



FCC - TEST REPORT

Report Number : **709502405780-00B** Date of Issue: August 30,2024

Model : Refer to page 4

Product Type : Acoustic Imaging Camera

Applicant : FOTRIC INC.

Address : No. 14, Lane 2500, Xiupu Road, Pudong, 201201 Shanghai,
PEOPLE'S REPUBLIC OF CHINA

Manufacturer : FOTRIC INC.

Address : No. 14, Lane 2500, Xiupu Road, Pudong, 201201 Shanghai,
PEOPLE'S REPUBLIC OF CHINA

Test Result : **n Positive** **Δ Negative**

Total pages including Appendices : 75



TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch is a subcontractor to TÜV SÜD Product Service GmbH according to the principles outlined in ISO 17025.

TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch reports apply only to the specific samples tested under stated test conditions. Construction of the actual test samples has been documented. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. The manufacturer/importer is responsible to the Competent Authorities in Europe for any modifications made to the production units which result in non-compliance to the relevant regulations. TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch issued reports.

This report is the confidential property of the client. As a mutual protection to our clients, the public and ourselves, extracts from the test report shall not be reproduced except in full without our written approval.



1 Table of Contents

1	Table of Contents.....	2
2	Report Modification Record.....	3
3	Details about the Test Laboratory	3
4	Description of the Equipment under Test.....	4
5	Summary of Test Standards	8
6	Summary of Test Results	9
7	General Remarks.....	10
8	Test Setups	11
9	Systems test configuration	14
10	Technical Requirement	15
10.1	Conducted Emission	15
10.2	Conducted peak output power.....	20
10.3	6dB bandwidth	31
10.4	Power spectral density	36
10.5	Spurious RF conducted emissions.....	41
10.6	Band edge	54
10.7	Spurious radiated emissions for transmitter	63
11	Test Equipment List.....	72
12	System Measurement Uncertainty	73
13	Photographs of Test Set-ups	74
14	Photographs of EUT	75



2 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
709502405780-00B	First Issue	08/30/2024

3 Details about the Test Laboratory

Test Site 1

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
No.16 Lane, 1951 Du Hui Road,
Shanghai 201108,
P.R. China

Telephone: +86 21 6141 0123

Fax: +86 21 6140 8600

FCC Registration No.: 820234

FCC Designation Number: CN1183

ISED CAB identifier: CN0101

IC Registration No.: 31668

4 Description of the Equipment under Test

Product: Acoustic Imaging Camera

Model no.:

Fotric AC80	Fotric 450 Pro	Fotric AC60	Fotric H0
Fotric AC81	Fotric 451 Pro	Fotric AC61	Fotric H1
Fotric AC82	Fotric 452 Pro	Fotric AC62	Fotric H2
Fotric AC83	Fotric 453 Pro	Fotric AC63	Fotric H3
Fotric AC84	Fotric 454 Pro	Fotric AC64	Fotric H4
Fotric AC85	Fotric 455 Pro	Fotric AC65	Fotric H5
Fotric AC86	Fotric 456 Pro	Fotric AC66	Fotric H6
Fotric AC87	Fotric 457 Pro	Fotric AC67	Fotric H7
Fotric AC88	Fotric 458 Pro	Fotric AC68	Fotric H8
Fotric AC89	Fotric 459 Pro	Fotric AC69	Fotric H9
Fotric H0pLus	Fotric H0+	Fotric Fac30FH	Fotric TD0
Fotric H1pLus	Fotric H1+	Fotric Fac31FH	Fotric TD1
Fotric H2pLus	Fotric H2+	Fotric Fac32FH	Fotric TD2
Fotric H3pLus	Fotric H3+	Fotric Fac33FH	Fotric TD3
Fotric H4pLus	Fotric H4+	Fotric Fac34FH	Fotric TD4
Fotric H5pLus	Fotric H5+	Fotric Fac35FH	Fotric TD5
Fotric H6pLus	Fotric H6+	Fotric Fac36FH	Fotric TD6
Fotric H7pLus	Fotric H7+	Fotric Fac37FH	Fotric TD7
Fotric H8pLus	Fotric H8+	Fotric Fac38FH	Fotric TD8
Fotric H9pLus	Fotric H9+	Fotric Fac39FH	Fotric TD9
Fotric EE0HE	Fotric EE0DT	Fotric H0Pro	Fotric AC80-Ex
Fotric EE1HE	Fotric EE1DT	Fotric H1Pro	Fotric AC81-Ex
Fotric EE2HE	Fotric EE2DT	Fotric H2Pro	Fotric AC82-Ex
Fotric EE3HE	Fotric EE3DT	Fotric H3Pro	Fotric AC83-Ex
Fotric EE4HE	Fotric EE4DT	Fotric H4Pro	Fotric AC84-Ex
Fotric EE5HE	Fotric EE5DT	Fotric H5Pro	Fotric AC85-Ex
Fotric EE6HE	Fotric EE6DT	Fotric H6Pro	Fotric AC86-Ex
Fotric EE7HE	Fotric EE7DT	Fotric H7Pro	Fotric AC87-Ex
Fotric EE8HE	Fotric EE8DT	Fotric H8Pro	Fotric AC88-Ex
Fotric EE9HE	Fotric EE9DT	Fotric H9Pro	Fotric AC89-Ex
Fotric TD0pro	Fotric TD0plus	Fotric TD0+	
Fotric TD1pro	Fotric TD1plus	Fotric TD1+	
Fotric TD2pro	Fotric TD2plus	Fotric TD2+	
Fotric TD3pro	Fotric TD3plus	Fotric TD3+	
Fotric TD4pro	Fotric TD4plus	Fotric TD4+	
Fotric TD5pro	Fotric TD5plus	Fotric TD5+	
Fotric TD6pro	Fotric TD6plus	Fotric TD6+	
Fotric TD7pro	Fotric TD7plus	Fotric TD7+	
Fotric TD8pro	Fotric TD8plus	Fotric TD8+	
Fotric TD9pro	Fotric TD9plus	Fotric TD9+	

FCC ID: 2AZTCFALCONAC

Options and accessories: NA

Rating: DC 7.4V for Acoustic Imaging Camera
Input: AC 100-240V, 50/60Hz, Output DC 12V for adapter

RF Transmission
Frequency:

For Bluetooth:2402~2480MHz
For 2.4G Wi-Fi:802.11b/g/n-HT20: 2412~2462 MHz
802.11n-HT40: 2422~2452 MHz
For 5G Wi-Fi:5180~5240 MHz (U-NII-1)
5260~5320 MHz (U-NII-2A)
5500~5720 MHz (U-NII-2C)
5745~5825 MHz (U-NII-3)

No. of Operated Channel: 79 channels for Bluetooth EDR

Ch	Fre (MH)	Ch	Fre (MH)	Ch	Fre (MH)	Ch	Fre (MH)	Ch	Fre (MHz)
1	2402	17	2418	33	2434	49	2450	65	2466
2	2403	18	2419	34	2435	50	2451	66	2467
3	2404	19	2420	35	2436	51	2452	67	2468
4	2405	20	2421	36	2437	52	2453	68	2469
5	2406	21	2422	37	2438	53	2454	69	2470
6	2407	22	2423	38	2439	54	2455	70	2471
7	2408	23	2424	39	2440	55	2456	71	2472
8	2409	24	2425	40	2441	56	2457	72	2473
9	2410	25	2426	41	2442	57	2458	73	2474
10	2411	26	2427	42	2443	58	2459	74	2475
11	2412	27	2428	43	2444	59	2460	75	2476
12	2413	28	2429	44	2445	60	2461	76	2477
13	2414	29	2430	45	2446	61	2462	77	2478
14	2415	30	2431	46	2447	62	2463	78	2479
15	2416	31	2432	47	2448	63	2464	79	2480
16	2417	32	2433	48	2449	64	2465		

40 channels for Bluetooth 4.2 BLE

Ch	Fre(MHz)	Ch	Fre(MHz)	Ch	Fre(MHz)	Ch	Fre(MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

2.4GHz WIFI: 11 for 802.11b/802.11g/802.11(H20);
7 for 802.11n(HT40)

802.11b/g/n(HT20)					802.11n(HT40)		
Ch	Fre(MHz)	Ch	Fre(MHz)	Ch	Fre(MHz)	Ch	Fre(MHz)
1	2412	7	2442	3	2422	8	2447MHz
2	2417	8	2447	4	2427	9	2452MHz
3	2422	9	2452	5	2432		
4	2427	10	2457	6	2437		
5	2432	11	2462	7	2442		
6	2437						

5180~5240 MHz (U-NII-1):

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
40	5200	48	5240

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
42	5210

5260~5320 MHz (U-NII-2A)

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	60	5300
56	5280	64	5320

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
54	5270	62	5310

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
58	5290		

5500~5720 MHz (U-NII-2C)

12 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency (MHz)	Channel	Frequency(MHz)
100	5500	124	5620
104	5520	128	5640
108	5540	132	5660
112	5560	136	5680
116	5580	140	5700
120	5600	144	5720

6 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency (MHz)	Channel	Frequency(MHz)
102	5510	126	5630
110	5550	134	5670
118	5590	142	5710

3 channels are provided for 802.11ac (VHT80):

Channel	Frequency (MHz)	Channel	Frequency(MHz)
106	5530	138	5690
122	5610		



5745~5825 MHz (U-NII-3): Channel 149 – 165

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	161	5805
153	5765	165	5825
157	5785		

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
155	5755

Modulation:

Bluetooth EDR FHSS: GFSK, $\pi/4$ DQPSK, 8DPSK

Bluetooth 4.2+BLE DHSS: GFSK

For Wi-Fi: Direct Sequence Spread Spectrum (DSSS) for 802.11b
Orthogonal Frequency Division Multiplexing (OFDM) for
802.11a/b/g/n/ac

Hardware Version:

V01

Software Version:

V6.2.0

Data speed:

1. Bluetooth EDR FHSS: 1Mbps, 2Mbps, 3Mbps
2. Bluetooth 4.2+BLE DHSS: 1Mbps
3. Wi-Fi: 11b 1 ~ 11Mbps,
11g/a 6 ~ 54Mbps, 11n HT20 6.5 ~ 72.2Mbps,
11n HT 40 13.5 ~ 150Mbps,
11ac VHT40 13.5 ~ 200Mbps,
11ac VHT80 29.3 ~ 433.3Mbps

Antenna Type:

PIFA Antenna

Antenna Gain:

1.76dBi for 2.4GHz; 5.96dBi for 5GHz

Description of the EUT:

The Equipment Under Test (EUT) is an Acoustic Imaging Camera with Bluetooth and Wi-Fi Module. The EUT support Bluetooth EDR, BLE function, Wi-Fi 2.4GHz and Wi-Fi 5GHz.

