RF TEST REPORT

Applicant	Hangzhou Zhaotong Microelectronics Co., Ltd.
FCC ID	2BOBE-ZT9612UV10
Product	ZT9612UV10
Brand	ZTOP
Model	ZT9612UV10
Report No.	R2412A1668-R3V2
Issue Date	May 13, 2025

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15E (2024)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Prepared by: Xu Ying *Approved by: Xu Kai*

Eurofins TA Technology (Shanghai) Co., Ltd.

Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
TEL: +86-021-50791141/2/3
FAX: +86-021-50791141/2/3-8000

TABLE OF CONTENT

1. Test Laboratory 5
1.1. Notes of the test report 5
1.2. Test facility 5
1.3. Testing Location 5
2. General Description of Equipment under Test 6
2.1. Applicant and Manufacturer Information 6
2.2. General information 6
3. Applied Standards 8
4. Test Configuration 9
5. Test Case Results 13
5.1. Occupied Bandwidth 13
5.2. Average Power Output 82
5.3. Frequency Stability 102
5.4. Power Spectral Density 106
6. Main Test Instruments 221
ANNEX A: The EUT Appearance 222
ANNEX B: Test Setup Photos 223

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

Version	Revision Description	Issue Date
Rev.0	Initial issue of report.	March 25, 2025
Rev.1	Updated information.	April 22, 2025
Rev.2	Updated information.	May 13, 2025
Note: This revised report (Report No.: R2412A1668-R3V2) supersedes and replaces the previously issued report (Report No.: R2412A1668-R3V1). Please discard or destroy the previously issued report and dispose of it accordingly.		

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

Summary of measurement results

Number	Test Case	Clause in FCC rules	Verdict
1	Average output power	15.407(a)	PASS
2	Occupied bandwidth	15.407(e)	PASS
3	Frequency stability	15.407(g)	PASS
4	Power spectral density	15.407(a)	PASS
Date of Testing: December 6, 2024 ~ March 7, 2025 Date of Sample Received: December 2, 2024			
Note: PASS: The EUT complies with the essential requirements in the standard. FAIL: The EUT does not comply with the essential requirements in the standard. All indications of Pass/Fail in this report are opinions expressed by Eurofins TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

1. Test Laboratory

1.1. Notes of the test report

This report shall not be reproduced in full or partial, without the written approval of **Eurofins TA Technology (Shanghai) Co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2. Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA (Certificate Number: 3857.01)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

1.3. Testing Location

Company:	Eurofins TA Technology (Shanghai) Co., Ltd.
Address:	Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
City:	Shanghai
Post code:	201201
Country:	P. R. China
Contact:	Xu Kai
Telephone:	+86-021-50791141/2/3
Fax:	+86-021-50791141/2/3-8000
Website:	https://www.eurofins.com/electrical-and-electronics
E-mail:	Kain.Xu@cpt.eurofinscn.com

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

2. General Description of Equipment under Test

2.1. Applicant and Manufacturer Information

Applicant	Hangzhou Zhaotong Microelectronics Co., Ltd.
Applicant address	Room 113-11, Building D, Integrated Circuit Design Industrial Park, No. 858, Jianshe 2nd Road, Xiaoshan Economic and Technological Development Zone, Xiaoshan District, Hangzhou City, Zhejiang Province
Manufacturer	Hangzhou Zhaotong Microelectronics Co., Ltd.
Manufacturer address	Room 113-11, Building D, Integrated Circuit Design Industrial Park, No. 858, Jianshe 2nd Road, Xiaoshan Economic and Technological Development Zone, Xiaoshan District, Hangzhou City, Zhejiang Province

2.2. General information

EUT Description					
Model	ZT9612UV10				
Lab internal SN	R2412A1668/S01				
Hardware Version	V1.0				
Software Version	C01B190				
Power Supply	External power supply				
Antenna Type	External Antenna				
Antenna Connector	RPSMA-K (meet with the standard FCC Part 15.203 requirement)				
Antenna Gain	Band	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
	Antenna 1&2	4.53dBi	4.77 dBi	5.62 dBi	5.62 dBi
Directional Gain	MIMO Mode for Power	4.53dBi	4.77 dBi	5.62 dBi	5.62 dBi
	MIMO Mode for PSD	7.51 dBi	7.78 dBi	8.63 dBi	8.63 dBi
Operating Frequency Range(s)	U-NII-1: 5150MHz-5250MHz U-NII-2A: 5250MHz -5350MHz U-NII-2C: 5470MHz-5725MHz U-NII-3: 5725MHz -5850MHz				
Modulation Type	802.11a: OFDM 802.11n (HT20/HT40): OFDM 802.11ac (VHT20/VHT40/VHT80): OFDM 802.11ax (HE20/ HE40/ HE80): OFDM 802.11ax ERSU (HE20/ HE40/ HE80): OFDMA				
Max. Output Power	20.58 dBm				
Operating temperature range	-25 ° C to 85 ° C				
Operating voltage range	3 V to 3.6 V				

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

Testing temperature range	-30 ° C to 50° C
Testing voltage range	3.0 V – 3.3V - 3.6 V
State voltage	3.3 V
EUT Accessory	
USB Cable	Manufacturer: UGREEN Model: USB3.0 100cm

Note:
1. The EUT is sent from the applicant to Eurofins TA and the information of the EUT is declared by the applicant.
2. This device support automatically discontinue transmission, while the device is not transmitting any information, the device can automatically discontinue transmission and become standby mode for power saving. The device can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.
3. (a) Manufacturers implements security features in any digitally modulated devices capable of operating in any of the U-NII bands, so that third parties are not able to reprogram the device to operate outside the parameters for which the device was certified. The software prevents the user from operating the transmitter with operating frequencies, output power, modulation types or other radio frequency parameters outside those that were approved for the device. Manufacturers uses means including, but not limited to the use of a private network that allows only authenticated users to download software, electronic signatures in software or coding in hardware that is decoded by software to verify that new software can be legally loaded into a device to meet these requirements and must describe the methods in their application for equipment authorization.
(b) Manufacturers take steps to ensure that DFS functionality cannot be disabled by the operator of the U-NII device.

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

3. Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards:

FCC CFR47 Part 15E (2024) Unlicensed National Information Infrastructure Devices

ANSI C63.10-2013

Reference standard:

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

4. Test Configuration

Test Mode

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate. Preliminary tests have been done on all the configuration for confirming worst case. Data rate below means worst-case rate of each test item.

Worst-case data rates are shown as following table.

Mode	Data Rate
	CDD/MIMO
802.11a	6 Mbps
802.11n HT20	MCS8
802.11n HT40	MCS8
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0
802.11ac VHT80	MCS0
802.11ax HE20	MCS0
802.11ax HE40	MCS0
802.11ax HE80	MCS0

The worst case Antenna mode for each of the following tests for Wi-Fi:

Test Cases	Antenna 1	Antenna 2	MIMO
Average conducted output power	802.11a	802.11a	802.11n HT20/40 802.11ac VHT20/40/80
Occupied bandwidth	802.11a	--	802.11n HT20/40 802.11ac VHT20/40/80
Frequency stability	802.11a	--	--
Power Spectral Density	802.11a	802.11a	802.11n HT20/40 802.11ac VHT20/40/80
Note: Only the worst data was recorded in this report.			

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

ERSU Mode

Test Cases	Antenna 1	Antenna 2	MIMO
Average conducted output power	802.11ax HE20 242-Tones	802.11ax HE20 242-Tones	802.11ax HE20 242-Tones
Occupied bandwidth	802.11ax HE20 242-Tones	--	--
Frequency stability	-	--	--
Power Spectral Density	802.11ax HE20 242-Tones	802.11ax HE20 242-Tones	802.11ax HE20 242-Tones

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

Wireless Technology and Frequency Range

Wireless Technology		Bandwidth	Channel	Frequency
Wi-Fi	U-NII-1	20 MHz	36	5180MHz
			40	5200MHz
			44	5220MHz
			48	5240MHz
		40 MHz	38	5190MHz
			46	5230MHz
		80 MHz	42	5210MHz
	U-NII-2A	20 MHz	52	5260MHz
			56	5280MHz
			60	5300MHz
			64	5320MHz
		40 MHz	54	5270MHz
			62	5310MHz
		80 MHz	58	5290MHz
	U-NII-2C	20 MHz	100	5500MHz
			104	5520MHz
			108	5540MHz
			112	5560MHz
			116	5580MHz
			120	5600MHz
			124	5620MHz
			128	5640MHz
			132	5660MHz
			136	5680MHz
			140	5700MHz
			144	5720MHz
		40 MHz	102	5510MHz
			110	5550MHz
			118	5590MHz
			126	5630MHz
			134	5670MHz
			142	5710MHz
		80 MHz	106	5530MHz
			122	5610MHz
			138	5690MHz

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

	U-NII-3	20 MHz	149	5745MHz
			153	5765MHz
			157	5785MHz
			161	5805MHz
			165	5825MHz
		40 MHz	151	5755MHz
			159	5795MHz
		80 MHz	155	5775MHz
Does this device support TPC Function? ☒Yes ☐No				
Does this device support TDWR Band? ☒Yes ☐No				

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

5. Test Case Results

5.1. Occupied Bandwidth

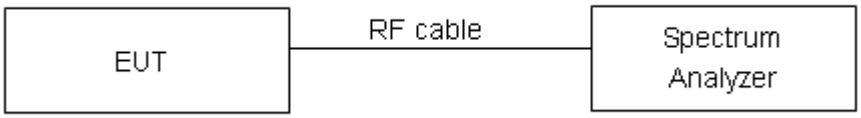
Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.
For U-NII-1/U-NII-2A/U-NII-2C, set RBW ≈1% OCB kHz, VBW ≥ 3 × RBW, 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 26 dB relative to the maximum level measured in the fundamental emission.
For U-NII-3, Set RBW = 100 kHz, VBW ≥ 3 × RBW, 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.
Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.
Use the 99 % power bandwidth function of the instrument

Test Setup



Limits

For U-NII-1/U-NII-2A/U-NII-2C
No specific occupied bandwidth requirements in Part 15.407.
For U-NII-3
Rule FCC Part §15.407(e)
Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 936 Hz.

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

Test Results:

U-NII-1

Mode	Frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5180	16.958	25.577	Pass
802.11a	5200	16.982	25.168	Pass
802.11a	5240	16.982	23.750	Pass
802.11ac(VHT20)	5180	18.263	26.150	Pass
802.11ac(VHT20)	5200	18.228	26.847	Pass
802.11ac(VHT20)	5240	18.277	26.938	Pass
802.11ac(VHT40)	5190	36.800	45.538	Pass
802.11ac(VHT40)	5230	36.798	47.222	Pass
802.11ac(VHT80)	5210	75.770	86.334	Pass
802.11ax(HE20)	5180	19.146	25.190	Pass
802.11ax(HE20)	5200	19.120	25.335	Pass
802.11ax(HE20)	5240	19.189	25.095	Pass
802.11ax(HE40)	5190	38.073	45.280	Pass
802.11ax(HE40)	5230	38.138	45.113	Pass
802.11ax(HE80)	5210	77.182	85.300	Pass
802.11n(HT20)	5180	18.203	26.912	Pass
802.11n(HT20)	5200	18.168	25.476	Pass
802.11n(HT20)	5240	18.117	26.065	Pass
802.11n(HT40)	5190	36.719	45.623	Pass
802.11n(HT40)	5230	36.722	47.417	Pass

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

U-NII-2A

Mode	Frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5260	16.972	23.472	Pass
802.11a	5300	17.071	24.667	Pass
802.11a	5320	17.017	25.125	Pass
802.11ac(VHT20)	5260	18.315	27.489	Pass
802.11ac(VHT20)	5300	18.287	28.791	Pass
802.11ac(VHT20)	5320	18.254	25.582	Pass
802.11ac(VHT40)	5270	36.792	46.237	Pass
802.11ac(VHT40)	5310	36.763	47.804	Pass
802.11ac(VHT80)	5290	75.717	88.244	Pass
802.11ax(HE20)	5260	19.246	24.339	Pass
802.11ax(HE20)	5300	19.169	25.573	Pass
802.11ax(HE20)	5320	19.178	24.319	Pass
802.11ax(HE40)	5270	38.049	45.941	Pass
802.11ax(HE40)	5310	38.097	46.014	Pass
802.11ax(HE80)	5290	77.034	85.955	Pass
802.11n(HT20)	5260	18.133	25.737	Pass
802.11n(HT20)	5300	18.192	28.062	Pass
802.11n(HT20)	5320	18.225	26.138	Pass
802.11n(HT40)	5270	36.720	46.310	Pass
802.11n(HT40)	5310	36.718	46.926	Pass

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

U-NII-2C

Mode	Frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5500	16.990	24.489	Pass
802.11a	5600	17.010	23.529	Pass
802.11a	5700	17.015	24.856	Pass
802.11ac(VHT20)	5500	18.290	26.064	Pass
802.11ac(VHT20)	5600	18.204	26.316	Pass
802.11ac(VHT20)	5700	18.306	26.518	Pass
802.11ac(VHT40)	5510	36.849	46.456	Pass
802.11ac(VHT40)	5590	36.804	46.046	Pass
802.11ac(VHT40)	5670	36.723	45.043	Pass
802.11ac(VHT80)	5530	75.792	87.626	Pass
802.11ac(VHT80)	5610	75.685	87.612	Pass
802.11ax(HE20)	5500	19.164	25.826	Pass
802.11ax(HE20)	5600	19.167	24.446	Pass
802.11ax(HE20)	5700	19.190	25.996	Pass
802.11ax(HE40)	5510	38.159	46.414	Pass
802.11ax(HE40)	5590	38.169	45.191	Pass
802.11ax(HE40)	5670	38.124	45.559	Pass
802.11ax(HE80)	5530	77.263	84.211	Pass
802.11ax(HE80)	5610	77.151	84.362	Pass
802.11n(HT20)	5500	18.202	25.841	Pass
802.11n(HT20)	5600	18.215	26.853	Pass
802.11n(HT20)	5700	18.174	26.048	Pass
802.11n(HT40)	5510	36.788	46.284	Pass
802.11n(HT40)	5590	36.725	48.644	Pass
802.11n(HT40)	5670	36.790	46.834	Pass

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

U-NII-3

Mode	Frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Verdict
802.11a	5745	17.056	16.356	Pass
802.11a	5785	17.051	16.348	Pass
802.11a	5825	16.996	16.374	Pass
802.11ac(VHT20)	5745	18.251	17.588	Pass
802.11ac(VHT20)	5785	18.289	17.608	Pass
802.11ac(VHT20)	5825	18.307	17.588	Pass
802.11ac(VHT40)	5755	36.688	36.328	Pass
802.11ac(VHT40)	5795	36.747	36.463	Pass
802.11ac(VHT80)	5775	75.649	75.110	Pass
802.11ax(HE20)	5745	19.169	18.893	Pass
802.11ax(HE20)	5785	19.223	18.916	Pass
802.11ax(HE20)	5825	19.210	18.877	Pass
802.11ax(HE40)	5755	38.131	37.974	Pass
802.11ax(HE40)	5795	38.095	37.959	Pass
802.11ax(HE80)	5775	77.185	75.156	Pass
802.11n(HT20)	5745	18.180	17.573	Pass
802.11n(HT20)	5785	18.161	17.575	Pass
802.11n(HT20)	5825	18.185	17.594	Pass
802.11n(HT40)	5755	36.722	36.337	Pass
802.11n(HT40)	5795	36.638	36.343	Pass

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

ERSU Mode

U-NII-1

Mode	Frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Verdict
802.11ax HE20 242-Tones:RU Index 61	5180	19.152	25.485	Pass
	5200	19.176	24.171	Pass
	5240	19.139	25.450	Pass

U-NII-2A

Mode	Frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Verdict
802.11ax HE20 242-Tones:RU Index 61	5260	19.167	26.254	Pass
	5300	19.116	25.621	Pass
	5320	19.177	24.368	Pass

U-NII-2C

Mode	Frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Verdict
802.11ax HE20 242-Tones:RU Index 61	5500	19.171	25.025	Pass
	5600	19.170	24.275	Pass
	5700	19.142	26.171	Pass

U-NII-3

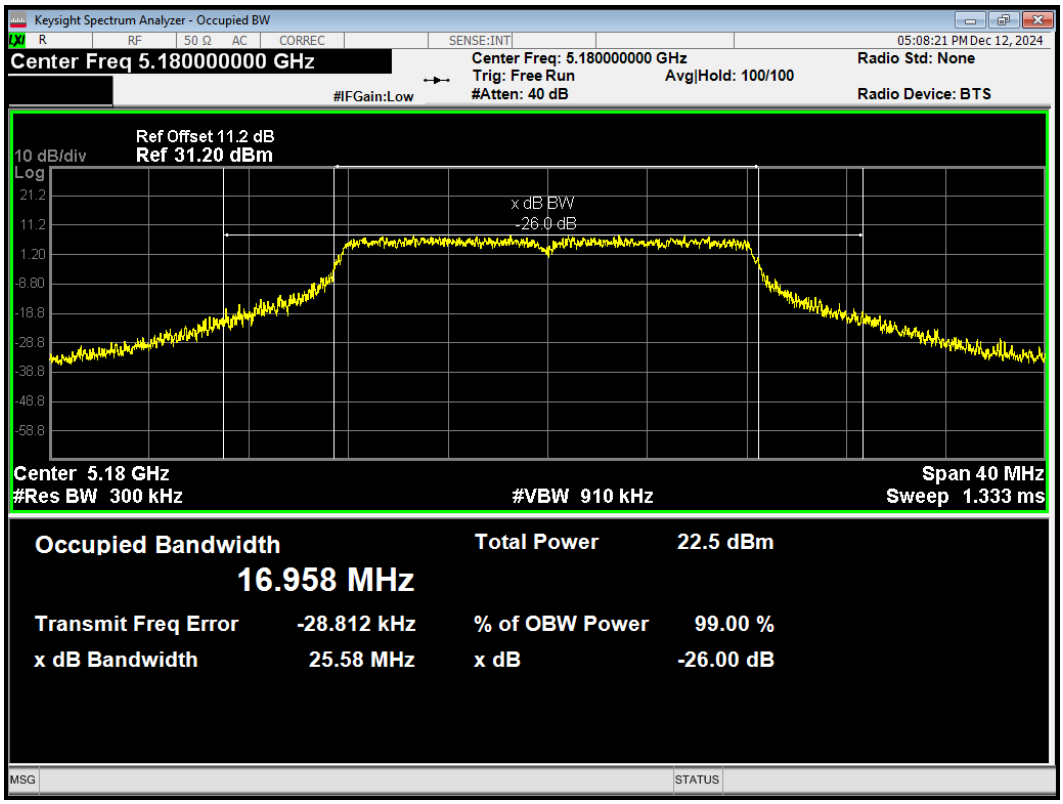
Mode	Frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Verdict
802.11ax HE20 242-Tones:RU Index 61	5745	19.737	17.531	Pass
	5785	19.152	17.645	Pass
	5825	19.200	17.705	Pass

