

G R O V E ENTERPRISES, INC.



RECEIVERS
SCANNERS
ANTENNAS
accessories
PUBLICATIONS

800 • 438 • 8155

LET YOUR OLD SCANNER FLY LIKE A NEW ONE!



United States Air Force

MILITARY AIRCRAFT SCANVERTER

Now, hear 225-400 MHz military aircraft communications on your scanner's 118-136 MHz band! Hear 216-225 MHz land mobile and hams as well!

Ideal for monitoring Thunderbirds and Blue Angels air show stunt coordination, military flight training, strategic communications, air-to-ground flight service stations, air-to-air comms, midair refueling and more!

The all-new Grove CVR-4 Scanverter uses a proprietary technique called "bandstacking" to reduce the 175-MHz-wide military aircraft band into an 18 MHz swath to be heard on any scanner with standard aircraft reception.

Assembled with surface mount devices and all-metal case, the CVR-4 offers excellent sensitivity (1 microvolt nom.) and out-of-band interference rejection. The on/off switch bypass function allows the unit to be left in line when not in use.

The CVR-4 Scanverter comes with a universal adaptor kit so that it can be connected directly to a

handheld scanner for portability, or to the rear of a base or mobile scanner (BNC and Motorola adaptors included).

Operates from standard 9-volt alkaline battery (not included).

Order CVR4
Only

\$89⁹⁵

\$5 UPS \$7.50 UPS 2nd Day Air

\$6 US Priority Mail

\$9 Canadian UPS

\$8 Canadian APP

SPECIFICATIONS

Frequency Range: 216-406 MHz

Sensitivity: 1 microvolt

Oscillator Frequency: 18 MHz harmonics

Power Required: Alkaline battery; 9 volt @ 13 mA

Connectors: BNC

Dimensions: 4"H x 1-1/2"W x 2"D

Weight: 6 oz.

Bypass Loss: 2 dB @ 400 MHz, 6 dB @ 800 MHz



Grove Enterprises, Inc., P.O. Box 98,
300 S. Highway 64 West, Brasstown, NC 28902

September 1 — October 31, 1993

The devastating floods along the Mississippi have provided interesting listening for shortwave and scanner enthusiasts. U.S. Army Corps of Engineers, Red Cross, National Guard, public safety agencies and other relief and enforcement divisions use the airwaves to coordinate their efforts. Such communications are often receivable on shortwave radios as well as VHF/UHF scanners.

Several new products have hit the market during the last catalog period. The Uniden BC2500XLT handheld scanners go out as soon as they come in, but back orders are being filled quickly. Users are enjoying the wide frequency coverage, 400 channel memory, VFO tuning, and automatic search store and count features in this unique product.

The midpriced Yaesu FRG-100 general coverage receiver is now available with an excellent filter modification installed, making it an outstanding value for shortwave listeners who want to stay well below \$1000.

For portable 12 volt power, the Innova PowerPack is a survivalist's dream. And if you recharge AA cells, the new fast-charge Millenium system is a winner.

After many months of intensive software writing—and rewriting—the new Grove FCC database is the easiest to use, most comprehensive, and least expensive source of official FCC frequency records ever made available to the public!

And there's more. Take a close look at your new Grove catalog; I think you will find an outstanding choice of products at equally outstanding savings.

Best wishes for good listening.

Bob

Bob Grove
President



GROVE PHONE LINE SERVICES:

ORDER LINE ONLY:

800-438-8155

(M-F, 8am-5:30pm Eastern)

TECHNICAL HELP LINE

704-837-7081

(M-F, 8:30am-11:30am and 1pm-4:30pm Eastern)

BUSINESS OFFICE

704-837-9200

(M-F, 9am-5:00pm Eastern)

DATA LINE/FAX SERVICE

704-837-2216

(24 hours/day, 7 days/week)

BULLETIN BOARD SYSTEM

Grove Enterprises has an advanced computer bulletin board system available **Monday-Friday from 6:30pm-8am (non-business hours), and 24 hours/day on weekends.**

The BBS is free and is available to all people.

704-837-9200 300/1200/2400 BPS

704-837-5957 300/1200/2400 BPS

704-837-7081 9600/12,000/14,400 BPS

ORDER WITH ABSOLUTE CONFIDENCE

Grove Enterprise prides itself on offering quality products at reasonable prices AND outstanding technical support. In the rare event you should experience some kind of problem with any of the products we manufacture or sell, or should you have a complaint, please call us first at 1-800-438-8155 and we'll do everything we can to keep you as a satisfied customer.

Occasionally a customer will order a product that turns out not to be what he wanted or, perhaps, expected. Simply call our toll-free number, 1-800-438-8155 within thirty (30) days of shipping and we will gladly credit your future purchases, or we'll issue you a refund—your choice!

Of course these returns **must be authorized** and the product must be received in new condition, otherwise we have to charge a restocking fee according to the invoice value: \$0-\$500 - \$15; \$501-1000 - \$25; \$1000+ - \$35.

SHIPPING DAMAGES:

Should you receive a damaged shipping carton, ask the UPS driver to wait while you inspect the contents. **IF** there is damage, refuse the package and immediately call us at 1-800-438-8155.

LIMITED WARRANTY:

All equipment manufactured or modified by Grove Enterprises is warranted to the original purchaser to be free from defects in materials and workmanship for a period of one (1) year from the date of purchase as shown on the purchaser's receipt. Grove Enterprises may, under this warranty, either repair or replace (at our option) any part which proves defective in material or workmanship, provided the unit has not been modified in any manner or field repairs attempted. Please call us at 1-800-438-8155 for a return authorization number and shipping instructions before returning any item for warranty repair.

Grove Enterprises assumes no responsibility for damages or penalties incurred resulting from the use of this product in a manner or location other than that for which it is intended.

REALISTIC® EQUIPMENT:

Should any equipment manufactured by Realistic® and sold to you through Grove Enterprises fail within a period of one year from the shipping date, the unit must be returned to Grove Enterprises for warranty repair. Please call us at 1-800-438-8155 for return instructions.

OTHER WARRANTIES:

On items not manufactured by Grove Enterprises or Realistic®, (ICOM, Uniden, Kenwood, etc.), please check your service manual for instructions or call us at 1-800-438-8155 for the name, address or telephone number for the repair center nearest you.



For Technical Support
CALL SUE
704-837-7081

**If you're into radio
monitoring...
DON'T MISS THIS!**



SCHEDULE

Friday, October 15

11:00 am to 5:00 pm
Registration Open
12:00 to 5:00 pm
Exhibits and Listening Post
Open
7:00 to 9:15 pm
"Hobby Talk"

Saturday, October 16

8:00 to 11:30 am
Registration Open
9:00 am to 12:30 pm
Exhibits Open and
Morning Seminars
12:30 to 3:00 pm
Exhibits Open/Lunch Break

Saturday cont'd

3:00 pm
Exhibits Close
3:00 to 5:15 pm
Afternoon Seminars
7:00 to 9:00 pm
Banquet—Served at table
9:00 pm
Transmitter Bug Hunt

Sunday, October 17

9:00 am to 12:30 pm
Morning Seminars
Convention Closes at 1:00 pm

This three day weekend is full of activities for the radio enthusiast:

- Dozens of exhibitors with the latest equipment and accessories for radio monitoring, including R.L. Drake, Grove Enterprises, ICOM America and Sony.
- Join your fellow monitors at a professional listening post featuring the Grove SDU-100.
- A two hour hobby talk starts the weekend off Friday evening and is hosted by moderator Bob Grove. A panel of experts will discuss the current developments in the hobby.
- Attend any of over 35 seminars covering shortwave and scanner monitoring for the beginner through the advanced listener.
- Saturday evening's banquet will feature guest speaker Carole J. Perry, noted author, teacher and promoter of amateur radio.
- Get your scanner charged and ready for the "Bug Hunt"—a highlight at each convention!
- A swap meet area available Sunday for those attendees with equipment to sell or trade.
- Over \$8000 in door prizes!



Enjoy accommodations at the Atlanta Airport Hilton and receive the special nightly rate of only \$69 (save over 50% off the regular \$140 per night rate!)

which includes the following:

- Same rate single or double!
- Free parking!
- Complimentary airport shuttle!
- Baggage check-out for Delta!

Call 404-767-9000 or
800-HILTONS to make your
room reservation now!

Be sure to mention Monitoring Times when making
your reservation to receive the special room rate.

**EXHIBIT AREA PASSES
AVAILABLE AT THE
DOOR FOR ONLY \$5⁰⁰!**

PRE-REGISTRATION FORM

Deadline 9/15/93

Enclosed is my \$50 registration fee!

Enclosed is my \$21.95 banquet fee!

Name: _____

Address: _____

City: _____ State: _____ Zip: _____ Phone #: _____

Method of Payment: Check/MO Visa/MC/Discover

Card# _____

Exp Date: _____

Signature: _____

MONITORING TIMES CONVENTION
P.O. BOX 98
BRASSTOWN, NC 28902
1-800-438-8155



GROVE SDU 100 SPECTRUM DISPLAY UNIT

Purchase the SDU-100 package along with any compatible receiver in this catalog and receive a \$50 discount!

Turn your ICOM R7000, R7100, or R9000 into a powerful spectrum analyzer! Plugs into any receiver or transceiver that has an IF output jack!

Enjoy the high-tech advantage of counter-surveillance professionals who depend upon spectrum analyzers to find eavesdropping transmitters ("bugs").

As the "spikes" appear on the screen you can tune them in quickly; no need to wait for the slow, hit-and-miss search of a scanner. A "freeze" function allows you to hold and examine all of the signals present at any moment in time!

Your receiver's tuned signal is the center of the screen, with up to 10 MHz (or as narrow as 100 kHz) of spectrum displayed simultaneously! Nail those unknowns as soon as they transmit!

Ideal for locating jammers, identifying sources of radio interference, studying signal propagation, testing antennas, aligning receivers and transmitters, and much more!

Connect the SDU-100 to any TTL monochrome monitor, or order the matching VID-100 9" CRT monitor. 12 VDC powered for mobile or field environment; AC adaptor included (the VID-100 is AC powered).

The SDU-100 is configured to operate with a variety of receiver intermediate frequencies (IFs), including 8.8, 10.7, 21.4, 45 and 70 MHz. The IF or receiver model must be specified at the time of order.



Order Today!

Special Pricing when you order the SDU-100 Spectrum Display Unit and VID-100 9" CRT Monitor together, only:

\$599⁹⁵ \$12.50 UPS \$24 2nd Day Air
\$26 US Priority Mail
\$16.50 Canadian UPS \$31 Canadian APP

Ordered separately:

SDU-100 Spectrum Display Unit \$499⁹⁵
\$8 UPS \$11 2nd Day Air \$12 US Priority Mail
\$11 Canadian UPS \$14.50 Canadian APP

SPECIFICATIONS

SPAN: 10, 5, 2, 1 MHz, 500, 200, 100, 0 (Time) kHz
DISPLAY ACCURACY: +/-3% or +/-3 dB, whichever is larger
RESOLUTION BANDWIDTH: 5, 30 kHz
SWEEP TIME: 0.1, 0.5, 2, 6 seconds
IF: 10.7 (others available by special order)
VIDEO OUTPUT: TTL to optional monochrome monitor
MINIMUM DETECTABLE SIGNAL (MDS): -130 dBm nom.
DISPLAY DYNAMIC RANGE: 80 dB

Designed and manufactured by Grove in the USA!

VID-100 9" CRT Monitor \$149⁹⁵
\$8.50 UPS \$17 2nd Day Air \$17.50 US Priority Mail
\$13.50 Canadian UPS \$21.50 Canadian APP

Choosing a Shortwave Receiver

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Choosing a shortwave receiver for your personal use is a lot like choosing a car. You must first decide what basic service you need, then shop for the best buy.

Looking for a good portable? The Sony ICF2010 is the best choice. Featuring keyboard entry of frequencies as well as a tuning dial, the radio offers sensitivity and a choice of wide or narrow selectivity. In addition to 150 kHz-30MHz continuous coverage, the 2010 also offers 118-136 MHz aircraft and 88-108 MHz FM broadcast reception.

The 2010's synchronous detection enhances shortwave reception; single sideband signals are also quite satisfactory. Battery life is much improved over its predecessors and it comes with an AC adaptor. Additional features are found on the new upgraded model SW77, listed in this catalog.

For low cost at reasonable performance, try the Sangean ATS-803A. Continuous 150 kHz-30 MHz AM and SSB reception are offered along with FM broadcast and wide or narrow selectivity. An AC adaptor is included.

If you want pocket portability, forget high quality; the two don't mix. The characteristics of

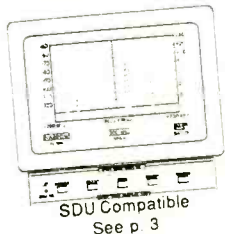
greatest importance to listeners are those which are most commonly compromised in low-cost radios; frequency stability, dial accuracy, selectivity and overload immunity.

The Grove TUN4 preselector will reduce or eliminate overload interference on low cost receivers which suffer from poor dynamic range, and is equipped with connectors for external antennas.

The Yaesu FRG-100 is a pleasing performer at a pleasing price between the low-cost portables and more expensive tabletops. For the serious listener the Drake R8, ICOM R71A, Kenwood R5000 and JRC NR535 head the list.



THE R8 COMMUNICATIONS RECEIVER



It has been nearly a decade since this respected American company withdrew from manufacturing communications equipment; now they have returned better than ever!

The exciting new R8 general coverage communications receiver offers outstanding 100 kHz-30 MHz performance at a competitive cost. Four voice-bandwidth filters combined with excellent audio design make international broadcast listening as well as utilities monitoring a pleasure.

Synchronous detection reduces fading and distortion while passband tuning rejects adjacent frequency interference. Ideal for AM, SSB, RTTY, CW reception.

Optional converter allows AM/FM reception 35-55, 108-174 MHz, while a built-in microprocessor/controller offers RS232 computer control and multiple-function scanning.

Dual VFOs, switchable preamp/attenuator, dual-time-zone clock timer, switchable antenna inputs, universal power supply and more combine to make this new receiver an outstanding value.

SPECIFICATIONS

Frequency range: 100 kHz-30 MHz (35-55/108-174 MHz with optional converter)

Tuning steps: 10/100 Hz (10/100/1000 FM/AM)

Display: Backlit LCD

Dimmer: Yes

Type of listening recommended: International broadcast and utilities

Receiving modes: AM, narrow FM, USB, LSB, RTTY, CW, synchronous AM

Memory: 100 channels

Banks: 10

Scan: Yes

Search: No

Delay: Yes

Squelch: Yes

Clock: Dual time zone

Audio output power: 2.5 W @ 4 ohms for 10 % THD

Record audio output: Yes

Recorder activator: No

S meter: Analog

Computer interface: RS232

Conversion scheme: Double up-conversion

Sensitivity: 0.5 uV 1.5-30 MHz (0.25 uV 5-30 MHz with preamp), 1 uV 100 kHz-1.5 MHz

Selectable preamplifier: Yes

Selectable attenuator: Yes

Selectivity: (-6/-60 dB, 2:1 shape factor) 6/4/2.3/1.8 kHz; 500 Hz (3:1)

Image rejection: greater than 800B 1.5-30 MHz, greater than 60 dB

100 kHz-1.5 MHz

Frequency stability: +/- 10 ppm - 10° to 50° C

Selectable AGC: Off/slow/fast

Dynamic range: 90 dB @ 20 kHz spacing

Passband tuning: +/- 3 kHz

Noise blanker/limiter: Dual

Adjustable notch filter: 500-5000 Hz, 40 dB

Tone control: Yes

Antenna connector: Dual, switched

Dimensions: 13-1/2"W x 5-1/4"H x 13"D

Weight: 13 lbs.

Power requirements: 100/120/200/240 VAC, 50/60 Hz; 11:16

VDC @ 2A

Warranty: 1 year

Order RCV1
Grove discount price only
\$959⁹⁵
Retail ~~\$979~~
\$14.50 UPS
\$27.50 UPS 2nd Day Air
\$28.50 US Priority Mail
\$24.50 Canadian UPS
\$35.50 Canadian APP

ACCESSORIES:

ACC43 VHF Converter \$199.95

ACC49 External Speaker \$48.95 plus \$6 UPS

ACC67 Service Manual \$39.95

ACC77 PC Software \$58.95

Installation fee \$20

KENWOOD R-5000

This extraordinary communications receiver has built-in modes for AM, FM, USB, LSB, CW, FM and FSK (RTTY). 100 memory channels store frequency, mode, and antenna selection (two inputs); 10 Hz tuning accuracy. Non-volatile memory retains functions even if long-life lithium battery fails.

Filters are provided for 6 kHz AM, 2.5 kHz SSB; you can add up to two more (one each: CW, SSB or AM). Excellent audio quality for broadcast monitoring.

OPTIONAL ACCESSORIES

If only accessories are ordered, add \$10 to total order.

ACC50	VC20 118-174 VHF conv.	\$199.95
ACC51	YK88A 6 kHz AM filter	\$84.95
ACC52	YK88S 2.4 kHz SSB filter	\$84.95
ACC53	YK88SN 1.8 kHz narrow SSB	\$84.95
ACC54	YK88C 500 Hz CW filter	\$84.95
ACC55	YK88CN 270 Hz narrow CW	\$94.95
ACC56	DCK2 12VDC mobile power cable	\$12.95
ACC57	VS1 voice synthesizer	\$59.95
ACC59	IF232C translator control	\$94.95
ACC69	IC-10 interface	\$34.95
ACC62	Headphones HS5 deluxe	\$64.95
ACC63	Headphones HS6 lightwt	\$44.95
ACC65	SP23 external speaker (plus \$7.50 UPS shipping)	\$65.95
ACC66	MB430 mobile mount bracket	\$34.95
ACC68	Service manual	\$25

Installation Fee (one or more accessories) \$20 plus \$10 drop ship fee.

Order RCV7
Only
\$899⁹⁵
Retail ~~\$1099⁹⁵~~
\$15.50 UPS
\$30.50 UPS 2nd Day Air
\$32.50 US Priority Mail
\$20 Canadian UPS
\$38.50 Canadian APP



SPECIFICATIONS

Frequency range: 100 kHz - 30 MHz

Keypad frequency entry: Yes

Tuning steps: 10/100 Hz/1/2.5/5/10/20/50 kHz set by mode

RIT (fine tuning): Yes

Display: Fluorescent

Dimmer: Yes

Type of listening recommended: Domestic and international broadcasting; two-way SSB/CW/RTTY

Receiving modes: AM, USB, LSB, narrow FM, RTTY, CW

Memory: 100 channels

Scan: Yes, programmable

Banks: 10

Lockout: Yes

Search: Yes

Clock: 24 hour, dual function with timer

Audio output power: 1.5 watts

Record output: Yes; no activator

S meter: Analog

Computer interface: Optional

Conversion scheme: Dual up-conversion; 50.1125/8.83 MHz

Sensitivity: SSB 1.6-30 25 uV (5) 00-1600 kHz 4 uV; 150-500 kHz 1uV

Selectable preamplifier: No

Selectable attenuator: 10/20/30 dB

Selectivity: (-6/-60dB) AM 6/24 kHz; SSB 2.5/4.9 kHz

Image rejection: 80 dB

Frequency stability: +/- 300 Hz after 30 minutes warmup

Selectable AGC: fast/slow/off

Dynamic range: 102 dB

Passband tuning: Yes

Noise blanker/limiter: Dual

Adjustable notch filter: Yes

Antenna connector: SO-239 (UHF); random wire terminal

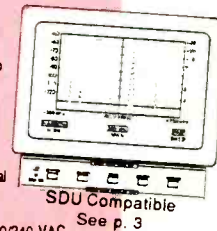
Dimensions: 10.62"W x 3.78"H x 10.6"D

Weight: 12.3 lbs.

Power requirements: 12 VDC (with optional adaptor), 120/240 VAC

Warranty: One year

Accessories included: None





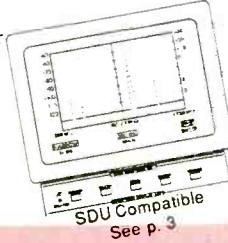
JRC NRD-535D

This top-of-the-line communication receiver Offers continuous frequency coverage of 90 kHz through 30 MHz and reception modes for AM, USB, LSB, CW, RTTY, FAX and narrowband FM.

