

Radio Shack PRO-95 Scanner

The Radio Shack PRO-95 is a portable, 1000 channel scanner, built in China by GRE for Radio Shack. It is a newer version of the 300 channel trunk-tracking PRO-93. Radio Shack sent us a PRO-95, s/n C011921, fitted with version 1.00 firmware and bearing date code 08A02 (August 2002). We viewed the firmware version by pressing the 3 key while the welcome message is visible, shortly after power up.

One of the most blessed traits of the PRO-95 is that it may be powered by four AA alkaline batteries. You don't need to spend lots of money on proprietary battery packs. The PRO-95 is furnished with two battery trays, a black colored tray for alkaline cells and a yellow tray for rechargeable batteries.

You may power the scanner using an optional 9 VDC 300 mA wall wart. The wart will recharge the batteries if you employ the yellow battery tray, which has a special charging contact.

◆ Frequency Coverage

The PRO-95 receives AM and FM signals on the most popular scanner bands plus Citizens Band, 216 - 220, and 1240 - 1300 MHz. The current crop of Radio Shack scanners do not tune the 225 - 400 MHz military air band. Military air band monitoring became more important after September 11, 2001 due, in part, to the Combat Air Patrol missions flying over major US cities.

Like the PRO-2053 (see May 2002 *MT*), the PRO-95 tunes the 137 - 174 MHz band using factory-selected steps of 5, 6.25, or 7.5 kHz, and the user cannot change the step size. As a consequence, you cannot directly program frequencies like 160.000 MHz because the radio coerces the entry to the closest FCC allocated channel of 159.9975 MHz. The VHF-high federal assignments, e.g., 165.2375 MHz, are coerced as well.

◆ Memory and Modes

The PRO-95's 1000 memory channels are divided equally among 10 banks. The scanner alerts you when programming a channel with a frequency which is already programmed into another channel in the same bank, though no duplicate warning is given if the same frequency exists in a different bank.

Each channel has a mode: AM, FM, MO (Motorola trunked), or ED (EDACS trunked). The PRO-95 does not support LTR trunking, CTCSS and DCS squelch. You may choose between AM or FM mode, which is handy when

scanning military activity adjacent to the 2 meter ham band because the military employs both modes within the same band.

For trunking purposes, a memory bank must be designated as MO or ED. You can mix conventional and a trunked system within the same bank, but you cannot use a bank for both Motorola and EDACS trunking.

The PRO-95 has a total of 10 talk group ID banks and each one contains 5 sub-banks. Each sub-bank can hold 20 IDs.

You can program a 12-character label for each memory bank and each memory channel. Both the channel label and frequency are displayed simultaneously when stopped on a channel. A defect in the PRO-2053 and the PRO-93 version 1.00 firmware caused some of the labels for channels in banks 0 and 1 to be overwritten by the labels from banks 8 and 9. Our PRO-95 doesn't have this problem.

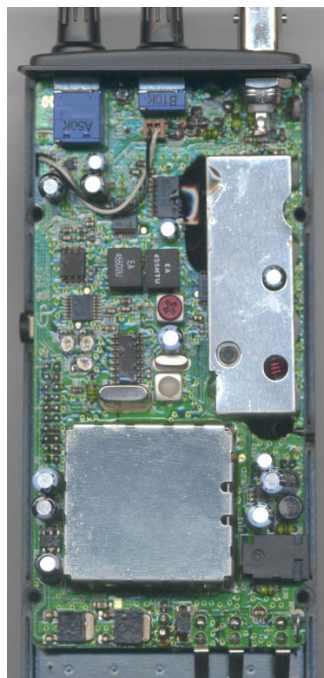
The PRO-95's attenuator setup is more flexible than most scanners. The attenuator can be enabled on a per-channel, per-search bank basis or globally.

The display backlight is flexible, too. The backlight can be set to time out after 3, 5, 10, or 20 seconds, or latched on.

◆ Scanning and Searching

The PRO-95 scans a mixture of both conventional and trunked systems very well, with no perceptible hesitation when switching between banks. This radio is quick, too. We measured a 42 channel/sec scan rate (conventional) and an 87 step/sec search speed.

