Freedom Electronics Trademark II Series Intercom

Installation and User's Guide

Rev 2.0 ● 06/2025

Table of Contents

⚠ ATTENTION:

• Trademark I and Trademark II Desktop Controllers, Digital Interface Boxes and 4-Speaker Interface Cards and **NOT** interchangeable.

• Trademark I and Trademark II operate the same.

Trademark II Systems (Model 4000)

TMK-4000
Talk and Station Shift buttons are red.
Printed circuit board is blue.

DIB-400X
Box enclosure is red.
Printed circuit board is blue.

Trademark I Systems (Model 3000)

TMK-3000
Talk and Station Shift buttons are blue.
Printed circuit board is green.

DIB-300X
Box enclosure is gray or brown.
Printed circuit board is green.

Important Safety Information

Know Your Environment
Working at a fueling station can present many dangers. It is a potentially dangerous environment of electricity, flammable fuels, vapors, and interactions with the general public. Only trained and knowledgeable individuals should perform service on the equipment. It is important to your safety and the safety of others to follow proper procedures.

Emergency Shut Off (ESO)
Know how to turn OFF power to all the fueling equipment by locating the ESO switch and circuit breakers. You must know how to shut off all fuel flow and electricity in an emergency.

Follow the Regulations
Information is available at Occupational Safety and Hazard Association (OSHA), National Fire Protection Association (NFPA) 30A; Code for Motor Fuel Dispensing Facilities and Repair Garages, NFPA 70; National Electrical Code (NEC), as well as other national, state and local entities. All applicable codes must be followed to maintain safe installation, service, use and operation of the equipment.

LOTO (Lockout/Tagout)
Always make sure ALL power to the dispenser is turned OFF before servicing the dispenser. Follow OSHA Standard 29 CFR 1910.147 The Control of Hazardous Energy (Lockout/Tagout).

No Sparks - No Smoking
Sparks from power tools, burning cigarettes, static electricity, vehicles and other sources can ignite fuels and their vapors. Ensure that you use safe and established practices while working with electrical devices and equipment.

Wear Proper PPE
Check with your company, customers and the job/site specifics to determine what types of personal protective equipment are appropriate. Always wear the proper PPE to prevent injuries and save lives.

Barricade Your Work Area
One of the dangers of working at an active retail fueling station is the potential impact of customers and the general public. It is important to properly establish your work area by barricading, to reduce the potential of vehicles or customers from entering the work area. The use of barricades is both for the protection of workers and protection of the general public/customers.

Read the Manual(s)
Knowledge of all related manufacturer procedures, manuals and documents is important. Follow the Recommended Practices of The American Petroleum Institute (API). Understand the specific procedures before starting work. If you do not understand a procedure, call Freedom Electronics at 770-792-8888.

Notify Site
On arrival identify yourself to the site manager and inform them of the work you will be performing.

Specifications and Features

Specifications

- The basic Trademark II Series Intercom System comes with an 8-speaker interface.

- These systems are easily upgradeable to up to 32 speaker stations by adding optional 4-Speaker Interface Cards.

- The basic system uses a single Desktop Controller with the ability to add up to a total of 16.

- The Digital Interface Box (DIB) provides a convenient location for speaker and call switch terminals.

Features

- User friendly operation
- Remote to Remote communication
- Hold memory
- Large LCD displays station and call status
- Message / Music digital volume control
- Adjustable alert beeper tone volume
- One touch answer
- 18" detachable gooseneck microphone
- Small footprint Desktop Controller
- Assign call priority to a speaker station
- Individual or total message / music mute

- Monitor selected speakers or silent standby
- Dual channel communication (2 conversations at once)
- VOX (Voice Activated "hands free" talk switching)
- Dry contact call input
- Individual talk out speaker station digital volume control
- Chemical resistant long-life membrane keypad
- Dedicated output amplifier for each speaker
- Backroom mountable speaker interface
- All line paging (capable of disabling select speakers)
- Message / Music (capable of disabling select speakers)
- Assign up to 16 characters to label speaker locations

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Freedom Electronics Trademark II Intercom

Applicable Parts

Part# FE-TMK-4108
Trademark II Basic 8 Wired Speaker Station
Intercom System With 1 Desktop Controller

