

Migration from NM7010A to NM7010B+

This documentation mainly describes what H/W designers should consider when migrating from the NM7010A-LF to the NM7010B+. For the information about firmware migration from NM7010A-LF to NM7010B+, refer to *Migration from W3100 to W3150A+*.

In addition, NM7010A has three different versions. The firmware of them is also fully compatible. Users just need to pay more attention on H/W change. This documentation focuses on the migration from NM7010A-LF Rev 2.0 to NM7010B+.

For additional information about the NM7010B+ and NM7010A-LF Rev 2.0, refer to the *NM7010B+ Datasheet ver 1.3* and *NM7010A-LF Datasheet ver 2.6*.

This document contains the following topics:

Topic

Section 1, "Comparison"

Section 2, "Hardware Considerations"

Section 3, "References"

1. Comparison

1.1 Advantages and Challenges of Migration

This section highlights the various advantages and challenges involved when migrating from the NM7010A to the NM7010B+.

Since Ethernet chip is W3150A+, the NM7010B+ provides a higher level of performance while maintaining many characteristics of the NM7010A's architecture. Following is a list of the advantages of migrating to the NM7010B+:

- More cost-effective
- Provides a higher level of integration
- Added Tx free size register and Rx received size register, users can directly read them and don't need to calculate the value by themselves any more.
- TCP sequence and ACK number is automatically processed. Users don't need to calculate the values by themselves any more.
- New functions (PPPoE/IGMP/SPI Interface/Keepalive, etc)
- Standard driver library for future W5100 migration

Following is a list of differences that may present challenges in migrating from the NM7010A to the NM7010B+.

- H/W is not 100% compatible

1.2 Summary and Feature Comparison Tables

Table 1 includes information comparing some of the features of the NM7010A and the NM7010B+.

Table 1. NM7010A and NM7010B+ Comparison

	NM7010A	NM7010B+
Voltage	3.3v	
Function	Ethernet Connectivity	
H/W TCP/IP stack	W3100	W3150A+
PHY	RTL8201BL/IP101A-LF	IP101A-LF
Protocol	TCP, UDP, IP, ARP, ICMP	TCP, UDP, IP, ARP, ICMP, IGMP, PPPoE,
Connector Type	2×2×14 2mm pin header	
Dimension (mm)	52×25×21	
Temperature	0~70°C	

