

July 1 - August 31, 1995

GROVE



Catalog & Buyer's Guide[®]

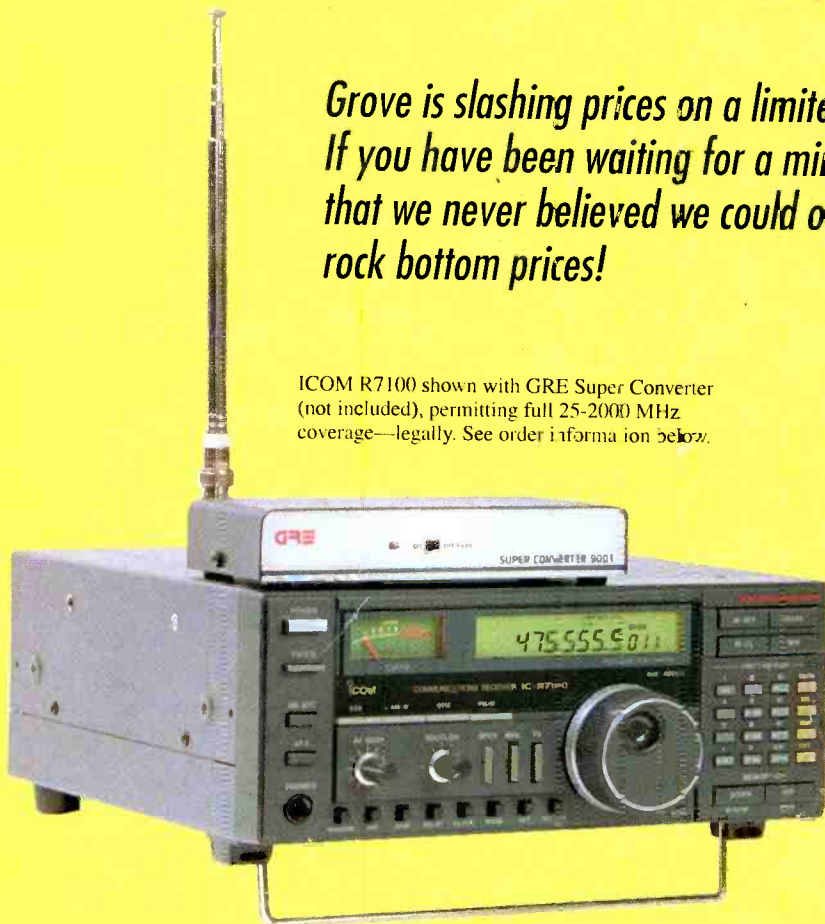
America,
the Beautiful



ICOM PRICE BREAK

Grove is slashing prices on a limited number of ICOM R7100-2 scanners. If you have been waiting for a miracle, wait no longer — these are prices that we never believed we could offer! Hurry and take advantage of these rock bottom prices!

ICOM R7100 shown with GRE Super Converter (not included), permitting full 25-2000 MHz coverage—legally. See order information below.



ICOM R7100-2

ICOM's Best VHF/UHF Communications Receiver

**Special
Limited-Time Offer:
\$1299.95***

With the most popular features of the legendary R7000, plus a few features that listeners wanted, the R7100 is ICOM's best compact receiver.

The R7100 offers 25-800 and 900-2000 MHz frequency coverage 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. Prices subject to change due to yen fluctuations.

Call Now — Stock is Limited and Moving Rapidly!

Last Grove Price: ~~\$1499.95~~

Retail Price: ~~\$1942.50~~

Order SCN15-C

\$16 UPS
\$31 UPS 2nd Day Air
\$36 US Priority Mail
\$27.50 Canadian UPS
\$43.50 Canadian APP

*** For an additional \$55, receive the GRE Super Converter (CVR3) and get full 25-2000 MHz coverage—a \$94 value from the factory!**



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

July 1-August 31, 1995

Our nation still mourns for our friends and neighbors in Okahoma City. Confident of our near-invulnerability to outside threats, we never expected such a cowardly act from within. But, as Americans, we have also learned the unifying effect of the healing process. Let us hope that this shameless act will yield a renewed spirit of brotherhood across our land, a recommitment to "One Nation..." This month's cover, created by Art Director John Bailey, is a visual statement of our commitment to these ideals. We have earned the respect which we enjoy for our fortitude and our leadership, our recognition of right from wrong, and our steadfast mission to provide both a forum for dissidence and a land of opportunity.

In the light of such profound subjects, I am hesitant to use this column in the usual fashion, but after all, this is a buyer's guide, and the electronics marketplace is burgeoning with new advances! Read from cover to cover to see how you can benefit from the values—and some brand new bonuses!

The new Grove FCC Database on CD-ROM is incredible! Calls are coming in complimenting us on the improvements—faster search speed, comprehensive service codes on a pop-up window, dynamic prompts, improved accuracy, updated records and more—at the same low price!

The country's leading shortwave receiver, the Drake R8, has now been replaced by an even better R8A! It was hard to improve on the original, but Drake did it, and at only a modest cost increase.

Pay attention, too, to our new shortwave listening accessories, including the all-new Grove TUN-5 MiniTuner Plus as well as the JPS ANC-4 noise canceller.

And for scanner listeners, hams and VHF/UHF communicators, we offer a low-profile, high-performance, magnetic-mount, mobile antenna with surprising performance, both for transmitting and receiving!

We are finally up-to-speed with our extremely popular SP200 Sound Enhancer. Surveillance agents are using them because of their incredible sound-processing ability as well as their capability to activate remote tape recorders.

Several new books, including my Antenna Factbook, the latest edition of the Listener's Lawbook, the ARRL Repeater Handbook, and (a pictorial history of) The Zenith Transoceanic,

And finally, Grove Enterprises is now an Internet node. Reach us 24 hours a day after August 1st at www.grove.net for on-line viewing of catalog items, special offers, and other radio-related files.

So browse, enjoy and learn. When you are ready to order, our courteous sales staff is ready to assist you, and our qualified technical staff will be happy to answer any remaining questions.

Bob and Judy Grove

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Order With Confidence

Grove Enterprises 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. **ALL PRICES ARE SUBJECT TO CHANGE!**

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 (less shipping charges)—your choice!

ALL RETURNED ITEMS MUST HAVE A RETURN AUTHORIZATION NUMBER OR THE RETURN IS SUBJECT TO A RESTOCKING FEE BASED ON THE INVOICE VALUE: \$0-\$500 - \$15; \$501-1000 - \$25; \$1000+ - \$35. BE SURE TO REQUEST A RETURN AUTHORIZATION NUMBER FROM A CUSTOMER SERVICE REPRESENTATIVE!

Any product returned in not-as-new condition will be assessed a fair refurbishing charge. Be sure to include the authorization number as a restocking fee must be assessed (see above) for products returned without authorization. Special order items cannot be returned.

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.**

Canadian Shipments:

All Canadian shipments are subject to duties and GST tax. These charges are the responsibility of the purchaser and not Grove Enterprises

Limited Warranty:

All equipment manufactured 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.

All customer-owned equipment repaired by Grove Enterprises is warranted for a period of 90 days from the date shown on the customer receipt. The warranty is not transferrable. Modifications to the equipment may void the original manufacturer's warranty.

Radio Shack® Equipment:

Should any equipment manufactured by Radio Shack® 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 Radio Shack®, (ICOM, Uniden, Sony, 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.

Grove Phone Line Services:

ORDER LINE ONLY

800-438-8155

(M-F, 8:00am-6:00pm Eastern)

TECHNICAL/REPAIR SERVICE

704-837-7081

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

BUSINESS OFFICE

704-837-9200

(M-F, 8am-5:00pm Eastern)

DATA LINE/FAX SERVICE

704-837-2216

(24 hours/day, 7 days/week)

INTERNET SITE
www.grove.net

BULLETIN BOARD SYSTEM

Grove Enterprises has an advanced computer bulletin board system available **Monday-Friday from 5:30pm-8am (non-business hours), and 24 hours/day on weekends.**

The BBS is free and is available to all people. All phone numbers operate at 300-14,400 BPS:

704-837-9200 704-837-5957
704-837-7081 704-837-5183



Explore the New Frontier— Satellite Communications

ICOM 820H Dual-Band, All-Mode Transceiver for Satellite and Terrestrial Communications!

This new, all-mode, dual-band transceiver is both compact and lightweight, offering operating versatility other base stations just can't match. Automatic crossband repeater, normal and reverse satellite communications tracking, independent uplink/downlink doppler-shift compensation, 10 satellite up/downlink management memory channels and more! Frequency coverage is 144-148 MHz VHF/430-450 MHz UHF. **For unsurpassed wide-coverage monitoring, request the optional frequency extension (136-174 MHz/420-460 MHz) available to MARS and CAP licensees at the time of order, to others after delivery (FCC type acceptance requirements).** Satellite software available from AMSAT (210) 896-0336. Also, see pp. 46-47 for Grove's great selection of satellite reference books.

NEW!



License required to transmit: Technician, General, Advanced or Extra

Reap big savings on Grove's IC-820H Accessory Package!



Order this special *Grove Satellite Package* and receive a **free certificate for a \$70 Instatrak (VGA) or Quik-Trak (CGA/EGA) control software package from AMSAT.**

Grove Satellite Package

ACC 15	\$89.00
ACC 17	\$399.00
ACC74	\$122.95
ANT 28	\$169.00
ANT 29	\$229.00
CBL1N	\$69.95
CBL1P	\$64.95
CBL3N	\$19.95
CBL3P	\$12.45
MIC 2	\$187.95
PRE 6	\$159.95
PRE 7	\$164.95
PWR 4	\$344.95
ROT 2	\$588.95

Retail price with AMSAT software ~~\$2693.00~~

Grove Discount Price \$2493.00

A \$200 Savings!

Order XCVR 01

Only **\$1649⁹⁵**

- \$16 UPS
- \$31 UPS 2nd Day Air
- \$36 US Priority Mail
- \$27.50 Canadian UPS;
- \$43.50 Canadian APP

FEATURES AND SPECIFICATIONS:

- Frequency coverage: 144-148/430-450 MHz
- SSB, FM, CW, 9600 baud packet
- 1 Hz tuning resolution plus RIT
- IF shift
- Normal/reverse satellite tracking memory
- Doppler compensation
- 10 crossband, 50 conventional memory channels
- Dual VFOs on both VHF and UHF
- Dual antenna jacks (SO-239 VHF/N UHF)
- Noise blanker
- Attenuator
- Programmable memory/mode select scan
- CW semi-break in and side tone
- Auto repeater function
- 45/6 watts power

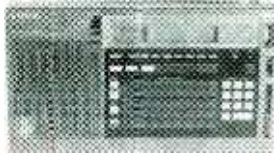
RECOMMENDED ACCESSORIES:

ACC 15	Dual fiberglass boom	\$89.00
ACC 17	Satellite Tracker ST-1	\$399.00
ACC 36	UT-36 voice synthesizer	\$55.95
ACC 74	CT-17 Ci-V level converter	\$122.95
ANT 28	2-Meter antenna	\$169.00
ANT 29	70 centimeter antenna	\$229.00
BRK 5	MB-23 carrying handle	\$11.95
BRK 8	MB-5 mobile mounting bracket	\$42.95
CBL1N	Belden 9913 cable 100ft.(N con.)	\$69.95
CBL1P	Belden 9913 cable 100ft. (PL259)	\$64.95
CBL2N	Belden 9913 cable 50ft. (Ncon.)	\$49.95
CBL2P	Belden 9913 cable 50ft. (PL259)	\$44.95
CBL3N	Belden 9914 patch cable 3ft (N con.)	\$19.95
CBL3P	Belden 9914 patch cable 3ft. (PL259)	\$12.45
MIC 1	HM-12 hand microphone	\$53.95
MIC 2	SM-20 desktop microphone	\$187.95
MOD 2	136-174/420-460 MHz transmit & receive	\$40.00
PWR 4	PS-55 Style-matching power supply	\$344.95
PRE 6	AG25 144-148 MHz preamp	\$159.95
PRE 7	AG35 420-450 MHz preamp	\$164.95
ROT 2	YAESU G5400B rotator	\$588.95
SPK 1	SP-3 external speaker	\$101.95
SPK 3	SP-20 external speaker	\$224.95

Choosing a Shortwave Receiver

WHEN YOU SELECT A SHORTWAVE RECEIVER, consider several factors:

- (1) Do you need portability? Small radios are convenient carry-alongs, but their performance is always inferior to the pricier desktop radios.
- (2) Is battery operation of paramount importance? If power outages are frequent, the battery option may be important.
- (3) Is price a serious consideration? Performance generally improves as price goes up, but it isn't proportional. Check the specifications.
- (4) Will you be using an external antenna? This is always the better choice, but the resultant stronger signals will cause problems in cheaper radios.
- (5) Do you intend to listen to hams and other communicators? Single sideband (SSB) mode is mandatory.
- (6) Is this to be a primary or a backup receiver? You may wish to relax on specifications slightly if you already have a high-performance receiver.
- (7) Are you located near a powerful broadcasting transmitter? Plastic cabinets



Sony ICF2010

and poorly-designed circuitry invite serious strong-signal-interference problems.

Among portables, the Sony ICF-2010 still remains the top contender as the most cost-effective radio. Not only does it offer decent sensitivity, selectivity and loudspeaker audio, but it offers synchronous detection, very useful for weak- and fading-signal shortwave reception. It includes the FM broadcast band and even listenable aircraft band reception, an unusual bonus in portables.

Among the small shortwave portables, consider the Sony SW30 for broadcast-only reception (no SSB) at low cost, or the recently-released SW7600G with synchronous detection and SSB—a fast seller.

For superb audio quality, the Grudig Satellit 700 is the pick.

For serious listening, the new Drake R8A offers improved performance over the former leader, their own R8! Or try their new SW8 with improved sensitivity, battery/desktop/portable operation, excellent SSB performance, synchronous detection, all at an attractive price between that of the low-cost portables and the more expensive desktops.



Drake R8A

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 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 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.

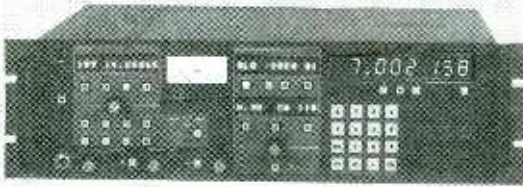
While nothing can guarantee protection from a direct lightning strike (always disconnect your antenna from your equipment during storm season), these devices will harmlessly short-circuit any voltages induced on the antenna by close strikes.



Grove Skywire



In the Market for a Luxury Receiver?



WATKINS-JOHNSON HF1000

For the first time in recent history, a leading manufacturer of equipment for the federal government has made available the most advanced receiver on the consumer market.

Designed for a super-secret monitoring agency, the HF1000 offers unsurpassed features and performance, like 1 hertz tuning and display readout, +30 dBm third-order intercept, DSP filtering with 58 bandwidths, RS232 and CSMA control ports, built-in self test, 5 kHz-30 MHz continuous tuning, ten step noise blanker, excellent filter shape factor, low-distortion AM synchronous detection, internal speaker and much, much more.

This is a receiver for the discriminating listener, the consummate DXer, the true professional who wants the best there is.

RCV 18 Only \$3799

ACCESSORIES:

\$23 UPS	ACC 85 Preselector	\$589.95
\$39 2nd Day Air	ANT 2 Grove Skywire antenna	\$39.95
\$25.50 US Priority Mail	ANT 24 Dymek active antenna	\$179.95
\$35 Canadian A	SFT 2 ScanCat Gold software	\$94.95
\$35 Canadian UPS	SPK 13 Grove Sound Enhancer	\$279.95

The Tiny Titan

LOWE HF-150



"...at the Monitoring Times Convention...I (compared) the HF-150 with a Sony SW55, a Sony SW77, a Sony ICF2010, and a Grundig Satellit 500...it blew away the competition." James D. Strader, P.E.

This "tiny Titan" from Lowe of England offers enormous performance in a miniature package. Simplicity and specifications are the key elements of this little marvel. Ideal for the apartment dweller or traveler. Continuous 30 kHz-30 MHz coverage, all-mode (AM, AM synchronous, USB, LSB) reception, dual up-conversion circuitry, 1 kHz LCD readout, 8 Hz tuning steps, 60 non-volatile memory channels, internal battery power, and internal speaker.

A survivor, the HF-150 is built with all-metal panels, machined parts, alloy casings, and silk-smooth tuning. Choose fast or slow tuning, wide or narrow selectivity, internal batteries or external 12 VDC or 120 VAC power. All in a 7-1/4"W x 3"H x 6-1/4"D, 3 pound package!

RCV 25
Only \$599⁹⁵

- \$8.50 UPS
- \$17 UPS 2nd Day
- \$17 US Priority Mail
- \$18.50 Canadian APP
- \$18 Canadian UPS

ACCESSORIES:

ACC 149 Key pad	\$89.95
ANT 2 Grove Skywire antenna	\$39.95
ANT 3 Grove Mini Skywire antenna	\$29.95
ANT 24 Dymek active antenna	\$179.95
SPK 13 Grove Sound Enhancer	\$279.95

See Shortwave Product Comparisons and Specifications on pages 22-23!

THE GREAT WORLD BAND RECEIVER FROM R.L. DRAKE

Not only continuous coverage 500 kHz-30 MHz, but 87-108 MHz FM broadcast (stereo at headphone jack) and 116-136 MHz aircraft as well! Standard and synchronous detection AM, upper and lower sideband on medium and short wave, direct frequency entry keypad, 0.5 microvolt sensitivity, dual 6/4 kHz selectivity on AM, sharp 2.3 kHz selectivity on SSB. Up-conversion eliminates images while +10 dB intercept point suppresses intermod.

A compact 11" wide by 5-1/4" high and weighing a scant 10 pounds, the SW8 runs on optional internal batteries or its supplied AC adaptor. High-contrast, backlit LCD display provides 100 Hz tuning accuracy. Dual-mode clock timer and 70 scannable memories round out the key features of this welcome receiver! See specifications on pp. 22-23.

Order RCV 19
Grove discount price only \$689⁹⁵

ACCESSORIES:

ANT 2 Grove Skywire antenna	\$39.95	\$13.50 UPS
ANT 3 Grove Mini Skywire antenna	\$29.95	\$27 UPS 2nd Day Air
ANT 24 Dymek active antenna	\$179.95	\$23.50 US Priority Mail
SPK 13 Grove Sound Enhancer	\$279.95	\$21 Canadian UPS
		\$28 Canadian APP

SW8





New!



R8-A Communications Receiver

*The successor to the famous R8 is here—
Why pay more when the best costs less?*

The Drake R8 has been internationally respected for its excellent audio, frequency agility (100 kHz-30 MHz, expandable to 33-55 and 108-174 MHz with optional converter), friendly control panel, synchronous detection, noise blanker, passband tuning, preamp/attenuator selection, universal power supply, dual clock timers, giant display, five filter bandwidths and six receiving modes. Now Drake has added over a dozen important improvements to their legend R8 receiver, including:

- Single-keypress mode and bandwidth selection
- Alphanumeric display of station identification
- Improved overload immunity
- 440 memory records
- Rapid scanning
- Enhanced tone control
- Tighter frequency stability
- Strong metal tilt bail
- Expanded-function RS232 computer control
- Removable/replaceable line cord

Order RCV 3

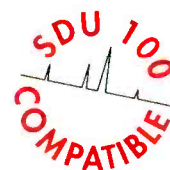
Grove discount price only **\$1068⁹⁵**

\$16.50 UPS
\$30 UPS 2nd Day Air
\$29 US Priority Mail
\$26 Canadian UPS
\$35.50 Canadian APP

~~Retail \$1099.95~~

ACCESSORIES:

ACC 43 VHF converter	\$209.95
ANT2 Grove Skywire antenna	\$39.95
ANT 24 Dymek active antenna	\$179.95
Installation Fee	\$20.00
MAN 2 Service manual	\$39.95
SFT 2 ScanCat Gold software	\$79.95
SFT 8 PC interface software	\$58.95
SPK 2 External speaker	\$48.95
	plus \$6 UPS
SPK 13 Grove Sound Enhancer	\$279.95
WP 5 RDI White Paper®	\$5.95



FREE GIFT with every Pre-Registration received before 9-13-95!

Preliminary Schedule

FRIDAY, October 13, 1995	
10-5 pm	Exhibits open
12-4 pm	Special interest groups
1-2 pm	Scanning Atlanta
2-4 pm	International Broadcaster's Forum
5 pm	Exhibits close
7-7:30 pm	Opening Ceremony
7:30-8:30 pm	MT Expert Panel w/Rachel Baughn host
8:45-9:45 pm	ST Expert Panel w/Larry Van Horn host
SATURDAY, October 14, 1995	
9-11:15 am	Seminar
9 am	Exhibits open
11:15-1 pm	Lunch
3 pm	Exhibits close
1-4:15 pm	Seminars
4:30 pm	Bug Hunt
5:15 pm	Prize drawing
7 pm	Banquet
SUNDAY, October 15, 1995	
9-12:45 pm	Seminars



**Atlanta, Ga., Airport Hilton
Oct. 13-15, 1995**

Register Today!

**\$55.00 Registration
\$23.95 Banquet Ticket**

Grove Enterprises

300 S. Hwy. 64 W.
Brasstown, N.C. 28902
1-800-438-8155 or 704-837-9200
(FAX) 704-837-2216

**Look for exhibits and
thousands of dollars
in prizes from:**

- Computer Aided Technologies
- Ramsey Electronics
- Signal Intelligence
- AMSAT
- ICOM
- Universal Radio
- Sony
- R.L. Drake
- MFJ Enterprises
- Swagur

Don't miss this year's Grove Communications EXPO (formerly the Monitoring Times Convention), now incorporating a full slate of satellite communications seminars and demonstrations!



ICOM R-71A

Order while supplies last—this popular model is now discontinued!

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 blanker 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. See detailed specifications on pp. 22-23. Prices subject to change due to yen fluctuations.

OPTIONAL ACCESSORIES



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

ACC 1	EX257 FM mode detector	\$82.95
ACC 4	CR64 high stability crystal	\$114.95/95
ACC 7	EX310 voice synthesizer	\$69.95
ACC 8	FL32A CW narrow filter	\$86.95
ACC 9*	FL44A SSB filter	\$178.95
ACC 10*	FL63A CW narrow filter	\$59.95
*Use only one filter		
ACC 12	RC11 remote control	\$109.95
ACC 73*	UX14 Level converter	\$96.95
ACC 74*	CT-17 computer interface	\$144.95
*Must use ACC73 & ACC74 together		
ANT 2	Grove Skywire antenna	\$39.95
ANT 24	Dymek active antenna	\$179.95
BRK 4	MB12 mobile mount bracket	\$25.95
DCC 1	DC Power kit EX299	\$29.95
MAN 1	Service manual	\$50.00
SFT 2	Scancat Gold software	\$94.95
SPK 1	SP3 speaker (plus \$7.50 UPS)	\$101.95
SPK 13	Grove Sound Enhancer	\$279.95
WP01	RDI White Paper®	\$5.95

RCV 6

Only **\$999⁹⁵**

\$17.50 UPS
\$33 UPS 2nd Day
\$31 US Priority Mail
\$39.50 Canadian APP
\$30 Canadian UPS

ICOM GP-22

Global Positioning System

Special Sale Price
GPS 22 \$499⁹⁵

\$8.50 UPS
 \$12.50 2nd Day Air
 \$13 Priority Mail
 \$15 Canadian UPS
 \$16.50 Canadian APP

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. Includes carrying case, cigarette lighter power cord, AC wall adaptor/charger, illustrated instruction book. Prices subject to change due to yen fluctuations.

ACCESSORIES:

BAT 1	AA Alkaline Batteries	\$7.99
BAT 13	Rechargeable Nicad batteries	\$2.75

Super Value and Performance from SANGEAN

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! See detailed specifications on pp. 22-23. Requires 4 D cells.

Order RCV 9

Only **\$219⁹⁵**

~~Retail \$399~~

\$8.50 UPS
\$17.2nd Day Air
\$16.50 US Priority Mail
\$20.50 Canadian APP
\$18 Canadian UPS



ACCESSORIES:

ANT 3	Grove Mini Skywire antenna	\$29.95
ANT 21	Select-A-Tenna	\$65.95
ANT 17	Amp. SW antenna	\$24.95
BAT 2	D cell alkaline bat.	\$1.19 ea
SPK 11	Naval HTS speaker	\$34.95



SONY ICF-SW100

Powerful Shirt-pocket Shortwave Radio

Order RCV 24

Only \$349⁹⁵

\$8.50 UPS
\$21 UPS 2nd Day Air
\$17 US Priority Mail
\$18.50 Canadian APP
\$21 Canadian UPS



Only 4-3/8" W x 2-7/8"H x 15/16" D

Incredible! Imagine compressing the popular functions of the mighty Sony ICF2010 into a shirt-pocket radio! This tiny titan offers continuous 150 kHz-30 MHz and 76-108 MHz FM frequency ranges, Sony's famous synchronous detection, USB/LSB reception, 100 Hz tuning steps, 50 memory presets, 24 hour clock/timer, world time computer, stations name display, illuminated LCD, and much, much more.

AC adaptor, stereo earphones, active antenna, soft carrying case, station directory, and full instruction manual included at no extra charge! Two AA batteries required.

See detailed specifications on pp. 22-23.



ACCESSORIES:

ANT 17 amplified SW antenna \$24.95
ANT 21 Select-A-Tenna \$65.95
BAT 1 AA alkaline batteries \$7.99 ea
SPK 13 Grove Sound Enhancer \$279.95

SONY ICF-SW77

For those who have been looking for the next step up, it's here! The new Sony ICF-SW77 has all of the features of the popular ICF-2010 (except air band), plus: front panel tuning dial, separate bass and treble controls, 162 non-volatile memory channels, stereo FM (headphones), station name display, 50 Hz fine tuning steps, broadcasting time display, 24 hour/local time clock, and 5-event timer. It comes complete with an AC adaptor, stereo earphones, ear pads, carrying belt, compact antenna, external antenna adaptor, manual. See specifications on pp. 22-23. Requires 4 C cell batteries.

