TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 15, Subpart E (Section 15.407)**
Report No.:	RFBWIN-WTW-P22110682-5
FCC ID:	J9C-QCNCM865
Product:	Qualcomm WiFi 7/BT Combo module
Brand:	Qualcomm
Model No.:	QCNCM865
Received Date:	2022/11/24
Test Date:	2023/1/17 ~ 2023/2/21
Issued Date:	2023/3/21
Applicant:	Qualcomm Technologies, Inc.
Address:	5775 Morehouse Drive, San Diego, CA 92121-1714
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

Approved by: _____ , **Date:** **2023/3/21**

May Chen / Manager

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Prepared by : Luna Yu / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBWIN-WTW-P22110682-5	Original release.	2023/3/21

1 Certificate

Product:	Qualcomm WiFi 7/BT Combo module
Brand:	Qualcomm
Test Model:	QCNCM865
Sample Status:	Engineering sample
Applicant:	Qualcomm Technologies, Inc.
Test Date:	2023/1/17 ~ 2023/2/21
Standard:	47 CFR FCC Part 15, Subpart E (Section 15.407)
Measurement procedure:	ANSI C63.10-2013 KDB 291074 D02 EMC Measurement v01 KDB 789033 D02 General UNII Test Procedure New Rules v02r01 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 E (Section 15.407)			
Clause	Test Item	Result	Remark
15.407(a)(3)	RF Output Power	Pass	Meet the requirement of limit.
15.407(a)(3)	Power Spectral Density	Pass	Meet the requirement of limit.
15.407(b)(9)	AC Power Conducted Emissions	Pass	Minimum passing margin is -9.81 dB at 0.56792 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -4.0 dB at 297.14 MHz
15.407(b)(5) 15.407(b)(10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -2.0 dB at 5611.70 MHz
15.407(e)	6 dB Bandwidth	Pass	Meet the requirement of limit.
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.403	Operational restrictions U-NII 4 devices	-	Declaration by applicant.
15.203	Antenna Requirement	Pass	Antenna connector is MHF 4L not a standard connector.

Note: 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:

Parameter	Specification	Expanded Uncertainty (k=2) (±)
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	5.1 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 of EUT

Product	Qualcomm WiFi 7/BT Combo module
Brand	Qualcomm
Test Model	QCNCM865
Status of EUT	Engineering sample
Power Supply Rating	3.3Vdc from host equipment
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM for OFDM in 11ac mode 4096QAM for OFDMA in 11ax mode 4096QAM for OFDMA in 11be mode
Modulation Technology	OFDM, OFDMA
Transfer Rate	802.11a: up to 54 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 1733.3 Mbps 802.11ax: up to 2401.9 Mbps 802.11be: up to 2882.4 Mbps
Operating Frequency	5.835 GHz ~ 5.885 GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20), 802.11be (EHT20): 3 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40), 802.11be (EHT40): 2 802.11ac (VHT80), 802.11ax (HE80), 802.11be (EHT80): 1 802.11ac (VHT160), 802.11ax (HE160), 802.11be (EHT160): 1
Resource Unit (RU)	Single RU: 26-tone, 52-tone, 106-tone, 242-tone, 484-tone, 996-tone Multi-RU (Small RU): 52-tone + 26-tone, 106-tone + 26-tone Multi-RU (Large RU): 484-tone + 242-tone, 996-tone + 484-tone, 2 * 996-tone
Channel Puncturing (Large RU)	80 MHz punctured by 20 MHz; 160 MHz punctured by 20 MHz 160 MHz punctured by 40 MHz
Output Power	EIRP: 289.69 mW (24.62 dBm)
EUT Category	Client device

Note:

1. There are Bluetooth and WLAN (2.4 GHz & 5 GHz & 5.9 GHz & 6 GHz) technology used for the EUT.
2. Simultaneously transmission condition.

DBS			
Condition	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			
Condition	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

3. QCNCM865 has HW variant SKUs below to support different Microsoft Windows platform system and feature:

SKU	Support platform system and feature
NCM865	**X86 platform, support DBS and HBS**
NCM865A	Qualcomm platform, support DBS and HBS
NCM835	X86 platform, support DBS
NCM835A	Qualcomm platform, support DBS
Note: From the above SKUs, the worst was found in **SKU (NCM865)**. Therefore only the test data of the modes were recorded in this report.	

4. The EUT support OFDMA and Partial RU mode, therefore partial RU combination were investigated and the worst case scenario was identified. (The worst case data were presented in section 3.4)
5. The above EUT information is declared by manufacturer and for more detailed features description, please refers 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	Cable Loss (dB)	Antenna Type	Connector Type	Cable Length
1	Chain0/1	Hong-Bo	260-25094	3.53 3.06 3.07 4.81 4.2	2.4~2.4835GHz 5.15~5.25GHz 5.25~5.35GHz 5.47~5.725GHz 5.725~5.850GHz	0.74 1.16 1.18 1.26 1.28	PIFA	MHF 4L	300mm
2	Chain0/1	Hong-Bo	260-25083	5.09 5.14 5.09 5.16 5.12	5.850~5.895 GHz 5.925~6.425 GHz 6.425~6.525 GHz 6.525~6.875 GHz 6.875~7.125 GHz	1.29 1.35 1.38 1.45 1.50	PIFA	MHF 4L	300mm
3	Chain0/1	Hong-Bo	260-25084	3.22 3.35 3.42 4.77 4.72 4.71 4.75 4.29 4.81 4.74	2.4~2.4835 GHz 5.150~5.250 GHz 5.250~5.350 GHz 5.470~5.725 GHz 5.725~5.850 GHz 5.850~5.895 GHz 5.925~6.425 GHz 6.425~6.525 GHz 6.525~6.875 GHz 6.875~7.125 GHz	0.49 0.76 0.77 0.80 0.84 0.84 0.86 0.91 0.96 0.98	Monopole	MHF 4L	200mm

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

2. The EUT incorporates a MIMO function:

5.9 GHz 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
802.11ac (VHT160)	2TX	2RX
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	2TX	2RX
802.11ax (HE80)	2TX	2RX
802.11ax (HE160)	2TX	2RX
802.11be (EHT20)	2TX	2RX
802.11be (EHT40)	2TX	2RX
802.11be (EHT80)	2TX	2RX
802.11be (EHT160)	2TX	2RX
802.11ax (RU26/52/106/242/484/996/2x996)	2TX	2RX
802.11be (RU26/52/106/242/484/996/2x996 MRU52+26/106+26/ 484+242/996+484/996+484+242)	2TX	2RX

Note:

1. The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz), 802.11ac mode for 20MHz (40MHz, 80MHz, 160MHz), 802.11ax mode for 20MHz (40MHz, 80MHz, 160MHz) and 802.11be mode for 20MHz (40MHz, 80MHz, 160MHz) therefore the manufacturer will control the power for 802.11n/ac/ax mode is same as the 802.11be mode or more lower than it and investigated worst case to representative mode in test report.

3.3 Channel List

For U-NII-4FOR 5845 ~ 5885 MHz

3 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20), 802.11be (EHT20):

Channel	Frequency	Channel	Frequency	Channel	Frequency
*169	5845 MHz	173	5865 MHz	177	5885 MHz

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

Channel	Frequency	Channel	Frequency
*167	5835 MHz	175	5875 MHz

1 channel is provided for 802.11ac (VHT80), 802.11ax (HE80), 802.11be (EHT80):

Channel	Frequency
*171	5855 MHz

1 channel is provided for 802.11ac (VHT160), 802.11ax (HE160), 802.11be (EHT160):

Channel	Frequency
*163	5815 MHz

Note: * U-NII-3 & -4 span channels.

3.4 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	1. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

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 / Power Spectral Density	A	802.11a	CDD	169, 173, 177	BPSK	6Mb/s	NA
		802.11be (EHT20)				MCS0	
		802.11be (EHT40)		167, 175			
		802.11be (EHT80)		171			
		802.11be (EHT160)		163			
		802.11be (EHT20) 26-tone RU		169, 173, 177			0, 0, 8
		802.11be (EHT20) 52-tone RU					37, 37, 40
		802.11be (EHT20) 106-tone RU					53, 53, 54
		802.11be (EHT20) 242-tone RU					NA
		802.11be (EHT40) 484-tone RU		167, 175			
		802.11be (EHT80) 996-tone RU		171			
		802.11be (EHT160) 2x996-tone RU		163			
		802.11be (EHT20) 52+26-tone MRU		173			UL_RU52+26_Low_70_MCS0 UL_RU52+26_High_72_MCS0
		802.11be (EHT20) 106+26-tone MRU					UL_RU106+26_Low_82_MCS0 UL_RU106+26_High_83_MCS0
		802.11be (EHT80) 484+242-tone MRU		171			UL_RU484+242_Punc20_91_MCS0
		802.11be (EHT160) 996+484-tone MRU		163			UL_RU996+484_Punc40_MCS0
		802.11be (EHT80) Punctured by 20 MHz		171			EHT80_SU_Punct20_Mid2
		802.11be (EHT160) Punctured by 20 MHz		163			EHT160_SU_Punct20_Mid3
		802.11be (EHT160) Punctured by 40 MHz					EHT160_SU_Punct40_Mid2

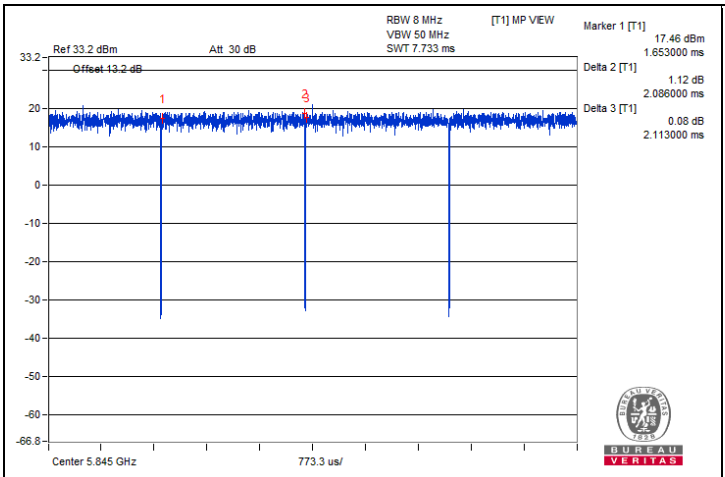
Test Item	EUT Configure Mode	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter	RU/MRU Index
RF Output Power	C	802.11be (EHT20) 26-tone RU	CDD	169, 173, 177	BPSK	MCS0	0, 0, 8
		802.11be (EHT20) 52-tone RU					37, 37, 40
		802.11be (EHT20) 106-tone RU					53, 53, 54
		802.11be (EHT20) 52+26-tone MRU		173			UL_RU52+26_Low_70_MCS0 UL_RU52+26_High_72_MCS0
		802.11be (EHT20) 106+26-tone MRU					UL_RU106+26_Low_82_MCS0 UL_RU106+26_High_83_MCS0
6 dB Bandwidth	A	802.11a	CDD	169, 173, 177	BPSK	6Mb/s	NA
		802.11be (EHT20)				MCS0	
		802.11be (EHT40)		167, 175			
		802.11be (EHT80)		171			
		802.11be (EHT160)		163			
		802.11be (EHT20) 26-tone RU		169, 173, 177			0, 0, 8
		802.11be (EHT20) 52-tone RU					37, 37, 40
		802.11be (EHT20) 106-tone RU					53, 53, 54
		802.11be (EHT40) 484-tone RU		167, 175			NA
		802.11be (EHT80) 996-tone RU		171			
		802.11be (EHT160) 2x996-tone RU		163			
		802.11be (EHT80) 484+242-tone MRU		171			UL_RU484+242_Punc20_91_MCS0
		802.11be (EHT160) 996+484-tone MRU		163			UL_RU996+484_Punc40_MCS0
		802.11be (EHT80) Punctured by 20 MHz		171			EHT80_SU_Punct20_Mid2
		802.11be (EHT160) Punctured by 20 MHz		163			EHT160_SU_Punct20_Mid3
		802.11be (EHT160) Punctured by 40 MHz					EHT160_SU_Punct40_Mid2
Frequency Stability	A	802.11a	-	173	un-modulation	-	NA

Test Item	EUT Configure Mode	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter	RU/MRU Index
AC Power Conducted Emissions	B	802.11be (EHT40)	CDD	167	BPSK	MCS0	NA
Unwanted Emissions below 1 GHz	A, B	802.11be (EHT40)	CDD	167	BPSK	MCS0	NA
Unwanted Emissions above 1 GHz	A	802.11a	CDD	169, 173, 177	BPSK	6Mb/s	NA
		802.11be (EHT20)				MCS0	
		802.11be (EHT40)		167, 175			
		802.11be (EHT80)		171			
		802.11be (EHT160)		163			
		802.11be (EHT80) 484+242-tone MRU		171			UL_RU484+242_Punc20_91_MCS0
		802.11be (EHT160) 996+484-tone MRU		163			UL_RU996+484_Punc40_MCS0
		802.11be (EHT80) Punctured by 20 MHz		171			EHT80_SU_Punct20_Mid2
		802.11be (EHT160) Punctured by 20 MHz		163			EHT160_SU_Punct20_Mid3
		802.11be (EHT160) Punctured by 40 MHz					EHT160_SU_Punct40_Mid2
		802.11be (EHT20) 26-tone RU		169, 173, 177			0, 0, 8
		802.11be (EHT20) 52-tone RU					37, 37, 40
		802.11be (EHT20) 106-tone RU					53, 53, 54
	B	802.11a	CDD	169, 173, 177	BPSK	6Mb/s	NA
		802.11be (EHT20)				MCS0	
		802.11be (EHT40)		167, 175			
		802.11be (EHT80)		171			
		802.11be (EHT160)		163			
		802.11be (EHT80) Punctured by 20 MHz		171			EHT80_SU_Punct20_Mid2
		802.11be (EHT160) Punctured by 20 MHz		163			EHT160_SU_Punct20_Mid3

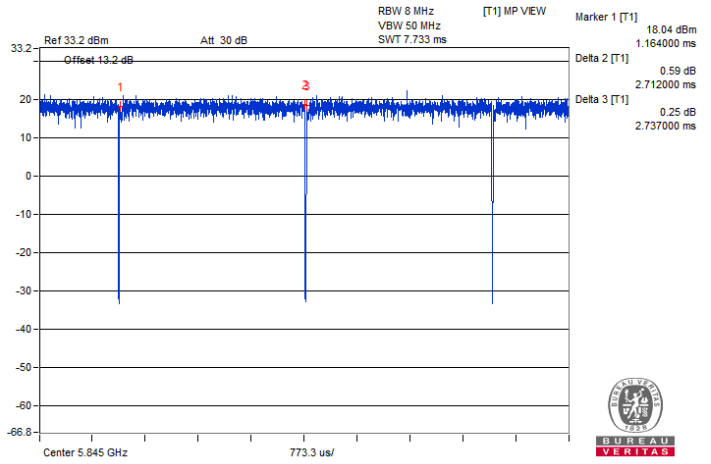
Test Item	EUT Configure Mode	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter	RU/MRU Index
Unwanted Emissions above 1 GHz	B	802.11be (EHT160) Punctured by 40 MHz	CDD	163	BPSK	MCS0	EHT160_SU_Punct40_Mid2
		802.11be (EHT20) 26-tone RU		169, 173, 177			0, 0, 8
		802.11be (EHT20) 52-tone RU					37, 37, 40
		802.11be (EHT20) 106-tone RU					53, 53, 54
		802.11be (EHT20) 52+26-tone MRU		173			UL_RU52+26_Low_70_MCS0 UL_RU52+26_High_72_MCS0
		802.11be (EHT20) 106+26-tone MRU		169			UL_RU106+26_Low_82_MCS0 UL_RU106+26_High_83_MCS0
		802.11be (EHT80) 484+242-tone MRU		171			UL_RU484+242_Punc20_91_MCS0
		802.11be (EHT160) 996+484-tone MRU		163			UL_RU996+484_Punc40_MCS0
EUT Configure Mode:	A	EUT only (w/o antenna) Nss_1					
	B	EUT with 50 ohm terminator Nss_1					
	C	EUT only (w/o antenna) Nss_2					

3.5 Duty Cycle of Test Signal

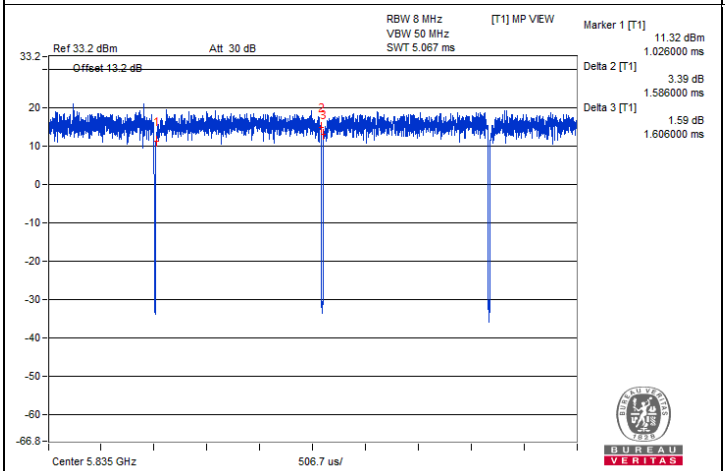
802.11a: Duty cycle = 2.086 ms / 2.113 ms x 100% = 98.7%
802.11be (EHT20): Duty cycle = 2.712 ms / 2.737 ms x 100% = 99.1%
802.11be (EHT40): Duty cycle = 1.586 ms / 1.606 ms x 100% = 98.8%
802.11be (EHT80): Duty cycle = 0.998 ms / 1.036 ms x 100% = 96.3%, duty factor = 10 * log (1/Duty cycle) = 0.16 dB
802.11be (EHT160): Duty cycle = 0.739 ms / 0.766 ms x 100% = 96.5%, duty factor = 10 * log (1/Duty cycle) = 0.16 dB
802.11be (EHT20) 26-tone RU: Duty cycle = 5.077 ms / 5.13 ms x 100% = 99.0%
802.11be (EHT20) 52-tone RU: Duty cycle = 5.077 ms / 5.13 ms x 100% = 99.0%
802.11be (EHT20) 106-tone RU: Duty cycle = 5.077 ms / 5.13 ms x 100% = 99.0%
802.11be (EHT20) 242-tone RU: Duty cycle = 5.077 ms / 5.13 ms x 100% = 99.0%
802.11be (EHT40) 484-tone RU: Duty cycle = 3.321 ms / 3.359 ms x 100% = 98.9%
802.11be (EHT80) 996-tone RU: Duty cycle = 1.62 ms / 1.661 ms x 100% = 97.5%, duty factor = 10 * log (1/Duty cycle) = 0.11 dB
802.11be (EHT160) 2x996-tone RU: Duty cycle = 2.146 ms / 2.188 ms x 100% = 98.1%
802.11be (EHT20) 52+26-tone MRU: Duty cycle = 5.077 ms / 5.13 ms x 100% = 99.0%
802.11be (EHT20) 106+26-tone MRU: Duty cycle = 5.077 ms / 5.13 ms x 100% = 99.0%
802.11be (EHT80) 484+242-tone MRU: Duty cycle = 1.62 ms / 1.661 ms x 100% = 97.5%, duty factor = 10 * log (1/Duty cycle) = 0.11 dB
802.11be (EHT160) 996+484-tone MRU: Duty cycle = 2.146 ms / 2.188 ms x 100% = 98.1%
802.11be (EHT80) Punctured by 20 MHz: Duty cycle = 0.998 ms / 1.036 ms x 100% = 96.3%, duty factor = 10 * log (1/Duty cycle) = 0.16 dB
802.11be (EHT160) Punctured by 20 MHz: Duty cycle = 0.739 ms / 0.766 ms x 100% = 96.5%, duty factor = 10 * log (1/Duty cycle) = 0.16 dB
802.11be (EHT160) Punctured by 40 MHz: Duty cycle = 0.739 ms / 0.766 ms x 100% = 96.5%, duty factor = 10 * log (1/Duty cycle) = 0.16 dB



802.11a



802.11be (EHT20)



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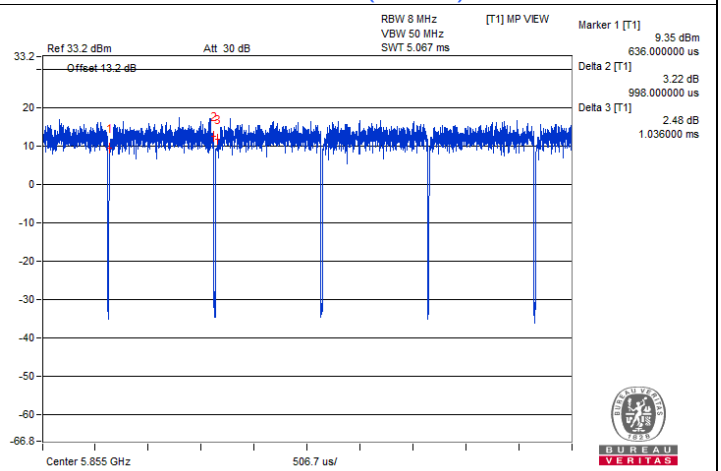

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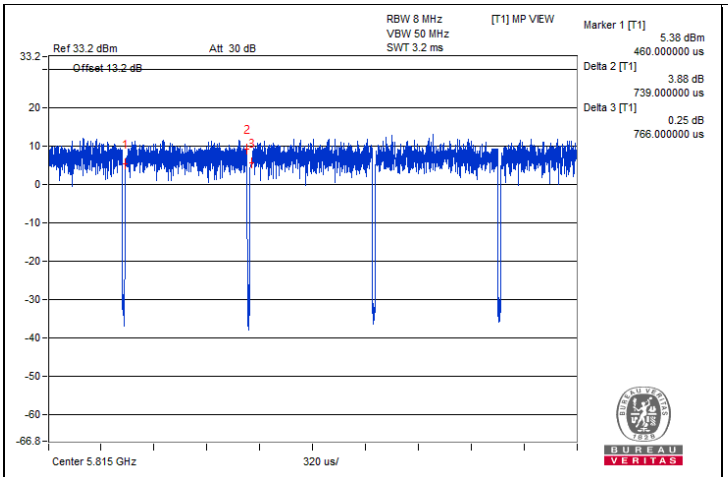

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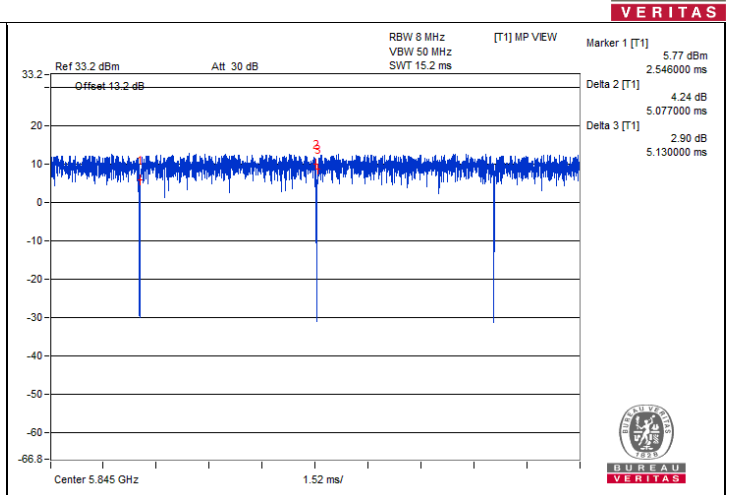
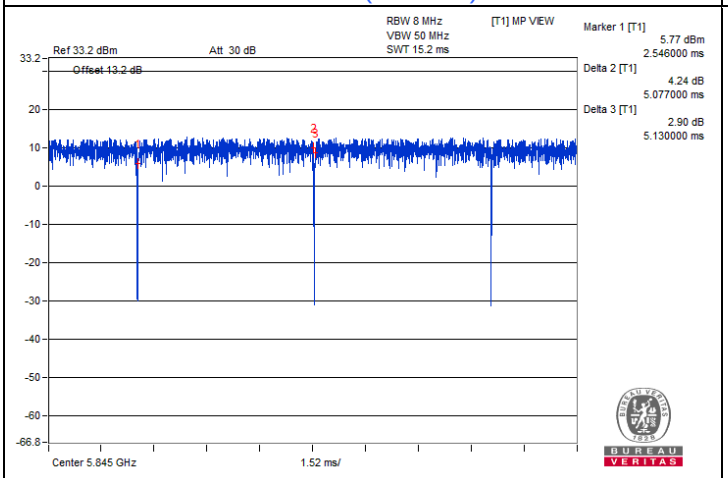
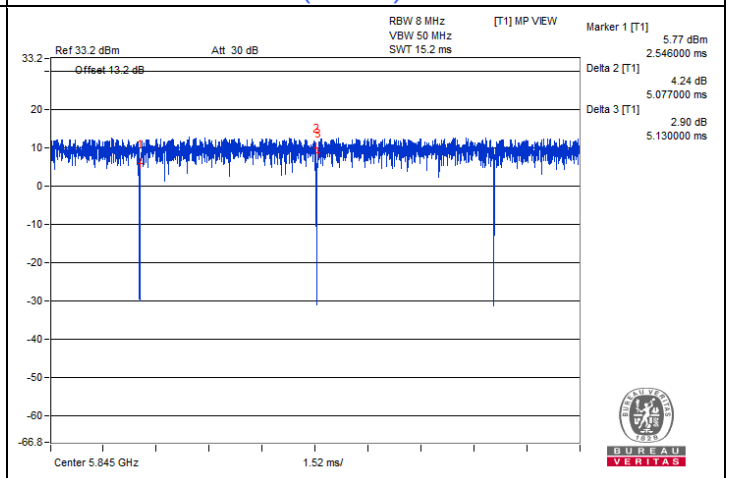


