

10GHz EME Project

Doug Millar K6JEY

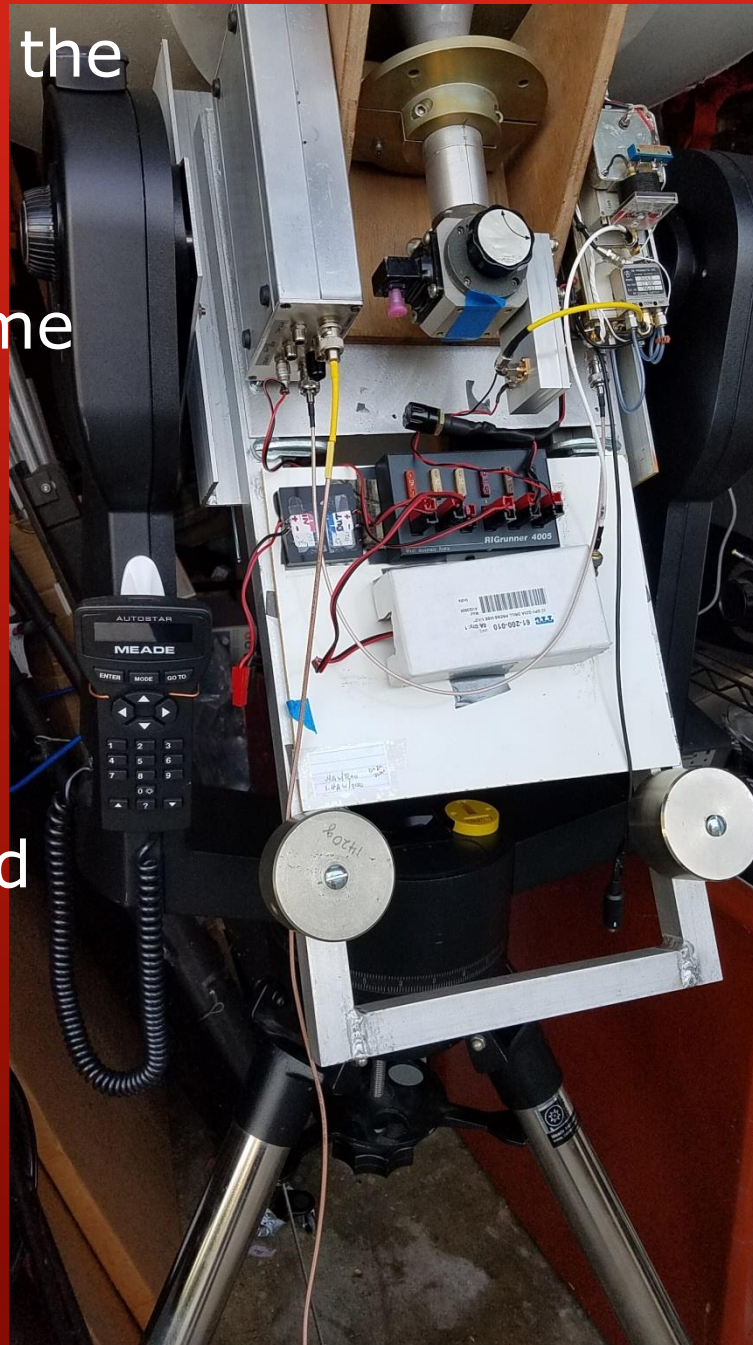
It all started with the dish



30", cassegrain, custom feed and 36db gain.

Clutch in on the Left.

Dish and frame
Mount flush
with
Channels
attached
To the fork
arms.
C clamps hold
frame
And channel
Together.

