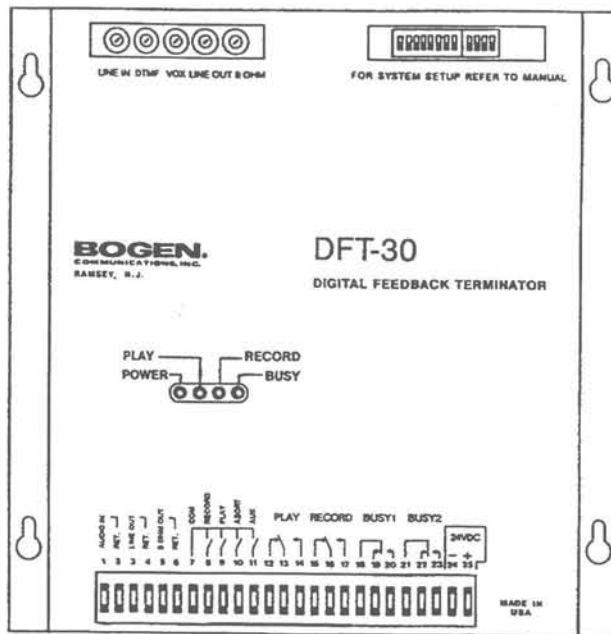


# BOGEN<sup>®</sup>

## Digital Feedback Terminator

### Model DFT-30



## Specifications

|                                 |   |
|---------------------------------|---|
| Input voltage:                  | 24VDC   |
| Input current:                  | 250mA maximum   |
| Input sampling rates:           | 32 or 64kBPS, switch selected   |
| Audio input impedance:          | 600 ohm, transformer isolated   |
| Input level range:              | -30dB to +10dB, adjustable  |
| VOX sensitivity:                | -30dB to +10dB, adjustable  |
| DTMF sensitivity:               | -22dB to +10dB, adjustable  |
| Line output impedance:          | 600 ohm, transformer isolated   |
| Gain through line output:       | 0dB typical   |
| Speaker output impedance:       | 1 ohm, transformer isolated   |
| Maximum output level :          | 0.4 watts into 8 ohms   |
| Control input requirements:     | Contact closure, 250msec duration. All inputs optically isolated and can be activated by dry contact or solid state open collector. |
| Control output characteristics: | Form C relay outputs, Contacts rated 24VDC @ 1 ampere, non-inductive  |
| Connector type:                 | 25-position, type 66 connector block  |

## Description

The Bogen DFT-30 Digital Feedback Terminator is a record/play unit designed to eliminate feedback in paging systems. It uses digital technology to store and then repeat a page over the loudspeaker system. It is especially useful for high noise areas, where amplified audio output induces feedback into the system. It includes several versatile operational features which can be field-selected to meet different needs.

The DFT-30 installs easily between the paging system amplifier and the telephone system. It can be connected to Key system or PBX page ports (supplying a dry audio pair and normally open contact closure) or to Key/PBX loop start trunks or PBX station ports using the Bogen Model TAMB access module. The unit offers a choice of 600 ohm line output or 8 ohm output to the paging system amplifier.

The unit includes flanges for wall mounted installation. All connections are to a 66-type punch down block on the front panel. Connections include relay contacts (4), audio input and output, power supply, and control lines for record, play and abort functions. Configuration switches, screwdriver-adjustable controls and function indicator LEDs are also located on the front panel. The unit operates from 24VDC (Bogen PRSASAC power supply recommended, not included).

### Field-selectable operational features include:

- Recording time of 30 or 60 seconds.
- Play the page once or twice.
- Preannounce tone can be included.
- Pre-page pause time of 1, 3, 5, or 10 seconds.
- Field-selected RECORD, ABORT, and PLAY options.

**Important — Before you install this equipment, you should read and understand these instructions.**

## Installation

The DFT-30 is designed for wall-mounted installation to a telephone equipment backboard and requires 8" x 8" of wall space. The mounting location should be near an AC outlet. Keyhole slots are provided to speed installation. Use appropriate hardware if mounting to drywall or similar thin materials.

### Note

*Do not install the unit closer than 18" from a power supply or other equipment that generates electrical noise.*

## Connections

All connections are made to the 66-type punch-down block located on the front panel. Use of a punch-down tool and wire compatible with type 66 blocks will ensure proper connection.

