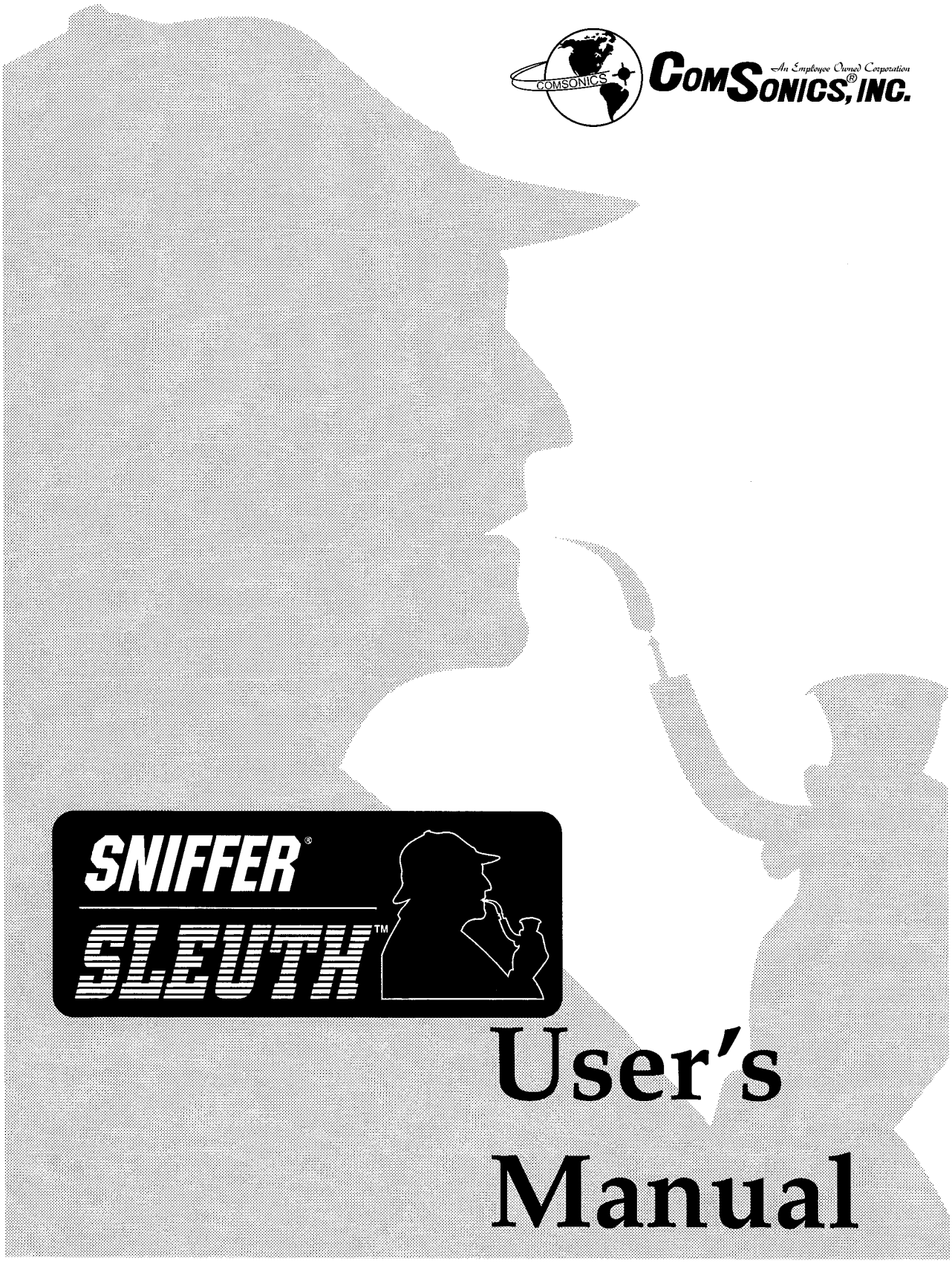

ComSonics, Inc.
An Employee Owned Corporation

SNIFFER® SLEUTH™

User's Manual

Warranty

ComSonics, Inc. warrants this product free of material and workmanship defects for a period of one year. The warranty starts from the original date of shipment.

Remedies provided under Warranty are exclusive and in lieu of all other warranties expressed or implied. The liability to ComSonics is limited to product repair or replacement at the discretion of ComSonics. ComSonics shall not be liable for any incidental or consequential damages.

The warranty does not cover the following:

- Parts or components not supplied by ComSonics, or modified parts and components.
- Any product or part failure that results from accident, abuse, misuse, neglect, or unauthorized repairs or modifications by individuals other than ComSonics personnel.
- Failures caused by use of this product in extreme climates or moisture conditions.
- Sniffer Sleuth Battery Pack.

Technical Support

ComSonics maintains a Technical Support Service for customer convenience. Contact a Technical Support Representative by telephone at 1-800-336-9681 or 1-540-434-5965; Fax at 1-540-432-9794; or Email at tech-support@comsonics.com.

Return Information

Safely package products returned for repair, calibration, etc. Please enclose information on the reason for return. Ship the product prepaid.

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Document No. 100863-001 Rev. B

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Specifications

Operating frequency ranges	80 ~ 120 MHz (Model 001), 120 ~ 150 MHz (Model 002)
Tuning increments	1.0 kHz
Tuning stability	< ±1.0 kHz
Terminal sensitivity:	
with Sniffer I.D.™	-72 dBmV (0.7 μV/m @ 126 MHz)
with Sniffer® Transmitter	-76 dBmV (0.4 μV/m @ 126 MHz)
Detector bandwidth	± 6.0 kHz
Mute	Sniffer I.D.™ or standard Sniffer® transmitter tag activated
Squelch	0 ~ 1000 μV/m in 10 μV/m increments
Communications output	Proprietary / RS-232 levels
Operating temperature range	0 °F ~ 120 °F (-18 °C ~ 49 °C)

Read This First!

The following is provided to assist you in initially using your Sleuth.

Unpacking the Unit

The Sleuth, its charger, and any ordered accessories are included in a single shipping container designed to provide the maximum protection during shipment. Immediately upon receipt, inspect the container and contents for signs of physical damage. Notify the freight forwarder of any damage detected.

It is advisable to keep the original shipping container for use when returning the unit for re-calibration.