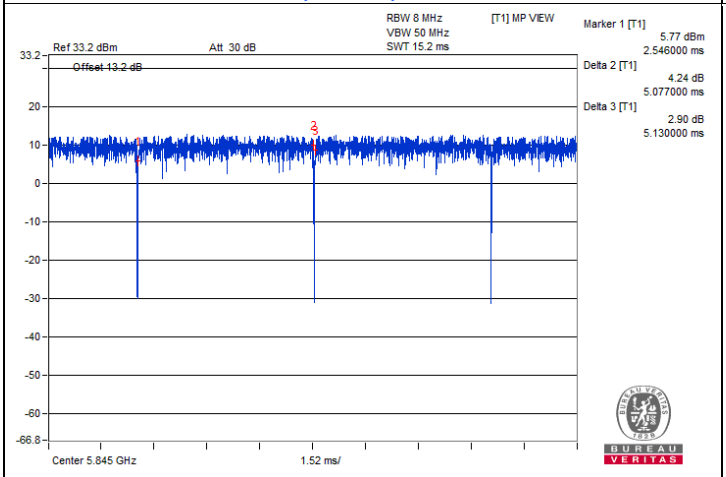
802.11be (EHT20) 26-tone RU



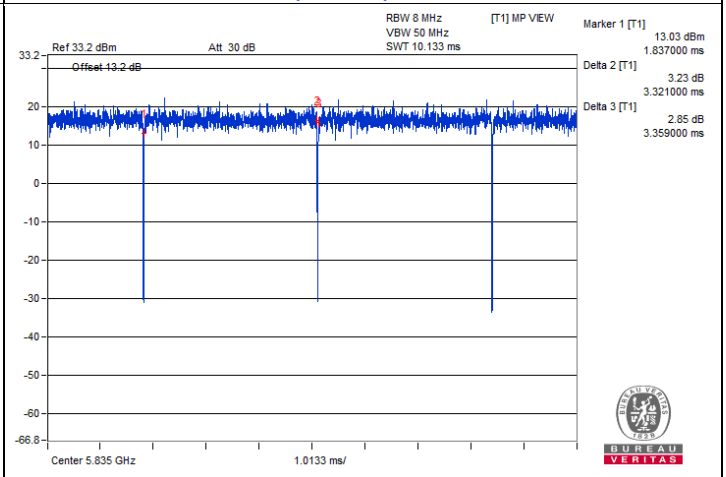
802.11be (EHT20) 52-tone RU



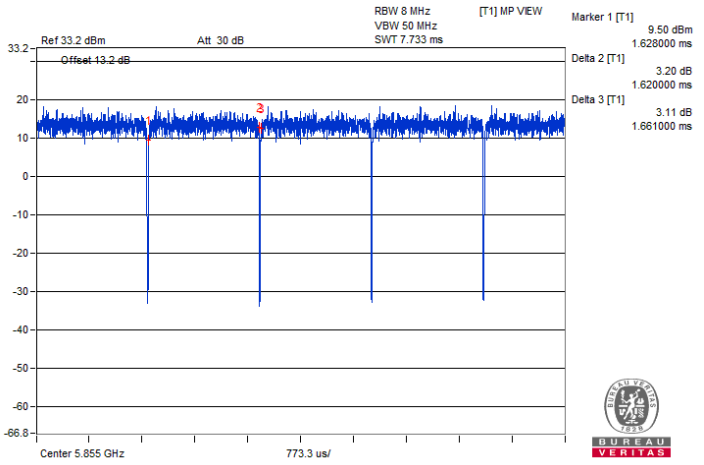
802.11be (EHT20) 106-tone RU



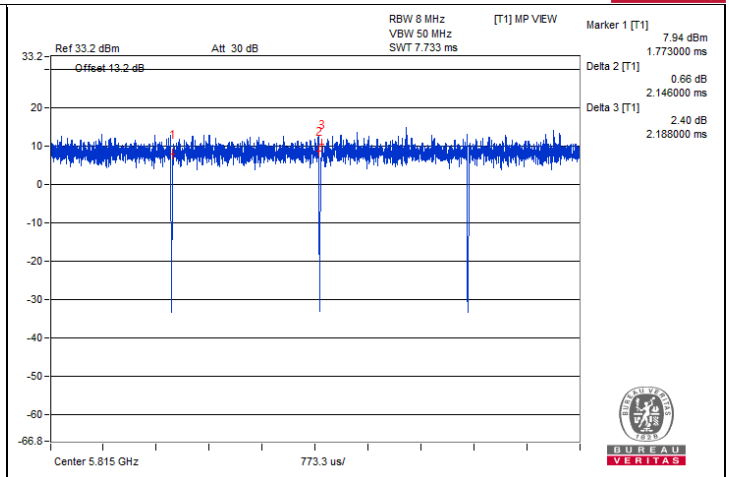
802.11be (EHT20) 242-tone RU



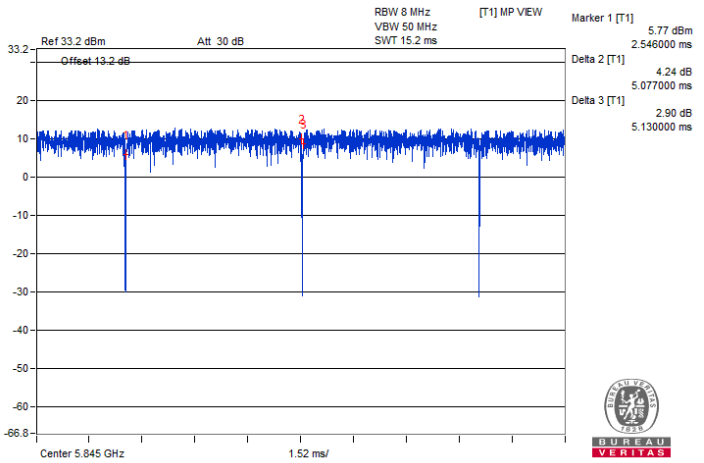
802.11be (EHT40) 484-tone RU



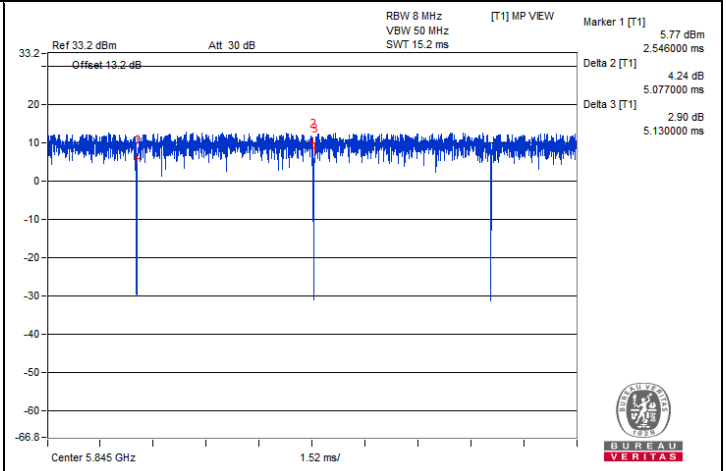
802.11be (EHT80) 996-tone RU



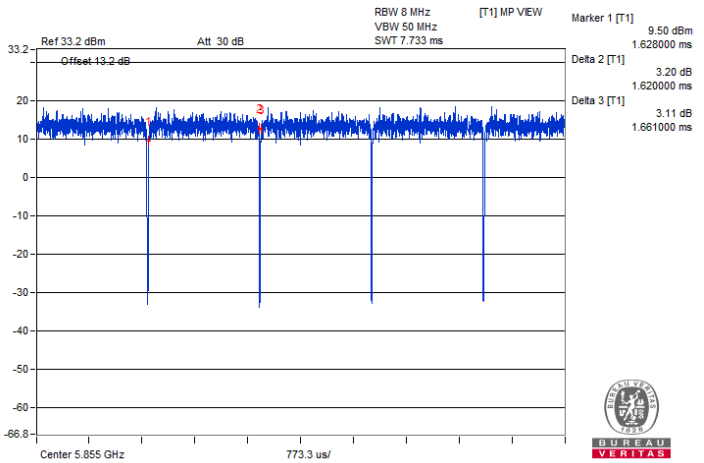
802.11be (EHT160) 2x996-tone RU



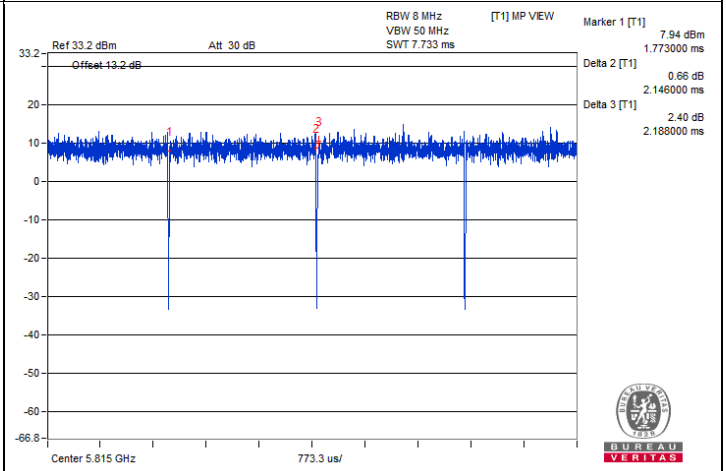
802.11be (EHT20) 52+26-tone MRU



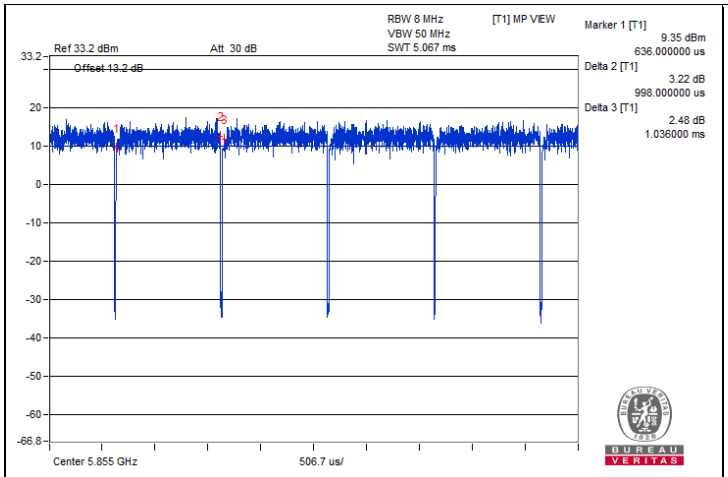
802.11be (EHT20) 106+26-tone MRU



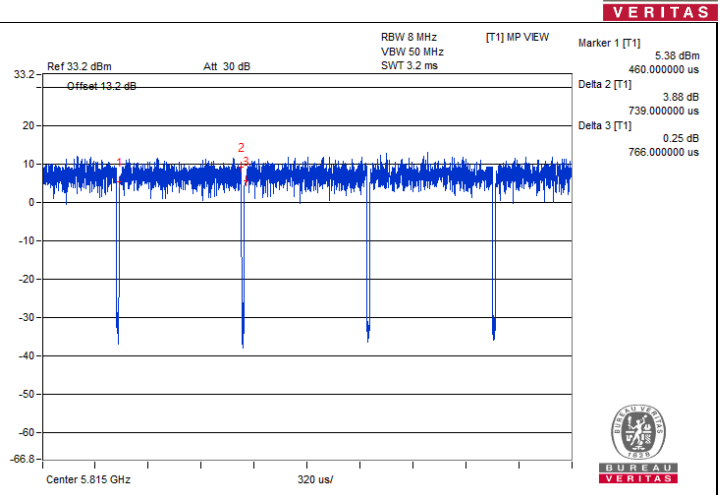
802.11be (EHT80) 484+242-tone MRU



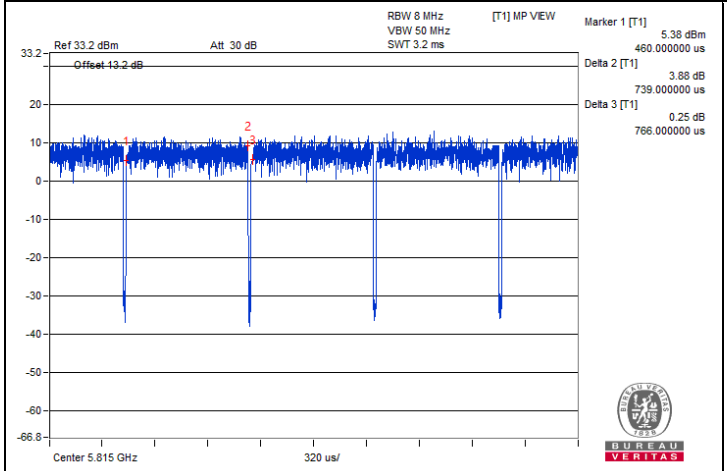
802.11be (EHT160) 996+484-tone MRU



802.11be (EHT80) Punctured by 20 MHz



802.11be (EHT160) Punctured by 20 MHz



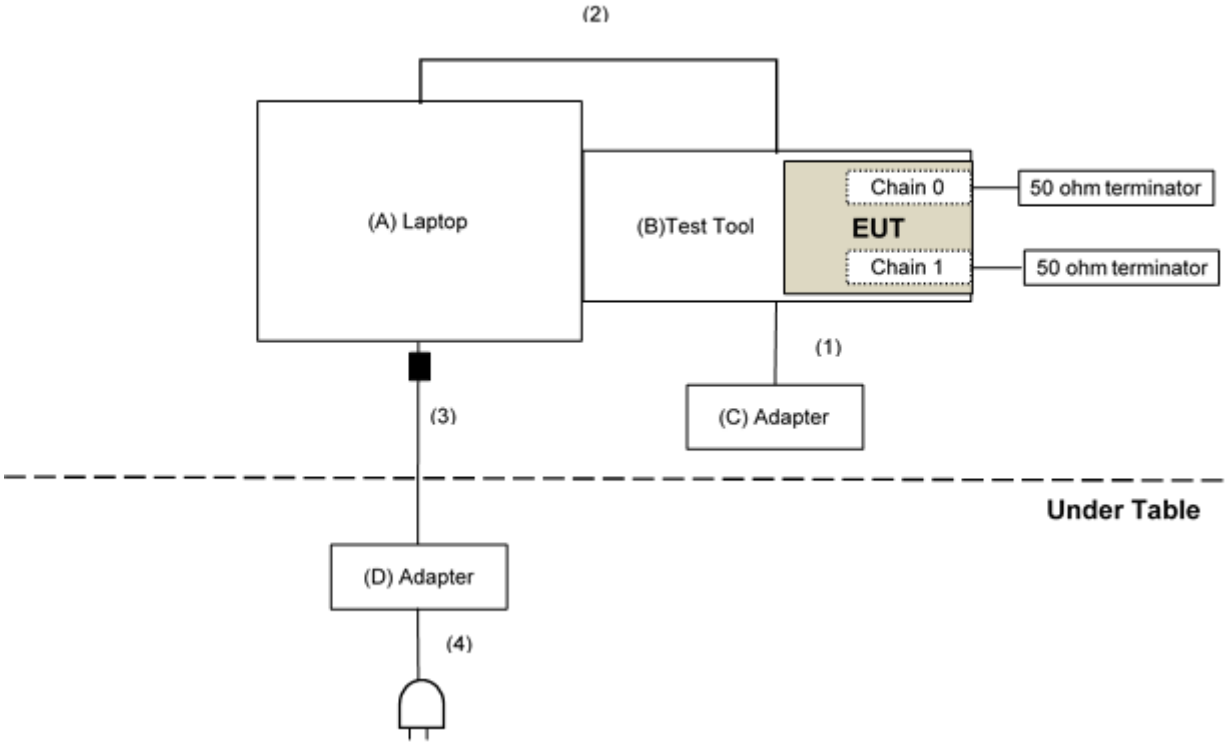
802.11be (EHT160) Punctured by 40 MHz

3.6 Test Program Used and Operation Descriptions

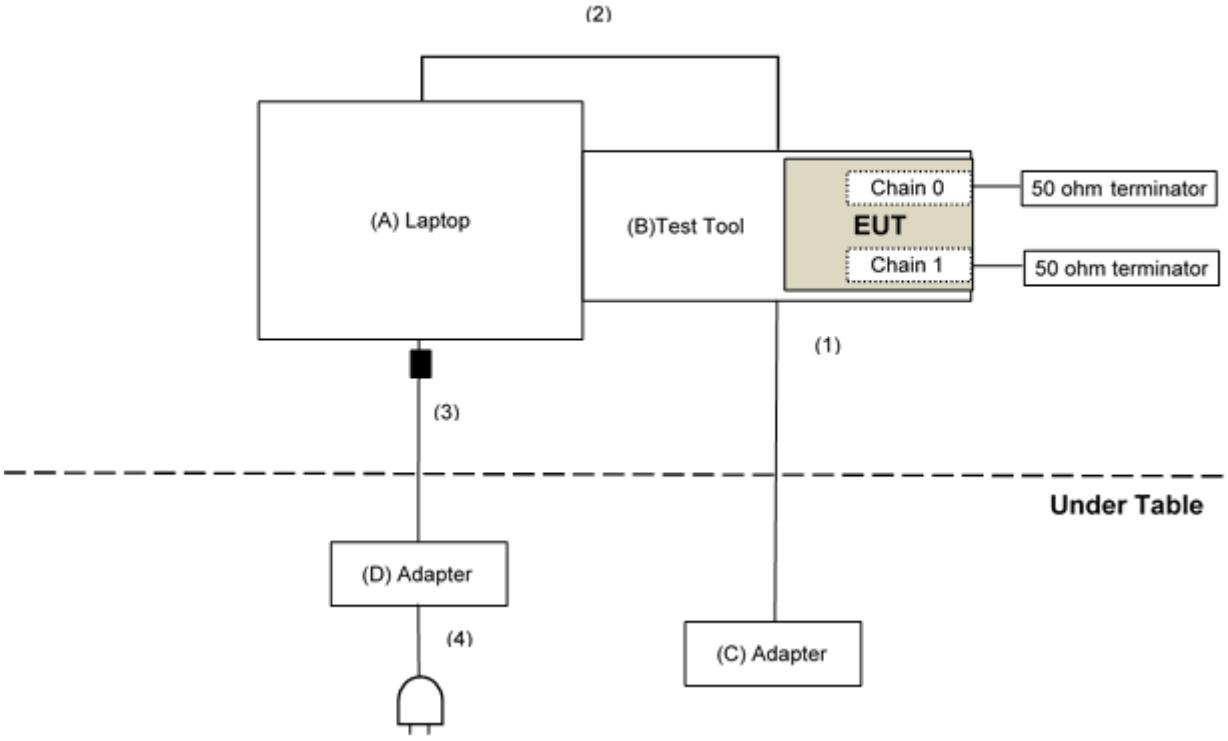
Controlling software (QRCT 4.0.00159.1) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices

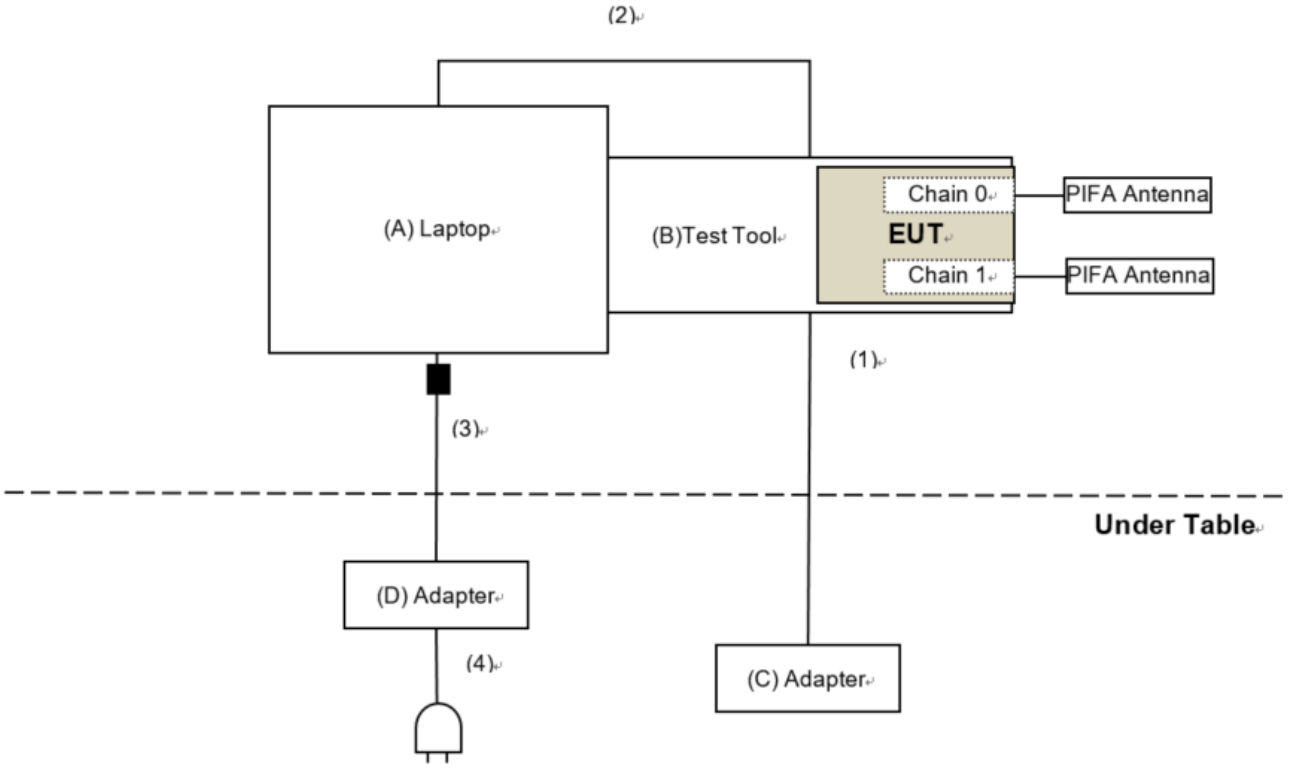
For AC Power Conducted Emission test



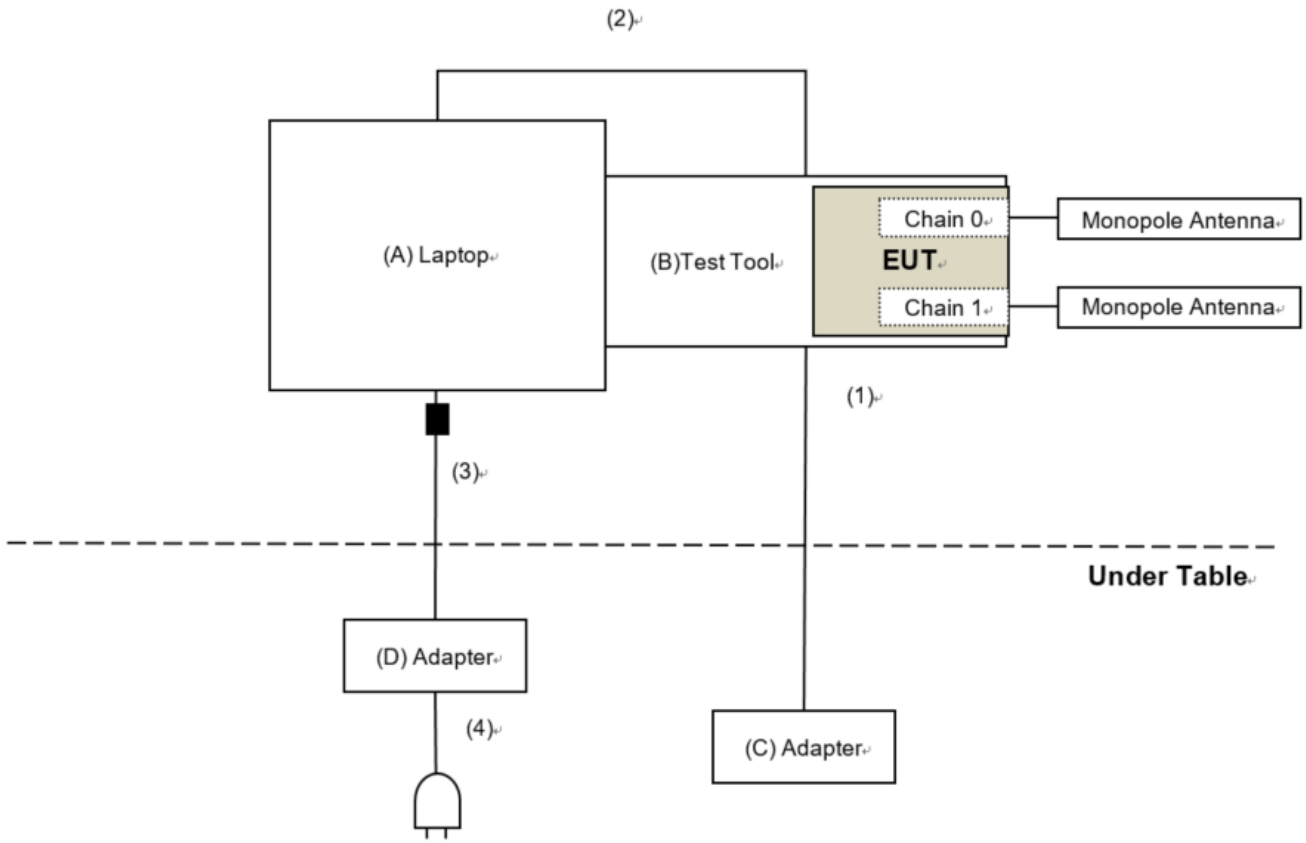
For Unwanted Emission test



For Unwanted Emission Above 1GHz with Antenna Set 2 test



For Unwanted Emission Above 1GHz with Antenna Set 3 test



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Laptop	Dell	E5420	6FGHKV1	N/A	Provided by Lab
B	Test Tool	Qualcomm	N/A	N/A	N/A	Supplied by applicant
C	Adapter	PHIHONG	PSAA12A-120L6	N/A	N/A	Supplied by applicant
D	Adapter	Dell	LLA65NS2-01	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	DC Cable	1	1.2	NO	0	Supplied by applicant
2	USB Cable	1	0.6	Yes	0	Provided by Lab
3	DC Cable	1	1.8	NO	1	Provided by Lab
4	AC Cable	1	1.5	NO	0	Provided by Lab

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
Power Meter Anritsu	ML2495A	1529002	2022/6/22	2023/6/21
Pulse Power Sensor Anritsu	MA2411B	1726434	2022/6/22	2023/6/21

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2023/1/17

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2022/4/5	2023/4/4
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9020B	MY60112409	2022/3/11	2023/3/10

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2023/1/17

4.3 6 dB Bandwidth

Refer to section 4.2 to get information of the instruments.

