RF Exposure Report

Report No.:	SABEIH-WTW-P20120866
FCC ID:	P27DG4244
Test Model:	DG4244
Series Model:	DG4244XXXXXXXXXX (the x could be 0 to 9, A to Z, "blank", "-" or "/" , for marketing purpose)
Received Date:	Dec. 25, 2020
Test Date:	Jan. 7 to Mar. 4, 2021
Issued Date:	Mar. 22, 2021
Applicant:	Sercomm Corp.
Address:	8F, No. 3-1, YuanQu St., NanKang, Taipei 115, Taiwan, R.O.C. (NanKang Software Park)
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-P20120866	Original release.	Mar. 22, 2021

1 Certificate of Conformity

Product:	DOCSIS 3.1 WiFi 6 Gateway
Brand:	Sercomm
Test Model:	DG4244
Series Model:	DG4244XXXXXXXXXX (the x could be 0 to 9, A to Z, "blank", "-" or "/" , for marketing purpose)
Sample Status:	Engineering sample
Applicant:	Sercomm Corp.
Test Date:	Jan. 7 to Mar. 4, 2021
Standards:	FCC Part 2 (Section 2.1091)
	IEEE C95.3 -2002
References Test Guidance:	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:** Mar. 22, 2021

Jessica Cheng / Senior Specialist

Approved by : Rex. Lai , **Date:** Mar. 22, 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 38cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Type	Dipole					
Connector	IPEX					
Antenna	Ant 0 (dBi)	Ant 1 (dBi)	Ant 2 (dBi)	Ant 3 (dBi)	Peak Gain(dBi) for each band	Directional Gain with correlated signal(dBi)
2.4G	3.67	3.76	3.60	3.12	3.76	9.56
5G B1	3.52	2.21	2.01	2.17	3.52	8.52
5G B2	3.90	2.92	2.18	2.62	3.90	8.95
5G B3	3.90	2.92	2.18	2.62	3.90	8.95
5G B4	4.17	2.31	2.32	2.26	4.17	8.82

Note: 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.

2.5 Calculation Result Of Maximum Conducted Power

Function	Frequency Band (MHz)	Max AV Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WLAN	2412-2462	28.46	9.56	38	0.349	1
WLAN	5180-5240	27.75	8.52	38	0.233	1
WLAN	5260-5320	23.70	8.95	38	0.101	1
WLAN	5500-5720	23.87	8.95	38	0.105	1
WLAN	5745-5825	28.95	8.82	38	0.330	1
2.4GHz Directional gain = 9.56 dBi 5.0GHz (5180-5240 MHz) Directional gain =8.52 dBi 5.0GHz (5260-5320 MHz) Directional gain =8.95 dBi 5.0GHz (5500-5720 MHz) Directional gain =8.95 dBi 5.0GHz (5745-5825 MHz) Directional gain =8.82 dBi						

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. 2.4GHz & 5GHz WLAN technologies can transmit at same time.

Conclusion:

The formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

WLAN (2.4GHz) + WLAN (5GHz) = 0.349/1 + 0.330 /1 = 0.679

Therefore the maximum calculations of above situations are less than the "1" limit.

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