

Test Report No:
2590623R-RFUSV15S-A

TEST REPORT

FCC Rules & Regulations

Product Name	Rugged Tablet PC
Brand Name	Winmate
Model No.	M133WK-5, D140, M133WKxxxxxxx, D140xxxxxxx (where X can be A-Z, a-z, 0-9, "-", blank or slash for marketing purpose only)
FCC ID	PX9M133WK002
Applicant's Name / Address	Winmate Inc. 9F, No.111-6, Shing-De Rd., San-Chung District, New Taipei City, 241
Manufacturer's Name	Winmate Inc.
Test Method Requested, Standard	FCC CFR Title 47 Part 15 Subpart E Section 15.407
Verdict Summary	IN COMPLIANCE
Documented by Jinn Chen	
Tested by Jason Tuan	
Approved by Alan Chen	
Date of Receipt	2025/09/19
Date of Issue	2025/10/20
Report Version	V1.0

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Competences and Guarantees

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA.

General Conditions

1. The test results relate only to the samples tested.
2. The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
3. This report must not be used to claim product endorsement by TAF or any agency of the government.
4. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.
5. Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Revision History

Version	Description	Issued Date
V1.0	Initial issue of report	2025/10/20

Summary of Test Result

Report Clause	Test Items	Result (PASS/FAIL)	Remark
3	Contention Based Protocol	PASS	-

Comments and Explanations
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1. General Information

1.1. EUT Description

Frequency Range	5925 ~ 6525 MHz	
Operating Frequency / Channel Number	IEEE 802.11 ax (20 MHz)	5955 ~ 6515 MHz / 29 Channels
	IEEE 802.11 ax (40 MHz)	5965 ~ 6525 MHz / 15 Channels
	IEEE 802.11 ax (80 MHz)	5985 ~ 6465 MHz / 7 Channels
	IEEE 802.11 ax (160 MHz)	6025 ~ 6505 MHz / 4 Channels
Type of Modulation	IEEE 802.11 ax	OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM

Accessories Information					
No.	Equipment Name	Brand Name	Model No.	Rating	Remark
1	Adapter	Chicony	A20-065N3A	Input : AC 100-240V; 1.6A; 50-60Hz; Class I Output: DC 5.0V---3.0A, 15.0W/ 9V---3A/ 12V---3A/ 15V---3A/ 20.0V---3.25A, 65.0W	Non-shielded, 1.5m
No.	Equipment Name	Description			
2	Power Cable	Non-shielded, 1.8m			

The difference for each model is shown as below:

Model No.	Description
M133WK-5, D140, M133WKxxxxxxx, D140xxxxxxx (where X can be A-Z, a-z, 0-9, "-", blank or slash for marketing purpose only)	It's declared by manufacture about all models are electrically identical, different model names for marketing purpose.

From the above models, model: M133WK-5 was selected as representative model for the test and its data was recorded in this report.

Antenna Information					
Item	Brand Name	Model No.	Type	Antenna Gain (dBi)	
				U-NII 5	U-NII 6
1	WINMATE INC.	90RF0500002N (Main)	Monopole	3.56	2.56
		90RF0600002F (Aux)		3.71	2.36

For IEEE 802.11ax Mode: (2TX, 2RX)

1.2. EUT Information

EUT Power Type	From Adapter
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1.3. Testing Location Information

USA	FCC Designation Number: TW0033
Canada	CAB Identifier Number: TW3023 / Company Number: 26930

Site Description	Accredited by TAF
	Accredited Number: 3023

Test Laboratory	DEKRA Testing and Certification Co., Ltd.
	Linkou Laboratory
Address	No. 85, Wenlin St., Linkou Dist., New Taipei City 244017, Taiwan, R.O.C.
Performed Location	No. 26, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan, R.O.C.
Phone Number	+886-3-275-7255
Fax Number	+886-3-327-8031

Ambient conditions in the laboratory:

Performed Item	Items	Required	Actual	Test Date
Conducted Emission	Temperature (°C)	10~40 °C	24.8 °C	2025/09/26
	Humidity (%RH)	10~90 %	50.2 %	

1.4. Measurement Uncertainty

Uncertainties have been calculated according to the DEKRA internal document.

The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test Item	Uncertainty
Contention-Based Protocol	± 1.05 dB

1.5. List of Test Equipment

For Conducted Measurements / HY-SR02

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
V	Spectrum Analyzer	KEYSIGHT	N9010A	MY55150401	2025/09/12	2026/09/11
V	Signal Generator	Agilent	N5182B	MY53050685	2025/07/23	2026/07/22

Note:

1. All equipment is calibrated every year.
2. The test instruments marked with "V" are used to measure the final test results.

