

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart C (Section 15.247)
Report No.: RFBENL-WTW-P24060724B
FCC ID: RYK-WNFQ291BEBT
Product: WiFi 7/BT module
Brand: Sparklan
Model No.: WNFQ-292BE(BT)
Series Model: WNFQ-291BE(BT), WNFQ-291BEI(BT)
Received Date: 2025/3/5
Test Date: 2025/4/28 ~ 2025/8/15
Issued Date: 2025/9/17

Applicant: SparkLAN Communications, Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration / 723255 / TW2022

Designation Number:

Approved by: _____, **Date:** 2025/9/17
May Chen / Manager

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Prepared by : Phoenix Huang / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBENL-WTW-P24060724B	Original release.	2025/9/17

1 Certificate

Product: WiFi 7/BT module

Brand: Sparklan

Test Model: WNFQ-292BE(BT)

Series Model: WNFQ-291BE(BT), WNFQ-291BEI(BT)

Sample Status: Engineering sample

Applicant: SparkLAN Communications, Inc.

Test Date: 2025/4/28 ~ 2025/8/15

Standard: 47 CFR FCC Part 15, Subpart C (Section 15.247)

Measurement ANSI C63.10-2020

procedure:

KDB 558074 D01 15.247 Meas Guidance v05r02

KDB 662911 D01 Multiple Transmitter Output v02r01

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 RF characteristics under the conditions specified in this report.

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
Standard / Clause	Test Item	Result	Remark
15.247(b)	RF Output Power	Pass	Meet the requirement of limit.
15.247(e)	Power Spectral Density	N/A	Refer to Note 1 below
15.247(a)(2)	6 dB Bandwidth	N/A	Refer to Note 1 below
15.247(d)	Conducted Out of Band Emissions	N/A	Refer to Note 1 below
15.207	AC Power Conducted Emissions	Pass	Minimum passing margin is -12.98 dB at 25.87500 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -4.1 dB at 32.70 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -1.91 dB at 2483.52 MHz
15.203	Antenna Requirement	Pass	Antenna connector is MHF 4L, I-PEX MHF4, RP-SMA (M), MHF4L to SMA-F not a standard connector.

Note:

- Only RF Output Power, AC Power Conducted Emissions and Unwanted Emissions test items were performed for this addendum. The others testing data refer to original test report (Report No.: RFBENL-WTW-P24060724).
- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Specification	Expanded Uncertainty (k=2) (±)
RF Output Power	-	1.1 dB
AC Power Conducted Emissions	150 kHz ~ 30 MHz	1.9 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.1 dB
	30 MHz ~ 1 GHz	5.4 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	5.1 dB
	18 GHz ~ 40 GHz	5.3 dB

The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and no modifications required for compliance.

3 General Information

3.1 General Description

Product	WiFi 7/BT module
Brand	Sparklan
Test Model	WNFQ-292BE(BT)
Series Model	WNFQ-291BE(BT), WNFQ-291BEI(BT)
Status of EUT	Engineering sample
Power Supply Rating	3.3 Vdc from host equipment
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM for OFDM in VHT mode 4096QAM for OFDMA in 11ax mode 4096QAM for OFDMA in 11be mode
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	802.11b: up to 11 Mbps 802.11g: up to 54 Mbps 802.11n: up to 300 Mbps VHT: up to 500 Mbps 802.11ax: up to 709.1 Mbps 802.11be: up to 688.2 Mbps
Operating Frequency	2.412 GHz ~ 2.472 GHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20), VHT20, 802.11ax (HE20), 802.11be (EHT20): 13 802.11n (HT40), VHT40, 802.11ax (HE40), 802.11be (EHT40): 9
Resource Unit (RU)	Single RU: 26-tone, 52-tone, 106-tone, 242-tone, 484-tone Multi-RU (Small RU): 52-tone + 26-tone, 106-tone + 26-tone
Output Power	473.327 mW (26.75 dBm)

Note:

- This report is prepared for FCC class II permissive change. The difference compared with the Report No.: RFBENL-WTW-P24060724 as the following:
 - ◆ Add model: WNFQ-292BE(BT)
 - ◆ Add 2nd source pin to pin chip: QCC2076 for model WNFQ-292BE(BT).
 - ◆ Disable WiFi-7 bandwidth 320 MHz for model WNFQ-292BE(BT).
 - ◆ Upgraded ANSI C63.10 standard version.
 - ◆ Remove NPTH for WNFQ-292BE(BT).
- According to above conditions, there are RF Output Power, AC Power Conducted Emissions and Unwanted Emissions test items need to be performed. All data for meeting the requirement is verified.
- All models are listed as below.

Brand	Model	Difference
Sparklan	WNFQ-291BEI(BT)	All models are electrically identical, different model names are for marketing purpose.
	WNFQ-291BE(BT)	
	WNFQ-292BE(BT)	1. Chip QCC2076 2. Disable WiFi-7 bandwidth 320 MHz

From the above models, model: WNFQ-292BE(BT) was selected as representative model for the test and its data was recorded in this report.

- There are Bluetooth (EDR, BLE, QHS) and WLAN (2.4 GHz & 5 GHz & 5.9 GHz & 6 GHz) technology used for the EUT.

5. Simultaneously transmission combination.

DBS			
Combination	Technology		
1	WLAN(2.4GHz)_Ant 0+1		WLAN(5GHz) _Ant 0+1
2	WLAN(2.4GHz) _Ant 0+1		WLAN(6GHz) _Ant 0+1
HBS+BT			
Combination	Technology		
3	Bluetooth_Ant 0+1		WLAN(5GHz) _Ant 0+1
4	Bluetooth_Ant 0+1		WLAN(6GHz) _Ant 0+1
5	WLAN(5GHz_U-NII-1, U-NII-2A)_Ant 0+1	WLAN(5GHz_U-NII-2C, U-NII-3, U-NII-4) _Ant 0+1	Bluetooth
6	WLAN(5GHz_U-NII-1, U-NII-2A)_Ant 0+1	WLAN(6GHz) _Ant 0+1	Bluetooth

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

6. The EUT support OFDMA and Partial RU mode, therefore partial RU combination were investigated and the worst case scenario was identified.
7. 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 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna Set	RF Chain No.	Brand	Model	Antenna Net Gain (dBi)	Frequency Range (GHz)	Cable Loss (dB)	Antenna Type	Connector Type	Cable Length (mm)
1	Chain0/1	Hong-Bo	260-25094	3.53	2.4~2.4835	0.74	PIFA	MHF 4L	300
				3.06	5.15~5.25	1.16			
				3.07	5.25~5.35	1.18			
				4.81	5.47~5.725	1.26			
				4.2	5.725~5.850	1.28			
2	Chain0/1	Hong-Bo	260-25083	5.09	5.850~5.895	1.29	PIFA	MHF 4L	300
				5.14	5.925~6.425	1.35			
				5.09	6.425~6.525	1.38			
				5.16	6.525~6.875	1.45			
				5.12	6.875~7.125	1.50			
3	Chain0/1	Hong-Bo	260-25084	3.22	2.4~2.4835	0.49	Monopole	MHF 4L	200
				3.35	5.150~5.250	0.76			
				3.42	5.250~5.350	0.77			
				4.77	5.470~5.725	0.80			
				4.72	5.725~5.850	0.84			
				4.71	5.850~5.895	0.84			
				4.75	5.925~6.425	0.86			
				4.29	6.425~6.525	0.91			
				4.81	6.525~6.875	0.96			
				4.74	6.875~7.125	0.98			

Antenna Set	RF Chain No.	Brand	Model	Antenna Net Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connector Type	Cable Length (mm)
4	Chain0/1	SparkLAN	AD-513AX	3.11	2.4~2.4835	Dipole	I-PEX MHF4	150
				4.46	5.150~5.850			
				4.07	5.850~5.895			
				4.53	5.925~6.425			
				4.06	6.425~6.525			
				4.04	6.525~6.875			
				3.97	6.875~7.125			
5	Chain0/1	SparkLAN	AD-510AX	2.27	2.4~2.4835	Dipole	RP-SMA (M)	150
				2.88	5.150~5.850			
				2.6	5.850~5.895			
				3.23	5.925~6.425			
				3.34	6.425~6.525			
				3.52	6.525~6.875			
6	Chain0/1	SparkLAN	AD-512AX	3.52	6.875~7.125	Dipole	RP-SMA (M)	150
				2.35	2.4~2.4835			
				3.00	5.150~5.850			
				2.80	5.850~5.895			
				2.87	5.925~6.425			
				3.02	6.425~6.525			
7	Chain0/1	SparkLAN	AD-516AX	3.02	6.525~6.875	Dipole	I-PEX MHF4	250
				2.61	6.875~7.125			
				1.65	2.4~2.4835			
				4.3	5.150~5.850			
				4.38	5.850~5.895			
				4.43	5.925~6.425			
8	Chain0/1	Johanson	2450AD18A6050	4.45	6.425~6.525	Chip	MHF4L to SMA-F	-
				4.46	6.525~6.875			
				4.48	6.875~7.125			
				2	2.4~2.4835			
				1.5	5.150~5.850			
				2.7	5.850~5.895			
				2.7	5.925~6.425			
				2.7	6.425~6.525			
				2.7	6.525~6.875			
				2.7	6.875~7.125			

* Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.

2. The EUT incorporates a MIMO function:

2.4 GHz 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
802.11be (EHT20)	2TX	2RX
802.11be (EHT40)	2TX	2RX
802.11ax (RU26/52/106/242/484)	2TX	2RX
802.11be (RU26/52/106/242/484 MRU52+26/106+26)	2TX	2RX

Note: The modulation and bandwidth are similar for 802.11n mode for 20 MHz (40 MHz), VHT mode for 20 MHz (40 MHz), 802.11ax mode for 20 MHz (40 MHz) and 802.11be mode for 20 MHz (40 MHz). Therefore the investigated worst case is the representative mode in test report.

3.3 Channel List

13 channels are provided for 802.11b, 802.11g, 802.11n (HT20), VHT20, 802.11ax (HE20), 802.11be (EHT20):

Channel	Frequency	Channel	Frequency
1	2412 MHz	8	2447 MHz
2	2417 MHz	9	2452 MHz
3	2422 MHz	10	2457 MHz
4	2427 MHz	11	2462 MHz
5	2432 MHz	12	2467 MHz
6	2437 MHz	13	2472 MHz
7	2442 MHz		

9 channels are provided for 802.11n (HT40), VHT40, 802.11ax (HE40), 802.11be (EHT40):

Channel	Frequency	Channel	Frequency
3	2422 MHz	8	2447 MHz
4	2427 MHz	9	2452 MHz
5	2432 MHz	10	2457 MHz
6	2437 MHz	11	2462 MHz
7	2442 MHz		

3.4 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates.
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Following channel(s) was (were) selected for the final test as listed below:

Test Item	EUT Configure Mode	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter	RU/MRU Index
RF Output Power	-	802.11b	CDD	1, 6, 11, 12, 13	DBPSK	1Mb/s	NA
		802.11g		1, 2, 6, 11, 12, 13	BPSK	6Mb/s	NA
		802.11be (EHT20)		1, 2, 6, 11, 12, 13	BPSK	MCS0	NA
		802.11be (EHT40)		3, 4, 6, 8, 9, 10, 11	BPSK	MCS0	NA
		802.11be (EHT20) 26-tone RU		1, 2, 6, 10, 11, 12, 13	BPSK	MCS0	0, 0, 0, 8, 8, 8, 8
		802.11be (EHT20) 52-tone RU		1, 2, 6, 10, 11, 12, 13	BPSK	MCS0	37, 37, 37, 40, 40, 40, 40
		802.11be (EHT20) 106-tone RU		1, 2, 6, 10, 11, 12, 13	BPSK	MCS0	53, 53, 53, 54, 54, 54, 54
		802.11be (EHT20) 242-tone RU		6	BPSK	MCS0	61
		802.11be (EHT40) 484-tone RU		6	BPSK	MCS0	65
		802.11be (EHT20) 52+26-tone MRU		6	BPSK	MCS0	UL_RU52+26_Low_70_MCS0 UL_RU52+26_High_72_MCS0
		802.11be (EHT20) 106+26-tone MRU		6	BPSK	MCS0	UL_RU106+26_Low_82_MCS0 UL_RU106+26_High_83_MCS0
AC Power Conducted Emissions	C	802.11b	CDD	1	DBPSK	1Mb/s	NA
Unwanted Emissions below 1 GHz	A, B	802.11b	CDD	1	DBPSK	1Mb/s	NA
Unwanted Emissions above 1 GHz	A, B	802.11g	CDD	11	BPSK	6Mb/s	NA
		802.11be (EHT20) 106-tone RU		1, 2, 6, 10, 11, 12, 13	BPSK	MCS0	53, 53, 53, 54, 54, 54, 54
EUT Configure Mode:	A	EUT only (remove 50 ohm terminator and Connect to the appropriate equipment)					
	B	EUT with 50 ohm terminator					
	C	EUT with antenna (Model: 260-25094)					
Note: For unwanted emission test items, the tested channel was chosen the worst case as mode represent to report							

3.5 Duty Cycle of Test Signal

802.11b: Duty cycle = 1.362 ms / 1.378 ms x 100% = 98.8%

802.11g: Duty cycle = 2.085 ms / 2.11 ms x 100% = 98.8%

802.11be (EHT20): Duty cycle = 2.713 ms / 2.748 ms x 100% = 98.7%

802.11be (EHT40): Duty cycle = 1.579 ms / 1.601 ms x 100% = 98.6%

802.11be (EHT20) 26-tone RU: Duty cycle = 5.075 ms / 5.11 ms x 100% = 99.3%

802.11be (EHT20) 52-tone RU: Duty cycle = 5.05 ms / 5.135 ms x 100% = 98.3%

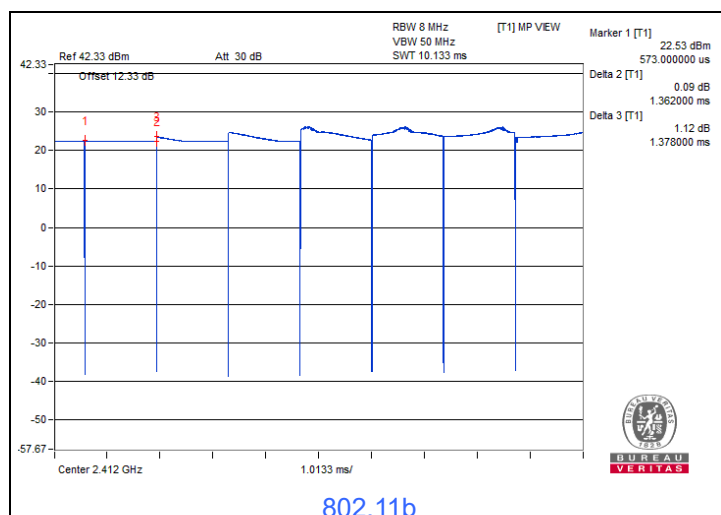
802.11be (EHT20) 106-tone RU: Duty cycle = 3.04 ms / 3.075 ms x 100% = 98.9%

802.11be (EHT20) 242-tone RU: Duty cycle = 5.058 ms / 5.111 ms x 100% = 99.0%

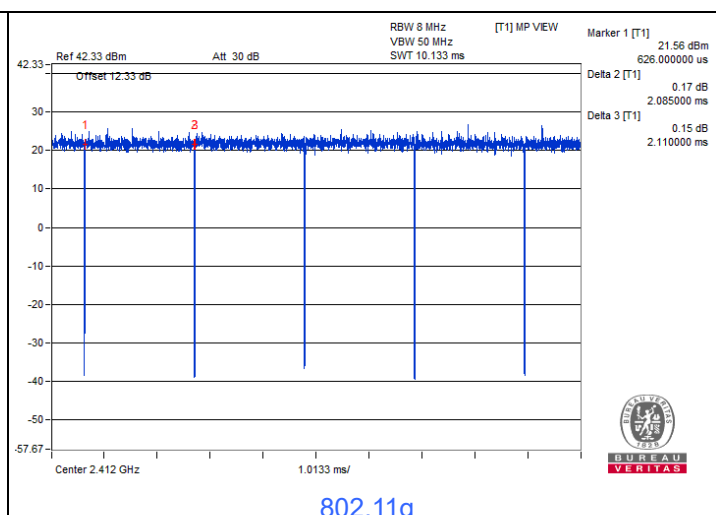
802.11be (EHT40) 484-tone RU: Duty cycle = 3.319 ms / 3.357 ms x 100% = 98.9%

802.11be (EHT20) 52+26-tone MRU: Duty cycle = 5.058 ms / 5.111 ms x 100% = 99.0%

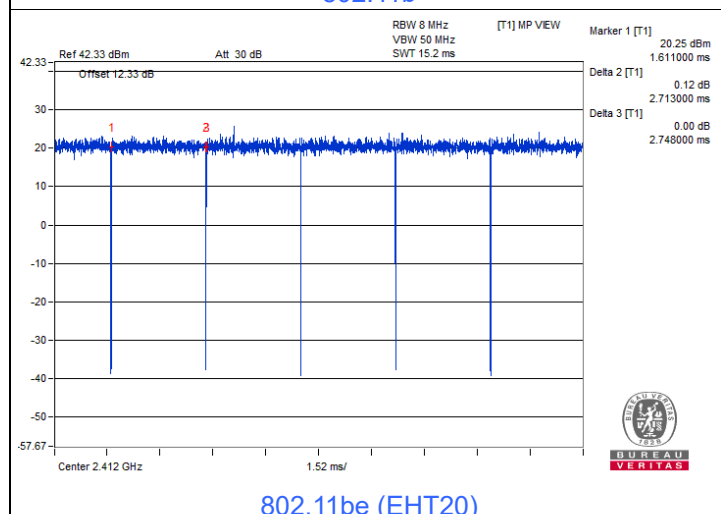
802.11be (EHT20) 106+26-tone MRU: Duty cycle = 5.058 ms / 5.111 ms x 100% = 99.0%



