

## Radio Test Report

**Report No.:** RJBAOZ-WTW-P20120409

**Test Model:** FG900CS

**Received Date:** Dec. 11, 2020

**Test Date:** Jan. 15 to 21, 2021

**Issued Date:** Feb. 08, 2021

**Applicant:** Alpha Networks Inc.

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**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
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**Release Control Record**

Issue No.	Description	Date Issued
RJBAOZ-WTW-P20120409	Original release.	Feb. 08, 2021

## 1 Certificate of Conformity

**Product:** 5G CPE router

**Brand:** NEC

**Test Model:** FG900CS

**Sample Status:** Engineering sample

**Applicant:** Alpha Networks Inc.

**Test Date:** Jan. 15 to 21, 2021

**Standards:** ARIB STD-T66 (V3.7), MIC notice 88 Appendix 43  
Certification Ordinance Article 2-1-19

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**Prepared by :** Phoenix Huang, **Date:** Feb. 08, 2021  
Phoenix Huang / Specialist

**Approved by :** Clark Lin, **Date:** Feb. 08, 2021  
Clark Lin / Technical Manager

## 2 Summary of Test Results

The EUT has been tested according to the following specifications:

Notice 88 Appendix 43 Reference	ARIB STD-T66 Ref.	Report Reference	Parameter	Test Results (Note)
<b>General Provisions</b>				
C	3.2 (4)	4.1	Frequency tolerance	C
D	3.2 (7)	4.2	Occupied bandwidth	C
E	3.2 (6)	4.4	Spurious emissions	C
<b>Transmitting Equipment</b>				
F	--	4.5	Antenna power	C
--	--	--	SAR	NA
<b>Transmitting Antenna</b>				
--	--	3.5	Type, configuration, etc. of transmitting antenna	C
--	--	3.5	Direction pattern of transmitting antenna	C
<b>Receiving Equipment</b>				
G	3.3 (1)	4.6	Spurious emissions of receiver	C
--	--	3.5	Refer to all articles for transmitting antenna	C
<b>Operating Frequency 2400 to 2483.5MHz</b>				
--	3.7 (1)	3.4	High frequency / modulation section cannot be opened easily	C
--	3.1 (1)	3.1	Communication method	C
--	3.2 (1)a	3.1	Modulation method	C
--	3.2 (1)a	3.1	Spread spectrum method	C
--	3.2 (2)	4.5	Antenna power	C
--	3.6 (2)	4.5	Absolute gain of transmitting antenna	C
--	3.6 (2)	--	Angular width of principal radiation (AWPR)	NA
--	3.2 (10)	4.9	Number of carriers within 1 MHz bandwidth in OFDM	C
--	3.2 (8)	4.3	Spreading bandwidth	C
--	3.2 (9)	4.3	Spreading factor	C
--	3.2 (11)	--	Frequency retention time (FH employed)	NA
--	3.4.1 (1)	4.8	Interference Prevention Function	C
--	3.4.1 (3)	4.7	Carrier Sense Capability	C
Note: 1. C = Conform NC = Not Conform NT = Not Tested NA = Not Applicable 2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.				

## 2.1 Test Instruments

Description & Manufacturer	Model no.	Serial No.	Calibrated Date	Calibrated Until	Calibration Authority	Calibration Method
Spectrum Analyzer R&S	FSV40	100964	May 29, 2020	May 28, 2021	ETC	(c)
ESG Vector signal generator Agilent	E4438C	MY45094468	Nov. 18, 2020	Nov. 17, 2021	ETC	(c)
Power Meter Anritsu	ML2495A	1529002	July 22, 2020	July 21, 2021	ETC	(c)
Power Sensor Anritsu	MA2411B	1339443	July 22, 2020	July 21, 2021	ETC	(c)
DC Power Supply Topward	6603D	795558	NA	NA	NA	NA
AC Power Source Extech Electronics	6905S	1991551	NA	NA	NA	NA
True RMS Clamp Meter FLUKE	325	31130711WS	June 06, 2020	June 05, 2021	ETC	(c)
Power Combiner Mini-circuits	ZFRSC-123-S+	F698501347_02	Dec. 23, 2020	Dec. 22, 2021	BV CPS E&E	(d)
Power Divide Warison	WDIV-4R4029	0001	Jan. 11, 2021	Jan. 10, 2022	BV CPS E&E	(d)

- Note:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Calibration method :
- a) : Calibration conducted by the National Institute of Information and Communications Technology (NICT) or a designated calibration agency under Article 102-18 paragraph (1).
  - b) : Calibration conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Law (Law No. 51 of 1992) Japan Calibration Service System.
  - c) : Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1).
  - d) : Calibration conducted by using other equipment that listed above from a) to c).
3. The power supply no evaluation calibrated, which used the digital multimeter to verify.
4. Tested Date: Jan. 15 to 21, 2021

## 2.2 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in TR 100 028-1.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

Parameter	Uncertainty
Occupied Bandwidth	$\pm 960$ Hz
Spurious emissions	$\pm 2.5$ dB
Output power density	$\pm 1.2$ dB
Out of band radiated power	$\pm 2.5$ dB
Frequency Tolerance	$\pm 960$ Hz

## 2.3 Modification Record

There were no modifications required for compliance.



### 3 General Information

#### 3.1 General Description of EUT

Product	5G CPE router
Brand	NEC
Test Model	FG900CS
Status of EUT	Engineering sample
Nominal Voltage	12 Vdc from power adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode and VHT20/40 in 2.4GHz mode 1024QAM for OFDMA in 11ax mode only
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	802.11b: up to 11 Mbps 802.11a/g: up to 54 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 866.7 Mbps 802.11ax: up to 1201.0 Mbps
Operating Frequency	<b>2.4GHz:</b> 2.412 ~ 2.472 GHz <b>5GHz:</b> 5.18 ~ 5.24 GHz, 5.26 ~ 5.32 GHz, 5.50 ~ 5.70 GHz
Number of Channel	<b>2.4GHz:</b> 802.11b/g/n (HT20)/VHT20/ax (HE20): 13 802.11n (HT40)/VHT40/ax (HE40): 9 <b>5GHz: (W52+W53)</b> 802.11a/n (HT20)/ac (VHT20)/ax (HE20): 8 802.11n (HT40)/ac (VHT40)/ax (HE40): 4 802.11ac (VHT80)/ax (HE80): 2 <b>5GHz: (W56)</b> 802.11a/n (HT20)/ac (VHT20)/ax (HE20): 11 802.11n (HT40)/ac (VHT40)/ax (HE40): 5 802.11ac (VHT80)/ax (HE80): 2
Rated RF Output Power Density	Refer to Note
Conducted RF Output Power Density	Refer to Note
Radiated RF Output Power Density	Refer to Note
Antenna Type	Refer to section 3.5
Antenna Connector	Refer to section 3.5
Accessory Device	Adapter x 1
Data Cable Supplied	NA

Note:

1. The EUT contains certified Bluetooth modular which Model: BGM210P22A (Certified number: 020-190254).

2. The EUT has below radios as following table:

Radio 1	Radio 2	Radio 3	Radio 4
WLAN (2.4GHz)	WLAN (5GHz)	Bluetooth	WWAN

3. The EUT needs to be supplied from power adapter and the following different models could be chosen:

No	Brand	Model No.	Spec.
1	TAMURA	XL-Z1233N	Input: 100 Vac, 0.9 A, 50-60 Hz AC Input cable: Unshielded, 1 m Output: 12 Vdc, 3.3 A DC Output cable: Unshielded, 2 m
2	NEC	CVZ1225NF-T0300Z	Input: 100 Vac, 0.7 A, 50-60 Hz AC Input cable: Unshielded, 1 m Output: 12 Vdc, 2.5 A DC Output cable: Unshielded, 2 m

Note: From the above adapters, Adapter 1 was selected as representative adapter for the test and its data was recorded in this report.

4. The EUT incorporates a MIMO function:

2.4GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11b	2TX	2RX
802.11g	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
VHT20	2TX	2RX
VHT40	2TX	2RX
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	2TX	2RX
5GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11a	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ac (VHT20)	2TX	2RX
802.11ac (VHT40)	2TX	2RX
802.11ac (VHT80)	2TX	2RX
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	2TX	2RX
802.11ax (HE80)	2TX	2RX

5. The power table as below table:

Modulation Mode	Rated output power density (mW/MHz)	Conducted RF output power density (mW/MHz)	Radiated RF output power density (mW/MHz)
2.4GHz Band			
802.11b	6.7	6.686	15.928
802.11g	6.8	6.76	16.104
VHT20	6.8	6.798	16.195
VHT40	3.4	3.313	7.893
802.11ax (HE20)	6.8	6.798	16.195
802.11ax (HE40)	3.4	3.413	8.131

6. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

### 3.2 Description of Test Modes

#### Operated in 2400 ~ 2483.5MHz band:

13 channels are provided for 802.11b, 802.11g, 802.11n (HT20), VH20, 802.11ax (HE20):

Channel	Freq. (MHz)	Channel	Freq. (MHz)
<b>1</b>	<b>2412</b>	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432	12	2467
6	2437	<b>13</b>	<b>2472</b>
<b>7</b>	<b>2442</b>		

9 channels are provided for 802.11n (HT40), VH40, 802.11ax (HE40):

Channel	Freq. (MHz)	Channel	Freq. (MHz)
<b>3</b>	<b>2422</b>	8	2447
4	2427	9	2452
5	2432	10	2457
6	2437	<b>11</b>	<b>2462</b>
<b>7</b>	<b>2442</b>		

Note:

1. The channels which were indicated in bold type of the above channel list were selected as representative test channel. Therefore only the data of the test channels were recorded in this report.

By means of test software (QDART-Connectivity1.0-00082) provided by manufacturer, the power levels during the tests were set according to the following codes:

802.11b		802.11g		VHT20		VHT40		802.11ax (HE20)		802.11ax (HE40)	
Channel	Power Setting	Channel	Power Setting	Channel	Power Setting	Channel	Power Setting	Channel	Power Setting	Channel	Power Setting
1	14	1	17	1	17.5	3	17	1	18.5	3	18
7	14	7	17	7	17.5	7	17	7	18	7	18
13	14.5	13	17	13	17.5	11	17	13	17.5	11	18

### 3.3 Test Conditions

Test Conditions	Voltage (Vdc)
$V_{normal}$	12

Note: After checking the fluctuation of input voltage to the circuit of the radio part (excluding the power supply) of the equipment to be tested, the fluctuation less than +/- 1 % when input voltage from an external supply into the equipment fluctuates +/- 10%, therefore, the test is carried out only at the normal voltage.

Test modes are presented in the report as below:

Test Item	Test Conditions	Environmental Conditions
Frequency Tolerance	Chain 0	25 deg.C, 60 % RH
Occupied Bandwidth / Spreading Bandwidth	Chain 0 Chain 1	25 deg.C, 60 % RH
Spurious Emissions for Transmitter	Chain 0 Chain 1 W	25 deg.C, 60 % RH
Antenna Power	Chain 0 Chain 1 S	25 deg.C, 60 % RH
Spurious Emissions for Receiver	Chain 0 Chain 1 S	25 deg.C, 60 % RH

S : Sum of each Chain,

C : Use combiner,

W : [ Worst result ] x [ Number of antenna ports ]

### 3.4 Assembly

The EUT used a kind of particular screw, which could not operated by a tool bought in the market. Only means of brute force will be able to open.

### 3.5 Antenna Specifications

#### 3.5.1 Antenna Gain

Antenna No.	RF Chain No.	Antenna Net Gain (dBi)	Frequency Range (MHz)	Antenna Type	Connector Type	Cable Length (cm)	Cable Loss (dB)
1	WiFi Chain 0	2.87	2400~2483.5	PIFA	i-pex(MHF)	21	0.6
		5.46	5150~5850				0.9
2	WiFi Chain 1	3.77	2400~2483.5	PIFA	i-pex(MHF)	9	0.2
		6.0	5150~5850				0.4

Note: The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

#### 3.5.2 Antenna Pattern

Please refer to the attached file (Antenna pattern).

## 4 Test Results

### 4.1 Frequency Tolerance Measurement

#### 4.1.1 Limits of Frequency Tolerance Measurement

Tolerance of frequency shall be +/- 50ppm

#### 4.1.2 Test Setup



#### 4.1.3 Test Results

802.11b / 802.11g / VHT20 / 802.11ax (HE20)

Chain 0

Channel	Frequency (MHz)	V <sub>normal</sub>	
		Carrier frequency (MHz)	Frequency tolerance (ppm)
1	2412	2411.988036	-4.960
7	2442	2441.988097	-4.874
13	2472	2471.987521	-5.048

VHT40 / 802.11ax (HE40)

Chain 0

Channel	Frequency (MHz)	V <sub>normal</sub>	
		Carrier frequency (MHz)	Frequency tolerance (ppm)
3	2422	2421.986854	-5.427
7	2442	2441.987226	-5.230
11	2462	2461.988802	-4.548

## 4.2 Occupied Bandwidth Measurement (99% power bandwidth)

### 4.2.1 Limits of Occupied Bandwidth Measurement

Item	Limit	Remark
Occupied bandwidth	<26MHz	For 802.11b, g, 802.11n (HT20), VHT20, 802.11 ax (HE20)
Occupied bandwidth	<38MHz	For 802.11n (HT40), VHT40, 802.11 ax (HE40)

### 4.2.2 Test Setup



#### 4.2.3 Test Results

##### 802.11b

##### Chain 0

Channel	Frequency (MHz)	$V_{normal}$
		Occupied bandwidth (MHz)
1	2412	12.97
7	2442	13.00
13	2472	13.20

**NOTE:** For the test plots please refer to the below pages.

##### Chain 1

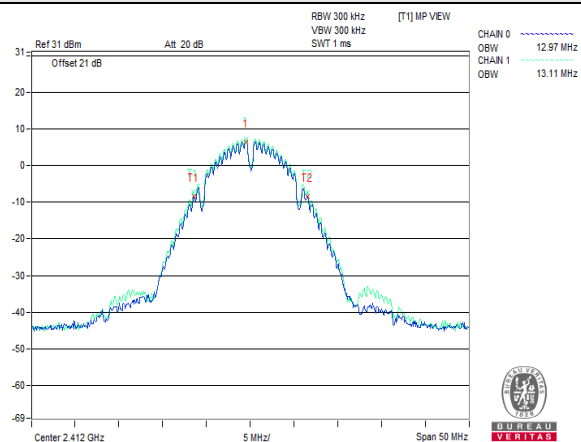
Channel	Frequency (MHz)	$V_{normal}$
		Occupied bandwidth (MHz)
1	2412	13.11
7	2442	13.30
13	2472	13.20

**NOTE:** For the test plots please refer to the below pages.

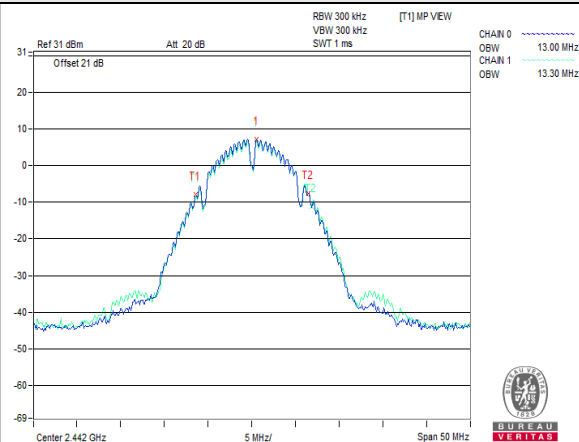


## Graph

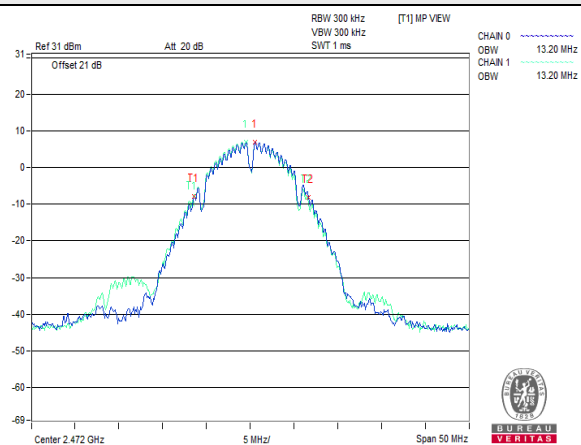
V<sub>normal</sub>



CH 1 (2412MHz)



CH 7 (2442MHz)



CH 13 (2472MHz)

## 802.11g

### Chain 0

Channel	Frequency (MHz)	V <sub>normal</sub>
		Occupied bandwidth (MHz)
1	2412	16.50
7	2442	16.50
13	2472	17.46

**NOTE:** For the test plots please refer to the below pages.

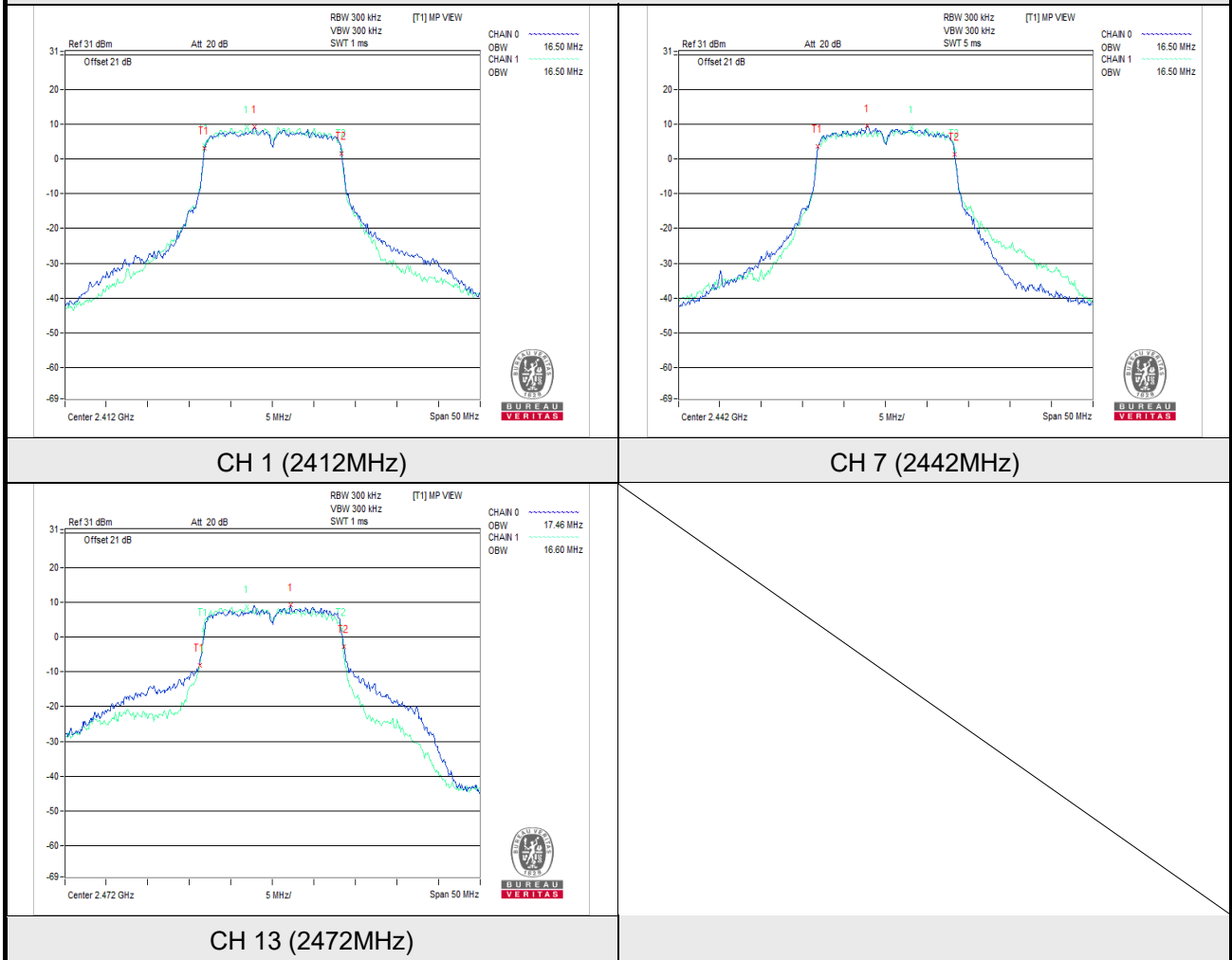
### Chain 1

Channel	Frequency (MHz)	V <sub>normal</sub>
		Occupied bandwidth (MHz)
1	2412	16.50
7	2442	16.50
13	2472	16.60

**NOTE:** For the test plots please refer to the below pages.

## Graph

V<sub>normal</sub>



## VHT20

### Chain 0

Channel	Frequency (MHz)	$V_{normal}$
		Occupied bandwidth (MHz)
1	2412	17.70
7	2442	17.60
13	2472	18.60

**NOTE:** For the test plots please refer to the below pages.

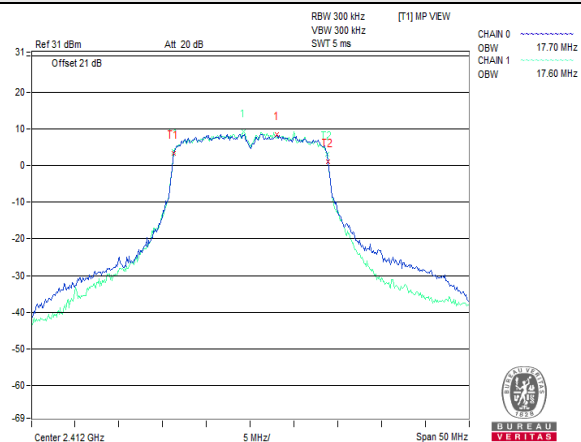
### Chain 1

Channel	Frequency (MHz)	$V_{normal}$
		Occupied bandwidth (MHz)
1	2412	17.60
7	2442	17.70
13	2472	17.70

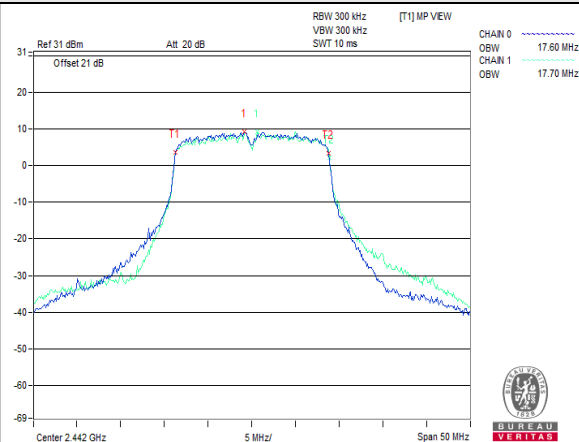
**NOTE:** For the test plots please refer to the below pages.

## Graph

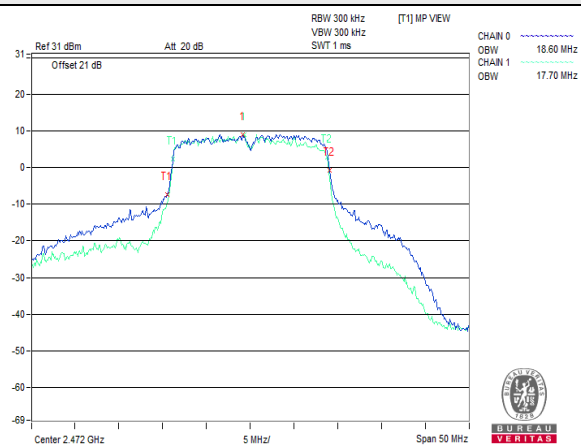
V<sub>normal</sub>



CH 1 (2412MHz)



CH 7 (2442MHz)



CH 13 (2472MHz)

## VHT40

### Chain 0

Channel	Frequency (MHz)	$V_{normal}$
		Occupied bandwidth (MHz)
3	2422	36.10
7	2442	35.90
11	2462	36.30

**NOTE:** For the test plots please refer to the below pages.

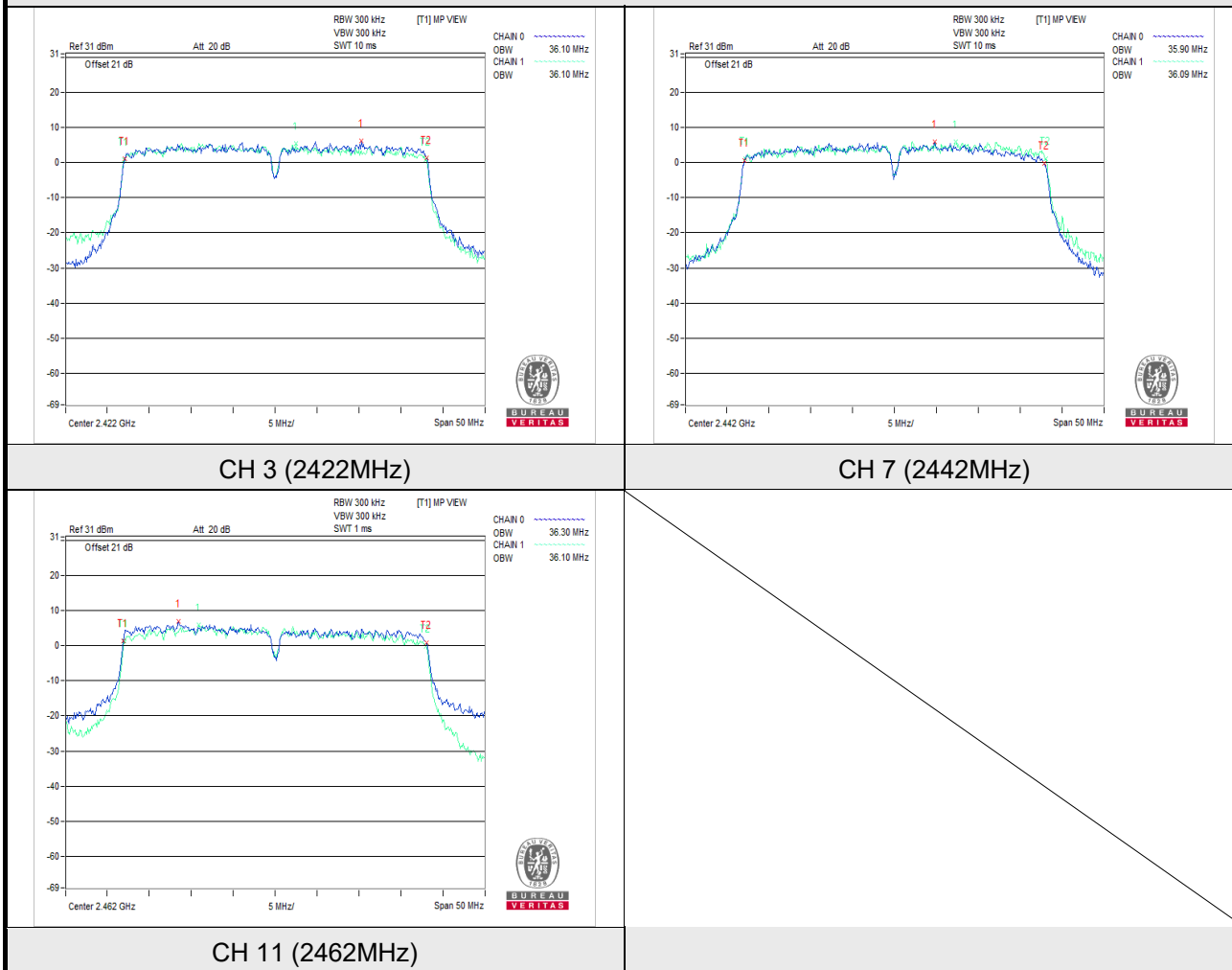
### Chain 1

Channel	Frequency (MHz)	$V_{normal}$
		Occupied bandwidth (MHz)
3	2422	36.10
7	2442	36.09
11	2462	36.10