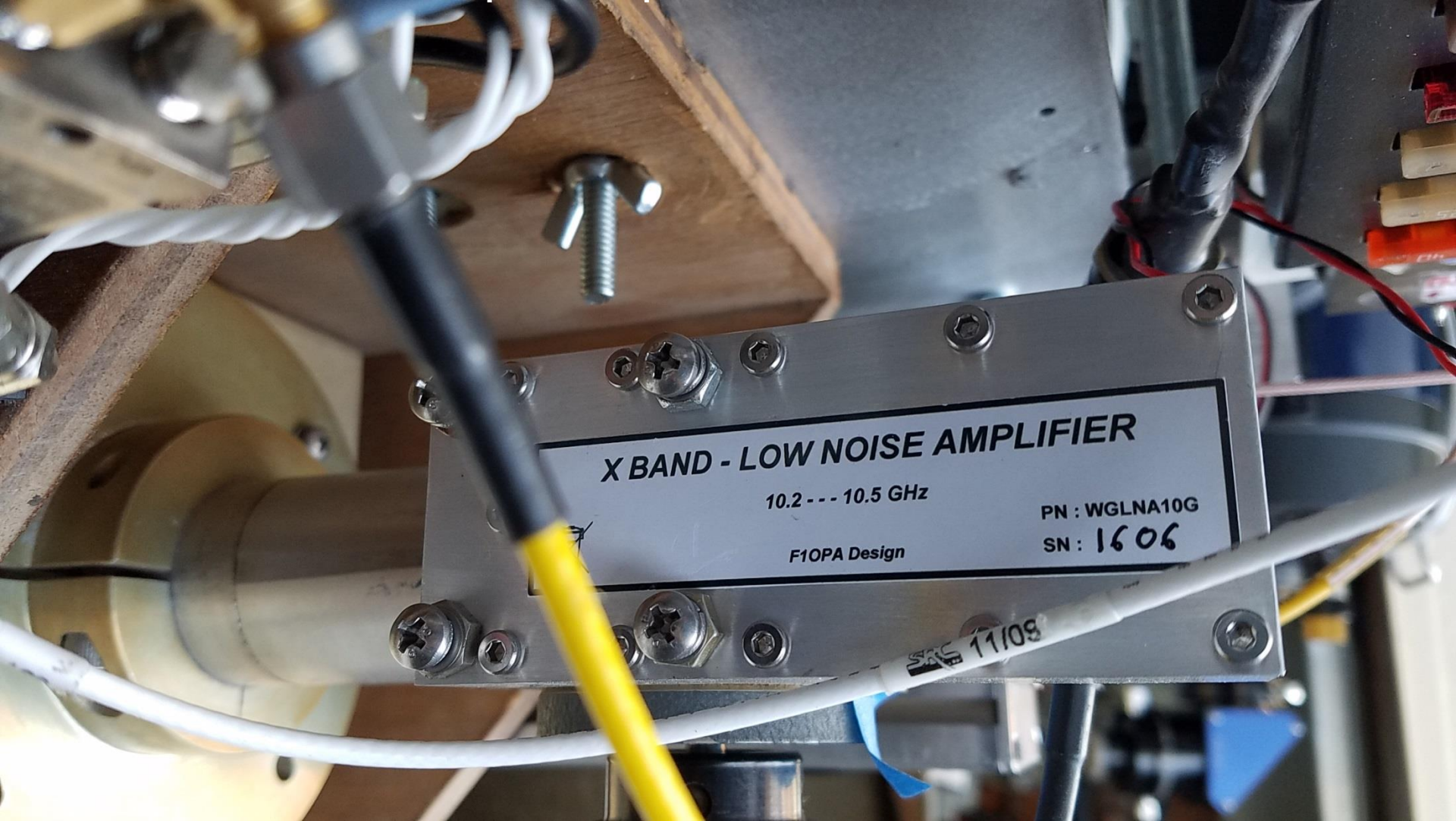


Balance is so good
That small weights
Are used. But, very
Sensitive to balance.