Compare with the
Sony ICF-2010



Order RCV 10

Only \$469⁹⁵

Retail \$549⁹⁵

\$8.50 UPS
\$17 UPS 2nd Day
\$18 US Priority Mail
\$20.50 Canadian APP
\$18 Canadian UPS

ACCESSORIES:

ANT 3 Grove Mini Skywire antenna \$29.95
ANT 17 Amplified SW antenna \$24.95
ANT 21 Select-A-Tenna \$65.95
BAT 3 C cell alkaline batteries \$1.09ea
SPK 13 Grove Sound Enhancer \$279.95

SONY ICF-SW30

Looking for an uncomplicated, high-performance, low cost portable? It's the new Sony ICF-SW30! Replacing the popular ICF-SW7601, this broadcast-only (no SSB) radio features double conversion, high selectivity and excellent sensitivity to bring in distant stations.

Battery powered with level indicator, dual-zone 24-hour clock, temporary memory during battery change, 15 memory channels (5 for each band), signal seeking (autosearch in 1 kHz steps), and pushbutton tuning. Travel power lock prevents accidental turn-on. Offers FM stereo with earphones (not included). See specifications: pp. 22-23. Requires 3 AA cell batteries.



Order RCV 21

Only \$112⁹⁵

\$6 UPS
\$9.50 UPS 2nd Day
\$5.50 US Priority Mail
\$8.50 Canadian APP
\$12 Canadian UPS

ACCESSORIES:

ANT 17 Amplified SW antenna \$24.95
ANT 21 Select-A-Tenna \$65.95
BAT 1 AA alkaline batteries \$7.99 ea
PWR 7 AC adaptor \$19.95
SPK 11 Naval HTS speaker \$34.95

Retail \$129⁹⁵

SONY ICF-SW7600G

It was inevitable. The early models ICF 2002 and 2003 have been replaced by a tiny marvel with synchronous AM detection, SSB, and even FM stereo coverage! Measuring just over 7 inches wide and weighing 22 ounces, the SW7600G 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, pushbutton tuning, tone control, external antenna jack, clock timer with sleep function, tilt bracket, keyboard lock, direct-entry keypad and 22 scannable memory channels keynote the high-tech features of this potent portable! See pp. 22-23 for more details. Requires 4 AA cell batteries.

HIGH SENSITIVITY
PLUS SYNCHRONOUS
DETECTION!



ACCESSORIES:

ANT2 Select-A-Tenna \$65.95
ANT 17 Amp. SW antenna \$24.95
BAT 1 AA alkaline bat. \$7.99ea
PWR 9 AC adaptor \$19.95
SPK 11 Naval HTS speaker \$34.95

Order RCV 11

Only \$199⁹⁵

Retail \$249⁹⁵

\$8.50 UPS
\$13 UPS 2nd Day Air
\$14 US Priority Mail
\$16 Canadian UPS
\$15.50 Canadian APP



SONY ICF-2010

This is a full-featured radio for the serious shortwave listener—with a reputation of distinction among the "powerful portables."

This is the world's most popular shortwave radio, and it comes complete with AC adaptor, earphone, shoulder strap, wire antenna, external antenna adaptor/plug, and SW handbook.

Synchronous detection allows interference-free reception on many stations difficult to hear on other radios. Narrow/wide selectivity switching; clock/timer allows up to 4 automatic on/off cycles per day for frequencies and times of your choice; 10-step LED signal strength meter, audio tone selection for speech or music; and 10 station direct-access keyboard combine to make this Sony product a remarkable value for beginners or seasoned SWL's.

Frequency range includes 150 kHz-30MHz, 76-108, and 116-136 MHz. See pp. 22-23 for more detailed specifications. Requires 3D/2AA cell batteries.

Order RCV 2
Only \$349⁹⁵

Retail ~~\$459~~⁹⁵

\$8.50 UPS
\$17 UPS 2nd Day
\$17 US Priority Mail
\$18.50 Canadian APP
\$18 Canadian UPS

ACCESSORIES:

- ANT 17 Amplified SW ant. \$24.95
- Ant 21 Select-A-Tenna \$65.95
- WP04 RDI WHITE PAPER® \$5.95
- BAT 1 AA cell alkaline bat. \$7.95ea
- BAT 2 D cell alkaline bat. \$1.19ea
- SPK 13 Grove Sound Enhancer .. \$279.95
- ANT 3 Grove Mini-Skywire \$29.95

GRUNDIG

Luxury Portable

SATELLIT 700



RCV 23
Only \$499⁹⁵

\$8.50 UPS
\$17 2nd Day Air
\$16 US Priority Mail
\$18 Canadian APP
\$11.50 Canadian UPS

Grundig's decades of quality radio manufacturing culminate in the Satellit 700, a high performance portable at an affordable price! Separate bass and treble controls coupled with the large internal speaker produce the best audio we've heard in any contemporary shortwave portable!

Continuous frequency coverage 150-353 kHz longwave, 528-30,000 kHz medium and shortwave, 87.5-108 MHz FM broadcast. USB/LSB selection on utilities, with 100 Hz tuning steps and infinite-resolution RIT (clarifier) for fine tuning. Straightforward keyboard entry makes frequency selection a snap!

Wide and narrow filters provide excellent audio quality and adjacent channel interference rejection, while synchronous detection with automatic USB/LSB tracking improves single-signal response.

120 factory preset frequencies with station names on the giant LCD display allows instant selection of favorite stations. Automatic handscanning searches for active frequencies. Requires 4 D cell batteries.

ACCESSORIES:

- ANT 21 Select-A-Tenna \$65.95
- ANT 17 amp. SW antenna \$24.95
- BAT 2 D cell alkaline bat \$1.19ea
- SPK 13 Grove Sound Enhancer \$279.95
- ANT 3 Grove Mini-Skywire \$29.95

See comparisons and specifications for these products on pp. 22-23

Yacht Boy 400

Portable Shortwave Receiver

Order RCV 22
Special Sale Price
Only \$199⁹⁵
Retail ~~\$270~~⁹⁵

\$8.50 UPS
\$17 2nd Day Air
\$16 US Priority Mail
\$18 Canadian APP
\$11.50 Canadian UPS



It's always a pleasure to introduce a really good, low-cost product—and that's just what Grundig's newest entry is. With AM/FM stereo and continuous shortwave frequency coverage from 1.7-30 MHz in 5 or 1 kHz tuning increments, SSB, infinite fine tuning, FM broadcast reception, and battery or AC power convenience, the 400 also offers 40 scannable memories and simple pushbutton tuning.

A giant, backlit LCD shows frequency, dual-zone 24 hour clock, battery condition, even a bargraph for received signal strength! Dual bandwidth selectivity allows sharp rejection of adjacent frequency interference, while high sensitivity assures weak signal reception, even with the convenient telescoping whip. Requires 6 AA cell batteries.

This compact marvel is ideal for dependable backup during power outages and as a suitcase companion during that next trip.

"The best compact shortwave portable we have tested"... "The best sounding audio we have come across in a compact portable."

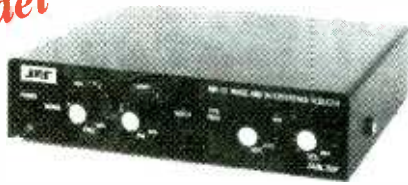
(Larry Magne, Monitoring Times, August 1993)

ACCESSORIES:

- ANT 17 amp. SW antenna \$24.95
- ANT 21 Select-A-Tenna \$65.95
- BAT 1 AA alkaline batteries. \$7.95ea
- PWR 8 AC adaptor \$7.95
- SPK 11 Naval HTS speaker .. \$34.95
- ANT 3 Grove Mini-Skywire \$29.95



**New Model
ANC-4!**



JPS Noise Canceller/ Active Antenna

Imagine, just connect this simple device between your receiving antenna and shortwave receiver or transceiver, and null out interference of virtually *any* kind! Computer hash, line noise, TV sync buzz—absolutely any RF interference goes away when the ANC-4 is adjusted to your receive frequency.

Use the attachable whip (provided) or, even better, a second external antenna to sample local noise. A simple adjustment from the front panel reduces or even eliminates any electrical noise interference you are likely to encounter! The new ANC-4 can even be used as a frequency-selective active antenna/signal booster! Whip, random wire antenna, DC plug and full instructions provided. Requires 12 VDC @ 300 mA power.

Order ACC 21
Only **\$174⁹⁵**

\$6 UPS
\$9.50 UPS 2nd Day
\$5.50 US Priority Mail
\$7 Canadian APP
\$10 Canadian UPS

ACCESSORIES:

PWR 13 Universal power supply \$9.95

M-400 UNIVERSAL DECODER

NEW VERSION 2! Now with Super POCSAG, 1200 baud, simple, pushbutton mode selection, this self-contained, compact, menu-driven decoder, when connected to your scanner's or VHF/UHF receiver's external speaker jack, will reveal CTCSS (PL) sub-audible tones, DCS (DPL) squelch tones, POCSAG and GOLAY digital paging messages, DTMF (Touch Tone*) telephone numbers, even air-to-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. *Parallel printer allows full page hardcopy.*

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: 11-16 VDC @ 200 mA, AC adaptor included
SIZE: 8-3/4"W x 2-1/2"D x 8"D
WEIGHT: 2 lbs

Order DEM9
Only **\$399⁹⁵**

\$8.50 UPS
\$24 UPS 2nd Day Air
\$18 US Priority Mail
\$20.50 Canadian APP
\$22 Canadian UPS

Access an entire dimension of coded communication signals. Copy Morse Code, RTTY, ASCII, TOR (FEC and ARQ) and much more—right off the air!



UNIVERSAL M8000 MULTIMODE DECODER

New Version 5 now includes three new modes: PACTOR, ARQ6-90 and ACARS. 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 1.6-3/8"W x 3-1/2"H x 12-3/4"D. Truly a remarkable monitoring accessory for the serious utilities enthusiast.

Order DEM6
Only **\$1349⁹⁵**
Retail ~~\$1399⁹⁵~~

\$11 UPS
\$21.50 UPS 2nd Day
\$21 US Priority Mail
\$35.50 Canadian APP
\$25.50 Canadian UPS

SPECIFICATIONS

RECEPTION MODES:

- Morse (5-120 WPM)
- RTTY (45/50/57/75/100 baud and 20-250 baud non-standard)
- ASCII (75/110/150/300/600/1050/1200/1800 baud)
- SITOR (A/B/AMTOR A/AMTOR B/ARQTOR/FECTOR)
- FDM/VFT (8/12/16/24 channel)
- Piccolo
- TDM/ARQ (M2/M4/E/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)
- NEW VERSION 5 NOW INCLUDES PACTOR, ARQ6-90 AND ACARS!

ACCESSORIES:

ACC 153 Serial port adapter \$24.95
BRK 6 19" rack panel mount kit \$19.95
SFT 3 COPYCAT terminal software \$69.95



THE GROVE SKYWIRE SHORTWAVE ANTENNA

Outdoor dipole provides worldwide shortwave reception!

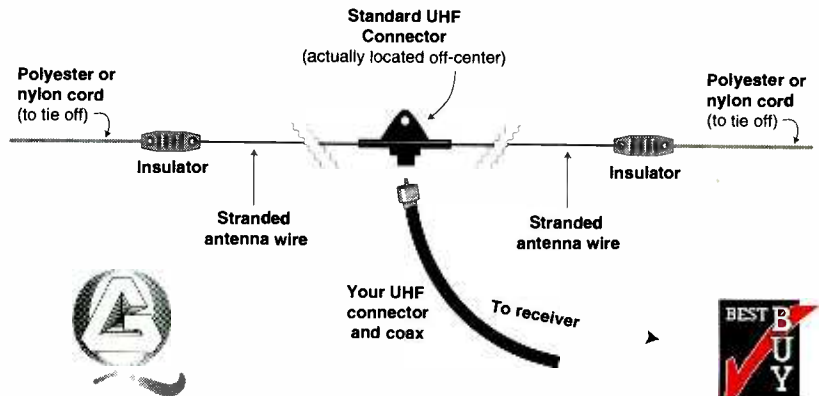
High performance and low cost—an unbeatable combination! Why restrict your frequency coverage with the gaps found in expensive trap dipoles or unpredictable random wire when you can get unsurpassed full-frequency reception with the Grove Skywire?

Comes assembled with Budwig center connector ready for your PL-259 (UHF male) equipped coaxial cable (50 or 75 ohm, see page 31); includes two professional porcelain end insulators and complete instructions.

ATTENTION HOME EXPERIMENTERS:

Build your own SW dipole! Order ACC101 (Budwig center connector) for only \$9.95 and add your own wire to construct a SW dipole!

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



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

Order ANT 2
Only \$39⁹⁵

- \$6 UPS
- \$9.50 UPS 2nd Day
- \$5.50 US Priority Mail
- \$7 Canadian APP
- \$10 Canadian UPS

A Shortwave Sampler

©Grove Enterprises, Inc. 1995
(Frequencies in kilohertz, upper sideband)

4066	Mississippi River barges		weather
4080	Mississippi River barges	11232	Canadian Air Force
4146	Ship calling channel	11244	US STRATCOM
4149	Mississippi River barges	11282	International airlines
4417	Ship working channel	13200	U.S. Air Force air to ground
4426	U.S. Coast Guard ships		
4469	Civil Air Patrol	13270	Flying weather
4517	U.S. Air Force MARS	13282	Flight weather
4593.5	U.S. Air Force MARS	13306	International airlines
4637.5	Offshore petroleum platforms	13354	NOAA Hurricane Hunters
4724	U.S. Air Force air to ground		
5598	International airlines		
5616	International airlines		
5696	U.S. Coast Guard aircraft		
6501	U.S. Coast Guard ships		
6577	International airlines		
6604	Flight weather broadcasts		
6673	NOAA hurricane hunters		
6739	U.S. Air Force air to ground		
6754	Canadian Air Force		
6840	Spy numbers transmissions		
8294	Ship to shore		
8297	Mississippi River barges		
8740	Ship to shore		
8803	Ship to shore		
8806	Ship to shore		
8825	International airlines		
8846	International airlines		
8876	NOAA hurricane hunters		
8891	International airlines		
8968	U.S. Air Force air to ground		
8971	U.S. Navy, Atlantic		
8983	U.S. Coast Guard air/ground		
8992	U.S. Air Force		
9023	U.S. Air Force		
10780	NASA Cape Kennedy		
11175	U.S. Air Force air to ground		
11200	Royal Air Force flight		

	INTERNATIONAL BROADCASTERS		
	(Frequencies kilohertz, AM mode)		
	5960	Canada	
	5975	England	
	6010	Cuba	
	6040	Germany	
	6165	Netherlands	
	6175	England	
	7325	England	
	9540	Spain	
	9755	Canada	
	9745	Ecuador	
	12095	England	
	13760	USA	
	15155	Ecuador	
	17795	Australia	

	TIME SIGNALS		
	WWV: 2500		
	5000		
	10000		
	15000		
	20000		
	CHU: 3330		
	7335		
	14670		

Grove Mini-Skywire!



Short on yard space? The new Mini-Skywire is less than two-thirds of the length of the original Skywire and still offers great reception!

This new, low-cost receiving antenna is an excellent choice for restricted space and portable shortwave radios. Its unique, 40-foot, dual-dipole design allows full 3-30 MHz frequency coverage and may be used in vertical, horizontal, sloper, or inverted V or L configurations.

Comes fully assembled, including high-quality Budwig center insulator for your PL-259 coax connector. See P. 31 for cable and adaptors.



Order ANT 3
Only \$29⁹⁵

- \$6 UPS
- \$9.50 UPS 2nd Day
- \$5.50 US Priority Mail
- \$7 Canadian APP
- \$10 Canadian UPS



UPS 2nd Day Air at Ground Rates on All Products



Grove TUN-5 MINITUNER



**NEW!
NEW!**



The successor to the Grove TUN-4 is even better! Use as desktop active antenna or amplified pre-selector!

Yes, the popular TUN-4 MiniTuner has now been replaced by the compact, new TUN-5! Bring the weak signals up out of the mud with this valuable shortwave signal booster which can be used as a desktop active antenna or as an amplified preselector when connected to an external antenna. Features up to 20 dB gain, variable attenuation, razor-sharp selectivity, 250 kHz-30 MHz frequency coverage, dual-gate FET amplification, battery or AC operation, rugged SO-239 antenna connectors, and bypass switch. Attachable whip, AC wall adaptor and full instructions included.

Order TUN 5 \$6 UPS
Only **\$99⁹⁵** \$9.50 UPS 2nd Day
\$5.50 US Priority Mail
\$7 Canadian APP
\$10 Canadian UPS

ACCESSORIES:

BAT 4 9V Alkaline Battery \$2.09 ea
ADPK15 PL259 to PL259 \$5.95

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 \$5.50 UPS
Only **\$14⁹⁵** \$8.50 UPS 2nd Day Air
\$4.50 US Priority Mail
\$6.50 Canadian APP
\$10 Canadian UPS

KIWA MW Air-Core Loop Antenna

High Performance

NEW!

Winner of the 93/94
World Radio Television
Handbook Award



Are you looking for an antenna that will improve medium wave reception on your communications receiver? Then look no more — this unique 12-inch, circular air-core antenna provides improved weak signal reception of medium wave broadcast signals and its electronically balanced circuitry minimizes pickup of electrical interference. Some of the other high performance features of the Kiwa loop include:

- Full 530-1705 kHz MW frequency coverage including the new expansion band from 1605 to 1705 kHz.
- May be precisely rotated and tilted for maximum signal pickup and nulling of interfering stations.
- Equipped with local/DX pre-amp switch, variable output attenuator, and dual output amplifiers.
- May be powered by a low-noise AC supply, included, or by battery.
- Stands 17 inches (43 cm) high and weighs 16 pounds (7.25 kg).

Order ANT 31 \$16.50 UPS
Only **\$349⁹⁵** \$30 UPS 2nd Day Air
\$29 US Priority Mail
\$26 Canadian UPS
\$35.50 Canadian APP

Stoner-Dymek Shortwave/ Longwave Active Antenna!

**New
Item!**



If a large, outside dipole is out of the question, choose the Dymek DA-100E, the best 50 kHz-30 MHz active receiving antenna available! High sensitivity, low noise, wide dynamic range, step-selectable attenuator, static-discharge-protected, weatherproof remote amplifier/whip assembly.

Includes AC power supply, indoor control unit, 50 feet RG-58/U coax, remote amplifier, 4' stainless-steel whip, receiver-interconnect cable and full instructions.

Order ANT 24 \$7.50 UPS
Only **\$179⁹⁵** \$12.50 UPS 2nd Day Air
\$8 US Priority Mail
\$10.50 Canadian APP
\$15 Canadian UPS



REALISTIC® Amplified Shortwave Antenna

"Ideal for apartment dwellers and travelers who can't erect a large outside antenna, and listeners who wish to prevent front-end receiver overload without sacrificing signal strength."

—Bob Grove, *Monitoring Times*, July 1993

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.



Order ANT 17

Only \$24⁹⁵ *New Low Price!*

\$5.50 UPS
\$8.50 UPS 2nd Day Air
\$4.50 US Priority Mail
\$6.50 Canadian APP
\$10 Canadian UPS

ACCESSORIES:

ANT 25 RCA & PL-259 (UHF) adaptors, random wire antenna \$7.95
BAT 4 9 volt alkaline bat. \$2.09 ea.
PWR 13 AC wall adaptor \$9.95



NEW!
FROM
GROVE!

INTERFERENCE ELIMINATORS



For scanners and shortwave receivers

Reduce or even eliminate strong signal overload from your scanner or general coverage receiver. Increase reception range with these new wavetraps, notch filters and bandpass filters designed exclusively by Grove Enterprises! Attach directly to your antenna cable, no modification required!

Ideal for suppressing overload interference from AM and shortwave broadcasters, CB, aircraft and more. Reject unwanted signals by 40 dB or more; reduce intermod interference by at least 120 dB! Filters can be combined for deeper rejection or multiple frequencies. Simply choose your filter(s) from the list below and specify your antenna connectors. For other types of scanner interference, see the Grove Scanner Filter FTR5 on page 30!

FTR6
30-2000 MHz Bandpass Filter \$29⁹⁵
Removes AM broadcast, CB and shortwave interference from scanners

FTR7
540-1700 kHz Band Reject Filter ... \$29⁹⁵
Removes AM broadcast interference from shortwave/longer wave receivers

FTR 8
118-137 MHz Band Reject Filter ... \$29⁹⁵
Removes aircraft interference from scanners

FTR 9
30 MHz Low Pass Filter \$29⁹⁵
Eliminates paging, FM and TV broadcast signals and other sources of VHF/UHF interference from shortwave receivers

Plus \$6.00 UPS Shipping

Adaptor Kits:

ADPK 1 PL-259 (UHF) \$9.95
ADPK 2 1/8" Miniplug \$9.95
ADPK 3 BNC \$9.95
ADPK 4 Motorola \$12.95
ADPK 5 RCA \$9.95
ADPK 6 Motorola/BNC \$9.95
ADPK 9 N \$12.95

SELECT-A-TENNA

Medium Wave Antenna Booster

Apartment dwellers and mobile home owners, boost your 530-1700 kHz AM broadcast reception up to 30 dB with the famous Select-A-Tenna! Improves adjacent channel rejection, reduces signal fading. Tuning knob selects your listening frequency.

No batteries or power required; simply set the Select-A-Tenna next to your radio, peak the tuning knob, and listen to AM broadcast signals soar out of the background noise!

This 11", high-Q loop antenna directs its captive signals to your radio's internal ferrite loop without any physical connection! If your receiver requires an external antenna, a convenient 3.5 mm (1/8") jack and plug are provided. Connect an outside wire to the Select-A-Tenna and receive medium wave signals like you've never heard before!



Order ANT 21

Only \$65⁹⁵

\$6.50 UPS
\$11.50 UPS 2nd Day
\$8.50 US Priority Mail
\$11.50 Canadian APP
\$15 Canadian UPS

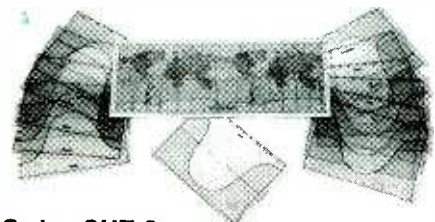
"I was able to pull in stations that were absolutely inaudible without it."

—Stephen J. Price
Monitoring Times, April 1995

DX EDGE

Your "Edge" in Shortwave Monitoring

Plan your listening around the most productive times and frequencies using this valuable, simple-to-use shortwave tool. Share the secret of successful hams and professionals alike who know the advantages of "grayline propagation." Just line up the proper dateline on your location and it's ready to use. Sturdy map chart, perpetual monthly overlays and easy instructions included.



Order CHT 3

Only \$24⁹⁵

Plus \$5.00 UPS Shipping

Choosing a Scanner

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.

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 or 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 (+/- 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 and its appearance at numerous frequencies. Intermod results from inadequate dynamic range.

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.

Caveat: Listening Law

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 and cordless telephones; 4. voice paging; 5. 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, and any interference-causing protected transmission long enough to identify its source.

A new law makes it unlawful to manufacture or import a cellular-receiving scanner or converter but it is lawful to own one. It is, however, still illegal to listen to mobile telephone conversations.

If you have further questions regarding selecting a scanner, call our Technical office at 704-837-7081.

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.

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 BC-9000XLT, with its channel-programmable attenuator, is more immune to interference from intermodulation and images, making it an excellent choice for strong or weak signal areas like large cities.

BC-9000XLT



A Scanner Sampler

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

5/94



ICOM R7100-2

ICOM's Best VHF/UHF Communications Receiver

With the most popular features of the legendary R7000, plus a few features that listeners wanted, the R7100 is ICOM's best compact receiver.

The R7100 offers 25-800 and 900-2000 MHz frequency coverage 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.

MAJOR PRICE REDUCTION! Grove is slashing prices on a limited number of **ICOM R7100-2** and **R-1** scanners. If you have been waiting for a miracle, wait no longer—these are prices that we never believed we could offer! Hurry and take advantage of these rock bottom prices!

Special Limited-Time Offer:
\$1299.95*

***For an additional \$55, receive the GRE Super Converter (CVR3) and get full 25-2000 MHz coverage—a \$94 value from the factory!**

NOTE: Cellular-capable, full-frequency-coverage model R7100-1 available only to federal, state, county, city and local government agencies and cellular service providers who submit an official purchase order.

SCN15-G R7100-1: \$1539⁹⁵
(plus shipping)

Order SCN15-C \$16 UPS
\$31 UPS 2nd Day Air
\$36 US Priority Mail
\$27.50 Canadian UPS;
\$43.50 Canadian APP

Retail Price: ~~\$1942.50~~
Last Grove Price: ~~\$1499.95~~

ACCESSORIES:

- ACC 36 UT36 Voice Synthesizer \$61.95
- ACC 72 TVR7100 Video Adaptor \$315.95
- ACC 74 CT17 computer interface \$144.95
- BRK 5 MB23 carrying handle \$11.95
- BRK 8 MB5 mounting bracket \$42.95
- ANT 8N 46" extendable whip antenna \$23.95
- CVR 6 Shortwave Scanner Converter \$99.95
- Installation of one or more accessories \$20.00
- MAN 4 Service Manual \$50.00
- SFT 2 Scancat Gold comp. software \$94.95
- (Requires CT-17 interface kit, ACC 74, above)
- SPK 3 SP20 speaker \$224.95
- SPK 13 Grove Sound Enhancer \$249.95
- SPL 2 SCPC Splitter \$64.95



ICOM R1

Special Limited-Time Offer:
\$419.95

Imagine, a shortwave and VHF/UHF scanner with 100 kHz-800MHz and 900-1300 MHz 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. See detailed specifications on pp. 24-25. Requires 6 AA batteries. Prices subject to change due to yen fluctuations.

ACCESSORIES:

- ANT 8 Range extending telescoping whip \$16.95
- BAT 1 AA Alkaline batteries \$ 7.99
- BAT 11 BP-90 Replaceable AA battery case .. \$23.95
- BAT 12 BP-84 Triple-life battery pack \$79.95
- BAT 13 AA rechargeable nicad batteries \$2.75
- CAS 3 R1 Carrying case (no battery pack) . \$21.95
- CAS 4 BP-90 Carrying case \$33.95
- CAS 5 BP-84 Carrying case \$23.95
- DCC 5 CP-12 Cigarette power cord \$29.95
- HDP 1 Headphones \$19.95
- MAN 3 Service Manual \$36.50
- PWR 14 BC-72A Desk Charger \$119.95
- PWR 17 BA12 Battery Charger Adaptor \$23.95

Order SCN 13

Retail \$599
Last Grove Price \$499.95

- \$7.50 UPS
- \$11 UPS 2nd Day Air
- \$12 US Priority Mail
- \$13 Canadian UPS
- \$12.50 Canadian APP

ICOM R100

Mobile Desktop Scanner



For the full-spectrum listener, this compact scanner is hard to beat: tuning range from 100 kHz-799 MHz, 900-1856 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. Comes with VHF/UHF telescoping antenna, HF wire antenna, DC power cable, mounting bracket, fuses, speaker plug, cable ties and screws. See detailed specifications on pp. 24-25. Prices subject to change due to yen fluctuations.

