



## RF Exposure Evaluation Declaration

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**FCC ID:** H8N-AP6356S  
**IC:** 1353A-AP6356S  
**Applicant:** Askey Computer Corp  
  
**Application Type:** Certification  
**Product:** WIFI+BT Combo Module  
**Model No.:** AP6356S  
**Brand Name:** ASKEY  
**FCC Classification:** Digital Transmission System (DTS)  
Unlicensed National Information Infrastructure (NII)  
**Test Procedure(s):** KDB 447498 D01v06  
**Test Date:** February 26 ~ March 14, 2019

Reviewed By:

( Sunny Sun )

Approved By:

( Robin Wu )



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

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## Revision History

Report No.	Version	Description	Issue Date	Note
1902RSU013-U6	Rev. 01	Initial Report	03-22-2019	Valid

## §2.1033 General Information

<b>Applicant:</b>	Askey Computer Corp.
<b>Applicant Address:</b>	10F, No.119, JIANKANG RD., ZHONGHE DIST., NEW TAIPEI CITY, TAIWAN
<b>Manufacturer:</b>	Askey Computer Corp.
<b>Manufacturer Address:</b>	10F, No.119, JIANKANG RD., ZHONGHE DIST., NEW TAIPEI CITY, TAIWAN
<b>Test Site:</b>	MRT Technology (Suzhou) Co., Ltd
<b>Test Site Address:</b>	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China
<b>FCC Registration No.:</b>	893164
<b>IC Registration No.:</b>	11384A-1
<b>Test Device Serial No.:</b>	N/A <input type="checkbox"/> Production <input checked="" type="checkbox"/> Pre-Production <input type="checkbox"/> Engineering

### Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Tian'edang Rd., Suzhou, China.

- MRT facility is a FCC registered (MRT Reg. No. 893164) test facility with the site description report on file and has met all the requirements specified in ANSI C63.4-2014.
- MRT facility is an IC registered (MRT Reg. No. 11384A-1) test laboratory with the site description on file at Industry Canada.
- MRT facility is a VCCI registered (R-20025, G-20034, C-20020, T-20020) test laboratory with the site description on file at VCCI Council.
- MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) under the American Association for Laboratory Accreditation Program (A2LA Cert. No. 3628.01) in EMC, Telecommunications, Radio and SAR testing.



## 1. PRODUCT INFORMATION

### 1.1. Equipment Description

Product Name:	WIFI+BT Combo Module
Model No.:	AP6356S
Brand Name:	ASKEY
Wi-Fi Specification	802.11a/b/g/n/ac
Bluetooth Specification:	V4.2 dual mode
Power Type:	VBAT: 3.3V DC; VDDIO: 1.8V DC

### 1.2. Description of Available Antennas

Antenna Type	Frequency Band (GHz)	T <sub>x</sub> Paths	Per Chain Max Antenna Gain (dBi)		Directional Gain (dBi)	
			Ant 0	Ant 1	For Power	For PSD
Wi-Fi Internal Antenna						
PCB	2412 ~ 2462	2	2.48	3.52	3.52	6.53
	5150 ~ 5825	2	5.12	4.85	5.12	8.13
Bluetooth Internal Antenna						
PCB	2402 ~ 2480	1	2.48		--	

Note:

- The EUT supports Cyclic Delay Diversity (CDD) technology on 802.11a/b/g mode, and CDD signals are correlated.

For CDD transmissions, directional gain is calculated as follows,  $N_{ANT} = 2$ ,  $N_{SS} = 1$ .

If all antennas have the same gain,  $G_{ANT}$ , Directional gain =  $G_{ANT} + \text{Array Gain}$ , where Array Gain is as follows.

- For power spectral density (PSD) measurements on all devices,

Array Gain =  $10 \log (N_{ANT} / N_{SS})$  dB = 3.01;