4.4 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2022/4/5	2023/4/4
DC POWER SUPPLY Topward	6603D	795558	N/A	N/A
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9020B	MY60112409	2022/3/11	2023/3/10
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	2022/12/26	2023/12/25
True RMS Clamp Meter Fluke	325	31130711WS	2022/6/9	2023/6/8

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2023/1/17

4.5 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance	N/A	EMC-01	2022/9/27	2023/9/26
Fixed attenuator STI	STI02-2200-10	005	2022/8/24	2023/8/23
LISN R&S	ESH3-Z5	848773/004	2022/10/18	2023/10/17
RF Coaxial Cable JYEBO	5D-FB	COCCAB-001	2022/8/24	2023/8/23
Software BVADT	BVADT_Cond_V7.3.7.4	N/A	N/A	N/A
TEST RECEIVER R&S	ESCS 30	847124/029	2022/10/14	2023/10/13

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2023/2/20

4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Bilog Antenna Schwarzbeck	VULB 9168	9168-0842	2022/10/24	2023/10/23
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-02	2022/12/28	2023/12/27
LOOP ANTENNA Electro-Metrics	EM-6879	264	2022/3/18	2023/3/17
Pre_Amplifier Agilent	8447D	2944A10636	2022/3/19	2023/3/18
Pre_Amplifier EMCI	EMC330N	980538	2022/4/25	2023/4/24
RF Coaxial Cable COMMATE/PEWC	8D	966-5-1	2022/4/25	2023/4/24
		966-5-2	2022/4/25	2023/4/24
		966-5-3	2022/4/25	2023/4/24
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2022/12/19	2023/12/18
		LOOPCAB-002	2022/12/19	2023/12/18
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9020B	MY60112410	2022/3/13	2023/3/12
Test Receiver R&S	ESR3	102528	2023/2/10	2024/2/9

Notes:

1. The test was performed in 966 Chamber No. 5.
2. Tested Date: 2023/2/15

4.7 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-1819	2022/11/13	2023/11/12
	BBHA 9170	9170-739	2022/11/13	2023/11/12
Pre_Amplifier EMCI	EMC12630SE	980509	2022/4/25	2023/4/24
	EMC184045SE	980387	2022/12/28	2023/12/27
RF Cable-Frequency range: 1-40GHz EMCI	EMC102-KM-KM-1200	160924	2022/12/28	2023/12/27
RF Coaxial Cable EMCI	EMC-KM-KM-4000	200214	2022/3/8	2023/3/7
	EMC104-SM-SM-1500	180503	2022/4/25	2023/4/24
	EMC104-SM-SM-2000	180501	2022/4/25	2023/4/24
	EMC104-SM-SM-6000	180506	2022/4/25	2023/4/24
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9020B	MY60112410	2022/3/13	2023/3/12
Test Receiver R&S	ESR3	102528	2023/2/10	2024/2/9

Notes:

1. The test was performed in 966 Chamber No. 5.
2. Tested Date: 2023/2/20 ~ 2023/2/21

5 Limits of Test Items

5.1 RF Output Power

Device Category	Limit (Max Average Power)
Indoor access point	EIRP 36 dBm
Subordinate device	EIRP 36 dBm
Client device	EIRP 30 dBm
Note: For all U-NII-4 and U-NII-3 & -4 span channels shall met above EIRP values.	

Per KDB 662911 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 Power Spectral Density

Device Category	Limit
Indoor access point	EIRP 20 dBm/MHz
Subordinate device	EIRP 20 dBm/MHz
Client device	EIRP 14 dBm/MHz
Note: For all U-NII-4 and U-NII-3 & -4 span channels shall met above EIRP values.	

5.3 6 dB Bandwidth

Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

5.4 Frequency Stability

The frequency of the carrier signal shall be maintained within band of operation.

5.5 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.

5.6 Unwanted Emissions below 1 GHz

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

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).

5.7 Unwanted Emissions above 1 GHz

(i) For an indoor access point or subordinate device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of 15 dBm/MHz and shall decrease linearly to an e.i.r.p. of −7 dBm/MHz at or above 5.925 GHz.

(ii) For a client device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of −5 dBm/MHz and shall decrease linearly to an e.i.r.p. of −27 dBm/MHz at or above 5.925 GHz.

(iii) For a client device or indoor access point or subordinate device, all emissions below 5.725 GHz shall not exceed an e.i.r.p. of −27 dBm/MHz at 5.65 GHz increasing linearly to 10 dBm/MHz at 5.7 GHz, and from 5.7 GHz increasing linearly to a level of 15.6 dBm/MHz at 5.72 GHz, and from 5.72 GHz increasing linearly to a level of 27 dBm/MHz at 5.725 GHz.

Note:

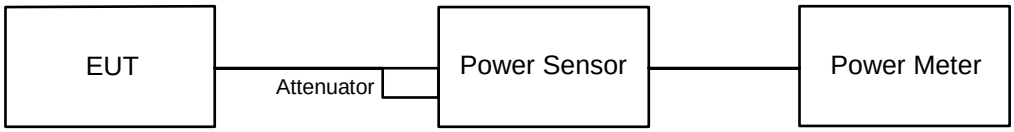
The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3}$$ μV/m, where P is the eirp (Watts).

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

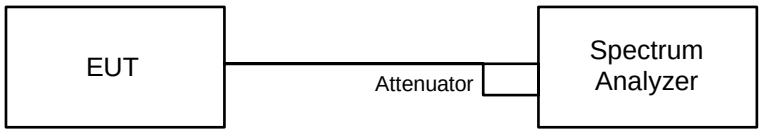


6.1.2 Test Procedure

Method PM is 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 and set the detector to average. Duty factor is not added to measured value.

6.2 Power Spectral Density

6.2.1 Test Setup



6.2.2 Test Procedure

For specified measurement bandwidth 1 MHz:
Method SA-1

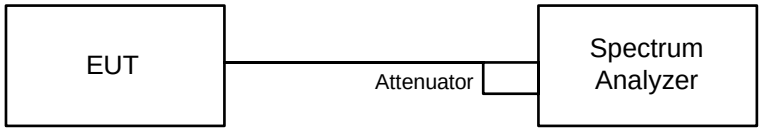
a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
b. Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
c. Scale the observed power level to an equivalent value in 1 MHz by adjusting (increasing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(1 MHz/300 kHz)
d. Sweep points ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
e. Sweep time = auto, trigger set to “free run”.
f. Trace average at least 100 traces in power averaging mode.
g. Record the max value

For specified measurement bandwidth 1 MHz:
Method SA-2

a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
b. Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
c. Scale the observed power level to an equivalent value in 1 MHz by adjusting (increasing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(1 MHz/300 kHz)
d. Sweep points ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
e. Sweep time = auto, trigger set to “free run”.
f. Trace average at least 100 traces in power averaging mode.
g. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
h. Record the max value and add 10 log (1/duty cycle).

6.3 6 dB Bandwidth

6.3.1 Test Setup

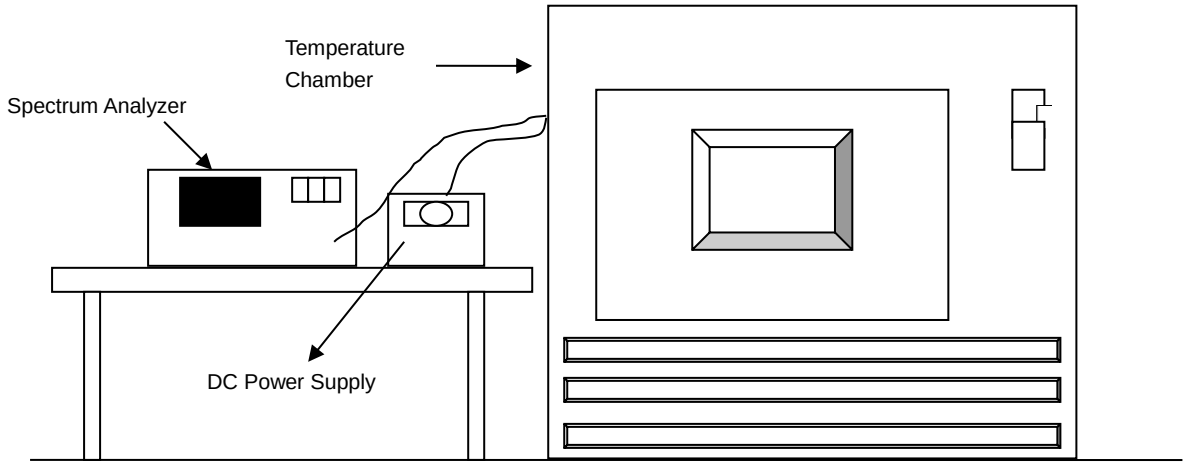


6.3.2 Test Procedure

a. Set resolution bandwidth (RBW) = 100 kHz.
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

6.4 Frequency Stability

6.4.1 Test Setup

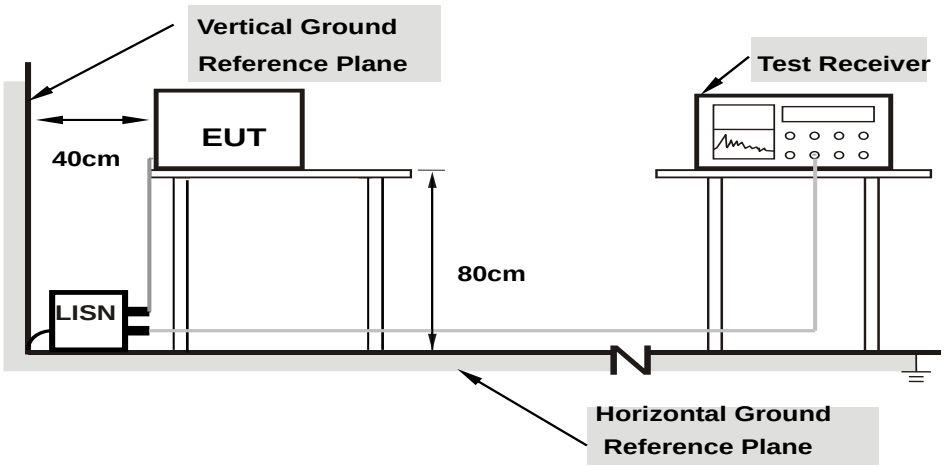


6.4.2 Test Procedure

a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
b. Turn the EUT on and couple its output to a spectrum analyzer.
c. Turn the EUT off and set the chamber to the highest temperature specified.
d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.
e. Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.
f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

6.5 AC Power Conducted Emissions

6.5.1 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).

6.5.2 Test Procedure

a. 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.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

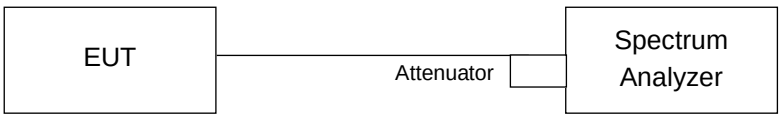
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

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.

6.6 Unwanted Emissions below 1 GHz

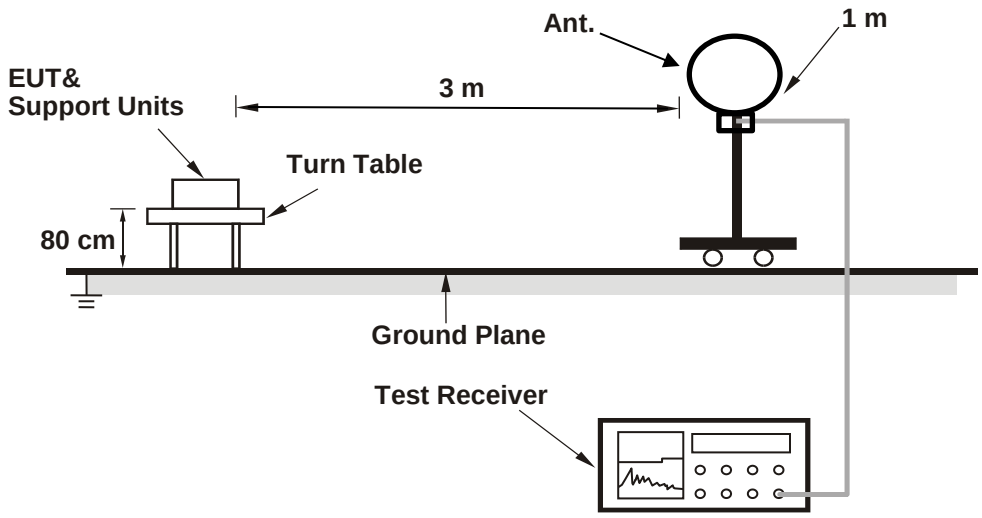
6.6.1 Test Setup

For Conducted Configuration:

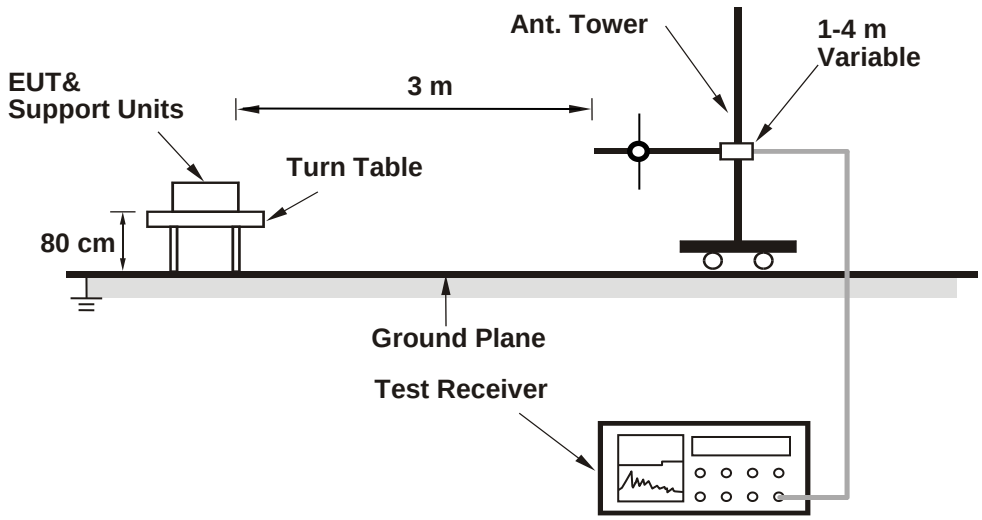


For Radiated Configuration:

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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

6.6.2 Test Procedure

Following FCC KDB 789033 D02 General UNII Test Procedures:

Radiated versus Conducted Measurements.

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

a. 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.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

d. 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. 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

a. 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.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. 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.

d. 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. 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.

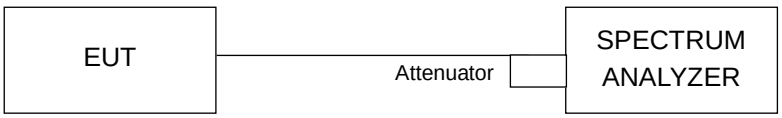
Notes:

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.

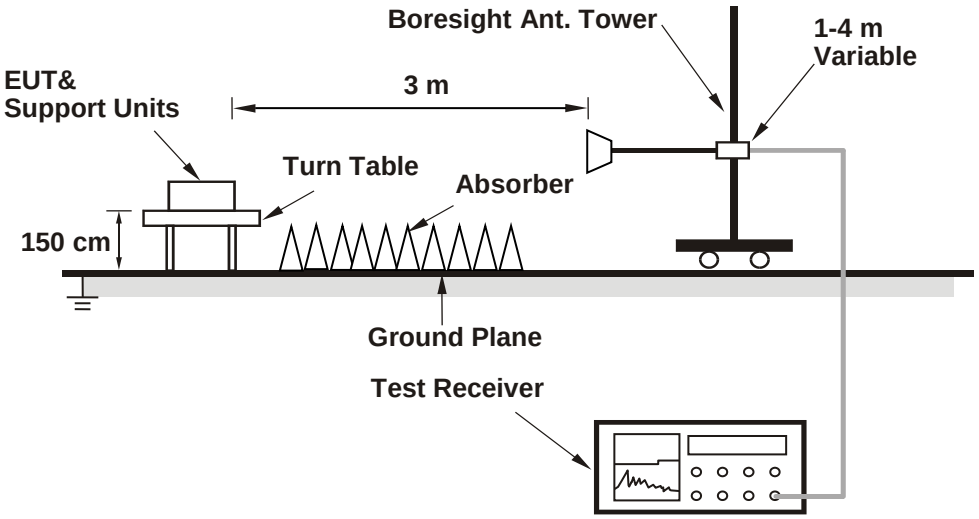
6.7 Unwanted Emissions above 1 GHz

6.7.1 Test Setup

For Conducted Configuration:



For Radiated Configuration:



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

6.7.2 Test Procedure

Following FCC KDB 789033 D02 General UNII Test Procedures:

Radiated versus Conducted Measurements.

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 above 1 GHz

a. 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.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. 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.

d. 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. 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 ≥ 1/T (Duty cycle < 98%) or 10 Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1 GHz.
3. All modes of operation were investigated and the worst-case emissions are reported.

7 Test Results of Test Item

7.1 RF Output Power

Mode A

Input Power:	3.3 Vdc	Environmental Conditions:	24°C, 62% RH	Tested By:	Eric Peng

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
169	5845	13.28	13.91	45.885	16.62	5.09	148.139	21.71	30	Pass
173	5865	13.29	13.78	45.209	16.55	5.09	145.957	21.64	30	Pass
177	5885	13.14	13.75	44.32	16.47	5.09	143.087	21.56	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
169	5845	14.07	14.47	53.517	17.28	5.09	172.779	22.37	30	Pass
173	5865	13.94	14.63	53.814	17.31	5.09	173.738	22.4	30	Pass
177	5885	12.85	13.41	41.203	16.15	5.09	133.024	21.24	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
167	5835	16.05	16.52	85.146	19.30	5.09	274.893	24.39	30	Pass
175	5875	15.97	16.53	84.515	19.27	5.09	272.856	24.36	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
171	5855	14.61	15.31	62.869	17.98	5.09	202.972	23.07	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT160)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
163	5815	12.54	13.13	38.506	15.86	5.09	124.316	20.95	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT20) 26-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
169	5845	4.87	5.30	6.457	8.10	5.09	20.846	13.19	30	Pass
173	5865	4.91	5.38	6.549	8.16	5.09	21.143	13.25	30	Pass
177	5885	4.43	5.06	5.98	7.77	5.09	19.306	12.86	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT20) 52-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
169	5845	8.09	8.51	13.537	11.32	5.09	43.704	16.41	30	Pass
173	5865	8.12	8.59	13.714	11.37	5.09	44.276	16.46	30	Pass
177	5885	7.92	8.64	13.506	11.31	5.09	43.604	16.4	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT20) 106-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
169	5845	10.89	11.38	26.015	14.15	5.09	83.989	19.24	30	Pass
173	5865	10.92	11.43	26.259	14.19	5.09	84.777	19.28	30	Pass
177	5885	9.22	9.94	18.219	12.61	5.09	58.82	17.7	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT20) 242-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
169	5845	14.01	14.68	54.553	17.37	5.09	176.124	22.46	30	Pass
173	5865	14.06	14.74	55.253	17.42	5.09	178.384	22.51	30	Pass
177	5885	13.36	13.95	46.508	16.68	5.09	150.151	21.77	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT40) 484-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
167	5835	14.31	14.84	57.456	17.59	5.09	185.496	22.68	30	Pass
175	5875	16.23	16.79	89.729	19.53	5.09	289.69	24.62	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT80) 996-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
171	5855	11.61	12.27	31.353	14.96	5.09	101.223	20.05	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT160) 2x996-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
163	5815	11.90	12.40	32.866	15.17	5.09	106.108	20.26	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT20) 52+26-tone MRU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
173	5865	8.99	9.58	17.003	12.31	5.09	54.894	17.4	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT20) 106+26-tone MRU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
173	5865	11.22	11.84	28.519	14.55	5.09	92.073	19.64	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT80) 484+242-tone MRU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
171	5855	15.14	15.71	69.898	18.44	5.09	225.665	23.53	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT160) 996+484-tone MRU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
163	5815	12.45	13.03	37.67	15.76	5.09	121.617	20.85	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT80) Punctured by 20 MHz

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
171	5855	14.83	15.46	65.565	18.17	5.09	211.676	23.26	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT160) Punctured by 20 MHz

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
163	5815	11.67	12.35	31.868	15.03	5.09	102.886	20.12	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT160) Punctured by 40 MHz

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
163	5815	11.71	12.34	31.965	15.05	5.09	103.199	20.14	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

Mode C

Input Power:	3.3 Vdc	Environmental Conditions:	25°C, 63% RH	Tested By:	Eric Peng

802.11be (EHT20) 26-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
169	5845	7.81	8.24	12.708	11.04	5.09	41.028	16.13	30	Pass
173	5865	7.89	8.32	12.944	11.12	5.09	41.79	16.21	30	Pass
177	5885	7.37	8.01	11.782	10.71	5.09	38.038	15.8	30	Pass

Note:

1. The directional gain is 5.09 dBi

802.11be (EHT20) 52-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
169	5845	11.06	11.45	26.728	14.27	5.09	86.291	19.36	30	Pass
173	5865	11.08	11.51	26.981	14.31	5.09	87.108	19.4	30	Pass
177	5885	10.87	11.60	26.672	14.26	5.09	86.11	19.35	30	Pass

Note:

1. The directional gain is 5.09 dBi

802.11be (EHT20) 106-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
169	5845	13.37	13.89	46.218	16.65	5.09	149.215	21.74	30	Pass
173	5865	13.45	13.92	46.791	16.70	5.09	151.064	21.79	30	Pass
177	5885	11.70	12.48	32.492	15.12	5.09	104.9	20.21	30	Pass

Note:

1. The directional gain is 5.09 dBi

802.11be (EHT20) 52+26-tone MRU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
173	5865	11.93	12.55	33.584	15.26	5.09	108.426	20.35	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

802.11be (EHT20) 106+26-tone MRU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
173	5865	14.18	14.76	56.104	17.49	5.09	181.131	22.58	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 5.09 dBi

7.2 Power Spectral Density

Mode A

Input Power:	3.3 Vdc	Environmental Conditions:	24°C, 62% RH	Tested By:	Eric Peng

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1						
169	5845	-2.93	-2.11	0.51	5.74	8.1	13.84	14	Pass
173	5865	-2.75	-2.11	0.59	5.82	8.1	13.92	14	Pass
177	5885	-3.18	-2.33	0.28	5.51	8.1	13.61	14	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

802.11be (EHT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1						
169	5845	-2.91	-2.11	0.52	5.75	8.1	13.85	14	Pass
173	5865	-2.63	-2.25	0.57	5.80	8.1	13.9	14	Pass
177	5885	-3.18	-2.45	0.21	5.44	8.1	13.54	14	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

802.11be (EHT40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1						
167	5835	-4.37	-3.57	-0.94	4.29	8.1	12.39	14	Pass
175	5875	-4.36	-3.79	-1.06	4.17	8.1	12.27	14	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

802.11be (EHT80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1							
171	5855	-7.70	-6.92	-4.28	0.16	1.11	8.1	9.21	14	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

802.11be (EHT160)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1							
163	5815	-11.24	-10.39	-7.78	0.16	-2.39	8.1	5.71	14	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

802.11be (EHT20) 26-tone RU

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1						
169	5845	-4.47	-3.99	-1.21	4.02	8.1	12.12	14	Pass
173	5865	-4.51	-3.99	-1.23	4.00	8.1	12.1	14	Pass
177	5885	-5.12	-4.59	-1.84	3.39	8.1	11.49	14	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

802.11be (EHT20) 52-tone RU

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1						
169	5845	-4.13	-3.65	-0.87	4.36	8.1	12.46	14	Pass
173	5865	-4.19	-3.63	-0.89	4.34	8.1	12.44	14	Pass
177	5885	-3.93	-3.90	-0.9	4.33	8.1	12.43	14	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

802.11be (EHT20) 106-tone RU

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1						
169	5845	-2.96	-2.30	0.39	5.62	8.1	13.72	14	Pass
173	5865	-3.07	-2.33	0.33	5.56	8.1	13.66	14	Pass
177	5885	-4.42	-3.64	-1	4.23	8.1	12.33	14	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

802.11be (EHT20) 242-tone RU

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1						
169	5845	-3.02	-2.22	0.41	5.64	8.1	13.74	14	Pass
173	5865	-3.15	-2.28	0.32	5.55	8.1	13.65	14	Pass
177	5885	-3.29	-2.43	0.17	5.40	8.1	13.5	14	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

802.11be (EHT40) 484-tone RU

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1						
167	5835	-4.24	-3.47	-0.83	4.40	8.1	12.5	14	Pass
175	5875	-4.33	-3.67	-0.98	4.25	8.1	12.35	14	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

802.11be (EHT80) 996-tone RU

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1							
171	5855	-7.32	-6.53	-3.9	0.11	1.44	8.1	9.54	14	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

802.11be (EHT160) 2x996-tone RU

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1						
163	5815	-11.35	-10.51	-7.9	-2.67	8.1	5.43	14	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

802.11be (EHT20) 52+26-tone MRU

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1						
173	5865	-4.04	-3.37	-0.68	4.55	8.1	12.65	14	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

802.11be (EHT20) 106+26-tone MRU

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1						
173	5865	-3.81	-3.10	-0.43	4.80	8.1	12.9	14	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

802.11be (EHT80) 484+242-tone MRU

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1							
171	5855	-4.06	-3.47	-0.74	0.11	4.60	8.1	12.7	14	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

802.11be (EHT160) 996+484-tone MRU

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1						
163	5815	-8.79	-8.06	-5.4	-0.17	8.1	7.93	14	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

802.11be (EHT80) Punctured by 20 MHz

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1							
171	5855	-5.76	-5.00	-2.35	0.16	3.04	8.1	11.14	14	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

802.11be (EHT160) Punctured by 20 MHz

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1							
163	5815	-10.81	-9.88	-7.31	0.16	-1.92	8.1	6.18	14	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

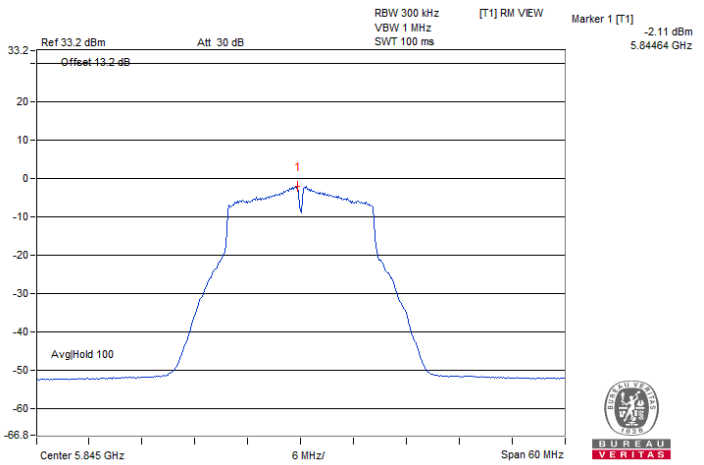
802.11be (EHT160) Punctured by 40 MHz

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/MHz)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1							
163	5815	-9.99	-9.21	-6.57	0.16	-1.18	8.1	6.92	14	Pass