**Basic connections are described on page 3.** The numbers in parenthesis are punch-down terminal numbers as printed on the front panel.

## Input From the Paging System

Installation drawings are included in this manual (see pages 5 through 8) as follows:

- Figure 1 shows the typical connection to a page port.
- Figure 2 shows the connections and accessories required to add a busy tone to the page port when the unit is in play mode.
- Figure 3 shows connection to a loop start trunk, using the Bogen TAMB accessory to provide contact closure.
- Figure 4 shows connection to a PBX station port using the TAMB.

(1/2) **AUDIO IN** — Transformer isolated, 600-Ohm input with dc blocking capacitor can accommodate audio levels from -15dBm to 0dBm. The higher the nominal signal level applied within the limits, the better the signal-to-noise ratio.

## Output To Paging System

Outputs are separately adjustable.

(3/4) **LINE OUT** — Line level, 600 ohm, transformer-isolated output. Generally, this connection is made to an amplifier's Lo-Z input jack (not a MIC input).

(5/6) **8 OHM OUT** — 8 ohm output, transformer-isolated for connecting to amplifiers requiring higher input level (AUX inputs).

## Control Lines

Control terminals (8 - 11) are biased around 12VDC. To activate, the terminal should be shorted to COM (terminal 7).

(7/8) **RECORD** — Activates RECORD mode. The unit will record as long as the contact is maintained or until memory capacity is reached.

(7/9) **PLAY** — Activates play-on-demand when this feature is selected (see Set Play Options, no connection necessary for basic operation).

(7/10) **ABORT** — Forces the DFT-30 to stop operation immediately (no connection necessary for basic operation).

(7/11) **AUX** — Not used.

## Output Relays

Each Form C relay output listed below includes normally closed, common and normally open contacts. The labelling on the front panel shows the relay condition in the idle state.

(12 - 14) **PLAY** — Active only while the unit is in the PLAY mode.

(15 - 17) **RECORD** — Active only while the unit is in the RECORD mode.

(18 - 20) **BUSY 1** — Active while the unit is in the RECORD or PLAY mode or delay before playback.

(21 - 23) **BUSY 2** — Active while the unit is in the RECORD or PLAY mode or delay before playback.

## Power

This unit requires the use of an appropriate power supply. The Bogen Model PRSASAC power supply is recommended for this purpose. The PRSASAC provides 24VDC @ 450mA from a 120VAC source.

(24/25) **24VDC** — 24VDC @ 250mA via suitable power supply. Connect the output of the power supply to the 24VDC terminals before plugging the supply into an AC outlet. **Be certain to observe correct polarity.**

### Caution

*Before plugging the power supply into the AC outlet:*

- Be sure all wiring is properly installed.
- Set the configuration/option switches as described below under Field Setup Options.
- Read Operation section

## Field Setup Options

Two miniature switch blocks are used to set the configuration of the DFT-30. These switches are accessible by removing the plastic cover on the upper right corner of the front panel. Use a pointed instrument (i.e., pen tip) to move the switches up-to-on and down-to-off position according to the instructions which follow:

### Switches 1 - 8 (Left Bank)

#### Set Recording Length

Sets the digital sampling rate to control recording time.

|        |                       |
|--------|-----------------------|
| #1 OFF | 60 seconds at 32 kBPS |
| #1 ON  | 30 seconds at 64kBPS  |

#### DTMF Options

Lets DFT-30 record DTMF tones for special applications or use DTMF tones to abort operation.

|         |        |                               |
|---------|--------|-------------------------------|
| #2 OFF, | #3 OFF | No restrictions on DTMF tones |
| #2 ON,  | #3 OFF | Records 2 DTMF tones,         |
|         |        | aborts operation on third     |
| #2 OFF, | #3 ON  | Records 1 DTMF tone,          |
|         |        | aborts operation on second    |
| #2 ON,  | #3 ON  | Abort with first DTMF tone    |

## Method of Activation

Note: RECORD can be activated by the dry contact (terminals 7, 8) regardless of the switch setting.

**#4 ON/OFF      Activate RECORD by DTMF**

Recording will start when the DTMF tone is detected. Recording will end 0.3 seconds after the end of audio detection.

