

TEST REPORT

Report Number: R15980274-E7

Applicant : Samsung Electronics Co Ltd
129, Samsung-ro, Yeongtong-gu, Suwon-si,
Gyeonggi-do, 16677, Rep. of Korea

Model : SM-S942U, SM-S942U1

FCC ID : A3LSMS942U

EUT Description : GSM/WCDMA/LTE/NR/SCS/NTN Phone + BT/BLE, DTS/UNII
a/b/g/n/ac/ax/be, WPT and NFC

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C
ISED RSS-247 ISSUE 4
ISED RSS-GEN ISSUE 5 + A1 + A2

Date Of Issue:
2025-11-25

Prepared by:
UL LLC
12 Laboratory Dr.
Durham, NC 27713 USA
TEL: (919) 549-1400



REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2025-11-25	Initial Issue	Manish Baral

TABLE OF CONTENTS

REPORT REVISION HISTORY	2
1. ATTESTATION OF TEST RESULTS	7
2. TEST RESULTS SUMMARY	8
4. TEST METHODOLOGY	9
5. FACILITIES AND ACCREDITATION	9
6. DECISION RULES AND MEASUREMENT UNCERTAINTY	10
6.1. METROLOGICAL TRACEABILITY	10
6.2. DECISION RULES.....	10
6.3. MEASUREMENT UNCERTAINTY.....	10
6.4. SAMPLE CALCULATION	10
7. EQUIPMENT UNDER TEST	11
7.1. EUT DESCRIPTION	11
7.2. MAXIMUM OUTPUT POWER.....	11
7.3. DESCRIPTION OF AVAILABLE ANTENNAS	12
7.4. WORST-CASE CONFIGURATION AND MODE.....	13
7.5. DESCRIPTION OF TEST SETUP.....	14
8. MEASUREMENT METHOD.....	15
9. TEST AND MEASUREMENT EQUIPMENT	16
10. ANTENNA PORT TEST RESULTS	20
10.1. ON TIME AND DUTY CYCLE	20
10.2. 99% BANDWIDTH	21
10.2.1. BLE (125 kbps).....	21
10.2.2. BLE (500 kbps).....	22
10.2.3. BLE (1Mbps).....	23
10.2.4. BLE (2Mbps).....	27
10.2.5. 802.11b MODE	31
10.2.6. 802.11g MODE	32
10.2.7. 802.11n HT20 MODE	33
10.2.8. 802.11be EHT20 26T MODE	34
10.2.9. 802.11be EHT20 52T MODE	35
10.2.10. 802.11be EHT20 52T+26T MODE	36
10.2.11. 802.11be EHT20 106T MODE	37
10.2.12. 802.11be EHT20 106T+26T MODE	38
10.2.13. 802.11be EHT20 242T MODE	39
10.3. 6 dB BANDWIDTH	40
10.3.1. BLE (125 kbps).....	41

10.3.2.	BLE (500 kbps)	42
10.3.3.	BLE (1Mbps)	43
10.3.4.	BLE (2Mbps)	45
10.3.5.	802.11b MODE	47
10.3.6.	802.11g MODE	48
10.3.7.	802.11n HT20 MODE	49
10.3.8.	802.11be EHT20 26T MODE	50
10.3.9.	802.11be EHT20 52T MODE	51
10.3.10.	802.11be EHT20 52T+26T MODE	52
10.3.11.	802.11be EHT20 106T MODE	53
10.3.12.	802.11be EHT20 106T+26T/82 MODE	54
10.3.13.	802.11be EHT20 242T MODE	55
10.4.	OUTPUT POWER	56
10.4.1.	BLE (125 kbps)	58
10.4.2.	BLE (500 kbps)	58
10.4.3.	BLE (1Mbps)	59
10.4.4.	BLE (2 Mbps)	60
10.4.5.	BLE (1Mbps) MIMO	61
10.4.6.	BLE (2Mbps) MIMO	62
10.4.7.	802.11b MODE	63
10.4.8.	802.11g MODE	64
10.4.9.	802.11n HT20 MODE	65
10.4.10.	802.11be EHT20 26T MODE	66
10.4.11.	802.11be EHT20 52T MODE	67
10.4.12.	802.11be EHT20 52T +26T MODE	68
10.4.13.	802.11be EHT20 106T MODE	69
10.4.14.	802.11be EHT20 106T+26T MODE	70
10.4.15.	802.11be EHT20 242T MODE	71
10.4.16.	802.11be EHT20 SU MODE	72
10.5.	AVERAGE POWER	73
10.5.1.	BLE (125 kbps)	74
10.5.2.	BLE (500 kbps)	74
10.5.3.	BLE (1Mbps)	75
10.5.4.	BLE (2Mbps)	76
10.5.5.	BLE (1Mbps) MIMO	77
10.5.6.	BLE (2Mbps) MIMO	77
10.5.7.	802.11b MODE	78
10.5.8.	802.11g MODE	78
10.5.9.	802.11n HT20 MODE	78
10.5.10.	802.11be EHT20 26T MODE	79
10.5.11.	802.11be EHT20 52T MODE	79
10.5.12.	802.11be EHT20 52T +26T MODE	79
10.5.13.	802.11be EHT20 106T MODE	80
10.5.14.	802.11be EHT20 106T+26T MODE	80
10.5.15.	802.11be EHT20 242T MODE	80
10.5.16.	802.11be EHT20 SU MODE	81
10.6.	POWER SPECTRAL DENSITY	82
10.6.1.	BLE (125 kbps)	83
10.6.2.	BLE (500 kbps)	84
10.6.3.	BLE (1Mbps)	85
10.6.4.	BLE (2Mbps)	88

10.6.5.	802.11b MODE	91
10.6.6.	802.11n HT20 MODE	92
10.6.7.	802.11be EHT20 26T MODE	93
10.6.8.	802.11be EHT20 52T MODE	94
10.6.9.	802.11be EHT20 106T MODE	95
10.7.	CONDUCTED SPURIOUS EMISSIONS	96
10.7.1.	BLE (125 kbps)	97
10.7.2.	BLE (500 kbps)	98
10.7.3.	BLE (1Mbps)	99
10.7.4.	BLE (2Mbps)	103
10.7.5.	802.11b MODE	107
10.7.6.	802.11g MODE	109
10.7.7.	802.11n HT20 MODE	111
10.7.9.	802.11be EHT20 26T/0 MODE	113
10.7.10.	802.11be EHT20 26T/4 MODE	114
10.7.11.	802.11be EHT20 26T/8 MODE	115
10.7.12.	802.11be EHT20 52T/37 MODE	116
10.7.13.	802.11be EHT20 52T/38 MODE	117
10.7.14.	802.11be EHT20 52T/40 MODE	118
10.7.15.	802.11be EHT20 52T+26T/70 MODE	119
10.7.16.	802.11be EHT20 52T+26T/71 MODE	120
10.7.17.	802.11be EHT20 52T+26T/72 MODE	121
10.7.18.	802.11be EHT20 106T/53 MODE	122
10.7.19.	802.11be EHT20 106T/54 MODE	124
10.7.20.	802.11be EHT20 106T+26T/82 MODE	125
10.7.21.	802.11be EHT20 106T+26T/83 MODE	127
10.7.22.	802.11be EHT20 242T/61 MODE	128
11.	RADIATED TEST RESULTS	130
11.1.	TRANSMITTER ABOVE 1 GHz	132
11.1.1.	BLE (125 kbps)	132
11.1.2.	BLE (500 kbps)	142
11.1.3.	BLE (1Mbps)	152
11.1.4.	BLE (2Mbps)	182
11.1.5.	TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND	212
11.1.6.	TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND	222
11.1.7.	TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND	232
11.1.8.	TX ABOVE 1 GHz 802.11be EHT20 26T/0 MODE IN THE 2.4 GHz BAND	236
11.1.9.	TX ABOVE 1 GHz 802.11be EHT20 26T/8 MODE IN THE 2.4 GHz BAND	238
11.1.10.	TX ABOVE 1 GHz 802.11be EHT20 52T/37 MODE IN THE 2.4 GHz BAND	240
11.1.11.	TX ABOVE 1 GHz 802.11be EHT20 52T/40 MODE IN THE 2.4 GHz BAND	242
11.1.12.	TX ABOVE 1 GHz 802.11be EHT20 52T+26T/70 MODE IN THE 2.4 GHz BAND 244	
11.1.13.	TX ABOVE 1 GHz 802.11be EHT20 52T+26T/72 MODE IN THE 2.4 GHz BAND 246	
11.1.14.	TX ABOVE 1 GHz 802.11be EHT20 106T/53 MODE IN THE 2.4 GHz BAND ...	248
11.1.15.	TX ABOVE 1 GHz 802.11be EHT20 106T/54 MODE IN THE 2.4 GHz BAND ...	250
11.1.16.	TX ABOVE 1 GHz 802.11be EHT20 106T+26T/82 MODE IN THE 2.4 GHz BAND 252	
11.1.17.	TX ABOVE 1 GHz 802.11be EHT20 106T+26T/83 MODE IN THE 2.4 GHz BAND 254	

11.2.	WORST CASE BELOW 30MHz BLE C0	256
11.3.	WORST CASE BELOW 1 GHz BLE C0	260
11.4.	WORST CASE 18-26 GHz BLE C0	262
11.5.	WORST CASE BELOW 30MHz BLE C1	264
11.6.	WORST CASE BELOW 30MHz BLE C1	266
11.7.	WORST CASE BELOW 1 GHz BLE C1	268
11.8.	WORST CASE 18-26 GHz BLE C1	270
11.9.	WORST CASE BELOW 30MHz BLE MIMO	272
11.10.	WORST CASE BELOW 1 GHz BLE MIMO	276
11.11.	WORST CASE 18-26 GHz BLE MIMO	278
11.12.	WORST CASE BELOW 30MHz WLAN MIMO	280
11.13.	WORST CASE BELOW 1 GHz WLAN MIMO	284
11.14.	WORST CASE 18-26 GHz WLAN MIMO	286
12.	AC POWER LINE CONDUCTED EMISSIONS	288
12.1.1.	AC Power Line BLE C0	289
12.1.2.	AC Power Line BLE C1	291
12.1.3.	AC Power Line BLE MIMO	293
12.1.4.	AC Power Line 2.4 WLAN MIMO	295
13.	SETUP PHOTOS	297

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Samsung Electronics Co Ltd
129, Samsung-ro, Yeongtong-gu, Suwon-si,
Gyeonggi-do, 16677, Rep. of Korea

EUT DESCRIPTION: GSM/WCDMA/LTE/NR/SCS/NTN Phone + BT/BLE, DTS/UNII
a/b/g/n/ac/ax/be, WPT and NFC

MODEL: SM-S942U, SM-S942U1

SERIAL NUMBER: YHK0046M, YHK0177M, YHK0082M, YHK0065M,
YHK0076M, YHK0074M, YHK0129M, YHK0161M, YHK0165M

SAMPLE RECEIPT DATE: 2025-09-09, 2025-09-11, 2025-09-19, 2025-09-22, 2025-10-01,
2025-10-07

DATE TESTED: 2025-09-19 to 2025-10-10

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Refer to Section 2
ISED RSS-247 Issue 4	Refer to Section 2
ISED RSS-GEN Issue 5 + A1 + A2	Refer to Section 2

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document.

Approved & Released For
UL LLC By:

Prepared By:



Jeff Moser
Operations Manager
Consumer Technology Division
UL LLC



Manish Baral
Engineer
Consumer Technology Division
UL LLC

2. TEST RESULTS SUMMARY

This report contains data provided by the customer which can impact the validity of results. UL LLC is only responsible for correctly integrating customer-provided data with measurements performed by UL LLC.

Below is a list of the data provided by the customer:

1. Antenna gain and type (section 6.3)
2. Supported Data-Rates and Power Settings. Orientation of Operation (Section 6.5)
3. Software, Firmware and Hardware Versions of EUT (section 6.4)

FCC Clause	ISED Clause	Requirement	Result	Comment
See Comment		Duty Cycle	Reporting purposes only	ANSI C63.10 Section 11.6.
-	RSS-GEN 6.7	99% OBW	Reporting purposes only	ANSI C63.10 Section 6.9.3.
15.247 (a) (2)	RSS-247 6.3.1 (a)	6dB BW	Compliant	None.
15.247 (b) (3)	RSS-247 6.3.2	Output Power		None.
See Comment		Average power	Reporting purposes only	Per ANSI C63.10, Section 11.9.2.3.2.
15.247 (e)	RSS-247 6.3.1 (b)	PSD	Compliant	None.
15.247 (d)	RSS-247 6.6	Conducted Spurious Emissions		None.
15.209, 15.205	RSS-GEN 8.9, 8.10	Radiated Emissions		None.
15.207	RSS-Gen 8.8	AC Mains Conducted Emissions	See Comment	None.

4. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2020+A1:2023+Corr:2024, KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, RSS-GEN Issue 5 + A1 + A2, and RSS-247 Issue 4.

5. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, Certificate Number 0751.06, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☒	Building 2800 Suite Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A	US0067	27265	825374

6. DECISION RULES AND MEASUREMENT UNCERTAINTY

6.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

6.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

6.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	ULab
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.22%
Power Spectral Density	2.47 dB
RF Power Measurement Direct Method Using Power Meter	1.3 dB (PK) / 0.45 dB (AV)
Unwanted Emissions, Conducted	1.94 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, All Ranges	6.01 dB
Time Domain Measurements	3.39%
Temperature	0.57°C
Humidity	3.39%
DC Supply Voltages	0.57%

Uncertainty figures are valid to a confidence level of 95%.

6.4. SAMPLE CALCULATION

RADIATED EMISSIONS

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)
 $36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.
 $36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$

7. EQUIPMENT UNDER TEST

7.1. EUT DESCRIPTION

The EUT is a GSM/WCDMA/LTE/NR/SCS/NTN Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax/be, WPT and NFC. This reports BLE 2Tx and 2.4 GHz 802.11 b/g/n/ac/ax/be 2Tx 20 MHz.

7.2. MAXIMUM OUTPUT POWER

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

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
1Tx			
2402 - 2480	BLE C0 125 kbps	9.88	9.73
2402 - 2480	BLE C0 500 kbps	9.9	9.77
2402 - 2480	BLE C0 1 Mbps	15.65	36.73
2402 - 2480	BLE C1 1 Mbps	15.79	37.93
2402 - 2480	BLE C0 2 Mbps	15.72	37.33
2402 - 2480	BLE C1 2 Mbps	15.75	37.58
2Tx			
2402 - 2480	BLE 1 Mbps	14.3	26.92
2402 - 2480	BLE 2 Mbps	14.62	28.97
2412 - 2462	802.11b	26.24	420.73
2412 - 2462	802.11g	28.05	638.26
2412 - 2462	802.11n HT20	28.27	671.43
2412 - 2462	802.11be EHT20 26T	24.33	271.02
2412 - 2462	802.11be EHT20 52T	26.83	481.95
2412 - 2462	802.11be EHT20 52T +26T	24.24	265.46
2412 - 2462	802.11be EHT20 106T	26.09	406.44
2412 - 2462	802.11be EHT20 106T+26T	27.45	555.90
2412 - 2462	802.11be EHT20 242T	26.17	414.00
2412 - 2462	802.11be EHT20 SU	26.35	431.52

7.3. DESCRIPTION OF AVAILABLE ANTENNAS

The antenna(s) gain and type, as provided by the manufacturer' are as follows:

For Chain 0 the radio utilizes an inverted F antenna, with a maximum gain of -2.88 dBi

For Chain 1 the radio utilizes a slot antenna, with a maximum gain of -3.9 dBi

Band (GHz)	Antenna 1 Antenna Gain (dBi)	Antenna 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)	Correlated Chains Directional Gain (dBi)
2.4	-2.88	-3.90	-3.36	-0.36

7.4. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz, above 18GHz, and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

Band edge and radiated emissions between 1GHz and 18GHz were performed with the EUT set to transmit at the highest power on low, middle and high channels. Radiated Spurious emissions were tested for modes with worst-case power and PSD.

For SISO Chain 0 (Antenna 1), the fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, it was determined that the X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X orientation.

For SISO Chain 1 (Antenna 2), the fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, it was determined that Z orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Z orientation.

For MIMO, the fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, it was determined that Z orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Z orientation.

Through pretesting, Full Tone was considered worst-case versus Single User (SU) mode. Therefore, all SU modes were represented by Full Tone.

PSD was performed on the narrowest bandwidths and worst-case power.

BLE was tested in both SISO and MIMO modes. For WLAN, MIMO power levels are the same as SISO. Therefore, all testing was performed in MIMO to represent worst-case emissions and data.

Worst-case data rates were as follows:

BLE – 0.125/0.5/1/2 Mbps

802.11b – 1 Mbps

802.11g - 6 Mbps

802.11n20 – MCS0

802.11be20 – MCS0, Nss = 1

This report covers 2 models, the model differences and the representative model is shown below:

Representative Model	Difference	Derivative Model
		SM-S942U1
SM-S942U	Hardware	Same as SM-S942U
	Software	Different UI

7.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Power Adapter	Flextronics	G-1000-US	Na	na

I/O CABLES

I/O Cable List						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB-C	1	USB-C	Shielded	<3m	Phone to power adapter

TEST SETUP

The EUT is configured using its own built-in software

SETUP DIAGRAM

Refer to R15980274-EP1 for setup diagrams

8. MEASUREMENT METHOD

On-Time and Duty Cycle: ANSI C63.10 Section 11.6.

Occupied BW (99%): ANSI C63.10 Section 6.9.3

6 dB BW: ANSI C63.10 Subclause -11.8.1 RBW $\geq$ DTS BW

Output Power: ANSI C63.10 Subclause -11.9.1.3 Method PKPM1 Peak-reading power meter
Output Power: ANSI C63.10 Subclause -11.9.2.3.2 Method AVGPM-G (Measurement using a gated RF average-reading power meter)

PSD: ANSI C63.10 Subclause -11.10.2 Method PKPSD (peak PSD)

Conducted emissions non-restricted frequency bands: ANSI C63.10 Subclause -11.11 and 6.10.4

Radiated emissions restricted & unrestricted frequency bands: ANSI C63.10 Subclause -11.12.1 and 6.10.5, 6.3 to 6.6.

9. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 1)

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
0.009-30MHz					
135144	Active Loop Antenna	ETS-Lindgren	6502	2024-10-02	2025-10-31
	30-1000 MHz				
90629	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2024-01-30	2026-01-30
	1-18 GHz				
135143	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2024-02-07	2026-02-07
	18-40 GHz				
91186	Horn Antenna, 18-26.5GHz	ARA	MWH-1826/B	2024-05-16	2026-05-16
	Gain-Loss Chains				
91974	Gain-loss string: 0.009-30MHz	Various	Various	2025-05-31	2026-05-31
91976	Gain-loss string: 25-1000MHz	Various	Various	2025-05-31	2026-05-31
91979	Gain-loss string: 1-18GHz	Various	Various	2025-05-31	2026-05-31
135999	Gain-loss string: 18-40GHz	Various	Various	2025-05-31	2026-05-31
	Receiver & Software				
197955	Spectrum Analyzer	Rohde & Schwarz	ESW44	2025-05-12	2026-05-12
90416	Spectrum Analyzer	Keysight	N9030A	2025-07-31	2026-07-31
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	Additional Equipment used				
241205	Environmental Meter	Fisher Scientific	15-077-963	2025-08-05	2027-08-05

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 2) 05

Equip. ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
	1-18 GHz				
88761	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2023-10-05	2025-10-05
	Gain-Loss Chains				
91977	Gain-loss string: 1-18GHz	Various	Various	2025-05-31	2026-05-31
	Receiver & Software				
206496	Spectrum Analyzer	Rohde & Schwarz	ESW44	2025-07-29	2026-07-29
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	Additional Equipment used				
239540	Environmental Meter	Fisher Scientific	15-077-963	2025-08-05	2027-08-05
213025	Wideband Radio Communications Tester	Rohde and Schwarz	CMW500	2025-01-14	2026-01-14

Test Equipment Used - Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	Conducted Room 2				
90410	Spectrum Analyzer MY54410168	Keysight Technologies	N9030A	2025-07-10	2026-07-10
211055	Real-Time Peak Power Sensor 50MHz to 8GHz 12002	Boonton	RTP5000	2025-07-30	2026-07-30
211056	Real-Time Peak Power Sensor 50MHz to 8GHz 12001	Boonton	RTP5000	2025-07-30	2026-07-30
248881	Environmental Meter 240303668	Control Company	06-662-4	2024-04-10	2026-04-10
SOFTEMI	Antenna Port Software	UL	Version 2024.2.23	-	-
Power Software	Boonton Power Analyzer	Boonton	Version 3.0.13.0	-	-
	Additional Equipment used				
BT0001	CBT Tester	Rohde & Schwarz	1153.9000.35	NA	NA
259603	Conducted Switch Box	UL	CSB	2025-03-12	2026-03-12
226561	SMA Coaxial 10dB Attenuator 25MHz-18GHz	CentricRF	C18S2-10	2025-04-01	2026-04-01
259679	SMA Coaxial 10dB Attenuator 25MHz-18GHz	CentricRF	C27S-10	2025-06-25	2026-06-25

Test Equipment Used - Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
Conducted Room 1					
90416	Spectrum Analyzer MY54490254	Keysight Technologies	N9030A	2025-07-31	2026-07-31
179892	Environmental Meter 161024885	Fisher Scientific	15-077-963	2025-08-05	2026-08-05
SOFTEMI	Antenna Port Software	UL	Version 2024.2.23	-	-
Conducted Room 2					
211055	Real-Time Peak Power Sensor 50MHz to 8GHz 12002	Boonton	RTP5000	2025-07-30	2026-07-30
211056	Real-Time Peak Power Sensor 50MHz to 8GHz 12001	Boonton	RTP5000	2025-07-30	2026-07-30
248881	Environmental Meter 240303668	Control Company	06-662-4	2024-04-10	2026-04-10
Power Software	Boonton Power Analyzer	Boonton	Version 3.0.13.0	-	-
Additional Equipment used					
245262	Conducted Switch Box	UL	CSB	2025-03-14	2026-03-14
259680	SMA Coaxial 10dB Attenuator 25MHz-18GHz	CentricRF	C27S-10	2025-08-11	2026-08-11
259681	SMA Coaxial 10dB Attenuator 25MHz-18GHz	CentricRF	C27S-10	2025-08-11	2026-08-11

Test Equipment Used - Line-Conducted Emissions – Voltage (Morrisville – Conducted 1)

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
CBL087	Coax cable, RG223, N-male to BNC-male, 20-ft.	Pasternack	PE3W06143-240	2025-04-17	2026-04-17
179892	Environmental Meter	Fisher Scientific	15-077-963	2025-08-05	2026-08-06
80391	LISN, 50-ohm/50-uH, 250uH 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50/250-25-2-01	2025-09-29	2026-09-29
75141	EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESCI 7	2025-7-30	2026-07-30
52859	Transient Limiter, 0.009-100MHz	Electro-Metrics	EM-7600	2025-7-30	2026-07-30
PS216	AC Power Source	Elgar	CW2501M	NA	NA
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		

10. ANTENNA PORT TEST RESULTS

10.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

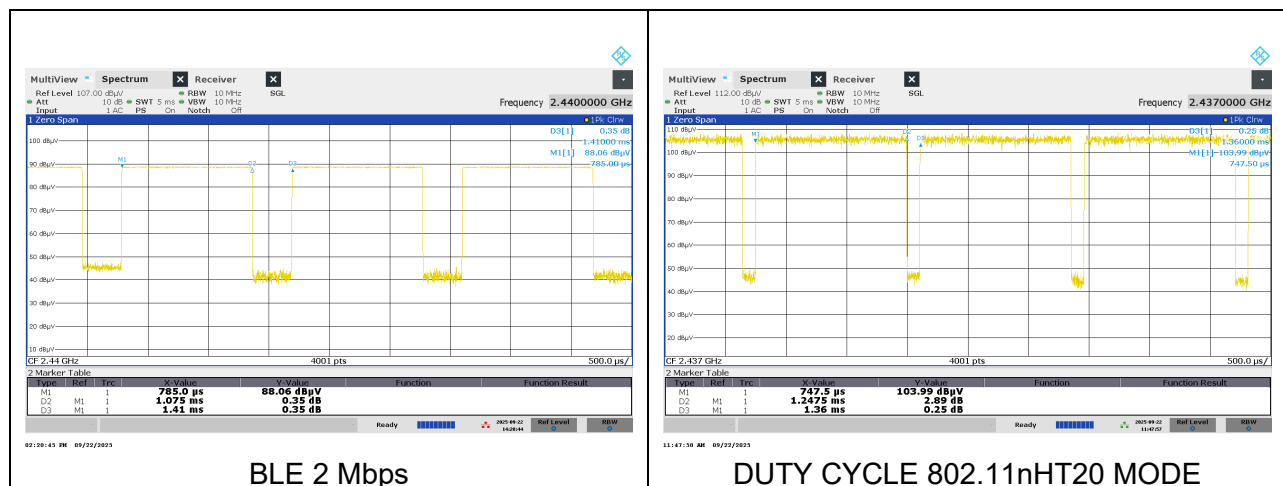
PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Voltage (dB)	Duty Cycle Correction RMS (dB)	1/B Minimum VBW (kHz)
BLE 125 kbps	17.050	18.060	0.944	94.41	0.50	0.25	0.059
BLE 500 kbps	4.545	5.310	0.856	85.59	1.35	0.68	0.220
BLE 1 Mbps	2.130	2.505	0.850	85.03	1.41	0.70	0.469
BLE 2 Mbps	1.075	1.410	0.762	76.24	2.36	1.18	0.930
802.11b	8.813	8.925	0.987	98.74	0.00	0.00	0.010
802.11g	1.464	1.573	0.931	93.08	0.62	0.31	0.683
802.11nHT20	1.248	1.360	0.917	91.73	0.75	0.37	0.802
802.11beEHT20 26T	2.625	2.653	0.990	98.96	0.00	0.00	0.010
802.11beEHT20 52T	2.623	2.650	0.990	98.96	0.00	0.00	0.010
802.11beEHT20 106T	1.468	1.493	0.983	98.32	0.00	0.00	0.010
802.11beEHT20 242T	0.708	0.733	0.966	96.59	0.30	0.15	1.413

DUTY CYCLE PLOTS



10.2. 99% BANDWIDTH

LIMITS

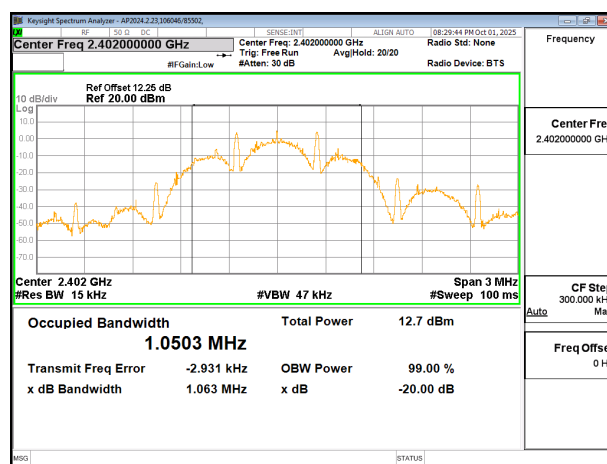
None; for reporting purposes only.

RESULTS

10.2.1. BLE (125 kbps)

Antenna 1

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0503
Middle	2440	1.0559
High	2480	1.0468

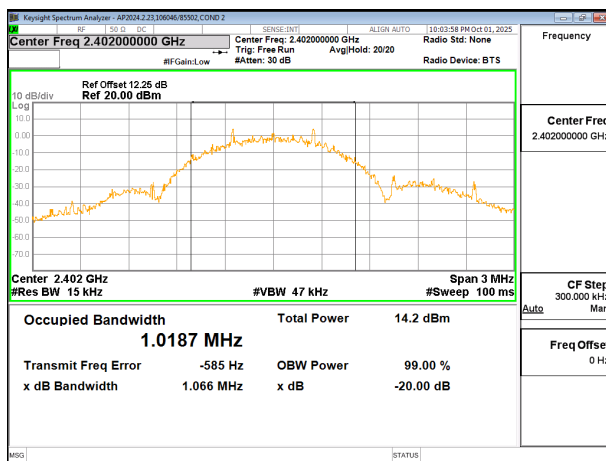


LOW CHANNEL

10.2.2. BLE (500 kbps)

Antenna 1

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0187
Middle	2440	1.0332
High	2480	1.0201

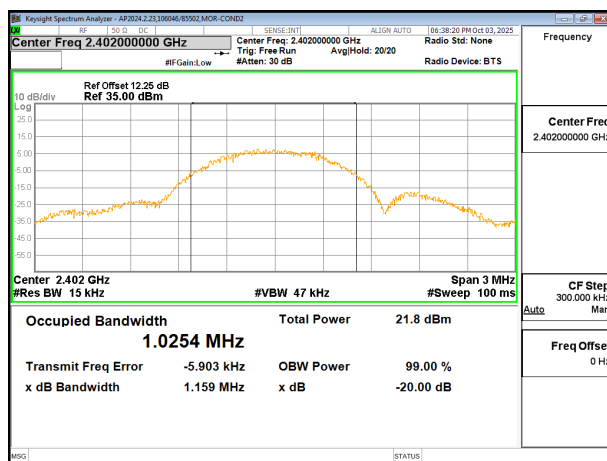


LOW CHANNEL

10.2.3. BLE (1Mbps)

Antenna 1

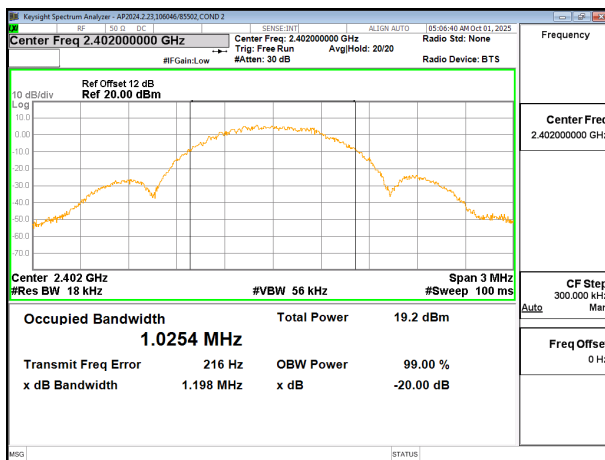
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0254
Middle	2440	1.0206
High	2480	1.0175



LOW CHANNEL

Antenna 2

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0254
Middle	2440	1.0234
High	2480	1.0149

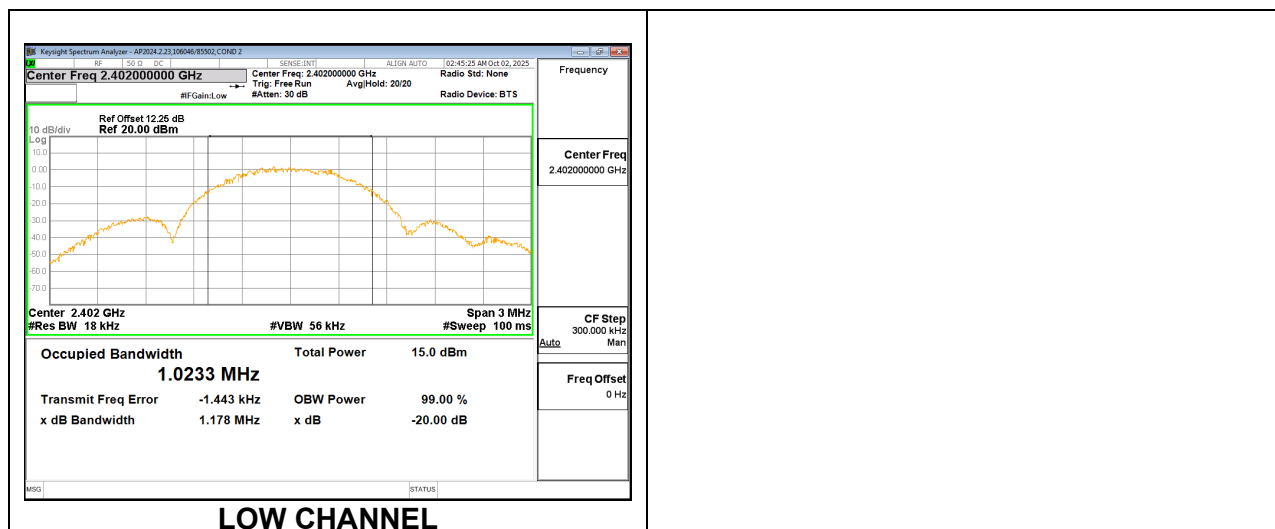


LOW CHANNEL

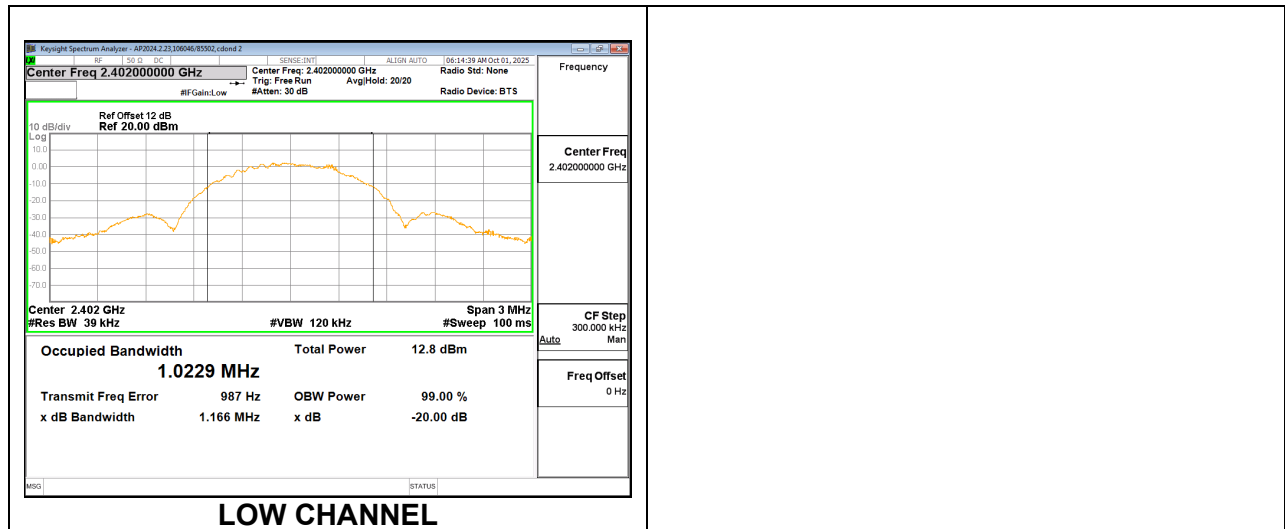
MIMO

C0

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0233
Middle	2440	1.0244
High	2480	1.0293



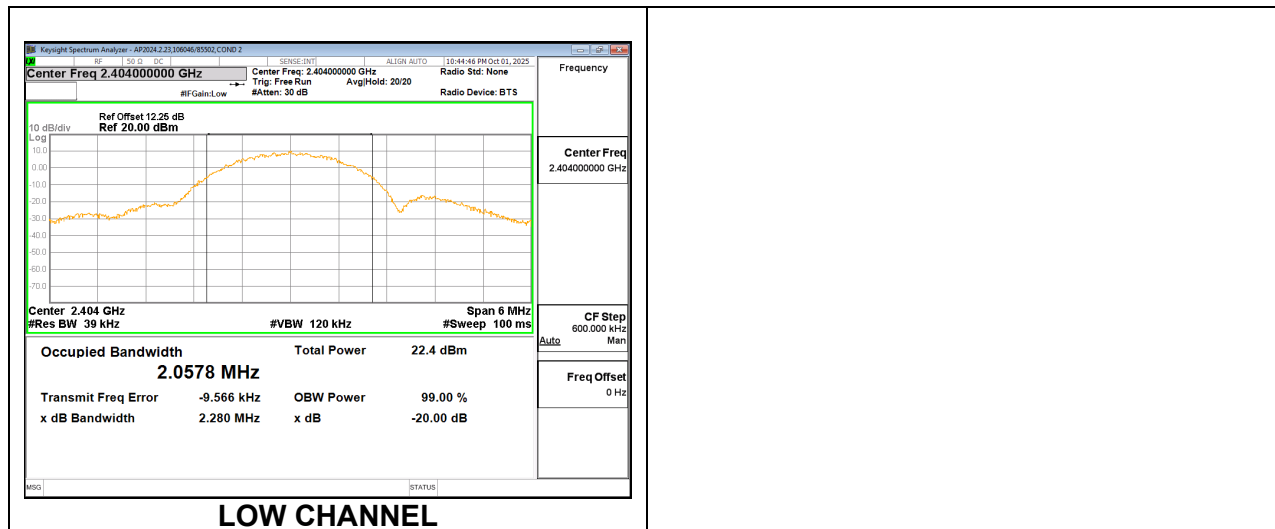
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0229
Middle	2440	1.0283
High	2480	1.0259



