Non-Blocking Touch Panel

The Mikromedia Plus for STM32 board is well designed and has many useful peripherals on board. A key feature of this board is the 480 x 272 LCD screen with an integral Touch Panel. The supplied library routines for driving the LCD and Touch panel work very well especially when used together with Visual_TFT to design the screen objects. However, when USB is enabled at the same time, it hangs up frequently. USB is an essential peripheral and being able to use it together with the LCD/Touch panel is absolutely a must in any application involving this board.

I got so frustrated debugging microE code that I decided to write my own I2C1 and STMPE610 drivers. I had to maintain compatibility with Visual_TFT but provide non-blocking functions for the Touch Panel. This code is the result of that effort.

After running Visual_TFT to generate the code, a few modifications are required in order to use my drivers. These are all in module **<Project Name>driver.c** generated by Visual_TFT.

1. Add the line extern char STMPE_State; to the bottom of //Global variables
2. Comment out line STMPE610_SetSize(CurrentScreen->Width, CurrentScreen->Height); in function void DrawScreen(TScreen *aScreen).
3. In function void Init_MCU(), comment out everything from // Place your code here through I2C1_Init_Advanced(400000, &_GPIO_MODULE_I2C1_PB67);
4. In function Start_TP() comment out everything from if (STMPE610_Config() == STMPE610_OK) { through STMPE610_SetCalibrationConsts(&TPConstsStruct);
5. At the bottom of the code in Start_TP() add the line STMPE_State = 1;
6. In Main() remove any extra Check_TP(); statements generated by Visual_TFT.
7. The PLL settings must also be changed. In the main menu of mikroC, click on Project, Edit Projects…, Load Scheme, then select STM32F407ZG_PLL_25_to_120MHZ_USB.cfgsch and click Open. Compile the code and load into MM Plus for STM32 board.

This procedure has to be repeated each time you run Visual_TFT to make any modifications since it wipes out any editing in the driver module.

NOTE: This code should also work with the new mikromedia 7 for STM32F4 which uses the newer STMPE811 chip.

I have also included 2 programs. Serial Utility is for communicating with the UART6 on the board. USB Utility is for communicating with the USB port on the board. They can be opened at the same time. If you want the source code for these two programs, send me a request by e-mail.