Order SCN14
Only \$799.95

- \$9.50 UPS
- \$16.50 UPS 2nd Day Air
- \$17US Priority Mail
- \$18 Canadian UPS
- \$19.50 Canadian APP

ACCESSORIES:

- CVR 3 GRE Super Converter \$84.95
- PWR 16 AC Adaptor \$24.95
- SPL 2 SCPC splitter \$64.95



Universal SCPC-100 Satellite Audio Receiver



Years ago most radio networks — ABC, CBS, Mutual, NBC, NPR and others distributed their programming by telephone lines or microwave systems. Single Channel Per Carrier (SCPC) technology has allowed these networks to use satellite transmissions to their affiliates and users.

Now you can expand your home satellite system to receive all of these "hidden signals" and programs with the Universal SCPC-100 Satellite SCPC Audio Receiver.

The new SCPC-100 receiver is the first high quality unit that is affordable, rivaling many commercial SCPC receivers costing thousands of dollars. Features include:

- Stable microprocessor-controlled tuning with two buttons. No knobs; frequency agile.
- 50-channel program memory with instant one-button recall. Non-volatile; holds memory when power is off.
- Receives entire 950-1450 MHz LNB frequency range from your satellite system.
- Easy-to-read 1/2" LED's; 4 digits, 7 segment numbers.
- Receives high quality music from hundreds of stations; can be used with your HI-FI system.
- Simple 3-minute hook-up; easy to use; no user fees or subscriptions required for reception.
- Receives all C- and Ku-band SCPC signals and programming.
- Unit made and assembled in the U.S.A.

Receive Hundreds of Great SCPC Radio Channels and Services On Your Standard TVRO Home Dish Satellite System!



SPECIFICATIONS:

- TUNING RANGE:** 950-1450 MHz, vertical and horizontal polarization
- TUNING STEPS:** 8 kHz with variable tuning speeds
- INPUT IMPEDANCE:** 75 ohms - coax cable
- INPUT/OUTPUT CONNECTORS:** "F" type. 75 ohms
- SPEAKER OUTPUT:** 1.5 watts, 3 to 8 ohms
- LINE OUTPUT:** 600 ohms, -10db
- UNIT POWER REQUIREMENT:** 16 volts AC, 50-60 hertz, 1 ampere
- SOURCE VOLTAGE:** Included power module - 110 volts AC, 50-60 hertz
- CABINET SIZE:** 14 inches wide, 2.5 inches high, 7.5 inches deep
- WEIGHT:** 5 pounds

Order RCV27
Only \$399⁹⁵

Plus \$5 shipping and handling (UPS)

Now from Grove! **AOR** Quality Scanners!

AR-8000

*The Most Remarkable Handheld Scanner Ever Offered.
"Better than the Yupiteru MVT-7100" (EDCO)*



With wide frequency coverage--500 kHz-1900 MHz (less cellular), 1000 memory channels and all-mode reception (AM, USB, LSB, CW, WFM, NFM), the new, handsomely-styled AR8000 offers selectable tuning steps from 50 Hz through 999.995 kHz. An oversized, edgelit LCD window holds 44 bold alphanumeric characters, 7 of which can be custom-written for convenient user identification! There are more features packed into this scanner than any other we've ever offered!

Autostore, RS232 control, second-radio cloning, power saver, keyboard beep defeat, and even selectable-channel display blanking for security! A top-panel rotary knob tunes frequencies and channels. Dual VFOs toggle between two-frequency simplex. 30-channel-per-second scan/search speed.

Each channel may be programmed for frequency, mode, audio or carrier squelch with programmable 1-99 second delay, 10-dB attenuator, step size, channel offset, and channel designator. Any one channel may be selected for priority sampling. An LCD bargraph S-meter also serves as a narrow-span, spectrum display unit!

The feature list continues with strong, clear audio; interchangeable NiCad/alkaline batteries (4AA NiCds and charger included); a universal 9-16 volt external power jack for convenient mobile uses; an internal ferrite antenna for medium-wave broadcast reception; and an illustrated 115-page owner's manual. See detailed specifications on pp. 24-25.

Order SCN27
Only \$599⁹⁵

- \$8.50 UPS
- \$11 UPS 2nd Day Air
- \$10 US Priority Mail
- \$14 Canadian UPS;
- \$12.50 Canadian APP

ACCESSORIES:

ACC 154	Interface Kit	\$99.95
BAT 1	AA Alkaline batteries	\$.79
BAT 13	Extra AA Nicad batteries	\$2.75 ea
CAS 2	Soft Case for AR-8000	\$29.95
SFT 2	Scancat Gold Computer Software	\$94.95

AR-3000A

Professional
Desktop
Scanner



Imagine: A quality, general coverage shortwave communications-quality receiver and continuous, wide-frequency-coverage scanner, all in one compact instrument--and at a cost savings besides!

Arguably the best desktop scanner ever designed, the AOR AR3000A offers 100 kHz-2036 MHz (less 824-849 and 869-894 Mhz--restorable with optional CVR 3) frequency coverage, continuous tuning dial, all mode reception (AM, NFM, WFM, USB, LSB, CW), 400 memory channels and fast 50 channel per second scan/search rate.

Unexcelled sensitivity and selectivity let you hear signals lesser scanners and shortwave receivers miss. 15 bandpass filters and low noise, wide dynamic range GaAsFET RF amplifiers combine to reject intermodulation and overload suffered by other scanners and receivers.

Operates on 13.6 VDC for compact mobile installations; 120 VAC adaptor included.

See detailed specifications on pp. 24-25.

Order SCN26
Only \$1029⁹⁵

- \$10.50 UPS
- \$11 UPS 2nd Day Air
- \$18.50 US Priority Mail
- \$19.50 Canadian UPS;
- \$21.50 Canadian APP

ACCESSORIES:

CVR 3	GRE Super Converter	\$84.95
SFT 2	ScanCat Gold software	\$94.95



Quality and value from Uniden **Beacon**

Uniden **BC9000XLT** Desktop Scanner

An impressive performer, this improved-design scanner is for serious monitors of the 25-550, 760-1300 MHz (less cellular) spectrum. Featuring 500 memory channels, tuning knob, 16-digit alphanumeric display with adjustable brightness, powerful 2.2 watts of audio, treble-cut tone control, CTCSS tone squelch option. Just look at the specifications table for its advanced features!

The intuitive layout of the panel makes operating a breeze! An illuminated keypad and rubber-padded tilt feet combine with the large tuning knob for additional comfort during periods of serious signal searching. Search lockout of up to 50 frequencies prevent unwanted interruptions. This scanner means business. See detailed specifications on p. 25.

A Great NEW Scanner for Serious Monitors



Order SCN 30
Only **\$389⁹⁵**

\$8.50 UPS
\$15.50 UPS 2nd Day Air
\$16 US Priority Mail
\$16.50 Canadian UPS
\$20.50 Canadian APP

ACCESSORIES:

DCC 2	Direct wire DC power cord	\$9.95
ACC 130	CTCSS tone board	\$46.95
BRK 2	Mounting bracket	\$15.95
CVR 3	GRE Superconverter	\$84.95
CVR 6	Shortwave Scanverter	\$99.95

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—less cellular), 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!

See pp. 24-25 for detailed specifications.

Order SCN19
Only **\$269⁹⁵**

\$8.50 UPS
\$15.50 2nd Day Air
\$16 US Priority Mail
\$17.50 Canadian APP
\$16.50 Canadian UPS



ACCESSORIES:

ACC 96	CTCSS Squelch Decoder	\$59.95
	Installation Fee	\$20.00
DCC 2	DC Power Cord	\$9.95
DCC 4	Mobile Cig Lighter Adaptor	\$9.95
BRK 2	Mobile Mounting Bracket	\$15.95
CVR 3	GRE Superconverter	\$84.95
CVR 6	Shortwave Scanverter	\$99.95

Uniden **BC3000XLT** Hand-Held Scanner

NEW!

Featuring continuous 25-550, 760-1300 MHz (less cellular) frequency range, 400 memory channels, 10 priority channels, 100-channel-per-second TurboScan, automatic storage of search-discovered frequencies, selectable-channel overload attenuator, mode and step selection, data skip, and reduced-intermod design. This is the new leader in hand-held scanning.

Strong audio guarantees crisp reception in noisy environments; up to 50 frequencies may be locked out of the search function to eliminate unwanted interruptions; battery save circuit extends charge life during inactive reception periods; handsome, rugged styling makes this handheld scanner an outstanding choice. See detailed specifications on p. 25.



Order SCN 29
Only **\$399⁹⁵**

\$7.50 UPS
\$11 2nd Day Air
\$10 Priority Mail
\$13 Canadian UPS
\$13 Canadian APP

ACCESSORIES:

CVR 6	Shortwave Scanverter	\$99.95
DCC 7	DC power cord	\$15.95
BAT 15	Replacement battery pack	\$31.95
CAS 6	Carrying Case	\$19.95



SDU 100

THE GROVE SPECTRUM DISPLAY UNIT



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-200 high contrast 9" CRT monitor. 12 VDC powered for mobile or field environment; AC adaptor included (the VID-200 is AC powered).

The SDU-100 is configured to operate on receiver intermediate frequencies (IFs) of 8.8 and 10.7 MHz. The IF or receiver model must be specified at the time of order. Designed and manufactured by Grove in the USA!

SDU-100 Spectrum Display Unit **\$499⁹⁵**
VID-200 9" CRT Monitor **\$149⁹⁵**

Shipping charges for SDU-100 and monitor ordered together: \$15.50 UPS; \$26 2nd Day Air; \$22.50 US Priority Mail; \$22 Canadian UPS; \$25 Canadian APP

The SDU-100 is compatible with the following receivers:

ICOM R7000	ICOM R7100	ICOM R9000	Yaesu FT1000	
Yaesu FRG-100*	Kenwood R5000*	Drake R8*	Mason A2	Uniden BC-890XLT*

*Requires receiver modification

Look for the SDU icon in this catalog for compatible receivers



UNIDEN SC150B "SPORTCAT"



Designed especially for the racing fan, the new "SportCat" has not only full land mobile and civilian aircraft coverage, but has 10 one-touch, direct-access keys for instant callup of active sports channels! Follow the exciting radio action at motor racing, air shows and special events!

Imagine: the SportCat's red-hot TurboScan zips along at 100 channels per second, allowing virtually instant access to up to 100 memorized frequencies in the 29-54, 108-174, 406-512 and 806-956 MHz bands (less cellular); or press any of the ten preprogrammed TurboSearch keys to allow band-edge-to-band-edge frequency hunting at a blurring 300 channels per second!

One-step weather key selects autosearch of local NOAA channels for latest weather.

Supplied with rechargeable battery pack, AC wall adaptor/charger, flex antenna, belt clip, earphone and manual. Black model only.

See detailed specifications on pp. 24-25.

Order SCN23
Only \$194⁹⁵

\$7.50 UPS
\$11 UPS 2nd Day Air
\$10 US Priority Mail
\$14 Canadian UPS;
\$12.50 Canadian APP

ACCESSORIES:

BAT 8 BP 120 Battery pack	\$19.95
CVR 4 Military Air Converter	\$99.95
CVR 5 Shortwave Scanverter	\$99.95
DCC 7 Universal DC adapter	\$15.95

UNIDEN BC220XLT



Uniden's update of the revered BC200XLT

Now Uniden has replaced their revered BC200XLT scanner with this new, compact entry. Frequency coverage 29-54, 108-174, 406-512, and 806-956 MHz (less cellular). 200 memory channels in 10 banks include 10 priority channels for instant access to important transmissions.

TurboScan and TurboSearch provide 100 channel per second scanning and 300 channel per second searching! Preprogrammed service search affords single-key access to police, fire, emergency, aircraft, marine and weather frequencies! Data skip avoids noisy data transmissions, stopping only on valid communications!

Up to 10 priority channels switch you instantly to important transmissions regardless of monitoring status.

See detailed specifications on pp. 24-25.

Order SCN 24
Only \$229⁹⁵

\$7.50 UPS
\$11 UPS 2nd Day Air
\$10 US Priority Mail
\$14 Canadian UPS;
\$12.50 Canadian APP

ACCESSORIES:

BAT 8 BP 120 Battery Pack	\$19.95
CVR 4 Grove Military Scanverter	\$99.95
CVR 5 Shortwave Scanverter	\$99.95
DCC 7 Univ. DC Adaptor	\$15.95



Radio Shack® Knows What You Want Most in a Scanner!

PRO-60

Wide Frequency coverage in a compact, handheld design!

Featuring continuous frequency coverage from 30-512 and 760-1000 MHz (less cellular), this new Radio Shack scanner allows selection of AM and narrow or wide FM, storage of up to 200 memory channels in ten banks, triple up-conversion, rechargeable or replaceable batteries (available accessories), battery saver circuit, 25/50 channel-per-second scan/search speed. Rubber ducky antenna, belt clip and full instructions included. See detailed specifications on pp. 24-25.



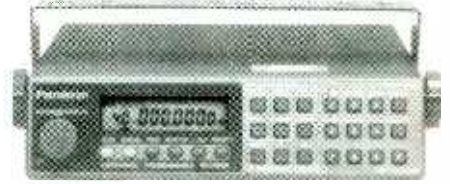
ACCESSORIES:

- ANT 8 Range extending antenna... \$16.95
- ANT 14 Flex antenna \$29.95
- BAT 1 AA Alkaline batteries \$7.99
- BAT 13 Nicad batteries \$2.75/ea
- PWR 13 Univ. Power supply \$9.95

Order SCN 32
Only **\$329⁹⁵**

- \$7.50 UPS
- \$10.50 2nd Day Air
- \$10 US Priority Mail
- \$13 Canadian UPS
- \$13 Canadian APP

PRO-2026



Mobile Scanner from Realistic® now has non-volatile memory!

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

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! See specifications on pp. 24-25.



Order SCN 16
Only **\$219⁹⁵**

- \$7.50 UPS
- \$12.50 UPS 2nd Day
- \$10.00 US Priority Mail
- \$15 Canadian UPS
- \$12.50 Canadian APP

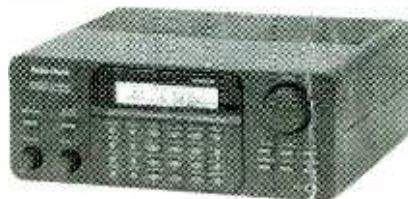
ACCESSORIES:

- CVR 5 Shortwave Scanverter \$99.95
- CVR 3 GRE Super converter \$84.95
- PWR 13 Universal Power supply \$9.95

Superb New Radio Shack® PRO-2035

This new top-of-the-line scanner offers wide frequency coverage (25-520, 760-1300 MHz, less cellular, unrestorable); 100 memory channels in ten 100-channel banks, 100 additional "scratchpad" (monitor) memory channels to temporarily store search-revealed frequencies; automatic memory storage of search-discovered frequencies; ten separate search ranges; selectable modes and tuning steps; room-filling 1.3 watts of audio from the internal 3" speaker; high sensitivity for weak signal reception; 10 dB attenuator to reduce strong-signal intermod; choice of sound- or carrier-activated squelch; 11 pre-programmed NOAA weather channels; front tilt feet with non-skid feet for optimum viewing; and a rotary knob for manual frequency tuning and memory channel selection.

Additional amenities like selectable-channel lockout and delay, any-channel priority, automatic mode/step default, blast-protected earphone jack, tape recorder audio output combine to make this an outstanding product at an outstanding price. See detailed specifications on pp. 24-25.



Order SCN 28
Only **\$399⁹⁵**

- \$8.50 UPS
- \$17 2nd Day Air
- \$16.50 US Priority Mail
- \$17.50 Canadian UPS
- \$19.50 APP

Retail ~~\$449.95~~

ACCESSORIES:

- ACC 163 Optoscan 525 Computer Interface Call for pricing
- CVR 3 GRE Converter \$84.95
- CVR 6 Shortwave Scanverter \$99.95
- SFT 1 ScanStar Pro software \$79.95
- SFT 2 ScanCat Gold software \$94.95
- SFT 7 ScanStar Commercial software ... \$129.95



PRO-26 Wide Coverage Handheld Scanner

Scan up to 1.3 GHz!

Radio Shack's latest is feature-packed! Offering nearly continuous coverage, less cellular, from 25 to 1300 MHz, 200 memory channels, 300-channel-per-second search rate, triple up-conversion, high sensitivity and powerful 250 mW audio, the new PRO-26 is making waves on the scanner scene! Belt clip, flex whip and manual included. See specifications on pp. 24-25.

New!



Order SCN 5
Only **\$349⁹⁵**
\$7.50 UPS
\$10.50 2nd Day Air
\$10 US Priority Mail
\$13 Canadian UPS
\$13 Canadian APP

ACCESSORIES:

BAT 1	AA cells (four required)	.....	\$ .79 ea.
PWR 5	AC adaptor/charger	.....	\$6.95
DCC 6	Cigarette lighter DC cord	.....	\$12.95
ANT 8	Telescoping whip antenna	.....	\$16.95
ANT 14	Condor flex antenna	.....	\$29.95

New! **The 1995 Enhanced
Grove FCC Database V4.1**

Available on both CD-ROM and High Density Diskette



The new Grove FCC Database is a spectacular compendium of all the licensees in the FCC Master File! Public safety, railroad, business, industrial, broadcast, maritime and many, many others. You can sort through fields like city, service, state, callsign, antenna height, output power, county and many more! The program can also be custom-tailored to fit your specific searching needs using any available information you have.

Simply choose from either CD-ROM or High Density Disk.

Grove FCC Database on CD-ROM offers a unique and useful mapping program. This program shows you on a map where your desired station is including major roadways, cities, state and county borders. To operate the mapping

New Features for v4.1

- Updated records
- Faster Search speed
- Comprehensive service codes
- Pop-up windows
- Dynamic prompts
- Improved accuracy

program you must have a VGA card, 386 or higher processor, 4 M RAM, 10 M free hard disk space and a mouse is recommended.

High Density Disk

CA, TX, FL	.....	\$49.95
Additional Data Disks	.....	\$39.95
All Other States	.....	\$39.95
Additional Data Disks	.....	\$29.95
CD-ROM w/ Mapping	.....	\$169.95
CD-ROM w/o Mapping	.....	\$99.95

Shipping for both CD-ROM and High Density Disk: \$4 First Class Mail



Because software is easily copied, it is not refundable. Defective copies will be replaced at no charge.

OPTOSCAN® 456 and 535

Optoscan 456 and Realistic® PRO-2006 shown



Optoelectronics' Superb Computer Interfaces for the PRO-2005/2006 and PRO-2035 Scanners

Now you can have high-speed (50 channels per second), automatic, computer-controlled scanning, search and logging for your Realistic PRO-2005, 2006 or 2035 (latter model requires the Optoscan 535). Select CTCSS or DCS scanning and auto-logging with time stamp and air time; decode and log DTMF with a time stamp.

RS-232C level converter included, using CI-V multi-radio protocol. Optoscan requires software to operate (see packages on p. 20). No drilling or soldering required, but may take one or two hours to install. Easy-to-follow instruction manual and videotape included, but some component knowledge is helpful.

NOTE: Installation voids equipment warranty on the radio.

Order ACC 143 for PRO-2005/2006

Only **\$299⁹⁵** plus \$5.50 UPS ground shipping

Order ACC 163 for PRO-2035

Only **\$299⁹⁵**



SCANCAT-GOLD

Use your 640k (or better) computer to control your AOR, Drake, Kenwood, ICOM, Yaesu, JRC, Lowe, WJ, and Radio Shack PRO-2005/6/35 with this all-new software program! Operates from the RS-232 port. Just check the features listed at right:



- For listeners—**
- Search between any two frequencies in any tuning step
 - Autolog new active frequencies and create disk files
 - Display spectrum analysis on screen or printer
 - Scan frequencies from up to 15 disk files
 - Import from text formats and virtually any database
 - Link up to 15 search banks
 - Output to any printer or disk file
 - Automatic "birdie" lockout

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Only \$94⁹⁵

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- For commercial users—**
- Demographic search for frequency coordination and usage profiling
 - ASCII file logging of date, time, signal strength, air time
 - Unlimited file sizes
 - Macro control by frequency of dwell, hang, resume, threshold, audible alarms
 - Unattended on/off times for logging and searching

Scan Star TM



Because software is easily copied, it is not refundable. Defective copies will be replaced at no charge.

Professional Receiver Control Software

SCANSTAR IS A HIGH-PERFORMANCE, high end receiver control package designed to deliver a comprehensive monitoring environment to the radio listener. The program requires a 386 IBM PC with 2 Meg of RAM, hard disk, VGA,EGA display, serial ports, and DOS 5/6 with HIMEM and SMARTDRV (or equiv), or OS/2 3.0 (warp) to run this radio control program.

- Advanced Flex Scan engine lets you blend multiple search ranges and groups of channels and banks, with selectable scanning priority.
- Spectrum analysis with hardcopy on OS456, R7100, R9000, AR3000 or NRD-535. Hardcopy support for most laser, dot matrix and ink jet printers.
- CTCSS/DCS tone controlled scanning and logging with Optoelectronics OS456 or DC440.
- Monitoring Assistant for easy logging while you explore the bands.
- Terminal window for TNC, modem or decoder.
- Search and store mode finds active channels and builds new scan groups.
- Channels, banks and group size limited by computer memory. Logs hits, airtime and DTMF by channel and tone automatically.
- Comprehensive report printing, data logging and import and export features
- Supports R7000, R7100, R9000, OS 456, OS535 FRG9600, AR3000, NRD535, R8, MR8100 and DC440 models
- Demo program available on Grove BBS

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New! ScanStar for Windows!

FAST SPEED AND COMPUTER MULTITASKING are yours with this advanced receiver control program! Supports AOR AR3000/3000A/8000, Yaesu FRG9600, ICOM R7000/7100/9000, and Opto 456/535. Requires MS-DOS 386 or higher with Windows 3.1, Workgroups 3.11 or Windows 95, and 4 M RAM.

- With new ScanStar for Windows, you can:
- Combine groups, banks and search ranges to scan
 - Display the monitoring spectrum with excellent graphics
 - Import and export various data formats
 - Use your computer for other tasks while scanning

- Operate at full speed regardless of other functions
- Scan by carrier or audio squelch, PL/DPL code or signal strength
- Autosearch and store new-found frequencies into memory
- Log all activity to disk or printer
- Provide full-featured data management

Order SFT 9
Only \$159⁹⁵

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Commercial Receiver Control Software

SCANSTAR COMMERCIAL OFFERS ALL the features of the popular ScanStar Professional edition plus:

- Multi-radio scanning with Search/save (handoff) and peer strategies,
- Use any combination of radio type or port, port sharing for CI-V devices
- Graphical User Interface (GUI) command center shows activity, history and status of channels in real time.
- Quickly reconfigure as the action unfolds!
- Priority system with 256 levels and selectable preemption,
- High resolution VGA/SVGA/S3 graphics modes: 640X480, 800X600 & 1024X763.
- Mouse support in all screens (text and GUI) for fast, easy operation.
- Independent scan windows allow simultaneous scanning of two programs, four radios!
- Detailed event logging for special applications: repeater usage recording, frequency coordination, etc. Data format and sample C program included.
- 32 bit code for maximum performance on 386, 486 and 586 processors. Requires IBM PC 386/486/586 with 4 MEG RAM, hard disk, VGA/SVGA, mouse, serial port(s), DOS 5/6 or OS/2 3.0. warp. Windows and 286 not supported. Supports: R7000, R7100, R9000, FRG9600, AR3000, AR8000, NRD535, R8, and MR8100 and Optoelectronic's OS456, OS535 and DC440.

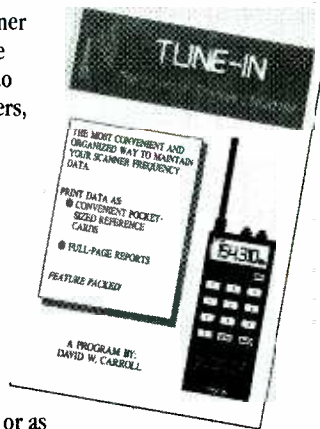
Order SFT 7
Only \$129⁹⁵

Plus \$4 UPS Ground or First Class Mail



TUNE-IN! Scanner Database

This is a feature-packed scanner database developed with the listener in mind. Designed to complement today's high-tech scanners, TUNE-IN provides the user with the easiest way to keep track of the hundreds of frequencies in his scanner with the most organized, manageable and user-friendly interface available. TUNE-IN allows up to 100 channels to be stored in an infinite number of banks limited only by your computer's hard disk. TUNE-IN allows the data to be printed as handy pocket-sized cards, or as a full-page report listing channel number, frequency, mode, location, description and comments.



Because software is easily copied, it is not refundable. Defective copies will be replaced at no charge.

Order SFT 6
Only \$24⁹⁵

Plus \$4.00 UPS Ground or First Class Mail

Copycat

Terminal Control Program

Finally, a computer control program for the Universal M-7000 and M-8000 data decoders. The M-7000 and M-8000 are notorious for their unfriendly "button pads". Copycat will free you forever from remembering all those buttons and keys.



Simple pull-down menus control all functions. No more looking through complicated manuals or searching for which button does what function. All commands are in plain English. Copycat also has a fully editable test buffer, with cut, paste and print. Save or load your test buffer to files as well. Copycat has 20 programmable macros to fully automate complex functions and much, much more. Requires an IBM/PC compatible computer with at least 640K of RAM, 1 drive, minimum 1 serial port (2 required if you use a mouse). Please specify 3-1/2 or 5-1/4 disks.

Because software is easily copied, it is not refundable. Defective copies will be replaced at no charge.

Order SFT 3
Only \$69⁹⁵

Plus \$4.00 UPS Ground or First Class Mail

The Super DX Edge[®]

Version 2

The Super DX Edge is the computerized version of the popular DX Edge, the DX operating aid. It combines all the tools you need to improve your DX performance and make your amateur operating or shortwave listening more enjoyable.



Super DX Edge contains highly accurate graphic displays of sunrise and sunset times, daylight and darkness areas of the world, best times for long path and Gray Line DX, all for any time of the year and any time of day. This is the information you need to determine the best opportunities for long distance DX.

