



Test Report No.: PSU-NQN2412200117RF01



FCC TEST REPORT

(Part 15, Subpart C)

Applicant:	Qingdao Intelligent & Precise Electronics Co., Ltd.
Address:	No.218 Qianwangang Road, Qingdao Economic & Technological Development Zone, Qingdao City, Shandong Province, P. R. China

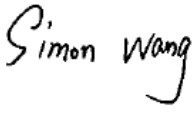
Manufacturer or Supplier:	Qingdao Intelligent & Precise Electronics Co., Ltd.
Address:	No.218 Qianwangang Road, Qingdao Economic & Technological Development Zone, Qingdao City, Shandong Province, P. R. China
Product:	WiFi/BT Module
Brand Name:	Hisense
Model Name:	MWH543S
FCC ID:	2AJVQ-MWH543S
Date of tests:	Nov.19, 2024 ~ Dec. 17, 2024

The tests have been carried out according to the requirements of the following standard:

☒ **FCC Part 15, Subpart C, Section 15.247**

☒ **ANSI C63.10-2020**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Simon Wang Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
 Date: Dec. 17, 2024	 Date: Dec. 17, 2024

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



Test Report No.: PSU-NQN2412200117RF01

TABLE OF CONTENTS

RELEASE CONTROL RECORD	5
1 SUMMARY OF TEST RESULTS.....	6
1.1 MEASUREMENT UNCERTAINTY.....	7
2 GENERAL INFORMATION	8
2.1 GENERAL DESCRIPTION OF EUT	8
2.2 DESCRIPTION OF TEST MODES	9
2.2.1 CONFIGURATION OF SYSTEM UNDER TEST	10
2.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL.....	10
2.3 GENERAL DESCRIPTION OF APPLIED STANDARDS	12
2.4 DESCRIPTION OF SUPPORT UNITS.....	12
3 TEST TYPES AND RESULTS.....	13
3.1 CONDUCTED EMISSION MEASUREMENT.....	13
3.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT	13
3.1.2 TEST INSTRUMENTS.....	13
3.1.3 TEST PROCEDURES	13
3.1.4 DEVIATION FROM TEST STANDARD	14
3.1.5 TEST SETUP	14
3.1.6 EUT OPERATING CONDITIONS	14
3.1.7 TEST RESULTS	15
3.2 RADIATED EMISSION AND BANDEDGE MEASUREMENT	16
3.2.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT	16
3.2.2 TEST INSTRUMENTS.....	17
3.2.3 TEST PROCEDURES	18
3.2.4 DEVIATION FROM TEST STANDARD	18
3.2.5 TEST SETUP	19
3.2.6 EUT OPERATING CONDITIONS	20
3.2.7 TEST RESULTS	21
3.3 NUMBER OF HOPPING FREQUENCY USED	52
3.3.1 LIMIT OF HOPPING FREQUENCY USED	52
3.3.2 TEST SETUP	52
3.3.3 TEST INSTRUMENTS.....	52
3.3.4 TEST PROCEDURES	53
3.3.5 DEVIATION FROM TEST STANDARD	53
3.3.6 TEST RESULTS	53
3.4 DWELL TIME ON EACH CHANNEL	54



Test Report No.: PSU-NQN2412200117RF01

3.4.1	LIMIT OF DWELL TIME USED	54
3.4.2	TEST SETUP	54
3.4.3	TEST INSTRUMENTS	54
3.4.4	TEST PROCEDURES	54
3.4.5	DEVIATION FROM TEST STANDARD	55
3.4.6	TEST RESULTS	55
3.5	CHANNEL BANDWIDTH	56
3.5.1	LIMITS OF CHANNEL BANDWIDTH	56
3.5.2	TEST SETUP	56
3.5.3	TEST INSTRUMENTS	56
3.5.4	TEST PROCEDURE	56
3.5.5	DEVIATION FROM TEST STANDARD	56
3.5.6	EUT OPERATING CONDITION	57
3.5.7	TEST RESULTS	57
3.6	HOPPING CHANNEL SEPARATION	58
3.6.1	LIMIT OF HOPPING CHANNEL SEPARATION	58
3.6.2	TEST SETUP	58
3.6.3	TEST INSTRUMENTS	58
3.6.4	TEST PROCEDURES	58
3.6.5	DEVIATION FROM TEST STANDARD	58
3.6.6	TEST RESULTS	59
3.7	MAXIMUM OUTPUT POWER	59
3.7.1	LIMITS OF MAXIMUM OUTPUT POWER MEASUREMENT	59
3.7.2	TEST SETUP	59
3.7.3	TEST INSTRUMENTS	59
3.7.4	TEST PROCEDURES	59
3.7.5	DEVIATION FROM TEST STANDARD	60
3.7.6	EUT OPERATING CONDITION	60
3.7.7	TEST RESULTS	61
3.7.7.1	MAXIMUM PEAK OUTPUT POWER	61
3.7.7.2	AVERAGE OUTPUT POWER (FOR REFERENCE)	62
3.8	OUT OF BAND MEASUREMENT	63
3.8.1	LIMITS OF OUT OF BAND MEASUREMENT	63
3.8.2	TEST INSTRUMENTS	63
3.8.3	TEST PROCEDURE	63
3.8.4	DEVIATION FROM TEST STANDARD	63



Test Report No.: PSU-NQN2412200117RF01

3.8.5	EUT OPERATING CONDITION	63
3.8.6	TEST RESULTS	63
4	PHOTOGRAPHS OF THE TEST CONFIGURATION.....	64
5	MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	65
6	APPENDIX	66



Test Report No.: PSU-NQN2412200117RF01

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-NQN2412200117RF01	Original release	Dec. 17, 2024



Test Report No.: PSU-NQN2412200117RF01

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C		
STANDARD	TEST TYPE AND LIMIT	RESULT
15.207	AC Power Conducted Emission	Compliance
15.247(a)(1)(iii)	Number of Hopping Frequency Used	Compliance
15.247(a)(1)(iii)	Dwell Time on Each Channel	Compliance
15.247(a)(1)	1. Hopping Channel Separation 2. Spectrum Bandwidth of a Frequency Hopping Sequence Spread Spectrum System	Compliance
15.247(b)	Maximum Peak Output Power	Compliance
15.247(d)&15.209	Transmitter Radiated Emissions	Compliance
15.247(d)	Out of band Measurement	Compliance
15.203	Antenna Requirement	Compliance

NOTE:

1. If the Frequency Hopping System operating in 2400-2483.5MHz band and the output power less than 125mW. The hopping channel carrier frequencies separated by a minimum of 25kHz or two-thirds of the 20dB bandwidth of hopping channel whichever is greater.
2. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly 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.

Test Lab Information Reference:

BV 7Layers Communications Technology (Shenzhen) Co., Ltd

Lab Address:

Room B37, Warehouse A5, No.3 Chiwan 4th Road, Zhaoshang Street, Nanshan District Shenzhen, Guangdong, People's Republic of China

Accredited Test Lab Cert 3939.01

1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	UNCERTAINTY
AC Power Conducted emissions	$\pm 2.70\text{dB}$
Radiated emissions (9KHz~30MHz)	$\pm 2.68\text{dB}$
Radiated emissions (30MHz~1GHz)	$\pm 4.98\text{dB}$
Radiated emissions (1GHz ~6GHz)	$\pm 4.70\text{dB}$
Radiated emissions (6GHz ~18GHz)	$\pm 4.60\text{dB}$
Radiated emissions (18GHz ~40GHz)	$\pm 4.12\text{dB}$
Conducted emissions	$\pm 4.01\text{dB}$
Occupied Channel Bandwidth	$\pm 43.58\text{KHz}$
Conducted Output power	$\pm 2.06\text{dB}$
Power Spectral Density	$\pm 0.85\text{ dB}$

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	WiFi/BT Module
BRAND NAME	Hisense
MODEL NAME	MWH543S
NOMINAL VOLTAGE	3.3Vdc (DC supply)
MODULATION TECHNOLOGY	FHSS
MODULATION TYPE	GFSK, 8DPSK, $\pi/4$ DQPSK
OPERATING FREQUENCY	2402MHz~2480MHz
NUMBER OF CHANNEL	79
MAX. OUTPUT POWER	8.375mW (Max. Measured)
ANTENNA TYPE	PIFA Antenna with 1.06dBi gain
HW VERSION	V1.00
SW VERSION	N/A
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	N/A

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
3. Antenna gain and EUT conducted cable loss are provided by the customer, and the laboratory will record the results based on these items that involve these two parameters.

2.2 DESCRIPTION OF TEST MODES

79 channels are provided to this EUT:

CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
0	2402	20	2422	40	2442	60	2462
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468
7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480
19	2421	39	2441	59	2461		

2.2.1 CONFIGURATION OF SYSTEM UNDER TEST

Please see section 4 photograph of the test configuration for reference.

2.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports.

The worst case was found when positioned on X axis for radiated emission.

Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE<1G	RE≥1G	PLC	APCM	
-	√	√	√	√	-

Where **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission

RE≥1G: Radiated Emission above 1GHz
APCM: Antenna Port Conducted Measurement

RADIATED EMISSION TEST (BELOW 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture) and packet type.
- ☒ The following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	PACKET TYPE
-	0 to 78	78	FHSS	$\pi/4$ -DQPSK	2DH5

RADIATED EMISSION TEST (ABOVE 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture) and packet type.
- ☒ The following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	PACKET TYPE
-	0 to 78	0, 39, 78	FHSS	$\pi/4$ -DQPSK	2DH5



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Test Report No.: PSU-NQN2412200117RF01

POWER LINE CONDUCTED EMISSION TEST:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture) and packet type.
- ☒ The following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	PACKET TYPE
-	0 to 78	78	FHSS	$\pi/4$ -DQPSK	2DH5

ANTENNA PORT CONDUCTED MEASUREMENT:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and packet types.
- ☒ The following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	PACKET TYPE
0 to 78	0, 39, 78	FHSS	GFSK	DH1/DH3/DH5
0 to 78	0, 39, 78	FHSS	$\pi/4$ DQPSK	2DH1/2DH3/2DH5
0 to 78	0, 39, 78	FHSS	8DPSK	3DH1/3DH3/3DH5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE (SYSTEM)	TESTED BY
RE<1G	23deg. C, 70%RH	DC 3.3V By DC Supply	Jace Hu
RE≥1G	23deg. C, 70%RH	DC 3.3V By DC Supply	Jace Hu
PLC	25deg. C, 52%RH	DC 3.3V By DC Supply	Carl Xie
APCM	25deg. C, 60%RH	DC 3.6V By DC Supply	James Fu



Test Report No.: PSU-NQN2412200117RF01

2.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C. Section 15.247

ANSI C63.10-2020

- NOTE:**
1. All test items have been performed and recorded as per the above standards.
 2. The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (Certification). The test report has been issued separately.

2.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Desktop	Lenovo	M73 SFF	PC04GRQV	N/A
2	Desktop	Lenovo	M73 SFF	PC06CS27	N/A
3	Laptop	Lenovo	Thinkpad L440	R90FTFKN	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	AC Line: Unshielded, Detachable 1.5m
2	AC Line: Unshielded, Detachable 1.5m
3	AC Line: Unshielded, Detachable 1.5m

3 TEST TYPES AND RESULTS

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
0.15 ~ 0.5 0.5 ~ 5 5 ~ 30	Quasi-peak	Average
	66 to 56	56 to 46
	56	46
	60	50

- NOTE:** 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

3.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR3	101900	Feb. 13,24	Feb. 12,25
EMC32 test software	Rohde&Schwarz	EMC32	NA	NA	NA
LISN network	Rohde&Schwarz	ENV216	101922	Mar. 09,24	Mar. 08,25

- NOTE:** 1. The test was performed in CE shielded room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

3.1.3 TEST PROCEDURES

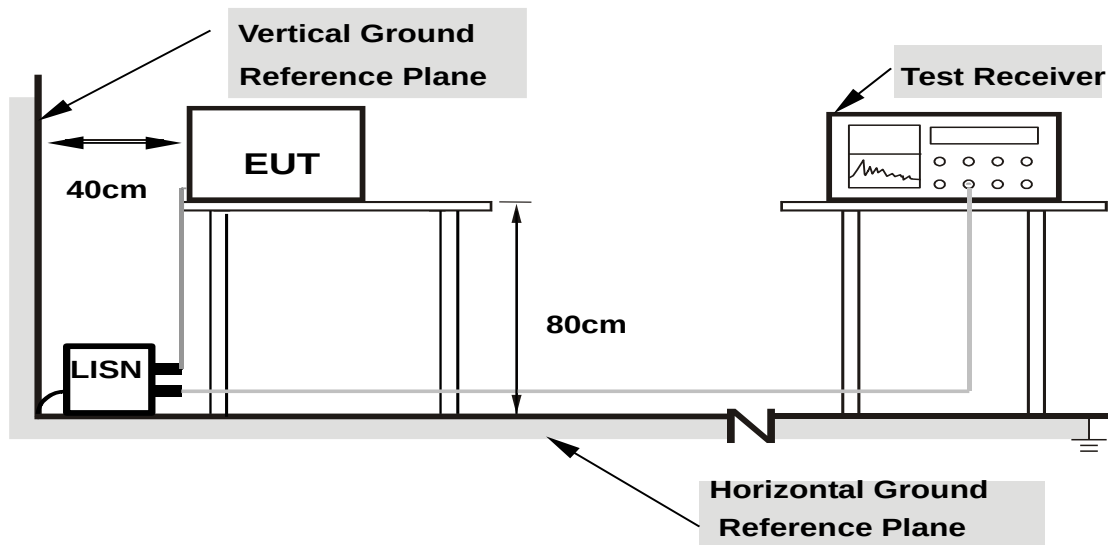
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

3.1.4 DEVIATION FROM TEST STANDARD

No deviation.

3.1.5 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

For the actual test configuration, please refer to the attached file (Test Setup Photo).

3.1.6 EUT OPERATING CONDITIONS

- a. Turned on the power and connected of all equipment.
- b. EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.



Test Report No.: PSU-NQN2412200117RF01

3.1.7 TEST RESULTS

NA



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Test Report No.: PSU-NQN2412200117RF01

3.2 RADIATED EMISSION AND BANDEDGE MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a). Other emissions shall be at least 20dB below the highest level of the desired power.

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



Test Report No.: PSU-NQN2412200117RF01

3.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	Nov. 14,23	Nov. 13,26
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Feb. 17,24	Feb. 16,25
Horn Antenna	ETS-LINDGREN	3117	00168692	Feb. 17,24	Feb. 16,25
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Sep.02, 24	Sep.01, 25
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	JS1120-3	3.2.06	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	N/A	May. 05,24	May. 04,25
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Mar. 27,24	Mar. 26,25
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May. 05,24	May. 04,25
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May.09,24	May.08,25
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Feb. 16,24	Feb. 15,25
DC Source	Kikusui/JP	PMX18-5A	0000001	Aug. 10,24	Aug. 09,25
Power Meter	Anritsu	ML2495A	1506002	Feb. 13,24	Feb. 12,25
Power Sensor	Anritsu	MA2411B	1339352	Feb. 13,24	Feb. 12,25
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep.01,24	Aug.31,25

- NOTE:**
1. The calibration interval of the above test instruments is 12 months or 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
 2. The test was performed in 3m Chamber.
 3. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

3.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. 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 is a broadband antenna, and its 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. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be performed using fresh batteries. The turntable was rotated to maximize the emission level.

NOTE:

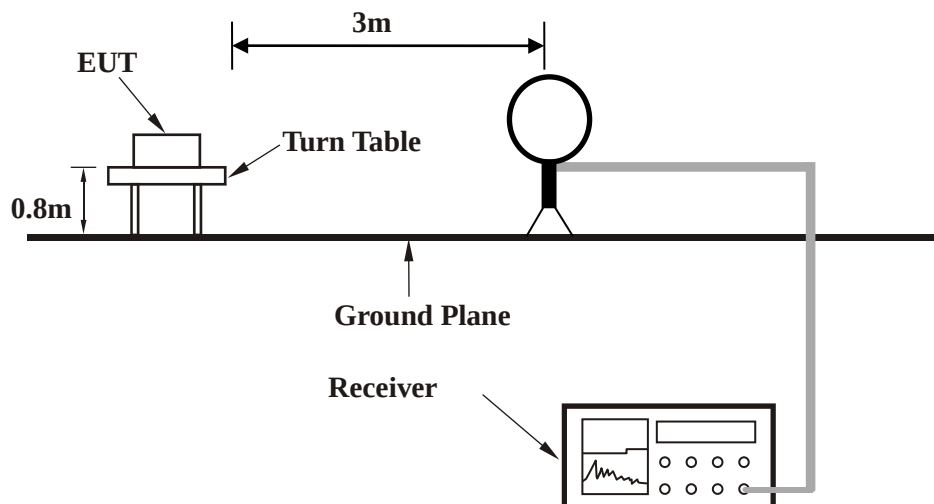
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. If the dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from $20\log(\text{dwell time}/100 \text{ ms})$, in an effort to demonstrate compliance with the 15.209 limit.
5. All modes of operation were investigated and the worst-case emissions are reported.

3.2.4 DEVIATION FROM TEST STANDARD

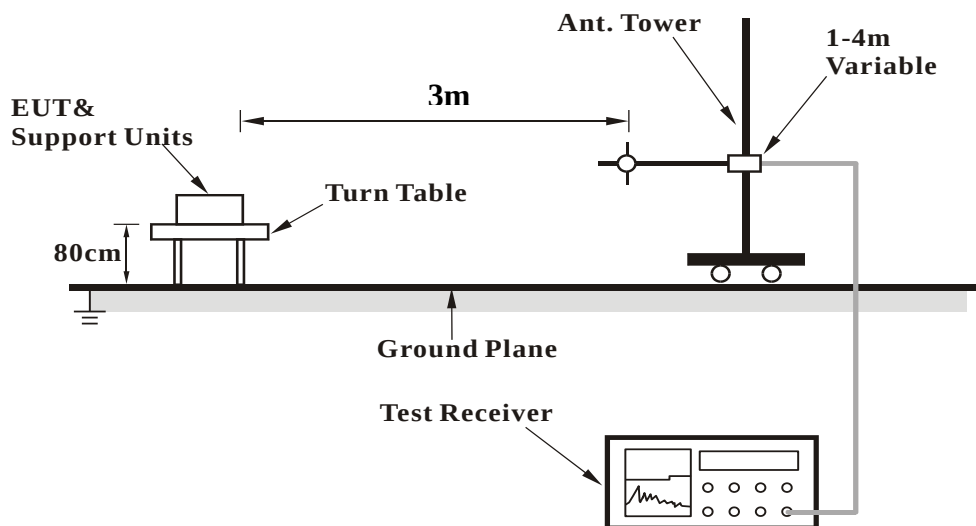
No deviation.

3.2.5 TEST SETUP

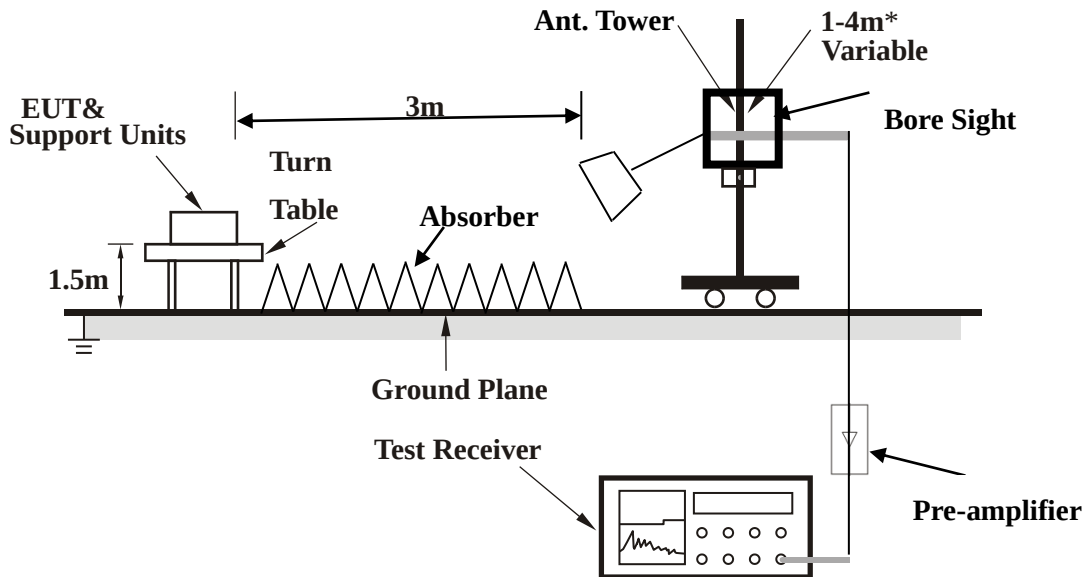
<Frequency Range 9KHz~30MHz >



< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna

Depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

3.2.6 EUT OPERATING CONDITIONS

- Set the EUT under full load condition and placed them on a testing table.
- Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.
- The necessary accessories enable the EUT in full functions.