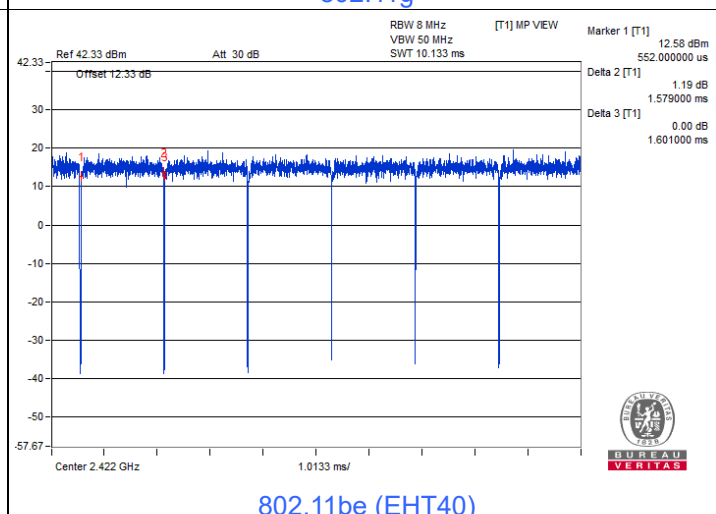
802.11b



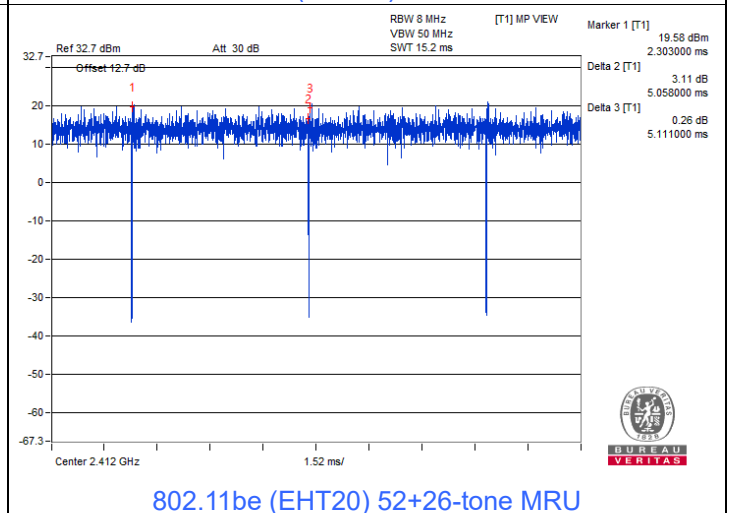
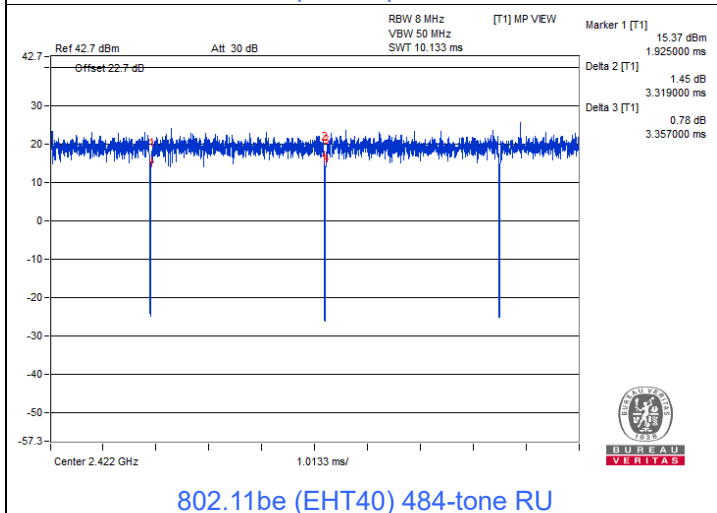
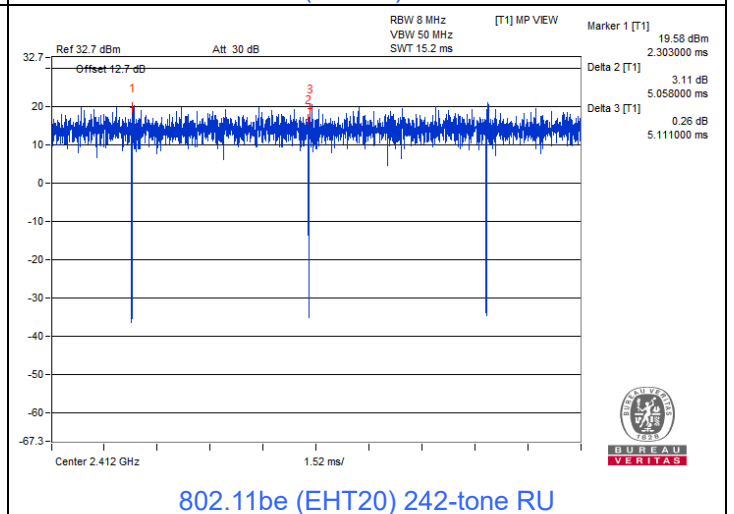
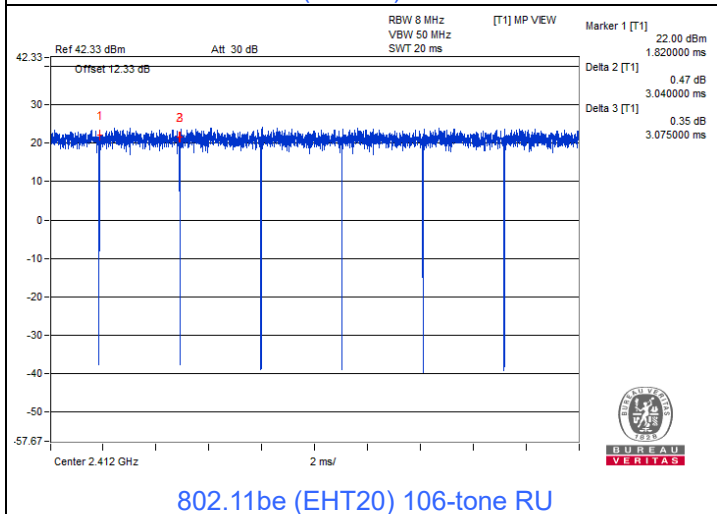
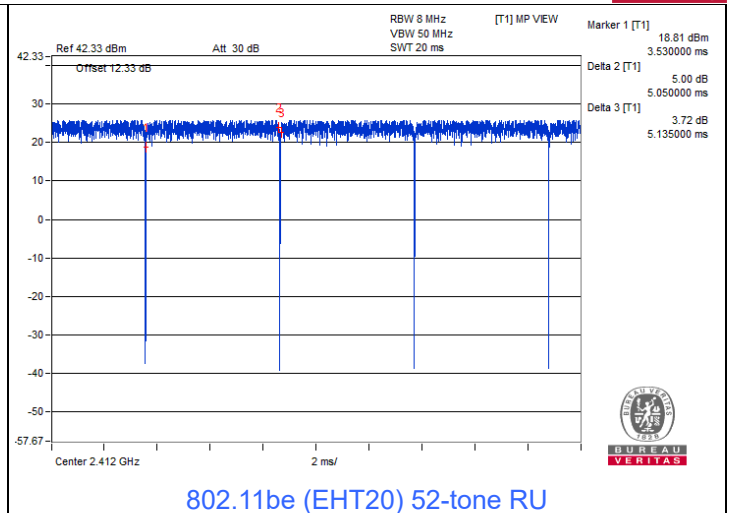
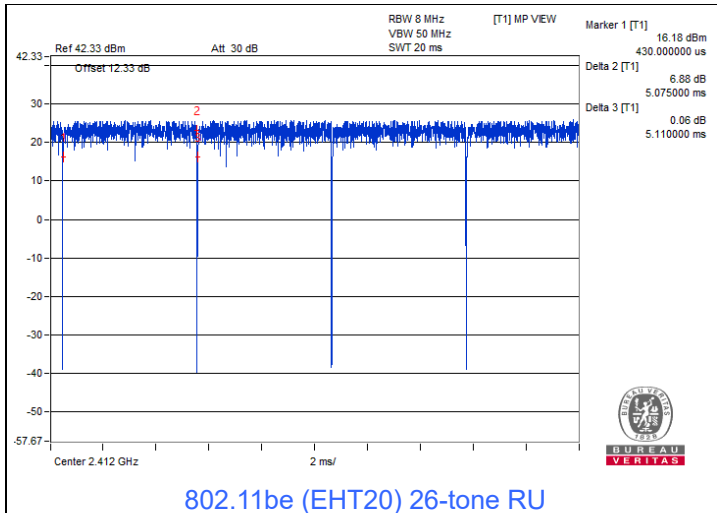
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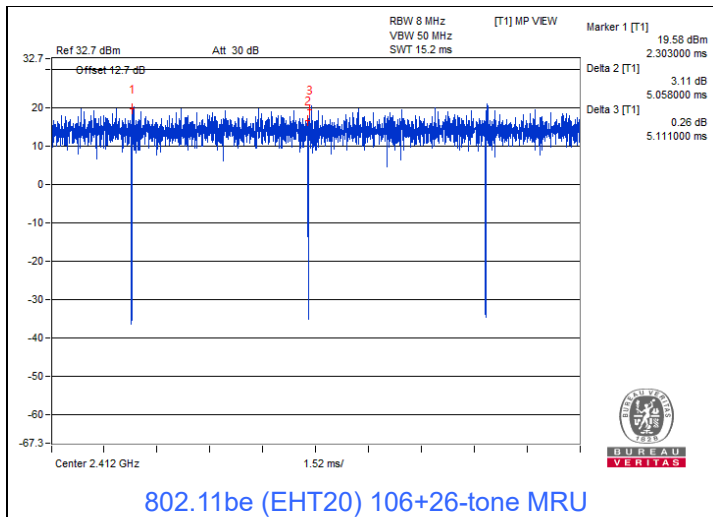


802.11be (EHT20)



802.11be (EHT40)





3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Laptop	Dell	E6430	N/A	N/A	Supplied by applicant
B	Test Tool	Qualcomm	N/A	N/A	N/A	Supplied by applicant
C	Adapter	Dell	LLA65NS2-01	N/A	N/A	Supplied by applicant
D	Test Tool	Qualcomm	N/A	N/A	N/A	Supplied by applicant

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	DC Cable	1	1.8	NO	1	Supplied by applicant
2	AC Cable	1	1.5	NO	0	Supplied by applicant

4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Fixed Attenuator Woken	00800A1K01A-20	00800A1K01A-20-02	2025/5/23	2026/5/22
Pulse Power Sensor Anritsu	MA2411B	1726434	2025/6/3	2026/6/2
RF Power Meter Anritsu	ML2495A	1529002	2025/6/3	2026/6/2

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2025/8/12

4.2 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance Telegartner	50 ohm	3	2024/11/1	2025/10/31
EMI Test Receiver R&S	ESCS 30	100375	2024/5/20	2025/5/19
Fixed Attenuator STI	STI02-2200-10	005	2025/2/17	2026/2/16
LISN R&S	ESH3-Z5	835239/001	2025/3/27	2026/3/26
		848773/004	2024/10/7	2025/10/6
RF Coaxial Cable JYEBAO	5D-FB	COCCAB-001	2025/2/17	2026/2/16
Software BVADT	BVADT_Cond_V7.3.7.4	N/A	N/A	N/A

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2025/5/6 ~ 2025/5/7

4.3 Unwanted Emissions below 1 GHz

Mode A

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Fixed Attenuator Woken	00800A1K01A-10	00800A1K01A-10-01	2024/5/29	2025/5/28
PXA Signal Analyzer Keysight	N9030A	MY55330160	2025/1/16	2026/1/15
Software	ADT_RF Test Software V8	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2025/4/28

Mode B

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-361	2024/10/8	2025/10/7
Fix tool for Boresight antenna tower BV	FBA-01	FBA_SIP01	N/A	N/A
Fixed Attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	2025/2/8	2026/2/7
Loop Antenna TESEQ	HLA 6121	63620	2024/10/17	2025/10/16
MXE EMI Receiver Agilent	N9038A	MY50010156	2024/6/5	2025/6/4
Preamplifier EMCI	EMC330N	980852	2025/2/8	2026/2/7
	EMC001340	980142	2025/2/17	2026/2/16
RF Coaxial Cable PEWC	8D	001	2025/2/8	2026/2/7
		966-3-2	2025/2/8	2026/2/7
		966-3-3	2025/2/8	2026/2/7
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2025/5/6

4.4 Unwanted Emissions above 1 GHz

Mode A

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Fixed Attenuator Woken	00800A1K01A-10	00800A1K01A-10-01	2025/5/23	2026/5/22
PXA Signal Analyzer Keysight	N9030A	MY55330160	2025/1/16	2026/1/15
Software	ADT_RF Test Software V8	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2025/8/15

Mode B

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	N/A	N/A
Fix tool for Boresight antenna tower BV	FBA-01	FBA_SIP01	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-406	2024/11/10	2025/11/9
	BBHA 9170	9170-739	2024/11/10	2025/11/9
MXE EMI Receiver Agilent	N9038A	MY50010156	2024/6/5	2025/6/4
Preamplifier EMCI	EMC12630SE	980384	2025/1/14	2026/1/13
	EMC184045SE	980387	2024/8/8	2025/8/7
PXA Signal Analyzer Keysight	N9030B	MY57141948	2024/5/20	2025/5/19
RF Coaxial Cable EMCI	EMC102-KM-KM-1200	160924	2025/1/24	2026/1/23
	EMC102-KM-KM-4000	200214	2025/1/24	2026/1/23
	EMC104-SM-SM-1500	180504	2025/1/18	2026/1/17
	EMC104-SM-SM-2000	180601	2025/1/18	2026/1/17
	EMC104-SM-SM-6000	210201	2025/1/18	2026/1/17
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2025/5/2 ~ 2025/5/5

5 Limits of Test Items

5.1 RF Output Power

For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30 dBm)

Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

5.2 AC Power Conducted Emissions

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Notes:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

5.3 Unwanted Emissions below 1 GHz

Radiated emissions up to 1 GHz which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20 dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = $20 \log$ Emission level (uV/m).

5.4 Unwanted Emissions above 1 GHz

Radiated emissions above 1 GHz which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20 dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
Above 960	500	3

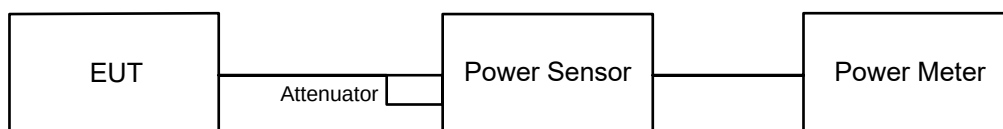
Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup



6.1.2 Test Procedure

Peak Power:

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

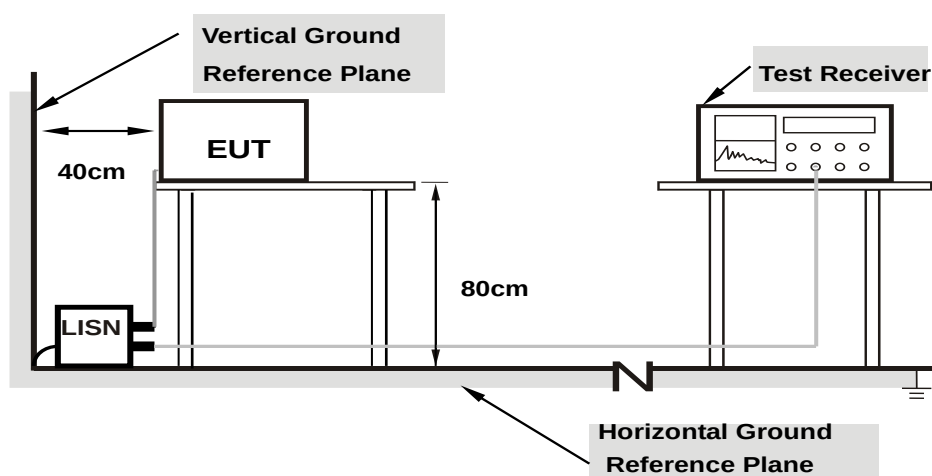
The power meter video bandwidth is greater than or equal to the DTS bandwidth and use a fast responding diode detector.

Average Power:

Average power sensor was used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

6.2 AC Power Conducted Emissions

6.2.1 Test Setup



Note: 1.Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.2.2 Test Procedure

- Exploratory ac power-line conducted emission measurements: The EUT shall be operated on the mid channel and in the mode with highest output power unless the fundamental operates in the AC power-line emission test range then the EUT shall be operated in the range of typical modes of operation.
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50 uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

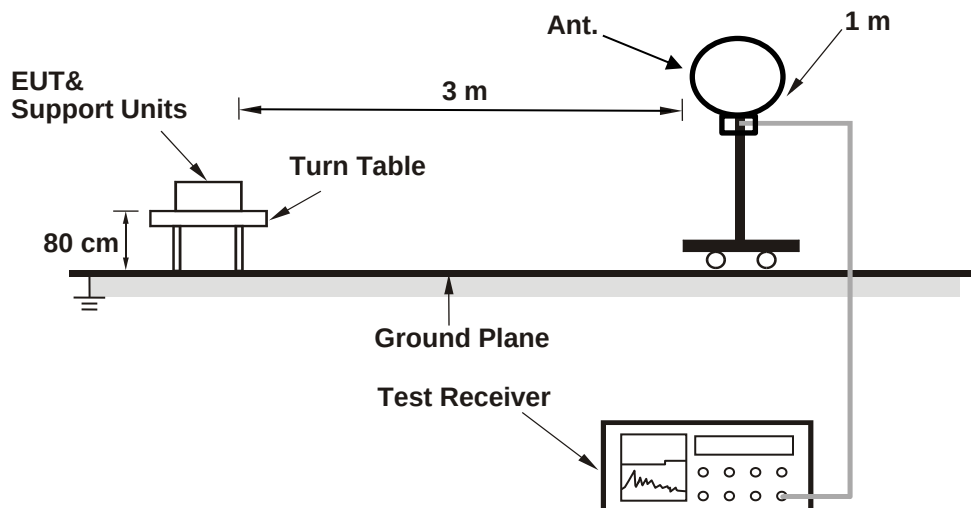
Note: The resolution bandwidth and video bandwidth of test receiver is 9 kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15 MHz-30 MHz.

