



User Manual

SST4 Mini Simulator

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Safety Information - Read First

To ensure personal safety, read **Safety Information - Read First** and the **Cautions** below before using the SST4 Mini Simulator.

For safety reasons, users need to be properly trained in the use of the equipment. Use the SST4 Mini Simulator only as specified in this guide, otherwise the usage provided by the device may be impaired.

Warning

- The SST4 Mini contains a lithium battery. Do not disassemble or set on fire. Must be disposed of using e-waste recycling. Used batteries must be disposed of by a qualified recycler or hazardous materials handler.
- Do not use in potential explosive and/or hazardous atmospheres; safe area use only. The SST4 Mini Simulator is intended solely for training and simulation purposes. It does not replace functional gas detectors, and must not be used for live gas measurement or personal protection purposes.

Cautions

- Do not use the SST4 Mini Simulator unit or remote if it is damaged or broken; contact WatchGas or an authorized WatchGas distributor for assistance.
- Only a trained instructor or personnel under supervision should operate the devices.
- Do not operate in explosive or flammable environments; safe area use only.
- Avoid placing the devices near heat sources or in direct sunlight.
- Do not mix new and used batteries; always replace the 2 batteries inside the remote together.
- If the remote has been left in long-term storage, replace both batteries before using it.
- When the battery level of the remote is low **BAT LO** will be flashing on the screen. When this occurs, replace the batteries.
- Only clean the housing with a dry or slightly damp cloth.
- Do not use solvents, alcohol, or pressurized water spray to clean the device. Doing this will damage the plastic outer layer, or the electronics inside the remote (the remote is not water-resistant).
- Do not expose the devices to electrical shock or mechanical shock.
- Do not immerse the devices in water or any other liquids.
- Keep out of reach of children.
- Do not attempt to disassemble, adjust, or service the devices unless instructions for that procedure are provided in the technical reference guide, and/or that part is listed as a replacement part. Use only WatchGas replacement parts.
- If the SST4 Mini Simulator or its components are damaged or contaminated, dispose of them according to local regulations for hazardous materials.
- The warranty of the devices will be voided if customers, personnel, or third parties damage the devices during repair attempts.

1. Introduction

1.1 SST4 Mini Simulator Product Description

The SST4 Mini Simulator is a wireless gas simulator that uses a reliable protocol to simulate gas concentration levels for CO, H₂S, O₂, and CH₄ (LEL). This protocol ensures stable communication between units without requiring Wi-Fi. The set consists of two items: the remote, which is responsible for sending gas concentration values to all units, and the SST4 Mini Simulator unit, which receives and responds to these values.

These devices allow users to train personnel in the proper use of gas detectors. Proper training is essential, as the correct response to a dangerous gas situation can save lives.

The set provides all the tools necessary to train personnel on how to operate the SST4 Mini and respond appropriately if a hazardous gas is detected, all within a safe and controlled training environment.

1.2 What's In the Box

The content below provides all the standard items included with the SST4 Mini Simulator. If the SST4 Mini Simulator is damaged or any items are missing, contact the place of purchase.

- **SST4 Mini Simulator Remote control**
- **SST4 Mini gas detector with the radio receiver module inside**
- **2xAA 1.5V Batteries (pre-installed)**
- **User Manual**
- **Warranty Card (if applicable)**

WARNING: The SST4 Mini included in the package is different from a normal SST4 Mini gas detection device - the sensor is replaced with a radio-receiver, and the gas concentration values are sent via the Simulator Remote. As such, users should take care not to use the SST4 Mini Simulator SST4 Mini as a regular gas detection device. It should only be used for training purposes, in safe, controlled, and well-ventilated areas.

2. Prepare For Use

2.1 The SST4 Mini Simulator Remote

1. Power on the device using the ON/OFF switch, located in front of the remote.
2. On first startup, the last saved channel will be loaded — the default is channel 15.
3. To change the channel, turn off the remote, press the channel button on the right side of the remote, and power the device back on while keeping the channel button pressed.
4. The remote will enter channel configuration mode.
5. Use the turning knob to select the desired channel.
6. Once the channel is selected, press down the turning knob to save the selected channel. When successful, the screen will show OFF.
7. Power cycle the remote by turning it off and back on.
8. To select a gas type, press the corresponding gas selection button and use the turning knob to adjust to the gas concentration value.
9. If everything is set up correctly, the changes will be reflected on the SST4 Mini display when turned on.