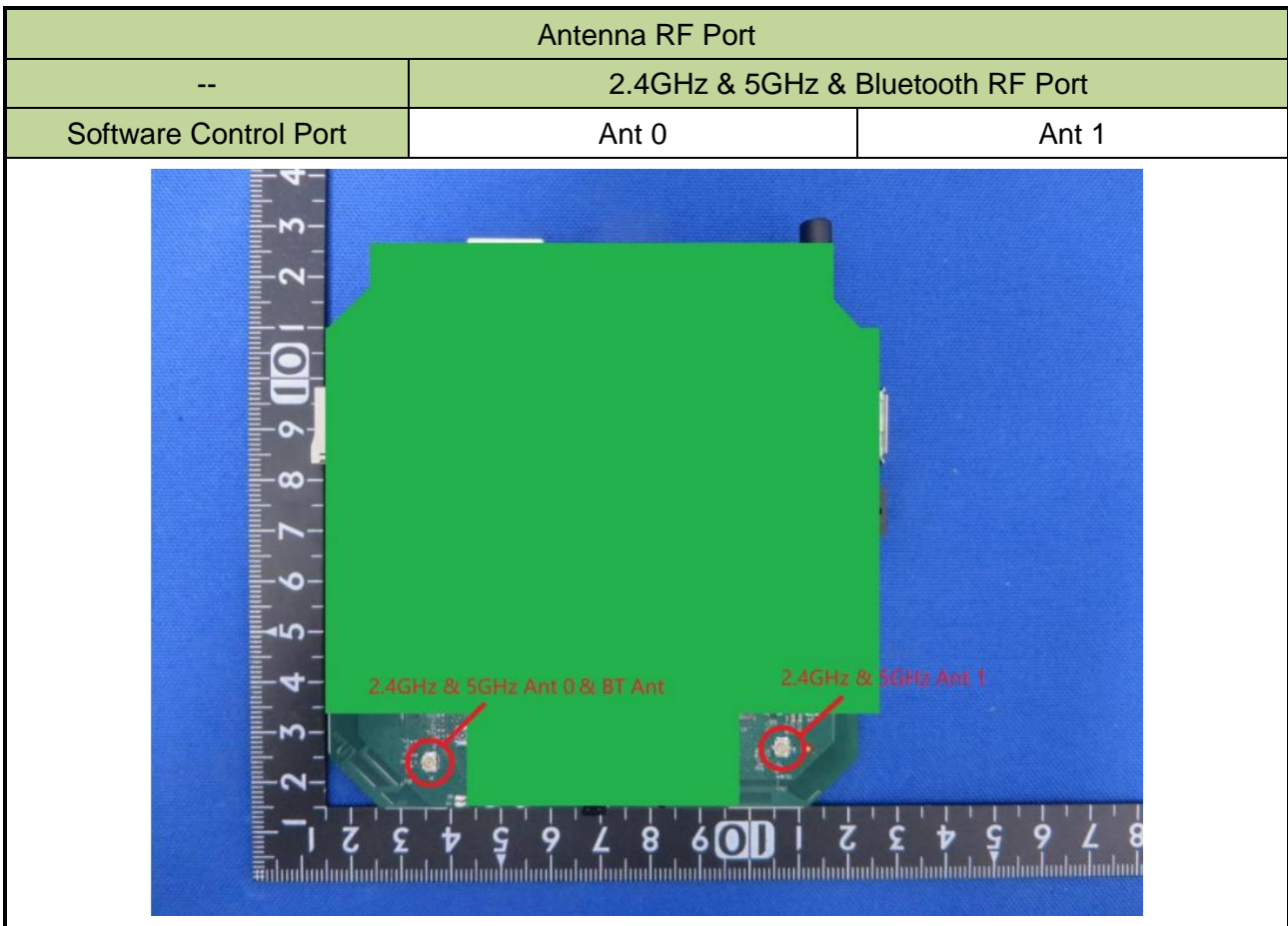
- For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB for  $N_{ANT} \leq 4$ ;

If antenna gains are not equal, Directional gain may be calculated by using the formulas applicable to equal gain antennas with  $G_{ANT}$  set equal to the gain of the antenna having the highest gain.

- The EUT supports Beam Forming technology on 802.11n/ac mode, Directional gain =  $G_{ANT} + 10 \log (N_{ANT} / N_{SS})$  dBi, where  $N_{SS}$  = the number of independent spatial streams of data and  $G_{ANT}$  is the antenna gain in dBi.

### 1.3. Description of Antenna RF Port



## 2. RF Exposure Evaluation

### 2.1. Limits

According to FCC 1.1310: 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 1.1307(b)

#### LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f= Frequency in MHz

Calculation Formula:  $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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

$P_d$  is the limit of MPE, 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

## 2.2. Test Result of RF Exposure Evaluation

Product	WIFI+BT Combo Module
Test Item	RF Exposure Evaluation

Test Mode	Frequency Band (MHz)	Maximum EIRP (dBm)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
Bluetooth	2402 ~ 2480	12.29	0.0034	1
Wi-Fi	2412 ~ 2462	20.27	0.0212	1
	5180 ~ 5825	22.69	0.0370	1

### CONCLUSION:

The max Power Density at R (20 cm) =  $0.0034 \text{ mW/cm}^2 + 0.0212 \text{ mW/cm}^2 + 0.0370 \text{ mW/cm}^2 = 0.0616 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$ .

Therefore, the Min Safety Distance is 20cm.

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## **Appendix A - EUT Photograph**

Refer to “1902RSU013-UE” file.