RF EXPOSURE EVALUATION REPORT

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Test Report Number: SKT-RET-220004
Date of issue: October 06, 2022

Applicant:	**Intellian Technologies, Inc.** 18-7, Jinwisandan-ro, Jinwi-myeon (Chungho-ri) Pyeongtaek-si, Gyeonggi-do, 17709 Korea
Manufacturer:	**Intellian Technologies, Inc.** 18-7, Jinwisandan-ro, Jinwi-myeon (Chungho-ri) Pyeongtaek-si, Gyeonggi-do, 17709 Korea
Product:	Marine Fleet Broadband
Model:	F4-A500-S, F4-A500-R
FCC ID:	XXZ-INTFB500
IC:	26236-INTFB500
Project number:	SKTEU22-1169
EUT received:	August 22, 2022

Type of Evaluation:	RF Exposure Evaluation

The above equipment has been tested by SK Tech Co., Ltd., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product or system, which was tested.

Changwon Yang / **Testing Engineer**

Jongsoo Yoon / **Technical Manager**

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Revision History of Test Report

Rev.	Revisions	Effect page	Approved by	Date
-	Initial issue	All	Jongsoo Yoon	Oct. 06, 2022

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1 Description of equipment under test (EUT)

Product:	Marine Fleet Broadband
Model:	F4-A500-S, F4-A500-R
Serial number:	None (prototype)
Hardware version:	prototype
Software version:	prototype

Product Marketing Name (PMN):	FB500
Hardware Version Identification Number (HVIN):	F4-A500-S, F4-A500-R
Firmware Version Identification Number (FVIN):	-
Host Marketing Name (HMN):	-

Model differences:

Model name	Difference	Tested (checked)
F4-A500-S	fully tested model that was provided by the applicant. Stand-alone, support all functions	☒
F4-A500-R	Listed without the tests by the applicant's request. Rack mount, support all functions	☐

Technical data:

Technologies	Max. power conducted	Max. antenna gain	Max. EIRP
Satellite 1 626.5 MHz to 1 660.5 MHz	33.45 dBm	19.39 dBi	52.84 dBm
WLAN 2412 MHz to 2462 MHz	12.01 dBm	2.00 dBi	14.01 Bm

2 FCC and ISED Canada Exposure Limits

2.1. FCC, CFR 47 Section

The table below is excerpted from Table 1 of 47 CFR 1.1310 titled "Limits for Maximum Permissible Exposure (MPE), (ii) Limits for General Population/Uncontrolled Exposure"

Frequency Range (MHz)	Power Density (mW/cm^2)	Averaging Time (minutes)
300 -1500	f/1500	30
1500 - 100000	1.0	30

where f = frequency in MHz

NOTE: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

2.2. ISED, RSS section

Prediction of MPE limit at given distance – ISED

RSS-102, Table 4, RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)

Frequency Range (MHz)	Power Density (W/m^2)	Reference Period (minutes)
300-6000	$0.02619 \times f^{0.6834}$	6

Note: f is frequency in MHz

NOTE: The Limit at the middle frequency 1643.5 MHz is 4.129 W/m^2
The Limit at the middle frequency 2437 MHz is 5.404 W/m^2

3 Prediction of MPE limit at given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

Linear form $S = PG / 4\pi R^2$

Where: S is the power density (W/m^2)
P is the power delivered to the antenna (W)
G is the antenna gain observed in the far-field region (linear)
R is the distance from antenna to point of interest (m)

Prediction: worst case [under FCC, CFR 47 Section]

Technologies:		Satellite	WLAN	
	Frequency	1643.5	2437	MHz
PG	Declared max power (EIRP)	52.84	14.01	dBm
R	Distance	230	230	cm
S	MPE limit for uncontrolled exposure	1	1	mW/cm^2
	Calculated Power density:	**0.289 4**	**0.000 04**	**mW/cm^2**
	Calculated percentage of Limit:	**71.11**	**0.01**	**%**

This prediction demonstrates the following:

The power density levels for FCC at a distance of **2.3 m** are below the maximum levels allowed by regulations.

Prediction: worst case [under ISED, RSS section]

Technologies:		Satellite	WLAN	
	Frequency	1643.5	2437	MHz
PG	Maximum EIRP	52.84	14.01	dBm
PG	Maximum EIRP	192.31	0.02	W
R	Distance	2.3	2.3	m
S	Power density	4.129	0.000 4	W/m^2
	Exclusion Limit from above:	**2.894**	**5.404**	**W/m^2**
	Calculated percentage of Limit:	**70.11**	**0.000 07**	**%**

This prediction demonstrates the following:

The power density levels for ISED at a distance of **2.3 m** are below the maximum levels allowed by regulations.