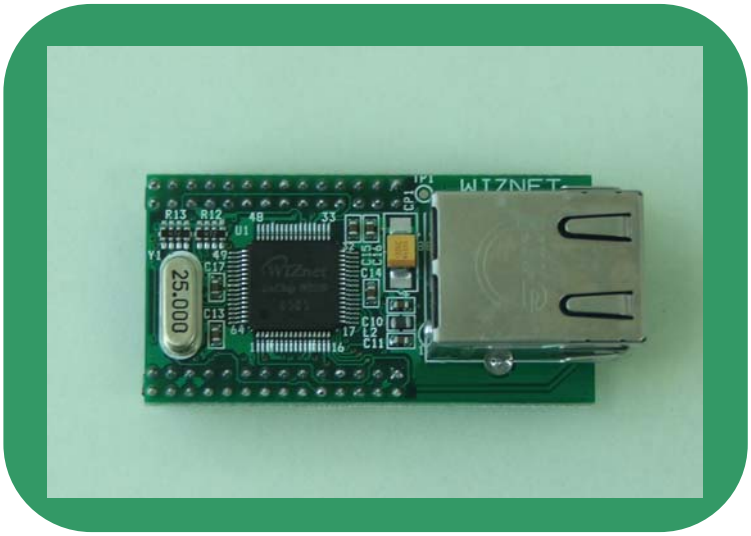
NM7010B Datasheet
(Ver. 1.3)



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Document History Information

Revision	Data	Description
Ver. 1.0	May 16, 2005	Release with NM7010B Launching
Ver.1.1	July 11, 2005	- Pin Assignments is modified. JP1-28 : NC, JP2:4 GND - Connector Specification is added
Ver.1.2	October 12, 2005	- Part is changed. U1: W3150A
Ver.1.3	December 14, 2005	- Part is changed. U3: RD1-1D5B1A1A

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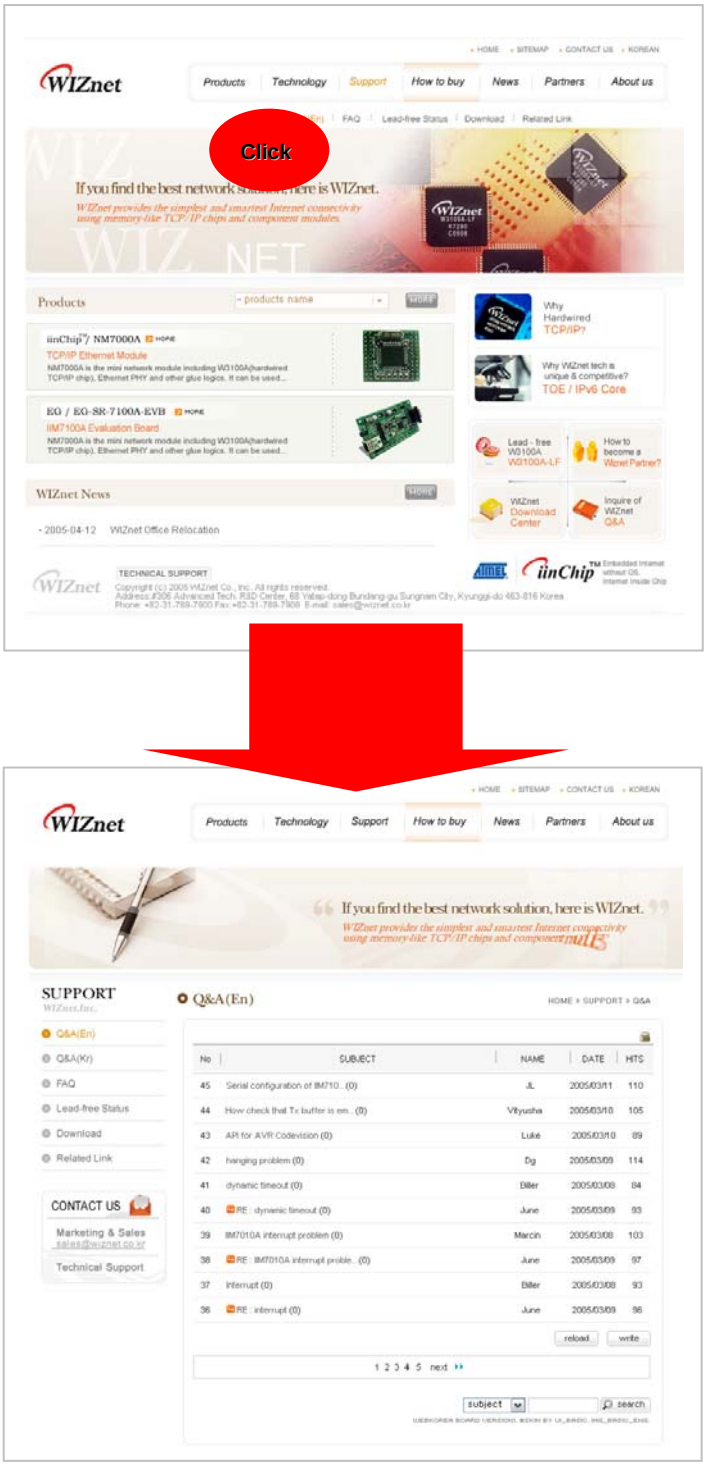