2. Hardware Considerations

2.1 NM7010A Pin Assignment

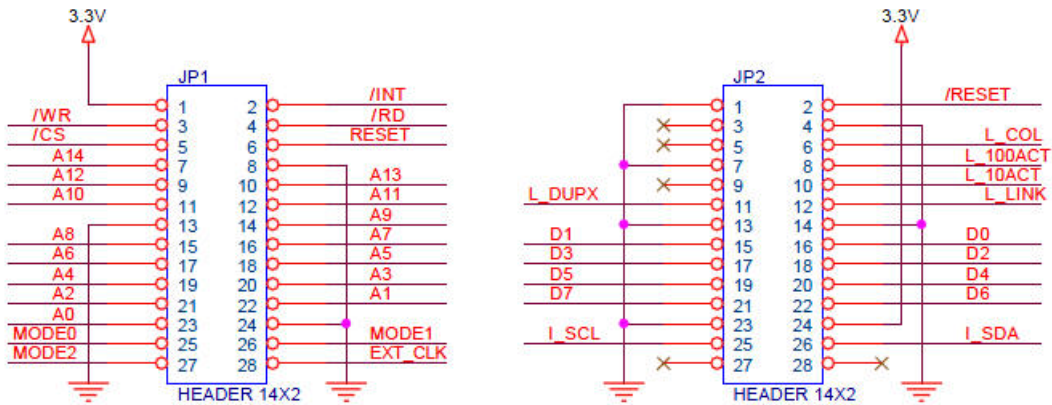


Fig.1 NM7010A pin assignment

2.2 NM7010B+ Pin Assignment

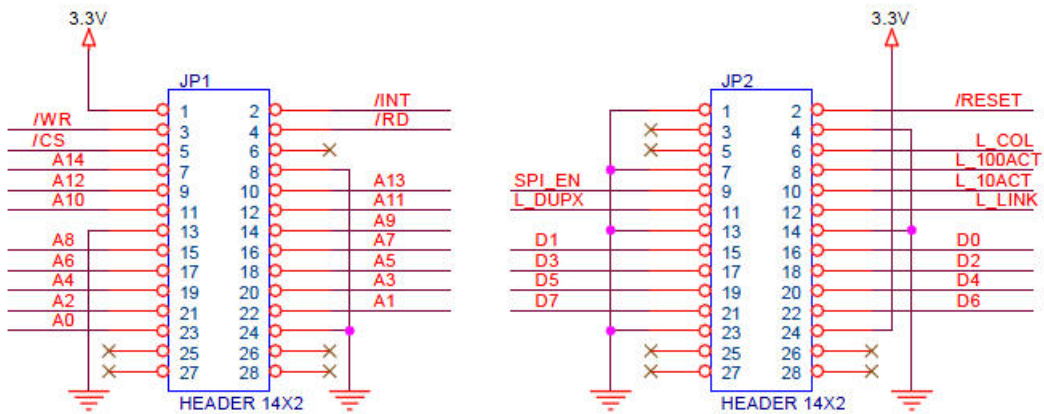


Fig.2 NM7010B+ pin assignment

2.3 Migration Pin Assignment

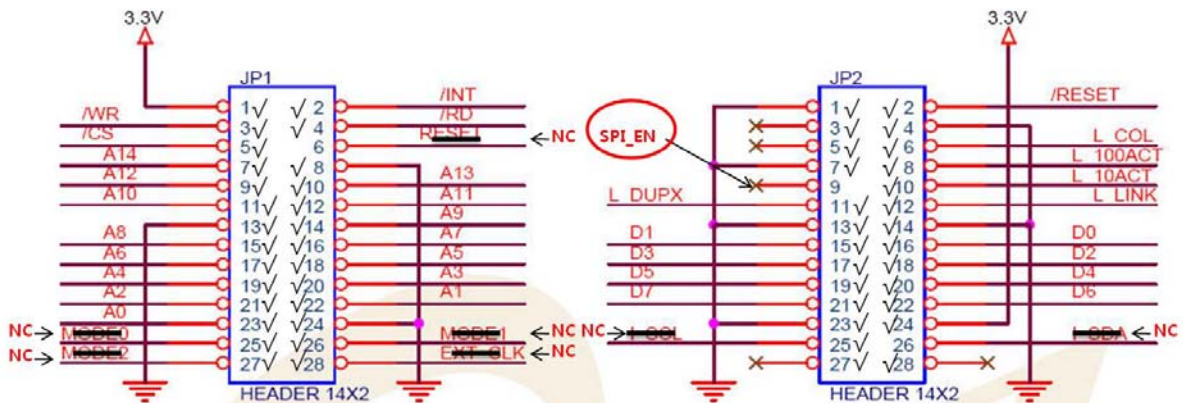


Fig 3 Pin Assignment Considerations when migrate from the NM7010A to NM7010B+

- "—" means "removed function"
- "√" means "no change",
- "←+comments" means "the changed part"

2.4 Summary for HW change

Table 2 Summary for HW change

MCU Interface	NM7010A→NM7010B+
Direct BUS	JP1.6: NM7010B+ requires only one reset signal(/RESET). User doesn't need to handle two kinds of the reset signals. JP1.25~28: NM7010B+ generates clock signal internally. So these pins will not influence on new module because they are NC pins.
Indirect BUS	
I2C	NM7010B+ doesn't support I2C interface. However if your MCU supports SPI interface, you can use NM7010B+.

3. References

To download User manual and Configtool, refer to below links:

- NM7010A:

Datasheet:

[http://www.wiznet.co.kr/Upload_Files/ReferenceFiles/NM7010A-LF_Datasheet_V2.6\[0\].pdf](http://www.wiznet.co.kr/Upload_Files/ReferenceFiles/NM7010A-LF_Datasheet_V2.6[0].pdf)

Hardware schematic:

[http://www.wiznet.co.kr/Upload_Files/ReferenceFiles/NM7010A-LF_Rev.2.0_schematic_20070719\[1\].pdf](http://www.wiznet.co.kr/Upload_Files/ReferenceFiles/NM7010A-LF_Rev.2.0_schematic_20070719[1].pdf)

- NM7010B+:

Datasheet:

[http://www.wiznet.co.kr/Upload_Files/ReferenceFiles/NM7010B_Datasheet_v1_3\[1\].pdf](http://www.wiznet.co.kr/Upload_Files/ReferenceFiles/NM7010B_Datasheet_v1_3[1].pdf)

Hardware schematic:

[http://www.wiznet.co.kr/Upload_Files/ReferenceFiles/NM7010B_Schematic_070718\[1\].pdf](http://www.wiznet.co.kr/Upload_Files/ReferenceFiles/NM7010B_Schematic_070718[1].pdf)

- TCP/UDP loopback testing tool (AX1.exe)

http://www.wiznet.co.kr/Upload_Files/ReferenceFiles/AX1.zip