

RF Exposure Report

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FCC ID: YAW529027-BEK-Z

Test Model: PVS6

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**FCC Registration /
Designation Number:** 723255 / TW2022



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Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 RF Exposure	5
2.1 Limits for Maximum Permissible Exposure (MPE)	5
2.2 MPE Calculation Formula	5
2.3 Classification	5
2.4 Antenna Gain	6
2.5 Calculation Result	7
Appendix	8

Release Control Record

Issue No.	Description	Date Issued
MFBFBE-WTW-P22080834	Original release.	2022/10/4

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	f/1500	30
1500-100,000	1.0	30

f = Frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE Calculation Formula

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 20 cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

WLAN / Bluetooth								
Ant No.	Chain No.	Brand	Part Number	Model	Antenna Net Gain (dBi)	Frequency rang (GHz)	Antenna type	Connector type
1	Chain 0 (Including BT)	airgain	N2420DGLCORE3-T-PK1-W90SMA	65-031-212002B	2.2	2.4~2.4835	PCB	I-PEX
					3.8	5.15~5.25		
					4.2	5.725~5.85		
2	Chain 1 (WLAN use only)	airgain	N2420DGST2-T-PK1-A50U	65-031-212003B	4.2	2.4~2.4835	PCB	I-PEX
					4.1	5.15~5.25		
					4.8	5.725~5.85		
LTE								
Ant No.	Chain No.	Brand	Part Number	Model	Antenna Gain (dBi)	Frequency rang (MHz)	Antenna type	Connector type
3	LTE	airgain	N815DMST-T-PK1-B55SMA	65-031-212001B	2.7	1850~1910	PCB	I-PEX
						1710~1755		
						698~716		

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

2.5 Calculation Result

Operation Mode	Evaluation Frequency (MHz)	Max Avg. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Result
WLAN 2.4GHz	2412-2462	298.263	4.2	20	0.15607	1	Pass
WLAN 5GHz (U-NII-1) (Master mode)	5180-5240	88.499	4.1	20	0.04526	1	Pass
WLAN 5GHz (U-NII-1) (Client mode)	5180-5240	109.511	4.1	20	0.056	1	Pass
WLAN 5GHz (U-NII-3)	5745-5825	153.251	4.8	20	0.09207	1	Pass
Bluetooth	2402-2480	4.285	2.2	20	0.00141	1	Pass
WWAN-LTE <Worst band>	699.7-715.3	158.49	2.7	20	0.05871	0.46647	Pass

NOTE:

Note:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- LTE: Limit of Power Density = F/1500

Conclusion:

The formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

$WLAN\ 2.4GHz + Bluetooth + LTE = 0.15607 / 1 + 0.00141 / 1 + 0.05871 / 0.46647 = 0.28334$

$WLAN\ 5GHz + Bluetooth + LTE = 0.09207 / 1 + 0.00141 / 1 + 0.05871 / 0.46647 = 0.21934$

Therefore the maximum calculations of above situations are less than the "1" limit.

Appendix

WWAN module

MPE Evaluation for FCC ID: XMR2020BG95M1

Operation Mode	Evaluation Frequency (MHz)	The Worst Case		Max Avg. Power		Directional Gain	Power Density (mW/cm ²)		Ratio
		Channel Number	Freq. (MHz)	mW	dBm		dBi	Value	
LTE (Band 2)	1850.7-1909.3	18607	1850.7	158.49	22.00	2.70	0.05871	1	0.05871
LTE (Band 4)	1710.7-1754.3	19957	1710.7	158.49	22.00	2.70	0.05871	1	0.05871
LTE (Band 12)	699.7-715.3	23017	699.7	158.49	22.00	2.70	0.05871	0.46647	0.12586

*Distance = 20 cm

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