10.2.4. BLE (2Mbps)

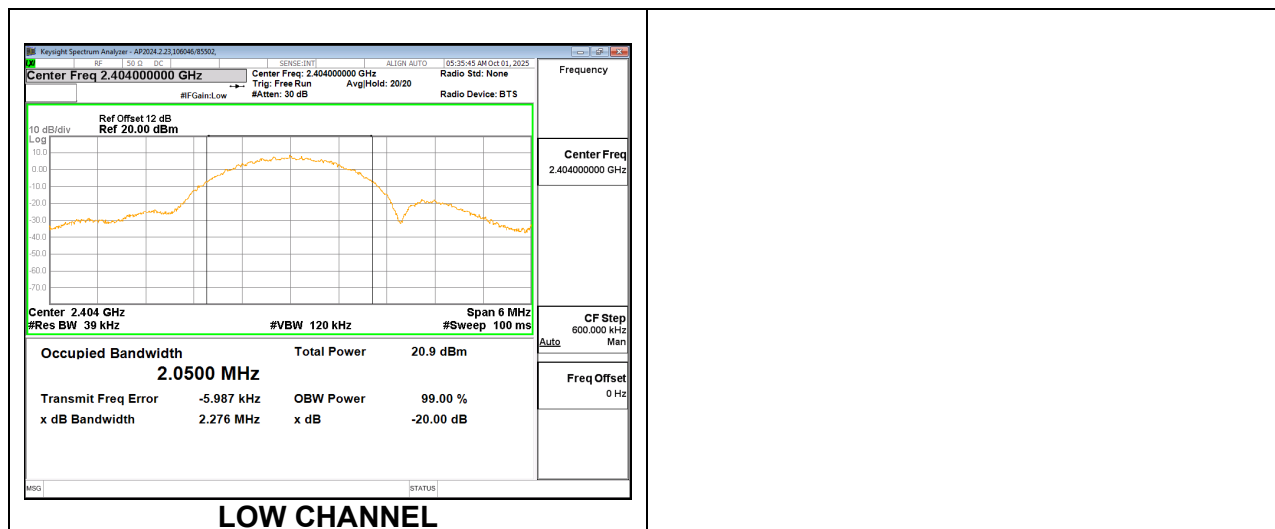
Antenna 1

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2404	2.0578
Middle	2440	2.0439
High	2478	2.0367



Antenna 2

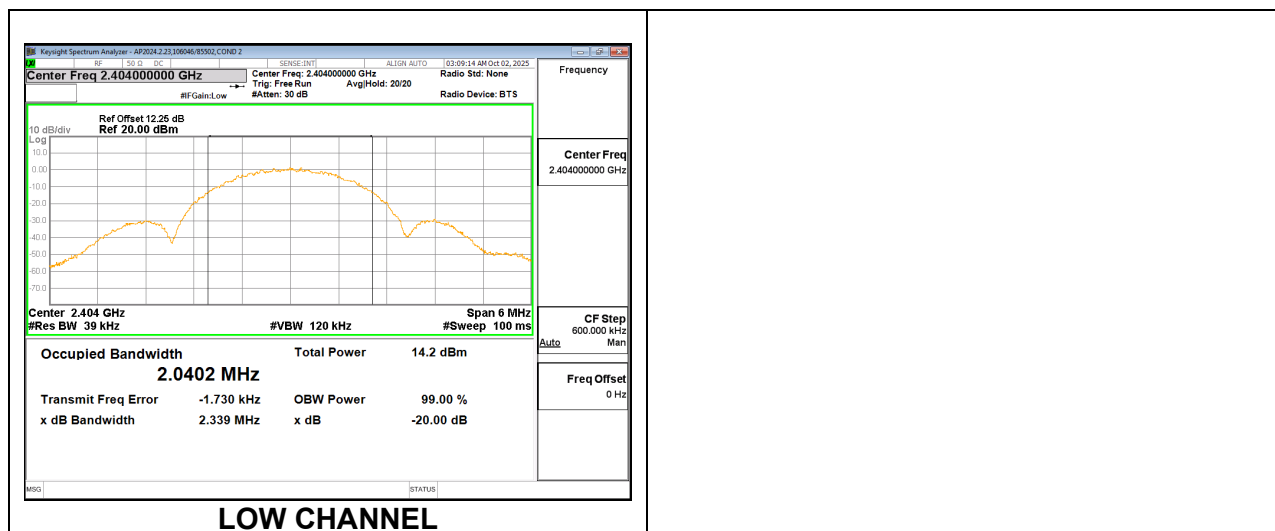
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2404	2.0500
Middle	2440	2.0379
High	2478	2.0378



MIMO

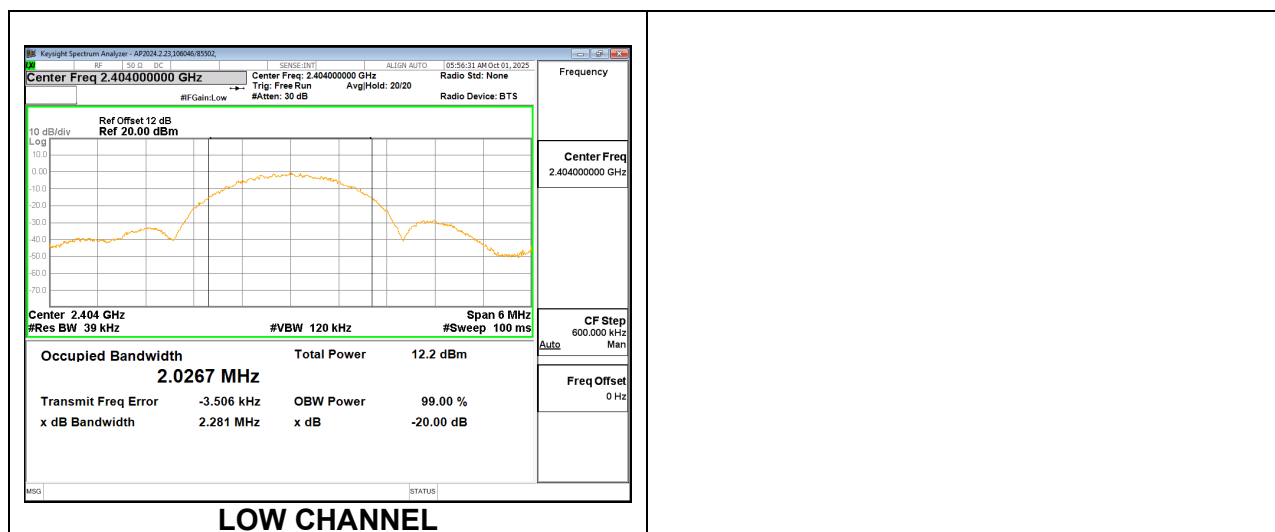
C0

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2404	2.0402
Middle	2440	2.0441
High	2478	2.0483



C1

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2404	2.0267
Middle	2440	2.0388
High	2478	2.0486

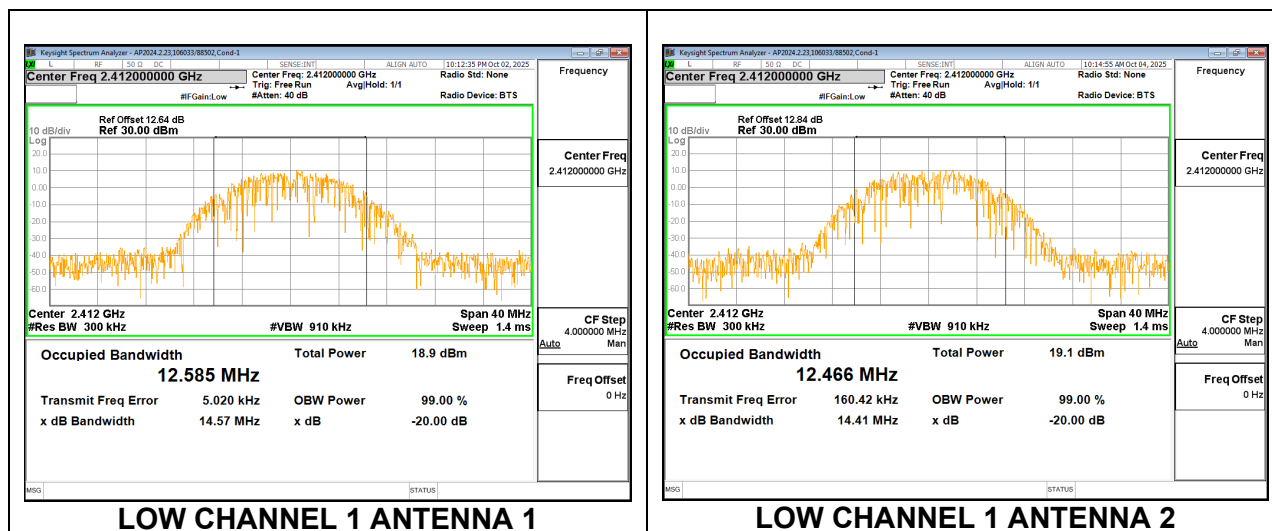


10.2.5. 802.11b MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth (MHz) ANT 1	99% Bandwidth (MHz) ANT 2
Low	2412	12.585	12.466
Mid	2437	12.732	13.129
High 11	2462	13.079	12.900

LOW CHANNEL 1

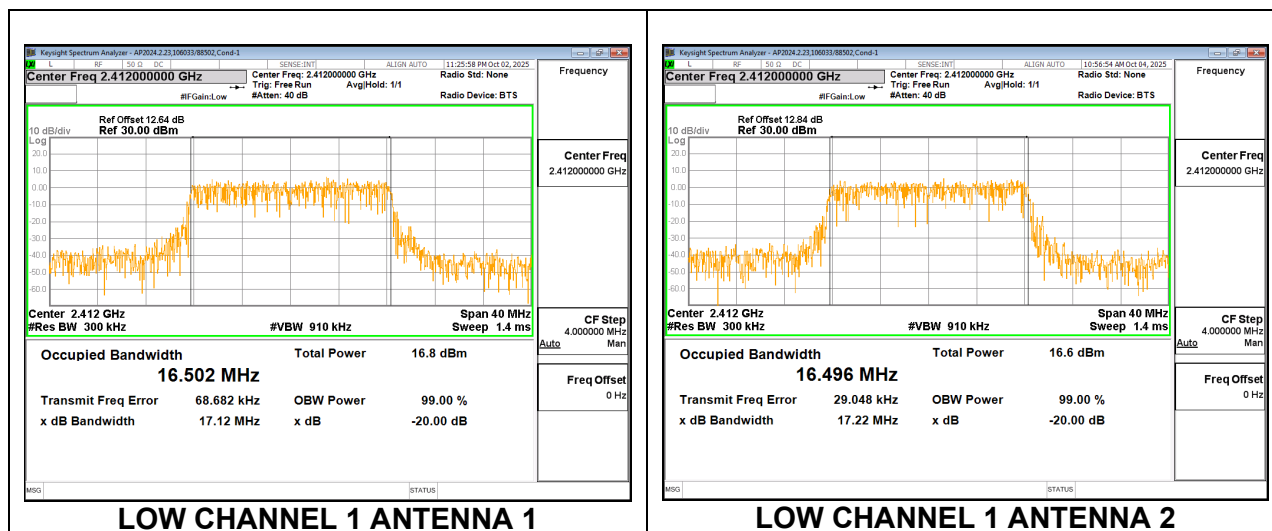


10.2.6. 802.11g MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth (MHz) ANT 1	99% Bandwidth (MHz) ANT 2
Low	2412	16.502	16.496
Mid	2437	16.473	16.532
High 11	2462	16.449	16.526

LOW CHANNEL 1

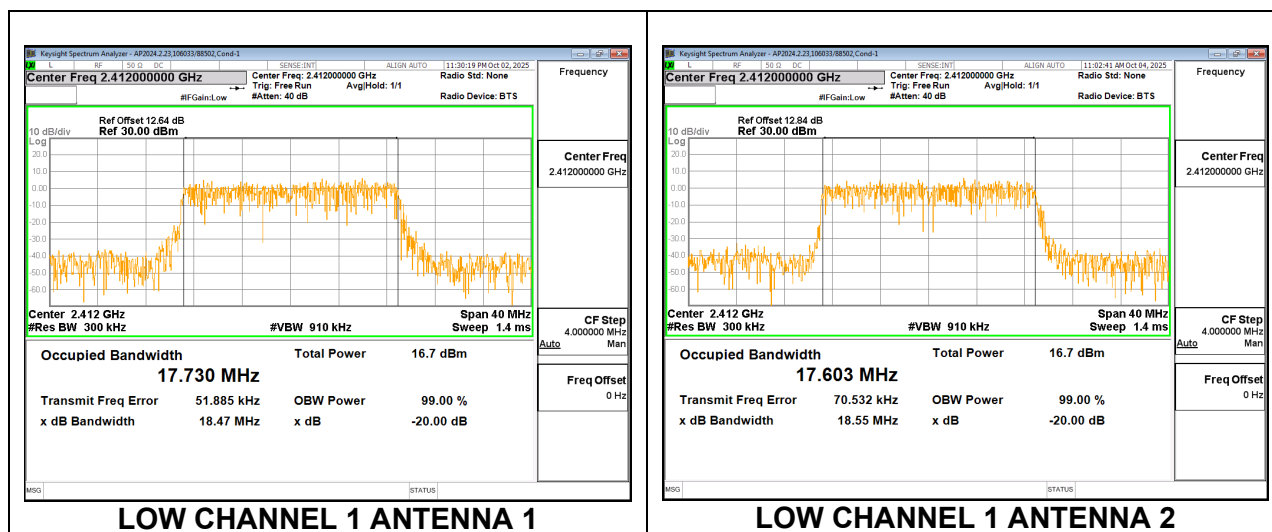


10.2.7. 802.11n HT20 MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth (MHz) ANT 1	99% Bandwidth (MHz) ANT 2
Low	2412	17.730	17.603
Mid	2437	17.601	17.678
High 11	2462	17.647	17.707

LOW CHANNEL 1



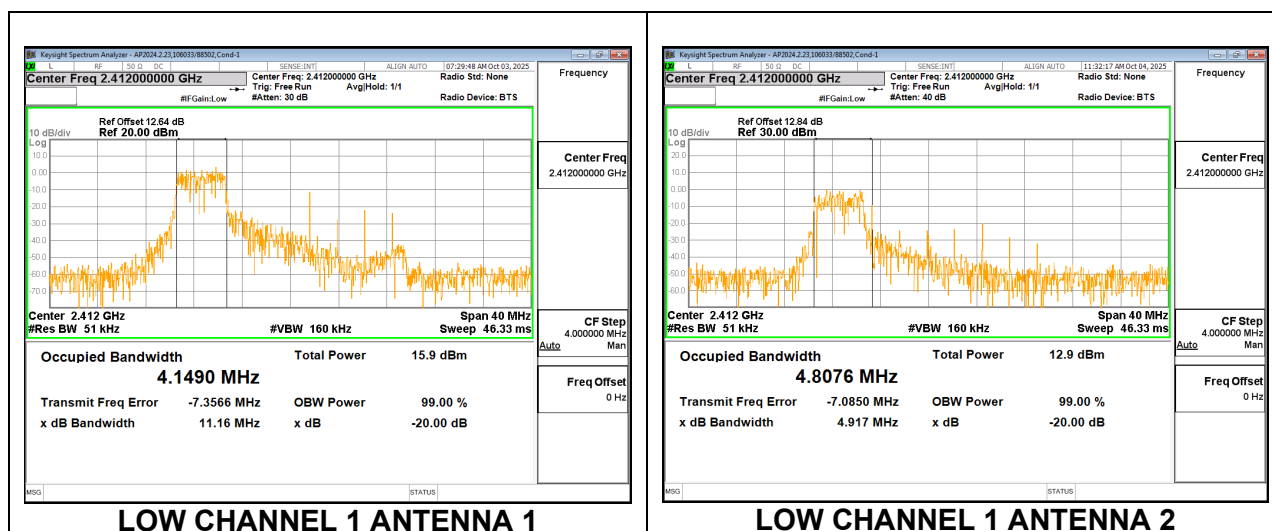
10.2.9. 802.11be EHT20 52T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth (MHz) ANT 1	99% Bandwidth (MHz) ANT 2
Low	2412	4.1490	4.8076
Mid	2437	4.2528	4.6702
High	2462	4.4315	4.8627

Low – 52T/37
Mid – 52T/38
High – 52T/40

LOW CHANNEL 1



10.2.10. 802.11be EHT20 52T+26T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

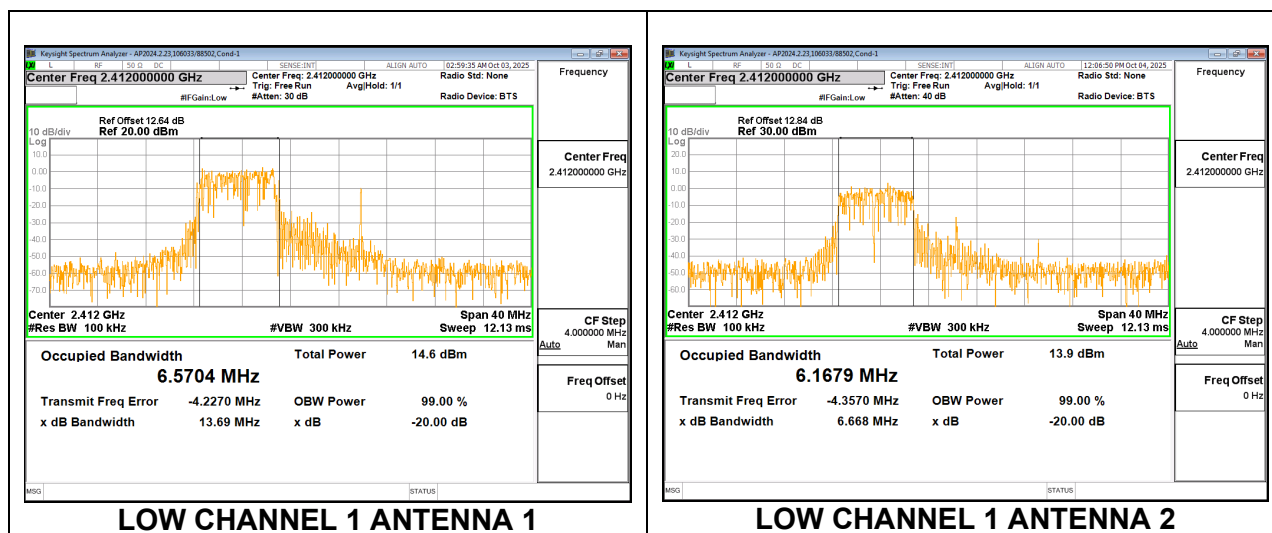
Channel	Frequency (MHz)	99% Bandwidth (MHz) ANT 1	99% Bandwidth (MHz) ANT 2
Low	2412	6.5704	6.1679
Mid	2437	6.7019	6.7992
High 11	2462	6.6385	6.2135

Low – 52T+26T/37

Mid - 52T+26T/38

High - 52T+26T/40

LOW CHANNEL 1



10.2.11. 802.11be EHT20 106T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

