ETS Inc. SM5-EQ-PRO Microphone kit Instructions

The SM5-EQ-PRO is a professional grade, Microphone and, DVR-I/P camera, recorder interface designed for use in acoustically difficult and sound quality critical environments such as interrogation and court rooms.

PCCM-1 Microphone Placement
Locate the PCCM-1 microphone as close as possible to the area of interest in the space to be monitored. Do not mount the microphone near air conditioning vents, light fixtures or electrical equipment. The PCCM-1 operates optimally 3-5 feet away from the subject(s) to be monitored. The PCCM-1 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.

PACEQ-1 location and power
The PACEQ-1 interface box is designed to be placed near the DVR, I/P camera, PC or recorder. Once all settings are made, the interface can be located out of view. All controls are recessed to reduce the possibility of accidental “bumping” of settings. The PACEQ-1 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 PACEQ-1.

Cable Run
Run a professional grade microphone type cable (preferred) or a 22 gauge, stranded, two conductor shielded cable between the PACEQ-1 module and the PCCM-1 microphone. Keep the cable run distance at or under 500 feet and away from AC power sources, light fixtures and electrical equipment. *See Figure 1 for connection diagram.*

Microphone input
Connect the supplied PCCM-1 microphone per the wiring diagram in figure 1. Note- do not connect microphones to both inputs at the same time. If using a microphone other than the PCCM-1, determine whether it is a powered or unpowered type. If it is a powered type, flip the Phantom power switch on. Both inputs are balanced types.

Microphone preamp gain
To properly set the gain for a given microphone and environment, first turn the EQ off and place the “threshold” and “compression” controls at full counter clock-wise. Set output level at 12 o’clock. Now set the gain for an average of 0db on a VU meter with typical average sound levels occurring in the room. If you do not have a db meter on your equipment, adjust the gain for a clear sounding signal using headphones.

Setting the PACEQ-1 equalizer levels (EQ switch in “On” position).
Setting an equalizer for the desired overall sound is a subjective topic. We recommend using headphones to evaluate the sound quality. Start with setting all controls to the mid-point (flat= no gain or cut). We suggest you do this when the desired sound source is present (people taking, being interviewed, etc.) Adjust each control clockwise and counter clockwise to get a feel for how each band affects the overall sound. Keep in mind that the human voice resides predominately in the 1Khz-6Khz range. To focus on these bands, the 60Hz, 150Hz, 400Hz and 10Khz controls can all be turned full counter clockwise. The remaining 3 controls (1Khz, 2.5Khz and 6Khz) can then be adjusted for best sound clarity and intelligibility. Note- turning any of the controls fully clockwise will produce noticeable amplifier noise (a hissing sound). We have found the following settings to be most effective in reducing background noise and emphasizing the human voice band: 60Hz, 150Hz, 400Hz, 10KHz full counter clockwise. 2.5Khz 12 O’clock position. 1KHz and 6KHz at 9 O’clock from full counter clockwise.

Setting the PACEQ-1 compressor / limiter (ALC Adjust) controls
A compressor limiter is a circuit designed to keep audio signals in a specific range of amplitude so that audio signals supplied to head-end equipment and speakers are not overdriven causing uncomfortably high listener volume levels. A compressor/ limiter also prevent signal distortion and amplifier clipping, when sound levels are high.

Setting a compressor/limiter for the desired overall sound is *also* a subjective topic. First, be sure to set microphone gain as described earlier in these instructions. A good starting point is to set the output both “threshold” and “compression” at

3 o'clock. Then, experiment with different settings of +/- 30% from preset with both controls. The end idea is to have both the highest and lowest expected volume levels in the environment, produce a comfortable overall listening level or an average reading of 0db on a VU meter.

Audio outputs

The PACEQ-1 features two independent "line level" audio outputs. The balanced audio output is designed to be used with professional audio mixers and recorders. The unbalanced output is designed to be used with security equipment…I/P cameras, DVRs etc.

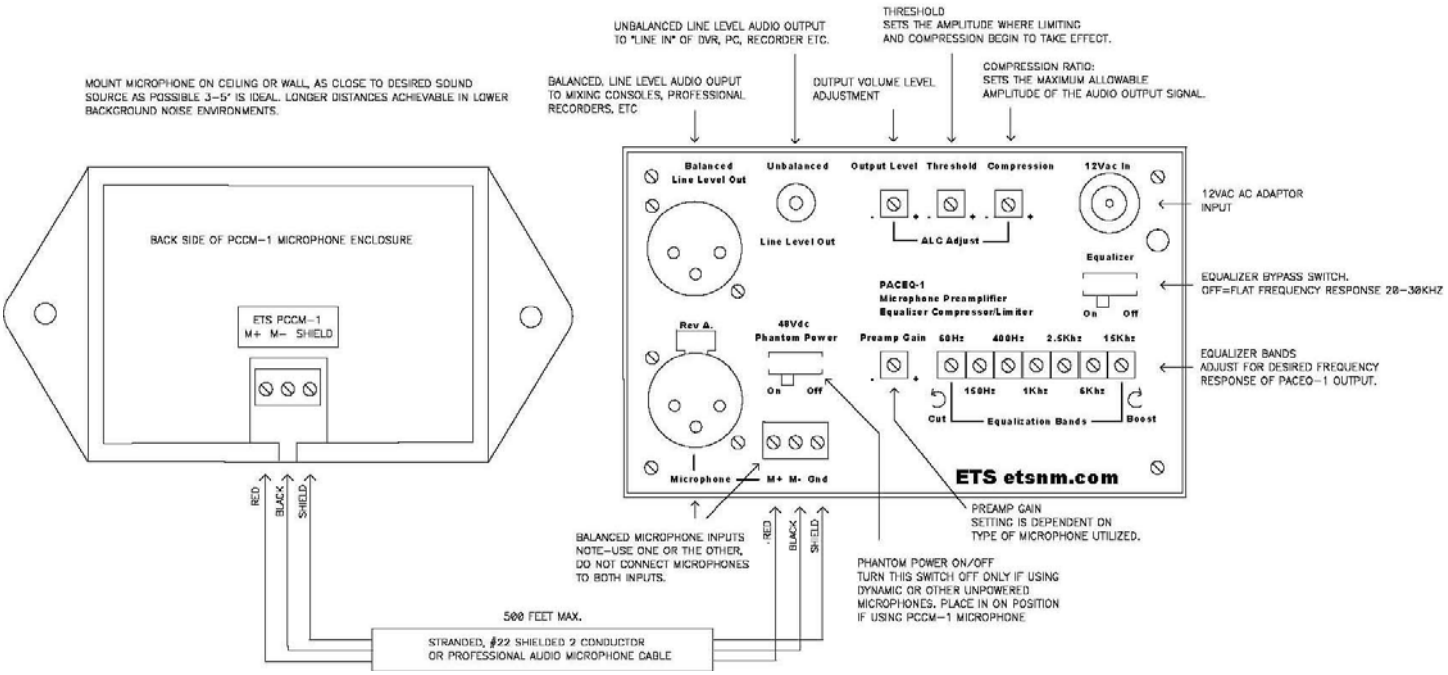

Figure 1.

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.