Part# FE-941-0108
Trademark II Four Speaker Interface Card

Part# FE-DIB-4004
Trademark II Digital Interface Box
w/Power Supply (8+ Speaker Stations)

Part# FE-TMK-4000
Trademark II Desktop Controller

Part# 503-1546
Island Mode Overlay
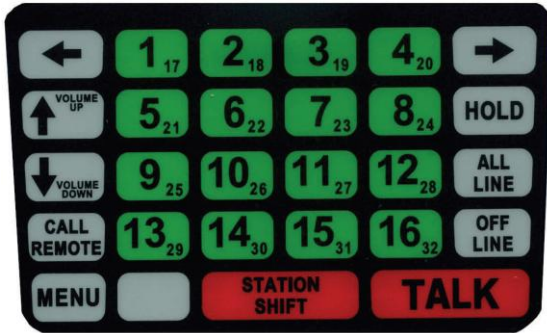
Part# FE-216-0008
Dispenser Speaker, 3.25"

Part# FE-SPK-1003
Speaker Box with Call Switch

Part# FE-SPK-1013
Outdoor Handset

Freedom Electronics Trademark II Intercom
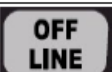
Operating Instructions

- Speak naturally into the microphone at a distance of about two inches.

- Touch the keys with the pads of your fingers(Do NOT use hard or sharp objects).

Standard Overlay Included

Island Mode Overlay, Sold Separately

1 17	Speaker stations 1 thru 16 are selected with a single key press. Speaker stations 17 thru 32 are selected by first pressing the STATION SHIFT key followed by the appropriate station select key.
STATION SHIFT	Depressing this switch followed by pressing a station select key allows operator to select speaker stations 17 thru 32.
TALK	Press and hold this switch to talk to a speaker station release to listen. Status LCD indicates: TALK / LISTEN state. *(Acts as the ENTER key during programming.)*
OFF LINE	Deactivates all stations. Intercom should remain in this mode when not in use. Status LCD indicates: OFF LINE mode. *(Used to back up through programming levels.)*
ALL LINE	Press and hold this switch while talking to broadcast page to all enabled stations simultaneously.
HOLD	Depressing HOLD causes station status LCD to display HOLD followed by the number of held stations as a reminder of previously active stations. Status LCD indicates HOLD followed by the number of stations placed on hold.
CALL REMOTE	Depressing this switch followed by pressing a station select key allows operator to call remote selectors 1 thru 16.
VOLUME UP	Depressing this switch increases Listen volume. Status LCD indicates volume level (1 – 15). *(Used to increment numbers, letters or to scroll to Station or Remote #'s in programming.)*
VOLUME DOWN	Depressing this switch decreases Listen volume. Status LCD indicates volume level (1 – 15). *(Used to increment numbers, letters or to scroll to Station or Remote #'s in programming.*
MENU	Depress the MENU switch and enter security code (**2, 3, 6, 7**) allows access to configuration menu.
→	Depressing this switch allows the installer to scroll forward through the menu descriptions. *(Used to move forward through programming menu items.)*
←	Depressing this switch allows the installer to scroll backward through the menu descriptions. *(Used to move backward through programming menu items.)*

Operating Instructions

- **Turn On / Turn Off**
  - o The power switch is located on the Digital Interface Box. The Desktop Controller will power up to the OFFLINE Standby mode.

- **Select a speaker station while in Offline mode**
  - o Press a speaker station number for stations 1–16.
    Press STATION SHIFT and a speaker station number for stations 17–32.
  - o Selecting a station will immediately place the intercom into the LISTEN mode.
  - o Press and hold the TALK button while talking out to selected speaker, or talk directly into microphone if the VOX option has been enabled.
  - o Release the TALK button to listen to the selected speaker.
  - o After conversation is complete, press OFFLINE to return the intercom to OFFLINE Standby (If the automatic standby option is selected the intercom will return to either OFFLINE Standby or Monitor All Line mode after a 5-minute delay).

