

RF Exposure Evaluation Declaration

Product Name : SG500M2-X
Brand Name : TRITOM
Model No. : SG500M2-X
FCC ID : 2ACARSG500M2

Applicant : Tri Cascade Inc
Address : 19200 Von Karman Ave, Ste 400, Irvine, CA 92612

Date of Receipt : Sep. 16, 2022
Issued Date : Dec. 21, 2022
Report No. : 2290522R-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 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.

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.

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



Product Name : SG500M2-X
Applicant : Tri Cascade Inc
Address : 19200 Von Karman Ave, Ste 400, Irvine, CA 92612
Manufacturer : Tri Cascade Inc
Address : 19200 Von Karman Ave, Ste 400, Irvine, CA 92612
Brand Name : TRITOM
Model No. : SG500M2-X
FCC ID : 2ACARSG500M2
Module Voltage : DC 3.3V (host equipment)
System Voltage : DC 5V (host equipment)
Applicable Standard : FCC 47 CFR Part 2.1091 Radiofrequency radiation exposure
evaluation: mobile devices.
Laboratory Name : DEKRA Testing and Certification Co., Ltd.
Hsin Chu Laboratory
Address : No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu
County 310, Taiwan, R.O.C.
Test Result : Complied

Documented By :

Handwritten signature of Amelia Wu in blue ink.

(Amelia Wu / Project Specialist)

Approved By :

Handwritten signature of Rueyyan Lin in blue ink.

(Rueyyan Lin / Supervisor)

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Revision History

Version	Description	Issued Date
V1.0	Initial issue of report	Dec. 21, 2022

Class II Permissive Change (C2PC)

Permissive Change	Modifications
Class II (C2PC)	1. Removing the 5G NR n41 frequency. 2. The EUT was installed to the host (Brand: VOS / Model No.: VOS5-GC-1) to perform RF Exposure Evaluation.

1. General Information

1.1. EUT General Information

RF General Information				
Evaluation Mode	Band	Frequency Range		Modulation Type
		Uplink (MHz)	Downlink (MHz)	
WWAN	WCDMA Band 2	1852.4 ~ 1907.6	1932.4 ~ 1987.6	BPSK / QPSK / 16QAM / 64QAM
	WCDMA Band 4	1712.4 ~ 1752.6	2112.4 ~ 2152.6	
	WCDMA Band 5	826.4 ~ 846.6	871.4 ~ 891.6	
	LTE Band 2	1850~1910	1930~1990	QPSK / 16QAM / 64QAM / 256QAM
	LTE Band 4	1710~1755	2110~2115	
	LTE Band 5	824~849	869~894	
	LTE Band 7	2500~2570	2620~2690	
	LTE Band 12	699~716	729~746	
	LTE Band 13	777~787	746~756	
	LTE Band 14	788~798	758~768	
	LTE Band 25	1850~1915	1930~1995	
	LTE Band 26	814~849	859~894	
	LTE Band 30	2305~2315	2350~2360	
	LTE Band 41	2496~2690	2496~2690	
	LTE Band 48	3500 ~ 3700	3500 ~ 3700	
	LTE Band 66	1710~1780	2110~2200	
	LTE Band 71	663~698	617~652	
	5G NR n2	1850~1910	1930~1990	pi/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM
	5G NR n5	824~849	869~894	
	5G NR n66	1710~1780	2110~2200	
	5G NR n71	663~698	617~652	

Note: The above EUT information is declared by the manufacturer.

1.2. Test Facility

Laboratory Information

USA : **FCC Registration Number: TW3024**
Canada : **CAB identifier : TW3024**

The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site: <http://www.dekra.com.tw>

If you have any comments, please don't hesitate to contact us. Our test sites as below:

Test Laboratory	DEKRA Testing and Certification Co., Ltd.
Address	1. No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C. 2. No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.
Phone number	1. +886-3-582-8001 2. +886-3-582-8001
Fax number	1. +886-3-582-8958 2. +886-3-582-8958
E mail address	info.tw@dekra.com
Website	http://www.dekra.com.tw
Note: Test site number for address 1 includes HC-SR02. Test site number for address 2 includes HC-CB02, HC-CB03, HC-CB04, HC-SR10 and HC-SR12.	

2. RF Exposure Evaluation

2.1. Test Limit

(A) Test Limit for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	*(100)	<6
3.0-30	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	<6

(B) Test Limit for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/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

Power Density (S) is calculated by the following formula:

$$S = (P \cdot G) / 4\pi R^2$$

where:

S = power density (in appropriate units, e.g. mW/ cm²)

P = power input to the antenna (in appropriate units, e.g., mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

π = 3.1416

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

2.2. Test Result of RF Exposure Evaluation

Exposure Environment: General Population / Uncontrolled Exposure

Evaluation Mode	E.I.R.P (dBm)	E.I.R.P (mW)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Test Result (PASS/FAIL)
WCDMA Band 2	22.60	181.97	0.036	1.000	PASS
WCDMA Band 4	22.30	169.82	0.034	1.000	PASS
WCDMA Band 5	21.60	144.54	0.029	0.549	PASS
LTE Band 2	22.60	181.97	0.036	1.000	PASS
LTE Band 4	22.30	169.82	0.034	1.000	PASS
LTE Band 5	21.60	144.54	0.029	0.549	PASS
LTE Band 7	24.60	288.40	0.057	1.000	PASS
LTE Band 12	15.90	38.90	0.008	0.466	PASS
LTE Band 13	17.00	50.12	0.010	0.518	PASS
LTE Band 14	17.10	51.29	0.010	0.525	PASS
LTE Band 25	22.40	173.78	0.035	1.000	PASS
LTE Band 26	21.50	141.25	0.028	0.549	PASS
LTE Band 26 (Part 90)	21.50	141.25	0.028	0.543	PASS
LTE Band 30	23.90	245.47	0.049	1.000	PASS
LTE Band 41	27.20	524.81	0.104	1.000	PASS
LTE Band 48	22.90	194.98	0.039	1.000	PASS
LTE Band 66	22.30	169.82	0.034	1.000	PASS
LTE Band 71	13.50	22.39	0.004	0.442	PASS
LTE Band 5B	21.60	144.54	0.029	0.549	PASS
LTE Band 7C	24.60	288.40	0.057	1.000	PASS
LTE Band 41C	27.20	524.81	0.104	1.000	PASS
LTE Band 48C	22.90	194.98	0.039	1.000	PASS
LTE Band 66B	22.30	169.82	0.034	1.000	PASS
LTE Band 66C	22.30	169.82	0.034	1.000	PASS
5G NR n2	22.60	181.97	0.036	1.000	PASS
5G NR n5	21.60	144.54	0.029	0.549	PASS
5G NR n66	22.30	169.82	0.034	1.000	PASS
5G NR n71	13.50	22.39	0.004	0.442	PASS

Distance (cm): 20 for Maximum Permissible Exposure.

Note:

1. The above EUT information is declared by the manufacturer.
2. The results are evaluated using the maximum power.