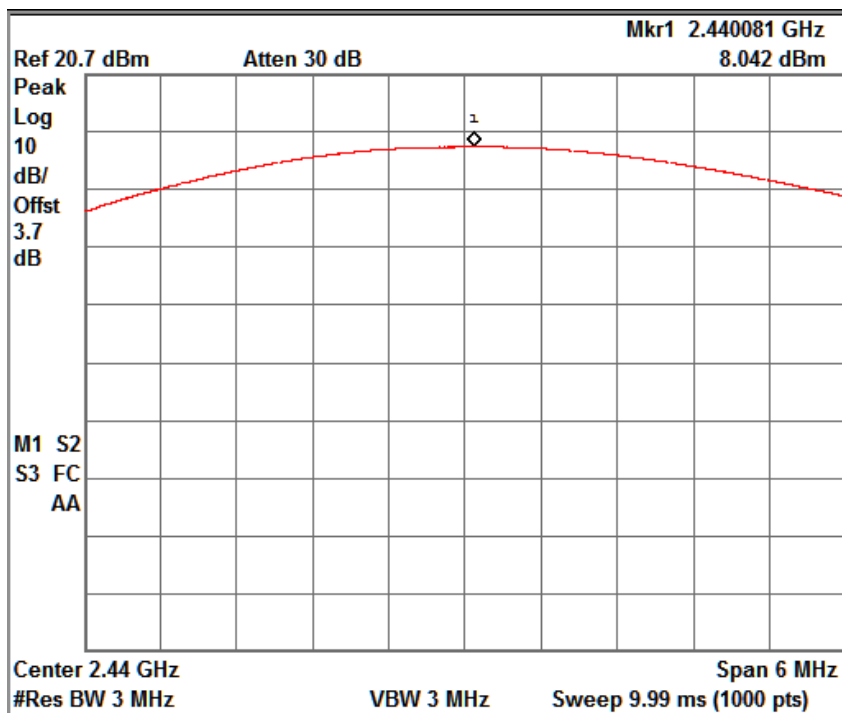
Modulation Type: GFSK

Channel	Frequency (MHz)	Peak Output power (dBm)	Limit (dBm)
Low	2402	8.72	20.96
Mid	2440	8.04	20.96
High	2480	6.75	20.96

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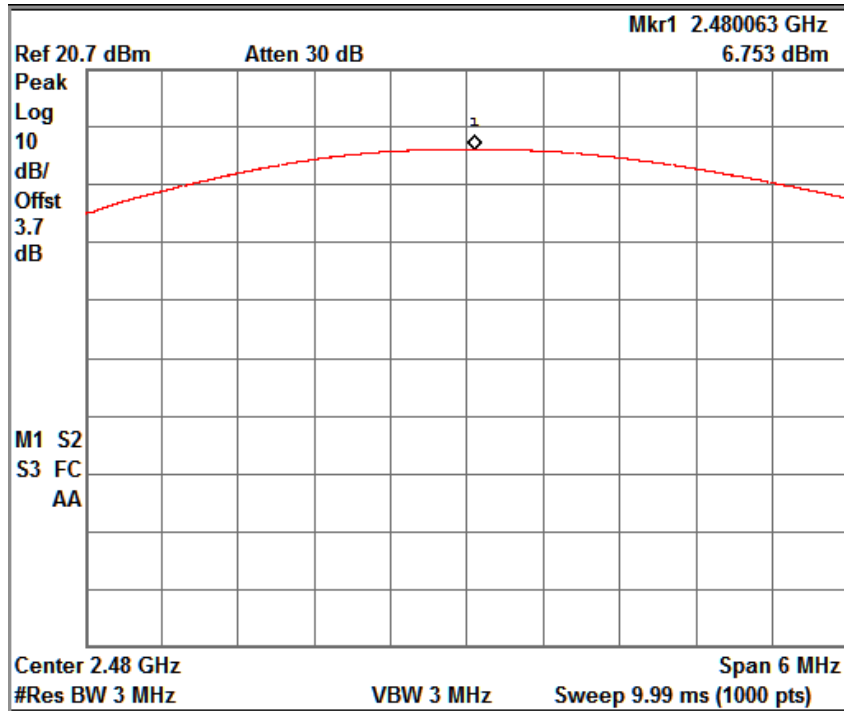


Channel Frequency: 2402 MHz



Channel Frequency: 2440 MHz

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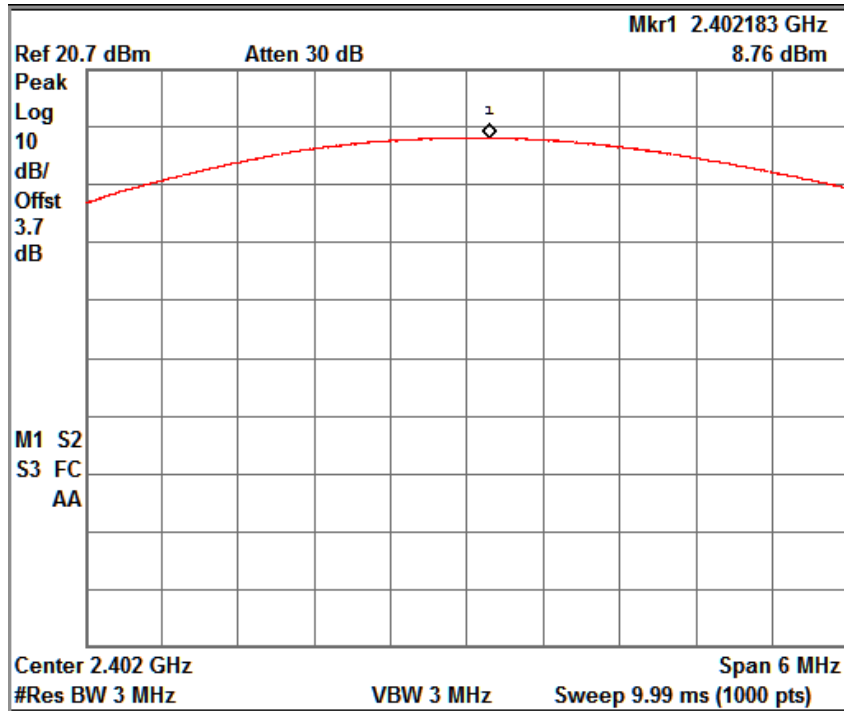
Channel Frequency: 2480 MHz

Modulation Type: Pi/4 DQPSK

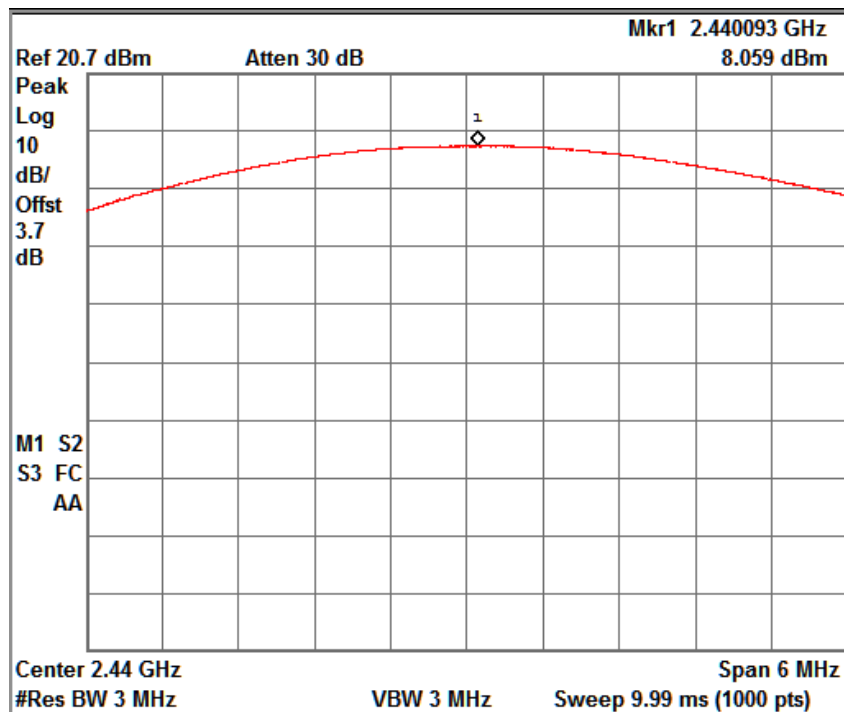
Test Results:

Channel	Frequency (MHz)	Output power (dBm)	Limit (dBm)
Low	2402	8.76	20.96
Mid	2440	8.05	20.96
High	2480	6.79	20.96

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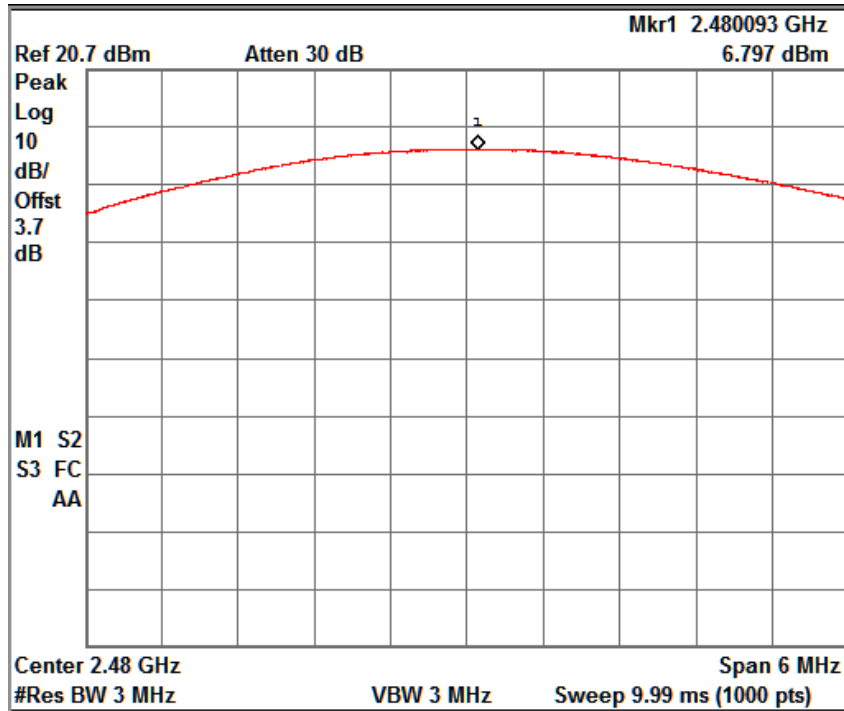


Channel Frequency: 2402 MHz



Channel Frequency: 2440 MHz

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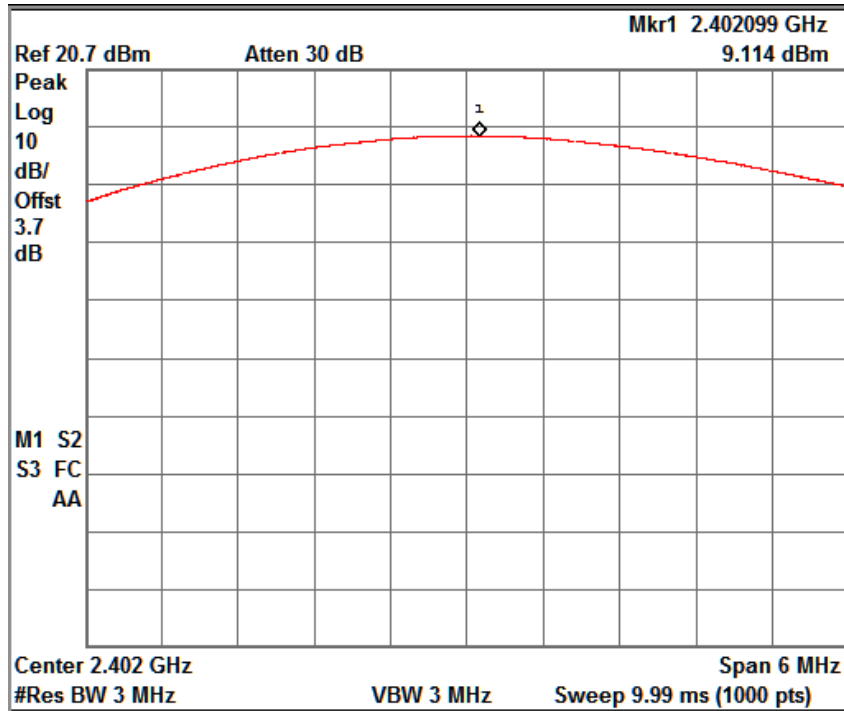
Channel Frequency: 2480 MHz

Modulation Type: 8 DPSK

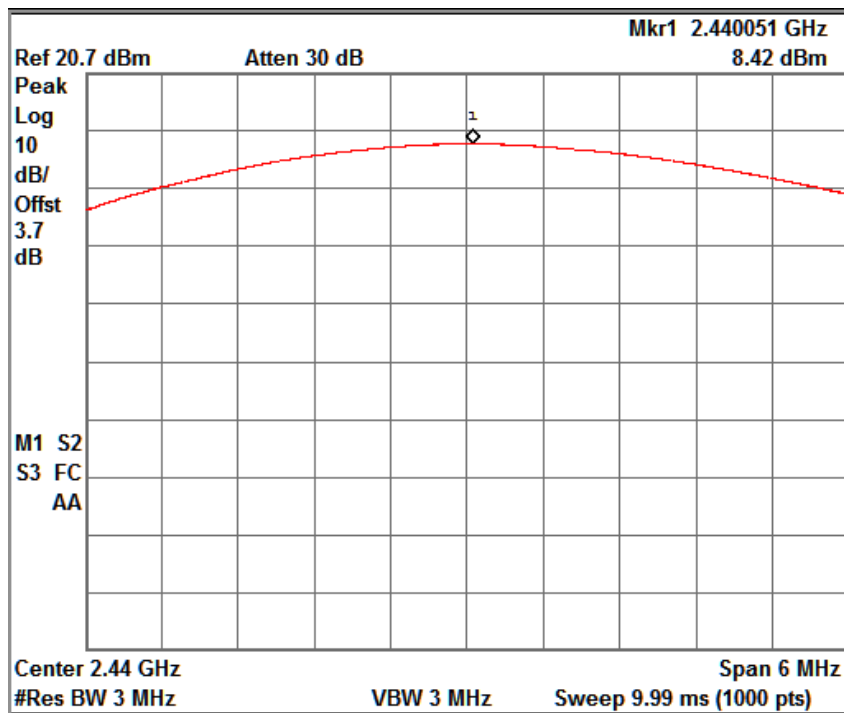
Test Results:

Channel	Frequency (MHz)	Output power (dBm)	Limit (dBm)
Low	2402	9.11	20.96
Mid	2440	8.42	20.96
High	2480	7.21	20.96

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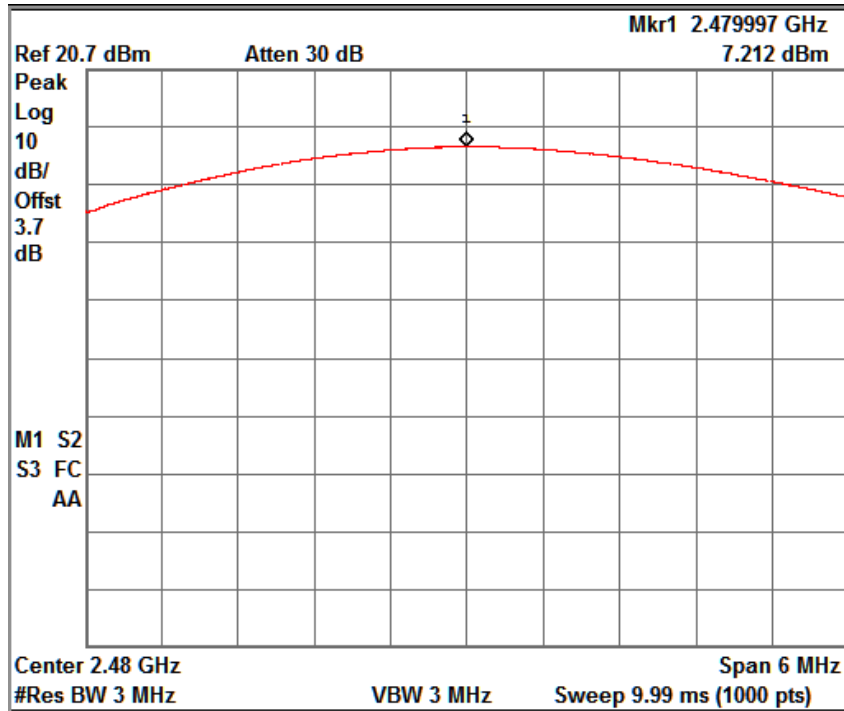


Channel Frequency: 2402 MHz



Channel Frequency: 2440 MHz

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Channel Frequency: 2480 MHz

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**20 Bandwidth
Result**

Pass

Test Specification FCC 15.247 (a)(1) & RSS-247 Section 5.1(2)
Detector Function Peak

Requirement The bandwidth of a frequency hopping channel is the 20 dB emission bandwidth, measured with the hopping stopped. The system RF bandwidth is equal to the channel bandwidth multiplied by the number of channels in the hopset. The hopset shall be such that the near-term distribution of frequencies appears random, with sequential hops randomly distributed in both direction and magnitude of change in the hopset while the long-term distribution appears evenly distributed.

Test Method:

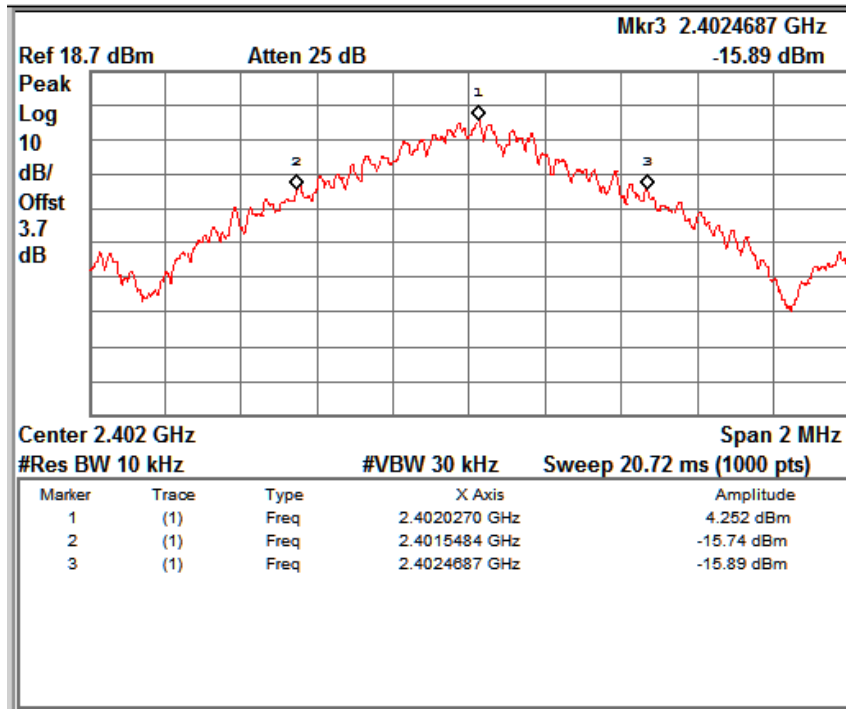


Cable Loss considered in the test results

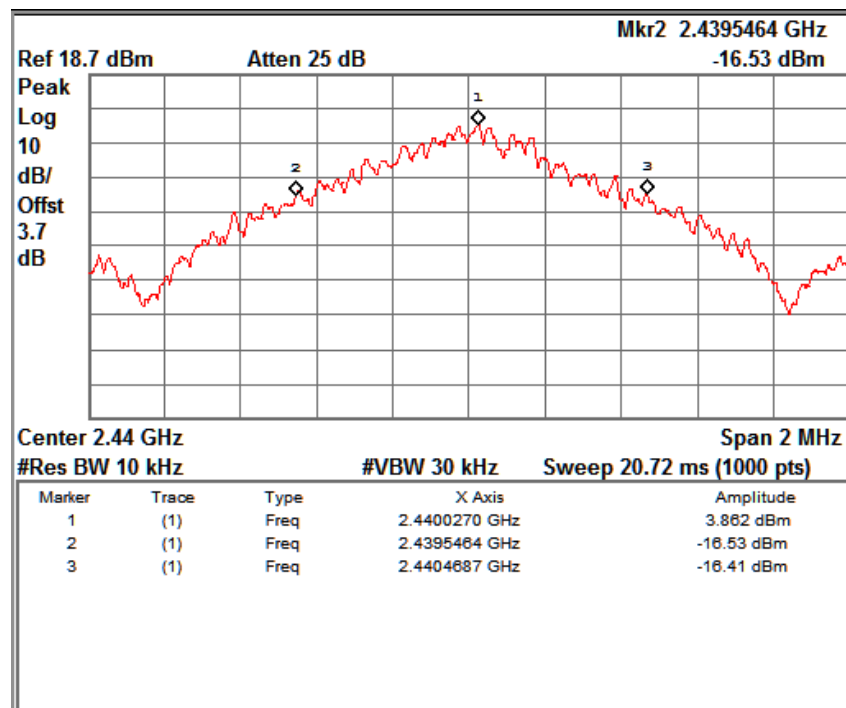
Test Result:

Modulation Type: GFSK

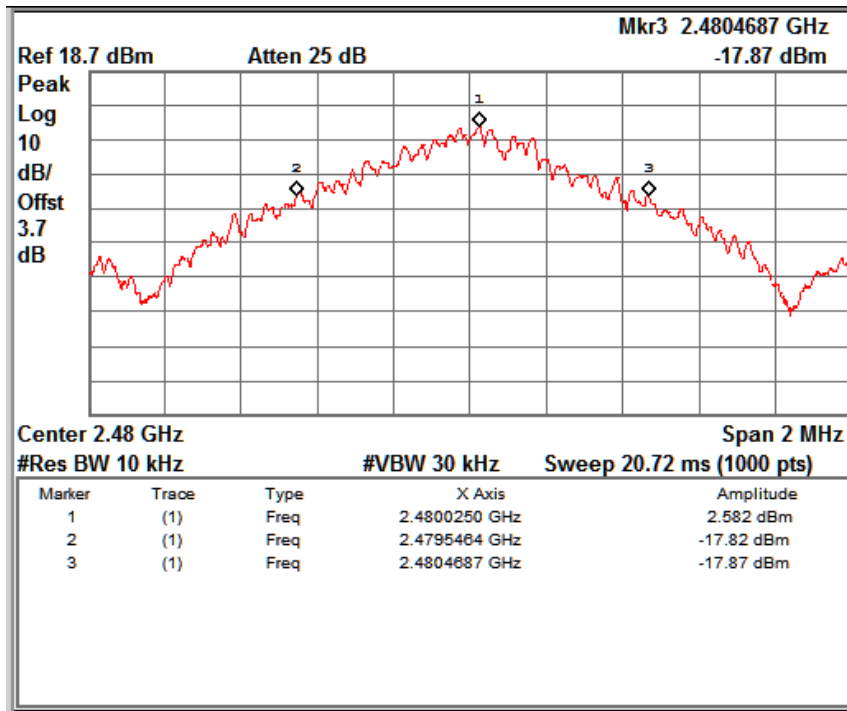
Channel	Channel Frequency (MHz)	Lower 20dB Frequency (MHz)	Higher 20dB Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Low	2402	2401.548	2402.468	0.920	0.993
Mid	2440	2439.546	2440.468	0.922	0.997
High	2480	2479.546	2480.468	0.922	0.997