JRC's continuously-variable passband filter allows the user to custom-select exact filter bandwidth from 0.5-5.8 kHz, to reduce or eliminate adjacent channel interference with minimum impact on the fidelity of the desired signal. Exalted carrier selectable sideband (ECSS) permits additional clarity of reception on AM international broadcasters who are plagued by adjacent-frequency interference.

Four filter bandwidths may be selected for any mode (except NBFM which is 12 kHz). The dual noise blanker is extremely effective in reducing or eliminating aggravating impulse noise like ignition noise and the woodpecker.

Front panel controls include squelch, AF and RF gain controls, tone control, and AGC timing. A 24-hour clock-timer can be pre-adjusted for frequency, mode and on/off time, and includes a record activator. A built-in RS232 interface allows your computer to control virtually every function of this remarkable receiver for even greater listening power.



Order RCV3
\$1688⁹⁵

\$16.50 UPS
\$35.50 UPS 2nd Day
\$35.50 US Priority Mail
\$30.50 Canadian UPS
\$45.50 Canadian Air Parcel Post

SPECIFICATIONS

Frequency range: 90 kHz-30MHz
Keypad frequency entry: yes
Tuning steps: 1 Hz minimum
Display: Fluorescent
Dimmer: 4 levels
Type of listening recommended: Utility and foreign broadcasting
Receiving modes: AM, CW, RTTY, FAX, NBFM, USB, LSB
Memory: 200 channels
Scan: Yes
Delay: Yes
Squelch: Yes
Clock: 24 hour clock/timer
Audio output power: 1 watt @ 4 ohms
Record audio output: 1 mW @ 600 ohms (mini phone plug)
Recorder activator: yes
S meter: Analog-emulation fluorescent
Computer interface: RS232 built-in
Conversion scheme: Triple up-conversion (70.45 MHz/455/97 kHz)

Sensitivity: 0.5 uV 1.5-30 MHz (SSB)
Selectable preamplifier: No
Selectable attenuator: 20 dB
Selectivity: (-6/-60 dB) AUX 12/24 kHz, WIDE 6/15 kHz, INTER 2/6 kHz, NARR 1/3 kHz, FM 12 kHz, continuously adjustable 0.5-5.8 kHz
Image rejection: -70 dB
Frequency stability: +/- 2 PPM after one-hour warmup
Selectable AGC: Fast/slow/off
Dynamic range: 106 dB @ 300 Hz BW
Passband tuning: +/- 1 kHz
Noise blanker/limiter: Dual width
Adjustable notch filter: -30 dB
Tone control: Yes
Antenna connector: SO-239 (UHF)
Dimensions: 13"W x 5"H x 11"D
Weight: 20 lbs.
Power requirements: 120/240 VAC @ 50/60 Hz; 12 VDC 2 2A
Warranty: One year
Accessories included: None

OPTIONAL ACCESSORIES

ACC5 Upgrade Kit \$169.95
(0.5-5 kHz tunable filter for early models)
ACC 24 62CJD00 serial cable for computer \$59.95
ACC25 NVA-319 matching speaker with pushbutton audio filters \$179.95
ACC26 CFL-218A 1.8 kHz extra sharp SSB/RTTY filter \$139.95
ACC27 CFL-232 500 Hz sharp CW filter \$139.95
ACC28 CFL-251 2.4 kHz sharp SSB/fax filter \$139.95
ACC29 CGD-135 High stability (+/-0.5 PPM) crystal oscillator \$79.95
ACC107 RTTY Demodulator \$109.95
Upgrade and filter installation fee: \$20 any quantity

YAESU FRG-100 COMMUNICATIONS RECEIVER

Order RCV 17
Grove price only
\$529⁹⁵

\$7.50 UPS
\$14.50 UPS 2nd Day Air
\$16.50 US Priority Mail
\$18.50 Canadian APP
\$13 Canadian UPS



The long-awaited FRG-100 has finally arrived! Simple to operate, high in performance and low in cost. Now that's an unbeatable combination! This compact lightweight tunes continuously from 50 kHz through 30 MHz and offers USB, LSB, AM and CW modes.

Featuring dual conversion (47.21 MHz/455 kHz), three tuning rates, five-decimal place (10 Hz) readout, fast/slow AGC, 50 scannable memory channels with lockout, 0.25 microvolt sensitivity (SSB/CW), adjustable all-mode squelch, three selectivity bandwidths, noise, Yaesu CAD control capability and a powerful internal speaker, the new FRG-100 is an ideal way to get into serious shortwave listening at a budget price!

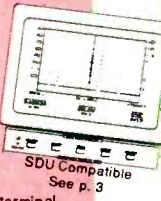
ACCESSORIES:

Installation fee \$20
ACC103 500 Hz narrow CW filter \$139
ACC104 15 kHz FM mode adaptor \$45
ACC105 High stability crystal oscillator \$89
Grove Super Filter Mod \$179.95
Includes installation of two high-selectivity, 13-pole ladder filters. Narrow: 3 kHz @ -6dB, 9 kHz @ -70 dB; Wide: 6 kHz @ -6dB, 15 kHz @ -70 dB.

SPECIFICATIONS

Frequency Range: 50 kHz-30 MHz
Tuning steps: 10/100/1000 Hz plus user-programmable RIT (fine tuning); Selectable CW/SSB offset
Display: Backlit LCD
Dimmer: Yes
Recommended use: General purpose broadcast and utilities
Receiving modes: USB, LSB, CW, AM (NBFM optional)
Memory: 50 channels plus 16 pre-programmed broadcast bands
Scan: Yes Banks: Yes (multimode search options)
Lockout: Individual channels
Priority: Selectable Search: Yes
Delay: Yes Squelch: Yes
Clock: Twin 12/24 hour with sleep timer and recorder switch
Audio output power: 1.5 watts
Recorder activator: Yes
Signal strength indicator: Mechanical S meter

Computer interface: Yaesu CAD program
Conversion scheme: Dual up-conversion (47.21 MHz/455 kHz)
Sensitivity: 1 microvolt AM, 0.25 microvolt SSB/CW
Selectable preamplifier: No
Selectable attenuator: 6 or 12 dB
IF selectivity: 2.4 kHz (SSB), 4/5 kHz (AM)
Image rejection: 60 dB or better
Frequency stability: +/-10 PPM-10 to +50 degrees C.
Selectable AGC: Slow/fast
Passband tuning: No
Noise blanker or limiter: Noise blanker
Adjustable notch filter: No
Tone control: No
Antenna connector: 50 ohm coax conn plus 500 ohm terminal
Dimensions: 9-1/2"W x 3-1/2"H x 10"D
Weight: 6.6 lbs.
Power requirement(s): 13.5 VDC @ 1.2 A; 120 VAC adaptor inc.
Warranty: One year
Accessories included: AC wall adaptor





ICOM R-71A

This receiver is as professional as it looks. The brilliant fluorescent display provides frequency information down to tenths of a kilohertz and alerts the listener to other dial settings (mode, memory, channel, VRO).

Signal resolution of 10 Hz eliminates the need for RIT, even on SSB or RTTY. mode and may be scanned or searched. An effective noise blander has adjustable controls for optimum reduction of a wide variety of impulse noises, from power line hash to the Russian woodpecker.

Filter selectivities of 6, 2.3 and 0.5 kHz are provided; you may add one more for use in any mode. This latest version also reintroduces passband tuning.

Of interest to the visually impaired is the optional EX-310 speech synthesizer which announces the displayed frequency in English.



Order RCV6
Only
\$1037⁹⁵

\$15 UPS
\$30.50 UPS 2nd Day
\$30.50 US Priority Mail
\$39.50 Canadian APP
\$26 Canadian UPS

OPTIONAL ACCESSORIES

One or more accessories installed w/radio -- \$20

ACC1	EX257 FM mode detector	\$49.95
ACC2	SP3 speaker (plus \$7.50 UPS)	\$65.00
ACC3	DC Power kit EX299	\$12.95
ACC4	CR64 high stability crystal	\$79.95
ACC73*	UX14 Level converter	\$70.95
ACC74*	CT-17 computer interface	\$95.95
*Must use ACC73 & ACC74 together		
ACC7	EX310 voice synthesizer	\$59.95
ACC8	FL32A CW narrow filter	\$69.95
ACC9*	FL44A SSB filter	\$178.95
ACC10*	FL63A CW narrow filter	\$59.95
*Use only one filter		
ACC12	RC11 remote control	\$70.95
ACC13	MB12 mobile mount bracket	\$25.95
ACC14	Service manual	\$25.00

SPECIFICATIONS

Frequency range: 100 kHz-30MHz
Keypad frequency entry: Yes, plus tuning knob
Tuning steps: 10 Hz
RIT (fine tuning): No
Display: Fluorescent
Dimmer: Yes
Type of listening recommended: Domestic and international broadcasting, two-way communications
Receiving modes: AM, USB, LSB, RTTY, CW, narrowband FM
Memory: 32 channels plus 2 temporary VFO memories
Scan: Yes
Lockout: No
Search: Yes
Squelch: Yes
Audio output power: 2 watts
Record output: Yes
Recorder activator: Yes
S meter: Analog
Computer interface: Optional

Conversion scheme: Quadruple up-conversion
Sensitivity: 0.2 uV with preamplifier on
Selectable preamplifier: Yes
Selectable attenuator: Yes
Selectivity: (-6/60 dB) wide 6/15 kHz, narrow 2.3/4.2 kHz; optional FM 15/25 kHz
Image rejection: 60 dB
Frequency stability: 50 Hz
Selectable AGC: Yes
Dynamic range: 86 dB
Passband tuning: No
Noise blander/limiter: Dual, adjustable
Adjustable notch filter: Yes
Antenna connector: SO-239 (UHF)
Auxiliary connector: 70 MHz IF output
Dimensions: 11-1/4"W x 4-3/8"H x 10-7/8"D
Weight: 16-1/2 lbs.
Power requirements: 120/240 VAC, 12 VDC with optional EX299
Warranty: One year
Accessories included: None



ICOM R-72

For the serious shortwave enthusiast on a budget, the new R72 offers full 100 kHz-30 MHz frequency coverage and direct keypad entry with advanced features. A backlit LCD shows the receiver's 10 Hz frequency resolution, while 101 scannable memory channels store frequencies in AM, LSB, USB, RTTY, and CW. Dual-range search is included as well as an analog S meter and a recorder activator coupled to a 24 hour clock timer.

SPECIFICATIONS

Frequency range: 30 kHz-30 MHz
Keypad frequency entry: Yes
Tuning steps: 10Hz/1kHz/10kHz
RIT (fine tuning): unnecessary
Display: Backlit LCD; 10 Hz resolution
Dimmer: Yes
Type of listening recommended: Domestic and international broadcasting; two-way SSB/CW/RTTY
Receiving modes: AM, SSB, CW, FM optional
Memory: 101 channels
Scan: Yes
Lockout: Yes
Search: Dual range
Squelch: Yes
Audio output power: 2 watts
Recorder Activator: Yes
Computer interface: optional

Banks: No
Priority: No
Delay: Yes
Clock: Yes with timer
Record Output: Yes
S meter: Yes, analog

Conversion scheme: Triple up-conversion; 70.4515 MHz, 9.0115 MHz, 455 kHz
Sensitivity: 100 kHz-1.8 MHz 2uV SSB/12.6uV AM; 1.8-30 MHz (preamp on) 0.16 SSB/2uV AM; optional FM 0.5uV
Selectable preamplifier: Yes
Selectable attenuator: 10/20/30 dB
Selectivity: (-6/-60dB): AM wide 6/20 kHz; AM narrow/SSB 2.3/8 kHz; optional FM 15/30 kHz
Image rejection: 70 dB
Frequency stability: +/- 30 Hz after 1 hour warmup
Selectable AGC: fast/slow
Dynamic range: 100 dB
Passband tuning: No
Antenna connector: SO-239 (UHF) and push dip
Auxiliary connector: No
Dimensions: 9.5"W x 3.7"H x 9"D
Weight: 10.6 lbs.
Power requirements: 120/240 VAC, built-in niacds; optional 13.8 VDC mobile kit.
Warranty: One year
Accessories included: None

Order RCV8
Only
\$919⁹⁵

\$15 UPS
\$27.50 UPS 2nd Day
\$30.50 US Priority Mail
\$39.50 Canadian APP
\$26 Canadian UPS



Campers, hikers, geologists, explorers, boaters, motorists, balloonists, fliers, cyclists, mountain climbers—find your position within a few feet anywhere on Earth with the new, low-cost...

ICOM GP-22 SATELLITE POSITION LOCATOR

Use the same precision satellites that helped us win the Gulf War. This tiny (2-1/2" x 5-1/4", 11 oz) earth station fits in the palm of your hand! The easy-to-read digital display reveals bearing information from up to five earth-orbiting satellites, providing your latitude and longitude to within 300 feet (limited by the Department of Defense)—even your altitude! Easy to use. Track your direction or return to a precise location. Create a route. Confirm your waypoints. Compute estimated time of arrival (ETA). Display heading, speed, bearing and range. Compute world and local time. Powered by rechargeable battery pack or optional AA cells. Includes carrying case, cigarette lighter power cord, AC wall adaptor/charger, illustrated instruction book.

Order GP22 Only **\$754⁹⁵**
\$7.50 UPS
\$11.50 2nd Day Air
\$12.50 Priority Mail
\$13.50 Canadian UPS
\$16.50 Canadian APP



SANGEAN ATS-803A



Whether you are a beginner looking for a high performance portable at low cost, or a seasoned SWL planning on a second receiver, this is clearly the most feature-packed, high performance portable under \$200!

Order RCV4 Only **\$169⁹⁵**
\$7.50 UPS
\$14.50 2nd Day Air
\$15.50 US Priority Mail
\$17.50 Canadian APP
\$11.50 Canadian UPS

SPECIFICATIONS

Frequency range: 150 kHz - 30 MHz, 87.5 - 108 MHz	Selectable preamplifier: No
Keypad frequency entry: Yes	Selectable attenuator: RF gain control
Tuning steps: 1 kHz	Selectivity: Wide/narrow AM/SSB (6.5 kHz AM)
RIT (fine tuning): Tuning knob and BFO	Image rejection: AM 50 dB, FM 60 dB
Display: Illuminated LCD	Frequency stability: Quartz PLL
Dimmer: No	Selectable AGC: No
Type of listening recommended: Domestic & intl broadcast, casual	Dynamic range: Not available
Receiving modes: AM, SSB, wideband FM	Passband tuning: No
Memory: 9 channels	Noise blanker/limiter: No
Banks: No	Adjustable notch filter: No
Priority: No	Tone control: Separate bass & treble
Delay: Yes	Antenna connector: RCA photo plug
Clock: With alarm/sleep functions	Auxiliary connector: No
Audio output power: 900 milliwatts	Dimensions: 11-1/2"W x 6-1/4"H x 2-1/2"D
Record output: 5 pin DIN connector; 1 millivolt @ 1000 ohms	Weight: 4 lbs.
S meter: LED light bar	Power requirements: 2 AA and 6 D cells or 120 VAC
Computer interface: No	Warranty: 1 year
Conversion scheme: Dual up-conversion; 55.845 MHz, 10.7 MHz, 450 kHz	Accessories included: AC adaptor, stereo headphones, shoulder strap, SW handbook, external antenna adaptor.
Sensitivity: Not available	

SPECIFICATIONS

Frequency range: 150 kHz-30 MHz AM/SSB, 87.5-108 MHz FM
Keypad frequency entry: Yes
Display: Backlit LCD
Dimmer: Yes
Recommended use: Casual SW listening
Receiving modes: AM, SSB, FM
Memory: 45 presets Scan: Yes
Banks: No Lockout: No
Priority: No Search: Yes
Delay: Yes Squelch: No
Clock: Dual time display with record timer
Audio output power: 800 mW
Record audio output: No
Recorder activator: Internal programmable cassette recorder/player
Signal strength indicator: Yes
Computer interface: No
Conversion scheme: Double conversion
Sensitivity: Not available
Selectable preamplifier: RF gain control
Selectable attenuator: No
IF selectivity: Wide/narrow switch
Image rejection: Not available
Frequency stability: Not available
Selectable AGC: No Dynamic range: Not available
Passband tuning: No Noise blanker/limiter: No
Adjustable notch filter: No Tone control: Yes
Antenna connector: Yes Auxiliary connector: No
Dimensions: 11-1/4"W x 7-3/8"H x 2-3/4"D
Weight: 3 lbs. 13 oz. Warranty: One year
Power requirements: AC, internal batteries
Accessories included: AC adaptor, external antenna adaptor, shortwave handbook

Top-of-the-line With Built-In Cassette Recorder

SANGEAN ATS-818CS

Imagine—record your favorite programs automatically with the dual-zone clock timer on any frequency from 150 kHz through 30 MHz, 87.5-108 MHz FM as well! This impressive portable has SSB and CW reception, 45 memory channels, wide/narrow filter selectivity, signal strength indicator, AC wall adaptor and more!



Order RCV9 Only **\$249⁹⁵** Retail **\$399**
\$7.50 UPS
\$14.50 2nd Day Air
\$16 US Priority Mail
\$20.50 Canadian APP
\$13 Canadian UPS



SHORTWAVE RECEIVER



SONY ICF-SW7600

It was inevitable. The early models ICF 2002 and 2003 have been replaced by a tiny marvel with AM, SSB, and even FM stereo coverage! Measuring just over 7 inches wide and weighing 22 ounces, the SW7600 is loaded with features! DX/local switch reduces "pumping" on strong SSB signals; power switch lock prevents accidental battery depletion during transport.

Continuous 150 kHz-29.995 MHz frequency coverage plus 87.6-108 MHz FM headphone stereo (headphones included!), pushbutton tuning, tone control, external antenna jack, clock timer with sleep function, tilt bracket, keyboard lock, direct-entry keypad and ten scannable memory channels keynote the high-tech features of this potent portable!

SPECIFICATIONS

Frequency range: 150-29995 kHz, 87.6 - 108 MHz
 Keypad frequency entry: Yes
 Tuning steps: 5 kHz, fast/slow button
 RIT (fine tuning): +/- 10 kHz AM and SSB
 Display: Backlit LCD
 Dimmer: No
 Type of listening recommended: Domestic & international broadcasting, casual SSB
 Receiving modes: AM, wide FM, SSB
 Memory: 10 channels Scan: Yes
 Banks: No Lockout: No
 Priority: No Search: Yes, with times delay
 Delay: No Squelch: No
 Clock: With timer & sleep function
 Audio output power: Unavailable
 Record audio output: yes
 Recorder activator: yes
 S meter: Single "tune" LED
 Computer interface: No
 Conversion scheme: Dual conversion
 Sensitivity: Unavailable
 Selectable preamplifier: No
 Selectable attenuator: DX/local switch
 Noise blanker/limiter: No
 Adjustable notch filter: No
 Tone control: Music/news switch
 Antenna connector: No
 Dimensions: 7-9/32"W x 4-11/16"H x 1-1/4"D
 Weight: 1-1/4 lbs.
 Power requirements: 4 AA cells or AC adaptor
 Warranty: One year.
 Accessories included: Stereo earplugs, carrying case, reel antenna, AC wall adaptor.

