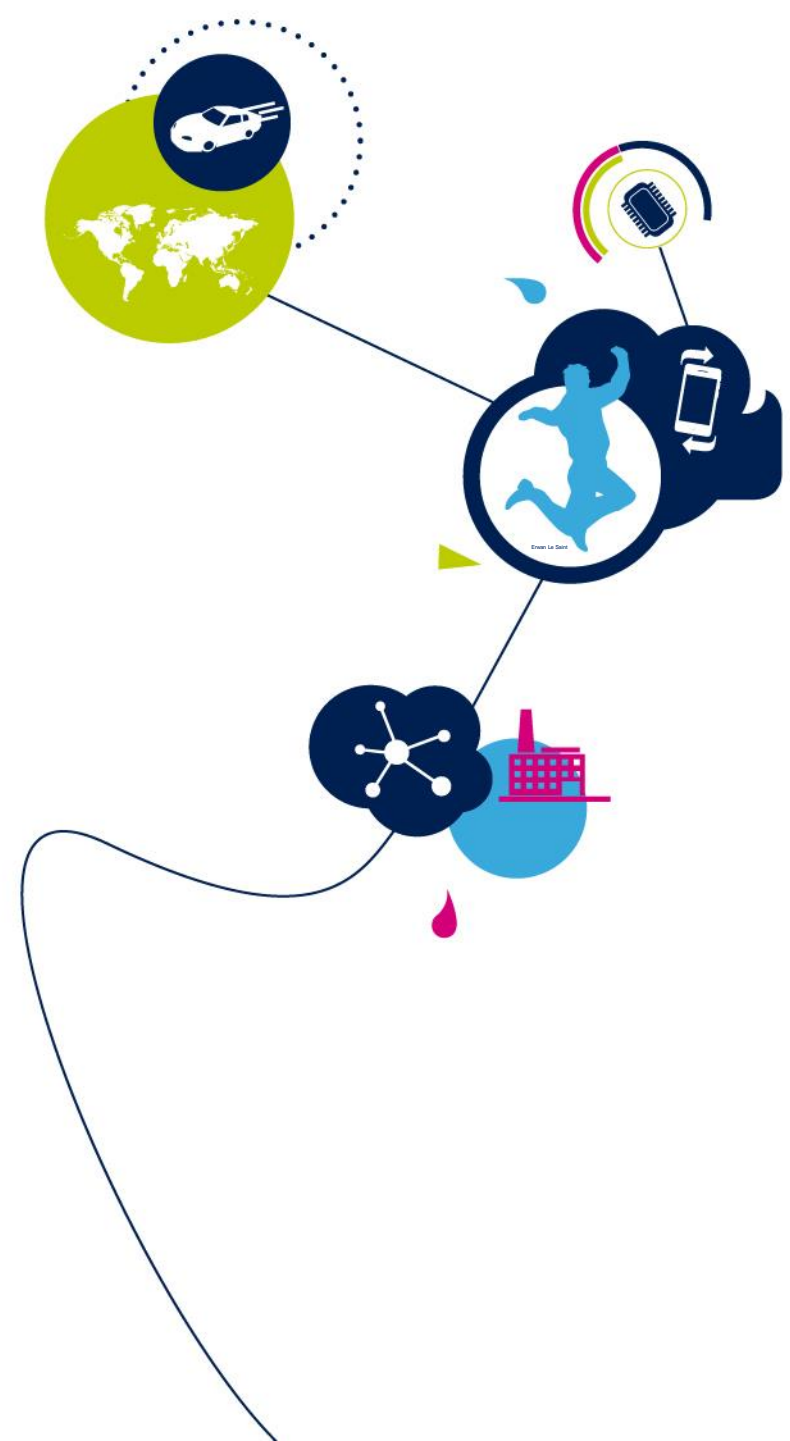
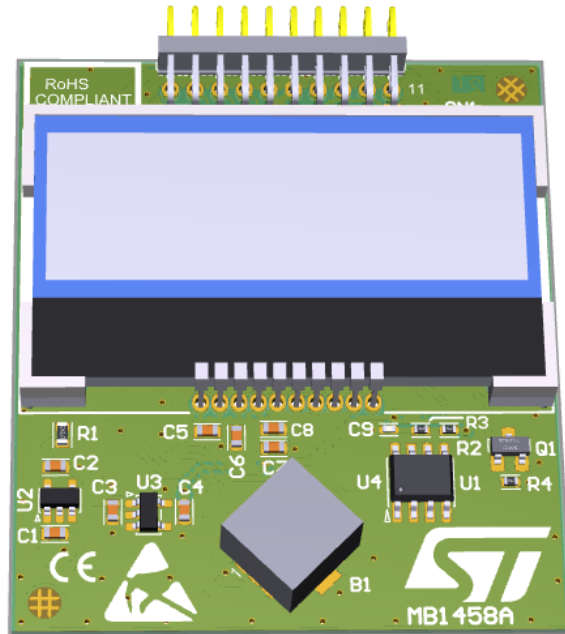


