



## INTRODUCTION

The TIF-951 is a 2 line digital telephone interface designed to be used with all RTS digital intercom systems. It provides bi-directional communication between the intercom matrix and a standard DTMF capable telephone, and it allows the phone to access all crosspoints of the matrix, as well as dynamic party lines, IFB circuits, and other forms of communications. The 1U rack mountable TIF-951 provides a transparent link to the telephone system enabling full dial-out capability from any designated keypanel with keypad. Unlimited TIF-951 interfaces may be connected to the central matrix to meet the user's needs.

## OPERATION

**Call In Mode:** The call in mode of the TIF-951 may be set to manual answer or auto-answer. In the manual mode, the call is answered by depressing the appropriate key at any eligible keypanel that is assigned to the TIF-951. In the auto-answer mode, the number of rings is pre-set. Upon connection, the caller defaults to the first 7 pre-assigned audio destinations. At that time the caller may use the DTMF keypad on the instrument to re-assign the telephone to a pre-configured crosspoint, party line or IFB. Operationally, a press of each button on the telephone keypad activates or deactivates the predetermined talk and listen assignment in the central matrix. A general reconfiguration of the DTMF buttons may be performed while connected on the telephone as well as from the intercom. Each of the TIF-951 units may be set to ring up to 16 different keypanels in the intercom system, and all incoming calls produce flashing alphanumeric identification tallies at the designated keypanels. A password requirement may also be added for security purposes.

**Dial Out Mode:** The TIF-951 transmits standard DTMF tones (pulses optional) to the telephone system. The tones are activated from the keypad of the calling keypanel. They are also heard by the keypanel operator during dialing, and there is a visual cue of the numbers as they are displayed one at a time in the call waiting window. Any number of phone lines may be active on the keypanel, and any of these may be monitored, put on hold, accessed individually, or accessed all at once using the talk and listen keys. Last number redial and the ability to store up to 10 phone numbers are included features of the TIF-951.

## FEATURES

### KEYPANEL:

- Dial from intercom panel keypad
- Multiple panels can access the same line
- Line in-use tally
- Line ringing tally
- Selected panels may produce audible ring
- Panels may disconnect lines
- Unlimited number of phone interfaces
- Unlimited access to phone interfaces
- DTMF echo allows dialer to hear tones
- Visual display of number dialed
- Lines can be put on hold
- Lines can be manually disconnected

### INTERFACE:

- Auto or manual answer
- Select security code or none
- Select number of rings before answer
- Caller can be locked to one matrix point
- Up to 16 panels may be selected to ring
- Call in directly to party line or IFB
- Caller may select up to 7 T/L assignments
- Caller may change presets
- Optional pulse code circuit card
- Auto disconnect
- Direct audio input mixes w/matrix audio
- Tone to set levels for intercom and phone

## APPLICATIONS

- Simplex or full duplex IFB
- Remote IFB through cellular phone
- Remote PL from ENG/SNG
- Remote studio tie-in
- Remote diagnostics
- Aerospace multi-system link
- Sports venue multiple PL tie-in
- Olympic or concurrent sports IFB

## TELEPHONE INTERFACE - System Specifications

<b>SYSTEM</b>	True Digital. Second generation Texas Instruments™ TMS320C25 processor. 8KHz sampling rate. Internal digital input and output gain processing, filtering.
<b>Trans-hybrid Loss</b>	>40 dB with pink noise or voice as test input. With the override and output expander functions switched in, trans-hybrid loss is enhanced by approximately 12 dB.
<b>Send Level to Phone Line</b>	-10 dBm average level. Maintained by internal digital AGC.
<b>Frequency Response (caller to output)</b>	200 to 3400 Hz $\pm$ 1 dB.
<b>Noise and Distortion (caller to output)</b>	< .5% THD + N. 1KHz at any level from -48 to -8 dBm.
<b>Signal to Noise</b>	> 60 dB referenced to -18 dBm phone level. > 72 dB referenced to 0 dBm phone level.

<b>Send Audio Input</b>	Active balanced. Accommodates -24 to +12 dBm levels.
<b>Caller Audio Output</b>	Active differential. Output levels to +14 dBm depending on caller telephone line level and adjustment of front panel level adjust. Drives 600 Ohm.

(Auto Answer and Disconnect functions are based on USA telephone system)

<b>Auto Answer</b>	Responds to 90 VAC, 20 Hz ringing signal
<b>Disconnect</b>	Responds to any of the following: <ul style="list-style-type: none"> <li>• Loop Current Interruption</li> <li>• Loop Current Reversal</li> <li>• Dial Tone Detection (350 &amp; 440Hz present for 800 msec [minimum] )</li> </ul>
<b>Power Requirement</b>	90-260 VAC continuous, 47 to 63 Hz.
<b>Rack Mounting</b>	19" EIA, 1 RU (1.75"), 15.50" deep.
	DE9, 9 pin female.



**Model TIF-951 Telephone Interface - Back panel**

The Telex TIF-951 Intelligent telephone interface has been designed to respond to ringing for auto-answer and to respond to a number of conditions to detect hang-up. These conditions are based upon the United States Telephone system. PBX systems within the US, and PBX and Public telephone systems in other countries may have ringing and hang-up characteristics which differ from the design parameters used in the TIF-951. Telex handles these requirements on a case by case basis and may require a one-time engineering fee to adapt the TIF-951 for non-standard telephone systems.

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