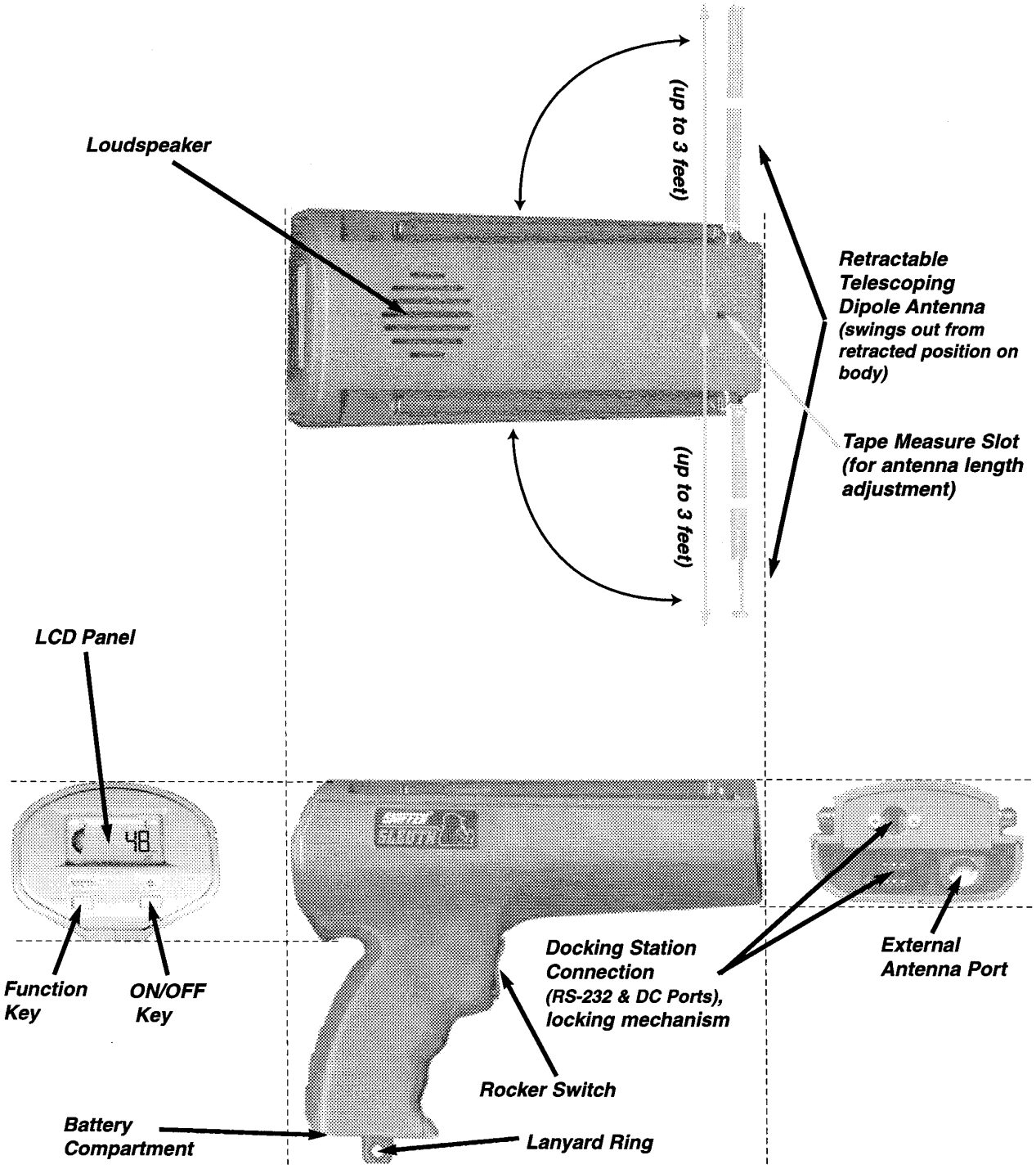
Battery Care

The Sleuth is powered by a battery pack of nickel-cadmium cells. In order to receive the maximum benefit from them, care must taken to ensure that the recommended operating practices are followed.

As supplied from ComSonics, the Sleuth battery pack is only partially charged. Before using the unit for a full day's operation, the battery pack must be charged for 4 to 6 hours.

Additional Reading!

To get the most life out of your batteries, read the pamphlet *Getting the Most From Your Batteries* included with your Sleuth shipment; there is also a section on *Changing the Battery.*


Loudspeaker
(up to 3 feet)
(up to 3 feet)
Retractable Telescoping Dipole Antenna (swings out from retracted position on body)
Tape Measure Slot (for antenna length adjustment)
LCD Panel
Function Key
ON/OFF Key
Docking Station Connection (RS-232 & DC Ports), locking mechanism
External Antenna Port
Rocker Switch
Battery Compartment
Lanyard Ring

Introducing Sniffer Sleuth

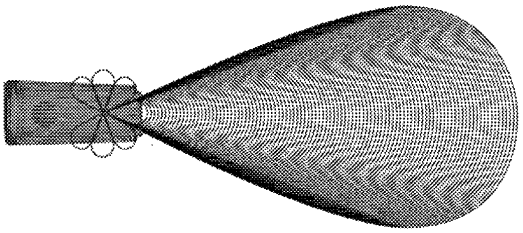
Sleuth is a hand-held signal leakage detection device. When programmed, Sleuth makes active measurements on a chosen frequency and shows the results on a liquid crystal display (LCD). It indicates detected leakage by receiving and processing a modulated carrier.

Sleuth can detect leaks at up to 500 feet with a sensitivity of -76 dBmV (0.4 µV/m), or -72 dBmV (0.7 µV/m) if the Sniffer I.D. tag system is used. There are two models that differ only in their tuning ranges: the model 100760-001, which operates in the range of 80 ~ 120 MHz in increments of 1 kHz, and the Model 100760-002, which operates in the range of 120 MHz ~ 150 MHz in increments of 1 kHz.

Sleuth has Sniffer II/III and SnifferID™ tone discrimination capability: it can be set to detect one or both of two discrete "tag" signals injected into a television signal by a SnifferID™ signal source. Sleuth operates in one of two modes: a "video" mode, in which Sleuth generates its own audio tone based on the signal from a video sensing system; and a "Sniffer" mode, in which Sleuth amplifies a received signal for its audio output (see *Using Sleuth in the Field,* **Operating Modes**). Muting suppresses the audio output but not the readout displays. Sleuth also discriminates between signal leakage and such non-signal RF radiation as power lines and burst noise.

Sleuth has a built-in dipole antenna, or can be adapted to work with a handheld dipole antenna. The Docking Station adapts Sleuth for monopole antenna use. Sleuth can also be used with the GeoSniffer for vehicle-based mapping of RF leakage. (See *Using Sleuth with the Docking Station* and *Using Sleuth with an External Antenna,* and *Setup Function Modes: External Antenna* for details.)

When Sleuth's dipole antenna is fully retracted and stored normally, the unit has the functionality of a near-field probe antenna. Common-mode reception enabled by the folded antenna elements collapses the sensitivity to a forward direction, increasing Sleuth's near-field isolation capability. The illustration demonstrates Sleuth's field of sensitivity in this way.

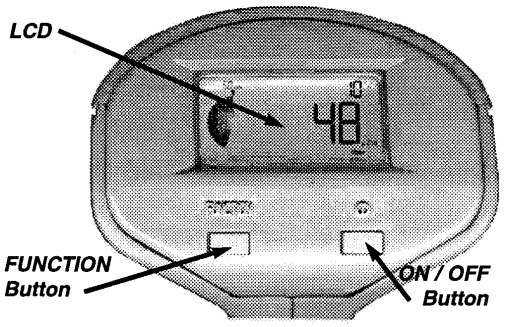


Rechargeable nickel-cadmium (NiCad) batteries are used to power Sleuth. Although intended for hand-held operation. Sleuth can also be operated from a vehicle power system through the use of an optional Docking Station. (See *Using Sleuth with the Docking Station.)*

The Sleuth battery is shipped with only a minimal charge and must be recharged before operation. The Sleuth's battery type requires 3 to 4 hours to recharge fully. See the *Getting the Most from Your Batteries* pamphlet for more information.

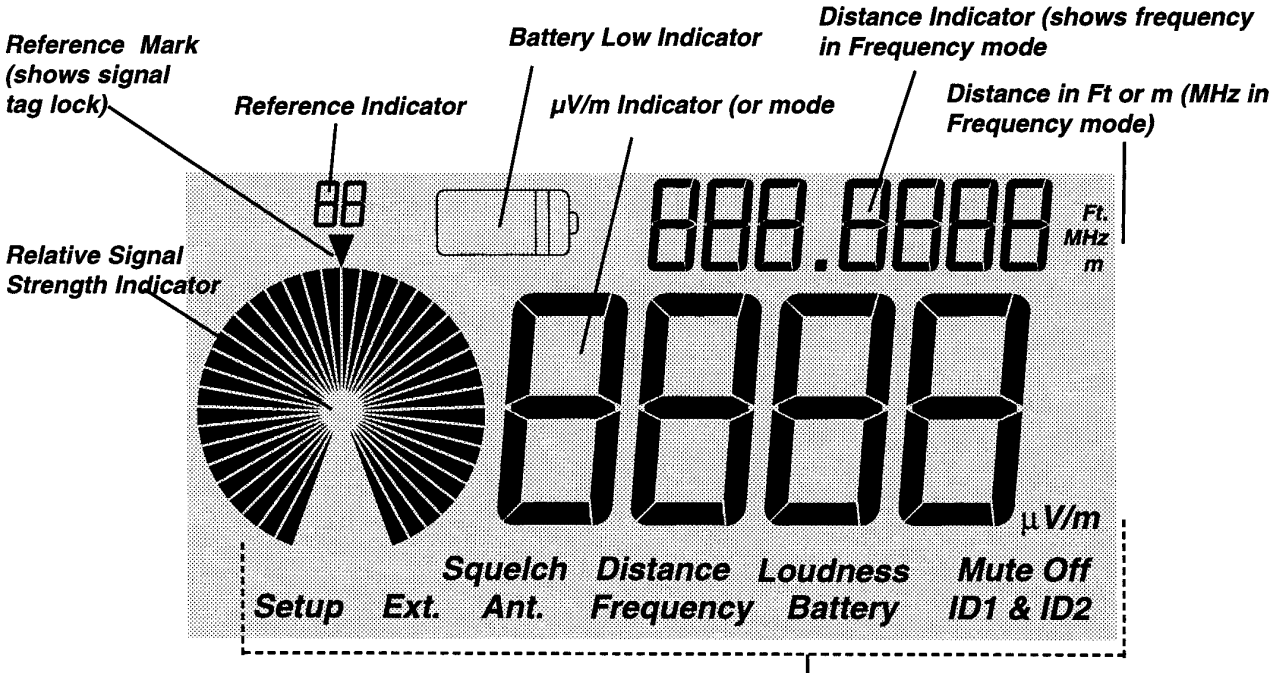
Introducing Sniffer Sleuth

The Sleuth "panel" is equipped with two keys. The **ON / OFF button** turns Sleuth on and off. The FUNCTION button switches the Sleuth from its normal, or operating, mode into one of the Setup modes. Repeated presses of the FUNCTION button scroll through each of the different setup functions and then back to the operating mode. After five seconds with no additional key presses, any of the function modes returns to the operating mode automatically.



