



FCC AND ISCED CERTIFICATION TEST REPORT

Applicant:	Guangzhou Shikun Electronics Co., Ltd
Address:	NO.6 Liankun Road, Huangpu District, Guangzhou, China
Manufacturer:	Guangzhou Shikun Electronics Co., Ltd
Address:	NO.6 Liankun Road, Huangpu District, Guangzhou, China
Product Description:	IEEE 802.11b/g/n/a/ac 2T2R USB WiFi Module Integrated BT 2.1+EDR/4.2/5.0
Brand Name:	NA
Tested Model:	SKI.WB822CU.8
FCC ID:	2AR82-SKIWB822CU8
IC:	24728-SKIWB822CU8
Report No.:	JCF240627041-003
Received Date:	Jun. 27, 2024
Tested Date:	Jun. 27, 2024 ~ Jul. 18, 2024
Issued Date:	Jul. 18, 2024
Test Standards:	FCC Rules and Regulations Part 15 Subpart C, RSS-247 Issue 3 August 2023
Test Procedure:	ANSI C63.10:2013, RSS-Gen Issue 5 A2, Feb. 2021
Test Result:	Pass
Prepared By:  <u>Roger Li/Engineer</u>	
Date: Jul. 18, 2024	
Reviewed By:  <u>Kennys Zhang/Engineer</u>	
Date: Jul. 18, 2024	
Approved By:  <u>Talent Zhang/Engineer</u>	
Date: Jul. 18, 2024	

Note: The test results in this report apply exclusively to the tested model / sample. Without written approval of Guangzhou Jingce Testing Technology Co., Ltd. the test report shall not be reproduced except in full.

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Jul. 18, 2024	Original Report	/

Table of Contents

1. Test Report Declare	5
2. Summary of Test Results	6
3. Test Laboratory	6
4. Equipment Under Test	7
4.1. Description of EUT	7
4.2. Channel List	7
4.3. Test Channel Configuration	7
4.4. Test environment conditions	8
4.5. Description of Available Antennas	8
4.6. Description of Available Antennas	9
5. Description of Test Setup	9
5.1. Accessory	9
5.2. Support Equipment	9
5.3. Test Setup	9
5.4. Setup Diagram for Tests	9
6. Measurement Uncertainty	9
7. Measuring Instrument and Software Used	10
8. On Time and Duty Cycle	12
8.1. Block diagram of test setup	12
8.2. Limits	12
8.3. Procedure	12
8.4. Results	12
8.5. Original test data	13
9. 6 dB DTS Bandwidth and 99 % Occupied Bandwidth	22
9.1. Block diagram of test setup	22
9.2. Limits	22
9.3. Test Procedure	22
9.4. Results	22
9.5. Original test data	24
10. Conducted Output Power	40
10.1. Block diagram of test setup	40
10.2. Limits	40
10.3. Test Procedure	40
10.4. Results	40
11. Power Spectral Density	42
11.1. Block diagram of test setup	42
11.2. Limits	42
11.3. Test Procedure	42
11.4. Results	42
11.5. Original test data	43
12. Conducted Band edge and Spurious Emissions	52
12.1. Block diagram of test setup	52
12.2. Limits	52
12.3. Test Procedure	52
12.4. Test result	52
12.5. Original test data	54
13. Radiated Emission	84
13.1. Block diagram of test setup	84
13.2. Limit	85
13.3. Test Procedure	86
13.4. Results	88
13.5. Original test data	88

14. AC Power Line Conducted Emissions 89

14.1. Block diagram of test setup 89

14.2. Limits 89

14.3. Test procedure 89

14.4. Test result 90

15. Antenna Requirements 91

15.1. Applicable Requirements 91

15.2. Result 91

APPENDIX A – Radiated Emission Below 1GHz Test Data 92

APPENDIX B – Radiated Emission Above 1GHz Test Data 94

1. Test Report Declare

Applicant:	Guangzhou Shikun Electronics Co., Ltd
Address:	NO.6 Liankun Road, Huangpu District, Guangzhou, China
Manufacturer:	Guangzhou Shikun Electronics Co., Ltd
Address:	NO.6 Liankun Road, Huangpu District, Guangzhou, China
Product Name:	IEEE 802.11b/g/n/a/ac 2T2R USB WiFi Module Integrated BT 2.1+EDR/4.2/5.0
Brand Name:	NA
Model Name:	SKI.WB822CU.8
Difference Description:	NA

We Declare:

The equipment described above is tested by Guangzhou Jingce Testing Technology Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Guangzhou Jingce Testing Technology Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests except as provided information by clients.

2. Summary of Test Results

Summary of Test Results			
Clause	Test Items	FCC/ISED Rules	Test Results
1	6dB Bandwidth and 99 % Occupied Bandwidth	FCC Part 15.247 (a) (2) RSS-247 Clause 5.2 (a) ISED RSS-Gen Clause 6.7	Pass
2	Peak Conducted Output Power	FCC Part 15.247 (b) (3) RSS-247 Clause 5.4 (d)	Pass
3	Power Spectral Density	FCC Part 15.247 (e) RSS-247 Clause 5.2 (b)	Pass
4	Conducted Bandedge and Spurious Emission	FCC Part 15.247 (d) RSS-247 Clause 5.5	Pass
5	Radiated Bandedge and Spurious Emission	FCC Part 15.247 (d) FCC Part 15.209 FCC Part 15.205 RSS-247 Clause 5.5 RSS-GEN Clause 8.9	Pass
6	Conducted Emission Test For AC Power Port	FCC Part 15.207 RSS-GEN Clause 8.8	NA
7	Antenna Requirement	FCC Part 15.203 RSS-GEN Clause 6.8	Pass

3. Test Laboratory

Guangzhou Jingce Testing Technology Co., Ltd.

