

## RF EXPOSURE EVALUATION

### 1. PRODUCT INFORMATION

Product Description	Emporia EV Charger
Model Name	EMEVSE1
FCC ID	2AS6P-EMEVSE1

### 2. EVALUATION METHOD AND LIMIT

Human exposure to RF emissions from mobile devices (47CFR§2.1091) may be evaluated based on the MPE limits adopted by the FCC for electric and magnetic field strength and/or power density, as appropriate, since exposures are assumed to occur at distances of 20 cm or more from persons.

The device under test Emporia EV Charging Station is a Type 1 Level 2 electric vehicle charger that charges any EV up to 40 amps with NEMA 14-50P or up to 48 amps with hardwired installation. It comes with a 25' cable with an SAE J1772 connector so it works with all electric cars. Its IP54 enclosure is made to withstand the elements outdoors. It will get operated with input voltage of 208/240VAC 50/60Hz.

### LIMITS FOR GENERAL POPULATION/UNCONTROLLED EXPOSURE

Frequency Range (MHz)	E-field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time IEI <sup>2</sup> IHI <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/1500	30
1500--100,000	--	--	1.0	30

\*Note:

- f= Frequency in MHz\*Plane-wave Equivalent Power Density
- The averaging time for General Population/Uncontrolled exposure to fixed transmitters is not applicable for mobile and portable transmitters. (operated in BT/ WIFI) See 47CFR§§2.1091 and 2.1093 on source-based time-averaging requirement for mobile and portable transmitters.

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

Where:

S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to anisotropic radiator

R=distance to the center of radiation of the antenna

### 3. CALCULATION

A minimum test separation distance 20cm is required between the antenna and radiating structures of the device and nearby persons to apply mobile device exposure limits. The distance must be at least 20cm and fully supported by the operating and installation configurations of the transmitter and its antenna(s), according to the source-based time-averaged maximum power requirements of §2.1091(d)(2). In cases where cable losses or other attenuations are applied to determine compliance, the most conservative operating configurations and exposure conditions must be evaluated.

The device under test (Emporia Vue Energy Meter) is neither a mobile device nor a RF exposure product and it is not closed to 20cm distance from persons

**Antenna Gain (2.4GHz) = 3.05dBi (Numeric = 2.018), rr = 3.14**

Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Power Density (mW/cm <sup>2</sup> )	Power Density Limit (mW/cm <sup>2</sup> )
2412(Wi-Fi)	18.03	63.533093185	0.0255	1
2402(BLE)	1.87	1.5381546403	0.0006	1
2402(BT)	3.78	2.3878112829	0.0009	1

Note: Only the worst case recorded.