**NOTE:** For the test plots please refer to the below pages.

## Graph

V<sub>normal</sub>



## 802.11ax (HE20)

### Chain 0

Channel	Frequency (MHz)	$V_{normal}$
		Occupied bandwidth (MHz)
1	2412	18.98
7	2442	19.00
13	2472	19.40

**NOTE:** For the test plots please refer to the below pages.

### Chain 1

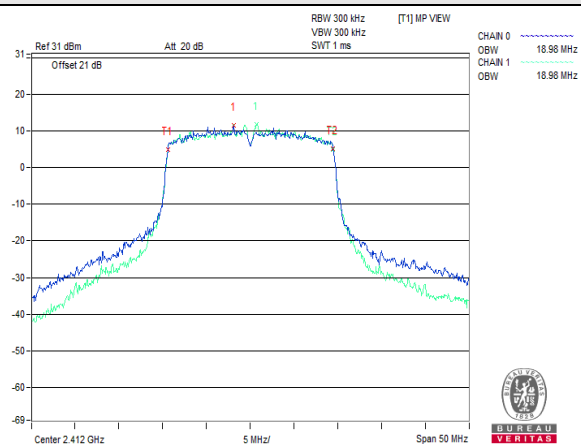
Channel	Frequency (MHz)	$V_{normal}$
		Occupied bandwidth (MHz)
1	2412	18.98
7	2442	19.00
13	2472	19.10

**NOTE:** For the test plots please refer to the below pages.

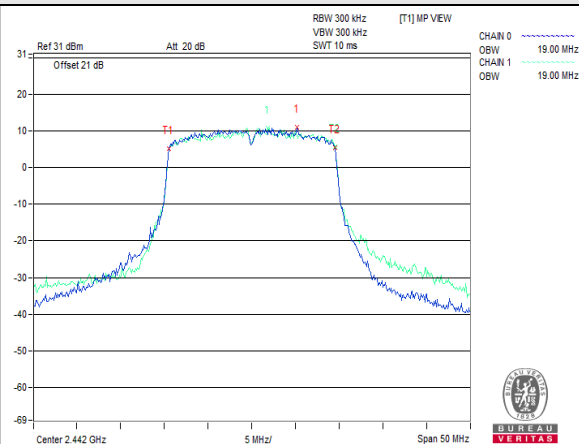


## Graph

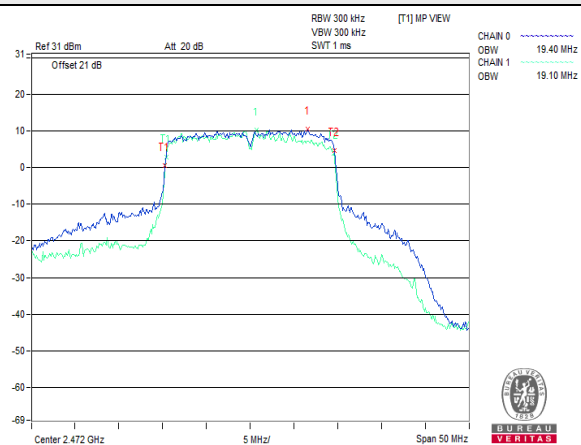
V<sub>normal</sub>



CH 1 (2412MHz)



CH 7 (2442MHz)



CH 13 (2472MHz)

## 802.11ax (HE40)

### Chain 0

Channel	Frequency (MHz)	V <sub>normal</sub>
		Occupied bandwidth (MHz)
3	2422	37.90
7	2442	37.70
11	2462	37.90

**NOTE:** For the test plots please refer to the below pages.

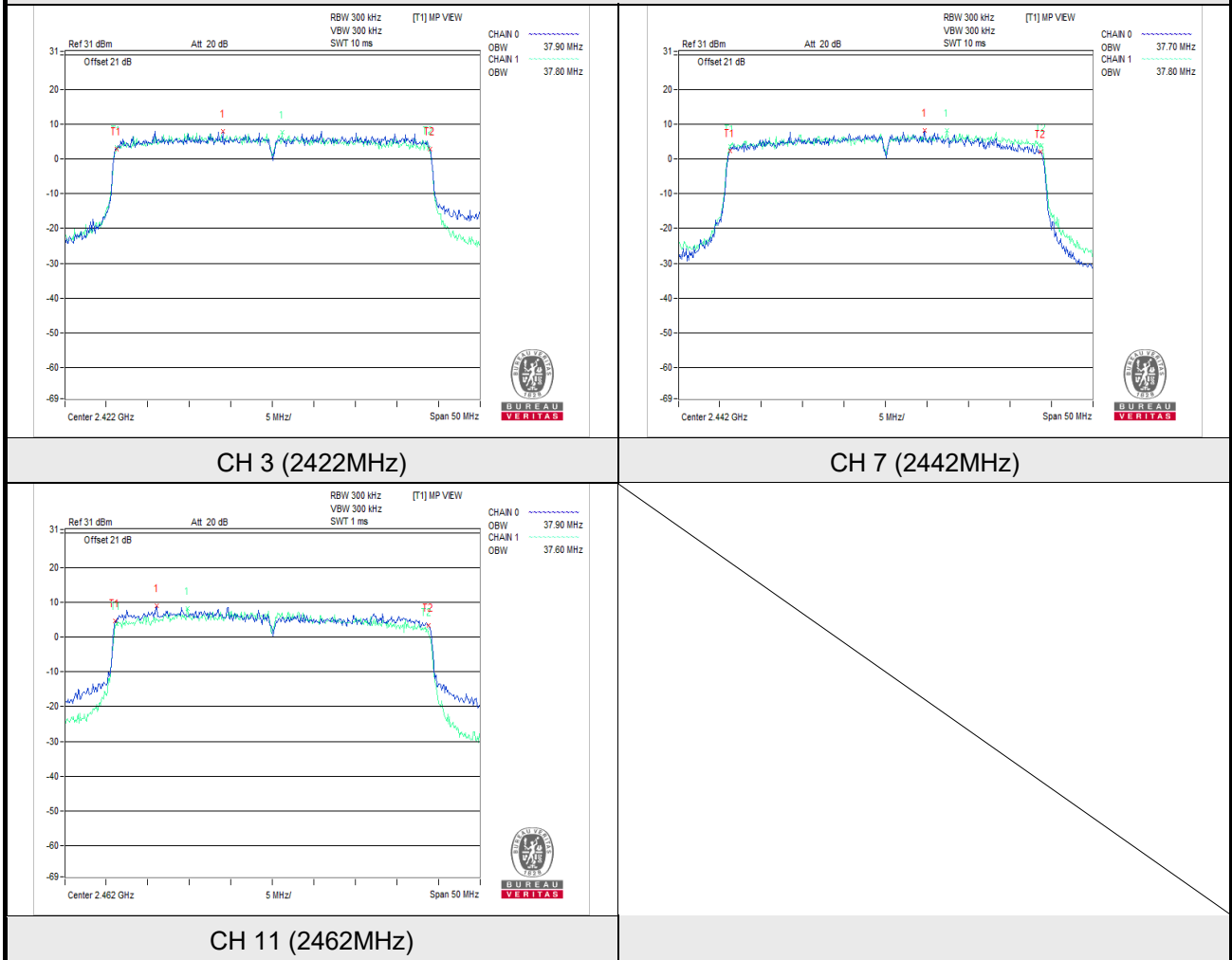
### Chain 1

Channel	Frequency (MHz)	V <sub>normal</sub>
		Occupied bandwidth (MHz)
3	2422	37.80
7	2442	37.80
11	2462	37.60

**NOTE:** For the test plots please refer to the below pages.

## Graph

V<sub>normal</sub>



### 4.3 Spreading Bandwidth Measurement (90% power bandwidth)

#### 4.3.1 Limits of Spreading Bandwidth and Spreading Factor Measurement

Item	Limit	Remark
Spreading Bandwidth	$\geq 500\text{kHz}$	(For DSSS, FHSS)
Spreading Factor	$\geq 5$	Operating frequency 2400 to 2483.5MHz

#### 4.3.2 Test Setup



#### 4.3.3 Test Results

802.11b\_Data Rate: 1Mbps

##### Chain 0

Channel	Frequency (MHz)	$V_{normal}$	
		Occupied bandwidth (MHz)	Spreading factor
1	2412	8.05	8.05
7	2442	8.10	8.10
13	2472	8.20	8.20

**NOTE:** For the test plots please refer to the below pages.

Spreading Factor: 90% channel power bandwidth / 1

##### Chain 1

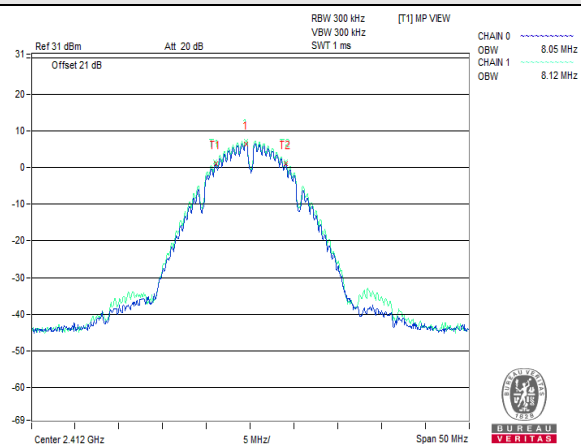
Channel	Frequency (MHz)	$V_{normal}$	
		Occupied bandwidth (MHz)	Spreading factor
1	2412	8.12	8.12
7	2442	8.20	8.20
13	2472	8.10	8.10

**NOTE:** For the test plots please refer to the below pages.

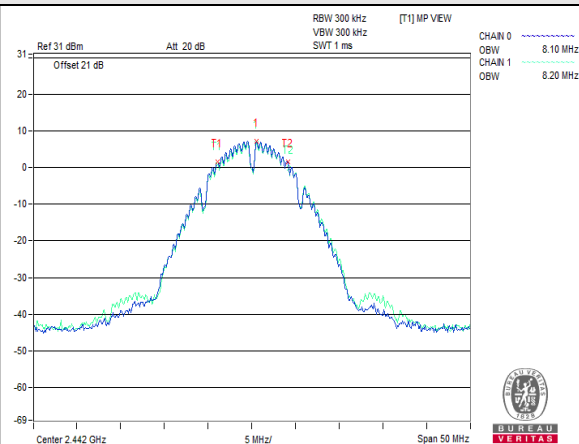
Spreading Factor: 90% channel power bandwidth / 1

## Graph

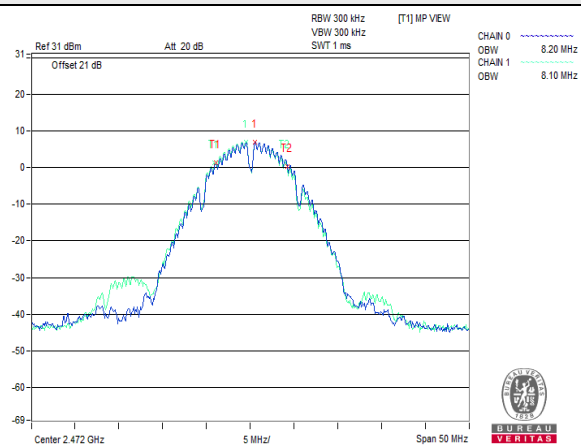
V<sub>normal</sub>



CH 1 (2412MHz)



CH 7 (2442MHz)



CH 13 (2472MHz)

## 802.11b\_Data Rate: 2Mbps

### Chain 0

Channel	Frequency (MHz)	$V_{normal}$	
		Occupied bandwidth (MHz)	Spreading factor
1	2412	8.00	8.00
7	2442	8.10	8.10
13	2472	8.20	8.20

**NOTE:** For the test plots please refer to the below pages.  
 Spreading Factor: 90% channel power bandwidth / 1

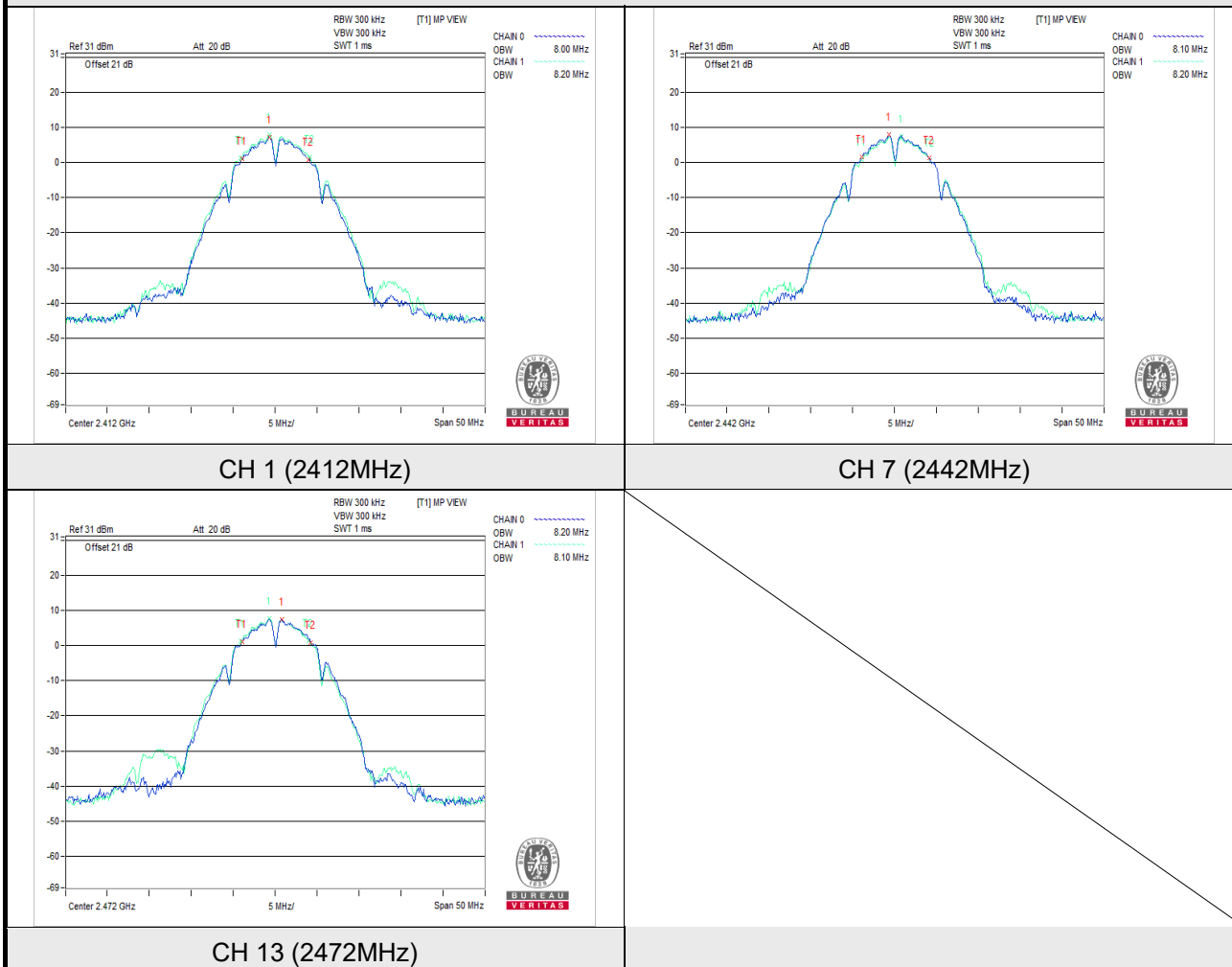
### Chain 1

Channel	Frequency (MHz)	$V_{normal}$	
		Occupied bandwidth (MHz)	Spreading factor
1	2412	8.20	8.20
7	2442	8.20	8.20
13	2472	8.10	8.10

**NOTE:** For the test plots please refer to the below pages.  
 Spreading Factor: 90% channel power bandwidth / 1

## Graph

V<sub>normal</sub>





## 802.11b\_Data Rate: 5.5Mbps

### Chain 0

Channel	Frequency (MHz)	$V_{normal}$	
		Occupied bandwidth (MHz)	Spreading factor
1	2412	8.20	5.96
7	2442	8.00	5.81
13	2472	8.10	5.89

**NOTE:** For the test plots please refer to the below pages.

Spreading Factor: 90% channel power bandwidth / 1.375

### Chain 1

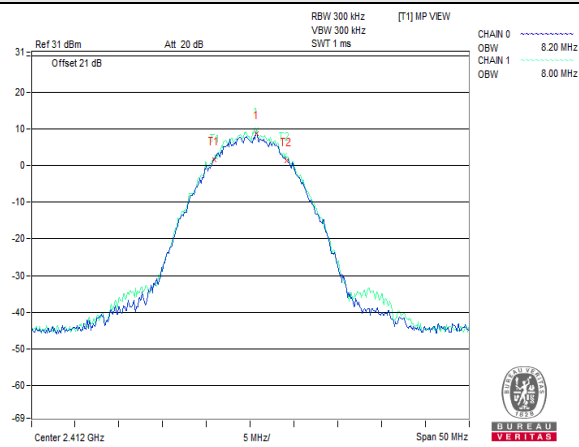
Channel	Frequency (MHz)	$V_{normal}$	
		Occupied bandwidth (MHz)	Spreading factor
1	2412	8.00	5.81
7	2442	8.30	6.03
13	2472	8.10	5.89

**NOTE:** For the test plots please refer to the below pages.

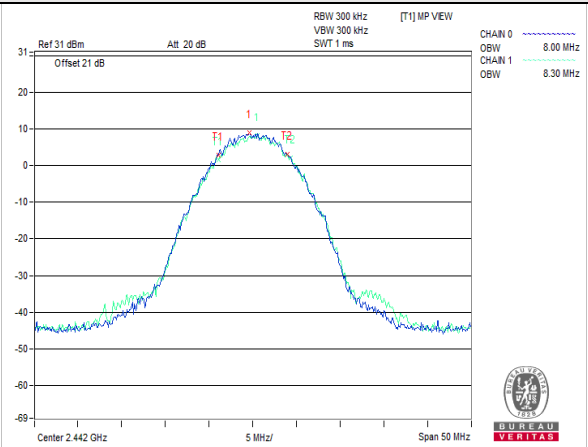
Spreading Factor: 90% channel power bandwidth / 1.375

## Graph

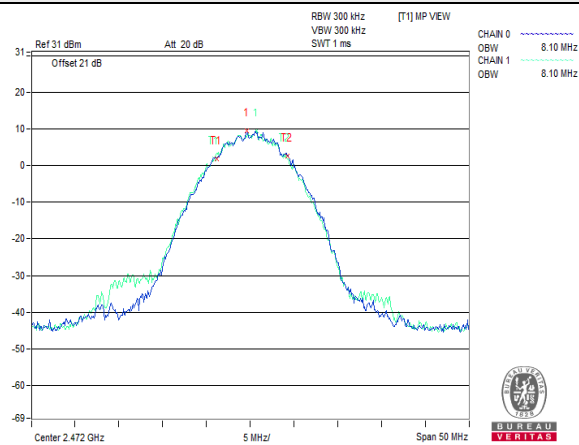
V<sub>normal</sub>



CH 1 (2412MHz)



CH 7 (2442MHz)



CH 13 (2472MHz)

## 802.11b\_Data Rate: 11Mbps

### Chain 0

Channel	Frequency (MHz)	$V_{normal}$	
		Occupied bandwidth (MHz)	Spreading factor
1	2412	8.10	5.89
7	2442	8.10	5.89
13	2472	8.30	6.03

**NOTE:** For the test plots please refer to the below pages.

Spreading Factor: 90% channel power bandwidth / 1.375

### Chain 1

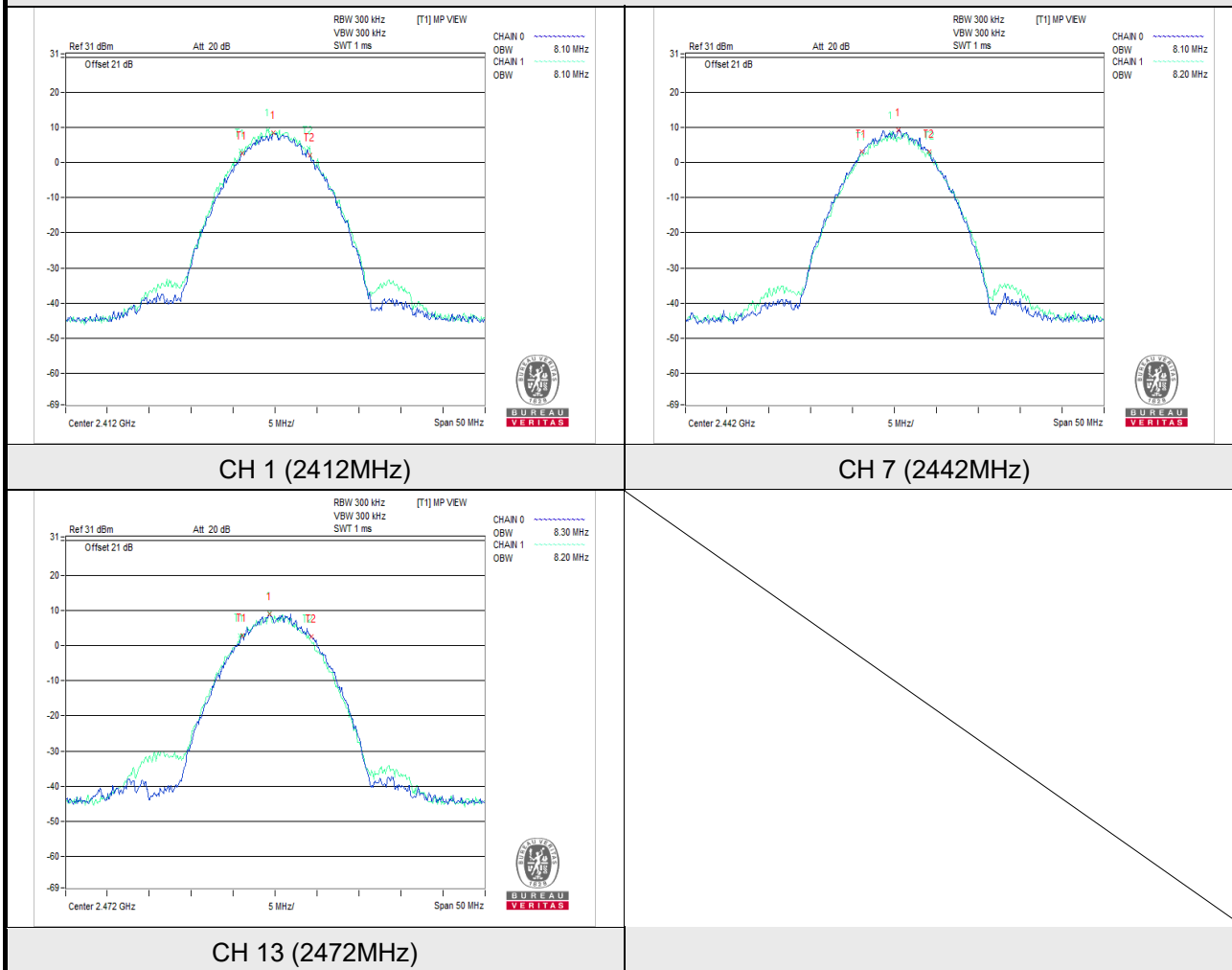
Channel	Frequency (MHz)	$V_{normal}$	
		Occupied bandwidth (MHz)	Spreading factor
1	2412	8.10	5.89
7	2442	8.20	5.96
13	2472	8.20	5.96

**NOTE:** For the test plots please refer to the below pages.

Spreading Factor: 90% channel power bandwidth / 1.375

## Graph

V<sub>normal</sub>



#### 4.4 Spurious Emissions for Transmitter Measurement

##### 4.4.1 Limits of Spurious Emissions

Frequencies (MHz)	Limit
Operating frequency 2400 to 2483.5MHz	
30.0MHz to 1000.0MHz	$\leq 0.25 \text{ uW/100kHz}$
1000.0MHz to 2387MHz	$\leq 2.5 \text{ uW/MHz}$
2387.0MHz to 2400.0MHz	$\leq 25 \text{ uW/MHz}$
2483.5MHz to 2496.5MHz	$\leq 25 \text{ uW/MHz}$
2496.5MHz to 12500.0MHz	$\leq 2.5 \text{ uW/MHz}$

##### 4.4.2 Test Setup



#### 4.4.3 Test Results

802.11b

Chain 0

TEST CHANNEL		CH 1 (2412MHz)			
TEST CONDITION	FREQUENCY RANGE(MHz)	FREQUENCY (MHz)	MEASURE. VALUE( $\mu$ W)	LIMIT ( $\mu$ W)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	896.088	0.001954	0.125	PASS
	1000.0 to 2387.0	2307.767	0.167880	1.25	PASS
	2387.0 to 2400.0	2399.936	2.259436	12.5	PASS
	2483.5 to 2496.5	2485.597	0.251189	12.5	PASS
	2496.5 to 12500.0	6326.590	0.479733	1.25	PASS
TEST CHANNEL		CH 7 (2442MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	862.260	0.002046	0.125	PASS
	1000.0 to 2387.0	1386.452	0.177828	1.25	PASS
	2387.0 to 2400.0	2390.046	0.205589	12.5	PASS
	2483.5 to 2496.5	2487.531	0.233884	12.5	PASS
	2496.5 to 12500.0	6925.549	0.480839	1.25	PASS
TEST CHANNEL		CH 13 (2472MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	750.103	0.002094	0.125	PASS
	1000.0 to 2387.0	1686.391	0.167494	1.25	PASS
	2387.0 to 2400.0	2392.341	0.255270	12.5	PASS
	2483.5 to 2496.5	2483.521	2.511886	12.5	PASS
	2496.5 to 12500.0	5867.679	0.508159	1.25	PASS