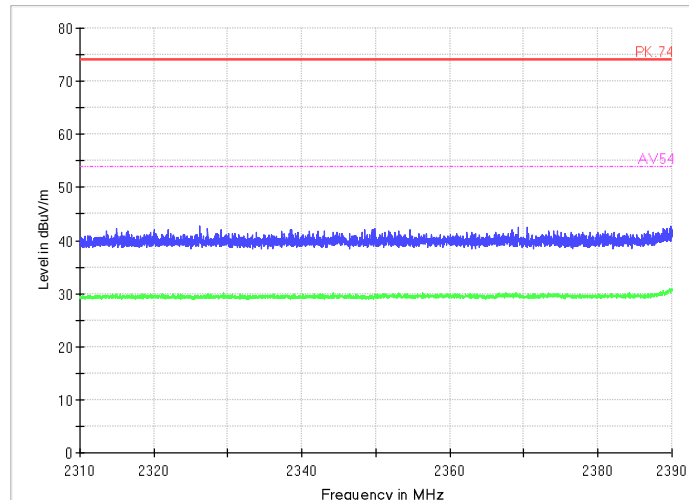
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Test Report No.: PSU-NQN2412200117RF01

3.2.7 TEST RESULTS

NOTE : The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

Radiated Emission Band Edge for BT

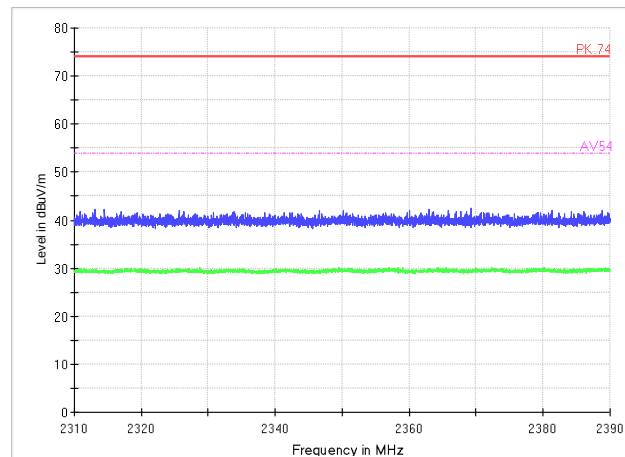


Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: GFSK

Polarity: Vertical

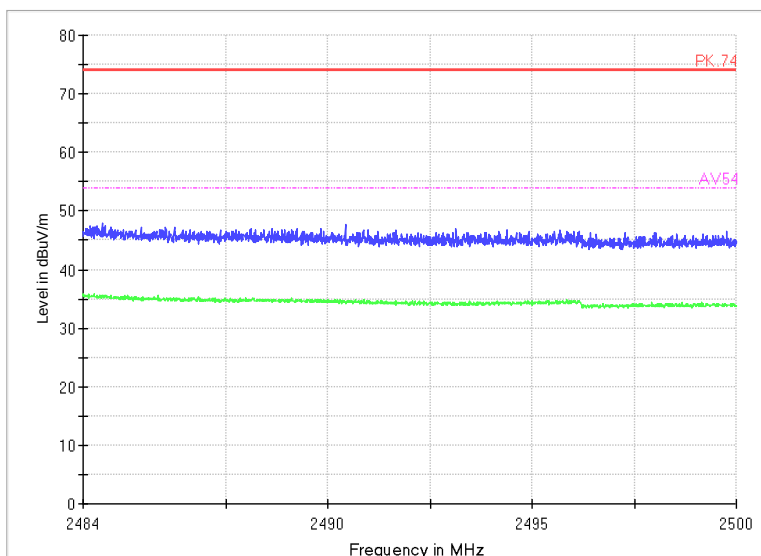


Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: GFSK

Polarity: Horizontal

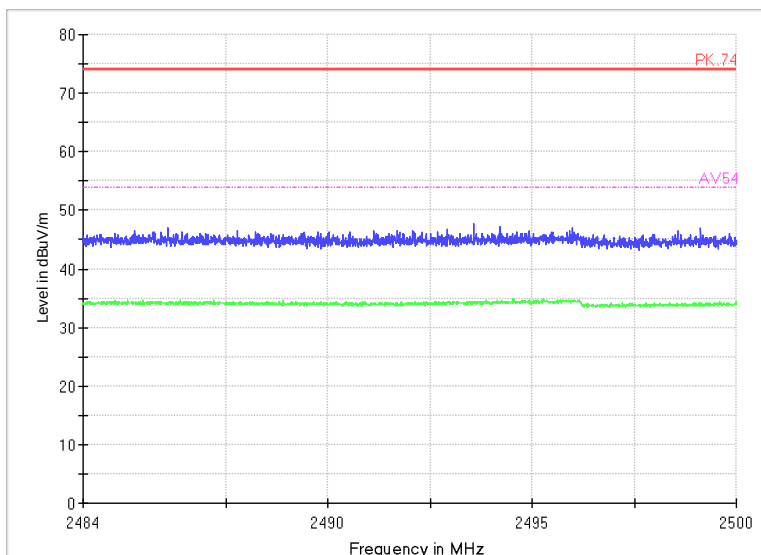


Carrier frequency (MHz): 2480

Channel No.:78

Test Mode: GFSK

Polarity: Vertical

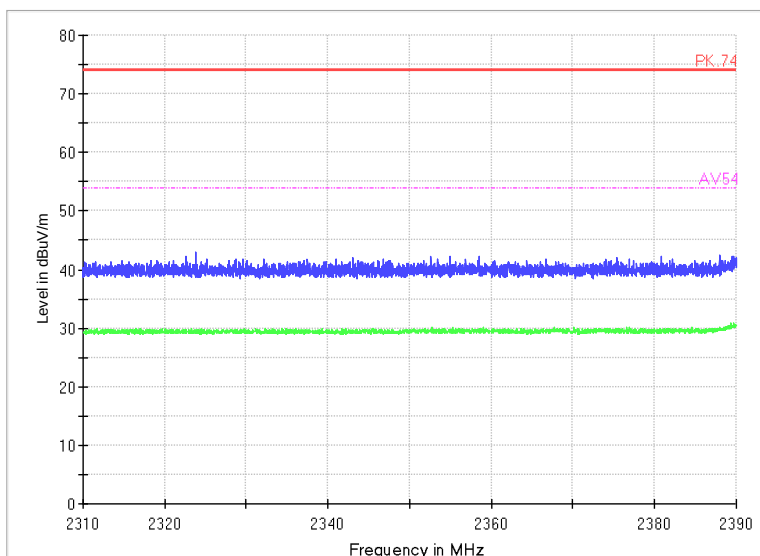


Carrier frequency (MHz): 2480

Channel No.:78

Test Mode: GFSK

Polarity: Horizontal

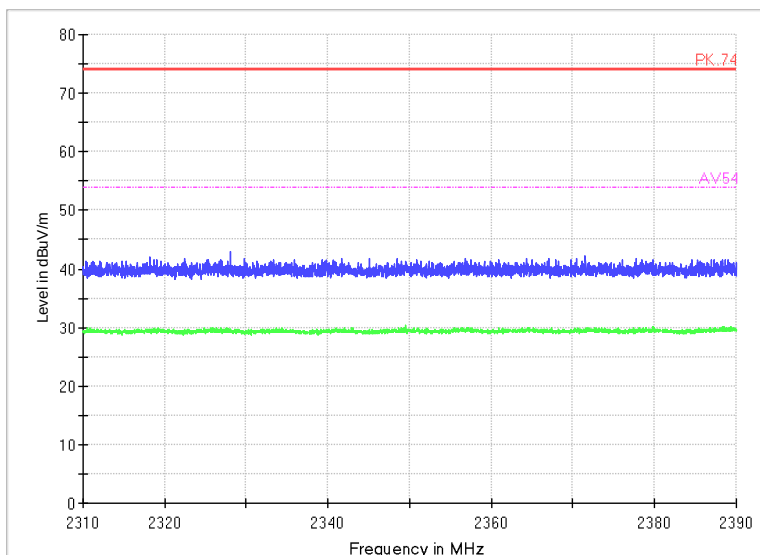


Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: $\pi/4$ DQPSK

Polarity: Vertical

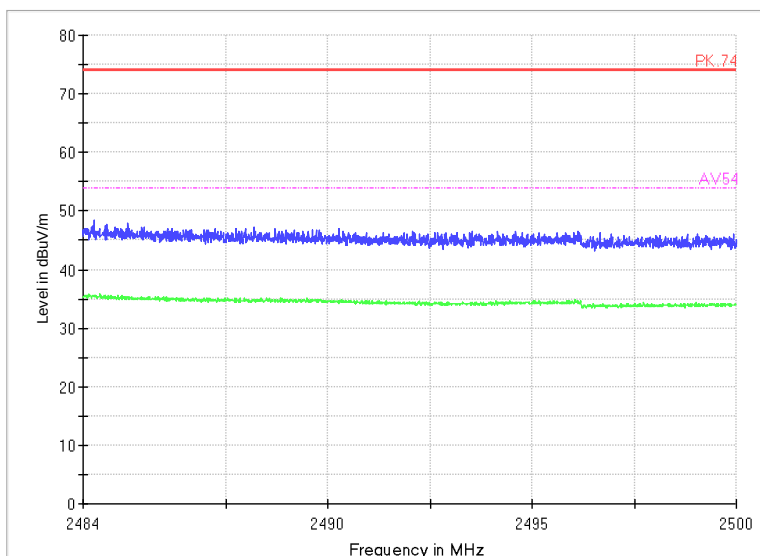


Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: $\pi/4$ DQPSK

Polarity: Horizontal

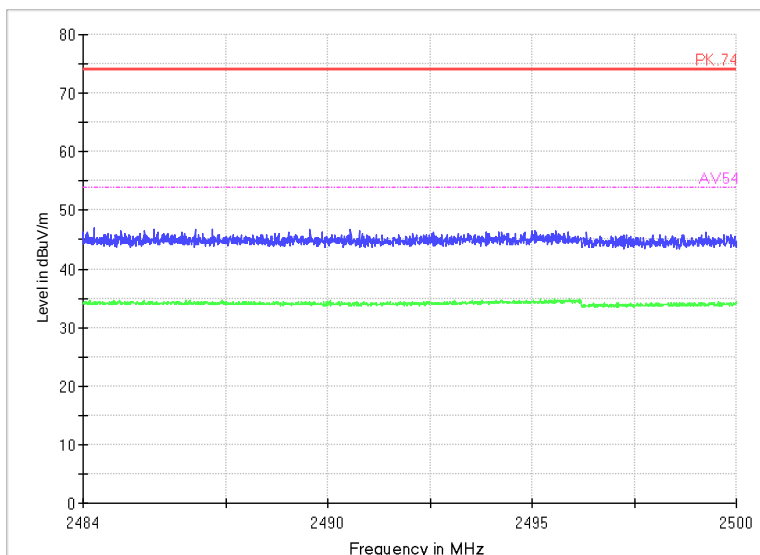


Carrier frequency (MHz): 2480

Channel No.:78

Test Mode: $\pi/4$ DQPSK

Polarity: Vertical

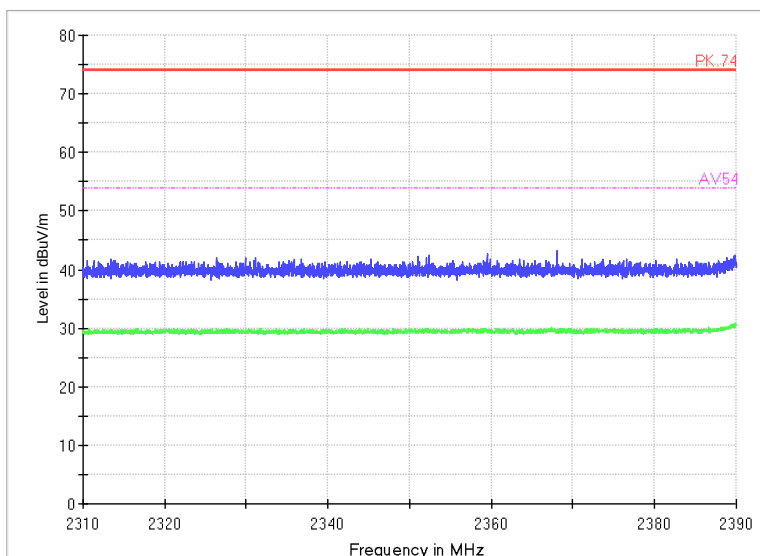


Carrier frequency (MHz): 2480

Channel No.:78

Test Mode: $\pi/4$ DQPSK

Polarity: Horizontal

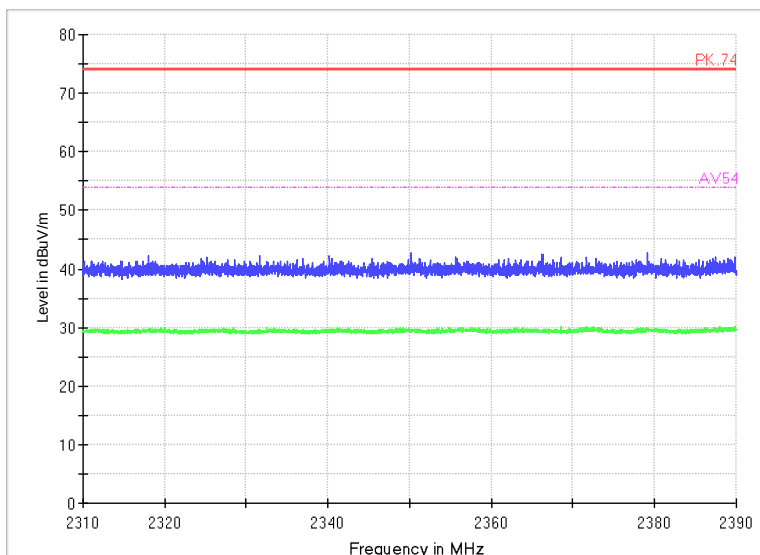


Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: 8DPSK

Polarity: Vertical

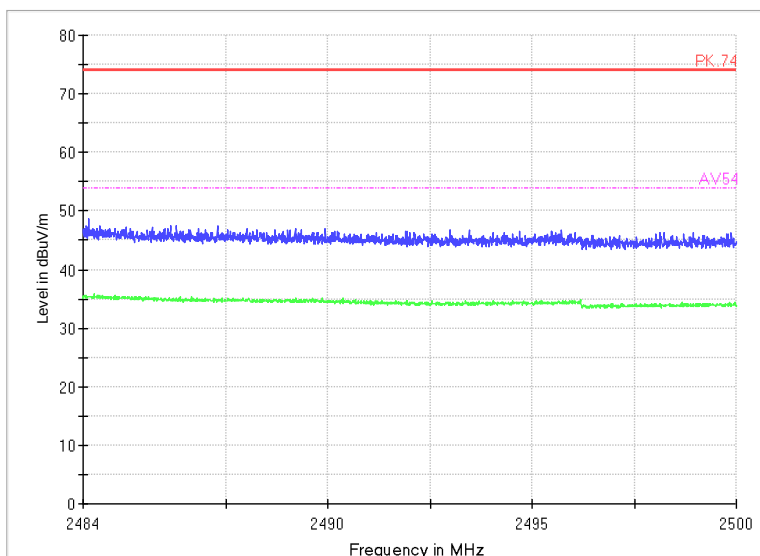


Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: 8DPSK

Polarity: Horizontal

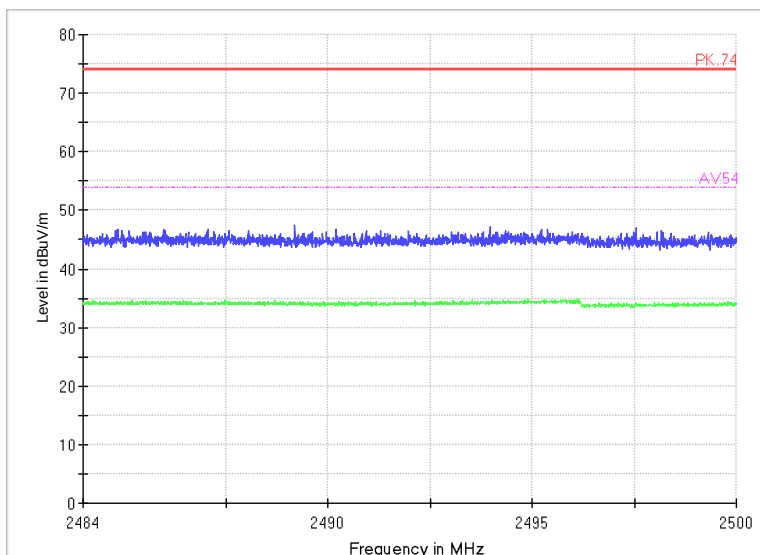


Carrier frequency (MHz): 2480

Channel No.:78

Test Mode: 8DPSK

Polarity: Vertical



Carrier frequency (MHz): 2480

Channel No.:78

Test Mode: 8DPSK

Polarity: Horizontal



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Test Report No.: PSU-NQN2412200117RF01

Radiated Emission for BT

After comparison, the worst case attitude is EUT lay down.

Determining Spurious Emissions Levels

A “reference path loss” is established and the A_{Rpl} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

The measurement results are obtained as described below:

$$\text{Result} = P_{\text{mea}} + A_{Rpl}$$

Sample calculation: $(12.82 \text{ dB}\mu\text{V/m}) = (30.92 \text{ dB}\mu\text{V}) + (-18.1 \text{ dB/m})$, the corresponding frequency is 36.014 MHz.

