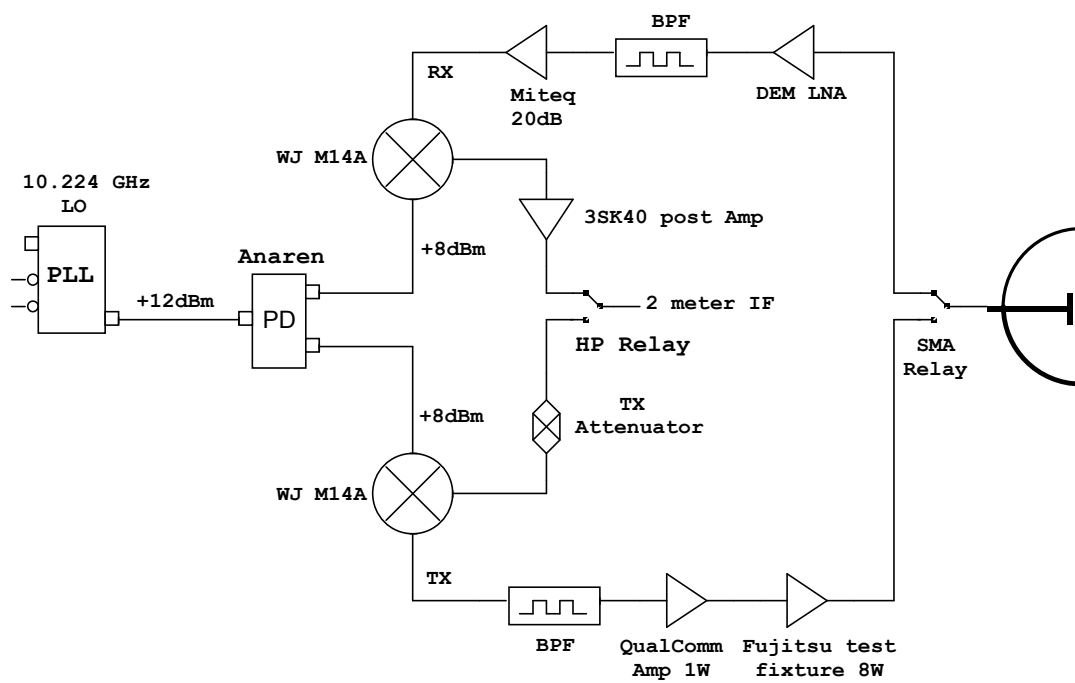


10 GHz Transverter

basics from KB3XG Cheese Bits April/May 1995
built by WA3JUF 1998



10 GHz TRANSVERTER, "All the Boring Details", Part 1

de: John, KB3XG

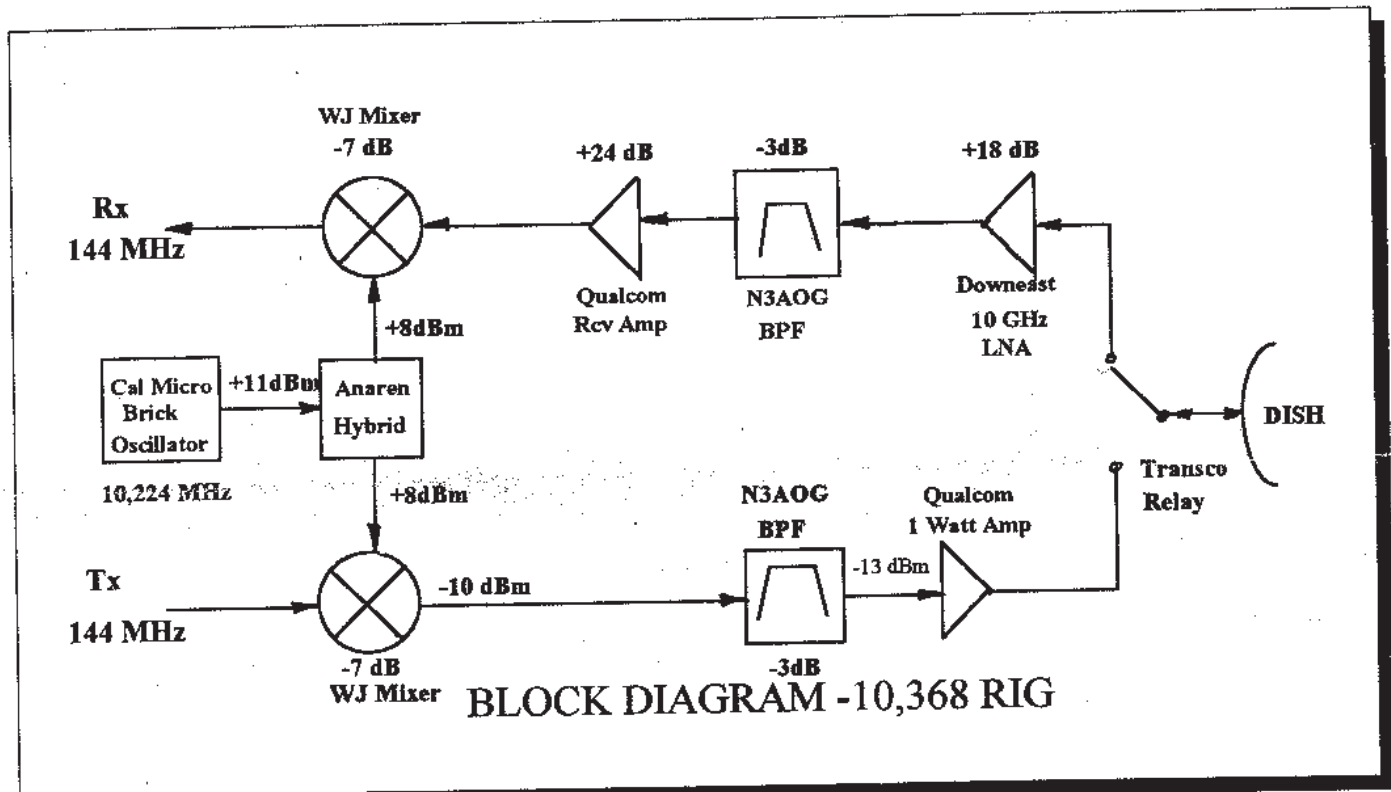
I'm sure by now everyone has heard about those 10 GHz surplus boards available through Chuck, WB6IGP. The few articles that have been published describe a few tuning steps, making you think that this will be as easy as a no-tune transverter. Maybe it's me, but I did not find this to be the case. It was a lot of tedious work-but an economical way to get on the band.

WHAT YOU GET FOR \$88:

These boards were manufactured by Qualcomm for a commercial user at 14 GHz. I ordered the complete package. (PA [with cover], LNA [with cover], synthesizer, power supply, & heat sinks). Chuck made a deal with Qualcomm to saw the heat sink in sections and return the unused pieces (QualComm doesn't want to see this equipment "re-enter" the market). Chuck takes care to keep everything you will need for ham use intact. I didn't use the synthesizer, but salvaged chip caps and other parts off of this board during the project.

SYSTEM DESIGN:

I was advised by a few of our New England friends that the on-board mixers and LO splitter could not be used due the difference in frequency (Make sure you save these microwave diode goodies for future experiments). I decided to go with the standard Pack Rat design.