Manufacturer's suggested retail \$249⁹⁵

Order RCV11 \$7.50 UPS
 \$11.50 UPS 2nd Day Air
\$219⁹⁵ \$13.50 US Priority Mail
 \$11.50 Canadian UPS
 \$15.50 Canadian APP

SPECIFICATIONS

Frequency range: 150 kHz-30 MHz AM/SSB, 87.5-108 MHz FM
 Keypad frequency entry: yes
 Tuning steps: 0.1/1 kHz RIT or fine tuning: yes
 Display: LCD Dimmer: No
 Recommended use: Casual International broadcast listening
 Receiving modes: AM/SSB
 Memory: 125 channels
 Scan: Yes
 Banks: 25 (5 channels each)
 Lockout: No Priority: No
 Search: Yes Delay: Yes
 Squelch: No Clock: 12/24 hour
 Audio output power: 400 milliwatts at 10% THD
 Record audio output: 245 millivolts @ 10 K ohms
 Recorder activator: Yes
 Signal strength indicator: LCD bargraph
 Computer Interface: No
 Conversion scheme: Dual 55.845 MHz/455 kHz (10.7 MHz FM)
 Sensitivity: Unavailable Selectable preamplifier: No
 Selectable attenuator: Yes Tone control: Yes
 Antenna connector: 1/8" miniplug
 Auxiliary connector: No
 Dimensions: 7-3/4"W x 5"H x 1-1/2"D
 Weight: Approx. 2 lbs Warranty: One year
 Power requirement(s): 4 AA batteries; 6VDC (AC adaptor inc.)
 Accessories included: Stereo earphones, AC adaptor, earpads, carrying case, compact antenna, external antenna adaptor, books and manual

SONY ICF-SW55

For the traveler on the go, reliable shortwave coverage — AM and SSB — are at your fingertips with the popular SW55. Just check all the features found in this compact powerhouse:

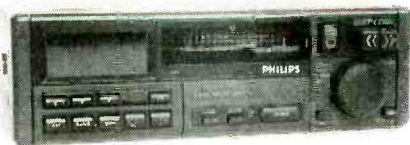
- Frequency range and modes: 150 kHz-30 MHz AM/SSB, 76-108 MHz FM
- Station Name tuning with LCD display
- 125 Frequency Memory
- .1/1 kHz Tuning Steps
- EEPROM Memory (no battery backup required)
- FM Stereo (earphones only)
- World Time Clock
- Includes carrying case, soft pouch, world band guidebook, AC adaptor, AN-71 compact antenna, stereo earphones.



Order RCV15
 Only
\$369⁹⁵

Retail \$449⁹⁵
 \$7.50 UPS
 \$14.50 UPS 2nd Day Air
 \$17.50 US Priority Mail
 \$20.50 Canadian APP
 \$13 Canadian UPS

PHILIPS DC-777 Mobile/AM/FM/SHORTWAVE



For those mobile shortwave listeners who want it all—FM stereo, local AM medium wave and international broadcasting, the DC777 even includes a stereo cassette player so you can hear your favorite tapes when listening conditions aren't the best. Twenty memory channels with autosearch, a brilliantly-backlighted LCD frequency display, crisp stereo FM, compact in-dash mounting, digital frequency entry—just a few of the advanced features which are found on this high quality, multiband auto radio. DIN mounting bracket included for imported vehicles.

SPECIFICATIONS

Freq Range: 530-1710, 3170-21910 kHz AM; 87.5-108 MHz FM
 Keypad frequency entry: Yes
 Tuning steps: 1/10 kHz AM, 50 kHz FM
 RIT (fine tuning): No Display: Backlit LCD
 Sensitivity: Unavailable Dimmer: No
 Type of listening recommended: Broadcasting
 Receiving modes: AM/WFM
 Memory: 20 shortwave presets
 Scan: Yes Search: Five-level autostore
 Delay: Infinite Squelch: No
 Clock: Three program timers
 Audio output power: 50 watts max.
 Conversion scheme: Double conversion
 Selectable preamplifier: No Selectable attenuator: No
 Tone control: Bass, treble, balance fader
 Antenna connector: Motorola Auxiliary connector: No
 Dimensions: 7"W x 2"H x 6"D
 Weight: Approx. 8 lbs. Warranty: One year
 Power requirements: 13.6 VDC
 Accessories included: DIN mounting bracket

Order RCV12 \$7.50 UPS
\$349⁹⁵ \$12.50 UPS 2nd Day Air
 \$16 US Priority Mail
 \$12.50 Canadian UPS \$18.50 Canadian Air PP

ACC91 Pull-out security mount \$59.95
 ACC92 U.S. vehicle dashmount kit \$19.95
 (specify model and year when ordering)
 ACC93 Wired remote control kit \$79.95



UNIVERSAL M8000 MULTIMODE DECODER



Now, the most advanced data reader/decoder ever produced! Nothing could be simpler: plug the new M8000 into your receiver's or scanner's speaker or earphone jack, connect a printer or VGA color monitor, and copy Morse code, RTTY, ASCII, TOR (FEC and ARQ), packet, FDM, Russian Cyrillic, bit inversion, facsimile and even piccolo--all off the air! The M8000 will even automatically tune its filters!

Ideal for testing data transmissions--reads digital pager transmissions (GOLAY and POCSAG) when connected to any scanner (unlawful for unauthorized listening!). Print squelch prevents noise from generating garbled messages, while internal displays alert you to baud rates, control characters, tuning graphs and other information, all in 16 vibrant colors!

Operates on 120 or 240 VAC, 50/60 Hz, and measures 16-3/8" W x 3-1/2"H x 12-3/4"D. Truly a remarkable monitoring accessory for the serious utilities enthusiast.

Optional 19-inch rack panel mounting kit \$19.95

SPECIFICATIONS

RECEPTION MODES:

- Morse (5-120 WPM)
- RTTY (45/50/57/75/100 baud and 20-250 baud non-standard)
- ASCH (75/110/150/300/600/1050/1200/1800 baud)
- BITOR (A/B/AMTOR A/AMTOR B/AROTOR/FECTOR)

- FDM/VFT (8/12/16/24 channel)
- Piccolo
- TDWARQ (M2/M4/E3/S/SWED)
- FEC (A/S)
- Packet (300/1200 baud)
- Pager (Golay/POCSAG)
- Facsimile (60/90/120/240 LPM, AM/FM)
- Cyrillic (Russian third shift)

Order DEM6
Retail \$1399⁹⁵
Grove price only
\$1298⁹⁵
\$10.50 UPS
\$20.50 UPS 2nd Day Air
\$20.50 US Priority Mail
\$35.50 Canadian APP
\$25.50 Canadian UPS

MFJ-1278B

All-Mode Digital Decoder For Your Computer!



If you have an IBM compatible computer (Mac and Commodore adaptors available) and a shortwave receiver or transceiver, you can now display radioteletype messages, bit inversion RTTY, packet communications (military, commercial and amateur), news and weather facsimile photos and maps, AMTOR and PACTOR messages, Morse code, Navtex alerts, ASCII text, even amateur slow-scan television! Top-rated demodulator in independent tests!

Multi-grey level gives sharp newsphoto and SSTV imaging! LED all-mode tuning meter makes perfect signal adjustment a snap, and an automatic signal identification circuit selects the mode for you! If you are a licensed amateur, the MFJ-1278 can be used for transmitting as well! Let us know what model transceiver you have, and we'll provide the interface cable (see list below)!

Hams can use the personal mailbox soft-partitioned memory for electronic messages.

Includes port for Epson or IBM compatible printer. Full-color SSTV is displayed on your color monitor with the optional MFJ-1289 terminal software.

The MFJ-1278 alone prints out SSTV and FAX, but requires the MFJ-1289 MultiCom enhancement package to display on screen. This powerful IBM-compatible software provides high-resolution FAX imaging, macro keys for instant mode changes without having to reset parameters, and an alarm for detecting key letters, words or phrases. For transmitting, many additional features are provided.

Comes with 32K RAM, host mode, KISS interface for TCP/IP/MSYS, independent transmit level for each port, random code generator, lithium battery backup, RS-232 and TTL serial ports, socketed ICs, tuneup command, peripheral I/O port, automatic serial numbering, programmable message memories, dual radio ports for HF and VHF, CW paddle jack, audio amplifier and monitor speaker for signals and sidetones, packet connect bell, full operation manual. As if this weren't enough, each 1278 is accompanied by a coupon entitling the owner to one free upgrade in the future!

Measures only 9-1/2"W x 1-1/2"H x 9-1/2"D. Powered directly from 120 VAC/60 Hz, or 12 VDC.

New features for MFJ-1278B:

- New PACTOR mode
- 32K bytes Enhanced Packet mailbox Allows separate call sign, auto forwarding and reverse mail forwarding. Remote Sysop access, Sysop paging, chat mode, mailbox C-text "Has-mail" LED indicator, Mailbox is expandable to 128K or 512K
- New COLOR SSTV VIS tones. Allow other SSTV receiver to auto start picture
- 1 Megabit system EPROM
- 64K bytes battery backup RAM
- European RTTY tones selectable
- External reset, optional scope tuning output
- Selectable 19,200 baud terminal operation

Order DEM8
Only
\$299⁹⁵
\$7.50 UPS
\$13.50 UPS 2nd Day
\$15.50 US Priority Mail
\$12.50 Canadian UPS
\$18.50 Canadian APP

DEM4 MFJ 1278BT Turbo with 2400 baud modem! Only \$369⁹⁵

TNC cables, \$13.95 each:

- ACC41** Icom 8 pin (MFJ-5084)
- ACC42** Yaesu 8 pin (MFJ-5080)
- ACC46** Kenwood, Alinco 8 pin (MFJ-5086)
- ACC44** Kenwood HT (MFJ-5026)
- ACC45** Icom, Yaesu HT, Alinco DJ-560 (MFJ-5024)

ACCESSORIES:

- ACC39** MFJ-1282B Commodore 64/128 adaptor \$39.95
- ACC40A** MFJ-1289 Hi-res enhancer (5-1/4" disk) \$59.95
- ACC40B** MFJ-1289 Hi-res enhancer (3-1/2" disk) \$59.95
- ACC61** MFJ-1290 Amiga adaptor \$49.95



THE GROVE SKYWIRE ANTENNA

Now with improved waterproof feedline connector at no extra charge!

Highest performance and lowest cost—an unbeatable combination! Why restrict your frequency coverage with the gaps found in expensive trap dipoles or unpredictable random wire when you can get unsurpassed full-frequency reception with the Grove Skywire?

Comes assembled with SO-239 UHF female connector ready for your PL-259 (UHF male) equipped coaxial cable (50 or 75 ohm) see page 26; includes two professional porcelain end insulators and complete instructions.

Outdoor dipole for worldwide shortwave reception

HAMS! Ideal for transmitting when used with a transmatch. (1.8-30 MHz at up to 250 watts)

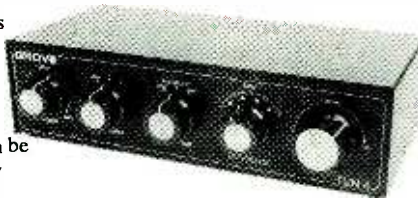
Order ANT 2 Only \$29.95
\$5UPS
\$7.50 UPS 2nd Day
\$5 US Priority Mail
\$7 Canadian APP
\$8.50 Canadian UPS

SPECIFICATIONS
Length: 66 feet
Feedpoint impedance: 50 or 75 ohm (nominal)
Feedpoint location: 22 feet from end
Elements: 18 AWG (16 x 30) bare stranded copper
Connector housing: Heavy duty black phenolic

Build your own SW dipole! ACC101 CH239 SW Dipole Connector only \$9.95
Wire not included!

GROVE'S INDOOR/OUTDOOR ANTENNA SYSTEM

Here's the shortwave monitor's dream—a high performance, amplified antenna system for general coverage shortwave and medium wave monitoring. For indoor use, the ANT-6 Hidden Antenna—a thin profile, flexible wire antenna—can be inconspicuously run along molding, out a window to a tree, even under a rug. For outdoor use, the ANT-2 Skywire Antenna—a 66-foot, off-center fed antenna—includes pre-measured stranded copper antenna wire, porcelain end insulators and custom center insulator for your PL-259 coax connection. And when connected to the powerful TUN-4 signal booster, you have instant coverage from 100 kHz to 30 MHz!



SPECIFICATIONS
Gain: Approximately 20 dB
Freq Range: 100 kHz-30MHz in 4 bands
Pre-selector Type: Series-tuned L-section filter
Power Required: 9 to 18 volts DC (12 VDC nom.) @ 30 mA.
Connectors: SO239 (4) signal line, 2.1 mm DIN power
Cabinet: Custom formed aluminum, baked enamel finish
Dimensions: 9-1/4"W x 3"H x 4"D
Weight: 1-1/2 lbs.

Yes, global short wave reception will be at your fingertips, and you can operate two radios at one time!

Easy to use and extremely flexible, the TUN-4 has a built-in, solid-state booster amplifier to give additional strength to all received signals from 100 kHz through 30 MHz, broadcasters and utilities stations. Wall adaptor (120VAC/12VDC) included.

WHAT YOU NEED TO ORDER:

- ANT 2 Skywire Antenna (above) **\$29.95**
- or
- ANT6 Hidden Antenna (see pg. 26 for specs) **\$19.95**
- TUN-4 MiniTuner Plus **\$99.95**
- CKSW Accessory kit **\$12.95**

includes 20' antenna wire, banana plug plus 3 adaptors for all portable and tabletop multiband radios equipped for external antenna connections.

Shipping charges for system ordered together:
\$7.50 UPS \$11.50 UPS 2nd Day Air \$8.50 US Priority Mail
\$15.50 Canadian UPS \$13.50 Canadian APP

Shortwave Antennas and Accessories

While it is true that any length of wire will pick up signals, a well planned antenna installation will pick them up better. The greatest efficiency of an antenna occurs when its electrical length matches that of the incoming radio wave (resonance). For a given length this only occurs at one frequency and related multiples. It is the job of the antenna designer to come up with the best combination of characteristics for wide frequency coverage.

The "bigger the better" concept has its limitations. Once an antenna is large enough to hear signals above the noise generated by the receiver's own circuitry, further strength is unnecessary. For most applications 20-75 feet is plenty long enough; in fact, doubling the length of a matched antenna will improve signals by only 3 decibels—half an S unit and barely discernible.

Impedance matching (standing wave ratio-SWR) may be important for transmitting, but is of virtually no concern in receiving. While a perfect match between an antenna and receiver will deliver the greatest signal strength, the background atmospheric noise (hiss and static) will increase proportionately. The net result will be a high S-meter reading, but no better signal readability above the noise.

A wire antenna may be thick or thin, made of any metal, insulated or uninsulated, stranded or solid; it will hear all signals the same. Choose your wire for strength, solderability and corrosion resistance.

An antenna should be as high as possible and away from large metal surfaces and electrical power lines to avoid electrical noise pickup and shock hazard. Indoor antennas often pick up noise from household appliances, although loop antennas may be rotated for minimum interference.

Recommended Antennas

For shortwave reception, it's hard to beat an elevated dipole. In actual field tests the low-cost Grove Skywire (ANT-2) repeatedly equalled or outperformed any other receiving antenna on the market including expensive trap dipoles.

Trap dipoles are designed to work best on certain ranges like the broadcast or ham bands, often compromising the remaining frequency ranges. Why buy a general coverage receiver, then reduce its capability with a frequency-restricting antenna?

For medium and longwave reception, the operator may wish to disconnect the ground side of the feedline, thus allowing the feedline to become part of the antenna for added length and improved low frequency signal strengths.

Directional antennas concentrate incoming signals ("gain") from one direction while rejecting interfering signals from other directions.

The large capture area (aperture) of a big antenna overcomes poor sensitivity in old receivers by providing stronger signals, but modern receivers have excellent sensitivity and require smaller antennas.

Active antennas are nothing more than short vertical elements attached to an amplifier to approximate the signal levels delivered by a full-size antenna. Untuned amplifiers are vulnerable to strong signal overload because of limited dynamic range. This produces gain compression (apparent lack of sensitivity) and intermodulation ("intermod"—the mixing of signal frequencies heard as spurious signals throughout the listening range).

Some active antennas, including the Grove



The Top 100 SW Frequencies

An introduction to shortwave listening from *Grove Enterprises and Monitoring Times*. ©1993

Hidden Antenna system, overcome this shortcoming by including a preselector which selects the desired frequency and attenuates all others.

Because of their indoor location, complexity, vulnerabilities and cost, active antennas should be chosen only when adequate outdoor antennas are not possible.

If an antenna intercepts enough signal voltage to overcome losses and noise in the receiver, no amount of amplification will make the signal easier to copy, just louder—along with louder background noise.

Feedline

A wire run from your receiver to a nearby tree may produce excellent reception, but it is susceptible to electrical noise pickup from nearby appliances; use coaxial cable for your antenna lead-in. For reception below 30 MHz, virtually any well-shielded coax like RG-58/U, RG-59/U, RG-6/U or RG-8/U is satisfactory for runs up to at least 100 feet.

Preselectors

A preselector can be thought of as a frequency-adjustable gate for radio signals; its purpose is to pass desired signal frequencies while rejecting all others. Installed between the antenna line and receiver, it eliminates intermodulation, image interference and desensitization caused by strong signals in economy receivers. It is not an impedance matching device.

An amplified preselector like the Grove TUN4 not only passes those desired signals, but amplifies them as well, often improving reception when the antenna is small or indoors.

Grounding

A connection to an earth ground rarely makes signals stronger, but will lessen the hazard of electrical shock and may reduce electrical line noise interference or AC hum on received signals.

An effective ground consists of a short length of heavy gauge wire (or coax cable shield) connected to a single metal pipe or rod driven at least eight feet into moist soil. Dry soil or sand is worthless as a ground. A metal (not PVC) cold water pipe may work, but hot water pipes are usually caulked at the water heater, electrically insulating them. As a last resort, connect your ground wire to the screw holding on the wall plate over the AC outlet.

Equipment chassis should be commonly tied together by a single ground wire to reduce common mode hum. Experiment with different grounding combinations for best results.

The old-fashioned gap-type lightning arrestors so common during the vacuum tube era are no longer adequate; transistors burn out at voltages much lower than an air gap can protect. Offering much better protection are the new gas-charge types such as the Grove LA1 and Alpha Delta TransiTrap.

While nothing can guarantee protection from a direct lightning strike (always disconnect your antenna from your equipment during storm season), these devices will harmlessly short-circuit any voltages induced on the antenna by close strikes.

Nowhere in the radio spectrum is found as much intrigue as on shortwave. The following frequencies (in kHz) list voice utilities (two-way communications) using upper side-band (USB) and AM broadcasters best heard in the early evening hours.

UTILITIES			
1620	Pirate Broadcasters		
2500AM	WWV Time Signals		
2670	U.S. Coast Guard		
4065	Mississippi River Barges		
4071	Ship working channel		
4089	Mississippi River Barges		
4113	Ship calling channel		
4146	Ship calling channel		
4149	Mississippi River Barges		
4411	Ship working channel		
4417	Ship working channel		
4426	US Coast Guard		
4467.5	Civil Air Patrol		
4517	Air Force MARS		
4593.5	Air Force MARS		
4637.5	Offshore petroleum		
4670	"Spy numbers" broadcasts		
4742	"Spy numbers" broadcasts		
5015	Army Corps of Engineers		
5320	U.S. Coast Guard		
5598	International airlines		
5616	International airlines		
5680	U.S. Coast Guard		
5692	U.S. Coast Guard air/ground		
5696	U.S. Coast Guard air/ground		
5703	Tactical Air Ground		
5812	"Spy numbers" broadcasts		
6224	Mississippi River barges		
6227	Mississippi River barges		
6506.4	U.S. Coast Guard ships		
6513	Inland waterways		
6230-	Mississippi River barges		
6577	International airlines		
6586	International airlines		
6604	Flight weather		
6673	NOAA hurricane hunters		
6683	Andrews AFB, VIP		
6697	U.S. Navy		
6738	U.S. Air Force air/ground		
6753	Canadian Air Force		
6761	Strategic Air Command		
6802	"Spy numbers" broadcasts		
6812	Air Force diplomatic		
6927	Andrews AFB, VIP		
7416	Pirates		
8294	Ship to shore, Pacific		
8297	Mississippi River barges		
8418	"Spy numbers" broadcasts		
8740	Ship to shore		
8778	U.S. Navy		
8784	Ship to shore		
8803	Ship to shore		
8806	Ship to shore		
8825	International airlines		
8846	International airlines		
8876	NOAA Hurricane Hunters		
8879	International airlines		
8891	International airlines		
8921	International airlines		
8972	U.S. Navy, Atlantic		
8984	U.S. Coast Guard air/ground		
8989	U.S. Air Force air/ground		
8993	U.S. Air Force air/ground		
9014	U.S. Air Force air/ground		
10493	FEMA emergency net		
10780	NASA air/ground		
11176	U.S. Air Force air/ground		
11182	Scott Air Force Base, air/ground		
11200	RAF, flight weather		
11229	U.S. Air Force diplomatic		
11233	Canadian Air Force air/ground		
11234	RAF, air ground		
11243	Strategic air command		
11246	U.S. Air Force air/ground		
11282	International airlines		
12290	U.S. Coast Guard		
12326	Ship to shore		
13089	U.S. Coast marine weather		
13181	U.S. Navy		
13201	U.S. Air Force air/ground		
13215	U.S. Air Force air/ground		
13241	U.S. Air Force air/ground		
13270	Flying weather		
13282	Flight weather		
13306	International airlines		
13354	NOAA Hurricane Hunters		
14325	NOAA Hurricane Hunters		
14441.5	Navy MARS		
14447	Navy MARS		
15000AM	WWV Time Signals		
15015	U.S. Air Force		
INTERNATIONAL BROADCASTERS			
<i>(Schedules subject to change)</i>			
5960	Canada	9755	Canada
6040	Germany	9745	Ecuador
6165	Netherlands	12095	England
6175	England	13660	Cuba
7325	England	13760	USA
7355	USA	15155	Ecuador
7375	Costa Rica	17795	Australia
9530	Spain	21740	Australia
9685	Sweden		
TIME SIGNALS			
WWV:5000	10000	15000	20000
CHU: 3330	7335	14670	



MFJ 752C SIGNAL ENHANCER II



Reduce interference and enhance sound with the latest all-mode, dual, tunable filter. Connect between your receiver's or scanner's external speaker jack and an external speaker or headset, then tune the two filters to peak or notch audio signals.

