

# Sniffer® Shadow™

## User Guide



REPRODUCTION  
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## Introduction

Thank you for purchasing ComSonics' Sniffer® Shadow™, the latest weapon for fighting dreaded home-borne ingress. Shadow's sleek new shape provides a tool that is as easy to look at as it is to use. One button – that's right, only **ONE BUTTON** blends with the ergonomic contours of the front panel making it virtually impossible to misadjust the instrument. The button says either it's on or it's off and, well, maybe a few other things. Coupled with a Smart Flip-Cover, the button controls powering functions, the backlight function, operating modes, and even the loudness of the famous, 28 year-old Sniffer warble.

Of course, we didn't stop there. An optional accessory software kit customizes tuned frequency, units-of-measure, squelch, and scrambled channel level compensation to suit your needs. The kit provides the workstation application and all other tools necessary to communicate with and personalize the Shadow to conform with system specific parameters.

Lastly (but far from least important), the Shadow introduces a brand new way to isolate real leakage from power line sparkles, like those emitted by hair driers, vacuum cleaners, blenders, food processors, etc. We call it the **Leakage Validation™ Function**. This feature, along with your 25 kHz or 50 kHz channel frequency offset from a neighboring system's carrier location offers the best available solution for making sure that the leakage you read is your leakage and only your leakage.

## **General Operation**

The Sniffer Shadow has one multifunction button on the front. Press the button momentarily to power on the unit. The speaker sounds a single beep. Hold the button for two seconds to power off. The speaker sounds a double beep.

The Shadow has two modes of operation. The unit is in Measure mode when the lid is fully open and the display is active. It is in Monitor mode when the power is on and the lid is closed. In Monitor mode, the indicator light flashes yellow at five-second intervals.

Fully opening the lid powers on the Shadow and activates the Measure mode. Opening the lid illuminates the display backlight for ten seconds. Press the button momentarily to re-activate the backlight when needed. Closing the lid activates the Monitor mode.

In Monitor mode, a momentary press of the button mutes the warble tone alert for five minutes. Opening the lid cancels the mute function.

## **Battery Care**

An internal Lithium Ion rechargeable battery powers the Sniffer Shadow. Charge the battery for three hours before using the unit for the first time. Only use the included AC Charger to charge the battery. Use of other chargers may cause equipment failure, create a safety hazard, and void the warranty.

The Shadow has one visible multifunction indicator light. The light is red when the battery is charging and turns yellow when the battery is fully charged. If the ambient temperature is out of range (too hot or too cold), the light flashes in red and the battery will not receive a charge. This feature prevents premature failure of the battery due to charging at temperature extremes.

The Shadow will not operate when charging the battery.

## **Monitor Mode**

The Monitor mode is active when the Shadow is on and the lid is closed. In this mode, the indicator light flashes yellow at five-second intervals.

In Monitor mode, the speaker emits the Sniffer warble tone indicating the presence of a RF field exceeding the Monitor mode squelch setting. The warble tone sounds for one second and repeats every five seconds. Press the button momentarily to mute the warble tone for five minutes. Open the lid to cancel the warble tone mute.

The Monitor mode squelch level is factory set to 15  $\mu\text{V}/\text{m}$ .\*

A chirp tone indicates a low battery warning. The chirp tone increases as the battery level diminishes. The Shadow automatically powers off to protect the battery from excessive discharge.

## **Measure Mode**

Fully opening the lid activates the Measure mode. A backlight illuminates the display for ten seconds on opening the lid. Momentarily pressing the button reactivates the backlight for ten seconds.

The units-of-measure is factory set to  $\mu\text{V}/\text{m}$ .\*

Leakage level measurements are displayed in large easy to read numbers. See the Specifications section for the level range of each units-of-measure setting.

The leakage level indicator, on the left of the display, shows the relative leakage level.

The Shadow produces an audible warble tone. The warble tone varies in loudness according to the leakage level measurement.

When the backlight is on, press the button to adjust the loudness. Each press of the button increases the loudness up a step to the maximum level and then back to the minimum level. Loudness is adjustable only when the backlight is on.