6.3 Unwanted Emissions below 1 GHz

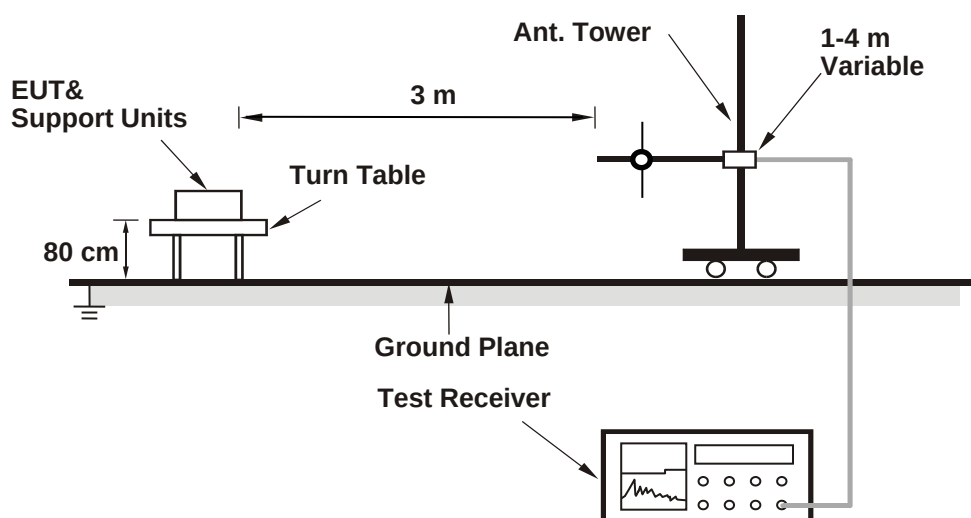
6.3.1 Test Setup

For Radiated Configuration:

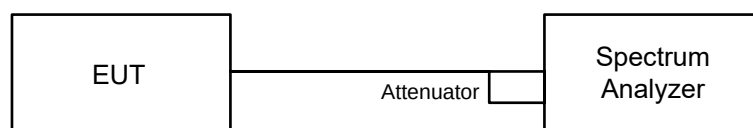
For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



For Conducted Configuration:



For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.3.2 Test Procedure

Radiated versus Conducted Measurement.

The unwanted emission limits in both the restricted and non-restricted bands are based on antenna-port conducted measurements in conjunction with cabinet emissions tests are permitted to demonstrate compliance.

The following steps was performed:

- a. Cabinet emissions measurements. Radiated measurement was performed to ensure that cabinet emissions are below the emission limits. For the cabinet-emission measurements the antenna was replaced by a termination matching the nominal impedance of the antenna.
- b. Conducted tests was performed using equipment that matches the nominal impedance of the antenna assembly used with the EUT.
- c. EIRP calculation. A value representative of an upper bound on out-of-band antenna gain (in dBi) shall be added to the measured antenna-port conducted emission power to compute EIRP within the specified measurement bandwidth. (For emissions in the restricted bands, additional calculations are required to convert EIRP to field strength at the specified distance.) The upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands or 2 dBi, whichever is greater.
- d. EIRP adjustments for multiple outputs. (Follow the procedures specified in FCC KDB Publication 662911)
- e. For all of Radiation emission test

For Radiated emission below 30 MHz

- e-1.1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- e-1.2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- e-1.3. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- e-1.4. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e-1.5. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode, except for the frequency band (9 kHz to 90 kHz and 110 kHz to 490 kHz) set to average detect function and peak detect function.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200 Hz at frequency below 150 kHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz or 10 kHz at frequency (150 kHz to 30 MHz).
3. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated emission above 30 MHz

- e-2.1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- e-2.2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- e-2.3. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e-2.4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e-2.5. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

Radiated versus Conducted Measurement

For Radiated measurement:

The level of unwanted emissions was measured when radiated by the cabinet or structure of the equipment with the antenna connector(s) terminated by a specified load (cabinet radiation).

For Conducted measurement:

The level of unwanted emissions was measured as their power in a specified load (conducted spurious emissions).

Conducted Unwanted Emission Convert Formula

- a. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.
- b. EIRP Level (dBm) = Raw Value(dBm) + Correction Factor(dB)
- c. Correction Factor is directional gain, and the composite gain will be used when signal support the correlated signal.
For the out of band spurious the gain for the specific band may have been used rather than the highest gain across all bands.
For the band edge the gain for the specific band may have been used.

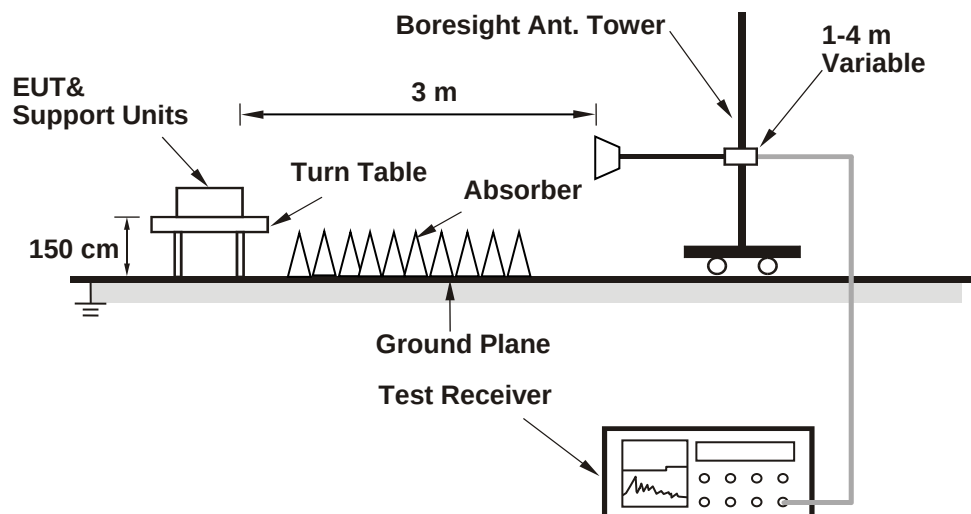
Notes:

1. In restricted bands below 1000 MHz, add upper bound on ground plane reflection:
For frequencies between 30 MHz and 1000 MHz, add 4.7 dB.
2. The conducted emission test was considered some factor to compute test result.

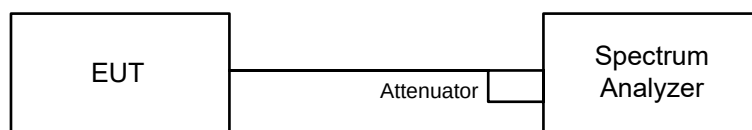
6.4 Unwanted Emissions above 1 GHz

6.4.1 Test Setup

For Radiated Configuration:



For Conducted Configuration:



For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.4.2 Test Procedure

Radiated versus Conducted Measurement.

The unwanted emission limits in both the restricted and non-restricted bands are based on antenna-port conducted measurements in conjunction with cabinet emissions tests are permitted to demonstrate compliance.

The following steps was performed:

- Cabinet emissions measurements. Radiated measurement was performed to ensure that cabinet emissions are below the emission limits. For the cabinet-emission measurements the antenna was replaced by a termination matching the nominal impedance of the antenna.
- Conducted tests was performed using equipment that matches the nominal impedance of the antenna assembly used with the EUT.
- EIRP calculation. A value representative of an upper bound on out-of-band antenna gain (in dBi) shall be added to the measured antenna-port conducted emission power to compute EIRP within the specified measurement bandwidth. (For emissions in the restricted bands, additional calculations are required to convert EIRP to field strength at the specified distance.) The upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands or 2 dBi, whichever is greater.
- EIRP adjustments for multiple outputs. (Follow the procedures specified in FCC KDB Publication 662911)
- For all of Radiation emission test
 - The EUT was placed on the top of a rotating table 1.5 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
 - The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

- e-3. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e-4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e-5. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Notes:

1. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) and Average detection (AV) at frequency above 1 GHz.
2. For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10 Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1 GHz.
3. All modes of operation were investigated and the worst-case emissions are reported.

Radiated versus Conducted Measurement

For Radiated measurement:

The level of unwanted emissions was measured when radiated by the cabinet or structure of the equipment with the antenna connector(s) terminated by a specified load (cabinet radiation).

For Conducted measurement:

The level of unwanted emissions was measured as their power in a specified load (conducted spurious emissions).

For Verified radiated measurement:

The level of unwanted emissions was measured when radiated by the cabinet or structure of the equipment with the antenna connector(s) terminated by a specified load (cabinet radiation).

Conducted Unwanted Emission Convert Formula

a. Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.

b. EIRP Level (dBm) = Raw Value(dBm) + Correction Factor(dB).

c. Correction Factor is directional gain, and the composite gain will be used when signal support the correlated signal.

For the out of band spurious the gain for the specific band may have been used rather than the highest gain across all bands.

For the band edge the gain for the specific band may have been used.

Note: The conducted emission test was considered some factor to compute test result.

7 Test Results of Test Item

7.1 RF Output Power

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko
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For Peak Power

802.11b

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	21.84	20.75	271.607	24.34	30	Pass
6	2437	21.56	20.48	254.905	24.06	30	Pass
11	2462	21.22	20.24	238.116	23.77	30	Pass
12	2467	20.42	19.28	194.877	22.90	30	Pass
13	2472	14.20	13.90	50.85	17.06	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.53 dBi $\leq$ 6 dBi, so the output power limit shall not be reduced.

802.11g

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	23.74	22.46	412.79	26.16	30	Pass
2	2417	23.90	22.65	429.548	26.33	30	Pass
6	2437	23.66	22.35	404.065	26.06	30	Pass
11	2462	22.75	21.00	314.257	24.97	30	Pass
12	2467	19.70	18.35	161.717	22.09	30	Pass
13	2472	1.20	1.30	2.667	4.26	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.53 dBi $\leq$ 6 dBi, so the output power limit shall not be reduced.

802.11be (EHT20)

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	23.37	22.65	401.347	26.04	30	Pass
2	2417	24.02	23.10	456.522	26.59	30	Pass
6	2437	24.30	23.10	473.327	26.75	30	Pass
11	2462	21.00	19.70	219.218	23.41	30	Pass
12	2467	20.12	18.93	180.964	22.58	30	Pass
13	2472	1.50	0.56	2.55	4.07	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.53 dBi $\leq$ 6 dBi, so the output power limit shall not be reduced.

802.11be (EHT40)

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	19.59	18.70	165.122	22.18	30	Pass
4	2427	20.18	19.62	195.854	22.92	30	Pass
6	2437	21.80	21.10	280.181	24.47	30	Pass
8	2447	19.20	18.52	154.298	21.88	30	Pass
9	2452	19.27	18.00	147.624	21.69	30	Pass
10	2457	17.18	16.12	93.166	19.69	30	Pass
11	2462	-0.23	0.20	1.9955	3.00	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.53 dBi $\leq$ 6 dBi, so the output power limit shall not be reduced.

802.11be (EHT20) 26-tone RU

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	23.20	23.60	438.016	26.41	30	Pass
2	2417	23.02	23.66	432.721	26.36	30	Pass
6	2437	23.54	23.51	450.332	26.54	30	Pass
10	2457	23.36	23.60	445.857	26.49	30	Pass
11	2462	23.50	22.46	400.07	26.02	30	Pass
12	2467	22.46	21.45	315.834	24.99	30	Pass
13	2472	-3.80	-3.30	0.8846	-0.53	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.53 dBi $\leq$ 6 dBi, so the output power limit shall not be reduced.

802.11be (EHT20) 52-tone RU

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	22.68	23.66	417.627	26.21	30	Pass
2	2417	23.00	23.69	433.41	26.37	30	Pass
6	2437	23.90	23.42	465.257	26.68	30	Pass
10	2457	23.42	23.36	436.556	26.40	30	Pass
11	2462	22.66	22.08	345.937	25.39	30	Pass
12	2467	20.96	21.00	250.631	23.99	30	Pass
13	2472	-2.00	-2.61	1.1792	0.72	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.53 dBi $\leq$ 6 dBi, so the output power limit shall not be reduced.

802.11be (EHT20) 106-tone RU

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	23.41	23.64	450.487	26.54	30	Pass
2	2417	23.37	23.64	448.477	26.52	30	Pass
6	2437	23.77	23.66	470.506	26.73	30	Pass
10	2457	23.76	23.16	444.698	26.48	30	Pass
11	2462	23.32	22.52	393.432	25.95	30	Pass
12	2467	20.60	20.13	217.854	23.38	30	Pass
13	2472	0.20	-0.71	1.8963	2.78	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.53 dBi $\leq$ 6 dBi, so the output power limit shall not be reduced.

802.11be (EHT20) 242-tone RU

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
6	2437	24.08	23.31	470.148	26.72	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.53 dBi $\leq$ 6 dBi, so the output power limit shall not be reduced.

802.11be (EHT40) 484-tone RU

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
6	2437	22.12	21.30	297.826	24.74	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.53 dBi $\leq$ 6 dBi, so the output power limit shall not be reduced.

802.11be (EHT20) 52+26-tone MRU

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
6	2437	24.01	23.35	468.04	26.70	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.53 dBi $\leq$ 6 dBi, so the output power limit shall not be reduced.

802.11be (EHT20) 106+26-tone MRU

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
6	2437	24.05	23.29	467.402	26.70	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 3.53 dBi $\leq$ 6 dBi, so the output power limit shall not be reduced.

For Average Power

802.11b

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	19.21	18.12	148.232	21.71
6	2437	18.90	17.98	140.431	21.47
11	2462	18.40	17.76	128.887	21.10
12	2467	17.54	16.53	101.732	20.07
13	2472	12.10	11.12	29.16	14.65

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	17.88	17.28	114.833	20.60
2	2417	18.53	17.43	126.62	21.03
6	2437	18.22	17.10	117.66	20.71
11	2462	17.11	15.94	90.669	19.57
12	2467	14.39	13.26	48.663	16.87
13	2472	-3.10	-5.70	0.7589	-1.20

802.11be (EHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	17.10	16.72	98.276	19.92
2	2417	17.65	17.20	110.691	20.44
6	2437	17.90	17.32	115.611	20.63
11	2462	14.45	13.86	52.183	17.18
12	2467	13.60	12.93	42.542	16.29
13	2472	-3.88	-6.00	0.6604	-1.80

802.11be (EHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
3	2422	14.20	13.48	48.587	16.87
4	2427	14.66	14.23	55.727	17.46
6	2437	16.13	15.56	76.995	18.86
8	2447	14.28	13.56	49.49	16.95
9	2452	13.80	12.92	43.577	16.39
10	2457	11.80	10.86	27.326	14.37
11	2462	-4.40	-5.47	0.6469	-1.89

802.11be (EHT20) 26-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	17.53	17.97	119.285	20.77
2	2417	16.87	18.02	112.028	20.49
6	2437	18.40	18.19	135.1	21.31
10	2457	18.50	17.53	127.419	21.05
11	2462	18.00	17.54	119.85	20.79
12	2467	15.82	15.88	76.92	18.86
13	2472	-9.11	-8.73	0.2567	-5.91

802.11be (EHT20) 52-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	16.63	16.90	95.004	19.78
2	2417	16.39	16.96	93.21	19.69
6	2437	17.33	16.75	101.391	20.06
10	2457	18.29	17.50	123.687	20.92
11	2462	17.25	16.95	102.633	20.11
12	2467	15.96	16.20	81.133	19.09
13	2472	-7.69	-7.33	0.3551	-4.50

802.11be (EHT20) 106-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	17.96	18.29	129.97	21.14
2	2417	17.32	18.37	122.658	20.89
6	2437	18.27	18.06	131.116	21.18
10	2457	18.35	17.79	128.509	21.09
11	2462	17.30	16.65	99.941	20.00
12	2467	14.99	14.80	61.75	17.91
13	2472	-4.71	-4.54	0.6896	-1.61

802.11be (EHT20) 242-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
6	2437	18.66	17.93	135.538	21.32

802.11be (EHT40) 484-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
6	2437	16.52	16.02	84.869	19.29

802.11be (EHT20) 52+26-tone MRU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
6	2437	18.88	18.10	141.833	21.52

802.11be (EHT20) 106+26-tone MRU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
6	2437	18.90	18.15	142.938	21.55

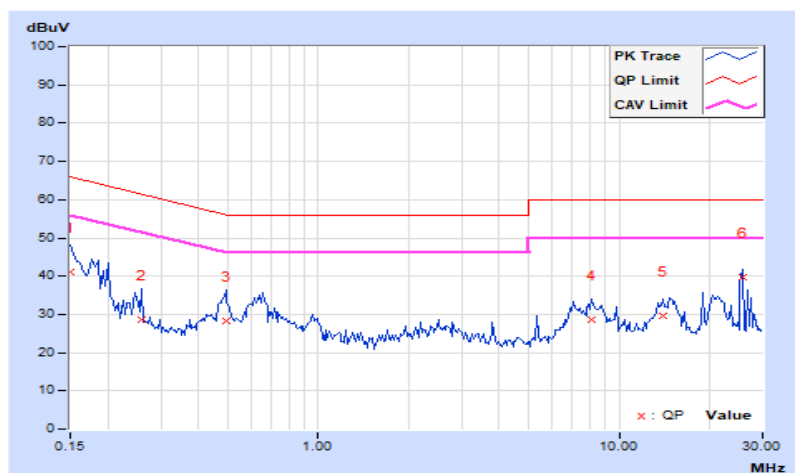
7.2 AC Power Conducted Emissions

RF Mode	802.11b	Channel	CH 1 : 2412 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 63% RH
Tested By	Louis Yang		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.96	31.28	20.57	41.24	30.53	66.00	56.00	-24.76	-25.47
2	0.25938	9.99	18.79	1.56	28.78	11.55	61.45	51.45	-32.67	-39.90
3	0.49375	10.00	18.35	11.78	28.35	21.78	56.10	46.10	-27.75	-24.32
4	8.05469	10.37	18.36	12.31	28.73	22.68	60.00	50.00	-31.27	-27.32
5	13.92969	10.64	19.12	13.75	29.76	24.39	60.00	50.00	-30.24	-25.61
6	25.87500	11.04	28.72	25.98	39.76	37.02	60.00	50.00	-20.24	-12.98

