RF Exposure Evaluation Declaration

Product Name	:	Scout Hub
Model No.	:	SCHUB02
FCC ID	:	2AC5T-SCHUB02

Applicant	:	Scout Security, Inc.
Address	:	210 N Racine Ave, Chicago IL 60607

Date of Receipt	:	Nov. 15, 2016
Test Date	:	Nov. 15, 2016~ Dec. 06, 2016
Issued Date	:	Jan. 04, 2017
Report No.	:	16A2069R-RF-US-P20V01
Report Version	:	V1.0

Test Report Certification

Issued Date : Jan. 04, 2017
Report No. : 16A2069R-RF-US-P20V01

Product Name	:	Scout Hub
Applicant	:	Scout Security, Inc.
Address	:	210 N Racine Ave, Chicago IL 60607
Manufacturer	:	GoerTek Inc
Address	:	No.8877 Yingqian Street,High-Tech Industrial Development District,Weifang,Shandong,261031, P.R.China
Model No.	:	SCHUB02
FCC ID	:	2AC5T-SCHUB02
EUT Voltage	:	5V DC 1.0A
Brand Name	:	Scout Alarm
Applicable Standard	:	KDB 447498D01V06 FCC Part1.1310
Test Result	:	Complied
Performed Location	:	Quietek Corporation - Suzhou EMC Laboratory No.99 Hongye Rd., Suzhou Industrial Park, Suzhou, 215006, Jiangsu, China TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098 FCC Registration Number: 800392

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Approved By : Harry Zhao

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Laboratory Information

We, **QuieTek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted(audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scope:

Taiwan R.O.C.	**:**	**BSMI, NCC, TAF**
USA	**:**	**FCC**
Japan	**:**	**VCCI**
China	**:**	**CNAS**

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : http://www.quietek.com/english/about/certificates.aspx?bval=5
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/index_en.aspx
If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

HsinChu Testing Laboratory :
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TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789 E-Mail : service@quietek.com

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No.99 Hongye Rd., Suzhou Industrial Park, Suzhou, 215006, Jiangsu, China
TEL : +86-512-6251-5088 / FAX : 86-512-6251-5098 E-Mail : service@quietek.com

1. RF Exposure Evaluation

1.1. 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/cm2)	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

Friis Formula

Friis transmission formula: Pd = (Pout*G)/(4*pi*r2)

Where

Pd = power density in mW/cm2

Pout = 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

Pd id the limit of MPE. 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.

1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.
The temperature and related humidity: 18℃and 78％ RH.

1.3. Test Result of RF Exposure Evaluation

Product	:	Scout Hub
Test Item	:	RF Exposure Evaluation
Test Site	:	AC-6

- **Antenna Information**

Test Mode	Frequency Band (MHz)	Antenna Gain (dBi)
Zigbee	2405~2480	2
Z-Wave	908-916	2.51
LTE	1850~1910	8.51
	1710~1755	6.00
	824~849	6.63
	699~716	6.63
	777~787	6.63

- Output Power into Antenna & RF Exposure Evaluation Distance:

Test Mode	Frequency Band (MHz)	Maximum Output Power to Antenna (dBm)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm2)	Limit of Power Density S(mW/cm2)
Zigbee	2405~2480	0.12	2	0.00032	1
Z-Wave	908-916	-2.87	2.51	0.00018	0.605
LTE	1850~1910	22.63	8.51	0.25866	1
	1710~1755	22.64	6.00	0.14546	1
	824~849	22.74	6.63	0.17208	0.549
	699~716	22.75	6.63	0.17248	0.466
	777~787	22.56	6.63	0.16509	0.518

- Simultaneous transmission:

Test Mode	Simultaneous transmission power density at R = 20 cm (mW/cm2)	Limit of Power Density S(mW/cm2)
Zigbee + Z-Wave + LTE Band 2	0.25916	0.605
Zigbee + Z-Wave + LTE Band 4	0.14596	0.605
Zigbee + Z-Wave + LTE Band 5	0.17258	0.549
Zigbee + Z-Wave + LTE Band 12	0.17298	0.466
Zigbee + Z-Wave + LTE Band 13	0.16559	0.518

Note: The power density is 0.25916mW/cm2 for Scout Hub without any other radio equipment.

The End