

# Maximum Permissible Exposure Evaluation

## ***FCC ID: 2ABES-KR1409***

### 1. Client Information

**Applicant** : Pathway Innovations and Technologies, Inc.  
**Address** : 10211 Pacific Mesa Blvd., #412, San Diego, CA 92121, USA  
**Manufacturer** : ShenZhen KerunVisual Technology Co., Ltd.  
**Address** : 6/F, Building 2, Zone S2, 1213 Liuxian Blvd Honghualing Industrial Park Nanshan District, Shenzhen City, China

### 2. General Description of EUT

<b>EUT Name</b>	:	Home base unit									
<b>Models No.</b>	:	S921, MT200-HBU, MT200XF									
<b>Model Difference</b>	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is model name for commercial.									
<b>Product Description</b>	:	Frequency Bands: Bluetooth V4.0(BLE): 2402~2480 MHz 802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz									
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<b>Power Supply</b>	:	AC/DC Adapter (TDX-0902000): Input: AC 100~240V, 50/60Hz, 0.6A. Output: DC 9V, 2.0A.									
<b>Connecting I/O Port(S)</b>	:	Please refer to the User's Manual									

**Note:** More test information about the EUT please refer the RF Test Report.

## MPE Calculations for GSM

### 1. Antenna Gain:

BLE: 4.5 dBi FPC Antenna  
 802.11b/g/n(HT20)/n(HT40): 4.5 dBi FPC Antenna

### 2. EUT Operation Condition:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

### 3. Exposure Evaluation:

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = (PG) / 4\pi R^2$$

Where

**S**: power density

**P**: power input to the antenna

**G**: power gain of the antenna in the direction of interest relative to an isotropic radiator.

**R**: distance to the center of radiation of the antenna

### 4. Test Result:

Worst Maximum MPE Result										
Worst Conducted Power (dBm)		Turn-up Power (dB)		Max tune up power (dBm) [P]		ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm <sup>2</sup> ) [S]		
802.11 b/g/n	BLE	802.11 b/g/n	BLE	802.11 b/g/n	BLE			802.11 b/g/n	BLE	Sum
16.54	3.329	16±1	3±1	17	4	4.5	20	0.0281	0.0012	0.0293

**Note:**  
 (1) N<sub>TX</sub>= Number of Transmit Antennas  
 RF Output power specifies that Maximum Conducted Peak Output Power.



### 5. Conclusion:

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

#### Limits for General Population/ Uncontrolled Exposure

Frequency Range (MHz)	Power density (mW/ cm <sup>2</sup> )
300-1,500	F/1500
1,500-100,000	1.0

#### 1500-100000MHz:

The worst MPE is calculated as ***0.0293 mW / cm<sup>2</sup> < limit 1mW/cm<sup>2</sup>***. So, RF exposure limit warning or SAR test are not required.

The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR2.1091 (b).

The RF Exposure Information page from the manual is included here for reference.

#### Note

For a more detailed features description, please refer to the RF Test Report.

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