2. Test Configuration of EUT

2.1. Test Condition

EUT Operational Condition	
Testing Voltage	AC 120V/60Hz

2.2. Test Frequency Mode

Test Software Version	N/A
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2.3. Measurement Configuration

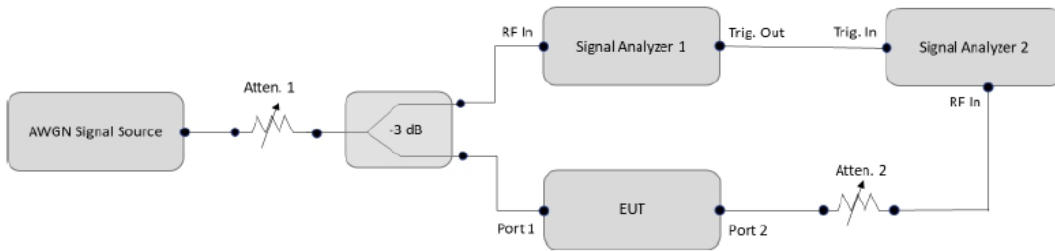
Test Mode	Mode 1 (Normal)
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Note:

1. Determining compliance shall be based on the results of the compliance measurement, without taking measurement instrumentation uncertainty into account.

3. Contention Based Protocol

3.1. Test Setup



3.2. Test Limit

Unlicensed indoor low-power devices must detect co-channel radio frequency power that is at least -62 dBm (The threshold is referenced to a 0dBi antenna gain.) or lower. Additionally, indoor low-power devices must detect co-channel energy with 90% or greater certainty.

3.3. Test Procedure

1. Set the signal analyzer center frequency to the nominal EUT channel center frequency. The span range of the signal analyzer shall be between two times and five times the OBW of the EUT. Connect the output port of the EUT to the signal analyzer 2. Ensure that the attenuator 2 provides enough attenuation to not overload the signal analyzer 2 receiver.
2. Monitoring the signal analyzer 2, verify the EUT is operating and transmitting with the parameters.
3. Determine number of times detection threshold test as following table,

Test Items	Number of Tests	Placement of Incumbent Transmission
$BW_{EUT} \leq BW_{Inc}$	Once	Same as EUT transmission
$BW_{Inc} < BW_{EUT} \leq 2 \times BW_{Inc}$	Once	Contained within BWEUT
$2 \times BW_{Inc} < BW_{EUT} \leq 4 \times BW_{Inc}$	Twice. (Incumbent transmission is contained within BWEUT)	Closely to the lower edge and upper edge of the EUT Channel
$BW_{EUT} > 4 \times BW_{Inc}$	Three times	Closely to the lower edge ,in the middle and upper edge of the EUT Channel

4. Using an AWGN signal source, generate (but do not transmit, i.e., RF OFF) a 10 MHz-wide AWGN signal.
5. Set the AWGN signal power to an extremely low level (more than 20 dB below the -62 dBm threshold). Connect the AWGN signal source, via a 3-dB splitter, to the signal analyzer 1 and the EUT.
6. Transmit the AWGN signal (RF ON) and verify its characteristics on the signal analyzer 1.
7. Monitor the signal analyzer 2 to verify if the AWGN signal has been detected and the EUT has ceased transmission. If the EUT continues to transmit, then incrementally increase the AWGN signal power level until the EUT stops transmitting.
8. (Including all losses in the RF paths) Determine and record the AWGN signal power level (at the EUT's antenna port) at which the EUT ceased transmission. Repeat the procedure at least 10 times to verify the EUT can detect an AWGN signal with 90% (or better) level of certainty.
9. Refer to step 3 table to determine number of times the detection threshold testing needs to be repeated. If testing is required more than once, then go back to step 1, choose a different center frequency for the AWGN signal and repeat the process.

3.4. Test Result of Contention Based Protocol

Refer as Appendix A

Appendix A. Test Result of Contention Based Protocol

Contention Based Protocol Measurement									
Measurement Mode	Operation Band	The Incumbent Signal (AWGN) Level (dBm)		Device Type				Antenna Gain (dBi)	
Conducted measurement	U-NII 5	-62 (at the antenna connector)		client				2.36	
Operation Mode	Channel Bandwidth (MHz)	Channel Number	Channel Frequency (MHz)	Test Result					
				AWGN Signals Frequency (MHz)	Number of Times	Number of Detected	Detection Rate	Limit	Result
802.11ax	20	33	6115	6115	10	10	100%	90%	Pass
	160	47	6185	6110	10	10	100%	90%	Pass
				6185	10	10	100%	90%	Pass
				6260	10	10	100%	90%	Pass

