

# ETS Inc. MSI-BOC5 Speaker / Microphone Breakout Instructions

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The MSI-BOC5 is an interface box designed to breakout the signals from ETS 2-way CAT5 based audio systems. It's primary use is to permit the use of separated (as opposed to combined) Speakers and microphones with our –C5 interface products. In addition, the use of two MSI-BOC5s permits conversion from our legacy 2-way systems to CAT5 main cable runs.

## Microphone / Speaker Placement.

Locate the speaker and microphone near the area of interest in the space to be monitored. If a large area is to be monitored, locate the speaker and microphone in the middle of the space if possible. Avoid mounting the speaker and microphone near air conditioning vents, light fixtures or electrical equipment. The speaker and microphone should be placed as close to the subject(s) as possible. 5 to 10 feet is ideal. The speaker and microphone are still useable in the range of 15-25 feet in public address applications but is dependent on the level of background noise in the area. Experimentation in the environment will determine what distances work best.

## Audio Signal Cable Runs

Recommended cable is: CAT5 between the CAT5 amplifier / interface (SMA1-XX-XX) and the MSI-BOC5 microphone/speaker. Keep the cable run distances under 1,000 feet and away from AC power sources, light fixtures and electrical equipment. *Make connections as shown in Figure 1.*

## Speaker output

Connect 70V speakers only and observe speaker polarity. Use 2 conductor (shield optional) cable 22AWG to connect the 70V speaker to the MSI-BOC5. The CAT5 main cable run + this cable run should not exceed a combined length of 1000'.

## Microphone input

Use only ETS Sound Surveillance series microphones. Use 2 conductor 22AWG shielded cable to connect the microphone to the MSI-COB5. The CAT5 main cable run + this cable run should not exceed a combined length of 1000'.

## Call Switch

Use these terminals for connecting a dry contact call switch or a door relay. Any type of wire is suitable for these functions. Note-these connections are not referenced to any circuitry in the MSI-COB5, so they may be used for any function required in your application.

## IMPORTANT

Wire the RJ45 connectors in the following manner. DO NOT wire as a standard Ethernet cable and do not cross connections over.

Pair 1	1	CALL SW
	2	CALL SW
Pair 2	3	SPEAKER (70V) +
	4	SPEAKER (70V) –
Pair 3	5	MICROPHONE +
	6	MICROPHONE –
Pair 4	7	+12V (MICROPHONE)
	8	COM (MICROPHONE)

## 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.

**Made in the USA**

TO 24VAC 50VA AC ADAPTOR.  
UP TO 100 FT #18 2 CONDUCTOR IS PERMISSIBLE

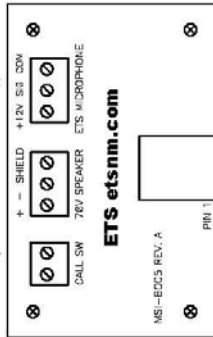
**IMPORTANT**  
INSTALL WIRES IN RJ45 PLUG IN THE FOLLOWING ORDER  
DO NOT WIRE AS A STANDARD ETHERNET CABLE!!!

- PAIR 1 < 1 CALL SW
- PAIR 2 < 2 CALL SW
- PAIR 2 < 3 SPEAKER (70V) +
- PAIR 2 < 4 SPEAKER (70V) -
- PAIR 3 < 5 MICROPHONE +
- PAIR 3 < 6 MICROPHONE -
- PAIR 4 < 7 +12V (MICROPHONE)
- PAIR 4 < 8 COM (MICROPHONE)

TO ANY ETS SOUND SURVEILLANCE  
SERIES MICROPHONE

TO ANY SPEAKER  
WITH 70V TRANSFORMER

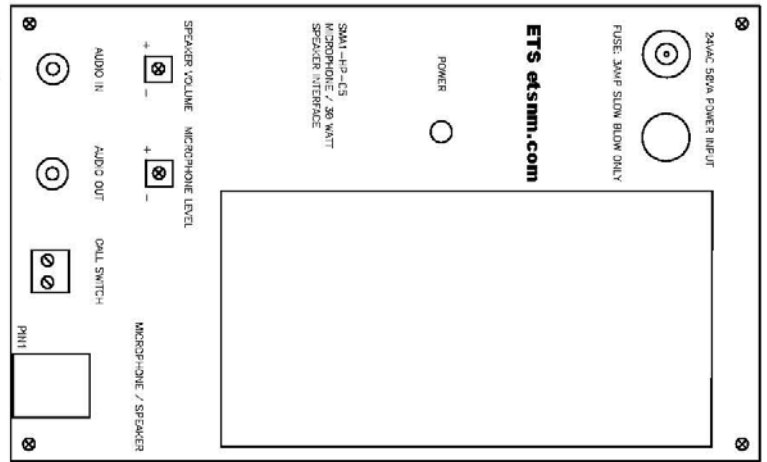
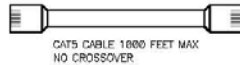
OPTIONAL CALL SWITCH INPUT  
OR DOOR RELAY OUTPUT



TO DVR OR I/P CAMERA 'AUDIO OUT.'

