

TEST REPORT

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Test Report Number: SKT-RFC-260005

Date of issue: 2026.1.9

Applicant:

Samsung Electronics Co., Ltd.

Model:

NP960XRD

Add Model:

NP964XRD

FCC ID:

A3LNP960XRD

Project number:

SKTEU25-1464

Date of Testing

2025.11.27 ~ 2026.1.9

Applied standards:

ANSI C63.10-2020

558074 D01 15.247 Meas Guidance v05r02

Rule parts:

Part 15 Subpart C (15.247)

Equipment Class:

Digital Transmission System (DTS)

The above equipment has been tested by SK Tech Co., Ltd., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product or system, which was tested.



MinJae Song / **Testing Engineer**



JungWoo Kim / **Technical Manager**

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Revision History of Test Report

Rev.	Revisions	Effect page	Approved by	Date
-	Initial issue	All	Jungwoo Kim	2026.1.9



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1 Summary of Test Results

The EUT has been tested according to the following specifications

Applied Standard : FCC Part 15, Subpart C 15.247 (DTS)					
FCC Part Section(s)	Test Description	Limit	Test Condition	Test Result	Reference
15.247(a)	6 dB Bandwidth	> 500 kHz		PASS	Section 3.2
15.247(b)	Maximum Output Power	< 1 Watt		PASS	Section 3.3
15.247(e)	Maximum Power Spectral Density	< 8 dBm / 3 kHz		PASS	Section 3.4
15.247(d)	Conducted Spurious Emissions	> 20 dBc		PASS	Section 3.5
15.205 15.209	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Emissions in restricted bands must meet the radiated limits detailed in 15.209	Radiated	PASS	Section 3.7
15.207	AC Conducted Emissions (150 kHz – 30 MHz)	< FCC 15.207 limits	AC Line Conducted	PASS	Section 3.8
15.203	Antenna Requirement	FCC 15.203	-	PASS	Section 3.1

NOTES

- 1) The general test methods used to test on this devices are ANSI C63.10.



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 Items	Frequency Range	Expanded Uncertainty $U = kU_c (k = 2)$
Radiated Spurious Emissions	< 1 GHz	3.08
	> 1 GHz	5.06
	> 18 GHz	5.39
Measurement Items		Expanded Uncertainty $U = kU_c (k = 2)$
Conducted	Maximum Output Power	1.28
Measurement Items	Frequency Range	Expanded Uncertainty $U = kU_c (k = 2)$
AC Conducted Emissions	150 kHz ~ 30 MHz	3.34

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

Equipment Class	Digital Transmission System (DTS)		
EUT Type	Portable Computing Device		
FCC ID	A3LNP960XRD		
Model	NP960XRD		
Additional model name	NP964XRD		
Operating Frequency	Bluetooth Low Energy 1Mbps: 2 400 MHz to 2 483.5 MHz 2Mbps: 2 400 MHz to 2 483.5 MHz		
Antenna Gain	ANT 1 (Main)	ANT 2 (Aux)	Direction gain NOTE3
	1.14 dBi	1.11 dBi	4.14 dBi
H/W Version	REV1.0		
S/W Version	NP960XRD		
EUT Capabilities	802.11b/g/a/n/ac/ax/be WLAN, Bluetooth (BDR, EDR, LE)		

NOTE 1: For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

NOTE 2: For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

NOTE 3: Directional gain (completely uncorrelated signal with unequal antenna gain and equal transmit power)
 $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}]$ dBi

2.2 Antenna Configurations

WIFI Configurations		SISO		MIMO	
		ANT1	ANT2	ANT1	ANT2
Bluetooth Low Energy (LE)	1Mbps	Support	Support	Support	Support
	1Mbps	Support	Support	Support	Support
	125kbps	Support	Not Support	Not Support	Not Support
	500kbps	Support	Not Support	Not Support	Not Support



2.3 Tested sample and Tested companion device information

Type	Model	Note
Test sample (Conducted)	NP960XRD	S/N: LVVE930YA00240X
Test sample (Radiated)	NP960XRD	S/N: LVVE930YA00217Y
Test sample (Radiated)	NP960XRD	S/N: LVVE930YA00075V

2.4 Description of Test Mode

The EUT has been tested with all modes of operating conditions to determine the worst case emission characteristics.

[Test Mode & Frequency]

LE	Mode	Tested Frequency (MHz)		
LE	1Mbps	2402	2440	2480
	2Mbps	2402	2440	2480
	125kbps	2402	2440	2480
	500kbps	2402	2440	2480

2.5 INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipments, which is traceable to recognized national standards.

2.6 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.7 General Description of Applied Standards

Generally the tests were performed according to the specifications of the standard, it must comply with the requirements of the following standards.

FCC CFR 47 Part 15, Subpart E (§15.407)

ANSI C63.10-2020

558074 D01 15.247 Meas Guidance v05r02

All test items in this test report have been performed and recorded as per the above standards.



2.8 Information of the Testing Laboratories

Our laboratories are FCC recognized accredited test firms and accredited and approved according to ISO/IEC 17025.

Test Firm Name : SK Tech Co., LTD.

Address : 88, Geulgaeul-ro 81beon-gil, wabu-eup Namyangju-si, Gyeonggi-do, 12203, Rep. of Korea

FCC

Designation Number : KR0007

Test Firm Registration Number : 938639

ISED

Designation Number : KR0007

Test Firm Registration Number : 5429A



2.9 Test Equipment

Test Equipment is traceable to the National Institute of Standards and Technology (NIST). Measurement antenna used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Equipment Name	Manufacturer	Model No.	Serial No.	Next Cal. Date
Spectrum Analyzer	Keysight Technologies	N9020B	MY63471160	2026-10-31
Spectrum Analyzer	Keysight Technologies	N9020B	MY63471163	2026-11-26
EMC Analyzer	Agilent	E7405A	US40240203	2026-03-10
EMI TEST RECEIVER	R & S	ESR 26	101441	2026-07-07
Vector Signal Generator	R & S	SMBV100B	101179	2026-03-13
Signal Generator	R & S	SMB100A	180704	2026-11-13
Power Meter	Agilent	E4418B	US39402176	2026-06-11
Power Meter	Agilent	E4417A	MY45100426	2026-03-12
Power Sensor	HP	8485A	3318A13916	2026-03-12
Power Sensor	Agilent	E9327A	MY44420696	2026-03-12
Attenuator	JFW	50HFAR-006-2.9MM	N/A	2026-06-12
Attenuator	JFW	50HFAR-006-2.9MM	N/A	2026-06-12
Attenuator	JFW	50HFAR-010-2.9MM	N/A	2026-06-12
Attenuator	JFW	50HFAR-010-2.9MM	N/A	2026-06-12
Attenuator	JFW	50HFAR-020-2.9MM	N/A	2026-06-12
TRILOG-Broadband Antenna	Schwarzbeck	ULB9168	9168-230	2027-05-12
Double Ridged guide Horn Antenna	ETS-LINDGREN	3117	00205960	2026-05-16
Horn Antenna	FLANN MICROWAVE	20240-20	273364	2026-10-19
Horn Antenna	FLANN MICROWAVE	22240-20	274186	2026-10-19
Low Noise Pre-Amplifier	TSJ	MLA-0118-J01-40	14879	2026-03-11
Preamplifier	TSJ	MLA-1840-A01-50	2610050	2026-03-13
Pre-Amplifier	TSJ	MLA-10K01-B01-27	2005350	2026-03-11
High Pass Filter	Wainwright	WHKX 3.0/18G-12SS	8	2026-03-12
High Pass Filter	Wainwright	WHKX10-5850-6500-18000-40SS	36	2026-06-11
High Pass Filter	Mini-Circuits	ZHFW-K7000+	2540	2026-12-01
High Pass Filter	Wainwright	WHKX10-3698-4300-18000-60SS	1	2026-06-11
EMI RECEIVER	Narda	PMM9010F	020WW40105	2026-11-12
Two-Line V-Network	R & S	ENV 216	102047	2026-01-22
Pulse Limiter	R & S	ESH3-Z2	100604	2026-11-12



