RF Exposure Report

Report No.:	SABEIH-WTW-P21040025
FCC ID:	P27SMATK42
Test Model:	LL-AF2-ST-SM-ATK42
Series Model:	SM-ATK42xxx (the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, a to z, "blank" or "-", for the marketing purpose)
Received Date:	Apr. 1, 2021
Test Date:	Apr. 16 to 17, 2021
Issued Date:	Apr. 23, 2021
Applicant:	Sercomm Corporation
Address:	8F, No. 3-1, YuanQu St., NanKang, Taipei 115, Taiwan, R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
FCC Registration / Designation Number:	198487 / TW2021

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
SABEIH-WTW-P21040025	Original release.	Apr. 23, 2021

1 Certificate of Conformity

Product:	LPWA Asset Tracker, AirFinder SuperTag Plus
Brand:	Sercomm, AirFinder
Test Model:	LL-AF2-ST-SM-ATK42
Series Model:	SM-ATK42xxx (the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, a to z, "blank" or "-", for the marketing purpose)
Sample Status:	Engineering sample
Applicant:	Sercomm Corporation
Test Date:	Apr. 16 to 17, 2021
Standards:	FCC Part 2 (Section 2.1091) KDB 447498 D01 General RF Exposure Guidance v06

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : Jessica Cheng , **Date:** Apr. 23, 2021

Jessica Cheng / Senior Specialist

Approved by : Rex. Lai , **Date:** Apr. 23, 2021

Rex Lai / Associate Technical Manager

2 RF Exposure

2.1 Limits For Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (minutes)
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
1500-100,000	…	…	1.0	30

f = Frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE Calculation Formula

$Pd = (Pout*G) / (4*pi*r^2)$

where

Pd = power density in mW/cm^2

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

2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Calculation Result Of Maximum Conducted Power

EUT (BT LE):

Function	Frequency Band (MHz)	Max AV Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
BT LE	2.402-2.480	-3.85	3.12	20	0.0002	1

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.
3. BT LE + LTE technologies can not transmit at same time.
4. The EUT contains LTE module. For more details please refer to as below:

Contains LTE Certified Module
FCC ID: P27-TPM540

LTE module FCC ID: P27-TPM540

Frequency Band (MHz)	Max. Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
LTE 2: 1850-1910	23.71	4.18	20	0.122	1.00
LTE 4: 1710-1755	23.92	4.68	20	0.144	1.00
LTE 12: 699-716	23.14	2.04	20	0.066	0.47
LTE 13: 777-787	21.49	2.22	20	0.047	0.52

Conclusion:

The formula of calculated the MPE is:
CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1
CPD = Calculation power density
LPD = Limit of power density

LTE Band 2 = 0.122/1 = 0.122
LTE Band 4 = 0.144/1 = 0.144
LTE Band 12 = 0.066/0.47 = 0.140
LTE Band 13 = 0.047/0.52 = 0.090
Therefore the maximum calculations of above situations are less than the “1” limit.

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