

## Maximum Permissible Exposure Report

### 1. Product Information

EUT : Wireless data logger  
Model Number : FlashLink RTL 22362  
Model Difference Declaration : The probe is an optional function shows in EUT photos.  
Test Model : FlashLink RTL  
Power Supply : DC 3.70V by Battery  
Hardware version : B90MR41B  
Software version : B9D\_DeltaTrak\_L02

#### GSM

BAND : ☒ GSM 850  
☒ PCS 1900  
☒ GSM 900  
☒ DCS 1800

GSM FCC Operation Frequency : US-Bands:  
GSM 850(UL: 824 – 848 MHz/DL: 869 – 894 MHz)  
GSM 1900(UL: 1850 –1910 MHz/DL: 1930 – 1990 MHz)  
NON US-bands:  
GSM 900(UL: 880 – 915 MHz/DL: 925 – 960 MHz)  
GSM 1800(UL: 1710 – 1785 MHz/DL: 1805 – 1880 MHz)

Channel Separation : 0.2MHz

Modulation Technology : GMSK

Antenna Type And Gain : Internal Antenna  
GSM900: 0.2 dBi  
DCS1800: -1.1 dBi  
GSM850: -1.04 dBi  
PCS1900: 0.18 dBi

*Note: Antenna position refer to EUT Photos.*

## 2. Refer evaluation method

[ANSI C95.1–1999](#): IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

[FCC KDB publication 447498 D01 General 1 RF Exposure Guidance v06](#): Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

[FCC CFR 47 part1 1.1310](#): Radiofrequency radiation exposure limits.

### 3. Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	6
3.0 – 30	1842/f	4.89/f	(900/f <sup>2</sup> )*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	/	/	f/300	6
1500 – 100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 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

### 4. MPE Calculation Method

Predication of MPE limit at a given distance

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 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

### 5. Antenna Information

This Product can only use antennas certificated as follows provided by manufacturer;

*Note: The Antenna gain shows in section 1 of this file*

## 6. Max Conducted Power

Mode	Frequency (MHz)	Peak Power	Avg.Burst Power
GPRS850 (1 Slot)	824.2	31.62	31.42
	836.6	<b>31.67</b>	<b>31.44</b>
	848.8	31.51	31.30

Mode	Frequency (MHz)	Peak Power	Avg.Burst Power
GPRS1900 (1 Slot)	1850.2	30.18	29.94
	1880	30.03	29.80
	1909.8	<b>30.19</b>	<b>29.96</b>

## 7. Manufacturing Tolerance

### GSM850

Maximum Output Power(Average)			
Frequency (MHz)	824.2	836.6	848.8
Target (dBm)	31.0	31.0	31.0
Tolerance $\pm$ (dB)	1.0	1.0	1.0

### PCS1900

Maximum Output Power(Average)			
Frequency (MHz)	1850.2	1880	1909.8
Target (dBm)	30.0	30.0	30.0
Tolerance $\pm$ (dB)	1.0	1.0	1.0

## 8. Measurement Results

### 8.1 Standalone MPE

As declared by the Applicant, the EUT is a wireless device used in a fix application, at least 20 cm from any body part of the user or nearby persons; from the maximum EUT RF output power, the minimum separation distance,  $r=20\text{cm}$ , as well as the gain of the used antenna refer to antenna information, the RF power density can be obtained.

GSM850:

Frequency(MHz)	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	Duty Cycle	MPE (mW/cm <sup>2</sup> )	MPE Limits (mW/cm <sup>2</sup> )
	dBm	mW					
824.2	32.00	1584.8932	-1.04	0.7870	100%	0.2483	0.5495
836.6	32.00	1584.8932	-1.04	0.7870	100%	0.2483	0.5577
848.8	32.00	1584.8932	-1.04	0.7870	100%	0.2483	0.5659

PCS1900:

Frequency(MHz)	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	Duty Cycle	MPE (mW/cm <sup>2</sup> )	MPE Limits (mW/cm <sup>2</sup> )
	dBm	mW					
1850.2	31.00	1258.9254	0.18	1.0423	100%	0.2612	1.0000
1880	31.00	1258.9254	0.18	1.0423	100%	0.2612	1.0000
1909.8	31.00	1258.9254	0.18	1.0423	200%	0.2612	1.0000

Remark:

1. Output power including tune-up tolerance;
2. MPE evaluate distance is 20cm from user manual provide by manufacturer;

### 8.2 Simultaneous Transmission MPE

N/A

## 9. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

-----THE END OF REPORT-----