



FCC CERTIFICATION TEST REPORT

Applicant	:	EFY Intelligent Control (Tianjin) Technology Co., Ltd.
Address	:	No. 24 Tongchang, No.156 Nanhai Rd., TEDA Tianjin, China
Equipment under Test	:	Formation performance multi-rotor UAV
Model No.	:	Agile Bee 3
Trade Mark	:	N/A
FCC ID	:	2BMFY-AGILE-BEE-3
Report No.	:	DDT-B24112619-1E01
Issue Date	:	Dec. 10, 2024
Issued By	:	Tianjin Dongdian Testing Service Co., Ltd.
Address	:	Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park Development Area, Tianjin, China. Tel: +86-022-58038000, E-mail: ddt@dgddt.com, http://www.dgddt.com



REPORT

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Test Report Declare

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Equipment under Test	:	Formation performance multi-rotor UAV
Model No.	:	Agile Bee 3
Trade Mark	:	N/A
Manufacturer	:	EFY Intelligent Control (Tianjin) Technology Co., Ltd.
Address	:	No. 24 Tongchang, No.156 Nanhai Rd., TEDA Tianjin, China

Test Standard Used: FCC Rules and Regulations Part 15 Subpart C

Test procedure used: ANSI C63.10:2020, KDB 558074 D01 15.247 Meas Guidance v05r02

We Declare:

The equipment described above is tested by Tianjin Dongdian Testing Service 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 Tianjin Dongdian Testing Service Co., Ltd is assumed of full responsibility for the accuracy and completeness of these tests.

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

Report No:	DDT-B24112619-1E01		
Date of Receipt:	Nov. 28, 2024	Date of Test:	Nov. 28, 2024 ~ Dec 10, 2024

Prepared By:

Novak Wei

Novak Wei/Engineer

Approved By:

Aaron Zhang

Aaron Zhang/Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Tianjin Dongdian Testing Service Co., Ltd.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Dec 10, 2024	

1. Summary of Test Results

The EUT have been tested according to the applicable standards as referenced below.		
Description of Test Item	Standard	Verdict
6dB Bandwidth and 99% Bandwidth	FCC 15.247 (a) (2)	Pass
Maximum Conducted Output Power	FCC 15.247 (b) (3)	Pass
Power Spectral Density	FCC 15.247 (e)	Pass
Conducted Band-Edge Emissions	FCC 15.247 (d)	Pass
Conducted Spurious Emissions	FCC 15.247 (d)	Pass
Radiated Spurious Emissions	FCC 15.247 (d) FCC 15.209 FCC 15.205	Pass
Radiated Band Edge Emissions	FCC 15.247 (d) FCC 15.209 FCC 15.205	Pass
Power Line Conducted Emission	FCC 15.207	N/A
Antenna Requirement	FCC 15.203	Pass
"N/A" means Not Applicable.		

2. General Test Information

2.1. Description of EUT

EUT* Name	: Formation performance multi-rotor UAV
Model Number	: Agile Bee 3
EUT Function Description	: Please reference user manual of this device
Power supply	: DC 14.54V by Polymer Li-ion built-in battery
Radio Technology	: IEEE 802.11b/g/n
Operation Frequency	: IEEE 802.11b: 2412MHz-2462MHz IEEE 802.11g: 2412MHz-2462MHz IEEE 802.11n HT20: 2412MHz-2462MHz
Modulation	: IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Transmitter 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: MCS0~MCS7
Antenna Type	: FPC antenna 1, maximum PK gain: 4.20 dBi FPC antenna 2, maximum PK gain: 3.69 dBi
SISO Mode	: ☒ 11b ☒ 11g ☒ 11n ☐ 11ax
MIMO Mode	: ☐ 11b ☐ 11g ☐ 11n ☐ 11ax

Note1: EUT is the ab. of equipment under test.

Channel information					
CH	Frequency (MHz)	CH	Frequency (MHz)	CH	Frequency (MHz)
1	2412	5	2432	9	2452
2	2417	6	2437	10	2457
3	2422	7	2442	11	2462
4	2427	8	2447	/	/

2.2. Accessories of EUT

Description of Accessories	Manufacturer	Model number	Description	Remark
N/A	N/A	N/A	N/A	N/A

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	EMC Compliance	SN
Notebook	Lenovo Beijing Co. Ltd.	ThinkPad	FCC/CE	TP00067A

2.4. Block diagram of EUT configuration for test

EUT

Run the special test software “putty.exe” provided by manufacturer to control EUT work in Continuous Tx mode, and select test channel, wireless mode and data rate.

Tested mode, channel, setting Tx power and rand data rate information					
Mode	Setting Tx Power		Data rate (Mbps) (See Note)	Channel	Frequency (MHz)
	ANT1	ANT2			
IEEE 802.11b	75	89	1	LCH: CH1	2412
	75	89	1	MCH: CH6	2437
	75	89	1	HCH: CH11	2462
IEEE 802.11g	70	83	6	LCH: CH1	2412
	70	83	6	MCH: CH6	2437
	70	83	6	HCH: CH11	2462
IEEE 802.11n HT20	70	80	MCS 0	LCH: CH1	2412
	70	80	MCS 0	MCH: CH6	2437
	70	80	MCS 0	HCH: CH11	2462

Note1: According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.

2.5. Deviations of test standard

No Deviation

2.6. Test environment conditions

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

Temperature range:	21-28℃
Humidity range:	20-75%
Pressure range:	86-106kPa

2.7. Test laboratory

Tianjin Dongdian Testing Service Co., Ltd.

Address: Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park Development Area, Tianjin, China.

Tel: +86-22-58038033, <http://www.ddttest.com>, Email: ddt@dgddt.com

NVLAP (National Voluntary Laboratory Accreditation Program) CODE: 500036-0

CNAS (China National Accreditation Service for Conformity Assessment) CODE: L13402

FCC Designation Number: CN5004; FCC Test Firm Registration Number: 368676

ISED (Innovation, Science and Economic Development Canada) Company Number: 27768

Conformity Assessment Body Identifier: CN0125

VCCI Facility Registration Number: C-20089, T-20093, R-20125, G-20122

2.8. Measurement uncertainty

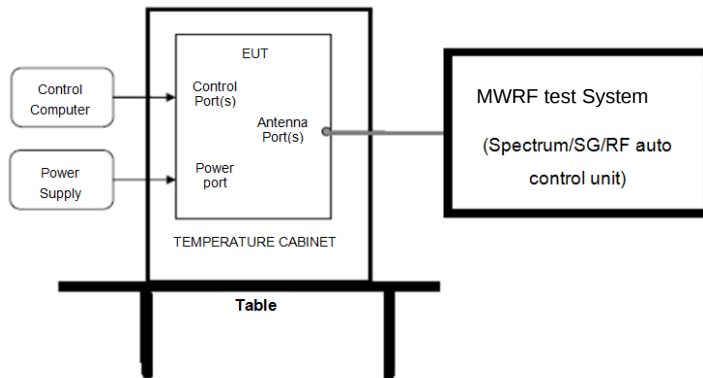
Test Item	Uncertainty
Bandwidth	0.14%
Peak Output Power (Conducted) (Spectrum Analyzer)	0.12 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$); 0.32 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
Peak Output Power (Conducted) (Power Sensor)	0.51 dB
Power Spectral Density	0.12 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$); 0.32 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
Frequencies Stability	6.7×10^{-8} (Antenna couple method) 3.4×10^{-8} (Conducted method)
Conducted Spurious Emissions	0.12 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$); 0.32 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$); 0.52 dB ($8 \text{ GHz} \leq f < 22 \text{ GHz}$)
Uncertainty for Radio Frequency (RBW < 20 kHz)	3×10^{-7}
Temperature	$\pm 2^{\circ}\text{C}$
Humidity	$\pm 1\%$
Uncertainty for Radiation Emission Test (30 MHz - 1 GHz)	2.72 dB (Antenna Polarize: V) 2.72 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission Test (1 GHz - 40 GHz)	2.74 dB (1 - 6 GHz) 2.72 dB (6 GHz - 18 GHz) 3.54 dB (18 GHz - 26 GHz) 4.30 dB (26 GHz - 40 GHz)
Uncertainty for Power Line Conduction Emission Test	3.40 dB (150 kHz - 30 MHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3. Equipment Used During Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
RF Connected Test (MWRFTest system)					
Microwave Signal Generator	Keysight	N5173B	MY53270968	2024/03/22	1 Year
MXG Vector Signal Generator	Keysight	N5182A	MY50143288	2024/02/21	1 Year
EMI Test Receiver	Keysight	N9030B	MY56320639	2024/04/01	1 Year
Wideband Radio Communication Tester	R&S	CMW500	158800	2024/02/21	1 Year
Power Sensor	KEYSIGHT	U2021XA	MY59150007	2024/02/21	1 Year
DC Power Supply	inSTEK	PSP-2010	EN122317	2024/02/03	1 Year
Test Software	MWRFTest	MTS8310	V03	N/A	N/A
Radiated Emission -10m EMI Chamber					
Broadband Horn Antenna	TESEQ	BHA 9118	31754	2023/10/11	2 Year
Broad Band Horn Antenna	Com-Power	AHA-840	10100024	2023/10/16	2 Year
Active Loop Antenna	R&S	HFH2-Z2	100269	2024/07/10	2 Year
amplifier	CMO-MW	DPA8 1000 18000	09211739	2024/02/18	1 Year
EMI Test Receiver	R&S	ESCI	101024	2024/02/18	1 Year
EMI Test Receiver	R&S	ESCI	101030	2024/02/18	1 Year
EMI Test Receiver	R&S	ESU26	100244	2024/02/18	1 Year
EXA Signal Analyzer	KEYSIGHT	N9010A	MY53281492	2024/02/21	1 Year
Bilog Antenna	TESEQ	CBL6112D	29068	2024/10/10	2 Year
Bilog Antenna	TESEQ	CBL6112D	29069	2024/10/10	2 Year
Amplifier	Sonoma	310N	300913	2024/02/18	1 Year
Amplifier	Sonoma	310N	334532	2024/02/18	1 Year
Ant Mast	Innco	MA4000	N/A	N/A	N/A
Ant Mast	Innco	MA4000	N/A	N/A	N/A
Mast Controller	Innco	CO2000	N/A	N/A	N/A
Mast Controller	Innco	CO2000	N/A	N/A	N/A
RF Selector 4CH	TOYO	NS4904N	Selector1	N/A	N/A
RF Selector 4CH	TOYO	NS4904N	Selector2	N/A	N/A
Test software	TOYO	EP5/RSE	Ver 1.9.1	N/A	N/A
Test software	Audix	E3	V 6.11111b	N/A	N/A
Power Line Conducted Emissions Test					
Test Receiver	R&S	ESCI	101397	2024/02/18	1 Year
LISN	R&S	ENV216	101122	2024/02/18	1 Year
Test software	TOYO	EP5/CE	V 5.4.40	N/A	N/A

4. 6dB Bandwidth and 99% Bandwidth

4.1. Block diagram of test setup



4.2. Limits

For direct sequence systems, the minimum 6 dB bandwidth shall be at least 500 kHz

4.3. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) 99% Bandwidth set the spectrum analyzer as follows:

RBW:	1% to 5% of the OBW
VBW:	Three times the RBW
Detector Mode:	Peak
Sweep time:	auto
Trace mode	Max hold

(3) 6dB Bandwidth set the spectrum analyzer as follows:

RBW:	100 kHz
VBW:	300 kHz
Detector Mode:	Peak
Sweep time:	auto
Trace mode	Max hold

(4) Allow the trace to stabilize, 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.

4.4. Test result

Test Mode	Test Channel	Antenna	6dB Bandwidth (MHz)	Limit (MHz)	Verdict
b	2412	Ant1	10.08	≥ 0.5	Pass
b	2437	Ant1	10.08	≥ 0.5	Pass
b	2462	Ant1	10.08	≥ 0.5	Pass
b	2412	Ant2	10.07	≥ 0.5	Pass
b	2437	Ant2	10.08	≥ 0.5	Pass
b	2462	Ant2	10.07	≥ 0.5	Pass
g	2412	Ant1	15.89	≥ 0.5	Pass
g	2437	Ant1	16.00	≥ 0.5	Pass
g	2462	Ant1	15.78	≥ 0.5	Pass
g	2412	Ant2	15.67	≥ 0.5	Pass
g	2437	Ant2	15.80	≥ 0.5	Pass
g	2462	Ant2	15.90	≥ 0.5	Pass
n20	2412	Ant1	16.38	≥ 0.5	Pass
n20	2437	Ant1	16.02	≥ 0.5	Pass
n20	2462	Ant1	16.28	≥ 0.5	Pass
n20	2412	Ant2	16.27	≥ 0.5	Pass
n20	2437	Ant2	16.27	≥ 0.5	Pass
n20	2462	Ant2	16.26	≥ 0.5	Pass