3 Test Results

3.1 Antenna Requirement

Except from §15.203 of the FCC Rules/Regulations:

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 the section.

- The antenna of the EUT is attached to the inside.

Result

The EUT complies with the requirement of §15.203



3.2 6 dB Bandwidth

3.2.1 Regulation

Part. 15.247(a)

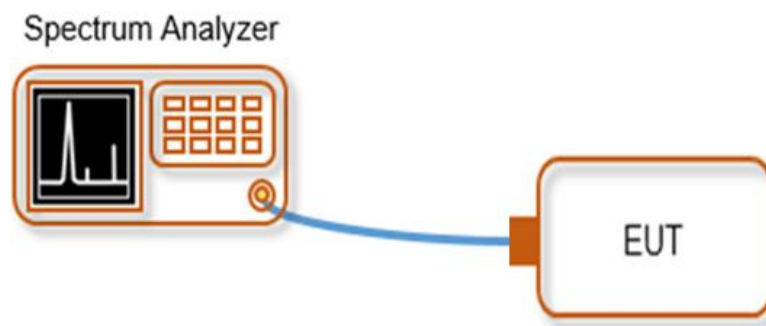
(2) **Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.**

3.2.2 6 dB Bandwidth Test Procedure

The transmitter output is connected to the Spectrum Analyzer and used following test procedure of ANSI c63.10-2020

1. Set resolution bandwidth (RBW) = 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times \text{RBW}$.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = No faster than coupled (auto) time.
6. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

