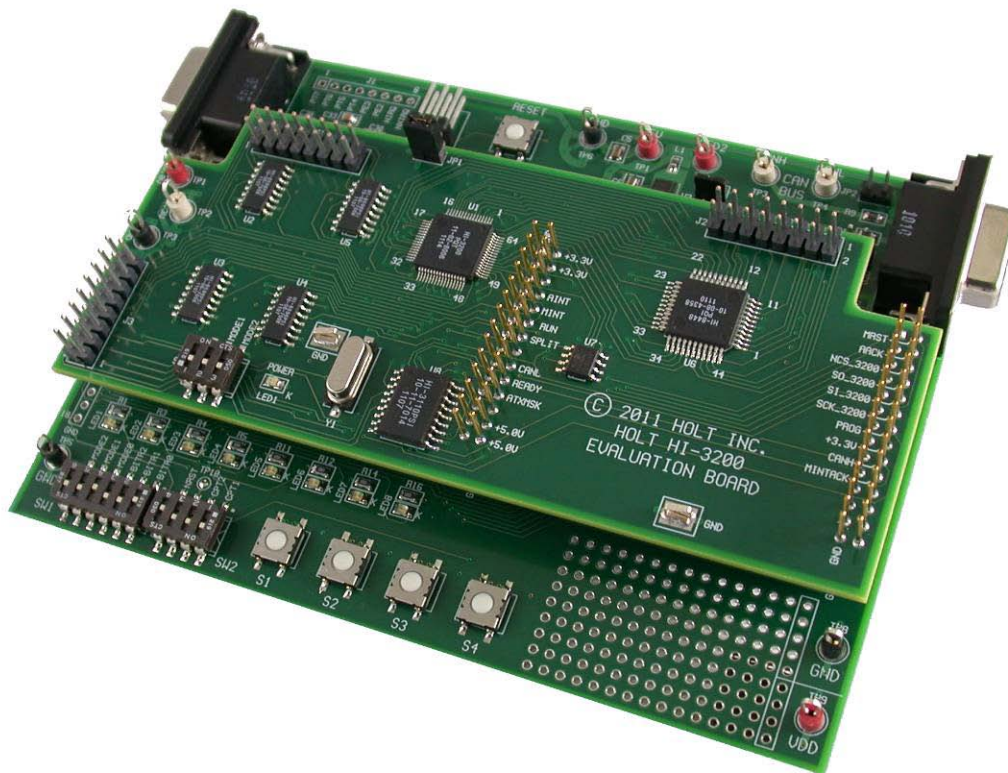


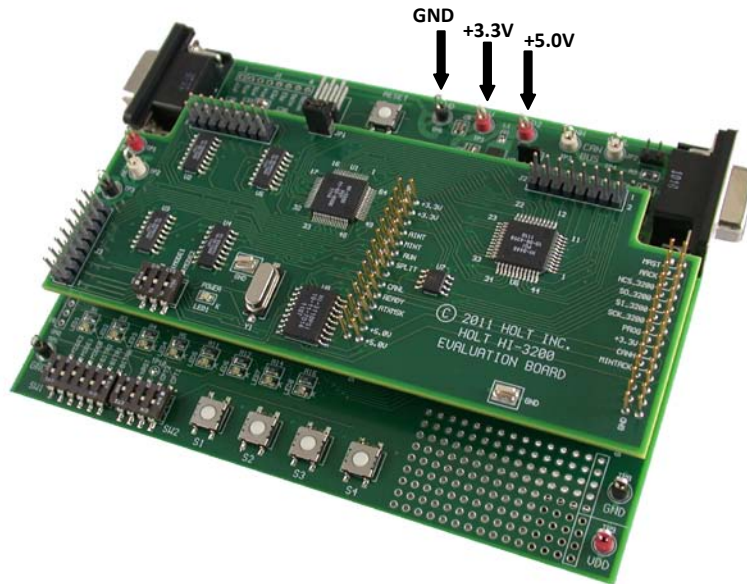
Introduction:

The Holt HI-3200 Data Management Evaluation Board demonstrates most of the features of the HI-3200 ARINC 429 – CAN Bus Bridge. The HI-3200 features 8 ARINC 429 receive channels, 4 ARINC 429 transmit channels, CAN Bus / ARINC 825 interface, programmable filters, schedulers and auto-initialization. A Freescale MC9S12XDT512 microcontroller communicates with the HI-3200 through the SPI interface. The main board “General Purpose SPI Evaluation Board” includes switches and LEDs to help navigate the operating modes and confirm data and status information. A Serial UART port allows debug and data messages to be sent to a PC using any terminal program such as HyperTerminal. The HI-3200 Evaluation Board is a daughter card that plugs on to the General Purpose SPI board via two 26 pin connectors.