For GFSK

Channel No.:0

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
36.014	12.82	-18.1	30.92	Vertical	40	27.18
84.126	19.87	-21.2	41.07	Vertical	40	20.13
168.322	19.69	-19.1	38.79	Vertical	43.5	23.81
310.0875	15.84	-13.2	29.04	Vertical	46	30.16
312.755	15.95	-13.1	29.05	Vertical	46	30.05
935.495	20.51	-0.3	20.81	Vertical	46	25.49

For $\pi/4$ DQPSK

Channel No.:0

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
48.042	11.64	-14.9	26.54	Vertical	40	28.36
84.126	19.88	-21.2	41.08	Vertical	40	20.12
168.322	19.73	-19.1	38.83	Vertical	43.5	23.77
270.56	26.35	-14.2	40.55	Vertical	46	19.65
320.612	16.06	-12.9	28.96	Vertical	46	29.94
940.1995	20.42	-0.4	20.82	Vertical	46	25.58

For 8DPSK

Channel No.:0

Frequency	Result	ARpl	Pmea	Polarity	Limit	Margin
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BUREAU

Test Report No.: PSU-NQN2412200117RF01

(MHz)	(dBuV/m)	(dB)	(dBuV/m)		(dBuV/m)	(dB)
36.014	12.84	-18.1	30.94	Vertical	40	27.16
78.112	18.22	-21.7	39.92	Vertical	40	21.78
168.322	19.71	-19.1	38.81	Vertical	43.5	23.79
264.546	25.02	-14.4	39.42	Vertical	46	20.98
378.7635	23.66	-11.2	34.86	Vertical	46	22.34
919.9265	22.47	-0.3	22.77	Vertical	46	23.53

For GFSK

Channel No.:39

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
48.042	11.59	-14.9	26.49	Vertical	40	28.41
78.112	18.15	-21.7	39.85	Vertical	40	21.85
168.322	19.69	-19.1	38.79	Vertical	43.5	23.81
270.56	26.32	-14.2	40.52	Vertical	46	19.68
390.7915	24.17	-11	35.17	Vertical	46	21.83
929.5295	20.53	-0.1	20.63	Vertical	46	25.47

For $\pi/4$ DQPSK

Channel No.:39

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
36.014	12.82	-18.1	30.92	Vertical	40	27.18
84.126	19.92	-21.2	41.12	Vertical	40	20.08
168.322	19.68	-19.1	38.78	Vertical	43.5	23.82
270.56	26.32	-14.2	40.52	Vertical	46	19.68
390.7915	24.16	-11	35.16	Vertical	46	21.84
889.2745	19.79	-1	20.79	Vertical	46	26.21

For 8DPSK

Channel No.:39

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
47.0235	9.47	-15.2	24.67	Vertical	40	30.53
84.126	19.9	-21.2	41.1	Vertical	40	20.1
168.322	19.72	-19.1	38.82	Vertical	43.5	23.78



Test Report No.: PSU-NQN2412200117RF01

270.56	26.34	-14.2	40.54	Vertical	46	19.66
390.7915	24.19	-11	35.19	Vertical	46	21.81
886.8495	19.98	-1	20.98	Vertical	46	26.02

For GFSK

Channel No.:78

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
36.014	12.81	-18.1	30.91	Vertical	40	27.19
84.126	19.89	-21.2	41.09	Vertical	40	20.11
168.322	19.68	-19.1	38.78	Vertical	43.5	23.82
270.56	26.32	-14.2	40.52	Vertical	46	19.68
390.7915	24.18	-11	35.18	Vertical	46	21.82
881.66	19.76	-1	20.76	Vertical	46	26.24

For $\pi/4$ DQPSK

Channel No.:78

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
36.014	12.82	-18.1	30.92	Vertical	40	27.18
84.1745	22.08	-21.2	43.28	Vertical	40	17.92
168.322	19.76	-19.1	38.86	Vertical	43.5	23.74
270.56	26.37	-14.2	40.57	Vertical	46	19.63
390.7915	24.18	-11	35.18	Vertical	46	21.82
924.34	20.5	-0.3	20.8	Vertical	46	25.5

For 8DPSK

Channel No.:78

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
36.014	12.83	-18.1	30.93	Vertical	40	27.17
78.112	18.21	-21.7	39.91	Vertical	40	21.79
168.322	19.72	-19.1	38.82	Vertical	43.5	23.78
270.56	26.31	-14.2	40.51	Vertical	46	19.69
390.7915	24.18	-11	35.18	Vertical	46	21.82

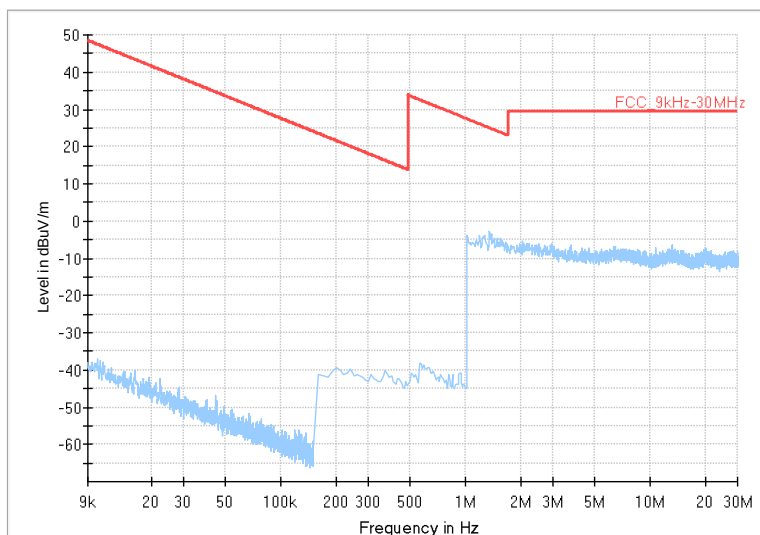


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VERITAS

Test Report No.: PSU-NQN2412200117RF01

988.069	20.56	-0.1	20.66	Vertical	54	33.44
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Full Spectrum



Frequency Range: 9kHz -30MHz

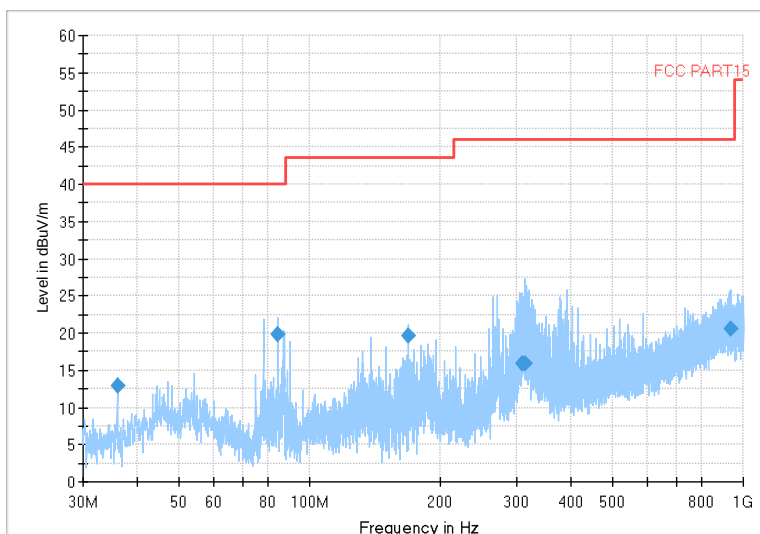
Detector: QP mode

Note: The relevant tests have been performed in order to verify in which mode would have the worst features, the result show above is the worst case.