NM7010B Datasheet

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1. Introduction

NM7010B is the network module that includes W3150A (TCP/IP hardwired chip), Ethernet PHY (RTL8201BL), MAG-JACK (RJ45 with X'FMR) with other glue logics. It can be used as a component and no effort is required to interface W3150A and PHY chip. The NM7010B is an ideal option for users who want to develop their Internet enabling systems rapidly.

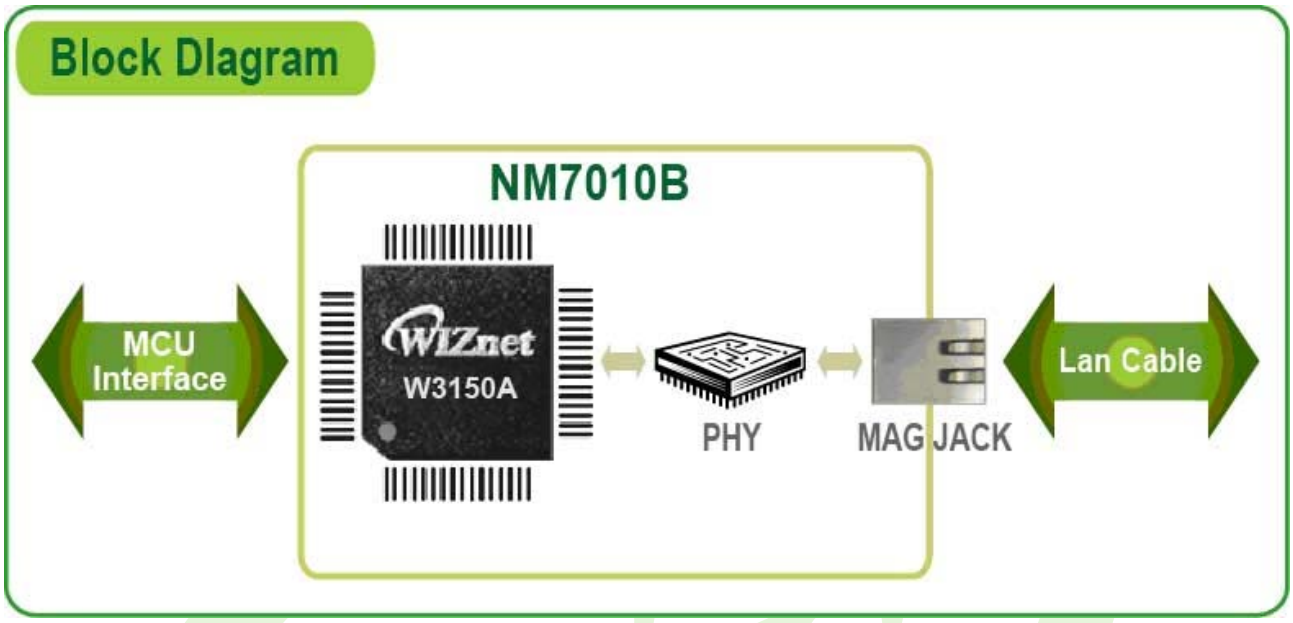
NM7010B consists of W3150A, Ethernet PHY and MAG-JACK.