- **Adjust the Desktop Controller listen volume**
  - o While connected to a speaker station, press the UP/DOWN arrows to adjust the listen volume.
  - o If the Monitor All Channels mode is enabled, a second volume adjustment is available. While in Monitor Standby press the UP/DOWN arrows to adjust the Monitor All Channels volume.

- **Answer a call from a speaker station**
  - o The intercom will beep and flash the word Call, followed by the number of waiting call requests in the lower right corner of the LCD screen (Call01 indicates one speaker station is calling, Call03 indicates that there are three stations calling).
  - o Press the TALK button to active the first speaker calling; after the conversation is complete press OFFLINE to return to OFFLINE Standby. The intercom will beep again if there are additional calls waiting. Call requests will be answered in the order they were placed.

- **Page all stations**
  - o Press and hold the ALL LINE button and talk out to all of the speakers simultaneously. Releasing the ALL LINE button will return the intercom to the previous mode it was in.

- **Call a Station remote**
  - o Press the REMOTE SHIFT followed by a remote number 1–16 to talk to another Desktop Controller.

- **Place system in OFFLINE Standby**
  - o Press OFFLINE to return the intercom to the OFFLINE Standby mode.
    (If the automatic standby option is selected the intercom will return to either OFFLINE Standby or Monitor All Line mode after a 5-minute delay).

- **Place a call on HOLD**
  - o If it is necessary to place a speaker station on hold to answer additional calls press the HOLD button. The word Hold, followed by the number of on hold speaker stations will flash in the lower left corner of the LCD screen. While in OFFLINE Standby mode, press the HOLD button to recall held stations in the order they were placed on hold.

Programming

Navigating the Menu

1. Press the **MENU** key and enter password: **2 3 6 7.**
   When using an Island Mode Overlay enter password: **3/4 5/6 11/12 13/14.**

2. The screen will display the first menu option. Use the **RIGHT/LEFT** arrows to move through the menus until the desired option is displayed.

3. Press the **TALK** key to enter the desired menu option.

4. Use the **UP** and **DOWN** arrows to increment numbers, letters or to select Station or Remote #'s.
   • Flashing fields indicate adjustable options

5. Press the **TALK** key to enter the selected changes.

6. To return to the main menu, press the **OFF LINE** key one to two times, depending on menu level.

7. To exit programming mode, press the **MENU** key. Display will return to OFFLINE stand-by.

Programming Menu

1) Assign Address to Station Remote
Each Desktop Controller requires a unique address number. These numbers give each Desktop Controller its identity.
   Remote ID Address (Default = 01) (Available addresses 01-16)

2) Quantity of Speakers Installed
The system will sense the quantity of installed I/O cards and will default to the maximum number of available speaker circuits accordingly. The quantity of speakers can be set to a lower number if less than the maximum is installed to avoid the possibility of connecting to an unwired station.
   Speaker Quantity (Default = The quantity of 4-Speaker Interface Cards installed x 4)
                      (Available quantity 01-32)

3) Stations Disabled During "All Line"
Any Speaker Station requiring privacy during an All Line Paging/Listen situation can be disabled. This function disables All Line Paging outgoing as well as All Line Listen incoming communications.
   Station (XX) (Default = All Enabled) Scroll to desired Speaker Station and select Disable.

4) Stations Disabled During "Music"
When the intercom is in the OFFLINE Standby mode it is capable of transmitting background music or messaging. If there are Speaker Stations requiring silence during OFFLINE Standby, they can be disabled.
   Station (XX) (Default = All Enabled) Scroll to desired Speaker Station and select Disable.

Programming

5) **Disable Calls from Speaker Stations**
Disables Audio tone only. The Desktop Controller will receive all incoming audio call requests from any Speaker Station as well as any additional Desktop Controller. If an individual Desktop Controller is in a location where the audio call alerts from the Speaker Stations are unsuitable, they can be disabled. When Speaker Station calls are disabled, the Desktop Controller will only receive audio call requests from other Desktop Controllers and only visual call requests from the Speaker Stations.
  Station Call (Default = Enable)

6) **Adjust Volume of Alert Beeper Tones**
Adjust the volume of the Alert Beeper Tones generated by Calling Speaker Stations, Busy signals, Key presses and Errors.
  Alert Tone Volume (Default = 08) (Available volume range 01-15)

