# Mark, W7MLG's Ham Station in our Great West Sprinter RV

I've built up an HF / VHF Ham station in our RV. It consists of the following:

Scorpion SA-680 Screwdriver Antenna Scorpion Mobile Antenna Website
Elecraft KX3 Transceiver Elecraft KX3 Website
Elecraft PX3 Panadapter Elecraft PX3 Website
Elecraft KPA500 Amplifier Elecraft KPA500 Website

The Scorpion HF antenna is mounted on our RV on the mount described at Mark's RV Mods Site. I also have a 2 meter antenna on the roof that is not shown below.

More details about the installation follow.

The antenna is mounted fairly high on the rear door hinges, with a short cap hat.

With the antenna fully up, the top of the cap hat is still below 13' 6" which is a typical minimum clearance for US overpasses. I still have to take the cap hat off when there are low trees. I uses a the quick disconnects that came with the cap hat. Extras can be found by searching for a "Workman KDT Quick Disconnect". It is designed to break at a specific weak spot. I can confirm that after hitting a tree and breaking off the quick disconnect, there was no damage to anything else. A replacement was about $10 US.

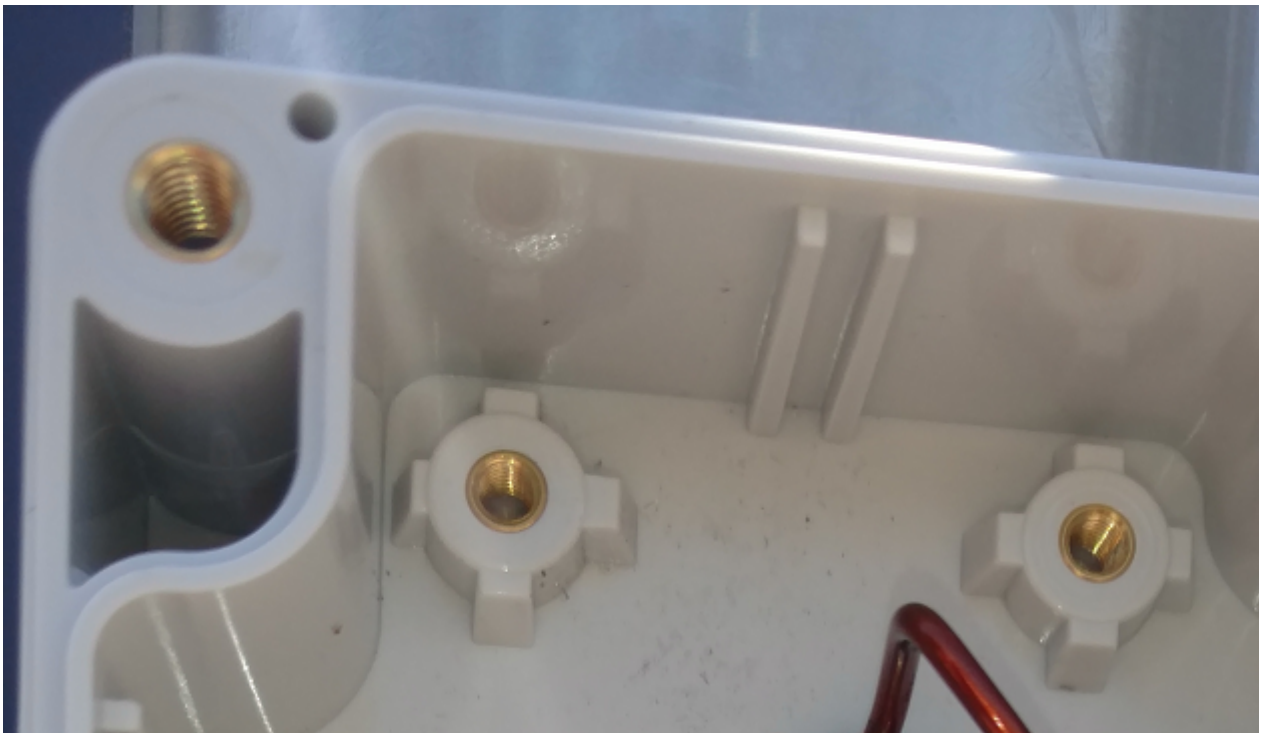
The feedline and control cable go under the RV. There is also a tinned braided strap that bonds the base of the antenna and various parts of the mount together. It is attached to a bumper mounting bolt. The feedline, control cable and ground strap all go to an entrance port under the RV.

