3.3. Configuration Options

The following list summarizes the main files which may be edited to change the configuration options of the HI-6120 / HI-6121. Each file is sufficiently annotated to fully explain how to make changes. Additional information is also provided in the User's Guide contained on the CD-ROM.

`Holt HI6120 Demo` (or `Holt HI6121 Demo`) folder
- `Source` folder
  - `612x_initialization.c`
- `Include` folder
  - `612x_initialization.h`

3.3.1. 612x_initialization.h

`#define HOST_BUS_INTERFACE`
Set host bus interface for HI-6120 or HI-6121

`#define SUPPORT_BROADCAST`
Set Broadcast commands (RT Address 31) valid or invalid.
`#define Notice 2`
Segregate broadcast messages

`#define ILLEGAL_CMD_DETECT`
Enable "Illegal Command Detection". If Illegal Command Detection is enabled, the `illegal_table[256]` array in `612x_initialization.c` may be edited to user-define illegal commands. More details on this are contained in the User's Guide.

3.3.2. 612x_initialization.C

This is the main program which can be used to:

a. Configure host bus interfaces for HI-6120 or HI-6121
b. Write Descriptor and Illegalization Tables
c. Write to external EEPROM to perform auto-initialization sequence
d. Pre-load transmit data
e. Exercise memory buffer modes

Details on editing each subroutine are provided in the User's Guide.

HOLT INC.
INTEGRATED CIRCUITS

23351 Madero,
Mission Viejo.
CA 92691. USA.
Tel: + 1 949 859 8800
Fax: + 1 949 859 9643
Email: sales@holtic.com
Web: www.holtic.com

HI-6120 / HI-6121
MIL-STD-1553 Remote Terminal Developer's Kit

Quick Start Guide

1. INTRODUCTION

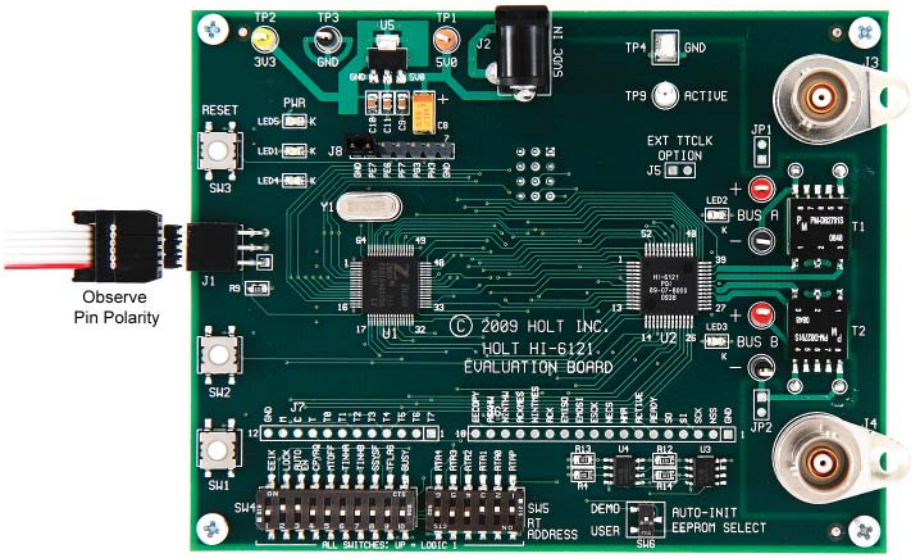
The **HI-6120 / HI-6121 Remote Terminal Developer's Kit** is a reference MIL-STD-1553B Remote Terminal design. It contains Holt's single-chip remote terminal IC (HI-6120 or HI-6121) and bus interface transformers, enabling connection to a MIL-STD-1553 bus. The HI-6120 / HI-6121 interfaces to an external Zilog® ZNEO™ microprocessor which can be programmed over a USB using the supplied Zilog® "Smart Cable". The board also includes two external flash EEPROM devices which can be used for automatic initialization.

