

## 1. INTRODUCTION

This User's Guide contains information necessary for the setup and operation of the ST 006 EMF (electromagnetic field) Detector.

Before operating your ST 006, read this User's Guide carefully and consult it every time you have questions about the operation of the EMF Detector.

The information in this User's Guide is subject to change without prior notice.

The manufacturer reserves the right to change the product's specifications in such a manner that they do not worsen or reduce the product's functionality.



## 2. PURPOSE

The ST 006 EMF Detector is designed to detect and locate sources of electromagnetic radiation from devices intended for the unauthorized obtaining of information (eavesdropping devices), such as:

- radio microphones;
- telephone radio transmitters;
- radio-stethoscopes;
- hidden video cameras equipped with a radio channel for transmitting information;
- systems of spatial high-frequency radiation in the radio-frequency range;
- systems for transmitting images from computer monitors using a radio channel;
- radio beacons for tracking moving objects (people, vehicles, freights, etc.);
- unauthorized radio stations, wireless phones, and phones with wireless extensions.

The ST 006 will operate in accordance with its specifications if the battery voltage is no lower than 3.2 V. Operating temperature: -20° to 35° C (-4° to 95° F). Relative humidity: up to 95% (noncondensing).

**WARNING! The output amplifier of the ST 006 may be damaged by high voltage from static electricity, which may accumulate on synthetic clothing, floor carpets, etc.**

### 3. SPECIFICATIONS

Frequency range	30–2,500 MHz
Input sensitivity:	
F=30–800 MHz	< –56 dBm (0.35 mV)
F=800–1,700 MHz	< –50 dBm (0.71 mV)
F=1,700–2,500 MHz	< –42 dBm (1.8 mV)
Display dynamic range	60 dB
Audio frequency range	0.5–5.0 kHz
Power supply	3.6 V rechargeable battery
Average current consumption	<40 mA
Dimensions (without antenna)	85 x 53 x 19 mm (3.3 x 2.1 x 0.7 in.)
Weight (without battery)	0.15 kg (0.22 lb.)

### 4. ST 006 BOX CONTENT

You will find the following in the ST 006 box:

1. ST 006 EMF Detector Unit
2. Telescopic antenna
3. Battery charger
4. This User's Guide

## 5. OPERATING PRINCIPLES OF ST 006

The ST 006 utilizes the principles of wideband detection of electric fields.

The EMF Detector receives radio signals in the range of 30 to 2,500 MHz, detects them, and displays them visually and as an audio signal.

The level of the signal is displayed on a 16-segment LED meter. Separate LEDs for **GSM** and **DECT** signals are also present.

Audio signals help identify different types of eavesdropping devices.

The device also displays the battery level during operation.

### 5.1 DESCRIPTION OF THE BOX CONTENTS

#### 5.1.1 ST 006 EMF Detector

The ST 006 EMF Detector is a small form-factor box (Fig. 1).

On the front panel of the detector:

- a 16-segment red LED meter and a blue PWR LED (1);
- GSM and DECT signals LEDs (2);

The top of the detector has a threaded port for connecting a telescopic antenna (3).

The right side of the detector has

- a "X" control button (4);
- a port for connecting the charger, marked "CHARGE" (5).

The left side of the detector has

- a "X" control button (6).

The back of the detector hosts

- a decorative speaker grille (9);
- a brief operation memo (8);
- a sticker with information about the manufacturer, model, and serial number (7).

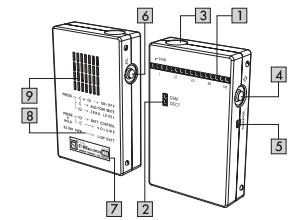


fig. 1

### 5.1.2 Charging unit

The charging unit is intended for charging the internal battery of the ST 006 from a 220 VAC, 50 Hz electrical outlet.

### 5.2 PACKAGING

The ST 006 and its accessories are shipped in a white box made of corrugated cardboard with the dimensions of 170 x 150 x 60 mm (6.7 x 6 x 2.4 in.).

For convenience and protection the detector and its accessories are placed in specially molded styrofoam inserts.

The contents of the box are depicted in Fig. 2.

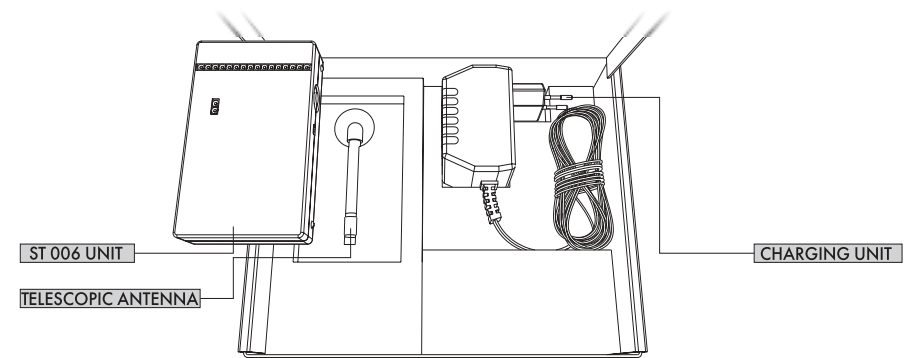


fig. 2

## 6. OPERATING THE ST 007

**This User's Guide describes the principles of operating the ST 006. It is not intended as a comprehensive reference for detecting eavesdropping devices.**

### 6.1. DISPLAY AND CONTROLS

#### 6.1.1. Display

The front of the detector has all the indicators.