Remove annoying whistles with the 70 dB notch filter. Set audio bandwidths from a sharp 40 Hz to full range sound. Suppress static crashes and impulse noise with the ANL clipper.

External speaker, headphones and AC power supply required.

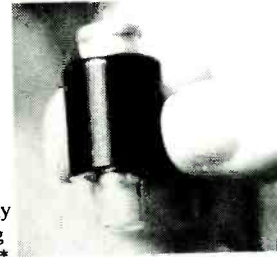
Order **FTR1** \$94⁹⁵
\$5.50 UPS
\$9.50 UPS 2nd Day
\$8 US Priority Mail
\$11.50 Canadian APP
\$10.50 Canadian UPS

ACCESSORY:
ACC20 AC Power Supply \$9.95

LIGHTNING/EMP PROTECTOR

For Scanners / Shortwave Receivers

While nothing can withstand a direct lightning hit, the new Grove LA-1 connects between your antenna cable and radio to prevent induced voltages from nearby lightning strokes, high-powered transmitters, and other massive energy surges from burning out your equipment*



Not a flimsy spark gap or simple diode shunt, the Grove LA-1 uses state-of-the-art gas discharge technology, proven in government tests to be the best deterrent against lightning and electromagnetic pulse (EMP) surges.

Responds in one ten-millionth of a second to short-circuit bursts of 250,000 volts at currents of 5000 amps, while allowing normal signal voltages (and even control voltages up to 50 volts AC or DC) to pass undisturbed! Extremely low signal loss—0.2 dB at 1500 MHz! Ideal for protecting scanners, shortwave receivers, CB equipment, VCRs, TVs, satellite receivers, FM stereo systems and more. The tiny protector measures only 3/4"D x 1-1/2"L and comes equipped with standard F connectors for home entertainment equipment and Grove accessories. Adaptors are available as shown below.

- | | | |
|------------------------------------|----------------|----------------------|
| LA1F (with F conn) | \$19.95 | \$3.50 UPS |
| LA1B (with BNC conn) | \$24.95 | \$6.50 UPS 2nd Day; |
| LA1P (with PL-259 UHF conn) | \$24.95 | \$4 US Priority Mail |
| LA1M (with Motorola conn) | \$29.95 | \$6.50 Canadian APP |
| | | \$8.50 Canadian UPS |

*Will not prevent AC power line surges; such protectors are available from Radio Shack, computer stores, and most department stores.

REALISTIC® AMPLIFIED SHORTWAVE ANTENNA



It's an active antenna and amplified preselector all in one! Operated by an internal nine-volt battery (not supplied) or an optional AC wall adaptor, this new signal booster is ideal for virtually any 3-30 MHz shortwave receive, desktop or portable.

Offering a variable attenuator/gain control from 0-20 dB and razor-sharp tuning, the Realistic booster has its own 29" telescoping whip, or will accept an external antenna through its RCA phono-type antenna connector. Receiver antenna interconnect cable with 1/8" (3.5 mm) plug included for Sony and similar receivers (other adaptors available; see accessories below).

Take heart, apartment dwellers and suitcase travellers, strong signals can come in small packages!

Order **ANT 17** \$29⁹⁵
\$4.50 UPS
\$6.50 UPS 2nd Day Air
\$4 US Priority Mail
\$6.50 Canadian APP
\$8.50 Canadian UPS

ACCESSORIES
ACC20 AC wall adaptor \$9.95
ACC108 RCA & PL-259 (UHF) adaptors, random wire antenna \$9.95

UNIVERSAL REEL ANTENNA

For Shortwave Portables

Whether you have a Sony, Sangean, Realistic, Grundig or other whip-portable shortwave radio, this new, 23-foot, reel-out antenna can be firmly attached for better reception. When not in use it can be conveniently stored in a pouch or even your pocket!

Comes with whip clip and 1/8" (3.5 mm) standard antenna adaptor.



Order **ANT 16** Only \$12⁹⁵
\$4.50 UPS
\$6.50 UPS 2nd Day Air
\$4 US Priority Mail
\$6.50 Canadian APP
\$8.50 Canadian UPS

For Technical Support
CALL LARRY
704-837-7081





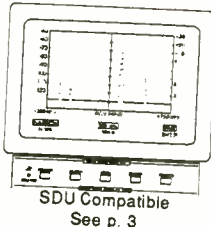
ICOM R7100

VHF/UHF Communications Receiver



SPECIFICATIONS

Frequency range: 25-2000 MHz
 Keypad frequency entry: Yes
 Tuning steps: 100 Hz; 1/5/10/12.5/20/25/100 kHz; 1 MHz
 RIT (fine tuning): No
 Display: LCD
 Dimmer: yes
 Type of listening recommended: Utility monitoring
 Receiving modes: AM, WAM, FM, WFM, NFM, USB, SSB
 Memory: 900 channels
 Scan: 5/12 ch/sec Banks: 9
 Lockout: Yes Priority: Yes
 Search: Yes
 Delay: 0/2/5/10 seconds; infinite
 Squelch: Yes
 Clock: Yes with 2 event timer
 Audio output power: 2 W @ 10% THD
 Record output: Yes
 Recorder activator: Yes
 S meter: Analog
 Computer interface: Optional
 Conversion scheme: Triple up-conversion under (778.7 or 266.7, 10.7 MHz; 455 kHz)
 Sensitivity: 0.35 mV NFM
 Selectable preamplifier: No
 Selectable attenuator: Yes
 Selectivity: @-6dB: 2.4 kHz SSB, 6 kHz AM/NFM, 15 kHz AM/FM, 150 kHz WFM
 Image rejection: 50 dB
 Frequency stability: +/- 1.5 ppm 25-250 MHz, +/-5 ppm 25-1000, +/- 10 ppm 1300 MHz
 Dynamic range: Unknown
 Noise blanker/limiter: ANL
 Antenna connector: N female
 Auxiliary connector: 10.7 MHz IF Output
 Dimensions: 9-1/2"W x 3-3/4"H x 9-1/2"D
 Weight: 13 lbs.
 Power requirements: 13.8 VDC, 117/240 VAC
 Warranty: One year
 Accessories included: Plugs, fuses, DC cord, spare screws



ICOM has done it again! They took the most popular features of the legend R7000, added a few features that listeners wanted, and released this new, compact receiver.

The R7100 offers continuous frequency coverage (no gaps) from 25 to 2000 MHz on a brilliant LCD readout, selectable tuning steps, USB/LSB/AM/FM modes with wide and narrow selectivity switching.

900 scannable memory locations store frequency, channel number, mode and search steps; ten search banks with memory channel lockout, 5 or 12 channel-per-second scan speed and scan-resume delay are also found on this model.

High sensitivity and stable SSB reception are additional perks, as are sensitive, all-mode squelch and easy pushbutton function selection.

Choosing a Scanner

©Grove Enterprises, Inc. 1993

The consumer electronics marketplace bulges with products competing for your dollar. By following a few simple rules you will make the right choice in buying that new scanner.

Frequency Range

The most common frequency ranges monitored by scanner enthusiasts are: 30-50 MHz (VHF low band), 144-174 MHz (VHF high band) and 450-512 MHz (UHF). Most scanners now include the 406-420 MHz federal government land mobile and 420-450 MHz amateur band as well. These bands all utilize narrow band FM for communications.

The civilian VHF aircraft band (118-136 MHz, AM mode) provides another interesting target for monitoring as does the emerging 806-960 MHz band, sometimes called the cellular band or microwave mobile (806-960 MHz), now in use in all major metropolitan areas. Very few receivers include the military UHF aircraft band (225-400 MHz, AM mode).

The prospective scanner buyer should decide which of these aspects of listening are of greatest interest before purchasing a radio.

Programmable or Crystal?

Stay away from crystal type scanners unless you won't be changing frequencies. For the majority of listeners, keyboard programmable scanners are the way to go—no question about it.

Mobile, Base, or Handheld?

Scanners come in a variety of models to meet the particular needs of the listener. Do a lot of driving? Install a mobile unit. Constantly in and out of the car, office or home? You may prefer a hand-held. Do most of your listening in the office of home? A base unit would be more practical.

Many models are capable of more than one application, accepting power from AC mains as well as mobile battery supply. AC wall adaptors charge batteries in hand-helds and power the scanner when plugged in.

Most hand-held scanners have small speakers which do not compete well in a noisy environment; an earphone or external speaker will solve that problem.

Technical Specifications

The terminology used to rate a scanner's performance may be explained simply.

Sensitivity refers to the weakest signal voltage that the radio will respond to readably; the lower the number, the better. Good sensitivity is about 0.5 microvolts.

Selectivity is the radio's ability to reject adjacent frequency interference; the sharper, the better, especially in urban areas. Average selectivity for a scanner would be about 30 kHz (sometimes stated as +/- 15 kHz) at -50 dB.

Dynamic range is the ability of a scanner to handle extremely strong as well as extremely weak signals. Since none of them does it very well, this specification is never given.

Intermodulation ("intermod") is an internally-generated interference produced when strong signals mix together, producing spurious signals. It is often recognizable because of its distorted contents from two or more signals. Intermod results from inadequate dynamic range.

OPTIONAL ACCESSORIES

ACC36 UT36 Voice Synthesizer	\$35.95	ACC78 Service Manual	\$35
ACC71 SP20 Speaker	\$144.95	ACC83 MB5 Mounting Bracket	\$25.95
ACC72 TVR7100 Video Adaptor	\$209.95	ANT8N 46" Extendable Whip Antenna	\$23.95
ACC74 CT17 Computer Interface	\$95.95	Installation of one or more accessories	\$20

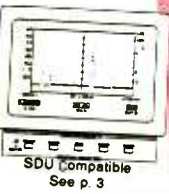
Order SCN15
\$1289
 \$15 UPS
 \$28.50 UPS 2nd Day Air
 \$35.50 US Priority Mail
 \$27.50 Canadian UPS;
 \$43.50 Canadian APP



ICOM R7000 Continuous Coverage VHF/UHF Receiver

Used by government and military agencies worldwide, the ICOM R7000 provides total spectrum 25-1000 (triple conversion) and 1025-2000 (quadruple conversion) MHz frequency coverage with 100 Hz fluorescent readout accuracy! Add to this enormous tuning range 99 memory channels with priority function, keyboard entry or dial tuning, FM/AM/SSB modes, five tuning speeds, S-meter/center tuning meter, 2.8/9/15/150 kHz filter selection, noise blanker, internal speaker with 2.5 watts of audio power, spurious signal suppression greater than 60 dB, high sensitivity, and programmable scanning with auto-write memory, and you have the most advanced scanner receiver ever designed for the serious VHF/UHF listener.

Order SCN4
\$1239
 \$15 UPS
 \$33.50 UPS 2nd Day Air
 \$35.50 US Priority Mail
 \$27.50 Canadian UPS;
 \$43.50 Canadian APP





ICOM R-100 MOBILE/DESKTOP SCANNER

For the full-spectrum listener, this compact scanner is hard to beat: continuous tuning range from 100 kHz through 1856 MHz with direct keypad entry or knob tuning, 100 channel memory, switchable preamp and attenuator, programmable 24-hour clock timer, 10 search ranges, LCD bargraph S meter, AM and wide/narrow FM mode detection (no SSB) just begin the list of features.



SPECIFICATIONS

Frequency range: 100 kHz-1856 MHz
Keypad frequency entry: Yes
Tuning steps: 1/5/8/9/10/12.5/20/25 kHz
RIT (fine tuning): Tuning knob
Display: Backlit LCD
Dimmer: On/Off
Type of listening recommended: Domestic and international broadcasting, including FM and TV audio; VHF/UHF scanning
Receiving modes: AM, narrow FM, wide FM
Memory: 100 channels
Scan: Three modes/20 channels per second
Banks: Ten with programmable characteristics
Lockout: Yes **Priority:** Yes
Search: 10 ranges
Delay: 3 programmable functions
Squelch: All modes
Clock: 24 hour with timer and sleep switch
Audio output power: 2.5 watts
S meter: LCD bargraph
Computer interface: No
Conversion scheme: Triple conversion

Sensitivity: 500 kHz-1.6 MHz 10 uV AM; 1.6-50 MHz 5.6 uV narrow FM/3.3 uV AM; 50-905 MHz 0.4 uV narrow FM/1.0 uV AM
Selectable preamplifier: 15 dB
Selectable attenuator: 20 dB
Selectivity: (-6 dB) narrow FM 15 kHz; 180 kHz wide FM; AM 6 kHz
Image rejection: Unknown
Frequency stability: Unknown
Dynamic range: Unknown
Noise blanker/limiter: Yes
Antenna connector: BNC
Auxiliary connector: No
Dimensions: 5.8"W x 2"H x 7.1"D
Weight: 3.1 lbs.
Power requirements: 12 VDC
Warranty: One year
Accessories included: VHF/UHF telescoping antenna, HF wire antenna, DC power cable, mounting bracket, fuses, speaker plug, cable tie and screws.

Order SCN14
 Grove discount price only
\$599⁹⁵

\$8.50 UPS
 \$14.50 UPS 2nd Day Air
 \$16.50 US Priority Mail
 \$12.50 Canadian UPS
 \$19.50 Canadian APP

ACCESSORIES:
 ACC75 AC Adaptor \$24.95

ICOM R1 General Coverage Pocket Scanner

SPECIFICATIONS

Frequency range: 100 kHz-1300 MHz
Keypad frequency entry: Yes
Tuning steps: 0.5/5/8/9/10/12.5/15/20/25/30/50 kHz
RIT (fine tuning): Tuning knob
Display: Edge-lit LCD
Dimmer: On/Off
Type of listening recommended: Domestic & international broadcasting, including FM and TV audio; VHF/UHF scanning
Receiving modes: AM, narrowband FM, wideband FM
Memory: 100 channels
Scan: 20 channels/second
Banks: No
Lockout: Yes
Priority: Yes
Search: 10 ranges with autoload
Delay: 2 second, 10 second timed
Squelch: All modes
Clock: With on/off timer
Audio output power: 150 milliwatts @ 8 ohms
Record audio output: Earphone jack
S meter: LCD bargraph
Conversion scheme: Trip conversion 266.7/10.7 MHz/455 kHz
Sensitivity: NFM, 0.4 uV; AM, 0.79 uV, WFM 3.2 uV
Selectable attenuator: No
Selectivity: (-6dB) AM 15 kHz; narrow FM 15 kHz; wide FM 150 kHz
Noise blanker/limiter: No
Antenna connector: BNC
Dimensions: 1-7/8"W x 4"H x 1-1/2"D
Weight: 9.9 ounces
Power requirements: Internal nicads; 120 VAC wall charger/adaptor included; 6-16 VDC external
Warranty: One year
Accessories included: Flex antenna, AC wall adaptor/charger, belt clip

Imagine, a shortwave and VHF/UHF scanner with continuous 100 kHz-1300 MHz (no gaps!) frequency coverage that fits in your shirt pocket! You select the mode—AM, FM wide or narrow—and install up to 100 of your favorite shortwave and scanner frequencies into memory. An edge-lit LCD shows frequency, memory channel, and other settings as well.

Less than 2" wide, the R1 scans, searches and autoloads, has knob tuning, a signal strength indicator, and even a 24-hour clock timer! This high-sensitivity scanner comes with flex whip, rechargeable battery, AC wall charger/adaptor and belt clip.

ACCESSORIES:

ANT8 Range extending telescoping whip **\$16.95**
ACC19 R1 Carrying case (no battery pack) **\$19.95**
ACC30 BP-90 Replaceable AA battery case **\$18.95**
ACC33 BP-90 Carrying case **\$19.95**
ACC32 BP-84 Triple-life battery pack **\$79.95**
ACC34 BP-84 Carrying case **\$19.95**
ACC31 CP-12 Cigarette power cord **\$18.95**
ACC48 BC-72A Desk Charger **\$99.95**
ACC76 Service Manual **\$35**
ACC81 Owner's Manual **\$9.95**
ACC90 BA12 Battery Charger Adaptor **\$17**
HDP1 Headphones **\$19.95**



Order SCN13
 Retail \$599
 Only
\$449⁹⁵

\$6.50 UPS
 \$9.50 UPS 2nd Day Air
 \$11.50 US Priority Mail
 \$9.50 Canadian UPS
 \$12.50 Canadian APP



UNIDEN BC-2500XLT

SUPER HANDHELD

This brand new, 400 channel powerhouse offers wide frequency coverage (25-550, 760-1300 MHz, less cellular), Turbo Scan (100 channels per second), instant NOAA weather access, high contrast LCD, rechargeable battery pack, continuous tuning dial, search store, channel activity counter, and much, much more!

Order SCN18
Only
\$359⁹⁵

\$8.50 UPS
\$9.50 2nd Day Air
\$9.50 US Priority Mail
\$10.50 Canadian UPS
\$12.50 Canadian APP

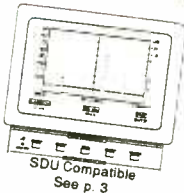
SPECIFICATIONS

Frequency range: 25-550, 760-1300 MHz (less cellular)
Keypad frequency entry: Yes
Tuning steps: 5, 12.5, 25, 50 kHz
RIT or fine tuning: Tuning dial
Display: Backlit LCD
Dimmer: No
Recommended use: Full-coverage scanning
Receiving modes: AM, NFM, WFM
Memory: 400 channels
Scan: 100/20 channels per second
Banks: 20
Lockout: Any channel
Priority: 10 channels
Search: Automatic memory store
Delay: 2 second, all channel
Squelch: Yes
Audio output power: 400 milliwatts
Record audio output: Speaker and earphone jacks
Sensitivity: 1 uV, 25-550 MHz; 1.5 uV, 550-1100 MHz;
3 uV, 1100-1300 MHz; 3 uV, WFM
Antenna connector: BNC
Dimensions: 2-3/4"W x 7-1/2"H x 1-1/4"D
Weight: 17 oz.
Power requirement(s): 12 VDC, attachable nicad battery pack
Warranty: One year
Accessories included: Flex whip, battery pack, AC adaptor/charger, carrying case, manual

Wide coverage, high performance,
desktop/mobile scanner!

UNIDEN BC-890XLT

Uniden stuns the market with this low cost scanner which features wide frequency coverage (29-54, 108-174, 216-512, 806-956 MHz), 200 memory channels, 100-channel-per-second TurboScan, weather alert, CTCSS (optional), channel activity counter, 10 channel priority, search autostore, tape recorder output, memory channel transfer, and much, much more!