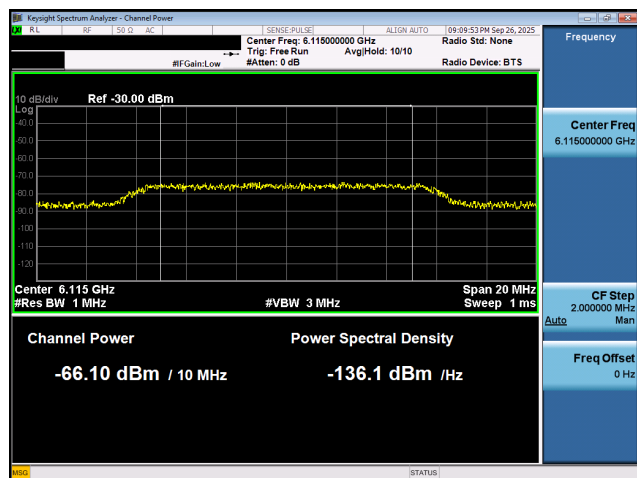
Lowest Interference (AWGN) Level Check										
Operation Mode	Channel Bandwidth (MHz)	Channel Number	Channel Frequency (MHz)	AWGN		Path Loss (dB)	Adjusted Power (dBm)	Detection Limit (dBm)	EUT Status	Result
				Frequency (MHz)	Power (dBm)					
802.11ax	20	33	6115	6115	-66.10	0	-68.46	-62	OFF	Pass
					-67.20	0	-69.56	-62	Minimal	Pass
					-72.20	0	-74.56	-62	ON	Pass
	160	47	6185	6110	-64.25	0	-66.61	-62	OFF	Pass
					-64.70	0	-67.06	-62	Minimal	Pass
					-79.10	0	-81.46	-62	ON	Pass
				6185	-62.86	0	-65.22	-62	OFF	Pass
					-63.90	0	-66.26	-62	Minimal	Pass
					-77.50	0	-79.86	-62	ON	Pass
				6260	-64.35	0	-66.71	-62	OFF	Pass
					-65.10	0	-67.46	-62	Minimal	Pass
					-79.30	0	-81.66	-62	ON	Pass

Note:

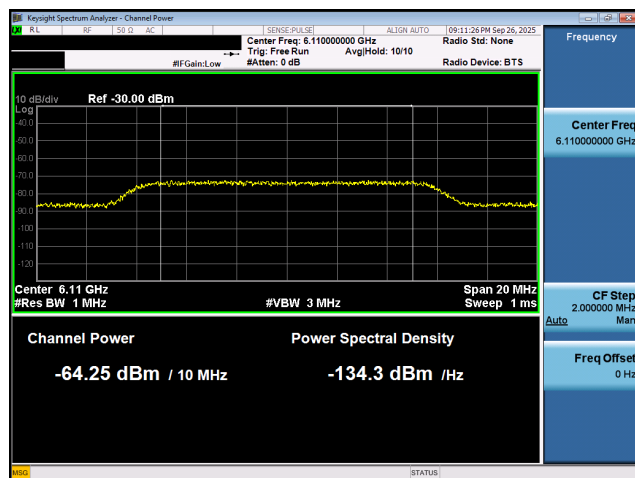
1. AWGN Power (dBm) at the antenna connector = S.G. (dBm) - Cable loss (dB) - Splitter loss (dB).
2. Adjusted Power (dBm) = Injected AWGN Power (dBm) – Antenna Gain (dBi) + Path Loss (dB).
3. Only one chain was performed for testing.
4. The AWGN level is reported for the following conditions:
 - OFF = AWGN level at which no transmission is detected, consistently for a minimum period of 10 seconds.
 - Minimal = AWGN level at which the system begins to trigger the transmission switch-off, albeit not being kept off consistently.
 - ON = AWGN level at which no impact on the transmission is detected, consistently for a minimum period of 10 seconds.

Plots of shows Incumbent signal level

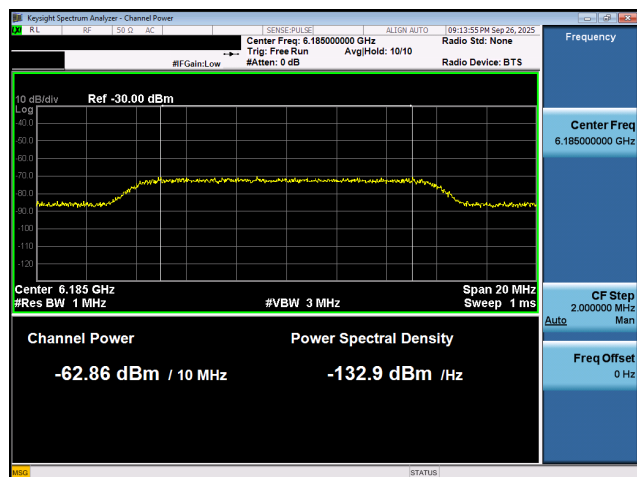
802.11ax-20 MHz / 6115 MHz



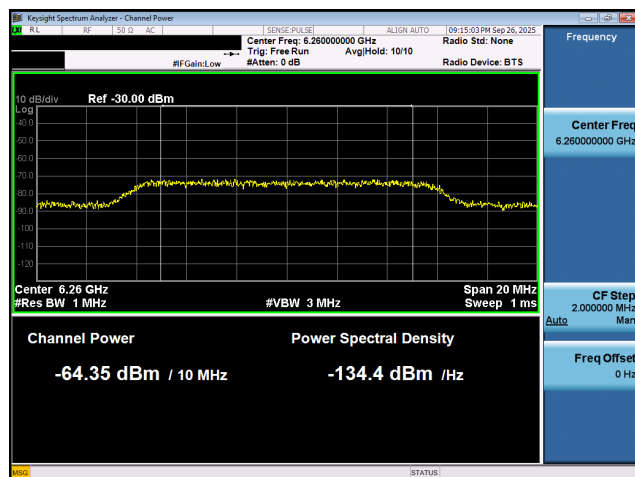
802.11ax-160 MHz / 6110 MHz (Lower Edge)