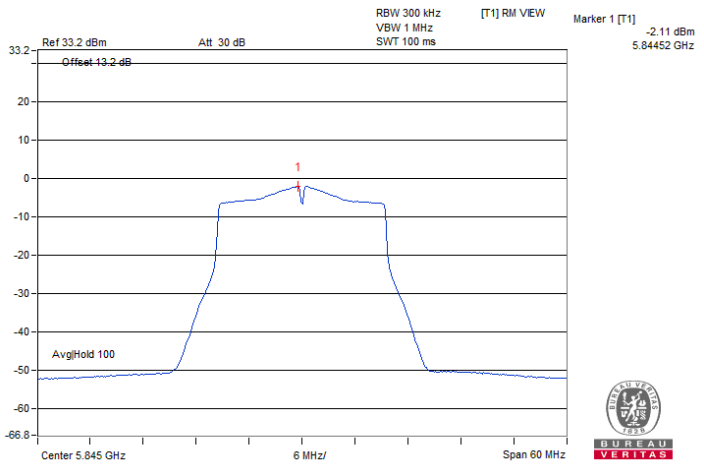
Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. The directional gain is 8.1 dBi

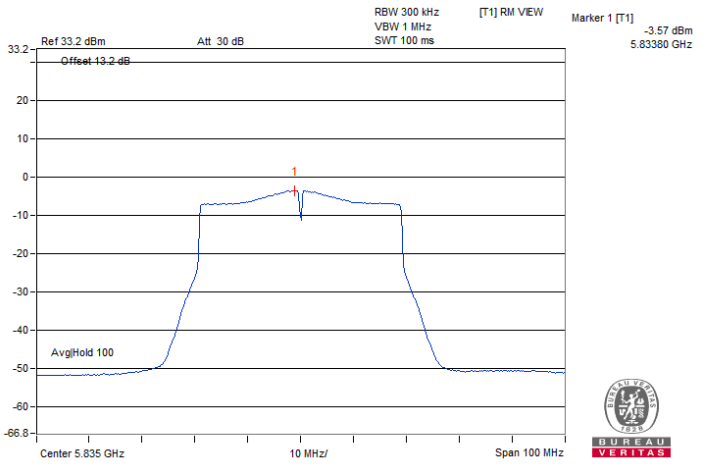
Spectrum Plot of Maximum Value



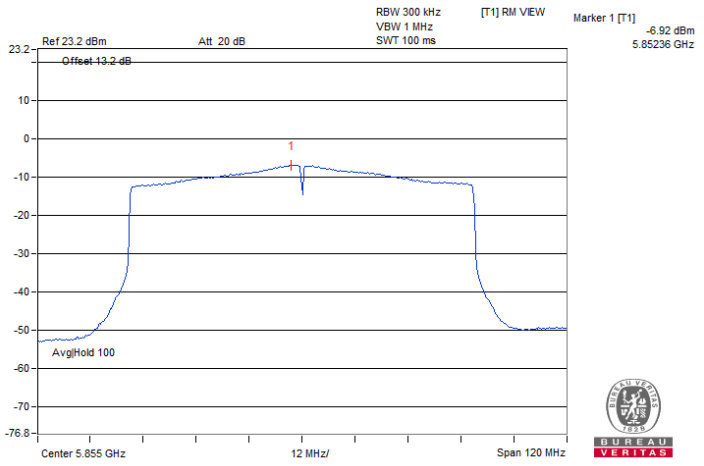
802.11a / Chain 1 : CH 169



802.11be (EHT20) / Chain 1 : CH 169

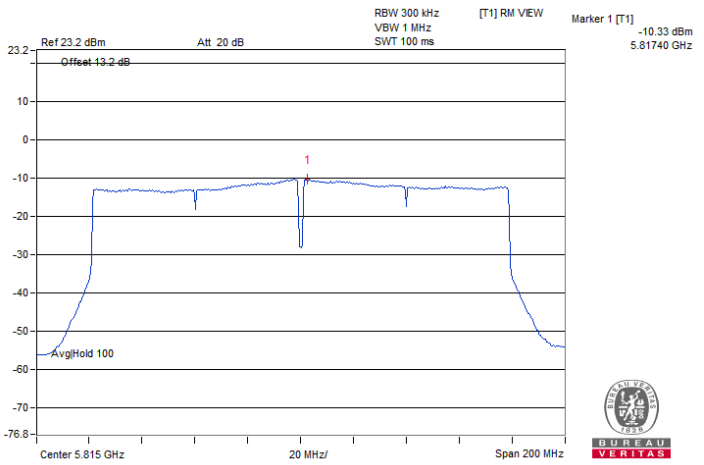


802.11be (EHT40) / Chain 1 : CH 167

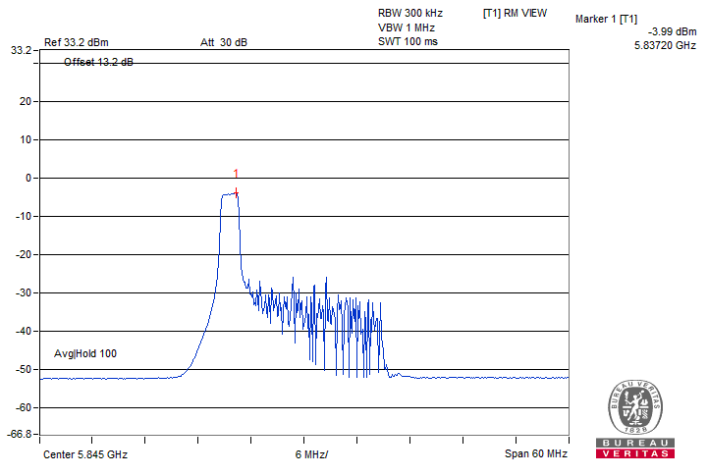


802.11be (EHT80) / Chain 1 : CH 171

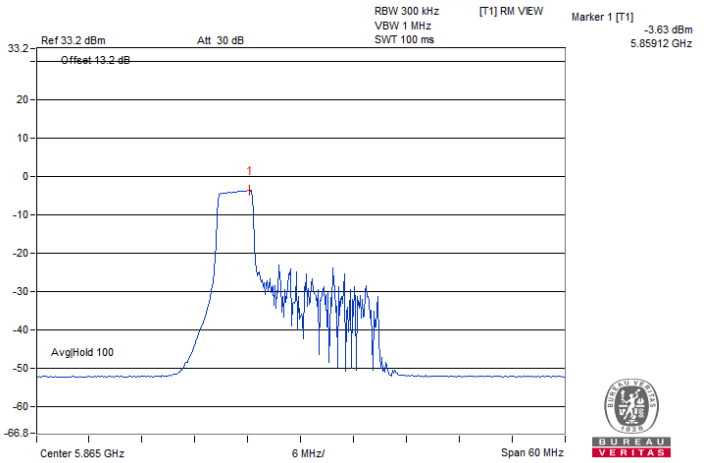
Spectrum Plot of Maximum Value



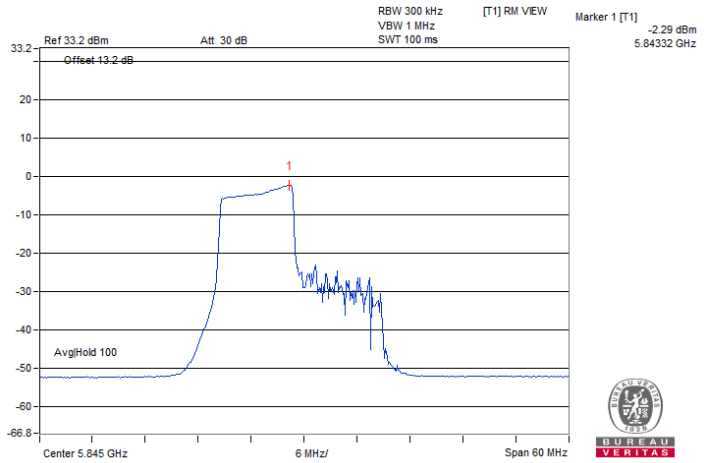
802.11be (EHT160) / Chain 1 : CH 163



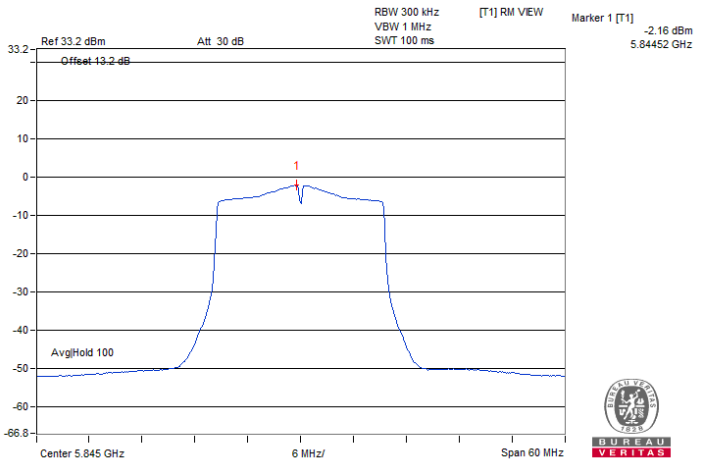
802.11be (EHT20) 26-tone RU / Chain 1 : CH 169@0



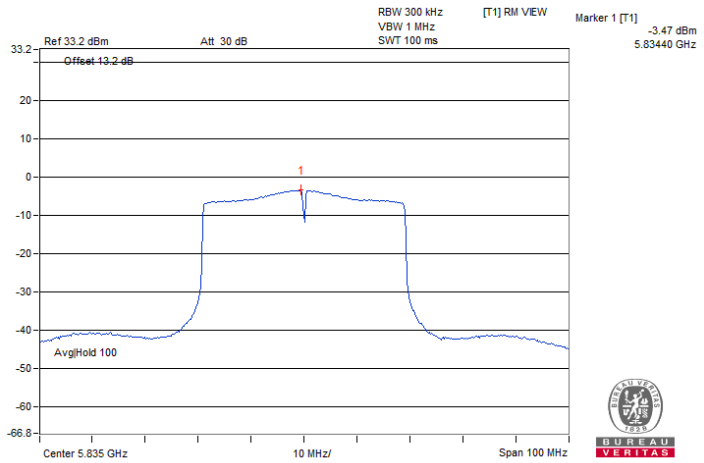
802.11be (EHT20) 52-tone RU / Chain 1 : CH 173@37



802.11be (EHT20) 106-tone RU / Chain 1 : CH 169@53

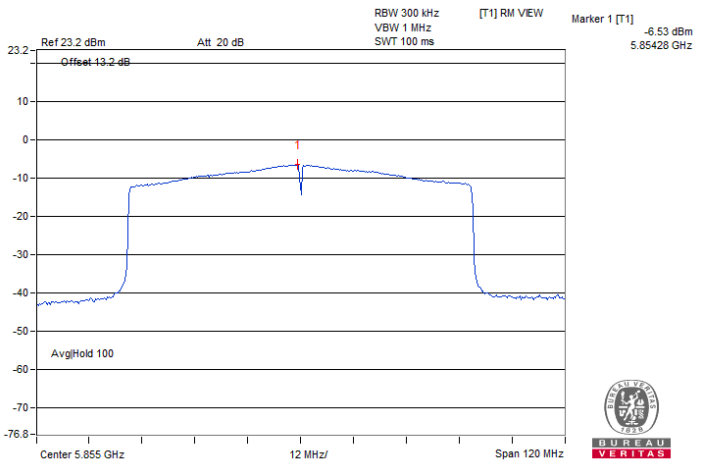


802.11be (EHT20) 242-tone RU / Chain 1 : CH 169@61

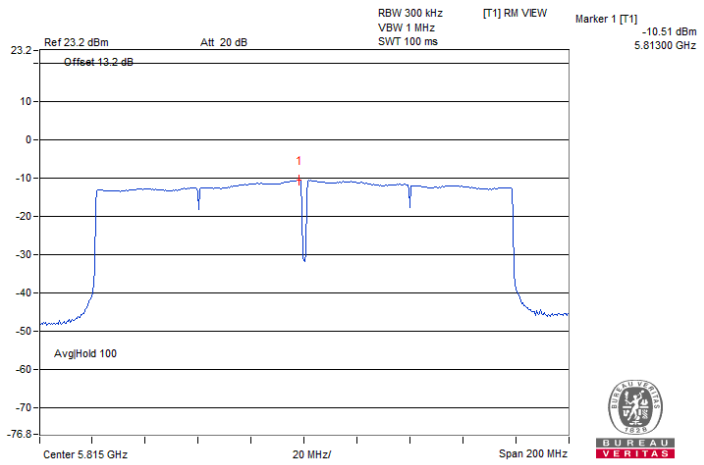


802.11be (EHT40) 484-tone RU / Chain 1 : CH 167@65

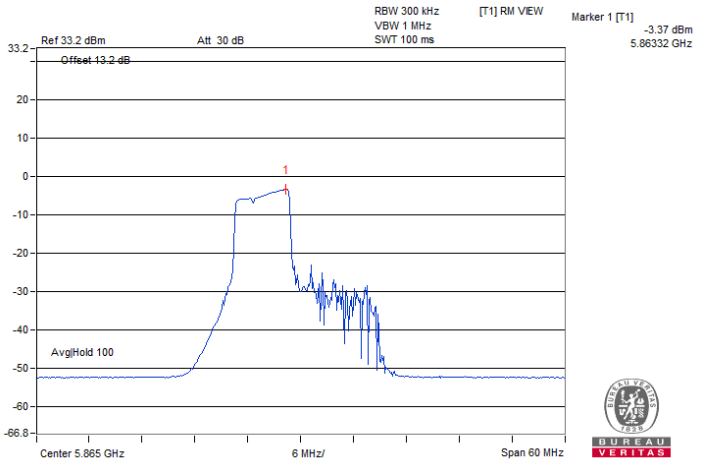
Spectrum Plot of Maximum Value



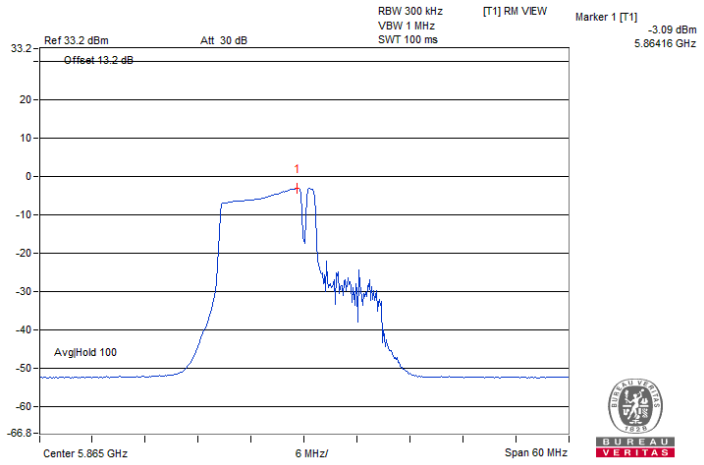
802.11be (EHT80) 996-tone RU / Chain 1 : CH 171@67



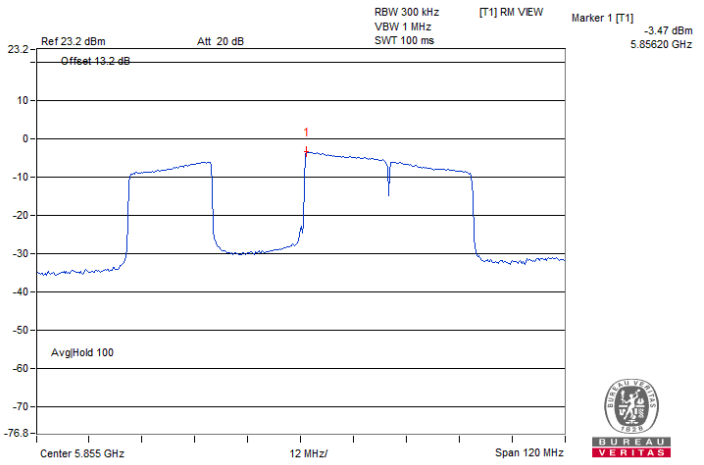
802.11be (EHT160) 2x996-tone RU / Chain 1 : CH 163@68



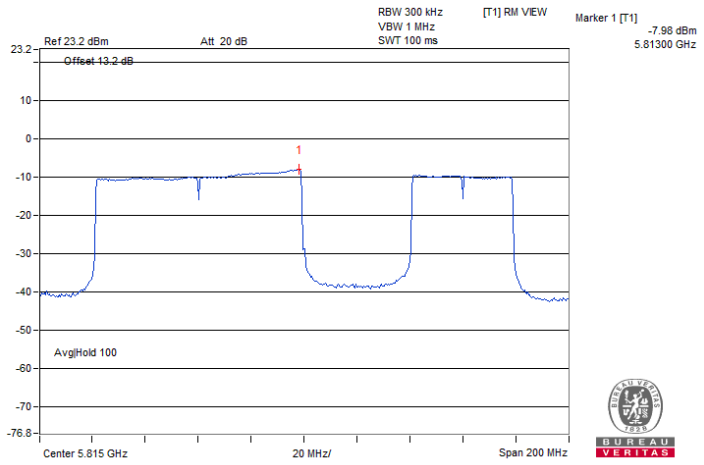
802.11be (EHT20) 52+26-tone MRU / Chain 1 : CH 173@1



802.11be (EHT20) 106+26-tone MRU / Chain 1 : CH 173@1

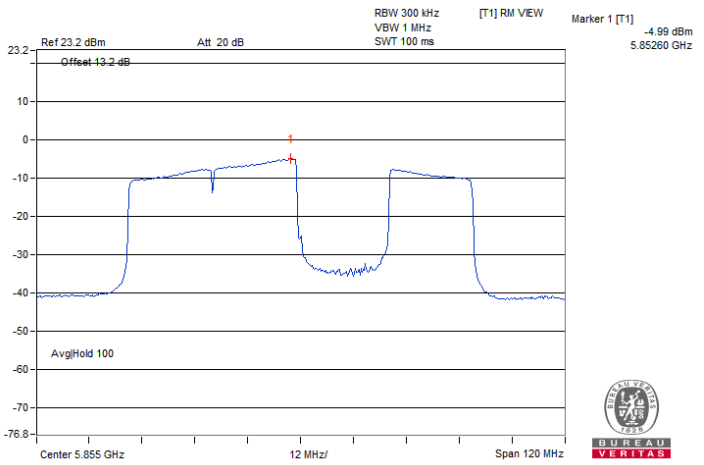


802.11be (EHT80) 484+242-tone MRU / Chain 1 : CH 171@3

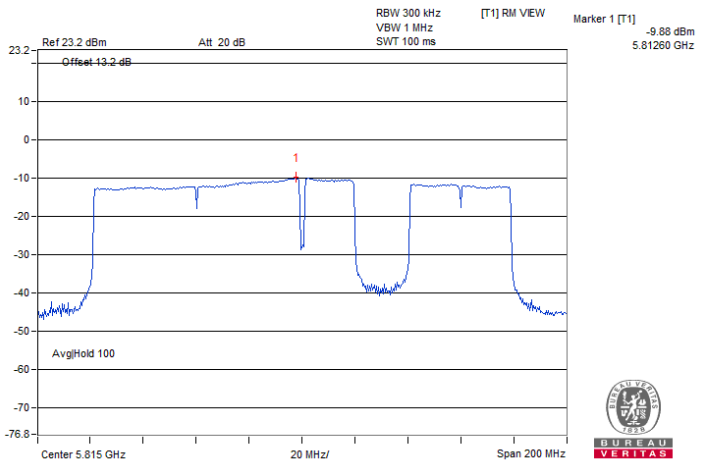


802.11be (EHT160) 996+484-tone MRU / Chain 1 : CH 163@3

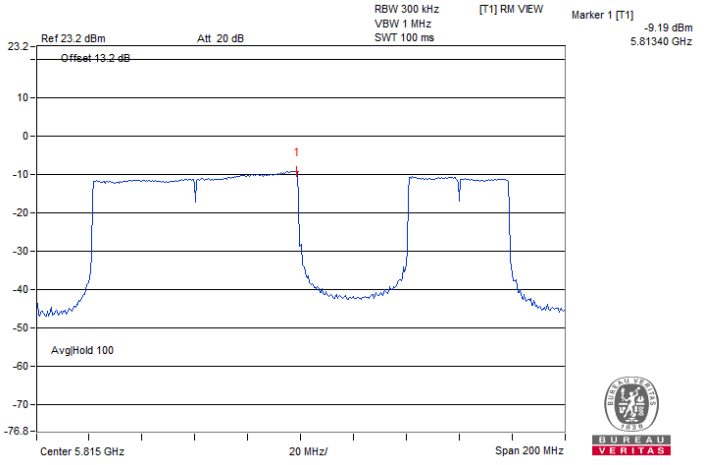
Spectrum Plot of Maximum Value



802.11be (EHT80) Punctured by 20 MHz / Chain 1 : CH 171@3



802.11be (EHT160) Punctured by 20 MHz / Chain 1 : CH 163@5



802.11be (EHT160) Punctured by 40 MHz / Chain 1 : CH 163@11

7.3 6 dB Bandwidth

Mode A

Input Power:	3.3 Vdc	Environmental Conditions:	24°C, 62% RH	Tested By:	Eric Peng

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
169	5845	13.80	15.11	0.5	Pass
173	5865	15.06	14.98	0.5	Pass
177	5885	15.11	14.40	0.5	Pass

802.11be (EHT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
169	5845	18.25	15.97	0.5	Pass
173	5865	17.34	14.63	0.5	Pass
177	5885	16.31	16.37	0.5	Pass

802.11be (EHT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
167	5835	34.58	31.31	0.5	Pass
175	5875	36.76	36.47	0.5	Pass

802.11be (EHT80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
171	5855	71.32	71.38	0.5	Pass

802.11be (EHT160)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
163	5815	156.10	156.93	0.5	Pass

802.11be (EHT20) 26-tone RU

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
169	5845	12.05	14.53	0.5	Pass
173	5865	12.03	12.02	0.5	Pass
177	5885	12.04	12.05	0.5	Pass

802.11be (EHT20) 52-tone RU

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
169	5845	17.05	17.05	0.5	Pass
173	5865	17.04	17.06	0.5	Pass
177	5885	17.05	17.06	0.5	Pass

802.11be (EHT20) 106-tone RU

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
169	5845	17.11	17.07	0.5	Pass
173	5865	17.10	17.10	0.5	Pass
177	5885	17.10	17.11	0.5	Pass

802.11be (EHT40) 484-tone RU

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
167	5835	36.36	34.74	0.5	Pass
175	5875	37.68	36.12	0.5	Pass

802.11be (EHT80) 996-tone RU

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
171	5855	77.84	77.97	0.5	Pass

802.11be (EHT160) 2x996-tone RU

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
163	5815	157.83	156.99	0.5	Pass

802.11be (EHT80) 484+242-tone MRU

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
171	5855	73.21	75.82	0.5	Pass

802.11be (EHT160) 996+484-tone MRU

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
163	5815	157.99	158.15	0.5	Pass

802.11be (EHT80) Punctured by 20 MHz

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
171	5855	76.68	71.95	0.5	Pass

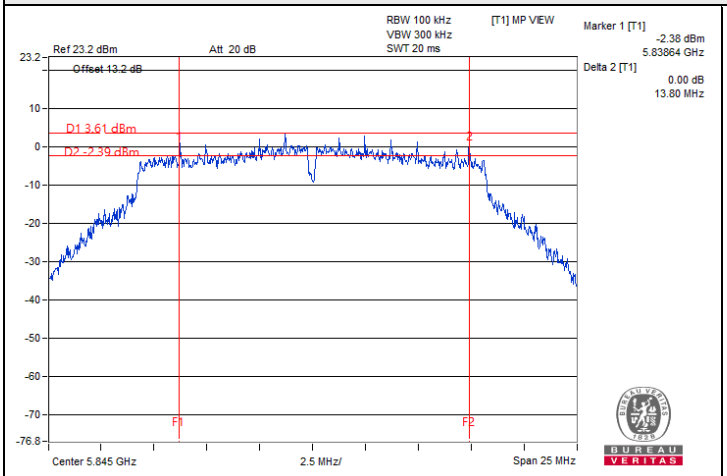
802.11be (EHT160) Punctured by 20 MHz

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
163	5815	157.72	157.12	0.5	Pass

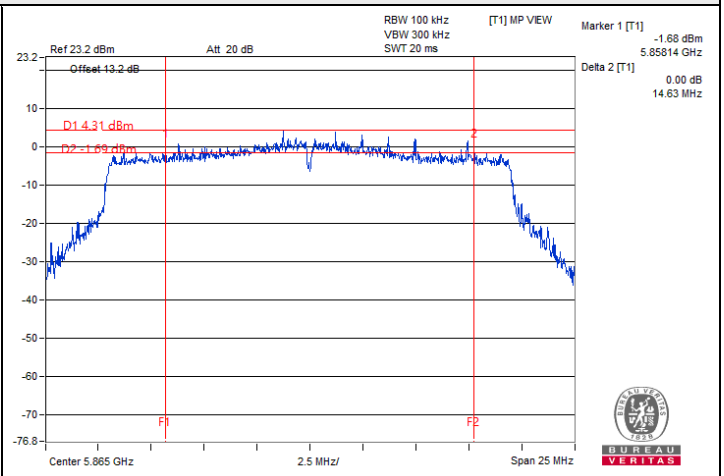
802.11be (EHT160) Punctured by 40 MHz

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
163	5815	157.78	157.91	0.5	Pass

