RADIO TEST REPORT
FCC 47 CFR PART 15 SUBPART C

Test Standard	**FCC Part 15.247**
Product name	**WLAN/BT USB Dongle**
Brand Name	**Toshiba Tec Corporation**
Model No.	**CL-8852BU**
Test Result	**Pass**
Statements of Conformity	**Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.**

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.
The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc. (Wugu Laboratory).

Approved by:

Dally Hong

Dally Hong
Sr. Engineer

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com.tw/Terms-and-Conditions and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Revision History

Rev.	Issue Date	Revisions	Revised By
00	November 1, 2023	Initial Issue	Doris Chu

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

Table of contents

1. GENERAL INFORMATION 4
1.1 EUT INFORMATION 4
1.2 EUT CHANNEL INFORMATION 5
1.3 ANTENNA INFORMATION 5
1.4 MEASUREMENT UNCERTAINTY 6
1.5 FACILITIES AND TEST LOCATION 7
1.6 INSTRUMENT CALIBRATION 8
1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT 9
1.8 TEST METHODOLOGY AND APPLIED STANDARDS 9
2. TEST SUMMARY 10
3. DESCRIPTION OF TEST MODES 11
3.1 THE WORST MODE OF OPERATING CONDITION 11
3.2 THE WORST MODE OF MEASUREMENT 13
4. EUT DUTY CYCLE 14
5. TEST RESULT 17
5.1 AC POWER LINE CONDUCTED EMISSION 17
5.2 6DB BANDWIDTH AND OCCUPIED BANDWIDTH(99%) 20
5.3 OUTPUT POWER MEASUREMENT 39
5.4 POWER SPECTRAL DENSITY 45
5.5 CONDUCTED BANDEDGE AND SPURIOUS EMISSION 57
5.6 RADIATION BANDEDGE AND SPURIOUS EMISSION 74
APPENDIX 1 - PHOTOGRAPHS OF EUT A-1

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	Toshiba Tec Corporation 6-78, Minami-Cho, Mishima-Shi, Shizuoka-ken 411-8520 Japan
Manufacturer	CC&C Technologies Inc. 8F, 150, Jian Yi Road, Zhonghe District, New Taipei City, Taiwan 235, R. O. C.
Factory	Kunshan CC&C Technologies, Co., Ltd No.9 building,3rd Main Street, Kunshan Free Trade Zone, Jiangsu Province, P. R. China
Equipment	WLAN/BT USB Dongle
Model No.	CL-8852BU
Model Discrepancy	N/A
Trade Name	Toshiba Tec Corporation
Received Date	July 21, 2023
Date of Test	July 26 ~ August 31, 2023
Power Operation	Power from host device.
HW Version	0B
SW Version	01

Remark:
1. For more details, please refer to the User's manual of the EUT.
2. Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

1.2 EUT CHANNEL INFORMATION

Frequency Range	802.11b/g/n HT20/ac VHT20/ax HE20: 2412 MHz ~ 2462 MHz 802.11n HT40/ac VHT40/ax HE40: 2422 MHz ~ 2452 MHz
Modulation Type	1. IEEE 802.11b mode: CCK 2. IEEE 802.11g mode: OFDM 3. IEEE 802.11n HT 20 MHz mode : OFDM 4. IEEE 802.11n HT 40 MHz mode : OFDM 5. IEEE 802.11ac VHT20 mode: OFDM 6. IEEE 802.11ac VHT40 mode: OFDM 7. IEEE 802.11ax HE20 mode: OFDMA 8. IEEE 802.11ax HE40 mode: OFDMA
Number of channel	1. IEEE 802.11b mode: 11 Channels 2. IEEE 802.11g mode: 11 Channels 3. IEEE 802.11n HT 20 MHz mode : 11 Channels 4. IEEE 802.11n HT 40 MHz mode : 7 Channels 5. IEEE 802.11ac VHT20 mode: 11 Channels 6. IEEE 802.11ac VHT40 mode: 7 Channels 7. IEEE 802.11ax HE20 mode: 11 Channels 8. IEEE 802.11ax HE40 mode: 7 Channels

Remark:
Refer as ANSI C63.10: 2013 clause 5.6.1 Table 4 for test channels

Number of frequencies to be tested		
Frequency range in which device operates	**Number of frequencies**	**Location in frequency range of operation**
☐ 1 MHz or less	1	Middle
☐ 1 MHz to 10 MHz	2	1 near top and 1 near bottom
☒ More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

1.3 ANTENNA INFORMATION

Antenna Type	☐ PIFA ☒ PCB ☐ Dipole ☐ Coils
Antenna Gain	Chain 0: Gain: -13.33 dBi Chain 1: Gain: -13.74 dBi Power Directional Gain: -10.52 dBi
Antenna Connector	N/A

Notes:
1. Power Directional Gain: 10LOG(((10^(Ant1/10)+10^(Ant2/10))/2))
2.The antenna(s) of the EUT are permanently attached and there are no provisions for connection to an external antenna. So the EUT complies with the requirements of §15.203.

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	± 2.213 dB
Channel Bandwidth	± 2.7 %
RF output power (Power Meter + Power sensor)	± 0.243 dB
Power Spectral density	± 2.739 dB
Conducted Bandedge	± 2.739 dB
Conducted Spurious Emission	± 2.742 dB
Radiated Emission_9kHz-30MHz	± 3.115 dB
Radiated Emission_30MHz-200MHz	± 4.071 dB
Radiated Emission_200MHz-1GHz	± 4.419 dB
Radiated Emission_1GHz-6GHz	± 5.023 dB
Radiated Emission_6GHz-18GHz	± 5.068 dB
Radiated Emission_18GHz-26GHz	± 3.349 dB
Radiated Emission_26GHz-40GHz	± 3.229 dB

Remark:
1.This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2
2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at

AC Powerline Conducted Emission and Conducted:

☒ No.11, Wugong 6th Rd., Wugu Dist., New Taipei City, Taiwan.

Radiated emission 9kHz to 40GHz:

☐ No.11, Wugong 6th Rd., Wugu Dist., New Taipei City, Taiwan.

☒ No. 12, Ln. 116, Wugong 3rd Rd., Wugu Dist., New Taipei City, Taiwan 24803

CAB identifier: TW1309

Test site	Test Engineer	Remark
AC Conduction Room	Tony Chao	-
Radiation	Czerny Lin	-
RF Conducted	Allen Shen	-

Remark: The lab has been recognized as the FCC accredited lab. under the KDB 974614 D01 and is listed in the FCC pubic Access Link (PAL) database, FCC Registration No. :444940, the FCC Designation No.:TW1309

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

1.6 INSTRUMENT CALIBRATION

Conducted_FCC/IC/NCC (All)					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Power Sensor	Anritsu	MA2411B	1911386	2023-07-25	2024-07-24
Power Sensor	Anritsu	MA2411B	1911387	2023-07-25	2024-07-24
Power Meter	Anritsu	ML2496A	2136002	2022-11-24	2023-11-23
EXA Signal Analyzer	Keysight	N9010B	MY60242460	2023-02-02	2024-02-01
Software	Radio Test Software Ver. 21				

Radiated Emission Test Site: 966 D					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Antenna	SHWARZBECK	VULB 9168	1277	2023-01-13	2024-01-12
Pre-Amplifier	EMCI	EMC118A45SE	980820	2022-12-23	2023-12-22
Pre-Amplifier	EMCI	EMC330N	980853	2022-12-23	2023-12-22
Coaxial Cable	EMC	EMC101G-KM-KM-9000	220407+211228+230205	2023-03-21	2024-03-20
EXA Signal Analyzer	Agilent	N9010A	MY52220817	2023-03-09	2024-03-08
Coaxial Cable	EMC	EMCCFD400	211212+211222+211020	2023-03-21	2024-03-20
High Pass Filter	TITAN	T04H30001800070S01	211215-7-1	2023-02-02	2024-02-01
Thermo-Hygro Meter	EDSDS	EDS-A49	966D1	2023-05-11	2024-05-10
Pre-Amplifier	EMCI	EMC184045SE	980872	2023-01-03	2024-01-02
Horn Antenna	RF SPIN	DRH18-E	210301A18ES	2023-02-03	2024-02-02
Horn Antenna	SHWARZBECK	BBHA 9170	1134	2022-12-30	2023-12-29
Loop Antenna	SCHWARZBECK	FMZB 1513-60	1513-60-028	2022-12-27	2023-12-26
Software	e3 V9-210616c				

RF_Conduction(RF)					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
EMI Test Receiver	R&S	ESCI	100064	2023-06-07	2024-06-06
LISN	TESEQ	LN2-16N	22012	2023-03-08	2024-03-07
Cable	EMCI	CFD300-NL	CERF	2023-06-27	2024-06-26
Software	EZ-EMC(CCS-3A1-CE-WUGU)				

Remark:
1. Each piece of equipment is scheduled for calibration once a year.
2. N.C.R. = No Calibration Required.

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

Support Unit List					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
NB(E)	Lenovo	IBM 7663	N/A	N/A	N/A

1.8 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.247, KDB 662911, KDB 558074.

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

2. TEST SUMMARY

FCC Standard Section	Report Section	Test Item	Result
15.203	1.3	Antenna Requirement	Pass
15.207(a)	5.1	AC Conducted Emission	Pass
15.247(a)(2)	5.2	6 dB Bandwidth	Pass
-	5.2	Occupied Bandwidth (99%)	Pass
15.247(b)(3)	5.3	Output Power Measurement	Pass
15.247(e)	54	Power Spectral Density	Pass
15.247(d)	5.5	Conducted Band Edge	Pass
15.247(d)	5.5	Conducted Emission	Pass
15.247(d)	5.6	Radiation Band Edge	Pass
15.247(d)	5.6	Radiation Spurious Emission	Pass

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	IEEE 802.11b mode:1Mbps IEEE 802.11g mode:6Mbps IEEE 802.11n HT20 mode: MCS0 IEEE 802.11n HT40 mode: MCS0 IEEE 802.11ac VHT20 mode: MCS0 IEEE 802.11ac VHT40 mode: MCS0 IEEE 802.11ax HE20 mode: MCS0 IEEE 802.11ax HE40 mode: MCS0
Operation Transmitter	IEEE 802.11b mode: 2T2R IEEE 802.11g mode: 2T2R IEEE 802.11n HT20 mode: 2T2R IEEE 802.11n HT40 mode: 2T2R IEEE 802.11ac VHT20 mode: 2T2R IEEE 802.11ac VHT40 mode: 2T2R IEEE 802.11ax HE20 mode: 2T2R IEEE 802.11ax HE40 mode: 2T2R

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

Test Channel Frequencies	**IEEE 802.11b mode:** 1. Lowest Channel: 2412 MHz 2. Middle Channel: 2437MHz 3. Highest Channel: 2462 MHz **IEEE 802.11g mode :** 1. Lowest Channel: 2412 MHz 2. Middle Channel: 2437MHz 3. Highest Channel: 2462 MHz **IEEE 802.11n HT20 mode :** 1. Lowest Channel: 2412 MHz 2. Middle Channel: 2437MHz 3. Highest Channel: 2462 MHz **IEEE 802.11ac VHT20 mode :** 1. Lowest Channel: 2412 MHz 2. Middle Channel: 2437MHz 3. Highest Channel: 2462 MHz **IEEE 802.11ax HE20 mode :** 1. Lowest Channel: 2412 MHz 2. Middle Channel: 2437MHz 3. Highest Channel: 2462 MHz **IEEE 802.11n HT40 mode :** 1. Lowest Channel: 2422 MHz 2. Middle Channel: 2437MHz 3. Highest Channel: 2452 MHz **IEEE 802.11ac VHT40 mode :** 1. Lowest Channel: 2422 MHz 2. Middle Channel: 2437MHz 3. Highest Channel: 2452 MHz **IEEE 802.11ax HE40 mode :** 1. Lowest Channel: 2422 MHz 2. Middle Channel: 2437MHz 3. Highest Channel: 2452 MHz

Remark:
1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.
2. The mode IEEE 802.11ac VHT20 and VHT40 are only different in control messages with IEEE 802.11n 20 MHz and HT40, and have same power setting. Therefore, the highest power(IEEE 802.11n 20 MHz and HT40) were test conducted and radiated measurement and recorded in this report.