NOTE: The value shown on the SST4 Mini may be slightly different from the value set on the remote. Small differences are normal, but if the displayed value differs by more than 10%, the SST4 Mini should be calibrated.



1. LCD
2. Channel Button
3. ON/OFF Switch
4. Turning Knob
5. Gas Selection

2.2 The SST4 Mini Simulator Unit

1. For more information on the SST4 Mini, refer to the [SST4 Manual](#). Please note that the sensors in the SST4 Mini are replaced with a radio-receiver. This means that the SST4 Mini will not give an alarm in the presence of dangerous gas and should never be used as a real gas detector under any circumstances.
2. Hold the pushbutton on the SST4 Mini to turn it on, and ensure that the radio-receiver is active. This is indicated with a red LED. If the radio-receiver is not active (the LED is not illuminated), let go of the button and try again.
3. Once the SST4 Mini has powered on, all gas values except for oxygen will display zero, mimicking the normal behaviour of the regular SST4.
4. A common sign of incorrect setup is seeing the gas values as OL (over load), which means that the radio-receiver is not active (red LED is not illuminated). Turn off the SST4 Mini and try again.
5. The channel setting on the SST4 Mini Simulator Unit is handled via hardware, and the selected channel is labelled physically on the device.



1. Display
2. Pushbutton
3. Red LED Location

3. How to Use

Step 1: Powering the SST4 Mini Simulator Unit

1. Press and hold the SST4 Mini's pushbutton to power on the device.
2. Make sure the red LED is illuminated, indicating that the radio receiver is powered on; if it is not, stop the activation and try again.
3. As the remote has not yet sent any valid data, the SST4 Mini will display 0 for all gases and 20.9% for oxygen (O₂).
4. Turn on the remote by using the ON/OFF switch.

Step 2: Selecting and Adjusting the Gas Type

1. Press a button on the remote to select the desired gas type (H₂S, CO, O₂, or LEL).
2. The selected gas type is then shown on the display of the remote.
3. Use the turning knob on the remote to increase or decrease the gas value. **NOTE:** For gases with decimal values (e.g., O₂, or H₂S), a decimal point is shown on the display.
4. The current simulated value is broadcasted wirelessly.

Step 3: Channel Selection

1. Turn off the remote.
2. While holding the channel button pressed, turn the remote back on.
3. The current channel is shown as "CHXX" on the display of the remote.
4. Use the turning knob to select a channel from 1 to 15.
5. Press the turning knob to confirm and save the desired channel.
6. If the desired channel has been saved successfully, the remote will show "OFF" on its display.
7. Power cycle the remote by turning it off and back on.

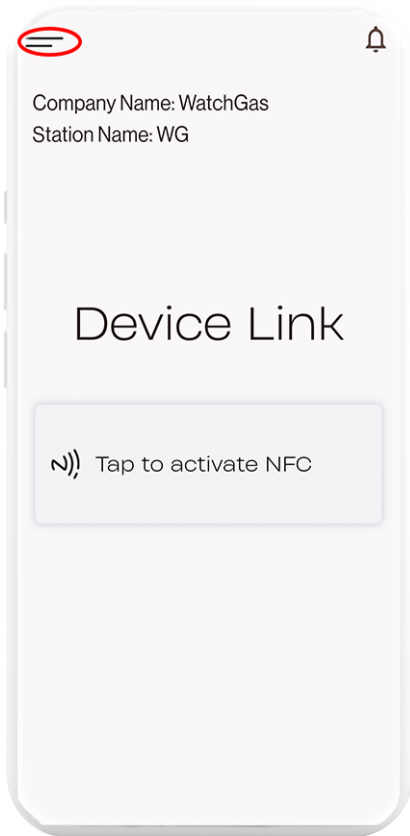
Step 4: Broadcasting & Receiver Response

1. Simulated values are sent to all the SST4 Mini Simulator units on the same selected channel.
2. When the SST4 Mini Simulator Unit receives gas concentration data, it updates its sensor values accordingly.
3. The SST4 Mini Simulator Unit reverts to its default gas concentration values if no valid data is received for 5 seconds.

