

# 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 <sup>°</sup> C     |                                       |



### 2. Hardware Considerations

## 2.1 NM7010A Pin Assignment

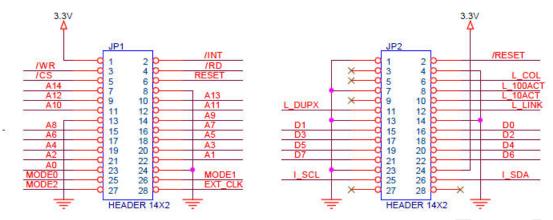


Fig.1 NM7010A pin assignment

## 2.2 NM7010B+ Pin Assignment

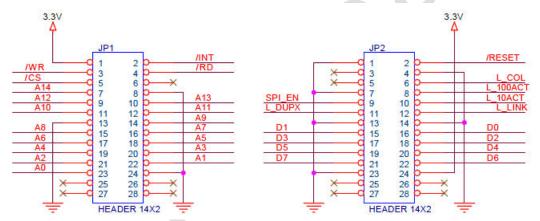


Fig. 2 NM7010B+ pin assignment

## 2.3 Migration Pin Assignment

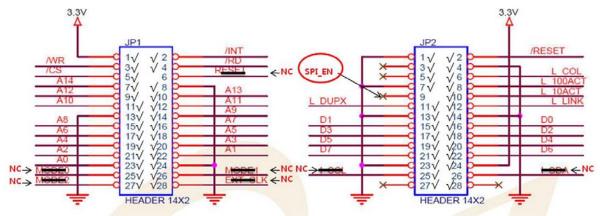


Fig 3 Pin Assignment Considerations when migrate from the NM7010A to NM7010B+

- "—" 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         |
| Indirect BUS  | 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.            |
| 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 Hardware schematic:

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
Hardware schematic:

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