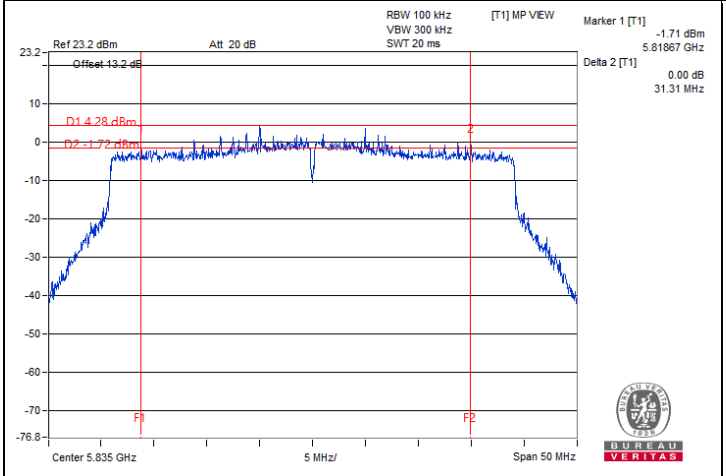
Spectrum Plot of Minimum Value



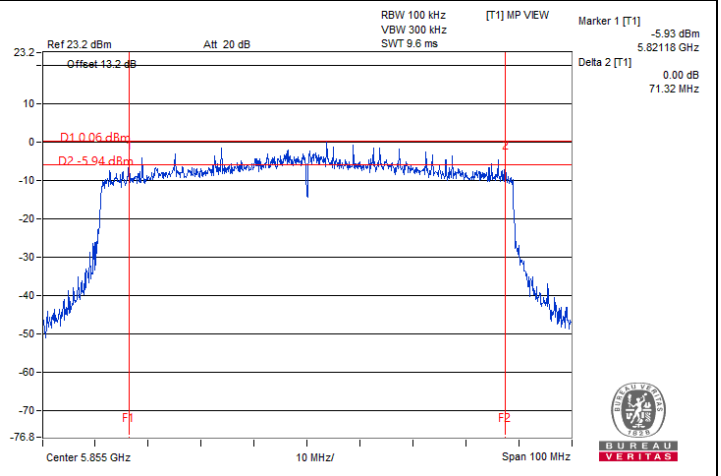
802.11a / Chain 0 : CH 169



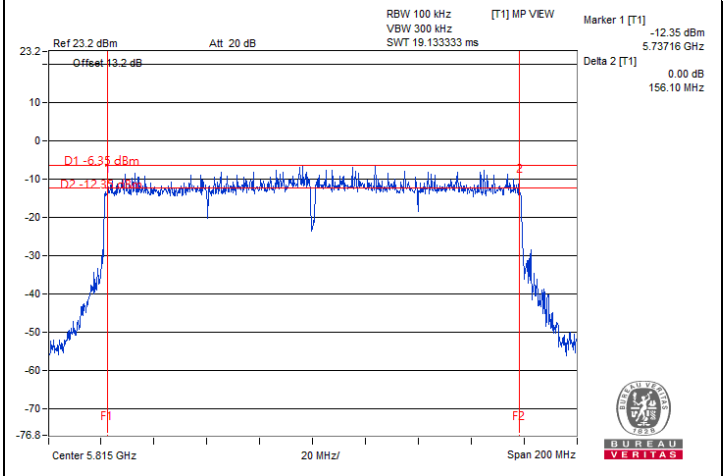
802.11be (EHT20) / Chain 1 : CH 173



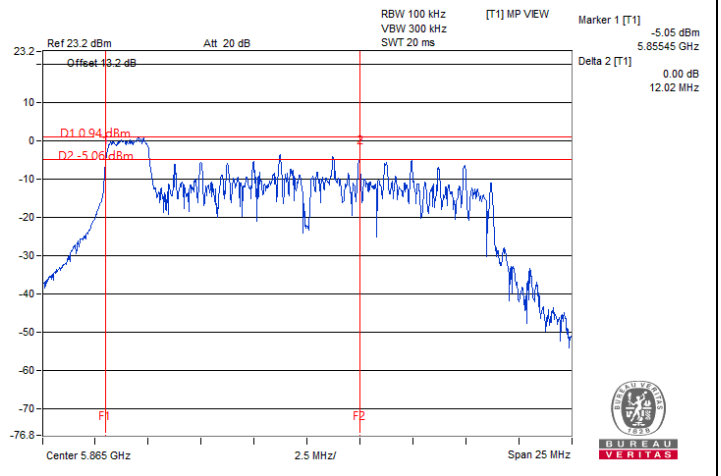
802.11be (EHT40) / Chain 1 : CH 167



802.11be (EHT80) / Chain 0 : CH 171

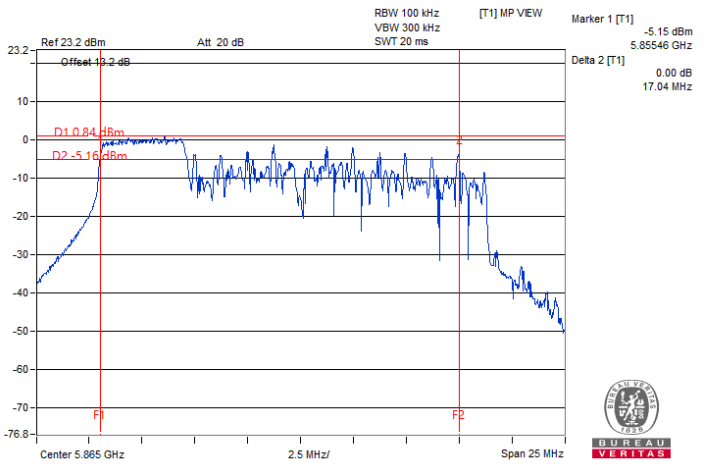


802.11be (EHT160) / Chain 0 : CH 163

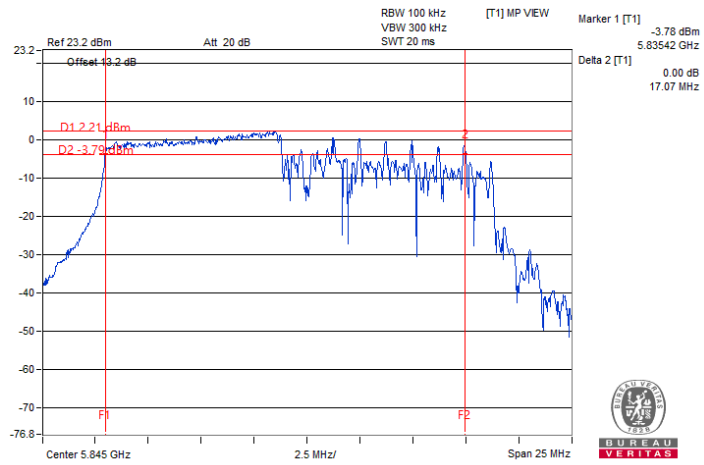


802.11be (EHT20) 26-tone RU / Chain 1 : CH 173@0

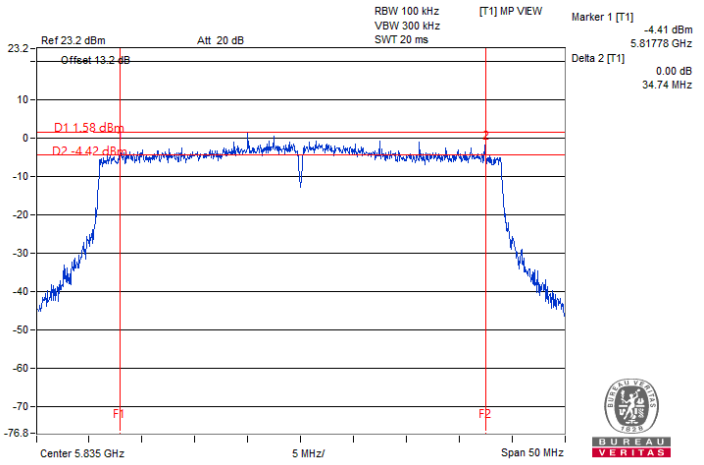
Spectrum Plot of Minimum Value



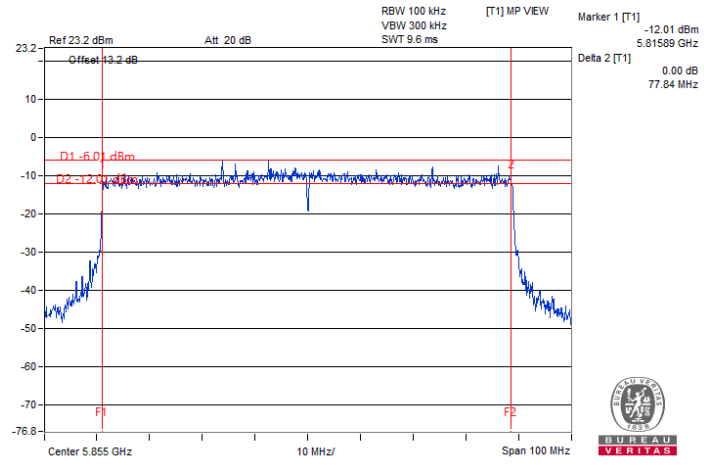
802.11be (EHT20) 52-tone RU / Chain 0 : CH 173@37



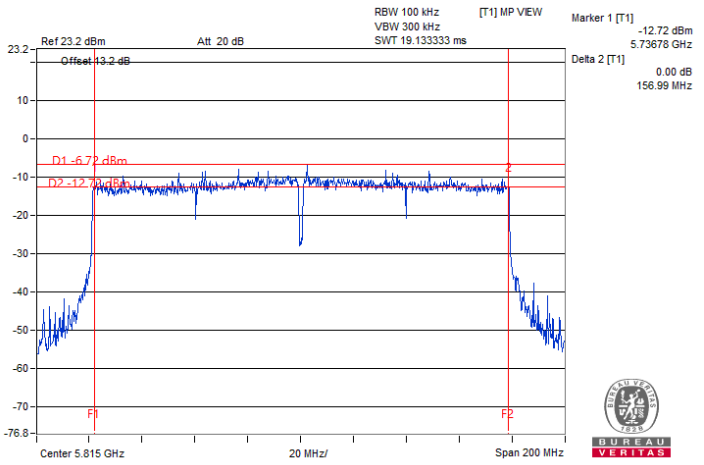
802.11be (EHT20) 106-tone RU / Chain 1 : CH 169@53



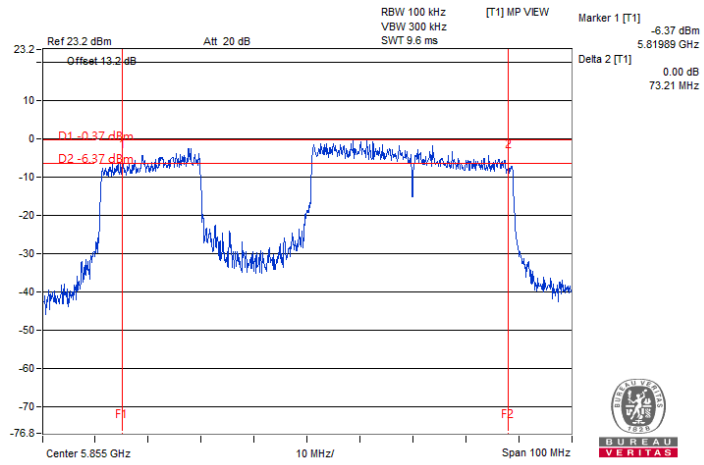
802.11be (EHT40) 484-tone RU / Chain 1 : CH 167@65



802.11be (EHT80) 996-tone RU / Chain 0 : CH 171@67

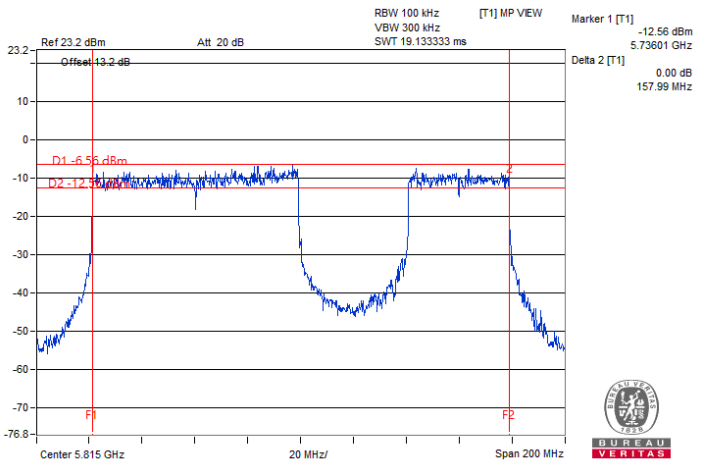


802.11be (EHT160) 2x996-tone RU / Chain 1 : CH 163@68

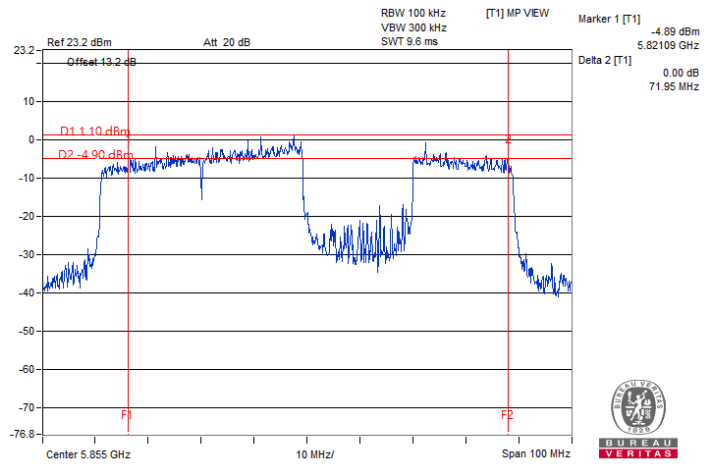


802.11be (EHT80) 484+242-tone MRU / Chain 0 : CH 171@3

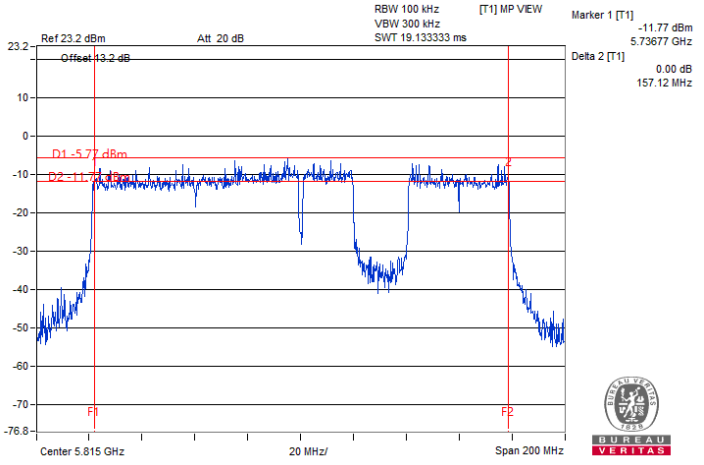
Spectrum Plot of Minimum Value



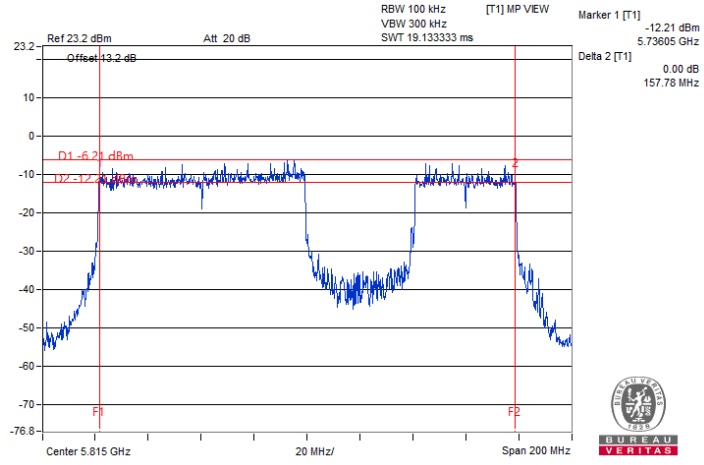
802.11be (EHT160) 996+484-tone MRU / Chain 0 : CH 163@3



802.11be (EHT80) Punctured by 20 MHz / Chain 1 : CH 171@3



802.11be (EHT160) Punctured by 20 MHz / Chain 1 : CH 163@5



802.11be (EHT160) Punctured by 40 MHz / Chain 0 : CH 163@11

7.4 Frequency Stability

Mode A

Input Power:	3.3 Vdc	Environmental Conditions:	24°C, 62% RH	Tested By:	Eric Peng

802.11a

Frequency Stability Versus Temperature									
Operating Frequency: 5865 MHz									
Temp. (℃)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
70	3.3	5864.9703	Pass	5864.9721	Pass	5864.9726	Pass	5864.9729	Pass
60	3.3	5864.99	Pass	5864.9858	Pass	5864.9908	Pass	5864.989	Pass
50	3.3	5864.9859	Pass	5864.9882	Pass	5864.9867	Pass	5864.9872	Pass
40	3.3	5865.0162	Pass	5865.0186	Pass	5865.0201	Pass	5865.0186	Pass
30	3.3	5864.9823	Pass	5864.9789	Pass	5864.9788	Pass	5864.982	Pass
20	3.3	5864.9884	Pass	5864.9868	Pass	5864.9873	Pass	5864.9902	Pass
10	3.3	5864.9972	Pass	5864.9965	Pass	5864.9943	Pass	5864.9939	Pass
0	3.3	5865.0047	Pass	5865.0016	Pass	5865.0007	Pass	5865.0002	Pass
-10	3.3	5864.9971	Pass	5864.9929	Pass	5864.9953	Pass	5864.9939	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5865 MHz									
Temp. (℃)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
20	3.795	5864.9879	Pass	5864.9874	Pass	5864.9848	Pass	5864.985	Pass
	3.3	5864.9884	Pass	5864.9868	Pass	5864.9873	Pass	5864.9902	Pass
	2.805	5864.9988	Pass	5864.9994	Pass	5865.0003	Pass	5864.9991	Pass

7.5 AC Power Conducted Emissions

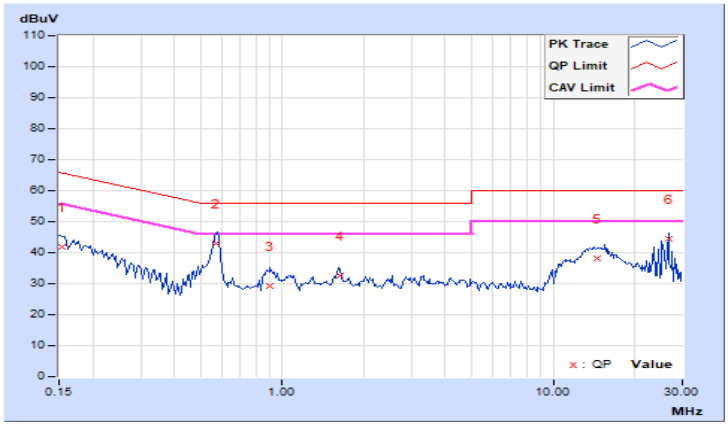
Mode B

RF Mode	802.11be (EHT40)	**Channel**	CH 167：5835 MHz
Frequency Range	150kHz ~ 30MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Carter Lin		

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	0.15397	9.96	31.76	24.56	41.72	34.52	65.78	55.78	-24.06	-21.26
2	**0.56792**	**9.98**	**32.98**	**26.21**	**42.96**	**36.19**	**56.00**	**46.00**	**-13.04**	**-9.81**
3	0.89605	9.99	19.24	16.54	29.23	26.53	56.00	46.00	-26.77	-19.47
4	1.62892	10.03	22.39	18.19	32.42	28.22	56.00	46.00	-23.58	-17.78
5	14.52738	10.77	27.44	20.73	38.21	31.50	60.00	50.00	-21.79	-18.50
6	26.62107	11.21	33.27	28.31	44.48	39.52	60.00	50.00	-15.52	-10.48

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

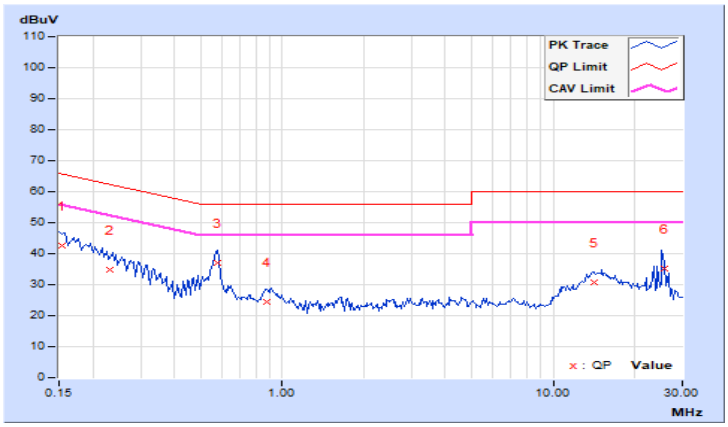


RF Mode	802.11be (EHT40)	**Channel**	CH 167：5835 MHz
Frequency Range	150kHz ~ 30MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Carter Lin		

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	9.93	32.80	19.93	42.73	29.86	65.79	55.79	-23.06	-25.93
2	0.23204	9.94	24.97	10.08	34.91	20.02	62.38	52.38	-27.47	-32.36
3	0.57965	9.95	27.19	18.67	37.14	28.62	56.00	46.00	-18.86	-17.38
4	0.88048	9.96	14.62	2.91	24.58	12.87	56.00	46.00	-31.42	-33.13
5	14.17964	10.57	20.35	13.25	30.92	23.82	60.00	50.00	-29.08	-26.18
6	25.85930	10.86	24.51	18.28	35.37	29.14	60.00	50.00	-24.63	-20.86

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



7.6 Unwanted Emissions below 1 GHz

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 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 f = 30 – 1000 MHz, add 4.7 dB. 2. The conducted emission test was considered some factor to compute test result.

Mode A

802.11be (EHT40) - Channel 167

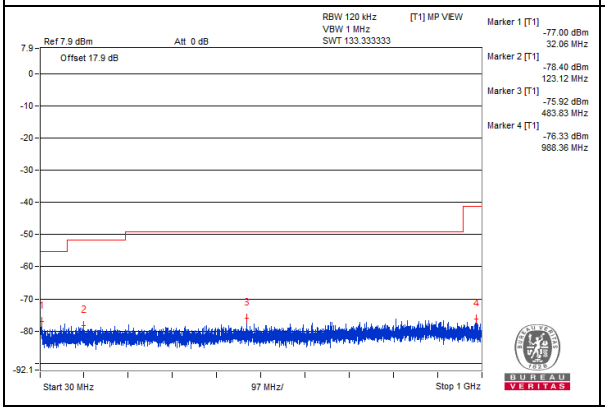
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	32.06	29.21	40	-10.79	-77	-77.48	8.17	-66.05
2	191.5	27.62	43.5	-15.88	-79.74	-78.06	8.17	-67.64
3	394.35	27.3	46	-18.7	-78.39	-80.05	8.17	-67.96
4	483.83	28.93	46	-17.07	-75.92	-80.03	8.17	-66.33
5	760.53	28.42	46	-17.58	-78.55	-77.55	8.17	-66.84
6	988.36	29.9	54	-24.1	-76.33	-76.77	8.17	-65.36

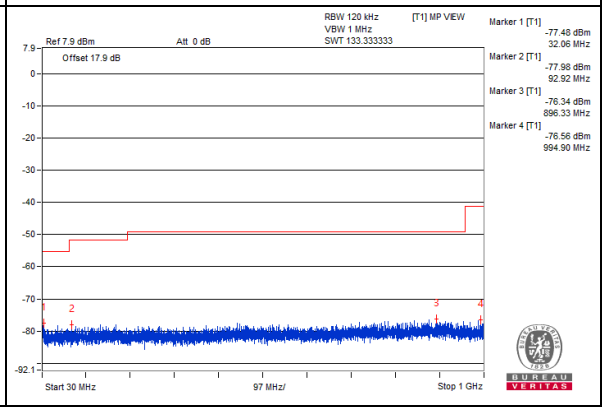
Remarks:

1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.

Chain 0



Chain 1



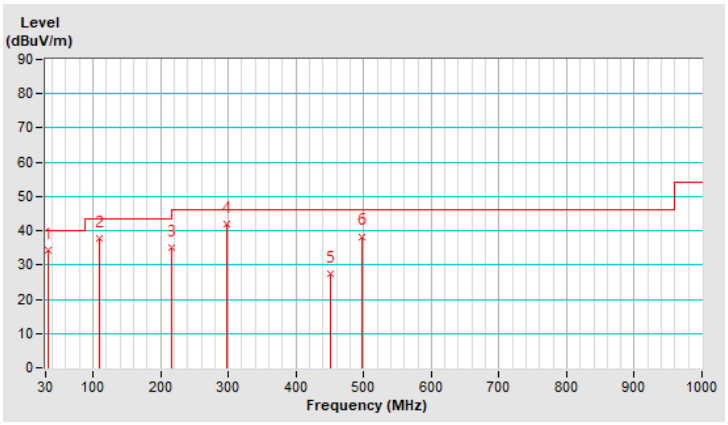
Mode B

RF Mode	802.11be (EHT40)	Channel	CH 167：5835 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 68% 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	34.83	34.2 QP	40.0	-5.8	3.00 H	279	47.8	-13.6
2	109.22	37.8 QP	43.5	-5.7	2.00 H	333	53.7	-15.9
3	215.53	35.2 QP	43.5	-8.3	1.00 H	133	51.2	-16.0
4	**297.14**	**42.0 QP**	**46.0**	**-4.0**	**1.00 H**	**172**	**54.4**	**-12.4**
5	451.07	27.6 QP	46.0	-18.4	2.00 H	305	35.8	-8.2
6	498.28	38.3 QP	46.0	-7.7	1.50 H	185	45.9	-7.6

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 emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

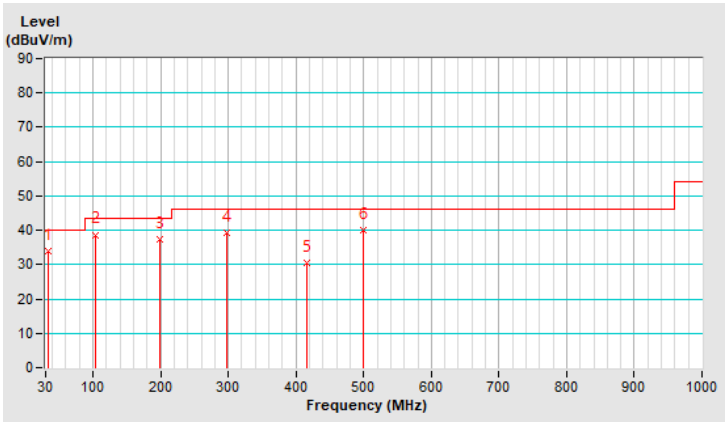


RF Mode	802.11be (EHT40)	**Channel**	CH 167：5835 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 68% RH
Tested By	Louis Yang		

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	33.34	33.8 QP	40.0	-6.2	3.00 V	278	47.6	-13.8
2	104.11	38.7 QP	43.5	-4.8	2.00 V	314	55.4	-16.7
3	199.13	37.3 QP	43.5	-6.2	1.50 V	159	53.4	-16.1
4	297.41	39.2 QP	46.0	-6.8	1.00 V	216	51.5	-12.3
5	415.81	30.5 QP	46.0	-15.5	2.00 V	187	39.9	-9.4
6	500.00	40.0 QP	46.0	-6.0	1.50 V	315	47.6	-7.6

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 emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



7.7 Unwanted Emissions above 1 GHz

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 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 f = 30 – 1000 MHz, add 4.7 dB. 2. The conducted emission test was considered some factor to compute test result.