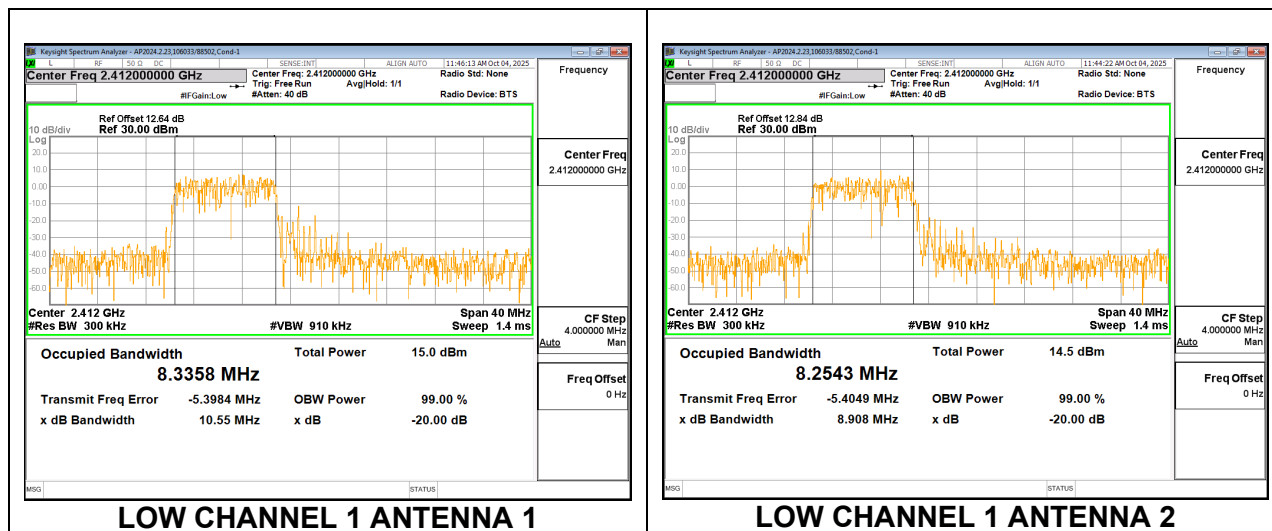
Channel	Frequency (MHz)	99% Bandwidth (MHz) ANT 1	99% Bandwidth (MHz) ANT 2
Low	2412	8.3358	8.2543
Mid	2437	8.2958	8.2418
High	2462	8.2657	8.3275

Low – 106T/53

Mid – 106T/53

High - 106T/54

LOW CHANNEL 1



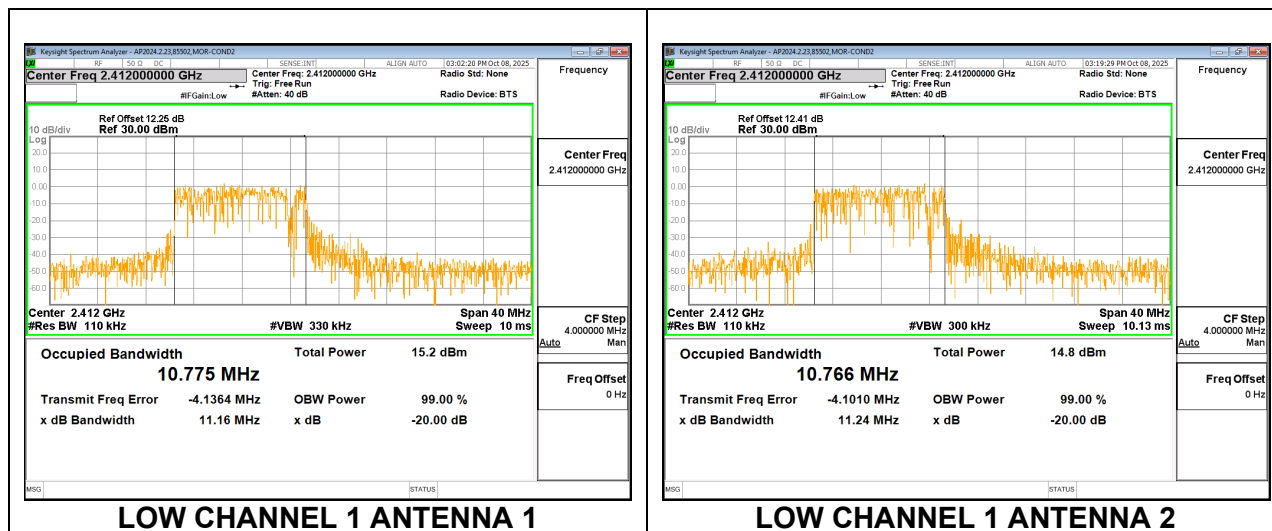
10.2.12. 802.11be EHT20 106T+26T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth (MHz) ANT 1	99% Bandwidth (MHz) ANT 2
Low	2412	10.775	10.766
Mid	2437	10.722	10.807
High	2462	10.765	10.717

Low – 106T+26T/53
Mid – 106T+26T/53
High – 106T+26T/54

LOW CHANNEL 1



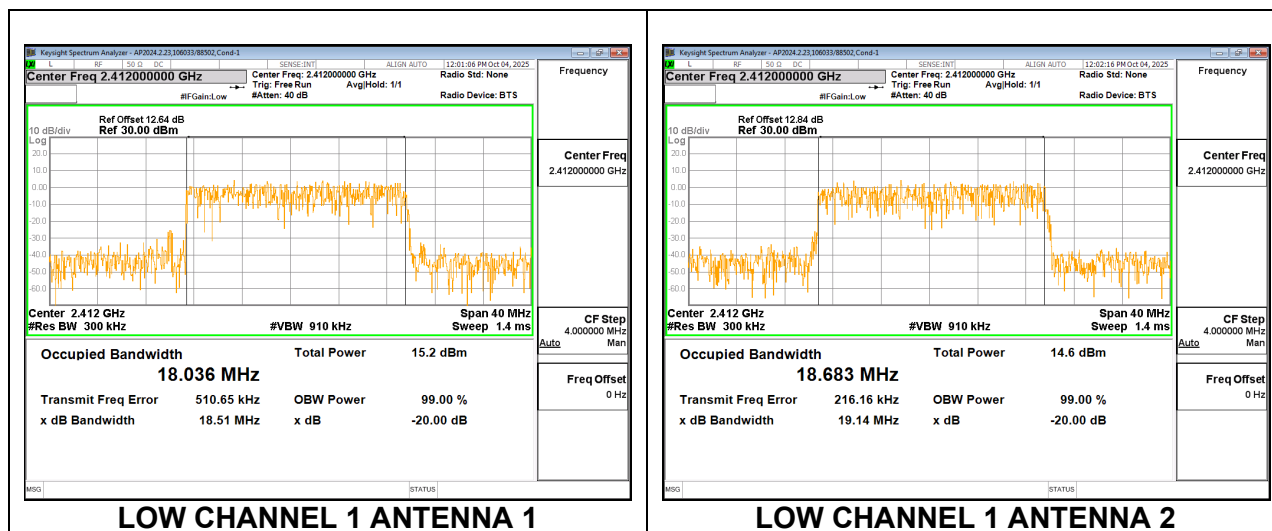
10.2.13. 802.11be EHT20 242T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth (MHz) ANT 1	99% Bandwidth (MHz) ANT 2
Low	2412	18.036	18.683
Mid	2437	17.702	18.322
High	2462	17.703	18.269

Low/Mid/High – 242T/61

LOW CHANNEL 1



10.3. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

RSS-247 5.2 (a)

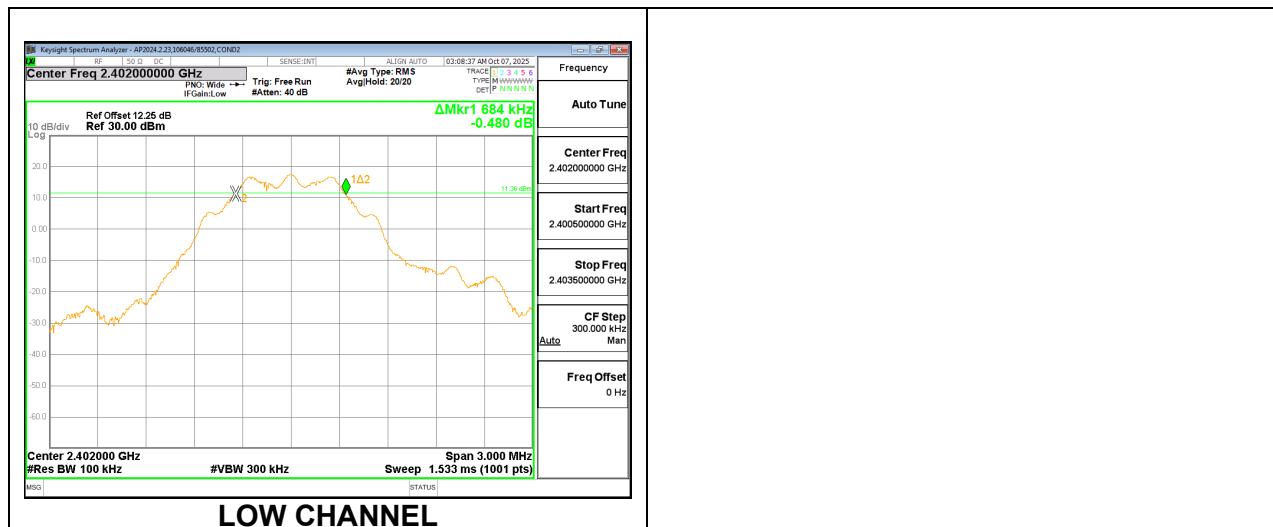
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

10.3.1. BLE (125 kbps)

Antenna 1

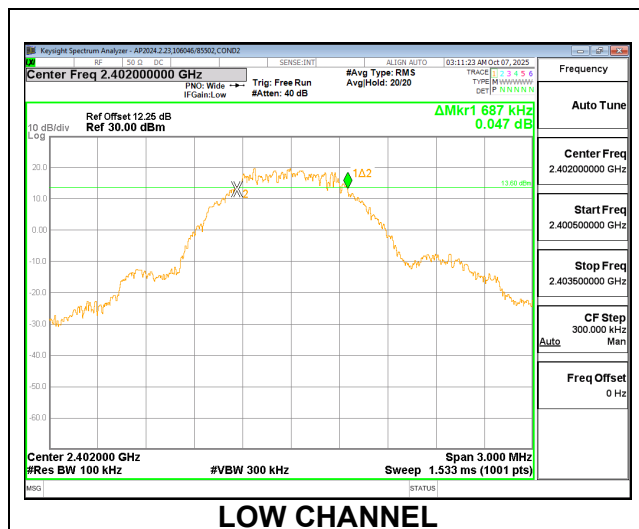
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.6840	0.5
Middle	2440	0.6930	0.5
High	2480	0.6810	0.5



10.3.2. BLE (500 kbps)

Antenna 1

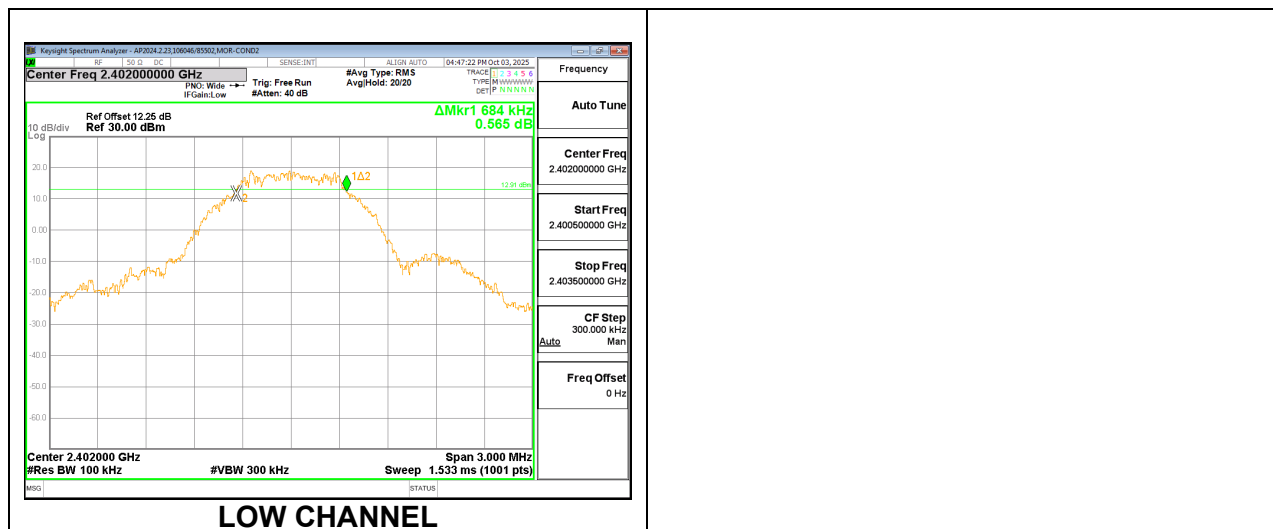
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.6870	0.5
Middle	2440	0.7260	0.5
High	2480	0.6240	0.5



10.3.3. BLE (1Mbps)

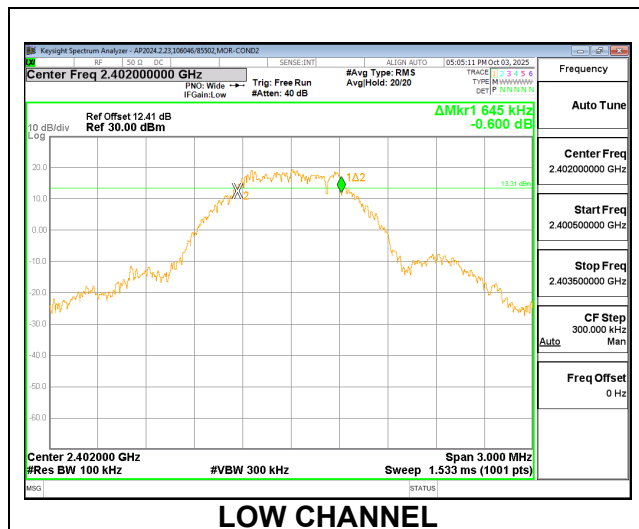
Antenna 1

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.6840	0.5
Middle	2440	0.6810	0.5
High	2480	0.6510	0.5



Antenna 2

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.6450	0.5
Middle	2440	0.6540	0.5
High	2480	0.7230	0.5



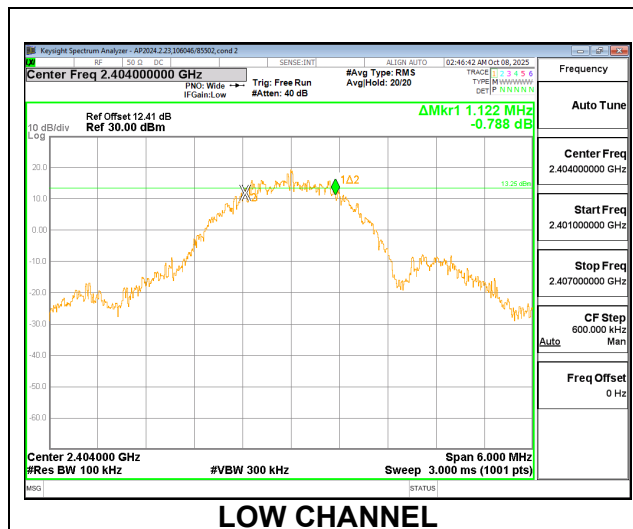
Channel	Frequency (MHz)	6 dB Bandwidth (MHz) Chain 0	6 dB Bandwidth (MHz) Chain 1	Minimum Limit (MHz)
Low	2402	0.6180	0.714	0.5
Middle	2440	0.6360	0.687	0.5
High	2480	0.6570	0.699	0.5

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2404	1.1100	0.5
Middle	2440	1.0560	0.5
High	2478	1.2720	0.5



Antenna 2

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2404	1.1220	0.5
Middle	2440	1.2000	0.5
High	2478	1.2000	0.5



MIMO

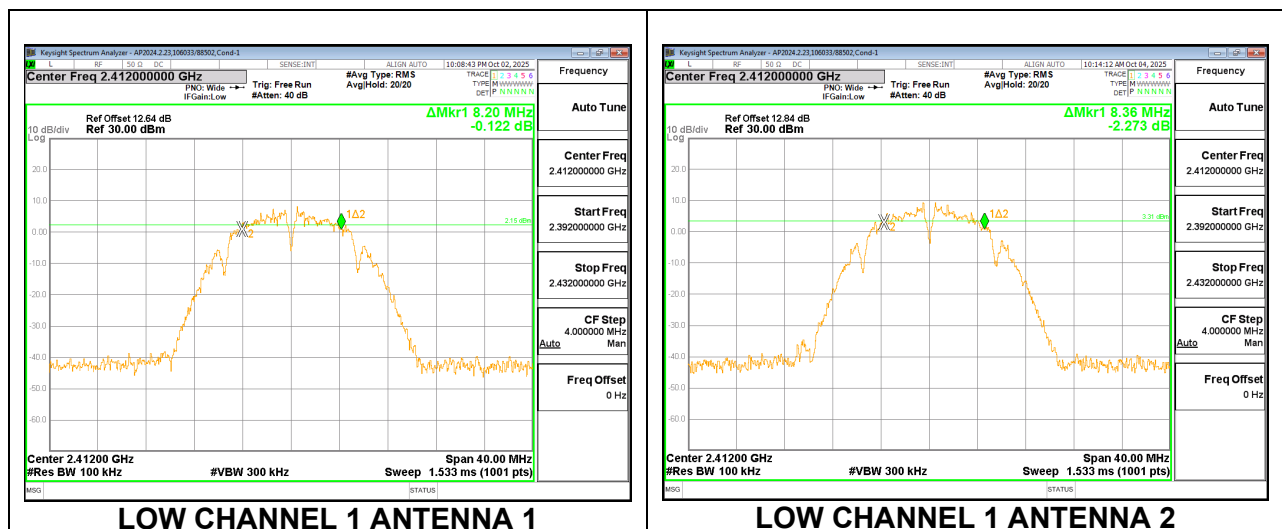
Channel	Frequency (MHz)	6 dB Bandwidth (MHz) Chain 0	6 dB Bandwidth (MHz) Chain 1	Minimum Limit (MHz)
Low	2404	1.1040	1.152	0.5
Middle	2440	1.1940	1.032	0.5
High	2478	1.2180	1.164	0.5

10.3.5. 802.11b MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	6dB BW(MHz) ANT 1	6dB BW (MHz) ANT 2	Minimum Limit (MHz)
Low	2412	8.20	8.36	0.5
Mid	2437	8.72	8.68	0.5
High 11	2462	9.16	8.64	0.5