7) **Enable Microphone VOX Circuit**
The outbound talk circuit can be activated by pressing and holding the Talk button on the Desktop Controller or utilizing the built-in VOX circuit, if it is enabled and properly adjusted. If this parameter is disabled, the next menu item will be skipped over.
  Enable VOX (Default = Disable)

8) **Adjust Microphone VOX Sensitivity**
The microphone VOX circuit requires adjusting to accommodate voice switching levels. The range of adjustments is 1-15, 15 being the most sensitive. The VOX circuit will sense voice activity at the microphone and activate the talk out circuit. If the VOX circuit is adjusted to low, it may not activate unless you speak extremely loud. If the circuit is adjusted to high, it may remain active due to ambient background noise. During the process of adjusting the VOX circuit there is a visual prompt that will change giving you feedback to the level of adjustment acquired.
  VOX Sensitivity (Default = 08) (Available sensitivity range 01-15)

9) **Adjust "Talk-Out" Volume**
The Talk Out Volume can be adjusted to one global volume and then if additional adjustments are necessary the volume can be raised or lowered for individual speaker stations.
  Adjust Global
    Global Volume (Default = 08) Recommend adjusting to 12.
    (Available volume range 01-15) The volume of all the Speaker Stations are adjusted simultaneously.
  Adjust Station
    Station XX Volume YY The volume levels of individual speaker stations can also be made. *If the Global adjustment feature is used after individual adjustments are made, all individual adjustments are lost*.

10) **Adjust "Music" Volume**
While the intercom is in OFFLINE Standby it is capable of transmitting background music or messaging. This adjustment sets the volume for all the speakers that are selected for background Music/Messaging. Individual speaker volume adjustments are not available
  "Music" Volume (Default = 08) (Available volume range 01-15)

Programming

11) Automatically Reset to OffLine (Standby)
If this feature is enabled, the system will return to OFFLINE Standby after a delay of 300 seconds if the Talk switch is not pressed or the VOX circuit is not activated. If this feature is disabled, the selected station will remain active in the Listen state until the Off Line button is pressed.
> **Auto OffLine** (Default = Enable)

12) Silent OffLine or Monitor All Channels
If this feature is set for Silent, the Desktop Controller will be totally silent during Off Line Standby. If the feature is set for Monitor; the Desktop Controller will monitor all Speaker Stations that are not disabled during All Line Page while in Off Line Standby.
> **Standby Mode** (Default = Silent) (Other available feature = Monitor)

13) Assign Text to Station Remote
Each attached Desktop Controller will have a default description consisting of the word Remote# followed by its assigned address. This description can be changed to better describe the Desktop Controller's location. The description can utilize up to 16 characters.
> **Select Remote** (Default = Remote # 01) This feature allows scrolling through Remotes to select which to reassign text.
> **Reassign Text** Refer to: Assigning custom text descriptions on next page.

14) Assign Text to Speaker Station
Each attached Speaker Station will have a default description consisting of the word Station# followed by its assigned address. This description can be changed to better describe the Speaker Stations location. The description can utilize up to 16 characters.
> **Select Station** (Default = Station # 01) This feature allows scrolling through Speaker Stations to select which to reassign text.
> **Reassign Text** Refer to: Assigning custom text descriptions on next page.

15) Synchronize Programming
If any of the default parameters have been changed and there are additional Desktop Controllers, the programming can be synchronized to eliminate the need to program the additional Desktop Controllers separately. All data is synchronized except for the Desktop Controllers ID number, and any Station Calls that are disabled.
> Press **TALK** to Synchronize

16) Restore System Default Values
Restores programming to factory default settings.
> Press **TALK** to Restore Default Values

17) Software Versions
The Desktop Controller and and Digital Interface Box software versions are displayed on this screen. These software versions should match and indicate proper communication.

Programming

18) Station Priority

If this feature is disabled, the calls from the Speaker Stations will be answered in the order that they are received. A single Speaker Station can be selected to take call priority over all other Speaker stations.