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

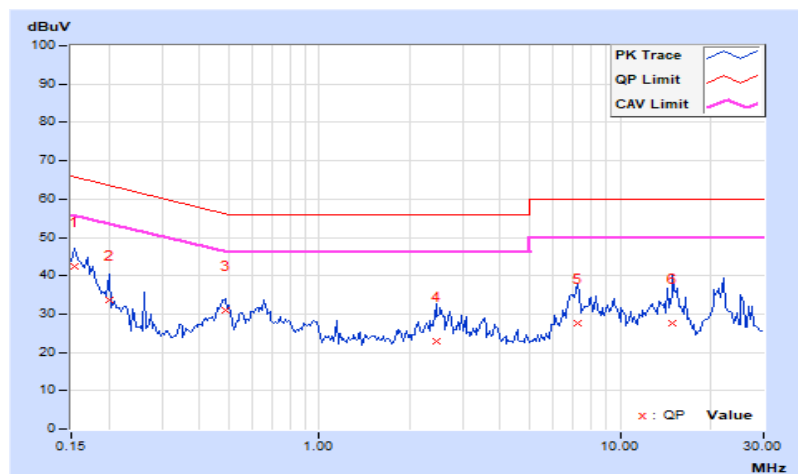


RF Mode	802.11b	Channel	CH 1 : 2412 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25 °C, 63% RH
Tested By	Louis Yang		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	10.01	32.55	22.96	42.56	32.97	65.79	55.79	-23.23	-22.82
2	0.20078	10.02	23.65	7.17	33.67	17.19	63.58	53.58	-29.91	-36.39
3	0.48984	10.01	20.91	12.69	30.92	22.70	56.17	46.17	-25.25	-23.47
4	2.44141	10.12	12.78	7.19	22.90	17.31	56.00	46.00	-33.10	-28.69
5	7.18750	10.30	17.21	11.21	27.51	21.51	60.00	50.00	-32.49	-28.49
6	14.93359	10.60	17.16	8.90	27.76	19.50	60.00	50.00	-32.24	-30.50

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



7.3 Unwanted Emissions below 1 GHz

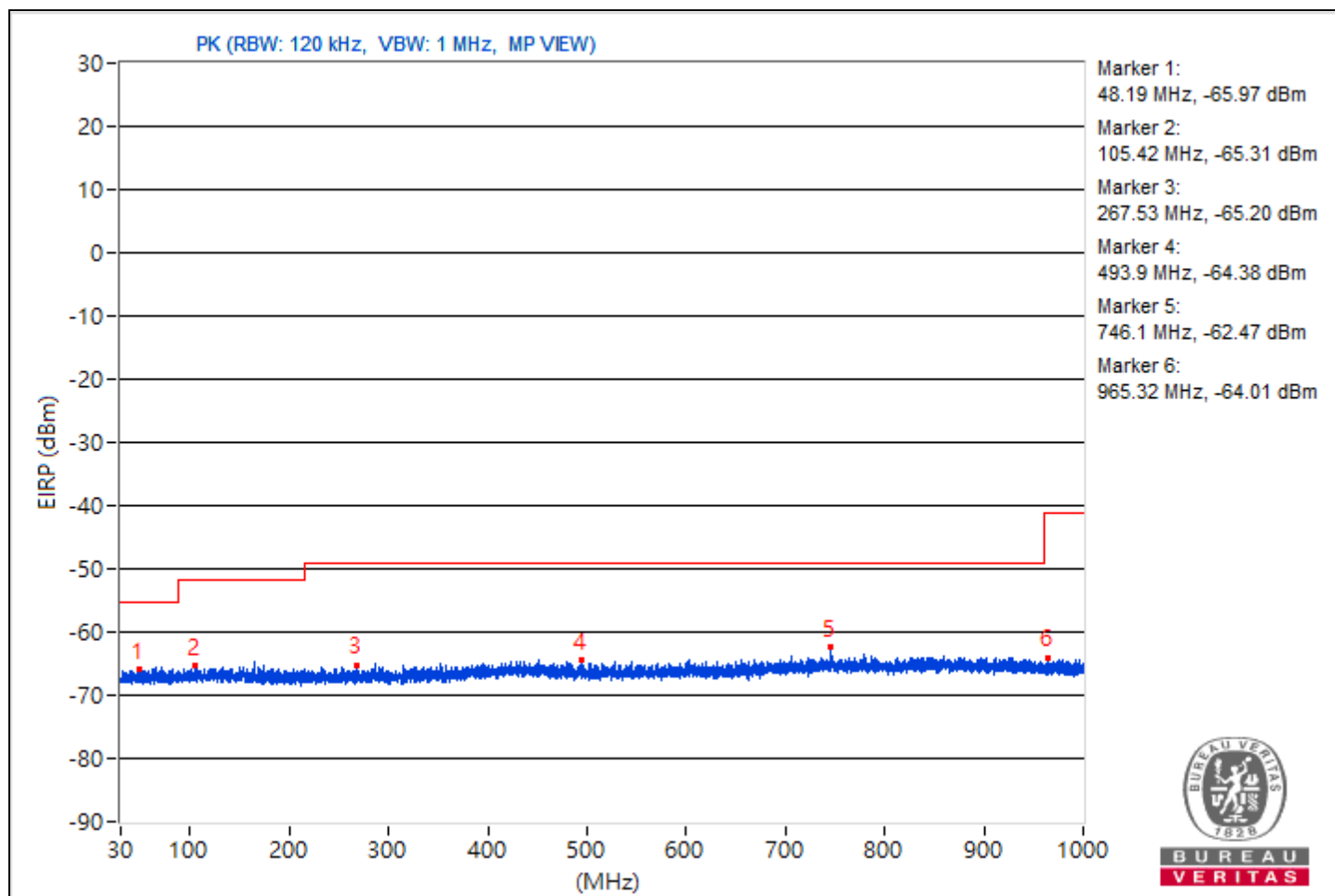
Mode A

RF Mode	802.11b	Channel	CH 1 : 2412 MHz
Frequency Range	30 MHz ~ 1 GHz	Environmental Conditions	23°C, 66% RH
Tested By	Dolly Chung		

Conducted Unwanted Emissions								
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value Chain 0 (dBm)	Raw Value Chain 1 (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	48.19	29.29 PK	40	-10.71	-80.31	-84.26	12.87	-65.97
2	105.42	29.95 PK	43.5	-13.55	-80.01	-82.8	12.87	-65.31
3	267.53	30.06 PK	46	-15.94	-82.74	-79.88	12.87	-65.2
4	493.9	30.88 PK	46	-15.12	-80.64	-79.92	12.87	-64.38
5	746.1	32.79 PK	46	-13.21	-77.16	-80	12.87	-62.47
6	965.32	31.25 PK	54	-22.75	-82.26	-78.37	12.87	-64.01

Notes:

1. Margin value = Emission Level - Limit value
2. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



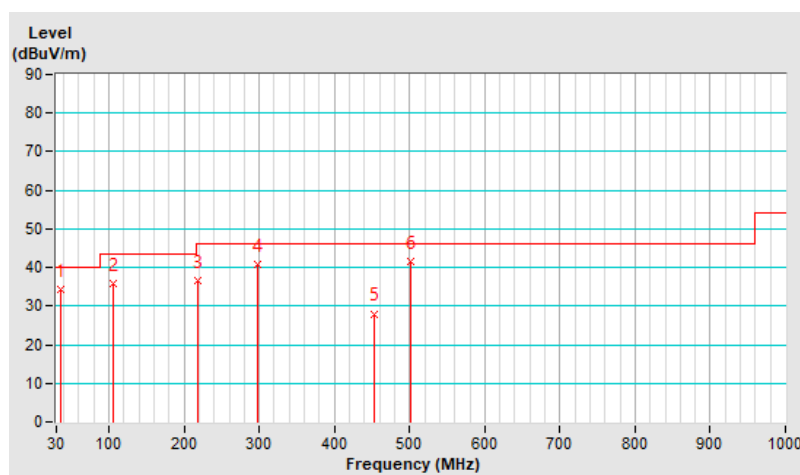
Mode B

RF Mode	802.11b	Channel	CH 1 : 2412 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120 kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 72% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	35.70	34.2 QP	40.0	-5.8	2.03 H	301	47.4	-13.2
2	105.00	35.8 QP	43.5	-7.7	2.13 H	312	51.7	-15.9
3	217.60	36.7 QP	46.0	-9.3	1.71 H	157	52.8	-16.1
4	297.60	40.8 QP	46.0	-5.2	1.42 H	169	52.8	-12.0
5	452.30	28.0 QP	46.0	-18.0	3.11 H	360	35.9	-7.9
6	501.50	41.4 QP	46.0	-4.6	1.67 H	164	48.3	-6.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

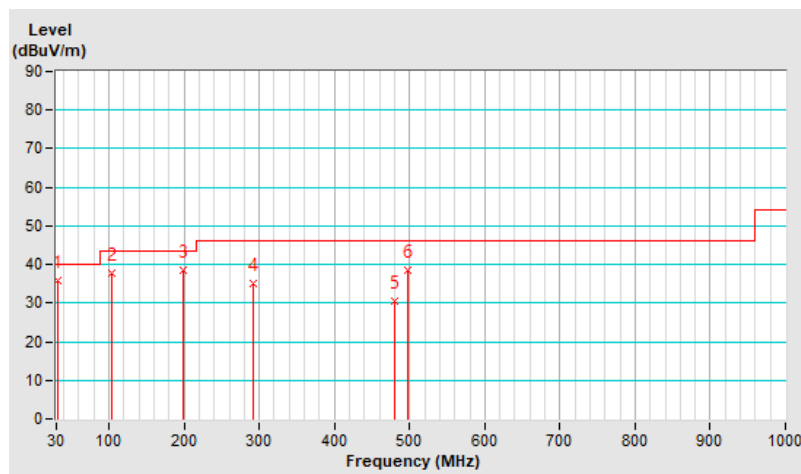


RF Mode	802.11b	Channel	CH 1 : 2412 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120 kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 72% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	32.70	35.9 QP	40.0	-4.1	2.99 V	273	49.1	-13.2
2	104.30	37.8 QP	43.5	-5.7	2.15 V	351	53.8	-16.0
3	199.00	38.5 QP	43.5	-5.0	1.56 V	165	54.2	-15.7
4	292.50	34.9 QP	46.0	-11.1	1.03 V	176	47.1	-12.2
5	480.80	30.4 QP	46.0	-15.6	2.12 V	185	37.7	-7.3
6	497.40	38.6 QP	46.0	-7.4	1.66 V	296	45.6	-7.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



7.4 Unwanted Emissions above 1 GHz

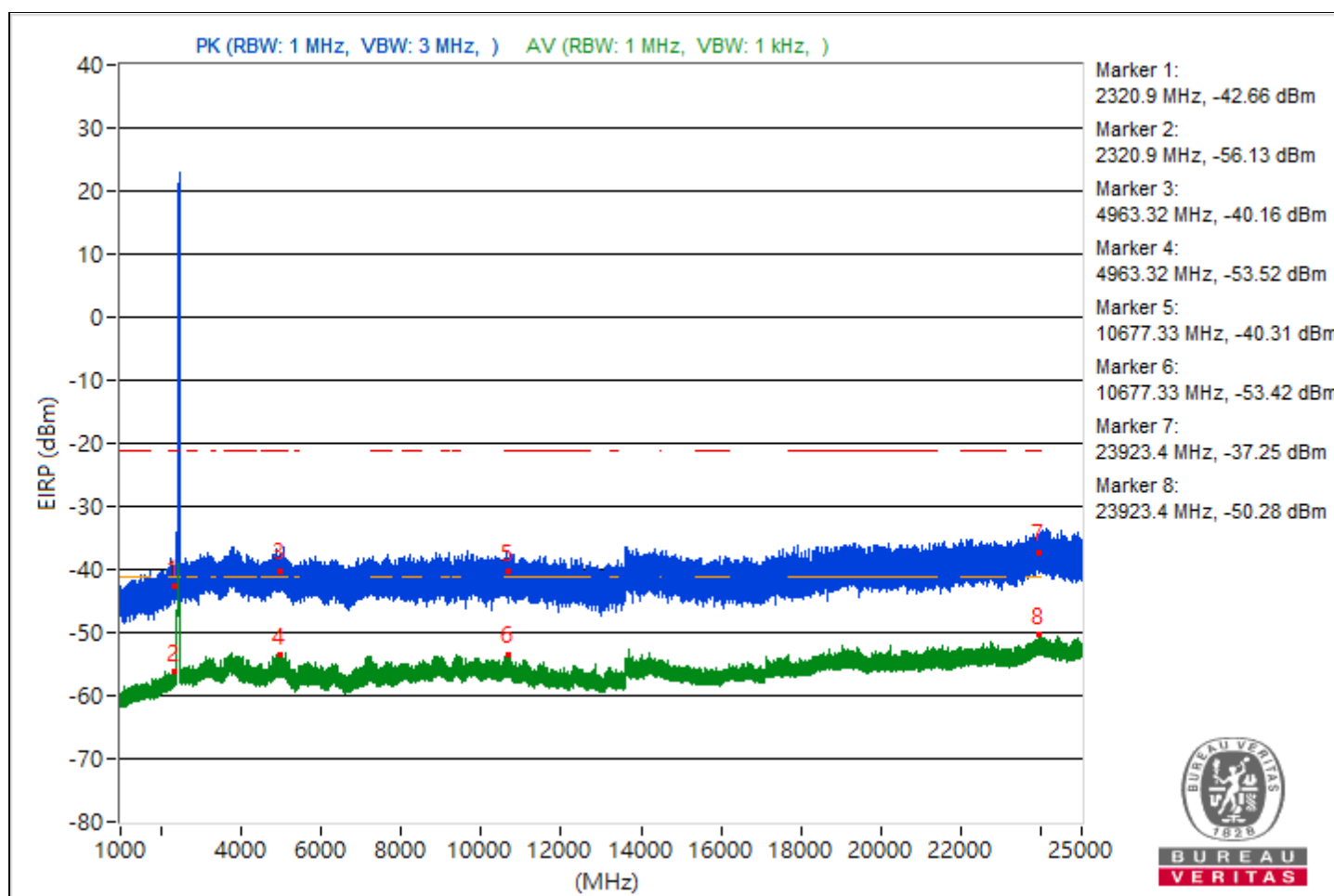
Mode A

Conducted Unwanted Emissions

RF Mode	802.11g	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Environmental Conditions	26°C, 66% RH
Tested By	Dolly Chung		

Conducted Unwanted Emissions								
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value Chain 0 (dBm)	Raw Value Chain 1 (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2320.9	52.6 PK	74	-21.4	-54.27	-53.46	8.17	-42.66
2	2320.9	39.13 AV	54	-14.87	-66.29	-68.64	8.17	-56.13
3	4963.32	55.1 PK	74	-18.9	-50.15	-52.99	8.17	-40.16
4	4963.32	41.74 AV	54	-12.26	-66.86	-63.27	8.17	-53.52
5	10677.33	54.95 PK	74	-19.05	-50.65	-52.54	8.17	-40.31
6	10677.33	41.84 AV	54	-12.16	-63.69	-65.75	8.17	-53.42
7	23923.4	58.01 PK	74	-15.99	-48.86	-48.05	8.17	-37.25
8	23923.4	44.98 AV	54	-9.02	-60.21	-63.21	8.17	-50.28

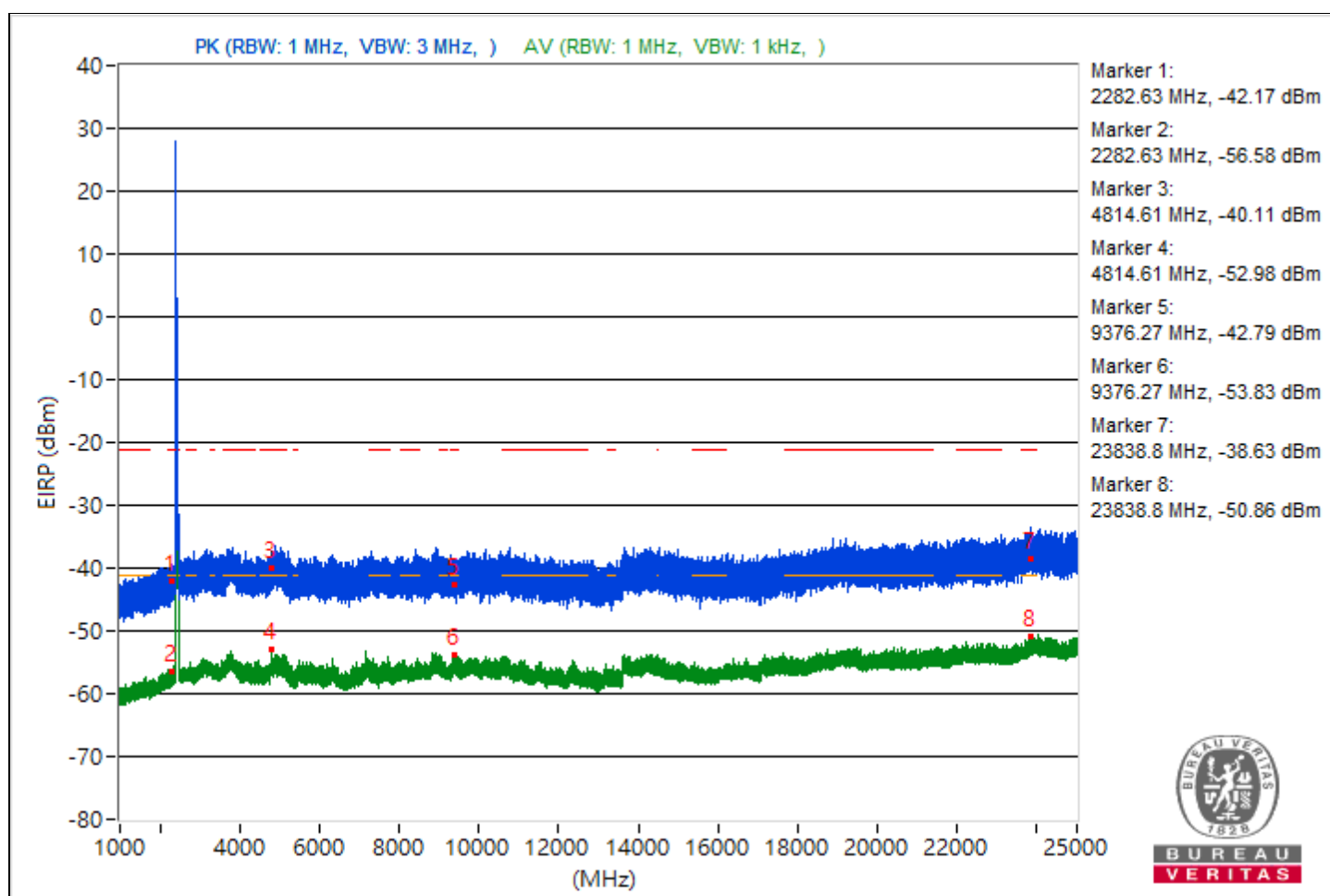
Note: Margin value = Emission Level - Limit value



RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Environmental Conditions	26°C, 66% RH
Tested By	Dolly Chung		

Conducted Unwanted Emissions								
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value Chain 0 (dBm)	Raw Value Chain 1 (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2282.63	53.09 PK	74	-20.91	-53.86	-52.9	8.17	-42.17
2	2282.63	38.68 AV	54	-15.32	-66.54	-69.48	8.17	-56.58
3	4814.61	55.15 PK	74	-18.85	-50.59	-52.14	8.17	-40.11
4	4814.61	42.28 AV	54	-11.72	-65.06	-63.41	8.17	-52.98
5	9376.27	52.47 PK	74	-21.53	-53.89	-54.04	8.17	-42.79
6	9376.27	41.43 AV	54	-12.57	-67.02	-63.64	8.17	-53.83
7	23838.8	56.63 PK	74	-17.37	-49.1	-50.66	8.17	-38.63
8	23838.8	44.4 AV	54	-9.6	-61.01	-63.38	8.17	-50.86

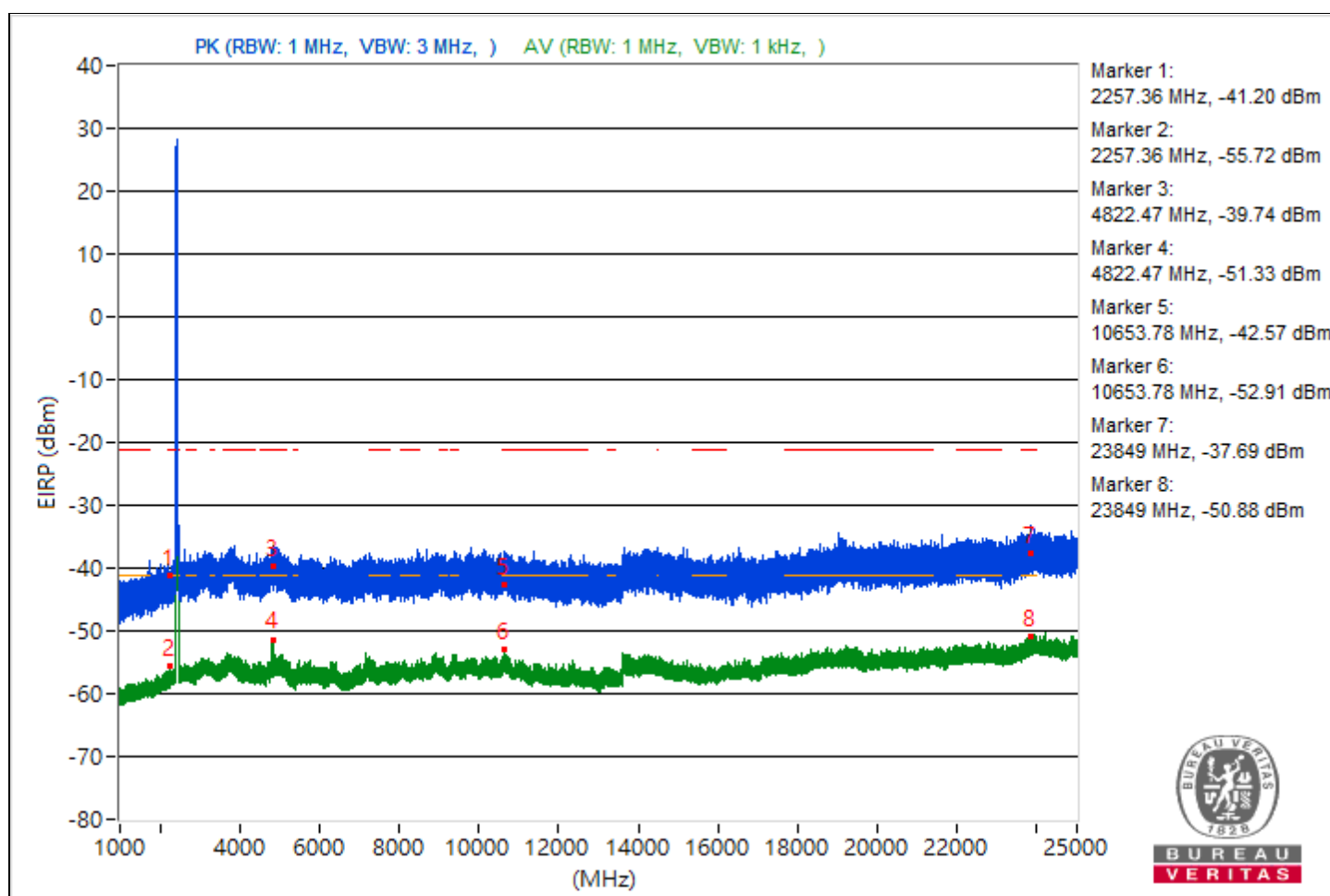
Note: Margin value = Emission Level - Limit value



RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 2 : 2417 MHz
Frequency Range	1 GHz ~ 25 GHz	Environmental Conditions	26°C, 66% RH
Tested By	Dolly Chung		

Conducted Unwanted Emissions								
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value Chain 0 (dBm)	Raw Value Chain 1 (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2257.36	54.06 PK	74	-19.94	-52.91	-51.9	8.17	-41.2
2	2257.36	39.54 AV	54	-14.46	-65.5	-68.97	8.17	-55.72
3	4822.47	55.52 PK	74	-18.48	-51.14	-50.72	8.17	-39.74
4	4822.47	43.93 AV	54	-10.07	-61.68	-63.55	8.17	-51.33
5	10653.78	52.69 PK	74	-21.31	-53.73	-53.78	8.17	-42.57
6	10653.78	42.35 AV	54	-11.65	-62.94	-65.67	8.17	-52.91
7	23849	57.57 PK	74	-16.43	-47.31	-51.32	8.17	-37.69
8	23849	44.38 AV	54	-9.62	-63.73	-60.85	8.17	-50.88

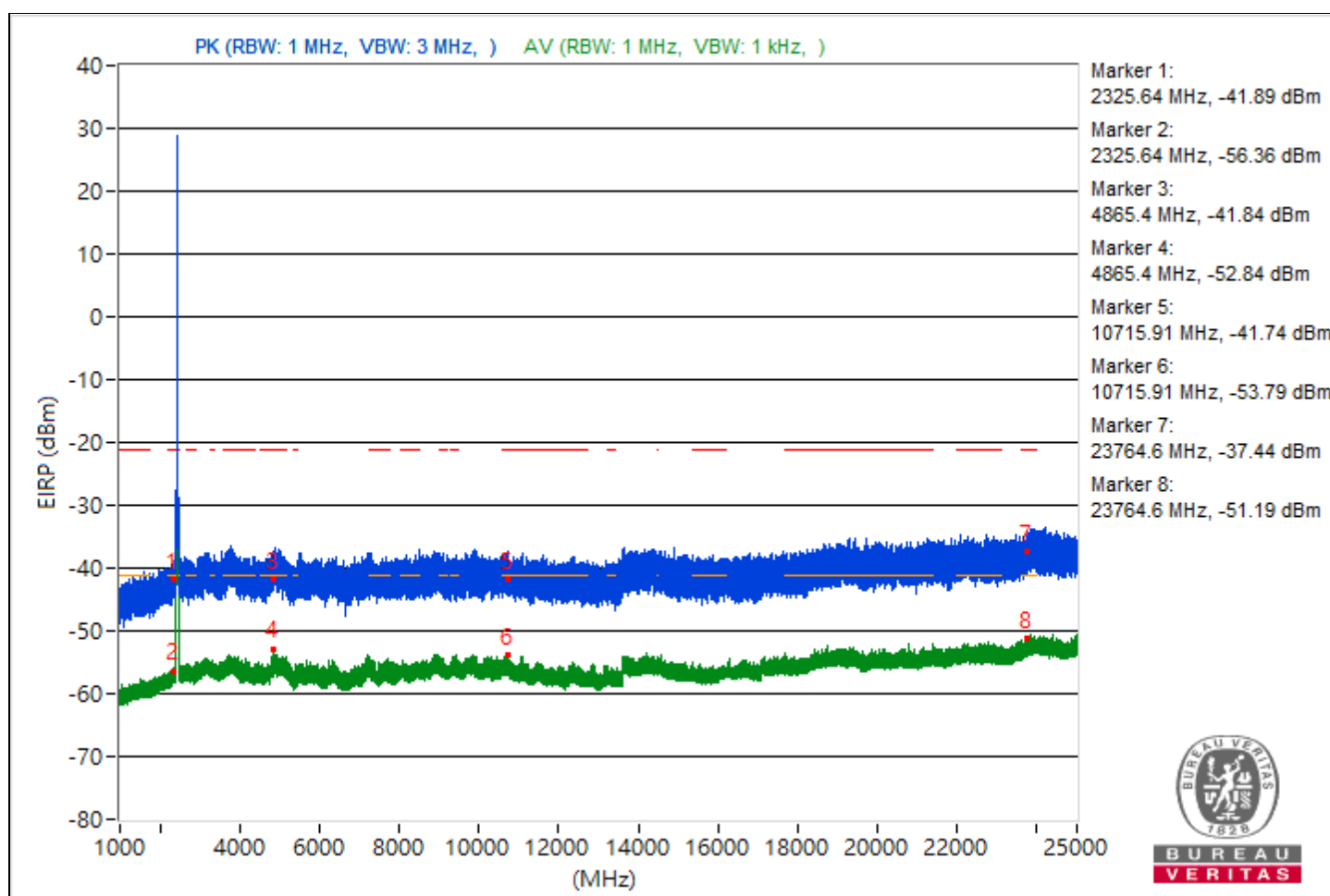
Note: Margin value = Emission Level - Limit value



RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Environmental Conditions	26°C, 66% RH
Tested By	Dolly Chung		

Conducted Unwanted Emissions								
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value Chain 0 (dBm)	Raw Value Chain 1 (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2325.64	53.37 PK	74	-20.63	-52.7	-53.46	8.17	-41.89
2	2325.64	38.9 AV	54	-15.1	-66.84	-68.37	8.17	-56.36
3	4865.4	53.42 PK	74	-20.58	-53.91	-52.28	8.17	-41.84
4	4865.4	42.42 AV	54	-11.58	-63.14	-65.12	8.17	-52.84
5	10715.91	53.52 PK	74	-20.48	-51.7	-54.63	8.17	-41.74
6	10715.91	41.47 AV	54	-12.53	-63.33	-67.66	8.17	-53.79
7	23764.6	57.82 PK	74	-16.18	-49.05	-48.22	8.17	-37.44
8	23764.6	44.07 AV	54	-9.93	-61.18	-64.03	8.17	-51.19

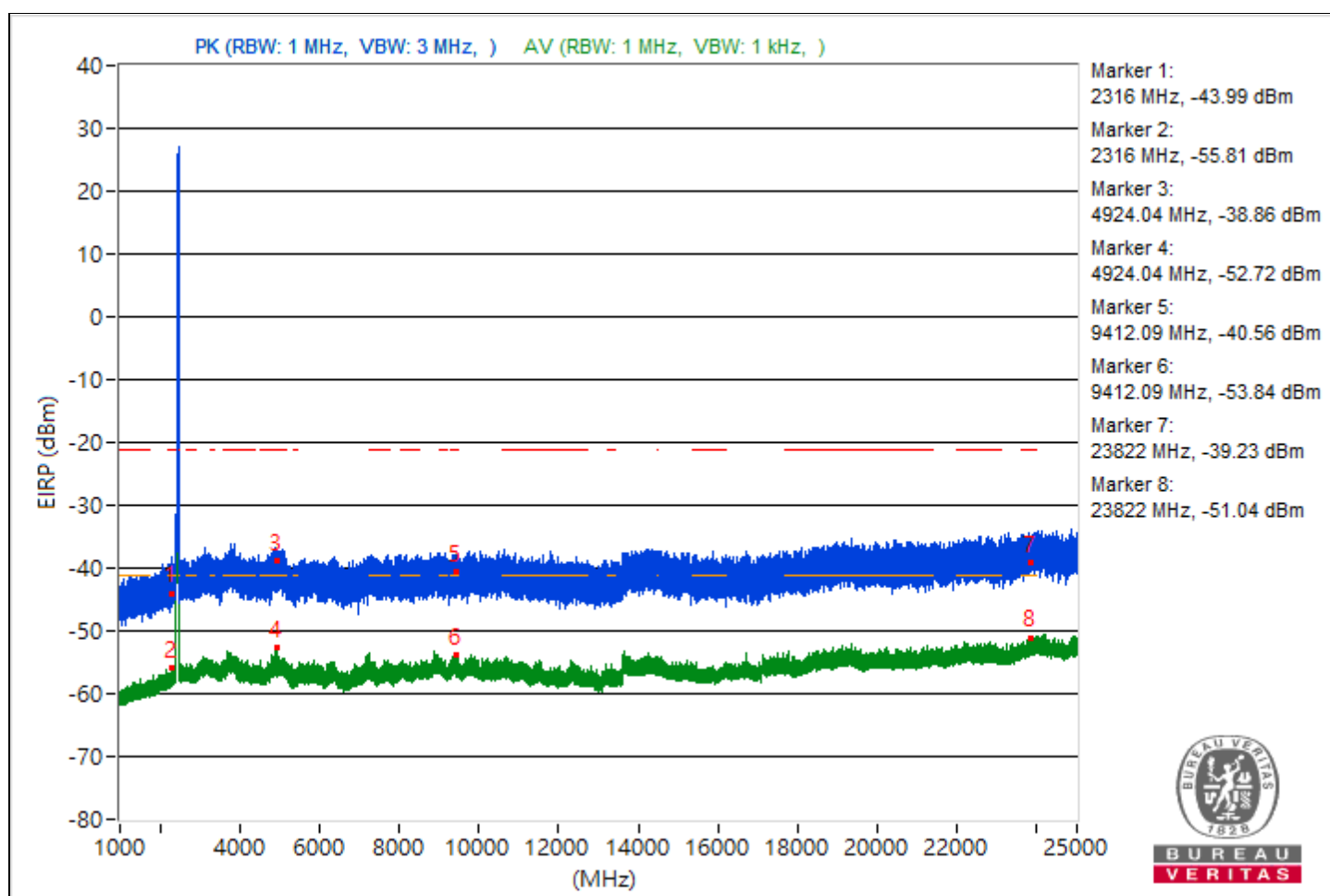
Note: Margin value = Emission Level - Limit value



RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 10 : 2457 MHz
Frequency Range	1 GHz ~ 25 GHz	Environmental Conditions	26°C, 66% RH
Tested By	Dolly Chung		

Conducted Unwanted Emissions								
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value Chain 0 (dBm)	Raw Value Chain 1 (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2316	51.27 PK	74	-22.73	-54.53	-55.93	8.17	-43.99
2	2316	39.45 AV	54	-14.55	-65.61	-69.04	8.17	-55.81
3	4924.04	56.4 PK	74	-17.6	-49.97	-50.1	8.17	-38.86
4	4924.04	42.54 AV	54	-11.46	-65.66	-62.65	8.17	-52.72
5	9412.09	54.7 PK	74	-19.3	-51.24	-52.3	8.17	-40.56
6	9412.09	41.42 AV	54	-12.58	-63.94	-66.47	8.17	-53.84
7	23822	56.03 PK	74	-17.97	-50.15	-50.69	8.17	-39.23
8	23822	44.22 AV	54	-9.78	-60.87	-64.18	8.17	-51.04

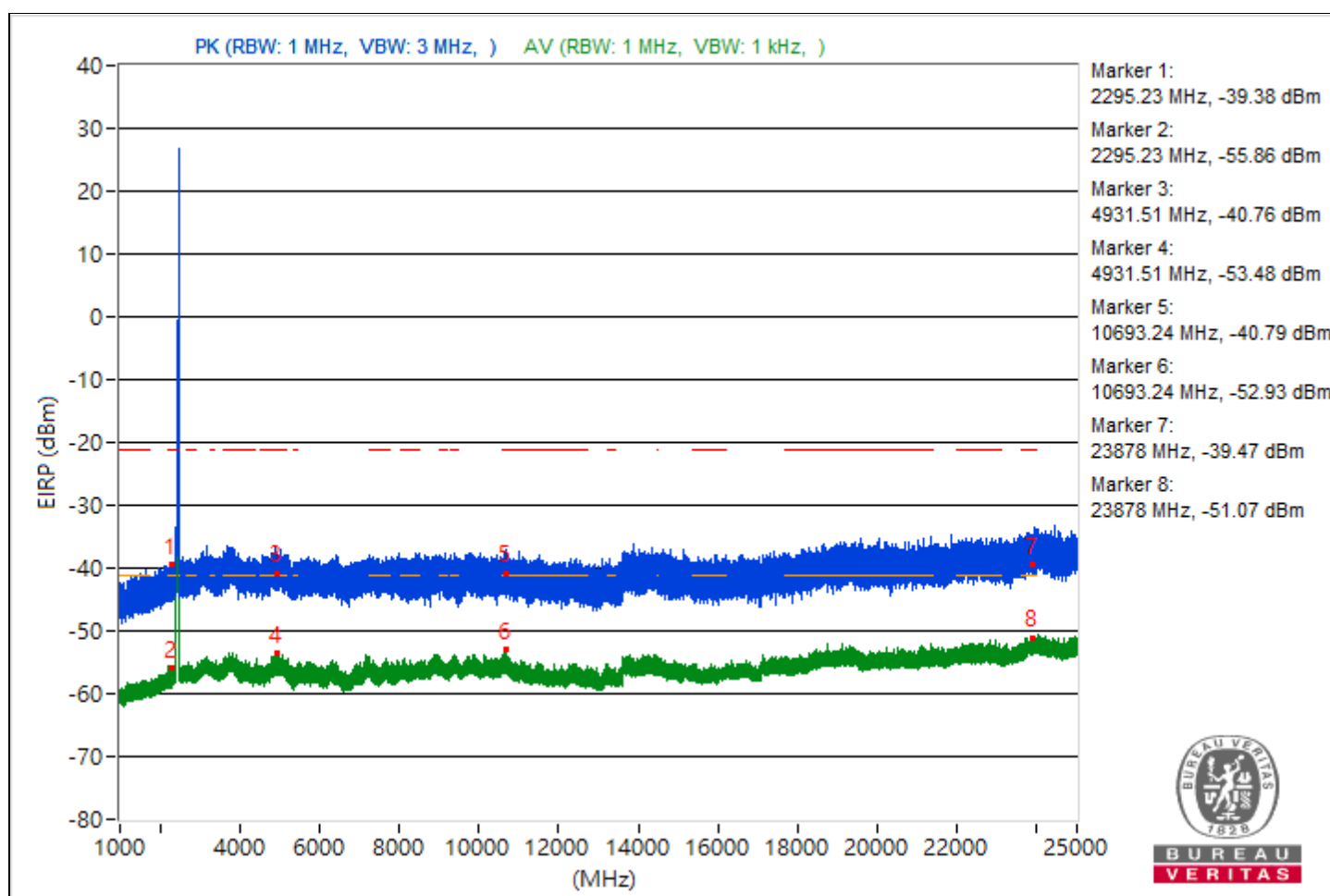
Note: Margin value = Emission Level - Limit value



RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Environmental Conditions	26°C, 66% RH
Tested By	Dolly Chung		

Conducted Unwanted Emissions								
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value Chain 0 (dBm)	Raw Value Chain 1 (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2295.23	55.88 PK	74	-18.12	-52.64	-49.16	8.17	-39.38
2	2295.23	39.4 AV	54	-14.6	-68.09	-66.2	8.17	-55.86
3	4931.51	54.5 PK	74	-19.5	-51.75	-52.14	8.17	-40.76
4	4931.51	41.78 AV	54	-12.22	-66.26	-63.5	8.17	-53.48
5	10693.24	54.47 PK	74	-19.53	-53.71	-50.73	8.17	-40.79
6	10693.24	42.33 AV	54	-11.67	-64.72	-63.58	8.17	-52.93
7	23878	55.79 PK	74	-18.21	-52.46	-49.37	8.17	-39.47
8	23878	44.19 AV	54	-9.81	-64.11	-60.95	8.17	-51.07

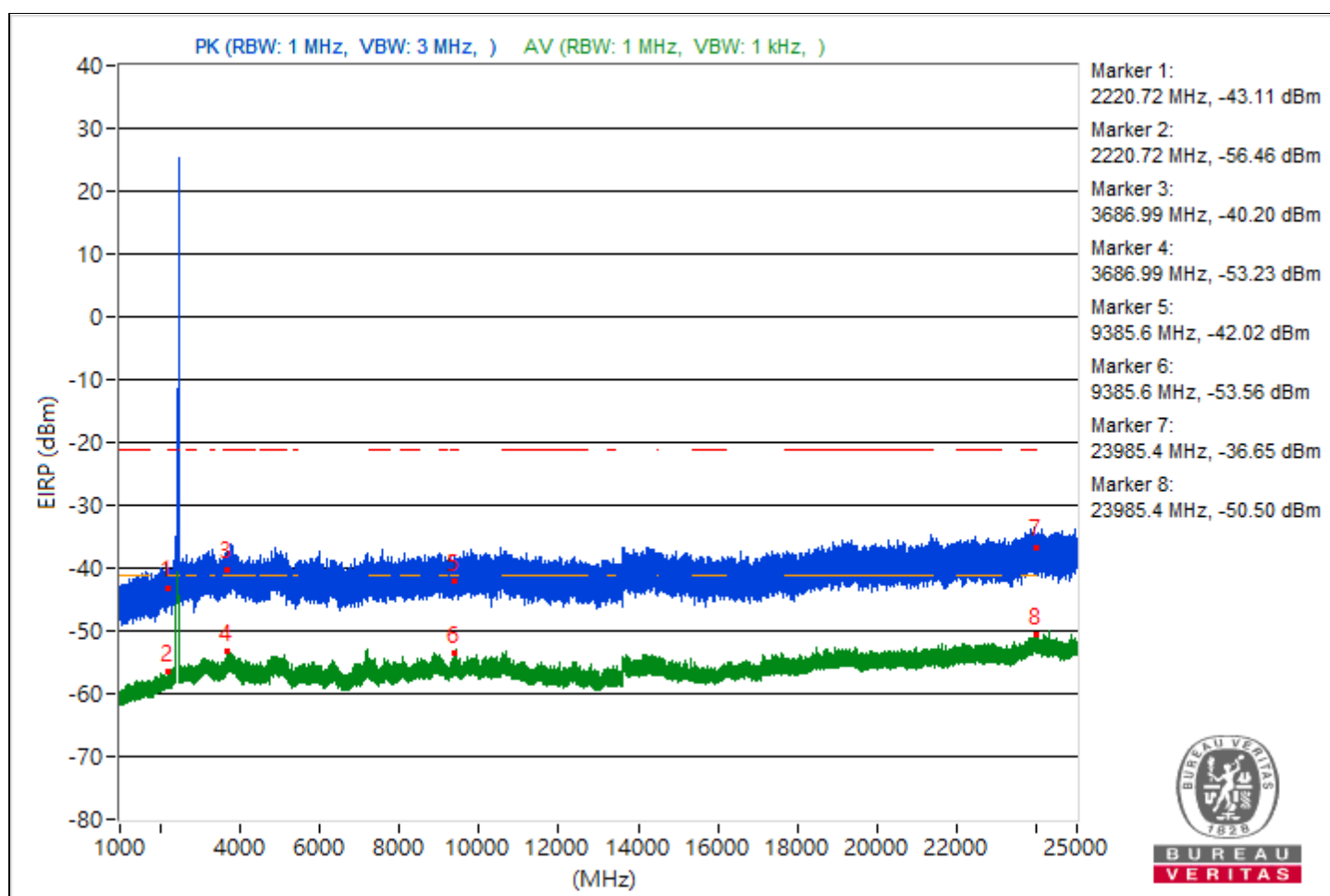
Note: Margin value = Emission Level - Limit value



RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 12 : 2467 MHz
Frequency Range	1 GHz ~ 25 GHz	Environmental Conditions	26°C, 66% RH
Tested By	Dolly Chung		

Conducted Unwanted Emissions								
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value Chain 0 (dBm)	Raw Value Chain 1 (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2220.72	52.15 PK	74	-21.85	-54.11	-54.48	8.17	-43.11
2	2220.72	38.8 AV	54	-15.2	-66.47	-69.26	8.17	-56.46
3	3686.99	55.06 PK	74	-18.94	-49.34	-55.37	8.17	-40.2
4	3686.99	42.03 AV	54	-11.97	-66.41	-63.05	8.17	-53.23
5	9385.6	53.24 PK	74	-20.76	-51.98	-54.91	8.17	-42.02
6	9385.6	41.7 AV	54	-12.3	-67.14	-63.2	8.17	-53.56
7	23985.4	58.61 PK	74	-15.39	-49.2	-46.8	8.17	-36.65
8	23985.4	44.76 AV	54	-9.24	-62.52	-60.99	8.17	-50.5

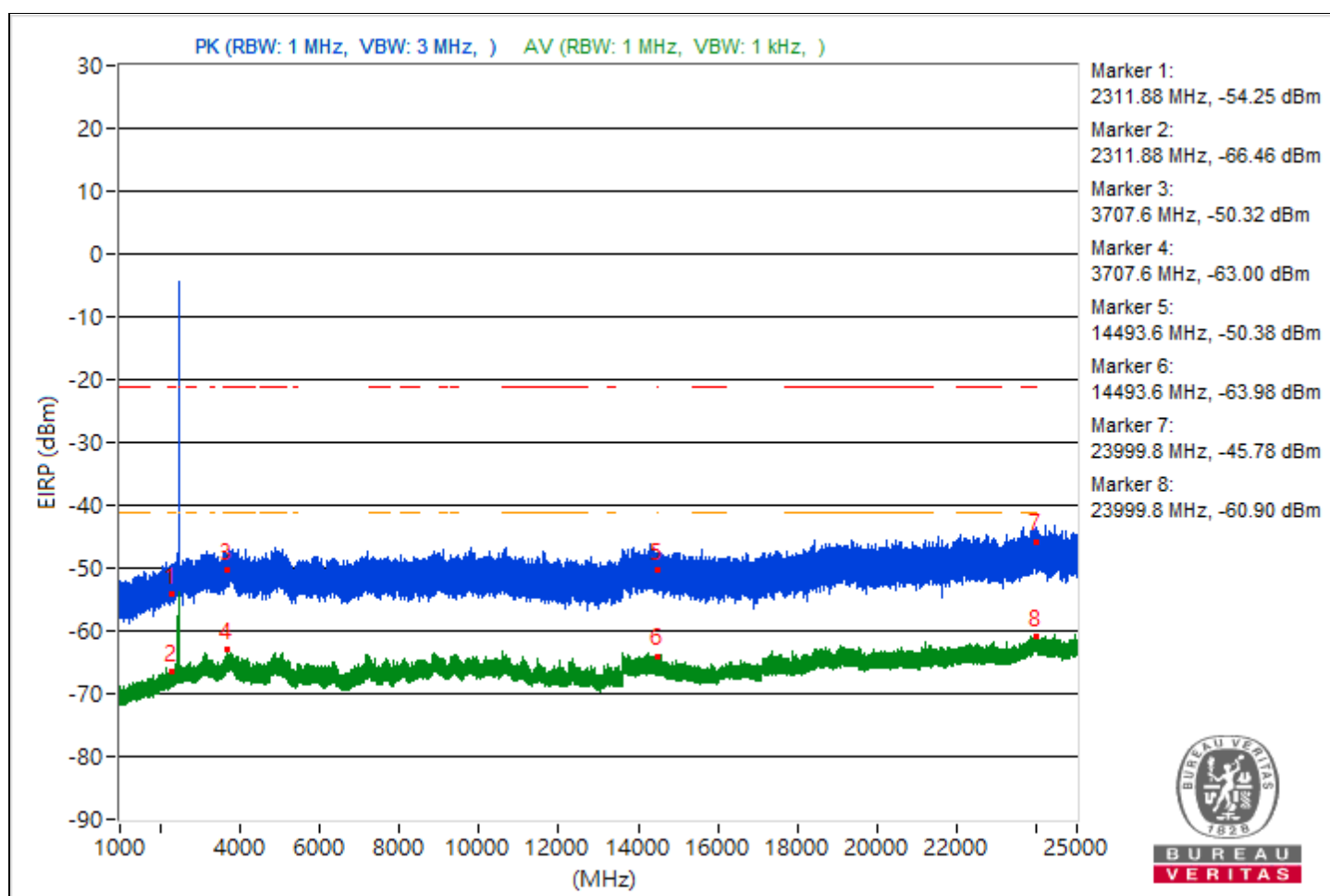
Note: Margin value = Emission Level - Limit value



RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 13 : 2472 MHz
Frequency Range	1 GHz ~ 25 GHz	Environmental Conditions	26°C, 66% RH
Tested By	Dolly Chung		

Conducted Unwanted Emissions								
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value Chain 0 (dBm)	Raw Value Chain 1 (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	2311.88	41.01 PK	74	-32.99	-65.43	-65.43	8.17	-54.25
2	2311.88	28.8 AV	54	-25.2	-76.59	-79.03	8.17	-66.46
3	3707.6	44.94 PK	74	-29.06	-61.91	-61.13	8.17	-50.32
4	3707.6	32.26 AV	54	-21.74	-75.49	-73.17	8.17	-63
5	14493.6	44.88 PK	74	-29.12	-61.18	-61.98	8.17	-50.38
6	14493.6	31.28 AV	54	-22.72	-73.6	-77.62	8.17	-63.98
7	23999.8	49.48 PK	74	-24.52	-57.97	-56.15	8.17	-45.78
8	23999.8	34.36 AV	54	-19.64	-70.94	-73.62	8.17	-60.9

Note: Margin value = Emission Level - Limit value



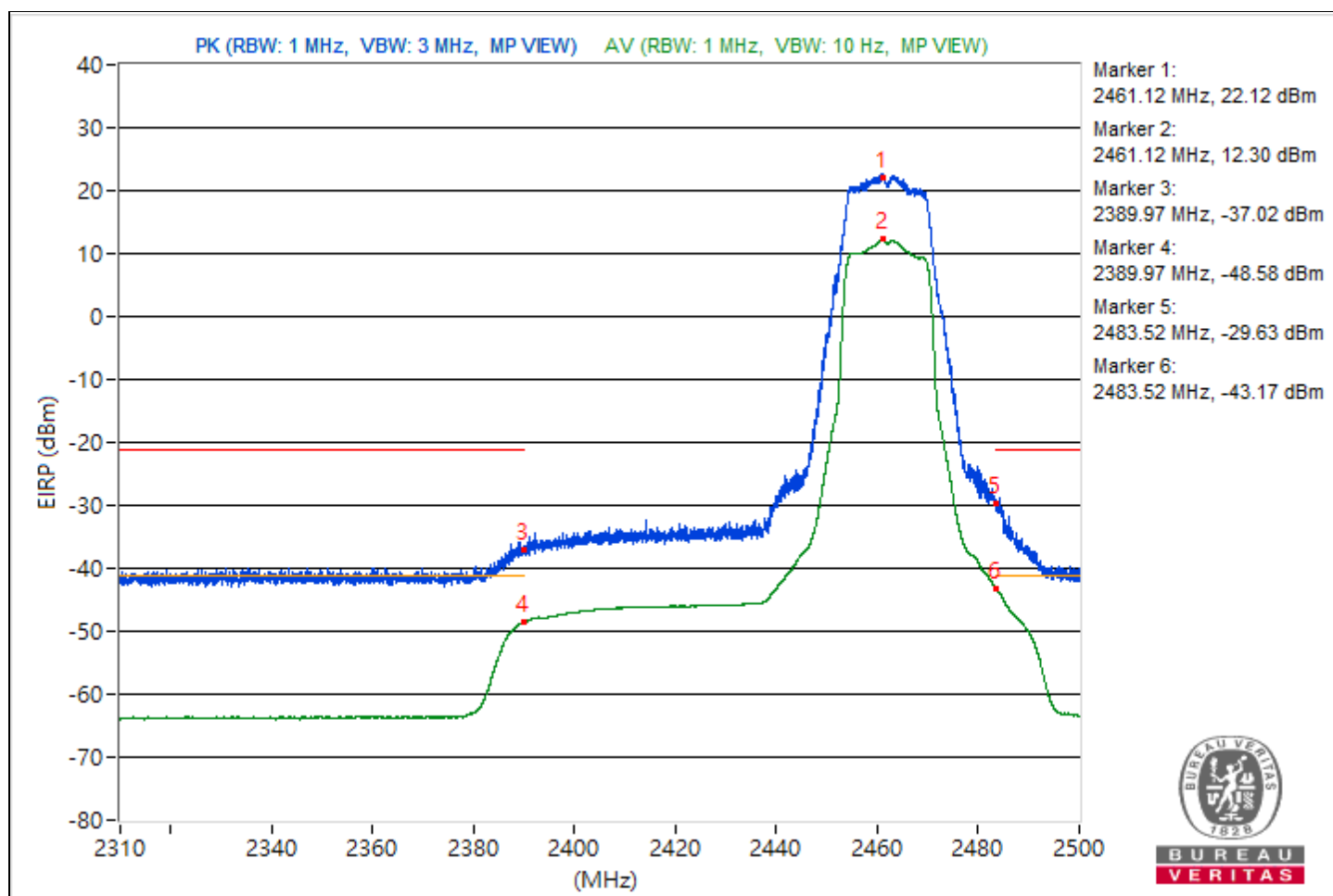
Conducted Band Edges

RF Mode	802.11g	Channel	CH 11 : 2462 MHz
Frequency Range	2.31 GHz ~ 2.5 GHz	Environmental Conditions	26°C, 66% RH
Tested By	Dolly Chung		

Conducted Band Edge								
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value Chain 0 (dBm)	Raw Value Chain 1 (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	*2461.12	117.38 PK			12.81	12.31	6.54	22.12
2	*2461.12	107.56 AV			3.32	2.08	6.54	12.3
3	2389.97	58.24 PK	74	-15.76	-46.67	-46.47	6.54	-37.02
4	2389.97	46.68 AV	54	-7.32	-57.91	-58.37	6.54	-48.58
5	2483.52	65.63 PK	74	-8.37	-37.19	-42.99	6.54	-29.63
6	2483.52	52.09 AV	54	-1.91	-50.73	-56.49	6.54	-43.17

Notes:

1. Margin value = Emission Level - Limit value
2. " * " : Fundamental frequency, the limit was restricted at the RF Output Power.