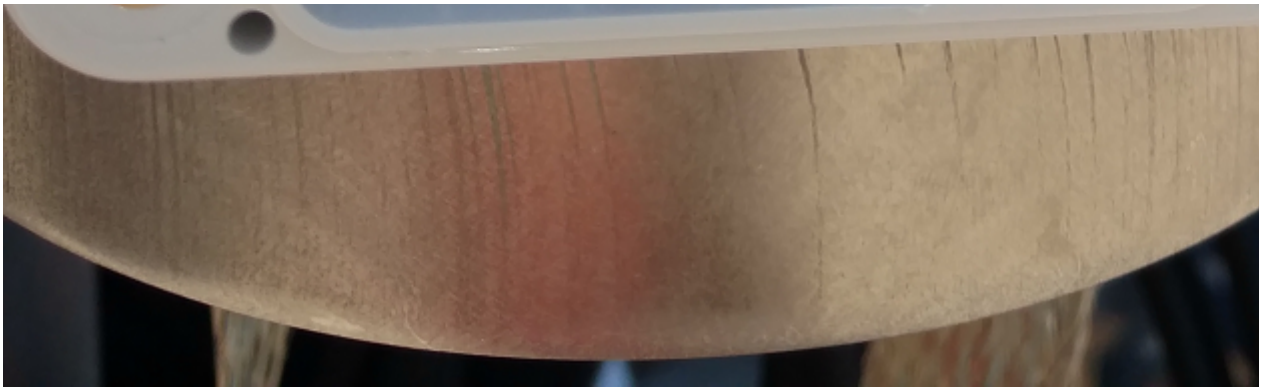
A closer look from the rear shows the antenna base and the wiring to it. The mount has a nice personalized nameplate.

Here is a close up of the feedline connection.

There are ferrite cores on both the coax feedline and the antenna control cable. I generally followed the information found at Alan, K0BG's Common Mode Current Site Page. Alan's whole site is a great resource. I have a Vector Network Analyzer. I chose the cores (Mix 31) and number of turns to maximize the impedance while keeping the self resonance above 52 MHz.

The gray box is a shunt coil that helps to match the antenna. I had to expand the coil somewhat to lower the inductance for the best match. It is not pretty but it works well, less than 1.2:1 SWR from 40 to 10 Meters.





The feedline, control cable and ground all go through a plate under the RV. The control cable and feedline go through waterproof connections.

Inside the rear of the RV, the lines connect through the same plate the DC power cables from the house batteries to the 2 kW inverter go through, and are tied to a central ground point for all the equipment in the rear.

In the rear of the RV, the KPA500 amplifer is mounted just under the seat. The seat slides forward and folds down, so care was taken to not interfere with any part of the seat in any possible position. The amplifier is powered from the RV AC power system, which can be either the Inverter, Generator or Shore Power. I could have used a mobile amp, but I had this amp, and the RV has AC power at all times, so that is what I used. With 15W out of the KX3, the KPA500 provides about 220W.

There is an Alpha Delta lightning arrestor and the DC power cables for the kX3, PX3 and antenna control feed to the right of the picture.

