

### General Description

This module is build to control the human interface of the Industrial Reference Platform Hpe\_IRP. User can define the activity level of buttons, switches and LEDs.

The HMI has one shared interrupt signal with two interrupt registers, one for the buttons and one for the switches. Two corresponding interrupt mask registers are available. Via the mask registers it is possible to mask interrupts not currently of interest and to determine the interrupt trigger condition for the buttons and switches.

The control register is used to turn the interrupts of the buttons and switches on and off.

Manual: GERA-HMI-MV2 Manual V1.1.pdf

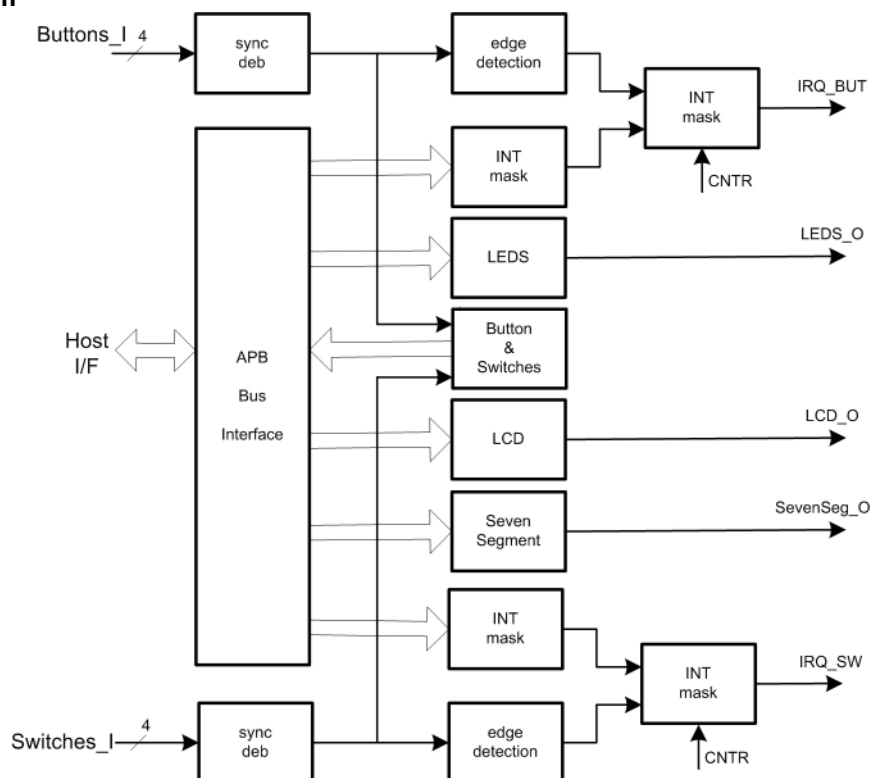
### Features

- AMBA 2 APB Interface
- HD44780 LCD Display Controller access for 2 \* 20 character LCD
- Buttons and Switches inputs
- Seven Segment Displays and LEDs outputs
- High and Low Active Signal Selection
- Input Signal synchronization and debouncing

### Functional Description

The core has an AMBA APB bus communication interface and includes programmable registers that can be modified depending on the desired functionality.

### Block Diagram



### Device Utilisation & Performance

Technology	Device	Utilization (Average out of some different applications)	Performance
Stratix III (Altera)	EP3SL150F780	Logic Elements: 243 Block Memory: 0	100 MHz AHB bus clock