SWISS TIMING

RF Exposure Considerations for the GPSRadio32V2

FCC ID: 2AXIALTRA073

The FCC requires that the calculated MPE be equal to or less than a given limit dependent on frequency at a distance of 20 cm from a device to the body of a user.

The GPSRadio32V2 equipment is a fixed device and operates using a 917.5MHz transmitter. Transmission occurs for 50.0mS max, every 5000mS (defined by the product firmware)

The following FCC Rule Parts and procedures are applicable:

Part 1.1310 – Radiofrequency radiation exposure limits

Part 2.1091 – Radiofrequency radiation exposure evaluation: mobile devices

KDB447498 D01 v06
Mobile and Portable Devices RF Exposure Procedures and Equipment Authorisation Policies

MPE CALCULATION

The MPE calculation used to calculate the safe operating distance for the user is:

$$S = EIRP/4 \pi R^2$$

Where

S = Power density

EIRP = Effective Isotropic Radiated Power (EIRP = P x G)

P = Conducted Transmitter Power

G = Antenna Gain (relative to an isotropic radiator)

R = distance to the centre of radiation of the antenna (safe operating distance)

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Values:

Transmitter frequency range = 917.5 – 917.5 MHz

P = 22.0dBm (158.5mW) max.

For transmission of 50.0mS max, every 5000mS:
Source-based, time-averaged power = 158.5 x 50 / 5000 = 1.6mW

G = 2.15 dBi (x1.64)

R = 20 cm

S_{req} = **f/1500 = 0.6 mW/cm²** (Ref. CFR §1.1310)

Calculation:

$S = 1.6 \times 1.64 / 4 \pi R^2$

$S = 2.62 / (12.56 \times 20^2)$

$S = 2.62 / (5024)$

$S = 0.00052$ mW/cm²

(Equivalent to 0.6 cm safe operating distance)

Conclusion

The required 20 cm RF exposure limits for General Population/ Uncontrolled Exposure will not be exceeded for the GPSRadio32V2 using an antenna having a maximum gain of 2.15 dBi..

Signature: _____

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