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RF Test Report

6 GHz WLAN

Report No. : FCCCMKP-WAY-P23090062-3R1
Customer : DAVOLINK Inc.
Address : 112, Beolmal-ro, Dongan-gu Anyang-si, Gyeonggi-do South Korea 14057
Use of Report : Certification
Model Name : DVW-632
FCC ID : RZEDVW-632
Date of Test : 2023.09.06 to 2023.10.06
Test Method Used : FCC 47 CFR PART 15 Subpart E (Section §15.407)
KDB987594 D02v02r01
789033 D02 General UNII Test Procedures New
Rules v02r01, ANSI C63.10-2013
Testing Environment : Refer to the Test Condition

Test Result : ☒ Pass ☐ Fail

ISSUED BY: BV CPS ADT Korea Ltd., EMC/RF Laboratory

ADDRESS: Innoplex No.2 106, Sinwon-ro 306, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea 16675

TEST LOCATION: HeungAn-daero 49, DongAn-gu, Anyang-si, Gyeonggi-do, Korea, 14119

Tested by

Name : Kwangmin JUNG

(Signature)

Technical Manager

Name : Donghwa SHIN

(Signature)

2023. 12. 11

BV CPS ADT Korea Ltd.

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.

RELEASE CONTROL RECORD

REPORT NO.	REASON FOR CHANGE	DATE ISSUED
FCCCMKP-WAY-P23090062-3	Original release	2023.10.10
FCCCMKP-WAY-P23090062-3R1	Update note on test items of Contention Based Protocol	2023.12.11

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1 Summary of Test Results

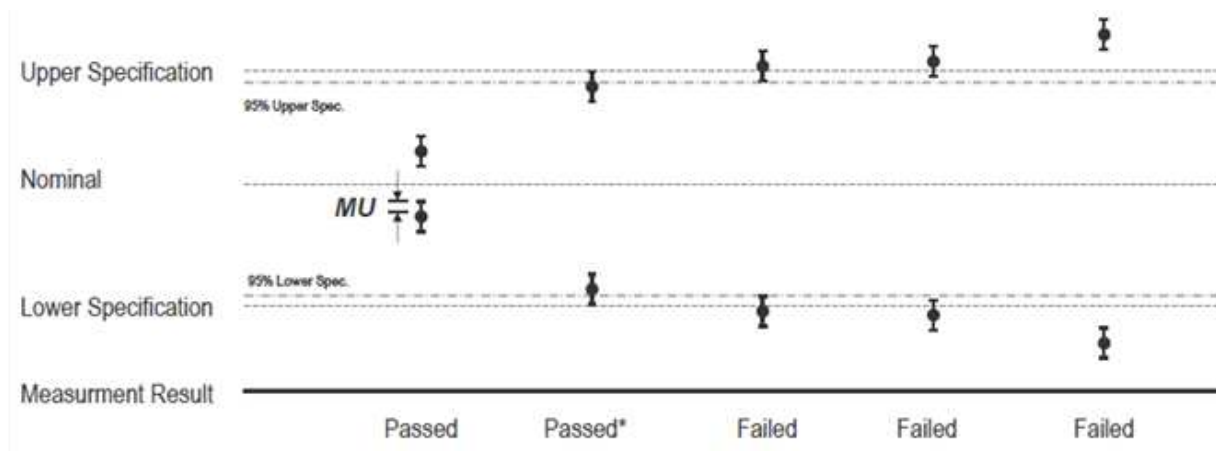
The EUT has been tested according to the following specifications

Applied Standard : FCC Part 15, Subpart E 15.407 (6ID)					
FCC Part Section(s)	Test Description	Limit	Test Condition	Test Result	Reference
15.407(a)	26 dB Bandwidth & 99 % Bandwidth	≤ 320 MHz	Conducted	PASS	Section 3.2
15.407(a)	Maximum Output Power	< 30 dBm EIRP		PASS	Section 3.3
15.407(a)	Maximum Power Spectral Density	< 5 dBm/MHz EIRP		PASS	Section 3.4
15.407(d)	Contention Based Protocol	Detect co-channel energy with 90% or greater certainty		PASS	Section 3.7
15.407(b)	In-Band Emissions	a. Suppressed by 20 dB at 1MHz outside of the channel edge. b. Suppressed by 28 dB at one channel band width from the channel center. c. Suppressed by 40 dB at one-and one-half time the channel bandwidth from the channel center.		PASS	Section 3.5
15.205 15.209 15.407(b)	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 3.8
15.207	AC Conducted Emissions (150 kHz – 30 MHz)	$< \text{FCC 15.207 limits}$	AC Line Conducted	PASS	Section 3.9
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.
- 2) Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

1.1 Decision Rules for Statement of Conformity



QUA-52 Decision Rule(QA Document) was applied.

Step 1) : Reference Check, Daily Check, Peripheral device Check

Step 2) : Re-test Procedure (Repeat the test maximum 3 times, Different Test Engineer)

- 1) If the original test results are subject to retesting and the judgement is unclear, the retest is carried out.
- 2) If the result of the first retest is the same as the initial test, the judgement is made based on the value.
- 3) If the result of the first retest differ from the results of the initial test, the second re-test is carried out.
- 4) After completion of the second retest, the average of the three test results is determined as the final result. However, if the deviation of the three test values is more than 5 % of the reference value, the technical manager should review the reproducibility of the test from the beginning.

1.2 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	9 kHz – 30 MHz	2.00
	30 MHz – 1 GHz	4.22
	1 GHz – 18 GHz	5.40
	18 GHz – 26.5 GHz	5.08
Measurement Items		Expanded Uncertainty $U = kU_c (k = 2)$
Conducted	Maximum Output Power	1.20
Measurement Items	Frequency Range	Expanded Uncertainty $U = kU_c (k = 2)$
AC Conducted Emissions	150 kHz ~ 30 MHz	3.10

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	6 GHz Low Power Indoor Access Point (6ID)		
Product name	KEVIN		
FCC ID	RZEDVW-632		
Model	DVW-632		
Additional model name	-		
Power Supply	DC 12 V		
Modulation Type	OFDM : 802.11ax(HE20, HE40, HE80, HE160)		
Transfer Rate	MCS0 to MCS11 (802.11ax) / MIMO(2TX)		
Operating Frequency	NII 5: 5 925 MHz to 6 425 MHz NII 6: 6 425 MHz to 6 525 MHz NII 7: 6 525 MHz to 6 875 MHz NII 8: 6 875 MHz to 7 125 MHz		
Output Power (EIRP)	NII 5: 22.59 dBm NII 6: 23.52 dBm NII 7: 23.04 dBm NII 8: 18.89 dBm		
Antenna Type	PCB Antenna		
Antenna Gain	ANT 1	ANT 2	Direction gain NOTE3
	NII 5: 5.19 dBi NII 6: 5.09 dBi NII 7: 5.83 dBi NII 8: 5.13 dBi	NII 5: 5.76 dBi NII 6: 5.76 dBi NII 7: 6.59 dBi NII 8: 5.72 dBi	NII 5: 5.48 dBi NII 6: 5.44 dBi NII 7: 6.23 dBi NII 8: 5.44 dBi
H/W Version	1.1		
S/W Version	r7331		

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)
 $10 \log [(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10}) / N^{ANT}]$ dBi

2.2 Tested sample and Tested companion device information

Type	Model	Note
Test sample (Conducted)	DVW-632	S/N : DVW632IA20CDD01007
Test sample (Radiated)	DVW-632	S/N: DVW632IA20CDD01012

2.3 Description of Test Mode

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

Test Mode		Worst case data rate
TM 1	802.11ax(HE20)	MCS 0 NSS 2
TM 2	802.11ax(HE40)	MCS 0 NSS 2
TM 3	802.11ax(HE80)	MCS 0 NSS 2
TM 4	802.11ax(HE160)	MCS 0 NSS 2

6 GHz Band	Mode	Tested Frequency (MHz)		
NII 5	802.11ax(HE20)	5 955	6 175	6 415
	802.11ax(HE40)	5 965	6 165	6 405
	802.11ax(HE80)	5 985	6 145	6 385
	802.11ax(HE160)	6 025	6 185	6 345
NII 6	802.11ax(HE20)	6 435	6 475	6 515
	802.11ax(HE40)	6 445	6 485	6 525
	802.11ax(HE80)	6 465	-	-
	802.11ax(HE160)	6 505	-	-
NII 7	802.11ax(HE20)	6 535	6 695	6 875
	802.11ax(HE40)	6 565	6 685	6 845
	802.11ax(HE80)	6 545	6 705	6 865
	802.11ax(HE160)	6 665	6 825	-
NII 8	802.11ax(HE20)	6 895	6 995	7 115
	802.11ax(HE40)	6 885	7 005	7 085
	802.11ax(HE80)	6 945	7 025	-
	802.11ax(HE160)	6 985	-	-

2.4 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.

2.5 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.

2.6 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)
987594 D02 U-NII 6 GHz EMC Measurement v02r01
KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2013

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

2.7 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
True-RMS Digital Multimeter	Fluke	177	43240434	2024-05-25
MXG Vector Signal Generator	Keysight Technologies	N5182B	MY53051310	2023-11-22
Frequency Extender	Keysight Technologies	N5182BX07	MY61500110	2024-05-26
Signal Generator	R&S	SMB100A	MY41006053	2024-05-25
2 Way Power Divider	Woken Technology	0120A02208001S	DDT91LDW3S9	2023-11-22
DC Power Supply	Agilent	6674A	3637A01457	2023-11-22
Active Loop Antenna	R&S	HFH2-Z2E	100881	2025-02-03
Trilog Antenna (with 6 dB ATT.)	Schwarzbeck	VULB 9163	1100	2025-02-08
Horn Antenna	R&S	HF907	102773	2023-12-22
BBHA 9170 Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	00955	2023-11-30
Signal Conditioning Unit	R&S	SCU-18F	180112	2023-11-21
Signal Conditioning Unit	R&S	SCU08F2	08400015	2023-11-21
Amplifier	L3 Narda-MITEQ	JS44-18004000-33-8P	2142086	2023-11-22
EMI Test Receiver	R&S	ESW8	101170	2023-11-21
EMI Test Receiver	R&S	ESW44	101812	2023-11-22
Spectrum Analyzer	R&S	FSW50	101403	2023-11-22
Signal Analyzer	Keysight Technologies	N9020B	MY62150135	2024-05-25
Signal Analyzer	Keysight Technologies	N9030B	MY57142476	2023-11-22
Humidity Barometer TEMP Meter	LUTRON	MHB-382SD	AJ.38459	2023-11-29
Humidity Barometer TEMP Meter	LUTRON	MHB-382SD	AJ.38482	2023-11-22
Attenuator	API inmet	40AH2W-10	2	2024-05-26
High Pass Filter	Micro-Tronics	HPM17543	28	2024-05-25
Open Switch and Control Unit	R&S	OSP120	102245	-
MIMO Power Set Master	Keysight Technologies	MP400B	-	2023-12-02
LISN	R&S	ENV216	102437	2023-11-22
EMI Test Receiver	R&S	ESR	102529	2023-11-21
EMC 32(CE)	R&S	EMC32	Version 10.50.40	-
EMC 32(RSE)	R&S	EMC32	Version 10.35.10	-

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 UFL Type. (FPC Antenna)

Result

The EUT complies with the requirement of §15.203

3.2 26 dB Bandwidth & 99 % Bandwidth

3.2.1 26 dB Bandwidth Test Procedure

The bandwidth at 26 dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies. The 26 dB bandwidth is used to determine the conducted output power limit.

The transmitter output is connected to the Spectrum Analyzer and used following test procedure of KDB987594

1. Set resolution bandwidth (RBW) = approximately 1 % of the EBW.
2. Set the video bandwidth (VBW) > RBW.
3. Detector = Peak.
4. Trace mode = max hold.

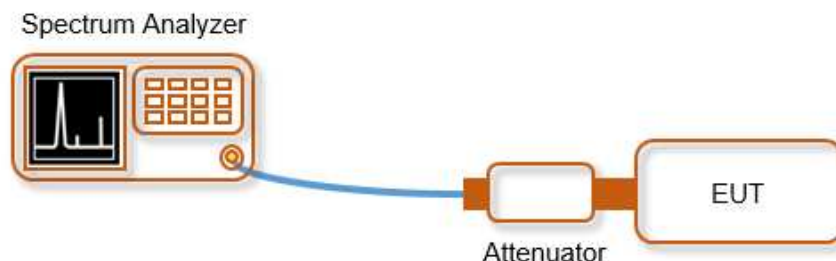
Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

3.2.2 99 % Bandwidth Test Procedure

The transmitter output is connected to the Spectrum Analyzer and used following test procedure of KDB987594

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1% to 5% of the OBW
4. Set VBW $\geq 3 \times$ RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99% power bandwidth function of the instrument (if available).

3.2.3 Test Setup



3.2.3 Test Result

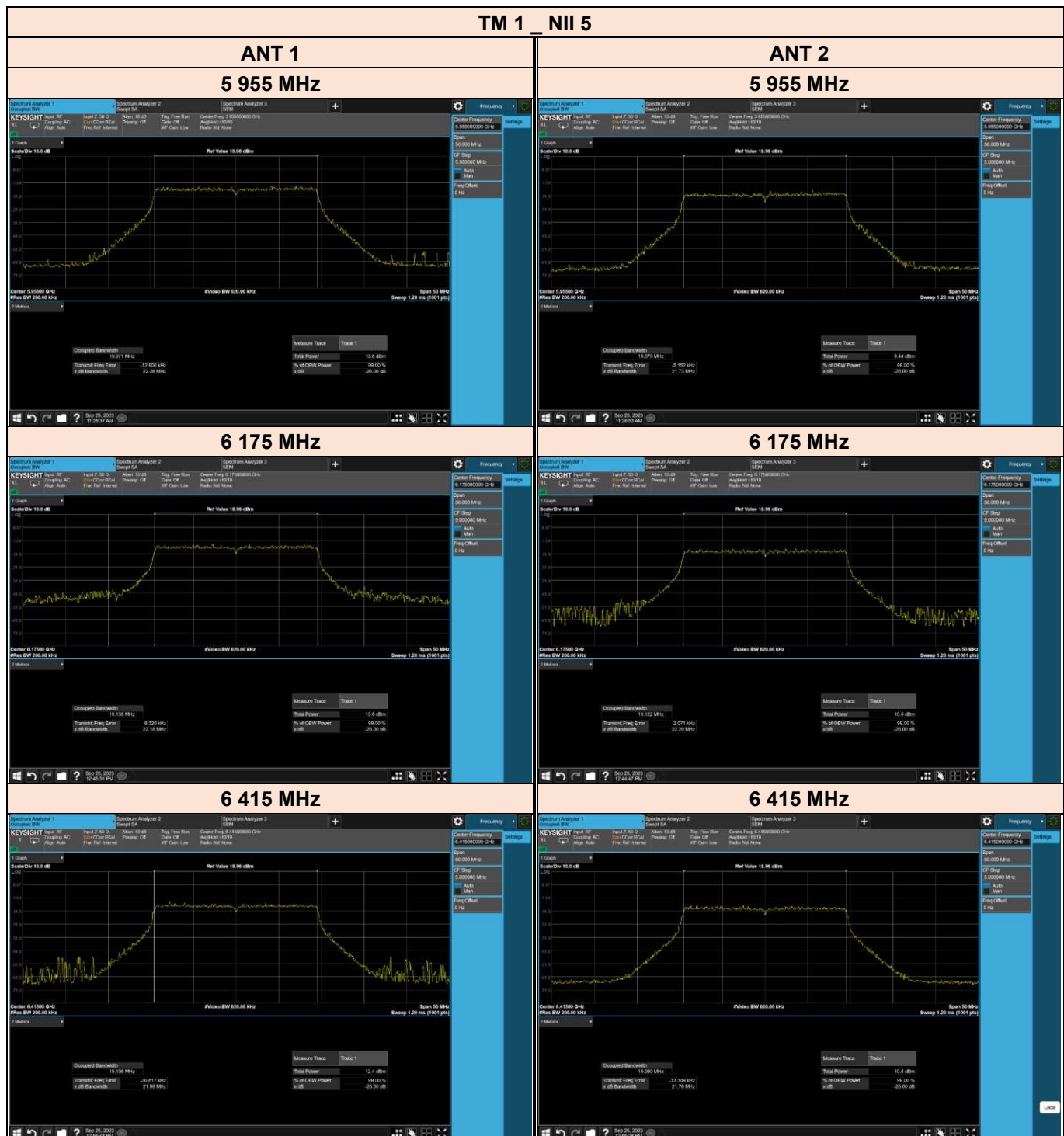
[Test Data of 26 dB Bandwidth & 99 % Bandwidth]

Test Mode	Band	Tested Frequency [MHz]	X dB Bandwidth [MHz]		99 % Bandwidth [MHz]	
			ANT1	ANT2	ANT1	ANT2
TM 1	NII 5	5 955	22.38	21.73	19.07	19.08
		6 175	22.18	22.29	19.14	19.12
		6 415	21.99	21.76	19.11	19.09
	NII 6	6 435	22.15	21.87	19.10	19.08
		6 475	22.62	22.12	19.08	19.10
		6 515	22.44	21.86	19.06	19.13
	NII 7	6 535	22.14	21.55	19.11	19.11
		6 695	21.84	22.27	19.12	19.09
		6 875	22.05	21.64	19.13	19.12
	NII 8	6 895	22.39	22.22	19.11	19.06
		6 995	21.94	21.86	19.12	19.09
		7 115	22.03	22.09	19.12	19.10
TM 2	NII 5	5 965	43.44	43.10	38.02	38.04
		6 165	43.45	43.83	38.08	38.10
		6 405	43.98	42.57	38.07	38.04
	NII 6	6 445	43.43	42.30	38.01	38.04
		6 485	43.00	42.50	38.09	38.01
		6 525	43.19	43.03	37.91	38.05
	NII 7	6 565	43.48	42.97	38.05	38.00
		6 685	43.55	43.33	38.00	38.04
		6 845	43.69	42.82	38.02	38.05
	NII 8	6 885	43.46	43.19	38.04	38.02
		7 005	43.02	42.78	38.04	37.98
		7 085	43.63	42.96	38.03	38.00



Test Mode	Band	Tested Frequency [MHz]	X dB Bandwidth [MHz]		99 % Bandwidth [MHz]	
			ANT1	ANT2	ANT1	ANT2
TM 3	NII 5	5 985	86.75	84.52	77.70	77.55
		6 145	86.68	87.14	77.90	77.77
		6 385	88.33	86.34	77.77	77.70
	NII 6	6 465	86.45	85.29	77.70	77.75
	NII 7	6 545	86.59	86.21	77.79	77.71
		6 705	86.78	86.72	77.88	77.63
		6 865	87.80	86.16	77.83	77.78
	NII 8	6 945	87.74	86.61	77.86	77.72
		7 025	89.05	87.07	77.65	77.57
TM 4	NII 5	6 025	167.50	165.40	156.65	156.16
		6 185	167.90	168.70	156.88	156.92
		6 345	168.10	166.90	156.58	156.42
	NII 6	6 505	168.00	168.80	157.27	156.90
	NII 7	6 665	168.00	168.60	156.56	156.44
		6 825	168.40	166.80	156.92	157.01
	NII 8	6 985	166.60	167.80	156.77	156.39

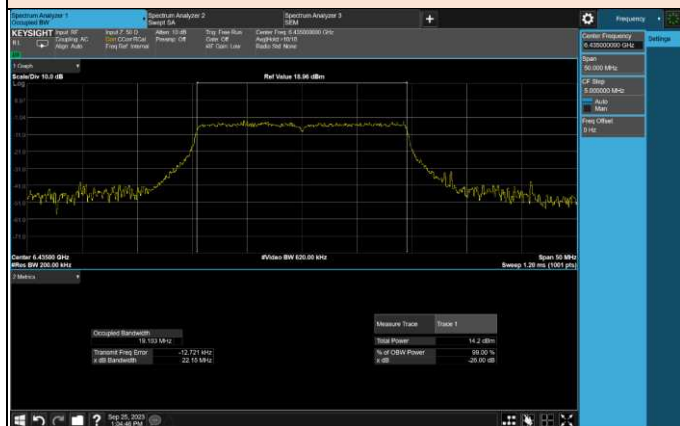
[Test Plot of 26 dB Bandwidth & 99 % Bandwidth]



