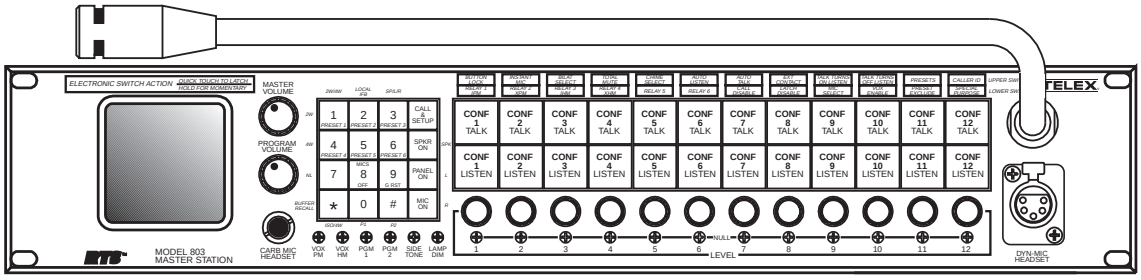
USER INSTRUCTIONS

MODEL 803
MASTER INTERCOM STATION



Model 803 Master Intercom Station
(Shown with Optional Panel Microphone)

RTS™

9350-7547-000 Rev A1, 8 /21/97

Proprietary Notice

The RTS product information and design disclosed herein were originated by and are the property of Telex Communications, Inc. Telex reserves all patent, proprietary design, manufacturing, reproduction, use and sales rights thereto, and to any article disclosed therein, except to the extent rights are expressly granted to others.

Copyright Notice

Unpacking And Inspection

Immediately upon receipt of the equipment, inspect the shipping container and the contents carefully for any discrepancies or damage. Should there be any, notify the freight company and the dealer at once.

Warranty Information

RTS products are warranted by Telex Communications, Inc. to be free from defects in materials and workmanship for a period of three years from the date of sale.

The sole obligation of Telex during the warranty period is to provide, without charge, parts and labor necessary to remedy covered defects appearing in products returned prepaid to Telex. This warranty does not cover any defect, malfunction or failure caused beyond the control of Telex, including unreasonable or negligent operation, abuse, accident, failure to follow instructions in the Service Manual or the User Manual, defective or improper associated equipment, attempts at modification and repair not authorized by Telex, and shipping damage. Products with their serial numbers removed or effaced are not covered by this warranty.

To obtain warranty service, follow the procedures entitled "Procedure For Returns" and "Shipping to Manufacturer for Repair or Adjustment".

This warranty is the sole and exclusive express warranty given with respect to RTS products. It is the responsibility of the user to determine before purchase that this product is suitable for the user's intended purpose.

Any and all implied warranties, including the implied warranty of merchantability are limited to the duration of this express limited warranty. Neither Telex nor the dealer who sells rts products is liable for incidental or consequential damages of any kind.

Customer Support

Technical questions should be directed to:

Customer Service Department
RTS/Telex,
2550 Hollywood Way, Suite 207
Burbank, CA 91505 U.S.A.
Telephone: (818) 566-6700
Fax: (818) 843-7953

Return Shipping Instructions

Procedure For Returns

If a repair is necessary, contact the dealer where this unit was purchased.

If repair through the dealer is not possible, obtain a return authorization from:

Customer Service Department
Telex Communications, Inc.
Telephone: (800) 828-6107
Fax: (800) 323-0498

DO NOT RETURN ANY EQUIPMENT DIRECTLY TO THE FACTORY WITHOUT FIRST OBTAINING A RETURN AUTHORIZATION.

Be prepared to provide the company name, address, phone number, a person to contact regarding the repair, the type and quantity of equipment, a description of the problem and the serial number(s).

Shipping to Manufacturer for Repair or Adjustment

All shipments of RTS products should be made via United Parcel Service or the best available shipper, prepaid. The equipment should be shipped in the original packing carton; if that is not available, use any suitable container that is rigid and of adequate size. If a substitute container is used, the equipment should be wrapped in paper and surrounded with at least four inches of excelsior or similar shock-absorbing material. All shipments must be sent to the following address and must include the Return Authorization.

Factory Service Department
Telex Communications, Incorporated
West 1st Street
Blue Earth, MN 56013 U.S.A.

Upon completion of any repair the equipment will be returned via United Parcel Service or specified shipper collect.

Table of Contents

1 Description and Specifications

1.1 General Description

The RTS Model 803 Master Intercom Station is an updated replacement to the popular Model 802. By employing many of the technological breakthroughs that have occurred since the design of the 802, RTS has been able to integrate into the 803 the complete circuitry for all 802 base features and options except squawk. For example, call signaling is now standard on all twelve intercom channels. For applications requiring 4-wire operation, IFB panel emulation or ISO panel emulation the circuitry is already there; you simply install an option cable to the back panel, set one or two internal DIP switches (IFB and ISO emulate only) and you're ready to go. For all other applications, everything you need is "in the box".

In terms of form, fit and function the 803 can directly replace the 802 with the following exceptions: 1) squawk is not supported on the 803; 2) many users do not require a front panel gooseneck microphone, so that is now supplied as a separate plug-in style microphone (unlike the 802 microphone which was permanently mounted); 3) the 803 includes built-in DC blocking for the intercom channels, so when connecting to powered intercom channels that were previously connected to an 802, the external isolation capacitors are no longer required and may have to be removed for best audio performance; 4) although seldom done in practice, the 802 could be DC powered; the 803 cannot.

In addition to it's role as a product replacement for the 802, the 803 also adds several new features in response to the increasing communication needs of a variety of users. Following is a general description of 803 features. Expanded descriptions of these features, a detailed comparison and contrast with the 802, and a list of specifications may be found on the following pages.

1.1.1 General 803 Features

- Audio Inputs and Outputs: 12 intercom channels (channels 1-12); 3 auxiliary channels (channels 13-15); 2 program inputs; 2 headset dynamic-mic inputs and headphone outputs; 2 headset carbon-mic inputs and headphone outputs; 2 electret panel mic inputs; 1 built-in speaker and 1 switched speaker output; 1 unswitched, balanced mic output (hot mic).
- Control Inputs and Outputs: 6 DPDT relay outputs and 1 external switch contact input, all assignable via the front panel setup-mode; 12 dedicated, open-collector keying outputs (one for each intercom channel); 1 RS232/RS485 port for remote control, programming, and monitoring.
- Three Operating Modes: 1) normal operation, where front panel controls are used for intercommunications 2) setup mode, where front panel buttons access the user-programmable setup features; 3) DTMF mode, where the keypad is used for telephone dialing on a selected intercom channel.
- Audio Input Control: Complete control of audio mix for all audio inputs via a combination of user controls, setup trimmers and the RS232/RS485 port. All audio inputs are assignable, via setup mode, to left headphone, right headphone, speaker, or any combination.
- Two-Wire and Four-Wire Operation: two-wire operation (with or without nulling) or four-wire operation independently selectable for each intercom channel via front panel setup mode; two-wire operation is standard (balanced or unbalanced); four-wire intercom channel operation requires an optional 50-pin connector); auxiliary channels 13 & 14 are four-wire only; auxiliary channel 15 is two-wire only. All channels (intercom and auxiliary) support simultaneous two-way communication (full duplex).
- ISO Operation: Compatible with RTS VIE-306 Video ISO System; interfaces with external RTS VCP-6 or VCP-12 ISO Panels, or emulates these panels internally (requires one optional 50-pin connector for VCP-6 emulation; two for VCP-12 emulation).
- IFB Operation: Compatible with RTS Model 4000 IFB System; interfaces with external RTS Model 4001 or 4002 IFB panels, or emulates these panels internally (requires one optional 50-pin connector for Model 4001 emulation; two for Model 4002 emulation). Also supports "local IFB", where any channel may be configured as a stand-alone IFB.
- User-Programmable Setup Features: A variety of programmable features allow the user to customize, simplify, and "automate" communication tasks. (Features list includes original 802 features plus new features.)
- Control Signals: Call send and receive (compatible with TW intercom system), with 3 chime tones (or no chime) selectable for call send; talk-off send (compatible with RTS TW intercom system); global reset send (compatible with RTS VIE-306 Video ISO System); DTMF send (for touch-tone dialing).

Note: control signals are applicable to the 12 intercom channels only, and not to the 3 auxiliary channels.

1.1.2 803 Controls, Indicators, Connectors

1.1.2.1 Front Panel, User Controls

- 1 Master volume control.
- 1 Program master volume control.
- 12 intercom channel level controls.
- 16-button keypad with backlit, user-replaceable labels[1]; the keypad operates in normal, setup and DTMF modes; normal and DTMF mode labeling is printed on the button labels in normal text; setup mode functions are printed on the button labels or on the front panel next to the buttons in italics; the left-most twelve buttons contain standard telephone keypad nomenclature in standard layout (letter designations excluded).
- 12 conference talk/listen button pairs with backlit, user-replaceable labels; buttons operate in normal and setup modes; normal-mode intercom functions are identified on the labels in normal text; setup mode functions are printed in italics on the front panel above the buttons.

1.1.2.2 Front Panel Trimmers

Trimmers are recessed and adjustable using a number 0 flat-blade jeweler's screwdriver or equivalent.

- Panel mic VOX threshold adjustment.
- Dynamic-mic and carbon-mic headset VOX threshold adjustment.
- Program 1 input level.
- Program 2 input level.
- Sidetone level.
- Master lamp brightness.
- Null adjustment: one trimmer for each intercom channel.

1.1.2.3 Front Panel, Connectors

- Carbon-mic headset.
- Electret gooseneck mic.
- Dynamic-mic headset (5-pin stereo standard, 4-pin mono or 6-pin stereo w/mic switch input optional).

1.1.2.4 Back Panel, Controls

Key code switch (selects 1-digit passcode for front-panel access to setup mode, or no passcode, or locks out setup mode).

1.1.2.5 Back Panel, Standard Connectors

- RS232/RS485.
- Ancillary.
- Relay/switch/ISO.
- Headset/microphone/program/hot mic.
- 2-wire intercom channels.

1.1.2.6 Back Panel, Optional Connectors

- IFB 1: used for Model 4001 emulate, or 4002 emulate when used with IFB 2 connector.
- ISO 1: used for Model VCP-6 emulate, or VCP-12 emulate when used with ISO 2 connector.
- IFB 2 / ISO 2: used with IFB1 or ISO1 connector (but not both) for Model 4002 IFB Panel or VCP-12 ISO Panel emulation.
- 4-wire intercom channels.

1.1.2.7 Back Panel Trimmers

Trimmers are recessed and adjustable using a number 0 flat-blade jeweler's screwdriver or equivalent.

- Front panel headset mic gain (adjusts both carbon and dynamic).
- Front panel gooseneck microphone gain.
- External headset-mic gain.
- External electret-mic gain.
- ISO (channel 15) receive level.
- ISO (channel 15) null adjustment.
- Hot mic output level.

---

1 Button labels are printed black on clear acetate.

1.1.2.8 Internal DIP Switches and Jumpers

Note: Access to DIP switches and jumpers requires top cover removal.

DIP switches

- IFB1 and IFB 2 select: enable the back panel IFB emulation connectors and allocate front panel buttons for IFB Panel emulation. Default: disabled.
- ISO 1 and ISO 2 select: enable the back panel ISO emulation connectors and allocate front panel buttons for ISO Panel emulation. Default: disabled.
- Number of active presets: selects whether multiple presets may be activated at once, or only one at a time. Default: multiple presets may be activated.
- Exclusive listen enable: when this feature is disabled, activating a talk button has no effect on the listen buttons; when this feature is enabled, activating a talk button automatically turns off all active listen buttons for all other channels except that channel. Default: exclusive listen disabled.
- Power-up reset option (warm or cold reset). See "Resetting the 803", page 19 for details. Default: warm reset at power-up.
- Call light time-out select: selects 20 seconds or 20 minutes for time out of flashing button indication for incoming calls. Default: 20 seconds.
- Number of active intercom channels: selects channels 1-6 active or channels 1-12 active. Default: all 12 intercom channels active.
- 801 emulation: Default: 801 emulation disabled.
- Internal/external ISO select: internal is used when the 803 emulates a VCP panel; external is used when the 803 connects to an external VCP panel, or when ISO is not used. Default: external.
- ISO listen disable: turn off all active conference channel listen buttons during ISO: Default: off (listens not disabled during ISO).
- ISO enable/disable: Default: disabled.
- IFB talk disable: turns off all active conference channel talk buttons during IFB. Default: off.

Jumpers

Separate jumpers set the "off" brightness for the keypad buttons and for the talk/listen buttons. Available settings are high, low and off.

1.1.3 Setup Mode Description

1.1.3.1 Names for Setup Mode Features

Names for setup mode features are printed in italics on the front panel as follows:

Setup Mode Features for Talk Buttons: Setup mode features that are accessed using the talk buttons are printed at the very top of the front panel. For example, access BUTTON LOCK by pressing the TALK 1 button during setup mode.

Setup Mode Features for Listen Buttons: Setup mode features that are accessed using the listen buttons are printed just below the setup mode features for the talk buttons. For example, access RELAY 1 by pressing the LISTEN 1 button during setup mode.

Setup Mode Features for Keypad Buttons: Some names for setup features are printed in italics next to the buttons. Some are printed in italics on the buttons. For example, access the LOCAL IFB feature by pressing button 2 during setup mode. Access presets by tapping any one of the buttons labeled PRE 1 through PRE 6. Labels that are not italicized are operating features and not setup mode features.

Note: some italicized labels are not setup mode features, but are submenu items for use with a particular setup mode feature.

1.1.3.2 Setup Mode Features

2W/4W Setup

Each intercom channel may be set for two-wire operation, four-wire operation, or both (not applicable to auxiliary channels). For two-wire operation, nulling may also be optionally turned on or off. Thus, the intercom channels may be individually programmed to operate with a variety of inputs and outputs. For example, two-wire operation won't work with a typical two-way radio, which often requires a four-wire, unbalanced connection. RTS "TW" belt packs and intercom channels, of course, operate in two-wire mode, and nulling is normally activated when connecting to TW devices.

Default setting: all channels set for two-wire operation with nulling.

AUTO LISTEN Setup

Each listen button may be individually programmed for auto listen. When auto listen is assigned to a channel, that channel's listen button will automatically turn on when there is an incoming call signal from another intercom station.

Default setting: auto listen is disabled for all channels.

AUTO TALK Setup

Each talk button can be individually programmed to automatically activate when an incoming call signal is received on its intercom channel. The microphone also activates, so that the 803 user can talk to the caller without having to press any buttons.

Default setting: auto talk disabled for all channels.

BILAT SELECT Setup

If one or more of the auxiliary channels 13-15 are not being used with the ISO and IFB options, these channels may be assigned to front-panel buttons (usually unused keypad buttons) for talk and listen activation.

Default setting: channels 13 through 15 unassigned.

BUFFER RECALL Setup

The 803 has an internal buffer which stores the current status (on or off) for all 24 talk and listen buttons. The contents of this buffer can be recalled and stored in any one of the 6 presets (the PRE 1 through PRE 6 buttons on the keypad). You can then activate that preset button at any time during normal operation to recall the saved talk and listen button settings.

Default setting: N/A

BUTTON LOCK Setup

This feature locks selected talk and listen buttons in the on or off position. You must also use this feature to unlock buttons.

Default setting: all buttons unlocked.

CALL DISABLE Setup

This feature disables or enables call signal reception on selected intercom channels. When call signal reception is disabled on a channel, there will be no chime tone or button flash to indicate an incoming call. Outgoing call signals are not affected.

Default setting: call reception enabled for all intercom channels.

CALLER ID Setup

Caller ID causes the listen button for an intercom channel to flicker when audio is being received on that channel. This provides a visual cue of which channel is talking. You can set caller ID to provide this indication when the listen button is on and/or off.

Default setting: caller ID is disabled on all intercom channels.

CHIME SELECT Setup

Chime select lets you select one of 3 chime tones for incoming call announcement on the intercom channels. The currently selected tone always sounds at power-up or after a reset.

Default setting: a single high-low tone

EXT CONTACT Setup

This feature lets you activate any one button on the front panel (except CALL & SETUP) using an external switch. You can also activate a group of buttons by assigning those buttons to a preset and then activating the preset with the external switch.

Default setting: the external switch activates the MIC ON button on the keypad.

INSTANT MIC Setup

In order to talk to an intercom channel, both the MIC ON button and the talk button for that channel must be on. In some cases it may be convenient to have both of these activate when the talk button is pressed. This is referred to as "instant mic".

Default setting: instant mic is disabled for all channels.

LATCH DISABLE Setup

Most front panel buttons can operate in both momentary and latching mode. You may not want certain buttons to have the ability to latch (for example, a button that talks to a radio transmitter). You can disable latching for these buttons.

Default setting: latching operation enabled for all buttons that support latching.

LOCAL IFB Setup

Any of the intercom channels 1-12 can be converted into a local IFB channel. (Not applicable to channels 13-15). A local IFB channel normally sends a program feed to a remote listener. By pressing the talk button for the local IFB channel, the 803 station operator can interrupt the program feed and then talk to the remote listener. The program source for a local IFB channel can be either of the program 1 or 2 inputs, or the listen input for that channel.

Default setting: local IFB is off for all channels.

MIC SELECT Setup

This feature selects which microphone inputs are activated by the PANEL ON button in both the on and off positions.

Default setting: the PANEL ON button selects the front panel gooseneck microphone in the on position and the front panel headset microphone (either carbon or dynamic) in the off position.

PRESET EXCLUDE Setup

Selected talk and listen buttons may be excluded so that they cannot be assigned for activation using the preset buttons.

Default setting: no talk or listen buttons are excluded from assignment to presets.

PRESETS Setup

Any combination of talk and listen buttons may be assigned for activation by any one of the 6 preset buttons.

Default setting: no presets setup.

RELAY Setup

Any of the 6 built-in relays may be assigned for activation by selected front panel buttons.

Default setting: no relays assigned.

SP/L/R (Speaker Left/Right Select) Setup

Each audio input can be directed to the speaker, the left headphone, the right headphone, or any combination of the three.

Default setting: all audio inputs are assigned to the speaker and to both the right and left headphones.

SPECIAL PURPOSE Setup

This feature is only available for special-order products.

TALK TURNS OFF LISTEN Setup

Occasionally, activating a talk button while the listen button is on may cause feedback, echo or other undesirable sounds. This may only happen on selected channels, or it may happen on all channels in certain environments or with certain audio sources. You can eliminate this problem by setting selected listen buttons to automatically turn off while their associated talk buttons are on.

Default setting: talk turns off listen is deactivated for all channels.

TALK TURNS ON LISTEN Setup

You can set the talk button for any channel so that activating that talk button will automatically turn on the listen button.

Default setting: talk turns on listen is deactivated for all channels.

TOTAL MUTE Setup

Total mute lets you turn off all talk and listen buttons by tapping a single button.

Default setting: no total mute button assigned.

VOX ENABLE Setup

The 803 can be set for voice-activated microphone. When this feature is enabled the microphone will remain off when you are not speaking into it. When you do speak, the microphone will turn on, and your voice will be transmitted on any channels that have talk buttons activated.

Default setting: vox disabled.

1.1.4 803 Compatibility with RTS Video ISO System

The 803 can be connected to an external VCP-6 or VCP-12 Video ISO Panel. For external ISO, button activation at the VCP panel causes deactivation of all conference channel talk buttons at the 803 (listen button deactivation may also be setup via an internal 803 DIP switch), and the 803 mic audio is automatically routed to the VCP system.

The 803 can also emulate a VCP-6 or VCP-12 ISO Panel. VCP-6 emulation requires installation of an optional 50-pin cable and resetting internal DIP switches. VCP-6 emulation takes over 3 intercom channels (and their talk and listen buttons) and auxiliary channel 15. VCP-6 emulation can be installed along with Model 4001 IFB panel emulation. VCP-12 emulation is similar to VCP-6 emulation, but requires installation of two 50-pin option cables. VCP-12 emulation takes over 6 intercom channels and auxiliary channel 15. Also, IFB panel emulation is not possible when VCP-12 panel emulation is installed. (However, local IFB is still possible on any unused intercom channels.)

1.1.5 803 Compatibility with RTS Model 4000 IFB System and Local IFB

The 803 can be connected to an external 4001 or 4002 IFB Panel. For external IFB, button activation at the IFB panel causes deactivation of all conference channel talk buttons at the 803, and the 803 mic audio is automatically routed to the IFB system.