Carrier frequency (MHz): 2402

Channel No.:0

Full Spectrum

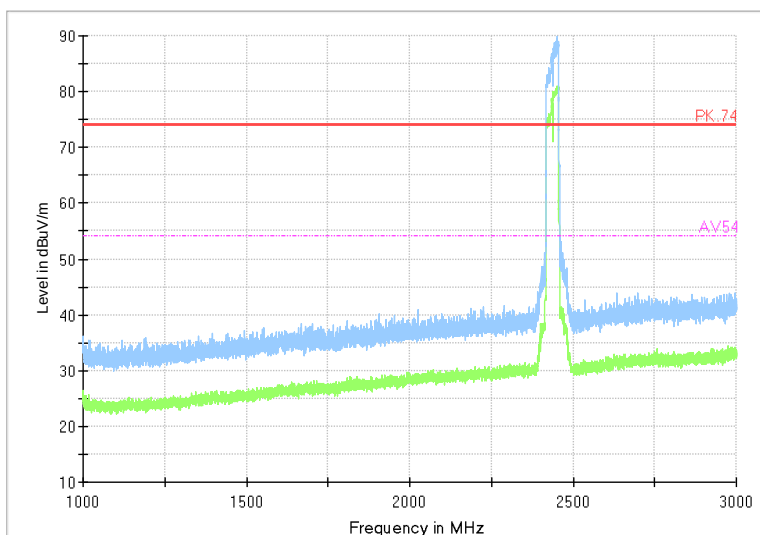


Frequency Range: 30MHz-1GHz

Detector: QP mode

Modulation type: GFSK

Full Spectrum

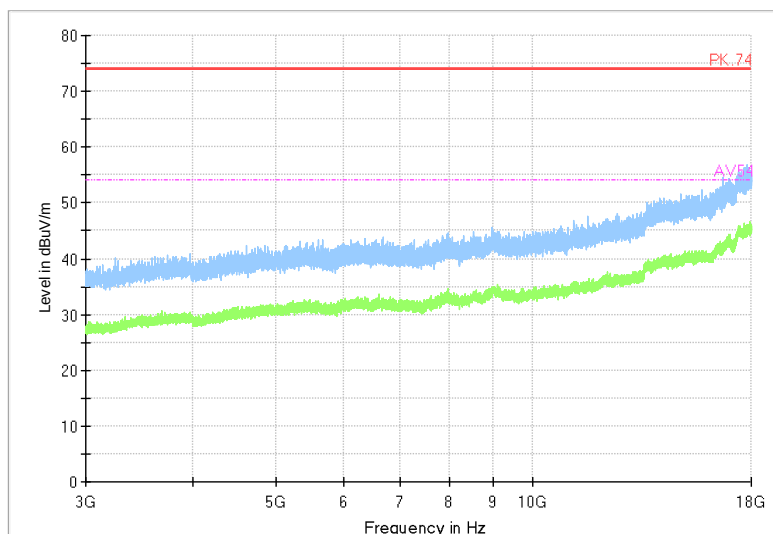


Frequency Range: 1GHz-3GHz

Detector: Av mode and PK mode

Modulation type: GFSK

Full Spectrum

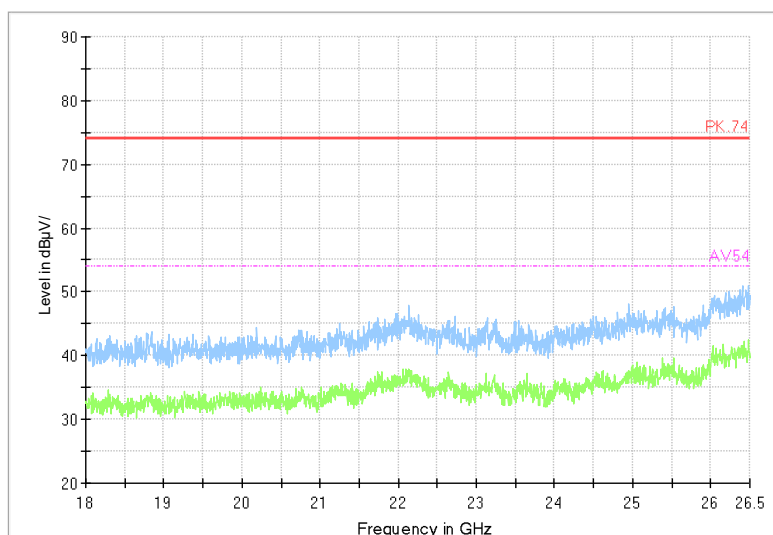


Frequency Range: 3GHz-18GHz

Detector: Av mode and PK mode

Modulation type: GFSK

Full Spectrum



Frequency Range: 18GHz-26GHz

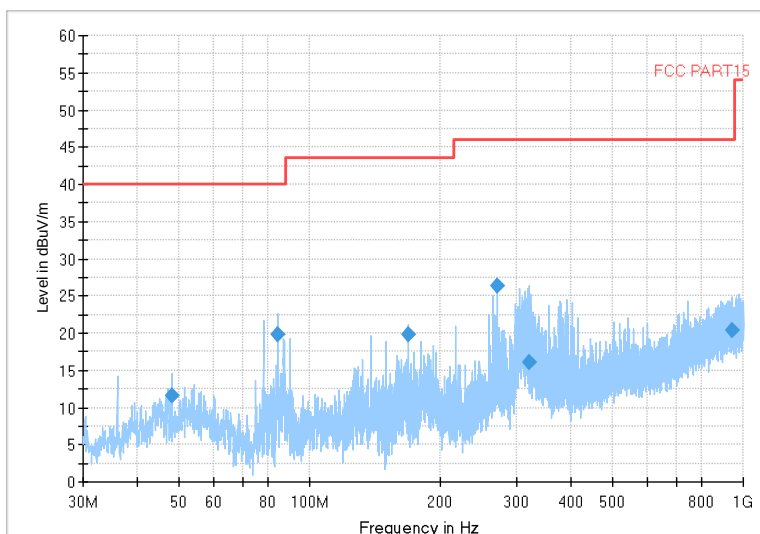
Detector: Av mode and PK mode

Modulation type: GFSK

Carrier frequency (MHz): 2402

Channel No.:0

Full Spectrum

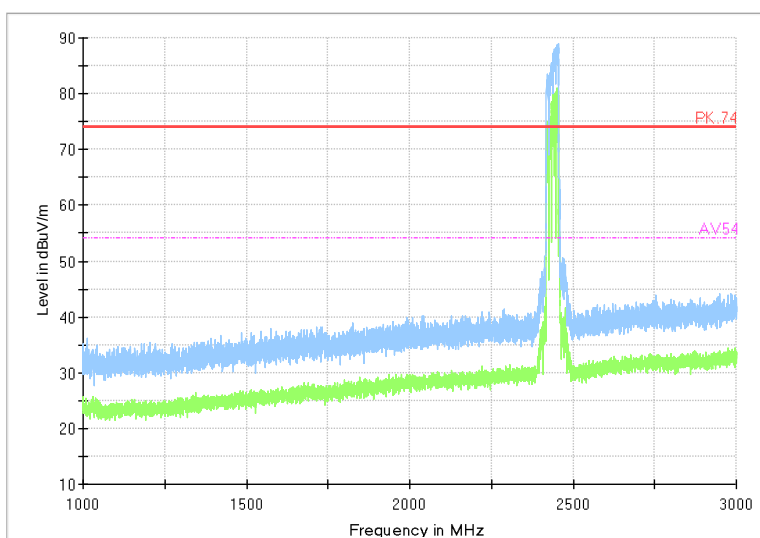


Frequency Range:30MHz-1GHz

Detector: QP mode

Modulation type: $\pi/4$ DQPSK

Full Spectrum



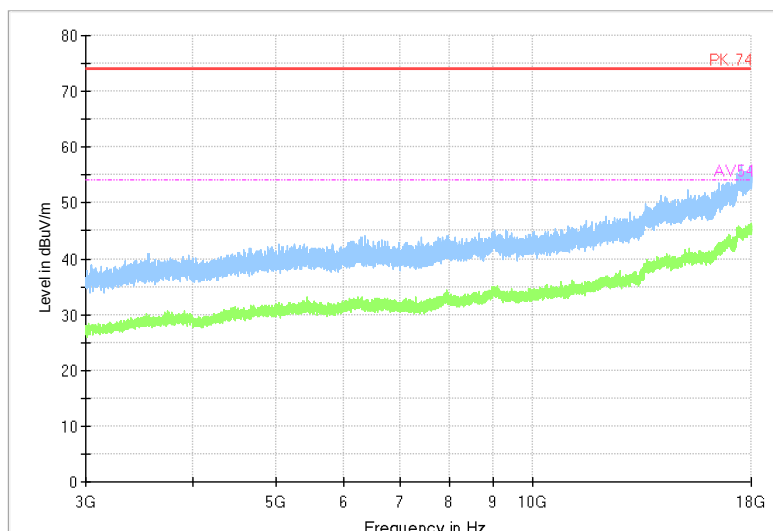
Frequency Range: 1GHz-3GHz

Test Report No.: PSU-NQN2412200117RF01

Detector: Av mode and PK mode

Modulation type: $\pi/4$ DQPSK

Full Spectrum

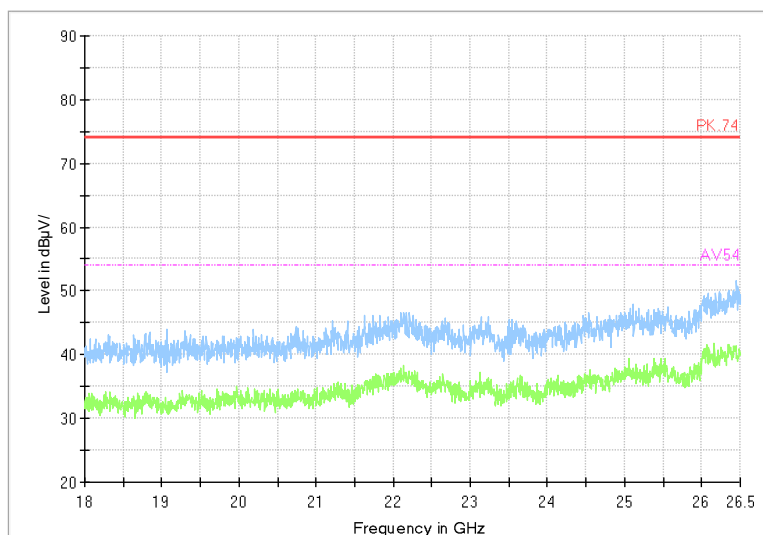


Frequency Range: 3GHz-18GHz

Detector: Av mode and PK mode

Modulation type: $\pi/4$ DQPSK

Full Spectrum



Frequency Range: 18GHz-26GHz

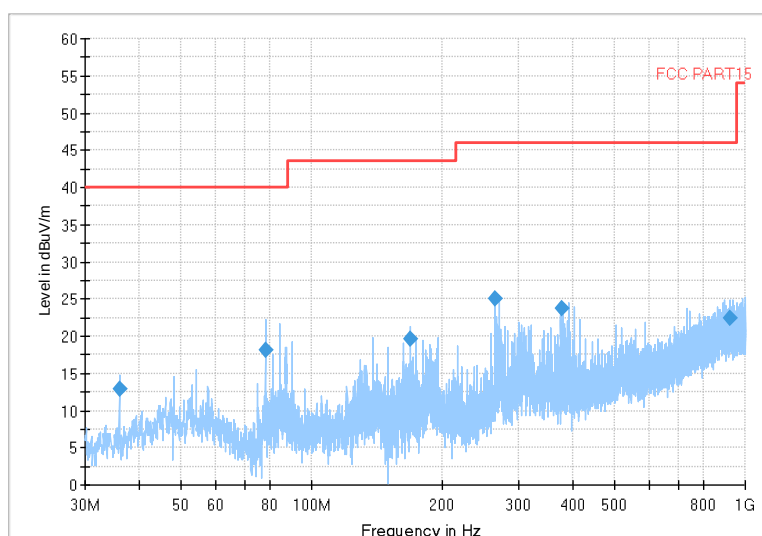
Detector: Av mode and PK mode

Modulation type: $\pi/4$ DQPSK

Carrier frequency (MHz): 2402

Channel No.:0

Full Spectrum

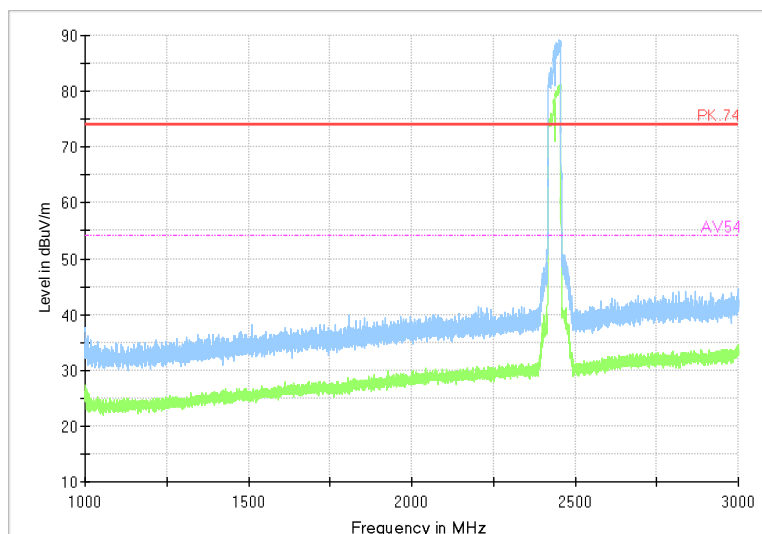


Frequency Range:30MHz-1GHz

Detector: QP mode

Modulation type: 8DPSK

Full Spectrum

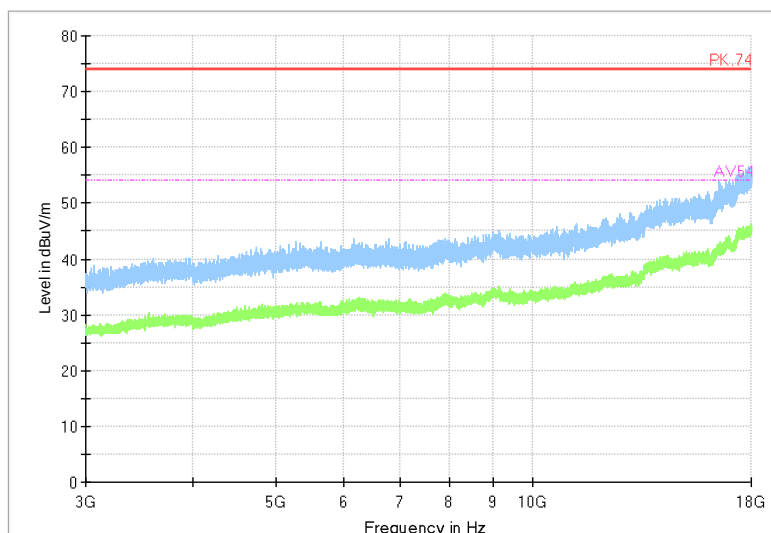


Frequency Range: 1GHz-3GHz

Detector: Av mode and PK mode

Modulation type: 8DPSK

Full Spectrum

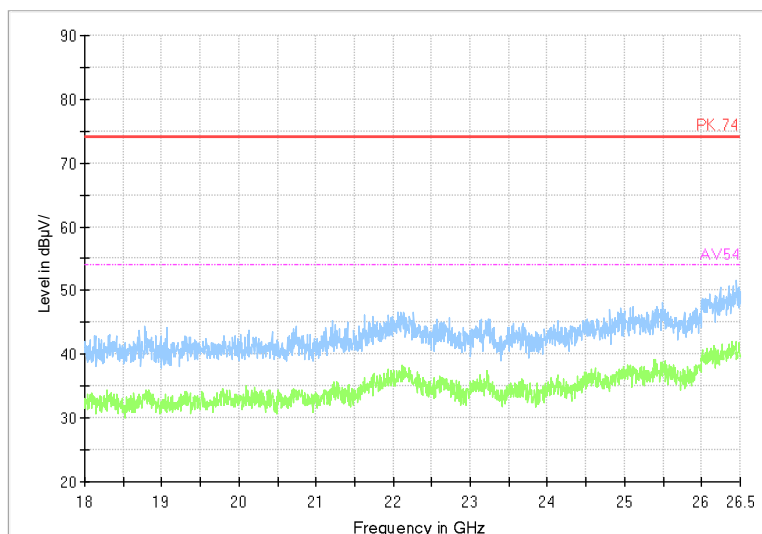


Frequency Range: 3GHz-18GHz

Detector: Av mode and PK mode

Modulation type: 8DPSK

Full Spectrum



Frequency Range: 18GHz-26GHz

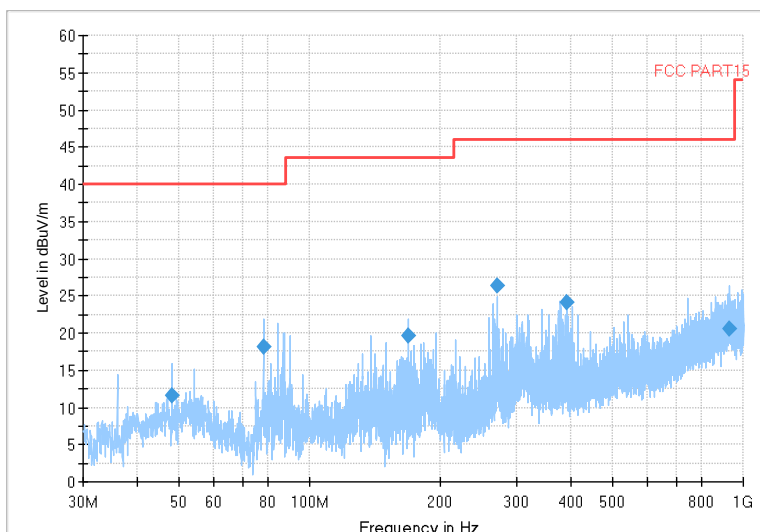
Detector: Av mode and PK mode

Modulation type: 8DPSK

Carrier frequency (MHz): 2440

Channel No.:39

Full Spectrum

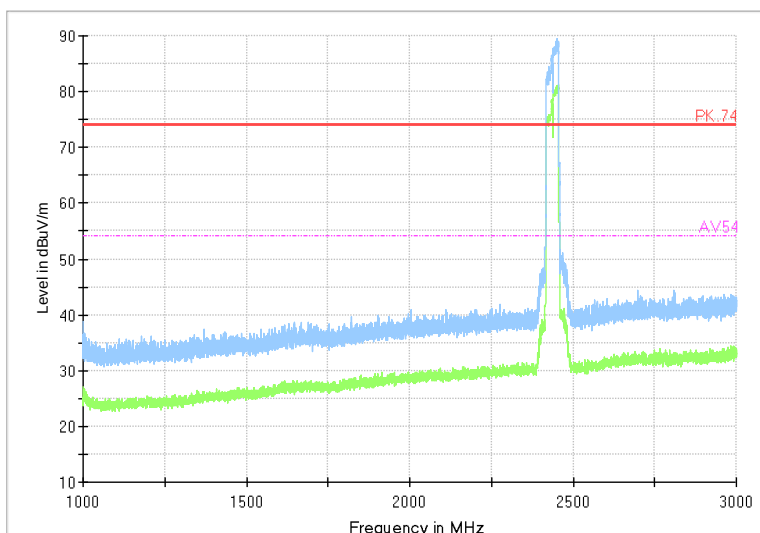


Frequency Range: 30MHz-1GHz

Detector: QP mode

Modulation type: GFSK

Full Spectrum

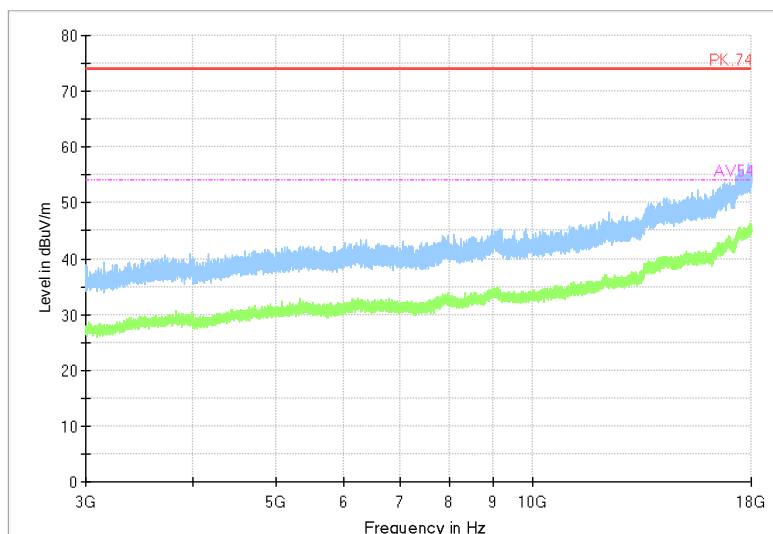


Frequency Range: 1GHz-3GHz

Detector: Av mode and PK mode

Modulation type: GFSK

Full Spectrum

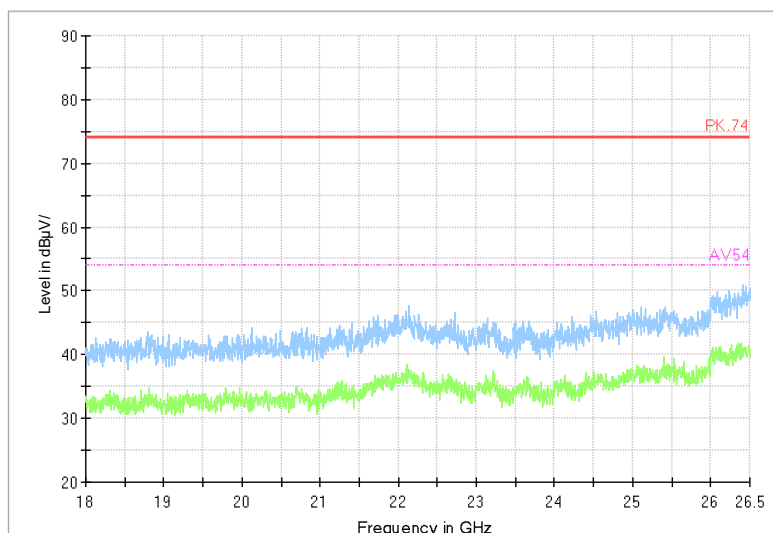


Frequency Range: 3GHz-18GHz

Detector: Av mode and PK mode

Modulation type: GFSK

Full Spectrum



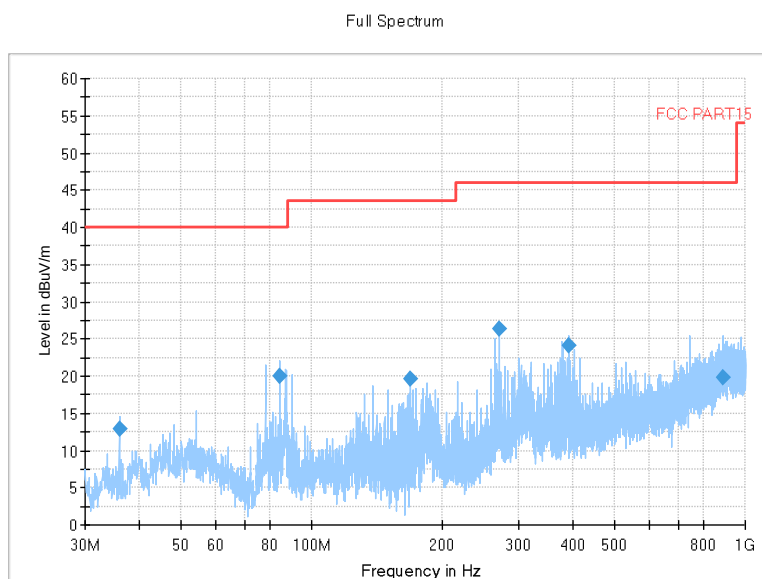
Frequency Range: 18GHz-26GHz

Detector: Av mode and PK mode

Modulation type: GFSK

Carrier frequency (MHz): 2440

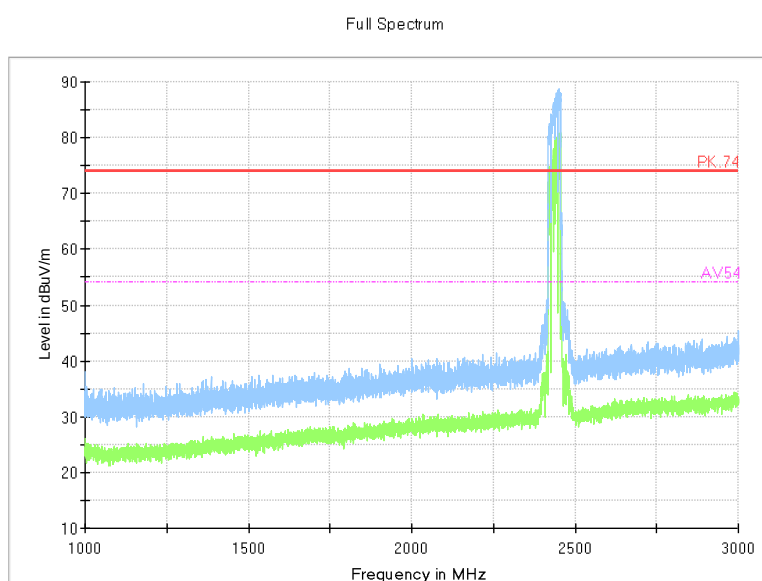
Channel No.:39



Frequency Range: 30MHz-1GHz

Detector:QP mode

Modulation type: $\pi/4$ DQPSK



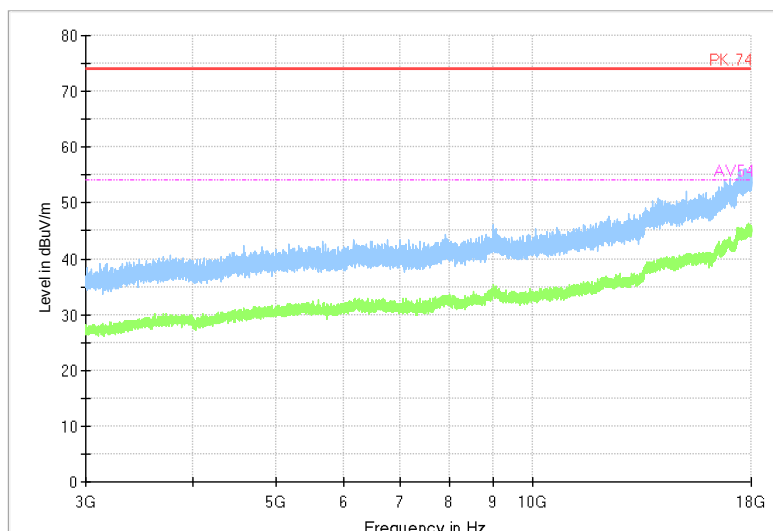
Test Report No.: PSU-NQN2412200117RF01

Frequency Range: 1GHz-3GHz

Detector: Av mode and PK mode

Modulation type: $\pi/4$ DQPSK

Full Spectrum

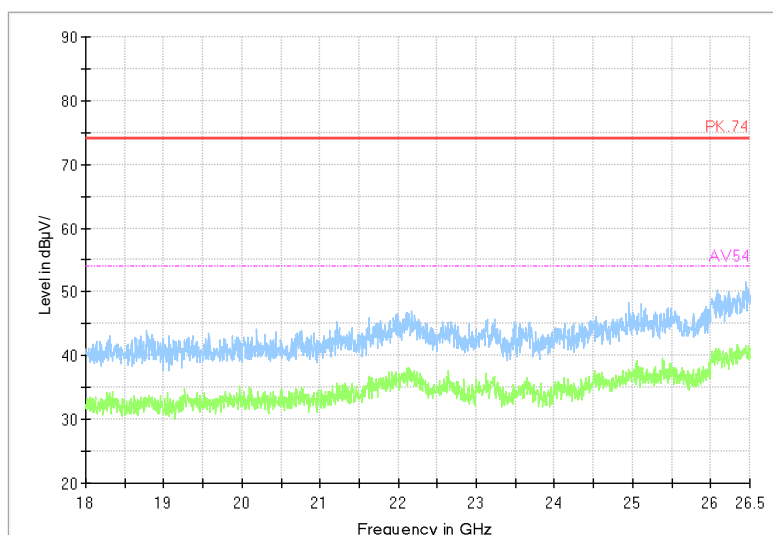


Frequency Range: 3GHz-18GHz

Detector: Av mode and PK mode

Modulation type: $\pi/4$ DQPSK

Full Spectrum



Frequency Range: 18GHz-26GHz

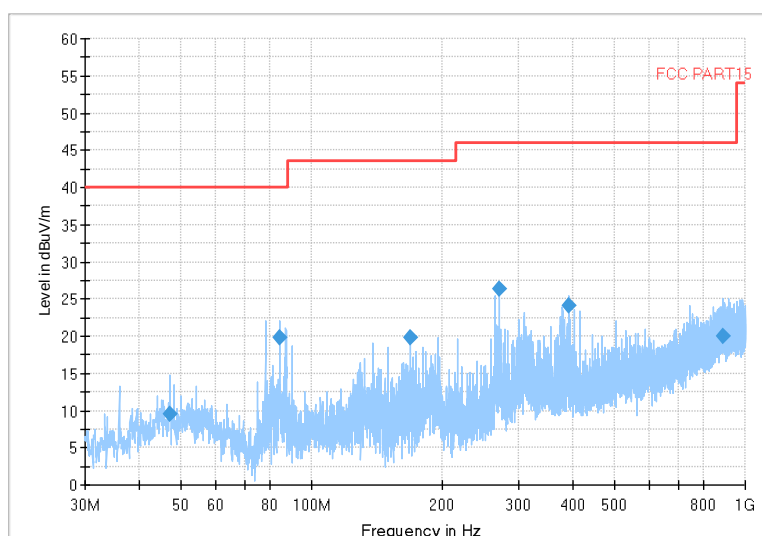
Detector: Av mode and PK mode

Modulation type: $\pi/4$ DQPSK

Carrier frequency (MHz): 2440

Channel No.:39

Full Spectrum

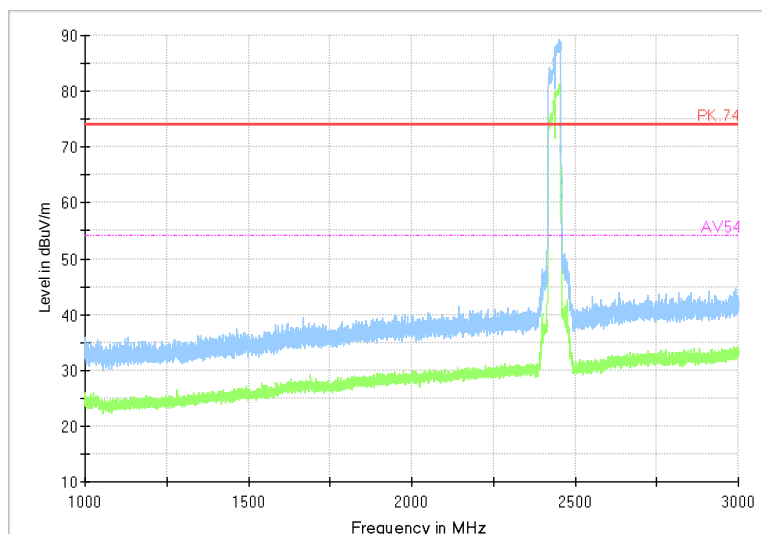


Frequency Range: 30MHz-1GHz

Detector: QP mode

Modulation type: 8DPSK

Full Spectrum

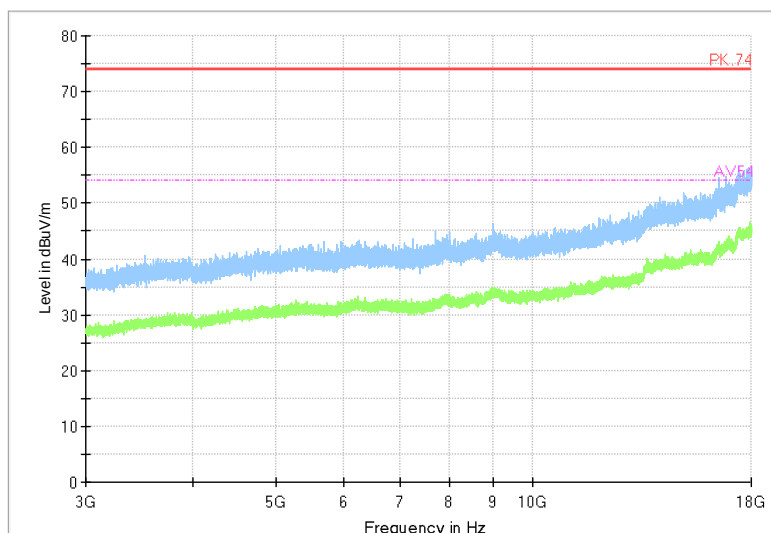


Frequency Range: 1GHz-3GHz

Detector: Av mode and PK mode

Modulation type: 8DPSK

Full Spectrum