Counterweights in
Slots

Hand paddle
mount

Great preamp from F1OPA .6db NF



X BAND - LOW NOISE AMPLIFIER

10.2 --- 10.5 GHz

F1OPA Design

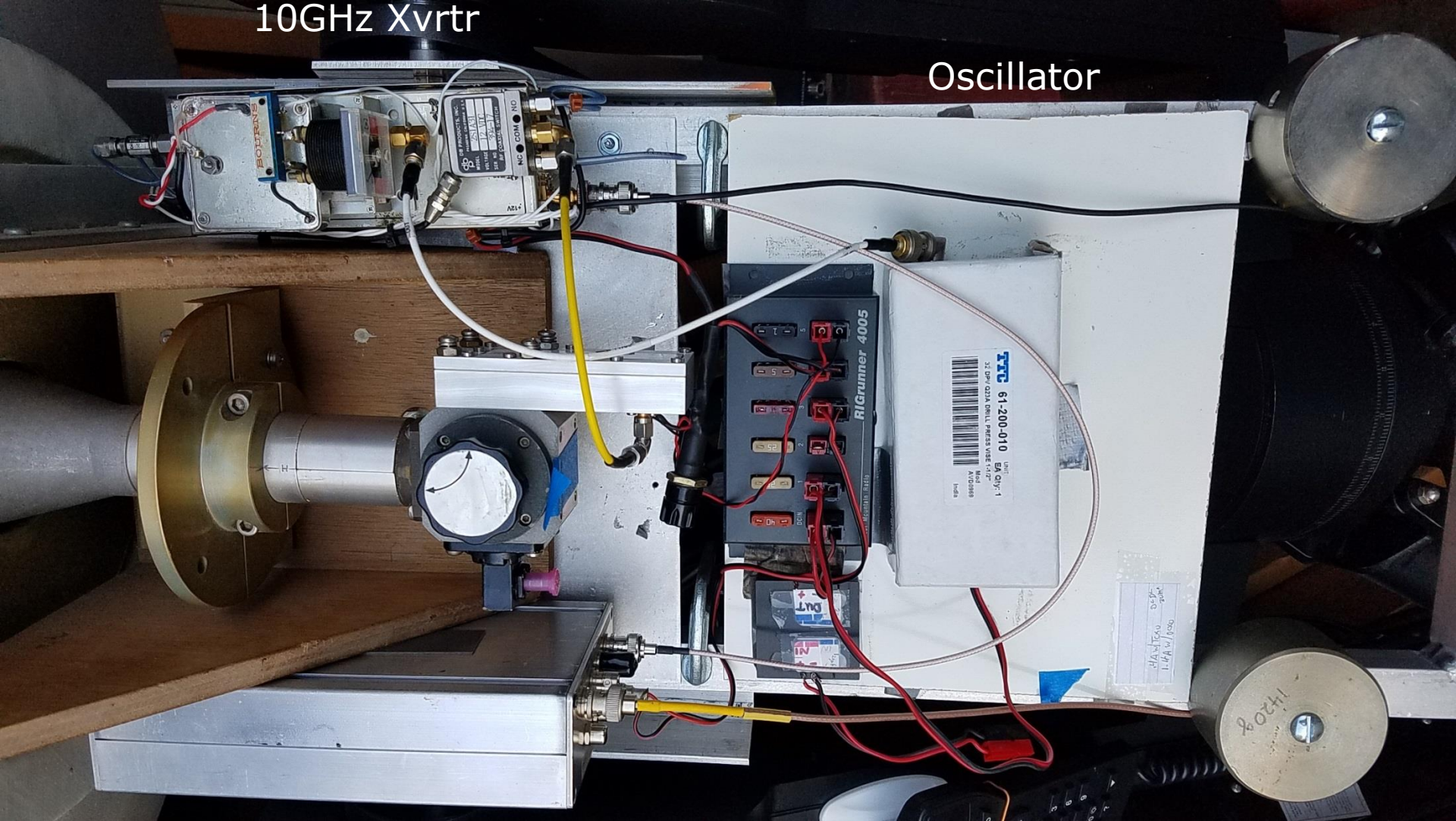
PN : WGLNA10G

SN : 1606