802.11ax-160 MHz / 6185 MHz (Middle)

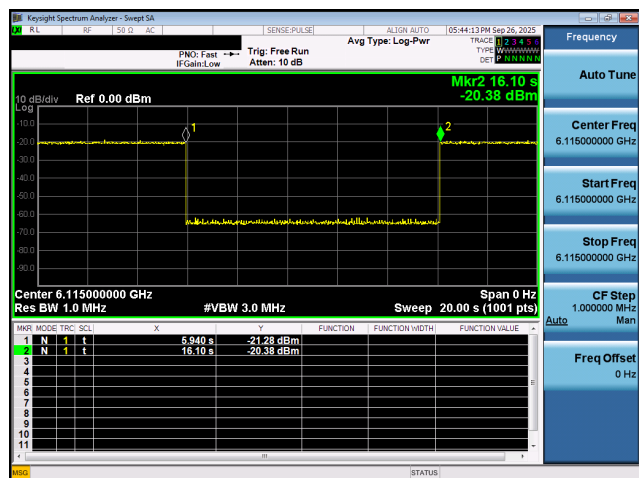


802.11ax-160 MHz / 6260 MHz (Upper Edge)

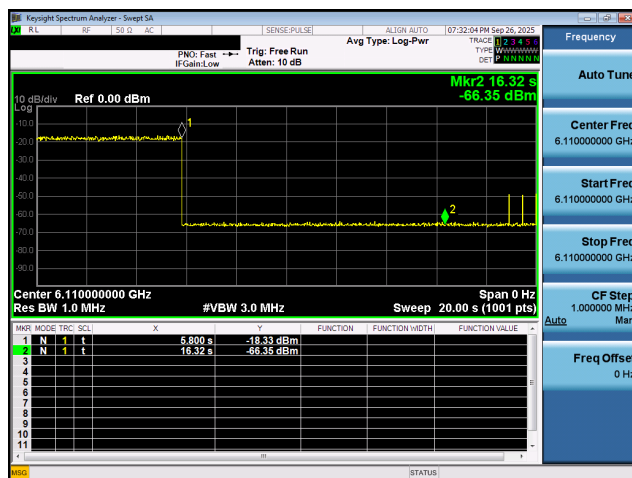


Plots of EUT ceased transmission in the time domain

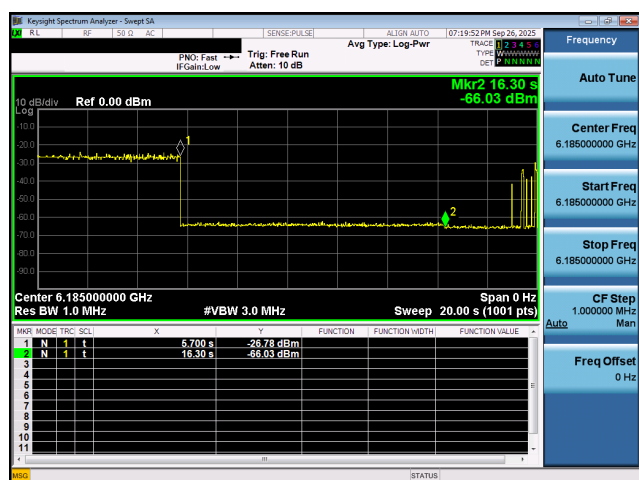
802.11ax-20 MHz / 6115 MHz



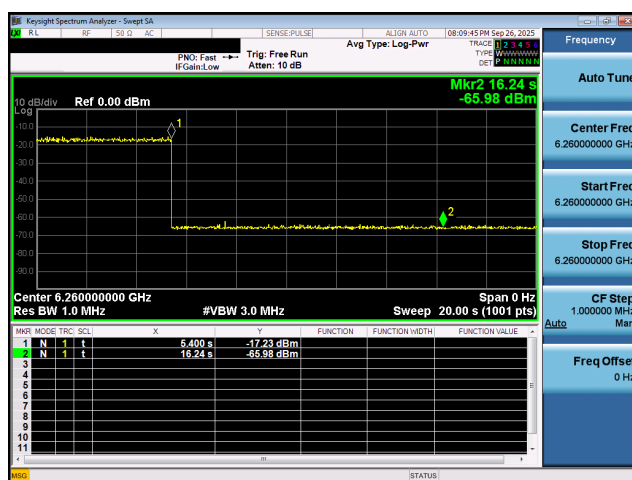
802.11ax-160 MHz / 6110 MHz (Lower Edge)



802.11ax-160 MHz / 6185 MHz (Middle)



802.11ax-160 MHz / 6260 MHz (Upper Edge)