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

3.2 THE WORST MODE OF MEASUREMENT

AC Power Line Conducted Emission	
Test Condition	AC Power line conducted emission for line and neutral
Power supply Mode	Mode 1: EUT Power by System
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Radiated Emission Measurement Above 1G	
Test Condition	Radiated Emission Above 1G
Power supply Mode	Mode 1: EUT Power by System
Worst Mode	☒ Mode 1
Worst Position	☐ Placed in fixed position. ☒ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☐ Placed in fixed position at Z-Plane (H-Plane)

Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT Power by System
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Remark:
1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(X-Plane) were recorded in this report
3. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

4. EUT DUTY CYCLE

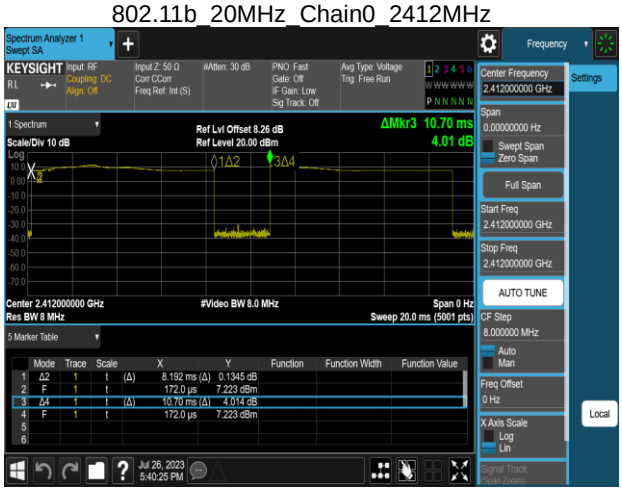
Temperature: 24.3 ~ 28℃ **Test date:** July 26 ~ August 31, 2023

Humidity: 50 ~ 61% RH **Tested by:** Allen Shen

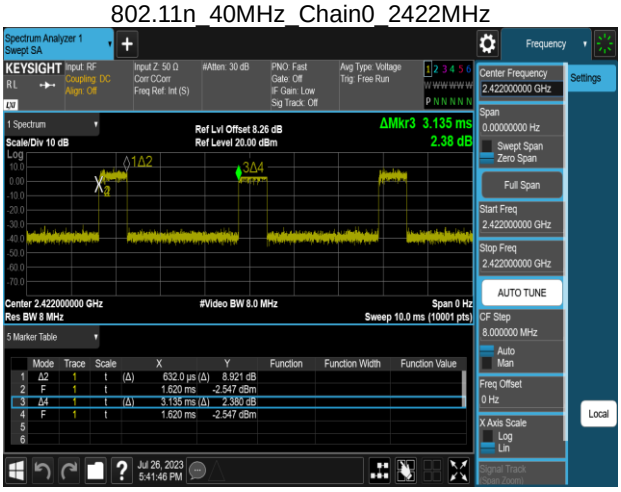
	Duty Cycle (%) = Ton / (Ton+Toff)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
802.11b	76.59	1.16	0.12	1.00
802.11g	35.21	4.53	0.74	1.00
802.11n_20	33.70	4.72	0.79	1.00
802.11n_40	20.16	6.96	1.58	2.00
802.11ac_20	33.77	4.71	0.78	1.00
802.11ac_40	20.26	6.93	1.57	2.00
802.11ax_20	31.82	4.97	0.86	1.00
802.11ax_40	19.75	7.04	1.62	2.00

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

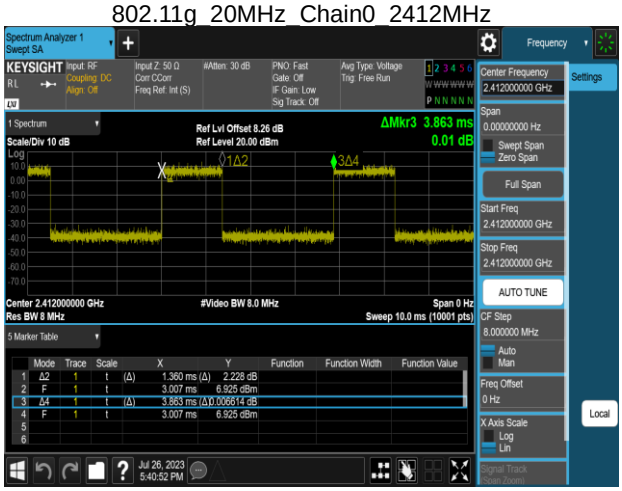
802.11b_20MHz_Chain0_2412MHz



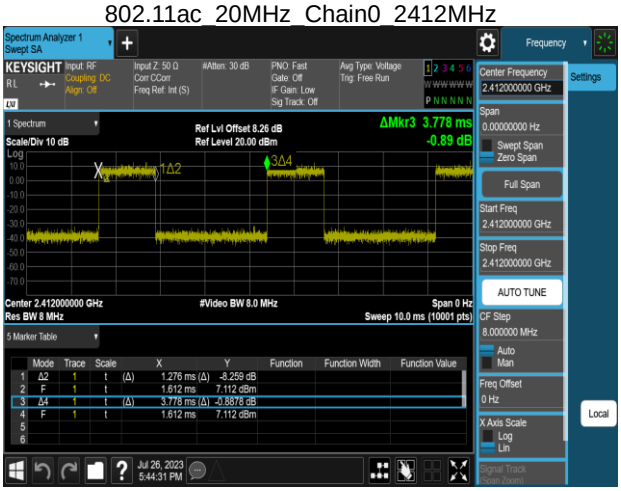
802.11n_40MHz_Chain0_2422MHz



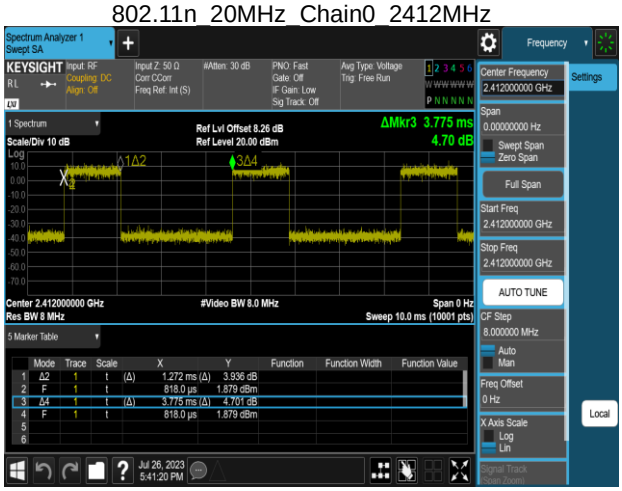
802.11g_20MHz_Chain0_2412MHz



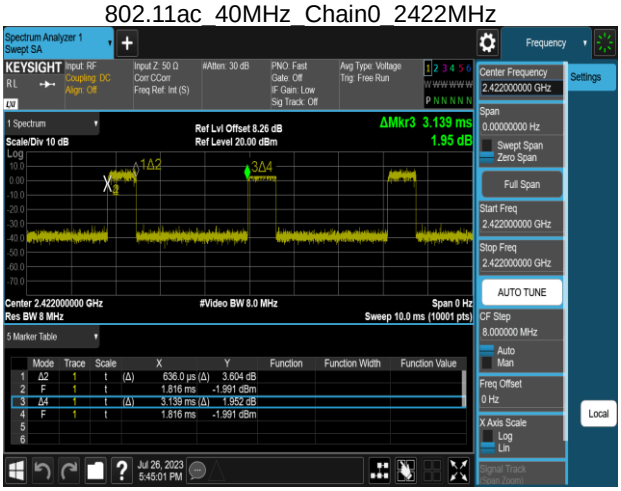
802.11ac_20MHz_Chain0_2412MHz



802.11n_20MHz_Chain0_2412MHz



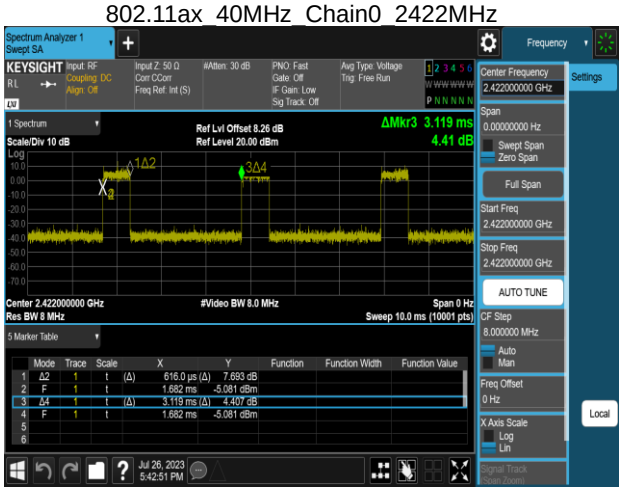
802.11ac_40MHz_Chain0_2422MHz



This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

802.11ax_20MHz_Chain0_2412MHz

802.11ax_40MHz_Chain0_2422MHz



This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

5. TEST RESULT

5.1 AC POWER LINE CONDUCTED EMISSION

5.1.1 Test Limit

According to §15.207(a)(2),

Frequency Range (MHz)	Limits(dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

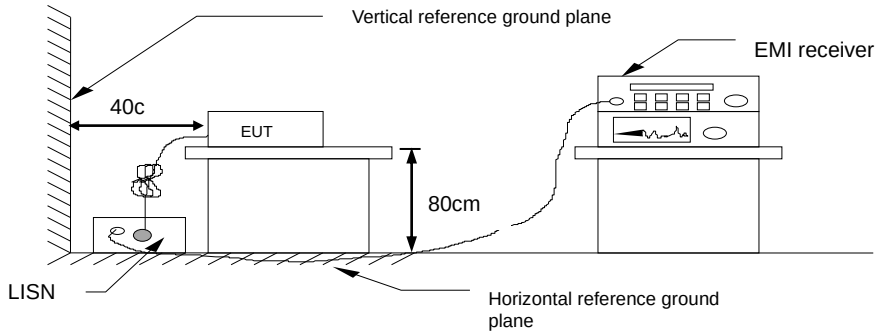
* Decreases with the logarithm of the frequency.