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

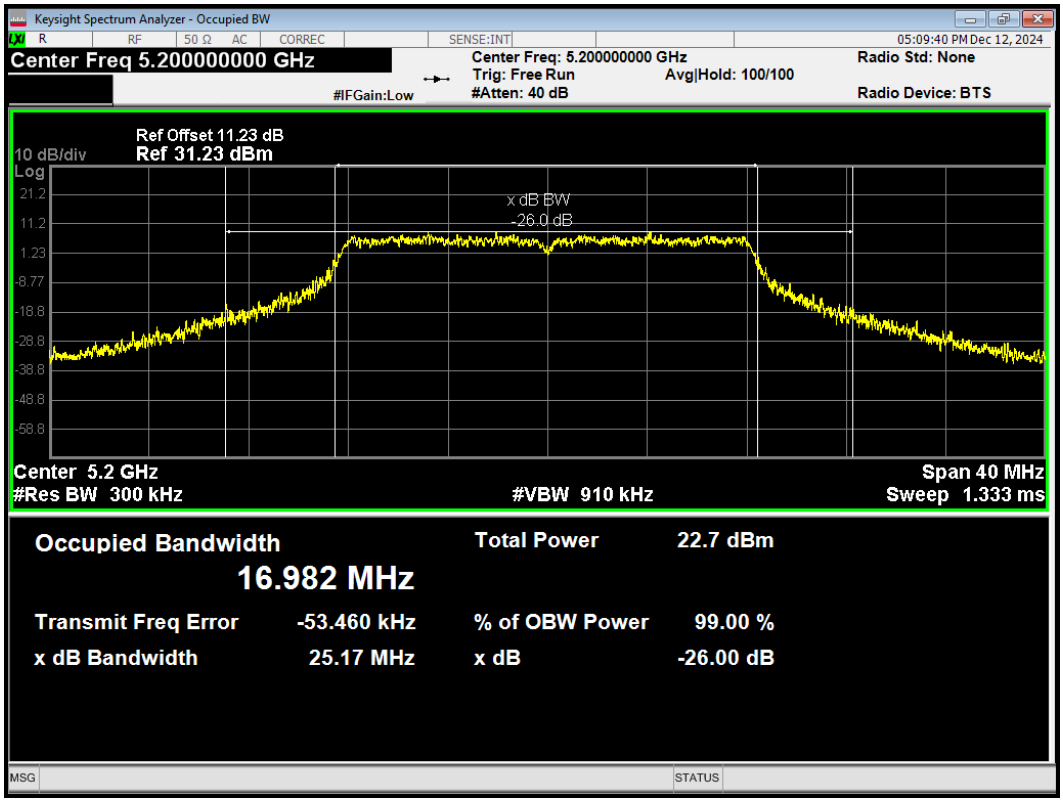
99% bandwidth

U-NII-1

OBW 802.11a 5180MHz

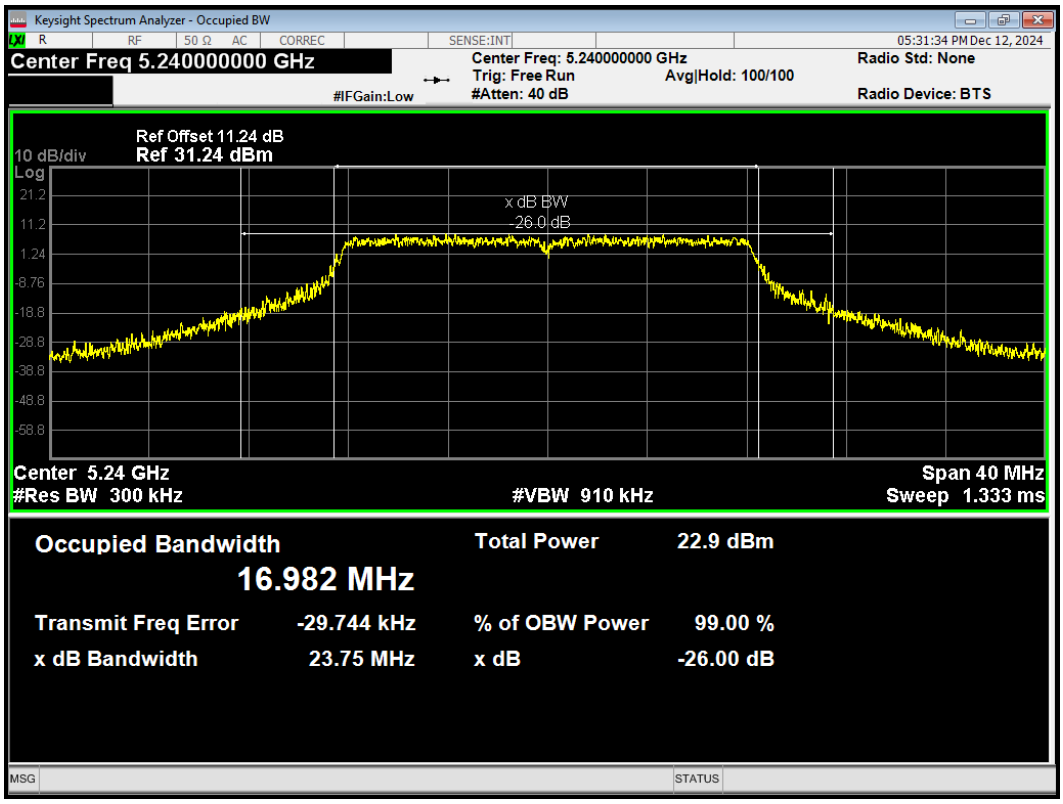


OBW 802.11a 5200MHz

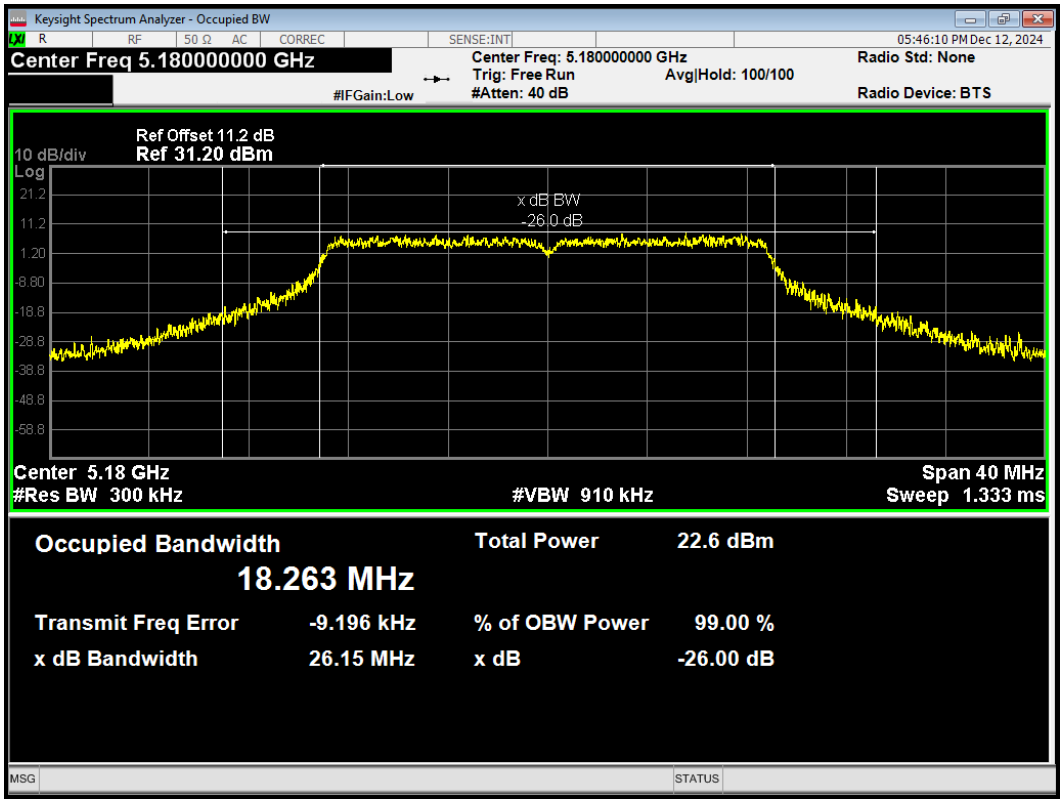


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11a 5240MHz

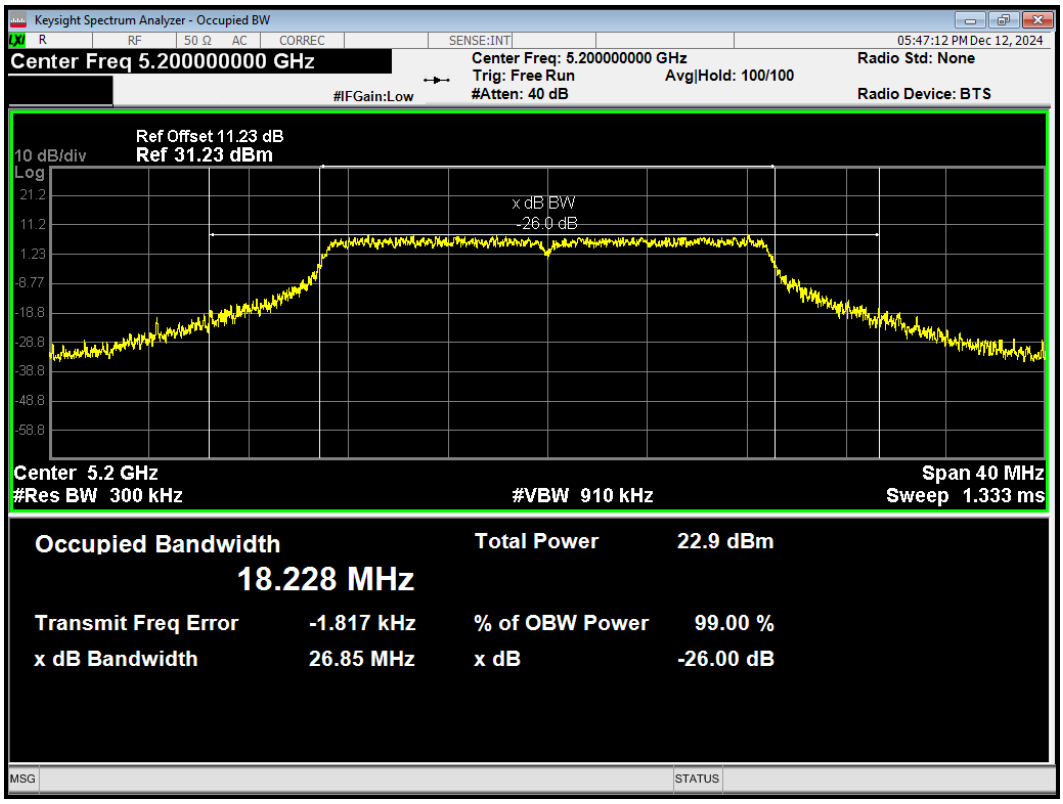


OBW 802.11ac(VHT20) 5180MHz

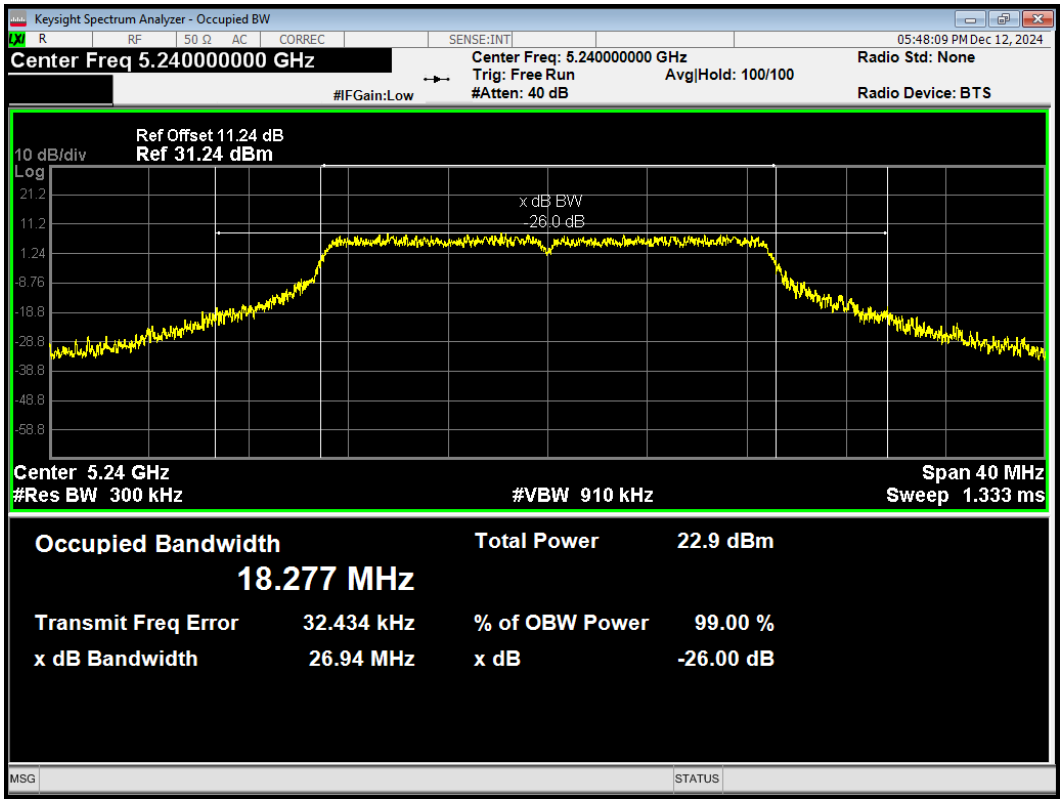


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ac(VHT20) 5200MHz

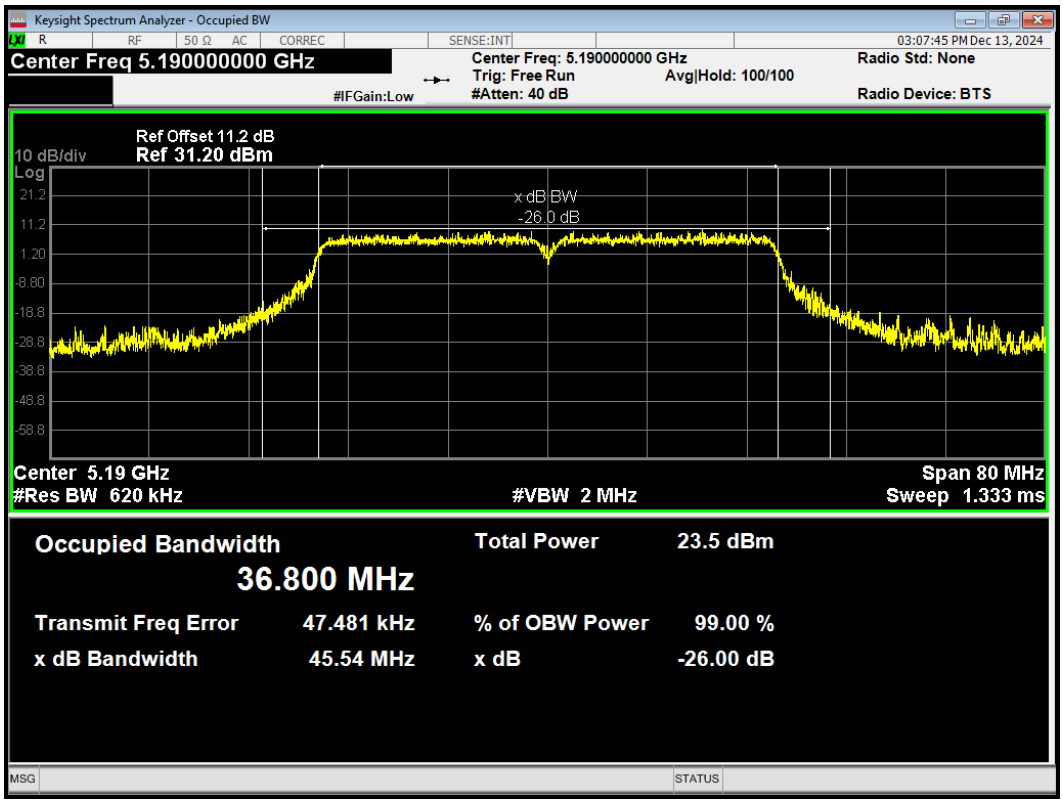


OBW 802.11ac(VHT20) 5240MHz

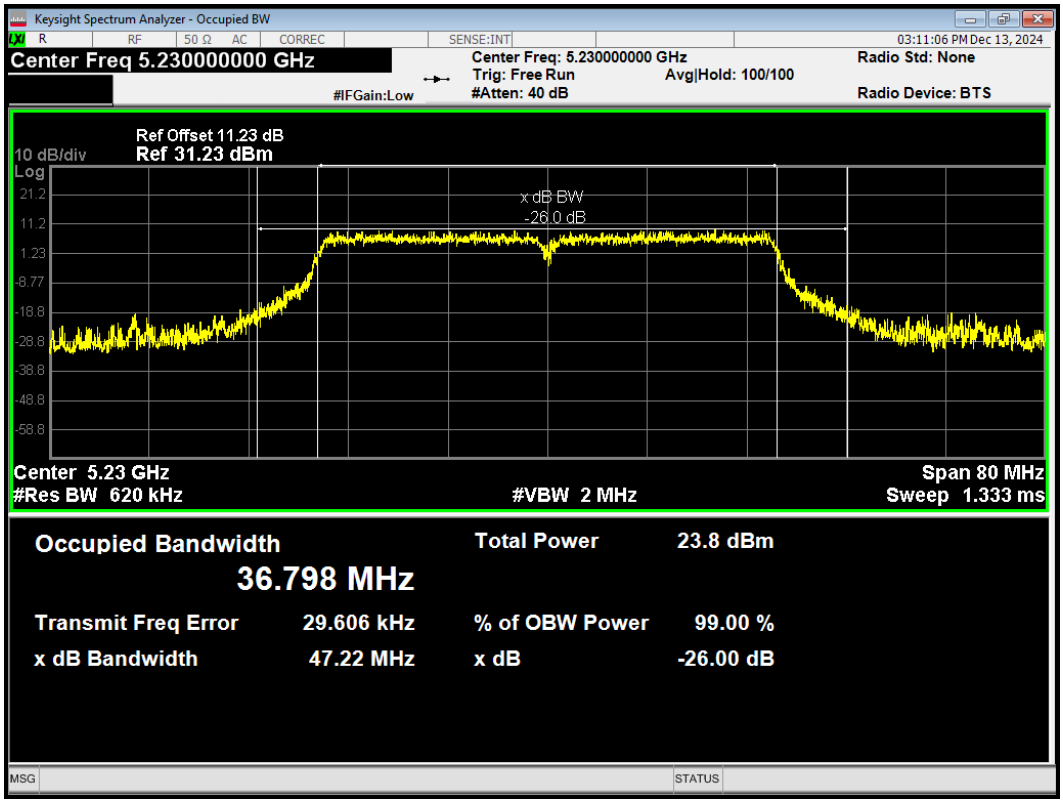


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ac(VHT40) 5190MHz

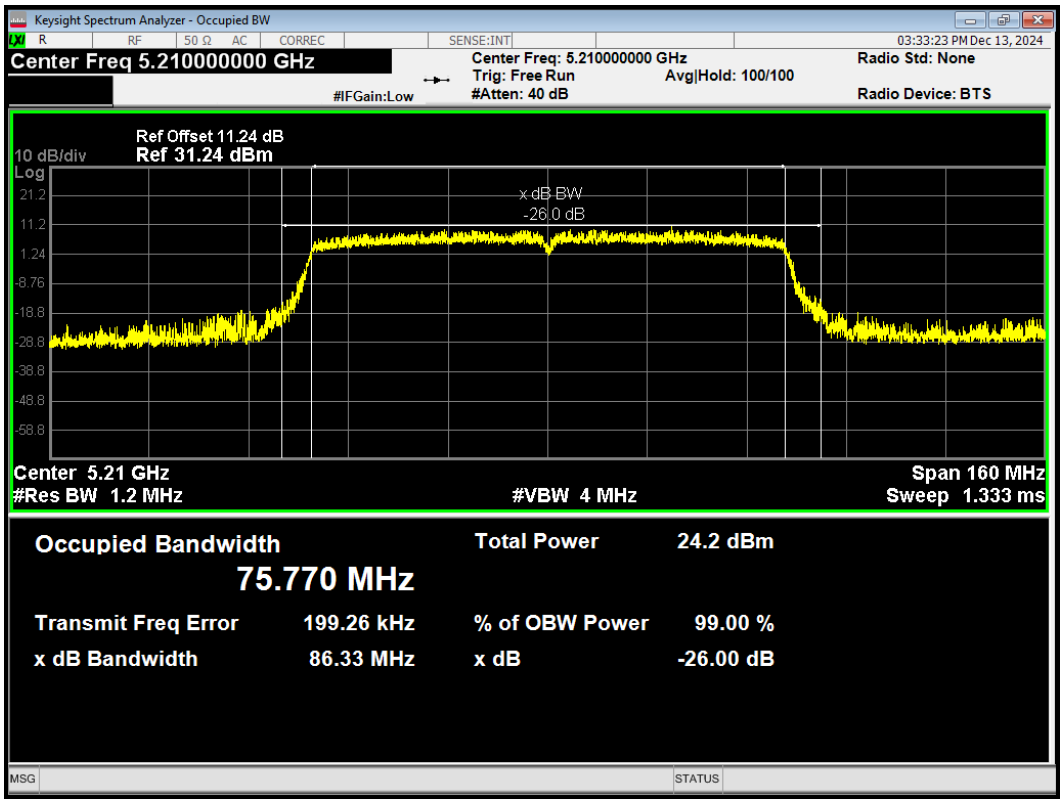


OBW 802.11ac(VHT40) 5230MHz

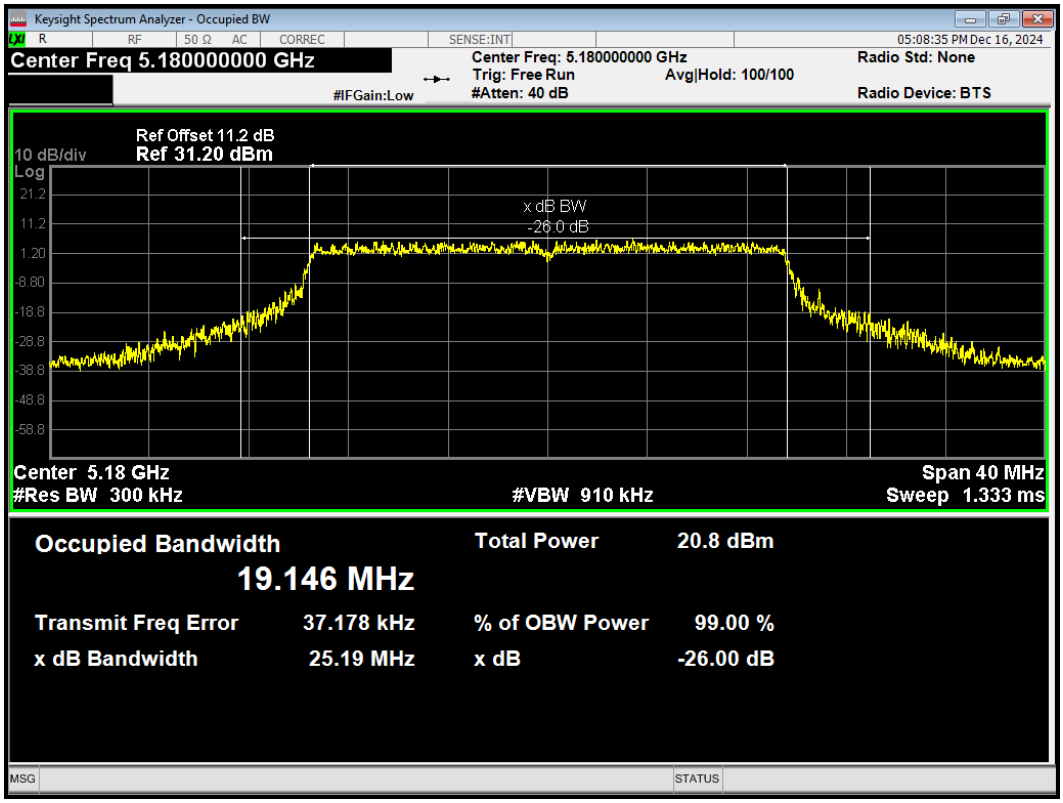


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ac(VHT80) 5210MHz

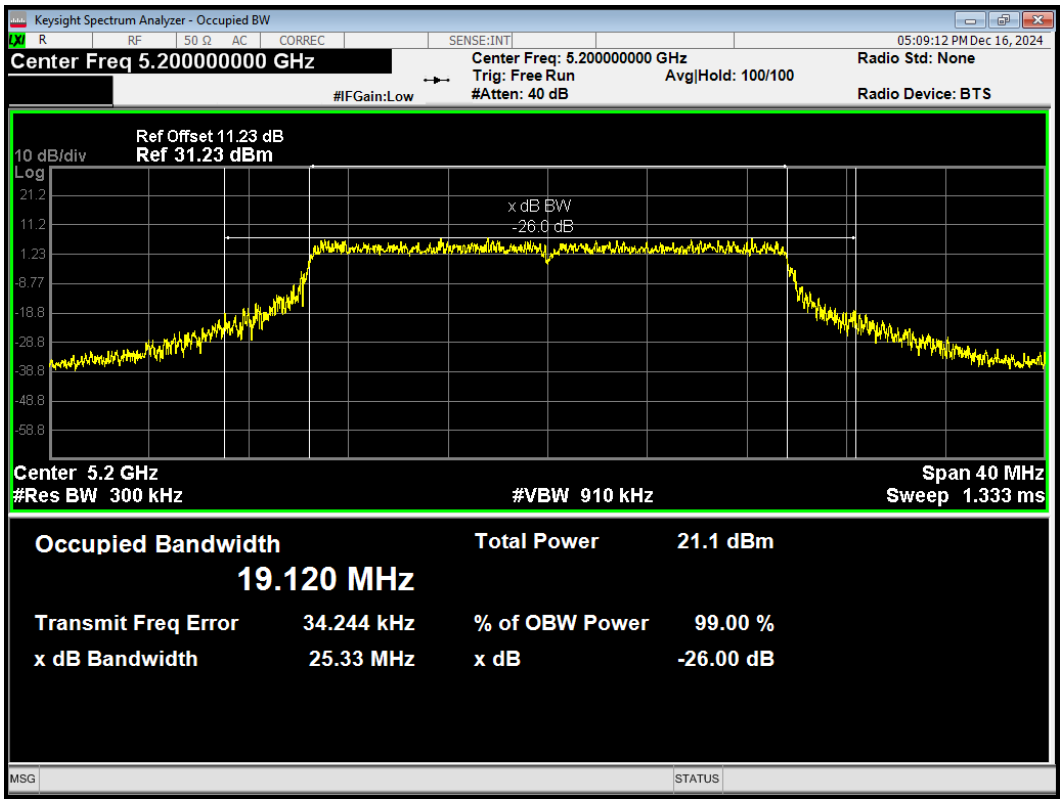


OBW 802.11ax(HE20) 5180MHz

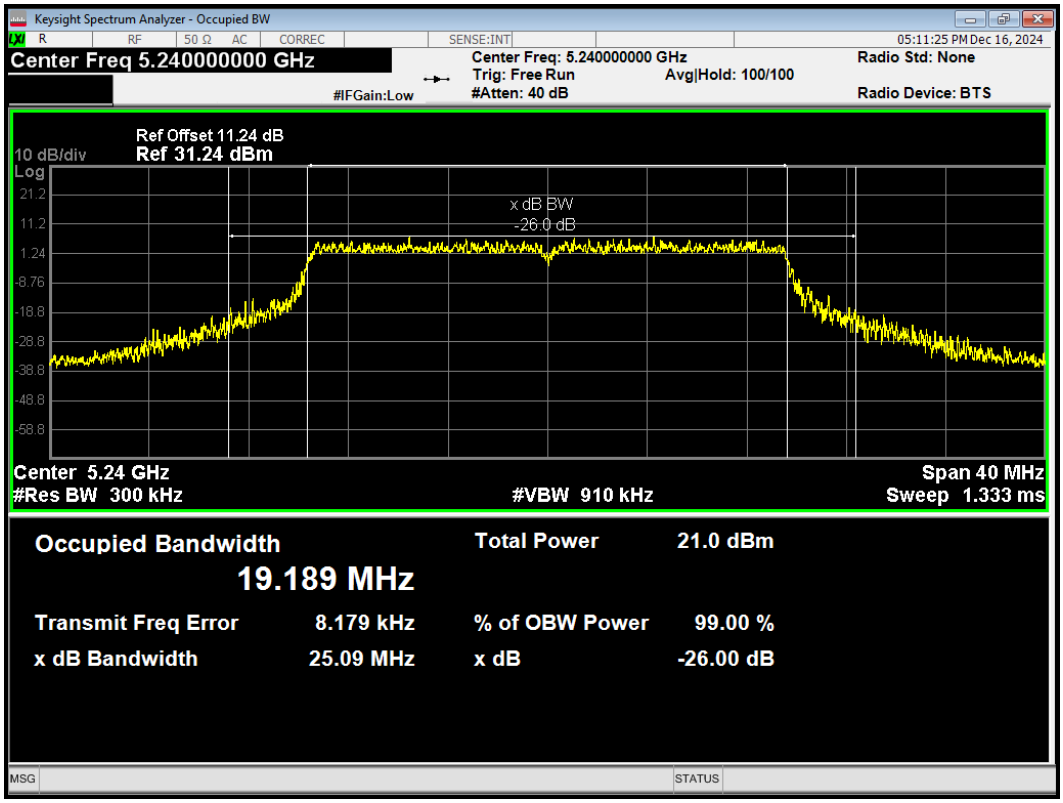


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ax(HE20) 5200MHz

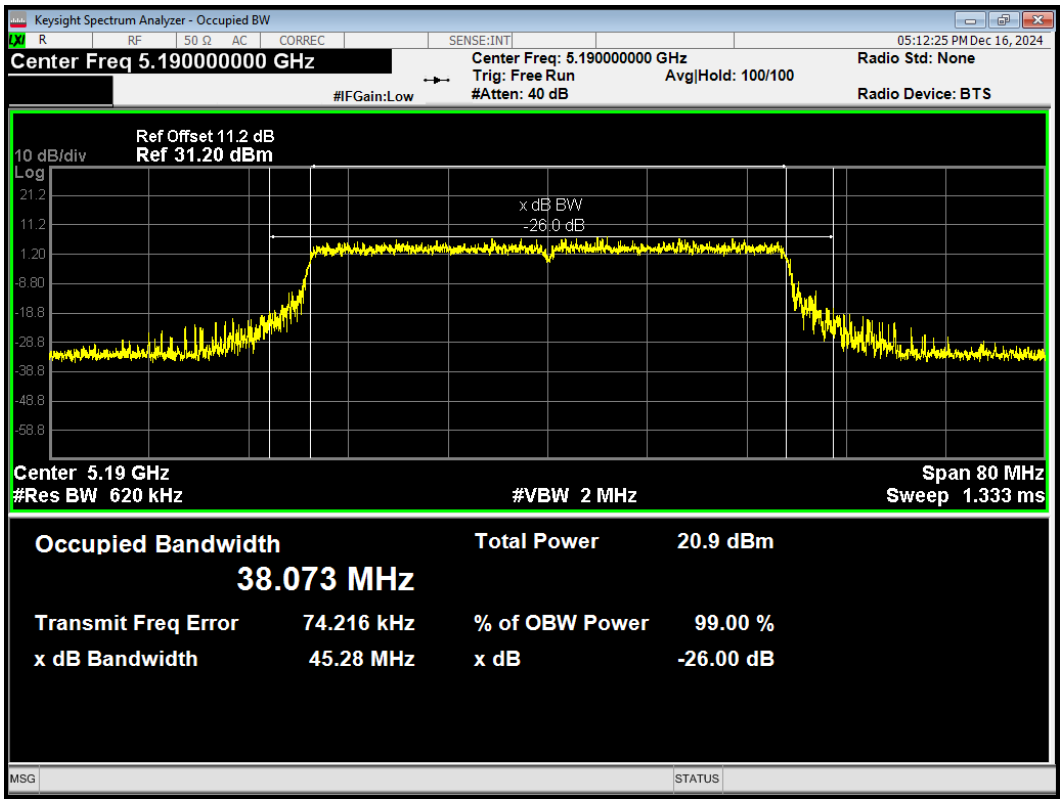


OBW 802.11ax(HE20) 5240MHz

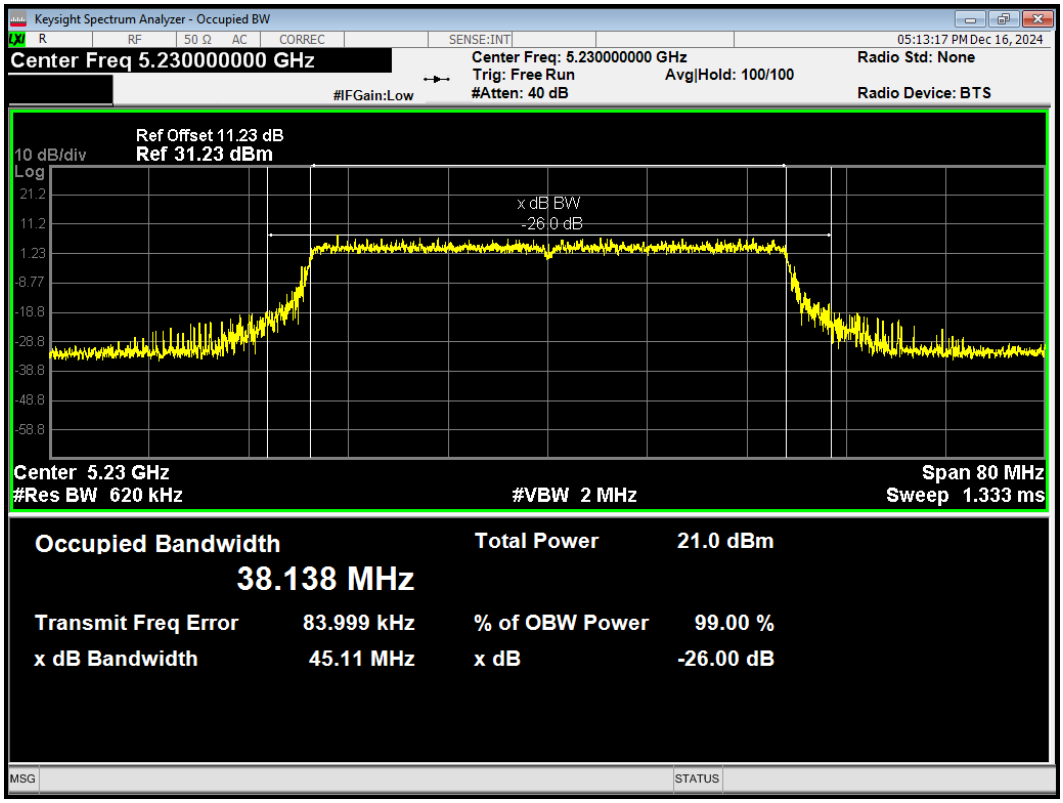


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ax(HE40) 5190MHz

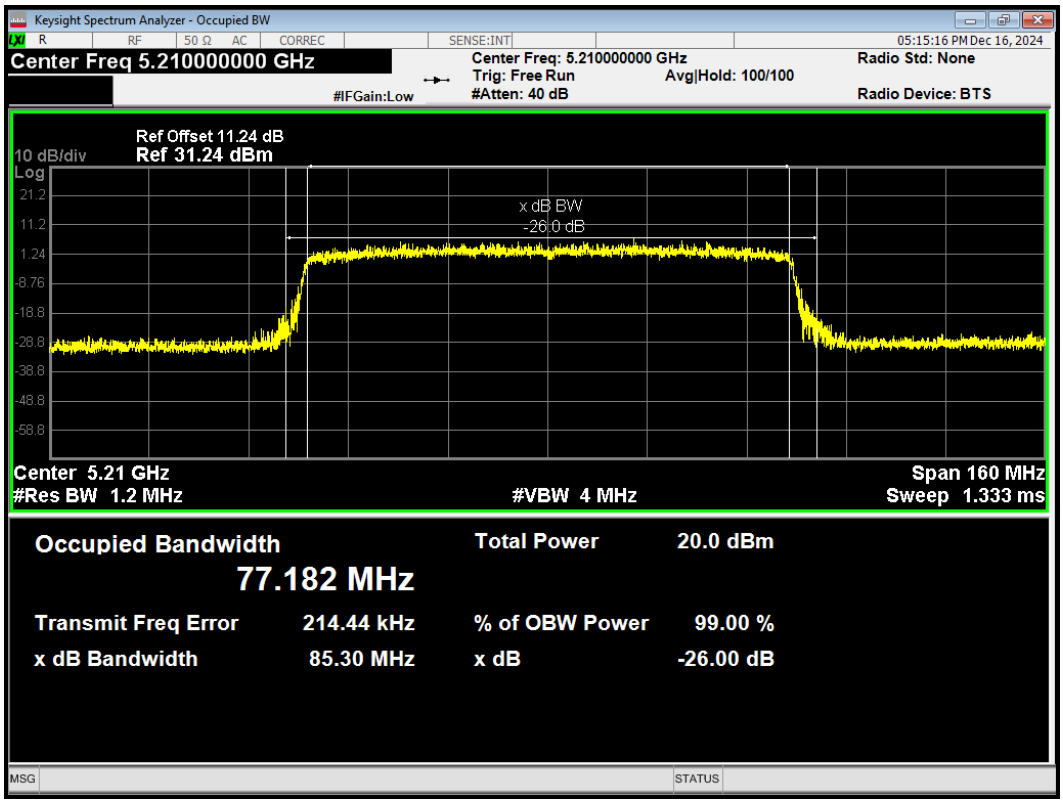


OBW 802.11ax(HE40) 5230MHz

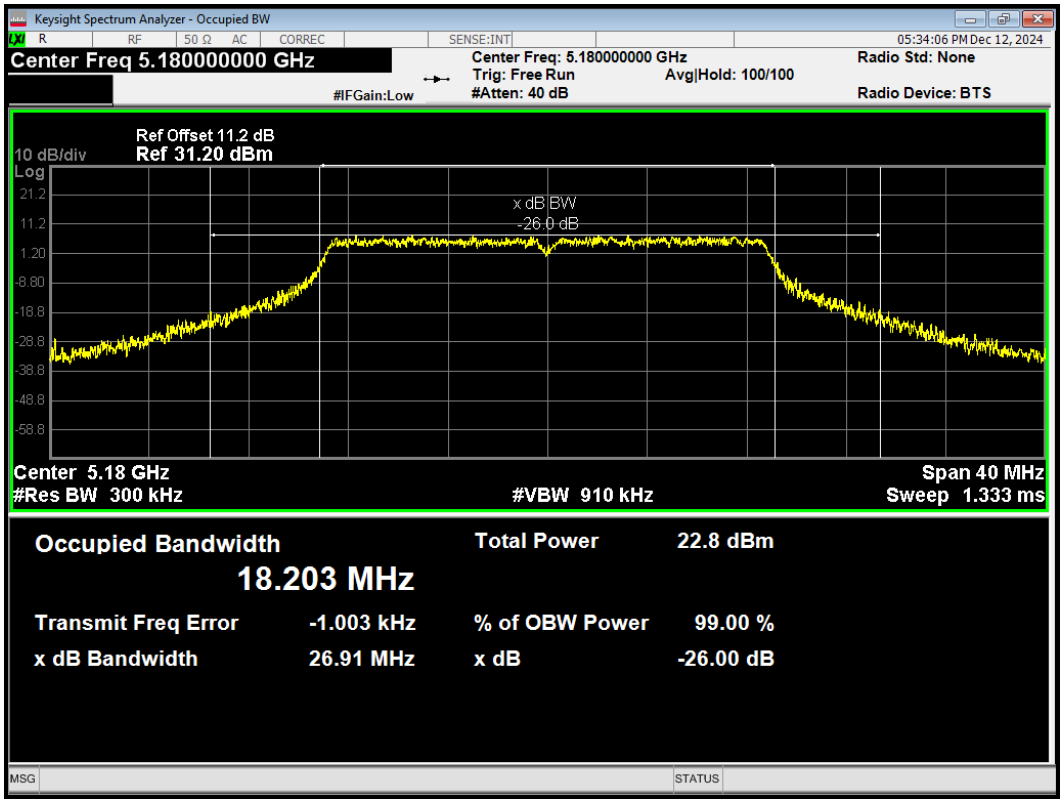


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ax(HE80) 5210MHz

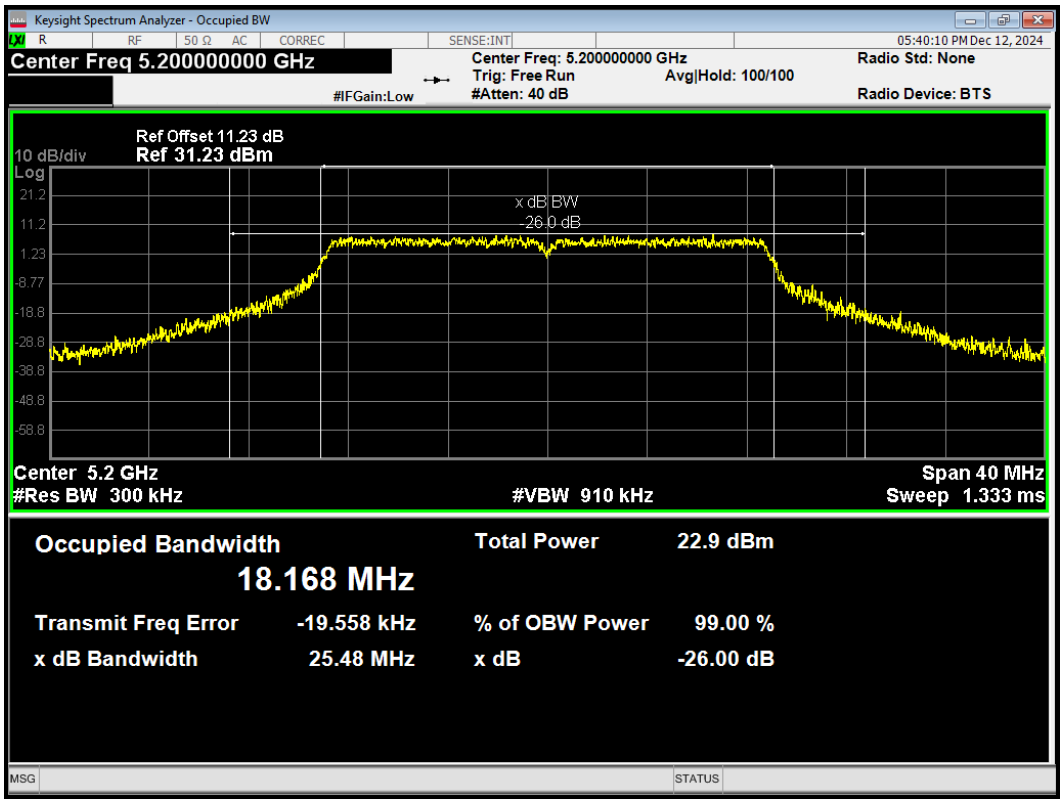


OBW 802.11n(HT20) 5180MHz

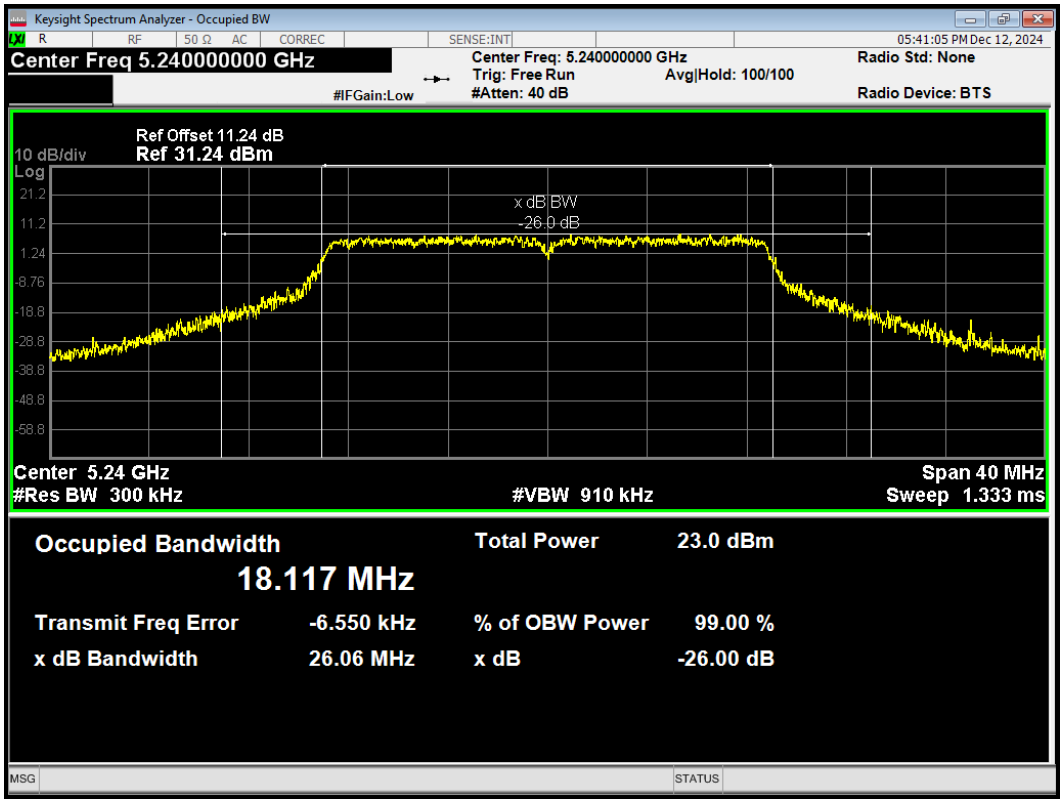


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11n(HT20) 5200MHz

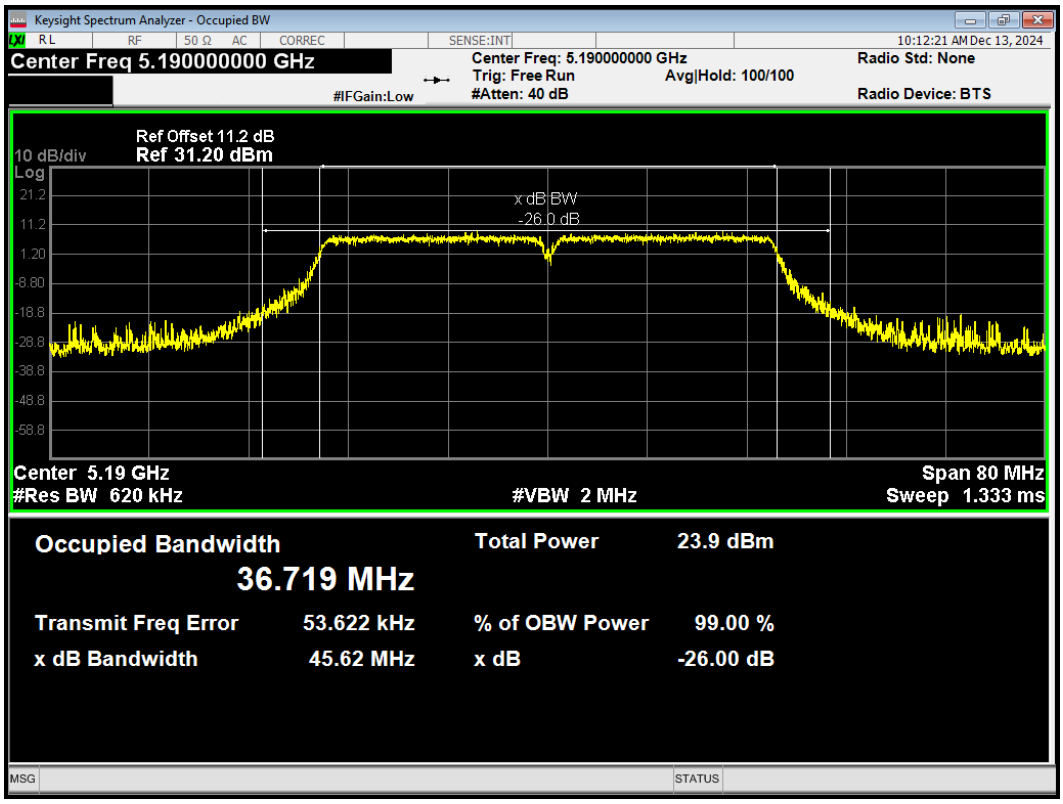


OBW 802.11n(HT20) 5240MHz

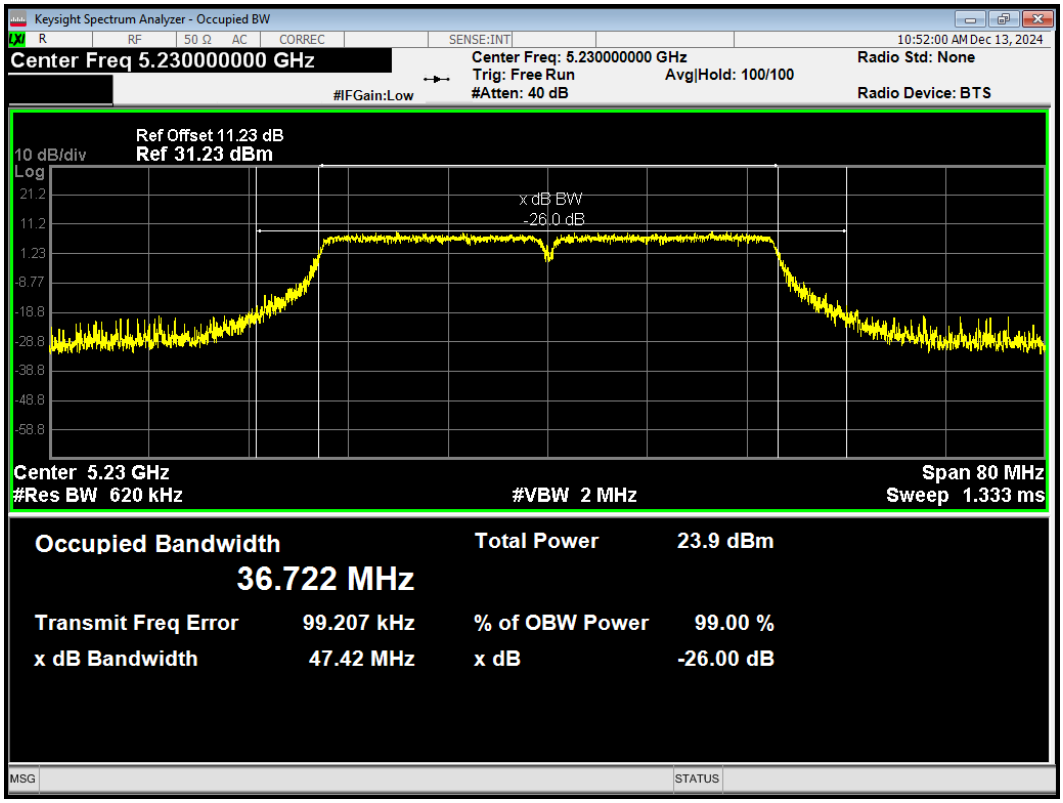


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11n(HT40) 5190MHz



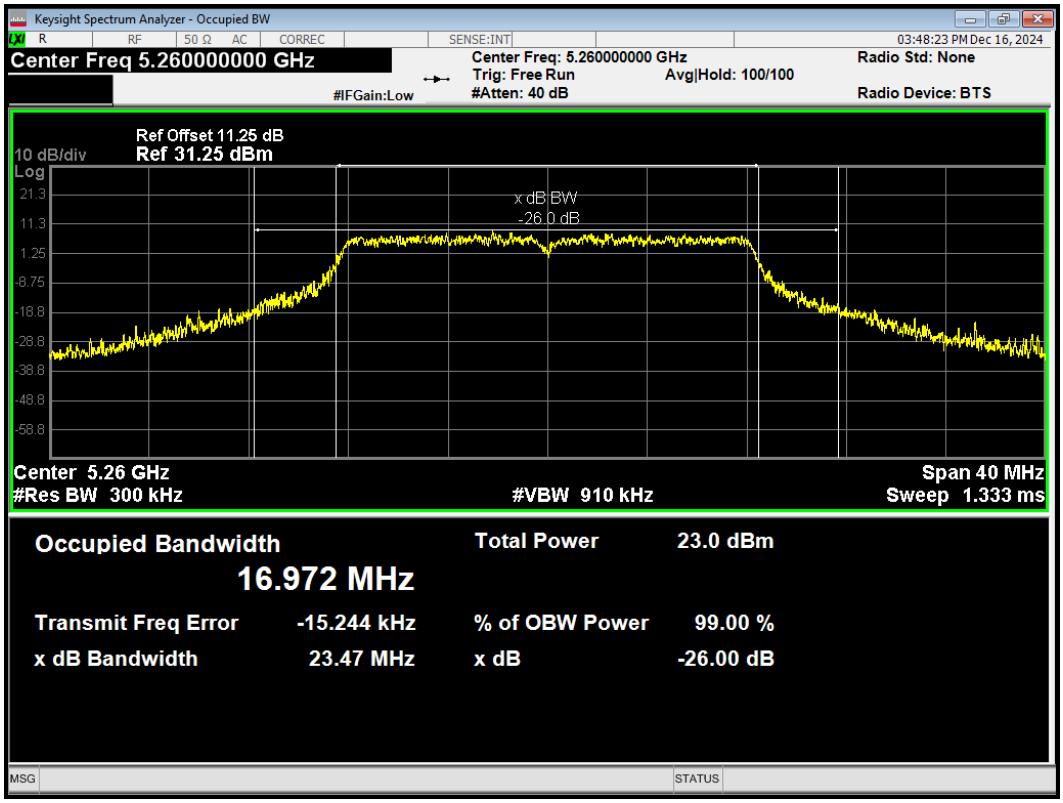
OBW 802.11n(HT40) 5230MHz



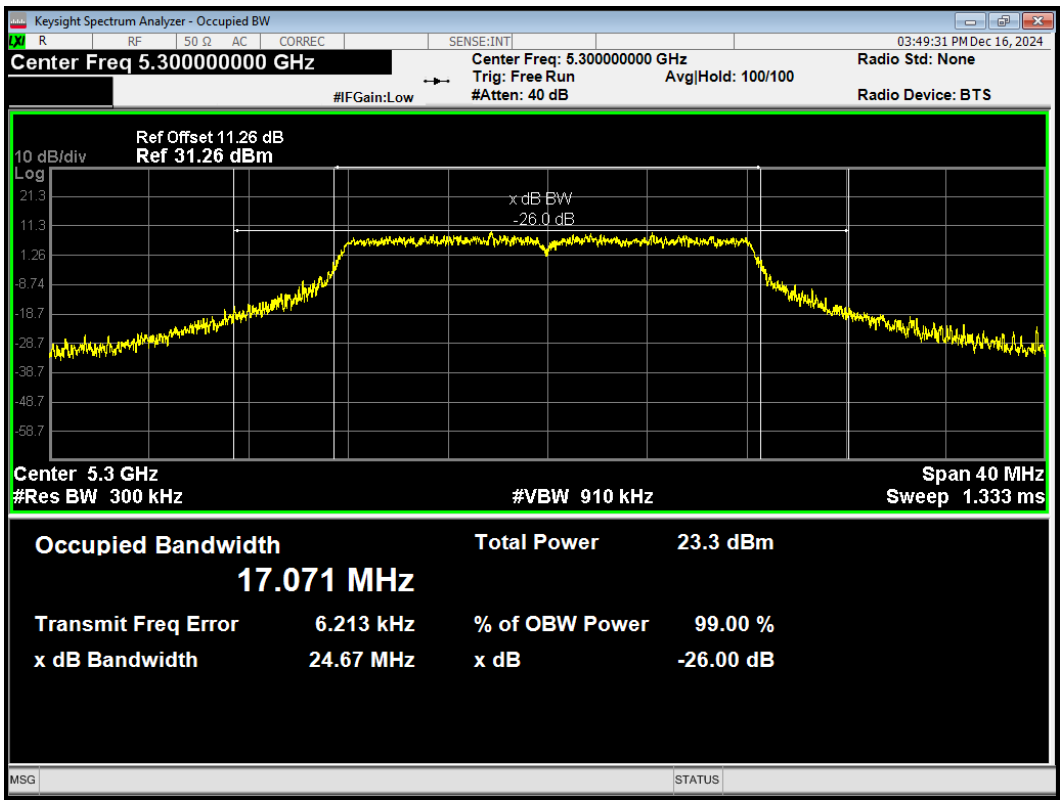
This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