Also included in this version is a predictor of Maximum Usable Frequency (MUF) to determine the best frequency bands to use between two locations and a Great Circle Bearing calculator to provide you with distance and bearing between any two points in the world.

This program will run best on a computer running DOS with a 386 or 486 processor (will run more slowly on 286). EGA or VGA graphics may be used.

Because software is easily copied, it is not refundable. Defective copies will be replaced at no charge.

Order SFT 5
Only \$29⁹⁵

Plus \$4 UPS Ground or First Class Mail

NEW!

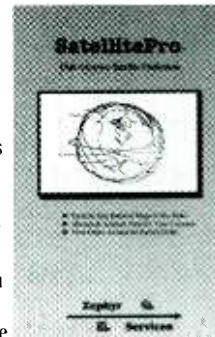
SATELLITE-PRO

Professional satellite prediction for your computer!

Used extensively by scientific observatories, this easy-to-use program tracks up to 200 satellites simultaneously, yet manages a database of up to 20,000 separate satellites!

Software includes more than 650 orbital element sets (elsets), with on-screen editing of NORAD 2-line elsets, as well as a list of free sources for additional elements. Displays ground tracks in orthographic or equal-area formats; and alt-azimuth or equatorial sky maps with user-definable fields of view and star magnitudes to +7.0, indicating the positions of the major planets, sun and moon.

Displays and records in real time



right ascension, declination, slant range, range rate, intersatellite range, radio and astronomical phase angles, velocities, altitudes, acquisition times and pass durations, even launch-generated parameters. Extensively documented; IBM compatible, EGA/VGA and printer support.

Because software is easily copied, it is not refundable. Defective copies will be replaced at no charge.

Order SFT 4
Only \$149⁹⁵

Plus \$4.00 UPS Ground or First Class Mail



Grove's Shortwave Receiver Specification/Comparison Guide

(Use this guide to compare receivers featured on pp. 4-10 of this catalog)*

Receiver	Drake R8A	Drake SW8	Grundig Sat. 700	Grundig Yt. By. 400	ICOM R71A	Lowe HF-150
Catalog Page #	5	4	8	8	6	4
Grove Order #	RCV 3	RCV 19	RCV 23	RCV 22	RCV 6	RCV 25
Grove Price	\$1068.95	\$689.95	\$499.95	\$199.95	\$999.95	\$599.95
Frequency Range	100kHz-30MHz (33-55/108-174MHz with optional converter)	500kHz-30 MHz, 87-108.118-137MHz	1.6-30 MHz, 87.5-108 MHz	160kHz-30MHz 87.5-108MHz	100kHz-30MHz	30kHz-30MHz
Keypad Entry?	Yes, plus tuning dial	Yes, plus tuning dial	Yes	Yes	Yes, plus tuning dial	Optional
Tuning Steps	10/100Hz 1 kHz	50 kHz FM 100 Hz AM	1 kHz AM/100Hz SSB 25 kHz FM	1/5 kHz	1Hz minimum	8Hz LSB, USB, AMS 60Hz AM mode
RIT/Fine Tuning	No	No	Yes	Yes	10, 50, 100 Hz	No
Display	Backlit LCD	Backlit LCD	Backlit LCD	Backlit LCD	Fluorescent	Backlit LCD
Dimmer	Yes	On/Off	On/Off	On/Off	Yes	No
Recommended Use	Int. Broadcast/Utilities	AM/SSB, aircraft/FM	Broadcast recept.	Casual SW and FM	General SW/Utilities	General SW
Receiving Modes	AM, NFM, USB, LSB, CW, RTTY	AM, AM synch., LSB, USB, WFM	AM, AM synch., LSB, USB, WFM	AM, SSB, FM CW	AM, USB, LSB, RTTY, CW	LSB, USB, AM, USB, WFM
Memory	440 channels	70 channels	120 preset/512 prgmbl.	40 channels	32 channels/2 temp. VFO	60 channels
Scan	Yes	Yes	Yes	Yes	Yes	No
Banks	10	7	64	No	By mode	No
Search	No	No	Yes	Yes	Yes	No
Delay	Yes	5 sec. per step	1 second	Yes	Yes	No
Squelch	Yes	No	No	No	Yes	No
Clock	Dual time zone	Dual mode	12/24 hr./sleep/progr. rec.	12/24 hr./sleep	No	No
Audio Output Power	2.5 W @ 4 ohms	2 W @ 4 ohms	3 W	700 mW	2 W	
Record Audio Output	300 mV into 4.7k ohms	300 mV into 4.7k ohms	stereo and mono	No	Yes	Approx. 200 mV
Recorder Activator	No	No	Yes	No	Yes	Yes
Signal Strength Ind.	Analog S-meter	Analog S-meter	LCD bargraph	LCD bargraph	Analog S-meter	No
Computer Interface	RS232C	No	No	No	Optional	Optional
Conversion Scheme	Double-up	Double up	Double up	Double up	Quadruple up	Double up
Sensitivity	0.5 uV 1.5-30 MHz	0.5 uV or better (SSB)			0.2 uV with preamp	No
Selectable Preamp.	Yes	No	No	No	Yes	Yes
Selectable Atten.	Yes	20 dB	Yes	Yes	Yes	Yes
IF Selectivity	(-6/-60 dB): 6/4/2.3/1.8 kHz; 500 Hz	(-6/-50 dB): AM Narrow 4/6 kHz SSB 2.3/4.5 kHz	3.8/6.8 kHz		(-6/-60 dB): wide 6/15 kHz narrow 2.3/4.2 kHz	(-6/-60 dB): wide 6.5/10.2 kHz narrow 2.6/4.1 kHz
Image Rejection	80 dB or better 1.5-30 MHz	70 dB or better			60 dB	65 dB
Selectable AGC	Off/slow/fast	Yes	w/ RF gain control	No	Yes	No
Dynamic Range	100 dB @ 20 kHz spacing	95 dB or better			86 dB	100 dB @50kHz
Passband Tuning	+/-3 kHz	No	No	No	Yes	No
Noise Blanker/Limiter	Dual	No	No	No	Dual, adjustable	No
Adjustable Notch Filter	500-5000 Hz, 40 dB	No	No	No	Yes	No
Tone Control	Yes	Yes	Sep. bass/treble	Yes	Yes	No
Antenna Connector	Dual, switched PL 259	SO-239 (UHF), Push terminals, integral whip	DIN (supplied)	1/8" mini whip	SO-239	SO-239, Press terminals, active serial for whip
Dimensions	13.5"W/5.25"H/13"D	11.5"W/5.25"H/13"D	12"W/7"H/2.5"D	7.75"H/4.62"W/1.75"D	11.25"W/4.37"H/10.87"D	7.25"/3"H/6.25"D
Weight	13 lbs.	10 lbs.	4 lbs., 2 oz.	1 lb. 5 oz.	16.5 lbs.	3 lbs.
Power Requirement(s)	100/120/200/240VAC 11:16VDC @ 2A	6-9VDC/6 cells	120/240VAC/4D cells	6AA cells/9VDC	120/240VAC/ 12VDC w/ optional adaptor	12VDC/8AA cells
Warranty	One year	One year	One year	One year	One year	One year
Accessories Incl.	None	Tele. whip/AC adaptor	Coax conn./AC adpt.	Reel ant./Case/ SW Guide	Spare fuses	AC adapter

* Prices (and all other specifications) are subject to change without notice.

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Sangean ATS-818CS	Sony ICF-SW30	Sony ICF-SW77	Sony ICF-SW100	Sony ICF-SW2010	Sony ICF-SW7600G	Watkins-Johnson HF1000
6	7	7	7	8	7	4
RCV 9	RCV 21	RCV 10	RCV 24	RCV 2	RCV 11	RCV 18
\$219.95	\$112.95	\$469.95	\$349.95	\$349.95	\$199.95	\$3,799
150kHz-30MHz AM/SSB 87.5-108MHz FM	10 international broadcast bands. See p. 7	150kHz-29.99MHz 87.5-108 MHz	150kHz-30MHz 76-108 MHz	150kHz-30MHz 76-108, 116-136MHz	150kHz-29.995MHz 87.6-108MHz	5kHz-30MHz
Yes	No	Yes, plus tuning dial	Yes, plus tuning dial	Yes, plus tuning dial	Yes	Yes
1kHz	1kHz	50Hz/1kHz	100Hz/1/5kHz; 9/10kHz MW, 50kHz FM	100Hz	1kHz	1Hz
	No	No		No	Yes	Yes
Backlit LCD	LCD	Backlit LCD	Backlit LCD	Backlit LCD	Backlit LCD	4 LED panels
Yes	No	On/off	On/Off	On/off	No	
Casual SW	Casual SW	Casual SW	Casual SW	SW /Air/Util./FM	Casual SW	Serious Monitoring
AM, SSB, FM CW, narrowband FM	AM, FM	AM, SSB, FM	AM, AM synch., USB, LSB/CW, FM	AM, USB, LSB, wide. FM, synch. det.	AM, wide FM, SSB	Synch. AM, FM, CW, USB, LSB, ISB
45 presets	15 channels	162 channels	50 channels	32 channels	22 channels	100 channels
Yes	Yes	Yes	Yes	Yes	Yes	3 modes
No	Yes	20	10	No	No	Programmable
Yes		Yes	Yes	Yes	Yes	Multiple Banks
Yes		Yes	Yes	Yes	No	Adjustable
No		No		No	No	Adjustable
Dual time with record	dual zone 24 hr.	12/24 hr.	24 hr./sleep	12/24 hr./alarm/sleep	w/ timer and sleep	No
800 mW		400 mW	250 mW	380 mW		1 W
No		138 mV	245 mV	.775 mV @ 1000 ohms	Yes	0dBm, 600 ohms
Internal prog. cassette	No	Yes	No	No	Yes	No
Yes	No	LCD bargraph	No	LED bargraph	Single 'tune' LED	Analog meter
No	No	No	No	No	No	RS232C and carrier sense
Double up	Double up	Double up	Double up	Double up	Double up	Triple up
						0.56 uV SSB, 0.5-30 MHz
No	No	No	No	No	No	15 dB
RF gain control	Yes	Yes	Yes	Yes	Yes	10 dB
Wide/narrow switch 6.5 kHz AM				(-6/-50 dB) Wide 9/18 kHz Narrow 4/18 kHz		DSP; 58 settings from 56 to 8000 Hz
						90 dB min.
No	No	No	No	No	No	100 dB, 15 ms attack
						110 dB or better
No	No	No	No	No	No	CW only
No	No	No	No	No	No	10-step
No	No	No	No	No	No	Tunable IF notch
Yes	No	Sep. bass/treble	Yes	Yes	Music/news switch	No
Yes	No	1/8" miniplug	1/8" miniplug	1/8" miniplug	1/8" miniplug	BNC
11.25"W/7.37"H/2.75"D	6.5"W/4.5"H/1.5"D	10.87"W/6.87"H/1.87"D	4.37"W/2.87"H/.93"D	11.37"W/6.25"H/2.16D	7.27"W/4.72"H/1.25"D	19"W/5.25"H/20"D
3 lbs. 13 oz	1 lb. 2 oz.	3.25 lbs.	8 oz.	3.75 lbs.	1.25 lbs.	15 lbs.
120VAC/int.cells 4D cells	4.5 VDC/3AA cells	6VDC or 4C cells	120VAC or 2AA cells	120VAC or 3D/2AA cells	120VAC or 4AA cells	97-235VAC, 47-440 Hz
One year	One year	One year	One year	One year	One year	One year
AC adapt./ Ext. ant. adaptor/ SW guide	Tele. Antenna/ Strap	Stereo earphones/ AC apadt./Tele. ant/ Ant. adapt./ Carrvina belt/SW Guide	Stereo earphones/ AC apadt./ Tele. ant/Soft pouch /SW Guide	Earphone./ AC apadt./Wire ant. Tele. ant/strap Ext. Ant. adapt./SW Gd.	Carrying case./ Reel Antenna	None



Grove's Scanner Specification/Comparison Guide

(Use this guide to compare scanners featured on pp. 14-19 of this catalog)*

Scanner	AR 3000A	AR 8000	ICOM R1	ICOM R100	ICOM R7100-2	Radio Shack Pro 26
Catalog Page #	15	15	14	14	14	19
Grove Order #	SCN 26	SCN 27	SCN 13	SCN 14	SCN 15C	SCN 5
Grove Price	\$1,029.95	\$599.95	\$419.95	\$799.95	\$1,299.95	\$349.95
Frequency Range	100kHz-824 MHz, 849-869 MHz, 894-2036 MHz	500kHz-1900 MHz (less cellular)	100 kHz-800 MHz, 900-1300 Hz	100 kHz-800 MHz, 900-1856 MHz	25-800, 900-2000 MHz	25 MHz-1.3 GHz (less cellular)
Keypad Entry?	Yes, plus tuning dial	Yes	Yes	Yes	Yes, plus tuning dial	Yes
Tuning Steps	Programmable 50 Hz-999 kHz	50 Hz-999.999 kHz	0.5/5/8/9/10/12.5/15/20 25/30/50 kHz	1/5/8/9/10/12.5/20/25 kHz	100 Hz; 1/5/10/12.5/ 20/25/100 kHz; 1 Mhz	5/6/12.5/200 kHz
RIT/Fine Tuning	Tuning dial	Tuning dial	Tuning dial	Tuning dial	Tuning dial	No
Display	Backlit LCD	Edgelit LCD	Edgelit LCD	Backlit LCD	LCD	LCD
Dimmer	On/off	On/Off	On/Off	On/Off	Yes	No
Recommended Use	Serious wide-spect. mon.	Gen. purpose wide-freq.	Gen. purpose wide freq.	Gen. purpose wide freq. incl. FM, TV audio	Serious VHF/UHF incl. FM, TV audio	VHF/UHF
Receiving Modes	AM/NFM/WFM/LSB/ USB/CW	AM/NFM/WFM/USB/ LSB/CW	AM,NFM, WFM	AM, Nar. & wide band FM	AM, WAM,FM, WFM, NFM/USB/SSB	AM, NFM, WFM
Memory	400 chan. w/ backup	1000 channels	100 channels	100 channels	900 channels	Non-volatile 200 ch.
Scan	50 channels/sec.	30 channels/sec.	20 channels/sec.	3 modes/20 chan./sec.	5/12 channels/sec.	50 channels/sec.
Banks	4	20 (50 channels ea.)	No	Programmable	9	10 banks/20 chan. ea.
Channel Lockout	Scan & search chan.	Yes	Yes	Yes	Yes	Yes
Priority	4 channels	Any channel	Yes	Yes	Yes	Any one channel
Search	50 channels/sec.	30 channels/sec.	10 ranges w/ autoloop	10 ranges	Yes	300 steps/sec.
Delay	Yes, variable	Programmable	2 sec./10 sec. timed	3 progrmb. functions	0/2/5/10 sec.; infinite	Indiv. chan., 2-4 sec.
Squelch	Yes	Audio/carrier activ.	Yes	All modes	Yes	Yes
Clock	Yes	No	w/ on/off timer	24 hr./timer & sleep	Yes, 2-event timer	No
Audio Output Power	1.2 W @ 4 ohms	180 mW	150 mW @ 8 ohms W	2.5 W	2 W	250 mW max
Record Audio Output	Yes	No	No	Yes	Yes	No
Recorder Activator	Yes	No	No	Yes	Yes	No
Signal Strength Ind.	Yes	LCD bargraph	LCD bargraph	LCD bargraph	Analog S-meter	No
Computer Interface	RS232C	RS232 Optional	No	No	Optional	No
Conversion Scheme	Triple conv.	Triple up/quad. on WFM	Triple conv.	Triple conv.	Triple conv.	Triple conv.
Sensitivity	0.25-0.35uV	.025-3 uV	0.4-3.2 uV	0.4-10 uV	0.35 uV NFM	0.8 uV nom. (NFM)
Selectable Preamp.	No	No	No	Yes	No	No
Selectable Atten.	Yes	Yes, chan. selectable	No	Yes	Yes	Yes
IF Selectivity	(-6/-60 dB): SSB 2.4/4.5 kHz; AM/NFM 12/25 kHz	SSB (-6/-50 dB): 4/15 kHz; AM/NFM: 12/25 kHz WFM 180/800 kHz	(-6 dB) AM 15 kHz; Narrow FM 15 kHz; wide FM 150 kHz	(-6 dB) nar. FM 15 kHz; 180 kHz wide FM AM 6 kHz	(-6 dB): 2.4 kHz SSB; 6 Hz AM/NFM; 15 Hz AM/FM; 150 kHz WFM	(-30 dB) 30 kHz AM/NFM
Noise Blanker/Limiter	No	No	No	Yes	Yes	No
Antenna Connector	BNC Integral whip	BNC	BNC	PL/259/N	N female serial for whip	BNC
Dimensions	5.5"W/3"H/7.875"D	6"H/2.75"W/1.5"D	1.875"H/W/4"H/1.5"D	5.8"W/2"H/7.1"D	9.5"W/3.75"H/9.5"D	2.62"W/6.1"H/1.625"D
Weight	2.5lbs.	13 oz.	9.9 oz.	3.1 lbs.	13 lbs.	8.47 oz.
Power Requirement(s)	9-16 VDC	4AA cells (NiCds supplied)	Internal NiCds	12 VDC	13.8 VDC; 117/240VAC	9 VDC (4AA cells)
Warranty	One year	One year	One year	One year	One year	One year ²
Accessories Incl.	Tele. whip/AC adapt./ DC adaptor/Manual	AC adaptor/ whip antenna/cig. lighter cord/ manual/ carrying strap	Flex antenna/ AC wall adaptor/charger/ belt clip	VHF/UHF tele. antenna/ HF wire antenna/DC power cable/mounting bracket/fuses/speaker plug/cable tie/screws	Plugs/Fuses/ DC cord/spare screws	Belt clip/flex whip antenna

* All specifications, including prices, are subject to change without notice.

¹ Plus pre-programmed police, fire, aircraft, maritime, emergency and weather

² Unit must be returned to Grove Enterprises within the first year for any warranty repairs. See page 1 of catalog

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Radio Shack Pro 60	Realistic Pro 2026	Radio Shack Pro 2035	Uniden BC-220XLT	Uniden BC-890XLT	Uniden BC-3000XLT	Uniden BC-9000XLT	Uniden SC150B
18	18	18	17	16	16	16	17
SCN 32	SCN 16	SCN 28	SCN 24	SCN 19	SCN 29	SCN 30	SCN 23
\$329.95	\$219.95	\$399.95	\$229.95	\$269.95	\$399.95	\$389.95	\$194.95
30-512 760-999.9875 MHz (less cellular)	29-54, 108-174, 406-512 806-956 MHz (less cellular)	25-520, 760-1300 (less cellular)	29.54, 108-174, 406-512, 806-956 MHz (less cellular)	29-54, 108-174, 216-512, 806-956 MHz (less cellular)	25-550, 760-1300 MHz (less cellular)	25-550, 760-1300 MHz (less cellular)	29-54, 108-174, 406-512, 806-956 MHz (less cellular)
Yes	Yes	Yes	Yes	Yes	Yes	Alphanumeric	Yes
5/12.5/25/50 kHz	5/12.5 kHz	5/12.5/50 kHz	5/12.5 kHz	5/12.5/25 kHz	5/12.5/25/50 kHz	5/12.5/25/50 kHz	5/12.5 kHz
No	No	Rotary tuning knob		Cont. tuning dial	No	Tuning knob	
LCD	Fluorescent	Backlit LCD	Backlit LCD	Backlit LCD	EdgeLit LCD	16-character, dot mtrx., alphanum.	Backlit LCD
No	No	No	On/off	No	On/off	High/low/off	On/off
VHF/UHF utilities	Mobile/base VHF/UHF utilities	General purpose VHF/UHF utilities	VHF/UHF utilities	Wide coverage mobile and sports	Gen. purpose scanning	Serious scanning	General VHF/UHF
AM, NFM, WFM	AM, NFM and narrow FM	AM, wide and FM det. by freq. range	NFM, AM (aero) det. by freq. range	AM, NFM	WFM, NFM, AM (selectable)	WFM, NFM, AM	NFM/AM (aero)
200 ch./10 monitor ch.	100 channels	1000 channels	200 channels	200 channels	400 channels	500 channels	100 channels
25 channels/sec..	14 channels/sec.	50 channels/sec.	100 channels/sec.	100/20 channels/sec.	100 channels/sec.	100 channels/sec.	100 channels/sec.
10 banks/20 chan. ea.	5 banks/20 chan. ea.	10	10	10	20	20	10
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Any one channel	Any one channel	Any one channel	10 channels	10 channels	10 channels	10 channels	1st chan. ea. bank
50 channels/sec..	19 steps/sec.	10 separate banks	300 channels/sec.	w/ autostore	300 steps/sec.	300 steps/sec.	Pre-program./10 banks
Indiv. chan., 2 sec.	Indiv. chan.	Selectable; 2 sec.	2 sec. any chan.	2 sec. any chan.	2 sec., chan.-selectable	2 sec., chan.-selectable	Indiv. channel, 2 sec.
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No	No	No	No	No	No	No	No
180 mW	1.1 W	1.3 W	180 mW	2.7 W	320 mW	2.2 W	180 mW
No	Yes	Yes	No	Yes	Spkr. & earph. jacks	Yes	No
No	No	No	No	No	No	Yes	No
No	No	No	No	No	No	No	No
No	No	No	No	No	No	No	No
Triple conv.	Dual conv.	Triple up conv.	Double conv.		Triple-up conv.	Triple-up conv.	Double conv.
1 uV typical	0.7 uV ave.	0.5 uV	0.5 uV nom NFM	0.75-1.1 uV			0.5 uV nom.
No	No	No	No	No	No	No	No
No	No	Yes	No	No	No		
(-30 dB) 30 kHz AM/NFM	(-50 dB) 30 kHz	(-6/-50 dB) 12/24 kHz AM: 20/40 kHz NFM: 300/600 kHz WFM					
No	No	No	No	No	No	No	No
BNC	BNC	BNC	BNC	BNC	BNC	BNC	BNC
2.44"W/6.31"H/2.13"D	6.625"W/1.625"H/7.375"D	4"H/10.5"W/7.5"D	6"H/7.5"W/1.7"D	10.5"W/3.5"H/7.5"D	7.4"H/2.7"W/1.5"D	10.5"H/3.38"W/7.5"D	6"H/2.5"W/1.7"D
8.8 oz.	2 lbs. 3 oz.		2 lbs.	3 lbs. 14 oz.	13 oz..	4lbs.	13 oz..
9 VDC (6AA cells)	12 VDC 13.6 VDC	120 VAC/12 VDC	Battery	120VAC/12 VDC	6.5 VDC	12 VDC (AC adapt. incl.)	Battery
One year ²	One year	One year	One year	One year	One year	One year	One year
Belt clip/flex whip antenna	Mobile mount kit	Attachable whip/ Manual	AC adaptor/ flex antenna/ belt clip/Manual/ Earphone	AC adaptor/tele. whip/ Instructions	Rechargeable bat. pack/ AC wall adaptor-charger/ belt clip/flex antenna/ earphone/manual	AC adaptor/tele. whip/ owner's manual	AC adaptor/ flex antenna/ belt clip/Manual/ Earphone



Get The Best Scanner Antenna Money Can Buy!

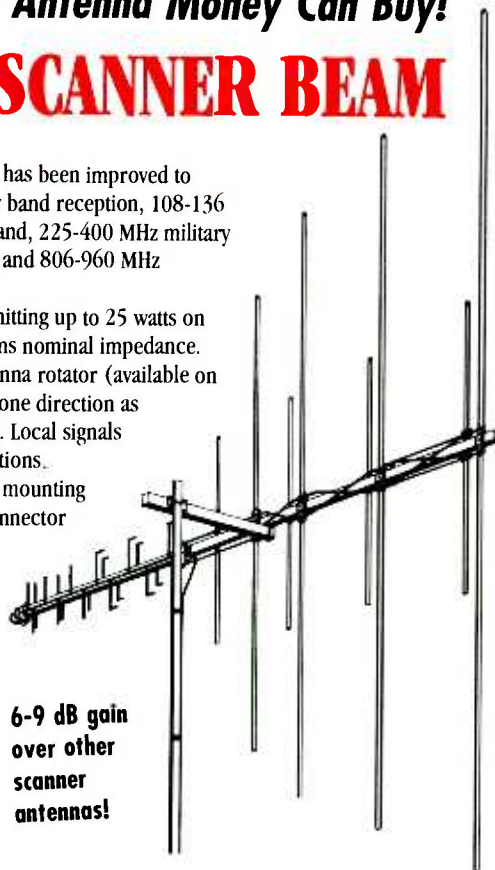
THE GROVE SCANNER BEAM

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 (available on p. 31) 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. 31). Approximate size 8'H x 5'L.



6-9 dB gain
over other
scanner
antennas!

Order ANT 1
Only \$59⁹⁵



\$10.50 UPS
\$17 UPS 2nd Day Air
\$12.50 US Priority Mail
\$13.50 Canadian APP
\$18 Canadian UPS

Shipped only in U.S. and Canada

Which Scanner Antenna?

HAND-HELD - The whip antenna included with your scanner is fine for local reception of strong signals, but if you are interested 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 and new, low-profile ANT-30 come equipped with a Motorola plug or BNC connector and have strong magnetic bases which will not come loose at normal road speeds.

You don't want a visible antenna on your car? Order the Grove ANT-20 "No-Tenna." It provides full-frequency coverage reception by connecting internally to the car body.

The car's existing AM/FM antenna may be used with a multicoupler like the Grove CPL-63 with some compromise in signal strengths. In weak signal areas, a preamplifier like the Grove PRE-5 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-130J. 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 MoniTenna 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 Grove Scanner Beam, used with an inexpensive TV rotator like the Grove ROT 1, 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.

Professional Wideband Discone

Best Discone on the Market for VHF/UHF Receivers

The discone antenna is used by government and military agencies worldwide because of its wide bandwidth characteristics and non-directional coverage.

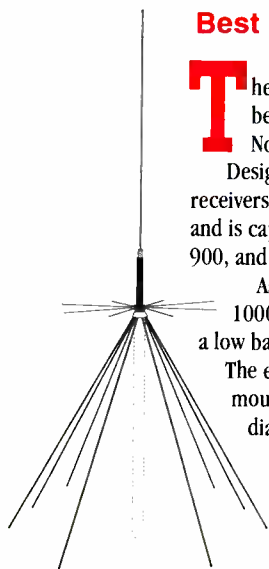
Now Diamond offers a professional grade discone at a popular price.