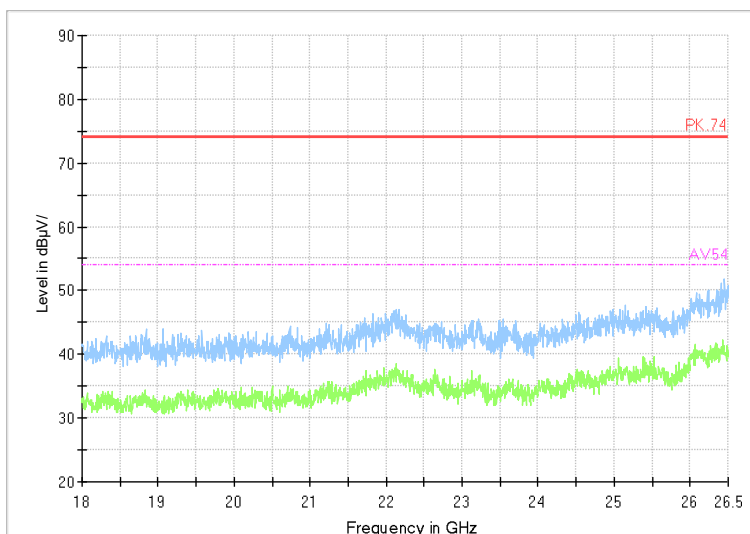


Frequency Range: 3GHz-18GHz

Detector: Av mode and PK mode

Modulation type: 8DPSK

Full Spectrum



Frequency Range: 18GHz-26GHz

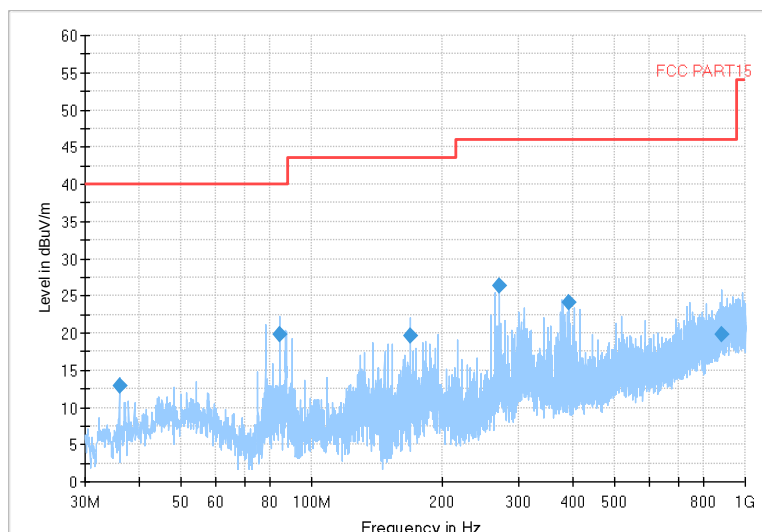
Detector: Av mode and PK mode

Modulation type: 8DPSK

Carrier frequency (MHz): 2480

Channel No.:78

Full Spectrum

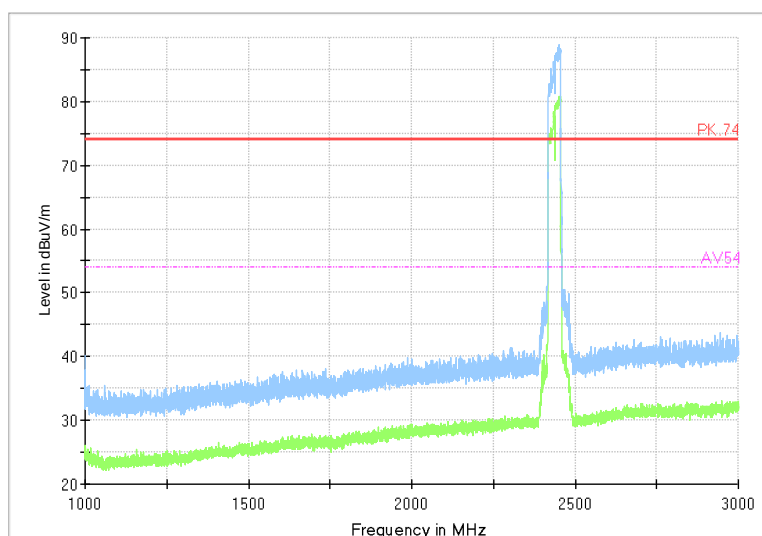


Frequency Range: 30MHz-1GHz

Detector: QP mode

Modulation type: GFSK

Full Spectrum

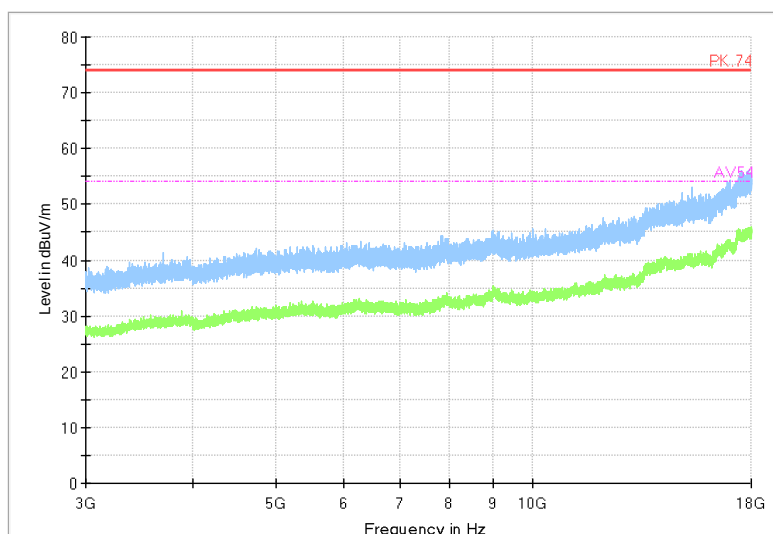


Frequency Range: 1GHz-3GHz

Detector: Av mode and PK mode

Modulation type: GFSK

Full Spectrum

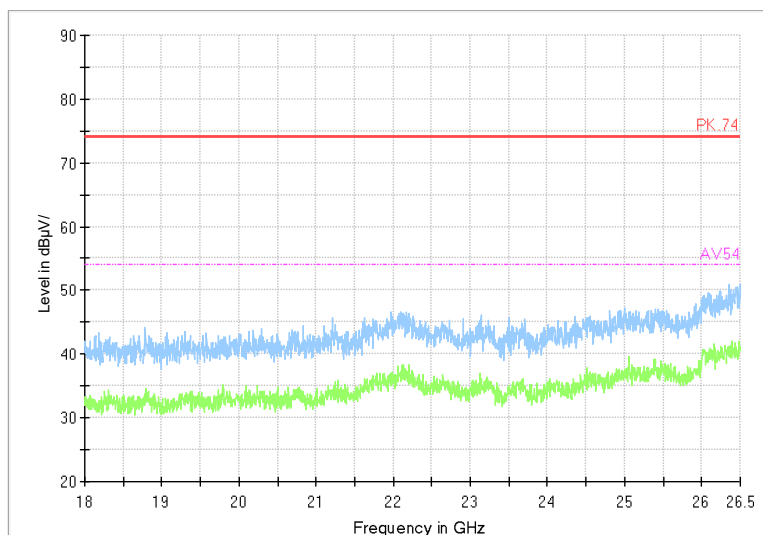


Frequency Range: 3GHz-18GHz

Detector: Av mode and PK mode

Modulation type: GFSK

Full Spectrum



Frequency Range: 18GHz-26GHz

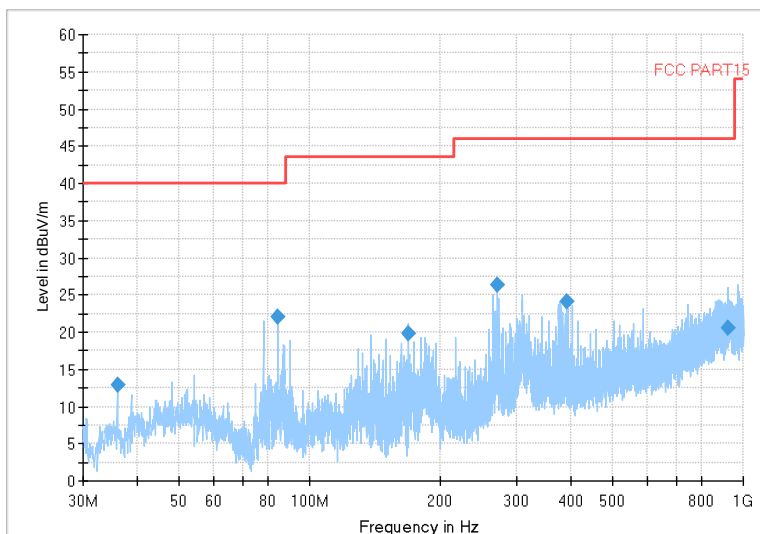
Detector: Av mode and PK mode

Modulation type: GFSK

Carrier frequency (MHz): 2480

Channel No.:78

Full Spectrum

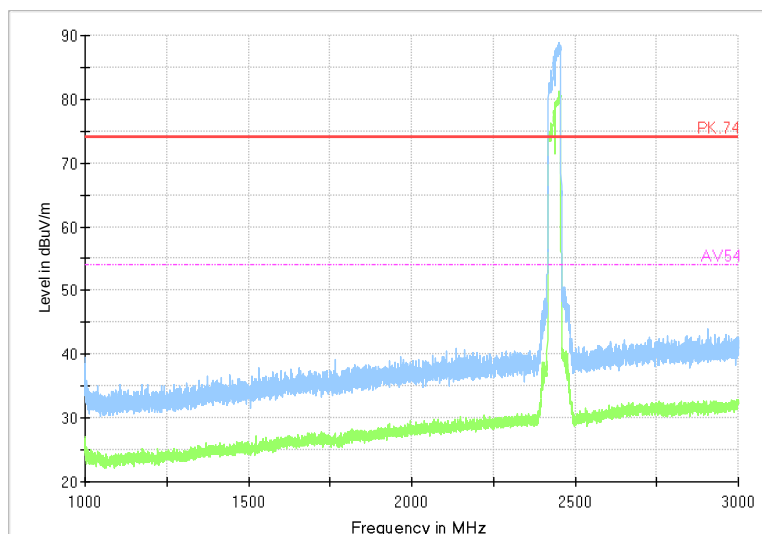


Frequency Range: 30MHz-1GHz

Detector: QP mode

Modulation type: $\pi/4$ DQPSK

Full Spectrum

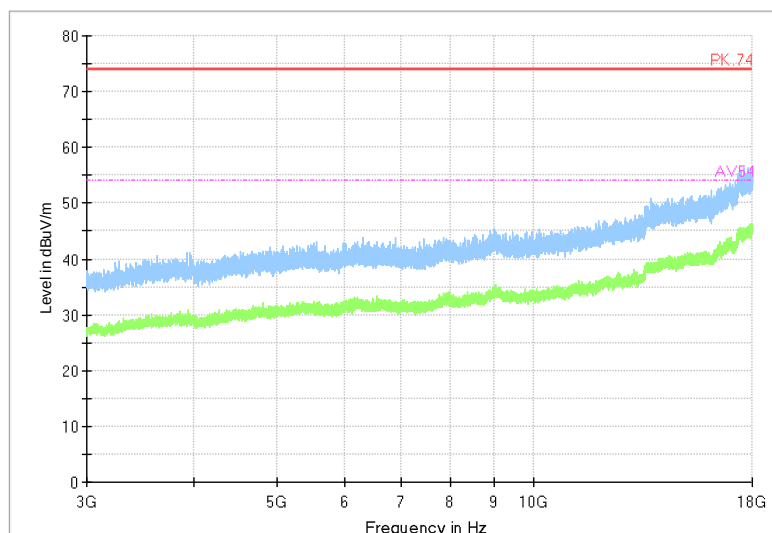


Frequency Range: 1GHz-3GHz

Detector: Av mode and PK mode

Modulation type: $\pi/4$ DQPSK

Full Spectrum

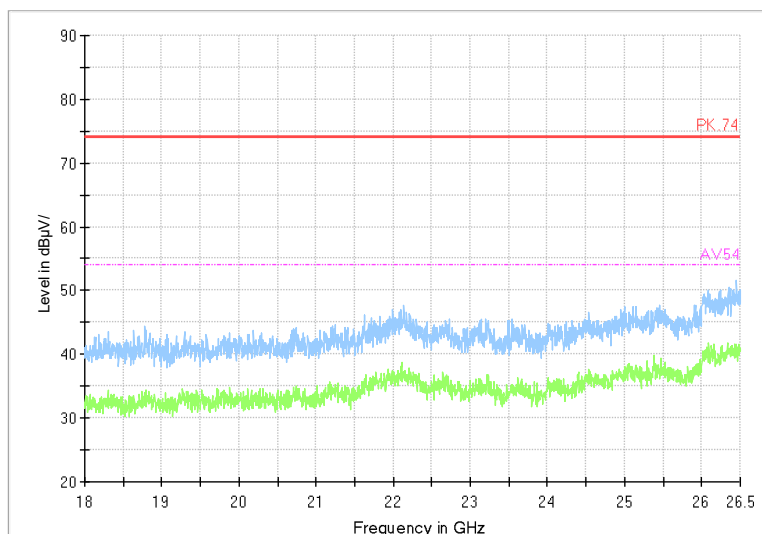


Frequency Range: 3GHz-18GHz

Detector: Av mode and PK mode

Modulation type: $\pi/4$ DQPSK

Full Spectrum



Frequency Range: 18GHz-26GHz

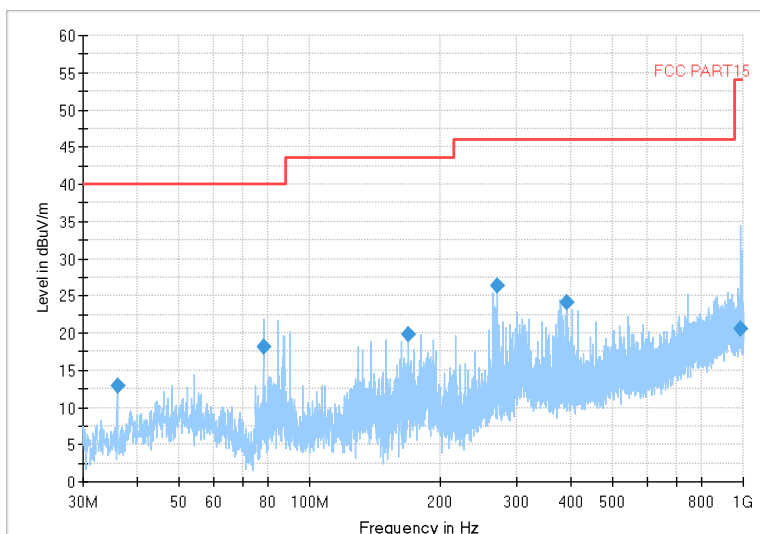
Detector: Av mode and PK mode

Modulation type: $\pi/4$ DQPSK

Carrier frequency (MHz): 2480

Channel No.:78

Full Spectrum

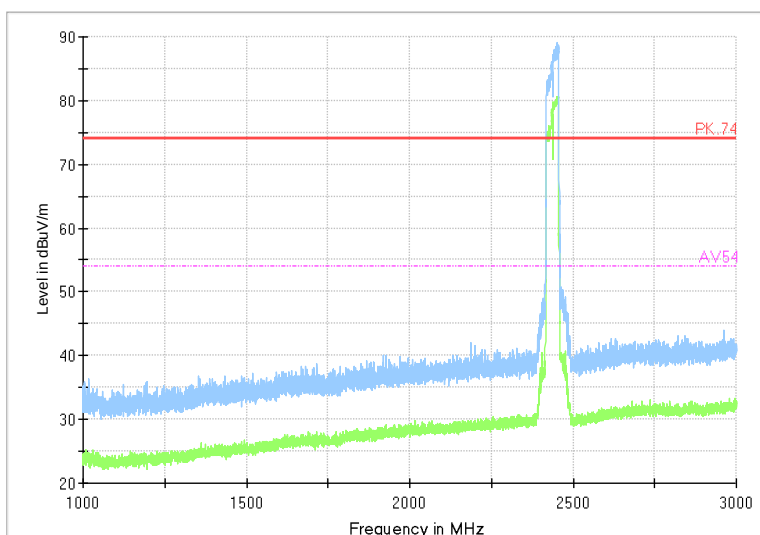


Frequency Range: 30MHz-1GHz

Detector: QP mode

Modulation type: 8DPSK

Full Spectrum

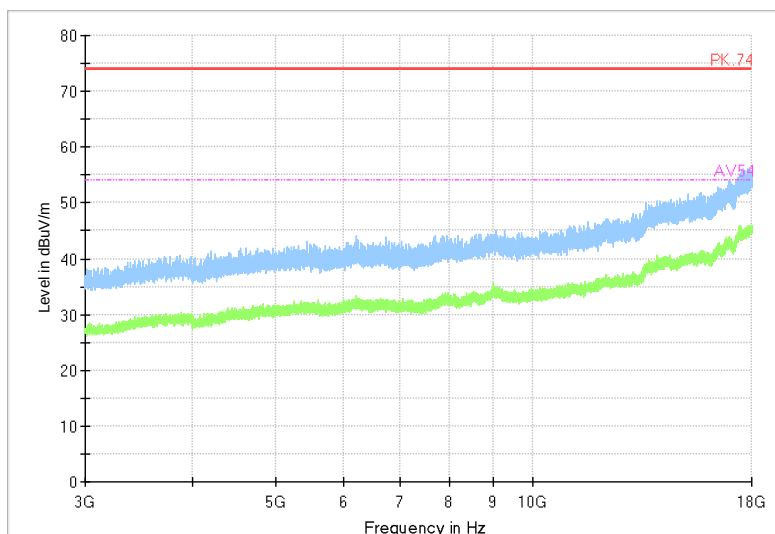


Frequency Range: 1GHz-3GHz

Detector: Av mode and PK mode

Modulation type: 8DPSK

Full Spectrum

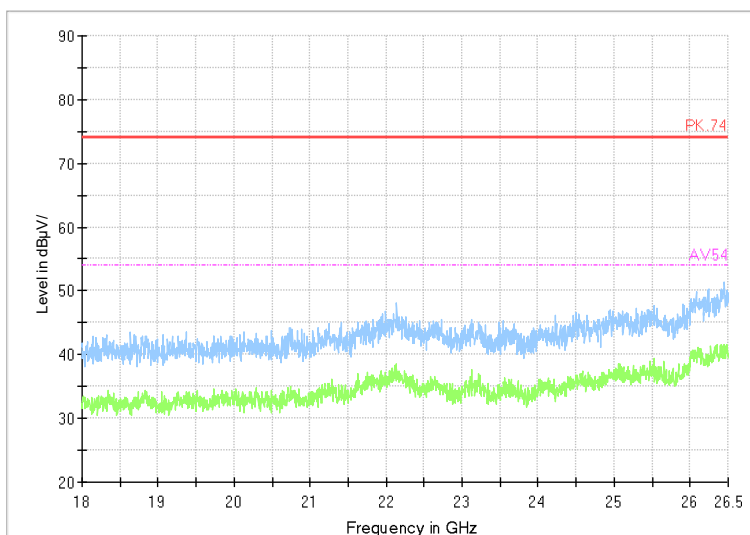


Frequency Range: 3GHz-18GHz

Detector: Av mode and PK mode

Modulation type: 8DPSK

Full Spectrum



Frequency Range: 18GHz-26GHz

Detector: Av mode and PK mode

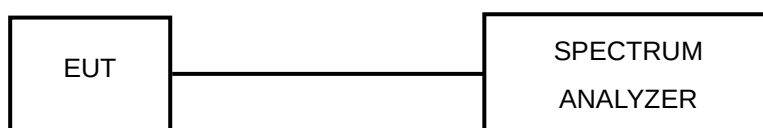
Modulation type: 8DPSK

3.3 NUMBER OF HOPPING FREQUENCY USED

3.3.1 LIMIT OF HOPPING FREQUENCY USED

At least 15 channels frequencies, and should be equally spaced.

3.3.2 TEST SETUP



3.3.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Meter	ANRITSU	ML2495A	1506002	Feb. 13,24	Feb. 12,25
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510523	Feb. 13,24	Feb. 12,25
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	May.09,24	May.08,25
Power Sensor	ANRITSU	MA2411B	1339352	Feb. 13,24	Feb. 12,25

NOTE:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GREGT/CHINA and NIM/CHINA.
2. The test was performed in RF Oven room.



Test Report No.: PSU-NQN2412200117RF01

3.3.4 TEST PROCEDURES

- a. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
- c. Set the SA on MaxHold Mode, and then keep the EUT in hopping mode. Record all the signals from each channel until each one has been recorded.
- d. Set the SA on View mode and then plot the result on SA screen.
- e. Repeat above procedures until all frequencies measured were completed.

3.3.5 DEVIATION FROM TEST STANDARD

No deviation.

3.3.6 TEST RESULTS

There are 79 hopping frequencies in the hopping mode. Please refer to next two pages for the test result. On the plots, it shows that the hopping frequencies are equally spaced.

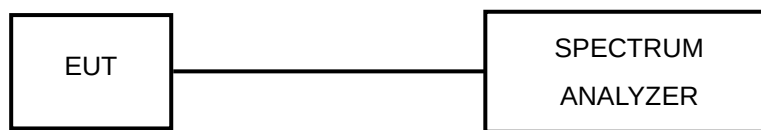
Please Refer to Appendix Of this test report.