The 803 can also emulate a 4001 or 4002 IFB Panel. Model 4001 IFB Panel emulation requires installation of an optional 50-pin cable and resetting internal DIP switches. Model 4001 emulation takes over 3 intercom channels (and their talk and listen buttons) and auxiliary channel 13. Model 4001 emulation can be installed along with VCP-6 ISO Panel emulation. Model 4002 IFB Panel emulation is similar to Model 4001 emulation, but requires installation of two 50-pin option cables. Model 4002 emulation takes over 6 intercom channels and auxiliary channels 13 and 14. Also, VCP emulation is not possible when Model 4002 emulation is installed. However, external ISO is still possible.

Any intercom channel that is not being used for intercommunication or IFB/ISO panel emulation may be configured as a local IFB channel. This channel can be set to normally monitor a program input at either the program 1 or 2 input. Or, if the local IFB channel is operated in 4-wire mode, the listen input may be used as the program source. Pressing the talk button for that channel disconnects the program input and causes the 803 operator's voice to be heard at the IFB output.

1.1.6 Comparison of 803 and 802

1.1.6.1 Retained Features

Presets
Relays
Latch Disable
Preset Exclude
Special Purpose
Button Lock
Instant Mic
Bilat Select
Total Mute
Chime Select
Auto Listen
Auto Talk
External Contact
Talk Turns On Listen
Talk Turns Off Listen

1.1.6.2 New Features & Changes

	Model 803	Model 802
Depth	10"	14.25"
Weight	10 lb.	18 lb.
Std. Channels	12	6
Internal Jumpers	2	Many
Technology	Surface-mount	Through-hole
Indicators	LED	Incandescent lamp
Hot Mic Output	Adj. to +26dBm	Fixed at 0 dBm
Outputs	Active balanced	Transformer balanced
Listen Controls	Front panel	Adjustment board
Null Adjustment	Front panel	Adjustment board
Lamp Dim Adjust	Front panel	Adjustment board
VOX Adjust	Front panel	N/A
Local IFB	Yes	Only with 862
Local IFB Pgm Adj	Front panel	None
DTMF Generator	Yes	No
Talk Off Signaling	Yes	No
Call Light	Standard	Optional
2W/4W Select	Via software	Via hardware
Listen Output Config	Via software	Via hardware
Headset Connector	Optional 4-, 5-, or 6-pin	5/6-pin female
Auxiliary Connections	2) DB25 connectors	Terminal strip
Program lockout	Via software	Via hardware
CPU Watchdog	Yes	No
Circuit Cards	3	Up to 14
Listen Activity Ind.	12 channels	None
Mic inputs & levels	Software adjustable	Fixed
Panel Mic	Removable	Non-removable
Warm/Cold Start	Front panel	Adjustment board
Multi Listen Dim	Yes	No
Presets	6	4
Squawk	No	Optional

1.2 Specifications

1.2.1 803 Master Station

Inputs

Dynamic Microphone
- Source Impedance: 50 to 1000 ohms
- Level: -55 dBu to -25 dBu

Carbon Microphone
- Level: -15 dBu nominal
- Excitation: 10 milliamperes

Four-Wire Receive Level
- -20 dBu to 0 dBu into 40 kilohms

Program Input Level
- 0 dBu to +10 dBu into 40 kilohms

Outputs

Headphone Level
- 40 mW peak into 25 ohms
- 62.5 mW peak into 100 ohms
- 81 mW peak into 1000 ohms

Speaker Level
- 6 W peak power into 4 ohms

Unswitched Balanced Mic Out (Hot mic)
- Adjustable to +25 dBm peak

Current Source Line Driver
- Current: 10 mA pp nominal
- Two Wire Level: 2 Vpp @ 200 ohms
- Four Wire Level: 6 Vpp @ 600 ohms

Relays
- Bellcore surge withstand: 2.5 kV
- Agency Approvals: UL,CSA,FCC Part 68
- Contact Type and Ratings
  - Type: SPDT (wired DPDT in parallel)
  - Maximum resistive current: 2 A
  - Maximum operating voltage:125 VAC, 110 VDC
  - Maximum switching capacity: 62.5 VA, 60 W
  - Minimum load:10 uA, 10 mVDC
  - Rated load, resistive: 0.5 A @125 VAC; 1 A @ 30 VDC
- Coil Ratings
  - Power Consumption:140 mW
  - Dielectric Strength: 1000 VAC

Key Outputs
- 0.4 A, 50 VDC maximum

Operating Distance
- 1 mile, nominal

RS232/RS485 Data

Baud rate: 2400 baud*

Data bits: 8

Stop bits: 1

Parity: none

Handshaking: none

* Initial connection at 2400 baud required. After connecting the 803 may be set to 300, 600, 1200, 2400, 4800, or 9600 baud.

Environmental

Ambient Temperature
- Storage: -40°C to +85°C
- Operating: 0°C to 50°C

Relative Humidity
- 10% to 90% Non-condensing

Mechanical

Color, Front Panel:Gray, Federal Standard 595A Color #26492

Weight:10 lb.

Dimensions (Excluding connectors and panel mic)
- Height: 3.5" (89 mm) high
- Width: 19.0" (483 mm)
- Depth: 10.0" (254 mm)

Electrical

Power, Nominal: 43VA

Supplies
- +5 VDC, 3 A
- +15 VDC, 1.6 A
- -15VDC, 0.3A

1.2.2 External Power Supply

General

Type: Model UP30431 Power Supply Specifications (Universal Input, Switching Type Supply)

Efficiency: 75% min.

MTBF: 50,000 hours

EMI: Meets FCC Class "B" and VDE Class "B"

Safety Approvals: UL / CSA / TUV/ CE Safety Marks

Environmental

Ambient Temperature
- Storage: -20°C to 85°C
- Operating: 0°C to 40°C

Relative Humidity: 0% to 95% Non-Condensing

Cooling: Free air convection

Input

Input Voltage: 100 VAC to 250 VAC at IEC connector

Input Frequency: 47 Hz to 63 Hz

Inrush Current, Cold: 15 A @115 VAC, 30 A @230 VAC

Outputs

Power, Nominal: 43 VA

Supplies
+5 VDC,3A
+15 VDC, 1.6 A
-15 VDC, 0.3 A

Line regulation: +0.2%

Load regulation
+5 VDC: +/-3%
+15 VDC: +/-5%
-15 VDC: +/-10%

Ripple & Noise, 20 MHz BW: 1% max

Hold-up Time: 20 ms

Overvoltage Protection at main rated output: +15%

Overcurrent Protection: +150% load

Mechanical

Weight: 2 lb. (0.9 kg)

Length: 6.08" (154.4 mm)

Width: 3.33" (84.5 mm)

Height: 1.97" (50.0 mm)

Output Cord Length: 4 ft (1.2 m)

Output Connector: 5 pin DIN, male

Output Connections: pin l, return; pin 2, return, pin 3, +5 VDC; pin 4, -12 VDC; pin 5, +12 VDC

2 Installation

2.1 Unpacking

The package contents vary depending on what options are included. Refer to Table 1 for the items included with your 803. If anything appears missing or damaged, contact your dealer.

If your 803 includes option cables, proceed to "Option Cable Installation" on the next page. Otherwise, skip to "DIP Switch Settings", page 16.

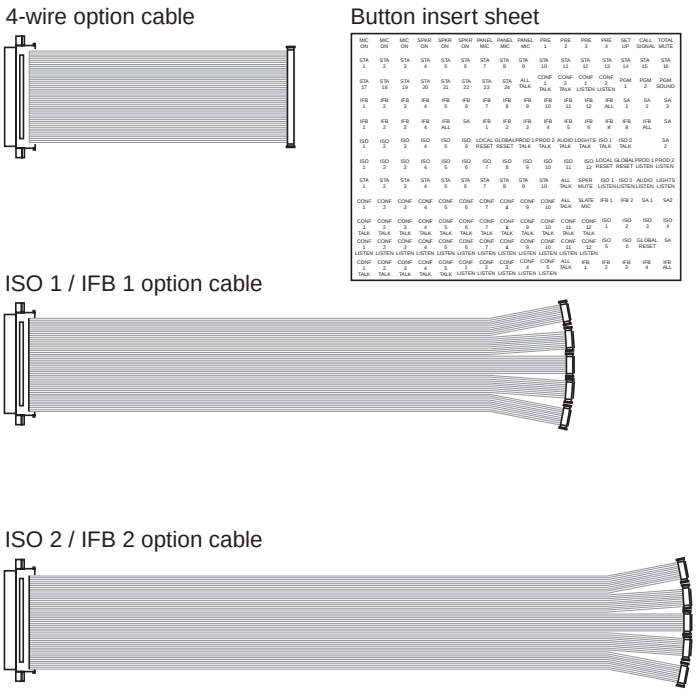


Figure 1. *Option components*

Table 1. *803 Package contents for various option configurations*

Description	803 Standard, No Options	803-C: 4-Wire Option	803-C-G1: 4-wire & IFB1 Options	803-C-G1G5: 4-wire, IFB1 & IFB2 Options	803-C-G1-H1: 4-wire, IFB1 & ISO1 Options	803-C-H1: 4-wire & ISO1 Options	803-C-H1H5: 4-wire, ISO1 & ISO2 Options	803-G1: IFB1 Option	803-G1G5: IFB1 & IFB2 Options	803-G1-H1: IFB1 & ISO1 Options	803-H1: ISO1 Option	803-H1H5: ISO1 & ISO2 Options
803 Intercom Station	1	1	1	1	1	1	1	1	1	1	1	1
Power Supply, 100-250V, 50-60 Hz, 1.2A	1	1	1	1	1	1	1	1	1	1	1	1
803 Manual	1	1	1	1	1	1	1	1	1	1	1	1
Ribbon Cable Assy, 14-inch, with one 50-pin connector to five 10-pin connectors for ISO1 or IFB1			1	1	2	1	1	1	1	2	1	1
Ribbon Cable Assy, 17-inch, with one 50-pin connector to five 10-pin connectors for ISO2 or IFB2				1			1		1			1
Ribbon Cable Assy, 10-inch, 50-pin to 50-pin for 4-wire option.		1	1	1	1	1	1					
Button Insert Sheet			1	1	1	1	1	1	1	1	1	1

2.2 Option Cable Installation

2.2.1 General Information

The connector openings for the option cables are labeled on the back panel as follows:

ISO 1 Connector: Used for VCP-6 and VCP-12 ISO Panel Emulation; provides connections for ISO1 through ISO6.

IFB 1 Connector: Used for 4001 and 4002 IFB Panel Emulation; provides connections for IFB1 through IFB4 and SA1 (Stage Announce 1)

IFB 2 / ISO 2 Connector: Can be used with the ISO1 connector for VCP-12 Panel Emulation (provides the ISO7 through ISO12 connections). Or, can be used with the IFB1 connector for 4002 IFB Panel Emulation (provides the IFB5 through IFB8 and SA2 connections)

2.2.2 Back Panel Connector Installation

1. Remove the 12 top cover screws and remove the cover.

2. Select the desired connector opening in the back panel. Remove the 3/16 jack screw and the phillips screw that hold the mesh screen and white plastic cable retaining clip in place.

3. Insert the 50-Pin "D" connector of the option cable into the connector opening. The connector should be oriented the same way as the TWO WIRE LINE CONNECTOR that is already installed.

4. Reinstall the white plastic cable retaining clip and the screws. Note that the "D" connector has threaded inserts, so the hex nuts that were originally used are no longer required.

5. Refer to the following installation notes for each option cable to complete the installation.

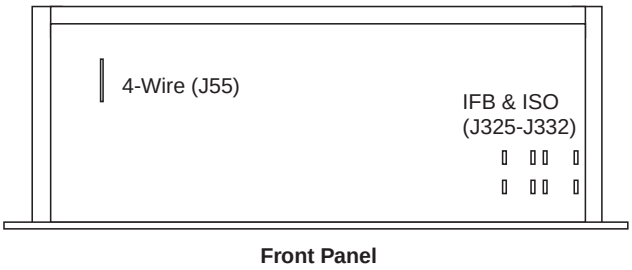


Figure 3. *Locations of option cable connectors on the main circuit board*

2.2.3 4-Wire Option Cable Notes

Connect the 4-wire cable to J55 on the main circuit board. The red wire on the cable corresponds to pin 1 of J55. Note: there are no internal DIP switches directly related to the 4-wire option. You configure individual channels to operate in 4-wire mode via the front panel setup mode. See "*2W/4W* Setup", page 43 for details.

2.2.4 IFB and ISO Option Cable Notes

2.2.4.1 General Notes

The priority and tally connectors are identified in Figure 2. Only one priority connector is used for each cable. It determines who gets controlling access to IFB's and ISO's when there is more than one IFB or ISO panel in the intercom system. Priority 1 overrides all panels set to priority 2, 3, or 4; priority 2 overrides priority 3 and 4 etc. When an IFB or ISO button is pressed at a panel which has a higher priority, any lower priority panels will be disconnected from that IFB or ISO until the button is released on the higher priority panel. If the same IFB or ISO button is activated on two panels with the same priority, both will be able to talk to the IFB or ISO at the same time.

The tally connector is used in all cases. It distributes button-pressed signals throughout the intercom system to notify all other IFB or ISO panels when any IFB or ISO button has been pressed.

Important! The priority and tally connectors can be installed backward if the correct location of pin 1 is not observed. Also, the connectors can be misaligned so that all pins are not connected. Check carefully when installing.

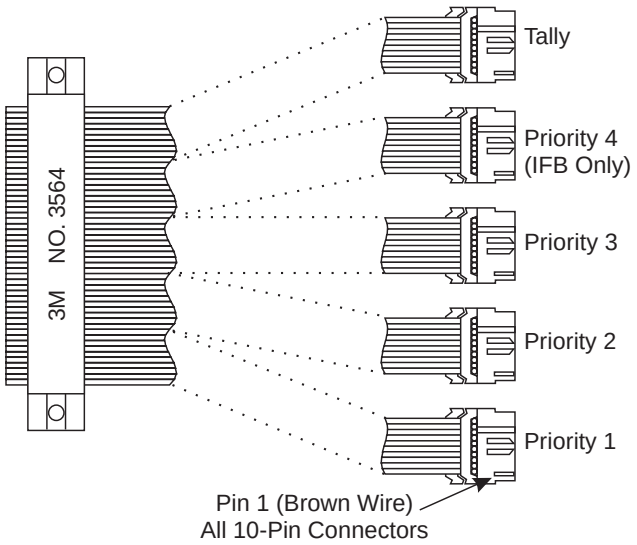


Figure 2. *Priority and tally connectors for IFB and ISO option cables*

When you install an IFB or ISO option cable and set the internal DIP switches as noted in the following paragraphs, specific front panel buttons will be reserved for the installed option. The button insert sheet provides standard button labels for these reserved buttons. See "Front Panel Button Inserts", page 17 for details.

2.2.4.2 IFB 1 Cable Notes

- Connect the desired priority connector to J325 on the main circuit board. Connect the tally connector to J326.
- Set DIP switch S1-3 (page 16) to the ON position*. DIP switch S2-8 may optionally be set to the on position if you want all talk buttons to automatically shut off whenever any IFB button is activated.
- When installing button inserts for IFB 1 (page 17) note that different buttons are used, depending on whether or not another IFB or ISO connector is installed.
- Use a 50-pin cable to connect from the IFB 1 connector to a Model 4010 Central Electronics Unit. Typical connections are shown in Figure 20, page 40. Refer also to your Model 4010 Manual; if you are only using the IFB 1 connector and not IFB 2, connections are the same as for a Model 4001 Control Station.

2.2.4.3 IFB 2 Cable Notes

- The IFB 2 cable should only be installed in addition to the IFB 1 cable. If you install and activate this cable, do not install and activate any ISO option cables.
- Connect the desired priority connector to J327 on the main board. Connect the tally connector to J328.
- Set DIP switch S1-4 (page 16) to the ON position to activate the IFB 2 connector*. (You should already have set DIP switch S1-3 to the on position to activate the IFB 1 connector.)
- Install the button inserts (page 17).
- Typical system connections are shown in Figure 18, page 38. Refer also to your Model 4010 Central Electronics Manual. When using both the IFB 1 and IFB 2 connectors, connections are the same as for a Model 4002 Control Station.

2.2.5 ISO 1 Cable Notes

- Connect the desired priority connector to J329 on the main circuit board. Connect the tally connector to J330.
- Set DIP switches S2-4 and S2-6 (page 16) to the ON position to activate and use this connector*. DIP switch S2-5 may optionally be set to the ON position if you want all conference channel listen buttons to automatically shut off whenever any ISO button is activated (all conference channel talk buttons always shut off during ISO).
- When installing button inserts for ISO 1 (page 17) note that different buttons are reserved, depending on whether or not another IFB or ISO connector is installed.
- Use a 50-pin cable to connect from the ISO 1 connector to a Model VIE-306 Video ISO Electronics Unit. Typical connections are shown in Figure 20, page 40. Refer to your Model VIE-306 Manual for further information. If you are only using the ISO 1 connector and not ISO 2, connections are the same as for a Model VCP-6.

2.2.5.1 ISO 2 Cable Notes

- The ISO 2 cable should only be installed in addition to the ISO 1 cable. Also, if you install and activate this cable, you cannot install and activate any IFB option cables.
- Connect the desired priority connector to J331 on the main board. Connect the tally connector to J332.
- Set DIP switch S1-4 to the on position to activate the ISO 2 connector*. (You should already have set DIP switches S2-4 and S2-6 to the on position to activate the ISO 1 connector.)
- Install the button inserts (page 17).
- Typical system connections are shown in Figure 19, page 39Refer to your Model VIE-306 Video ISO Electronics Manual for connection information. When using both the ISO 1 and ISO 2 connectors, connections are the same as if you are connecting a Model VCP-12 Control Station.

---

* Any time you change any of these DIP switch settings, you must perform a reset in order for them to take effect. All previous setup mode programming will be erased during the reset.

2.3 DIP Switch Settings

Unless you are using the 803 for IFB or ISO operations, you will probably not need to change any of the DIP switch settings. However, briefly review the tables below and make any required or optional changes before proceeding. Figure 4 shows the locations of the DIP switches. Access the switches by removing the 12 screws securing the top cover.

Switches that are grayed-out in the tables require a reset after changing, and will cause any setup-mode programming to be erased. All other switches do not require any reset. See "Resetting the 803", page 19.

If you activate any of the DIP switches for the IFB or ISO connectors on the back panel, change the front panel button inserts as described on the next page. Otherwise, proceed to "Setting the Key Code Switch", page 17.

Table 2. *DIP switch S1 settings*

Switch No.	Description	Default Setting
S1-1	Not used	OFF
S1-2	Not used	OFF
S1-3	IFB enable for Model 4001/ 4002 emulate No: OFF Yes: ON Note: 4001 / 4002 Emulation uses the IFB1 / IFB2 connectors on the back panel.	OFF
S1-4	Back Panel IFB / ISO connector configuration: Only IFB 1 and / or ISO 1 installed: OFF IFB 1 & 2 or ISO 1 & 2 installed: ON	OFF
S1-5	Number of presets (PRE 1 through PRE 6) that can be activated at the same time: All may be activated at same time: OFF Only one at a time: ON Note: Each of the preset buttons (PRE1 through PRE6 on the keypad) can be assigned to simultaneously activate various combinations of front panel buttons. See "Presets Setup", page 48.	OFF
S1-6	Exclusive listen with talk Talk does not turn off listens: OFF Talk does turn off listens: ON Note, when S1-6 is on: if a talk button is pressed, all listen buttons except the one associated with that talk button will turn off until talk is released. However, listen buttons may be manually reactivated while a talk button is on.	OFF
S1-7	Power-up reset options Warm reset: OFF Cold reset: ON Note: see "Resetting the 803", page 19.	OFF
S1-8	Not used	OFF

Table 3. *DIP switch S2 settings*

Switch No.	Description	Default Setting
S2-1	Call light time out select: 20 seconds: OFF 20 minutes: ON Note: Call light time out determines how long front panel listen buttons will flash after receiving an incoming call.	OFF
S2-2	Number of active intercom channels 12: ON 6: OFF Note: If S2-2 is set to off, the talk and listen 6-12 buttons will not operate at all for intercom usage. The IFB1, IFB2, ISO1 and ISO2 options do use some or all of these buttons; however, the position of S2-2 does not affect any of these options.	ON
S2-3	801 Emulation No: OFF Yes: ON	OFF
S2-4	ISO type select: External ISO: OFF VCP Emulate: ON Note: In VCP emulate mode some front panel buttons are used for ISO control as shown in Figure 7, page 18. In external ISO mode, an external VCP6A or VCP12A is used for ISO selection and the 803 microphone is used to talk to the selected ISO. For both types of ISO, S2-6 must be ON to activate S2-4.	OFF
S2-5	Disable all active conference channel listen buttons during ISO? No: OFF Yes: ON Note: All conference channel talk buttons are automatically disabled during ISO.	OFF
S2-6	ISO enable Disable: OFF Enable: ON	OFF
S2-7	Not used	OFF
S2-8	Turn off all active conference channel talk buttons during IFB? No: OFF Yes: ON Note: this feature applies only for Model 4001/4002 IFB Panel emulation.	OFF

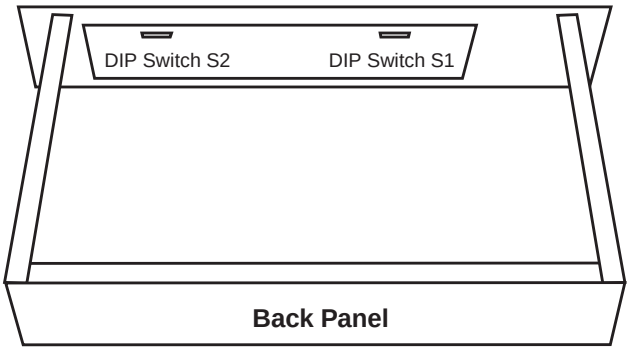


Figure 4. *Locations of DIP switches*

2.4 LED "Off" Brightness Jumpers

There are 3 settings available for the "off" brightness of the button LED's: off, low brightness and high brightness. For most cases, the default setting will be satisfactory, and the overall brightness of the lamps can be adjusted as need via the front panel LAMP DIM trimmer.