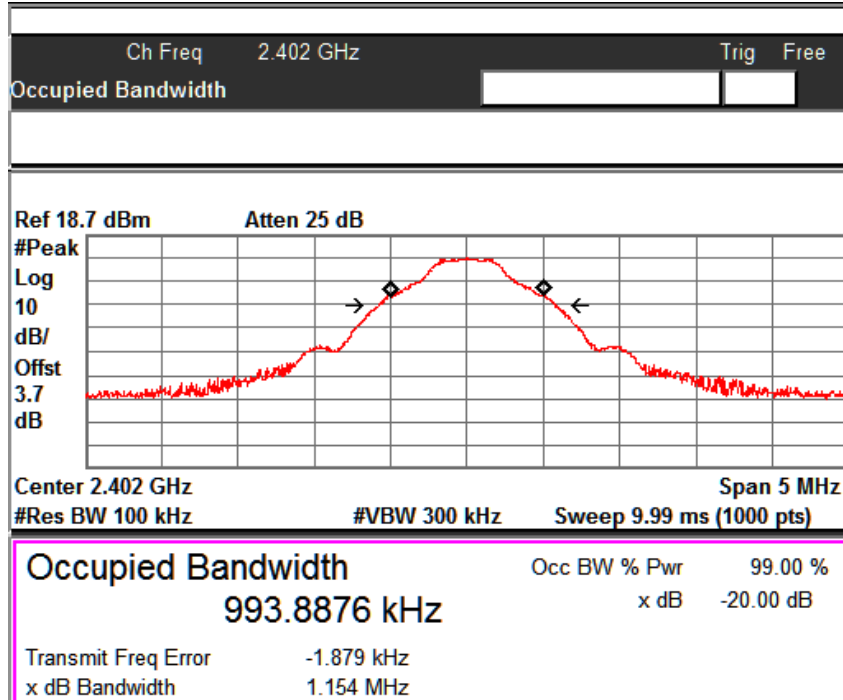
Channel Low: 20dB Bandwidth Measurement



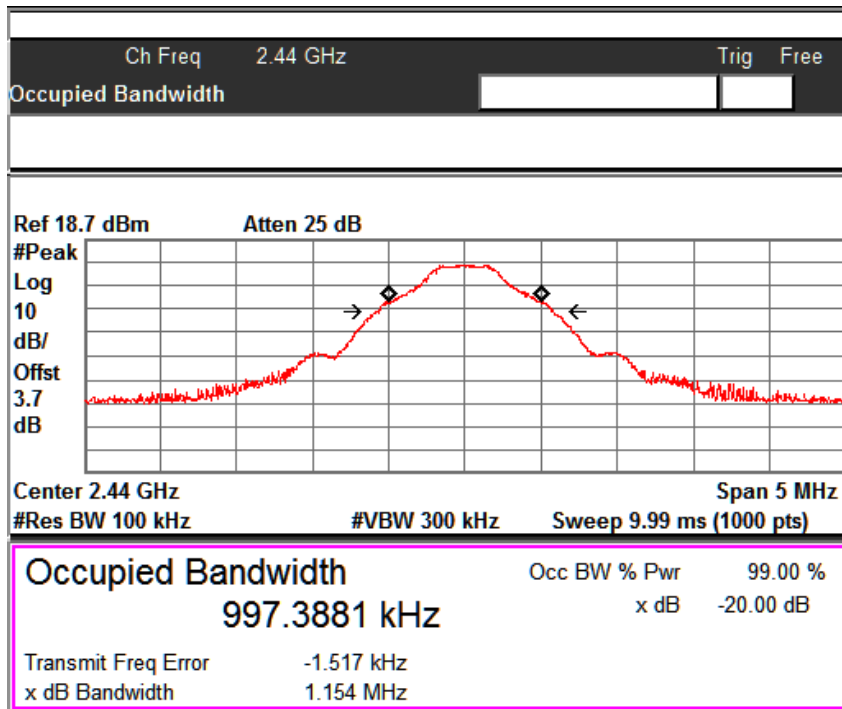
Channel Mid: 20dB Bandwidth Measurement



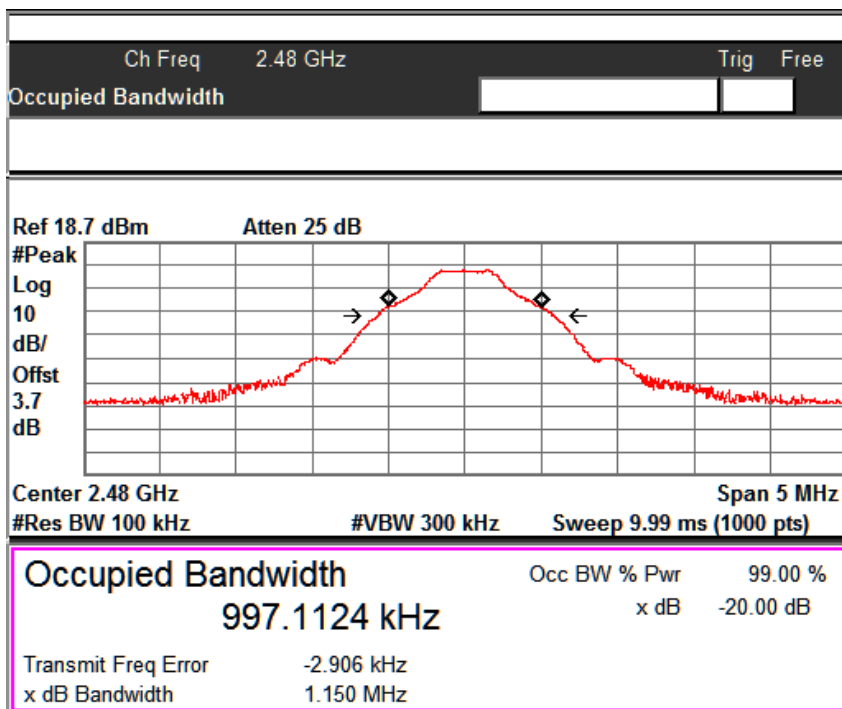
Channel High: 20dB Bandwidth Measurement



99% Occupied Bandwidth: Channel Low



99% Occupied Bandwidth: Channel Mid



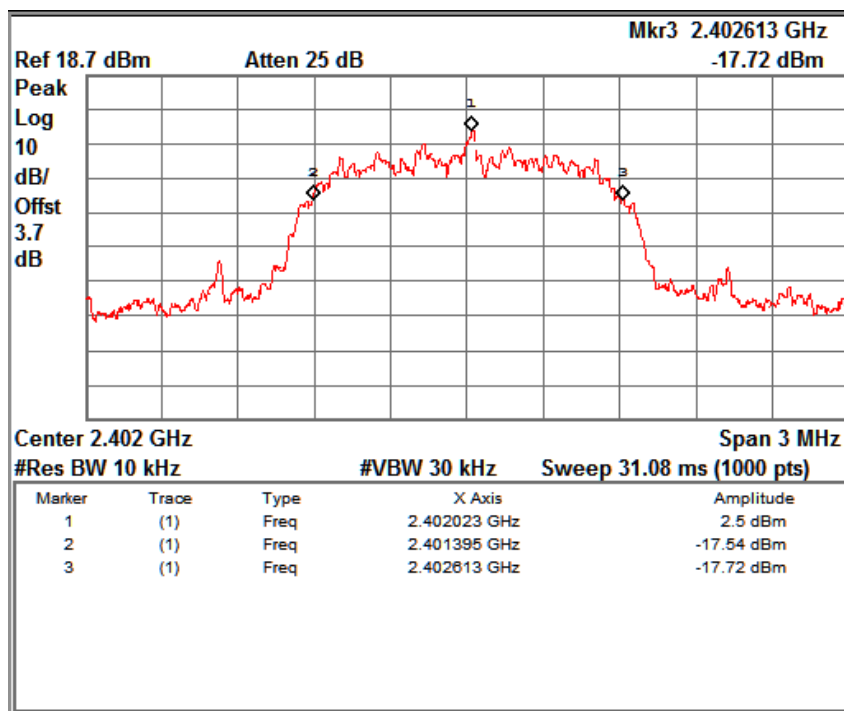
99% Occupied Bandwidth: Channel High

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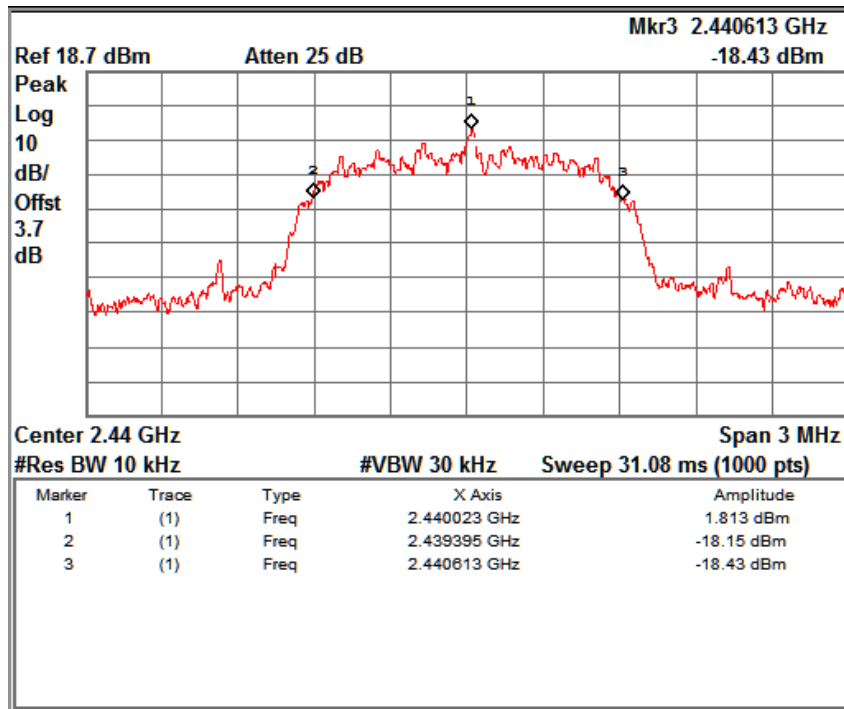
Modulation Type: Pi/4 DQPSK

Test Results:

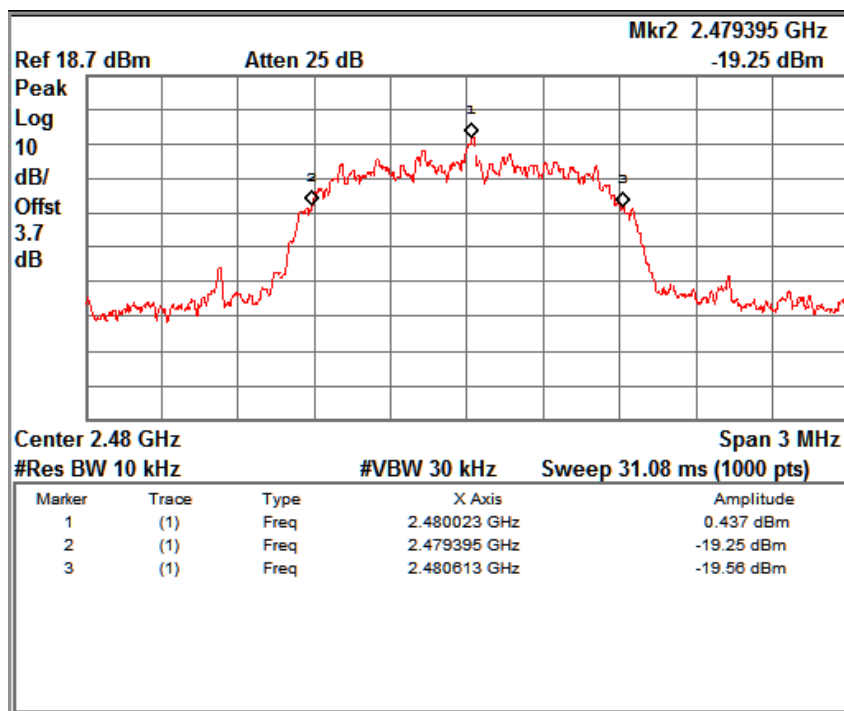
Channel	Channel Frequency (MHz)	Lower 20dB Frequency (MHz)	Higher 20dB Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Low	2402	2401.395	2402.613	1.218	1.224
Mid	2440	2439.395	2440.613	1.218	1.219
High	2480	2479.395	2480.613	1.218	1.225



