GL Communications Inc.

tScan16™ 16 Port T1/E1 (Rx)

tScan16™ Breakout Box Reference Guide

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Section 1.0 Operating Modes

The **tScan16 Breakout Box (Adapter Board)** is designed to be operated in one of two configurations: **BRIDGE** or **MONITOR**.

In **BRIDGE** configuration, the tScan16 taps into existing T1/E1 connections. Signals arriving on the T1/E1 jacks marked "***Equipment***" are routed through to the corresponding "***Line***" jacks, and signals arriving on the "***Line***" jacks are routed through to the corresponding "***Equipment***" jacks. The board uses bridging resistors to tap into the T1/E1 connections without interfering with the signals.

In **MONITOR** configuration, the tScan16 is simply connected to 16 T1/E1 monitor signals. T1/E1 signals arriving on "Equipment" jacks are not routed to "Line" jacks, neither are signals arriving on "Line" jacks routed to the "Equipment" jacks. Since the T1/E1 signals are already at monitor level, the tScan16 does not use the bridging resistors.

To set the tScan16 Breakout Box for BRIDGE configuration:

(1) On DIP switches S1A through S1H (all the lettered DIP switches), set each individual switch to ON.

(2) On DIP switches S2 through S5 (all the remaining DIP switches), set each individual switch to OFF.

(3) Set **Terminate** mode to "**Bridge**" in the tScan16™ Analyzer Software.

To set the tScan16 Breakout Box for MONITOR configuration:

(1) On DIP switches S1A through S1H (all the lettered DIP switches), set each individual switch to OFF.

(2) On DIP switches S2 through S5 (all the remaining DIP switches), set each individual switch to ON.

(3) Set **Terminate** mode to "**Monitor**" in the tScan16™ Analyzer Software.

Open the 4 screws on the break out box to get access to the Dip Switches. See figure below

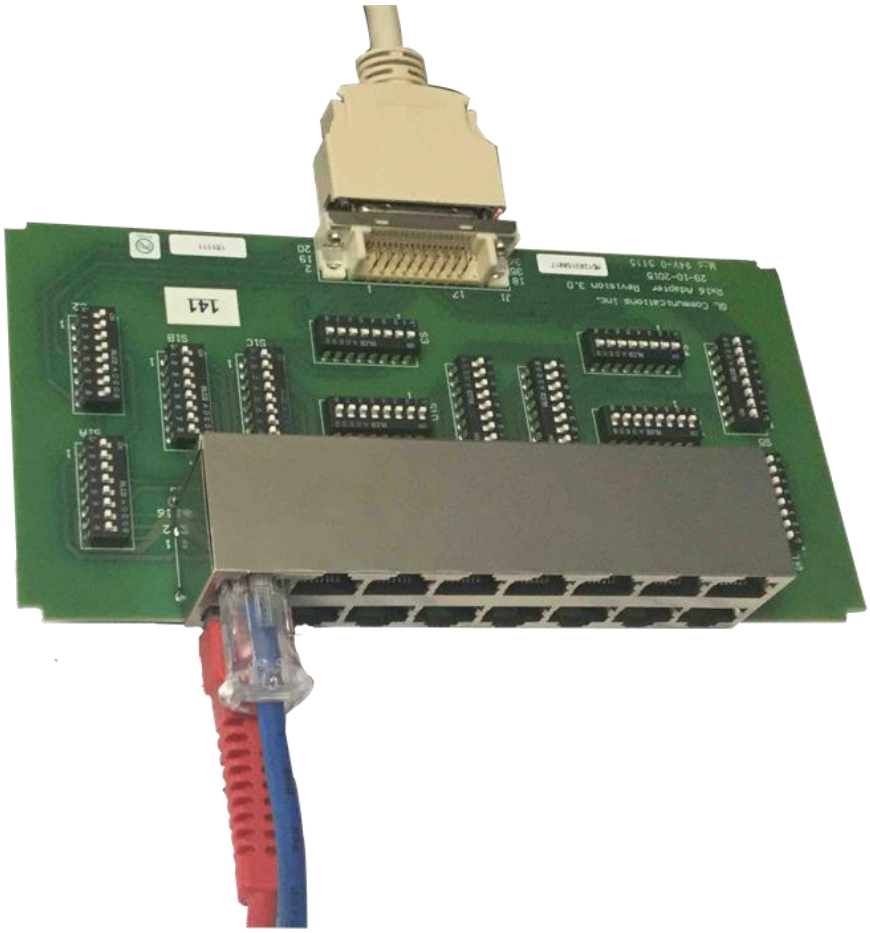

Figure 1: tScan16™ Breakout Box – DIP Switches

By default, when an tScan16 Breakout Box is initially assembled at GL, it is set to **BRIDGE** configuration. If customers require tScan16 to work with Monitor Ports in their network setup, then perform required changes as mentioned above.

Refer to schematics in the next section for more details.

Section 2.0 Schematics

2.1 tScan16™ Breakout Box - Top Level Diagram

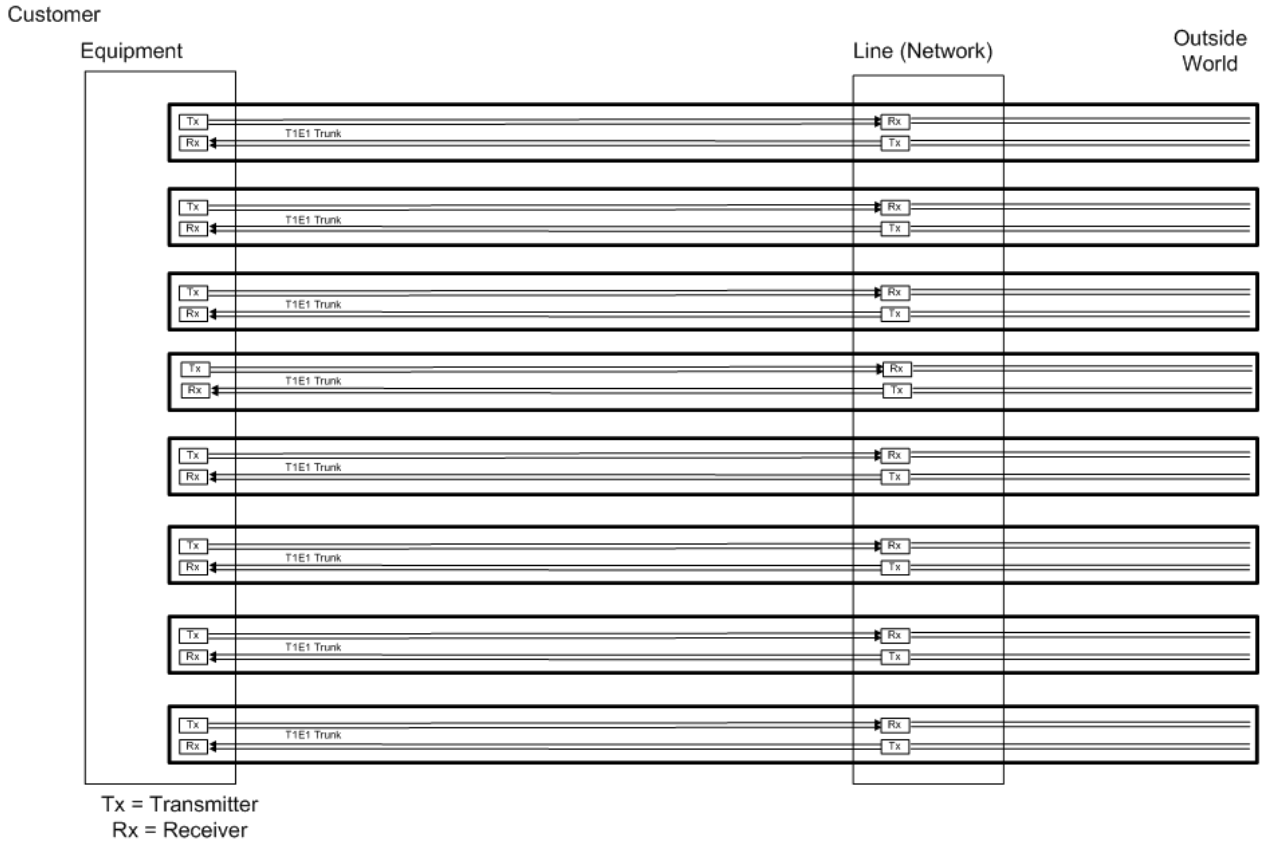

Figure 2: tScan16™ Breakout Box Top Level Diagram

The equipment transmits a signal to the line and eventually network (outside world). Likewise, the signal from the outside world enters and eventually ends up at the equipment. This is repeated for all trunks. Objective is to monitor the trunks non-intrusively. There are two primary ways to do this

2.2 Method 1 – Bridge Mode

The signals are routed through the tScan16 breakout box and non-intrusively monitored (through resistors). This is done for all the trunks, but not shown in the diagram below.

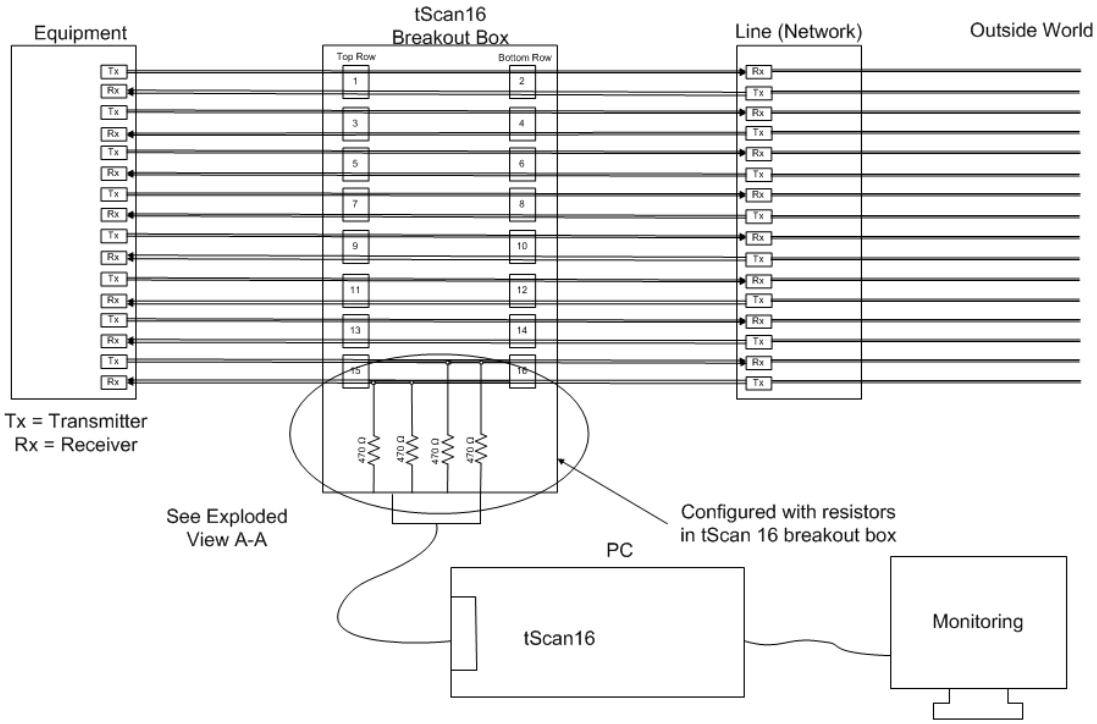

Figure 3: Monitoring Signals through Resistors

See exploded view for ports 15 and 16.

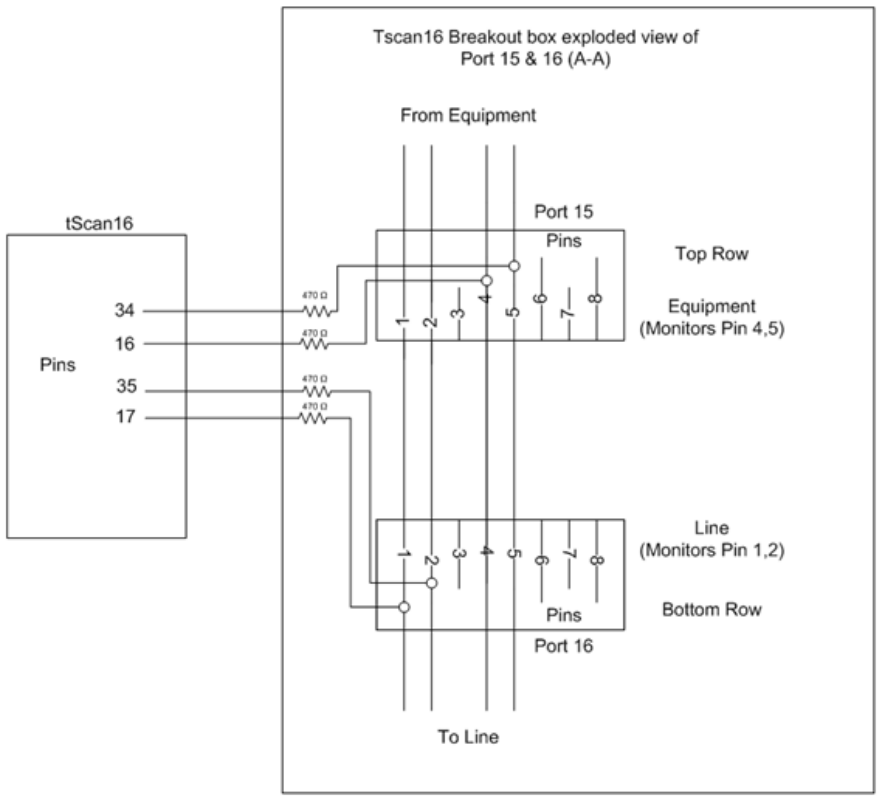

Figure 4: Exploded View for Ports 15 and 16

The diagram below shows the complete pin-to-pin connection between the breakout box and the tScan16™.

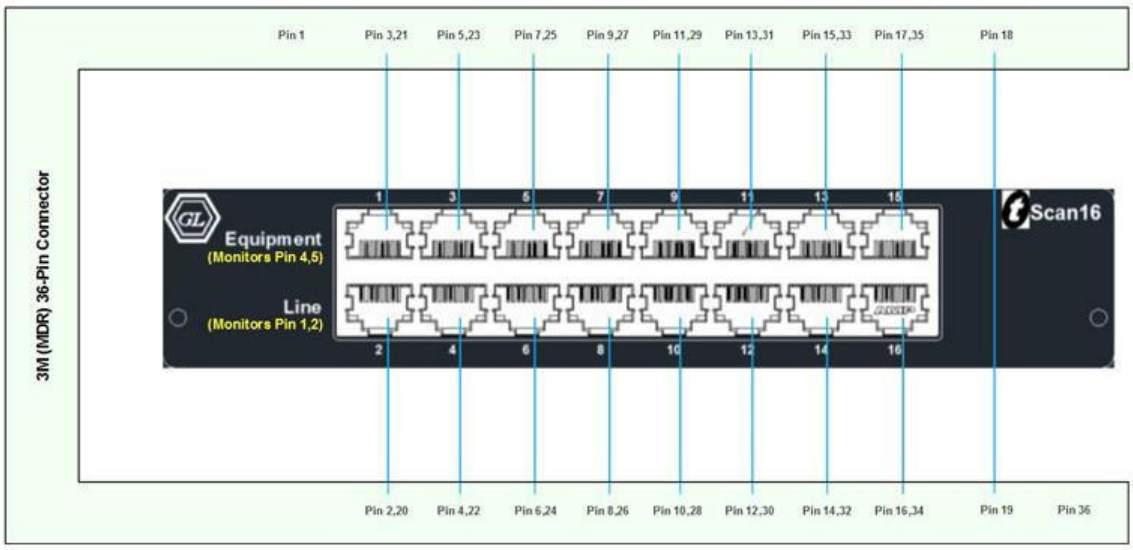

Figure 5: Pin-to-Pin Connection between the Breakout Box and the tScan16™

2.3 Method 2 – Monitor Mode

The tScan16™ breakout box connects to a DSX-1 patch panel which already have resistive monitor points. In this case, tScan16 is configured without resistors.

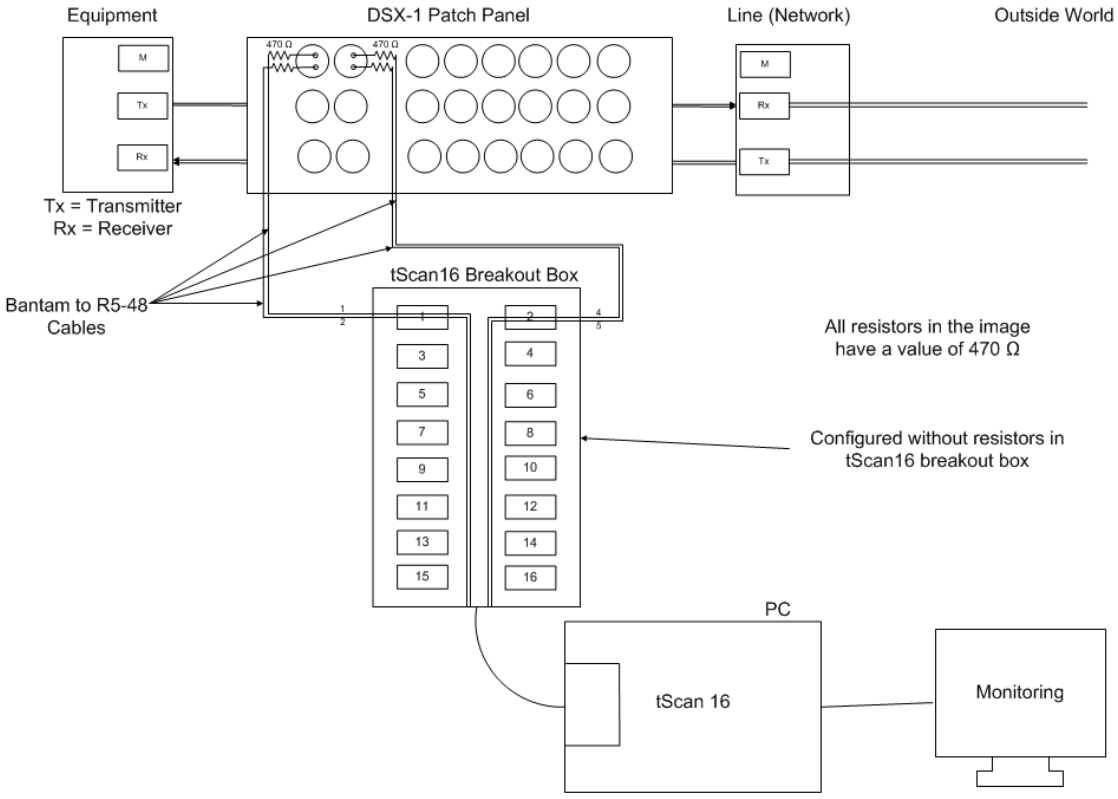

Figure 6: Breakout Box with DSX-1 Patch Panel