FCC PART 15C
TEST REPORT
No.I21Z60790-IOT04

for

Honor Device Co., Ltd.

Smart Phone

NTH-NX9

With

FCC ID: 2AYGCNTH-NX9

Hardware Version: HN2NTHM

Software Version: 4.2.0.107（C900E107R1P2）

Issued Date: 2021-08-20

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

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

Test Laboratory:

CTTL-Telecommunication Technology Labs, CAICT

No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China 100191.

Tel:+86(0)10-62304633-2512, Fax:+86(0)10-62304633-2504

Email: cttl_terminals@caict.ac.cn, website: www.caict.ac.cn

©Copyright. All rights reserved by CTTL.

REPORT HISTORY

Report Number	Revision	Description	Issue Date
I21Z60790-IOT04	Rev.0	1st edition	2021-08-20
I21Z60790-IOT04	Rev.1	Change P.5.Testing Location 1	2021-09-09

©Copyright. All rights reserved by CTTL.

CONTENTS

1. TEST LABORATORY 5

1.1. INTRODUCTION & ACCREDITATION 5
1.2. TESTING LOCATION 5
1.3. TESTING ENVIRONMENT 6
1.4. PROJECT DATE 6
1.5. SIGNATURE 6

2. CLIENT INFORMATION 7

2.1. APPLICANT INFORMATION 7
2.2. MANUFACTURER INFORMATION 7

3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE) 8

3.1. ABOUT EUT 8
3.2. INTERNAL IDENTIFICATION OF EUT 8
3.3. INTERNAL IDENTIFICATION OF AE 8
3.4. GENERAL DESCRIPTION 10
3.5. INTERPRETATION OF THE TEST ENVIRONMENT 10

4. REFERENCE DOCUMENTS 10

4.1. DOCUMENTS SUPPLIED BY APPLICANT 10
4.2. REFERENCE DOCUMENTS FOR TESTING 10

5. TEST RESULTS 11

5.1. SUMMARY OF TEST RESULTS 11
5.2. STATEMENTS 11
5.3. TEST CONDITIONS 11

6. TEST FACILITIES UTILIZED 12

7. MEASUREMENT UNCERTAINTY 13

7.1. MAXIMUM OUTPUT POWER 13
7.2. PEAK POWER SPECTRAL DENSITY 13
7.3. DTS 6-DB SIGNAL BANDWIDTH 13
7.4. BAND EDGES COMPLIANCE 13
7.5. TRANSMITTER SPURIOUS EMISSION 13
7.6. AC POWER-LINE CONDUCTED EMISSION 13

ANNEX A: DETAILED TEST RESULTS 14

A.1. MEASUREMENT METHOD 14

A.2. MAXIMUM OUTPUT POWER 15

A.2.1. PEAK OUTPUT POWER-CONDUCTED 15

©Copyright. All rights reserved by CTTL.

A.3. PEAK POWER SPECTRAL DENSITY 22

A.4. DTS 6-DB SIGNAL BANDWIDTH 54

A.5. BAND EDGES COMPLIANCE 73

A.6. TRANSMITTER SPURIOUS EMISSION 98

A.6.1 TRANSMITTER SPURIOUS EMISSION – CONDUCTED 98

A.6.2 TRANSMITTER SPURIOUS EMISSION - RADIATED 385

A.7. AC POWER-LINE CONDUCTED EMISSION 413

ANNEX B: EUT PARAMETERS 417

ANNEX C: ACCREDITATION CERTIFICATE 417

©Copyright. All rights reserved by CTTL.

1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0, and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (ISED#: 24849). The detail accreditation scope can be found on NVLAP website.

1.2. Testing Location

Location 1:CTTL(Huayuan North Road)

Address:	No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China100191

Location 2:CTTL(BDA)

Address:	No.18A, Kangding Street, Beijing Economic-Technology Development Area, Beijing, P. R. China 100176

©Copyright. All rights reserved by CTTL.

1.3. Testing Environment

Normal Temperature: 15-35℃

Relative Humidity: 20-75%

1.4. Project date

Testing Start Date: 2021-05-10

Testing End Date: 2021-08-20

1.5. Signature

Xie Xiuzhen

(Prepared this test report)

Zheng Wei

(Reviewed this test report)

Hu Xiaoyu

(Approved this test report)

©Copyright. All rights reserved by CTTL.

2. Client Information

2.1. Applicant Information

Company Name:	Honor Device Co., Ltd.
Address:	Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, Guangdong, China
City:	Shenzhen
Postal Code:	/
Country:	China
Telephone:	0755-61886688
Fax:	/

2.2. Manufacturer Information

Company Name:	Honor Device Co., Ltd.
Address:	Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, Guangdong, China
City:	Shenzhen
Postal Code:	/
Country:	China
Telephone:	0755-61886688
Fax:	/

©Copyright. All rights reserved by CTTL.

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	Smart Phone
Model name	NTH-NX9
FCC ID	2AYGCNTH-NX9
With WLAN Function	Yes
Frequency Band	ISM 2400MHz~2483.5MHz
Type of Modulation	DSSS/CCK/OFDM
Number of Channels	11
Antenna	Integral Antenna
MAX Conducted Power	27.68dBm
Nominal voltages	3.87V
Maximum voltages	4.45V
Minimum voltages	3.6V

3.2. Internal Identification of EUT

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	861997050026090/ 861997050029193	HN2NTHM	4.2.0.107（C900E107R1P2）
EUT2	861997050038418/ 861997050042501	HN2NTHM	4.2.0.107（C900E107R1P2）
EUT3	861997050038426	HN2NTHM	4.2.0.107（C900E107R1P2）
EUT4	AXPM011428000074	HN2NTHM	4.2.0.107（C900E107R1P2）

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE

AE ID*	Description	SN	Note
AE1	Battery	/	EUT1
AE9	Battery	/	EUT2
AE2	Charger	/	NEW
AE3	Charger	/	OLD
AE4	USB Cable	/	LUXSHARE
AE5	USB Cable	/	Mingji
AE6	Headset	/	Foster
AE7	Headset	/	Lianchuang
AE8	Headset	/	Quancheng

AE1

Model	HB476489EFW

©Copyright. All rights reserved by CTTL.

Manufacturer	Sunwoda
Capacitance	4200mAh
Nominal voltage	3.87V

AE9

Model	HB476489EFW
Manufacturer	SCUD
Capacitance	4200mAh
Nominal voltage	3.87V

AE2

Model	HW-110600X00
Manufacturer	Honor Device Co., Ltd
OUTPUT	5V DC 2A OR 10V DC 4A OR 11V DC 6A MAX
SN	YF91YEM3500036
Note	NEW

AE3

Model	HW-110600X00
Manufacturer	Honor Device Co., Ltd
OUTPUT	5V DC 2A OR 10V DC 4A OR 11V DC 6A MAX
SN	YF91LBLBL00158
Note	OLD

AE4

Model	L99UC139-CS-H
Manufacturer	LUXSHARE
Length	/

AE5

Model	213-01011-0
Manufacturer	Mingji
Length	/

AE6

Model	640958
Manufacturer	Foster
Length	/

AE7

Model	MEND1632B729012
Manufacturer	Lianchuang
Length	/

©Copyright. All rights reserved by CTTL.

AE8

Model	1331-3301-6001-TC-347
Manufacturer	Quancheng
Length	/

*AE ID: is used to identify the test sample in the lab internally.

3.4. General Description

The Equipment under Test (EUT) is a model of Smart Phone with integrated antenna and inbuilt battery.

It has Bluetooth (EDR) function.

It consists of normal options: travel charger, USB cable.

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the client.

3.5. Interpretation of the Test Environment

For the test methods, the test environment uncertainty figures correspond to an expansion factor k=2.

Measurement Uncertainty

Parameter	Uncertainty
temperature	0.48°C
humidity	2 %
DC voltages	0.003V

4. Reference Documents

4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part15	FCC CFR 47, Part 15, Subpart C: 15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; 15.247 Operation within the bands 902-928MHz, 2400-2483.5 MHz, and 5725-5850 MHz.	2019
ANSI C63.10	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices	2013
KDB 558074 D01	Federal Communications Commission Office of Engineering and Technology Laboratory Division GUIDANCE FOR COMPLIANCE MEASUREMENTS ON DIGITAL TRANSMISSION SYSTEM, FREQUENCY	2019

©Copyright. All rights reserved by CTTL.

5. Test Results

5.1. Summary of Test Results

SUMMARY OF MEASUREMENT RESULTS	Sub-clause of Part15C	Sub-clause of IC	Verdict
Maximum Peak Output Power	15.247 (b)	/	P
Peak Power Spectral Density	15.247 (e)	/	P
Occupied 6dB Bandwidth	15.247 (a)	/	P
Band Edges Compliance	15.247 (d)	/	P
Transmitter Spurious Emission - Conducted	15.247 (d)	/	P
Transmitter Spurious Emission - Radiated	15.247, 15.205, 15.209	/	P
AC Powerline Conducted Emission	15.107, 15.207	/	P

Please refer to **ANNEX A** for detail.

Terms used in Verdict column

P	Pass, The EUT complies with the essential requirements in the standard.
NP	Not Perform, The test was not performed by CTTL
NA	Not Applicable, The test was not applicable
F	Fail, The EUT does not comply with the essential requirements in the standard

5.2. Statements

The test cases as listed in section 5.1 of this report for the EUT specified in section 3 was performed by CTTL and according to the standards or reference documents listed in section 4.2

The EUT met all requirements of the standards or reference documents, and only the WLAN function was tested in this report.

5.3. Test Conditions

T nom	Normal Temperature
T min	Low Temperature
T max	High Temperature
V nom	Normal Voltage

For this report, if the test cases listed above are tested under normal temperature and normal voltage, and also under norm humidity, the specific condition is shown as follows:

Temperature	T nom	26℃
Voltage	V nom	3.87V
Humidity	H nom	20-75%

©Copyright. All rights reserved by CTTL.

6. Test Facilities Utilized

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Vector Signal Analyzer	FSQ40	200089	Rohde & Schwarz	1 year	2022-05-24
2	Vector Signal Analyzer	FSW67	104051	Rohde & Schwarz	1 year	2021-12-08
3	LISN	ENV216	101459	Rohde & Schwarz	1 year	2022-03-22
4	Test Receiver	ESCI	100766	Rohde & Schwarz	1 year	2022-03-09
5	Shielding Room	S81	/	ETS-Lindgren	/	/

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Antenna	3117	139065	ETS	1 year	2021-09-22
2	Antenna	VULB 9163	9163-482	SCHWARZBECK	1 year	2021-11-04
3	Test Receiver	ESU26	100376	R&S	1 year	2021-09-04
4	Test Receiver	FSV40	101047	R&S	1 year	2022-06-02
5	Universal Radio Communication Tester	CMW500	159408	R&S	1 year	2022-03-08
6	Test Receiver	FSV30	101525	R&S	1 year	2022-02-20
7	Antenna	LB-7180-NF	J203001300005	A-INFO	1 year	2022-02-28
8	Antenna	HFH2-Z2	829324	R&S	1 year	2021-12-10
9	Antenna	LB-180400-25-C-KF	2110084000006	A-INFO	1 year	2022-02-28
10	Anechoic Chamber	FACT-3	Ct000332-1074	ETS	1 year	2022-01-21

©Copyright. All rights reserved by CTTL.

7. Measurement Uncertainty

7.1. Maximum Output Power

Measurement Uncertainty: 0.387dB,k=1.96

7.2. Peak Power Spectral Density

Measurement Uncertainty: 0.705dB,k=1.96

7.3. DTS 6-dB Signal Bandwidth

Measurement Uncertainty: 60.80Hz,k=1.96

7.4. Band Edges Compliance

Measurement Uncertainty : 0.62dB,k=1.96

7.5. Transmitter Spurious Emission

Conducted (k=1.96)

Frequency Range	Uncertainty(dB)
30MHz ≤ f ≤ 2GHz	1.22
2GHz ≤ f ≤3.6GHz	1.22
3.6GHz ≤ f ≤8GHz	1.22
8GHz ≤ f ≤12.75GHz	1.51
12.75GHz ≤ f ≤26GHz	1.51
26GHz ≤ f ≤40GHz	1.59

Radiated (k=2)

Frequency Range	Uncertainty(dB)
9kHz-30MHz	/
30MHz ≤ f ≤ 1GHz	5.84
1GHz ≤ f ≤18GHz	5.82
18GHz ≤ f ≤40GHz	3.78

7.6. AC Power-line Conducted Emission

Measurement Uncertainty : 3.1dB,k=2

©Copyright. All rights reserved by CTTL.

ANNEX A: Detailed Test Results

A.1. Measurement Method

A.1.1. Conducted Measurements

Connect the EUT to the test system as Fig.A.1.1.1 shows.
Set the EUT to the required work mode.
Set the EUT to the required channel.
Set the Vector Signal Analyzer and start measurement.
Record the values. Vector Signal Analyzer

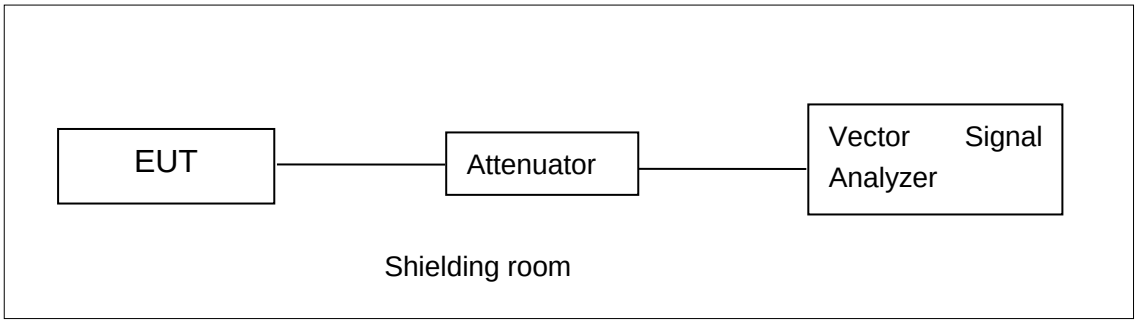

Fig.A.1.1.1: Test Setup Diagram for Conducted Measurements

A.1.2. Radiated Emission Measurements

In the case of radiated emission, the used settings are as follows,
Sweep frequency from 30 MHz to 1GHz, RBW = 100 kHz, VBW = 300 kHz;
Sweep frequency from 1 GHz to 26GHz, RBW = 1MHz, VBW = 10Hz;

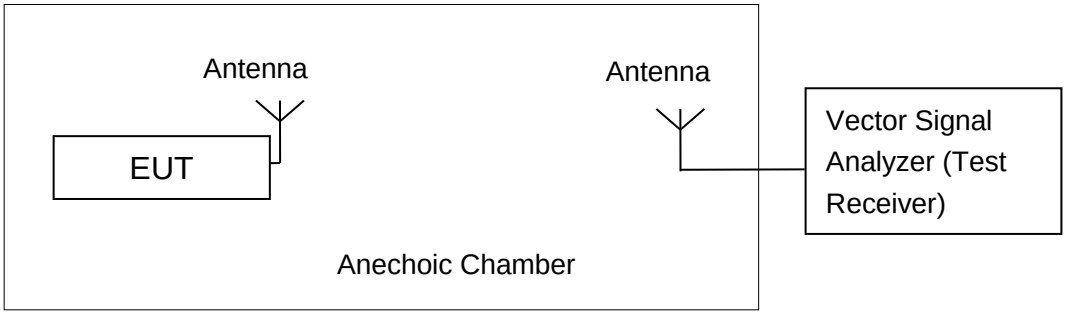

Fig.A.1.2.1: Test Setup Diagram for Radiated Measurements

©Copyright. All rights reserved by CTTL.

A.2. Maximum Output Power

Method of Measurement: See ANSI C63.10-2013-clause 11.9.1.2

a) Set the RBW = 1 MHz.
b) Set the VBW = 3 MHz.
c) Set the span ⩾ [1.5 × DTS bandwidth].
d) Detector = peak.
e) Sweep time = auto couple.
f) Trace mode = max hold.
g) Allow trace to fully stabilize.
h) Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges (for some instruments, this may require a manual override to select the peak detector).

Measurement Limit:

Standard	Limit (dBm)
FCC CRF Part 15.247(b)	< 30

EUT ID: EUT3 & EUT4

A.2.1. Peak Output Power-conducted

Measurement Results:

SISO-core0

802.11b/g mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11b	1	17.12	16.11	16.02
802.11g	6	24.48	23.31	23.21

The data rate 1Mbps and 6Mbps are selected as worse condition, and the following cases are performed with this condition.

802.11n-HT20 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11n(20MHz)	MCS0	24.81	23.82	23.67

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

©Copyright. All rights reserved by CTTL.

802.11n-HT40 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		2422MHz (Ch3)	2437MHz (Ch6)	2452 MHz (Ch9)
802.11n(40MHz)	MCS0	24.61	23.87	24.48

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

802.11ax-HE20 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11ax(20MHz)	MCS0	25.87	24.99	24.75

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

802.11ax-HE40 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		2422MHz (Ch3)	2437MHz (Ch6)	2452 MHz (Ch9)
802.11ax(40MHz)	MCS0	25.67	25.04	25.63

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

802.11ax-HE20 mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11ax-HE20(RU26-left)	MCS0	19.61	19.71	18.58
802.11ax-HE20(RU26-right)	MCS0	20.25	18.76	18.37
802.11ax-HE20(RU52-left)	MCS0	20.87	20.73	19.59
802.11ax-HE20(RU52-right)	MCS0	21.06	19.75	19.27
802.11ax-HE20(RU106-left)	MCS0	19.89	19.87	19.17
802.11ax-HE20(RU106-right)	MCS0	20.53	19.42	19.13
802.11ax-HE20(RU242)	MCS0	19.11	18.67	17.97

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

All the power setting of 802.11ax20-RU26/52/106/242 are 9dBm.

©Copyright. All rights reserved by CTTL.

802.11ax-HE40 mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11ax-HE40(RU26-left)	MCS0	19.70	19.35	20.22
802.11ax-HE40(RU26-right)	MCS0	19.74	19.10	19.82
802.11ax-HE40(RU52-left)	MCS0	20.14	20.55	21.09
802.11ax-HE40(RU52-right)	MCS0	20.09	19.30	20.06
802.11ax-HE40(RU106-left)	MCS0	19.85	20.04	20.51
802.11ax-HE40(RU106-right)	MCS0	19.42	18.81	19.63
802.11ax-HE40(RU242-left)	MCS0	19.39	19.45	19.67
802.11ax-HE40(RU242-right)	MCS0	19.65	18.47	19.52
802.11ax-HE40(RU242-left)	MCS0	18.36	17.70	18.51

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

All the power setting of 802.11ax20-RU26/52/106/242 are 9dBm.

