



## CTC Laboratories, Inc.

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### Maximum Permissible Exposure Evaluation

FCC ID: 2BB6E-GLMX23A04

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

#### EUT Specification

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name:              | Smart Travel Adapter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Trade Mark:                | GlocalMe                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Model/Type reference:      | GLMX23A04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Listed Model(s):           | /                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Frequency band (Operating) | WIFI: 2412MHz~2462MHz<br>GSM 850: UL: 824MHz~849MHz, DL: 869MHz~894MHz<br>PCS 1900: UL: 1850MHz~1910, DL: 1930MHz~1990MHz<br>WCDMA Band II: UL: 1852.4MHz~1907.6MHz, DL: 1932.6MHz~1987.4MHz<br>WCDMA Band IV: UL: 1712.4MHz~1752.6MHz, DL: 2112.6MHz~2152.4MHz<br>WCDMA Band V: UL: 826.4MHz~846.6MHz, DL: 871.6MHz~1891.4MHz<br>LTE FDD Band 2: UL: 1850.7MHz~1909.3MHz, DL: 1930.7MHz~1989.3MHz<br>LTE FDD Band 4: UL: 1710.7MHz~1754.3MHz, DL: 2110.7MHz~2154.3MHz<br>LTE FDD Band 5: UL: 824.7MHz~848.3MHz, DL: 869.7MHz~893.3MHz<br>LTE FDD Band 7: UL: 2502.5MHz~2567.5MHz, DL: 2622.5MHz~2687.5MHz<br>LTE FDD Band 12: UL: 699.7MHz~715.3MHz, DL: 729.7MHz~745.3MHz<br>LTE FDD Band 13: UL: 779.5MHz~784.5MHz, DL: 748.5MHz~751.0MHz<br>LTE FDD Band 17: UL: 706.5MHz~713.5MHz, DL: 736.5MHz~743.5MHz<br>LTE FDD Band 25: UL: 1850.7MHz~1914.3MHz, DL: 1930.7MHz~1994.3MHz<br>LTE FDD Band 26 (814~824MHz): UL: 814MHz~824MHz, DL: 859MHz~869MHz<br>LTE FDD Band 26 (824~849MHz): UL: 824MHz~849MHz, DL: 869MHz~894MHz<br>LTE TDD Band 41: UL: 2498.5MHz~2687.5MHz, DL: 2498.5MHz~2687.5MHz<br>LTE FDD Band 66: UL: 1710.7MHz~1779.3MHz, DL: 2110.7MHz~2179.3MHz |
| Device category            | <input type="checkbox"/> Portable (<5mm separation)<br><input checked="" type="checkbox"/> Mobile (>20cm separation)<br><input type="checkbox"/> Fixed (>20cm separation)<br><input type="checkbox"/> Others ____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Exposure classification    | <input type="checkbox"/> Occupational/Controlled exposure (S=5mW/cm <sup>2</sup> )<br><input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm <sup>2</sup> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Antenna diversity          | <input type="checkbox"/> Single antenna<br><input checked="" type="checkbox"/> Multiple antennas<br><input type="checkbox"/> Tx diversity<br><input type="checkbox"/> Rx diversity<br><input type="checkbox"/> Tx/Rx diversity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Antenna gain               | WIFI: -1.51dBi Max<br>GSM 850: -2.08dBi Max<br>PCS 1900: -0.41dBi Max                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    | WCDMA Band II: -0.41dBi Max<br>WCDMA Band IV: -1.60dBi Max<br>WCDMA Band V: -2.08dBi Max<br>FDD Band 2: -0.14dBi Max<br>FDD Band 4: -1.60dBi Max<br>FDD Band 5: -2.08dBi Max<br>FDD Band 7: -3.93dBi Max<br>FDD Band 12: 0.98dBi Max<br>FDD Band 13: -1.58dBi Max<br>FDD Band 17: 0.98dBi Max<br>FDD Band 25: -0.14dBi Max<br>FDD Band 26 (814~824MHz): -1.71dBi Max<br>FDD Band 26 (824~849MHz): -2.08dBi Max<br>TDD Band 41: -1.71dBi Max<br>FDD Band 66: -1.60dBi Max |
| Evaluation applied | <input checked="" type="checkbox"/> MPE Evaluation<br><input type="checkbox"/> SAR Evaluation                                                                                                                                                                                                                                                                                                                                                                            |

## Limits for Maximum Permissible Exposure (MPE)

| Frequency Range(MHz)                                  | Electric Field Strength(V/m) | Magnetic Field Strength(A/m) | Power Density(mW/cm <sup>2</sup> ) | Average Time |
|-------------------------------------------------------|------------------------------|------------------------------|------------------------------------|--------------|
| (A) Limits for Occupational/Control Exposures         |                              |                              |                                    |              |
| 300-1500                                              | --                           | --                           | F/300                              | 6            |
| 1500-100000                                           | --                           | --                           | 5                                  | 6            |
| (B) Limits for General Population/Uncontrol Exposures |                              |                              |                                    |              |
| 300-1500                                              | --                           | --                           | F/1500                             | 30           |
| 1500-100000                                           | --                           | --                           | 1                                  | 30           |

F = frequency in MHz

Friis transmission formula:  $P_d = (P_{out} * G) / (4 * \pi * R^2)$ 

Where

 $P_d$  = Power density in mW/cm<sup>2</sup> $P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

 $\pi$  = 3.1416

R = distance between observation point and center of the radiator in cm

$P_d$  the limit of MPE 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, We will know the distance where the MPE limit is reached.

