

R-1000 TELEMETRY RECEIVER

OPERATING MANUAL



COMMUNICATIONS SPECIALISTS, INC.
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FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FEATURES

- Factory tuned to any 4 MHz wide segment in the 148 - 174 MHz Band. **Dual front end also covers 216 – 222 MHz.**
- Very high sensitivity of -148 to -150 dBm.
- Variable RF Gain control with 80dB range.
- Step increments programmable in .1 kHz, .2kHz, .5kHz, or 1.0kHz steps.
- Digital signal strength meter that responds to narrow telemetry pulses.
- Loud 120mw audio output.
- 999 non-volatile memory channels. Each one with alphanumeric comment field and .1kHz (100Hz) resolution frequency storage.
- Scans through all memory channels. Dwell time on each channel is programmable from 1 to 30 seconds in 1 second steps. Any memory channel can easily be programmed out of the scan sequence.
- Audible beep feedback when any key is pushed confirms entry and can be programmed on or off.
- For illumination in darkness, the display and keyboard are backlit with LEDs for 5 seconds when lamp key is pushed. If key is held for 2 seconds, LEDs will stay on continuously until key is pushed again.
- Supplied with 4 high capacity NiMH rechargeable batteries for 12-hour operation.
- Also supplied with both 110vac wall charger and 12vdc cigarette lighter charger. Both chargers will charge and operate receiver with good, dead, or no batteries.
- Easy slide off battery compartment door to allow operation off regular "AA" alkaline batteries.
- Also supplied with tough nylon case with belt loop, rubber duck antenna for non-directional use, belt clip, wrist strap, mono headset adapter and coax cable.
- 1 year warranty.
- 1 day delivery.
- **Price \$695.00** (Visa/Mastercard and Discover welcomed)
- *Please specify desired 4 MHz wide segment when ordering.*

SPECIFICATIONS

Selectivity:	6dB down @ ± 1.2 kHz, 60dB down @ ± 2.2 kHz
Receive Mode:	CW
Antenna Impedance:	50 ohms
Antenna Jack:	Standard BNC (BNC female)
Power Requirements:	4.8vdc (4 ea. "AA" Ni-cad or NiMH rechargeable batteries), or 6.0vdc (4 ea. "AA" Alkaline batteries), or 9-16vdc from supplied 110vac wall or cigarette lighter charger
Current Drain:	160ma at maximum audio output
Dimensions:	6.1" (15.5cm) high, 2.6" (6.6cm) wide, 1.5" (3.8cm) deep, less knobs
Weight:	12.4oz. (352 g) with supplied NiMH rechargeable batteries
Headphone Jack:	Top Mounted 3.5mm (1/8") mono headphone jack

FRONT VIEW



TOP VIEW



OPERATING INSTRUCTIONS

[**BOLD**] = Front panel keyboard keys, (**BOLD**) = Top panel knobs

BASIC START-UP

1. Turn (**PWR/VOL**) knob to the right.
2. Press [**CLEAR**].
3. Enter frequency (i.e.: 164.4375MHz) press [**1**] [**6**] [**4**] [**.**] [**4**] [**3**] [**7**] [**5**] on the keypad and press [**ENT**]. 164.4375 will appear in the display window. Rotate (**DIAL**) to fine tune if needed. If you make a mistake press [**CLEAR**] to start over.
4. The (**GAIN**) knob will serve as your attenuator. Turn it to the right for long range reception and to the left for close tracking.

STORING DATA IN THE MEMORY BANK

Store as many as 999 frequencies in the memory bank. Each memory channel holds one frequency with an alphanumeric comment for convenient identification. The stored data can be recalled quickly and easily.