LOW CHANNEL 1

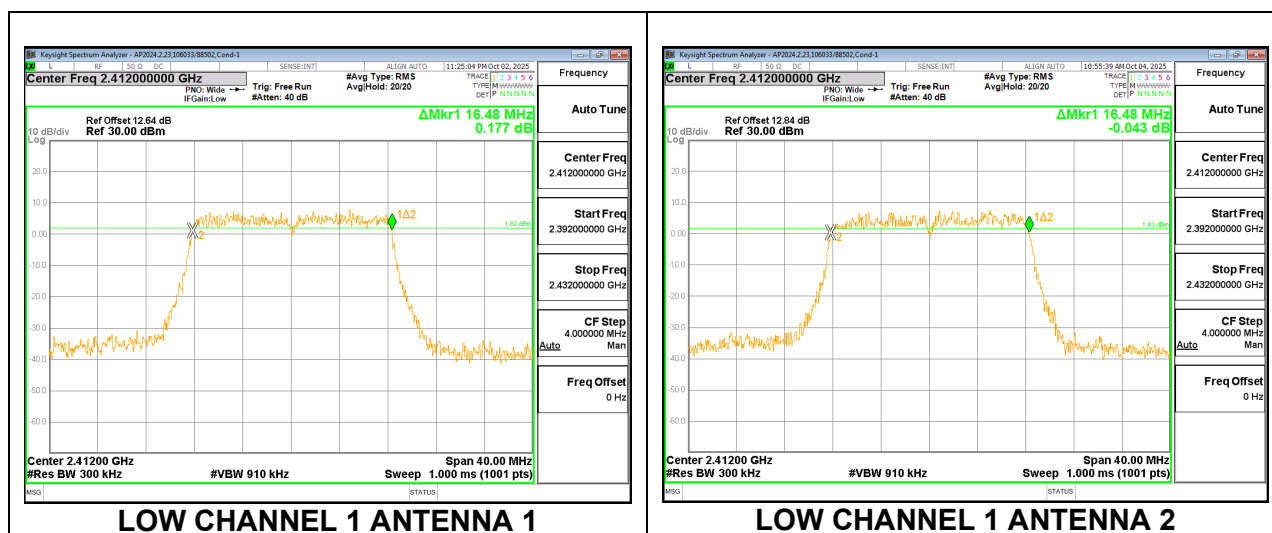


10.3.6. 802.11g MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	6dB BW(MHz) ANT 1	6dB BW (MHz) ANT 2	Minimum Limit (MHz)
Low	2412	16.48	16.48	0.5
Mid	2437	16.52	16.48	0.5
High 11	2462	16.48	16.44	0.5

LOW CHANNEL 1

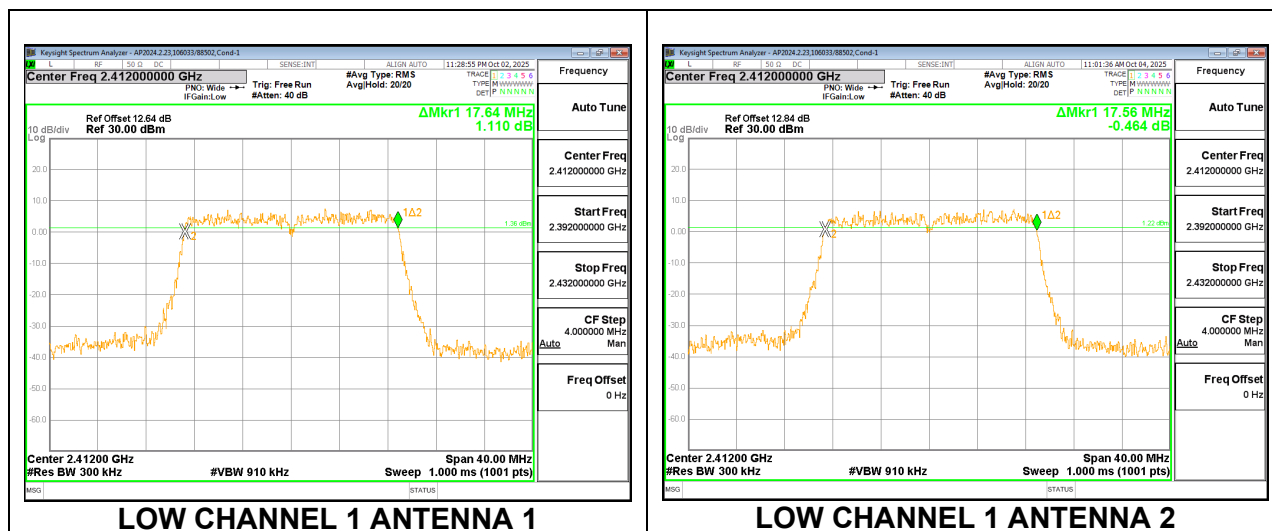


10.3.7. 802.11n HT20 MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	6dB BW(MHz) ANT 1	6dB BW (MHz) ANT 2	Minimum Limit (MHz)
Low	2412	17.64	17.56	0.5
Mid	2437	17.76	17.80	0.5
High 11	2462	17.68	17.68	0.5

LOW CHANNEL 1



10.3.8. 802.11be EHT20 26T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

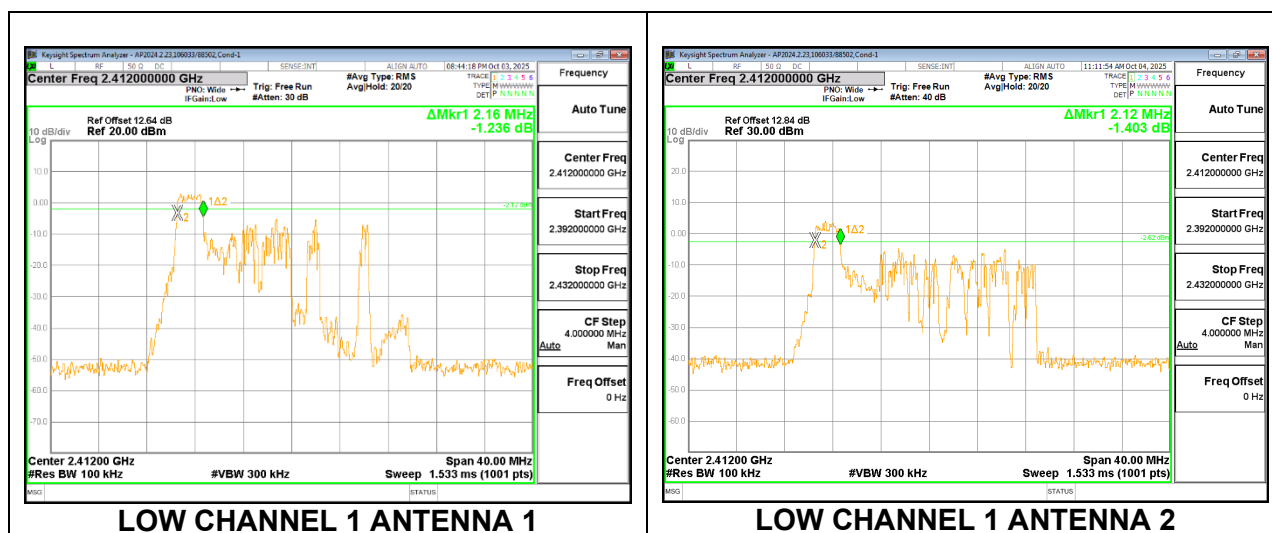
Channel	Frequency (MHz)	6dB BW(MHz) ANT 1	6dB BW (MHz) ANT 2	Minimum Limit (MHz)
Low	2412	2.16	2.12	0.5
Mid	2437	2.72	2.64	0.5
High	2462	2.08	2.16	0.5

Low – 26T/0

Mid – 26T/4

High – 26T/8

LOW CHANNEL 1



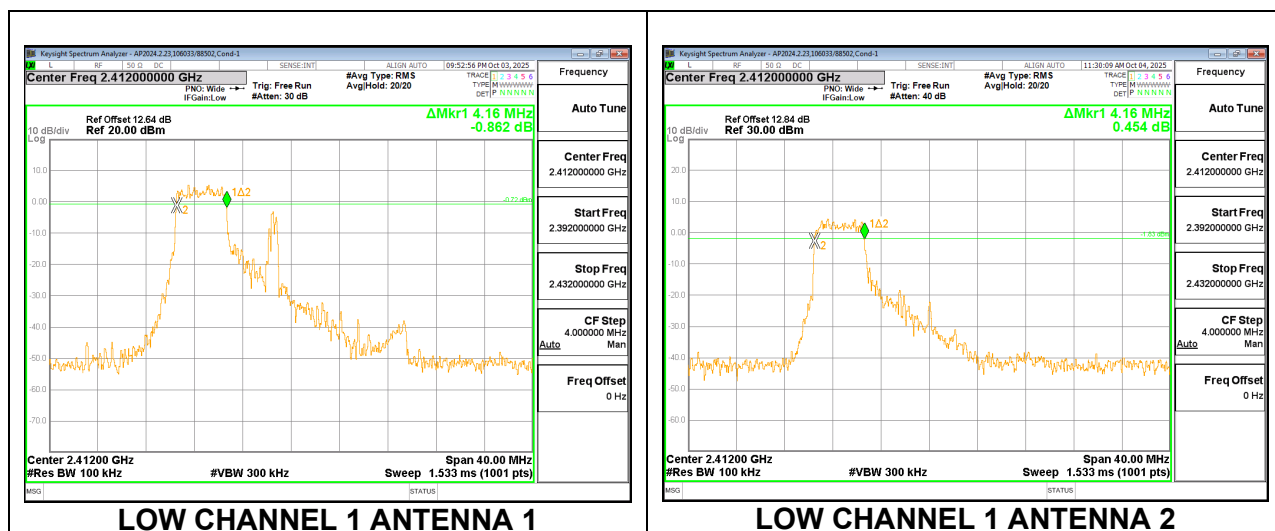
10.3.9. 802.11be EHT20 52T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	6dB BW(MHz) ANT 1	6dB BW (MHz) ANT 2	Minimum Limit (MHz)
Low	2412	4.16	4.16	0.5
Mid	2437	4.08	4.08	0.5
High	2462	4.08	4.08	0.5

Low – 52T/37
Mid – 52T/38
High – 52T/40

LOW CHANNEL 1



10.3.10. 802.11be EHT20 52T+26T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

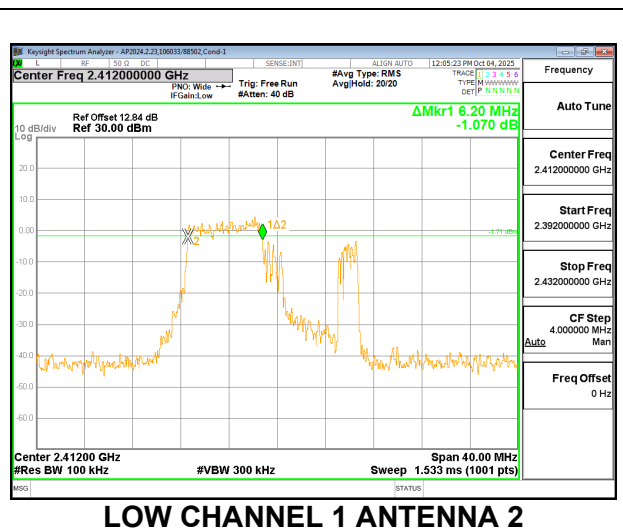
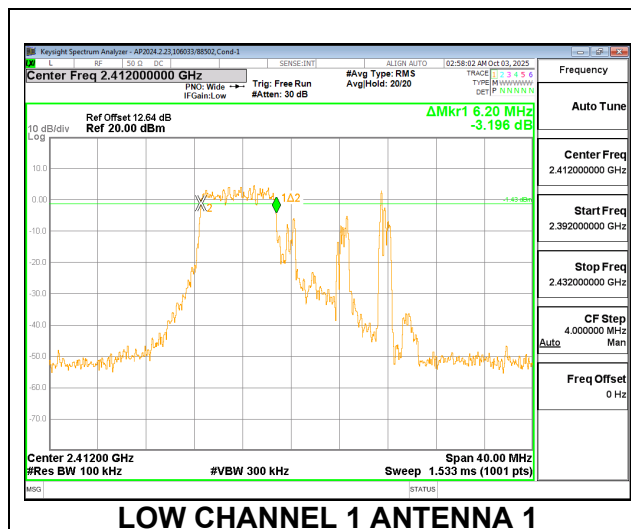
Channel	Frequency (MHz)	6dB BW(MHz) ANT 1	6dB BW (MHz) ANT 2	Minimum Limit (MHz)
Low	2412	6.20	6.20	0.5
Mid	2437	6.72	6.64	0.5
High 11	2462	6.28	6.16	0.5

Low – 52T+26T/37

Mid - 52T+26T/38

High - 52T+26T/40

LOW CHANNEL 1



10.3.11. 802.11be EHT20 106T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

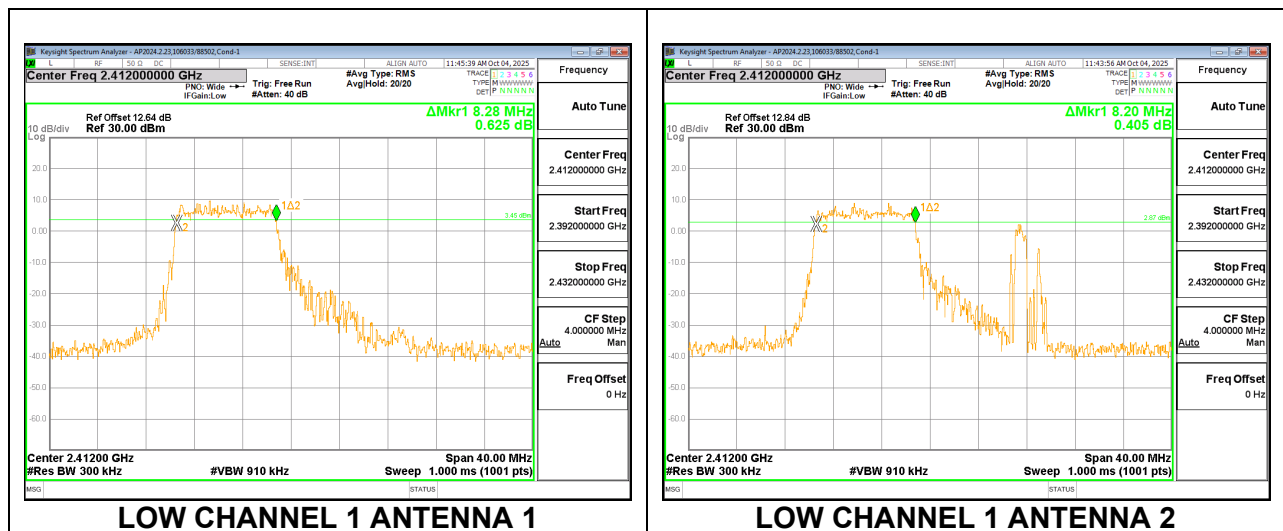
Channel	Frequency (MHz)	6dB BW(MHz) ANT 1	6dB BW (MHz) ANT 2	Minimum Limit (MHz)
Low	2412	8.28	8.20	0.5
Mid	2437	8.24	8.28	0.5
High	2462	8.20	8.40	0.5

Low – 106T/53

Mid – 106T/53

High - 106T/54

LOW CHANNEL 1



10.3.12. 802.11be EHT20 106T+26T/82 MODE

2TX Antenna 1 + Antenna 2 CDD MODE

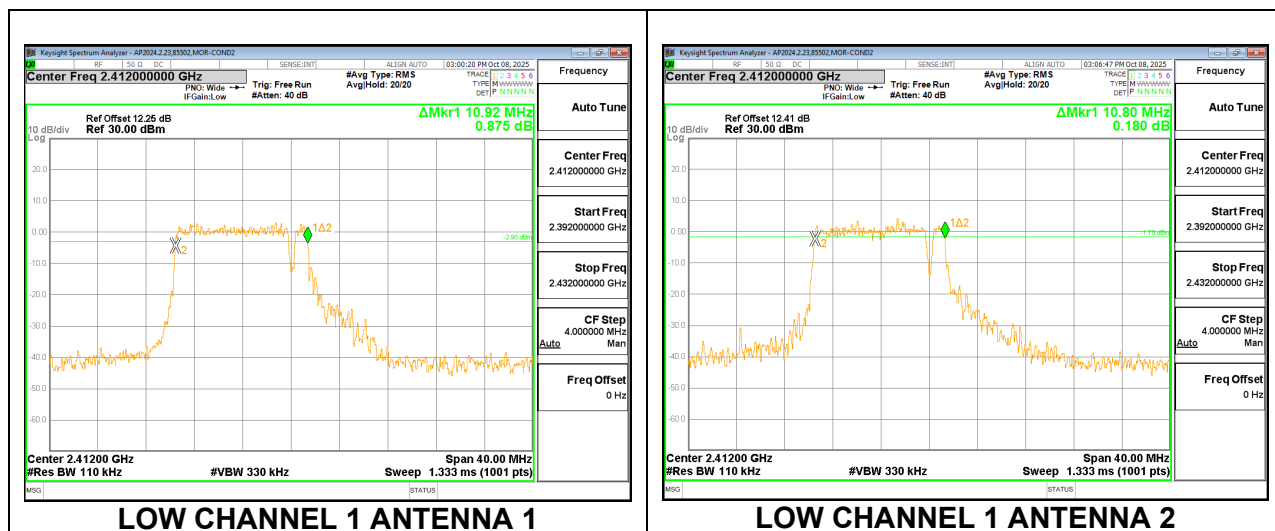
Channel	Frequency (MHz)	6dB BW(MHz) ANT 1	6dB BW (MHz) ANT 2	Minimum Limit (MHz)
Low	2412	10.92	10.80	0.5
Mid	2437	10.80	10.88	0.5
High	2462	10.84	10.84	0.5

Low – 106T+26T/53

Mid – 106T+26T/53

High – 106T+26T/54

LOW CHANNEL 1



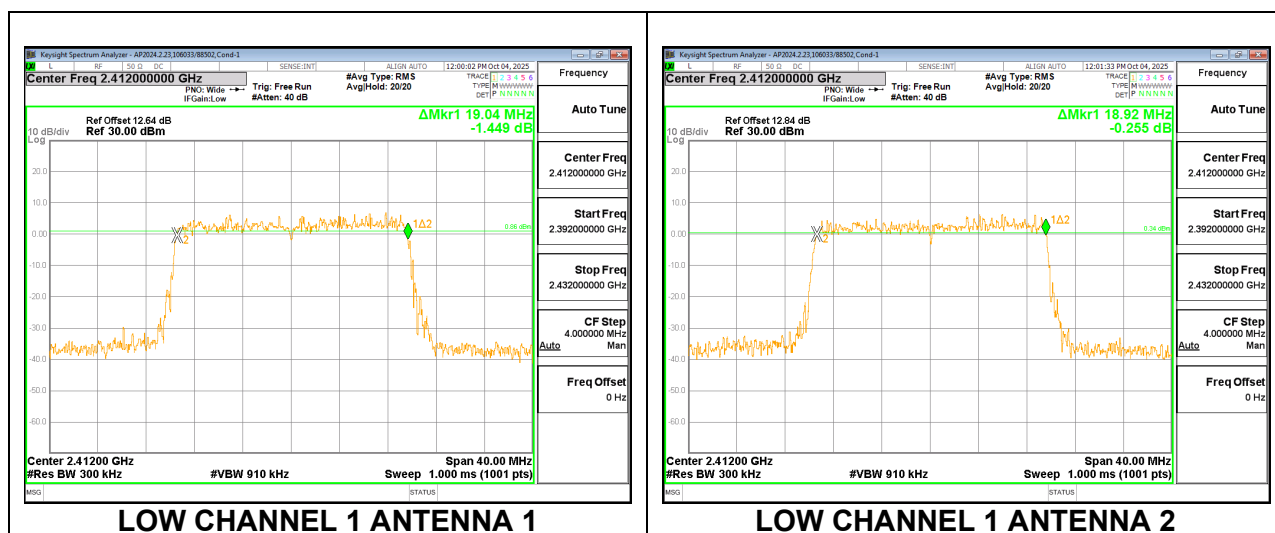
10.3.13. 802.11be EHT20 242T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	6dB BW(MHz) ANT 1	6dB BW (MHz) ANT 2	Minimum Limit (MHz)
Low	2412	19.04	18.92	0.5
Mid	2437	17.68	19.20	0.5
High	2462	17.68	19.08	0.5

Low/Mid/High – 242T/61

LOW CHANNEL 1



10.4. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

RSS-247 5.4 (d)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

For SISO, the cable assembly insertion loss of 12.08 dB (including 10.03 dB pad and 2.05 dB cable) for antenna 1 and 12 dB (including 10.01 dB pad and 1.99 dB cable) for antenna 2 were entered as offsets in the power meter.