Memory banks may be scanned in open or closed mode, a distinction which makes sense only for trunked systems. When



scanning trunked systems in the closed mode, the talk group lists are used as filters to tell the PRO-95 which talk groups to ignore and which to monitor. In open mode, the PRO-95 will stop for conversations in any talk group.

There is only one pair of user programmable search limits. There are preprogrammed service search banks for VHF-marine, citizens band, police/fire, civil aviation, and ham radio. CB and marine channel channels are displayed as well as frequency. The police/fire and ham banks are further divided into sub-banks by frequency. Therefore, you can choose to limit your search to preprogrammed VHF-low band police/fire, 2 meter hams, etc.

A single priority frequency may be sampled approximately every two seconds. Priority sampling is irregular when scanning trunked systems because the PRO-95 will not interrupt a trunked transmission to sample the priority channel.

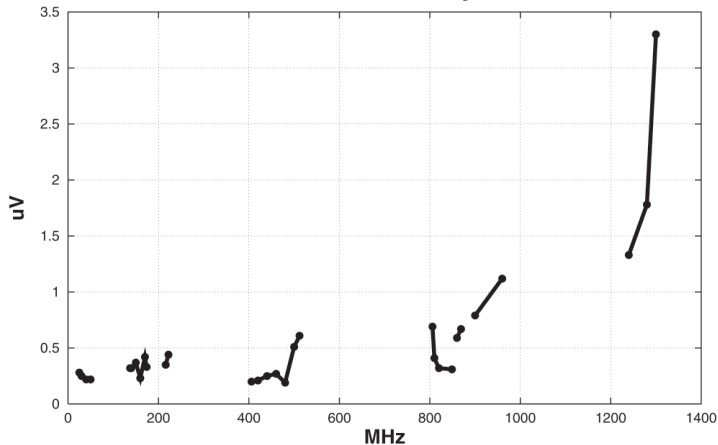
◆ Manual

New, helpful notes, printed in the margins, make the PRO-95's user manual easier to understand than prior manuals. However, the manual is only 3-3/4 inches wide and difficult to hold open while reading.

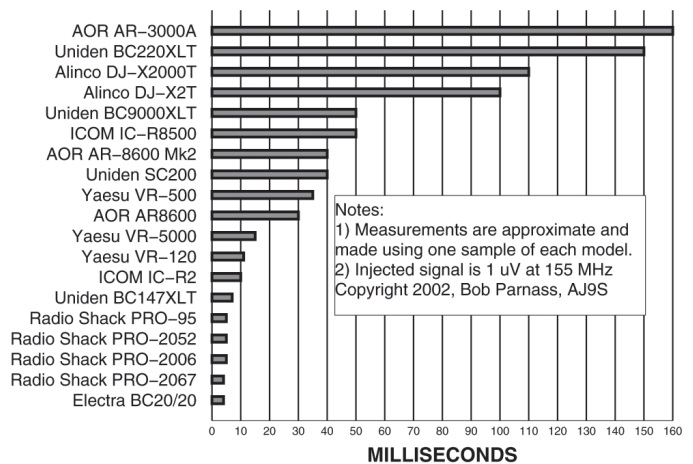
You can download a copy of the user manual from: http://support.radioshack.com/support_electronics/doc69/69487.pdf and print it out so you won't have to fight with the binding.

Both the PRO-93 and PRO-95 manuals contain a mistake which calls for the wrong size plug for the AC adapter. The manual specifies a size C instead of the better fitting size B (pg. 12).

