The NorCal 2N2/XX Project

Pacificon 2007 · Jim Kortge, K8IQY

The NorCal 2N2/XX Project

Questions to be answered

- What is it?
- Why are we doing it?
- Where are we in the project plan?
- When can I get one?
- Q & A at the end of the talk.

The NorCal 2N2/XX Project

The NorCal 2222 Design Contest (Late Fall, 1997)
Wayne Burdick, N6KR

The object of this contest is to build a ham-band transceiver using only one kind of active device, the venerable 2N2222 NPN transistor. NPN transistors can function at all stages of a radio--oscillators, RF or AF amplifiers, mixers, switching and timing circuits--and you get to use up to twenty-two of them!

Specifically encouraged is out-right theft of existing circuits to build the transceiver. In fact, you don't necessarily have to design a thing; if you want, just glue together existing circuits. But do it with style!

This contest will appeal to those who are all thumbs, since the finished rigs will NOT be judged by appearance or construction technique, just by what they do and how well they do it. The winner will have the honor of having his or her design named the official "NorCal 2222 Transceiver"! There will of course be tangible prizes, too, *and there's always the possibility that the winning design might become a NorCal kit.*

The NorCal 2N2/XX Project

Original 2N2/40, Fall/Winter 1997
NorCal 2222 Design Contest Winner

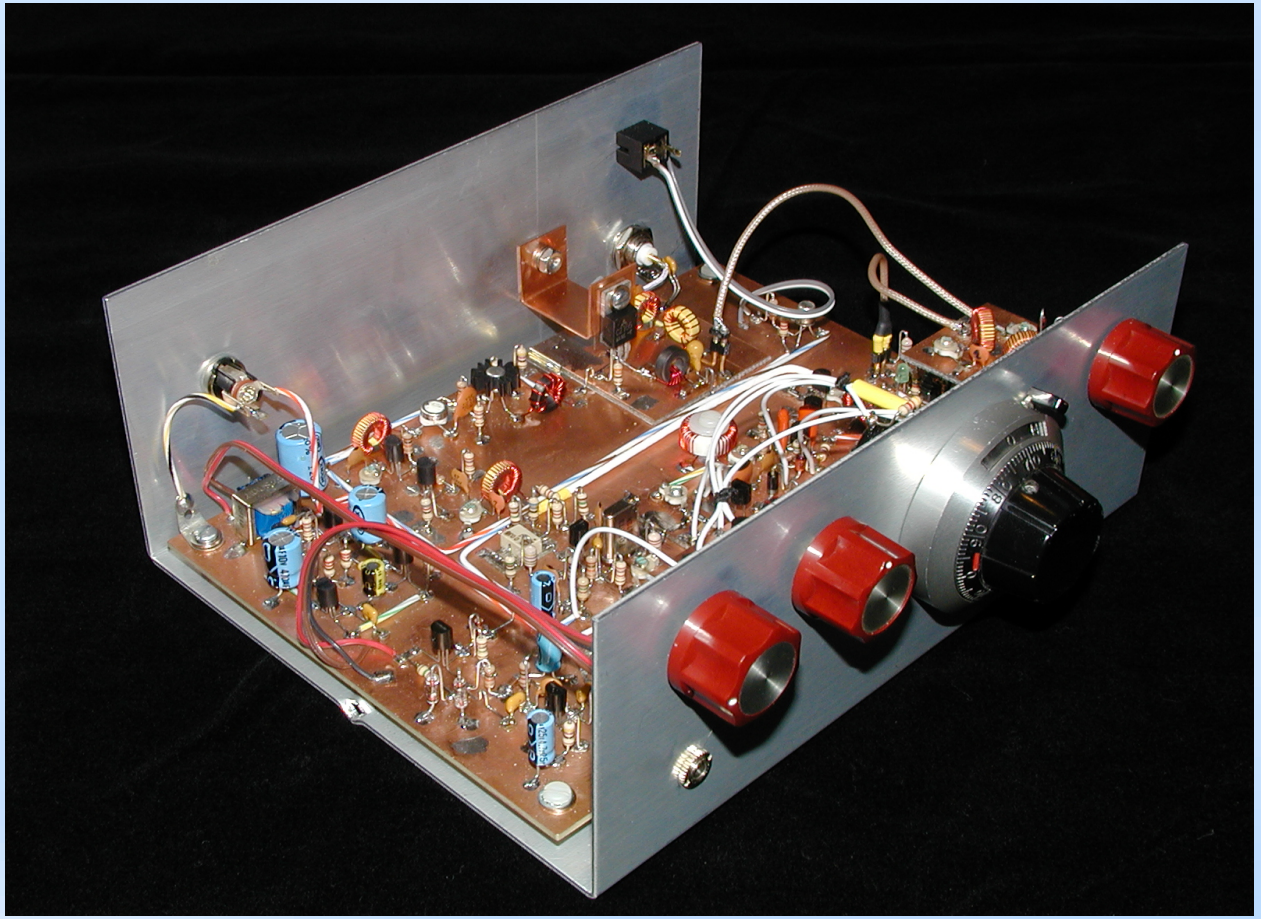
