

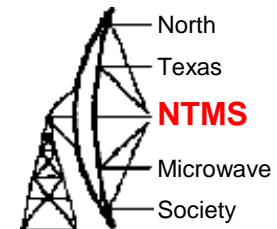
10 GHz Transverter From Surplus Parts

HAMCOM 2013

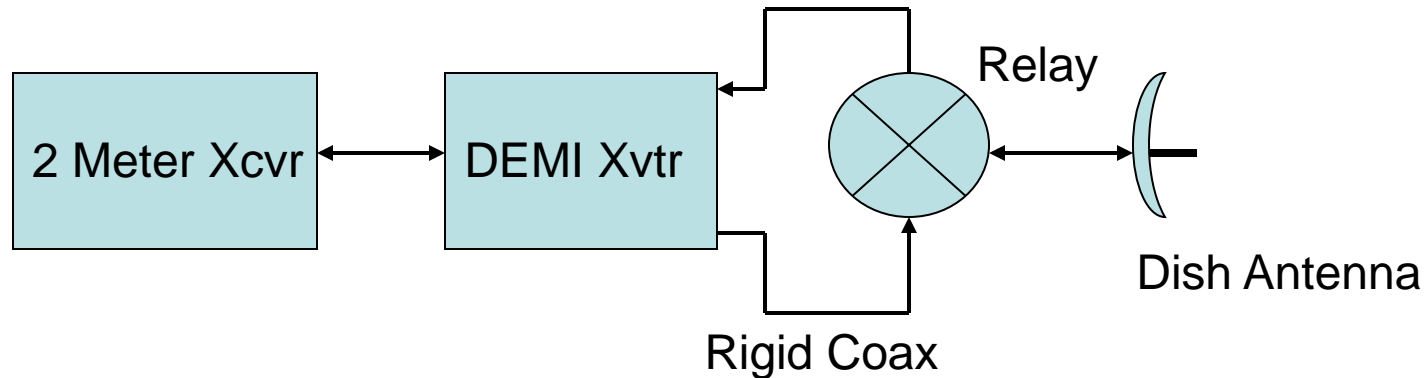
Plano, TX

Bob Gormley WA5YWC

Hamcom 2012 Presentation



Basic Components



- **Down East Microwave 10 GHz Transverter Kit**
- **2 meter I/F transceiver**
- **Relay and rigid coax**
- **Dish or Horn antenna**

2 Meter Multimode I/F Radio

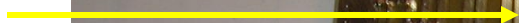


- FT-817
- FT-857
- IC-202
- FT-290
- IC-251
- TS-700A

- My choice is the ICOM IC-706. Affordable and readily available
- 10 Watts out on 2 meters, adjustable to 0.5 watts out
- Built-in keyer, Accessory jack for transceiver interface