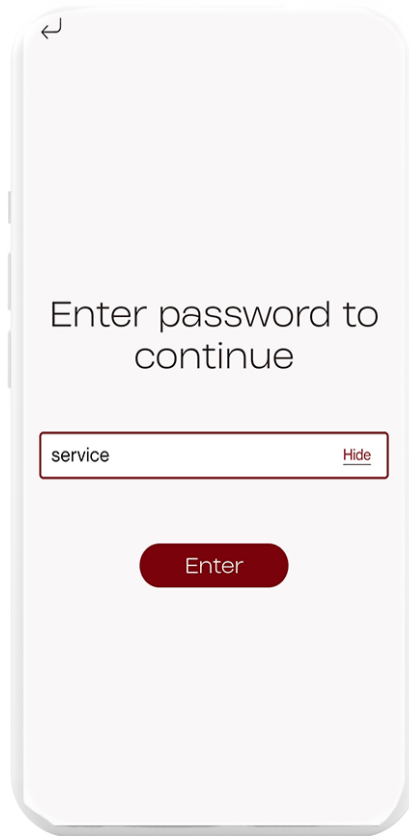
Step 5: Calibration Mode

1. Place the SST4 Mini Simulator Unit into the [SST Dock](#) for Calibration, or use the [WatchGas SST App](#).
2. Wait for the Fresh Air phase to complete and for the system to enter the calibration gas injection phase.
3. Once the Fresh Air phase is finished and the Calibration phase begins, press and hold the turning knob on the remote for 3 seconds.
4. The remote will now display “CAL”, and the readings on the SST Dock monitor will begin to change.
5. WatchGas recommends users to keep the remote placed on a stable surface near the SST Dock during calibration.
6. Do not press any buttons or rotate the turning knob on the remote during the Calibration process.
7. When the Calibration is complete, press and hold the turning knob (on the remote) again for 3 seconds to exit Calibration mode.
8. Alternatively, you can exit Calibration mode by powering off the remote.
9. Activating Calibration mode on the remote simulates injecting calibration gas into the SST4 Mini.
10. Once Calibration is successfully completed, the displayed values on both the remote and the SST4 Mini Simulator Unit should be closely aligned.

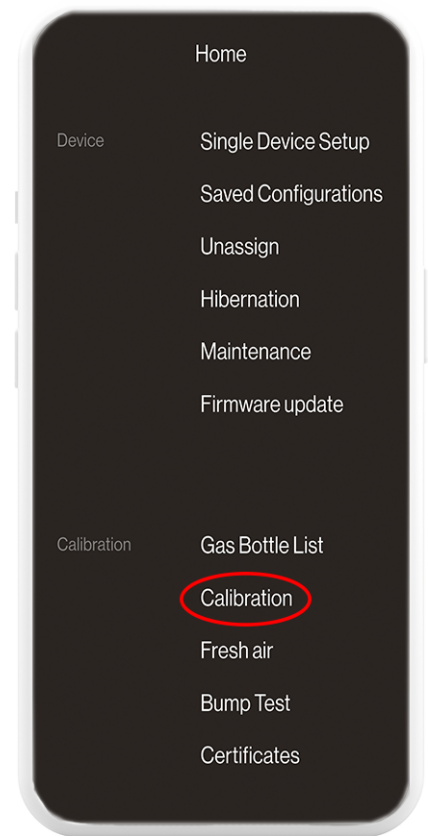
To use the **WatchGas SST App**, first download and install the app from the [App Store](#), the [Play Store](#), or scan the QR code below:



Next, open the app, and press the two lines in the upper left corner.



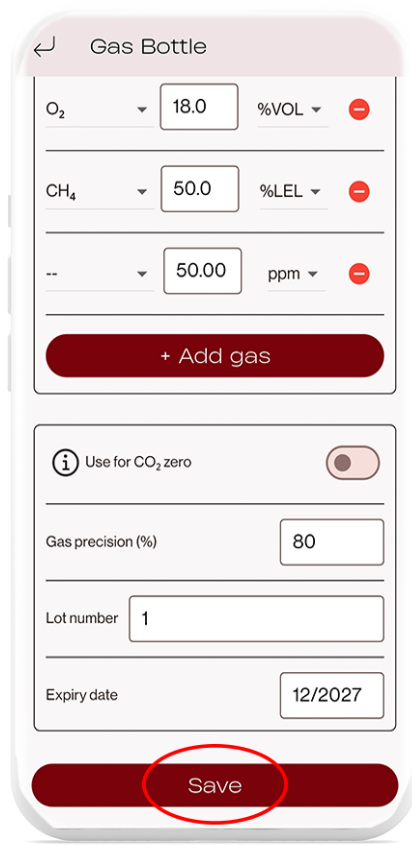
On the next screen, input the “service” password and press the Enter button.