Pacificon 2007 · Jim Kortge, K8IQY

The NorCal 2N2/XX Project

Revised 2N2/40, Winter 1998
QRPp Article

Pacificon 2007 · Jim Kortge, K8IQY

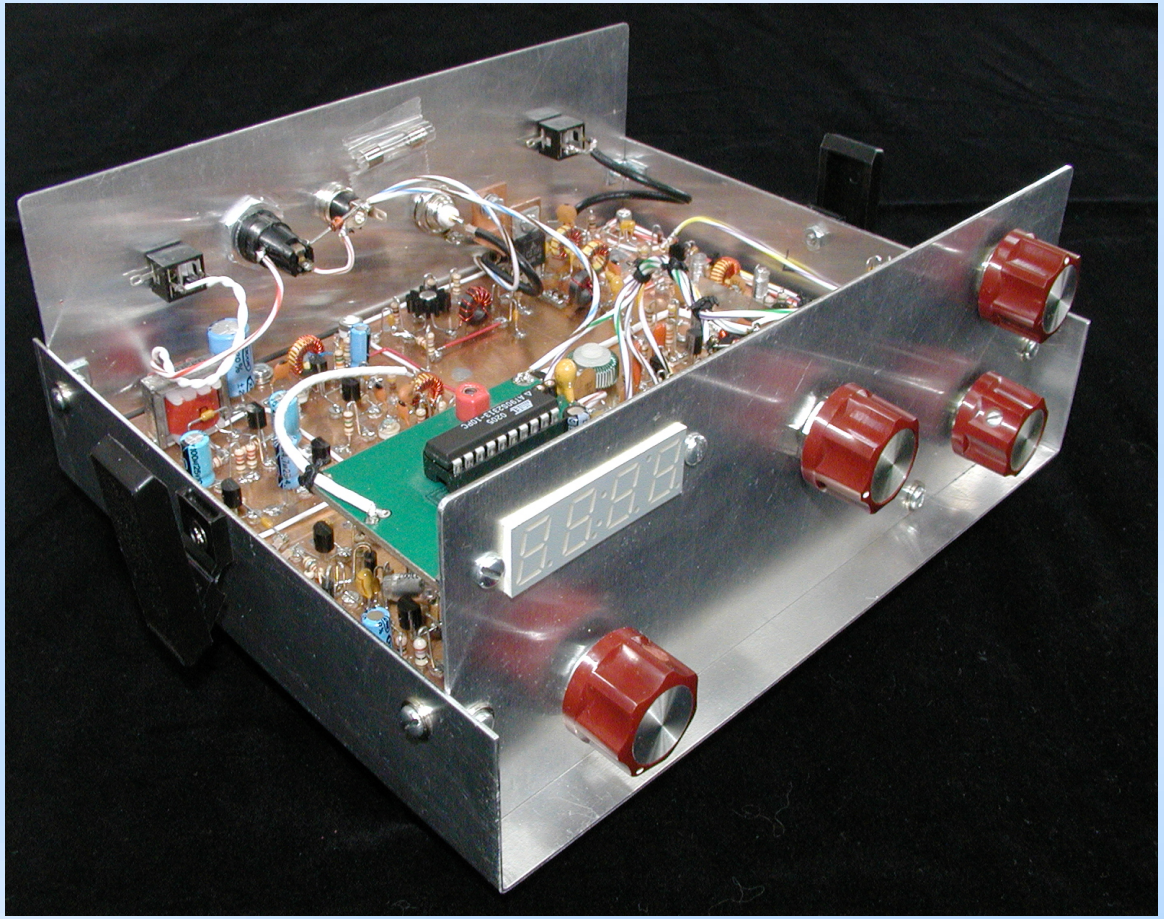
The NorCal 2N2/XX Project



2N2/30, Fall 2002

Pacificon 2007 · Jim Kortge, K8IQY

The NorCal 2N2/XX Project



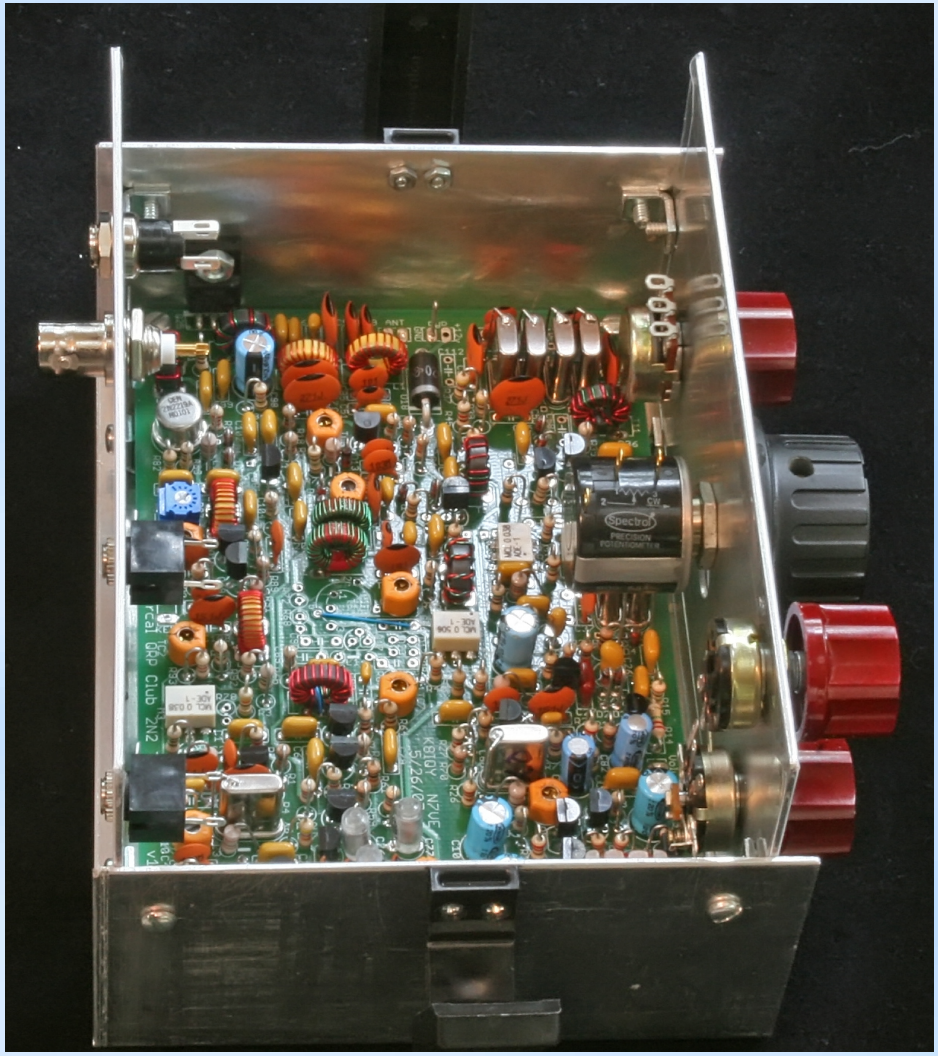
2N2/20, Fall 2004

Pacificon 2007 · Jim Kortge, K8IQY

The NorCal 2N2/XX Project

- A number of discrete component QRP transceivers, using PN2222 transistors, developed during past 10 years.
- All used “RF friendly”, Manhattan-style construction.
- Much enthusiasm for the designs, but very few completed rigs due to “scratch building” requirements, i.e., no kits.