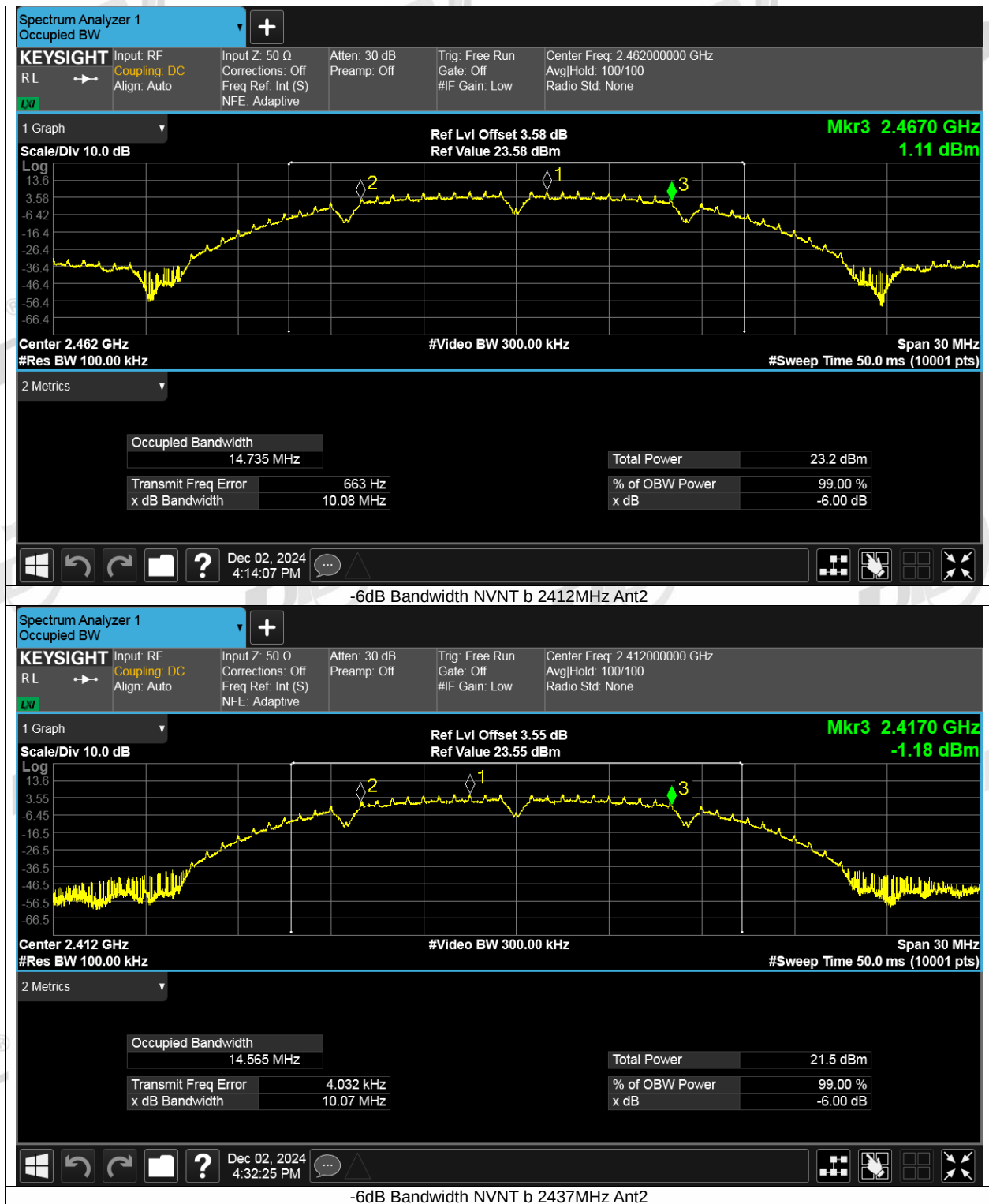
Test Mode	Test Channel	Antenna	99% OBW (MHz)	Limit (MHz)	Verdict
b	2412	Ant1	14.772	---	Pass
b	2437	Ant1	14.725	---	Pass
b	2462	Ant1	14.781	---	Pass
b	2412	Ant2	14.569	---	Pass
b	2437	Ant2	14.592	---	Pass
b	2462	Ant2	14.596	---	Pass
g	2412	Ant1	16.403	---	Pass
g	2437	Ant1	16.465	---	Pass
g	2462	Ant1	16.415	---	Pass
g	2412	Ant2	16.433	---	Pass
g	2437	Ant2	16.435	---	Pass
g	2462	Ant2	16.44	---	Pass
n20	2412	Ant1	17.577	---	Pass
n20	2437	Ant1	17.6	---	Pass
n20	2462	Ant1	17.59	---	Pass

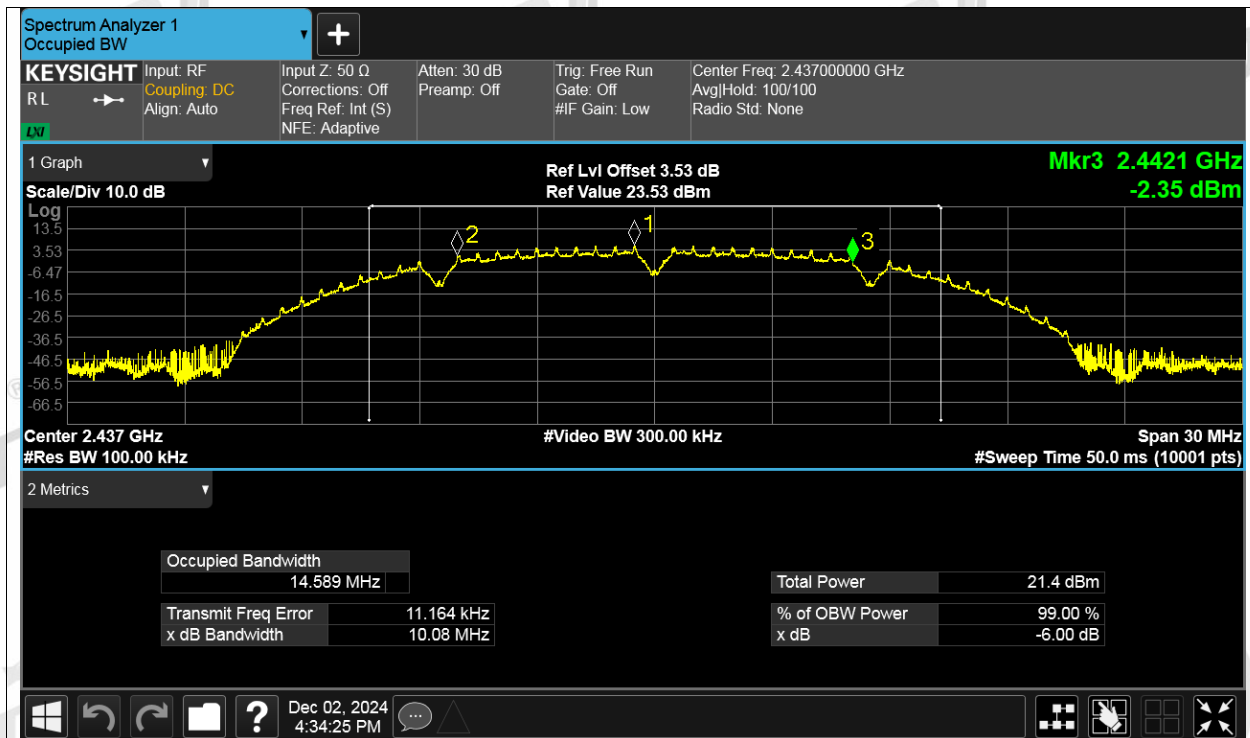
n20	2412	Ant2	17.576	---	Pass
n20	2437	Ant2	17.57	---	Pass
n20	2462	Ant2	17.598	---	Pass