**#5 ON/OFF      Activate RECORD by audio detection**

Recording will start at the beginning of the actual paging and will end 0.3 seconds after end of audio detection.

## Set Play Options

These switches select play options. The unit can be set to repeat a recording once or twice (normal operation), or to play one recording on demand, in response to a contact closure.

|                             |   |
|-----------------------------|---|
| <b>#6 OFF,      #7 OFF</b>  | <b>Play for duration of closure on the PLAY terminals</b> |
| <b>#6 ON,        #7 OFF</b> | <b>Play once with momentary contact on PLAY</b>           |
| <b>#6 OFF,      #7 ON</b>   | <b>Playback page once (normal operation)</b>              |
| <b>#6 ON,        #7 ON</b>  | <b>Playback page twice (pause time set below)</b>         |

## Preannounce Tone

This switch selects a single-burst preannounce tone signal before the initial playback.

**#8 ON/OFF                  Preannounce Tone**

## Switches 1 - 4 (Right Bank)

### Set Delay Before Playback

Sets the delay time between RECORD and PLAY and any subsequent playback (when set to playback twice).

|                             |                        |
|-----------------------------|------------------------|
| <b>#1 OFF,      #2 OFF</b>  | <b>1 second delay</b>  |
| <b>#1 ON,        #2 OFF</b> | <b>3 second delay</b>  |
| <b>#1 OFF,      #2 ON</b>   | <b>5 second delay</b>  |
| <b>#1 ON,        #2 ON</b>  | <b>10 second delay</b> |

**Switches 3 and 4 are not used.**

## Operation

After completing all connections and double checking the wiring, remove the plastic cover on the front panel to expose a bank of screwdriver-adjustable controls. Rotate each control and set to its mid position. Do not force the controls.

Plug the power supply into an AC outlet. The POWER LED will illuminate. If the LED does not light, check for proper connection at the power supply terminals (reversed polarity will not damage the unit.).

Dial up to system and make a page. When the DFT-30 is activated by contact closure (or DTMF tone/audio sensing options), the RECORD and BUSY LEDs illuminate. When you hang up the phone, the PLAY and BUSY LEDs will light and you will hear the page over the system speakers (following the preset delay time).

When the page is complete, the unit will return to the idle state, ready to record the next page.

## Adjustments

To adjust the unit for optimal performance, remove the cover on the front panel to expose the controls.

Record a page. If the playback is distorted, decrease the output level slightly by rotating the LINE OUT (or 8 OHM) control counterclockwise. If the playback still sounds distorted, decrease the signal level reaching the audio processor by rotating the LINE IN control counterclockwise.

If using DTMF options, you can adjust the signal level reaching the DTMF decoder by rotating the DTMF control. Counterclockwise rotation reduces the level.

The audio detection sensitivity is controlled with the VOX control. Rotate clockwise if the first word is dropped from playback.