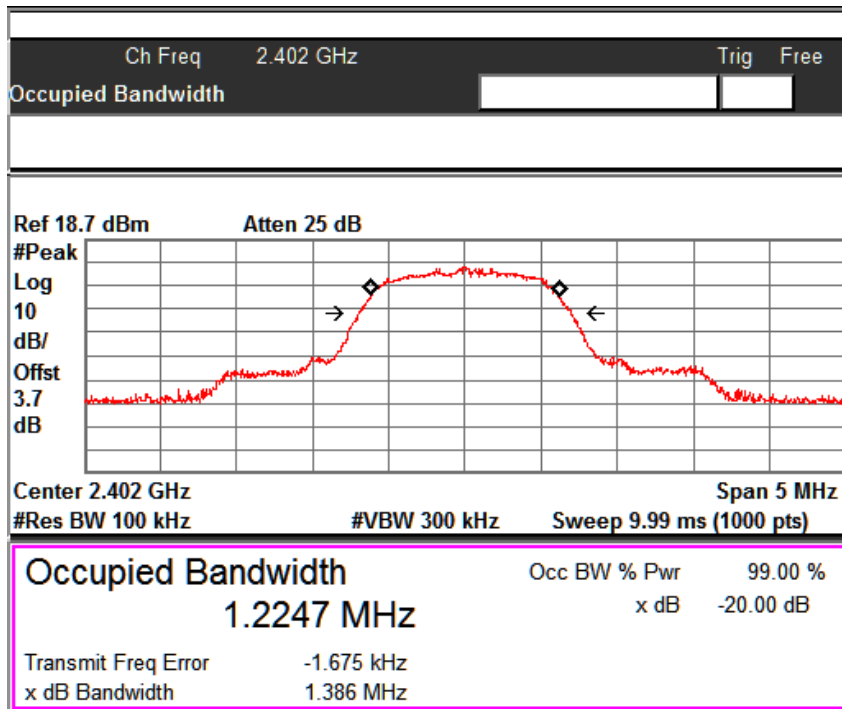
Channel Low: 20dB Bandwidth Measurement



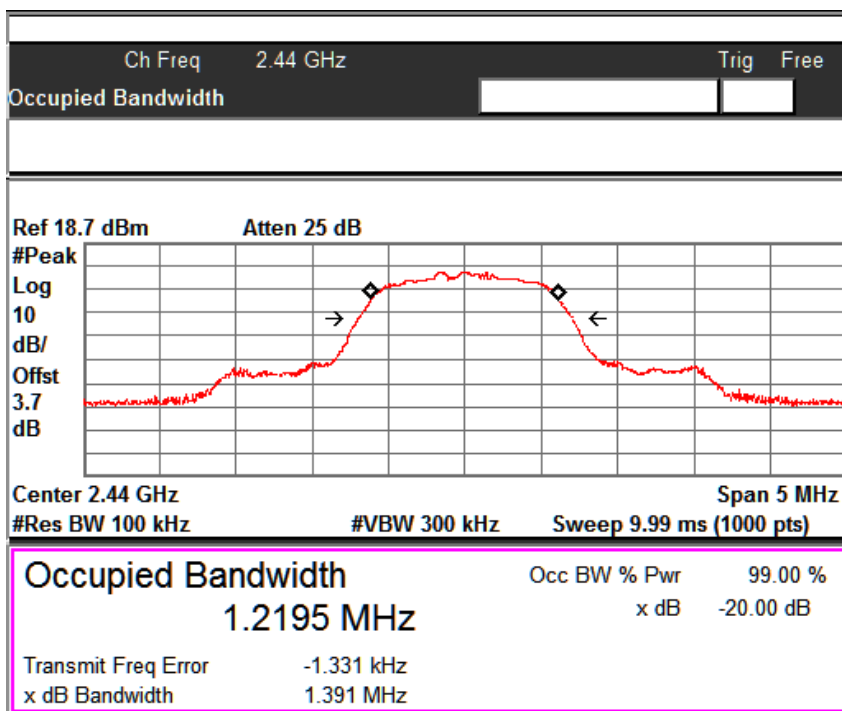
Channel Mid: 20dB Bandwidth Measurement



Channel High: 20dB Bandwidth Measurement

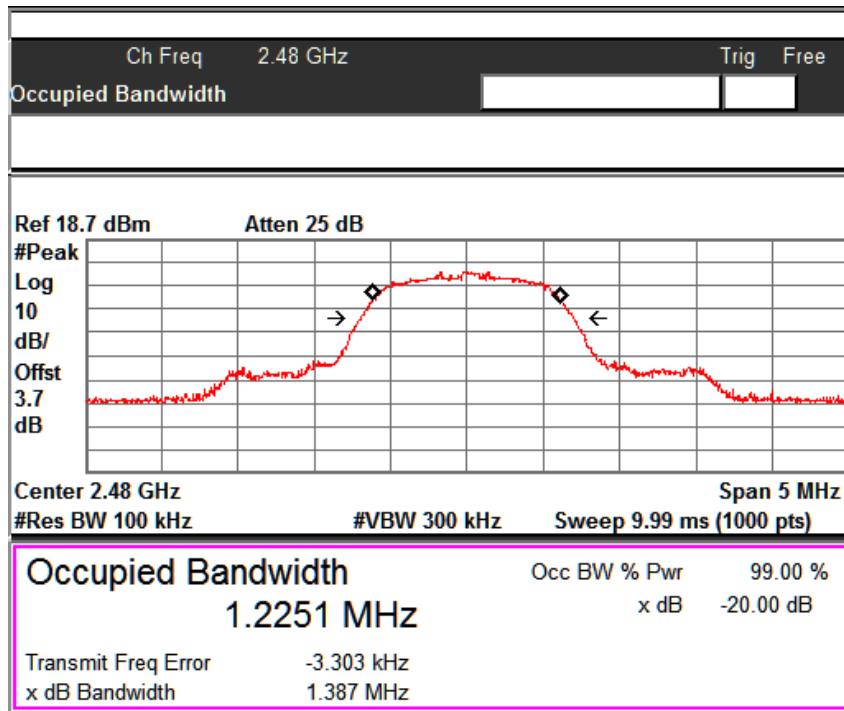


99% Occupied Bandwidth: Channel Low



99% Occupied Bandwidth: Channel Mid

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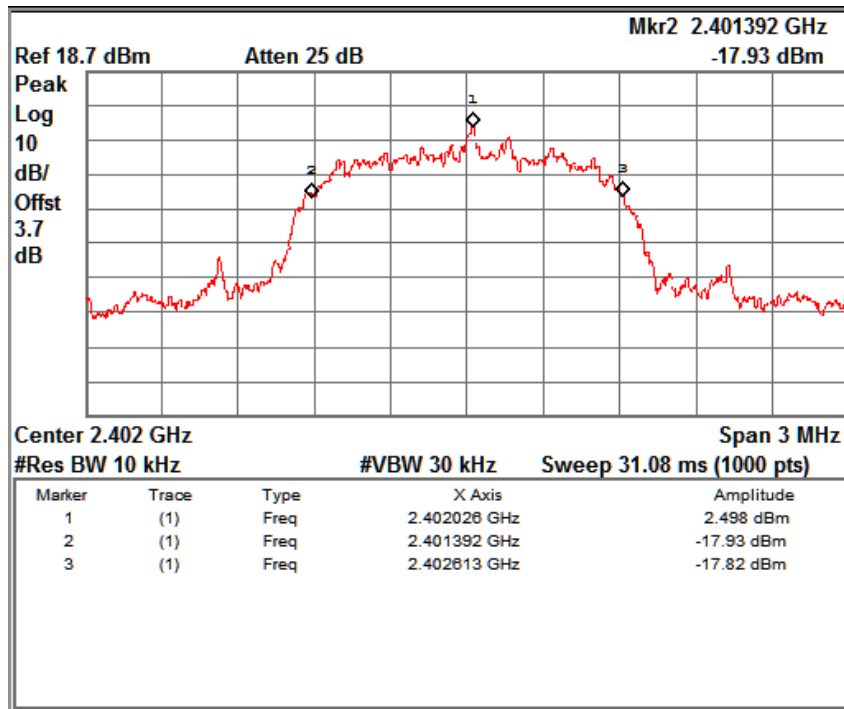


99% Occupied Bandwidth: Channel High

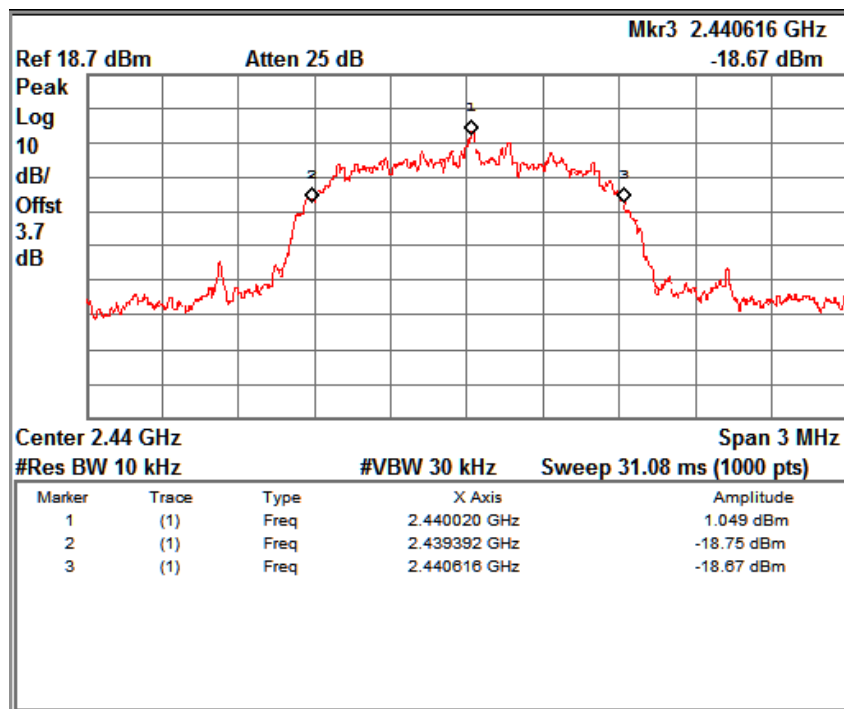
Modulation Type: 8 DPSK

Test Results:

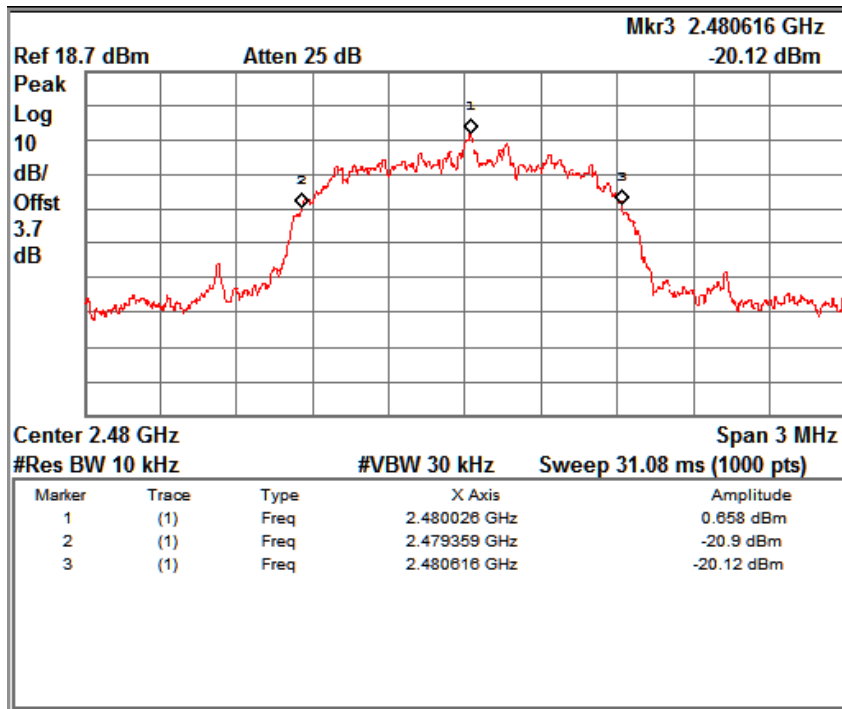
Channel	Channel Frequency (MHz)	Lower 20dB Frequency (MHz)	Higher 20dB Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
Low	2402	2401.392	2402.613	1.221	1.229
Mid	2440	2439.392	2440.616	1.224	1.231
High	2480	2479.359	2480.616	1.257	1.224



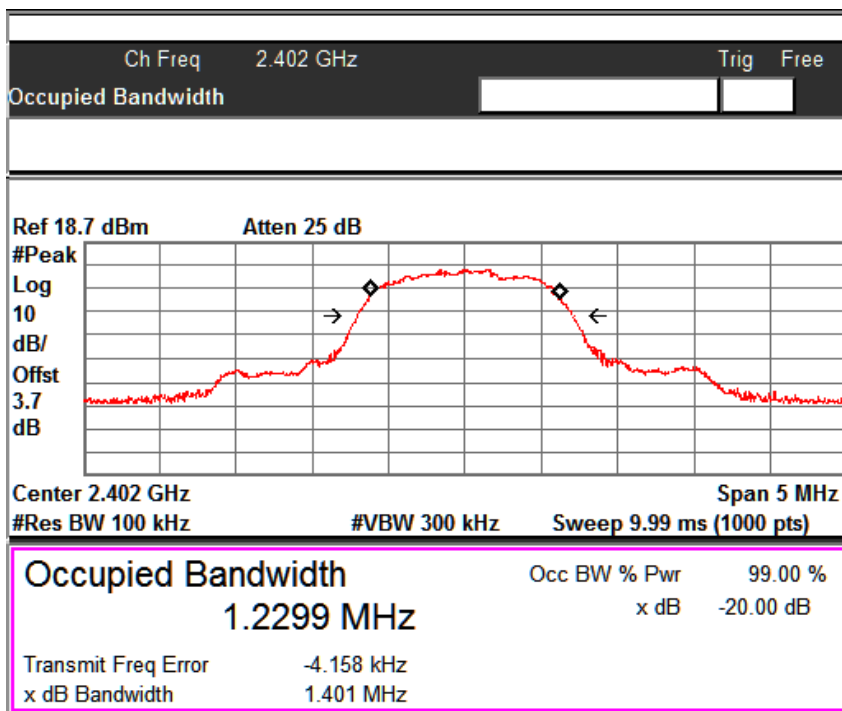
Channel Low: 20dB Bandwidth Measurement



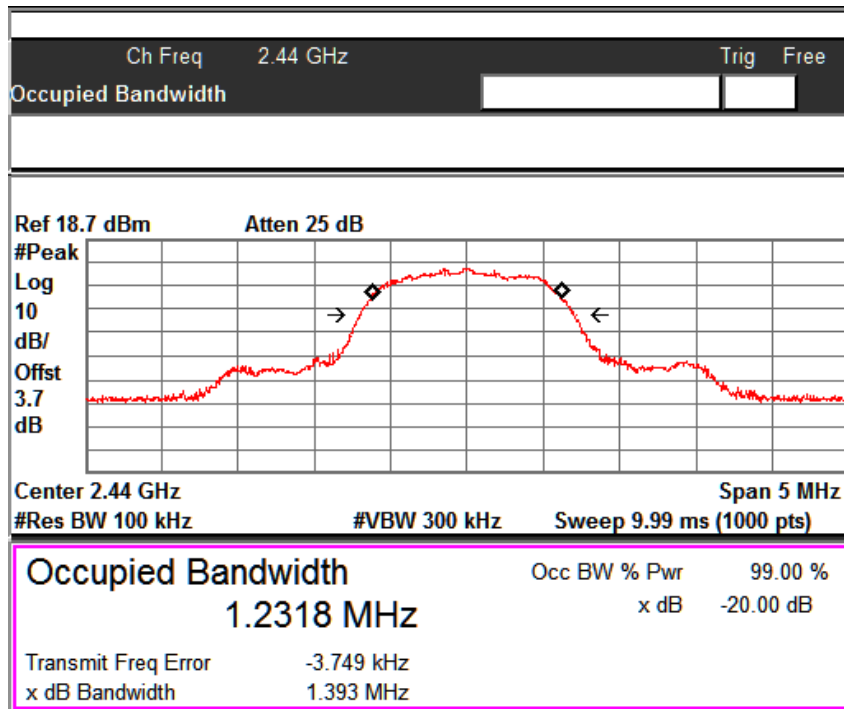
Channel Mid: 20dB Bandwidth Measurement



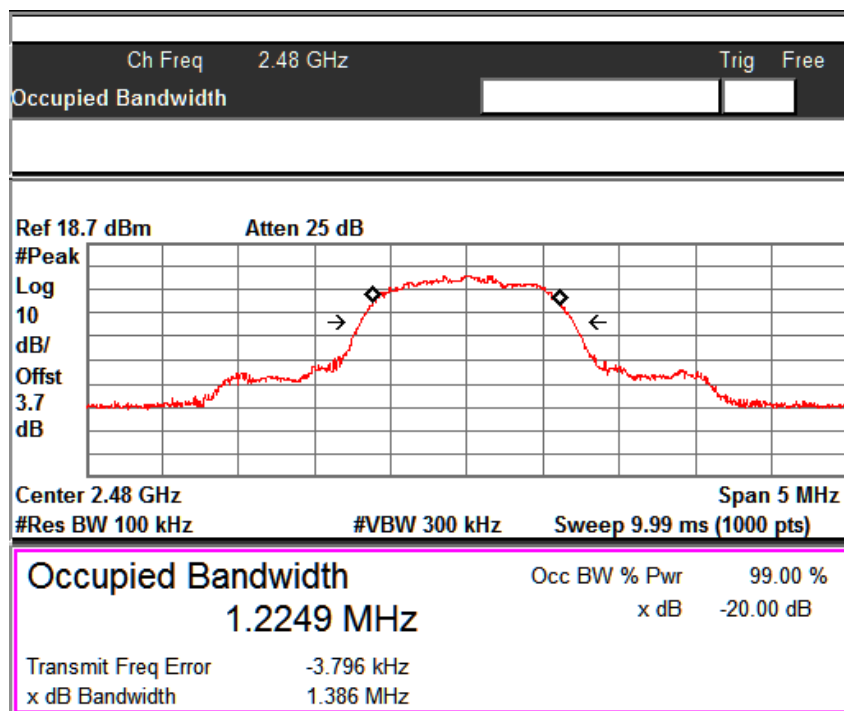
Channel High: 20dB Bandwidth Measurement



