CERTIFICATION TEST REPORT

Report Number. : U-4791479848-FR3V2

Applicant	:	SAMSUNG ELECTRONICS CO., LTD. 129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI, GYEONGGI-DO, 16677, KOREA
Model	:	WCF934M
FCC ID	:	A3LWCF934M
IC	:	649E-WCF934M
EUT Description	:	DTS/UNII a/b/g/n/ac/ax module and BT/BLE
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C INDUSTRY CANADA RSS-247 Issue 3 INDUSTRY CANADA RSS-GEN Issue 5

Date Of Issue:
2025-02-07

Prepared by:
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Uiwang Test Site: UL Korea, Ltd. Uiwang Laboratory
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IAS ACCREDITED
Testing Laboratory
TL-1087

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2025-02-04	Initial issue	Jaehyeok Bang
V2	2025-02-07	Updated to address TCB`s question	Jaehyeok Bang

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UL Korea, Ltd. Uiwang Laboratory FORM ID: FCC_15C(05)
42, Obongsandan 1-ro, Uiwang-si, Gyeonggi-do, Republic of Korea TEL: (031) 389-9603 FAX: (031) 462-8355

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.

EUT DESCRIPTION: DTS/UNII a/b/g/n/ac/ax module and BT/BLE

MODEL NUMBER: WCF934M

SERIAL NUMBER: 4C573957D7D2, 4C573957D552, 4C573957D870 (CONDUCTED); 4C573957D760, 4C573957D5A8, 4C573957D91C (RADIATED);

DATE TESTED: 2025-01-06 – 2025-01-31

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
47 CFR Part 15 Subpart C	Complies
INDUSTRY CANADA RSS-247 Issue 3	Complies
INDUSTRY CANADA RSS-GEN Issue 5	Complies

UL Korea, Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Korea, Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL KOREA LTD. By:

Changmin Kim
Senior Laboratory Engineer
UL Korea, Ltd.

Tested By:

Jaehyeok Bang
Laboratory Test Engineer
UL Korea, Ltd.

UL Korea, Ltd. Uiwang Laboratory FORM ID: FCC_15C(05)
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2. MANUFACTURER INFORMATION

Applicant Information

Company Name:	SAMSUNG ELECTRONICS CO., LTD.
Address:	129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI, GYEONGGI-DO, 16677, KOREA

Manufacturer Information 1

Company Name:	Chengdu Xuguang Technology Co., Ltd.
Address:	No.86 2nd Section, Park Road, Longquanyi District, Chengdu City, Sichuan Province, P.R.China

Manufacturer Information 2

Company Name:	CHEMTROVINA COMPANY LIMITED
Address:	Nhon Trach 2 – Loc Khang IZ, Hiep Phuoc Town, Nhon Trach District,, Dong Nai Province, Vietnam

Manufacturer Information 3

Company Name:	CHEMTRONICS CO., LTD.
Address:	35, Buk-ri, Namsa-myeon, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea

Manufacturer Information 4

Company Name:	SJIT CO., LTD.
Address:	#54-11, Dongtanhana 1 gil, Hwaseong-si, Gyeonggi-Do, Korea

Company Name:	SJIT VINA Co., Ltd
Address:	Lot X2, Ho Nai Industrial Zone, Ho Nai 3 Commune, Trang Bom District, Dong Nai Province, Vietnam

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with following methods.

1. FCC 47 CFR Part 2.
2. FCC 47 CFR Part 15.
3. KDB 558074 D01 15.247 Meas Guidance v05r02.
4. IC RSS-247 Issue 3.
5. IC RSS-Gen Issue 5.
6. ANSI C63.10-2020.

4. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 42, Obongsandan 1-ro, Uiwang-si, Gyeonggi-do, Republic of Korea. Line conducted emissions are measured only at the 218 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

42, Obongsandan 1-ro
☒ Chamber 1
☒ Chamber 2

Used ISED Test Site Reg. (SATELLITE company number): 32001
CAB Identifier: KR0161

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-1087. The full scope of accreditation can be viewed at https://www.iasonline.org/wp-content/uploads/2022/05/TL-1087-Cert-New.pdf

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

5.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
28.9 dBuV/m = 36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB

AC Corrected Reading (dBuV) = Measured Voltage (dBuV) + Extension Cord Loss (dB) + Cable Loss (dB)
44.72 dBuV = 34.72 dBuV + 9.9 dB + 0.1 dB

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Common Items

PARAMETER	UNCERTAINTY
RF Output Power	0.94 dB
Power Spectral Density	0.85 dB
Occupied Bandwidth	0.07 %
Conducted Spurious Emissions	1.21 dB
AC Power Line Conducted Emissions	2.32 dB

Uncertainty figures are valid to a confidence level of 95%, k=2

Chamber 1

PARAMETER	UNCERTAINTY
Radiated Disturbance, 30 MHz to 1 GHz	3.64 dB
Radiated Disturbance, 1 GHz to 18 GHz	5.38 dB
Radiated Disturbance, Above 18 GHz	6.23 dB

Uncertainty figures are valid to a confidence level of 95%, k=2

Chamber 2

PARAMETER	UNCERTAINTY
Radiated Disturbance, 9 kHz to 30 MHz	1.66 dB
Radiated Disturbance, 1 GHz to 18 GHz	5.39 dB

Uncertainty figures are valid to a confidence level of 95%, k=2

5.4. DECISION RULES

Decision rule for statement(s) of conformity is based on Clause 4.3.3 in IEC Guide 115:2023. Measurement Uncertainty is not applied when providing statements of conformity in accordance with IEC Guide 115:2023, 4.3.3

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is a DTS/UNII a/b/g/n/ac/ax module and BT/BLE.
This test report addresses the DSS(Bluetooth) operational mode.

Representative model	Software	Hardware Type	Difference
WCF934M	Same	Type1	Basic: PCB top IR LED
		Type2	PCB bottom IR LED
		Type3	PCB top IR LED / MIC removed
Note1. H/W changes that are not RF related. Spot-Check test was performed on Type2 and Type3. The hardware Type 1 was used for final testing and is representative of the test results in this report.			

6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak and average conducted output power as follows:

ANT0

Frequency Range [MHz]	Mode	Power Mode	Output Power [dBm]	Output Power [mW]	Antenna gain [dBi]	e.i.r.p. Note1 [dBm]
2 402 - 2 480	Basic GFSK	Peak	12.800	19.055	-2.07	10.730
		Average	12.368	17.250	-2.07	10.298
	Enhanced Pi/4-DPSK	Peak	12.710	18.664	-2.07	10.640
		Average	9.654	9.235	-2.07	7.584
	Enhanced 8PSK	Peak	12.810	19.099	-2.07	10.740
		Average	9.730	9.397	-2.07	7.660

Note 1: e.i.r.p. = Output Power[dBm] + Antenna gain[dBi]

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

The internal antenna was Permanently attached.
Therefore this E.U.T Complies with the requirement of §15.203.