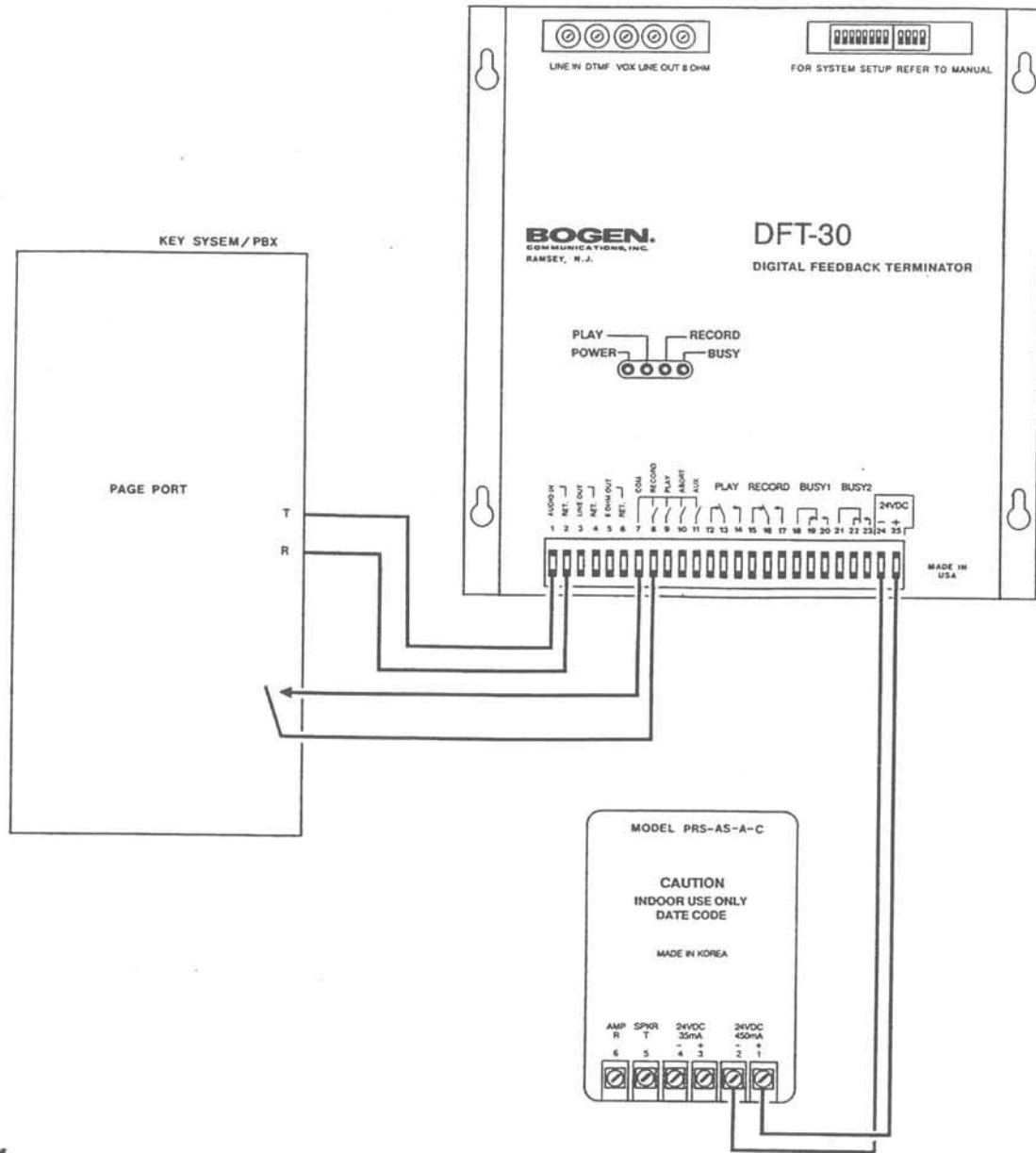
## Maintenance & Warranty Repair

The DFT-30 requires no periodic maintenance.

If this unit requires repair send it freight prepaid and fully insured to Bogen Service Department, 50 Spring Street, Ramsey, NJ 07446.

If possible use the original packaging material to ensure safe shipment. Enclose a copy of your purchase order/receipt showing date purchased for repair under terms of the warranty. The unit will be promptly repaired and returned to you (freight prepaid while under warranty).