Add.: No.10, Hefeng No.1 street, Huangpu District, Guangzhou, Guangdong, People's Republic of China

Association for Laboratory Accreditation(A2LA). Certificate Number: 6594.03

FCC Designation Number: CN1381. Test Firm Registration Number: 486550

IC Test Firm Registration Number: 31808

Conformity Assessment Body identifier: CN0173

4. Equipment Under Test

4.1. Description of EUT

EUT Name:	IEEE 802.11b/g/n/a/ac 2T2R USB WiFi Module Integrated BT 2.1+EDR/4.2/5.0
Model Number:	SKI.WB822CU.8
EUT Function Description:	Please refer to user manual of this device
Power Supply:	DC 3.3V±0.3
Hardware Version:	NA
Software Version:	NA
Radio Specification:	IEEE802.11b/g/n
Operation Frequency:	IEEE 802.11b: 2412MHz—2462MHz IEEE 802.11g: 2412MHz—2462MHz IEEE 802.11n HT20: 2412MHz—2462MHz IEEE 802.11n HT40: 2422MHz—2452MHz
Modulation:	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n (HT20/40): OFDM (64QAM, 16QAM, QPSK, BPSK)
Data Rate:	IEEE 802.11b: 1, 2, 5.5, 11 Mbps IEEE 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps IEEE 802.11n HT20: 14.4, 28.9, 43.3, 57.8, 86.7, 115.6, 130.0, 144.4Mbps IEEE 802.11n HT40: 30.0, 60.0, 90.0, 120.0, 180.0, 240.0, 270.0, 300.0 Mbps
Antenna Type:	Shrapnel Antenna 1, MAX. Gain: 3.82 dBi Shrapnel Antenna 2, MAX. Gain: 4.13 dBi

Note 1: EUT is the ab. of equipment under test.

Note 2: The antenna gain is declared by the customer and the laboratory is not responsible for the accuracy of the antenna gain.

4.2. Channel List

Channel List for 802.11b/g/n (20 MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	4	2427	7	2442	10	2457
2	2417	5	2432	8	2447	11	2462
3	2422	6	2437	9	2452	/	/

Channel List for 802.11n (40 MHz)					
Channel	Frequency (MHz)	Channel	Frequency(MHz)	Channel	Frequency (MHz)
3	2422	6	2437	9	2452
4	2427	7	2442	/	/
5	2432	8	2447	/	/

4.3. Test Channel Configuration

Tested mode, channel and rand data rate information			
Mode	Data rate (Mbps)	Channel	Frequency

	(see Note)		(MHz)
802.11b	1	Low: CH1	2412
	1	Middle: CH6	2437
	1	High: CH11	2462
802.11g	6	Low: CH1	2412
	6	Middle: CH6	2437
	6	High: CH11	2462
802.11n HT20	MCS 8	Low: CH1	2412
	MCS 8	Middle: CH6	2437
	MCS 8	High: CH11	2462
802.11n HT40	MCS 8	Low: CH3	2422
	MCS 8	Middle: CH6	2437
	MCS 8	High: CH9	2452
Note: According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.			

4.4. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature range:	21-25 °C
Humidity range:	40-75%
Pressure range:	86-106 kPa

4.5. Description of Available Antennas

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band				
Test Software		MP Tool		
Modulation Mode	Transmit Antenna Number	Test Software Setting Value		
		Channel	ANT1	ANT2
802.11b	2	CH1	70	80
		CH6	70	80
		CH11	70	80
802.11g	2	CH1	40	50
		CH6	40	50
		CH11	40	50
802.11HT20	2	CH1	30	30
		CH6	35	35
		CH11	40	40
802.11n HT40	2	CH3	40	40
		CH6	40	40
		CH9	40	40

4.6. Description of Available Antennas

Test Mode	Transmit and Receive Mode	Description
802.11b	☒ 2TX, 2RX	ANT 1 and ANT2 can be used as transmitting/receiving antenna.
802.11g	☒ 2TX, 2RX	ANT 1 and ANT2 can be used as transmitting/receiving antenna.
802.11n HT20	☒ 2TX, 2RX	ANT 1 and ANT2 can be used as transmitting/receiving antenna.
802.11n HT40	☒ 2TX, 2RX	ANT 1 and ANT2 can be used as transmitting/receiving antenna.
Note: 1. Only 802.11n HT20/HT40 support MIMO mode 2. WLAN 2.4 GHz & WLAN 5G can't transmit simultaneously. (declared by client)		

5. Description of Test Setup

5.1. Accessory

Description of Accessories	Manufacturer	Model Number	Description	Remark
/	/	/	/	/

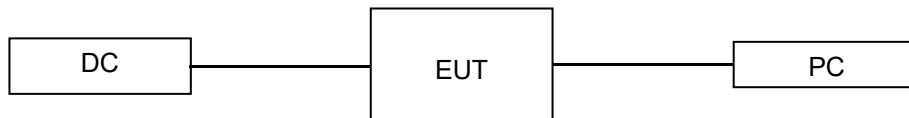
5.2. Support Equipment

Equipment	Brand Name	Model Name	P/N
PC	Lenovo	T480	/

5.3. Test Setup

The EUT can work in Fixed Frequency mode.

5.4. Setup Diagram for Tests



6. Measurement Uncertainty

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

Test Item	Uncertainty
AC Power Conduction emission	1.37 dB
All Radiated emissions	5.4dB
Conducted emissions	3.09 dB
Occupied Channel Bandwidth	1.1%
Conducted Output power	0.82dB
Power Spectral Density	0.82dB
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k = 2.	

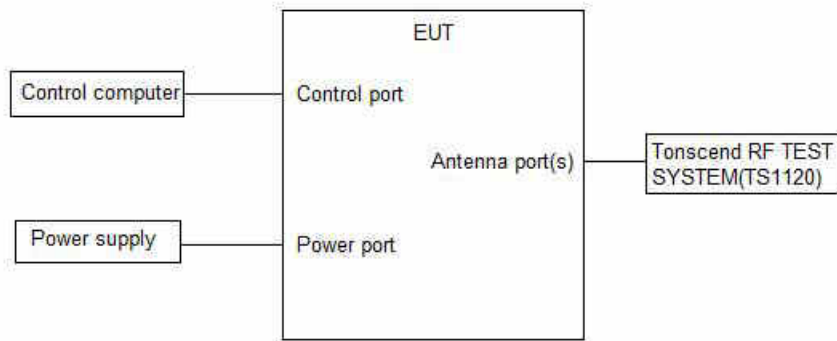
7. Measuring Instrument and Software Used