The radio utilizes a internal antenna, with a maximum gain of: -2.07 dBi

“BT” as indicated in antenna specification are written as ANT0 in this report.

6.4. WORST-CASE CONFIGURATION AND MODE

The fundamentals of the EUT were investigated in three orthogonal orientations X, Y and Z.
It was determined that below table’s orientation was the worst-case orientation.

ANT0
X

Radiated and power line conducted tests were performed with EUT connected to test jig and laptop as the worst-case configuration. Radiated harmonics spurious 1~18 GHz Low/Mid/High channels,18-26GHz were performed with the EUT set at the 1Tx mode. Radiated emission below 1GHz and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

All radiated and power line conducted tests were performed attached with test jig for the worst-case condition mode.

GFSK, Pi/4-DQPSK, 8PSK average Power are all investigated, The GFSK & 8PSK Power are the worst case. Testing is based on this mode to showing compliance.

6.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Test Jig	MediaTek	-	-	N/A
Laptop	Lenovo	TP00136D	PF-4M6STB	N/A
Charger	Lenovo	ADLX45YCC3G	8SSA10R16915C2TJ	N/A

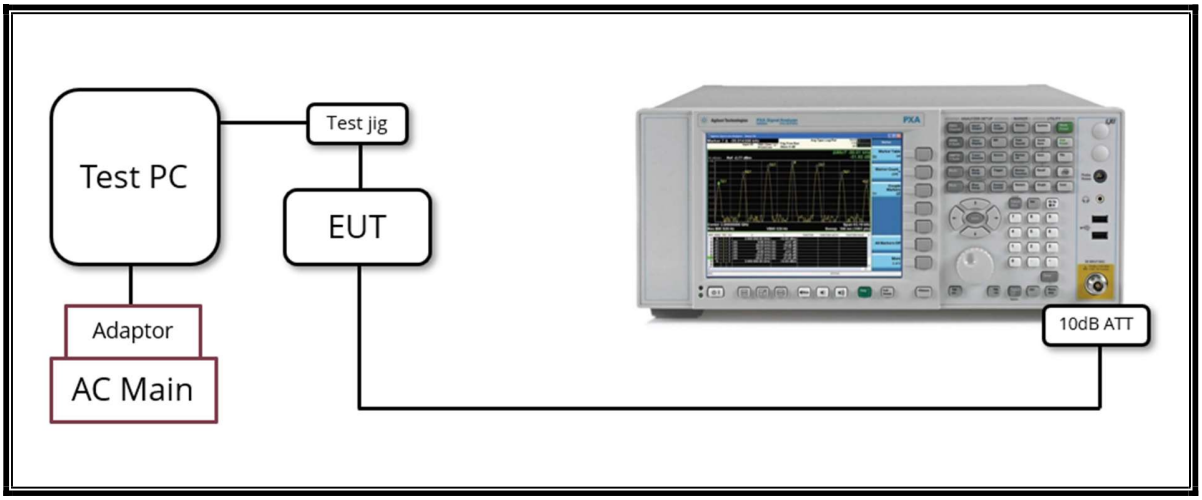
I/O CABLE

I/O Cable List						
Cable No.	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	DC Power and Data	1	24 pin	Unshielded	20 cm	N/A

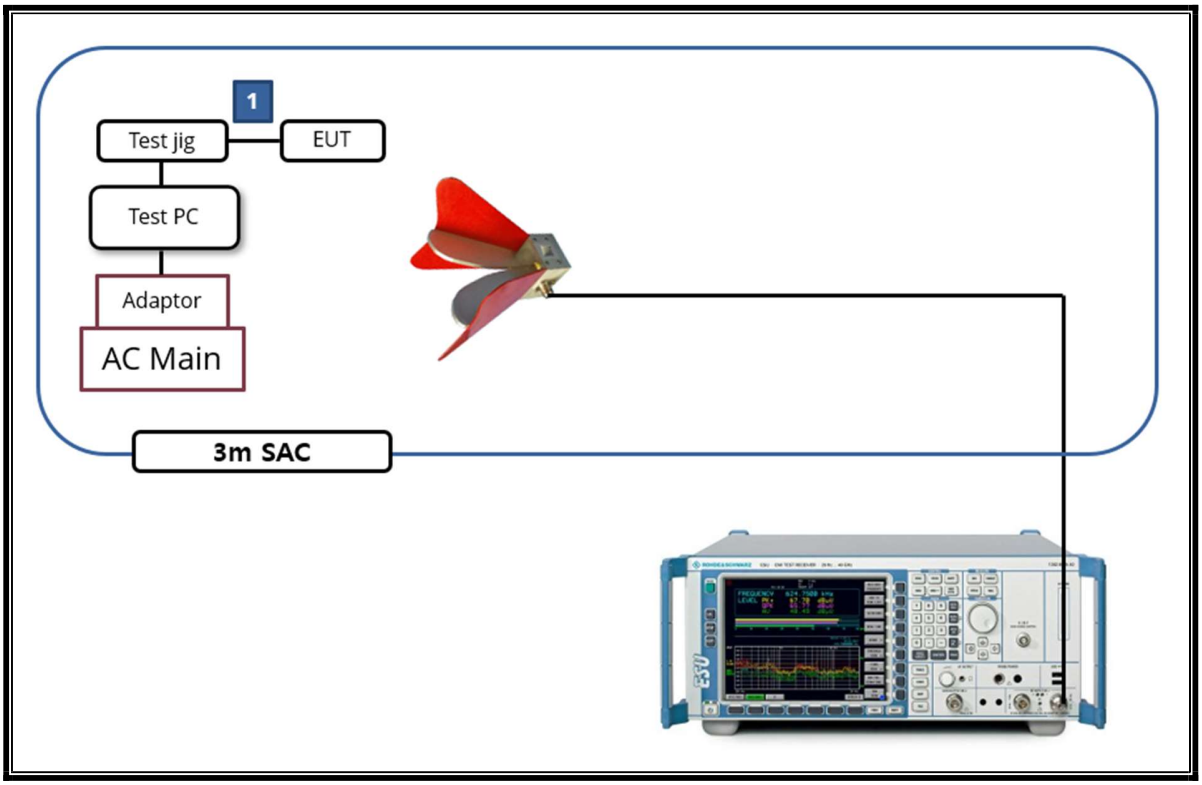
TEST SETUP

The EUT is a stand-alone unit during the tests.
Test software exercised the EUT to enable Bluetooth mode.

SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due date
Spectrum Analyzer	KEYSIGHT	N9030B	MY57143717	2024-07-23	2025-07-23
Power Sensor	Rohde & Schwarz	NRP50S	101284	2024-07-23	2025-07-23
EMI Test Receiver	Rohde & Schwarz	ESW44	103297	2024-07-18	2025-07-18
EMI Test Receiver	Rohde & Schwarz	ESW44	103313	2024-01-29	2025-01-29
				2025-01-22	2026-01-22
EMI Test Receiver	Rohde & Schwarz	ESW44	103350	2024-04-08	2025-04-08
EMI Test Receiver	Rohde & Schwarz	ESR7	102328	2024-01-29	2025-01-29
				2025-01-22	2026-01-22
2 Line LISN	Rohde & Schwarz	EVN216	102638	2024-01-30	2025-01-30
				2025-01-23	2026-01-23
Signal Generator	Rohde & Schwarz	SMB100A	184060	2024-07-18	2025-07-18
Loop Antenna	TESEQ	HLA 6121	65111	2023-08-01	2025-08-01
TRILOG BROADBAND ANTENNA	Schwarzbeck	VULB 9163	01670	2023-10-17	2025-10-17
Double-Ridged Guide Antenna	ETS LINDGREN	3117	00261223	2024-09-24	2025-09-24
Double-Ridged Guide Antenna	ETS LINDGREN	3117	00261463	2024-09-20	2025-09-20
DOUBLE-RIDGED WAVEGUIDE HORN ANTENNA	ETS LINDGREN	3116C	00261440	2024-09-20	2025-09-20
Amplifier	ETS LINDGREN	3116C-PA	00261440	2024-09-20	2025-09-20
Signal Conditioning Unit	Rohde & Schwarz	SCU01F	100316	2024-03-22	2025-03-22
Amplifier	EXYNOD	ELNA03-40D	631509	2024-07-18	2025-07-18
Amplifier	BNZ	BZR-01001800-231040-182020	28452	2024-04-08	2025-04-08
Amplifier	BNZ	BZR-01001800-231040-181515	31049	2024-07-18	2025-07-18
Attenuator	Centric RF	C040-10	N/A	2024-01-11	2025-01-11
				2025-01-10	2026-01-10
Attenuator	EXYNOD	RLAN-210-18G	10A001	2024-04-08	2025-04-08
Fixed Attenuator	PASTERNACK	PE7087-10	2241	2024-07-18	2025-07-18
Low Pass Filter	Micro-Tronics	LPS17541	019	2024-07-18	2025-07-18
Low Pass Filter	Micro-Tronics	LPS17541	050	2024-04-08	2025-04-08
High Pass Filter	Micro-Tronics	HPM50107	G115	2024-07-18	2025-07-18
High Pass Filter	Micro-Tronics	HPM17543	021	2024-07-18	2025-07-18
High Pass Filter	Micro-Tronics	HPS17542	020	2024-07-18	2025-07-18
High Pass Filter	Micro-Tronics	HPM17543	051	2024-04-08	2025-04-08
High Pass Filter	Micro-Tronics	HPS17542	051	2024-04-08	2025-04-08
Humidity/Baro/Temp DATA RECORDER	Lutron	MHB-382SD	AL.92208	2024-07-23	2025-07-23
Humidity/Baro/Temp DATA RECORDER	Lutron	MHB-382SD	AM.00223	2024-01-11	2025-01-11
				2025-01-02	2026-01-02
Humidity/Baro/Temp DATA RECORDER	Lutron	MHB-382SD	AM.00227	2024-01-11	2025-01-11
				2025-01-02	2026-01-02
Digital Multimeter	Fluke Corporation	17B+	51260820WS	2024-07-18	2025-07-18

Measurement Software			
Description	Manufacturer	Model	Vesrsion
Radiated software	UL	UL EMC	Ver 9.5
AC Line Conducted Software	Rohde & Schwarz	EMC32	Ver 11.10.00

8. TEST RESULTS SUMMARY

FCC Part Section	IC Part Section	Test Description	Test Limit	Test Condition	Test Result
2.1051, 15.247(d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-20 dBc	Conducted	Complies
15.247 (b)(1)	RSS-247 5.1(b)	TX conducted output power	< 21 dBm		Complies
15.247 (a)(1)	RSS-247 5.1(b)	Hopping frequency separation	> two-thirds of the 20 dB bandwidth		Complies
15.247 (a)(1)(iii)	RSS-247 5.1(d)	Number of Hopping channels	More than 15 non-overlapping channels		Complies
15.247 (a)(1)(iii)	RSS-247 5.1(d)	Avg Time of Occupancy	< 0.4 s		Complies
-	RSS-GEN Clause 6.7	Occupied bandwidth (99% emission bandwidth)	N/A		Complies
15.207(a)	RSS-GEN Clause 8.8	AC Power Line conducted emissions	Section 12	Power Line conducted	Complies
15.205, 15.209	RSS-GEN Clause 8.9 & 8.10	Radiated Spurious Emission	< 54dBuV/m(Av)	Radiated	Complies

9. MEASUREMENT METHODS

20dB BW : ANSI C63.10, Section 6.9.2

99% BW : ANSI C63.10, Section 6.9.3

HOPPING FREQUENCY SEPARATION : ANSI C63.10, Section 7.8.2

NUMBER OF HOPPING CHANNELS : ANSI C63.10, Section 7.8.3

AVERAGE TIME OF OCCUPANCY : ANSI C63.10, Section 7.8.4

OUTPUT POWER : ANSI C63.10, Section 7.8.5.

Out-of-band EMISSIONS (Conducted) : ANSI C63.10, Section 7.8.7

Out-of-band EMISSIONS IN NON-RESTRICTED BANDS: ANSI C63.10, Section 7.8.8

Out-of-band EMISSIONS IN RESTRICTED BANDS : ANSI C63.10, Section 7.8.8

AC Power Line Conducted Emission : ANSI C63.10-2020, Section 6.2.

