



# RF Exposure Evaluation Report

**Equipment** : UMTS Femtocell Access Point  
**Brand Name** : Alcatel-Lucent, NOKIA  
**Model No.** : 9362 Enterprise Cell V2.2 WCDMA B2/B5 Int  
9362 Enterprise Cell V2.2 WCDMA B2/B5 Ext  
**FCC ID** : ZMYV22DBWCDMA  
**Standard** : 47 CFR Part 2.1091  
**Applicant** : MitraStar Technology Corporation  
No. 6, Innovation Rd II, Science-Based Industrial,  
Hsin-Chu, Taiwan  
**Manufacturer (1)** : MitraStar Technology Corporation  
No. 6, Innovation Rd II, Hsinchu Science Park,  
Hsinchu 30076, Taiwan  
**Manufacturer (2)** : WuXi MitraStar Technology Co. Ltd  
60#-E, Minshan Road, Wuxi New district Jangsu,  
P.R.C.

The product sample received on Jan. 19, 2016 and completely tested on Mar. 30, 2016. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with 47 CFR Part 2.1091, and pass the limit.

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Sam Chen  
SPORTON INTERNATIONAL INC.



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## REVISION HISTORY

[illegible]

# 1 General Description

## 1.1 EUT supports Radios application

Radios application	Information
WCDMA	WCDMA Band V WCDMA Band II

## 1.2 Table for Multiple Listing

The EUT has two brand and model names which are identical to each other in all aspects except for the following table:

Brand Name	EUT	Model Name	Description
Alcatel-Lucent, NOKIA	EUT 1	9362 Enterprise Cell V2.2 WCDMA B2/B5 Int	Internal Antenna
	EUT 2	9362 Enterprise Cell V2.2 WCDMA B2/B5 Ext	External Antenna

Note: The difference brand name served as marketing strategy.

## 1.3 Testing Location

Testing Location			
<input type="checkbox"/>	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-327-0973	
<input checked="" type="checkbox"/>	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085	



## **2 Maximum RF average output power among production units**

WCDMA Band V	WCDMA Band II
Average Power (dBm)	
24.0±2	24.0±2

### 3 RF Exposure Limit Introduction

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	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

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; \*Plane-wave equivalent power density

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:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

**E** = Electric field (V/m)

**P** = RF output power (W)

**G** = EUT Antenna numeric gain (numeric)

**d** = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

## 4 Radio Frequency Radiation Exposure Evaluation

### 4.1 Power Density Calculation

For EUT 1 (Internal Ant.)

Band	Frequency (MHz)	Tune-up power (dBm)	Antenna Gain (dBi)	Tune-up EIRP power(dBm)	Tune-up EIRP power(mW)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
WCDMA Band V	871.4	26.00	2.81	28.81	760.33	0.1513	0.58
WCDMA Band II	1932.4	26.00	2.41	28.41	693.43	0.1380	1.00

For EUT 2 (External Ant.)

Band	Frequency (MHz)	Tune-up power (dBm)	Antenna Gain (dBi)	Tune-up EIRP power(dBm)	Tune-up EIRP power(mW)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
WCDMA Band V	871.4	26.00	1.00	27.00	501.19	0.0998	0.58
WCDMA Band II	1932.4	26.00	4.00	30.00	1000.00	0.1990	1.00

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

#### Conclusion:

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