5.1.2 Test Procedure

Test method Refer as ANSI C63.10: 2013 clause 6.2,

1. The EUT was placed on a non-conducted table, which is 0.8m above horizontal ground plane and 0.4m above vertical ground plane.
2. EUT connected to the line impedance stabilization network (LISN)
3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. Recorded Line for Neutral and Line.

5.1.3 Test Setup



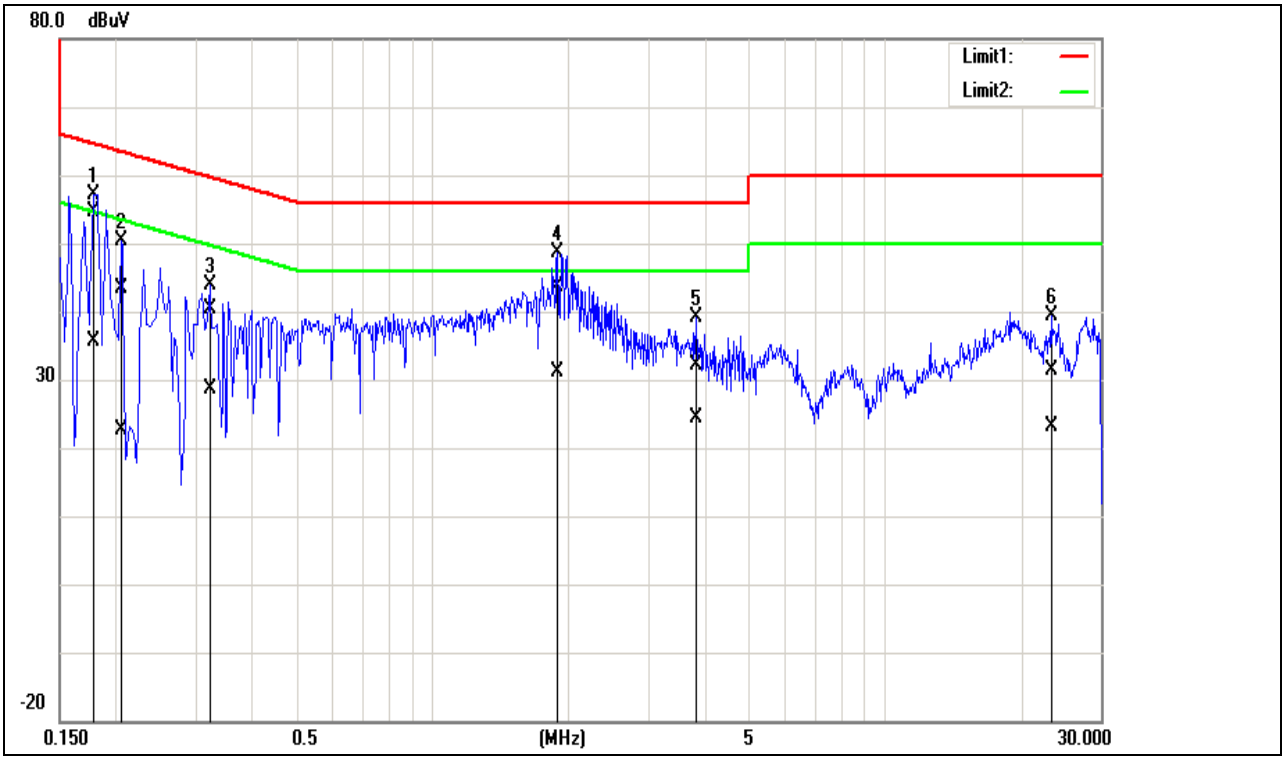
5.1.4 Test Result

Pass.

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

Test Data

Job No.:	**TMWK2307002435KR**	**Date:**	**2023/8/24**
Company:	**Toshiba Tec Corporation**	**Time:**	**PM 06:06:49**
Standard:	**NCC/FCC/IC QP**	**Temp.(℃)/Hum.(%):**	**25.5(℃)/53%**
Test item:	**Conduction test**	**Test By:**	**Tony Chao**
Line:	**L1**	**Test Voltage:**	**AC 120V/60Hz**
Model:			
Description:			



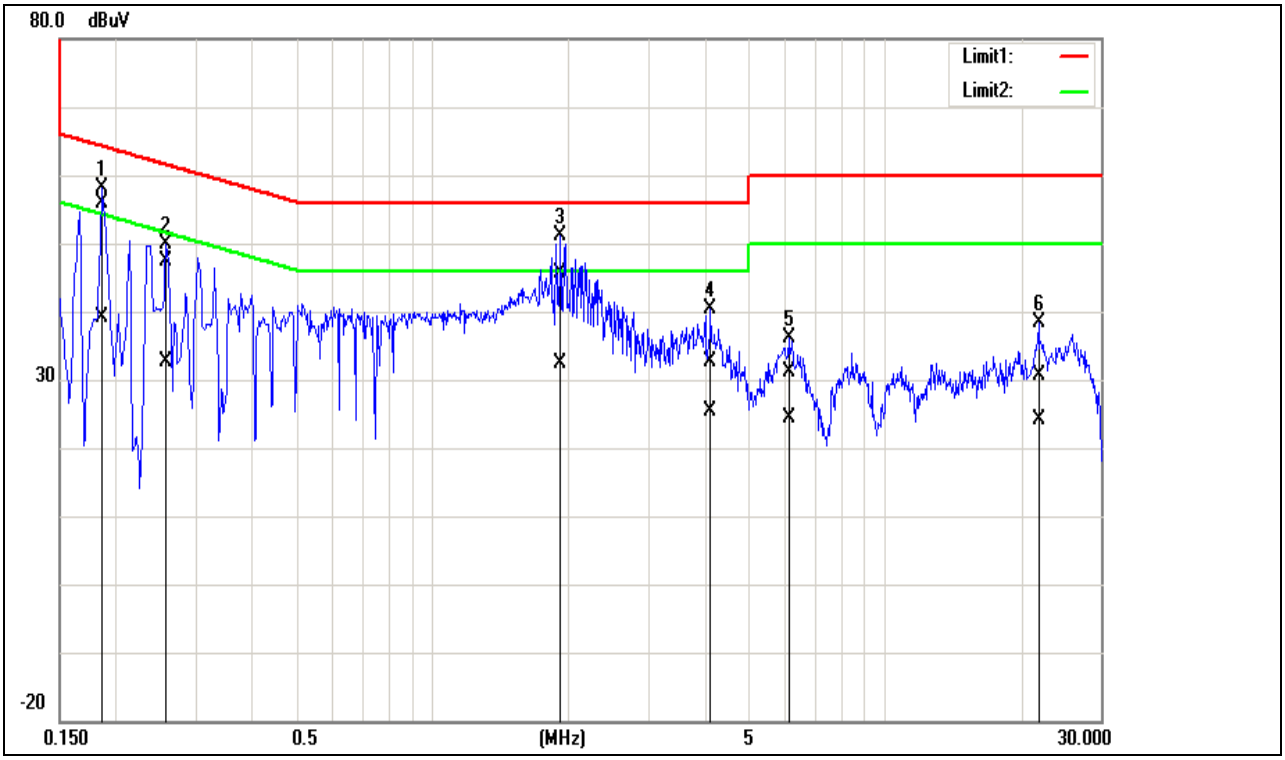
No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1*	0.1780	54.44	35.57	0.15	54.59	35.72	64.58	54.58	-9.99	-18.86	Pass
2	0.2060	43.25	22.44	0.15	43.40	22.59	63.37	53.37	-19.97	-30.78	Pass
3	0.3220	40.14	28.57	0.15	40.29	28.72	59.66	49.66	-19.37	-20.94	Pass
4	1.8900	43.36	30.84	0.22	43.58	31.06	56.00	46.00	-12.42	-14.94	Pass
5	3.8220	31.81	24.24	0.26	32.07	24.50	56.00	46.00	-23.93	-21.50	Pass
6	23.3020	30.88	22.46	0.55	31.43	23.01	60.00	50.00	-28.57	-26.99	Pass

Note: 1. Correction factor = LISN loss + Cable loss.

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

Job No.:	**TMWK2307002435KR**	**Date:**	**2023/8/24**
Company:	**Toshiba Tec Corporation**	**Time:**	**PM 05:59:12**
Standard:	**NCC/FCC/IC QP**	**Temp.(℃)/Hum.(%):**	**25.5(℃)/53%**
Test item:	**Conduction test**	**Test By:**	**Tony Chao**
Line:	**N**	**Test Voltage:**	**AC 120V/60Hz**
Model:			

Description:



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1*	0.1860	55.63	39.01	0.20	55.83	39.21	64.21	54.21	-8.38	-15.00	Pass
2	0.2580	47.26	32.41	0.19	47.45	32.60	61.50	51.50	-14.05	-18.90	Pass
3	1.9220	45.41	32.22	0.26	45.67	32.48	56.00	46.00	-10.33	-13.52	Pass
4	4.1340	32.23	25.07	0.31	32.54	25.38	56.00	46.00	-23.46	-20.62	Pass
5	6.1220	30.83	23.97	0.34	31.17	24.31	60.00	50.00	-28.83	-25.69	Pass
6	21.8740	30.04	23.53	0.53	30.57	24.06	60.00	50.00	-29.43	-25.94	Pass

Note: 1. Correction factor = LISN loss + Cable loss.

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

5.2 6dB BANDWIDTH AND OCCUPIED BANDWIDTH(99%)

5.2.1 Test Limit

According to §15.247(a)(2),

6 dB Bandwidth ：

Limit	Shall be at least 500kHz

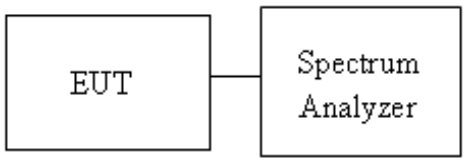
Occupied Bandwidth(99%) ： For reporting purposes only.

5.2.2 Test Procedure

Test method Refer as KDB 558074 D01 and ANSI C63.10: 2013 clause 6.9.2,

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 100kHz, VBW = 300kHz and Detector = Peak, to measurement 6 dB Bandwidth.
4. SA set RBW = 1% ~ 5% OBW, VBW = three times the RBW and Detector = Peak, to measurement 99% Bandwidth
5. Measure and record the result of 6 dB Bandwidth and 99% Bandwidth. in the test report.

