HOLT INC.
INTEGRATED CIRCUITS

QSG-145

ARINC 429 / SPI Demonstration board
Quick Start Guide

July 2010

Power sequencing

In order to power the ARINC SPI Demo board, jumpers JP1 and JP42 must be connected. These jumpers ensure that the HI-3585 and HI-3598 are connected to main VDD.

To prevent large currents during supply turn-on and turn-off, V+ should be applied before VDD and removed after VDD, always ensuring that V+ is the most positive supply. The V- supply is not critical and can be applied at any time.

Current board configuration

The HI-3585 and HI-3598 are currently configured with external series resistance on the analog driver and receivers for typical lightning protection applications. Jumpers on the back of the demo board can be reconfigured. Please see accompanying schematic for details.

Loaded program description

The SPI Demo board is currently loaded with a program that exercises ARINC transmission for the HI-3585 with the HI-3598 awaiting receipt. To achieve this, external connections are required from the AOUT/BOUT signals of the HI-3585 to any or all of the receivers on the HI-3598. The receiver of the HI-3585 is in self-test mode and will receive its own internal transmission.

The program excecutes as follows:
1) MR on HI-3585 and HI-3598
2) Status register read on HI-3585 and HI-3598
3) Control register write and read on HI-3585. If correct, LED1 is set.
4) Control register writes of channels 1-8 on HI-3598.
5) Control register reads of channels 1-8 on HI-3598. If channel 8 has a correct read, LED2 is set.
6) Transmitter FIFO write of one word to HI-3585
7) Immediate transmission from HI-3585
8) Status register read of HI-3585, if receiver FIFO contains data, data is read. If correct, LED3 is set.
9) Status register read of HI-3598, if any receiver FIFO contains data, data is read. If correct, LED4 is set.
10) Repeat steps 6-9

Code Warrior programming and debugging

If changes to the program are desired, Special Edition Codewarrior S12(X) V5.0 should be installed and started. A P&E USB BDM Multilink cable (USB-ML-12) should be attached to the unpowered board while the USB cable is disconnected from the computer. After the multilink cable is attached to the board, connect the USB cable to the computer then power-up the demo board.

The SPIDemoR1 folder contains all necessary C project files, and the SPIDemoR1.mcp file is the project to be loaded in Codewarrrior. For details on using Codewarrior software, go to www.Codewarrior.com

REVISION HISTORY

P/N	Rev	Date	Description of Change
QSG-145	NEW	06/09/09	Initial Release
	A	07/14/10	Added LED descriptions