Testing Laboratory 3787

RADIO EXPOSURE TEST REPORT

Equipment	:	802.11 b/g/n WiFi Module+BT combo module
Brand Name	:	Telit
Model Name	:	WE310F5-I; WE310F5-P
Applicant	:	TELIT COMMUNICATIONS S.P.A. VIA STAZIONE DI PROSECCO 5B - SGONICO -TRIESTE - ITALY
Manufacturer	:	TELIT COMMUNICATIONS S.P.A. VIA STAZIONE DI PROSECCO 5B - SGONICO -TRIESTE - ITALY
Standard	:	NCC LP0002 (Jul. 01, 2020) Section 6.20 (6.20.2)

The product was received on Nov. 12, 2020, and testing was started from Nov. 26, 2020 and completed on Jan. 11, 2022. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in NCC LP0002 (Jul. 01, 2020) Section 6.20 (6.20.2) and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.

Approved by: Cliff Chang

Sporton International Inc. Hsinchu Laboratory
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Table of Contents

History of this test report **3**
Summary of Test Result **4**
1 General Description **5**
1.1 EUT General Information 5
1.2 Antenna Information 5
1.3 Table for Multiple Listing 5
1.4 EUT Support Function 5
1.5 Accessories 6
1.6 Testing Location 6
2 Maximum Permissible Exposure **7**
2.1 Limit of Maximum Permissible Exposure 7
2.2 MPE Calculation Method 7
2.3 Calculated Result and Limit 8
Photographs of EUT v01

History of this test report

Report No.	Version	Description	Issued Date
TA0N1118-02	01	Initial issue of report	Feb. 07, 2022

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2	-	Exposure evaluation	PASS	-
Note: The test results of this report reference the Sporton Report No.: FA0N1118. After evaluating, the test results comply with the test standard LP0002 (2020-07-01).				

Declaration of Conformity:
1. The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results. 2. The measurement uncertainty please refer to report "Measurement Uncertainty"
Comments and Explanations:
1. The test configuration, test mode and test software were written in this test report are declared by the manufacturer. 2. The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen

Report Producer: Wendy Pan

1 General Description

1.1 EUT General Information

RF General Information			
Evaluation Mode	**Frequency Range (MHz)**	**Operating Frequency (MHz)**	**Modulation Type**
2.4GHz WLAN	2400-2483.5	2412-2462	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)
Bluetooth	2400-2483.5	2402-2480	LE: GFSK

1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	AMO	ALA321C3	Chip	N/A	2.3
2	1	TAOGLAS	GW.11.A113	Dipole	N/A	2.3

Note: The above information was declared by manufacturer.

<For 2.4GHz Band>

For IEEE 802.11b/g/n mode (1TX/1RX):

Only Port 1 can be used as transmitting/receiving antenna.

<For Bluetooth>

For bluetooth (1TX/1RX):

Only Port 1 can be used as transmitting/receiving antenna.

1.3 Table for Multiple Listing

The EUT has two model names which are identical to each other in all aspects except for the following table:

EUT No.	Model Name	Description	Remark
1	WE310F5-I	Interated antenna variant (SMD)	Equip with ant.1
2	WE310F5-P	Without antenna-Expose RF pad (Dipole antenna)	Equip with ant.2

Note 1: The above information was declared by manufacturer.

Note 2: The EUT 2 was performed testing for the RF exposure.

1.4 EUT Support Function

The EUT supports AP/client functions, after evaluating, the client was selected to test.

1.5 Accessories

N/A

1.6 Testing Location

Testing Location Information	
Test Lab.：Sporton International Inc. Hsinchu Laboratory	
Hsinchu	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)
(TAF: 3787)	TEL: 886-3-656-9065 FAX: 886-3-656-9085
	Test site Designation No. TW3787 with FCC.
	Conformity Assessment Body Identifier (CABID) TW3787 with ISED.

2 Maximum Permissible Exposure

2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
0.3-3.0	614	1.63	*100	6
3-30	1842 / f	4.89 / f	*900 / f^2	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5.0	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
0.3-1.34	614	1.63	*100	30
1.34-30	842/f	2.19/f	*180/f^2	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE Calculation Method

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

E (V/m) = $\frac{\sqrt{30 \times P \times G}}{d}$ Power Density: *Pd* (W/m²) = $\frac{E^2}{377}$

E = Electric field (V/m)

P = RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

Pd = $\frac{30 \times P \times G}{377 \times d^2}$

2.3 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm^2)	S Limit (mW/cm^2)
2.4G;G1D	2.30	17.34	19.64	0.50	20.14	0.10328	20	0.02055	1.00000
2.4G;BT-LE	2.30	4.86	7.16	0.50	7.66	0.00583	20	0.00116	1.00000

Note: The above antenna gain was declared by manufacturer.

———THE END———