10. ANTENNA PORT TEST RESULTS

10.1. ON TIME AND DUTY CYCLE

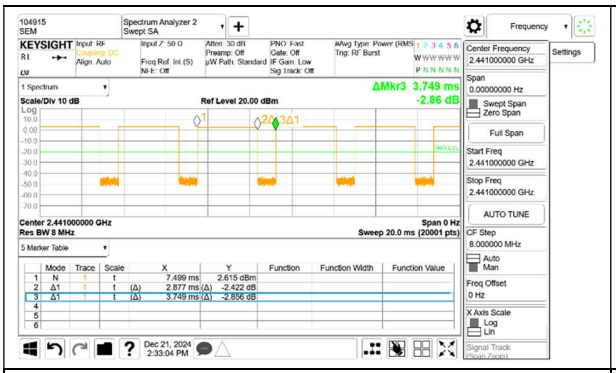
LIMITS

None; for reporting purposes only.

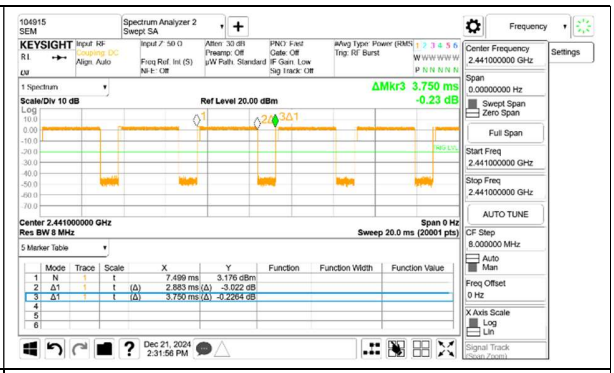
PROCEDURE

ANSI C63.10, Section 11.6: Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS



1-DH5



3-DH5

Mode	On time [msec]	Period [msec]	Duty Cycle [%]	1/T Minimum VBW [kHz]
2 400 ~ 2 483.5 MHz Band				
BDR	2.877	3.749	76.740	0.35
EDR	2.883	3.750	76.880	0.35

10.2. 20 dB & 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW, unless otherwise specified by the applicable requirement. The sweep time is coupled.

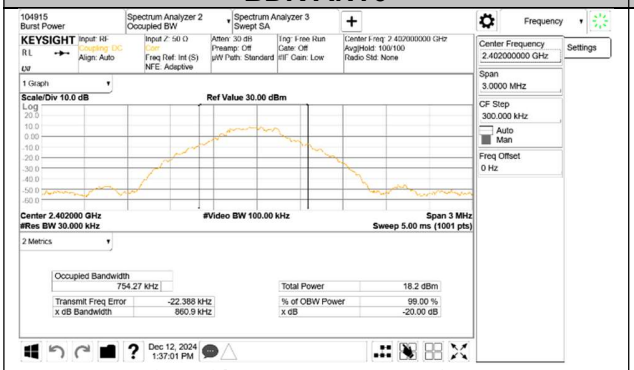
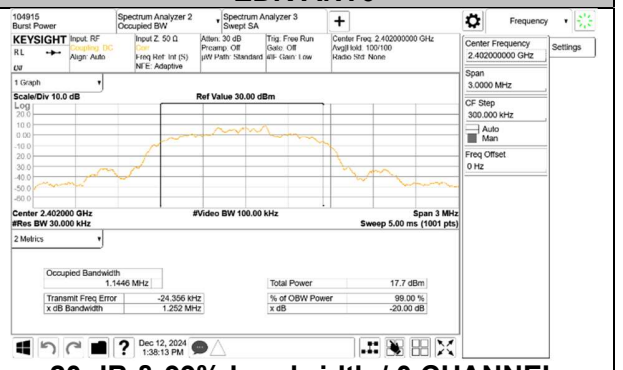
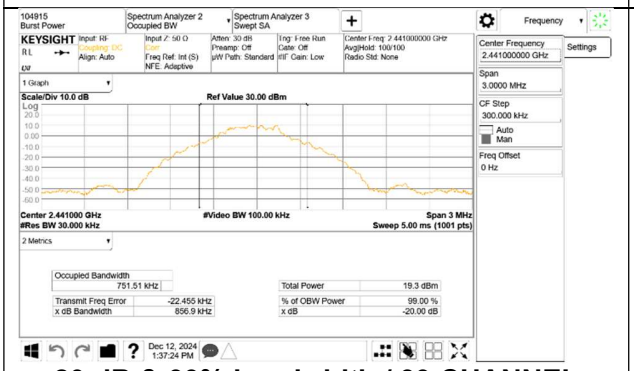
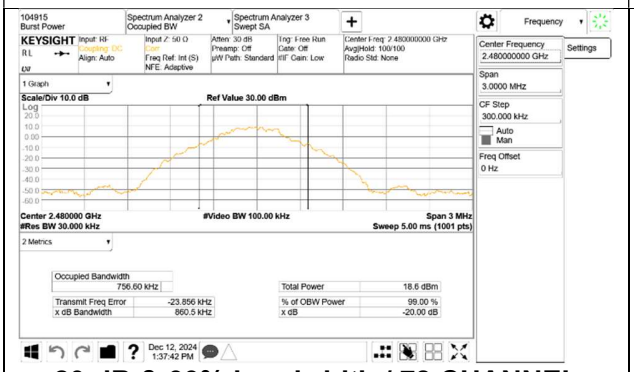
RESULTS

10.2.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

Antenna	Channel	Frequency [MHz]	20 dB Bandwidth [kHz]	99% Bandwidth [kHz]
ANT0	0	2 402	860.9	754.3
	39	2 441	856.9	751.5
	78	2 480	860.5	756.6
Worst			**860.9**	

10.2.2. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

Antenna	Channel	Frequency [MHz]	20 dB Bandwidth [kHz]	99% Bandwidth [kHz]
ANT0	0	2 402	1 252.0	1 144.6
	39	2 441	1 255.0	1 144.2
	78	2 480	1 253.0	1 143.4
Worst			**1 255.0**	

BDR ANT0	EDR ANT0
	
20 dB & 99% bandwidth / 0 CHANNEL	**20 dB & 99% bandwidth / 0 CHANNEL**
	
20 dB & 99% bandwidth / 39 CHANNEL	**20 dB & 99% bandwidth / 39 CHANNEL**
	
20 dB & 99% bandwidth / 78 CHANNEL	**20 dB & 99% bandwidth / 78 CHANNEL**

10.3. HOPPING FREQUENCY SEPARATION

LIMITS

FCC §15.247 (a) (1)
RSS-247 (5.1) (b)

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

Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

TEST PROCEDURE

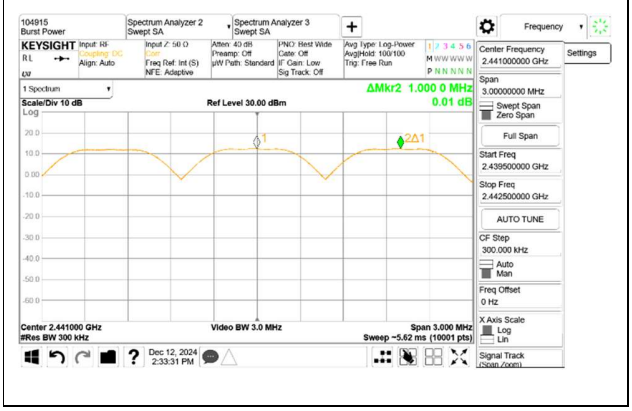
The transmitter output is connected to a spectrum analyzer. Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel. The VBW is set to VBW >= RBW. The sweep time is coupled.