TS Test System						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
☒	Spectrum Analyzer	Keysight	N9030B	MY56320512	Sep. 12, 2023	Sep. 11, 2024
☒	Vector Signal Generator	Keysight	N5182B	MY57300334	Sep. 12, 2023	Sep. 11, 2024
☒	Signal Generator	Keysight	N5171B	MY57280639	Sep. 12, 2023	Sep. 11, 2024
☒	DC POWER	Keysight	E342A	MY59020356	Jun. 29, 2024	Jun. 28, 2025
☒	Incubator thermometer	GWS	EL-02JA	21107288	Sep. 12, 2023	Sep. 11, 2024
☒	Control unit(Power sensor)	Tonscend	JS0806-2	/	Sep. 12, 2023	Sep. 11, 2024
☒	Wideband radio communication tester	R&S	CMW500	163478	Jul. 03, 2024	Jul. 02, 2025
☒	Spectrum Analyzer	Keysight	N9020B	MY60112206	Sep. 12, 2023	Sep. 11, 2024
☒	Control unit(Power sensor)	Tonscend	JS0806-2	21H8060465	Sep. 12, 2023	Sep. 12, 2024
Software						
Used	Description	Manufacturer	Name		Version	
☒	Test software	Tonscend	JS1120-3		V3.3.10	
RSE Test System						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
☒	EMI Receiver	R&S	ESR	102154	Sep. 12, 2023	Sep. 11, 2024
☒	Bilog Antenna	Schwarzbeck	VULB 9163	01361	Aug. 16, 2023	Aug. 15, 2024
☒	Horn Antenna 1	Schwarzbeck	BBHA 9120 D	02411	May. 28, 2024	May. 27, 2025
☒	Horn Antenna 2	ETS	BBHA 9170	1090	Sep. 04, 2023	Sep. 03, 2024
☒	loop-antenna	Schwarzbeck	FMZB 1513-60	00030	Jan. 14, 2024	Jan. 13, 2025
☒	Signal Pre-Amplifier	Tonscend	TAP01018050	AP23I8060293	Oct. 12, 2023	Oct. 11, 2024
☒	Signal Pre-Amplifier	ETS	3116C-PA	00217677	Aug. 24, 2023	Aug. 23, 2024
☒	966 Chamber	YIHENG	9m*6m*6m	001	Sep. 05, 2023	Sep. 04, 2026
Software						
Used	Description	Manufacturer	Name		Version	
☒	Test software	Tonscend	TS+		V3.0.0.4	
Conducted Emission Test For AC Power Port						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
☒	LISN	R&S	ENV216	102509	Sep. 12, 2023	Sep. 11, 2024
☒	EMI Receiver	R&S	ESR	102154	Sep. 12, 2023	Sep. 11, 2024
Software						
Used	Description	Manufacturer	Name		Version	

☒	Test software	EZ	EZ-EMC		EMEC-3A1	
Other Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
☒	Temperature & Humidity	Temperature	HTC-1	/	Nov. 02, 2023	Nov. 01, 2024

8. On Time and Duty Cycle

8.1. Block diagram of test setup



8.2. Limits

None; for reporting purposes only

8.3. Procedure

KDB 558074 Zero-Span Spectrum Analyzer Method

8.4. Results

Test Mode	Ant.	Freq. (MHz)	Transmission Duration (ms)	Transmission Period (ms)	Duty Cycle (%)
11B	Ant1	2412	8.19	8.70	94.14
	Ant2	2412	8.19	8.69	94.25
	Ant1	2437	8.20	8.70	94.25
	Ant2	2437	8.19	8.69	94.25
	Ant1	2462	8.21	8.70	94.37
	Ant2	2462	8.20	8.70	94.25
11G	Ant1	2412	1.36	1.86	73.12
	Ant2	2412	1.36	1.87	72.73
	Ant1	2437	1.36	1.87	72.73
	Ant2	2437	1.36	1.86	73.12
	Ant1	2462	1.36	1.86	73.12
	Ant2	2462	1.36	1.86	73.12
11N20MIMO	Ant1	2412	1.27	1.77	71.75
	Ant2	2412	1.27	1.77	71.75
	Ant1	2437	1.27	1.77	71.75
	Ant2	2437	1.27	1.77	71.75
	Ant1	2462	1.27	1.77	71.75
	Ant2	2462	1.27	1.77	71.75
11N40MIMO	Ant1	2422	0.63	1.13	55.75
	Ant2	2422	0.63	1.14	55.26
	Ant1	2437	0.63	1.13	55.75
	Ant2	2437	0.63	1.13	55.75
	Ant1	2452	0.63	1.14	55.26
	Ant2	2452	0.63	1.14	55.26

Note: Duty Cycle Correction Factor = $10\log(1/x)$.

Where: x is Duty Cycle (Linear)

Where: T is On Time

If that calculated VBW is not available on the analyzer, then the next higher value should be used.

For mode 11b, the duty cycle is greater than 98 %, so it can set VBW to 10 Hz.

8.5. Original test data





11B_Ant2_2437



11B_Ant1_2462



11B_Ant2_2462





11G_Ant2_2437



11G_Ant1_2462



11G_Ant2_2462



11N20MIMO_Ant1_2412



11N20MIMO_Ant2_2412



11N20MIMO_Ant1_2437



11N20MIMO_Ant2_2437



11N20MIMO_Ant1_2462



11N20MIMO_Ant2_2462





11N40MIMO_Ant2_2437



11N40MIMO_Ant1_2452



11N40MIMO_Ant2_2452



9. 6 dB DTS Bandwidth and 99 % Occupied Bandwidth

9.1. Block diagram of test setup

Same as section 8.1

9.2. Limits

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(a)(2) ISED RSS-247 5.2 (a)	6 dB Bandwidth	≥ 500 kHz	2400-2483.5
ISED RSS-Gen Clause 6.7	99 % Occupied Bandwidth	For reporting purposes only.	2400-2483.5

9.3. Test Procedure

Connect the UUT to the spectrum analyzer and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	For 6 dB Bandwidth :100 kHz For 99 % Occupied Bandwidth :1 % to 5 % of the occupied bandwidth
VBW	For 6 dB Bandwidth: $\geq 3 \times$ RBW For 99 % Occupied Bandwidth : $\geq 3 \times$ RBW
Trace	Max hold
Sweep	Auto couple

Allow the trace to stabilize and 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 and 99 % relative to the maximum level measured in the fundamental emission.

9.4. Results

6dB bandwidth:

Test Mode	Ant.	Freq. (MHz)	DTS BW (MHz)	FL (MHz)	FH (MHz)	Limit (MHz)	Verdict
11B	Ant1	2412	10.040	2406.960	2417.000	0.5	PASS
	Ant2	2412	10.040	2407.000	2417.040	0.5	PASS
	Ant1	2437	9.960	2432.040	2442.000	0.5	PASS
	Ant2	2437	11.000	2432.040	2443.040	0.5	PASS
	Ant1	2462	9.920	2457.000	2466.920	0.5	PASS
	Ant2	2462	9.840	2457.200	2467.040	0.5	PASS
11G	Ant1	2412	16.240	2403.880	2420.120	0.5	PASS
	Ant2	2412	16.360	2403.800	2420.160	0.5	PASS
	Ant1	2437	16.360	2428.800	2445.160	0.5	PASS
	Ant2	2437	16.320	2428.840	2445.160	0.5	PASS
	Ant1	2462	16.320	2453.840	2470.160	0.5	PASS
	Ant2	2462	16.360	2453.800	2470.160	0.5	PASS
11N20MIMO	Ant1	2412	17.560	2403.200	2420.760	0.5	PASS
	Ant2	2412	17.600	2403.200	2420.800	0.5	PASS
	Ant1	2437	16.680	2428.240	2444.920	0.5	PASS
	Ant2	2437	17.600	2428.200	2445.800	0.5	PASS
	Ant1	2462	17.520	2453.240	2470.760	0.5	PASS
	Ant2	2462	17.600	2453.200	2470.800	0.5	PASS
11N40MIMO	Ant1	2422	34.000	2404.480	2438.480	0.5	PASS
	Ant2	2422	32.560	2406.960	2439.520	0.5	PASS

