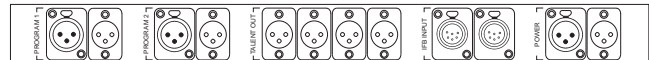




MA-4 and Two AX-4's in Rackmount Frame



PIC-4000B Front View



PIC-4000B Rear View

**FEATURES**

- **Works as stand-alone system, or can be integrated with Clear-Com intercom stations**
- **Large system capacity – up to 96 Talent Receivers accessible from up to 50 locations**
- **Provides split program feeds for binaural headsets on a single mic cable**
- **Two separate program inputs and individual program level controls on IFB Controller**
- **Program feeds are selectable for “interrupt” or “non-interrupt”**
- **Amount of interrupt attenuation individually adjustable for each talent output**
- **Modular Access Stations expandable in groups of four**
- **Up to 12 talent access buttons in one rack space (1.75")**
- **“Tally” lights indicate IFB channels in use**
- **“All IFB” button simultaneously accesses all IFB channels**
- **Easy to install and operate**
- **Compatible with all Clear-Com main and remote stations**

**DESCRIPTION**

The Clear-Com program interrupt/IFB system is designed for all broadcast and teleproduction applications. It may be used as a stand-alone system or be fully integrated into an intercom network. The system consists of one or more IFB Controllers, Talent Access Stations, Talent Receivers, an intercom power supply, and interconnect cable.

During production taping or airing, the talent – commentators, sportscasters, announcers, musicians, and so on – frequently need to monitor program audio and also hear cues from the director. Clear-Com's IFB system allows talent to monitor the ongoing program, while permitting directors and producers to interrupt or dip the program audio to address them.

The IFB system transmits one or two program audio signals to individual talent receivers via standard, two-conductor shielded microphone cable. It permits multiple intercom station or “talent access” operators to interrupt the program and cue talent. The system's virtually unlimited expansion capabilities permit up to 50 talent access locations and up to 96 talent receivers.

**TYPICAL IFB APPLICATION**

To address an individual talent, the producer or director presses the IFB button which is assigned to that individual on a talent access station (an IFB channel), and speaks into the microphone connected to the station. The engaged IFB button lights at all stations connected to that IFB channel, indicating which individual is being accessed.

The IFB Controller attenuates or completely mutes the program audio feed to that talent, so that the director's cue can be heard. Two operators at separate access stations – a producer and a director, for example – can access the same talent, or two different talents, simultaneously.

When the operator presses a button at a talent access station which is integrated with an intercom station, the intercom's microphone is used to address the talent. The mic is momentarily disconnected from the intercom station's Talk function, while the Listen function remains. The intercom operator may therefore simultaneously address talent and continue to monitor intercom activity.

### **PIC-4000B IFB CONTROLLER**

Each IFB Controller handles up to four talent receivers, and has inputs for two program sources. It contains the circuitry for selecting one of the two program sources, sending the program to the IFB channels, and interrupting it – with variable attenuation – via the talent access stations. Its four separate outputs provide discrete, interruptible IFB lines to either monaural TR-50 talent receivers or stereo/split-feed TR-532 talent receivers (one side is interrupt, and the other non-interrupt).

All audio signals, plus DC power, are sent to the talent receivers via 3-pin XLR connectors and standard mic cable. The PIC-4000B requires 30 VDC power from a Clear-Com intercom main station or power supply.

### **TALENT ACCESS STATIONS**

Each talent access station contains four momentary pushbuttons, each of which is associated with a separate talent output from a PIC-4000B Controller. All pushbuttons contain "tally" lamps to indicate IFB channels in use. Access stations connect to the PIC-4000B via 6-pin XLR connectors, using four-pair, individually shielded cable. An optional rack-mount kit holds up to three access stations, providing control of 12 IFB channels in one rack space.

### **MA-4 AND MA-4N MASTER CONTROL/TALENT ACCESS STATIONS**

The master control access station provides individual access to four talent channels, and "ALL IFB" access to all the IFB channels in the system. It contains the audio line-driver circuits. One MA-4 or MA-4N is required at each talent access control location. It is designed for direct console mounting, or may be rack mounted with the optional kit.

The MA-4 is designed for stand-alone operation, and includes its own panel-mounted electret gooseneck microphone. The MA-4N is used in conjunction with a Clear-Com intercom station, and uses the station's microphone for talking to the talent.

### **AX-4 ACCESS EXPANSION STATION**

The expansion station connects to either a MA-4 or MA-4N station, expanding the IFB channel selection capabilities by four additional channels per AX-4. Multiple AX-4's may be linked together to control a maximum of 96 talent channels.

### **IFB-4 ACCESS MODULE**

This module is electronically identical to the AX-4, and may be mounted in the front panel of a Clear-Com MS-812A intercom master station. By using the IFB-4, both intercom and IFB functions can be combined into one rack-mountable unit.