Readings taken by Sleuth, as well as various user preference settings and status indicators, are displayed on an LCD panel that faces the user when Sleuth is in use:

- the **µV/m indicator** displays readings taken by Sleuth in µV/m while the device is in operating mode;
- the **distance indicator** displays the distance setting of Sleuth (or, in Frequency Setup mode, the target frequency which Sleuth can be set to tune);
- the tachometer-style **relative indicator** displays relative signal strength in the operating mode;
- the **reference mark,** displayed at center scale, indicates that Sleuth has locked onto a target signal; and
- the **battery low indicator** appears when the battery has approximately five minutes of operating time

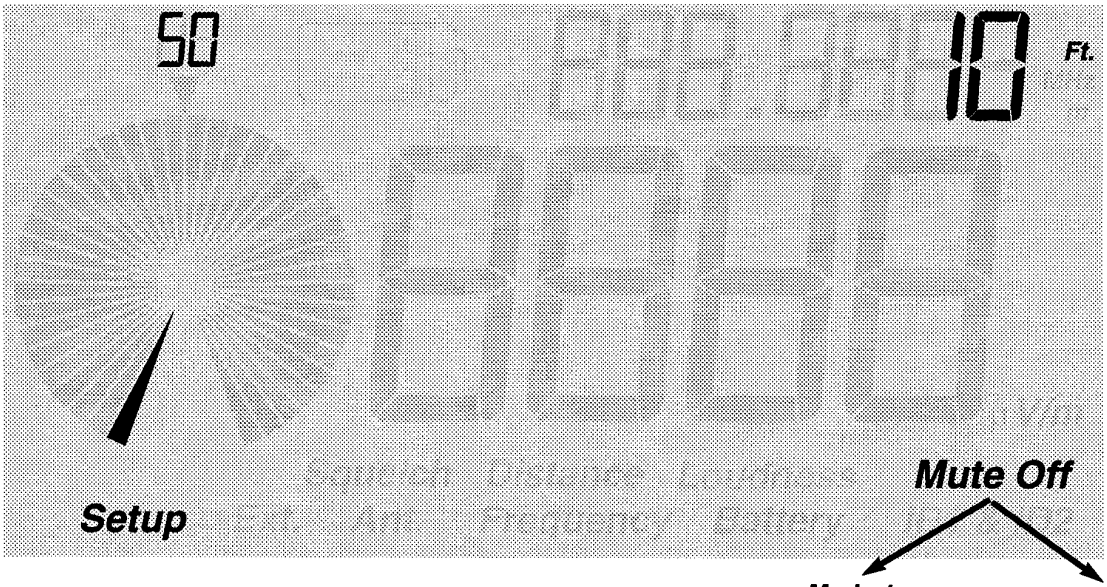


Setup Function Modes: Mute

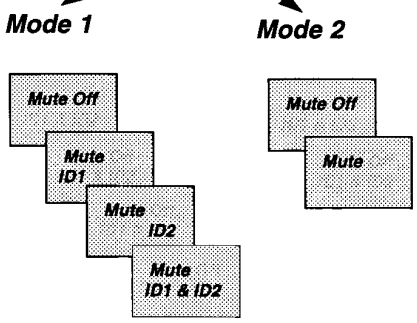
Sleuth powers up in its operating mode, allowing you to instantly begin to make measurements. There are seven additional "Setup" function modes: Mute, Loudness, Distance, Squelch, Battery, Frequency, and External Antenna, which you can use to change Sleuth's operating parameters. In each of these modes, ***Setup*** is highlighted, as well as the particular setup function; the display shows only those parts that are relevant to the function. The FUNCTION button and rocker switch serve to control parameters within the chosen mode. Any changes made in these function modes are "saved" instantly and require no additional key presses. When the device is powered up, all function settings, except External Antenna, are retained from the last time they were adjusted.

The ***Mute*** mode allows Sleuth's tag detection capability to be turned on (to detect either or both of two possible tones, generated by the Snifter I.D. signal source), or off, allowing Sleuth to detect any signals within specified parameters. These options cause slightly different behavior in Sleuth depending upon which of Sleuth's two operating modes are in use (see *Using Sleuth in the Field).*

To access this function, turn Sleuth ON; after the self-test, press the FUNCTION button until ***Setup*** and ***Mute*** are both displayed; ***Mute*** will be flashing.



Press the rocker switch up or down to toggle between the "on" settings (see the explanation of mute options for the two operating modes in *Using Sleuth in the field,* **Operating** Modes) and ***Mute Off.***
To return to the operating mode or to access another Setup function mode, press the FUNCTION button until the desired mode is highlighted. If no key press activity is detected after five seconds, Sleuth automatically returns to the operating mode.

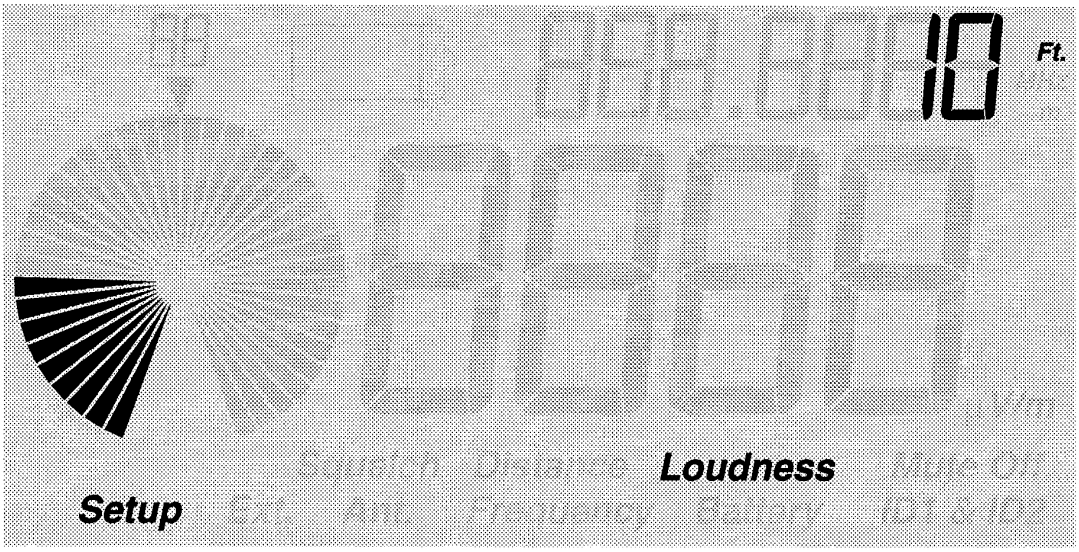


Setup Function Modes: Loudness

The Loudness mode allows adjusting of Sleuth's speaker volume.

To access this function, turn Sleuth on; after the self-test, press the FUNCTION button until ***Loudness*** is flashing.

To change the loudness, press the rocker switch down to decrease loudness; press the rocker switch up to increase loudness. The relative indicator changes accordingly.



To return to the operating mode or to access another Setup function mode, press the FUNCTION button until the desired mode is flashing. If no key press activity is detected after five seconds, Sleuth automatically returns to the operating mode.

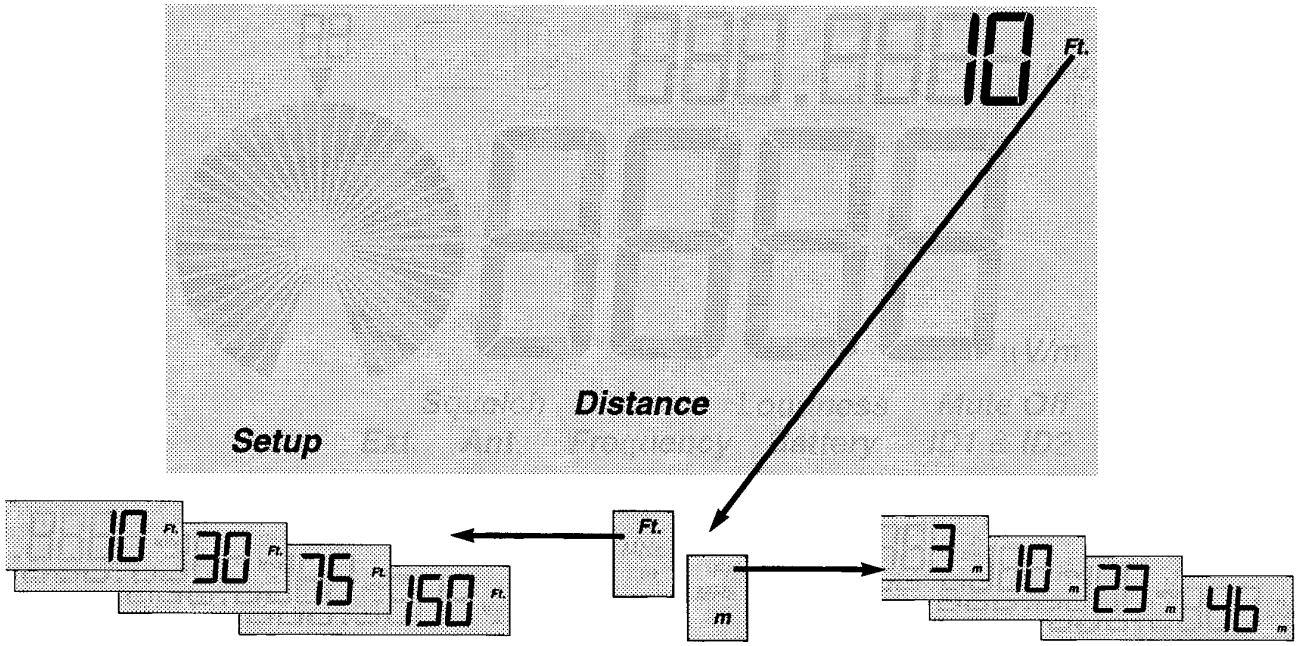
Setup Function Modes: Distance

The Distance mode allows adjusting of Sleuth's readout over different operating ranges. A strong reading made at a distance of ten feet would be significantly attenuated if made at 150 feet. When the distance setting is adjusted. Sleuth adjusts the reading accordingly. For instance, a signal reading 20 µV/m at a 10-foot distance would read more like 1 µV/m at 150 feet. By adjusting the Sleuth distance setting to 150 feet, the reading is compensated so that it approximates a 10 foot reading.

