RF Exposure Report

Report No.: SA190618D07B

FCC ID: TK4WLE900VX

Test Model: WLE900VX

Received Date: Nov. 15, 2019

Test Date: Nov. 21 to Dec. 4, 2019

Issued Date: Dec. 17, 2019

Applicant: Compex Systems Pte Ltd

Address: No 9 Harrison Road, Harrison Industrial Building, #05-01, 369651, Singapore

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

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
SA190618D07B	Original release.	Dec. 17, 2019

1 Certificate of Conformity

Product:	802.11ac Dual Band Module
Brand:	COMPEX
Test Model:	WLE900VX
Sample Status:	Engineering sample
Applicant:	Compex Systems Pte Ltd
Test Date:	Nov. 21 to Dec. 4, 2019
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 : Celia Chen , **Date:** Dec. 17, 2019

Celia Chen / Supervisor

Approved by : Rex. Lai , **Date:** Dec. 17, 2019

Rex Lai / Associate Technical Manager

2 General Information

2.1 General Description of EUT

Product	802.11ac Dual Band Module
Brand	COMPEX
Test Model	WLE900VX
Status of EUT	Engineering sample
Operating Frequency	2412 ~ 2462MHz, 5180 ~ 5240MHz, 5745 ~ 5825MHz 5260~5320MHz, 5500~5700MHz: 802.11a, 802.11n (20MHz) / (40MHz) 5260~5320MHz, 5500~5720MHz: 802.11ac (20MHz) / (40MHz) / (80MHz)
Output Power	**2412 ~ 2462MHz:** 209.152 mW **5180 ~ 5240MHz:** 139.657mW **5260~5320MHz:** 185.828mW **5500~5720MHz:** 183.277mW **5745 ~ 5825MHz:** 254.153mW
Antenna Type	Refer to note as below
Antenna Connector	Reverse SMA
Accessory Device	N/A
Data Cable Supplied	N/A

Note:

1. The difference compared with original test report is adding frequency bands: 5260-5320MHz and 5500-5720MHz with antenna (Diploe antenna model: RFDPA171300SBLB801).

2. The antenna information is listed as below:

Antenna Type	Dipole Antenna	Dipole Antenna
Model	RFDPA171300SBLB801	RFDPA171300SBLB801
Maximum Gain (dBi)	2412-2462MHz: 2.22 5180-5825MHz: 4.29	2412-2462MHz: 2.22 5180-5825MHz: 4.29
Remark	Original C2PC Approved	New C2PC
	Add new antenna and disabled DFS bands by software.	Enable DFS bands 2A and 2C

3. 2.4GHz and 5GHz modes cannot transmit simultaneously.

4. The EUT provides 3 completed transmitters and 3 receivers.

Modulation Mode	TX FUNCTION
802.11a	1TX
802.11b	1TX
802.11g	1TX
802.11n (20MHz)	3TX
802.11n (40MHz)	3TX
802.11ac (20MHz)	3TX
802.11ac (40MHz)	3TX
802.11ac (80MHz)	3TX

5. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3 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

Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2412-2462	23.20	6.99	20	0.2078	1
5180-5240	21.45	9.06	20	0.2237	1
5260-5320	22.69	9.06	20	0.2977	1
5500-5720	22.63	9.06	20	0.2936	1
5745~5825	24.05	9.06	20	0.4071	1

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. 2.4GHz: Directional gain = 2.22dBi + 10log(3) = 6.99dBi
   5.0GHz: Directional gain = 4.29dBi + 10log(3) = 9.06dBi

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