U-NII-2A

OBW 802.11a 5260MHz

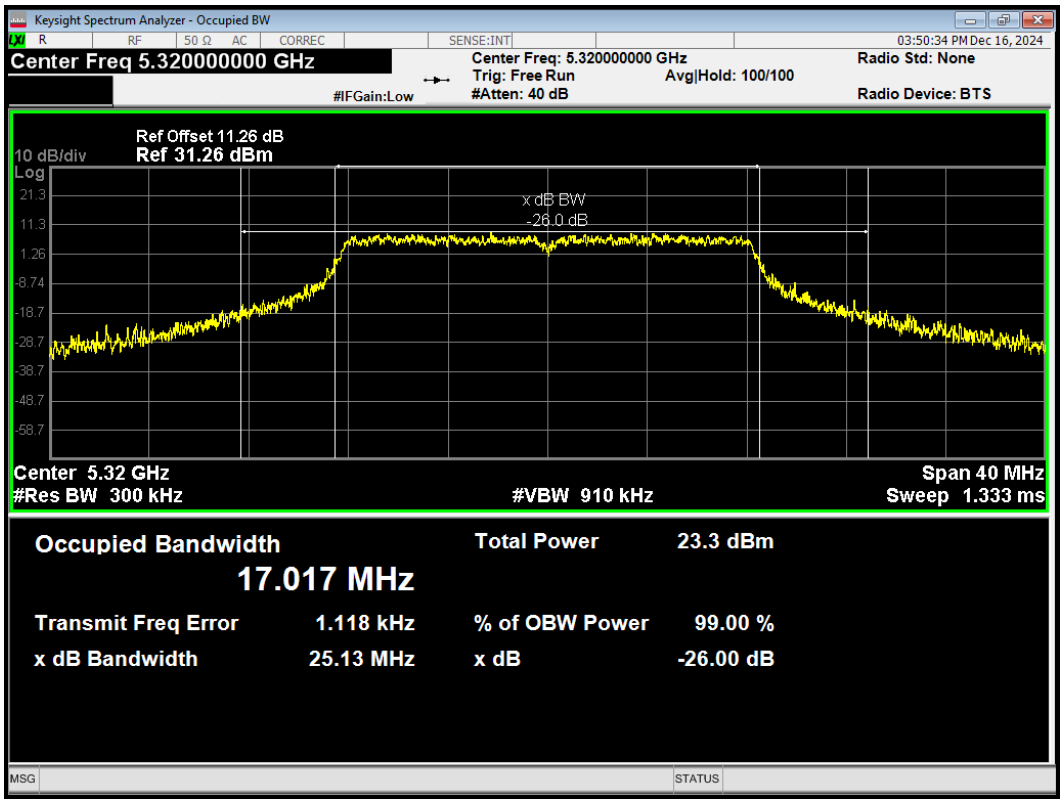


OBW 802.11a 5300MHz

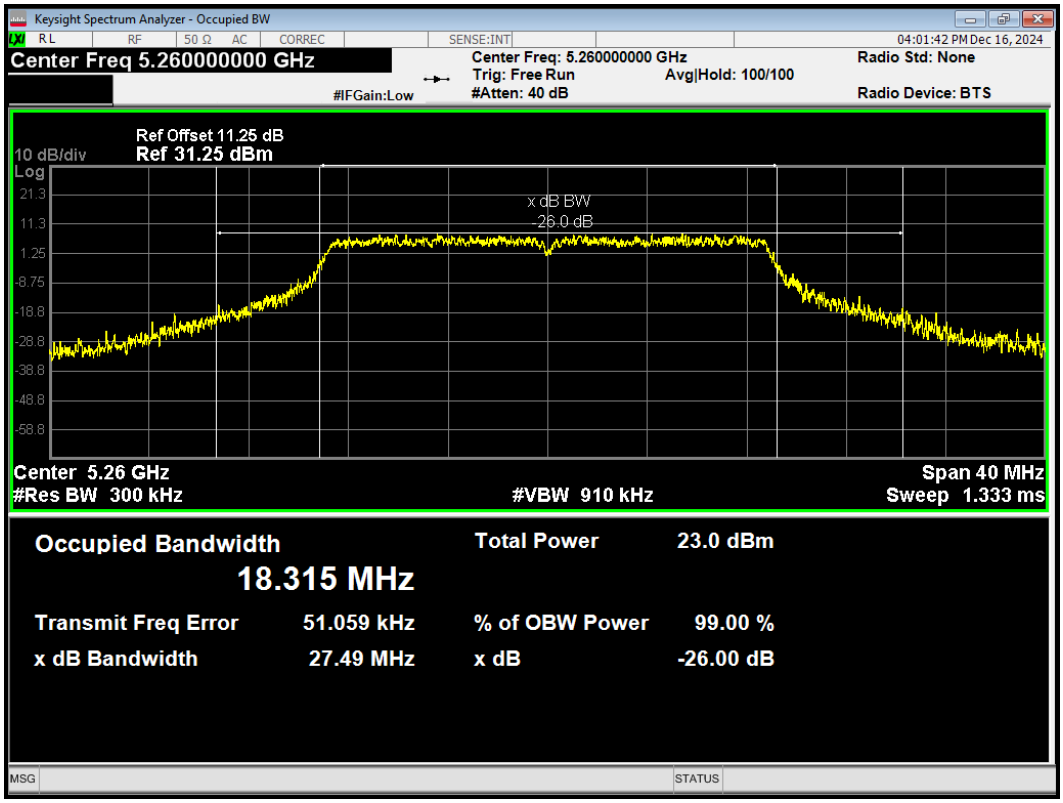


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11a 5320MHz

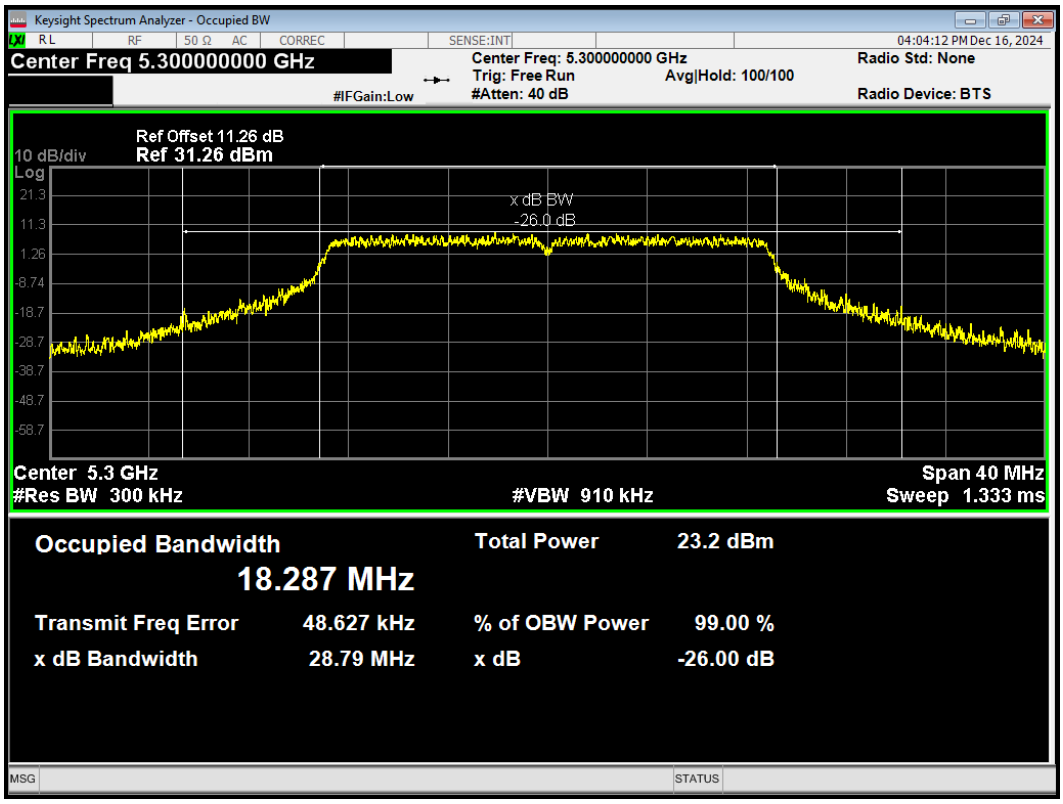


OBW 802.11ac(VHT20) 5260MHz

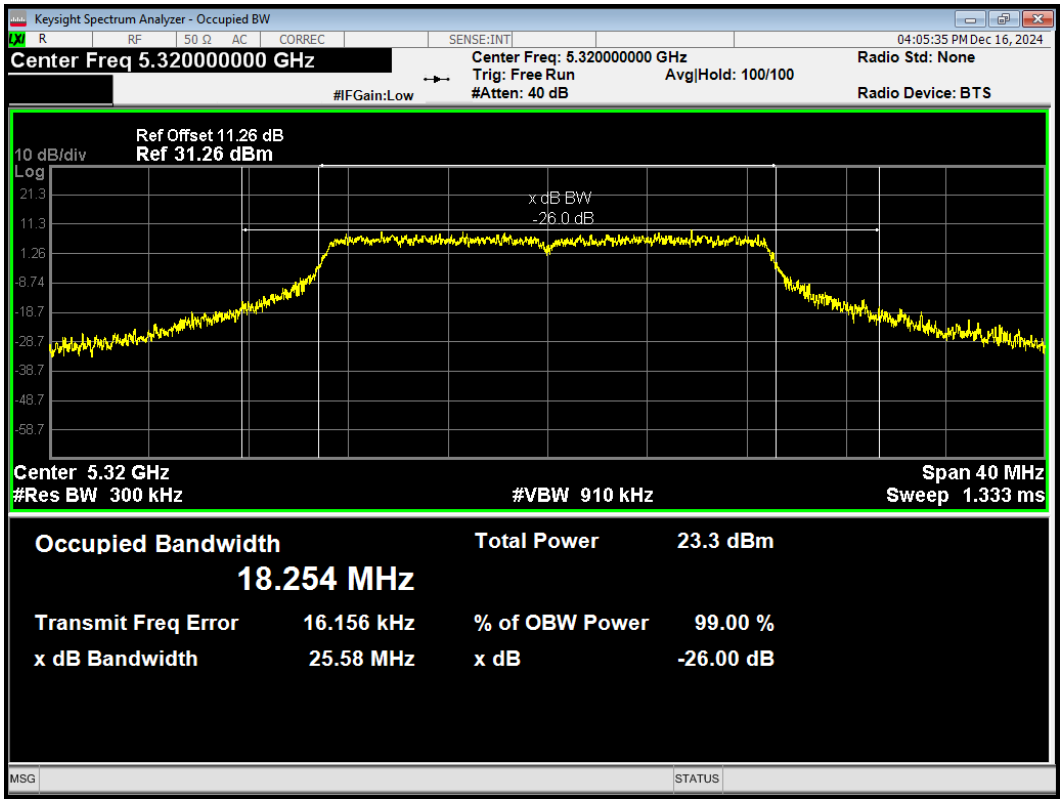


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ac(VHT20) 5300MHz

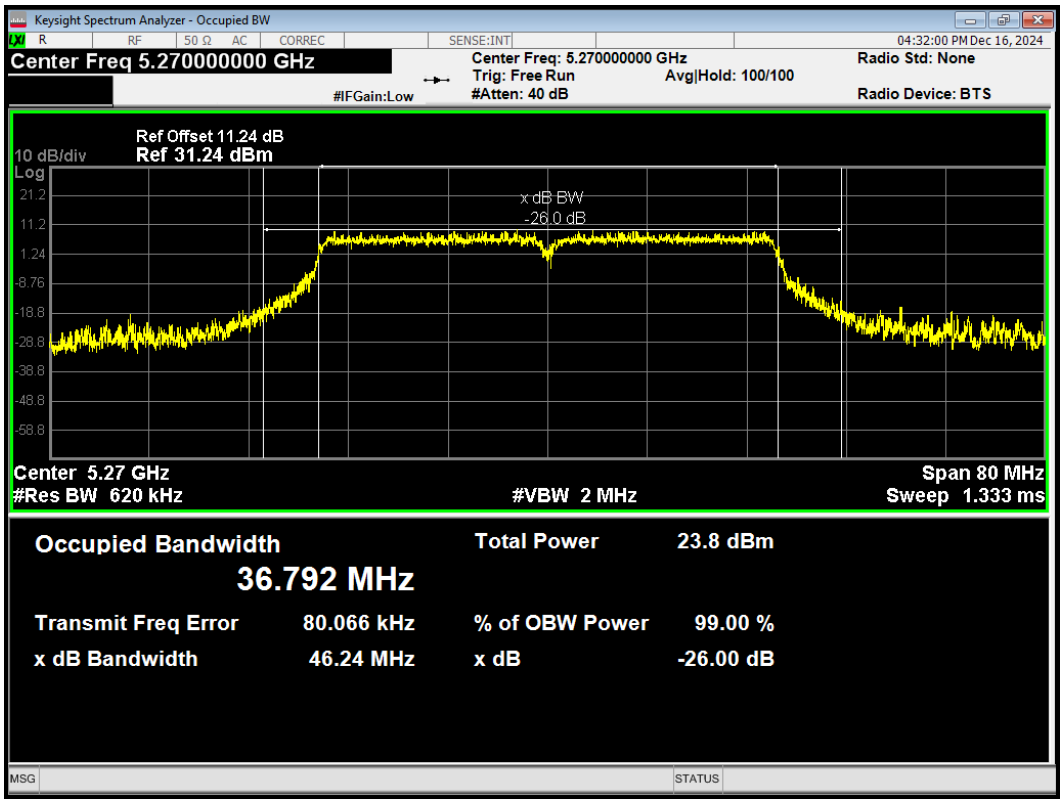


OBW 802.11ac(VHT20) 5320MHz

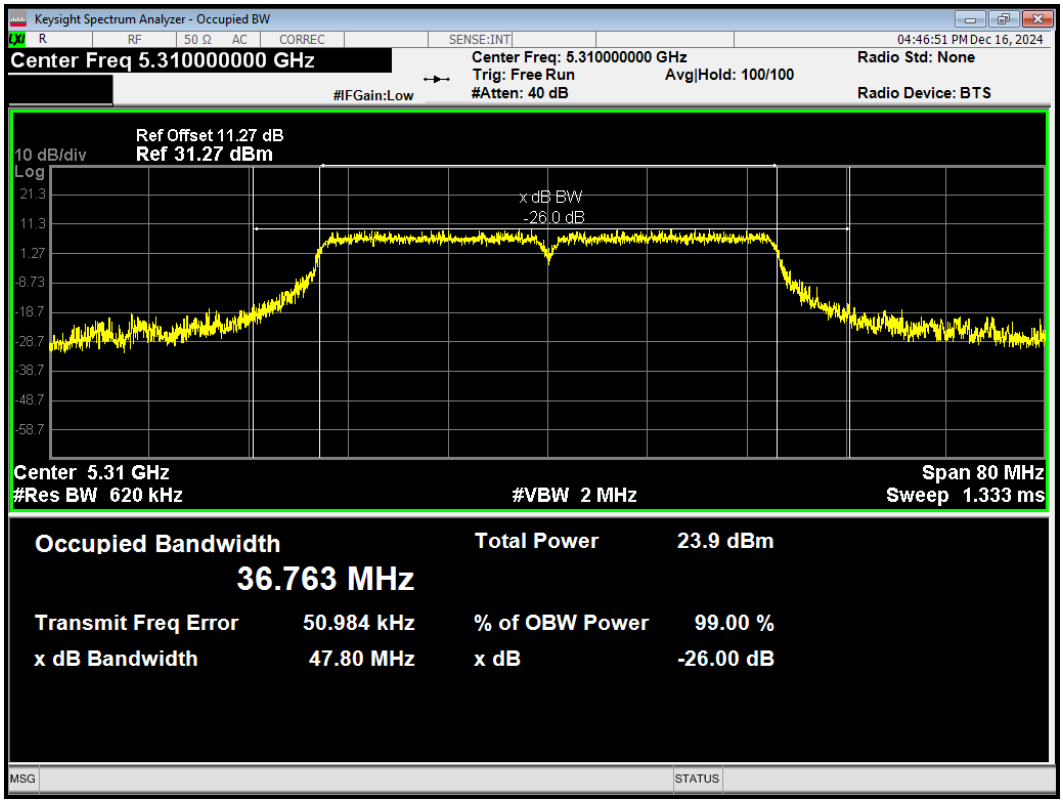


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ac(VHT40) 5270MHz

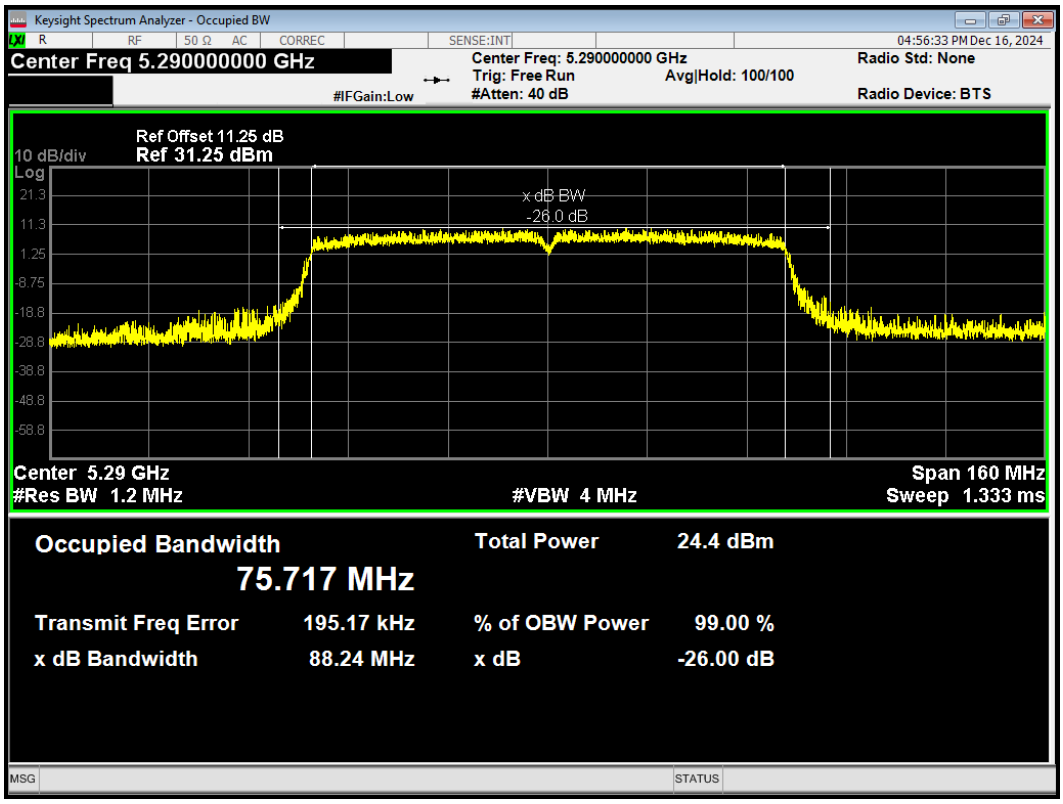


OBW 802.11ac(VHT40) 5310MHz

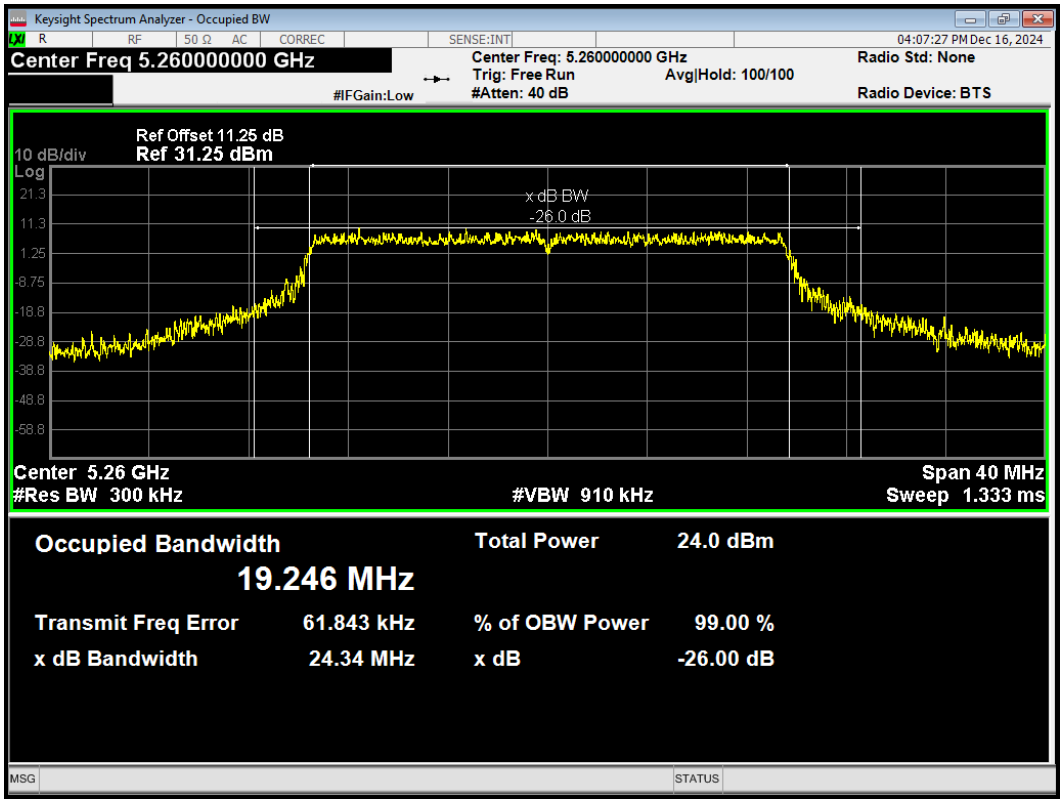


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ac(VHT80) 5290MHz

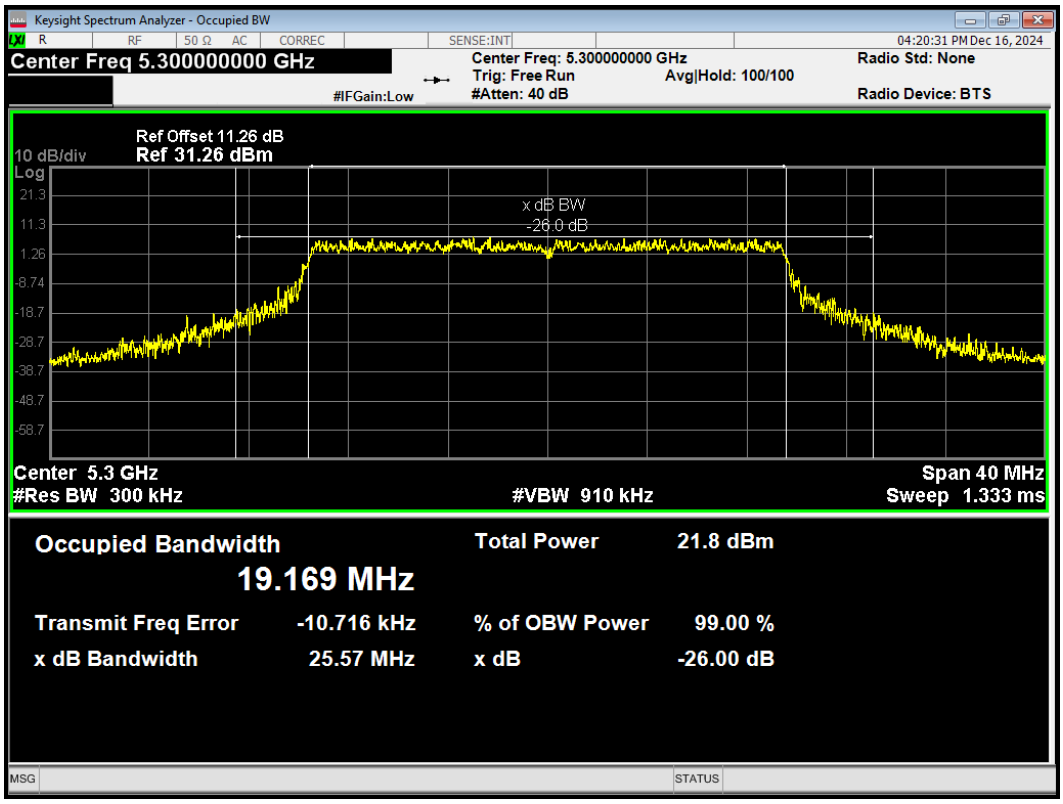


OBW 802.11ax(HE20) 5260MHz

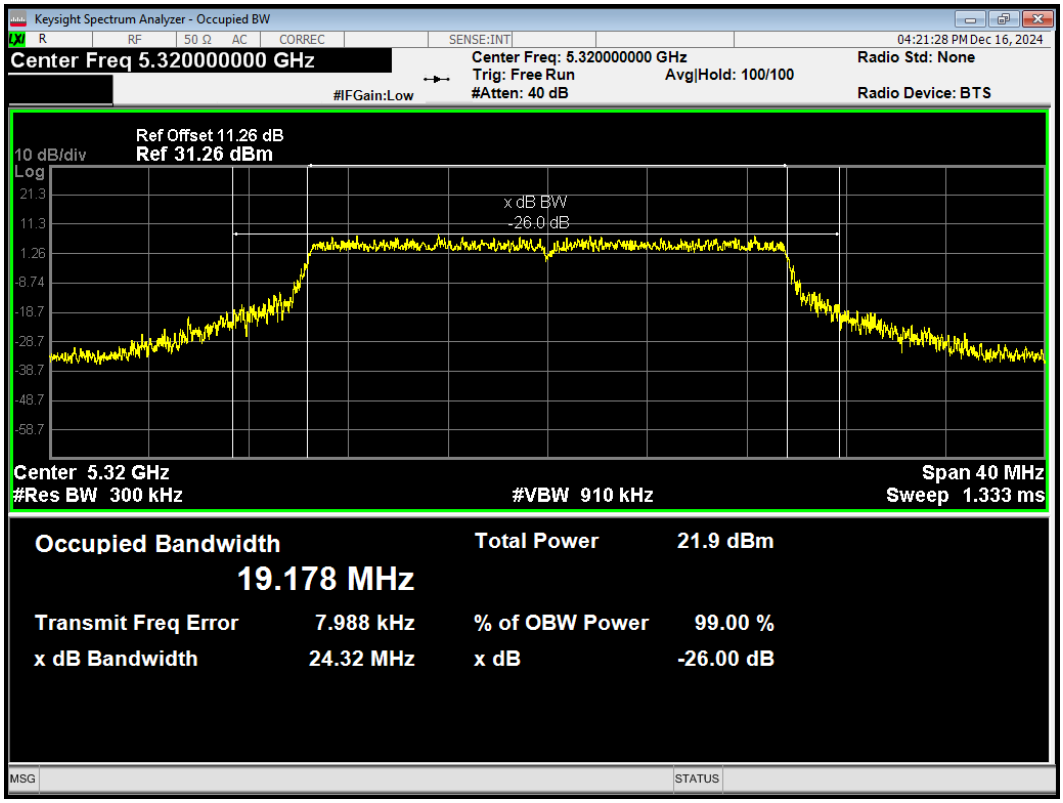


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ax(HE20) 5300MHz

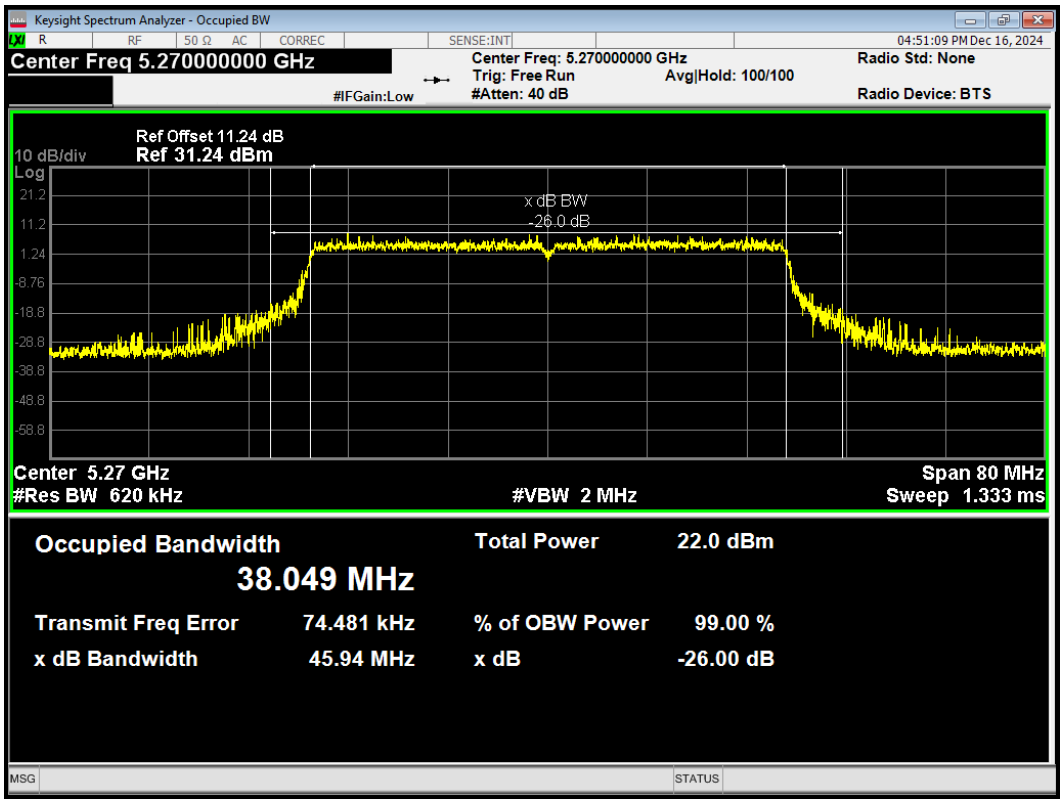


OBW 802.11ax(HE20) 5320MHz

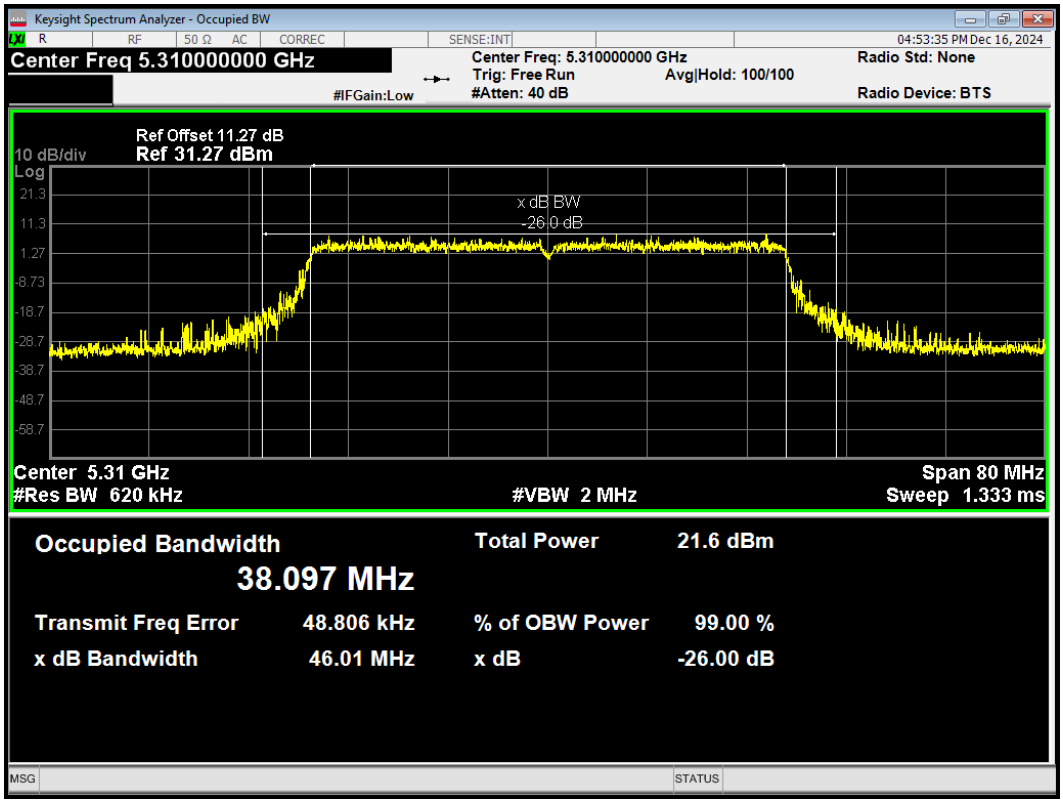


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ax(HE40) 5270MHz

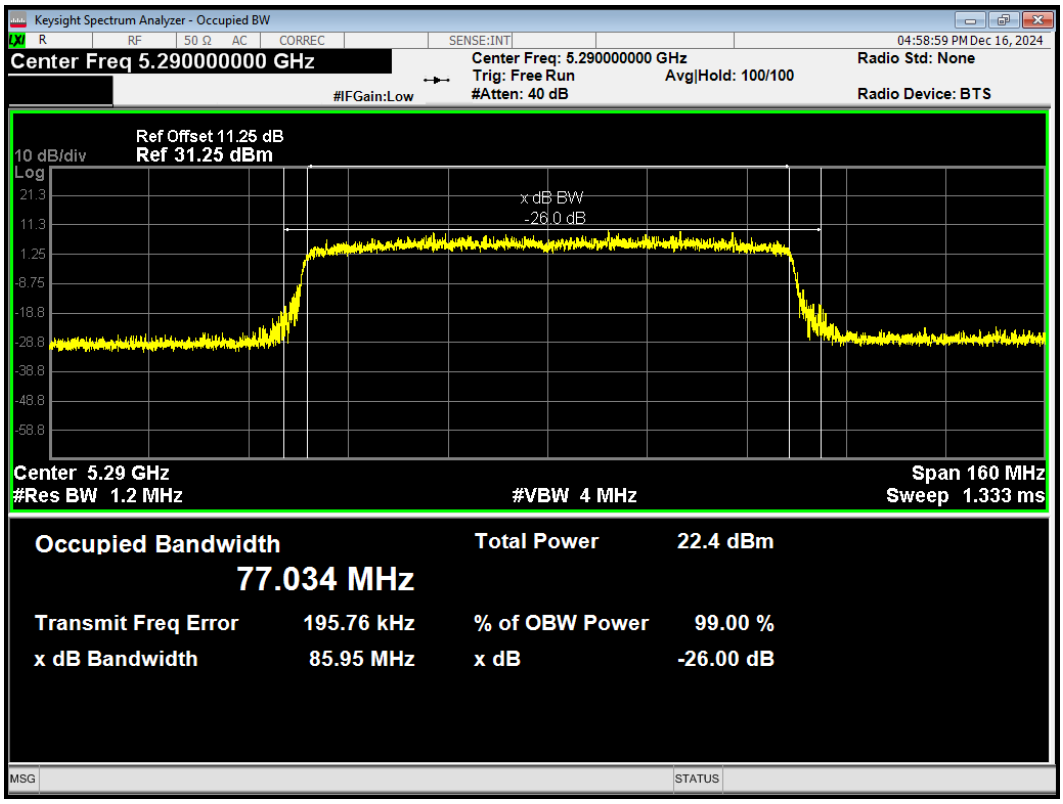


OBW 802.11ax(HE40) 5310MHz

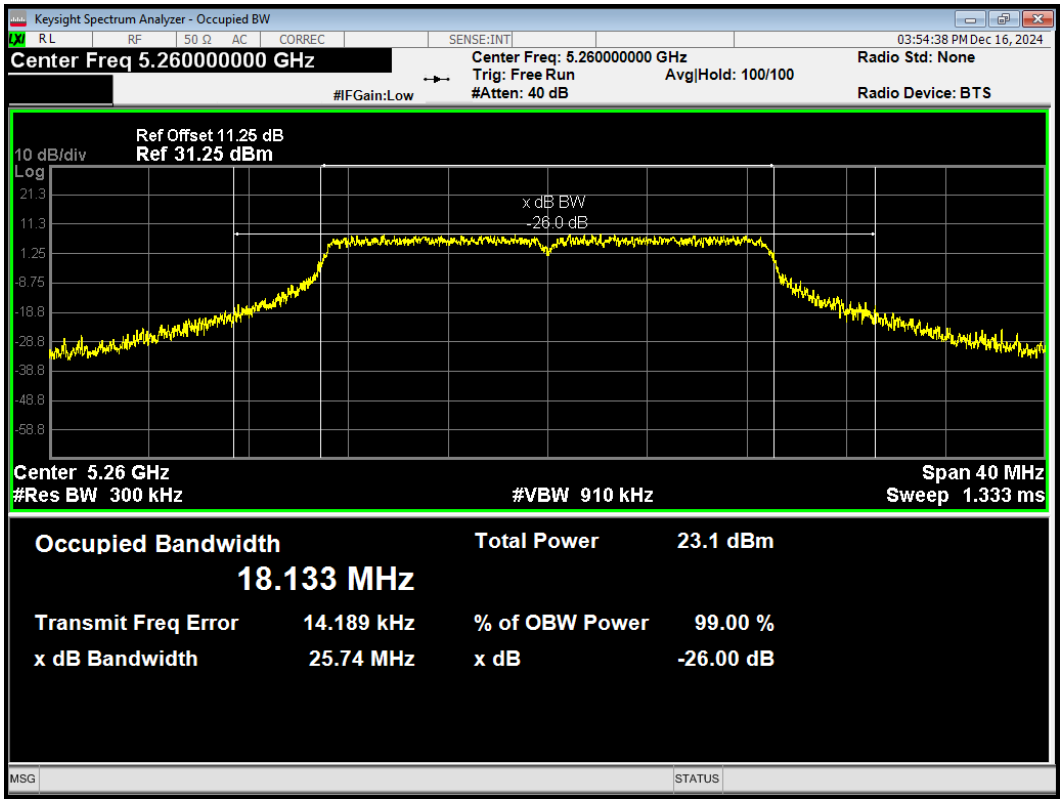


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ax(HE80) 5290MHz

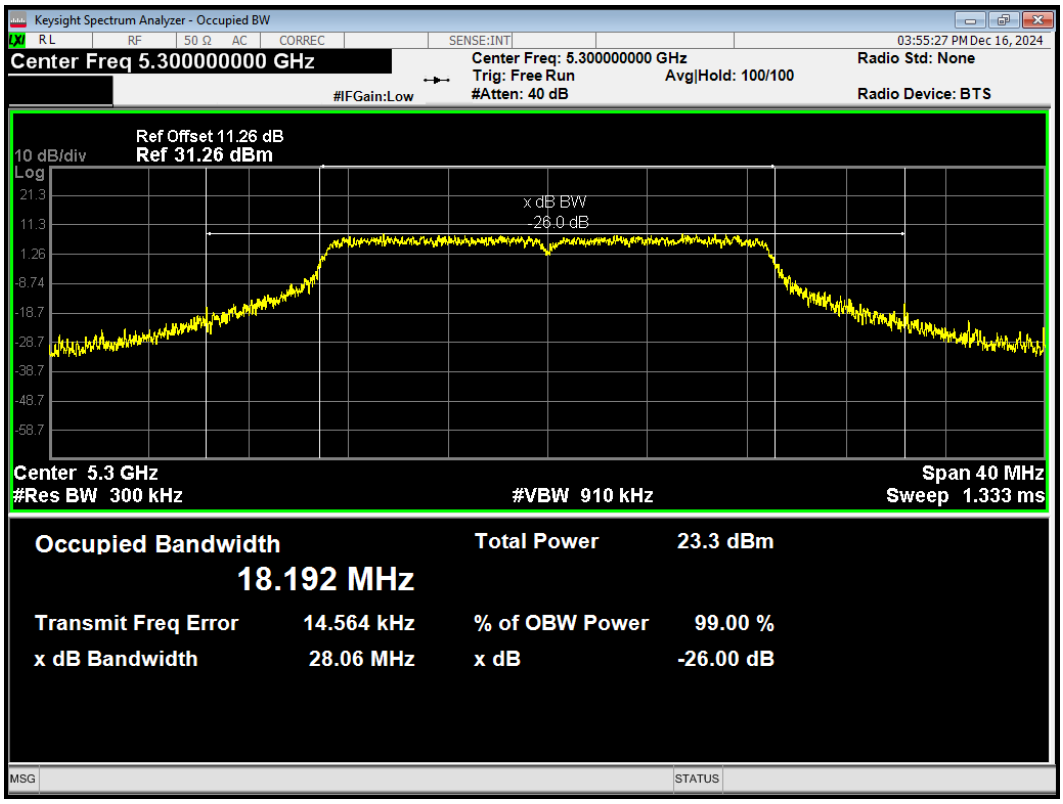


OBW 802.11n(HT20) 5260MHz

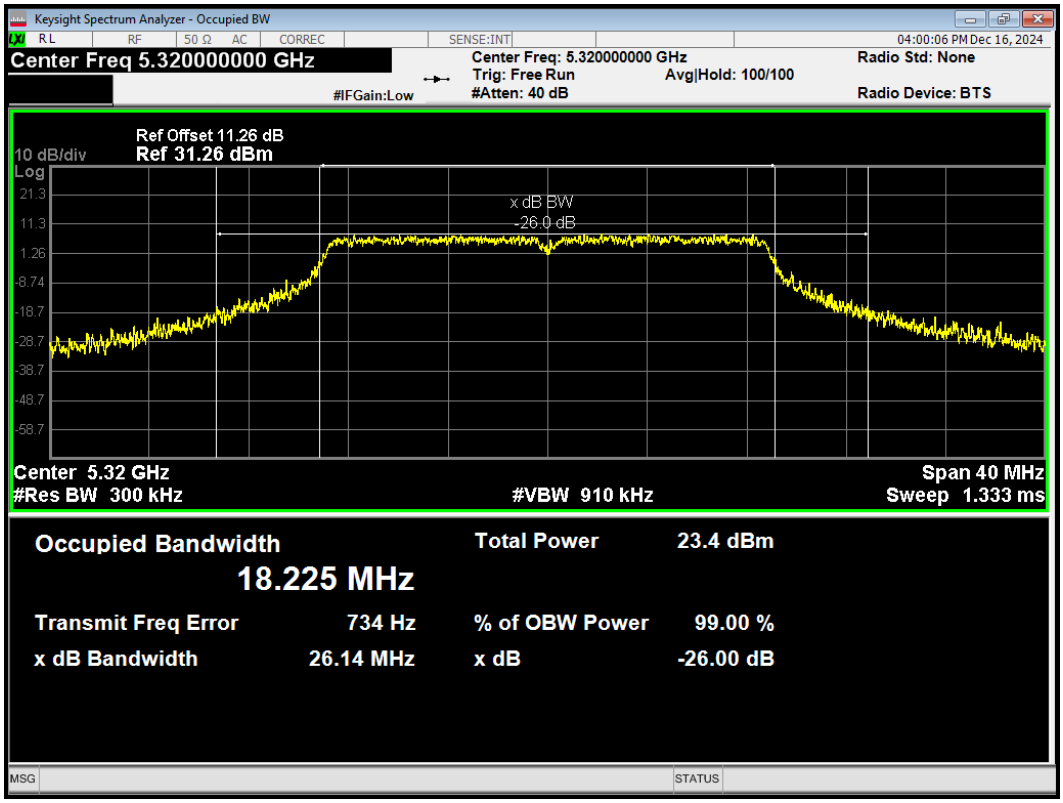


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11n(HT20) 5300MHz

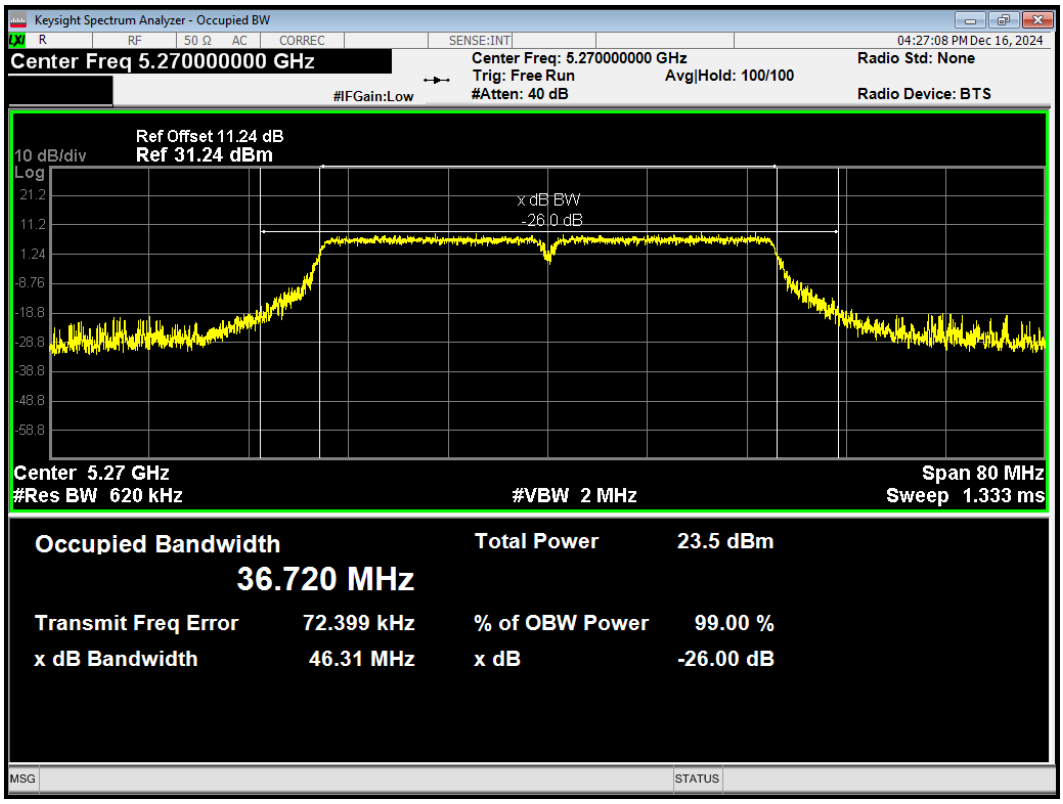


OBW 802.11n(HT20) 5320MHz

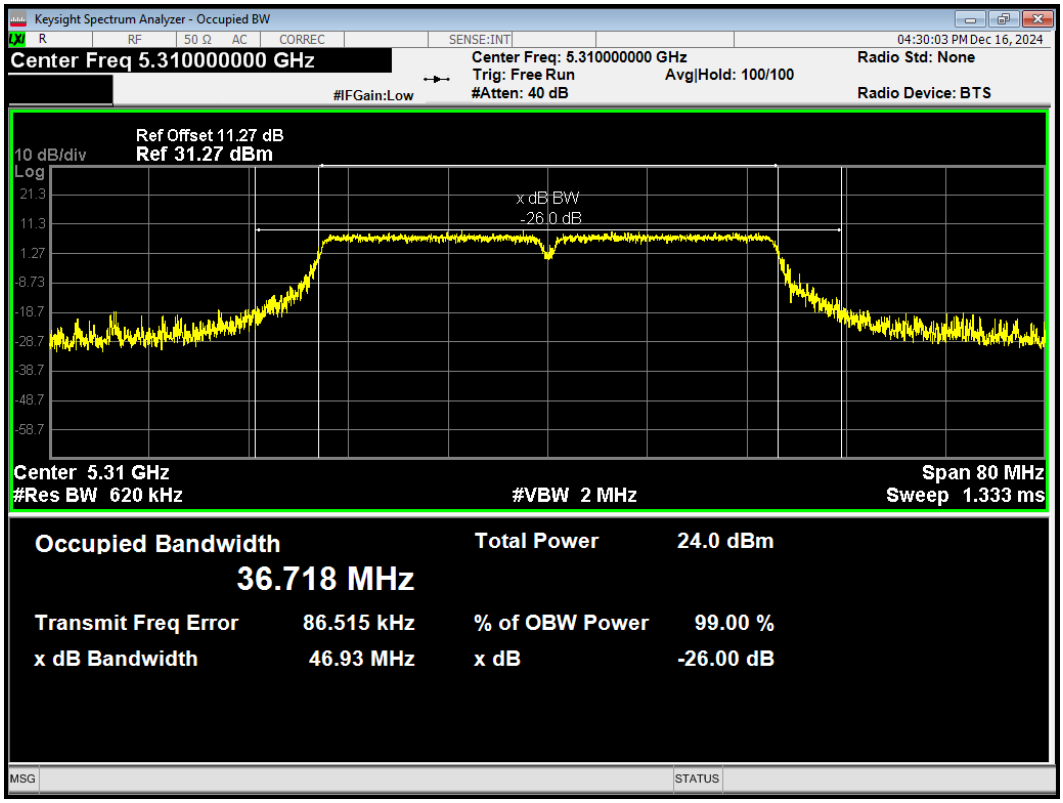


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11n(HT40) 5270MHz



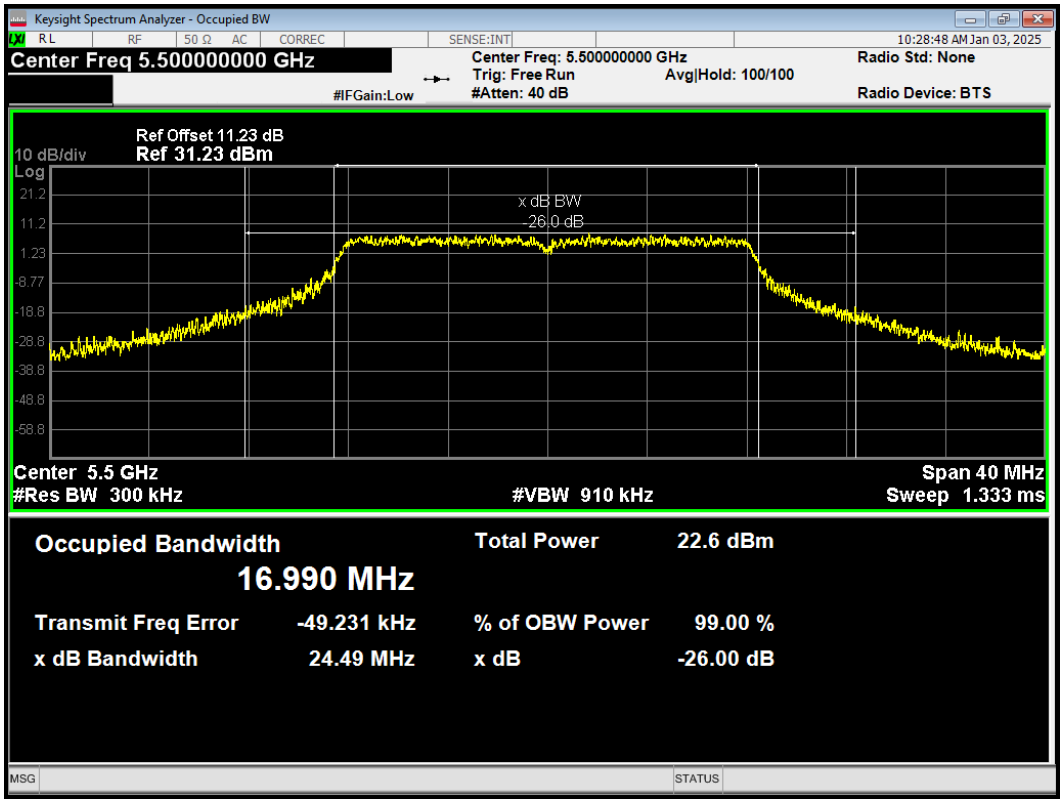
OBW 802.11n(HT40) 5310MHz



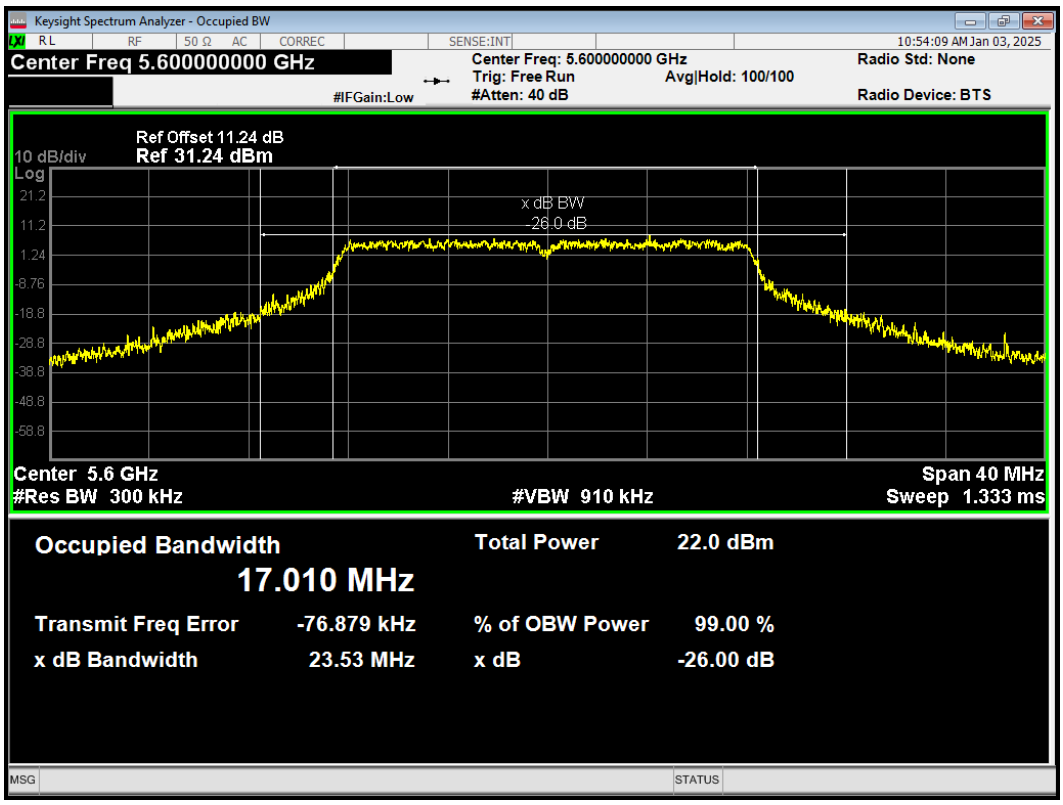
This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