The distance settings are designed to simulate typical distances encountered in cable installation troubleshooting: 10 feet/3 meters is "normal" distance; 30 feet/10 meters is for street-to-suspended cable, 75 feet/23 meters is for street-to-home, and 150 feet/46 meters is for street-to-backyard setback.

To access this function, turn the Sleuth on; after the self-test, press the FUNCTION button until the ***Distance*** display is flashing. The Distance Indicator remains active in this mode.

Changing the distance setting involves two steps: (1) When the Distance mode is first accessed, pressing the rocker switch toggles the display between ***Ft.*** (feet) and ***m*** (meters). Press the rocker switch until the desired setting appears; (2) press the FUNCTION button a second time to change the distance range. Press the rocker switch to select a range; the selections available depend on whether feet or meters was chosen in the previous step. Select from ***10, 30, 75,*** or ***150*** feet, or ***3, 10, 23,*** or ***46*** meters.



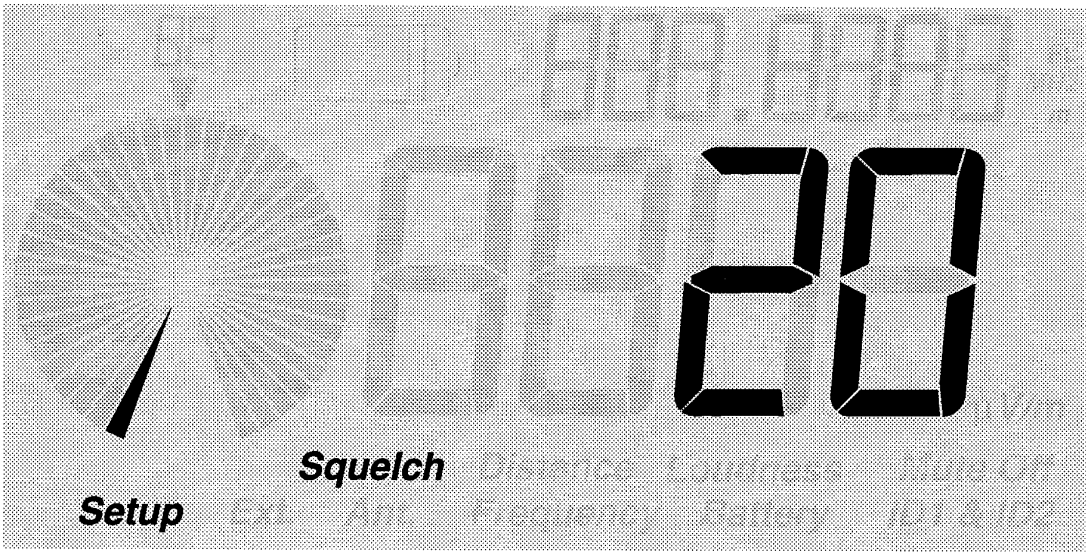
To return to the operating mode or to access another Setup function mode, press the FUNCTION button until the desired mode is flashing. If no key press activity is detected after five seconds, Sleuth automatically returns to the operating mode.

Setup Function Modes: Squelch

The Squelch mode allows adjusting of Sleuth's squelch threshold.

To access this function, turn Sleuth on; after the self-test, press the FUNCTION button until ***Squelch*** is flashing.

To change the squelch threshold, press the rocker switch down to decrease the threshold level; press the rocker switch up to increase the threshold level. The threshold level can be set between 0 and 1000 µV/m, in increments of 10 µV/m.

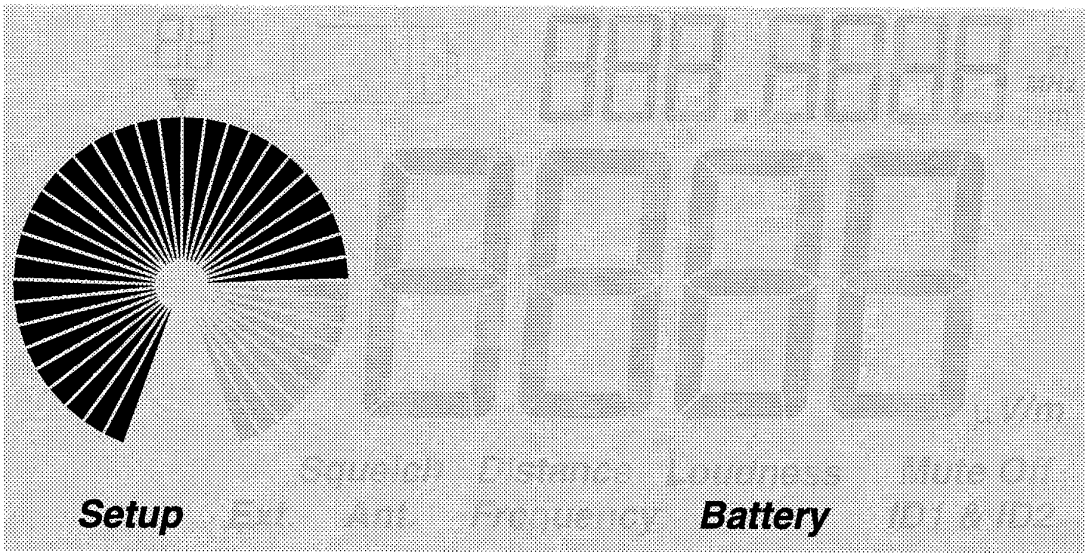


To return to the operating mode or to access another Setup function mode, press the FUNCTION button until the desired mode is flashing. If no key press activity is detected after five seconds, Sleuth automatically returns to the operating mode.

Setup Function Modes: Battery

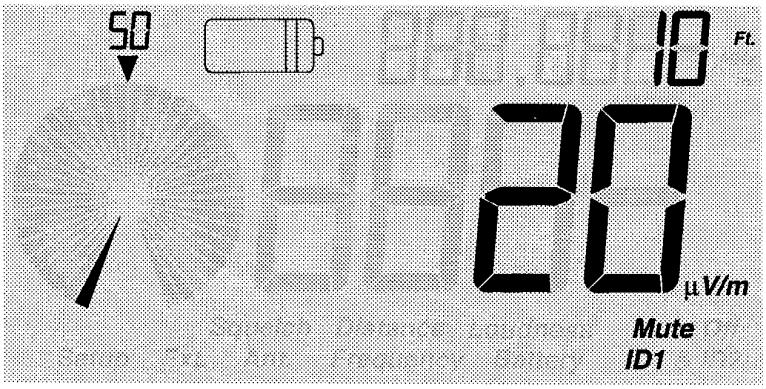
The ***Battery*** mode displays Sleuth's battery level.

To access this function, turn Sleuth ON; after the self-test, press the FUNCTION button until ***Battery*** is flashing. The Relative Indicator remains active in this mode, displaying the relative battery level.



The battery symbol appears only when there are approximately five minutes or less operating time left (see below); it can appear in operating mode (the Relative Indicator only indicates battery level in the Battery Mode).