This guide gives a brief summary of how to get up and running quickly. Additional supporting material and software are provided in the included CD-ROM.

2. KIT CONTENTS

The kit includes the following hardware:

- This guide.
- HI-6120 or HI-6121 Development Board (order each separately).
- Zilog® USB "Smart Cable" with Zilog® driver installation instructions.
- 5V DC external power supply with universal AC mains adapter.
- CD ROM containing additional support documentation and software.



3. MODES OF OPERATION

The kit supports two modes of operation, a quick start Demonstration Mode and a Configuration Mode for more advanced users.

3.1. Demonstration Mode Set-up

The purpose of the Demonstration Mode is to allow the user to plug into a MIL-STD-1553 bus and respond automatically to valid commands.

1. Connect the board to an existing MIL-STD-1553 bus with active bus controller.
2. Set LOCK = "1" (UP position) and AUTOEN = "1" using DIP switch SW4.
3. Set desired RT address bits and correct parity using DIP switch SW5.
4. Select the desired automatic response mode by setting DIP switch SW6. This will auto-initialize the terminal from one of the on-board EEPROM devices.

   Set SW6 to "DEMO" setting: This will enable the broadcast command option and Illegal Command Detection[1].

   Set SW6 to "USER" setting: This will disable the broadcast command option and Illegal Command Detection. In this case the terminal will respond "clear status" to all valid commands and ignore invalid commands, including broadcast.

   NOTE: The "DEMO" setting may also be initialized from the external Zilog® host microprocessor by setting AUTOEN = "0" in step 2 and skipping step 4.
5. Power up the board by connecting the supplied external 5V power supply. If initializing from the host, LED1 will flash green at reset. If initializing from the EEPROM, LED4 will flash red at reset.

3.2. Configuration Mode Set-up

Configuration Mode is intended for advanced users who wish to manually configure the HI-6120 / HI-6121. The kit comes with annotated C files which can easily be edited to custom-configure the HI-6120 / HI-6121 using the on-board Zilog® ZNEO™ microprocessor. The C files may also be used as templates for customer designs using other microprocessors.

1. Go to http://www.zilog.com.
2. Click ***Tools and Software*** → ***Software Downloads***. Download Zilog® Developer Studio II (ZDS II) for ZNEO™ Z16F.
3. Install the ZDS II software onto a Windows computer using default settings.
4. Copy the `Holt HI6120 Demo` (or `Holt HI6121 Demo`) folder and subfolders from the included CD-ROM to the local hard drive. Each C source file in the `Source` directory has a corresponding header (.h) file in the `Include` directory.
5. Open ZDS II. Click ***File*** → ***Open Project,*** navigate to the `Source` subfolder, select project file `Zneo_6120_demo.zdsproj` and open it.
6. Click ***Rebuild All*** and the project should compile without errors or warnings.
7. Set LOCK = "0" (DOWN position), CPYREQ = "0" and AUTOEN = "0" using DIP switch SW4.
8. Set desired RT address bits and correct parity using DIP switch SW5.
9. Connect Zilog® Smart Cable to USB port. This "plug and play" device should be recognized by Windows and declared ready to use. Apply power to the HI-612x demo board. Observing the ribbon cable pin 1 stripe shown in the photo, plug the Smart Cable ribbon cable into the board using the supplied male-male adapter.
10. Click ***Debug*** → ***Reset*** and the Zilog® debugger should successfully "Connect to Target" and download the program into the processor flash memory. The window showing `main.c` should show a yellow program counter arrow at the top of `main.c`.

1 The following commands will be illegalized: Undefined Mode Codes, Reserved Mode Codes, Broadcast Transmit Subaddress Commands, Broadcast Transmit Mode Codes 0,2,16,18,19, Transmit Mode Codes 0,3 and all Transmit Subaddress Commands for Subaddress 17.