RESULTS

See the following pages.

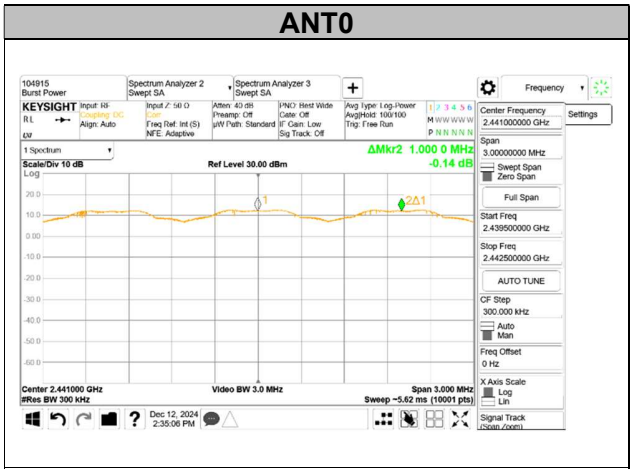
10.3.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

ANT0



10.3.2. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

ANT0



10.4. NUMBER OF HOPPING CHANNELS

LIMITS

FCC §15.247 (a) (1) (iii)
RSS-247 (5.1) (d)

Frequency hopping systems in the 2400 – 2483.5 MHz band shall use at least 15 non-overlapping channels.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The span is set to cover the entire authorized band, in either a single sweep or in multiple contiguous sweeps. To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller. The analyzer is set to Max Hold.

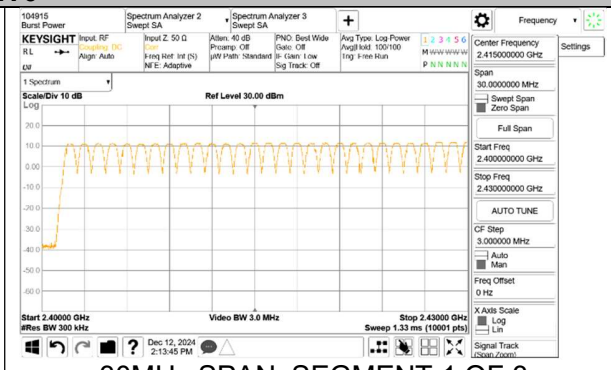
RESULTS

Normal Mode: All Channels Observed

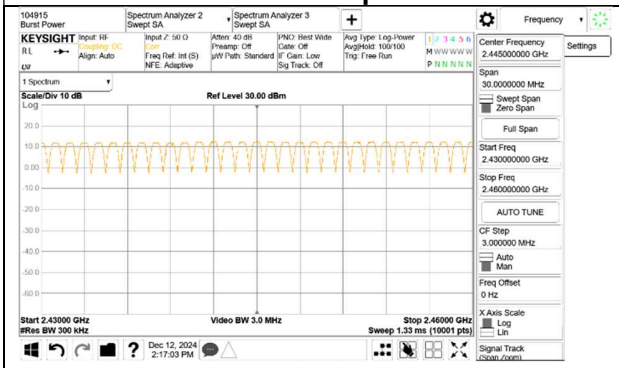
10.4.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

ANT0

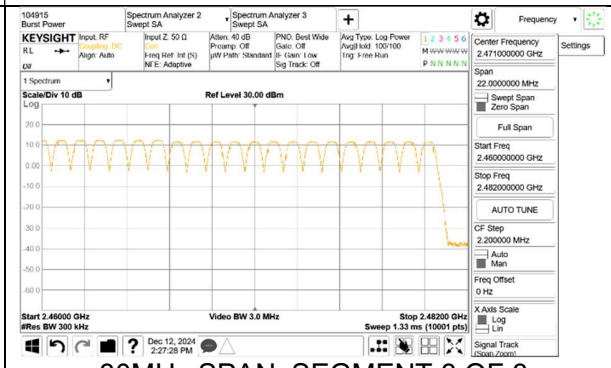
100 MHz Span



30MHz SPAN, SEGMENT 1 OF 3



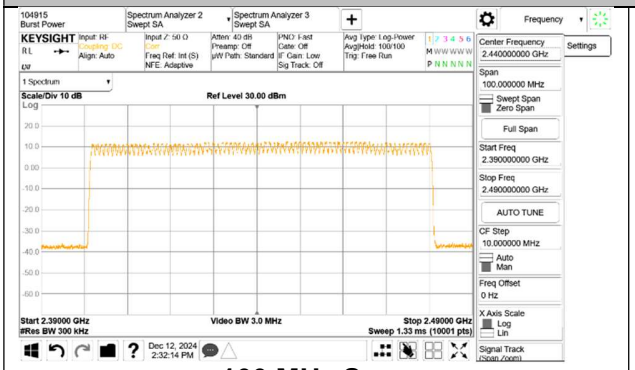
30MHz SPAN, SEGMENT 2 OF 3



30MHz SPAN, SEGMENT 3 OF 3

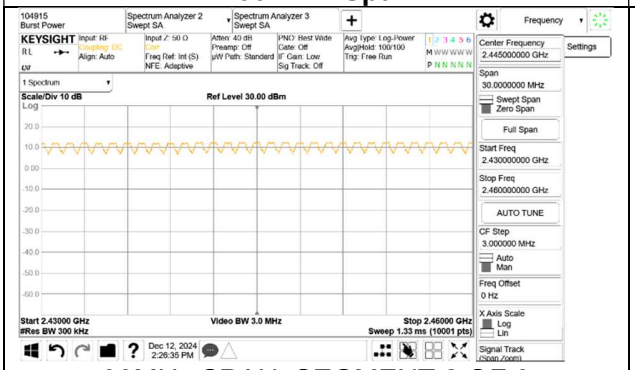
10.4.2. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

ANT0



100 MHz Span

30MHz SPAN, SEGMENT 1 OF 3



30MHz SPAN, SEGMENT 2 OF 3

30MHz SPAN, SEGMENT 3 OF 3

10.5. AVERAGE TIME OF OCCUPANCY

LIMITS

FCC §15.247 (a) (1) (iii)
RSS-247 (5.1) (d)

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.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The span is set to 0 Hz, centered on a single, selected hopping channel. The width of a single pulse is measured in a fast scan. The number of pulses is measured in a 3.16 second scan, to enable resolution of each occurrence.

