FIRST LOOK

CONSUMER RADIOS AND ELECTRONICS

Radio Shack Pro-2096

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It is a debate as old as the scanning hobby itself. Who makes the best scanner? Which scanner is the best one in the marketplace? What scanner should I buy?

Get a group of 10 scanner hobbyists together in one room and you will probably get 10 different answers. A lot of that variance is due to the listening habits of the hobbyists themselves and the various radio systems available to monitor in each one's local area.

There is no "one size fits all," easy answer to the questions above. But there is one fairly universal constant we can point to: Over the last few years we have had more "receive capability" packed into our new scanners than at any other time in the history of the hobby. This new capability is due in large part to the technological advancements of the two major scanner manufacturers: Radio Shack (GRE) and Uniden.

Although having a scanner that can monitor a significant portion of the radio spectrum is a plus, if the scanner can't decode signals in those bands into usable audio for the listener, having that extended frequency coverage is useless. Fortunately for the radio hobbyist, these two manufacturers have pushed each other and the limits of technology in order to provide the radio community with some of the most advanced scanner products ever offered. When it comes to "receive capability" Uniden and Radio Shack rise to the top of the receiving market heap.

This month we look at one of the most recent of these new products: the Radio Shack Pro-2096.

❖ The Pro-2096: Top Features

The Pro-2096 has a lot of capability packed in its small package. In addition to scanning conventional frequencies programmed into the scanner, it can handle most of the major trunk protocols that the scanner user will encounter in the field, with one notable exception. The 2096 can track most of the Motorola trunk systems on-the-air today, including: Type I, II, IIi Hybrid, and APCO 25 phase 1 digital systems (including 3600 bps and 9600 bps control channel systems using the C4FM and CQPSK modulation schemes) and M/A-COMs EDACS systems. However, the 2096 cannot track any of the Johnson LTR trunk systems used by local businesses and a few public safety agencies.

Like its sibling the Pro-96, the military aircraft band can be opened up using Don Starr's WIN96 software at **http://www.starrsoft.com/software/Win96/**. While we didn't have a chance to check out the performance of the 2096 in the 225-400 MHz band, field reports from some Milair monitors at airshows indicate that the Pro-96 is not very sensitive in this band. Since the 2096 is based on the same RF configuration, we will probably see similar results with the 2096.

Unlike the first generation of trunk scanners (e.g., BC-895), the user can scan conventional frequencies and trunk systems, instead of just one or the other. The 2096 scanner will also decode conventional digital APCO 25 frequencies.

Some of the other major features of this scanner include six preprogrammed frequency ranges: Marine, CB, FRS/GMRS/MURS, Police/Fire, Civilian Aircraft, Amateur Radio, and one limit search (user configurable). Another nice feature is the ability to copy active frequencies found during frequency searches into a memory channel. Also, like many other recent scanner product releases, the 2096 has weather alert and SAME signal decoding capability.

The 2096 has two types of storage memory. Working memory (500 channels) is the memory that your scanner uses while you are programming, cloning, or actively listening. The other memory is the most-touted feature of the Pro-2096: the V-Scanner (Virtual Scanner). This feature allows you to edit, store, recall and use up to 11 full sets of

MT Rating: Four Stars

★★★★☆

scanner memory profiles. With V-Scanner, it is possible to create separate scanner memory profiles for different areas you visit or for different ways that you use the scanner.

One final feature of note is the 2096 digital AGC (Automatic Gain Control). You may find that audio levels vary greatly among different users on digital systems. The Pro-2096 includes a digital AGC that can help compensate for these low audio levels when they occur. This function is selectable and will have no effect on analog transmissions.

❖ What's in the Box?

In addition to the Pro-2096 scanner, you will get a whip antenna, AC adapter, DC cable with fuse (cigarette-lighter adapter optional), two mobile mounting brackets (conventional mount with side knobs and DIN sleeve and 2 keys), mounting hardware, quick start guide, users guide, and preloaded data addendum.

❖ Overall Rating and Final Thoughts

There is a lot of scanner here for the money. Overall, I like the Pro-2096. I do have a few complaints that potential buyers should note. First, there's no LTR trunking capability. If you have a public safety agency or business that uses LTR trunking, you will have to conventionally scan that system. Second, there is no military air coverage (see text above). Third, unlike most of the Uniden trunk trackers, there is no built-in computer interface or software (see specifications below), and no flash updating of the scanner firmware. And, while the screen is nicely laid out, it is small and somewhat difficult to read. If you are visually impaired you will have trouble seeing this screen.

If you purchase the 2096 and use it for trunk tracking a Motorola 800 MHz analog trunk system, the FCC rebanding of the 800 MHz band may become an issue at some point. Once a local agency has been rebanded, the unit will no longer trunk track that system and the unit will have to be sent back to Radio Shack to update the firmware.