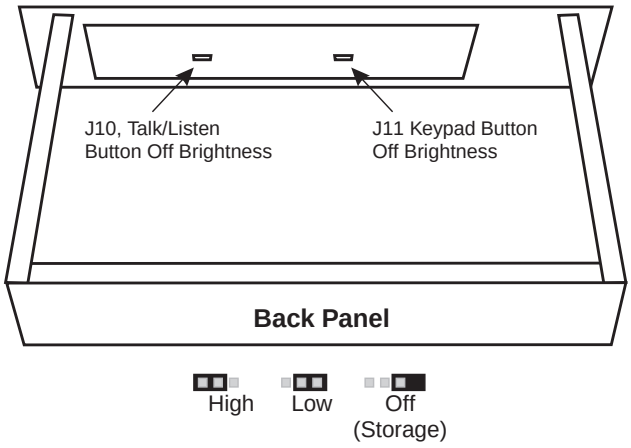


Figure 6. *Locations of jumpers to select the "off" brightness for the front panel buttons*

2.5 Front Panel Button Inserts

The default setting for the front panel buttons is 12 conference intercom lines, with one talk and listen button pair for each line. This configuration applies to both 2-wire and 4-wire conference lines. If ISO or IFB options are installed, the front panel button configuration may be changed by installing different inserts from the supplied button insert sheet. Or, you can make your own custom inserts. Figure 7 summarizes the button usage for the various option configurations.

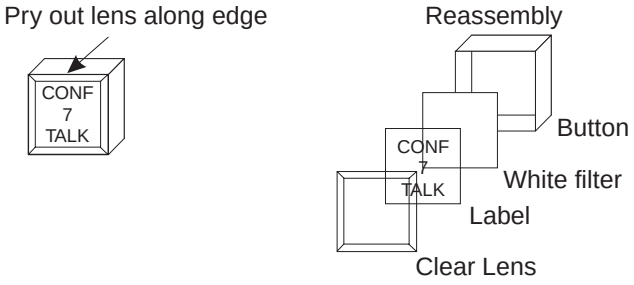


Figure 5. *Button insert replacement*

2.6 Setting the Key Code Switch

The key code switch on the back panel controls access to the user-programmable setup mode features. (The setup mode features are described starting on page 43.) Key code switch settings are as follows:

0: No access permitted (no one can program the 803)
1-9: User must enter this number before accessing setup mode
A-F: No restrictions on access to setup mode (default)

Note: The key code switch has a stop at the 0 setting. Do not attempt to rotate the switch through 0 to F.

To restrict access, select one of the settings 0 through 9. Otherwise, leave the setting in the default position. If you change the switch setting, the new setting will take place immediately. Note that if you select the 0 position, you will need to gain access to this switch if you ever need to change any 803 programmable features.

DEFAULT CONFIGURATION

12 CONFERENCE LINES
(2-WIRE OR 4-WIRE)

CONF 1 TALK	**CONF** 2 TALK	**CONF** 3 TALK	**CONF** 4 TALK	**CONF** 5 TALK	**CONF** 6 TALK	**CONF** 7 TALK	**CONF** 8 TALK	**CONF** 9 TALK	**CONF** 10 TALK	**CONF** 11 TALK	**CONF** 12 TALK
CONF 1 LISTEN	**CONF** 2 LISTEN	**CONF** 3 LISTEN	**CONF** 4 LISTEN	**CONF** 5 LISTEN	**CONF** 6 LISTEN	**CONF** 7 LISTEN	**CONF** 8 LISTEN	**CONF** 9 LISTEN	**CONF** 10 LISTEN	**CONF** 11 LISTEN	**CONF** 12 LISTEN

IFB 1 CONNECTOR INSTALLED

9 CONFERENCE LINES;
REMAINING 6 BUTTONS EMULATE
A MODEL 4001 IFB PANEL

CONF 1 TALK	**CONF** 2 TALK	**CONF** 3 TALK	**CONF** 4 TALK	**CONF** 5 TALK	**CONF** 6 TALK	**CONF** 7 TALK	**CONF** 8 TALK	**CONF** 9 TALK	**IFB** 1	**IFB** 2	**IFB** ALL
CONF 1 LISTEN	**CONF** 2 LISTEN	**CONF** 3 LISTEN	**CONF** 4 LISTEN	**CONF** 5 LISTEN	**CONF** 6 LISTEN	**CONF** 7 LISTEN	**CONF** 8 LISTEN	**CONF** 9 LISTEN	**IFB** 3	**IFB** 4	SA 1

IFB 1 AND IFB 2
CONNECTORS INSTALLED

6 CONFERENCE LINES;
REMAINING 12 BUTTONS EMULATE
A MODEL 4002 IFB PANEL

CONF 1 TALK	**CONF** 2 TALK	**CONF** 3 TALK	**CONF** 4 TALK	**CONF** 5 TALK	**CONF** 6 TALK	**IFB 1**	**IFB 2**	**IFB 3**	**IFB 4**	**SA 1**	**SA 2**
CONF 1 LISTEN	**CONF** 2 LISTEN	**CONF** 3 LISTEN	**CONF** 4 LISTEN	**CONF** 5 LISTEN	**CONF** 6 LISTEN	**IFB 5**	**IFB 6**	**IFB 7**	**IFB 8**	**IFB ALL**	

ISO 1 CONNECTOR INSTALLED

9 CONFERENCE LINES;
REMAINING 6 BUTTONS EMULATE
A MODEL VCP-6 ISO PANEL

CONF 1 TALK	**CONF** 2 TALK	**CONF** 3 TALK	**CONF** 4 TALK	**CONF** 5 TALK	**CONF** 6 TALK	**CONF** 7 TALK	**CONF** 8 TALK	**CONF** 9 TALK	**ISO 1**	**ISO 2**	**ISO 3**
CONF 1 LISTEN	**CONF** 2 LISTEN	**CONF** 3 LISTEN	**CONF** 4 LISTEN	**CONF** 5 LISTEN	**CONF** 6 LISTEN	**CONF** 7 LISTEN	**CONF** 8 LISTEN	**CONF** 9 LISTEN	**ISO 4**	**ISO 5**	**ISO 6**

ISO 1 AND ISO 2
CONNECTORS INSTALLED

6 CONFERENCE LINES;
REMAINING 12 BUTTONS EMULATE
A MODEL VCP-12 ISO PANEL

CONF 1 TALK	**CONF** 2 TALK	**CONF** 3 TALK	**CONF** 4 TALK	**CONF** 5 TALK	**CONF** 6 TALK	**ISO 1**	**ISO 2**	**ISO 3**	**ISO 4**	**ISO 5**	**ISO 6**
CONF 1 LISTEN	**CONF** 2 LISTEN	**CONF** 3 LISTEN	**CONF** 4 LISTEN	**CONF** 5 LISTEN	**CONF** 6 LISTEN	**ISO 7**	**ISO 8**	**ISO 9**	**ISO 10**	**ISO 11**	**ISO 12**

IFB 1 AND ISO 1
CONNECTORS INSTALLED

6 CONFERENCE LINES;
6 BUTTONS EMULATE
A MODEL 4001 IFB PANEL
6 BUTTONS EMULATE
A MODEL VCP-6 ISO PANEL

CONF 1 TALK	**CONF** 2 TALK	**CONF** 3 TALK	**CONF** 4 TALK	**CONF** 5 TALK	**CONF** 6 TALK	**IFB 1**	**IFB 2**	**IFB ALL**	**ISO 1**	**ISO 2**	**ISO 3**
CONF 1 LISTEN	**CONF** 2 LISTEN	**CONF** 3 LISTEN	**CONF** 4 LISTEN	**CONF** 5 LISTEN	**CONF** 6 LISTEN	**IFB 3**	**IFB 4**	**SA 1**	**ISO 4**	**ISO 5**	**ISO 6**

Figure 7. *Button usage for various configurations of the 803*

2.7 Resetting the 803

Prior to mounting the 803, perform a power-up reset. This will allow any DIP switch changes to take effect, and it will allow you to verify the operation of the front panel displays. To perform the power-up reset, simply plug in the power supply module.

At the start of reset, the front panel buttons will light in sequence. Then one listen button and one keypad button will light simultaneously to display the version number. The listen button displays the high digit and the keypad button displays the low digit. For example, if the LISTEN 5 button and the "7" button on the keypad are both lit, the version number is 5.7.

After the version number is displayed, the currently selected chime tone (if any) will sound. This is the tone that you will hear for incoming call announcement. (You can change this tone or turn it off. See "Chime Select Setup". page 46.) At this time, the SPK ON button will also light and remain on.

Note: The rest of this page provides a detailed explanation of the reset operation. You may skip this and proceed to "Mounting the 803" on the next page; however, note that changes to DIP switch settings after you have programmed the 803 (using setup mode, as described starting on page 43) could erase your programmed settings.

The 803 has two reset modes: cold reset and warm reset. A cold reset restarts the 803 and erases all setup mode programming. All front panel buttons are turned off (except the SPK ON button, which always starts up in the on position). A warm reset restarts the 803 and resets all front panel buttons to the positions they were in before the reset was initiated.

A cold reset occurs under the following conditions:

- DIP switch S1-7 is set to the on position and the 803 is powered up.
- The user forces a cold reset during normal operation. (See "Forcing a Cold Reset", below.)
- The user changes any of the DIP switches that are grayed-out in Tables 2 or 3 (page 16) and then performs a cold or warm reset by any means.
- The backup battery fails and any kind of reset by any means occurs.

A warm reset only occurs under the following conditions:

- At power up if DIP switch S1-7 is set to the off position **AND NO HARDWARE DIP SWITCH SETTINGS HAVE BEEN CHANGED AND THE BACKUP BATTERY IS FUNCTIONING CORRECTLY**. (DIP switches that affect hardware operation are grayed-out in Tables 2 or 3 , page 16.)
- When the user forces a warm reset during normal operation (see below) **AND NO HARDWARE DIP SWITCH SETTINGS HAVE BEEN CHANGED AND THE BACKUP BATTERY IS FUNCTIONING CORRECTLY**.

Forcing a cold reset

Simultaneously press and hold the talk 1, 5, and 9 buttons and the listen 2 button. Then, release the talk buttons while continuing to hold the listen 2 button. After the front panel lights begin to cycle release the listen 2 button.

Forcing a warm reset

Simultaneously press and hold the talk 1, 5, and 9 buttons, then release all 3 buttons.

2.8 Mounting the 803

Note: If the mounting location for the 803 provides access to the back panel controls and connectors, you should be able to mount the 803 at this time. Otherwise, perform the connections and adjustments as described in the following sections before mounting the 803.

The 803 mounts in any standard equipment rack or bay and occupies 2 rack spaces (3.5 inches high). Depth is 10.5 inches behind the front panel. Allow an additional 2 to 3 inches for connectors.

If the 803 will be used with a VCP-6/VCP-12 ISO Panel or a 4001/4002 IFB Panel, it is generally located within easy reach of these devices. General consideration should also be given to the visibility of the controls and indicators from the operator's position to avoid eye or neck strain during extended usage and to assure unobstructed vision of other personnel or equipment. If necessary, discuss the positioning of the 803 and related components with personnel who will have to use them to assure the best setup. Once the 803 has been mounted, you should be ready to connect it to the intercom system. Proceed to the next page.

2.9 803 Connections

Refer to the connector pin-out tables and notes on the following pages for information about each connector. For examples of connector usage, refer to the diagrams following the connector pin-out tables. After you connect the 803, you may have to configure one or more features prior to operation. See "Setup Mode", starting on page 43 .

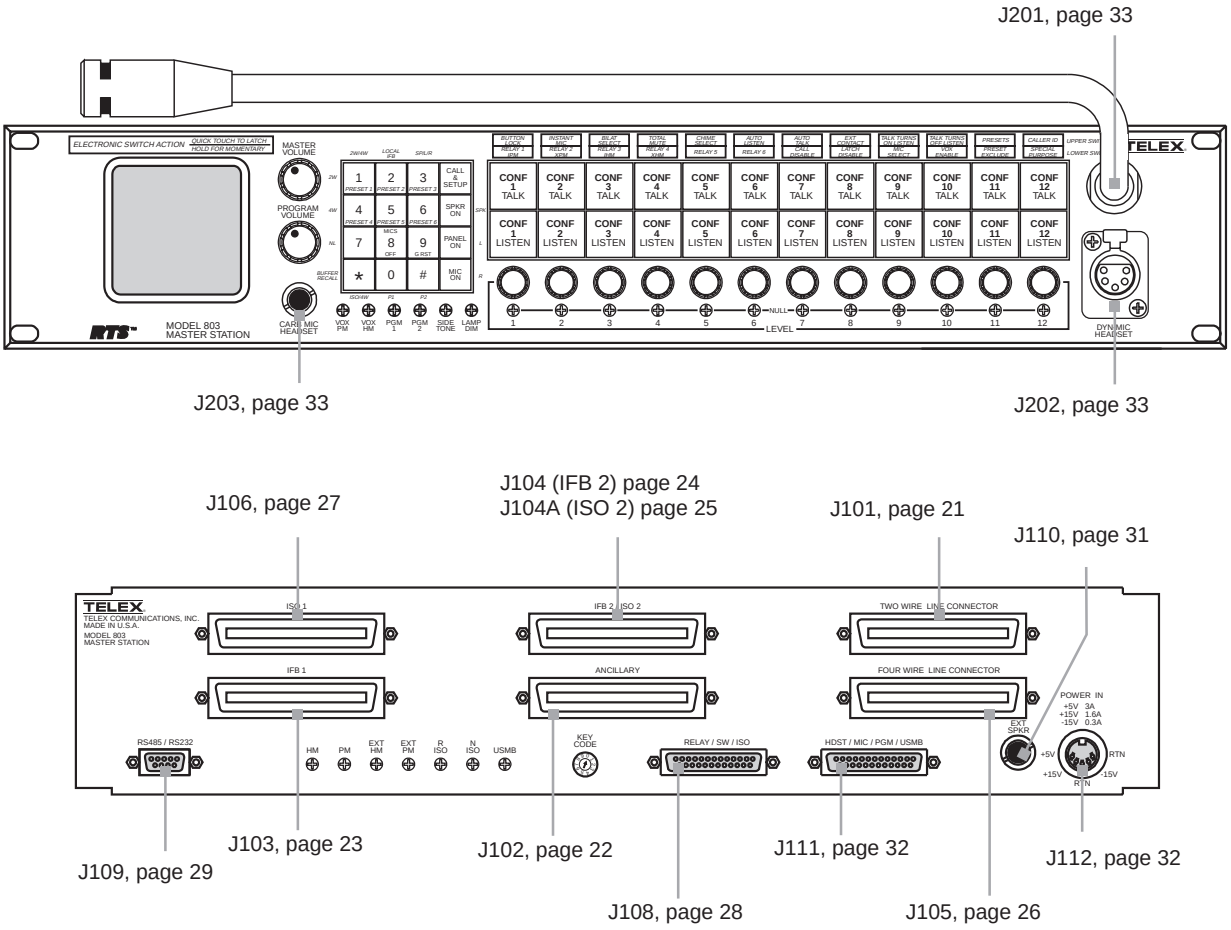


Figure 8. *Connector reference view*

2.9.1 J101 Connector

Intercom Audio

By default, 803 channels 1-12 are set for 2-wire bilateral operation with nulling. This may be modified for selected channels. See "2W/4W Setup", page 43 for further details. The 803 uses a balanced configuration for 2-wire operation. The 803 channels can be connected to either balanced or unbalanced intercom stations or channels. However, when making unbalanced connections, the noise immunity of the balanced 803 channel will be compromised, and it is best to not distribute that channel over cabling to other points in the intercom system. If you are connecting the 803 to an unpowered (dry) intercom channel, terminate that channel at one and only one point by connecting a 200 ohm, 1/4-watt resistor across the intercom channel. If you are connecting a powered channel, termination is usually accomplished by the power supply. The 803 has built-in dc isolation, and so it is not necessary to use isolation capacitors when connecting to a powered intercom channel.

Talk Keying Signal Outputs

The 12 talk keying signal outputs are activated by the 803's talk buttons. These outputs may be used to activate external devices such as relays. See "Using the Talk Keying Outputs", page 34.

Program 2

For a description of the program inputs, see this topic on page 22.

Applications for J101

J101 may be used in several ways:

- Connecting to a TW intercom system using an RTS Model 4012 System Interconnect Panel. An application is illustrated in Figure 15, page 35.
- Connecting to a TW intercom system using an RTS Model 862 System Interconnect Panel. An application is illustrated in Figure 16, page 36.
- Direct interconnection of several 803 Master Stations. An application is illustrated in Figure 17, page 37.
- Direct connection to intercom stations and other audio inputs and outputs. Use an RTS Model 4024 Connecting Block or equivalent to break out the connections. The pin numbers on the 4024 Connecting Block correspond to the pin numbers on the J101 connector.

Table 4. *J101 connector pin-out*

Description	Pin Numbers
2-wire bilateral audio, low, Ch 1 (2WBL1)	1
2-wire bilateral audio, high, Ch 1 (2WBH1)	26
2-wire bilateral audio, low, Ch 2 (2WBL2)	2
2-wire bilateral audio, high, Ch 2 (2WBH2)	27
2-wire bilateral audio, low, Ch 3 (2WBL3)	3
2-wire bilateral audio, high, Ch 3 (2WBH3)	28
2-wire bilateral audio, low, Ch 4 (2WBL4)	4
2-wire bilateral audio, high, Ch 4 (2WBH4)	29
2-wire bilateral audio, low, Ch 5 (2WBL5)	5
2-wire bilateral audio, high, Ch 5 (2WBH5)	30
2-wire bilateral audio, low, Ch 6 (2WBL6)	6
2-wire bilateral audio, high, Ch 6 (2WBH6)	31
2-wire bilateral audio, low, Ch 7 (2WBL7)	7
2-wire bilateral audio, high, Ch 7 (2WBH7)	32
2-wire bilateral audio, low, Ch 8 (2WBL8)	8
2-wire bilateral audio, high, Ch 8 (2WBH8)	33
2-wire bilateral audio, low, Ch 9 (2WBL9)	9
2-wire bilateral audio, high, Ch 9 (2WBH9)	34
2-wire bilateral audio, low, Ch 10 (2WBL10)	10
2-wire bilateral audio, high, Ch 10 (2WBH10)	35
2-wire bilateral audio, low, Ch 11 (2WBL11)	11
2-wire bilateral audio, high, Ch 11 (2WBH11)	36
2-wire bilateral audio, low, Ch 12 (2WBL12)	12
2-wire bilateral audio, high, Ch 12 (2WBH12)	37
Channel 1 Talk Keying Signal Return	13
Channel 1 Talk Keying Signal	38
Channel 2 Talk Keying Signal Return	14
Channel 2 Talk Keying Signal	39
Channel 3 Talk Keying Signal Return	15
Channel 3 Talk Keying Signal	40
Channel 4 Talk Keying Signal Return	16
Channel 4 Talk Keying Signal	41
Channel 5 Talk Keying Signal Return	17
Channel 5 Talk Keying Signal	42
Channel 6 Talk Keying Signal Return	18
Channel 6 Talk Keying Signal	43
Channel 7 Talk Keying Signal Return	19
Channel 7 Talk Keying Signal	44
Channel 8 Talk Keying Signal Return	20
Channel 8 Talk Keying Signal	45
Channel 9 Talk Keying Signal Return	21
Channel 9 Talk Keying Signal	46
Channel 10 Talk Keying Signal Return	22
Channel 10 Talk Keying Signal	47
Channel 11 Talk Keying Signal Return	23
Channel 11 Talk Keying Signal	48
Channel 12 Talk Keying Signal Return	24
Channel 12 Talk Keying Signal	49
Program 2 Input Low	25
Program 2 Input High	50

2.9.2 J102 Connector

Relay Outputs

Each of the 6 internal relays may be assigned for activation by most of the front panel buttons. See "Relay 1 Through Relay 6 Setup", page 49. The relays can be used for any audio or low-current switching requirements. For each relay, the normal closed contact acts like a simple closed switch (shorted to common) when the assigned front panel button is not on, and the switch contact opens when the button is activated. The normal open contact operation is the reverse of the normal closed contact. The two common connections for each relay are electrically identical. All relay connections are electrically isolated from the rest of the 803 circuitry. Relay connections are also available at J108, page 28.