99% Occupied Bandwidth: Channel Low



99% Occupied Bandwidth: Channel Mid



99% Occupied Bandwidth: Channel High

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Number of Hopping Channels Result

Pass

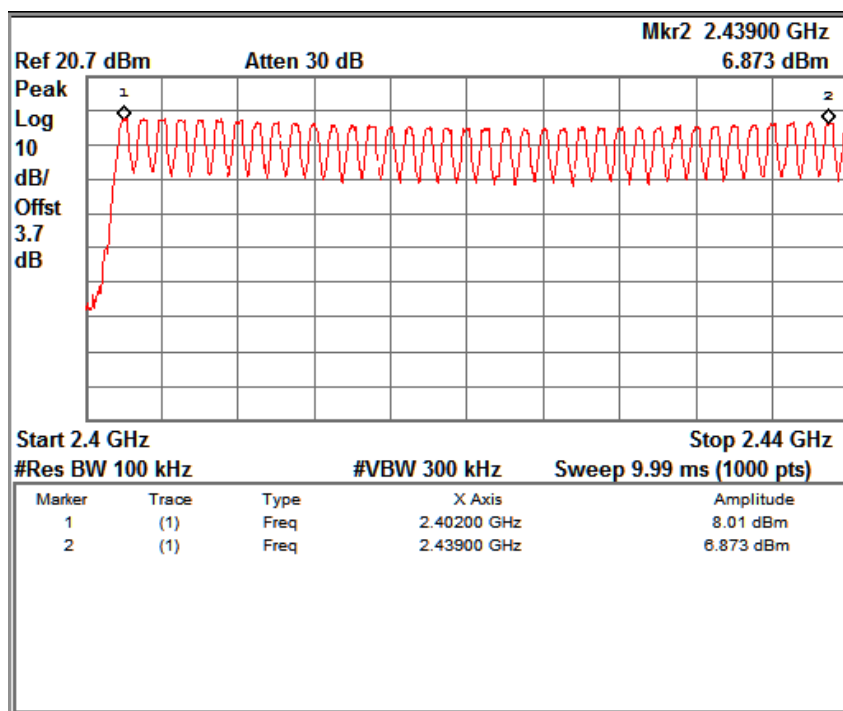
Test Specification	FCC 15.247 (a)(1)(ii) & RSS-247 Section 5.1(4)
Detector Function	Peak
Requirement	Frequency hopping systems operating in the band 2400-2483.5 MHz shall use at least 15 hopping channels

Test Method:



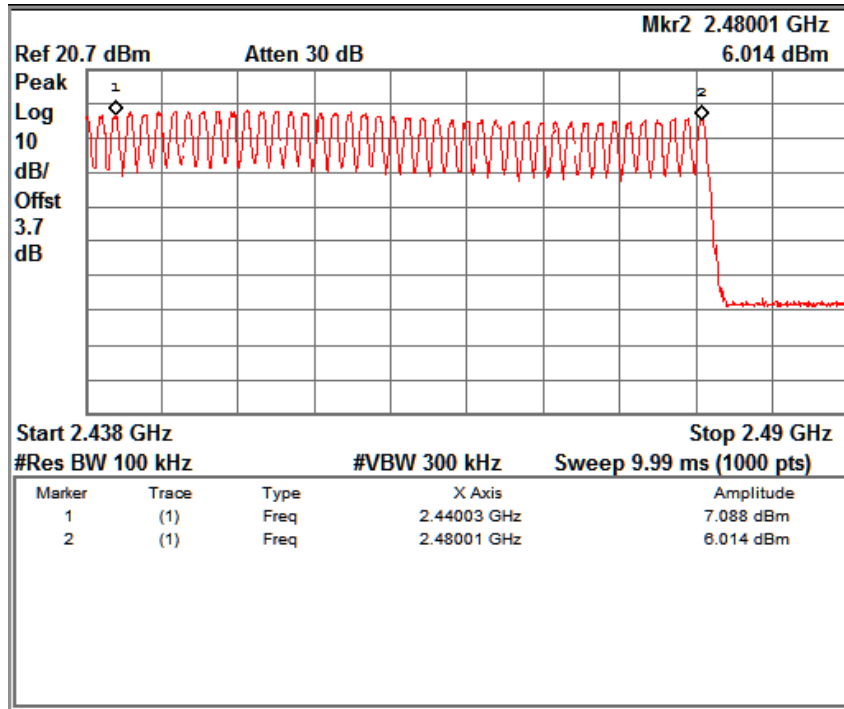
Cable Loss considered in the test results

Test Result:



Number of Hopping Channels: 38

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Number of Hopping Channels: 41

Total Number of hopping channels = 79 (38+41)

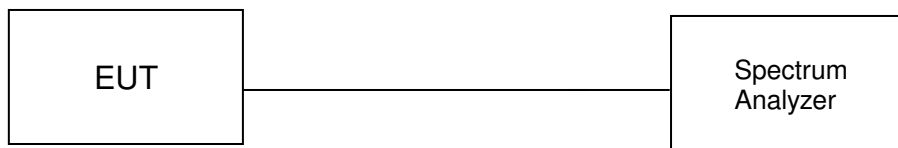
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Carrier Frequency Separation Result

Pass

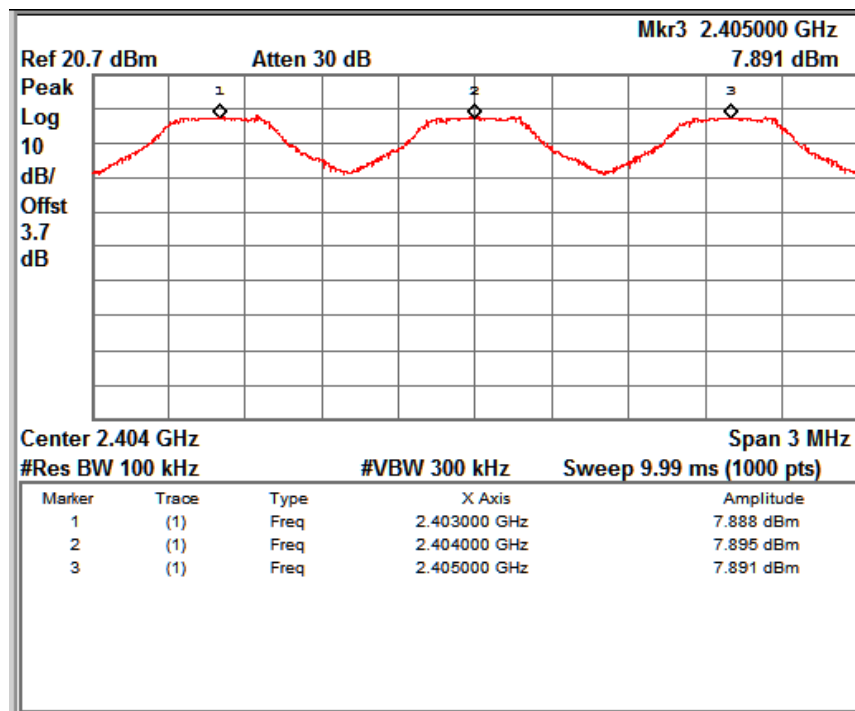
Test Specification	FCC 15.247 (a)(1) & RSS-247 Section 5.1(2)
Detector Function	Peak
Requirement	Frequency hopping systems shall have hopping channel carrier frequency separated by a minimum of 25kHz or the 20dB bandwidth of the hopping channel, whichever is greater

Test Method:



Cable Loss considered in the test results

Test Result:



Channel Separation

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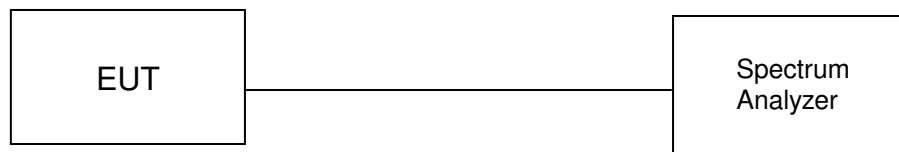
Time of Occupancy (Dwell Time)

Result

Pass

Test Specification	FCC 15.247 (a)(1)(iii) & RSS-247 Section 5.1(4)
Detector Function	Peak
Requirement	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. Transmissions on particular hopping frequencies may be avoided or suppressed provided That a minimum of 15 hopping channels are used.

Test Method:



Test Result:

Time slot		Time Slot (s)
DH	Measurement Value (sec)	
DH5	0.00287	0.306
2DH5	0.00291	0.310
3DH5	0.00289	0.308

Measurement Method

Period Time = 0.4(sec)*79 (hopping channel) = 31.6 s

DH Time slot = Measurement value (Sec)*(1600/ (6*79))*Period time

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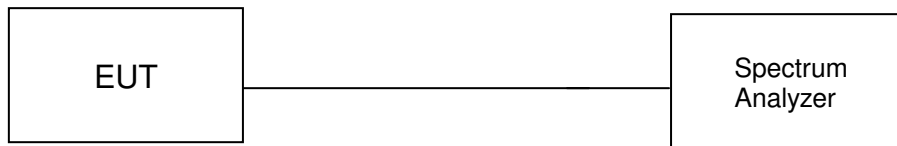
Band-edge Compliance of RF Conducted Emissions
Result

Pass

Test Specification FCC 15.247 (d) & RSS-247 Section 5.5
 Detector Function Peak

Requirement In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

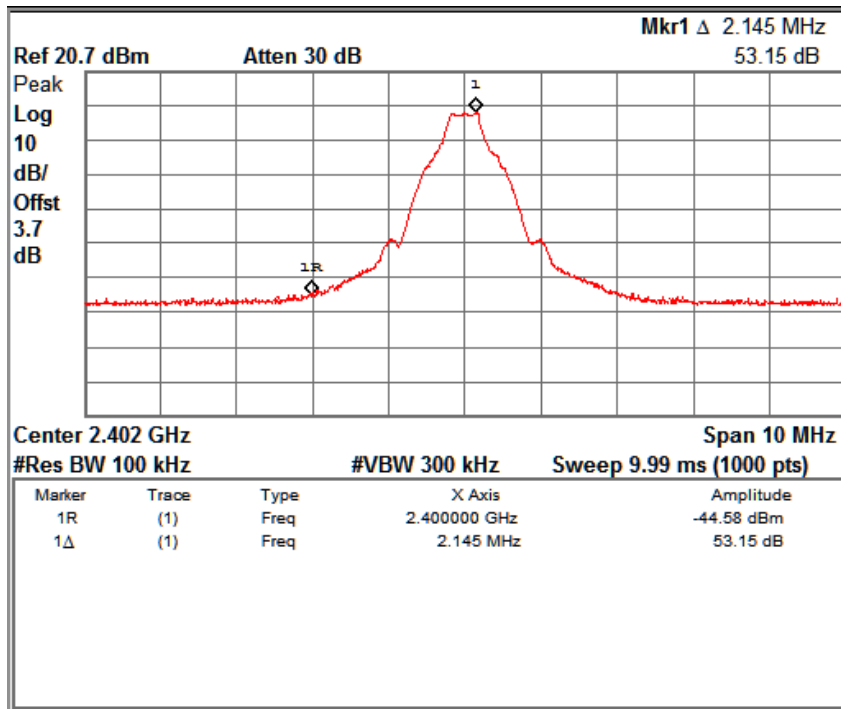
Test Method:



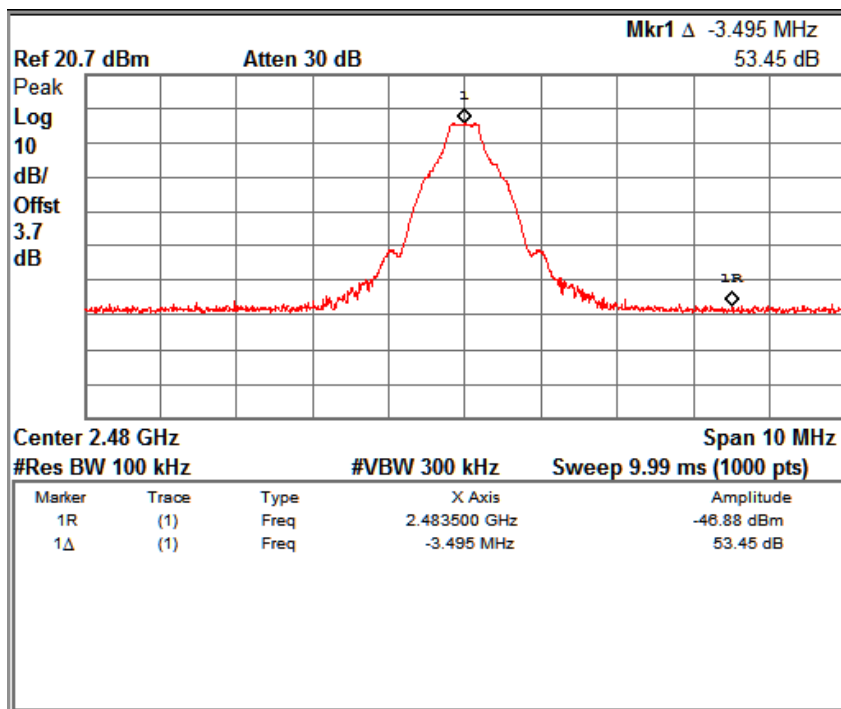
Modulation Type: GFSK

Test Result:

Channel	Fundamental Frequency (MHz)	Value at Band Edge		Limit (dBc)
		Frequency (MHz)	Value (dBc)	
Low	2402.00	2400.0	-44.58	-20
High	2480.00	2483.5	-46.88	-20