Looking past the issues above, I like the Pro-2096. It is an excellent scanner and worthy of a spot in your shack. The manual is one of the best I have seen, scanner performance is very good, and the unit is very easy to program and use.

Table One: Pro-2096 Specifications

Frequency Coverage

Frequency Range (MHz)	Programming/ Search Step Value
25.000-54.000 MHz	5 kHz
108.0000-136.9875 MHz	12.5 kHz
137.0000-174.0000 MHz	5, 6.25 or 7.5 kHz
216.0025-221.9975 MHz	5 kHz
222.0000-225.0000 MHz	5 kHz
406.0000-512.0000 MHz	6.25 kHz
806.0000-823.9875 MHz	6.25 kHz
849.0000-868.9875 MHz	6.25 kHz
894.0000-960.0000 MHz	6.25 kHz
1240.000-1300.000 MHz	6.25 kHz

Memory Organization
V-Scanners: 11 500-channel virtual scanners
Memory channels: 500
Channel storage banks: 10
Number of channels per channel storage bank: 50
Talkgroup ID memories: 1500
ID memory banks: 10

Sub-banks per bank: 5
Number of memory IDs per sub-bank: 30

Sensitivity (20 dB S/N)
FM mode:

25.0000-54.000 MHz	0.3 μV
108.0000-136.9875 MHz	0.3 μV
137.0000-174.0000 MHz	0.5 μV
216.0000-225.0000 MHz	0.5 μV
406.0000-512.0000 MHz	0.5 μV
806.0000-960.0000 MHz	0.7 μV
1240.000-1300.000 MHz	0.7 μV

AM mode:

25.000-54.000 MHz	1 μV
108.0000-136.9875 MHz	1 μV
137.0000-174.0000 MHz	1.5 μV
216.0000-225.0000 MHz	1.5 μV
406.0000-512.0000 MHz	2 μV
806.0000-960.0000 MHz	2 μV
1240.000-1300.000 MHz	3 μV

Selectivity
25.000-27.995 MHz in AM mode
　−6 dB ±5 kHz
　−50 dB ±6 kHz
All other frequencies in AM and FM mode
　−6 dB ±8 kHz
　−50 dB ±14 kHz

IF Rejection

380.8 MHz at 174 MHz	60 dB
21.4 MHz at 174 MHz	100 dB
Spurious Rejection at 174 MHz FM	40 dB

Scanning Speed and Delay
Scanning Rate: Up to 60 channels per second
Search Rate: Up to 75 steps per second
Conventional Channel Delay Time: 2 seconds
Priority Sampling: 2 seconds

Trunking Talkgroup Delay Time: User configurable

Intermediate Frequencies (IF)
1st IF　　380.7275 to 380.86875 MHz
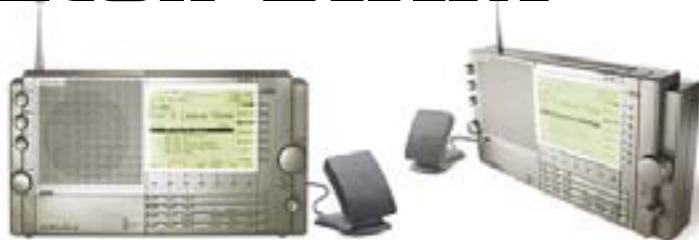2nd IF　　21.4 MHz
3rd IF　　455 kHz

Squelch Sensitivity

Threshold (FM and AM)	0.5 μV
Tight (FM)	25 dB
Tight (AM)	20 dB

Miscellaneous Specs
Antenna Impedance: 50-Ohms
Antenna Jack: BNC
Antenna (included): Five section 26.5-inch telescopic antenna
Attenuators: Channel and search band selectable, global attenuator
Audio Output Power (10% THD): 1.5 watts
Built-in Speaker: 3-inch (77 mm) 8 Ohm dynamic type
Computer Remote Control Jack: 1/8-inch mini jack (3.5 mm) used for cloning/programming. An optional Scanner/PC interface (20-289) can be purchased for $24.99 on the Radio Shack website.
External Speaker Jack: Yes
Headphone jack: Yes
Mode Selectable: Yes
Operating Temperature: −4 to 140°F (−20 to 60°C)
Power Requirement: 13.8 volts, current drain 600 mA, center pin positive
Physical Dimensions (HWD): 21/4 x 71/4 x 55/16-inches (55 x 185 x 135 mm)
Reset: Manual reset button on the rear deck of the scanner.
Weight (without cabinet and accessories): 27.7 oz. (790 g)
Note: These specifications are typical and individual unit specs will vary.