SAC 11/09

10GHz Xvrtr

Oscillator



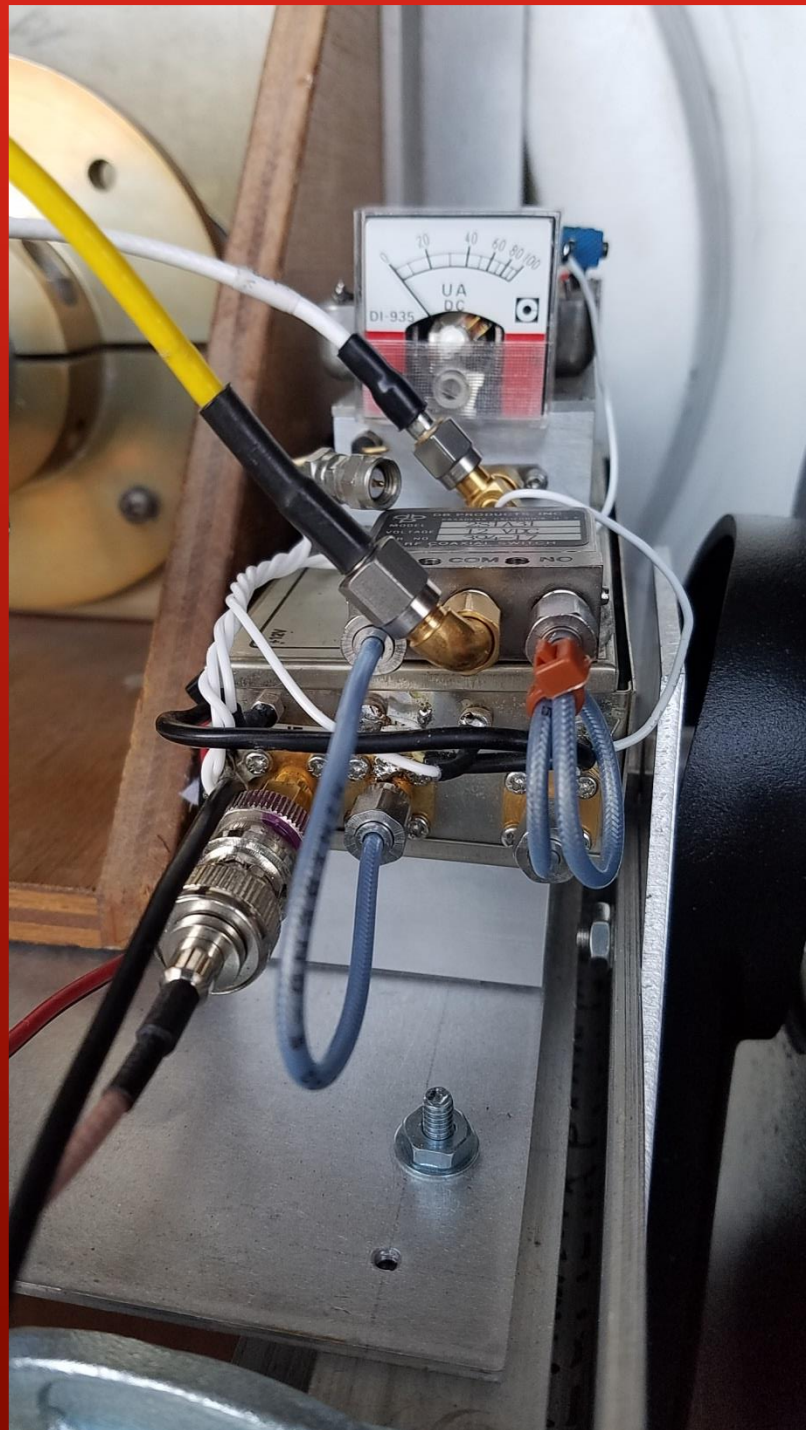
2nd Converter

DB6NT xvrtr

JMI PLL

Tested TCXO

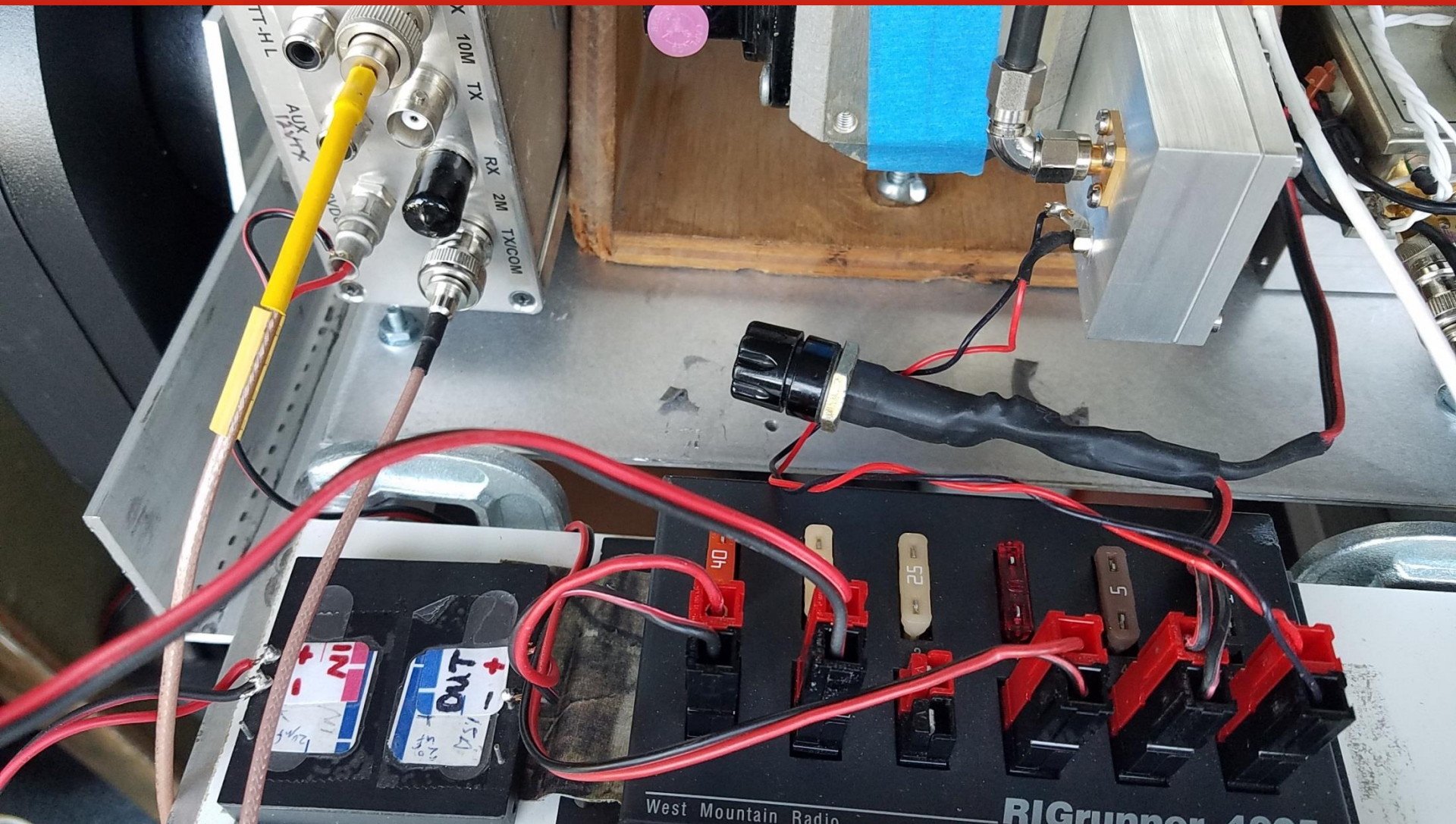
Power meter is
Handy.



DC Power

- For testing ran on batteries
- Dc-dc converter for 12v stability with LiPo batteries.
- Anderson Power Poles and junction box
 - Easy to connect/disconnect
 - Easy to monitor current or voltage.

