

RF Exposure Report

Report No.: SA161019E02

FCC ID: COFWMSGSM42

Test Model: WM-SG-SM-42

Received Date: Oct. 19, 2016

Test Date: Jan. 11, 2017

Issued Date: Feb. 10, 2017

Applicant: UNIVERSAL GLOBAL SCIENTIFIC INDUSTRIAL CO., LTD.

Address: 141, Lane 351, Sec. 1, Taiping Road., Tsautuen, Nantou 54261, Taiwan

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Hsin Chu Laboratory

Lab Address: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
Taiwan R.O.C.

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Release Control Record

Issue No.	Description	Date Issued
SA161019E02	Original release.	Feb. 10, 2017

1 Certificate of Conformity

Product: LPWAN module

Brand: USI

Test Model: WM-SG-SM-42

Sample Status: ENGINEERING SAMPLE

Applicant: UNIVERSAL GLOBAL SCIENTIFIC INDUSTRIAL CO., LTD.

Test Date: Jan. 11, 2017

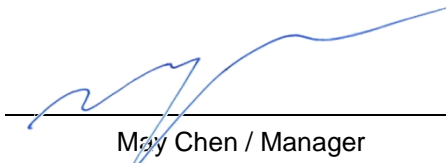
Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

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 EMC characteristics under the conditions specified in this report.

Prepared by :  , **Date:** Feb. 10, 2017
Claire Kuan / Specialist

Approved by :  , **Date:** Feb. 10, 2017
May Chen / Manager

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 ²)	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

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

where

Pd = power density in mW/cm²

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**.

2.4 Calculation Result of Maximum Conducted Power

For Hybrid Mode (125kHz Bandwidth, 64 channels):

Frequency Band (MHz)	Max Power Avg. (dBm)	Max Power Avg. (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (W/m ²)
902.3~914.9	19.50	89.125	2.3	20	0.03011	0.60153

- NOTE:**
1. Power Density Limit = F/1500
 2. This power include tune-up tolerance range that specified in WM-SG-SM-42 Tune Up power table.

For Hybrid Mode (500kHz Bandwidth, 8 channels):

Frequency Band (MHz)	Max Power Avg. (dBm)	Max Power Avg. (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (W/m ²)
903~914.2	19.50	89.125	2.3	20	0.03011	0.602

- NOTE:**
1. Power Density Limit = F/1500
 2. This power include tune-up tolerance range that specified in WM-SG-SM-42 Tune Up power table.

For DTS Mode (500kHz Bandwidth, 8 channels):

Frequency Band (MHz)	Max Power Avg. (dBm)	Max Power Avg. (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (W/m ²)
903~914.2	19.50	89.125	2.3	20	0.03011	0.602

- NOTE:**
1. Power Density Limit = F/1500
 2. This power include tune-up tolerance range that specified in WM-SG-SM-42 Tune Up power table.

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