### **TR-50 TALENT RECEIVER**

The small, portable unit contains an amplifier with volume control to power the talent's earphone. The TR-50 connects to the PIC-4000B via standard, two-conductor shielded mic cable. A miniature in-the-ear earpiece is included with each receiver.

### **TR-532 STEREO/SPLIT-FEED RECEIVER**

The TR-532 accepts interrupt and non-interrupt program signals – on a single, standard mic cable – and outputs them to a sportscaster-type headset or standard stereo earphones. The interrupt signal goes to one ear, and the non-interrupt to the other. The receiver contains two discrete amplifiers, and provides a passive "loop-through" output of the headset's microphone for on-air applications. It also provides an interrupt "tally" signal indicator.



TR-50 Talent Receiver



TR-532 Talent Receiver

## ACCESSORIES

The TS-1 miniature, monaural in-the-ear earpiece is used with the TR-50 talent receiver. One is supplied with the TR-50, and they are also available separately. The Model 820022 rack-mount kit mounts three talent access stations in a single rack space. It holds three stations – one MA-4(N) and two AX-4's – for a total of 12 IFB channels.

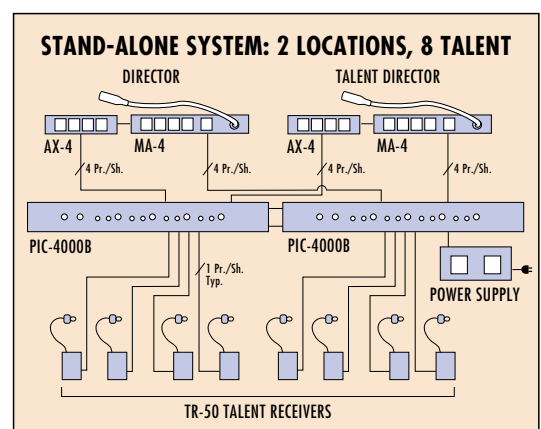
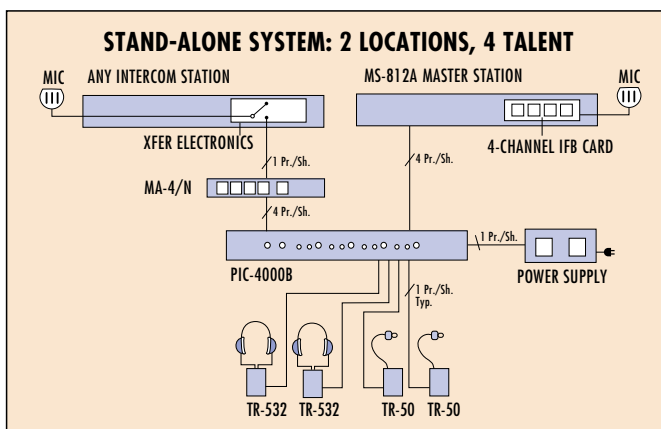
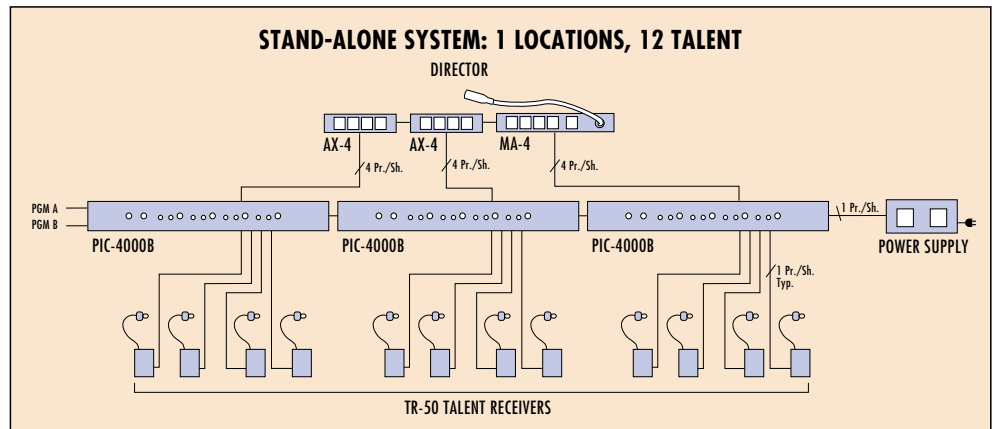
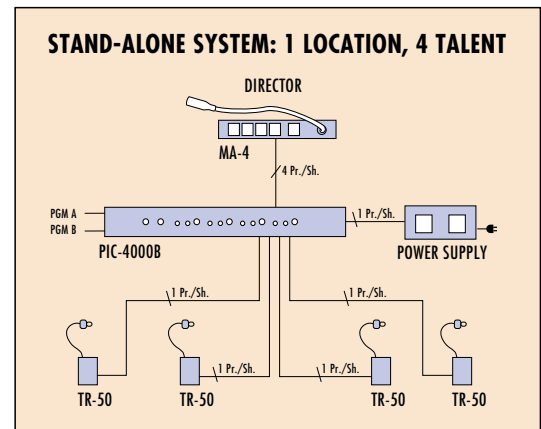
## ORDERING INFORMATION

First, determine whether the IFB system will be stand-alone, or will be integrated with Clear-Com intercom stations. If it will be integrated with an intercom system, and intercom stations are located where the IFB talent access stations will be used, the stations' microphones may be used along with MA-4N master control talent access stations. If a Clear-Com intercom station is not nearby, then choose the MA-4 station, which includes its own gooseneck mic.