Channel Low



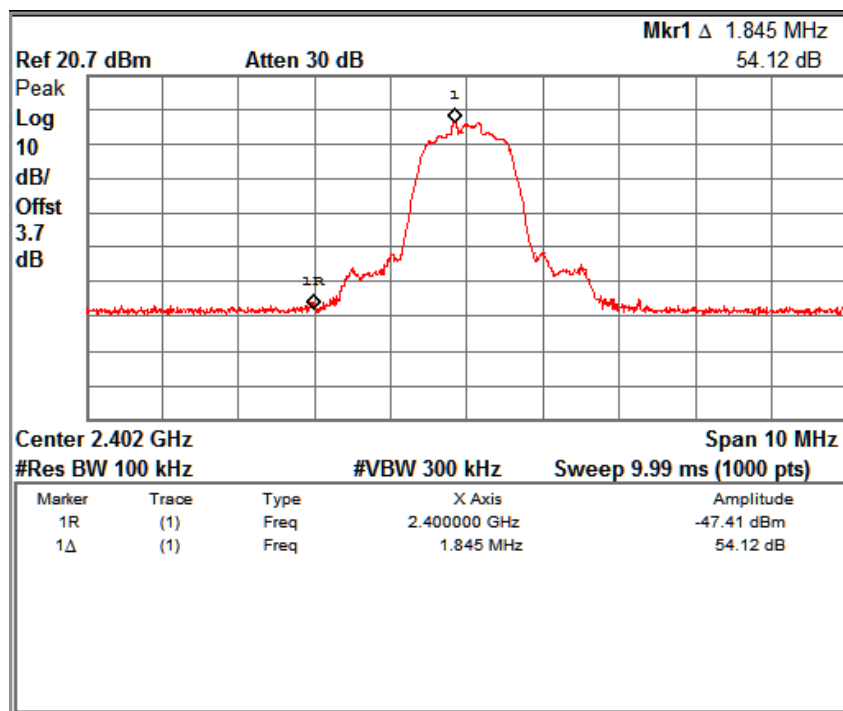
Channel High

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Modulation Type: Pi/4 DQPSK

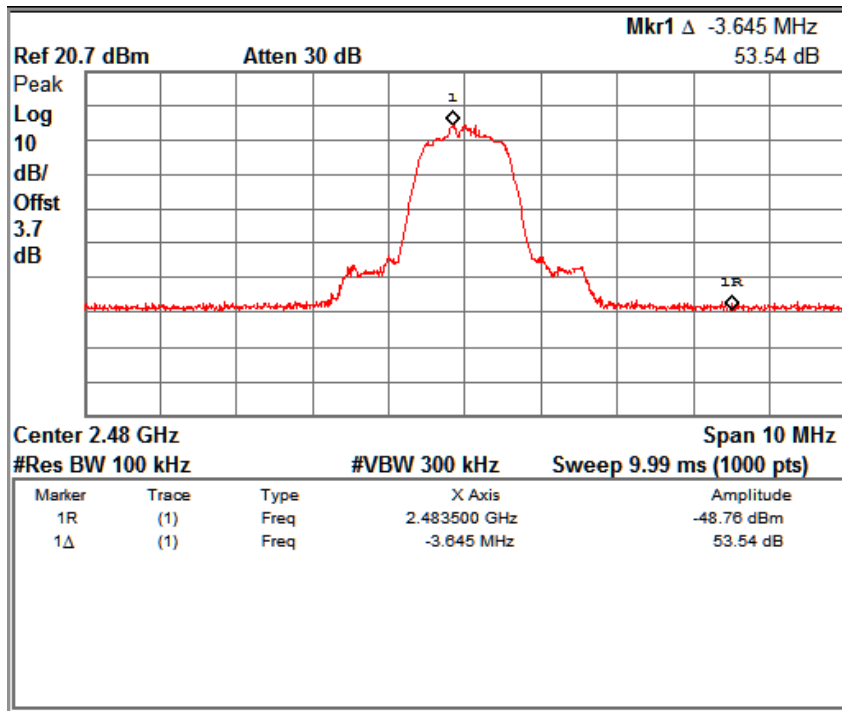
Test Results:

Channel	Fundamental Frequency (MHz)	Value at Band Edge		Limit (dBc)
		Frequency (MHz)	Value (dBc)	
Low	2402.00	2400.0	-47.41	-20
High	2480.00	2483.5	-48.76	-20



Channel Low

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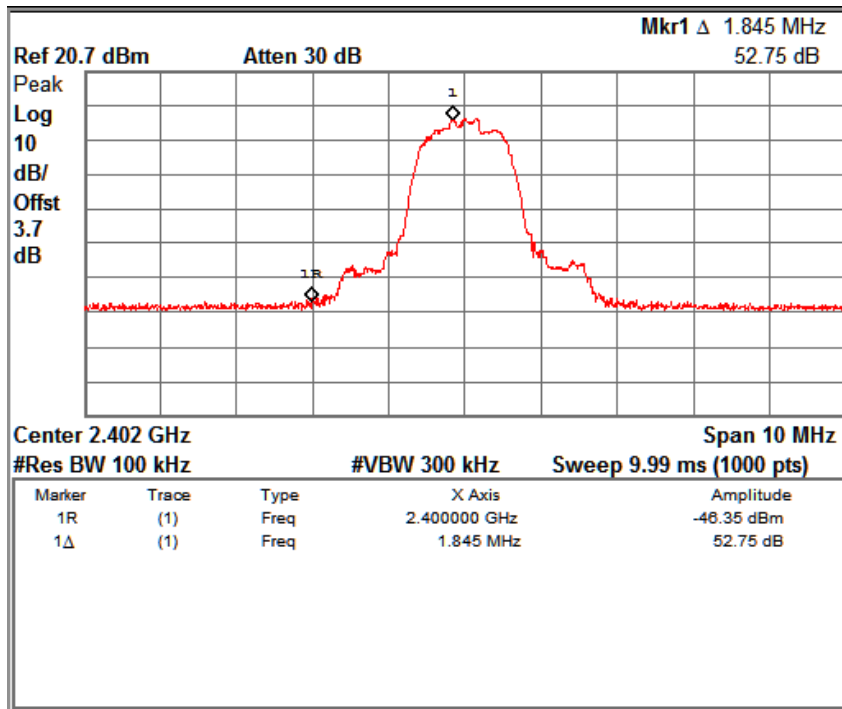


Channel High

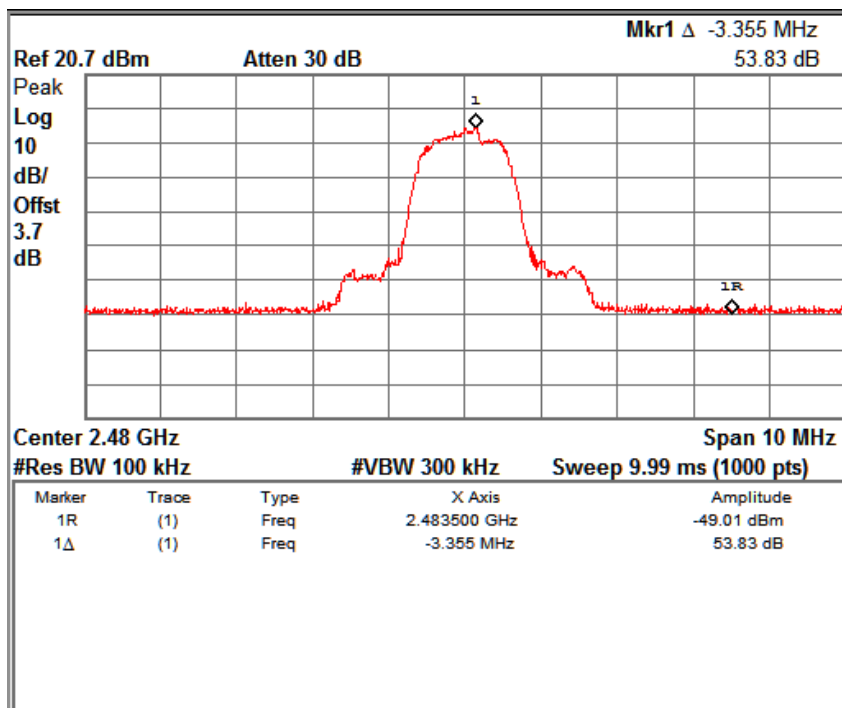
Modulation Type: 8 DPSK

Test Results:

Channel	Fundamental Frequency (MHz)	Value at Band Edge		Limit (dBc)
		Frequency (MHz)	Value (dBc)	
Low	2402.00	2400.0	-46.35	-20
High	2480.00	2483.5	-49.01	-20



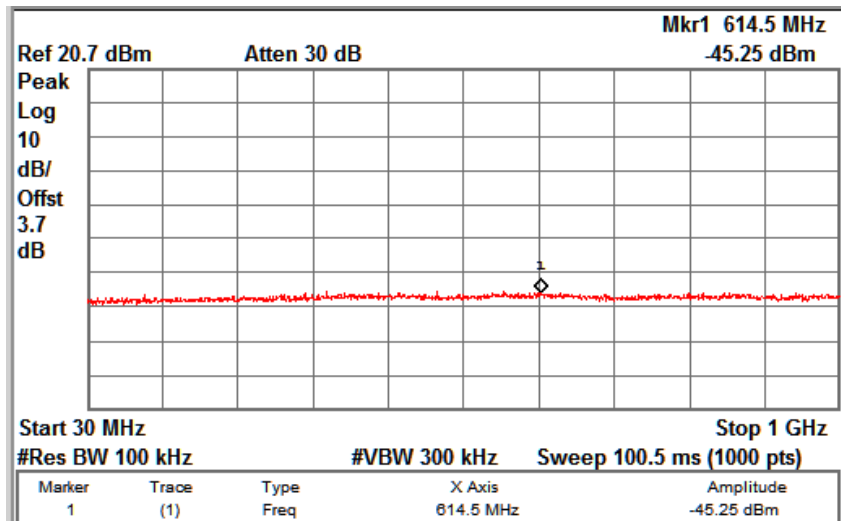
Channel Low



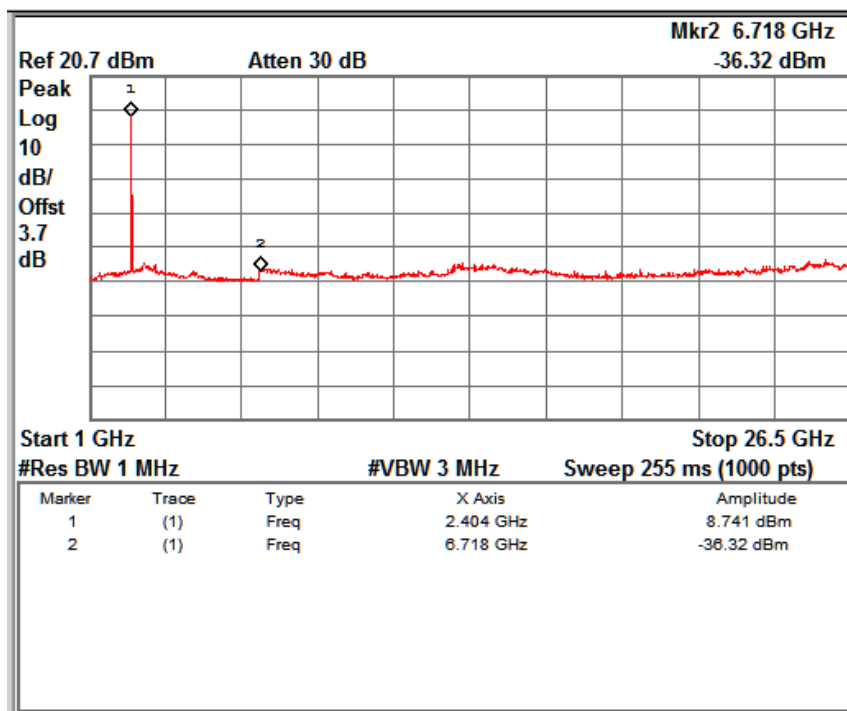
Channel High

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Conducted Spurious Emissions