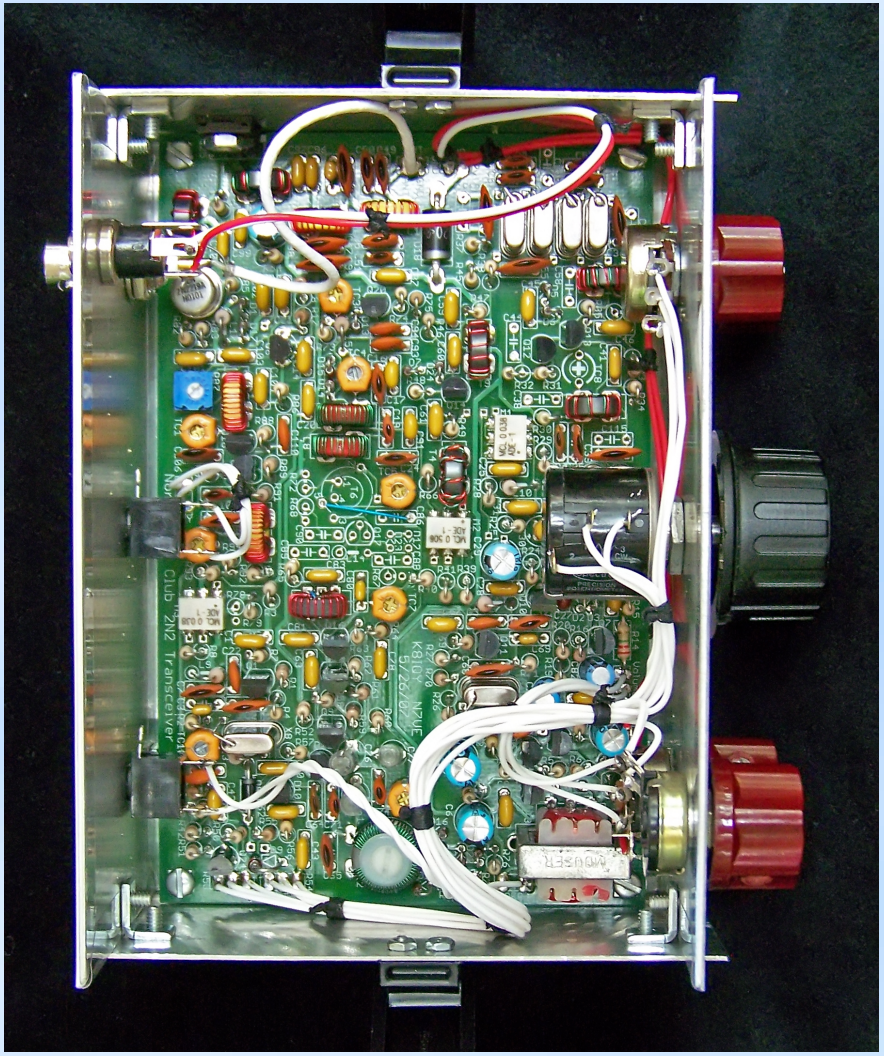
The NorCal 2N2/XX Project



What is it?

- A real, PN2222 type QRP transceiver, available on 20, 30, or 40 meters.
- Based on prior K8IQY 2N2 designs – using best practices.
- Employing a PCB for building ease and consistent performance.
- Complete with all parts, case, and build manual.