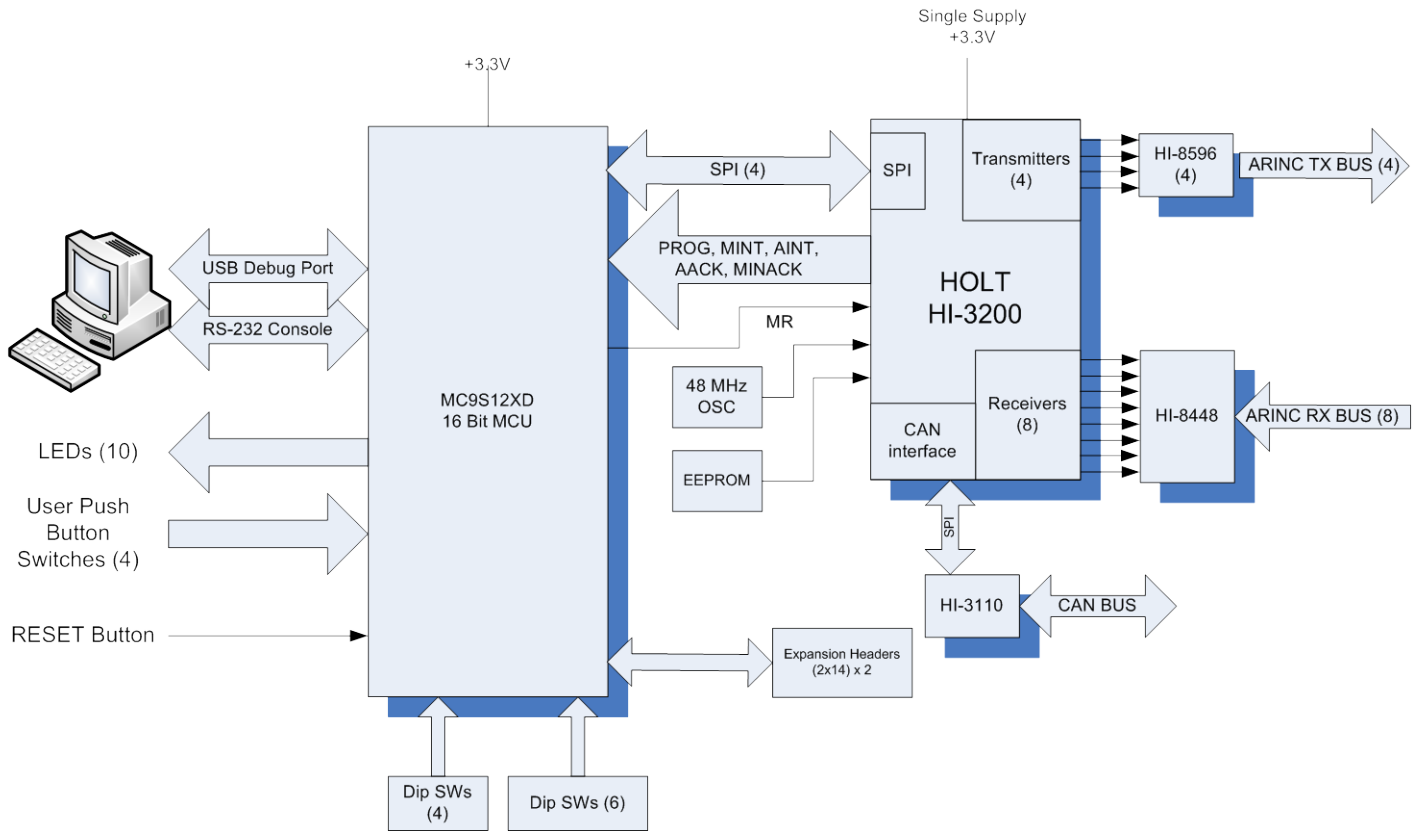
Initial Board Set up

1. Connect a +3.3V power supply to TP1 and ground to TP6. The HI-3200 uses +3.3V. Connect +5.0V to TP2, the HI-3110 used to transfer CAN frames, uses +5.0V. The HI-8596s on the daughter card used to generate ARINC bipolar differential signals only require a +3.3V supply.