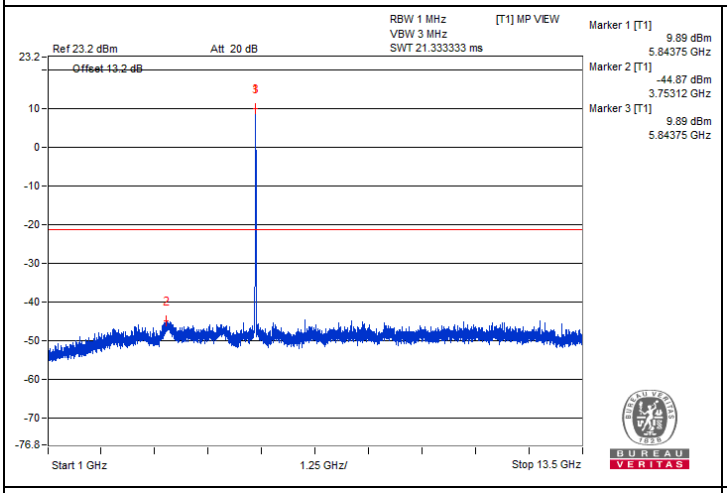
Mode A
802.11a - Channel 169
Conducted spurious emission table

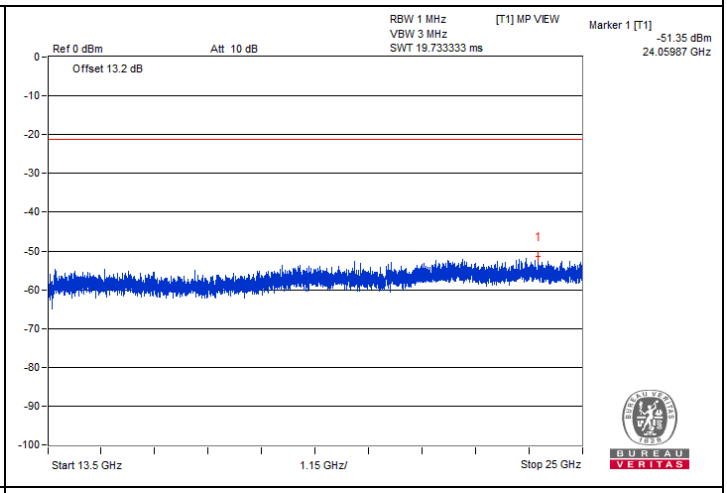
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	3887.5	60.5 PK	74	-13.5	-46.67	-45.31	8.17	-34.76
2	3878.12	49.62 AV	54	-4.38	-56.83	-56.81	8.17	-45.64
3	#7795.31	59.68 PK	68.2	-8.52	-45.37	-48.83	8.17	-35.58
4	11676.56	59.5 PK	74	-14.5	-45.41	-49.33	8.17	-35.76
5	11670.31	48.37 AV	54	-5.63	-58.08	-58.06	8.17	-46.89
6	#17522.12	49.17 PK	68.2	-19.03	-56.47	-58.24	8.17	-46.09

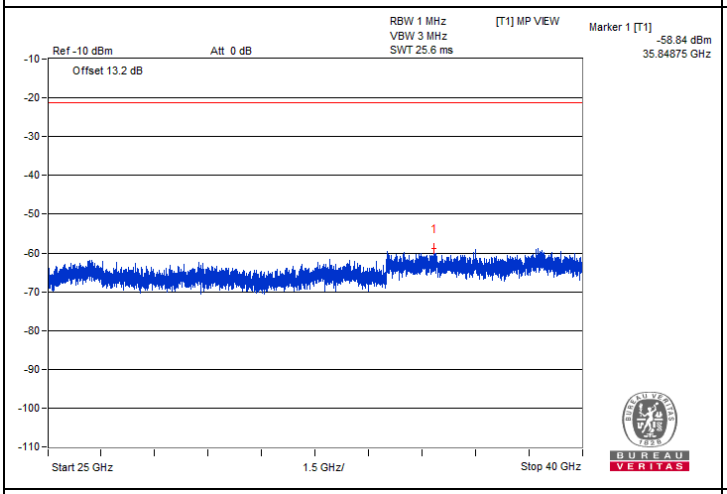
Remarks:

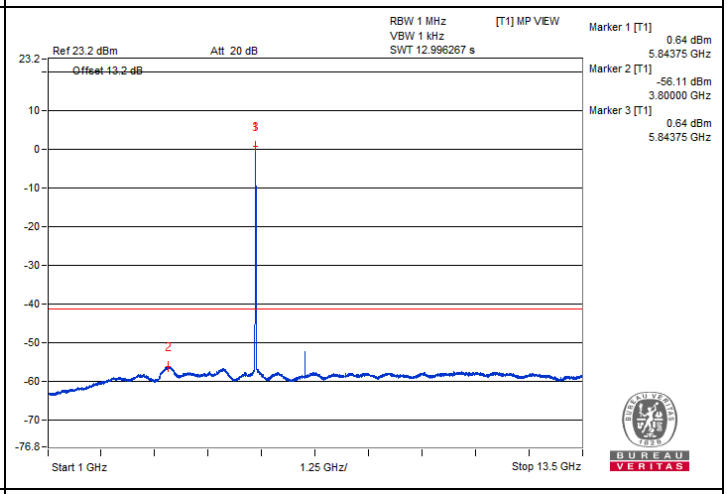
1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.
3. " # " : The frequency is out of the restricted band.

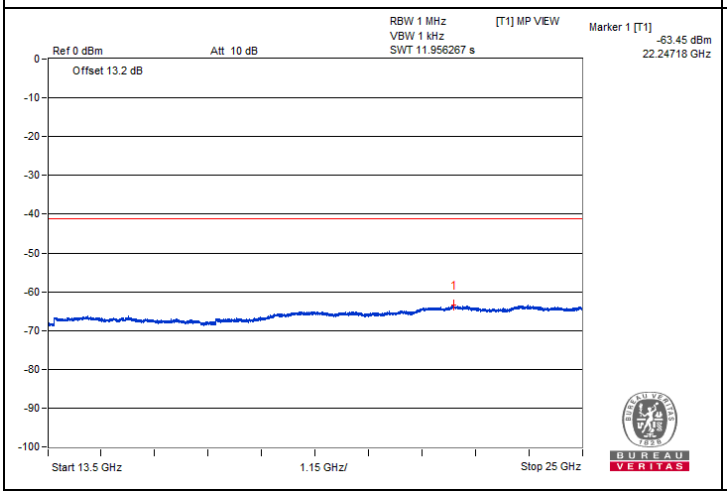
Chain 0

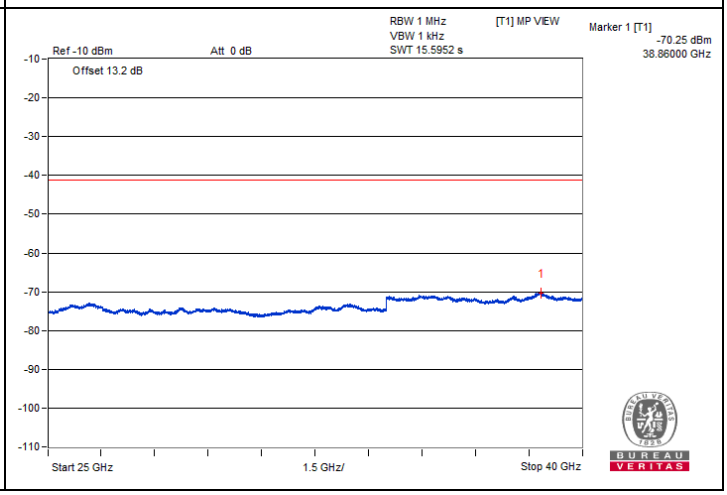

RBW 1 MHz
VBW 3 MHz
SWT 21.333333 ms
[T1] MP VIEW
Ref 23.2 dBm
Att 20 dB
Offset 13.2 dB
Marker 1 [T1]
9.89 dBm
5.84375 GHz
Marker 2 [T1]
-44.87 dBm
3.75312 GHz
Marker 3 [T1]
9.89 dBm
5.84375 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 3 MHz
SWT 19.733333 ms
[T1] MP VIEW
Ref 0 dBm
Att 10 dB
Offset 13.2 dB
Marker 1 [T1]
-51.35 dBm
24.05987 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz

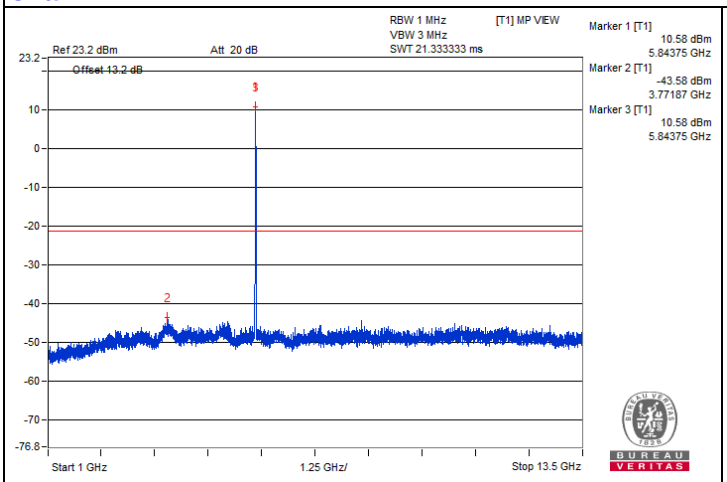

RBW 1 MHz
VBW 3 MHz
SWT 25.6 ms
[T1] MP VIEW
Ref -10 dBm
Att 0 dB
Offset 13.2 dB
Marker 1 [T1]
-58.84 dBm
35.84875 GHz
Start 25 GHz
1.5 GHz/
Stop 40 GHz

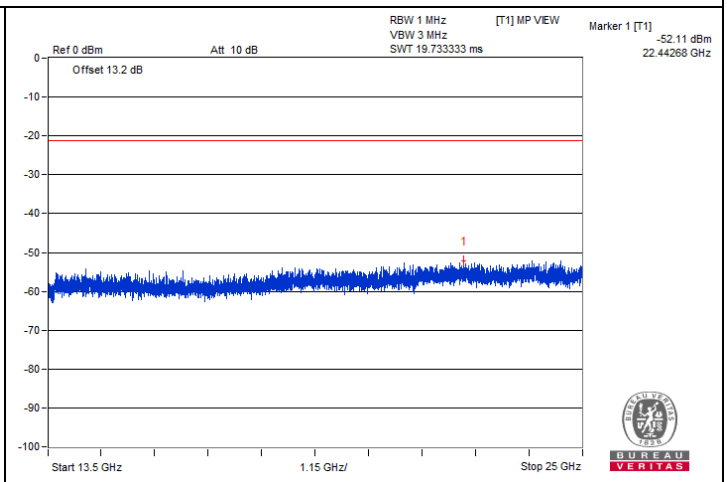

RBW 1 MHz
VBW 1 kHz
SWT 12.996267 s
[T1] MP VIEW
Ref 23.2 dBm
Att 20 dB
Offset 13.2 dB
Marker 1 [T1]
0.64 dBm
5.84375 GHz
Marker 2 [T1]
-56.11 dBm
3.80000 GHz
Marker 3 [T1]
0.64 dBm
5.84375 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz

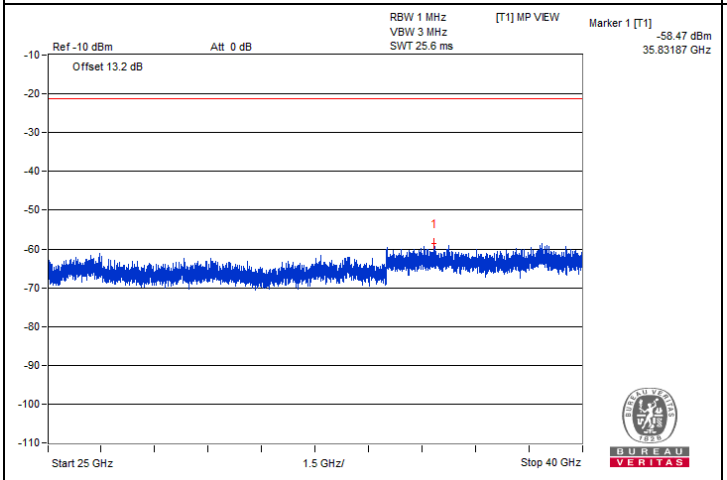

RBW 1 MHz
VBW 1 kHz
SWT 11.956267 s
[T1] MP VIEW
Ref 0 dBm
Att 10 dB
Offset 13.2 dB
Marker 1 [T1]
-63.45 dBm
22.24718 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz

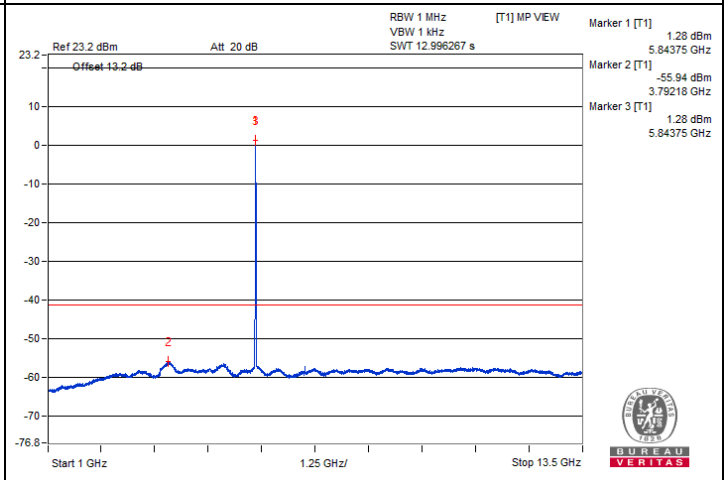

RBW 1 MHz
VBW 1 kHz
SWT 15.5952 s
[T1] MP VIEW
Ref -10 dBm
Att 0 dB
Offset 13.2 dB
Marker 1 [T1]
-70.25 dBm
38.86000 GHz
Start 25 GHz
1.5 GHz/
Stop 40 GHz

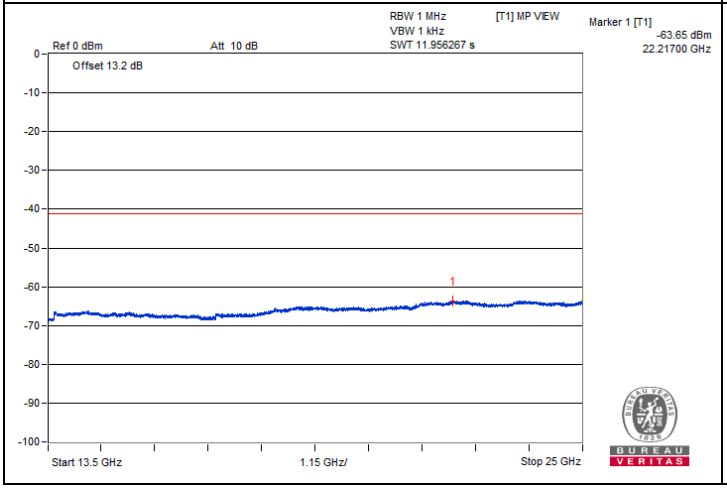
Chain 1

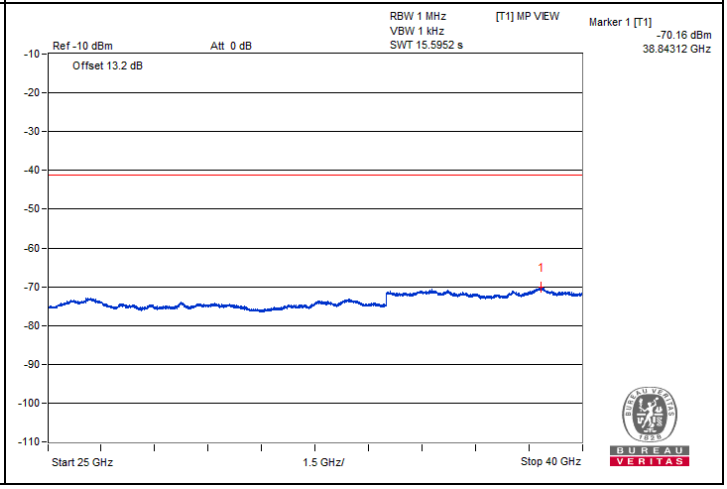

RBW 1 MHz
VBW 3 MHz
SWT 21.333333 ms
[T1] MP VIEW
Ref 23.2 dBm
Att 20 dB
Offset 13.2 dB
Marker 1 [T1]
10.58 dBm
5.84375 GHz
Marker 2 [T1]
-43.58 dBm
3.77187 GHz
Marker 3 [T1]
10.58 dBm
5.84375 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 3 MHz
SWT 19.733333 ms
[T1] MP VIEW
Ref 0 dBm
Att 10 dB
Offset 13.2 dB
Marker 1 [T1]
-52.11 dBm
22.44268 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz


RBW 1 MHz
VBW 3 MHz
SWT 25.6 ms
[T1] MP VIEW
Ref -10 dBm
Att 0 dB
Offset 13.2 dB
Marker 1 [T1]
-58.47 dBm
35.83187 GHz
Start 25 GHz
1.5 GHz/
Stop 40 GHz

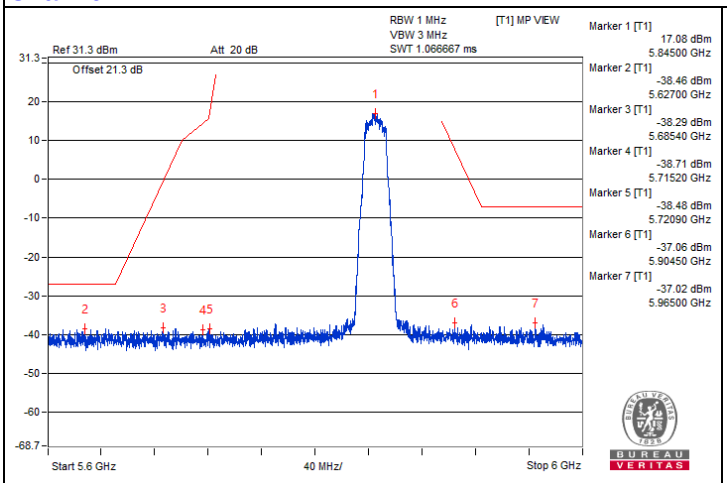

RBW 1 MHz
VBW 1 kHz
SWT 12.996267 s
[T1] MP VIEW
Ref 23.2 dBm
Att 20 dB
Offset 13.2 dB
Marker 1 [T1]
1.28 dBm
5.84375 GHz
Marker 2 [T1]
-55.94 dBm
3.79218 GHz
Marker 3 [T1]
1.28 dBm
5.84375 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 1 kHz
SWT 11.956267 s
[T1] MP VIEW
Ref 0 dBm
Att 10 dB
Offset 13.2 dB
Marker 1 [T1]
-63.65 dBm
22.21700 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz

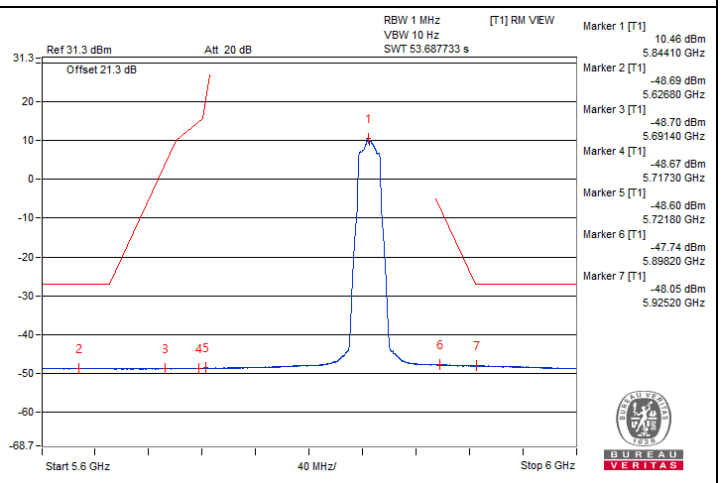

RBW 1 MHz
VBW 1 kHz
SWT 15.5952 s
[T1] MP VIEW
Ref -10 dBm
Att 0 dB
Offset 13.2 dB
Marker 1 [T1]
-70.16 dBm
38.84312 GHz
Start 25 GHz
1.5 GHz/
Stop 40 GHz

Bandedge table

Chain 0

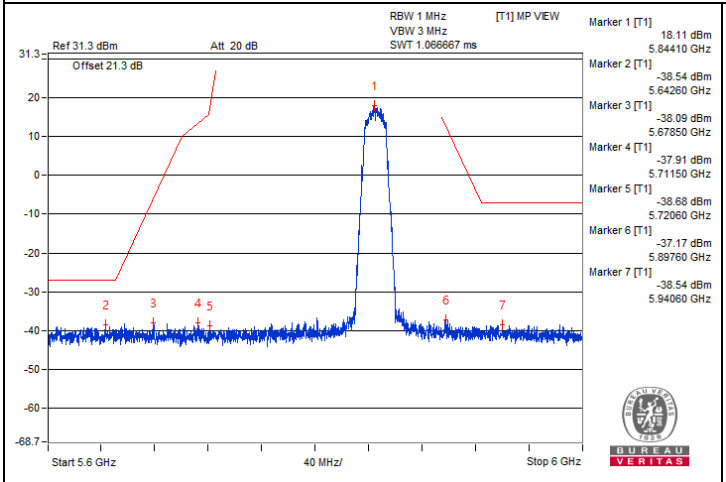


Peak

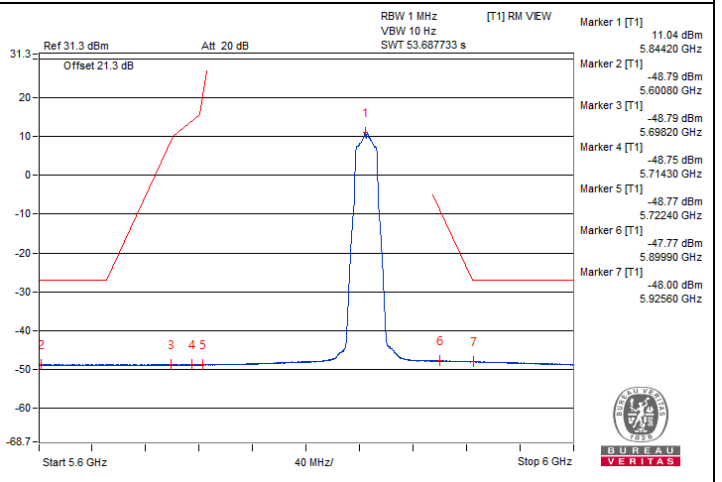


Average

Chain 1



Peak



Average

802.11a - Channel 173

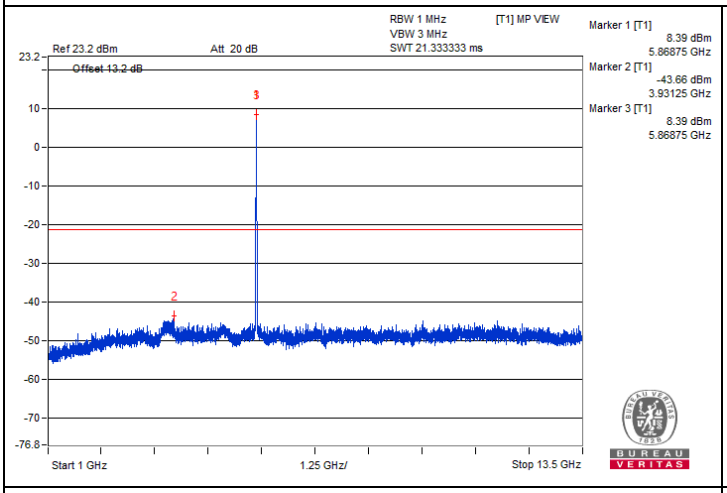
Conducted spurious emission table

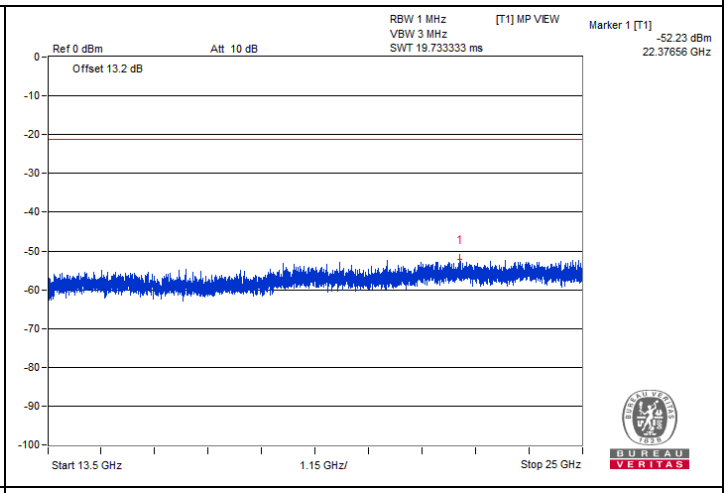
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	3893.75	60.9 PK	74	-13.1	-44.79	-46.46	8.17	-34.36
2	3896.87	49.46 AV	54	-4.54	-57.14	-56.83	8.17	-45.80
3	#7823.43	59.34 PK	68.2	-8.86	-48.91	-45.83	8.17	-35.92
4	11740.62	59.03 PK	74	-14.97	-47.28	-47.54	8.17	-36.23
5	11734.37	48.41 AV	54	-5.59	-58.11	-57.95	8.17	-46.85
6	#17605.5	49.75 PK	68.2	-18.45	-56.07	-57.41	8.17	-45.51

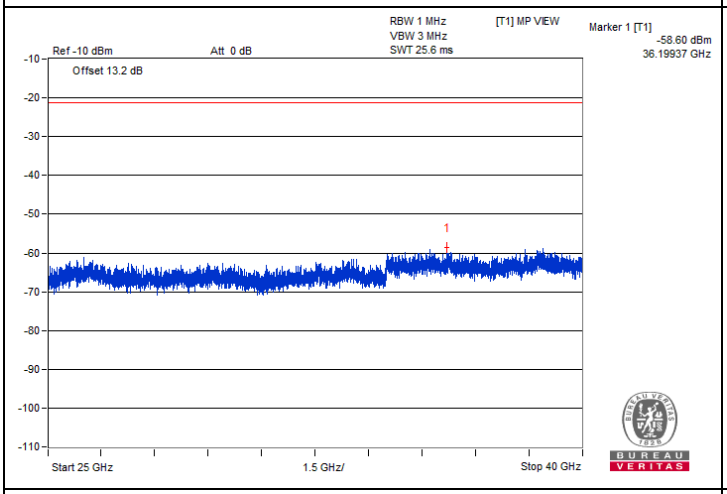
Remarks:

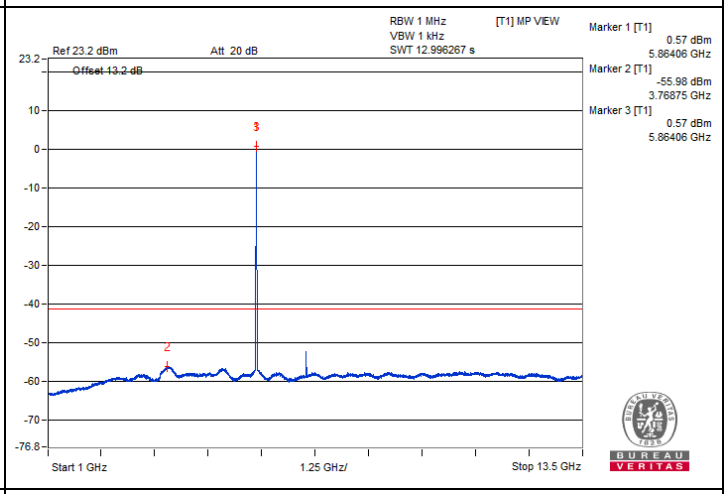
1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.
3. " # " : The frequency is out of the restricted band.

