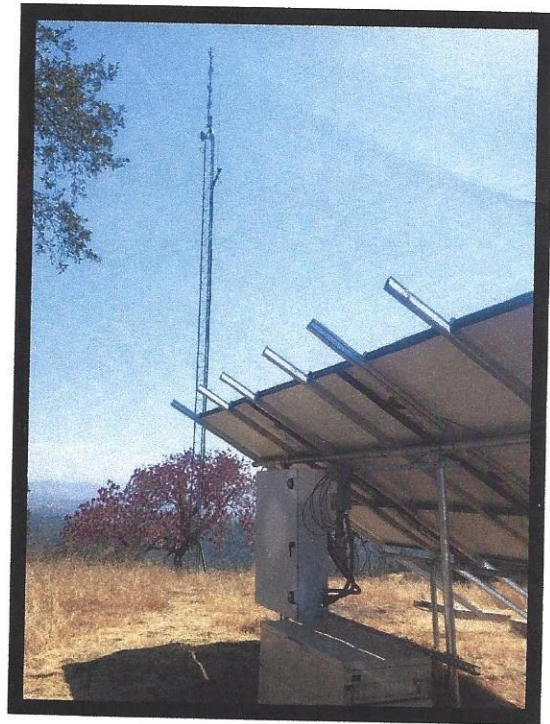
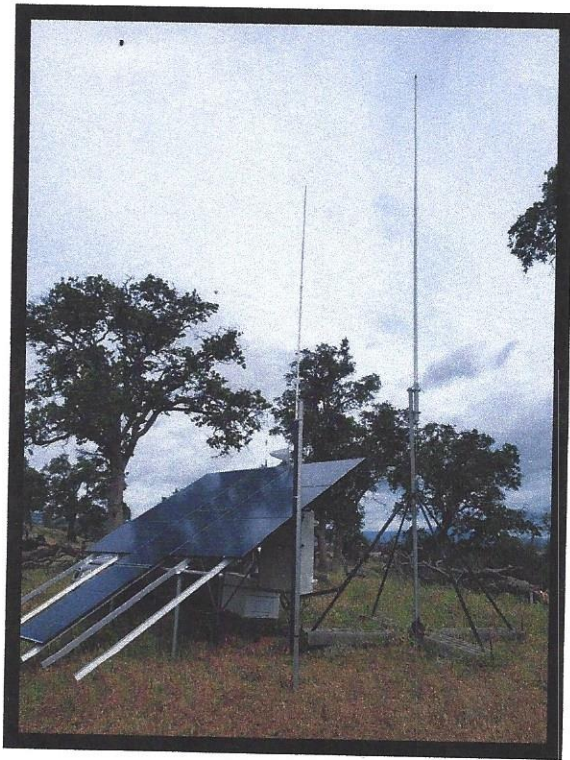


# The California G.M.R.S. System

By: Nathan Moore KI6JAS WQOW802  
9/23/2022



Nathan Moore

Email: [moparsb440@yahoo.com](mailto:moparsb440@yahoo.com)

Cell:209-494-2340

## Parts List

Midnight Solar can be purchased from Iron Edison distributor or on Ebay ~~600~~<sup>5</sup>

Solar Charge Controller Midnight Solar Classic 150 MPPT 96Amp 150V ~~600~~<sup>600</sup>

Solar Shunt Controller Midnight Solar WNWBJR Whiz Bang JR

Solar Shunt Midnight Solar MNSHUNT-1000/50 Shunt 1000A

Solar Disconnect (Fused) 3 String Combiner MNPV4HV-DISCO 3R-DLX

24V Battery Disconnect relay Emerson 586-114111 DC Power Solenoid  
Found on Amazon Aprox. \$84

12v Relay to control the 24v Relay ELK SPDT 12 VDC  
[www.elkproducts.com/product/relay-module-spdt-12-vdc-912-91212/](http://www.elkproducts.com/product/relay-module-spdt-12-vdc-912-91212/)

Heavy Car Audio Fuses from Amazon

Solar Racking Made By Iron Ridge [www.ironridge.com/ground-based/](http://www.ironridge.com/ground-based/)