TM 1_NII 6

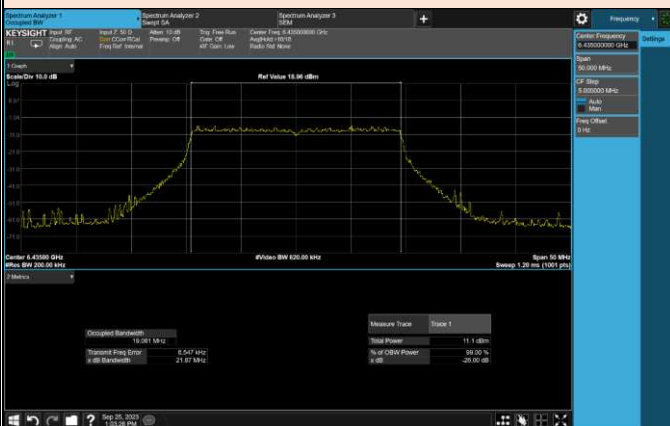
ANT 1

6 435 MHz

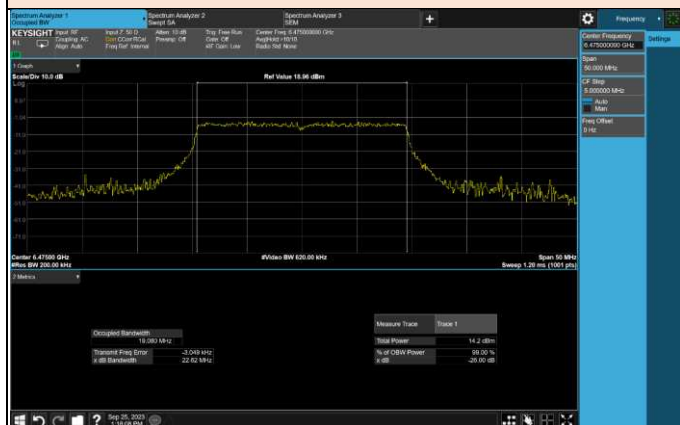


ANT 2

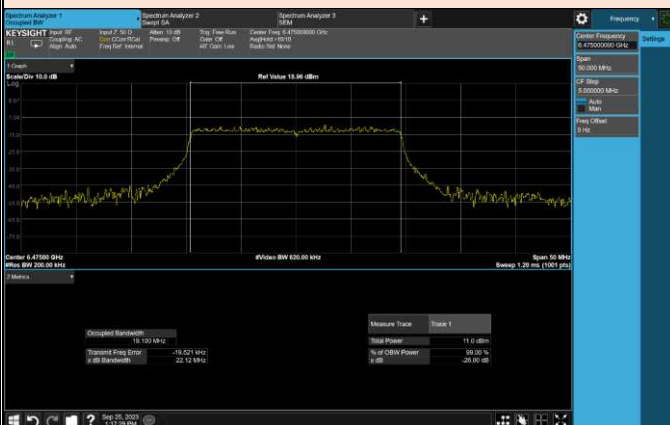
6 435 MHz



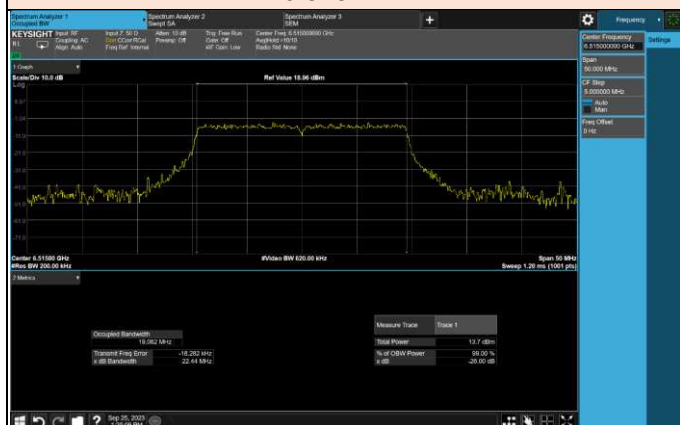
6 475 MHz



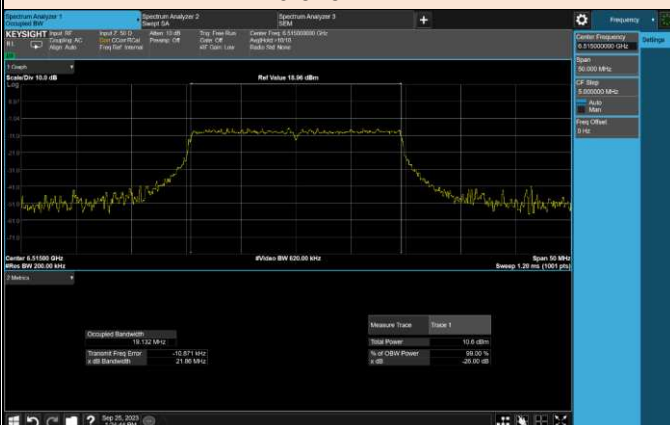
6 475 MHz



6 515 MHz



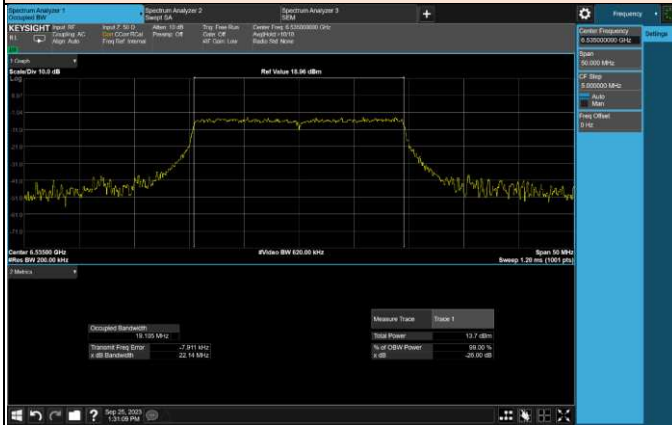
6 515 MHz



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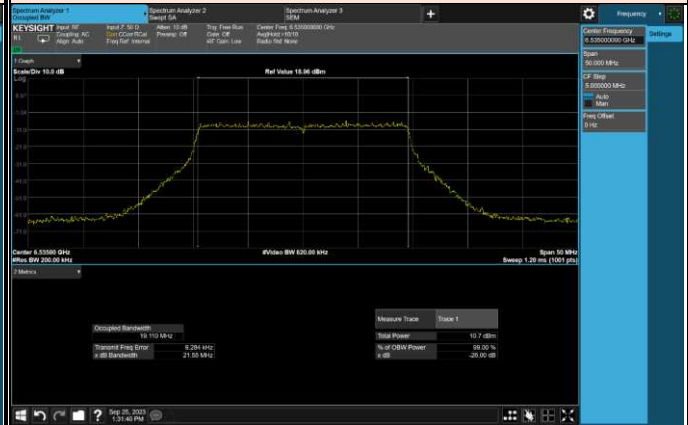
ANT 1

6 535 MHz

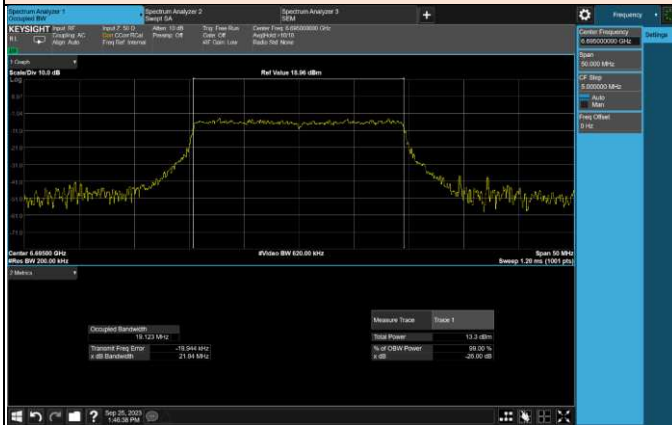


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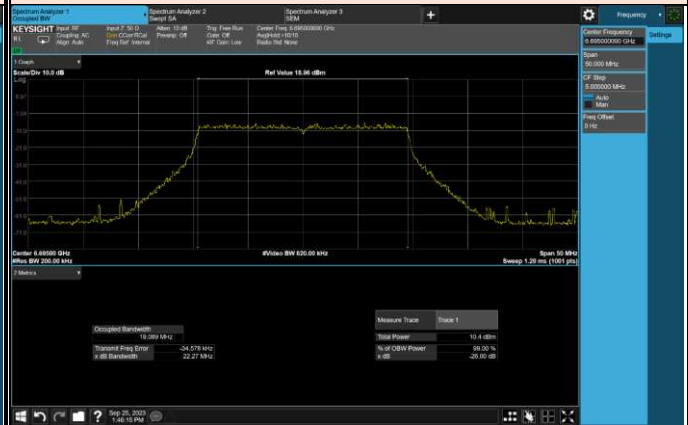
6 535 MHz



