RF EXPOSURE REPORT



Report No.: 17070445-FCC-H2 Supersede Report No.: N/A

Applicant Telecell Mobile (H.K) Ltd.			
Product Name	Mobile Phone		
Model No.	ATRIUM II	F55L2	
Serial No.	N/A		
Test Standard	FCC 2.109	3:2016	
Test Date	June 16 to August 09, 2017		
Issue Date	August 10, 2017		
Test Result	Pass Fail		
Equipment complied with the specification			
Equipment did not comply with the specification			
Loven	Luo	David Huang	
Loren Luo Test Engineer		David Huang Checked By	

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Test result presented in this test report is applicable to the tested sample only

Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

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Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety



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1. Report Revision History

Report No.	Report Version	Description	Issue Date
17070445-FCC-H2	NONE	Original	August 10, 2017

2. Customer information

Applicant Name	Telecell Mobile (H.K) Ltd.
Applicant Add	RM 801 Metro Ctr II, 21 Lam Hing Street,Kln Bay,Hong Kong
Manufacturer	Telecell Mobile (H.K) Ltd.
Manufacturer Add	RM 801 Metro Ctr II, 21 Lam Hing Street,Kln Bay,Hong Kong

3. Test site information

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES
	
	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park
Lab Address	South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China
	518108
FCC Test Site No.	535293
IC Test Site No.	4842E-1
Test Software	Radiated Emission Program-To Shenzhen v2.0



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4. Equipment under Test (EUT) Information

Description of EUT: Mobile Phone

Main Model: ATRIUM II F55L2

Serial Model: N/A

Date EUT received: June 15, 2017

Test Date(s): June 16 to August 09, 2017

GSM850: -1.31dBi PCS1900: -0.35dBi

UMTS-FDD Band V: -1.31dBi UMTS-FDD Band IV: -0.53dBi UMTS-FDD Band II: -0.35dBi

LTE Band II: -0.82dBi

LTE Band V: -1.31dBi

LTE Band IV: -0.24dBi Antenna Gain:

LTE Band VII: 0.62dBi LTE Band XII: -1.68dBi LTE Band XVII: -1.68dBi

WIFI: -0.49dBi

Bluetooth/BLE:-0.49dBi

GPS: -0.94dBi

Antenna Type: PIFA antenna

GSM / GPRS: GMSK EGPRS: GMSK,8PSK UMTS-FDD: QPSK

Type of Modulation:

802.11b/g/n: DSSS, OFDM

Bluetooth: GFSK, π /4DQPSK, 8DPSK

BLE: GFSK GPS:BPSK



RF Operating Frequency (ies):

Number of Channels:

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GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz

PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz

UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz

UMTS-FDD Band IV TX:1712.4 ~ 1752.6 MHz;

RX: 2112.4 ~ 2152.6 MHz

UMTS-FDD Band II TX:1852.4 ~ 1907.6 MHz:

RX: 1932.4 ~ 1987.6 MHz

LTE Band II TX: 1850.7 ~ 1909.3MHz; RX : 1930.7 ~ 1989.3 MHz LTE Band IV TX: 1710.7 ~ 1754.3 MHz; RX : 2110.7~ 2154.3 MHz

LTE Band V TX: 824.7~ 848.3 MHz; RX: 869.7 ~ 893.3MHz

LTE Band VII TX: 2502.5 ~ 2567.5 MHz; RX : 2622.5 ~ 2687.5 MHz

LTE Band XII TX:699.7 ~ 715.3 MHz; RX : 729.7~ 745.3MHz LTE Band XVII TX: 706.5 ~ 713.5 MHz; RX : 736.5 ~ 743.5 MHz

WIFI: 802.11b/g/n(20M): 2412-2462 MHz WIFI: 802.11n(40M): 2422-2452 MHz Bluetooth& BLE: 2402-2480 MHz

