

## RF Exposure Report

**Report No.:** SA190807D08A

**FCC ID:** TK4WLE1216V520

**Test Model:** WLE1216V5-20, WLE1216V5-20-I

**Received Date:** Nov. 18, 2019

**Test Date:** Nov. 29 to Dec. 27, 2019

**Issued Date:** Mar. 9, 2020

**Applicant:** Compex Systems Pte Ltd

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**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



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### Release Control Record

| Issue No.    | Description       | Date Issued  |
|--------------|-------------------|--------------|
| SA190807D08A | Original release. | Mar. 9, 2020 |

## 1 Certificate of Conformity

**Product:** WiFi Module

**Equipment Class:** Unlicensed National Information Infrastructure TX

**Brand:** COMPEX

**Test Model:** WLE1216V5-20, WLE1216V5-20-I

**Sample Status:** Pre-Production

**Applicant:** Compex Systems Pte Ltd

**Test Date:** Nov. 29 to Dec. 27, 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 :** Jessica Cheng , **Date:** Mar. 9, 2020  
Jessica Cheng / Senior Specialist

**Approved by :** Rex Lai , **Date:** Mar. 9, 2020  
Rex Lai / Associate Technical Manager

## 2 General Information

### 2.1 General Description of EUT

|                     |                                                                                                                                  |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Product             | WiFi Module                                                                                                                      |
| Brand               | COMPEX                                                                                                                           |
| Test Model          | WLE1216V5-20, WLE1216V5-20-I                                                                                                     |
| Status of EUT       | Pre-Production                                                                                                                   |
| Operating Frequency | 5180~5240MHz, 5260~5320MHz, 5500~5720MHz, 5745~ 5825MHz                                                                          |
| Output Power        | <b>5180~5240MHz:</b> 92.52 mW<br><b>5260~5320MHz:</b> 89.684mW<br><b>5500~5720MHz:</b> 83.01mW<br><b>5745~5825MHz:</b> 370.176mW |
| 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 by software and adding antenna source (Dipole antenna model: RFDPA171300SBLB801).
2. This report is prepared for FCC class II permissive change.
3. 2.4GHz & 5GHz technologies can transmit at same time.
4. The antenna information is listed as below.

| Description        | Platform: Network Security Appliance<br>(Brand: Check Point / Model: V-81W) |                                                  |                                              |
|--------------------|-----------------------------------------------------------------------------|--------------------------------------------------|----------------------------------------------|
|                    | 2412-2462MHz                                                                | 5180-5825MHz                                     |                                              |
| Antenna Type       | Dipole Antenna                                                              | Dipole Antenna                                   |                                              |
| Antenna model      | RFDPA171300SBLB801                                                          | RFDPA171300SBLB801                               |                                              |
| Maximum Gain (dBi) | 2.22                                                                        | 4.29                                             | 4.29                                         |
| Remark             | Original Approved                                                           |                                                  | Additional                                   |
|                    |                                                                             | The DFS bands 2A and 2C are disabled by software | Add DFS bands 2A and 2C are used by software |

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

| Modulation Mode          | TX FUNCTION |
|--------------------------|-------------|
| 802.11a                  | 1TX         |
| 802.11n (20MHz)          | 4TX         |
| 802.11n (40MHz)          | 4TX         |
| 802.11ac (20MHz)         | 4TX         |
| 802.11ac (40MHz)         | 4TX         |
| 802.11ac (80MHz)         | 4TX         |
| 802.11ac (80MHz + 80MHz) | 2TX+2TX     |

6. Accessory device of Platform as follows.

| Brand | Model        | Rating                                                                                                                   |
|-------|--------------|--------------------------------------------------------------------------------------------------------------------------|
| FSP   | FSP060-DHAN3 | AC I/P : 100-240V ~ 1.8A 50-60Hz<br>DC O/P 12V==5.0A<br>Power cord: AC 2 Pin, Non-shielded DC cable (1.2m) With one Core |

7. 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 <sup>2</sup> ) | 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 <sup>2</sup> )*              | 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

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$$

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

#### 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

### FCC ID: TK4WLE1216V520 (WLAN 5GHz)

| Frequency Band (MHz) | Max Power (dBm) | Antenna Gain (dBi) | Distance (cm) | Power Density (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) |
|----------------------|-----------------|--------------------|---------------|-------------------------------------|-----------------------------|
| 5180~5240            | 19.66           | 4.29               | 20            | 0.0494                              | 1                           |
| 5260~5320            | 19.53           | 4.29               | 20            | 0.0479                              | 1                           |
| 5500~5720            | 19.19           | 4.29               | 20            | 0.0443                              | 1                           |
| 5745~5825            | 25.68           | 4.29               | 20            | 0.1976                              | 1                           |

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. The device didn't support beam-forming technology and Cyclic Delay Diversity (CDD) technology, and the transmit signals are uncorrected, so no add array gain to the band power and band PSD.

### FCC ID: TK4WLE1216V220 (WLAN 2.4GHz)

| Frequency Band (MHz) | Max Power (dBm) | Antenna Gain (dBi) | Distance (cm) | Power Density (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) |
|----------------------|-----------------|--------------------|---------------|-------------------------------------|-----------------------------|
| 2412-2462            | 26.00           | 2.22               | 20            | 0.1320                              | 1                           |

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. The device didn't support beam-forming technology and Cyclic Delay Diversity (CDD) technology, and the transmit signals are uncorrected, so no add array gain to the band power and band PSD.

Simultaneously transmitter condition:

FCC ID: TK4WLE1216V220 (WLAN 2.4GHz) + FCC ID: TK4WLE1216V520 (WLAN 5GHz)  
= 0.1320 + 0.1976 = 0.3296

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

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