Order SCN19
Only
\$269⁹⁵

\$7.50 UPS
\$14.50 2nd Day Air
\$15.50 US Priority Mail
\$17.50 Canadian APP
\$11.50 Canadian UPS

SPECIFICATIONS

Frequency range: 29-54, 108-174, 216-512, 806-956 MHz (less cellular)
Keypad frequency entry: Yes
Tuning steps: 5/12.5/25 kHz
RIT or fine tuning: Continuous tuning dial
Display: Backlit LCD
Dimmer: No
Recommended use: Wide coverage mobile
Receiving modes: AM, NFM
Memory: 200 channels
Scan: 100/20 channels per second
Banks: 10
Lockout: Any channel

Priority: 10 channels
Search: With memory autostore
Delay: 2 seconds, any channel
Squelch: Yes
Clock: No
Audio output power: 2.7 watts
Record audio output: Tape output
Sensitivity (12 dB SINAD): 0.75 uV NFM, 1.1 uV AM (nom.)
Antenna connector: BNC
Auxiliary connector: RCA jack
Dimensions: 10-1/2"W x 3-1/2"H x 7-1/2"D
Weight: 3 lbs., 14 oz.
Power requirement(s): 12 VDC
Warranty: One year
Accessories inc: AC adaptor, telescoping whip, instructions

ACCESSORIES:
ACC96 CTCSS Squelch Decoder
Installation Fee

\$59.95
\$10.00

ACC23 Mobile Cig Lighter Adaptor
ACC109 DC Power Cord
ACC110 Mobile Mounting Bracket

\$9.95
\$9.95
\$9.50



SPECIFICATIONS

Frequency range: 29-54, 118-174, 406-512, 806-956 MHz (less cellular)
 Keypad frequency entry: Yes
 Tuning steps: 5/12.5 kHz determined by frequency range
 RIT (fine tuning): No
 Display: Edgelit LCD
 Dimmer: On/Off
 Type of listening recommended: VHF/UHF utilities
 Receiving modes: AM/narrow FM determined by frequency range
 Memory: 200 channels
 Scan: 16 channels per second
 Banks: 10
 Lockout: Yes
 Priority: Ten channels
 Search: Yes
 Delay: Individual channels
 Squelch: Yes
 Audio output power: 450 milliwatts
 Record audio output: Earphone jack
 Recorder activator: No
 S meter: No
 Computer interface: No
 Conversion scheme: Double conversion
 Sensitivity: 0.4 uV 29-54/136-174 MHz, 0.5 uV 406-512 MHz, 0.3 uV 118-136 MHz, 1uV 806-956 MHz
 Selectable attenuator: No
 Selectivity: (-55 dB) 50 kHz
 Image rejection: Unavailable
 Frequency stability: Unavailable
 Dynamic range: Unavailable
 Noise blanker/limiter: No
 Antenna connector: BNC
 Dimensions: 2-11/16"W x 7-1/2"H x 1-3/8"D
 Weight: 1-1/4 lbs.
 Power requirements: 12 VDC (internal nicads)
 Warranty: One year
 Accessories included: Earplug, AC wall adaptor/charger, flex whip, leatherette case

UNIDEN BC-200XLT

Unlike its competitors, the BC200XLT comes equipped with a detachable nicad battery pack, leatherette holster, AC wall charger/adaptor, and earplug.

Instant weather scan is pre-programmed. Audio has plenty of punch for noise locations. The rugged, rubberized keypad has excellent tactile feedback.



Order SCN9 Retail \$489⁹⁵
NOW Only \$229⁹⁵
 \$6.50 UPS
 \$9.50 UPS 2nd Day Air
 \$9.50 US Priority Mail
 \$10.50 Canadian UPS
 \$12.50 Canadian APP

ACCESSORIES:

- ACC99** Extra Bearcat Battery pack **\$39.95**
- ACC16** Extra Metro West long-life battery pack **\$65.95**
(plus \$4 UPS shipping if ordered separately)
(see page 27 for more details)
- ACC70** Pro-Charge 7 **\$36.95**
(see page 27 for more details)
- HDP1&** Headphones **\$19.95**
(see page 28 for more details)
- ACC35** 3/32" Adaptor for headphones **\$1.50**



SPECIFICATIONS

Frequency range: 29-54, 118-174, 406-512, 806-956 MHz (less cellular)
 Keypad frequency entry: yes
 Tuning steps: 5/12.5 kHz determined by frequency range
 RIT (fine tuning): No
 Display: Backlit LCD
 Dimmer: No
 Type of listening recommended: VHF/UHF utilities
 Receiving modes: AM, narrow FM determined by frequency range
 Memory: 100 channels plus pre-programmed police, fire, aircraft, maritime, emergency, weather frequencies
 Scan: 15 channels per second
 Banks: 5
 Priority: Channel one
 Delay: yes
 Audio output power: 3 watts
 Record audio output: External speaker jack, no activator

S meter: No
 Computer interface: No
 Conversion scheme: Dual conversion
 Sensitivity: 0.4 uV 29054/136-174 MHz, 0.5 uV 406-512 MHz, 0.8 uV 118-136 MHz, 1uV 806-956 MHz
 Selectable preamplifier: Optional accessory
 Selectable attenuator: No
 Selectivity: (-55 dB) 50 kHz
 Noise blanker/limiter: No
 Tone control: No
 Antenna connector: BNC
 Dimensions: 6-5/16"W x 1-5/8"H x 7-3/8"D
 Weight: 1-1/4 lbs.
 Power requirements: 12 VDC, 120 VAC wall adaptor included
 Warranty: 1 year
 Accessories inc: Mobile mount kit, DC cord, attachable whip

UNIDEN BC-760XLT

Measuring a tiny 2" high by 7" wide and deep, this scanner is ideal for mobile installations. Many agencies use CTCSS ("PL") sub-audible encoding to separate groups of users. With the optional ACC96 decoder and ACC97 switch installed in your BC760XLT, you can choose which channels you want to hear with normal squelch, and which will respond only to the proper tones all at the same time!

The 760 also has pre-programmed service search capability, just push a button to find active police, fire, aircraft, maritime, emergency, and weather channels!

Order SCN12
 Retail \$399⁹⁵
 Only
\$269⁹⁵

\$7.50 UPS
 \$13.50 UPS 2nd Day Air
 \$15.50 US Priority Mail
 \$12 Canadian UPS
 \$20.50 Canadian APP

OPTIONAL ACCESSORIES

- ACC96** CTCSS Squelch Decoder **\$59.95**
- ACC97** ON/OFF plug-in switch **\$10.95**
(must use ACC96 and ACC97 together)
- ACC98** Preamplifier (plug-in) **\$29.95**
Installation of ACC96 and 97



UNIDEN BC-800XLT

**Top of the Line
With Uninterrupted 800 MHz Coverage!**

The BC800XLT features low, high, air, UHF and 800 MHz band coverage with 40 channels of memory and instant weather reception. Other features include search capability, rapid scan (15 channels per second), powerful 1.5 watt audio amplifier, two telescoping antennas (one) for 800 MHz range), better than 1 microvolt sensitivity, 55dB selectivity @ +/- 25 kHz, instant weather reception, brilliant fluorescent display, AC/DC operation, direct channel access, individual channel delay, priority channel one, fully synthesized keyboard entry.



SPECIFICATIONS

Frequency range: 29-54, 118-174, 406-512, 806-912 MHz	S meter: no
Keypad frequency entry: Yes	Computer interface: No
Tuning steps: 5/12.5 kHz determined by frequency range	Conversion scheme: Double conversion
RIT (fine tuning): No	Sensitivity: 0.6 uV 29054/136-174 MHz, 0.8 uV 118-136/406-512 MHz, 1 uV 840-012 MHz
Display: Fluorescent	Selectable attenuator: No
Dimmer: No	Selectivity: (-55 dB) 50 kHz
Type of listening recommended: VHF/UHF utilities	Noise blanker/limiter: No
Receiving modes: AM, narrow FM determined by frequency range	Tone Control: No
Memory: 40 channels	Antenna connector: 2 Motorola (separate 800 MHz jack)
Scan: 15 channels/second Banks: 2	Dimensions: 10-1/2"W x 3-5/8"H x 8"D
Lockout: yes Priority: Yes	Weight: 7.1 lbs.
Search: Yes Delay: Individual channel	Power requirements: 120 VAC, 12 VDC
Squelch: yes	Memory backup: 2 AA cells (not supplied)
Audio output power: 1.5 watts	Warranty: One year
Record audio output: External speaker jack; no activator	Accessories included: Attachable whips (2)

**Order SCN 11
Only
\$239⁹⁵**

Retail \$499⁹⁵

\$7.50 UPS
\$14.50 UPS 2nd Day Air
\$16.50 US Priority Mail
\$12.50 Canadian UPS
\$19.50 Canadian APP

UNIDEN BC-855XLT

Don't be fooled by its low price. The BC855XLT is a low-profile, desktop scanner with outstanding performance. Offering a frequency range of 29-54, 108-174, 406-512 and 806-956 MHz (less cellular, restorable), this sleekly-designed scanner includes 50 memory channels, individual channel lockout and delay, automatic squelch, priority, a non-volatile memory and powerful, crisp 1.3 watt audio!

All land mobile public service bands, civilian aircraft band, instant weather channel access are yours, and its BNC jack accommodates a snap-on whip (provided) or your external antenna. A 12-volt AC wall adaptor is included.



SPECIFICATIONS

Frequency range: 29-54, 108-174, 406-512, 806-956 MHz (less cellular)	Recorder activator: No
Keypad frequency entry: Yes	S meter: No
Tuning steps: 5/12.5 kHz determined by frequency range	Computer interface: No
RIT (fine tuning): No	Conversion scheme: Double conversion
Display: Edgelit LCD	Sensitivity: 0.5 uV or better 29-512 MHz FM, 0.8 uV 108-136 MHz, 1 uV 806-956 MHz
Dimmer: No	Selectable attenuator: No
Type of listening recommended: VHF/UHF utilities	Selectivity: (-55 dB) 50 kHz
Receiving modes: AM/narrow FM determined by frequency range	Noise blanker/limiter: No
Memory: 50 channels	Tone control: No
Scan: 5/15 channels per second (selectable)	Antenna connector: BNC
Banks: 5 Lockout: Yes	Dimensions: 9"W x 6-1/2"D x 2-1/4"H
Priority: Channel one Search: Yes	Weight: 1 lb. 6 oz.
Delay: Individual channel Squelch: Yes	Power requirements: 12 VDC
Audio output power: 1.3 watts	Warranty: One year
Record audio output: Earphone jack	Accessories included: 120 VAC wall adaptor, whip

**Order SCN8
Retail \$299⁹⁵
Only
\$189⁹⁵**

\$6.50 UPS
\$9.50 2nd Day Air
\$9.50 Priority Mail
\$10.50 Canadian UPS
\$13 Canadian APP



SPECIFICATIONS

Frequency range: 30-50, 118-174, 220-512, 806-999.9875 MHz (less cellular)
 Keypad frequency entry: Yes
 Tuning steps: 5/12.5/25 kHz determined by frequency range
 RIT or fine tuning: No
 Display: Edgellit LCD
 Dimmer: On/off
 Recommended use: VHF/UHF utilities
 Receiving modes: AM/FM narrow
 Memory: 200 channels
 Scan: 25 channels per second
 Banks: 10 Lockout: Yes
 Priority: Channel one
 Search: 50 channels per second
 Delay: Individual channel, 2 seconds
 Squelch: Yes
 Audio output power: 250 milliwatts
 Record audio output: Earphone jack
 Recorder activator: No
 Computer interface: No
 Conversion scheme: Triple conversion: 608/48.5 MHz/455 kHz
 Sensitivity: 1 microvolt or better
 Selectable attenuator: No
 IF selectivity: (-50 dB) 40 kHz
 Antenna connector: BNC
 Dimensions: 2-1/4" W x 5-3/4"H x 1-1/2"D
 Weight: 14.5 ounces
 Power requirements: 9 VDC (6 AA cells)
 Warranty: One year—unit must be returned to Grove Enterprises within first year for warranty repair—see page 1.
 Accessories inc: Belt clip, flex whip antenna



**REALISTIC® PRO-43
HANDHELD SCANNER**

Yes, Realistic is now leading the market with their new 200 channel, programmable, handheld scanner with increased frequency range: 30-50, 118-174, 220-512 and 806-1000 MHz (less cellular).

Military and civilian aircraft, public safety, amateur, government, maritime, business—all VHF/UHF communications services in a compact 2-1/4"W x 5-3/4"H x 1-1/2"D handheld weighing only 14-1/2 ounces, sturdy belt clip and BNC flex whip included.

Runs off 6 AA alkaline or nicad batteries (not included). With its fast 25 per second scan rate, this triple-conversion scanner is a winning companion!

ACCESSORIES:

ANT 8	Range extending antenna	\$16.95
ACC38	DC Adaptor	\$12.95
ACC47	Nicad batteries (6 required)	\$2.25/each
ACC100	AC Wall Adaptor/Charger	\$6.95

Order SCN 17
 Retail \$349
 Grove price only \$293.95
 \$6.50 UPS
 \$9.50 2nd Day Air
 \$9.50 US Priority Mail
 \$10.50 Canadian UPS
 \$13 Canadian APP

**REALISTIC®
PRO-2006**



With no crystals needed, this exceptional unit delivers a wide range of frequencies not found on most scanners—including public service, broadcast FM, military bands and CB! Resists strong signal overload interference.

Rapid 26-channel-per second scan and search complements this scanner's excellent interference immunity for metropolitan monitoring. Built-in speaker and telescoping antenna are included. Jacks provide for external speaker, tape recorder, and DC adaptor.

Order SCN 6
 Retail \$399
 Grove price only \$359
 \$7.50 UPS
 \$15 2nd Day Air
 \$16 US Priority Mail
 \$12.50 Canadian UPS
 \$19.50 APP

SPECIFICATIONS

Frequency range: 25-520, 760-1300 MHz (less cellular)
 Keypad frequency entry: Yes
 Tuning steps: 5, 12.5, 30 (if cellular restored), 50 kHz
 RIT (fine tuning): No
 Display: Backlit LCD
 Dimmer: Yes
 Type of listening recommended: VHF/UHF communications; casual FM broadcast
 Receiving modes: AM, wide & narrow FM
 Memory: 400 channels; frequency and mode
 Scan: 26 channels per second
 Banks: 10 Lockout: Individual channel
 Priority: Any channel Search: 26 channels per second
 Delay: 2 seconds, individual channels
 Squelch: Yes
 Audio output power: 1.3 watts @ 8 ohms
 Record audio output: 600 mV @ 10K ohms
 Recorder activator: No
 Smeter: No
 Computer interface: No
 Conversion scheme: Triple up-conversion
 Sensitivity: 0.5 uV NFM 25-1100 MHz; 2 uV AM; 3 uV WFM
 Selectable attenuator: Yes, 10 dB
 Selectivity: (-6/-50 dB) 18/30 kHz NFM/AM; 300/600 kHz WFM
 Noise blanker/limiter: No
 Tone control: No
 Antenna connector: BNC
 Dimensions: 8-1/2"W x 4"H x 8"D
 Weight: 4-3/4 lbs.
 Power requirements: 120 VAC @ 60 Hz; 13.8 VDC (10 watts)
 Warranty: One year—unit must be returned to Grove Enterprises within first year for warranty repair—see page 1.
 Accessories included: Telescoping whip, manual

**Mobile Mounting Bracket
for PRO-2006**

Turn this desktop into a mobile unit for only \$24.95!

The heavy, rubberized steel clasps hug tightly around the PRO-2006 while the adjustable mounting bracket can be fastened firmly with hand-tightened thumbscrews. Take the best scanner on the road with you!

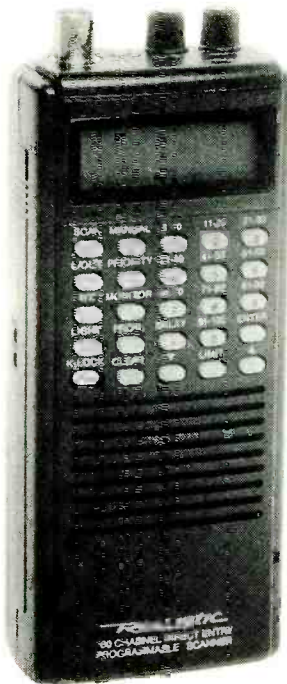
Order ACC102 \$24.95

plus \$4 UPS shipping if ordered separately



SPECIFICATIONS

Frequency range: 29-54, 108-174, 406-512, 806-956 MHz (less cellular)
 Keypad frequency entry: yes
 Tuning steps: 5 kHz
 RIT or fine tuning: No
 Display: Backlit LCD
 Dimmer: No
 Recommended use: General purpose scanning
 Receiving modes: NFM, AM (civilian air band only)
 Memory: 100 channels plus 10 search-monitor channels
 Scan: 20 channels per second, up or down
 Banks: 10
 Lockout: Individual channel
 Priority: Any channel
 Search: Yes, up or down
 Delay: Any channel
 Squelch: Yes
 Audio output power: 220 milliwatts
 Record audio output: Earphone jack (full power)
 Recorder activator: No
 Conversion scheme: Dual, 10.8 MHz and 450 kHz
 Sensitivity: 0.8 microvolts nominal
 Antenna connector: BNC
 Dimensions: 2-3/4"W x 6"H x 1-3/8"D
 Weight: Approx. 1 lb
 Power requirement(s): 6 volts (4 replaceable AA cells)
 Warranty: One year—unit must be returned to Grove Ent. within first year for warranty repair—see page 1.
 Accessories included: Flex whip, belt clip, manual



REALISTIC® PRO-46 HANDHELD SCANNER

Monitor low, band, high band, civilian aircraft, UHF and 800 MHz; enter up to 100 channels into fast-scan memory. Be ready for anything, any time with replaceable alkaline or nicad batteries (4 AA required).

Instant weather channel access; keyboard lock prevents accidental commands; memory erase command. Compact, sensitive, easy to operate. Comes with whip, sturdy belt clip and excellent instruction manual.

Order SCN 20
 Grove price only
\$193⁹⁵

\$6.50 UPS
 \$9.50 2nd Day Air
 \$9.50 US Priority Mail
 \$10.50 Canadian UPS
 \$12.50 Canadian APP

ACCESSORIES:

ANT 8 Range extending antenna **\$16.95**
 ACC38 DC Adaptor **\$12.95**
 ACC47 Nicad batteries (6 required) **\$2.25/each**
 ACC100 AC Wall Adaptor/Charger **\$6.95**

Images are produced in every receiver. They are recognizable as a duplicate of the legitimate signal, offset by 21.4, 21.6 or 21.7 MHz (twice the intermediate frequency—I.F.) from the actual frequency, depending upon the scanner. With up-conversion design, image frequencies fall outside the tuning range and aren't a problem.

Which Scanner is the Best?

Like answering "Which car is the best?", we must list qualifications. At the present time,

programmable scanners are available from Uniden, ICOM, AOR, and Radio Shack. Additionally, the Yaesu FRG-9600, Kenwood RZ-1, and ICOM R-1, R-100, R-7000, R-7100 and R-9000 offer shortwave, VHF/UHF coverage and scannable memories.

Most popular scanners have excellent sensitivity and reasonable selectivity (reject adjacent channel interference), but suffer from intermodulation and image interference from strong signal overload, especially when used with an outdoor antenna.

The PRO-2006 is more immune to interference from intermodulation and images, making it an excellent choice for strong or weak signal areas like large cities.

In comparison, while the Bearcat BC760XLT and BC800XLT have superb sensitivity, they are easily overloaded by strong signals; use them in rural or deep suburban locations, or with their own attachable whip antennas in the city.

The new BC890XLT offers a tuning-knob, not available on other scanners in its price class.

REALISTIC® PRO-2026 MOBILE SCANNER

Made for Radio Shack by Uniden, the PRO-2026 has the major features of the popular BC760XLT, but is designed for mobile operation only (the Bearcat accessories will not work with the PRO-2026).

Frequency range is 29-54, 108-174, 406-512 and 806-956 MHz (less cellular). Any channel may be selected for priority, sampled every few seconds for activity. Factory-preset police, fire, ambulance, aircraft, marine and weather channels may be scanned by pressing the appropriate button when driving in new locations.