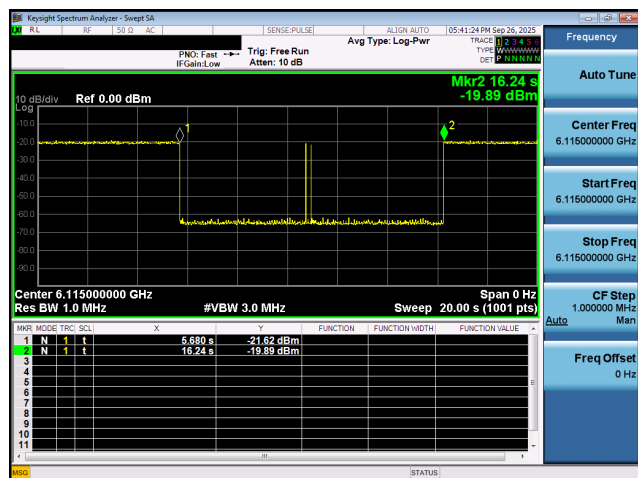


Note:

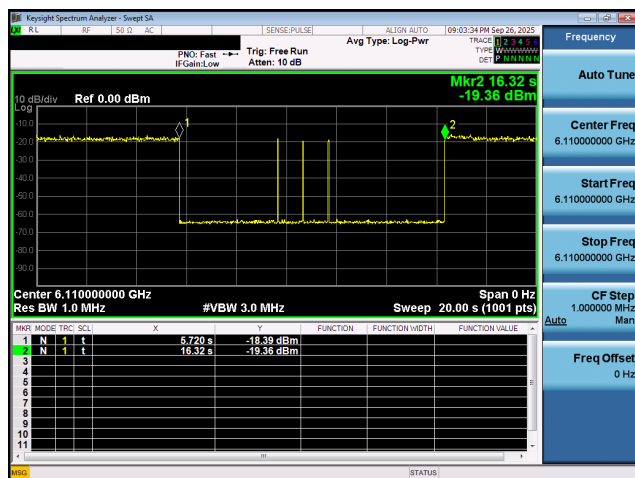
1. An interference signal was injected at Marker 1.
2. Remove the interference signal at Marker 2.

Plots of Start transmitting

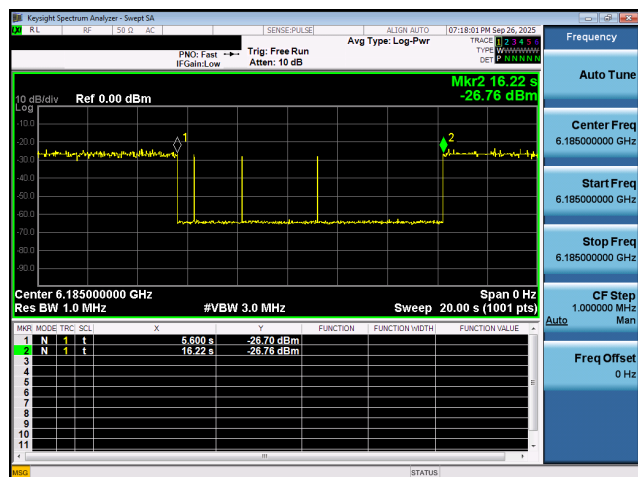
802.11ax-20 MHz / 6115 MHz



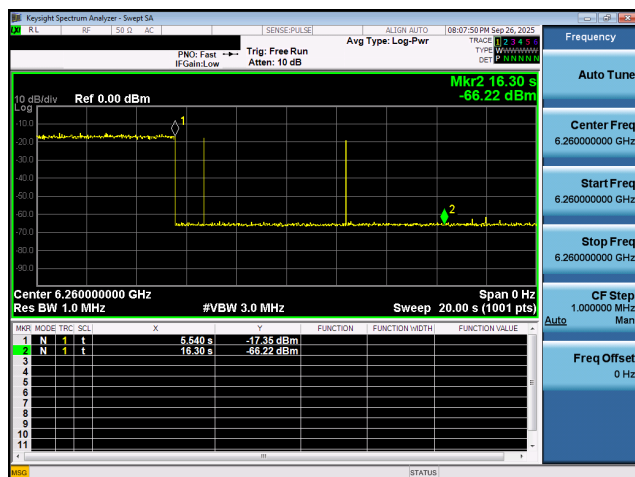
802.11ax-160 MHz / 6110 MHz (Lower Edge)



802.11ax-160 MHz / 6185 MHz (Middle)



802.11ax-160 MHz / 6260 MHz (Upper Edge)



Note:

1. An interference signal was injected at Marker 1.
2. Remove the interference signal at Marker 2.

Contention Based Protocol Measurement									
Measurement Mode	Operation Band	The Incumbent Signal (AWGN) Level (dBm)		Device Type				Antenna Gain (dBi)	
Conducted measurement	U-NII 6	-62 (at the antenna connector)		client				2.36	
Operation Mode	Channel Bandwidth (MHz)	Channel Number	Channel Frequency (MHz)	Test Result					
				AWGN Signals Frequency (MHz)	Number of Times	Number of Detected	Detection Rate	Limit	Result
802.11ax	20	97	6435	6435	10	10	100%	90%	Pass
	160	111	6505	6430	10	10	100%	90%	Pass
				6505	10	10	100%	90%	Pass
				6580	10	10	100%	90%	Pass

