

# ETS Inc. SM16 Switcher / Mixer Instructions

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The SM16 is a 16 single channel, one way “listen only” switcher / mixer base station for use with all ETS SM1 series microphones. The SM16 can be used independently or with a CCTV system. The SM16 also easily connects to recording equipment such as DVRs and audio recorders. Note the audio input / output signals of the SM16 are “line level” (0dbm).

## Microphone Placement.

Place the SM1 Microphones in the areas of interest in a room or multiple rooms to be monitored. If an entire room is to be monitored, place the SM1 in the middle of the room. Do not mount the microphone near air conditioning vents, light fixtures or electrical equipment. The SM1 should be placed as close as possible to the subject(s) to be monitored. The SM1 is usable at distances of up to 25 feet but is dependent on the level of background noise in the area. Experimentation in the environment will determine what distances work best.

## Cable Run

Run a 22 gauge, stranded, two conductor shielded cable between the SM16 amplifier and the SM1 microphone. Keep the cable run distance under 1000 feet and away from AC power sources, light fixtures and electrical equipment. See *Figure 1 for connection diagram.*

## Microphone Mounting

The SM1 can be surface or flush mounted on ceilings or walls. For flush mounting, cut a 2 ¼” by 2 ¾” hole in the wall or ceiling tile to allow room for the circuit board, connect the cable and mount the SM1 to the surface with screws. For surface mounting, purchase a low profile Wire Mold single gang box and mount it to the wall or ceiling with screws, connect the cable and attach the SM1 to the box.

## Adjusting the SM1 Gain

The SM1 output level is set by selecting the desired volume range and adjusting the gain control.

The “Volume Range” jumper should be set to the “LO” position when using the SM1 with IP cameras that utilize “microphone inputs” also know as “Mic. Level” inputs. This sets the maximum gain of the SM1’s pre-amp to x14. The jumper should be placed in the “HI” position when using IP cameras with “Line level” inputs of DVRs and IP cameras. This sets the maximum gain of the SM1’s pre-amp to x196.

The SM1 is shipped with the gain set at midrange. If the sound on the SM3 is distorted, rotate the control towards the – mark (counter-clockwise). If the volume at the SM3 is too low, rotate the control towards the + mark (clockwise).

## Setting the SM1 Hi-Cut/Lo-Cut switches

The normal frequency response of the SM1-W microphone is 500-13Khz. When both switched “in”, The “HI Cut” and “Lo Cut” filters set the SM1’s frequency response to 900-6Khz. Enabling one or both of the filters is useful when background noise needs to be further reduced and intelligibility of speech emphasized. We recommend experimenting with the switch settings to achieve the best acoustic result for your application.

## Using the SM16 with an audio recorder

If you are using an audio recorder, press and hold down Button Number 2 (approximately 2 seconds) until the Recorder light comes on; then connect the recorder as shown in the drawing on the reverse side.

**Note: If the SM16 is not going to be used with an audio recorder, press and hold down Button Number 2 until the Recorder light goes off.**

## Changing SM16 Modes: Switcher Mode or Mixer Mode

The SM16 can be set to operate as a 1-of-16 channel switcher **or** as an 16 channel mixer. In the 1-of-16 mode, only one channel can be monitored at a time. Press any button to change channels. In the mixer mode, any combination of microphones can be mixed together. Press an unlit channel to select and press a lit channel to unselect.

To change modes, press down and hold Button 1 until the mixer light changes state. The SM16 will remember your settings for each mode and restore that setting when you change modes. Mixer Mode is on when the Mixer Mode light is on, and Switcher is on when the Mixer Mode light is off.

### Setting Volume Levels for a Channel

All channels are set to maximum at the factory. To set a new volume level, press Microphone Level. The Microphone Level LED will flash, indicating it is ready to change volume. In Switcher Mode, just adjust the Microphone Level knob to a comfortable level and press down Microphone Level again to save the new setting.

If you are in Mixer Mode, press the Microphone Level and the LED will flash; then select a channel to set (the keyboard will be blanked out so that you can select one channel). Adjust the Microphone Level knob and press Microphone Level to save the new setting. Repeat the same procedure again for another channel if needed.

To restore factory maximum settings, press and hold Microphone Level until it flashes. All channels will be set to maximum.

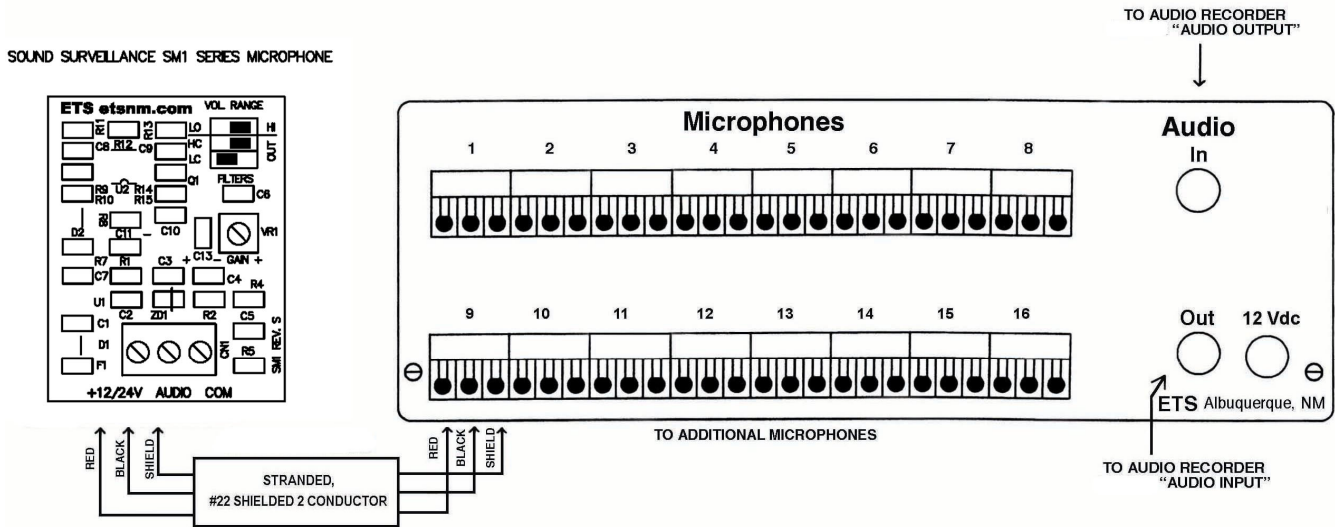


Figure 1.

### Caution

It may be against the law to install this microphone kit in certain environments. It may also be against the law to record conversations of the person(s) being monitored without their knowledge. It is the responsibility of the installation company and end-user to determine if the application of this product is legal. These laws vary from state to state. If you are not informed on these matters, consult a qualified attorney or contact the appropriate state agency. A sticker is provided with this kit for the applications where notification must be posted.

### Warranty

All ETS products carry a one year parts and labor warranty. This warranty does not cover damages as a result of misuse, improper handling of the unit or exposure to extreme temperatures or moisture. At its discretion, ETS reserves the right to repair or replace this unit under the conditions of the warranty. If you experience problems with your equipment call ETS at: 505-888-3923 to obtain a return authorization number. Equipment requiring repair beyond the warranty period or units that have been damaged or are not covered under the warranty can be repaired by ETS for a minimal cost under most conditions.

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