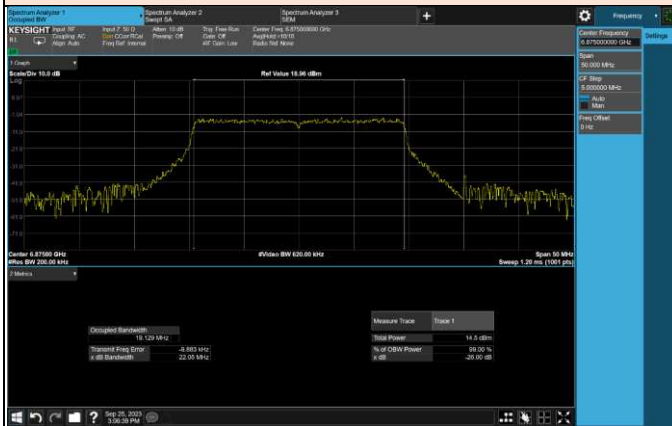
6 695 MHz



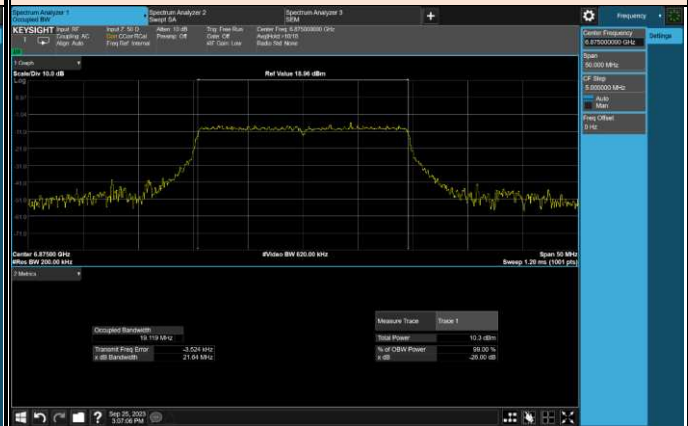
6 695 MHz



6 875 MHz



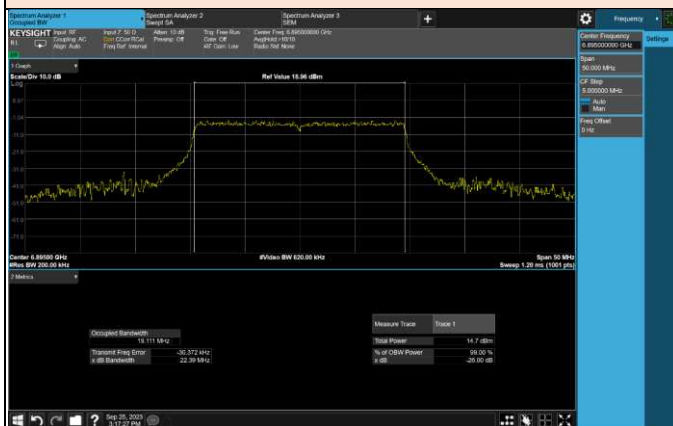
6 875 MHz



TM 1_NII 8

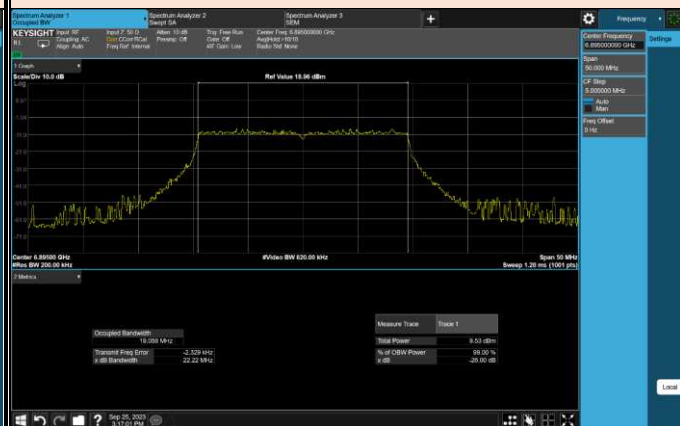
ANT 1

6 895 MHz

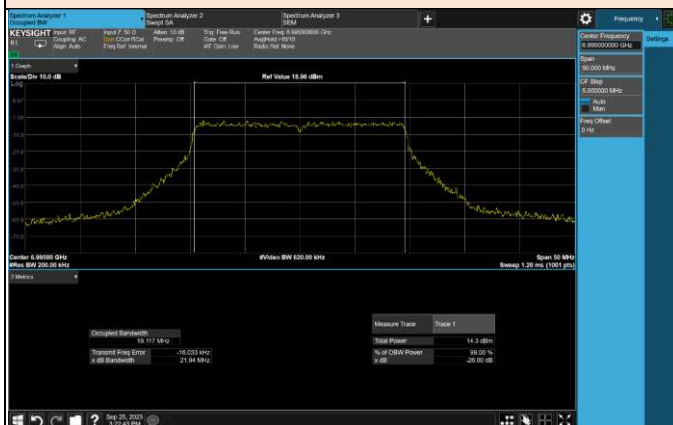


ANT 2

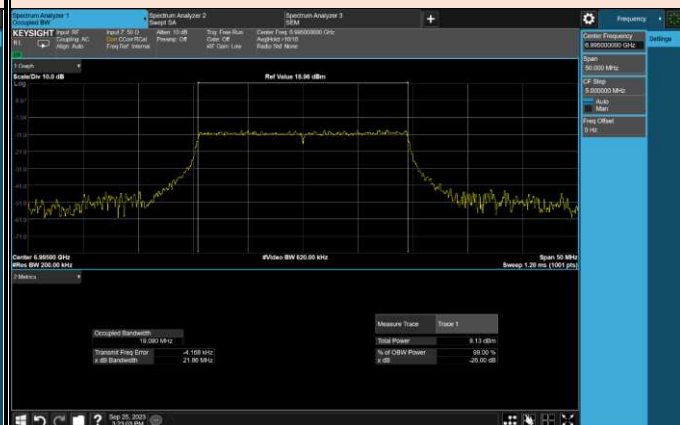
6 895 MHz



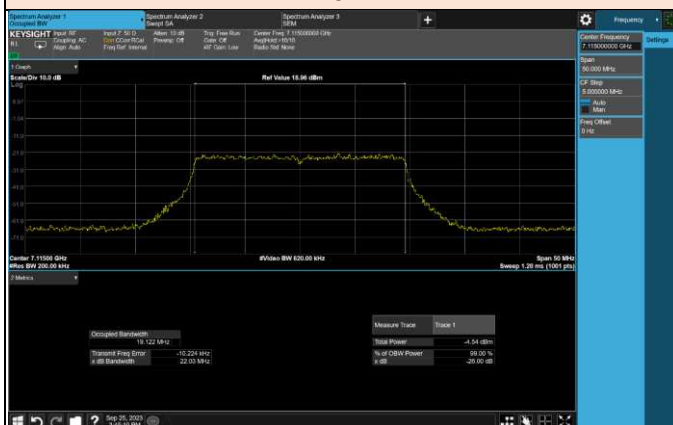
6 995 MHz



6 995 MHz



7 115 MHz



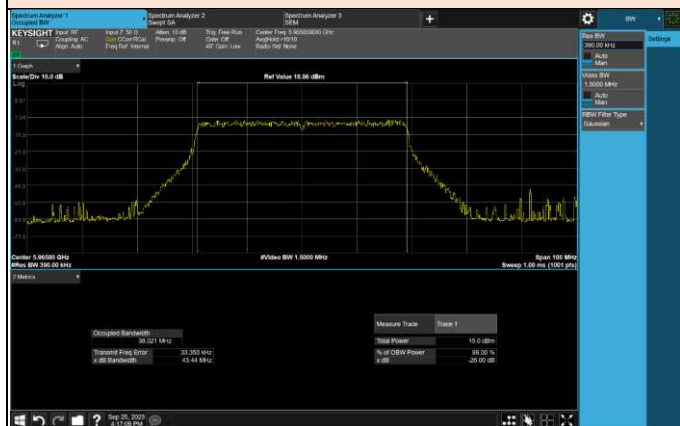
7 115 MHz



TM 2 _ NII 5

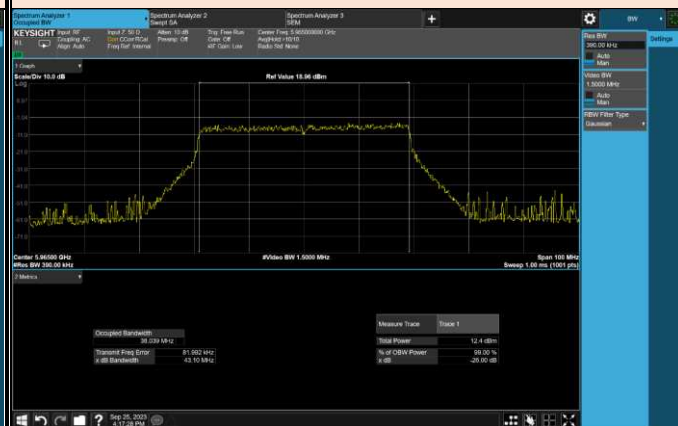
ANT 1

5 965 MHz

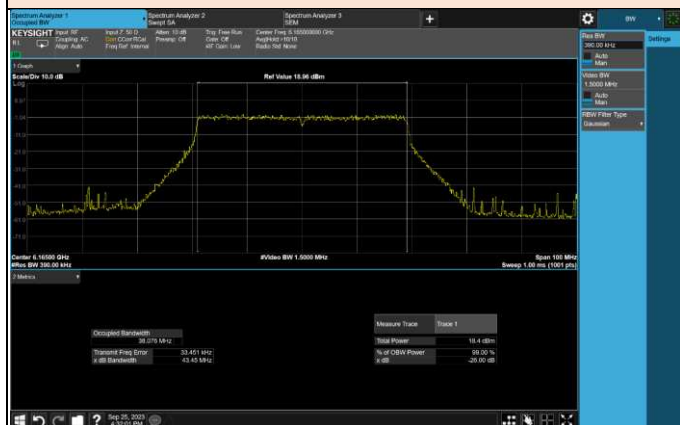


ANT 2

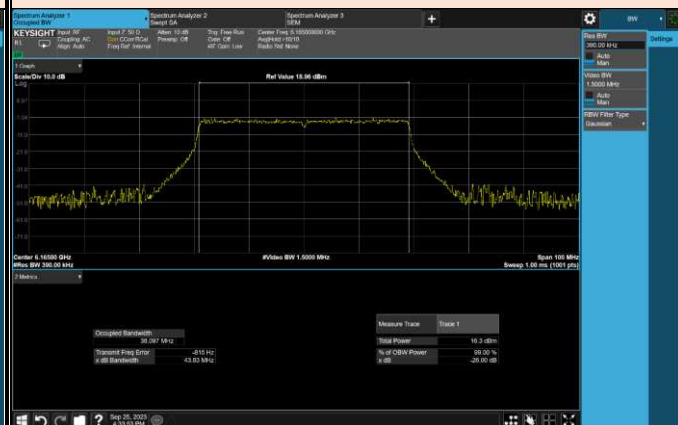
5 965 MHz



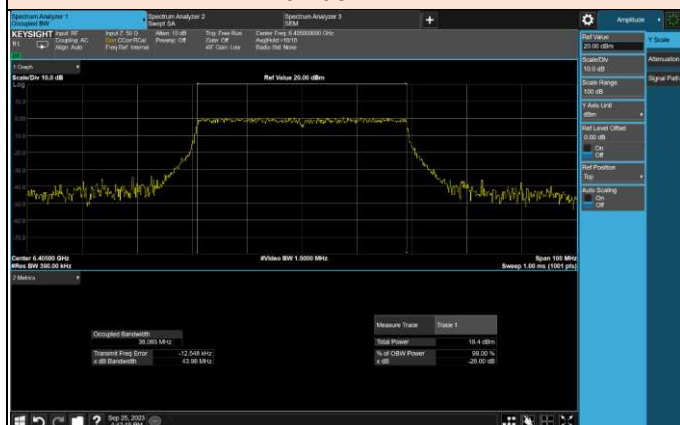
6 165 MHz



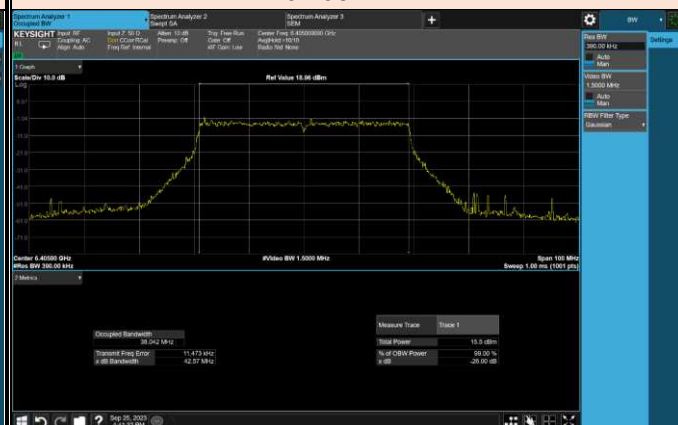
6 165 MHz



6 405 MHz



6 405 MHz



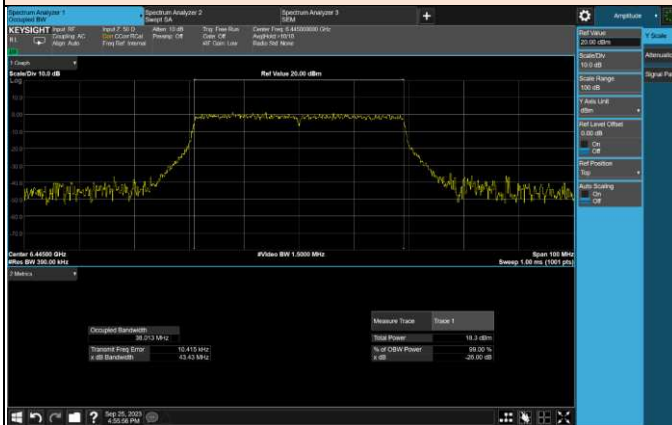


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VERITAS

TM 2 _ NII 6

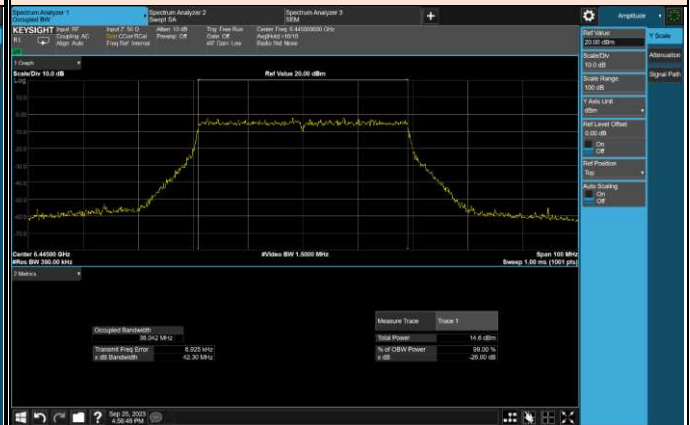
ANT 1

6 445 MHz



ANT 2

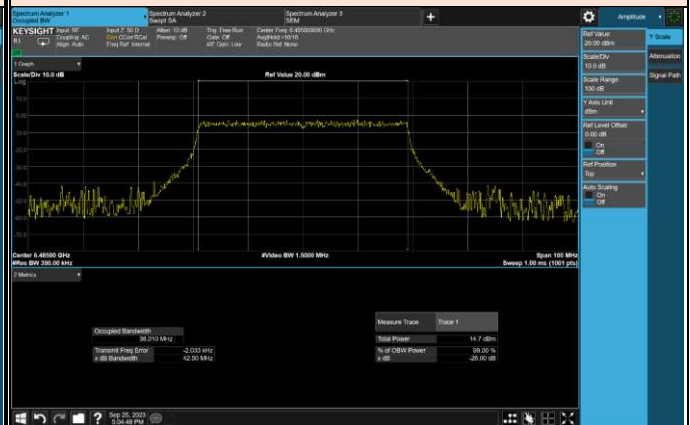
6 445 MHz



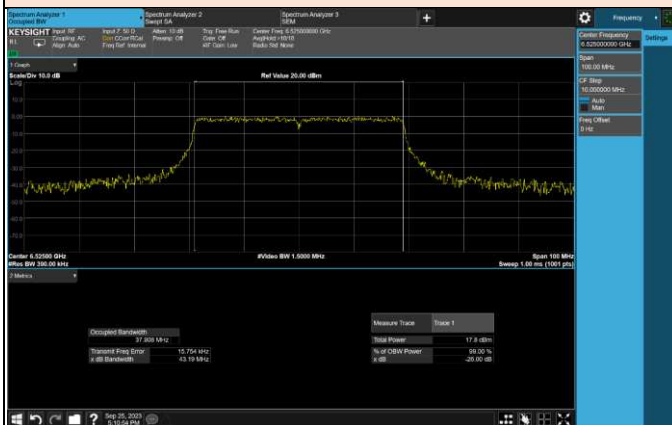
6 485 MHz



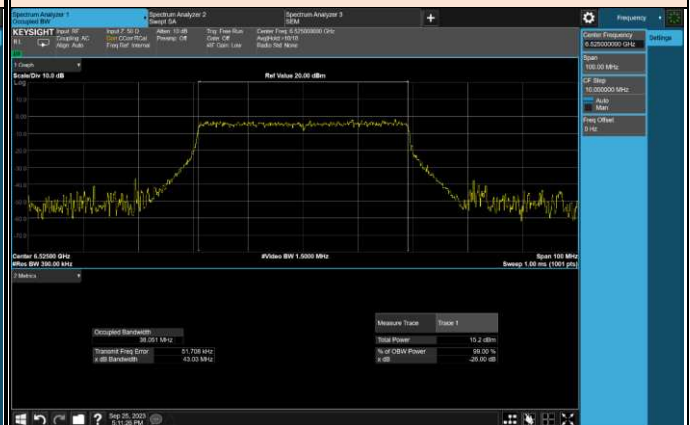
6 485 MHz



6 525 MHz



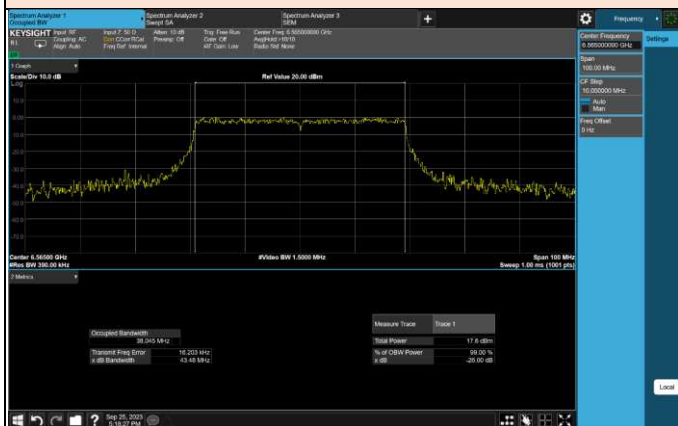
6 525 MHz



TM 2 _ NII 7

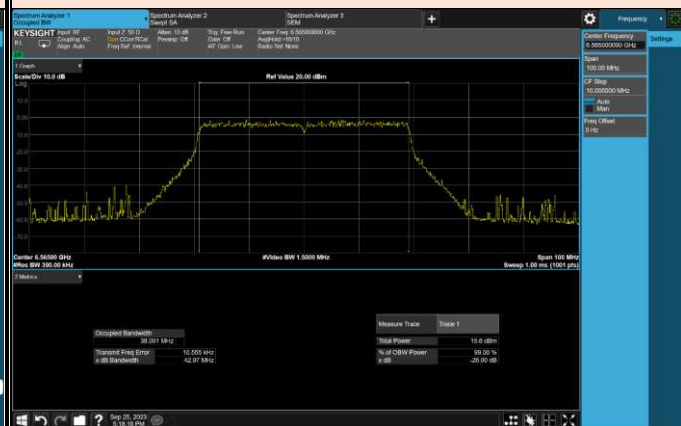
ANT 1

6 565 MHz

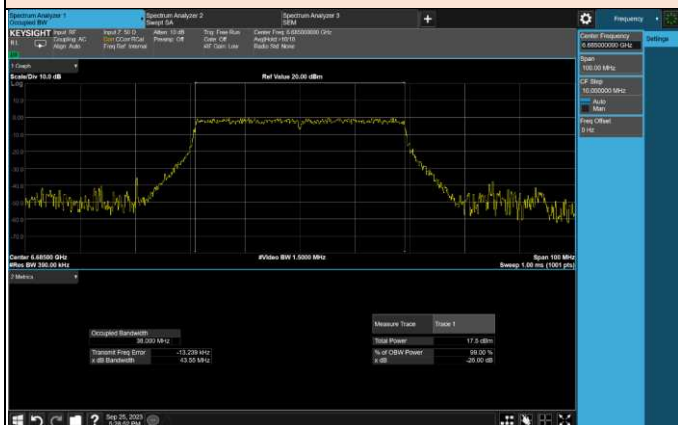


ANT 2

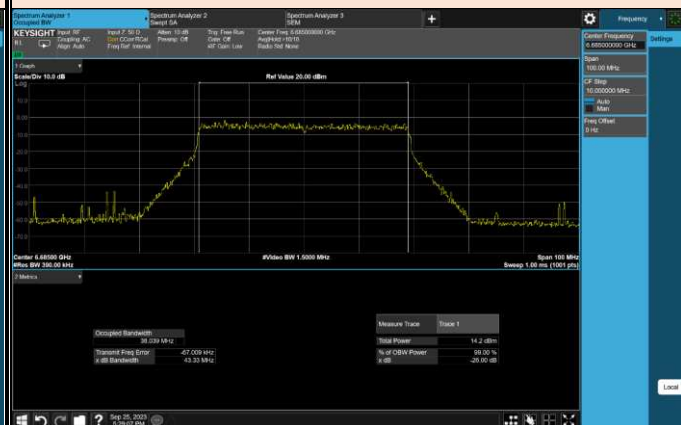
6 565 MHz



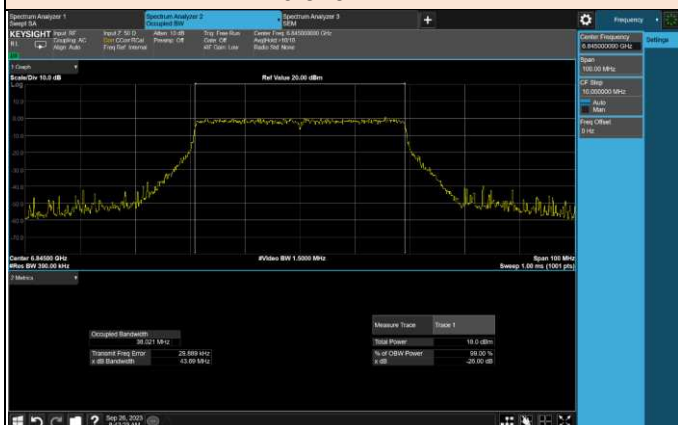
6 685 MHz



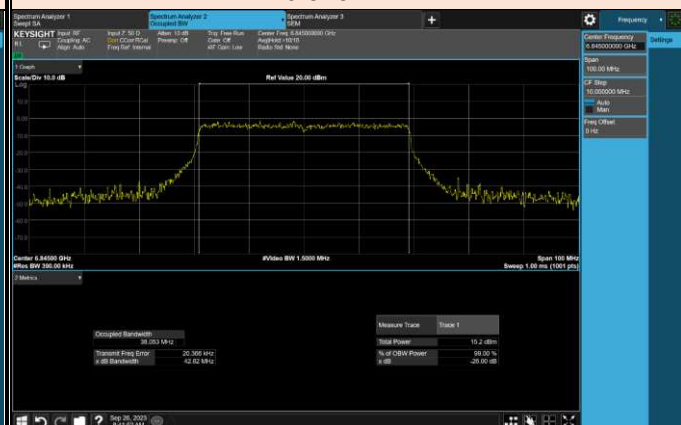
6 685 MHz



6 845 MHz



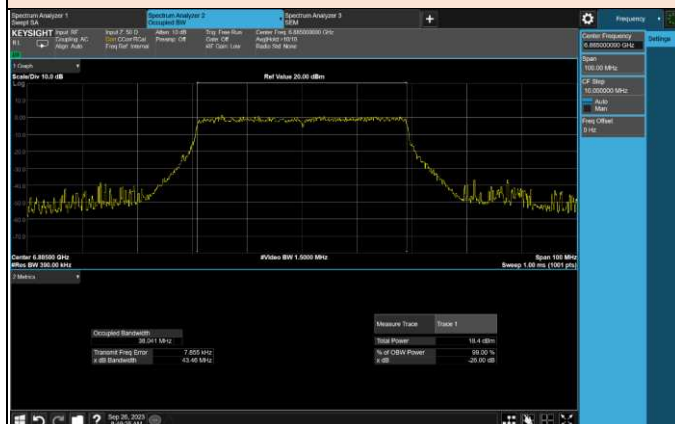
6 845 MHz



TM 2 _ NII 8

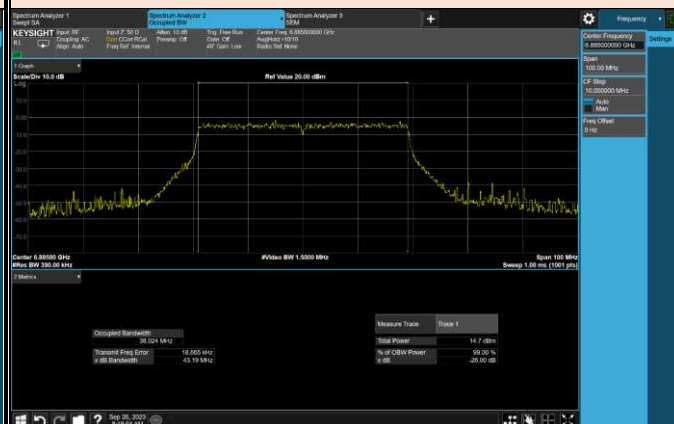
ANT 1

6 885 MHz

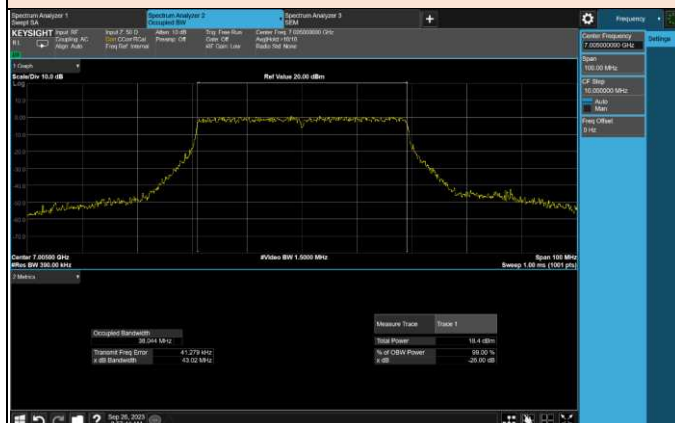


ANT 2

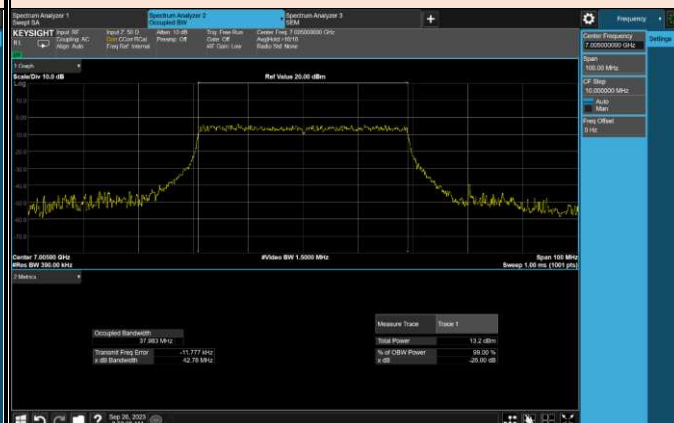