**NOTE:** 1. The spectrum plots are attached on the following pages.

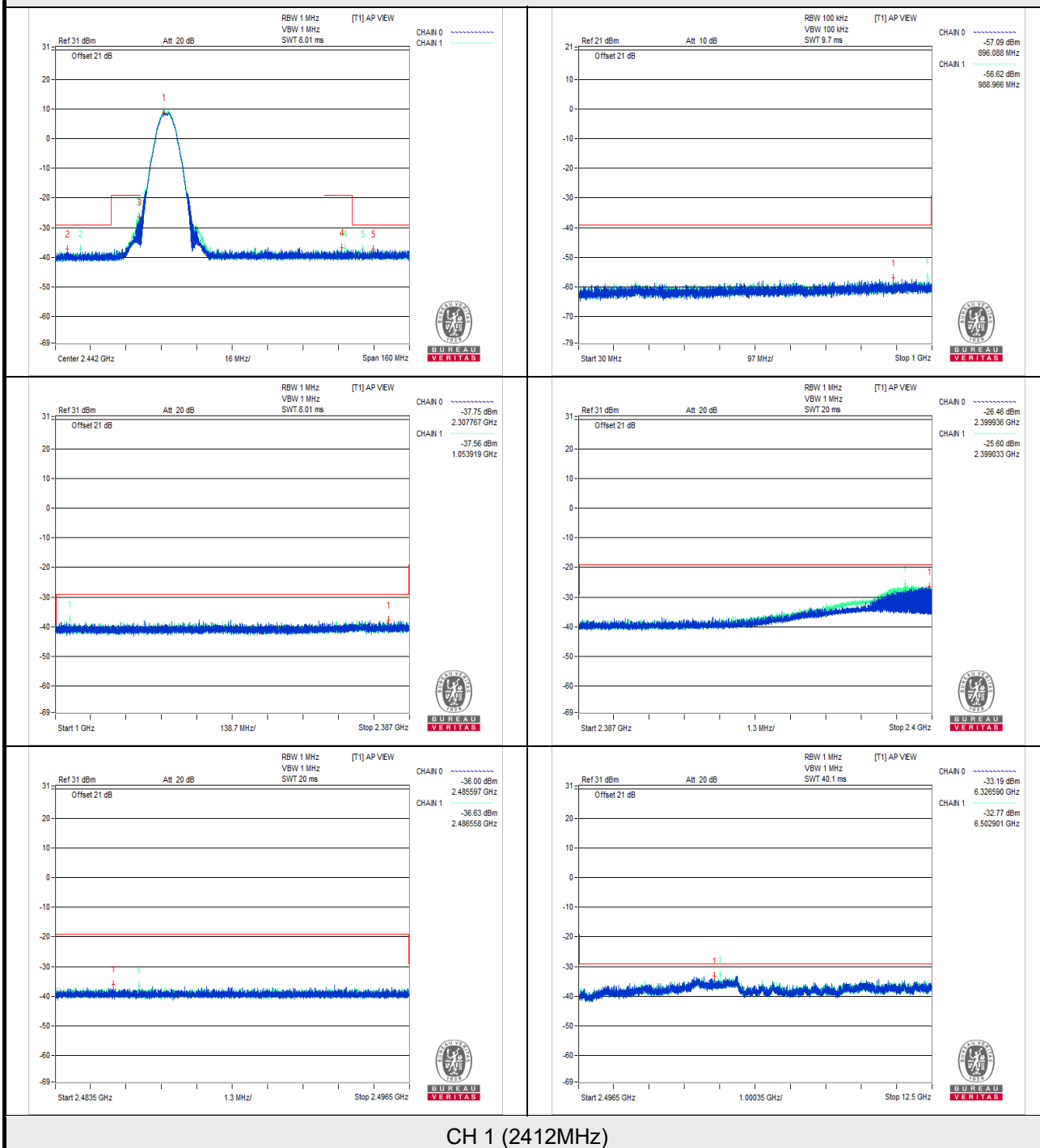
## Chain 1

TEST CHANNEL		CH 1 (2412MHz)			
TEST CONDITION	FREQUENCY RANGE(MHz)	FREQUENCY (MHz)	MEASURE. VALUE(uW)	LIMIT (uW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	988.966	0.002178	0.125	PASS
	1000.0 to 2387.0	1053.919	0.175388	1.25	PASS
	2387.0 to 2400.0	2399.033	2.754229	12.5	PASS
	2483.5 to 2496.5	2486.558	0.217270	12.5	PASS
	2496.5 to 12500.0	6502.901	0.528445	1.25	PASS
TEST CHANNEL		CH 7 (2442MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	825.763	0.002518	0.125	PASS
	1000.0 to 2387.0	1403.096	0.171396	1.25	PASS
	2387.0 to 2400.0	2393.779	0.190546	12.5	PASS
	2483.5 to 2496.5	2492.663	0.226464	12.5	PASS
	2496.5 to 12500.0	5885.185	0.500035	1.25	PASS
TEST CHANNEL		CH 13 (2472MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	996.847	0.002133	0.125	PASS
	1000.0 to 2387.0	2341.055	0.175792	1.25	PASS
	2387.0 to 2400.0	2395.376	0.197697	12.5	PASS
	2483.5 to 2496.5	2483.581	1.667247	12.5	PASS
	2496.5 to 12500.0	6790.502	0.434510	1.25	PASS

**NOTE:** 1. The spectrum plots are attached on the following pages.

## Graph

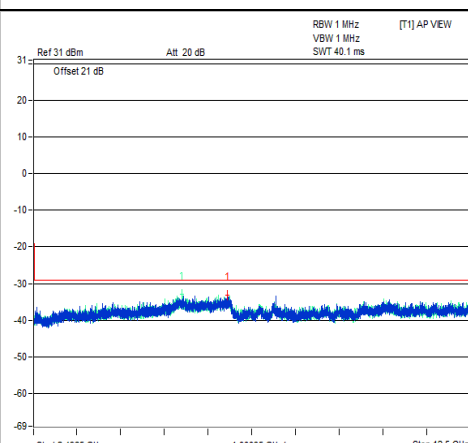
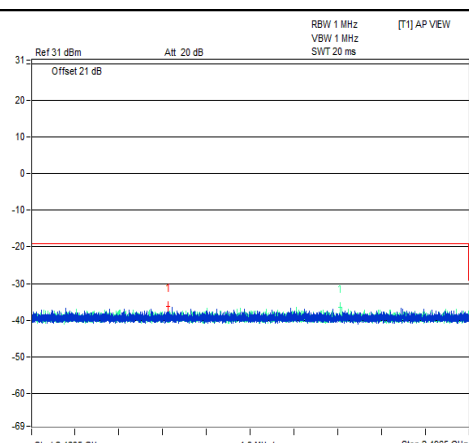
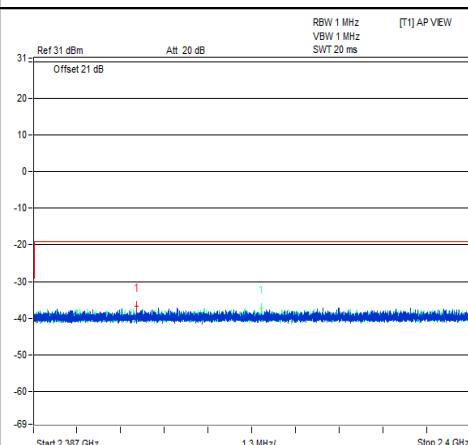
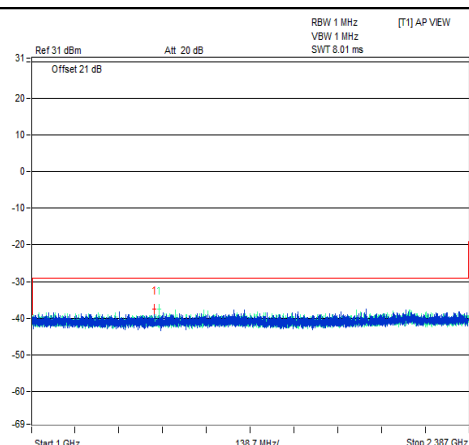
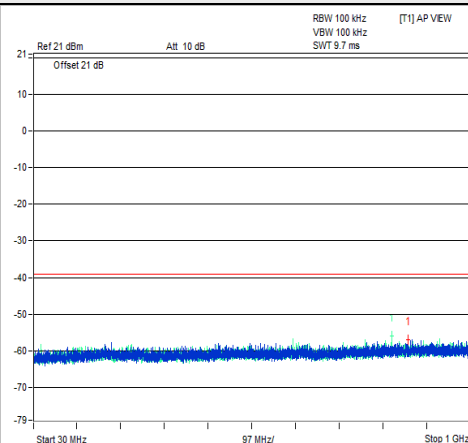
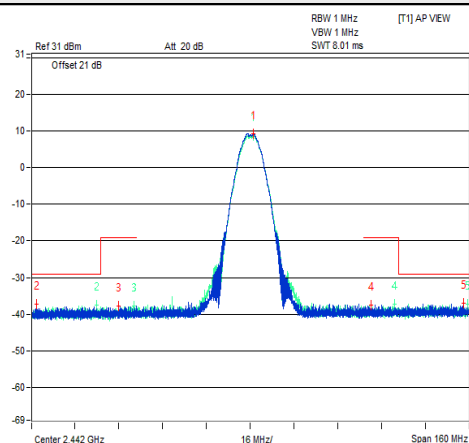
Vnormal



CH 1 (2412MHz)

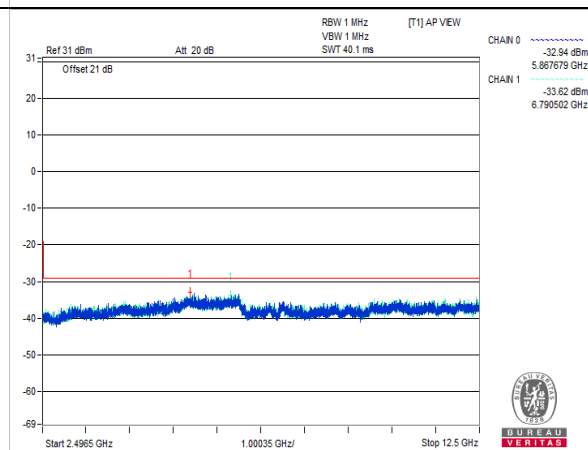
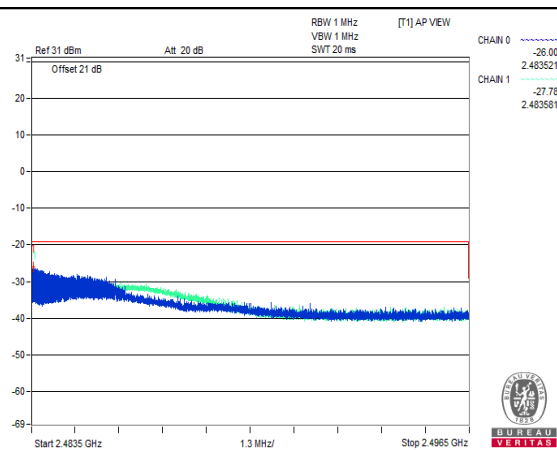
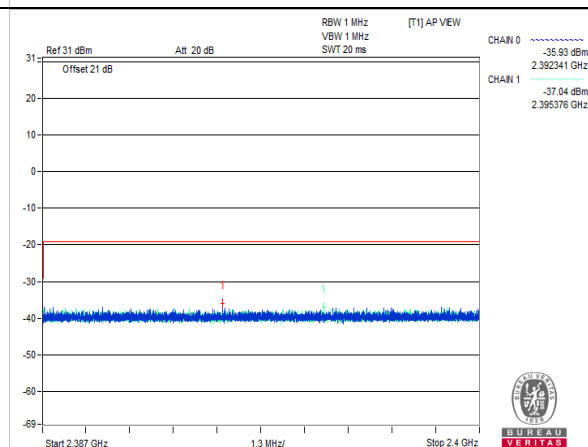
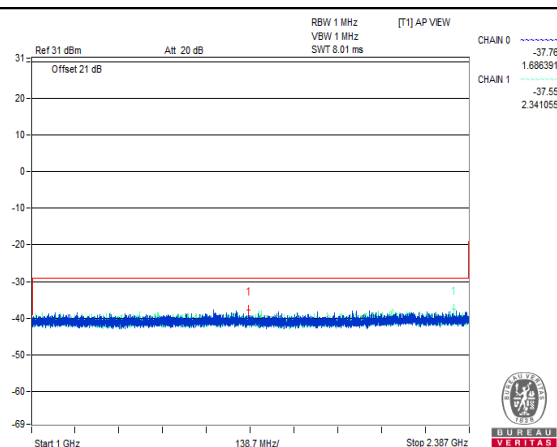
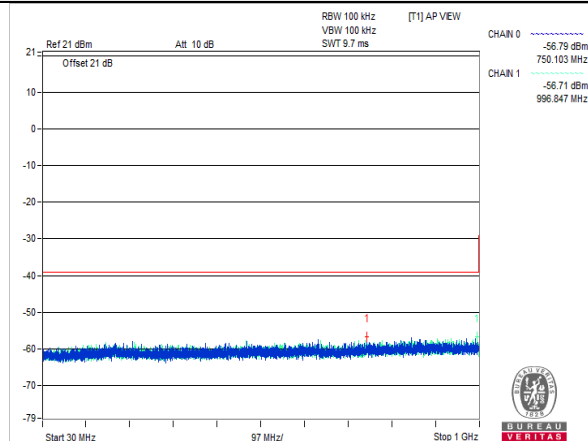
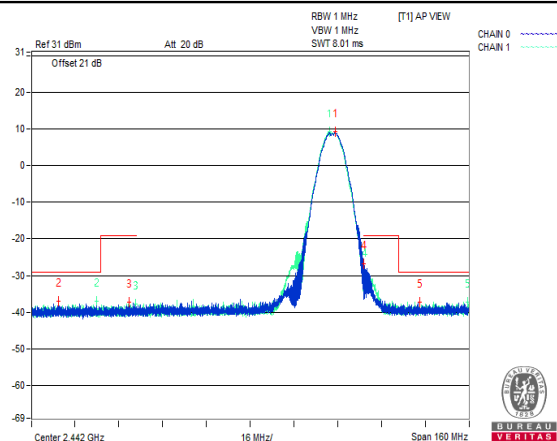


# Vnormal



CH 7 (2442MHz)

Vnormal



CH 13 (2472MHz)

[ Worst result ] x [ Number of antenna ports ]

TEST CHANNEL		CH 1 (2412MHz)		
TEST CONDITION	FREQUENCY RANGE(MHz)	MEASURE. VALUE (uW)	LIMIT (uW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.004356	0.25	PASS
	1000.0 to 2387.0	0.350776	2.5	PASS
	2387.0 to 2400.0	5.508458	25	PASS
	2483.5 to 2496.5	0.502378	25	PASS
	2496.5 to 12500.0	1.056890	2.5	PASS
TEST CHANNEL		CH 7 (2442MHz)		
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.005036	0.25	PASS
	1000.0 to 2387.0	0.355656	2.5	PASS
	2387.0 to 2400.0	0.411178	25	PASS
	2483.5 to 2496.5	0.467768	25	PASS
	2496.5 to 12500.0	1.000070	2.5	PASS
TEST CHANNEL		CH 13 (2472MHz)		
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.004266	0.25	PASS
	1000.0 to 2387.0	0.351584	2.5	PASS
	2387.0 to 2400.0	0.510540	25	PASS
	2483.5 to 2496.5	5.023772	25	PASS
	2496.5 to 12500.0	1.016318	2.5	PASS

802.11g

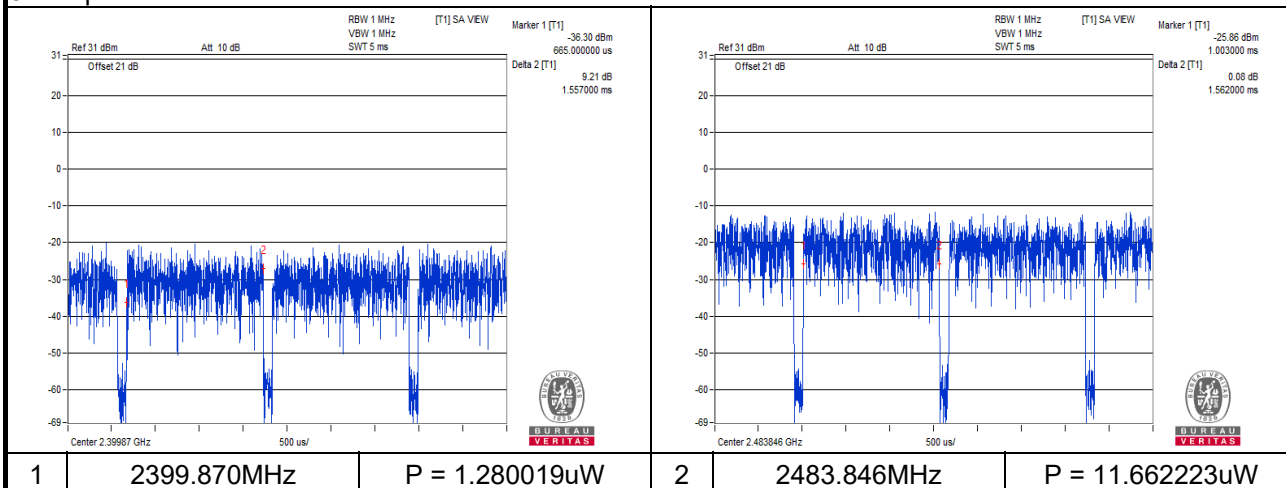
Chain 0

TEST CHANNEL		CH 1 (2412MHz)			
TEST CONDITION	FREQUENCY RANGE(MHz)	FREQUENCY (MHz)	MEASURE. VALUE(μW)	LIMIT (μW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	939.011	0.002128	0.125	PASS
	1000.0 to 2387.0	2385.786	0.175792	1.25	PASS
	2387.0 to 2400.0	2399.870	1.280019	12.5	PASS(1)
	2483.5 to 2496.5	2485.037	0.238232	12.5	PASS
	2496.5 to 12500.0	6355.350	0.461318	1.25	PASS
TEST CHANNEL		CH 7 (2442MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	907.001	0.002296	0.125	PASS
	1000.0 to 2387.0	2132.138	0.184927	1.25	PASS
	2387.0 to 2400.0	2398.537	0.208449	12.5	PASS
	2483.5 to 2496.5	2483.503	0.239883	12.5	PASS
	2496.5 to 12500.0	6687.966	0.478630	1.25	PASS
TEST CHANNEL		CH 13 (2472MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	893.421	0.002275	0.125	PASS
	1000.0 to 2387.0	2184.844	0.201372	1.25	PASS
	2387.0 to 2400.0	2399.990	0.234423	12.5	PASS
	2483.5 to 2496.5	2483.846	11.662223	12.5	PASS(2)
	2496.5 to 12500.0	6995.574	0.512861	1.25	PASS

**NOTE:** 1. The spectrum plots are attached on the following pages.  
 2. (No.): The value was tested under Measuring Mode \*Zero Span.

## Measuring Mode \*Zero Span

1. Set the spectrum analyzer as below and it takes in a value of all data point.
2. Regarding the all data value, it transforms the “dBm” value into “uW” value.
3. It adds the all values and calculates a grand total. Define a grand total as “P”.
4. It divides “P” by sample data point (ex.501) and calculates the mean value.
5. It reports the mean value.



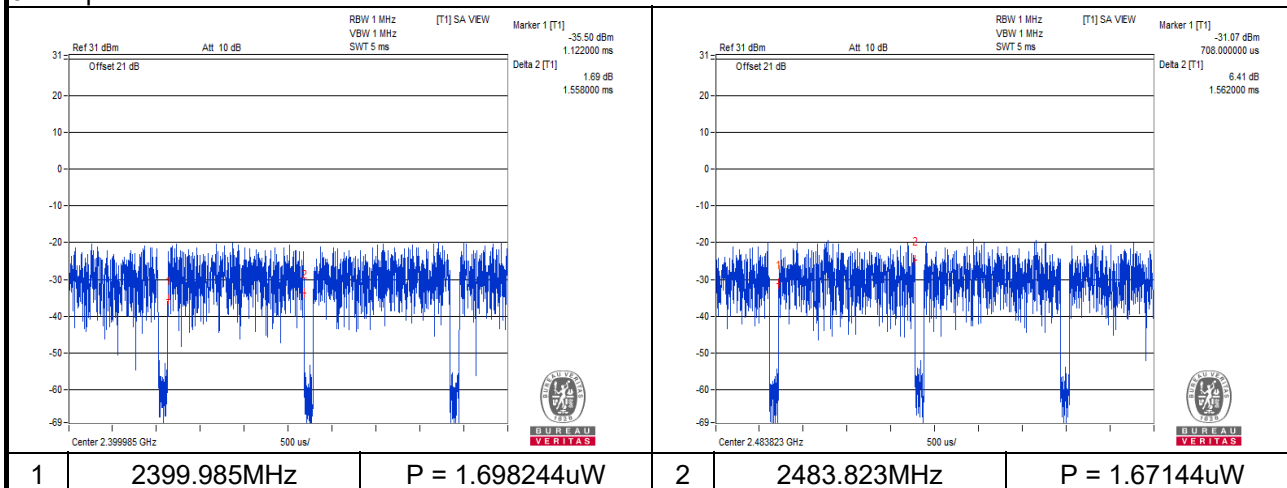
## Chain 1

TEST CHANNEL		CH 1 (2412MHz)			
TEST CONDITION	FREQUENCY RANGE(MHz)	FREQUENCY (MHz)	MEASURE. VALUE(uW)	LIMIT (uW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	915.246	0.002046	0.125	PASS
	1000.0 to 2387.0	1595.543	0.171002	1.25	PASS
	2387.0 to 2400.0	2399.985	1.698244	12.5	PASS(1)
	2483.5 to 2496.5	2483.790	0.203704	12.5	PASS
	2496.5 to 12500.0	6406.618	0.506991	1.25	PASS
TEST CHANNEL		CH 7 (2442MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	795.208	0.001932	0.125	PASS
	1000.0 to 2387.0	1093.449	0.167494	1.25	PASS
	2387.0 to 2400.0	2394.317	0.207970	12.5	PASS
	2483.5 to 2496.5	2493.430	0.233884	12.5	PASS
	2496.5 to 12500.0	5806.408	0.552077	1.25	PASS
TEST CHANNEL		CH 13 (2472MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	883.478	0.001820	0.125	PASS
	1000.0 to 2387.0	2288.176	0.229087	1.25	PASS
	2387.0 to 2400.0	2397.624	0.218776	12.5	PASS
	2483.5 to 2496.5	2483.823	1.671440	12.5	PASS(2)
	2496.5 to 12500.0	5818.912	0.438531	1.25	PASS

**NOTE:** 1. The spectrum plots are attached on the following pages.  
 2. (No.): The value was tested under Measuring Mode \*Zero Span.

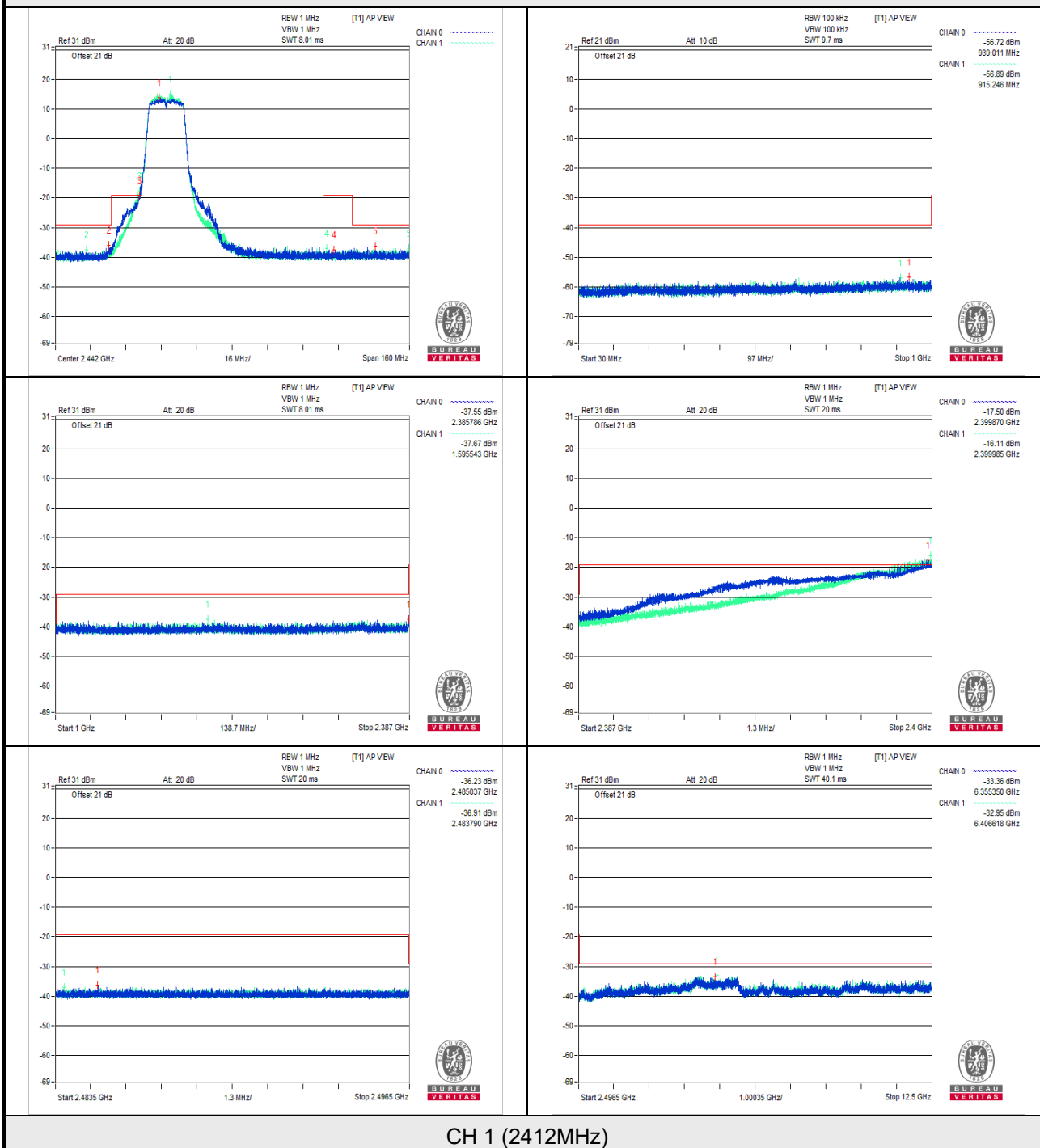
## Measuring Mode \*Zero Span

1. Set the spectrum analyzer as below and it takes in a value of all data point.
2. Regarding the all data value, it transforms the “dBm” value into “uW” value.
3. It adds the all values and calculates a grand total. Define a grand total as “P”.
4. It divides “P” by sample data point (ex.501) and calculates the mean value.
5. It reports the mean value.