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 omni-directional 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 31.



Order ANT 9
Only \$87⁹⁵

\$7.50 UPS
\$12.50 UPS 2nd Day Air
\$8 US Priority Mail
\$10.50 Canadian APP
\$15 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. What you want is 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-5 work well in low-signal-strength environments, but when used with outside antennas in a metropolitan area can cause desensitization (signals are weaker than before) and generate intermodulation (spurious signals) as well.

Filters and Attenuators

THE MOST COMMON CAUSE 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.

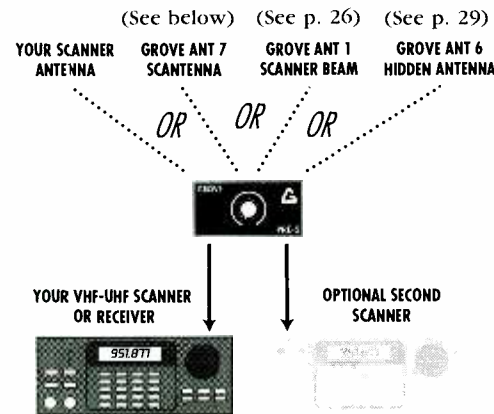
Is your scanner plagued by AM broadcast, CB or shortwave stations? Try the FTR-6. Do local AM broadcasters disrupt your shortwave or longwave reception? The FTR-7 will take care of that. Are aircraft signals interfering with VHF public safety monitoring? Eliminate them with the FTR-8. Is a local FM or TV broadcast ruining your shortwave reception? You need the FTR-9.

The Grove PRE-5 Signal Booster

For years the popular Grove PRE-4 signal-boosting scanner preamplifier has provided thousands of scanners, TVs and FM stereo systems improved VHF and UHF reception.

Now Grove offers a dramatically-improved preamplifier with lower noise figure, lower intermod, and better high frequency gain! Mount the weather-proof remote module at the antenna to overcome coax line loss, or right at the control box for convenience.

Use your new PRE-5 Power Ant with an indoor or outdoor antenna, and operate up to two scanners with its built-in splitter. Continuous gain control from -10 dB attenuation to +18 dB amplification, and the unit is automatically bypassed when power is switched off!



PRE-5 SPECIFICATIONS:

- GAIN:** Continuously adjustable —10 dB to +18 dB
- FREQUENCY RANGE:** 30-1000+ MHz
- NOISE FIGURE:** 3.5 dB
- 3RD ORDER INTERCEPT POINT:** +27 dBm
- DIMENSIONS:** 4"W x 2"H x 3"D
- WEIGHT:** 10 oz.
- CONNECTORS:** Low-loss type F
- POWER REQUIRED:** 12 VDC (nom.); AC adaptor included

ACCESSORIES:

- ADAPTOR KITS:**
- ADPK 3 BNC \$9.95
- ADPK 4 Motorola \$12.95
- ADPK 9 N \$12.95

Order PRE 5
Only \$89⁹⁵

- \$6 UPS
- \$10.50 UPS 2nd Day Air
- \$8.50 US Priority Mail
- \$11.50 Canadian APP
- \$10.50 Canadian UPS

THE SCANTENNA FROM ANTENNACRAFT



This 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. 31. Approximate size 7-1/2'H x 4-1/2'W.



Order ANT 7
Only \$39⁹⁵

- \$10.50 UPS
- \$17 UPS 2nd Day Air
- \$8 US Priority Mail
- \$11.50 Canadian APP
- \$18 Canadian UPS

Shipped only in U.S. and Canada



From Max Systems: High Gain 800 MHz Portable Antenna



The new Max Systems antenna will make a tremendous improvement in 806-960 MHz reception over the whip provided with your hand-held or desktop scanner! (Not usable in other frequency ranges.)

Equipped with standard BNC connector; rugged ground-plane construction for optimum performance. Only 7-1/2" tall. Ideal for use with GRE converters.

Order ANT 22
Only **\$29⁹⁵**

With straight connector for handheld scanners

Order ANT 23
Only **\$34⁹⁵**

With right-angle connector for desktop use

\$6.50 UPS
\$11 UPS 2nd Day Air
\$8.50 US Priority Mail
\$11.50 Canadian UPS
\$15 Canadian APP

New from Grove! STEALTH Mobile Monitoring Antenna

A unique design optimizes coverage of the popular 30-50, 118-174, 406-512 and 806-960 MHz bands; this low-profile, magnetic-mount mobile antenna is only 18" high, yet offers performance comparable to much bulkier scanner antennas.

Rugged, stainless-steel whip and strong magnetic base are hermetically sealed for waterproof construction, sleek-black-finished for unobtrusive mounting. Includes 14 feet of small-diameter cable and BNC connector.

Order ANT 30
Only **\$29⁹⁵**

\$7 UPS Ground
\$12.50 UPS 2nd Day Air
\$7 US Priority Mail
\$10 Canadian APP
\$15 Canadian UPS



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 a high-performance mobile antenna for wide-frequency-coverage scanners.

This sleek, black, 24" fiberglass whip, mounted on a strong magnetic base, assures 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.

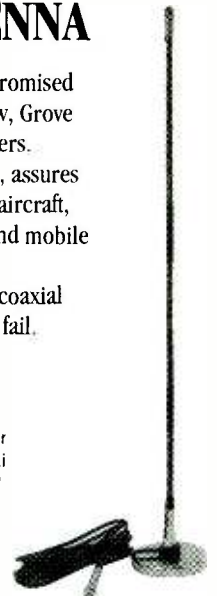
Order ANT 4
Only **\$49⁹⁵**

\$7 UPS
\$12.50 UPS 2nd Day Air
\$7 US Priority Mail
\$10 Canadian APP
\$15 Canadian UPS

Order ANT 4W
Only **\$12⁹⁵**

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

\$6 UPS
\$10 UPS 2nd Day Air
\$5.50 US Priority Mail
\$6.50 Canadian APP
\$14 Canadian UPS



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
Only **\$29⁹⁵**
Retail ~~\$49⁹⁵~~

Plus \$7 UPS Shipping

ACCESSORY:

ACC 94 Adhesive re-mount kit\$4.95



UNIVERSAL WHIP ANTENNA

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") **\$14⁹⁵**

ANT 8B **\$21⁹⁵**

(w/right-angle BNC adaptor)

ANT-8N **\$23⁹⁵**

(w/right-angle N adaptor)

\$5 UPS
\$8 UPS 2nd Day Air
\$5 First Class Mail
\$4.50 Canadian APP
\$10 Canadian UPS



Austin Condor

High Performance Flex Antenna

FOR YEARS we have been looking for a replacement "rubber duckie" that really makes a difference here! The 12" Austin "Condor" is signal scanner reception—on compared to the original a replacement "rubber duckie" on handheld scanners. It's guaranteed to improve weak all frequency ranges—when scanner antenna.

\$6 UPS
\$8.50 UPS 2nd Day Air
\$5 US Priority Mail
\$10 Canadian UPS
\$6.50 Canadian APP

Order ANT 14

Only **\$29⁹⁵**

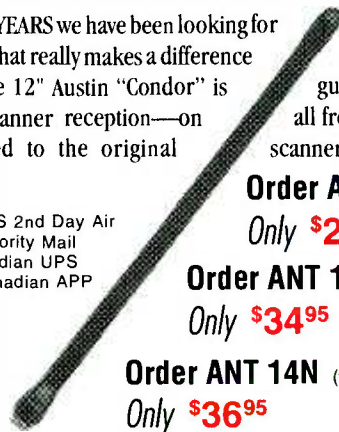


Order ANT 14B (w/BNC right-angle conn.)

Only **\$34⁹⁵**

Order ANT 14N (w/N right-angle conn.)

Only **\$36⁹⁵**



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 GRE PRE1 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.



Order ANT 6

Only **\$19⁹⁵**

\$6.25 UPS
\$8.50 UPS 2nd Day Air
\$4.50 US Priority Mail
\$6.50 Canadian APP
\$10 Canadian UPS

Turn Your Car into a Giant All-Band Antenna!

The Grove No-Tenna™



Imagine: strong, clear, continuous frequency coverage of shortwave and scanner signals without having to mount an antenna anywhere on your car! No invitation to theft, suspicion, breakage, low overhangs, hole drilling, scraped paint, or cables through doors or windows. **No visible antenna whatsoever!** The 8' antenna mounts in seconds, using your entire car body as a giant, efficient, 1-1000 MHz all-band antenna!

The unique No-Tenna™ was developed exclusively in Grove's laboratory and extensively road tested under all signal conditions. Ideal for city dwellers, travelers, reporters, investigators—anyone who doesn't want a visible receiving antenna on his vehicle (not for transmitting).

Connected to a single upholstery screw already in the vehicle; use either the upper, right-hand moulding screw or the adjacent sun visor screw. Spring clip provided for temporary connections to motel or apartment metal window frames, curtain rods and other emergency, makeshift antennas. Full instructions and universal connectors for RCA, BNC and 1/8" (3.5mm) miniplug included. If you own an ICOM R-100 be sure to specify a PL-259 adaptor.

Order ANT 20

Only **\$19⁹⁵**

Plus \$4.50
UPS Ground
Shipping

ACCESSORIES:

ADPK 8 Motorola Adaptor Kit..... \$5.95



Eliminate
Unightly
Antennas ...



With the Grove No-Tenna!



Quality Scanner Accessories from Grove!



SCANNER FILTER



ELIMINATE THOSE AGGRAVATING FM and TV broadcasters from interfering with your favorite scanner frequencies! Select any one additional source of interference in the 100-220 MHz range and reject it as well! Ideal for use with preamplifiers and outdoor scanner antennas!

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. Additional adaptor kits available below.

A diode shunt array protects your scanner from nearby lightning strikes and high-powered transmitters. A high-pass filter removes shortwave feedthrough, while band-reject filters remove FM and TV broadcast interference automatically.

Order FTR 5
Only \$44⁹⁵

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

SPECIFICATIONS:

Passes: 30-50, 118-174, 225-1500 MHz
Rejects: 0-30, 50-118, 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

ACCESSORIES:

ADAPTOR KITS:
ADPK 3 BNC \$9.95
ADPK 4 Motorola \$12.95
ADPK 9 N \$12.95

MILITARY AIRCRAFT SCANVERTER



NOW, HEAR 225-400 MHz military aircraft communications on your scanner's 118-136 MHz band! Listen in on 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 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).

SPECIFICATIONS:

Frequency Range: 216-406 MHz
Sensitivity: 1 microvolt
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

Order CVR 4
Only \$99⁹⁵

\$6 UPS
\$10.50 UPS 2nd Day Air
\$6.50 US Priority Mail
\$12.50 Canadian UPS
\$8 Canadian APP

ACCESSORY:

BAT 4 9 Volt alkaline battery \$2.09

GRE SUPER CONVERTER

RECEIVE CONTINUOUS 800-1000 MHz ON YOUR PROGRAMMABLE SCANNER!



LOOKING FOR THE BEST WAY to get uninterrupted 800-1000 MHz coverage on your 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 (\$14.95) or ANT-8 (\$16.95).

When you tune 410-512 MHz on your scanner, you will be receiving 800-1000 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 CVR 3 Only \$84⁹⁵

ACCESSORY:

ANT 22 High gain 800 MHz portable ant \$29.95
BAT 4 9 Volt alkaline battery \$2.09

\$5.50 UPS
\$9 UPS 2nd Day Air
\$7 US Priority Mail
\$8.50 Canadian APP
\$10 Canadian UPS

GRE Super Amplifier for Handhelds



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 PRE 1
Only \$49⁹⁵
Retail \$68

\$6 UPS
\$8.50 UPS 2nd Day Air
\$6 US Priority Mail
\$10 Canadian UPS
\$7.50 Canadian APP

ACCESSORY: BAT 4 9 Volt alkaline battery \$2.09



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!

Order CBL 50
(50 feet w/ adaptors)
Only \$19⁹⁵

\$6 UPS
\$10 UPS 2nd Day Air
\$6.50 US Priority Mail
\$8 Canadian APP
\$13 Canadian UPS

Order CBL 100
(100 feet w/ adaptors)
Only \$29⁹⁵

\$6.50 UPS
\$11 UPS 2nd Day Air
\$7.50 US Priority Mail
\$9 Canadian APP
\$17 Canadian UPS

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



ADAPTORS AVAILABLE

- ADP 1 UHF Female to F male
- ADP 2 F Female to PL259 Male
- ADP 3 F Female to N Male
- ADP 4 F Female to Male Mini-Plug
- ADP 5 N Female to BNC Male
- ADP 6 UHF Female to Male Mini-Plug
- ADP 7 UHF Female to N Male
- ADP 9 F Female to BNC Male
- ADP 10 UHF/BNC
- ADP 11 UHF female to RCA male
- ADP 12 BNC/N
- ADP 13 BNC/BNC (right angle elbow)
- ADP 14 F female to RCA male
- ADP 15 N female to F male
- ADP 17 BNC female to F male
- ADP 18 F/2 wires
- ADP 19 UHF/2 wires
- ADP 22 MOT/BNC
- ADP 23 UHF female Barrel-1.50
- ADP 24 BNC female to PL259 male
- ADP 26 F/F Barrel—\$2.00
- ADP 27 Banana Plug—\$2.00
- ADP 28 F to PAL/Satellite 700
- ADP 29 3/32" Adaptor—1.50
- ADP 30 T-adj. BNC fem./male/fem.—1.50
- ADPK 10 F female to Motorola male
- ADPK 13 F/F Cable 3ft.—2.50
- ADPK 14 F/Motorola cable, 3ft.—2.50
- ADPK 15 PL259/PL259 cable, 3ft.—2.50
- ADPK 16 BNC to BNC

Adaptors may be ordered separately for \$5.95 each. Free shipping if ordered with other products; \$2.00 for one or more shipped alone.

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

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.



Order ROT 1
Only \$59⁹⁵

\$7 UPS
\$16.50 UPS 2nd Day Air
\$11.50 US Priority Mail
\$18 Canadian UPS
\$14.50 Canadian APP

ACCESSORIES:

- CBL 2 50 feet 3-conductor cable \$5.95
- CBL 3 100 feet 3-conductor cable \$8.95

Variable Attenuator Reduces Overload Interference!



Reduce scanner and shortwave intermod and desensitization with this variable attenuator. Adjustable from 0 to 20 dB attenuation from 0-1000 MHz or higher! Can also

be used to reduce distortion when connected between a radio's audio output and your tape recorder! Equipped with F connectors; adaptors available from list below.

Order ATT 1
Only \$9⁹⁵ Plus \$5 UPS Ground

Adaptor Kits:

- ADPK 1 PL-259 (UHF) \$9.95
- ADPK 2 1/8" Miniplug \$9.95
- ADPK 3 BNC \$9.95
- ADPK 4 Motorola \$12.95
- ADPK 5 RCA \$9.95
- ADPK 6 Motorola/BNC \$9.95
- ADPK 9 N \$12.95
- ACC 176 1/8" cable interconnect for tape recorder (2 provided) \$6.95

Lightning/EMP Protector For Scanners and Shortwave Receivers

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



Appearance may vary

Not a flimsy spark gap or simple diode shunt, the Grove LAR-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 and ham equipment, VCRs, TVs, satellite receivers, FM stereo systems and more. May be used with transmitters up to 100 watts.

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.

- LAR1F (with F conn) \$19.95 \$4.50 UPS
- LAR1B (with BNC conn) \$24.95 \$8 UPS 2nd Day
- LAR1P (with PL-259 UHF conn) \$24.95 \$4.50 US Priority Mail
- LAR1M (with Motorola conn) \$29.95 \$6.50 Canadian APP

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



Use Your AM/FM Car Antenna for Scanner Reception Too!

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 (Motorola) Only **\$14⁹⁵**

Order CPL-63B (BNC) Only **\$16⁹⁵**

\$5 UPS
\$8.50 2nd Day Air
\$5 US Priority Mail
\$10 Canadian UPS
\$6.50 Canadian APP

Swirl with ease . . .

Professional Antenna Switch



Switch your scanner, shortwave receiver, ham transceiver or any other radio device operating at frequencies as high as 1000 MHz with this superb, die-cast, waveguide-cavity antenna switch. Handles up to 2500 watts PEP for transmitting, VSWR under 1:1.2, insertion loss only 0.2 dB, port-to-port isolation 60 dB. Automatically grounds unselected port. Standard UHF (SO-239) connectors mate with PL-259 and other adaptors.

Order SWC 1

Only **\$25⁹⁵**

\$4.50 UPS Ground
\$8 UPS 2nd Day Air
\$4.50 US Priority Mail
\$10 Canadian UPS
\$6.50 Canadian APP

Dual Scanner Multicoupler Kit

WOULD YOU LIKE TO CONNECT two scanners (or one scanner with sep. 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

Only **\$29⁹⁵**

\$5 UPS
\$8.50 UPS 2nd Day Air
\$5 US Priority Mail
\$10 Canadian UPS
\$6.50 Canadian Air PP

ACCESSORY:

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

Professional Power Supply

Adjusts to the voltage you need for mobile & portable accessories!

Operating from 100-115 volts AC, this rugged, compact (5"W x 3"H x 5"D) lab power supply is ideal for powering those mobile and portable, battery-operated scanners, shortwave radios, CB rigs and other equipment. Adjustable from 9 to 15 volts and provides up to 5 amps DC. Over-current protected. Includes binding posts as well as cigarette lighter jack for powering your accessories. Large meter accurately shows voltage and current. Regulated for less than 1% voltage fluctuation or 3 mV ripple. Weighs 5 pounds.



Order PWR 3

Only **\$59⁹⁵**

\$6 UPS Ground
\$8.50 2nd Day Air
\$ 5.50 US Priority Mail
\$7.50 Canadian APP
\$10.50 Canadian UPS

Save on Low-Current AC Wall Adaptors!

GROVE'S PWR 12 Universal power supply plugs into 120V AC wall socket and provides 3, 4.5, 6, 7.5, 9 and 12 volts DC at up to several hundred mA (intermittent use). Has six different plugs for virtually every accessory. List price \$12.95.

Order PWR 12

Only **\$4⁹⁵** plus \$3.50 UPS or Priority Mail



THE PWR 11 provides 12VDC at 100 mA from standard 2.1 mm coax plug. UL and CSA approved.



Order PWR 11

Only **\$4⁹⁵** plus \$3 UPS or Priority Mail



MetroWest Long Life Battery Pack and Drop-In Charger

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 mA 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 BAT 9
Only \$74⁹⁵

\$5.50 UPS
\$9 2nd Day Air
\$7 US Priority Mail
\$10 Canadian UPS
\$8.50 Canadian APP



Professional 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 PWR 15

Only \$44⁹⁵

\$5.50 UPS Ground
\$9 2nd Day Air
\$7 US Priority Mail
\$10 Canadian UPS
\$8.50 Canadian APP

Radio Shack® Rechargeable AA NICAD Batteries



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

Order BAT 13
Only \$27⁵ ea.

plus \$2.50 shipping
any quantity

Save \$\$\$ on our 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 PWR 13 plus \$5 UPS
or Priority Mail
Only \$9⁹⁵

A \$15 dollar value!

Great Deals on High Quality Alkaline Batteries Industrial ALKALINE AA, C, D, and 9V Batteries!

These high-power, long-life, industrial quality Eveready Energizers™ are unavailable in stores. Ideal for radios, flashlights, clocks, cassette players, remote controls, electronic accessories, motorized tools and toys, and any other application requiring a high-current, long life battery. Choose from individually packed AA, C, D or single 9V batteries.

BAT 01 AA Batteries \$1.79 ea.
BAT 02 D Batteries \$1.19 ea.
BAT 03 C Batteries \$1.09 ea.
BAT 04 9V Batteries \$2.09 ea.

plus \$2.50 UPS Ground or
US Priority Mail shipping





Lifetime Guarantee! ONE-HOUR RECHARGEABLE NICAD SYSTEM

YOU CAN'T BUY BETTER, faster-charging NiCad batteries than the Gates Millennium. These 750 MAH 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 Millennium AA cells at a time in just one hour.



- Order PWR 6 Rapidcharger *Only* \$19⁹⁵ \$6 UPS
 - Order BAT 5-2 AA Cells *Only* \$5⁹⁵ (2) \$9 UPS 2nd Day Air
 - Order BAT 5-4 AA Cells *Only* \$9⁹⁵ (4) \$6.50 US Priority Mail
- \$10 Canadian UPS
\$8 Canadian APP

Order ACC 119 and ACC 120 at the same time and save!
Rapidcharger and 4 AA cells only \$24⁹⁵

Mobile Cigarette Lighter Power Adapter For Bearcat Scanners!

SIMPLY PLUG THE GROVE ACC23 into your vehicle's cigarette lighter to charge the batteries and/or operate the Bearcat scanners listed in this catalog (except BC2500XLT) or any other mobile accessory, including radar detectors, which use a 12 volts DC, center pin positive, 2.1 mm barrel connector.

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



Order DCC 4
Only \$9⁹⁵

Including First Class Mail Shipping



Pen Pointer

NOW YOU CAN highlight your talk with a brilliant, red beam of laser light, the same beam used on night-viewing weapons! This tiny (5.8") pocket penlight projects a tight spot of light for 200 yards, yet measures only 5.8" in length. Ideal for lectures, educators, sales presentations and more!

All-aluminum, black matte construction, GaAlAs solid-state laser with acrylic collimating lens, 3 milliwatts power at 670 nm wavelength! Requires only two AAA cells for long-life power! Attractive presentation case included at no additional cost. Registered with FDA for approved uses.

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PRICE!

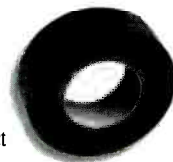
Order LAS 1
Only \$59⁹⁵ \$5.50 UPS
\$8 2nd Day Air
\$5 US Priority Mail
\$7 Canadian APP
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Accessories:

BAT 6 AAA Batteries \$1.00/each

Weather-Proof Flex-Tape!

IDEAL FOR SECURELY WRAPPING coax couplings and splices without heat or mess. Forms a tight, flexible, waterproof seal for wiring, plumbing, automotive, marine and other hostile environments. Easy to apply; remains pliable for years without leaving a sticky residue like putty sealants. Resists water immersion, sunlight, abrasion, impact and most chemicals.



Order ACC 168
Only \$1⁹⁵ For 22-foot roll

Plus \$1.50 First Class Mail

Super Convenient Up-Right Mounts for Handheld Radios!

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 our handy holders. The BRK 1 holds one hand-held, while the BRK 7 holds two (or one scanner and a beverage container)—with a handy compartment in the middle for other accessories!

Their 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. The two outer compartments of the BRK 7 even adjust to provide a snug fit for any handheld unit.

Cushion pads are provided for an even better grip, especially on small handhelds like the ICOM R-1 and Realistic® PRO-62.



Double Holder (shown at left)

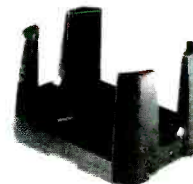
Order BRK 7
Only \$12⁹⁵ \$5.50 UPS
\$8 2nd Day Air
\$5 US Priority Mail
\$7 Canadian APP
\$10 Canadian UPS

BRK 7 holds two scanners, a frequency counter, whip and other accessories!

Single Holder (shown at right)

Order BRK 1
Only \$9⁹⁵

\$5.50 UPS
\$8 2nd Day Air
\$5 US Priority Mail
\$7 Canadian APP
\$10 Canadian UPS





Sub-Compact Extension Speaker

MEASURING JUST 3-1/4" IN DIAMETER, this tiny extension speaker with its black textured styling and chrome accents is ideally suited for mobile mounting. A swivel base allows proper positioning, while its 7' extension cable with standard 1/8" (3.5 mm) miniplug will reach anywhere in the listening area.

Order SPK 14
Only \$7⁹⁵

New!



Scanner shown for size comparison only

Free Shipping!
(for speaker 14 only)

ACCESSORIES:

ADP 29 3/32" (2.5 mm) sub-mini adaptor \$1.50

Communications Headphones — a Solid Value for the Listener!



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 external speaker/earphone jacks.

Perfect for any audio application—stereo systems, communications receivers and scanners. Coil cord with 1/4" plug and 1/8" adaptor included.

Order HDP 1
Only \$19⁹⁵

\$6 UPS
\$9 UPS 2nd Day Air
\$6.50 US Priority Mail
\$10 Canadian UPS
\$8 Canadian APP

ACCESSORIES:

ADPK I1 Universal Adaptor \$12.95
One or two 1/4" headphone jacks to 3/32" (2.5 mm) or 1/8" (3.5 mm) plug — fits all model scanners
ADP 29 3/32" Adaptor (fits BC200XLT) \$1.50

NAVAL HTS-3 COMPACT AMPLIFIED SPEAKER

Includes Tape Recorder Activator and Cigarette Lighter Power Cord

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:

BAT 1 AA Alkaline batteries \$7.95
PWR 13 AC wall power supply \$9.95
BAT 13 Nicad AA batteries \$2.75/each (4 required)

Order SPK 11
Only \$34⁹⁵

\$6 UPS
\$9 UPS 2nd Day Air
\$7 US Priority Mail
\$10 Canadian UPS or APP

Clip-On Mini Speaker For Handheld Radios

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.



Order SPK 9
Only \$10⁹⁵

\$5 UPS
\$8 UPS 2nd Day Air
\$4.50 US Priority Mail
\$9 Canadian UPS
\$5.50 Canadian APP

ACCESSORY:

ADP 29 3/32" (2.5 mm) adaptor (for BC200XLT, etc.) \$1.50





UNIVERSAL BELT CLIP

A QUICK PRESS firmly attaches this strong, plastic belt clip to your frequency counter, handie-talkie, cellular or cordless phone, camera, pager, test equipment, portable radio, or virtually any other flat surface! The polymer adhesive remains pliant so that years later the clip may be removed without destroying the surface!

Order BRK 3 Plus \$2 .50
Only \$4⁹⁵ First Class Mail



Color Chart of the Radio Spectrum

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 \$5.50 UPS
Only \$9⁹⁵ \$7.50 2nd Day Air
\$2.50 Bookrate/\$5.50 Priority Mail
\$8.50 Canadian UPS
\$6 Canadian APP

LEATHERMAN® POCKET TOOL

YOU'VE SEEN THE LEGENDARY 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.



Made in the U.S.A.

