



5 September 2018

Etherdyne Technologies, Inc., is an innovative and disruptive start up focused on advancing the capabilities of Internet of Things “IoT” sensors by providing them power wirelessly. The demonstration and research will highlight our patent-pending 'Loop Technology' that addresses the factors restricting IoT sensor growth -- battery life and devices/sensors are tethered (wired) resulting in the cumbersome and less than ideal user experience.

The purpose of the Special Temporary Authority grant is to research distance, efficiency and power for wireless energy transfer and to demonstrate the technology.

Location:

Located indoors, within a 2 story building centered at:
5353 Betsy Ross Drive
Santa Clara, CA 95054

37°24'33.00"N
121°58'53.00"W
115 meter radius
3.17 m AMSL
NTE 10 m AGL

Operation: 9/18/2018 – 3/18/2019

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STA Proposed Parameters:

The transmitter under research and development consists of a power supply that takes in 110 VAC and output 12VDC, 24 VDC and 48VDC), a power amplifier (input: 12VDC, 24VDC or 48VDC, output 6.78MHz AC), and loop (antenna) array.

When the system is in operation, the power amplifier converts DC to AC and create current in the loop to induce magnetic field. The magnetic field is coupled to the receiver loop (antenna) to induce voltage and current.

Wireless Power Equipment:

The antenna for each fixed transmitter consists of a wire loop (antenna) with no gain, at the 6.78 MHz frequency. Each MO is a wireless power receiver device which consists of a receiver loop (antenna) coupled to the magnetic field of the transmitter.

In addition to the wireless power receivers, mobile devices contain a Zigbee™, Bluetooth™ or Wi-Fi™ module for communication. One type of wireless power receiver device, has no communication capability and does not transmit emissions.

Technical Details

# Units	Type	Antenna Type	Antenna Gain	Max ERP	Frequency MHz	Bandwidth	Emission Designator	Modulation
20	FX to MO	None	None	<100 W	6.78	15 kHz	15K0N0N	n/a
2	FX to MO	None	None	<100 W	6.78	15 kHz	15K0N0N	n/a
2	FX to MO	None	None	<100 W	6.78	15 kHz	15K0N0N	n/a
50	MO to FX	PCB dipole	2.79dBi	1658mW EIRP	2412-2462	36.5 MHz	36M5W7W	64QAM
100	MO to FX	Flat panel	5.0 dBi	7.29W EIRP	2405-2480	2.96 MHz	2M96G1D	QPSK
100	MO to FX	External dipole	2.14 dBi	11.13mW EIRP	2402-2480	1.09 MHz	1M0G1D	GFSK
1,000	MO	None	None	n/a	RxOnly 6.78	n/a	n/a	n/a

Geographical Area of STA

The proposed STA is located indoors within in a 2 story building centered at:
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