SISO-core1

802.11b/g mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11b	1	19.66	19.13	19.32
802.11g	6	20.55	23.65	20.40

The data rate 1Mbps and 6Mbps are selected as worse condition, and the following cases are performed with this condition.

802.11n-HT20 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11n(20MHz)	MCS0	21.13	23.96	21.11

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

©Copyright. All rights reserved by CTTL.

802.11n-HT40 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		2422MHz (Ch3)	2437MHz (Ch6)	2452 MHz (Ch9)
802.11n(40MHz)	MCS0	19.55	24.11	20.33

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

802.11ax-HE20 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11ax(20MHz)	MCS0	21.50	25.46	22.54

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

802.11ax-HE40 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		2422MHz (Ch3)	2437MHz (Ch6)	2452 MHz (Ch9)
802.11ax(40MHz)	MCS0	20.61	25.46	20.37

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

802.11ax-HE20 mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11ax-HE20(RU26-left)	MCS0	20.14	19.64	19.85
802.11ax-HE20(RU26-right)	MCS0	19.74	19.87	19.79
802.11ax-HE20(RU52-left)	MCS0	20.23	20.49	20.47
802.11ax-HE20(RU52-right)	MCS0	20.07	19.96	19.82
802.11ax-HE20(RU106-left)	MCS0	19.68	19.47	20.21
802.11ax-HE20(RU106-right)	MCS0	19.55	19.64	19.83
802.11ax-HE20(RU242)	MCS0	18.69	18.45	18.41

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

All the power setting of 802.11ax20-RU26/52/106/242 are 9dBm.

©Copyright. All rights reserved by CTTL.

802.11ax-HE40 mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11ax-HE40(RU26-left)	MCS0	20.16	19.39	20.38
802.11ax-HE40(RU26-right)	MCS0	19.78	19.90	19.88
802.11ax-HE40(RU52-left)	MCS0	20.53	20.08	20.71
802.11ax-HE40(RU52-right)	MCS0	20.15	19.88	19.91
802.11ax-HE40(RU106-left)	MCS0	20.09	19.81	20.30
802.11ax-HE40(RU106-right)	MCS0	20.03	19.52	19.36
802.11ax-HE40(RU242-left)	MCS0	19.67	19.32	19.91
802.11ax-HE40(RU242-right)	MCS0	19.57	19.28	19.46
802.11ax-HE40(RU242-left)	MCS0	18.52	18.08	18.32

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

All the power setting of 802.11ax20-RU26/52/106/242 are 9dBm.

The largest point of RU is 802.11ax20-RU52-right-core0、802.11ax40-RU52-left-core0.

CDD

802.11g mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11g	6	26.40	27.40	25.61

The data rate 6Mbps are selected as worse condition, and the following cases are performed with this condition.

MIMO

802.11n-HT20 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11n(20MHz)	MCS0	26.17	27.02	25.38

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

802.11n-HT40 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		2422MHz (Ch3)	2437MHz (Ch6)	2452 MHz (Ch9)
802.11n(40MHz)	MCS0	24.37	25.49	24.57

©Copyright. All rights reserved by CTTL.

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

802.11ax-HE20 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11ax(20MHz)	MCS0	26.44	27.68	26.06

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

802.11ax-HE40 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		2422MHz (Ch3)	2437MHz (Ch6)	2452 MHz (Ch9)
802.11ax(40MHz)	MCS0	24.78	25.89	24.50

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

802.11ax-HE20 mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11ax-HE20(RU26-left)	MCS0	22.65	22.12	22.10
802.11ax-HE20(RU26-right)	MCS0	22.84	21.84	21.73
802.11ax-HE20(RU52-left)	MCS0	22.71	22.62	22.23
802.11ax-HE20(RU52-right)	MCS0	22.87	21.89	21.95
802.11ax-HE20(RU106-left)	MCS0	22.19	22.24	21.56
802.11ax-HE20(RU106-right)	MCS0	22.37	21.58	21.37
802.11ax-HE20(RU242)	MCS0	21.27	20.83	20.72

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

All the power setting of 802.11ax20-RU26/52/106/242 are 9dBm.

802.11ax-HE40 mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11ax-HE40(RU26-left)	MCS0	21.97	21.90	22.71
802.11ax-HE40(RU26-right)	MCS0	22.19	21.65	22.13
802.11ax-HE40(RU52-left)	MCS0	22.85	22.39	23.43
802.11ax-HE40(RU52-right)	MCS0	22.76	21.98	22.41
802.11ax-HE40(RU106-left)	MCS0	22.79	21.97	23.08

©Copyright. All rights reserved by CTTL.

802.11ax-HE40(RU106-right)	MCS0	21.97	21.17	22.06
802.11ax-HE40(RU242-left)	MCS0	21.94	21.64	22.36
802.11ax-HE40(RU242-right)	MCS0	22.03	21.39	21.84
802.11ax-HE40(RU242-left)	MCS0	20.95	20.25	20.83

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

All the power setting of 802.11ax40-RU26/52/106/242/484 are 9dBm.

The largest point of RU is 802.11ax20-RU52-right、802.11ax40-RU52-left.

The duty cycle of all other mode except 802.11b are 50%. The duty cycle of 802.11b is greater than or equal to 98%.

Conclusion: Pass

©Copyright. All rights reserved by CTTL.

A.3. Peak Power Spectral Density

Method of Measurement: See ANSI C63.10-2013-clause 11.10.2

a) Set analyzer center frequency to DTS channel center frequency.
b) Set the span to 1.5 times the DTS bandwidth.
c) Set the RBW to RBW = 3 kHz.
d) Set the VBW = 10 kHz.
e) Detector = peak.
f) Sweep time = auto couple.
g) Trace mode = max hold.
h) Allow trace to fully stabilize.
i) Use the peak marker function to determine the maximum amplitude level within the RBW.

Measurement Limit:

Standard	Limit
FCC CRF Part 15.247(e)	< 8 dBm/3 kHz

EUT ID: EUT3 & EUT4

Measurement Results:

SISO-core0

802.11b/g mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
802.11b	1	Fig.A.3.1	-6.57	**P**
	6	Fig.A.3.2	-7.80	**P**
	11	Fig.A.3.3	-7.87	**P**
802.11g	1	Fig.A.3.4	-7.01	**P**
	6	Fig.A.3.5	-8.26	**P**
	11	Fig.A.3.6	-7.71	**P**

802.11n-HT20 mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
802.11n (HT20)	1	Fig.A.3.7	-5.40	**P**
	6	Fig.A.3.8	-6.46	**P**
	11	Fig.A.3.9	-6.79	**P**

802.11n-HT40 mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
802.11n (HT40)	3	Fig.A.3.10	-8.82	**P**
	6	Fig.A.3.11	-9.29	**P**
	9	Fig.A.3.12	-9.47	**P**

©Copyright. All rights reserved by CTTL.

802.11ax-HE20 mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
802.11ax (HT20)	1	Fig.A.3.13	-6.56	**P**
	6	Fig.A.3.14	-7.07	**P**
	11	Fig.A.3.15	-8.38	**P**

802.11ax-HE40 mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
802.11ax (HT40)	3	Fig.A.3.16	-8.47	**P**
	6	Fig.A.3.17	-10.15	**P**
	9	Fig.A.3.18	-10.08	**P**

802.11ax-HE20 mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
RU26-left core1	1	Fig.A.3.19	-6.28	**P**
	6	Fig.A.3.20	-7.22	**P**
	11	Fig.A.3.21	-6.05	**P**
RU26-right core0	1	Fig.A.3.22	-7.89	**P**
	6	Fig.A.3.23	-8.56	**P**
	11	Fig.A.3.24	-7.63	**P**

Siso-core1

802.11ax-HE40 mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
RU26-left core1	1	Fig.A.3.25	-7.39	**P**
	6	Fig.A.3.26	-7.15	**P**
	11	Fig.A.3.27	-6.63	**P**
RU26-right core1	1	Fig.A.3.28	-9.14	**P**
	6	Fig.A.3.29	-9.38	**P**
	11	Fig.A.3.30	-8.57	**P**

CDD

802.11b/g mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
802.11g	1	Fig.A.3.31	-5.53	**P**
	6	Fig.A.3.32	-4.48	**P**
	11	Fig.A.3.33	-6.86	**P**

©Copyright. All rights reserved by CTTL.

MIMO

802.11n-HT20 mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
802.11n (HT20)	1	Fig.A.3.34	-4.70	**P**
	6	Fig.A.3.35	-3.87	**P**
	11	Fig.A.3.36	-4.81	**P**

802.11n-HT40 mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
802.11n (HT40)	3	Fig.A.3.37	-6.48	**P**
	6	Fig.A.3.38	-7.06	**P**
	9	Fig.A.3.39	-7.96	**P**

802.11ax-HE20 mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
802.11ax (HT20)	1	Fig.A.3.40	-5.82	**P**
	6	Fig.A.3.41	-4.43	**P**
	11	Fig.A.3.42	-5.07	**P**

802.11ax-HE40 mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
802.11ax (HT40)	3	Fig.A.3.43	-8.59	**P**
	6	Fig.A.3.44	-8.48	**P**
	9	Fig.A.3.45	-9.01	**P**

Both of the core0 and core1 are measured, as the power of core0 is larger, so the plot of core0 are reflected in the report.

802.11ax-HE20 mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
RU26-left	1	Fig.A.3.46	-4.67	**P**
	6	Fig.A.3.47	-5.15	**P**
	11	Fig.A.3.48	-4.72	**P**
RU26-right	1	Fig.A.3.49	-4.48	**P**
	6	Fig.A.3.50	-5.74	**P**
	11	Fig.A.3.51	-5.52	**P**

©Copyright. All rights reserved by CTTL.

802.11ax-HE40 mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
RU26-left	1	Fig.A.3.52	-6.01	**P**
	6	Fig.A.3.53	-6.40	**P**
	11	Fig.A.3.54	-4.80	**P**
RU26-right	1	Fig.A.3.55	-6.33	**P**
	6	Fig.A.3.56	-6.86	**P**
	11	Fig.A.3.57	-6.64	**P**

Both of the core0 and core1 are measured, as the power of core1 is larger, so the plot of core1 are reflected in the report.

Conclusion: Pass

Test graphs as below:

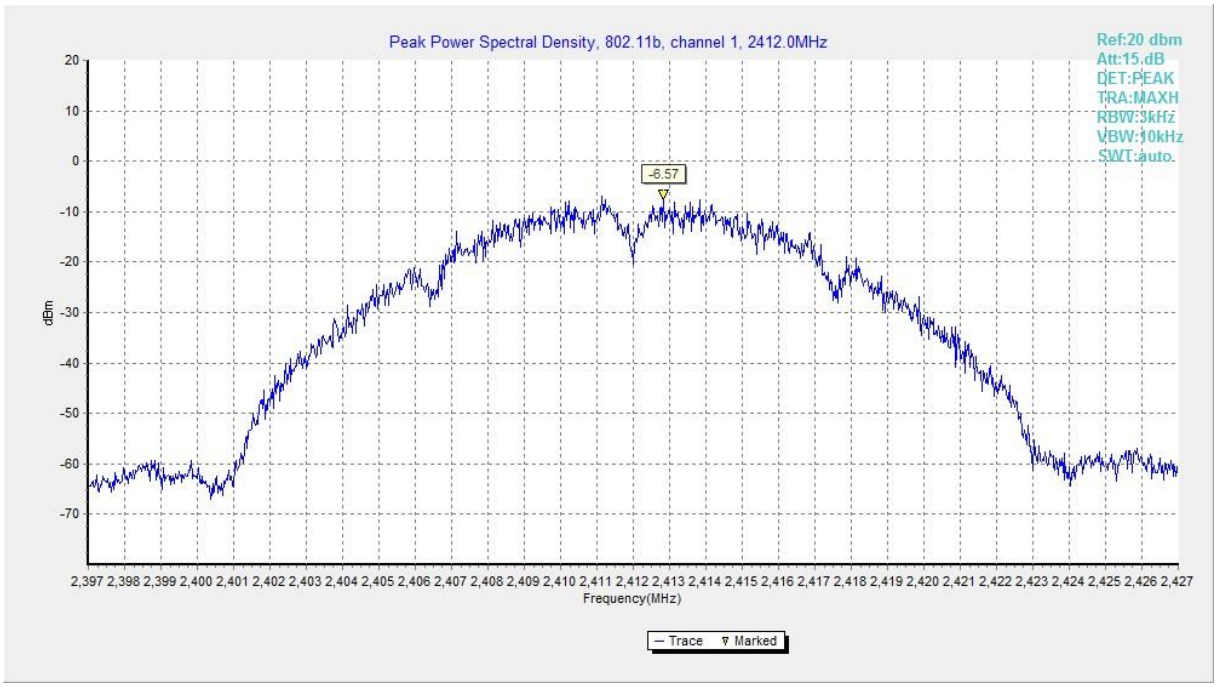

Fig.A.3.1 Power Spectral Density(802.11b,Ch1)

©Copyright. All rights reserved by CTTL.

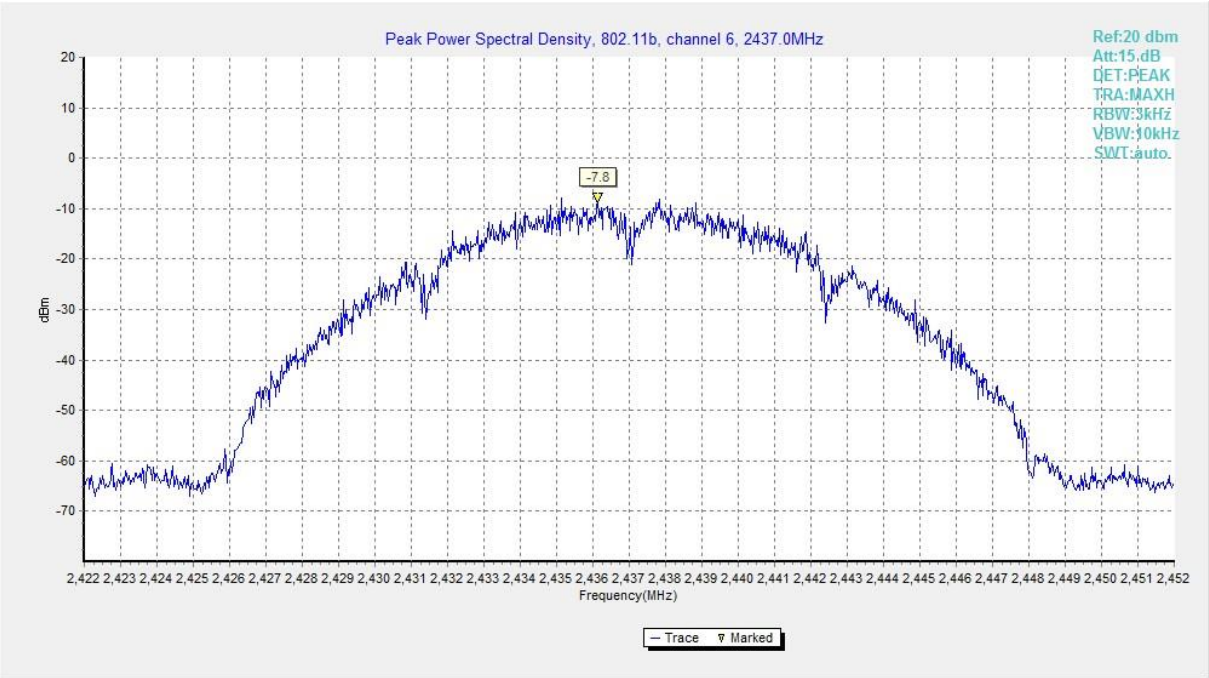

Fig.A.3.2 Power Spectral Density (802.11b, Ch 6)

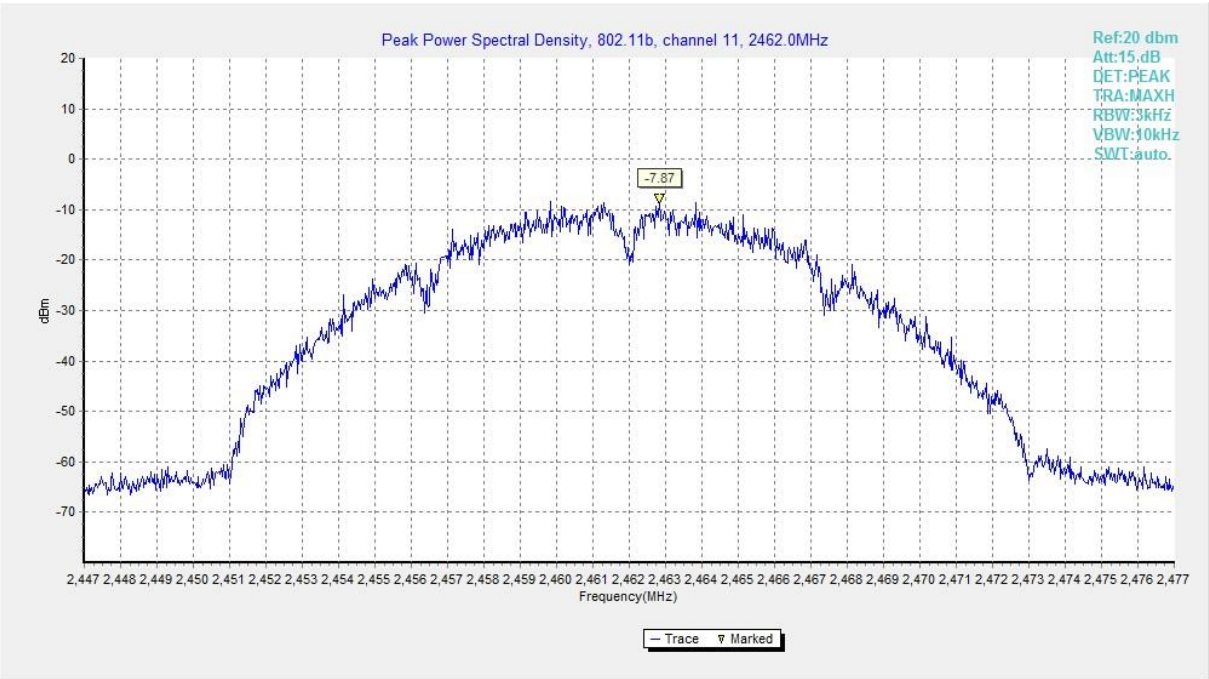

Fig.A.3.3 Power Spectral Density (802.11b, Ch 11)

©Copyright. All rights reserved by CTTL.