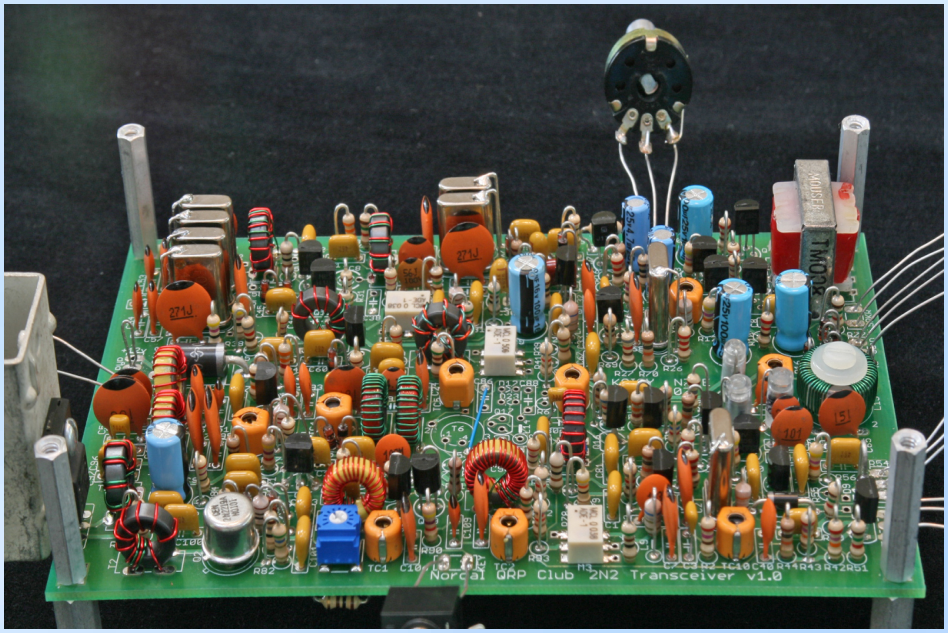
The NorCal 2N2/XX Project



What is it? (cont.)

- An all analog, low noise design.
- 0.2 uV (or better) MDS
- 6 poles of crystal filtering.
- Stable VFO – 100 KHz band coverage, 50 KHz on 30M.
- QSK keying.
- Built in sidetone.
- Room filling audio.