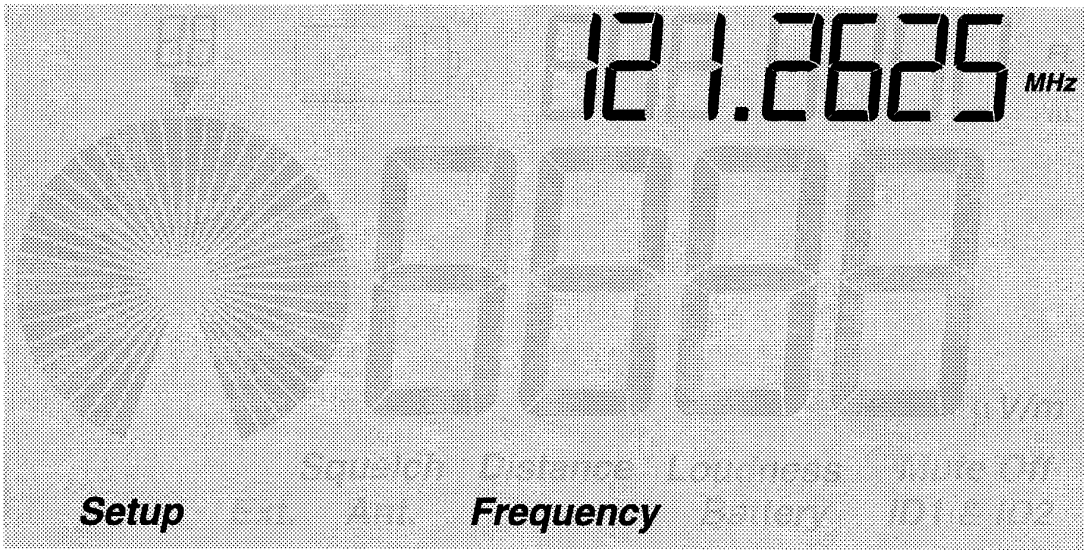
To return to the operating mode or to access another Setup function mode, press the FUNCTION button until the desired mode is flashing. If no key press activity is detected after five seconds, Sleuth automatically returns to the operating mode.



Setup Function Modes: Frequency

Allows adjusting of Sleuth's target frequency.

To access this function, turn Sleuth ON; after the self-test, press the FUNCTION button until ***Frequency*** is flashing. The Distance indicator now reads the previously-set target frequency, followed by ***MHz*** instead of ***Ft.*** or ***m*** that is displayed during normal operation.

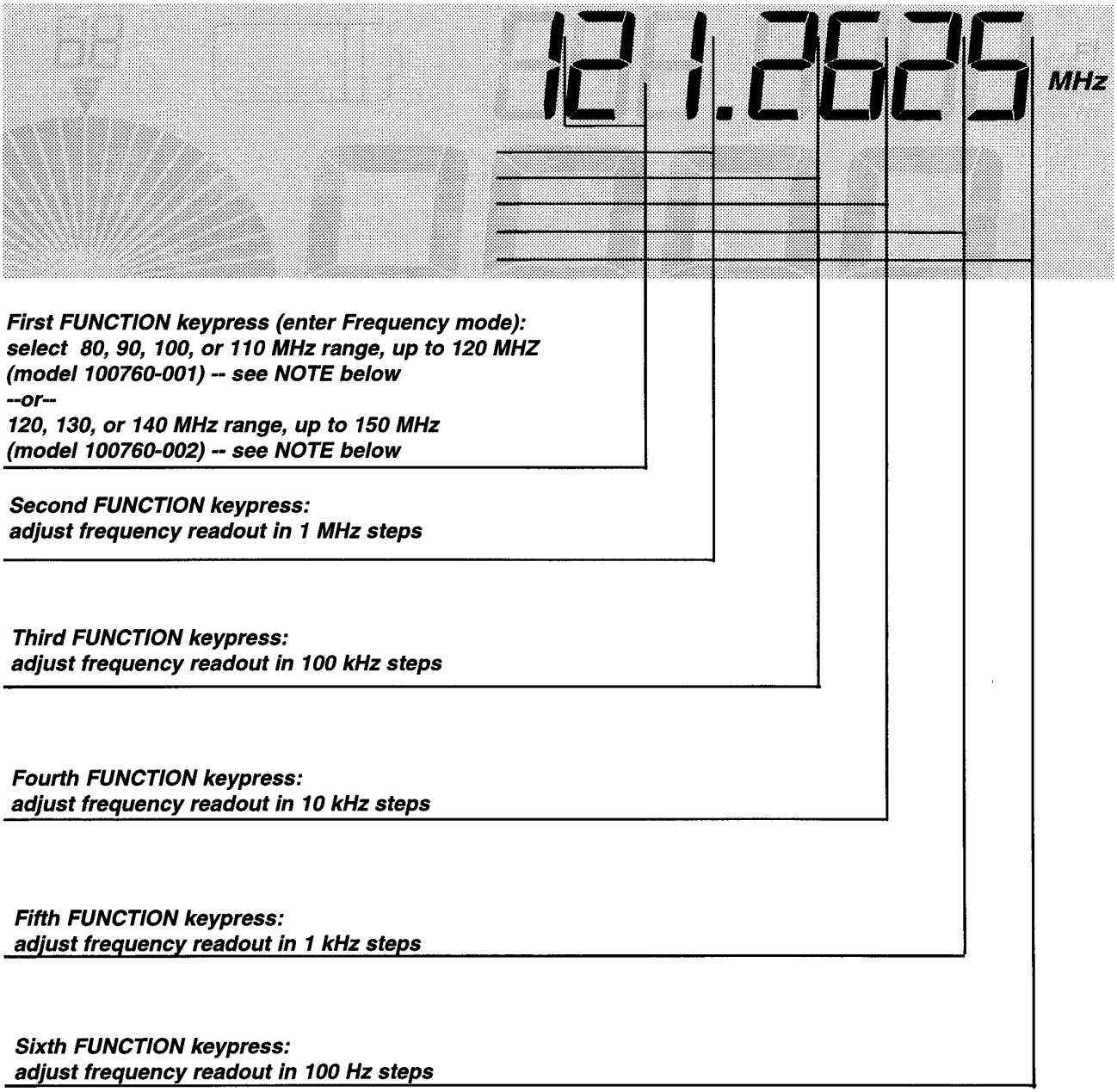


When first entering the Frequency mode, you can use the rocker switch to toggle the frequency between 80, 90, 100, or 120 MHz with the Model 100760-001, or 120, 130, 140, and 150 MHz with the Model 100760-002. Subsequent presses of the FUNCTION key allow you to fine tune the frequency by allowing adjustment of the frequency in increments of 1 MHz, 100 kHz, 10 kHz, etc., increasing one decimal place at a time in descending order; see the illustration on the next page.

For instance, to set the frequency of a Model 100760-002 (range: 120.0000 to 150.000) to 121.2625, turn the unit on; after the self-test, press the FUNCTION button until ***Frequency*** appears. Press the rocker switch until the display reads in the 120 MHz range; if the previous frequency was, say, 131.2255, pressing the switch up would change it to 141.2255, while pressing it down would change it to 121.2255 (see NOTE at bottom of next page). Press the FUNCTION button again, and press the rocker switch until the display reads 121. Press the FUNCTION button again, and press the rocker switch until the display reads 121.2. Press the FUNCTION button again, and press the rocker switch until the display reads 121.26. Press the FUNCTION button again, and press the rocker switch until the display reads 121.262. Press the FUNCTION button again, and press the rocker switch until the display reads 121.2625.

To return to the operating mode or to access another Setup function mode, press the FUNCTION button until the desired mode is flashing. If no key press activity is detected after five seconds, Sleuth automatically returns to the operating mode.

Setup Function Modes: Frequency



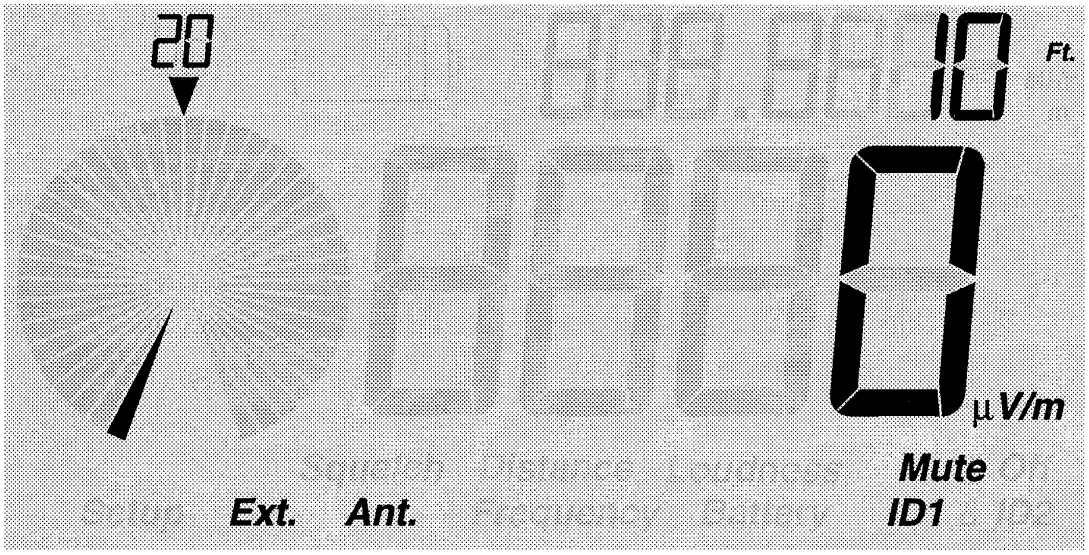
Press FUNCTION again to exit the Frequency mode; this will occur automatically after 5 seconds.