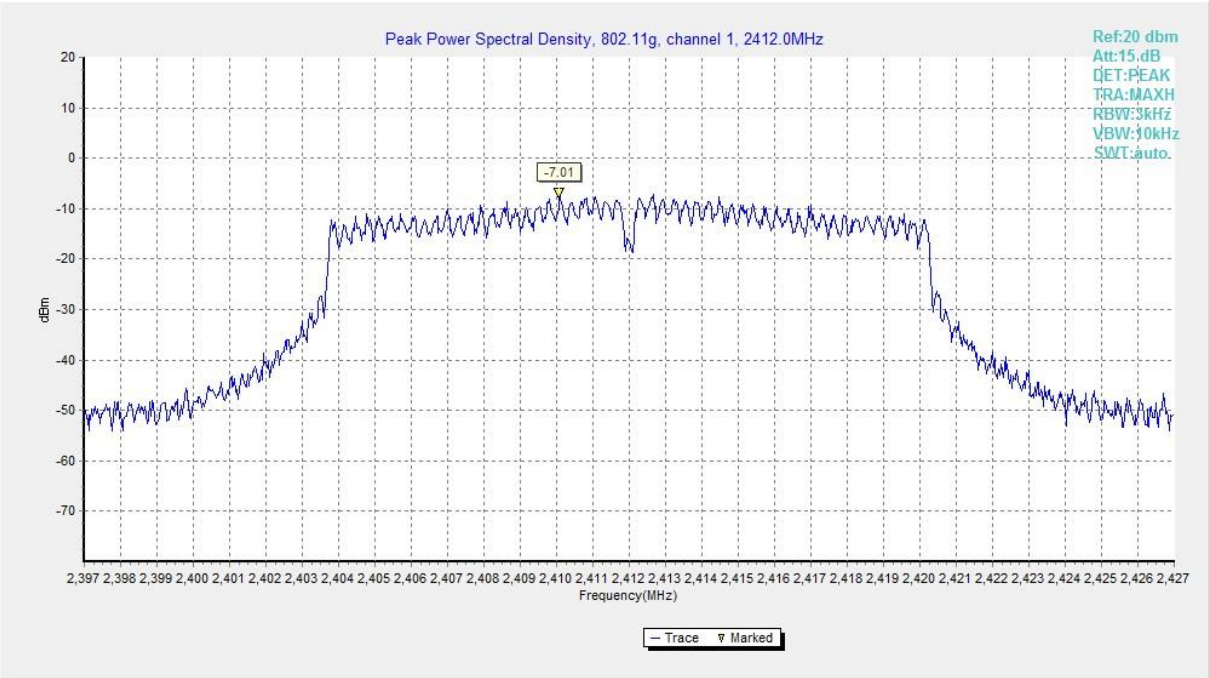

Fig.A.3.4 Power Spectral Density (802.11g, Ch 1)

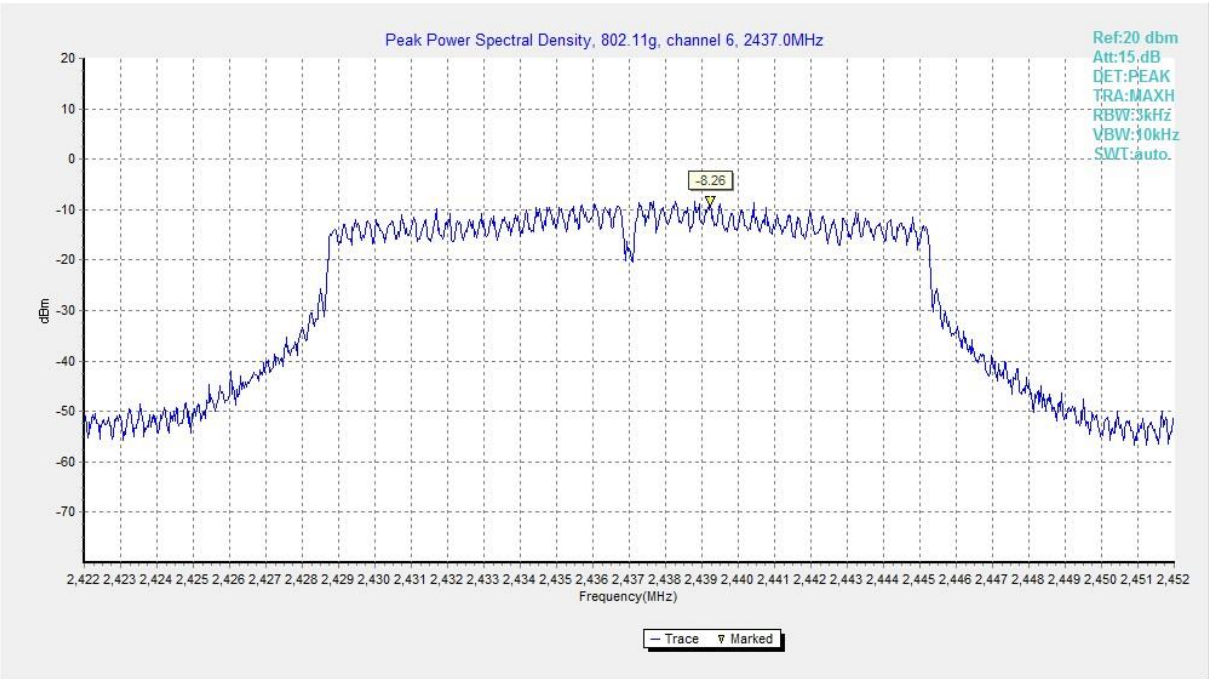

Fig.A.3.5 Power Spectral Density (802.11g, Ch 6)

©Copyright. All rights reserved by CTTL.

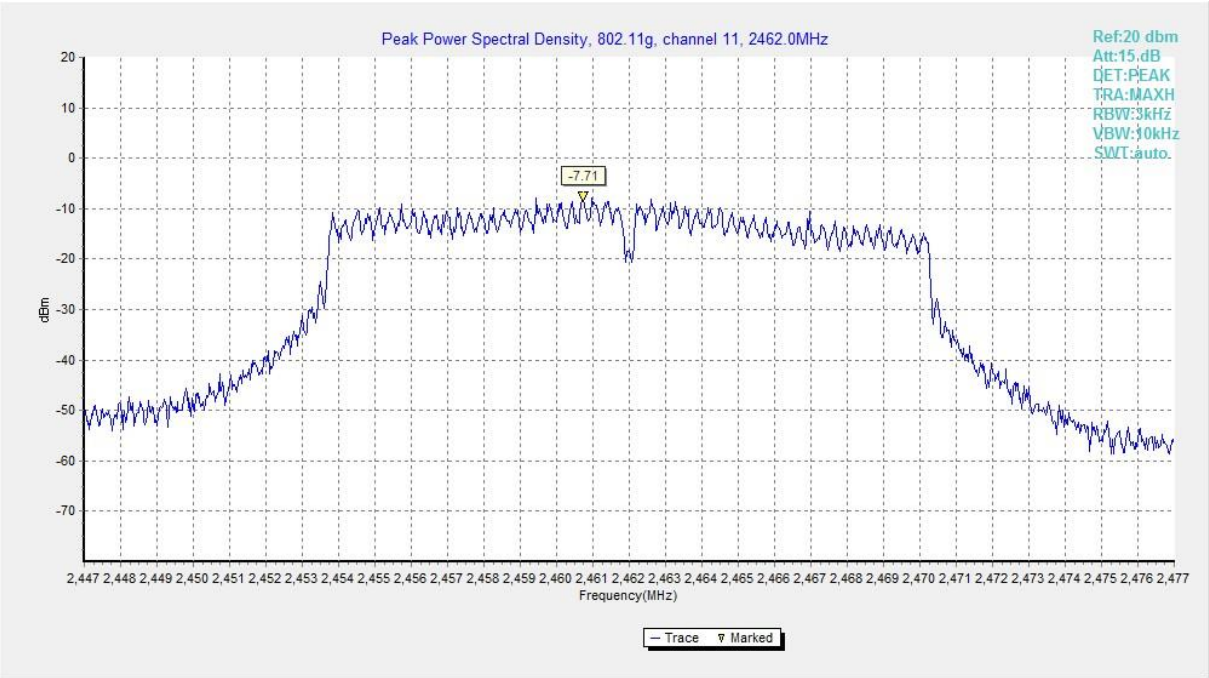

Fig.A.3.6 Power Spectral Density (802.11g, Ch 11)

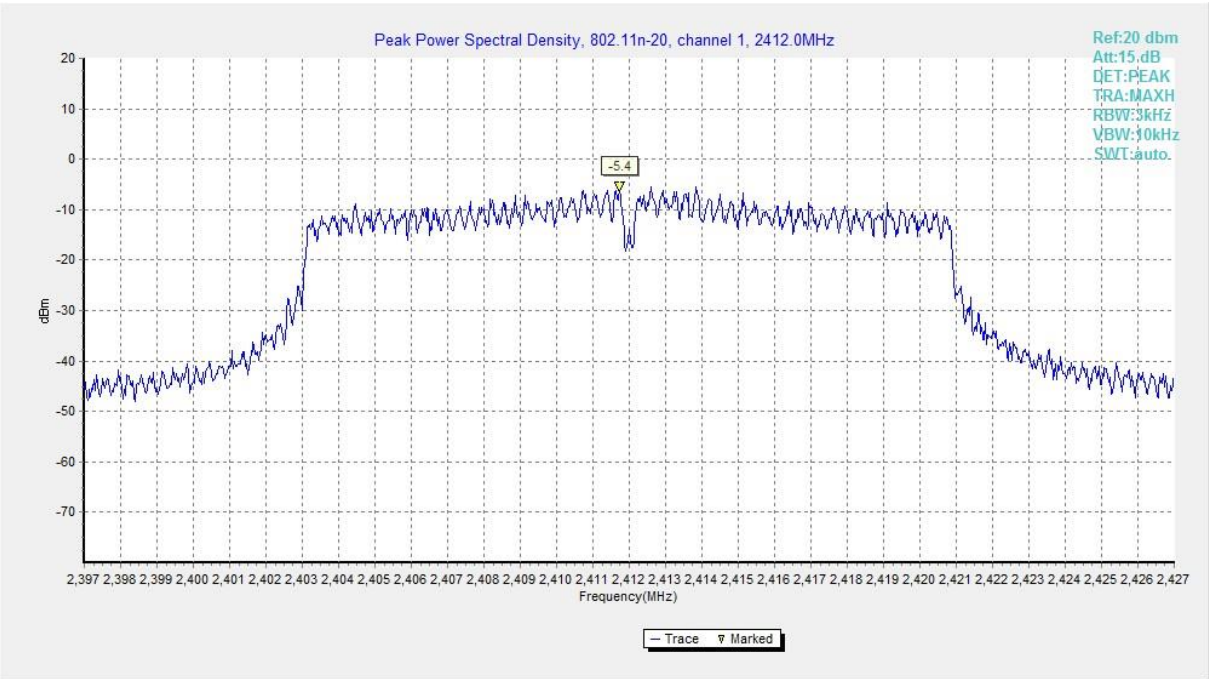

Fig.A.3.7 Power Spectral Density (802.11n-HT20, Ch 1)

©Copyright. All rights reserved by CTTL.

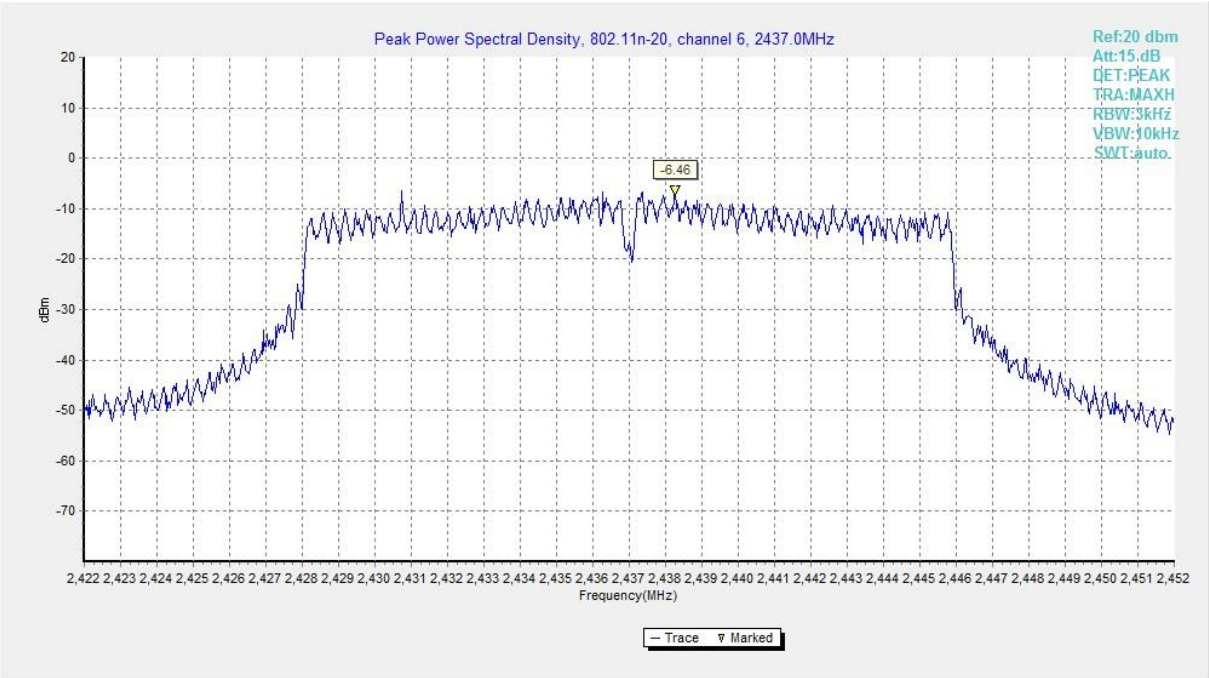

Fig.A.3.8 Power Spectral Density (802.11n-HT20, Ch 6)

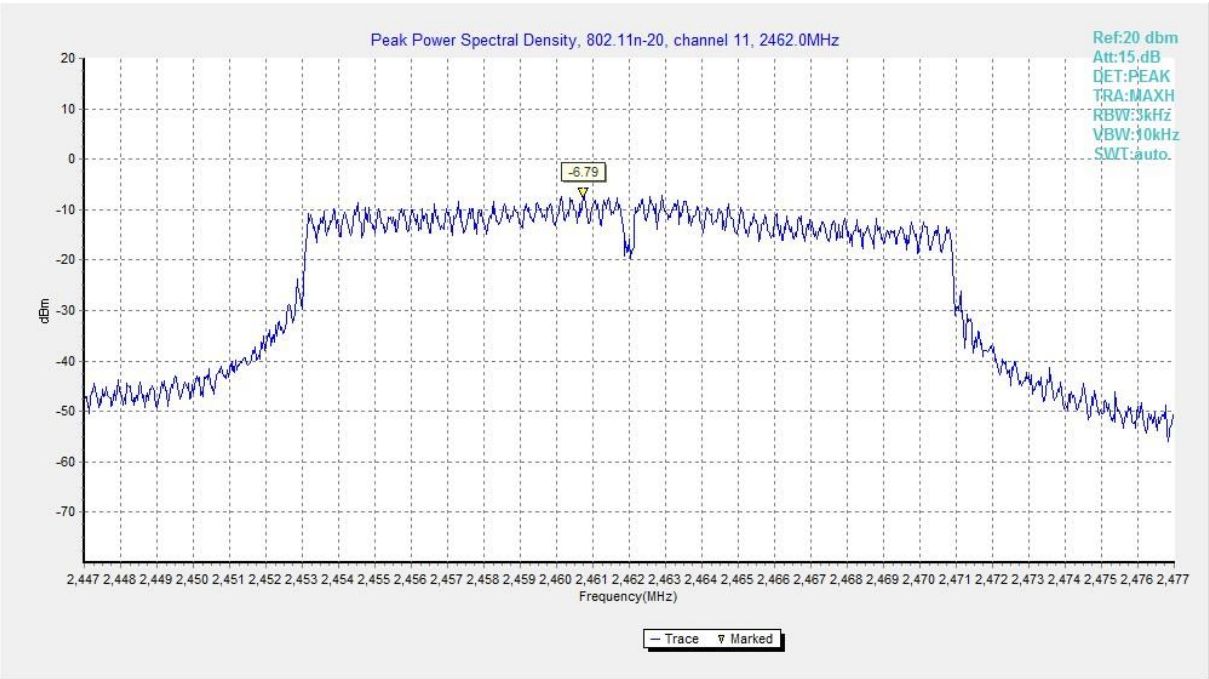

Fig.A.3.9 Power Spectral Density (802.11n-HT20, Ch 11)

©Copyright. All rights reserved by CTTL.

