AS/NZS RF Exposure Report

Equipment	:	**Summit SOM 8M Plus System-on-Module - WiFi 5 + Bluetooth 5.3**
Model No.	:	**Summit SOM 8M Plus**
Brand Name	:	**Laird Connectivity**
Applicant	:	**Laird Connectivity LLC**
Address	:	**W66N220 Commerce Court, Cedarburg, WI 53012 United States Of America**
Standard	:	**AS/NZS 2772.2:2016 Amd 1:2018**
Received Date	:	**Oct. 28, 2021**
Tested Date	:	**Nov 10, 2021 ~ Feb. 18, 2022**

We, International Certification Corporation, would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by: **Approved by:**

James Fan / Assistant Manager **Gary Chang / Manager**

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Release Record

Report No.	Version	Description	Issued Date
AA1O2803	Rev. 01	Initial issue	Mar. 24, 2022

1 General Description

1.1 Information

The device has 3 hardware configurations as below:

No.	Brand name	Model Name	Part Number	Description
1	Laird Connectivity	Summit SOM 8M Plus	453-00070	512MB LPDDR4 and 8GB eMMC
2			453-00071	1GB LPDDR4 and 8GB eMMC
3			453-00072	2GB LPDDR4 and 16GB eMMC

1.1.1 Specification of the Equipment under Test (EUT)

S/W Version for RF	image-summitsom-mfg-imx8mp-summitsom_2g-20211211212204
S/W Version for Normal	image-summitsom-cmd-imx8mp-summitsom_512m-20211211215354
WLAN	
Operating Frequency	802.11b/g/n: 2412 MHz ~ 2472 MHz 802.11a/n/ac: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5700 MHz, 5725 MHz -5850 MHz
Modulation Type	802.11b: DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n/ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
BT	
Operating Frequency	2402 MHz ~ 2480 MHz
Modulation Type	Bluetooth 5.3 LE: GFSK Bluetooth BR(1Mbps): GFSK Bluetooth EDR (2Mbps): π/4-DQPSK Bluetooth EDR (3Mbps): 8-DPSK

1.1.2 Antenna Details

Ant. No.	Model	Part Number	Type	Connector	Operating Frequency (MHz) / Gain (dBi)				
					2400 ~ 2483.5	5150~5250	5250~5350	5470~5725	5725~5850
1	Nanoblade	CAF94505	PCB Dipole	IPEX U.FL	2.0	3.9	3.9	4	4
2	Mini NanoBlade Flex	MAF95310	PCB Dipole	IPEX U.FL	2.8	3.4	3.4	3.4	3.4
3	FlexMIMO	EFD2455A3S-10MHF1	PCB Dipole	IPEX U.FL	2.0	3	3	3	3
4	2.4/5.5 GHz FlexPIFA	001-0016	PIFA	IPEX U.FL	2.5	3	3	3	3
5	001-0009	001-0009	Dipole	RP-SMA	2.0	2	2	2	2

1.1.3 EUT Operational Condition

Power Supply Type	12Vdc from AC adapter

2 RF exposure evaluation

2.1 Limits

The device shall comply with the relevant limits as below table.

Exposure category	Frequency Range	E-field strength (V/m)	H-filed strength (A/m)	Equivalent plane wave power flux density S_{eq}(W/m^2)
Occupational	400 MHz~2GHz	3.07 * f $^{0.5}$	0.00814 * f $^{0.5}$	f / 40
	2GHz ~ 300 GHz	137	0.364	50
General public	400 MHz~2GHz	1.37 * f $^{0.5}$	0.00364 * f $^{0.5}$	f /200
	2GHz ~ 300 GHz	61.4	0.163	10

Note: f is the frequency in MHz

2.2 Evaluation Formula for Far-Field

Follow below formula to evaluate E-field strength.

$$E= \frac{\sqrt{30*P*G}}{R}$$

Where

P(W) is the input power of antenna

G is the gain of antenna

R(m) Is the distance between the human body and the antenna

2.3 Deviation from Test Standard and Measurement Procedure

None

2.4 Measurement Uncertainty

The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)).

Parameters	Uncertainty
Conducted power	±0.808 dB

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
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.

2.5 Evaluation Results

Mode	Frequency Range (MHz)	Maximum E.I.R.P. (dBm)	Distance (m)	Evaluation E-Field Strength (V/m)	Limit (V/m)	PASS / FAIL
BT LE	2402-2480	9.69	0.20	2.64	61.4	Pass
BT EDR	2402-2480	10.87	0.20	3.03	61.4	Pass
Wi-Fi	2412-2472	25.20	0.20	15.76	61.4	Pass
	5180-5240	22.82	0.20	11.98	61.4	Pass
	5260-5320	22.99	0.20	12.22	61.4	Pass
	5500-5700	25.98	0.20	17.24	61.4	Pass
	5745-5825	25.84	0.20	16.96	61.4	Pass

3 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corporation (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website http://www.icertifi.com.tw.

Linkou	**Kwei Shan**	**Kwei Shan Site II**
Tel: 886-2-2601-1640	Tel: 886-3-271-8666	Tel: 886-3-271-8640
No.30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan (R.O.C.)	No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.) No.2-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.)	No.14-1, Lane 19, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 333, Taiwan (R.O.C.)

If you have any suggestion, please feel free to contact us as below information.

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