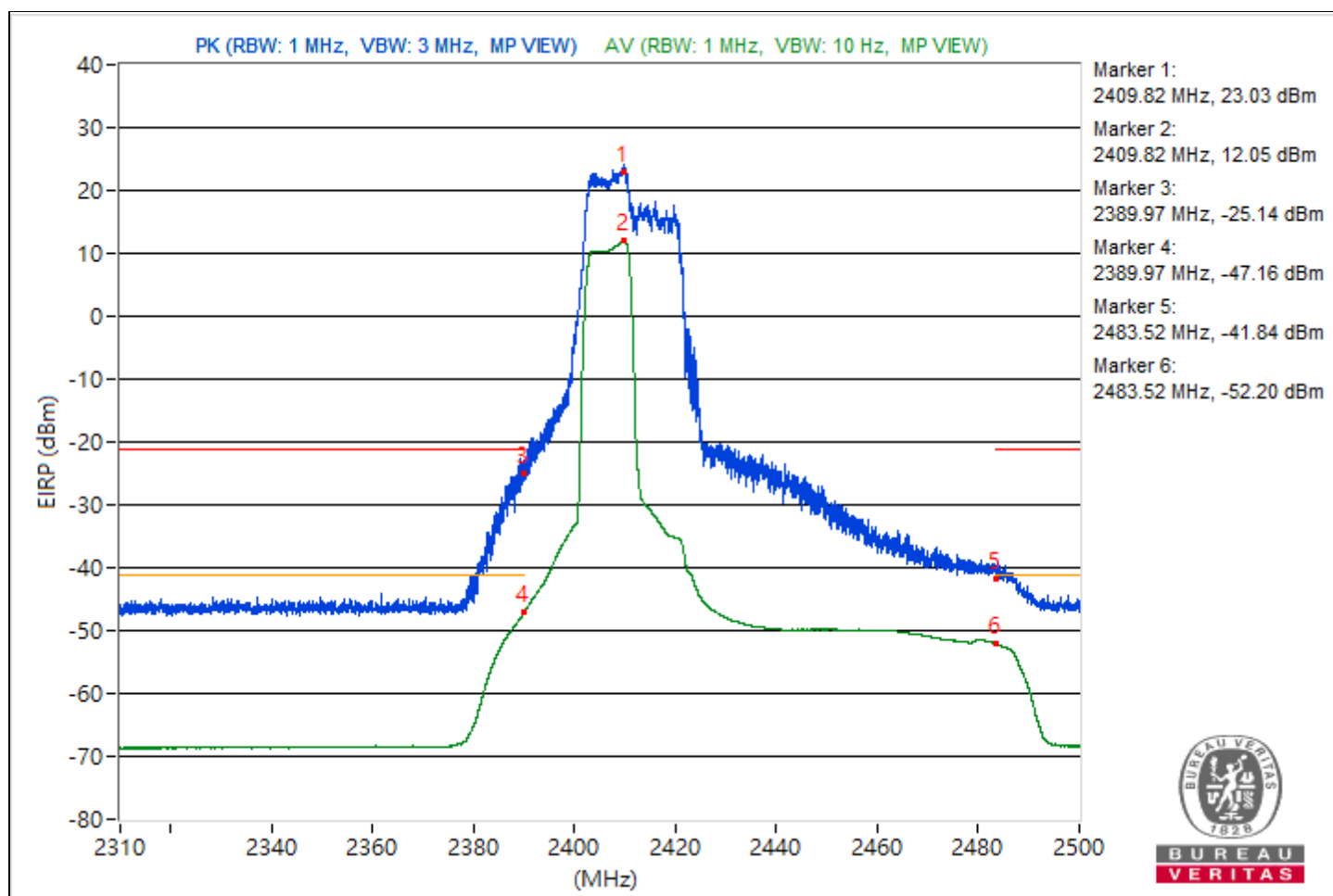


RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 1 : 2412 MHz
Frequency Range	2.31 GHz ~ 2.5 GHz	Environmental Conditions	26°C, 66% RH
Tested By	Dolly Chung		

Conducted Band Edge								
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value Chain 0 (dBm)	Raw Value Chain 1 (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	*2409.82	118.29 PK			13.61	13.34	6.54	23.03
2	*2409.82	107.31 AV			2.53	2.46	6.54	12.05
3	2389.97	70.12 PK	74	-3.88	-34.64	-34.74	6.54	-25.14
4	2389.97	48.1 AV	54	-5.9	-57.5	-56.04	6.54	-47.16
5	2483.52	53.42 PK	74	-20.58	-51.26	-51.53	6.54	-41.84
6	2483.52	43.06 AV	54	-10.94	-62.35	-61.22	6.54	-52.2

Notes:

1. Margin value = Emission Level - Limit value
2. " * " : Fundamental frequency, the limit was restricted at the RF Output Power.

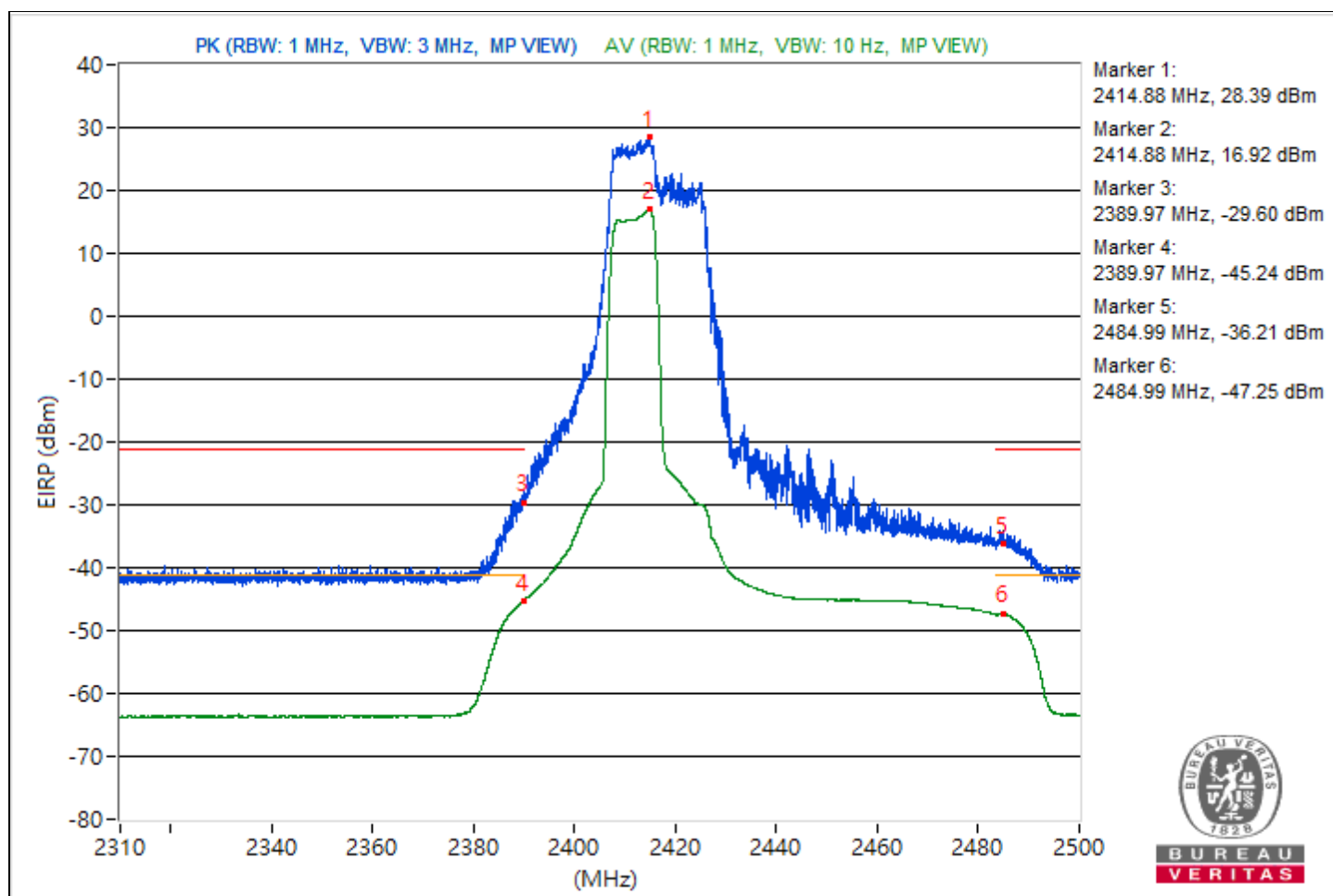


RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 2 : 2417 MHz
Frequency Range	2.31 GHz ~ 2.5 GHz	Environmental Conditions	26°C, 66% RH
Tested By	Dolly Chung		

Conducted Band Edge								
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value Chain 0 (dBm)	Raw Value Chain 1 (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	*2414.88	123.65 PK			19.05	18.63	6.54	28.39
2	*2414.88	112.18 AV			7.53	7.19	6.54	16.92
3	2389.97	65.66 PK	74	-8.34	-38.27	-40.25	6.54	-29.6
4	2389.97	50.02 AV	54	-3.98	-54.6	-54.99	6.54	-45.24
5	2484.99	59.05 PK	74	-14.95	-47.57	-44.48	6.54	-36.21
6	2484.99	48.01 AV	54	-5.99	-57.76	-56.01	6.54	-47.25

Notes:

1. Margin value = Emission Level - Limit value
2. " * " : Fundamental frequency, the limit was restricted at the RF Output Power.

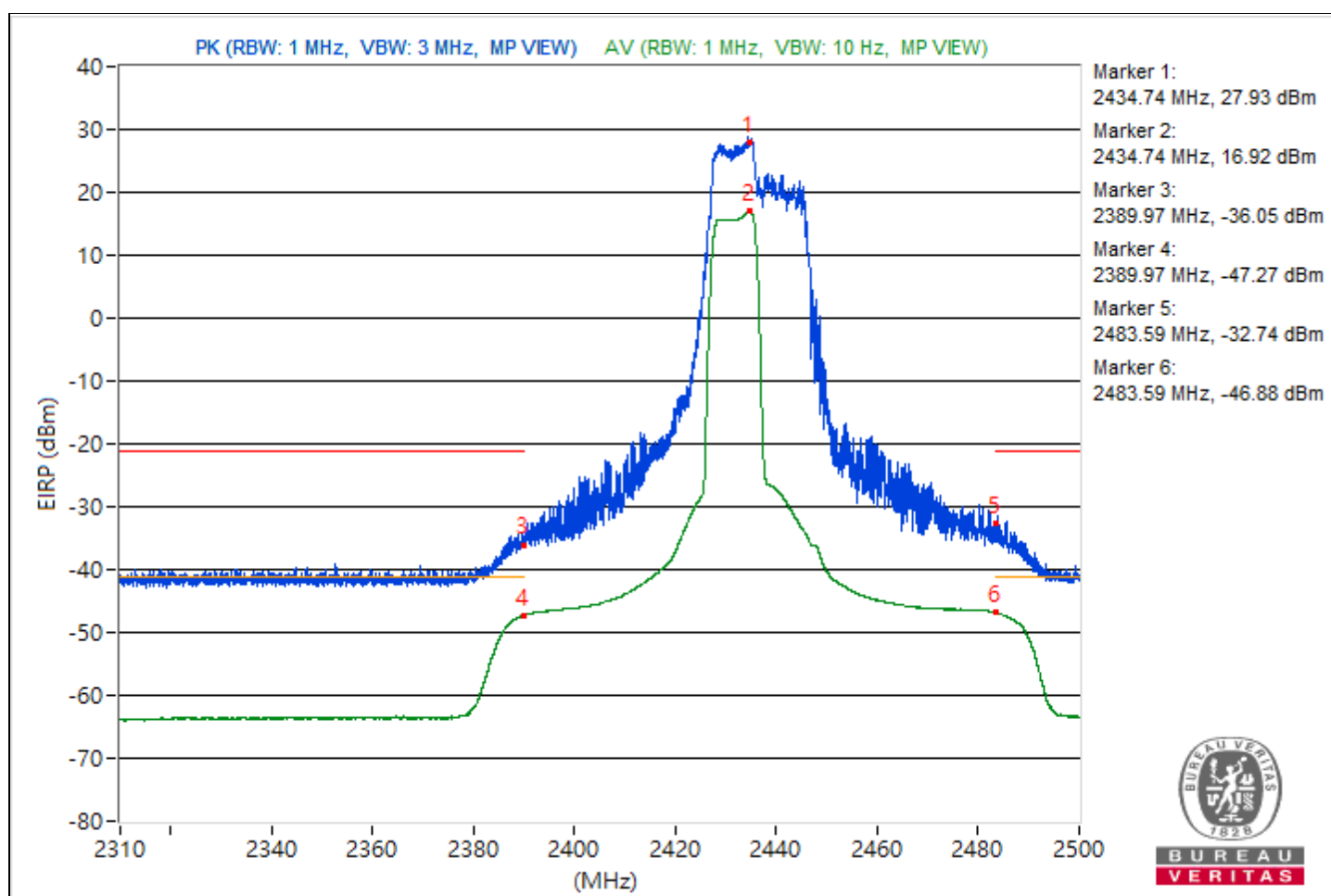


RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 6 : 2437 MHz
Frequency Range	2.31 GHz ~ 2.5 GHz	Environmental Conditions	26°C, 66% RH
Tested By	Dolly Chung		

Conducted Band Edge								
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value Chain 0 (dBm)	Raw Value Chain 1 (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	*2434.74	123.19 PK			18.52	18.23	6.54	27.93
2	*2434.74	112.18 AV			7.24	7.5	6.54	16.92
3	2389.97	59.21 PK	74	-14.79	-45.67	-45.53	6.54	-36.05
4	2389.97	47.99 AV	54	-6.01	-56.8	-56.83	6.54	-47.27
5	2483.59	62.52 PK	74	-11.48	-44.81	-40.71	6.54	-32.74
6	2483.59	48.38 AV	54	-5.62	-56.97	-55.94	6.54	-46.88

Notes:

1. Margin value = Emission Level - Limit value
2. " * " : Fundamental frequency, the limit was restricted at the RF Output Power.

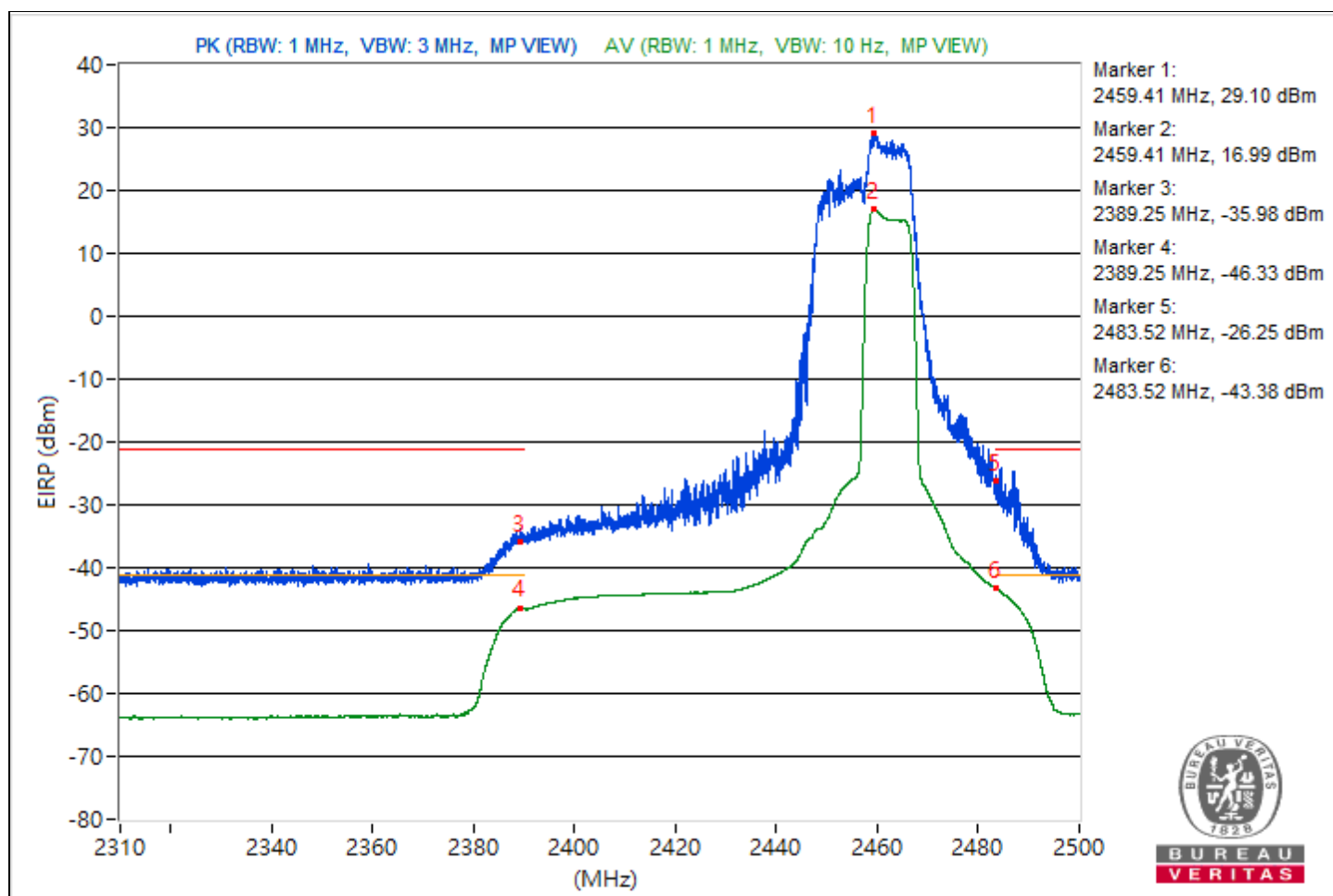


RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 10 : 2457 MHz
Frequency Range	2.31 GHz ~ 2.5 GHz	Environmental Conditions	26°C, 66% RH
Tested By	Dolly Chung		

Conducted Band Edge								
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value Chain 0 (dBm)	Raw Value Chain 1 (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	*2459.41	124.36 PK			20.14	18.88	6.54	29.1
2	*2459.41	112.25 AV			7.04	7.8	6.54	16.99
3	2389.25	59.28 PK	74	-14.72	-45.88	-45.21	6.54	-35.98
4	2389.25	48.93 AV	54	-5.07	-56.22	-55.56	6.54	-46.33
5	2483.52	69.01 PK	74	-4.99	-36.29	-35.36	6.54	-26.25
6	2483.52	51.88 AV	54	-2.12	-54.07	-52.02	6.54	-43.38

Notes:

1. Margin value = Emission Level - Limit value
2. " * " : Fundamental frequency, the limit was restricted at the RF Output Power.