4.5. original test data

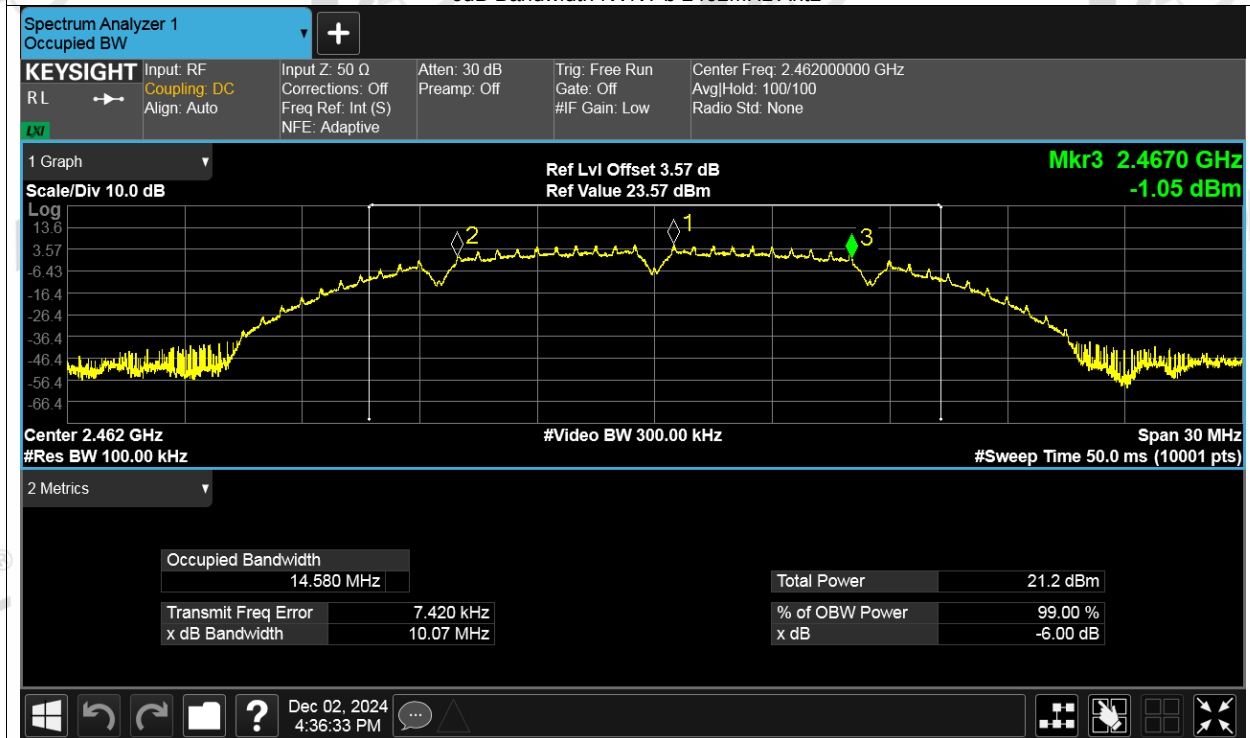
6dB Bandwidth



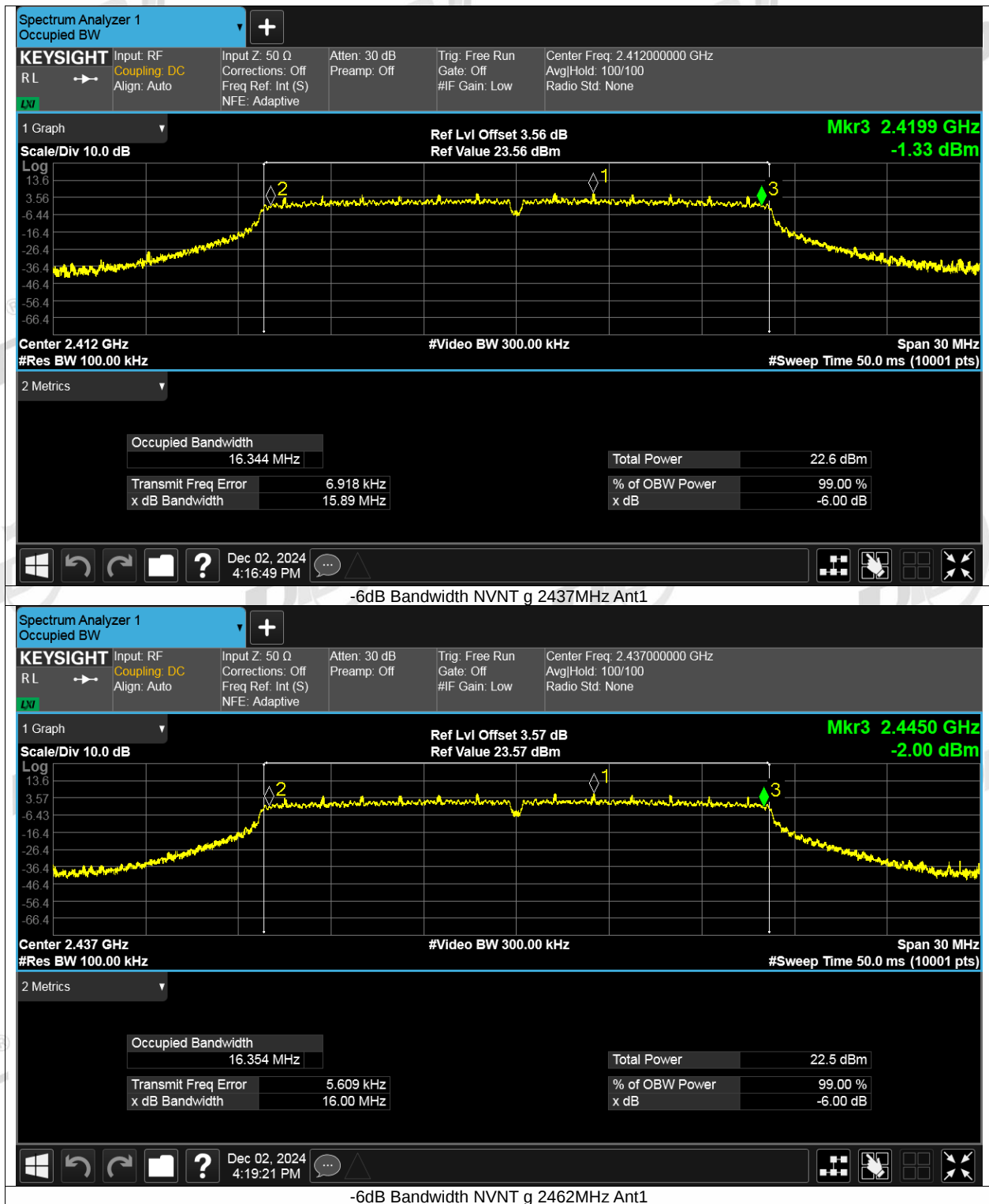


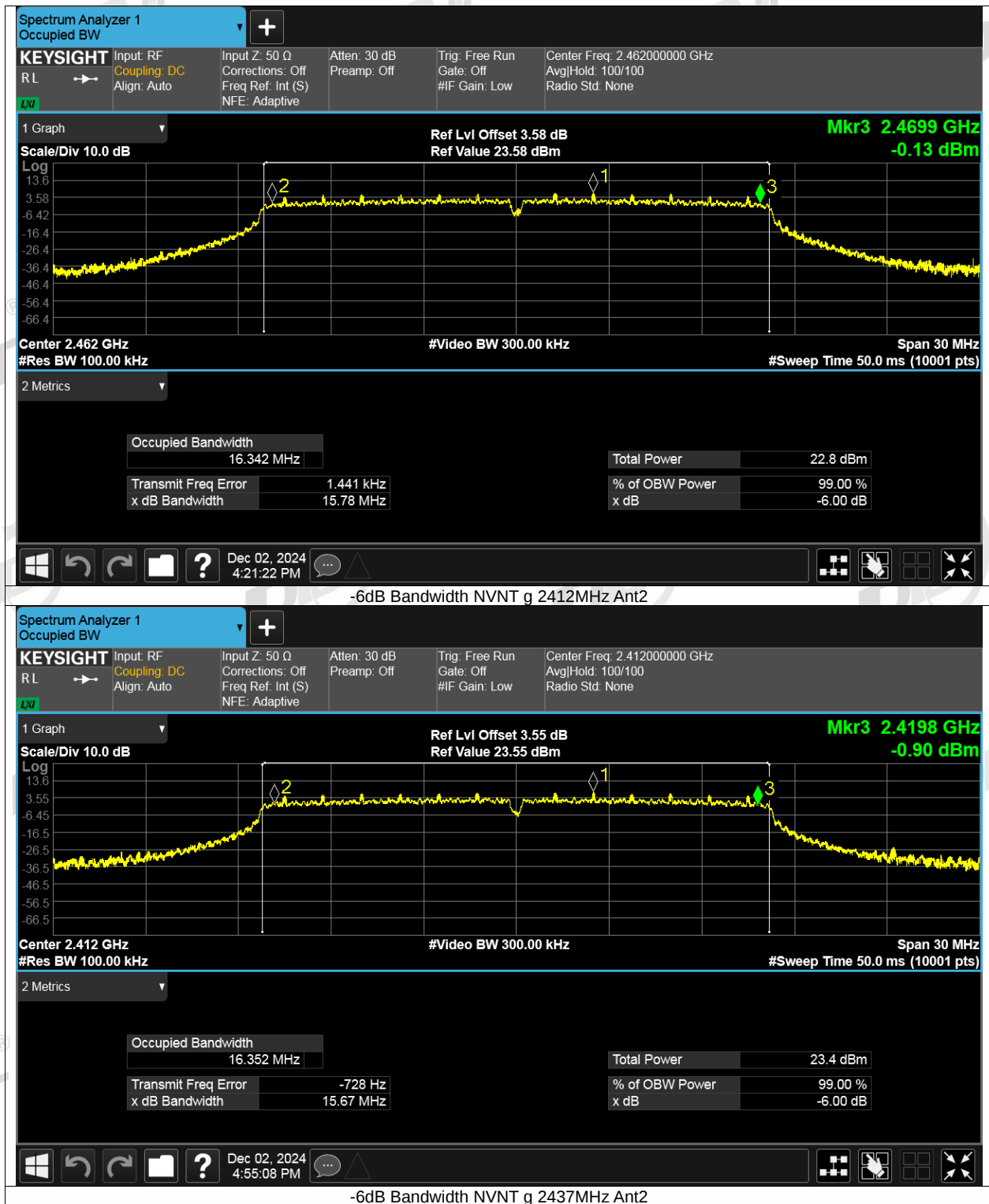


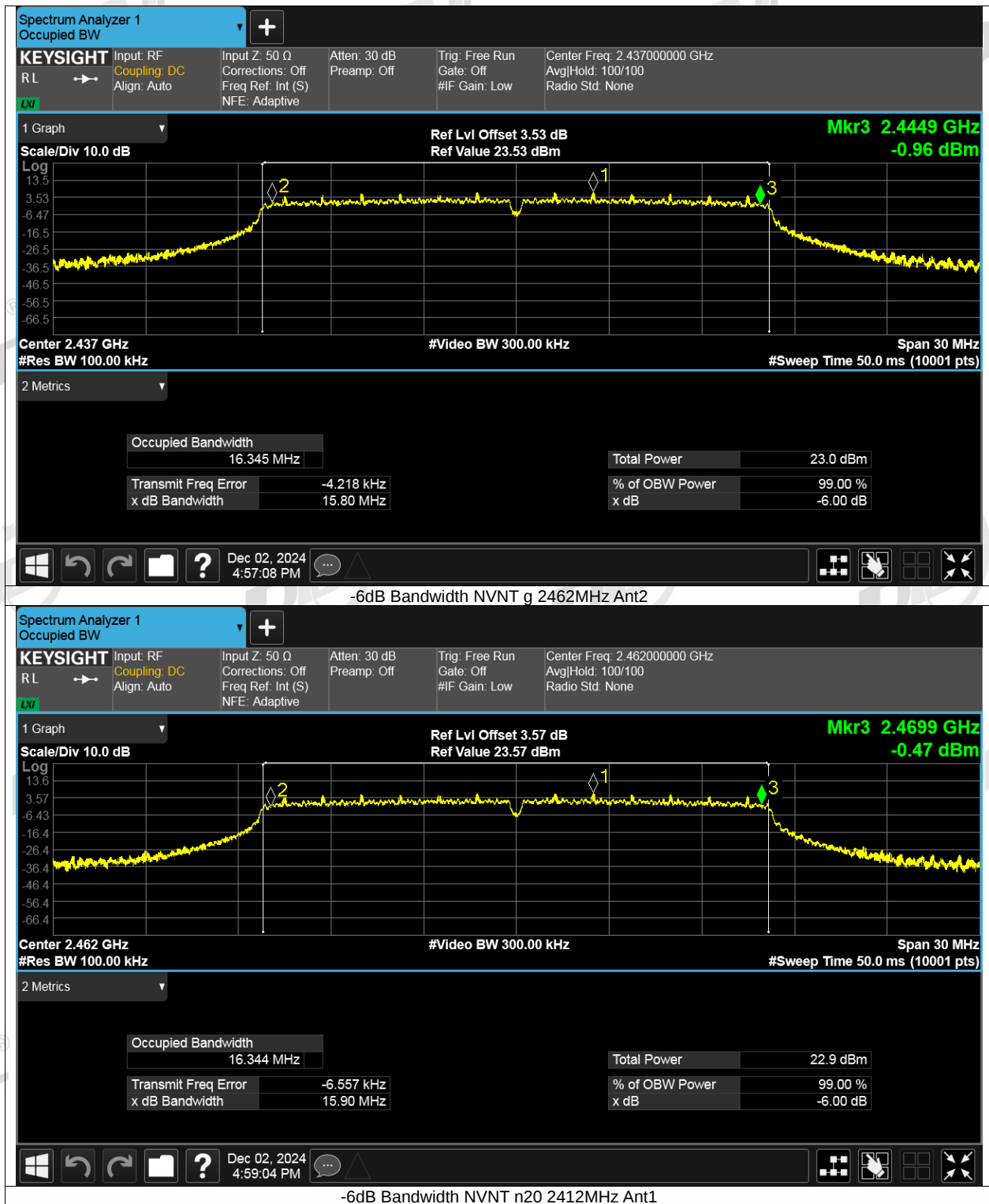
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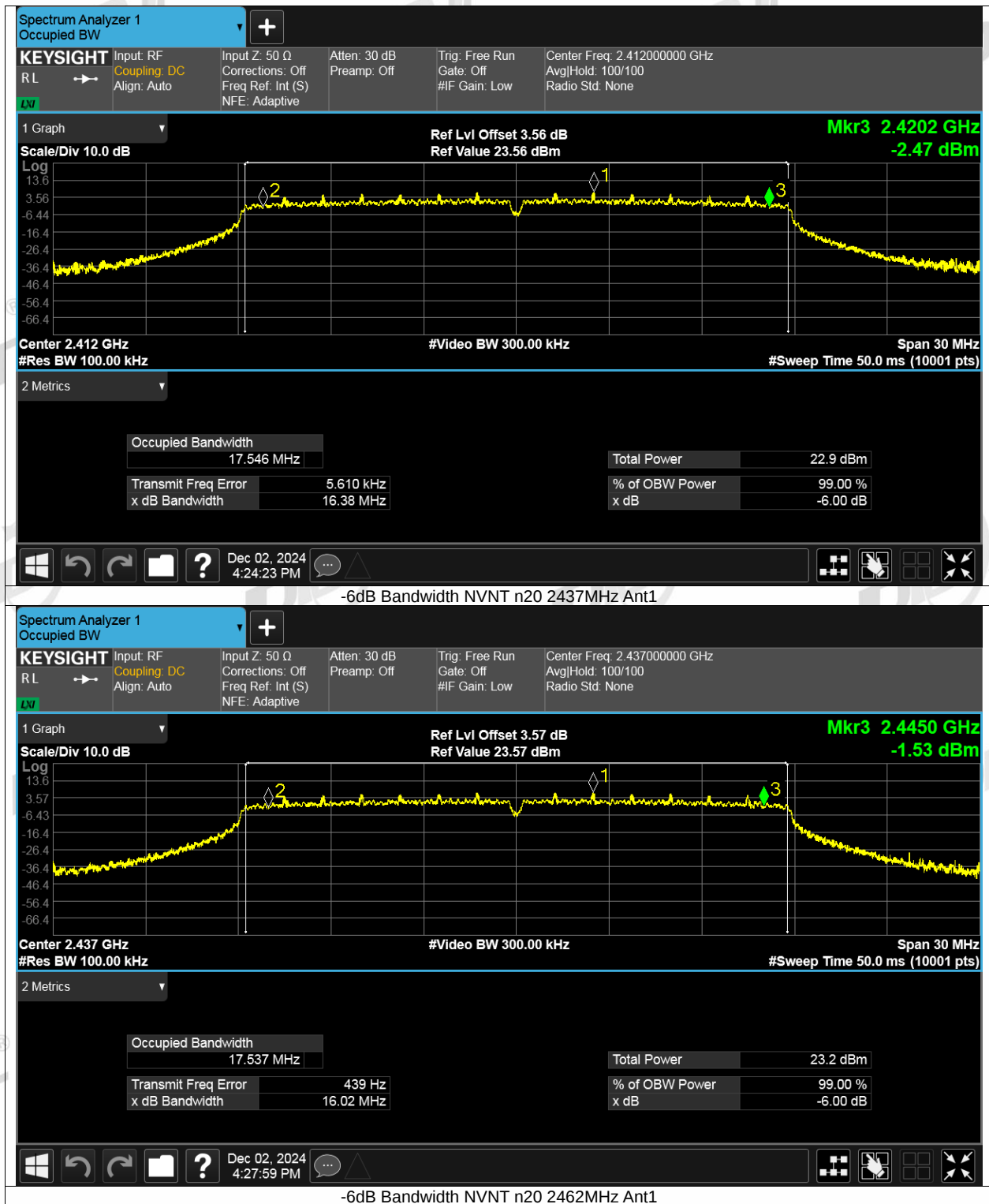


