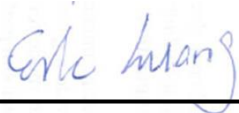


RF Exposure Evaluation Report

APPLICANT : BandRich Inc.
EQUIPMENT : Ruggedized 4G LTE M2M & Vehicle Mount Router
BRAND NAME : BandLuxe
MODEL NAME : K535
FCC ID : UZI-35K888
STANDARD : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC., would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091, and pass the limit. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.



Reviewed by: Eric Huang / Deputy Manager



Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan City, Taiwan (R.O.C.)



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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA5N0203	Rev. 01	Initial issue of report	Nov. 20, 2015



1. Administration Data

1.1. Testing Laboratory

Testing Laboratory	
Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978

Applicant	
Company Name	BandRich Inc.
Address	6F-2., No. 71, Zhouzi St., Neihu Dist., Taipei City 11493, Taiwan (R.O.C.)

Manufacturer	
Company Name	FAIR GOAL ELECTRONIC CO.
Address	1F., No.97-1, Haihu, Luzhu Township, Taoyuan County 338, Taiwan (R.O.C.)

2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Ruggedized 4G LTE M2M & Vehicle Mount Router
Brand Name	BandLuxe
Model Name	K535
FCC ID	UZI-35K888
IMEI Code	359230050008077
Wireless Technology and Frequency Range	WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 14: 790.5 MHz ~ 795.5 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz
Mode	<ul style="list-style-type: none">• RMC 12.2Kbps Rel 99• HSDPA• HSUPA• DC-HSDPA• LTE: QPSK, 16QAM• 802.11b/g/n HT20/HT40
HW Version	K1813ME011
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.



3. Maximum RF average output power among production units

Mode	Average Power (dBm)
WCDMA Band V	23.00
WCDMA Band IV	23.00
WCDMA Band II	23.00
LTE Band 2	23.00
LTE Band 4	23.00
LTE Band 12	23.00
LTE Band 14	23.00
LTE Band 17	23.00
LTE Band 25	23.00

Band / Mode	IEEE 802.11 Average Power (dBm)											
	11b			11g			HT20			HT40		
2.4GHz Band	Ant 0	Ant 1	Ant 0+1	Ant 0	Ant 1	Ant 0+1	Ant 0	Ant 1	Ant 0+1	Ant 0	Ant 1	Ant 0+1
		18.0	18.0	21.0	18.0	18.0	21.0	16.0	16.0	19.0	15.0	15.0



4. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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) Limits for General Population/Uncontrolled Exposure				
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

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:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna



5. Radio Frequency Radiation Exposure Evaluation

5.1. Standalone Power Density Calculation

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
WCDMA Band V	826.4	1.00	23.00	24.000	0.251	251.189	0.050	0.551	0.091
WCDMA Band IV	1712.4	2.00	23.00	25.000	0.316	316.228	0.063	1.000	0.063
WCDMA Band II	1852.4	2.00	23.00	25.000	0.316	316.228	0.063	1.000	0.063
LTE Band 12	699.7	1.00	23.00	24.000	0.251	251.189	0.050	0.466	0.107
LTE Band 17	706.5	1.00	23.00	24.000	0.251	251.189	0.050	0.471	0.106
LTE Band 14	790.5	1.00	23.00	24.000	0.251	251.189	0.050	0.527	0.095
LTE Band 4	1710.7	2.00	23.00	25.000	0.316	316.228	0.063	1.000	0.063
LTE Band 2	1850.7	2.00	23.00	25.000	0.316	316.228	0.063	1.000	0.063
LTE Band 25	1850.7	2.00	23.00	25.000	0.316	316.228	0.063	1.000	0.063
2.4GHz WLAN	2412.0	4.50	21.00	25.500	0.355	354.813	0.071	1.000	0.071

Note:

- For conservativeness, the lowest uplink frequency of each band is used to determine the MPE limit of that band.

5.2. Collocated Power Density Calculation

WLAN Power Density / Limit	WWAN Power Density / Limit	Σ(Power Density / Limit) of WWAN + WLAN
0.071	0.107	0.178

Note:

- Σ(Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + WLAN
- Considering the WWAN module collocation with the WLAN transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 2 collocated transmitters is compliant

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.