5.2.3 Test Setup



This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

5.2.4 Test Result

Temperature:	24.3 ~ 28℃	**Test date:**	July 26 ~ August 31, 2023
Humidity:	50 ~ 61% RH	**Tested by:**	Allen Shen

802.11b Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	**11110.00**	≧ 500	PASS
2437	11080.00	≧ 500	PASS
2462	10180.00	≧ 500	PASS

802.11b Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	11100.00	≧ 500	PASS
2437	**11120.00**	≧ 500	PASS
2462	11100.00	≧ 500	PASS

802.11g Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	16110.00	≧ 500	PASS
2437	16100.00	≧ 500	PASS
2462	**16120.00**	≧ 500	PASS

802.11g Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	16350.00	≧ 500	PASS
2437	16350.00	≧ 500	PASS
2462	**16360.00**	≧ 500	PASS

802.11n_HT_20M Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	17300.00	≧ 500	PASS
2437	17300.00	≧ 500	PASS
2462	**17320.00**	≧ 500	PASS

802.11n_HT_20M Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	17300.00	≧ 500	PASS
2437	**17320.00**	≧ 500	PASS
2462	17290.00	≧ 500	PASS

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

802.11n_HT_40M Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2422	32640.00	≧ 500	PASS
2437	36060.00	≧ 500	PASS
2452	**36120.00**	≧ 500	PASS

802.11n_HT_40M Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2422	32610.00	≧ 500	PASS
2437	36130.00	≧ 500	PASS
2452	**36310.00**	≧ 500	PASS

802.11ax_HE_20M Ch0

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2412	full	15030.00	≧ 500	PASS
2412	26/0	15750.00	≧ 500	PASS
2437	full	**18530.00**	≧ 500	PASS
2462	full	18210.00	≧ 500	PASS

802.11ax_HE_20M Ch1

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2412	full	15110.00	≧ 500	PASS
2412	26/0	14500.00	≧ 500	PASS
2437	full	**18680.00**	≧ 500	PASS
2462	full	18370.00	≧ 500	PASS

802.11ax_HE_40M Ch0

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2422	full	31390.00	≧ 500	PASS
2437	full	37640.00	≧ 500	PASS
2452	full	**38020.00**	≧ 500	PASS

802.11ax_HE_40M Ch1

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2422	full	35080.00	≧ 500	PASS
2437	full	37970.00	≧ 500	PASS
2452	full	**37990.00**	≧ 500	PASS

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

802.11b Ch0

Freq. (MHz)	99% BW (MHz)
2412	14.857
2437	**14.876**
2462	14.833

802.11b Ch1

Freq. (MHz)	99% BW (MHz)
2412	14.896
2437	**14.922**
2462	14.901

802.11g Ch0

Freq. (MHz)	99% BW (MHz)
2412	**16.408**
2437	16.394
2462	16.389

802.11g Ch1

Freq. (MHz)	99% BW (MHz)
2412	16.344
2437	16.346
2462	**16.356**

802.11n_HT20M Ch0

Freq. (MHz)	99% BW (MHz)
2412	17.538
2437	17.517
2462	**17.545**

802.11n_HT20M Ch1

Freq. (MHz)	99% BW (MHz)
2412	17.536
2437	17.512
2462	**17.539**

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

802.11n_HT40M Ch0

Freq. (MHz)	99% BW (MHz)
2422	35.643
2437	**36.099**
2452	36.052

802.11n_HT40M Ch1

Freq. (MHz)	99% BW (MHz)
2422	35.655
2437	36.124
2452	**36.139**

802.11ax_HE20M Ch0

Freq. (MHz)	RU Config	99% BW (MHz)
2412	full	18.625
2412	26/0	17.917
2437	full	18.899
2462	full	**18.911**

802.11ax_HE20M Ch1

Freq. (MHz)	RU Config	99% BW (MHz)
2412	full	18.631
2412	26/0	17.735
2437	full	18.895
2462	full	**18.913**

802.11ax_HE40M Ch0

Freq. (MHz)	RU Config	99% BW (MHz)
2422	full	37.184
2437	full	**37.707**
2452	full	37.671

802.11ax_HE40M Ch1

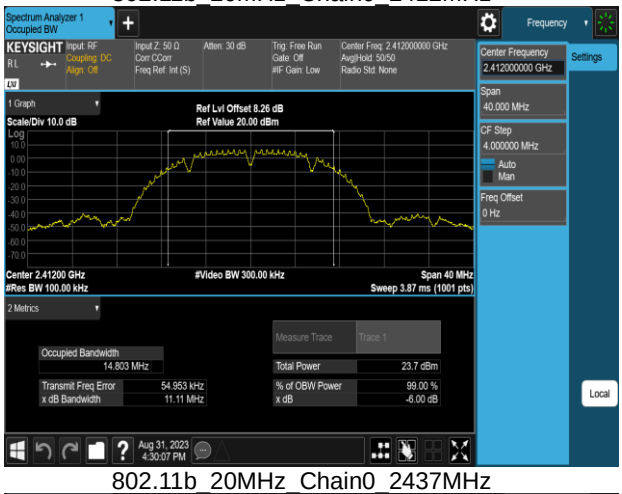
Freq. (MHz)	RU Config	99% BW (MHz)
2422	full	37.178
2437	full	37.715
2452	full	**37.732**