3.4 DWELL TIME ON EACH CHANNEL

3.4.1 LIMIT OF DWELL TIME USED

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.

3.4.2 TEST SETUP



3.4.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.4.4 TEST PROCEDURES

- a. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
- c. Adjust the center frequency of SA on any frequency be measured and set SA to zero span mode. And then, set RBW and VBW of spectrum analyzer to proper value.
- d. Measure the time duration of one transmission on the measured frequency. And then plot the result with time difference of this time duration.
- e. Repeat above procedures until all different time-slot modes have been completed.



Test Report No.: PSU-NQN2412200117RF01

3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

3.4.6 TEST RESULTS

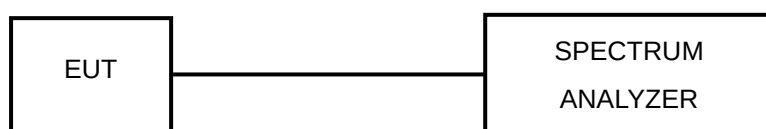
Please Refer to Appendix Of this test report

3.5 CHANNEL BANDWIDTH

3.5.1 LIMITS OF CHANNEL BANDWIDTH

For frequency hopping system operating in the 2400-2483.5MHz, If the 20dB bandwidth of hopping channel is greater than 25kHz, two-thirds 20dB bandwidth of hopping channel shall be a minimum limit for the hopping channel separation.

3.5.2 TEST SETUP



3.5.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.5.4 TEST PROCEDURE

- a. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
- c. Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
- d. Repeat above procedures until all frequencies measured were complete.

3.5.5 DEVIATION FROM TEST STANDARD

No deviation.



Test Report No.: PSU-NQN2412200117RF01

3.5.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

3.5.7 TEST RESULTS

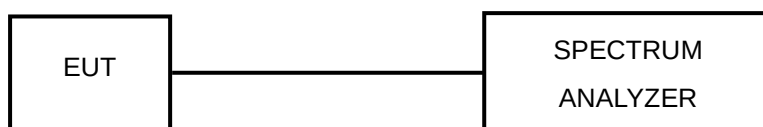
Please Refer to Appendix Of this test report.

3.6 HOPPING CHANNEL SEPARATION

3.6.1 LIMIT OF HOPPING CHANNEL SEPARATION

At least 25kHz or two-third of 20dB hopping channel bandwidth (whichever is greater).

3.6.2 TEST SETUP



3.6.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.6.4 TEST PROCEDURES

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range.
3. By using the MaxHold function record the separation of two adjacent channels.
4. Measure the frequency difference of these two adjacent channels by SA MARK function. And then plot the result on SA screen.
5. Repeat above procedures until all frequencies measured were complete.

3.6.5 DEVIATION FROM TEST STANDARD

No deviation.

3.6.6 TEST RESULTS

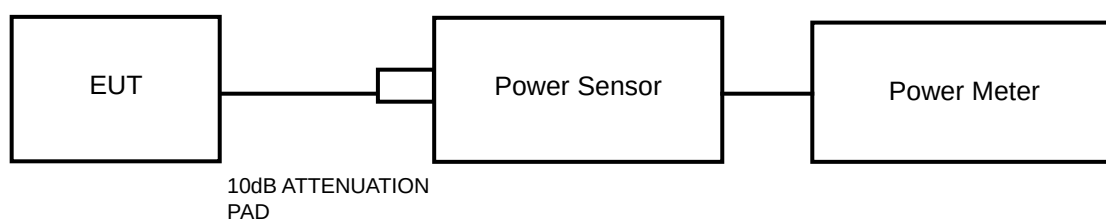
Please Refer to Appendix Of this test report.

3.7 MAXIMUM OUTPUT POWER

3.7.1 LIMITS OF MAXIMUM OUTPUT POWER MEASUREMENT

The Maximum Output Power Measurement is 125mW.

3.7.2 TEST SETUP



3.7.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.7.4 TEST PROCEDURES

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.



Test Report No.: PSU-NQN2412200117RF01

3.7.5 DEVIATION FROM TEST STANDARD

No deviation.

3.7.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



Test Report No.: PSU-NQN2412200117RF01

3.7.7 TEST RESULTS

3.7.7.1 MAXIMUM PEAK OUTPUT POWER

Please Refer to Appendix Of this test report.



Test Report No.: PSU-NQN2412200117RF01

3.7.7.2 AVERAGE OUTPUT POWER (FOR REFERENCE)

The average power sensor was used on the output port of the EUT. A power meter was used to read the response of the power sensor. Record the power level.

Please Refer to Appendix Of this test report.

3.8 OUT OF BAND MEASUREMENT

3.8.1 LIMITS OF OUT OF BAND MEASUREMENT

Below -20dB of the highest emission level of operating band (in 100KHz RBW).

3.8.2 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.8.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low loss cable. Spectrum Analyzer was set RBW to 100 kHz and VBW to 300 kHz with suitable frequency span including 100 MHz bandwidth from band edge. Detector = PEAK and Trace mode = Max Hold. The band edges was measured and recorded.

3.8.4 DEVIATION FROM TEST STANDARD

No deviation.

3.8.5 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

3.8.6 TEST RESULTS

The spectrum plots are attached on the following images. D1 line indicates the highest level. D2 line indicates the 20dB offset below D1. It shows compliance to the requirement.

Please Refer to Appendix Of this test report.



Test Report No.: PSU-NQN2412200117RF01

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



Test Report No.: PSU-NQN2412200117RF01

5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

6 APPENDIX

20DB EMISSION BANDWIDTH

TEST RESULT

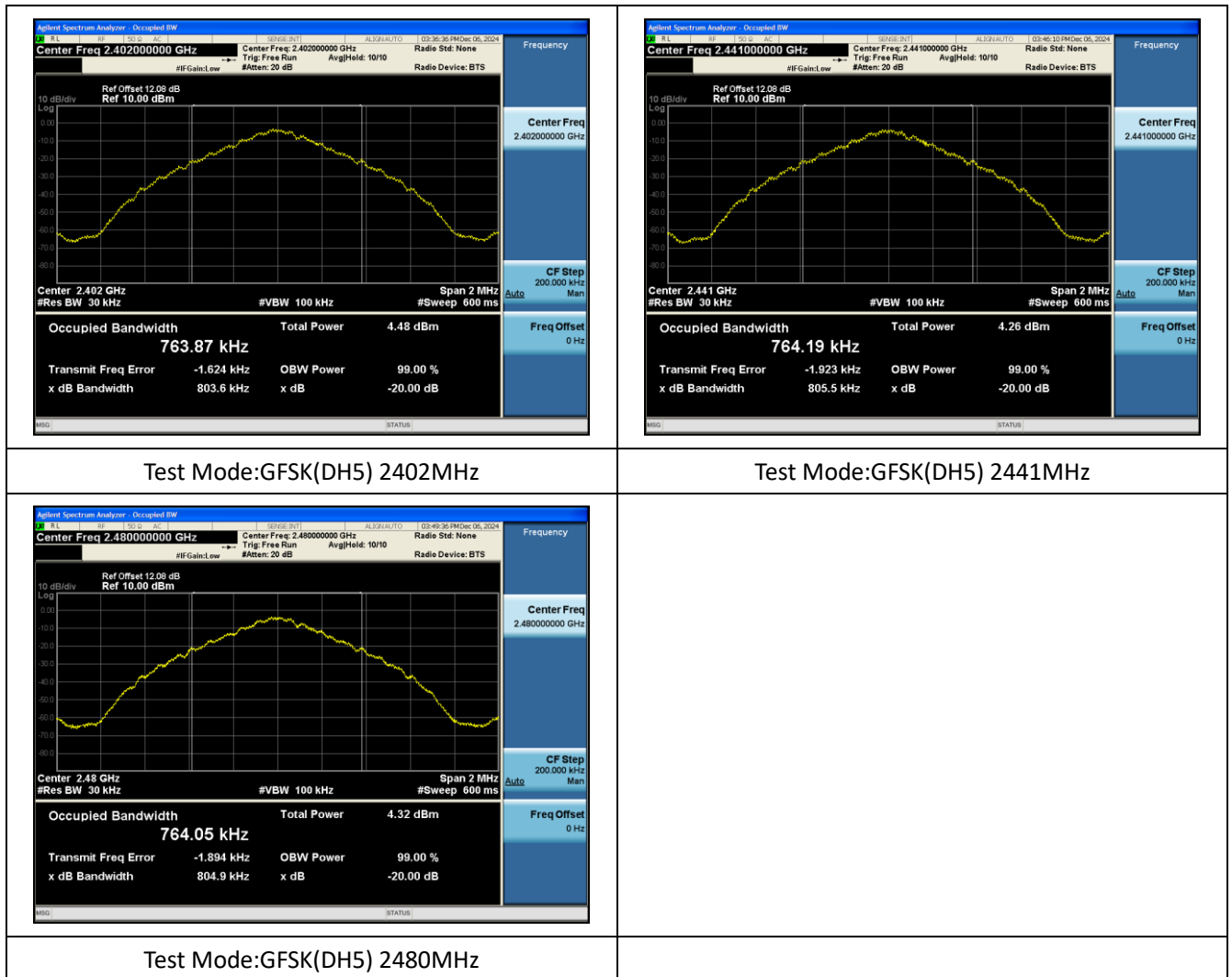
Test Mode	Carrier frequency (MHz)	20dB Bandwidth(KHz)
GFSK(DH5)	2402	803.6
GFSK(DH5)	2441	805.5
GFSK(DH5)	2480	804.9

Test Mode	Carrier frequency (MHz)	20dB Bandwidth(KHz)
$\pi/4$ DQPSK(2DH5)	2402	1340.9
$\pi/4$ DQPSK(2DH5)	2441	1339.4
$\pi/4$ DQPSK(2DH5)	2480	1332.4

Test Mode	Carrier frequency (MHz)	20dB Bandwidth(KHz)
8DPSK(3DH5)	2402	1331.9
8DPSK(3DH5)	2441	1336.4
8DPSK(3DH5)	2480	1338.3

TEST GRAPHS

Test Mode: GFSK(DH5)

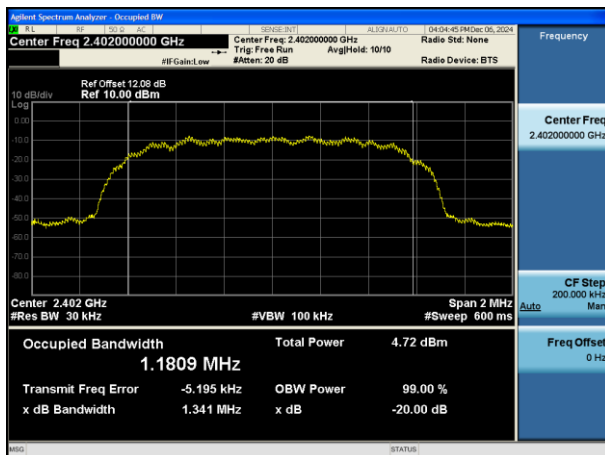




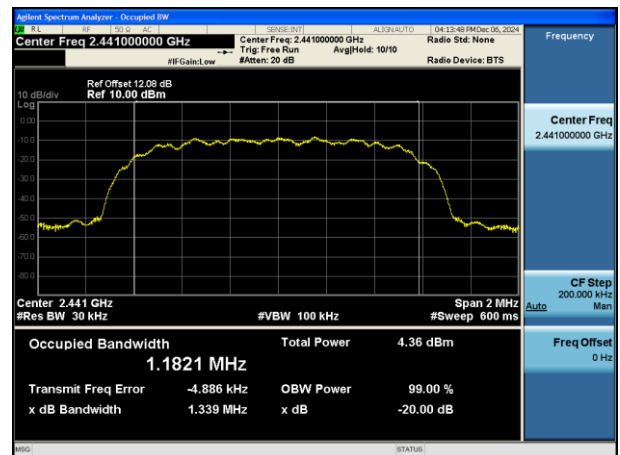
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VERITAS

Test Report No.: PSU-NQN2412200117RF01

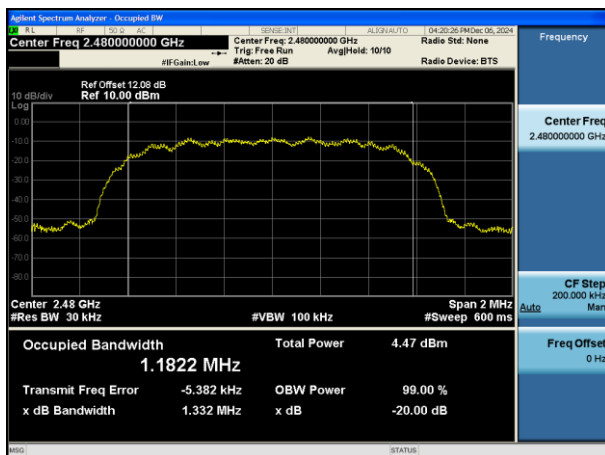
Test Mode: $\pi/4$ DQPSK(2DH5)



Test Mode: $\pi/4$ DQPSK(2DH5) 2402MHz

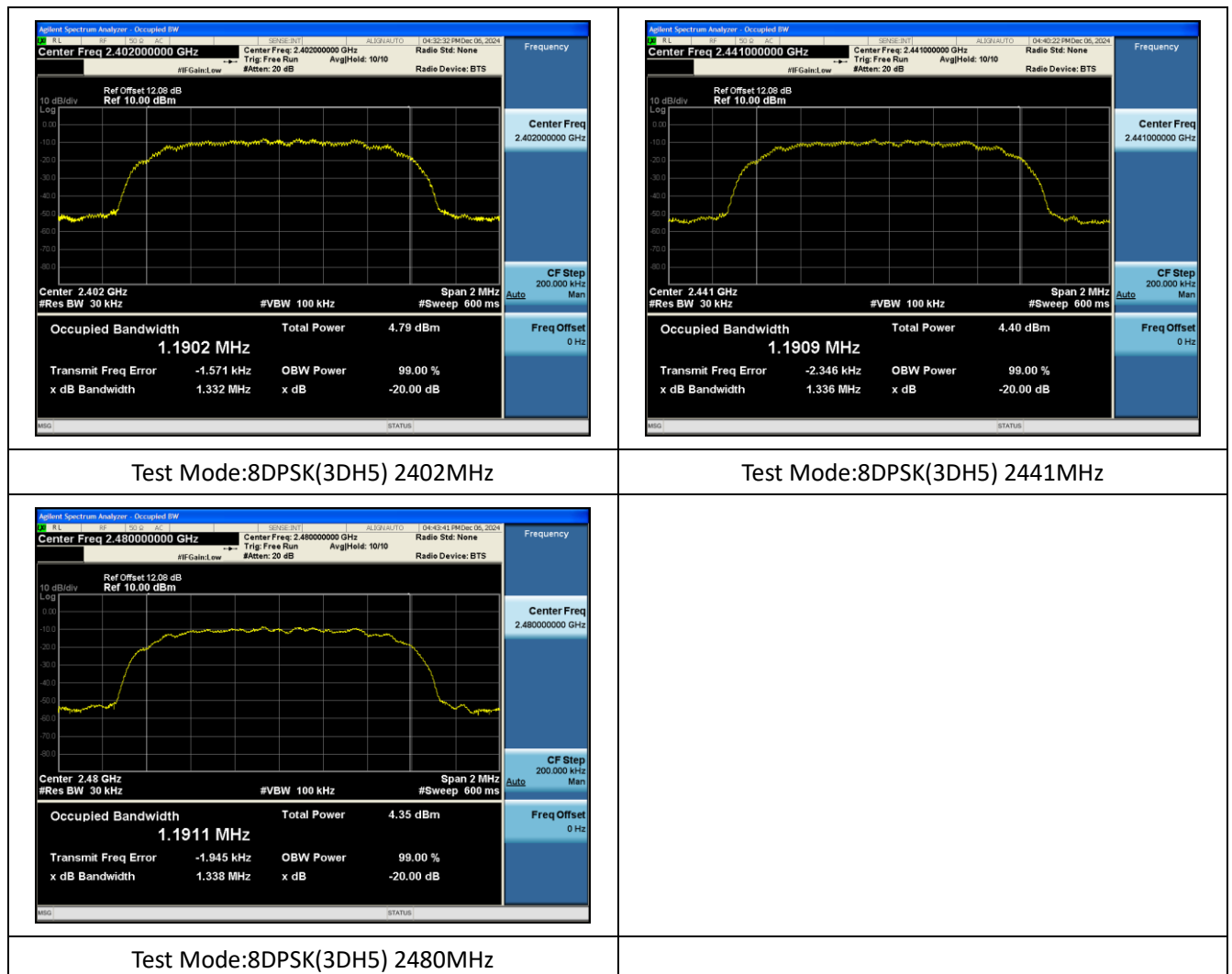


Test Mode: $\pi/4$ DQPSK(2DH5) 2441MHz



Test Mode: $\pi/4$ DQPSK(2DH5) 2480MHz

Test Mode: 8DPSK(3DH5)



OCCUPIED CHANNEL BANDWIDTH

TEST RESULT

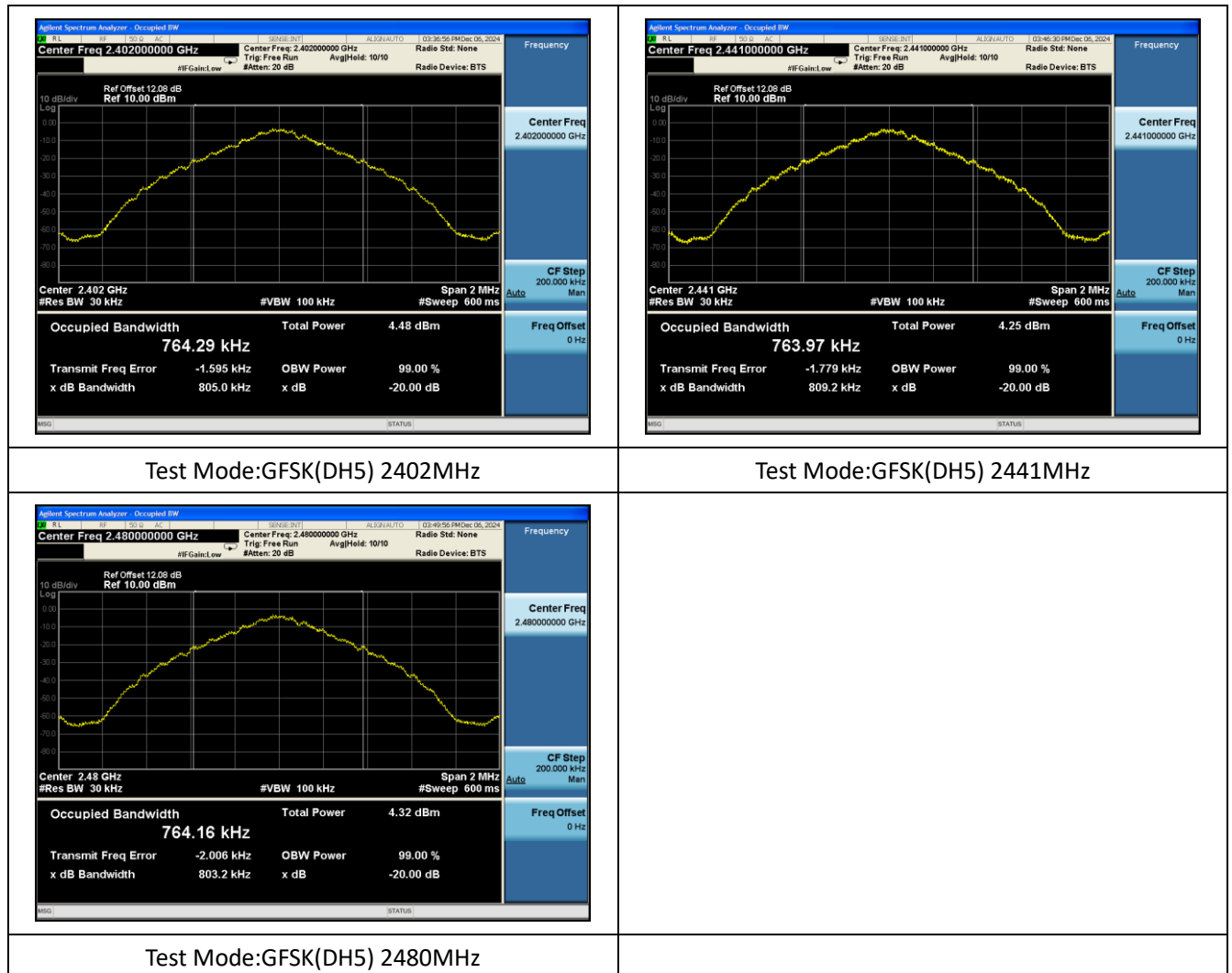
Test Mode	Carrier frequency (MHz)	99% Bandwidth(kHz)
GFSK(DH5)	2402	764.3
GFSK(DH5)	2441	764.0
GFSK(DH5)	2480	764.2