NOTE: the model's frequency range limits how far the frequency can be adjusted in any direction. For instance, on a unit already set to 121.2255, pressing down will yield no results, as "111.2255" would be below the 120.0000 limit. Likewise, on a unit set to 141.2255, pressing up will have no effect because "151.2255" would above the 150.0000 limit. This applies to all the decimal places in the frequency range.

Setup Function Modes: External Antenna

When Sleuth is turned on (and not housed in the Docking Station), it always defaults to using the internal dipole. However, this mode allows switching of the Sleuth's antenna from the internal dipole to an external hand-held dipole antenna.

The internal dipole antenna can be switched off manually by pressing the FUNCTION button until ***Ext. Ant*** *is* flashing. Pressing the rocker switch toggles between the external antenna and the internal dipole settings. If the internal dipole is in use, ***Ext. Ant.*** blinks; pressing the rocker causes the blinking to stop, indicating that the external antenna setting is on. If the external antenna setting is in use, ***Ext. Ant.*** does not blink; pressing the rocker causes the display to blink, indicating that the internal dipole setting is on.



NOTE: Whenever Sleuth is inserted into the Docking Station (which is equipped with an external antenna connection). Sleuth is **automatically switched to the external monopole antenna setting.** Whenever Sleuth is turned off and powered up again, or if Sleuth is on and the external power source is removed. Sleuth is **automatically switched to the internal dipole setting**.

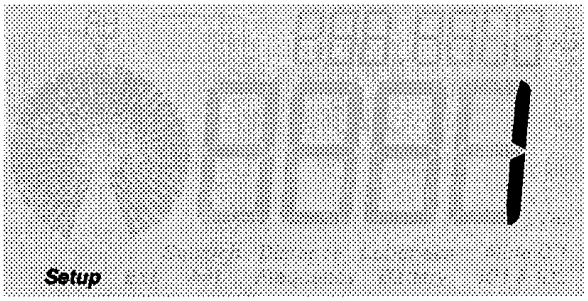
To return to the operating mode or to access another Setup function mode, press the FUNCTION button until the desired mode is flashing. If no key press activity is detected after five seconds, Sleuth automatically returns to the operating mode.

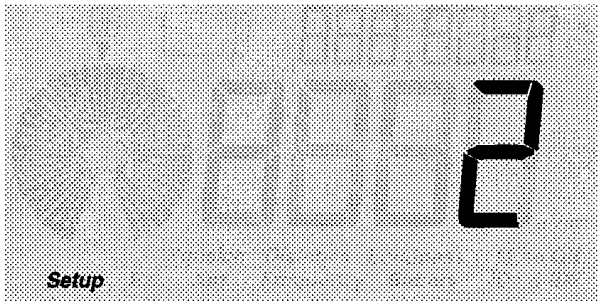
Using Sleuth in the Field

Sleuth is in its operating (normal) mode after it's turned on and performs a brief self-test. Before turning on Sleuth for field use, make sure the battery is fully charged, and make any user-preference changes that aren't likely to change during field use - e.g., target frequency, mute, and squelch. This way Sleuth is ready the moment it's powered up. Of course, any user preferences for the mute, distance, squelch, frequency, and loudness can easily be changed during operation by pressing the FUNCTION button repeatedly until the desired function is flashing. If no activity is detected after five seconds. Sleuth will automatically return to the operating mode.

Operating Modes. Sleuth has two modes: mode 1 (video mode), in which Sleuth generates its own audio tone, or mode 2 (Snifter mode), in which it amplifies the received signal for the audio output. Depending upon which is used, the Sleuth's audio behavior and the mute options will be slightly different: mode 1, designed for video carriers, includes the ID tone options, and features a simulated audio tone; mode 2 has "mute off" and "mute on", and uses the audio signal from an external source, such as a Sniffer II/III signal source. The table below describes the different options and settings.

To set the operating mode, power up Sleuth and press the FUNCTION button once during the self-test routine. When it finishes, the display will show either **1** or **2** in the µV/m indicator (see below), depending upon which mode was last used.





Mode 1 (video mode): Mute settings available

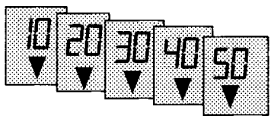
Mute setting	Activates when...	with…
Mute Off	µV/m more than squelch level	simulated audio tone, sweeping up
Mute ID1	µV/m more than squelch level & ID1	simulated audio tone, sweeping up
Mute ID2	µV/m more than squelch level & ID2	simulated audio tone, sweeping down
Mute ID1 & ID2	µV/m more than squelch level & ID1 & ID2	simulated audio tone, sweeping up (ID1) or down (ID2)

Mode 2 (Sniffer mode): Mute settings available

Mute setting	Activates when…	with...
Mute Off	µV/m more than squelch level	real audio
Mute	µV/m more than squelch level & Sniffer II/III signal	real audio

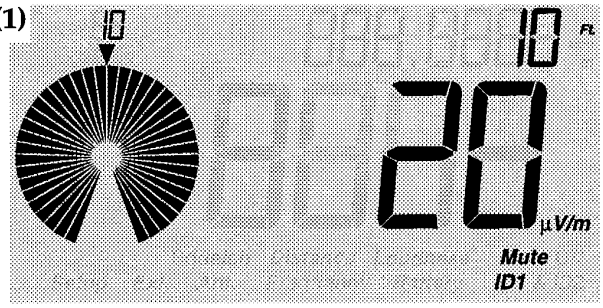
Using Sleuth in the Field

On Sleuth's LCD, the µV/m indicator displays the intensity of the signal it is detecting relative to the distance range selected (see *Setup Function Modes: Distance).* The relative indicator displays the intensity of the detected signal at ±10 dB from the selected sensitivity reference, which can be changed by pressing the rocker switch up or down in normal mode; the numeric display over the reference mark changes accordingly. The purpose of the relative indicator is to help find the location of a signal leak. For instance, in trying to find a leak in a group of apartment buildings from out in the street, set Sleuth to a high sensitivity to detect a signal over a wide area. As you begin to isolate the signal to a definite location, step down Sleuth's sensitivity reference to a lower level.

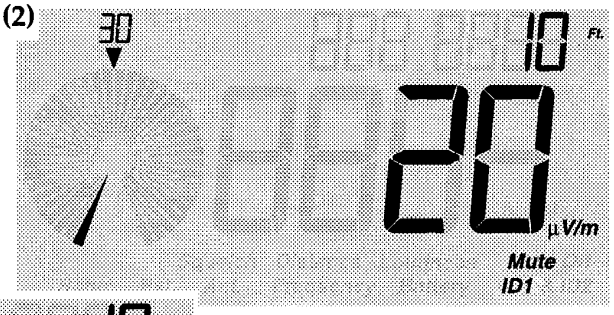


The sensitivity reference setting can range from 10 to 50 (see illustration): the relative indicator displays a range (-10 dB at the lowest, 0 dB at center, +10 dB at the highest). The readouts below demonstrate Sleuth's sensitivity reference set at different reference settings. At 10 (1), the relative indicator shows a reading that is higher than the indicator can display: the setting is too low for the intensity of the signal being read. At 30 (2), the indicator is not registering, indicating that the sensitivity reference is too high for the intensity of the signal being read. At 20 (3), the indicator is close to the center, indicating that Sleuth's sensitivity is at a useful level: the intensity should fluctuate visibly as the Sleuth is moved in relation to the source of the signal being read.

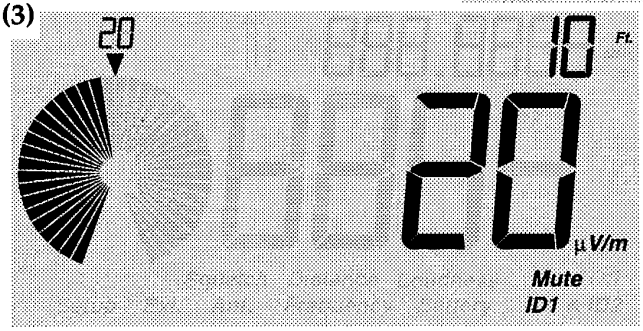
(1)



(2)



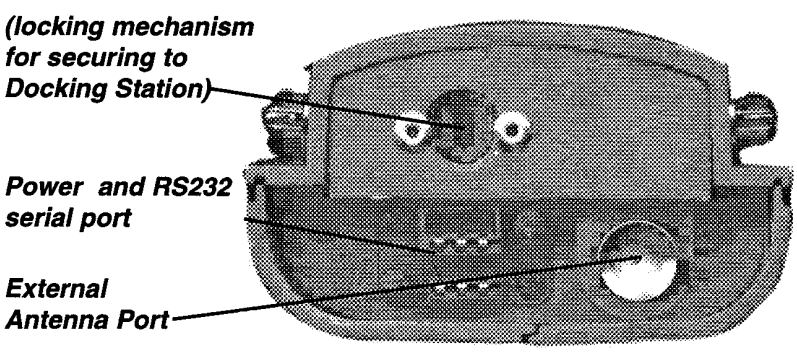
(3)

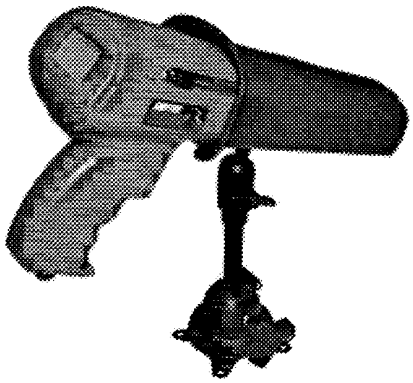


The reference mark below the sensitivity reference indicates tag lock. When mode 1 (video mode) is in use, the mark appears when Sleuth locks onto an ID signal. When mode 2 (Sniffer mode) is in use, the mark appears when Sleuth locks onto a Sniffer II/III signal source.