3.2.4 Test Setup





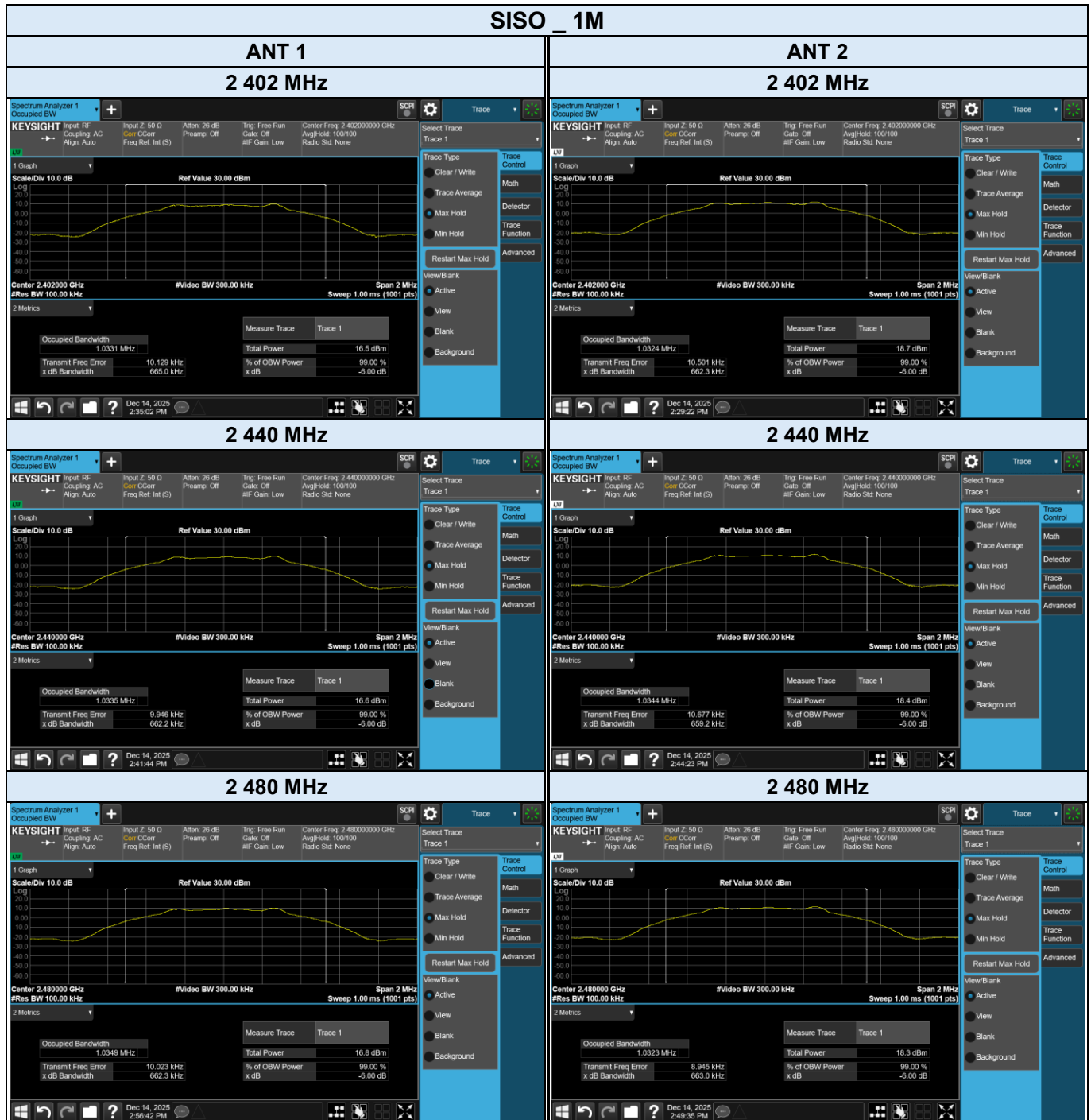
3.2.5 Test Result

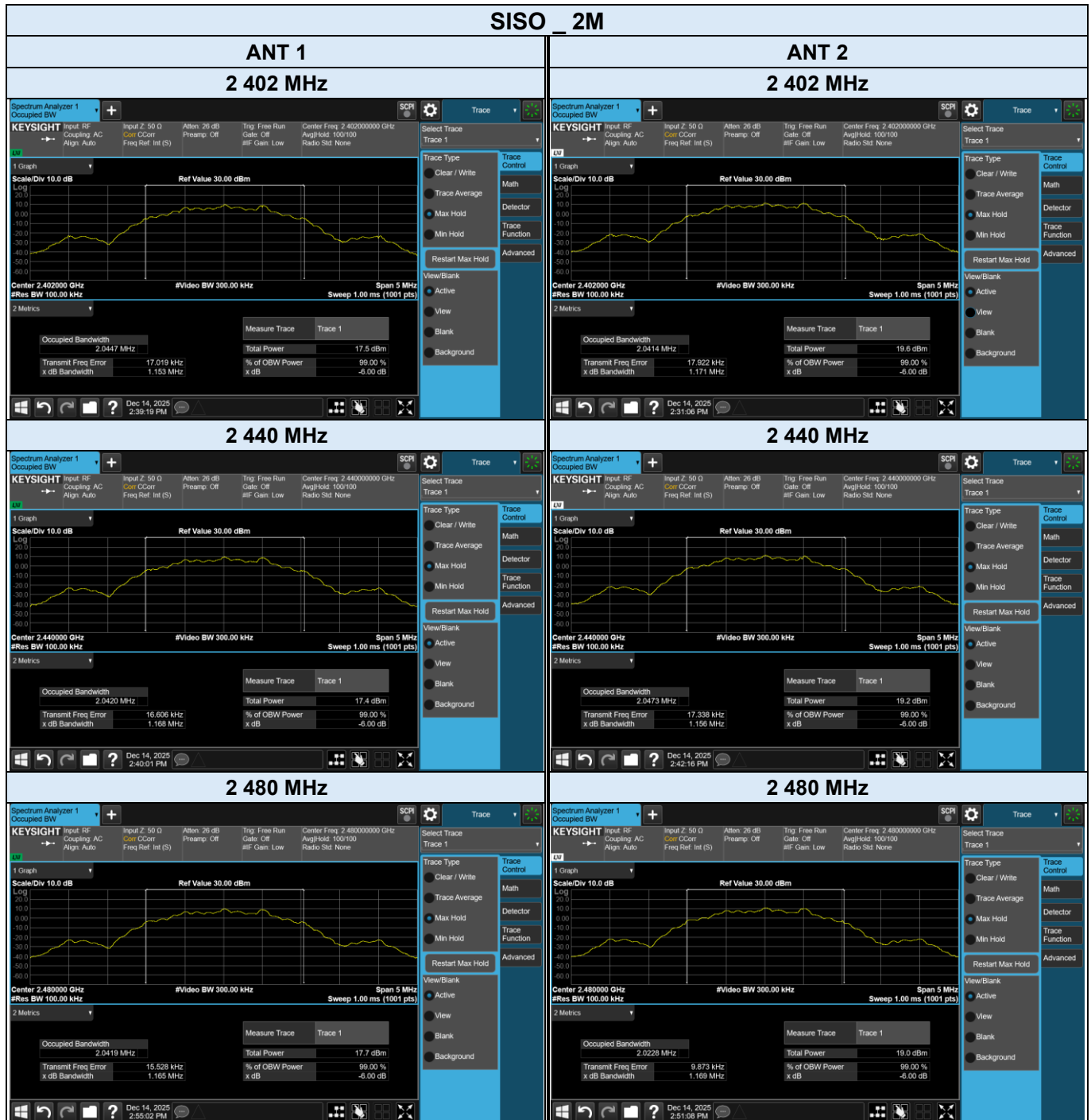
[Test Data of 6 dB Bandwidth]

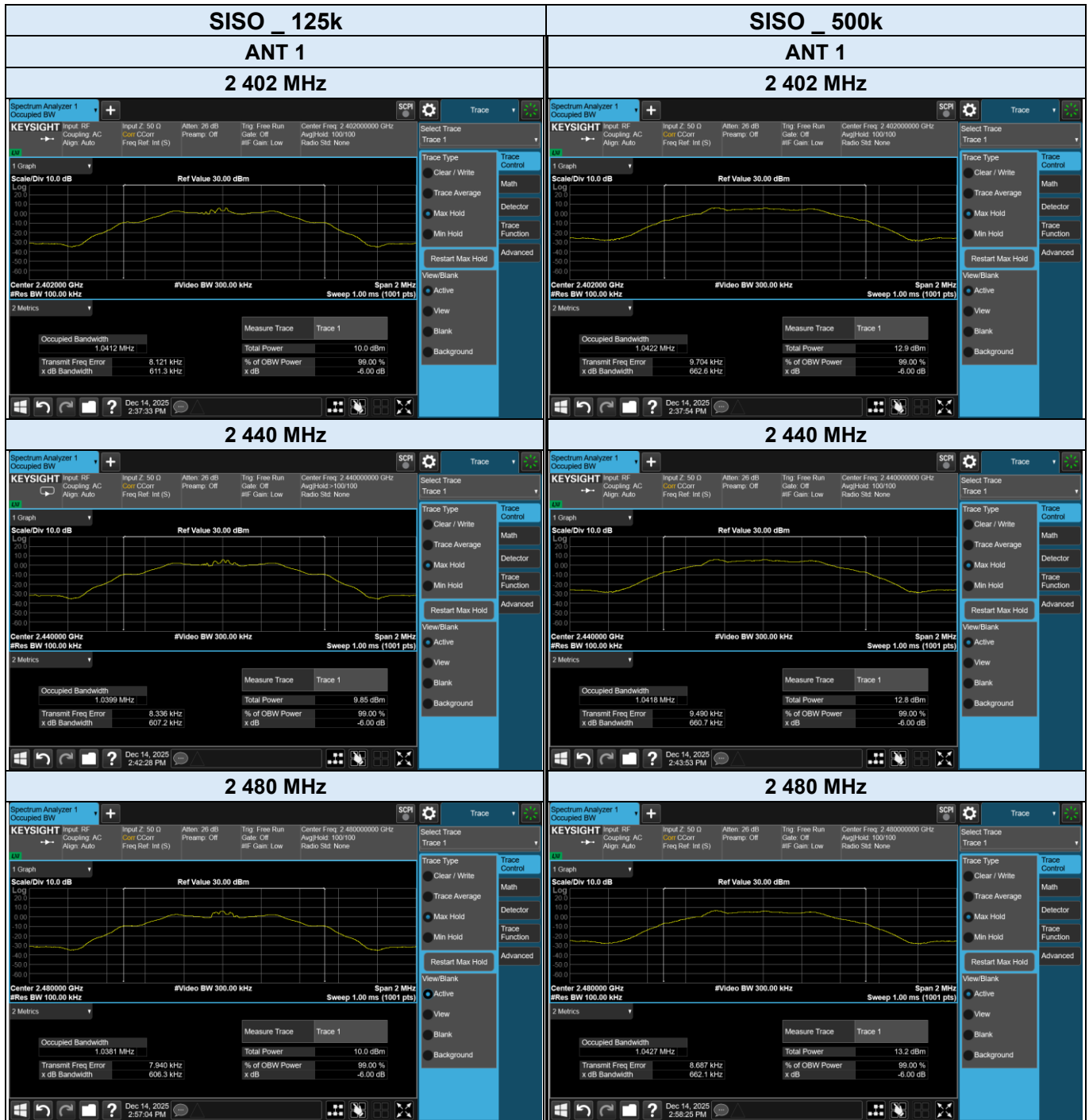
Antenna Configurations	Test Mode	Tested Frequency [MHz]	6 dB Bandwidth [MHz]	
			ANT1	ANT2
SISO	1M	2402	0.665	0.662
		2440	0.662	0.659
		2480	0.662	0.663
	2M	2402	1.153	1.171
		2440	1.168	1.156
		2480	1.165	1.169
	125k	2402	0.611	NA
		2440	0.607	
		2480	0.606	
	500k	2402	0.663	
		2440	0.661	
		2480	0.662	
MIMO	1M	2402	0.662	0.667
		2440	0.664	0.661
		2480	0.663	0.664
	2M	2402	1.169	1.169
		2440	1.182	1.176