Radio Shack PRO-95
NFM 12 dB SINAD Sensitivity, s/n C011921



SQUELCH TAIL LENGTH



Notes:
1) Measurements are approximate and made using one sample of each model.
2) Injected signal is 1 uV at 155 MHz
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Measurements

Radio Shack PRO-95 Scanner
Catalog #20-525
S/N C011921

List price \$249.99
Radio Shack Corp.
Ft Worth, Texas
<http://www.radioshack.com>

Frequency coverage (MHz):
25 - 54 (5 kHz step)
108 - 136.9875 (12.5 kHz step)
137 - 174 (5, 6.25, 7.5 kHz steps)
216.0025 - 221.9975 (5 kHz step)
222 - 225 (5 kHz step)
406 - 512 (6.25 kHz step)
806 - 823.9875 (6.25 kHz step)
849 - 868.9875 (6.25 kHz step)
894 - 960 (6.25 kHz step)
1240 - 1300 (6.25 kHz step)

Modes: AM, NFM, user selectable
NFM modulation acceptance: 12 kHz
Attenuator:
19 dB @ 155 MHz
16 dB @ 460 MHz
12 dB @ 860 MHz

Intermediate Frequencies (MHz):
380.8 (approx), 21.4, 0.455

Audio output power, measured at earphone jack:
125 mW @ 10% distortion

Squelch tail near threshold (1 uV @ 155 MHz): 5 ms.

Current Consumption (mA):
0, off
74, scanning
128, open squelch, max volume

Shutdown at 3.96 VDC, without warning
Practical memory scan
Speed: 42 channels/sec. (non-trunked)
Search speed: 87 steps/sec.

Performance

The PRO-95's speaker audio is good and loud and it was the first thing we noticed when putting the scanner into service. We measured 125 mw of power at the earphone jack. Audio at this jack is purposely attenuated for use with an earphone.

The squelch control has a moderate amount of hysteresis. We measured a 5 ms squelch tail, or noise burst as the squelch closed at the end of each conventional transmission. As the accompanying chart shows, the PRO-95's squelch tail is among the shortest we've measured and that's good.

Software

Programming the PRO-95's 1000 channels, text tags, and 1000 trunk IDs entirely through the radio's keyboard could require days of tiresome effort. A computer equipped with the proper cloning software would make the task so much easier. Though the PRO-95 is fitted with a serial interface jack, commercial software is not available at the time this review is being written.

As a rule, manufacturers have been unwilling to freely furnish the information required to write a cloning program. GRE made writing software for the PRO-95 and earlier PRO-93 even more difficult through encryption. Luckily for PRO-95, PRO-93, and PRO-2053 owners, Don Starr, Bill Petrowski, and Ken Plotkin have solved the puzzle and offer free Win93 and Win95 cloning software at the <http://www.starrsoft.com> web site. Their software requires a Microsoft Windows operating system and the proper interface adapter cable to connect the scanner and computer.

Meanwhile, there is no native cloning software for Linux and Mac computer users.

Overall

We were impressed with the PRO-95's performance when scanning a mixture of trunked and conventional signals. The audio is very good and the text labels are an excellent aid for those of us who have trouble remembering hundreds of different frequencies! Its AA battery arrangement is preferable to a monolithic, proprietary pack.

We would like to be able to lock out talk groups while searching a trunked system in open mode for new talk groups, a method the PRO-95 does not support.

Radio Shack should publish the information required to write cloning software for the PRO-95. It would make the PRO-95 more attractive if buyers had a choice of software.

Radio Shack scanner fans are still waiting for a new model with CTCSS/DCS squelch, LTR trunk tracking, and 225 - 400 MHz military air coverage.

NOTICE: It is unlawful to buy cellular-capable scanners in the United States made after 1993, or modified for cellular coverage, unless you are an authorized government agency, cellular service provider, or engineering/service company engaged in cellular technology.

Full 800 MHz Scanners

AOR AR-8200MKII
Wideband portable receiver
- 0.5 to 2040 MHz continuous. (unblocked)
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- Alphanumeric memory identification
- Spectrum scan
- Computer control
- Flexible dynamic memory
- Optional CTCSS & Extra memory boards
\$699 US

ALINCO DJ-X2
Credit Card Wideband portable receiver
- 0.5 to 999 MHz continuous. (unblocked)
- NFM, WFM, AM - 700 memory channels
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- Menu system
- Weighs 7 oz, 15mm thin, SMA connector
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