	Ant1	2437	32.560	2421.880	2454.440	0.5	PASS
	Ant2	2437	33.760	2420.760	2454.520	0.5	PASS
	Ant1	2452	34.080	2434.400	2468.480	0.5	PASS
	Ant2	2452	35.040	2434.560	2469.600	0.5	PASS

99 % bandwidth:

Test Mode	Ant.	Channel Freq. (MHz)	OCB (MHz)	FL (MHz)	FH (MHz)	Limit (MHz)	Verdict
11B	Ant1	2412	14.730	2404.6447	2419.3747	---	---
	Ant2	2412	14.608	2404.7223	2419.3303	---	---
	Ant1	2437	14.696	2429.5823	2444.2783	---	---
	Ant2	2437	14.612	2429.6881	2444.3001	---	---
	Ant1	2462	14.745	2454.6159	2469.3609	---	---
	Ant2	2462	14.641	2454.6735	2469.3145	---	---
11G	Ant1	2412	16.736	2403.6544	2420.3904	---	---
	Ant2	2412	16.560	2403.6925	2420.2525	---	---
	Ant1	2437	16.548	2428.7035	2445.2515	---	---
	Ant2	2437	16.649	2428.6756	2445.3246	---	---
	Ant1	2462	16.559	2453.7566	2470.3156	---	---
	Ant2	2462	16.597	2453.7136	2470.3106	---	---
11N20MIMO	Ant1	2412	17.689	2403.1691	2420.8581	---	---
	Ant2	2412	17.733	2403.1660	2420.8990	---	---
	Ant1	2437	17.719	2428.0960	2445.8150	---	---
	Ant2	2437	17.790	2428.1051	2445.8951	---	---
	Ant1	2462	17.678	2453.1636	2470.8416	---	---
	Ant2	2462	17.722	2453.1313	2470.8533	---	---
11N40MIMO	Ant1	2422	35.948	2404.0198	2439.9678	---	---
	Ant2	2422	36.171	2403.8781	2440.0491	---	---
	Ant1	2437	36.159	2418.7800	2454.9390	---	---
	Ant2	2437	36.080	2418.9063	2454.9863	---	---
	Ant1	2452	36.147	2433.8813	2470.0283	---	---
	Ant2	2452	36.113	2433.9327	2470.0457	---	---

9.5. Original test data

6dB bandwidth:











11N20MIMO_Ant2_2412



11N20MIMO_Ant1_2437



11N20MIMO_Ant2_2437





11N40MIMO_Ant2_2422



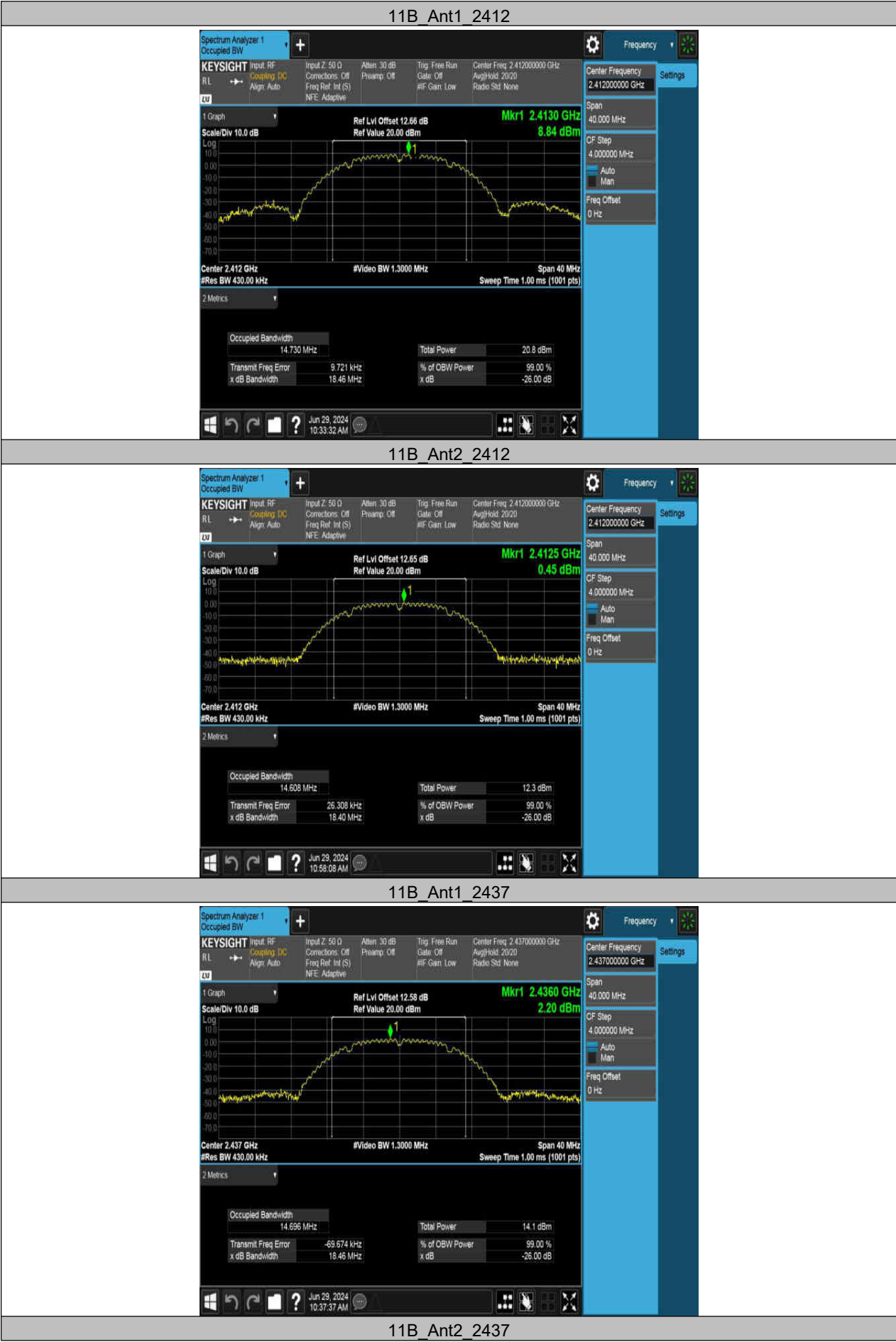
11N40MIMO_Ant1_2437

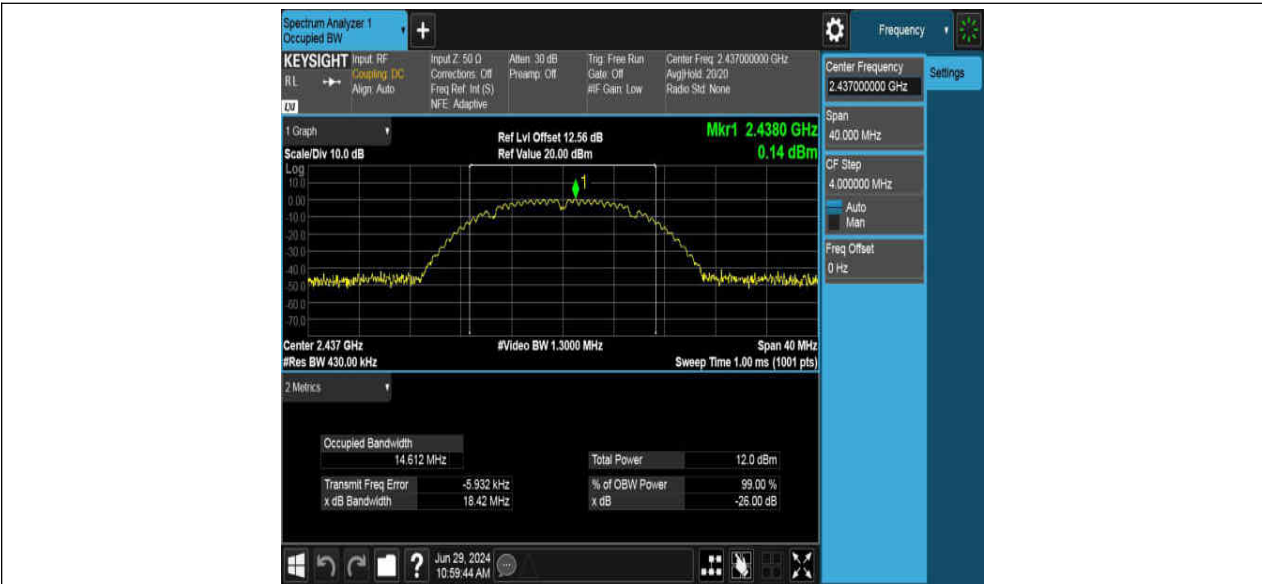


11N40MIMO Ant2 2437



99 % bandwidth:





11B_Ant1_2462



11B_Ant2_2462



11G_Ant1_2412



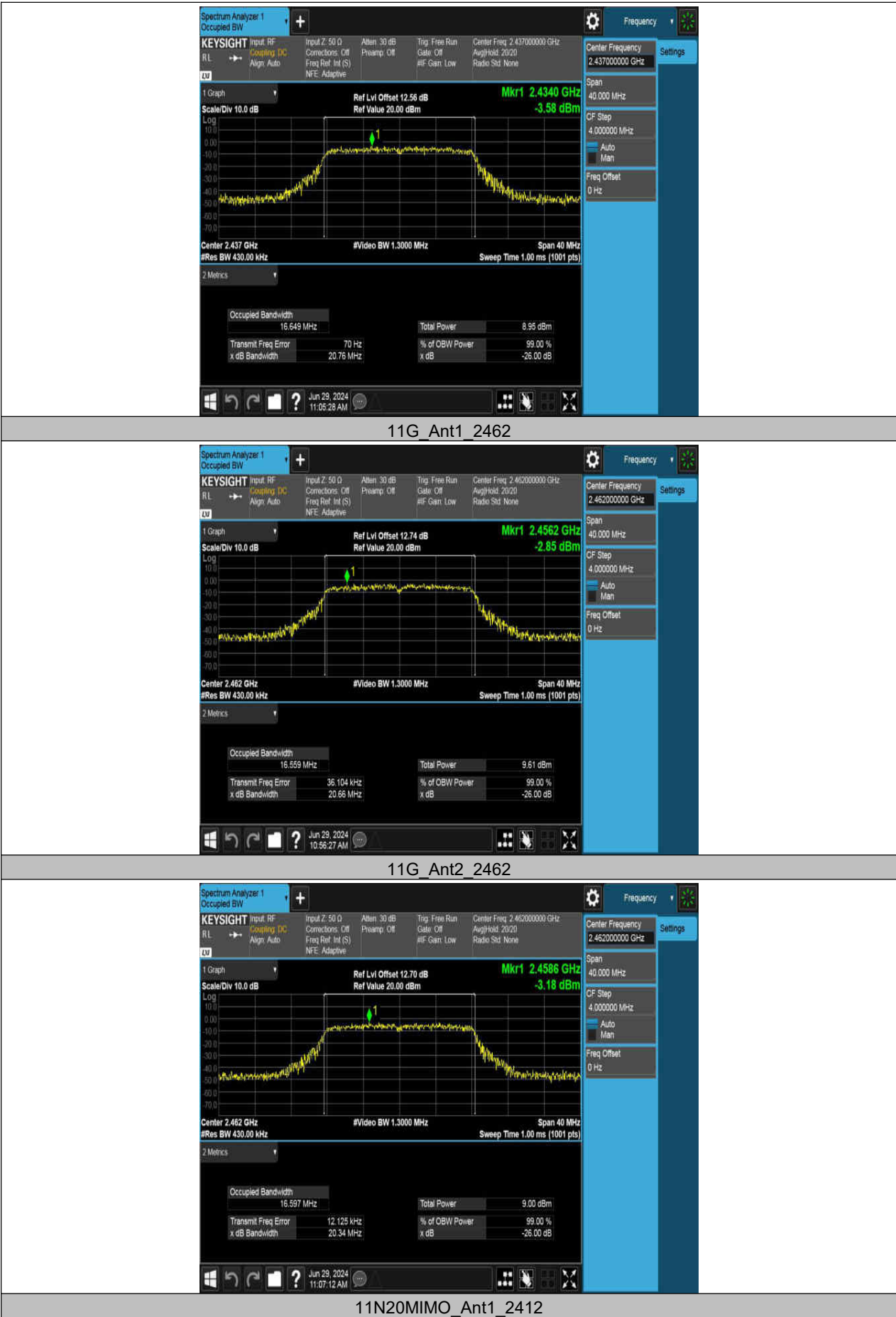
11G_Ant2_2412

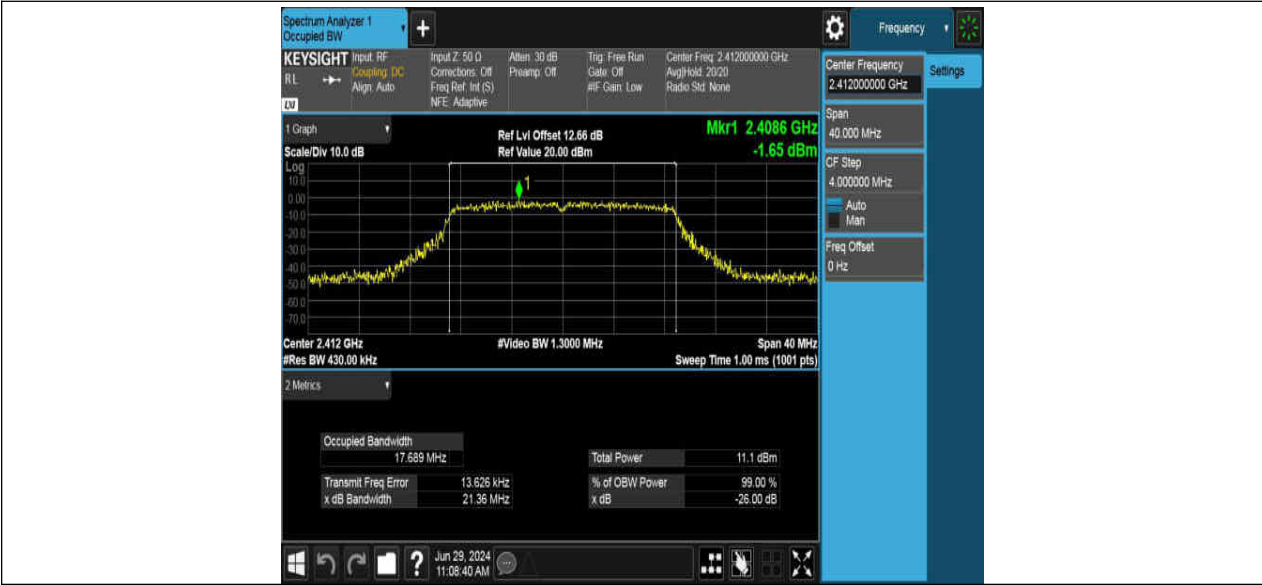


11G_Ant1_2437

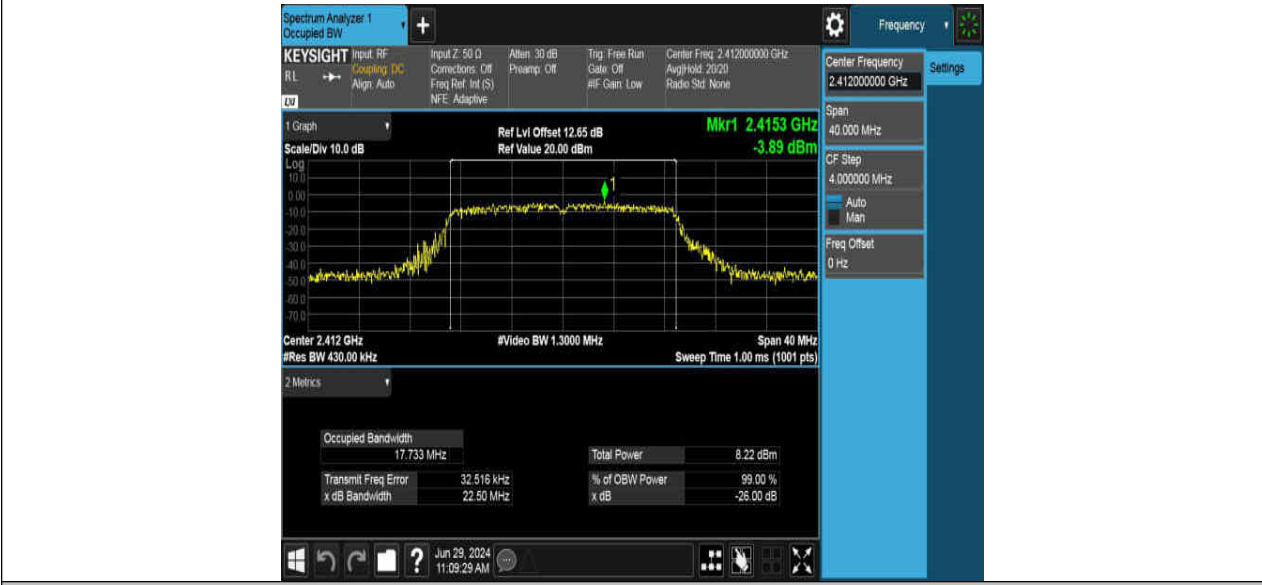


11G_Ant2_2437





11N20MIMO_Ant2_2412



11N20MIMO_Ant1_2437



11N20MIMO_Ant2_2437



11N20MIMO_Ant1_2462



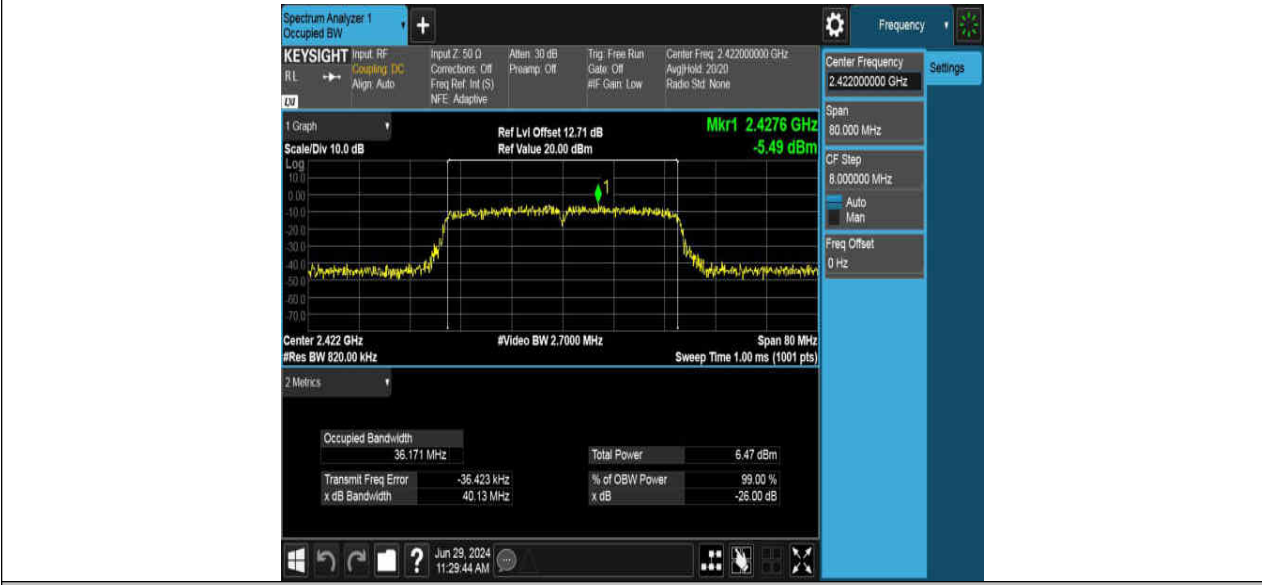
11N20MIMO_Ant2_2462



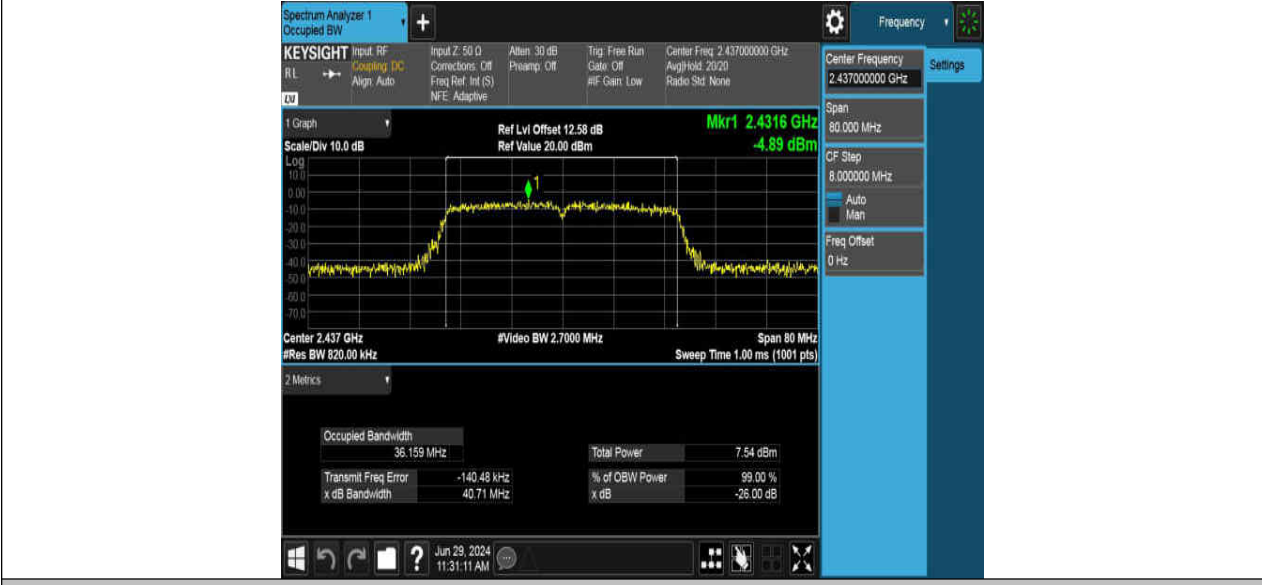
11N40MIMO Ant1 2422



11N40MIMO_Ant2_2422



11N40MIMO_Ant1_2437



11N40MIMO_Ant2_2437



10. Conducted Output Power

10.1. Block diagram of test setup

Same as section 8.1

10.2. Limits

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(b)(3) ISED RSS-247 5.4 (d)	Peak Output Power	1 watt or 30 dBm	2400-2483.5

10.3. Test Procedure

Place the EUT on the table and set it in the transmitting mode.

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Power sensor.

Measure peak power each channel.

Peak Detector use for Peak result.

AVG Detector use for AVG result.

10.4. Results

Test Mode	Ant.	Freq. (MHz)	Peak Power (dBm)	Conducted Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)	Verdict
11B	Ant1	2412	16.71	≤30.00	20.53	≤36.00	PASS
	Ant2	2412	16.27	≤30.00	20.40	≤36.00	PASS
	Ant1	2437	16.27	≤30.00	20.09	≤36.00	PASS
	Ant2	2437	16.08	≤30.00	20.21	≤36.00	PASS
	Ant1	2462	16.11	≤30.00	19.93	≤36.00	PASS
	Ant2	2462	15.89	≤30.00	20.02	≤36.00	PASS
11G	Ant1	2412	16.06	≤30.00	19.88	≤36.00	PASS
	Ant2	2412	16.51	≤30.00	20.64	≤36.00	PASS