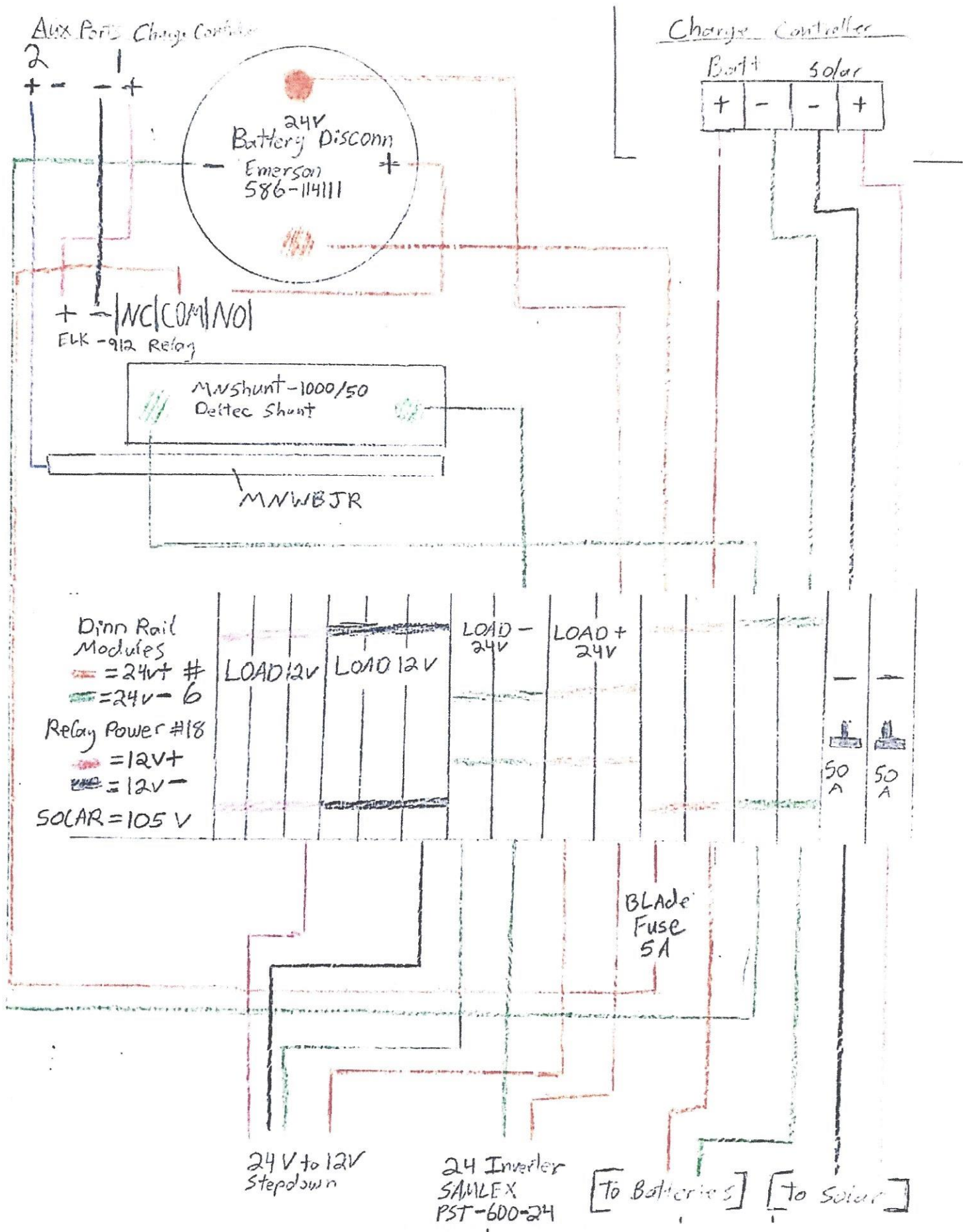
Galvanized Piping Ceres Pipe & Metal on 7th Street in Ceres

Batteries - 4 x 6V L16 Batteries from Battery Systems of Modesto  
1341 Mc Williams Way Modesto 209-577-4022

110v AC inverter Samlex PST-600-24 pure sign wave

Dinn Rail wire distribution was purchased from Willy's Electric on 7th St Modesto

24vdc to 12vdc step-down transformer ICT2412-30A (see attached document)





