

with three modes of scan and multiple scan speeds. Very good news—CTCSS encode AND DECODE is "standard" with Standard. With more repeaters going over to PL, it's hard to understand why their competition would still make CTCSS an option.

Programming

Programming the Standard is unlike programming any other 2-meter handheld. With the Standard equipment, you program in layers. For example, first you punch in the repeater output, and program it into any one of 40 memory channels. Then you go back and program the offset and the PL. This is layered on top of that original simplex frequency entry, and stays in memory until you go back and change it. And you don't need to worry about accidentally erasing a memory already programmed—a unique set of keystrokes makes accidental write-over impossible; you must deliberately write over what you want to change.

Once you master the concept of layering in the information for each memory channel, it programs up just as fast as any other handheld out there. But it is different from what you might be used to, when you first start poking away at the rubberized keypads.

Memory Unlimited

But here's the neat thing with the Standard C168A—you can pull out the plug-in 4K EEPROM memory cartridge, and plug in a 16K EEPROM memory cartridge for 200-channel storage! Or, if you're like me and can't remem-

ber what you've stored in 200 channels, you could have: several sets of 4K EEPROMs for different geographic regions of the country, or plug-in EEPROMs for 40 air scanner, marine, or repeater channels in different cities. Each PROM retains its memory after you unplug it. When you travel, you can just pick the appropriate PROM and plug it in. But you have to do the initial programming yourself. No one has cloned the *ARRL Repeater Directory* yet by geographic area in the standard or 16K PROMs.

I run the 200-channel PROM and divide up my frequencies by banks of 20 for different cities. This gives me 10 different banks of 20 channels each, and if I need more, I'll simply buy another \$30 200-channel EEPROM from the factory. They are readily available.

Ham radio dealers should cash in on this feature by offering preprogrammed EEPROMS. It takes a maximum of two minutes to

clone from one Standard set to another. Just think, Mr. Dealer, of all the time you can save when selling that next 2-meter transceiver—you won't have to stand there for 20 minutes, programming in some popular frequencies for your particular area on this new hand-held set.

Standard has a 440 MHz UHF model, the C468 (for about \$370), which I got my hands on. It's also a good performer. Like the 2-meter set, the big advantages are ultra-compact size, reasonably good audio out, out-of-band scanning capabilities, and the incredible memory expansion EEPROM capabilities.

So, welcome back, Standard. We look forward to some of that exotic equipment we see advertised in some of the Japanese magazines. The new dual-band mobiles look good, and that triband base station, along with the scanner spectrum analyzer, is also a long-awaited product here in the U.S.A. **73**

The Standard C168A HT Test Bench Report

TX power output (High, with included battery): 2.2 watts at 950 mA.

Second harmonic: -92 dB

Frequency accuracy: +094 Hz

Peak deviation: 4.8 kHz

In-band receiver sensitivity: 12 dB SINAD, 0.102 μ V

Selectivity (± 15 kHz): 32 dB

Selectivity (± 20 kHz): 60.4 dB

Intermodulation rejection: 63 dB

Image rejection: 73 dB

Heat sink capabilities: Good, using diecast aluminum frame.

Best feature: Ability to plug in EEPROM for 200-channel capability.

Least desirable function: Must read instruction manual several times to figure out how to program a memory sequence.

Distribution: Available from leading amateur radio dealers throughout the United States.

Availability: Off-the-shelf, including 27 different accessories.



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An Improved Crystal Tester

Continued from page 22

See Figure 2 for the improved circuit. If you power the tester with a 9-volt battery, it will make a very handy portable test instrument. It's especially useful when rummaging through those bins of surplus crystal at a hamfest or surplus store.

For a more permanent setup, you may wish to run the tester from 110 volts AC. I built the power supply shown in Figure 3 for mine. **73**

Contact Larry G. Ledford KA4J at 553-4th Street S.E., Cleveland TN 37311.

Parts List

Q1, Q2	2N2222 transistors
D1-D4	1N914 diodes
LED 1 & 2	Red LEDs
R1, R3, R4	1k, ¼W resistor
R2	33k, ¼W resistor
R5	10k, ¼W resistor
C1, C3, C5	0.001 μ F capacitors
C2	100 pF capacitor
C4	0.005 μ F capacitor
S1	SPST switch

Misc: XTAL sockets (optional), 9V battery, mini alligator clips (2), PC board, case, battery clip.

A blank PC box for the XTAL tester is available for \$3 + \$1.50 shipping/handling per order (the optional power supply board is \$3.50) from FAR Circuits, 18N640 Field Court, Dundee IL 60118.