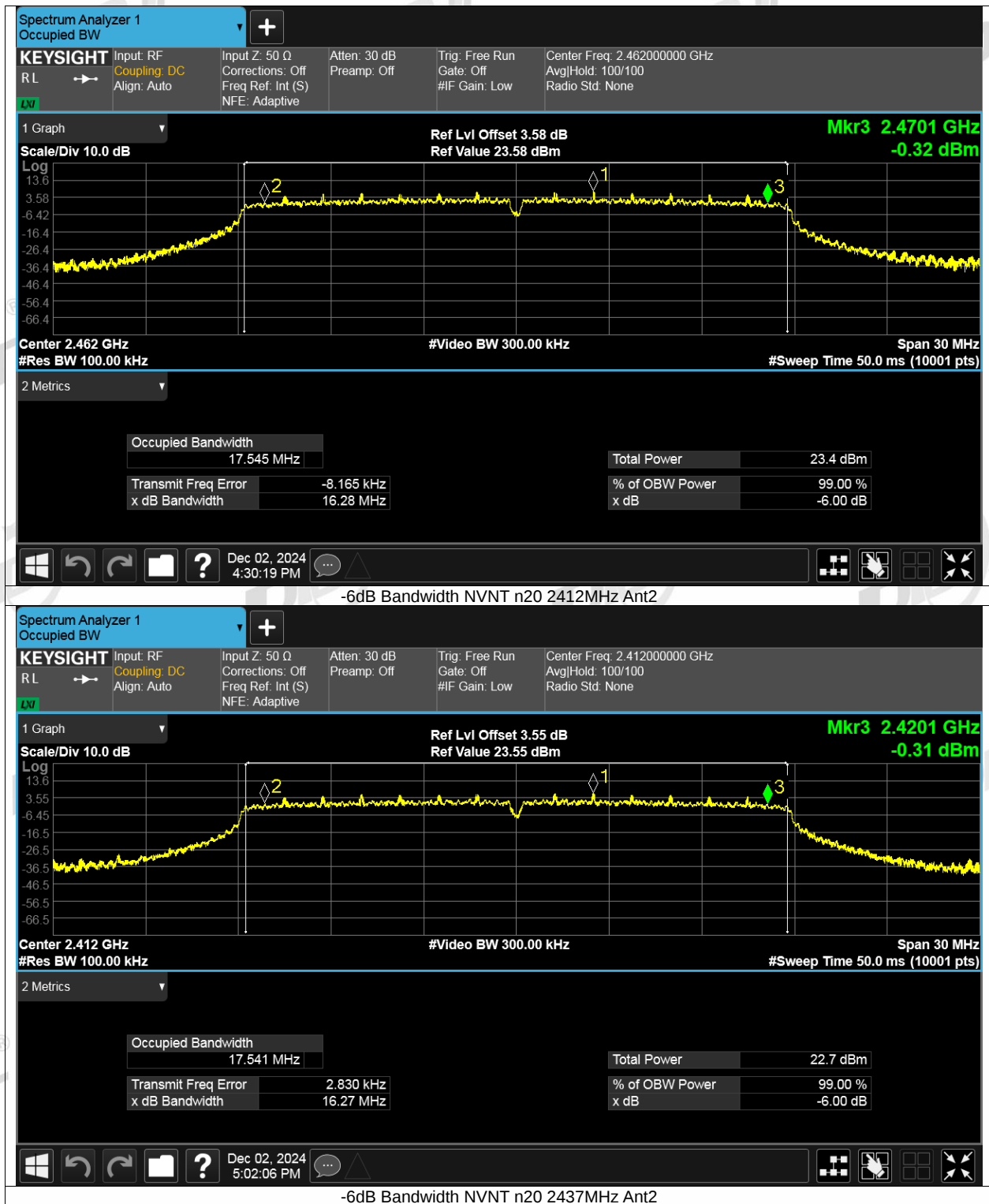
-6dB Bandwidth NVNT g 2412MHz Ant1

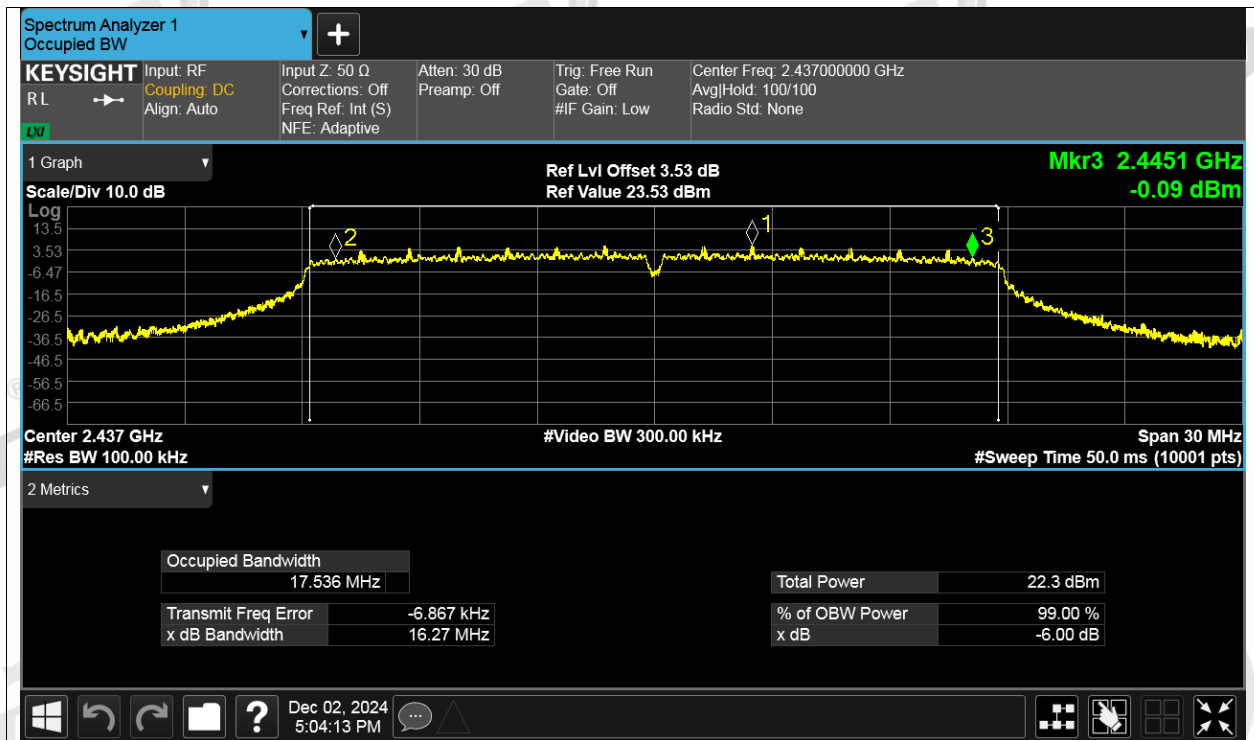




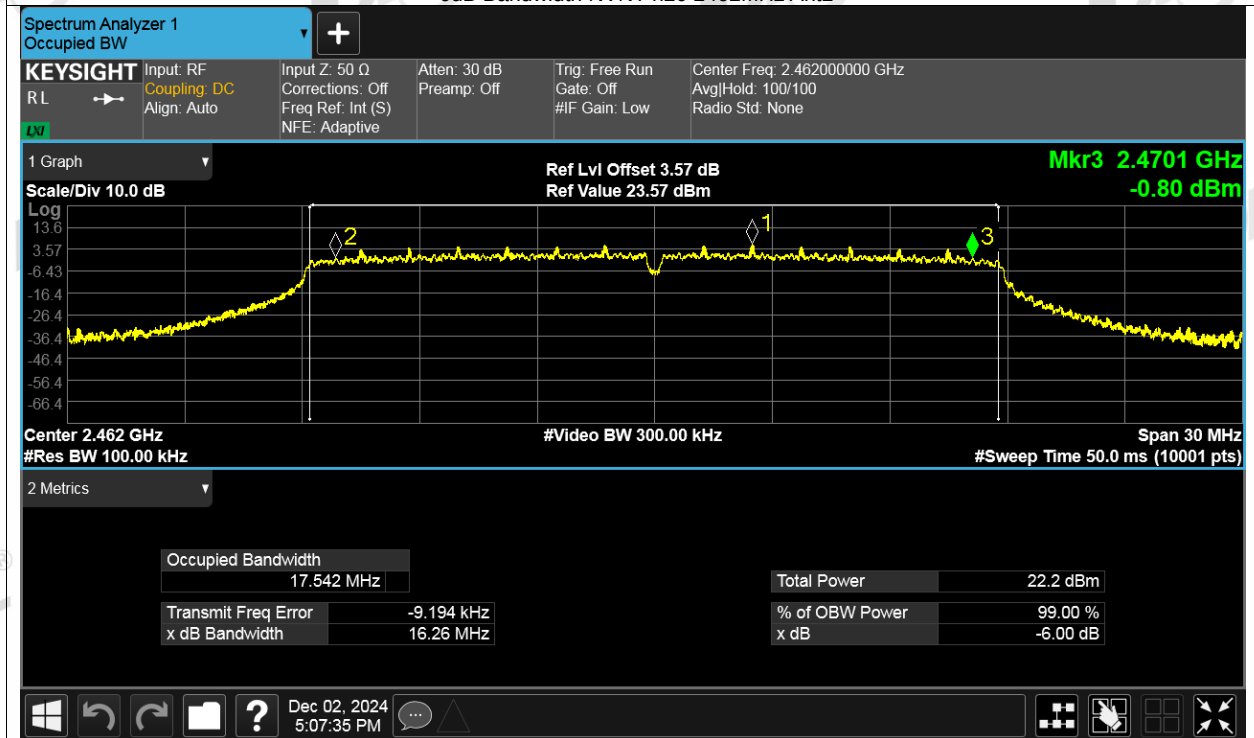




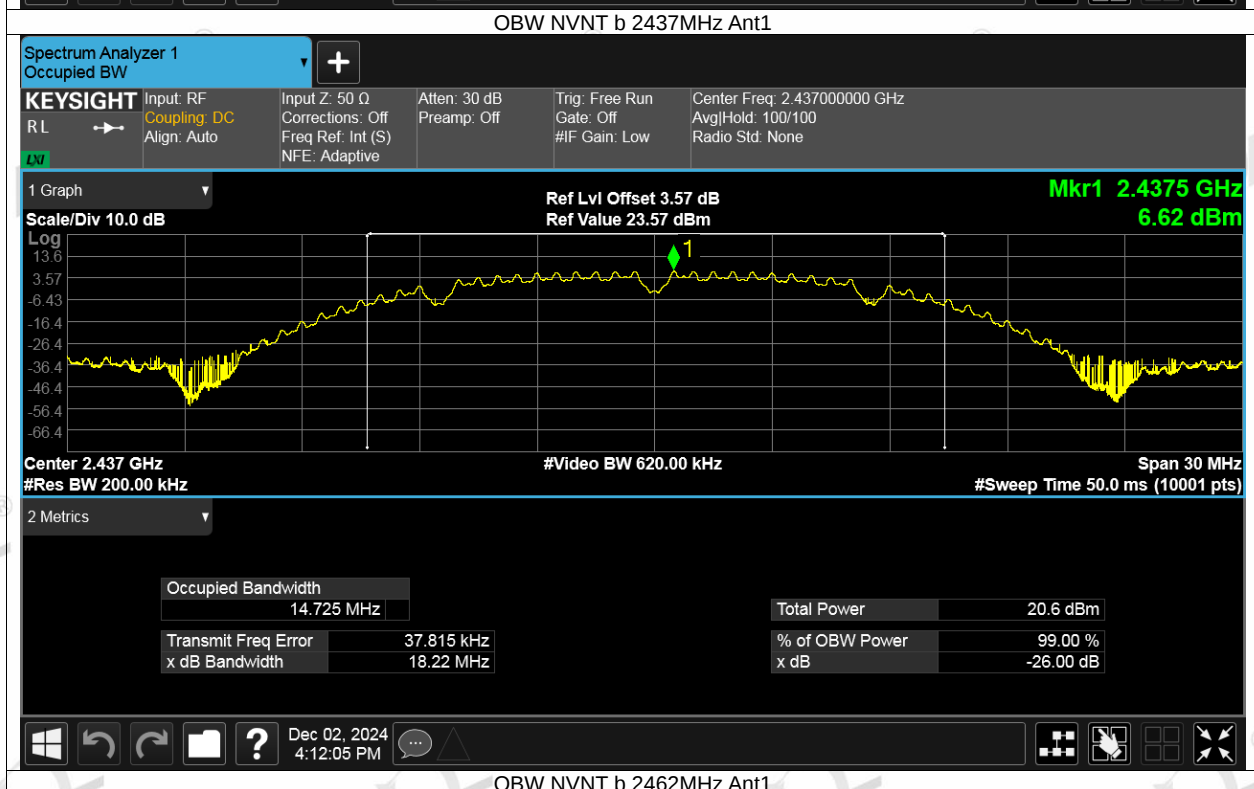
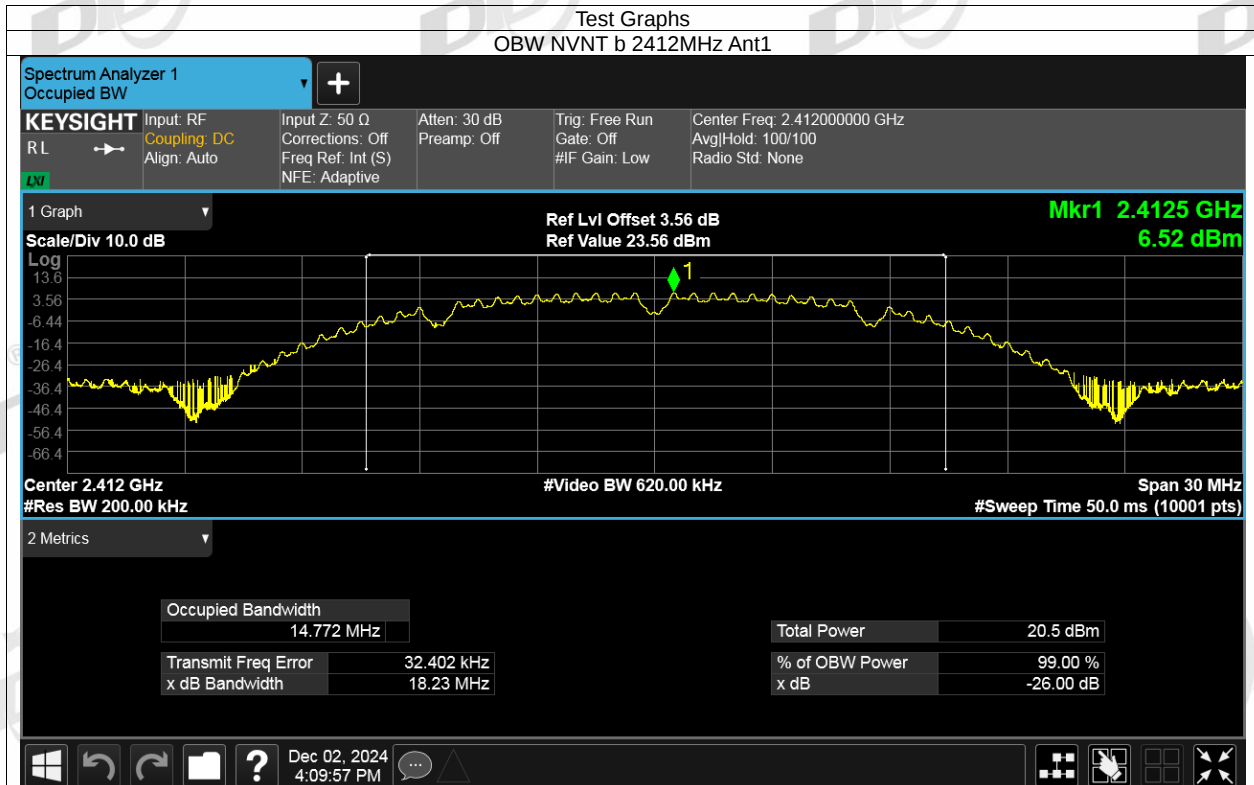




