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Rev.: 00

**IEEE C95.1 2005  
KDB 447498 D03  
47 C.F.R. Part 1, Subpart I, Section 1.1310  
47 C.F.R. Part 2, Subpart J, Section 2.1091**

## **RF EXPOSURE REPORT**

**For**

**WiFi/BT/GPS RF Module**

**Model: AK-6630**

**Trade Name: ASUKA**

*Issued to*

**Asuka Autotronics Inc.  
2F, No.12, Prosperity Rd. II, SBIP, Hsinchu, Taiwan**

*Issued by*

**Compliance Certification Services Inc.  
Wugu Laboratory  
No.11, Wugong 6th Rd., Wugu Dist.,  
New Taipei City 24891, Taiwan. (R.O.C.)  
Issue Date: September 2, 2019**

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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 90 days only.  
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## 1. TEST RESULT CERTIFICATION

### We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10: 2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.

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

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
IEEE C95.1 2005 KDB 447498 D03 47 C.F.R. Part 1, Subpart I, Section 1.1310 47 C.F.R. Part 2, Subpart J, Section 2.1091	No non-compliance noted
Statements of Conformity	
Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.	

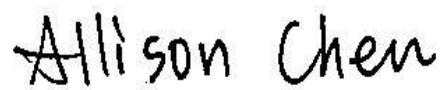
Approved by:



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Kevin Tsai  
Deputy Manager  
Compliance Certification Services Inc.

Reporter:



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Allison Chen  
Report coordinator  
Compliance Certification Services Inc.

## 2. LIMIT

According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

### 3. EUT SPECIFICATION

<b>EUT</b>	WiFi/BT/GPS RF Module																				
<b>Model</b>	AK-6630																				
<b>Frequency band (Operating)</b>	<input checked="" type="checkbox"/> Bluetooth: 2402MHz-2480MHz <input checked="" type="checkbox"/> 802.11b/g/n HT20: 2412MHz ~ 2462 MHz <input checked="" type="checkbox"/> 802.11n HT40: 2422MHz ~ 2452MHz <input type="checkbox"/> 802.11a/n HT20: 5180MHz ~ 5240MHz / 5260MHz ~ 5320MHz / 5500MHz ~ 5700MHz / 5745MHz ~ 5825MHz 802.11n HT40: 5190MHz ~ 5230MHz / 5270MHz ~ 5310MHz / 5510MHz ~ 5670MHz / 5755MHz ~ 5795MHz 802.11ac VHT80: 5210MHz / 5290MHz / 5530MHz / 5775MHz <input type="checkbox"/> Others																				
<b>Device category</b>	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others																				
<b>Exposure classification</b>	<input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm <sup>2</sup> ) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm <sup>2</sup> )																				
<b>Antenna Specification</b>	Bluetooth : Antenna Gain : 2.00 dBi (Numeric gain 1.58) WIFI 2.4GHz Antenna Gain : 2.00 dBi (Numeric gain 1.58)																				
<b>Maximum Measurement Average Power</b>	<table border="1"> <tr> <td>Bluetooth:</td> <td>6.62 dBm</td> <td>(4.592 mW)</td> </tr> <tr> <td>2.4GHz:</td> <td></td> <td></td> </tr> <tr> <td>IEEE 802.11b Mode:</td> <td>11.97 dBm</td> <td>(15.740 mW)</td> </tr> <tr> <td>IEEE 802.11g Mode:</td> <td>12.75 dBm</td> <td>(18.836 mW)</td> </tr> <tr> <td>IEEE 802.11n HT 20 Mode:</td> <td>13.70 dBm</td> <td>(23.442 mW)</td> </tr> <tr> <td>IEEE 802.11n HT 40 Mode:</td> <td>13.91 dBm</td> <td>(24.604 mW)</td> </tr> </table>			Bluetooth:	6.62 dBm	(4.592 mW)	2.4GHz:			IEEE 802.11b Mode:	11.97 dBm	(15.740 mW)	IEEE 802.11g Mode:	12.75 dBm	(18.836 mW)	IEEE 802.11n HT 20 Mode:	13.70 dBm	(23.442 mW)	IEEE 802.11n HT 40 Mode:	13.91 dBm	(24.604 mW)
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<b>Evaluation applied</b>	<input checked="" type="checkbox"/> MPE Evaluation* <input type="checkbox"/> SAR Evaluation <input type="checkbox"/> N/A																				

## 4. TEST RESULTS

**No non-compliance noted.**

### Calculation

$$\text{Given } E = \frac{\sqrt{30 \times P \times G}}{d} \quad \& \quad S = \frac{E^2}{377}$$

Where  $E$  = Field strength in Volts / meter

$P$  = Power in Watts

$G$  = Numeric antenna gain

$d$  = Distance in meters

$S$  = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

$P$  (mW) =  $P$  (W) / 1000 and

$d$  (cm) =  $d$  (m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where  $d$  = Distance in cm

$P$  = Power in mW

$G$  = Numeric antenna gain

$S$  = Power density in mW / cm<sup>2</sup>

## 5. MAXIMUM PERMISSIBLE EXPOSURE

Substituting the MPE safe distance using  $d = 20$  cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where  $P = \text{Power in mW}$

$G = \text{Numeric antenna gain}$

$S = \text{Power density in mW / cm}^2$

### Bluetooth:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm <sup>2</sup>	Limit (mW/cm <sup>2</sup> )
78	2480	5.623	1.58	20	0.0018	1

### IEEE 802.11b mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm <sup>2</sup>	Limit (mW/cm <sup>2</sup> )
11	2462	17.783	1.58	20	0.0056	1

### IEEE 802.11g mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm <sup>2</sup>	Limit (mW/cm <sup>2</sup> )
6	2437	22.387	1.58	20	0.0070	1

### IEEE 802.11n HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm <sup>2</sup>	Limit (mW/cm <sup>2</sup> )
6	2437	28.184	1.58	20	0.0089	1

### IEEE 802.11n HT40 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm <sup>2</sup>	Limit (mW/cm <sup>2</sup> )
6	2437	28.184	1.58	20	0.0089	1

--End of Report--