

RF Exposure Evaluation declaration

Product Name : HE863-EUD

Model No. : HE863-EUD

FCC ID : RI7HE863EU

Applicant : Telit Communications S.p.A.

Address : Viale Stazione di Prosecco 5/b

Date of Receipt : Nov. 17, 2009

Date of Declaration : Feb. 18, 2011

Report No. : 10B334R-RF-US-RFEXP

The declaration results relate only to the samples calculated.

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1. RF Exposure Evaluation

1.1. Limits

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).

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

| Frequency Range (MHz) | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density (mW/cm ²) | Average Time (Minutes) |
|--|-------------------------------|-------------------------------|-------------------------------------|------------------------|
| (A) Limits for Occupational/ Control Exposures | | | | |
| 300-1500 | -- | -- | F/300 | 6 |
| 1500-100,000 | -- | -- | 5 | 6 |
| (B) Limits for General Population/ Uncontrolled Exposures | | | | |
| 300-1500 | -- | -- | F/1500 | 30 |
| 1500-100,000 | -- | -- | 1 | 30 |

F= Frequency in MHz

Friis Formula

Friis transmission formula: $Pd = (Pout * G) / (4 * \pi * R^2)$

Where

Pd = power density in mW/cm²

Pout = 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

Pd is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

1.2. Test Procedure

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

The temperature and related humidity: 23°C and 58% RH.

1.3. Test Result of RF Exposure Evaluation

Product : HE863-EUD
 Test Item : RF Exposure Evaluation
 Test Site : N/A

| | 850 | | | | | |
|---------------------|-------|--------------|-------|--------------|-------|--------------|
| | Peak | Time-Average | Peak | Time-Average | Peak | Time-Average |
| | 128 | | 189 | | 251 | |
| GPRS 8 (1 Uplink) | 32.54 | 23.51 | 32.54 | 23.51 | 32.6 | 23.57 |
| GPRS 10 (2 Uplink) | 32.27 | 26.25 | 32.31 | 26.29 | 32.27 | 26.25 |
| GPRS 11 (3 Uplink) | 32 | 27.74 | 32.04 | 27.78 | 32.04 | 27.78 |
| GPRS 12 (4 Uplink) | 30.89 | 27.88 | 30.96 | 27.95 | 30.95 | 27.94 |
| EGPRS 8 (1 Uplink) | 27.37 | 18.34 | 27.33 | 18.3 | 27.42 | 18.39 |
| EGPRS 10 (2 Uplink) | 26.96 | 20.94 | 27.06 | 21.04 | 27.03 | 21.01 |
| EGPRS 11 (3 Uplink) | 26.06 | 21.8 | 26.17 | 21.91 | 26.13 | 21.87 |
| EGPRS 12 (4 Uplink) | 25.06 | 22.05 | 25.03 | 22.02 | 25.05 | 22.04 |

| | 1900 | | | | | |
|---------------------|-------|--------------|-------|--------------|-------|--------------|
| | Peak | Time-Average | Peak | Time-Average | Peak | Time-Average |
| | 512 | | 698 | | 885 | |
| GPRS 8 (1 Uplink) | 29.09 | 20.06 | 29.13 | 20.1 | 29.08 | 20.05 |
| GPRS 10 (2 Uplink) | 28.99 | 22.97 | 28.97 | 22.95 | 28.92 | 22.9 |
| GPRS 11 (3 Uplink) | 28.8 | 24.54 | 28.77 | 24.51 | 28.73 | 24.47 |
| GPRS 12 (4 Uplink) | 28.45 | 25.44 | 28.34 | 25.33 | 28.44 | 25.43 |
| EGPRS 8 (1 Uplink) | 25.89 | 16.86 | 25.91 | 16.88 | 25.93 | 16.9 |
| EGPRS 10 (2 Uplink) | 25.78 | 19.76 | 25.79 | 19.77 | 25.81 | 19.79 |
| EGPRS 11 (3 Uplink) | 25.64 | 21.38 | 25.51 | 21.25 | 25.53 | 21.27 |
| EGPRS 12 (4 Uplink) | 24.68 | 21.67 | 24.65 | 21.64 | 24.62 | 21.61 |