(Default = Disable)

19) Restrict Access

Enable this feature and make selected Speaker Stations and Remotes unavailable from this Remote. Selecting a restricted Speaker Station or Remote will display Error Message ACCESS RESTRICTED. If a Call is generated from a Restricted Speaker Station or Desktop Controller, the system will function as normal. All Call and Listen communications function per setting in programming option 3.

(Default = Disable)

20) Total Music Mute (Default = Disable)

While talking to a Speaker Station the background music will continue to play on all remaining unused Speaker Stations. If this feature is enabled the background music will be turned off globally any time the intercom system is not in OFFLINE Standby.

(Default = Disable)

Assigning custom text descriptions (16-character maximum can be assigned).

a) Scroll to either the Assign Text to Desktop Controller or Assign Text to Speaker Station (above) and press TALK to enter.
b) Using the **UP/DOWN Arrows,** scroll to the device number to customize and press the **TALK** button to enter the text customizing area.
c) Using the **UP/DOWN Arrows,** scroll to the desired character and press **TALK** to enter and advance the cursor to the next character position.
d) While assigning characters, pressing the **STATION SHIFT** button will change the character selection to either: Upper Case Alpha Characters, Lower Case Alpha Characters, Numeric Characters, or Special Characters/Punctuation.

Special Characters start with the space character and advance as follows while pressing the **UP ARROW**

SPACE	,	.	*	/	-	_	(	)	$	!	@	#	%	+	&	:	|	'	?	{	}

e) After customizing the text, press **TALK** repeatedly to advance to the descriptions end. Pressing **TALK** one more time will advance to the next station description to customize automatically.

f) To exit programming mode, just press the **MENU** key. Display will return to OFFLINE stand-by.

Installation

1) Install any additional 4-Speaker Interface Cards prior to mounting, if applicable. Refer to page 12.

2) Find a suitable non-hazardous location to install the Digital Interface Box. It can be mounted either under a counter or in the backroom.

3) Run an appropriate length of cable from each remote speaker and call switch to the area the intercom Digital Interface Box is located. (Label wire ends to avoid confusion when the final connections are made).

4) Connect the speaker and call switches to the appropriate positions on a 4-Speaker Interface Card. See wiring specifications on page 15.

5) Firmly plug the supplied Gooseneck Microphone into the socket on the top of the Desktop Controller until the latch clicks into place.

6) The Desktop Controller can be placed on a counter or mounted to a wall utilizing the three key slot mounting holes on the bottom.

7) Run and connect the RS485 wires from the Digital Interface Box to each Desktop Controller. See wiring specifications on page 15. Ensure correct polarity when connecting wires.

8) Run and connect the Voice Channel(s) wires. See wiring specifications on page 15.
   Systems with a single Desktop Controller require wiring to voice channel A only.
   Systems utilizing multiple Desktop Controllers require wiring to both voice channels A & B.
      When using multiple Desktop Controllers, each controller must be programmed with a unique address assigned via programming (01-16). See programming option 1.
   Ensure correct polarity when connecting wires.

9) Plug the power supply into a dedicated, grounded 120VAC outlet and plug into the Digital Interface Box.

10) Turn the power switch on at Digital Interface Box.

11) Enter programming to:
   Restore System Default Values, see programming option 16.
   Adjust Talk Out Volume from 8 to 12, see programming option 9.
   Any other site-specific options.

12) If desired, enable and adjust the VOX sensitivity, see programming option 7 and 8. A proper adjustment should trip the intercom into the talk mode when speaking in a normal voice into the microphone from a distance of about 2 inches.

13) Check for proper operation on all connected speakers and call switches to each Desktop Controller.

Adding 4-Speaker Interface Cards

Additional 4-speaker Interface Cards can be added to reach a total of 32 speaker stations(8 Cards).
Important: Additional Interface Cards must be installed into the next available open slot.

1) Power down the system.

2) Remove the top cover of the Digital Interface Box.

3) Clip out the card slot blanking cover(s) and discard.

4) Install the additional 4-speaker Interface Card(s) by removing the mounting screw and the 4-speaker connectors from the card and plug into the next available slot(s).

5) Secure the 4-Speaker Interface Card(s) to the Digital Interface Box with the mounting screw.

6) Reinstall the top cover of Digital Interface Box.