Human Interface AddOn

2nd Jan 2020

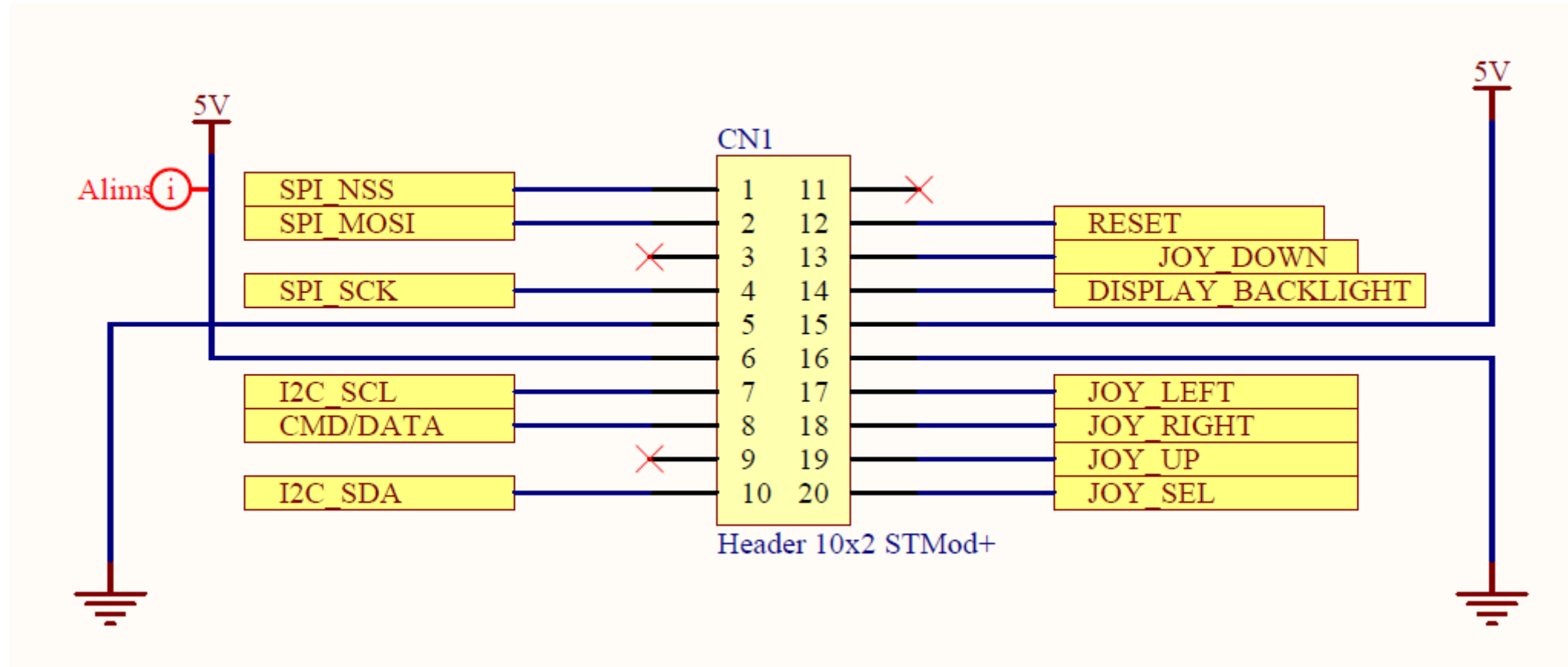
X slides, ~ X minutes

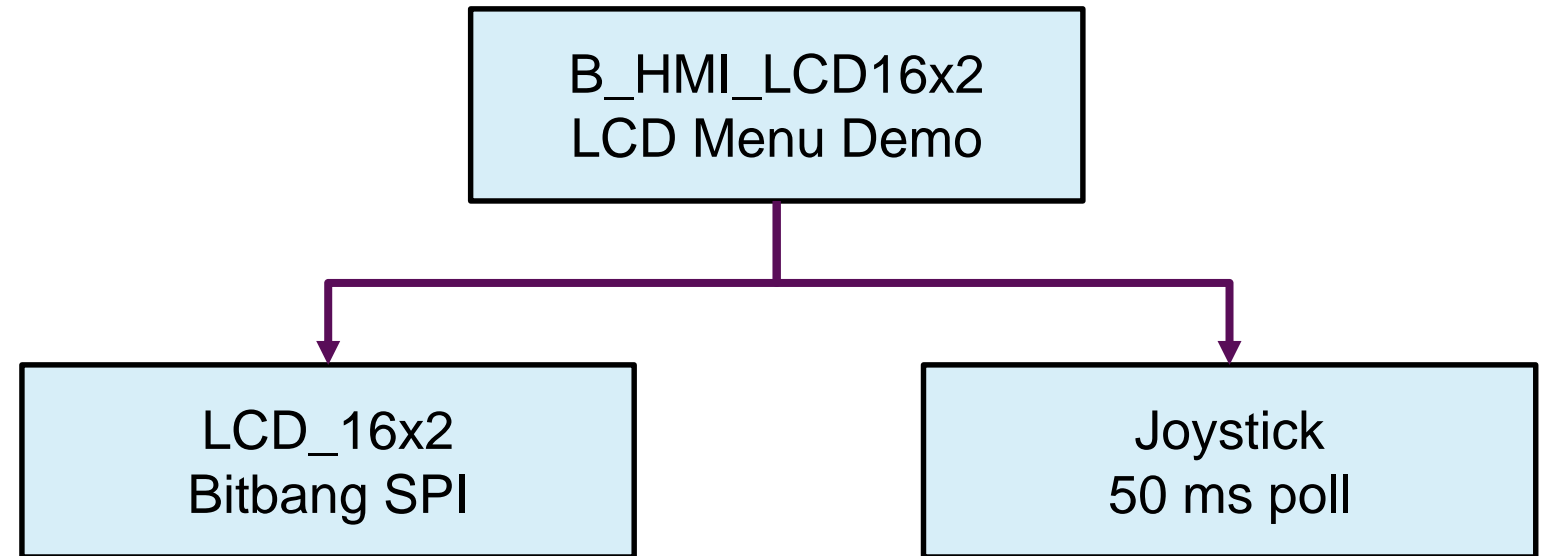
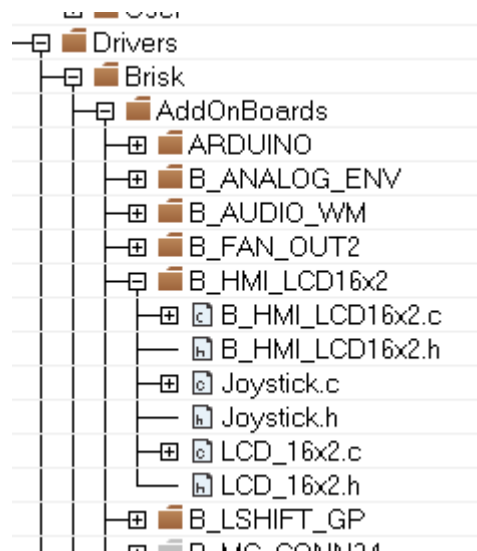




***The String ID shows up on the LCD
Push in the rockswitch to enter the menu***

- Features:
 - LCD 16x2 char (SPI) w/ BL control
Ref: NHD-C0216CZ-FSW-FBW-3V3
 - 5 way rock switch
 - 32 kbyte user EEPROM
- Prototype
 - 150 pcs produced
- Plug and Play:
 - Int ID: B_HMI_LCD16x2_BOARD
 - String ID: "B-HMI-LCD16x2"





Joystick :

Uses 5 GPIO scanned every 50ms from main loop

For each key, SW implements:

Debounce

Key pressed event

Key repetition with 2 speeds for autoincrement/decrement

Hot Key event when pressed for long time (service event)

Joystick
50 ms poll

LCD_16x2:

16 x 2 ASCII Character type transflexive display
SW Emulated SPI by GPIO (only write to display supported)
Backlight control by GPIO

User clear and draw the new screen content in MCU RAM
Then MCU push the whole screen content to the display

Function to grep:

```
void LCD_16x2_Printf(LCD_16x2_t* pL, const char *str,...);
```

Note:

The formatting of str is customized for embeded needs
The speed of SPI depends on SYSCLK frequency

LCD_16x2
Bitbang SPI