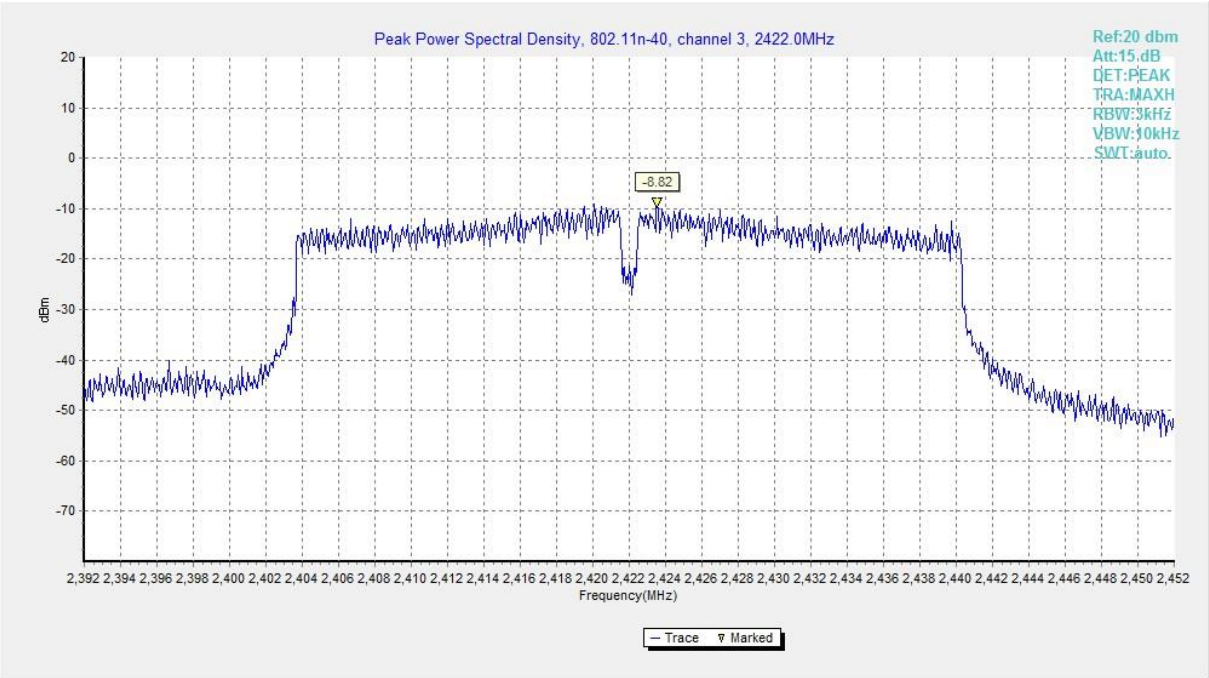

Fig.A.3.10 Power Spectral Density (802.11n-HT40, Ch 3)

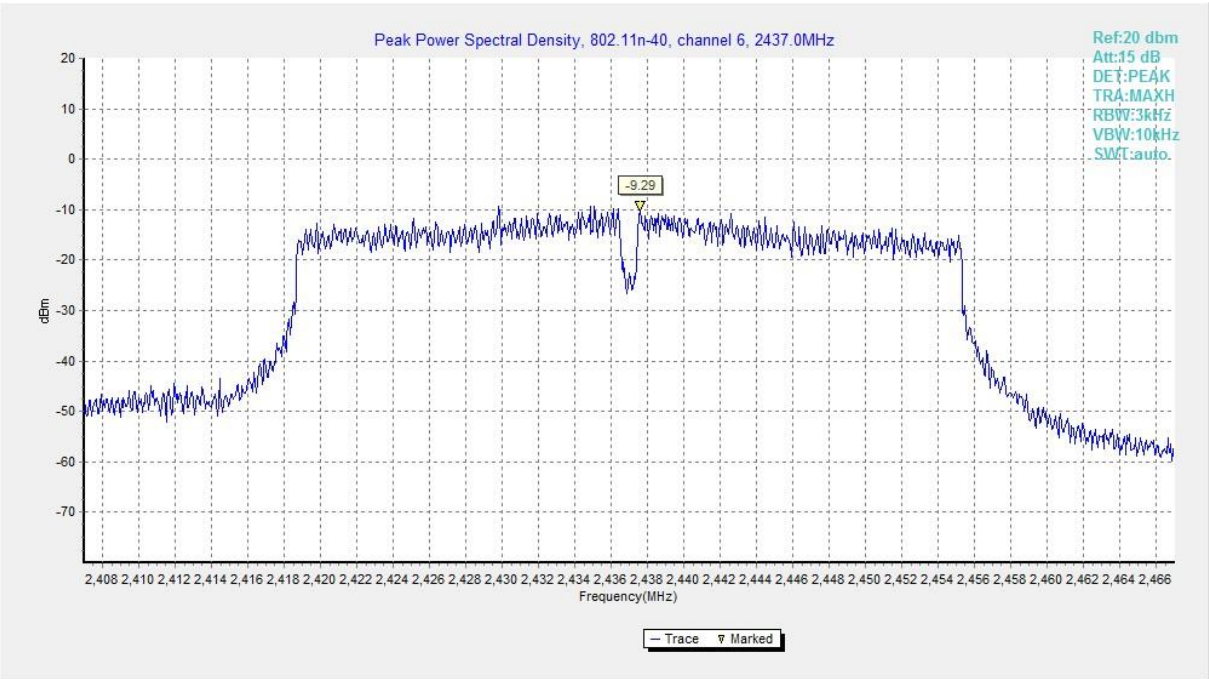

Fig.A.3.11 Power Spectral Density (802.11n-HT40, Ch 6)

©Copyright. All rights reserved by CTTL.

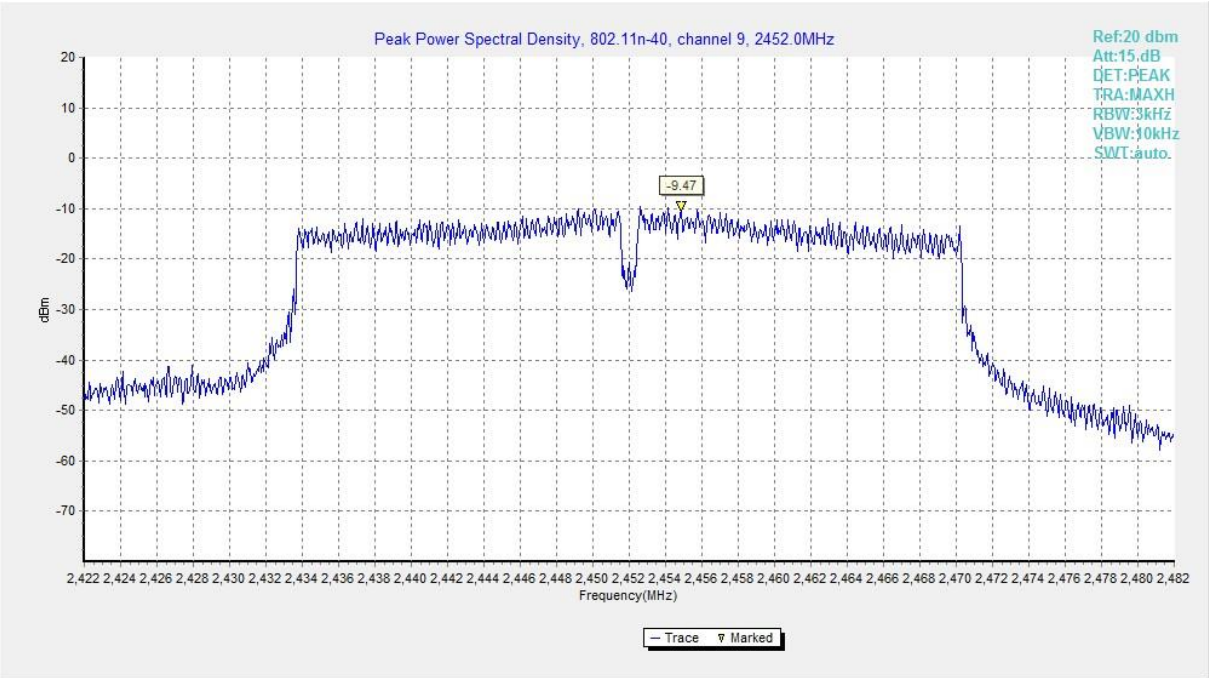

Fig.A.3.12 Power Spectral Density (802.11n-HT40, Ch 9)

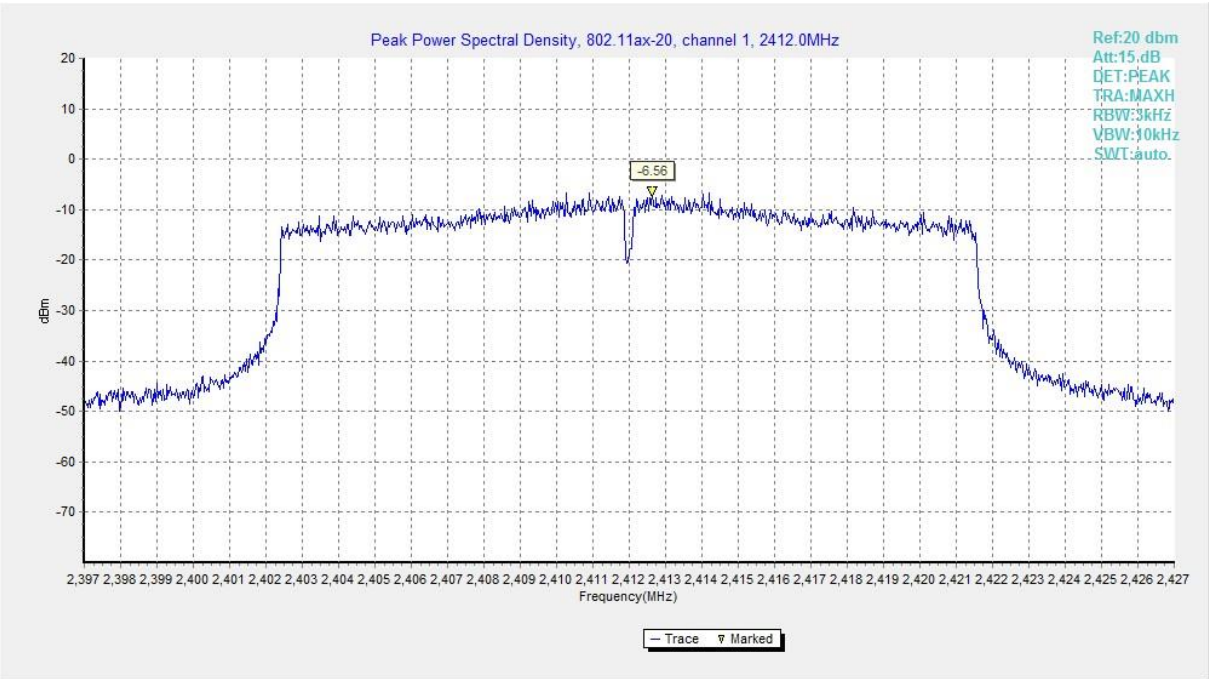

Fig.A.3.13 Power Spectral Density (802.11ax-HE20, Ch 1)

©Copyright. All rights reserved by CTTL.

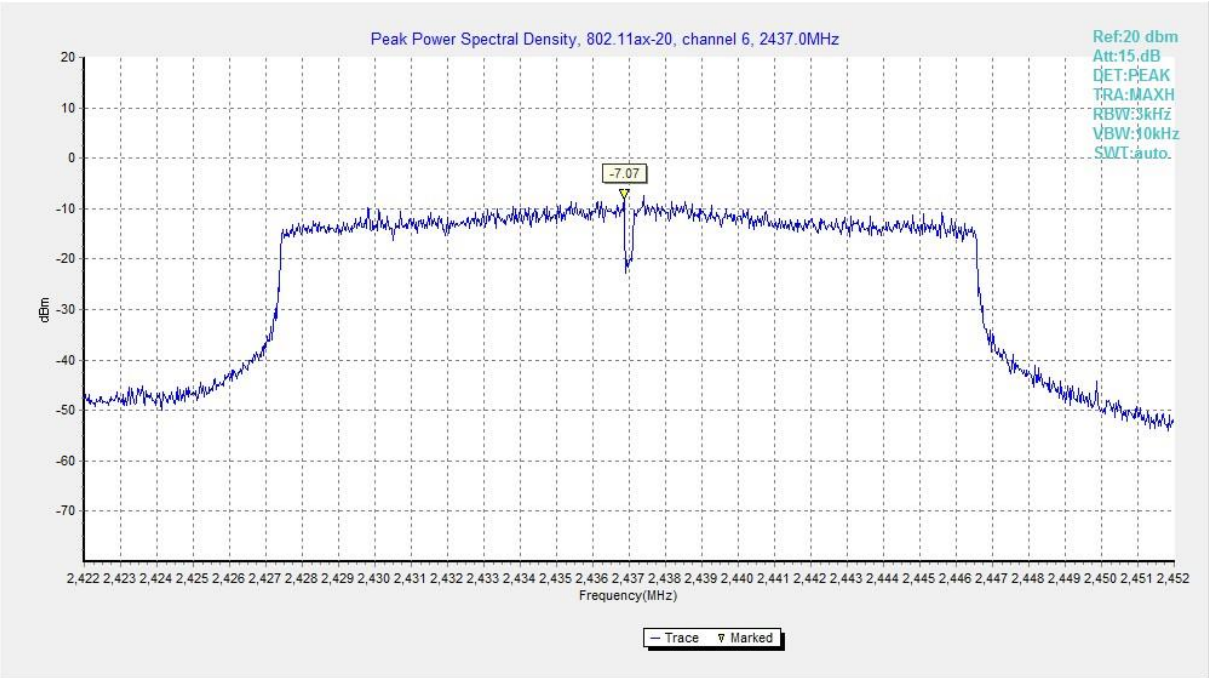

Fig.A.3.14 Power Spectral Density (802.11ax-HE20, Ch 6)

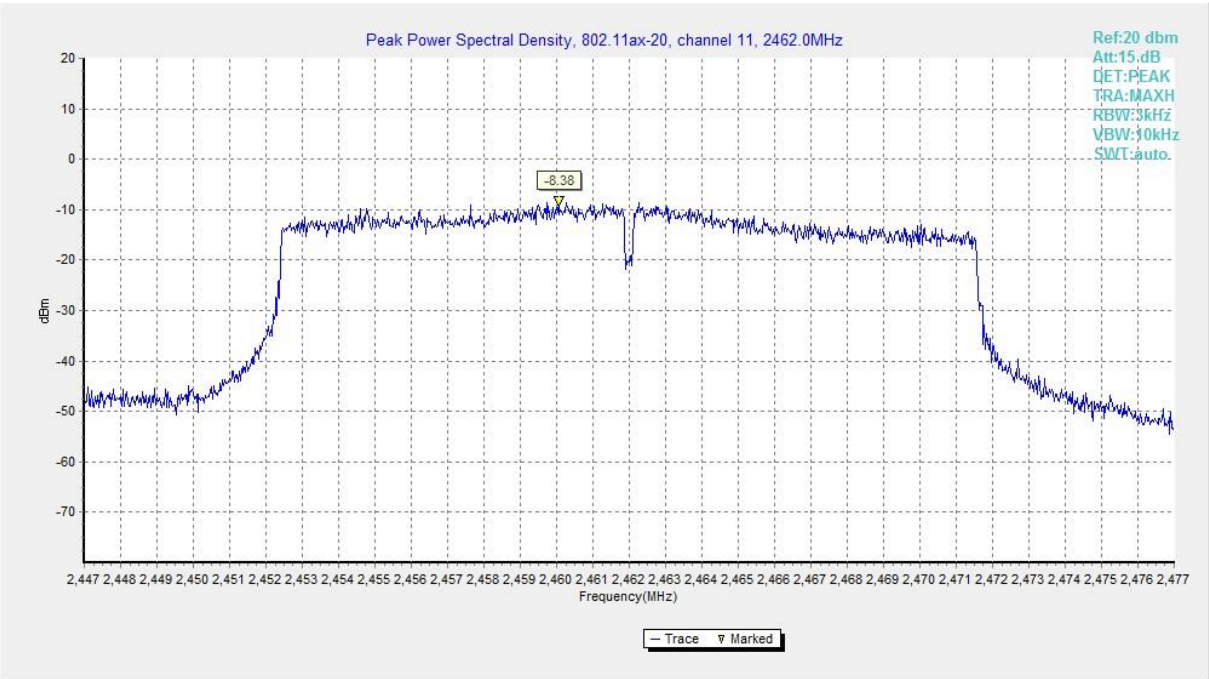

Fig.A.3.15 Power Spectral Density (802.11ax-HE20, Ch 11)

©Copyright. All rights reserved by CTTL.

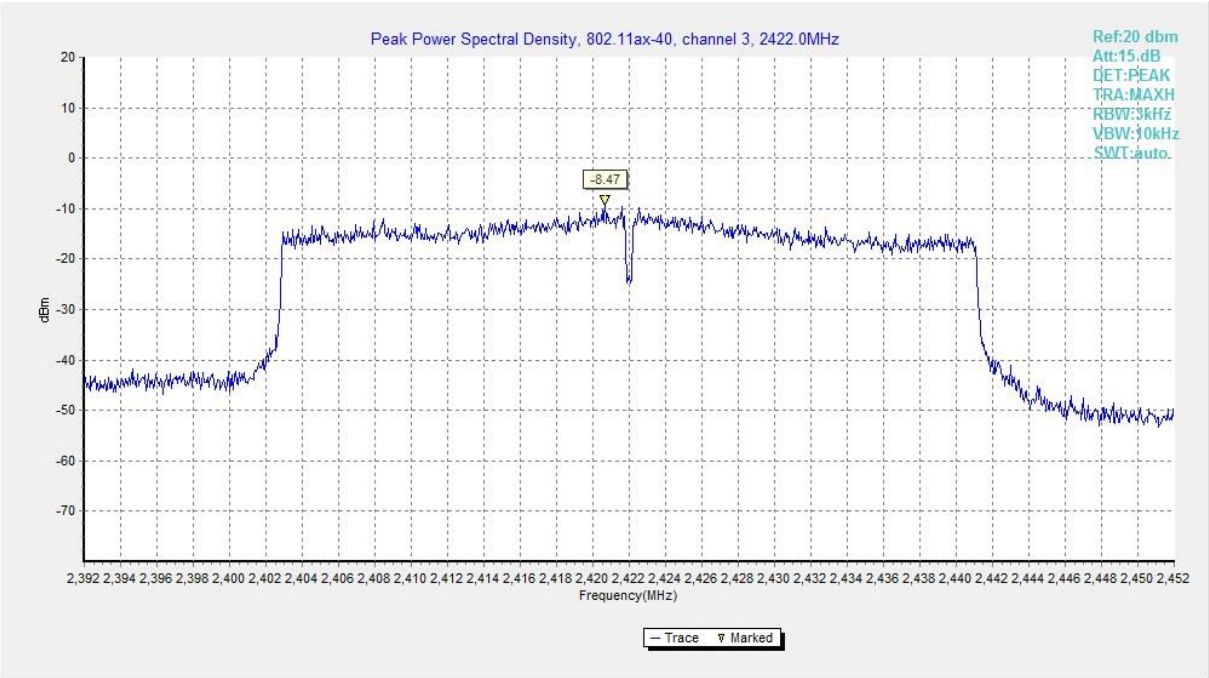

Fig.A.3.16 Power Spectral Density (802.11ax-HE40, Ch 3)

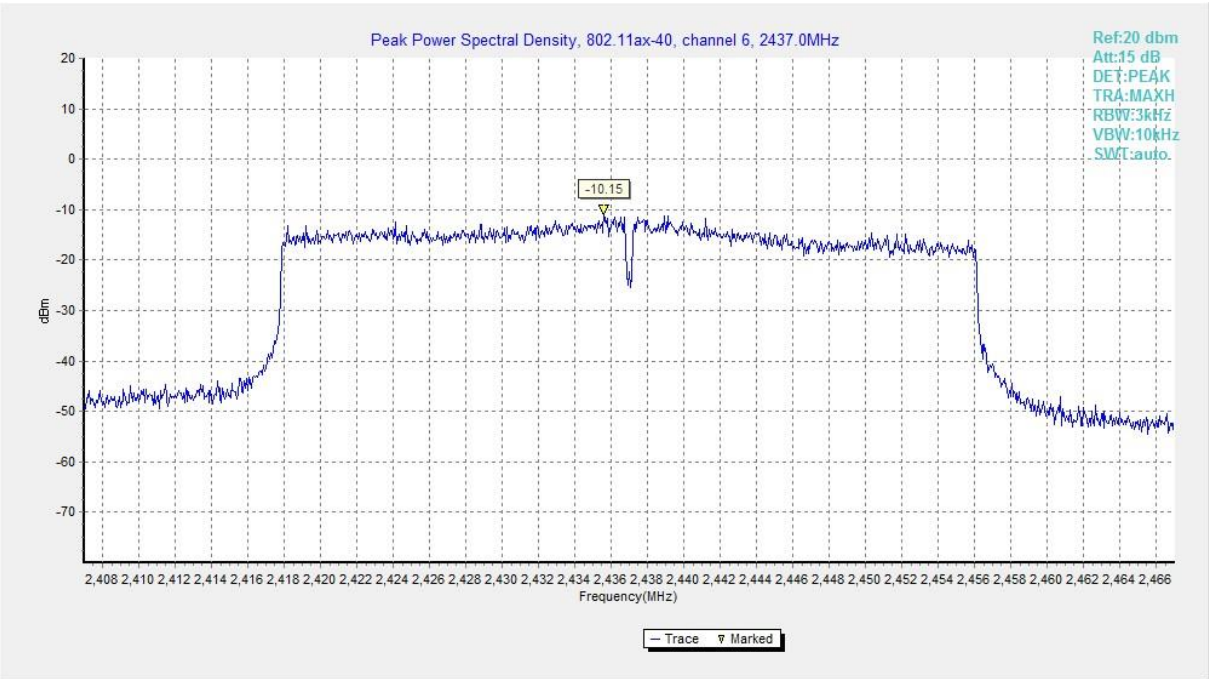

Fig.A.3.17 Power Spectral Density (802.11ax-HE40, Ch 6)

©Copyright. All rights reserved by CTTL.