GPS: 1575.42 MHz

GSM 850: 124CH PCS1900: 299CH

UMTS-FDD Band V: 102CH UMTS-FDD Band IV: 202CH UMTS-FDD Band II: 277CH

WIFI :802.11b/g/n(20M): 11CH WIFI :802.11n(40M): 7CH

Bluetooth: 79CH

BLE: 40CH GPS:1CH

Port: USB Port, Earphone Port

Adapter:

Model: TPA-46B050100UU

Input: AC100-240V~50/60Hz,0.2A

Input Power: Output: DC 5.0V,1000mA

Battery: Spec: 3.8V

Trade Name : FIGO

GPRS/EGPRS Multi-slot class 8/10/12



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5. FCC §2.1093 - Radiofrequency radiation exposure evaluation: portable devices.

5.1 RF Exposure

Standard Requirement:

According to §15.247 (i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] $\cdot [\sqrt{f_{(GHz)}}] \le 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, 16 where

- f_(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation¹⁷
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is ≤ 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Routine SAR evaluation refers to that specifically required by § 2.1093, using measurements or computer simulation. When routine SAR evaluation is not required, portable transmitters with output power greater than the applicable low threshold require SAR evaluation to qualify for TCB approval.

result = $P\sqrt{F}/D$

P= Maximum turn-up power in mW

F= Channel frequency in GHz

D= Minimum test separation distance in mm



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5.2 Test Result

Bluetooth Mode:

Modulation	СН	Freque ncy	Conducted Power	Tune Up Power	Max Tune Up Power	Max Tune Up Power	Result	Limit
		(MHz)	(dBm)	(dBm)	(dBm)	(mW)		
GFSK	Low	2402	-1.881	-1±1	0	1.000	0.31	3
	Mid	2441	-1.343	-1±1	0	1.000	0.31	3
	High	2480	-1.404	-1±1	0	1.000	0.31	3
	Low	2402	-2.503	-2±1	-1	0.794	0.25	3
π /4 DQPSK	Mid	2441	-1.817	-2±1	-1	0.794	0.25	3
	High	2480	-1.959	-2±1	-1	0.794	0.25	3
8-DPSK	Low	2402	-2.186	-2±1	-1	0.794	0.25	3
	Mid	2441	-1.854	-2±1	-1	0.794	0.25	3
	High	2480	-1.848	-2±1	-1	0.794	0.25	3

WIFI Mode:

Modulation	СН	Freque ncy (MHz)	Conducted Power (dBm)	Tune Up Power (dBm)	Max Tune Up Power (dBm)	Max Tune Up Power (mW)	Result	Limit
	Low	2412	8.54	8±1	9	7.943	2.47	3
802.11b	Mid	2437	7.84	8±1	9	7.943	2.48	3
	High	2462	7.73	8±1	9	7.943	2.49	3
802.11g	Low	2412	8.48	8±1	9	7.943	2.47	3
	Mid	2437	7.77	8±1	9	7.943	2.48	3
	High	2462	7.80	8±1	9	7.943	2.49	3
000 115	Low	2412	7.96	8±1	9	7.943	2.47	3
802.11n (20M)	Mid	2437	8.67	8±1	9	7.943	2.48	3
	High	2462	8.76	8±1	9	7.943	2.49	3
802.11n (40M)	Low	2422	8.65	8±1	9	7.943	2.47	3
	Mid	2437	8.44	8±1	9	7.943	2.48	3
	High	2452	8.72	8±1	9	7.943	2.49	3



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BLE Mode:

Modulation	СН	Freq (MHz)	Conducted Power (dBm)	Tune Up Power (dBm)	Max Tune Up Power (dBm)	Max Tune Up Power (mW)	Result	Limit
GFSK	Low	2402	-1.952	-2±1	-1	0.794	0.25	3
	Mid	2440	-1.167	-2±1	-1	0.794	0.25	3
	High	2480	-1.467	-2±1	-1	0.794	0.25	3

Result: Compliance

No SAR measurement is required.