7) Install the additional speaker and call button connectors and connect the wiring.

8) Power the system back on.

9) Enter programming to:
   Restore System Default Values, see programming option 16.
   Adjust Talk Out Volume from 8 to 12, see programming option 9.
   Program any other site-specific options.

Music or Message Player

Music and/or a prerecorded messages can be transmitted to all enabled remote stations that are in the standby mode.

Attach a 1000mv PP output of a message player/external amplifier to the music input and adjust the volume in programming option 10.

Speaker stations not requiring music can be disabled in programming option 4.

Activating any remote channel mutes the music or message to that channel only, unless the Total Music Mute feature is enabled in programming option 20.

Gilbarco Applause

- The Applause intercom boards work by "listening" for activity from the Desktop Controller.

- By default, the speaker will be used by the Applause system until there is activity from the intercom base station.

- When the intercom operator speaks out to the dispenser, the Applause intercom board will switch control of the dispenser's speaker to the intercom for 10 seconds.
    - After 10 seconds of inactivity from the intercom, the speaker will be switched back to the Applause system.

- If the dispenser is not equipped with the Applause system, it is recommended to bypass the Applause intercom board and wire direct to the speaker.

- If the intercom has no incoming listen activity at the Desktop Controller. It is necessary to select a speaker channel and talk out before the Applause system will connect the speaker to the intercom.

- If the intercom is not activating the Applause system, ensure the operator is speaking loud enough or raise the outgoing volume of the intercom system.

- To troubleshoot the wiring to the dispenser, temporarily bypass the Applause intercom board and wire direct to the dispenser speaker.

- Background music from the intercom system is not compatible with the Applause system.

- The "Talk-Out" Volume should be set to 12. Refer to programming option #9 on page 8.

- Refer to Gilbarco MDE-5029 Intercom Call Interface Board Installation Instructions.

- The Gilbarco Intercom Interface Board M09751A00X requires 2 wires per fueling point to control audio.

- The Gilbarco Intercom Call Interface Board M14595A00X requires 4 wires per dispenser to control audio and call operations for island mode operations.

See next page for Intercom Interface Board wiring.

Gilbarco Applause

Gilbarco Intercom Call Interface Board M14595A00X
(Per Dispenser)

To Speaker Connection on DIB (3&4)

To Call Connection on DIB (1&2)
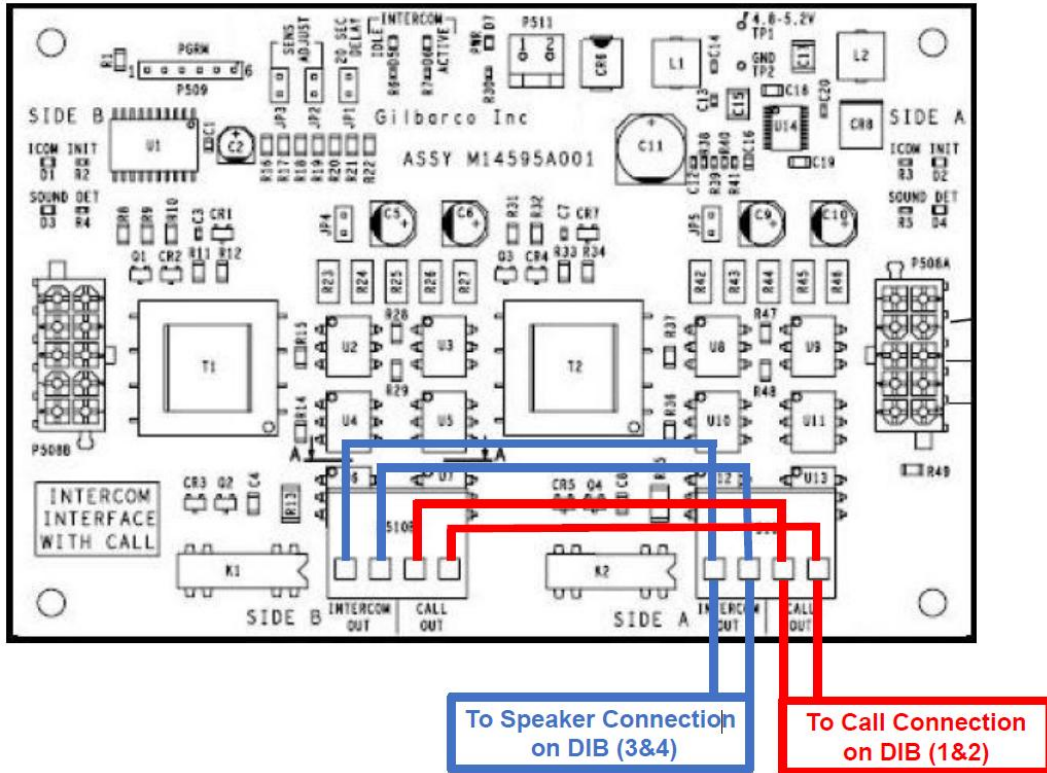
Gilbarco Intercom Interface Board M09751A00X
(Per Fueling Point)