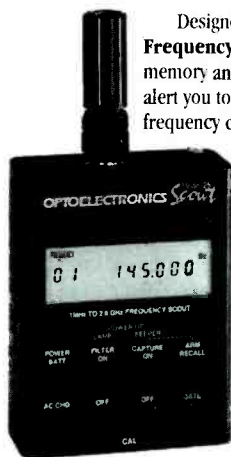
Order TOL 1 \$5.50 UPS
Only \$39⁹⁵ \$8.50 2nd Day Air
\$5 US Priority Mail
\$10 Canadian UPS;
\$7 Canadian APP

Pocket Frequency Counters from Optoelectronics

Ideal for calibrating signal generators and transmitters, for countermeasures transmitters, walkie-talkies, mobile radios, base stations, cordless phones, ham and These precision instruments offer outstanding sensitivity and TCXO (temperature compensated crystal oscillator) accuracy of 1 part per million. Prices include rechargeable battery pack and AC wall charger/adaptor, but not Operate for several hours on a fresh charge, or continuously with the wall adaptor. The effective range varies from about one foot (cordless phones) up to 75 feet or more

applications, and for determining the unknown frequencies of CB radios, radio control units and other signal emitters. (temperature compensated crystal oscillator) accuracy of 1 part per antenna (available from the list of accessories below).

for more powerful transmitters.



Designed for covert electronic surveillance, the new Frequency Scout is an advanced pocket frequency counter with memory and a selectable, silent vibrator or audible beeper to alert you to signal presence. With continuous 10-2800 MHz frequency coverage and 13 millisecond intercept time, the Scout accurately displays frequencies on a 10-digit, backlit LCD. High sensitivity captures weak signals for hundreds of feet, depending upon conditions.

Connected with an inexpensive audio cable, you can instantly command an ICOM R7000, R7100 or R9000 to receive an intercepted frequency.

Relative signal strengths are displayed on a 16-segment bargraph, and up to 400 different signal frequencies may be automatically stored for later recall. Continuous operation for at least 8 hours on a fast two-hour-rechargeable battery. Antenna sold separately.

Order CTR 8 \$7 UPS
Only \$449⁹⁵ \$11 UPS 2nd Day Air
\$9 US Priority Mail
\$12 Canadian UPS
\$10.50 Canadian APP



The 3300 Minicounter: pre-eminently portable! If you are looking for a low cost, high performance, pocket frequency counter, look no further. Optoelectronics' new 3300 is for you. Built-in rechargeable battery and AC adaptor included. Wide frequency coverage to 2.8 GHz, high sensitivity, precision frequency readout to 10 Hz on LCD display. Fast/slow gate sampling times for increased accuracy. Hold button preserves readings from brief transmissions. Great for catching those unknowns inconspicuously!

Order CTR 7 \$7 UPS
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ACCESSORIES:

- ANT 19 4"-18" telescoping whip \$14.95
- ANT 8 7"-46" long-range tele. whip \$16.95
- ANT 27 Low profile 1-1/2" close-range ant. \$31.95

ACCESSORIES:

- ANT 19 4"-18" telescoping whip \$14.95
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**THE SATELLITE
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HANDBOOK**



By Martin Davidoff With the launching of Satellite Times magazine, more and more listeners are focusing their antennas overhead! Get in on this exciting, new aspect of monitoring with projects and information from Davidoff's authoritative, easy-to-read handbook.

Antenna design, construction and tracking; amateur, TV and weather satellites; computer programs; graphs, tables and overlays. A great reference collection for beginners and experienced space enthusiasts alike. Use shipping code B.
BOK 85 \$19⁹⁵

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**KU-BAND SATELLITE TV
INSTALLATION AND REPAIR**



By Dr. Franz Baylen, Brent Gale and John McCormac A clear presentation and explanation of all aspects of worldwide Ku-band satellite television. Ku-band satellite communications systems are becoming commonplace throughout the world. This comprehensive manual provides do-it-yourselfers, technicians and managers with the knowledge necessary to fully understand all technical aspects of this rapidly growing field. Use shipping code B.
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**WORLD SATELLITE TV AND
SCRAMBLING METHODS, THE
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By Dr. Frank Baylin, Richard Maddox and John McCormac This thorough text is a must buy for technicians, satellite professionals and do-it-yourselfers. The design, operation and repair of satellite antennas, feeds, LNBS and receivers/modulators are examined in detail. An in-depth study of scrambling methods and broadcast formats is the backdrop to a discussion of all current American and European satellite TV technologies. Use shipping code B.

BOK 91 \$39⁹⁵

Modifications Performed by Grove Repair Service

The new Repair Service at Grove Enterprises can perform many of the equipment modifications that that you may need to turn a good scanner or receiver into a great one. Depending on the specific models, Grove's modification services include:

- Scan Speed Increase
- Frequency Range Expansion
- Unlocking of Blocked Frequencies
- Improved Headphone Audio
- Voltage and Spike Protection
- Factory Accessory Installation
- Memory Channel Increase
- Squelch Improvement

Modifications are available for both new equipment at the time of purchase from Grove, as well as for used equipment. Before returning your used scanner or receiver for modifications, please call 704-837-7081 and explain the type of modification you desire. If the requested service is available, Grove will issue you a service order number and advise you of the modification fee and the return shipping charges. Ship your equipment to Grove enclosing a check for the modification and return shipping.



Grove Enterprises, 300 S. Highway 64 W., Brasstown, N.C. 28902

Based upon the Supreme Court rulings of McLeod vs. Dillworth (1944), Bellas Hess (1967) and the Enterprises will no longer collect sales or use taxes apparently invalidly levied by states against residents who have no presence nor nexus in these states as established by the U.S. Supreme Court.

TO SPEED YOUR ORDER FOLLOW

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1. Fill out the order blank and send a check, bank or postal money order, or your complete credit card information (see #3 below) to Grove Enterprises, P.O. Box 98, Brasstown, NC 28902.
2. **DO NOT SEND CASH OR STAMPS!** COD is available for an additional \$5.50 per package via UPS Ground only (no COD's through Post Office or via UPS 2nd Day or Next Day Air). Cash, certified check or money order required at time of COD delivery.

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1. Have your order form filled out and your charge card in front of you.
2. Call our order desk toll free, 1-800-438-8155 (US and Canada), foreign countries call 1-704-837-9200 (no collect calls please!)
3. Give the salesperson your name, shipping and billing address, the items you want to order, your credit card number, expiration date and issuing bank. All credit card orders must include the billing address shown on your credit card records. If this is not possible, we will require a money order or certified check before the item can be shipped. (This method is necessary to eliminate fraudulent use of credit cards and protect you, our customer!)
4. **ALL PRICES SUBJECT TO CHANGE!**

FAX: 1-704-837-2216

TOLL FREE ORDER LINE: 1-800-438-8155

(MASTERCARD, VISA, DISCOVER CARD, COD)

SPECIAL

All Hawaii (including shipping charges). 2nd Day Air from UPS. Call or write for details.

PURCHASE ORDER

Written purchase orders from government agencies and institutions are accepted. Prices are not honored for open accounts. Special sale prices are not honored.

DELIVERY SCHEDULE

We ship within one working day upon **RECEIPT OF YOUR ORDER** unless you are notified of a delay. US shipments should arrive within 7-10 working days; U.S. Post Office shipments within 10 working days (bookrate can take as much as four weeks). These are maximum delivery times; if you do not receive your order within these time frames, call us so we can place a tracer on your order.

FOREIGN SHIPMENTS

Write or call, telling us what you want to order and how you want it shipped (surface or air parcel post, international or air UPS). Please note—**orders to some countries cannot be insured by the Post Office**. We do not assume any responsibility for losses other than proof of shipment. **PAYMENT BY INTERNATIONAL MONEY ORDER OR BY A BANK DRAFT DRAWN IN US CURRENCY. SORRY, NO CODs TO APOs OR OUTSIDE U.S.A. NO STAMPS PLEASE!**

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Shipping Method:

- UPS GROUND UPS NEXT DAY
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Product	Stock #	Quantity	Price	Shipping	TOTAL
<i>Customer Service: If you are confused about what equipment to order, call Sue or Chanel at 704-837-7081, 8:30-4:30</i>					
Monitoring Times magazine subscription		1 year*	\$23.95 (US)	-----	
Satellite Times magazine subscription		1 year**	\$19.95 (US)	-----	

* Two-year subscription to Monitoring Times, \$45.95; Three years, \$67.95. Foreign air mail, one year \$53.95

** Two-year subscription to Satellite Times, \$38; Three years, \$56. Foreign air mail, one year \$44.95

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Exp Date: _____

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TOTAL \$ _____

NC Residents add 6% Sales Tax \$ _____

TOTAL ENCLOSED \$ _____

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 Code B: \$6.00 UPS; \$9.25 2nd Day; \$3.00 Bookrate; \$8.50 Canadian UPS; \$7 Canadian APP
 If ordering more than one book, pay full shipping for first book ordered,
 \$1 shipping for each additional book.

Mail order to: Grove Enterprises

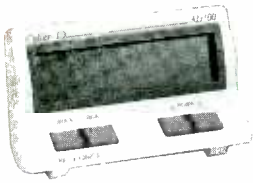
P.O. Box 98, 300 South Hwy. 64 West
 Brasstown, NC 28902

Phone: (800) 438-8155; (704) 837-9200



NEW!

Caller ID for Your Phone!



No longer will you be pestered by annoying calls. The Bel-Tronics* AD100 intercepts unwanted or unidentified calls and even displays the name and phone number of the caller on a giant LCD! And just look at these advanced features:

- **Call Reject:** You may key in up to 100 unwanted phone numbers; when these come in, the AD100's computerized voice will inform the caller politely that the call will not be accepted!
- **Block Buster:** If a caller has blocked his identity, the AD100 informs him that his call will not be accepted!
- **Call Screening:** Shows incoming name and phone number immediately for you to see.
- **Automatic Logging:** Memorizes and displays last 100 incoming calls for your reference.

Attractive off-white color; compact (5.3" x 3.4" x 2.1"). Requires 9-volt alkaline battery; low battery indicator on screen. Stand-up or wall-mount capable; telephone cord included. Before ordering, call your local telephone company to be sure you have caller ID in your area.



Order PHN 04

Only \$79⁹⁵

- \$6.50 UPS
- \$10 2nd Day Air
- \$9 US Priority Mail
- \$12 Canadian UPS
- \$12 Canadian APP

**Not affiliated with any former Bell System entity.*

ACCESSORY: BAT 4 9 Volt alkaline battery \$2.09

CHANNEL ORGANIZERS



CARRY A COMPLETE LIST of your 200 or 400 scanner channels, frequencies and agencies within this handy, shirt-pocket data management packet. These 3" x 4-1/2" professional forms are plastic protected, and bound with a durable ring for easy flip-access. Enter the data just as you have it programmed on your scanner for speedy reference. Extra replacement cards included.

Order CHT 8

400 channels,
20 frequencies per page

\$15⁹⁵

plus \$2.50 First Class Mail

Order CHT 7

200 channels,
20 frequencies per page

\$12⁹⁵

plus \$3 First Class Mail

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Non-Monitorable Cordless Phone



New CT-2 (900 MHz) spread-spectrum technology brings you unprecedented clarity, range and privacy. Reaches up to five times the distance of conventional 46/49 MHz cordless phones. Works as a wireless room monitor or hands-free intercom. Digital processing assures voice security while providing crisp, noise-free sound. Multi-channel autoscans select the best frequency for clearest communications. Recharge assures operation during power outages, and includes fixture to charge optional backup battery.

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ACCESSORY:

BAT 7 Battery Pack \$24.94



TRIFIELD ENVIRONMENTAL MONITOR

Concerned about electromagnetic radiation and its effect on your body? The TriField Environmental Monitor takes readings of home appliances, computers, microwave ovens, TV sets, electric blankets, fluorescent lights, power transformers, power lines, residential and industrial wiring, cellular and cordless telephones, VHF and UHF transceivers, and other sources of electromagnetic energy.

Operating for 10 or more hours from a standard 9-volt battery (supplied), the TriField meter will read up to 100 milligauss of magnetic field intensity from 60-100,000 Hz, up to 100 kilovolts per meter electric field intensity, and up to 1 milliwatt per square centimeter (as high as 3 GHz) radio/microwave power density.

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MFJ DUAL DIGITAL CLOCK

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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 and 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.

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.

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Only **\$24⁹⁵**

\$5 UPS
\$8 2nd Day Air
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ACCESSORIES:

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batteries \$.79
BAT 13 Rechargeable
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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.

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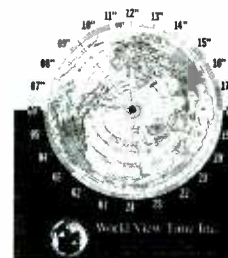
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THIS COLORFUL and accurate accessory reveals 24 hour time anywhere in the world at a glance. Polar projection features colored land masses with accurate 24 hour time zones on a glossy, durable, global map with metal axis hub. Select your time, and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

Order CHT 2

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INCLUDES FIRST
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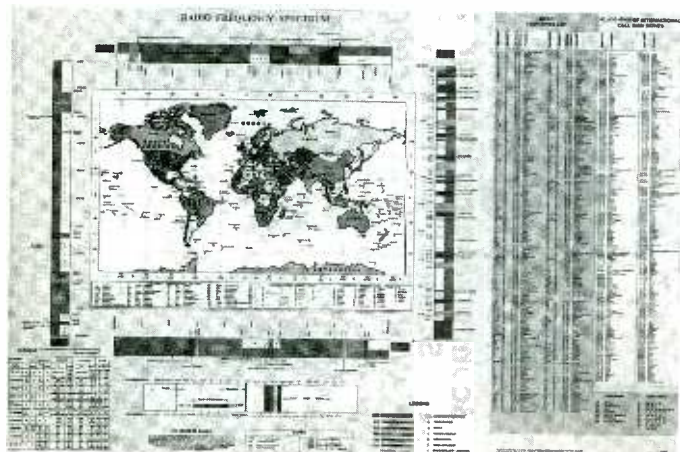
Full-Color Radio Wall Map is Chock Full of Info!

IDEAL FOR HAMS, shortwave listeners and scanner hobbyists alike! Shows worldwide callsign prefixes, basic spectrum allocations from 300 kHz-3 GHz, phonetic alphabet, ham bands by license class, Morse code symbols. Colorful, informative, accurate. Measures 37" x 25". Nationally advertised at \$19.95, Grove price only \$14.95!

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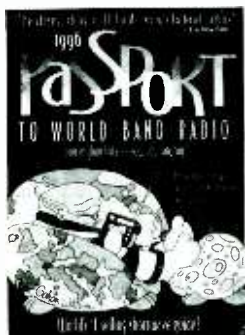
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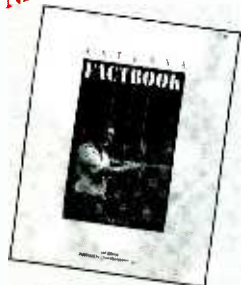
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By Bob Grove Is a tuner really necessary? How important is the choice of coax? Are all connectors the same? Which accessories are most valuable and which *don't* I want? When is a specific length of coax important? What is antenna resonance and is it really necessary? What determines an antenna's efficiency?

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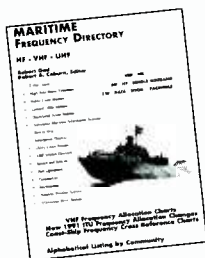


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By Frank Terranella Now expanded this all-new edition contains all the latest listening laws across the country, state by state (as applicable). Includes the new anti-cellular scanner amendment and thorough discussions, in simple language, of how these laws affect your listening hobby. A must for scanner enthusiasts! Use Shipping Code A.

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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! Use shipping code B.

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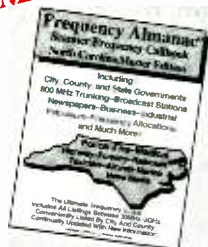
Over 100 agencies, from the Central Intelligence Agency to the National Security Agency are listed; scanner and shortwave as well.

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! Use shipping code B.

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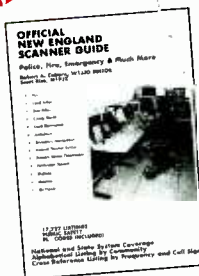
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This state-by-state scanner frequency directory takes over where other guides leave off. Not only police, fire and ambulance, but trunking, broadcasting, news agencies, business and industrial as well. Includes county, city, licensee name, callsign, frequency and mobile/base class. Comprehensive and accurate. (Note: order BOK 100 and indicate state).

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This new 1995/96 edition shows input/output frequencies, mapped locations and access tone codes for thousands of ham radio repeaters throughout the United States, Canada and Mexico, from 29-1300 MHz! Bandplans included. Exhaustive and accurate. A must for hams and scanner listeners alike. Use shipping code A.

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(1995-96 Edition)



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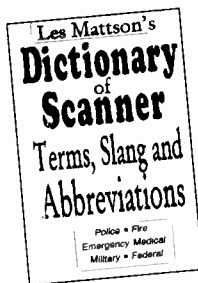
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By Les Mattson Become a scanning expert. Know how to understand police, fire, EMT, military, news reporters, aviation, maritime and federal radio operators and agents as they talk on the air. When the EMTs use jaws at an MVA and administer D5W, you'll know exactly what's going on! Use shipping code A.

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SCANNERS AND SECRET FREQUENCIES

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Order your copy today to start finding those frequencies where the original books left off! Use shipping code B.

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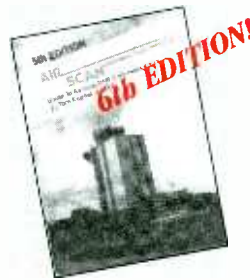


By Tom Kneitel This 8th edition continues the tradition of having the largest amount of federal frequency data ever compiled into a single volume.

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 government bureaus who would prefer not to have their communications frequencies published. Use shipping code B.

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AIR SCAN



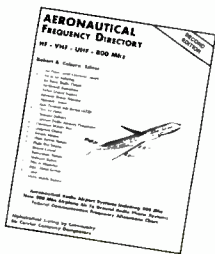
By Tom Kneitel This fifth edition of the exhaustive frequency directory for aircraft monitoring enthusiasts includes 2-30 MHz shortwave SSB as well as VHF-AM/FM and UHF-FM for all 50 states and Canada.

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

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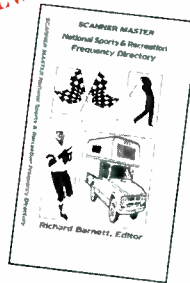
By Robert A. Coburn This second edition features 430 pages of listings of HF, VHF and UHF air-to-air, air-to-ground and ground utilities frequencies used by civilian, government and military agencies across the country. FAA, CAP, military, aeronautical telephone, flight support, airport communications—they're all here!

Arranged alphabetically by state, lists include service, name, location, call sign, frequency and use. Tables include allocations, voice designators and more. Use shipping code B.

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Richard Barnett, well-known scanner frequency expert, has just released this exhaustive directory of frequencies used by racing teams, sports events, parks and recreational areas, game and wildlife agencies, TV news teams, security forces, theme parks, colleges and museums. Common frequencies used by GMRS, itinerants, public safety, federal government, cordless phones, wireless mikes, railroads and marine are listed as well. A bargain for frequency hunters! Use shipping code A.

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Second Edition by Darryl Symington Over 130,000 frequencies plus a tactical call sign index highlight this updated military scanning guide. Hundreds of Air Force, Navy and Army bases as well as munitions and supply depots nationwide are listed alphabetically, covering fire/crash, security, medical, command posts, military police, tactical, maintenance and security communications. Use shipping code B.

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This 3rd edition contains over 800 pages of frequencies for federal, state, county and city public safety agencies all across the United States! Includes channelization plans and usages, maps, ten codes and unit designators. Also lists many amusement, sport, railway, aircraft and national park frequencies. Use shipping code A.

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Excellent reference chapters on seismic monitoring, voice security, and sources of information on all aspects of radio. Use shipping code B.

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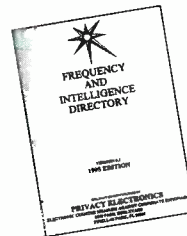
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NEW! SPECTRUM GUIDE

By Bennett Z. Kobb. Now you can tell what services are assigned to which VHF/UHF/microwave bands from 30 MHz through 300 GHz! This handy reference book is better than a wall chart; it provides historical and application insights so that listeners, engineers and product planners alike can anticipate what they are likely to find in the upper part of the radio spectrum. Includes footnote references to the U.S. Code of Federal Regulations.

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FREQUENCY AND INTELLIGENCE DIRECTORY



By Jay Harris. For south Florida scanner buffs, this book is a bonanza with its regionalized listings of business, public safety, cellular, cordless, tourist attractions, aircraft, press, marine, broadcasting, medical, railroad, sports, and transportation frequencies. And for nationwide federal/military VHF/UHF monitors, this may well be the most accurate frequency ever published. Use shipping code B.

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UNDERGROUND FREQUENCY GUIDE

By Don Schimmel. Noted utilities author Don Schimmel has just released this excellent collection of unusual transmissions and frequencies throughout the shortwave spectrum. Spies, smugglers, pirates, diplomatic, federal links and more are discussed in detail. Use shipping code B.

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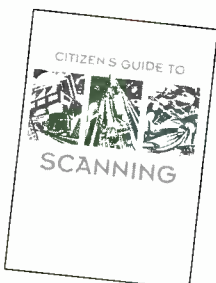
THE ULTIMATE SCANNER



By Bill Cheek. This indispensable bench manual explains technology that has been proved by thousands of readers of *The World Scanner Report*. Includes memory enhancements, up to 25,600 channels, cellular restoration, simple ways to automate arduous scanning tasks, signal discrimination, computer interfaces, plus generic and specific information on improving scanner performance. You may already own the better part of a "next generation scanner!"

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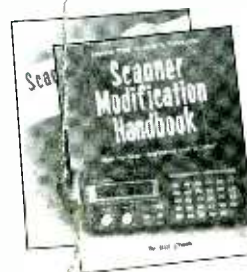
CITIZEN'S GUIDE TO SCANNING



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 radio horizons. Frequency lists for finding public safety, aircraft, boats, federal and military agencies, business communications, railroads, telephones, sports and entertainment, spacecraft, emergency/disaster communications and more! Use shipping code B.

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SCANNER MODIFICATION HANDBOOK VOL. 1 & 2



By Bill Cheek. Although concentrating on mods for Realistic® scanners, excellent hints are included for scanners in general. Cellular telephone frequency plans, adding S meters, squelch improvements, voltage protection, cellular restoration, increasing memory capacity, portable power supplies, choosing antennas and coax, and more!

Vol. 2 covers the PRO-2006, PRO-34, PRO-2022, Uniden BC200/205XLT, BC100XLT, and BC760/950XLT. Many of the techniques may be applied to other scanners as well. Use shipping code B.

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TRAVELER'S GUIDE TO WORLD RADIO



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 cities around the globe!

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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 a veteran listener.

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SHORTWAVE LISTENING GUIDEBOOK



Second Edition by Harry Helms
Excellent information for the beginner and experienced listener alike. Receivers, antennas and accessories are discussed in considerable detail, and in easy-to-read language.

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1995 WORLD RADIO TV HANDBOOK



The "must have" resource for radio buffs and broadcasting professionals. This annual publication shows what's on the airwaves anywhere in the world at any time. It features country-by-country listings of long-, medium-, and shortwave stations by frequency, time and language; an address book of worldwide TV stations; maps of principal transmitter sites; an hour-by-hour guide to broadcasts in English; a survey of high-frequency broadcasting reception conditions for the year—and much more! Use shipping code B.

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By Bob Grove Edited by MT's own Larry Van Horn, the 8th edition Shortwave Directory is the consummate DXer's bible for the first 30 MHz of radio spectrum.

Completely revised and updated, the 256 page, loose-leaf, three-hole punched edition features every HF listening target. Worldwide military organizations are featured and include all new U.S. and foreign listings. Now includes RTTY, FAX and other digital listings, coastal stations, non-directional beacons, and much more! A matching, professional, 2" slant D-ring binder is available for only \$5! Use shipping code B.

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(With Binder \$24⁹⁵)

THE ZENITH TRANS-OCEANIC ... THE ROYALTY OF RADIOS

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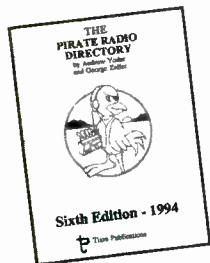


By John Bryant and Harold Cones No manufacturer has drawn more recent attention from the vintage radio collector than Zenith, maker of the legend Trans-Oceanic series. Flea markets are being combed for this popular collectible. This lavishly illustrated, glossy, historical essay is the most complete work ever done on the fabled Zenith. Fascinating to read, beautiful to admire. Ideal as a gift for the collector and the radio hobbyist. Use shipping code B.

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1994 PIRATE RADIO DIRECTORY



By George Zeller and Andrew Yoder
Recognized as authorities on unlicensed broadcasters, George Zeller and Andrew Yoder have updated this popular directory of pirate broadcasters — dozens and dozens of stations from all over North America. Use shipping code B.

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WORLD PRESS SERVICES FREQUENCIES



By Thomas Harrington Previous editions of this popular news frequency directory sold out quickly. This edition is cross-referenced by time, frequency and location, and lists approximately 400 frequencies and dozens of agencies which may be heard on RTTY and other modes as well throughout the shortwave spectrum.

Additional chapters list abbreviations and explain about equipment, accessories and tuning tips. This book is a must if you have a shortwave digital demodulator. Use shipping code A.

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2nd Edition!



By Robert E. Evans The most complete and up-to-date aeronautical frequency guide in publication! Over 2,350 frequencies in the commercial and military air services, including voice and digital modes in the HF, VHF and UHF ranges.

RTTY, SSB, ACARS and VOLMET services worldwide along with glossary of terms, source list, extensive codes, designators, waypoint data, and sector maps. Explanatory text reveals how to decipher the contents of messages. The ultimate aeronautical monitor's reference. Use shipping code A.

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CONFIDENTIAL FREQUENCY LIST



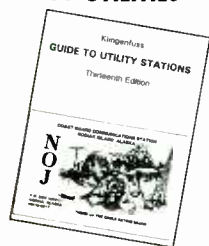
This 9th edition is the latest update to an excellent reference on 4-28 MHz communications.

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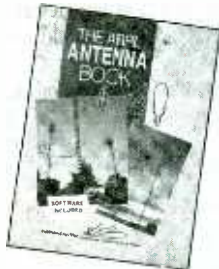
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Why pay over \$400 for separate audio components for your listening post—such as a speaker, adjustable notch/peak filter, audio amplifier, bass and treble equalizers, audio squelch, recorder activator and noise limiter—when you can have them all together in one attractively-styled, solid oak cabinet! This quality accessory is guaranteed to improve reception on any receiver, scanner or transceiver.