A 16-segment red LED meter and a single blue LED indicating battery status, occupy the upper area of the front panel.

The first segment (PWR) lights up blue when the device is powered up, or blinks indicating that the battery needs to be recharged.

The main purpose of the remaining 16 red segments of the meter is to indicate the level of the signal.



Adjacent segments light up to indicate the average value of the level of the detected signal, while a single lit up segment shows its peak value.



The main purpose of the GSM and DECT LEDs is to indicate that the device detects a radio transmission over these protocols.

Additional functions of these LEDs will be described later in relation to the control buttons (see 6.1.2).


#### 6.1.2 Controls


To turn the detector on and off press the  and  buttons one after another. When the device turns on, all the LEDs on the front panel will blink once.


Quick sequential pressing on the  button switches between audio modes:

- the built-in speaker will play the detected signal (the DECT LED will flash once);
- the built-in speaker will play tones with a frequency proportional to the level of the signal, beginning from the moment the fifth segment of the meter lights up (the GSM will flash once);
- the built-in speaker will be off (the GSM and DECT LEDs will flash once).



To control the volume of the audio signal in the speaker, press and hold the  button. The signal level meter will then indicate the volume of the audio signal.

Press the  briefly to set the indication threshold in relation to the current signal level. The signal level meter will be reset.

Press and hold the  button to check the battery charge level. The signal level meter will then display the current battery charge.

## 6.2. POWER SUPPLY

The ST 006 is powered from a single 3.6 V 400 mAh Ni-Cd rechargeable battery. The manufacturer guarantees no less than 500 charging cycles for the battery.

The minimum voltage required for the operation of the ST 006 EMF Detector is 3.2 V. When the battery discharges to that level, the blue PWR light will begin to flash.



Under a normal load, a fully charged battery should provide enough power for around 10 hours of operation of the detector.

If the device has been stored at temperatures below -5°C (23°F) for a prolonged period, the battery's capacity will decrease.

Please consider the following guidelines to judge the battery charge:

- if all the segments light up, the battery is fully charged;
- if 1–3 segments light up, the battery is almost empty;
- if the blue PWR LED is blinking, the battery is completely discharged.

### 6.2.1 Charging the battery

Connect the charger to the CHARGE port of the detector.

Plug the charger into a 220 VAC electric outlet.

The time necessary to fully charge the battery is 14 hours.

*Note: Ni-Cd batteries have the so-called memory effect. To ensure that the battery charges completely, try not to recharge it unless it is almost fully discharged.*



### 6.2.2 Replacing the battery

To replace the rechargeable battery follow these instructions:

- remove the screws in the back of the detector unit;
  - disconnect and remove the old battery;
  - insert a new battery, observing polarity;
  - replace the back of the detector and secure it with the screws.
- The unit accepts Ni-Cd or Ni-MH 3.6 V rechargeable batteries.

### 6.3 OPERATING THE ST 006 EMF DETECTOR

Attach the telescopic antenna to the detector.

Switch the detector on.

If the blue PWR LED is blinking, recharge the battery.

Check to see the battery charge level.

Set the desired length of the telescopic antenna using the following as a guide:



- at its maximum length, the antenna amplifies the signal by approximately three times (in the range below 800 MHz) compared to the minimum length;
- it is preferable to set the antenna to the minimum length when detecting eavesdropping devices with frequencies greater than 800 MHz.

Set the indication level threshold.

Walk around the scanned area and move the antenna of the detector around, making sure it is no closer than 10 cm (4 in.) to the suspected object.

When the antenna approaches an eavesdropping device the number of lit up segments of the signal level meter will increase.

If a pulse-type signal is detected, a single segment will move to the right on the meter.

If DECT or GSM signal are detected, the respective LEDs will light up on the front panel of the detector.

To determine the exact location of an eavesdropping device, set the zero threshold in relation to the current signal and continue scanning. Repeat as necessary until you locate the offending device.



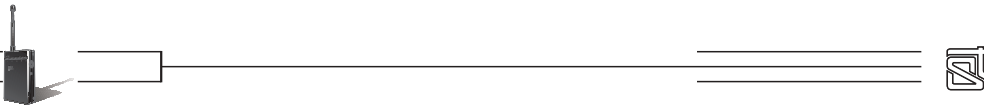
To use the effect of an audio feedback, turn up the volume to its maximum.