## Graph

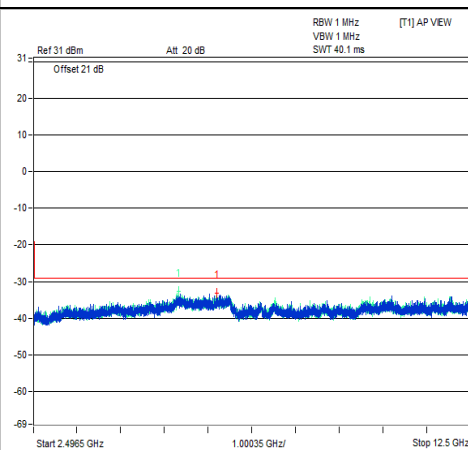
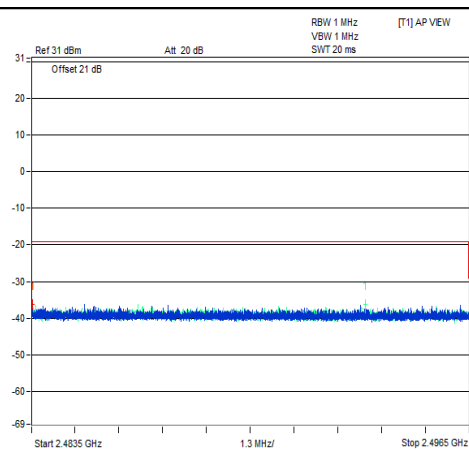
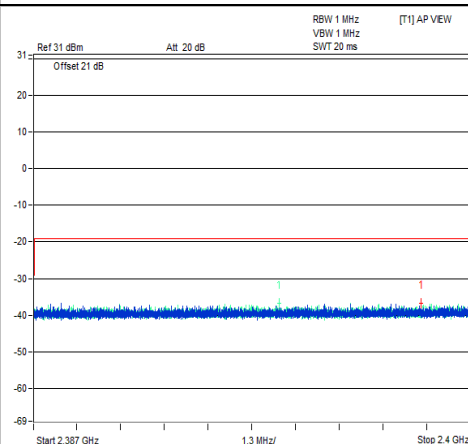
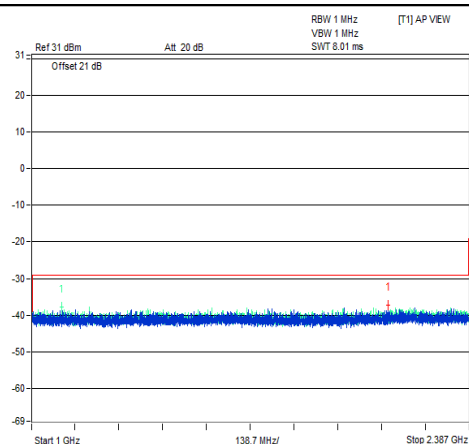
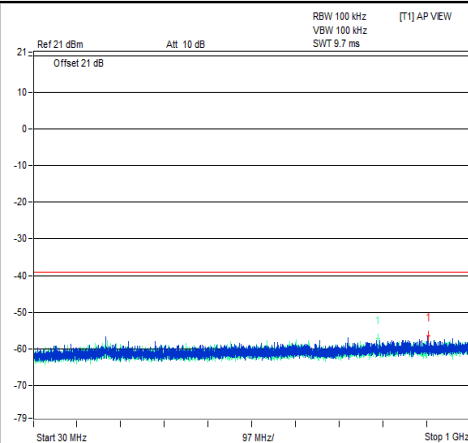
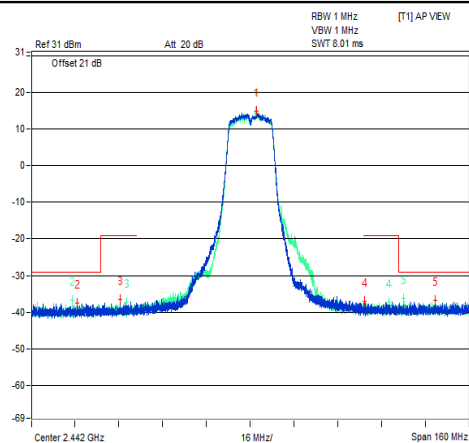
Vnormal



CH 1 (2412MHz)

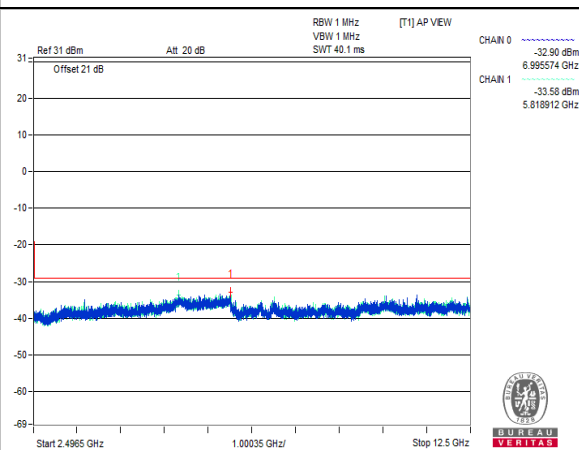
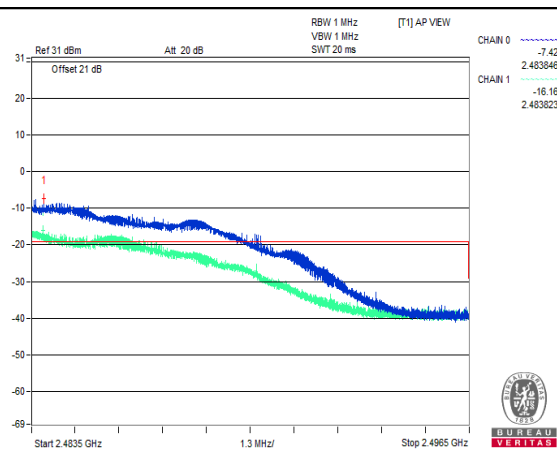
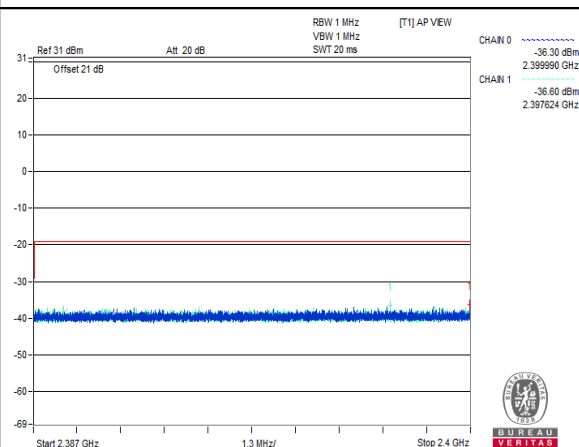
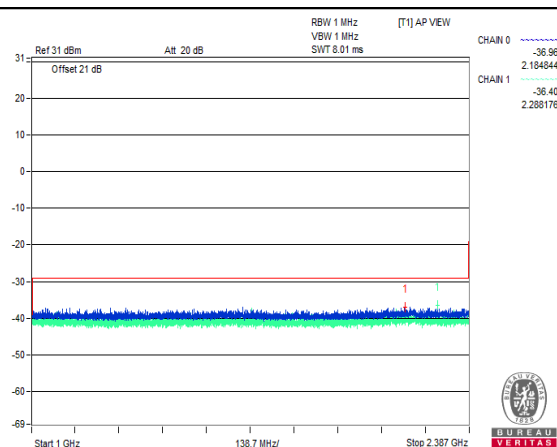
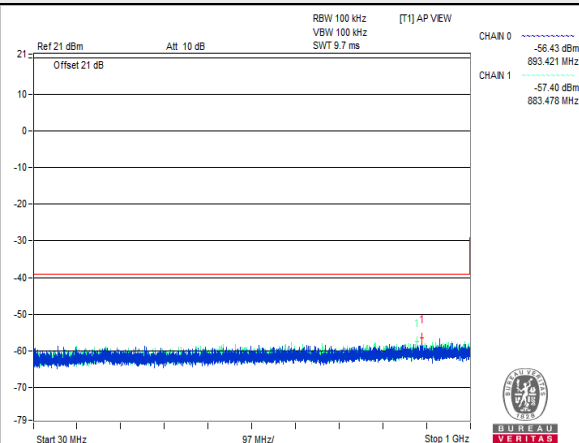
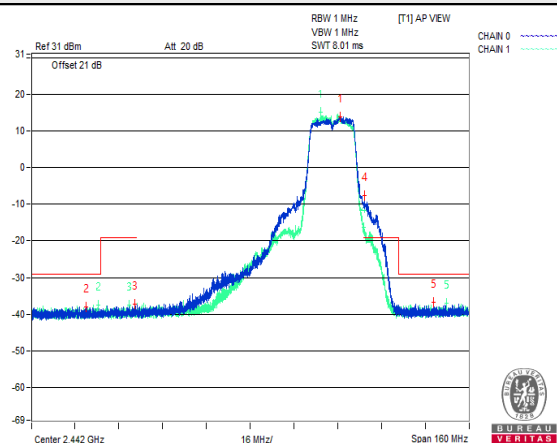


Vnormal



CH 7 (2442MHz)

Vnormal



CH 13 (2472MHz)

[ Worst result ] x [ Number of antenna ports ]

TEST CHANNEL		CH 1 (2412MHz)		
TEST CONDITION	FREQUENCY RANGE(MHz)	MEASURE. VALUE (uW)	LIMIT (uW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.004256	0.25	PASS
	1000.0 to 2387.0	0.351584	2.5	PASS
	2387.0 to 2400.0	3.396488	25	PASS
	2483.5 to 2496.5	0.476464	25	PASS
	2496.5 to 12500.0	1.013982	2.5	PASS
TEST CHANNEL		CH 7 (2442MHz)		
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.004592	0.25	PASS
	1000.0 to 2387.0	0.369854	2.5	PASS
	2387.0 to 2400.0	0.416898	25	PASS
	2483.5 to 2496.5	0.479766	25	PASS
	2496.5 to 12500.0	1.104154	2.5	PASS
TEST CHANNEL		CH 13 (2472MHz)		
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.004550	0.25	PASS
	1000.0 to 2387.0	0.458174	2.5	PASS
	2387.0 to 2400.0	0.468846	25	PASS
	2483.5 to 2496.5	23.324446	25	PASS
	2496.5 to 12500.0	1.025722	2.5	PASS

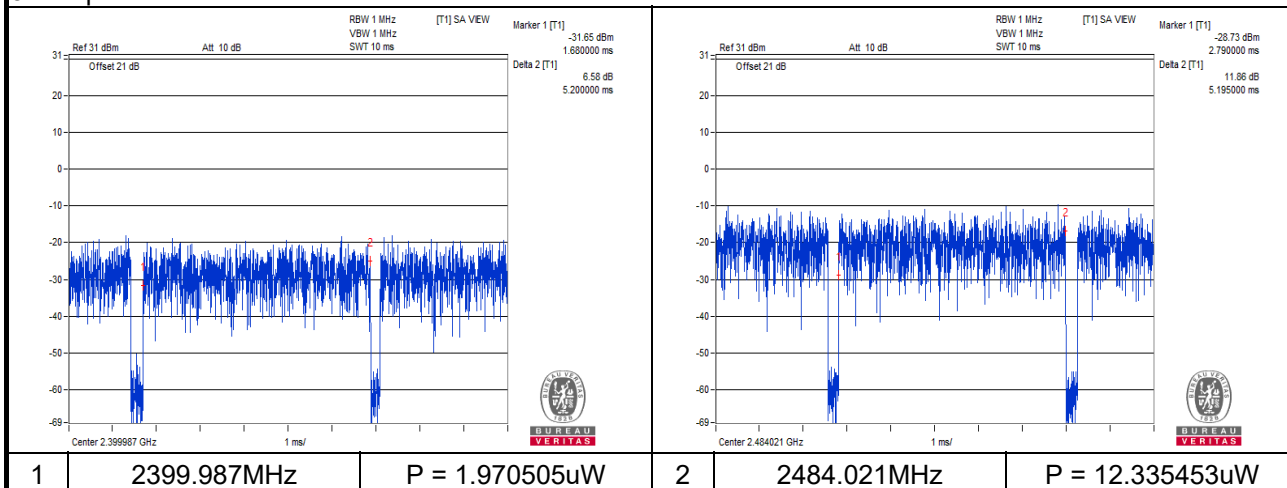
**VHT20**  
**Chain 0**

TEST CHANNEL		CH 1 (2412MHz)			
TEST CONDITION	FREQUENCY RANGE(MHz)	FREQUENCY (MHz)	MEASURE. VALUE(uW)	LIMIT (uW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	822.732	0.002004	0.125	PASS
	1000.0 to 2387.0	2386.653	0.316957	1.25	PASS
	2387.0 to 2400.0	2399.987	1.970505	12.5	PASS(1)
	2483.5 to 2496.5	2494.816	0.238781	12.5	PASS
	2496.5 to 12500.0	6936.803	0.464515	1.25	PASS
TEST CHANNEL		CH 7 (2442MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	996.726	0.001968	0.125	PASS
	1000.0 to 2387.0	2145.488	0.177828	1.25	PASS
	2387.0 to 2400.0	2388.612	0.250611	12.5	PASS
	2483.5 to 2496.5	2495.783	0.236592	12.5	PASS
	2496.5 to 12500.0	5865.178	0.476431	1.25	PASS
TEST CHANNEL		CH 13 (2472MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	967.020	0.002249	0.125	PASS
	1000.0 to 2387.0	1530.180	0.178238	1.25	PASS
	2387.0 to 2400.0	2394.346	0.218273	12.5	PASS
	2483.5 to 2496.5	2484.021	12.335453	12.5	PASS(2)
	2496.5 to 12500.0	5951.458	0.481948	1.25	PASS

**NOTE:** 1. The spectrum plots are attached on the following pages.  
 2. (No.): The value was tested under Measuring Mode \*Zero Span.

## Measuring Mode \*Zero Span

1. Set the spectrum analyzer as below and it takes in a value of all data point.
2. Regarding the all data value, it transforms the “dBm” value into “uW” value.
3. It adds the all values and calculates a grand total. Define a grand total as “P”.
4. It divides “P” by sample data point (ex.501) and calculates the mean value.
5. It reports the mean value.



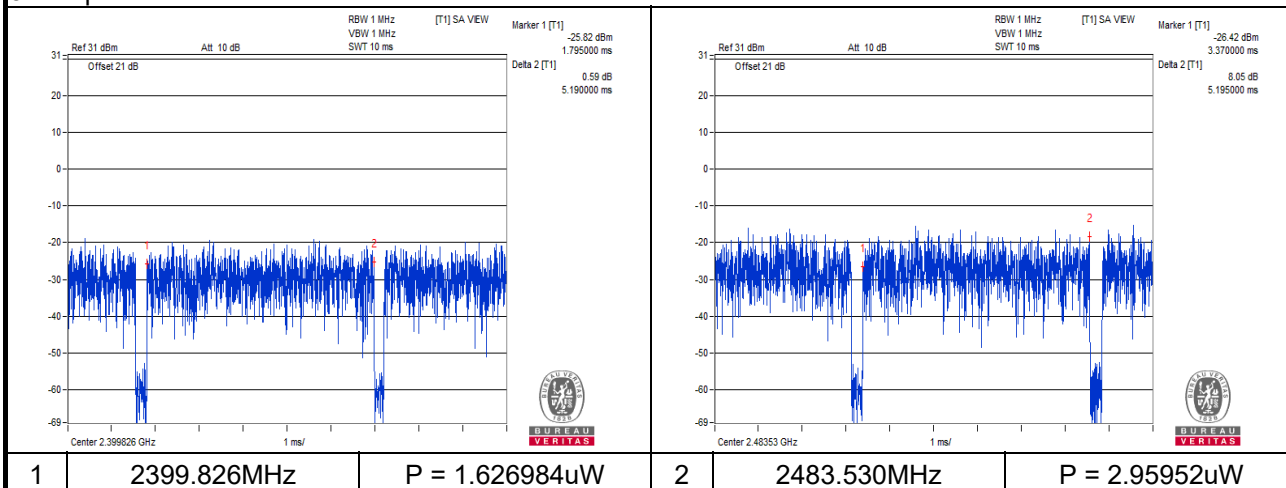
## Chain 1

TEST CHANNEL		CH 1 (2412MHz)			
TEST CONDITION	FREQUENCY RANGE(MHz)	FREQUENCY (MHz)	MEASURE. VALUE(uW)	LIMIT (uW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	890.511	0.002188	0.125	PASS
	1000.0 to 2387.0	2154.157	0.199986	1.25	PASS
	2387.0 to 2400.0	2399.826	1.626984	12.5	PASS(1)
	2483.5 to 2496.5	2485.495	0.240436	12.5	PASS
	2496.5 to 12500.0	5948.957	0.451856	1.25	PASS
TEST CHANNEL		CH 7 (2442MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	877.658	0.002203	0.125	PASS
	1000.0 to 2387.0	1642.007	0.171396	1.25	PASS
	2387.0 to 2400.0	2399.168	0.210378	12.5	PASS
	2483.5 to 2496.5	2486.311	0.243781	12.5	PASS
	2496.5 to 12500.0	5865.178	0.512861	1.25	PASS
TEST CHANNEL		CH 13 (2472MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	915.610	0.002350	0.125	PASS
	1000.0 to 2387.0	2055.680	0.211836	1.25	PASS
	2387.0 to 2400.0	2397.245	0.240436	12.5	PASS
	2483.5 to 2496.5	2483.530	2.959520	12.5	PASS(2)
	2496.5 to 12500.0	5896.439	0.463447	1.25	PASS

**NOTE:** 1. The spectrum plots are attached on the following pages.  
 2. (No.): The value was tested under Measuring Mode \*Zero Span.

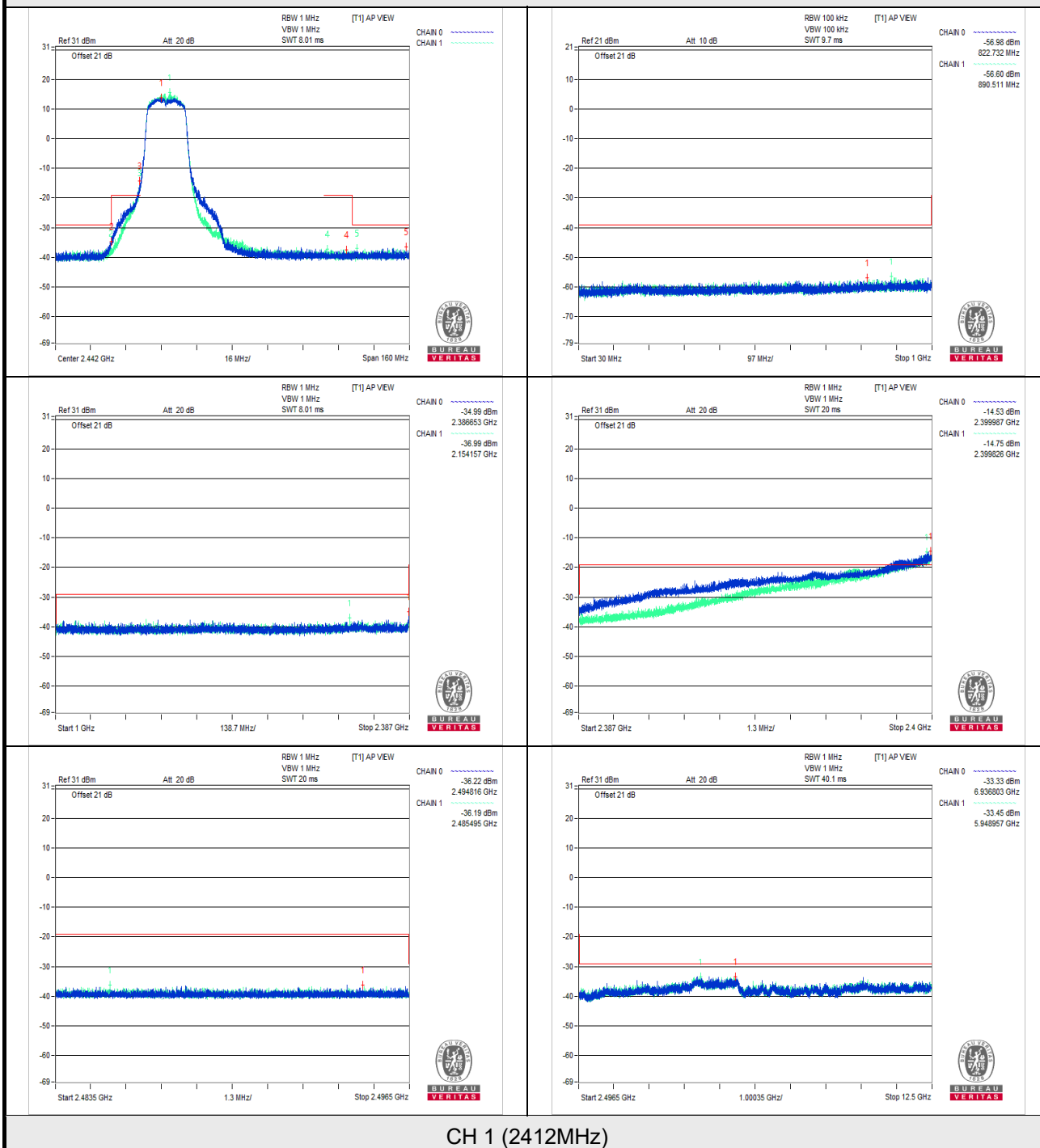
### Measuring Mode \*Zero Span

1. Set the spectrum analyzer as below and it takes in a value of all data point.
2. Regarding the all data value, it transforms the “dBm” value into “uW” value.
3. It adds the all values and calculates a grand total. Define a grand total as “P”.
4. It divides “P” by sample data point (ex.501) and calculates the mean value.
5. It reports the mean value.



## Graph

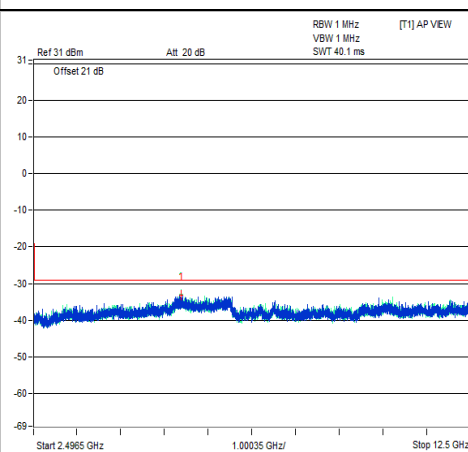
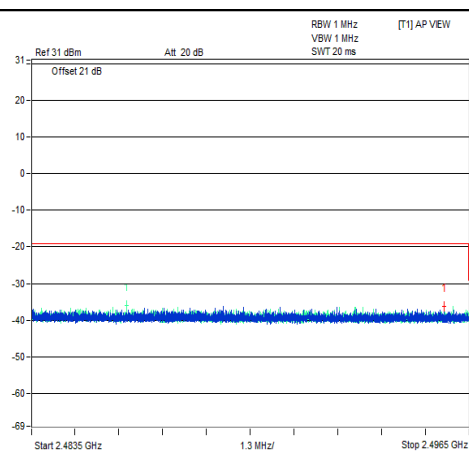
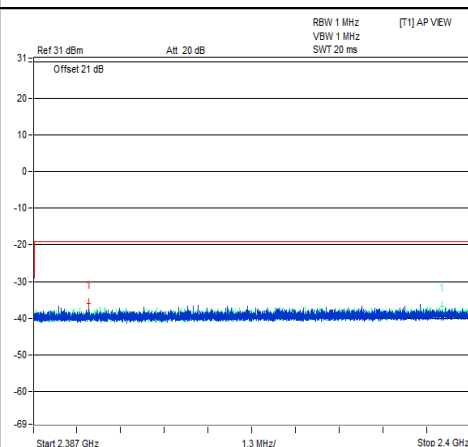
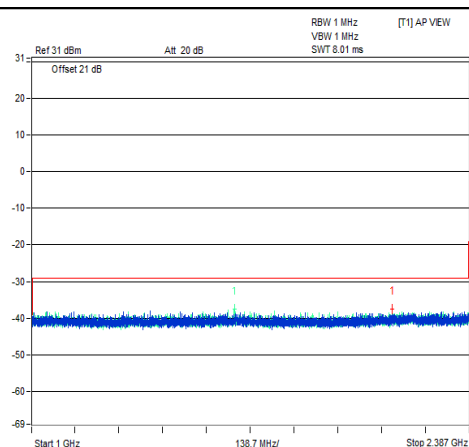
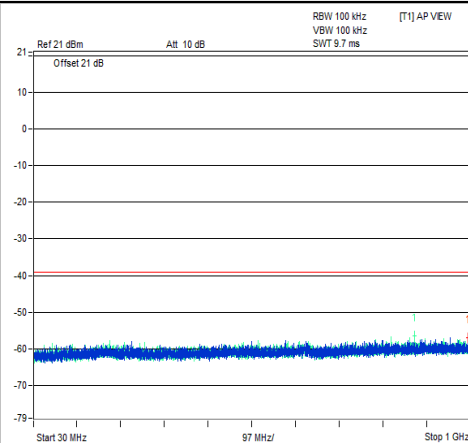
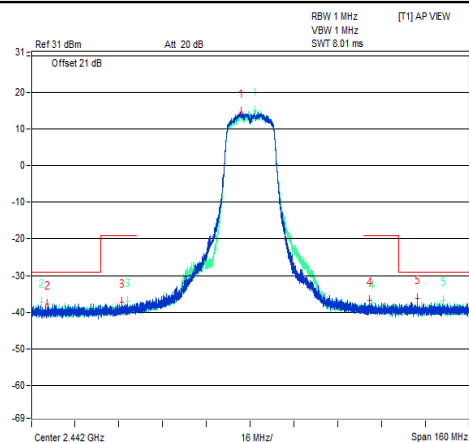
Vnormal



CH 1 (2412MHz)

