RF EXPOSURE REPORT

CERTIFICATE OF CONFORMITY

FCC Rule Part:	**FCC Part 2 (Section 2.1091)**
Report No.:	MFBEIH-WTW-P24090570
FCC ID:	P27XB10
Product:	Comcast Xfinity DOCSIS 4.0 gateway with Wi-Fi 7
Brand:	Comcast Xfinity
Model No.:	XB10
Series Model:	SG417DBCT
Received Date:	2024/10/9
Test Date:	2025/2/7
Issued Date:	2025/2/18
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
Test Location:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
FCC Registration / Designation Number:	198487 / TW2021

Approved by: Jeremy Lin , **Date:** 2025/2/18

Jeremy Lin / Project Engineer

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Prepared by : Annie Chang / Senior Specialist

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Release Control Record

Issue No.	Description	Date Issued
MFBEIH-WTW-P24090570	Original release.	2025/2/18

1 Certificate

Product:	Comcast Xfinity DOCSIS 4.0 gateway with Wi-Fi 7
Brand:	Comcast Xfinity
Test Model:	XB10
Series Model:	SG417DBCT
Sample Status:	Engineering sample
Applicant:	Sercomm Corporation
Test Date:	2025/2/7
FCC Rule Part:	FCC Part 2 (Section 2.1091)
Standard:	KDB 447498 D04 Interim General RF Exposure Guidance v01

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.

2 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Specification	Expanded Uncertainty (k=2)(±)
RF Exposure	1Hz ~400kHz	E = 0.14 dB , H = 1.81 dB
	300KHz~60MHz	E = 0.4 dB , H = 1.29 dB
	100MHz~3GHz	1.12 dB
	1MHz~40GHz	1.12 dB

3 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
EM Field Meter Wavecontrol	SMP2 dual	20SN1411	2024/3/28	2025/3/27
EM Field Probe Wavecontrol	WP400	20WP100708	2024/3/28	2025/3/27

Notes:

1. The test was performed in LK - Oven
2. Tested Date: 2025/2/7

4 Applicable RF Exposure Limit

§ 1.1310 Radiofrequency radiation exposure limits.

(a) Specific absorption rate (SAR) shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in § 1.1307(b) of this part within the frequency range of 100 kHz to 6 GHz (inclusive).
(b) The SAR limits for occupational/controlled exposure are 0.4 W/kg, as averaged over the whole body, and a peak spatial-average SAR of 8 W/kg, averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the parts of the human body treated as extremities, such as hands, wrists, feet, ankles, and pinnae, where the peak spatial-average SAR limit for occupational/controlled exposure is 20 W/kg, averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). Exposure may be averaged over a time period not to exceed 6 minutes to determine compliance with occupational/controlled SAR limits.
(c) The SAR limits for general population/uncontrolled exposure are 0.08 W/kg, as averaged over the whole body, and a peak spatial-average SAR of 1.6 W/kg, averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the parts of the human body treated as extremities, such as hands, wrists, feet, ankles, and pinnae, where the peak spatial-average SAR limit is 4 W/kg, averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). Exposure may be averaged over a time period not to exceed 30 minutes to determine compliance with general population/uncontrolled SAR limits.

(e) Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields

- Limits for General Population/Uncontrolled Exposure

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
300-1,500	…	…	f/1500	<30
1,500-100,000	…	…	1.0	<30

f = frequency in MHz. * = Plane-wave equivalent power density.

- Limits for Occupational/Controlled Exposure

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				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*($900/f^2$)	<6
30-300	61.4	0.163	1.0	<6
300-1,500			f/300	<6
1,500-100,000			5	<6

f = frequency in MHz. * = Plane-wave equivalent power density.

MPE-based Exemption – §1.1307(b)(3)(i)(C)

- The minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. The MPE-based test exemption condition is in terms of ERP, defined as the product of the maximum antenna gain and the delivered maximum time-averaged power.
- Table applies to any RF source (i.e. single fixed, mobile, and portable transmitters) and specifies power and distance criteria for each of the five frequency ranges used for the MPE limits.

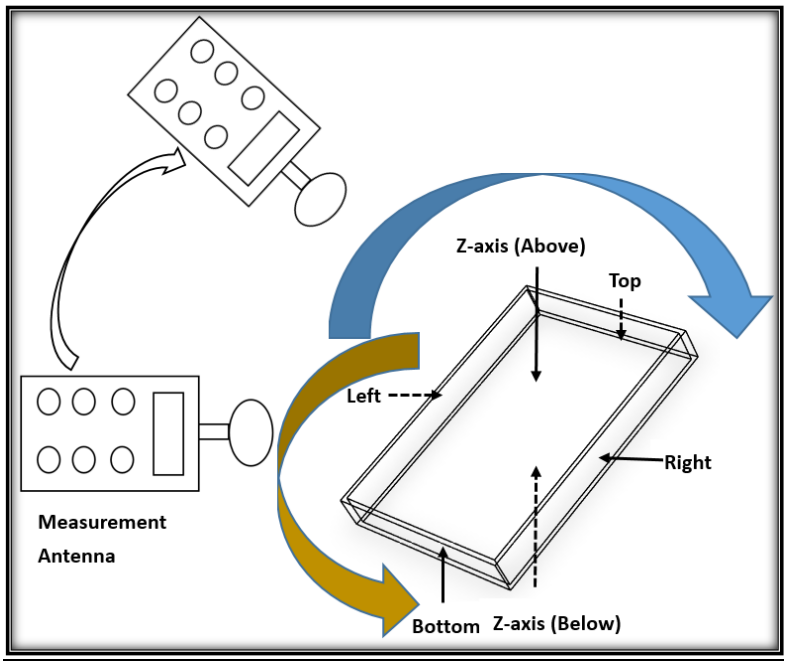
RF Source frequency (MHz)	Minimum Distance		Threshold ERP (watts)
	$\lambda_L/2\pi$	$\lambda_H/2\pi$	
0.3-1.34	159 m–35.6 m		1,920 R^2.
1.34-30	35.6 m–1.6 m		3,450 R^2/f^2.
30-300	1.6 m–159 mm		3.83 R^2.
300-1,500	159 mm–31.8 mm		0.0128 R^2f.
1,500-100,000	31.8 mm–0.5 mm		19.2 R^2.
R must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters.			