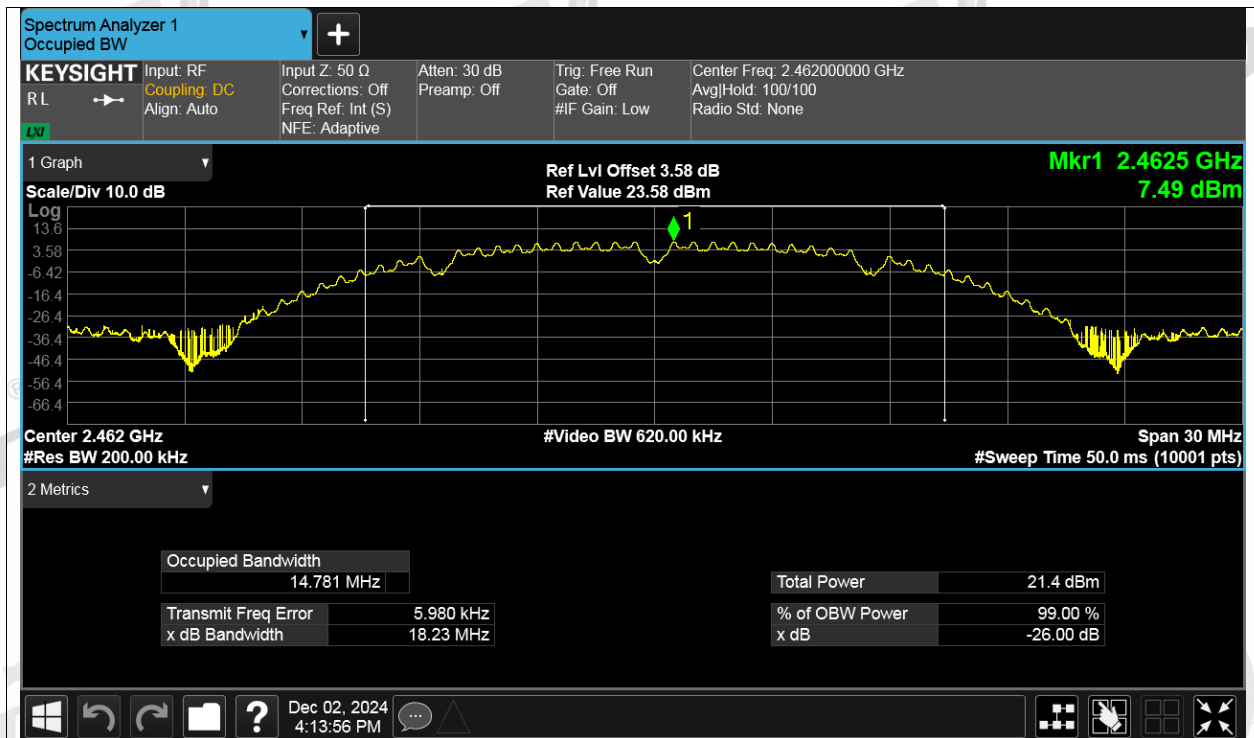
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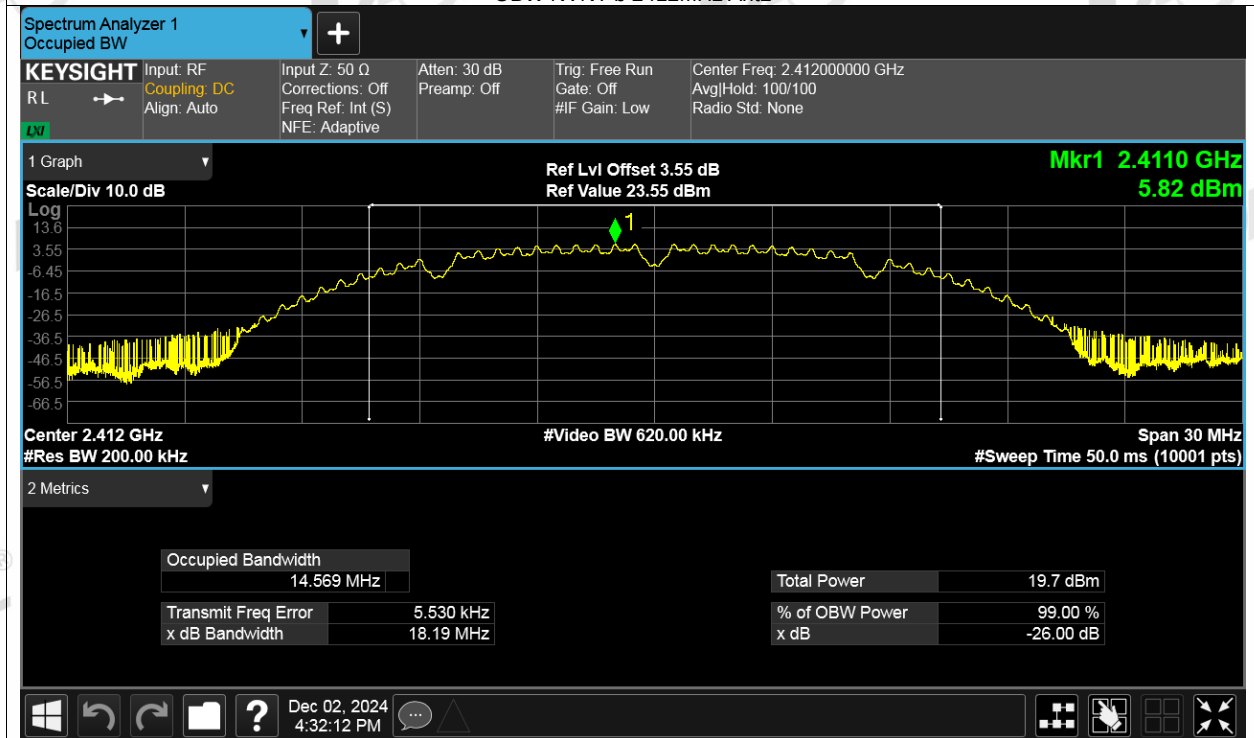
99% Bandwidth



