RF Exposure Evaluation Report

APPLICANT	:	**Ness Corporation Pty Ltd.**
EQUIPMENT	:	**Medi-Minder Guardian**
BRAND NAME	:	**Smartlink (A division of Ness Corporation Pty Ltd.)**
MODEL NAME	:	**SMIND-GUARD-LTE**
FCC ID	:	**O2K-SMINDLTE**
STANDARD	:	**47 CFR Part 2.1091** **FCC KDB 447498 D01 v06**

We, Sporton International (Shenzhen) Inc., would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091 and FCC KDB 447498 D01 v06, and pass the limit. Without written approval of Sporton International (Shenzhen) Inc., the test report shall not be reproduced except in full.

Hank Huang

Reviewed by: Hank Huang / Supervisor

Johnny Chen

Approved by: Johnny Chen / Manager

ACCREDITED Cert #5145.01

Sporton International (ShenZhen) Inc.

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People's Republic of China

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA082803	Rev. 01	Initial issue of report.	Oct. 14, 2020

1. Administration Data

1.1. Testing Laboratory

Sporton International (Shenzhen) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Testing Laboratory		
Test Firm	Sporton International (Shenzhen) Inc.	
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595	
Test Site No.	**FCC Designation No.**	**FCC Test Firm Registration No.**
	CN1256	421272

Applicant	
Company Name	Ness Corporation Pty Ltd.
Address	4/167 Prospect Highway, Seven Hills, NSW, 2147, Australia

Manufacturer	
Company Name	Ness Corporation Pty Ltd.
Address	4/167 Prospect Highway, Seven Hills, NSW, 2147, Australia

2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Medi-Minder Guardian
Brand Name	Smartlink (A division of Ness Corporation Pty Ltd.)
Model Name	SMIND-GUARD-LTE
FCC ID	O2K-SMINDLTE
Wireless Technology and Frequency Range	WCDMA Band II: 1852.4 MHz ~ 1907.6 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 5: 824.7 MHz ~ 848.3 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz SRD: 903 MHz ~ 927 MHz
Mode	RMC 12.2Kbps HSDPA HSUPA LTE: QPSK, 16QAM SRD: GFSK
HW Version	5
SW Version	1.5
Antenna Type / Gain	WWAN : Fixed External Antenna with gain 2.00 dBi SRD: Fixed Internal Antenna with gain 2.15 dBi
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.

Comments and Explanations:
1. 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. The maximum RF output tune up power, antenna gain also the safe distance used for evaluate RF exposure were declared by manufacturer.

3. Maximum RF average output tune up power among production units

<WCDMA>

Mode		Maximum Average power(dBm)
WCDMA	Band II	24.50
	Band V	24.50

<LTE>

Mode		Maximum Average power(dBm)
LTE	Band 2	24.00
	Band 4	24.00
	Band 5	24.00
	Band 12	24.00
	Band 13	24.00

<SRD>

Mode	Maximum Average Power (dBm)
SRD	22.00

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/f2)	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/f2)	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)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)
WCDMA Band II	1852.4	2.00	24.50	26.50	446.684	0.089	1.000
WCDMA Band V	826.4	2.00	24.50	26.50	446.684	0.089	0.551
LTE Band 2	1850.7	2.00	24.00	26.00	398.107	0.079	1.000
LTE Band 4	1710.7	2.00	24.00	26.00	398.107	0.079	1.000
LTE Band 5	824.7	2.00	24.00	26.00	398.107	0.079	0.550
LTE Band 12	699.7	2.00	24.00	26.00	398.107	0.079	0.466
LTE Band 13	779.5	2.00	24.00	26.00	398.107	0.079	0.520
SRD	903.0	2.15	22.00	24.15	260.016	0.052	0.601

Note:
1. For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.
2. Chose the maximum power to do MPE analysis.

5.2. Collocated Power Density Calculation

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)	Power Density / Limit
WCDMA Band II	1852.4	2.00	24.50	26.50	446.684	0.089	1.000	0.089
WCDMA Band V	826.4	2.00	24.50	26.50	446.684	0.089	0.551	0.161
LTE Band 2	1850.7	2.00	24.00	26.00	398.107	0.079	1.000	0.079
LTE Band 4	1710.7	2.00	24.00	26.00	398.107	0.079	1.000	0.079
LTE Band 5	824.7	2.00	24.00	26.00	398.107	0.079	0.550	0.144
LTE Band 12	699.7	2.00	24.00	26.00	398.107	0.079	0.466	0.170
LTE Band 13	779.5	2.00	24.00	26.00	398.107	0.079	0.520	0.152
SRD	903.0	2.15	22.00	24.15	260.016	0.052	0.601	0.086

WWAN Power Density / Limit	SRD Power Density / Limit	Σ(Power Density / Limit) of WWAN + SRD
0.170	0.086	0.256

General Note:

1. For colocation analysis, LTE band 12 is chosen for summation due to the highest (power density/limit) among all WWAN wireless modes.
2. The aggregated (power density /limit) of WWAN and SRD 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.

------THE END------