According to the client's declaration, all the models share the same schematic, hardware circuit, PCB layout, including RF parameters, except for the number of enabled microphone modules. We chose model Fotric H6 to perform all the tests and listed the worst data in this report. Only 2.4GHz Wi-Fi RF testing results were included in this report.

Test sample no.:

SHA-831405-2 (RF Conducted); SHA-831405-3 (RF Radiated)

The sample's mentioned in this report is/are submitted/ supplied/ manufactured by client. The laboratory therefore assumes no responsibility for accuracy of information on the brand name, model number, origin of manufacture, consignment or any information supplied.



5 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C 10-1-2023 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators

All the test methods were according to KDB 558074 D01 15.247 Meas Guidance v05r02 Measurement Guidance and ANSI C63.10-2013.



6 Summary of Test Results

Technical Requirements						
FCC Part 15 Subpart C						
Test Condition		Pages	Test Site	Test Result		
				Pass	Fail	N/A
§15.207	Conducted emission AC power port	15-19	Site 1	☒	☐	☐
§15.247 (b) (3)	Conducted peak output power	20-30	Site 1	☒	☐	☐
§15.247(a)(1)	20dB bandwidth	---	---	☐	☐	☒
§15.247(a)(1)	Carrier frequency separation	---	---	☐	☐	☒
§15.247(a)(1)(iii)	Number of hopping frequencies	---	---	☐	☐	☒
§15.247(a)(1)(iii)	Dwell Time	---	---	☐	☐	☒
§15.247(a)(2)	6dB bandwidth	31-35	Site 1	☒	☐	☐
§15.247(e)	Power spectral density	36-40	Site 1	☒	☐	☐
§15.247(d)	Spurious RF conducted emissions	41-54	Site 1	☒	☐	☐
§15.247(d)	Band edge	55-63	Site 1	☒	☐	☐
§15.247(d) & §15.209	Spurious radiated emissions for transmitter	64-72	Site 1	☒	☐	☐
§15.203	Antenna requirement	See note 1		☒	☐	☐

Remark 1: N/A – Not Applicable.

Note 1: The EUT uses a PIFA antenna, which gain is 1.76dBi for 2.4GHz and 5.96dBi for 5GHz. In accordance to §15.203, It is considered sufficiently to comply with the provisions of this section.



7 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: 2AZTCFALCONAC complies with Section 15.205, 15.207, 15.209, 15.247 of the FCC Part 15, Subpart C rules.

This report is only for the 2.4GHz Wi-Fi test report

SUMMARY:

All tests according to the regulations cited on page 5 were

n - Performed

o - **Not** Performed

The Equipment under Test

n - **Fulfills** the general approval requirements.

o - **Does not** fulfill the general approval requirements.

Sample Received Date: July 12, 2024

Testing Start Date: July 12, 2024

Testing End Date: August 16, 2024

-TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch

Reviewed by:

Prepared by:

Tested by:

Hui Tong

Hui TONG
Review Engineer



Jiaxi Xu

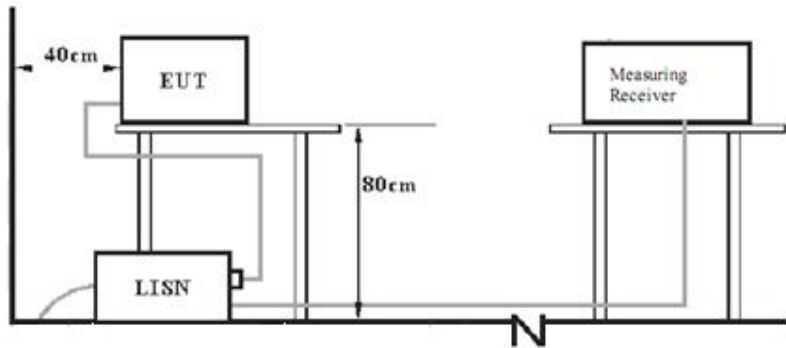
Jiaxi XU
Project Engineer

Cheng Huali

Cheng Huali
Test Engineer

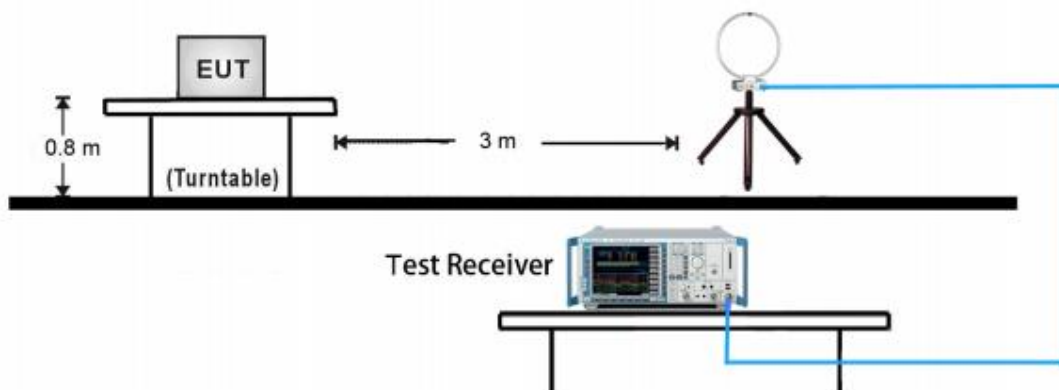
8 Test Setups

7.1 AC Power Line Conducted Emission test setups

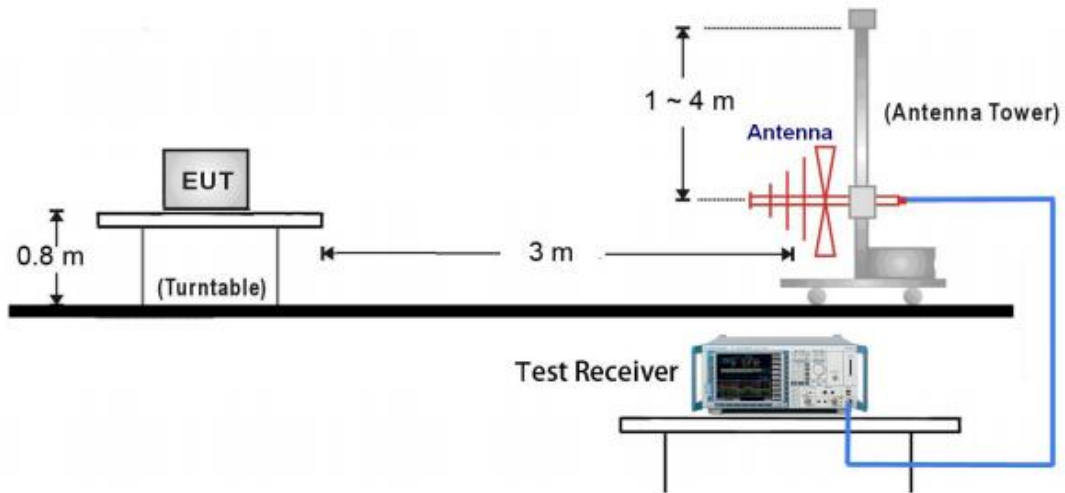


7.2 Radiated test setups

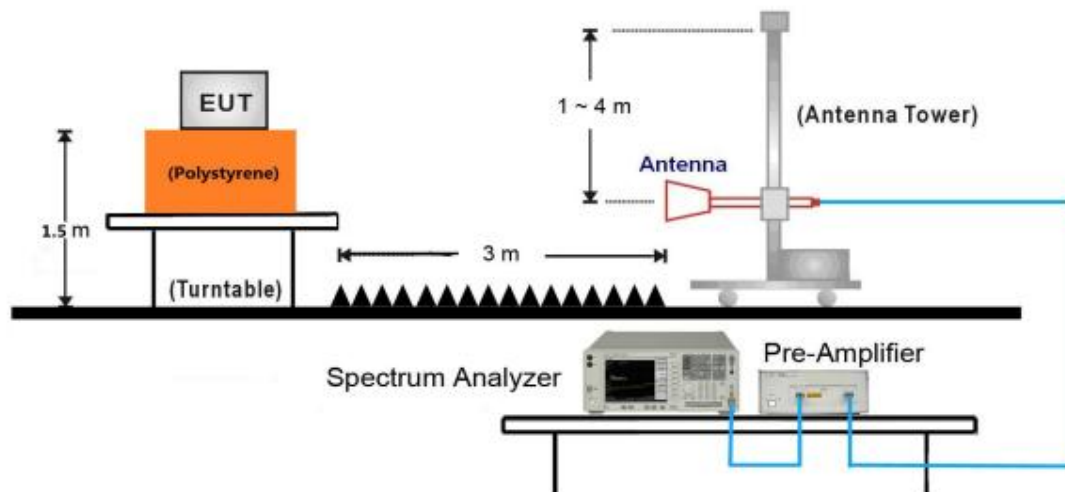
9kHz ~ 30MHz Test Setup:



30MHz ~ 1GHz Test Setup:

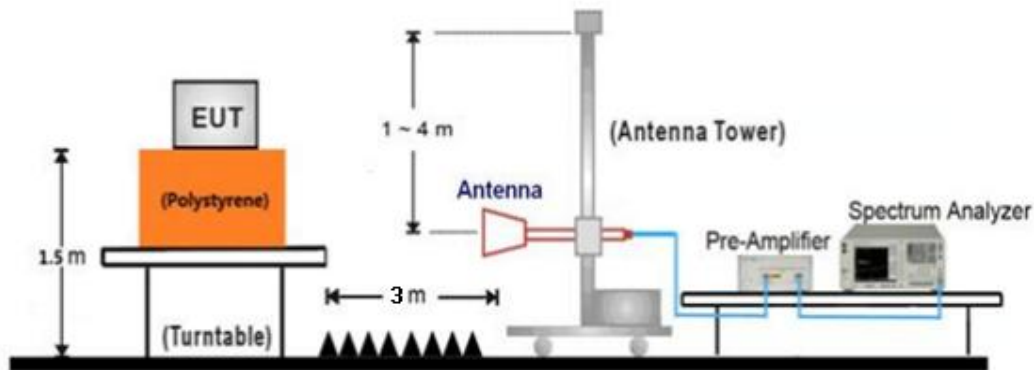


1GHz ~ 18GHz Test Setup:



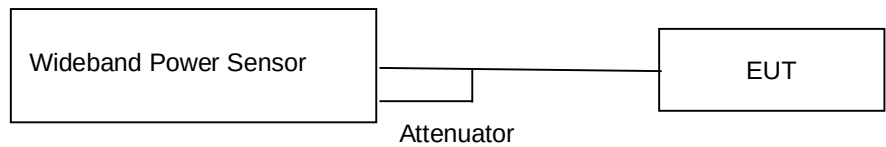


18GHz ~ 25GHz Test Setup:

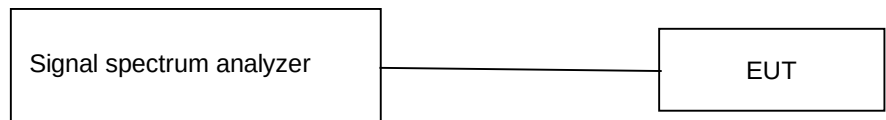


7.3 Conducted RF test setups

For Conducted peak output power



For other test items



9 Systems test configuration

Auxiliary Equipment Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
Notebook	Lenovo	E470	PF-OU5TS7 17/09

Test software: QRCT.exe

Test Mode Applicability and Tested Channel Detail:

Mode	Tested Channel	Data Rate (Mbps)	Modulation	Index Value (Power level setting)
802.11b	1	1	CCK	17
	6	1	CCK	17
	11	1	CCK	17
802.11g	1	6	OFDM	14
	6	6	OFDM	14
	11	6	OFDM	14
802.11n HT20	1	MCS0	OFDM	13
	6	MCS0	OFDM	13
	11	MCS0	OFDM	13
802.11n HT40	3	MCS0	OFDM	13
	6	MCS0	OFDM	13
	9	MCS0	OFDM	13

Non-hopping mode: The system was configured to operate at a signal channel transmitting. The test software allows the configuration and operation at the worst-case duty and the highest transmit power.