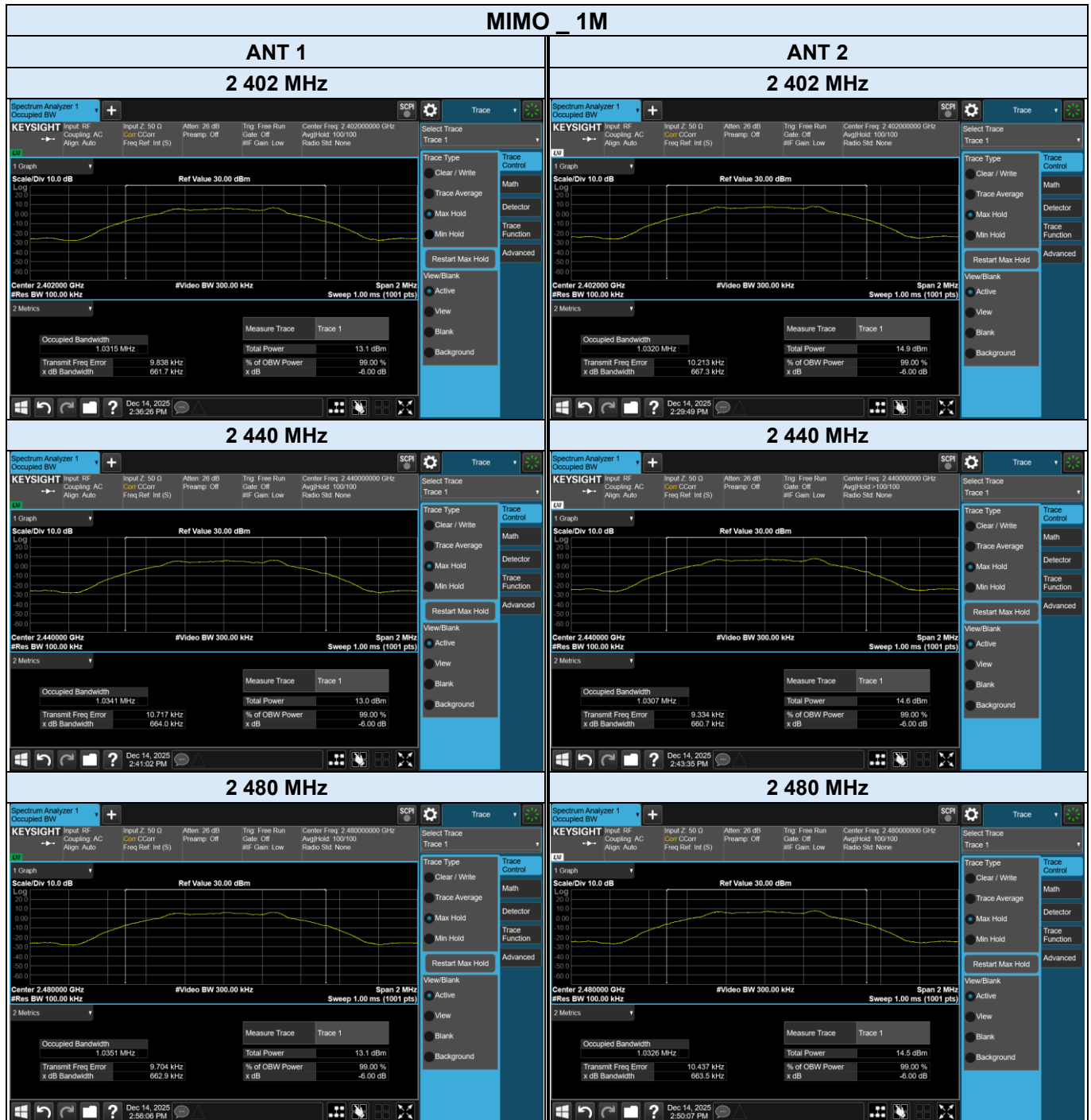


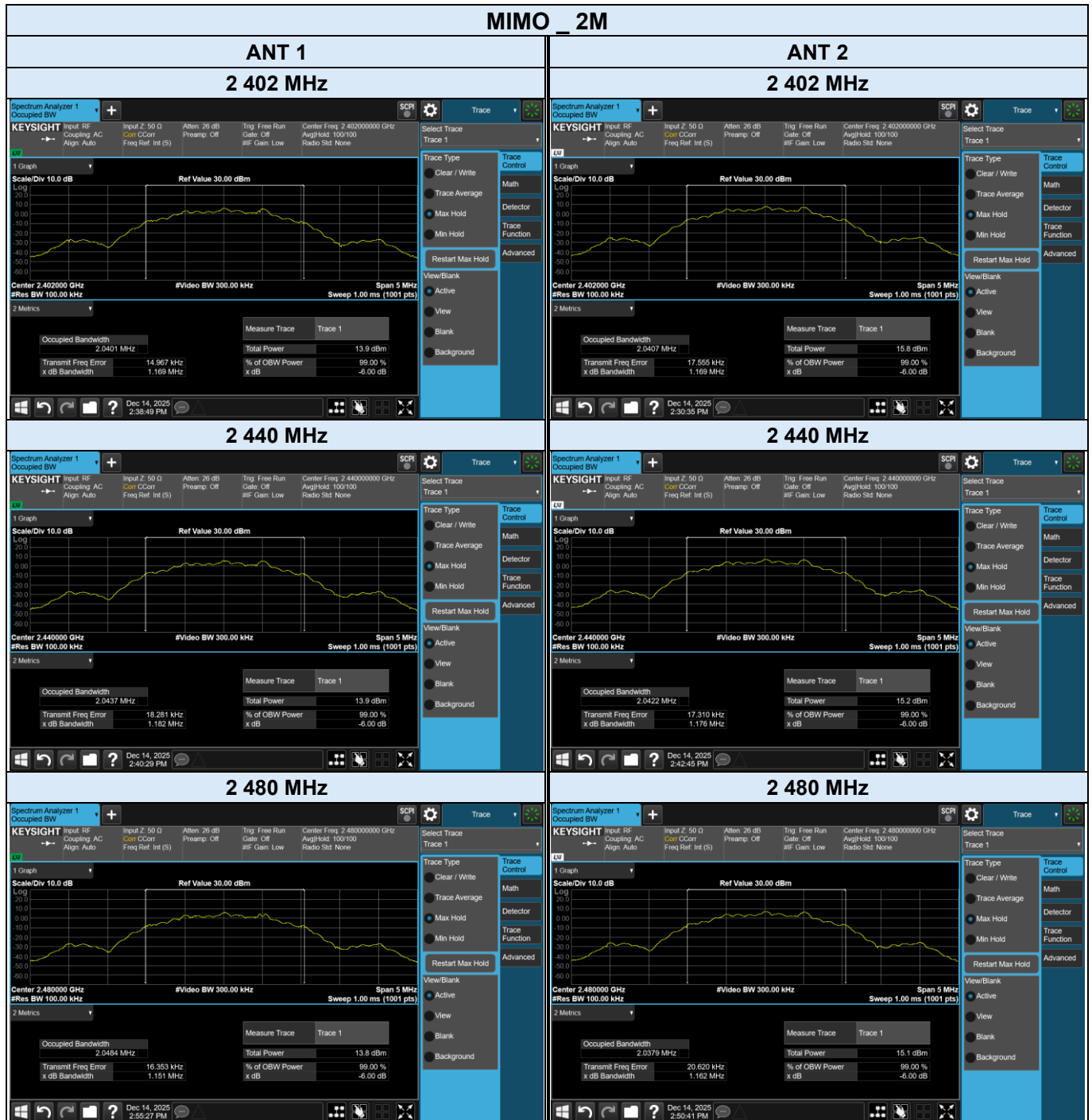
[Test Plot of 6 dB Bandwidth]













3.3 Maximum Conducted Output Power

3.3.1 Regulation

Part. 15.247(b)

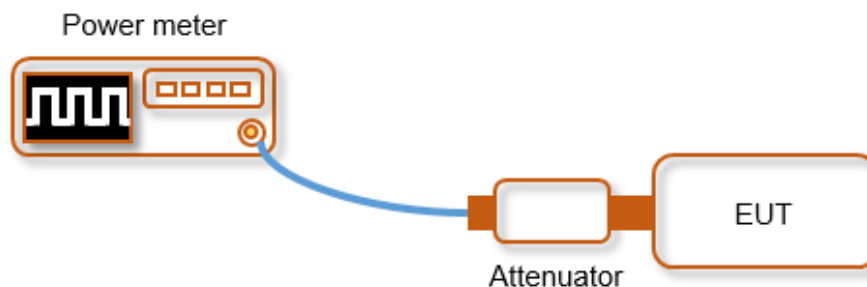
(3) **For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power.** Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the *maximum conducted output power* is the highest total transmit power occurring in any mode.

3.3.2 Test Procedure

PKPM1 Peak power meter method of ANSI C63.10-2020

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast responding diode detector.

3.3.3 Test Setup





3.3.4 Test Result

[Test Result of Peak Output Power]

Test Mode	Tested Frequency [MHz]	Peak Output Power [dBm]				
		SISO		MIMO		
		ANT1	ANT2	ANT1	ANT2	MIMO
1M	2402	11.74	11.82	7.76	7.87	10.83
	2440	11.43	11.12	7.58	7.24	10.42
	2480	11.81	11.08	7.79	6.93	10.39
2M	2402	11.79	11.84	8.03	7.86	10.96
	2440	11.72	11.21	7.63	7.31	10.48
	2480	11.81	11.04	7.72	6.93	10.35
125k	2402	7.93	NA			
	2440	7.65				
	2480	7.58				
500k	2402	7.68				
	2440	7.56				
	2480	7.95				



3.4 Maximum Power Spectral Density

3.4.1 Regulation

Part. 15.247(e)

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

3.4.2 Test Procedure

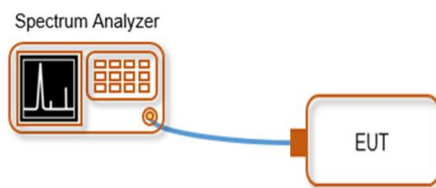
Maximum Power Spectral Density is measured using Measurement Procedure of ANSI C63.10-2020

Method PKPSD (peak PSD)

The following procedure shall be used if maximum peak conducted output power was used to determine compliance, and it is optional if the maximum conducted (average) output power was used to determine compliance:

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span >1.5 times the DTS bandwidth.
3. Set the RBW to $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq [3 \times \text{RBW}]$.
5. Detector = peak.
6. Sweep time = No faster than coupled (auto) time.
7. Trace mode = max-hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