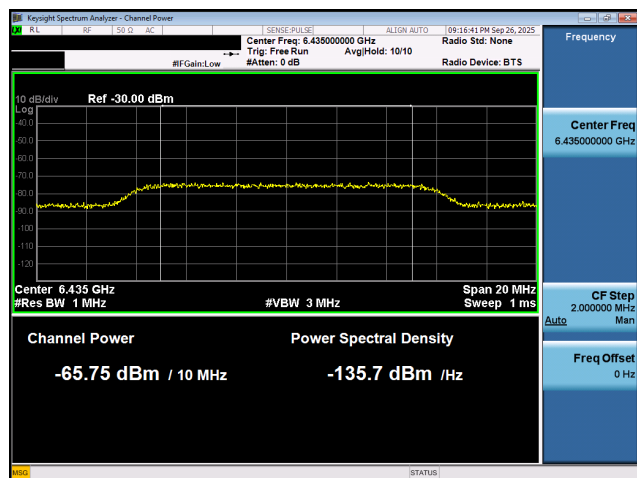
Lowest Interference (AWGN) Level Check										
Operation Mode	Channel Bandwidth (MHz)	Channel Number	Channel Frequency (MHz)	AWGN		Path Loss (dB)	Adjusted Power (dBm)	Detection Limit (dBm)	EUT Status	Result
				Frequency (MHz)	Power (dBm)					
802.11ax	20	97	6435	6435	-65.75	0	-68.11	-62	OFF	Pass
					-66.80	0	-69.16	-62	Minimal	Pass
					-71.50	0	-73.86	-62	ON	Pass
	160	111	6505	6430	-64.12	0	-66.48	-62	OFF	Pass
					-64.60	0	-66.96	-62	Minimal	Pass
					-69.10	0	-71.46	-62	ON	Pass
				6505	-62.43	0	-64.79	-62	OFF	Pass
					-62.90	0	-65.26	-62	Minimal	Pass
					-79.40	0	-81.76	-62	ON	Pass
				6580	-63.00	0	-65.36	-62	OFF	Pass
					-63.20	0	-65.56	-62	Minimal	Pass
					-68.90	0	-71.26	-62	ON	Pass

Note:

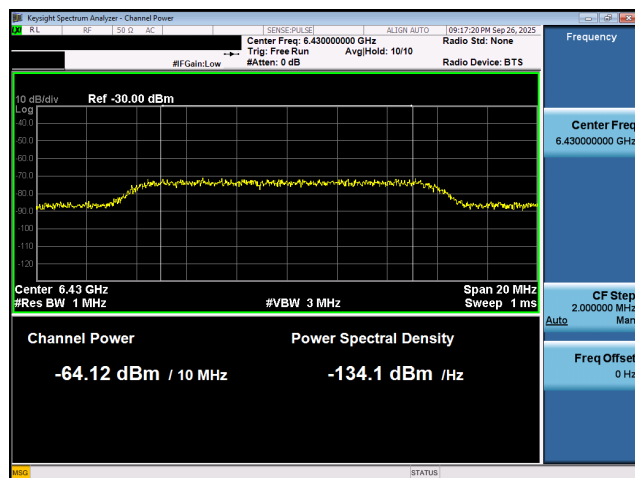
1. AWGN Power (dBm) at the antenna connector = S.G. (dBm) - Cable loss (dB) - Splitter loss (dB).
2. Adjusted Power (dBm) = Injected AWGN Power (dBm) – Antenna Gain (dBi) + Path Loss (dB).
3. Only one chain was performed for testing.
4. The AWGN level is reported for the following conditions:
 - OFF = AWGN level at which no transmission is detected, consistently for a minimum period of 10 seconds.
 - Minimal = AWGN level at which the system begins to trigger the transmission switch-off, albeit not being kept off consistently.
 - ON = AWGN level at which no impact on the transmission is detected, consistently for a minimum period of 10 seconds.