**Important Note:  
The 8 OHM and LINE OUT  
screening on the unit is reversed.**



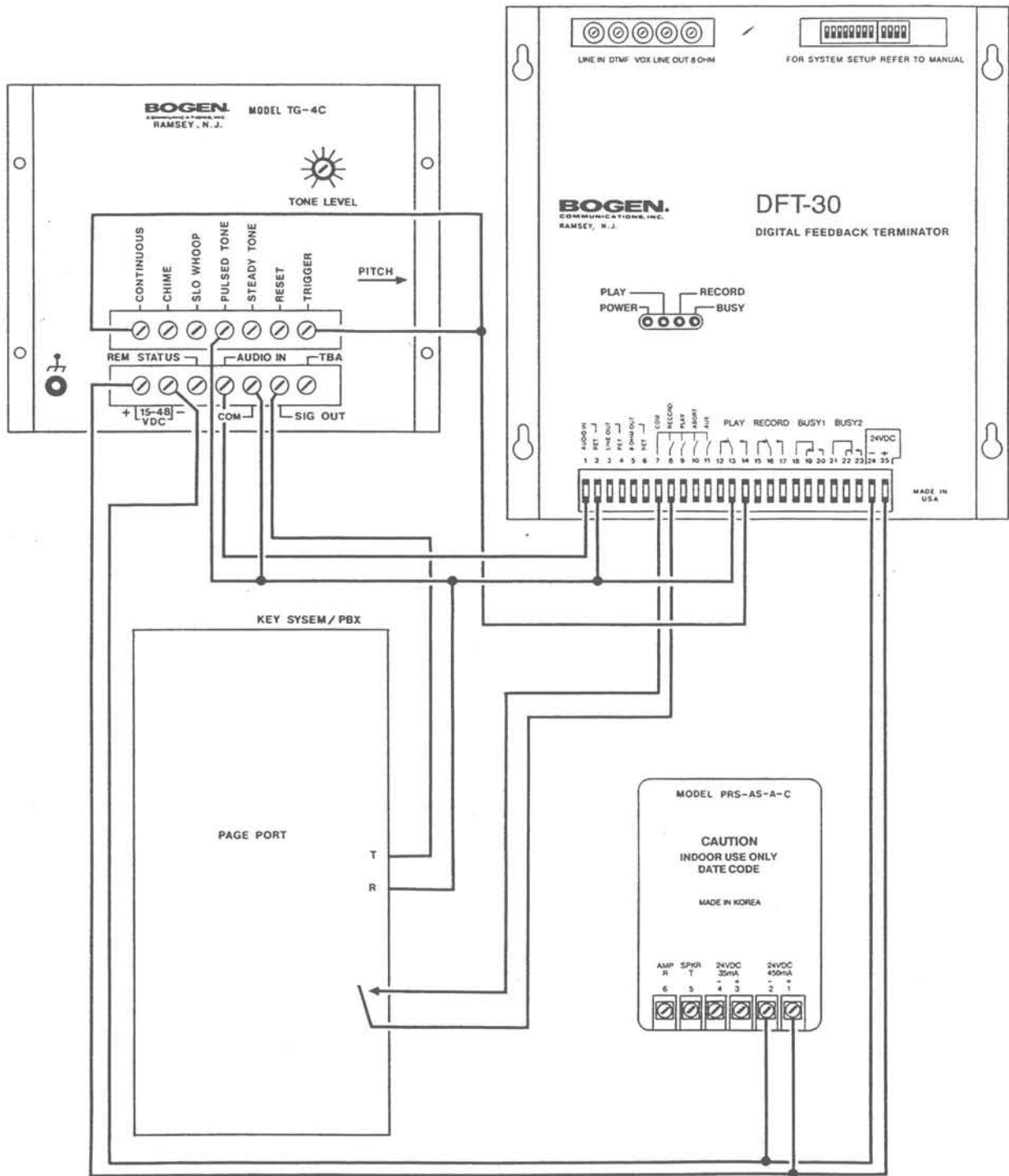
**Figure 1**  
**Connection of DFT-30 to Page Port**

Page port must supply a dry audio pair and a normally open contact closure.

The connections shown are for the telephone system only. You must connect the appropriate output terminals (LINE OUT or 8 OHM) to the sound system amplifier.

Generally, the LINE OUT terminals can be connected to the Lo-Z or 600-ohm input of the sound system amplifier (not a MIC input)

The 8 OHM output terminals can be used to drive a speaker directly or can be used to connect with amplifiers that require a higher input level (such as an AUX input).