Peak desired signals while reducing or even eliminating interference. Ideal for voice, music, CW or data. Equipped with stereo/mono headphone jack for privacy. Heavy-duty AC power supply is included at no extra charge!

The cabinet is hand-crafted in the mountains of North Carolina. Textured metal front panel resists fingerprints.

SPECIFICATIONS:

Power Required: 12 to 14 VDC @500 mA; 120 VAC adaptor included

Audio Power Output: 2.5 W @ 10% THD (8 ohms)

Audio Selectivity: Peak/notch 30 dB or greater, 0.3-6 kHz

Squelch Hold: 0-10 seconds

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Tape Activator: Audio activated (VOX), 3 second hold

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September, 1996

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Peak desired signals while reducing or even eliminating interference. Ideal for voice, music, CW or data. Equipped with stereo-mono headphone jack for privacy. Heavy-duty AC power supply is included at no extra charge!

The cabinet is hand-crafted in the mountains of North Carolina. Textured metal front panel resists fingerprints.

Originally produced as an integral section of *Monitoring Times* magazine, September 1996 issue, this 12-page Grove product section is distributed separately on request, along with other sections featuring scanners, satellite reception equipment, books and software. The various sections will appear on a rotating basis as part of *Monitoring Times*.

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Presenting the world's most popular shortwave radio!

SONY ICF-2010



This is a full-featured radio for the serious shortwave listener—with a reputation of distinction among the "powerful portables." Synchronous detection allows interference-free reception on many stations difficult to hear on other radios. Narrow/wide selectivity switching; clock/timer allows up to 4 automatic on/off cycles per day for frequencies and times of your choice; 10-step LED signal strength meter, audio tone selection for speech or music; and 32 station direct-access keyboard combine to make this Sony product a remarkable value for beginners or seasoned SWLs.

Frequency range includes 150 kHz-30MHz, 76-108, and 116-136 MHz. See pp. 6-7 for more detailed specifications. Requires 3D/2AA cell batteries.

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ANT 3	Grove Mini-Skywire	\$29.95
ANT 21	Select-A-Tenna	\$65.95
ANT 32	Kiwa Pocket Loop Antenna	\$119.95
WP04	RDI WHITE PAPER®	\$5.95
BAT 1	AA cell alkaline bat.	\$.79ea
BAT 2	D cell alkaline bat.	\$1.19ea
SPK 13	Grove Sound Enhancer	\$199.95
TUN 4A	Grove TUN4A MinitunerPlus	\$99.95

SONY ICF-SW100

Incredible! Imagine compressing the popular functions of the mighty Sony ICF2010 into a shirt-pocket radio! This tiny titan offers continuous 150 kHz-30 MHz and 76-108 MHz FM frequency ranges, Sony's famous synchronous detection, USB/LSB reception, 100 Hz tuning steps, 50 memory presets, 24 hour clock/timer, world time computer, station name display, illuminated LCD, and much, much more. See specs. pp 6-7.

AC adaptor, stereo earphones, active antenna, soft carrying case, station directory, and full instruction manual included at no extra charge! Two AA batteries required.

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ANT 21	Select-A-Tenna	\$65.95
BAT 1	AA alkaline batteries	\$.79 ea
SPK 11	Naval HTS-3 Amplified Spkr.	\$29.95
SPK 13	Grove Sound Enhancer	\$199.95
TUN 4A	Grove TUN4A MinitunerPlus	\$99.95

**Powerful
Shirt-pocket
Shortwave Radio**



SONY ICF-SW77

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ICOM R-8500

New!
Expected shipment August 1996



Introducing the incredible 100 kHz - 1,999.99 MHz Receiver of Your Dreams. Call to reserve yours now!

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This all-new receiver offers features previously found only on the premium R-9000—which sells to the government for \$7,508—but the R-8500 will retail for under

\$2,000. High stability crystal oscillators combine with automatic frequency control circuitry for outstanding stability. Multiple tuning speeds optimize signal hunting. Alphanumeric display aids in identifying memorized frequencies. Automatic memorizing of search-discovered active frequencies, skipping of unwanted channels, three antenna connectors for optimal choices for frequency ranges, even voice scan to ignore noisy channels, and even optional voice synthesizer and remote control—an incredible array of advanced features!

Call today to reserve your premium ICOM R-8500. See pp. 6-7 for detailed specifications (also available on the World Wide Web at www.grove.net). ICOM expects to begin delivery of units in August.

HIGH SENSITIVITY PLUS SYNCHRONOUS DETECTION!

SONY ICF-SW7600G



It was inevitable. The early compact models have been replaced by a tiny marvel with synchronous AM detection, SSB, and even FM stereo coverage! Measuring just over 7 inches wide and weighing 22 ounces, the SW7600G 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, pushbutton tuning, tone control, external antenna jack, clock timer with sleep function, tilt bracket, keyboard lock, direct-entry keypad and 22 scannable memory channels keynote the high-tech features of this potent portable! See pp. 6-7 for more details. Requires 4 AA cell batteries.

ORDER RCV 11 **\$189⁹⁵** SHIPPING \$9 UPS \$14 US Priority Mail \$16 Canadian UPS \$15.50 Canadian APP

ACCESSORIES

ANT 22	Select-A-Tenna	\$65.95
ANT 2	Grove Skywire Antenna	\$39.95
ANT 32	Kiwa Pocket Loop Antenna	\$119.95
BAT 1	AA alkaline bat.	\$.79
PWR 9	AC adaptor	\$19.95
SPK 11	Naval HTS speaker	\$29.95
TUN 4A	Grove TUN4A MinitunerPlus	\$99.95

DRAKE R8-A

Communications Receiver



The successor to the famous R8 is here—why pay more when the best costs less?

The Drake R8 has been internationally respected for its excellent audio, frequency agility (100 kHz-30 MHz, expandable to 33-55 and 108-174 MHz with optional converter), friendly control panel, synchronous detection, noise blanker, passband tuning, preamp/attenuator selection, universal power supply, dual clock timers, giant display, five filter bandwidths, and six receiving modes. Now Drake has added over a dozen important improvements to their legendary R8 receiver (see bullets at right). See specifications on pp. 6-7.

- Single-keypress mode and bandwidth selection
- Alphanumeric display of station identification
- Improved overload immunity
- 440 memory records
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- Enhanced tone control
- Tighter frequency stability
- Strong metal tilt bail
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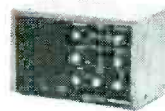
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ACC 43	VHF converter	\$209.95 + \$20 install.
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ANT2	Grove Skywire antenna	\$39.95
ANT 24	Dymek active antenna	\$179.95
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SPK 2	External speaker	\$48.95 plus \$6 UPS
SPK 13	Grove Sound Enhancer	\$199.95

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SW8

A GREAT WORLD BAND RECEIVER FROM FROM R.L. DRAKE CO.

Not only continuous coverage 500 kHz-30 MHz, but 87-108 MHz FM broadcast (stereo at headphone jack) and 116-136 MHz aircraft as well! Standard and synchronous detection AM, upper and lower sideband on medium and shortwave, direct frequency entry keypad, 0.5 microvolt sensitivity, dual 6/4 kHz selectivity on AM, sharp 2.3 kHz selectivity on SSB. Up-conversion eliminates images, while +10 dB intercept point suppresses intermod. Also, now includes an amplified whip antenna on all frequencies. See specifications on pp. 6-7.



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ACCESSORIES

ANT 2	Grove Skywire antenna	\$39.95
ANT 24	Dymek active antenna	\$179.95
SPK 13	Grove Sound Enhancer	\$199.95
TUN 4A	Grove TUN4A MinitunerPlus	\$99.95

Superb SW Portables from GRUNDIG

Yacht Boy 400

It's always a pleasure to offer a really good, low-cost product—and that's just what Grundig's YB-400 is. With AM/FM stereo and continuous shortwave frequency coverage from 1.7-30 MHz in 5 or 1 kHz tuning increments, SSB, infinite fine tuning, FM broadcast reception, and battery or AC power convenience, the 400 also offers 40 scannable memories and simple pushbutton tuning.

A giant, backlit LCD shows frequency, dual-zone 24 hour clock, battery condition, even a bargraph for received signal strength! Dual bandwidth selectivity allows sharp rejection of adjacent frequency interference, while high sensitivity assures weak signal reception, even with the convenient telescoping whip. Requires 6 AA cell batteries.

This compact marvel is ideal for dependable backup during power outages and as a suitcase companion during that next trip. See specifications on pp. 6-7.



Yacht Boy 400

"The best compact shortwave portable we have tested...the best sounding audio we have come across in a compact portable."

(Larry Magne, Monitoring Times, August 1993)



SATELLIT 700

See specifications on pp. 6-7.

SATELLIT 700

Grundig's decades of quality radio manufacturing culminate in the Satellit 700, a high performance portable at an affordable price! Separate bass and treble controls coupled with the large internal speaker produce the best audio we've heard in any contemporary shortwave portable!

Continuous frequency coverage 160-353 kHz longwave, 528-30,000 kHz medium and shortwave, 87.5-108 MHz FM broadcast. USB/LSB selection on utilities, with 100 Hz tuning steps and infinite-resolution RIT (clarifier) for fine tuning. Straightforward keyboard entry makes frequency selection a snap!

Wide and narrow filters provide excellent audio quality and adjacent channel interference rejection, while synchronous detection with automatic USB/LSB tracking improves single-signal response. 120 factory preset frequencies display station names on the giant LCD panel. Requires 4 D cell batteries. See specifications on pp. 6-7.

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ANT 3	Grove Mini-Skywire	\$29.95
ANT 21	Select-A-Tenna	\$65.95
ANT 32	Kiwa Pocket Loop Antenna	\$119.95
BAT 1	AA alkaline batteries (Y.B. 400)	\$.79ea
BAT 2	D cell alkaline batt. (Sat. 700)	\$1.19ea
PWR 8	AC adaptor (Y.B. 400)	\$7.95
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A great low cost radio featuring 150 kHz-30 MHz continuous tuning, 87.5-108 MHz FM reception (stereo earphones included!), dual AM selectivity, direct keyboard frequency entry, continuous tuning dial, scan and search modes, 45 memory channels, 24 hour dual-zone clock/timer, and distance/local sensitivity selection. See specifications on pp. 6-7.



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- ANT 32 Kiwa Pocket Loop Antenna \$119.95
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- (2 required for memory; 4 more for portable operation)
- PWR 10 AC adaptor \$9.95
- TUN 4A Grove TUN4A MinitunerPlus \$99.95

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ATS909 Multiband Radio

A great new challenger among full-featured SW portables!

This compact, new PLL-synthesized, portable receiver sets a new standard for Sangean. Features include continuous coverage longwave, mediumwave and shortwave reception plus FM (stereo with earphones), alphanumeric display for station identification, 306 channel memory, USB/LSB mode with 40 Hz step tuning, 29 memory banks with automatic search, world time for 42 cities, three independent timers, signal strength indicator, wide/narrow filter selection, RF gain and tone control. See specifications on pp. 6-7.



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ACCESSORIES

- ANT 3 Grove Mini Skywire Antenna \$29.95
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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! See detailed specifications on pp. 6-7. Requires 4 D cells.

Receivers are the same, excluding the tape recorder specifications.

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- BAT 2 D cell alkaline bat. \$1.19 ea
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GE Superadio III

ORDER RCV 5
\$59⁹⁵



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The GE Superadio series has been a popular receiver for AM/FM DXers for years. The smooth vernier dial features tuned RF on both AM and FM, while a ceramic IF filter and 7 tuned IF circuits provide outstanding selectivity. The two-way speaker system with separate bass, treble and loudness controls assures solid, clean sound, and the drift-cancelling, automatic frequency control (AFC) circuit can be switched out for weak-signal hunting. The internal AM loop and FM whip antennas provide convenient portability, while external antenna jacks accommodate your long-distance antennas.

Expertly designed and handsomely crafted, the GE Superadio III is powered by 120 VAC or six internal D cells (optional) with over 400 hours battery life!

ACCESSORIES

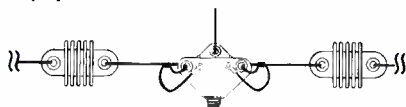
- ANT 3 Grove Mini-Skywire \$29.95
- ANT 21 Select-A-Tenna \$65.95
- ANT 31 Kiwa Loop Antenna \$349.95
- ANT 32 Kiwa Pocket Loop Antenna \$119.95
- BAT 1 AA cell alkaline bat. \$.79ea
- BAT 2 D cell alkaline bat. \$1.19ea
- SPK 13 Grove Sound Enhancer \$199.95
- TUN 4A Grove TUN4A MinitunerPlus \$99.95

FROM ALPHA DELTA:
Build-your-own
Antenna Kit



New!

Design your own dipole for optimum shortwave, medium wave, or longwave reception, and use this famous insulator/connector hardware for high performance, long life. Includes two super-strength end insulators, molded center assembly with standard SO-239 connector, and replaceable gas-discharge lightning arrester. Full instructions and antenna design procedures included.



ORDER ANT 12 SHIPPING
\$29⁹⁵ \$6 UPS
\$5.50 US Priority Mail
\$7 Canadian APP
\$10 Canadian UPS

Back by popular demand—and improved!
Our indoor/outdoor shortwave antenna system!

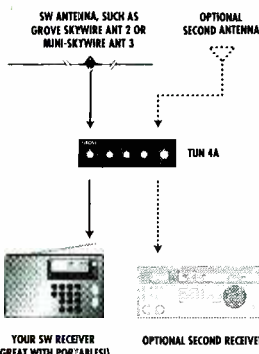


GROVE TUN-4A
MINITUNER PLUS



Here's the shortwave listener's dream—a high performance, amplified, frequency-tunable antenna system for general coverage shortwave and medium wave monitoring. For indoor use, connect a short length of wire or the popular Grove ANT-6 Hidden Antenna. Connected to an outdoor antenna like the Grove ANT-2 Skywire or ANT-3 Mini Skywire, the TUN-4A MiniTuner Plus provides knockout signal strength and allows frequency preselection as well.

Continuous 400 kHz-30 MHz coverage, -20 to +20 dB gain/attenuation control, dual antenna switch, dual receiver output, amplified/unamplified preselection, band switch, fine tuning, and built-in lightning protection. Full instructions included. Requires 12VDC power (sold separately).



ORDER TUN 4A SHIPPING
\$99⁹⁵ \$6.50 UPS
\$5.50 US Priority Mail
\$7 Canadian APP
\$10 Canadian UPS

"I now have your TUN-4A in permanent line serving my Lowe HF150 and Drake SW8 and it out-performs any of my other "premium" preselectors. Ounce for ounce and inch for inch, the TUN-4A is the best bargain for signal improvement and receiver front end extension that I have encountered..."

—John L. Wagner
SWL'er

ACCESSORIES

ADP 6	UHF female to male 1/4" Mini-Plug	\$5.95
ADP 11	UHF female to RCA male	\$5.95
ADP 27	Banana Plug	\$2.00
ADPK15	3foot PL259 Interconnect Cable	\$2.50
ANT2	Skywire	\$39.95
ANT3	Mini Skywire	\$29.95
ANT25	Random Wire Antenna	\$6.95
PWR 19	12VDC 200 MA Power Supply	\$7.95

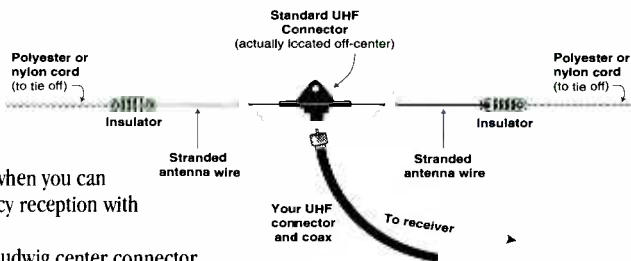
The Original Grove SKYWIRE Shortwave Antenna

High performance and low 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 Budwig center connector ready for your PL-259 (UHF male) equipped coaxial cable (50 or 75 ohm, see page 8); includes two professional porcelain end insulators and complete instructions.

ATTENTION HOME EXPERIMENTERS: Build your own SW dipole! Order ACC101 (Budwig center connector) for only \$9.95 and add your own wire to construct a SW dipole!

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



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

ORDER ANT 2
\$39⁹⁵

SHIPPING
\$6 UPS
\$5.50 US Priority Mail
\$7 Canadian APP
\$10 Canadian UPS



Limited Space?
Try Grove's new
Mini-Skywire

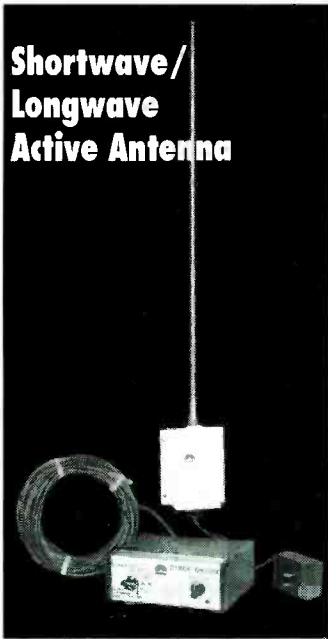


Similar to above, but 40-foot, dual-dipole design allows full 3-30 MHz frequency coverage and may be used in several configurations. Ready for P-259 coax connector. See cable and adaptors on p. 8.

ORDER ANT 3 SHIPPING
\$29⁹⁵ \$6 UPS
\$5.50 US Priority Mail
\$7 Canadian APP
\$10 Canadian UPS

STONER-DYMEK

Grove's Shortwave Receiver Specification Guide



Shortwave/
Longwave
Active Antenna

If a large, outside dipole is out of the question, choose the Dymek DA-100E, the best 50 kHz-30 MHz active receiving antenna available! High sensitivity, low noise, wide dynamic range, step-selectable attenuator, static-discharge-protected, weatherproof remote amplifier/whip assembly.

Includes AC power supply, indoor control unit, 50 feet RG-58/U coax, remote amplifier, 4' stainless-steel whip, receiver-interconnect cable, and full instructions.

ORDER ANT 24

\$179⁹⁵

SHIPPING

\$8 UPS
\$8 US Priority Mail
\$10.50 Canadian APP
\$15 Canadian UPS

Receiver	Drake R8A	Drake SW8	Grundig Sat. 700	Grundig Yl. By. 400	Sangean ATS-80
Grove Order #	RCV 3	RCV 19	RCV 23	RCV 22	RCV 13
Grove Price	\$1059.95	\$679.95	\$499.95	\$199.95	\$129.95
Frequency Range	100kHz-30MHz (35-55/108-174MHz with optional converter)	500kHz-30 MHz, 87-108, 118-137MHz	1.6-30 MHz, 87.5-108 MHz	160kHz-30MHz 87.5-108MHz	150kHz-30 MHz, 87.5-108 MHz
Keypad Entry?	Yes, plus tuning dial	Yes, plus tuning dial	Yes	Yes	Yes
Tuning Steps	10/100Hz 1 kHz	50 kHz FM 100 Hz AM	1 kHz AM/100Hz SSB 25 kHz FM	1/5 kHz	50/100 kHz FM, 10/9/5/1 kHz AM
RIT/Fine Tuning	No	No	Yes	Yes	No
Display	Backlit LCD	Backlit LCD	Backlit LCD	Backlit LCD	LCD
Dimmer	Yes	On/Off	On/Off	On/Off	No
Recommended Use	Int. Broadcast/Utilities	AM/SSB, aircraft/FM	Broadcast receipt	Casual SW and FM	Casual Broadcast
Receiving Modes	AM, NFM, USB, LSB, CW, RTTY	AM, AM synch., WFM, LSB, USB	AM, AM synch., LSB, USB, WFM	AM, LSB, FM, CW, USB	AM, FM
Memory	440 channels	70 channels	120 preset/512 prgmbl.	40 channels	45 channels
Scan	Yes	Yes	Yes	Yes	Yes
Banks	10	7	64	No	No
Search	No	No	Yes	Yes	Yes
Delay	Yes	5 sec. per step	1 second	Yes	Yes
Squelch	Yes	No	No	No	No
Clock	Dual time zone	Dual mode	12/24 hr./sleep/progr. rec.	12/24 hr./sleep	24 hour UTC/local alarm/timer
Audio Output Power	2.5 W @ 4 ohms	2 W @ 4 ohms	3 W	700 mW	440 mW @ 10 @ 16
Record Audio Output	300 mV into 4.7k ohms	300 mV into 4.7k ohms	stereo and mono	No	No
Recorder Activator	No	No	Yes	No	No
Signal Strength Ind.	Analog S-meter	Analog S-meter	LCD bargraph	LCD bargraph	No
Computer Interface	RS232C	No	No	No	No
Conversion Scheme	Double-up	Double up	Double up	Double up	Double conversion
Sensitivity	0.5 uV 1.5-30 MHz	0.5 uV or better (SSB)			
Selectable Preamp.	Yes	No	No	No	No
Selectable Atten.	Yes	20 dB	Yes	Yes	Yes
IF Selectivity	(-6/-60 dB): 6/4/2.3/1.8 kHz; 500 Hz	(-6/-50 dB): AM Narrow 4.6 kHz SSB 2.3/4.5 kHz	3.8/6.8 kHz		Wide/narrow AM
Image Rejection	80 dB or better 1.5-30 MHz	70 dB or better			
Selectable AGC	Off/slow/fast	Yes	w/ RF gain control	No	No
Dynamic Range	100 dB @ 20 kHz spacing	95 dB or better			
Passband Tuning	+/-3 kHz	No	No	No	No
Noise Blanker/Limiter	Dual	No	No	No	No
Adjustable Notch Filter	500-5000 Hz, 40 dB	No	No	No	No
Tone Control	Yes	Yes	Sep bass/treble	Yes	Yes
Antenna Connector	Dual, switched PL 259	SO-239 (UHF), Push terminals, integral whip	PAL (supplied)	1/8" mini whip	1/8" miniplug
Dimensions	13.5"W/5.25"H/13"D	11.5"W/5.25"H/13"D	12"W/7"H/2.5"D	7.75"H/4.62"W/1.75"D	7.5"W/5"H/1.5"D
Weight	13 lbs.	10 lbs.	4 lbs., 2 oz.	1 lb. 5 oz.	1 lb. 5 oz.
Power Requirement(s)	100/120/200/2450VAC; 11/16VDC @ 2A	6-9VDC/6 cells	120/240VAC/4D cells	6AA cells/9VDC	6 VDC @ 300 mA or 6 AA cells
Warranty	One year	One year	One year	One year	One year
Accessories Incl.	None	Tele whip/AC adaptor	Coax conn./AC adpt.	Reel ant./cable/ earphone/SW Guide/ 6AA batteries	Soft pouch/stereo earphones/external antenna adaptor

Top-Rated, High Performance **KIWA** Loop Antennas

KIWA Medium Wave Air-Core Loop Antenna

Are you looking for an antenna that will improve medium wave reception on your communications receiver? Then look no more—this unique 12-inch, circular air-core antenna provides improved weak signal reception of medium wave broadcast signals and its electronically balanced circuitry minimizes pickup of electrical interference. Some of the other high performance features of the Kiwa loop include:

- Full 530-1705 kHz MW frequency coverage
- May be precisely rotated and tilted for maximum signal pickup and nulling of interfering stations.
- Equipped with local/DX pre-amp switch, variable output attenuator, and dual output amplifiers.
- May be powered by a low-noise AC supply, included, or by battery.
- Stands 17 inches (43 cm) high and weighs 16 pounds (7.25 kg).

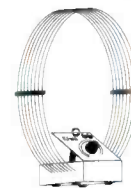
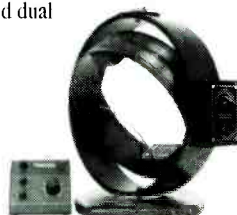
ORDER ANT 31

\$349⁹⁵

SHIPPING

\$17 UPS
\$29 US Priority Mail
\$26 Canadian APP
\$35.50 Canadian APP

Winner of the 93/
94 World Radio
Television
Handbook Award!



The New KIWA
Pocket-Loop
Antenna

This highly efficient signal grabber is 12" across when deployed, yet collapses to a tiny pocket size for transport! Designed to receive and amplify signals from 530 kHz through 20 MHz in four bands, no antenna jack on your portable radio is needed; it space-couples to your radio's existing whip and internal ferrite rod!

ORDER ANT 32

\$119⁹⁵

SHIPPING

\$15 UPS
\$25 US Priority Mail
\$30 Canadian APP
\$23 Canadian UPS

Prices and other Specifications Subject to Change without Notice

Sangean ATS-818CS	Sangean ATS-909	Sony ICF-SW77	Sony ICF-SW100	Sony ICF-SW2010	Sony ICF-SW7600G
RCV 9 \$219.95	RCV 8 \$298.95	RCV 10 \$459.95	RCV 24 \$359.95	RCV 2 \$349.95	RCV 11 \$189.95
150kHz-30MHz 87.5-108MHz	150kHz-30MHz 87.5-108 MHz	150kHz-29.99MHz 87.5- 108 MHz	150kHz-30MHz 76-108 MHz	150kHz-30MHz 76-108, 116-136MHz	150kHz-29.995MHz, 87.6-108MHz
Yes	Yes	Yes, plus tuning dial	Yes, plus tuning dial	Yes, plus tuning dial	Yes
1kHz	40 Hz USB/LSB	50Hz/1kHz	100Hz/1.5kHz; 9/10kHz MW, 50kHz FM	100Hz	1kHz
Backlit LCD	Backlit LCD	Backlit LCD	Backlit LCD	Backlit LCD	Backlit LCD
Yes	Yes	On/off	On/Off	On/off	No
Casual SW	Casual SW and Utilities	Casual SW	Casual SW	SW /Air/Util./FM	Casual SW
AM, LSB WFM, USB	AM, FM broadcast, USB, LSB	AM, AM synch, LSB, WFM, USB	AM, AM synch, USB, LSB, CW, WFM	AM, USB, LSB, WFM, synch. det.	AM, WFM, USB, LSB, synch. det.
45 presets	307 channels	162 channels	50 channels	32 channels	22 channels
Yes	Yes	Yes	Yes	Yes	Yes
No	29	20	10	No	No
Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	No
No	No	No	No	No	No
ual time with record	3 separate timers with alarm	12/24 hr.	24 hr./sleep	12/24 hr./alarm/sleep	w/ timer and sleep
800 mW		400 mW	250 mW	380 mW	
No	Yes	138 mV	245 mV	775 mV @ 1000 ohms	Yes
ternal prog. cassette	No	Yes	No	No	No
Yes	LCD bargraph	LCD bargraph	No	LED bargraph	Single 'tune' LED
No	No	No	No	No	No
Double up	Double conversion	Double up	Double up	Double up	Double up
No	No	No	No	No	No
RF gain control	RF gain control	Yes	Yes	Yes	Yes
Wide/narrow switch 6.5 kHz AM	Wide/narrow AM			(-6/-50 dB) Wide 9/18 kHz Narrow 4/18 kHz	
No	No	No	No	No	No
No	No	No	No	No	No
No	No	No	No	No	No
Yes	Yes	Sep. bass/treble	Yes	Yes	Music/news switch
Yes	1/8" miniplug	1/8" miniplug	1/8" miniplug	1/8" miniplug	1/8" miniplug
1.25"W/7.37"H/2.75"D	8.5"W/5.5"H/1.5"D	10.87"W/6.87"H/1.87"D	4.37"W/2.87"H/0.93"D	11.37"W/6.25"H/2.16D	7.27"W/4.72"H/1.25"D
3 lbs. 13 oz	1 lb 12 oz	3.25 lbs.	8 oz.	3.75 lbs.	1.25 lbs.
120VAC/mnt. cells 4D cells	4AA batteries or optional AC adaptor. 6 VDC	6VDC or 4C cells	120VAC or 2AA cells	120VAC or 3D/2AA cells	120VAC or 4AA cells
One year	One Year	One year	One year	One year	One year
AC adapt./ ext. ant. adaptor/ SW Guide	Manual, carrying pouch, earphones, external antenna connection.	Stereo earphones/ AC adapt./tele. ant/ SW Guide	Stereo earphones/AC adapt./tele. ant/soft pouch/SW Guide	Earphone/ AC adapt./wire ant./tele. ant/strap/ext. ant adapt./SW Gd.	Carrying case/ Reel Ant.