	Ant1	2437	15.18	≤30.00	19.00	≤36.00	PASS
	Ant2	2437	15.79	≤30.00	19.92	≤36.00	PASS
	Ant1	2462	16.95	≤30.00	20.77	≤36.00	PASS
	Ant2	2462	15.77	≤30.00	19.90	≤36.00	PASS
11N20MIMO	Ant1	2412	13.45	≤30.00	17.27	≤36.00	PASS
	Ant2	2412	11.12	≤30.00	15.25	≤36.00	PASS
	total	2412	15.45	≤30.00	19.39	≤36.00	PASS
	Ant1	2437	13.20	≤30.00	17.02	≤36.00	PASS
	Ant2	2437	11.52	≤30.00	15.65	≤36.00	PASS
	total	2437	15.45	≤30.00	19.40	≤36.00	PASS
	Ant1	2462	13.94	≤30.00	17.76	≤36.00	PASS
	Ant2	2462	12.49	≤30.00	16.62	≤36.00	PASS
11N40MIMO	total	2462	16.29	≤30.00	20.24	≤36.00	PASS
	Ant1	2422	15.42	≤30.00	19.24	≤36.00	PASS
	Ant2	2422	12.73	≤30.00	16.86	≤36.00	PASS
	total	2422	17.29	≤30.00	21.22	≤36.00	PASS
	Ant1	2437	14.04	≤30.00	17.86	≤36.00	PASS
	Ant2	2437	12.31	≤30.00	16.44	≤36.00	PASS
	total	2437	16.27	≤30.00	20.22	≤36.00	PASS
	Ant1	2452	13.82	≤30.00	17.64	≤36.00	PASS

	Ant2	2452	12.40	≤30.00	16.53	≤36.00	PASS
	total	2452	16.18	≤30.00	20.13	≤36.00	PASS

11. Power Spectral Density

11.1. Block diagram of test setup

Same as section 8.1

11.2. Limits

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC §15.247 (e) ISED RSS-247 5.2 (b)	Power Spectral Density	8 dBm/3 kHz	2400-2483.5

11.3. Test Procedure

Connect the UUT to the spectrum analyzer and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	$3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
VBW	$\geq 3 \times \text{RBW}$
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.