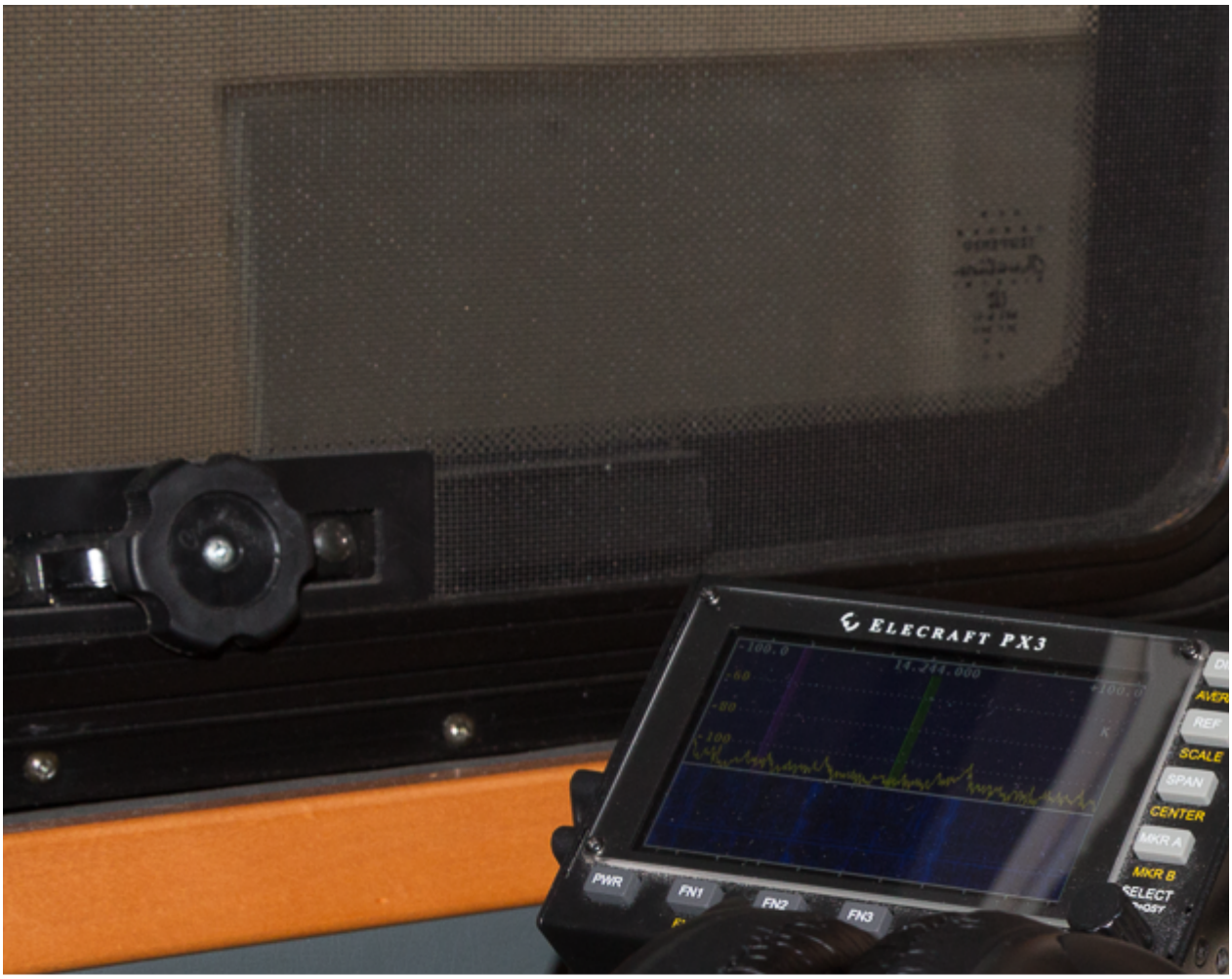
The front of the Amp is easily reachable under the rear seat.

The amp sits on a shelf right on top of the inverter. With the bonding and a few ferrite cores, the noise is not too bad. There is way more RFI from every vehicle and power line around me. There does not seem to be any effect on vehicle or RV electrical systems.

The KX3 and PX3 are mounted on a custom made table that fits onto a standard RV table leg.


YAMAHA

The KX3 and PX3 are on Side KX mounts from Gems Products. The rocker switch on the lower right is the antenna up/down manual control. The SMA connector on the right of the KX3 goes to the VHF antenna, but it is not permanently connected yet.



Here are some of my other sites:

Modifications to my RV, including solar power and extra storage:
https://sites.google.com/site/marksrvmods/
My Controleo2 based SMT Reflow Oven:
https://sites.google.com/site/markscontroleo2build/
My TS-590S MODs including a buffer board install for a panadapter:
https://sites.google.com/site/marksts590smods/
My TCXO Boards to replace the SO-3 in Kenwood TS-590 radios:
https://sites.google.com/site/markstcxo/
An explanation of various TCXO Characteristics in Kenwood TS-590 Radios: https://sites.google.com/site/markstcxomeasurements/
Modifications to allow use of an external clock in a Perseus SDR:
https://sites.google.com/site/perseusmods/
How I use Spectrum Lab Software to do frequency measurements:
https://sites.google.com/site/spectrumlabtesting/
Pictures I took of the 2017 Total Solar Eclipse from Menan Butte, Idaho:
https://sites.google.com/site/marks2017eclipsephotos/

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