6 885 MHz



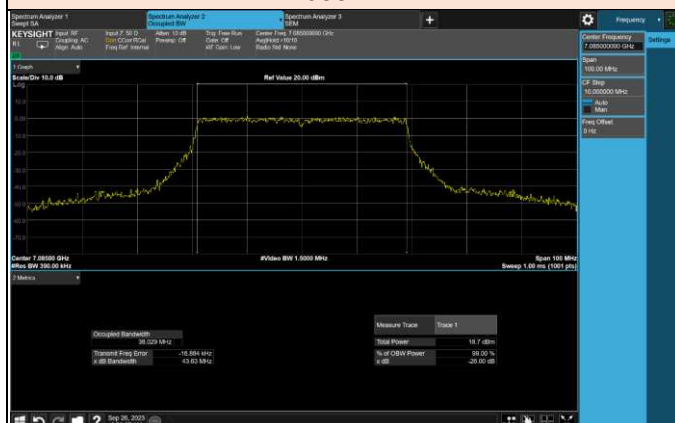
7 005 MHz



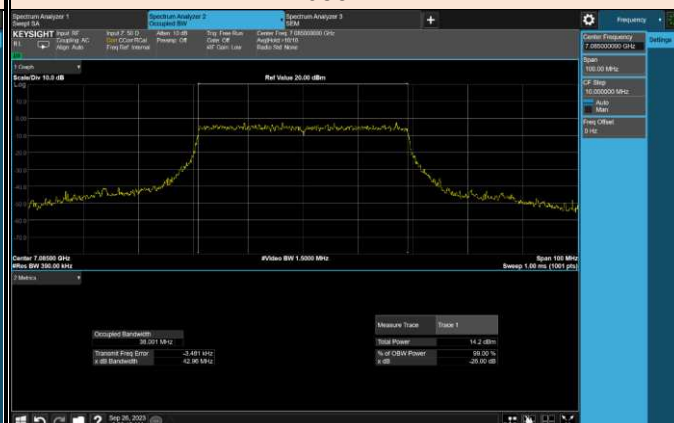
7 005 MHz



7 085 MHz



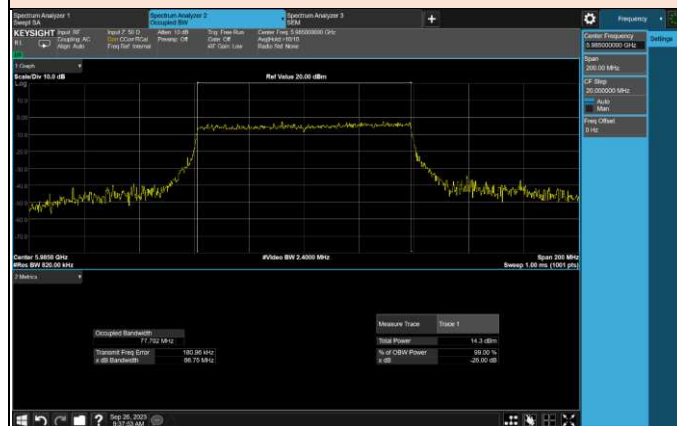
7 085 MHz



TM 3 _ NII 5

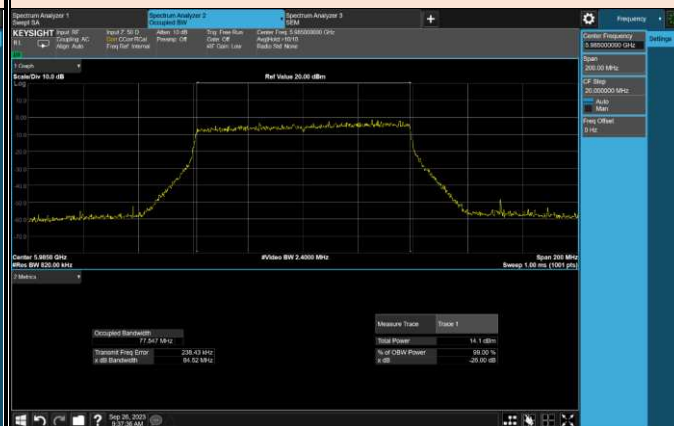
ANT 1

5 985 MHz

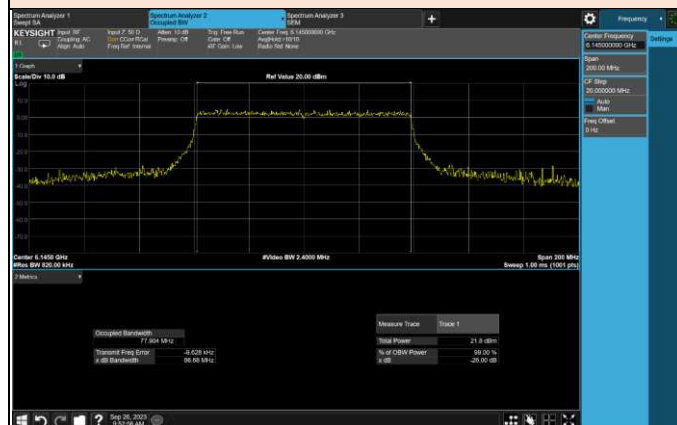


ANT 2

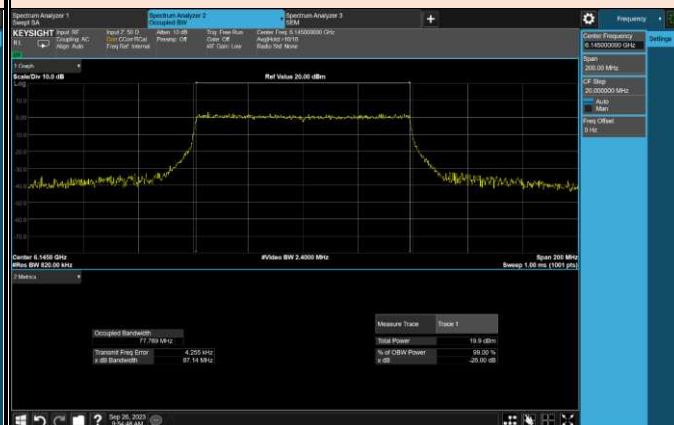
5 985 MHz



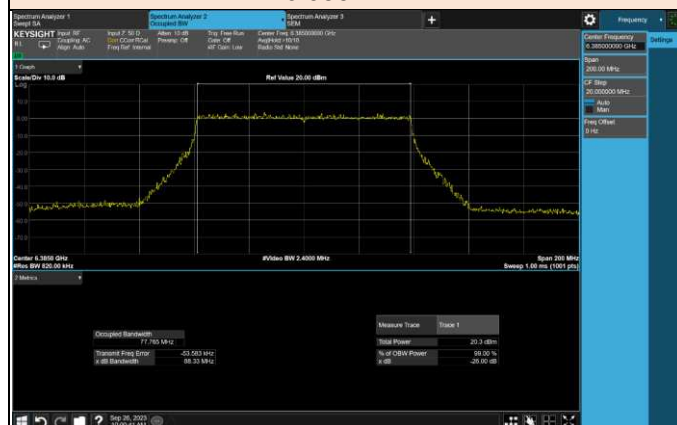
6 145 MHz



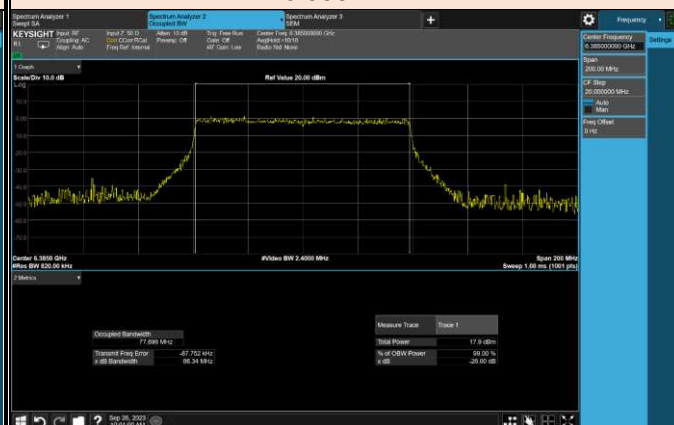
6 145 MHz

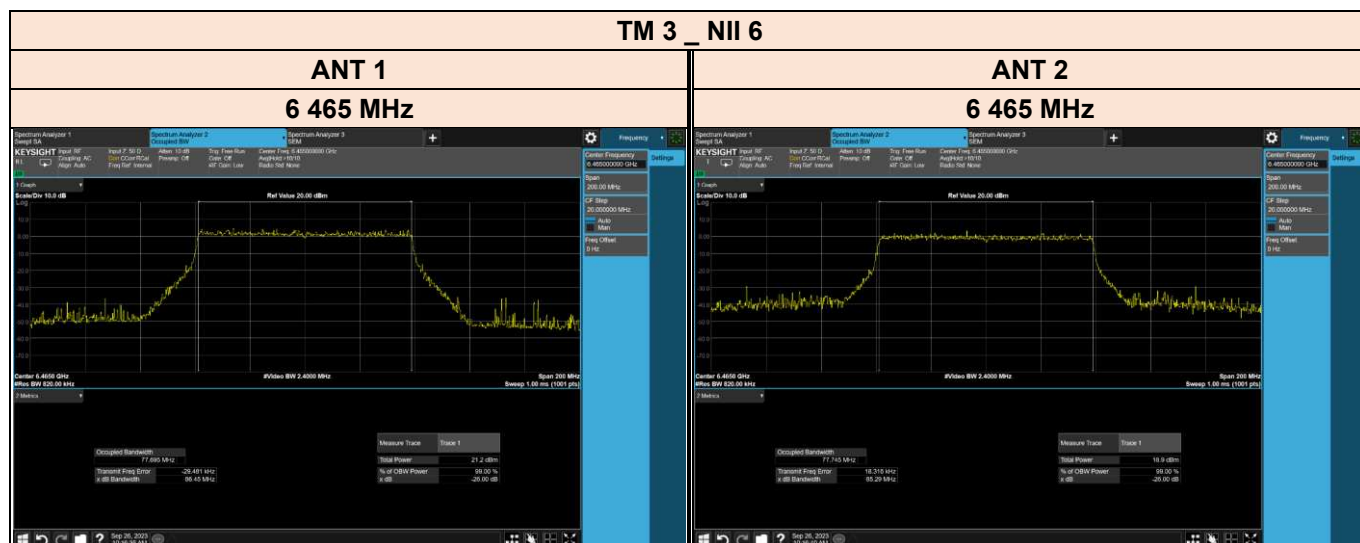


6 385 MHz



6 385 MHz

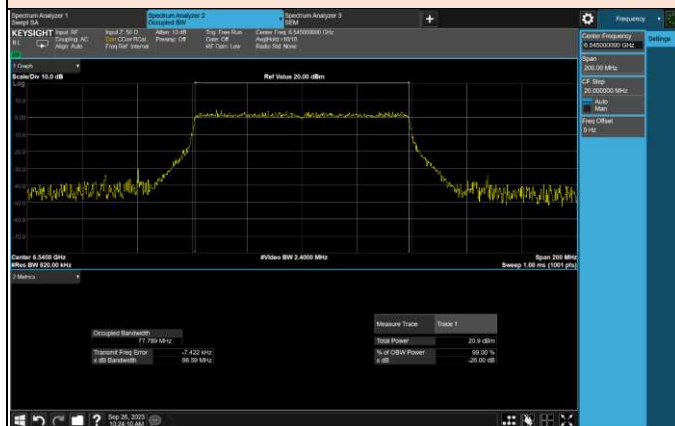




TM 3_NII 7

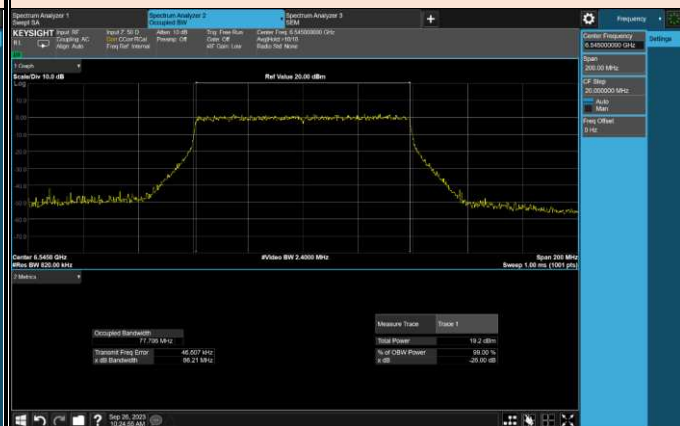
ANT 1

6 545 MHz

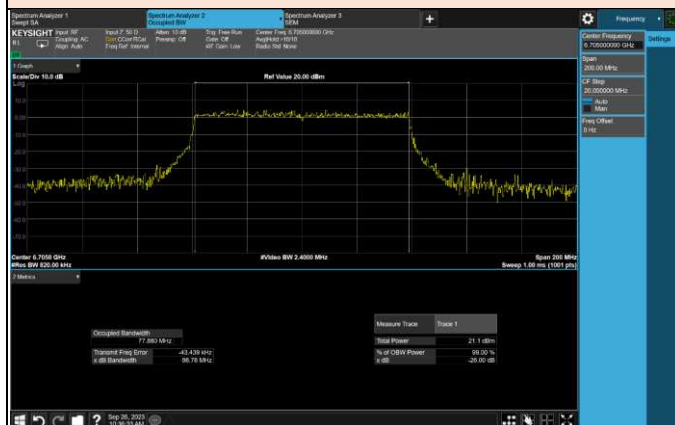


ANT 2

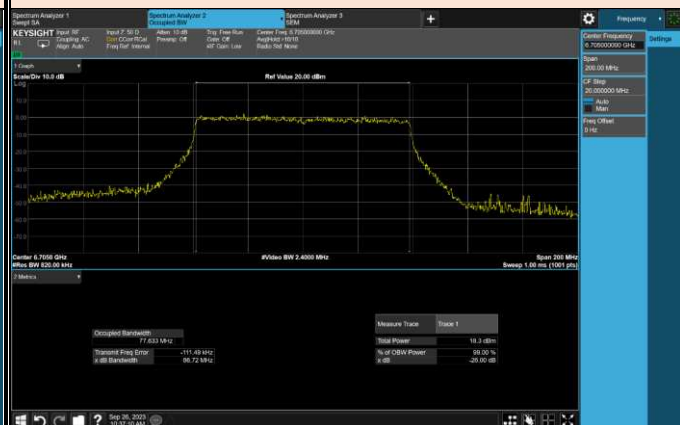
6 545 MHz



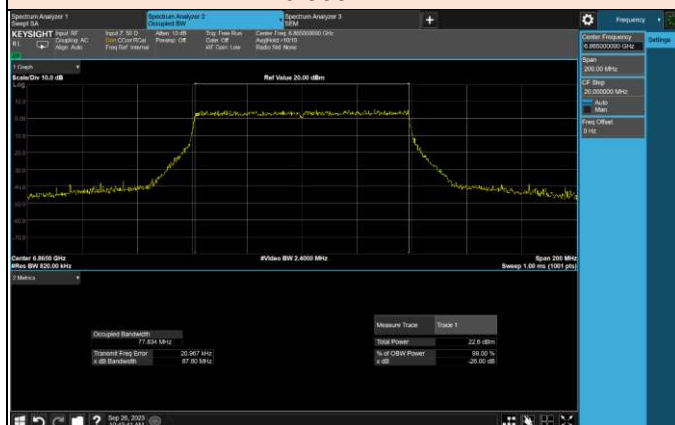
6 705 MHz



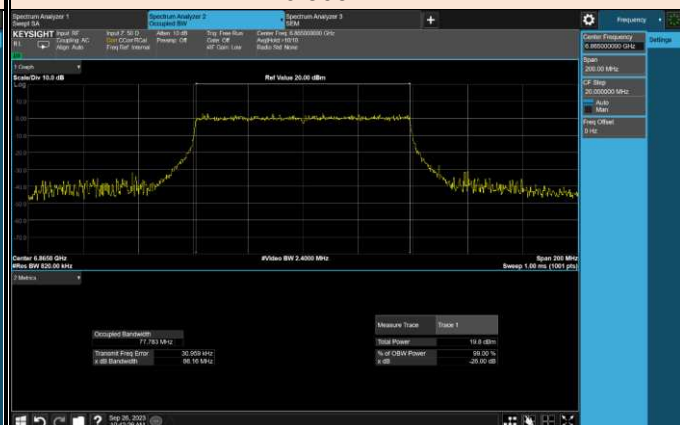
6 705 MHz



6 865 MHz



6 865 MHz



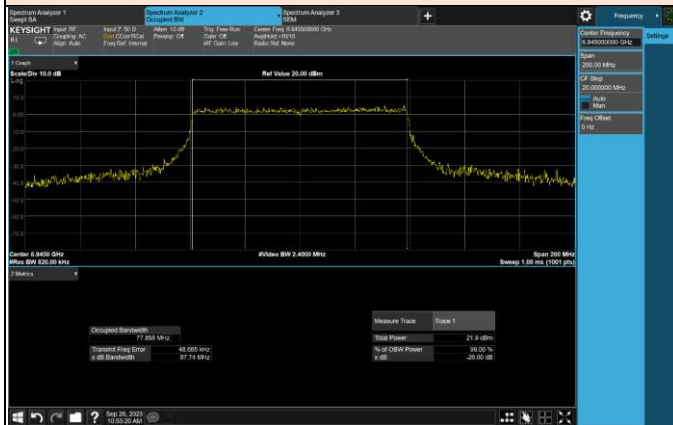


BUREAU
VERITAS

TM 3 _ NII 8

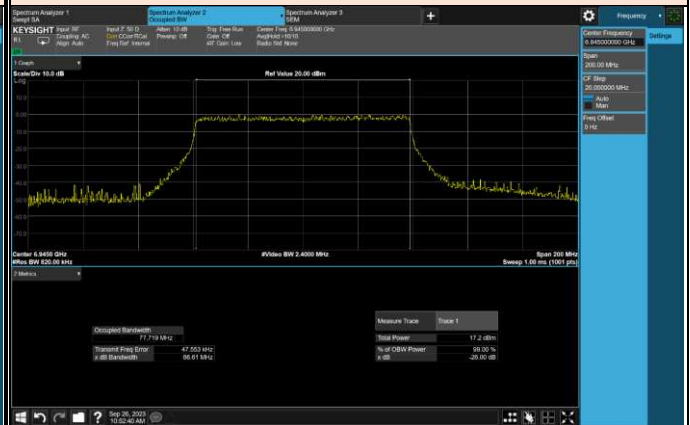
ANT 1

6 945 MHz



ANT 2

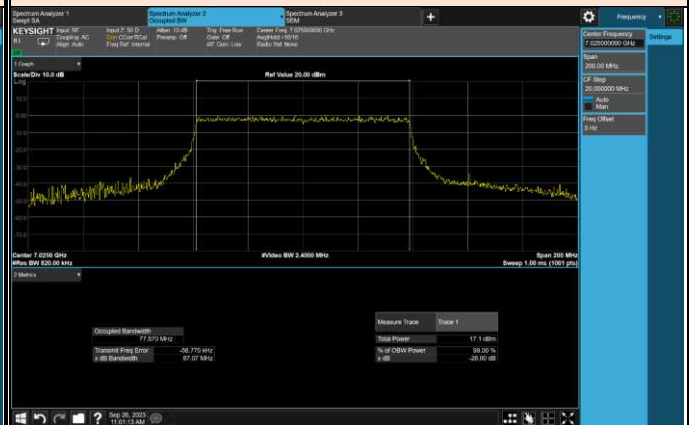
6 945 MHz



7 025 MHz



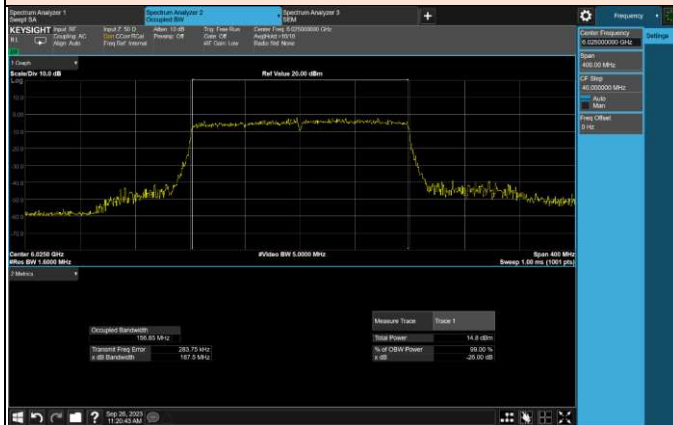
7 025 MHz



TM 4 _ NII 5

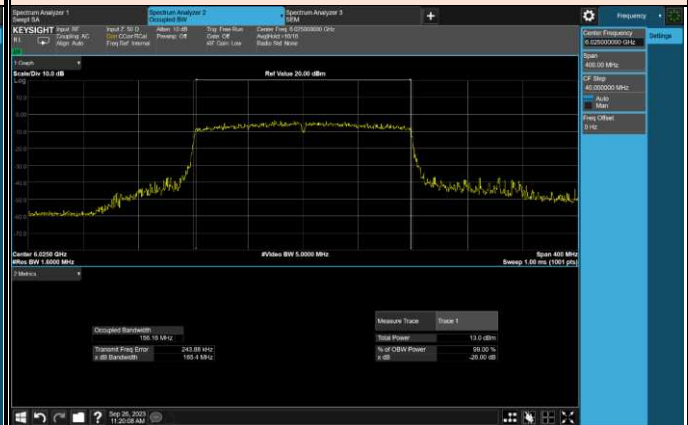
ANT 1

6 025 MHz



ANT 2

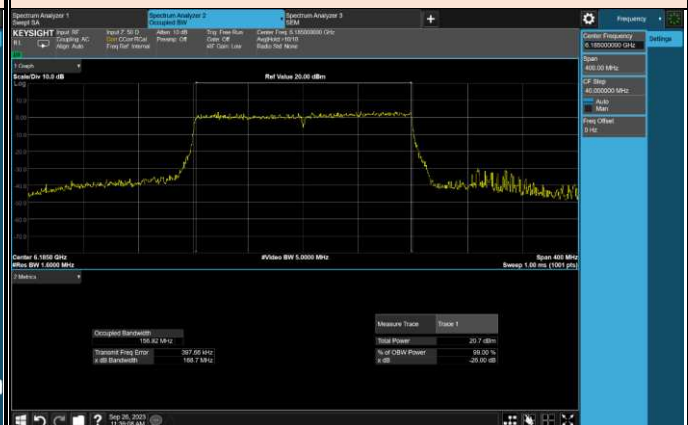
6 025 MHz



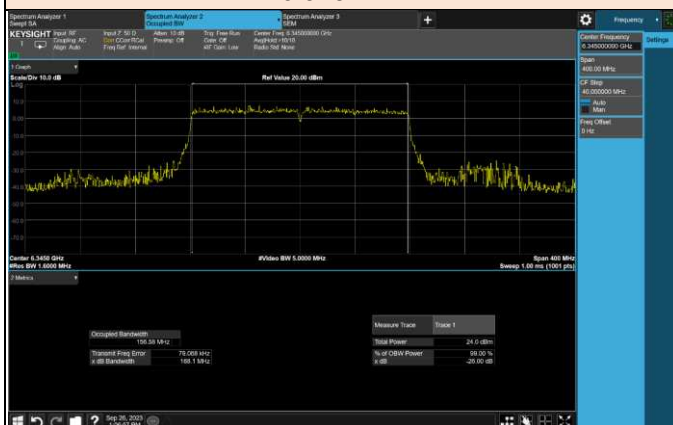
6 185 MHz



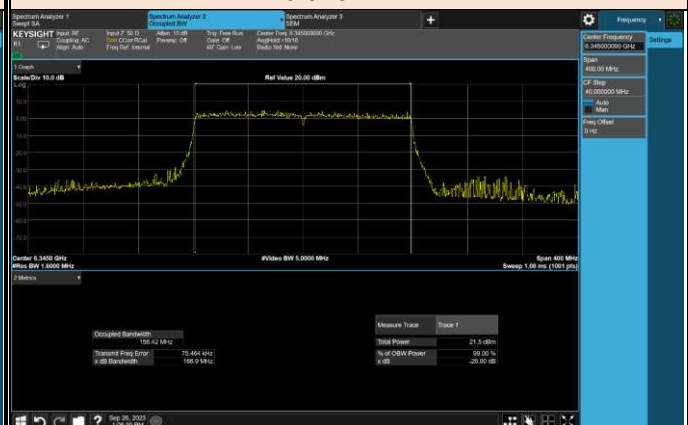
6 185 MHz



6 345 MHz



6 345 MHz



TM 4 _ NII 6

ANT 1

6 505 MHz



ANT 2

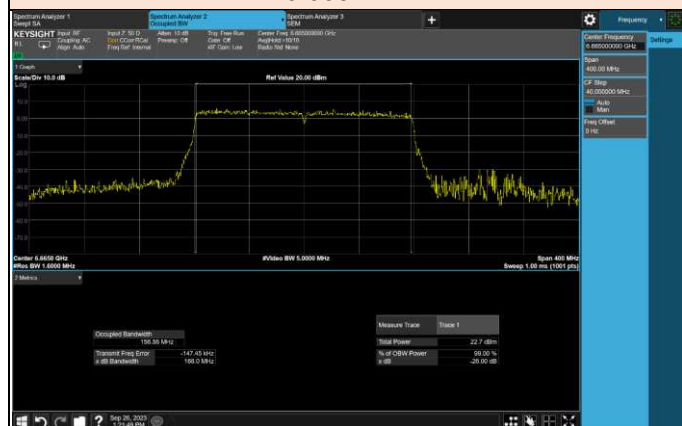
6 505 MHz



TM 4 _ NII 7

ANT 1

6 665 MHz



ANT 2

6 665 MHz

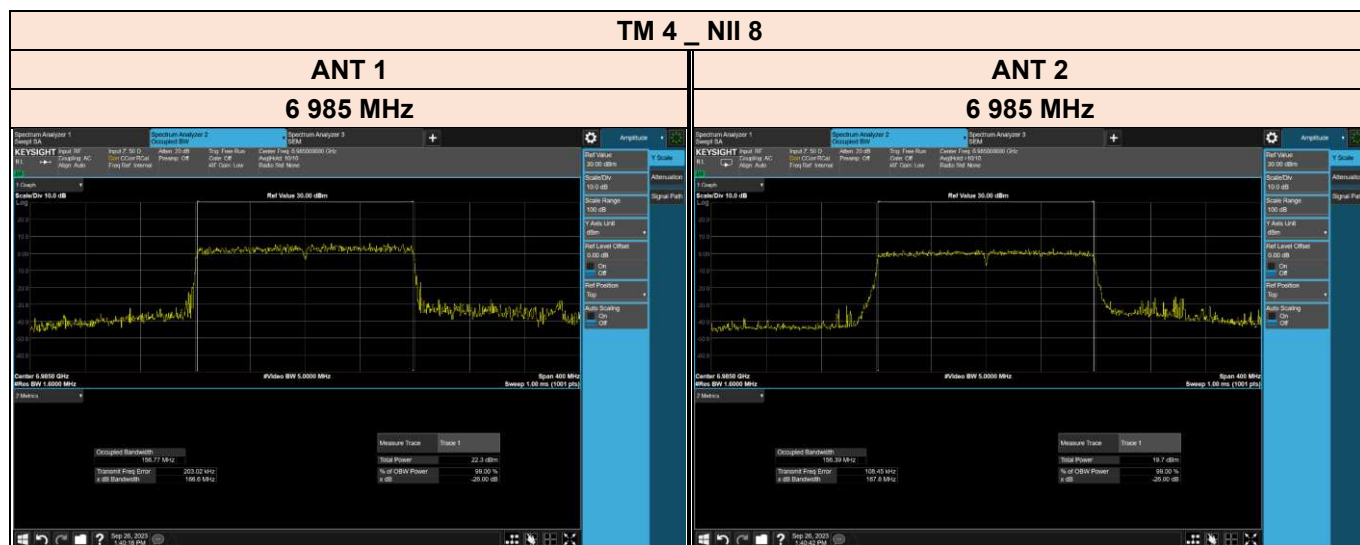


6 825 MHz



6 825 MHz





3.3 Maximum Output Power

3.3.1 Regulation

Part. 15.407(a)