Select Calibration

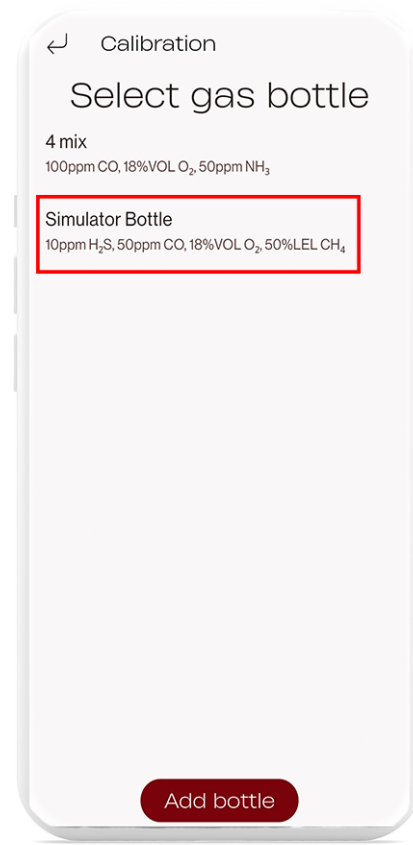


Press the Add Bottle button



For the Gas Bottle, input the following parameters:

- Name: Simulator bottle
- Part number: any number, does not matter
- Gas:
H2S: 10 ppm,
CO: 50 ppm,
O2: 18.00%
CH4 (LEL): 50%
- Gas Precision: 80%
- Lot number: any number, does not matter
- Expiry date: two years in the future (for example, if the current date is 11/2025, then the expiry date is 11/2027).



Select the Simulator Bottle

WARNING: This is a **fake gas bottle** in the app, take care not to use it when you calibrate a real gas detection device.

NOTE: if there is already a calibration gas bottle added to the app, then there is no need to use this fake one, **but only if the gas concentration values are the same.**

4. Supported Gases and Simulation Ranges

The SST4 Mini Simulator supports the following simulated gas types:

Gas	Simulation Range (ppm / %)	Adjustment Step	Default Calibration Value	Description
CO	0 – 1990 ppm	1 ppm	50 ppm	Simulates Carbon monoxide levels
H ₂ S	0 – 100 ppm	0.1 ppm	10 ppm	Simulates Hydrogen Sulfide levels
O ₂	0 – 24.9 %	0.1 %	18 %	Simulates ambient Oxygen levels
CH ₄ (LEL)	0 – 60 % LEL	1 % LEL	50 % LEL	Simulates explosive Methane range (LEL)

Table 1. Supported Gases and Simulation Ranges

NOTE: WatchGas recommends to use the suggested calibration defaults or enable the “CAL” mode for precise calibration output.

5. How to Change the Batteries

The SST4 Mini Simulator comes with two AA 1.5V batteries pre-installed in the remote. To replace them:

- Place the SST4 Mini Simulator remote on a flat surface.
- Turn it around, so that the rear label is visible.
- Use a screwdriver to loosen the screw on the back of the unit by turning it counterclockwise, then slide the battery compartment lid open.
- Remove the old batteries.
- Place two new AA 1.5V batteries into the designated spot inside the SST4 Mini Simulator remote, taking care to fit them facing the right way.
- Slide the battery compartment lid back on, reinsert the screw, and tighten clockwise.



6. Troubleshooting

In the table below, you can find all the issues and their most common causes and fixes:

Issue	Possible Cause	Solution
No values shown on the SST4 Mini's display	The remote is off or not sending any data	Ensure that the remote is powered on.
The SST4 Mini's display shows "ERROR"	The radio-receiver is not active	Restart the SST4 and check if the red LED is illuminated, indicating that the radio-receiver is powered correctly.
Values do not match between the remote and SST4 unit	The SST4 is not calibrated	Re-enter Calibration Mode and perform a complete calibration cycle. Note that there is still may be a difference of $\pm 10\%$.
SST4 values reset to default	No message received for 5 or more seconds	Check that the remote and SST4 unit are on the same channel.
Cannot change channel	The button on the side of the remote has not been pressed	Press and hold the channel button on the side of the remote during power-on.
Display of the SST4 Mini Simulator remote control shows "CAL", but no response from the SST4 unit	Calibration started too early	Wait for the "Fresh Air" phase to finish before entering CAL mode.

Table 2. Troubleshooting

NOTE: If these issues persist, contact WatchGas or an authorized WatchGas distributor.

7. Contact details

EMEA

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