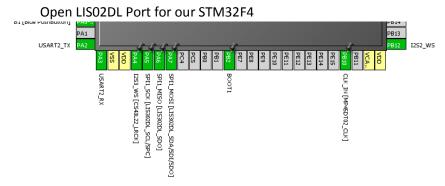
LIS302DL: 3-axis accelerometer

Set up Project configuration in STM32Cube MX



Code in main.c

```
struct acceleration {
  int8_t x, y, z;
} Acceleration;
uint8 t address, data;
```

Create data type for store value from LIS302DL name "acceleration" with 3 int8 x, y and z, and other 2 variables is address and data to store value that use for sending through SPI.

```
static void LIS302DL_Init(void) {
    HAL_GPIO_WritePin(GPIOE, GPIO_PIN_3, GPIO_PIN_RESET);
    address = 0x20;
    data = 0x47;

    HAL_SPI_Transmit(&hspi1, &address, 1, 50);
    HAL_SPI_Transmit(&hspi1, &data, 1, 50);

    HAL_GPIO_WritePin(GPIOE, GPIO_PIN_3, GPIO_PIN_SET);
}
```

function for Initialize LIS302DL. First, toggle CS(PE3) down and send address 0x20 and data 0x47 through SPI1, after toggle CS up again.

In function main()

```
HAL_UART_Transmit(&huart2, "Start", 5, 1000);
LIS302DL Init();
```

Begin with transmit data though UASRT as start symbol, then call LIS302DL_Init() to initialize our LIS302DL.

```
while (1)
{
/* USER CODE END WHILE */

/* USER CODE BEGIN 3 */
HAL_GPIO_WritePin(GPIOE,GPIO_PIN_3,GPIO_PIN_RESET);

address = 0x29+ 0x80;
HAL_SPI_Transmit(&hspi1, &address, 1, 50);
HAL_SPI_Receive(&hspi1, &Acceleration.x, 1, 50);

address = 0x2B+ 0x80;
HAL_SPI_Transmit(&hspi1, &address, 1, 50);
HAL_SPI_Transmit(&hspi1, &Acceleration.y, 1, 50);

address = 0x2D+ 0x80;
HAL_SPI_Receive(&hspi1, &Acceleration.y, 1, 50);

HAL_SPI_Transmit(&hspi1, &address, 1, 50);
HAL_SPI_Receive(&hspi1, &Acceleration.z, 1, 50);

length = sprintf(str, "x : %d, y : %d, z : %d\n\r", Acceleration.x, Acceleration.y, Acceleration.z);

HAL_UART_Transmit(&huart2, $tx, length, 10);

HAL_GPIO_WritePin(GPIOE,GPIO_PIN_3,GPIO_PIN_SET);
HAL_Delay(150);

}
/* USER CODE END 3 */
```

In while(1). toggle CS(PE3) down and send address 0x29 + 0x80, 0x2B + 0x80 + 0x2D + 0x08 through SPI1 and receive data from SPI that will be acceleration in x, y, z axis in order. After finish retrieving data toggle CS up again.