



Certification Exhibit

FCC ID: 2AXRM-IOBEACON

FCC Rule Part: 47 CFR Part 2.1091

TÜV SÜD Project Number: 72162883

**Manufacturer: Intelligent Observation Inc.
Model: Beacon**

RF Exposure

TÜV SÜD America
5610 West Sligh Ave., Suite 100
Tampa, FL 33634

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General Information:

Applicant: Intelligent Observation Inc.
 Device Category: Mobile
 Environment: General Population/Uncontrolled Exposure

Technical Information:

Antenna Type: Coil
 Transmitter Operating Frequency: 0.125 MHz
 Maximum Transmitter Field Strength: 96.36 dBuV/m
 Maximum System EIRP: 1.16 dBm, 1.3062 mW
 Exposure Conditions: 20 centimeters or greater

MPE Calculation

The Power Density (mW/cm²) is calculated as follows:

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

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
- R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Table 1: MPE Calculation – 125 kHz

Transmit Frequency (MHz)	Radio Field Strength (dBuV/m)	Power Density Limit (mW/Cm ²)	Radio EIRP (dBm)	Radio EIRP (mW)	Distance (cm)	Power Density (mW/cm ²)
0.125	96.36	100	1.16	1.306171	20	0.00026

Where:

- Radio EIRP (dBm)= Radio Field Strength (dBuV/m) – 95.2
- PG = Radio EIRP (mW)

The device also includes a 2.4 GHz Wireless module FCC ID: 2AC7Z-ESP32WROVERB. The radios cannot transmit simultaneously. The RF exposure calculations for the wireless module are provided for reference purposes.

Table 2: MPE Calculation – FCC ID: 2AC7Z-ESP32WROVERB

Radio	Transmit Frequency (MHz)	Radio Power (dBm)	Power Density Limit (mW/Cm ²)	Radio Power (mW)	Antenna Gain (dBi)	Antenna Gain (mW eq.)	Distance (cm)	Power Density (mW/cm ²)
Wi-Fi	2412	24	1.00	251.19	3.74	2.366	20	0.118
BLE	2402	2	1.00	1.58	3.74	2.366	20	0.001
BT3.0	2402	5.5	1.00	3.55	3.74	2.366	20	0.002