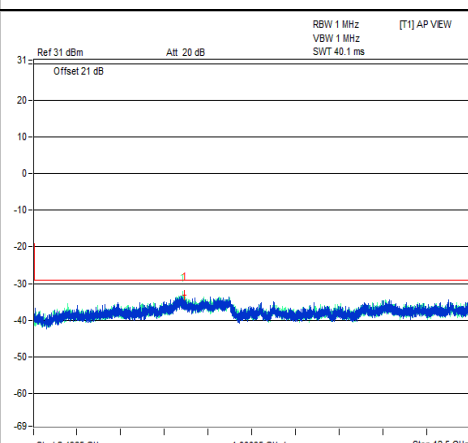
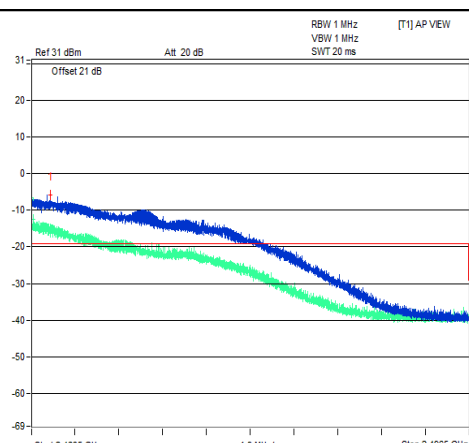
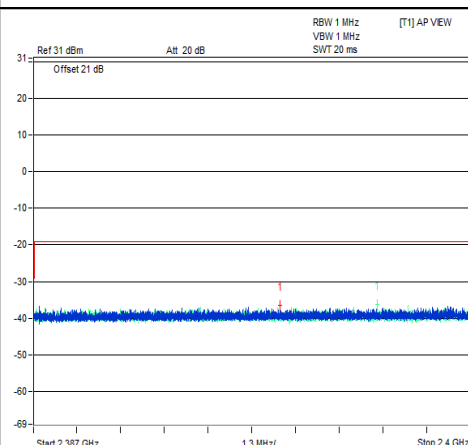
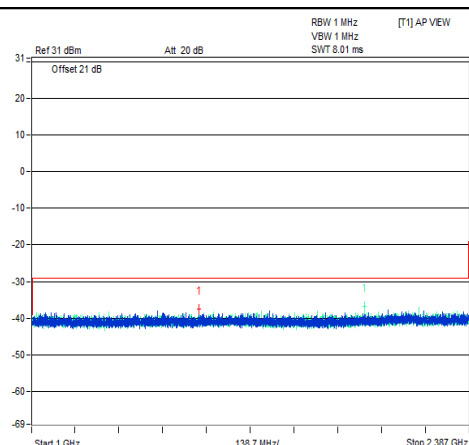
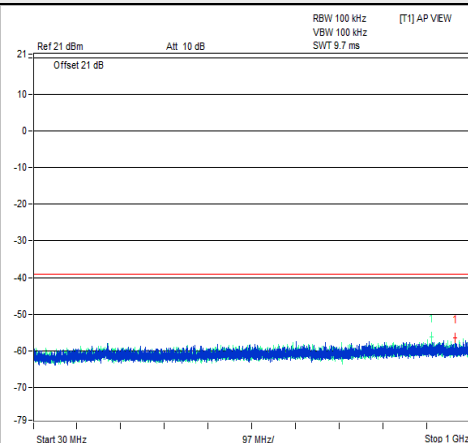
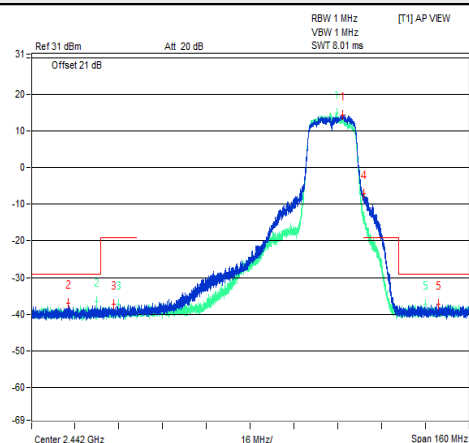


# Vnormal



CH 7 (2442MHz)

# Vnormal



CH 13 (2472MHz)

[ Worst result ] x [ Number of antenna ports ]

TEST CHANNEL		CH 1 (2412MHz)		
TEST CONDITION	FREQUENCY RANGE(MHz)	MEASURE. VALUE (uW)	LIMIT (uW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.004376	0.25	PASS
	1000.0 to 2387.0	0.633914	2.5	PASS
	2387.0 to 2400.0	3.941010	25	PASS
	2483.5 to 2496.5	0.480872	25	PASS
	2496.5 to 12500.0	0.929030	2.5	PASS
TEST CHANNEL		CH 7 (2442MHz)		
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.004406	0.25	PASS
	1000.0 to 2387.0	0.355656	2.5	PASS
	2387.0 to 2400.0	0.501222	25	PASS
	2483.5 to 2496.5	0.487562	25	PASS
	2496.5 to 12500.0	1.025722	2.5	PASS
TEST CHANNEL		CH 13 (2472MHz)		
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.004700	0.25	PASS
	1000.0 to 2387.0	0.423672	2.5	PASS
	2387.0 to 2400.0	0.480872	25	PASS
	2483.5 to 2496.5	24.670906	25	PASS
	2496.5 to 12500.0	0.963896	2.5	PASS

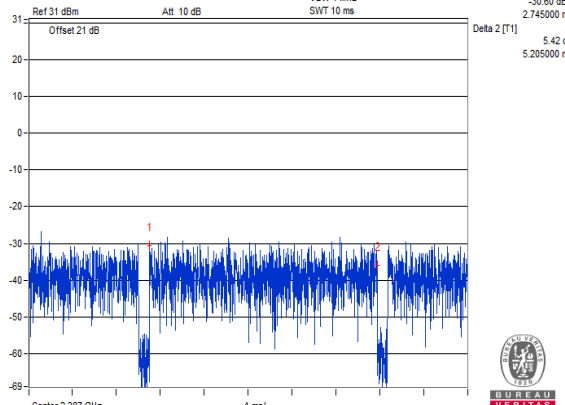
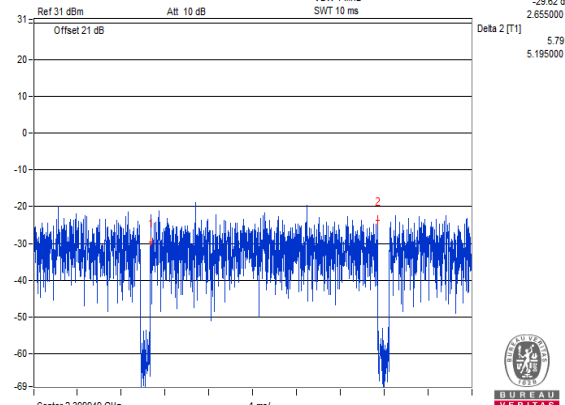
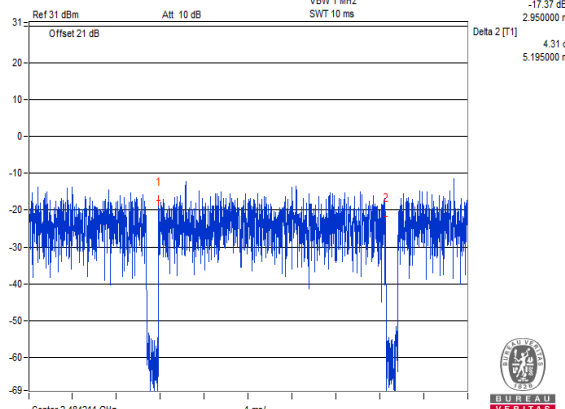
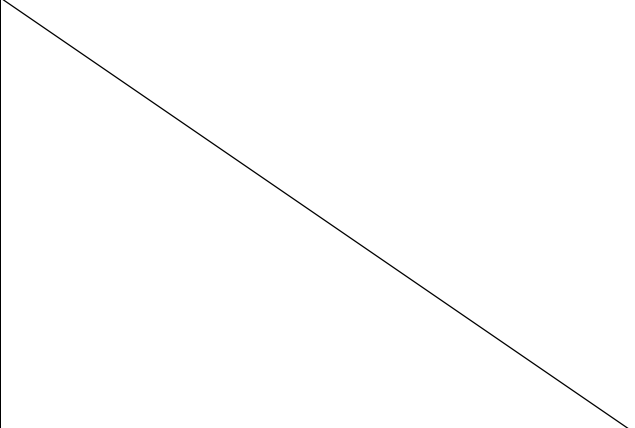
**VHT40**  
**Chain 0**

TEST CHANNEL		CH 3 (2422MHz)			
TEST CONDITION	FREQUENCY RANGE(MHz)	FREQUENCY (MHz)	MEASURE. VALUE(uW)	LIMIT (uW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	977.083	0.002051	0.125	PASS
	1000.0 to 2387.0	2387.000	0.197176	1.25	PASS(1)
	2387.0 to 2400.0	2399.949	1.033128	12.5	PASS(2)
	2483.5 to 2496.5	2484.813	0.343558	12.5	PASS
	2496.5 to 12500.0	5883.935	0.562341	1.25	PASS
TEST CHANNEL		CH 7 (2442MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	945.558	0.001754	0.125	PASS
	1000.0 to 2387.0	2386.826	0.187068	1.25	PASS
	2387.0 to 2400.0	2398.750	1.945360	12.5	PASS
	2483.5 to 2496.5	2483.649	1.811340	12.5	PASS
	2496.5 to 12500.0	5895.189	0.529663	1.25	PASS
TEST CHANNEL		CH 11 (2462MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	849.407	0.002042	0.125	PASS
	1000.0 to 2387.0	2322.331	0.186209	1.25	PASS
	2387.0 to 2400.0	2395.484	1.315225	12.5	PASS
	2483.5 to 2496.5	2484.211	6.048872	12.5	PASS(3)
	2496.5 to 12500.0	6980.568	0.521195	1.25	PASS

**NOTE:** 1. The spectrum plots are attached on the following pages.  
2. (No.): The value was tested under Measuring Mode \*Zero Span.

## Measuring Mode \*Zero Span

1. Set the spectrum analyzer as below and it takes in a value of all data point.
2. Regarding the all data value, it transforms the "dBm" value into "uW" value.
3. It adds the all values and calculates a grand total. Define a grand total as "P".
4. It divides "P" by sample data point (ex.501) and calculates the mean value.
5. It reports the mean value.

	
<b>1</b> <b>2387.000MHz</b> <b>P = 0.197176uW</b>	<b>2</b> <b>2399.949MHz</b> <b>P = 1.033128uW</b>
	
<b>3</b> <b>2484.211MHz</b> <b>P = 6.048872uW</b>	

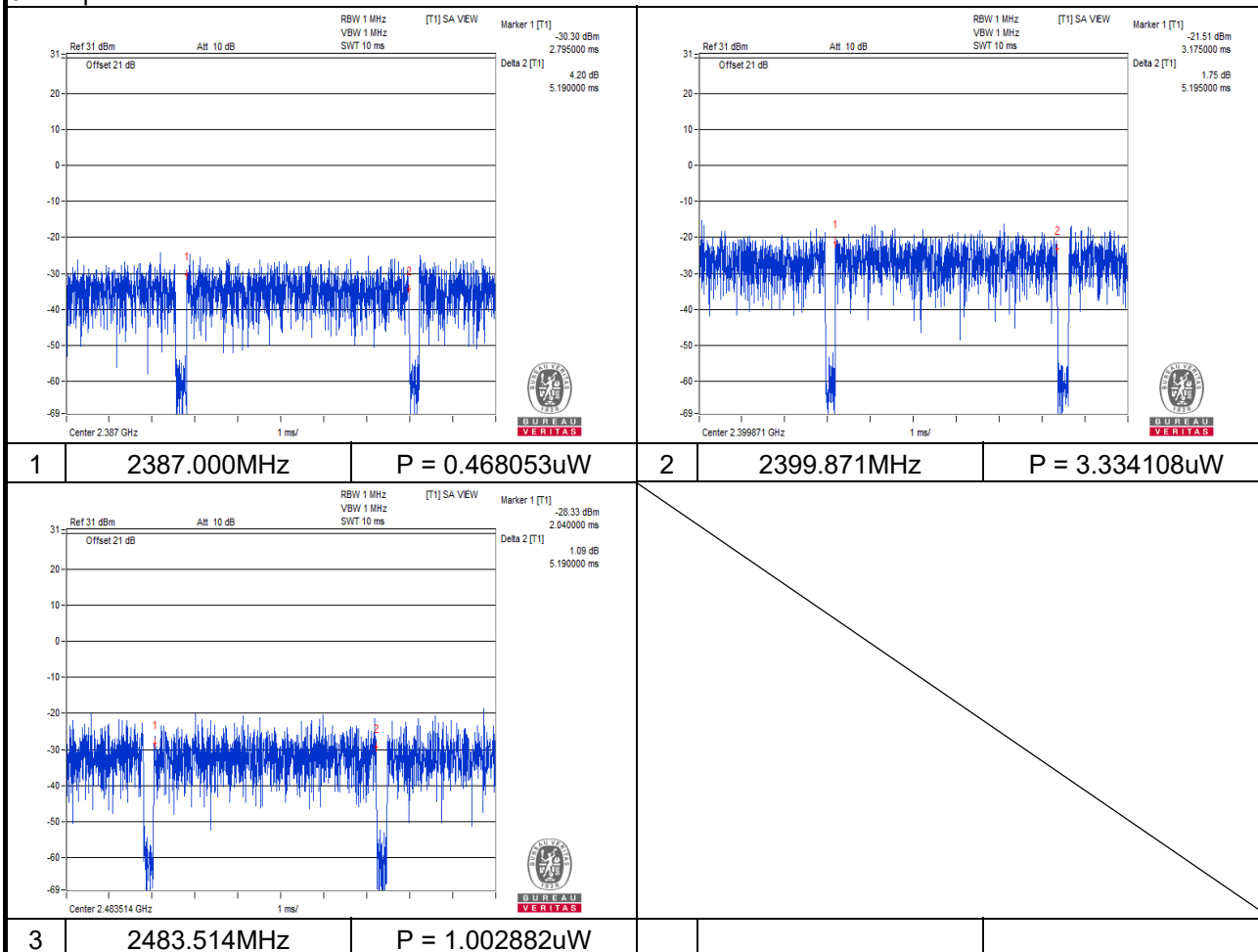
## Chain 1

TEST CHANNEL		CH 3 (2422MHz)			
TEST CONDITION	FREQUENCY RANGE(MHz)	FREQUENCY (MHz)	MEASURE. VALUE(uW)	LIMIT (uW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	991.997	0.001986	0.125	PASS
	1000.0 to 2387.0	2387.000	0.468053	1.25	PASS(1)
	2387.0 to 2400.0	2399.871	3.334108	12.5	PASS(2)
	2483.5 to 2496.5	2483.880	1.258925	12.5	PASS
	2496.5 to 12500.0	6876.782	0.587489	1.25	PASS
TEST CHANNEL		CH 7 (2442MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	625.337	0.001742	0.125	PASS
	1000.0 to 2387.0	2386.826	0.224388	1.25	PASS
	2387.0 to 2400.0	2399.645	7.709035	12.5	PASS
	2483.5 to 2496.5	2484.397	2.098940	12.5	PASS
	2496.5 to 12500.0	6980.568	0.495450	1.25	PASS
TEST CHANNEL		CH 11 (2462MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	954.410	0.001799	0.125	PASS
	1000.0 to 2387.0	2351.631	0.175792	1.25	PASS
	2387.0 to 2400.0	2399.629	1.545254	12.5	PASS
	2483.5 to 2496.5	2483.514	1.002882	12.5	PASS(3)
	2496.5 to 12500.0	5908.943	0.453942	1.25	PASS

**NOTE:** 1. The spectrum plots are attached on the following pages.  
 2. (No.): The value was tested under Measuring Mode \*Zero Span.

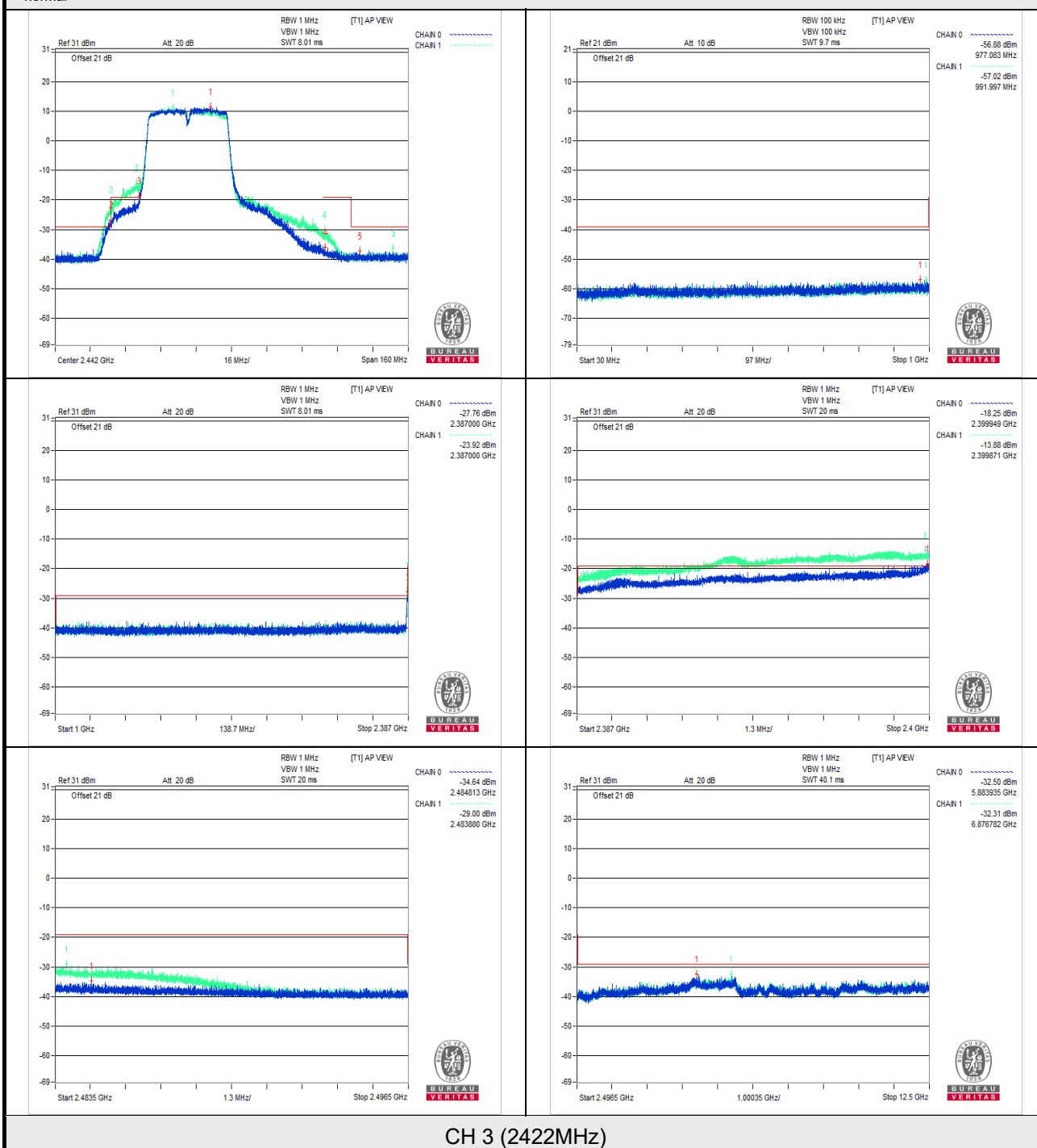
## Measuring Mode \*Zero Span

1. Set the spectrum analyzer as below and it takes in a value of all data point.
2. Regarding the all data value, it transforms the “dBm” value into “uW” value.
3. It adds the all values and calculates a grand total. Define a grand total as “P”.
4. It divides “P” by sample data point (ex.501) and calculates the mean value.
5. It reports the mean value.



## Graph

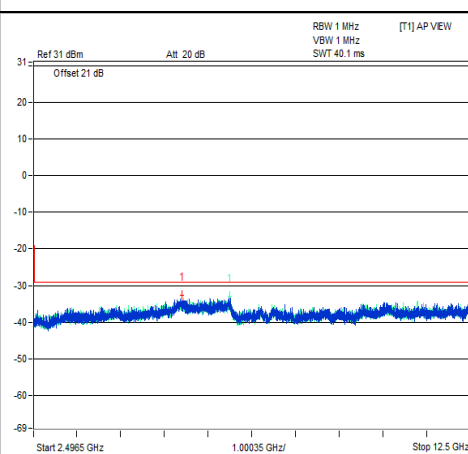
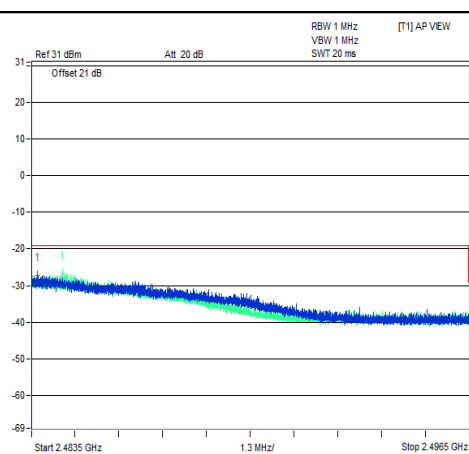
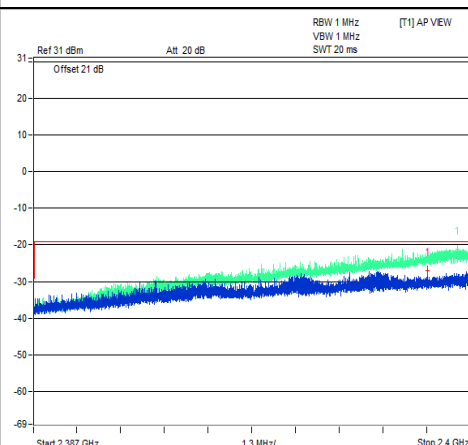
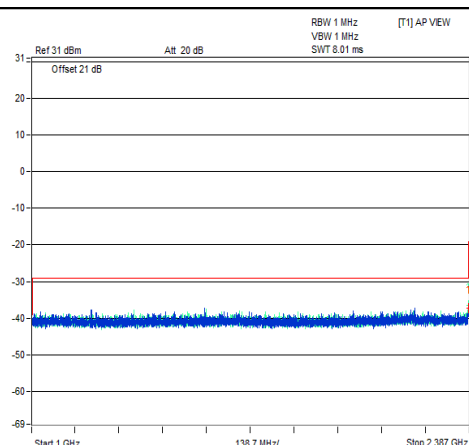
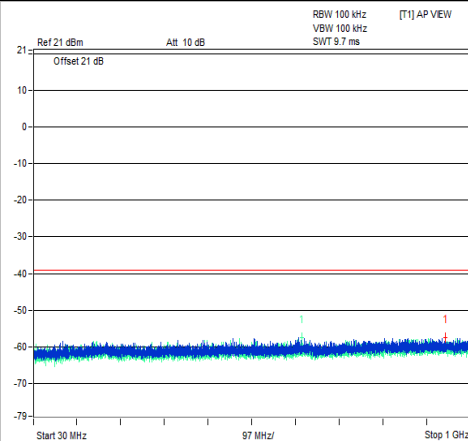
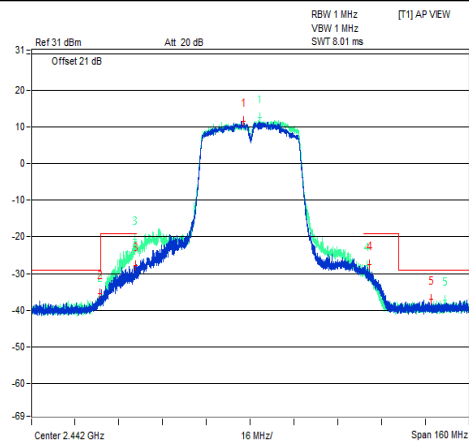
Vnormal



CH 3 (2422MHz)

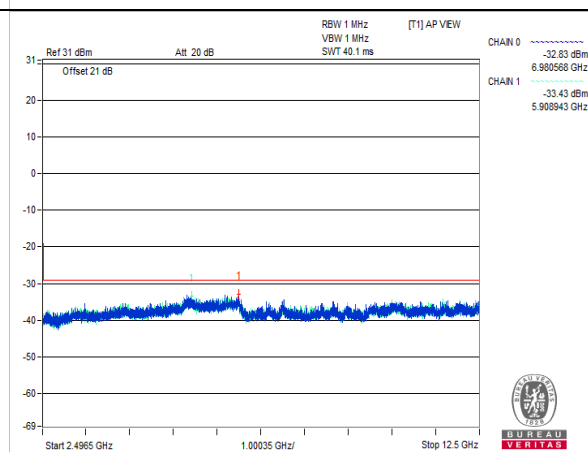
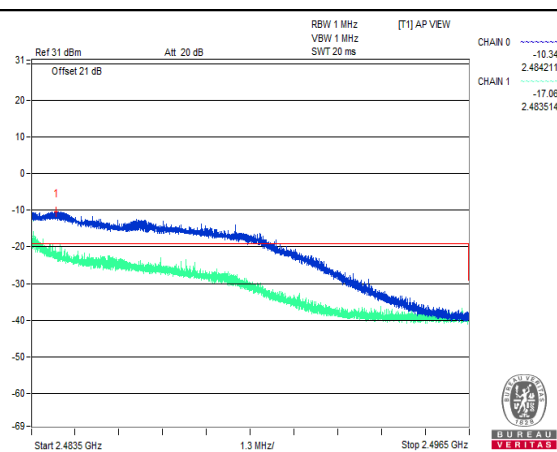
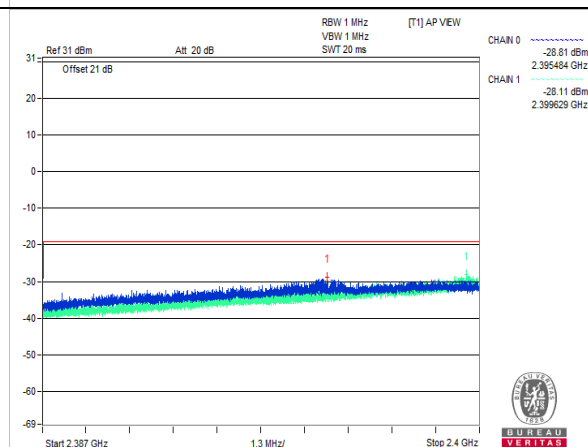
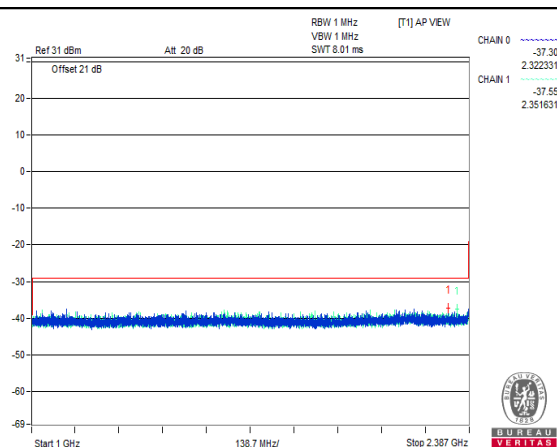
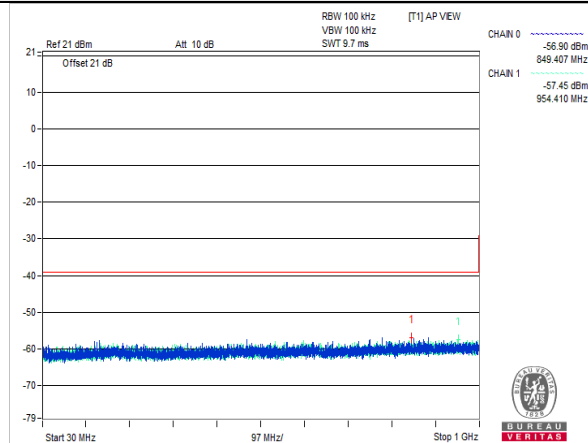
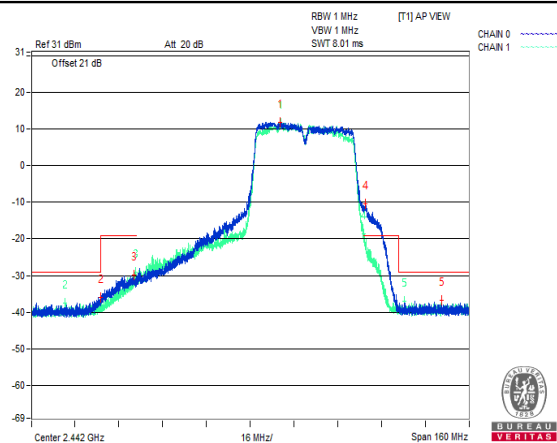