DEMI Transverter Kit

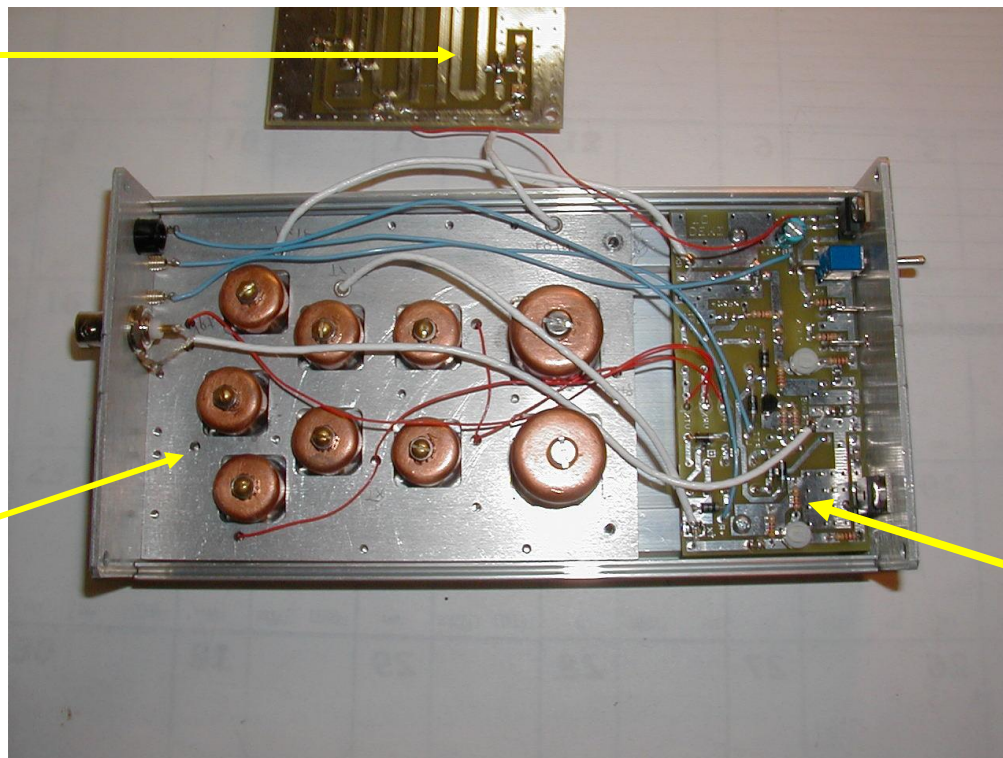
Osc/multiplier



Pipe Cap Filters

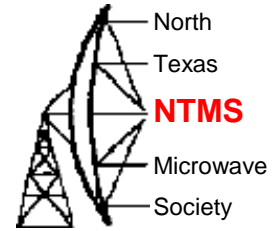


DC Control Board



Top View

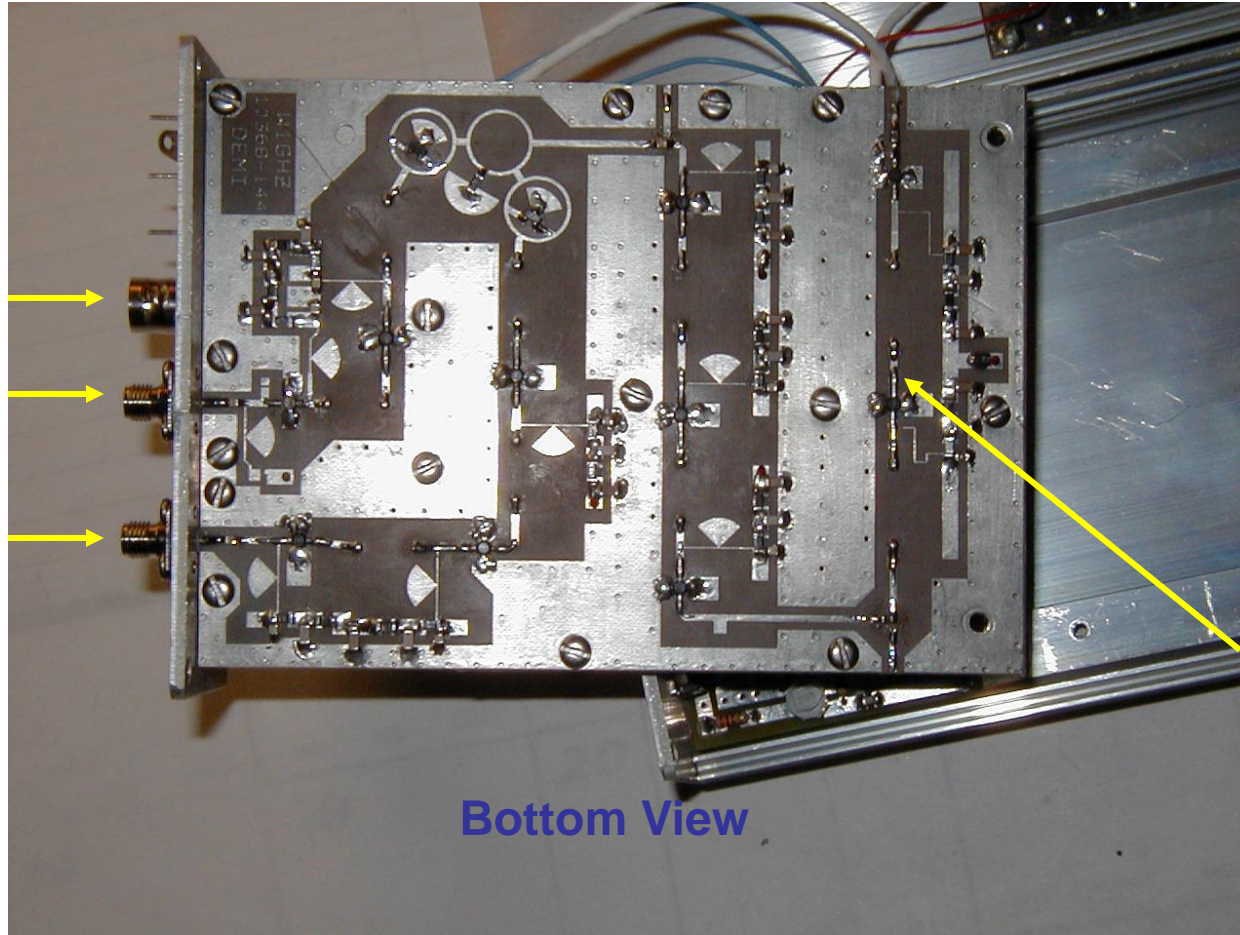
DEMI Transverter Kit



144 MHz in/out

10 GHz in

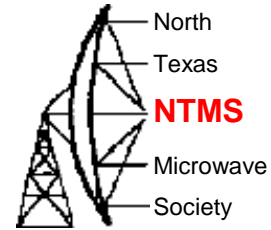
10 GHz out
(10 mW)