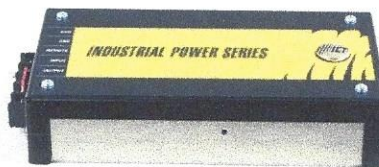


The Power of Reliability

## PRODUCT SPECIFICATIONS

# INDUSTRIAL SERIES

## Non-Isolated DC-DC Power Converters



ICT Industrial Power Series converters are non-isolated DC to DC converters designed for use on negative ground systems. Each converter is designed for high efficiency and long service life. The rugged case and modular design have proven durable in harsh environments. ICT offers an unmatched selection of voltages and currents to meet your requirements. Standard features on all models include fuse protection, high surge capacity, easy access mounting holes, and a terminal strip connector.

### Performance and Flexibility

Models are available ranging from 10 amps to 40 amps to match your needs, including voltage ranges for those hard to find applications. All ICT converters are field proven to work reliably for years under all types of conditions.

### Built In Protection

All models feature built in protection features, including current limiting, high surge capacity, and internal fuses to protect against polarity reversal. ICT Industrial Series converters come with all the protection you need.

### Reliability

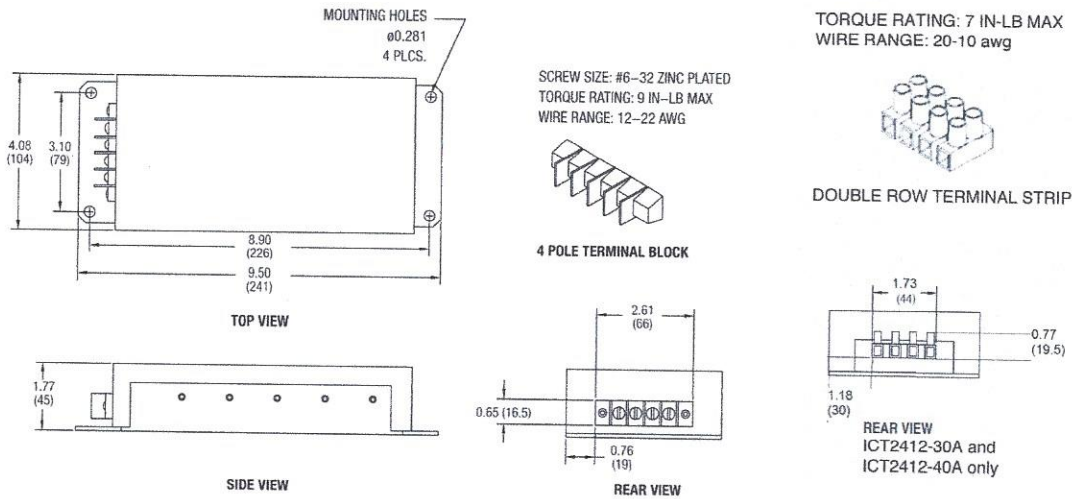
Reliability is achieved through careful design that virtually eliminates internal wiring and connections that can fail. ICT Industrial Series converters have proven tough over years of service. ICT converters are especially adept at handling adverse vibration and moisture prone environments. All models are designed to operate from minus 30 degrees C to plus 50 degrees C. Convection cooling means there are no moving parts to fail. Extra silicone is used for vibration and moisture resistance.