- TCP/IP, MAC protocol layer: W3150A
- Physical layer: Ethernet PHY
- Connector: MAG-JACK

1.1. Features

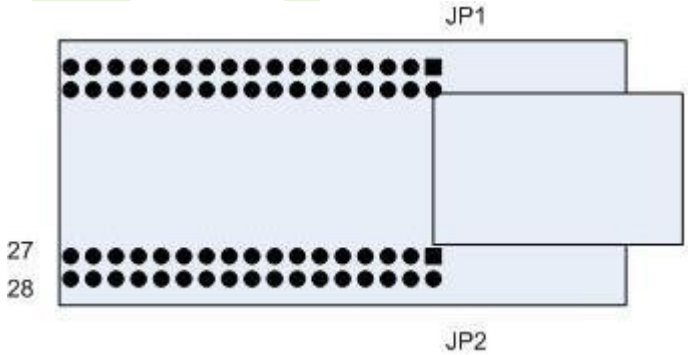
- Supports 10/100 Base TX
- Supports half/full duplex operation
- Supports auto-negotiation
- IEEE 802.3/802.3u Complaints
- Operates 3.3V with 5V I/O signal tolerance
- Supports network status indicator LEDs
- Includes Hardware Internet protocols: TCP, IP Ver.4, UDP, ICMP, ARP, PPPoE, IGMP
- Includes Hardware Ethernet protocols: DLC, MAC
- Supports 4 independent connections simultaneously
- Supports Intel/Motorola MCU bus Interface
- Supports Direct/Indirect mode bus access
- Supports Socket API for easy application programming
- Interfaces with Two 2.0mm pitch 2 * 14 header pin

1.2. Block Diagram

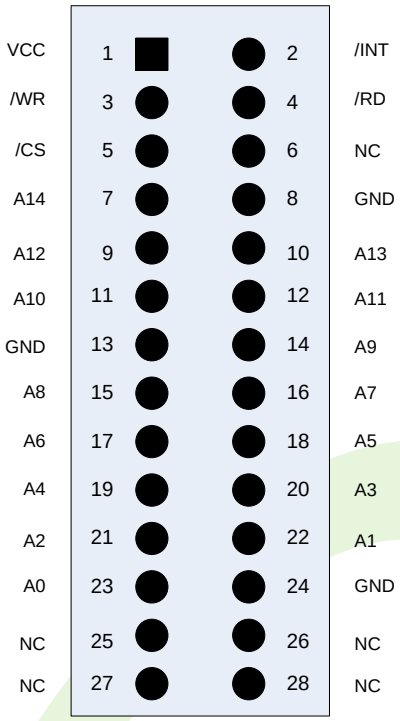


2. Pin Assignments & descriptions

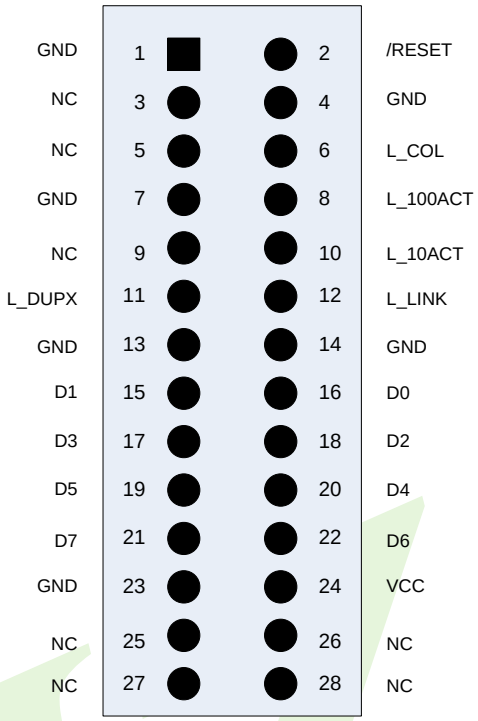
2.1. Pin Assignments



JP1



JP2



I : Input

O : Output

I/O : Bi-directional Input and output

P : Power

2.2. Power & Ground

Symbol	Type	Pin No.	Description
VCC	P	JP1 : 1 , JP2 : 24	**Power** : 3.3 V power supply
GND	P	JP1 : 8, JP1 : 13, JP1 : 24, JP2 : 1 JP2 : 4, JP2 : 7 JP2 : 13, JP2 : 14 JP2 : 23	**Ground**

2.3. MCU Interfaces

Symbol	Type	Pin No.	Description
A14~A8	I	JP1 : 7, JP1 : 10 JP1 : 9, JP1 : 12 JP1 : 11, JP1 : 14 JP1 : 15	**Address** Used as Address[14-8] pin
A7~A0	I	JP1 : 16 ~ JP1 : 23	**Address** Used as Address[7-0] pin
D7~D0	I/O	JP2 : 21, JP2 : 22 JP2 : 19, JP2 : 20 JP2 : 17, JP2 : 18 JP2 : 15, JP2 : 16	**Data** 8 bit-wide data bus
/CS	I	JP1 : 5	**Module Select** : Active low. /CS of W3150A
/RD	I	JP1 : 4	**Read Enable** : Active low. /RD of W3150A
/WR	I	JP1 : 3	**Write Enable** : Active low /WR of W3150A
/INT	O	JP1 : 2	**Interrupt** : Active low After reception or transmission it indicates that the W3150A requires MCU attention. By writing values to the Interrupt Status Register of W3150A the interrupt will be cleared. All interrupts can be masked by writing values to the IMR of W3150A(Interrupt Mask Register). For more details refer to the W3150A Datasheet

2.4. Network status & LEDs

You can observe the network status using MAC-JACK LEDs. LED interface can be extended to the LED of the main board.