3.4.3 Test Setup





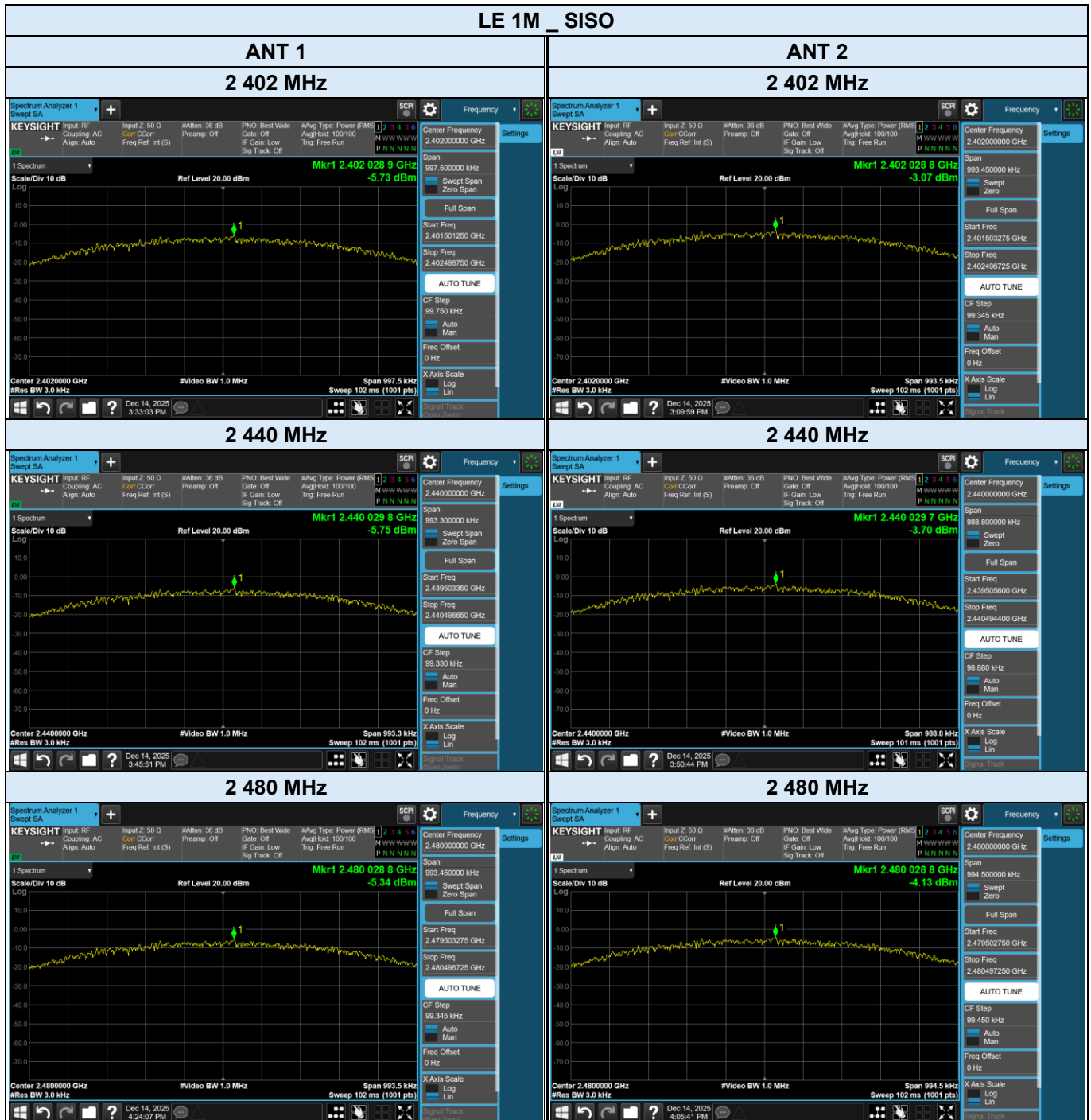
3.4.4 Test Result

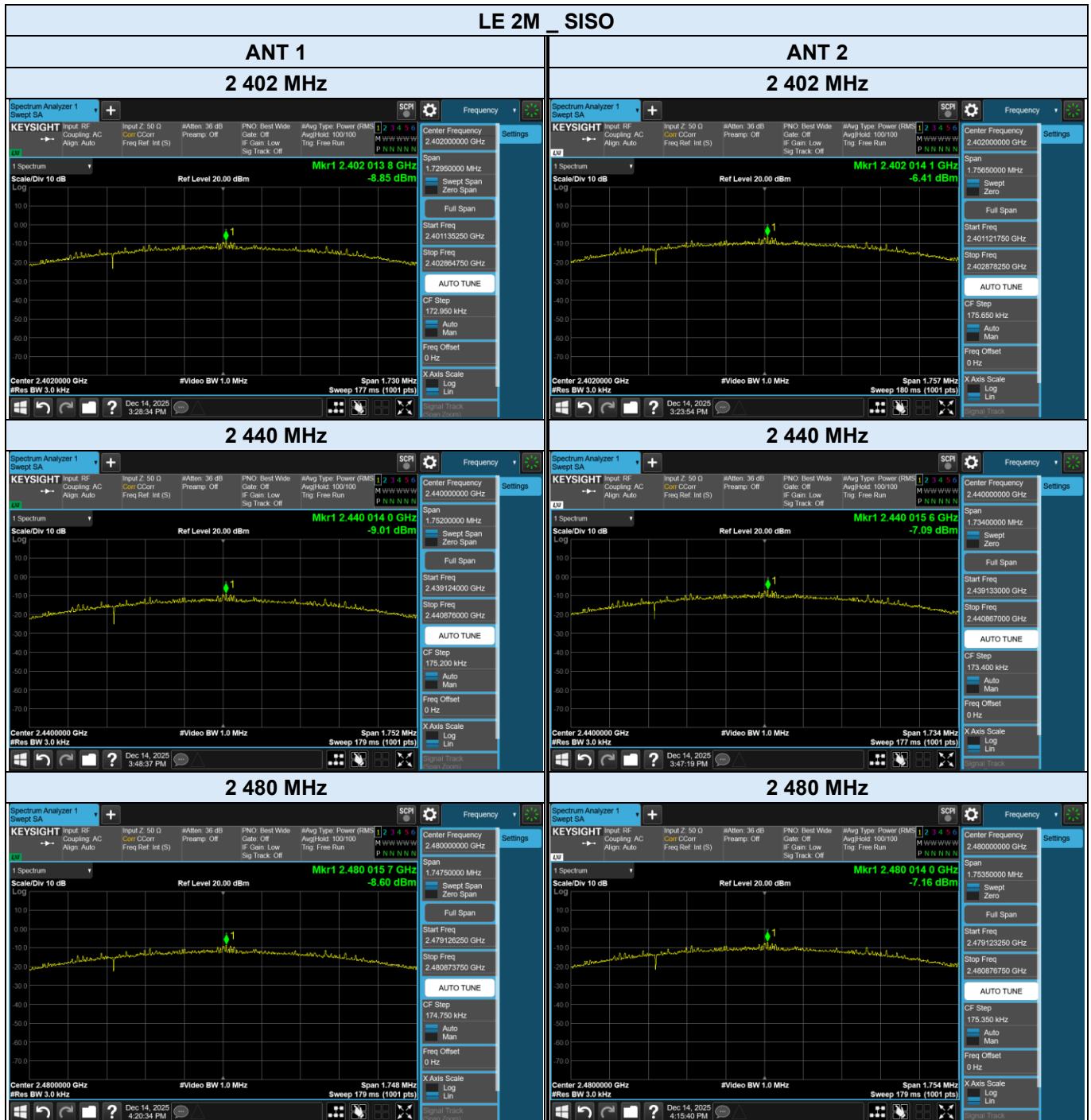
[Test Result of Peak Power Spectral Density]