U-NII-2C

OBW 802.11a 5500MHz

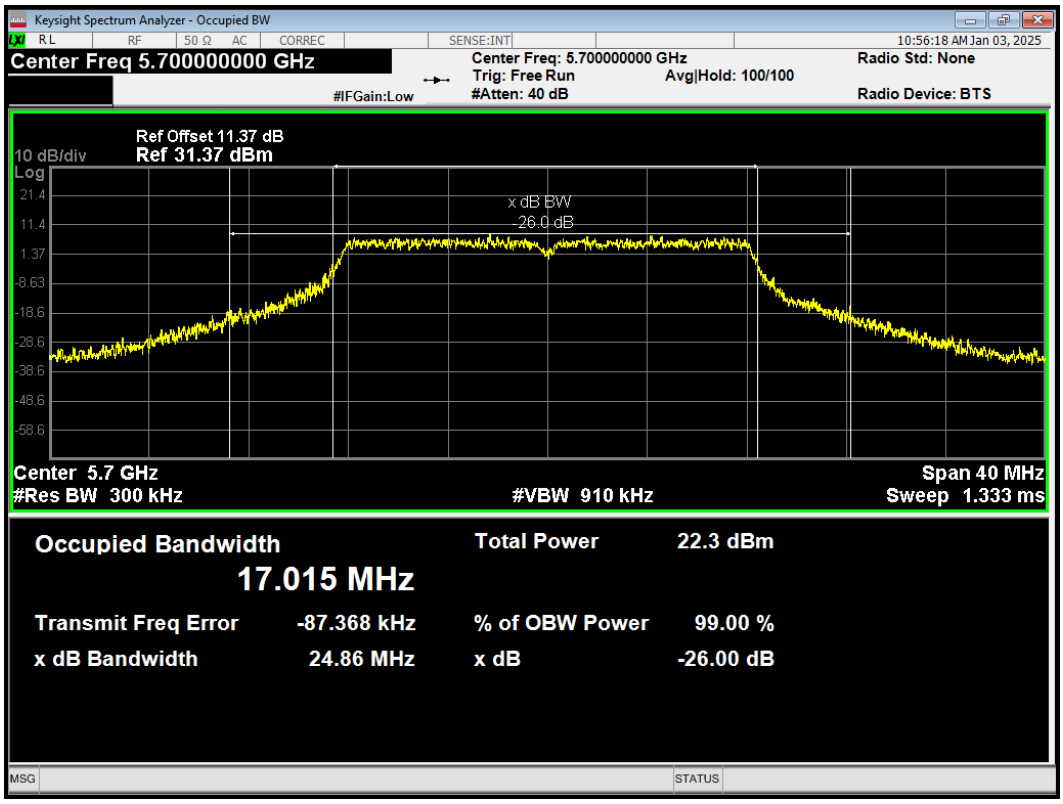


OBW 802.11a 5600MHz

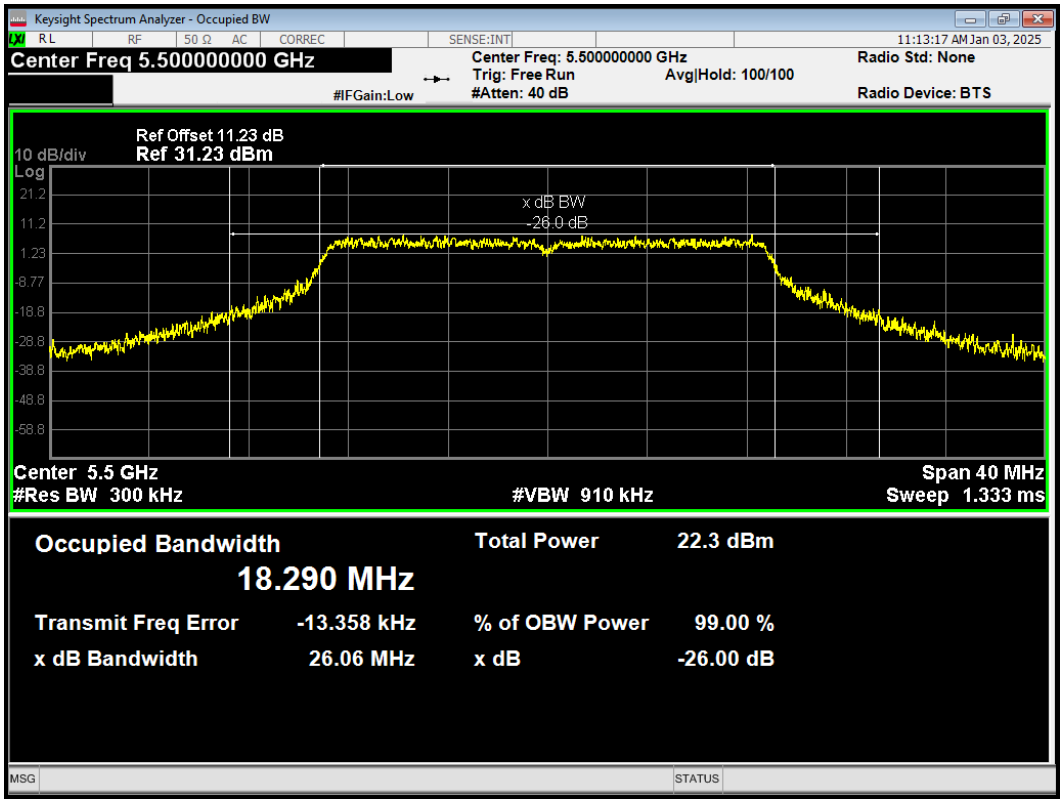


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11a 5700MHz

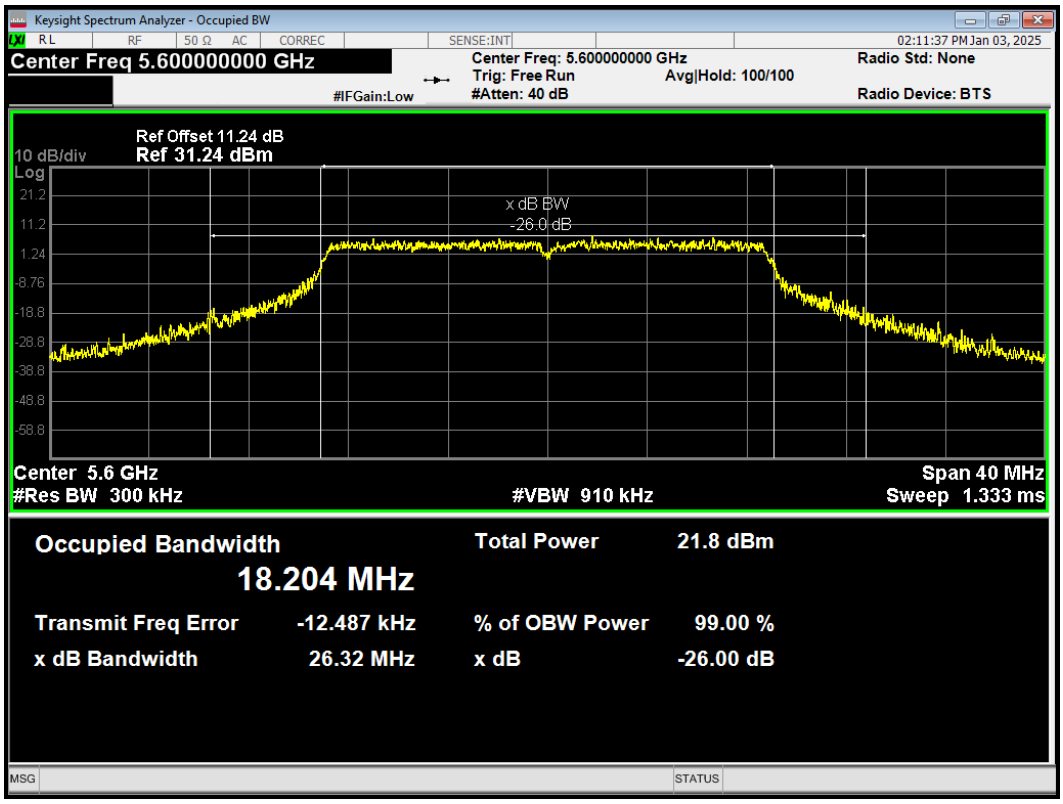


OBW 802.11ac(VHT20) 5500MHz

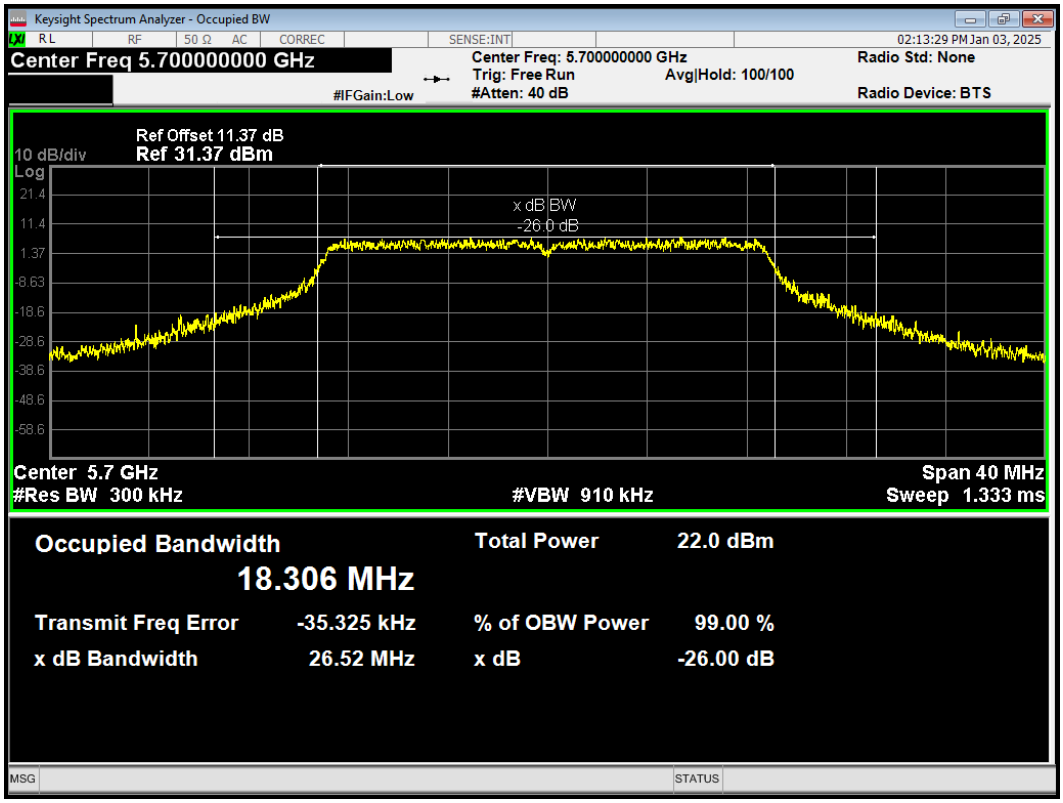


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ac(VHT20) 5600MHz

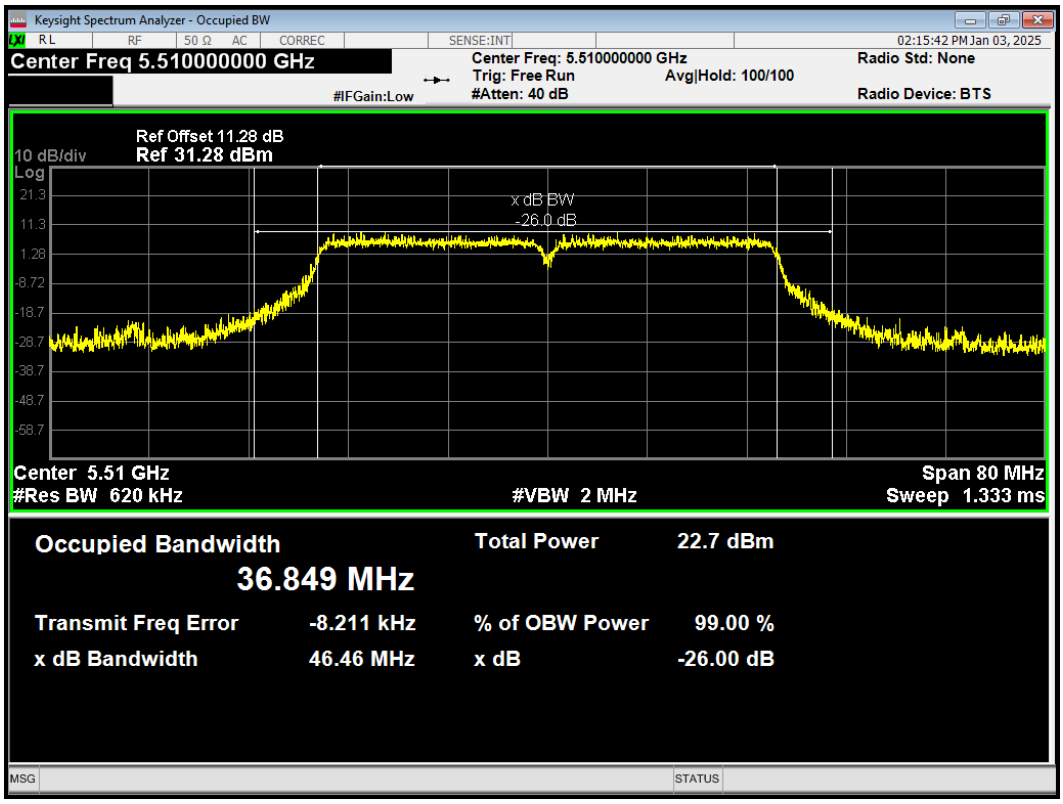


OBW 802.11ac(VHT20) 5700MHz

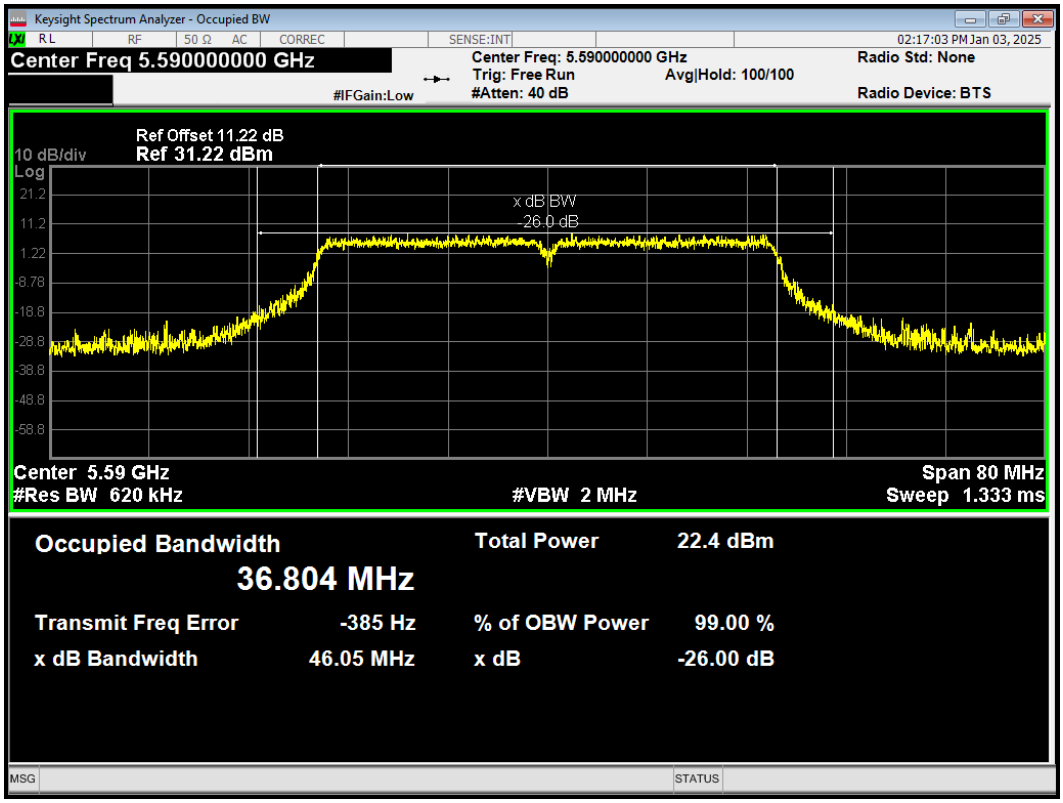


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ac(VHT40) 5510MHz

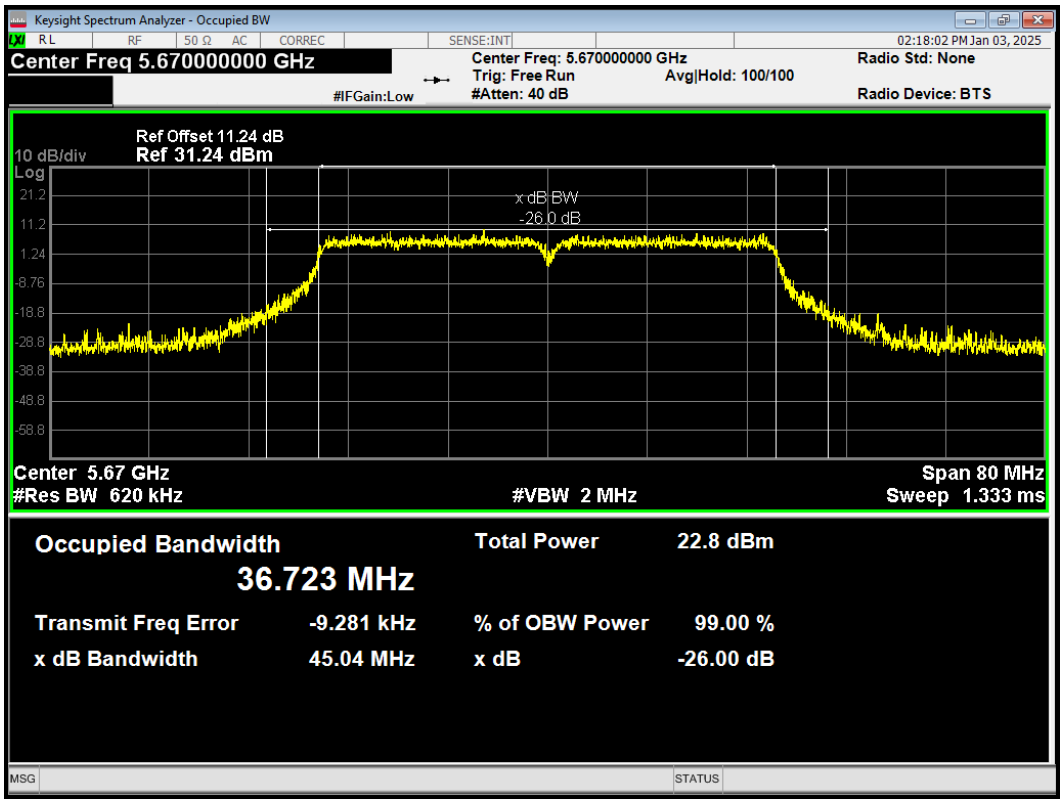


OBW 802.11ac(VHT40) 5590MHz

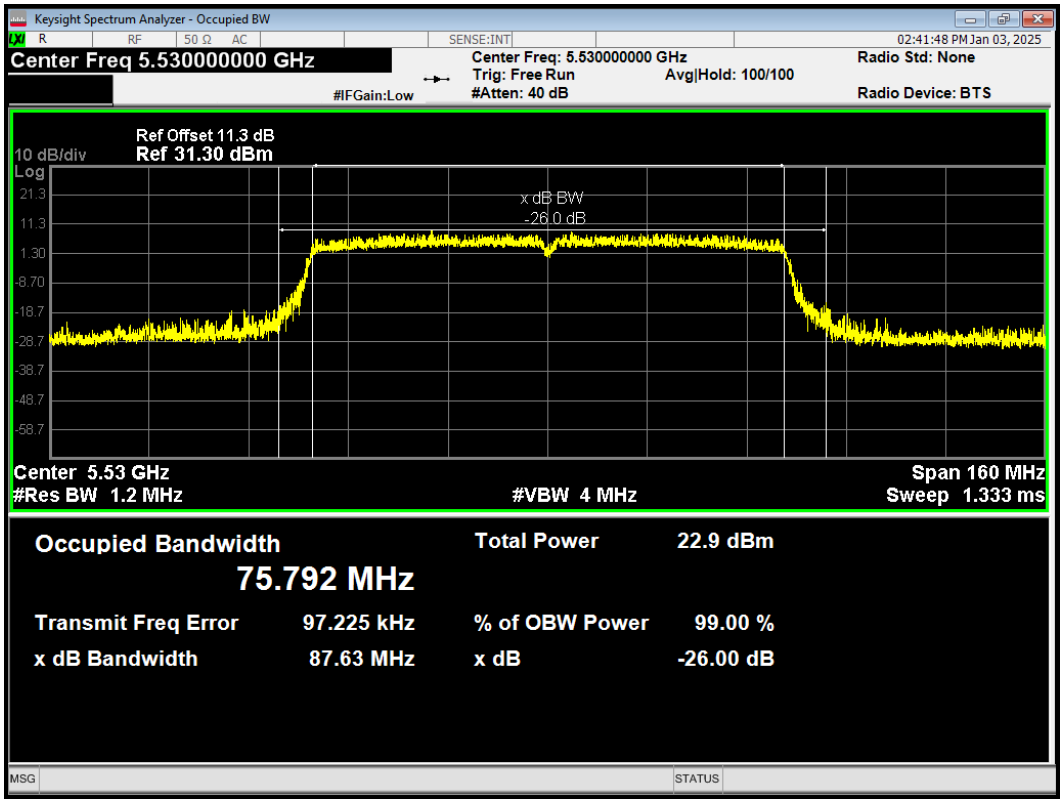


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ac(VHT40) 5670MHz

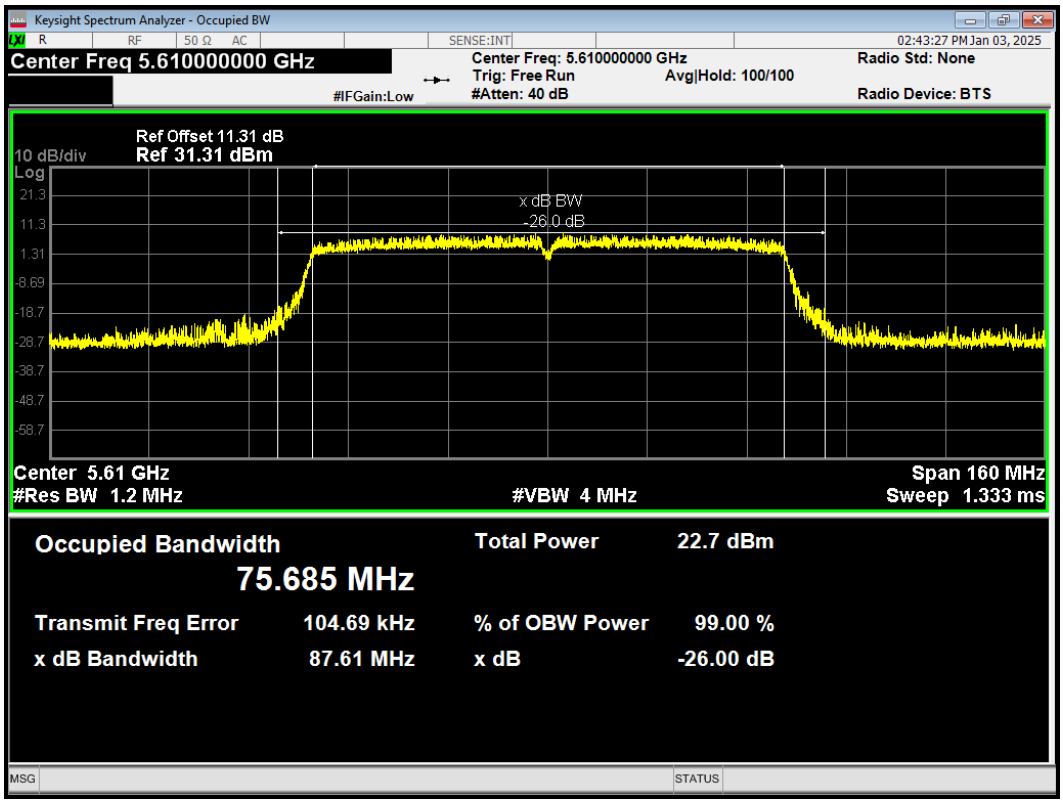


OBW 802.11ac(VHT80) 5530MHz

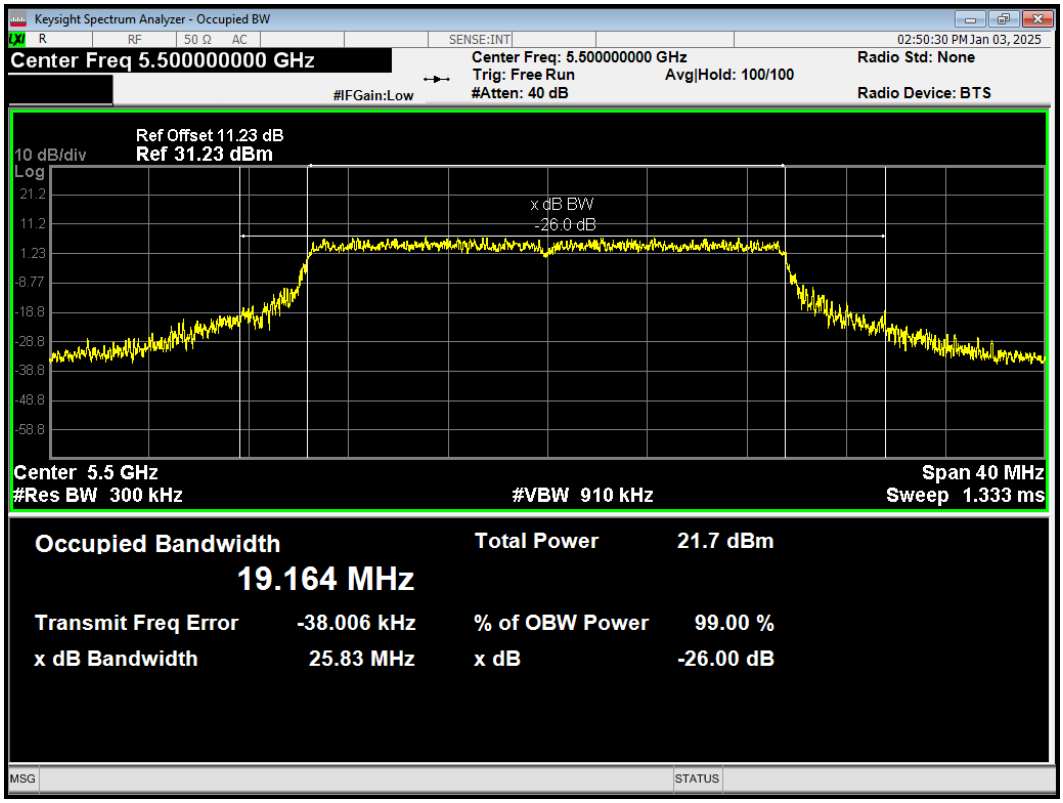


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ac(VHT80) 5610MHz

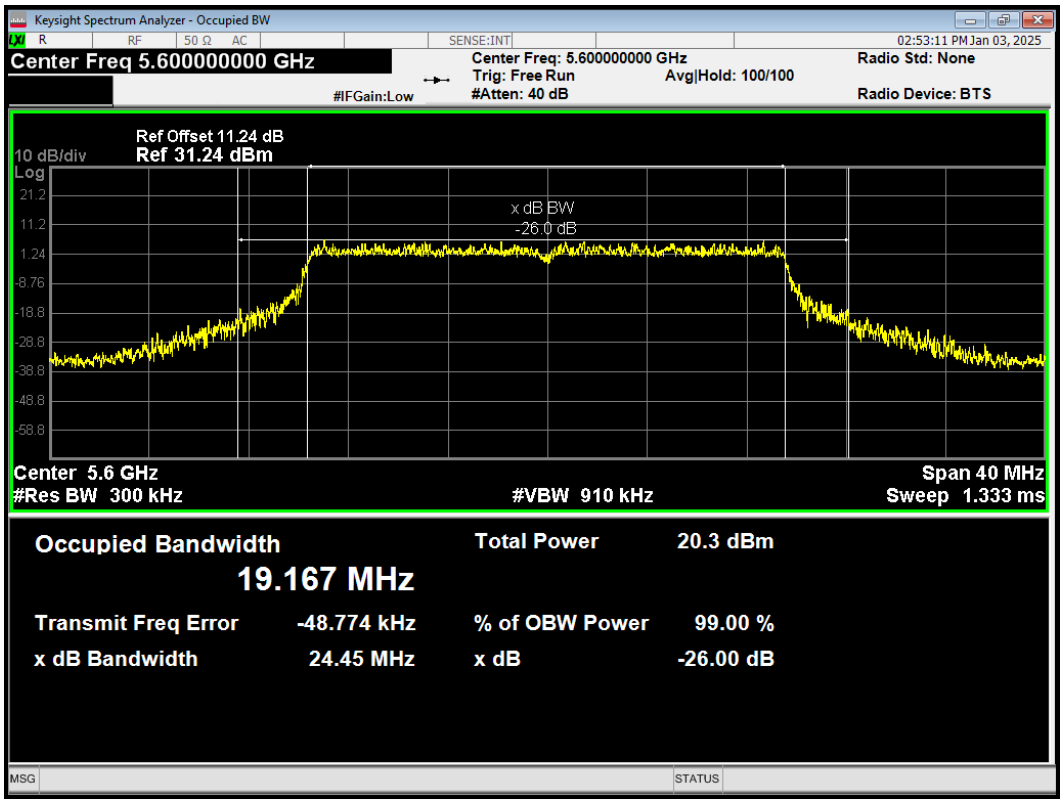


OBW 802.11ax(HE20) 5500MHz

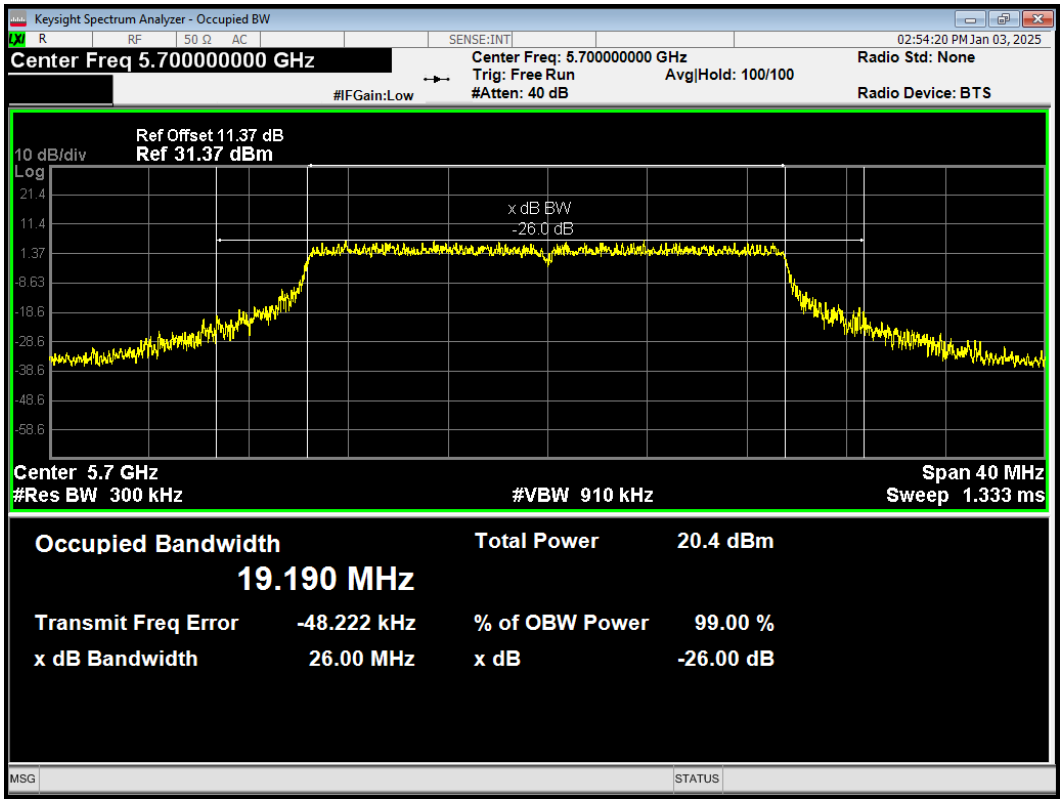


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ax(HE20) 5600MHz

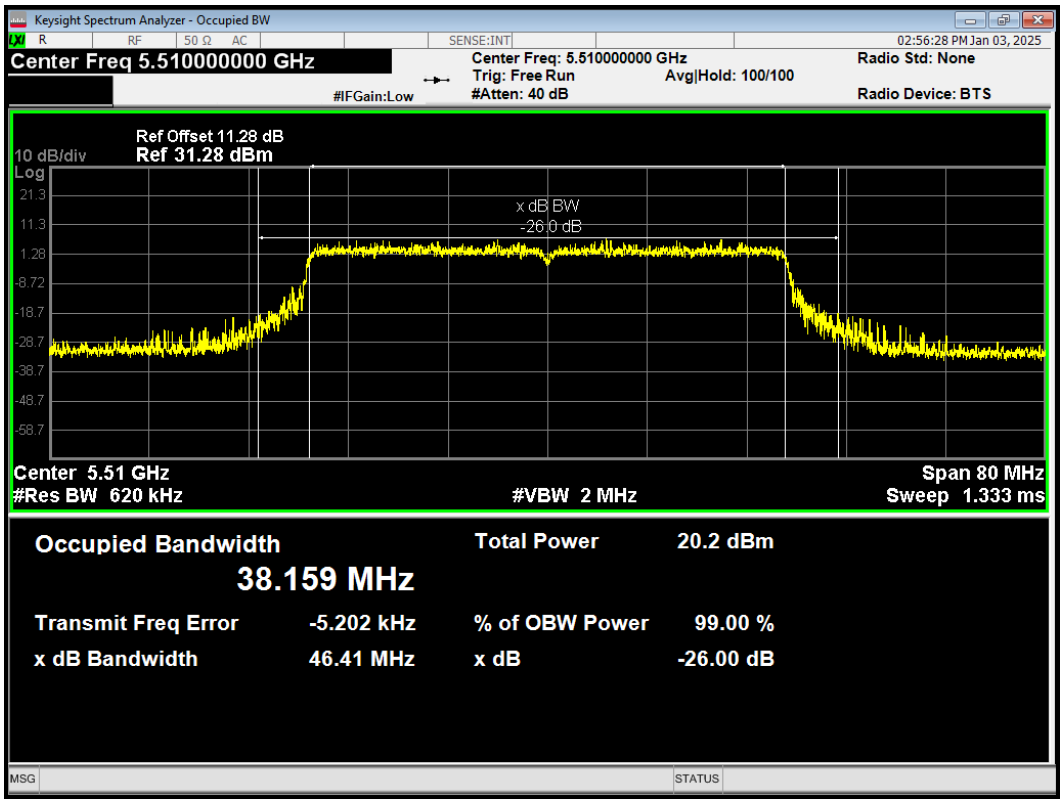


