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	RF Exposure Report				
Test Report Number	STA-24072634-LC-FCC-	IC-MPE			
FCC ID ISED ID	N6C-PCEAXAP 4908A-PCEAXAP				
Applicant Applicant Address Product Name Model Number Date of Receipt Date of Test Report Issue Date Test Standards Test Result	Silex technology, Inc. 2-3-1 Hikaridai, Seika-cho, Kyoto 619-0237, Japan Embedded Wireless Module SX-PCEAX-AP 08/14/2024 08/30/2024- 09/13/2024 09/20/2024 47 CFR §1.1307(b), 47 CFR §1.1310 RSS-102 Issue 6 Dec 2023				
Vista Labs TEST - CERTIFY - COMPLY 10 10 10 10 10 10 10 10 10 10	Issued by: Vista Compliance Laboratories 1261 Puerta Del Sol, San Clemente, CA 92673 USA <u>www.vista-compliance.com</u>				
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REVISION HISTORY

Report Number	Version	Description	Issued Date
STA-24072634-LC-FCC-IC-MPE	01	Initial report	09/20/2024





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1 General Information

1.1 Applicant

Applicant	icant Silex technology,Inc.		
Applicant Address 2-3-1 Hikaridai, Seika-cho, Kyoto 619-0237, Japan			
Manufacturer	Silex technology,Inc.		
Manufacturer Address	2-3-1 Hikaridai, Seika-cho, Kyoto 619-0237, Japan		

1.2 Product information

Product Name	Embedded Wireless Module		
Model Number	SX-PCEAX-AP		
Family Models	N/A		
Serial Number	1CBCEC2A9913		
	WLAN 2.4G: 2412-2462MHz		
Frequency Band	WLAN 5G: U-NII-1: 5150-5250MHz, U-NII-2A: 5250-5350MHz U-NII-2C: 5470-5725MHz, U-NII-3: 5725-5850MHz		
	802.11b: DSSS (CCK, DQPSK, DBPSK)		
Type of modulation	802.11g: OFDM-CCK (BPSK, QPSK, 16QAM, 64QAM)		
Type of modulation	802.11a/n/ac/ax: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM,		
	1024QAM)		
	Antenna type 1 - 2.4/5GHz PCB Adhesive Antenna		
	 Model: 2JF0188P, Brand: 2J Antenna 		
	• Antenna Peak Gain: 2.4G WLAN, 0.8 dBi; 5G WLAN: 4.7 dB		
Antenna (S) Information			
	Antenna type 2 - 2.4/5GHz Broadband Omnidirectional Antenna		
	 Model: 1399.17.0224, Brand: Huber+Suhner 		
	Antenna Peak Gain: 2.4G WLAN, 2 dBi; 5G WLAN: 2.5 dB		
Clock Frequencies	N/A		
Input Power	3.3VDC		
Power Adapter	Ν/Δ		
Manufacturer/Model			
Power Adapter SN	N/A		
Hardware version	N/A		
Software version	N/A		
Additional Info	N/A		





1.3 Test standard and method

Test standard	47 CFR §1.1307(b), 47 CFR §1.1310 RSS-102 Issue 6 Dec 2023
Test method	47 CFR §1.1307(b), 47 CFR §1.1310
	RSS-102 Issue 6 Dec 2023

2 Test Site Information

Lab performing tests	Vista Laboratories, Inc.		
Lab Address	1261 Puerta Del Sol, San Clemente, CA 92673 USA		
Phone Number +1 (949) 393-1123			
Website	www.vista-compliance.com		





3 FCC RF Exposure Evaluation

3.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm²)	Average Time (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f²)*	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

3.2 MPE Calculation Formula

Equation: $S = PG / 4\pi R^2$ or $R = \sqrt{PG} / 4\pi S$

Where, S = Power Density

P = Power Input to Antenna

G = Antenna Gain

R = distance to the center of radiated antenna in cm

3.3 Classification

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

3.4 Antenna Gain

Please see section 1.2 product information for antenna gain details.

Antenna	Band	Conducted Average Output Power (dBm)	Antenna Gain (dBi)	Separation distance (cm)	Power Density (mW/ cm²)	MPE Limit (mW/ cm²)	
2JF0188P (2J Antenna)	WLAN 2.4G	21	0.8	20	0.030	1	
2JF0188P (2J Antenna)	WLAN 5G	19.5	4.7	20	0.052	1	
1399.17.0224 (Huber+Suhner)	WLAN 2.4G	21	2	20	0.040	1	
1399.17.0224 (Huber+Suhner)	WLAN 5G	19.5	2.5	20	0.032	1	

3.5 FCC RF Exposure Evaluation Results

The above results show that the device complies with the MPE requirement.





4 ISED RF Exposure Evaluation

4.1 Limits for Maximum Permissible Exposure (MPE)

- 1. Per RSS-102 issue 5, section 2.5.2 as reproduced below:
 - 2.5.2 Exemption from Routine Evaluation Limits RF Exposure Evaluation

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- Below 20 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- At or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 22.48/f^{0.5}W (adjusted for tune-up tolerance), where f is in MHz;
- At or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- At or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;
- At or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

nformation that demonstrates now the e.i.r.p. was derived.							
Frequency Range (MHz)	Electric Field Strength (V/m rms)	Magnetic Field Strength (A/m rms)	Power Density (W/m²)	Reference Period (minutes)			
	Limits For Genera	al Population / Uncor	ntrolled Exposure				
0.003-10 ²¹	83	90	-	Instantaneous*			
0.1-10	-	0.73/ f	-	6**			
1.1-10	87/ f ^{0.5}	-	-	6**			
10-20	27.46	0.0728	2	6			
20-48	58.07/ f ^{0.25}	0.1540/ f ^{0.25}	8.944/ f ^{0.5}	6			
48-300	22.06	0.05852	1.291	6			
300-6000	3.142 f ^{0.3417}	0.008335 f ^{0.3417}	0.02619f ^{0.6834}	6			
6000-15000	61.4	0.163	10	6			
15000-150000	61.4	0.163	10	616000/ f ^{1.2}			
150000-300000 0.158 f ^{0.5} 4.21 x 10 ⁻⁴ f ^{0.5} 6.67 x 10 ⁻⁵ f 616000/ f ^{1.2}							
Note: f is frequency in MHz.							
*Based on nerve stimulation (NS).							
** Based on specific absorption rate (SAR).							

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.





4.2 MPE Calculation Formula

Pd = (Pout*G) / (4*pi*r²) 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

4.3 Classification

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

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4.4 Antenna Gain

Please see section 1.2 product information for antenna gain details.

4.5 ISED RF Exposure Exemption Evaluation Results

Antenna	Band (MHz)	Conducted Average Output Power (dBm)	Antenna Gain (dBi)	Separation distance (cm)	Power Density (W/ m²)	EIRP (W)	Exemption Limit (W)
2JF0188P (2J Antenna)	WLAN 2.4G	21	0.8	20	0.30	0.151	2.686
2JF0188P (2J Antenna)	WLAN 5G	19.5	4.7	20	0.52	0.166	4.507
1399.17.0224 (Huber+Suhner)	WLAN 2.4G	21	2	20	0.40	0.2	2.686
1399.17.0224 2 Huber+Suhner)	WLAN 5G	19.5	2.5	20	0.32	0.158	4.507

The above results show that the device complies with the ISED Exemption requirement.

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