The average time of occupancy in the specified 31.6 second period (79 channels * 0.4 s) is equal to 10 * (# of pulses in 3.16 s) * pulse width.

For AFH mode, the average time of occupancy in the specified 8 second period (20 channels * 0.4 seconds) is equal to 10 * (# of pulses in 0.8 s) * pulse width.

RESULTS

See the following pages.

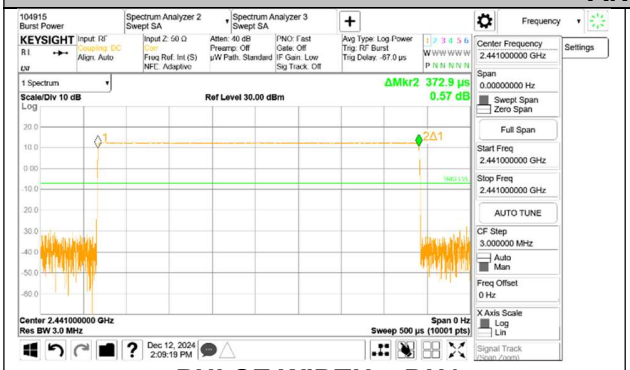
UL Korea, Ltd. Uiwang Laboratory FORM ID: FCC_15C(05)
42, Obongsandan 1-ro, Uiwang-si, Gyeonggi-do, Republic of Korea TEL: (031) 389-9603 FAX: (031) 462-8355

10.5.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

ANT0					
DH Packet	**Pulse Width [msec]**	**Number of Pulses in 3.16 seconds**	**Average Time of Occupancy [sec]**	**Limit [sec]**	**Margin [sec]**
GFSK Normal					
DH1	0.373	32	0.119	0.400	-0.281
DH3	1.629	16	0.261	0.400	-0.139
DH5	2.876	12	0.345	0.400	-0.055
DH Packet	**Pulse Width [msec]**	**Number of Pulses in 0.8 seconds**	**Average Time of Occupancy [sec]**	**Limit [sec]**	**Margin [sec]**
GFSK AFH					
DH1	0.373	8	0.030	0.400	-0.370
DH3	1.629	4	0.065	0.400	-0.335
DH5	2.876	3	0.086	0.400	-0.314

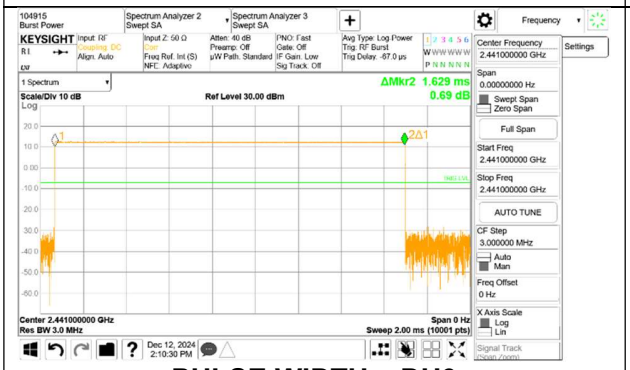
UL Korea, Ltd. Uiwang Laboratory FORM ID: FCC_15C(05)
42, Obongsandan 1-ro, Uiwang-si, Gyeonggi-do, Republic of Korea TEL: (031) 389-9603 FAX: (031) 462-8355

ANT0



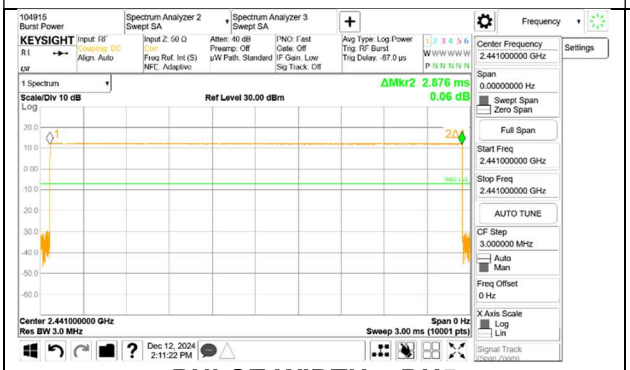
PULSE WIDTH – DH1

NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH1

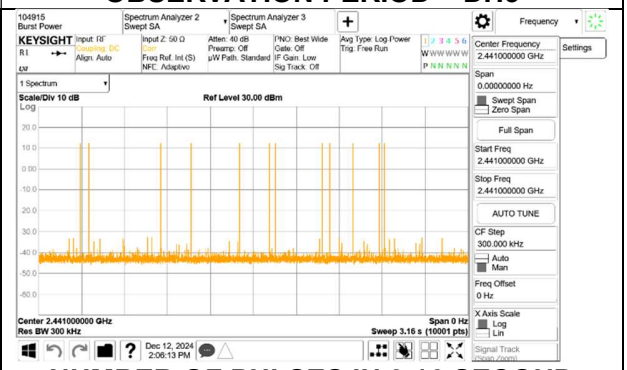


PULSE WIDTH – DH3

NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH3



PULSE WIDTH – DH5



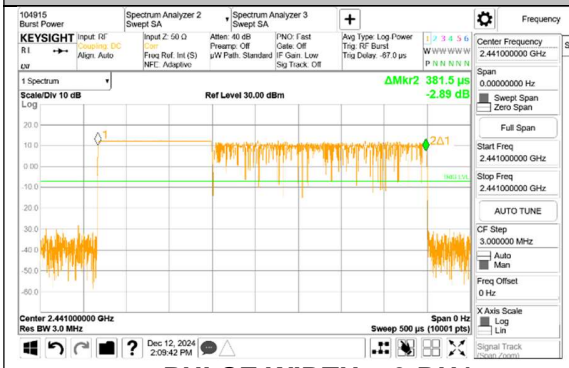
NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH5