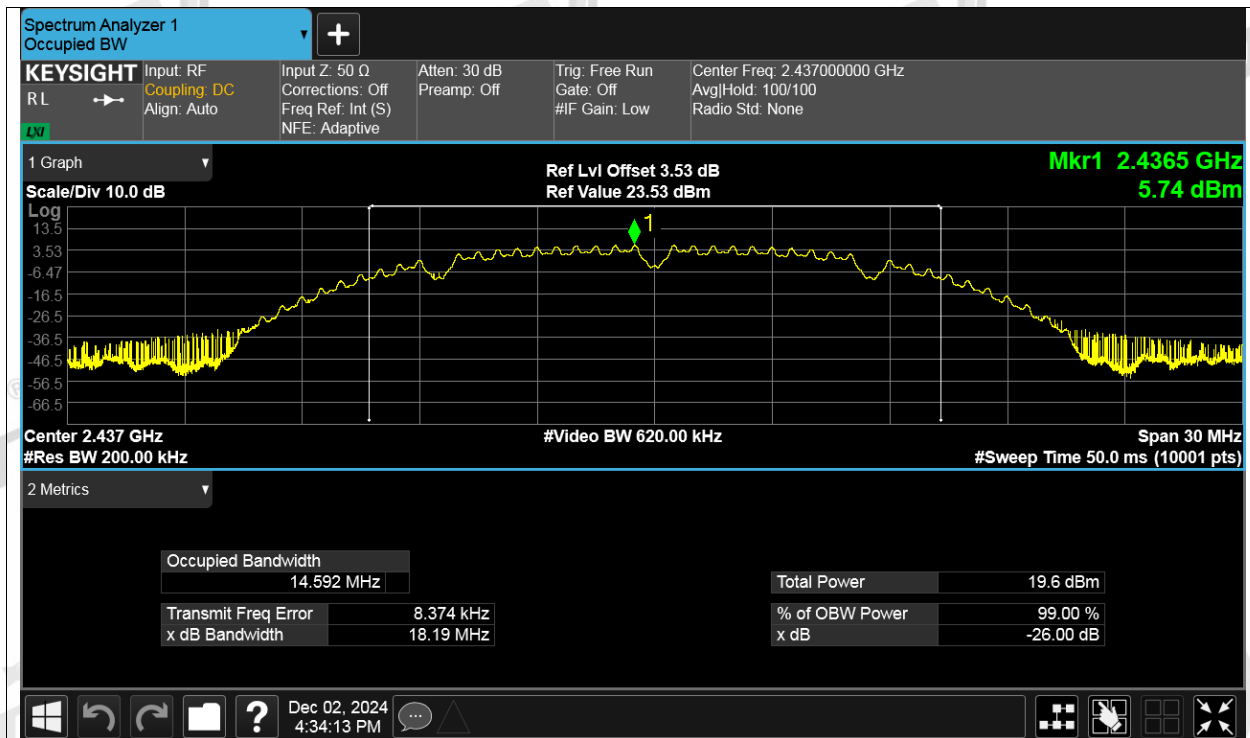
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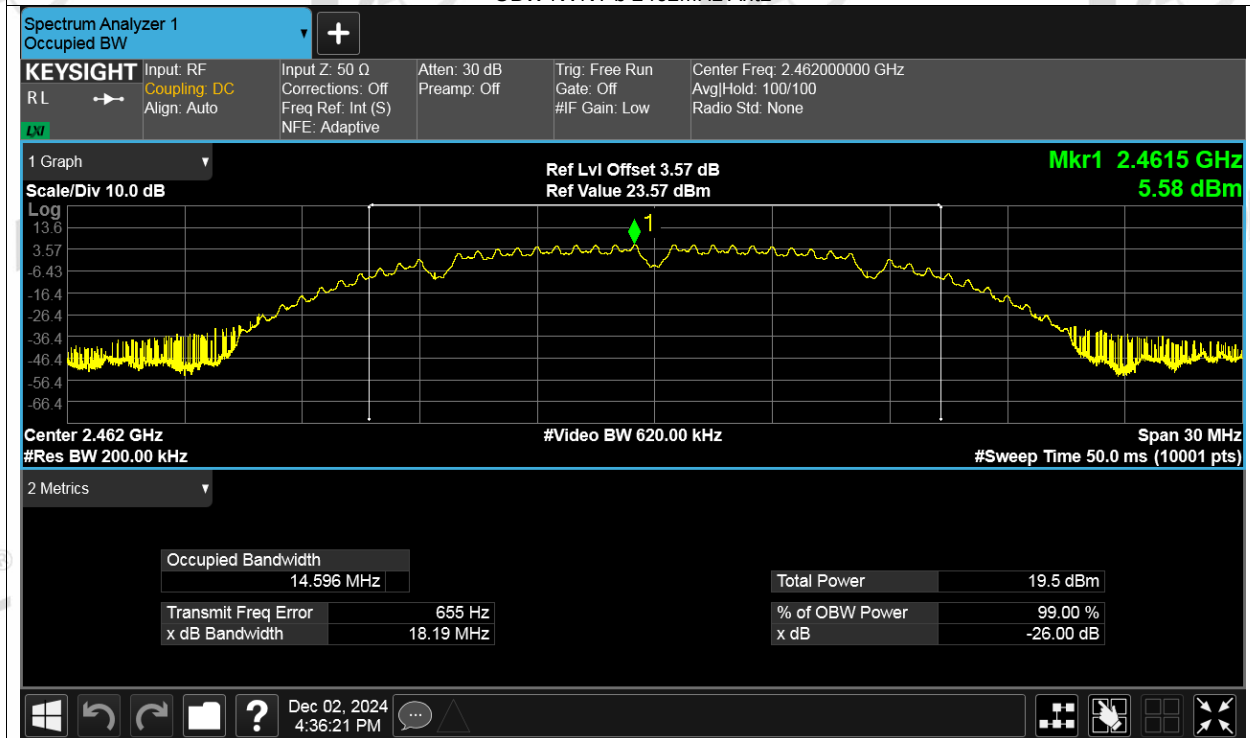
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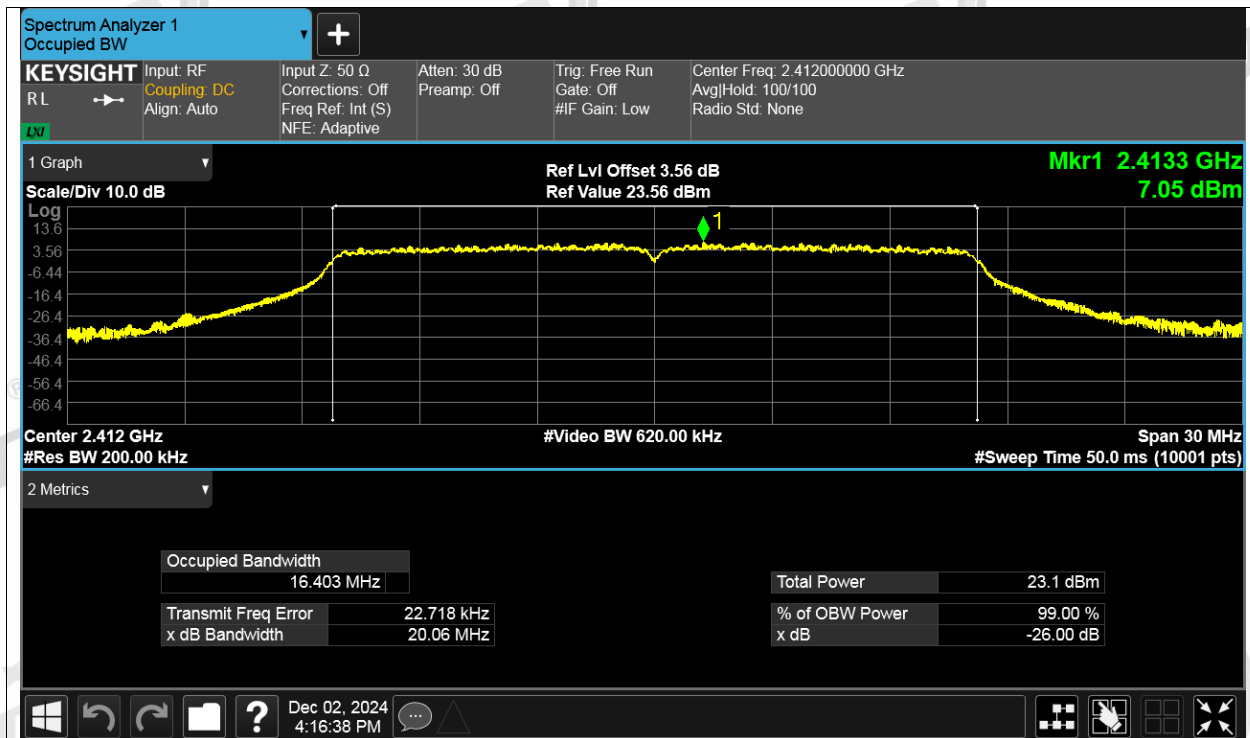
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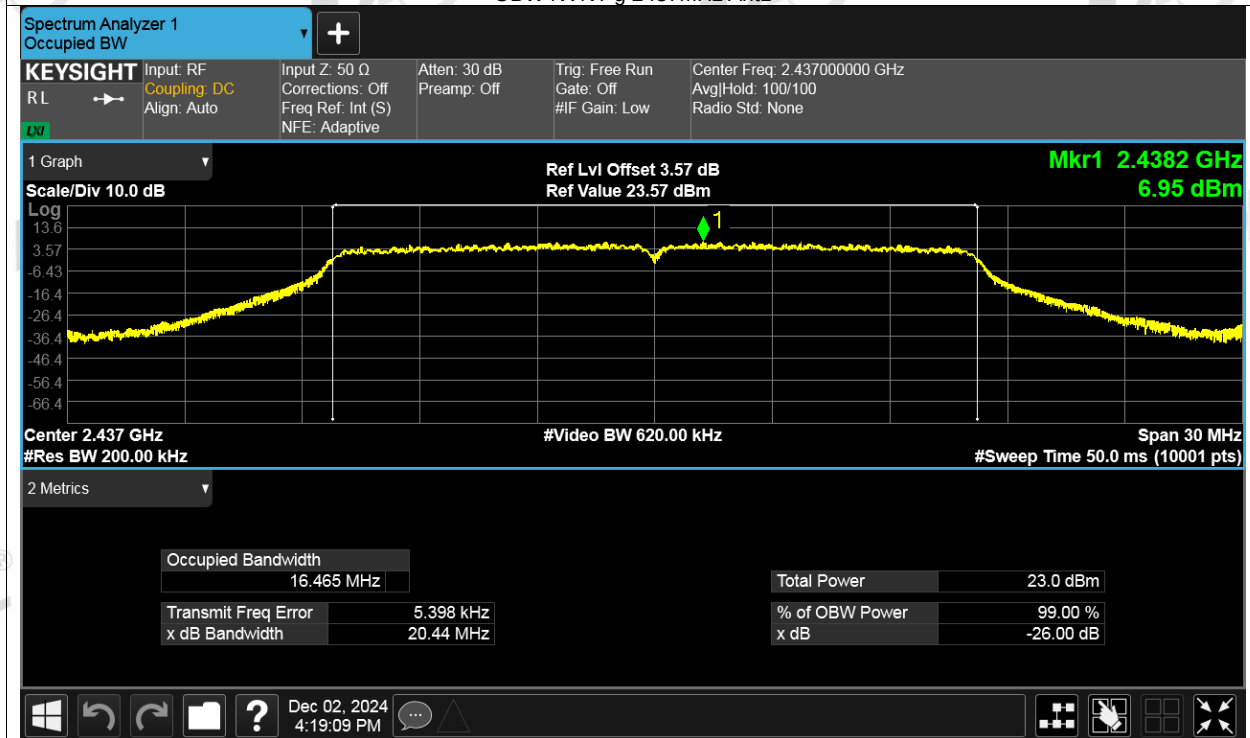
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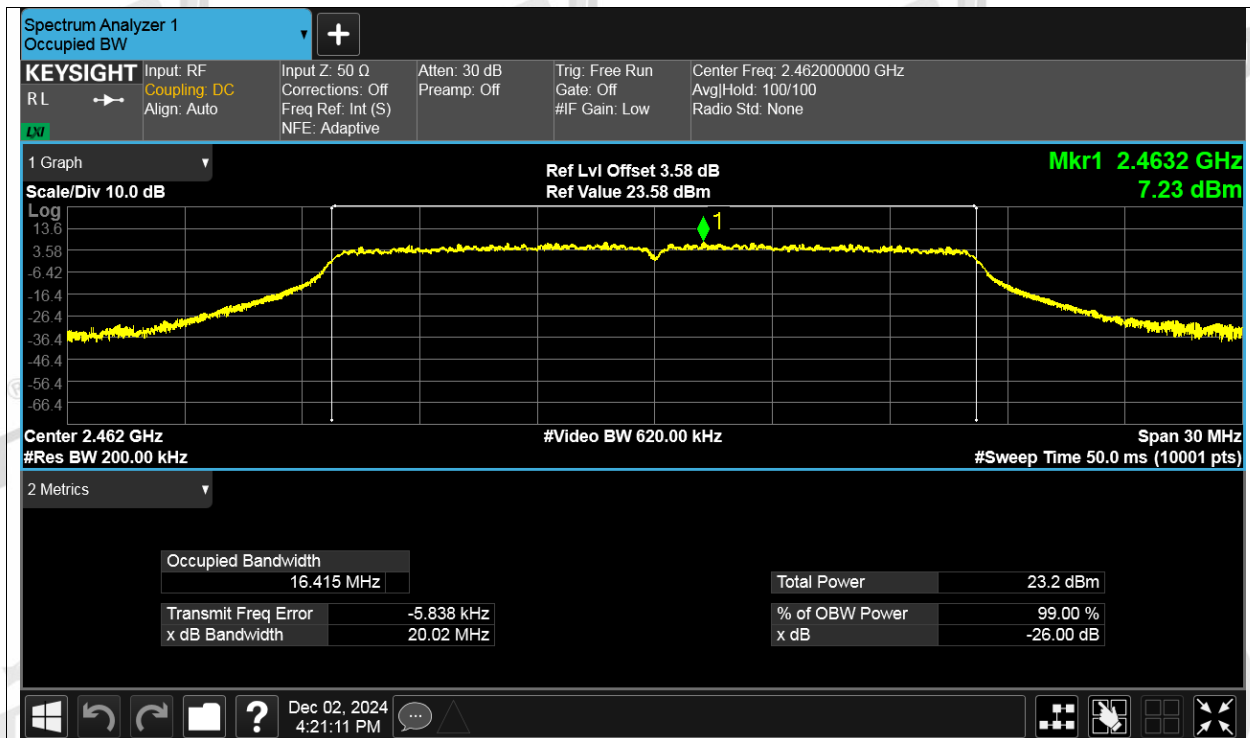
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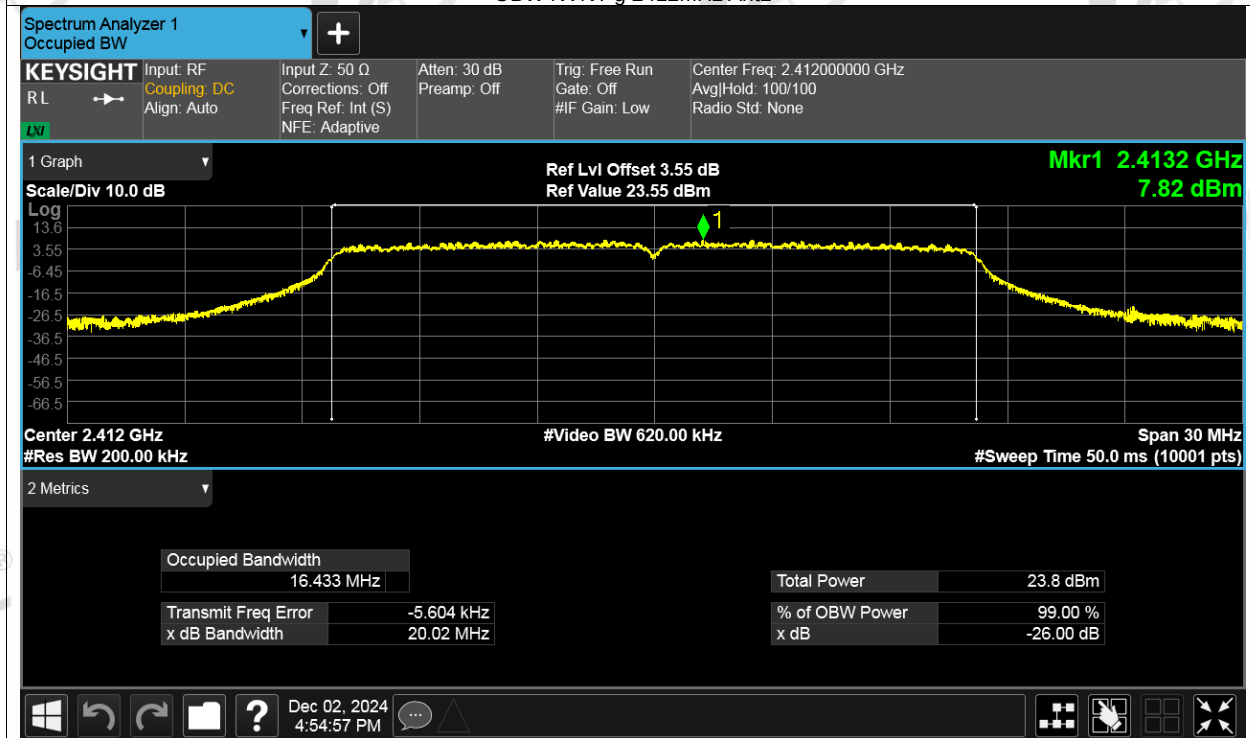
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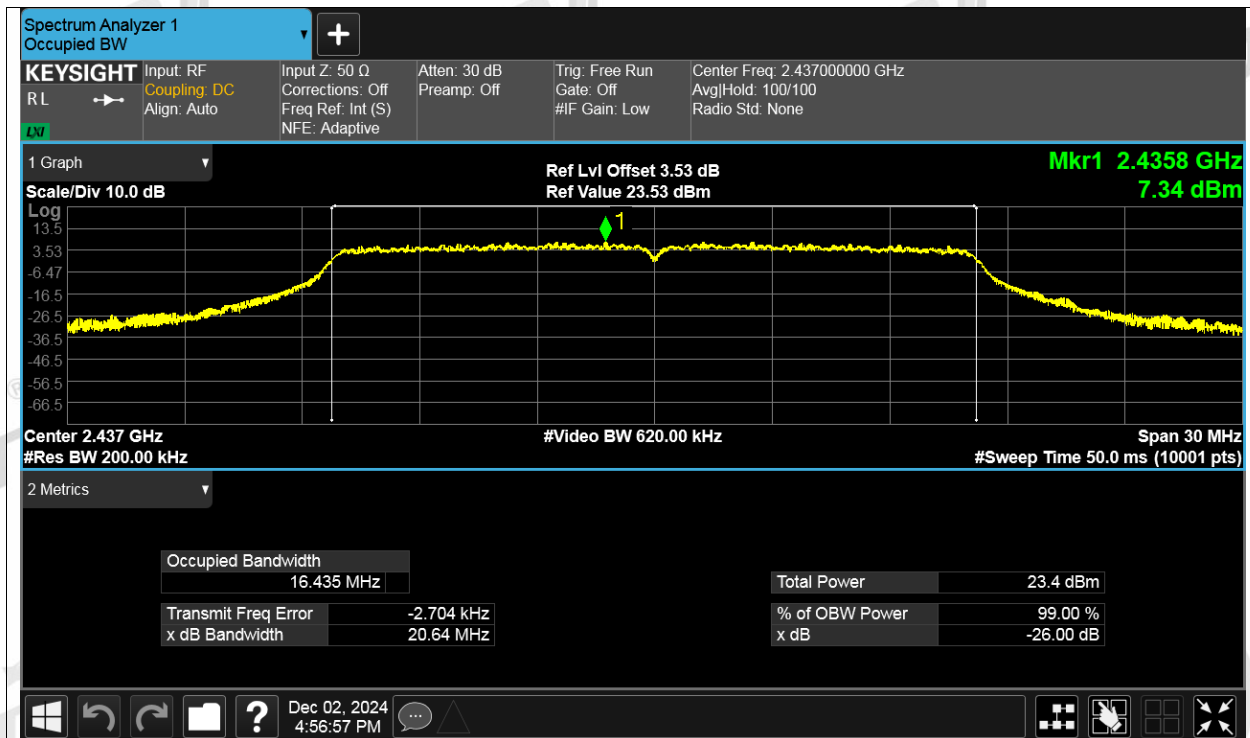
OBW NVNT g 2462MHz Ant1