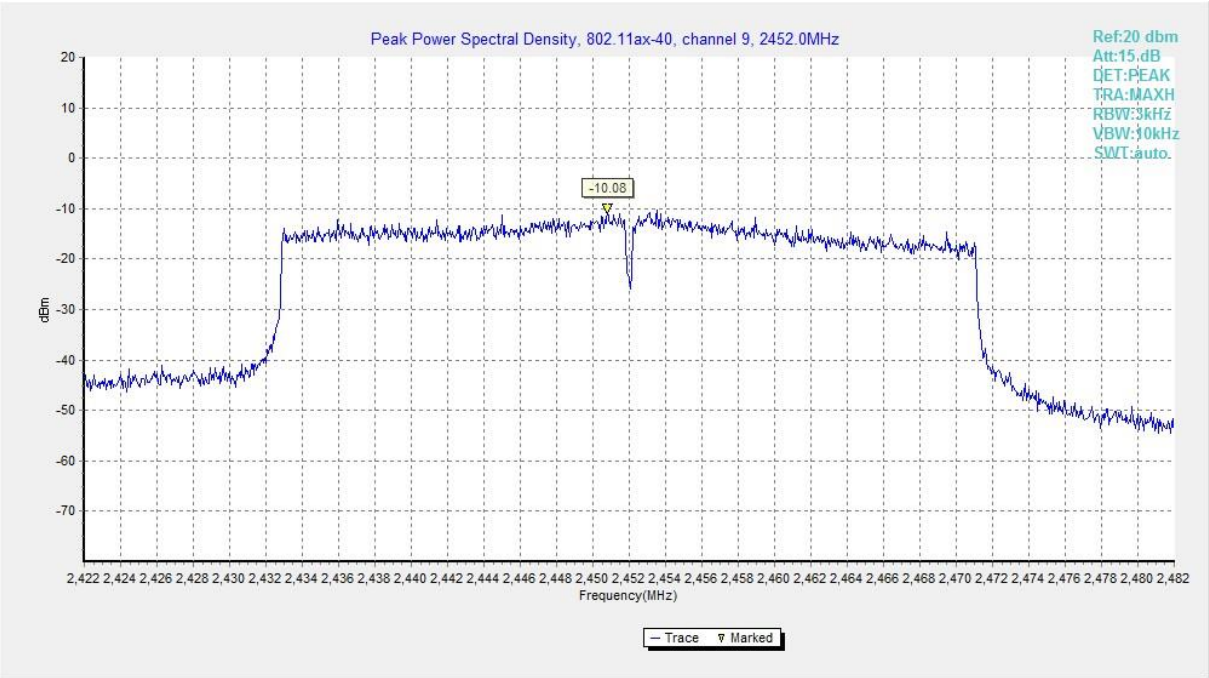

Fig.A.3.18 Power Spectral Density (802.11ax-HE400, Ch 9)

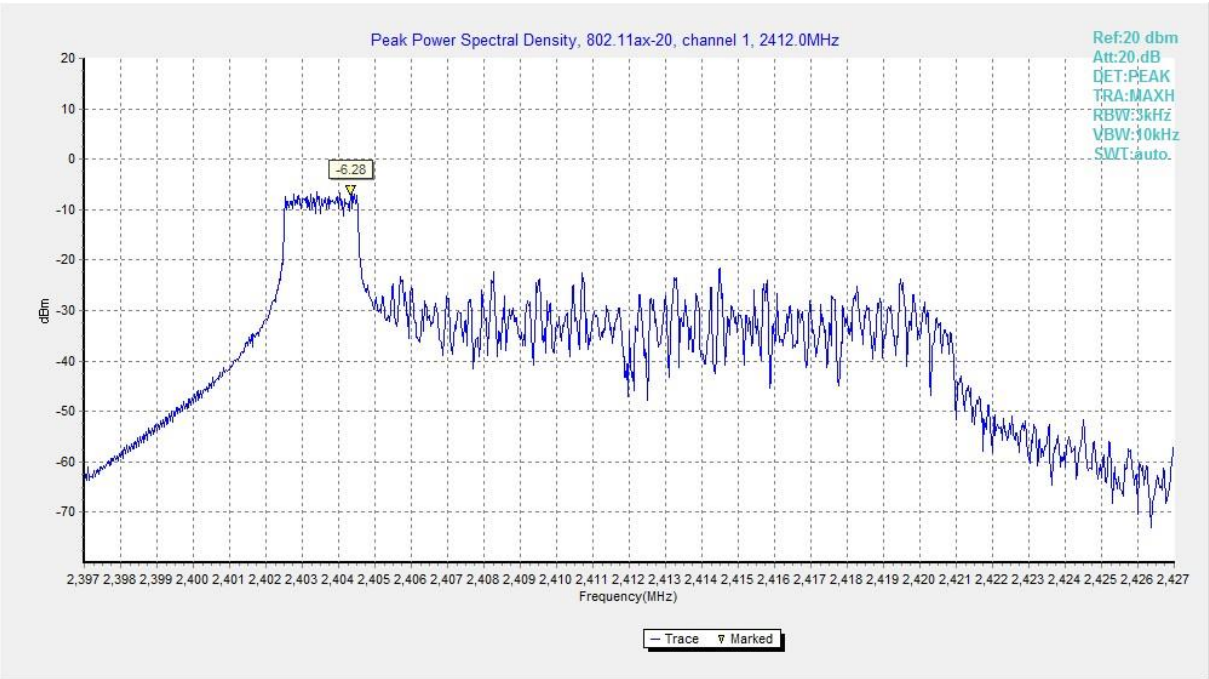

Fig.A.3.19 Power Spectral Density (802.11ax-HE20-RU26-left, Ch 1)

©Copyright. All rights reserved by CTTL.

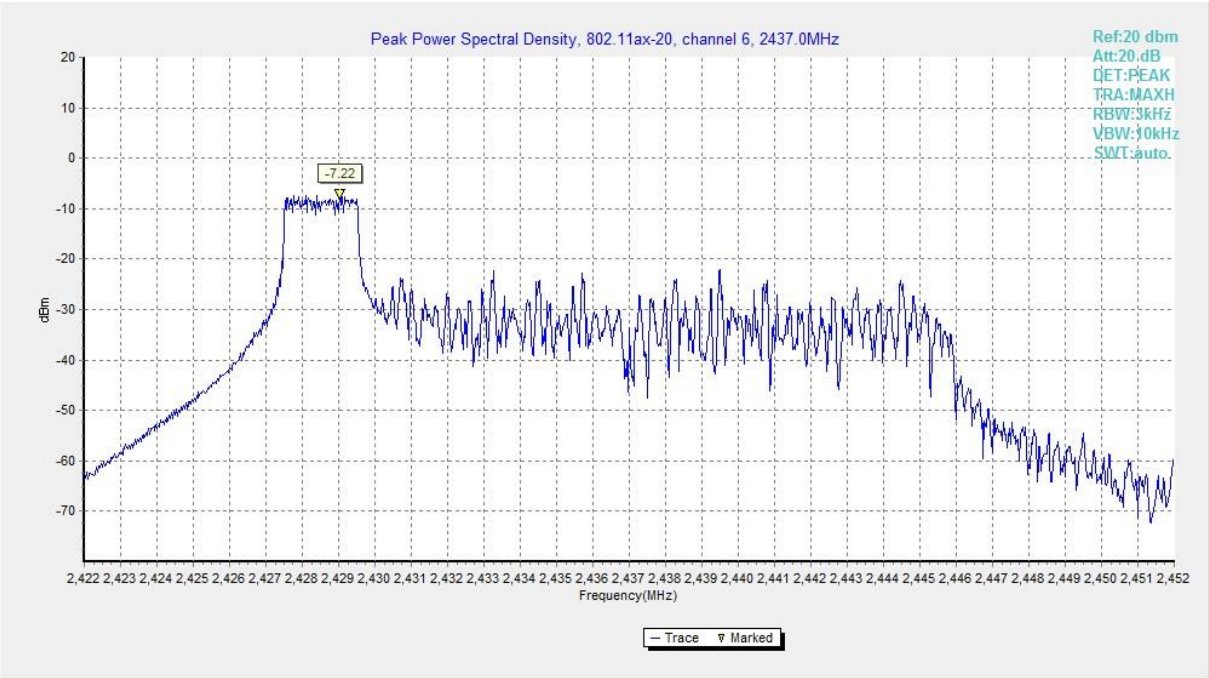

Fig.A.3.20 Power Spectral Density (802.11ax-HE20-RU26-left, Ch 6)

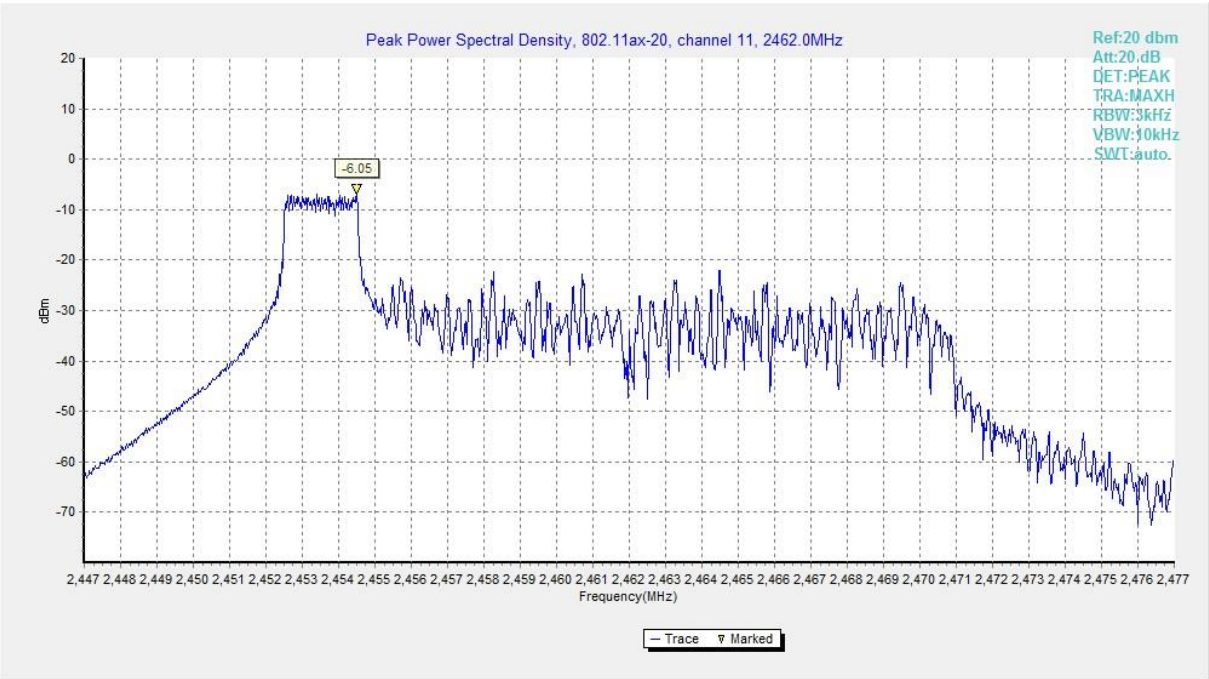

Fig.A.3.21 Power Spectral Density (802.11ax-HE20-RU26-left, Ch 11)

©Copyright. All rights reserved by CTTL.

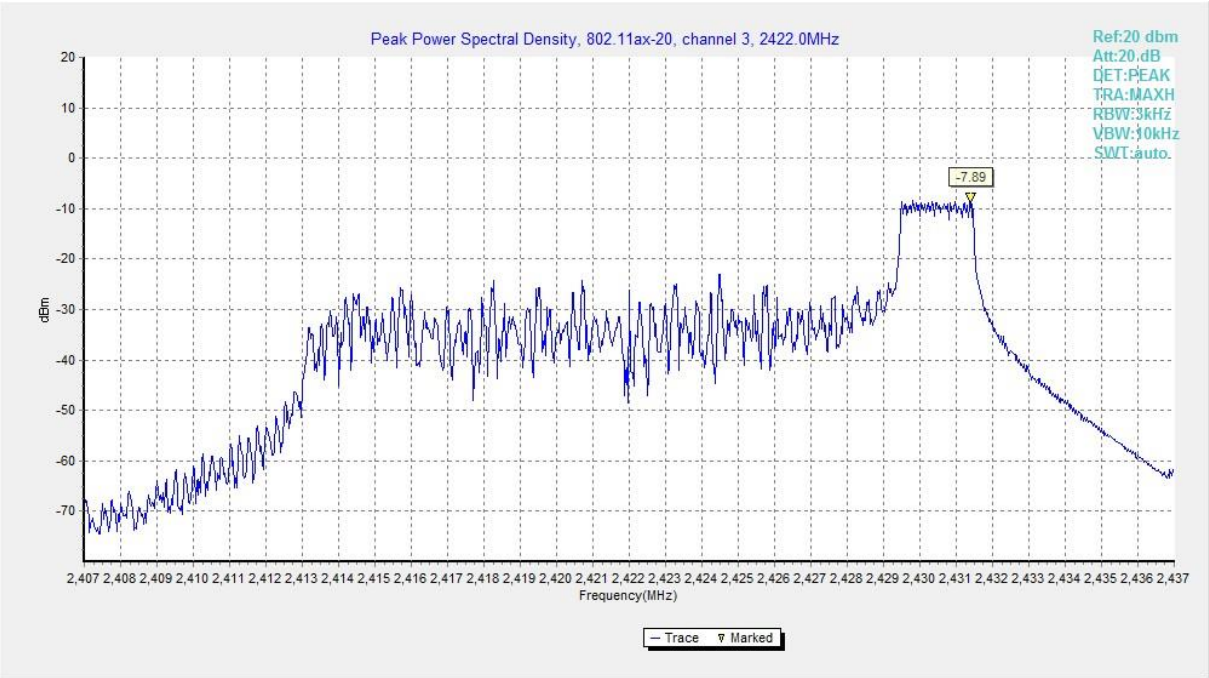

Fig.A.3.22 Power Spectral Density (802.11ax-HE20-RU26-right, Ch 1)

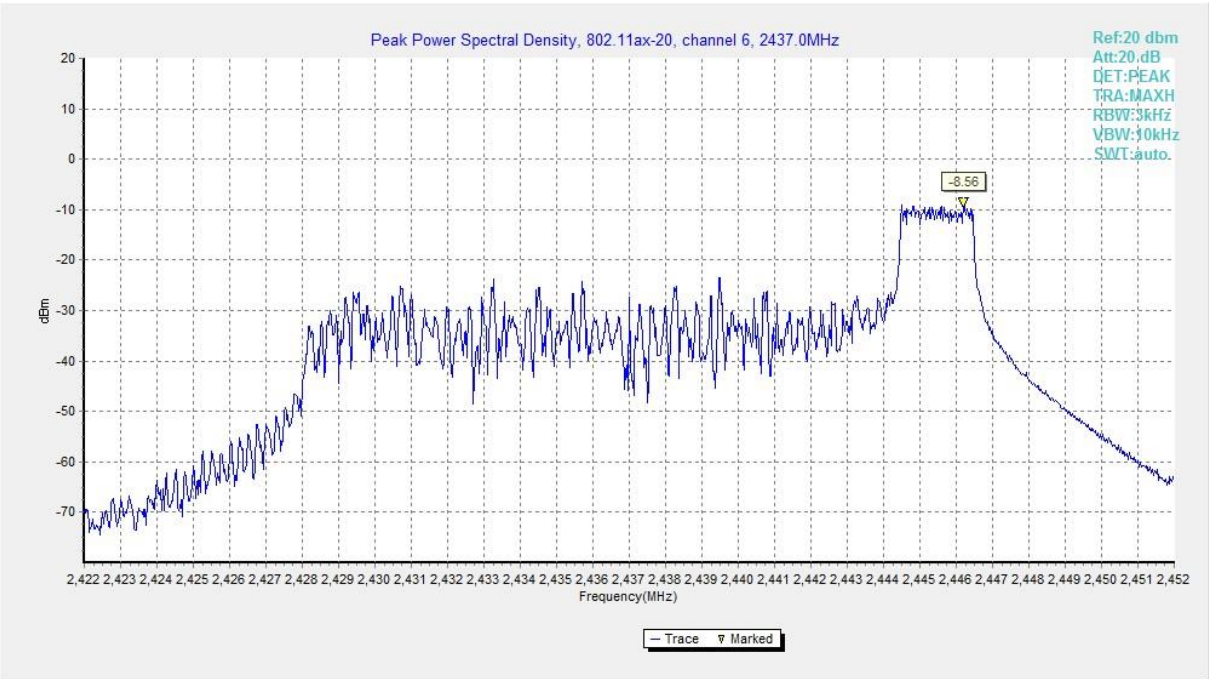

Fig.A.3.23 Power Spectral Density (802.11ax-HE20-RU26-right, Ch 6)

©Copyright. All rights reserved by CTTL.