Note : The calculated method are shown as below :

- 1 uplink(Duty cycle=1/8) : Time-Average = peak -9.03
- 2 uplink(Duty cycle=2/8) : Time-Average = peak -6.02
- 3 uplink(Duty cycle=3/8) : Time-Average = peak -4.26
- 4 uplink(Duty cycle=4/8) : Time-Average = peak -3.01

GSM 850 GPRS-Peak Gain: 4.2dBi

| Frequency (MHz) | Conducted Peak Power (dBm) | Duty Cycle | Conducted Average Power (dBm) | Output Power to Antenna (mW) | Power Density at R = 20 cm (mW/cm ²) | Limit (mW/cm ²) | Pass/Fail |
|-----------------|----------------------------|------------|-------------------------------|------------------------------|--|-----------------------------|-----------|
| 824.2 | 30.89 | 1/2 | 27.88 | 613.7 | 0.3211 | 0.55 | Pass |
| 836.4 | 30.96 | 1/2 | 27.95 | 623.7 | 0.3264 | 0.55 | Pass |
| 848.8 | 30.95 | 1/2 | 27.94 | 622.3 | 0.3256 | 0.55 | Pass |

GSM 850 EGPRS-Peak Gain: 4.2dBi

| Frequency (MHz) | Conducted Peak Power (dBm) | Duty Cycle | Conducted Average Power (dBm) | Output Power to Antenna (mW) | Power Density at R = 20 cm (mW/cm ²) | Limit (mW/cm ²) | Pass/Fail |
|-----------------|----------------------------|------------|-------------------------------|------------------------------|--|-----------------------------|-----------|
| 824.2 | 25.06 | 1/2 | 22.05 | 160.3 | 0.0839 | 0.55 | Pass |
| 836.4 | 25.03 | 1/2 | 22.02 | 159.2 | 0.0833 | 0.55 | Pass |
| 848.8 | 25.05 | 1/2 | 22.04 | 159.9 | 0.0837 | 0.55 | Pass |

PCS 1900 GPRS-Peak Gain: 4.2dBi

| Frequency (MHz) | Conducted Peak Power (dBm) | Duty Cycle | Conducted Average Power (dBm) | Output Power to Antenna (mW) | Power Density at R = 20 cm (mW/cm ²) | Limit (mW/cm ²) | Pass/Fail |
|-----------------|----------------------------|------------|-------------------------------|------------------------------|--|-----------------------------|-----------|
| 1850.2 | 28.45 | 1/2 | 25.44 | 349.9 | 0.1831 | 1 | Pass |
| 1880 | 28.34 | 1/2 | 25.33 | 341.2 | 0.1785 | 1 | Pass |
| 1909.8 | 28.44 | 1/2 | 25.43 | 349.1 | 0.1827 | 1 | Pass |

PCS 1900 EGPRS-Peak Gain: 4.2dBi

| Frequency (MHz) | Conducted Peak Power (dBm) | Duty Cycle | Conducted Average Power (dBm) | Output Power to Antenna (mW) | Power Density at R = 20 cm (mW/cm ²) | Limit (mW/cm ²) | Pass/Fail |
|-----------------|----------------------------|------------|-------------------------------|------------------------------|--|-----------------------------|-----------|
| 1850.2 | 24.68 | 1/2 | 21.67 | 146.9 | 0.0769 | 1 | Pass |
| 1880 | 24.65 | 1/2 | 21.64 | 145.9 | 0.0763 | 1 | Pass |
| 1909.8 | 24.62 | 1/2 | 21.61 | 144.9 | 0.0758 | 1 | Pass |

Note: The conducted output power is refer to report No.: 10B334R-HPUSP07V01 from the Quietek.