External Switch Contact Input (XSW)

A switch may be connected between pins 13 and 38 for remote operation of a front panel button. By default, switch contact closure will turn on the MIC ON button. To activate some other button, see "External Contact Setup", page 46. The XSW connection is also available at J108.

Program Inputs

Program inputs 1 and 2 are balanced, line-level audio inputs. Nominal input level is 0 dBm. Balanced or unbalanced sources may be connected, but use normal precautions when connecting an unbalanced source (use shielded cabling, keep leads short, avoid routing wires near high voltage etc.). The program 1 and 2 inputs are adjustable via the PGM 1 and 2 trimmers on the front panel, and they may be assigned to either right or left headphones or the internal speaker via front panel programming. The program 1 pins of J102 are electrically identical to the program 1 pins of J111; the program 2 pins of J102 are electrically identical to the program 2 pins of J101, J105 and J111. For each program source, use only one connect point.

Channels 13 and 14

J102 provides access to channels 13 and 14, which do not normally have front panel buttons assigned. Channel 13 is reserved when the Model 803 is configured for Model 4001 IFB emulation. Both channels 13 and 14 are reserved when the Model 803 is configured for Model 4002 IFB Station emulation. If one or both channels are not used for IFB, they may be used as 4-wire channels. Use the "Bilat" pins for output and the "Listen input" pins for input. See "Bilat Select Setup", page 44, to assign front panel buttons to use the channels. Note that there is no provision for call signaling, mic-off signaling or keying output signals on these channels.

Table 5. *J102 connector pin-out*

Description		Pin Numbers
Relay 1 (K1)	Normal open contact	1
	Common	26
	Common	2
	Normal closed contact	27
Relay 2 (K2)	Normal open contact	3
	Common	28
	Common	4
	Normal closed contact	29
Relay 3 (K3)	Normal open contact	5
	Common	30
	Common	6
	Normal closed contact	31
Relay 4 (K4)	Normal open contact	7
	Common	32
	Common	8
	Normal closed contact	33
Relay 5 (K5)	Normal open contact	9
	Common	34
	Common	10
	Normal closed contact	35
Relay 6 (K6)	Normal open contact	11
	Common	36
	Common	12
	Normal closed contact	37
External Switch Input (XSW)	Ground	13
	Normal open contact	38
Program 1 Input	Low	14
	High	39
Program 2 Input	Low	15
	High	40
No connection		16
		41
Bilat 13	Low	17
	High	42
Bilat 14	Low	18
	High	43
Listen Input 13	Low	19
	High	44
Listen input 14	Low	20
	High	45
No connection		21
		46
		22
		47
		23
		48
		24
		49
		25
		50

2.9.3 J103 Connector

J103 is an optional connector provided when the IFB 1 option is installed. Typical applications of this connector are shown in Figure 18, page 38 and Figure 20, page 40.

Table 6. *J103 connector pin-out*

Description		Pin Numbers
IFB Priority 1 Connections	IFB button #1	1
	IFB button #2	26
	IFB button #3	2
	IFB button #4	27
	SA1 button	3
	Ground	28
	Audio High	4
	Audio Low	29
	Ground	5
	Ground	30
IFB Priority 2 Connections	IFB button #1	6
	IFB button #2	31
	IFB button #3	7
	IFB button #4	32
	SA1 button	8
	Ground	33
	Audio High	9
	Audio Low	34
	Ground	10
	Ground	35
IFB Priority 3 Connections	IFB button #1	11
	IFB button #2	36
	IFB button #3	12
	IFB button #4	37
	SA1 button	13
	Ground	38
	Audio High	14
	Audio Low	39
	Ground	15
	Ground	40
IFB Priority 4 Connections	IFB button #1	16
	IFB button #2	41
	IFB button #3	17
	IFB button #4	42
	SA1 button	18
	Ground	43
	Audio High	19
	Audio Low	44
	Ground	20
	Ground	45
IFB 1-4 Tallies and SA1 Tally	IFB #1 Tally	21
	IFB #2 Tally	46
	IFB #3 Tally	22
	IFB #4 Tally	47
	SA1 Tally	23
No connection		48
Ground		24
Ground		49
Ground		25
Ground		50

2.9.4 J104 Connector

J104 is an optional connector provided when the IFB 2 connector is installed. A typical application of this connector is shown in Figure 18, page 38.

Table 7. *J104 connector pin-out for IFB usage (see Table 8 for ISO usage)*

Description		Pin Numbers
IFB Priority 1 Connections	IFB button #5	1
	IFB button #6	26
	IFB button #7	2
	IFB button #8	27
	SA2 button	3
	Ground	28
	Audio High	4
	Audio Low	29
	Ground	5
	Ground	30
IFB Priority 2 Connections	IFB button #5	6
	IFB button #6	31
	IFB button #7	7
	IFB button #8	32
	SA2 button	8
	Ground	33
	Audio High	9
	Audio Low	34
	Ground	10
	Ground	35
IFB Priority 3 Connections	IFB button #5	11
	IFB button #6	36
	IFB button #7	12
	IFB button #8	37
	SA2 button	13
	Ground	38
	Audio High	14
	Audio Low	39
	Ground	15
	Ground	40
IFB Priority 4 Connections	IFB button #5	16
	IFB button #6	41
	IFB button #7	17
	IFB button #8	42
	SA2 button	18
	Ground	43
	Audio High	19
	Audio Low	44
	Ground	20
	Ground	45
IFB 5-8 Tallies and SA2 Tally	IFB #5 Tally	21
	IFB #6 Tally	46
	IFB #7 Tally	22
	IFB #8 Tally	47
	SA2 Tally	23
No connection		48
Ground		24
Ground		49
Ground		25
Ground		50

2.9.5 J104A Connector

J104A is an optional connector provided when the ISO 2 connector is installed. A typical application of this connector is shown in Figure 19, page 39.

Table 8. *J104A connector pin-out for ISO usage*

Description		Pin Numbers
Priority 1 Connections	ISO button #7	1
	ISO button #8	26
	ISO button #9	2
	ISO button #10	27
	ISO button #11	3
	ISO button #12	28
	Audio High	4
	Audio Low	29
	Ground	5
	Ground	30
Priority 2 Connections	ISO button #7	6
	ISO button #8	31
	ISO button #9	7
	ISO button #10	32
	ISO button #11	8
	ISO button #12	33
	Audio High	9
	Audio Low	34
	Ground	10
	Ground	35
Priority 3 Connections	ISO button #7	11
	ISO button #8	36
	ISO button #9	12
	ISO button #10	37
	ISO button #11	13
	ISO button #12	38
	Audio High	14
	Audio Low	39
	Ground	15
	Ground	40
No connection		16
		41
		17
		42
		18
		43
		19
		44
		20
		45
Tallies	ISO #7 Tally	21
	ISO #8 Tally	46
	ISO #9 Tally	22
	ISO #10 Tally	47
	ISO #11 Tally	23
	ISO #12 Tally	48
	Ground	24
	Ground	49
	Global Reset Tally	25
	Global Reset button	50

2.9.6 J105 Connector

J105 is an optional connector provided when the 4-wire connector is installed. A typical application of this connector is shown in Figure 21, page 41.

Table 9. *J105 connector pin-out*

Description		Pin Numbers
4-Wire Listen Audio Inputs, Channels 1-12 (Items in parenthesis are the schematic abbreviations)	4-Wire Listen Low 1 (4WLL1)	1
	4-Wire Listen High 1 (4WLH1)	26
	4-Wire Listen Low 2 (4WLL2)	2
	4-Wire Listen High 2 (4WLH2)	27
	4-Wire Listen Low 3 (4WLL3)	3
	4-Wire Listen High 3 (4WLH3)	28
	4-Wire Listen Low 4 (4WLL4)	4
	4-Wire Listen High 4 (4WLH4)	29
	4-Wire Listen Low 5 (4WLL5)	5
	4-Wire Listen High 5 (4WLH5)	30
	4-Wire Listen Low 6 (4WLL6)	6
	4-Wire Listen High 6 (4WLH6)	31
	4-Wire Listen Low 7 (4WLL7)	7
	4-Wire Listen High 7 (4WLH7)	32
	4-Wire Listen Low 8 (4WLL8)	8
	4-Wire Listen High 8 (4WLH8)	33
	4-Wire Listen Low 9 (4WLL9)	9
	4-Wire Listen High 9 (4WLH9)	34
	4-Wire Listen Low 10 (4WLL10)	10
	4-Wire Listen High 10 (4WLH10)	35
	4-Wire Listen Low 11 (4WLL11)	11
	4-Wire Listen High 11 (4WLH11)	36
	4-Wire Listen Low 12 (4WLL12)	12
	4-Wire Listen High 12 (4WLH12)	37
4-Wire Talk Audio Outputs, Channels 1-12 (The 4-wire talk outputs are electrically identical to the 2-wire bilats at J101)	4-Wire Talk Low 1 (2WBL1)	13
	4-Wire Talk High 1 (2WBH1)	38
	4-Wire Talk Low 2 (2WBL2)	14
	4-Wire Talk High 2 (2WBH2)	39
	4-Wire Talk Low 3 (2WBL3)	15
	4-Wire Talk High 3 (2WBH3)	40
	4-Wire Talk Low 4 (2WBL4)	16
	4-Wire Talk High 4 (2WBH4)	41
	4-Wire Talk Low 5 (2WBL5)	17
	4-Wire Talk High 5 (2WBH5)	42
	4-Wire Talk Low 6 (2WBL6)	18
	4-Wire Talk High 6 (2WBH6)	43
	4-Wire Talk Low 7 (2WBL7)	19
	4-Wire Talk High 7 (2WBH7)	44
	4-Wire Talk Low 8 (2WBL8)	20
	4-Wire Talk High 8 (2WBH8)	45
	4-Wire Talk Low 9 (2WBL9)	21
	4-Wire Talk High 9 (2WBH9)	46
	4-Wire Talk Low 10 (2WBL10)	22
	4-Wire Talk High 10 (2WBH10)	47
	4-Wire Talk Low 11 (2WBL11)	23
	4-Wire Talk High 11 (2WBH11)	48
	4-Wire Talk Low 12 (2WBL12)	24
	4-Wire Talk High 12 (2WBH12)	49
Program 2 Input	Low	25
	Hi	50

2.9.7 J106 Connector

J106 is an optional connector provided when the ISO 1 connector is installed. Typical applications of this connector are shown in Figure 20, page 40 and Figure 19, page 39.

Table 10. *J106 connector pin-out*

Description		Pin Numbers
Priority 1 Connections	ISO button #1	1
	ISO button #2	26
	ISO button #3	2
	ISO button #4	27
	ISO button #5	3
	ISO button #6	28
	Audio High	4
	Audio Low	29
	Ground	5
	Ground	30
Priority 2 Connections	ISO button #1	6
	ISO button #2	31
	ISO button #3	7
	ISO button #4	32
	ISO button #5	8
	ISO button #6	33
	Audio High	9
	Audio Low	34
	Ground	10
	Ground	35
Priority 3 Connections	ISO button #1	11
	ISO button #2	36
	ISO button #3	12
	ISO button #4	37
	ISO button #5	13
	ISO button #6	38
	Audio High	14
	Audio Low	39
	Ground	15
	Ground	40
No connection		16
		41
		17
		42
		18
		43
		19
		44
		20
		45
Tallies	ISO #1 Tally	21
	ISO #2 Tally	46
	ISO #3 Tally	22
	ISO #4 Tally	47
	ISO #4 Tally	23
	ISO #4 Tally	48
	Ground	24
	Ground	49
	Global Reset Tally	25
	Global Reset button	50

2.9.8 J108 Connector

Relays and External Switch

The relay and external switch connections at J108 are electrically identical to those at J102. See "J102 Connector", page 22.

External ISO Connection

For external ISO, the 803 is used with an external VCP panel located adjacent to the 803. Activating any of the ISO buttons on the external VCP panel sends a control signal to the 803 which causes all active talk channels to deactivate. The 803's microphone audio is then output at the bilat 15 pins on the J108 connector. This audio output is connected to the audio input of the VCP, which then sends it to the ISO system.

To connect external ISO:

Connect J108, pin 13 of the 803 to TB2, pin 2 of the VCP; connect J108, pin 25 to TB2, pin 3. This is the audio output connection from the 803 to the VCP.

Connect J108, pin 12 of the 803 to TB4, pin 4 of the VCP; connect J108, pin 24 to TB4, pin 3. This is the control input connection from the VCP to the 803.

Set DIP switch S2-6 to ON; S2-5 to ON or OFF as desired; S2-4 to OFF. For DIP switch details, see page 16.

Bilat 15

As previously described, bilat 15 can be used for ISO. If ISO is not required, bilat 15 can be used as a 2-wire intercom channel, or for audio output or input. Note that there is no provision for call signaling, mic-off signaling or keying output signals for bilat 15. To assign talk and listen keys to use bilat 15, see "Bilat Select Setup", page 44. Note that there is no LISTEN control on the front panel for bilat 15. Adjust the listen level at the "R ISO" trimmer on the back panel. Adjust nulling at the "N ISO" trimmer on the back panel.

Table 11. *J108 connector pin-out*

Description		Pin Numbers
Relay 1 (K1)	Normal open contact	1
	Normal closed contact	2
	Common	14
Relay 2 (K2)	Normal open contact	15
	Normal closed contact	16
	Common	3
Relay 3 (K3)	Normal open contact	4
	Normal closed contact	5
	Common	17
Relay 4 (K4)	Normal open contact	18
	Normal closed contact	19
	Common	6
Relay 5 (K5)	Normal open contact	7
	Normal closed contact	8
	Common	20
Relay 6 (K6)	Normal open contact	21
	Normal closed contact	22
	Common	9
External Switch Input (XSW) Normal Open Contact		23
XSW and YSW Common		10
External Switch Input (YSW) Normal Open Contact (Not used on base mode)		11
External ISO control input from VCP	TB4, Pin 3 (Common)	24
	TB4, Pin 4 (Normal open contact)	12
Bilat 15	Audio Low	25
	Audio High	13

2.9.9 J109 Connector

J109 can be used to connect to a computer or terminal for remote access and control of the 803. Use a standard RS232 cable (not null modem). Default RS232 port settings are 2400 baud*, 8 data bits, 1 stop bit and no parity. No handshaking is used. You can send commands to do any of the following:

- operate all front panel buttons or read their settings
- inhibit manual operation of front panel buttons
- read the settings of all DIP switches
- read and modify the 803's programmable memory
- operate all relays, talk/listen gates and key lines independently of button positions
- initiate a reset (warm or cold)
- request notification upon operator initiation of reset
- send a command upon operator initiation of any function, front panel or DIP switch change

Command Structure

Most commands generally consist of 3 parts: a one- or two-character command letter, followed by a numeric modifier, followed by an operator. Commands which perform memory operations are structured as follows: a one- or two-character command letter, followed by a memory location, followed by a memory operator. If the memory operator modifies memory, it will be followed by one or more bytes of information to be sent to memory. All commands must be followed by a carriage return. All commands, except memory load commands, are limited to 128 characters in length.

Command Letters

A	attenuator
B	button
C	cold start
D	dump memory as bytes
DW	dump memory as words
E	eavesdrop (watch 803 button activity)
F	full duplex
G	gate (icom channels 1-15)
H	half Duplex
I	inhibit
K	keying signal outputs
M	memory operation (for factory testing)**
R	relay
V	version
W	warm start
Z	baud rate change

Table 12. *J109 connector pin-out*

Description	Pin Numbers
NC	1
RS232 TX	2
RS232 RX	3
NC	4
GND	5
NC	6
NC	7
RS485	8
RS485	9

Numeric Modifiers

Buttons and certain functions are numbered as follows:

1-12	top row of buttons
13-24	second row of buttons
25-40	keypad buttons (left-to-right, top-to-bottom)
41	external camera iso input
42	external global reset tally #1
43	external mic
44	external global reset tally #2
45-56	call light detectors
57-68	listen activity detectors
69	special mute (on special order software)
70	headset mic switch
71	carbon mic switch
72	external carbon mic switch
73	vox detect
74	external preset 3

Certain other items are also numbered as follows:

Relays: 1-6
Keying outputs: 1-12
Gates (icom channels): 1-15
LEVEL controls: 1-12

Operators

+	turn on the item specified in the numeric modifier
-	turn off the item specified in the numeric modifier
?	read the item specified in the numeric modifier

---

* You must connect at 2400 baud. After you connect, the 803 may be reprogrammed for any of the following baud rates: 300, 600, 1200, 2400, 4800, or 9600. To change the baud rate, send Z300 or Z9600 etc.

** Memory operations can modify the standard operation of controls, but require a knowledge of controller programming and the 803 I/O list.

Table 13. *Examples of commands and responses*

Description	Command Sequence	803 Response
Turn button 12 on:	Bl2+	none
Turn button 12 off:	B12-	none
Test button 12 status:	B12?	+ or -
Inhibit button 12 use by operator (lock in current position)	I12+	none
Allow button 12 use by operator:	I12-	none
Test if button 12 is inhibited:	I12?	+ or -
Assign relay 5 to button 12:	B12R5+	none
Remove relay 5 assignment from button 12:	B12R5-	none
Identify relay(s) assigned to button 12:	B12R?	1, or 2, or 3 etc. (or more than one)
Turn on relay 5:	R5+	none
Turn off relay 5:	R5-	none
Check relay 5 status:	R5?	+ or -
Turn on gate 12:	G12+	none
Turn off gate 12:	G12-	none
Check gate 12 status:	G12?	+ or -
Turn on keying output 12	K12+	none
Turn off keying output 12	K12-	none
Check keying output 12 status:	K12?	+ or -
Starting at memory location 01F0, load 04, 0D, 0A & 00	M0lF0L04,0D,0A,00	none
At memory location 01F0, set bit	M0IF0S40	
At memory location 01F0, reset bit	M0lF0R40	
Read memory location 01F0	M01F0?	4C
Dump memory at location 01F0 (as bytes)	D01F0	0100: 04 0D 0A 00
Dump memory at location 01F0 (as words)	DW0IF0	0100: 0904 000A
Adjust attenuator LEVEL 9 to level 10 (range is 0-15)	A0910	none
Check attenuator LEVEL 9	A09	10
Turn eavesdrop mode on:	E+	none (Status of buttons is reported as they change. Examples: button 12 turned on = B12+; button 12 turned off = B12- .)
Turn eavesdrop mode off:	E-	none
Eavesdrop mode active:	E?	+ (active) or - (inactive)
Warm start:	W	W or C (wait for reset to finish)
Cold start:	C	C (wait for reset to finish)
Version number:	V	TLX0XX(Telex version 0 X . X)
Full duplex	F	User commands echoed
Half duplex (default)	H	User commands not echoed
Change baud rate to 1200 baud	Z1200	Change to 1200 baud (default is 2400 baud)

Error Handling for the RS232 and RS485 Ports

Upon detection of an error in a command, the 803 will typically ignore the command and send out an error message consisting of the letter E along with a 2 digit code as follows:

E00	syntax error
E01	output buffer overflow
E02	unrecognizable command
E03	Unrecognized operator (+, - or ? expected)
E04	numeric modifier out of range
E10	RS-232 framing or parity error
E20	RS-422/485 framing or parity error

Note: Relays are updated every time a button is pushed or released. This means, for example, that if the host computer turns on a relay, it may be turned off the next time the 803 operator pushes any button. Keying output signals and gates may also be affected if the operator pushes the button associated with that key or gate.

