



November 12, 2019

TUV SUD BABT  
Octagon House, Concorde Way  
Segensworth Rd N, Fareham  
PO15 5RL

Attention: Director of Certification

**RE: Analysis of RF Exposure for Portable and Mobile use per KDB 447498 D01 Mobile Portable RF Exposure v06 and RSS-102 Issue 5 March 2015.**

FCC ID: 2ACR3-T100

IC: 12047A-T100

**1. Limits:**

Limits for General Population/Uncontrolled Exposure (Title 47 Subpart J §2.1091 and KDB 447498 D01 referring to limits under §1.1310)

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

*f = frequency in MHz*

*\*Plane-wave equivalent power density*



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Limits for Devices Used by the General Public (Uncontrolled Environment (RSS-102 Issue 5 March 2015))

| Frequency Range (MHz)    | Electric Field Strength (V/m rms) | Magnetic Field (A/m rms)                 | Power Density (W/m <sup>2</sup> ) | Reference Period (minutes) |
|--------------------------|-----------------------------------|--|-----------------------------------|----------------------------|
| 0.003 - 10 <sup>21</sup> | 83                                | 90                                       | -                                 | Instantaneous              |
| 0.1 - 10                 | -                                 | 0.73/f                                   | -                                 | 6**                        |
| 1.1 - 10                 | 87/f <sup>0.5</sup>               | -  | -                                 | 6**                        |
| 10 - 20                  | 27.46                             | 0.0728                                   | 2                                 | 6                          |
| 20 - 48                  | -58.07/f <sup>0.25</sup>          | 0.1540/f <sup>0.25</sup>                 | 8.944/f <sup>0.5</sup>            | 6                          |
| 48 - 300                 | 22.06                             | 0.05852                                  | 1.291                             | 6                          |
| 300 - 6000               | 3.142 f <sup>0.3417</sup>         | 0.008335 f <sup>0.3417</sup>             | 0.02619 f <sup>0.6834</sup>       | 6                          |
| 6000 - 15000             | 61.4                              | 0.163                                    | 10                                | 6                          |
| 15000 - 150000           | 61.4                              | 0.163                                    | 10                                | 616000/f <sup>1.2</sup>    |
| 150000 - 300000          | 0.158f <sup>0.5</sup>             | 4.21 x 10 <sup>-4</sup> f <sup>0.5</sup> | 6.67 x 10 <sup>-5</sup> f         | 616000/f <sup>1.2</sup>    |

*f* is frequency in MHz

\*Based on nerve stimulation (NS)

\*\* Based on specific absorption rate (SAR)

2. Mobile MPE Calculation Summary using a 20cm separation distance (worst case configuration):

| Mode                     | Output Power (mW) | Power Density (mW/cm <sup>2</sup> ) |
|--------------------------|-------------------|-------------------------------------|
| 24GHz Radar (2ACR3-T100) | 0.0007432         | 0.00000015                          |
| LTE band 2 (N7NHL78M)    | 281.8             | 0.397                               |

\*Output Power and Power Density values are from the original filing using the same antenna and antenna gain

3. Co-Located Transmitters transmission table:

| Transmitter type         | Transmitter type that can transmit at the same time |
|--------------------------|---|
| 24GHz Radar (2ACR3-T100) | Cellular (N7NHL78M)                                 |
| Cellular (N7NHL78M)      | 24GHz Radar (2ACR3-T100)                            |



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**4. Simultaneous Transmission MPE:**

| Transmitter type                   | MPE<br>(mw/cm <sup>2</sup> ) | Limit<br>(mW/cm <sup>2</sup> ) | MPE ratio<br>(MPE/Limit) |
|------------------------------------|------------------------------|--------------------------------|--------------------------|
| 24GHz Radar                        | 0.00000015                   | 1.0                            | 0.00000015               |
| LTE band 2                         | 0.397                        | 0.447631                       | 0.88689121               |
| Sum of the ratios (should be <1.0) |                              |                                | 0.88689136               |

Sincerely,

A handwritten signature in blue ink, appearing to read 'Ferdie S. Custodio'.

Ferdie S. Custodio

Name

Authorized Signatory

Title: Senior EMC Test Engineer /Wireless Team Lead