

Antoine Wajntraub (/s/profile/0050X000007voE9QAI) (Customer) to ST Community (/s/profile/0050X000007vh8GQAQ) (Employee): asked a question. Edited by STM Community July 31, 2018 at 4:40 PM (/s/question/0D50X00009Xke2hSAB/stm32f417-xpt2046-touch-screen)

STM32F417 + XPT2046 (touch screen)

Posted on February 23, 2017 at 22:57

Hello evervone!

To give you some context: I have a entire project generated by CubeMX on STM32F417, and now, I'm trying to make my touch screen work with it, trough SPI. So far, I can get the IRQ signal, so I detect when I have a touch, but I'm also trying to have the position of the touch, and this is the moment I have a problem.

Every pins are initialized by the code generated by CubeMX, and it's the same for my SPI_Handle.

I saw 'many' examples on the web, most of them they communicate with the functions SPI_I2S_Send/ReceiveData that is normally in the STM32F4XX_StdPeriph_Driver library. But CubeMX didn't generated this library, instead I have the HAL library, with the SPI file, and as I think that CubeMX is not bad, I think that if I don't have the first one, it's because I don't need it. Anyway, I'm trying to make it work with what I have, but I always got the same data, which is not good... Here is the interesting part of my code: void Touch_GetTouch(uint16_t * xPos, uint16_t * yPos)

```
{
  uint32_t avgX = 0;
  uint32_t avgY = 0;
  float calX, calY;
  TOUCH CS RESET:
  avgX = Touch_Read(CHX); //0x90
  avgY = Touch_ReadY(CHY); //0xD0
  TOUCH_CS_SET;
  calX = aX * avgX + bX * avgY + dX;
  calY = aY * avgX + bY * avgY + dY;
  *xPos = calX;
  *yPos = calY;
}
uint16_t Touch_Read(uint8_t cmd)
{
  Touch_Lock();
  Touch_Write(cmd);
  LCD Delay(10);
  Touch_Unlock();
  return Touch Read();
uint16 t Touch Read(void)
{
  uint32_t buf;
  HAL_StatusTypeDef res;
  uint8_t temp;
```

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```

```
uint8_t data = 0;
 /* Wait for SPI3 Tx buffer empty */
  while (hspi2.State != HAL_SPI_STATE_READY);
  res = HAL_SPI_Transmit(&hspi2, &data, 1, 500);
  if (res == HAL_OK) {
    while (hspi2.State != HAL_SPI_STATE_READY);
    res = HAL_SPI_Receive(&hspi2, &temp, 1, 500);
  if (res == HAL_OK) {
    buf=temp<<8;
    LCD_Delay(1);
    while (hspi2.State != HAL_SPI_STATE_READY);
    res = HAL_SPI_Transmit(&hspi2, &data, 1, 500);
  if (res == HAL_OK) {
    while (hspi2.State != HAL_SPI_STATE_READY);
    res = HAL_SPI_Receive(&hspi2, &temp, 1, 1000);
  if (res == HAL_OK) {
    buf |= temp;
    buf>>=3;
    buf&=0xfff;
    return buf;
  return buf;
void Touch_Write(uint8_t out)
  while (hspi2.State != HAL_SPI_STATE_READY);
  HAL_SPI_Transmit(&hspi2, &out, 1, 500);
  while (hspi2.State != HAL_SPI_STATE_READY);
  HAL_SPI_Receive(&hspi2, &out, 1, 500);
The Touch_Write and Touch_Read are inspired from some projects I saw, like this one :
```

http://fabioangeletti.altervista.org/blog/stm32f4-discovery-lcd-touchscreen/ (http://fabioangeletti.altervista.org/blog/stm32f4-discovery-lcd-touchscreen/)

I'm a beginner with the SPI, and most of the STM libraries, so I'm probably missing something stupid and simple, but after two days of trying to find that positions, I can't find out what it

Thanks for your help, if you need any infos, no problem!

Antoine

#xpt2046 #stm32f4



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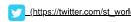
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