10 Technical Requirement

10.1 Conducted Emission

Test Method

1. The EUT was placed on a table, which is 0.8m above ground plane
2. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.).
3. Maximum procedure was performed to ensure EUT compliance
4. A EMI test receiver is used to test the emissions from both sides of AC line

Limit

According to §15.207, conducted emissions limit as below:

Frequency MHz	QP Limit dB μ V	AV Limit dB μ V
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

Decreasing linearly with logarithm of the frequency



Conducted Emission

150k-30MHz Conducted Emission Test

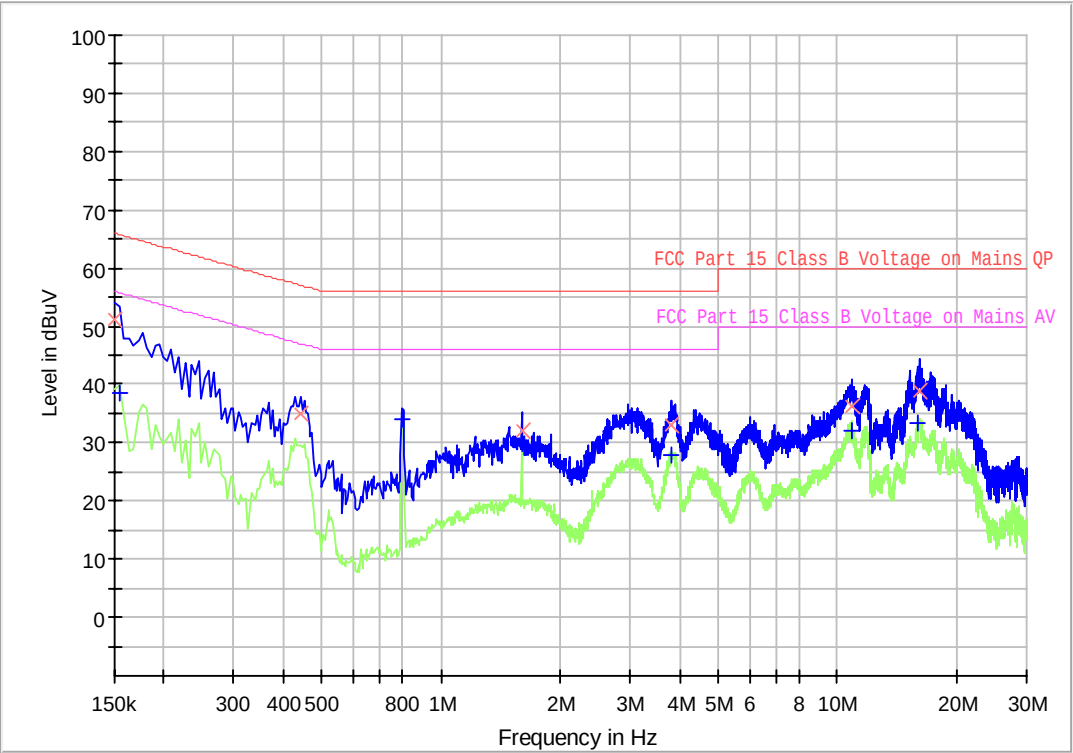
EUT Information

EUT Name: Acoustic Imaging Camera
Model: Fotric H6
Client: FOTRIC INC
Op Cond: Power on, TX_2437 at 802.11n HT40, AC 120V/60Hz
Operator: Huali CHENG
Standard: FCC Part 15.207(a)
Comment: Phase L
Sample No.: SHA-831405-2

Scan Setup: Voltage with 2-Line-LISN pre [EMI conducted]

Hardware Setup: Voltage with 2-Line-LISN
Receiver: [ESR 3]
Level Unit: dBuV

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
9 kHz - 150 kHz	100 Hz	PK+	200 Hz	0.02 s	0 dB
150 kHz - 30 MHz	4.5 kHz	PK+; AVG	9 kHz	0.01 s	0 dB





Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	51.28	---	66.00	14.72	1000.0	9.000	L1	19.4
0.154500	---	38.58	55.75	17.17	1000.0	9.000	L1	19.4
0.442500	35.06	---	57.01	21.95	1000.0	9.000	L1	19.5
0.798000	---	33.85	46.00	12.15	1000.0	9.000	L1	19.5
1.599000	---	29.75	46.00	16.25	1000.0	9.000	L1	19.5
1.599000	31.93	---	56.00	24.07	1000.0	9.000	L1	19.5
3.808500	32.92	---	56.00	23.08	1000.0	9.000	L1	19.6
3.826500	---	27.92	46.00	18.08	1000.0	9.000	L1	19.6
10.864500	36.40	---	60.00	23.60	1000.0	9.000	L1	19.8
10.864500	---	31.94	50.00	18.06	1000.0	9.000	L1	19.8
15.967500	---	33.26	50.00	16.74	1000.0	9.000	L1	20.1
16.080000	38.82	---	60.00	21.18	1000.0	9.000	L1	20.1

Note 1: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)
 Factor (dB) = Cable Loss (dB) + LISN Factor (dB) + 10dB Attenuator

150k-30MHz Conducted Emission Test

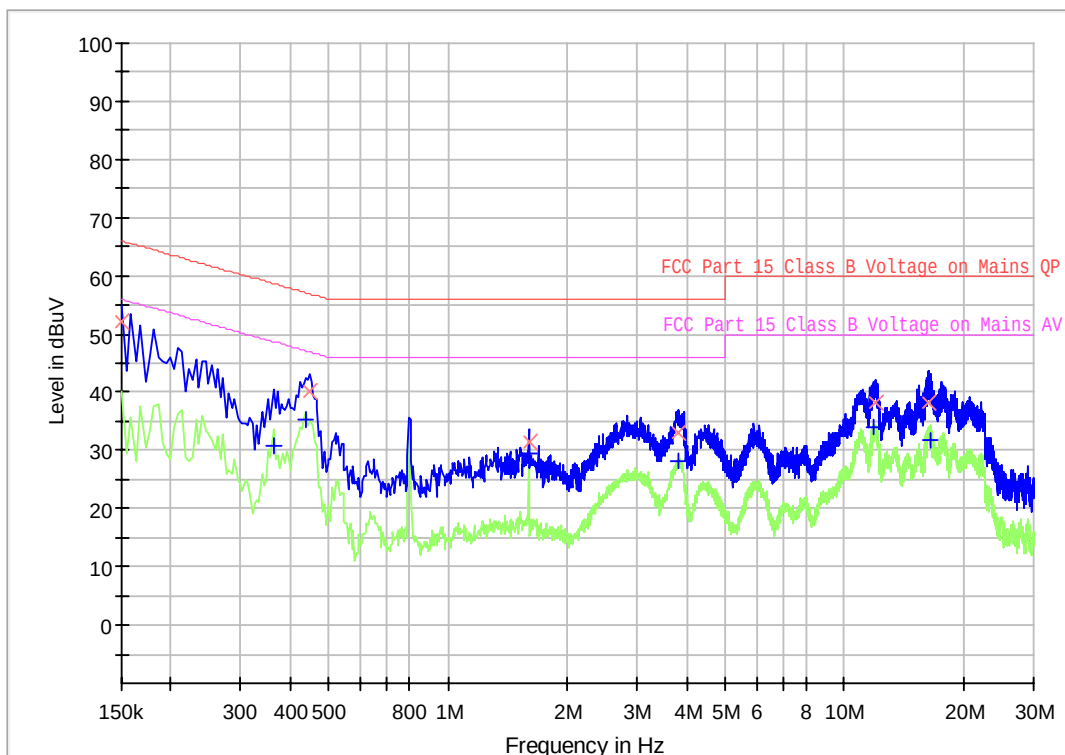
EUT Information

EUT Name: Acoustic Imaging Camera
 Model: Fotric H6
 Client: FOTRIC INC
 Op Cond: Power on, TX_2437 at 802.11n HT40, AC 120V/60Hz
 Operator: Huali CHENG
 Standard: FCC Part 15.207(a)
 Comment: Phase N
 Sample No.: SHA-831405-2

Scan Setup: Voltage with 2-Line-LISN pre [EMI conducted]

Hardware Setup: Voltage with 2-Line-LISN
 Receiver: [ESR 3]
 Level Unit: dBuV

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
9 kHz - 150 kHz	100 Hz	PK+	200 Hz	0.02 s	0 dB
150 kHz - 30 MHz	4.5 kHz	PK+; AVG	9 kHz	0.01 s	0 dB





Final Result

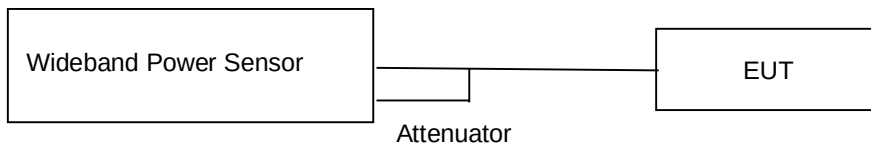
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	51.96	---	66.00	14.04	1000.0	9.000	N	19.4
0.361500	---	30.91	48.69	17.78	1000.0	9.000	N	19.5
0.438000	---	35.17	47.10	11.93	1000.0	9.000	N	19.5
0.447000	40.12	---	56.93	16.81	1000.0	9.000	N	19.5
1.599000	31.55	---	56.00	24.45	1000.0	9.000	N	19.5
1.599000	---	29.63	46.00	16.37	1000.0	9.000	N	19.5
3.790500	---	28.12	46.00	17.88	1000.0	9.000	N	19.6
3.817500	32.97	---	56.00	23.03	1000.0	9.000	N	19.6
11.886000	---	33.96	50.00	16.04	1000.0	9.000	N	19.8
11.980500	38.09	---	60.00	21.91	1000.0	9.000	N	19.8
16.327500	38.33	---	60.00	21.67	1000.0	9.000	N	20.0
16.426500	---	31.76	50.00	18.24	1000.0	9.000	N	20.0

Note 1: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)
 Factor (dB) = Cable Loss (dB) + LISN Factor (dB) + 10dB Attenuator

10.2 Conducted peak output power

Test Method (1)

- 1) The EUT is configured to transmit continuously, or to transmit with a constant duty cycle.
- 2) At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.
- 3) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
- 4) Measure the peak power of the transmitter. This measurement is a peak over both the ON and OFF periods of the transmitter.



