

The DNR-1 is a single channel digital background noise reduction processor. It is designed to connect directly to any SM1 series microphone (or any line level input signal) and a DRV, I/P camera, etc. Note- the audio output of the DNR-1 is "line level" (0db).

**SM1 Microphone Placement**

Locate the SM1s microphones as close as possible to the areas of interest in the space to be monitored. Do not mount the microphones near air conditioning vents, light fixtures or electrical equipment. The SM1s should be placed at least 5 feet away from the subject(s) to be monitored. An 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.

**DNR-1 location and power**

The DNR-1 interface box is designed to be located next to a DVR or I/P camera. The DNR-1 (unless connected to an ETS interface box or base station) 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 18 awg, 2 conductor cable to extend the distance between the AC power source and the DNR-1.

**Cable Run**

Run a 22 gauge, stranded, two conductor shielded cable between the DNR-1 module 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.*

**Audio inputs**

Connect any SM1 series microphone OR any other "line level" type signal. Do not use both inputs at the same time.

**Noise Reduction Switch**

This switch is provided so that the user can compare unprocessed audio to processed audio. You can demonstrate how effective the DNR-1 is at removing unwanted background noise. Note-when the noise reduction is on, the high frequency response of the input audio is reduced to below 10Khz. This is not typically an issue if conversations are the subject of observation.

**DNR-1 audio output**

This output is typically connected to the audio input of the DVR, I/P camera, etc. You can extend this output up to 1000 feet using audio coaxial cable and 2 field installable RCA (or 3.5mm) connectors.

**DNR-1 connection to an ETS interface or ETS base station**

Run up to 500 feet of 2 conductor shielded cable between the DNR-1 and an ETS interface or base station. Connect 12v to 12v, audio to audio and tie the shield ends com (-) to com (-). Note- when connected to an ETS base station or interface, the AC adaptor that comes with the DNR-1 is not required.

**Setting Input / Output levels**

Use the input level control to cut or boost the audio input level. If the level is too high and distortion is noticed, turn the level control towards the "-" position (CCW). If the signal is not loud enough, turn the control towards the "+" position (CW). The amount of post processor gain can be set with the output level control. Up to x11 gain is possible. Start with lower levels and experiment with this control until you get the desired audio level and minimal distortion. *Please note- there is a minimum input signal volume level of noise required by the DNR-1 before the noise cancelling will take effect. Only by experimentation (with the microphone's gain control and the DNR-1's input level control) and listening to the result in the application, will confirm when the noise cancelling is working properly. There will be a very noticeable reduction in the amount background noise present when the DNR-1 is operating correctly.*

## Noise reduction level jumpers

Set these according to the table printed on the DNR-1 enclosure, based on what matches your environment characteristics. Again, experiment with settings to attain the best possible results.

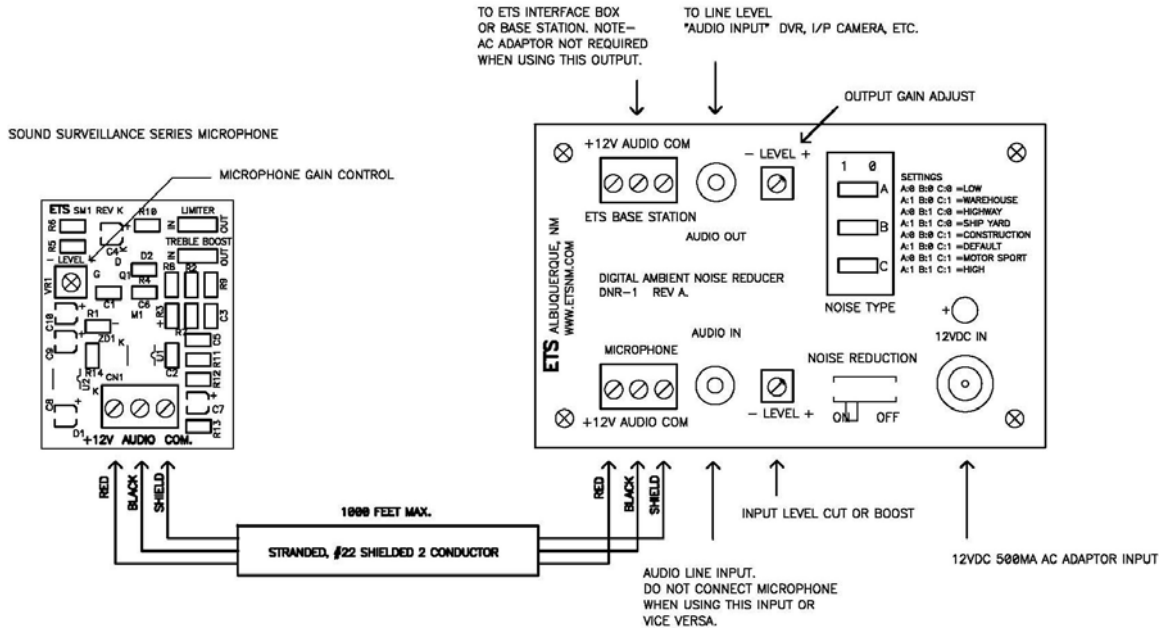


Figure 1.

## 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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by  
**ETS Inc.**