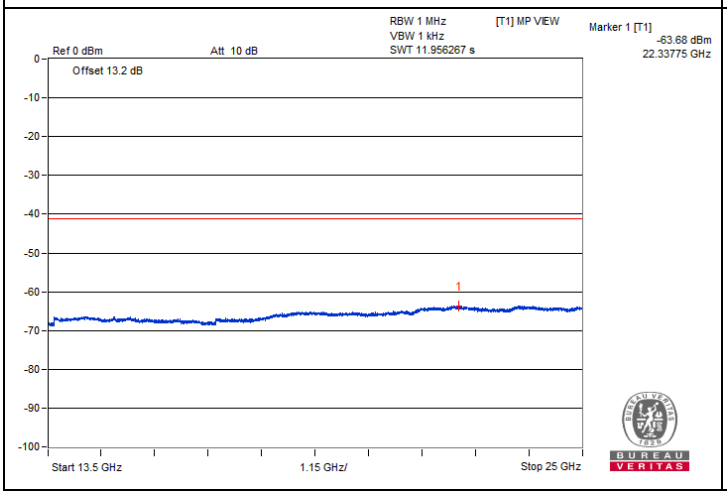
Chain 0

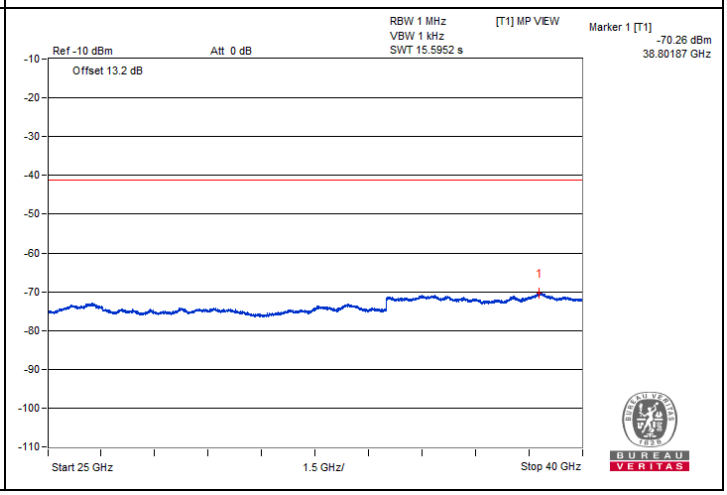

RBW 1 MHz
VBW 3 MHz
SWT 21.333333 ms
[T1] MP VIEW
Ref 23.2 dBm
Att 20 dB
Offset 13.2 dB
Marker 1 [T1]
8.39 dBm
5.86875 GHz
Marker 2 [T1]
-43.66 dBm
3.93125 GHz
Marker 3 [T1]
8.39 dBm
5.86875 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 3 MHz
SWT 19.733333 ms
[T1] MP VIEW
Ref 0 dBm
Att 10 dB
Offset 13.2 dB
Marker 1 [T1]
-52.23 dBm
22.37656 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz

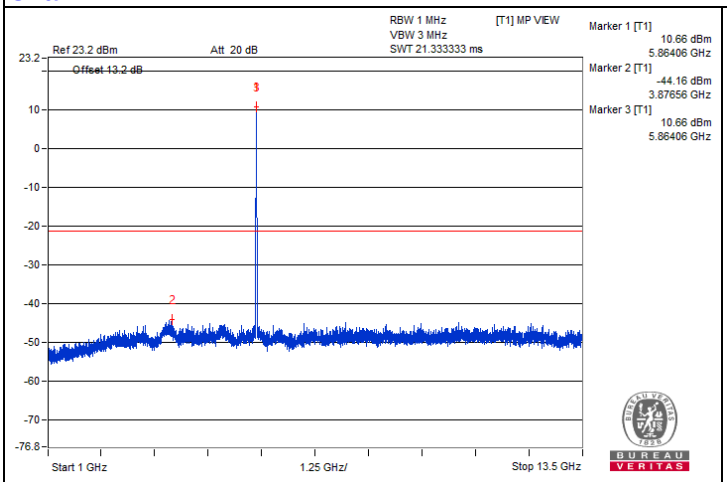

RBW 1 MHz
VBW 3 MHz
SWT 25.6 ms
[T1] MP VIEW
Ref -10 dBm
Att 0 dB
Offset 13.2 dB
Marker 1 [T1]
-58.60 dBm
36.19937 GHz
Start 25 GHz
1.5 GHz/
Stop 40 GHz

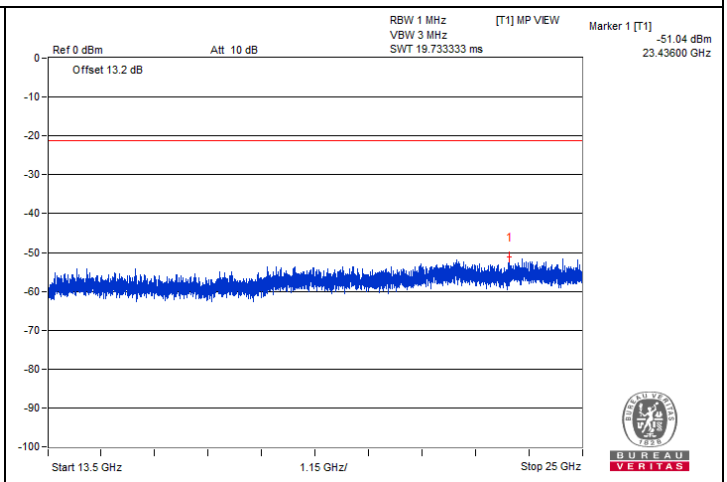

RBW 1 MHz
VBW 1 kHz
SWT 12.996267 s
[T1] MP VIEW
Ref 23.2 dBm
Att 20 dB
Offset 13.2 dB
Marker 1 [T1]
0.57 dBm
5.86406 GHz
Marker 2 [T1]
-55.98 dBm
3.76875 GHz
Marker 3 [T1]
0.57 dBm
5.86406 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz

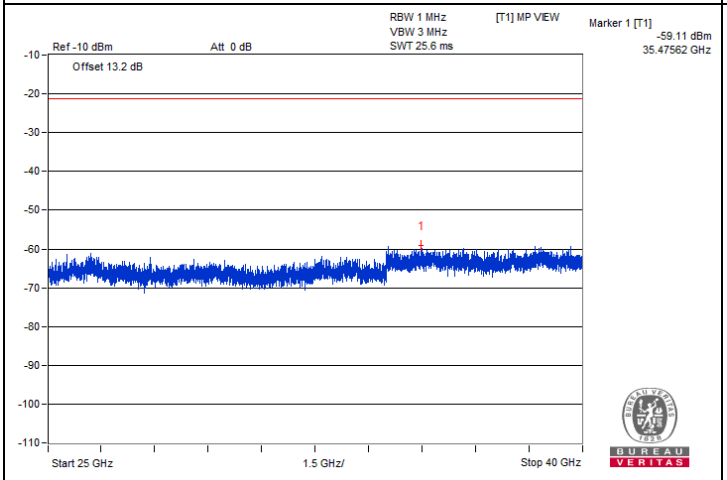

RBW 1 MHz
VBW 1 kHz
SWT 11.956267 s
[T1] MP VIEW
Ref 0 dBm
Att 10 dB
Offset 13.2 dB
Marker 1 [T1]
-63.68 dBm
22.33775 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz

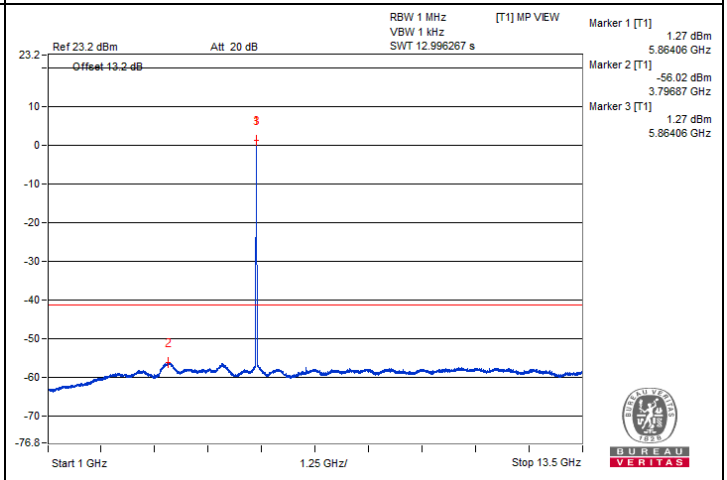

RBW 1 MHz
VBW 1 kHz
SWT 15.5952 s
[T1] MP VIEW
Ref -10 dBm
Att 0 dB
Offset 13.2 dB
Marker 1 [T1]
-70.26 dBm
38.80187 GHz
Start 25 GHz
1.5 GHz/
Stop 40 GHz

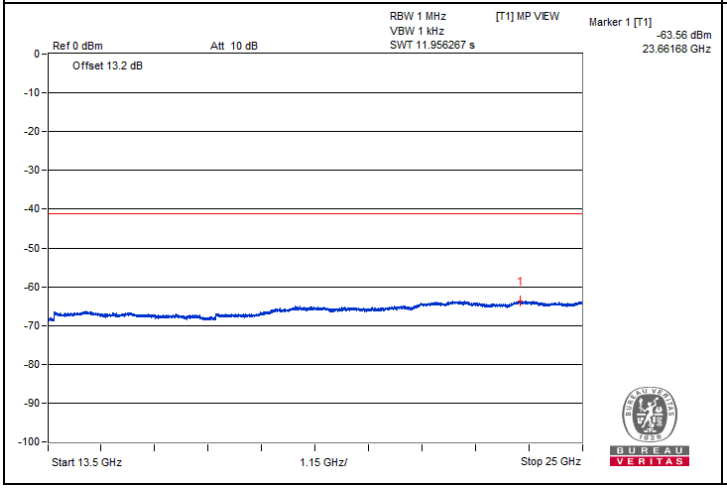
Chain 1

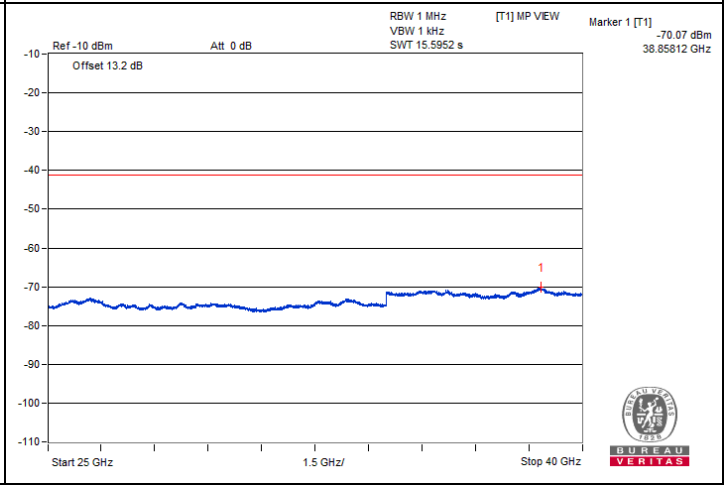

RBW 1 MHz
VBW 3 MHz
SWT 21.333333 ms
[T1] MP VIEW
Ref 23.2 dBm
Att 20 dB
Offset 13.2 dB
Marker 1 [T1]
10.66 dBm
5.86406 GHz
Marker 2 [T1]
-44.16 dBm
3.87656 GHz
Marker 3 [T1]
10.66 dBm
5.86406 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 3 MHz
SWT 19.733333 ms
[T1] MP VIEW
Ref 0 dBm
Att 10 dB
Offset 13.2 dB
Marker 1 [T1]
-51.04 dBm
23.43600 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz


RBW 1 MHz
VBW 3 MHz
SWT 25.6 ms
[T1] MP VIEW
Ref -10 dBm
Att 0 dB
Offset 13.2 dB
Marker 1 [T1]
-59.11 dBm
35.47562 GHz
Start 25 GHz
1.5 GHz/
Stop 40 GHz

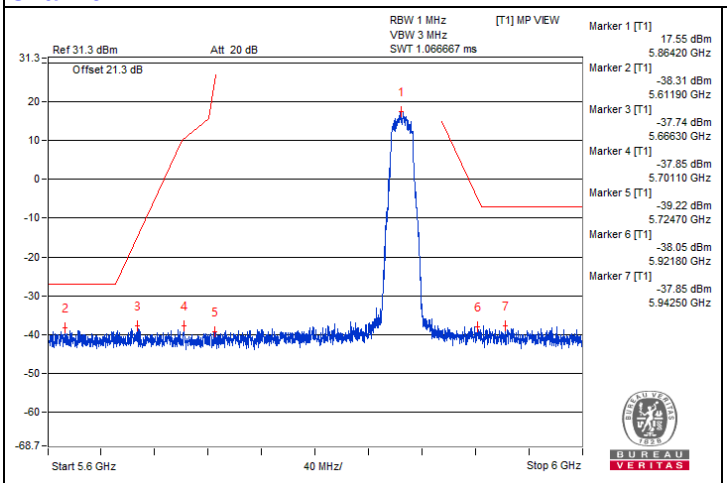

RBW 1 MHz
VBW 1 kHz
SWT 12.996267 s
[T1] MP VIEW
Ref 23.2 dBm
Att 20 dB
Offset 13.2 dB
Marker 1 [T1]
1.27 dBm
5.86406 GHz
Marker 2 [T1]
-56.02 dBm
3.79687 GHz
Marker 3 [T1]
1.27 dBm
5.86406 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 1 kHz
SWT 11.956267 s
[T1] MP VIEW
Ref 0 dBm
Att 10 dB
Offset 13.2 dB
Marker 1 [T1]
-63.56 dBm
23.66168 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz

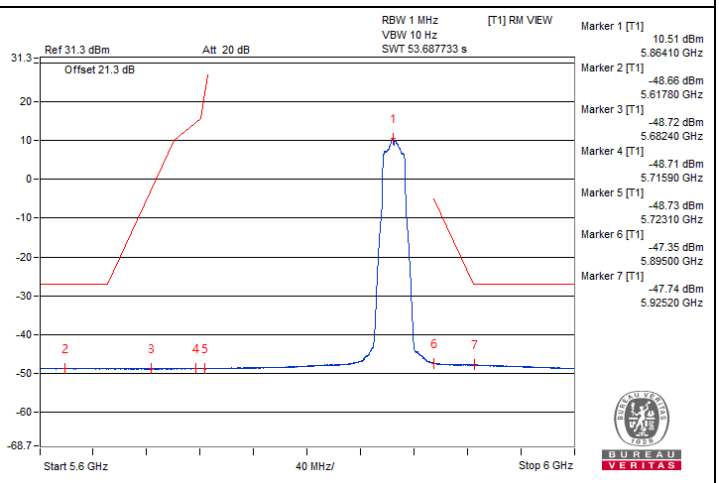

RBW 1 MHz
VBW 1 kHz
SWT 15.5952 s
[T1] MP VIEW
Ref -10 dBm
Att 0 dB
Offset 13.2 dB
Marker 1 [T1]
-70.07 dBm
38.85812 GHz
Start 25 GHz
1.5 GHz/
Stop 40 GHz

Bandedge table

Chain 0

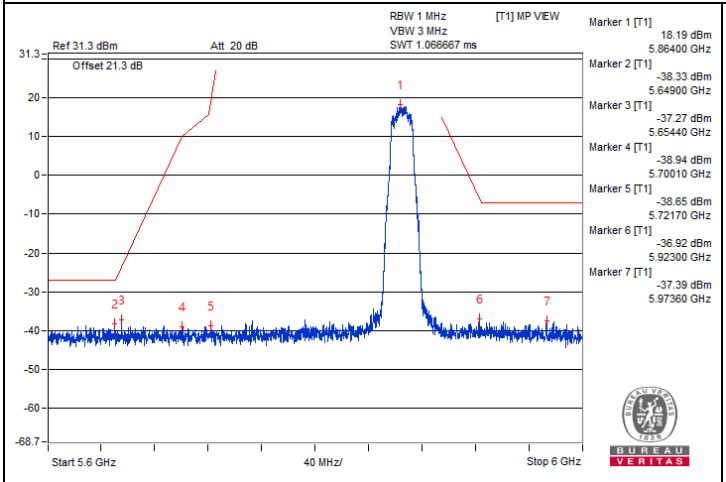


Peak

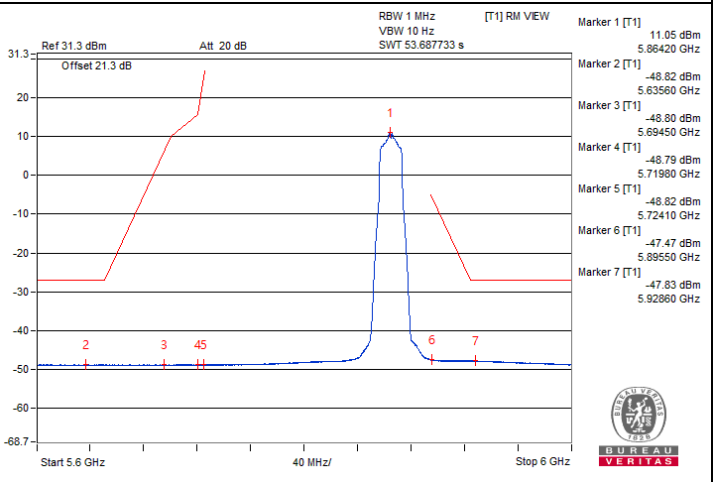


Average

Chain 1



Peak



Average

802.11a - Channel 177

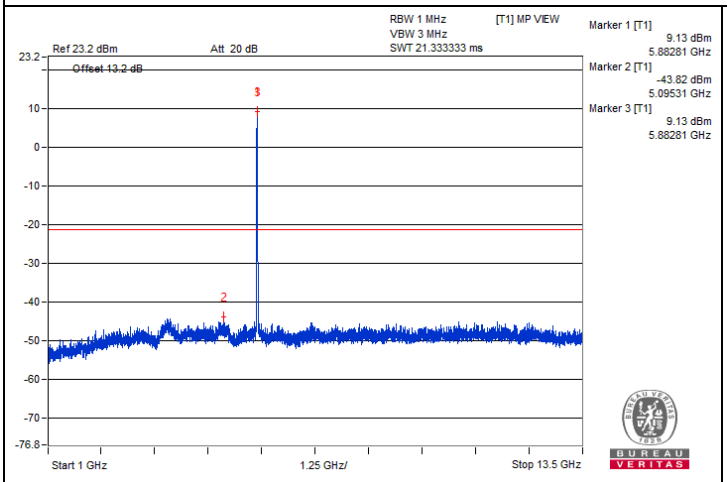
Conducted spurious emission table

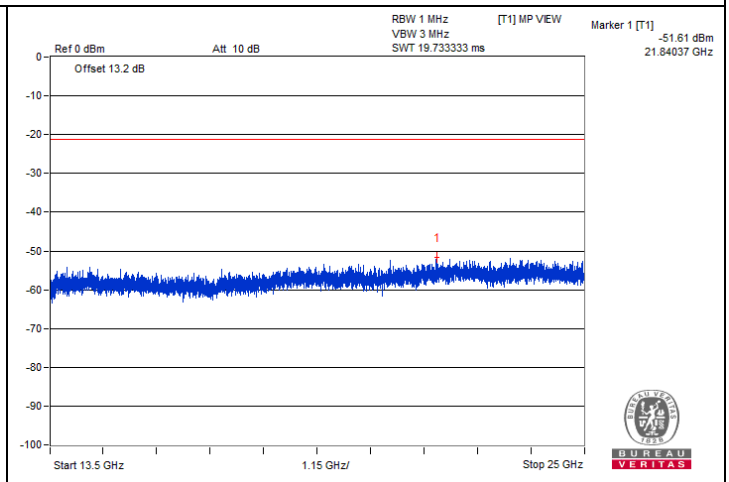
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	3910.93	59.83 PK	74	-14.17	-45.9	-47.45	8.17	-35.43
2	3906.25	49.36 AV	54	-4.64	-57.21	-56.95	8.17	-45.90
3	#7857.81	58.4 PK	68.2	-9.8	-47.88	-48.2	8.17	-36.86
4	11757.81	59.08 PK	74	-14.92	-46.8	-48.01	8.17	-36.18
5	11779.68	48.53 AV	54	-5.47	-57.88	-57.94	8.17	-46.73
6	#17650.06	49.16 PK	68.2	-19.04	-57.73	-56.88	8.17	-46.10

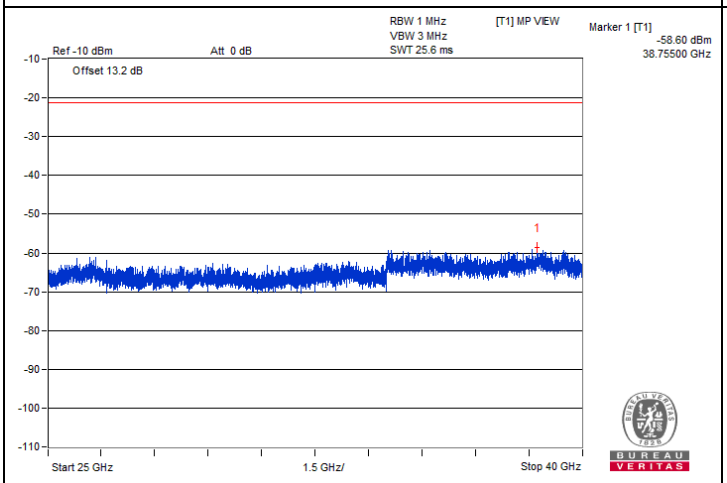
Remarks:

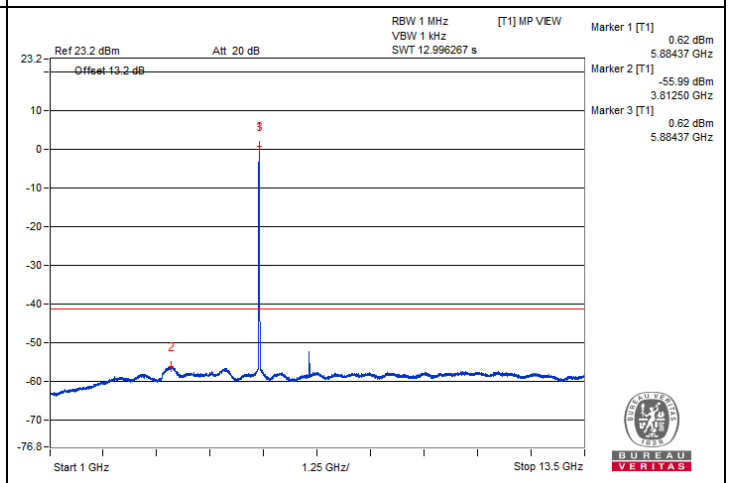
1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.
3. " # " : The frequency is out of the restricted band.