Bottom View

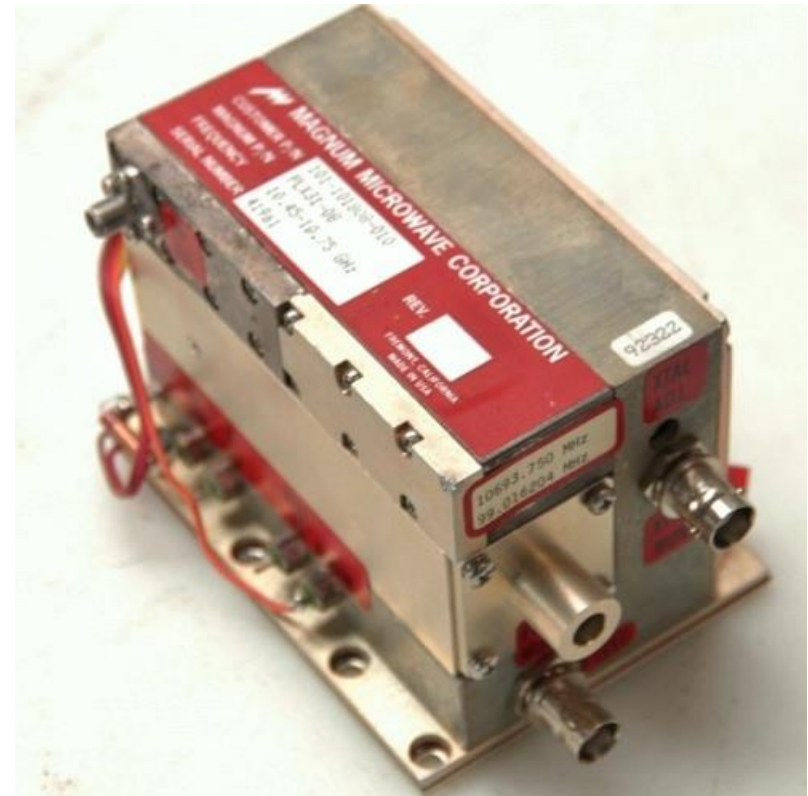
Surface mount construction

Basic Building Blocks for a 10GHz Transverter

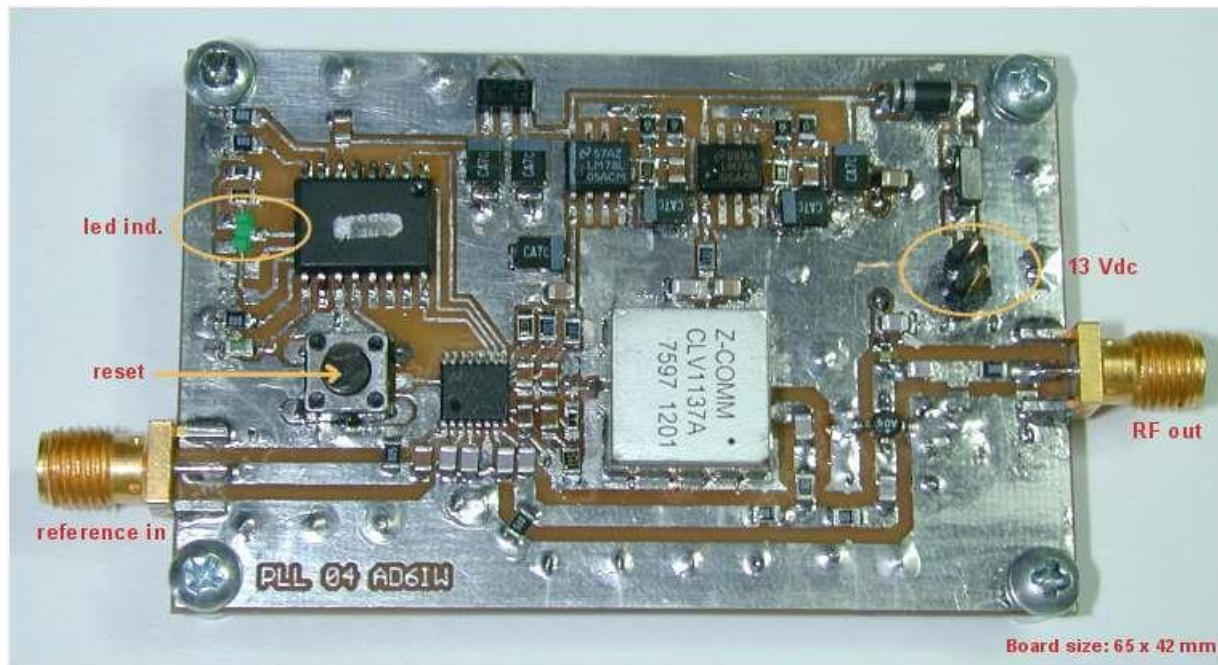


- Local Oscillator
- Frequency multiplier
- Power Divider
- Mixer
- Isolators
- Filter
- Low Noise Amplifier for Receive
- Power Amplifier for Transmit
- Transmit/Receive Relay
- Hardline Coax with connectors

Brick Oscillator

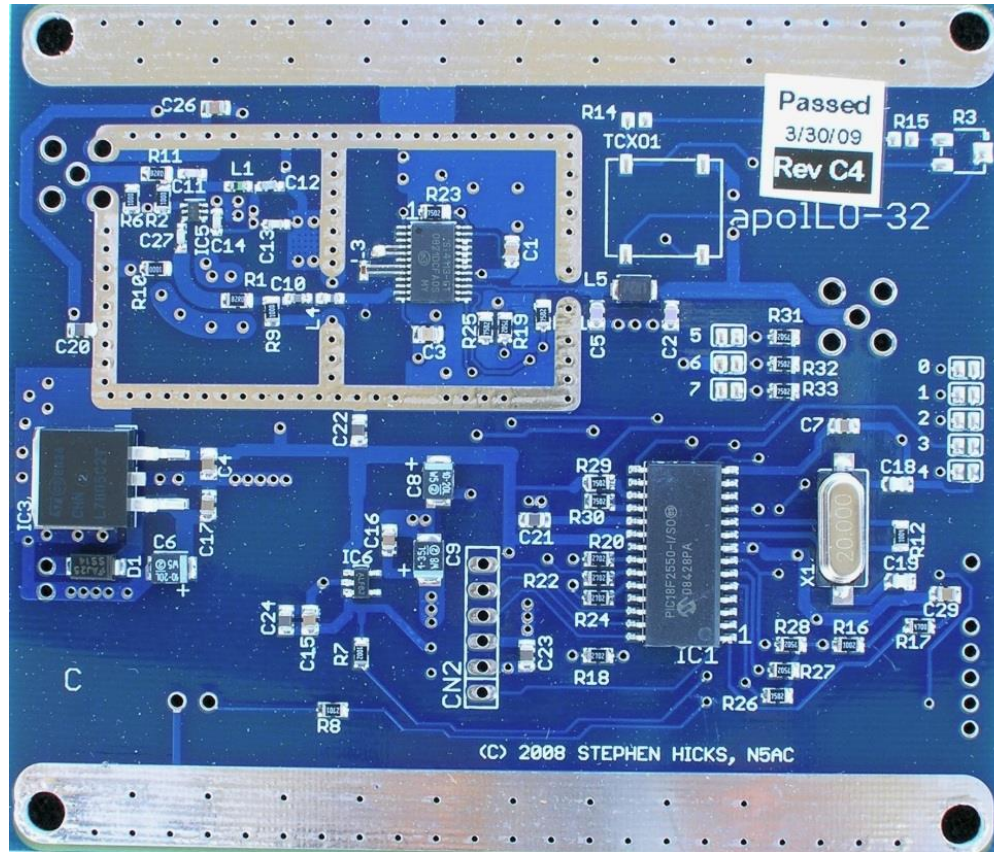
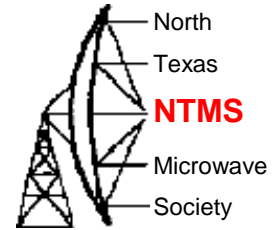


AD6IW μ Wave PLL LO



Available from Goran Popovic, AD6IW
ad6iw@ad6iw.com

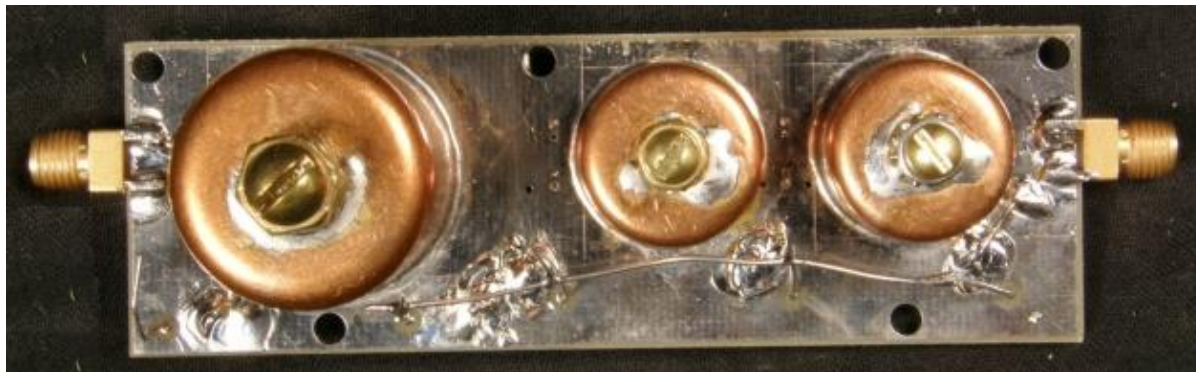
ApoLO A32 Frequency Synthesizer By Steve Hicks, N5AC



Available from Down East Microwave.