1. Turn the receiver on and press [**PROG**]. PROG-MEMORY will appear at the top of the display window.
2. The cursor will be on the top line. Press [**▽←**] to bring the cursor to (CH) channel selection. Enter the number 001 - 999 where the frequency will be stored and press [**ENT**] or scroll with (**DIAL**) to desired channel.
3. Press [**△→**] to move the cursor to the top line and use the keyboard to enter the frequency to be stored in that channel, then press [**ENT**]. The receiver will now be active on that frequency. Once the frequency is entered rotate (**DIAL**) to fine tune if needed. Push [**ENT**] again if no TXT line or no change is required to TXT line after entering frequency, to exit programming mode.
4. Press [**▽←**] to move cursor to TXT line. Rotate (**DIAL**) until the chosen letter or symbol is displayed. A maximum word length of seven characters may be used. Press [**△→**] to advance to next character. Press [**ENT**] when finished to exit programming mode.
5. If you make a mistake, press [**PROG**] to start over.

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ACCESSING THE MEMORY BANK

1. To access memory bank, press [MEMO], channel number and [ENT] or scroll through the channels by using [Δ→] or [▽←] or (DIAL).
2. To exit memory press [CLEAR].

SCANNING THE MEMORY BANK

The receiver will pause on each channel for 1 to 30 seconds. The default setting is 5 seconds. See Menu Programming to change the default setting.

1. Press [SCAN].
2. To exit Scan, press [MEMO] or [CLEAR].

CHANGING DATA IN THE MEMORY BANK

The data stored in the memory bank can be changed or deleted at any time.

1. Press [PROG]. If channel shown is not the one you want to change, press [▽←] to bring cursor to the channel number. Enter the channel number you want to change and [ENT] or scroll using (DIAL).
2. Press [Δ→] to bring cursor to the frequency, key in new frequency and [ENT] or rotate (DIAL) to desired frequency.
3. If you are *only* changing the frequency, press [ENT].
4. Press [▽←] to bring the cursor to TXT to change the comment, press [ENT] when finished.
5. To delete a channel press [PROG] then [▽←]. The cursor is now on the channel line, enter the channel number and [ENT] or scroll using (DIAL). Press [CLEAR] and [ENT].

PASS

The pass feature allows you to *skip* or *pass* over selected frequency channels from your memory bank while in the scan mode.

1. You can select the channel to be passed over from the scan or memory mode by pressing [PASS] while the selected frequency is shown on the display. The frequency is now omitted from the scan list.

2. To add the channel back to your scan list press [**MEMO**], the channel number and [**ENT**] or use [**Δ→**] or [**▽←**] or (**DIAL**) to scroll through the memory channels. Passed frequencies will display a small "p" in front of the frequency. Press [**PASS**] to cancel the pass feature and the frequency will be returned to your scan list.

MODIFY NUMBER OF CHANNELS

You may notice, while scrolling through the memory bank, a slight delay after the last channel before it returns to the first channel. This is due to the receiver scanning all 999 channels before returning to channel 001. If you only use the receiver to monitor a few frequencies, you may choose to modify the number of channels

1. To limit number of channels to 99 press and hold [**1**] while turning on power, to limit channels to 199 press and hold [**2**] while turning on power, to limit channels to 299 press and hold [**3**] etc.
2. To return to 999 channels press and hold [**0**] while turning on power.

KEYGUARD LOCK

The keyguard lock feature allows you to lock the keypad. While in the keyguard mode the only keys on the keypad that can be used are the [**Δ→**] [**▽←**] keys. (**DIAL**) (**GAIN**) and (**PWR/VOL**) knobs operate normally.

1. To activate keyguard mode, press and hold [**MEMO**] for 5 seconds.
2. To cancel keyguard press and hold [**MEMO**] for 5 seconds.

PROGRAMMING MENU

You can customize your receiver by changing the default settings in the programming menu.

1. To access menu, press and hold [**ENT**] for 5 seconds.
2. Move the cursor with [**Δ→**] or [**▽←**] to select menu option.
3. Rotate (**DIAL**) to:
 - Change scan dwell time from 1 to 30 seconds in 1 second steps.
 - Change steps to .1kHz, .2kHz, .5kHz, 1.0kHz.
 - Select beep tone on or off.
4. Press [**ENT**] when finished.

CPU RESET

Should the microprocessor "hang up" and need to be reset, this can be done easily and without losing memory.