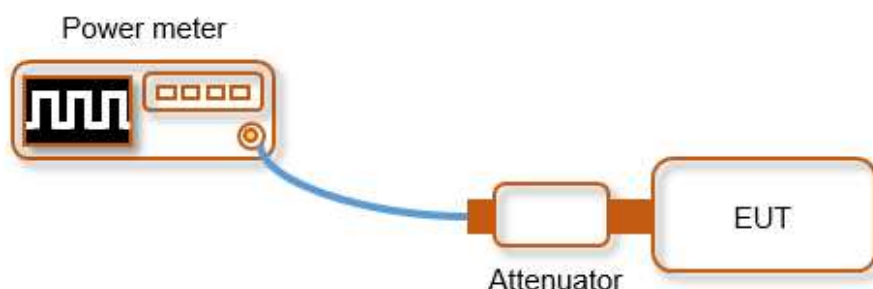
(5) For an indoor access point operating in the 5.925–7.125 GHz band, the maximum power spectral density must not exceed 5 dBm e.i.r.p. in any 1-megahertz band. In addition, **the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm**

3.3.2 Test Procedure

Method PM-G of KDB789033

Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

3.3.3 Test Setup



3.3.4 Test Result

[Test Result of Maximum Conducted Output Power]

Limit:

6 GHz Band	EIRP Power Limit [mW]	EIRP Power Limit [dBm]	Direction gain [dBi]	Conducted Limit [dBm]
NII 5	1000	30	5.48	24.52
NII 6	1000	30	5.44	24.56
NII 7	1000	30	6.23	23.77
NII 8	1000	30	5.44	24.56

Test Mode	Band	Tested Frequency [MHz]	Result Power [dBm]			
			ANT1	ANT2	MIMO	E.I.R.P
TM 1	NII 5	5 955	5.45	5.12	8.30	13.78
		6 175	5.72	5.55	8.65	14.13
		6 415	6.14	5.66	8.92	14.40
	NII 6	6 435	5.15	5.97	8.59	14.03
		6 475	6.38	5.80	9.11	14.55
		6 515	6.79	5.87	9.36	14.80
	NII 7	6 535	5.73	4.64	8.23	14.46
		6 695	6.83	5.01	9.02	15.25
		6 875	5.35	5.01	8.19	14.42
	NII 8	6 895	7.05	4.86	9.10	14.54
		6 995	5.71	3.98	7.94	13.38
		7 115	-13.86	-16.43	-11.95	-6.51
TM 2	NII 5	5 965	4.75	4.25	7.52	13.00
		6 165	8.55	8.45	11.51	16.99
		6 405	8.92	7.89	11.45	16.93
	NII 6	6 445	9.86	8.30	12.16	17.60
		6 485	9.34	9.07	12.22	17.66
		6 525	10.01	8.78	12.45	17.89
	NII 7	6 565	8.61	8.25	11.44	17.67
		6 685	9.29	7.91	11.66	17.89
		6 845	7.77	7.40	10.60	16.83
	NII 8	6 885	8.48	7.88	11.20	16.64
		7 005	7.95	6.70	10.38	15.82
		7 085	7.09	5.62	9.43	14.86

Test Mode	Band	Tested Frequency [MHz]	Result Power [dBm]			
			ANT1	ANT2	MIMO	E.I.R.P
TM 3	NII 5	5 985	4.16	4.01	7.10	12.58
		6 145	11.91	11.51	14.72	20.21
		6 385	12.03	10.81	14.47	19.96
	NII 6	6 465	11.78	11.18	14.50	19.94
	NII 7	6 545	12.00	11.01	14.54	20.77
		6 705	12.31	10.43	14.48	20.71
		6 865	10.75	10.47	13.62	19.85
	NII 8	6 945	11.35	9.29	13.45	18.89
		7 025	5.31	2.67	7.20	12.63
TM 4	NII 5	6 025	2.95	3.00	5.99	11.47
		6 185	14.06	13.03	16.59	22.07
		6 345	14.61	13.51	17.11	22.59
	NII 6	6 505	15.42	14.69	18.08	23.52
	NII 7	6 665	14.81	12.49	16.81	23.04
		6 825	7.87	7.67	10.78	17.01
	NII 8	6 985	7.98	6.33	10.24	15.68

3.4 Maximum Power Spectral Density

3.4.1 Regulation

Part. 15.407(a)

(5) For an indoor access point operating in the 5.925–7.125 GHz band, **the maximum power spectral density must not exceed 5 dBm e.i.r.p. in any 1-megahertz band**. In addition, the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm

3.4.2 Test Procedure

Maximum Power Spectral Density is measured using Measurement Procedure of KDB789033 D02v02r01

Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep):

(i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.

(ii) Set RBW = 1 MHz.

(iii) Set VBW $\geq$ 3 MHz.

(iv) Number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$. (This ensures that bin-to-bin spacing is $\leq \text{RBW}/2$, so that narrowband signals are not lost between frequency bins.)

(v) Sweep time = auto.

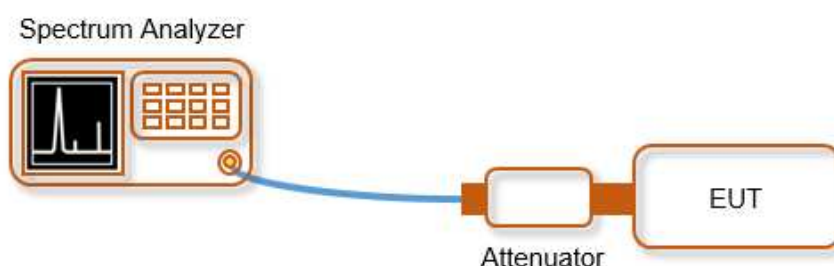
(vi) Detector = power averaging (rms), if available. Otherwise, use sample detector mode.

(vii) If transmit duty cycle $< 98\%$, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle $\geq 98\%$, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run.”

(viii) Trace average at least 100 traces in power averaging (rms) mode.

(ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

3.4.3 Test Setup



3.4.4 Test Result

[Test Result of Maximum Power Spectral Density]

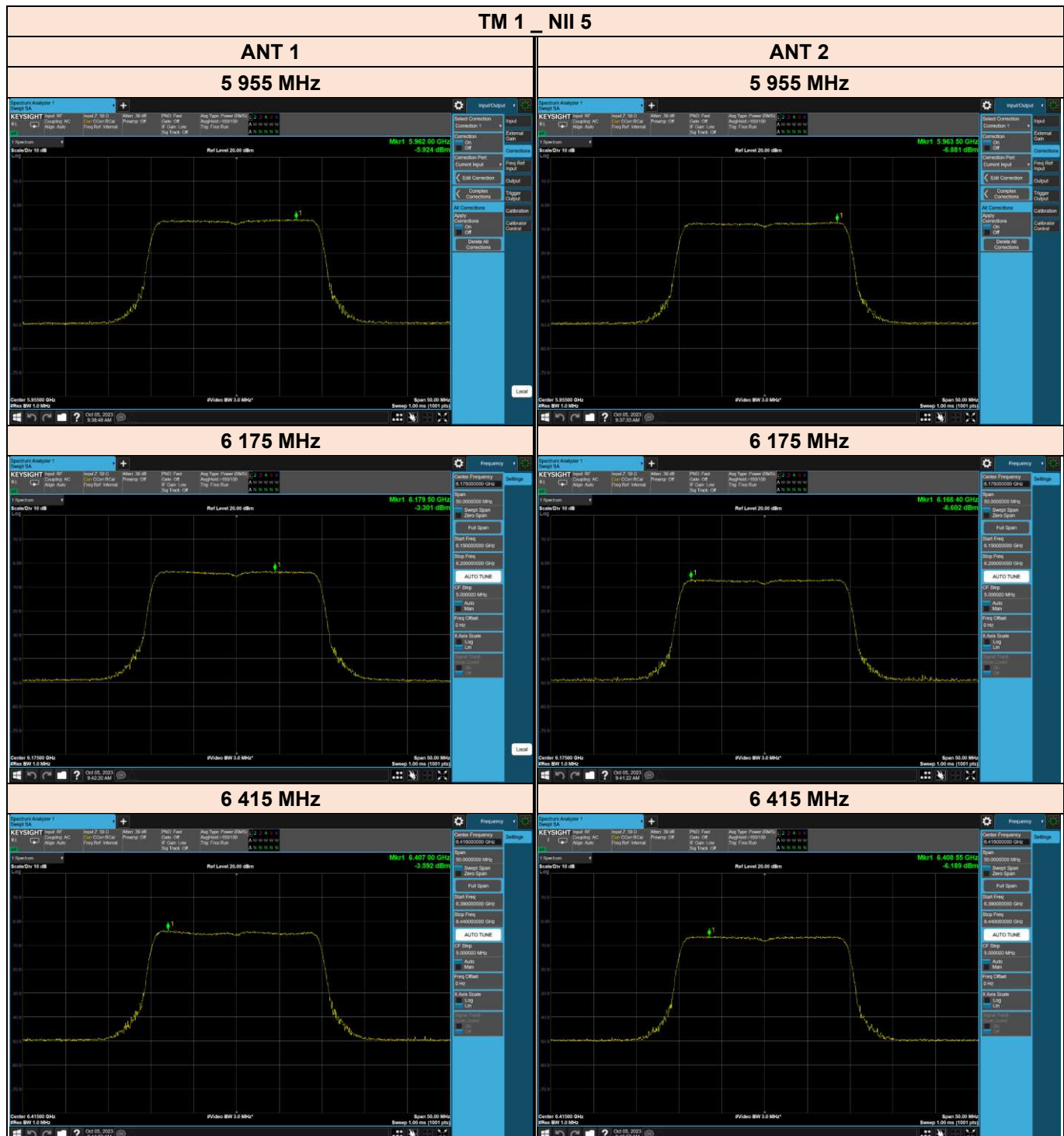
Limit

Band	EIRP PSD Limit [dBm]	Direction gain [dBi]	Conducted PSD Limit [dBm]
NII 5	5	5.48	-0.52
NII 6	5	5.44	-0.56
NII 7	5	6.23	-1.23
NII 8	5	5.44	-0.56

Test Mode	Band	Tested Frequency [MHz]	Result Power [dBm]			
			ANT1	ANT2	MIMO	E.I.R.P
TM 1	NII 5	5 955	-5.92	-6.88	-3.37	2.12
		6 175	-3.30	-6.60	-1.63	3.85
		6 415	-3.59	-6.19	-1.69	3.80
	NII 6	6 435	-4.37	-7.02	-2.48	2.95
		6 475	-3.95	-5.98	-1.84	3.60
		6 515	-3.70	-5.95	-1.67	3.77
	NII 7	6 535	-4.74	-6.71	-2.61	3.62
		6 695	-4.50	-5.53	-1.97	4.25
		6 875	-3.52	-7.52	-2.07	4.16
	NII 8	6 895	-2.71	-5.76	-0.96	4.47
		6 995	-2.82	-6.91	-1.39	4.05
		7 115	-24.14	-29.07	-22.93	-17.49
TM 2	NII 5	5 965	-8.58	-10.28	-6.34	-0.86
		6 165	-3.05	-6.95	-1.57	3.92
		6 405	-3.91	-6.37	-1.96	3.52
	NII 6	6 445	-3.64	-5.45	-1.44	4.00
		6 485	-3.67	-5.57	-1.51	3.93
		6 525	-3.37	-5.54	-1.31	4.13
	NII 7	6 565	-4.12	-6.59	-2.17	4.06
		6 685	-4.35	-5.89	-2.04	4.19
		6 845	-4.02	-8.43	-2.67	3.55
	NII 8	6 885	-2.83	-7.27	-1.50	3.94
		7 005	-3.05	-7.17	-1.63	3.81
		7 085	-2.58	-7.54	-1.38	4.06

Test Mode	Band	Tested Frequency [MHz]	Result Power [dBm]			
			ANT1	ANT2	MIMO	E.I.R.P
TM 3	NII 5	5 985	-11.13	-13.55	-9.16	-3.68
		6 145	-2.79	-6.37	-1.21	4.28
		6 385	-3.24	-5.73	-1.30	4.19
	NII 6	6 465	-3.76	-5.49	-1.53	3.91
	NII 7	6 545	-3.89	-6.12	-1.85	4.38
		6 705	-4.22	-5.75	-1.91	4.32
		6 865	-3.52	-7.97	-2.19	4.04
	NII 8	6 945	-3.03	-6.94	-1.55	3.89
		7 025	-2.46	-7.11	-1.18	4.25
TM 4	NII 5	6 025	-15.39	-16.15	-12.74	-7.26
		6 185	-3.35	-6.16	-1.52	3.96
		6 345	-3.38	-5.91	-1.45	4.03
	NII 6	6 505	-5.43	-7.92	-3.49	1.95
	NII 7	6 665	-3.92	-6.02	-1.83	4.39
		6 825	-3.59	-7.41	-2.08	4.15
	NII 8	6 985	-3.85	-7.47	-2.28	3.15

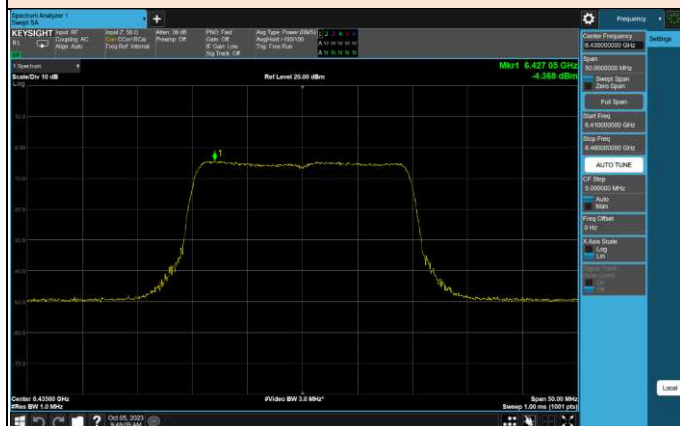
[Test Plot of Maximum Power Spectral Density]