The Measure mode squelch level is factory set to 10  $\mu\text{V}/\text{m}$ .\*

The Shadow includes a Leakage Validation function to determine if the received signal is leakage or noise. If the display shows the word 'Noise', the Shadow is reading a broad spectrum interference and not a television channel leak. This function is factory set to ON.\*

A battery graphic indicates the battery charge level. The Shadow automatically powers off when the charge is low to protect the battery from excessive discharge.

\* Function is field adjustable by using the optional Configuration Software Kit. See Configuration Software Kit section for selections.

## **Accessories**

Sniffer Shadow (includes Holster, AC Charger, and User Guide)	101213-001
AC Charger 100-240VAC	101226-001
Vehicle Charger 12VDC	101247-001
Holster	101240-001
Configuration Software Kit	101241-001

## Configuration Software Kit (option 101241-001)

The Sniffer Shadow is factory configured to the settings indicated through out this guide. To re-configure a Sniffer Shadow in the field, an optional Configuration Software Kit is available. The kit consists of a program disk, interface cable, and reference guide. It requires a PC with MS Windows 95 or later and an available serial port.

### Configurable Functions:

- Tuned Channel Selection: (single frequency in MHz)  
120.0000, 120.0060, 120.2500, 121.2375, 121.2500, 121.2625,  
123.2500, 126.0063, 126.2500, 127.2375, 127.2500, 127.2625,  
128.0000, 128.2500, 131.2500, 132.0066, 133.2375, 133.2500,  
133.2625\*, 136.0000, 136.2500, 138.0069, 138.2500, 139.2375,  
139.2500, 139.2625, 139.3000, 140.2500, 144.0000, 144.0072,  
144.2500, 145.2375, 145.2500, 145.2625, 147.2500
- Units-of-Measure Selection:  
 $\mu\text{V}/\text{m}^*$ ,  $\text{dB}\mu\text{V}/\text{m}$ , or  $\text{dB}\mu\text{V}$
- Monitor Mode Squelch Level Selection Range:  
15 to 400  $\mu\text{V}/\text{m}$ , 15  $\mu\text{V}/\text{m}^*$   
24 to 52  $\text{dB}\mu\text{V}/\text{m}$   
15 to 43  $\text{dB}\mu\text{V}$
- Measure Mode Squelch Level Selection Range:  
10 to 400  $\mu\text{V}/\text{m}$ , 10  $\mu\text{V}/\text{m}^*$   
20 to 52  $\text{dB}\mu\text{V}/\text{m}$   
11 to 43  $\text{dB}\mu\text{V}$
- Level Offset Compensation: (for scrambled channel)  
0.0\* to +6.0 dB in 0.5 dB steps
- Leakage / Noise Validation Function: On\* or Off
- Loudness: 25%, 50%\*, 75%, or 100% of maximum

\* Factory Default Setting

## Specifications

*Channel Tuning	Single Frequency (See Configuration Software Kit section for list of available frequencies)
Usable Level Range	5 to 1999 $\mu\text{V}/\text{m}$
and	14 to 66.0 dB $\mu\text{V}/\text{m}$
*Units of Measure	5 to 57.0 dB $\mu\text{V}$
Level Accuracy	$\pm 10\%$ over operating temperature
Pre-detection BW	7.5 kHz
Battery	Rechargeable Lithium Ion, internal Recharge Time: 3 Hours Runtime: Monitor Mode only: > 45 Hours Measure Mode only: > 3 Hours Combined Runtime: > 16 Hours <sup>i</sup>
Size	$\approx 5.25'' \times 2.5'' \times 1.6''$
Weight	< 7 oz
Operating temperature	0°F to 120°F (-18°C to 49°C)
Storage temperature	-4°F to 140°F (-20°C to 60°C)

\* Selectable through Configuration Software Kit (option 101241-001)

<sup>i</sup> Combined runtime based upon 80% Monitor Mode, 20% Measure Mode, and 50% Audio Loudness setting.

## 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 Shadow 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](mailto: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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