A great mobile scanner (mounting bracket included) at a great price, only \$189.95!



SPECIFICATIONS

Frequency Range: 29-54, 108-174, 406-512, 806-956 (less cellular)

Keypad frequency entry: Yes

Tuning steps: 5/12.5 kHz

RIT or fine tuning: No

Display: Fluorescent

Dimmer: No

Recommended use: Mobile

Receiving modes: AM/NFM

Memory: 100 channels

Scan: 14 channels per second

Banks: 5 banks of 20 channels each

Lockout: Individual channel

Priority: Any one channel

Search: 13 steps per second

Delay: Individual channel

Squelch: Yes

Audio output power: 1.1 watts

Record audio output: No

Recorder activator: No

Conversion scheme: Dual conversion, 10.8 MHz/450 kHz

Sensitivity: 0.7 microvolts average

Selectable attenuator: No

IF selectivity: (-50 dB) 30 kHz

Selectable AGC: No

Antenna connector: BNC

Dimensions: 6-5/8"W x 1-5/8"H x 7-3/8"D

Weight: 2 lbs. 3 oz.

Warranty: One year—unit must be returned to

Grove Ent. within first year for warranty

repair—see page 1.

Accessories included: Mobile mount kit

Order SCN 16
 Grove price only
\$189⁹⁵

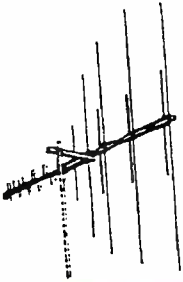
\$6.50 UPS
 \$9.50 UPS 2nd Day Air
 \$9.50 US Priority Mail
 \$10.50 Canadian UPS
 \$12.50 Canadian APP



The Best Scanner Antenna Money Can Buy!

SCANNER BEAM

6-9 dB gain
over other
scanner
antennas!



Our world-renowned Scanner Beam has been improved to provide unexcelled 30-50 MHz low band reception, 108-136 MHz aircraft, 136-174 MHz high band, 225-400 MHz military aircraft and satellites, 406-512 MHz UHF, and 806-960 MHz microwave mobile.

HAMS NOTE—can be used for transmitting up to 25 watts on 144, 220, and 420 MHz bands. 50/75 ohms nominal impedance.

May be used with inexpensive TV antenna rotator for boresight accuracy, or fixed in one direction as required for those elusive, distant stations. Local signals still come in loud and clear from all directions.

Balun transformer, offset pipe and all mounting hardware included (requires TV type F connector on your coax—available on pg. 29). Approximate size 8'H x 5'L.

Only shipped in U.S. and Canada

Order ANT1
Only
\$59⁹⁵

\$6.50 UPS
\$10 UPS 2nd Day Air
\$11.50 US Priority Mail
\$13.50 Canadian APP
\$10.50 Canadian UPS

THE SCANTENNA FROM ANTENNA-CRAFT

This new, full-frequency, omnidirectional scanner antenna will equal or outperform any competitor on the market. Its dipole-cluster design utilizes broadband techniques to provide continuous frequency coverage from 25-1300 MHz, offering superb reception of public safety, civilian and military aircraft, hams, personal communication devices, maritime, CB—anything in its frequency range! Requires TV type F connector on your coax—available on pg. 29. Approximate size 7-1/2'H x 4-1/2'W.

Only shipped in U.S. and Canada



Order ANT 7
Only
\$39⁹⁵

\$6.50 UPS
\$10 UPS 2nd Day Air
\$7.50 US Priority Mail
\$11.50 Canadian APP
\$10.50 Canadian UPS

Best Discone
on the Market
for VHF/UHF
Receivers

PROFESSIONAL WIDEBAND DISCONE

The discone antenna is used by government and military agencies worldwide because of its recognized high performance, wide bandwidth characteristics. Now Diamond offers a professional grade discone at a popular price.

Designed for use with wide-frequency coverage VHF/UHF scanners and receivers, the Diamond D130J discone consists of 16 rugged, stainless steel elements and is capable of transmitting up to 200 watts in the amateur 50, 144, 220, 432, 900, and 1200 MHz bands.

As a receiving antenna, the D130J is omnidirectional for continuous 25-1000 MHz (and above) coverage. A base-loaded, vertical top element is used as a low band (30-50 MHz) frequency extender.

The elements are arranged on a 24-inch support pipe equipped with two strong mounting brackets to accommodate any standard mast-pipe (1" to 2-1/8" diameter).

Choose 50 or 100 feet of coax from page 29.

Order ANT 9
Only
\$79⁹⁵

\$6.50 UPS
\$10 UPS 2nd Day Air
\$7.50 US Priority Mail
\$10.50 Canadian APP
\$9.50 Canadian UPS

SPECIFICATIONS

Frequency coverage	25-1300 MHz
Impedance	50 ohms nominal
Power rating	200 watts
Connector	UHF
Antenna style	Discone
Vertical length	66 inches
Weight	2.2 pounds

Coaxial Cable

At VHF/UHF frequencies, common CB-type RG-58/U coax will actually absorb signals. We recommend low-loss RG-6/U like the Grove CB-50 and CB-100 cables with custom connectors. It offers 100% shielding, small diameter, flexibility and low cost.

For the lowest possible losses, especially in runs in excess of 100 feet, use Belden 9913 or RG-11/U mini. These cables and connectors are available from some electronics distributors and TV and video accessory outlets.

Don't be concerned with impedance; although your scanner is designed to work with 50 ohm cable, no antenna made maintains a constant impedance over the wide frequency range of modern scanners. You want low loss and 100% (or close to it) shielding.

Preamplifiers

One of the most misunderstood accessories is the preamplifier. Its purpose is to boost weak signals which would remain unheard on a receiver without it. To do this it needs to have a very low noise figure, but very little gain.

Antenna-mounted preamplifiers are especially helpful in overcoming losses in long coaxial cables (over 100 feet and above 400 MHz).

Wideband (untuned) preamplifiers like the Grove PRE-4 and GRE Super Amplifier work well in low-signal-strength environments, but when used with outside antennas in a metropolitan area they saturate easily, causing desensitization (signals are weaker than before) and generate intermodulation (spurious signals) as well.

Filters and Attenuators

One of the most common causes of interference is strong signal overload. An attenuator reduces all signals, regardless of frequency, by the same amount; band-reject (stop-band) filters and wave traps remove a specific swath of spectrum; low-pass filters cut off all signals above a certain frequency; high-pass filters cut off all frequencies below a certain frequency; and notch filters attempt to remove one specific frequency.

The Grove FTR-5 is a combination filter designed to reduce interference from shortwave, AM, TV and FM broadcast stations, a common problem, as well as any one user-selected signal in the 100-174 MHz range.

For Technical Support
CALL LARRY
704-837-7081





Which Scanner Antenna?

HAND-HELD - The whip antenna included with your scanner is fine for local reception of strong signals, but if you are interesting in reaching out further, a larger external antenna is necessary. The Grove ANT-8 adjustable whip and ANT-14 Austin Condor Flex Antenna will increase range on any hand-held scanner or transceiver equipped with a BNC connector (not screwthread).

Hand-held radios may also be connected to mobile and rooftop base antennas as well, provided they are equipped with BNC connectors.

MOBILE - Inside a vehicle, a scanner's attachable whip is shielded by the vehicle body and an external antenna is recommended. A rooftop location is ideal, providing uniform response in all directions. Mounted elsewhere (fender, trunk, bumper), the pattern will favor the direction of the car body.

The short length and low height of mobile antennas limit their distance, and loading coils restrict their frequency range. 800 MHz coverage is more by accident than design. The mobile scanning enthusiast must be content with local listening.

Mobile scanner antennas like the popular Grove ANT4 come equipped with a Motorola plug or BNC connector and have strong magnetic bases which will not come loose at normal road speeds.

Amplified antennas like the Diamond D505 offer much greater range, but may overload and cause intermod in strong signal areas.

If an outside antenna is undesirable, the car's existing AM/FM antenna may be used with a multicoupler like the Grove ANT-63 with some compromise in signal strengths. In weak signal areas, a preamplifier like the Grove PRE-4 will boost reception range.

BASE - Many discons advertise 25-1300 (or higher) MHz response. While it is true that any antenna will get some signals at virtually any frequency, most discons have poor response below 100 MHz and erratic response above that.

Several discons are extremely well constructed including the Diamond D-130. It is an excellent, omnidirectional, VHF/UHF transmitting antenna and performs well for local reception.

Most low-cost base antennas work well for local coverage (25-50 miles distance). Remember, the smaller the dimensions of the antenna, the poorer it will perform on low band (30-50 MHz).

The best nondirectional, all-band scanner antennas on the market are the Antennacraft ANT-7 Scantenna, sold by Grove, and the Channel Master 5094A Moni Tenna available from Channel Master dealers.

An "omnidirectional" antenna mounted within a couple of feet of a metal mast or another antenna becomes directional due to signal reflection. In this case, turn the mast or antenna while listening to signals of interest to determine the best overall position, then tighten it down.

For extended range, a directional antenna like the new Grove Scanner Beam, used with an inexpensive TV rotator, offers gain in its forward direction while receiving local signals all around. VHF and UHF reception in excess of 100 miles under favorable conditions are possible.

GROVE EXCLUSIVE!

MAGNETIC MOUNT MOBILE ANTENNA

For years, mobile scanning enthusiasts have had to settle for compromised reception from antennas designed long ago for limited coverage scanners. Now, Grove offers the first high-performance mobile antenna designed in our labs for new, wide-frequency-coverage scanners.

Utilizing Grove's exclusive bifilar helix construction, this sleek, black, 24"



fiberglass whip, mounted on a strong magnetic base, assures premium signal

reception on 30-50 MHz low band, 88-108 MHz FM broadcast, 118-136 MHz aircraft, 136-174 MHz high band, 225-400 MHz military aircraft, 406-512 MHz UHF land mobile and 806-960 MHz microwave mobile.

Tested to withstand interstate highway speed and equipped with 12 feet of coaxial cable with Motorola and BNC connector, the ANT-4 will perform where others fail.

ANT4
\$49⁹⁵

\$6 UPS
\$10 UPS 2nd Day Air
\$6.50 US Priority Mail
\$10 Canadian APP
\$9 Canadian UPS

ANT4W
\$24⁹⁵

\$5 UPS
\$7.50 UPS 2nd Day Air
\$5 US Priority Mail
\$6.50 Canadian APP
\$8 Canadian UPS

(Whip antenna alone for your 3/8" x 24 TPI threaded mount)

WINDSHIELD MOUNT SCANNER ANTENNA

No holes and no magnets, this 22" Valor Glas-Master is designed for today's wide-frequency-coverage mobile scanners, 30-1200 MHz (not for transmitting). Simply clean an area on your rear window (cleansing pad included) and stick the antenna base to the glass. A companion coupler on the inside of the window does the rest!

15' of cable with BNC and Motorola connectors included—no assembly required.



Order **ANT 13**
Grove price only

\$39⁹⁵

\$5 UPS
\$10.50 UPS 2nd Day Air
\$5.50 US Priority Mail
\$8.50 Canadian UPS
\$8 Canadian APP

ACCESSORY:
ACC94 Adhesive re-mount kit \$4.95

EXTEND THE RECEPTION OF YOUR HANDHELD RADIO

Today's hand-held VHF/UHF scanners and handie-talkies from Bearcat, Regency, Cobra, Radio Shack, ICOM, Yaesu, and Kenwood have excellent sensitivity and talk power, but their range is reduced by their short "rubber ducky" antennas. Grove has the solution!

Just replace that inefficient flex antenna with our universal full-length whip—and stand back! Extendable from 7 to 46 inches, the ANT-8 is made of chrome-plated brass and equipped with a standard BNC base. Transmits on 45-960 MHz; receives 25-1300 MHz.

If your interest doesn't include 30-50 MHz low

band, choose our new ANT-19 with its full adjustability from 4"-18" (transmits and receives from 144-960 MHz).



Order

ANT-8 (7"-46") \$16⁹⁵

ANT-19 (4"-18") \$12⁹⁵

ANT-8B \$21⁹⁵

(w/right-angle BNC adaptor)

ANT-8N \$23⁹⁵

(w/right-angle N adaptor)

\$4 UPS
\$6.50 UPS 2nd Day Air
\$4.50 First Class Mail
\$4.50 Canadian APP
\$8 Canadian UPS



Start with our Scantenna or Scanner Beam then add our PRE-4 Wideband Preamplifier



GROVE'S OUTDOOR SCANNER ANTENNA SYSTEM

The PRE 4 Power Ant has taken all the best from its successful predecessors and combined them into one powerful signal booster for scanners, even TV and FM stereos!

Equipped with a high gain, low noise, solid state amplifier stage, the PRE-4's front panel control allows custom selection of up to 20 dB of amplification!

The weatherproof remote booster module may be attached at the antenna for maximum effectiveness to overcome coax cable losses, or may be mounted on the back of the control box for convenience. Power is supplied to the remote module through your coax.

Two output connectors are provided allowing you to use two scanners on one antenna at the same time! All connectors are type F for maximum signal transfer. 120VAC/12VDC wall adaptor included.

WHAT YOU NEED TO ORDER:

ANT 7 Scantenna (see page 23) **\$39.95**

or ANT 1 Scanner Beam (see page 23) **\$59.95**
plus

PRE 4 Preamplifier **\$59.95**

CK-SC Scanner Interconnect Kit **\$12.95**

(includes one 3' F/F cable with adaptors for most scanners)

**Not recommended for metropolitan use*

SPECIFICATIONS

GAIN: 20 dB max.

CONNECTORS: Type F for signal line; 2.1 mm. DIN for power

CABINET: Custom formed aluminum, baked enamel finish

DIMENSIONS: 4"W x 2"H x 3"D

WEIGHT: 10 oz.

Shipping charges for system ordered together:
\$10.50 UPS \$17.50 UPS 2nd Day Air
\$16 US Priority Mail \$17.50 Canadian UPS
\$20.50 Canadian Air Parcel Post

Connects to any scanner equipped with an external antenna jack

GROVE'S INDOOR SCANNER ANTENNA SYSTEM

The Apartment Dweller's Dream

The Grove Hidden Antenna System is a high performance, amplified indoor antenna for scanner monitoring. The 66-inch flexible ANT6 can be tucked in a corner, hung behind a drape—just about anywhere out of sight. And when connected to the powerful PRE4 signal booster, you have instant coverage from 30 to over 1000 MHz.

Yes, wide area scanner coverage will be at your fingertips, and you can operate two scanners at one time!

Hidden Antenna,
as packaged,
with Grove PRE4



WHAT YOU NEED TO ORDER:

ANT 6 Hidden Antenna (see page 26) **\$19.95**

PRE 4 Preamplifier **\$59.95**

CK-SC Scanner Interconnect Kit **\$12.95**

(includes one 3' F/F cable with adaptors for most scanners)

Shipping charges for system ordered together:

\$7.50 UPS
\$11.50 UPS 2nd Day Air
\$8.50 US Priority Mail
\$15.50 Canadian UPS
\$13.50 Canadian APP



AUSTIN CONDOR HIGH PERFORMANCE FLEX ANTENNA



For years we have been looking for a replacement "rubber duckie" that really makes a difference on handheld scanners. It's here! The Austin "Condor" is guaranteed to improve weak signal scanner reception—on all frequency ranges—when compared to the original scanner antenna.

Order

ANT 14 **\$29⁹⁵**

ANT 14B **\$34⁹⁵**

(w/BNC right-angle conn)

ANT 14N **\$36⁹⁵**

(w/N right-angle conn)

\$4.50 UPS
\$6.50 UPS 2nd Day Air
\$4.50 US Priority Mail
\$8.50 Canadian UPS
\$6.50 Canadian APP

GROVE HIDDEN ANTENNA



The Hidden Antenna may be used alone with your scanner for improved signal reception, over your attachable whip or may be connected to the powerful Grove PRE4 or TUN4 for considerably increase signal strength on scanners and shortwave receivers.

This five-foot, thin-profile, flexible wire antenna can be hung in a corner, behind a drape—just about anywhere out of sight. Comes fully assembled with 20 feet of coax and F male connector, with 3 adaptors for PL259 (UHF), Motorola and BNC connections.

\$4.50 UPS
\$7.50 UPS 2nd Day Air
\$4 US Parcel Post
\$6.50 Canadian APP
\$8.50 Canadian UPS

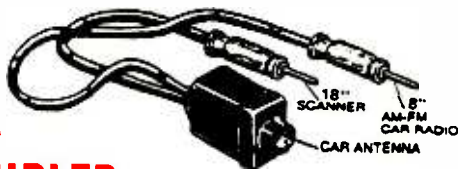
For Technical Support
CALL SUE
704-837-7081



Order **ANT 6**
Only
\$19⁹⁵

Convert Your Car Antenna Into a Scanner Antenna!

MOBILE ANTENNA MULTICOUPLER



How would you like to enjoy excellent 30-960 MHz mobile scanner reception using your existing AM/FM auto antenna? That's right; no holes, no magnets, no scratched paint or clumsy cables going through doors and windows. Ideal for low-profile monitoring installations where a separate scanner antenna is desirable.

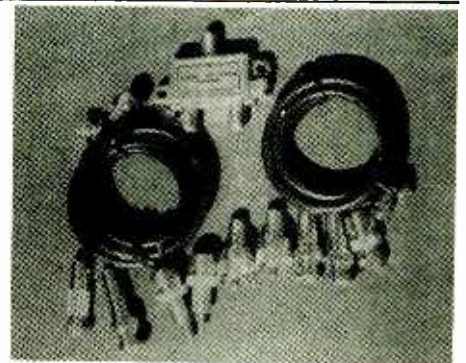
The Para Dynamics PDC 63 Mobile Multicoupler takes only seconds to install and allows simultaneous use of your AM/FM car radio as well as your mobile scanner. Comes equipped with your choice of Motorola or BNC connector.

Order **CPL-63M** **\$14⁹⁵**
(Motorola)

Order **CPL-63B** **\$16⁹⁵**
(BNC)

\$4 UPS
\$6.50 2nd Day Air
\$4.50 US Priority Mail
\$8.50 Canadian UPS
\$6.50 Canadian APP

DUAL SCANNER MULTICOUPLER



Would you like to connect two scanners (or one scanner with separate antenna jacks) to one antenna cable? The new Grove CPL-SC universal multicoupler is the answer! Insertion loss only 3 dB maximum; port isolation typically 25 dB; impedance 50-75 ohms.

Consisting of a wide-frequency-coverage splitter (25-1300 MHz or more) and two 3' output cables with adaptors for UHF (PL-259), Motorola, F, and BNC connectors (input and output), you'll be set for any combination.

Order
CPL-SC
\$29⁹⁵

\$4 UPS
\$6.50 UPS 2nd Day Air
\$4.50 US Priority Mail
\$8 Canadian UPS
\$6.50 Canadian Air PP

ADP 15 adaptor for ICOM
AH-7000 discone, \$5.95



METRO WEST LONG LIFE BATTERY PACK

For BC200XLT, BC205XLT, and BC100XLT

Over the years, MetroWest has introduced a number of innovative accessories for hand-held scanners, but none is more welcome than their new, double-life battery pack for the popular Uniden BC200XLT hand-held scanner.

The "Pro-Pack 1200" is numbered for its 1200 mAH charge capacity, twice that of the BP200 which comes with the BC200XLT from Uniden. The replacement look-alike slips right on the scanner to replace the original.

About 1/4" taller and slightly fatter than the Uniden pack, the Pro-Pack 1200 does not allow

the top strap of the Uniden case to button over the top as it did before, but is still may wrap around the front or back securely.

Because the charger jack on the battery pack had to be relocated due to battery density, the scanner must be removed from its holster before it can be recharged. The user may wish to punch a second hole at the new location for plug-in convenience. An AC wall adaptor/charger is included.



Order ACC16
Only
\$65⁹⁵
\$4.50 UPS
\$7.50 2nd Day Air
\$6.50 US Priority Mail
\$8.50 Canadian UPS
\$8.50 Canadian APP

METRO WEST PRO-CHARGE 7

Drop-In Charger for the Metrowest Battery!