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

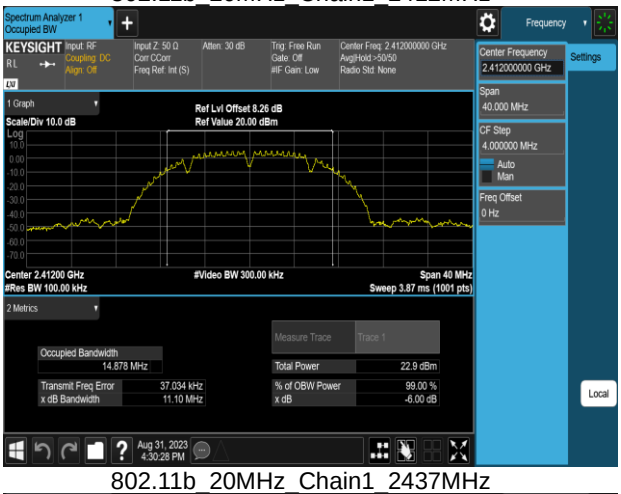
Test Data

6dB BANDWIDTH

802.11b_20MHz_Chain0_2412MHz

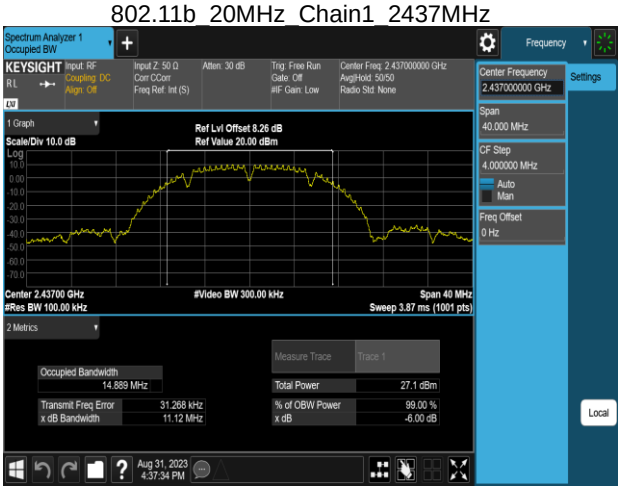


802.11b_20MHz_Chain1_2412MHz



802.11b_20MHz_Chain0_2437MHz

802.11b_20MHz_Chain1_2437MHz

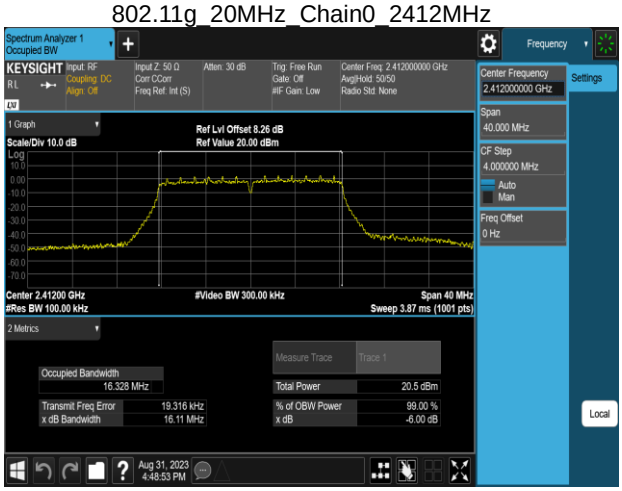


802.11b_20MHz_Chain0_2462MHz

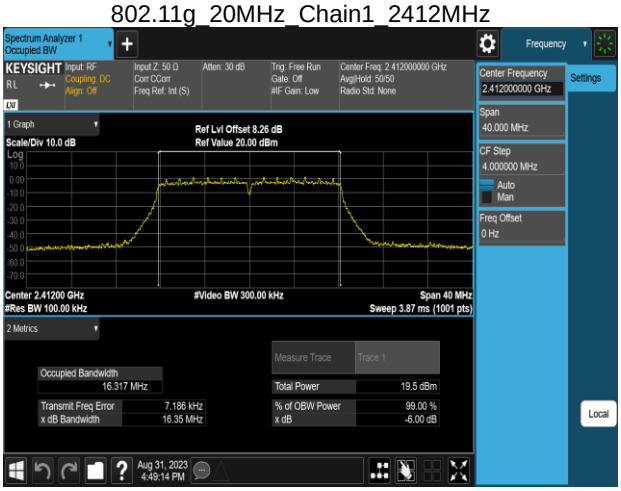
802.11b_20MHz_Chain1_2462MHz

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

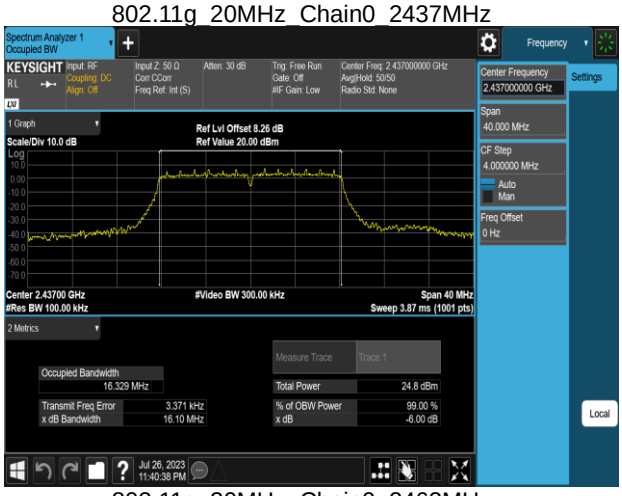
802.11g_20MHz_Chain0_2412MHz



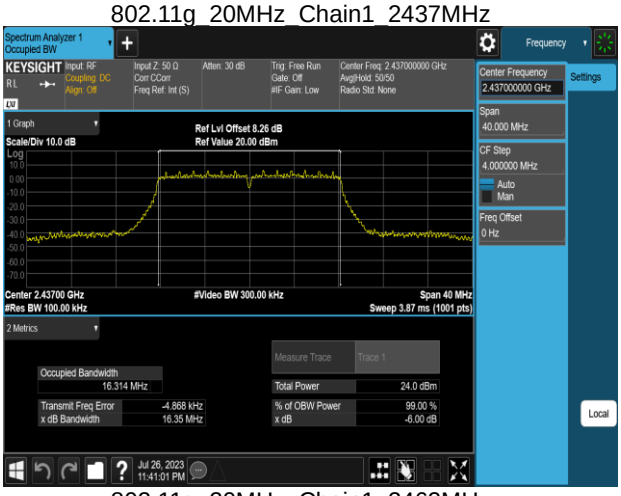
802.11g_20MHz_Chain1_2412MHz



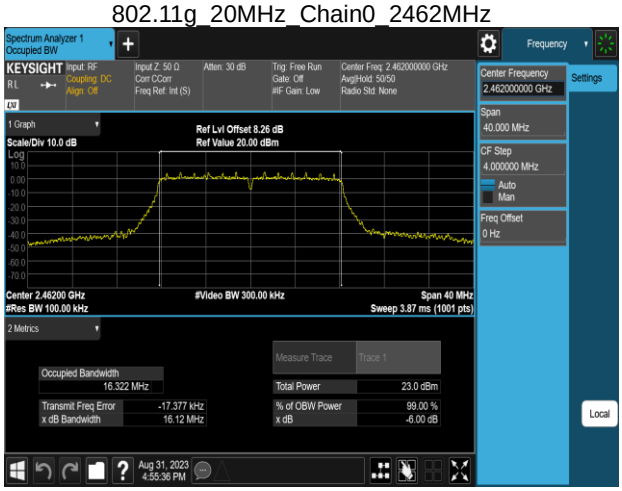
802.11g_20MHz_Chain0_2437MHz



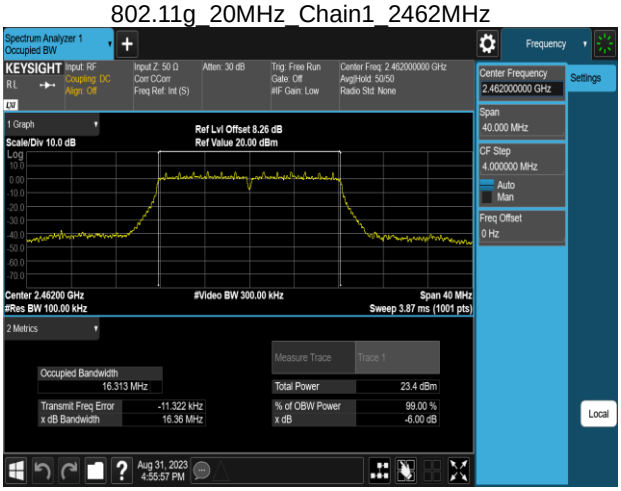
802.11g_20MHz_Chain1_2437MHz



802.11g_20MHz_Chain0_2462MHz

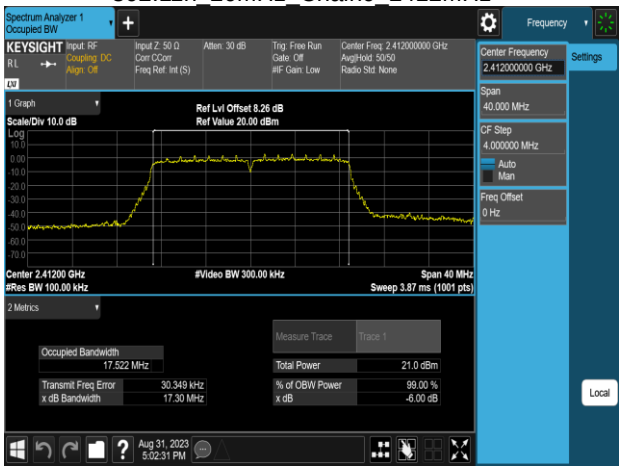


802.11g_20MHz_Chain1_2462MHz

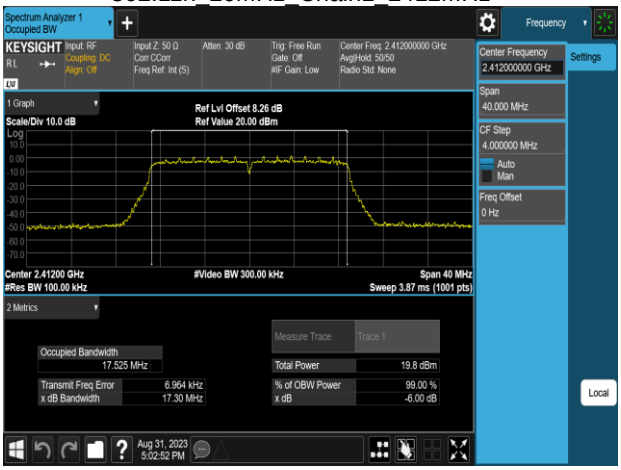


This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

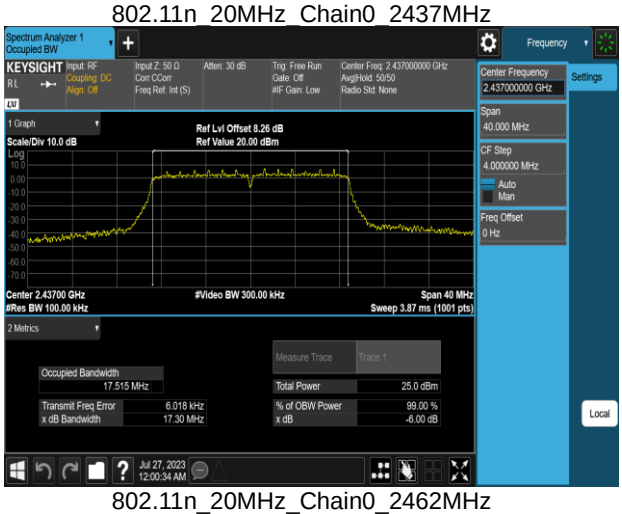
802.11n_20MHz_Chain0_2412MHz



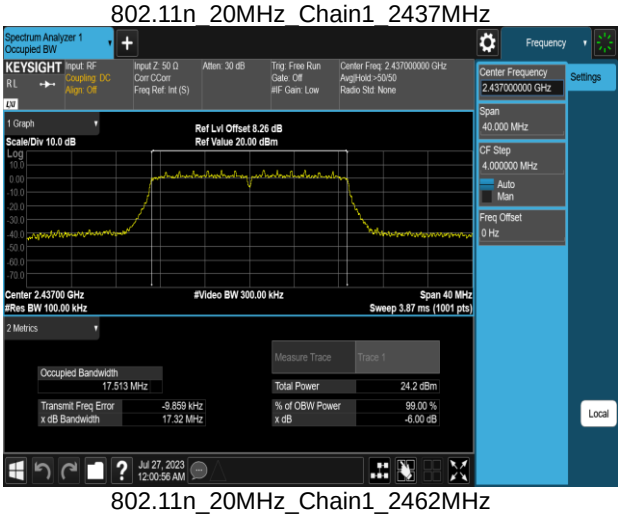
802.11n_20MHz_Chain1_2412MHz