Test Mode	Carrier frequency (MHz)	99% Bandwidth(kHz)
$\pi/4$ DQPSK(2DH5)	2402	1182.8
$\pi/4$ DQPSK(2DH5)	2441	1181.4
$\pi/4$ DQPSK(2DH5)	2480	1181.5

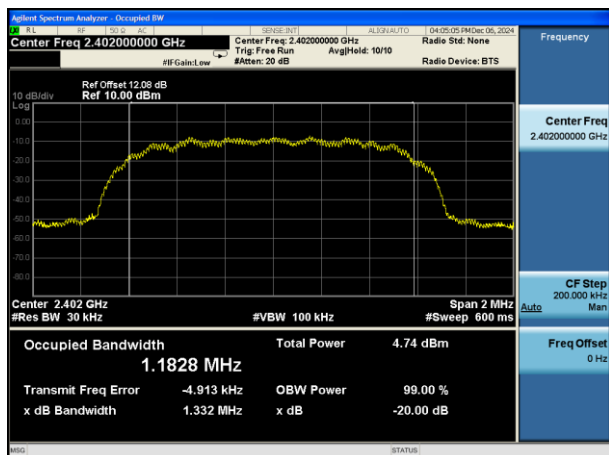
Test Mode	Carrier frequency (MHz)	99% Bandwidth(kHz)
8DPSK(3DH5)	2402	1191.1
8DPSK(3DH5)	2441	1190.2
8DPSK(3DH5)	2480	1190.9

TEST GRAPHS

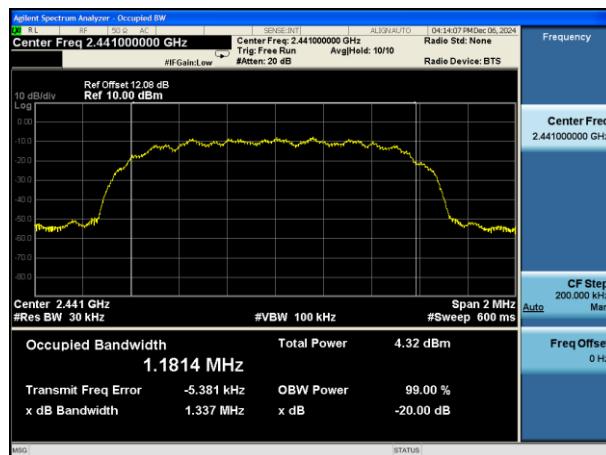
Test Mode: GFSK(DH5)



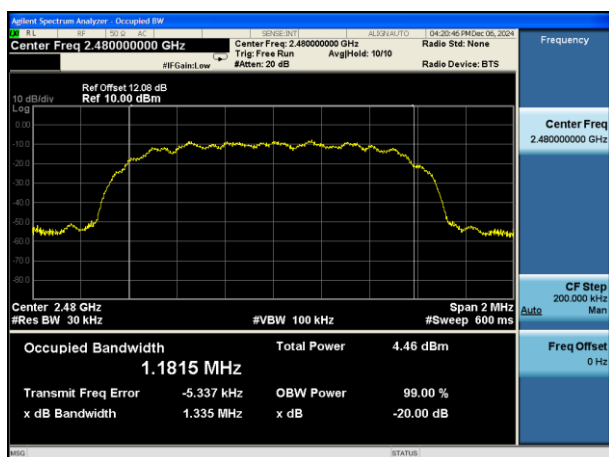
Test Mode: $\pi/4$ DQPSK(2DH5)



Test Mode: $\pi/4$ DQPSK(2DH5) 2402MHz

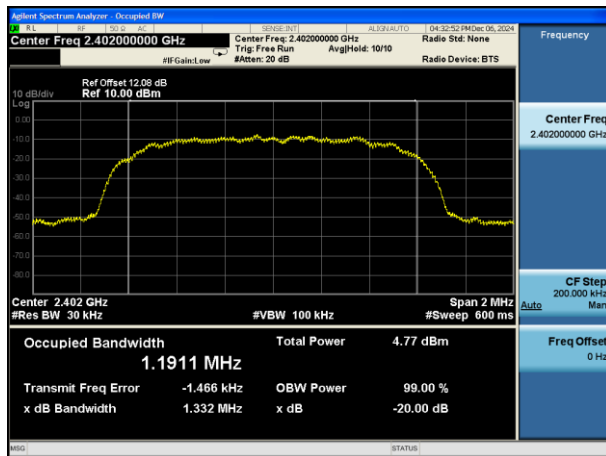


Test Mode: $\pi/4$ DQPSK(2DH5) 2441MHz

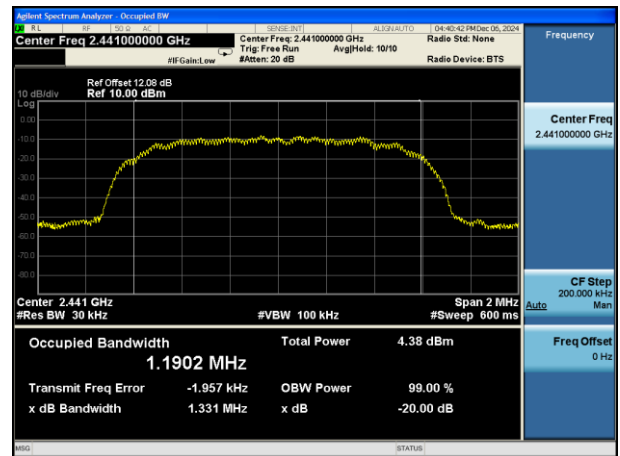


Test Mode: $\pi/4$ DQPSK(2DH5) 2480MHz

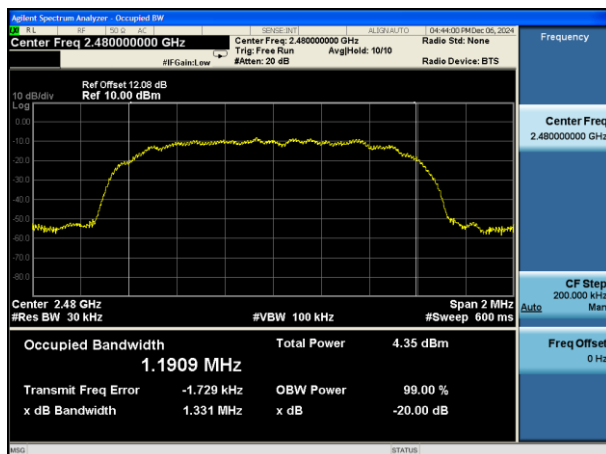
Test Mode: 8DPSK(3DH5)



Test Mode:8DPSK(3DH5) 2402MHz



Test Mode:8DPSK(3DH5) 2441MHz



Test Mode:8DPSK(3DH5) 2480MHz

MAXIMUM CONDUCTED OUTPUT POWER

TEST RESULT

Modulation type	Conducted Peak Power(dBm)		
	2402MHz	2441MHz	2480MHz
GFSK(DH5)	6.45	6.11	6.16
$\pi/4$ DQPSK(2DH5)	8.65	8.55	8.56
8DPSK(3DH5)	9.23	8.75	8.98

Modulation type	Conducted Average Power(dBm)		
	2402MHz	2441MHz	2480MHz
GFSK(DH5)	5.95	5.40	4.13
$\pi/4$ DQPSK(2DH5)	5.79	5.44	5.61
8DPSK(3DH5)	5.69	5.31	5.21

EIRP

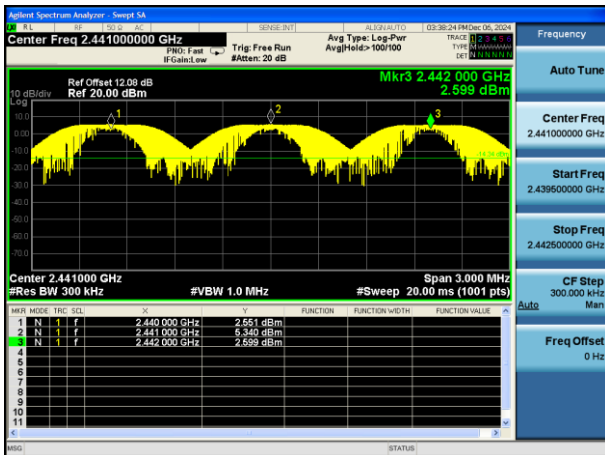
Modulation type	Peak EIRP(dBm)		
	2402MHz	2441MHz	2480MHz
GFSK(DH5)	7.51	7.17	7.22
$\pi/4$ DQPSK(2DH5)	9.71	9.61	9.62
8DPSK(3DH5)	10.29	9.81	10.04

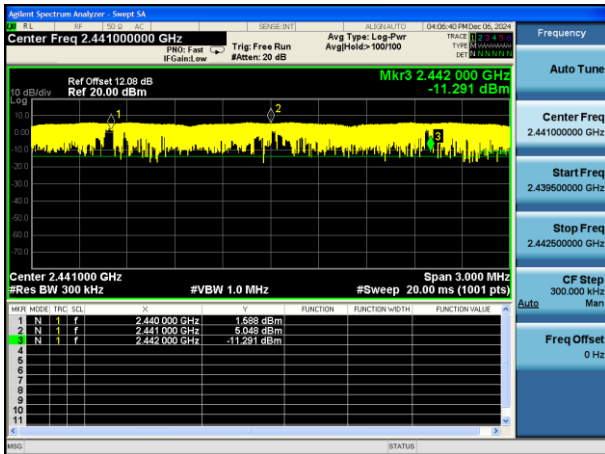
Modulation type	Average EIRP(dBm)		
	2402MHz	2441MHz	2480MHz
GFSK(DH5)	7.01	6.46	5.19
$\pi/4$ DQPSK(2DH5)	6.85	6.50	6.67
8DPSK(3DH5)	6.75	6.37	6.27

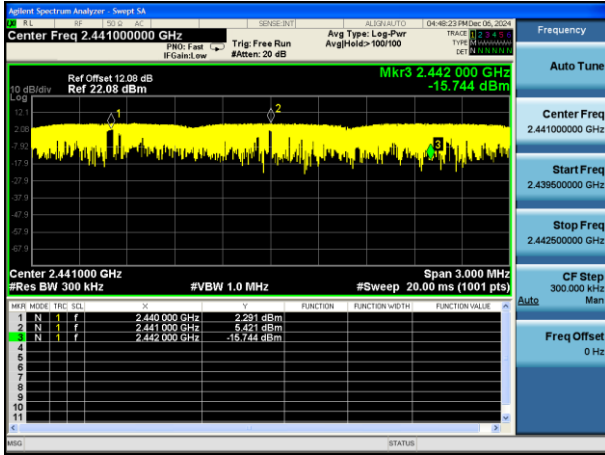
EIRP (dBm)=Conducted Power(dBm)+Antenna Gain(dBi)

CARRIER FREQUENCY SEPARATION

TEST GRAPHS

Test Mode	Op-mode	Channel separation (MHz)
GFSK(DH5)	Hopping mode	1
		

Test Mode	Op-mode	Channel separation (MHz)
$\pi/4$ DQPSK(2DH5)	Hopping mode	1
		

Test Mode	Op-mode	Channel separation (MHz)
8DPSK(3DH5)	Hopping mode	1
 The screenshot shows a spectrum analyzer interface. The main display shows a frequency spectrum with a yellow trace. The center frequency is 2.441000000 GHz. The span is 3.000 MHz. The resolution bandwidth is 300 kHz. The video bandwidth is 1.0 MHz. The sweep time is 20.00 ms (1001 pts). The reference level is 12.08 dB. The reference offset is 22.08 dBm. The marker 3 is at 2.442000 GHz with a value of -15.744 dBm. The marker 1 is at 2.440000 GHz with a value of 2.291 dBm. The marker 2 is at 2.441000 GHz with a value of 6.421 dBm. The marker 4 is at 2.442000 GHz with a value of -15.744 dBm. The marker 5 is at 2.443000 GHz with a value of -15.744 dBm. The marker 6 is at 2.444000 GHz with a value of -15.744 dBm. The marker 7 is at 2.445000 GHz with a value of -15.744 dBm. The marker 8 is at 2.446000 GHz with a value of -15.744 dBm. The marker 9 is at 2.447000 GHz with a value of -15.744 dBm. The marker 10 is at 2.448000 GHz with a value of -15.744 dBm. The marker 11 is at 2.449000 GHz with a value of -15.744 dBm.		



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Test Report No.: PSU-NQN2412200117RF01

TIME OF OCCUPANCY

TEST RESULT

Test Mode	Packet type	Time slot length(μ S)	Dwell time	Dwell time(ms)
GFSK(DH1)	DH1	374	Time slot length *31.6*16000/2/79	119.7
GFSK(DH3)	DH3	1610	Time slot length *31.6*16000/4/79	257.6
GFSK(DH5)	DH5	2860	Time slot length *31.6*16000/6/79	305.1

Test Mode	Packet type	Time slot length(μ S)	Dwell time	Dwell time(ms)
π /4DQPSK(2DH1)	2DH1	384	Time slot length *31.6*16000/2/79	122.9
π /4DQPSK(2DH3)	2DH3	1620	Time slot length *31.6*16000/4/79	259.2
π /4DQPSK(2DH5)	2DH5	2860	Time slot length *31.6*16000/6/79	305.1

Test Mode	Packet type	Time slot length(μ S)	Dwell time	Dwell time(ms)
8DPSK(3DH1)	3DH1	370	Time slot length *31.6*16000/2/79	118.4
8DPSK(3DH3)	3DH3	1620	Time slot length *31.6*16000/4/79	259.2
8DPSK(3DH5)	3DH5	2870	Time slot length *31.6*16000/6/79	306.1

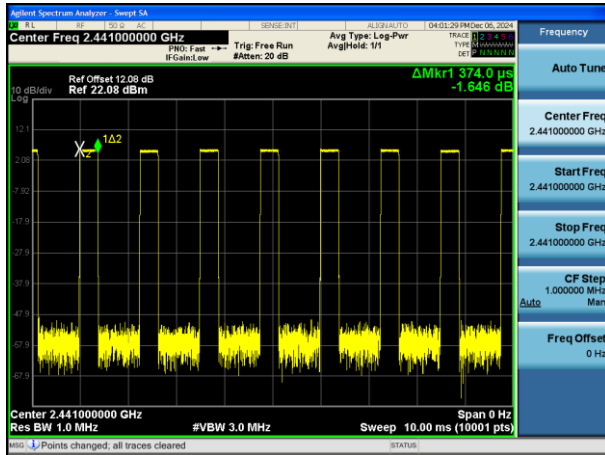


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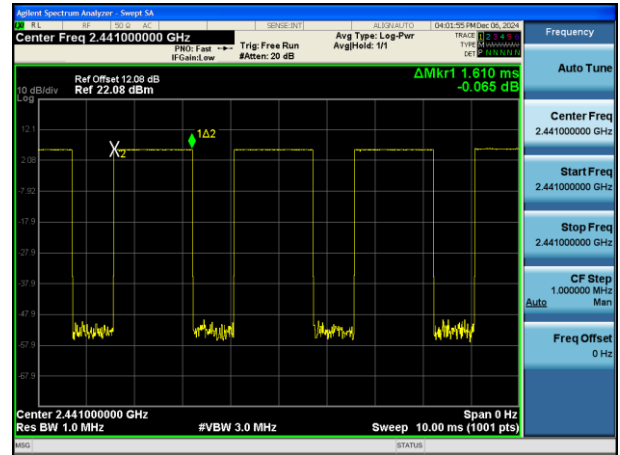
Test Report No.: PSU-NQN2412200117RF01

TEST GRAPHS

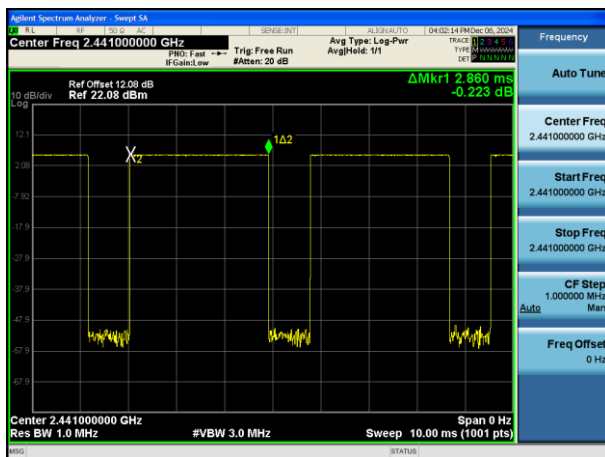
Test Mode: GFSK(DH5)



Test Mode:GFSK(DH1) 2441MHz



Test Mode:GFSK(DH3) 2441MHz



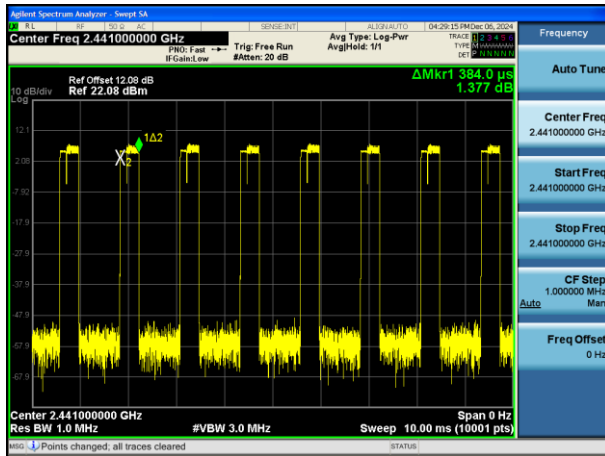
Test Mode:GFSK(DH5) 2441MHz



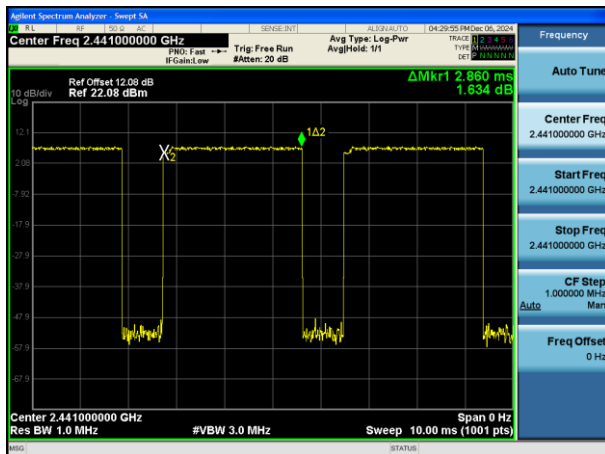
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Test Report No.: PSU-NQN2412200117RF01

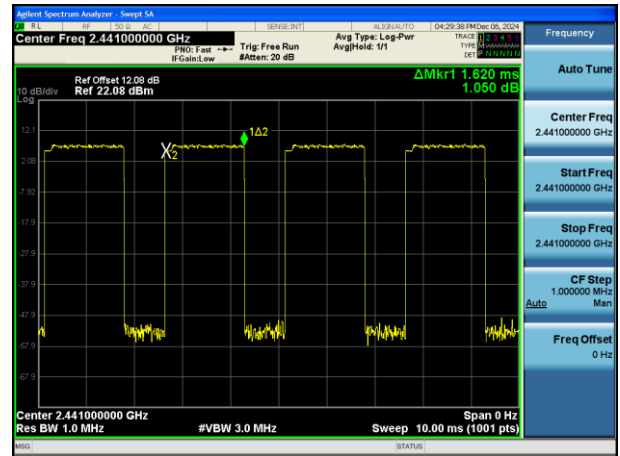
Test Mode: $\pi/4$ DQPSK(2DH5)