2. Connect the RS-232 cable to the board and the PC Serial (COM) port. Some features are only available using commands from the console. To view ARINC 429/825 messages, and control registers, a terminal program such as Hyper-Terminal may be used. Configure the communication for 115200 Baud, 8 bits, No Parity, No handshaking.
3. To evaluate Example 5 described in the HI-3200 data sheet a connection between TX0 (J1-1,2) and RX0 (J2 – 2,1) must be made on the HI-3200 daughter card.
4. A user provided PE Micro “USB Multilink Interface” debug cable must be connected when using Freescale “Code Warrior” for project software changes, program debugging and MCU reprogramming. The USB Debug connector is used for downloading code to the board from the Freescale IDE and is not required for a standalone demo.
5. HI-3200 daughter card default jumper settings:
 - JP1 – closed
 - SW1-1,2,3 open

Demonstration example:



Power On Reset

For normal operation ensure SW2 – 4 (MRST) is in the open position otherwise the MCU will be held in the reset state. This MRST Dip switch allows easy interfacing of an external MCU to the HI-3200. Closing SW2-4 will keep the RESET pin low forcing the Freescale MCU GPIOs into a high impedance state. For normal operation keep this switch open and use the RESET button to reset the MCU during testing.

Main Board Jumpers

Some jumpers do not apply to the HI-3200 so they will typically be shown as NA.

- JP1 - NA
- JP2 - closed (CAN bus impedance)
- JP3 - VDD jumper to J5 VLOGIC for HI-3200 daughter card.
- JP4 - NA
- JP5 - closed (CAN bus impedance)
- JP7 - NA.

Mode Selection

The 8 examples to choose from when operating the HI-3200 Evaluation board are those identified in the HI-3200 data sheet (DS3200).

Mode2	Mode1	Mode0	Evaluation Examples
0	0	0	(1) ARINC 429 Data reception using on-chip RAM
0	0	1	(2) ARINC 429 Data reception using on-chip filters and FIFOs
0	1	0	(3) ARINC 429 Data transmission directly from CPU
0	1	1	(4) ARINC 429 Data transmission using on-chip schedulers
1	0	0	(5) ARINC 429 Data concentrator / Repeater
1	0	1	(6) ARINC 825 (CAN) bus monitor / Receiver
1	1	0	(7) ARINC 825 (CAN) Terminal / Data Manager
1	1	1	(8) ARINC 429 – ARINC 825 (CAN) Autonomous Bridge

(0=CLOSED, 1=OPEN)

OPT1 switch – not programmed

OPT2 switch - not programmed

Push Buttons SW1-SW4 - not programmed

Mode - 4 Example 5: ARINC 429 Data concentrator / Repeater

For this demonstration set the switches for **ARINC 429 Data concentrator / repeater (Mode- 4)** as follows:

- MODE2 - open.
- MODE1 - closed.
- MODE0 - closed.

After a power on reset, a message is sent to the Console Port displaying software revision and HI-3200 registers. Mode- 4 (example 5)is shown as:

```
Holt HI-3200 Demonstration Software Revision: X.X
```

```
Example 5: ARINC Data Concentrator / Repeater
```

```
Master Control Register 0xF8
```

```
ARINC Receiver Control Registers
```

- RX0 0x81
- RX1 0x81
- RX2 0x81
- RX3 0x81
- RX4 0x81
- RX5 0x81
- RX6 0x81
- RX7 0x81

```
ARINC Transmitter Control Registers
```

- TX0 0x80
- TX1 0x80
- TX2 0x80
- TX3 0x80

QSG - 3200

When RUN=1, TX0 begins transmitting one immediate ARINC word from its descriptor table at a rate defined by the repetition rate register. By connecting TX0 to any receiver, conditional statements will be met in descriptor tables for TX0-TX4 and subsequent data will be transmitted on all 4 channels.

To properly demonstrate the remaining 7 examples please refer to the user's guide for explanation on set-up and transmission conditions for the ARINC 429 receivers and CAN bus.

Conclusion:

This quick demo exercises 8 possible configurations described in the HI-3200 data sheet of how the device may be used. To learn and use more features of the demo program refer to the user's guide on the CD-ROM.

QSG - 3200

REVISION HISTORY

P/N	Rev	Date	Description of Change
QSG-3200	NEW	08/12/11	Initial Release