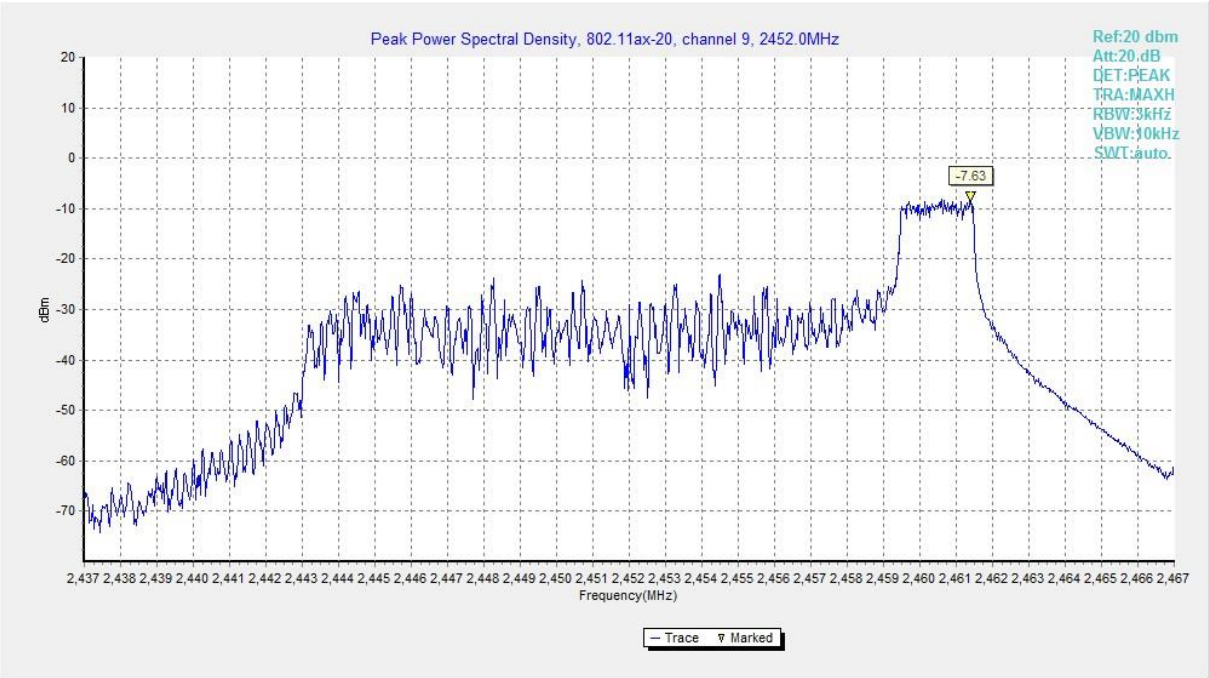

Fig.A.3.24 Power Spectral Density (802.11ax-HE20-RU26-right, Ch 11)

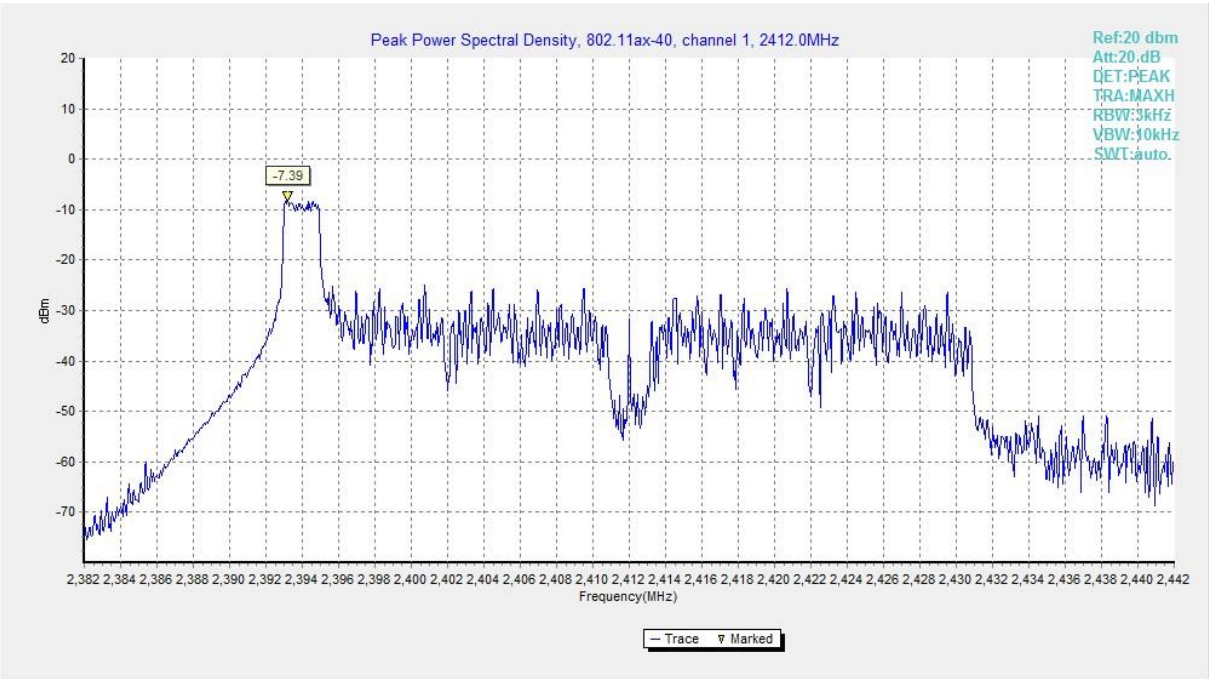

Fig.A.3.25 Power Spectral Density (802.11ax-HE40-RU26-left, Ch 3)

©Copyright. All rights reserved by CTTL.

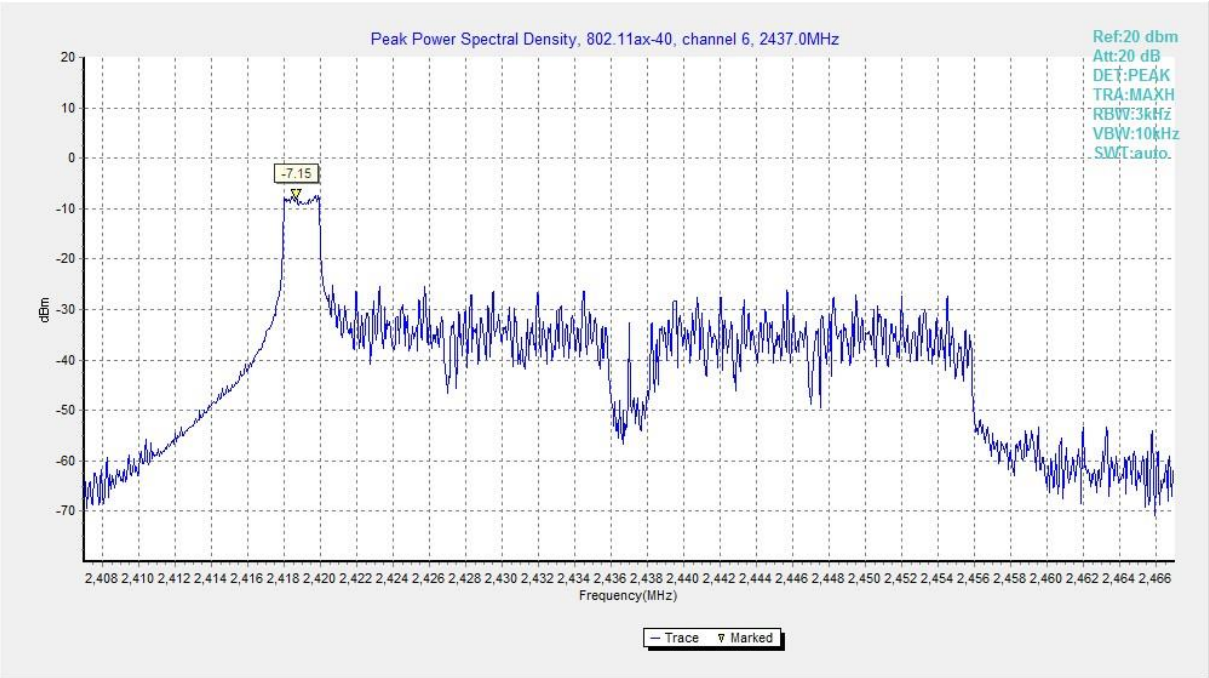

Fig.A.3.26 Power Spectral Density (802.11ax-HE40-RU26-left, Ch 6)

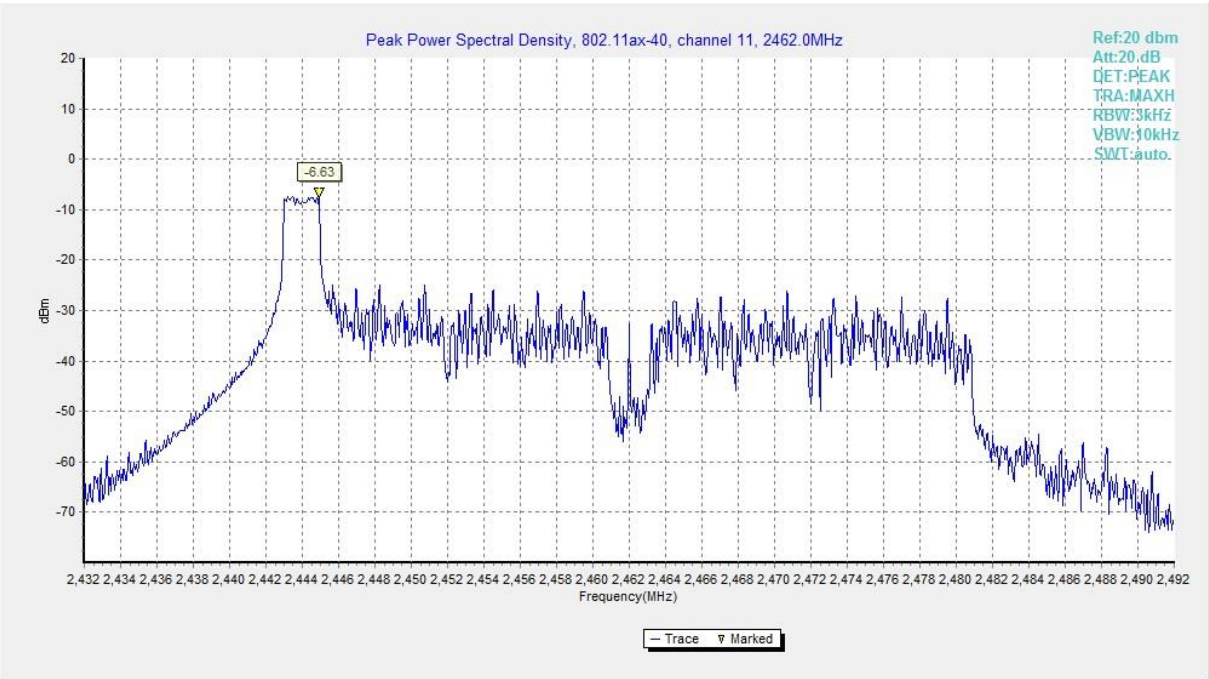

Fig.A.3.27 Power Spectral Density (802.11ax-HE40-RU26-left, Ch 9)

©Copyright. All rights reserved by CTTL.

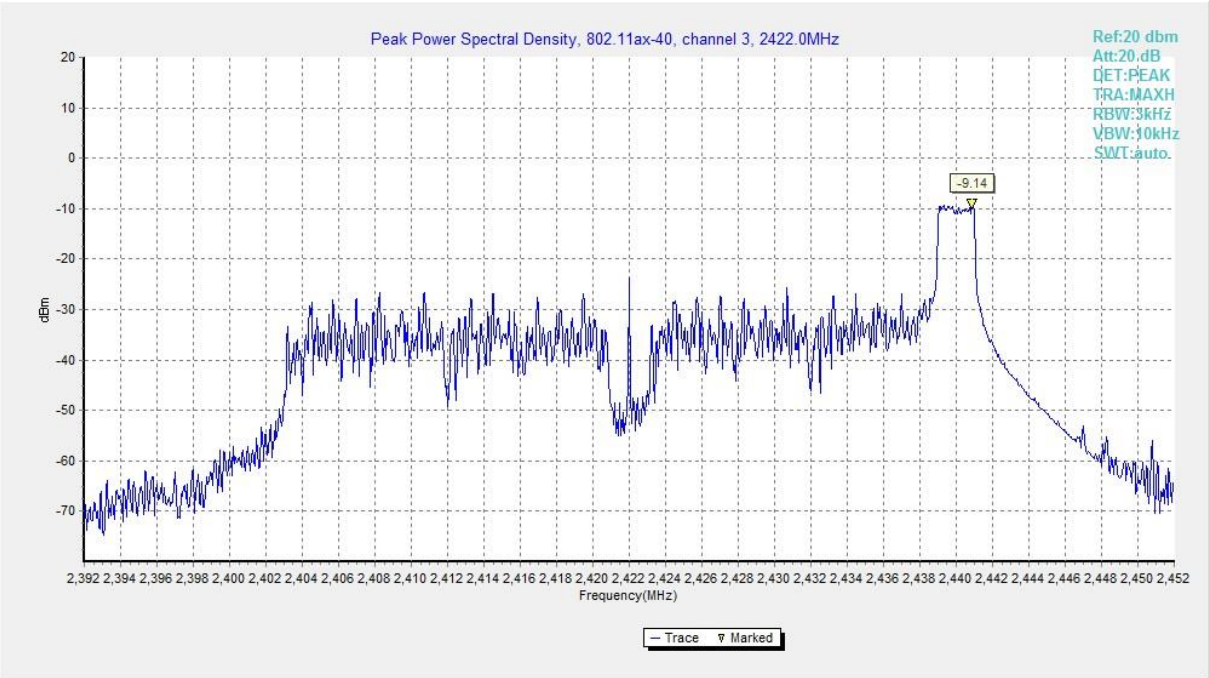

Fig.A.3.28 Power Spectral Density (802.11ax-HE40-RU26-right, Ch 3)

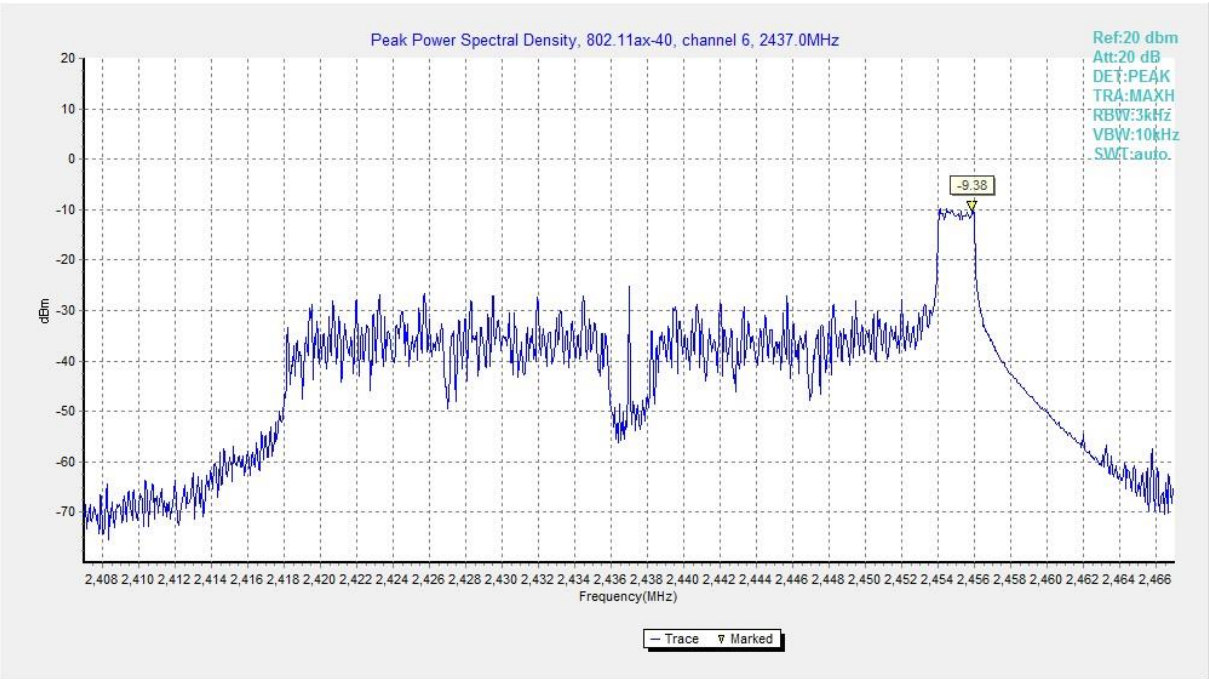

Fig.A.3.29 Power Spectral Density (802.11ax-HE40-RU26- right, Ch 6)

©Copyright. All rights reserved by CTTL.

