W7500 Errata Sheet

Document History

Ver 1.0.0 (July.11, 2016)	First release (erratum 1) - I2C
Ver 1.0.1 (Dec.08, 2016)	Correct SCL speed

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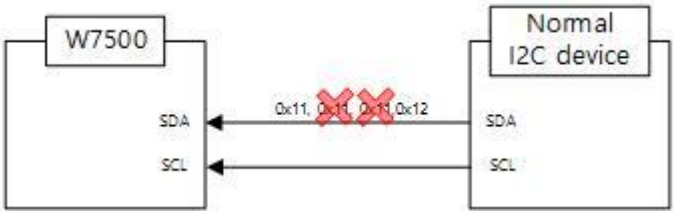
Erratum 1	
Phenomenon	**Receiving repeating data in continuative data transmission causes I2C communication problem.**
Condition	 W7500 receives the first repeating data but starts to discards from the 2nd repeating data to next different data in continuative data transmission. It causes data loss.
Solution & Recommendation	To avoid this issue, W7500 uses GPIO instead of I2C. In this case, SCL has limited speed, 100KHz. Example pseudo code:

```
Function Initialize_I2C ( )
{
...
    scl_port_num = I2C_PORT(conf->scl);
    scl_pin_index = I2C_PIN_INDEX(conf->scl);

    sda_port_num = I2C_PORT(conf->sda);
    sda_pin_index = I2C_PIN_INDEX(conf->sda);

    //SCL setting
    GPIO_InitDef.GPIO_Pin = scl_pin_index;
    GPIO_InitDef.GPIO_Mode = GPIO_Mode_OUT;

    if(scl_port_num == 0)
    {
        GPIO_Init(GPIOA, &GPIO_InitDef);
        GPIO_SetBits(GPIOA, scl_pin_index);
    }
....
//SDA setting
    GPIO_InitDef.GPIO_Pin = sda_pin_index;
```

```
    GPIO_InitDef.GPIO_Mode = GPIO_Mode_IN;
    if(sda_port_num == 0)
    {
        GPIO_Init(GPIOA, &GPIO_InitDef);
        GPIO_ResetBits(GPIOA, sda_pin_index);
    }
.....
}

/* SCL function */
Function I2C_SCL
{
...
    if(scl_port_num == 0)
    {
        if(data == 1)
            GPIO_SetBits(GPIOA, scl_pin_index);
        else
            GPIO_ResetBits(GPIOA, scl_pin_index);
    }
...
}

/* SDA function */
Function I2C_SDA
{
...
     if(sda_port_num == 0)
    {
        if(data == 1)
            GPIO_OUTENCLR = sda_pin_index;
        else
            GPIO_OUTENSET = sda_pin_index;
    }
...
}
```

	/* START function */
	Function I2C_START
	
	void I2C_Start(I2C_ConfigStruct* conf)
	{
	  I2C_WriteBitSCL(conf, 1);
	  I2C_WriteBitSDA(conf, 1);
	
	  I2C_WriteBitSDA(conf, 0);
	  I2C_WriteBitSCL(conf, 0);
	}
	/* STOP function */
	Function I2C_STOP
	
	void I2C_Stop(I2C_ConfigStruct* conf)
	{
	  I2C_WriteBitSCL(conf, 0);
	  I2C_WriteBitSDA(conf, 0);
	
	  I2C_WriteBitSCL(conf, 1);
	  I2C_WriteBitSDA(conf, 1);
	}
	.....