Series 3D50 Development Kit
Quick Start Guide

Grayhill, Inc.

Introduction

These instructions describe how to connect the 3D50 Display to its development board and how to connect the power, Ethernet, CAN bus, and RS-232 serial bus. These instructions are applicable to doing software development for the 3D50 Display using either the Qt Development environment or the Grayhill VUI Builder© software.

Equipment from Grayhill Included with 3D50Dev-100 Kit

- 3D50VT-100 Display
- 3D50 Mounting Frame
- 3D50 Development stand
- 3D50 Breakout board
- 3D50 18-pin DT cable to connect 3D50 to Breakout Board
- DB9 cable to connect CAN adapter port to 3D50 Breakout Board
- 12VDC Universal Power Supply
- DB9 cable to connect PC serial port to 3D50 Breakout Board *
- USB to Ethernet adapter to provide Ethernet port on 3D50 *
- Ethernet cable to connect PC Ethernet port to 3D50 Ethernet adapter *
 * These items are only provided on kits shipped after January 1, 2016

Hardware Setup Instructions

Note that the color of the cables shown in the pictures below may be different than the color of the cables provided.
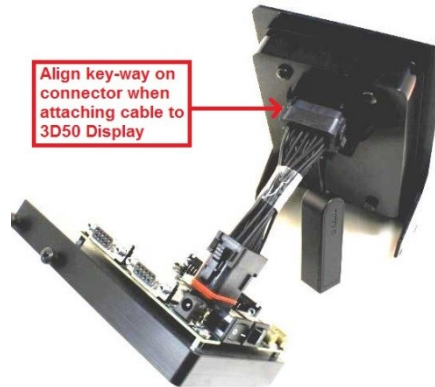
1. Mount the 3D50 Display to the mounting frame using the four provided screws
2. Open the rubber cover on the back of the 3D50 display and plug in the USB to Ethernet adapter.
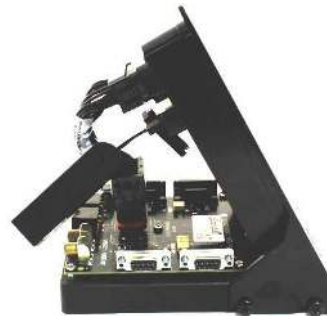
3. Connect the 18-pin DT cable to Breakout Board. Be sure to match Pin 1 on the cable to Pin 1 on the Breakout Board.

Match Pin 1 on cable to Pin 1 on board
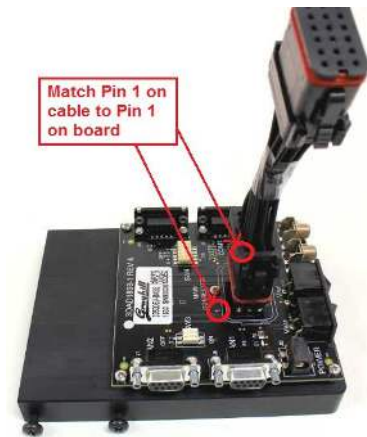
4. Connect 18-pin DT cable to back of the 3D50 Display. Note that this connector is keyed.

Align key-way on connector when attaching cable to 3D50 Display

5. Mount the frame with the 3D50 Display to the Breakout Board.

6. Connect Ethernet cable to USB to Ethernet adapter.

7. Connect DB9 serial cable to Breakout Board COM 1 port.
8. Attach other end of this cable to the serial port on the development PC.

3D50 Development Kit Hardware Setup Instructions

9. Connect the power cable to the Breakout Board.

10. Attach the other DB9 cable to the CAN 1 port on the Breakout Board.
11. Attach the other end of this cable to the USB to CAN adapter.

PC to CAN-bus Interface

The Series 3D50 Display device has two CAN bus interfaces that can be used for various purposes. The Grayhill VUI Builder© software communicates with the 3D50 Display via either CAN bus. The VUI Builder© software tool currently supports using a GridConnect USB to CAN adapter which requires adapter software from GridConnect. The GridConnect software also provides tools for monitoring the CAN bus and sending messages on the CAN bus without using the VUI Builder© software. The GridConnect software can be installed on the development PC as shown below:

1. Insert the disc or download the software from www.gridconnect.com and install the PCAN USB software.

2. A copy of the Dynamic Link Library (PCANBasic.DLL) provided with the USB PCAN adapter needs to be saved in the same folder as the VUI Builder executable. Make sure that the 32-bit version is used as opposed to the 64-bit version of the DLL. (Note: The PCANBasic.dll file can be found in the folder "\PreRelease\PCAN-Basic v3.4 (CAN-FD Support)\Win32" on the disc. It's also available on the GridConnect web site under "Support -> Product Packages -> PCAN-USB package". Then look in the download file "usb.zip" under the folder "PCAN-Basic API\Win32\".)