

---

# FCC MPE Evaluation Report

---

**Report No: WD-RF-R-240378-D0**

**Product Name** : RFID Reader  
**Model Name** : MP30TH-00  
**Series Model Name** : MP30TR-00  
**FCC ID** : WXAMP30T  
**Applicant** : GIGA-TMS INC.  
**Received Date** : Nov. 05, 2024  
**Tested Date** : Dec. 16, 2024 ~ Dec. 25, 2024  
**Applicable Standard** : 47 CFR FCC Part 2.1091  
47 CFR FCC Part 1.1310  
KDB 447498 D01  
OET Bulletin 65 Supplement C



## Wendell Industrial Co., Ltd Wendell EMC & RF Laboratory

**Caution:**

This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment.

Please note that the measurement uncertainty are provided for informational purpose only and are not used in determining the Pass/Fail results.

This report must not be used to claim product endorsement by TAF or any agency of the government.  
The test report shall not be reproduced without the written approval of Wendell Industrial Co., Ltd..

# Test Report

Issued Date: December 26, 2024

Project No.: 24Q102804

<b>Product Name</b>	RFID Reader
<b>Trade Name</b>	PROMAG
<b>Model Name</b>	MP30TH-00
<b>Series Model Name</b>	MP30TR-00
<b>FCC ID</b>	WXAMP30T
<b>Applicant</b>	GIGA-TMS INC.
<b>Manufacturer</b>	GIGA-TMS INC.
<b>EUT Rated Voltage</b>	USB 5V
<b>EUT Test Voltage</b>	USB 5V
<b>EUT Supports Radios Application</b>	RFID 13.56 MHz、RFID 125 kHz
<b>Applicable Standard</b>	47 CFR FCC Part 2.1091 47 CFR FCC Part 1.1310 KDB 447498 D01 OET Bulletin 65 Supplement C
<b>RF Evaluation</b>	0.000596 mW
<b>Test Result</b>	Complied

**Documented :**


( Specialist / Emma Lu )

**Technical Engineer :**


( Assistant Section Manager / Jason Hsieh )

**Approved :**


( Project Manager / Gary Wu )

## Table of Contents

<b>Document Revision History</b> .....	<b>4</b>
<b>Reference Testing Standard</b> .....	<b>5</b>
<b>1 Generation Information</b> .....	<b>6</b>
<b>1.1 Applicant</b> .....	<b>6</b>
<b>1.2 Manufacturer</b> .....	<b>6</b>
<b>1.3 Description of Equipment under Test</b> .....	<b>6</b>
<b>1.4 Test Facility</b> .....	<b>7</b>
<b>2 Mobile device Assessment Procedure</b> .....	<b>8</b>
<b>3 RF Exposure Assessment</b> .....	<b>8</b>
<b>4 Limit Requirement</b> .....	<b>9</b>
<b>5 Test Results</b> .....	<b>11</b>

## Document Revision History

Report No.	Issue date	Description
WD-RF-R-240378-A0	December 26, 2024	Initial report

## Reference Testing Standard

Standard	Description	Version
47 CFR FCC Part 2.1091	Radiofrequency radiation exposure evaluation: mobile devices.	--
47 CFR FCC Part 1.1310	Radiofrequency radiation exposure limits.	--
KDB 447498 D01	RF Exposure procedures and equipment authorization policies for mobile and portable devices.	V06
OET Bulletin 65 Supplement C	Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields.	Edition 01-01

## 1 Generation Information

### 1.1 Applicant

GIGA-TMS INC.  
8F, NO.31, LANE 169, KANG-NING ST.,HSI-CHIH, NEW TAIPEI CITY, 22180 TAIWAN

### 1.2 Manufacturer

GIGA-TMS INC.  
8F, NO.31, LANE 169, KANG-NING ST.,HSI-CHIH, NEW TAIPEI CITY, 22180 TAIWAN

### 1.3 Description of Equipment under Test

<b>Product Name</b>	RFID Reader
<b>Model No.</b>	MP30TH-00
<b>Series Model No.</b>	MP30TR-00
<b>Model Difference</b>	MP30TH-00 : TH = USB port, 00 = 125kHz+13.56MHz MP30TR-00 : TR = RS232 port, 00 = 125kHz+13.56MHz
<b>FCC ID</b>	WXAMP30T
<b>Frequency Range</b>	13.56 MHz 125 kHz
<b>Antenna Information</b>	Refer to the table “Antenna List”

The above equipment was tested by Wendell EMC & RF Laboratory For compliance with the requirements set forth in 47 CFR § 2.1091 / 47 CFR § 1.1310. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties

#### Antenna List

No.	Manufacturer	Model No.	Antenna Type	Peak Gain	Remark
1	GIGA-TMS INC.	PCB-T445A	Loop Antenna	N/A	13.56 MHz
2	SZXL	JJ-A-003	Loop Antenna	N/A	125 kHz

## 1.4 Test Facility

Items	Required (IEC 60068-1)
Temperature (°C)	15-35
Humidity (% RH)	25-75
Barometric pressure (mbar)	860-1060