Using Sleuth with the Docking Station

The Docking Station is designed to allow Sleuth to be easily used in a vehicle. It provides a stable platform for holding Sleuth so that the buttons and LCD can be easily seen, and extends battery time by connecting the Sleuth to the vehicle's power supply. The Docking Station also connects Sleuth to a monopole antenna, which can be mounted on the vehicle roof.





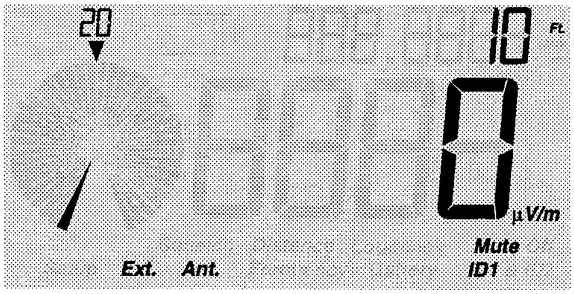
Connecting the Docking Station to Your Vehicle

The numbers accompanying the text refer to the diagram on the next page.

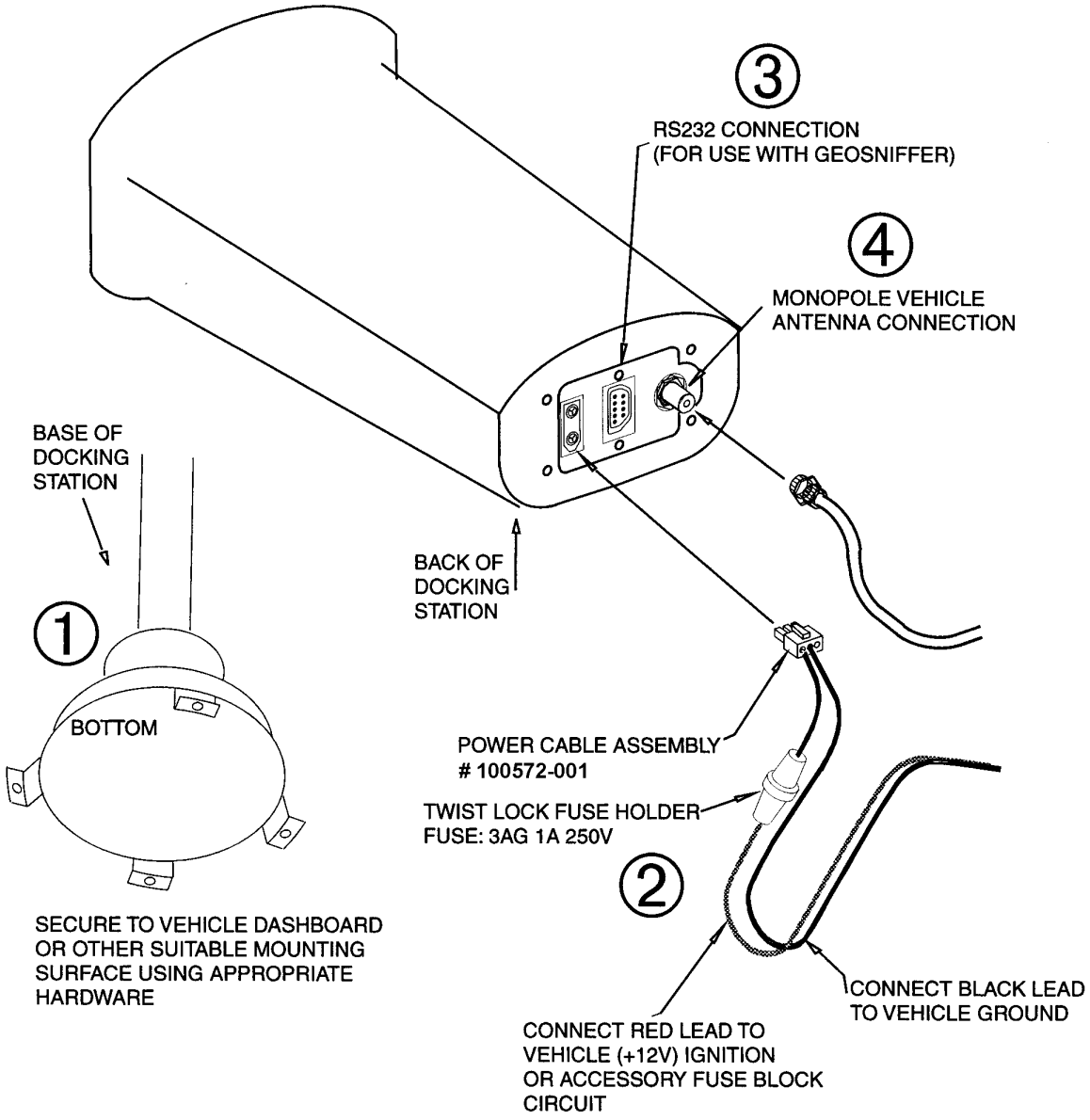
1) Mount the Docking Station in your vehicle. The Docking Station features two ball joints with four mounting screws. Mount the Docking Station so that you can reach the Sleuth buttons while sitting in the driver's seat of the vehicle, such as the dash or the transmission/engine hump.
2) Connect the Docking Station to the vehicle's ignition or accessory fuse block circuit.
3) If using Sleuth with a GeoSniffer, connect the RS-232 data cable of the GeoSniffer mobile unit and the Docking Station. (See the *GeoSniffer User's Guide* for information on mounting, connecting, and operating the GeoSniffer unit.)
4) Attach the monopole antenna to the Docking Station antenna connection.

Using Sleuth in the Docking Station

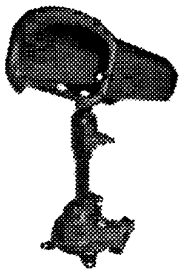
To use Sleuth with the Docking Station, mount the Sleuth unit by inserting it into the Docking Station. Because the power supply and antenna functions are being supplied externally through the Docking Station, Sleuth's LCD will show the ***Ext. Ant.*** (external antenna) display.

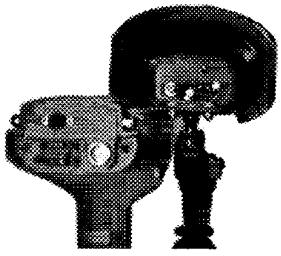


Using Sleuth with the Docking Station



Installation Instructions
Docking Station





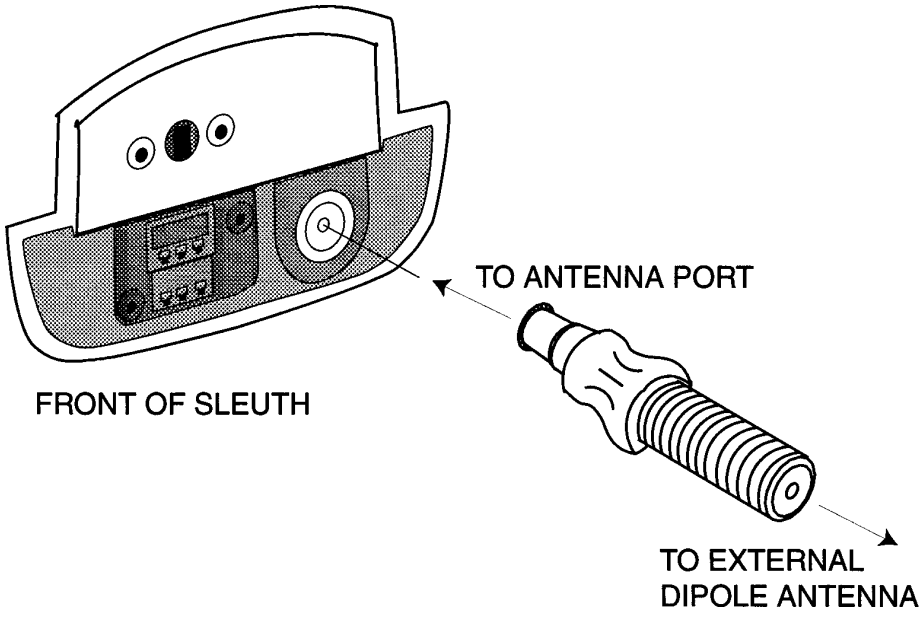
Using Sleuth with an External Antenna

Sleuth can also be used with a handheld external dipole antenna by means of an external antenna adapter (part #100892-001).