OBW 802.11ax(HE20) 5700MHz

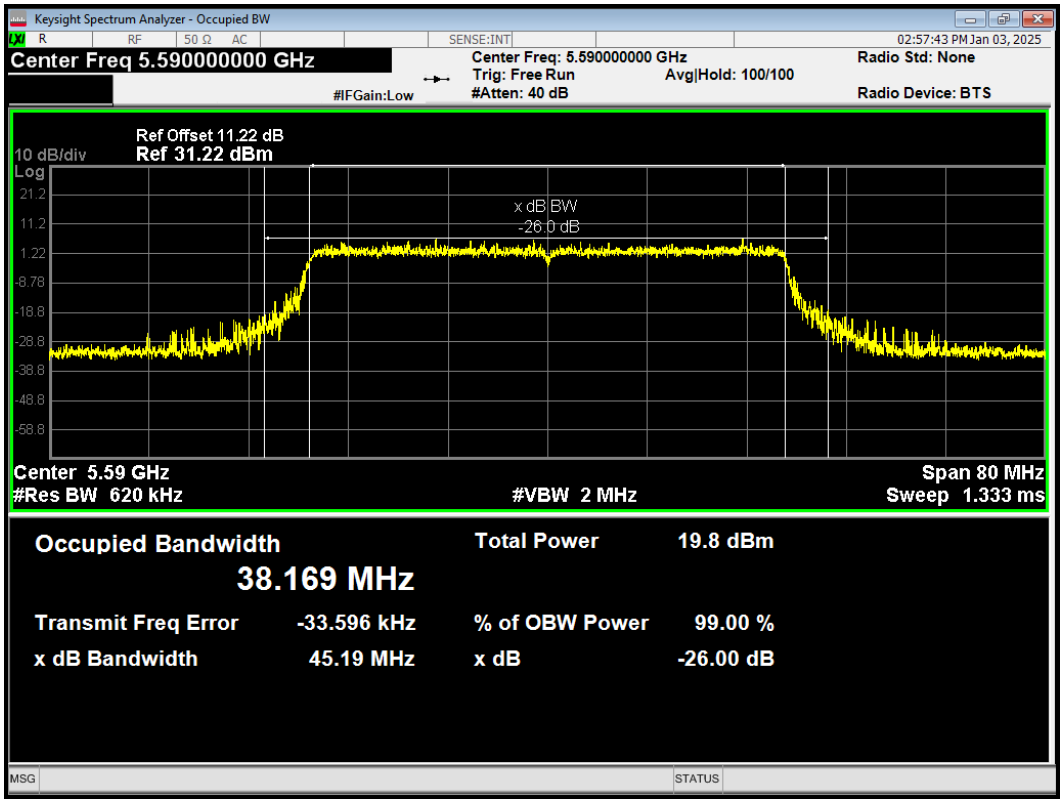


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ax(HE40) 5510MHz

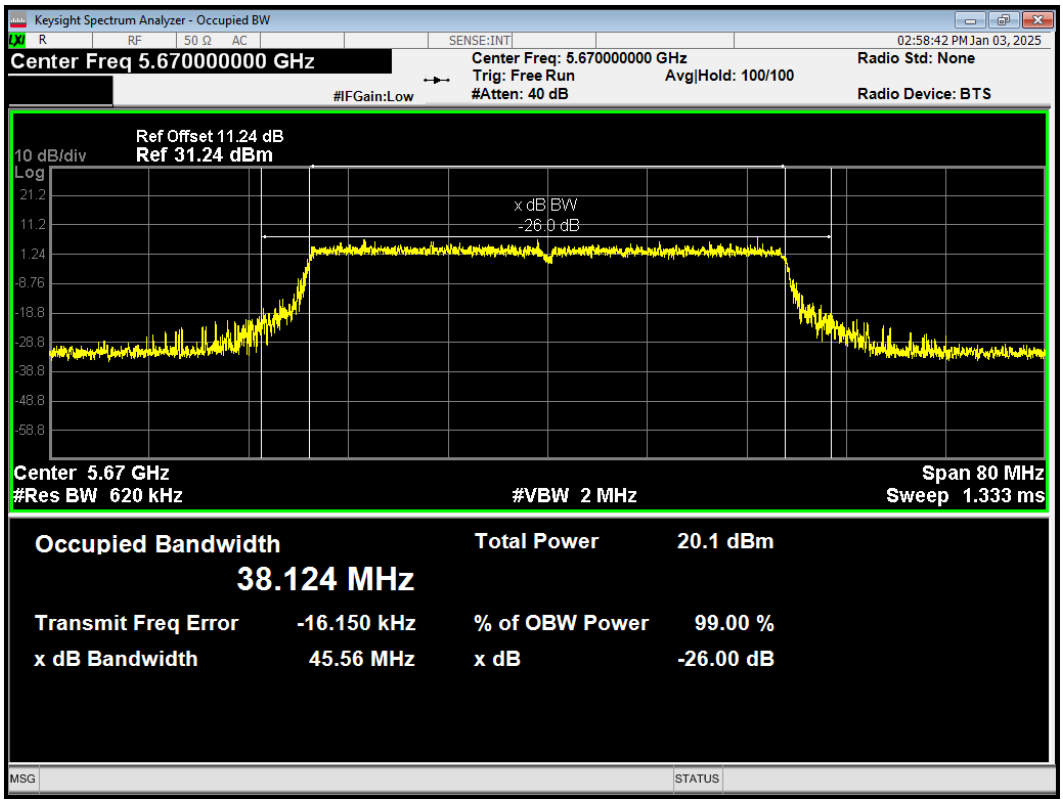


OBW 802.11ax(HE40) 5590MHz

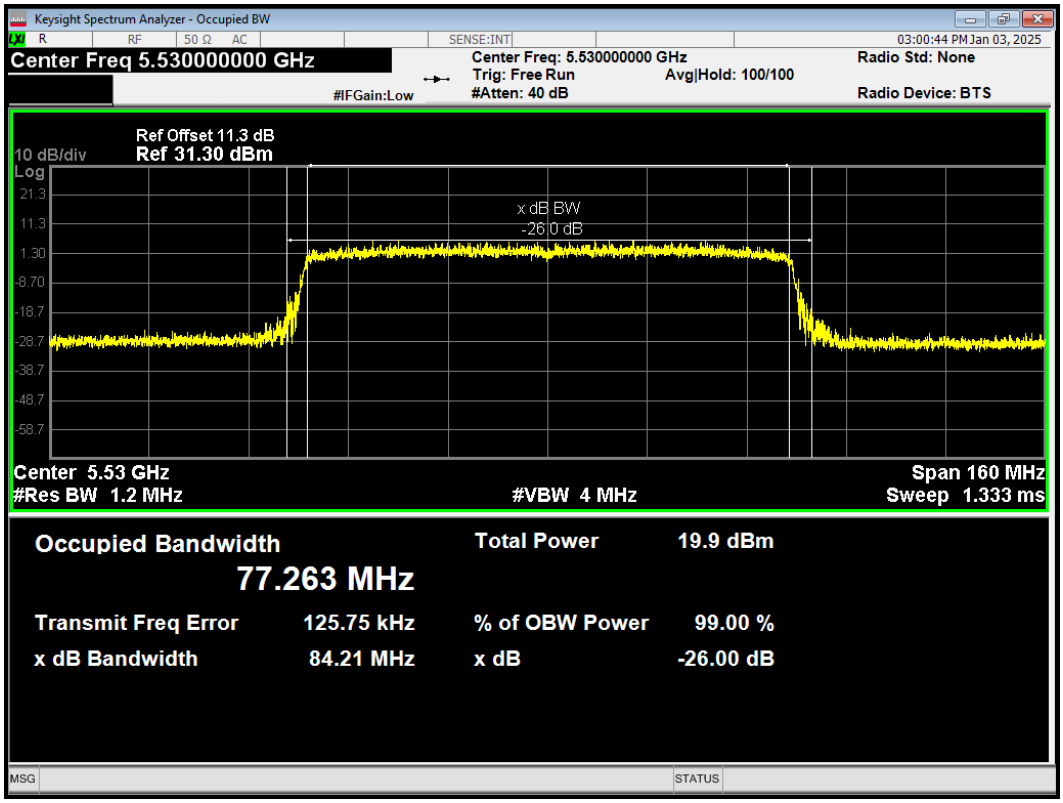


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ax(HE40) 5670MHz

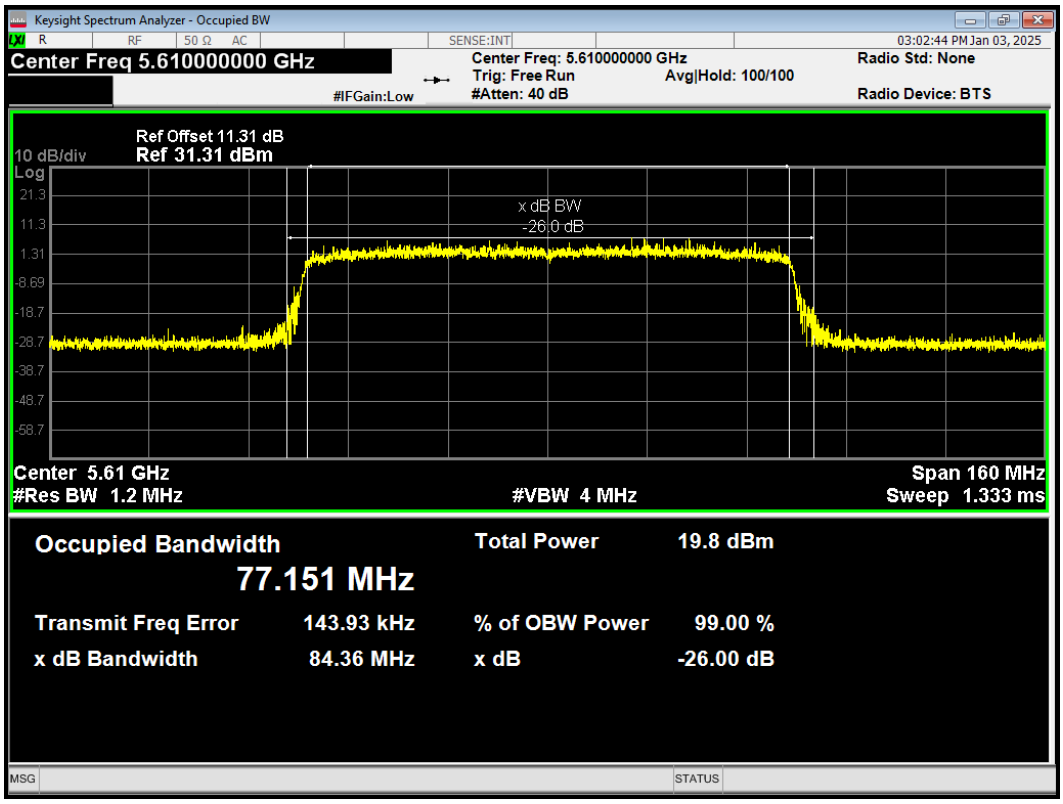


OBW 802.11ax(HE80) 5530MHz

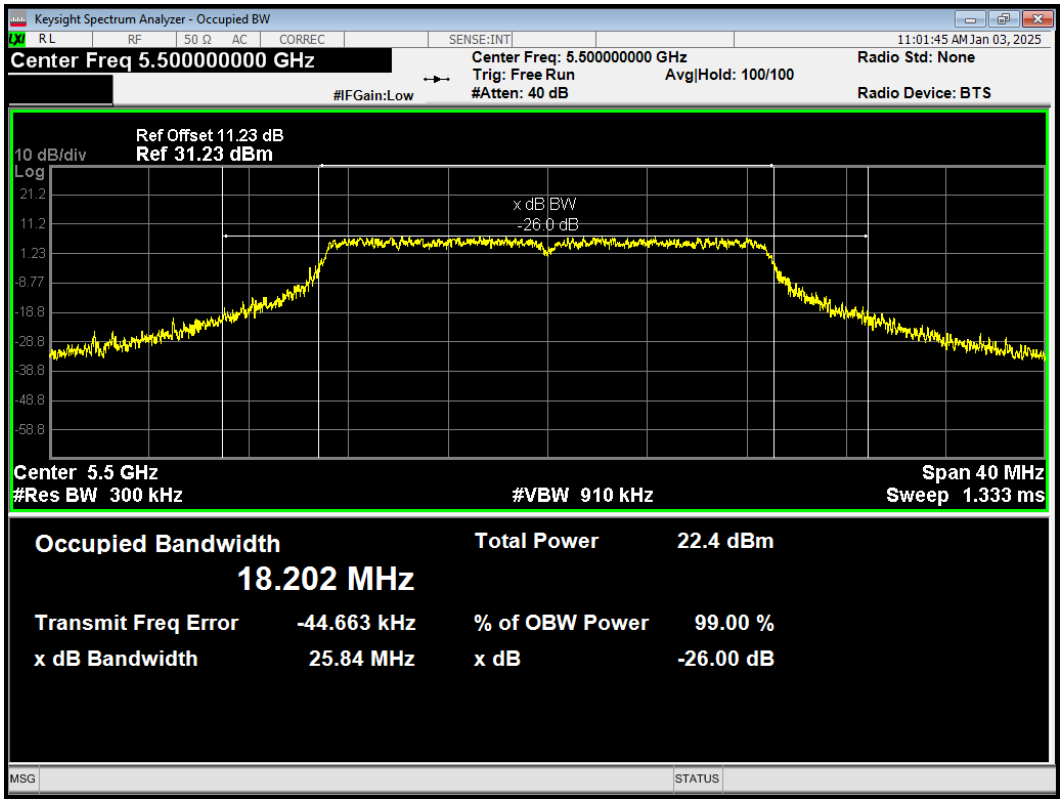


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ax(HE80) 5610MHz

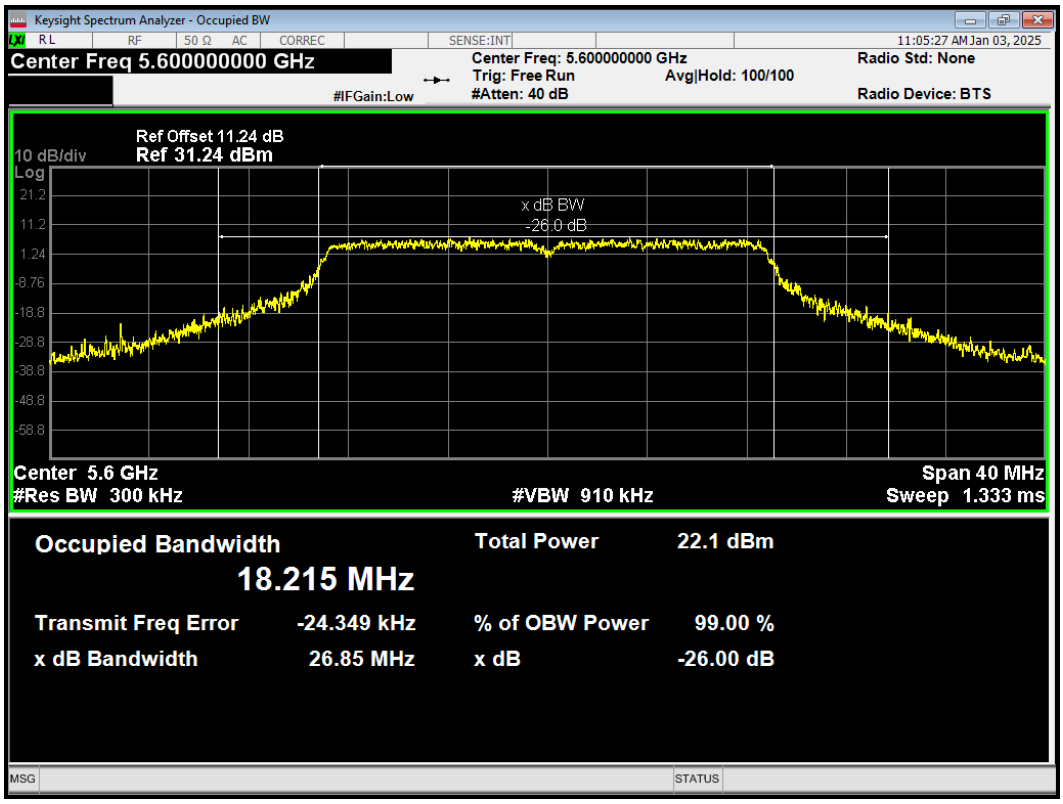


OBW 802.11n(HT20) 5500MHz

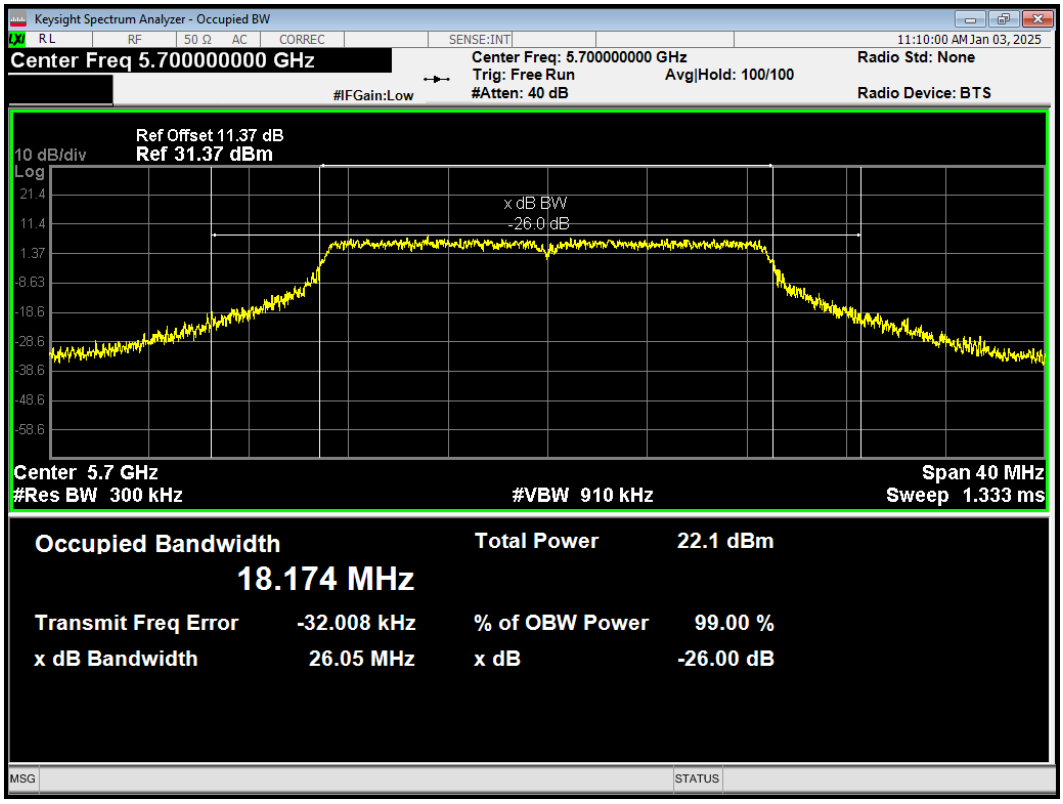


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11n(HT20) 5600MHz

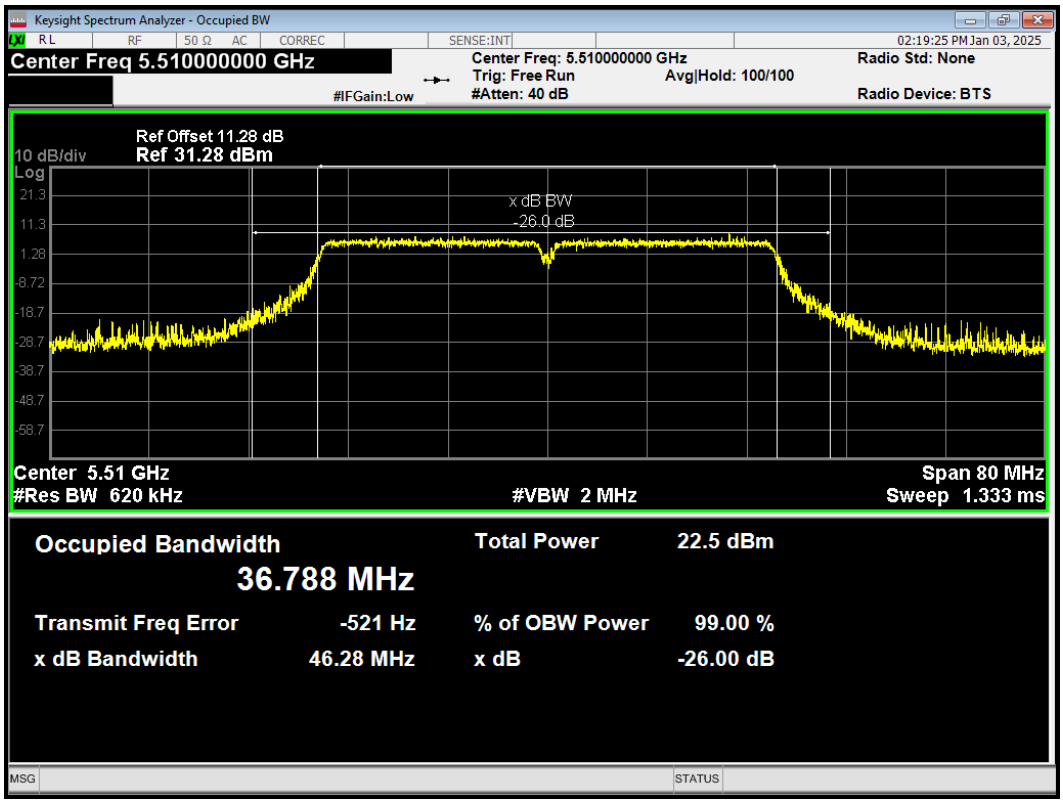


OBW 802.11n(HT20) 5700MHz

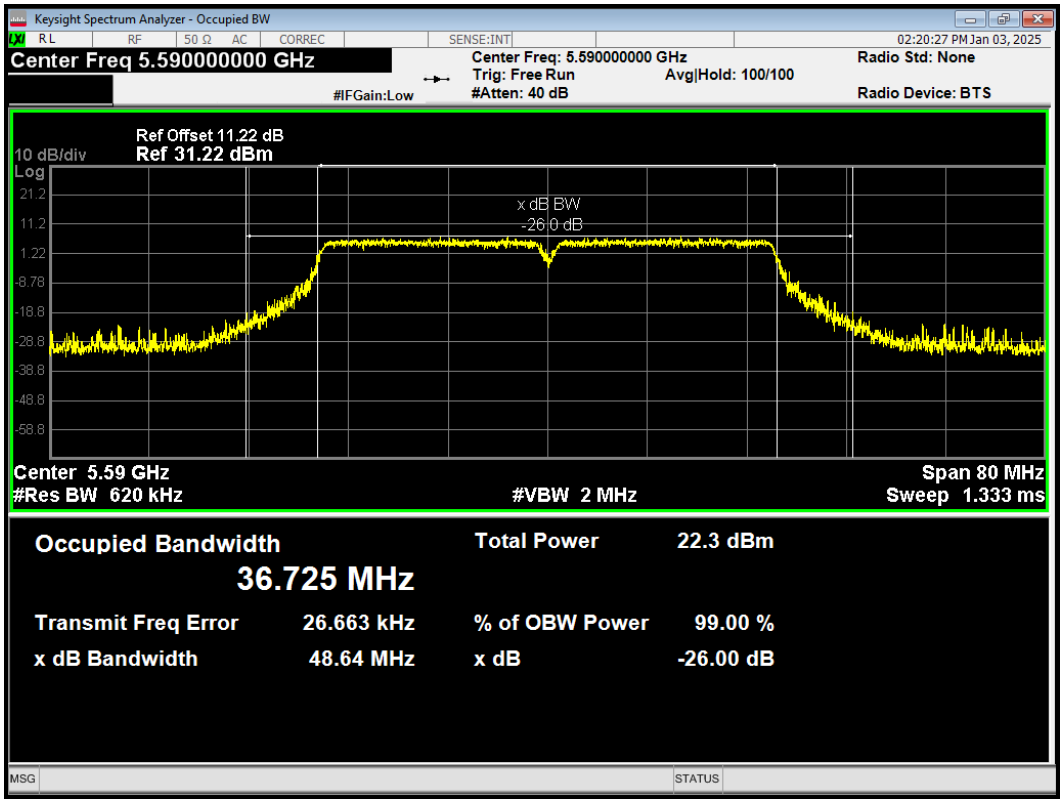


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11n(HT40) 5510MHz

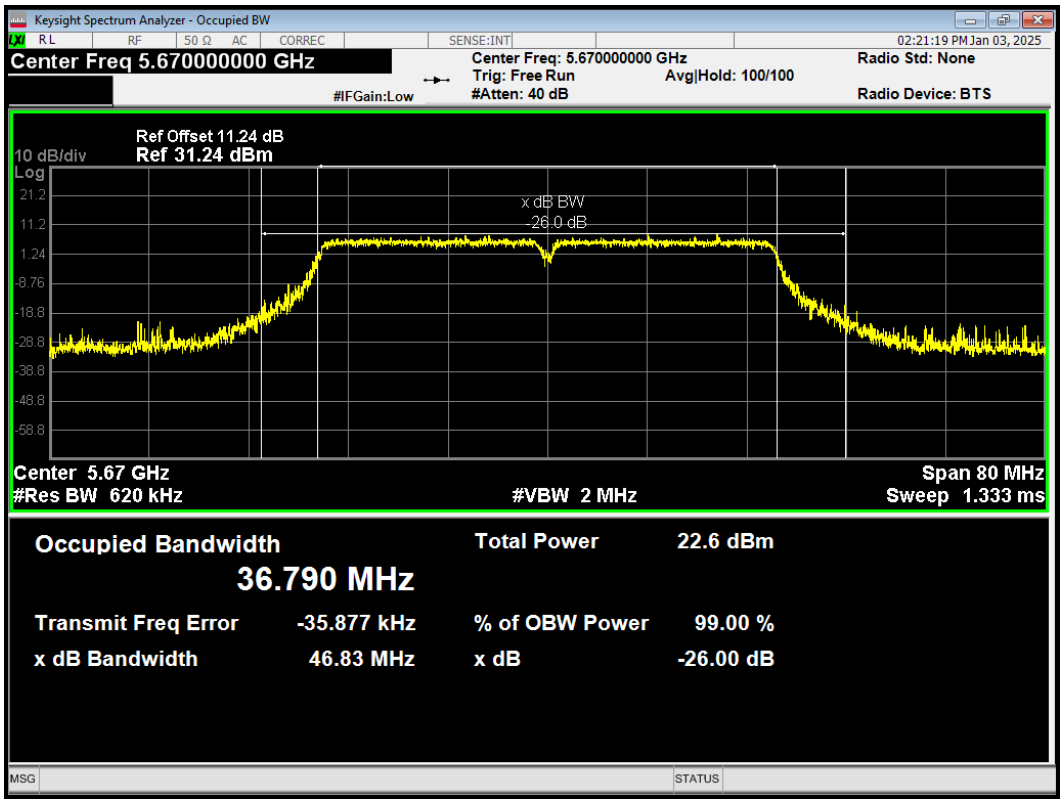


OBW 802.11n(HT40) 5590MHz



This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

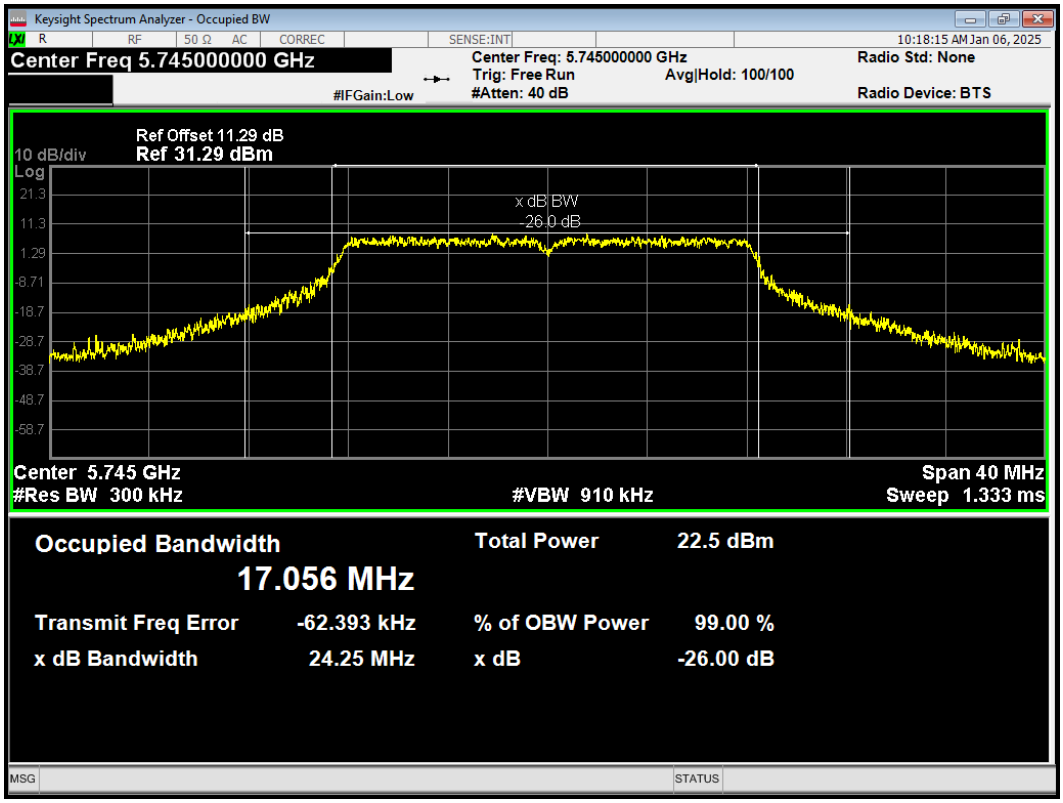
OBW 802.11n(HT40) 5670MHz



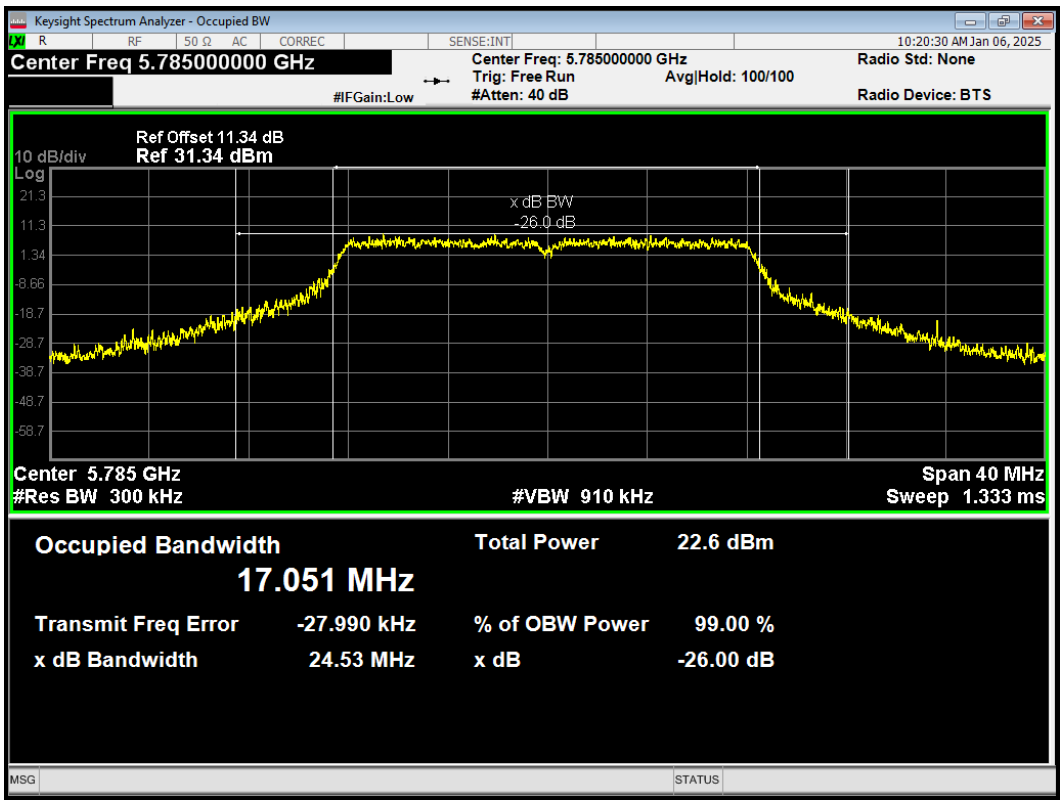
This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

