

# **ETS Inc.** VNF-4 Microphone Filter / Interface Instructions

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The VNF-4 is a single channel voice filter / interface for use with all SM1 series microphones. The VNF-4 is useful installed in environments with high levels of background noise. It provides a convenient way of supplying power to the SM1, installer friendly termination of the cable runs and a standard RCA or 3.5mm audio output connector. The VNF-4 easily connects to recording equipment such as DVRs, I/P cameras and audio recorders. Note the audio output signal of the VNF-4 can be setup for "line level" (0dbm) or "microphone level" (-40db).

## **SM1 Microphone Placement**

Locate the SM1 microphone as close as possible to the area of interest in the space to be monitored. If a large area is to be monitored, locate 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 at least 5 feet away from the subject(s) to be monitored. The SM1 is still useable in the range of 15-25 feet but is dependent on the level of background noise in the area. Experimentation in the environment will determine what distances work best.

## **VNF-4 location and power**

The VNF-4 interface box is designed to be located next to a DVR or I/P camera. The VNF-4 requires a 120VAC power source within 3 feet of its location. If this is not possible in your application, you can splice in up to 100 feet of 22 awg, 2 conductor cable to extend the distance between the AC power source and the VNF-4.

## **Cable Run**

Run a 22 gauge, stranded, two conductor shielded cable between the VNF-4 interface and the SM1 microphone. Keep the cable run distance under 1,000 feet and away from AC power sources, light fixtures and electrical equipment. See *Figure 1 for connection diagram.*

## **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 and mount the SM1 to the surface with screws. For surface mounting, purchase the SM1S surface mount adapter or use a single gang electrical box.

## **Adjusting the SM1 "gain" and VNF-4 "level" controls**

If the VNF-4 will be plugged into a "microphone level" input of an I/P camera, set the SM1 gain slightly clockwise (or 1/8 of a full turn) from full counter-clockwise. Then use the "level control" on the VNF-4 to set a volume that produces an acceptable audio level at the head end.

If the VNF-4 will be used with a "line level" input, turn the gain control of the SM1 to 3/4 full clockwise and adjust the level control on the VNF-4 to produce the clearest audio level at the head end.

## **Setting the SM1 Jumpers**

The SM1 microphone has jumper selectable treble boost and limiter circuits. The treble boost circuit when jumpered in, emphasizes the high frequency sounds that the microphone picks up. This is useful for improving the sound quality in environments where people are talking quietly or whispering. The limiter circuit, when jumpered in, automatically reduces the SM1's output during loud sound intervals. This eliminates the need for the listener to reduce the volume control on the amplifier when sounds get louder.

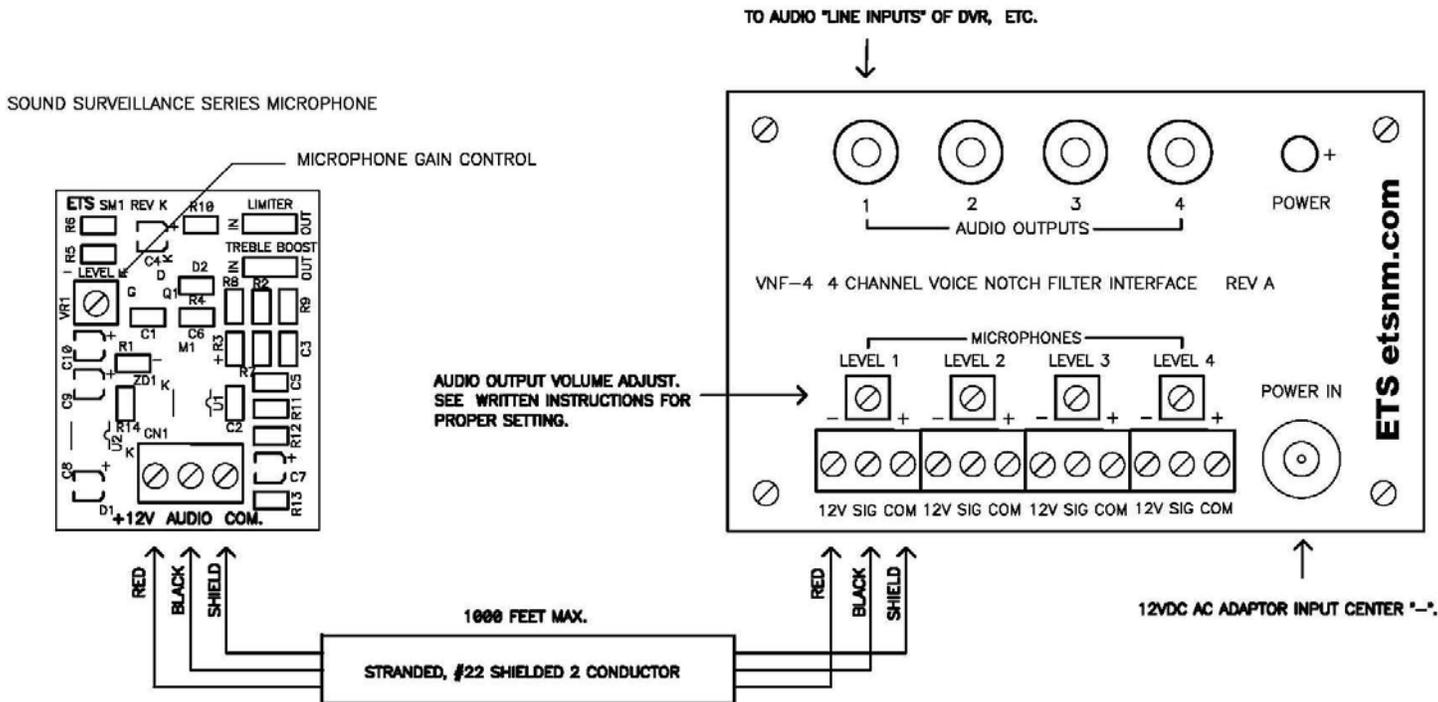


Figure 1.

### 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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