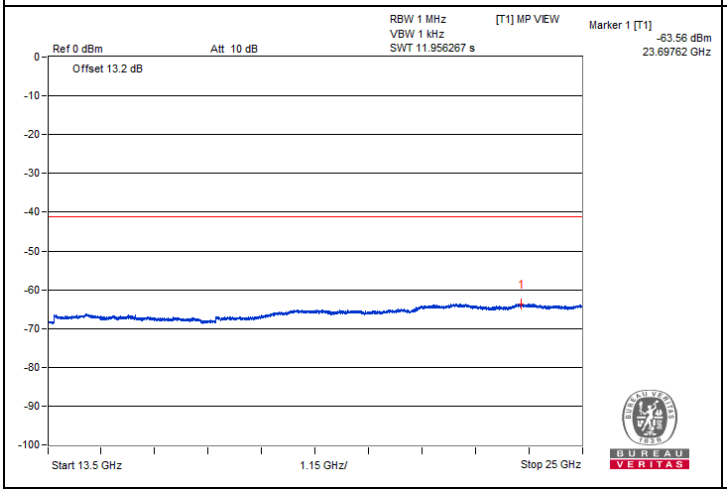
Chain 0

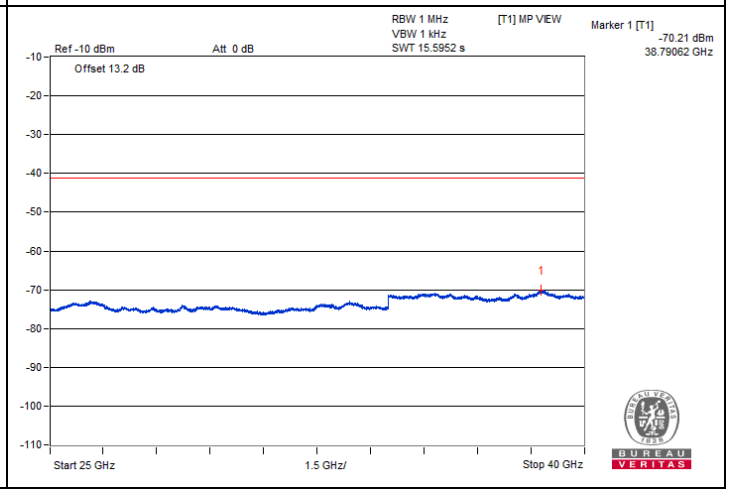

RBW 1 MHz
VBW 3 MHz
SWT 21.333333 ms
[T1] MP VIEW
Ref 23.2 dBm
Att 20 dB
Offset 13.2 dB
Marker 1 [T1]
9.13 dBm
5.88281 GHz
Marker 2 [T1]
-43.82 dBm
5.09531 GHz
Marker 3 [T1]
9.13 dBm
5.88281 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 3 MHz
SWT 19.733333 ms
[T1] MP VIEW
Ref 0 dBm
Att 10 dB
Offset 13.2 dB
Marker 1 [T1]
-51.61 dBm
21.84037 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz

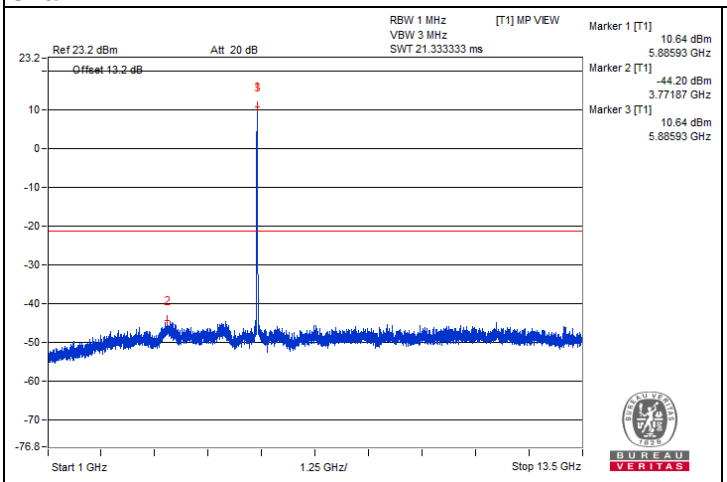

RBW 1 MHz
VBW 3 MHz
SWT 25.6 ms
[T1] MP VIEW
Ref -10 dBm
Att 0 dB
Offset 13.2 dB
Marker 1 [T1]
-58.60 dBm
38.75500 GHz
Start 25 GHz
1.5 GHz/
Stop 40 GHz

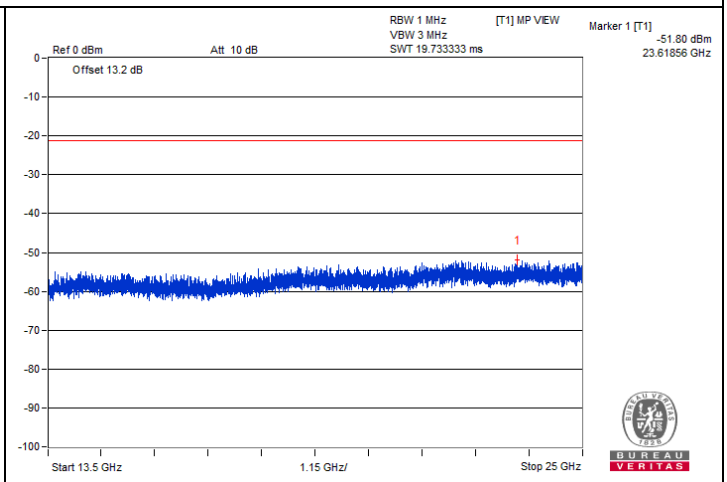

RBW 1 MHz
VBW 1 kHz
SWT 12.996267 s
[T1] MP VIEW
Ref 23.2 dBm
Att 20 dB
Offset 13.2 dB
Marker 1 [T1]
0.62 dBm
5.88437 GHz
Marker 2 [T1]
-55.99 dBm
3.81250 GHz
Marker 3 [T1]
0.62 dBm
5.88437 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz

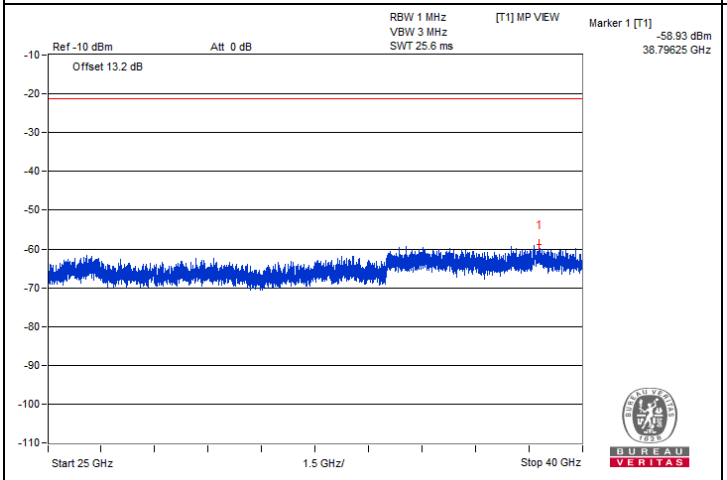

RBW 1 MHz
VBW 1 kHz
SWT 11.956267 s
[T1] MP VIEW
Ref 0 dBm
Att 10 dB
Offset 13.2 dB
Marker 1 [T1]
-63.56 dBm
23.69762 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz

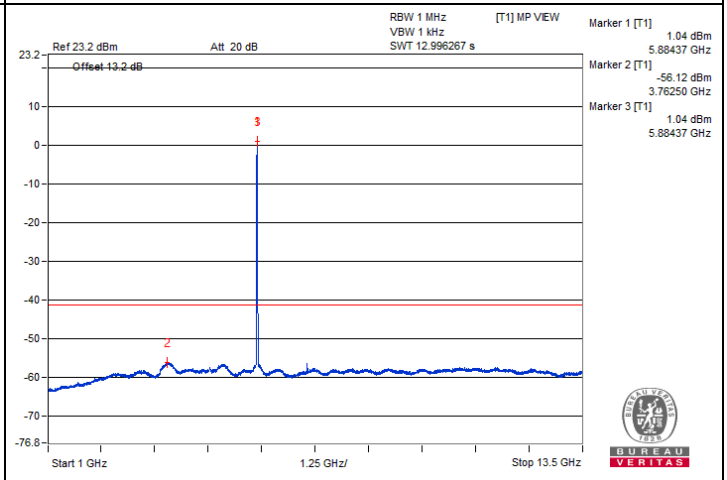

RBW 1 MHz
VBW 1 kHz
SWT 15.5952 s
[T1] MP VIEW
Ref -10 dBm
Att 0 dB
Offset 13.2 dB
Marker 1 [T1]
-70.21 dBm
38.79062 GHz
Start 25 GHz
1.5 GHz/
Stop 40 GHz

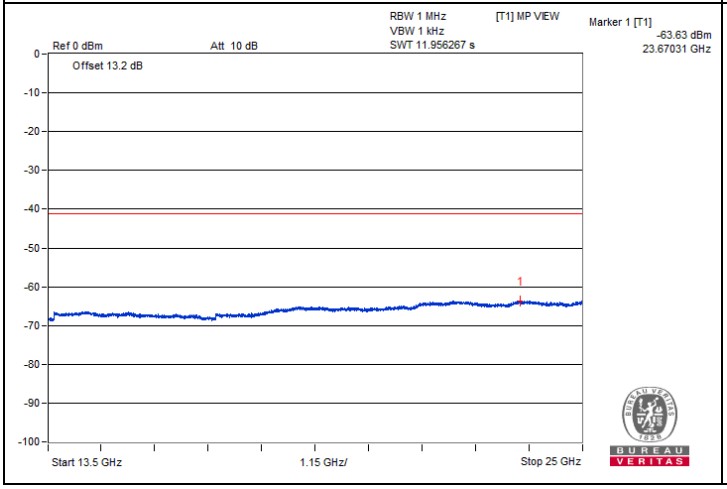
Chain 1

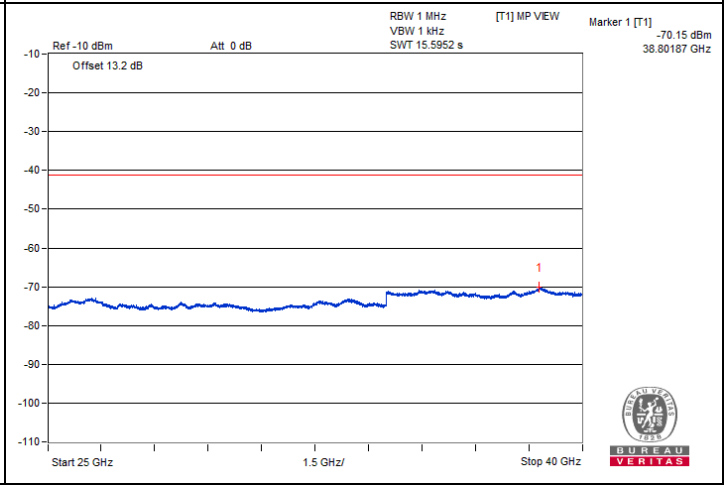

RBW 1 MHz
VBW 3 MHz
SWT 21.333333 ms
[T1] MP VIEW
Ref 23.2 dBm
Att 20 dB
Offset 13.2 dB
Marker 1 [T1]
10.64 dBm
5.88593 GHz
Marker 2 [T1]
-44.20 dBm
3.77187 GHz
Marker 3 [T1]
10.64 dBm
5.88593 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 3 MHz
SWT 19.733333 ms
[T1] MP VIEW
Ref 0 dBm
Att 10 dB
Offset 13.2 dB
Marker 1 [T1]
-51.80 dBm
23.61856 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz


RBW 1 MHz
VBW 3 MHz
SWT 25.6 ms
[T1] MP VIEW
Ref -10 dBm
Att 0 dB
Offset 13.2 dB
Marker 1 [T1]
-58.93 dBm
38.79625 GHz
Start 25 GHz
1.5 GHz/
Stop 40 GHz

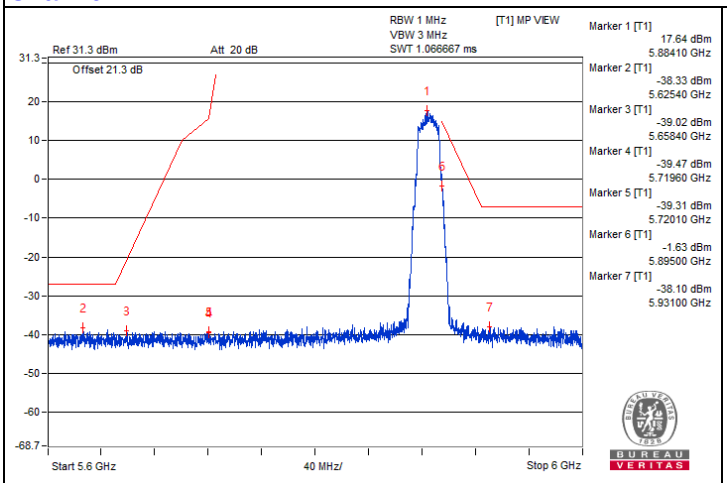

RBW 1 MHz
VBW 1 kHz
SWT 12.996267 s
[T1] MP VIEW
Ref 23.2 dBm
Att 20 dB
Offset 13.2 dB
Marker 1 [T1]
1.04 dBm
5.88437 GHz
Marker 2 [T1]
-56.12 dBm
3.76250 GHz
Marker 3 [T1]
1.04 dBm
5.88437 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 1 kHz
SWT 11.956267 s
[T1] MP VIEW
Ref 0 dBm
Att 10 dB
Offset 13.2 dB
Marker 1 [T1]
-63.63 dBm
23.67031 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz

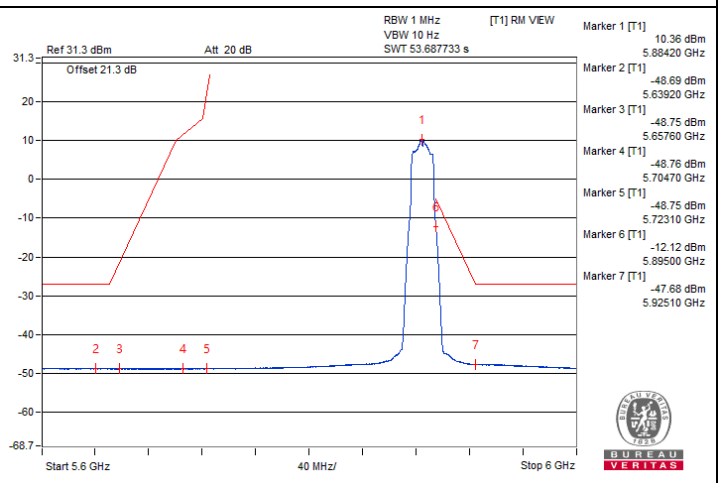

RBW 1 MHz
VBW 1 kHz
SWT 15.5952 s
[T1] MP VIEW
Ref -10 dBm
Att 0 dB
Offset 13.2 dB
Marker 1 [T1]
-70.15 dBm
38.80187 GHz
Start 25 GHz
1.5 GHz/
Stop 40 GHz

Bandedge table

Chain 0

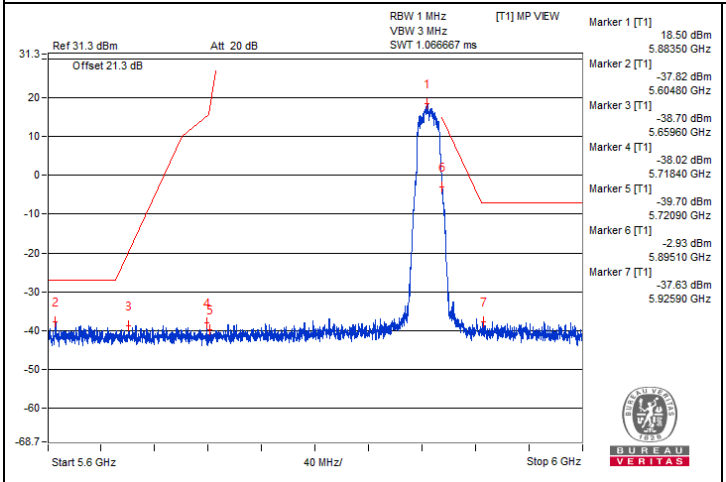


Peak

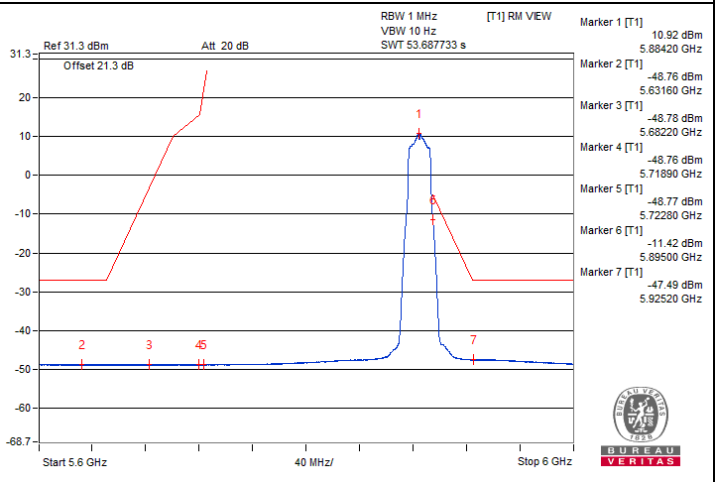


Average

Chain 1



Peak



Average

802.11be (EHT20) - Channel 169

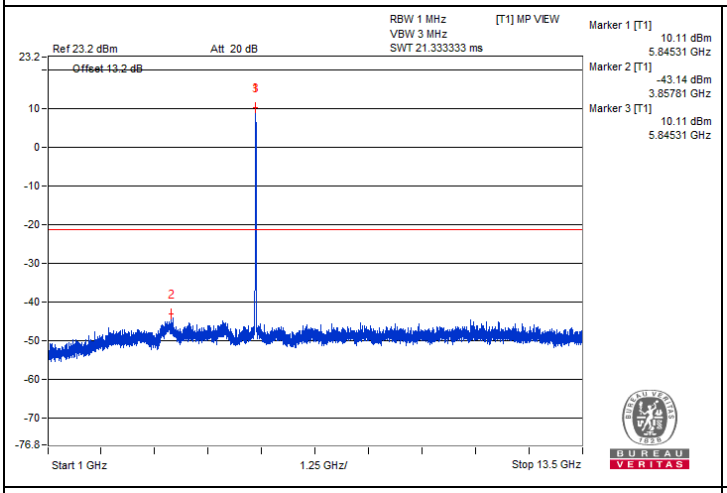
Conducted spurious emission table

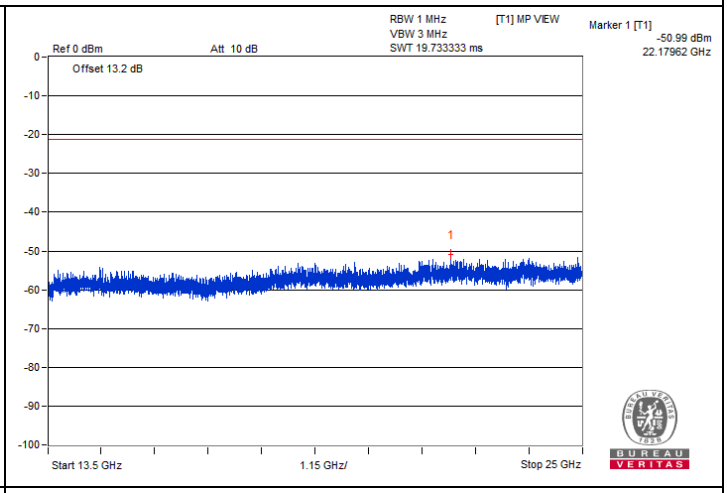
No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	3898.43	61.07 PK	74	-12.93	-44.16	-47.04	8.17	-34.19
2	3884.37	49.72 AV	54	-4.28	-56.69	-56.76	8.17	-45.54
3	#7779.68	58.76 PK	68.2	-9.44	-46.67	-48.99	8.17	-36.50
4	11701.56	59.84 PK	74	-14.16	-46.7	-46.5	8.17	-35.42
5	11681.25	48.38 AV	54	-5.62	-58.04	-58.08	8.17	-46.88
6	#17540.81	49.74 PK	68.2	-18.46	-55.41	-58.53	8.17	-45.52

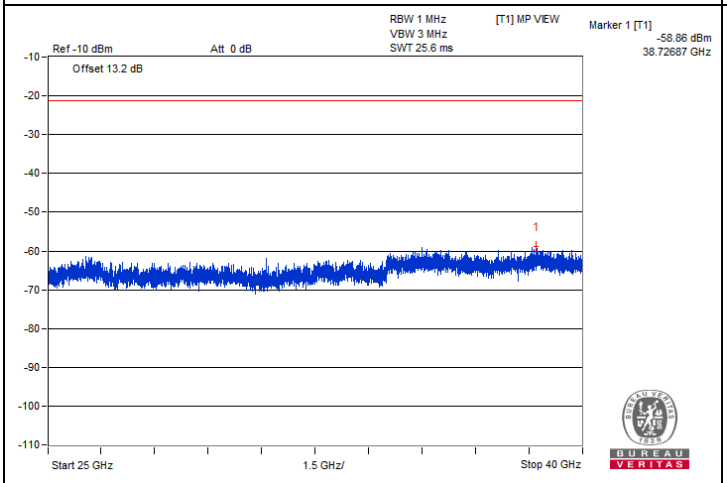
Remarks:

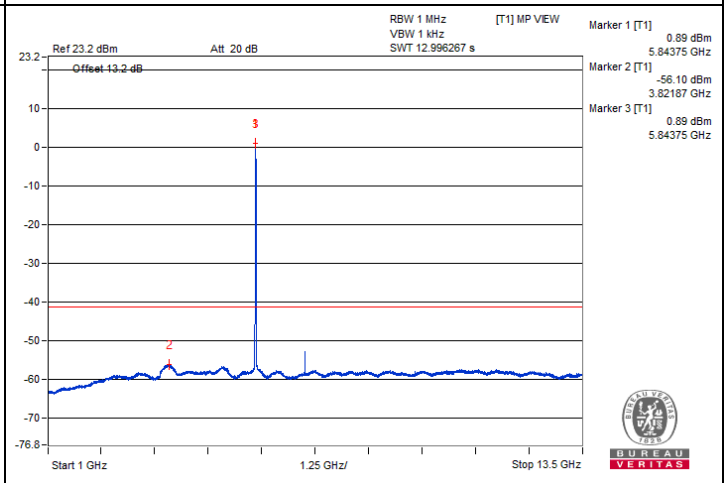
1. Margin value = Emission Level – Limit value
2. The other emission levels were very low against the limit.
3. " # " : The frequency is out of the restricted band.

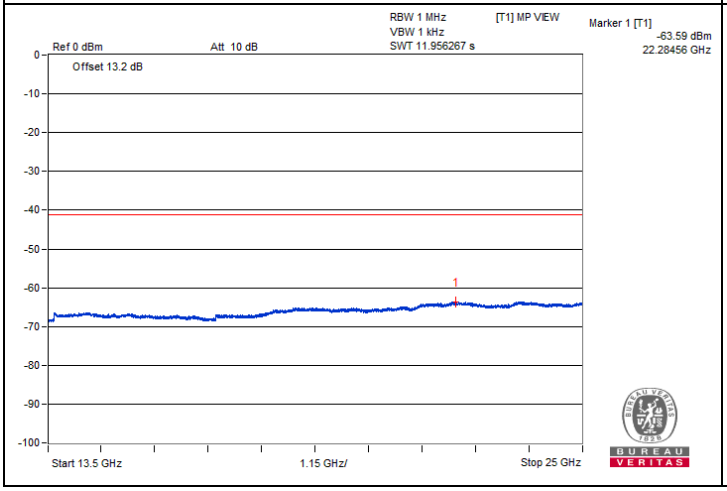
Chain 0

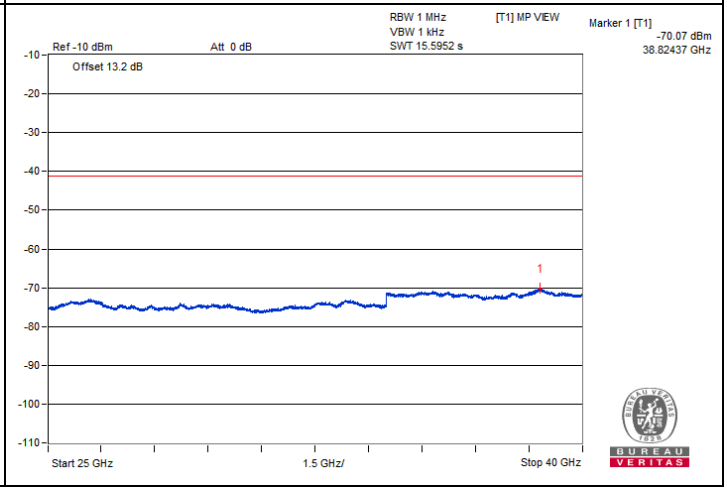

RBW 1 MHz
VBW 3 MHz
SWT 21.333333 ms
[T1] MP VIEW
Ref 23.2 dBm
Att 20 dB
Offset 13.2 dB
Marker 1 [T1]
10.11 dBm
5.84531 GHz
Marker 2 [T1]
-43.14 dBm
3.85781 GHz
Marker 3 [T1]
10.11 dBm
5.84531 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 3 MHz
SWT 19.733333 ms
[T1] MP VIEW
Ref 0 dBm
Att 10 dB
Offset 13.2 dB
Marker 1 [T1]
-50.99 dBm
22.17962 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz


RBW 1 MHz
VBW 3 MHz
SWT 25.6 ms
[T1] MP VIEW
Ref -10 dBm
Att 0 dB
Offset 13.2 dB
Marker 1 [T1]
-58.86 dBm
38.72687 GHz
Start 25 GHz
1.5 GHz/
Stop 40 GHz


RBW 1 MHz
VBW 1 kHz
SWT 12.996267 s
[T1] MP VIEW
Ref 23.2 dBm
Att 20 dB
Offset 13.2 dB
Marker 1 [T1]
0.89 dBm
5.84375 GHz
Marker 2 [T1]
-56.10 dBm
3.82187 GHz
Marker 3 [T1]
0.89 dBm
5.84375 GHz
Start 1 GHz
1.25 GHz/
Stop 13.5 GHz


RBW 1 MHz
VBW 1 kHz
SWT 11.956267 s
[T1] MP VIEW
Ref 0 dBm
Att 10 dB
Offset 13.2 dB
Marker 1 [T1]
-63.59 dBm
22.28456 GHz
Start 13.5 GHz
1.15 GHz/
Stop 25 GHz


RBW 1 MHz
VBW 1 kHz
SWT 15.5952 s
[T1] MP VIEW
Ref -10 dBm
Att 0 dB
Offset 13.2 dB
Marker 1 [T1]
-70.07 dBm
38.82437 GHz
Start 25 GHz
1.5 GHz/
Stop 40 GHz