Plots of shows Incumbent signal level

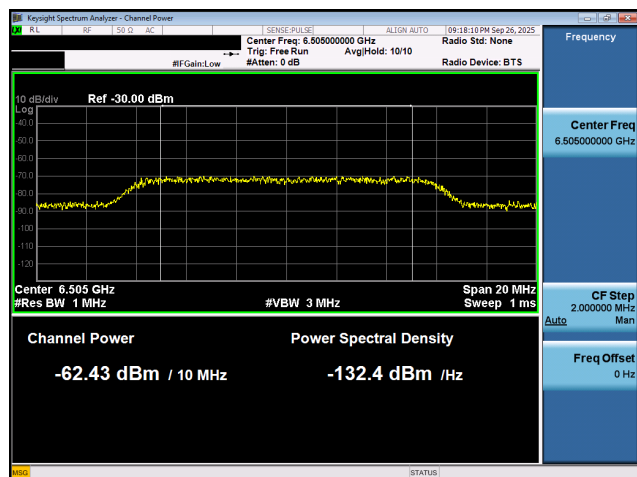
802.11ax-20 MHz / 6435 MHz



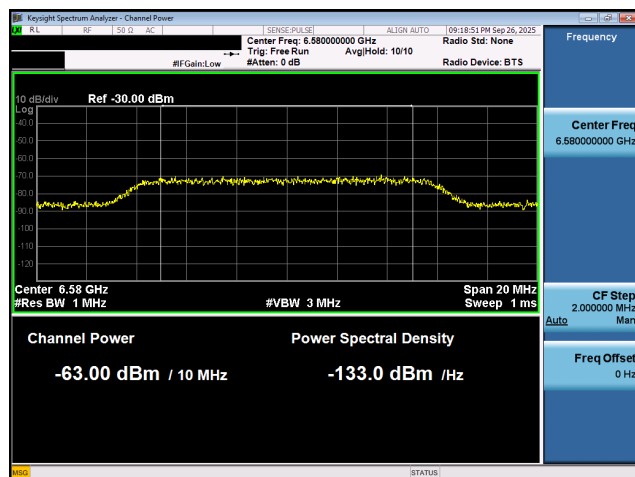
802.11ax-160 MHz / 6430 MHz (Lower Edge)



802.11ax-160 MHz / 6505 MHz (Middle)

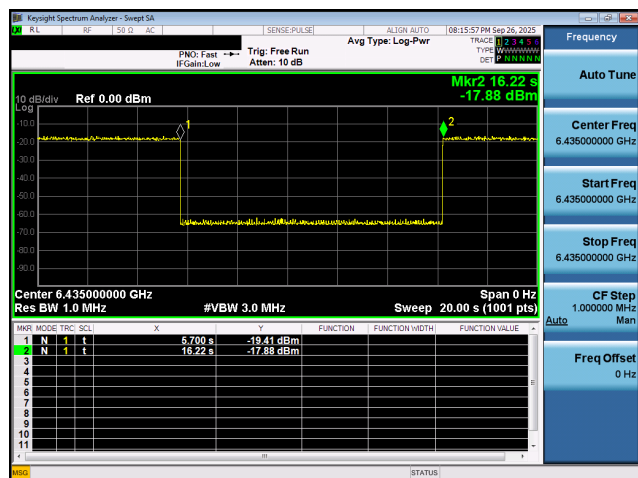


802.11ax-160 MHz / 6580 MHz (Upper Edge)

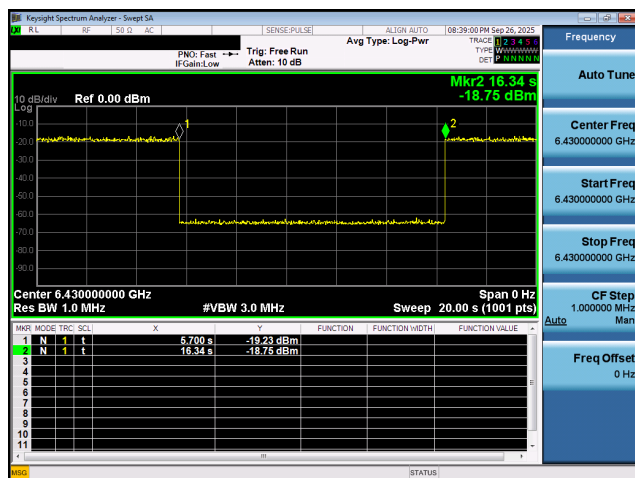


Plots of EUT ceased transmission in the time domain

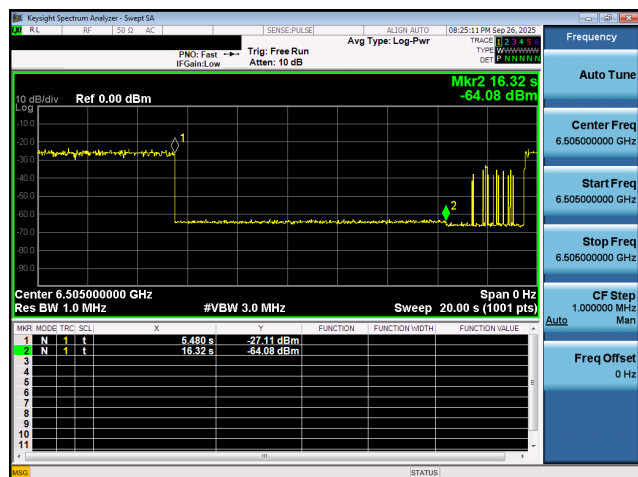
802.11ax-20 MHz / 6435 MHz



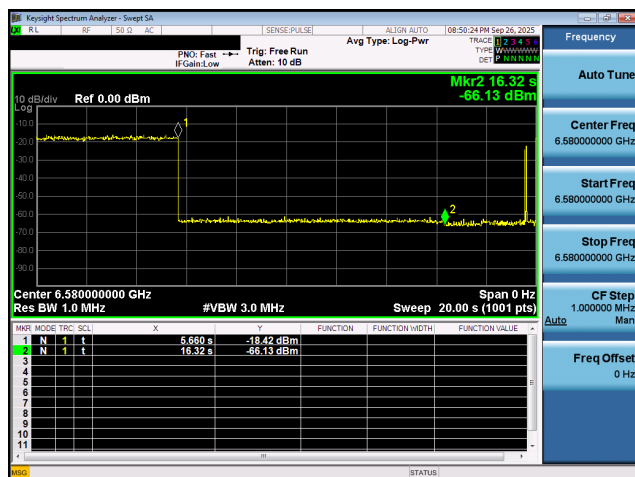
802.11ax-160 MHz / 6430 MHz (Lower Edge)