U-NII-3

OBW 802.11a 5745MHz

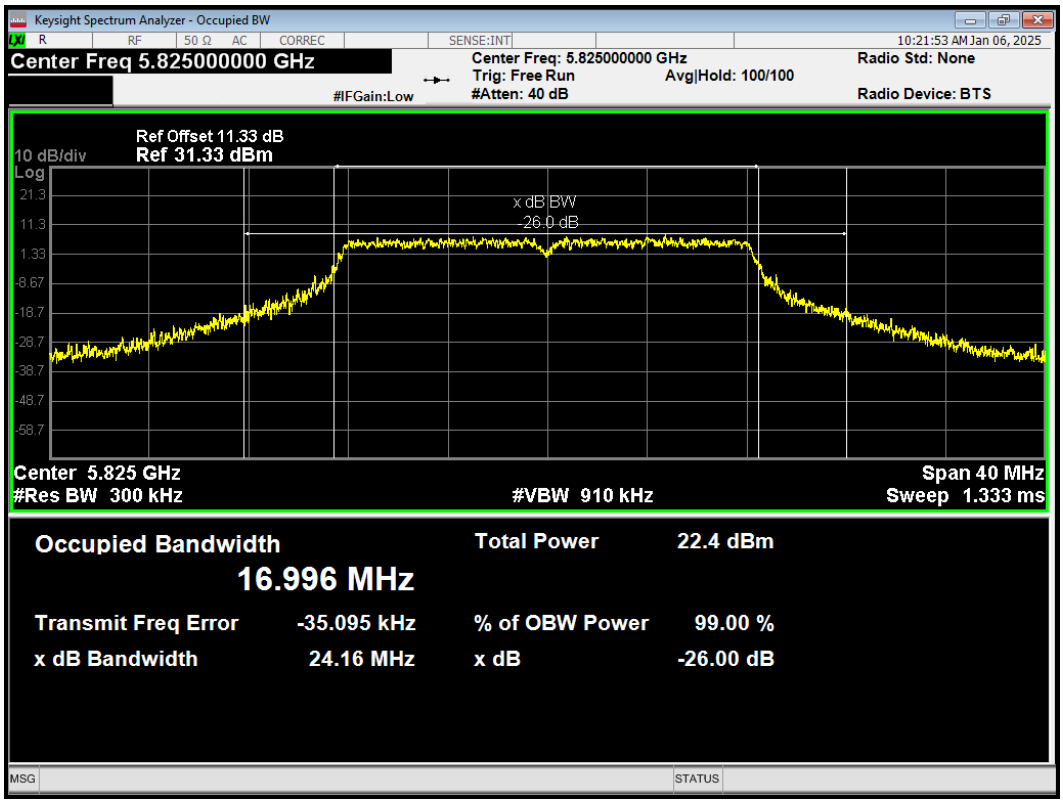


OBW 802.11a 5785MHz

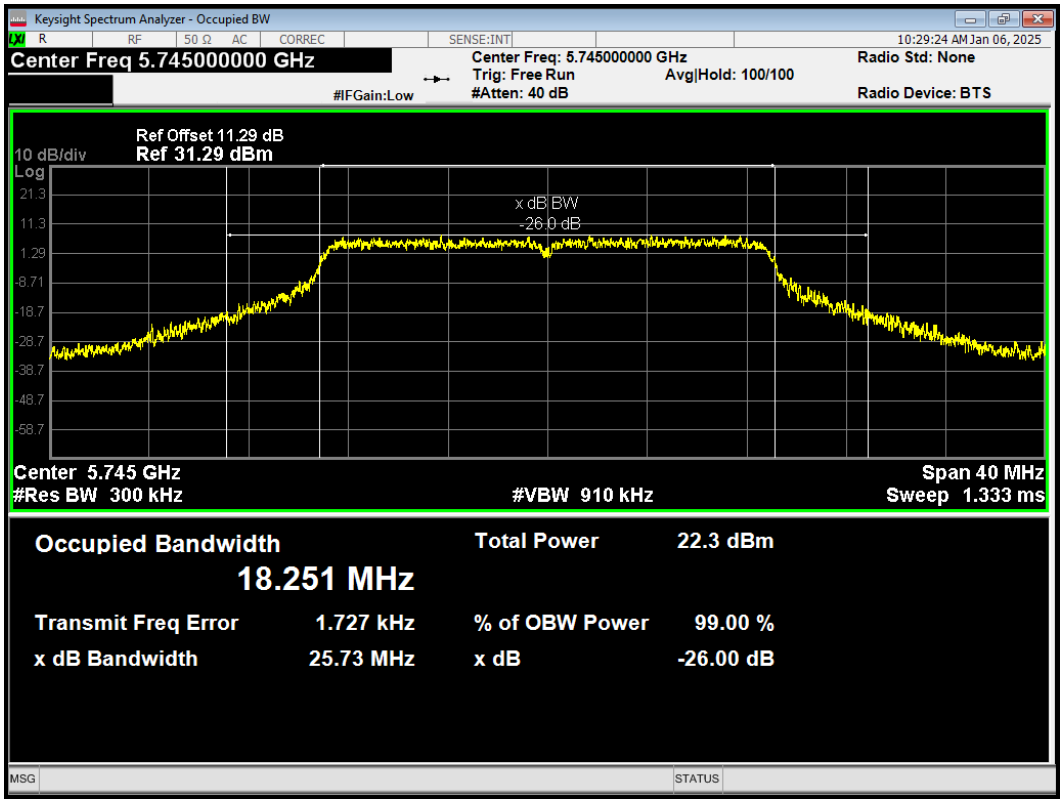


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11a 5825MHz

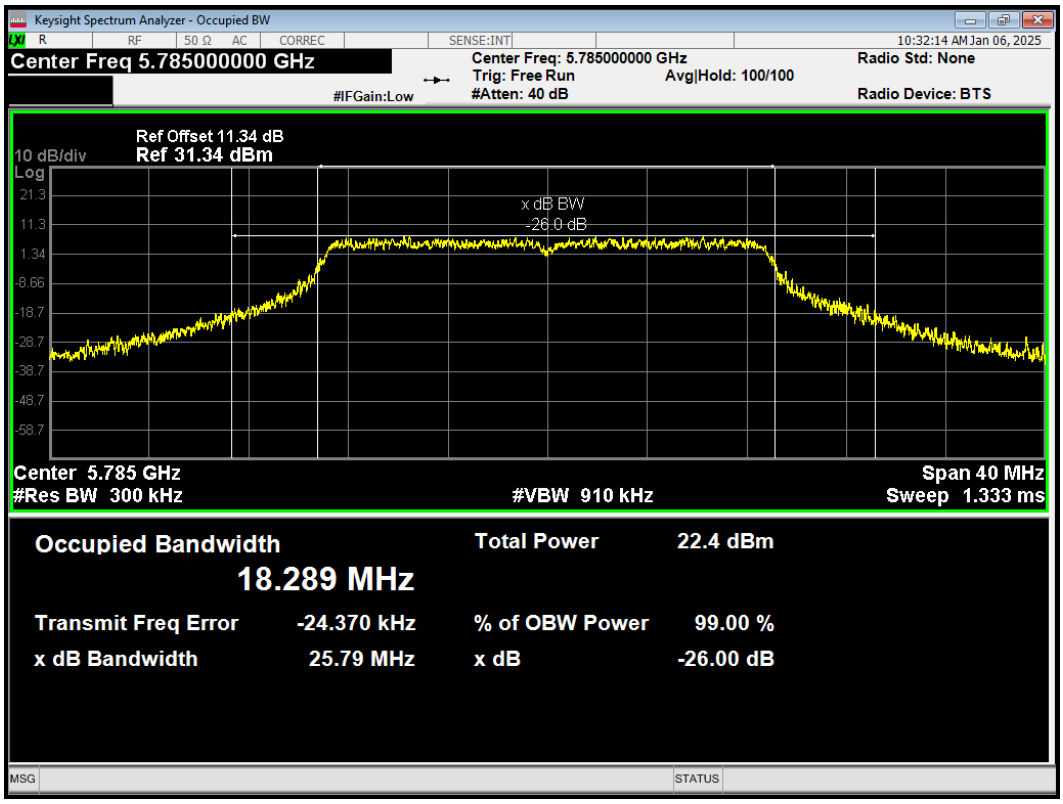


OBW 802.11ac(VHT20) 5745MHz

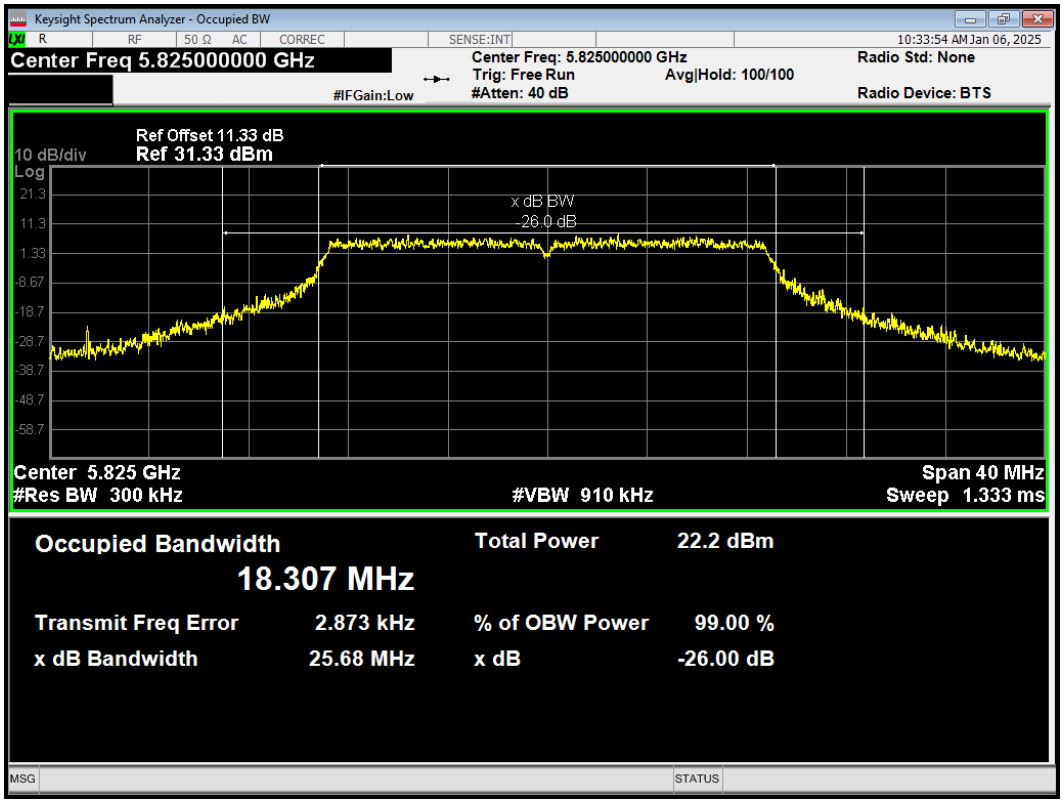


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ac(VHT20) 5785MHz

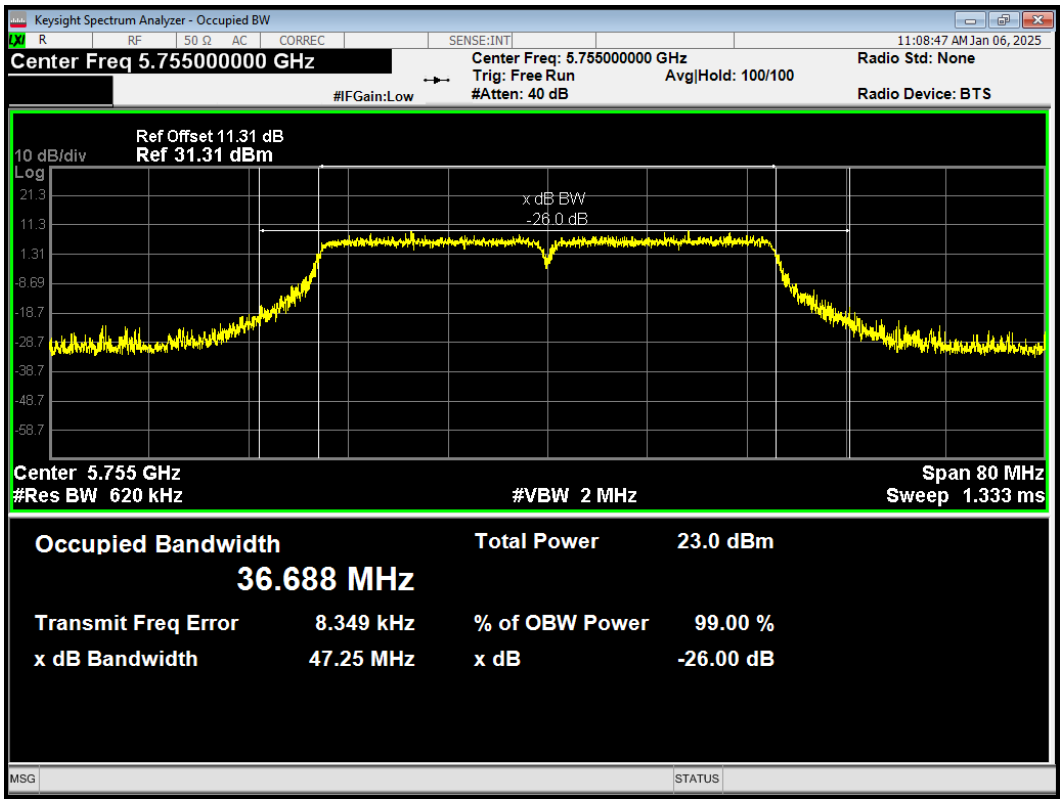


OBW 802.11ac(VHT20) 5825MHz

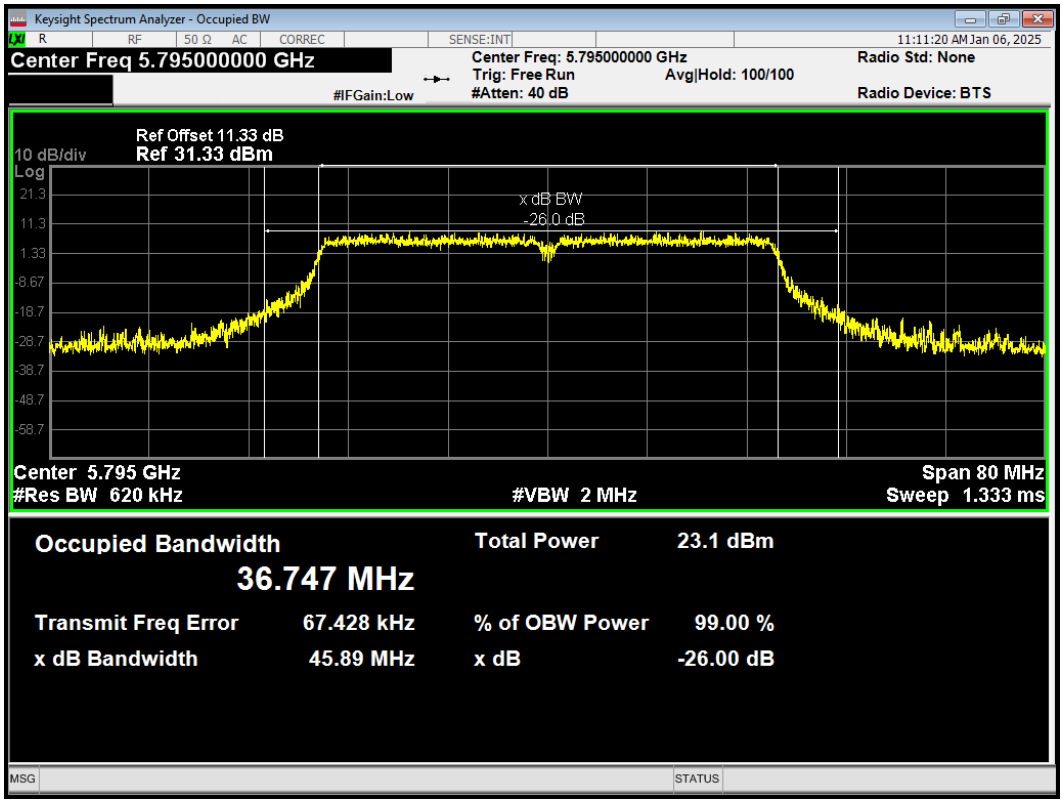


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ac(VHT40) 5755MHz

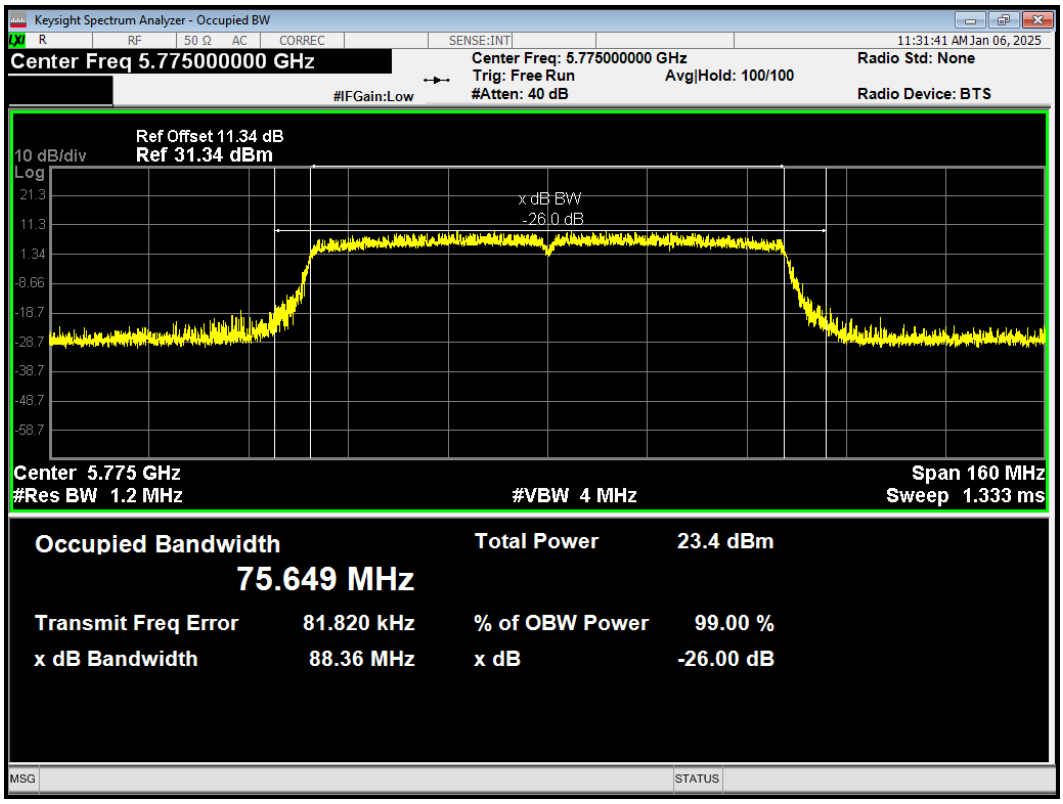


OBW 802.11ac(VHT40) 5795MHz

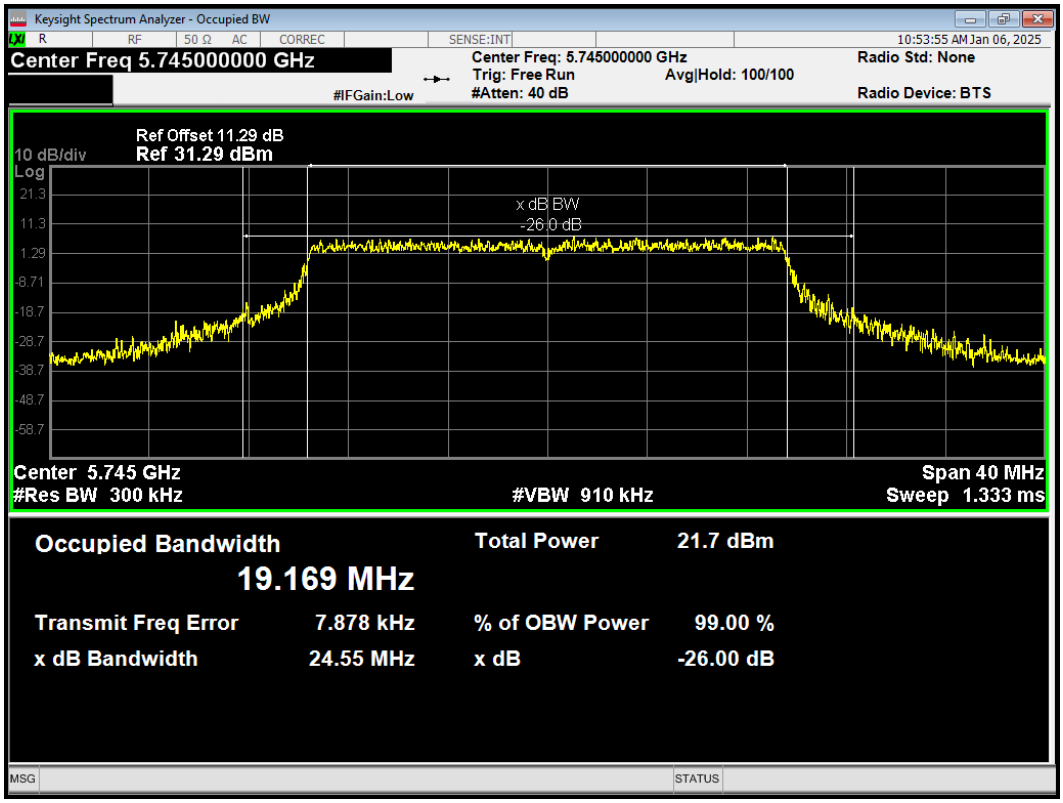


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ac(VHT80) 5775MHz

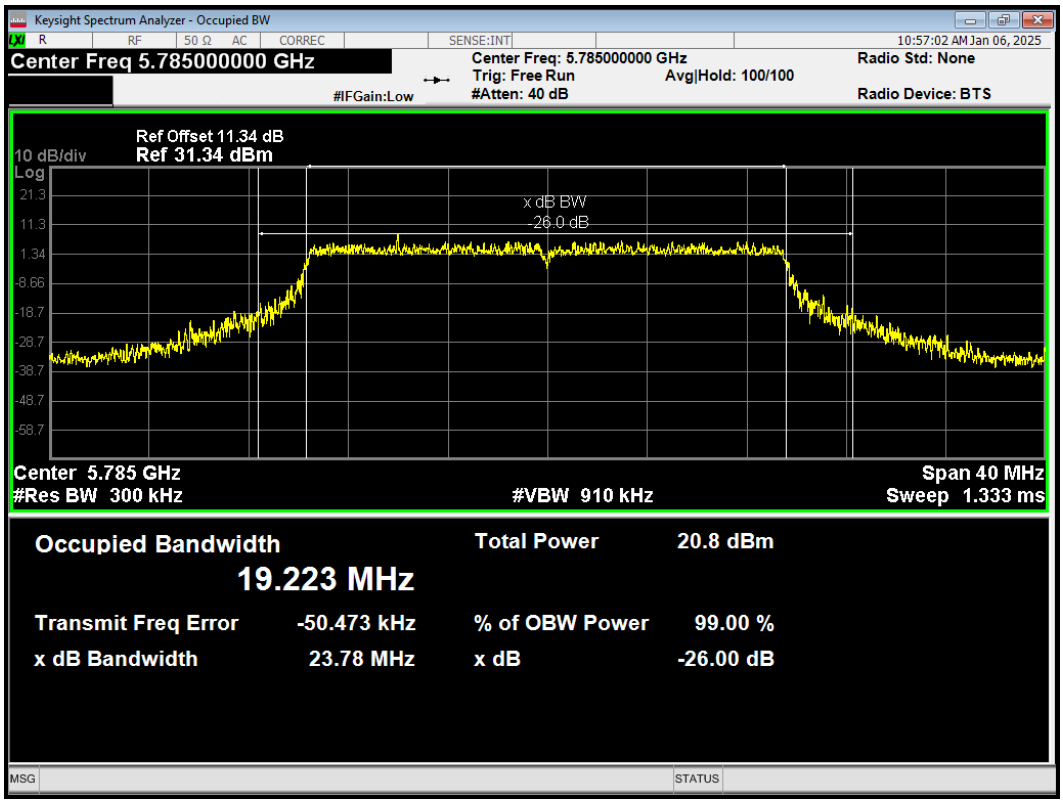


OBW 802.11ax(HE20) 5745MHz

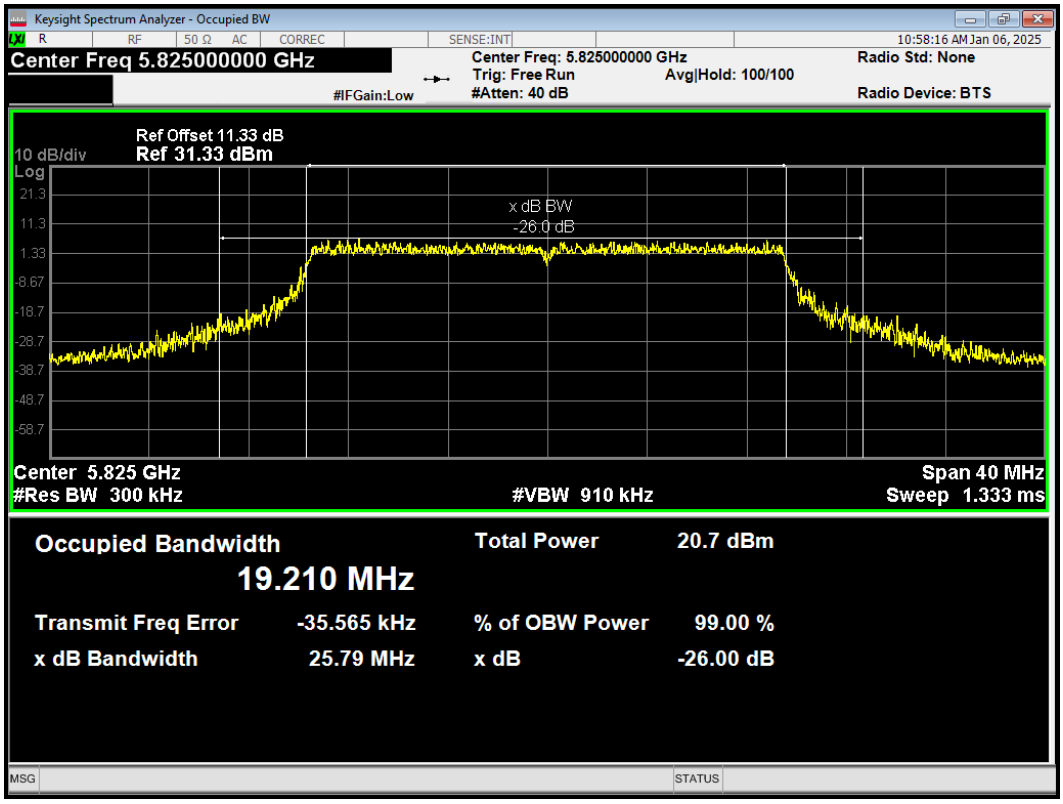


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ax(HE20) 5785MHz

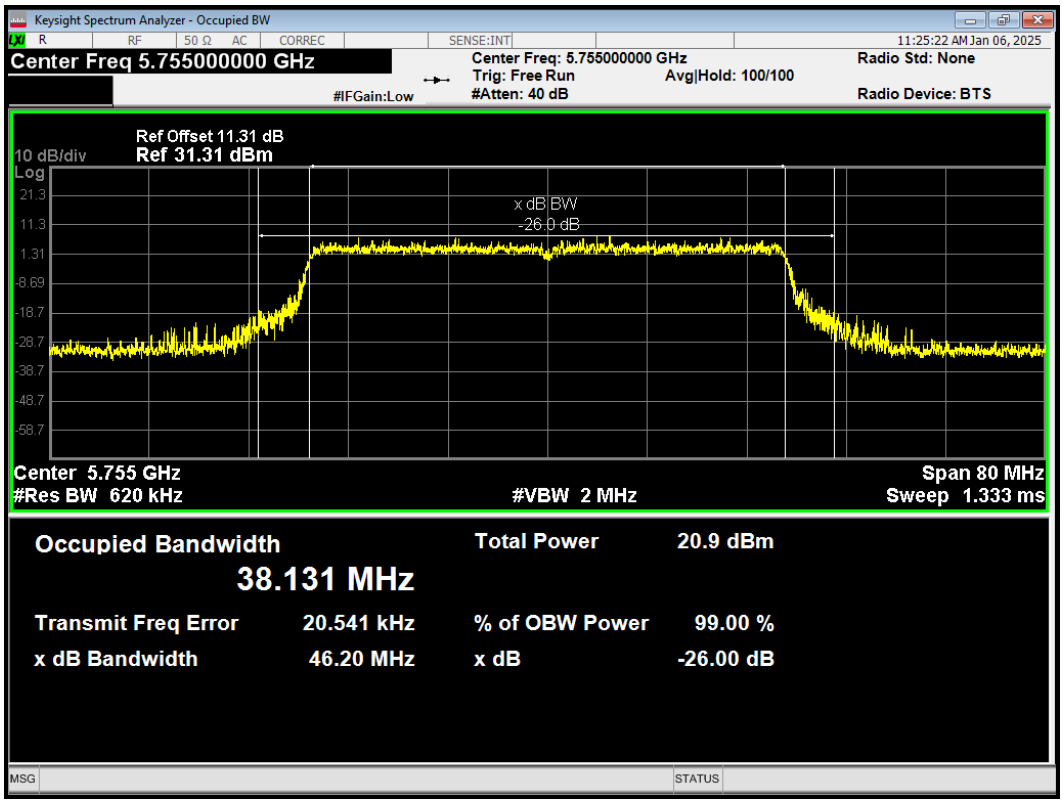


OBW 802.11ax(HE20) 5825MHz

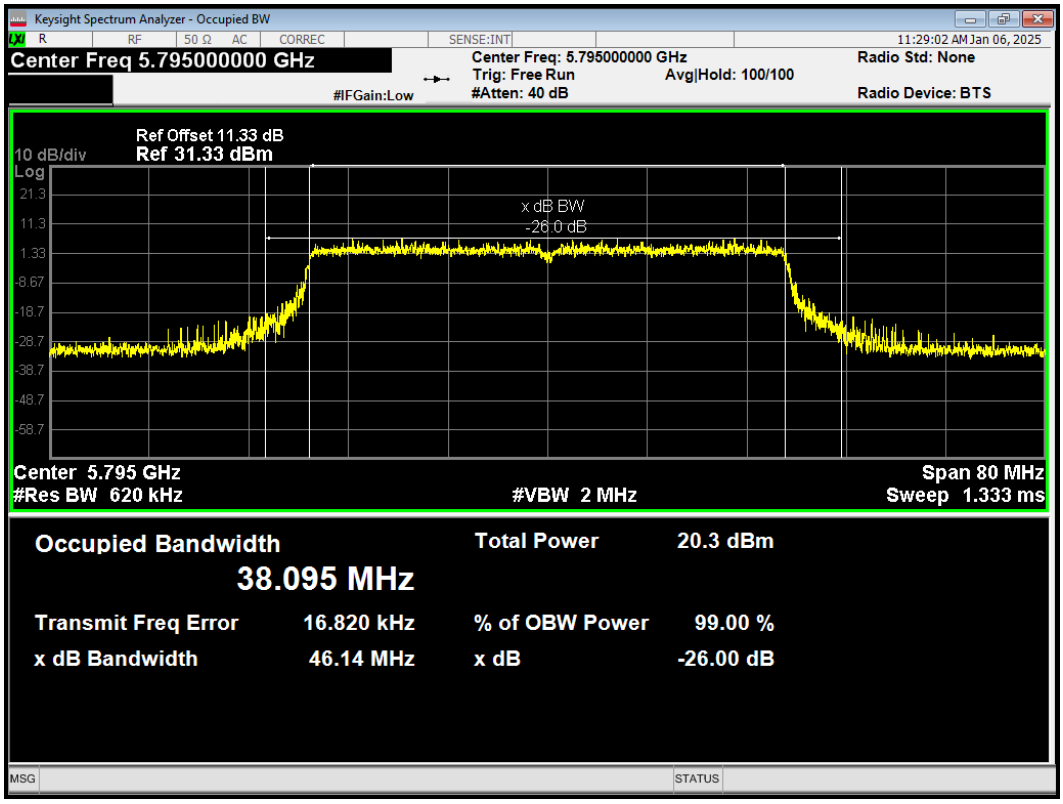


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ax(HE40) 5755MHz

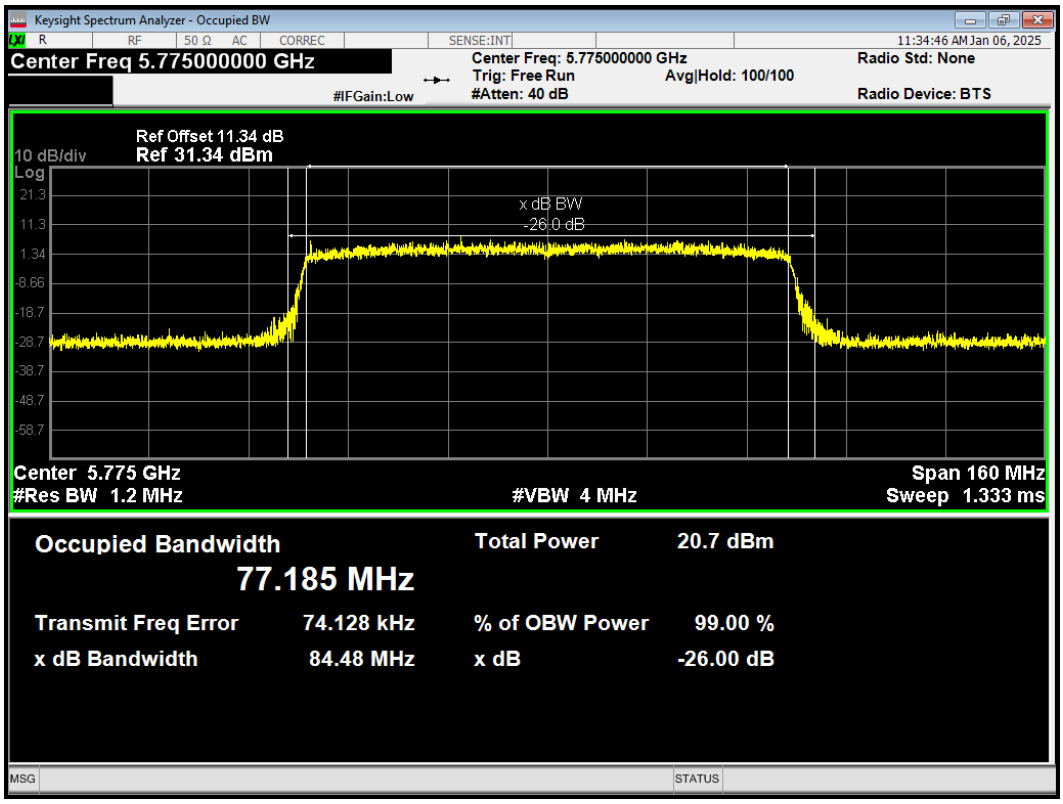


OBW 802.11ax(HE40) 5795MHz

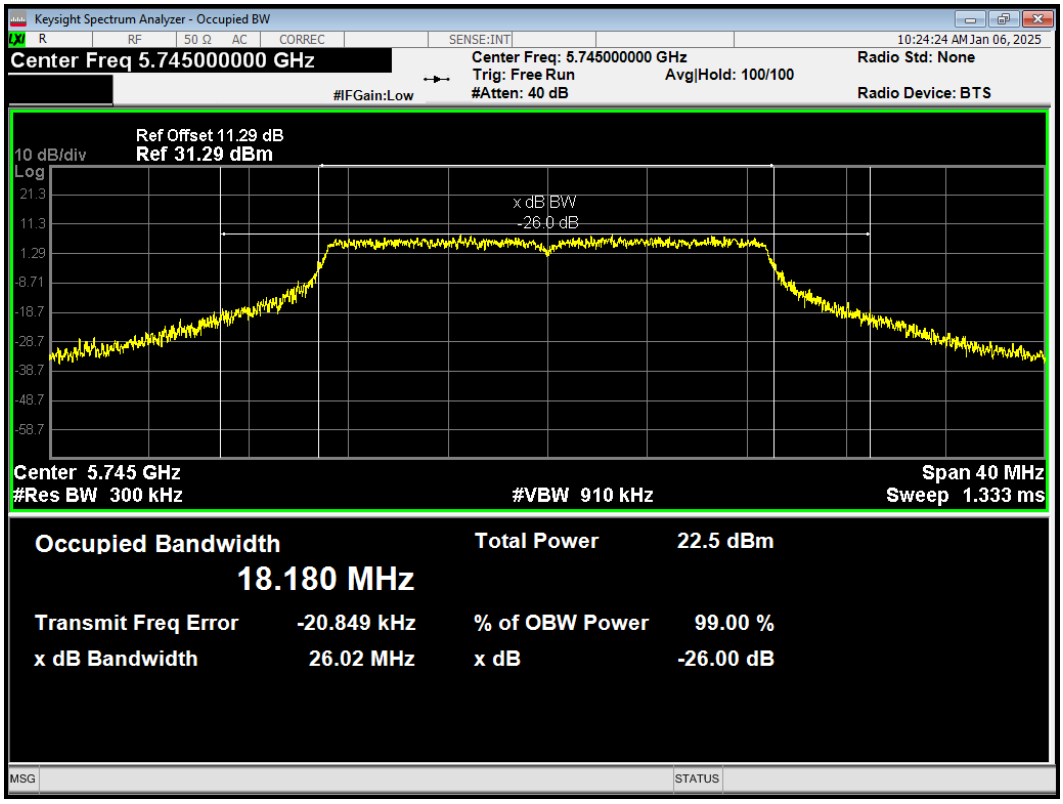


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ax(HE80) 5775MHz

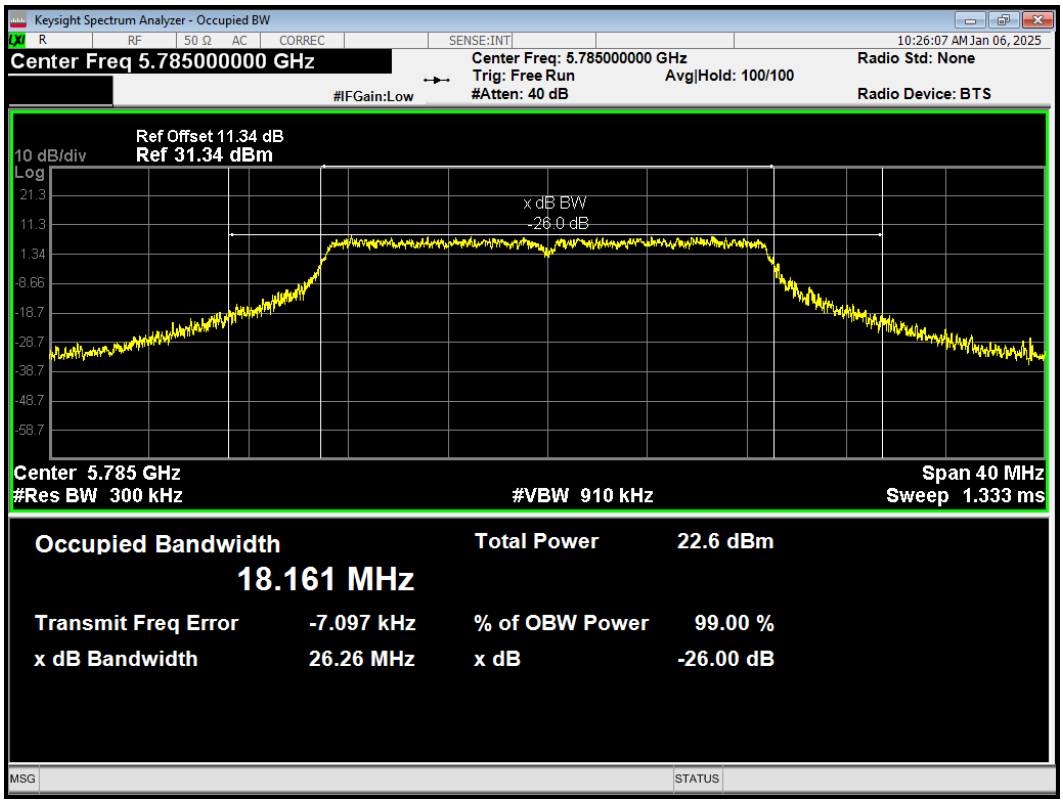


OBW 802.11n(HT20) 5745MHz

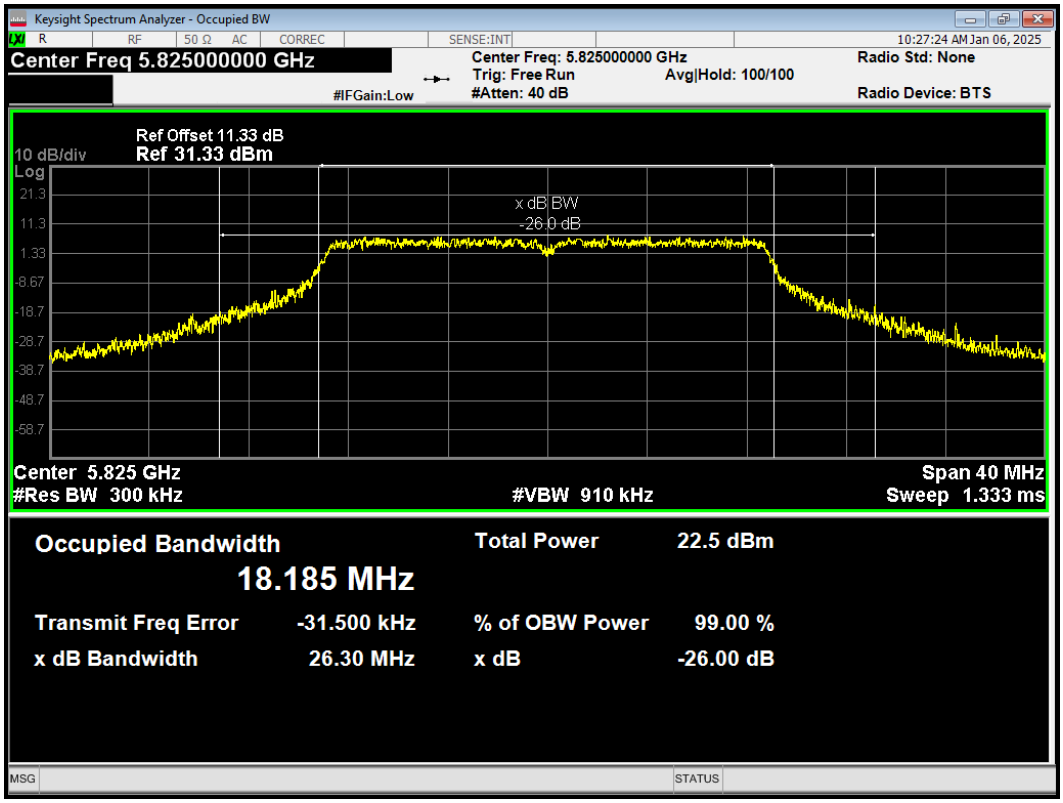


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11n(HT20) 5785MHz

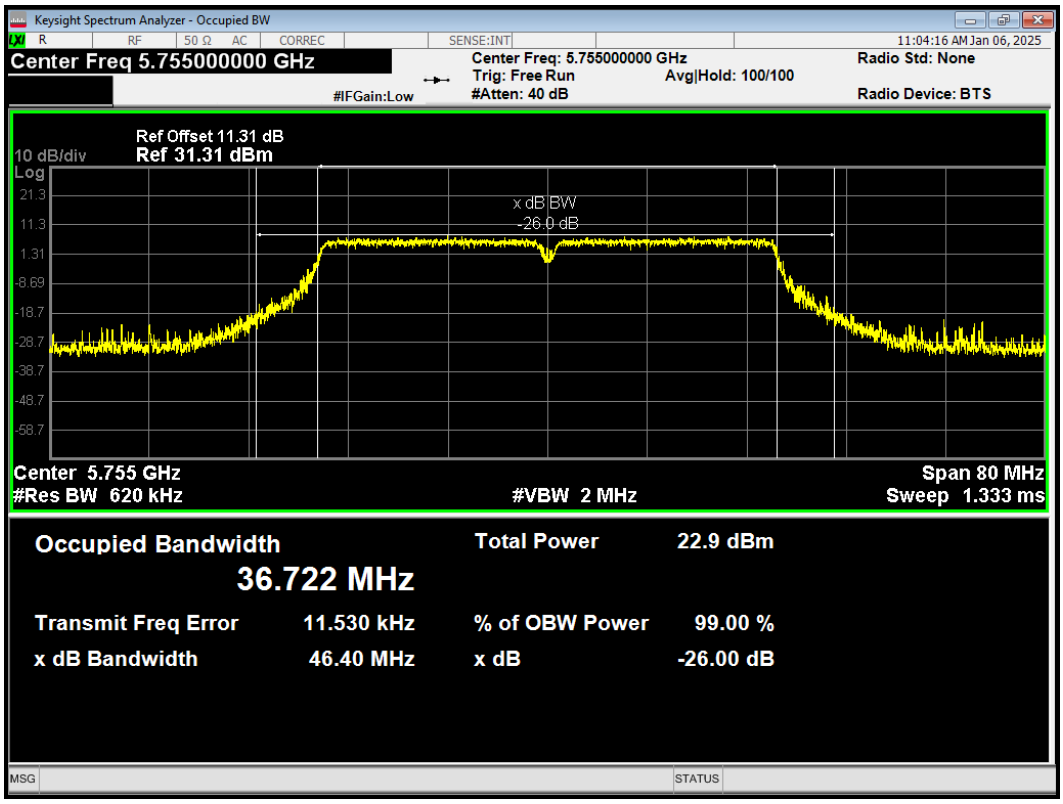


OBW 802.11n(HT20) 5825MHz

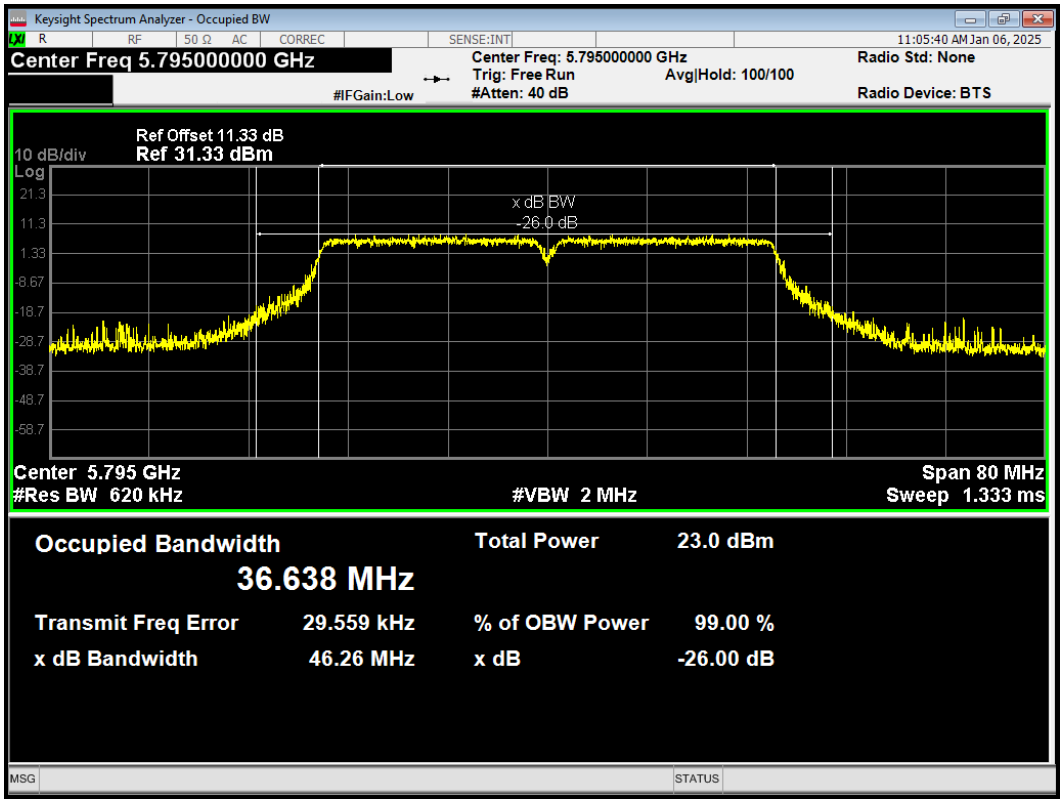


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11n(HT40) 5755MHz



OBW 802.11n(HT40) 5795MHz

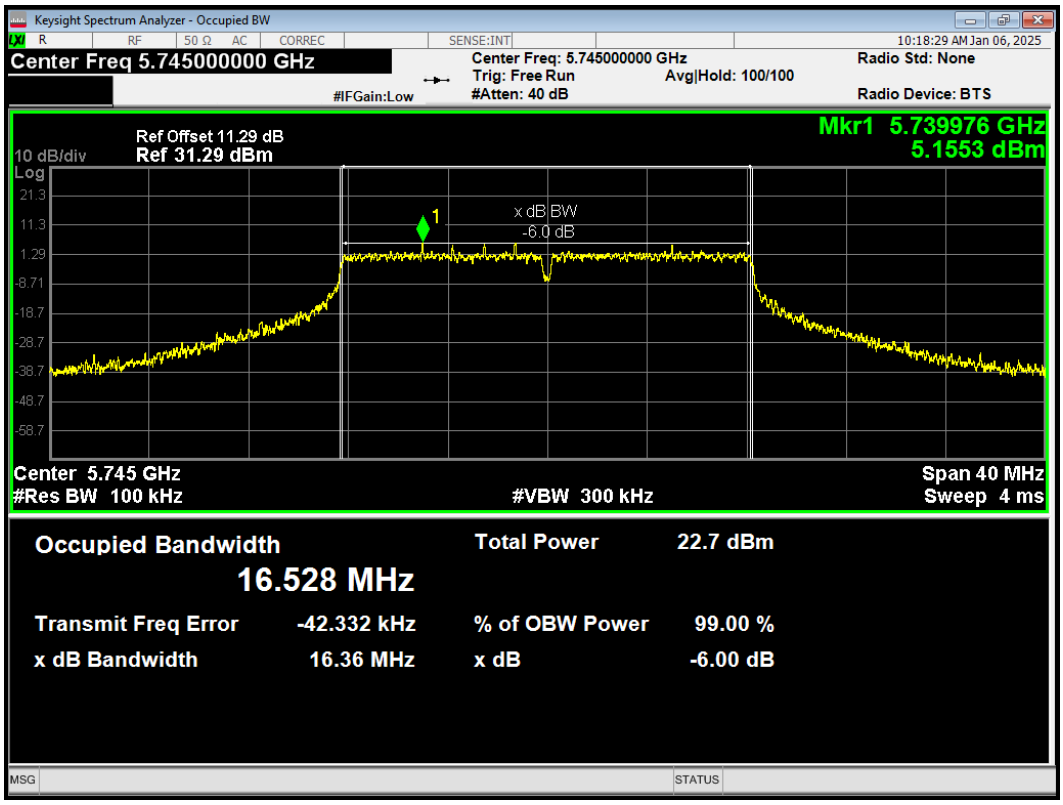


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

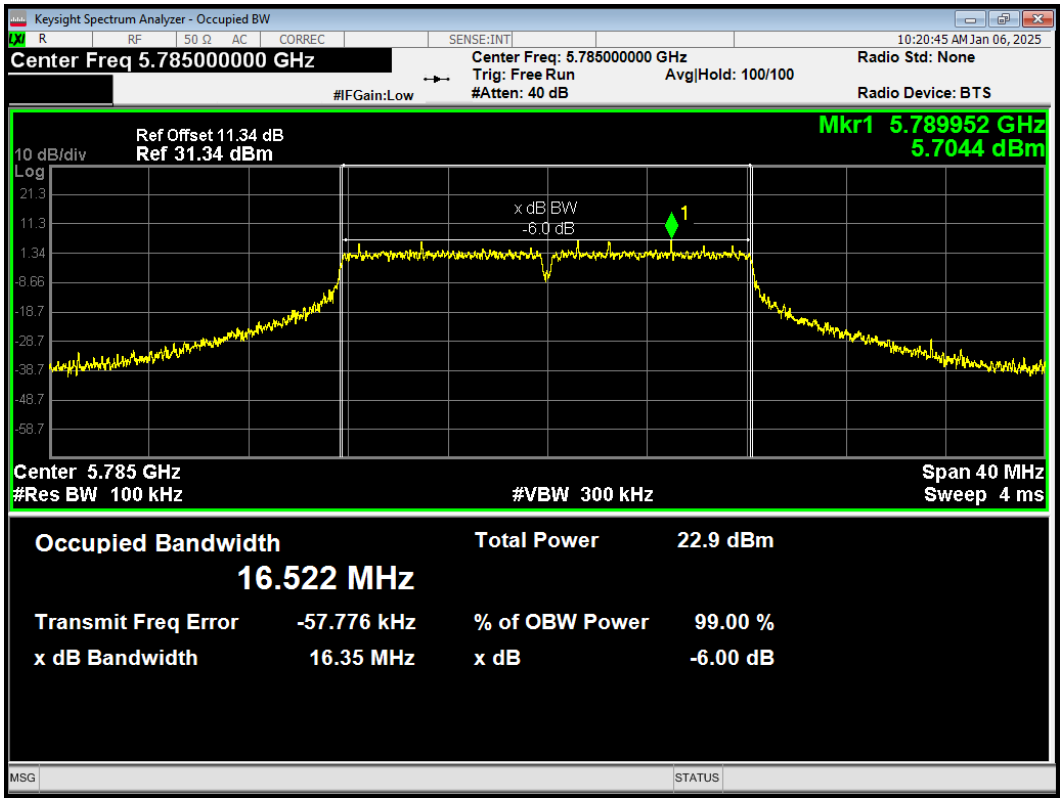
Minimum 6 dB bandwidth

U-NII-3

-6dB Bandwidth 802.11a 5745MHz

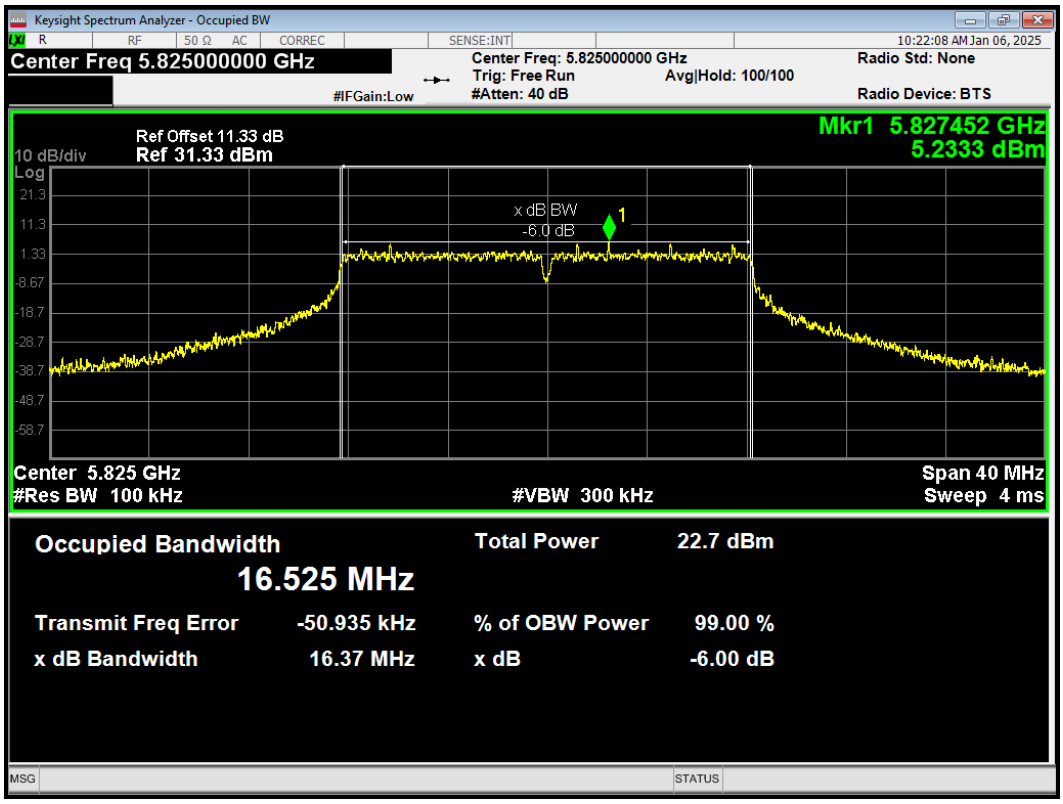


-6dB Bandwidth 802.11a 5785MHz