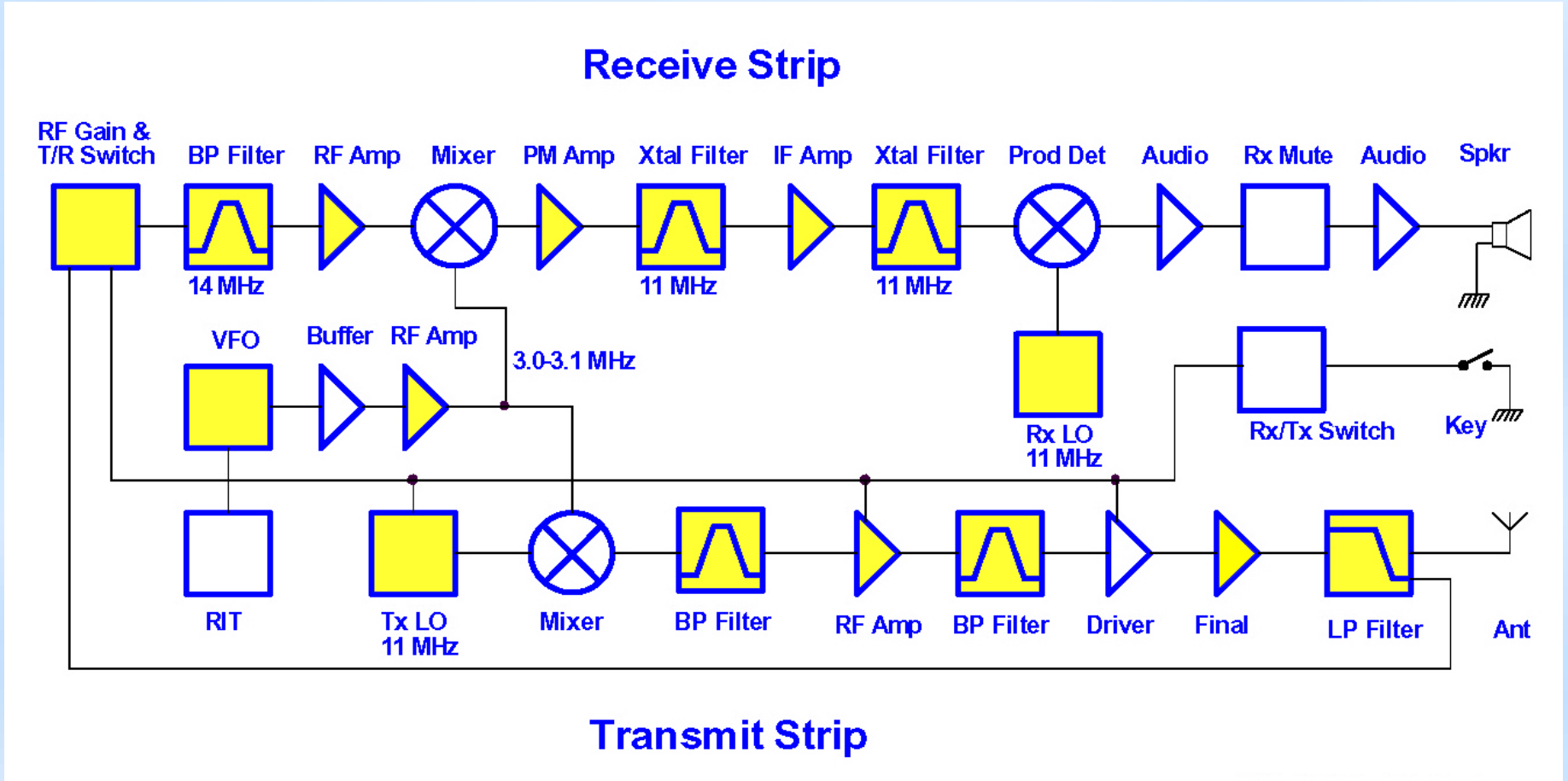
The NorCal 2N2/XX Project



What is it? (cont.)

- Top quality PC Board.
- Thru hole construction with leaded parts except mixers.
- Commercial grade, level 7 mixers used.
- Rugged, self-insulated, output transistor.
- 5+ watts output power, adjustable down to zero.

The NorCal 2N2/XX Project



2N2/XX Block Diagram

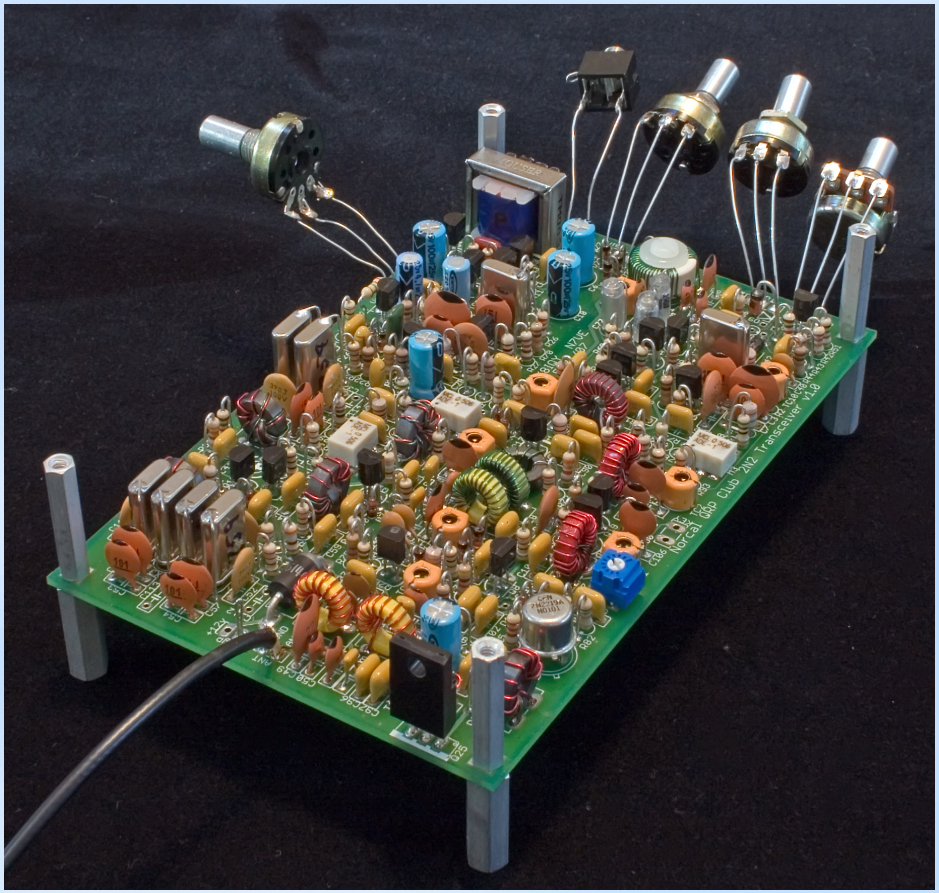
Pacificon 2007 · Jim Kortge, K8IQY

The NorCal 2N2/XX Project

Why are we doing this project?

- Provide QRPers with an opportunity to build and enjoy a "PN2222 cockroach" based rig.
- Using a PCB approach improves the likelihood of the rig being finished and working well.
- The right people, Jim Kortge, K8IQY and Dan Tayloe, N7VE, were available to do the initial work.
- NorCal has the interest and resources to make the project successful.