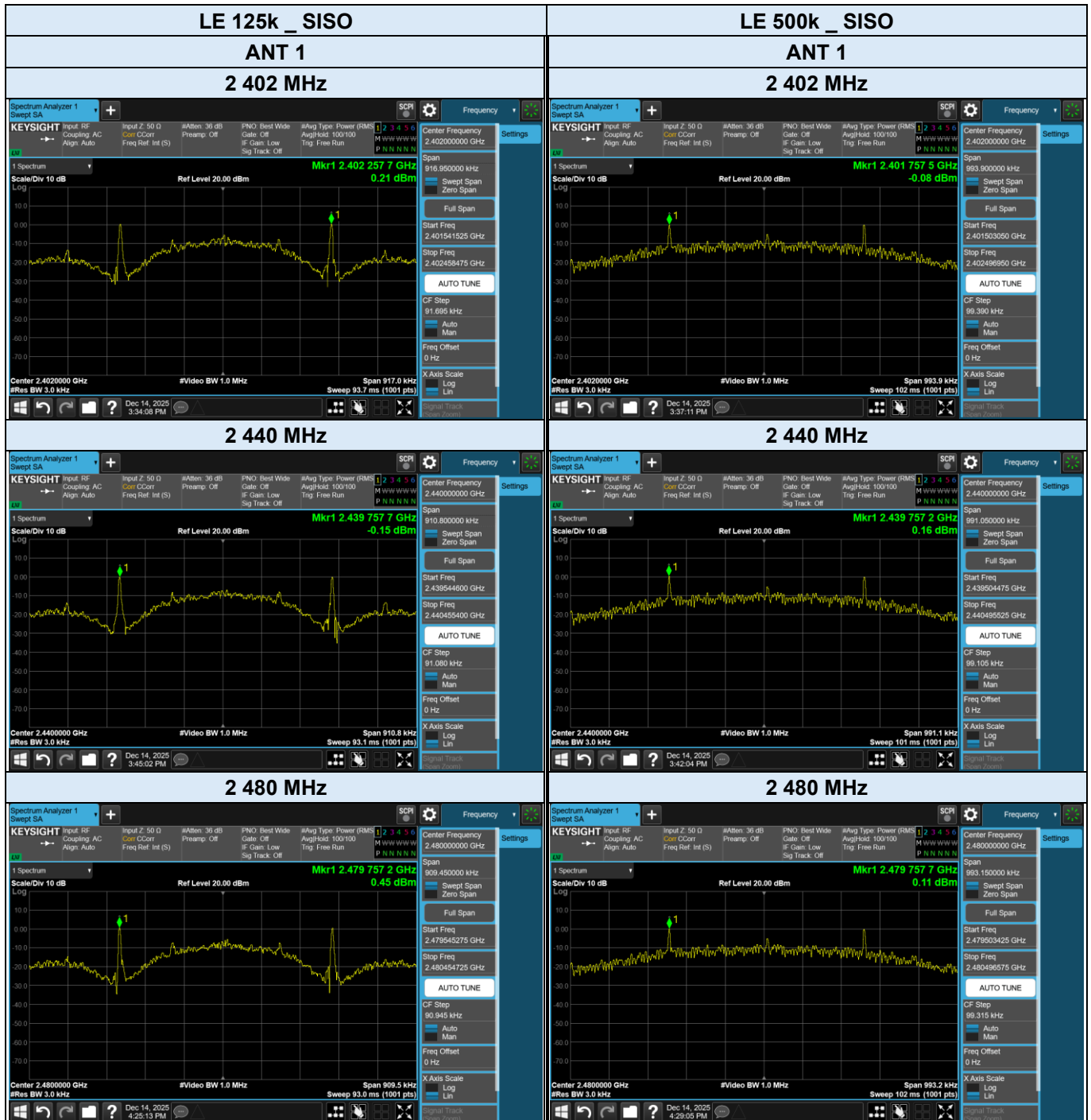
Test Mode	Tested Frequency [MHz]	Peak PSD [dBm]				
		SISO		MIMO		
		ANT1	ANT2	ANT1	ANT2	MIMO
1M	2402	-5.73	-3.07	-9.15	-7.05	-4.96
	2440	-5.75	-3.7	-9.34	-7.54	-5.34
	2480	-5.34	-4.13	-9.01	-7.66	-5.27
2M	2402	-8.85	-6.41	-12.5	-10.42	-8.33
	2440	-9.01	-7.09	-12.64	-10.99	-8.73
	2480	-8.6	-7.16	-12.32	-10.88	-8.53
125k	2402	0.21	NA			
	2440	-0.15				
	2480	0.45				
500k	2402	-0.08				
	2440	0.16				
	2480	0.11				