For MIMO, the cable assembly insertion loss of 10.05 dB (including 9.67 dB pad and 0.38 dB cable) for antenna 1 and 10.02 dB (including 9.64 dB pad and 0.38 dB cable) for antenna 2 were entered as offsets in the power meter.

The power output was measured on the EUT antenna port using an SMA cable and attenuator connected to a power meter via a wideband power sensor. Peak output power was read directly from power meter.

DIRECTIONAL ANTENNA GAIN

For 1 TX:

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

For 2 TX:

Tx chains are uncorrelated for power and correlated for PSD due to the device supporting CDD in all MIMO modes. The directional gains are as follows:

Band (GHz)	Antenna 1 Antenna Gain (dBi)	Antenna 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)	Correlated Chains Directional Gain (dBi)
2.4	-2.88	-3.90	-3.36	-0.36

RESULTS

10.4.1. BLE (125 kbps)

Antenna 1

Tested By:	106046/84740
Date:	9/24/2025

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	9.720	30	-20.280
Middle	2440	9.880	30	-20.120
High	2480	9.300	30	-20.700

10.4.2. BLE (500 kbps)

Antenna 1

Tested By:	106046/84740
Date:	9/24/2025

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	9.710	30	-20.290
Middle	2440	9.900	30	-20.100
High	2480	9.250	30	-20.750

10.4.3. BLE (1Mbps)

Antenna 1

Tested By:	106046/84740
Date:	9/24/2025

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	15.060	30	-14.940
Middle	2440	15.650	30	-14.350
High	2480	15.380	30	-14.620

Antenna 2

Tested By:	106046/84740
Date:	45924

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	15.130	30	-14.870
Middle	2440	15.790	30	-14.210
High	2480	15.360	30	-14.640

10.4.4. BLE (2 Mbps)

Antenna 1

Tested By:	106046/84740
Date:	45924

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2404	15.660	30	-14.340
Middle	2440	15.720	30	-14.280
High	2478	15.390	30	-14.610

Antenna 2

Tested By:	106046/84740
Date:	45924

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2404	15.390	30	-14.610
Middle	2440	15.750	30	-14.250
High	2478	15.220	30	-14.780

10.4.5. BLE (1Mbps) MIMO

2TX Chain 0 + Chain 1 CDD MODE

Test Engineer:	108387/84740
Test Date:	9/25/2025

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	Max Power (dBm)
Low	2402	-3.36	30.00	30.00
Mid	2440	-3.36	30.00	30.00
High	2480	-3.36	30.00	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2402	11.34	9.45	13.51	30.00	-16.49
Mid	2440	11.45	11.02	14.25	30.00	-15.75
High	2480	11.45	11.12	14.30	30.00	-15.70

10.4.6. BLE (2Mbps) MIMO

2TX Chain 0 + Chain 1 CDD MODE

Test Engineer:	108387/84740
Test Date:	9/25/2025

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	Max Power (dBm)
Low	2404	-3.36	30.00	30.00
Mid	2440	-3.36	30.00	30.00
High	2478	-3.36	30.00	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2404	11.61	9.54	13.71	30.00	-16.29
Mid	2440	11.51	11.14	14.34	30.00	-15.66
High	2478	11.75	11.46	14.62	30.00	-15.38

10.4.7. 802.11b MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046
Test Date:	2025-09-19

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-3.36	30.00	36	30.00
Mid 6	2437	-3.36	30.00	36	30.00
High 11	2462	-3.36	30.00	36	30.00

Results

Channel	Frequency (MHz)	Antenna 1 Measured Power (dBm)	Antenna 2 Measured Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	23.91	22.27	26.18	30.00	-3.82
Mid 6	2437	23.87	22.27	26.15	30.00	-3.85
High 11	2462	23.93	22.40	26.24	30.00	-3.76

10.4.8. 802.11g MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046
Test Date:	2025-09-19

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-3.36	30.00	36	30.00
Mid 6	2437	-3.36	30.00	36	30.00
High 11	2462	-3.36	30.00	36	30.00

Results

Channel	Frequency (MHz)	Antenna 1 Measured Power (dBm)	Antenna 2 Measured Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	25.46	23.81	27.72	30.00	-2.28
Mid 6	2437	24.95	23.28	27.21	30.00	-2.79
High 11	2462	25.58	24.42	28.05	30.00	-1.95

10.4.9. 802.11n HT20 MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046
Test Date:	2025-09-19

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-3.36	30.00	36	30.00
Mid 6	2437	-3.36	30.00	36	30.00
High 11	2462	-3.36	30.00	36	30.00

Results

Channel	Frequency (MHz)	Antenna 1 Measured Power (dBm)	Antenna 2 Measured Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	25.99	24.37	28.27	30.00	-1.73
Mid 6	2437	24.90	23.21	27.15	30.00	-2.85
High 11	2462	25.34	24.60	28.00	30.00	-2.00

10.4.10. 802.11be EHT20 26T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046
Test Date:	2025-09-19

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-3.36	30.00	36	30.00
Mid 6	2437	-3.36	30.00	36	30.00
High 11	2462	-3.36	30.00	36	30.00

Results

Channel	Frequency (MHz)	Antenna 1 Measured Power (dBm)	Antenna 2 Measured Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	22.65	19.40	24.33	30.00	-5.67
Mid 6	2437	18.63	17.28	21.02	30.00	-8.98
High 11	2462	18.94	17.51	21.29	30.00	-8.71

10.4.11. 802.11be EHT20 52T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046
Test Date:	2025-09-19

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-3.36	30.00	36	30.00
Mid 6	2437	-3.36	30.00	36	30.00
High 11	2462	-3.36	30.00	36	30.00

Results

Channel	Frequency (MHz)	Antenna 1 Measured Power (dBm)	Antenna 2 Measured Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	24.13	23.49	26.83	30.00	-3.17
Mid 6	2437	21.22	20.94	24.09	30.00	-5.91
High 11	2462	21.18	21.36	24.28	30.00	-5.72

10.4.12. 802.11be EHT20 52T +26T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046
Test Date:	2025-09-19

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-3.36	30.00	36	30.00
Mid 6	2437	-3.36	30.00	36	30.00
High 11	2462	-3.36	30.00	36	30.00

Results

Channel	Frequency (MHz)	Antenna 1 Measured Power (dBm)	Antenna 2 Measured Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	21.43	20.81	24.14	30.00	-5.86
Mid 6	2437	21.24	20.91	24.09	30.00	-5.91
High 11	2462	21.30	21.15	24.24	30.00	-5.76

10.4.13. 802.11be EHT20 106T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046
Test Date:	2025-09-19

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-3.36	30.00	36	30.00
Mid 6	2437	-3.36	30.00	36	30.00
High 11	2462	-3.36	30.00	36	30.00

Results

Channel	Frequency (MHz)	Antenna 1 Measured Power (dBm)	Antenna 2 Measured Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	23.89	22.08	26.09	30.00	-3.91
Mid 6	2437	23.58	21.96	25.86	30.00	-4.14
High 11	2462	23.77	22.18	26.06	30.00	-3.94

10.4.14. 802.11be EHT20 106T+26T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046
Test Date:	2025-09-19

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-3.36	30.00	36	30.00
Mid 6	2437	-3.36	30.00	36	30.00
High 11	2462	-3.36	30.00	36	30.00

Results

Channel	Frequency (MHz)	Antenna 1 Measured Power (dBm)	Antenna 2 Measured Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	25.98	22.03	27.45	30.00	-2.55
Mid 6	2437	24.97	22.12	26.79	30.00	-3.21
High 11	2462	25.41	22.61	27.24	30.00	-2.76

10.4.15. 802.11be EHT20 242T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046
Test Date:	2025-09-19

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-3.36	30.00	36	30.00
Mid 6	2437	-3.36	30.00	36	30.00
High 11	2462	-3.36	30.00	36	30.00

Results

Channel	Frequency (MHz)	Antenna 1 Measured Power (dBm)	Antenna 2 Measured Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	23.79	22.43	26.17	30.00	-3.83
Mid 6	2437	23.58	21.82	25.80	30.00	-4.20
High 11	2462	23.88	22.19	26.13	30.00	-3.87

10.4.16. 802.11be EHT20 SU MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046
Test Date:	2025-09-19

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	-3.36	30.00	36	30.00
Mid 6	2437	-3.36	30.00	36	30.00
High 11	2462	-3.36	30.00	36	30.00

Results

Channel	Frequency (MHz)	Antenna 1 Measured Power (dBm)	Antenna 2 Measured Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	23.89	22.07	26.08	30.00	-3.92
Mid 6	2437	23.59	21.95	25.86	30.00	-4.14
High 11	2462	24.07	22.46	26.35	30.00	-3.65

10.5. AVERAGE POWER

LIMITS

None; for reporting purposes only

TEST PROCEDURE

For SISO, the cable assembly insertion loss of 12.08 dB (including 10.03 dB pad and 2.05 dB cable) for antenna 1 and 12 dB (including 10.01 dB pad and 1.99 dB cable) for antenna 2 were entered as offsets in the power meter.

For MIMO, the cable assembly insertion loss of 10.05 dB (including 9.67 dB pad and 0.38 dB cable) for antenna 1 and 10.02 dB (including 9.64 dB pad and 0.38 dB cable) for antenna 2 were entered as offsets in the power meter.

The power output was measured on the EUT antenna port using an SMA cable and attenuator connected to a power meter via a wideband power sensor. Average output power was read directly from power meter. All measurements were gated.

RESULTS

10.5.1. BLE (125 kbps)

Antenna 1

Tested By:	106046/85502
Date:	9/24/2025

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	9.4
Middle	2440	9.55
High	2480	8.97

10.5.2. BLE (500 kbps)

Antenna 1

Tested By:	106046/85502
Date:	9/24/2025

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	9.4
Middle	2440	9.58
High	2480	8.99

10.5.3. BLE (1Mbps)

Antenna 1

Tested By:	106046/85502
Date:	9/24/2025

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	14.71
Middle	2440	15.03
High	2480	15.01

Antenna 2

Tested By:	106046/85502
Date:	9/24/2025

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	14.732
Middle	2440	15.369
High	2480	15.004

10.5.4. BLE (2Mbps)

Antenna 1

Tested By:	106046/85502
Date:	9/24/2025

Channel	Frequency (MHz)	AV power (dBm)
Low	2404	15.23
Middle	2440	15.31
High	2478	15.05

Antenna 2

Tested By:	106046/85502
Date:	9/24/2025

Channel	Frequency (MHz)	AV power (dBm)
Low	2404	15.034
Middle	2440	15.271
High	2478	14.628

10.5.5. BLE (1Mbps) MIMO

Antenna 1

Tested By:	106046/85502	
Date:	9/24/2025	

Channel	Frequency (MHz)	AV power C0 (dBm)	AV power C1 (dBm)	Total power (dBm)
Low	2402	10.86	9.00	13.039
Middle	2440	10.97	10.58	13.790
High	2480	11.02	10.62	13.835

10.5.6. BLE (2Mbps) MIMO

Antenna 1

Tested By:	106046/85502		
Date:	9/24/2025		

Channel	Frequency (MHz)	AV power C0 (dBm)	AV power C1 (dBm)	Total power (dBm)
Low	2404	11.02	9.06	13.160
Middle	2440	10.99	10.62	13.819
High	2478	11.19	10.85	14.034

10.5.7. 802.11b MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046/85502
Test Date:	9/19/2025

Channel	Frequency (MHz)	Antenna 1 Power (dBm)	Antenna 2 Power (dBm)	Total Power (dBm)
Low	2412	19.94	18.31	22.21
Mid	2437	19.82	18.50	22.22
High	2462	19.77	18.60	22.23

10.5.8. 802.11g MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046/85502
Test Date:	9/19/2025

Channel	Frequency (MHz)	Antenna 1 Power (dBm)	Antenna 2 Power (dBm)	Total Power (dBm)
Low	2412	17.74	16.39	20.13
Mid	2437	17.72	16.78	20.29
High	2462	17.70	16.69	20.23

10.5.9. 802.11n HT20 MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046/85502
Test Date:	9/19/2025

Channel	Frequency (MHz)	Antenna 1 Power (dBm)	Antenna 2 Power (dBm)	Total Power (dBm)
Low	2412	17.37	16.08	19.78
Mid	2437	17.39	16.45	19.96
High	2462	17.42	16.44	19.97

10.5.10. 802.11be EHT20 26T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046/85502
Test Date:	9/19/2025

Channel	Frequency (MHz)	Antenna 1 Power (dBm)	Antenna 2 Power (dBm)	Total Power (dBm)
Low	2412	10.65	9.01	12.92
Mid	2437	10.39	9.05	12.78
High	2462	10.44	8.91	12.75

10.5.11. 802.11be EHT20 52T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046/85502
Test Date:	9/19/2025

Channel	Frequency (MHz)	Antenna 1 Power (dBm)	Antenna 2 Power (dBm)	Total Power (dBm)
Low	2412	13.93	13.19	16.59
Mid	2437	13.28	13.16	16.23
High	2462	13.37	13.03	16.21

10.5.12. 802.11be EHT20 52T +26T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046/85502
Test Date:	9/19/2025

Channel	Frequency (MHz)	Antenna 1 Power (dBm)	Antenna 2 Power (dBm)	Total Power (dBm)
Low	2412	13.18	12.74	15.98
Mid	2437	13.18	13.10	16.15
High	2462	13.29	13.06	16.19

10.5.13. 802.11be EHT20 106T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046/85502
Test Date:	9/19/2025

Channel	Frequency (MHz)	Antenna 1 Power (dBm)	Antenna 2 Power (dBm)	Total Power (dBm)
Low	2412	15.49	13.55	17.64
Mid	2437	15.49	13.94	17.79
High	2462	15.56	13.79	17.77

10.5.14. 802.11be EHT20 106T+26T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046/85502
Test Date:	9/19/2025

Channel	Frequency (MHz)	Antenna 1 Power (dBm)	Antenna 2 Power (dBm)	Total Power (dBm)
Low	2412	15.83	14.41	18.19
Mid	2437	15.83	14.88	18.39
High	2462	15.61	14.61	18.15

10.5.15. 802.11be EHT20 242T MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046/85502
Test Date:	9/19/2025

Channel	Frequency (MHz)	Antenna 1 Power (dBm)	Antenna 2 Power (dBm)	Total Power (dBm)
Low	2412	15.50	13.54	17.64
Mid	2437	15.32	13.94	17.69
High	2462	15.50	13.76	17.73

10.5.16. 802.11be EHT20 SU MODE

2TX Antenna 1 + Antenna 2 CDD MODE

Test Engineer:	106046/85502
Test Date:	9/19/2025

Channel	Frequency (MHz)	Antenna 1 Power (dBm)	Antenna 2 Power (dBm)	Total Power (dBm)
Low	2412	15.58	13.62	17.72
Mid	2437	15.49	13.95	17.80
High	2462	15.45	13.74	17.69

10.6. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)
RSS-247 (5.2) (b)

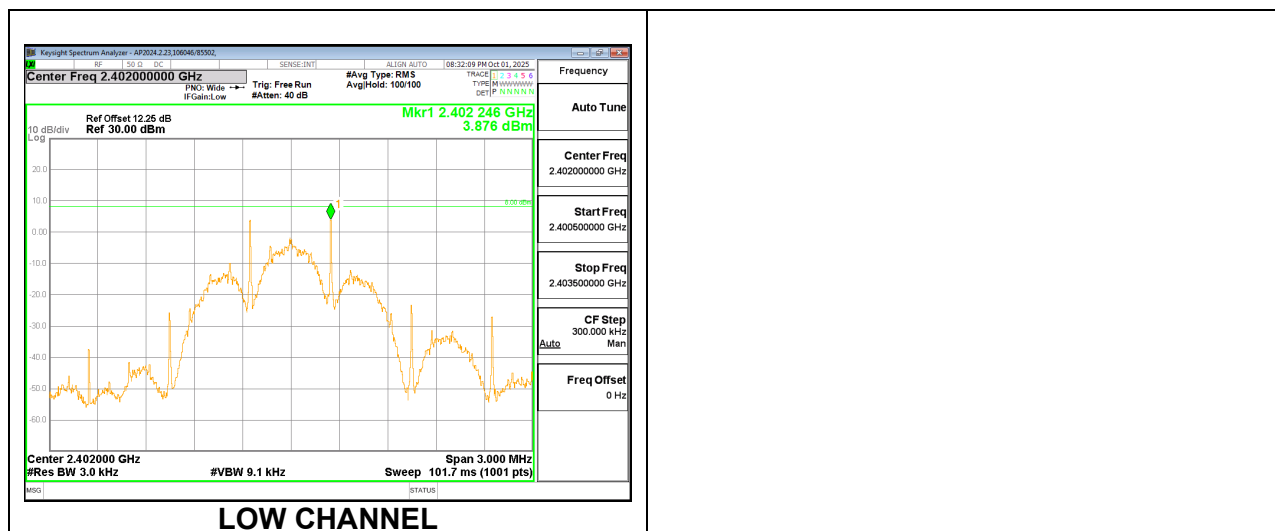
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

