



RF Exposure Evaluation Report

APPLICANT : MobileHelp
EQUIPMENT : Cellular Base Station Gen2.0
BRAND NAME : MobileHelp
MODEL NAME : CBS2-01
MARKETING NAME : CBS2-01
FCC ID : PXTCBS2-01
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



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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA531937	Rev. 01	Initial issue of report	Apr. 28, 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	MobileHelp
Address	3701 FAU Blvd., Suite 300. Boca Raton FL, 33431

Manufacturer	
Company Name	Daviscomms (Malaysia) Sdn Bhd
Address	Plot 18, Lorong Perusahaan Maju 1. Kawasan Perusahaan Perai 4, 13600 Perai, Malaysia

2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Cellular Base Station Gen2.0
Brand Name	MobileHelp
Model Name	CBS2-01
Marketing Name	CBS2-01
FCC ID	PXTCBS2-01
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz Bluetooth: 2402 MHz ~ 2480 MHz 433.92MHz Transceiver
Mode	<ul style="list-style-type: none">• GPRS/EGPRS• RMC 12.2Kbps• HSDPA• HSUPA• Bluetooth v4.0• 433.92MHz Transceiver: ASK
HW Version	R04
SW Version	3.00
EUT Stage	Production Unit

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	GSM 850	GSM 1900
	Average power(dBm)	
GPRS/EDGE (GMSK, 1 Tx slot)	33.00	30.00
GPRS/EDGE (GMSK, 2 Tx slots)	33.00	30.00
GPRS/EDGE (GMSK, 3 Tx slots)	33.00	30.00
GPRS/EDGE (GMSK, 4 Tx slots)	31.00	28.00

Mode	WCDMA Band V	WCDMA Band II
	Average power(dBm)	
RMC 12.2Kbps	24.00	24.00
HSDPA Subtest-1	24.00	24.00
HSUPA Subtest-5	24.00	24.00

Mode	Average Power (dBm)
Bluetooth v4.0+LE	1.0

Mode	Average Power (dBm)
Bluetooth v4.0+LE	1.0



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. 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
GSM 850 (1 Tx slot)	824.2	-3.00	33.00	30.000	1.000000	125.892541	0.025058	0.549467	0.045605
GSM 850 (2 Tx slots)	824.2	-3.00	33.00	30.000	1.000000	251.188643	0.049998	0.549467	0.090993
GSM 850 (3 Tx slots)	824.2	-3.00	33.00	30.000	1.000000	374.973002	0.074636	0.549467	0.135834
GSM 850 (4 Tx slots)	824.2	-3.00	31.00	28.000	0.630957	316.227766	0.062943	0.549467	0.114554
GSM 1900 (1 Tx slot)	1850.2	-3.00	30.00	27.000	0.501187	63.095734	0.012559	1.000000	0.012559
GSM 1900 (2 Tx slots)	1850.2	-3.00	30.00	27.000	0.501187	125.892541	0.025058	1.000000	0.025058
GSM 1900 (3 Tx slots)	1850.2	-3.00	30.00	27.000	0.501187	187.931682	0.037407	1.000000	0.037407
GSM 1900 (4 Tx slots)	1850.2	-3.00	28.00	25.000	0.316228	158.489319	0.031546	1.000000	0.031546
WCDMA Band 5	826.4	-3.00	24.00	21.000	0.125893	125.892541	0.025058	0.550933	0.045483
WCDMA Band 2	1852.4	-3.00	24.00	21.000	0.125893	125.892541	0.025058	1.000000	0.025058
Bluetooth	2402.0	2.28	1.00	3.280	0.002128	2.128139	0.000424	1.000000	0.000424

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

Band	Frequency (MHz)	Average Fundamental (dBuV/m)@3M	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
433.92MHz Transceiver	433.9	69.66	-25.570	0.000003	0.002773	0.000001	0.289280	0.000002

Note: The worse average fundamental emission of 433.92MHz transceiver is referred from RF report, Sporton Report No: FR531937AF.

5.2. Collocated Power Density Calculation

Max Bluetooth Power Density / Limit	Max WWAN Power Density / Limit	Max 433.92MHz Transceiver Power Density / Limit	Σ(Power Density / Limit) of WWAN + Bluetooth
0.000424	0.135834	0.000002	0.13626

Note:

- For collocation analysis, GSM 850 (3 Tx slots) is chosen for summation due to the highest (power density/limit) among all WWAN wireless modes.
- 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 + Bluetooth + 433.92MHz Transceiver
- Considering the WWAN module collocation with the Bluetooth and 433.92MHz transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 3 collocated transmitters is compliant

Conclusion:

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