2.9.10 J110 Connector

If desired, an external speaker may be connected and used in place of the internal speaker. Connector insertion causes the internal speaker to disconnect.

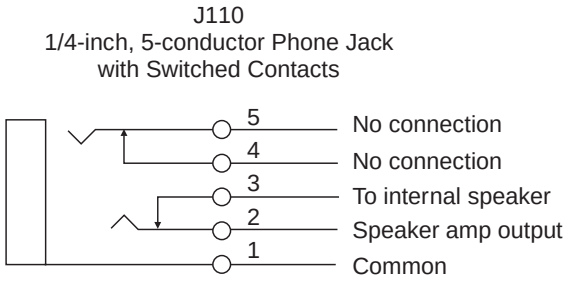


Figure 9. *J110 connector pin-out*

2.9.11 J111 Connector

External dynamic-mic Headset

An external dynamic-mic headset with stereo headphones can be connected at the back panel rather than at the front panel DYN-MIC HEADSET connector. Note that these two connectors are not wired in parallel, but are separate circuits. Set the mic input sensitivity for the external dynamic mic at the EXT HM trimmer on the back panel. To activate the external dynamic-mic input, see "Mic Select Setup", page 48.

External Panel Microphone

An external panel microphone can be connected at the back panel rather than at the panel microphone connector at the upper-right of the front panel. Note that these two connectors are not wired in parallel, but are separate circuits. Set the mic input sensitivity for the external panel microphone at the EXT PM trimmer on the back panel. To activate the external panel microphone input, see "Mic Select Setup", page 48.

Program Inputs

For a description of the program inputs, see this topic on page 22.

Unswitched balanced mic output (USMB)

Whatever microphone is currently being used, the signal from that microphone is continuously available at this output. The output cannot be muted on the standard 803 model.

Table 14. *J111 connector pin-out*

Description		Pin Number
External dynamic-mic Headset	Dynamic mic ground	1
	Dynamic mic high	14
	Headphone gnd	2
	Left headphone high	15
	Right headphone high	3
Chassis ground		16
Chassis ground		4
External panel mic	Mic low	17
	Mic high	5
	Mic excitation	18
External carbon mic headset	Common	6
	Mic high	19
	Headphone high	7
No connection		20
Digital ground		8
Program 1 input	Low	21
	High	9
Program 2 input	Low	22
	High	10
Chassis ground		23
Chassis ground		11
Unswitched balanced mic output (USMB)	Low	24
	High	12
Chassis ground		25
Chassis ground		13

2.9.12 J112 Connector

J112 is intended for use with the external 803 power supply.

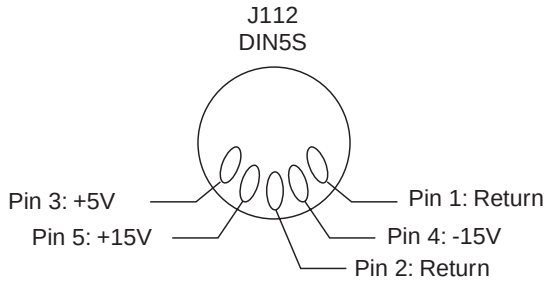


Figure 10. *J112 connector pin-out (looking toward the back panel)*

2.9.13 J201 Connector

J201 accepts a an electret condenser type panel microphone. Any microphone installed at this connector is referred to as the internal panel microphone (IPM). By default, the IPM is active when the PANEL ON button is in the on position. To change this, see "Mic Select Setup", page 48. The IPM gain is adjusted via the IPM trimmer on the back panel.

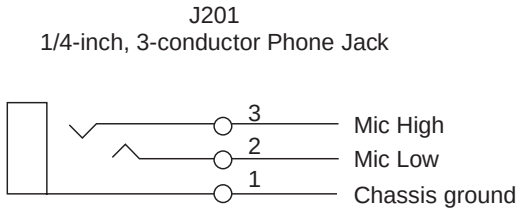


Figure 11. *J201 connector pin-out*

2.9.14 J202 Connector

J202 accepts a stereo, dynamic-mic headset. The microphone for any headset connected at J202 is referred to as the internal headset microphone (IHM). By default, the IHM is active when the PANEL ON button is in the off position. To change this, see "Mic Select Setup", page 48. The IHM gain is adjusted via the IHM trimmer on the back panel. The standard 803 uses a 5-pin connector for J202. This connector is used for headsets without a mic switch. The 6-pin version accepts a mic switch input which activates the MIC ON circuit.

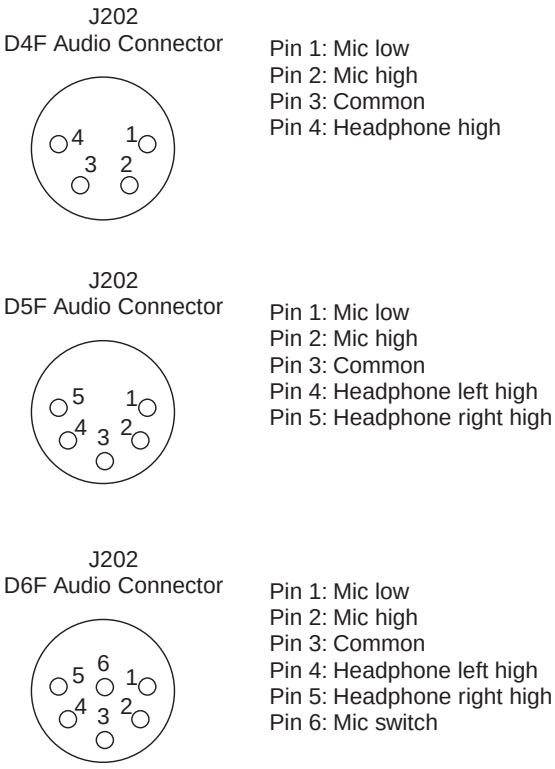


Figure 12. *J202 connector pin-outs*

2.9.15 J203 Connector

J203 accepts a standard monaural, carbon-mic headset. Operation of the PANEL ON button and the mic gain adjustment are identical to what is described for an IHM connected at J202.

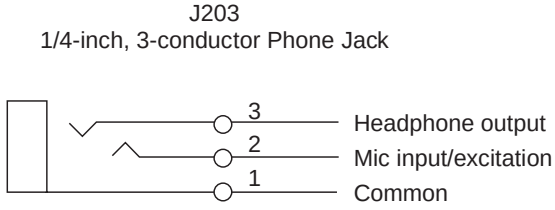


Figure 13. *J203 connector pin-out*

2.9.16 Miscellaneous Connections

2.9.16.1Local IFB

Any of the intercom channels 1-12 can be converted into a local IFB channel. (Not applicable to channels 13-15). A local IFB channel normally sends a program feed to a remote listener. By pressing the talk button for the local IFB channel, the 803 station operator can interrupt the program feed and then talk to the remote listener. Three sources can be selected for the program feed: either the program 1 or 2 inputs, or that channel's 4-wire input (if the 4-wire option is installed).

To use an intercom channel for local IFB:

1. Set the intercom channel for local IFB operation and select the desired program source: see "Local IFB Setup", page 47. Note: You can only use the program 1 or 2 inputs unless the 4-wire option is installed.

2. Connect the intercom channel to the remote listener's station. When connecting both local IFB channels and standard intercom channels to the 803, it may be convenient to use splitters. An example for 2-wire applications is shown in Figure 22, page 42. For a 2-wire IFB channel, use the appropriate pins at the J101 connector, page 21. (Note: the 2-wire channels are normally used for bi-directional audio. In this case, however, you will be using the channel for audio output only.) For a 4-wire channel, use the appropriate talk audio output pins at J105, page 26.

3. Connect the program source. For both 2-wire and 4-wire IFB, you may use either program 1 or 2 connected at any one of the following points:

   Program 1
   - J102: page 22
   - J111: page 32

   Program 2
   - J101: page 21
   - J102: page 22
   - J111: page 32

   If you are using a 4-wire channel for IFB, instead of using the program 1 or 2 input you may connect program input directly to the 4-wire listen input of the channel that you are using for IFB output.

4. If desired, label the talk button for the new IFB channel to distinguish it from a normal talk button.

5. For local IFB button operation see page 55.

2.9.16.2External ISO

External ISO connection was discussed on page 28.

2.9.16.3Using the Talk Keying Signal Outputs

The 12 talk keying signal outputs at J101 may be used to activate external devices by pressing the associated talk key. A typical configuration using a relay is shown in the figure below.

Note: Since the 803 uses Darlington outputs for the talk keying signals, the "on" state for the outputs may not pull sufficiently close to ground for use as a CMOS or TTL logic control output. Some type of external signal conditioning circuit is recommended.

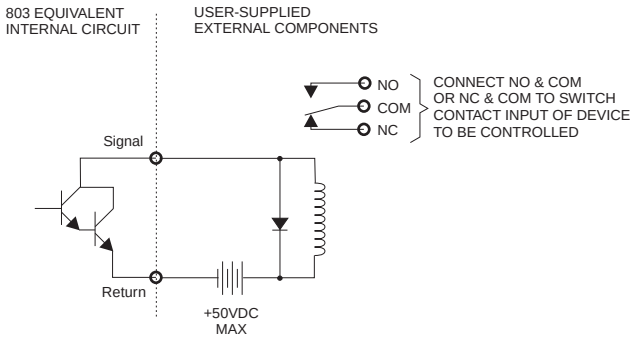


Figure 14. *Connecting an external relay for use with one of the keying outputs.*

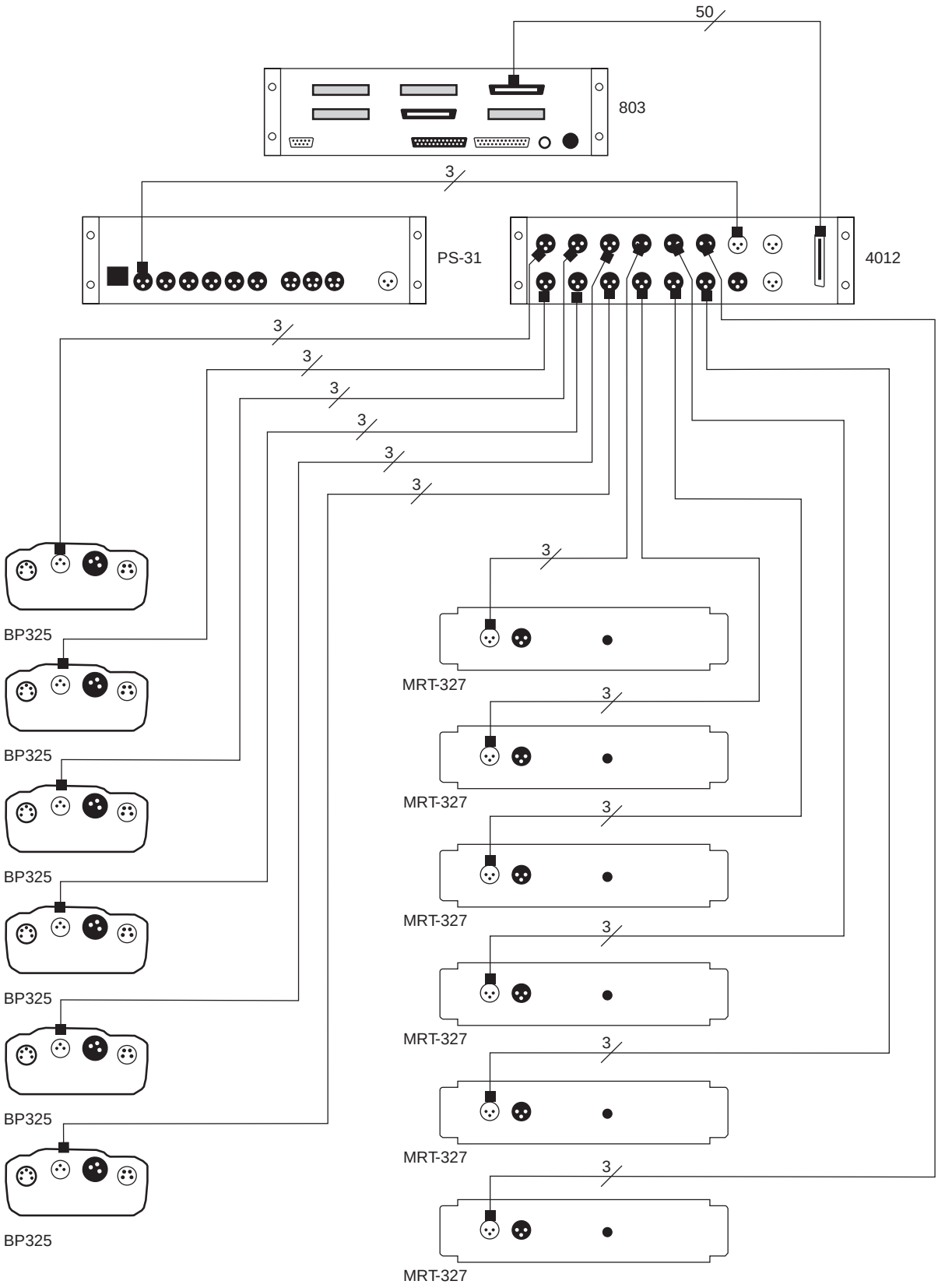


Figure 15. *Interfacing an 803 to a TW intercom system using a 4012 System Interconnect Panel. All BP325 and MRT-327 intercom stations conference on channel 1. Channel 2 of each intercom station communicates with the 803 on a private channel. The PS-31 provides power to the intercom stations on channel 1 and also provides the 200-ohm line termination for this channel. The 4012 provides a separate 200-ohm line termination for each of the twelve channels of the 803 that communicate separately with each intercom station.*

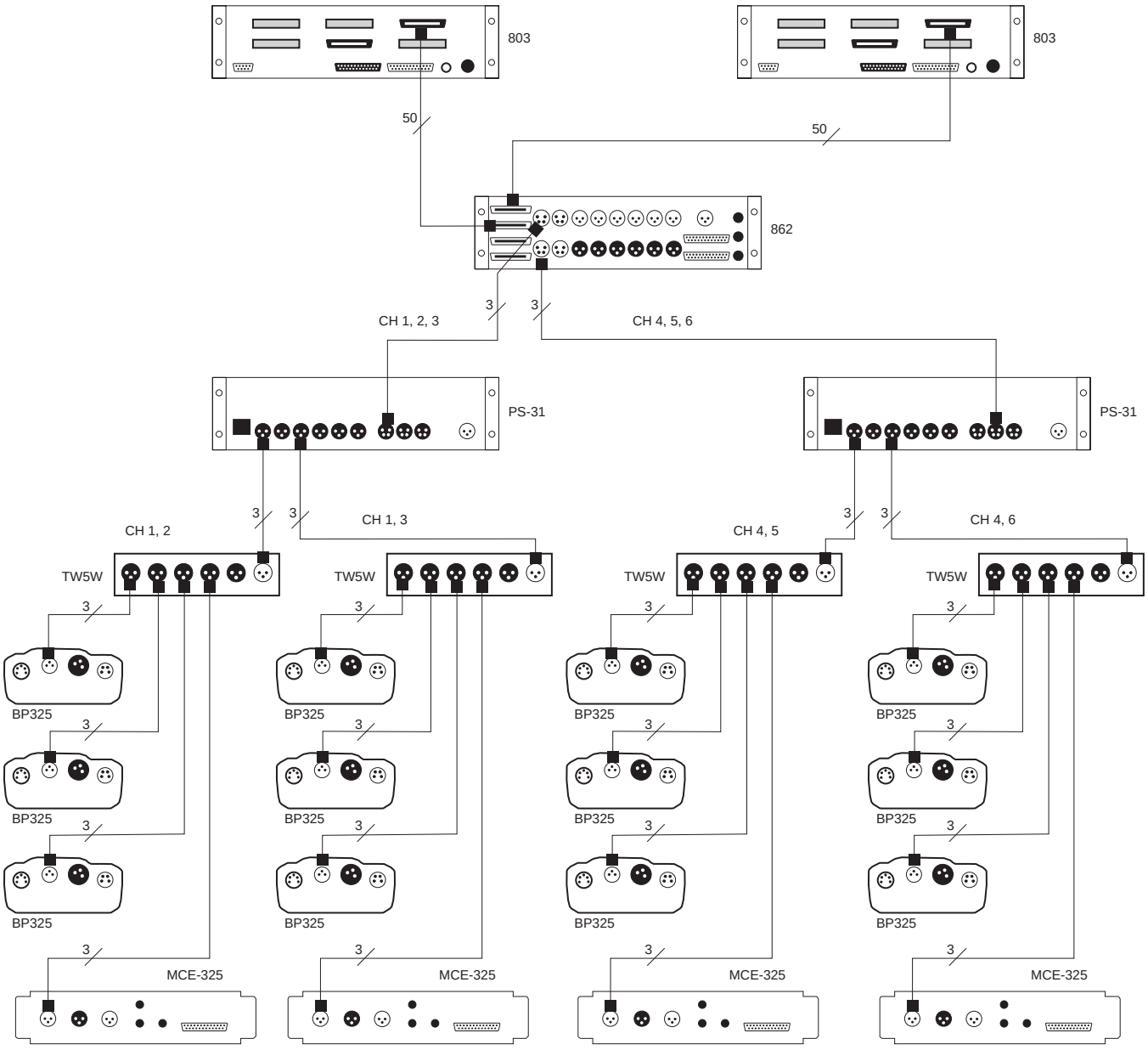


Figure 16. *An application showing 803 master stations connected to a TW intercom system using an 862 interconnect panel. In this application, each PS-31 provides power to three intercom channels. All intercom stations connected to each power supply can intercommunicate on a common conference channel (channel 1 or channel 4). This channel is not available to the 803's. Each 803, however can selectively communicate with any of the 4 intercom branches on a private channel.*

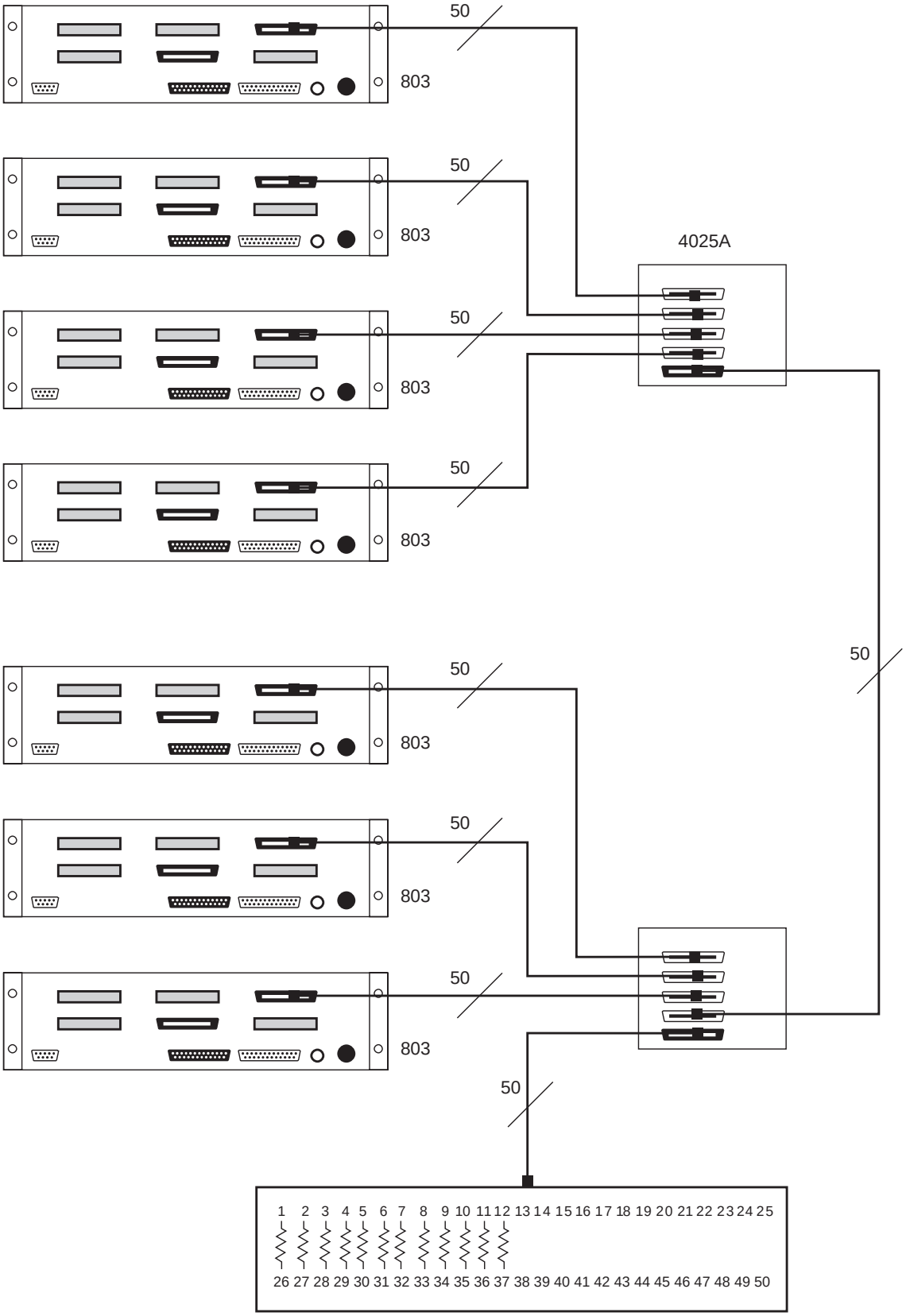


Figure 17. *A balanced, 2-wire intercom system using only 803 intercom stations. Each intercom station can talk and listen to any one or combination of intercom stations. A 200-ohm resistor is connected across each 2-wire channel to set the terminating impedance. By adding another 4025A interconnect panel, the system could be expanded to 12 stations.*