1. Press and hold [CLEAR] while turning receiver on.
2. Menu Programming will return to default settings of 5 second scan, 1.0 kHz steps, and beep on.

LAMP

The [LAMP] key will illuminate the display and keypad for use in darkness.

1. Press [LAMP] to illuminate the display and keypad for 5 seconds.
2. Press and hold [LAMP] for 2 seconds to illuminate continuously until [LAMP] is pressed again.

EARPHONE JACK

A 3.5mm (1/8") earphone jack is mounted on the top panel. When an earphone or headphone is plugged in, the internal speaker in the receiver is disconnected. If stereo headphones are used, only one side will be active.

RECHARGING THE BATTERY

The receiver is supplied with both wall and cigarette lighter chargers that plug into the side to recharge the batteries. A fully charged radio will provide approximately 12 hours of operation at moderate volume. The batteries should be charged overnight. Do not keep receiver on charger any longer than two or three days.

USING ALKALINE BATTERIES

If "AA" alkaline batteries are installed in receiver, **DO NOT** plug either wall or cigarette lighter charger into receiver. Remove at least one alkaline battery if you choose to operate receiver directly off wall or cigarette lighter charger without consuming battery power. If supplied rechargeable batteries are installed, they may be left in while using wall or cigarette lighter charger.

LOW BATTERY WARNING

If the NiMH batteries are low, the LOW BATTERY WARNING indication will not go off when plugging in the charger. The radio must be turned off first to extinguish the warning. This will alleviate the radio from being accidentally left on and draining the batteries.

CLOSE-IN DIRECTION FINDING

Your receiver has the ability to obtain directional information within inches of the transmitter. Because the RF gain control has such a high range of attenuation, it is imperative that the gain control be placed fully clockwise when tracking a weak or distant signal.

If the gain is left at the point where it was used for close-in direction finding, you may NOT be able to hear the transmitter during your initial attempts to track a new signal.

SUPPLIED ACCESSORY PRICE LIST

RA-1 AA NiMH Rechargeable Battery (4 ea)	\$ 2.95 ea.
RA-2 Nylon Case with Belt Loop	\$ 14.95 ea.
RA-3 Rubber Duck Antenna	\$ 14.95 ea.
RA-4 Belt Clip	\$ 3.95 ea.
RA-5 Wrist Strap	\$.95 ea.
RA-6 AC Wall Charger	\$ 12.95 ea.
RA-7 DC Cigarette Lighter Charger	\$ 7.95 ea.
RA-8 Mono Headset Adapter (1/4" female to 3.5mm male)	\$ 9.95 ea.
RA-60 5' Coax Cable with BNC at each end	\$ 7.95 ea.
R-1000 (complete with above accessories) <i>Please specify desired 4 MHz wide segment when ordering.</i>	\$695.00 ea.
Factory sweep align front end to a new 4 MHz wide segment in the 148 - 174 MHz Band.	\$100.00

OPTIONAL ACCESSORY PRICE LIST

Directional Antennas

RA-150	148-152 MHz Folded Yagi Antenna w/ Grip	\$125.00 ea.
RA-159	158-161 MHz Folded Yagi Antenna w/ Grip	\$125.00 ea.
RA-165	163-166 MHz Folded Yagi Antenna w/ Grip	\$125.00 ea.
RA-170	169-172 MHz Folded Yagi Antenna w/ Grip	\$125.00 ea.
RA-216	216-222 MHz Folded Yagi Antenna w/ Grip	\$125.00 ea.

Non-Directional Antennas

RA-9	Magnetic Mount Antenna	\$49.95 ea.
RA-10	Auto Roof Mount Antenna	\$28.95 ea.

The RA-9 & RA-10 antennas must be cut to the center of the operating frequency. A cutting chart is supplied with antenna.

Miscellaneous

RA-13	Mono Headset	\$36.95 ea.
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WARRANTY

The R-1000 is warranted to be free of defects in materials and workmanship for a period of one (1) year from the date of purchase. Just return the unit to the factory and we will repair it at no charge.

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