LO:

The California Microwave brick oscillator I used came with an odd ball waveguide flange. I removed the flange and noticed that the manufacturer had placed 4 tapped holes for a wide flange SMA connector around the probe (wide flange = 0.7", standard SMA flange = 0.5"). I installed my crystal (106.5 MHz X 12 X 8 = 10,224 MHz) and got about +10 dBm with a little tuning. Be careful with the tuning screw closest to the output. It requires a special tool (which I didn't have) and is easily damaged. I ordered the crystal from ICM part # 52-012378-07-F, (80-119 deg), 106.5 MHz.

International Crystal	(800) 426-9825
P.O. Box 26330	(405) 236-3741
10 North Lee	(fax) 235-1904
Oklahoma City, OK	73126

POWER SUPPLY:

Check the power supply before firing up any of the amplifier modules. Fabricate a mounting bracket or secure the board and power devices to a base plate. The TO-220 devices need to be electrically isolated but mechanically attached to either the base plate or mounting bracket to dissipate heat. Don't forget to use mica or Teflon insulating pads. Apply 12 to 15 volts to pin 8 of CN2 and allow the PTT line (pin 9 of CN2 or pin 4 of CN1) to float. +10 volts for the receiver amplifier should be present on pins 3, 4 & 5 of CN2 and 0 volts should be present on pins 2 & 3 of CN1 for the PA. Grounding the PTT line should reverse these voltages (+10V xmit, 0V rcv).