Wideband Power Sensor conducted test setup

Test Method (2)

1. Measure the duty cycle D of the transmitter output signal.
2. Set span to at least 1.5 times the OBW.
3. Set RBW = 1% to 5% of the OBW, not to exceed 1 MHz.
4. Set VBW $\geq [3 \times \text{RBW}]$.
5. Number of points in sweep $\geq [2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing $\leq \text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
6. Sweep time = auto.
7. Detector = RMS (i.e., power averaging), if available. Otherwise, use the sample detector mode.
8. Do not use sweep triggering. Allow the sweep to “free run.”
9. Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the ON and OFF periods of the transmitter.
10. Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function with band limits set equal to the OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.
11. Add $[10 \log (1 / D)]$, where D is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the ON and OFF times of the transmission).

Limits

According to §15.247 (b) (3) conducted peak output power limit as below:

Frequency Range MHz	Limit W	Limit dBm
2400-2483.5	≤ 1	≤ 30



Test result (conducted peak) as below:

802.11b

Frequency (MHz)	Conducted Peak Output Power(dBm)	Result
Low channel 2412MHz	18.31	Pass
Middle channel 2437MHz	19.41	Pass
High channel 2462MHz	19.21	Pass

802.11g

Frequency (MHz)	Conducted Peak Output Power(dBm)	Result
Low channel 2412MHz	20.66	Pass
Middle channel 2437MHz	21.76	Pass
High channel 2462MHz	21.01	Pass

802.11n(HT20)

Frequency (MHz)	Conducted Peak Output Power(dBm)	Result
Low channel 2412MHz	20.09	Pass
Middle channel 2437MHz	21.26	Pass
High channel 2462MHz	20.92	Pass

802.11n(HT40)

Frequency (MHz)	Conducted Peak Output Power(dBm)	Result
Low channel 2422MHz	21.19	Pass
Middle channel 2437MHz	21.65	Pass
High channel 2452MHz	21.39	Pass



Test result (average power) as below table:

802.11b

Frequency (MHz)	Duty cycle Factor (dB)	Conducted Power (dBm)	Total Power(average) (dBm)	Result
Low channel 2412MHz	0.1	14.85	14.95	Pass
Middle channel 2437MHz	0.1	15.84	15.94	Pass
High channel 2462MHz	0.1	16.2	16.3	Pass

802.11g

Frequency (MHz)	Duty cycle Factor (dB)	Conducted Power (dBm)	Total Power(average) (dBm)	Result
Low channel 2412MHz	0.59	11.28	11.87	Pass
Middle channel 2437MHz	0.59	11.66	12.25	Pass
High channel 2462MHz	0.59	11.83	12.42	Pass

802.11n(HT20)

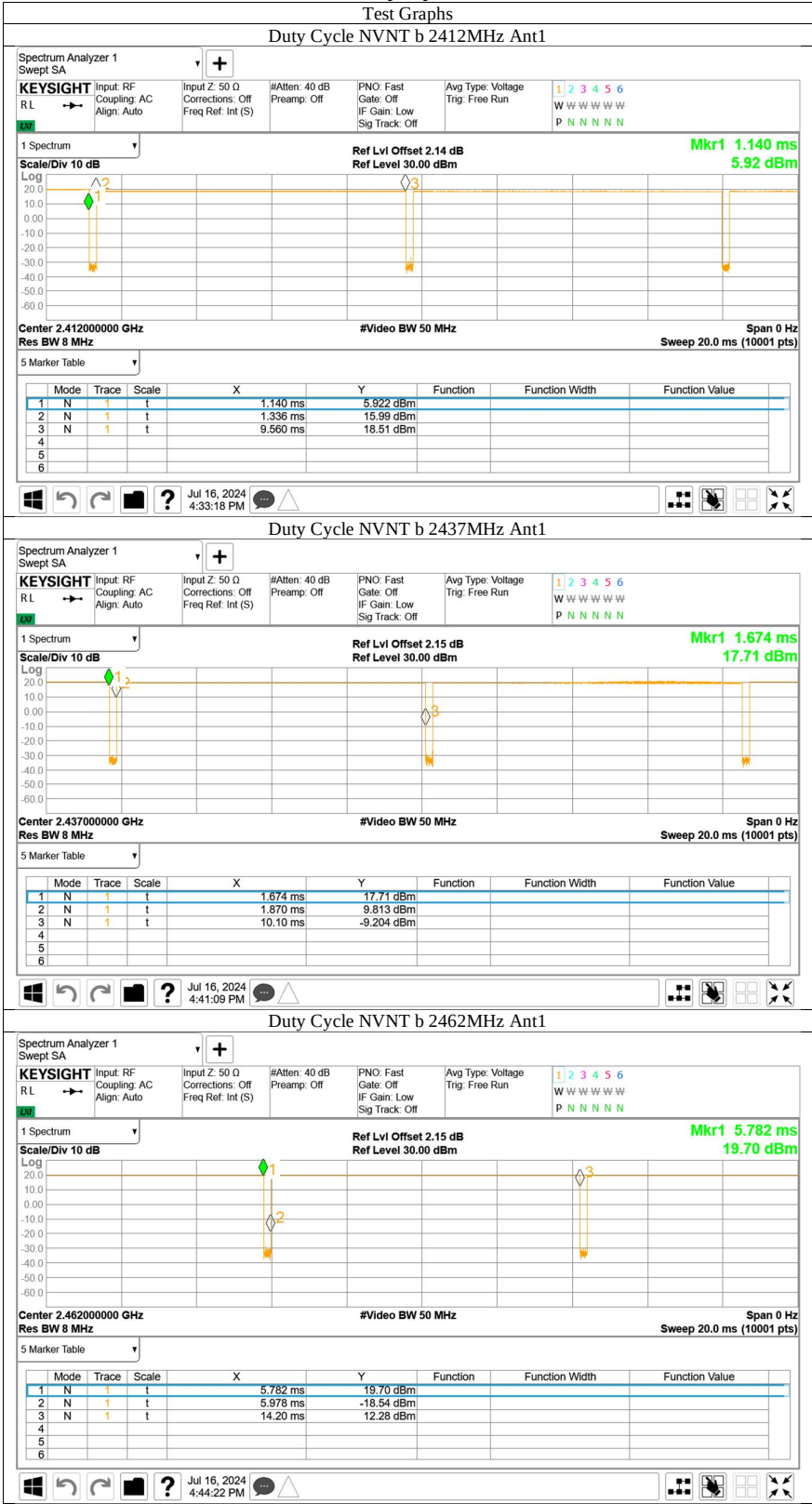
Frequency (MHz)	Duty cycle Factor (dB)	Conducted Power (dBm)	Total Power(average) (dBm)	Result
Low channel 2412MHz	0.63	10.47	11.10	Pass
Middle channel 2437MHz	0.63	10.95	11.58	Pass
High channel 2462MHz	0.63	11.16	11.79	Pass

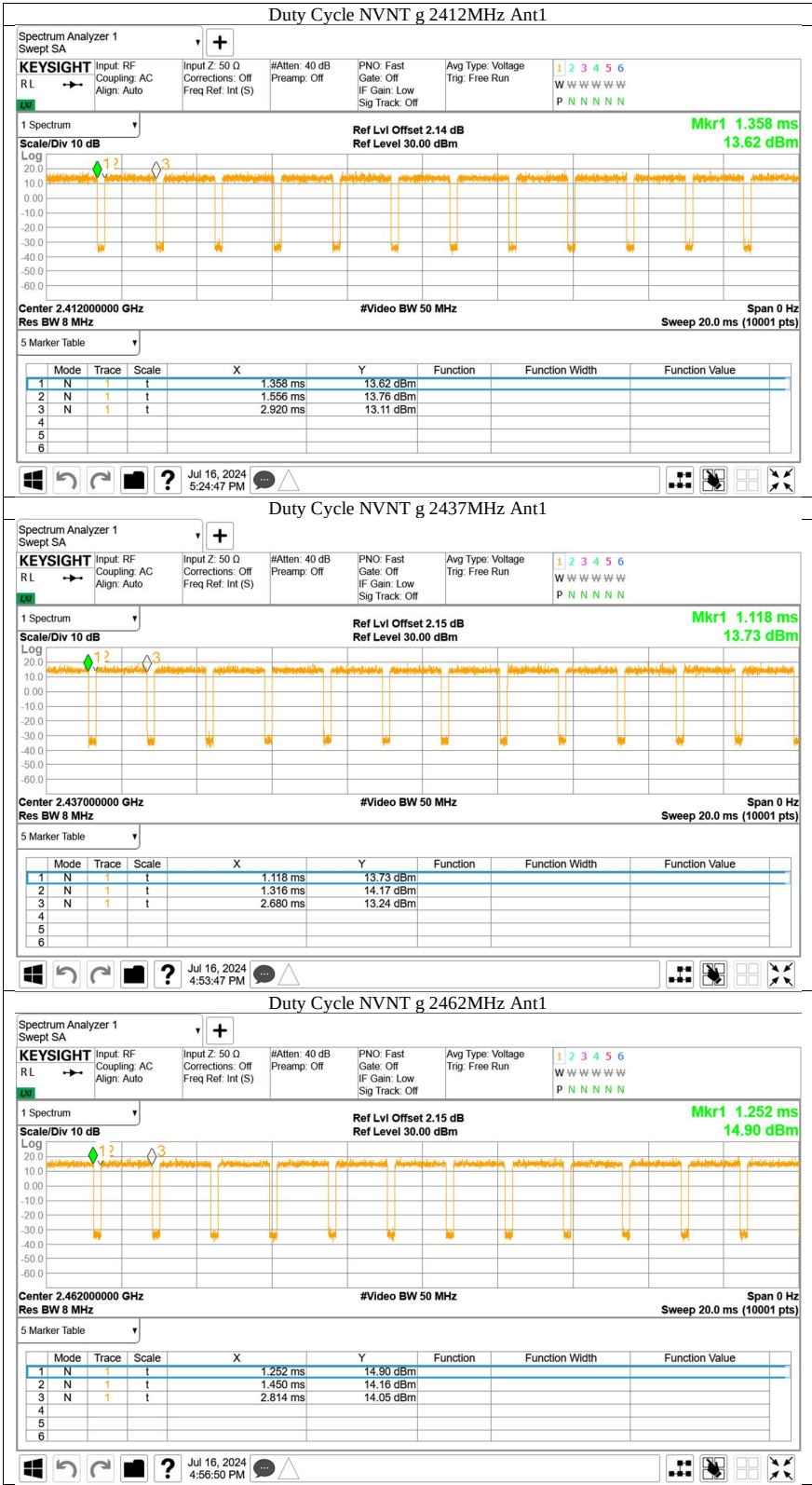
802.11n(HT40)