**Description:** Accredited by TAF  
Accredited Number: 2965

**Issued by:** Wendell Industrial Co., Ltd

**Company Address:** 6F/6F-1, No.188, Baoqiao Rd., Xindian Dist.,  
New Taipei City 23145, Taiwan R.O.C

**Test Lab:** Wendell EMC & RF Laboratory

**Lab Address:** 5F-1, No.188, Baoqiao Rd., Xindian Dist.,  
New Taipei City 23145, Taiwan R.O.C

**Test Location:** No. 119, Wugong 3rd Rd., Wugu Dist.,  
New Taipei City 248, Taiwan (R.O.C.)

**Designation Number:** TW0025

**Test Firm Registration Number:** 665221

## 2 Mobile device Assessment Procedure

In 47 CFR § 2.1091, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. In this context, the term "fixed location" means that the device is physically secured at one location and is not able to be easily moved to another location.

## 3 RF Exposure Assessment

Estimation of the expected exposure in power density can be made with the following equation:

$$S = \frac{P \times G}{4\pi \times R^2} = \frac{\text{EIRP}}{4\pi \times R^2}$$

S: power density

P: power input to the 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.

EIRP: Effective Isotropic Radiated Power

## 4 Limit Requirement

In 47 CFR § 1.1310, use of the device as based upon the user's awareness and ability to exercise control over human exposure. The two categories defined are Occupational/Controlled Exposure and General Population/Uncontrolled. These two categories are defined as follow:

### Occupational/Controlled Exposure:

Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

### General Population/Uncontrolled:

General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1,842 / f	4.89 / f	(900 / f <sup>2</sup> )*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f / 300	6
1,500-100,000	--	--	5	6

Note :

(1) f = frequency in MHz

(2) \* = Plane-wave equivalent power density

Limits for General Population / Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824 / f	2.19 / f	(180 / f <sup>2</sup> )*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f / 1,500	30
1,500-100,000	--	--	1.0	30

Note :

(1) f = frequency in MHz

(2) \* = Plane-wave equivalent power density

## RF Exposure Test Exemptions for Single Source

**1-mW Test Exemption** : Per § 1.1307(b)(3)(i)(A), a single RF source is *exempt RF device* (from the requirement to show data demonstrating compliance to RF exposure limits, as previously mentioned) if the available maximum time-averaged power is no more than 1 mW, regardless of separation distance.

**SAR-Based Exemption** : A more comprehensive exemption, considering a variable power threshold that depends on both the *separation distance* and power, is provided in § 1.1307(b)(3)(i)(B). This exemption is applicable to the frequency range between 300 MHz and 6 GHz, with *test separation distances* between 0.5 cm and 40 cm, and for all RF sources in fixed, mobile, and portable device exposure conditions.

**MPE-Based Exemption** : An alternative to the SAR-based exemption is provided in § 1.1307(b)(3)(i)(C), for a much wider frequency range, from 300 kHz to 100 GHz, applicable for separation distances greater or equal to  $\lambda/2\pi$ , where  $\lambda$  is the free-space operating wavelength in meters. The MPE-based test exemption condition is in terms of ERP, defined as the product of the maximum antenna gain and the delivered maximum time-averaged power.<sup>10</sup> For this case, a RF source is an *RF exempt device* if its ERP (watts) is no more than a frequency-dependent value, as detailed tabular form in Appendix B. These limits have been derived based on the basic specifications on Maximum Permissible Exposure (MPE) considered for the FCC rules in § 1.1310(e)(1).

## RF Exposure Test Exemptions for Simultaneous Transmission Sources

**1-mW Test Exemption for Multiple Sources** : As discussed in § 1.1307(b)(3)(ii)(A), the 1-mW exemption intended for single transmitters may be also applied to simultaneous transmission conditions, within the same host device, according one of the following criteria:

- When maximum available power each individual transmitting antenna within the same time averaging period is  $\leq 1$  mW, and the nearest parts of the antenna structures of the simultaneously operating transmitters are separated by at least 2 cm.
- When the aggregate maximum available power of all transmitting antennas is  $\leq 1$  mW in the same time-averaging period.

**Simultaneous Transmission with both SAR-based and MPE-Based Test Exemptions** : This case is described in detail in § 1.1307(b)(3)(ii)(B) and covers the situations where both SAR-based and MPE-based exemption may be considered for test exemption in fixed, mobile, or portable device exposure conditions. For these cases, a device with multiple RF sources transmitting simultaneously will be considered an *RF exempt device* if the condition of Formula (1) is satisfied.

$$\sum_{t=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evakyated_k}{Exposure\ Limit_k} \leq 1 \quad (1)$$

**Test Exemption Based on the SAR to Peak Location Separation Ratio :** When the ERP-based condition in the previous section does not apply, a test exemption may be still applicable based on the SAR to peak location separation ratio (SPLSR) [Glossary] procedure, discussed in more detail in Appendix E of KDB 447498.

## 5 Test Results

Mode	Max. Power (E.I.R.P)		Limit (mW)	Result
	dBm	mW		
RFID 13.56M	-32.25	0.000596	1mW	Pass
RFID 125kHz	-10.64	0.086298	1mW	Pass

Note :

The total power is less than 1mW. Compliance RF Exposure Test Exemption.

--- END ---