Select-A-Tenna



"I was able to pull in stations that were absolutely inaudible without it."

—Stephen J. Price
Monitoring Times,
April 1995

Apartment dwellers and mobile home owners, boost your 530-1700 kHz AM broadcast reception up to 30 dB with the famous Select-A-Tenna! Improves adjacent channel rejection, reduces signal fading. Tuning knob selects your listening frequency.

No batteries or power required; simply set the Select-A-Tenna next to your radio, peak the tuning knob, and listen to AM broadcast signals soar out of the background noise!

This 11", high-Q loop antenna directs its captive signals to your radio's internal ferrite loop without any physical connection! If your receiver requires an external antenna, a convenient 3.5 mm (1/8") jack and plug are provided. Connect an outside wire to the Select-A-Tenna and receive medium wave signals like you've never heard before!

ORDER ANT 21
\$65.95

SHIPPING
\$7 UPS
\$8.50 US Priority Mail
\$11.50 Canadian APP
\$15 Canadian UPS

Universal Reel Antenna for Shortwave Portables



Whether you have a Sony, Sangean, Realistic®, Grundig, or other whip-portable shortwave radio, this 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
\$14.95

SHIPPING
\$6 UPS
\$4.50 US Priority Mail
\$6.50 Canadian APP
\$10 Canadian UPS

JPS Noise Canceller/Active Antenna

Enjoy Crystal Clear Sound!

Imagine, just connect this simple device between your receiving antenna and shortwave receiver or transceiver, and null out locally-generated interference of virtually any kind! Computer hash, line noise, TV synch buzz—they all go away when the ANC-4 is adjusted to your receiver to receive 100 kHz-80 MHz!

Use the attachable whip (provided) or, even better, a second external antenna to sample local noise. A simple adjustment from the front panel reduces or even eliminates virtually any electrical noise interference you are likely to encounter! The new ANC-4 can even be used as a frequency-selective active antenna/signal booster! Whip, random wire antenna, DC plug and full instructions provided. Requires 12 VDC @ 300 mA power.

ACCESSORIES
PWR 13 Universal power supply \$9.95



ORDER ACC 21
\$174.95

SHIPPING
\$6.50 UPS
\$5.50 US Priority Mail
\$7 Canadian APP
\$10 Canadian UPS

Order Line: 1-800-438-8155; Product Support Info.: (704) 837-7081

The Stealthy 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 GRE PRE1 for considerably increased 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.

ORDER ANT 6

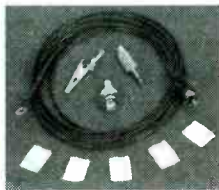
\$19⁹⁵

SHIPPING
\$6.75 UPS
\$4.50 US Priority Mail
\$6.50 Canadian APP
\$10 Canadian UPS



The Grove No-Tenna™

Turn Your Car
into a Giant
All-Band
Antenna!



Imagine: strong, clear, continuous frequency coverage of shortwave and scanner signals without having to mount an antenna anywhere on your car! No invitation to theft, suspicion, breakage, low overhangs, hole drilling, scraped paint, or cables through doors or windows. **No visible antenna whatsoever!** The 8" cable mounts in seconds, using your entire car body as a giant, 1-1000 MHz, all-band antenna!

Ideal for city dwellers, travelers, reporters, investigators—anyone who doesn't want a visible receiving antenna on his vehicle (not for transmitting).

Full instructions and universal connectors for RCA, BNC and 1/8" (3.5mm) miniplug included. If you own an ICOM R-100 be sure to specify a PL-259 adaptor.

ORDER ANT 20

\$19⁹⁵

SHIPPING
\$5 UPS
\$5 US Priority Mail
\$6 Canadian APP
\$6.50 Canadian UPS

M-400 Universal Decoder

Access an entire dimension of coded communications signals.



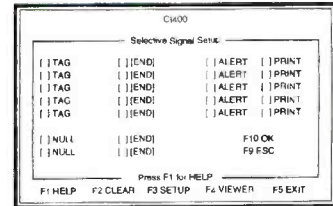
ORDER DEM 9
\$399⁹⁵

SHIPPING
\$9 UPS
\$18 US Priority Mail
\$20.50 Canadian APP
\$22 Canadian UPS

NEW VERSION 2! Now with Super POCSAG, 1200 baud, simple, pushbutton mode selection, this self-contained, compact, menu-driven decoder, when connected to your scanner's or VHF/UHF receiver's external speaker jack, will reveal CTCSS (PL) sub-audible tones, DCS (DPL) squelch tones, POCSAG and GOLAY digital paging messages, DTMF (Touch Tone™) telephone numbers, even air-to-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. *Parallel printer allows full page hardcopy.*



Add Screen Capture Interface!

Want to see a full-screen display of intercepted text messages? Connect the new CI-400 between the M400 and your IBM compatible computer (286, DOS 3.3 or better); requires 8 bit slot, 215 kB disk storage for program files, 3.5" floppy. Recommended: mouse, color monitor, hard drive. Includes interface card, cable, software, manual
SFT 14 Scr. Capt. Interface for M400 \$109⁹⁵

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!



ADAPTORS AVAILABLE

RG 59U

(25 feet w/ adaptors)
ORDER CBL 25

\$9⁹⁵

\$5.50 UPS
\$5.50 US Priority Mail
\$7 Canadian APP
\$12 Canadian UPS

RG 6U

(50 feet w/ adaptors)
ORDER CBL 50

\$14⁹⁵

\$6.50 UPS
\$6.50 US Priority Mail
\$8 Canadian APP
\$13 Canadian UPS

RG 6U

(100 feet w/ adaptors)
ORDER CBL 100

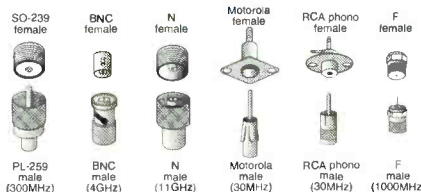
\$19⁹⁵

\$7 UPS
\$7.50 US Priority Mail
\$9 Canadian APP
\$17 Canadian UPS

Sorry—no other lengths available

Cable loss per 100 ft.:

1.6 dB @ 50 MHz
2.6 dB @ 170 MHz
4.6 dB @ 450 MHz



- ADP 1 UHF Female to F male
- ADP 2 F Female to PL259 Male
- ADP 3 F Female to N Male
- ADP 4 F Female to Male 1/8" Mini-Plug
- ADP 5 N Female to BNC Male
- ADP 6 UHF Female to Male 1/4" Mini-Plug
- ADP 7 UHF Female to N Male
- ADP 9 F Female to BNC Male
- ADP 10 UHF female to BNC Male
- ADP 11 UHF female to RCA male
- ADP 12 BNC female to N male
- ADP 13 BNC/BNC (right angle elbow)
- ADP 14 F female to RCA male
- ADP 15 N female to F male
- ADP 17 BNC female to F male
- ADP 18 F female to 2 wires
- ADP 19 UHF female to 2 wires
- ADP 22 Motorola female to BNC male
- ADP 23 UHF female to UHF female barrel—\$1.50
- ADP 24 BNC female to PL259 male
- ADP 26 F female to F female barrel—\$2.00
- ADP 27 Banana Plug—\$2.00
- ADP 28 F female to PAL fem. Satellite700
- ADP 29 3.5mm female to 2.5mm male min. plug—\$1.50
- ADP 30 Dual BNC fema. to BNC male T-adaptor—\$1.50
- ADPK 10 F female to Motorola male
- ADPK 13 F male to F male 3ft.cable—\$2.50
- ADPK 14 F/Motorola cable, 3ft.—\$2.50
- ADPK 15 PL259 male to PL259 male 3ft.—\$2.50
- ADPK 16 BNC male/ BNC male 3ft cable

Unless otherwise specified, adaptors may be ordered separately for \$5.95 each. Free shipping if ordered with other products; \$2.50 for one or more shipped alone.

If you are unsure which adaptor is needed, call Chanel or Sue at 704-837-7081 tech@grove.net for assistance.

GROVE'S SHORTWAVE ACCESSORY MART

Interference Eliminators



Ideal for suppressing overload interference from AM and shortwave broadcasters and more. Reject unwanted signals by 40 dB or more; reduce intermod interference by at least 120 dB! Filters can be combined for deeper rejection or multiple frequencies. Simply choose your filter(s) from the list below and specify your antenna connectors.

FTR 7: 540-1700 kHz Band Reject Filter. Removes AM broadcast interference from shortwave/longwave receivers

FTR 9: 30 MHz Low Pass Filter. Eliminates paging, FM and TV broadcast signals and other sources of VHF/UHF interference from shortwave receivers

ORDER FTR 7 or 9

\$29⁹⁵

SHIPPING
\$5 US Priority Mail
\$6.50 Canadian APP
\$10 Canadian UPS

ADAPTOR KITS:

ADPK 1 PL-259 (UHF) \$9.95
ADPK 3 BNC/F \$9.95
ADPK 6 Motorola/BNC \$9.95
ADPK 9 N/F \$12.95

Weather-Proof Flex-Tape!

Ideal for securely wrapping coax couplings and splices without heat or mess. Forms a tight, flexible, waterproof seal for wiring, plumbing, automotive, marine, and other hostile environments. Easy to apply; remains pliable for years without leaving a sticky residue like putty sealants. Resists water immersion, sunlight, abrasion, impact, and most chemicals. 22-foot roll.



ORDER ACC 168

\$1⁹⁵

SHIPPING
\$1.50 First Class
\$4 UPS
\$6 Canadian UPS
\$5.50 Canadian APP

NIGHTLOGGER II



Tape Automatic Recorder Activator

This respected product is now improved, offering manual-auto switch, line-spike protection, "record" indicator lamp, removable/replaceable cables, internal monitoring speaker, volume control, adjustable dropout time delay, and dry-contact relay switching. Ideal for unattended recording of scanner traffic, shortwave programs, events, and official communications record logging. AC adaptor, audio and control cables included.

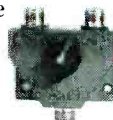
ORDER ACC 02

\$69⁹⁵

SHIPPING
\$5.50 US Priority Mail
\$6.50 UPS
\$7.00 Canadian APP
\$10 Canadian UPS

Pro Antenna Switch

Switch your scanner, shortwave receiver, ham transceiver, or any other radio device operating at frequencies as high as 1000 MHz with this superb, die-cast, waveguide-cavity antenna switch. Handles up to 2500 watts PEP for transmitting, VSWR under 1:1.2, insertion loss only 0.2 dB, and port-to-port isolation 60 dB. Automatically grounds unselected port. Standard UHF (SO-239) connectors mate with PL-259 and other adaptors.



ORDER SWC 1

\$25⁹⁵

SHIPPING
\$5 UPS
\$4.50 US Priority Mail
\$10 Canadian UPS
\$6.50 Canadian APP

Lightning/EMP Protector

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

Uses state-of-the-art gas discharge technology. Extremely low signal loss—0.2 dB at 1500 MHz! Ideal for protecting scanners, shortwave receivers, CB and ham equipment, VCRs, TVs, satellite receivers, FM stereo systems, and more. May be used with transmitters up to 100 watts.



LAR1F (with F conn) \$19⁹⁵
LAR1B (with BNC conn) \$24⁹⁵
LAR1P (w/ PL-259 UHF conn) \$24⁹⁵
LAR1M (with Motorola conn) \$29⁹⁵

SHIPPING
\$5 UPS
\$4.50 US Pr. Mail
\$6.50 Can. APP
\$9.50 Can. UPS

*Will not prevent AC power line surges. Appearance may vary.

Variable Attenuator



Reduces Overload Interference!

Reduce scanner and shortwave intermod and desensitization with this variable attenuator. Adjustable from 0 to 20 dB attenuation from 0-1000 MHz or higher! Can also be used to reduce distortion when connected between a radio's audio output and your tape recorder! Equipped with F connectors; adaptors available from list below.

ORDER ATT 1

\$9⁹⁵

SHIPPING
\$5.50 UPS or Priority Mail
\$6.50 Canadian APP
\$7 Canadian UPS

Adaptor Kits
ADPK 1 PL-259 (UHF) \$9.95
ADPK 3 BNC \$9.95
ADPK 6 Motorola/BNC \$9.95
ADPK 9 N \$12.95

Scan Manager Pro v.1.1

Now shortwave listeners and hams can have the same computer control power used by serious scanner enthusiasts by installing this powerful KC4ZGL Ham Software. If you have a modern IBM compatible computer equipped with Windows 3.1 or higher, you can edit databases and control all Kenwood, Icom, Drake R8A (R8 not supported) and Yaesu (except FT-767) transceivers and receivers! Call for compatibility with your equipment. Display your data in powerful spreadsheet style, controlled and edited by keyboard or mouse. When ordering, please indicate type of receiver and computer used.

ORDER SFT 13

\$68⁹⁵

SHIPPING
\$6 UPS
\$8 US Priority Mail
\$10.50 Canadian UPS
\$11.50 Canadian APP

Universal Power Converter

Operate your AC operated equipment anywhere in the world when you travel. This handsome, compact power converter set comes with a heavy duty, 1600 watt transformer and five wall adaptors for any 50 or 60 Hz, 120 or 240 VAC outlet. A convenient, color coded, country selection chart is included.



ORDER PWR 20

\$34⁹⁵

SHIPPING
\$7 UPS
\$9 US Priority Mail
\$12 Canadian APP
\$12 Canadian UPS

Mobile DC Power Converter

It's hard to find a DC operated accessory that won't work with the new Grove DCC 3 cigarette lighter adaptor. Equipped with the six most popular power plugs and switchable among 1.5, 3, 4.5, 6, 7.5, 9, and 12 volts at up to 800 mA current, this mobile powerhouse is the most versatile we've ever seen!



ORDER DCC 3

\$12⁹⁵

SHIPPING
\$5.50 UPS
\$4.50 US Priority Mail
\$7 Canadian APP
\$9 Canadian UPS

Alkaline/NiCd Batteries

BAT 01 AA Batteries \$1.79 ea.
BAT 02 D Batteries \$1.19 ea.
BAT 03 C Batteries \$1.09 ea.
BAT 04 9V Batteries \$2.25 ea.
BAT 13 AA NiCd rechargeable Batteries \$2.75 ea.

FREE SHIPPING w/PURCHASE OF ANY OTHER BATTERIES!

SHIPPING
\$3 UPS or US Priority
\$5.50 Canadian APP
\$6.00 Canadian UPS

GROVE'S SHORTWAVE ACCESSORY MART

Portable Power Station

A rugged, battery power source that can actually run your high-powered monitoring equipment and a few other accessories when needed with enough reserve power to start your car if that battery is dead. The Power Station is a compact powerhouse built around a 12 volt, 7 ampere-hour, rechargeable gel cell contained in a rugged ABS carrier. You can choose 3, 6, 9 or 12 volts output. Dimensions 7lbs, H8" x W7 x 4.5.



ORDER PWR 1 SHIPPING
\$59⁹⁵ \$6.50 UPS
 \$5.50 US Priority Mail
 \$7.50 Canadian APP
 \$10.50 Canadian UPS

Universal Power Supply



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).

A \$15 Value!
 ORDER PWR 13 SHIPPING
\$9⁹⁵ \$5.50 UPS
 \$5.50 US Priority Mail
 \$6.50 Canadian APP
 \$7 Canadian UPS

AC Wall Adaptors

Grove's PWR 12 Universal power supply plugs into 120V AC wall socket and provides 3, 4.5, 6, 7.5, 9 and 12 volts DC switchable polarity, at up to several hundred mA (intermittent use). Has six different plugs for virtually every accessory. List price \$12.95.

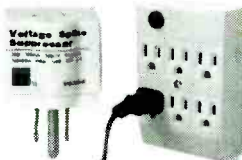


The PWR 19 (not shown) provides 12VDC at 200 mA from standard 2.1 mm coax plug (center +). UL and CSA approved.

ORDER PWR 12 ORDER PWR 19
\$4⁹⁵ **\$7⁹⁵**
 SHIPPING SHIPPING
 \$4 UPS or Priority Mail \$3.50 UPS or Priority Mail
 \$5.50 Canadian APP \$5.50 Canadian APP
 \$6.50 Canadian UPS \$6.50 Canadian UPS

AC Surge Protectors

Protect your delicate radio, computer, TV, stereo, test equipment, and other electronic equipment from devastating power-line voltage spikes and current surges. For all standard U.S. and Canada power lines (120 VAC, 1875 W, 60 Hz, 15 A).



Not shown to scale

ORDER LAR 2 ORDER LAR 3
 (single outlet) (6 outlets) 
\$3⁹⁵ **\$4⁹⁵**
 SHIPPING SHIPPING
 \$1.50 First Class \$2 First Class
 \$4 UPS \$4 UPS
 \$5.50 Canadian APP \$5.50 Canadian APP
 \$6 Canadian UPS \$6 Canadian UPS

Naval HTS-3 Compact Amplified Speaker



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 (or 12V auto system via included cigarette lighter cord), 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)!

ORDER SPK 11 SHIPPING
\$29⁹⁵ \$6.50 UPS
 \$7 US Priority Mail
 \$10 Canadian UPS or APP

ACCESSORIES
 BAT 1 AA Alkaline batteries \$7.99
 PWR 13 AC wall power supply \$9.95
 BAT 13 Nicad AA batteries (4 required) \$2.75/each

NEW! Universal Headset



This lightweight headset with volume control is ideal for stereo music as well as communications applications. The adjustable headband with cushioned earpieces affords maximum comfort, while the

20-20,000 Hz frequency range assures brilliant highs and thundering bass. Six foot cord is terminated in a 3.5 mm (1/8") stereo plug; 1/4" stereo adaptor included.

ORDER HDP 2 SHIPPING
\$19⁹⁵ \$6.50 UPS
 \$6.50 US Priority Mail
 \$10 Canadian UPS
 \$8 Canadian APP

Cassette Audio Adaptor

Listen to your scanner over your car or home stereo! Imagine—any electronic component that you own with an audio output jack (including your scanner or shortwave receiver) can be played directly through your home stereo system, portable "boom box," auto stereo or any other cassette player to provide full, rich sound! Shaped like a normal cassette, this adaptor slides into your cassette player. Your scanner or audio device then attaches to the adaptor with a 1/8" (3.5 mm) stereo or mono plug (included with flexible cord).



ORDER ACC79 SHIPPING
\$9⁹⁵ \$2 First Class
 \$4 UPS
 \$5.50 Canadian APP
 \$6 Canadian UPS

DX Edge for Propagation

Plan your listening around the most productive times and frequencies using this valuable, simple-to-use shortwave tool. Share the secret of successful hams and professionals alike who know the advantages of "grayline propagation." Just line up the proper dateline on your location and it's ready to use. Sturdy map chart, perpetual monthly overlays and easy instructions included.



ORDER CHT 3 SHIPPING
\$24⁹⁵ \$5.50 UPS and Priority Mail
 \$6.50 Canadian UPS
 \$7 Canadian APP

Color Radio Wall Map

Ideal for hams, shortwave listeners and scanner hobbyists alike! Shows worldwide callsign prefixes, basic spectrum allocations from 300 kHz-3 GHz, phonetic alphabet, ham bands by license class, and Morse code symbols. Colorful, informative, accurate. Measures 37" x 25". Nationally advertised at \$19.95.



ORDER CHT 4 SHIPPING
\$14⁹⁵ \$6 UPS
 \$2.50 Bookrate
 \$6 Canadian APP
 \$8.50 Canadian UPS

Also available: 30" x 40" Color Wall Chart of United States Radio Spectrum, 9 kHz-3 GHz.

ORDER CHT 1 SHIPPING
\$9⁹⁵ \$4.50 UPS/US Priority Mail
 \$2.50 Bookrate
 \$12 Canadian UPS or APP

GROVE'S SHORTWAVE ACCESSORY MART

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 CLK 4 SHIPING
\$24.95 \$6 UPS
 \$5 US Priority Mail
 \$10 Canadian UPS
 \$7.50 Canadian APP

Also available from MFJ: Dual Digital Clock (CLK 2, \$19.95) and Giant Display Digital Clock (CLK 5, \$39.95). Call for more information.

24-Hour Studio Clock



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 CLK 1 SHIPING
\$24.95 \$5.50 UPS
 \$5 US Priority Mail
 \$10 Canadian UPS
 \$7.50 Canadian APP

Also available: Limited Edition Grove Expo Studio Clock (similar to above, but with Grove logo in center of dial). Order CLK 1C, same price and shipping charges.

New at Grove:
 Clarity Hearing
 Instruments

Why pay more than \$1,000 for a hearing aid, when this top-quality unit can be yours for less than half the price?

Crystal-clear hearing enhancement, exclusively from Grove Enterprises!

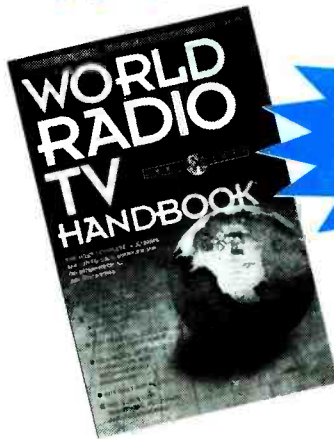
An exclusive agreement between Grove Enterprises and a high-tech aerospace manufacturing firm allows us to bring you unexcelled in-the-canal hearing enhancement at a dramatically low price! Clarity uses state-of-the-art flex-circuitry and advanced micro-technology and is designed to aid the majority of people with hearing loss, from mild to moderately severe. The Clarity CL 2000 offers exceptional sound quality, reliability and comfort, and it comes with a carrying case, cleaning tool, four batteries, a 30-day money-back guarantee, and a one year warranty against manufacturing defects.

For an exceptional value buy 2 and save \$63.00. See our site on the World Wide Web for additional information (<http://www.grove.net/~clarity>).



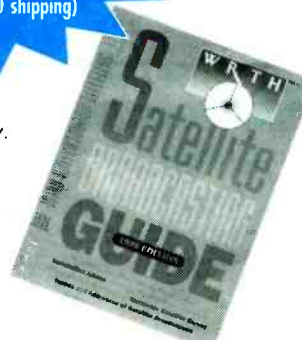
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Please Note: 1996 editions shown here. New covers not yet available.

Valued by its readers for 50 years, **World Radio TV Handbook** is a "must have" resource for radio buffs and broadcasting professionals. This annual publication shows what's on the airwaves anywhere in the world at any time. It features country-by-country listings of long, medium, and shortwave stations by frequency, time and language. Also, an hour-by-hour guide to broadcasts in English, a survey of high-frequency broadcasting reception conditions for the year and much more. Order BOK 3-97.

Satellite Broadcasting Guide — Everything you need to know about installing, repairing, maintaining and enjoying your satellite system. You'll learn how to set up your own home satellite system and receive hundreds of TV and radio stations that you probably didn't know existed. This book also provides a guide to satellite broadcasters, maps of satellite locations, and a directory of reputable dealers. Order BOK 79-97.



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Comes with batteries, pouch, cleaning tool and user guide.



ORDER CHI 2000 L (left ear) or CHI 2000 R (right ear)
\$479.95

FREE First Class Mail Shipping in U.S. (Call for foreign rates)

ORDER TWO AND SAVE!
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\$895.95

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ACCESSORY
 BAT 17 Replacement Batteries, call for price/availability

NOTE: Your order for a Clarity Hearing Instrument will be processed and shipped immediately after we receive the signed and dated "Waiver to Medical Evaluation Requirements" contained on the order form of this section.

Based upon the Supreme Court rulings of McLeod vs. Dillworth (1944), Bellas Hess (1967) and the proposed Brooks legislation (H.R. 2230), effective September 1, 1990, Grove Enterprises will no longer collect sales or use taxes apparently invalidly levied by states against residents when they purchase from us in North Carolina. We have neither economic presence nor nexus in these states as established by the U.S. Supreme Court.

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Phone Orders: Be prepared with the information requested above and call toll-free: (800) 438-8155; outside the U.S. and Canada call (704) 837-9200 (no collect calls please).

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U.S. Shipping and Delivery: Unless you are notified of a delay, all parcels

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Order Blank 9/96

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I have been advised that the Food and Drug Administration has determined that my best interest would be served if I had a medical evaluation by a licensed physician, preferably a physician who specializes in diseases of the ear, before purchasing a hearing aid. I am 18 years old or older and voluntarily sign this waiver which indicates that I do not wish a medical evaluation before purchasing a hearing aid. I understand that if unsatisfied with my hearing aid(s), I may return it within 30 days of the shipping date, for a full refund.

Signature _____

Date _____

Payment Method: *Personal checks subject to verification.*

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 COD MASTERCARD
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TOTAL \$ _____

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