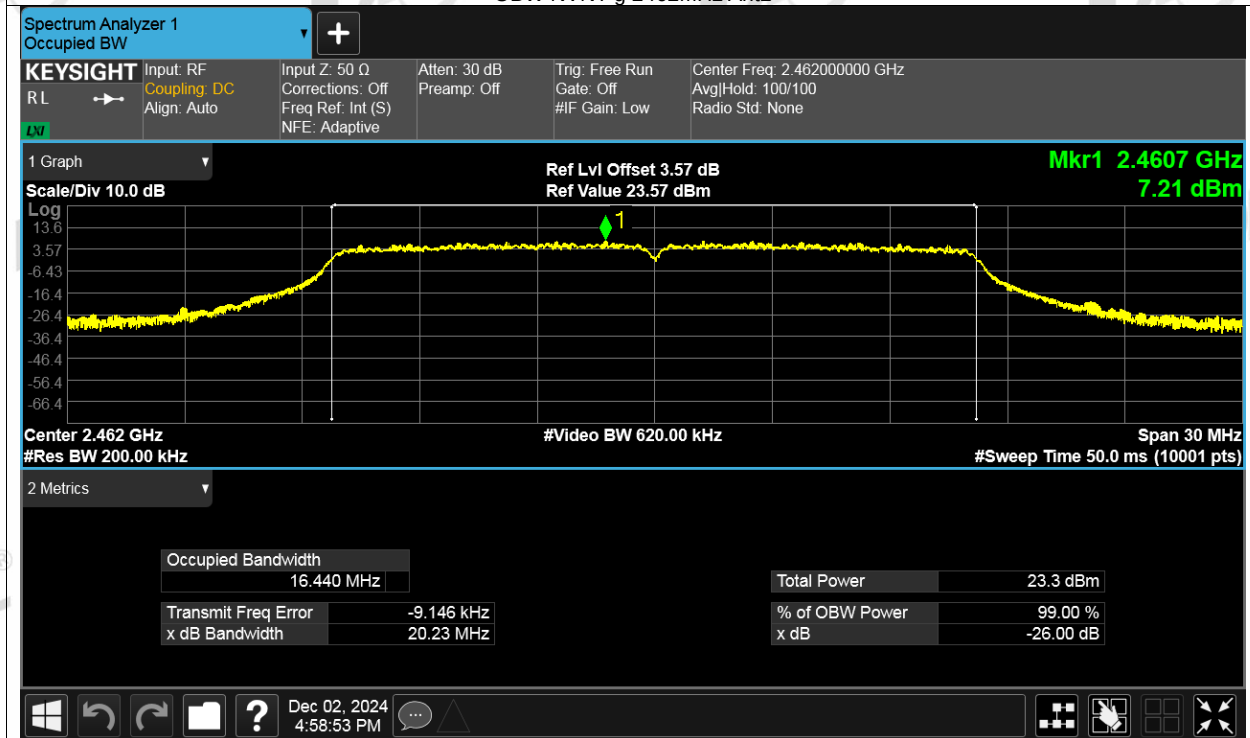
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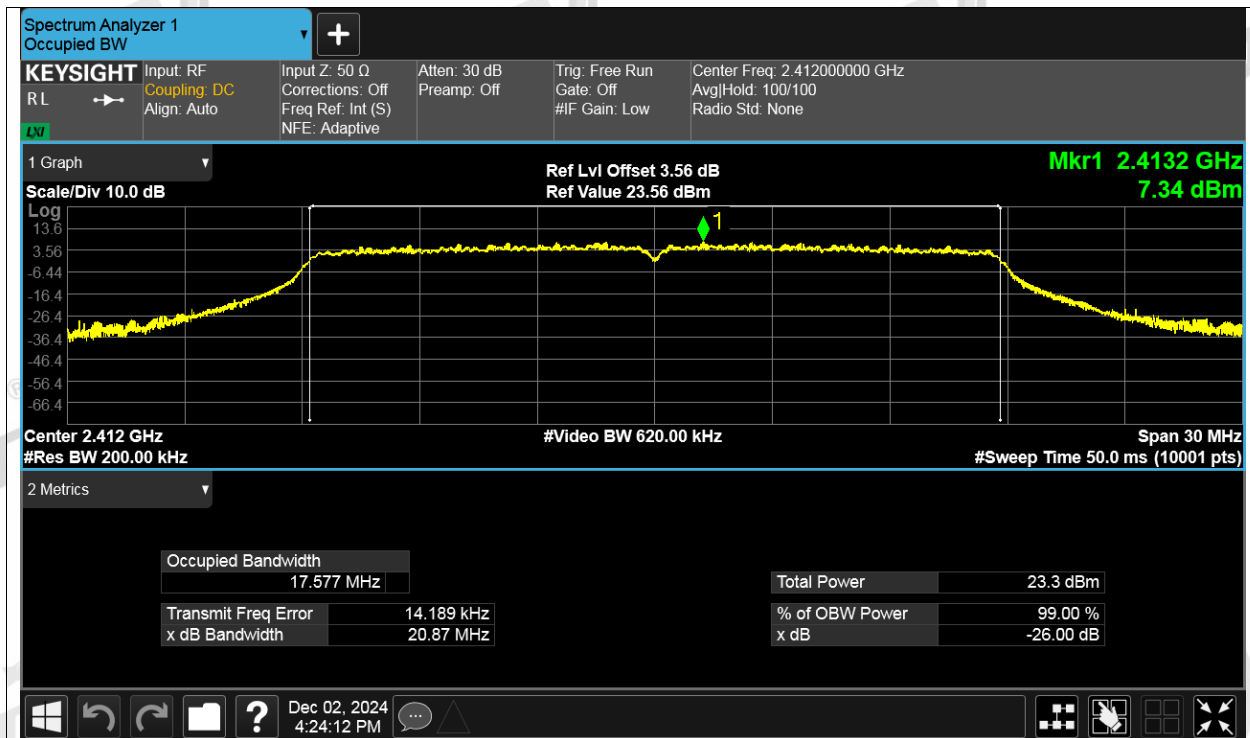
OBW NVNT g 2437MHz Ant2