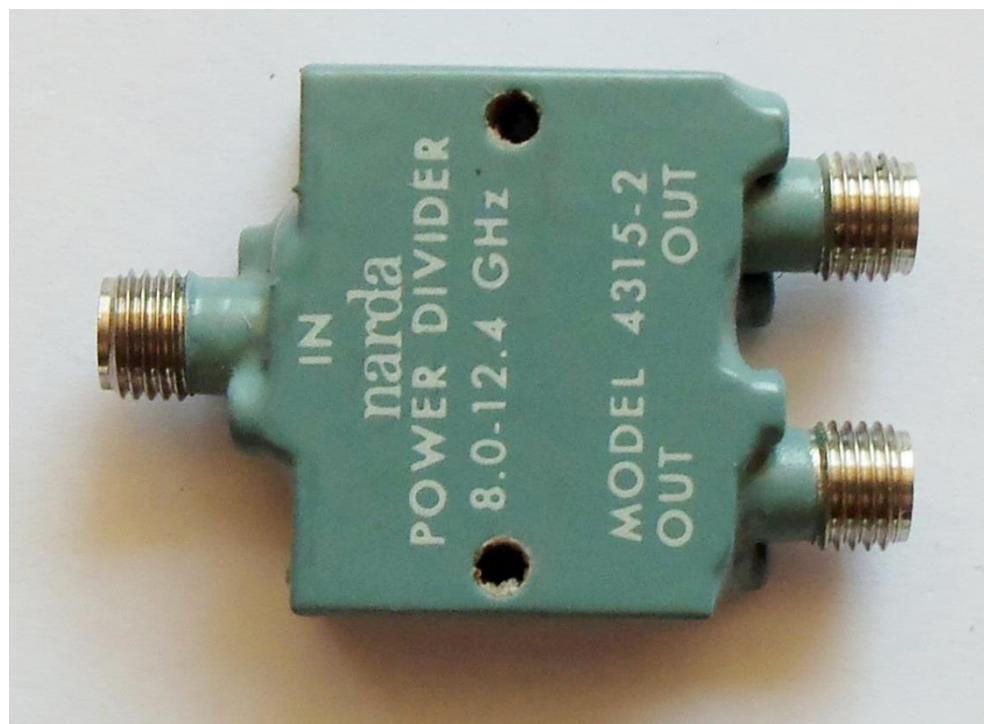
Frequency Multiplier

By
W1GHZ

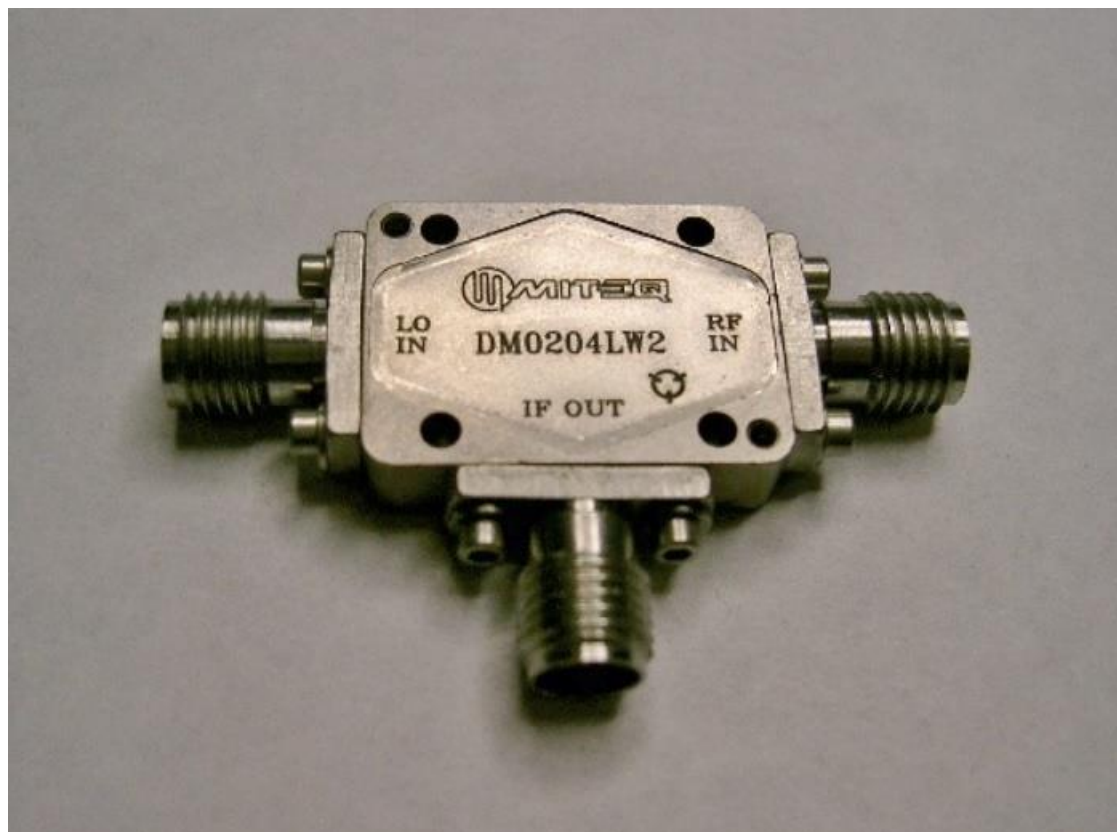


Personal Beacon for 10GHz by Paul Wade, W1GHZ
Contact Paul at w1ghz@arrl.net
www.w1ghz.org

