

# hear back PRO

16-CHANNEL PERSONAL MIXER SYSTEM

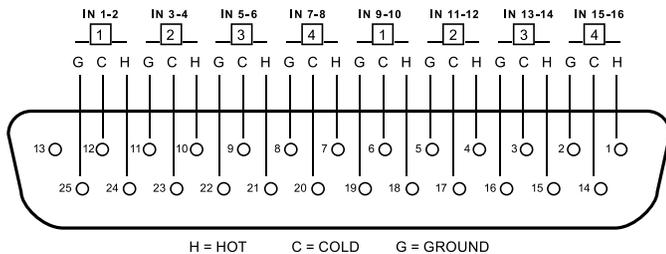
## AES/EBU Input/Output Card



SCAN  
CODE  
FOR USER  
GUIDE

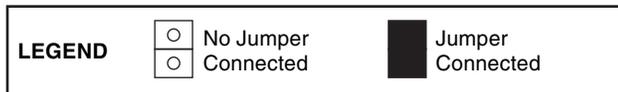
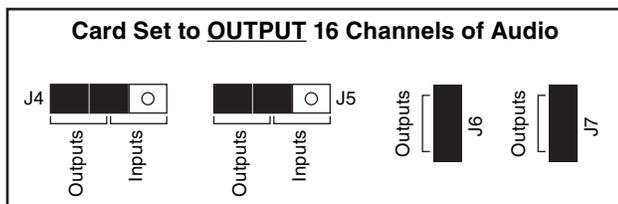
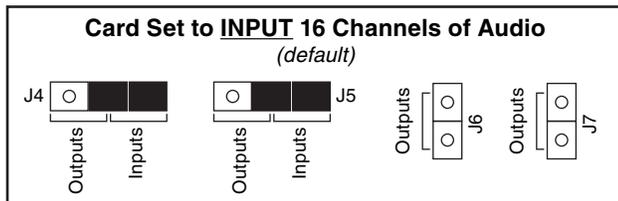
### OVERVIEW

16 channels of audio are connected to the AES/EBU card using a Tascam DA-88 style pinout on a DB25 connector (see diagram below). This is the same pinout that standard analog DA-88 style connections use (like our Analog input card). There is one difference: Most manufacturers use the first 4 balanced pairs (the first 8 channels) for inputs and the last 4 balanced pairs (the last 8 channels) for outputs. Due to the amount of space available on the back of our card, we use just one DB25 connector to input (or output) all 16 channels. If you are interfacing with AES/EBU on another piece of equipment that uses a DB25 type connector, you will want to use that manufacturer's break-out cable, which splits out to individual XLR connectors first, then patch each of those XLR connectors to our cable. Using a DB25 to DB25 cable will not work (if you try it, you will likely get only 8 channels).



### INPUT AND OUTPUT SETTINGS

The AES/EBU card can either input 16 channels of balanced AES/EBU audio or it can output 16 channels of balanced AES/EBU audio depending on where the four jumpers – J4, J5, J6, and J7 – are set. These jumpers are located on the card, and they are set by default as inputs at the factory. See jumper settings diagram below for both input and output settings.



### INPUT

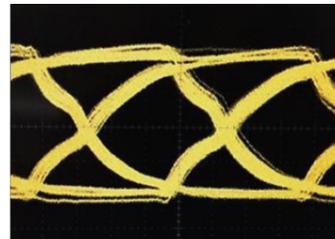
When the card is used as an input, the first pair of channels (1/2) serve as the clock source for the system and must be connected to a valid AES/EBU source in order for the rest of the inputs to work. All inputs MUST run at the same sampling rate and MUST have their word-clocks synchronized to avoid digital pops and clicks. The AES Card will automatically change sampling rate to lock on to the incoming signal.

### OUTPUT

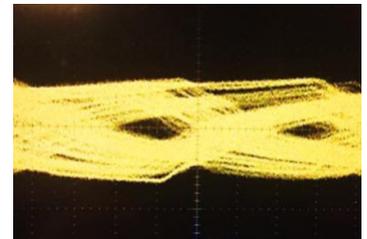
When the card is used as an output, the AES card will automatically change sampling rates to follow the sampling rate of the input source. Supported sampling rates are 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, and 192kHz.

### CABLING

Standard microphone cable is not recommended for transmission of the AES/EBU signal. Digital-grade 110Ω AES/EBU cable such as West Penn DA2401 is recommended. Below is a diagram of a good eye pattern of the AES/EBU signal using 100 feet of the correct AES/EBU grade cable and also a bad eye pattern of the AES/EBU signal using 100 feet of standard microphone cable. Not only does the bad eye pattern look chaotic, it simply does not work. A good eye pattern equals good results!



Good eye-pattern of AES/EBU signal after 100 ft of AES/EBU cable



Bad eye-pattern of AES/EBU signal after 100 ft of standard microphone cable

The maximum distance you can run AES/EBU on a good quality digital-grade 110Ω cable is a function of the maximum sampling rate that you wish you support. See the table below.

Sampling Rate	Maximum 110 Ω digital grade AES/EBU cable distance
44.1 kHz	475 feet
48 kHz	475 feet
88.2 kHz	275 feet
96 kHz	275 feet
176.4 kHz	175 feet
192 kHz	175 feet



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