RF EXPOSURE REPORT

For

AKUVOX (XIAMEN) NETWORKS CO., LTD.

10/F, No.56 Guanri Road, Software Park II, Xiamen 361009, China

FCC ID: 2AHCR-PG71

Report Type:	**Product Name:**
Original Report	HyPanel Pro

Report Number:	XMDN240219-08385E-RF-05
Report Date:	2025-01-06
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Approved By:	Miles Chen
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REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	XMDN240219-08385E-RF-05	R1V1	2025-01-06	Initial Release

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	AKUVOX (XIAMEN) NETWORKS CO., LTD.
Product Name:	HyPanel Pro
Tested Model:	PG71
Series Model(s):	PG71N
Power Supply:	DC 12V from Adapter or DC 48V from PoE
Maximum Conducted Output Power:	**Classic BT:** GFSK: 10.82dBm; π/4-DQPSK: 10.87dBm; 8DPSK: 11.21dBm **BLE:** 1.31dBm **2.4G Wi-Fi:** 13.73dBm **Zigbee:** 7.34dBm **5G Wi-Fi:** 16.79 dBm in 5150-5250 MHz Band 16.59 dBm in 5250-5350 MHz Band 13.83 dBm in 5470-5725 MHz Band 15.92 dBm in 5725-5850 MHz Band
Frequency Range:	**Classic BT:** 2402-2480MHz **BLE:** 2402-2480MHz **2.4G Wi-Fi:** 2412-2462MHz Zigbee: 2405~2480MHz **5G Wi-Fi:** 5180-5240 MHz (802.11a/n ht20/ac vht20) 5190-5230 MHz (802.11n ht40/ac vht40) 5210 MHz (802.11ac vht80) 5260-5320 MHz (802.11a/n ht20/ac vht20) 5270-5310 MHz (802.11n ht40/ac vht40) 5290 MHz (802.11ac vht80) 5500-5720 MHz (802.11a/n ht20/ac vht20) 5510-5710 MHz (802.11n ht40/ac vht40) 5530-5690MHz (802.11ac vht80) 5745-5825 MHz (802.11a/n ht20/ac vht20) 5755-5795 MHz (802.11n ht40/ac vht40) 5775 MHz (802.11ac vht80)
Antenna Type:	**Classic BT:** FPC Antenna **BLE:** FPC Antenna **2.4G Wi-Fi:** FPC Antenna **Zigbee:** LDS Antenna **5G Wi-Fi:** FPC Antenna
★Maximum Antenna Gain:	**Classic BT:** 2dBi **BLE:** 2dBi **2.4G Wi-Fi:** 2dBi **Zigbee:** 1.3dBi **5G Wi-Fi:** 3dBi
EUT Received Status:	Good
Note: *1. The Maximum Antenna Gain was declared by manufacturer.* *2. The model difference is PG71 is equipped with a camera and an indicator Led, while PG71N does not. Please refer to declaration letter for more detail.* *3. All measurement and test data in this report was gathered from production sample serial number: XMDN240219-08385E-RF-1 (Assigned by the BACL(Xiamen). The EUT supplied by the applicant was received on 2024-05-06)*	

Objective

This test report is prepared for *AKUVOX (XIAMEN) NETWORKS CO., LTD.* in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commissions rules.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Xiamen) to collect test data is located on the Unit 102, No. 902 Meifeng South Road, Binhai West Avenue, Science and Technology Innovation Park, Torch High tech Zone XiaMen.

Bay Area Compliance Laboratories Corp. (Xiamen) Lab is accredited to ISO/IEC 17025 by A2LA (Certificate Number: 7134.01) and the lab has been recognized as the FCC accredited lab under the KDB 974614 D01, the FCC Designation No. : CN1384.

FCC§15.247 (i), §1.1307(b)(1) & §2.1091 – MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to FCC §1.1307(b)(1) & §2.1091, systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

Limits for Maximum Permissible Exposure (MPE)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minutes)
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;
According to §1.1307(b)(1) & §2.1091 RF exposure is calculated.

Calculated Formulary:

Predication of MPE limit at a given distance
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

Calculated Data:

Mode	Frequency (MHz)	Antenna Gain		Tune-up Output Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limt (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
2.4G Wi-Fi	2412-2462	2	1.58	14	25.12	20	0.0079	1
BLE	2402-2480	2	1.58	1.5	1.41	20	0.0004	1
BT	2402-2480	2	1.58	11.5	14.13	20	0.0044	1
Zigbee	2405-2480	1.3	1.35	7.5	5.62	20	0.0015	1
5.2G Wi-Fi	5180-5240	3	2	17	50.12	20	0.0199	1
5.3G Wi-Fi	5260-5320	3	2	17	50.12	20	0.0199	1
5.4G Wi-Fi	5500-5720	3	2	14	25.12	20	0.0100	1
5.8G Wi-Fi	5745-5825	3	2	16	39.81	20	0.0158	1

Note: 1. The Tune-up output power was declared by the Manufacturer.

Simulatneous transmission:

Wifi/Bluetooth, Zigbee can transmissions simultaneously:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

$= S_{5G\ Wifi}/S_{limit\text{-}5G\ Wifi}+S_{Zigbee}/S_{limit\text{-}Zigbee}$

=0.0199+0.0015

=0.0214

＜1.0

Result: The device meets MPE at distance 20cm.

EUT PHOTOGRAPHS

Please refer to the attachment XMDN240219-08385E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and XMDN240219-08385E-RF-INP EUT INTERNAL PHOTOGRAPHS.

Declarations

1. Bay Area Compliance Laboratories Corp. (Xiamen) is not responsible for authenticity of any information provided by the applicant. Information from the applicant that may affect test results are marked with an asterisk "★".

2. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested.

3. Unless required by the rule provided by the applicant or product regulations, then decision rule in this report did not consider the uncertainty.

4. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor k=2 with the 95% confidence interval.

5. This report cannot be reproduced except in full, without prior written approval of Bay Area Compliance Laboratories Corp. (Xiamen).

6. This report is valid only with a valid digital signature. The digital signature may be available only under the adobe software above version 7.0.

******* END OF REPORT *******