

W7500P Errata Sheet

Document History

Ver 1.0.0 (JUN. 18, 2018)	First release (erratum 1)
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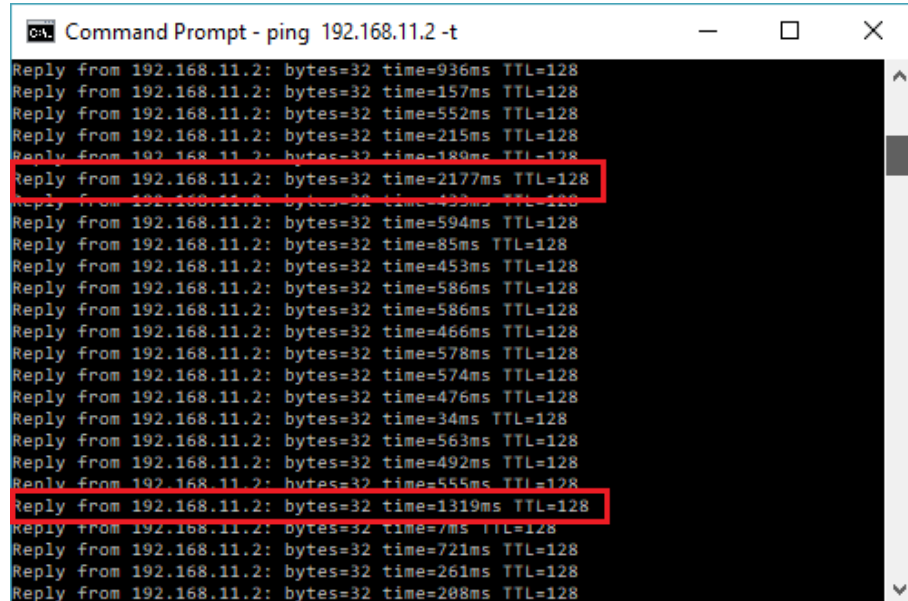
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Erratum 1

Transmission Delay Case

Phenomenon

There are some cases of data transmission delay when W7500P is connected to a particular switch or router. (The router that was used for the below test is "TP_LINK AC750")



```

C:\> Command Prompt - ping 192.168.11.2 -t
Reply from 192.168.11.2: bytes=32 time=936ms TTL=128
Reply from 192.168.11.2: bytes=32 time=157ms TTL=128
Reply from 192.168.11.2: bytes=32 time=552ms TTL=128
Reply from 192.168.11.2: bytes=32 time=215ms TTL=128
Reply from 192.168.11.2: bytes=32 time=189ms TTL=128
Reply from 192.168.11.2: bytes=32 time=2177ms TTL=128
Reply from 192.168.11.2: bytes=32 time=433ms TTL=128
Reply from 192.168.11.2: bytes=32 time=594ms TTL=128
Reply from 192.168.11.2: bytes=32 time=85ms TTL=128
Reply from 192.168.11.2: bytes=32 time=453ms TTL=128
Reply from 192.168.11.2: bytes=32 time=586ms TTL=128
Reply from 192.168.11.2: bytes=32 time=586ms TTL=128
Reply from 192.168.11.2: bytes=32 time=466ms TTL=128
Reply from 192.168.11.2: bytes=32 time=578ms TTL=128
Reply from 192.168.11.2: bytes=32 time=574ms TTL=128
Reply from 192.168.11.2: bytes=32 time=476ms TTL=128
Reply from 192.168.11.2: bytes=32 time=34ms TTL=128
Reply from 192.168.11.2: bytes=32 time=563ms TTL=128
Reply from 192.168.11.2: bytes=32 time=492ms TTL=128
Reply from 192.168.11.2: bytes=32 time=555ms TTL=128
Reply from 192.168.11.2: bytes=32 time=1319ms TTL=128
Reply from 192.168.11.2: bytes=32 time=7ms TTL=128
Reply from 192.168.11.2: bytes=32 time=721ms TTL=128
Reply from 192.168.11.2: bytes=32 time=261ms TTL=128
Reply from 192.168.11.2: bytes=32 time=208ms TTL=128
  
```

As shown above, there are random cases where the ping reply is delayed over 3 seconds and occurs irregularly.

Cause

The cause of this phenomenon is due to NC(Not Connected) pads & the connection problems related to PHY MII signals inside the chip (W7500P is silicon-in-package product and it includes W7500 and Ethernet PHY circuit inside.); By Collision handling due to wrong detection of duplex mode, the transmission packets are delayed.

In order to resolve this phenomenon, users **MUST** add the following initialization code.

```
void PHY_Init(void)
{
#ifdef __W7500P__ // W7500P only
    // PB_12
    *(volatile uint32_t *) (0x41003070) = 0x61; // RXDV: set pull down
    // PB_05
    *(volatile uint32_t *) (0x41002054) = 0x01;
    *(volatile uint32_t *) (0x41003054) = 0x61;
    // PB_06
    *(volatile uint32_t *) (0x41002058) = 0x01;
    *(volatile uint32_t *) (0x41003058) = 0x61;
    // PHY reset pin pull-up (PD_06)
    *(volatile uint32_t *) (0x410020D8) = 0x01;
    *(volatile uint32_t *) (0x410030D8) = 0x02;
    *(volatile uint32_t *) (0x45000004) = 0x40;
    *(volatile uint32_t *) (0x45000010) = 0x40;

    mdio_init(GPIOB, W7500x_MDC, W7500x_MDIO); // MDIO Init
    mdio_write(GPIOB, PHYREG_CONTROL, CNTL_RESET); // PHY Reset
#endif
}
```

Solution

The DUP pin(pin 15) of W7500P shows what duplex mode it operates with the switch or router as, The value is as below.

- DUP pin = '1' (HIGH) : Full duplex mode
- DUP pin = '0' (LOW) : Half duplex mode