Routine Evaluation

Routine Evaluation Procedure - Single and/or Multiple RF Sources

- MPE compliance are measurement in all directions surrounding the antenna and radiating structures of the device.

Test Setup



Note: The measurement antenna are moving and surrounding the EUT when performed the test, the test results recorded the highest values for each sides of the EUT (left/right/top/bottom/z-axis (Above)/z-axis (Below))

Fixed RF sources operating in the same time-averaging period – §1.1307(b)(3)(ii)(B)

- Either SAR-based or MPE-based exemption may be considered for test exemption for fixed, mobile, or portable device exposure conditions; therefore, the contributions from each exemption in conjunction with the measured SAR (Evaluatedk term) should be used to determine exemption for simultaneous transmission according to Formula below,

$$\sum_{i=1}^{a} \frac{P_i}{P_{th,i}} + \sum_{j=1}^{b} \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^{c} \frac{Evaluated_k}{Exposure\ Limit_k} \leq 1$$

The sum of the ratios of the applicable terms for SAR-based, MPE-based and measured SAR or MPE should be less than 1, to determine simultaneous transmission exposure compliance.

Where:

a = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(B) of this section for P_{th}, including existing exempt transmitters and those being added.

c = number of existing fixed, mobile, or portable RF sources with known evaluation for the specified minimum distance including existing evaluated transmitters.

$P_{th,i}$ = the exemption threshold power (P_{th}) according to paragraph (b)(3)(i)(B) of this section for fixed, mobile, or portable RF source *i.*

$ERP_{th,j}$ = exemption threshold ERP for fixed, mobile, or portable RF source *j,* at a distance of at least λ/2π according to the applicable formula of paragraph (b)(3)(i)(C) of this section.

Exposure Limit$_k$ = either the general population/uncontrolled maximum permissible exposure (MPE) or specific absorption rate (SAR) limit for each fixed, mobile, or portable RF source *k,* as applicable from § 1.1310 of this chapter.

b = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(C) of this section for Threshold ERP, including existing exempt transmitters and those being added.

P_i = the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source *i* at a distance between 0.5 cm and 40 cm (inclusive).

ERP_j = the ERP of fixed, mobile, or portable RF source *j.*

Evaluated$_k$ = the maximum reported SAR or MPE of fixed, mobile, or portable RF source *k* either in the device or at the transmitter site from an existing evaluation at the location of exposure.

5 Test Results

Environmental Conditions:	25°C, 76% RH	Tested By:	Waydi Tuan

For Single RF Source

MPE-based Exemption §1.1307(b)(3)(i)(C)							
Operation Mode	Frequency Band (MHz)	Average Power (mW)	Antenna Gain (dBi)	Maximum ERP (mW)	Distance (cm)	Limit Threshold (mW)	Test Result
Bluetooth	2402-2480	10.023	3.44	13.49	20	768	Pass
Zigbee	2405-2480	78.524	4.7	141.255	20	768	Pass

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

Routine Evaluation (General Population)					
Operation Mode	Frequency Band (MHz)	Power Density (mW/cm^2)	Test Distance (cm)	Limit (mW/cm^2)	Test Result
WLAN 2.4 GHz	2412-2462	0.2	10	1	Pass
WLAN 5 GHz	5180-5320 5500-5825	0.35	10	1	Pass
WLAN 6 GHz	5955-6415 6545-7095	0.2	10	1	Pass

For Multiple RF Sources (Simultaneous Operations)

Multiple RF Sources (Simultaneous Operations)							
Routine Evaluation (General Population)					Sum of Ratios	Limit of Ratios	Test Result
Operation Mode	Frequency Band (MHz)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Ratio			
WLAN 2.4 GHz	2412-2462	0.2	1	0.2	0.75	1	Pass
WLAN 5 GHz	5180-5320 5500-5825	0.35	1	0.35			
WLAN 6 GHz	5955-6415 6545-7095	0.2	1	0.2			

6 Conclusion

Source-base time average power is below Exemption Criteria and/or Routine Evaluation MPE thresholds, therefore the device is compliant FCC RF exposure requirement.

7 Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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The address and road map of all our labs can be found in our web site also.

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