2nd conversion transverter



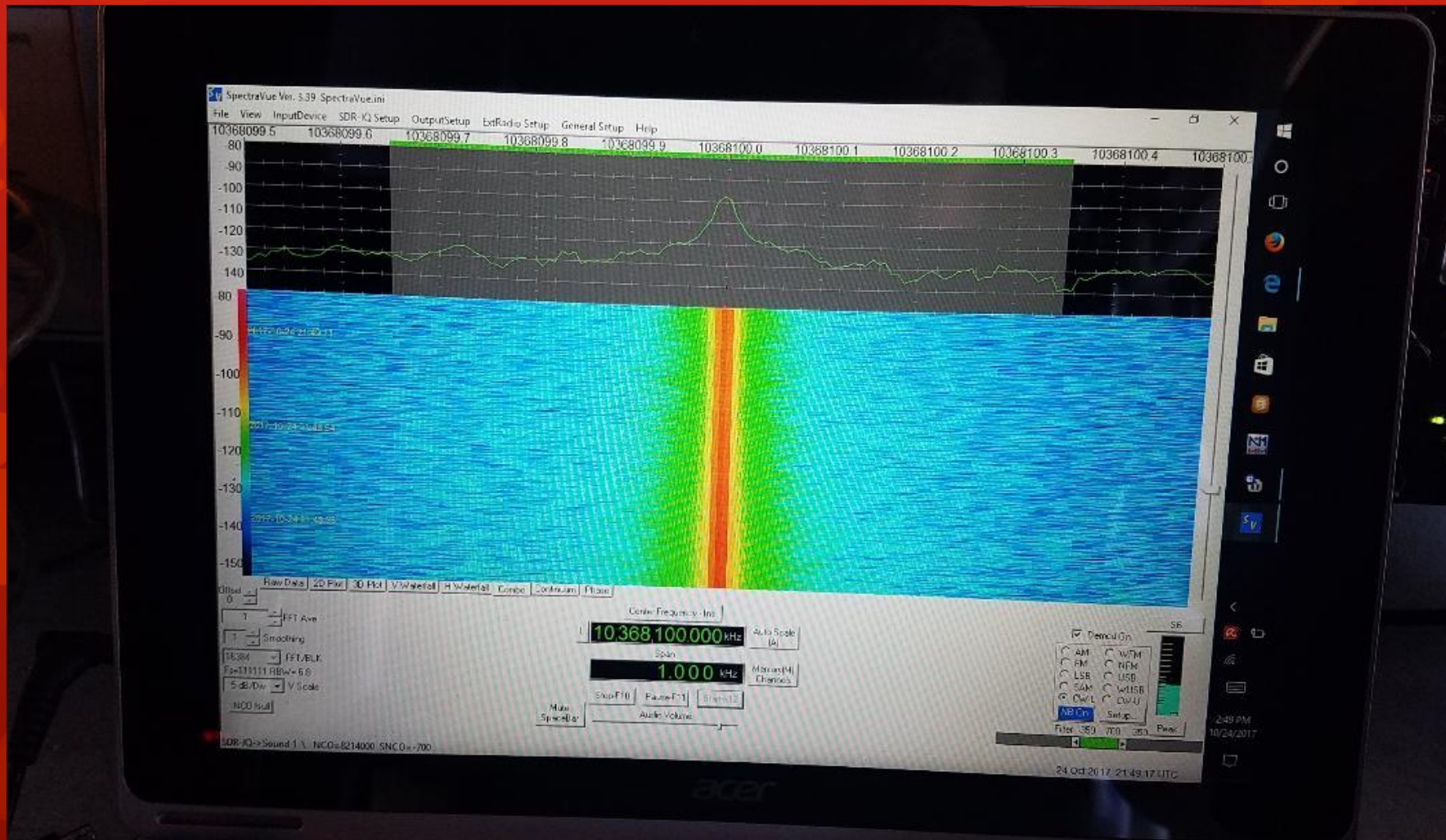
DC/DC converter

Power distribution

OCXO with switching power supply and buffered output.
Very stable. (10-12th.)



10GHz reference signal from GPS stabilized sig gen



Mount

- Meade LX90 mount with GPS
- Power- Internal battery or 12v 400ma
- Mount has 10 arc second accuracy
- Lunar tracking
- Simple, quick and cheap.
- Can be used with a computer

From this- Meade 12" LX90

Computer controlled
40k Object data base
Auto tracking
Very portable
Easy to align and very
accurate
Internal GPS for
position and time.
Battery or 12v
Can carry 70lbs.



To this- Light weight dish and electronics tray.