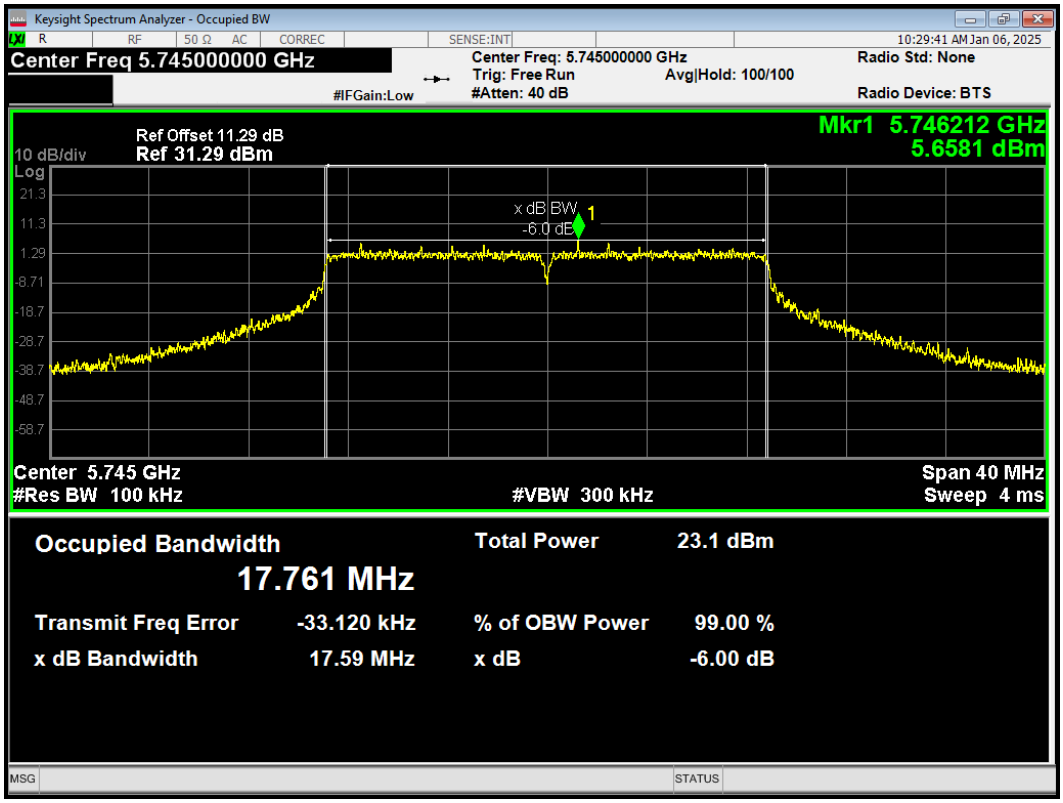


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

-6dB Bandwidth 802.11a 5825MHz

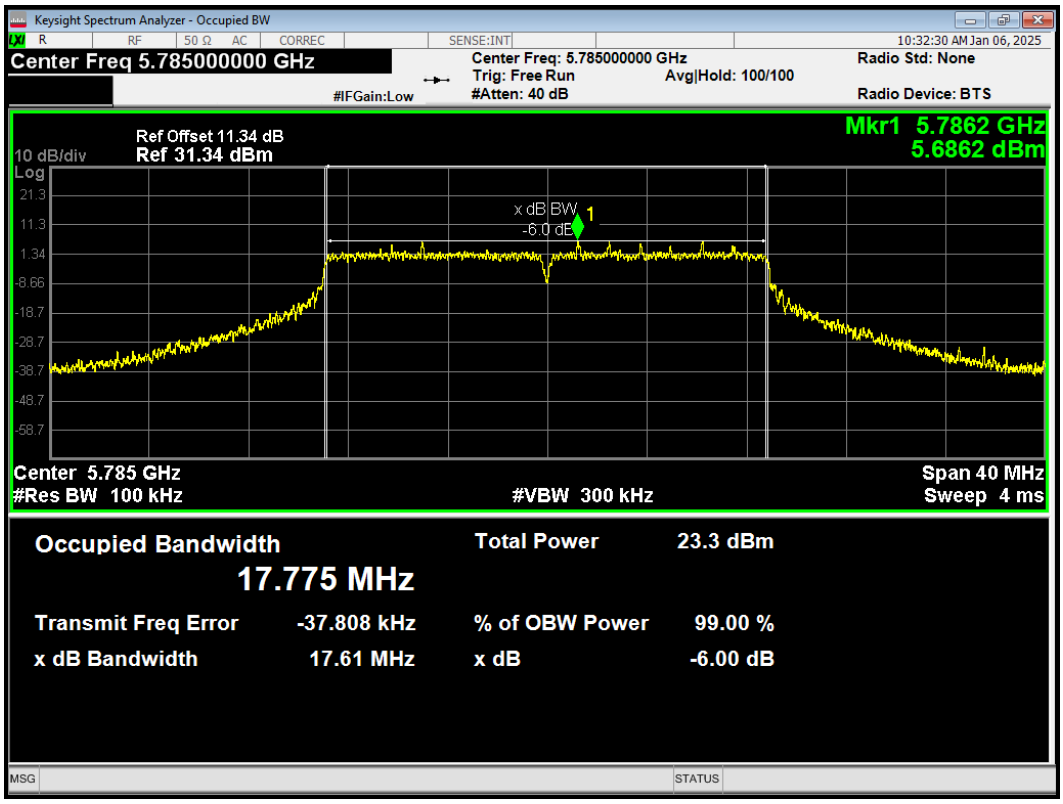


-6dB Bandwidth 802.11ac(VHT20) 5745MHz

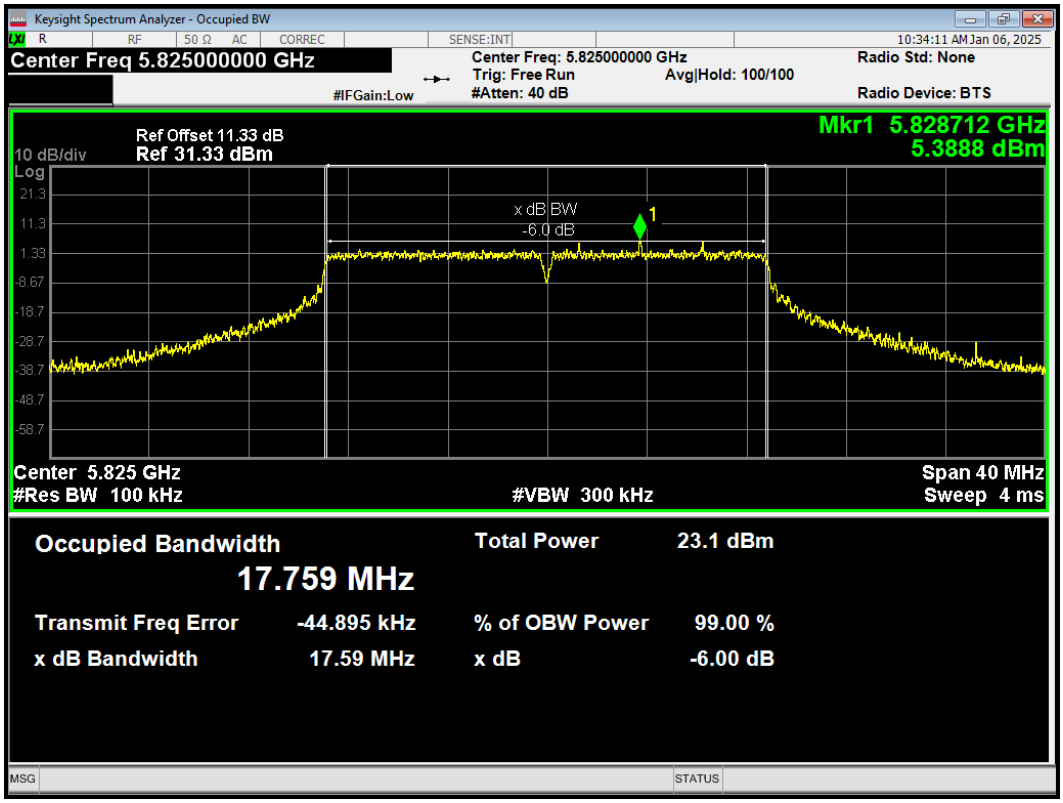


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

-6dB Bandwidth 802.11ac(VHT20) 5785MHz

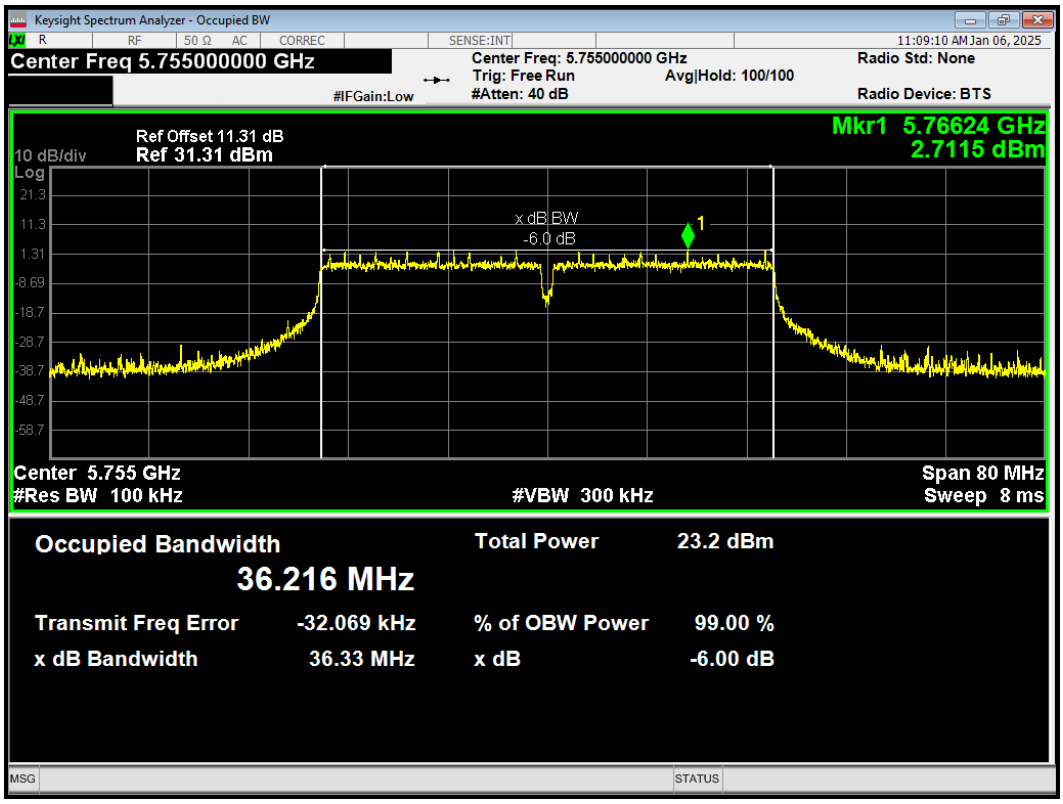


-6dB Bandwidth 802.11ac(VHT20) 5825MHz

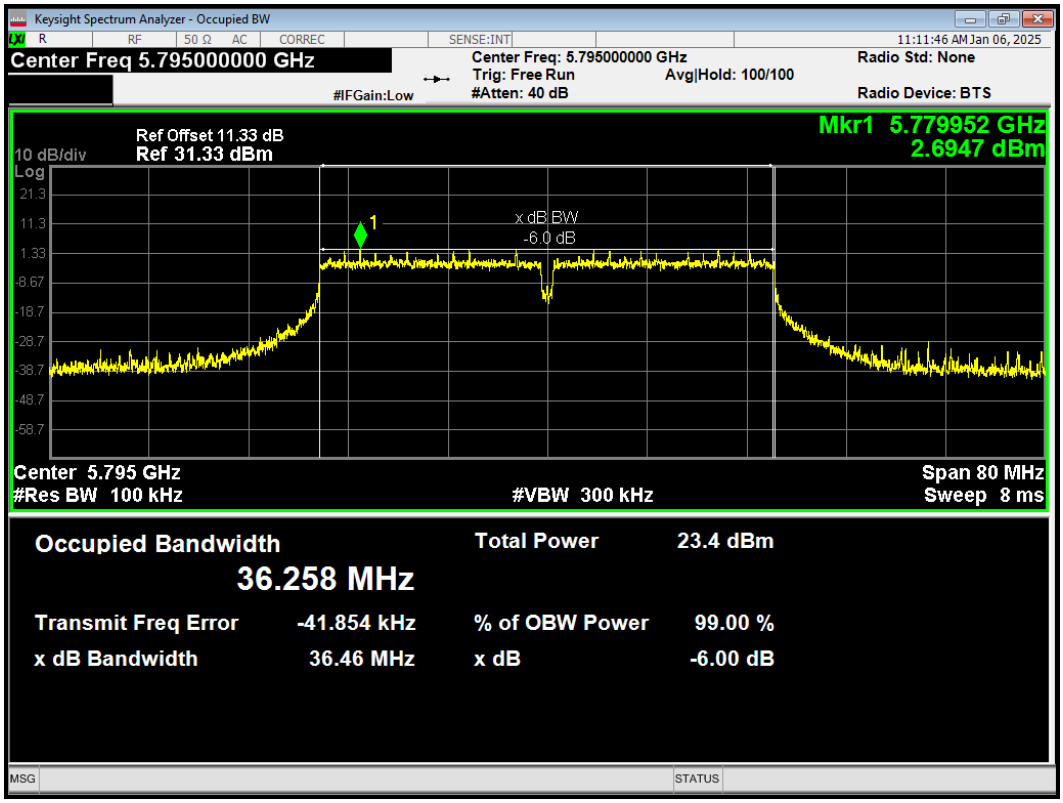


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

-6dB Bandwidth 802.11ac(VHT40) 5755MHz

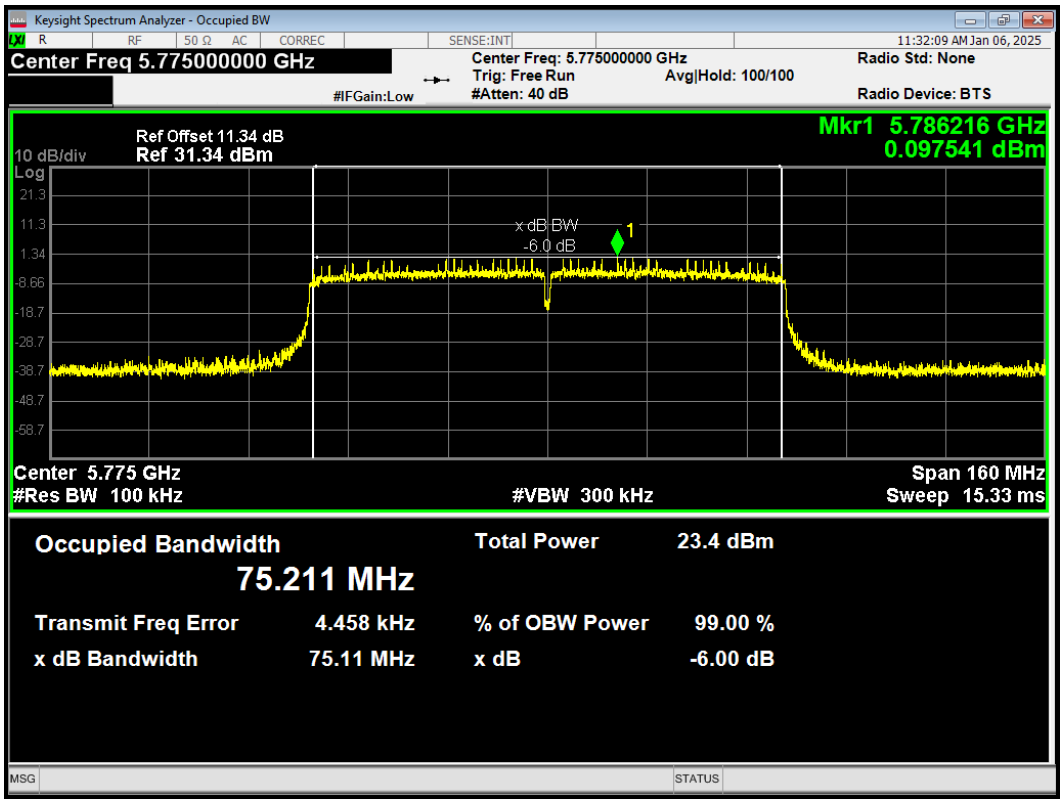


-6dB Bandwidth 802.11ac(VHT40) 5795MHz

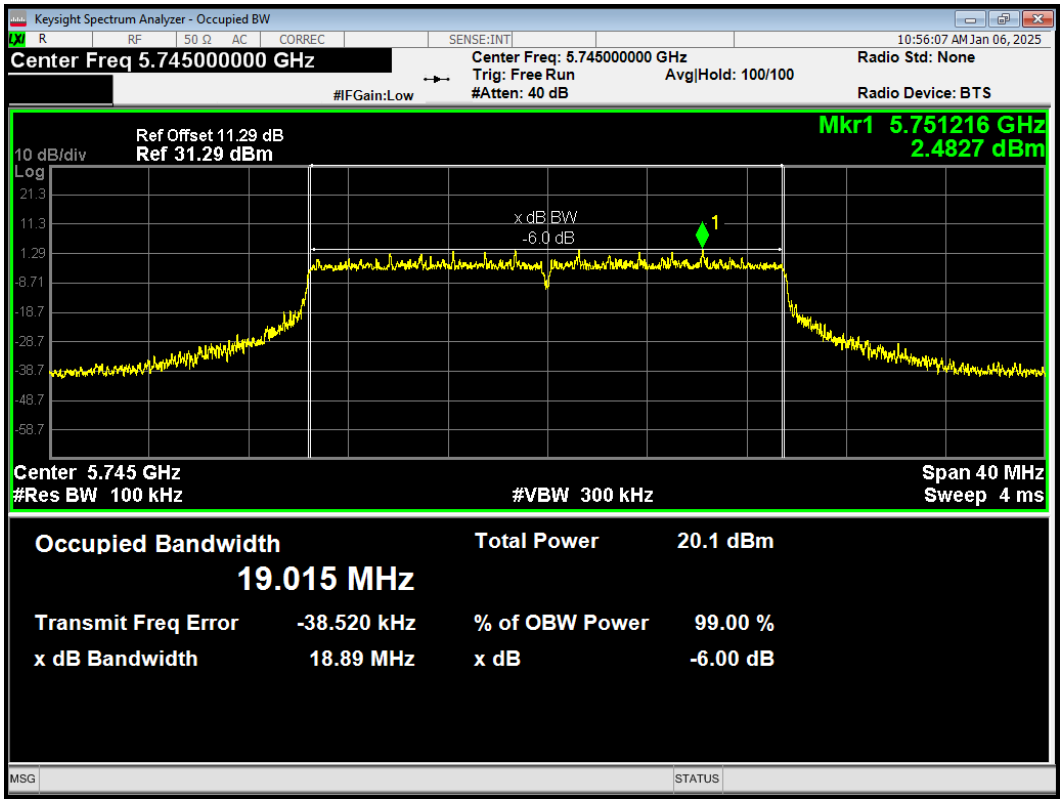


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

-6dB Bandwidth 802.11ac(VHT80) 5775MHz

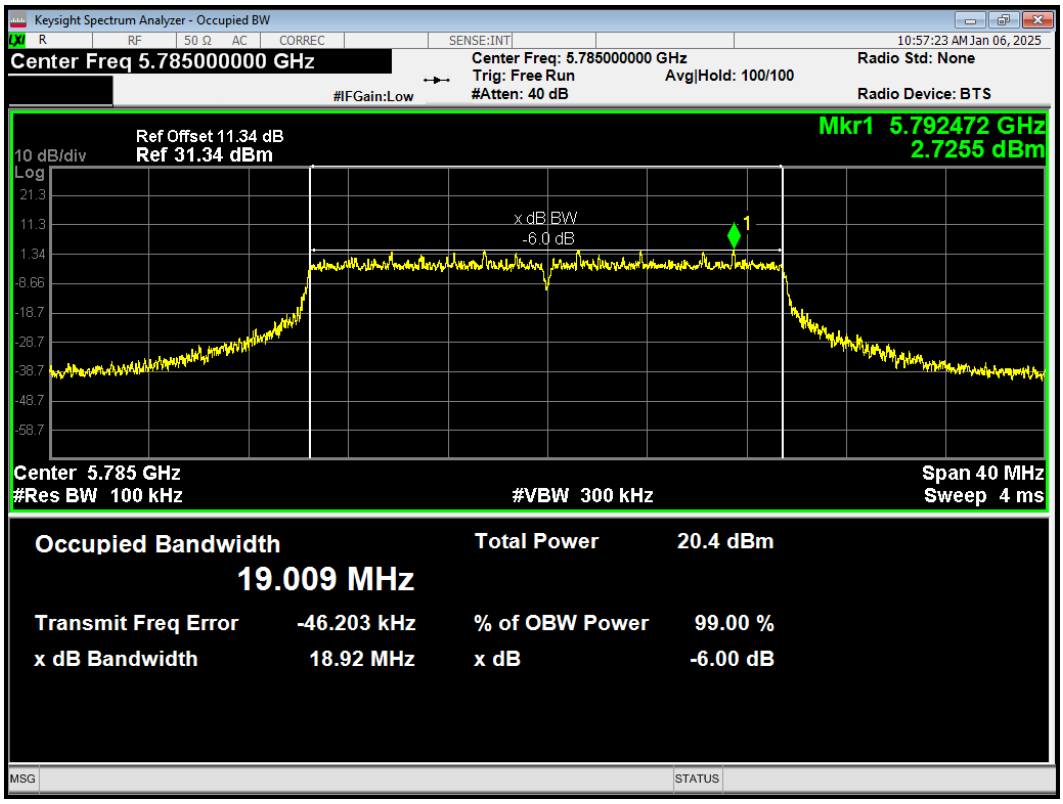


-6dB Bandwidth 802.11ax(HE20) 5745MHz

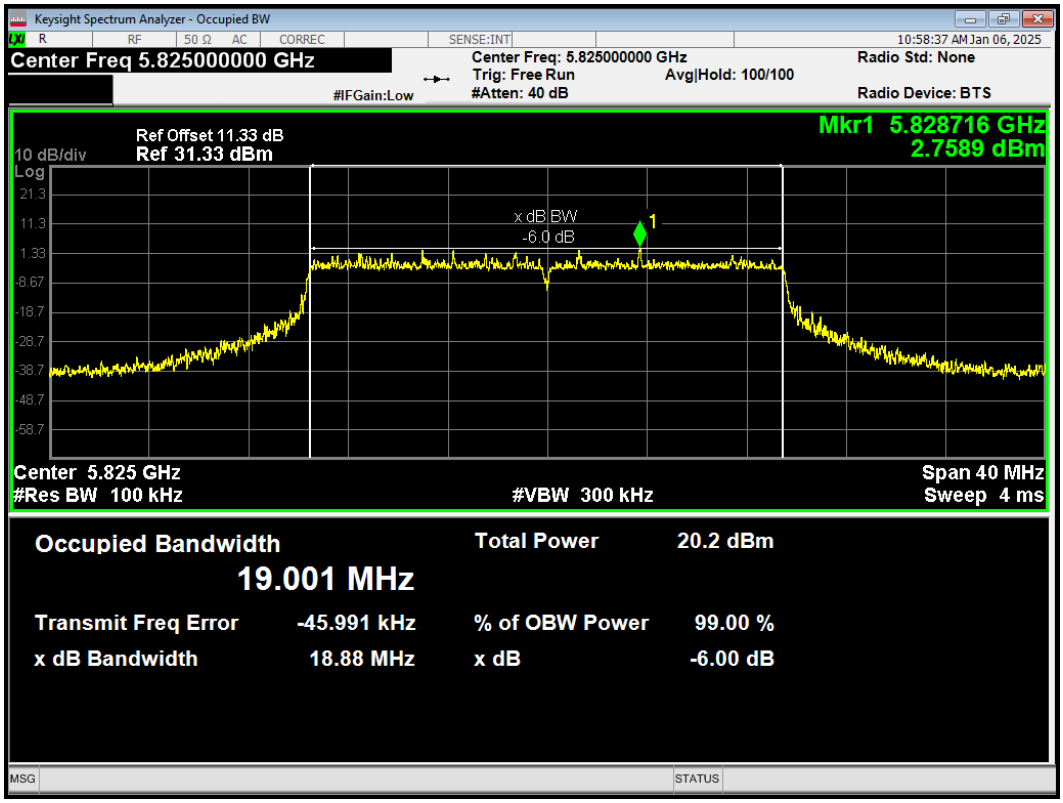


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

-6dB Bandwidth 802.11ax(HE20) 5785MHz

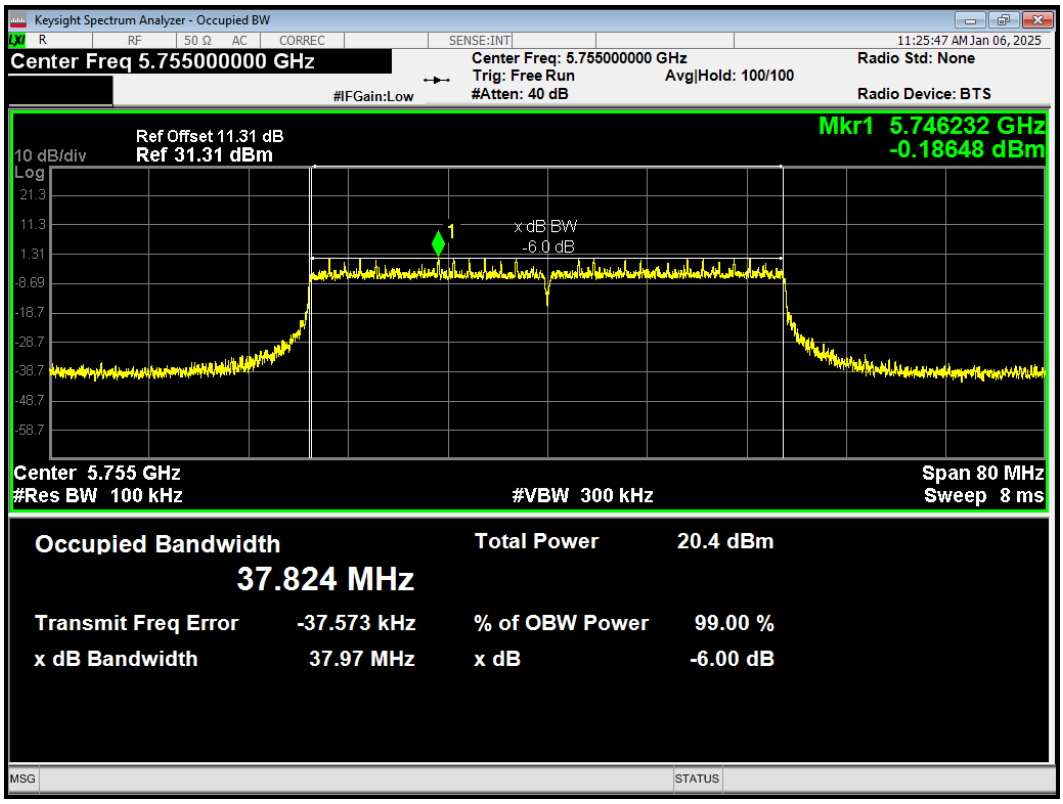


-6dB Bandwidth 802.11ax(HE20) 5825MHz

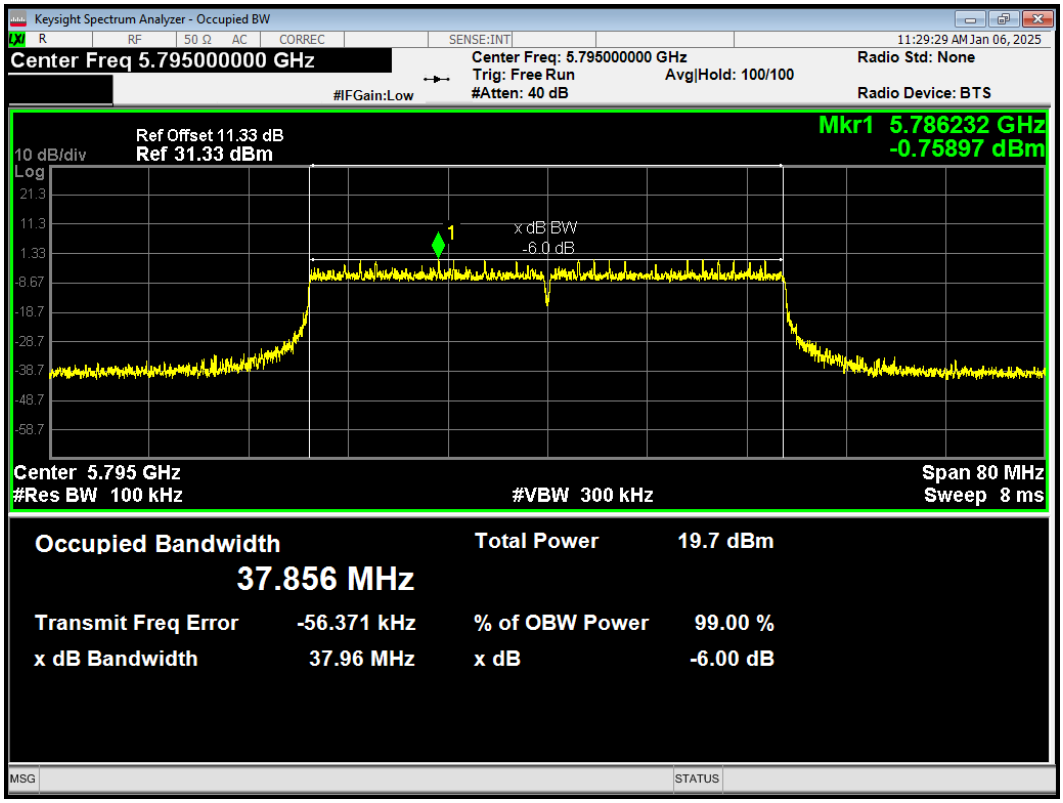


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

-6dB Bandwidth 802.11ax(HE40) 5755MHz

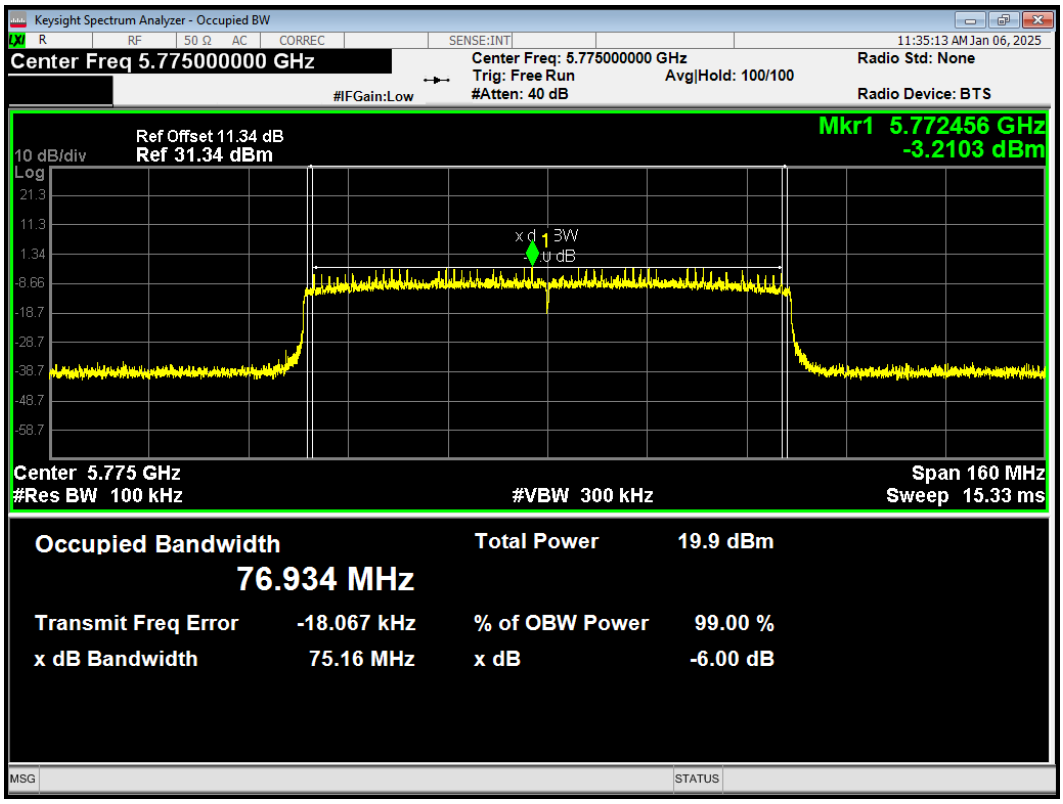


-6dB Bandwidth 802.11ax(HE40) 5795MHz

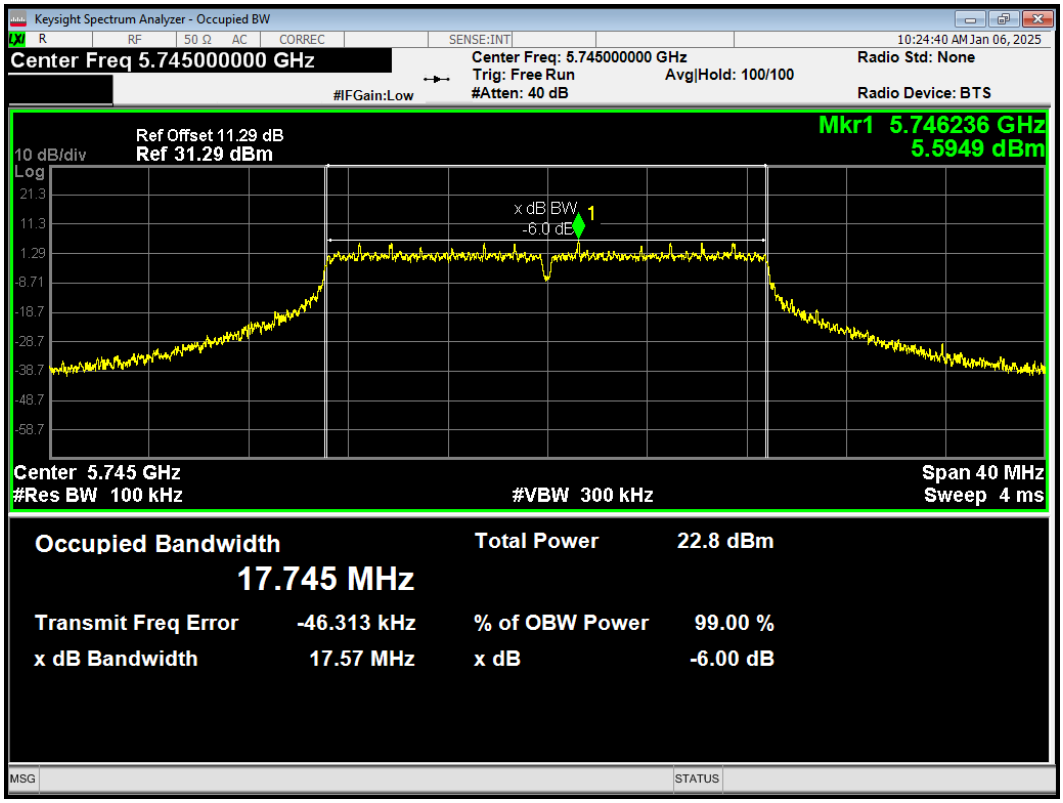


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

-6dB Bandwidth 802.11ax(HE80) 5775MHz

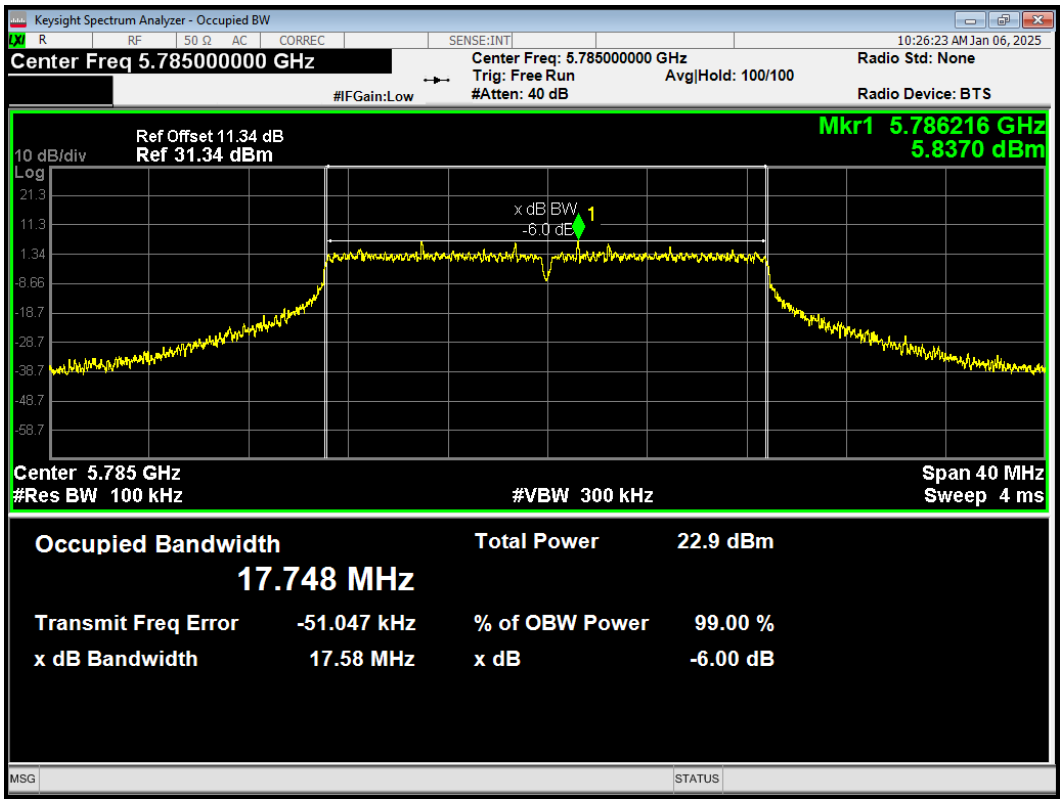


-6dB Bandwidth 802.11n(HT20) 5745MHz

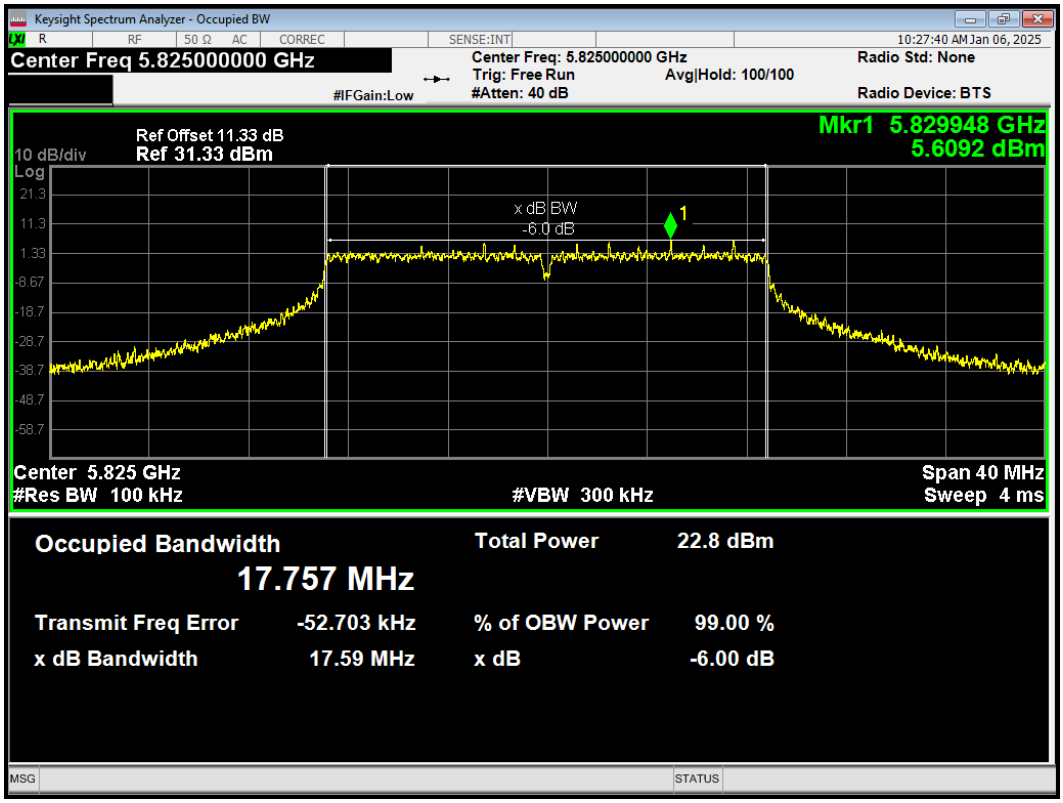


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

-6dB Bandwidth 802.11n(HT20) 5785MHz

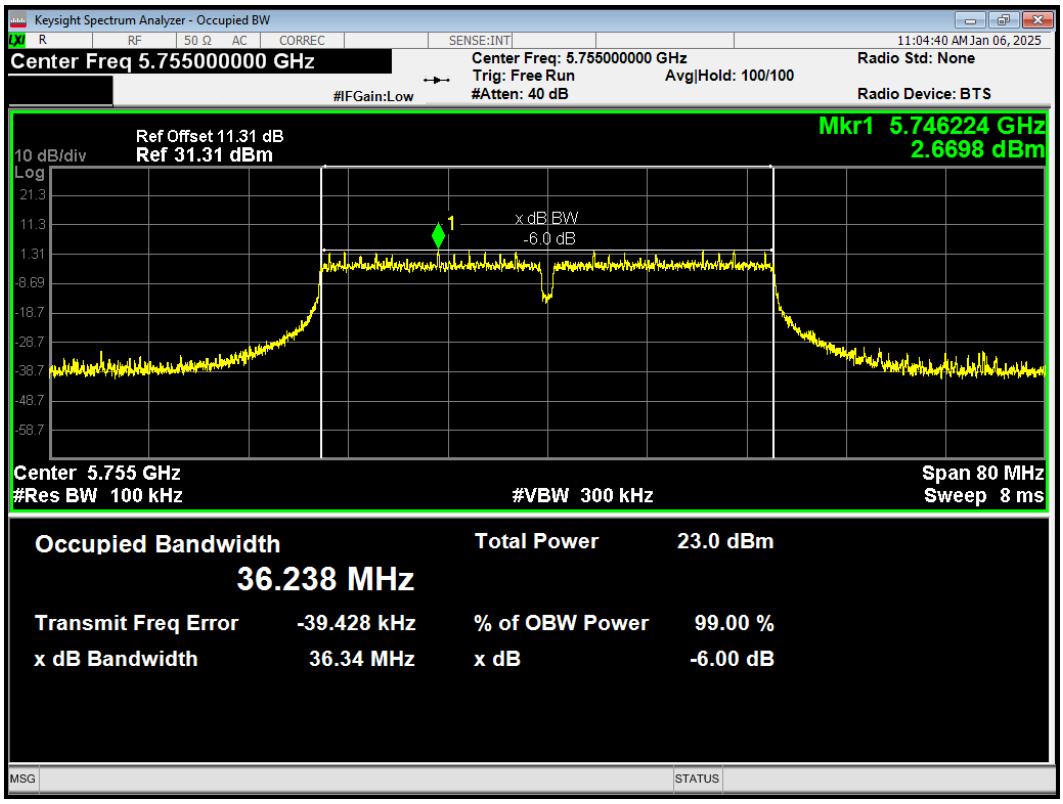


-6dB Bandwidth 802.11n(HT20) 5825MHz

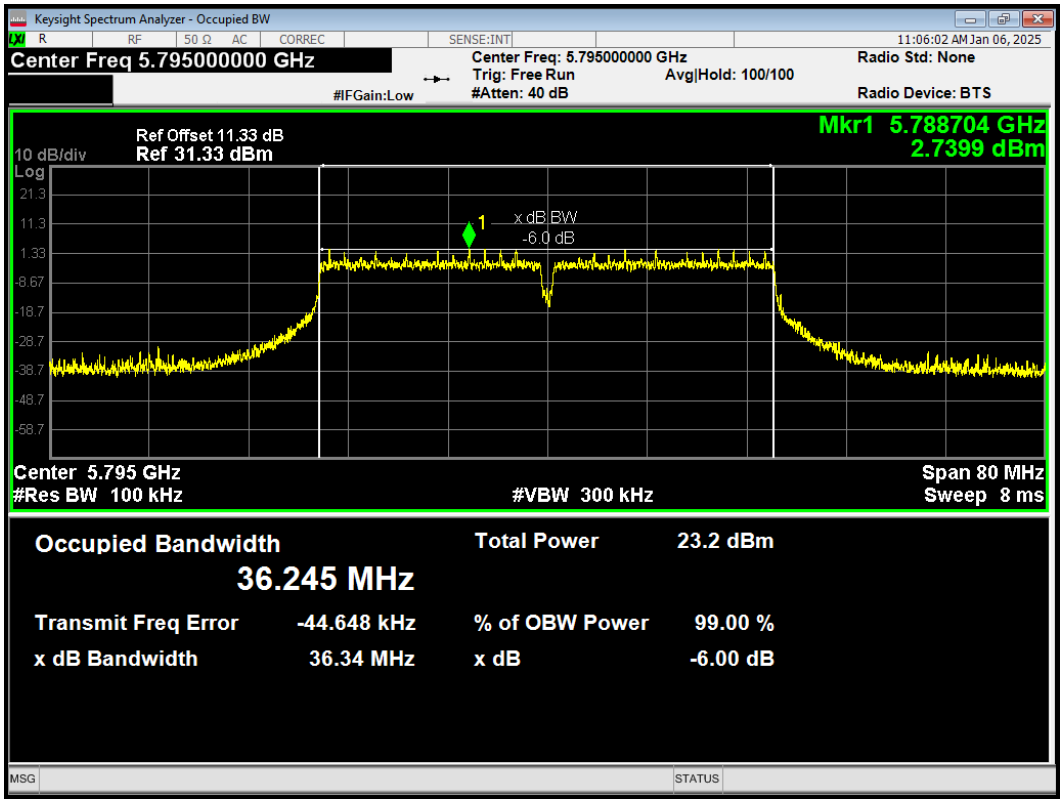


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

-6dB Bandwidth 802.11n(HT40) 5755MHz



-6dB Bandwidth 802.11n(HT40) 5795MHz



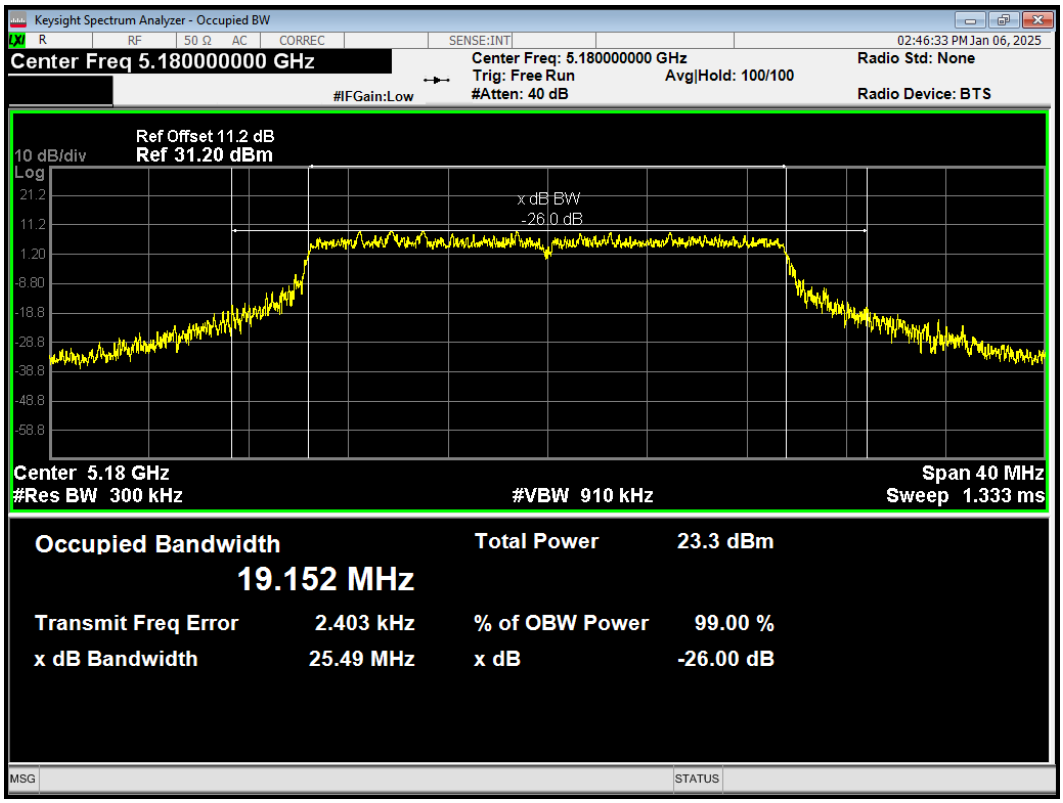
This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