### SPECIFICATIONS

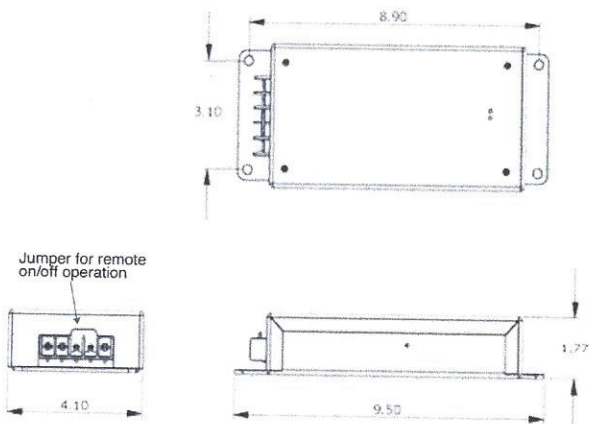
Model Number	Input Voltage Range	Output Voltage	Output Current (Cont.)	Output Current (Peak)	Current Limiting	Line Regulation	Load Regulation	Output Ripple (Max)	Efficiency (Typical)	Input Fuse	Over Voltage Protection	Dimensions (refer to drawing)
ICT2412-10A	20-30 VDC	13.8 VDC +/- 150 mV	9.0 Amps	10.0 Amps	10.5 Amps +/- 5%	0.5%	0.4%	40mV RMS	80%	10 Amp	16.0V	B
ICT2412-15A	20-30 VDC	13.8 VDC +/- 300 mV	13.5 Amps	15.0 Amps	16.0 Amps +/- 5%	0.45%	0.3%	40mV RMS	88%	15 Amp	16.0V	B
ICT2412-20A	20-30 VDC	13.8 VDC +/- 300 mV	18.0 Amps	20.0 Amps	21.0 Amps +/- 5%	0.45%	0.3%	40mV RMS	88%	20 Amp	16.0V	B
ICT2412-30A	20-30 VDC	13.8 VDC +/- 300 mV	25.0 Amps	30.0 Amps	31.0 Amps +/- 5%	0.45%	0.3%	40mV RMS	95%	30 Amp	16.0V	A
ICT2412-40A	20-30 VDC	13.8 VDC +/- 300 mV	36.0 Amps	40.0 Amps	42.0 Amps +/- 5%	0.45%	0.3%	40mV RMS	95%	50 Amp	16.0V	A

**Dimensions** - measurements in inches and (millimeters).

Drawing A



Drawing B



Model Numbers	These models feature a remote on/off contact feature. A jumper is installed between the REMOTE and the Input + terminals from the factory to enable the outputs. To use the remote on/off feature, remove the jumper. Short/Open the REMOTE terminal to the Input + terminals to turn the unit on/off.
ICT2412-10A	
ICT2412-15A	
ICT2412-20A	



# WL2XSX Stanislaus Repeater

Speaker Volume Up

Channel Up



Microphone / Programming

Channel Down

The Hytera RD982I-S repeater is installed and working properly. This repeater is capable of operating in Digital (DMR) and Analog mode. A "mix" mode channel allows the repeater to simultaneously run digital and analog at the same time. GMRS (General Mobile Radio Service) rules as defined by the FCC only allows for radio transitions in analog and digital modes. Our repeater is the only model of any brand that will link to other repeaters passing analog and digital traffic through the internet to another programmed RD982I-S repeater.

Analog and Digital run simultaneously in standby mode. The repeater is programmed with digital as priority. If analog is being used when a digital user transmits the analog conversation will end and digital takes over until it is no longer used. While operating in digital mode two separate conversations can take place simultaneously without interfering with each other. Below is an illustration of digital and analog.