802.11ax-160 MHz / 6505 MHz (Middle)



802.11ax-160 MHz / 6580 MHz (Upper Edge)

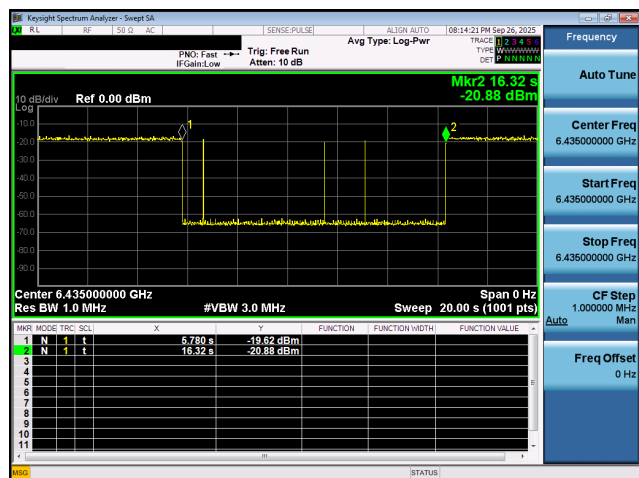


Note:

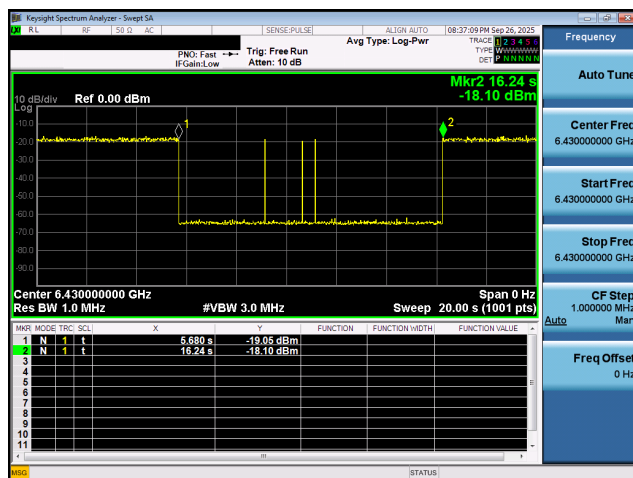
1. An interference signal was injected at Marker 1.
2. Remove the interference signal at Marker 2.

Plots of Start transmitting

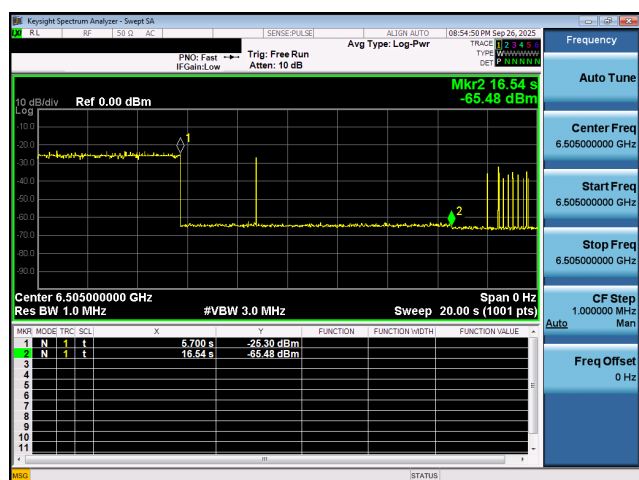
802.11ax-20 MHz / 6435 MHz



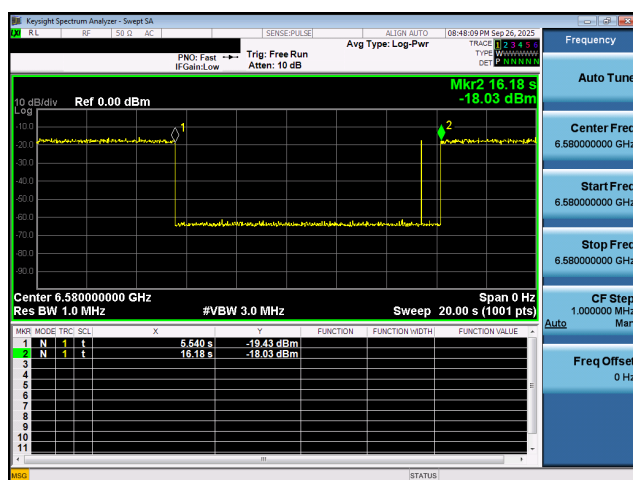
802.11ax-160 MHz / 6430 MHz (Lower Edge)



802.11ax-160 MHz / 6505 MHz (Middle)



802.11ax-160 MHz / 6580 MHz (Upper Edge)



Note:

1. An interference signal was injected at Marker 1.
2. Remove the interference signal at Marker 2.