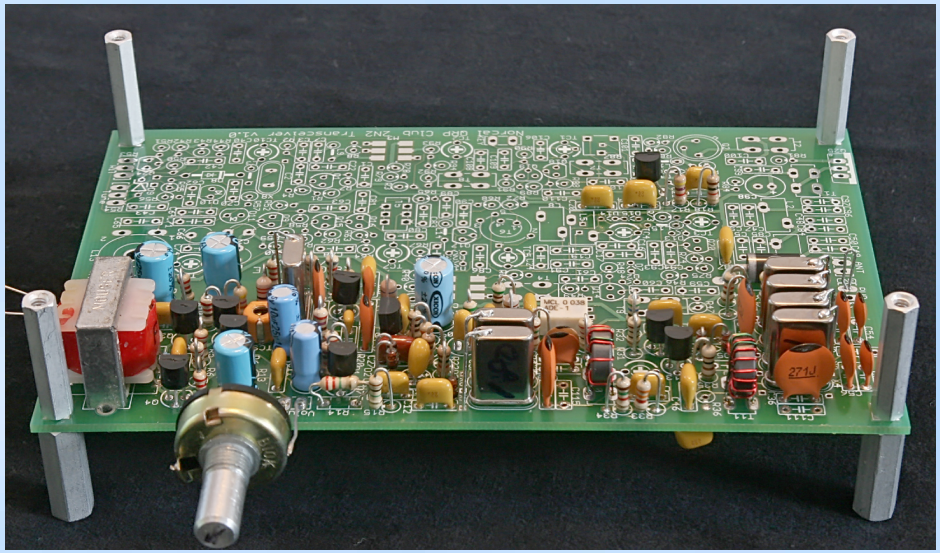
The NorCal 2N2/XX Project



Where are we in the project plan?

- **Electrical configuration defined.**
- **One prototype on each band built, limited tested and used “on air”.**
- **Packaging options being explored.**
- **Build manual started.**

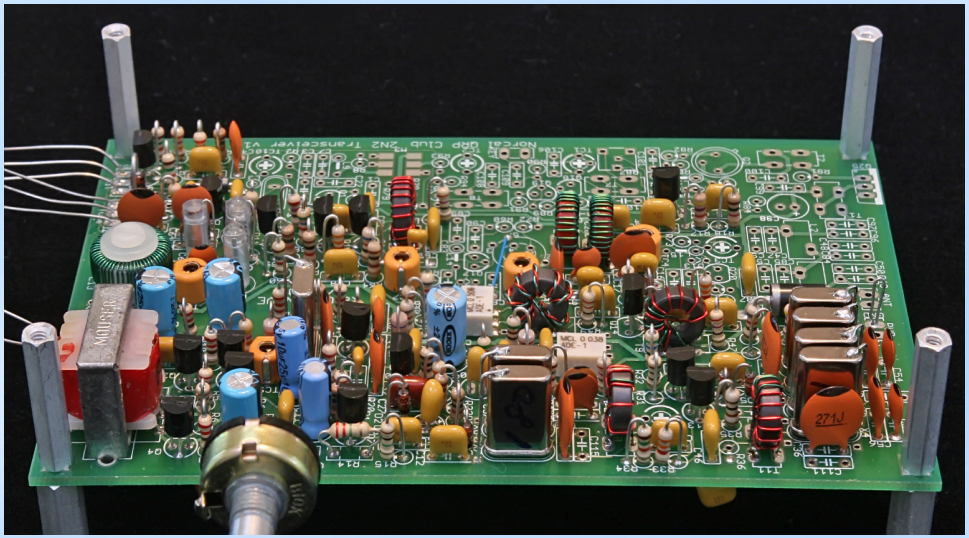
The NorCal 2N2/XX Project



Where are we in the project plan? (Cont.)

- 2nd generation PCB is next step.
- Two prototypes on each band will be built and evaluated for production readiness.
- Prototypes built using "build & test" manual to evaluate that too.

The NorCal 2N2/XX Project



Where are we in the project plan? (Cont.)

- Next steps expected to take 4-5 months.
- We want to get it right before releasing it!
- You want us to get it right before buying it!!

The NorCal 2N2/XX Project

When can I get one?

- Expected availability is next spring.
- Project has to be “ready for sale” before the ospreys return to Michigan in early April and K8IQY puts on his other hat. :-)

The NorCal 2N2/XX Project

Questions?