

RF Exposure Evaluation Declaration

Product Name : 5G CBRS Outdoor Router

Model No. : AirConnect® 8231, BEC AirConnect® 8231, BEC 8231

FCC ID : QI3BEC-8231

Applicant : Billion Electric Co., Ltd.

Address : 8F., No. 192, Sec. 2, Zhongxing Rd., Xindian Dist., New
Taipei City 231 Taiwan

Date of Receipt : Jul. 02, 2022

Date of Declaration : Aug. 15, 2022

Report No. : 2270054R-RFUSMPEV02-A

Report Version : V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF or any agency of the government.

The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Issued Date: Aug. 15, 2022

Report No.: 2270054R-RFUSMPEV02-A



Product Name	5G CBRS Outdoor Router	
Applicant	Billion Electric Co., Ltd.	
Address	8F., No. 192, Sec. 2, Zhongxing Rd., Xindian Dist., New Taipei City 231 Taiwan	
Manufacturer	Billion Electric Co., Ltd.	
Model No.	AirConnect® 8231, BEC AirConnect® 8231, BEC 8231	
FCC ID	QI3BEC-8231	
Trade Name	BEC / Billion	
Applicable Standard	KDB 447498 D01 v06	☒ Minimum test separation distance ≥ 20 cm ☐ For low power devices
Test Result	Complied	

Documented By :



(Senior Project Specialist / Joanne Lin)

Tested By :



(Senior Engineer / Alan Chen)

Approved By :



(Manager / Tim Sung)

Revision History

Report No.	Version	Description	Issued Date
2270054R-RFUSMPEV02-A	V1.0	Initial issue of report.	Aug. 15, 2022

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	5G CBRS Outdoor Router
Model No.	AirConnect® 8231, BEC AirConnect® 8231, BEC 8231
Trade Name	BEC / Billion
FCC ID	QI3BEC-8231

Note: For more detailed information please refer to report No.: 2270054R-RFUSWW5V05-A.

1.2. Test Facility

USA : **FCC Registration Number: TW0033**

Canada : **CAB Identifier Number: TW3023 / Company Number: 26930**

Site Description : Accredited by TAF
Accredited Number: 3023

Test Laboratory : DEKRA Testing and Certification Co., Ltd

Address : No. 5-22, Ruishukeng Linkou District, New Taipei City, 24451, Taiwan

Performed Location : No. 26, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan,
R.O.C.

Phone number : +886-3-275-7255

Fax number : +866-3-327-8031

Email address : info.tw@dekra.com

Website : <http://www.dekra.com.tw>

2. RF Exposure Evaluation

2.1. Standard Applicable

According to KDB 447498 D01 (7.1), A minimum test separation distance ≥ 20 cm is required between the antenna and radiating structures of the device and nearby persons to apply mobile device exposure limits.

2.2. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

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)
(A) Limits for Occupational/ Control Exposures				
3.0-30	1842/f	4.89/f	900/f ²	6
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
1.34-30	824/f	2.19/f	180/f ²	30
300-1500	--	--	F/1500	30
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0

2.3. Test Result of RF Exposure Evaluation

Product : 5G CBRS Outdoor Router
Test Item : RF Exposure Evaluation

Band	Tune-up conducted output power (dBm)	Antenna Gain (dBi)	E.I.R.P (dBm)	E.I.R.P (mW)	Power Density (mW/cm^2)	Limit (mW/cm^2)
5G NR n48	23.00	14.90	37.900	6165.950	0.928	1.000

Distance: 23cm

Note: The tune-up conducted output power is refer to the tune-up procedure provided by the customer.