Charge your high-capacity Metrowest battery like the pros with this drop-in charger (not for original Bearcat battery pack). Automatic circuit provides a full charge in just seven hours, yet prevents overcharging! Powered by your 12 VDC wall adaptor or from the Grove ACC23 cigarette lighter cord.

Lightweight (8 oz.) and compact (3-1/4" x 4-1/2" x 1-3/4"); two-color LED indicator shows charge status.

Order ACC70
Only
\$36⁹⁵
\$4.50 UPS
\$7.50 2nd Day Air
\$6.50 US Priority Mail
\$8.50 Canadian UPS
\$8.50 Canadian APP

UNIVERSAL POWER SUPPLY/CHARGER

Our universal AC adaptor is especially rugged, capable of switching to your choice of 3, 4.5, 6, 7.5, 9 or 12 volts DC at a current of 500 milliamps (1/2 amp)! Another switch lets you choose + or - polarity.

An array of plugs on its interconnect cord assures proper mating to any electronic accessory. Plugs into standard house current (120 VAC, 60 Hz).

Order ACC20
A \$15 dollar value
for Only
\$9⁹⁵
plus \$4.50 UPS
or Priority Mail



RECHARGEABLE AA NICAD BATTERIES

650 Milliamp High capacity AA Nicads for use with the PRO-43 as well as other handheld scanners.

Order ACC 47
\$2²⁵/ea plus \$2 shipping any quantity

MOBILE CIGARETTE LIGHTER POWER ADAPTOR

For Bearcat Scanners!

Simply plug the Grove ACC23 into your vehicle's cigarette lighter to charge the batteries and/or operate your Bearcat scanner or any other mobile accessory, including radar detectors and the Grove PRE4 Power Ant, which use a 12 volts DC, center pin positive, 2.1 mm barrel connector.

This power adaptor has an internal, replaceable 3A fuse.



Order ACC23
Only
\$9⁹⁵
INCLUDING FIRST CLASS MAIL SHIPPING



M-400 UNIVERSAL DECODER

Featuring simple, pushbutton mode selection, this self-contained, compact, minu-driven decoder, when connected to your scanner's or VHF/UHF receiver's external speaker jack, will reveal CTCSS (PL) subaudible tones, DCS (DPL) squelch tones, POCSAG and GOLAY digital paging messages, DTMF (Touch Tone*) telephone numbers, even air-go-ground ACARS digital aircraft messages!

Connected to your shortwave receiver (SSB mode), you can read RTTY, SITOR, FEC-A, SWED-ARQ, and even FAX pictures when used with a printer! There is no Morse code or packet capability. A jack is included to attach an external speaker so that you can still listen if your internal speaker is disconnected when using the M-400.

Input jacks provided for either audio or discriminator interconnect. AC wall adaptor, full manual and pair of 1/8" (3.5 mm) plugs included.



Order DEM 9
Only
\$399⁹⁵
\$7.50 UPS
\$14.50 UPS 2nd Day Air
\$17.50 US Priority Mail
\$20.50 Canadian APP
\$13 Canadian UPS

SPECIFICATIONS

MODES: Baudot (45, 50, 57, 100 baud)
ASCII (75, 110, 150 baud)
SITOR A & B (Automatically selected)
FEC-A (96 & 144 baud)
SWED-ARQ (S, M and L lengths)
FAX (120 LPM/576 IOC to parallel printer port)
Paging (GOLAY, POCSAG) ACARS
Encoded squelch (CTCSS, all 41 frequencies; DCS, all 104 codes) Tone dialing (DTMF, all 16 digits)

FILTER: Low tone (mark) 1275 Hz
Shifts: 170, 425, 850 Hz; plus 100-1000 Hz variable
INPUTS: Speaker, 4-16 ohms @ 100 mW max
Discriminator, 10K ohms @ 0.25 V max
OUTPUT: ASCII: 8 bit Centronics standard; DB25 connector
DISPLAY: Two-line, 20 characters each, 5/7 dot matrix LCD
Power required: 11-15 VDC @ 200 mA, AC adaptor included
SIZE: 8-3/4" W x 2-1/2" D x 8" D
WEIGHT: 2 lbs



Order HDP 1
Only
\$19⁹⁵

\$5 UPS
\$7.50 UPS 2nd Day Air
\$8 US Priority Mail
\$9 Canadian UPS
\$8 Canadian APP

COMMUNICATIONS HEADPHONES

Imagine—an ear-cushioned headset with adjustable volume controls for each earpiece and a stereo/mono switch built in! These new phones have a power handling capacity of 0.5 watts, frequency response of 20-18,000 Hz, sensitivity of 105 dB and 32 ohm impedance to match all

ACCESSORIES:
ACC80 Universal Adaptor
One or two 1/4" headphone jacks to 3/32" (2.5 mm) or 1/8" (3.5 mm) plug — fits all model scanners \$12.95
ACC35 3/32" Adaptor
(fits BC200XLT) \$1.50

HANDHELD RADIO MOUNT

How many times have you tried to set your hand-held scanner or handie-talkie on a table, ledge or car seat, just to have it fall over? That problem is solved with this handy holder.

Its sturdy jaws do an excellent job of supporting your radio — even with cables and antennas connected — on a desk or table top or even the bumpy environment of a vehicle, plane or boat.

Cushion pads are provided for an even better grip, especially on small handhelds like the ICOM R-1 and Realistic PRO-43.

Order ACC106
Only
\$9⁹⁵

\$4.50 UPS
\$7 2nd Day Air
\$4.50 US Priority Mail
\$7 Canadian APP



CLIP-ON MINI SPEAKER *For Handheld Radios*



Order SPK 9
Only
\$9⁹⁵

\$4 UPS
\$6.50 UPS 2nd Day Air
\$4 US Priority Mail
\$7.50 Canadian UPS
\$5.50 Canadian APP

Brand new! This tiny (2" square), lightweight (2-3/4 oz.) speaker plugs into any standard 1/8" (3.5 mm) earphone jack and provides excellent, concentrated sound when clipped to a lapel or collar. Ideal for crowded or noisy locations where you don't want your scanner blaring and don't want the confinement of an earphone.

ACC35 3/32"
(2.5 mm) adaptor
(for BC200XLT, etc.)
\$1.50



NAVAL HTS-2 COMPACT AMPLIFIED SPEAKER

Includes Tape Recorder Activator!

Designed for handheld walkie talkies and scanners, this amplified speaker puts out a resounding one watt of audio in noisy locations!

Powered by AA nicads or alkalines, battery saver automatically shuts off power when no sound is present. It activates a tape recorder whenever sound is present (1/8", 3/32" cables included)!

Compact (2-3/4" W x 4-1/2" H x 2-1/4" D) and lightweight (10 ounces), this amplified speaker can be snugly placed on your radio desk or stuck by Velcro to your vehicle's dashboard. LED signal light, audio level adjustment and amplifier bypass switch are included!



ACCESSORIES:

ACC23 Cigarette lighter power adaptor	\$9.95
ACC20 AC wall power supply	\$9.95
ACC47 Nicad AA batteries (4 required)	\$1.95/each

Order SPK11
Only
\$29⁹⁵
\$5 UPS
\$7.50 UPS 2nd Day Air
\$6.50 US Priority Mail
\$9.50 Canadian UPS or APP

PREMIUM LOW-LOSS RG6/U CABLE WITH ADAPTORS



Have you had trouble finding the right coaxial adaptors for linking your antenna and receiver? We can help! Simply tell us what adaptors you need, or what antenna and radio you will be using. We will provide you with a cable which is ready to attach between your antenna and receiver!

CB50

(50 feet w/ adaptors)

\$19⁹⁵

\$5 UPS
\$8.50 UPS 2nd Day Air
\$6 US Priority Mail
\$8 Canadian APP
\$8.50 Canadian UPS

CB100

(100 feet w/ adaptors)

\$29⁹⁵

\$5.50 UPS
\$9.50 UPS 2nd Day Air
\$7 US Priority Mail
\$9 Canadian APP
\$9.50 Canadian UPS

No other lengths available

Cable loss per 100 ft:
1.6 dB @ 50 MHz
2.6 dB @ 170 MHz
4.6 dB @ 450 MHz

AMPLIFIED EXTENSION SPEAKER

The new Grove SP10 amplified extension speaker turns your scanner's mousy squeak into a lion's roar! Your radio's volume control automatically sets the SP10's output power. Ideal for emergency vehicles—or your own car (rugged metal tilt bracket included). Fills noisy locations with clear, room-expanding sound.

Capable of delivering a powerful 10 watts when connected to your radio's external speaker or earphone jack, yet small enough for under-dash mounting. Connect the SP10 to your vehicle's 12 volt system for mobile applications, or order the SP10A for AC operation.

Imagine—crisp, room-filling sound from your Realistic, Bearcat, or other compact receiver. Sleek, black communications styling and no more small-speaker blues!



Order SP10

(for mobile use) only

\$39⁹⁵

Order SP10A

(for 120 VAC) only

\$49⁹⁵

\$5 UPS
\$9.50 UPS 2nd Day Air
\$6.50 US Priority Mail
\$9.50 Canadian UPS or APP

SPECIFICATIONS

Dimensions: 4-1/2"H x 5"W
(less bracket)
Weight: 28 ounces
Speaker size: 4" square
Impedance: 3-16 ohms nom.
Input audio voltage: 1.5 V P-Pmax.
Audio power: 18 watts peak
Operational power: 12 VDC @ less than 200 mA typ
Audio cable: 10 ft.; 3.5 mm (1/8") mini phone plug
DC cable: 5 ft., color-coded, in-line 2 A. fuse

ADAPTORS AVAILABLE

ADP1	UHF Female to F male
ADP2	F Female to PL259 Male
ADP3	F Female to N Male
ADP4	F Female to Male Mini-Plug
ADP5	N Female to BNC Male
ADP6	UHF Female to Male Mini-Plug
ADP7	UHF Female to N Male
ADP9	F Female to BNC Male
ADP11	UHF female to MOT male
ADP13	BNC/BNC (right angle elbow)
ADP14	F female to RCA male
ADP15	N female to F male
ADP17	BNC female to F male
ADP18	F/2 wires
ADP19	UHF/2 wires
ADP22	MOT/BNC
ADP24	BNC female to PL259 male
ADP25	F female to Motorola male
ADP26	F/F Barrel
ADP27	Banana Plug

Adaptors may be ordered separately for \$5.95 each.
Free shipping if ordered with other products;
\$1.50 for one or more shipped alone.

**If you are unsure which adaptor is needed,
call Larry or Sue at 704-837-7081
for assistance.**



ELF RADIATION DETECTOR

By special arrangement with the manufacturer, Grove brings you this sensitive, dependable ELF (extremely low frequency) exposure meter to arm you against the hazards of electromagnetic radiation.

Not limited to just 60 Hz like competitive narrow-frequency units, this meter measures from 30-300 Hz to detect harmonic radiation from power lines and other sources.

Simply switch this pocket instrument on and read instantly the radiation from computers, radios, home stereo and video systems, appliances, power lines, electric blankets and more. Standard 9-volt battery included.

Choose from low-level GSM2 (0.1-199.9 milligauss) or standard GSM3 (1-1999 milligauss), only \$99.95 each including vinyl zipper pouch and informative instructions.

Order GSM2
Order GSM3
\$99.95
each

\$5 UPS
\$7.50 UPS 2nd Day Air
\$5 US Priority Mail
\$8.50 Canadian UPS
\$7.50 Canadian APP

OPTOELECTRONICS POCKET FREQUENCY COUNTERS

We have added the necessary options and discounted the total for your best value!

Ideal for calibrating signal generators, transmitters, for countermeasures applications, and for determining the unknown frequencies of transmitters, walkie-talkies, mobile radios, base stations, cordless phones, ham and CB radios, radio control units and other signal emitters.

These tiny, precision instruments offer outstanding sensitivity and TCXO (temperature compensated crystal oscillator) accuracy of 1 part per million. All prices include rechargeable battery pack and AC wall charger/adaptor, but not antennas (available from the list of accessories below). Units operate for several hours on a fresh charge, or continuously with the wall adaptor.

The effective range of these frequency counters varies from about one foot (cordless phones) up to 75 feet or more for more powerful transmitters.

For casual applications such as reading the frequencies of nearby transmitters, select the new 2300. Measuring a scant 3-1/2"W x 3-3/4"H x 1"D and weighing about nine ounces, it offers 1-2400 MHz frequency range, 8 LED readout and VHF/UHF sensitivity of 3 millivolts (3 mV).



Or, look at the advanced features of the new, premium 3000: Ten-digit LCD readout, optional backlite for clear night-time viewing; total-spectrum 10 Hz-3000 MHz frequency range—from sub-audible through microwave! 1 mV typical sensitivity; 16-segment LCD signal-strength bargraph for tuning nearby transmitters or tracking hidden transmitters; even lab measurement capability of period, time interval and ratio are included at no extra cost.

For surveillance applications ("sweeping" rooms for hidden bugs), an optional audible tone alerts you to the presence of an unseen transmitter, changing its pitch as you approach its hidden location without having to see the bargraph! A powerful pocket package at its advertised \$450, and an incredible value at Grove's price of only \$349.95!

Model #2300
Order CTR 4
Only
\$125.95

ACCESSORIES:

- ACC11 Zippered soft case (for 3000) **\$15.95**
- ACC18 Zippered soft case with display window (for 2300) **\$12.95**
- ANT19 4"-18" telescoping whip **\$12.95**
- ANT8 7"-46" long-range telescoping whip **\$16.95**
- ACC6 Test probe for circuit testing **\$20.95**

Model #3000
Order CTR 6
Only
\$349.95

Shipping for either of the units:

- \$6.50 UPS
- \$9.50 UPS 2nd Day Air
- \$8.50 US Priority Mail
- \$9.50 Canadian UPS
- \$10.50 Canadian APP

Optional backlite and sweep tone **\$64.95**



SCANNER FILTER

Years ago, our first scanner filter allowed the listener to reject any signal in the VHF high band which was causing overload problems. It was a step in the right direction.

But interference problems, are far more severe now, with multiple sources disrupting listening. A simple notch filter is no longer the answer. Enter: The new Grove FTR5 Scanner Filter! Ideal for use with outside antennas and with signal boosters (preamplifiers)—anytime interference is troublesome.

An adjustable 100-220 MHz 30 dB notch filter allows you to reduce or eliminate single-frequency interference from aircraft, mobile telephone repeaters, paging signals, NOAA weather stations, nearby amateur or other repeaters.

High-Q microstripline circuitry features custom-wound inductors for deep interference rejection. A rugged weatherproof enclosure allows masthead mounting. Standard F connectors are provided for convenient interconnection with other adaptors or accessories.



- Order
- FTR5 F connectors **\$39⁹⁵**
 - FTR5B BNC adaptor **\$44⁹⁵**
 - FTR5M Motorola adap **\$44⁹⁵**
 - FTR5P PL259 adaptor **\$44⁹⁵**
 - FTR5N N adaptor **\$44⁹⁵**
- \$3.50 UPS
 \$6.50 2nd Day Air
 \$4.50 US Priority Mail
 \$8.50 Canadian UPS
 \$6.50 Canadian APP

SPECIFICATIONS

Passes: 30-50, 115-174, 225-1500 MHz
 Rejects: 0-30, 50-115, 174-225 MHz
 Frequency Range: 30-2000 MHz (nom.)
 Insertion Loss: less than 3dB
 Dimensions: 6"L x 1-1/8"D
 Weight: 3 ounces

GRE SUPER AMPLIFIER

Would you like more range out of your hand-held scanner? Try the new GRE Super Amplifier with built-in battery and 20 dB (adjustable) gain from 100-1000 MHz!

BNC connectors allow the Super Amplifier to be mounted between the scanner and rubber ducky antenna; a bypass switch permits the unit to be disabled without having to remove it.

A 9-volt alkaline battery (not supplied) will provide up to 24 hours of continuous operation; a convenient external power jack permits the unit to be used continuously from a 9 VDC wall adaptor (not supplied).



Order PRE1
 Retail for \$69
 Grove price only
\$54⁹⁵

\$5 UPS
 \$7.50 UPS 2nd Day Air
 \$5.50 US Priority Mail
 \$8.50 Canadian UPS
 \$7.50 Canadian APP

RECEIVE CONTINUOUS 810-912 MHz ON YOUR PROGRAMMABLE SCANNER

GRE SUPER CONVERTERS

Looking for the best way to get uninterrupted 810-912 MHz coverage on your hand-held or desktop scanner? Whether your scanner doesn't have that range now, or is one of the models with certain 800 MHz frequencies factory-censored, these high-sensitivity converters from GRE will fill in the gap!

Simply install a nine-volt battery (not supplied); BNC connectors are provided to interconnect with your scanner. Use an 800 MHz-capable external antenna or attach a whip adjusted to about 4" (or 12" for gain) like the Grove ANT-19 (\$12.95) or ANT-8 (\$16.95).

When you tune 410-512 MHz on your scanner, you will be receiving 810-912 MHz! Just add 400 to the frequency displayed on your scanner, and you'll know your receive frequency when the scanner is switched on. A handy bypass switch allows you to restore normal operation of your scanner without having to remove the converter.

Factory price \$94

ORDER CVR2 for handheld scanners **\$79⁹⁵**
ORDER CVR3 for desktop/mobile scanners: **\$84⁹⁵**

\$4.50 UPS \$7.50 UPS 2nd Day \$6.50 US Priority Mail
 \$8.50 Canadian APP \$8.50 Canadian UPS

ORDER WITH CONFIDENCE FROM GROVE!



1-800-438-8155



VISA
MASTERCARD
 or **DISCOVER**
ACCEPTED!



For Technical Support
CALL LARRY
704-837-7081





24-HOUR STUDIO CLOCK

Nothing lends an air of authority in a radio station like the clock on the studio wall. It is traditional, recognizable, functional, and now, with a modern precision quartz movement, accurate to 1/2 second per day.

This studio clock from Grove Enterprises is a professional 13" Seth Thomas, featuring a 24-hour

movement with bold, black numerals and a red sweep-second hand.

A convenient set knob allows precise set-up at installation; add an inexpensive alkaline AA cell (not included) and you have at least a year of unattended, accurate time — even during power outages.

Order CLK1
Only
\$24⁹⁵
\$6 UPS
\$9.50 UPS 2nd Day Air
\$6.50 US Parcel Post
\$10.50 Canadian APP or UPS

MFJ DUAL DIGITAL CLOCK

This compact digital timepiece features two large, accurate, LCD quartz movements, one to provide accurate 24 hour UTC radio time, the other for 12 hour local time. Mounted in a rugged extruded aluminum frame with a handsome brushed accent, the clock features high-contrast, 5/8 inch numerals,

easy to see anywhere in your radio room.

Powered by a long-life battery, the clock may be switched to show seconds as well. Measuring a scant 4-1/2"W x 2"H, the MFJ108B dual time clock can easily fit on any radio desk and provide valuable time information instantly.



Order CLK2
\$19⁹⁵
\$4 UPS
\$6.50 2nd Day Air
\$4.50 US Priority Mail
\$8.50 Canadian UPS
\$7.50 Canadian APP



MFJ WORLD MAP CLOCK

This new desk digital world map/clock adds a touch of golden elegance to your radio room. Time zones are available at the touch of a button, and the day of the week, date, and local 12 or 24 hour time with one second per day accuracy are also displayed in large LCD characters.

Key cities across the globe are highlighted to make identification easier and an alarm tone can be set to alert you to any particular time. The MFJ-112 measures 4" H x 3-1/2" W and battery is included.

Order CLK4
Only
\$24⁹⁵
\$4.50 UPS
\$6.50 2nd Day Air
\$4.50 US Priority Mail
\$8.50 Canadian JPS
\$7.50 Canadian APP

COLOR WALL CHART OF THE RADIO SPECTRUM

Now Grove offers this incredible 50" x 32", full color, fold-out wall chart of the United States radio spectrum!

