

RF EXPOSURE REPORT



Applicant: Silex Technology, Inc.
2-3-1 Hikaridai, Seika-cho, Soraku-gun, Kyoto 619-0237,
Japan

Manufacturer: Silex Technology, Inc.
2-3-1 Hikaridai, Seika-cho, Soraku-gun, Kyoto 619-0237,
Japan

Product Name: SX-PCEBE-AP

Brand Name: Silex Technology

Model No.: SX-PCEBE-AP

FCC ID N6C-PCEBEAP

Date of EUT Received: Dec. 06, 2024

Issue Date: Mar. 27, 2025

Approved By

John Yeh

We hereby certify that:

The above equipment was evaluated by SGS Taiwan Ltd. The evaluation in this report is in compliance with FCC Rule Part §1.1307 & KDB 447498 D04 v01 .

The results of this report relate to the specific sample identified in this report.

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Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TESA2412000883ES	00	Original	Mar. 27, 2025	Kimmy Chiou	

Note:

- 1、The remark "" indicates modification of the report upon requests from certification body.

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1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

1.1 Product Description

Product Name:	SX-PCEBE-AP
Brand Name:	Silex Technology
Model No.:	SX-PCEBE-AP

1.2 Evaluation site

Laboratory	Site Address		FCC Designation number	ISED Company Number	CAB Identifier
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	☒	No. 134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, 24803, Taiwan.	TW0027	4620A	TW3702
	☐	No. 2, Keji 1st Rd., Guishan Township, Taoyuan County, 333 Taiwan.	TW0028	4620E	
	☐	1F, No. 8, Alley 15, Lane 120, Sec. 1, Nei Hu Road, Nei Hu District, Taipei City, 222 Taiwan.	TW0029	23862	

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1.3 Antenna Information:

Antenna Type	Antenna Part No.	Freq. (MHz)	Element Gain (dBi)	Cable Loss	Net Gain (dBi)	Re-mark
Dipole	146153	2400~2500	3.35	0.175	3.175	
Dipole	H2B1PC1A1Cxxxx		2.90	0.23	2.67	
Monopole	GW.05.0153	2400~2500	2.80	0.00	2.80	
PIFA	6001535	2400~2500	3.20	0.50	2.70	Main
PIFA	6001535	2400~2500	4.30	1.10	3.20	Aux
Dipole	146153	5150~5250	3.45	0.275	3.175	
		5250~5350	3.25	0.275	2.975	
		5470~5725	4.55	0.275	4.275	
		5725~5850	4.05	0.275	3.775	
Dipole	H2B1PC1A1Cxxxx	5150~5250	4.00	0.78	3.22	
		5250~5350	4.90	0.99	3.91	
		5470~5725	4.00	1.18	2.82	
		5725~5850	5.60	1.63	3.97	
Monopole	WS.03.B.305151	5150~5250	5.63	2.40	3.23	
		5250~5350	5.15	1.30	3.85	
		5470~5725	4.14	0.80	3.34	
		5725~5850	4.12	0.80	3.32	
PIFA	6001535	5150~5250	6.00	2.80	3.20	Main
		5250~5350	6.30	2.40	3.90	Main
		5470~5725	5.10	0.80	4.30	Main
		5725~5850	4.20	0.80	3.40	Main
PIFA	6001535	5150~5250	5.60	2.40	3.20	Aux
		5250~5350	5.90	2.40	3.50	Aux
		5470~5725	5.00	0.80	4.20	Aux
		5725~5850	5.00	1.40	3.60	Aux

Note: Antenna information is provided by the applicant.

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2 DETERMINATION OF MPE EXEMPTION

2.1 FCC

2.1.1 Single RF Source

As per §1.1307(b)(3)(i),

- (A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);
- (B) Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by:

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

Where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

d = the separation distance (cm);

Note: when 10-g extremity SAR applies, SAR test exemption may be considered by applying a factor of 2.5 to the SAR-based exemption thresholds.

- (C) Or using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

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Table 1 to § 1.1307(b)(3)(i)(C) –

Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)			Minimum Distance			Threshold ERP (W)
fL		fH	$\lambda L / 2\pi$		$\lambda H / 2\pi$	
0.3	-	1.34	159m	-	35.6m	1920 R ²
1.34	-	30	35.6m	-	1.6m	3450 R ² /f ²
30	-	300	1.6m	-	159mm	3.83 R ²
300	-	1500	159mm	-	31.8mm	0.0128 R ² f
1500	-	100000	31.8mm	-	0.5mm	19.2R ²

R= minimum separation distance in meter

f = frequency in MHz

2.1.2 Multiple RF Sources

In the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation.

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$

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2.1.3 Single RF Source Evaluation Results

Muti TX	Frequency (MHz)	Max. tune-up power (dBm)	Peak gain (dBi)	ERP (dBm)	ERP (W)	Permissible Minimum separation distance ($\lambda/2\pi$) (m)	R = actual Minimum separation distance(m)	ERP _{th} (W)	ERP/ERP _{th}	Simultaneous transmission modes					
										1	2	3	4	5	6
WLAN 2.4G	2442	24.1	3.2	25.15	0.327	0.0196	0.200	0.768	0.426	V					
WLAN 5.2G	5180	23.5	3.23	24.58	0.287	0.0092	0.200	0.768	0.374						
WLAN 5.3G	5280	22	3.91	23.76	0.238	0.0090	0.200	0.768	0.310						
WLAN 5.6G	5470	24	4.3	26.15	0.412	0.0087	0.200	0.768	0.536						
WLAN 5.8G	5250	24.5	3.97	26.32	0.429	0.0091	0.200	0.768	0.559	V					

Note: For conservativeness, the lowest uplink frequency of each band is used to determine the minimum separation distance of that band. All the single RF source results (P or ERP) are less than their corresponding threshold (P_{th} or ERP_{th}), so they are exempt from RF exposure testing.

2.2 Multiple RF Sources Evaluation Results

Simultaneous transmission modes	Σ ERP/ERP _{th}	Criteria
1	0.985	1

Note:

1. Σ (ERP/ERP_{th}): This is a summation of [(ERP of RF source / exemption threshold ERP for RF source)].
Considering the collocated transmitters, the aggregated (ERP/ERP_{th}) is smaller than 1, and MPE of collocated transmitters is compliant

~ End of Report ~

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