Power Splitter



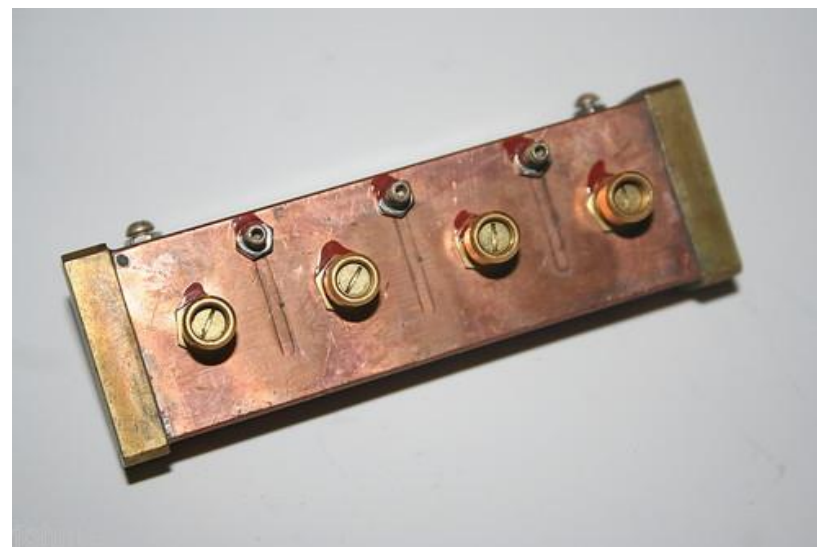
Microwave Mixer



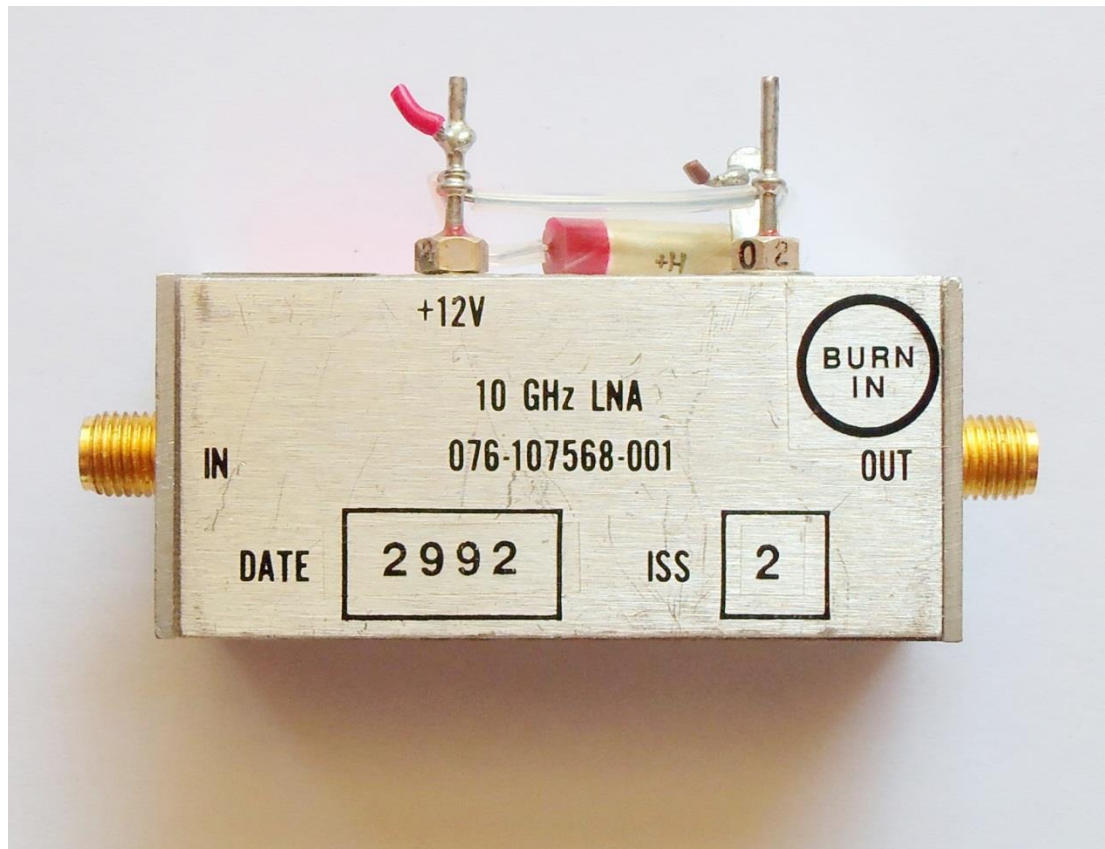
Microwave Isolator



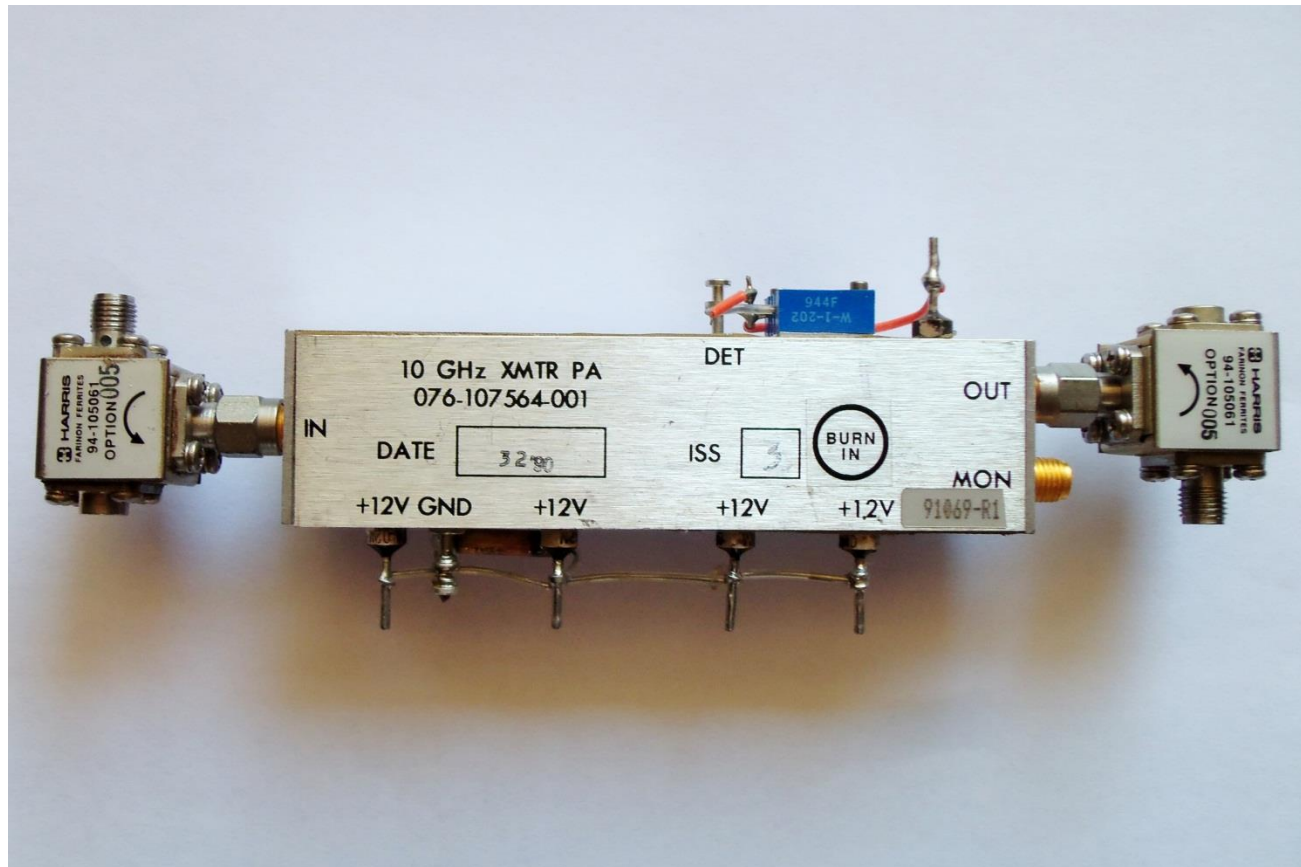
Waveguide Filter



Low Noise Amplifier for RX



Power Amplifier for TX



Relays



SPDT 28 VDC
0-18 GHz - SMA

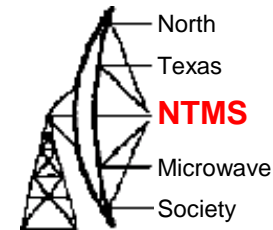


Transfer Relay
0-18 GHz - SMA

Hardline Coax



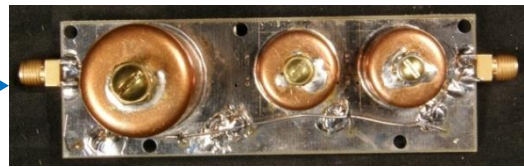
10 GHz Transverter With Connectorize Parts