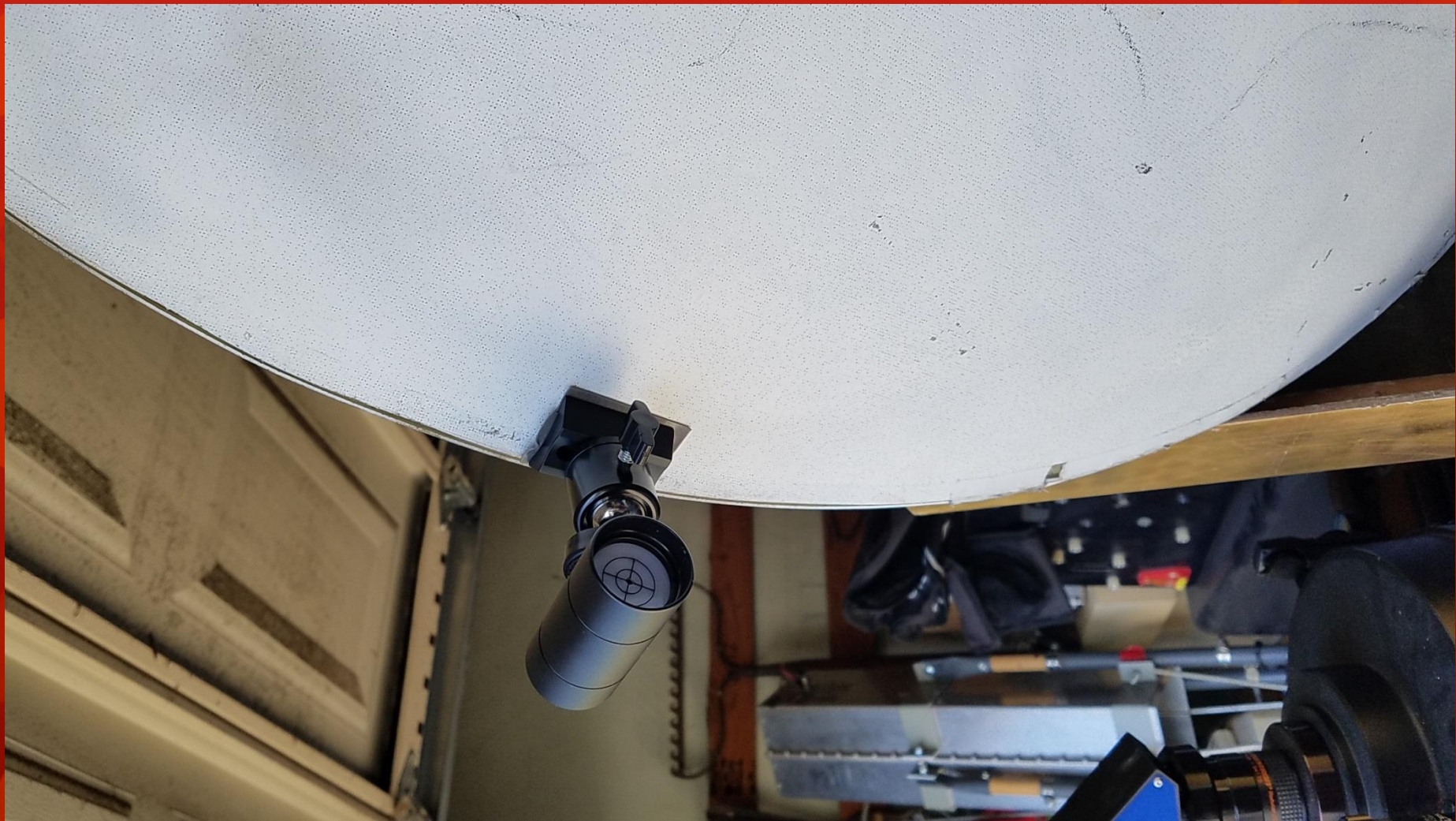


Other "Go To" mounts probably work as well

Site Survey

- Calculate where the moon will be at the most favorable part of the year and month.
- I plan on 10deg-50deg EL range in the East to SSW.
- The radio does not need to swing through the mount.

Finder scope. Sub degree accuracy.



Mount set up with levels. Note battery Box and AZ setting circle.



Outputs for serial
Data and guider.



Note-

box frame

C clamps mount
radio frame to
Fork arms

Mount to radio
Interface must be
At center of pivot.



Very portable
Dish has two
screws
Radio has two C
clamps
Mount has one
bolt to
the tripod.

Back end setup- K3, SDR-IQ, Signal link and computer.
Everything can be run on battery.
Reading 10.368.100MHz



Elecraft K3 Notes

- K3 has 8MHz IF output for SDR IQ and sends data to it.
- Transverter menu that selects band, freq. compensation power output level and port.
- Reads the frequency the xvrtr is tuned to.
- Output power can be finely tuned.
- K3 memorizes all settings per band.

General Dynamics GD8200 (\$250)