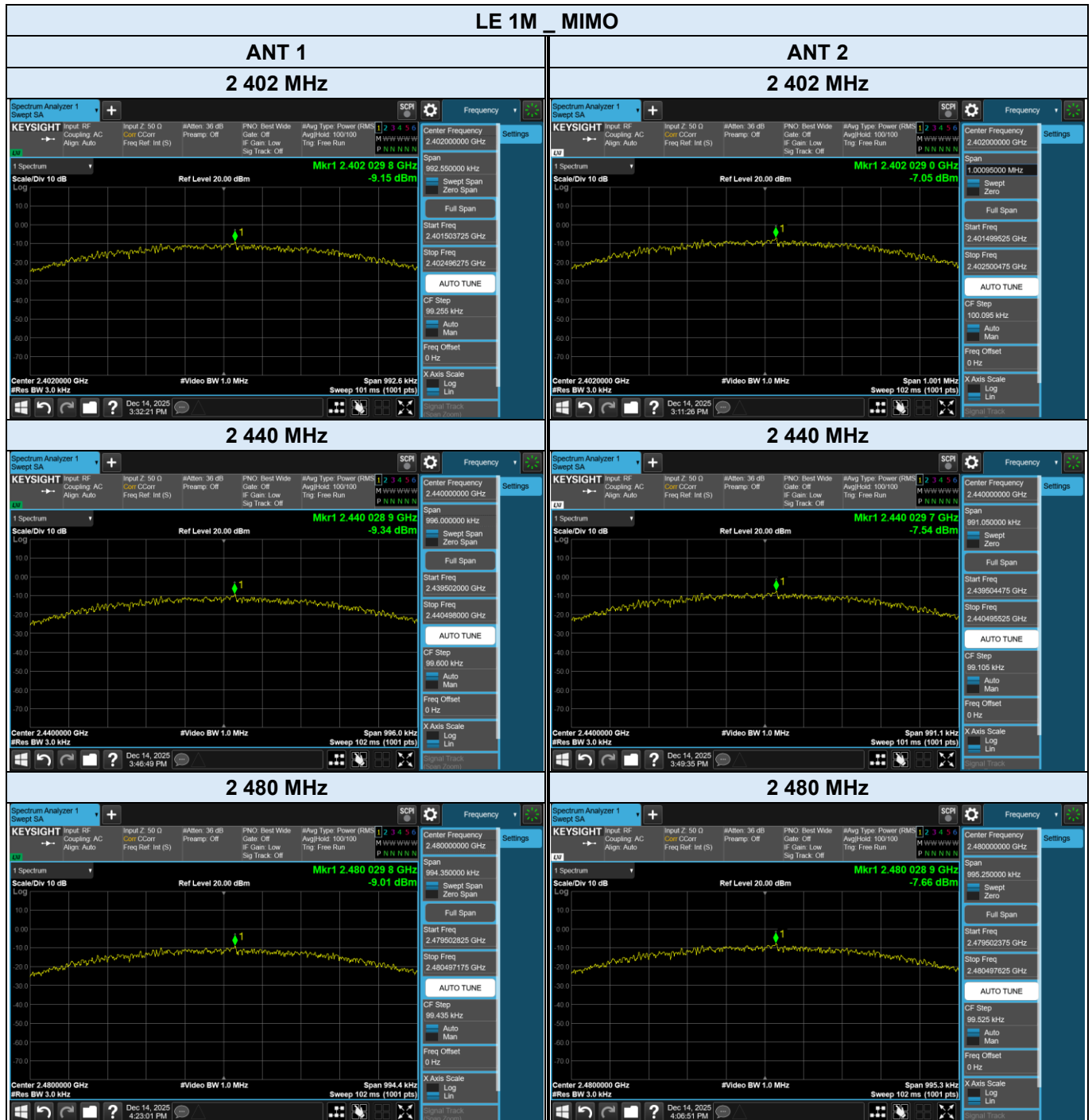


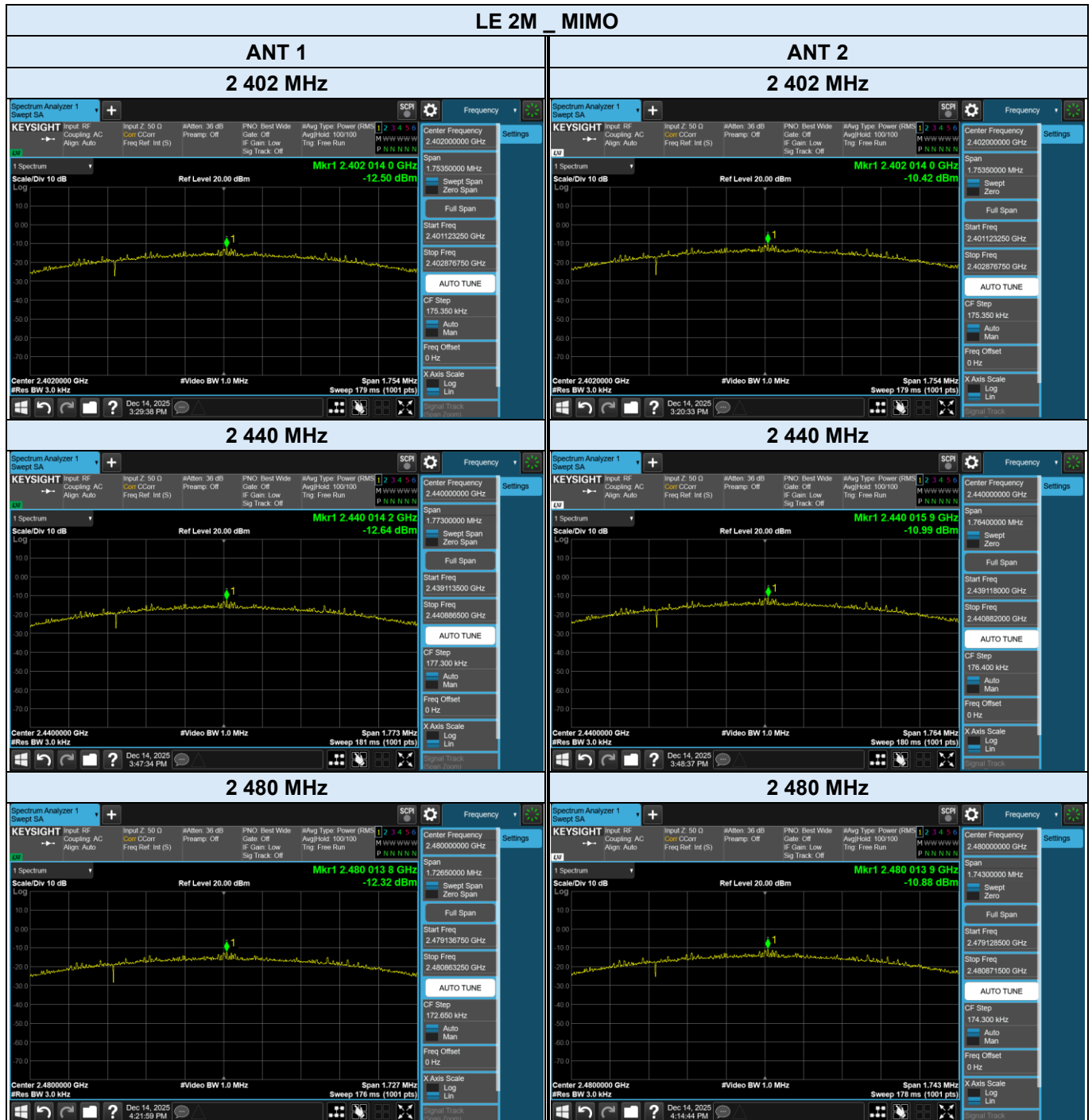
[Test Plot of Peak Power Spectral Density]













3.5 Conducted Spurious Emissions

3.5.1 Regulation

Part. 15.247(d)

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

3.5.2 Conducted Band edge Test Procedure

The transmitter output is connected to the Spectrum Analyzer and used following test procedure of ANSI C63.10-2020

1. Start and stop frequency were set such that the band edge would be placed in the center of the polot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. Set RBW = 100 kHz
4. Set VBW $\geq 3 \times$ RBW
5. Detector = Peak
6. Number of sweep points $\geq 2 \times$ SPAN/RBW
7. Trace Mode = max hold

3.5.3 Conducted Spurious Emission Test Procedure

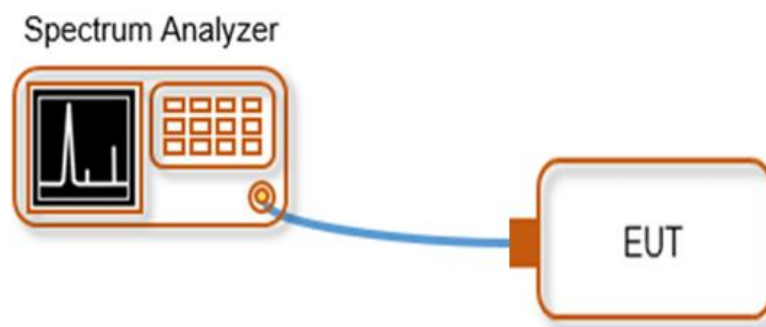
The transmitter output is connected to the Spectrum Analyzer and used following test procedure of ANSI c63.10-2020

1. Start was set to 30 MHz and stop was set to 25GHz.
2. Set RBW = 1 MHz
3. Set VBW $\geq 3 \times$ RBW
4. Detector = Peak
5. Number of sweep points $\geq 2 \times$ SPAN/RBW
6. Trace Mode = max hold

Out-of-band conducted spurious emissions were investigated for all data rates. However, the traces in the following plots are measured with a 1MHz RBW to reduce test time, so the display line may not necessarily appear to be 20dB below the level of the fundamental in a 1MHz bandwidth.

If there is no margin or non-conformity occurs, lower RBW to 100 kHz to proceed with the re-measurement.

3.5.4 Test Setup





3.5.5 Test Result

[Test Plot of Band Edge]