Second, determine how many talent positions will be accessed. One PIC-4000B IFB Controller is required for every four talent positions. Depending on the talents' needs, select the appropriate monaural or stereo/split-ear talent receivers.

Third, determine how many separate operators/locations will need IFB access to the talent. Each location will require an MA-4 or MA-4N for the first four channels of IFB, and one AX-4 for each additional four channels of IFB.

Finally, if a MS-812A intercom master station is used, determine how many factory-installed IFB-4 access stations are required (see the MS-812A data sheet for further information).



**SPECIFICATIONS**

**IFB SYSTEM SPECIFICATIONS**

Circuit Design: IC amplifiers and solid state switching. Current limited with short circuit and reverse-polarity protection.  
Intercom Frequency Response: 200 Hz - 18 kHz  
Program Frequency Response: 50 Hz - 18 kHz, -3 dB  
Distortion: 0.1% THD @ 1 kHz  
Signal-to-Noise Ratio: Better than -60 dB

**PIC-4000B**

Input Impedance: 100 KOhms balanced (47 KOhms single-ended), line level  
Input Level: -15 dBv nominal, +10 dBv max before clipping  
Talent Outputs: 1 interrupt and 1 non-interrupt per output (4 total); internally terminated  
Controls, Program Gain Adjust: 2  
Program Source Select: 8  
Interrupt Attenuation ("dip") Adjust: 4  
Connectors (Program Input), 3-pin female XLR: 2  
3-pin male XLR ("loopthrough"): 2  
Talent Access Station Input: (2) 6-pin female XLR, XLR-6F  
Talent Output: (4) 3-pin male XLR  
Power Input: 3-pin female XLR, 3-pin male XLR ("loop-through")  
Power Required: 24-32 VDC at 60mA, max (via connection to any Clear-Com system or power supply)  
Dimensions: 1.75" H x 19" W x 9" D (44 x 483 x 225 mm)  
Weight: 3.6 lbs (1.6 kg)

**MA-4/AX-4**

Controls: IFB Access pushbuttons (4), MA-4 also has one "All IFB" pushbutton. All buttons lit dimly; light brightly when engaged.  
Connectors: 6-pin male XLR (input), 6-pin female XLR ("loop-through"). MA-4/AX-4 also have 1/4" connectors  
Power Requirement, MA-4: 24 - 32 VDC, 180 mA max  
AX-4: 24 - 32 VDC, 150 mA max  
Dimensions, MA-4: 1.75" H x 6.3" W x 6.5" D (44 x 158 x 163 mm)  
AX-4: 1.75" H x 4.9" W x 6.5" D (44 x 123 x 163 mm)  
Weight, MA-4: 1.5 lb. (.67 kg)  
AX-4: 1 lb (.4 kg)

**TR-50 TALENT RECEIVER**

Earphone Type: Dynamic  
Earphone Impedance: >30 Ohms  
Max. Output Level: +20 dBm  
Power Required: 10 mA quiescent at 28 VDC supplied by IFB line  
Headset Connector: 3-pin female XLR (at end of 6' cord)  
Dimensions: 3.6" W x 1.5" H x 1.5" D (91 x 38 x 38 mm)  
Weight: 4.5 oz. (0.1 kg)

**TR-532 TALENT RECEIVER**

Earphone Type: Dynamic  
Earphone Impedance: 50 - 2,000 Ohms  
Max. Output Level: +20 dBv before clipping (drives standard Clear-Com headsets to over 110 dB SPL)  
Controls/Indicators, Interrupt Volume: 1  
Non-interrupt Volume: 1  
Red "interrupt" LED Indicator: 1  
Power Required: 25 mA quiescent at 28 VDC supplied by Clear-Com line  
Headset Connectors, 1/4" TRS headphone jack: 1  
6-pin male, headset XLR: 1  
IFB Input: 3-pin female XLR  
Microphone Output: 3-pin male, passive (unbalanced) signal  
Dimensions: 3.875" W x 4.125" H x 1.5"D (97 x 103 x 38 mm)  
Weight: 11 oz. (0.3 kg)

\* 0 dBv is referenced to 0.775 volts RMS

All specifications are subject to change without notice.