Use the red and white twisted-pair on the M10590A001 Cable.

To Speaker Connection on DIB (3&4)
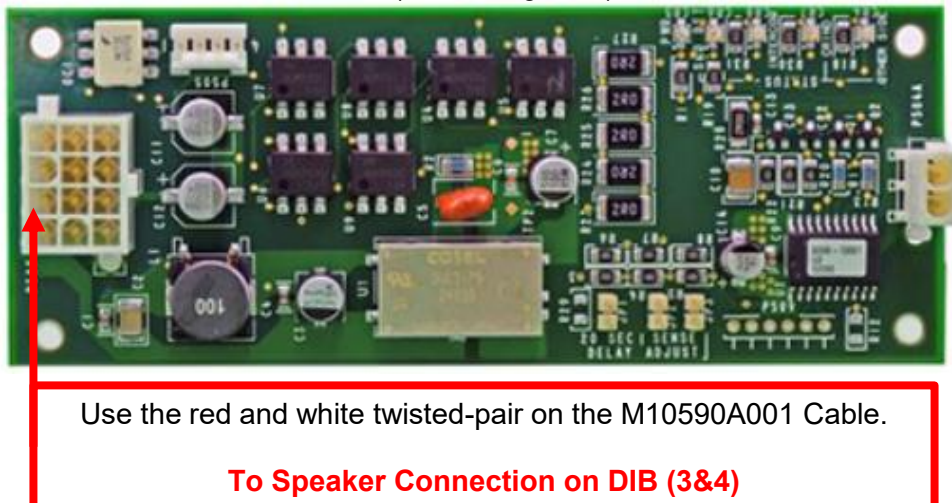
Wiring Specifications

Outside Speakers (2 Wires) and Call switches (2 Wires)
- Call switches are not required for audio communication.
- Mount Speakers and Call switches according to their installation and application guide.
- Must be a shielded/twisted-pair wire.
- Shield wires should be attached to the shield/ground connections at the DIB box only.
- All speaker/call wires must be routed through a separate conduit from those containing 120VAC power wiring.
    > DO NOT ROUTE AUDIO OR DATA CABLES IN THE SAME CONDUIT WITH 120VAC WIRING. THIS VIOLATES THE NATIONAL ELECTRIC CODE.
- Speakers mounted in close proximity of the Desktop Controller(s) may result in a howl (acoustical feedback). This condition can be corrected by lowering the volume or repositioning the speaker and/or Desktop Controller.

Voice Channels
- Connect the Voice Channel(s) from the Digital Interface Box to the Desktop Controller.
- Wire only Voice Channel A when using one Desktop Controller (2 wires)
- Wire both Voice Channels A & B when using multiple Desktop Controllers (4 Wires)
- Ensure correct polarity when connecting wires.
- Must include a drain wire

RS485
- Connect the RS485 from the Digital Interface Box to the Desktop Controller.
- RS485 wiring must have all four connections completed.
- Ensure correct polarity when connecting wires.
- Must include a drain wire.

Music Input
- Connect the Music Input from the music source(if desired).
- Must include a drain wire.

Power
- The power supply should have a dedicated, grounded 120VAC outlet.