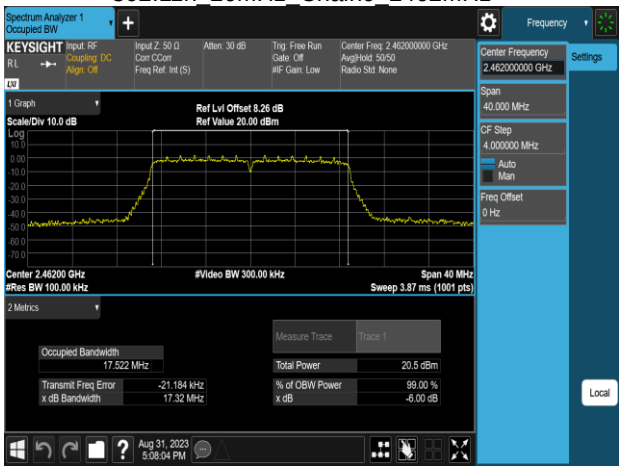
802.11n_20MHz_Chain0_2437MHz



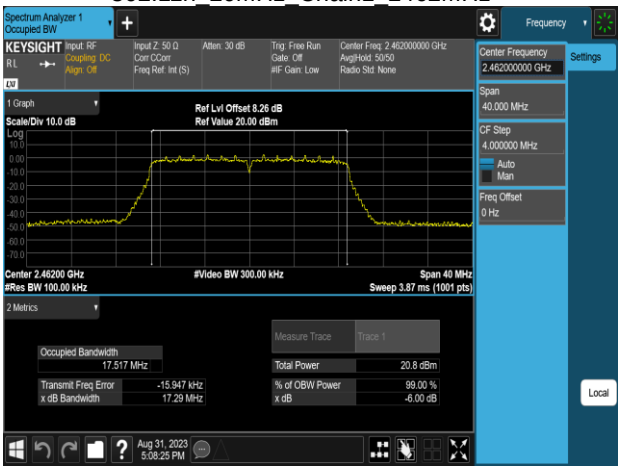
802.11n_20MHz_Chain1_2437MHz



802.11n_20MHz_Chain0_2462MHz

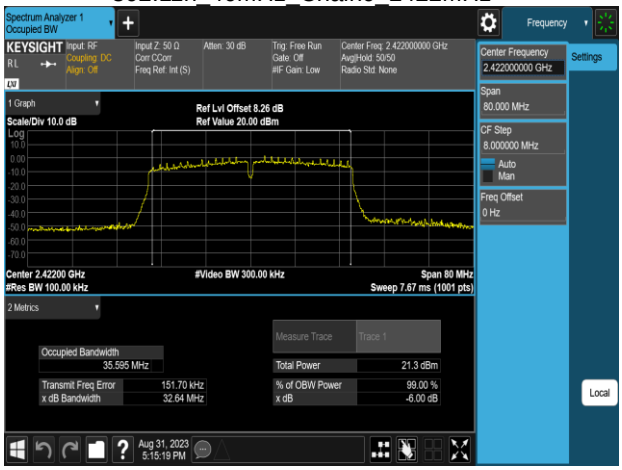


802.11n_20MHz_Chain1_2462MHz

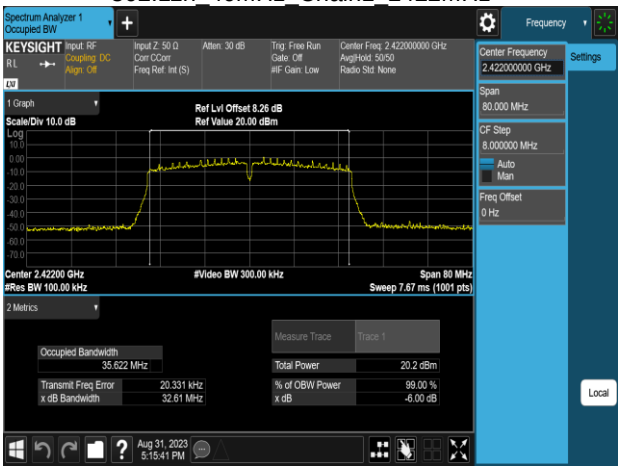


This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

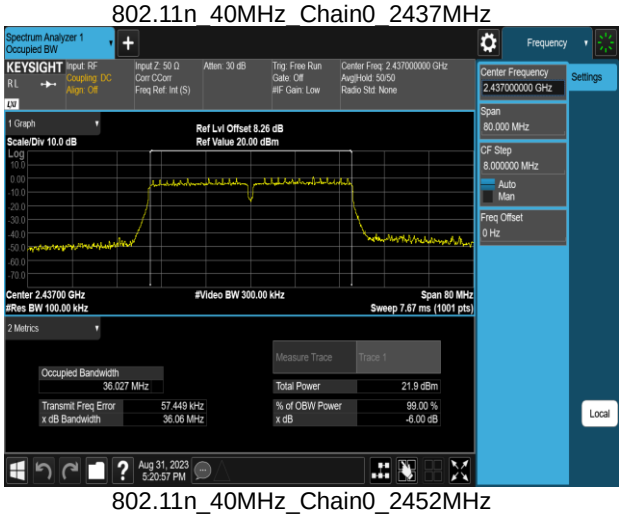
802.11n_40MHz_Chain0_2422MHz



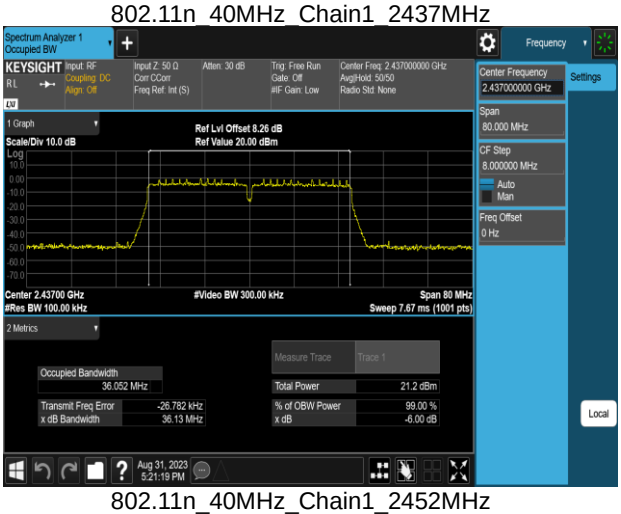
802.11n_40MHz_Chain1_2422MHz



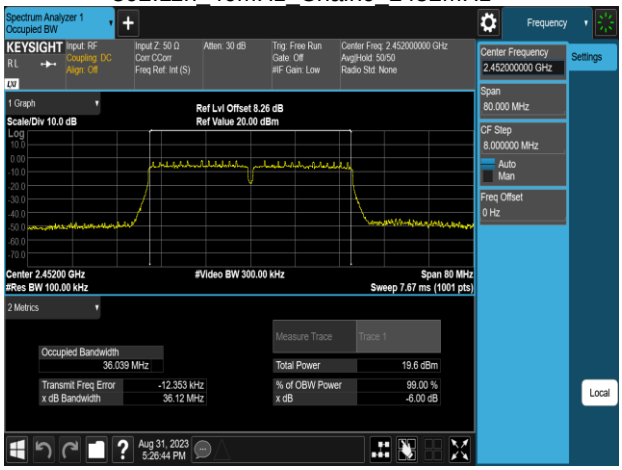
802.11n_40MHz_Chain0_2437MHz



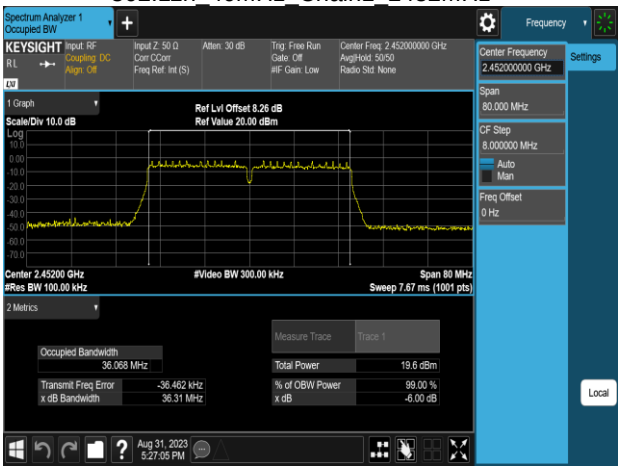
802.11n_40MHz_Chain1_2437MHz



802.11n_40MHz_Chain0_2452MHz

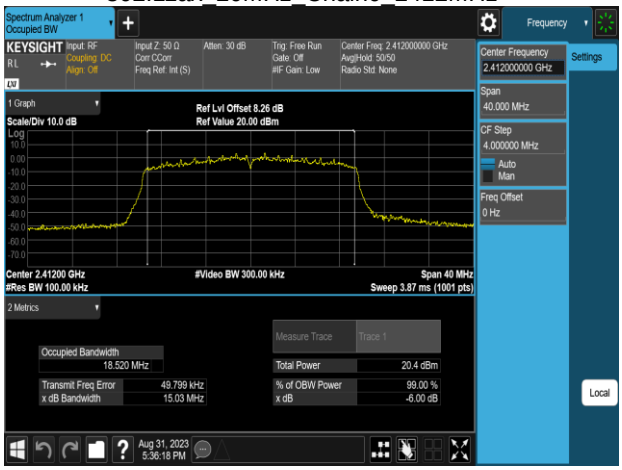


802.11n_40MHz_Chain1_2452MHz

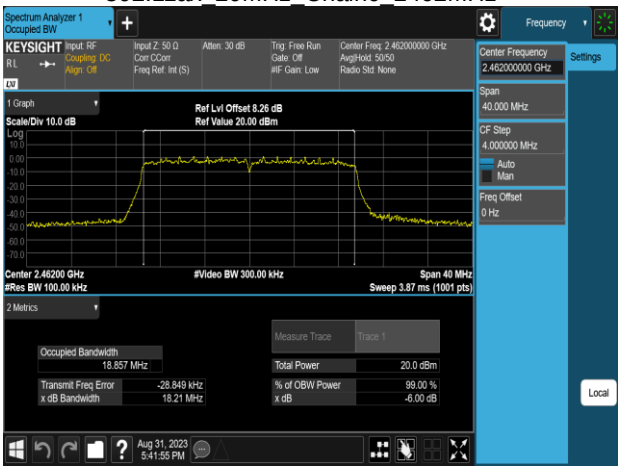


This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

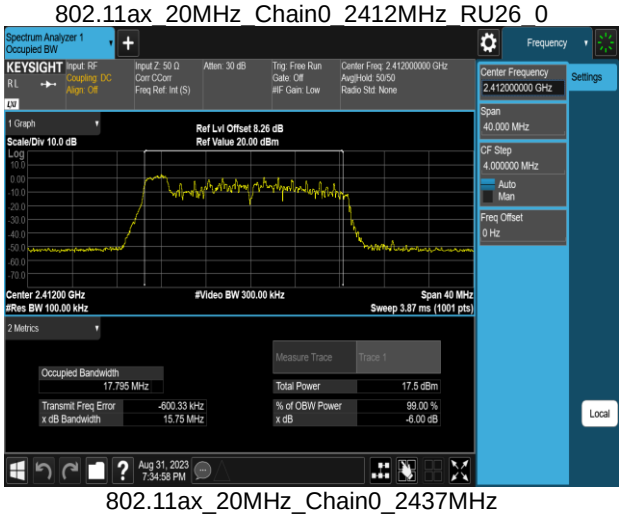
802.11ax_20MHz_Chain0_2412MHz



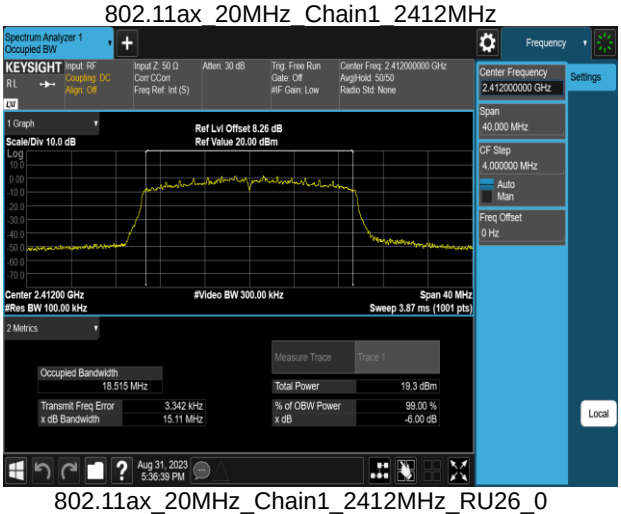
802.11ax_20MHz_Chain0_2462MHz



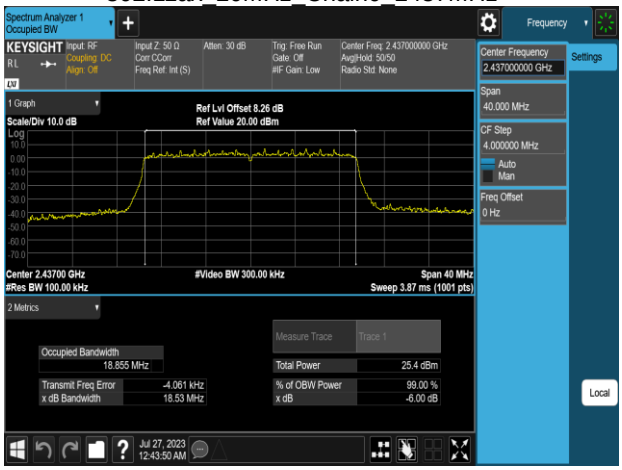
802.11ax_20MHz_Chain0_2412MHz_RU26_0



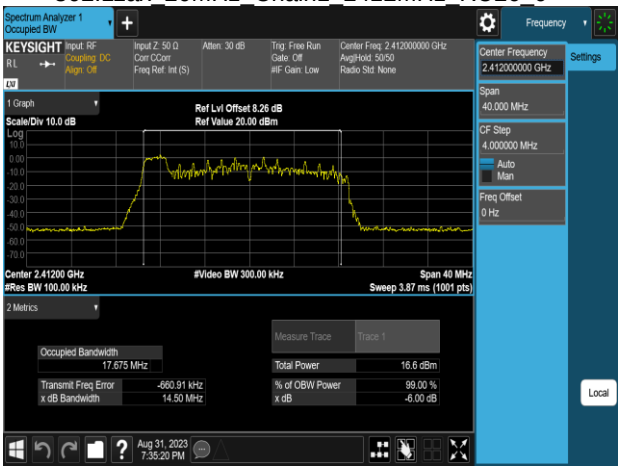