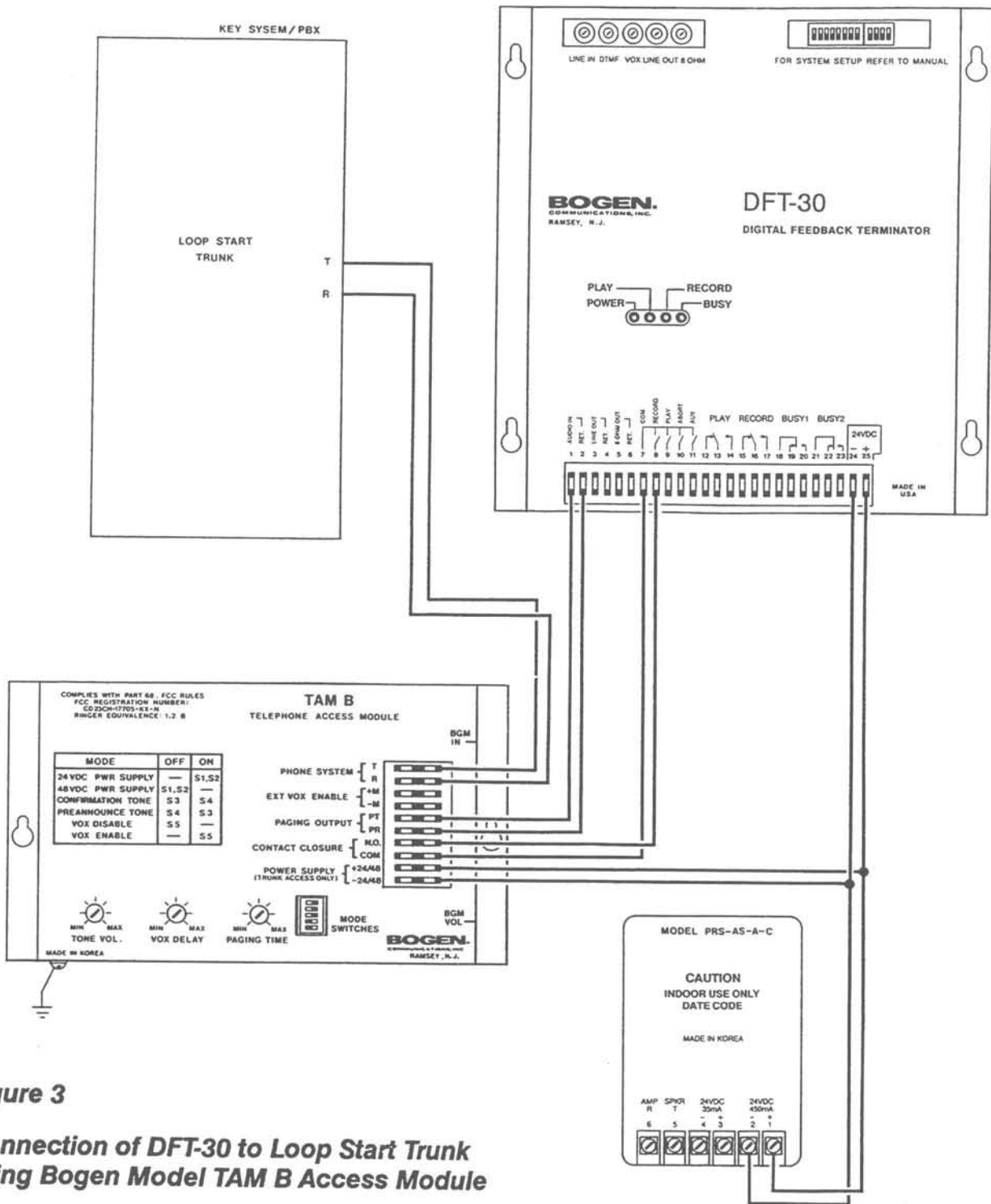
**Figure 2**

**Connection of DFT-30 to Page Port with Bogen Model TG4C Tone Generator**

The TG4C places its tone signal on the page port's audio pair during playback to indicate a busy condition. The page port must be capable of two-way communication for this accessory to work.

Make sound system connections as described in Figure 1.

Consult TG4C operating instructions for adjustment information.

