

## RF EXPOSURE REPORT



**Applicant:** Compex Systems Pte Ltd  
No 9 Harrison Road, Harrison Industrial Building, #05-01,  
Singapore 369651

**Manufacturer:** Compex Systems Pte Ltd  
No 9 Harrison Road, Harrison Industrial Building, #05-01,  
Singapore 369651

**Product Name:** WiFi 6 (802.11ax) 3x3 MU-MIMO Dual Band Module

**Brand Name:** Compex

**Model No.:** WLE3003HX

**Model Difference:** N/A

**Report Number:** TESA2312000772ES

**FCC ID** TK4WLE3003HX

**Date of EUT Received:** July 28, 2023

**Issue Date:** December 13, 2023

Approved By

John Yeh

**We hereby certify that:**

The above equipment was evaluate by SGS Taiwan Ltd. The evaluation in this report is in compliance with FCC Rule Part §2.1091, KDB 447498.

The results of this report relate only to the sample identified in this report.

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## Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TESA2312000772ES	00	1. Update applicant and product information 2. add FCC ID	December 13, 2023	Violetta Tang	

**Note:**

1. The remark "\*" indicates modification of the report upon requests from certification body.
2. Please note that the report TESA2312000772ES will replace the previous TESA2308000450ES as the new version and TESA2308000450ES is ineffective anymore from now on.

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## 1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

### 1.1 Product Description

Product Name:	WiFi 6 (802.11ax) 3x3 MU-MIMO Dual Band Module
Brand Name:	Compex
Model No.:	WLE3003HX
Model Difference:	N/A
Firmware Version:	fw1_vx_dep_R81
EUT Series No.:	WA23601047, WA23601013
Power Supply:	12Vdc
Platform	Product Name: Security appliance Brand Name:  CHECK POINT™ Model No.: V85RWL

### 1.2 Evaluation site

Laboratory	Site Address		FCC Designation number	ISED Company Number	CAB Identifier
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	<input checked="" type="checkbox"/>	No. 134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, 24803, Taiwan.	TW0027	4620A	TW3702
	<input type="checkbox"/>	No. 2, Keji 1st Rd., Guishan Township, Taoyuan County, 333 Taiwan.	TW0028	4620E	
	<input type="checkbox"/>	1F, No. 8, Alley 15, Lane 120, Sec. 1, Nei Hu Road, Neihu District, Taipei City, 222 Taiwan.	TW0029	23862	

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### 1.3 Antenna Information:

#### 1.3.1 WLAN

Antenna Type	Supplier	Antenna Part No.	Freq. (MHz)	Peak Antenna Gain (dBi)
Dipole	INPAQ TECHNOLOGY CO., LTD	RFDPA171300SBLB801	2412-2462	2.22

Antenna Type	Supplier	Antenna Part No.	Freq. (MHz)	Peak Antenna Gain (dBi)
Dipole	INPAQ TECHNOLOGY CO., LTD	RFDPA171300SBLB801	5150~5250	3.56
			5250~5350	4.29
			5475~5725	4.29
			5725~5825	3.77

**Note:**

1. Antenna information is provided by the applicant.
2. The device uses 3 antennas with the same specification mentioned above.

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## 1.3.2

## WWAN

Antenna Type	Antenna Model No.
External	Ant0
<b>Note:</b> Transmission in frequencies in this test report are only available by the above antenna(s).	