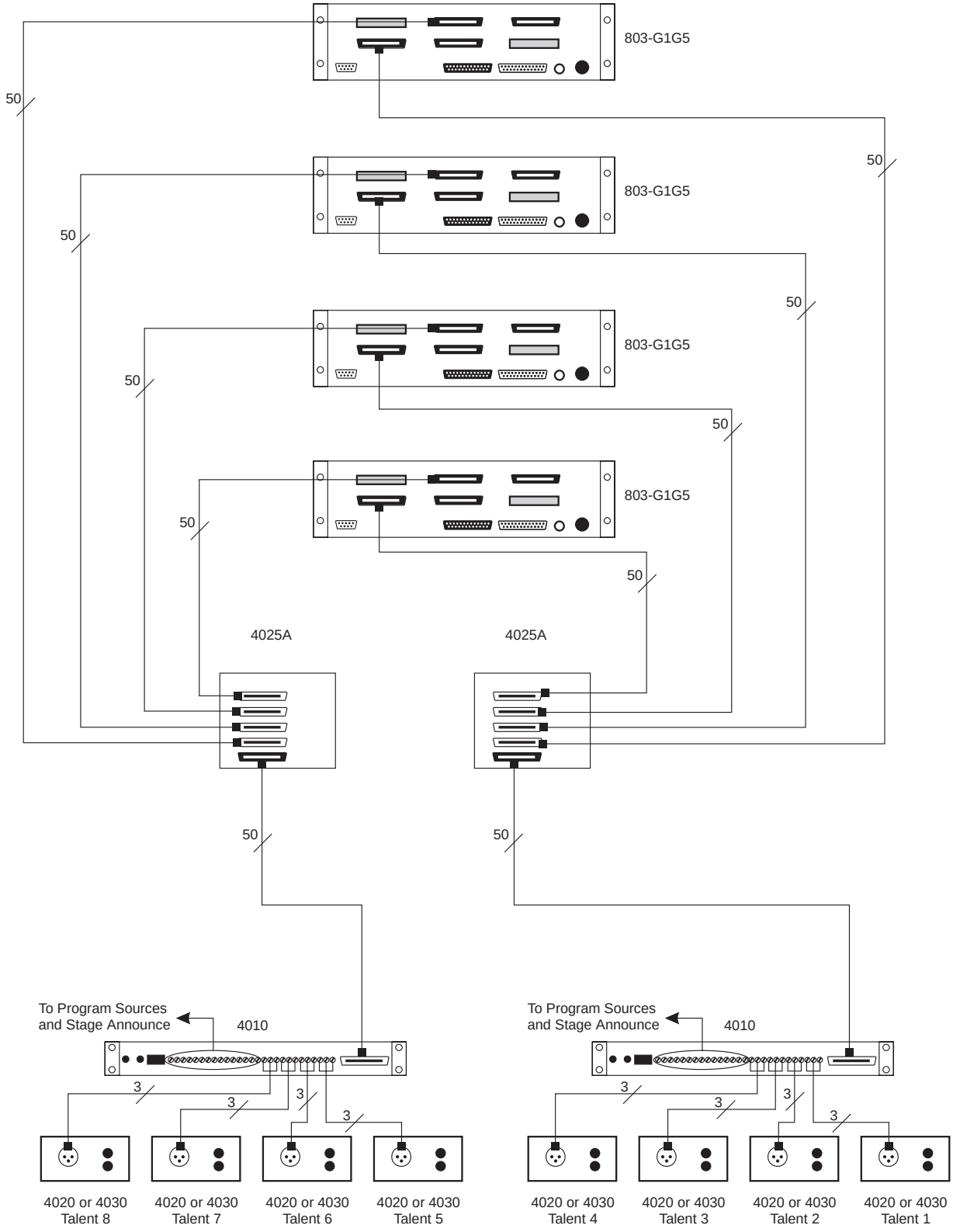


Figure 18. *IFB panel emulation with 803 Master Stations. In this example, the 803 stations are equipped with optional IFB1 and IFB2 connectors. Twelve front panel buttons emulate a Model 4002 IFB panel. Each 803 may send IFB selectively to any of the 8 talent locations or to all 4 talent stations on each 4010, or to all 8 talent stations. Each 803 may also selectively address either of two stage announce outputs. Note that in this configuration, channels 1 through 6 are still available for use as 2- or 4-wire intercom channels. Also, since no ISO option is installed, Bilat 15 is available as extra 2-wire intercom or audio I/O channels.*

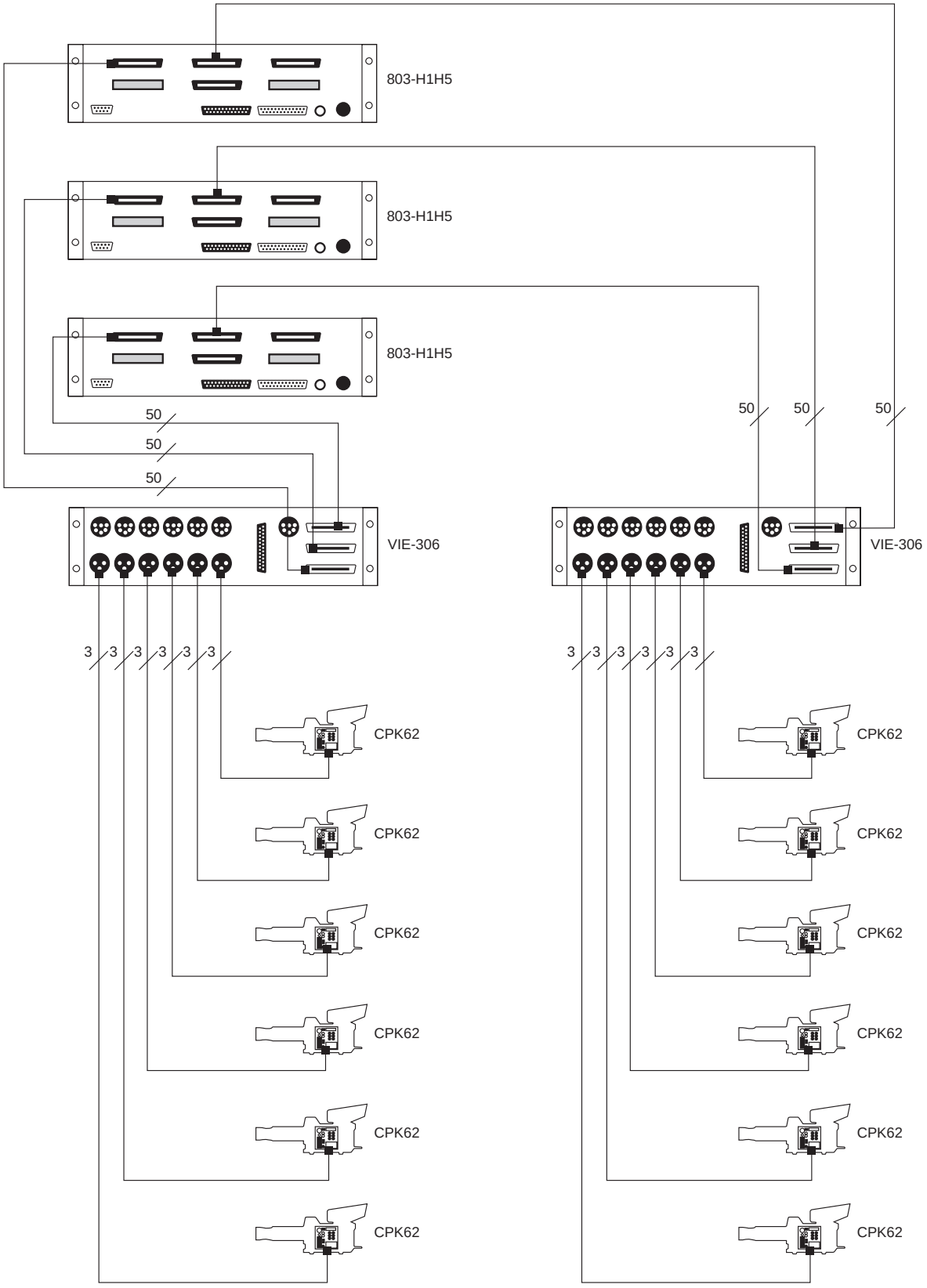


Figure 19. *ISO panel emulation with 803 Master Stations. In this example, the 803 stations are equipped with optional ISO1 and ISO2 connectors. Twelve front panel buttons emulate a Model VCP-12 ISO panel. Each 803 may selectively ISO any of the twelve cameras. Note that in this configuration, channels 1 through 6 are still available for use as 2- or 4-wire intercom channels. Also, since the IFB1 and IFB2 options are not installed, Bilats 13 and 14 are available as extra 4-wire intercom or audio I/O channels.*

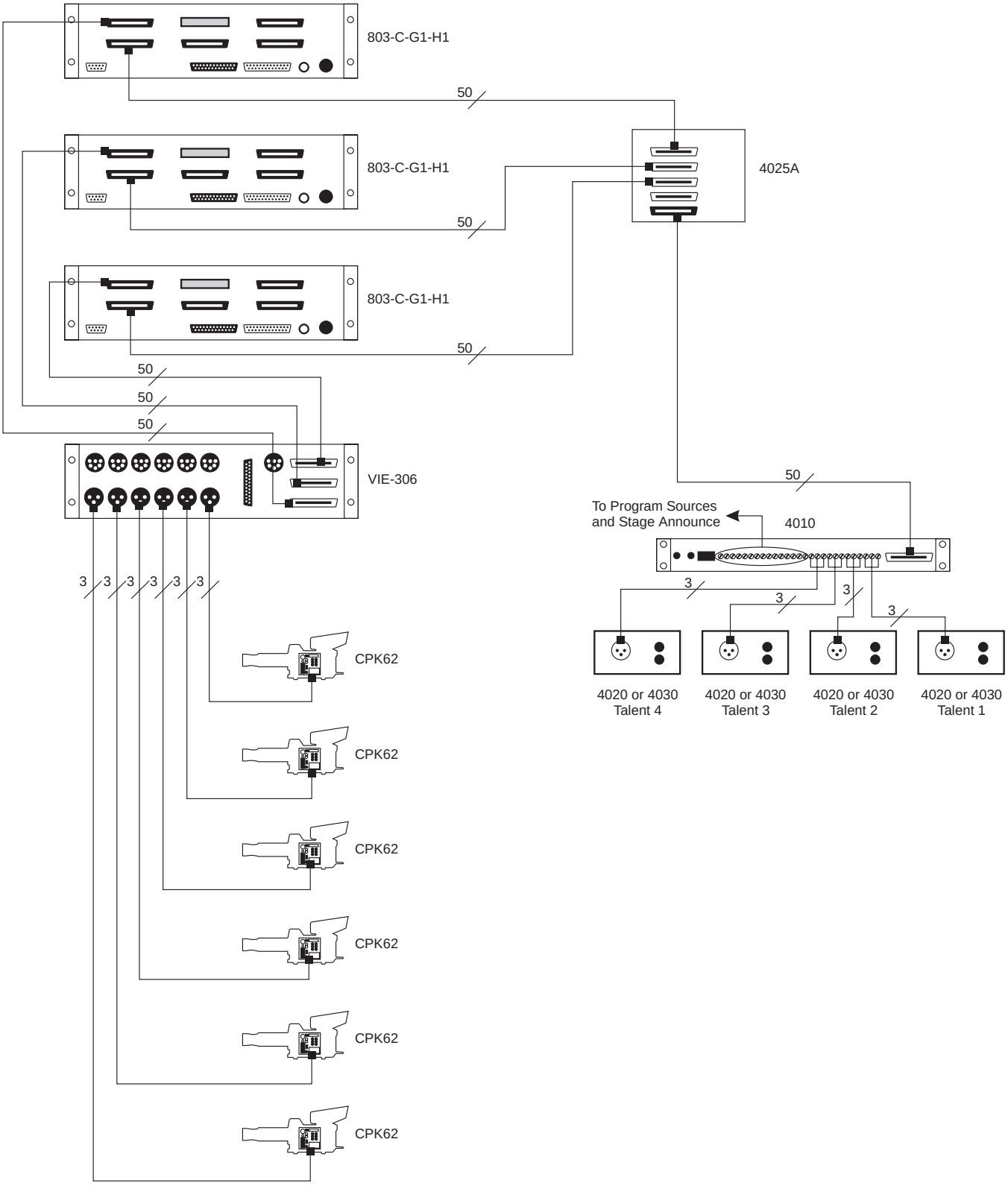


Figure 20. *IFB and ISO panel emulation with 803 Master Stations. In this example, the 803 stations are equipped with optional IFB1 and ISO1 connectors. Six front panel buttons emulate a Model 4001 IFB panel, and six emulate a VCP-6 ISO panel. Each 803 may send IFB selectively to any of the 4 talent locations or to the stage announce output of the 4010. Each 803 may also selectively ISO any of the six cameras. Note that in this configuration, channels 1 through 6 are still available for use as 2- or 4-wire intercom channels. Also, since the IFB2 option is not installed, Bilat 14 is available as an extra 4-wire intercom or audio I/O channel.*

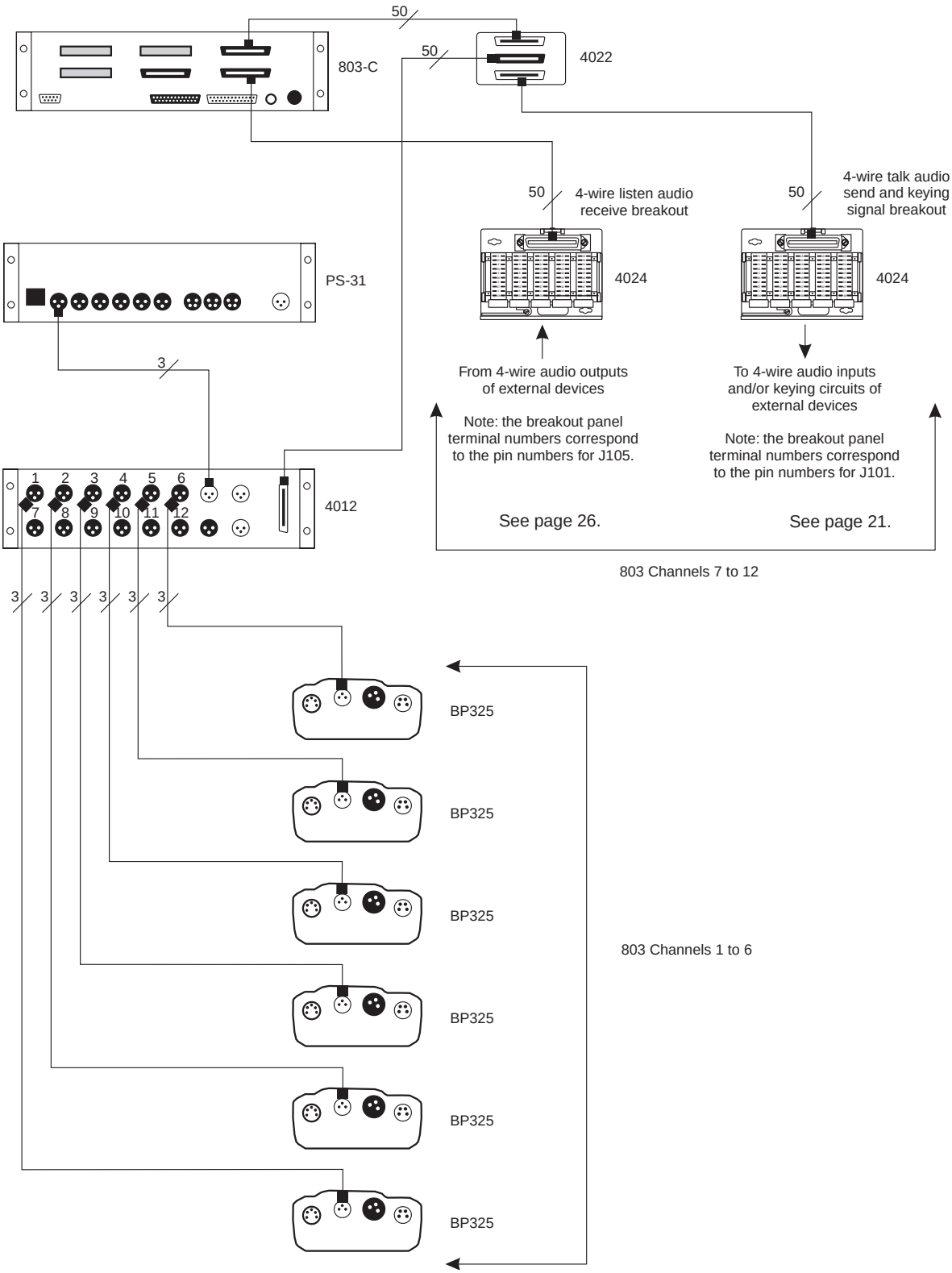


Figure 21. *An application showing the use of both 2-wire and 4-wire circuits. Note that in this example, the 4-wire talk outputs use the 2-wire connector (J101). When a channel is operated in 4-wire mode, the 4-wire talk audio outputs from the 803 use the 2-wire bilats, which are bi-directional, as outputs only. The 2-wire bilat connections are available at both J101 and J105. In this application, the 4-wire talk outputs are connected using J101. The only reason for doing this is to also provide access to the keying outputs of the 803. For example, it may be necessary to key a radio transmitter when talking to it. If you only need audio input/output for 4-wire circuits and do not need to use the keying signals, you can eliminate the 4024 used for 2-wire breakout and just use one 4024 for 4-wire breakout.*

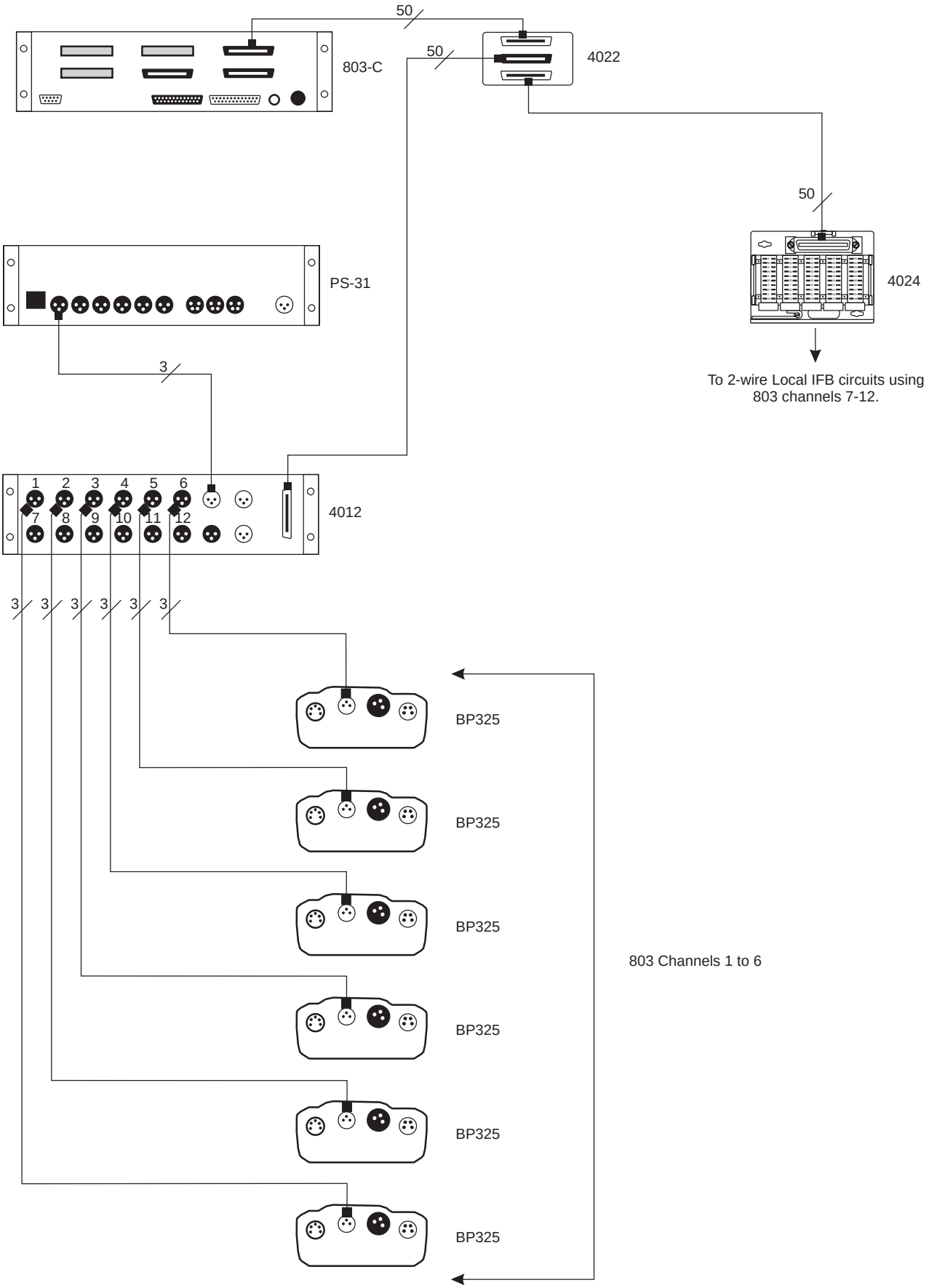


Figure 22. *Using splitters with 2-wire channels to provide 6 regular intercom channels and 6 local IFB channels.*

3 Setup Mode

3.1 Introduction

Setup mode lets you access almost all of the programmable features of the 803 using the front panel buttons. This section describes each of these features.