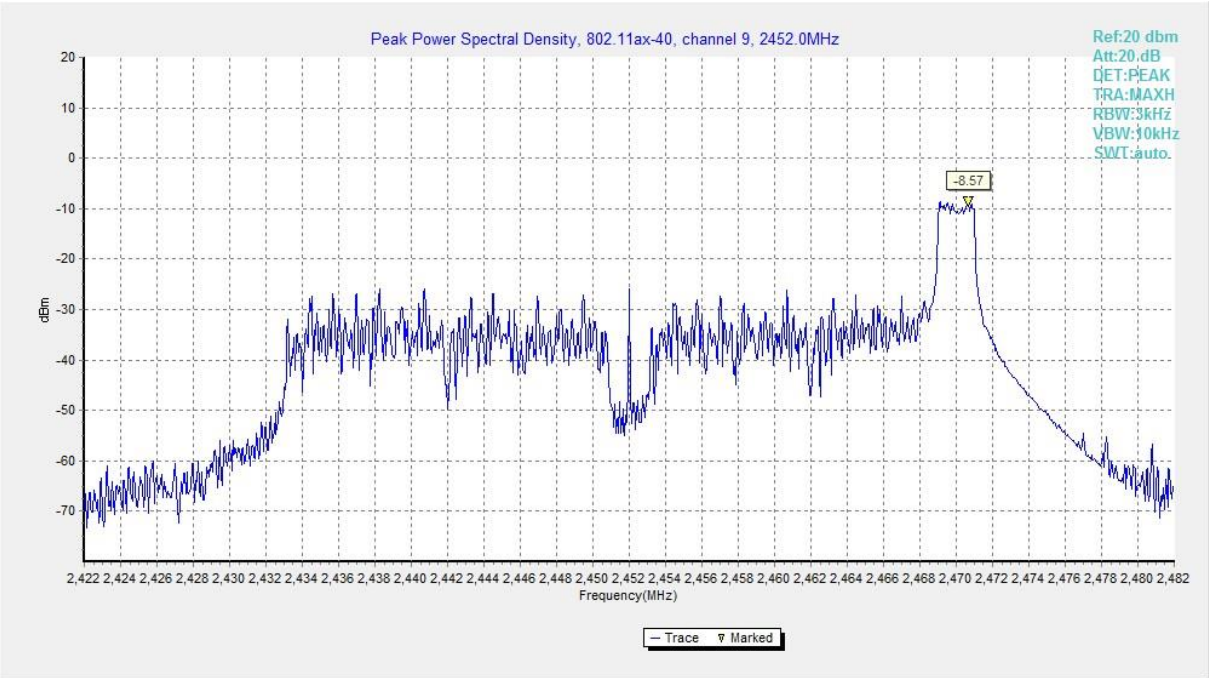

Fig.A.3.30 Power Spectral Density (802.11ax-HE40-RU26- right, Ch 9)

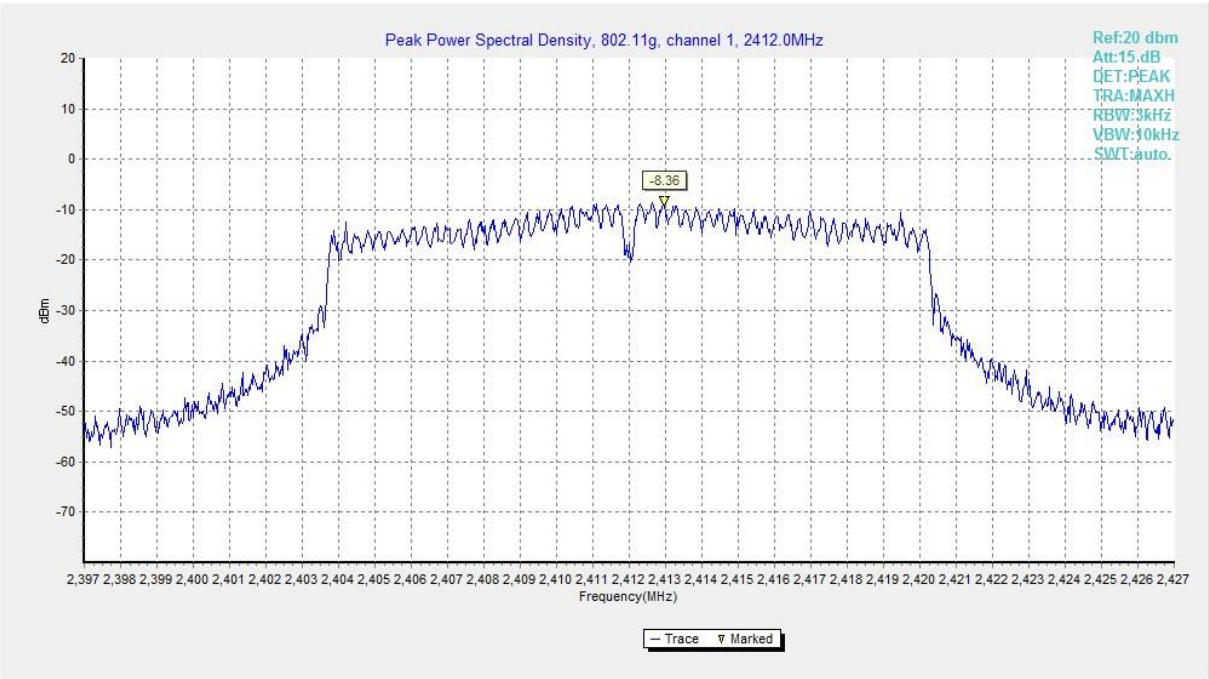

Fig.A.3.31 Power Spectral Density (802.11g, Ch 1)

©Copyright. All rights reserved by CTTL.

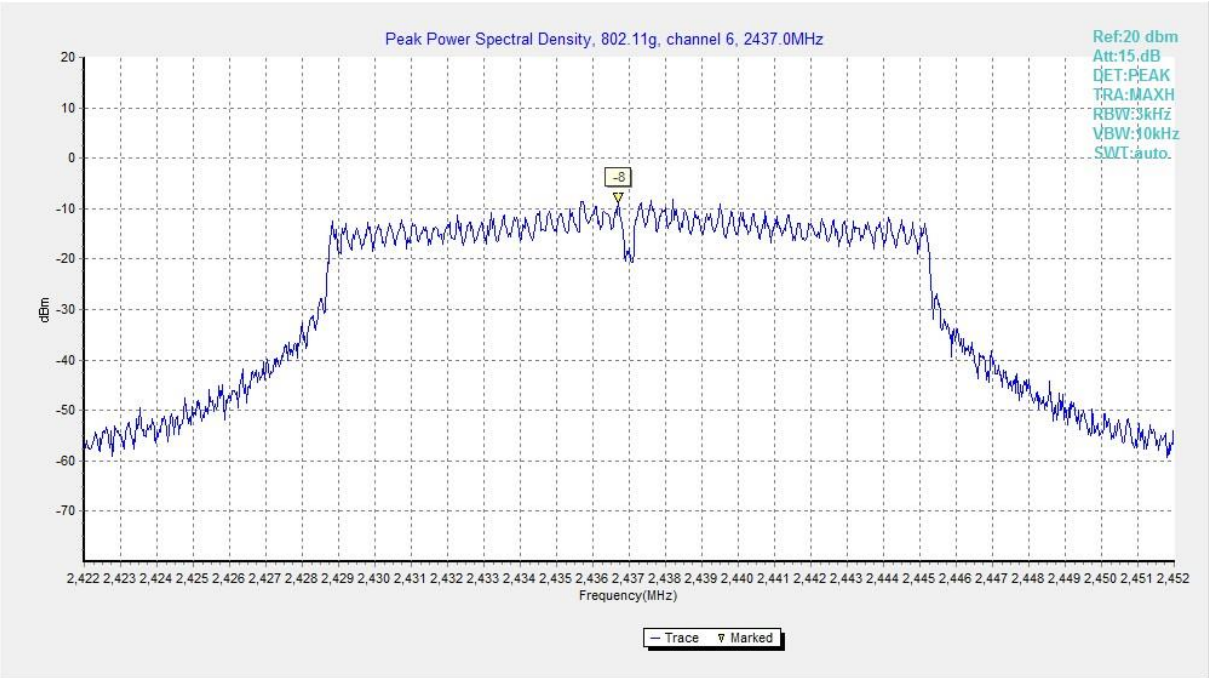

Fig.A.3.32 Power Spectral Density (802.11g, Ch 6)

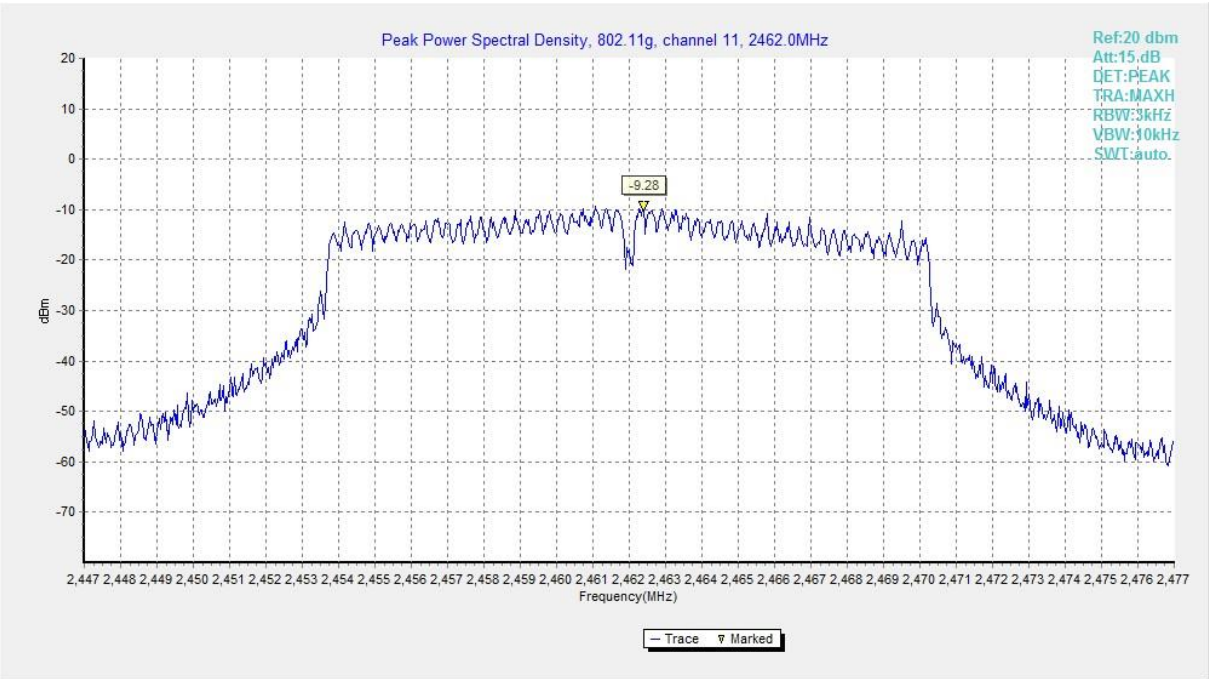

Fig.A.3.33 Power Spectral Density (802.11g, Ch 11)

©Copyright. All rights reserved by CTTL.

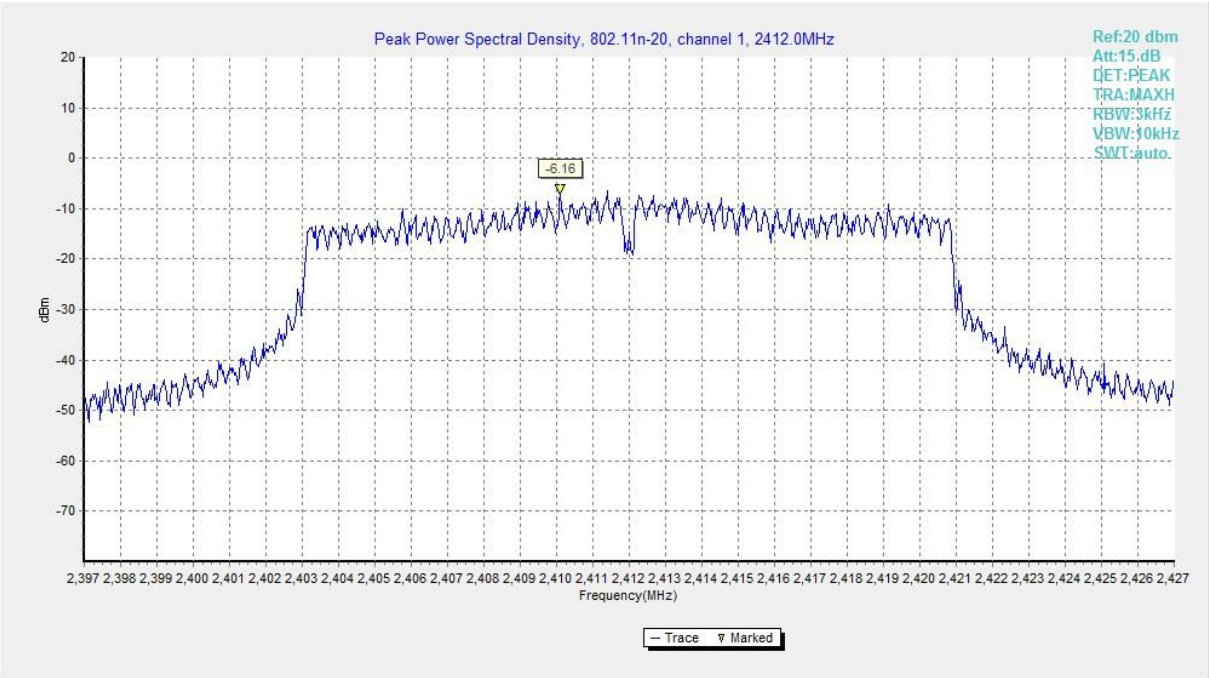

Fig.A.3.34 Power Spectral Density (802.11n-HT20, Ch 1)

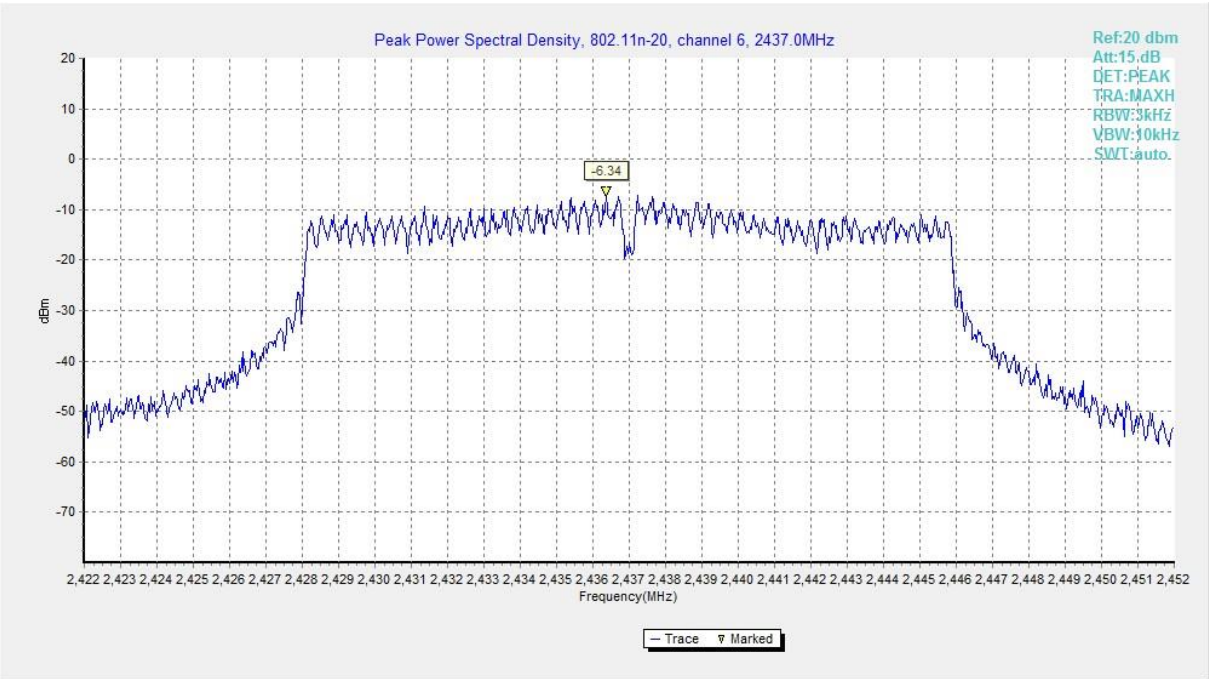

Fig.A.3.35 Power Spectral Density (802.11n-HT20, Ch 6)

©Copyright. All rights reserved by CTTL.

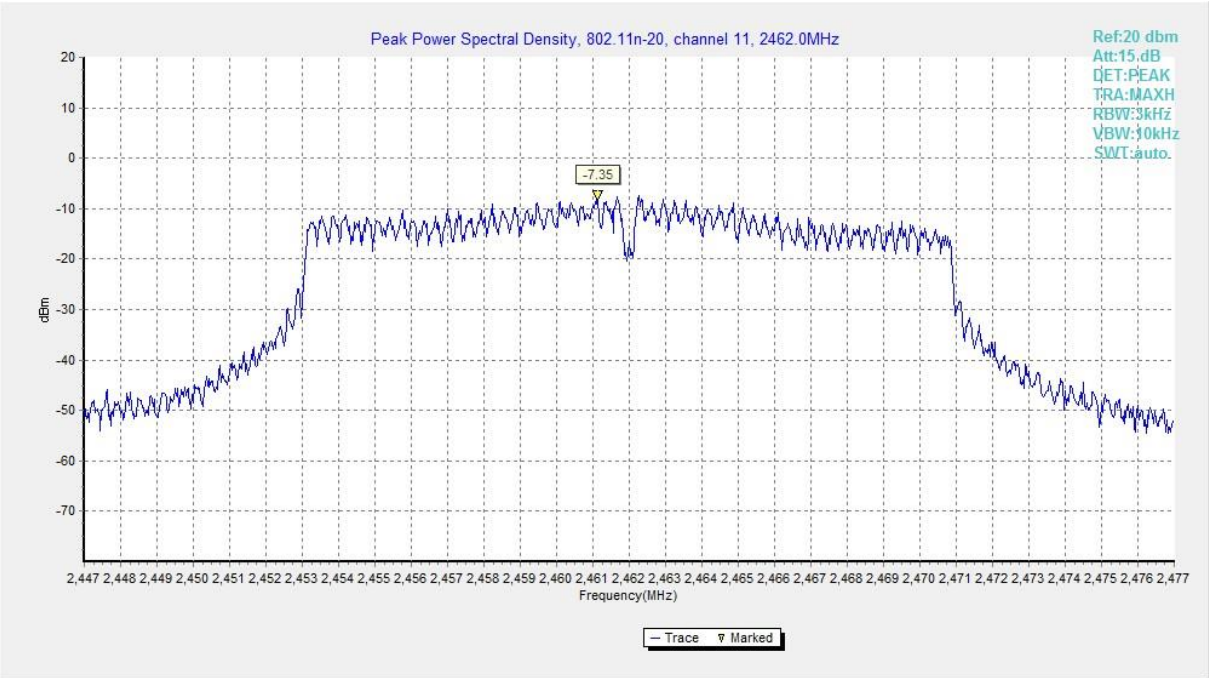

Fig.A.3.36 Power Spectral Density (802.11n-HT20, Ch 11)

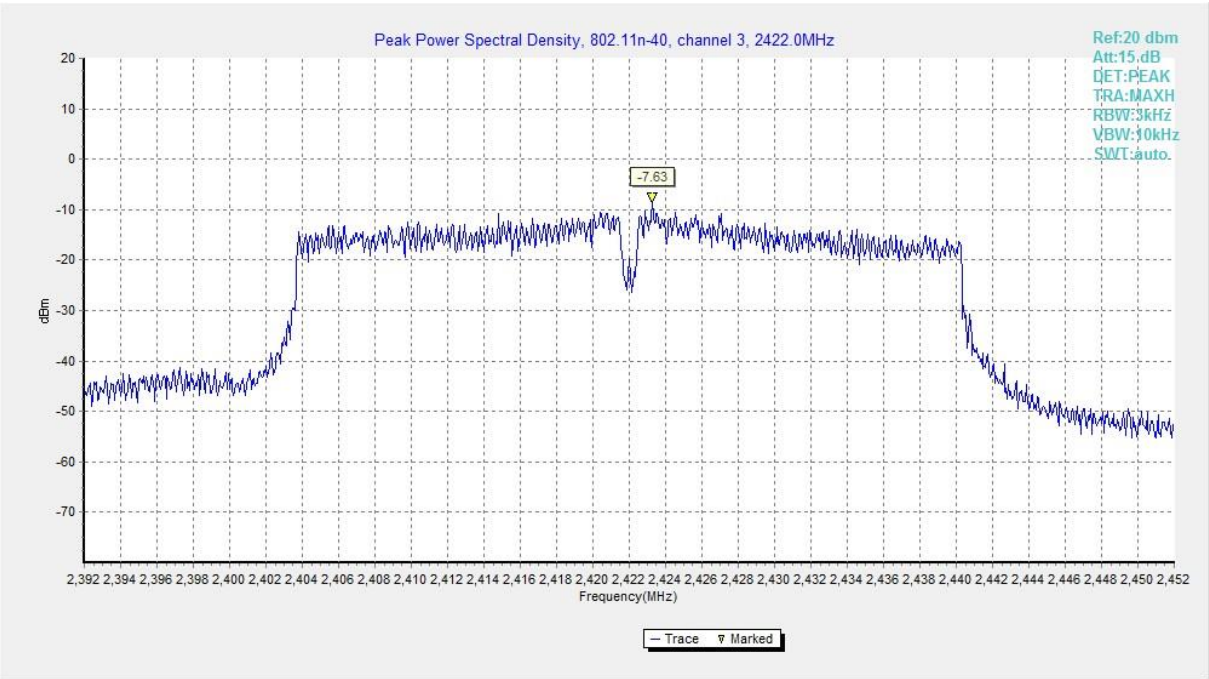

Fig.A.3.37 Power Spectral Density (802.11n-HT40, Ch 3)

©Copyright. All rights reserved by CTTL.

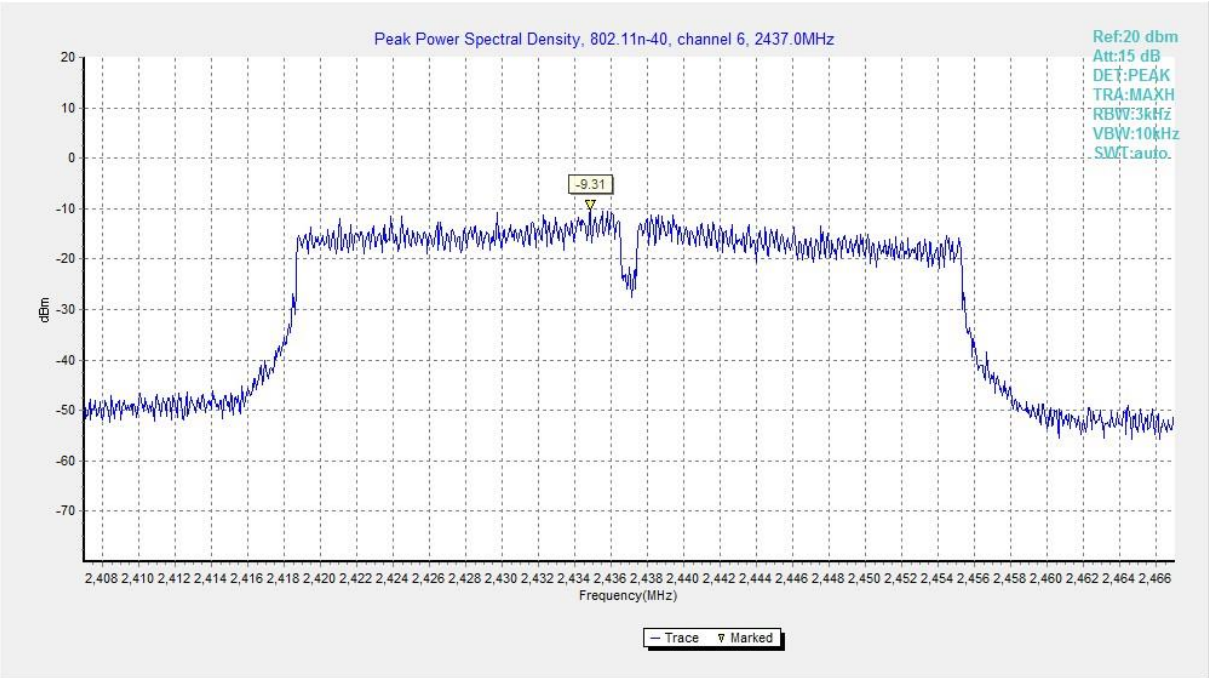

Fig.A.3.38 Power Spectral Density (802.11n-HT40, Ch 6)

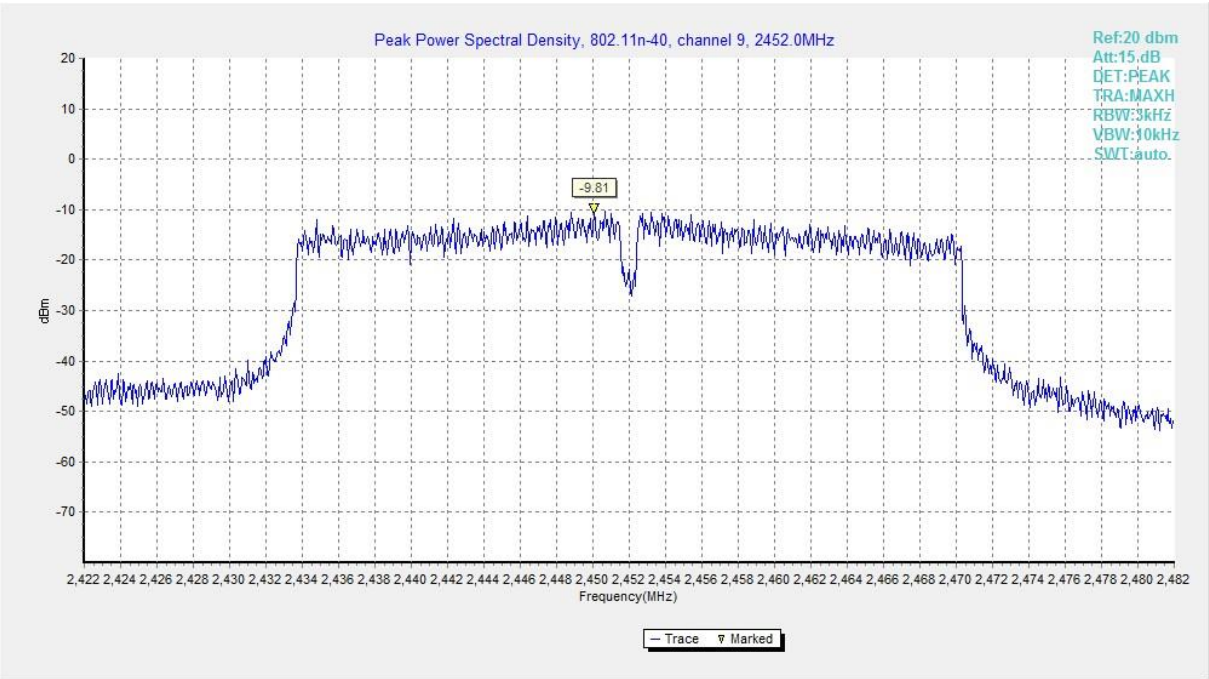

Fig.A.3.39 Power Spectral Density (802.11n-HT40, Ch 9)

©Copyright. All rights reserved by CTTL.

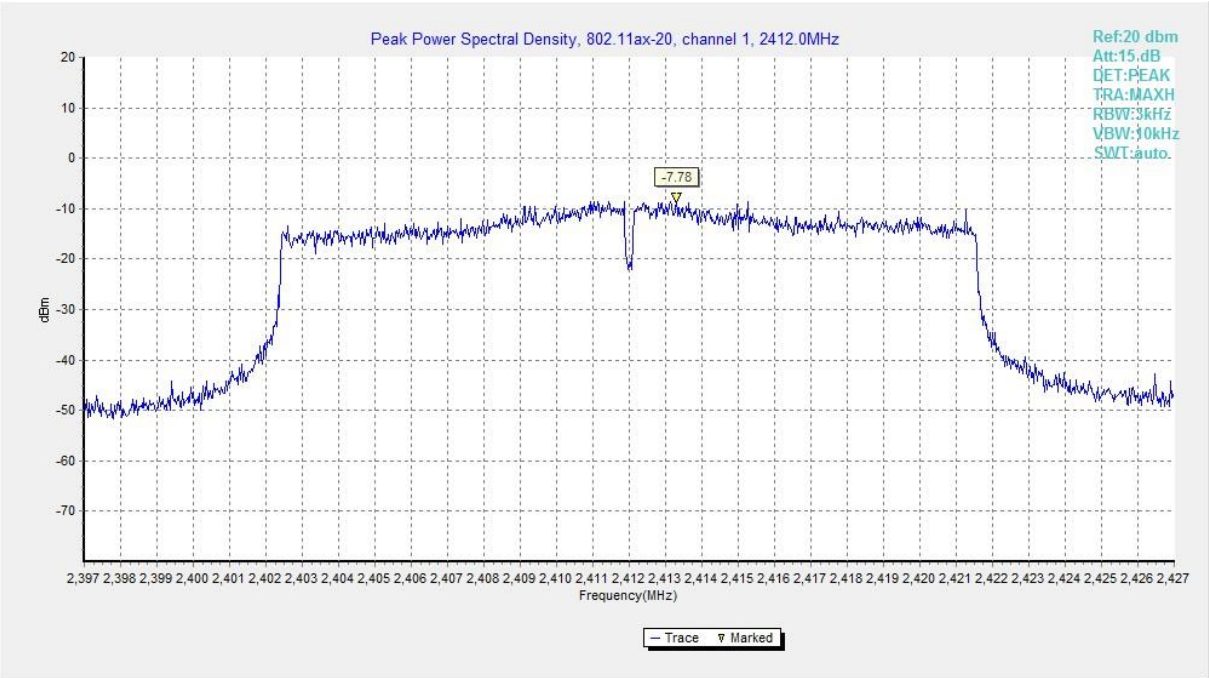

Fig.A.3.40 Power Spectral Density (802.11ax-HE20, Ch 1)

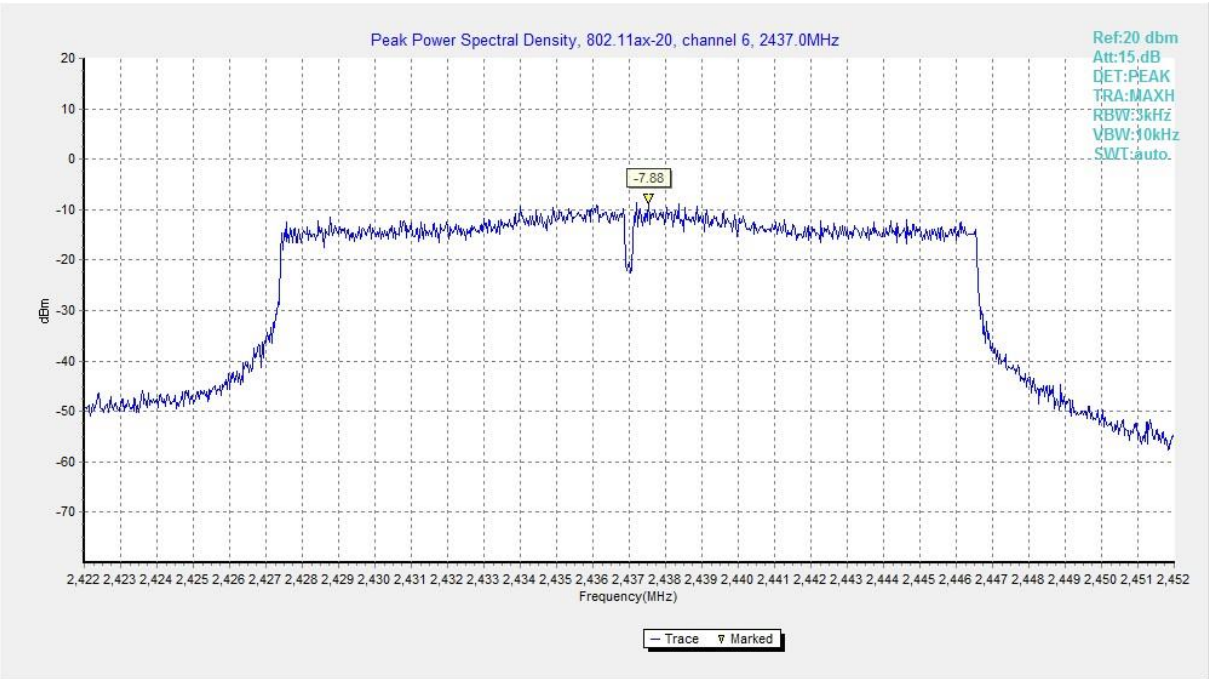

Fig.A.3.41 Power Spectral Density (802.11ax-HE20, Ch 6)

©Copyright. All rights reserved by CTTL.

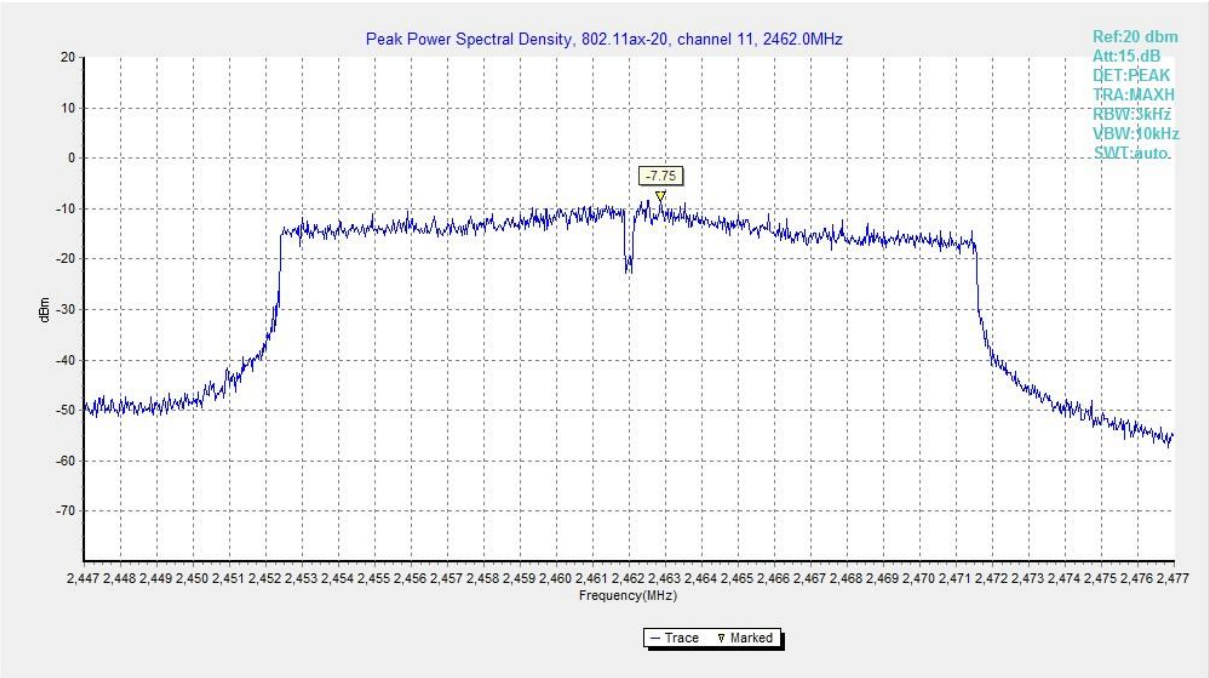

Fig.A.3.42 Power Spectral Density (802.11ax-HE20, Ch 11)

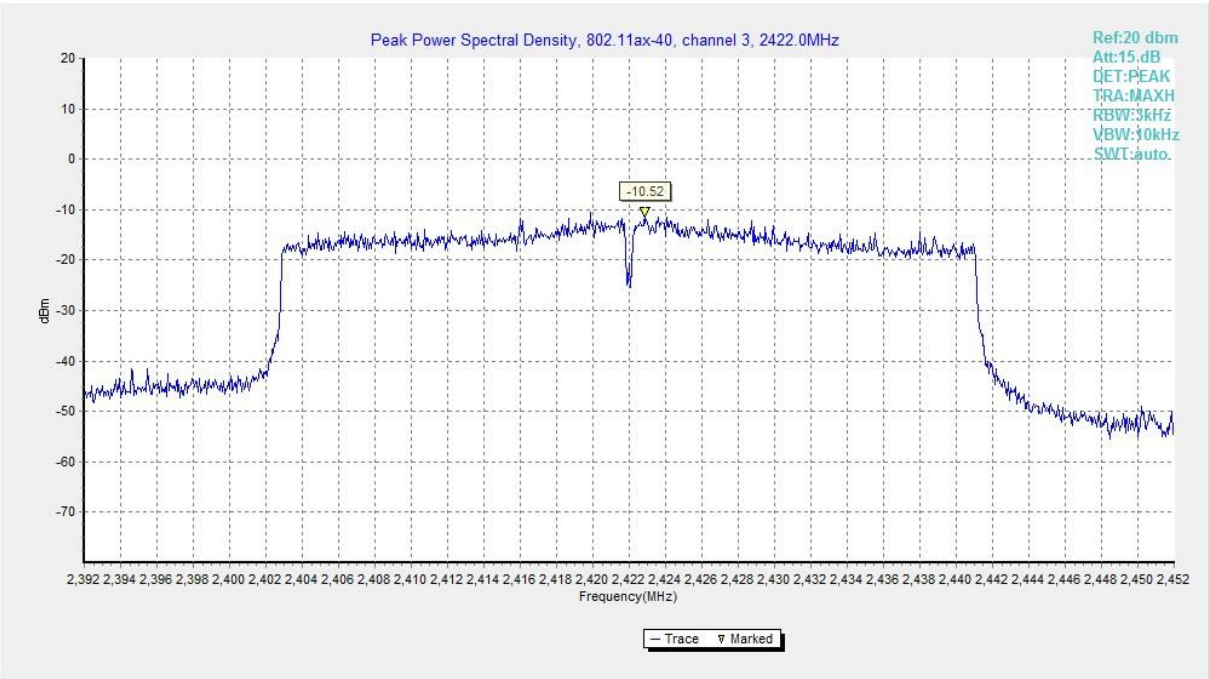

Fig.A.3.43 Power Spectral Density (802.11ax-HE40, Ch 3)

©Copyright. All rights reserved by CTTL.