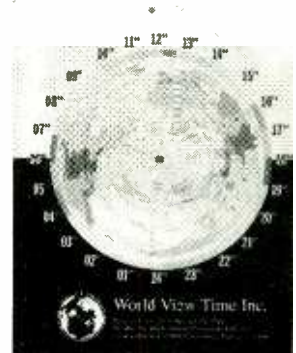
Printed on heavy gloss paper, the chart of the spectrum shows both government and non-government frequency allocations from 3 kHz through 300,000 MHz (300 GHz)—the entire radio spectrum!

28 services are shown in separate colors: land mobile, aeronautical, maritime, space, fixed, amateur, radio and TV broadcasting and more. No other low-cost publication provides so much band allocation detail at a glance as this handsome, professional wall chart.

Order CHT 1
Only
\$9⁹⁵
\$4.50 UPS
\$6.50 2nd Day Air
\$2 Bookrate
\$8.50 Canadian UPS
\$6 Canadian APP

WORLD TIME CONVERSION WHEEL

This colorful and accurate accessory reveals 24 hour time anywhere in the world at a glance. Polar projection features colored land masses with accurate 24 hour time zones on a glossy, durable, global map with metal axis hub. Select your time, and it's ready to use!



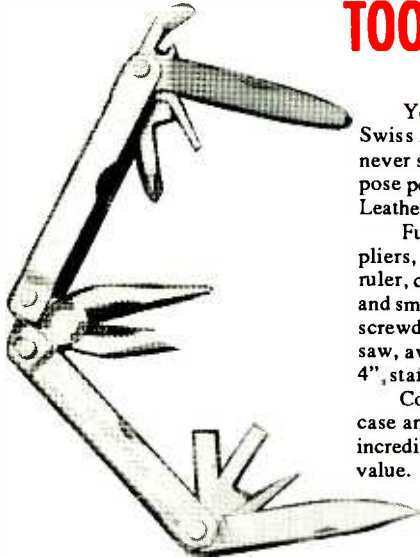
Order CHT 2
Only
\$8⁹⁵

INCLUDES FIRST CLASS MAIL SHIPPING



Made in the U.S.A.

THE LEATHERMAN® TOOL



You've seen the legend Swiss Army knife, but you've never seen a quality, multipurpose pocket tool like the Leatherman®.

Full-size needlenose/regular pliers, wire cutters, knife blade, ruler, can/bottle opener, large and small screwdrivers, Phillips screwdriver, metal/wood file/saw, awl/punch—all in a sturdy, 4", stainless steel frame!

Comes with leather belt case and 25 year warranty! An incredible, American-made value.

Order **TOOL 1**

Only **\$39⁹⁵**

\$4.50 UPS
\$7.50 2nd Day Air
\$4.50 US Priority Mail
\$8.50 Canadian UPS;
\$7 Canadian APP

NEW! EXPANDED! VERSION 3.0 1993 FCC DATABASE ON DISK!

NOW WITH:

- County, Latitude and Longitude fields added
- Numerical frequency field to ease the use of other database searches.
- Longer Licensee field for more accurate information.

Does not include Federal, military or amateur.

UPGRADES FOR 1992 VERSION 2.0 ARE ONLY

\$29⁹⁵



**First Data Disk
and Program**

**Additional
Data Disks**

CA, TX, FL

\$49⁹⁵

\$39⁹⁵

All other states

\$39⁹⁵

\$29⁹⁵

Plus \$3.00 Priority Mail

Required hardware: IBM or compatible system, 640 K RAM, color or monochrome monitor, hard drive.

Recommended: Mouse, expanded memory

A Scanner Sampler © Grove Enterprises, Inc. 1993

The spectrum above 30 MHz is saturated with two-way intrigue—air to ground, ship to shore, military and federal government, public safety, hams, businesses, trains—if you know where to look.

By convention, the VHF and UHF portion of the bands are divided into discrete segments (bands), names as follows: 30-50 MHz, VHF low band; 72-76 MHz, VHF mid band; 108-174 MHz, VHF high band; 225-512 MHz, UHF; and 806-960 MHz, microwave mobile or cellular band.

35.02	McDonald's order window	150.00	Russian satellite	236.6	Air Force Towers
40.50	Army Search/Rescue	151.625	Itinerant walkie talkies	241.0	National Guard
41.50	Army aircraft	154.37	Fire mutual aid	243.0	Military aircraft
46.61-46.97	Cordless phones	154.570	McDonald's order window		calling/distress
46.75	Pres. Helicopter	154.600	McDonald's order window	255.4	Mil flight weather
47.42	Red Cross	155.34	Hospital/ambulance	257.8	Mil tower calling
49.83-49.89	Wireless baby monitors	155.37	Police/mutual aid	259.7	Space Shuttle
121.5	Air emerg/calling	156.8	Boats call/distress	311.0	SAC primary
122.0	Flight weather	157.05	Coast Guard	321.0	SAC secondary
122.2	Flight service	157.10	Coast Guard	344.6	Mil flight weather
122.75	Gov't air to air	157.15	Coast Guard	349.4	MAC primary
122.8	Small airport UNICOM	162.40-		381.8	CG aircraft
122.9	gov't aircraft	162.55	Weather service	415.200	Fed protection service
122.925	Natural resources air	163.200	U.S. Marshall	415.700	Air Force One
123.1	Air search & rescue	165.2875	ATF	417.200	Fed Protection Service
123.45	Pilots air to air	165.375	Secret Service	462.675	GMRS
126.2	Military air towers	165.950	IRS	462.95-	
135.575-		167.050	FCC	463.175	Paramedics
135.625	ATS-3 satellite	167.5625	FBI	464.500	PGA tournament
143.625	Russian Mir cosmonauts	170.875	Federal Prisons	469.500	NASCAR racing
148.15	Civil Air Patrol	170.925	Federal Prisons		



THE INNOVA POWERPAK

This rechargeable battery pack provides 12 volt DC at up to 10 amps maximum (fused) from its sealed, 6.5 ampere-hour, lead-acid battery. LED indicators signal recharge, low battery and system ready status. Handy grip and carrying strap included.

Ideal for campers, field day, cellular telephones, DC power tools, emergency lighting, boating, camcorders, scanner and short wave receivers, ham and CB emergency power—anywhere battery operated equipment must be used for extended periods.

Includes cigarette lighter plug for recharging from a vehicle. Equipped with cigarette lighter socket for standard accessories.

Fast recharge—as little as one hour from a running vehicle, or 8-10 hours from the optional AC adaptor.



For Technical Support
CALL SUE
704-837-7081



Order PWR2
Only

\$49⁹⁵

\$6 UPS
\$12.50 UPS 2nd Day Air
\$11 US Priority Mail
\$15 Canadian UPS
\$14.50 Canadian APP

ACCESSORIES

ACC113	AC wall charger	\$12⁹⁵
ACC114	6.8 W solar charger panel (special order)	\$129⁹⁵
ACC115	AC inverter	\$79⁹⁵
ACC116	3-12 VDC @ 500 mA universal cigarette lighter adaptor	\$11⁹⁵
ACC117	Belt clip holder	\$6⁹⁵
ACC118	Storage pouch for cables, accessories	\$9⁹⁵



ONE-HOUR RECHARGEABLE NICADSYSTEM

You can't buy better, faster-charging NiCd batteries than the Gates Millenium. These 750 mA AH AA cells will provide noticeably longer operation for scanners, portable radios, recorders, and accessories, and they come with a lifetime manufacturer's warranty! The Rapidcharger will recharge 2 or 4 Millenium AA cells at a time in just one hour.

ORDER TODAY:

ACC119	Rapidcharger	\$19⁹⁵
ACC120	AA cells	(2) \$5⁹⁵
		(4) \$9⁹⁵

\$5 UPS
\$7.50 UPS 2nd Day Air
\$6 US Priority Mail
\$9 Canadian UPS
\$8 Canadian APP

\$\$ ORDER BOTH AND SAVE \$\$

Rapidcharger plus 4 AA cells **\$24⁹⁵**

NEW! HEAVY DUTY ANTENNA ROTATOR

Ideal for the Grove Scanner Beam, amateur VHF/UHF antennas, TV and FM antennas, this new rotator features a heavy-duty motor with high torque (tested through 70 MPH winds) with brake pads to protect the drive train.

Two synchronized motors give precise station location; extra-strength machine gears break through ice loads without binding. Mounts on masts up to 2" diameter. Requires 3 conductor cable (optional). Fast and easy installation.



ACCESSORIES:

ACC121	50 feet 3-conductor cable	\$5⁹⁵
ACC122	100 feet 3-conductor cable	\$8⁹⁵

Order ROT1
Only
\$59⁹⁵

\$5 UPS
\$7.50 UPS 2nd Day Air
\$6 US Priority Mail
\$9 Canadian UPS
\$8 Canadian APP

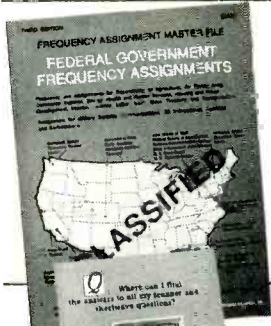
Caveat: ECPA '86

The Electronic Communications Privacy Act of 1986 forbids the monitoring of certain services receivable on scanners. Although there is no evidence at present that the new law is being enforced, violations are punishable by fine and/or imprisonment. The following list is included as a guide only and Grove Enterprises assumes no liability for its accuracy or interpretation.

The law forbids monitoring: 1. Encrypted or scrambled signals; 2. Paid subsidiary carrier authorization (SCA); 3. Mobile telephones or voice paging; 4. Remote broadcast or studio/transmitter links.

You may monitor any other transmission "readily accessible to the public" including public safety, federal and military, aircraft and maritime, amateur and CB, business and industrial, private land mobile, cordless telephones, and any interference-causing protected transmission long enough to identify its source.

A new law will make it unlawful to manufacture a cellular-receiving scanner after April 26, 1994, but it lawful to own one.



FEDERAL FREQUENCY ASSIGNMENT MASTER FILE

This new 3rd edition, now with 350 controversial pages, it provides the most comprehensive look at federal government frequencies in print.

Over 100 agencies, from the Central Intelligence

Agency to the National Security Agency are listed; scanner and shortwave as well.

No matter where you're located, you'll hear many of these frequencies in use. Alphabetized by department and agency and their

locations, then listed in frequency order, this compendium is the most authoritative reference for armchair monitoring of "forbidden" frequencies we've ever seen!

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By Bob Grove What is the best antenna for your requirements? When do you need a preselector rather than a preamp? What is the difference between "meter band," megahertz" and "kilohertz"? How can you determine the source of

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These are samples of the hundreds of questions expertly answered by Bob Grove's guide to monitoring. If you have questions about listening and equipment, chances are you'll find the answers here!

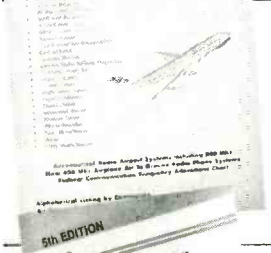
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military agencies across the country. FAA, CAP, military, aeronautical telephone, flight support, airport communications—they're all here!

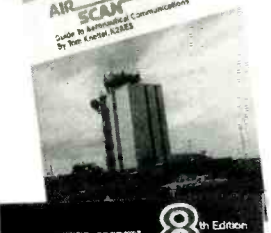
Arranged alphabetically by state, lists include service,

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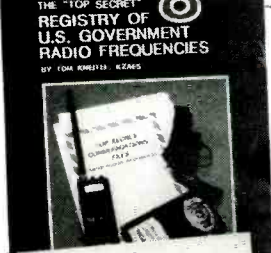
Military and federal tactical frequencies, flight service stations, NASA support frequencies, conservation agencies, even air show frequencies!

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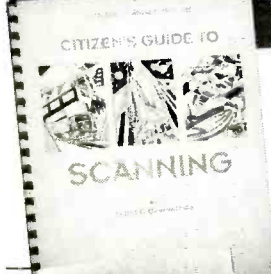
Concentrating on VHF and UHF scanner frequency ranges, agencies include Secret Service, Customs, DEA, CIA, NSA, White House, Border Patrol, ATF, and dozens of other

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By Laura Quarantiello Are you new to scanning? Would you like to know more about the hobby and how to get the most out of your scanner? Try this new guide to expanding your

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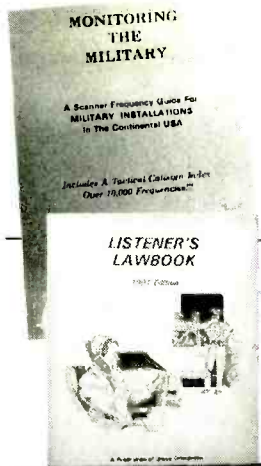
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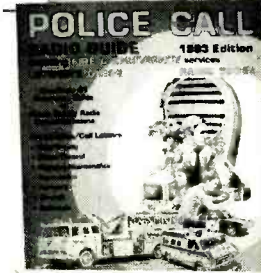
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By Daryll Symington
Just revised with over 10,000 VHF/UHF frequencies for nearly 400 military bases throughout the U.S., plus an extensive list of radio call signs and

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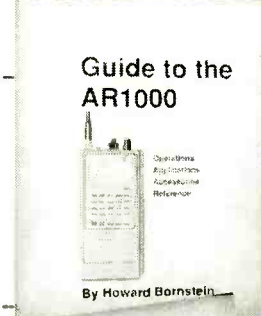
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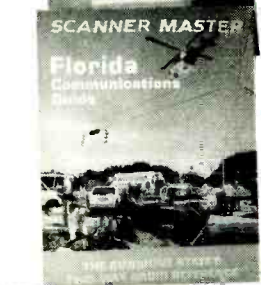
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TUNE IN ON TELEPHONE CALLS

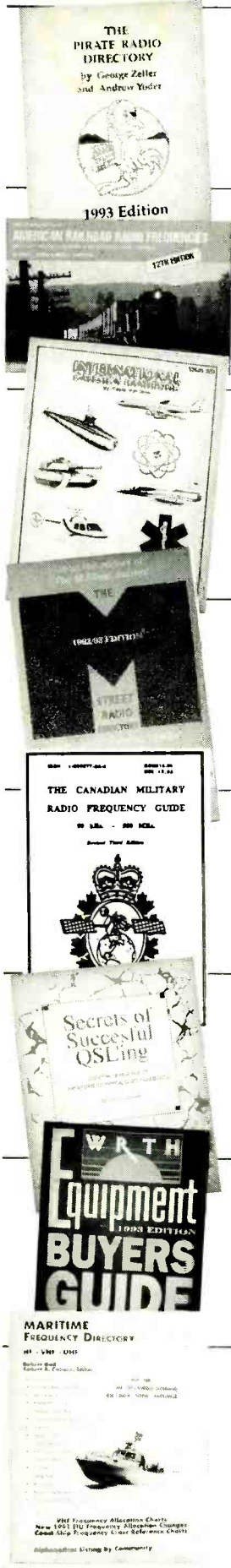
By Tom Kneitel No listener's book in recent history has caused so much consternation as Kneitel's recent expose' on where to

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By Robert S. Ing Previously, shortwave and scanner monitors have had to rely on occasional club bulletins or U.S. frequency

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US MARITIME FREQUENCY DIRECTORY

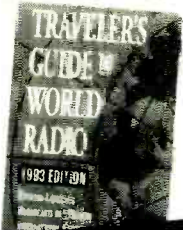
By Robert Gad and Robert A. Coburn Whether your maritime listening interests involve a scanner or

a shortwave receiver, this is the book for you! A massive compilation from official lists of US Coast Guard, high seas radio telephone, coastal

and ship stations, emergency distress, marine operator, weather service, inland waterways, and more!

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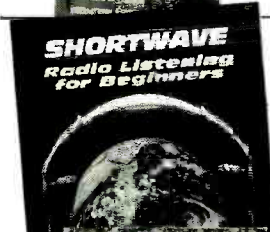
This handy pocket guide fits neatly in your suitcase or alongside your shortwave radio and provides instant access to English language programs from 55 major

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SHORTWAVE RADIO LISTENING FOR BEGINNERS

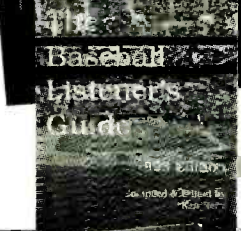
By Anita Louise McCormick This brand new publication provides excellent insight into shortwave radio--its history, its intrigue, its players.

Broadcasters, pirates and clandestines, utility communicators, hams and even scanner topics are covered in this easy-to-read, liberally illustrated work by

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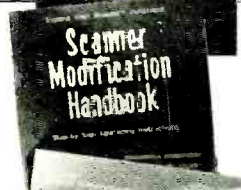
By Ken Reitz No matter where you are located, there is probably an AM or FM radio station nearby covering today's game. All 28 major

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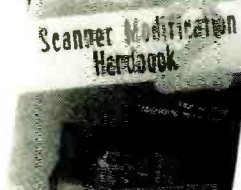
By Bill Cheek Although concentrating on mods for the Realistic® PRO2004 and 2005, excellent hints are included for scanners in general. Cellular telephone

frequency plans, adding S meters, squelch improvements, voltage protection, cellular restoration, increasing memory capacity (64,000 channels for the

PRO2004/2005 and 3200 for the PRO34!), portable power supplies, choosing antennas and coax, and more!

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SCANNER MODIFICATION HANDBOOK VOLUME 2

By Bill Cheek This second volume continues where the first leaves off. Detailed step-by-step instructions to add modifications to perk up your scanner.

While concentrating on the Realistic® PRO-2004/5/6, PRO-34, PRO-2022, Uniden BC200/205XLT, BC100XLT, and BC760/950XLT, if you are a clever

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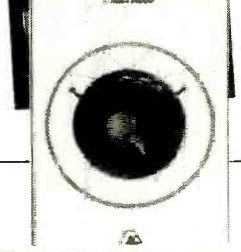
experienced technician should attempt to perform the alterations which may void the radios' warranties.

popular amateur transceiver models from ICOM, Kenwood, and Uniden; CB channel and power increase (illegal in the U.S.); and cellular restoration in the Bearcat 200XLT, 760XLT, and 960XLT scanners.

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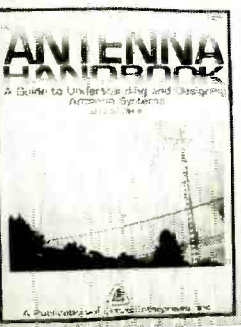
By Jacques D'Avignon Bandid? Minipro? Ionsound? The number of shortwave radio propagation

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WEATHER SATELLITE HANDBOOK

By Ralph E. Taggart
Weather satellite reception is becoming quite popular. Ralph Taggart's most recent handbook is filled with useful information, charts, photos and diagrams.

Concentrating on the 137 and 1691 MHz birds, Taggart's handbook includes construction details on antennas and rotators, tracking devices and programs, computer control,

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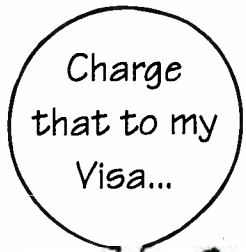
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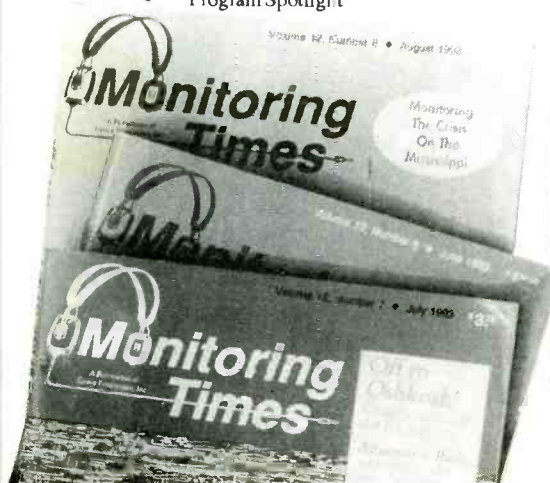
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Our six gigabyte computer has also been enhanced as more and more enthusiasts check in to our BBS to exchange newsbreaking listening tips

and equipment hints, as well as to ask questions and place orders.

The all-metal building shields our computers from interfering with the antenna array on the rooftop. A combination ham shack and monitoring post is outfitted with the latest high-tech equipment.

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