Recommended Cable Specifications:

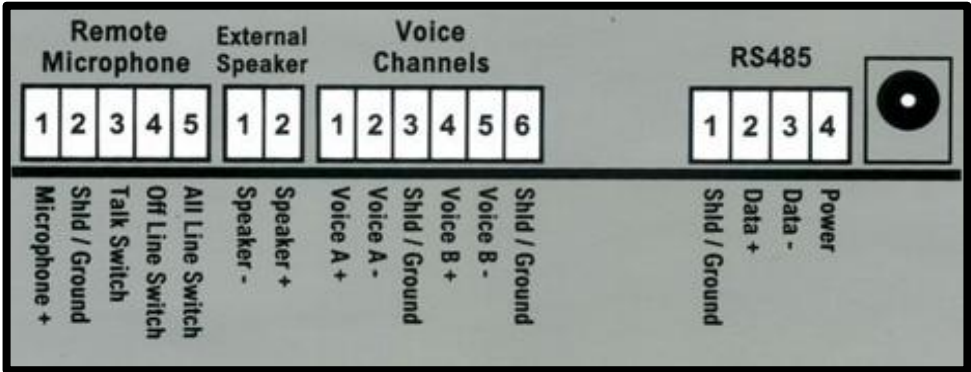| Outside Speaker/Call Switches/Voice Channels	RS485
• Less than 300 feet use 22 AWG or larger	• Less than 60 feet use 22 AWG or larger
• Less than 500 feet use 20 AWG or larger	• Less than 100 feet use 20 AWG or larger
• Less than 750 feet use 18 AWG or larger	• Less than 160 feet use 18 AWG or larger
• Less than 1200 feet use 16 AWG or larger	• Less than 250 feet use 16 AWG or larger
• Less than 2000 feet use 14 AWG	• Less than 400 feet use 14 AWG
• Wire length over 2000 feet (not recommended)	• Wire length over 400 feet (not recommended)

Desktop Controller

Remote Microphone					External Speaker		Voice Channels						RS485			
1	2	3	4	5	1	2	1	2	3	4	5	6	1	2	3	4

- Microphone +
- Shld / Ground
- Talk Switch
- Off Line Switch
- All Line Switch
- Speaker +
- Speaker -
- Voice A +
- Voice A -
- Shld / Ground
- Voice B +
- Voice B -
- Shld / Ground
- Shld / Ground
- Data -
- Data +
- Power

Digital Interface Box (DIB)

Music Input
- 1 Music +
- 2 Music -
- 3 Shld / Ground

Voice Channels
- 1 Voice A +
- 2 Voice A -
- 3 Shld / Ground
- 4 Voice B +
- 5 Voice B -
- 6 Shld / Ground

RS485
- 1 Shld / Ground
- 2 Data +
- 3 Data -
- 4 Power

OFF / ON

Power 9VDC

Speaker connections (columns labeled 1 2 3 4 each):
- Shld / Gnd
- Call
- - Speaker
- + Speaker

Speaker 1, Speaker 2, Speaker 3, Speaker 4
Speaker 5, Speaker 6, Speaker 7, Speaker 8
Speaker 9, Speaker 10, Speaker 11, Speaker 12
Speaker 13, Speaker 14, Speaker 15, Speaker 16
Speaker 17, Speaker 18, Speaker 19, Speaker 20
Speaker 21, Speaker 22, Speaker 23, Speaker 24
Speaker 25, Speaker 26, Speaker 27, Speaker 28
Speaker 29, Speaker 30, Speaker 31, Speaker 32

Freedom Electronics Trademark II Intercom

Power Supply
Input: 100-240 VAC 2A, 50-60HZ

Continue wiring up to 16 Desktop Station Controllers

Note: RS485 wiring must have all four connections completed to each component.

Note: Wire only "Voice Channel A" when using one station selector.
Wire both "Voice Channels A & B" when using multiple station selectors.

Depending on distance use shielded, twisted pair, 14-22 AWG audio cable.

Desktop Station Controller #02

Desktop Station Controller #01

Digital Interface Box

Freedom Electronics: Trademark II Intercom

Wiring for:
External Controller Listen Speaker and Single Remote Microphone with Switch

Wiring for:
Dual Remote Microphones with Switch