

eSky Wireless Inc.

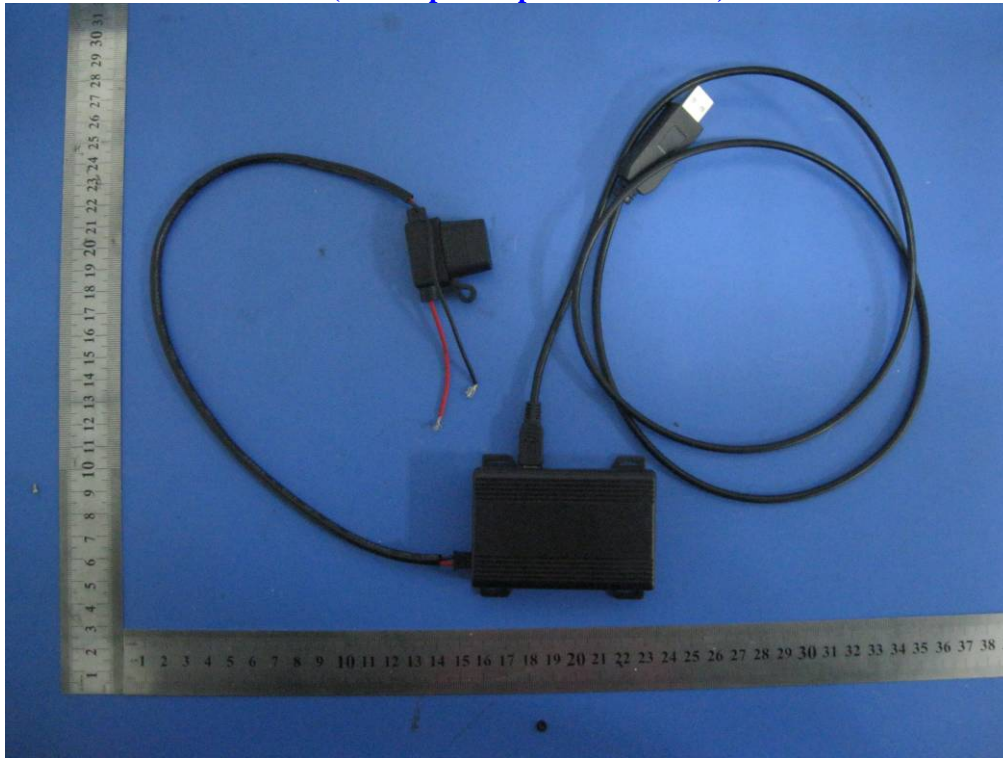
ES102 vehicle terminal

Model:ES102

November 20, 2012

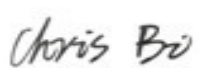


Report No.: 12020557-FCC-H1

(This report supersedes NONE)



Modifications made to the product : None

This Test Report is Issued Under the Authority of:

| | | |
|---|---|---|
|  |  |  |
| Chris Bi Compliance Engineer | Alex Liu Technical Manager | |

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RF Exposure Report

To: FCC 2.1091: 2012

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1. EXECUTIVE SUMMARY & EUT INFORMATION

The purpose of this test programme was to demonstrate compliance of the eSky Wireless Inc., ES102 vehicle terminal and model: ES102 against the current Stipulated Standards. The ES102 vehicle terminal has demonstrated compliance with the FCC 2.1091: 2012.

EUT Information

| | |
|--|---|
| EUT Description | : ES102 vehicle terminal |
| Model | : ES102 |
| Antenna Gain | : GSM 850: -2.5 dBi : PCS 1900: -1.5 dBi : DC 12 V 2A |
| Input Power | : Li-ion Battery : Model : HT602 : Power Rating: 3.7V 220 mAh |
| Maximum Conducted Peak Power to Antenna | : GSM850: 32.55 dBm : PCS1900: 30.17 dBm |
| Maximum Radiated ERP/EIRP | : GSM850: 27.89 dBm / ERP : PCS1900: 27.74 dBm / EIRP |
| Classification Per Stipulated Test Standard | : FCC 2.1091: 2012 |

2. TECHNICAL DETAILS

| | |
|--|--|
| Purpose | Compliance testing of ES102 vehicle terminal with stipulated standard |
| Applicant / Client | eSky Wireless Inc. Room 501, Building 13, No.99 TianZhou Road,Xuhui District, Shanghai |
| Manufacturer | eSky Wireless Inc. 22-303,328Xinghu Street,Suzhou,China |
| Laboratory performing the tests | SIEMIC Nanjing (China) Laboratories NO.2-1,Longcang Dadao, Yuhua Economic Development Zone, Nanjing, China Tel:+86(25)86730128/86730129 Fax:+86(25)86730127 Email:info@siemic.com |
| Test report reference number | 12020557-FCC-H1 |
| Date EUT received | September 15, 2012 |
| Standard applied | FCC 2.1091: 2012 |
| Dates of test | November 9 to November 10, 2012 |
| No of Units | #1 |
| Equipment Category | PCE |
| Trade Name | N/A |
| RF Operating Frequency (ies) | GSM850 TX : 824.2 ~ 848.8 MHz; RX : 869.2 ~ 893.8 MHz PCS1900 TX : 1850.2 ~ 1909.8 MHz; RX : 1930.2 ~ 1989.8 MHz |
| Number of Channels | 299CH (PCS1900) and 124CH (GSM850) |
| Modulation | GSM / PCS: GMSK |
| GPRS Multi-slot class | N/A |
| FCC ID | YR8ES102 |

3. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FCC §2.1091 - MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission’s guidelines.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for General Population/Uncontrolled Exposure

| Limits for General Population/Uncontrolled Exposure | | | | |
|---|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| Frequency Range (MHz) | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density (mW/cm ²) | Averaging Time (minutes) |
| 0.3-1.34 | 614 | 1.63 | *(100) | 30 |
| 1.34-30 | 824/f | 2.19/f | *(180/f ²) | 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

Test Data

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

Where: S = power density (in appropriate units, e.g. mW/cm²)
P = power input to the antenna (in appropriate units, e.g., mW).
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

GSM 850

Maximum peak output power at antenna input terminal: 32.55 (dBm)
Maximum peak output power at antenna input terminal: 1798.87 (mW)

Prediction distance: >20 (cm)
Predication frequency: 824.2 (MHz)
Antenna Gain (typical): -2.5 (dBi)
Antenna Gain (typical): 0.563 (numeric)

The worst case is power density at predication frequency at 20 cm: 0.201 (mW/cm²)
MPE limit for general population exposure at prediction frequency: 0.549 (mW/cm²)

0.201 (mW/cm²) < 0.549 (mW/cm²)

PCS 1900

Maximum peak output power at antenna input terminal: 30.17(dBm)
Maximum peak output power at antenna input terminal: 1039.92 (mW)

Prediction distance: >20 (cm)
Predication frequency: 1909.8 (MHz)
Antenna Gain (typical): -1.5 (dBi)
Antenna Gain (typical): 0.708 (numeric)

The worst case is power density at predication frequency at 20 cm: 0.147 (mW/cm²)
MPE limit for general population exposure at prediction frequency: 1 (mW/cm²)

0.147 (mW/cm²) < 1 (mW/cm²)

Result: Pass