TO DVR OR I/P CAMERA 'AUDIO IN'

OPTIONAL CALL SWITCH OUTPUT  
OR DOOR RELAY INPUT



CONNECTIONS TO MSI-BOC5 AND SMA1-HP-C5

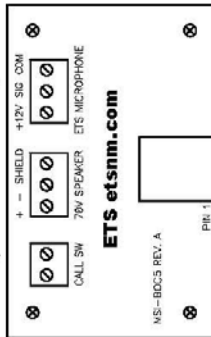
**IMPORTANT**  
INSTALL WIRES IN RJ45 PLUG IN THE FOLLOWING ORDER  
DO NOT WIRE AS A STANDARD ETHERNET CABLE!!!

- PAIR 1 < 1 CALL SW
- PAIR 2 < 2 CALL SW
- PAIR 2 < 3 SPEAKER (70V) +
- PAIR 2 < 4 SPEAKER (70V) -
- PAIR 3 < 5 MICROPHONE +
- PAIR 3 < 6 MICROPHONE -
- PAIR 4 < 7 +12V (MICROPHONE)
- PAIR 4 < 8 COM (MICROPHONE)

TO ANY ETS SOUND SURVEILLANCE  
SERIES MICROPHONE

TO ANY SPEAKER  
WITH 70V TRANSFORMER

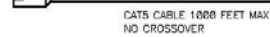
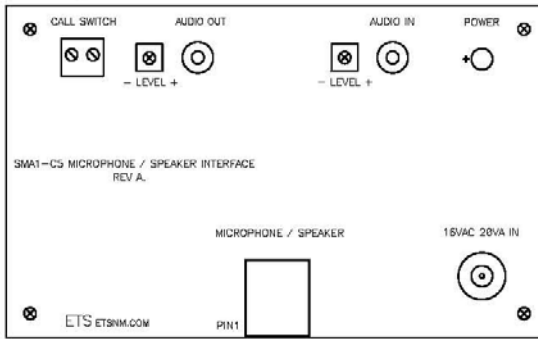
OPTIONAL CALL SWITCH INPUT  
OR DOOR RELAY OUTPUT



OPTIONAL CALL SWITCH OUTPUT  
OR DOOR RELAY INPUT

TO DVR OR I/P CAMERA 'AUDIO IN'

TO DVR OR I/P CAMERA 'AUDIO OUT.'



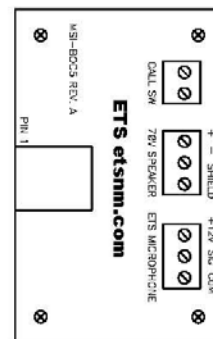
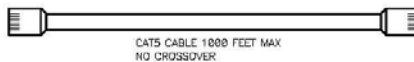
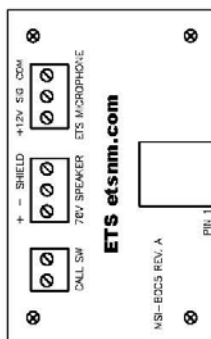
TO 15VAC 20VA AC ADAPTOR.  
UP TO 100 FT #18 2 CONDUCTOR IS PERMISSIBLE

CONNECTIONS TO MSI-BOC5 AND SMA1-C5 (OR SMA1-LP-C5)

TO ANY ETS SOUND SURVEILLANCE  
SERIES MICROPHONE OR STW1-XX  
MICROPHONE OUTPUT

TO ANY SPEAKER  
WITH 70V TRANSFORMER  
OR STW1-XX SPEAKER  
INPUT

OPTIONAL CALL SWITCH INPUT  
OR DOOR RELAY OUTPUT, OR  
TO ANY STW1-XX CALL SWITCH  
INPUT.



TO CALLSW INPUTS:  
STW2  
STW4  
SSB-RC  
SMB-RC

TO SPEAKER OUTPUTS:  
STW2  
STW4  
SSB-RC  
SMB-RC

TO MICROPHONE INPUTS:  
STW2  
STW4  
SSB-RC  
SMB-RC

CONNECTIONS TO CONVERT STANDARD LEGACY  
SOUND SURVEILLANCE 2-WAY SYSTEMS TO CAT5  
MAIN CABLE RUNS.