

FCC Radiofrequency Radiation Exposure Estimation Report

In accordance with the requirements of
FCC 47 CFR Part 2(2.1093), ANSI/IEEE C95.1-1992 and
KDB 447498 D01

Product Name: Hybrid Vr Portable Computer

Trademark: Pimax

Model Name: Portal QLED

Serial Model: Portal

Report No.: S22102101925007

FCC ID: 2ARKN-PORTAL

Prepared for

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TEST RESULT CERTIFICATION

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Product description

Product name : Hybrid Vr Portable Computer
Trademark : Pimax
Model and/or type reference : Portal QLED
Serial Model..... : Portal

Standards : FCC 47 CFR Part 1(1.1310)
FCC 47 CFR Part 2(2.1093)
ANSI/IEEE C95.1-1992
KDB 447498 D01

This device described above has been tested by Shenzhen NTEK. Testing has shown that this device is capable of compliance with FCC radiofrequency radiation exposure specified in FCC 47 CFR Part 2(2.1093) and ANSI/IEEE C95.1-1992. The test results in this report apply only to the tested sample of the stated device/equipment. Other similar device/equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

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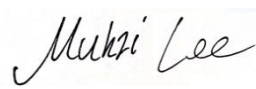
Date of Test

Date (s) of performance of tests..... : Feb. 08, 2023 ~ Jun. 07, 2023

Date of Issue : Jun. 07, 2023

Test Result : **Pass**

Prepared By
(Test Engineer)

: 

(Mukzi Lee)

Approved By
(Lab Manager)

: 

(Alex Li)

※ ※ Revision History ※ ※

REV.	DESCRIPTION	ISSUED DATE	REMARK
Rev.1.0	Initial Test Report Release	Jun. 07, 2023	Mukzi Lee

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1 General Information

1.1 RF Exposure Requirements

$$P_d = \frac{P_{out} \cdot G}{4 \cdot \pi \cdot R^2}$$

Where

P_d = Power density in mW/cm^2

P_{out} = output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

$\pi = 3.1416$

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

P_d the limit of MPE, $1\text{mW}/\text{cm}^2$. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

$$\text{mW} = 10^{(\text{dBm}/10)}$$

1.2 RF Exposure Limits

Table 1 to § 1.1310(e)(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)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3–3.0	614	1.63	*(100)	≤6
3.0–30	1842/f	4.89/f	*(900/f ²)	<6
30–300	61.4	0.163	1.0	<6
300–1,500			f/300	<6
1,500–100,000			5	<6
(ii) 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
300–1,500			f/1500	<30
1,500–100,000			1.0	<30

f = frequency in MHz. * = Plane-wave equivalent power density.

1.3 EUT Description

Device Information			
Product Name	Hybrid Vr Portable Computer		
Trade Name	Pimax		
Model Name	Portal QLED		
Serial Model	Portal		
FCC ID	2ARKN-PORTAL		
Device Phase	Identical Prototype		
Exposure Category	General population / Uncontrolled environment		
Antenna Type	FPC Antenna		
Antenna Gain	ANT 1: 1.5 dBi; ANT 2: 1.1 dBi		
Device Operating Configurations			
Supporting Mode(s)	802.11ax(20/40/80/160)		
Test Modulation	OFDMA (QPSK/BPSK/16QAM/64QAM/256QAM)		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	U-NII	5955MHz~7095MHz	