Test Mode: $\pi/4$ DQPSK(2DH1) 2441MHz

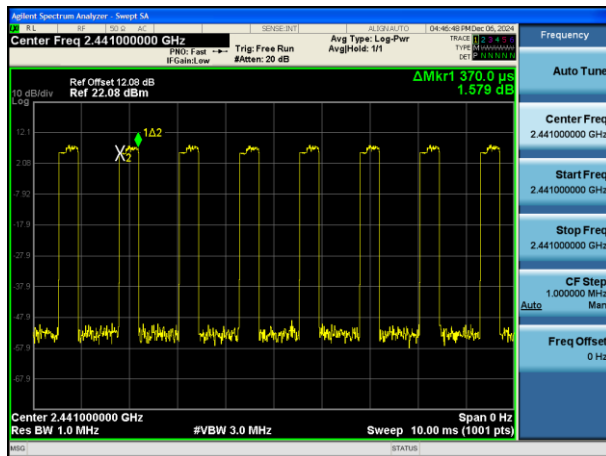


Test Mode: $\pi/4$ DQPSK(2DH5) 2441MHz

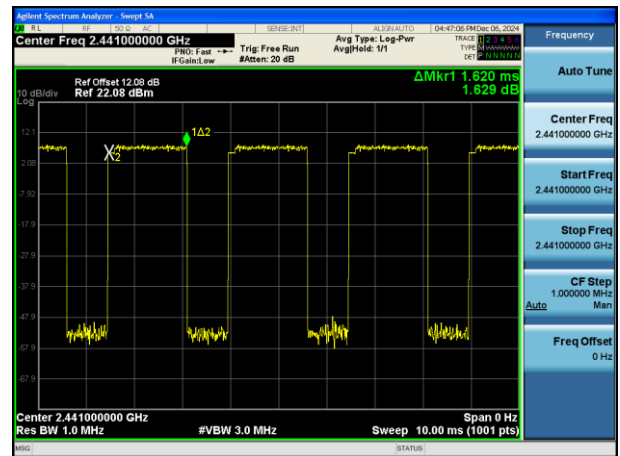


Test Mode: $\pi/4$ DQPSK(2DH3) 2441MHz

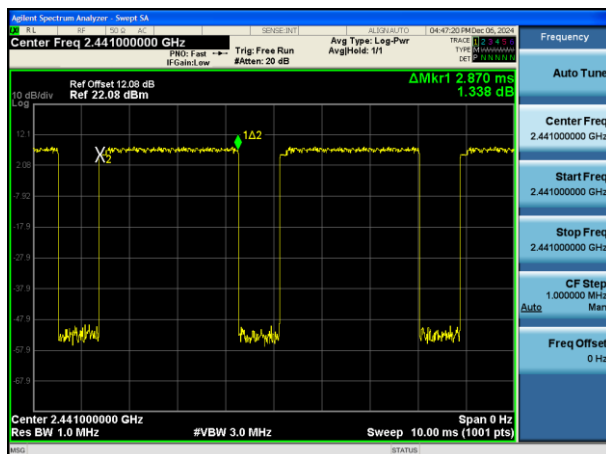
Test Mode: 8DPSK(3DH5)



Test Mode:8DPSK(3DH1) 2441MHz



Test Mode:8DPSK(3DH3) 2441MHz



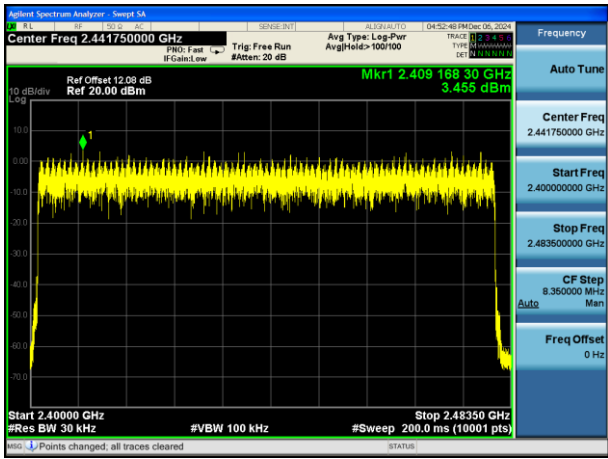
Test Mode:8DPSK(3DH5) 2441MHz



TEST GRAPHS

Test Mode	Op-mode	Result
GFSK(DH5)	Hopping mode	79

Test Mode	Op-mode	Result
$\pi/4$ DQPSK(2DH5)	Hopping mode	79

Test Mode	Op-mode	Result
8DPSK(3DH5)	Hopping mode	79
		



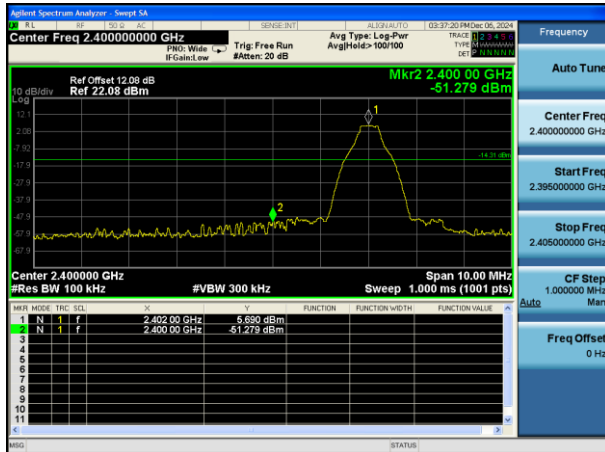
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Test Report No.: PSU-NQN2412200117RF01

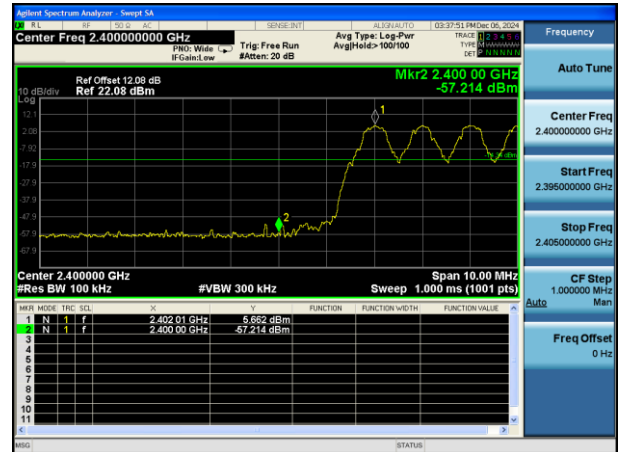
BAND EDGE MEASUREMENTS

TEST GRAPHS

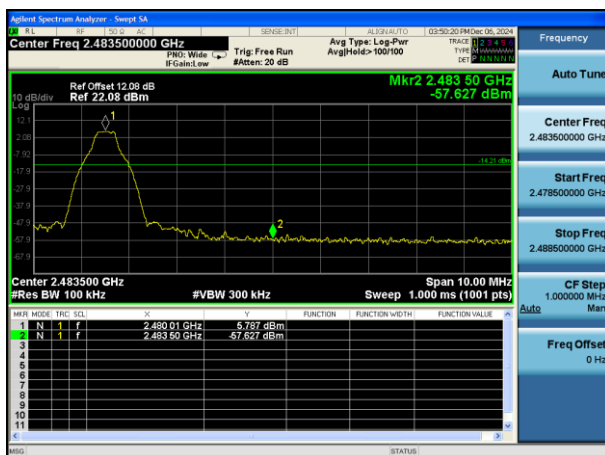
Test Mode: GFSK



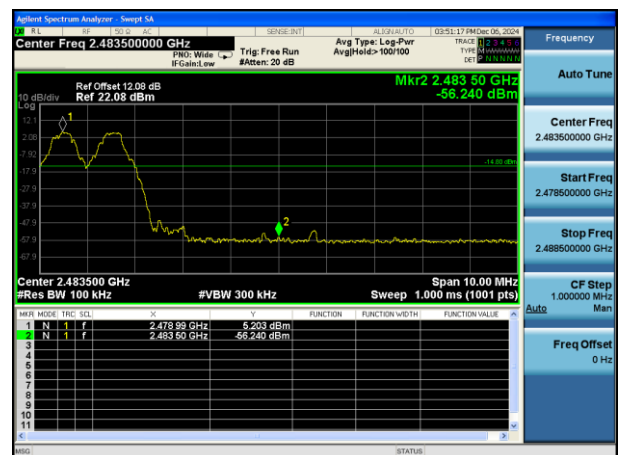
CH0(Hopping off)



CH0(Hopping on)

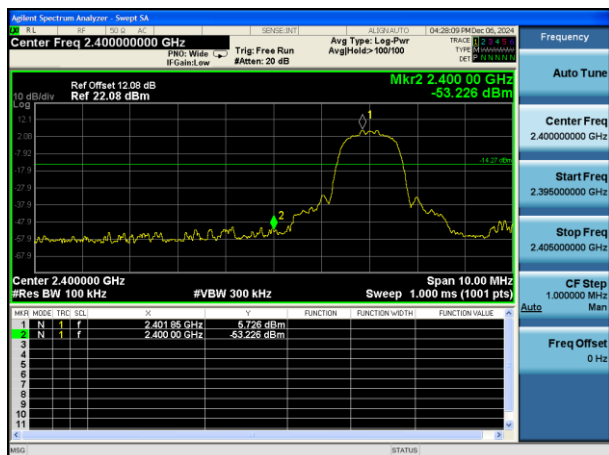


CH78(Hopping off)

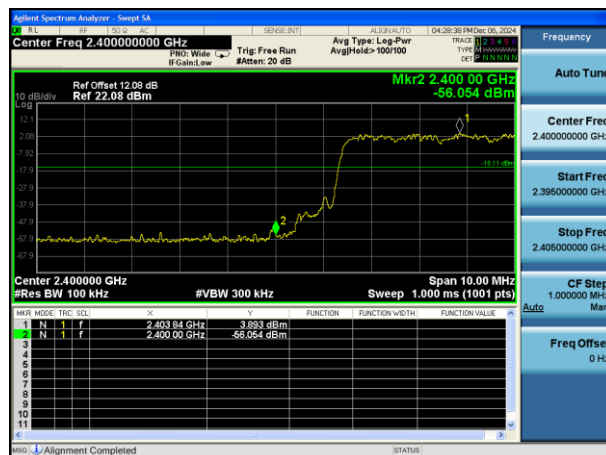


CH78(Hopping on)

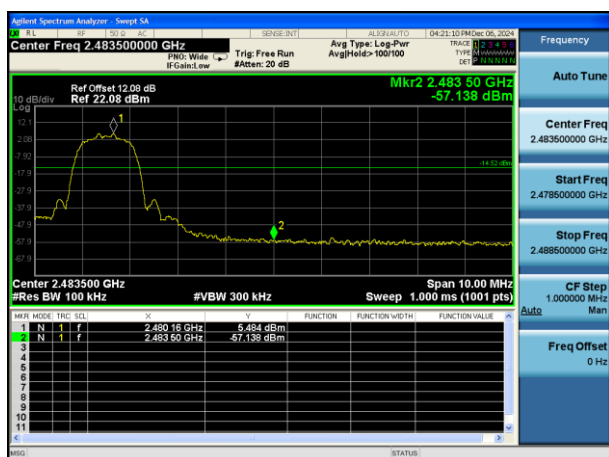
Test Mode: $\pi/4$ DQPSK



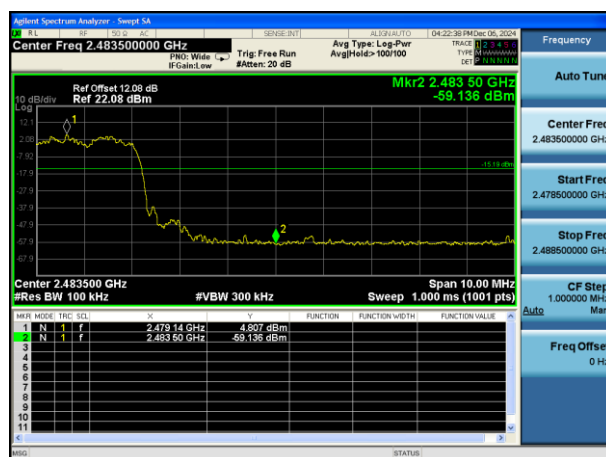
CH0(Hopping off)



CH0(Hopping on)

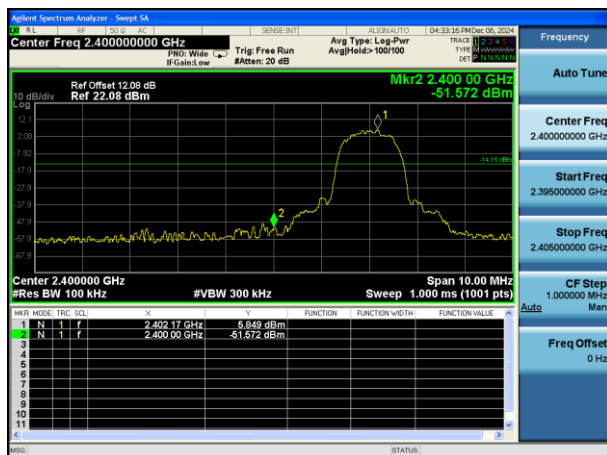


CH78(Hopping off)

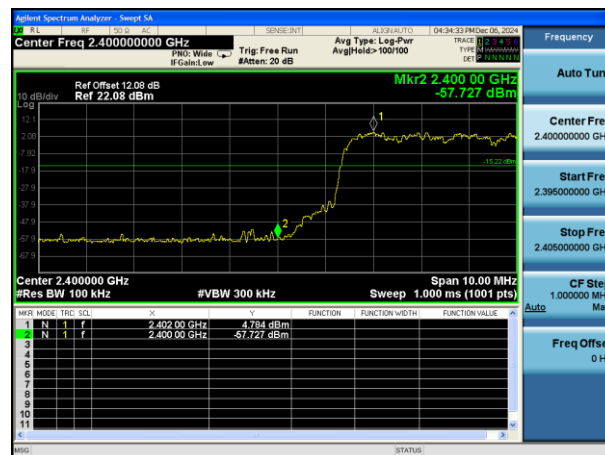


CH78(Hopping on)

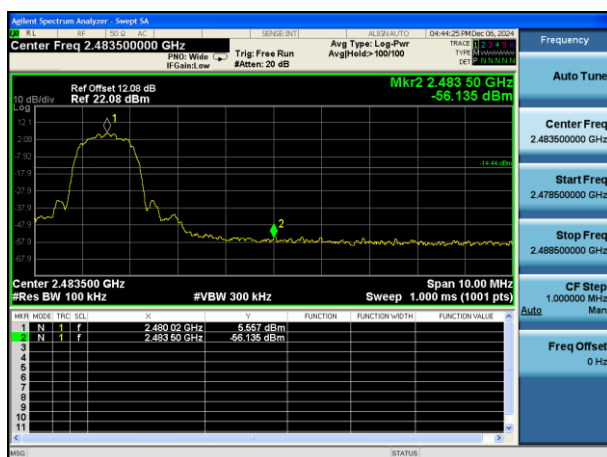
Test Mode: 8DPSK



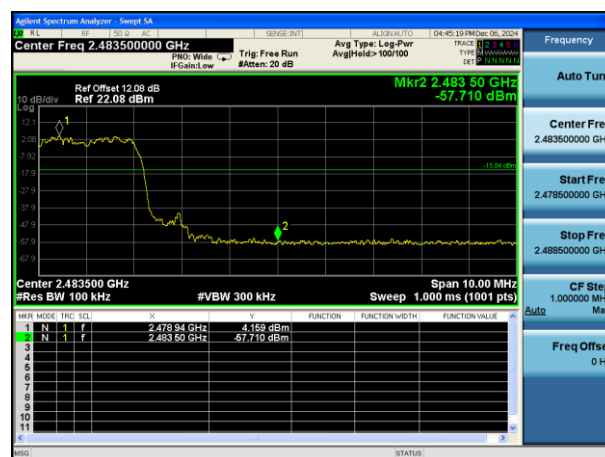
CH0(Hopping off)



CH0(Hopping on)



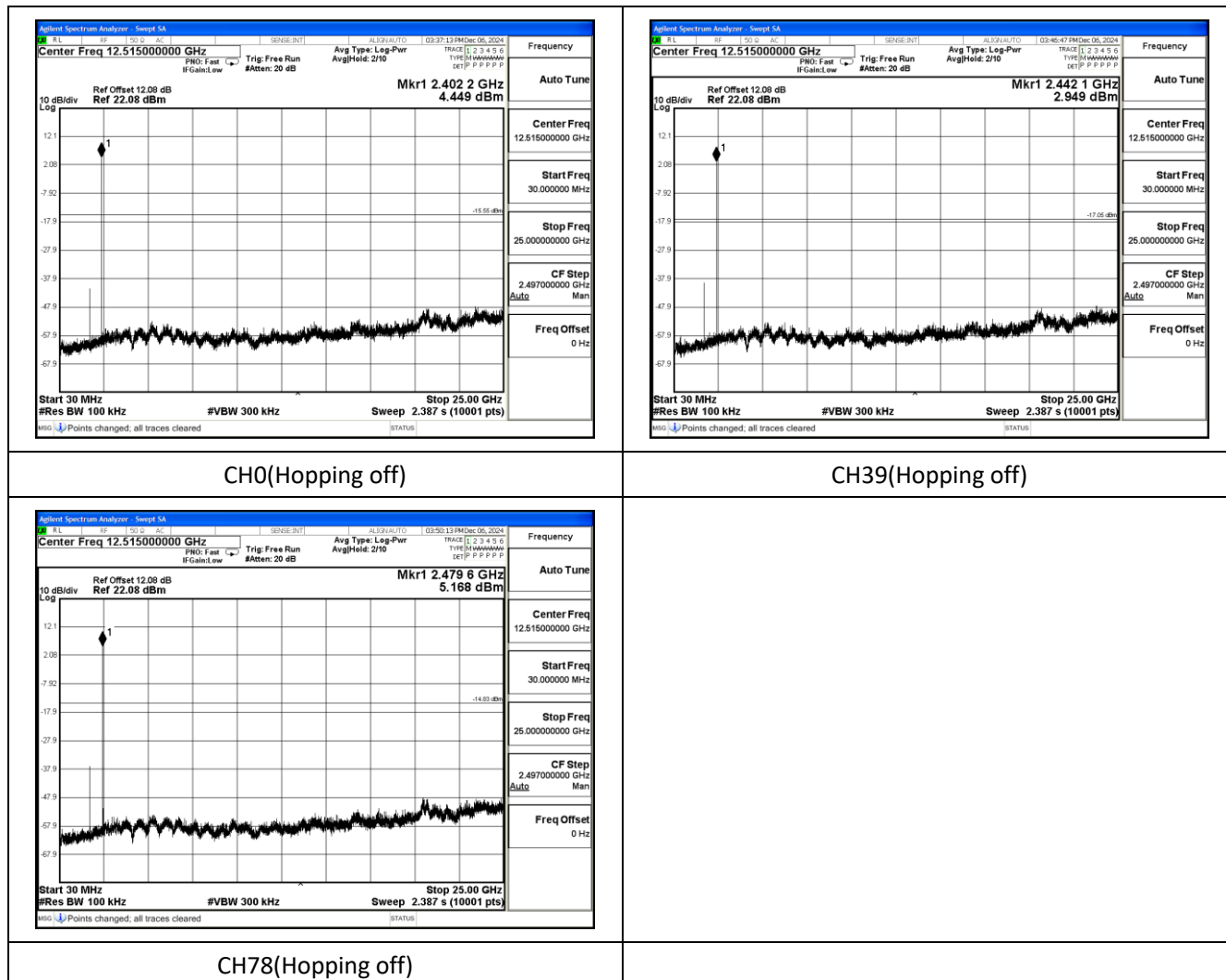
CH78(Hopping off)



CH78(Hopping on)

CONDUCTED SPURIOUS EMISSION TEST GRAPHS

Test Mode: GFSK





BUREAU
VERITAS

Test Report No.: PSU-NQN2412200117RF01

Test Mode: $\pi/4$ DQPSK