Slot 1 digital = Links to Sunol and Mariposa slot 1

Slot 2 digital = Stays local to the Stanislaus Repeater

Analog Channel Bandwidth



1 station transmitting at a time

Digital Channel Bandwidth



2 Stations transmitting at a time  
Slot 1 & Slot 2 (separate channels)

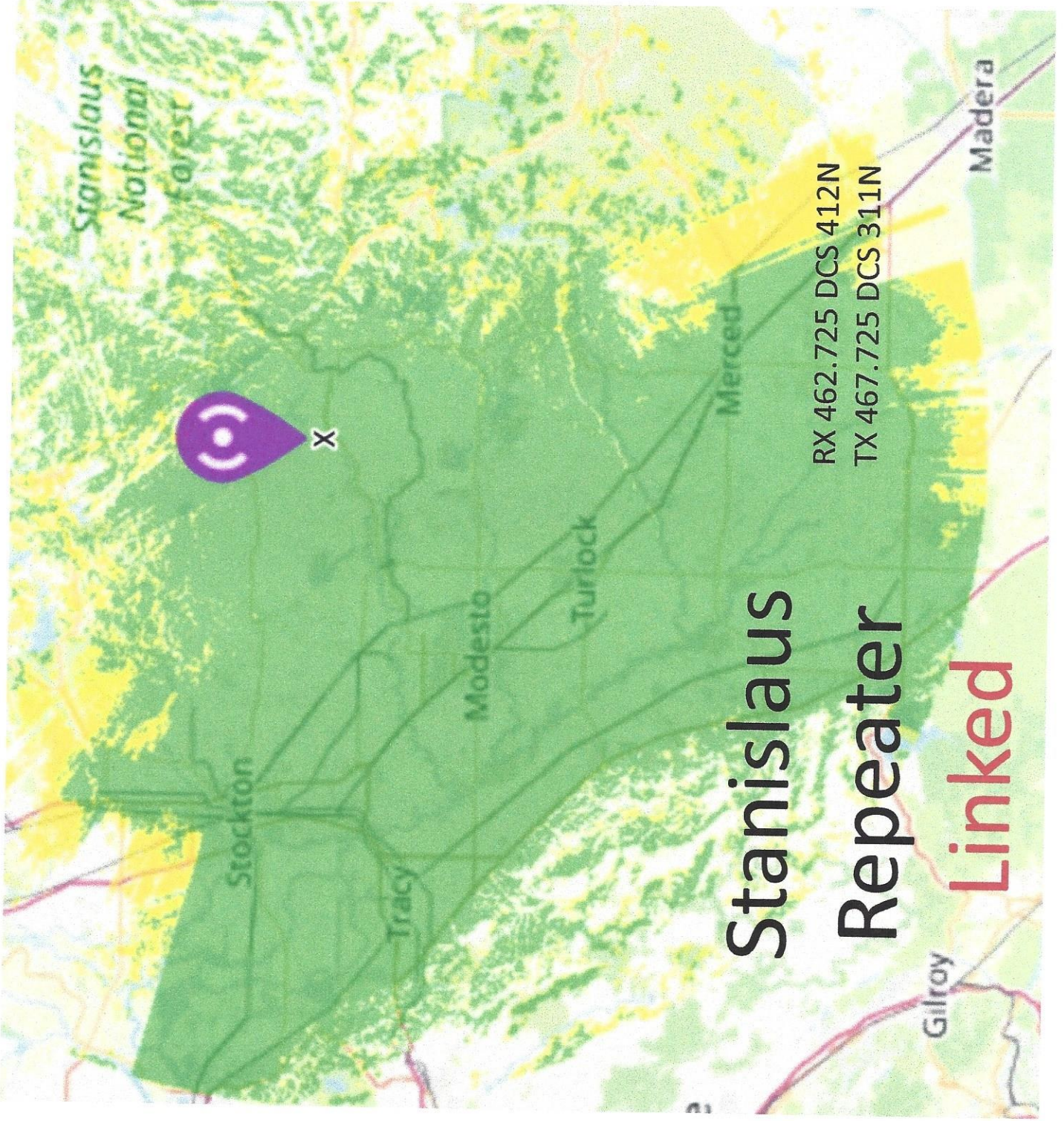




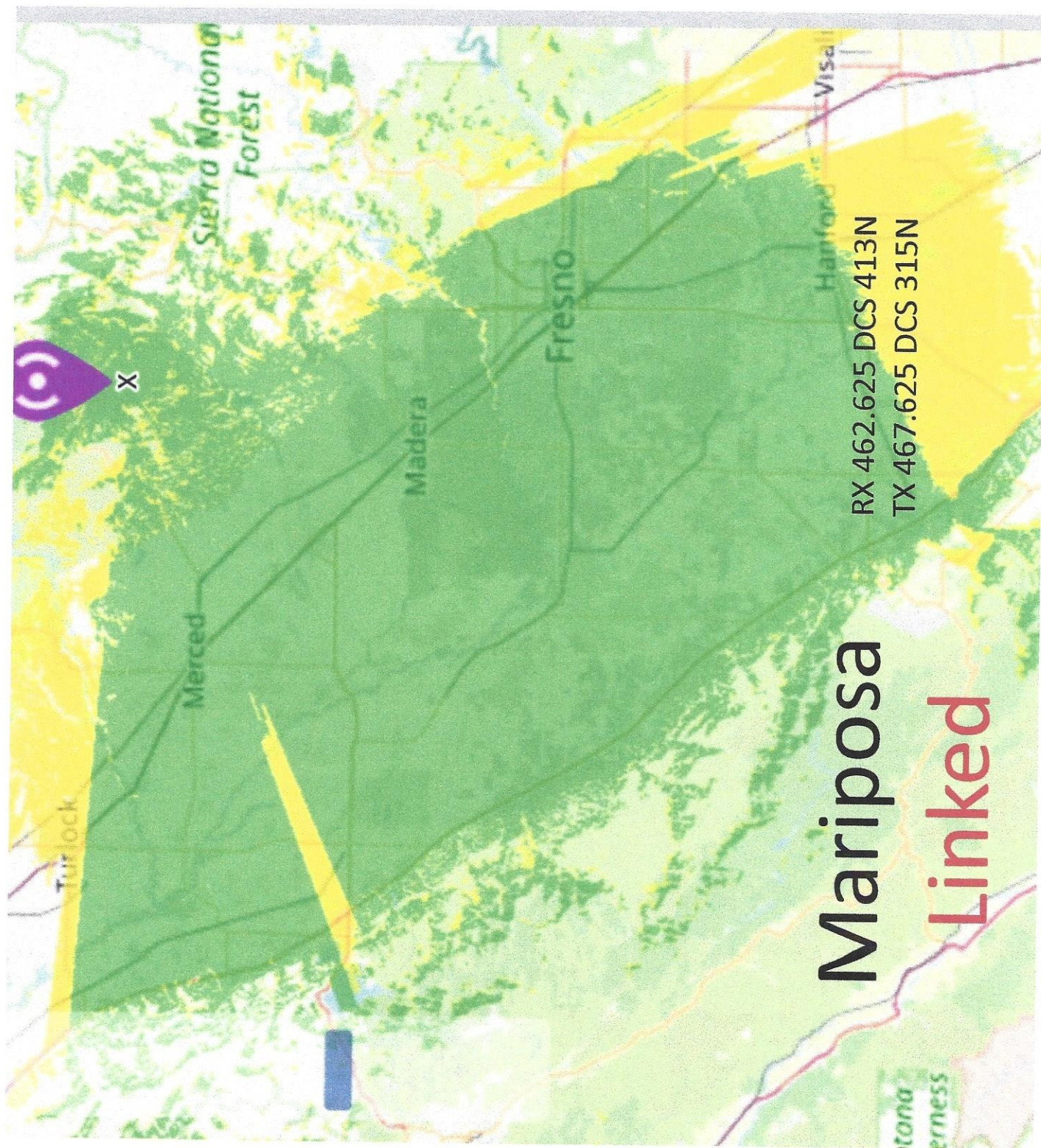
# Stanislaus Repeater

Linked

RX 462.725 DCS 412N  
TX 467.725 DCS 311N





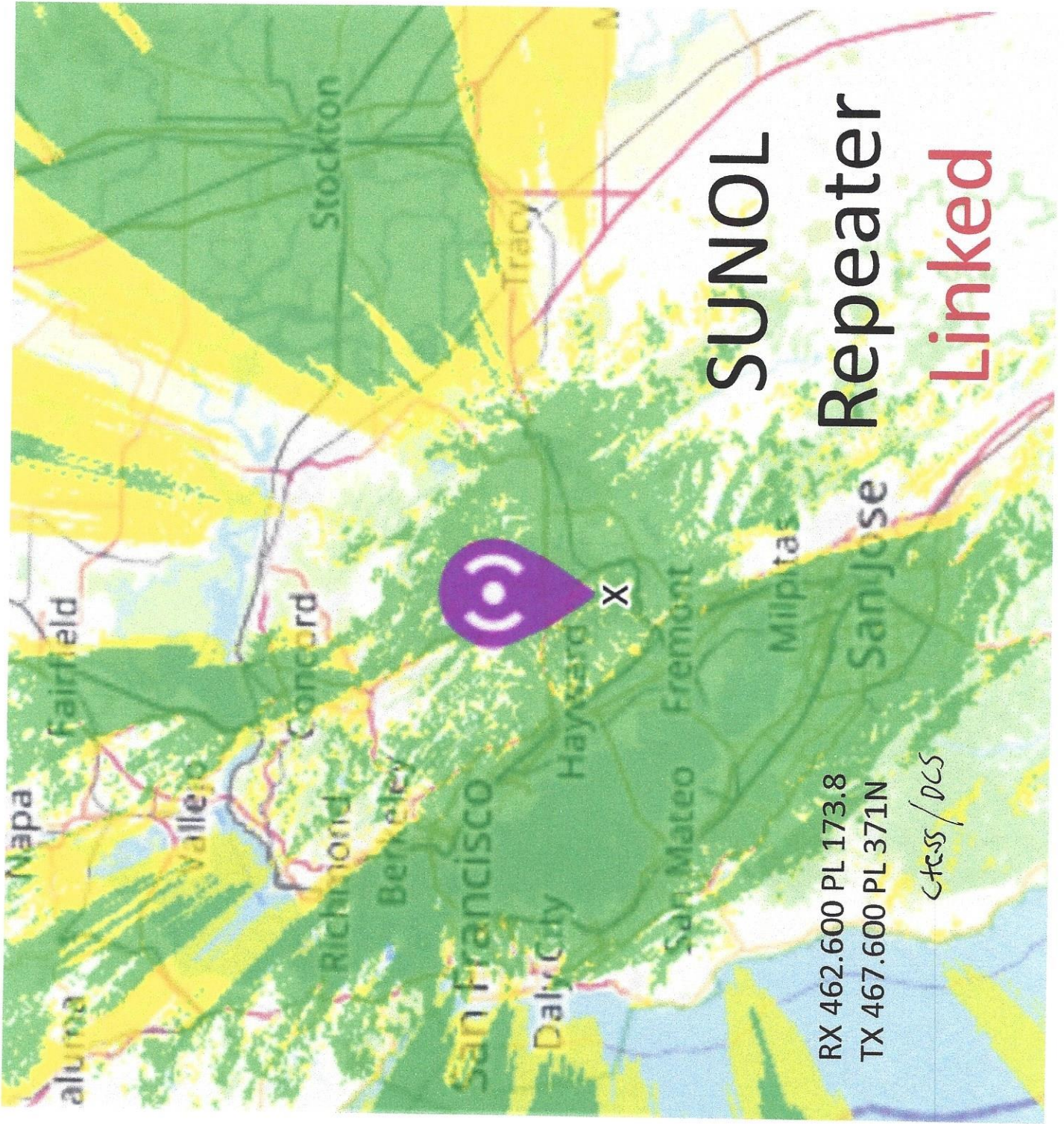


# Mariposa

## Linked

RX 462.625 DCS 413N  
TX 467.625 DCS 315N





# SUNOL Repeater Linked

RX 462.600 PL 173.8  
TX 467.600 PL 371N

*ctss / dcs*