1.4 Test specification(s)

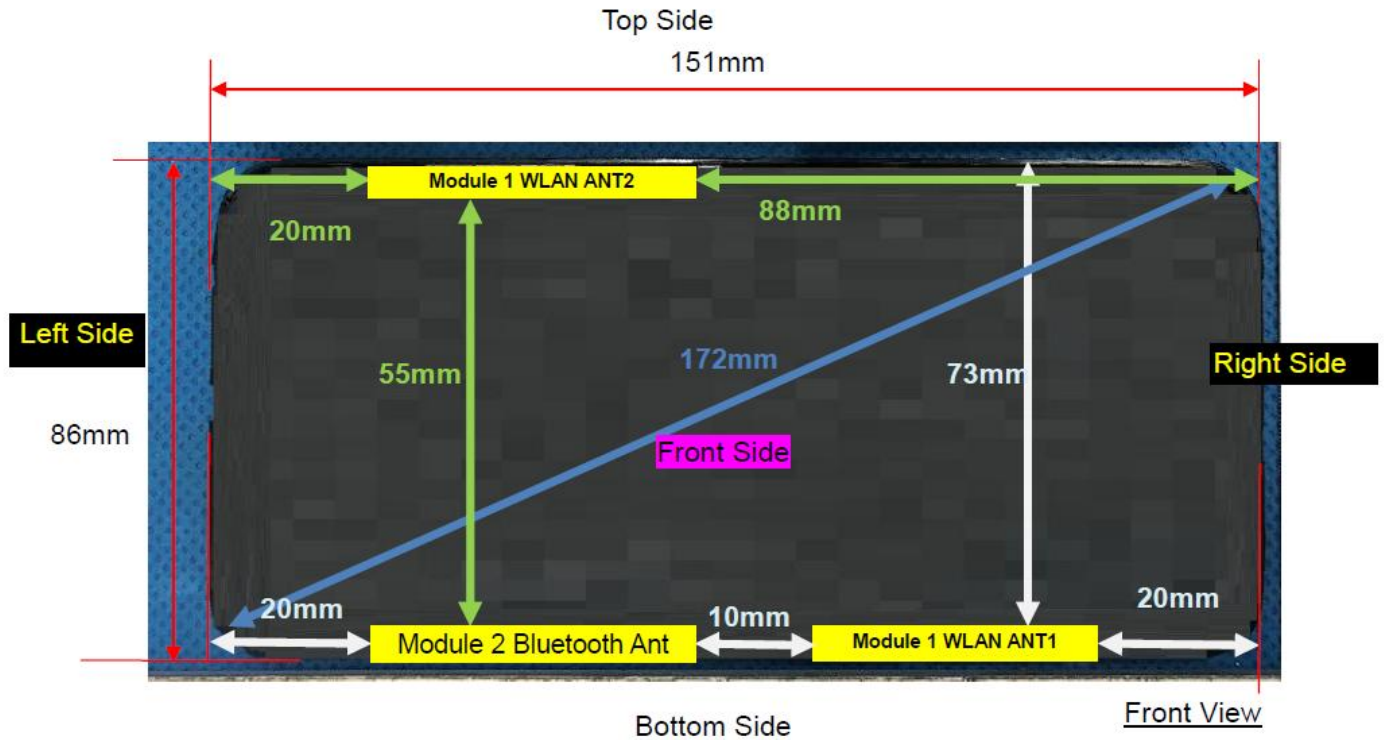
FCC 47 CFR Part 1(1.1310)
FCC 47 CFR Part 2(2.1093)
ANSI/IEEE C95.1-1992
KDB 447498 D01 General RF Exposure Guidance

1.5 Ambient Condition

Ambient temperature	20°C – 24°C
Relative Humidity	30% – 70%

2 RF Exposure Evaluation

2.1 Antenna Location



2.2 RF Exposure Evaluation result

Mode	f (GHz)	Ant	Ant Gain (dBi)	Conducted Power _{Max} (dBm)	E.I.R.P. _{max} (dBm)	E.I.R. P _{max} Tune-up (dBm)	E.I.R. P _{max} Tune-up (mW)	Distance (mm)	Evaluation Result (mW/m ²)	Total Evaluation Result (mW/m ²)	Limits (mW/m ²)	Verdict
Module 1 802.11ax (HEW160)	6.505	1	1.50	4.83	6.33	6.5	4.47	10	0.355609	0.984885	1	PASS
		2	1.10	5.51	6.61	7	5.01	10	0.398568			
Module 2 Bluetooth	2.440	-	0.80	-0.38	0.42	0.5	1.12	10	0.089101			
Module 1 Bluetooth	2402	-	1.50	0.85	2.35	2.5	1.78	10	0.141607			

NOTE: 1. WLAN 2.4G, WLAN 5G and WLAN 6G simultaneous transmission is not support.

2. Since the frequency is higher than 6GHz, compliance needs to be proved using MPE.

3. This device is a UMPC mini-table device, so the MPE evaluation is performed using a separation distance of 10mm.

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