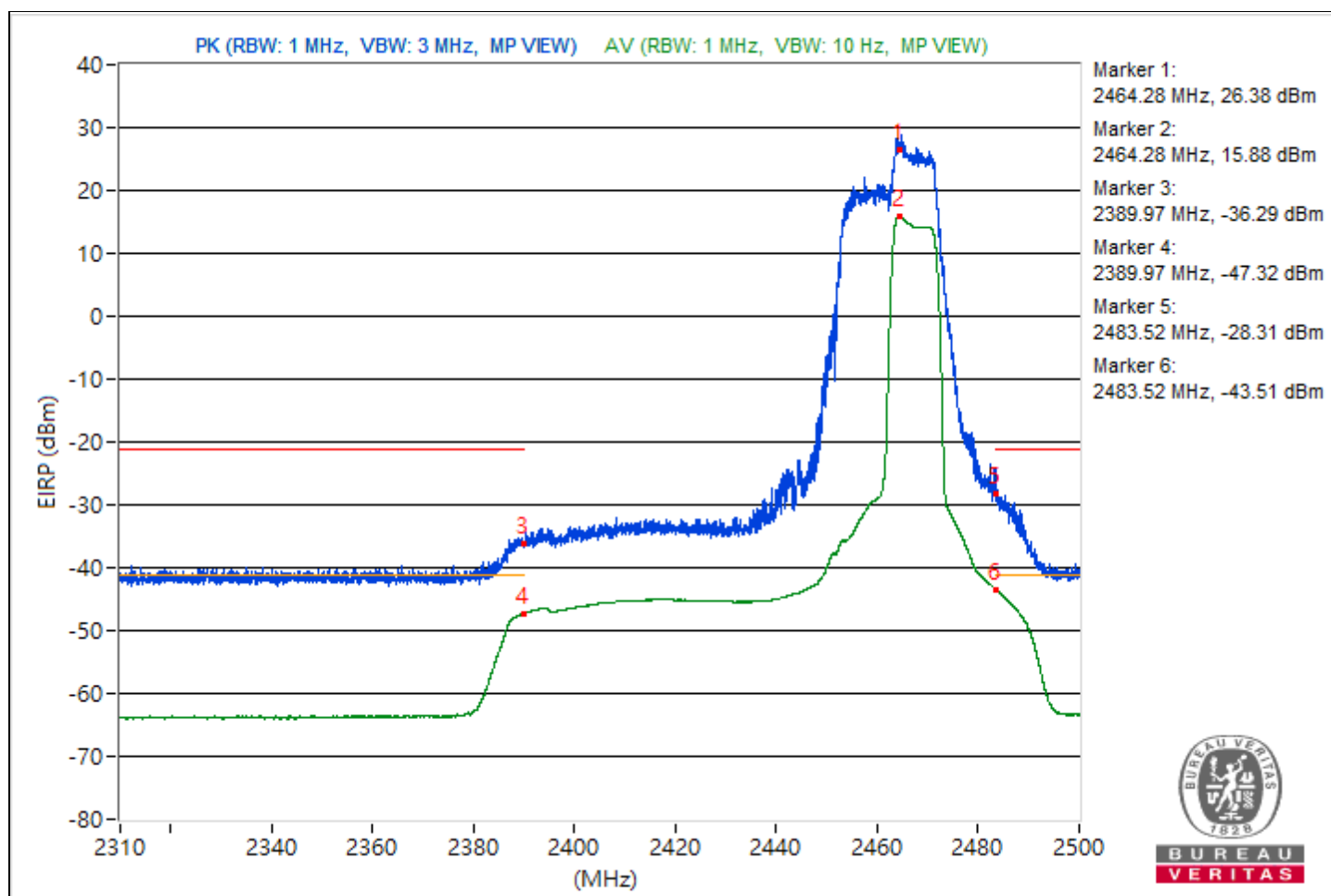


RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 11 : 2462 MHz
Frequency Range	2.31 GHz ~ 2.5 GHz	Environmental Conditions	26°C, 66% RH
Tested By	Dolly Chung		

Conducted Band Edge								
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value Chain 0 (dBm)	Raw Value Chain 1 (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	*2464.28	121.64 PK			15.86	17.63	6.54	26.38
2	*2464.28	111.14 AV			5.88	6.73	6.54	15.88
3	2389.97	58.97 PK	74	-15.03	-45.25	-46.51	6.54	-36.29
4	2389.97	47.94 AV	54	-6.06	-56.29	-57.53	6.54	-47.32
5	2483.52	66.95 PK	74	-7.05	-37.58	-38.16	6.54	-28.31
6	2483.52	51.75 AV	54	-2.25	-53.89	-52.36	6.54	-43.51

Notes:

1. Margin value = Emission Level - Limit value
2. " * " : Fundamental frequency, the limit was restricted at the RF Output Power.

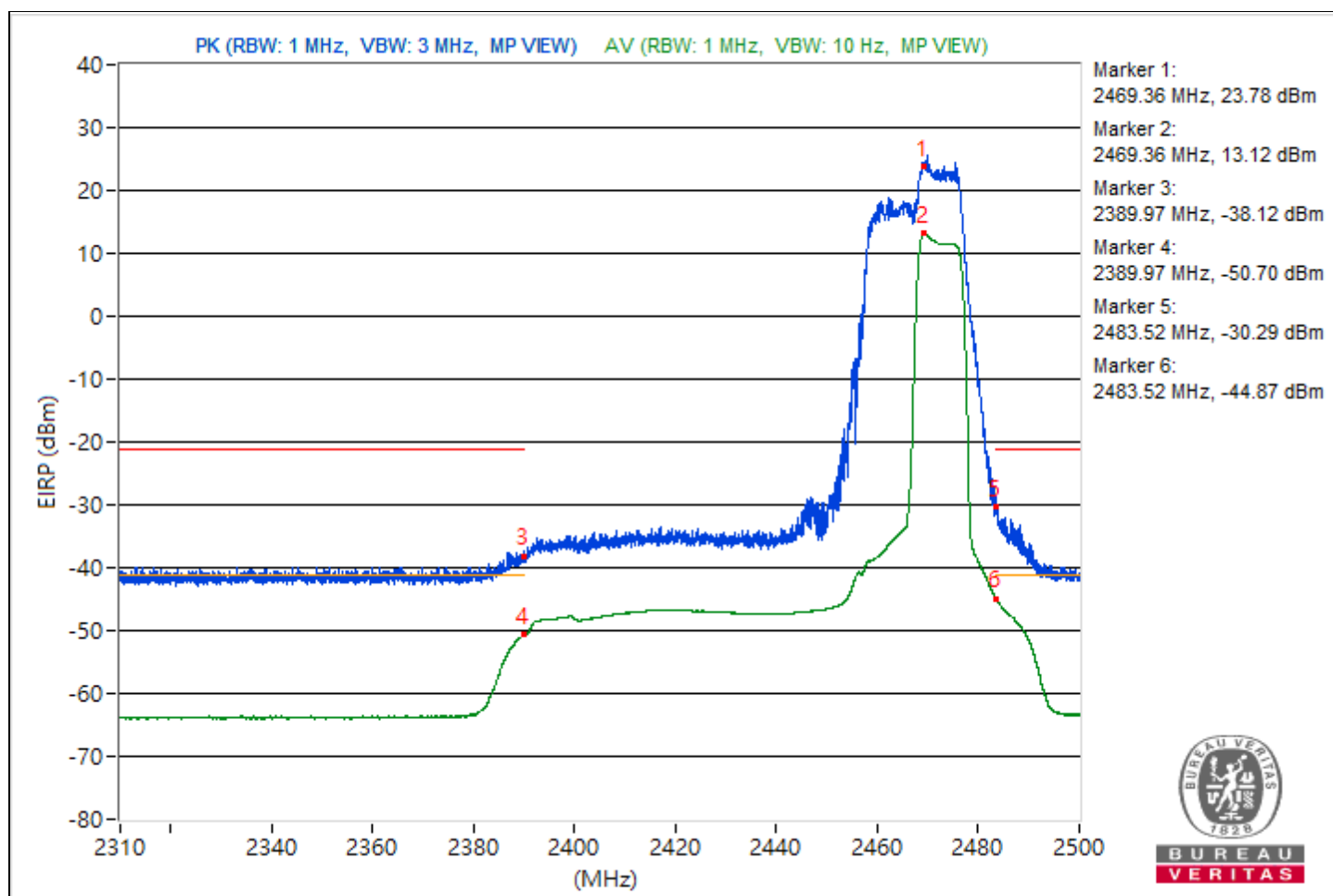


RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 12 : 2467 MHz
Frequency Range	2.31 GHz ~ 2.5 GHz	Environmental Conditions	26°C, 66% RH
Tested By	Dolly Chung		

Conducted Band Edge								
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value Chain 0 (dBm)	Raw Value Chain 1 (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	*2469.36	119.04 PK			13.73	14.67	6.54	23.78
2	*2469.36	108.38 AV			3.2	3.9	6.54	13.12
3	2389.97	57.14 PK	74	-16.86	-47.2	-48.19	6.54	-38.12
4	2389.97	44.56 AV	54	-9.44	-59.85	-60.69	6.54	-50.7
5	2483.52	64.97 PK	74	-9.03	-45.14	-37.52	6.54	-30.29
6	2483.52	50.39 AV	54	-3.61	-55.61	-53.48	6.54	-44.87

Notes:

1. Margin value = Emission Level - Limit value
2. " * " : Fundamental frequency, the limit was restricted at the RF Output Power.

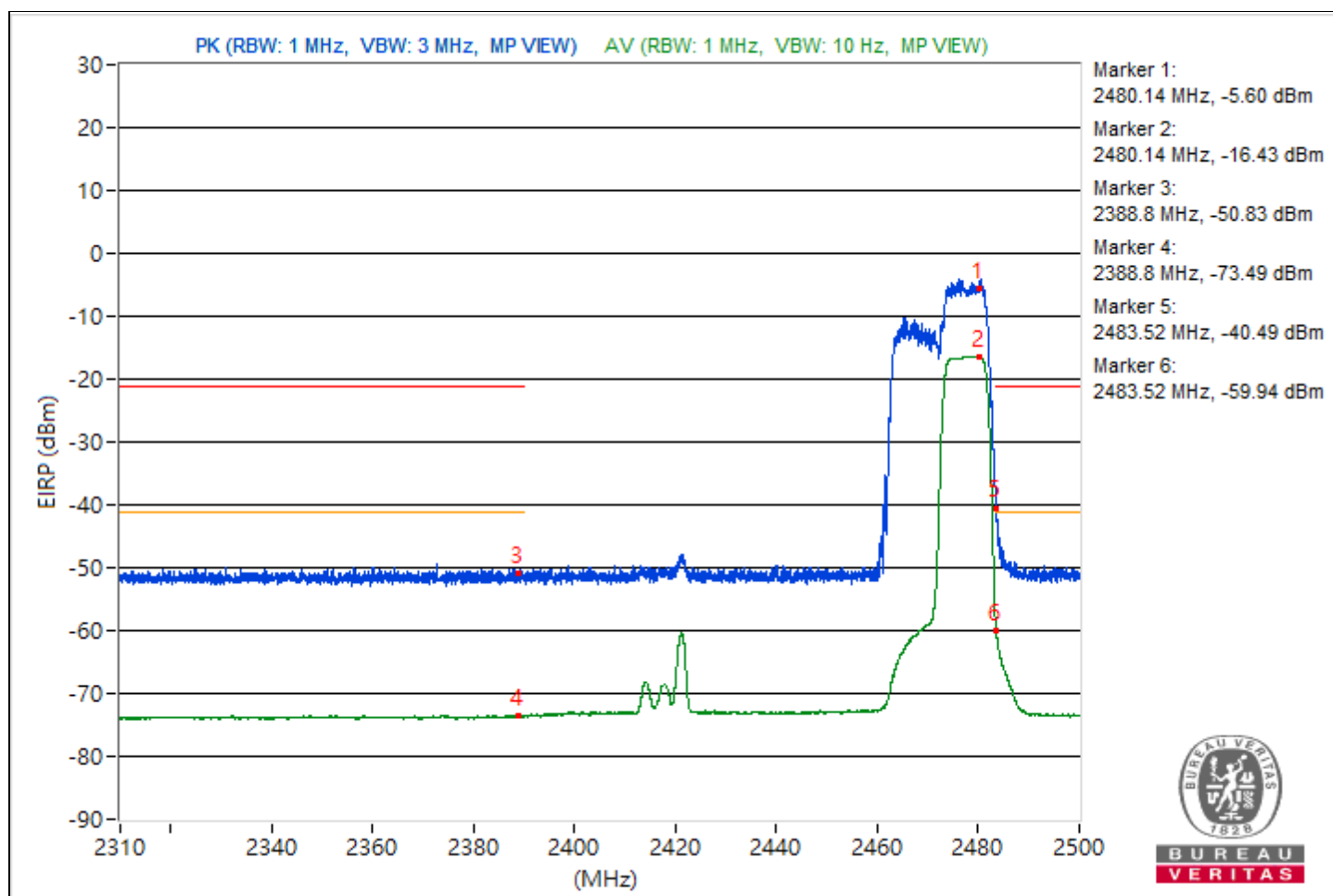


RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 13 : 2472 MHz
Frequency Range	2.31 GHz ~ 2.5 GHz	Environmental Conditions	26°C, 66% RH
Tested By	Dolly Chung		

Conducted Band Edge								
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value Chain 0 (dBm)	Raw Value Chain 1 (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	*2480.14	89.66 PK			-15.14	-15.16	6.54	-5.6
2	*2480.14	78.83 AV			-25.86	-26.11	6.54	-16.43
3	2388.8	44.43 PK	74	-29.57	-60.67	-60.11	6.54	-50.83
4	2388.8	21.77 AV	54	-32.23	-83.18	-82.91	6.54	-73.49
5	2483.52	54.77 PK	74	-19.23	-49.89	-50.2	6.54	-40.49
6	2483.52	35.32 AV	54	-18.68	-69.5	-69.48	6.54	-59.94

Notes:

1. Margin value = Emission Level - Limit value
2. " * " : Fundamental frequency, the limit was restricted at the RF Output Power.



Mode B

RF Mode	802.11g	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	26 °C, 71% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4924.00	42.4 PK	74.0	-31.6	1.61 H	118	40.6	1.8
2	4924.00	31.8 AV	54.0	-22.2	1.61 H	118	30.0	1.8
3	7386.00	44.8 PK	74.0	-29.2	1.75 H	273	37.5	7.3
4	7386.00	36.6 AV	54.0	-17.4	1.75 H	273	29.3	7.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4924.00	42.4 PK	74.0	-31.6	1.71 V	169	40.6	1.8
2	4924.00	32.6 AV	54.0	-21.4	1.71 V	169	30.8	1.8
3	7386.00	45.6 PK	74.0	-28.4	1.98 V	305	38.3	7.3
4	7386.00	36.0 AV	54.0	-18.0	1.98 V	305	28.7	7.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 72% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4824.00	42.8 PK	74.0	-31.2	1.76 H	117	41.1	1.7
2	4824.00	32.0 AV	54.0	-22.0	1.76 H	117	30.3	1.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4824.00	43.1 PK	74.0	-30.9	1.70 V	162	41.4	1.7
2	4824.00	32.2 AV	54.0	-21.8	1.70 V	162	30.5	1.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 2 : 2417 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 72% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4834.00	42.5 PK	74.0	-31.5	1.81 H	135	40.7	1.8
2	4834.00	31.3 AV	54.0	-22.7	1.81 H	135	29.5	1.8
3	7251.00	46.6 PK	74.0	-27.4	2.09 H	327	39.7	6.9
4	7251.00	35.7 AV	54.0	-18.3	2.09 H	327	28.8	6.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4834.00	42.1 PK	74.0	-31.9	1.65 V	165	40.3	1.8
2	4834.00	31.4 AV	54.0	-22.6	1.65 V	165	29.6	1.8
3	7251.00	46.2 PK	74.0	-27.8	2.10 V	286	39.3	6.9
4	7251.00	35.6 AV	54.0	-18.4	2.10 V	286	28.7	6.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 72% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4874.00	42.3 PK	74.0	-31.7	1.79 H	134	40.6	1.7
2	4874.00	31.3 AV	54.0	-22.7	1.79 H	134	29.6	1.7
3	7311.00	46.5 PK	74.0	-27.5	2.03 H	330	39.7	6.8
4	7311.00	35.3 AV	54.0	-18.7	2.03 H	330	28.5	6.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4874.00	42.5 PK	74.0	-31.5	1.70 V	174	40.8	1.7
2	4874.00	31.6 AV	54.0	-22.4	1.70 V	174	29.9	1.7
3	7311.00	46.3 PK	74.0	-27.7	2.03 V	301	39.5	6.8
4	7311.00	35.5 AV	54.0	-18.5	2.03 V	301	28.7	6.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 10 : 2457 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 72% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4914.00	42.7 PK	74.0	-31.3	1.76 H	125	41.0	1.7
2	4914.00	31.2 AV	54.0	-22.8	1.76 H	125	29.5	1.7
3	7371.00	46.6 PK	74.0	-27.4	2.04 H	334	39.4	7.2
4	7371.00	35.4 AV	54.0	-18.6	2.04 H	334	28.2	7.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4914.00	43.1 PK	74.0	-30.9	1.69 V	171	41.4	1.7
2	4914.00	32.0 AV	54.0	-22.0	1.69 V	171	30.3	1.7
3	7371.00	46.2 PK	74.0	-27.8	2.05 V	288	39.0	7.2
4	7371.00	35.8 AV	54.0	-18.2	2.05 V	288	28.6	7.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 72% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4924.00	42.3 PK	74.0	-31.7	1.76 H	124	40.5	1.8
2	4924.00	31.1 AV	54.0	-22.9	1.76 H	124	29.3	1.8
3	7386.00	46.2 PK	74.0	-27.8	2.12 H	337	38.9	7.3
4	7386.00	35.2 AV	54.0	-18.8	2.12 H	337	27.9	7.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4924.00	42.9 PK	74.0	-31.1	1.75 V	177	41.1	1.8
2	4924.00	31.7 AV	54.0	-22.3	1.75 V	177	29.9	1.8
3	7386.00	45.7 PK	74.0	-28.3	2.08 V	308	38.4	7.3
4	7386.00	35.5 AV	54.0	-18.5	2.08 V	308	28.2	7.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 12 : 2467 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 72% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4934.00	42.3 PK	74.0	-31.7	1.81 H	139	40.4	1.9
2	4934.00	31.0 AV	54.0	-23.0	1.81 H	139	29.1	1.9
3	7401.00	46.7 PK	74.0	-27.3	2.10 H	324	39.3	7.4
4	7401.00	35.8 AV	54.0	-18.2	2.10 H	324	28.4	7.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4934.00	42.7 PK	74.0	-31.3	1.66 V	158	40.8	1.9
2	4934.00	31.7 AV	54.0	-22.3	1.66 V	158	29.8	1.9
3	7401.00	46.0 PK	74.0	-28.0	2.02 V	300	38.6	7.4
4	7401.00	35.6 AV	54.0	-18.4	2.02 V	300	28.2	7.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

RF Mode	802.11be (EHT20) 106-tone RU	Channel	CH 13 : 2472 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 72% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4944.00	42.2 PK	74.0	-31.8	1.80 H	132	40.3	1.9
2	4944.00	31.2 AV	54.0	-22.8	1.80 H	132	29.3	1.9
3	7416.00	46.2 PK	74.0	-27.8	2.05 H	313	38.8	7.4
4	7416.00	35.4 AV	54.0	-18.6	2.05 H	313	28.0	7.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4944.00	42.9 PK	74.0	-31.1	1.71 V	171	41.0	1.9
2	4944.00	31.9 AV	54.0	-22.1	1.71 V	171	30.0	1.9
3	7416.00	46.0 PK	74.0	-28.0	2.08 V	300	38.6	7.4
4	7416.00	35.5 AV	54.0	-18.5	2.08 V	300	28.1	7.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 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 FCC recognized accredited test firms and accredited 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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