## **G.M.R.S**

### **General Mobil Radio Service**

No Test Required  
Repeater Access

Up to 50 Watts Power  
1 License per Family

Do you have a way to communicate with loved ones when the power goes out? In these uncertain times of civil unrest, internet and cellular outages may become more frequent and for prolonged periods of time. GMRS may be a solution for you.

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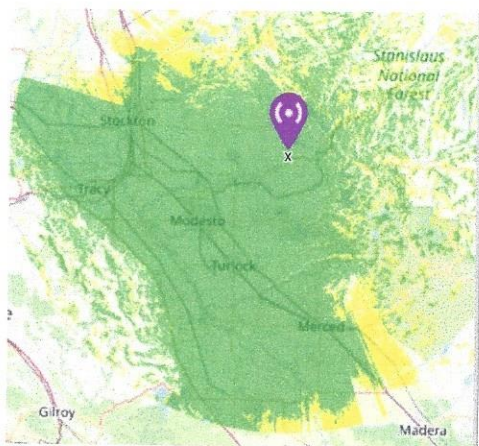
### **Licensing**

**[WWW.FCC.GOV/WIRELESS/UNIVERSAL-LICENSING-SYSTEM](http://WWW.FCC.GOV/WIRELESS/UNIVERSAL-LICENSING-SYSTEM)**

1. Click on "New User Registration"
  2. Write down your FRN # and Password
  3. Return to the above link and click "file online"
  4. Apply for license "ZA- G.M.R.S. Radio license"
- A family license costs \$35 and lasts for 10 Years  
With electronic filing you will receive your license  
Fast, usually within 4 business days.

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If you have questions on radios, programming, coverage areas or installations please contact me. [radar.csm@protonmail.com](mailto:radar.csm@protonmail.com)



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### **Programming**

Receive 462.725 +5.0  
Transmit 467.725

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### **Donations**

<https://gofund.me/af7aba4a>