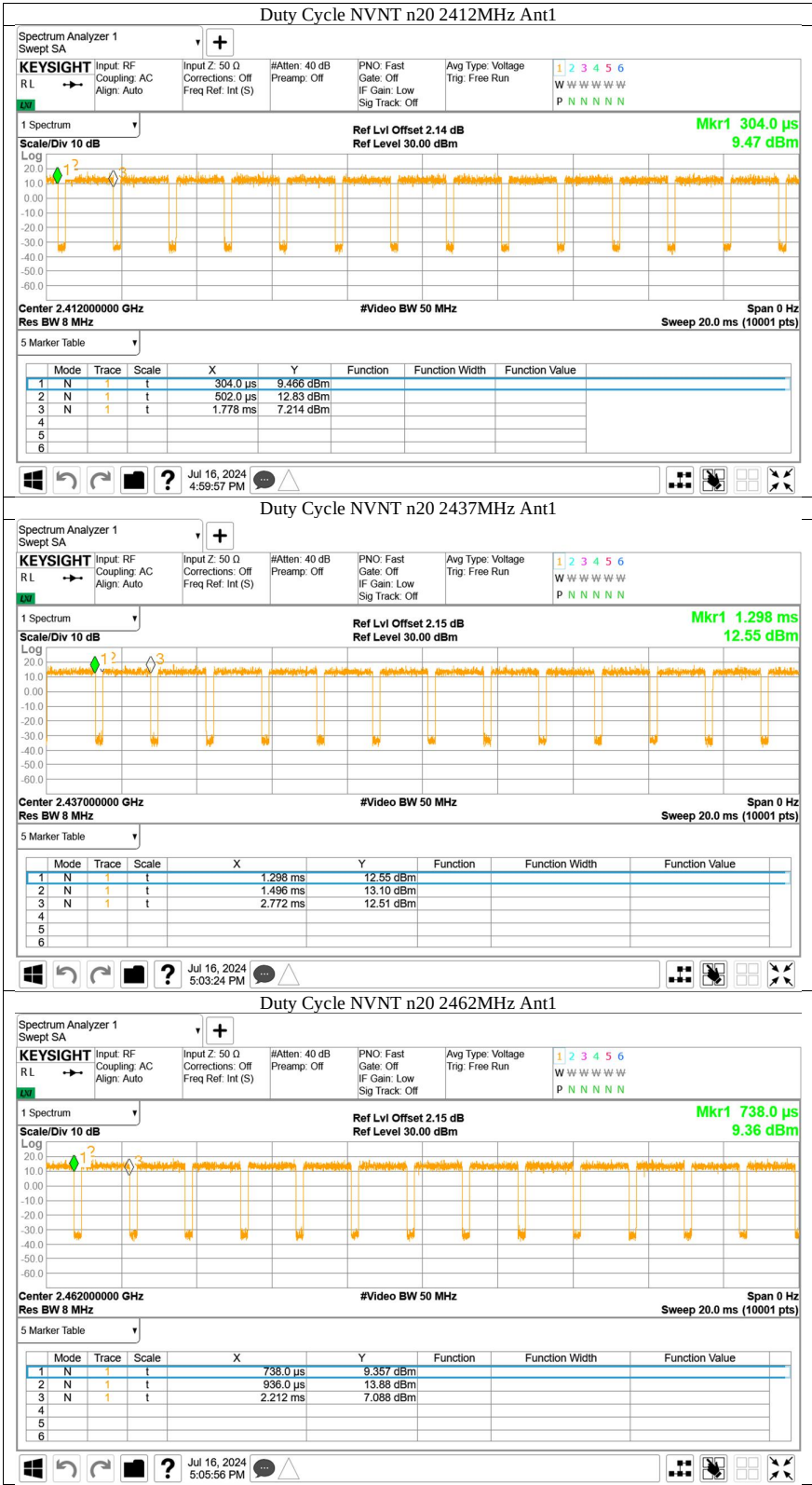
Frequency (MHz)	Duty cycle Factor (dB)	Conducted Power (dBm)	Total Power(average) (dBm)	Result
Low channel 2422MHz	1.19	9.80	10.99	Pass
Middle channel 2437MHz	1.19	10.72	11.91	Pass
High channel 2452MHz	1.19	10.39	11.58	Pass