TM 1 NII 6

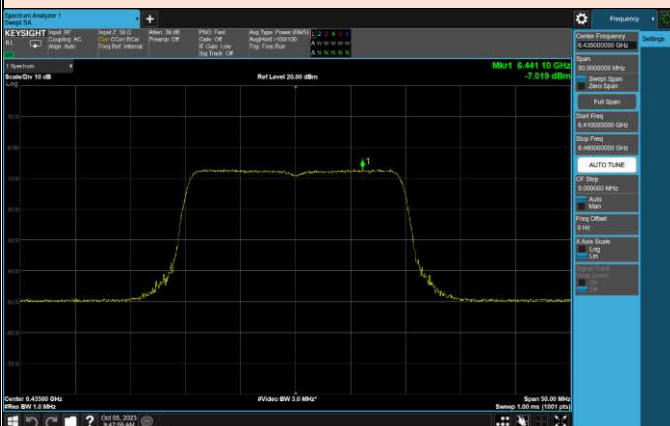
ANT 1

6 435 MHz

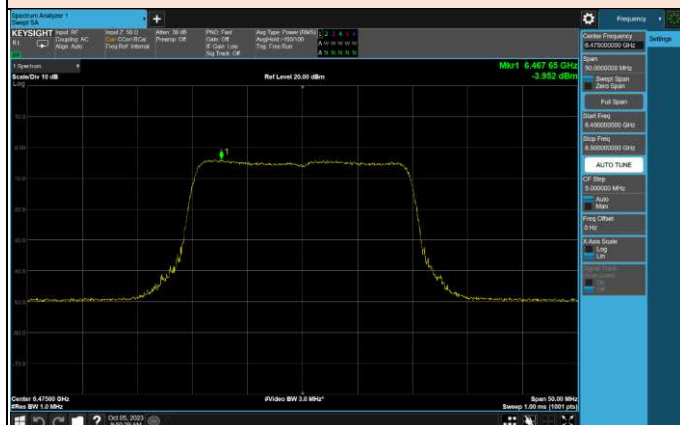


ANT 2

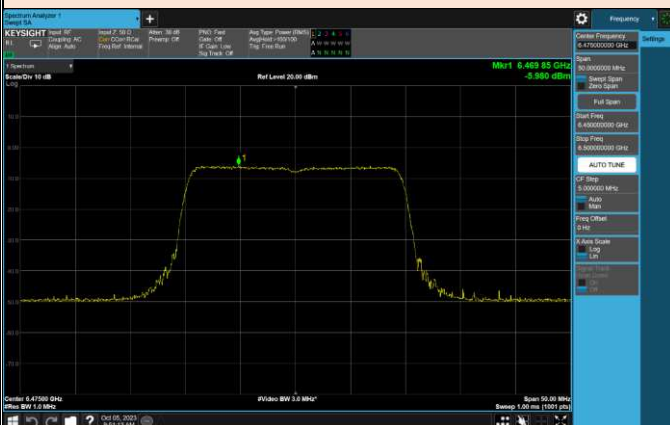
6 435 MHz



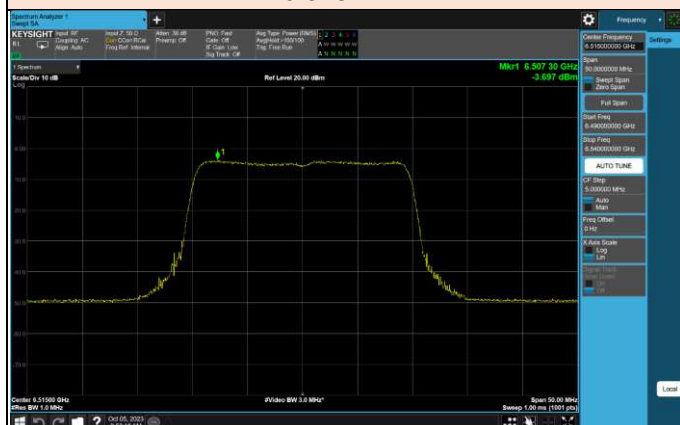
6 475 MHz



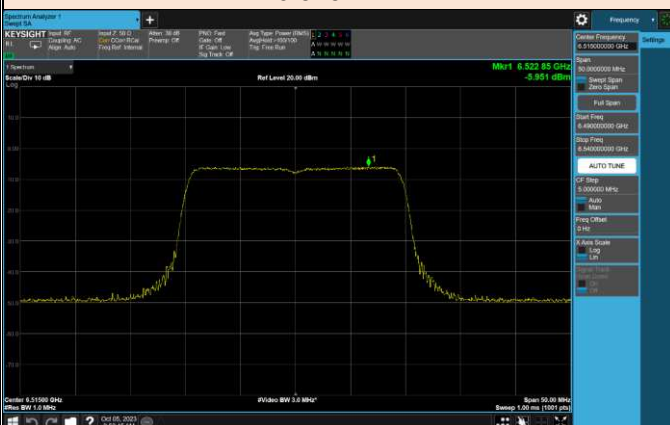
6 475 MHz



6 515 MHz



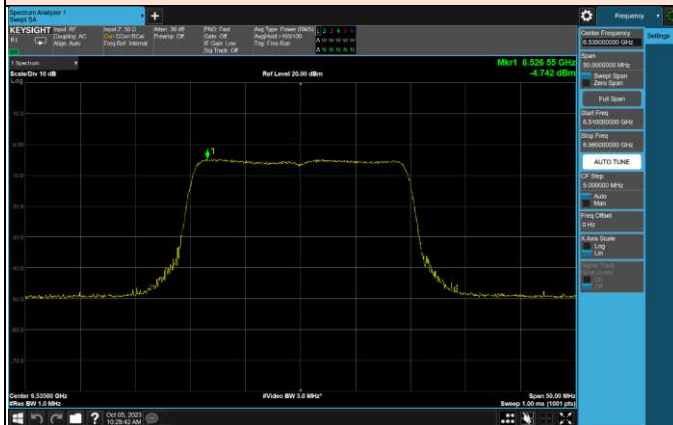
6 515 MHz



TM 1_NII 7

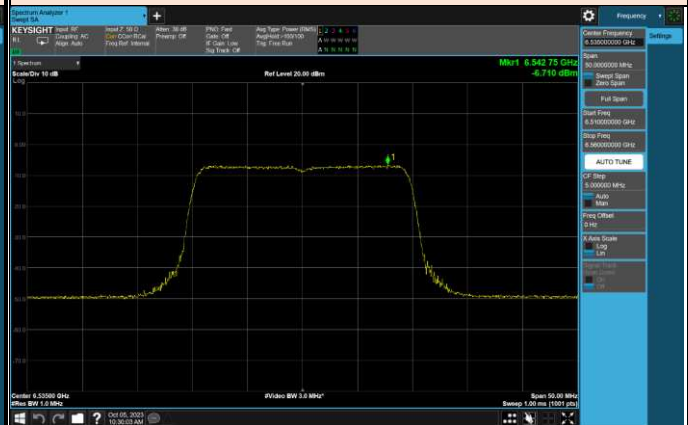
ANT 1

6 535 MHz

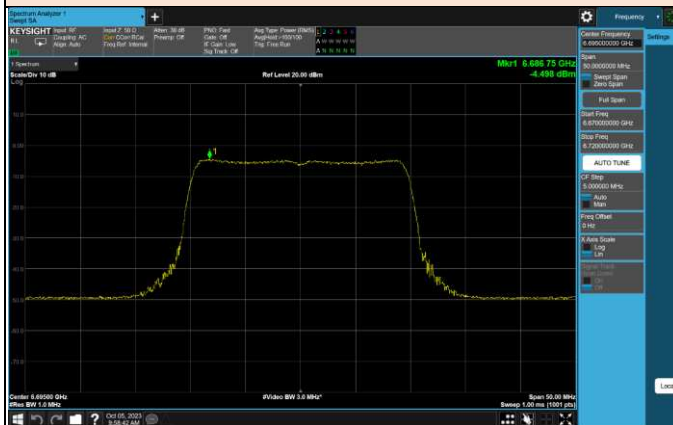


ANT 2

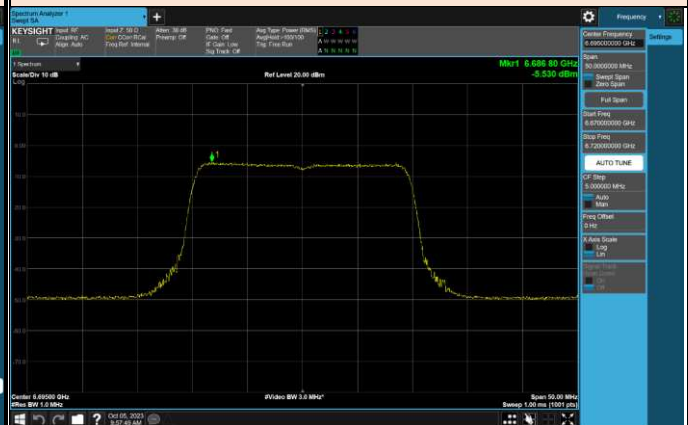
6 535 MHz



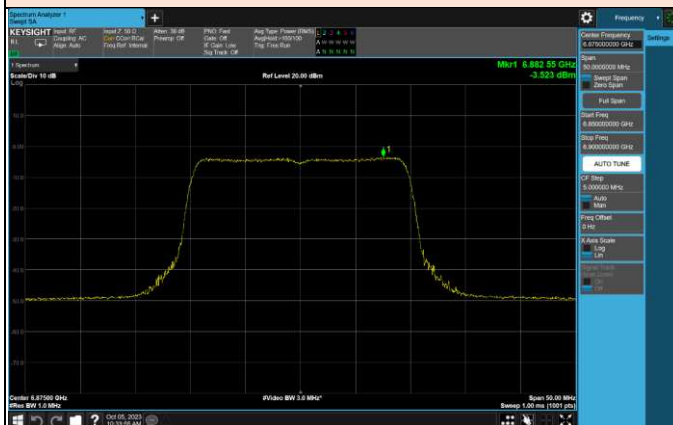
6 695 MHz



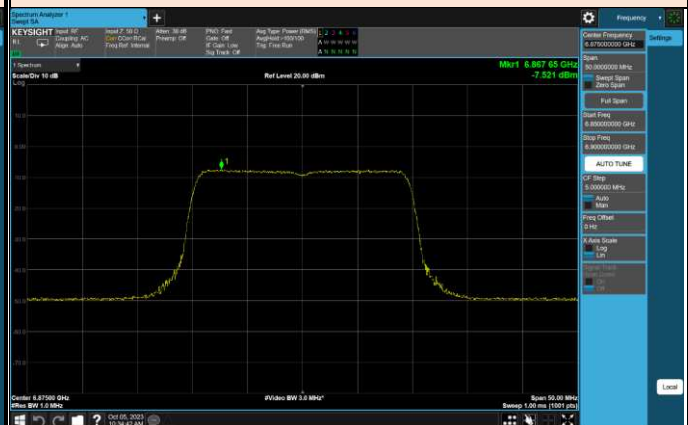
6 695 MHz



6 875 MHz



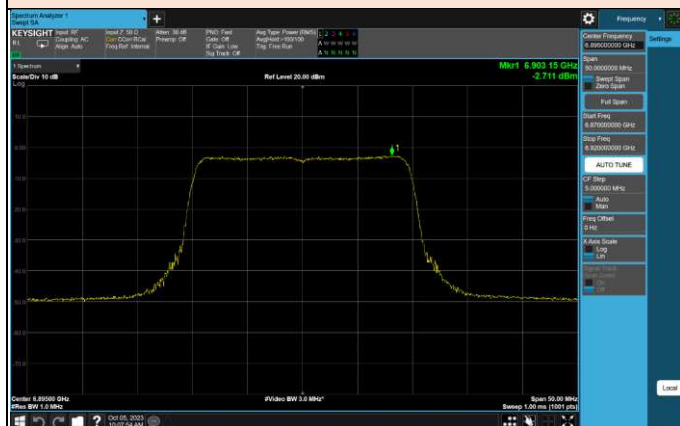
6 875 MHz



TM 1 NII 8

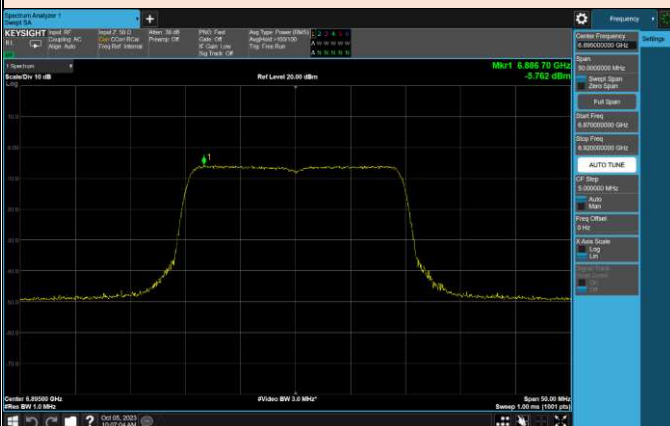
ANT 1

6 895 MHz

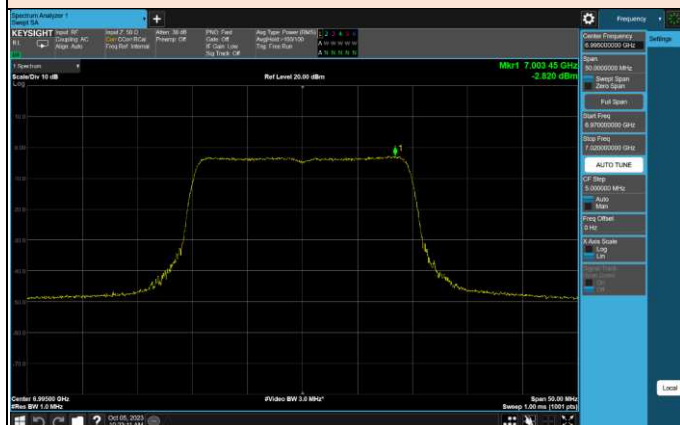


ANT 2

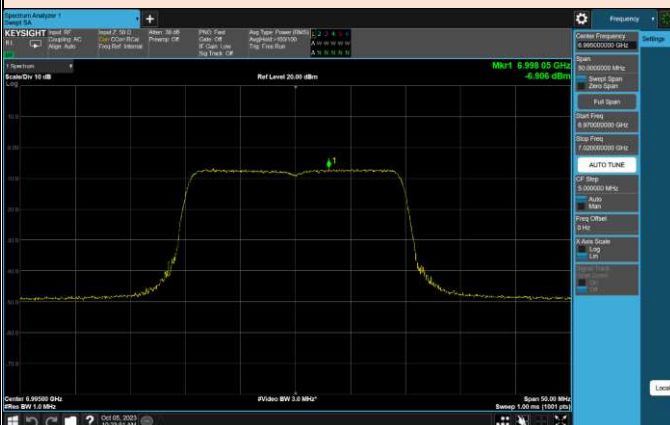
6 895 MHz



6 995 MHz



6 995 MHz



7 115 MHz



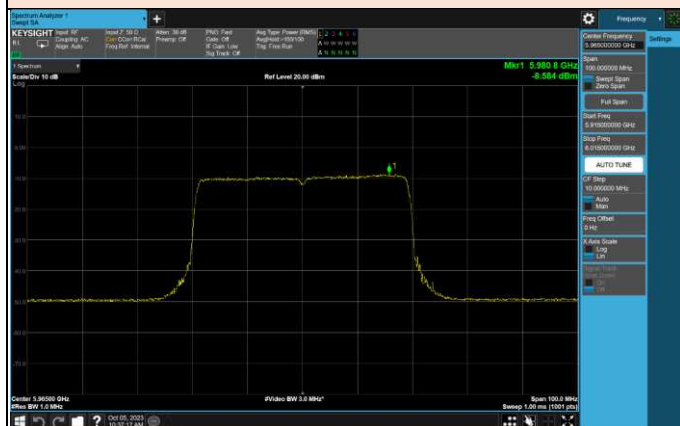
7 115 MHz



TM 2 _ NII 5

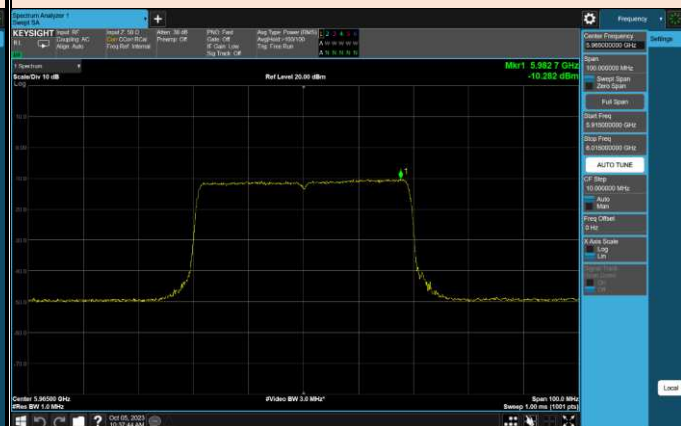
ANT 1

5 965 MHz

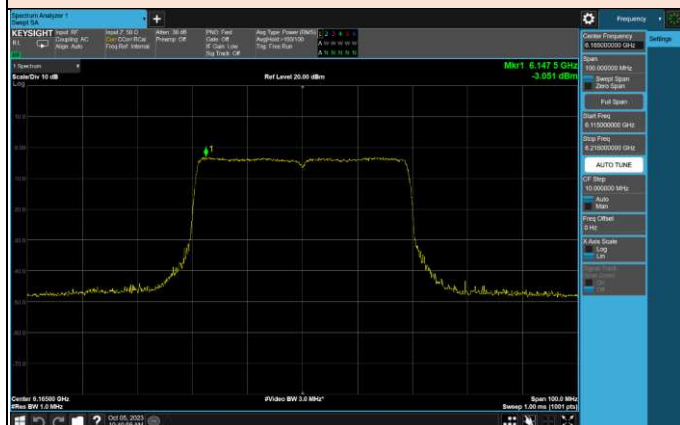


ANT 2

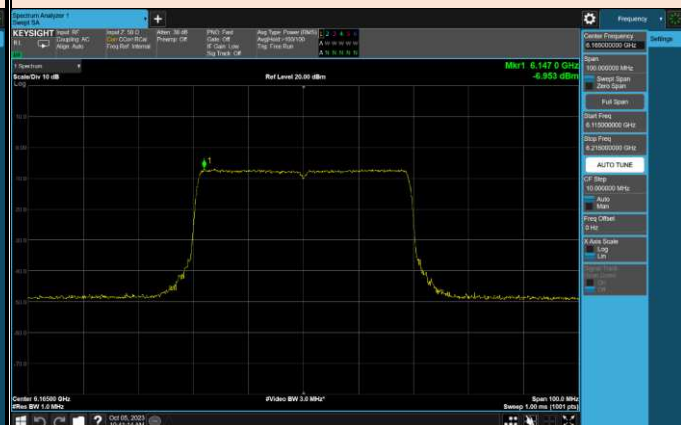
5 965 MHz



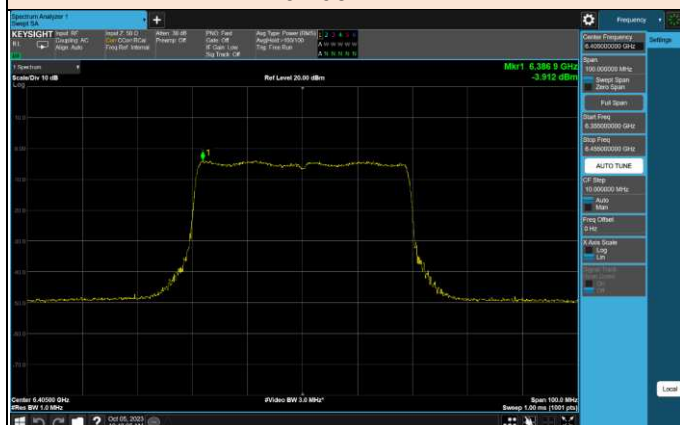
6 165 MHz



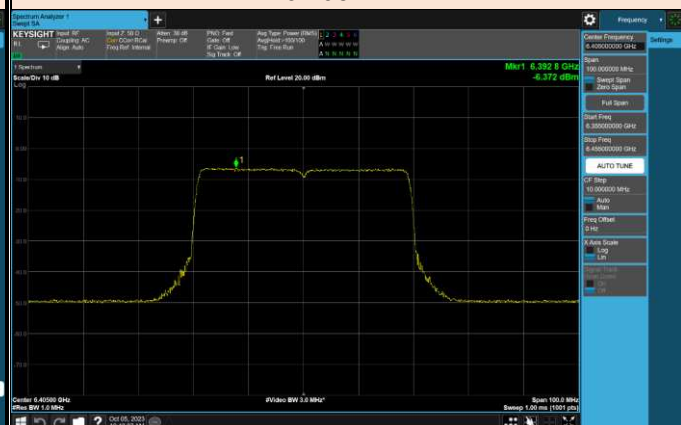
6 165 MHz



6 405 MHz



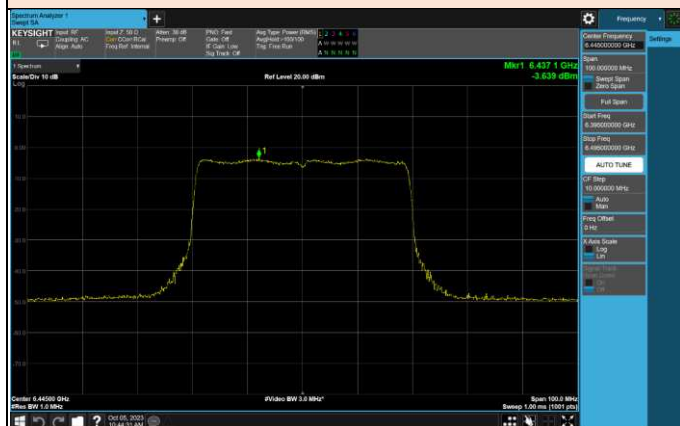
6 405 MHz



TM 2 _ NII 6