1136 MHz LO

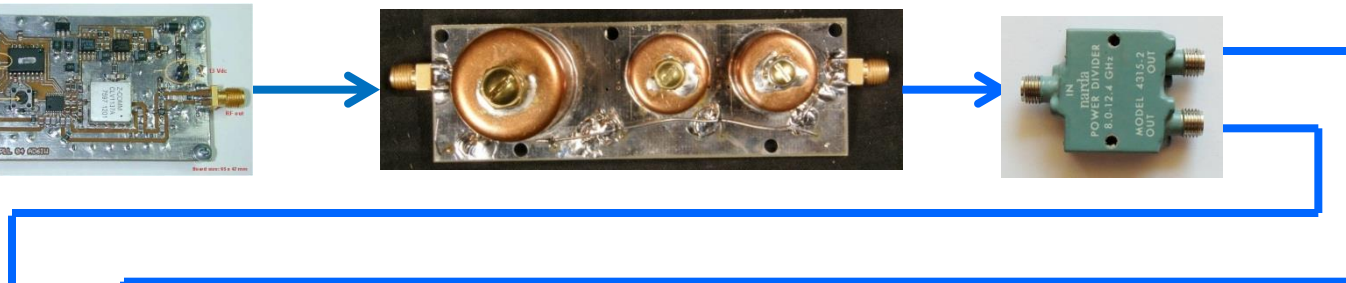


X9 Multiplier



10224 MHz

Pwr Splitter



RX Mixer



WG Filter



A

Dish Ant



2M I/F



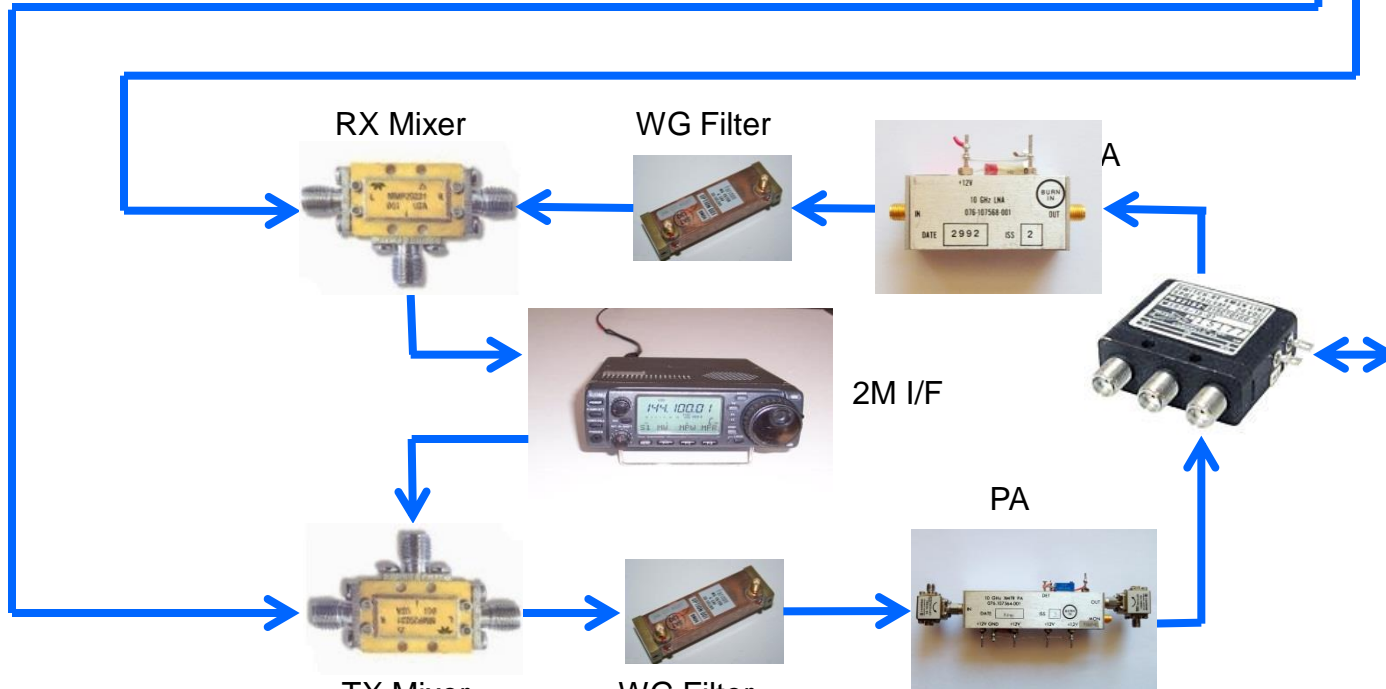
PA