Operating Frequency (MHz)			Ant 0 Peak Gain (dBi)
WCDMA / HSPA Band II	1850	~ 1910	3.72
WCDMA / HSPA Band IV	1710	~ 1753	3.72
WCDMA / HSPA Band V	824	~ 849	1.62
LTE-Band 2	1850	~ 1910	3.72
LTE-Band 4	1710	~ 1755	3.72
LTE-Band 5	824	~ 849	1.62
LTE-Band 7	2500	~ 2570	3.72
LTE-Band 12	699	~ 716	1.62
LTE-Band 13	777	~ 787	1.62
LTE-Band 14	788	~ 798	1.62
LTE-Band 25	1850	~ 1915	3.72
LTE-Band 26	824	~ 849	1.62
LTE-Band 26 Part 90	814	~ 824	1.62
LTE-Band 38	2570	~ 2620	3.72
LTE-Band 41	2496	~ 2690	3.72
LTE-Band 42	3400	~ 3600	3.27
LTE-Band 43	3600	~ 3800	3.27
LTE-Band 48	3550	~ 3700	3.27
LTE-Band 66	1710	~ 1780	3.72
LTE-Band 71	663	~ 698	1.62

**Note:** Antenna information is provided by the applicant.

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## 2 FCC MAXIMUM PERMISSIBLE EXPOSURE (MPE)

### 2.1 FCC Standard Applicable

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a Mobile device, the MPE is required.

According to §1.1310 and §2.1091 RF exposure is calculated.

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> )	Averaging Time (minute)
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
1500-100000	/	/	1.0	30

f = frequency in MHz

\* = Plane-wave equipment power density

Prediction of MPE limit at a given distance

$$S = PG/4\pi R^2$$

Where: S = Power density

P = Power input to antenna

G = Power gain of the antenna in the direction of interest relative to an isotropic radiator

R = Distance to the center of radiation of the antenna

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## 2.2 Power Density Calculation (Worst Case)

### FCC Standalone MPE

Operation Mode	Evaluation Frequency (MHz)	Operation Distance (cm)	Max. Output Power Include Tolerance (dBm)	Antenna Gain (dBi)	Max. EIRP (mW)	Power Density (PD) (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Pass / Fail	Power Density / Limit
WLAN 2.4G	2442.00	20	24.48	2.22	467.74	0.093	1.000	Pass	0.093
WLAN 5G	5180.00	20	26.29	4.29	1142.88	0.227	1.000	Pass	0.227
WCDMA / HSPA Band 2	1852.40	20	24	3.72	591.56	0.118	1.000	Pass	0.118
WCDMA / HSPA Band 4	1712.40	20	24	3.72	591.56	0.118	1.000	Pass	0.118
WCDMA / HSPA Band 5	826.40	20	24	1.62	364.75	0.073	0.551	Pass	0.132
LTE-Band 2	1850.70	20	24	3.72	591.56	0.118	1.000	Pass	0.118
LTE-Band 4	1710.70	20	24	3.72	591.56	0.118	1.000	Pass	0.118
LTE-Band 5	824.70	20	24	1.62	364.75	0.073	0.550	Pass	0.133
LTE-Band 7	2502.50	20	24	3.72	591.56	0.118	1.000	Pass	0.118
LTE-Band 12	699.70	20	24	1.62	364.75	0.073	0.466	Pass	0.157
LTE-Band 13	779.50	20	24	1.62	364.75	0.073	0.520	Pass	0.140
LTE-Band 14	788.00	20	24	1.62	364.75	0.073	0.525	Pass	0.139
LTE-Band 25	1850.70	20	24	3.72	591.56	0.118	1.000	Pass	0.118
LTE-Band 26 Part 90	814.70	20	24	1.62	364.75	0.073	0.543	Pass	0.134
LTE-Band 38	2572.50	20	24	3.72	591.56	0.118	1.000	Pass	0.118
LTE-Band 41	2498.50	20	24	3.72	591.56	0.118	1.000	Pass	0.118
LTE-Band 48	3552.50	20	23	3.27	423.64	0.084	1.000	Pass	0.084
LTE-Band 66	1710.70	20	24	3.72	591.56	0.118	1.000	Pass	0.118
LTE-Band 71	665.50	20	24	1.62	364.75	0.073	0.444	Pass	0.164

**Note:** For conservativeness, the lowest uplink frequency of each band is used to determine the MPE limit of that band.

~ End of Report ~

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