10.5.2. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

ANT0					
DH Packet	**Pulse Width [msec]**	**Number of Pulses in 3.16 seconds**	**Average Time of Occupancy [sec]**	**Limit [sec]**	**Margin [sec]**
8PSK Normal					
3-DH1	0.382	32	0.122	0.400	-0.278
3-DH3	1.632	16	0.261	0.400	-0.139
3-DH5	2.883	12	0.346	0.400	-0.054
DH Packet	**Pulse Width [msec]**	**Number of Pulses in 0.8 seconds**	**Average Time of Occupancy [sec]**	**Limit [sec]**	**Margin [sec]**
8PSK AFH					
3-DH1	0.382	8	0.031	0.400	-0.369
3-DH3	1.632	4	0.065	0.400	-0.335
3-DH5	2.883	3	0.086	0.400	-0.314

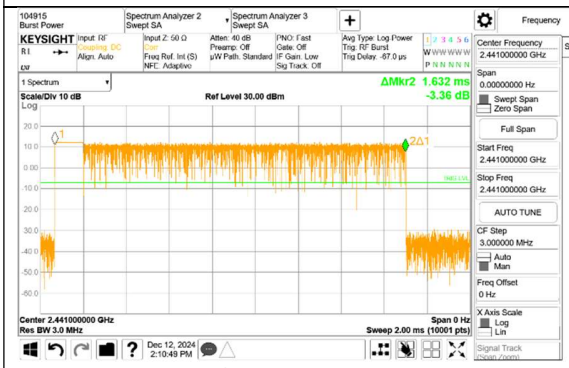
.

ANT0



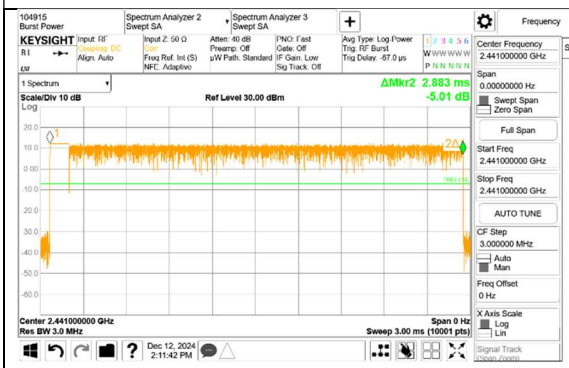
PULSE WIDTH – 3-DH1

NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – 3-DH1



PULSE WIDTH – 3-DH3

NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – 3-DH3



PULSE WIDTH – 3-DH5

NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – 3-DH5

10.6. OUTPUT POWER

LIMITS

§15.247 (b) (1)
RSS-247 5.1 (b)
The maximum antenna gain is less than 6 dBi, therefore the limit is 21 dBm.

TEST PROCEDURE
The transmitter output is connected to a spectrum analyzer the analyzer bandwidth is set to a value greater than the 20 dB bandwidth of the EUT.

RESULTS

10.6.1. BASIC DATA RATE GFSK MODULATION

Antenna	Channel	Frequency [MHz]	Peak Output Power [dBm]	Limit [dBm]	Margin [dB]
ANT0	0	2 402	11.86	21.00	-9.14
	39	2 441	12.80		-8.20
	78	2 480	12.20		-8.80
Worst			**12.80**		**-8.20**

10.6.2. ENHANCED DATA RATE Pi/4-DPSK MODULATION

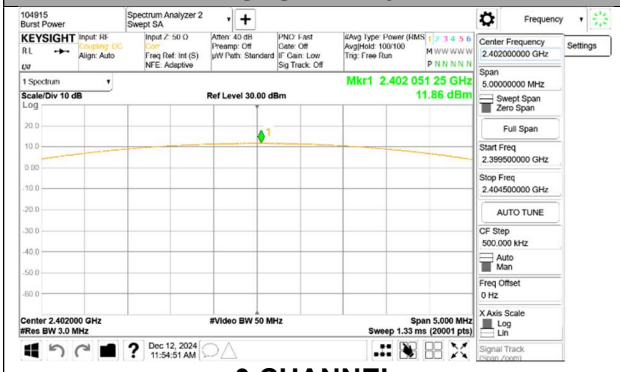
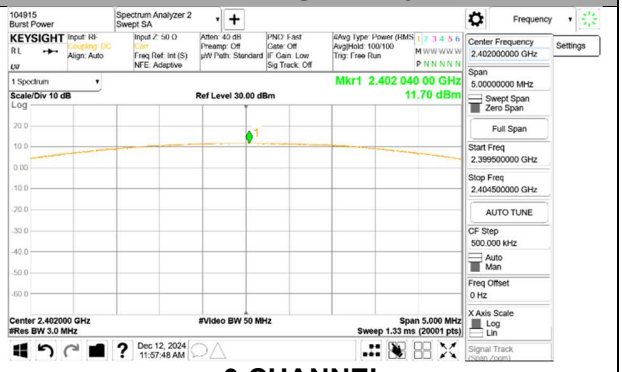
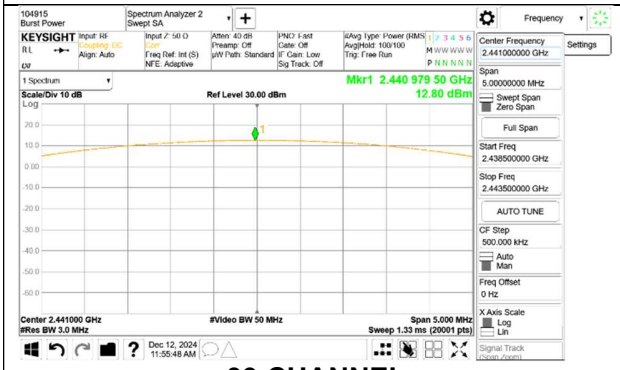
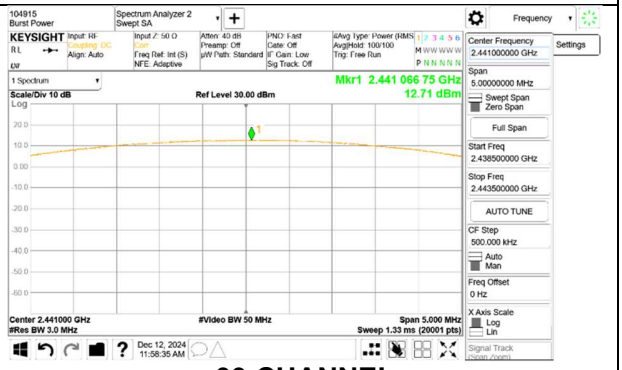
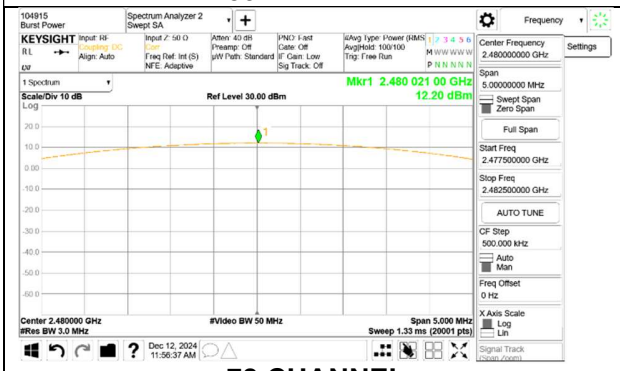
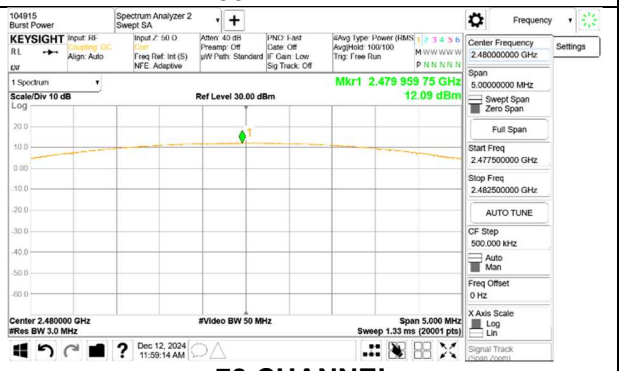
Antenna	Channel	Frequency [MHz]	Peak Output Power [dBm]	Limit [dBm]	Margin [dB]
ANT0	0	2 402	11.70	21.00	-9.30
	39	2 441	12.71		-8.29
	78	2 480	12.09		-8.91
Worst			**12.71**		**-8.29**