Reminder: Changing certain internal DIP switch settings (the ones that are grayed-out in Tables 2 and 3 on page 16) will erase all user programming that you configured in setup mode.

3.2 Entering Setup Mode

1. If a key code was assigned during installation (page 17) first enter that code on the keypad. Otherwise, skip this step and go directly to step 2.

2. Press and hold the CALL & SETUP button for about 3 seconds. It should flash brightly during this time. When setup mode activates, the CALL & SETUP button will become brightly lit. Also, all buttons that immediately access setup features will begin to flash dimly.

3. Tap any flashing button to access its setup feature.

Note: Select a setup feature within about 13 seconds after entering setup mode. Otherwise, the 803 will automatically return to normal operating mode. Once a feature has been selected the 803 will remain in setup mode until you exit.

4. To exit setup mode at any time, tap CALL & SETUP again.

3.3 Names for Setup Mode Features

Names for setup mode features are printed in italics on the front panel:

- **Setup Mode Features for Talk Buttons:** Setup mode features that are accessed using the talk buttons are printed at the very top of the front panel. For example, access *BUTTON LOCK* by pressing the TALK 1 button during setup mode.

- **Setup Mode Features for Listen Buttons:** Setup mode features that are accessed using the listen buttons are printed just below the setup mode features for the talk buttons. For example, access *RELAY 1* by pressing the LISTEN 1 button during setup mode.

- **Setup Mode Features for Keypad Buttons:** Some names for setup features are printed in italics next to the buttons. Some are printed in italics on the buttons. For example, access the *LOCAL IFB* feature by pressing 2 during setup mode. Access presets by tapping any one of the buttons labeled *PRE 1* through *PRE 6*. Labels that are not italicized are operating features and not setup mode features.

3.4 Using the Setup Features

The following paragraphs describe how to use all of the setup features that are named on the front panel. The features are listed in alpha-numeric order.

3.4.1 *2W* Setup

See "2W/4W Setup", below.

3.4.2 *2W/4W* Setup

Each intercom channel may be set for 2-wire operation, 4-wire operation, or both. For 2-wire operation, nulling may also be optionally turned on or off. Thus, the intercom channels may be individually programmed to operate with a variety of inputs and outputs. For example, 2-wire operation won't work with a typical 2-way radio, which often requires a 4-wire, unbalanced connection. RTS "TW" belt packs and intercom channels, of course, operate in 2-wire mode, and nulling is normally activated when connecting to TW devices.

Default setting: all channels set for 2-wire operation with nulling

Select 2-wire/4-wire operation for selected channels as follows:

1. Enter setup mode as previously described.

2. Tap the flashing 1 button on the keypad. The listen buttons will flash dimly.

3. Tap a flashing listen button to select that intercom channel. That listen button will flash brightly.

4. Select the desired type of operation by tapping any of the following buttons.

   Tap *2W* (the "1" button on the keypad) to turn 2-wire operation on or off. (Bright flash = on.)

   Tap *4W* (the "4" button on the keypad) to turn 4-wire operation on or off. (Bright flash = on.)

   Tap *NL* (the "7" button on the keypad) to turn nulling on or off for 2-wire operation. (Bright flash = on.)

5. This completes the assignment. You may now tap another listen button to change the settings for that button.

6. Tap the CALL & SETUP button to exit setup mode when finished.

3.4.3 *4W* Setup

See "2W/4W Setup", page 43.

3.4.4 *AUTO LISTEN* Setup

Each listen button may be individually programmed for auto listen. When auto listen is assigned to a channel, that channel's listen button will automatically turn on when there is an incoming call signal from another intercom station.

Default setting: auto listen is off for all channels.

Activate auto listen for selected channel as follows:

1. Enter setup mode (page 43).
2. Tap the *AUTO LISTEN* button (TALK 6).
3. Tap listen buttons to turn auto listen on or off. Auto listen is on when a listen button flashes brightly and off when it flashes dimly.
4. To quit auto listen assignment but remain in setup mode, tap the MIC ON button. To quit setup mode entirely, tap the CALL & SETUP button.

3.4.5 *AUTO TALK* Setup

Each talk button can be individually programmed to automatically activate when an incoming call signal is received on its intercom channel. The MIC ON button also activates, so that the 803 user can talk to the caller without having to press any buttons.

Default setting: off for all channels.

Activate auto talk for selected channel as follows:

1. Enter setup mode (page 43).
2. Tap the *AUTO TALK* button (TALK 7).
3. Tap listen buttons to turn auto talk on or off. Auto talk is on when a listen button flashes brightly and off when it flashes dimly.
4. To quit auto talk assignment but remain in setup mode, tap the MIC ON button. To quit setup mode entirely, tap the CALL & SETUP button.

3.4.6 *BILAT SELECT* Setup

In addition to the 12 regular intercom channels which can be configured for either 2-wire or 4-wire operation, the 803 has three extra audio channels, channels 13 through 15, that don't have talk and listen buttons associated with them. Channels 13 and 14 are 4-wire-only channels. Channel 13 TALK is reserved for IFB use when DIP switch S1-3 is set to the ON position (page 16). This switch selects Model 4001 IFB panel emulation when the optional IFB 1 connector is installed. Channel 14 TALK is reserved for IFB use when DIP switches S1-3 and S1-4 are set to the ON position (for Model 4002 emulate using both the IFB 1 and IFB 2 connectors). Channel 15 is a 2-wire-only channel. This channel is reserved for ISO use when DIP switch S2-6 is set to the ON position. (Note: the nulling adjustment for channel 15 is the "N ISO" trimmer on the back panel. See "ISO Channel 15 Adjustments", page 51.)

If one or more of these options are not installed, the unused channel can be used elsewhere; as an additional intercom channel, for example, or for some other audio input or output. Bilat select lets you assign these unused inputs and outputs to front panel buttons for activation.

Default setting: channels 13 through 15 unassigned.

To assign an unused bilat to a button:

1. Enter setup mode (page 43).
2. Tap the *BILAT SELECT* button (TALK 3).
3. Depending on what options are installed, the following buttons will flash brightly to indicate which inputs and outputs are available for assignment:

   TALK 10: channel 13 talk

   TALK 11: channel 14 talk

   TALK 12: channel 15 talk

   LISTEN 10: channel 13 listen

   LISTEN 11: channel 14 listen

   LISTEN 12: channel 15 listen
4. Tap any one of these buttons that is brightly flashing to select it. If the corresponding input or output is currently assigned to a button, that button will flash brightly. All other buttons that may be used for assignment will flash dimly.
5. Tap any flashing button to assign the unused input or output to that button.

6. To quit setup mode tap the CALL & SETUP button. Note that you must quit, then re-enter setup to assign additional unused channels.

3.4.7 *BUFFER RECALL* Setup

Buffer recall is a convenient way to assign the current on/off settings for all talk and listen buttons to any one of the *PRE 1* through *PRE 6* preset buttons. You can then activate that preset button at any time during normal operation to recall the saved talk and listen button settings.

Default setting: none

Use buffer recall as follows:

1. With the talk and listen buttons set as desired, enter setup mode (page 43). When you enter setup mode, the talk and listen button settings will automatically be stored in the buffer.

2. Tap the *PRESETS* button (TALK 11).

3. The *PRE 1* through *PRE 6* buttons on the keypad should now be flashing. Tap one of these buttons to select it. Any talk and listen buttons that are currently assigned for activation by that preset will be indicated by brightly flashing talk & listen buttons.

- If you don't want to overwrite the selected preset, cancel by tapping the same preset button again. Then tap the *PRESETS* button (TALK 11) again to make another selection.

- To store the buffer contents into the selected preset, tap the *BUFFER RECALL* button. You will note that the talk and listen buttons that were on just before entering setup mode are now flashing brightly. This indicates that the contents of the buffer have been successfully stored in the preset.

4. Tap the CALL & SETUP button to exit setup mode when finished.

3.4.8 *BUTTON LOCK* Setup

This feature locks selected talk and listen buttons in the on or off position. You must also use this feature to unlock buttons.

Default setting: all buttons unlocked.

To lock buttons on:

1. Turn on all talk and listen buttons that you want to lock in the on position.

2. Enter setup mode (page 43).

3. Tap the *BUTTON LOCK* button (TALK 1).

4. Tap the same talk and listen buttons that you selected in step 1. They should flash brightly when selected.

5. Tap the MIC ON button on the keypad to store your changes but remain in setup mode. Or, tap the CALL & SETUP button to exit setup mode. When you return to normal operation the talk and listen buttons that you selected will be locked in the on position.

To lock buttons off:

1. Turn off all talk and listen buttons that you want to lock in the off position.

2. Enter setup mode (page 43).

3. Tap *BUTTON LOCK*.

4. Tap the talk and listen buttons that you want to lock in the off position. They should flash brightly when selected.

5. Tap the MIC ON button on the keypad to store your changes but remain in setup mode. Or, tap the CALL & SETUP button to store your changes and exit setup mode. When you return to normal operation the talk and listen buttons that you selected will be locked in the off position.

Note: A talk or listen button that has been locked in the off position can still be activated by a preset button. However, you must assign that talk or listen button to the preset before locking it. (See "Presets Setup, page 48.)

To unlock buttons that are locked on or off:

1. Enter setup mode (page 43).

2. Tap *BUTTON LOCK*. All talk and listen buttons that are locked in either the on or off position will be flashing brightly. Tap any of these buttons that you want to unlock. They will flash dimly after being unlocked.

3. Tap the MIC ON button to store your changes but remain in setup mode. Or, tap the CALL & SETUP button to exit setup mode.

4. When you return to normal operation any buttons that were formerly locked in the on position will still be on. Simply tap them to turn them off.

3.4.9 *CALL DISABLE* Setup

This feature disables or enables call signal reception on selected channels. When call signal reception is disabled on a channel, there will be no chime tone or button flash to indicate an incoming call. Outgoing call signals are not affected.

Default setting: call reception enabled for all channels.

Disable or enable call signal reception as follows:

1. Enter setup mode (page 43).
2. Tap the *CALL DISABLE* button (LISTEN 7).
3. The listen buttons will flash brightly for all channels that have call reception enabled and dimly for all channels that have call reception disabled. Tap listen buttons as desired to enable or disable call signal reception.
4. Tap the CALL & SETUP button to exit setup mode.

3.4.10 *CALLER ID* Setup

Caller ID causes the listen button for a channel to flicker when audio is being received on that channel. This provides a visual cue of which channel is talking. You can set caller ID to provide this indication when the listen button is on and/or off.

Default setting: no caller ID.

Turn caller ID on or off for selected channels as follows:

1. Enter setup mode (page 43).
2. Tap the *CALLER ID* button (TALK 12).
3. Talk and listen buttons will flash brightly or dimly to indicate the current caller ID settings for each channel. If you want the listen button for a channel to display caller ID when that button is off, tap the listen button so that it is flashing brightly. If you want the listen button to display caller ID when it is on, tap the talk button so that it is brightly lit. Tap a button again to turn caller ID off.
4. Tap the CALL & SETUP button to exit setup mode.

3.4.11 *CHIME SELECT* Setup

Chime select lets you select one of 3 chime tones for incoming call announcement. The currently selected tone always sounds at power-up or after a reset.

Default setting: high/low tone

Change the chime tone as follows:

1. Enter setup mode (page 43).
2. Tap the *CHIME SELECT* button (TALK 5).
3. The LISTEN 10 through LISTEN 12 buttons select the chime tones as follows:

- ♦ LISTEN 10 selects a sweep tone
- ♦ LISTEN 11 selects high/low tone
- ♦ LISTEN 12 selects a staccato tone

4. Tap any one of these buttons to select its tone. The button will flash brightly for the currently selected tone. You can turn all tones off by tapping the button that is flashing brightly.
5. Tap the CALL & SETUP button to exit setup mode.

3.4.12 *EXT CONTACT* Setup

This feature lets you activate any one button on the front panel (except CALL & SETUP) using an external switch. You can also activate a group of buttons by assigning those buttons to a preset and then activating the preset with the external switch.

Note: the external switch can be connected at either J102, page 22 or J108, page 28. To configure a preset, see "Presets Setup", page 48.)

Default setting: the external switch activates the MIC ON button on the keypad

Reassign the external switch as follows:

1. Enter setup mode (page 43).
2. Tap the *EXT CONTACT* button (TALK 8).
3. The button that is currently assigned for activation by the external contact will flash brightly. Tap any other button to select that button. Or, tap the button that is currently flashing brightly to de-select the external contact.
4. Tap the CALL & SETUP button to exit setup mode. Check your new assignment by activating the external switch.

3.4.13 G-RST (Global Reset)

This is not a setup feature, It is an operating feature for use with ISO's. See "ISO Operation", page 54.

3.4.14 *IHM* (Internal Headset Microphone) Setup

See "MIC SELECT Setup", page 48.

3.4.15 *INSTANT MIC* Setup

In order to talk to a channel, both the MIC ON button and the talk button for that channel must be on. In some cases it may be convenient to have both of these activate when the talk button is pressed. This is referred to as "instant mic".

Default setting: off for all channels

Setup instant mic for selected channels as follows:

1. Enter setup mode (page 43).
2. Tap the *INSTANT MIC* button (TALK 2).
3. Tap any talk button to activate or deactivate instant mic for that button. The button will flash brightly when instant mic is activated and dimly when it is deactivated.
4. Tap the CALL & SETUP button to exit setup mode.

3.4.16 *IPM* Setup

See MIC SELECT, page 48.

3.4.17 *ISO/4W* Setup

This is used in two ways:

- to assign listen 15 to the speaker, left headphone or right headphone (See "SP/L/R Setup", page 49.)
- to select the program source for the local IFB feature (See "Local IFB Setup", below.)

3.4.18 *L* Setup

See "SP/L/R Setup", page 49.

3.4.19 *LATCH DISABLE* Setup

Most front panel buttons can operate in both momentary and latching mode. In some cases, you may not want a button to have the ability to latch. You can disable latching for these buttons.

Default setting: latching operation enabled for all buttons that support latching.

Disable latching for selected buttons as follows:

1. Enter setup mode (page 43).
2. Tap the *LATCH DISABLE* button (LISTEN 8).
3. Tap talk and listen buttons as desired to turn latch disable on or off. Latch disable is on when a button is brightly lit. Latching may also be disabled for the following buttons on the keypad: 0 through 9, *, #, and MIC ON.
4. Tap the CALL & SETUP button to exit setup mode.

3.4.20 *LOCAL IFB* Setup

Any of the intercom channels 1-12 can be converted into a local IFB channel. (Not applicable to channels 13-15). A local IFB channel normally sends a program feed to a remote listener. By pressing the talk button for the local IFB channel, the 803 station operator can interrupt the program feed and then talk to the remote listener. If the IFB channel is configured as a 2-wire channel, either the program 1 or 2 input can be selected as the program source. If the channel is configured for 4-wire operation you can also use the 4-wire listen input as the program input.

Default setting: local IFB is off for all channels

Setup a local IFB channel as follows:

1. Enter setup mode (page 43).
2. Tap the *LOCAL IFB* button (2 on the keypad). The talk buttons will begin to flash.
3. Tap a talk button to select it for use as a local IFB. That button will start flashing brightly.
4. The *, 0, and # buttons on the keypad will also start to flash. Tap one of these buttons to select the program source that it represents:

   * button: selected IFB channel's 4-wire input is used for program input.

   0 button: program 1 input

   # button: program 2 input

Note: only one program input may be selected for each local IFB.

5. You may now tap another talk button to setup that button as an IFB. Or, tap the CALL & SETUP button to exit setup mode.

Note: Whenever you select *LOCAL IFB* in setup mode, all talk buttons that are currently setup for this type of operation will flash brightly. To check the program source for any one of these talk buttons, tap the desired talk button once to turn it off, then tap it again to turn it on. The

*, 0, and # buttons will then display the program source being used with that button.

3.4.21 *MIC SELECT* Setup

This feature selects which microphone inputs are activated by the PANEL ON button in both the on and off positions.

The PANEL ON button can be programmed to select any of the following in the on position:

- no microphone
- a front panel gooseneck microphone (referred to as internal panel microphone, or IPM)
- an external panel microphone connected at the rear panel (referred to as XPM)
- Both an IPM and an XPM (not recommended for noise purposes)

The PANEL ON button can be programmed to select any of the following in the off position:

- no microphone
- a front panel headset dynamic mic (referred to as internal headset microphone, or IHM)
- an external headset dynamic microphone connected at the rear panel (referred to as XHM)
- both an IHM and an XHM (not recommended for noise purposes)

Default setting: the PANEL ON button selects the internal panel microphone (IPM) when on and the internal headset microphone (IHM) when off.

Setup the PANEL ON button as follows:

1. Enter setup mode (page 43).
2. Tap the *MIC SELECT* button (LISTEN 9).
3. The LISTEN 1 through LISTEN 4 buttons select the various microphone inputs as follows:

   LISTEN 1: IPM selected when PANEL ON is lit

   LISTEN 2: XPM selected when PANEL ON is lit

   LISTEN 3: IHM selected when PANEL ON is off

   LISTEN 4: XHM selected when PANEL ON is off

4. Tap any one of these buttons to setup the desired operation for the PANEL ON button.
5. Tap the CALL & SETUP button to exit setup mode.

Note: Although both internal and external microphone inputs can be enabled simultaneously, it is recommended that unused inputs be turned off to reduce amplifier noise.

3.4.22 MICS OFF

MICS OFF is not a setup feature. It is accessible during normal operation. See page 54.