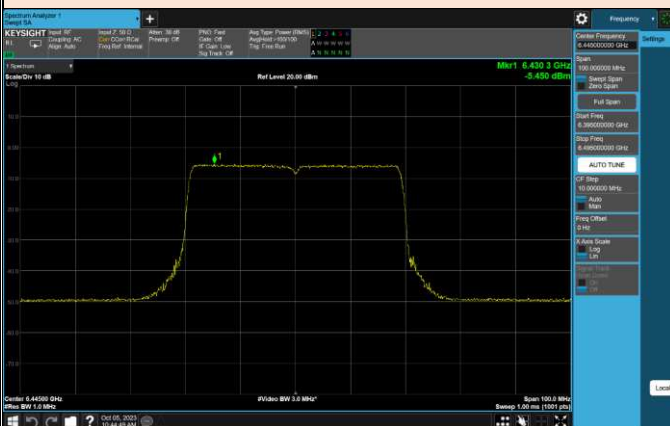
ANT 1

6 445 MHz

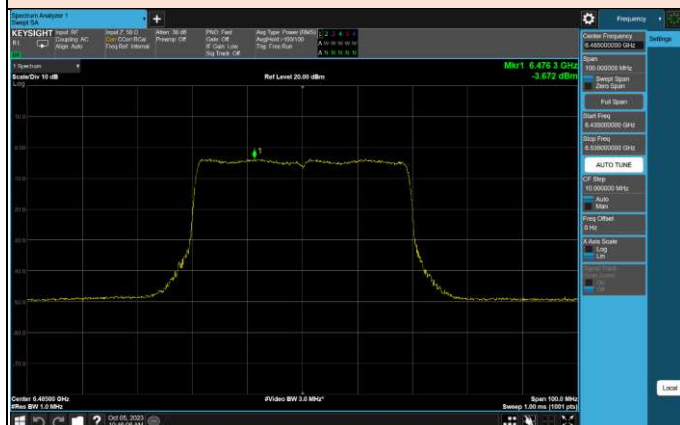


ANT 2

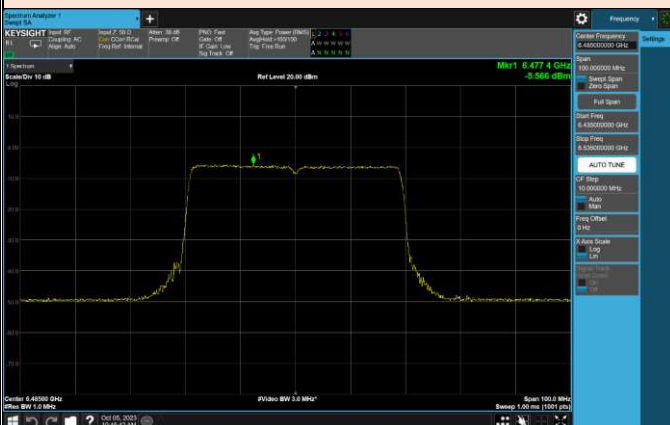
6 445 MHz



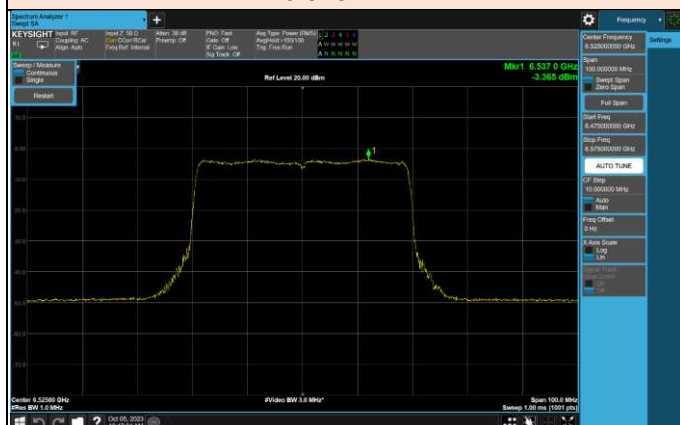
6 485 MHz



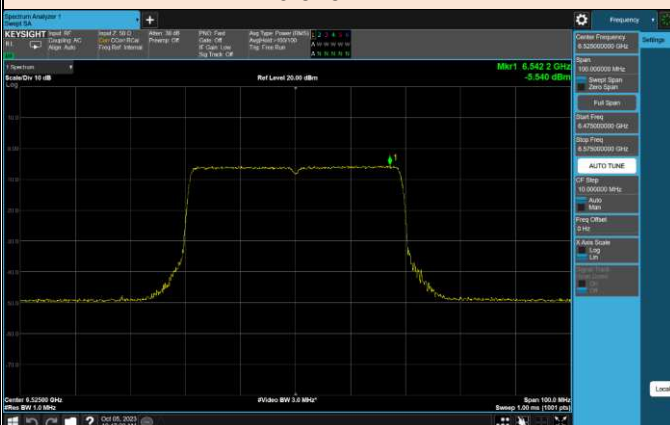
6 485 MHz



6 525 MHz



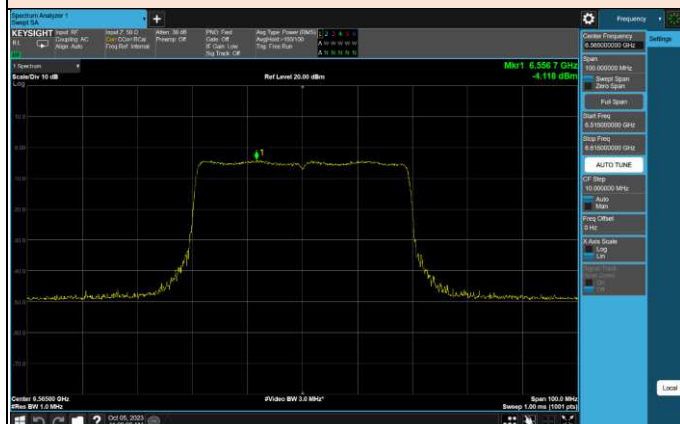
6 525 MHz



TM 2 _NII 7

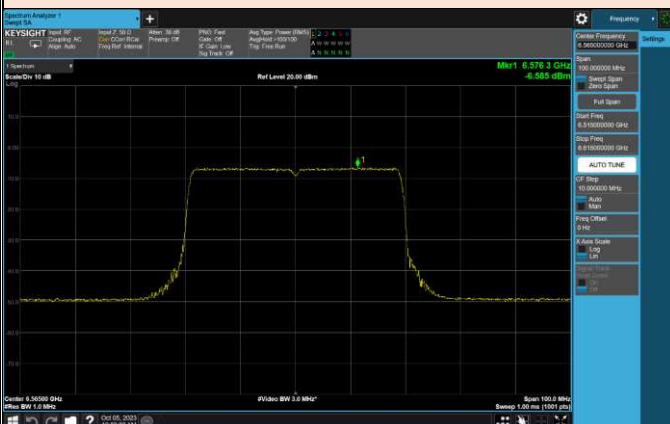
ANT 1

6 565 MHz

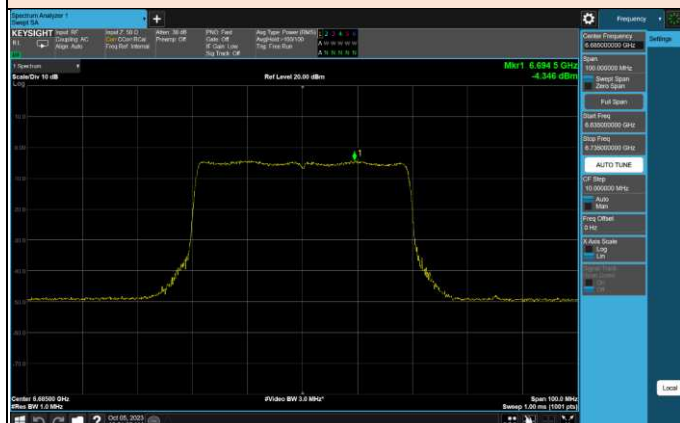


ANT 2

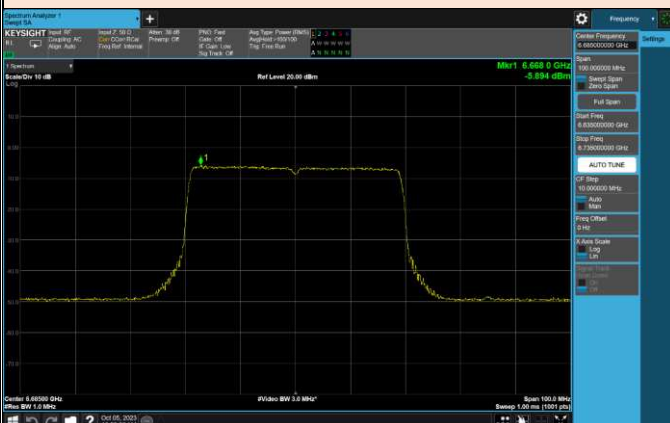
6 565 MHz



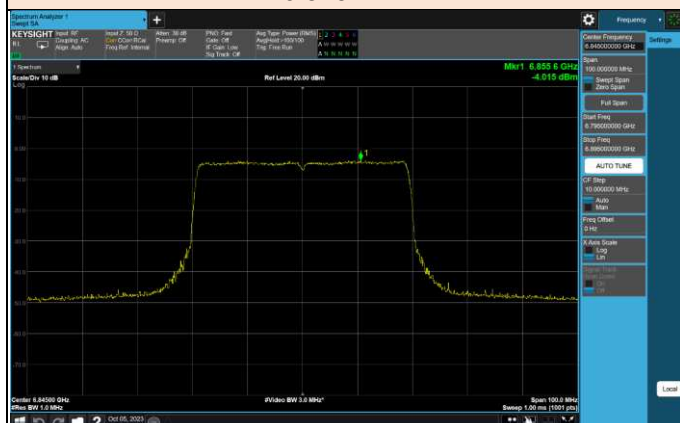
6 685 MHz



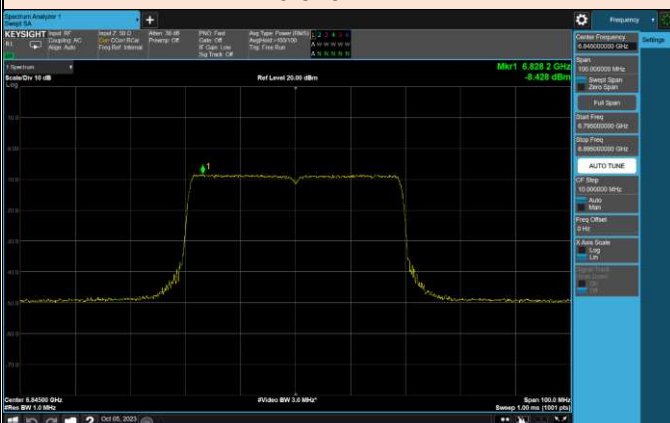
6 685 MHz



6 845 MHz



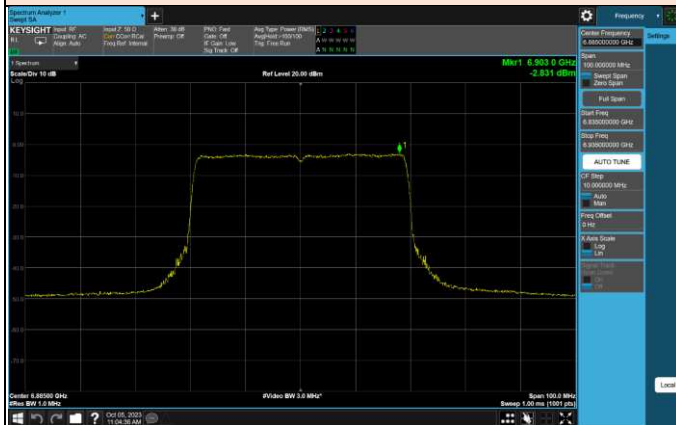
6 845 MHz



TM 2 _NII 8

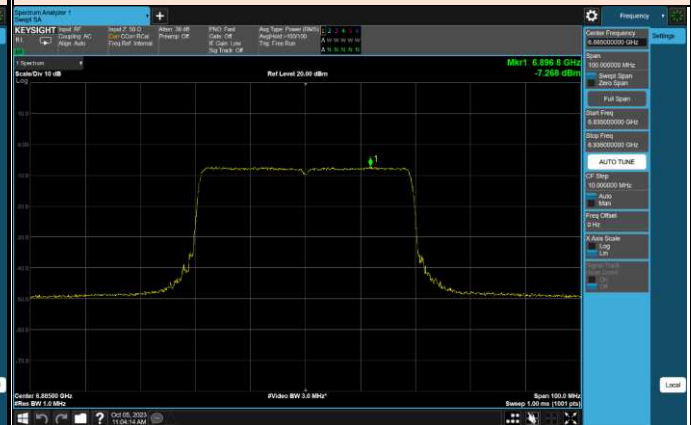
ANT 1

6 885 MHz

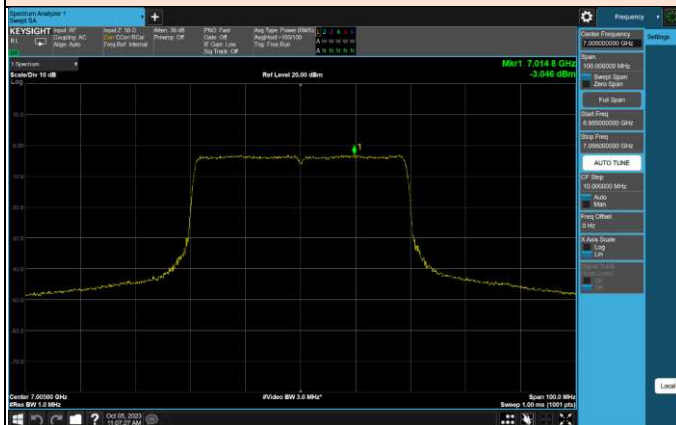


ANT 2

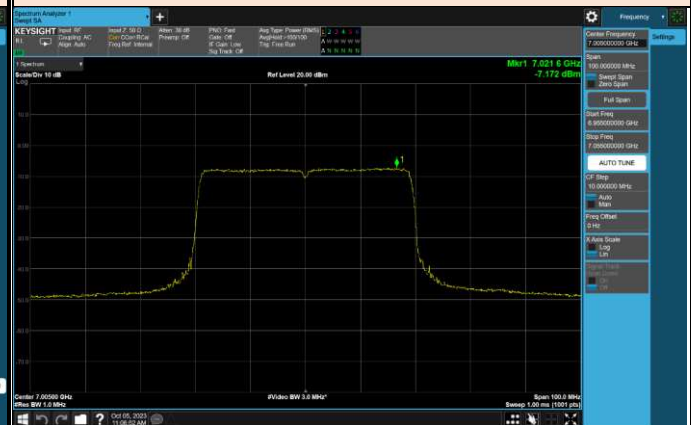
6 885 MHz



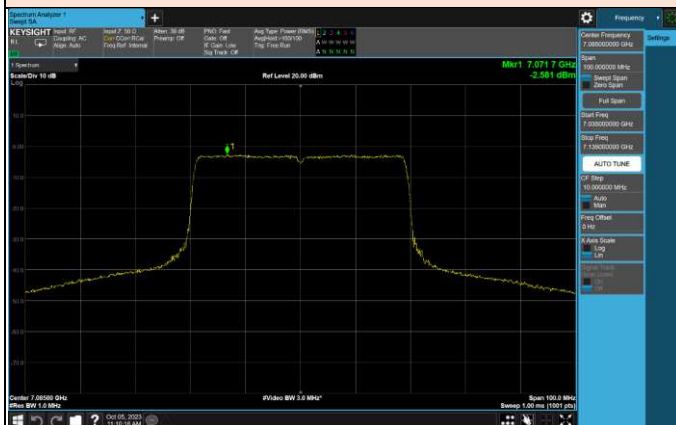
7 005 MHz



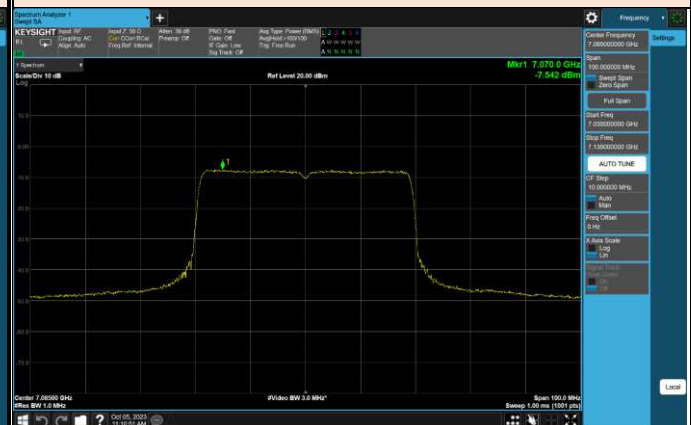
7 005 MHz



7 085 MHz



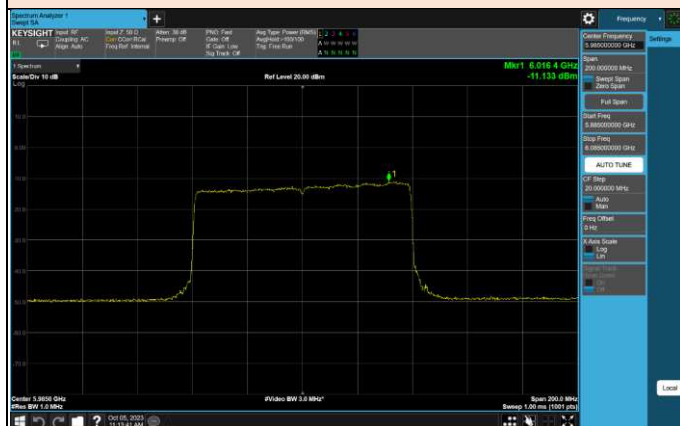
7 085 MHz



TM 3 _NII 5

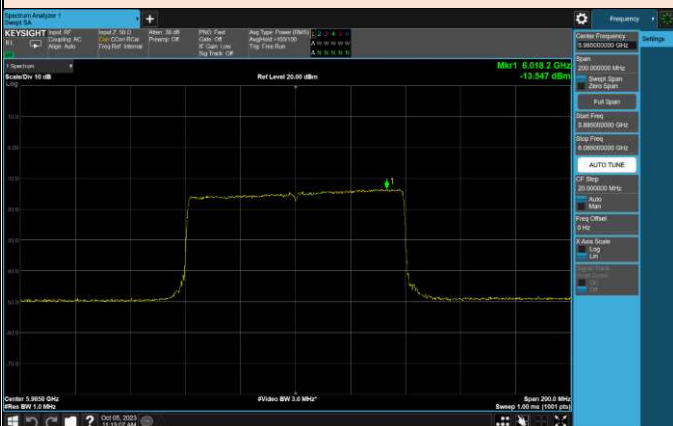
ANT 1

5 985 MHz

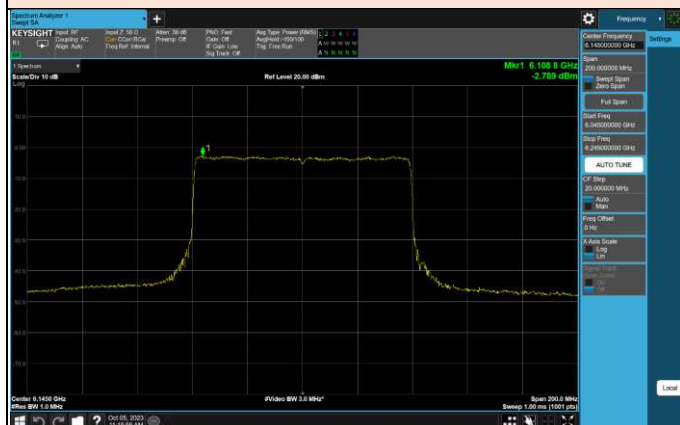


ANT 2

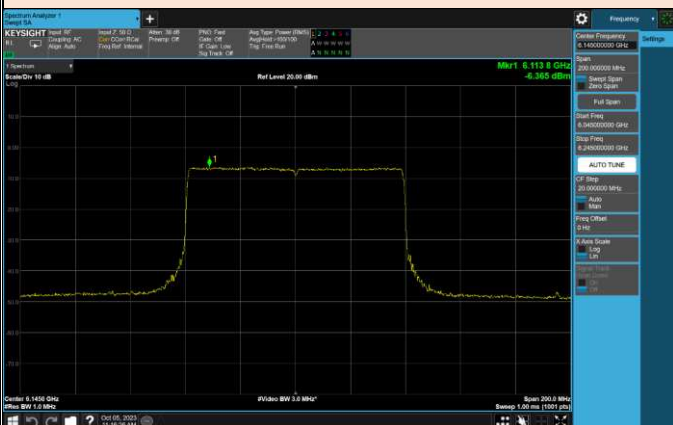
5 985 MHz



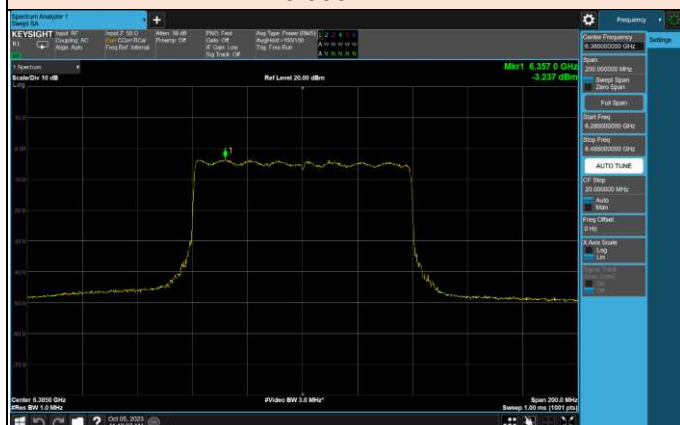
6 145 MHz



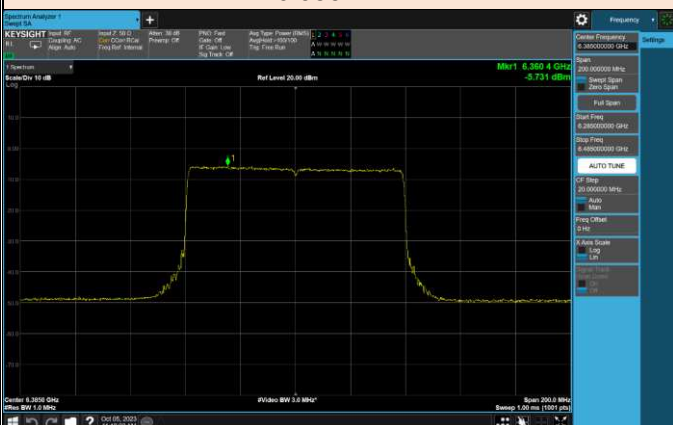
6 145 MHz