802.11ax_20MHz_Chain1_2412MHz



802.11ax_20MHz_Chain0_2437MHz

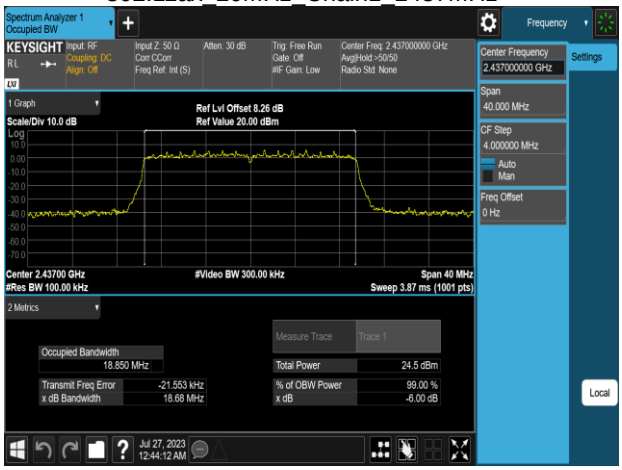


802.11ax_20MHz_Chain1_2412MHz_RU26_0

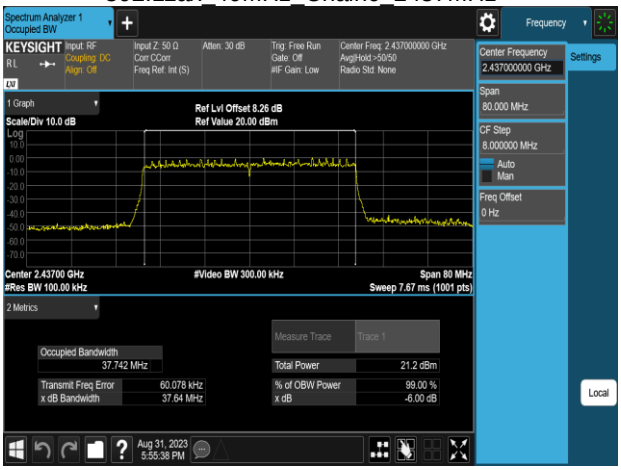


This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

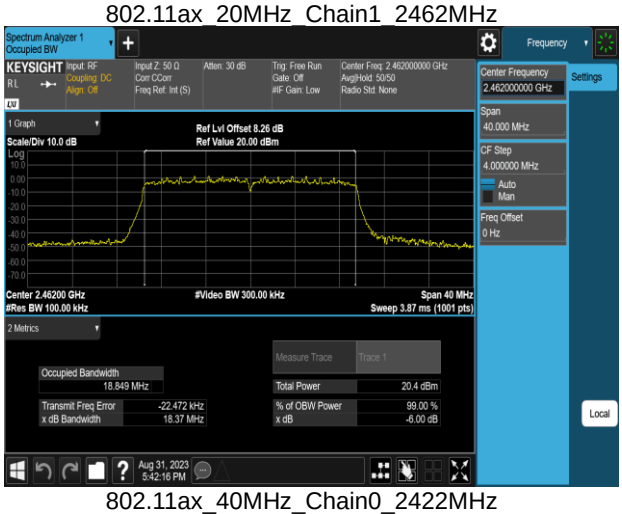
802.11ax_20MHz_Chain1_2437MHz



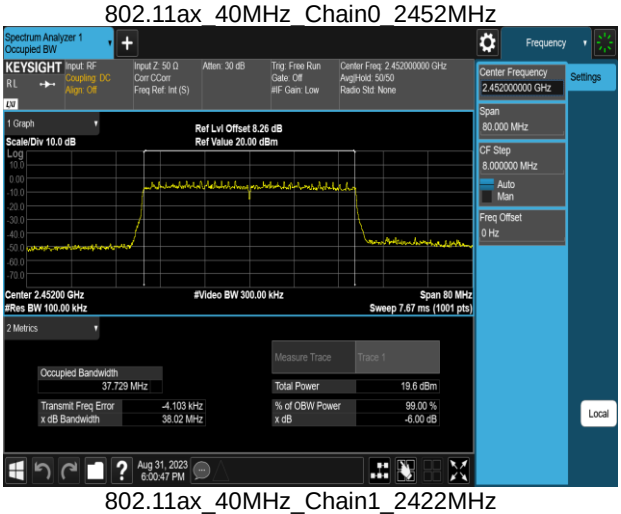
802.11ax_40MHz_Chain0_2437MHz



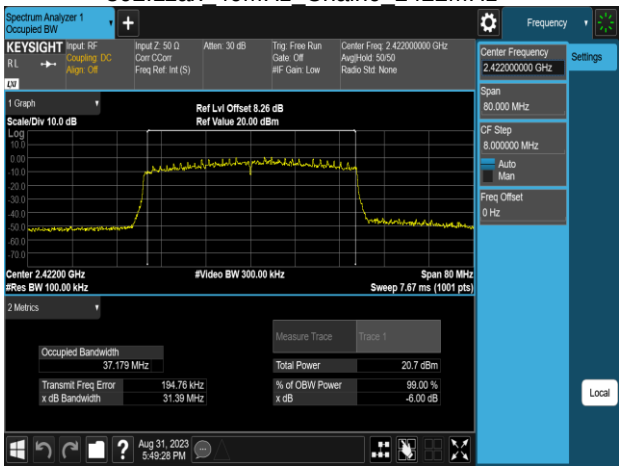
802.11ax_20MHz_Chain1_2462MHz



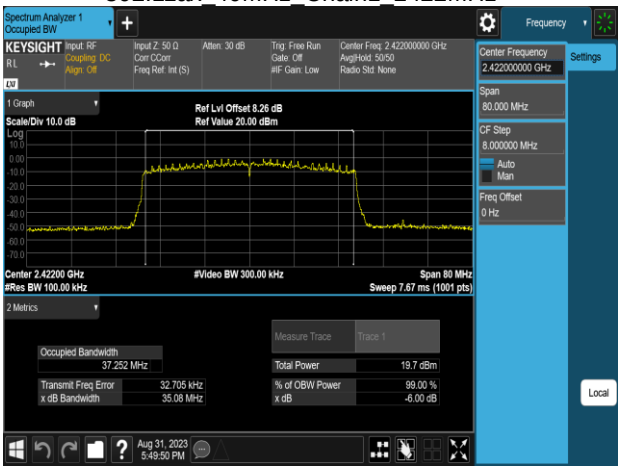
802.11ax_40MHz_Chain0_2452MHz



802.11ax_40MHz_Chain0_2422MHz

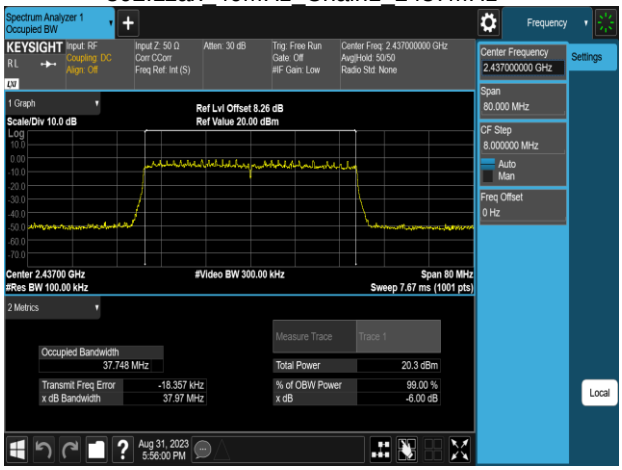


802.11ax_40MHz_Chain1_2422MHz

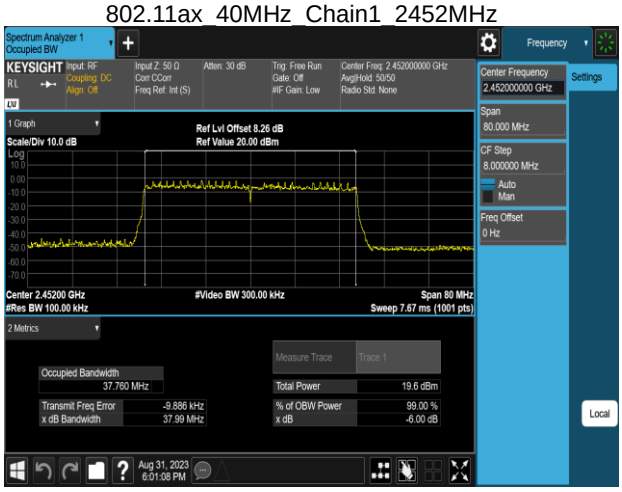


This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

802.11ax_40MHz_Chain1_2437MHz



802.11ax_40MHz_Chain1_2452MHz

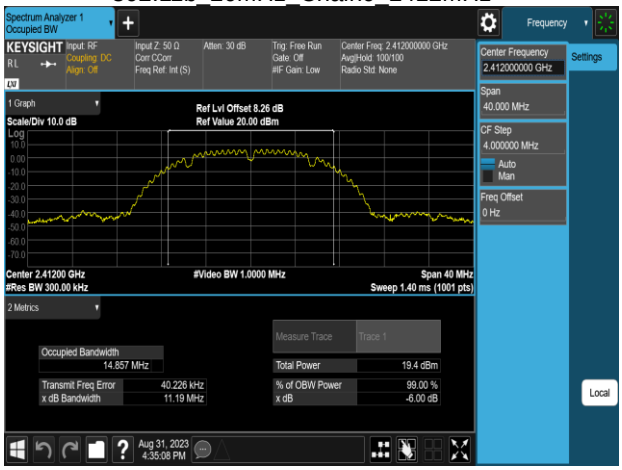


This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

Test Data

BANDWIDTH 99%

802.11b_20MHz_Chain0_2412MHz



802.11b_20MHz_Chain1_2412MHz

802.11b_20MHz_Chain0_2437MHz

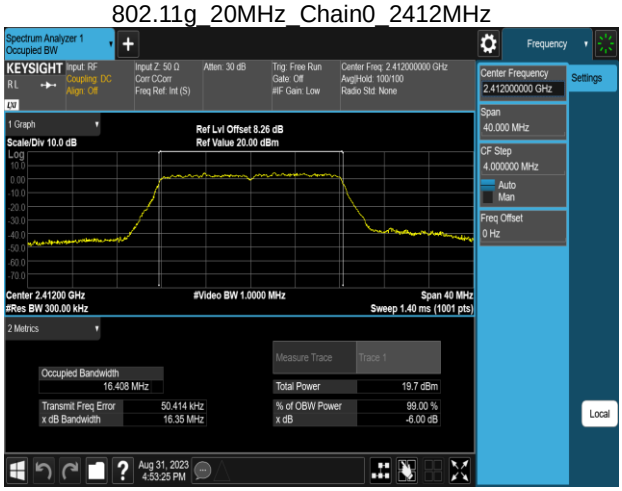
802.11b_20MHz_Chain1_2437MHz