3.4.23 *NL* Setup

See "2W/4W Setup", page 43.

3.4.24 *P1 and P2* Setup

See "SP/L/R Setup", page 49.

3.4.25 *PRE 1* through *PRE 6* Setup

See "Presets Setup", page 48.

3.4.26 *PRESET EXCLUDE* Setup

Selected talk and listen buttons may be excluded so that they cannot be assigned for activation using the preset buttons.

Default setting: no talk or listen buttons are excluded from assignment to presets.

Exclude buttons as follows:

1. Enter setup mode (page 43).
2. Tap the *PRESET EXCLUDE* button (LISTEN 11).
3. Tap talk and listen buttons as desired to turn the preset exclude feature on or off. Buttons that are excluded will be brightly lit.
4. Tap the CALL & SETUP button to exit setup mode.

3.4.27 *PRESETS* Setup

Any combination of talk and listen buttons may be assigned for activation by any one of the 6 preset buttons.

Default setting: no presets setup.

Setup preset buttons as follows:

1. Enter setup mode (page 43).

2. Tap the *PRESETS* button (TALK 11).

3. The *PRE 1* through *PRE 6* preset buttons on the keypad will start flashing. Tap any one of these buttons to select it. Talk and listen buttons that are currently assigned to that preset button will flash brightly. Tap talk and listen buttons to add or remove them. Or, if the selected preset button currently has assignments and you do not want to make changes, tap that preset button again to cancel, then tap a different preset button.

4. Tap the CALL & SETUP button to exit setup mode when finished.

3.4.28 *R* (Right Headphone) Setup

See "SP/L/R (Speaker Left/Right Select) Setup", at right.

3.4.29 *RELAY 1* through *RELAY 6* Setup

Any of the 6 built-in relays may be assigned for activation by selected front panel buttons:

Default setting: no relays assigned

Assign relays as follows:

1. Enter setup mode (page 43).

2. Tap any one of the *RELAY 1* through *RELAY 6* buttons (LISTEN 1 through LISTEN 6).

3. Tap any talk or listen button to assign the relay for activation by that button or to remove the assignment. When the relay is assigned for activation by a button, that button will flash brightly. The following buttons on the keypad may also be assigned to activate relays: 0-7, #, MIC ON, and SPK ON.

4. Tap the CALL & SETUP button to exit setup mode when finished.

3.4.30 *SP/L/R* (Speaker Left/Right Select) Setup

Each audio input can be directed to the speaker, the left headphone, the right headphone, or any combination of the three.

Default setting: all audio inputs are assigned to the speaker and to both the right and left headphones.

Redirect an audio input as follows:

1. Enter setup mode (page 43).

2. Tap the *SP/L/R* button (3 on the keypad).

3. Tap any one of the following buttons select an audio input:

- ♦ tap any listen button to select that listen input
- ♦ Tap 7 on the keypad to select listen channel 13
- ♦ Tap 8 on the keypad to select listen channel 14
- ♦ Tap 9 on the keypad to select the chime signal
- ♦ Tap * on the keypad to select listen channel 15 (ISO listen)
- ♦ Tap 0 on the keypad to select program 1
- ♦ Tap # on the keypad to select program 2

4. Once an audio source has been selected, bright flashing buttons will indicate where that source will currently be heard as follows:

- ♦ Bright flashing SPKR ON button: source heard at the speaker
- ♦ Bright flashing PANEL ON button: source heard in the left headphone
- ♦ Bright flashing MIC ON button: source heard in the right headphone

5. Tap any of these 3 buttons to assign the audio source to that destination.

6. Tap the CALL & SETUP button to exit setup mode when finished.

3.4.31 *SPECIAL PURPOSE* Setup

This feature is only available for special-order products.

3.4.32 *SPK* (Speaker) Setup

See "SP/L/R Setup", page 49.

3.4.33 *TALK TURNS OFF LISTEN* Setup

Occasionally, activating a talk button while the listen button is on may cause feedback, echo or other undesirable sounds. This may only happen on selected channels, or it may happen on all channels in certain environments or with certain audio sources. You can eliminate this prob-

lem by setting selected listen buttons to automatically turn off while their associated talk buttons are on.

Default setting: talk turns off listen is deactivated for all channels.

1. Enter setup mode (page 43).
2. Tap the *TALK TURNS OFF LISTEN* button (TALK 10). For any channel that has this feature activated, the TALK button will flash brightly.
3. Tap any TALK button to turn this feature on or off.
4. Tap CALL & SETUP to exit.

3.4.34 *TALK TURNS ON LISTEN* Setup

You can set the talk button for any channel so that activating that talk button will automatically turn on the listen button.

Default setting: talk turns on listen is deactivated for all channels.

1. Enter setup mode (page 43).
2. Tap the *TALK TURNS ON LISTEN* button (TALK 9). For any channel that has this feature activated, the TALK button will flash brightly.
3. Tap any TALK button to turn this feature on or off.
4. Tap CALL & SETUP to exit.

3.4.35 *TOTAL MUTE* Setup

Total mute lets you turn off all talk and listen buttons by tapping a single button.

Default setting: no total mute button assigned.

Setup a total mute button as follows:

1. Enter setup mode (page 43).
2. Tap the *TOTAL MUTE* button (TALK 4).
3. If there is a button that is currently assigned as a total mute button, that button will flash brightly. All other buttons that can be assigned for total mute will flash dimly. Tap any flashing button to set is as the total mute button. Note that only one total mute button can be set.
4. Tap CALL & SETUP to exit.

3.4.36 *VOX ENABLE* Setup

The 803 can be set for voice-activated microphone. When this feature is enabled the microphone will remain off when you are not speaking into it. When you do speak, the microphone will turn on, and your voice will be transmitted on any channels that have talk buttons activated.

Default setting: vox disabled

Enable vox operation as follows:

1. Enter setup mode (page 43).
2. Tap the *VOX ENABLE* button (LISTEN 10).
3. Tap the MIC ON button to enable or disable vox operation. The button will wink brightly when vox is enabled and dimly when it is disabled.
4. Tap the CALL & SETUP button to exit setup mode.

3.4.37 *XHM* (External Headset Microphone) Setup

See "MIC SELECT Setup", page 48.

3.4.38 *XPM* (External Panel Microphone) Setup

See "MIC SELECT Setup", page 48.

4 Adjustments

4.1 Back Panel Adjustments

4.1.1 Microphone Level Adjustments

There are 4 trimmers to adjust input gain for the various microphone inputs. Before adjusting the gain set the MIC ON button to the on position. Also, set the PANEL ON button to the on position for a panel microphone or to the off position for a headset microphone. Note that by default the PANEL ON button selects the internal panel microphone in the on position and the internal headset microphone in the off position. To change this see "Mic Select Setup, page 48.

HM (Internal Headset Microphone)

This trimmer adjusts the gain for a headset microphone connected at either the DYN-MIC HEADSET or CARBON-MIC HEADSET connector.

PM (Internal Panel Microphone)

This trimmer adjusts the gain for a panel microphone connected at the front panel of the 803.

EXT HM (External Headset Microphone)

This trimmer adjusts the microphone gain for a dynamic- or carbon-mic headset connected at J111.

EXT PM (External Panel Microphone)

This trimmer adjusts the gain for a panel microphone connected at J111 on the back panel.

4.1.2 ISO (Channel 15) Adjustments

R ISO (ISO Receive)

This trimmer functions for channel 15 exactly like the front panel LEVEL controls function for channels 1-12. Increase or decrease this level as desired when channel 15 is receiving an audio input.

N ISO (ISO Null)

The null adjustment for channel 15 is the same as for any of the 12 regular intercom channels. See "Null Adjustment", at right.

4.1.3 USMB (Unswitched Microphone Balanced) Output Level Adjustment

Use this control to adjust the USMB output level at J111.

4.2 Front Panel Adjustments

4.2.1 VOX PM / VOX HM Adjustment

Note: You must enable the VOX feature to make this adjustment. See VOX Enable Setup", page 50.

Note: The VOX level adjustment is affected by the settings of the "HM" and "PM" trimmers on the back panel. Make sure those trimmers are correctly set before proceeding. See "Microphone Level Adjustment", page 51.

Set the VOX level as follows:

1. Turn on a talk button.

2. Make sure the correct microphone is selected: the PANEL ON button should be on for a panel microphone and off for a headset microphone.

3. Speak into the microphone. If you are using a panel microphone adjust the VOX PM trimmer on the front panel so that the MIC ON button lights at the desired sound level; if you are using a headset microphone adjust the VOX HM trimmer to activate the MIC ON button.

4. This completes the VOX level adjustment. Turn the talk button off.

4.2.2 PGM1 / PGM2 Adjustment

Use the PGM1 and PGM2 trimmers on the front panel to equalize any level differences between the two program inputs. You may also adjust both trimmers to raise or lower the range of the PROGRAM VOLUME control.

4.2.3 LAMP DIM Adjustment

Adjust this trimmer to set the brightness of the front panel lamps as desired.

4.2.4 Null Adjustment

When you are using a channel in 2-wire mode, that channel should be balanced, or nulled, so that the outgoing signal from your microphone is not fed back into your speaker and/or headphones. Any residual signal that is fed back will sound like sidetone (see the separate paragraphs on "Sidetone Adjustment", below). However, unlike sidetone, which is heard only in the headphones and will be a constant level no matter which channel you are talking to; the residual feedback from an improperly nulled 2-wire channel will be heard both in the speaker and headphones, and it will vary from channel to channel depending on the degree of imbalance in each channel.

The null adjustment is related to the overall impedance of the intercom channel, and is thus to a certain degree influenced by the number of devices connected to that channel. Therefore, best nulling will be achieved after all stations have been connected to the intercom channel. You can perform the null adjustment using the panel mic and speaker (recommended method) or a headset. If a headset is used, you must first set the sidetone trimmer to minimum.

Note: Each channel can be set for either 2-wire or 4-wire operation, and nulling can be turned on or off for each 2-wire channel. (See "2W/4W Setup", page 43 for further information.) By default, all channels are set for 2-wire operation with nulling. If nulling has been turned off for a channel, or that channel is operated in 4-wire mode, the following adjustment will have no effect.

Perform the null adjustment as follows:

1. Activate the MIC ON button.

2. Select the desired microphone source. Activate the PANEL ON button if you are using a panel microphone, or tun the PANEL ON button off if you are using a headset. Also activate the SPEAKER ON button if you are using the speaker.

3. Activate the talk and listen buttons for the first channel that you want to adjust. If there is feedback, reduce the MASTER VOLUME.

4. While talking into the microphone, adjust the null trimmer for that channel to minimize your own voice level in the speaker or headphones. As you minimize, or null out, your own voice level you can increase the MASTER VOLUME level, as well as the individual LEVEL control for that channel, to help you hear better when a good null has been achieved.

Note: The null trimmers for channels 1-12 are located on the front panel. Since channels 13 and 14 are 4-wire only, no null trimmer is provided. The null trimmer for channel 15 is located on the back panel and is identified as N ISO, since this channel is primarily used for ISO operation.

5. Repeat the adjustment for each remaining channel that is being operated in 2-wire mode.

6. This completes the null adjustment. If you will be using headphones with the 803, perform the sidetone adjustment after the null adjustment.

4.2.5 Sidetone Adjustment

The sidetone adjustment lets you set the level of your own voice in the headphones when using a headset. A certain amount of sidetone is necessary for natural-sounding communication.

Note: If one or more channels are being operated in 2-wire mode with nulling, make sure those channels are properly nulled before setting the sidetone level.

1. Set the MASTER VOLUME and PROGRAM VOLUME controls to minimum.

2. Activate the MIC ON button.

3. Set the PANEL ON button to the off position.

4. While speaking into the headset microphone, adjust the SIDETONE trimmer so that your voice is heard in the headphones at the desired level.

5. This completes the sidetone adjustment.

5 Intercom Operation

5.1 Initial Volume Adjustment

Prior to first use, set the MASTER VOLUME and PROGRAM VOLUME controls to the minimum position. Set the twelve channel LEVEL controls to about the half-on position. Later, you can adjust the individual channel levels up or down to balance channels that are unusually loud or soft.

5.2 Momentary vs Latching Button Operation

Most front panel buttons feature both momentary and latching operation. For momentary operation, press and hold the button to turn it on, then release it to turn it off. For latching operation, tap a button to turn it on, then tap it again to turn it off. Latching operation can be used when you want to keep your hands free for other operations.

Note: Latching operation may be turned off for selected buttons. See "Latch Disable Setup", page 47.

5.3 Headset or Panel Mic/Speaker Selection

If you are using a headset, leave the PANEL ON button in the off position (unlit). You can set the SPKR ON button (speaker on) to either on or off as desired.

If you are using an optional panel microphone along with the built-in speaker, set the PANEL ON and SPKR ON buttons to the on position.

Note: You may find it useful to lock either or both of these buttons in the on or off position. See "Button Lock Setup", page 45.

5.4 Talking to an Intercom Channel

1. Activate the MIC ON button.

2. Make sure the correct microphone is selected: the PANEL ON button should be on when you are using a panel microphone and off when you are using a headset.

3. Activate the talk button for the channel that you want to talk to. Press and hold the button for momentary operation. Or, tap the button to latch it in the on position for "hands-free" operation.

Note: Several options can be assigned to selected talk buttons to modify their standard operation:

> You can setup a talk button so that it automatically activates the MIC ON button. See "Instant Mic Setup", page 47.
>
> You can setup a talk button to automatically turn on whenever there is an incoming call on that channel. See "Auto Talk Setup", page 44.
>
> You can defeat latching operation for a talk button. See "Latch Disable Setup", page 47.
>
> You can lock a talk button in the on or off position. See "Button Lock Setup", page 45.

5.5 Listening to an Intercom Channel

To listen to a channel, activate its listen button in either momentary or latching mode. Adjust the MASTER VOLUME control to an acceptable listening level.

As you listen to intercom channels, you may notice that some channels are louder or softer than others. In this case, adjust the individual channel LEVEL controls at the bottom of the front panel. (There is no level adjustment for channels 13 and 14. Adjust the channel 15 level via the R ISO trimmer on the back panel.)

Note: Several options can be assigned to selected listen buttons to modify their standard operation:

> You can setup a listen button to automatically turn on whenever the corresponding talk button is pressed. See "Talk Turns on Listen Setup", page 50.
>
> You can setup a listen button to automatically turn off whenever the corresponding talk button is pressed. See "Talk Turns off Listen Setup", page 49.
>
> You can setup a listen button to automatically turn on whenever there is an incoming call on that channel. See "Auto Listen Setup", page 44.
>
> You can defeat latching operation for a listen button. See "Latch Disable Setup", page 47.
>
> You can lock a listen button in the on or off position. See "Button Lock Setup", page 45.

5.6 Program Listen

After an acceptable listening level for the intercom system has been established, adjust the PROGRAM LEVEL control to establish an acceptable listening level for any program inputs that may be connected.

5.7 Receiving Call Signals

When another intercom station calls your station, you will hear the call chime tone, and the talk button for that channel will begin to flash. Activate the talk and listen buttons to communicate.

Note: Several options can be setup to modify the way incoming calls are received and indicated:

Incoming call signals may be disabled on selected channels. See "Call Disable Setup", page 46.

Selected talk and listen buttons may be setup to automatically activate on incoming call. See "Auto Talk Setup" and "Auto Listen Setup", page 44.

Any 1 of 3 chime tones, or no chime tone, may be selected for incoming call announce. See "Chime Select Setup, page 46.

Selected listen buttons may be setup to flicker as a caller talks to provide a visual cue of a call's origin. See "Caller ID Setup", page 46.

5.8 Sending Call Signals

To send a call signal on a specific channel:

1. Tap the CALL & SETUP button. It should begin to flash.

2. Within about 2-3 second, tap the talk button for the channel that you want to call. You should hear a chime tone, indicating that the call signal has been sent.

To send a call signal to a preset group of channels:

1. Tap the CALL & SETUP button. It should begin to flash.

2. Within about 2-3 second, tap the PRESET button for the group of channels that you want to call. You should hear the chime tone, then the CALL & SETUP button stop flashing.

Note: To setup a preset group see "Presets Setup", page 48.

5.9 Using MICS OFF to Deactivate Microphones on an Intercom Channel

MICS OFF lets you turn off the microphones on any intercom stations connected to a particular channel. The intercom stations must be capable of detecting the MICS OFF signal. Send a MICS OFF signal as follows:

1. Tap the MICS OFF button.

2. Tap any talk button to send the MICS OFF signal on that channel.

Note: you must tap a talk button within about 2 seconds. You must repeat the procedure for every channel.

5.10 Telephone Dialing with the Keypad

The 803 is capable of generating DTMF tones for dialing out on a phone line. If there is a telephone interface connected on an intercom channel, you can use the 803 keypad to dial out on that channel. The actual method that you use to access the phone line varies depending on how the 803 is connected and the type of telephone interface being used. For example, your intercom system may be configured so that activating a talk button will pick up the telephone line, in which case the following procedure may be used. Some installations, however, may require some other action to pick up a telephone line, in which case you will need to do that before the following procedure.

1. Tap the asterisk button (*) three times. The keypad buttons will light to indicate that dialing mode is activated, and the CALL & SETUP button will flash to indicate that this is the key to press to return to normal mode. The talk buttons will also begin to flash.

2. Tap the talk button for the channel that you want to dial on.

3. Now use the keypad to dial as for a normal touch-tone keypad.

4. When you are finished dialing, tap the CALL & SETUP button to return to normal operation.

5. Activate the microphone and listen button (if required) to proceed with your conversation.

6. Turn off your talk button when finished with the call to hang up.

5.11 ISO Operation

5.11.1 ISO Operation in VCP Emulate Mode

These instructions apply to any buttons that have been configured for ISO panel emulation with the optional ISO connector(s) installed and activated as described starting on page 14.

- If an ISO button is lit continuously, someone else is currently talking to that ISO channel. If your 803 or external VCP is set to the same or higher priority, you will be able to talk to that ISO; otherwise, you will have to wait until the light shuts off.

- To talk, activate the desired ISO button. It will flash while active. Also, all talk buttons will shut off and the MIC ON button will light. Turn the ISO button off when finished talking.

Note: If listen disable has been programmed (by setting DIP switch S2-5 to the ON position, page 16) all listen buttons will also shut off during ISO operation.

- When you are using the 803 in VCP emulate mode, you can use the global reset feature of the 803 to shut off all ISO buttons in the system. To do this, tap the G-RST button on the 803 keypad.

5.11.2 ISO Operation using an External VCP Panel

These instructions apply to an 803 that has been setup to work with an external VCP panel as described on page 28.

- If an ISO button is lit continuously, someone else is currently talking to that ISO channel. If your VCP is set to the same or higher priority, you will be able to talk to that ISO; otherwise, you will have to wait until the light shuts off.

- To talk, activate the desired ISO button on the VCP, then speak into the 803 microphone. While the ISO button is active, all 803 talk buttons will be off and the MIC ON button will be lit. Turn the ISO button off when finished talking. The 803 will return to normal operation.

- When you are using an external VCP, you can tap the Local Reset button at any time to turn off all active ISO buttons on your VCP Panel. Or, you can tap the Global Reset button to shut off all active ISO buttons in the intercom system.

Note: If listen disable has been programmed (by setting DIP switch S2-5 to the ON position, page 16) all listen buttons will also shut off during ISO operation.

5.12 IFB and SA (Stage Announce) Operation

5.12.1 Model 4001 or 4002 IFB Panel Emulation

These instructions apply to any buttons that have been configured for IFB panel emulation with the optional IFB connector(s) installed and activated as described starting on page 14.

- If an IFB or SA button is lit continuously, someone else is currently talking to that channel. If your IFB Panel is set to the same or higher priority, you will also be able to talk; otherwise, you will have to wait until the light shuts off.

- Press and hold the desired IFB or SA button, then talk into the microphone. The MIC ON button will automatically activate whenever any IFB button is on. Release the IFB button when finished talking.

- Note: If talk disable has been programmed (by setting DIP switch S2-8 to the ON position, page 16) all talk buttons will also shut off during IFB operation.

5.12.2 Local IFB

These instructions apply to any channel that has been setup for local IFB as described on page 34.

- To talk to a channel that has been setup for local IFB, press and hold the talk button for that channel. Note that the MIC ON button automatically activates when the talk button is pressed. Release the talk button when finished talking.

- The listen button for the local IFB channel will be locked off and will not operate.

- The talk button will only operate in momentary mode. Latching is not allowed.

6 Index