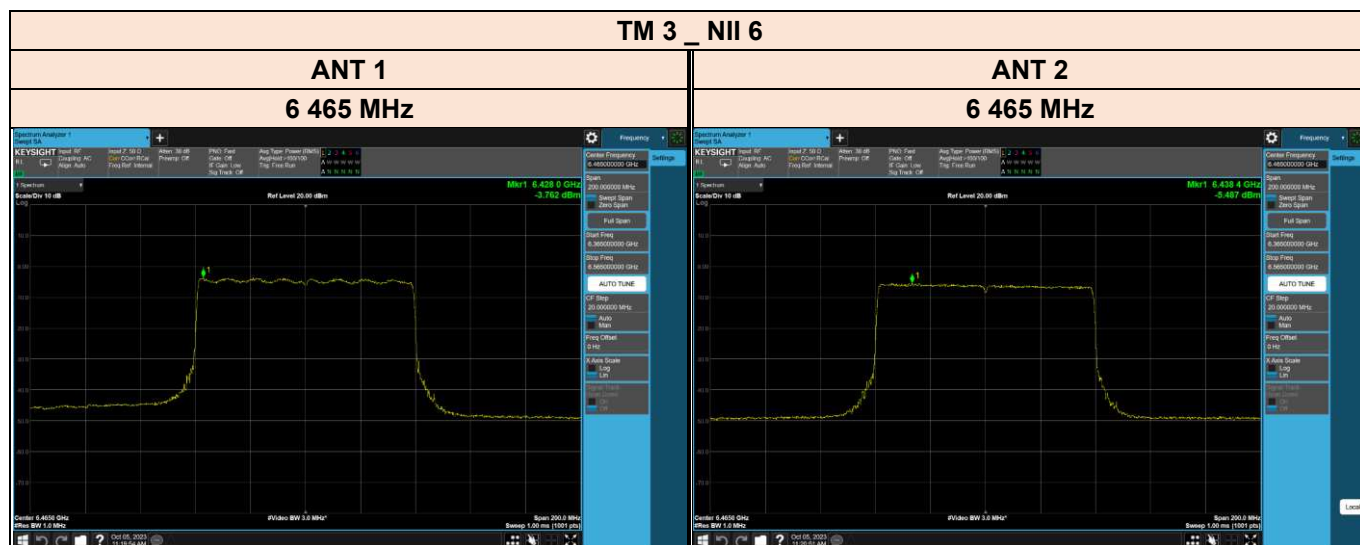


6 385 MHz



6 385 MHz

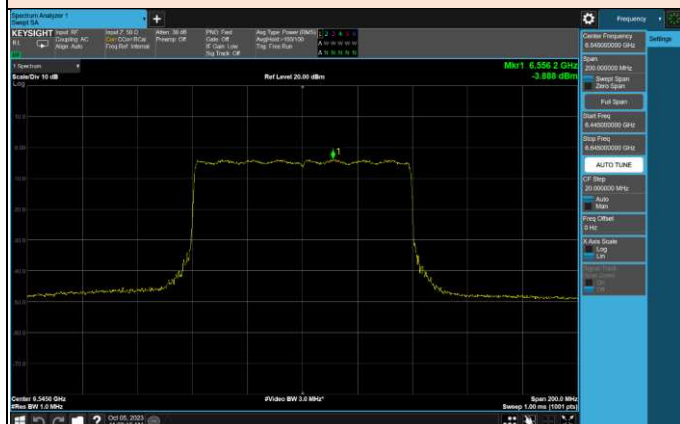




TM 3_NII 7

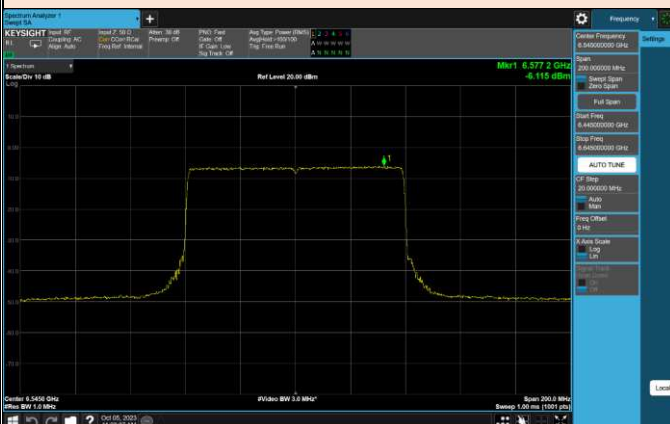
ANT 1

6 545 MHz

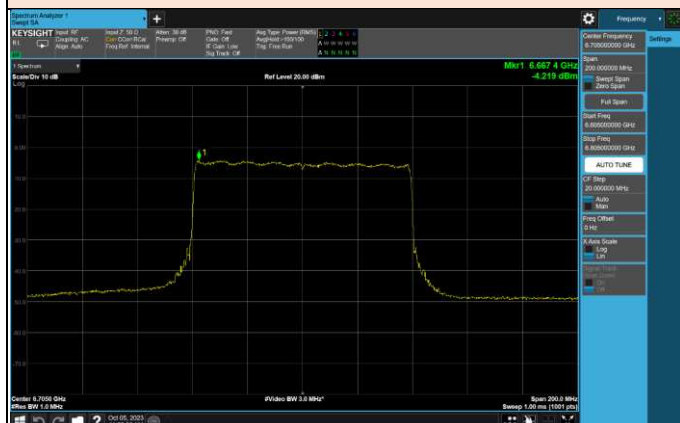


ANT 2

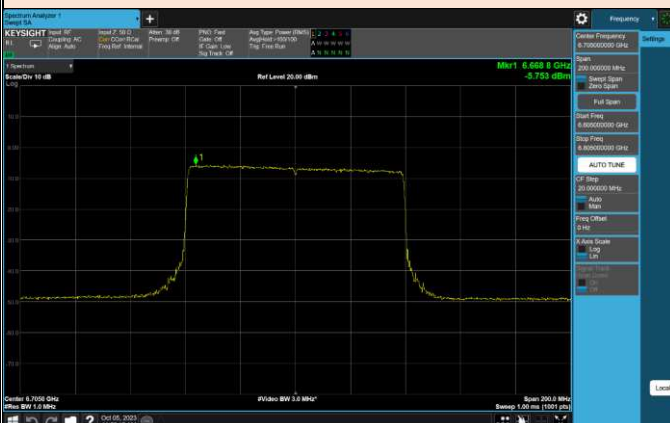
6 545 MHz



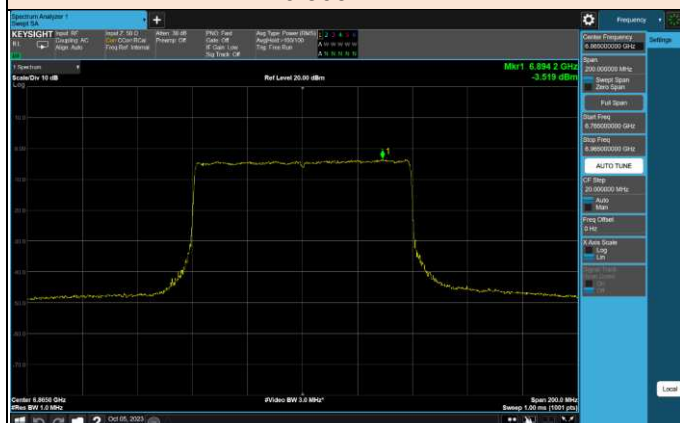
6 705 MHz



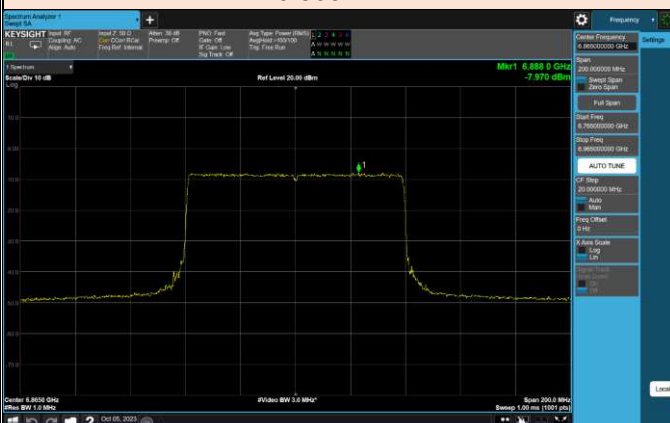
6 705 MHz



6 865 MHz



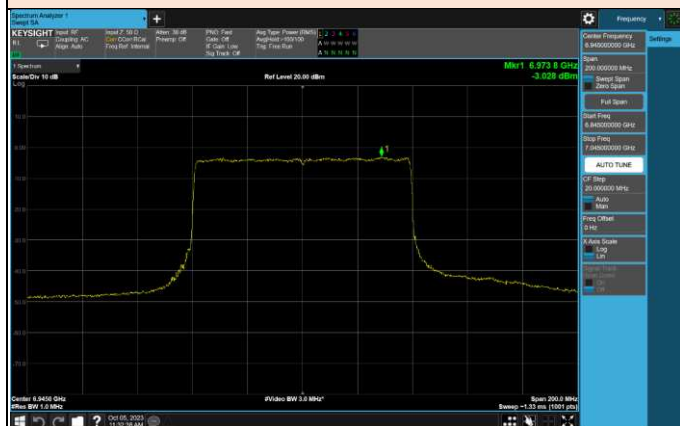
6 865 MHz



TM 3 _ NII 8

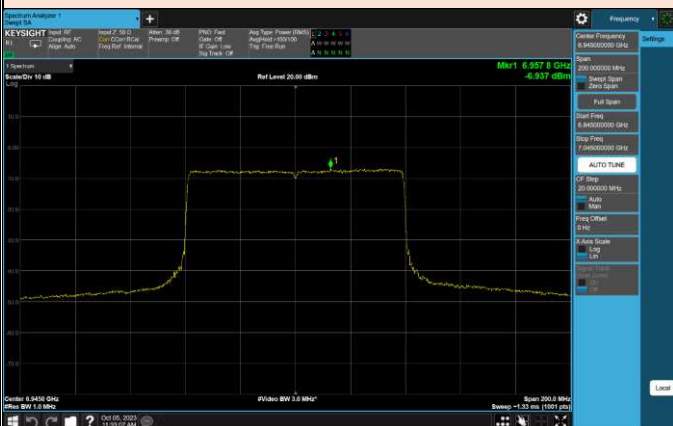
ANT 1

6 945 MHz

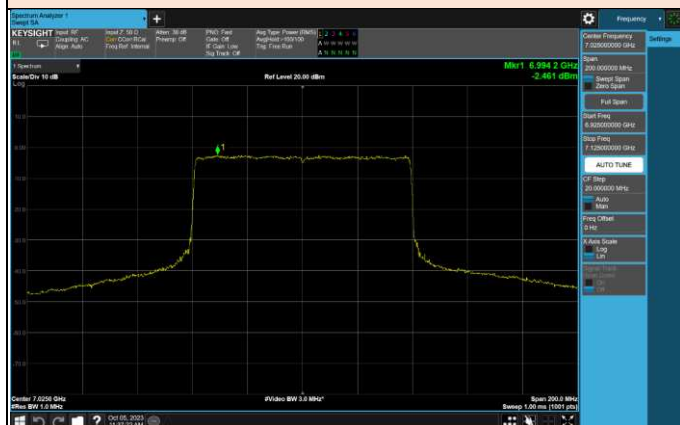


ANT 2

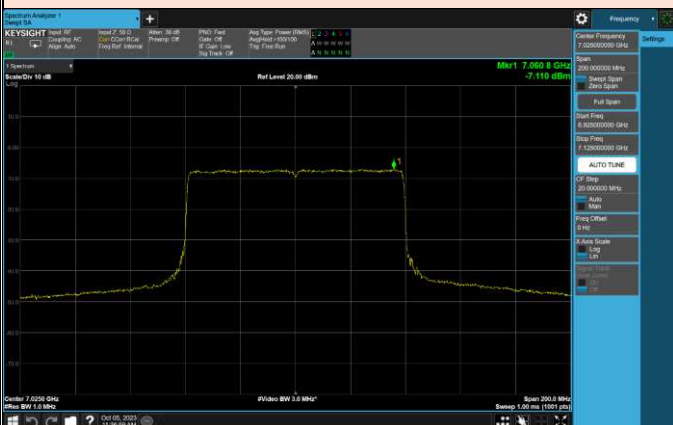
6 945 MHz



7 025 MHz



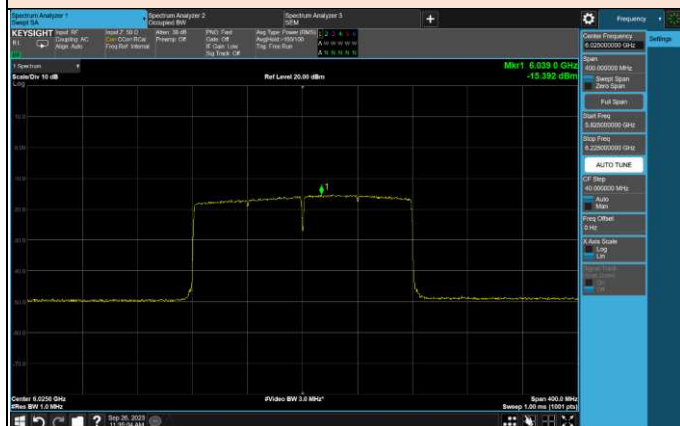
7 025 MHz



TM 4 _ NII 5

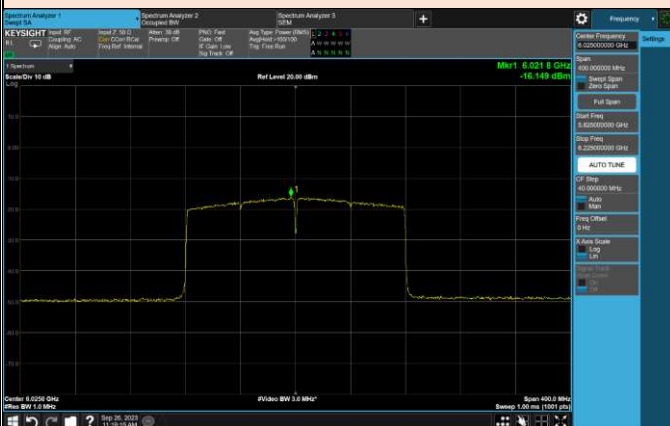
ANT 1

6 025 MHz

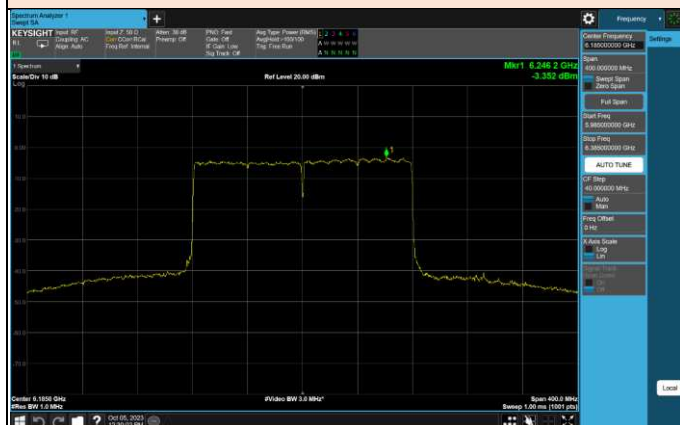


ANT 2

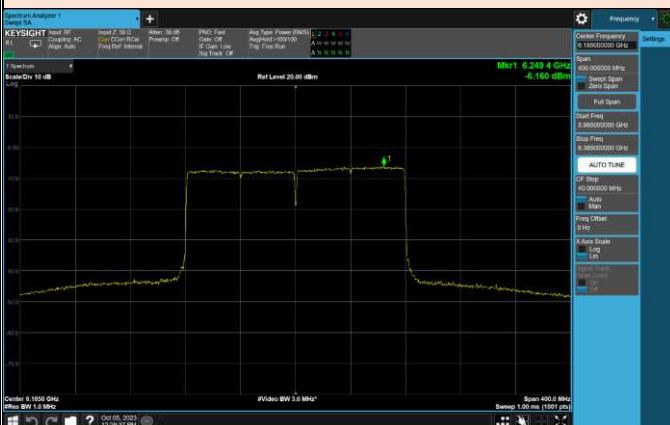
6 025 MHz



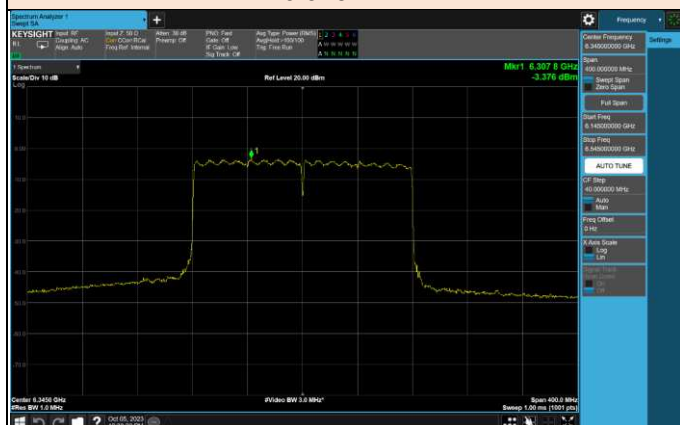
6 185 MHz



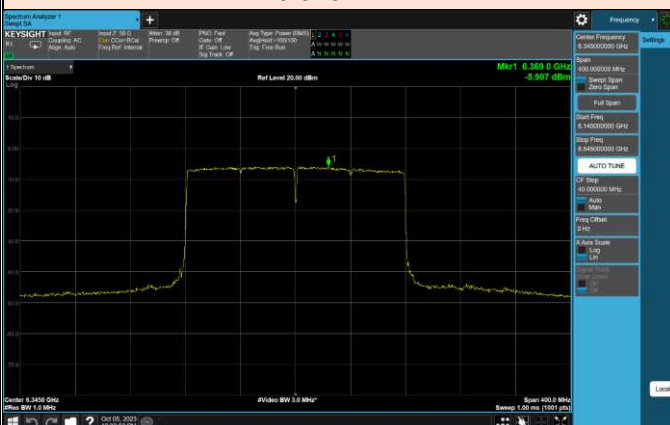
6 185 MHz



6 345 MHz



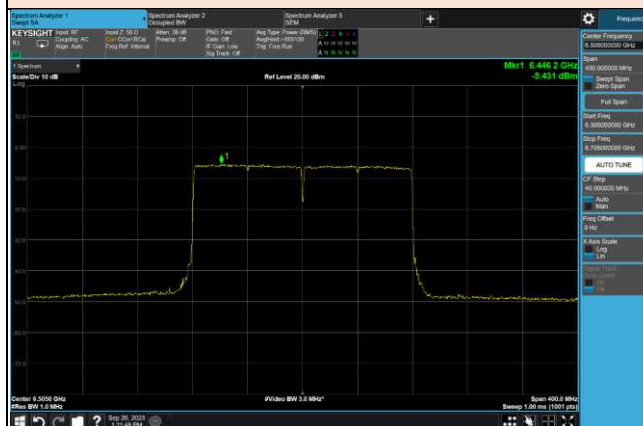
6 345 MHz



TM 4 _ NII 6

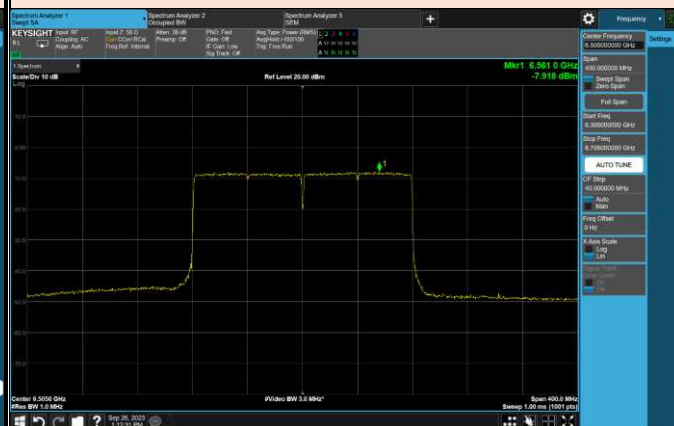
ANT 1

6 505 MHz



ANT 2

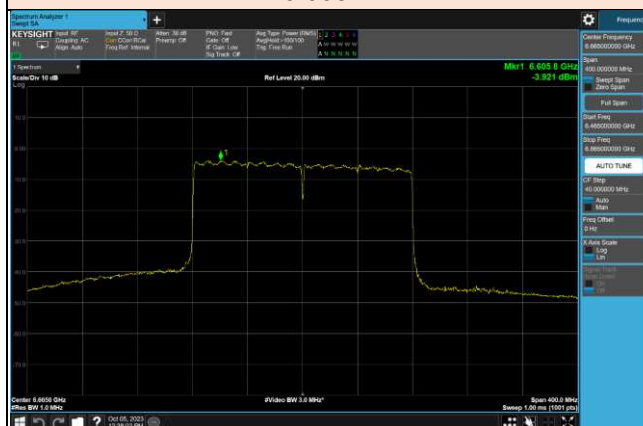
6 505 MHz



TM 4 _ NII 7

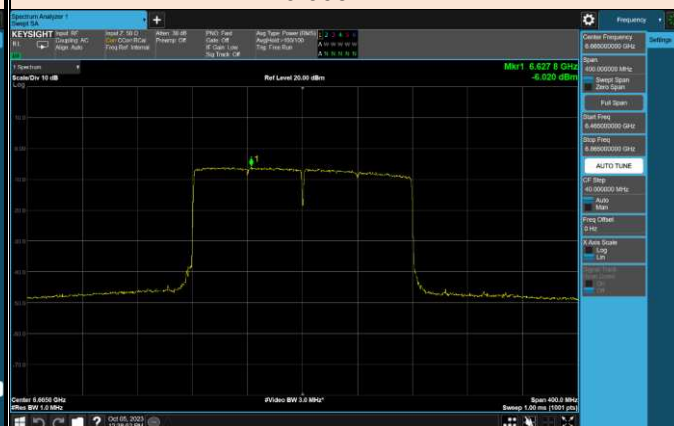
ANT 1

6 665 MHz

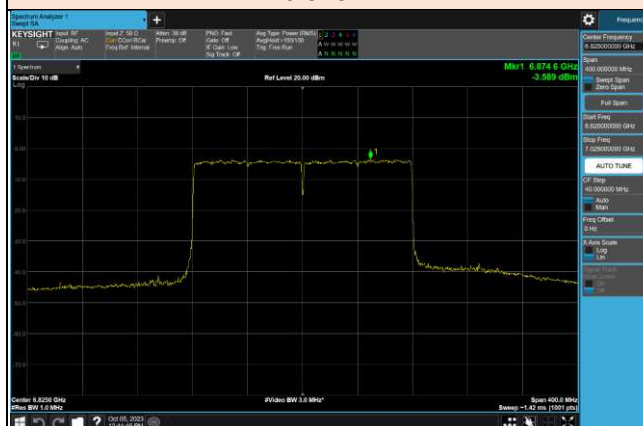


ANT 2

6 665 MHz



6 825 MHz



6 825 MHz

