

## RF Exposure Report

**Report No.:** SA180528C02E

**FCC ID:** M82-WISE6610N

**Contains FCC ID:** XMR201707BG96

**Test Model:** WISE-6610-N500C-A

**Series Model:** WISE-6610-N100-A, WISE-6610-N100C-A, WISE-6610-N500-A,  
WISE-6610-N100XXXXXXXXXXXX, WISE6610N100AXXXXXXXXXXXXX,  
WISE-6610-N100CXXXXXXXXXXXX,  
WISE6610N100CXXXXXXXXXXXX, WISE-6610-N500XXXXXXXXXXXX,  
WISE-6610-N500CXXXXXXXXXXXX, WISE6610N500AXXXXXXXXXXXXX,  
WISE6610N500CXXXXXXXXXXXX (where "X" maybe any alphanumeric  
character, blank or "-".)

**Received Date:** Nov. 13, 2019

**Test Date:** Jan. 17 ~ Feb. 14, 2020

**Issued Date:** Feb. 14, 2020

**Applicant:** ADVANTECH CO., LTD

**Address:** No.1, Alley 20, Lane 26, Rueiguang Rd, Neihu District, Taipei, Taiwan 114

**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. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City  
33383, TAIWAN

**FCC Registration /  
Designation Number:** 788550 / TW0003



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

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### Release Control Record

Issue No.	Description	Date Issued
SA180528C02E	Original release.	Feb. 14, 2020

## 1 Certificate of Conformity

**Product:** Industrial LoRaWAN gateway

**Brand:** Advantech

**Test Model:** WISE-6610-N500C-A

**Series Model:** WISE-6610-N100-A, WISE-6610-N100C-A, WISE-6610-N500-A,  
WISE-6610-N100XXXXXXXXXXXX, WISE6610N100AXXXXXXXXXXXXX,  
WISE-6610-N100CXXXXXXXXXXXX, WISE6610N100CAXXXXXXXXXXXXX,  
WISE-6610-N500XXXXXXXXXXXX, WISE-6610-N500CXXXXXXXXXXXX,  
WISE6610N500AXXXXXXXXXXXXX, WISE6610N500CAXXXXXXXXXXXXX  
(where "X" maybe any alphanumeric character, blank or "-".)

**Sample Status:** Engineering sample

**Applicant:** ADVANTECH CO., LTD

**Test Date:** Jan. 17 ~ Feb. 14, 2020

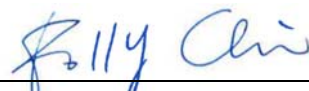
**Standards:** FCC Part 2 (Section 2.1091)

**References Test** KDB 447498 D01 General RF Exposure Guidance v06

**Guidance:** IEEE C95.3 -2002

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 :**



, **Date:**

Feb. 14, 2020

Polly Chien / Specialist

**Approved by :**



, **Date:**

Feb. 14, 2020

Bruce Chen / Senior Project Engineer

## 2 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				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 2.2 MPE Calculation Formula

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

where

Pd = power density in mW/cm<sup>2</sup>

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**.

### 3 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
923.3 ~ 927.5	24.23	0.41	20	0.058	0.616

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

For module (Brand: Quectel, Model: BG96, FCC ID: XMR201707BG96)

Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
LTE Band 2	24	2.22	20	0.083	1
LTE Band 4	23	3.05	20	0.080	1
LTE Band 5	24	1.85	20	0.077	0.55
LTE Band 12	24	-1.62	20	0.034	0.47
LTE Band 13	24	-0.22	20	0.048	0.52
LTE Band 26	24	1.85	20	0.077	0.54

Note:

1. The LoRa and WWAN cannot transmit simultaneously.
2. The above Max Power is Tune-up Power which client declared.
3. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

For antenna gain:

Frequency Band	Antenna Gain (dBi)
LoRa	0.41
LTE Band 2	2.22
LTE Band 4	3.05
LTE Band 5	1.85
LTE Band 12	-1.62
LTE Band 13	-0.22
LTE Band 26	1.85

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