10.6.1. BLE (125 kbps)

Antenna 1

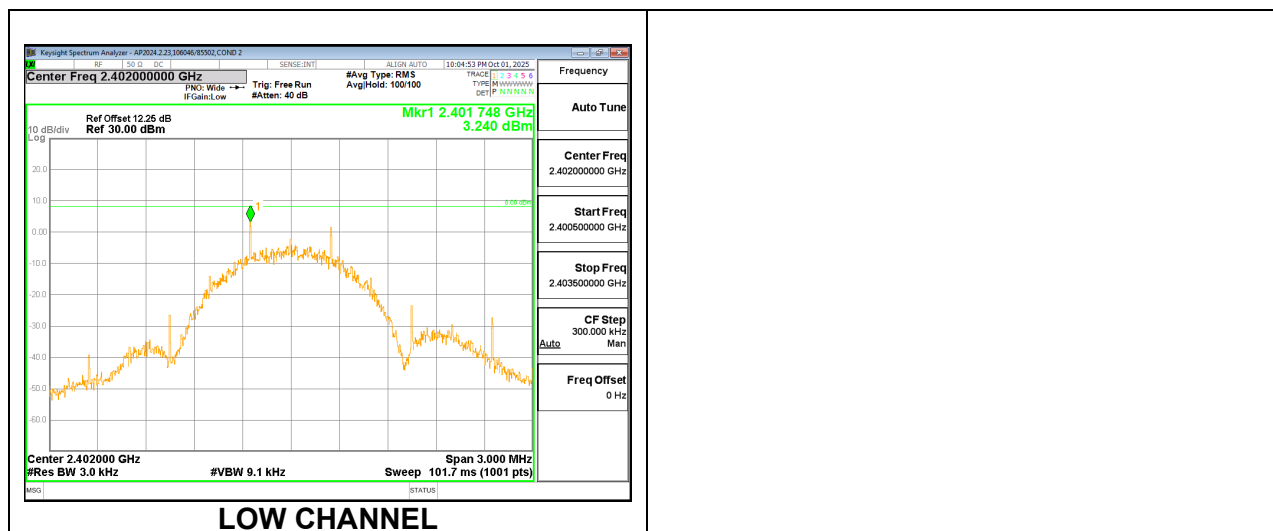
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	3.88	8	-4.12
Middle	2440	4.32	8	-3.68
High	2480	4.43	8	-3.57



10.6.2. BLE (500 kbps)

Antenna 1

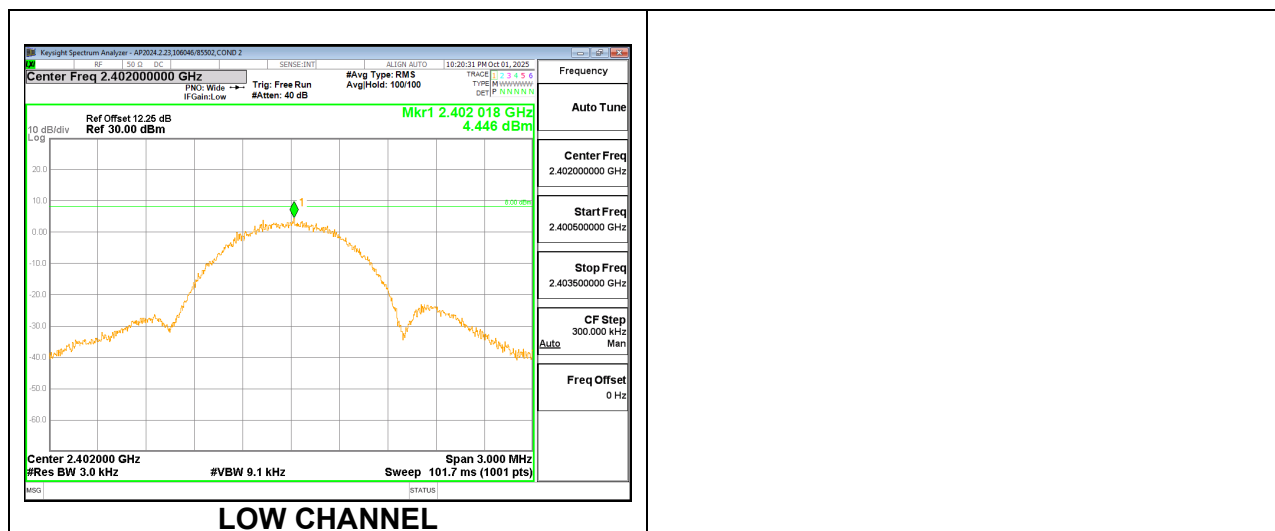
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	3.24	8	-4.76
Middle	2440	4.20	8	-3.80
High	2480	4.03	8	-3.97



10.6.3. BLE (1Mbps)

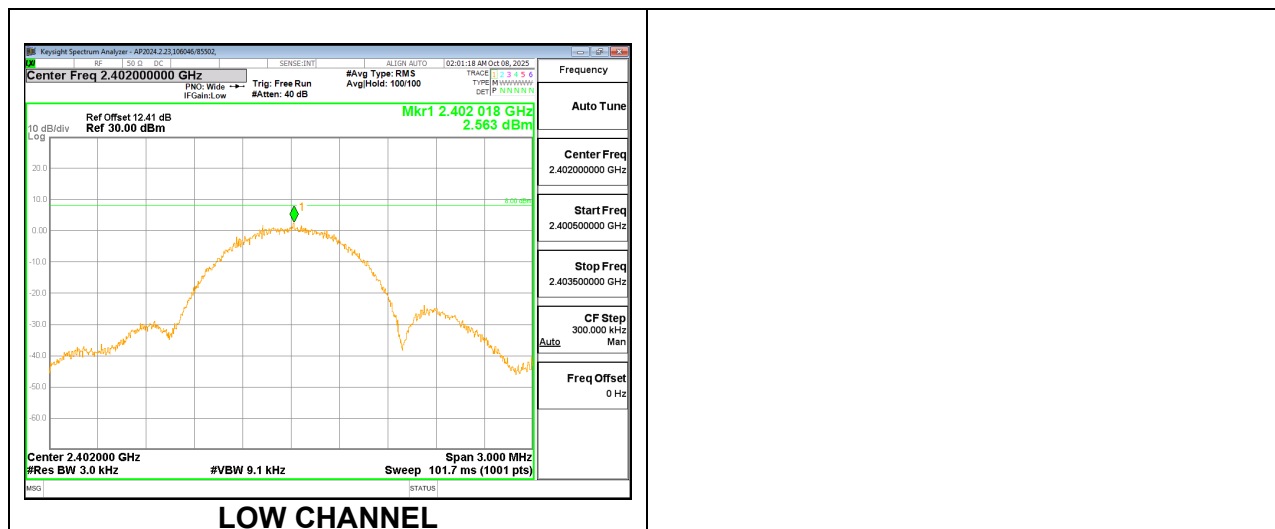
Antenna 1

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	4.45	8	-3.55
Middle	2440	4.30	8	-3.70
High	2480	4.04	8	-3.96



Antenna 2

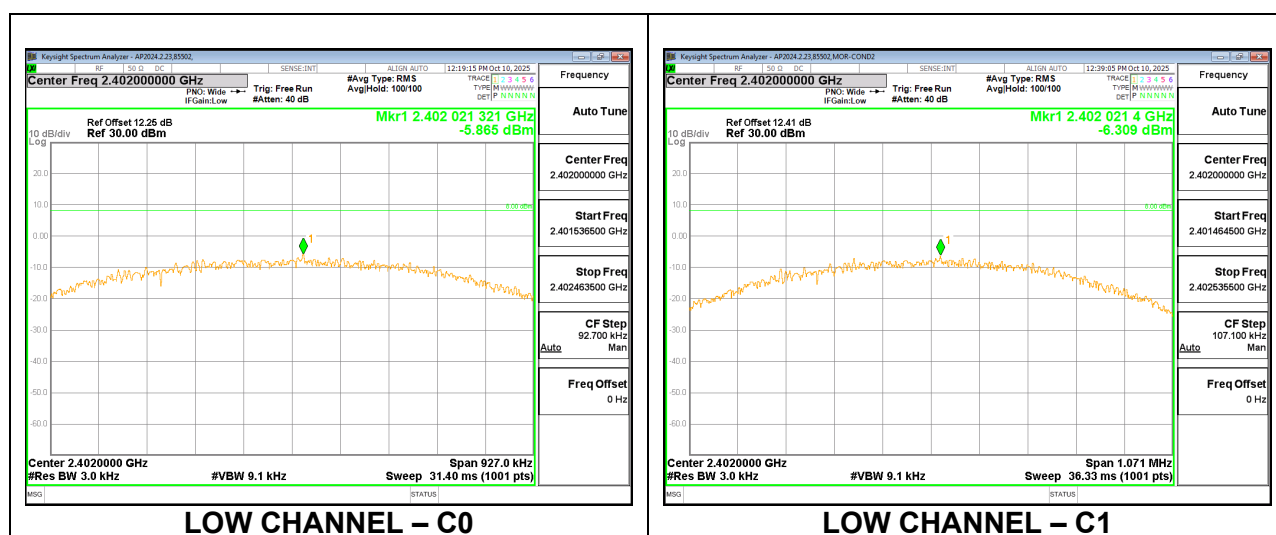
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	2.56	8	-5.44
Middle	2440	2.51	8	-5.50
High	2480	1.14	8	-6.86



MIMO

PSD Results

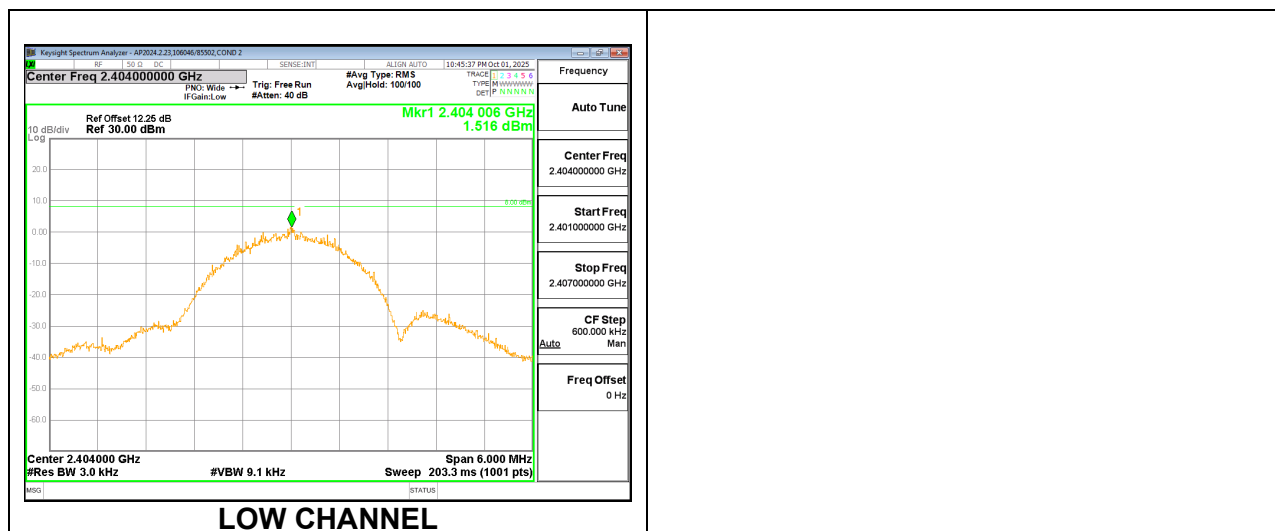
Channel	Frequency (MHz)	Antenna Meas C0 (dBm)	Antenna Meas C1 (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-5.87	-6.31	-3.07	8.0	-11.1
Mid	2437	-6.77	-4.62	-2.55	8.0	-10.6
High	2462	-6.01	-5.00	-2.46	8.0	-10.5



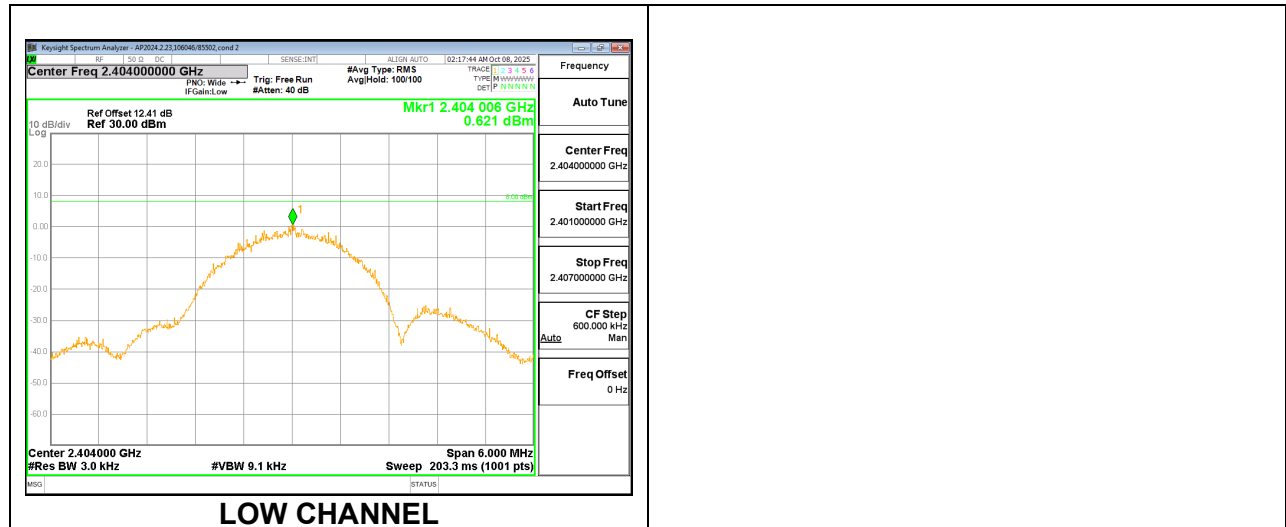
10.6.4. BLE (2Mbps)

Antenna 1

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2404	1.52	8	-6.48
Middle	2440	1.17	8	-6.83
High	2478	1.11	8	-6.89



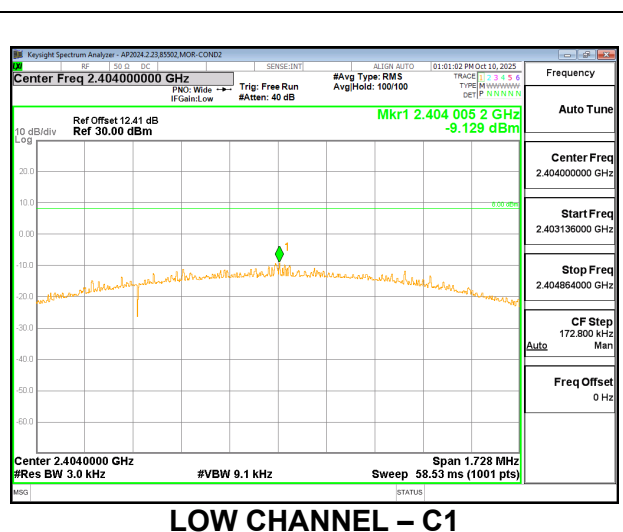
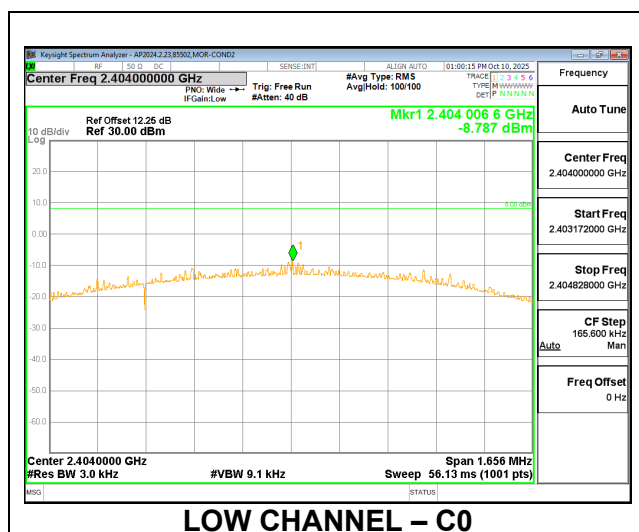
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2404	0.62	8	-7.38
Middle	2440	-0.77	8	-8.77
High	2478	-1.48	8	-9.48



MIMO

PSD Results

Channel	Frequency (MHz)	Antenna Meas C0 (dBm)	Antenna Meas C1 (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2404	-8.79	-9.13	-5.94	8.0	-13.9
Mid	2440	-9.10	-7.45	-5.19	8.0	-13.2
High	2478	-8.07	-7.89	-4.97	8.0	-13.0



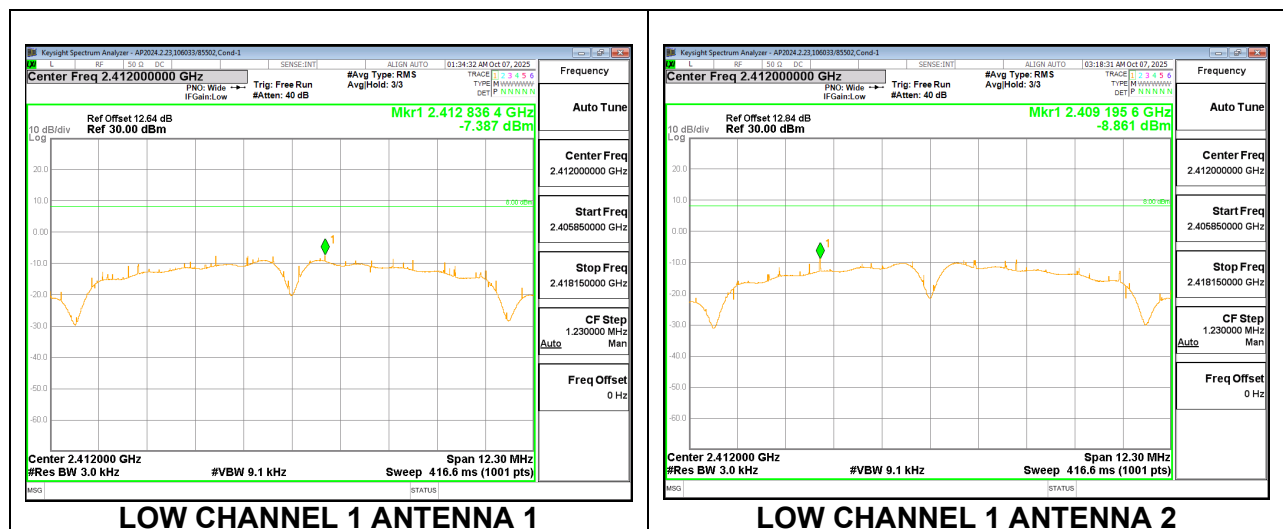
10.6.5. 802.11b MODE

2TX Antenna 1 + Antenna 2 CDD MODE

PSD Results

Channel	Frequency (MHz)	Antenna Meas C0 (dBm)	Antenna Meas C1 (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-7.39	-8.86	-5.05	8.0	-13.1
Mid	2437	-6.66	-8.48	-4.46	8.0	-12.5
High	2462	-6.37	-7.16	-3.73	8.0	-11.7