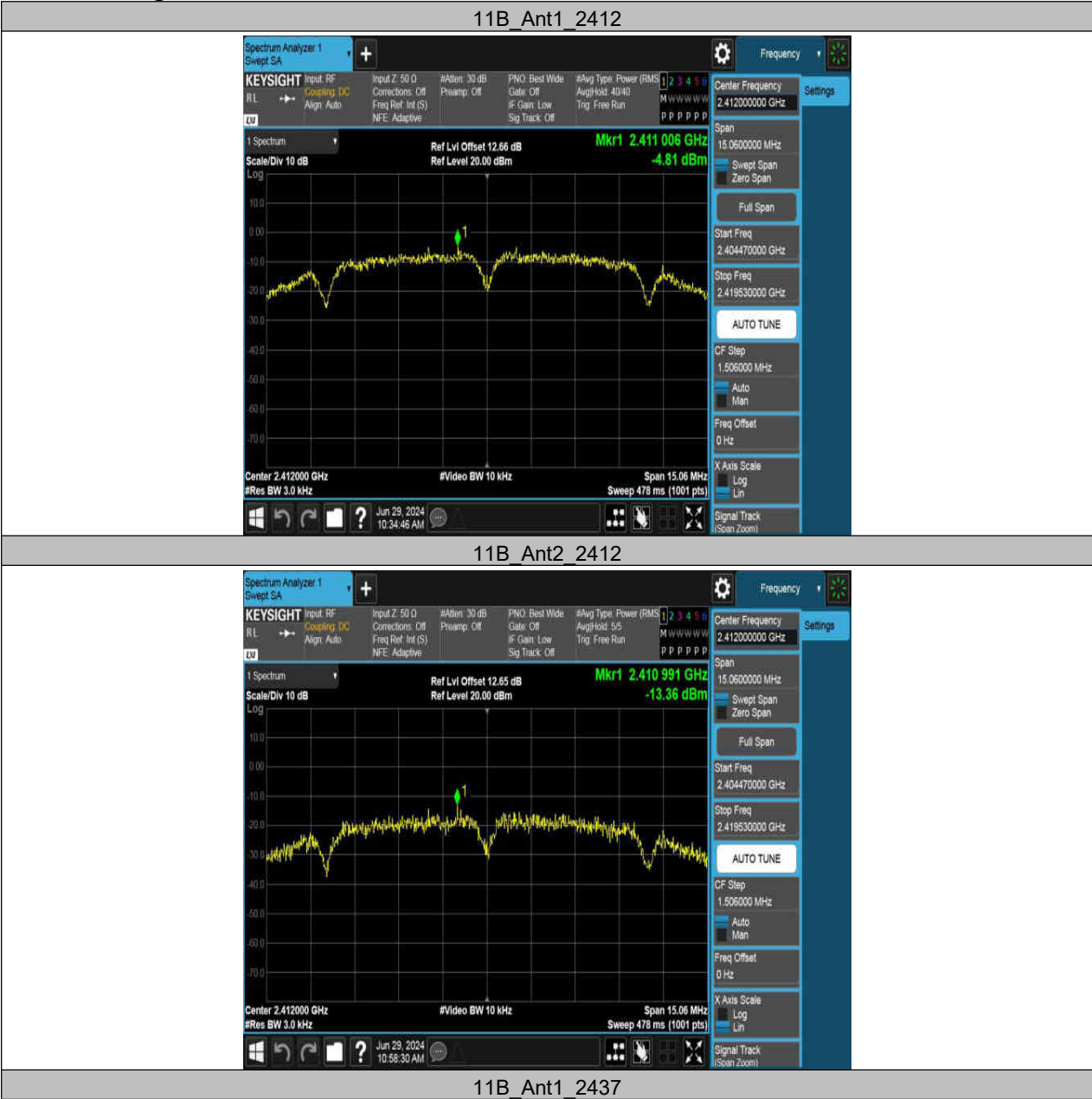
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

11.4. Results

Test Mode	Ant.	Freq. (MHz)	Result (dBm/3-100kHz)	Limit (dBm/3kHz)	Verdict
11B	Ant1	2412	-4.81	≤ 8.00	PASS
	Ant2	2412	-13.36	≤ 8.00	PASS
	Ant1	2437	-12.18	≤ 8.00	PASS
	Ant2	2437	-13.72	≤ 8.00	PASS
	Ant1	2462	-12.61	≤ 8.00	PASS
	Ant2	2462	-15.28	≤ 8.00	PASS
11G	Ant1	2412	-10.54	≤ 8.00	PASS
	Ant2	2412	-20.79	≤ 8.00	PASS
	Ant1	2437	-11.55	≤ 8.00	PASS
	Ant2	2437	-21.66	≤ 8.00	PASS
	Ant1	2462	-21.03	≤ 8.00	PASS
	Ant2	2462	-21.63	≤ 8.00	PASS
11N20MIMO	Ant1	2412	-19.65	≤ 8.00	PASS
	Ant2	2412	-20.91	≤ 8.00	PASS
	total	2412	-17.22	≤ 8.00	PASS
	Ant1	2437	-23.39	≤ 8.00	PASS
	Ant2	2437	-24.98	≤ 8.00	PASS
	total	2437	-21.10	≤ 8.00	PASS
	Ant1	2462	-23.32	≤ 8.00	PASS
	Ant2	2462	-23.82	≤ 8.00	PASS
	total	2462	-20.55	≤ 8.00	PASS
11N40MIMO	Ant1	2422	-23.98	≤ 8.00	PASS

	Ant2	2422	-26.70	≤8.00	PASS
	total	2422	-22.12	≤8.00	PASS
	Ant1	2437	-25.80	≤8.00	PASS
	Ant2	2437	-26.89	≤8.00	PASS
	total	2437	-23.30	≤8.00	PASS
	Ant1	2452	-24.57	≤8.00	PASS
	Ant2	2452	-25.74	≤8.00	PASS
	total	2452	-22.11	≤8.00	PASS

11.5. Original test data





11B_Ant2_2437



11B_Ant1_2462



11B_Ant2_2462

