

Instructions for setting up ConnectEVE 3D printer display board

Provided steps are tested with Marlin 2.1.1 and RAMPS 1.4 board

1. In **Marlin\Configuration.h** uncomment line `#define TOUCH_UI_FTDI_EVE` (disable/comment any other display support), line 3008.

```
3005 // Touch UI for FTDI EVE (FT800/FT810) displays
3006 // See Configuration_adv.h for all configuration options.
3007 //
3008 #define TOUCH_UI_FTDI_EVE
```

2. In **Marlin\Configuration_adv.h** define new board: `#define OPTOLAB_CONNECT_EVE`, line 1893.

```
1883 #if ENABLED(TOUCH_UI_FTDI_EVE)
1884 // Display board used
1885 // #define LCD_FTDI_VM800B35A // FTDI 3.5" with FT800 (320x240)
1886 // #define LCD_4DSYSTEMS_4DLCD_FT843 // 4D Systems 4.3" (480x272)
1887 // #define LCD_HAOYU_FT800CB // Haoyu with 4.3" or 5" (480x272)
1888 // #define LCD_HAOYU_FT810CB // Haoyu with 5" (800x480)
1889 // #define LCD_LULZBOT_CLCD_UI // LulzBot Color LCD UI
1890 // #define LCD_FYSETC_TFT81050 // FYSETC with 5" (800x480)
1891 // #define LCD_EVE3_50G // Matrix Orbital 5.0", 800x480, BT815
1892 // #define LCD_EVE2_50G // Matrix Orbital 5.0", 800x480, FT813
1893 #define OPTOLAB_CONNECT_EVE
1894 // Correct the resolution if not using the stock TFT panel.
1895 // #define TOUCH_UI_320x240
1896 // #define TOUCH_UI_480x272
1897 // #define TOUCH_UI_800x480
```

3. In **Marlin\Configuration_adv.h** enable UTF8 and Western charset, lines 1930 & 1934.

```
1928 // UTF8 processing and rendering.
1929 // Unsupported characters are shown as '?'.
1930 #define TOUCH_UI_USE_UTF8
1931 #if ENABLED(TOUCH_UI_USE_UTF8)
1932 // Western accents support. These accented characters use
1933 // combined bitmaps and require relatively little storage.
1934 #define TOUCH_UI_UTF8_WESTERN_CHARSET
1935 #if ENABLED(TOUCH_UI_UTF8_WESTERN_CHARSET)
1936 // Additional character groups. These characters require
1937 // full bitmaps and take up considerable storage:
1938 // #define TOUCH_UI_UTF8_SUPERSCRIPTS // ² ³
1939 // #define TOUCH_UI_UTF8_COPYRIGHT // © ®
1940 // #define TOUCH_UI_UTF8_GERMANIC // ß
1941 // #define TOUCH_UI_UTF8_SCANDINAVIAN // Æ Ð Ø Þ æ ð ø þ
1942 // #define TOUCH_UI_UTF8_PUNCTUATION // « » ¿ ¡
1943 // #define TOUCH_UI_UTF8_CURRENCY // ¢ £ ¤ ¥
1944 // #define TOUCH_UI_UTF8_ORDINALS // 1ª 2ª
1945 // #define TOUCH_UI_UTF8_MATHEMATICS // ± × ÷
1946 // #define TOUCH_UI_UTF8_FRACTIONS // ¼ ½ ¾
1947 // #define TOUCH_UI_UTF8_SYMBOLS // µ ¶ · § ~
1948 #endif
```

4. In **Marlin\src\lcd\extui\ftdi_eve_touch_ui\ftdi_eve_lib\basic\boards.h** add specification (display configuration) for new board (`OPTOLAB_CONNECT_EVE`), lines 244-259.

```

243     }
244 #elif defined(OPTOLAB_CONNECT_EVE)
245     #if !HAS_RESOLUTION
246         #define TOUCH_UI_480x272
247     #endif
248 #ifndef FTDI_API_LEVEL
249     #define FTDI_API_LEVEL      800
250 #endif
251 namespace FTDI {
252     IS_FT800
253     constexpr bool Use_Crystal      = true; // 0 = use internal oscillator, 1 = module has a crystal populated
254     constexpr bool GPIO_0_Audio_Enable = false;
255     constexpr bool GPIO_1_Audio_Shutdown = false;
256     constexpr uint8_t Swizzle      = 0;
257     constexpr uint8_t CSpread      = 1;
258     constexpr uint16_t touch_threshold = 1800; /* touch-sensitivity */
259 }
260 #else
261     #error "Unknown or no TOUCH_UI_FTDI_EVE board specified. To add a new board, modify this file."
262 #endif
263
264 #endif

```

5. In **Marlin\src\lcd\extui\ftdi_eve_touch_ui\pin_mappings.h** add pin configuration for new board (OPTOLAB_CONNECT_EVE), lines 145-151. Notice: SD card uses hardware SPI pins same as standard display boards for RAMPS

```

145 #elif ENABLED(OPTOLAB_CONNECT_EVE)
146     #define CLCD_USE_SOFT_SPI
147     #define CLCD_MOD_RESET      25
148     #define CLCD_SPI_CS        16
149     #define CLCD_SOFT_SPI_MOSI  29
150     #define CLCD_SOFT_SPI_MISO  27
151     #define CLCD_SOFT_SPI_SCLK  23
152 #endif

```

6. In **Marlin\src\lcd\extui\ftdi_eve_touch_ui\theme\colors.h** configure color theme for new display board (OPTOLAB_CONNECT_EVE)
7. In **Marlin\src\lcd\extui\ftdi_eve_touch_ui\generic\status_screen.cpp** add following section for OPTOLAB_CONNECT_EVE board, lines 422-432:

```

419 switch (tag) {
420     #if ENABLED(SDSUPPORT)
421     case 3:
422         #if ENABLED(OPTOLAB_CONNECT_EVE)
423             CardReader::release();
424             CardReader::mount();
425             if(!CardReader::isMounted()){
426                 setStatusMessage("(Re)insert Card and try again");
427                 GOTO_SCREEN(StatusScreen);
428             }
429         #else
430             setStatusMessage("Card successfully mounted");
431             GOTO_SCREEN(FileScreen);
432         #endif
433         break;
434     #else
435         GOTO_SCREEN(FileScreen);
436     #endif

```

Notice: This board (OPTOLAB_CONNECT_EVE) does not have SD card detect pin, so this part of the code enables SD card mount if card is insert after power up.

