

## Features

- Caller EQ at 400Hz and 2.5kHz
- Send limiter
- Caller compressor/expander
- Connection for caller mute
- Conference link
- Input/output level matching

## Applications

- Radio and TV talk shows
- Educational TV
- Voice mail systems
- Outreach ministries

## Product Description

The TI-101 is the most practical device on the market today designed specifically for the connection of professional audio equipment to telephone lines in broadcast and production operations. The TI-101 uses a manually adjusted electronic hybrid circuit to separate the host and caller signals, isolating the studio send from the caller return signal.

The TI-101 is easy to install, and requires only an external holding coil or telephone set to hold the line. When the TI-101 is first installed, the hybrid

must be balanced to the local telephone line. This is necessary to effectively null the host's voice out of the caller signal, so the return signal contains only the caller's voice. Once installed, the TI-101 does not need to be re-balanced unless changes are made, such as moving the studio to a new location, or switching to a different telephone exchange.

## Convenience Features

Equalization is included to remove unwanted resonances and "brighten up" the caller for better intelligibility.  $\pm 8\text{dB}$  is provided at both 400Hz and 2.5kHz.

The built-in send limiter can help improve hybrid performance, and also allows the TI-101 to drive the telephone line to the maximum level allowed by the FCC into the telephone line, without distortion or overmodulation.

The receive path includes a compressor/expander. The compressor rides gain on the caller, and is particularly useful during "shouting matches." The downward expander reduces noise when the caller is not speaking, and is especially valuable with noisy long distance lines.

## Two-way Conversation

*Unlike "speakerphones" and other half-duplex systems, the TI-101's electronic hybrid provides true full-duplex operation. This allows the host to carry on natural sounding, simultaneous two-way conversation with the callers. There is no objectionable "gating" effect. Two TI-101's may be interconnected for a two-line conference call.*

## Conference Link

With two telephone lines and two TI-101's, on-air conferences may be accomplished. Front panel switching allows the units to be used separately, or as half of the conference.

With the two telephone interfaces connected via their rear panel conference link connectors, parties on both lines can hear and speak with each other, as well as with the host.

## Level Matching

Gain adjusting switches on the back panel permit the TI-101 to operate from virtually any level at the input, and with any mixer or broadcast console at its output.

The input and the output may be independently switched to match either  $-10$  (semi-pro) or  $+8$  (broadcast) equipment.

The input is transformerless, and may be operated from a balanced or unbalanced source. The output is transformer coupled to eliminate RFI, even with unbalanced connections. In addition to the overall level matching switches, the caller level may also be adjusted with the front panel receive level control.

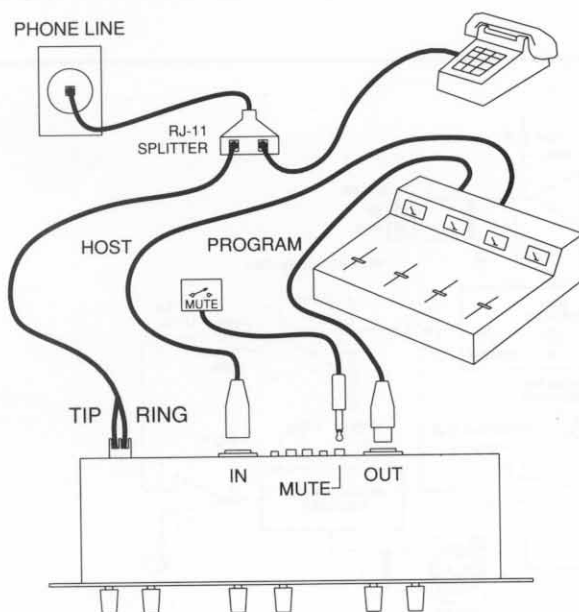
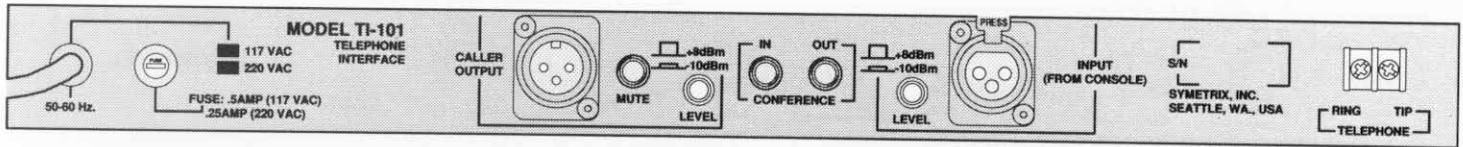


Fig.1 Simple TI-101 installation

# TI-101 Telephone Interface



## Specifications

<b>Input Impedance</b>	16.7k $\Omega$ (electronically balanced)
<b>Output Load Impedance</b>	minimum output load 600 $\Omega$ (transformer balanced)
<b>Telephone Port Impedance</b>	560 $\Omega$ (transformer isolated)
<b>Nominal Input and Output Level Ranges</b>	back panel switchable, -10dBm and +8dBm
<b>Maximum Output Level</b>	+20dBm
<b>Maximum Input Level</b>	+21dBm
<b>Typical THD</b>	.1%
<b>Controls</b>	send level, send limit, receive level, receive compress/expand, 400Hz and 2.5kHz equalization, conference link, low, high, and course frequency null adjust
<b>Visual Indicators</b>	LED's indicate send clip, send limit, receive clip, receive compress/expand, receive mute, power on
<b>Frequency Response</b>	band limited to 300Hz to 3kHz (measured from telephone port to output port)
<b>Typical Transhybrid Loss</b>	20dB over the specified frequency bandwidth
<b>Connectors</b>	3 pin XLR for input and output, #6 barrier strip for telephone tip and ring, 1/4" TS jack for Mute connect and Conference interconnect cables
<b>Physical Size</b>	1.75 x 19 x 6" (1U rack mount) 4.45 x 48.3 x 15.2 cm
<b>Shipping Weight</b>	7 lbs. (3.2kg)
<b>Power Requirements</b>	115VAC 60Hz

## Block Diagram