To use, mount the adapter into the antenna port on the front of the Sleuth unit, then attach the external antenna's cable to the adapter.

External Antenna Mode

Unlike the Docking Station, which automatically switches Sleuth to the external antenna mode, using a handheld antenna and the adapter requires Sleuth to be manually switched to external antenna mode, as described in *Setup Function Modes: External Antenna.*



Charging the Battery

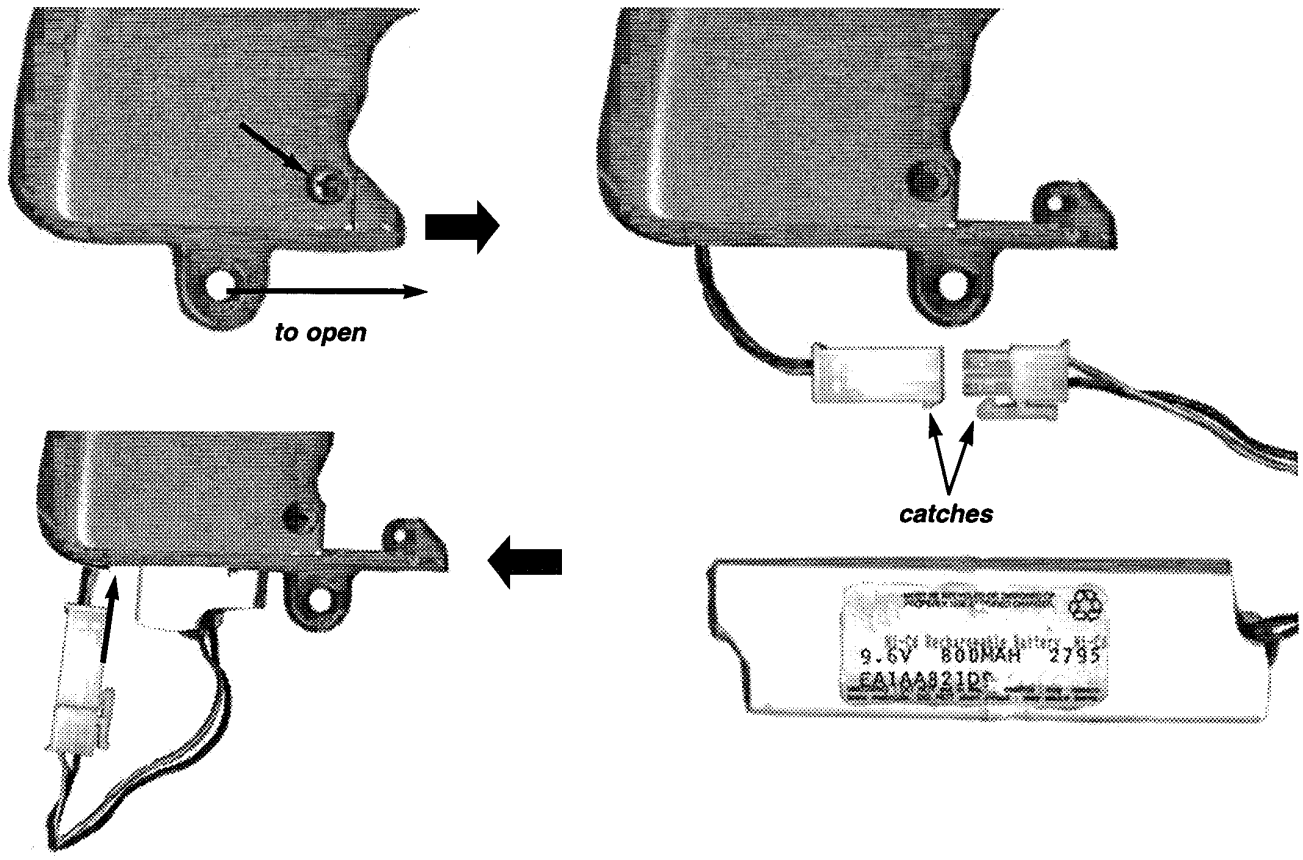
Sleuth uses a 9.6V nickel-cadmium (NiCad) battery housed within the handle. Everyday use of the battery and recharging will eventually require its replacement.

To replace the Sleuth battery, remove the screw (see below) holding the battery compartment door in place. The bottom part of the handle includes the lanyard ring. Slide the compartment door open and carefully pull out the battery.

The battery and Sleuth leads are joined by plastic connectors, each with a catch. Pull the catches back on the battery lead to separate them; discard the old battery properly. Connect the Sleuth lead with that of a new battery by pushing the lead connectors together.

Put the battery back into the handle as illustrated. When the battery pack is fully seated, place wiring and connector in slot behind the battery. Slide the compartment door back into place. Replace the screw and tighten.

Make sure the new battery is fully charged before use; see the *Getting the Most From Your Batteries* pamphlet, included with Sleuth, for more information.



Appendix A: Adjusting the Dipole Antenna

Optimum antenna lengths for the dipole are given for possible Sleuth frequencies in the table below.

Model 100760-001 (80 MHz ~ 120 MHz)

Frequency (MHz)	Length of Each Element: -- inches	-- meters
80	35 5/8	0.905
81	35 1/8	0.894
82	34 3/4	0.883
83	34 3/8	0.872
84	33 7/8	0.862
85	33 1/2	0.852
86	33 1/8	0.842
87	32 3/4	0.832
88	32 3/8	0.823
89	32	0.813
90	31 5/8	0.804
91	31 3/8	0.796
92	31	0.787
93	30 5/8	0.778
94	30 3/8	0.770
95	30	0.762
96	29 3/4	0.754
97	29 3/8	0.746
98	29 1/8	0.739
99	28 3/4	0.731
100	28 1/2	0.724
101	28 1/4	0.717
102	28	0.710
103	27 5/8	0.703
104	27 3/8	0.696
105	27 1/8	0.690
106	26 7/8	0.683
107	26 5/8	0.677
108	26 3/8	0.670
109	26 1/8	0.664
110	25 7/8	0.658
111	25 5/8	0.652
112	25 1/2	0.646
113	25 1/4	0.641
114	25	0.635
115	24 3/4	0.630
116	24 5/8	0.624
117	24 3/8	0.619
118	24 1/8	0.614
119	24	0.608
120	23 3/4	0.603

Model 100760-002 (120 ~ 150 MHz)

Frequency (MHz)	Length of Each Element: -- inches	-- meters
120	23 3/4	0.603
121	23 1/2	0.598
122	23 3/8	0.593
123	23 1/8	0.589
124	23	0.584
125	22 3/4	0.579
126	22 5/8	0.575
127	22 1/2	0.570
128	22 1/4	0.566
129	22 1/8	0.561
130	21 7/8	0.557
131	21 3/4	0.553
132	21 5/8	0.548
133	21 3/8	0.544
134	21 1/4	0.540
135	21 1/8	0.536
136	21	0.532
137	20 3/4	0.528
138	20 5/8	0.525
139	20 1/2	0.521
140	20 3/8	0.517
141	20 1/4	0.513
142	20 1/8	0.510
143	19 7/8	0.506
144	19 3/4	0.503
145	19 5/8	0.499
146	19 1/2	0.496
147	19 3/8	0.493
148	19 1/4	0.489
149	19 1/8	0.486
150	19	0.483

All distances are measured from the measure slot on the top center of the unit's front to the tip of the antenna element.

Appendix B: EC Declaration of Compliance

CE

Manufacturer: ComSonics, Inc.
P.O. Box 1106
1350 Port Republic Road
Harrisonburg, VA USA 22801
Tel.# 540-434-5965

Product: Sniffer Sleuth™
Models: 100760-001
100760-002

ComSonics, Inc. of Harrisonburg, Virginia, USA, hereby declares that the above-referenced product, to which this declaration relates, is in conformity with the provisions of:

Council Directive 89/336/EEC (May 3, 1989), on Electromagnetic Compatibility, as amended by Council Directive 92/31/EEC (April 28, 1992), and

Council Directive 73/23/EEC (February 19, 1973), on Low Voltage.

The Technical File required by these directives, including the original of this Declaration of Conformity, are maintained at the corporate headquarters of ComSonics, Inc. (as listed above) and within the European Community at ComTec Cable Accessories, Ltd., Over Industrial Park, Over, Cambridge CB4 5QE, United Kingdom.

Exceptions noted to the above: