HI-8500 Family ARINC 429 Line Driver Demo Board Quick Start Guide

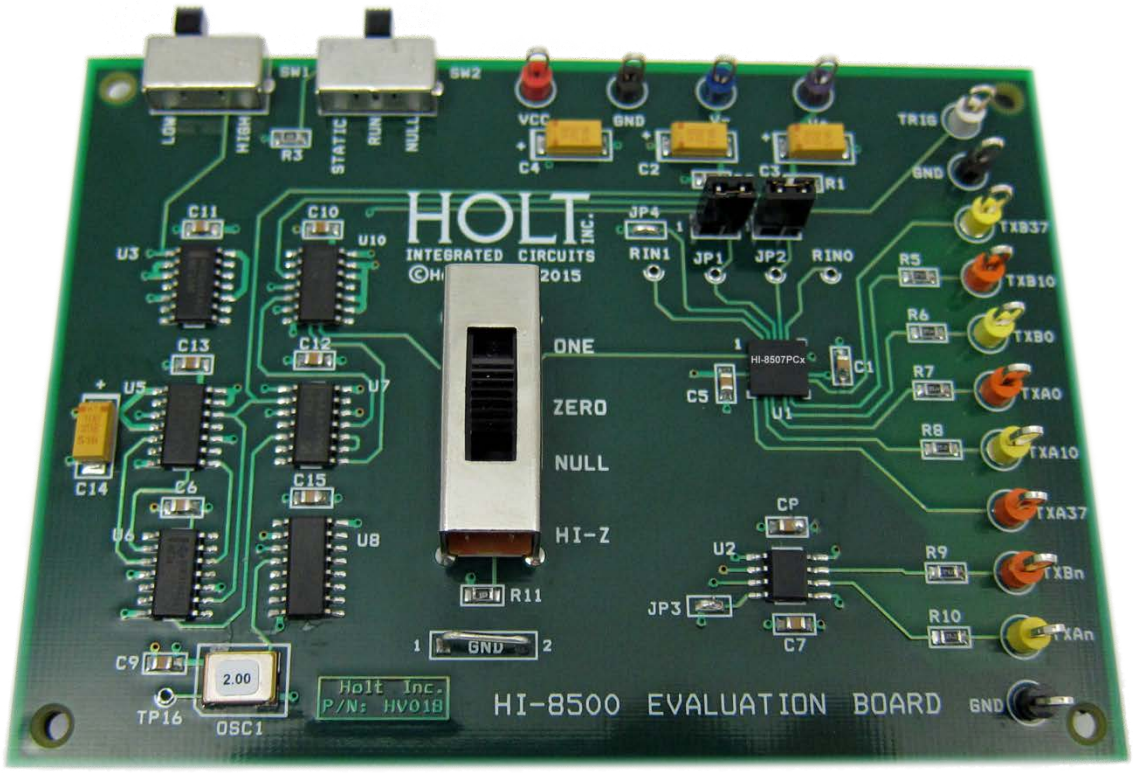
February 2017

REVISION HISTORY

Revision	Date	Description of Change
AN-8500, Rev. New	02-02-17	Initial Release

Introduction

The Holt HI-8500 demo board demonstrates the features of the HI-8500 ARINC 429 Line Driver Family. A built-in ARINC 429 pattern generator provides digital inputs to an HI-8501 and HI-8507. Slide switch SW1 selects between High-Speed and Low-Speed. Slide switches SW2 and SW3 are used to configure the HI-8507 for the output states provided in the data sheet: NULL, ONE State, Zero State and Tri-State.



HI-8500 Demo Board

Set Up

To demonstrate the board, external power supplies for bipolar ±12VDC and 3.3V or 5V logic power are needed. Connect the power supplies to the test points on the top of the board. The usable range for V+ and V- is actually 9.5-16.5V per the data sheet.

+12V to V+ TP2

-12V to V- TP1

3.3V or 5V to VCC TP3

GND TP4

To use the line drivers with an external ARINC 429 digital source, remove jumpers JP1 and JP2 and make the external digital connections to TX1 (on right side of J1) and TX2 (also on right side of J1) test points. Set slide switch SW1 to the speed position to match the speed of the external ARINC signal.

Demos:

1. Set desired speed, HIGH SPEED or LOW SPEED using slide switch SW1.
2. Configure slide switches SW2 and SW3 for the Demos shown below.

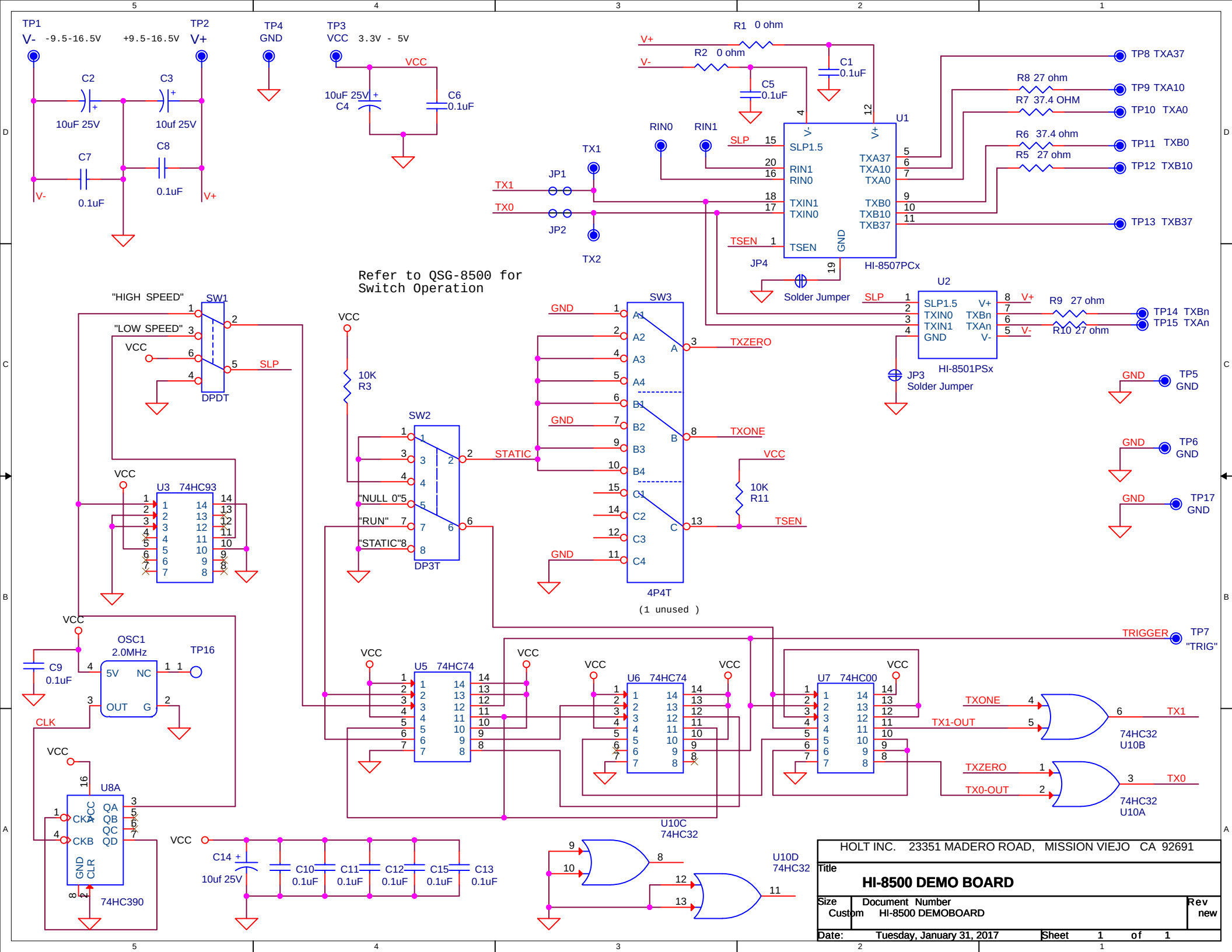
DEMO	SW2 Position	SW3 Position	TSEN	TXIN1	TXIN0	NOTES
RUN	RUN	Any	HIGH	DATA	DATA	Test Pattern Output
NULL	STATIC	NULL	HIGH	LOW	LOW	NULL (VDIFFN)
NULL	NULL	NULL	HIGH	HIGH	HIGH	NULL (VDIFFN)
STATIC ARINC 1 Output	STATIC	ONE	HIGH	HIGH	LOW	ARINC 1 (VDIFF1)
STATIC ARINC 0 Output	STATIC	ZERO	HIGH	LOW	HIGH	ARINC 0 (VDIFF0)
Hi-Z	STATIC	Hi-Z	LOW	HIGH	HIGH	Only: HI-8503,04,05,06 & 07

Notes:

When TSEN is low and both TXIN1 and TXIN0 are high, U1 is Tri-stated (Hi-Z).
When SLP is high, High Speed is selected (1.5 µs).

All Line Driver outputs are provided on Test Points with corresponding series resistors so the outputs are 37 Ω. Refer to the schematic for these connections. An oscilloscope trigger signal TRIG is provided on TP7.

RIN0 and RIN1 PCB pads connect to pins 20 and 16 of U1. On the HI-8507 these are connected internally through 50KΩ resistors to the TXIN0/1 digital inputs. These can be left open, pulled up or pulled down to ground, if desired. It is recommended to connect these to ground in a production design to hold Line Drivers in null-state during system start-up. Refer to the HI-8500 data sheet for the full specifications for the HI-8500 part family.



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