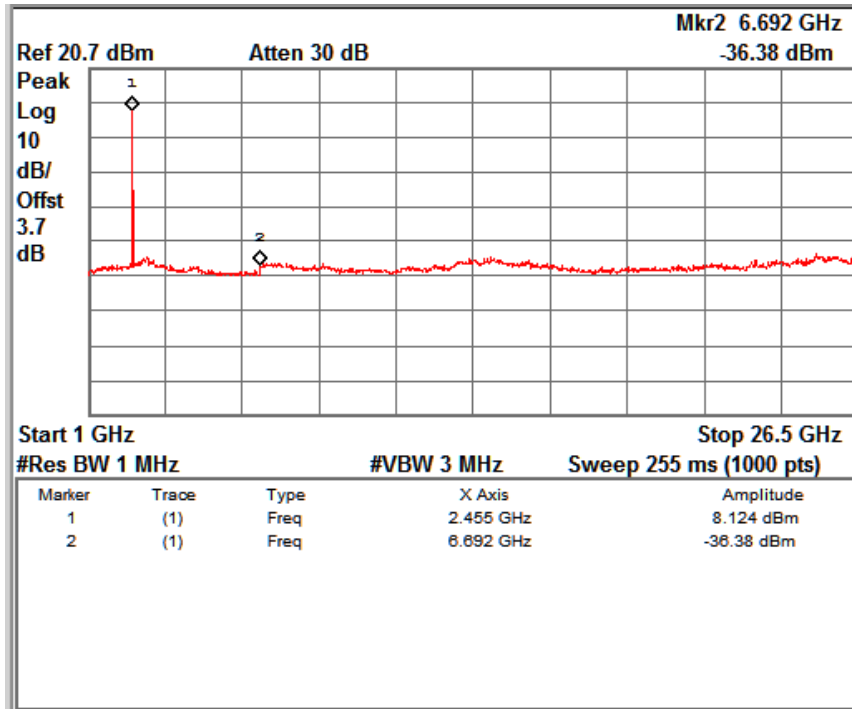


30MHz to 1GHz Spurious Emissions



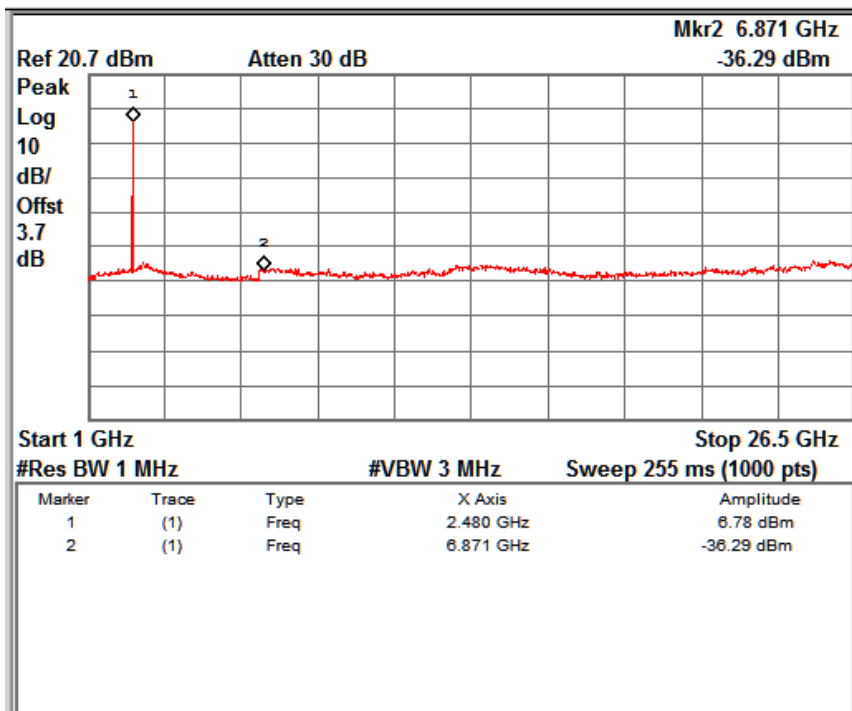
Channel: Low

Modulation: GFSK



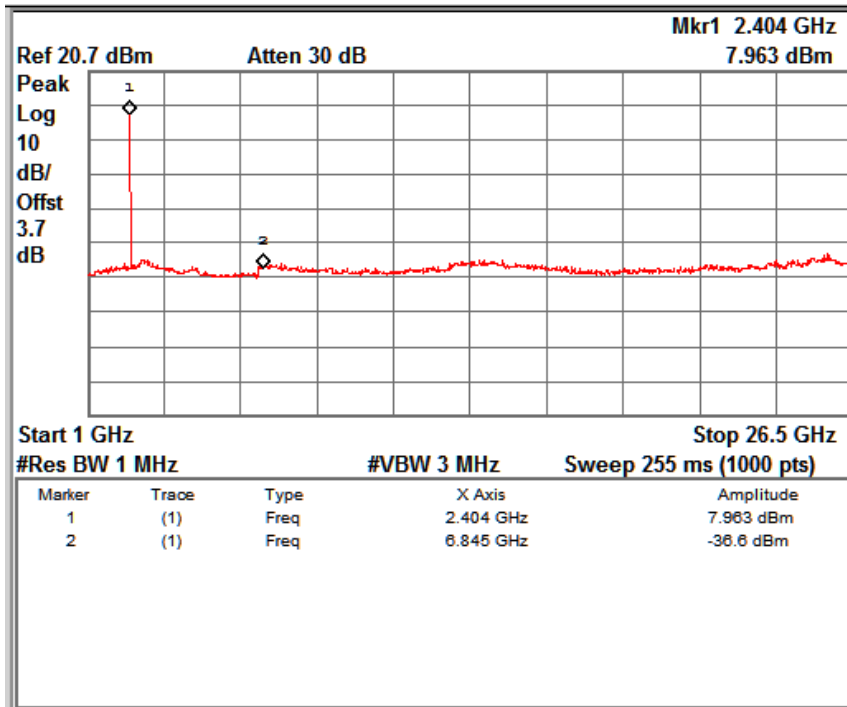
Channel: Mid

Modulation: GFSK



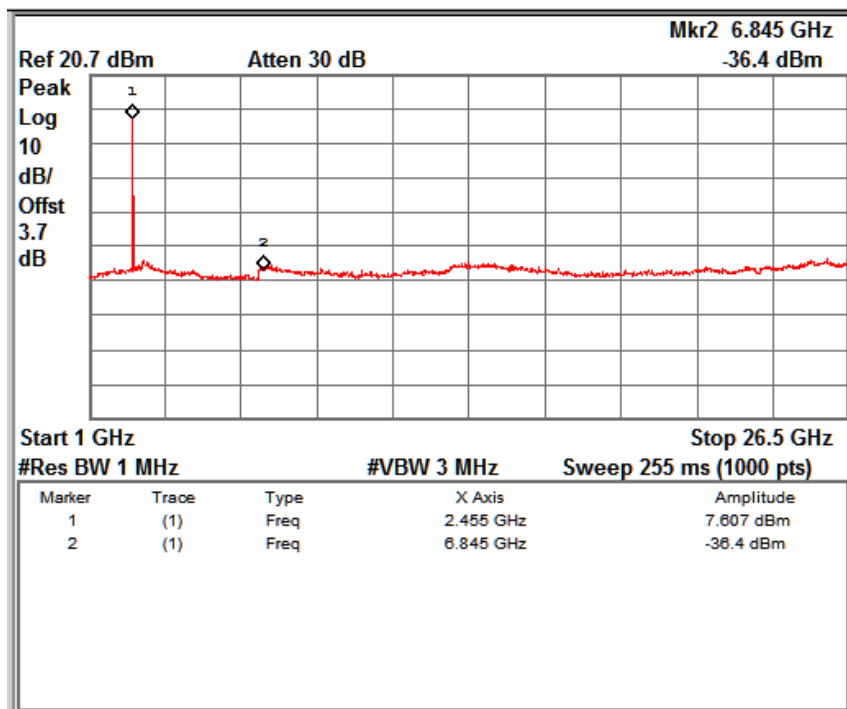
Channel: High

Modulation: GFSK



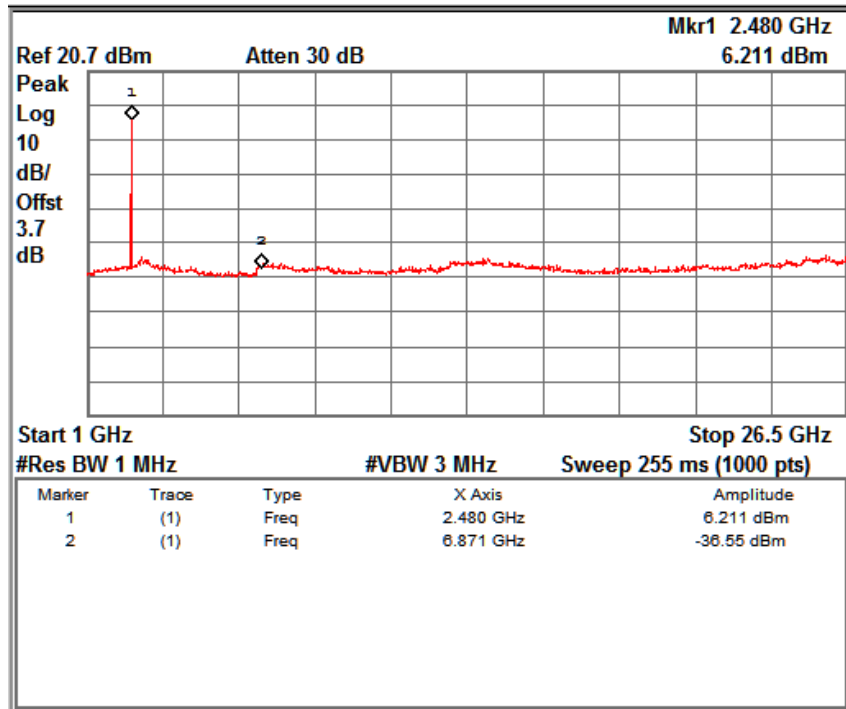
Channel: Low

Modulation: Pi/4 DQPSK



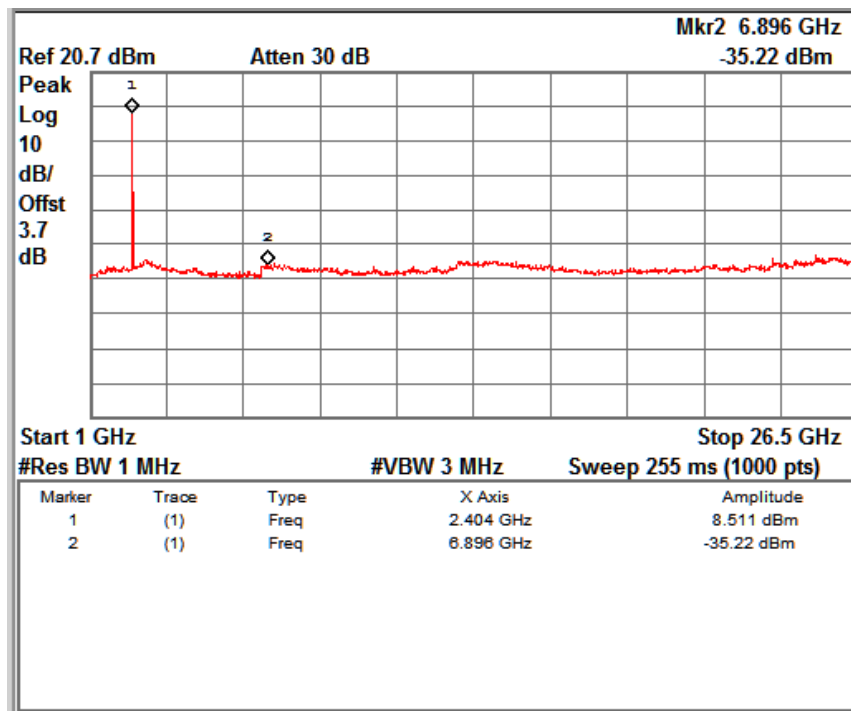
Channel: Mid

Modulation: Pi/4 DQPSK



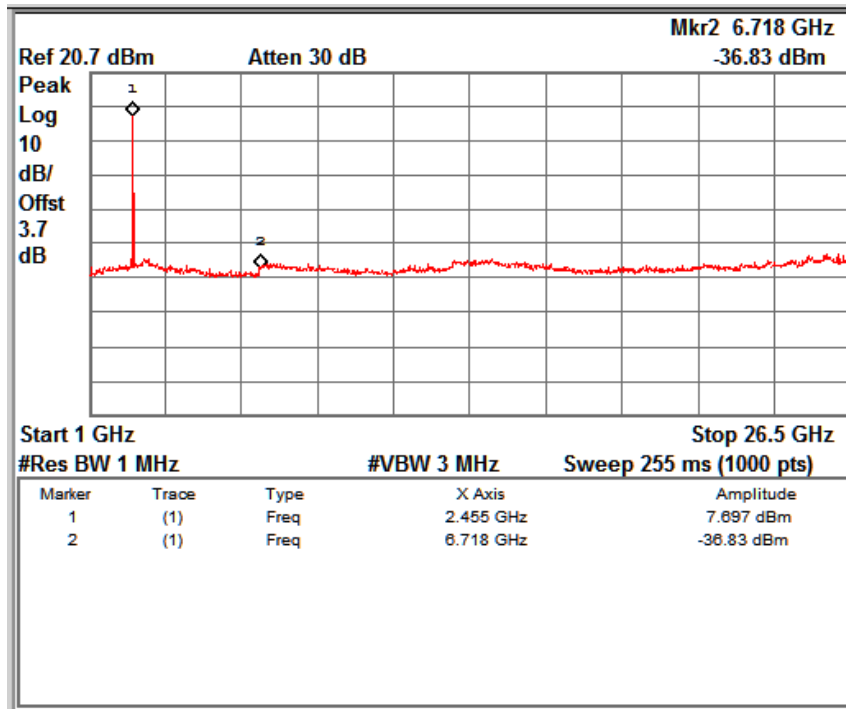
Channel: High

Modulation: Pi/4 DQPSK



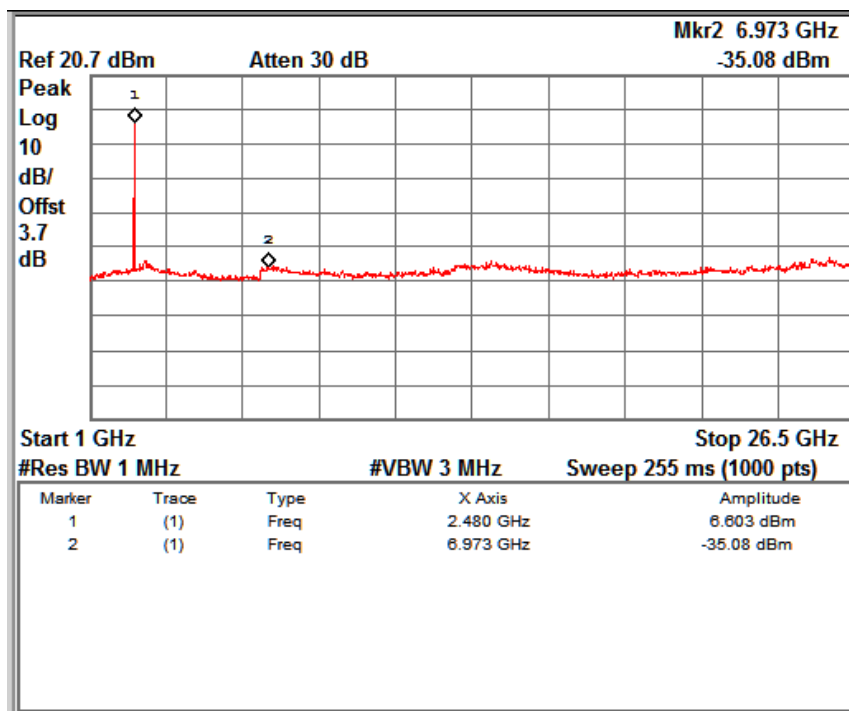
Channel: Low

Modulation: 8 DPSK



Channel: Mid

Modulation: 8 DPSK



Channel: High

Modulation: 8 DPSK

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Radiated Spurious Emissions & Restricted Bands of Operation
Result

