

RF EXPOSURE REPORT

OF

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

Product Name: SX-PCEAC-DB Rev2

Brand Name: SILEX TECHNOLOGY

Model No.: SX-PCEAC-DB, SX-PCEAC

Model Difference: Both hardware is identical. SX-PCEAC-DB works on 2.4GHz and 5GHz, SX-PCEAC does on 5GHz only. It's controlled by driver software.

Report Number: ER/2020/10098

FCC ID: N6C-PCEACDBR2

FCC Rule Part Part 2.1091

Issue Date: Apr. 17, 2020

We hereby certify that:

The above equipment was verified by SGS Taiwan Ltd. The evaluation in this report is in compliance with the above rule(s).

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

Approved By:

John Yeh

John Yeh / Asst. Manager



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Revision History

Report Number	Revision	Description	Issue Date	Remark
ER/2020/10098	Rev.00	Original.	Apr. 17, 2020	Revised By: Yuri Tsai

Note:

1、Multiple Model numbers or Trademarks

The variant model numbers are assessed as identical in hardware and software to each other, hence all variants are fully covered by the test results in this test report without further verification test.

2、Disclaimer

Variant information between model numbers is provided by the applicant, test results of this report are applicable to the sample EUT received.

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1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

1.1 General:

Product Name:	SX-PCEAC-DB Rev2
Brand Name:	SILEX TECHNOLOGY
Model No.:	SX-PCEAC-DB, SX-PCEAC
Model Difference:	Both hardware is identical. SX-PCEAC-DB works on 2.4GHz and 5GHz, SX-PCEAC does on 5GHz only. It's controlled by driver software.
Hardware Version:	PW104021XX
Firmware Version:	10.2-00082-4
Software Version:	Ver.1
Power Supply:	3.3V from DC Power Supply

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1.2 Antenna Information:**1.2.1 WLAN 2.4GHz**

Antenna Type	Supplier	Antenna Part No.	Freq. (MHz)	Peak Antenna Gain (dBi)	Worst Antenna Gain
ROD	STAF	1019-015A	2400~2483.5	2.14	V
	Sansei Denki	ANTDC-081A0		2	
	Sansei Denki	ANTDP-027A0		1.5	
PCB	Molex	146153		3.25	V
	Unictron	H2B1PC1A1C (AA258)		2.9	
	Unictron	H2B1PD1A1C (AA222)		2.8	

Note: Effective Legacy Gain for 3TX and MIMO mode = 8.02 dBi

1.2.2 WLAN 5GHz

Antenna Type	Supplier	Antenna Part No.	Freq. (MHz)	Peak Antenna Gain (dBi)	Worst Antenna Gain
ROD	STAF	1019-015A	5150~5850	4	V
	Sansei Denki	ANTDC-081A0		2	
	Sansei Denki	ANTDP-027A0		2.1	
	JOYMAX	KWM-619BMPXX		3.81	
PCB	Molex	146153		5	V
	Unictron	H2B1PC1A1C (AA258)		4.4	
	Unictron	H2B1PD1A1C (AA222)		4.2	

Note: Effective Legacy Gain for 3TX and MIMO mode = 9.77 dBi

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1.3 Rated Power

1.3.1 WLAN 2.4GHz

Wi-Fi 802.11	Frequency Range	Channels	Max. Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Worst Case
b	2412-2462	11	15.19	8.02	23.21	
g			22.57	8.02	30.59	V
n_HT20			20.92	8.02	28.94	
n_HT40	2422-2452	7	16.86	8.02	24.88	
Modulation type:		CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM				

1.3.2 WLAN 5GHz:

Wi-Fi 802.11	Frequency Range	Channels	Max. Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Worst Case
a	5150~5250	4	11.87	9.77	21.64	
	5250~5350	4	19.28		29.05	
	5470~5725	11	18.84		28.61	
	5725-5850	5	23.25		33.02	
n_HT ac_VHT 20M	5150~5250	4	HT: 12.65	9.77	22.42	
	5250~5350	4	HT: 14.84		24.61	
	5470~5725	11	HT: 18.52		28.29	
	5725-5850	5	HT: 23.29		33.06	V
n_HT ac_VHT 40M	5150~5250	2	HT: 13.20	9.77	22.97	
	5250~5350	2	HT: 15.03		24.81	
	5470~5725	5	HT: 19.03		28.80	
	5725-5850	2	HT: 22.41		32.18	
ac_VHT 80M	5150~5250	1	13.02	9.77	22.79	
	5250~5350	1	15.70		25.47	
	5470~5725	2	20.03		29.80	
	5725-5850	1	14.87		24.64	
Modulation type:		64QAM, 16QAM, QPSK, BPSK for OFDM				

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2 FCC MAXIMUM PERMISSIBLE EXPOSURE (MPE)

2.1 FCC Standard Applicable

According to §1.1307(b)(1), 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.

This is a Mobile device, the MPE is required.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for Maximum Permissive Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
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
1500-15000	/	/	1.0	30

f = frequency in MHz

* = Plane-wave equipment power density

Prediction of MPE limit at a given distance

$$S = PG / 4\pi R^2$$

Where: S = Power density

P = Power input to antenna

G = Power gain of the antenna in the direction of interest relative to an isotropic radiator

R = Distance to the center of radiation of the antenna

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2.2 Power Density Calculation (Worst Case)

FCC Standalone MPE

Operation Mode	Evaluation Frequency (MHz)	Operation Distance (cm)	Max. output Power (dBm)	Antenna Gain (dBi)	Max. output Power EIRP (mW)	Power Density (PD) (mW/cm ²)	Limit (mW/cm ²)	Pass / Fail	Power Density / Limit
WLAN 2.4G	2437.00	20	22.57	8.02	1145.51	0.228	1.000	Pass	0.228
WLAN 5G	5825.00	20	23.29	9.77	2023.02	0.403	1.000	Pass	0.403

~ End of Report ~

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