Symbol	Type	Pin No.	Description
L_COL	O	JP2 : 6	**Collision LED** : Active low when collisions occur.
L_100ACT	O	JP2 : 8	**Link 100/ACT LED** : Active low when linked by 100 Base TX, and blinking when transmitting or receiving data.
L_10ACT	O	JP2 : 10	**Link 10/ACT LED** : Active low when linked by 10 Base T, and blinking when transmitting or receiving data.
L_DUPX	O	JP2 : 11	**Full Duplex LED** : Active low when in full duplex operation. Active high when in half duplex operation.
L_LINK	O	JP2 : 12	**Link LED** : Active low when linked

2.5. Miscellaneous Signals

Symbol	Type	Pin No.	Description
/RESET	I	JP2 : 2	**Reset :** Active low Reset W3150A, RTL8201BL chip. For complete reset function this pin must be asserted low for at least 10ms.
NC	-	JP1 : 6, 25, 26, 27, 28 JP2 : 3, 5, 9, 25, 26, 27, 28	Not Connect

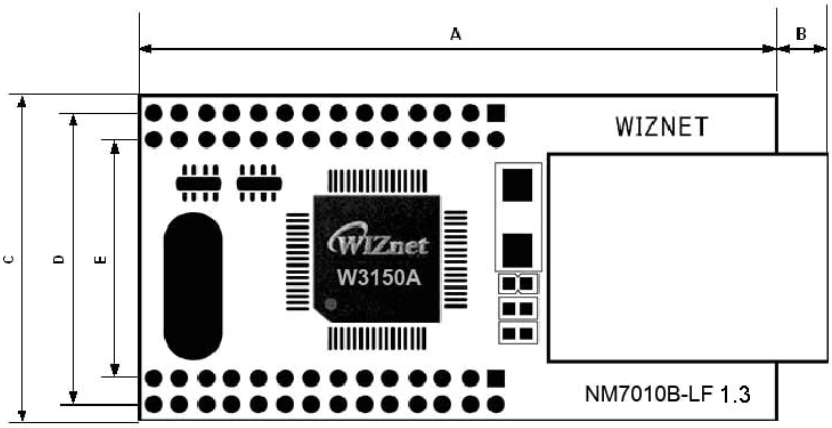
3. Timing Diagrams

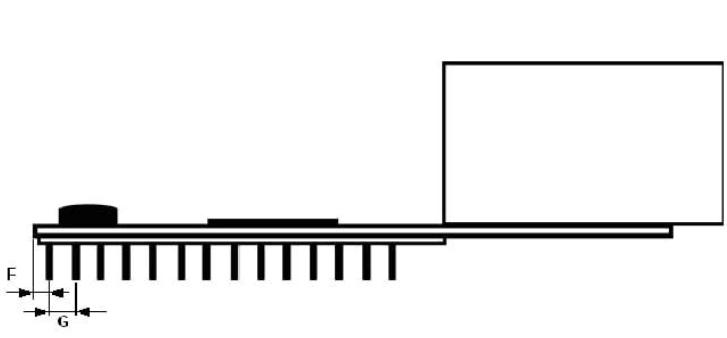
NM7010B provides following interfaces of W3150A

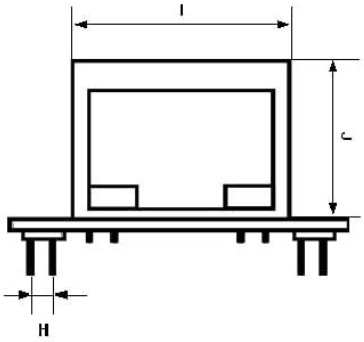
-. Direct/Indirect mode bus access

Refer to W3150A datasheet for timing of NM7010B

4. Dimensions







Symbols	Dimensions (mm)
A	48.0
B	4.0
C	25.0
D	22.4
E	18.4
F	1.0
G	2.0
H	2.0
I	16.0
J	13.4

5. Connector Specification

UNIT:mm