

TEST REPORT

Application No.: HKEM2007000653AT
Applicant: Pricer AB
Address of Applicant: Pricer AB, Box 215, SE-101 24 Stockholm, Sweden
Manufacturer: Pricer AB
Address of Manufacturer: Västra Järnvägsgatan 7, SE-111 64 Stockholm, Sweden
Equipment Under Test (EUT):
EUT Name: Pricer Shelf Controller
Model No.: 66170-10
Additional model: Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.
FCC ID: 2ACC86617010
Standard(s) : 47 CFR Part 1.1307;
 47 CFR Part 2.1093
Date of Receipt: 2020-07-03
Date of Test: 2020-07-03 to 2020-07-27
Date of Issue: 2020-07-28

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.





Law Man Kit
EMC Manager

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2020-07-28		Original

Authorized for issue by:			
			
		Leo Xu /Project Engineer	Date: 2020-07-28
			
		Law Man Kit /Reviewer	Date: 2020-07-28



2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
RF Exposure	47 CFR Part 1.1307, Part 1.1310; 47 CFR Part 2.1093	CFR 47 Part 1.1310	CFR 47 Part 1.1310	PASS

Declaration of EUT Family Grouping:

None.

Abbreviation:

- Tx: In this whole report Tx (or tx) means Transmitter.
- Rx: In this whole report Rx (or rx) means Receiver.
- RF: In this whole report RF means Radiated Frequency.
- CH: In this whole report CH means channel.
- Volt: In this whole report Volt means Voltage.
- Temp: In this whole report Temp means Temperature.
- Humid: In this whole report Humid means humidity.
- Press: In this whole report Press means Pressure.
- N/A: In this whole report not application.



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4 General Information

4.1 Details of E.U.T.

Power supply:	Adaptor Model: IEC 005 Input: AC 100V-240V, 50/60Hz, 0.75A Output: DC 5V, 1A
Test voltage:	AC 120V
Cable:	100cm unshielded 2wires DC cable
Antenna Gain:	1.5dBi
Antenna Type:	PCB Antenna
Channel Spacing:	5MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) 802.11n (HT20; HT40): OFDM (64QAM, 16QAM, QPSK, BPSK)
Number of Channels:	802.11b/g/n(HT20):11 802.11n(HT40): 7
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz 802.11n(HT40):2422MHz to 2452MHz
Tested Channels:	802.11b/g/n(HT20): 2412MHz, 2442MHz, 2462MHz 802.11n(HT40): 2422MHz, 2442MHz, 2452MHz
Series Number	A1
Hardware Version:	57771 D
Software Version:	1.00 (ff04c764)

Frequency List

802.11b/g/n(HT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	5	2432	9	2452
2	2417	6	2437	10	2457
3	2422	7	2442	11	2462
4	2427	8	2447		

802.11n(HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2422	5	2442
2	2427	6	2447
3	2432	7	2452
4	2437		

Remark: 1. Testing Channels are highlighted in **bold**.



4.2 Description of Support Units

The EUT has been tested with corresponding accessories as below:

Supplied by client

Description	Manufacturer	Model No.	SN/Certificate NO
UART Test board	N/A	N/A	N/A
Test Software (espRFTool)	ESPRESSIF	Version 2.4	N/A

Supplied by SGS:

Description	Manufacturer	Model No.	SN/Certificate NO
NoteBook (EMC4)	Dell	P75F	N/A

4.3 Test Location

All tests were performed at:

SGS Hong Kong Limited
Unit 2 and 3, G/F, Block A, Po Lung Centre,
11 Wang Chiu Road, Kowloon Bay, Kowloon, Hong Kong
Tel: +852 2305 2570 Fax: +852 2756 4480

No tests were sub-contracted.

4.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• **HOKLAS (Lab Code: 009)**

SGS Hong Kong Limited has been accepted by HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a HOKLAS Accredited Laboratory, this laboratory meets the requirements of ISO/IEC 17025:2017 and it has been accredited for performing specific test as listed in the scope of accreditation within the test category of Electrical and Electronic Products.

• **IAS Accreditation (Lab Code: TL-187)**

SGS Hong Kong Limited has met the requirements of AC89, IAS Accreditation Criteria for Testing Laboratories, and has demonstrated compliance with ISO/IEC Standard 17025:2017, General requirements for the competence of testing and calibration laboratories. This organization is accredited to provide the services specified in the scope of accreditation maintained on the IAS website (www.iasonline.org).

The report must not be used by the client to claim product certification, approval, or endorsement by IAS, NIST, or any agency of the Federal Government.

• **FCC Recognized Accredited Test Firm (CAB Registration No.: 514599)**

SGS Hong Kong Limited has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: HK0015, Test Firm Registration Number: 514599.

• **Industry Canada (Site Registration No.: 26103; CAB Identifier No.: HK0015)**

SGS Hong Kong Limited has been recognized by Department of Innovation, Science and Economic Development (ISED) Canada as a wireless testing laboratory. The acceptance letter from the ISED is maintained in our files. CAB Identifier No: HK0015, Site Registration Number: 26103.

4.5 Deviation from Standards

None

4.6 Abnormalities from Standard Conditions

None

5 Radio Spectrum Technical Requirement

5.1 RF Exposure

5.1.1 Test Requirement:

CFR 47 Part 1.1310

Limit:

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in Part1.1307(b)

TABLE 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)
(A) 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
(B) 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

According to IEEE C95.3:2002 section 5.5.1.1, The power density S at a point on the axis at a distance d from a transmitting antenna is given by the Friis free-space transmission formula

$$S = \frac{PG}{4\pi d^2}$$

S = power density (mW/cm²)
P = the net power delivered to the antenna (mW)
G = gain of the antenna in linear scale
d = distance between observation point and center of the radiator (cm)



5.1.1 EUT RF Exposure Evaluation

Antenna Gain:

The maximum Gain measured in fully anechoic chamber 1.413 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

WiFi:

Operation mode	Channel	Frequency (MHz)	Conduct power (including Tune-up tolerance) (dBm)	Conduct powe (mW)	Power Density at R = 20 cm (mW/cm2)	Limit	MPE Ratios	Result
802.11b	Low	2412	14.9	30.903	0.00868	1	0.00868	PASS
802.11b	Middle	2442	14.5	28.184	0.00792	1	0.00792	PASS
802.11b	High	2462	14.3	26.915	0.00756	1	0.00756	PASS
802.11g	Low	2412	13.2	20.893	0.00587	1	0.00587	PASS
802.11g	Middle	2442	12.5	17.783	0.00500	1	0.00500	PASS
802.11g	High	2462	12.3	16.982	0.00477	1	0.00477	PASS
802.11n20	Low	2412	13.2	20.893	0.00587	1	0.00587	PASS
802.11n20	Middle	2442	12.5	17.783	0.00500	1	0.00500	PASS
802.11n20	High	2462	12.3	16.982	0.00477	1	0.00477	PASS
802.11n40	Low	2422	15.6	36.308	0.01020	1	0.01020	PASS
802.11n40	Middle	2442	14.8	30.200	0.00849	1	0.00849	PASS
802.11n40	High	2452	14.1	25.704	0.00722	1	0.00722	PASS

Note: 1. Refer to report No. HKEM200700065302 EUT test conducted power value. The distancer (5th column) calculated from the Fries transmission formula is far greater than 20 cm separation requirement.

6 Photographs

Remark: Photos refer to Appendix A, Appendix B and Appendix C of HKEM2007000653AT.

- End of the Report -