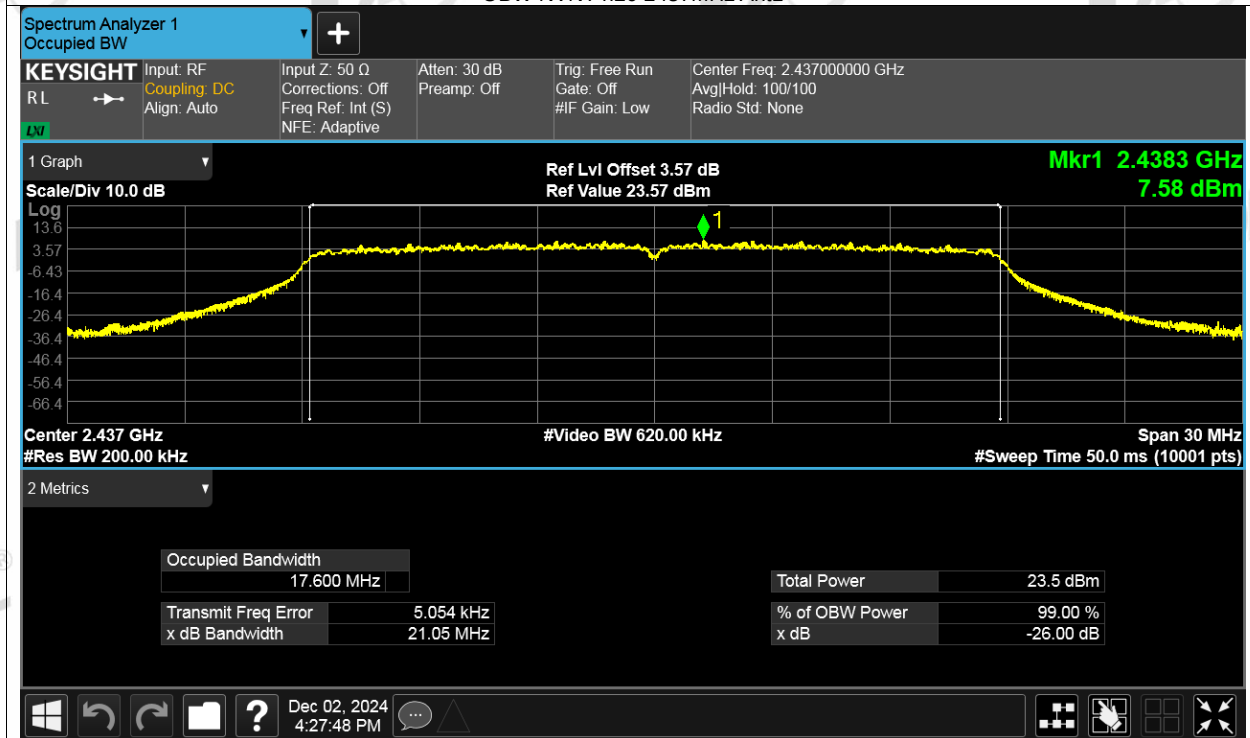
OBW NVNT g 2462MHz Ant2



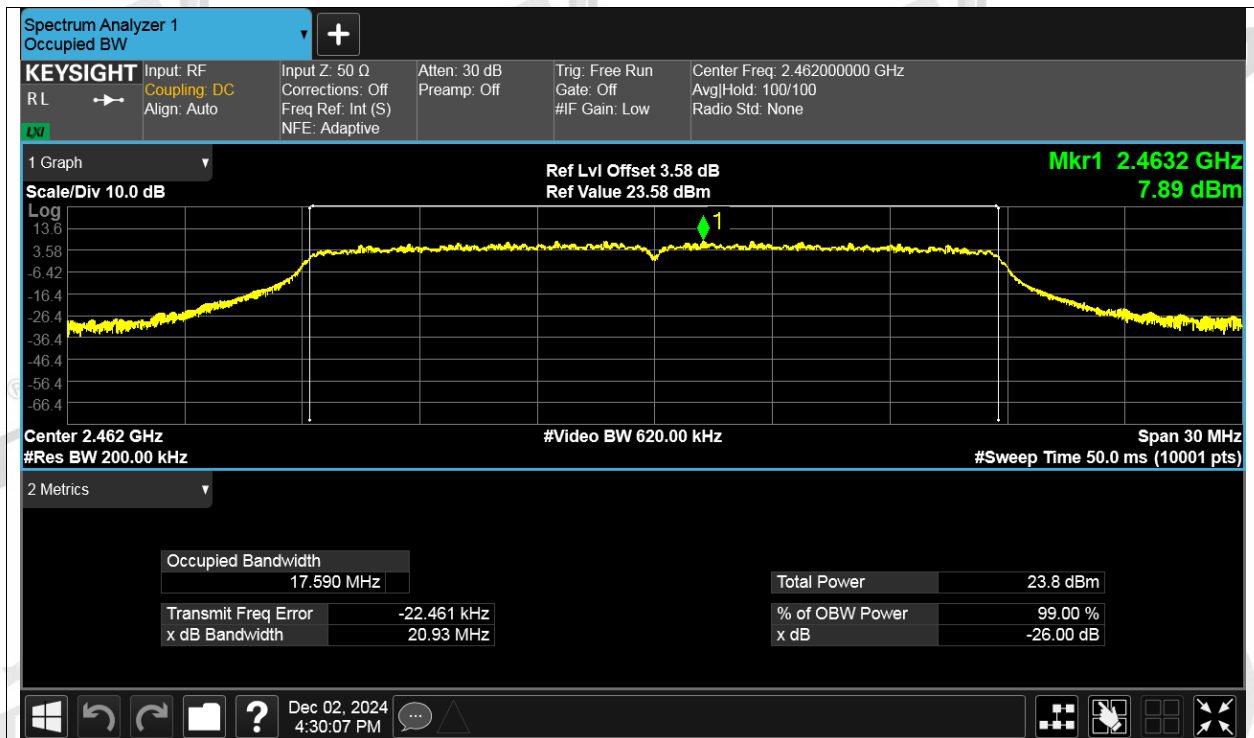
OBW NVNT n20 2412MHz Ant1



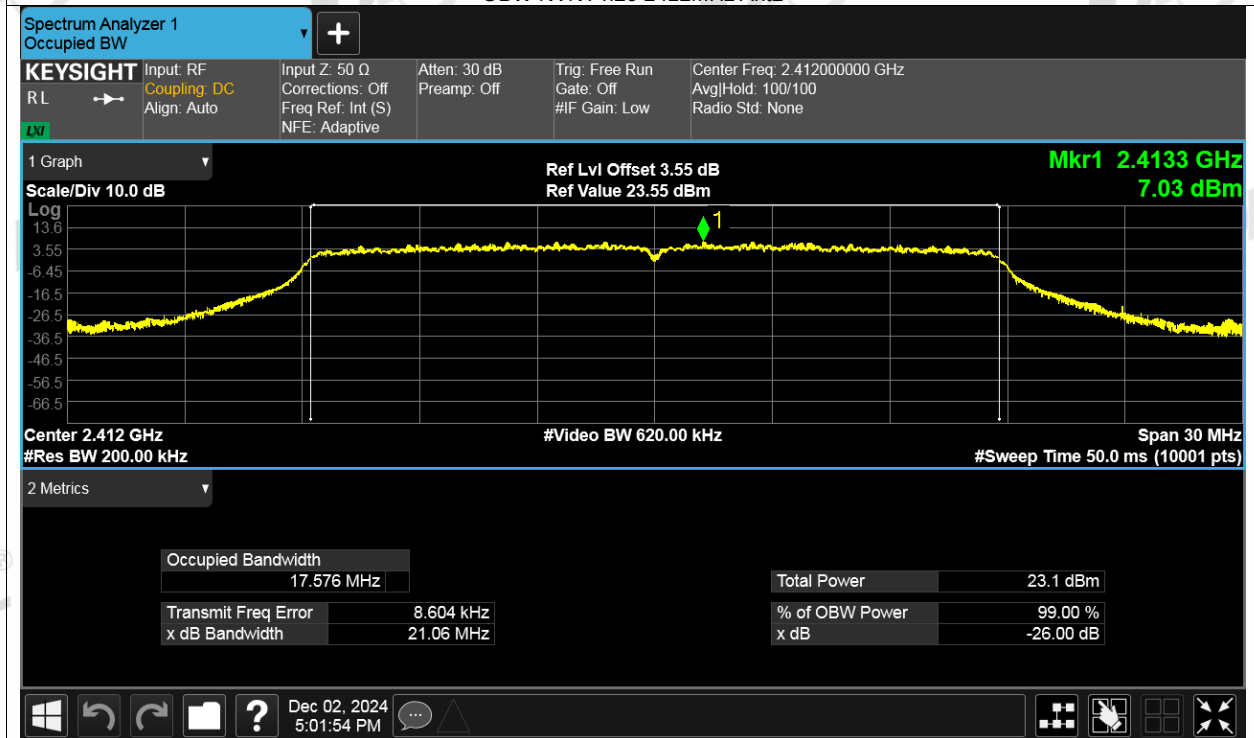
OBW NVNT n20 2437MHz Ant1



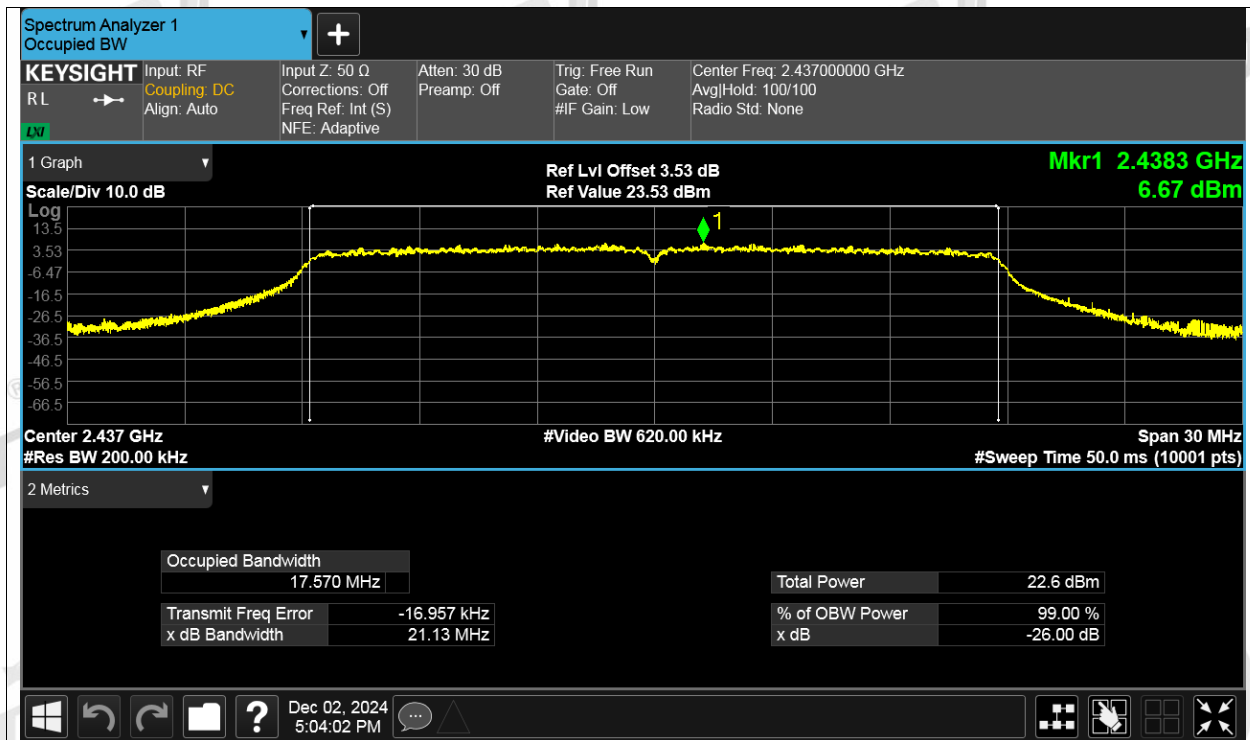
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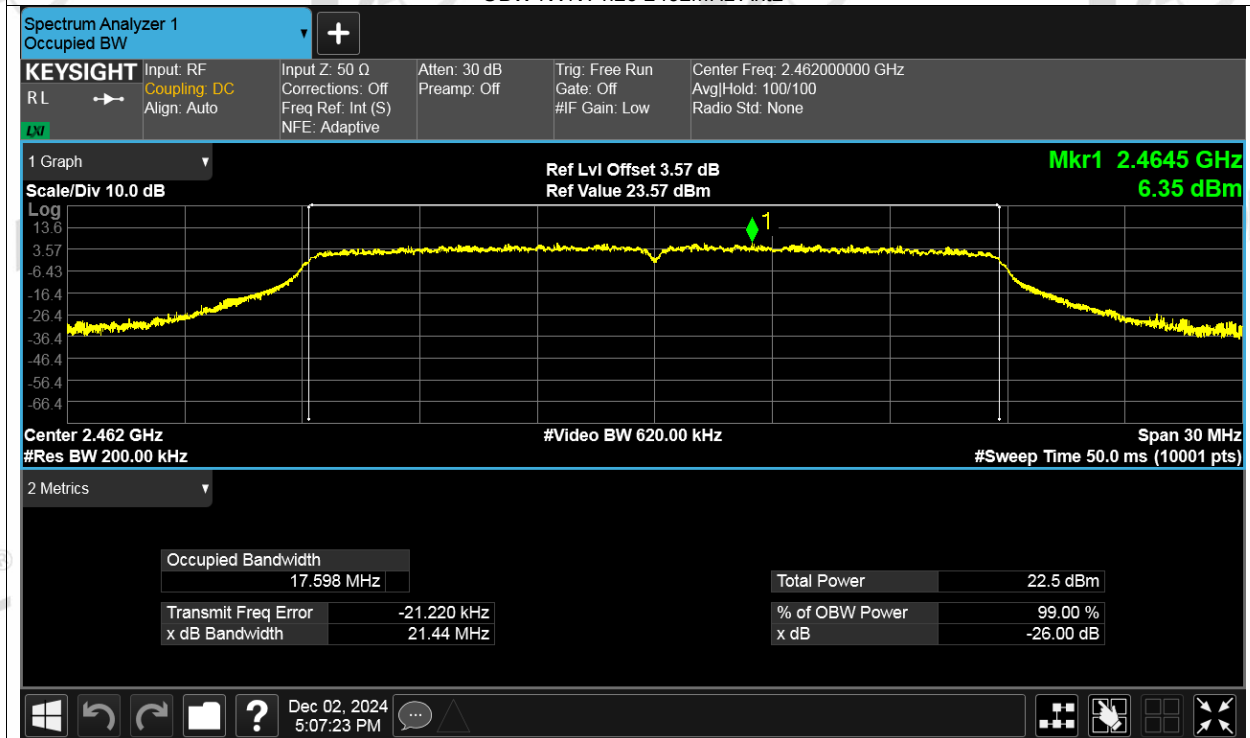
OBW NVNT n20 2412MHz Ant2



OBW NVNT n20 2437MHz Ant2



OBW NVNT n20 2462MHz Ant2



5. Maximum PK Conducted Output Power

5.1. Block diagram of test setup

Same as section 4.1

5.2. Limits

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

5.3. Test procedure

Connect each EUT's antenna output to power sensor by RF cable and attenuator
Measure the Maximum output power of antenna port by power sensor.

5.4. Test result

Mode	Frequency (MHz)	Antenna	PK Conducted Power (dBm)	Limit (dBm)	Verdict
b	2412	Ant1	18.87	30	Pass
b	2437	Ant1	18.98	30	Pass
b	2462	Ant1	19.83	30	Pass
b	2412	Ant2	18.11	30	Pass
b	2437	Ant2	18.04	30	Pass
b	2462	Ant2	17.97	30	Pass
g	2412	Ant1	23.71	30	Pass
g	2437	Ant1	23.53	30	Pass
g	2462	Ant1	23.88	30	Pass
g	2412	Ant2	24.24	30	Pass
g	2437	Ant2	23.9	30	Pass
g	2462	Ant2	23.89	30	Pass
n20	2412	Ant1	23.94	30	Pass
n20	2437	Ant1	23.95	30	Pass
n20	2462	Ant1	24.27	30	Pass
n20	2412	Ant2	23.55	30	Pass
n20	2437	Ant2	23.29	30	Pass
n20	2462	Ant2	23.09	30	Pass

6. Power Spectral Density

6.1. Block diagram of test setup

Same as section 4.1

6.2. Limits

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.

6.3. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) Set the spectrum analyzer as follows:

Center frequency	DTS Channel center frequency
RBW:	$3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
VBW:	$\geq 3\text{RBW}$
Span	1.5 times the DTS bandwidth
Detector Mode:	peak
Sweep time:	auto
Trace mode	Max hold

(3) Allow the trace to stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.

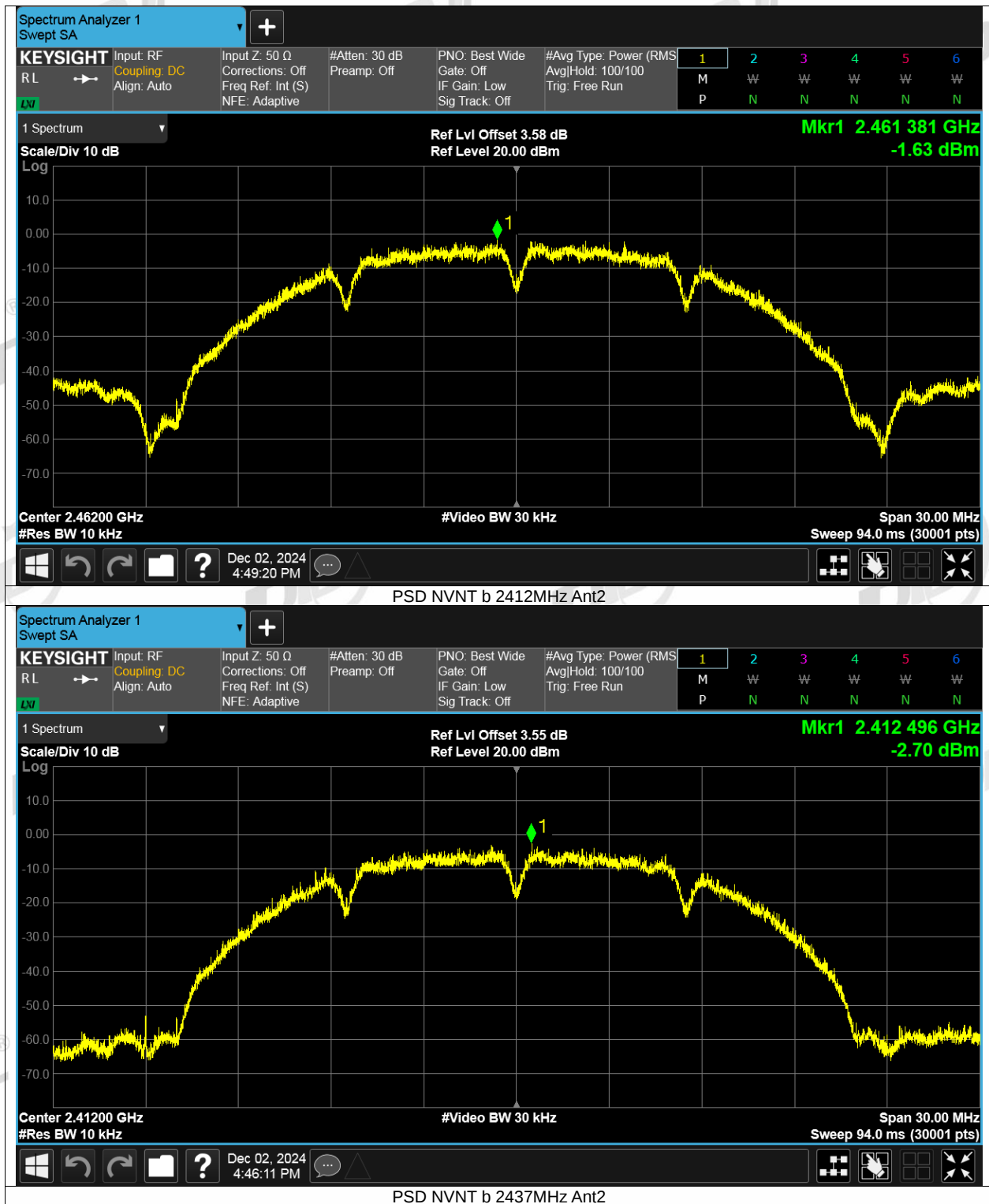
(4) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

6.4. Test result

Test Mode	Test Channel	Ant	PSD (dBm/3kHz)	Limit(dBm/3kHz)	Verdict
b	2412	Ant1	-2.25	8.00	Pass
b	2437	Ant1	-2.19	8.00	Pass
b	2462	Ant1	-1.63	8.00	Pass
b	2412	Ant2	-2.7	8.00	Pass
b	2437	Ant2	-2.46	8.00	Pass
b	2462	Ant2	-2.45	8.00	Pass
g	2412	Ant1	-2.49	8.00	Pass
g	2437	Ant1	-2.55	8.00	Pass
g	2462	Ant1	-1.36	8.00	Pass
g	2412	Ant2	-1.97	8.00	Pass
g	2437	Ant2	-2.2	8.00	Pass
g	2462	Ant2	-2.9	8.00	Pass
n20	2412	Ant1	-1.35	8.00	Pass
n20	2437	Ant1	-1.8	8.00	Pass
n20	2462	Ant1	-1.79	8.00	Pass
n20	2412	Ant2	-2.84	8.00	Pass
n20	2437	Ant2	-3.12	8.00	Pass
n20	2462	Ant2	-3.35	8.00	Pass

6.5. original test data







PSD NVNT b 2462MHz Ant2



PSD NVNT g 2412MHz Ant1