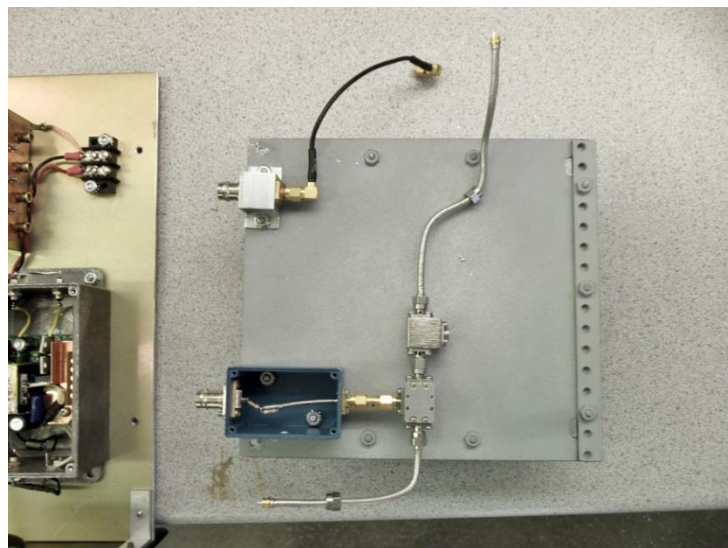
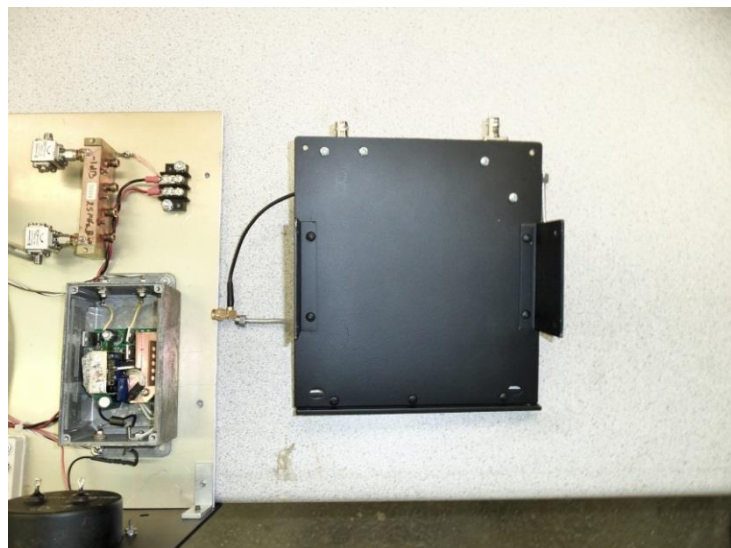
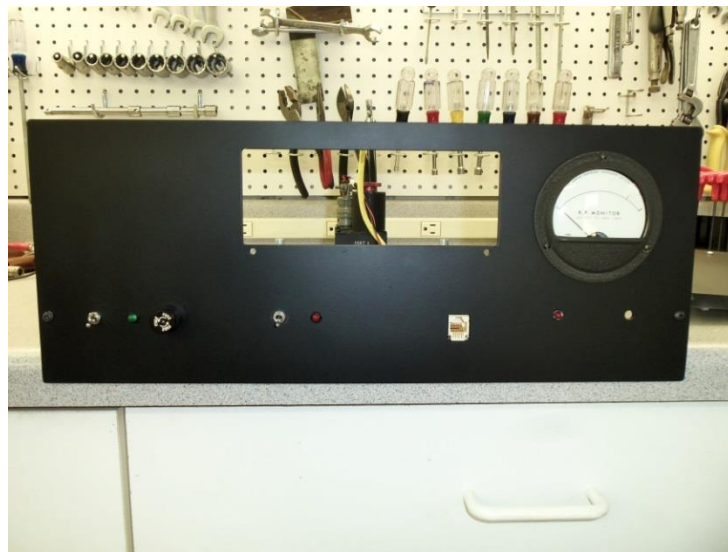
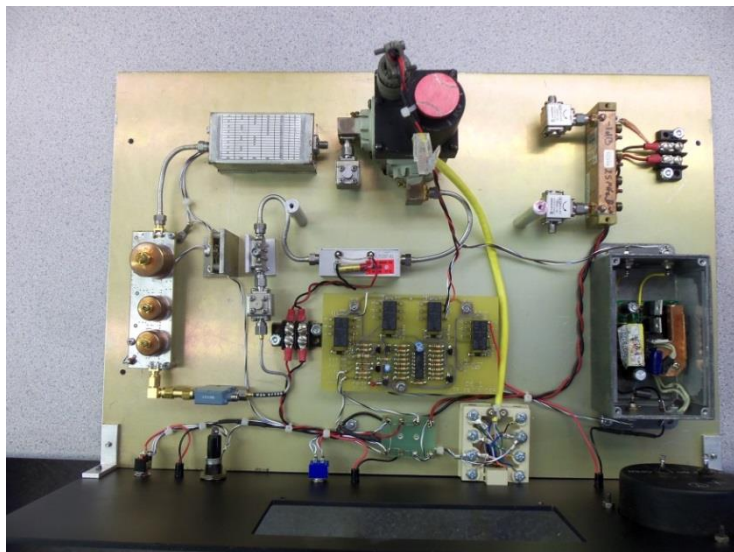
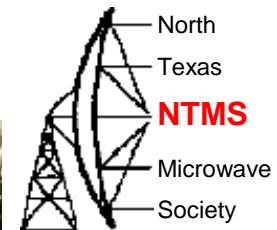
TX Mixer