ERSU Mode

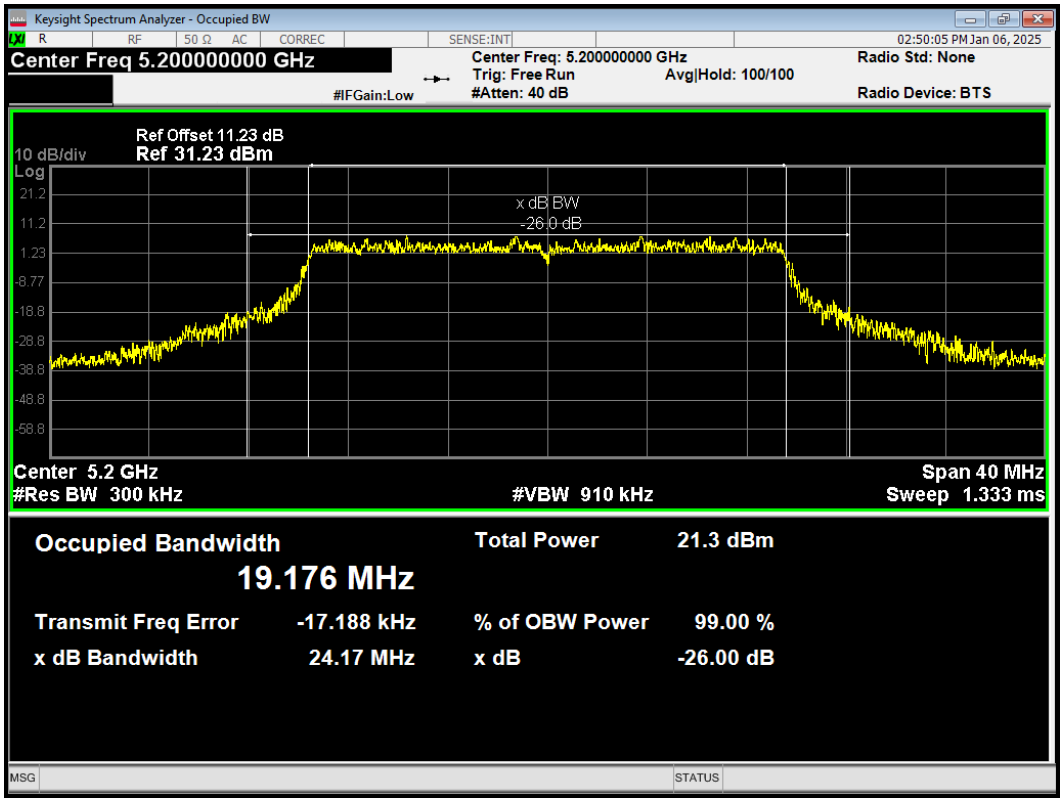
99% bandwidth

U-NII-1

OBWA 802.11ax(HE20) 242-Tones 5180MHz

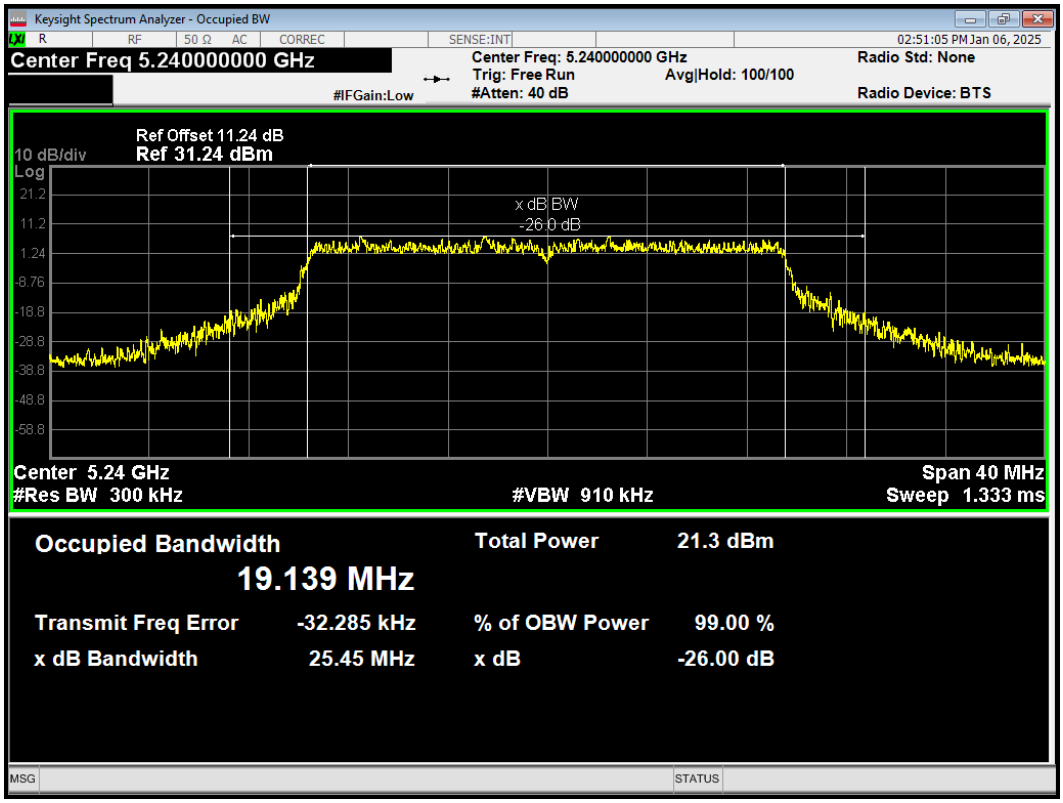


OBW 802.11ax(HE20) 242-Tones 5200MHz



This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

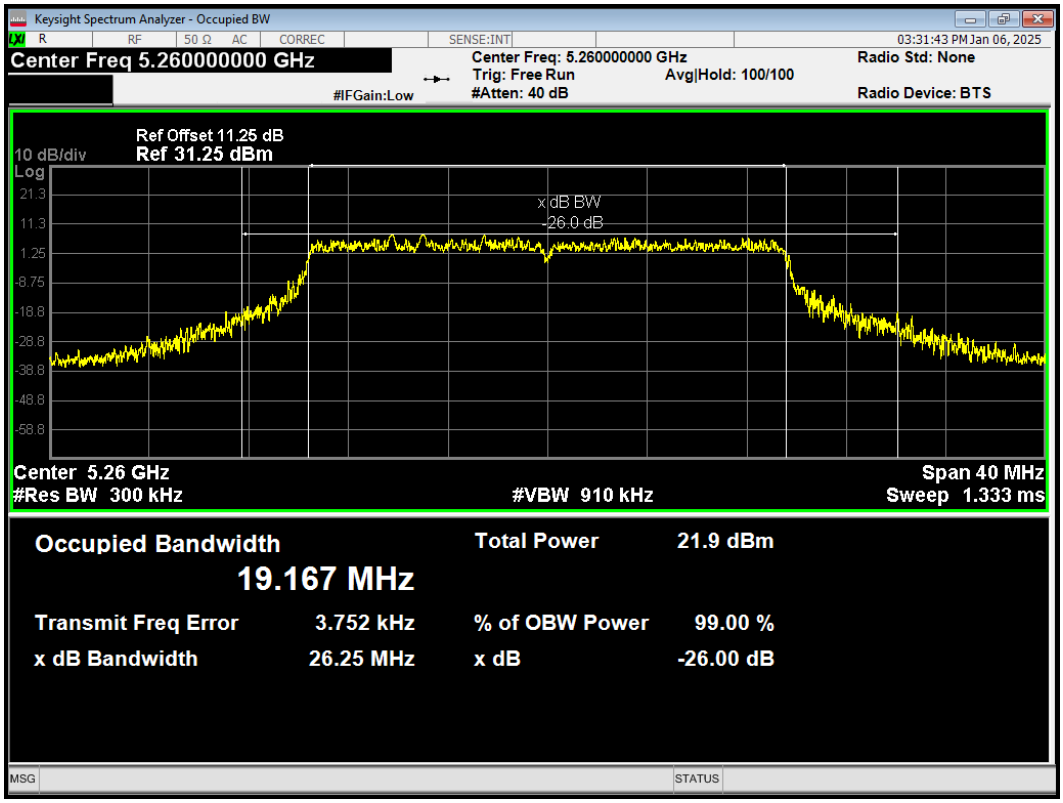
OBW 802.11ax(HE20) 242-Tones 5240MHz



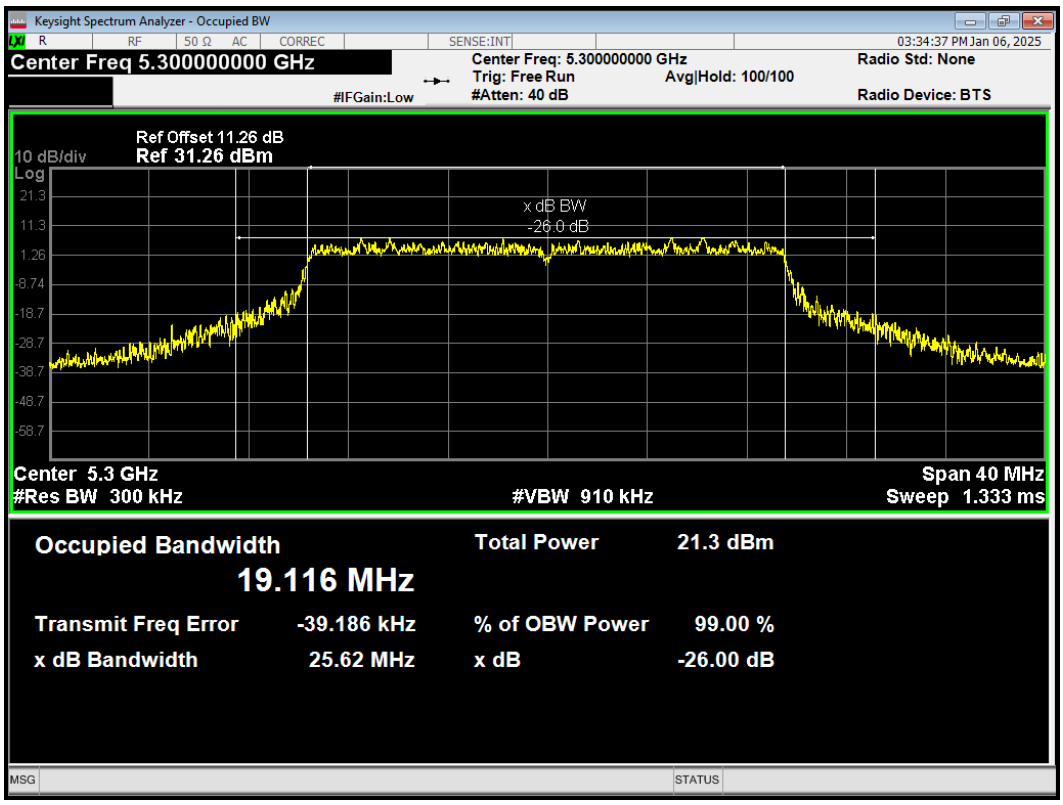
This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

U-NII-2A

OBW 802.11ax(HE20) 242-Tones 5260MHz

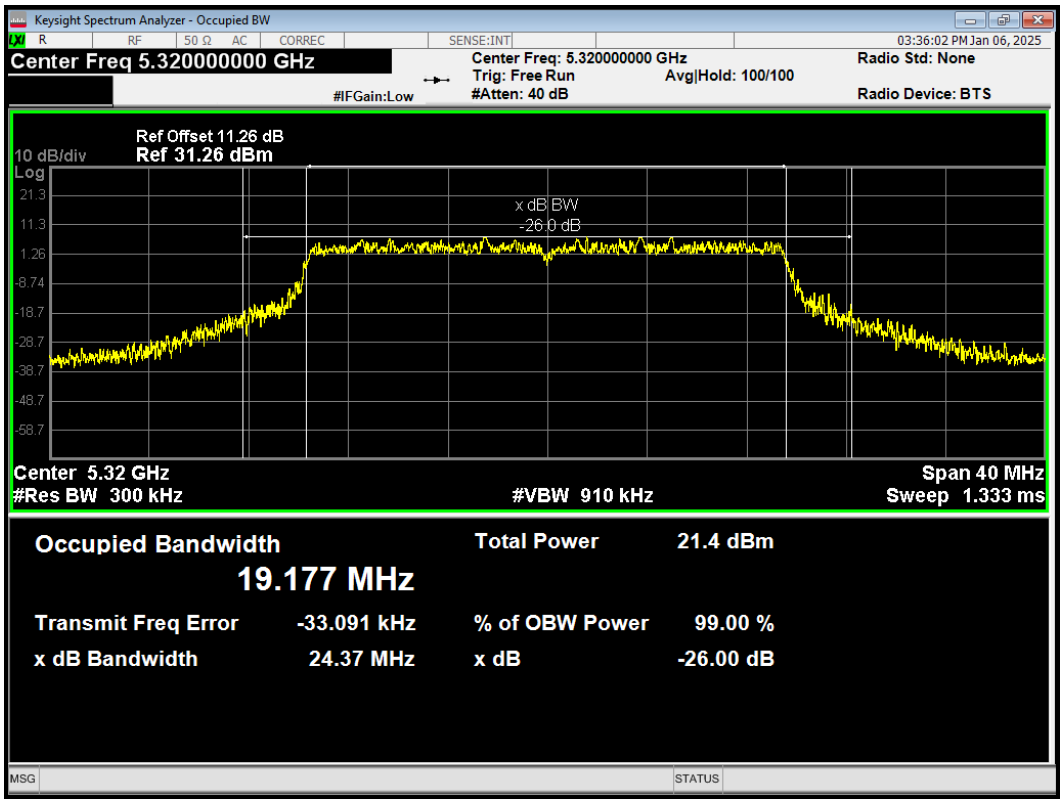


OBW 802.11ax(HE20) 242-Tones 5300MHz



This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

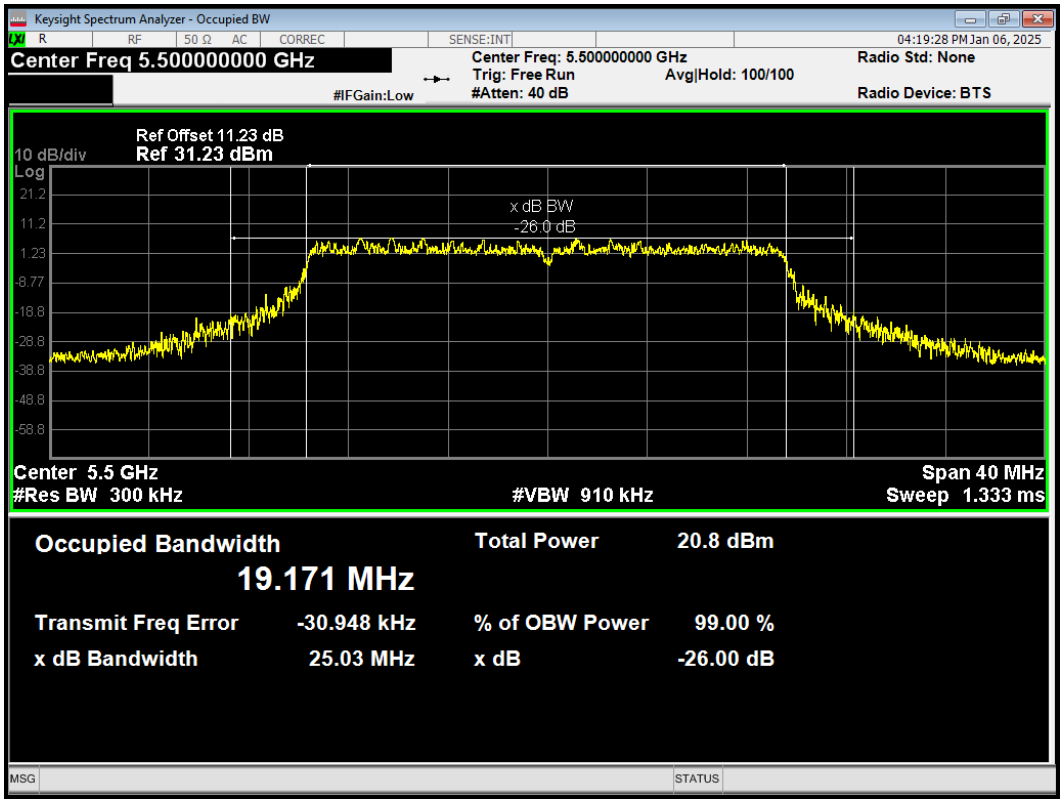
OBW 802.11ax(HE20) 242-Tones 5320MHz



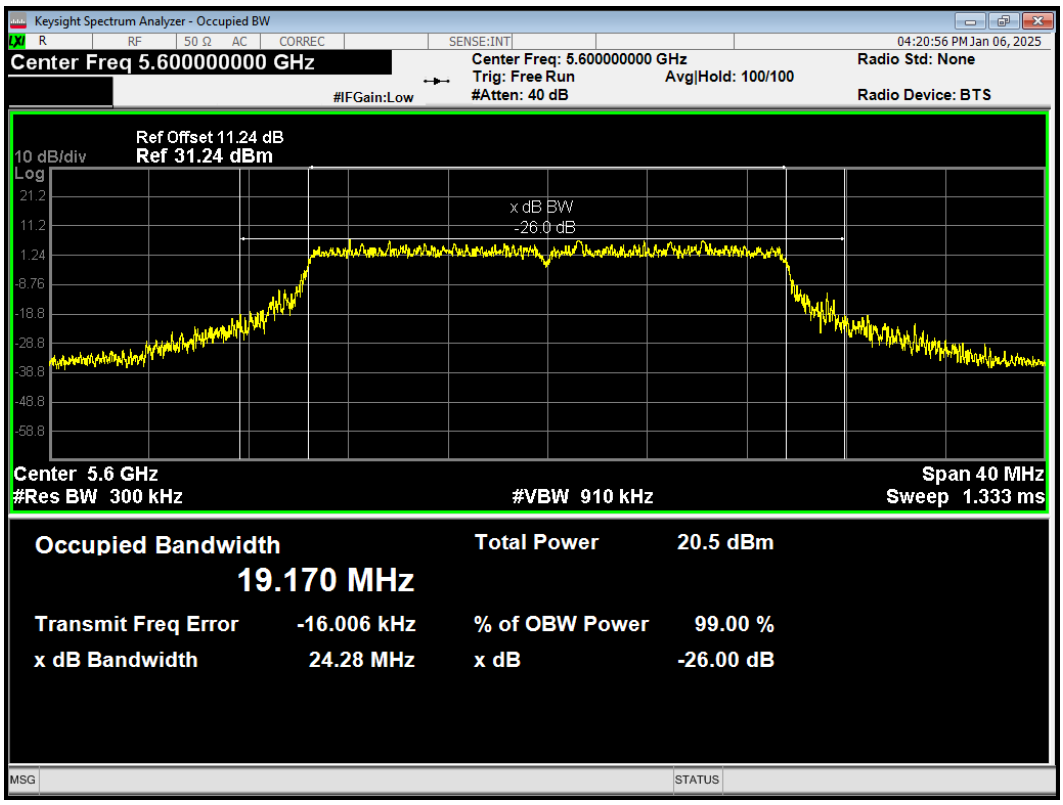
This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

U-NII-2C

OBW 802.11ax(HE20) 242-Tones 5500MHz

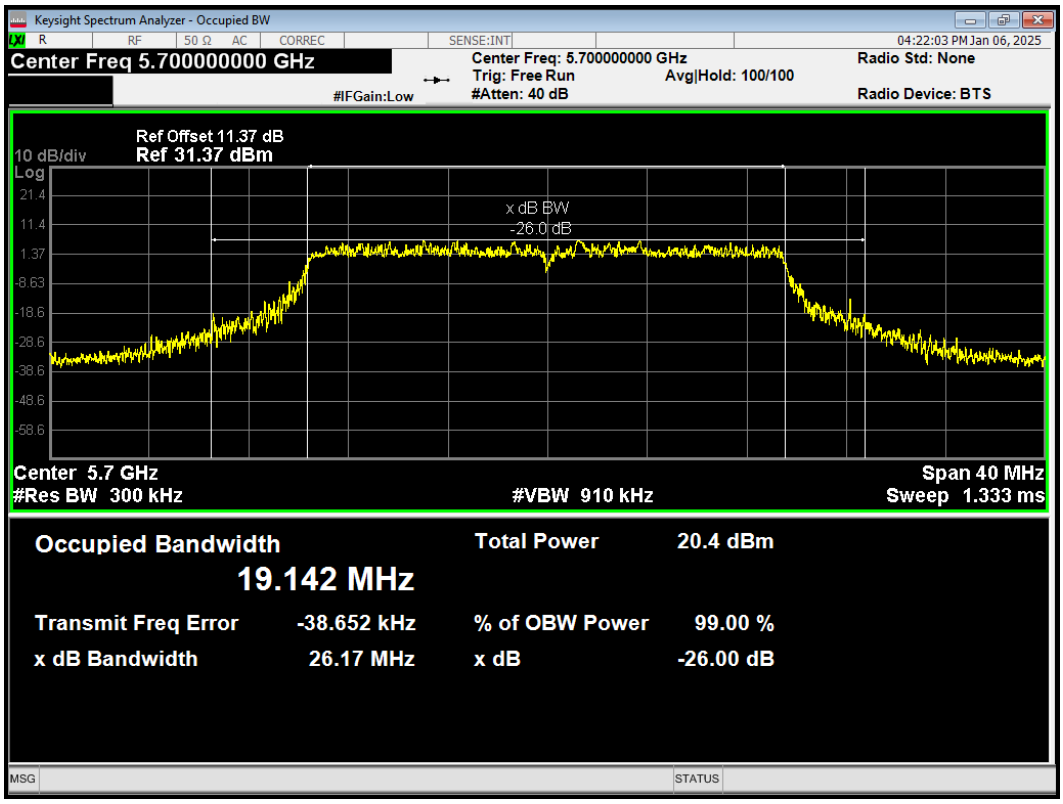


OBW 802.11ax(HE20) 242-Tones 5600MHz



This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

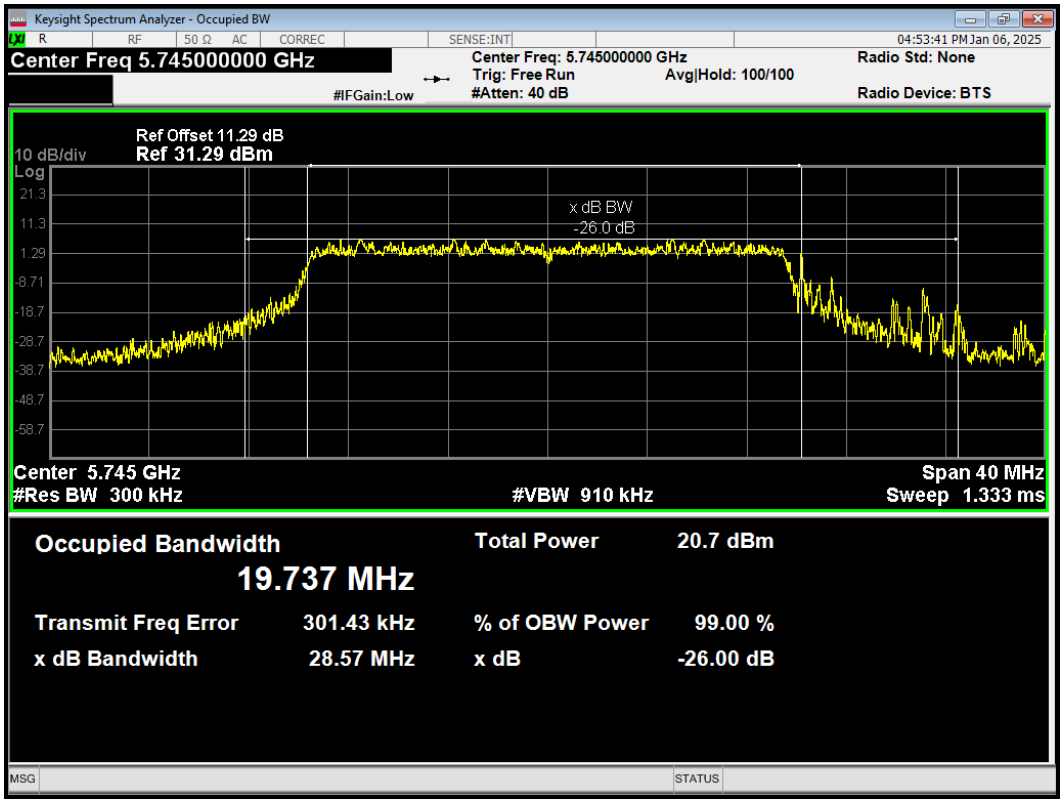
OBW 802.11ax(HE20) 242-Tones 5700MHz



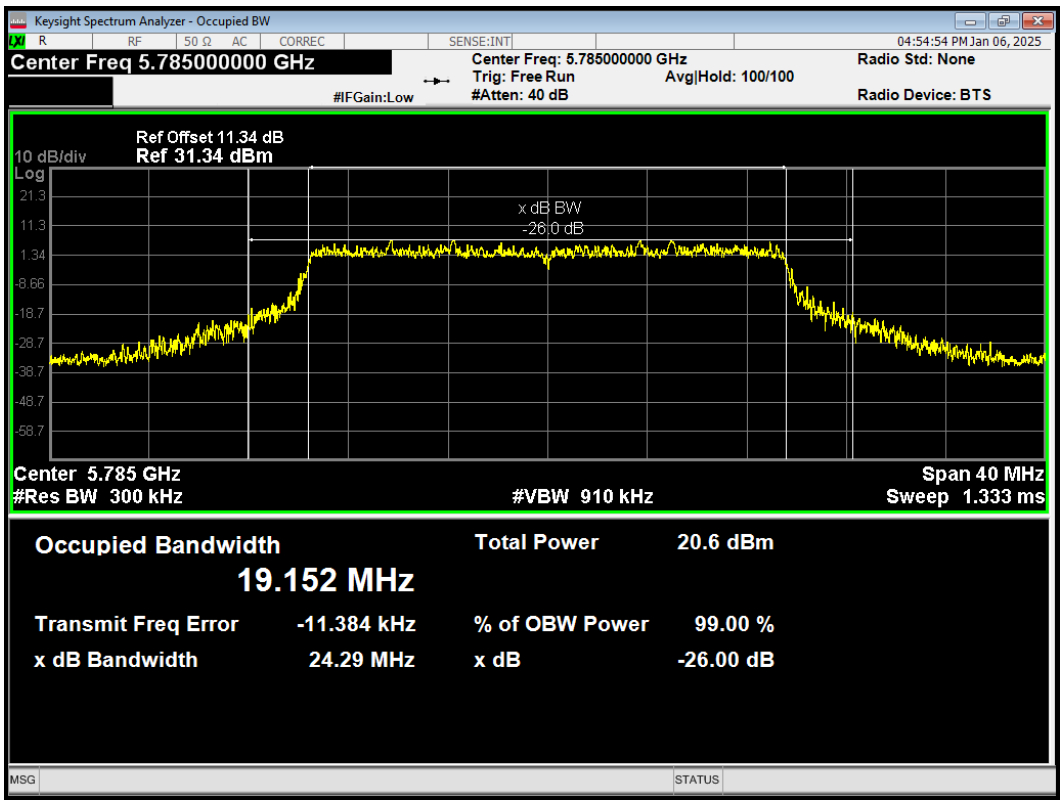
This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

U-NII-3

OBW 802.11ax(HE20) 242-Tones 5745MHz

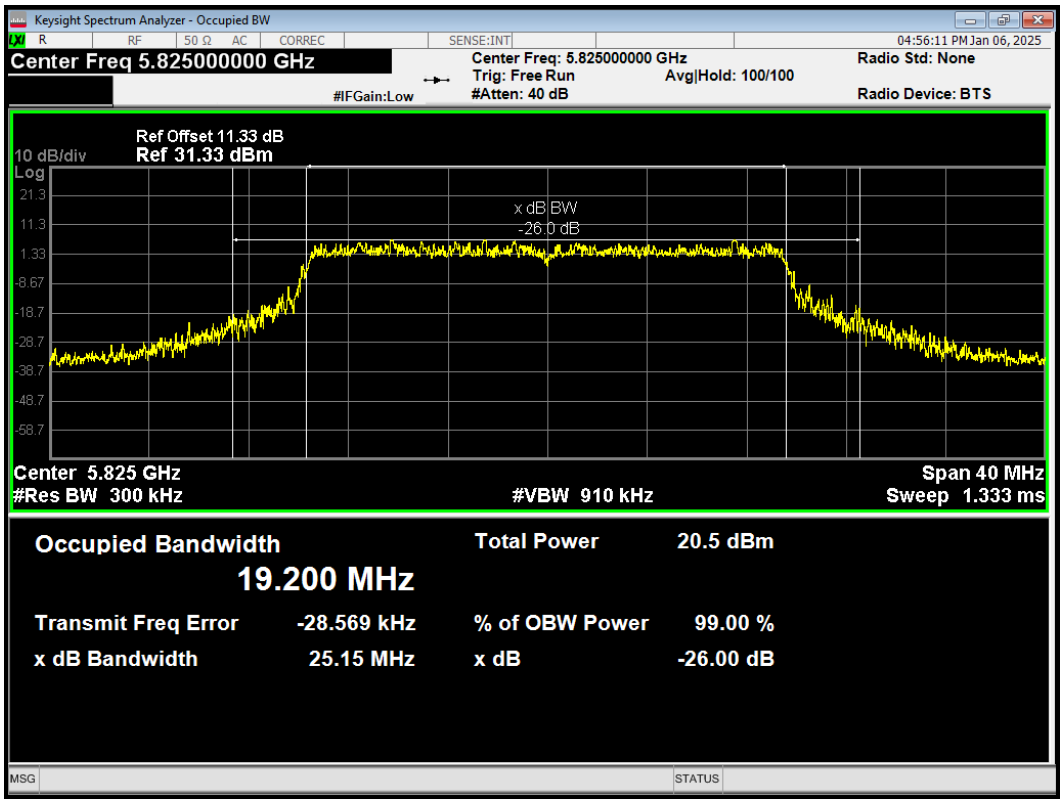


OBW 802.11ax(HE20) 242-Tones 5785MHz



This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

OBW 802.11ax(HE20) 242-Tones 5825MHz

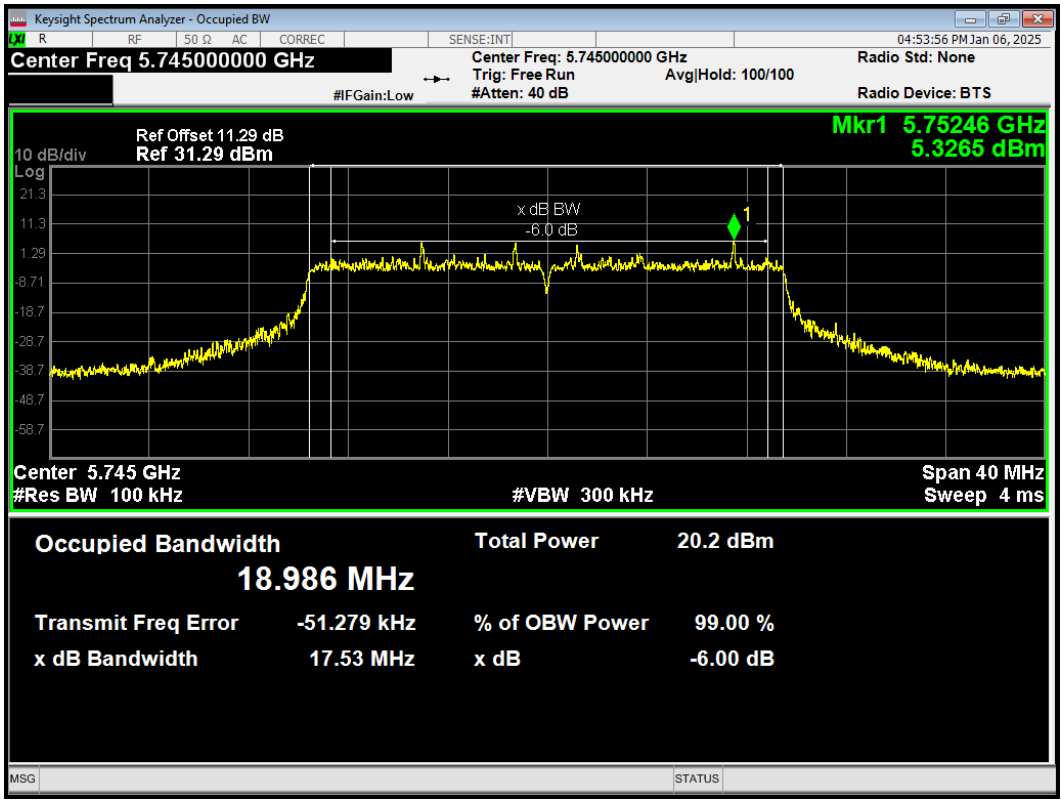


This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

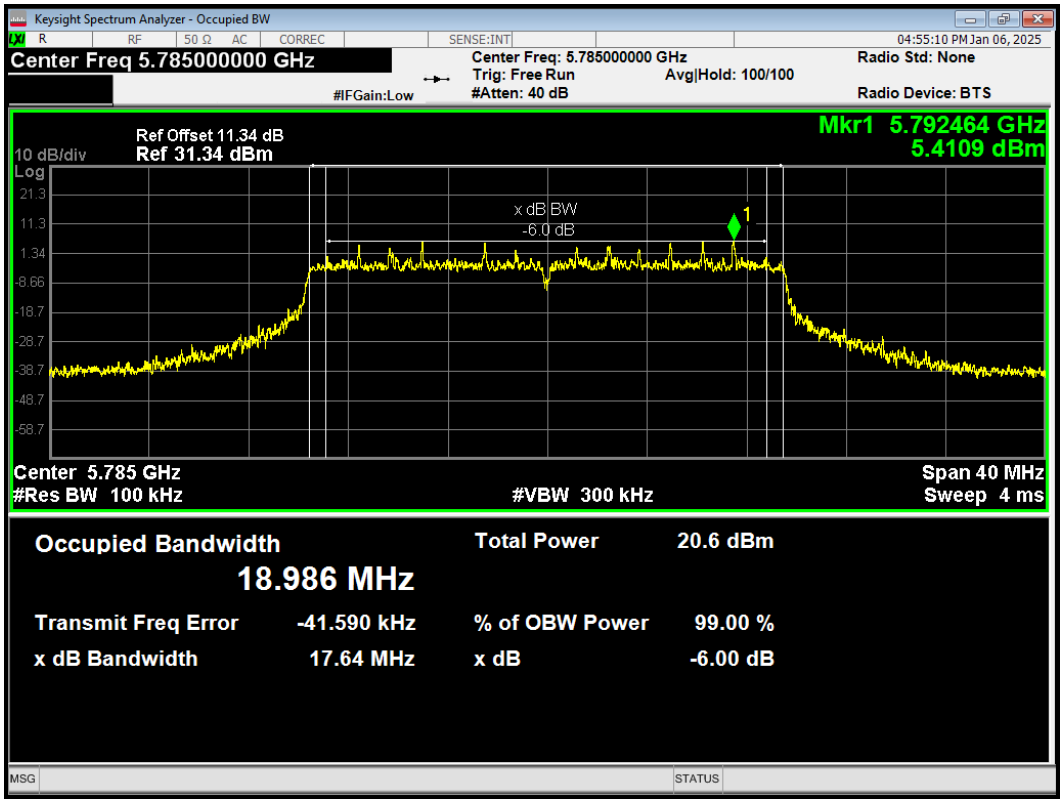
Minimum 6 dB bandwidth

U-NII-3

-6dB Bandwidth 802.11ax(HE20) 242-Tones 5745MHz

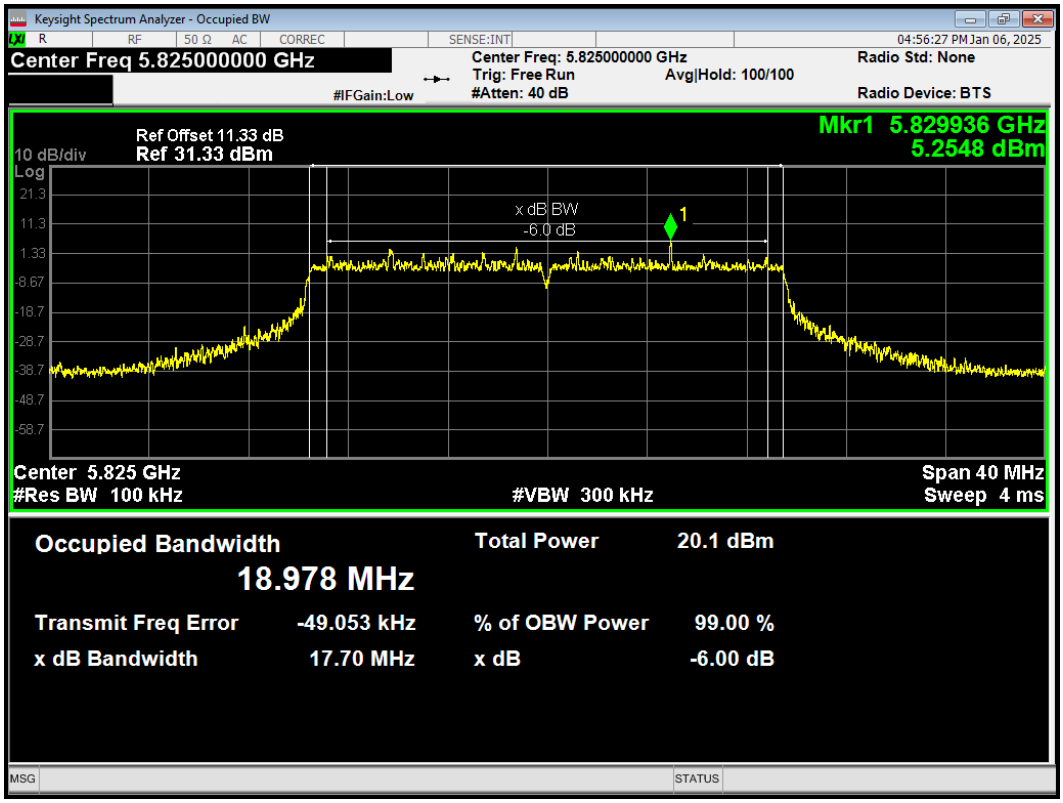


-6dB Bandwidth 802.11ax(HE20) 242-Tones 5785MHz



This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

-6dB Bandwidth 802.11ax(HE20) 242-Tones 5825MHz



This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

5.2. Average Power Output

Ambient condition

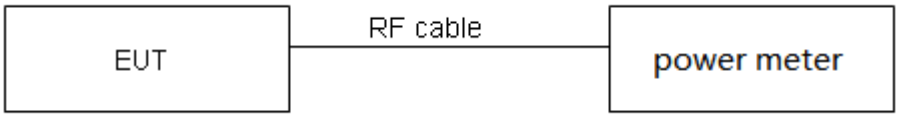
Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Methods of Measurement

During the process of the testing, The EUT was connected to the average power meter through an external attenuator and a known loss cable. The EUT is max power transmission with proper modulation. We use Maximum average Conducted Output Power Level Method in KDB789033 for this test

The conducted Power is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

Test Setup



Limits

Rule FCC Part 15.407(a)(1) / FCC Part 15.407(a) (2) / FCC Part 15.407(a) (3)
(1) For the band 5.15-5.25 GHz.
(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).
(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
(iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
(3)For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.44 dB.

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

Test Results

Mode	Duty cycle	Duty cycle correction Factor (dB)
802.11a	0.962	0.170
802.11n HT20	0.910	0.410
802.11n HT40	0.858	0.660
802.11ac VHT20	0.955	0.200
802.11ac VHT40	0.812	0.910
802.11ac VHT80	0.876	0.580
802.11ax HE20	0.961	0.170
802.11ax HE40	0.860	0.660
802.11ax HE80	0.830	0.810
Note: when Duty cycle⩾0.98, Duty cycle correction Factor not required.		

U-NII-1

Power Index				
Test Mode	Channel/ Frequency (MHz)	SISO Antenna1	SISO Antenna2	MIMO
802.11a	36/5180	10	10	-
	40/5200	10	10	-
	48/5240	10	10	-
802.11n HT20	36/5180	-	-	10
	40/5200	-	-	10
	48/5240	-	-	10
802.11n HT40	38/5190	-	-	10
	46/5230	-	-	10
802.11ac VHT20	36/5180	-	-	10
	40/5200	-	-	10
	48/5240	-	-	10
802.11ac VHT40	38/5190	-	-	10
	46/5230	-	-	10
802.11ac VHT80	42/5210	-	-	10
802.11ax HE20	36/5180	-	-	14
	40/5200	-	-	14
	48/5240	-	-	14
802.11ax HE40	38/5190	-	-	15
	46/5230	-	-	16
802.11ax HE80	42/5210	-	-	17

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

U-NII-2A

Power Index				
Test Mode	**Channel/ Frequency (MHz)**	**SISO Antenna1**	**SISO Antenna2**	**MIMO**
802.11a	52/5260	10	10	-
	60/5300	10	10	-
	64/5320	10	10	-
802.11n HT20	52/5260	-	-	10
	60/5300	-	-	10
	64/5320	-	-	10
802.11n HT40	54/5270	-	-	10
	62/5310	-	-	11
802.11ac VHT20	52/5260	-	-	10
	60/5300	-	-	10
	64/5320	-	-	10
802.11ac VHT40	54/5270	-	-	10
	62/5310	-	-	12
802.11ac VHT80	58/5290	-	-	10
802.11ax HE20	52/5260	-	-	16
	60/5300	-	-	16
	64/5320	-	-	16
802.11ax HE40	54/5270	-	-	19
	62/5310	-	-	19
802.11ax HE80	58/5290	-	-	20

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

U-NII-2C

Power Index				
Test Mode	**Channel/ Frequency (MHz)**	**SISO Antenna1**	**SISO Antenna2**	**MIMO**
802.11a	100/5500	10	10	-
	120/5600	10	10	-
	140/5700	10	10	-
802.11n HT20	100/5500	-	-	11
	120/5600	-	-	11
	140/5700	-	-	11
802.11n HT40	102/5510	-	-	10
	118/5590	-	-	10
	134/5670	-	-	10
802.11ac VHT20	100/5500	-	-	10
	120/5600	-	-	11
	140/5700	-	-	11
802.11ac VHT40	102/5510	-	-	10
	118/5590	-	-	10
	134/5670	-	-	10
802.11ac VHT80	106/5530	-	-	10
	122/5610	-	-	10
802.11ax HE20	100/5500	-	-	17
	120/5600	-	-	17
	140/5700	-	-	17
802.11ax HE40	102/5510	-	-	19
	118/5590	-	-	19
	134/5670	-	-	19
802.11ax HE80	106/5530	-	-	21
	122/5610	-	-	21

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.

U-NII-3

Power Index				
Test Mode	**Channel/ Frequency (MHz)**	**SISO Antenna1**	**SISO Antenna2**	**MIMO**
802.11a	149/5745	10	10	-
	157/5785	10	10	-
	165/5825	10	10	-
802.11n HT20	149/5745	-	-	10
	157/5785	-	-	10
	165/5825	-	-	10
802.11n HT40	151/5755	-	-	10
	159/5795	-	-	10
802.11ac VHT20	149/5745	-	-	10
	157/5785	-	-	10
	165/5825	-	-	10
802.11ac VHT40	151/5755	-	-	10
	159/5795	-	-	9
802.11ac VHT80	155/5775	-	-	10
802.11ax HE20	149/5745	-	-	16
	157/5785	-	-	16
	165/5825	-	-	16
802.11ax HE40	151/5755	-	-	18
	159/5795	-	-	18
802.11ax HE80	155/5775	-	-	20

This report shall not be reproduced except in full, without the written approval of Eurofins TA Technology (Shanghai) Co., Ltd.