# Vnormal



CH 7 (2442MHz)

Vnormal



CH 11 (2462MHz)

[ Worst result ] x [ Number of antenna ports ]

TEST CHANNEL		CH 3 (2422MHz)		
TEST CONDITION	FREQUENCY RANGE(MHz)	MEASURE. VALUE (uW)	LIMIT (uW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.004102	0.25	PASS
	1000.0 to 2387.0	0.936106	2.5	PASS
	2387.0 to 2400.0	6.668216	25	PASS
	2483.5 to 2496.5	2.517850	25	PASS
	2496.5 to 12500.0	1.174978	2.5	PASS
TEST CHANNEL		CH 7 (2442MHz)		
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.003508	0.25	PASS
	1000.0 to 2387.0	0.448776	2.5	PASS
	2387.0 to 2400.0	15.418070	25	PASS
	2483.5 to 2496.5	4.197880	25	PASS
	2496.5 to 12500.0	1.059326	2.5	PASS
TEST CHANNEL		CH 11 (2462MHz)		
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.004084	0.25	PASS
	1000.0 to 2387.0	0.372418	2.5	PASS
	2387.0 to 2400.0	3.090508	25	PASS
	2483.5 to 2496.5	12.097744	25	PASS
	2496.5 to 12500.0	1.042390	2.5	PASS

# 802.11ax (HE20)

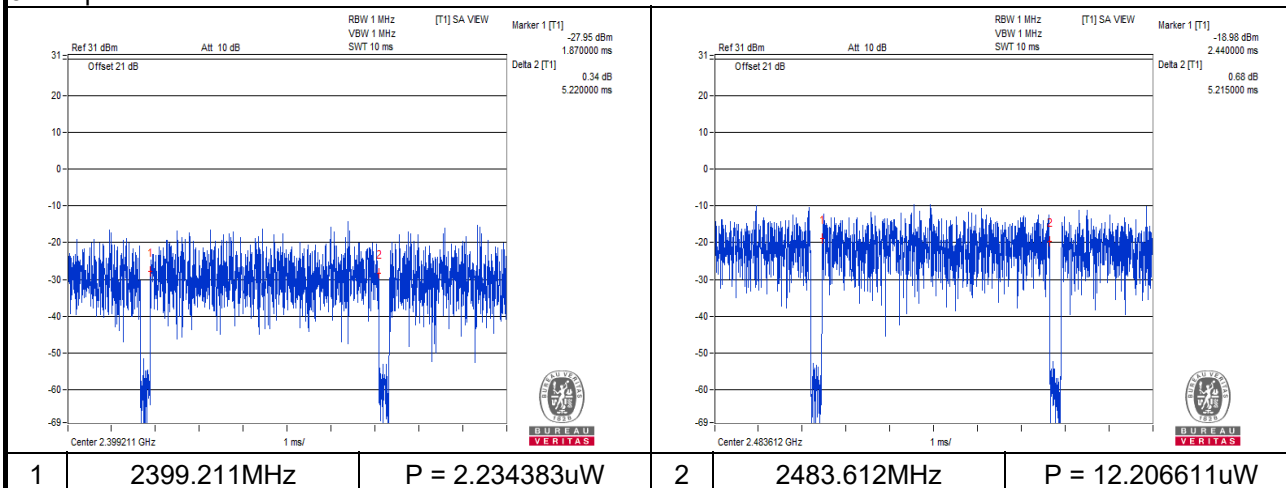
## Chain 0

TEST CHANNEL		CH 1 (2412MHz)			
TEST CONDITION	FREQUENCY RANGE(MHz)	FREQUENCY (MHz)	MEASURE. VALUE(uW)	LIMIT (uW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	729.127	0.004721	0.125	PASS
	1000.0 to 2387.0	2387.000	1.028016	1.25	PASS
	2387.0 to 2400.0	2399.211	2.234383	12.5	PASS(1)
	2483.5 to 2496.5	2488.430	0.231206	12.5	PASS
	2496.5 to 12500.0	6786.751	0.493174	1.25	PASS
TEST CHANNEL		CH 7 (2442MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	886.752	0.002056	0.125	PASS
	1000.0 to 2387.0	2256.448	0.165959	1.25	PASS
	2387.0 to 2400.0	2397.993	0.297852	12.5	PASS
	2483.5 to 2496.5	2485.818	0.267301	12.5	PASS
	2496.5 to 12500.0	6984.320	0.480839	1.25	PASS
TEST CHANNEL		CH 13 (2472MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	892.936	0.002163	0.125	PASS
	1000.0 to 2387.0	2303.606	0.177011	1.25	PASS
	2387.0 to 2400.0	2399.785	0.242103	12.5	PASS
	2483.5 to 2496.5	2483.612	12.206611	12.5	PASS(2)
	2496.5 to 12500.0	6082.754	0.540754	1.25	PASS

**NOTE:** 1. The spectrum plots are attached on the following pages.  
2. (No.): The value was tested under Measuring Mode \*Zero Span.

## Measuring Mode \*Zero Span

1. Set the spectrum analyzer as below and it takes in a value of all data point.
2. Regarding the all data value, it transforms the “dBm” value into “uW” value.
3. It adds the all values and calculates a grand total. Define a grand total as “P”.
4. It divides “P” by sample data point (ex.501) and calculates the mean value.
5. It reports the mean value.



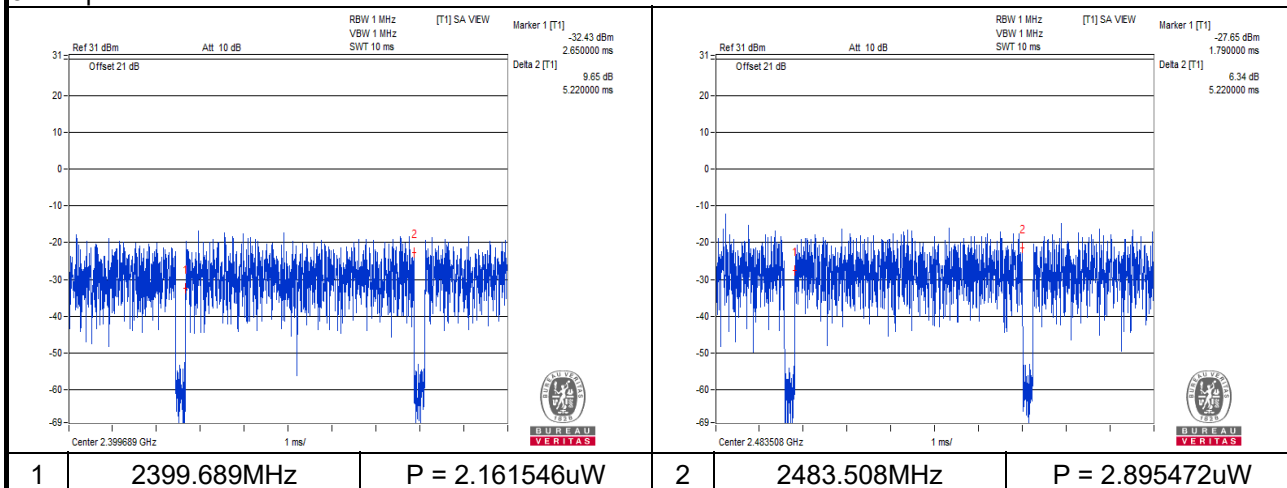
## Chain 1

TEST CHANNEL		CH 1 (2412MHz)			
TEST CONDITION	FREQUENCY RANGE(MHz)	FREQUENCY (MHz)	MEASURE. VALUE(uW)	LIMIT (uW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	917.671	0.001782	0.125	PASS
	1000.0 to 2387.0	2386.653	0.240991	1.25	PASS
	2387.0 to 2400.0	2399.689	2.161546	12.5	PASS(1)
	2483.5 to 2496.5	2489.933	0.207970	12.5	PASS
	2496.5 to 12500.0	6602.936	0.485289	1.25	PASS
TEST CHANNEL		CH 7 (2442MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	922.763	0.001954	0.125	PASS
	1000.0 to 2387.0	2169.761	0.188365	1.25	PASS
	2387.0 to 2400.0	2392.260	0.268534	12.5	PASS
	2483.5 to 2496.5	2484.158	0.239332	12.5	PASS
	2496.5 to 12500.0	5950.208	0.528445	1.25	PASS
TEST CHANNEL		CH 13 (2472MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	931.008	0.002296	0.125	PASS
	1000.0 to 2387.0	2226.628	0.170608	1.25	PASS
	2387.0 to 2400.0	2397.458	0.209894	12.5	PASS
	2483.5 to 2496.5	2483.508	2.895472	12.5	PASS(2)
	2496.5 to 12500.0	5863.928	0.548277	1.25	PASS

**NOTE:** 1. The spectrum plots are attached on the following pages.  
 2. (No.): The value was tested under Measuring Mode \*Zero Span.

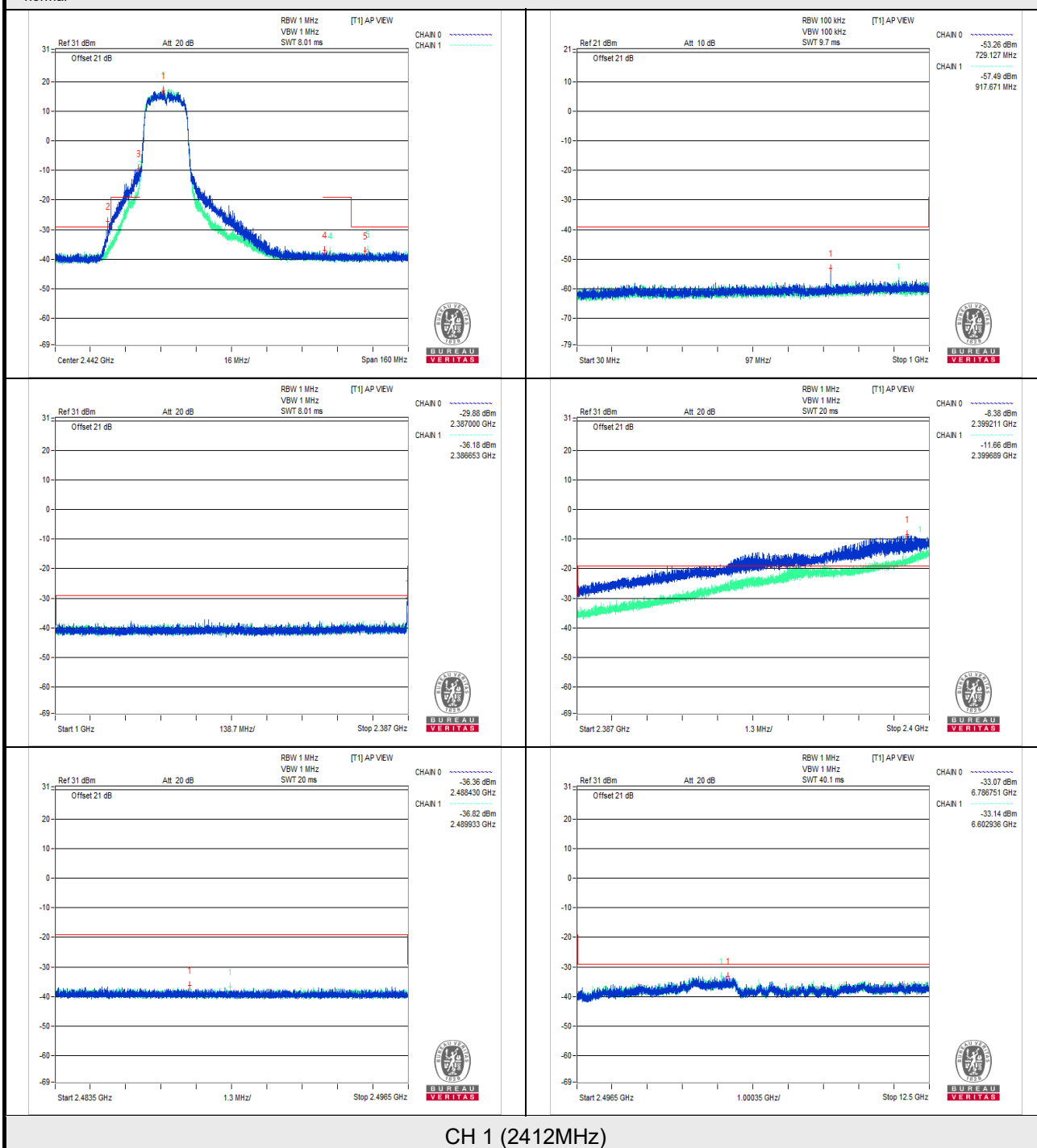
## Measuring Mode \*Zero Span

1. Set the spectrum analyzer as below and it takes in a value of all data point.
2. Regarding the all data value, it transforms the “dBm” value into “uW” value.
3. It adds the all values and calculates a grand total. Define a grand total as “P”.
4. It divides “P” by sample data point (ex.501) and calculates the mean value.
5. It reports the mean value.



## Graph

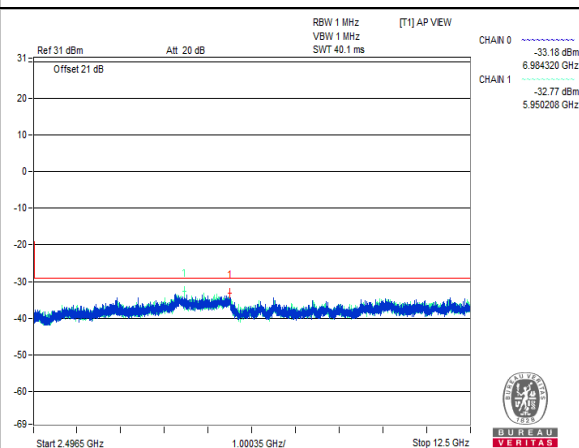
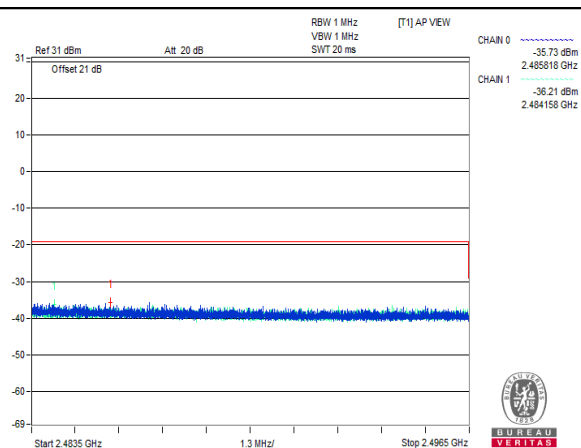
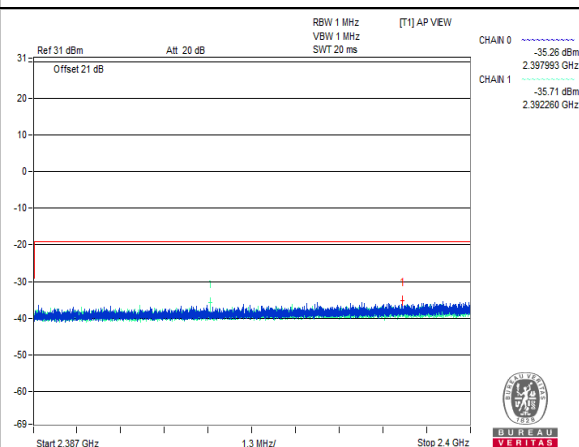
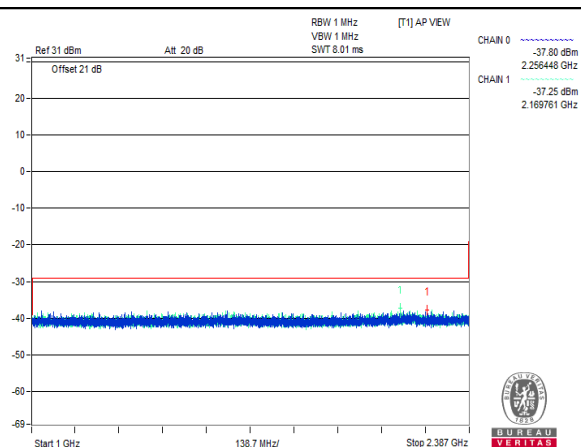
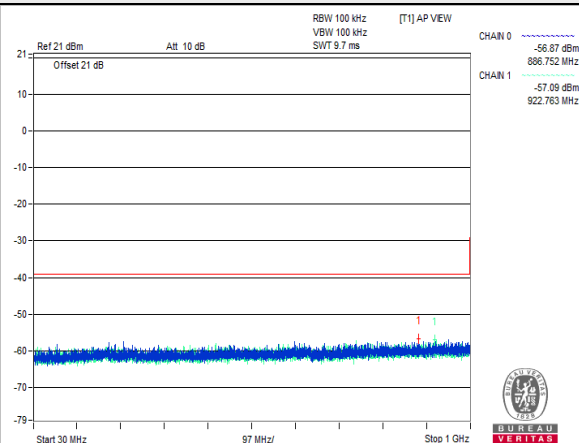
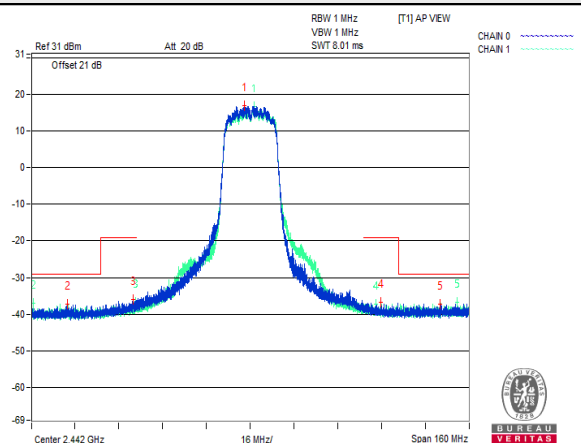
Vnormal



CH 1 (2412MHz)

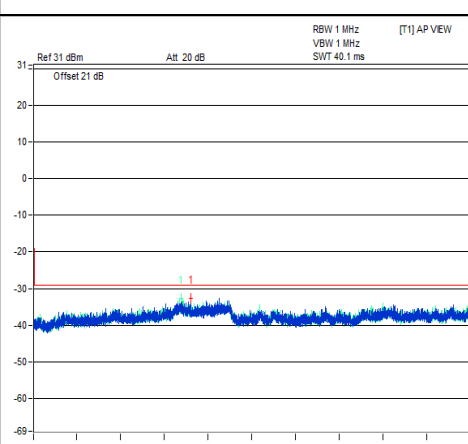
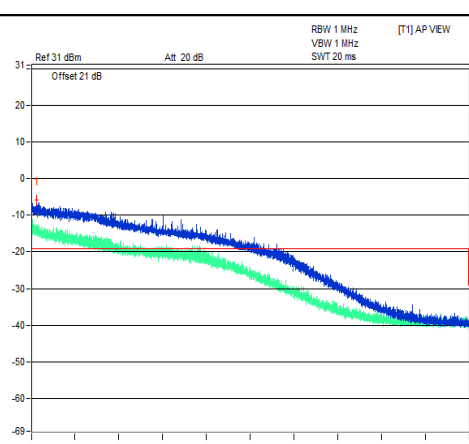
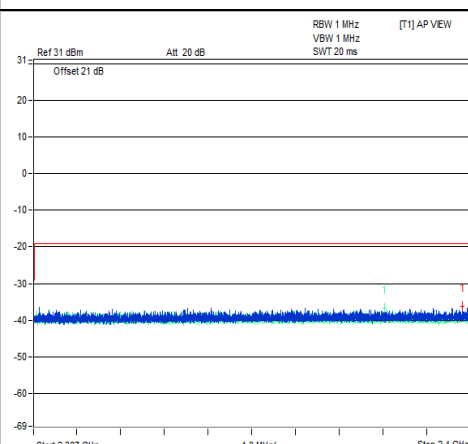
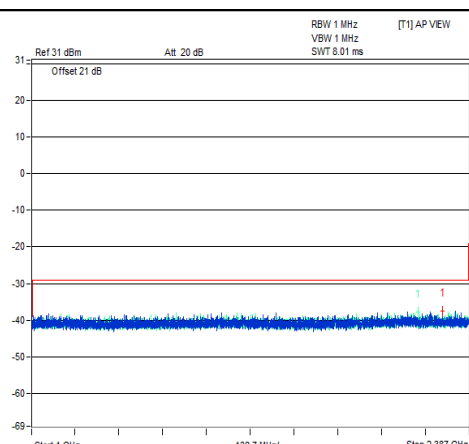
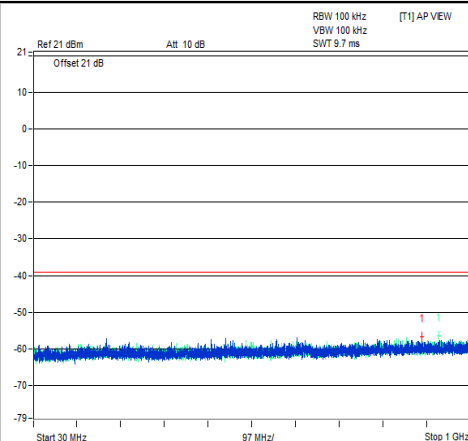
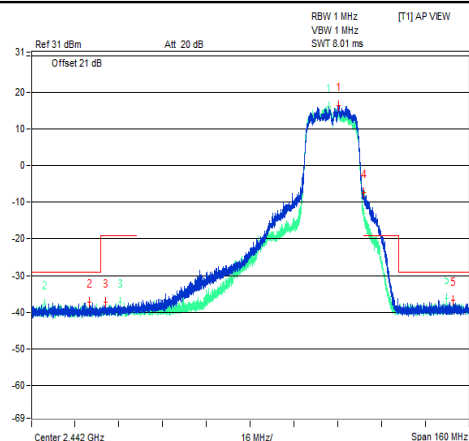


# Vnormal



CH 7 (2442MHz)

Vnormal



CH 13 (2472MHz)

[ Worst result ] x [ Number of antenna ports ]

TEST CHANNEL		CH 1 (2412MHz)		
TEST CONDITION	FREQUENCY RANGE(MHz)	MEASURE. VALUE (uW)	LIMIT (uW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.009442	0.25	PASS
	1000.0 to 2387.0	2.056032	2.5	PASS
	2387.0 to 2400.0	4.468766	25	PASS
	2483.5 to 2496.5	0.462412	25	PASS
	2496.5 to 12500.0	0.986348	2.5	PASS
TEST CHANNEL		CH 7 (2442MHz)		
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.004112	0.25	PASS
	1000.0 to 2387.0	0.376730	2.5	PASS
	2387.0 to 2400.0	0.595704	25	PASS
	2483.5 to 2496.5	0.534602	25	PASS
	2496.5 to 12500.0	1.056890	2.5	PASS
TEST CHANNEL		CH 13 (2472MHz)		
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.004592	0.25	PASS
	1000.0 to 2387.0	0.354022	2.5	PASS
	2387.0 to 2400.0	0.484206	25	PASS
	2483.5 to 2496.5	24.413222	25	PASS
	2496.5 to 12500.0	1.096554	2.5	PASS

## 802.11ax (HE40)

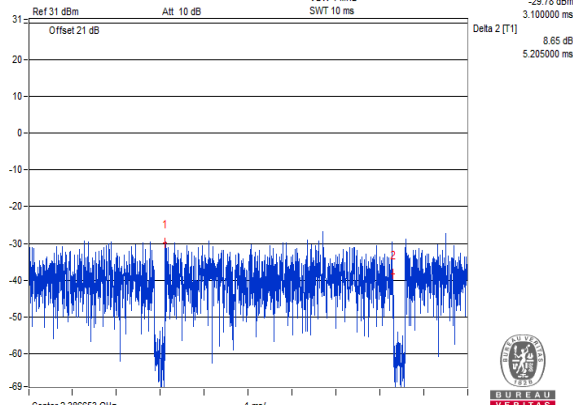
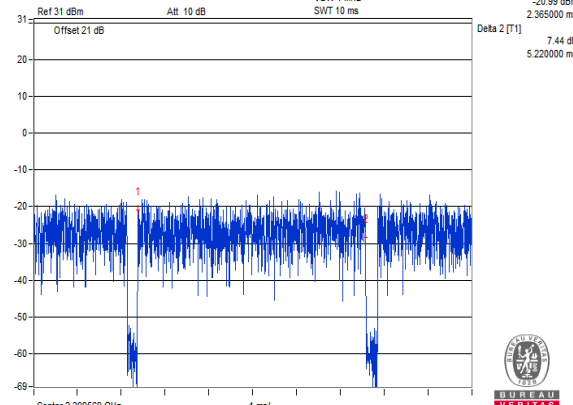
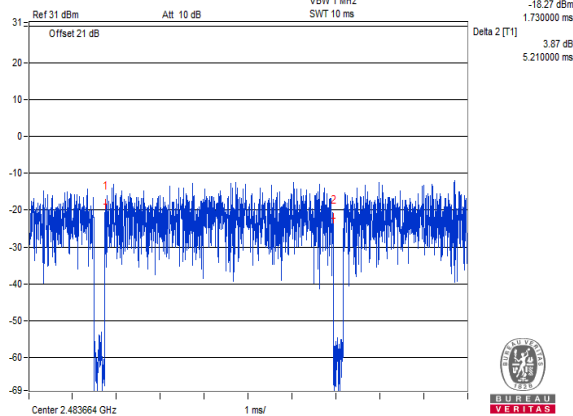
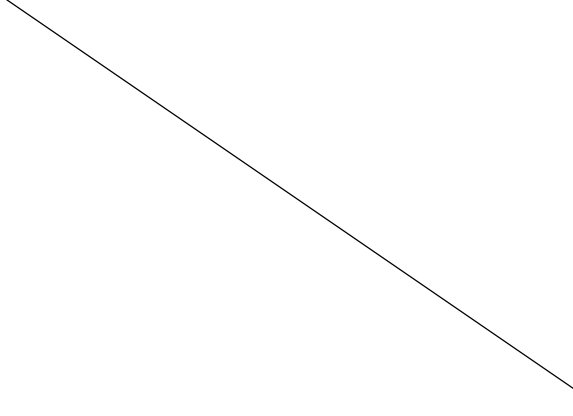
### Chain 0

TEST CHANNEL		CH 3 (2422MHz)			
TEST CONDITION	FREQUENCY RANGE(MHz)	FREQUENCY (MHz)	MEASURE. VALUE(uW)	LIMIT (uW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	846.861	0.001972	0.125	PASS
	1000.0 to 2387.0	2386.653	0.169119	1.25	PASS(1)
	2387.0 to 2400.0	2399.569	3.257664	12.5	PASS(2)
	2483.5 to 2496.5	2483.511	1.406048	12.5	PASS
	2496.5 to 12500.0	5810.159	0.458142	1.25	PASS
TEST CHANNEL		CH 7 (2442MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	946.771	0.002084	0.125	PASS
	1000.0 to 2387.0	2386.306	0.233884	1.25	PASS
	2387.0 to 2400.0	2398.958	4.149540	12.5	PASS
	2483.5 to 2496.5	2485.908	3.033891	12.5	PASS
	2496.5 to 12500.0	5841.420	0.456037	1.25	PASS
TEST CHANNEL		CH 11 (2462MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	939.617	0.002158	0.125	PASS
	1000.0 to 2387.0	2386.133	0.225944	1.25	PASS
	2387.0 to 2400.0	2398.805	1.794734	12.5	PASS
	2483.5 to 2496.5	2483.664	8.594929	12.5	PASS(3)
	2496.5 to 12500.0	6781.749	0.487528	1.25	PASS

- NOTE:** 1. The spectrum plots are attached on the following pages.  
 2. (No.): The value was tested under Measuring Mode \*Zero Span.