Pass

Test Specification	FCC 15.209 & 15.205 & RSS-247 Section 5.5 , RSS-Gen Section 8.9
Test Method	ANSI C63.10-2013
Measurement Location	Semi Anechoic Chamber
Measuring Frequency Range	9kHz to 40GHz (Up to 10 th harmonic of the highest fundamental frequency)
Measuring Distance	3m
Detection	QP for frequency below 1GHz, Peak, Average for frequency above 1GHz
Requirement	As per the limits mentioned in the bellow table

Radiated Spurious Emission Limits:

Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Distance of Measurement (m)
0.009 – 0.490	2400/F(kHz)	48.50 – 13.80	300*
0.490 – 1.705	24000/F(kHz)	33.80 – 23.00	30*
1.705 -30	30	29.54	30*
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Remark: * the limit shows in the table above of frequency range 0.009 – 0.490, 0.490 – 1.705 MHz and 1.705-30MHz is at 300 meter, 30 meter and 30 meter range respectively, which corresponds to 88, 50 – 53.80, 53.80 – 43.00 and 49.5dBμV/m at 3m range by extrapolation calculation and the measurement of loop antenna.

The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz Radiated emission limits in these three bands are based on measurements employing an average detector.

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Test results:

For Frequency Range 9kHz – 30MHz

No emissions found in this frequency range.

For Frequency Range 30MHz – 1GHz

Test Performed on both Battery Mode & Power Adaptor Mode, only worst case test results are reported for the 1GB RAM Variant

Polarization	Frequency (MHz)	Emission (dBm)	Limit (dBμV/m)	Margin (dB)
Vertical	31.87	25.39	40.00	-14.61
	211.30	30.53	43.50	-12.97
Horizontal	32.66	22.06	40.00	-17.94
	211.06	39.85	43.50	-03.65
	217.35	38.62	46.00	-07.38

Test Performed on both Battery Mode & Power Adaptor Mode, only worst case test results are reported for the 2GB RAM Variant

Polarization	Frequency (MHz)	Emission (dBm)	Limit (dBμV/m)	Margin (dB)
Vertical	30.64	26.89	40.0	-13.11
	209.73	32.19	43.5	-11.31
Horizontal	35.62	25.81	40.0	-14.19
	210.82	40.67	43.5	-02.83
	216.01	39.27	46.0	-06.73

Test results for frequencies in the range 1 GHz 26.5 GHz

Modulation type: GFSK

Channel	Polarization	Frequency (MHz)	Measured Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Low	Vertical	2390(Pk)	35.37	74	-38.63
		2390(Av)	24.25	54	-29.75
		2402(Pk)	87.35	*	-
		2402(Av)	86.83	*	-
		4804(Pk)	49.78	74	-24.22
		4804(Av)	36.75	54	-17.25
	Horizontal	2390(pk)	36.46	74	-37.54
		2390(Av)	24.04	54	-29.96
		2402(Pk)	88.17	*	-
		2402(Av)	87.69	*	-
		4804(Pk)	49.11	74	-24.89
		4804(Av)	36.97	54	-17.03
Mid	Vertical	2440(Pk)	86.37	*	-
		2440(Av)	85.88	*	-
		4884(Pk)	49.43	74	-24.57
		4884(Av)	37.34	54	-16.66
	Horizontal	2440(Pk)	86.28	*	-
		2440(Av)	85.78	*	-
		4884(Pk)	49.97	74	-24.03
		4884(Av)	37.40	54	-16.60
High	Vertical	2483.5(Pk)	37.32	74	-36.68
		2483.5(Av)	24.66	54	-29.34
		2480(Pk)	86.44	*	-
		2480(Av)	85.84	*	-
		4960(Pk)	50.46	74	-23.54
		4960(Av)	37.44	54	-16.56
	Horizontal	2483.5(Pk)	35.80	74	-38.20
		2483.5(Av)	24.67	54	-29.43
		2480(Pk)	85.72	*	-
		2480(Av)	85.14	*	-
		4960(Pk)	49.43	74	-24.57
		4960(Av)	37.38	54	-16.62

** -> Fundamental Frequency

Pk - > Peak Detector

Av->Average Detector

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Modulation type: Pi/4 DQPSK

Channel	Polarization	Frequency (MHz)	Measured Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Low	Vertical	2390(Pk)	37.75	74	-36.25
		2390(Av)	23.79	54	-30.21
		2402(Pk)	86.46	*	-
		2402(Av)	82.73	*	-
		4804(Pk)	49.76	74	-24.24
		4804(Av)	36.81	54	-17.19
	Horizontal	2390(pk)	36.89	74	-37.11
		2390(Av)	23.89	54	-30.11
		2402(Pk)	86.78	*	-
		2402(Av)	82.52	*	-
		4804(Pk)	49.51	74	-24.49
		4804(Av)	36.90	54	-17.10
Mid	Vertical	2440(Pk)	85.24	*	-
		2440(Av)	81.18	*	-
		4884(Pk)	49.94	74	-24.06
		4884(Av)	37.26	54	-16.74
	Horizontal	2440(Pk)	85.24	*	-
		2440(Av)	81.34	*	-
		4884(Pk)	49.78	74	-24.22
		4884(Av)	37.51	54	-16.49
High	Vertical	2483.5(Pk)	36.03	74	-37.97
		2483.5(Av)	24.37	54	-29.63
		2480(Pk)	85.49	*	-
		2480(Av)	81.44	*	-
		4960(Pk)	50.57	74	-23.43
		4960(Av)	37.38	54	-16.62
	Horizontal	2483.5(Pk)	35.82	74	-38.18
		2483.5(Av)	26.40	54	-27.60
		2480(Pk)	84.78	*	-
		2480(Av)	80.31	*	-
		4960(Pk)	50.68	74	-23.32
		4960(Av)	37.46	54	-16.54

** -> Fundamental Frequency
 Pk - > Peak Detector
 Av->Average Detector

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Modulation Type: 8 DPSK

Channel	Polarization	Frequency (MHz)	Measured Emission Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
Low	Vertical	2390(Pk)	34.94	74	-39.06
		2390(Av)	23.68	54	-30.32
		2402(Pk)	86.48	*	-
		2402(Av)	82.47	*	-
		4804(Pk)	49.83	74	-24.17
		4804(Av)	36.63	54	-17.37
	Horizontal	2390(pk)	35.63	74	-38.37
		2390(Av)	23.78	54	-30.22
		2402(Pk)	86.68	*	-
		2402(Av)	81.80	*	-
		4804(Pk)	49.46	74	-24.54
		4804(Av)	36.92	54	-17.08
Mid	Vertical	2440(Pk)	85.43	*	-
		2440(Av)	81.73	*	-
		4884(Pk)	50.02	74	-23.98
		4884(Av)	37.22	54	-16.78
	Horizontal	2440(Pk)	85.23	*	-
		2440(Av)	80.84	*	-
		4884(Pk)	51.24	74	-22.76
		4884(Av)	37.38	54	-16.62
High	Vertical	2483.5(Pk)	36.59	74	-37.41
		2483.5(Av)	24.36	54	-29.64
		2480(Pk)	85.83	*	-
		2480(Av)	81.95	*	-
		4960(Pk)	50.68	74	-23.32
		4960(Av)	37.33	54	-16.67
	Horizontal	2483.5(Pk)	36.07	74	-37.93
		2483.5(Av)	24.28	54	-29.72
		2480(Pk)	84.96	*	-
		2480(Av)	81.10	*	-
		4960(Pk)	50.74	74	-23.26
		4960(Av)	37.44	54	-16.56

** -> Fundamental Frequency
 Pk -> Peak Detector
 Av->Average Detector

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**Conducted Emission Test on A.C. Power Line
Result**

Pass

Test Specification : FCC Part 15.207 & RSS-Gen Issue 4 section 8.8
Test Method : ANSI C63.10-2013
Testing Location : Screened room
Measurement Bandwidth : 9kHz
Frequency Range : 150kHz – 30MHz
Supply Voltage : 120VAC,60Hz

Conducted Emission Test Limits:

Frequency of Emission (MHz)	QP Limit (dB μ V)	AV Limit (dB μ V/m)
0.15 – 0.5	66 – 56*	56 – 46*
0.5 – 5	56	46
5 – 30	60	50

* Decreases with the logarithm of the frequency

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Test Results:

Scan Diagram



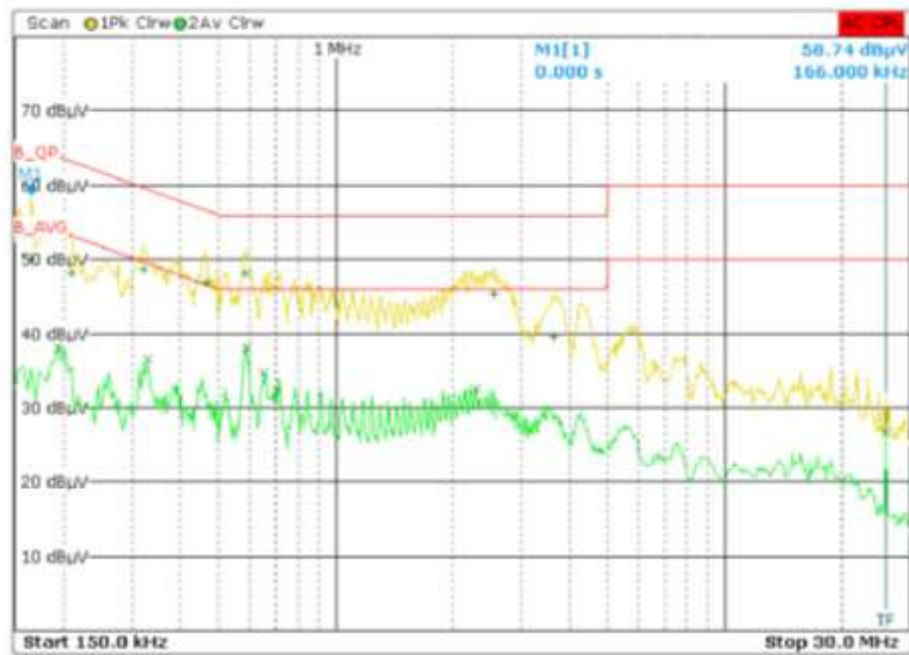
Final Results

Meas Time	1.0 s				
Margin	6.0 dB				
Peaks	25				
Trace	Frequency	Level (dBμV)	Phase	Detector	Delta Limit/dB
1	586.000000000 kHz	44.72		Quasi Peak	-11.28
2	582.000000000 kHz	34.60		Average	-11.40
1	2.370000000 MHz	41.32		Quasi Peak	-14.68
1	374.000000000 kHz	43.36		Quasi Peak	-15.05
2	322.000000000 kHz	33.19		Average	-16.47
2	13.558000000 MHz	32.44		Average	-17.56
1	4.406000000 MHz	38.24		Quasi Peak	-17.76
2	4.270000000 MHz	28.08		Average	-17.92
1	158.000000000 kHz	47.36		Quasi Peak	-18.21
2	2.038000000 MHz	27.56		Average	-18.44
1	13.558000000 MHz	41.48		Quasi Peak	-18.52
2	158.000000000 kHz	36.74		Average	-18.83
2	26.002000000 MHz	28.45		Average	-21.55
1	18.762000000 MHz	28.95		Quasi Peak	-31.05

Mode: Line

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Scan Diagram



Final Results

Meas Time	1.0 s				
Margin	6.0 dB				
Peaks	25				
Trace	Frequency	Level (dBµV)	Phase	Detector	Delta Limit/dB
1	582.000000000 kHz	48.09		Quasi Peak	-7.91
2	586.000000000 kHz	37.92		Average	-8.08
1	466.000000000 kHz	46.93		Quasi Peak	-9.65
1	2.542000000 MHz	45.38		Quasi Peak	-10.62
1	322.000000000 kHz	48.55		Quasi Peak	-11.11
2	654.000000000 kHz	34.62		Average	-11.38
2	330.000000000 kHz	36.59		Average	-12.86
2	2.282000000 MHz	32.58		Average	-13.42
2	706.000000000 kHz	32.20		Average	-13.80
1	210.000000000 kHz	48.12		Quasi Peak	-15.09
1	166.000000000 kHz	49.96		Quasi Peak	-15.20
2	194.000000000 kHz	38.08		Average	-15.78
1	3.630000000 MHz	39.48		Quasi Peak	-16.52
2	26.002000000 MHz	26.62		Average	-23.38

Mode: Neutral

*** END OF TEST REPORT***