

Federal Communication Commission
Authorization and Evaluation Division
7435 Oakland Mills Road
Columbia, MD 21046

Attention: Reviewing Engineer

The Telematics Control Unit H913E from **Sage Co., Ltd.** is a mobile device with a built in GSM module.

Due to the construction and the position of the antenna a distance under normal operating conditions of 20 cm or more is guaranteed. Additionally the user manual state:

The installation of the device is performing by the manufacturer at the rear window of the car and ensures at least 20cm distance from the antenna to any person inside or outside of the car.

The maximum output power of the Burst 1729 mW (32.38 dBm = 30.24 dBm ERP + 2.14 dB).

Regarding MPE limits, GPUC environment limits maximum exposure to 1 mW/cm².
For 848.8 MHz maximum exposure limit is: $f/1500 = 848.8/1500 = 0.57 \text{mW/cm}^2$.

The power density is:

$$S = E^2/3770 = -13 \text{ H}^2 = \text{limit} < 1 \text{ mW/cm}^2$$

Where: S = Power density (mW/cm²)
E = electrical field strength (V/m)

This formula converted using the EIRP at 20 cm. is:

$$P_{\text{out}} * G / 4\pi * r^2 \text{ mW/cm}^2$$
$$1729 / 4\pi * 400 = 0.344 \text{ mW/cm}^2$$

Further, the device uses the GSM protocol, which is a TDD format ratio of 1/8 in GSM mode and 4/8 in GPRS mode.

Calculations are based on standard formula for calculating field strength at a distance and converting power density using free space impedance.

If you should have any questions regarding this submission, please feel free to contact the undersigned.

Yours truly,

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