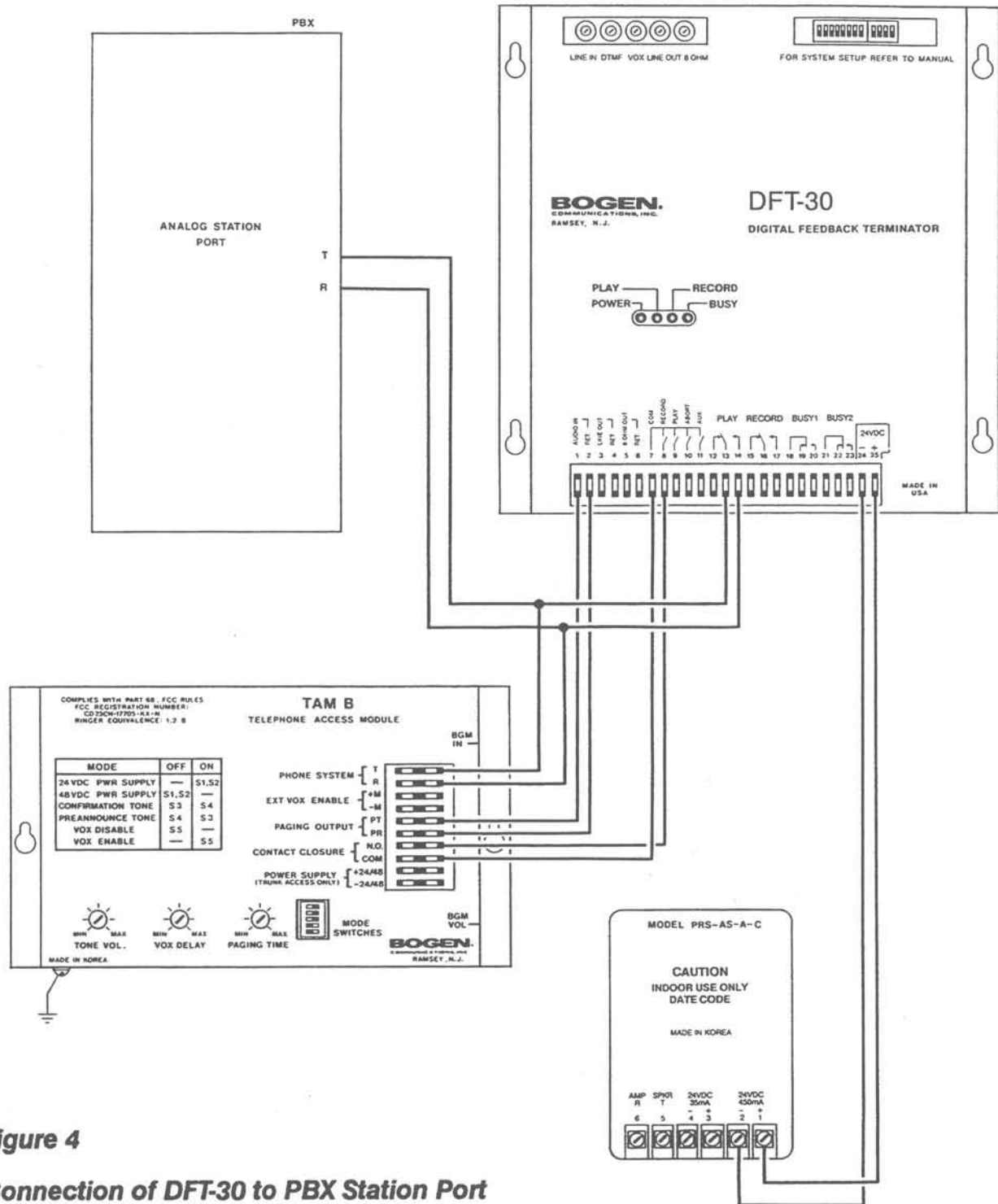


**Figure 3**  
**Connection of DFT-30 to Loop Start Trunk using Bogen Model TAM B Access Module**

Consult instruction supplied with the TAM B for information on setting controls and switches. Note that some telephone systems require that the TAM B supply 48 volts at its T and R terminals. In this case, disconnect the 24 volts from the PRSASAC to the TAM B and use a separate 48 volt supply (PRS48 recommended).

Make sound system connections as described in Figure 1.

A busy signal can be added to the loop start configuration by adding a TG4C Tone Generator. Follow Figure 2 and use the TAM B "PT/PR" terminals as a page port dry audio pair and the N.O./COM terminals as the normally open contact closure.



**Figure 4**  
**Connection of DFT-30 to PBX Station Port using Bogen Model TAM B Access Module**

This configuration automatically causes a busy signal when the normally open contacts from the DFT-30 are connected across the station line.

Make sound system connections as described in Figure 1.

Note that The TAM B requires no power supply in this configuration. The TAM B obtains its power from the station line.

Also note that the DFT-30 is not approved by the FCC for direct connection to CO lines. *This figure illustrates connections to PBX Station lines only.*