

# EDM International

# RF Exposure Exhibit

## SCOPE OF WORK

EMC TESTING – Voltage Monitor Model: AP30 Hotstick

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105251642MPK-003

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## RF Exposure Exhibit (mobile devices)

**Report Number:** 105251642MPK-003

**Project Number:** G105251642

**Report Issue Date:** December 20. 2022

**Product Designation:** AP30 Hotstick unit

**Model Tested:** AP30-HS

**FCC ID:** 2A9GX-AP30HS

**to**

**47CFR 2.1091**

**for**

**EDM INTERNATIONAL, INC.**

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<b>Report No. 105251642MPK-003</b>	
<b>Equipment Under Test:</b>	AP30 Hotstick Unit
<b>Trade Name:</b>	EDM International, Inc
<b>Model(s) Tested:</b>	AP30-HS
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<b>Applicable Regulation:</b>	47CFR 2.1091

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## 1.0 RF Exposure Summary

Test	Reference FCC	Result
Radio frequency Radiation Exposure Evaluation	47 CFR§2.1091	Complies

## 2.0 RF Exposure Limits

In this document, we evaluate the RF Exposure to human body due the intentional transmission from the transmitter (EUT). The limits for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed.

### 2.1 FCC Limits

According to FCC 1.1310 table 1: The criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in 1.1307(b)

#### LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (minutes)
<b>(A)Limits For Occupational / Control Exposures</b>				
0.3 – 3.0	614	1.63	*100	6
3.0 – 30	1842/f	4.89/f	*900/f <sup>2</sup>	6
30-300	61.4	0.163	1.0	6
300 - 1500	...	...	F/300	6
1500 - 100,000	...	...	5	6
<b>(B)Limits For General Population / Uncontrolled Exposure</b>				
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/1500	30
1500 - 100,000	...	...	1.0	30

F = Frequency in MHz

\* = plane wave equivalent density

### 3.0 Test Results (Mobile Configuration)

#### 3.1 Classification

Radio is installed inside a mobile host device. The antenna of the product, under normal use condition, is at least 20 cm away from the body of the user and accessible to the end user. Warning statement to the user for keeping at least 20 cm or more separation distance with the antenna should be included in user's manual.

#### 3.2 EIRP calculations

AP30 Hotstick Unit, Model: AP30-HS consists of one radio: 914.5MHz carrier

#### 3.3 Maximum RF Power

Tx Frequency (MHz)	EIRP (dBm)	Antenna Gain <sup>1</sup> (dBi)	Note
914.5	-1.76	1.4	Radiated power measurements were taken from Report # 105251642MPK-004.

### 3.4 RF Exposure Calculation

#### 3.4.1 RF Exposure calculation for 914MHz carrier.

Calculations for this report are based on highest power measured for each band.

Frequency Range (MHz)	EIRP <sup>1</sup> (dBm)	EIRP <sup>1</sup> (mW)	Power Density (mW/cm <sup>2</sup> ) @20 cm	FCC Limit (mW/cm <sup>2</sup> )	Result
914.5	-1.76	0.667	0.00018	0.609	Compliant

<sup>1</sup>Note: Antenna gains below 0 are considered as 0dBi.

## Appendix A: Power Density Calculation

The Power Density can be calculated using the formula

$$S = \text{EIRP} / 4\pi D^2$$

Where: S is Power Density in mW/cm<sup>2</sup>  
D is the distance from the antenna in cm.

#### 4.0 Document History

Revision/ Job Number	Writer Initials	Reviewers Initials	Date	Change
1.0/ G105251642	JAV	ML	December 20. 2022	Original document