WG Filter



Revision 1



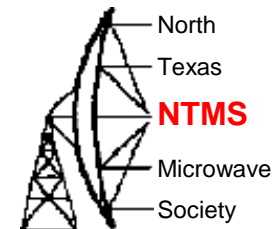


Back View

Top View

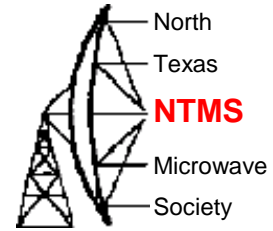


Revision 1 with TWTA

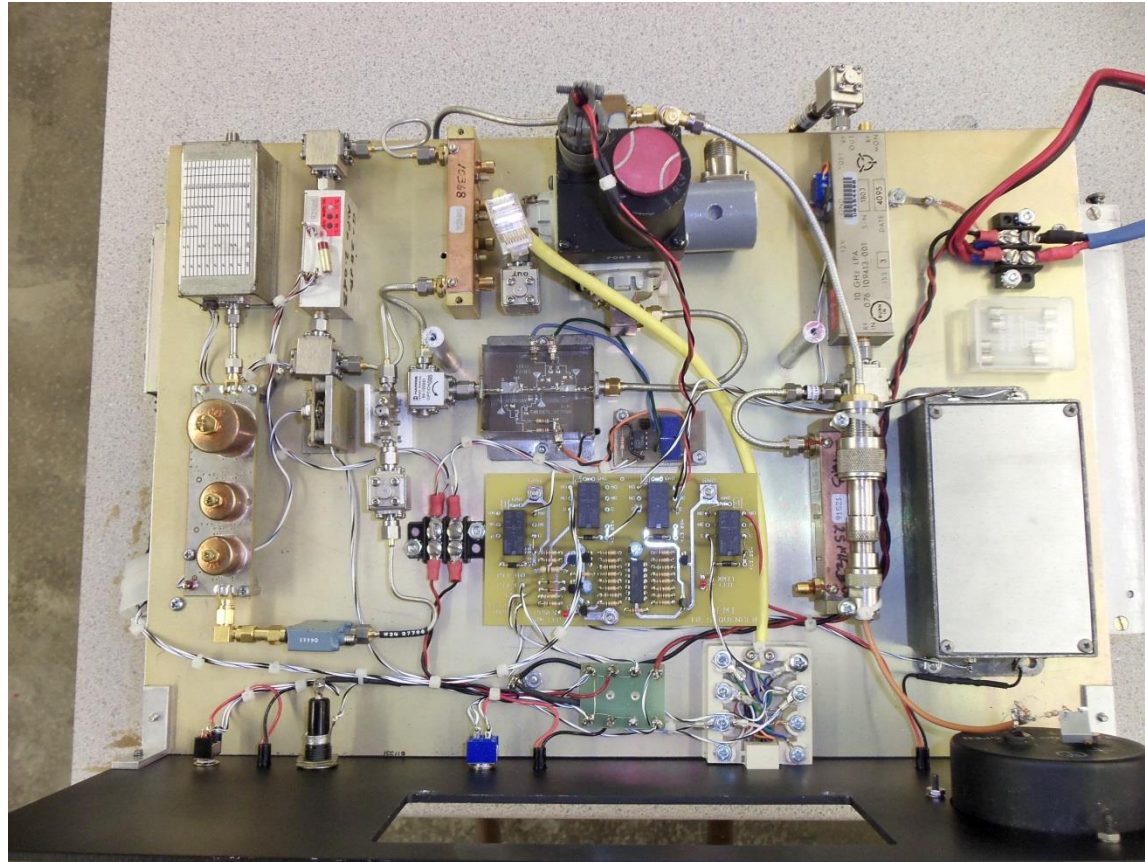


10 GHz and Above Contest

September 2012

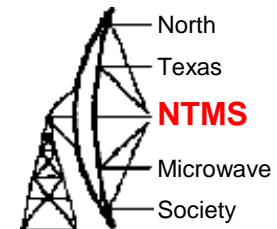


Revision 2

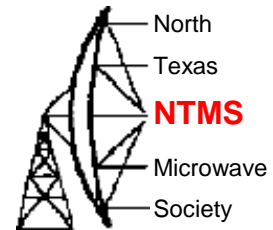


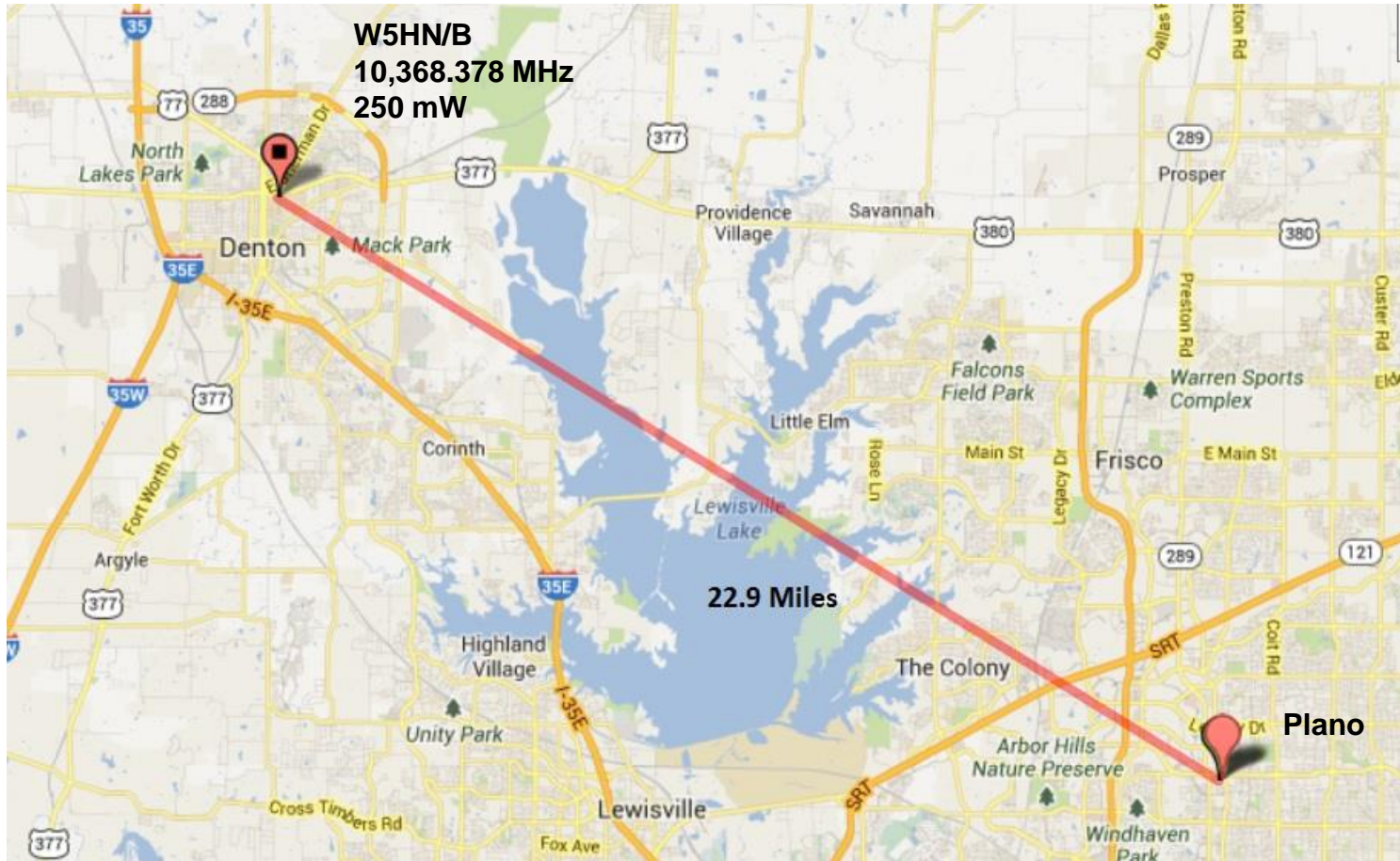
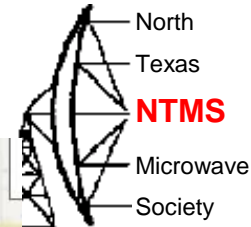
Added second stage pre-amp, filter, low power PA, power monitor circuit.

Revision 3: Integrated Dish and heavy duty tripod

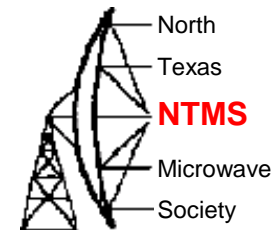


Monitoring 10 GHz beacon in Denton, TX from Plano, TX (22.9 miles)





104_0426.MOV



www.ntms.org