If the ST 006 detects an eavesdropping device, you will hear a distinctive tone with a frequency of 3–5 kHz.

*Note: Typical sensitivity for detecting 5 mW eavesdropping devices is around five meters; for detecting a GSM cell phone around 10 meters. These values are highly dependent on the operating frequency of an eavesdropping device and electromagnetic background of the scanned area.*

*The audio feedback effect is based on positive acoustic feedback that appears when a loop exists between the microphone of an eavesdropping device and the detector's built-in speaker.*

*It is only evident in eavesdropping devices that use regular types of modulation-amplitude or frequency modulation. In the event of frequency modulation, the effect utilizes the parasitic amplitude modulation in the frequency modulated signal. (In high-quality eavesdropping devices this effect might be less evident or not present at all.)*



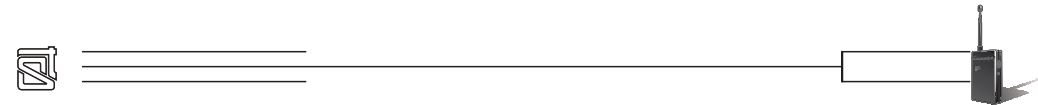
## 7. SOME WARNINGS AND RECOMMENDATIONS

7.1 Use the original packaging for storing and transporting the ST 006.

If you are not using the unit for a prolonged period of time, keep it in a closed, heated room with a temperature of 10 to 30°C (50° to 86° F) and relative humidity of no more than 80%.

When transporting the unit in the original packaging, take measures to prevent it from blows or excessive pressure.

7.2. After the unit has been exposed to temperatures below -5°C (23° F) for prolonged periods (over 4 hours), turn it on only after ensuring that there are no visible traces of condensation.



### 8. WARRANTY INFORMATION

8.1. The manufacturer guarantees that the ST 006 will comply with the specifications for a period of 12 months beginning from the day of purchase.

8.2. The manufacturer will carry out repairs of the unit and its accessories, or replace them if they malfunction or if the functioning does not comply with the stated specifications free of charge during the guarantee period.

8.3. This warranty only covers free-of-charge repair or adjustment of faults that are not the result of improper use, failure to follow the usage tips and recommendations stated in the User's Guide, improper storage or shipment, and mechanical damage to the unit or its parts. The warranty will only be ensured with a guarantee claim accompanied by a properly filled out certificate of warranty.

8.4. The warranty is granted for every unit only if the purchaser provides a certificate of warranty filled out by the manufacturer and the seller.

8.5. The manufacturer offers post-guarantee servicing of the ST 006 EMF Detector.

SmerSH Technics grants its official dealers the right to establish additional warranty periods.



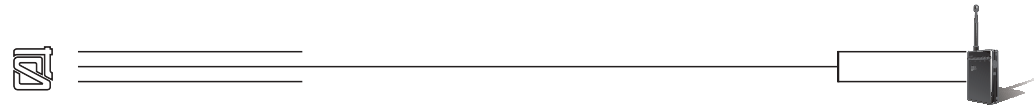
### 9. QUALITY CONTROL CERTIFICATE

The ST 006 EMF Detector

S/N \_\_\_\_\_ ,

has passed Q.C.

Manufacture date: \_\_\_\_\_



NOTES

**CERTIFICATE OF WARRANTY N1**

For warranty repair (servicing) of the ST 006 EFM Detector

S/N \_\_\_\_\_ Manufacture date \_\_\_\_\_ Manufacturer

Sold \_\_\_\_\_ Date " " \_\_\_\_\_ 200 r.

(name of the dealership or trade organization)

Sales representative \_\_\_\_\_ Seller

(signature)

**CERTIFICATE OF WARRANTY N1 (TEAR OFF PART)**

For warranty repair (servicing) of the ST 006 EFM Detector

S/N \_\_\_\_\_ accepted \_\_\_\_\_ service technician \_\_\_\_\_

(name and signature)



**CERTIFICATE OF WARRANTY N2**

For warranty repair (servicing) of the ST 006 EFM Detector

S/N \_\_\_\_\_ Manufacture date \_\_\_\_\_ Manufacturer \_\_\_\_\_

Sold \_\_\_\_\_ Date " " \_\_\_\_\_ 200 r.  
(name of the dealership or trade organization)

Sales representative \_\_\_\_\_ Seller \_\_\_\_\_  
(signature)

**CERTIFICATE OF WARRANTY N2(TEAR OFF PART)**

For warranty repair (servicing) of the ST 006 EFM Detector

S/N \_\_\_\_\_ accepted \_\_\_\_\_ service technician \_\_\_\_\_  
(name and signature)