## Measuring Mode \*Zero Span

1. Set the spectrum analyzer as below and it takes in a value of all data point.
2. Regarding the all data value, it transforms the "dBm" value into "uW" value.
3. It adds the all values and calculates a grand total. Define a grand total as "P".
4. It divides "P" by sample data point (ex.501) and calculates the mean value.
5. It reports the mean value.

	
<b>1</b> <b>2386.653MHz</b> <b>P = 0.169119uW</b>	<b>2</b> <b>2399.569MHz</b> <b>P = 3.257664uW</b>
	
<b>3</b> <b>2483.664MHz</b> <b>P = 8.594929uW</b>	

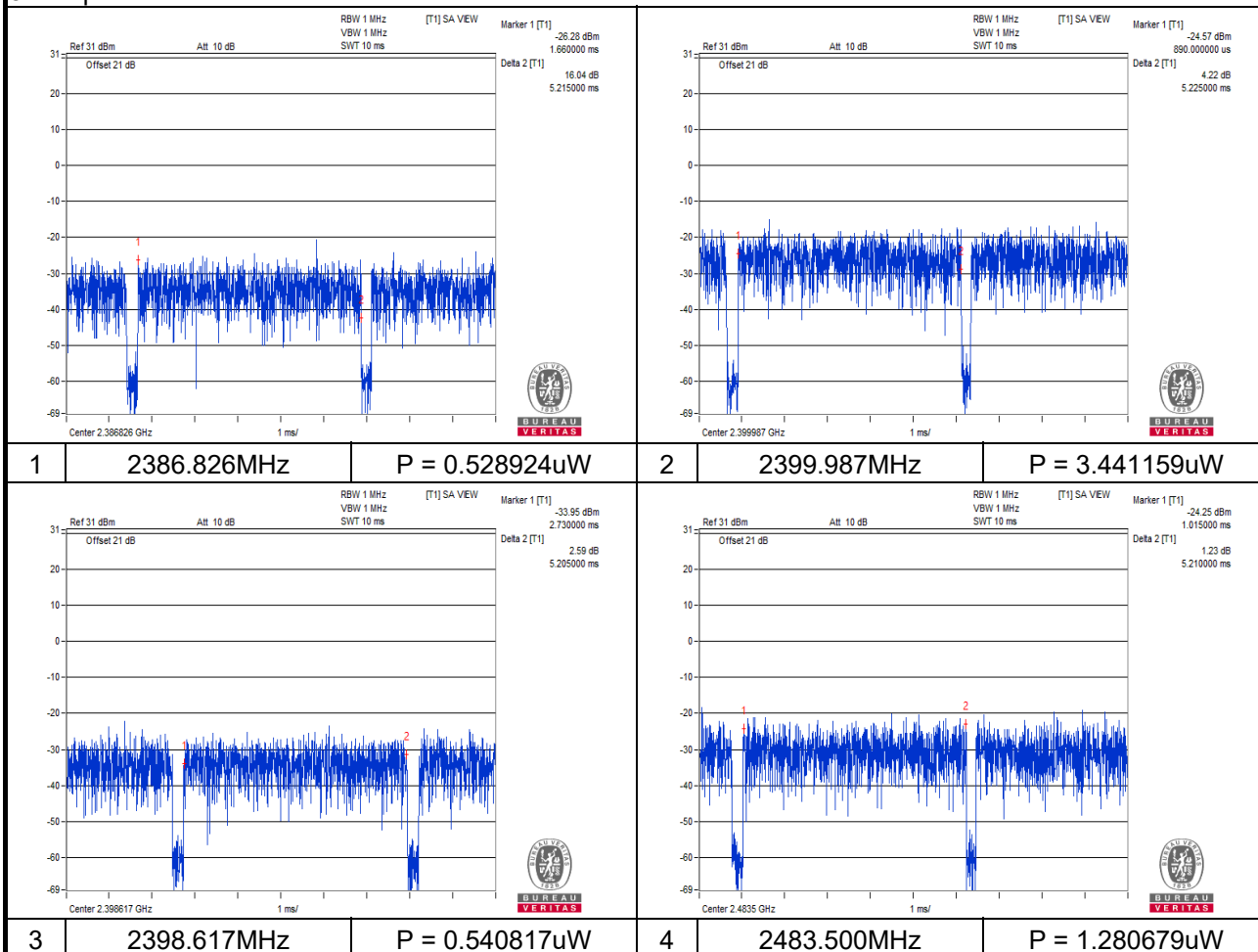
## Chain 1

TEST CHANNEL		CH 3 (2422MHz)			
TEST CONDITION	FREQUENCY RANGE(MHz)	FREQUENCY (MHz)	MEASURE. VALUE(uW)	LIMIT (uW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	992.603	0.001862	0.125	PASS
	1000.0 to 2387.0	2386.826	0.528924	1.25	PASS(1)
	2387.0 to 2400.0	2399.987	3.441159	12.5	PASS(2)
	2483.5 to 2496.5	2484.083	0.814704	12.5	PASS
	2496.5 to 12500.0	5863.928	0.635331	1.25	PASS
TEST CHANNEL		CH 7 (2442MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	989.330	0.002080	0.125	PASS
	1000.0 to 2387.0	2387.000	0.516416	1.25	PASS
	2387.0 to 2400.0	2398.617	0.540817	12.5	PASS(3)
	2483.5 to 2496.5	2483.682	3.069022	12.5	PASS
	2496.5 to 12500.0	5966.464	0.495450	1.25	PASS
TEST CHANNEL		CH 11 (2462MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	956.228	0.002046	0.125	PASS
	1000.0 to 2387.0	2386.306	0.222844	1.25	PASS
	2387.0 to 2400.0	2399.844	2.884032	12.5	PASS
	2483.5 to 2496.5	2483.500	1.280679	12.5	PASS(4)
	2496.5 to 12500.0	6795.504	0.452898	1.25	PASS

**NOTE:** 1. The spectrum plots are attached on the following pages.  
 2. (No.): The value was tested under Measuring Mode \*Zero Span.

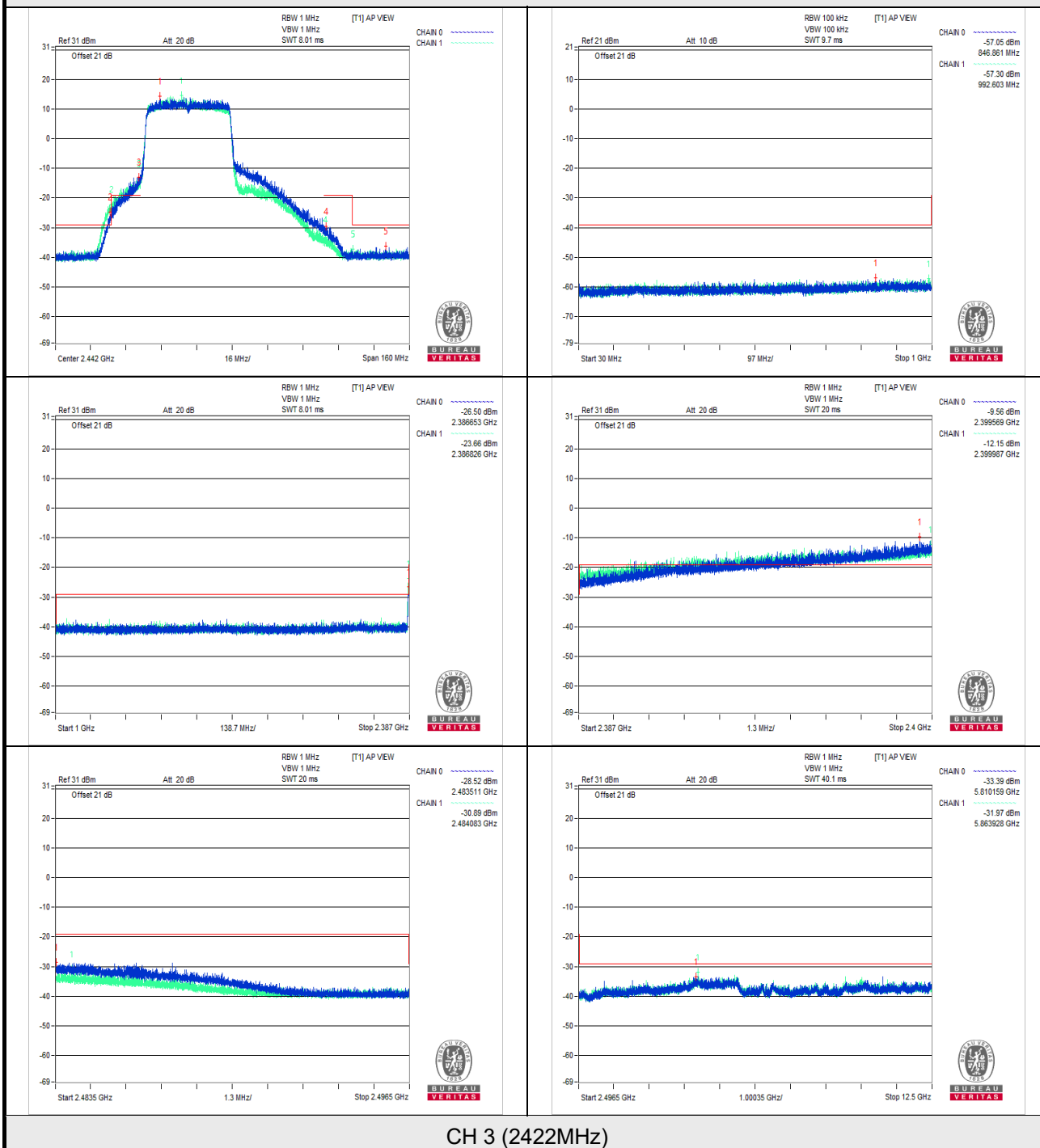
## Measuring Mode \*Zero Span

1. Set the spectrum analyzer as below and it takes in a value of all data point.
2. Regarding the all data value, it transforms the “dBm” value into “uW” value.
3. It adds the all values and calculates a grand total. Define a grand total as “P”.
4. It divides “P” by sample data point (ex.501) and calculates the mean value.
5. It reports the mean value.



## Graph

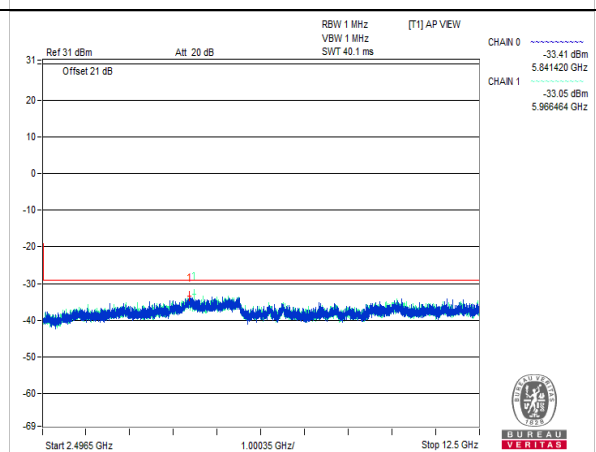
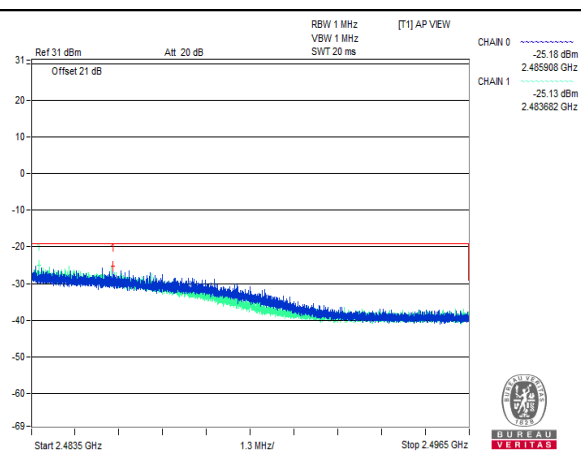
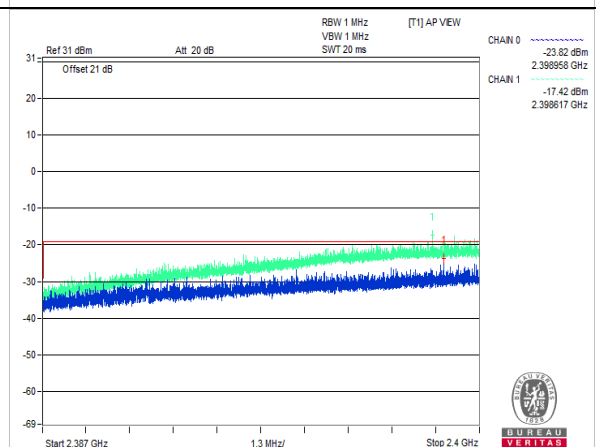
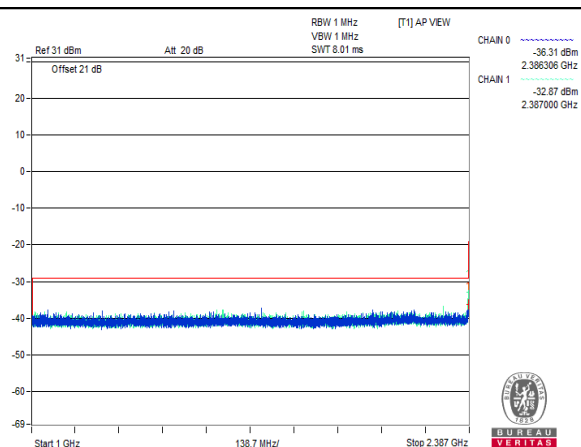
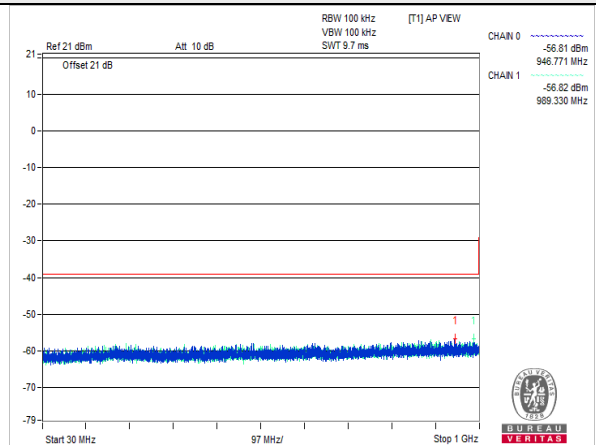
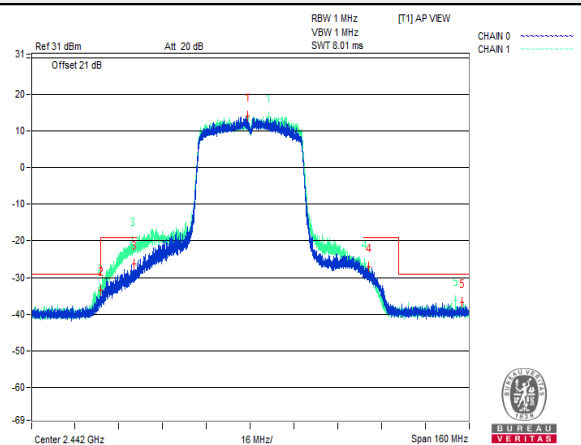
Vnormal



CH 3 (2422MHz)

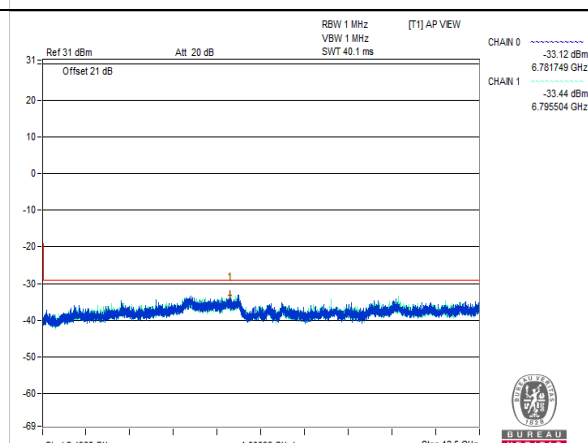
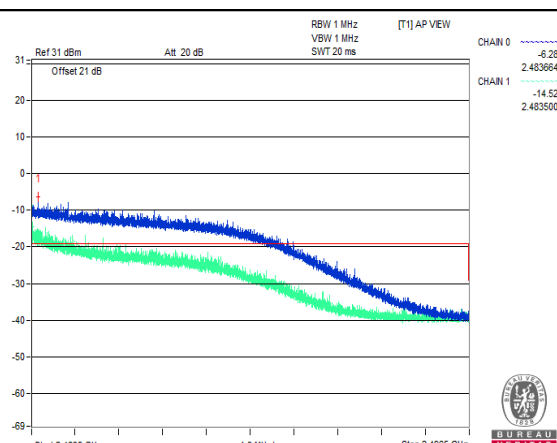
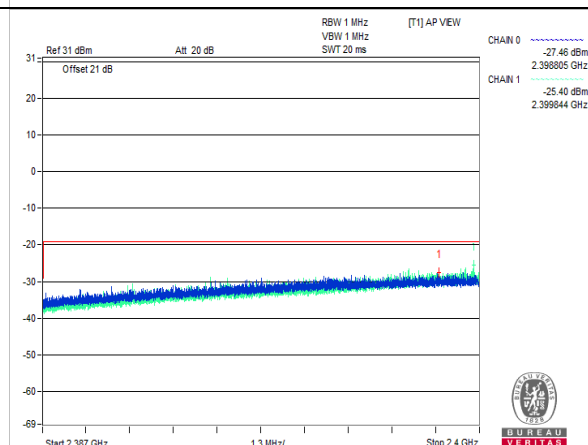
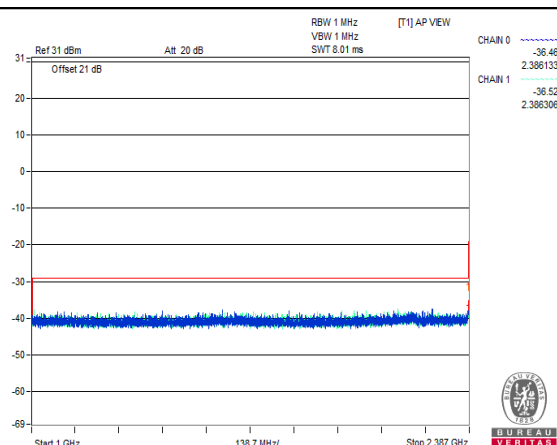
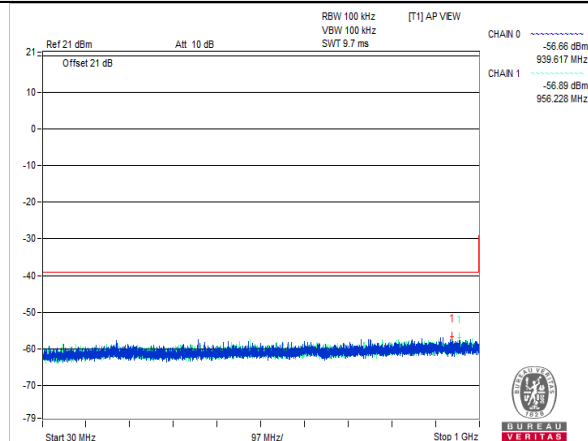
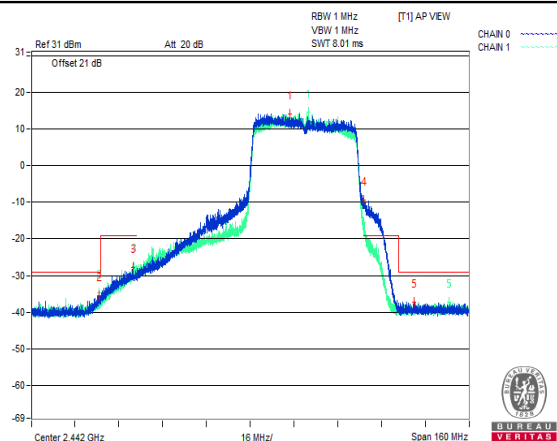


# Vnormal



CH 7 (2442MHz)

# Vnormal



CH 11 (2462MHz)

[ Worst result ] x [ Number of antenna ports ]

TEST CHANNEL		CH 3 (2422MHz)		
TEST CONDITION	FREQUENCY RANGE(MHz)	MEASURE. VALUE (uW)	LIMIT (uW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.003944	0.25	PASS
	1000.0 to 2387.0	1.057848	2.5	PASS
	2387.0 to 2400.0	6.882318	25	PASS
	2483.5 to 2496.5	2.812096	25	PASS
	2496.5 to 12500.0	1.270662	2.5	PASS
TEST CHANNEL		CH 7 (2442MHz)		
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.004168	0.25	PASS
	1000.0 to 2387.0	1.032832	2.5	PASS
	2387.0 to 2400.0	8.299080	25	PASS
	2483.5 to 2496.5	6.138044	25	PASS
	2496.5 to 12500.0	0.990900	2.5	PASS
TEST CHANNEL		CH 11 (2462MHz)		
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.004316	0.25	PASS
	1000.0 to 2387.0	0.451888	2.5	PASS
	2387.0 to 2400.0	5.768064	25	PASS
	2483.5 to 2496.5	17.189858	25	PASS
	2496.5 to 12500.0	0.975056	2.5	PASS

## 4.5 Antenna Power Measurement

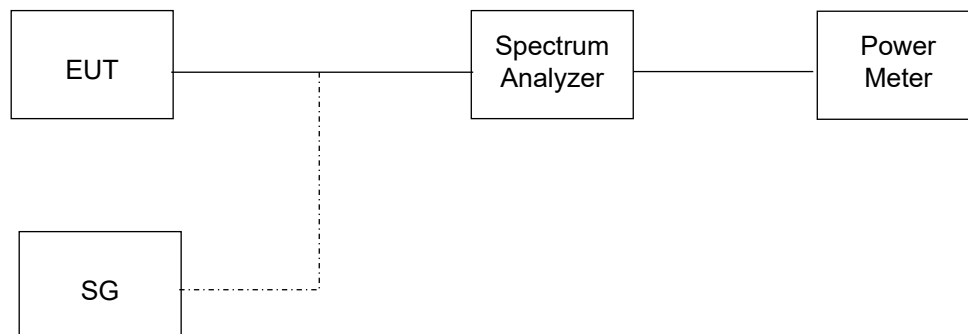
### 4.5.1 Limits of Antenna Power

Modulation Method	Frequency Band Used	Antenna Power (Max.)	EIRP Limit (Note 3)
DSSS	2400 – 2483.5 MHz	10mW/MHz	12.14 dBm/MHz ~ 22.14 dBm/MHz (16.368 mW/MHz ~ 163.68 mW/MHz)
OFDM (Note 1)	2400 – 2483.5 MHz	10mW/MHz	12.14 dBm/MHz ~ 22.14 dBm/MHz (16.368 mW/MHz ~ 163.68 mW/MHz)
OFDM (Note 2)	2400 – 2483.5 MHz	5 mW/MHz	9.13 dBm/MHz ~ 19.13 dBm/MHz (8.184 mW/MHz ~ 81.84 mW/MHz)

Note:

1. Occupied bandwidth is less than 26MHz
2. Occupied bandwidth is more than 26MHz and less than 38MHz
3. EIRP limit is variable by the HPBA, the HPBA (half-power beam width) of the antenna shall be  $360/A$  degrees or less, where  $A = \text{EIRP}/(2.14 \text{ dBi} + \text{"Antenna Power (limit)})$ .
4. Tolerance of antenna power shall be +20% (upper value) and -80% (lower value).

### 4.5.2 Test Setup



#### 4.5.3 Test Results

##### 802.11b

Voltage (Vdc)	Channel Number	Frequency (MHz)	Conducted RF Output Power Density (mW/MHz)			Radiated RF Output Power Density (mW/MHz)
			Chain 0	Chain 1	Total Power Density	
12	1	2412	3.112	3.574	6.686	15.928
	7	2442	3.452	2.774	6.226	14.832
	13	2472	3.252	3.07	6.322	15.061
Max. Limit (mW/MHz):					10	-
Rated Power (mW/MHz):					6.7	-
Tolerance of Antenna Power (mW/MHz):					1.34 ~ 8.04	-
Max. EIRP Limit (mW/MHz):					-	16.368

Note: 1. Antenna gain is 3.77 dBi.

2. The radiated RF output power density is a “calculated” value derived from the conducted value.

3. Formula: Radiated RF output power density = Conducted RF output power density + Antenna gain

##### 802.11g

Voltage (Vdc)	Channel Number	Frequency (MHz)	Conducted RF Output Power Density (mW/MHz)			Radiated RF Output Power Density (mW/MHz)
			Chain 0	Chain 1	Total Power Density	
12	1	2412	3.32	3.327	6.647	15.835
	7	2442	3.59	3.17	6.76	16.104
	13	2472	3.141	3.049	6.19	14.747
Max. Limit (mW/MHz):					10	-
Rated Power (mW/MHz):					6.8	-
Tolerance of Antenna Power (mW/MHz):					1.36 ~ 8.16	-
Max. EIRP Limit (mW/MHz):					-	16.368

Note: 1. Antenna gain is 3.77 dBi.

2. The radiated RF output power density is a “calculated” value derived from the conducted value.

3. Formula: Radiated RF output power density = Conducted RF output power density + Antenna gain

##### VHT20

Voltage (Vdc)	Channel Number	Frequency (MHz)	Conducted RF Output Power Density (mW/MHz)			Radiated RF Output Power Density (mW/MHz)
			Chain 0	Chain 1	Total Power Density	
12	1	2412	3.056	3.267	6.323	15.063
	7	2442	3.524	3.274	6.798	16.195
	13	2472	3.492	3.267	6.759	16.102
Max. Limit (mW/MHz):					10	-
Rated Power (mW/MHz):					6.8	-
Tolerance of Antenna Power (mW/MHz):					1.36 ~ 8.16	-
Max. EIRP Limit (mW/MHz):					-	16.368

Note: 1. Antenna gain is 3.77 dBi.

2. The radiated RF output power density is a “calculated” value derived from the conducted value.

3. Formula: Radiated RF output power density = Conducted RF output power density + Antenna gain

#### VHT40

Voltage (Vdc)	Channel Number	Frequency (MHz)	Conducted RF Output Power Density (mW/MHz)			Radiated RF Output Power Density (mW/MHz)
			Chain 0	Chain 1	Total Power Density	
12	3	2422	1.641	1.514	3.155	7.516
	7	2442	1.571	1.742	3.313	7.893
	11	2462	1.816	1.473	3.289	7.835
Max. Limit (mW/MHz):					5	-
Rated Power (mW/MHz):					3.4	-
Tolerance of Antenna Power (mW/MHz):					0.68 ~ 4.08	-
Max. EIRP Limit (mW/MHz):					-	8.184

Note: 1. Antenna gain is 3.77 dBi.

2. The radiated RF output power density is a "calculated" value derived from the conducted value.

3. Formula: Radiated RF output power density = Conducted RF output power density + Antenna gain

#### 802.11ax (HE20)

Voltage (Vdc)	Channel Number	Frequency (MHz)	Conducted RF Output Power Density (mW/MHz)			Radiated RF Output Power Density (mW/MHz)
			Chain 0	Chain 1	Total Power Density	
12	1	2412	3.274	3.524	6.798	16.195
	7	2442	3.557	3.056	6.613	15.754
	13	2472	2.839	2.501	5.34	12.722
Max. Limit (mW/MHz):					10	-
Rated Power (mW/MHz):					6.8	-
Tolerance of Antenna Power (mW/MHz):					1.36 ~ 8.16	-
Max. EIRP Limit (mW/MHz):					-	16.368

Note: 1. Antenna gain is 3.77 dBi.

2. The radiated RF output power density is a "calculated" value derived from the conducted value.

3. Formula: Radiated RF output power density = Conducted RF output power density + Antenna gain

#### 802.11ax (HE40)

Voltage (Vdc)	Channel Number	Frequency (MHz)	Conducted RF Output Power Density (mW/MHz)			Radiated RF Output Power Density (mW/MHz)
			Chain 0	Chain 1	Total Power Density	
12	3	2422	1.787	1.626	3.413	8.131
	7	2442	1.652	1.746	3.398	8.095
	11	2462	1.726	1.542	3.268	7.785
Max. Limit (mW/MHz):					5	-
Rated Power (mW/MHz):					3.4	-
Tolerance of Antenna Power (mW/MHz):					0.68 ~ 4.08	-
Max. EIRP Limit (mW/MHz):					-	8.184

Note: 1. Antenna gain is 3.77 dBi.

2. The radiated RF output power density is a "calculated" value derived from the conducted value.

3. Formula: Radiated RF output power density = Conducted RF output power density + Antenna gain

## 4.6 Spurious Emissions for Receiver

### 4.6.1 Limits of Spurious Emissions for Receiver

Frequencies (MHz)	Limit
Below 1GHz	$\leq 4\text{nW}/100\text{kHz}$ (-54dBm)
Above 1GHz	$\leq 20\text{nW}/\text{MHz}$ (-47dBm)

### 4.6.2 Test Setup



#### 4.6.3 Test Result

802.11b / 802.11g / VHT20 / 802.11ax (HE20)

##### Chain 0

TEST CHANNEL		CH 1 (2412MHz)			
TEST CONDITION	FREQUENCY RANGE(MHz)	FREQUENCY (MHz)	MEASURE. VALUE(nW)	LIMIT (nW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	960.108	0.002075	2.0	PASS
	1000.0 to 12500.0	10674.375	0.048978	10.0	PASS
TEST CHANNEL		CH 7 (2442MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	834.372	0.002178	2.0	PASS
	1000.0 to 12500.0	5850.125	0.050003	10.0	PASS
TEST CHANNEL		CH 13 (2472MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	860.562	0.001762	2.0	PASS
	1000.0 to 12500.0	6824.750	0.051050	10.0	PASS

**NOTE:** 1. The spectrum plots are attached on the following pages.

##### Chain 1

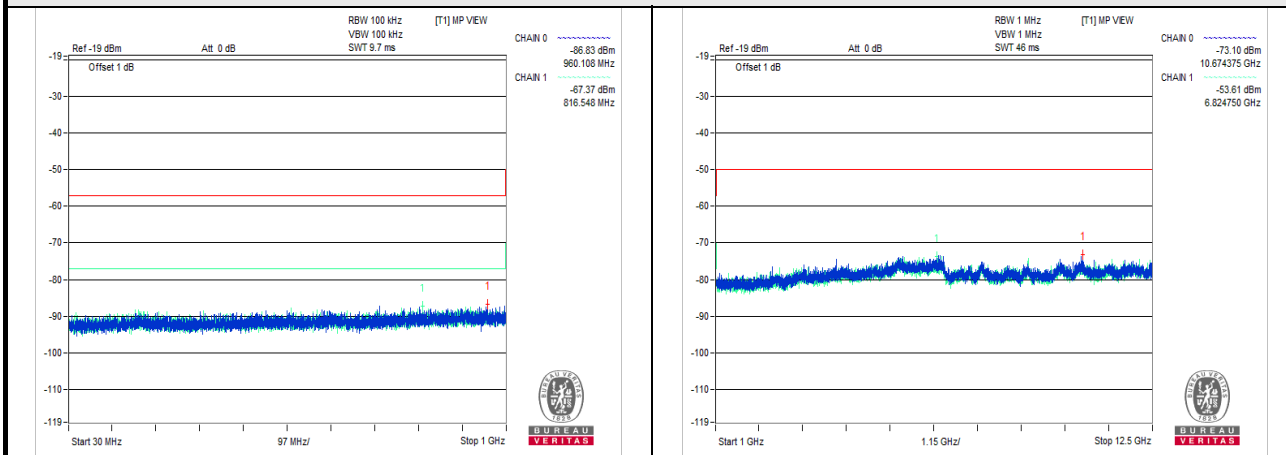
TEST CHANNEL		CH 1 (2412MHz)			
TEST CONDITION	FREQUENCY RANGE(MHz)	FREQUENCY (MHz)	MEASURE. VALUE(nW)	LIMIT (nW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	816.548	0.183231	2.0	PASS
	1000.0 to 12500.0	6824.750	4.355119	10.0	PASS
TEST CHANNEL		CH 7 (2442MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	993.210	0.181552	2.0	PASS
	1000.0 to 12500.0	6767.250	4.446313	10.0	PASS
TEST CHANNEL		CH 13 (2472MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	864.078	0.190985	2.0	PASS
	1000.0 to 12500.0	6433.750	4.613176	10.0	PASS

**NOTE:** 1. The spectrum plots are attached on the following pages.

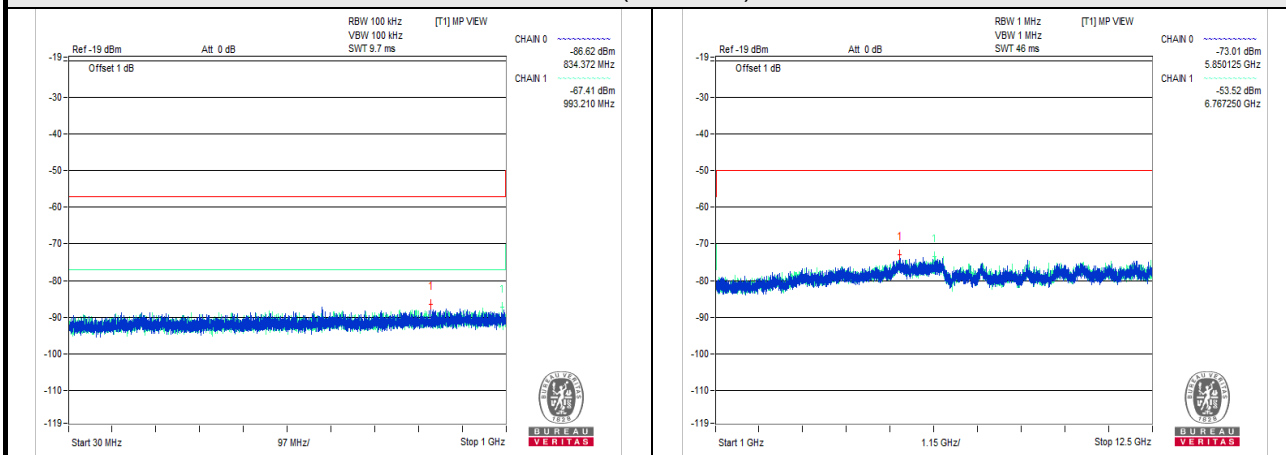


## Graph

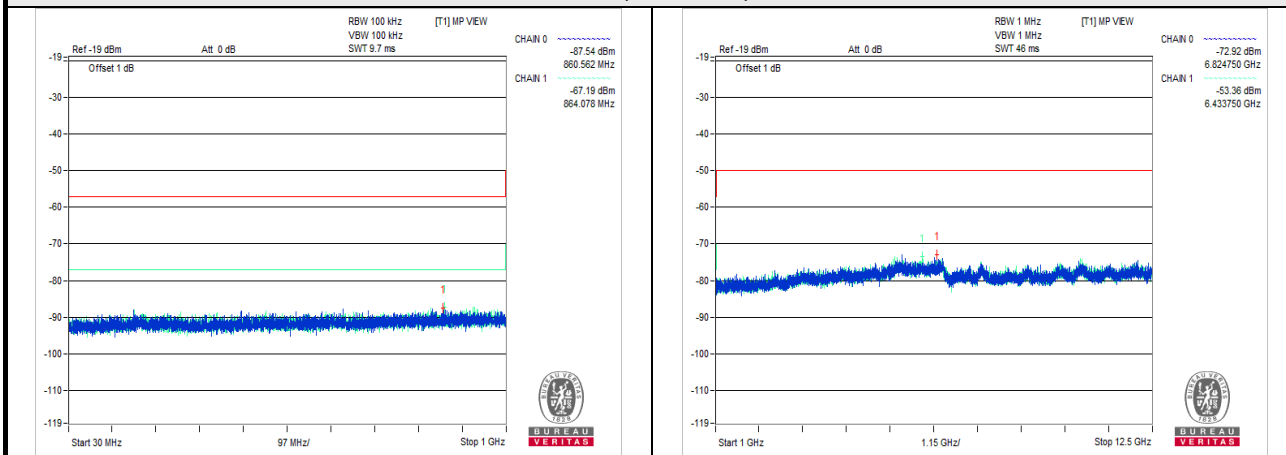
V<sub>normal</sub>



### CH 1 (2412MHz)



### CH 7 (2442MHz)



### CH 13 (2472MHz)



### Sum of each Chain

TEST CHANNEL		CH 1 (2412MHz)		
TEST CONDITION	FREQUENCY RANGE(MHz)	MEASURE. VALUE (nW)	LIMIT (nW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.185306	4	PASS
	1000.0 to 12500.0	4.404097	20	PASS
TEST CHANNEL		CH 7 (2442MHz)		
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.183730	4	PASS
	1000.0 to 12500.0	4.496316	20	PASS
TEST CHANNEL		CH 13 (2472MHz)		
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.192747	4	PASS
	1000.0 to 12500.0	4.664226	20	PASS

# VHT40 / 802.11ax (HE40)

## Chain 0

TEST CHANNEL		CH 3 (2422MHz)			
TEST CONDITION	FREQUENCY RANGE(MHz)	FREQUENCY (MHz)	MEASURE. VALUE(nW)	LIMIT (nW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	931.493	0.001820	2.0	PASS
	1000.0 to 12500.0	5827.125	0.041020	10.0	PASS
TEST CHANNEL		CH 7 (2442MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	926.886	0.002046	2.0	PASS
	1000.0 to 12500.0	6472.562	0.052723	10.0	PASS
TEST CHANNEL		CH 11 (2462MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	973.567	0.001901	2.0	PASS
	1000.0 to 12500.0	5841.500	0.048865	10.0	PASS

**NOTE:** 1. The spectrum plots are attached on the following pages.

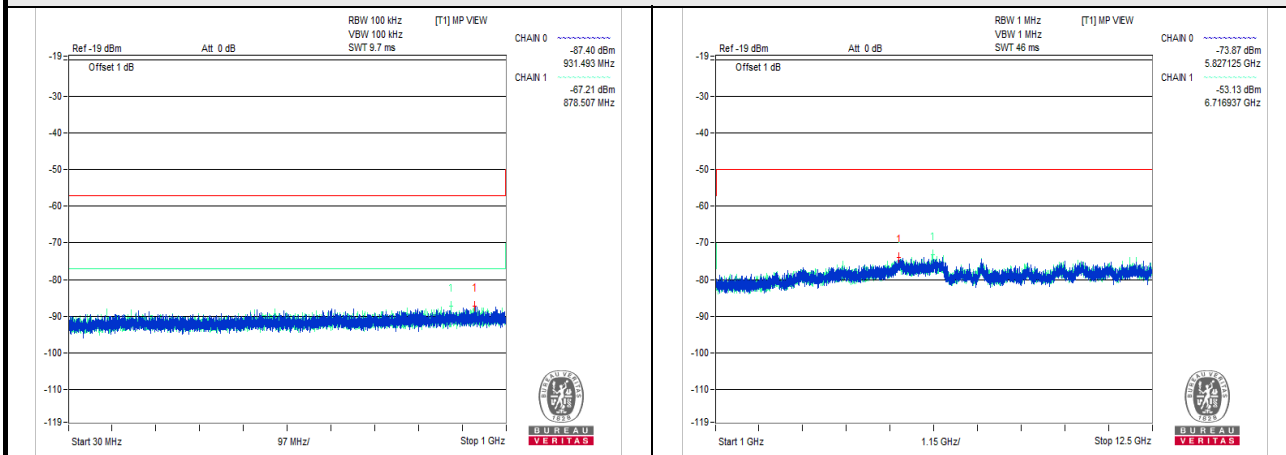
## Chain 1

TEST CHANNEL		CH 3 (2422MHz)			
TEST CONDITION	FREQUENCY RANGE(MHz)	FREQUENCY (MHz)	MEASURE. VALUE(nW)	LIMIT (nW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	878.507	0.190108	2.0	PASS
	1000.0 to 12500.0	6716.937	4.864072	10.0	PASS
TEST CHANNEL		CH 7 (2442MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	825.278	0.197242	2.0	PASS
	1000.0 to 12500.0	6977.125	5.834451	10.0	PASS
TEST CHANNEL		CH 11 (2462MHz)			
<b>V<sub>normal</sub></b>	30.0 to 1000.0	946.286	0.182810	2.0	PASS
	1000.0 to 12500.0	5788.312	5.584702	10.0	PASS

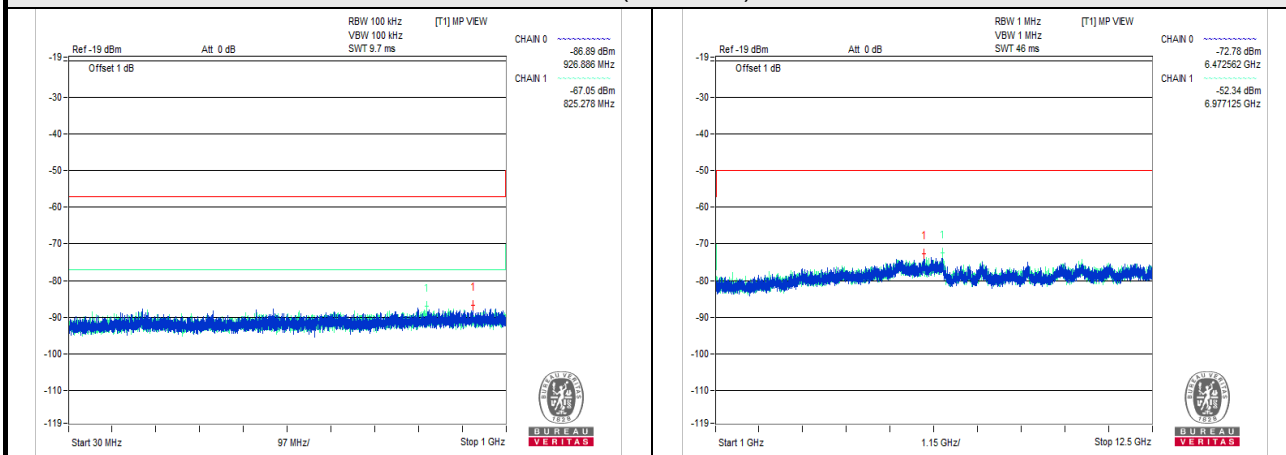
**NOTE:** 1. The spectrum plots are attached on the following pages.

## Graph

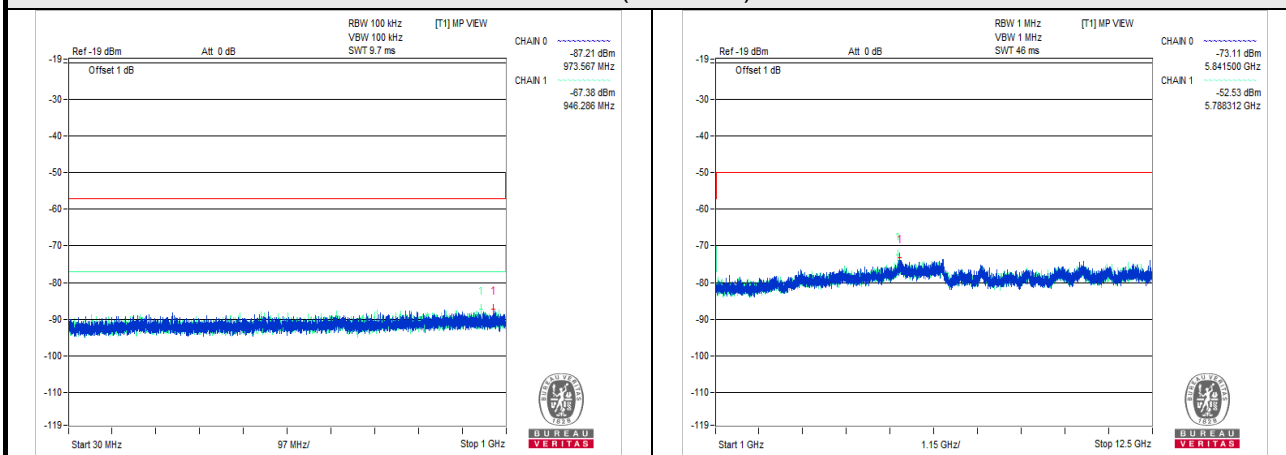
V<sub>normal</sub>



### CH 3 (2422MHz)



### CH 7 (2442MHz)



### CH 11 (2462MHz)

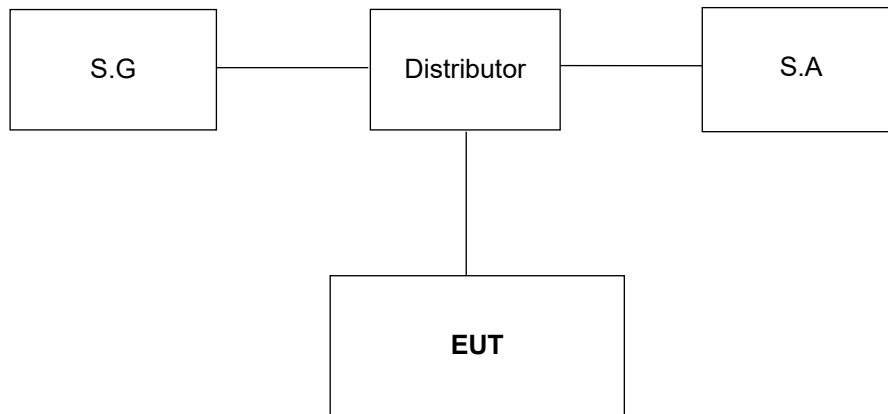


### Sum of each Chain

TEST CHANNEL		CH 3 (2422MHz)		
TEST CONDITION	FREQUENCY RANGE(MHz)	MEASURE. VALUE (nW)	LIMIT (nW)	RESULT
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.191928	4	PASS
	1000.0 to 12500.0	4.905092	20	PASS
TEST CHANNEL		CH 7 (2442MHz)		
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.199288	4	PASS
	1000.0 to 12500.0	5.887174	20	PASS
TEST CHANNEL		CH 11 (2462MHz)		
<b>V<sub>normal</sub></b>	30.0 to 1000.0	0.184711	4	PASS
	1000.0 to 12500.0	5.633567	20	PASS

## 4.7 Carrier Sense Capability

### 4.7.1 Measuring System Block Diagram



### 4.7.2 Measuring Operation Procedures

- a) Turn the standard signal generator output OFF. Leave the equipment under test to be ready for transmission and verify the transmission with the spectrum analyzer.
- b) Set the equipment under test to the receiving state.
- c) Turn the standard signal generator ON and leave the equipment under test to be ready for transmission and verify with the spectrum analyzer that no transmission is being made.

#### 4.7.3 Level of the Ambient Carrier

##### VHT40 / 802.11ax (HE40)

Frequency (MHz)	Pcs (dBm)
2422	-42.03
2442	-42.10
2462	-42.17

Note:

$Pcs (dBm) = 22.79 + Gr - 20\log(F)$ .

Gr: Antenna gain (2.4GHz: 2.87 dBi).

F: Transmission frequency (MHz).

#### 4.7.4 Test Result

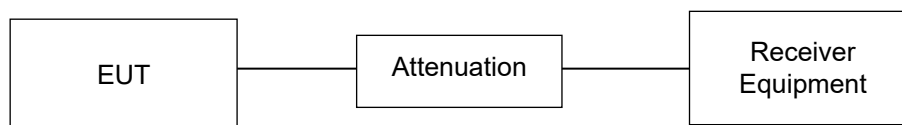
Environmental Conditions	25 deg.C, 60 % RH
Link Mode	Test Result
WiFi	Pass

## 4.8 Interference Prevention Function

### 4.8.1 Limits of Interference Prevention Function

Radio equipment used mainly on the same premises and automatically transmits or receives identification code.

### 4.8.2 Test Setup



### 4.8.3 Test Results

Environmental Conditions	25 deg.C, 60 % RH
Link Mode	Test Result
WiFi	Pass



## 4.9 Number of Carriers within 1 MHz Bandwidth in OFDM

### 4.9.1 Limit of Number of Carriers

For each 1MHz bandwidth in OFDM, there should be at least 1 carrier

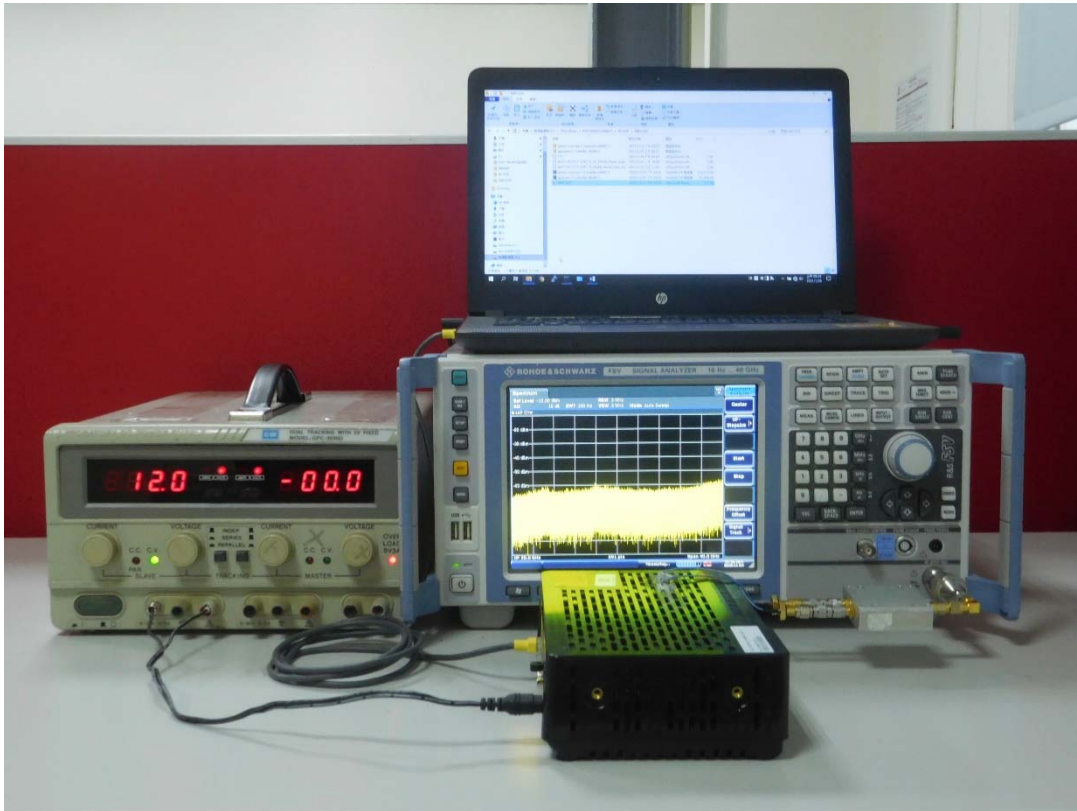
### 4.9.2 Test Setup



### 4.9.3 Test Result

About OFDM Technical, one OFDM Channel will have 52 sub-carriers. At present, we observe this product via the spectrum, and we know that there are 3 carriers in 1 MHz bandwidth in OFDM.

## 5 Photographs of the Test Configuration



## Appendix - Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

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The address and road map of all our labs can be found in our web site also.

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