## Measurement Result

| Band                 | Frequency (MHz) | Antenna Gain (dBi) | Maximum Power (dBm) | Tune up tolerance (dBm) | Max. Tune up Power (dBm) | Power Density at 20cm (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) | Verdict |
|----------------------|-----------------|--------------------|---------------------|-------------------------|--------------------------|---------------------------------------------|-----------------------------|---------|
| 802.11b              | 2437            | -1.51              | 21.60               | 22±1                    | 23                       | 0.02804                                     | 1.000                       | PASS    |
| 802.11g              | 2437            | -1.51              | 24.13               | 24±1                    | 25                       | 0.04444                                     | 1.000                       | PASS    |
| 802.11n(HT20)        | 2437            | -1.51              | 24.16               | 24±1                    | 25                       | 0.04444                                     | 1.000                       | PASS    |
| 802.11n(HT40)        | 2437            | -1.51              | 23.48               | 23±1                    | 24                       | 0.03530                                     | 1.000                       | PASS    |
| 802.11ax(HE20)       | 2437            | -1.51              | 24.59               | 24±1                    | 25                       | 0.04444                                     | 1.000                       | PASS    |
| 802.11ax(HE40)       | 2437            | -1.51              | 24.02               | 24±1                    | 25                       | 0.04444                                     | 1.000                       | PASS    |
| GPRS 850 (1 Tx slot) | 848.8           | -2.08              | 31.94               | 32±1                    | 33                       | 0.24589                                     | 0.566                       | PASS    |

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|                             |         |       |       |      |    |         |       |      |
|-----------------------------|---------|-------|-------|------|----|---------|-------|------|
| EGPRS 850<br>(1 Tx slot)    | 848.8   | -2.08 | 26.52 | 27±1 | 28 | 0.07776 | 0.566 | PASS |
| GPRS 1900 (1 Tx slot)       | 1880    | -0.41 | 29.74 | 30±1 | 31 | 0.22790 | 1.000 | PASS |
| EGPRS 1900<br>(1 Tx slot)   | 1909.8  | -0.41 | 26.76 | 27±1 | 28 | 0.11422 | 1.000 | PASS |
| WCDMA Band II               | 1907.60 | -0.41 | 23.28 | 23±1 | 24 | 0.04547 | 1.000 | PASS |
| WCDMA Band IV               | 1732.60 | -1.60 | 23.77 | 24±1 | 25 | 0.04353 | 1.000 | PASS |
| WCDMA Band V                | 826.40  | -2.08 | 23.75 | 24±1 | 25 | 0.03897 | 0.551 | PASS |
| LTE Band 2                  | 1860    | -0.14 | 24.02 | 24±1 | 25 | 0.06092 | 1.000 | PASS |
| LTE Band 4                  | 1710.7  | -1.60 | 24.64 | 25±1 | 26 | 0.05480 | 1.000 | PASS |
| LTE Band 5                  | 824.7   | -2.08 | 22.55 | 23±1 | 24 | 0.03096 | 0.550 | PASS |
| LTE Band 7                  | 2535    | -3.93 | 23.47 | 23±1 | 24 | 0.02022 | 1.000 | PASS |
| LTE Band 12                 | 699.7   | 0.98  | 23.05 | 23±1 | 24 | 0.06262 | 0.466 | PASS |
| LTE Band 13                 | 782     | -1.58 | 22.88 | 23±1 | 24 | 0.03473 | 0.521 | PASS |
| LTE Band 17                 | 706.5   | -0.98 | 23.14 | 23±1 | 24 | 0.03988 | 0.471 | PASS |
| LTE Band 25                 | 1882.5  | -0.14 | 24.26 | 24±1 | 25 | 0.06092 | 1.000 | PASS |
| LTE Band 26<br>(814~824MHz) | 815.5   | -1.71 | 23.68 | 24±1 | 25 | 0.04244 | 0.544 | PASS |
| LTE Band 26<br>(824~849MHz) | 824.7   | -2.08 | 23.28 | 23±1 | 24 | 0.03096 | 0.550 | PASS |
| LTE Band 41                 | 2685    | -1.71 | 23.88 | 24±1 | 25 | 0.04244 | 1.000 | PASS |
| LTE Band 66                 | 1745    | -1.60 | 23.60 | 24±1 | 25 | 0.04353 | 1.000 | PASS |

The GSM and WLAN can transmit simultaneously

| GPRS 850 (1 Tx slot)<br>Power density at 20cm<br>(mW) | WLAN<br>Power density at 20cm<br>(mW) | Total<br>Power density at<br>20cm(mW) | Limit | Verdict |
|-------------------------------------------------------|---------------------------------------|---------------------------------------|-------|---------|
| 0.24589                                               | 0.04444                               | 0.478874629                           | 1     | PASS    |

Total E-field strength = ((E-field strength)/ (Limit) + (E-field strength)/ (Limit)...) ≤ 1

Note:

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

\*\*\*\*\*THE END\*\*\*\*\*