802.11b_20MHz_Chain0_2462MHz

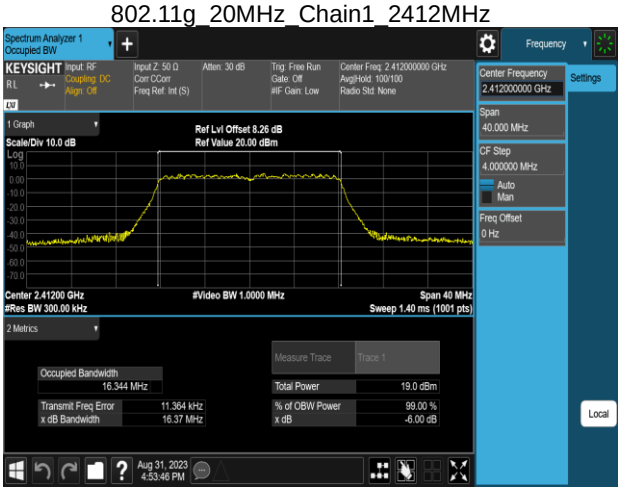
802.11b_20MHz_Chain1_2462MHz

This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

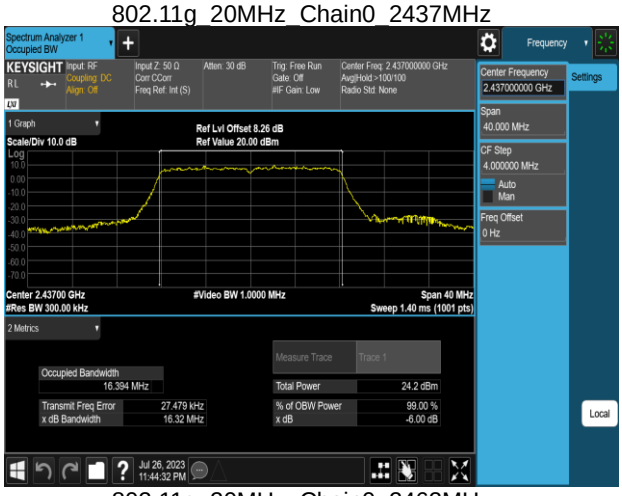
802.11g_20MHz_Chain0_2412MHz



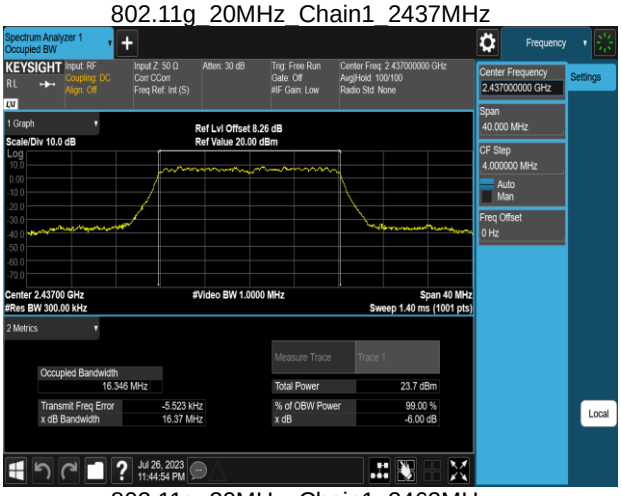
802.11g_20MHz_Chain1_2412MHz



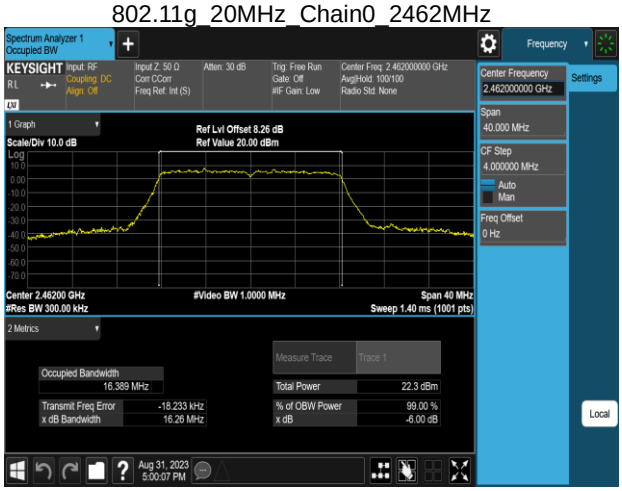
802.11g_20MHz_Chain0_2437MHz



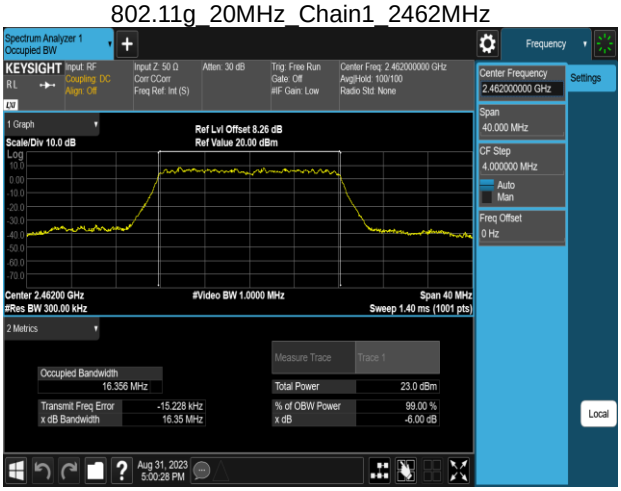
802.11g_20MHz_Chain1_2437MHz



802.11g_20MHz_Chain0_2462MHz

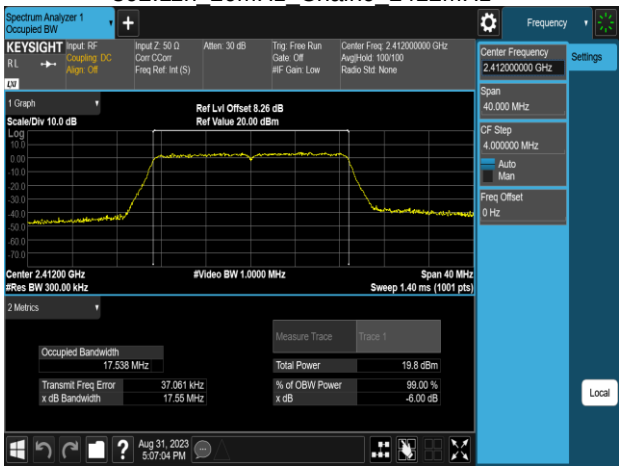


802.11g_20MHz_Chain1_2462MHz

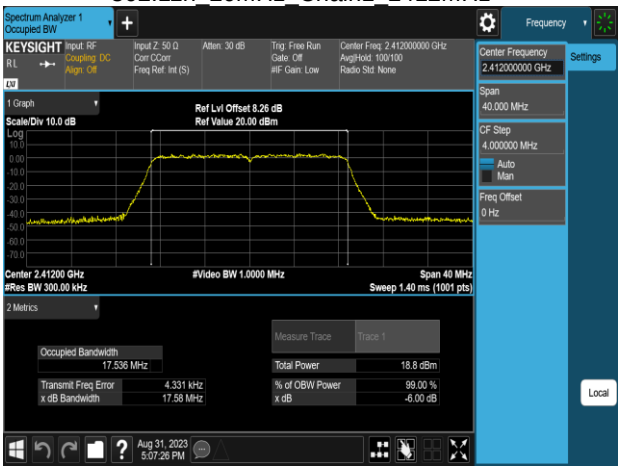


This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。

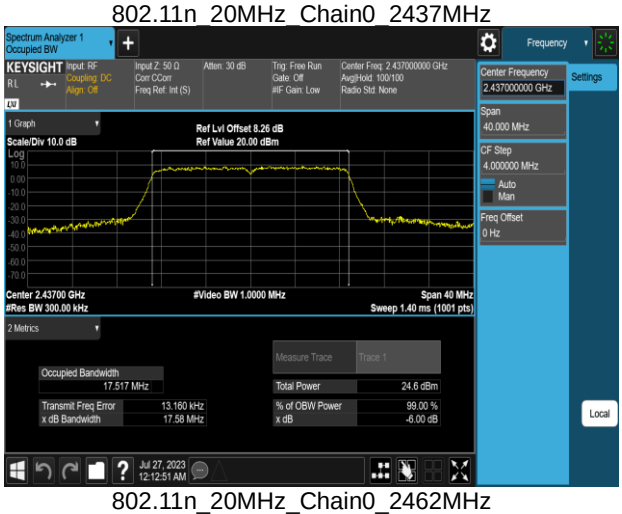
802.11n_20MHz_Chain0_2412MHz



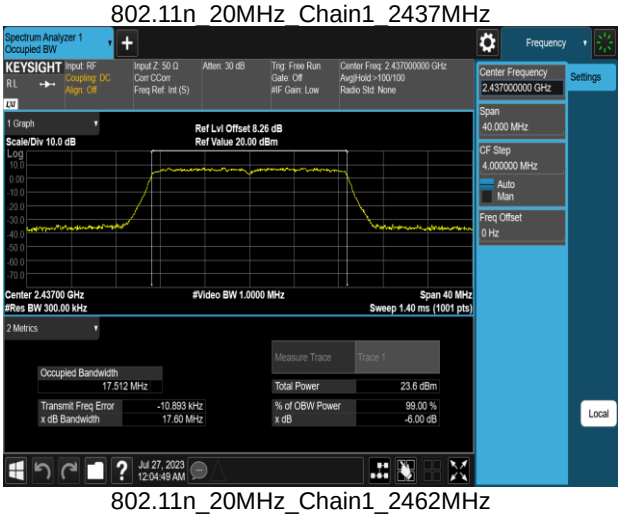
802.11n_20MHz_Chain1_2412MHz



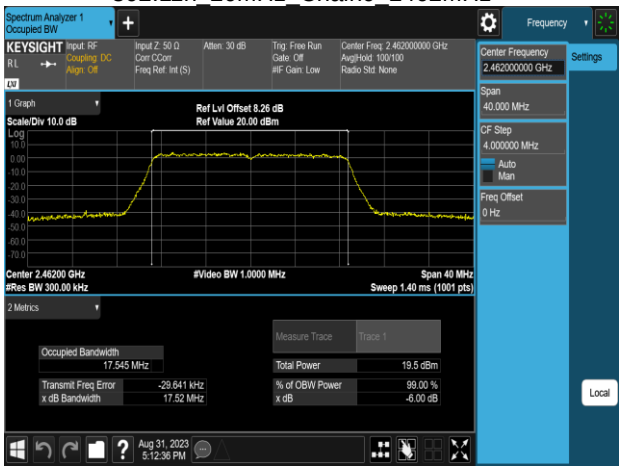
802.11n_20MHz_Chain0_2437MHz



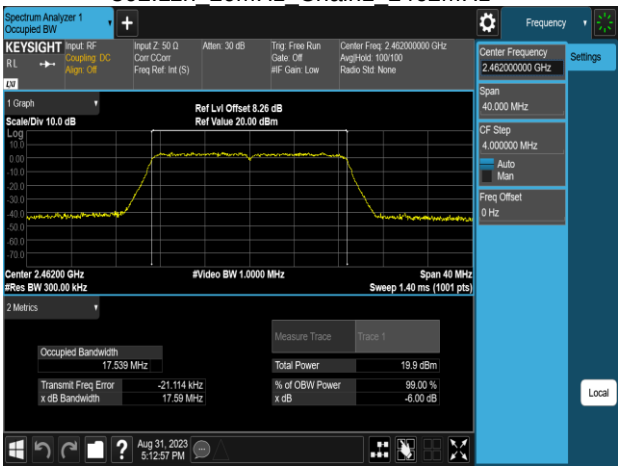
802.11n_20MHz_Chain1_2437MHz



802.11n_20MHz_Chain0_2462MHz



802.11n_20MHz_Chain1_2462MHz



This document cannot be reproduced except in full, without prior written approval of the Company. 本報告未經本公司書面許可，不可部份複製。