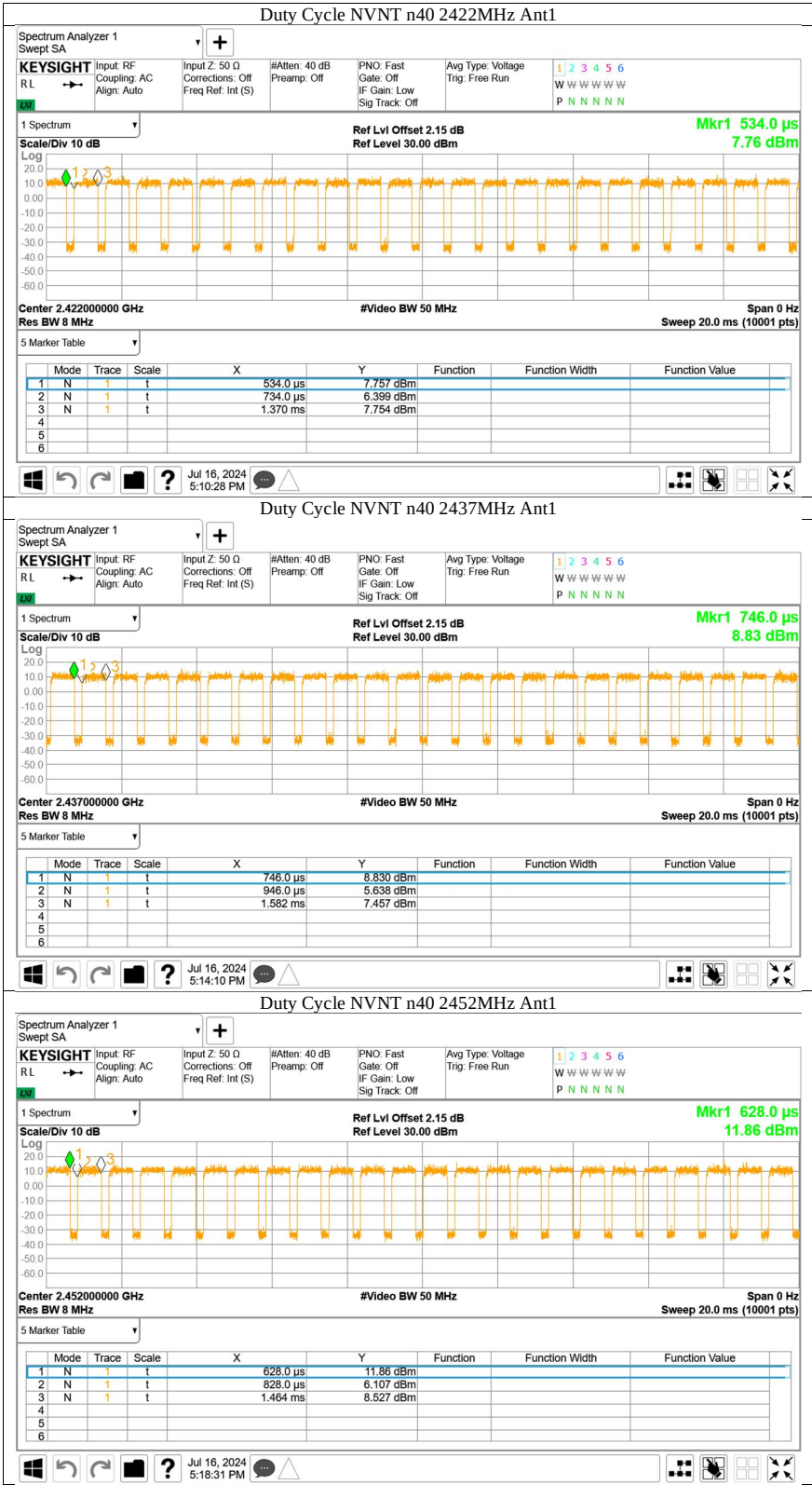


Duty cycle



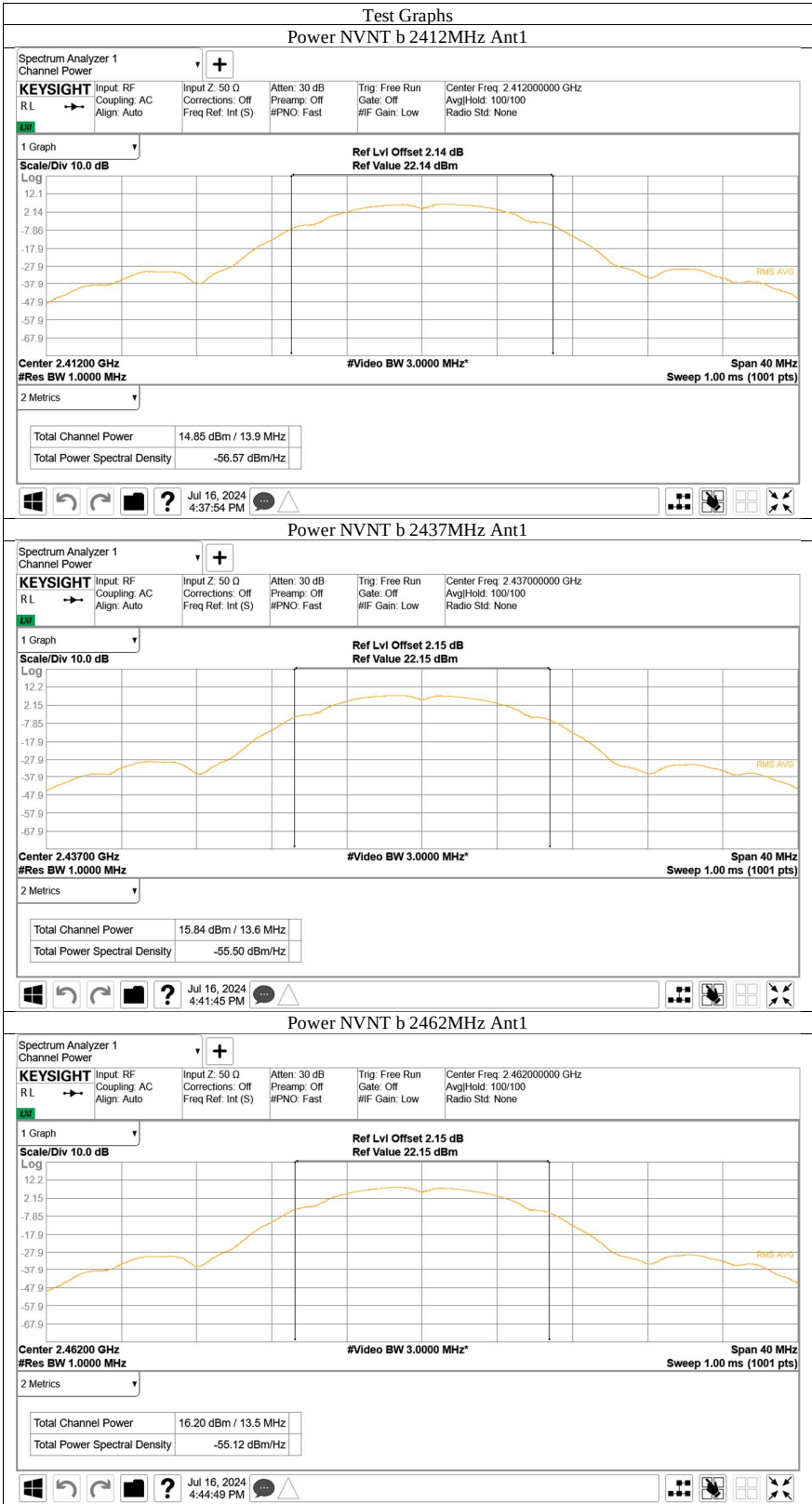


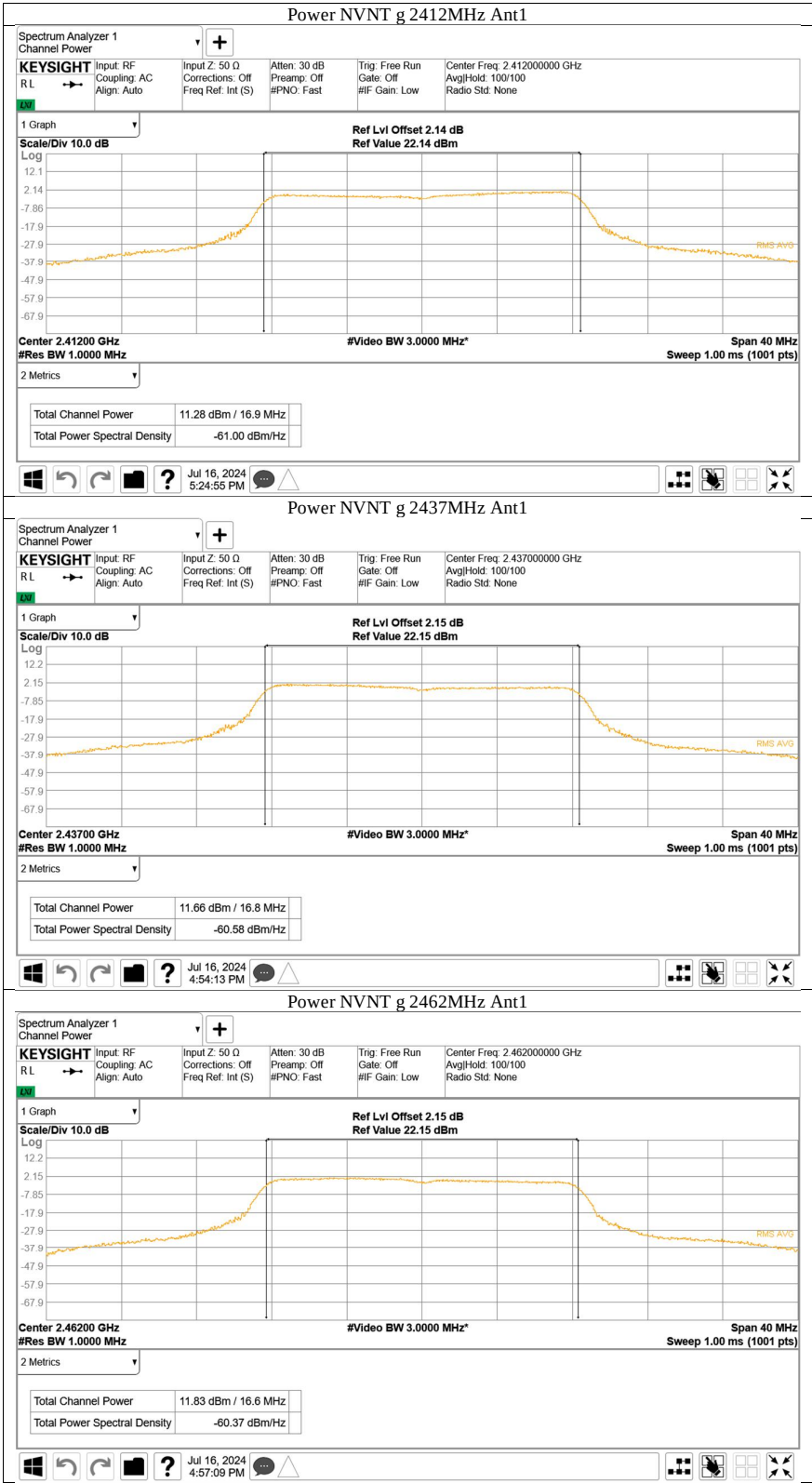


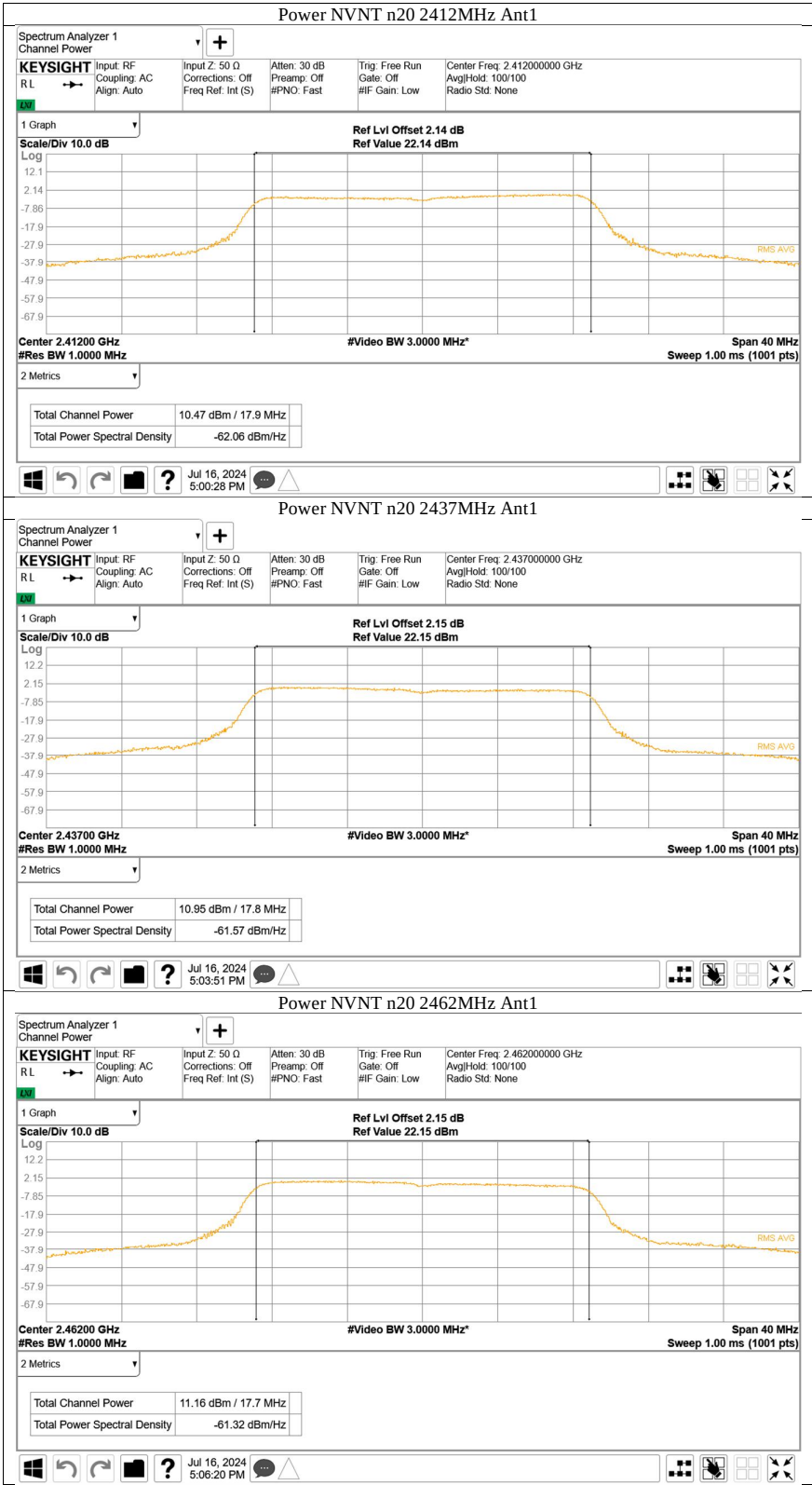


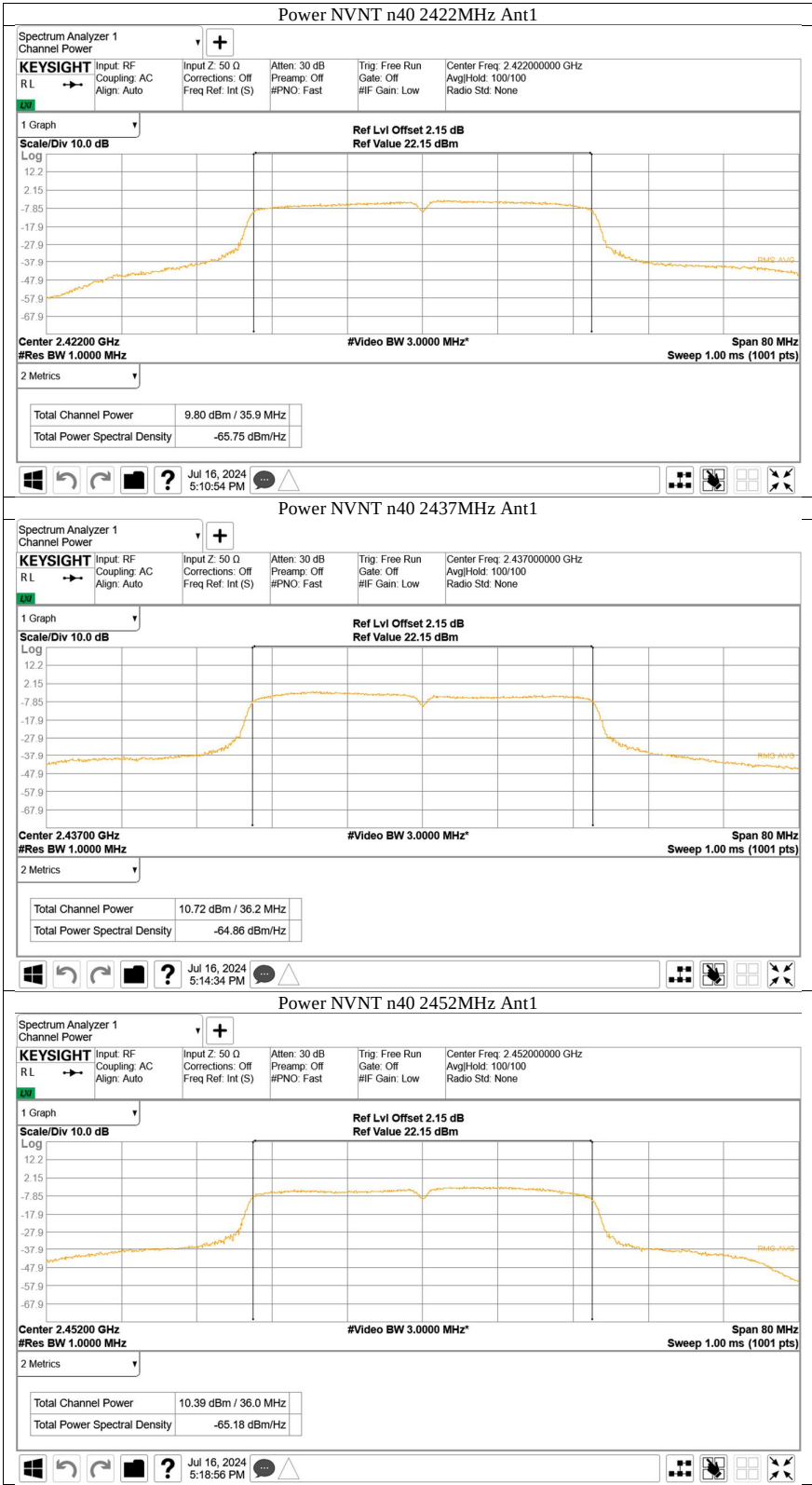


Conducted Output Power









10.36dB bandwidth

Test Method

1. The RF output of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:
RBW=100KHz, VBW $\geq$ 3RBW, Sweep = auto, Detector function = peak, Trace = max hold
4. Use the automatic bandwidth measurement capability of an instrument, use the X dB bandwidth mode with X set to 6 dB.
5. Allow the trace to stabilize, record the 6 dB Bandwidth value.

Limit

Limit [kHz]