LOW CHANNEL 1



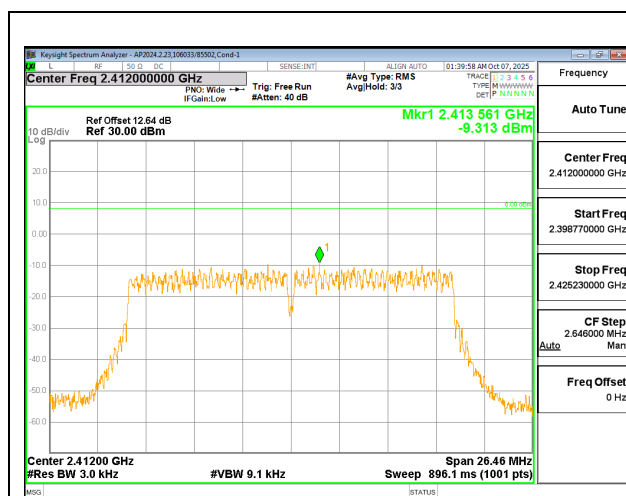
10.6.6. 802.11n HT20 MODE

2TX Antenna 1 + Antenna 2 CDD MODE

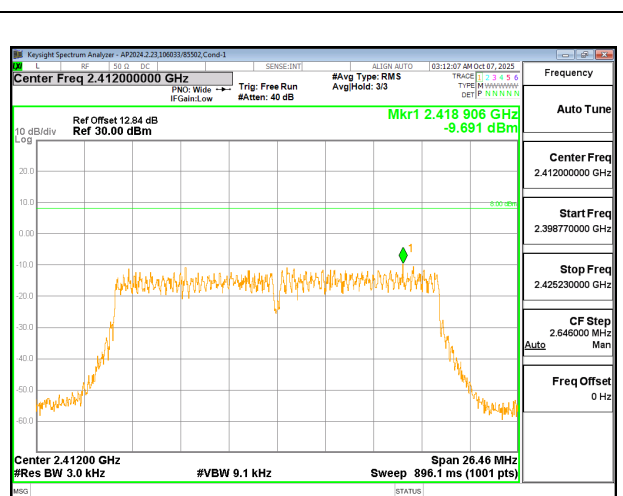
PSD Results

Channel	Frequency (MHz)	Antenna Meas C0 (dBm)	Antenna Meas C1 (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-9.31	-9.69	-6.49	8.0	-14.5
Mid	2437	-9.41	-10.00	-6.68	8.0	-14.7
High	2462	-8.91	-9.44	-6.16	8.0	-14.2

LOW CHANNEL 1



LOW CHANNEL 1 ANTENNA 1



LOW CHANNEL 1 ANTENNA 2

10.6.7. 802.11be EHT20 26T MODE

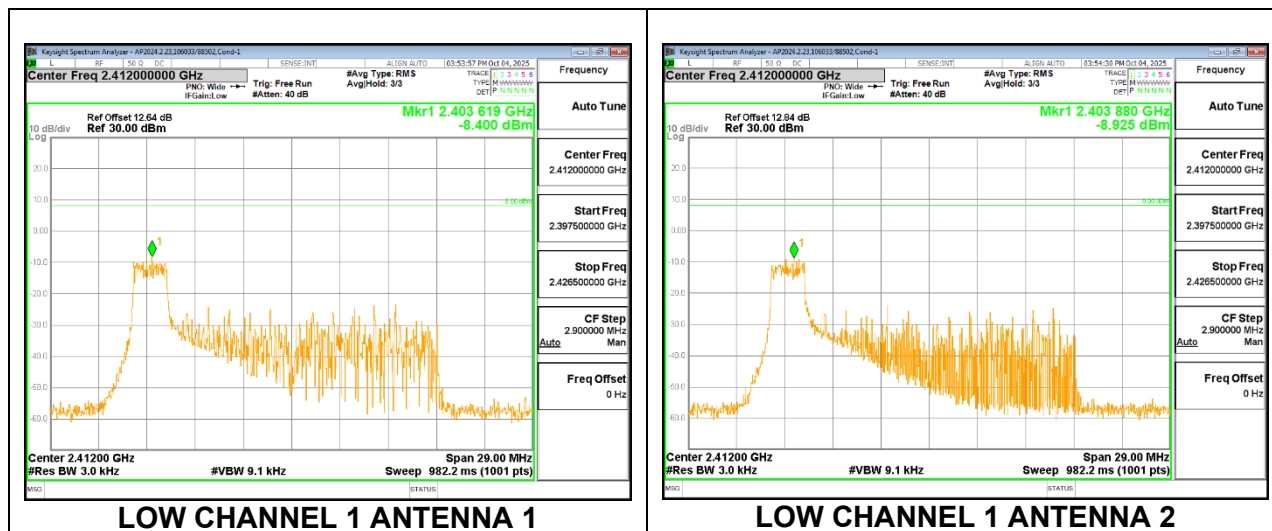
2TX Antenna 1 + Antenna 2 CDD MODE

PSD Results

Channel	Frequency (MHz)	Antenna Meas C0 (dBm)	Antenna Meas C1 (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-8.40	-8.93	-5.64	8.0	-13.6
Mid	2437	-8.80	-8.32	-5.55	8.0	-13.5
High	2462	-9.28	-8.11	-5.64	8.0	-13.6

Low - 26T/0
Mid - 26T/4
High - 26T/8

LOW CHANNEL 1



10.6.8. 802.11be EHT20 52T MODE

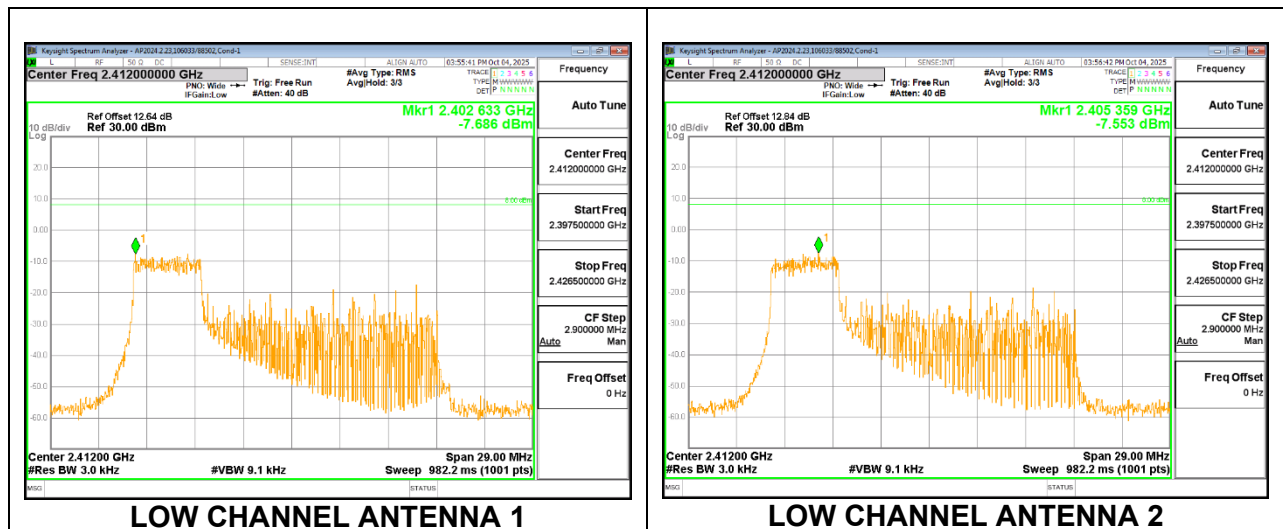
2TX Antenna 1 + Antenna 2 CDD MODE

PSD Results

Channel	Frequency (MHz)	Antenna Meas C0 (dBm)	Antenna Meas C1 (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-7.69	-7.55	-4.61	8.0	-12.6
Mid	2437	-7.15	-7.30	-4.22	8.0	-12.2
High	2462	-7.59	-7.63	-4.60	8.0	-12.6

Low – 52T/37
Mid – 52T/37
High – 52T/38

MID CHANNEL 6



10.6.9. 802.11be EHT20 106T MODE

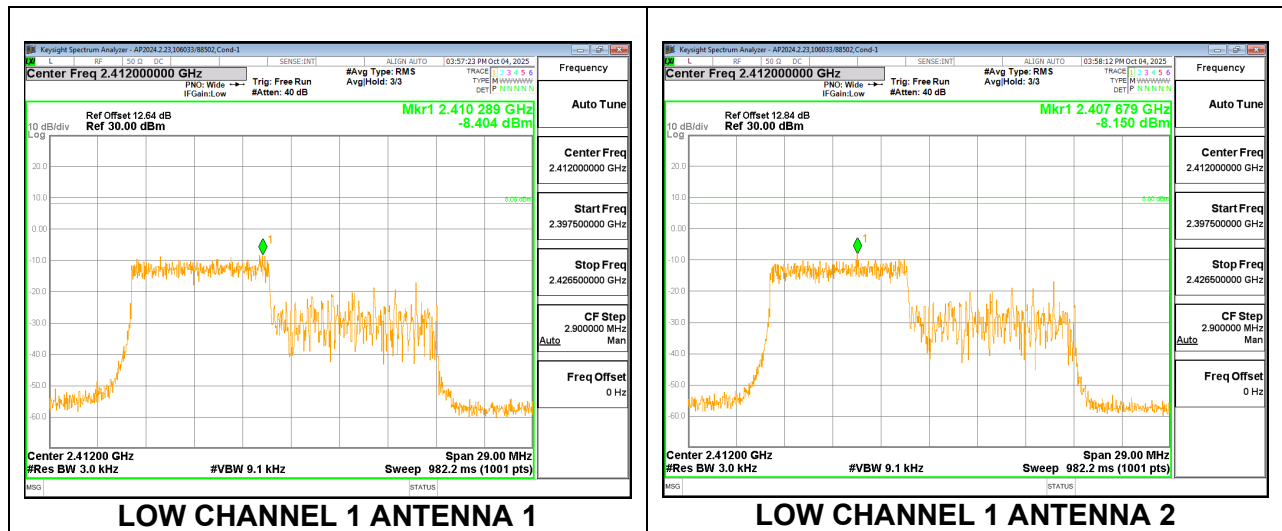
2TX Antenna 1 + Antenna 2 CDD MODE

PSD Results

Channel	Frequency (MHz)	Antenna Meas C0 (dBm)	Antenna Meas C1 (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-8.40	-8.15	-5.26	8.0	-13.3
Mid	2437	-8.57	-8.45	-5.50	8.0	-13.5
High	2462	-8.70	-8.97	-5.82	8.0	-13.8

Low - 106T/53
Mid - 106T/54
High - 106T/82

LOW CHANNEL 1



10.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

RSS-247 5.5

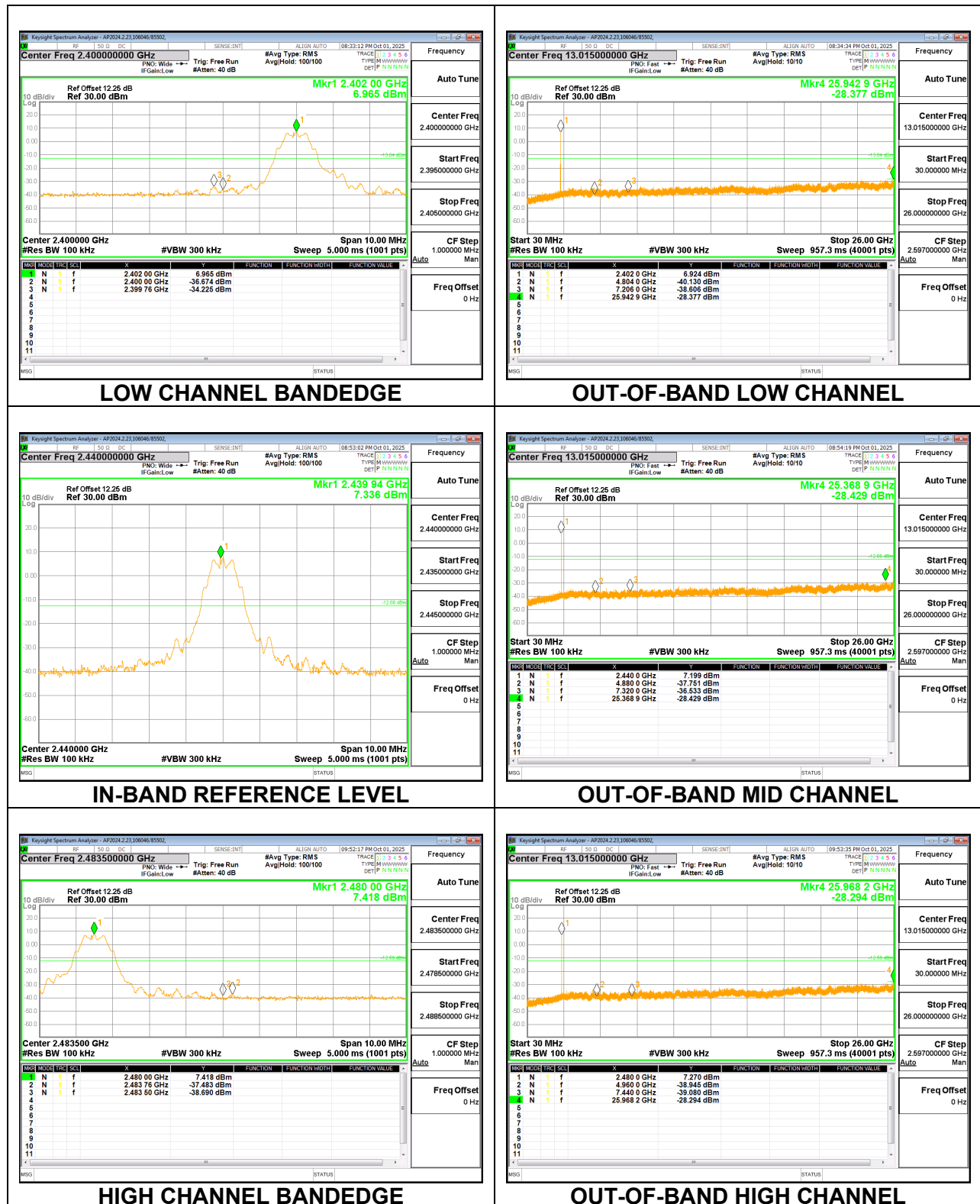
PROCEDURE

Output power was measured based on the use of a peak measurement; therefore, the required attenuation is -20 dBc.

RESULTS

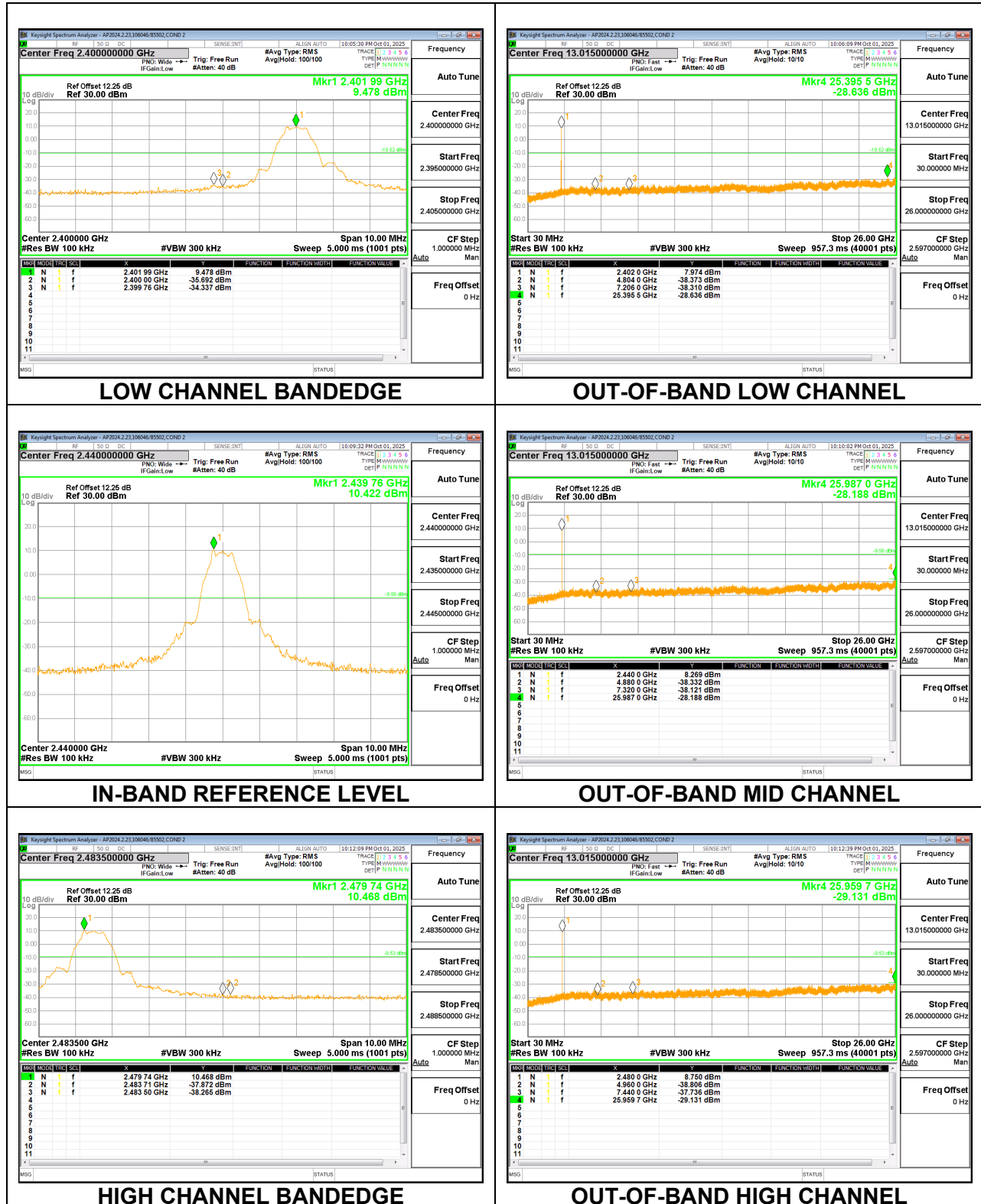
10.7.1. BLE (125 kbps)

Antenna 1



10.7.2. BLE (500 kbps)

Antenna 1



10.7.3. BLE (1Mbps)

Antenna 1