10.6.3. ENHANCED DATA RATE 8PSK MODULATION

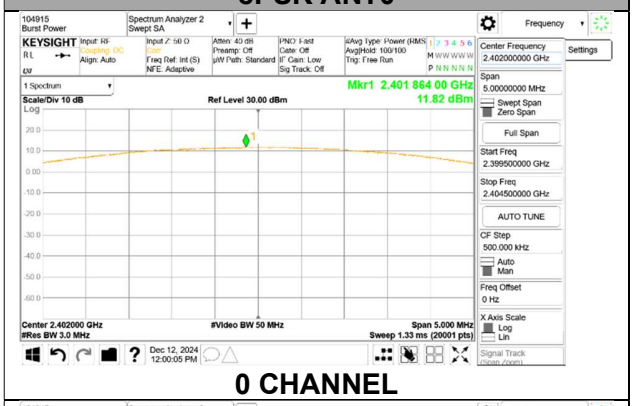
Antenna	Channel	Frequency [MHz]	Peak Output Power [dBm]	Limit [dBm]	Margin [dB]
ANT0	0	2 402	11.82	21.00	-9.18
	39	2 441	12.81		-8.19
	78	2 480	12.23		-8.77
Worst			**12.81**		**-8.19**

10.6.4. OUTPUT POWER PLOTS

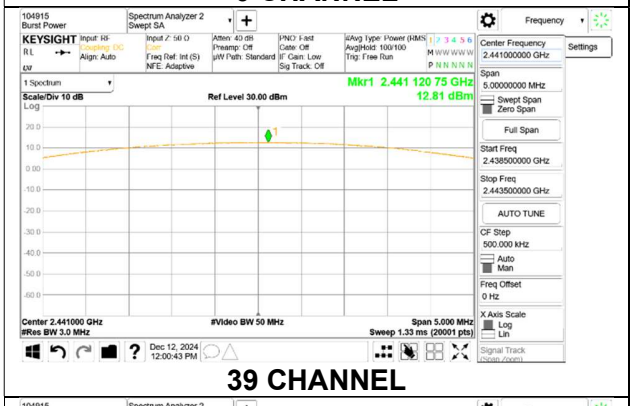
PEAK OUTPUT POWER

GFSK ANT0	Pi/4-DPSK ANT0
	
0 CHANNEL	**0 CHANNEL**
	
39 CHANNEL	**39 CHANNEL**
	
78 CHANNEL	**78 CHANNEL**

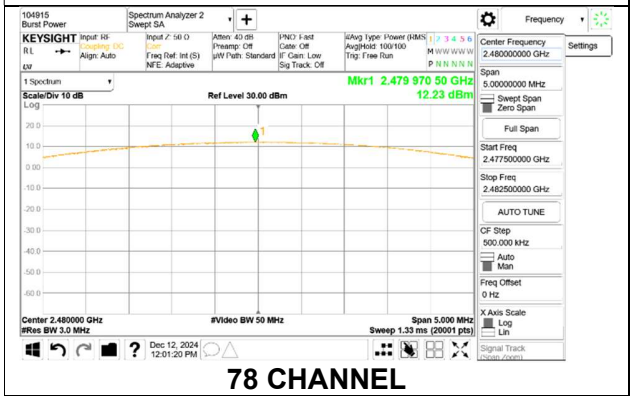
8PSK ANT0



0 CHANNEL



39 CHANNEL



78 CHANNEL

10.7. AVERAGE POWER

LIMITS

None; for reporting purposes only

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.
The cable assembly insertion loss was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

10.7.1. BASIC DATA RATE GFSK MODULATION

Antenna	Channel	Frequency [MHz]	Average Output Power [dBm]	Average Output Power [mW]
ANT0	0	2 402	11.309	13.518
	39	2 441	12.368	17.250
	78	2 480	11.730	14.894

10.7.2. ENHANCED DATA RATE PI/4-DQPSK MODULATION

Antenna	Channel	Frequency [MHz]	Average Output Power [dBm]	Average Output Power [mW]
ANT0	0	2 402	8.604	7.251
	39	2 441	9.654	9.235
	78	2 480	9.025	7.989

10.7.3. ENHANCED DATA RATE 8PSK MODULATION

Antenna	Channel	Frequency [MHz]	Average Output Power [dBm]	Average Output Power [mW]
ANT0	0	2 402	8.592	7.231
	39	2 441	9.730	9.397
	78	2 480	9.056	8.046

10.8. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)
RSS-247 5.5

Limit = -20 dBc

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

The band-edges at 2.4 and 2.4835 GHz are investigated with the transmitter set to the normal hopping mode.

RESULTS

See the following pages.