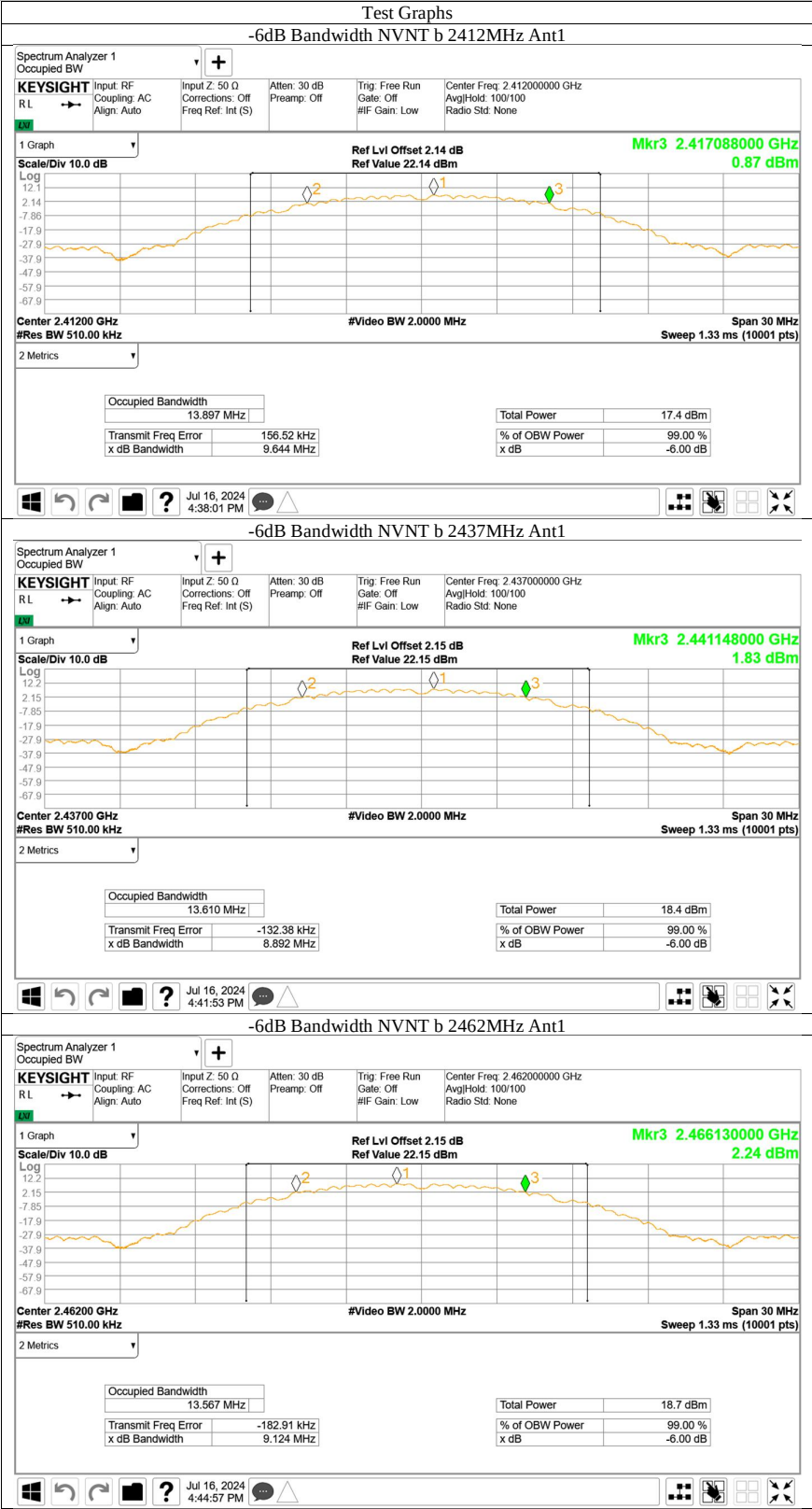
≥ 500

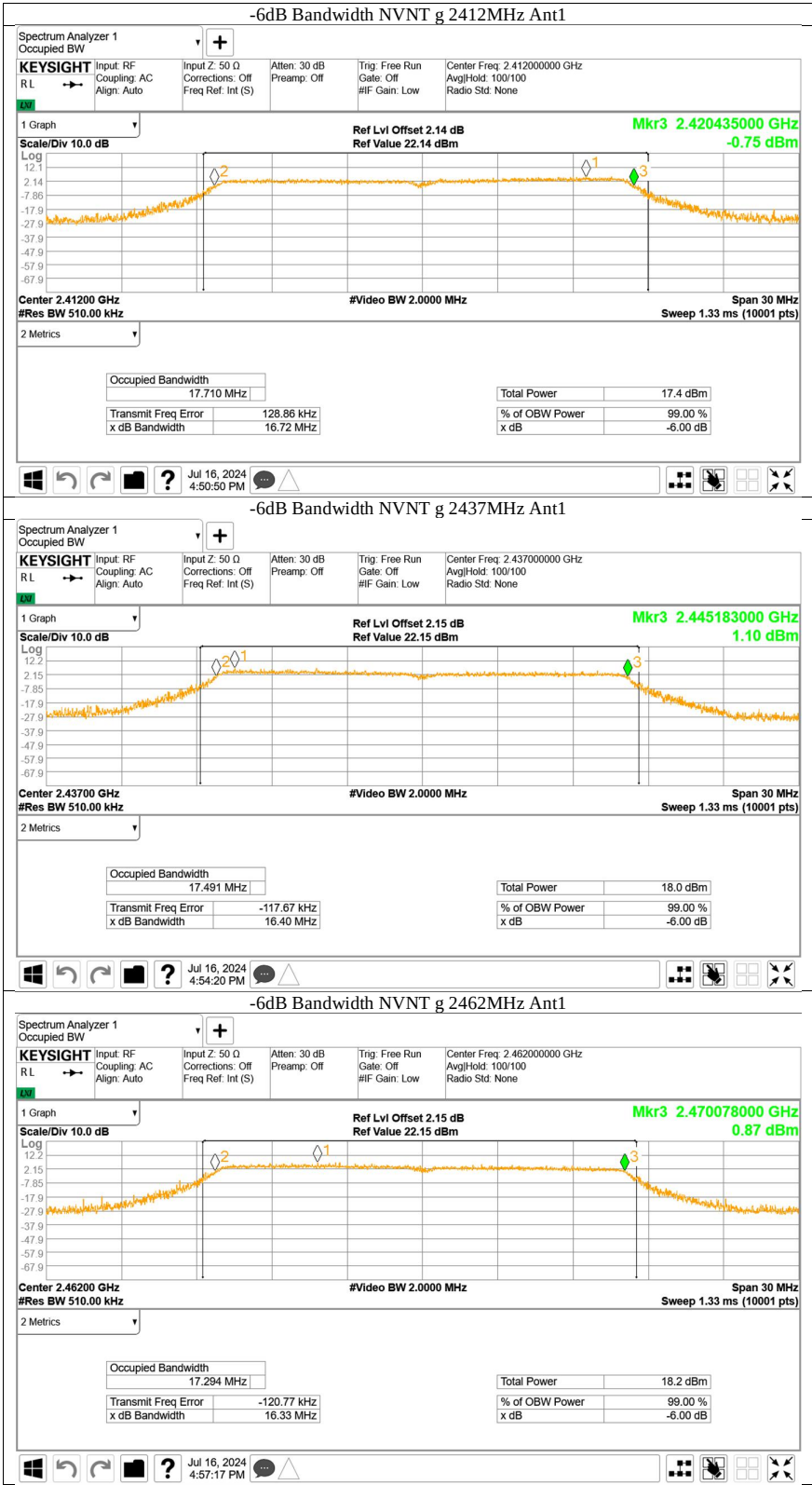
Test result

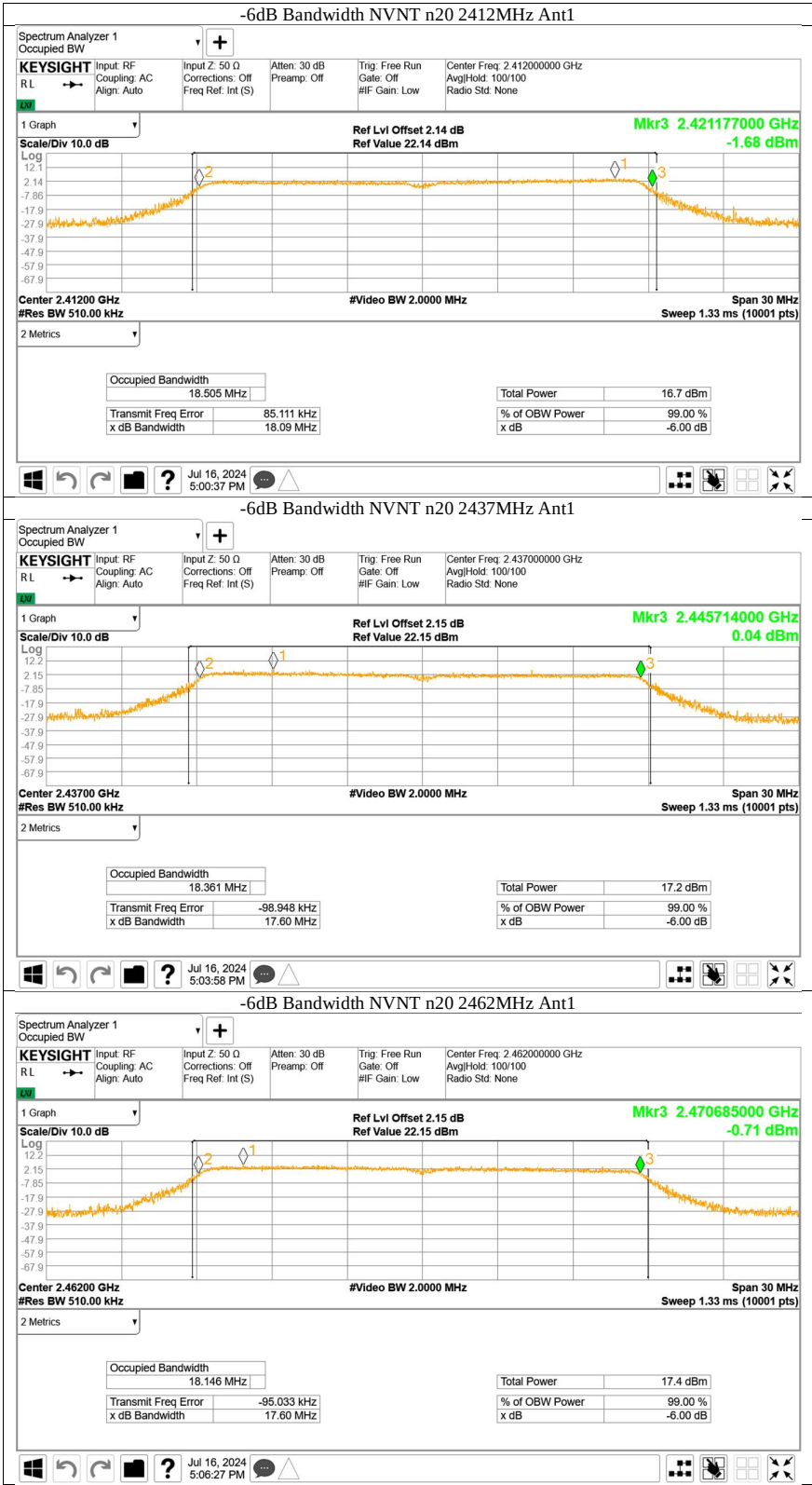
Test Mode	Frequency MHz	6dB bandwidth (MHz)		Result
		result	limit	verdict
802.11b	2412	9.644	≥ 0.5	Pass
	2437	8.892	≥ 0.5	Pass
	2462	9.124	≥ 0.5	Pass
802.11g	2412	16.724	≥ 0.5	Pass
	2437	16.395	≥ 0.5	Pass
	2462	16.334	≥ 0.5	Pass
802.11n(HT20)	2412	18.085	≥ 0.5	Pass
	2437	17.599	≥ 0.5	Pass
	2462	17.605	≥ 0.5	Pass
802.11n(HT40)	2422	35.53	≥ 0.5	Pass
	2437	35.837	≥ 0.5	Pass
	2452	35.186	≥ 0.5	Pass

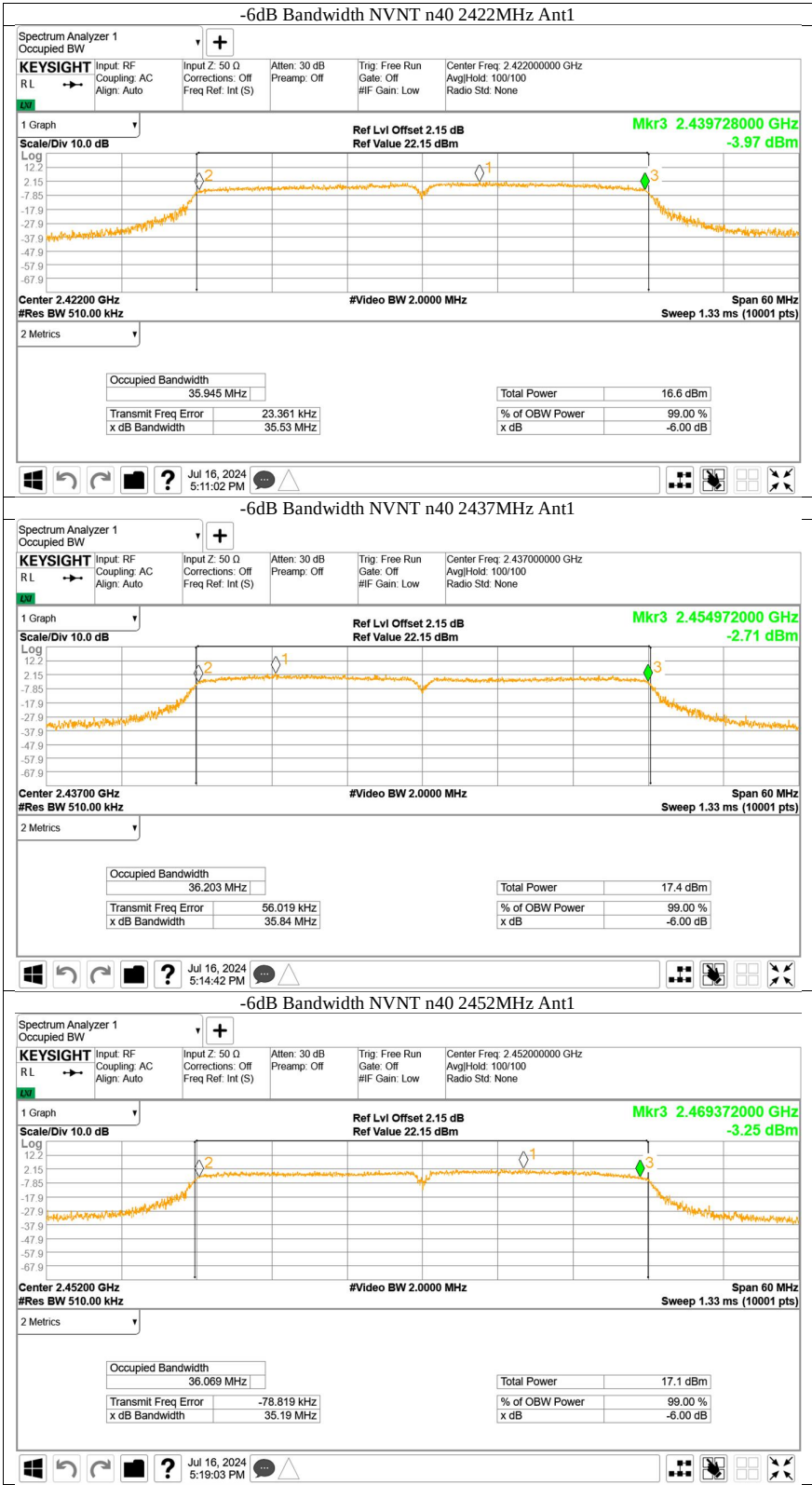


6 dB Bandwidth









10.4 Power spectral density

Test Method

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance:

1. The RF output of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:
4. Set analyzer center frequency to DTS channel center frequency. RBW=3kHz, VBW $\geq$ 3RBW, Span=1.5 times DTS bandwidth, Detector=Peak, Sweep=auto, Trace= max hold.
5. Allow trace to fully stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.
6. Repeat above procedures until other frequencies measured were completed.

Limit

Limit [dBm/3kHz]

≤ 8

Test result
802.11 b

Frequency MHz	Power spectral density dBm/3kHz	Result
Low channel 2412MHz	-7.68	Pass
Middle channel 2437MHz	-6.19	Pass
High channel 2462MHz	-5.58	Pass

802.11 g

Frequency MHz	Power spectral density dBm/3kHz	Result
Low channel 2412MHz	-11.90	Pass
Middle channel 2437MHz	-12.22	Pass
High channel 2462MHz	-11.91	Pass

802.11 n (HT20)

Frequency MHz	Power spectral density dBm/3kHz	Result
Low channel 2412MHz	-13.19	Pass
Middle channel 2437MHz	-14.34	Pass
High channel 2462MHz	-13.28	Pass

802.11 n (HT40)

Frequency MHz	Power spectral density dBm/3kHz	Result
Low channel 2422MHz	-16.52	Pass
Middle channel 2437MHz	-15.48	Pass
High channel 2452MHz	-15.88	Pass



Power spectral density

