User Manual

MIC-3612/3-BE

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Product Warranty (2 years)

Advantech warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Advantech, or which have been subject to misuse, abuse, accident or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain an RMA (return merchandize authorization) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

Declaration of Conformity

CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from Advantech. Please contact your local supplier for ordering information.

CE

This product has passed the CE test for environmental specifications. Test conditions for passing included the equipment being operated within an industrial enclosure. In order to protect the product from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

FCC Class A

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Class B

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FM

This equipment has passed the FM certification. According to the National Fire Protection Association, work sites are classified into different classes, divisions and groups, based on hazard considerations. This equipment is compliant with the specifications of Class I, Division 2, Groups A, B, C and D indoor hazards.

Technical Support and Assistance

1. Visit the Advantech web site at www.advantech.com/support where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
   – Product name and serial number
   – Description of your peripheral attachments
   – Description of your software (operating system, version, application software, etc.)
   – A complete description of the problem
   – The exact wording of any error messages

Warnings, Cautions and Notes

Warning! *Warnings indicate conditions, which if not observed, can cause personal injury!*

Caution! *Cautions are included to help you avoid damaging hardware or losing data. e.g.*

There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Note! *Notes provide optional additional information.*

Document Feedback

To assist us in making improvements to this manual, we would welcome comments and constructive criticism. Please send all such - in writing to: support@advantech.com

Packing List

Before setting up the system, check that the items listed below are included and in good condition. If any item does not accord with the table, please contact your dealer immediately.

■ Item XXXXXXXX
■ Box XXXXXXXXX

Safety Instructions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
15. The power cord or plug is damaged.
16. Liquid has penetrated into the equipment.
17. The equipment has been exposed to moisture.
18. The equipment does not work well, or you cannot get it to work according to the user's manual.
19. The equipment has been dropped and damaged.
20. The equipment has obvious signs of breakage.
21. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.
22. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
23. The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

Safety Precaution - Static Electricity

Follow these simple precautions to protect yourself from harm and the products from damage.

- To avoid electrical shock, always disconnect the power from your PC chassis before you work on it. Don't touch any components on the CPU card or other cards while the PC is on.
- Disconnect power before making any configuration changes. The sudden rush of power as you connect a jumper or install a card may damage sensitive electronic components.

Contents

Chapter 1

General Information

1.1 Introduction

The MIC-3612 is a 3U/6U sized 4-port RS-232/422/485 CompactPCI® Comm. Card, serial communication cards which complies with PICMG 2.0 R2.1 CompactPCI specifications. All channels are addressed in a continuous 32 byte I/O block for simplified software access. All channels may also share one PCI interrupt.

The MIC-3612 comes standard with 16C850 UARTs containing 128 byte FIFOs. These upgraded FIFOs greatly reduce CPU overhead and are an ideal choice for heavy multitasking environments.

1.2 Features

- PCI Specification 2.1x compliant
- Speeds up to 921.6 Kbps
- 16C850 UARTs with 128-byte standard
- Standard Industrial 3U/6U sized CPCI Board size
- I/O address automatically assigned by PCI Plug-and-Play
- OS supported: Windows@98/2000/XP/7, Linux
- Surge protection (2500VDC).
- Space reserved for termination resistors (for RS-422/485)
- Automatic RS-485 data flow control

1.3 Specifications

- **Bus Interface:** CPCI bus specification 2.1x compliant
- Bus controller: LCMXO2-4000HC-4FTG256I
- Communication controller: 16C850
- **IRQ:** all ports use the same IRQ assigned by PCI Plug-and-Play
- **Data bits:** 5, 6, 7, 8
- **Stop bits:** 1, 1.5, 2
- **Parity:** none, even, odd
- **Surge Protection:** 2500 VDC
- **Speed (bps):** 50 ~ 921.6 K
- **Data signals:** TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND (for RS-232) TX+, TX-, RX+, RX-, RTS+, RTS-, CTS+, CTS-, GND (for RS-422) DATA+, DATA-, GND (for RS-485)
- **Power consumption:**

	Typical	MAX
+5V	220mA	285mA
+3.3V	100mA	200mA
+12v	60mA	80mA

- **Dimensions:** 160 mm x 100 mm
- **Operating temperature:** 0° C ~ 70° C (referring to IEC68-2-1, 2)
- **Operating Humidity:**
  5 ~ 95% Relative Humidity, non-condensing (referring to IEC 68-2-1, 2)
- **Operating Humidity:**
  5 ~ 95% Relative Humidity, non-condensing (referring to IEC 68-2-3)
- **Storage Temperature:** -20 ~ 80° C

Chapter 2

Hardware Configuration

This chapter gives users a package item checklist, proper instructions about unpacking and step-by-step procedures for card installation.

2.1 Initial Inspection

In addition to this manual, you should find the following items inside the shipping package of the MIC-3612:

- CPCI communication interface card
- Wiring cable

We have carefully inspected the CPCI communication card series before shipping it. It should be free of marks and scratches and in perfect working order on receipt. As you unpack the CPCI communication card series, check it for signs of shipping damage (damaged box, scratches, dents, etc.). If it is damaged or it fails to meet specifications, notify our service department or your local sales representative immediately. Also notify the carrier. Retain the shipping carton and packing material for inspection by the carrier. After inspection we will make arrangements to repair or replace the unit. When you handle the CPCI communication card series, remove it from its protective packaging by grasping the rear metal panel. Keep the anti-vibration packaging. Whenever you remove the card from the PC, store it in this package for protection.

> **Note!** Discharge your body's static electric charge by touching the back of the grounded chassis of the system unit (metal) before handling the board. You should avoid contact with materials that hold a static charge such as plastic, vinyl and styrofoam. Handle the board only by its edges to avoid static damage to its integrated circuits. Avoid touching the exposed circuit connectors. We also recommend that you use a grounded wrist strap and place the card on a static dissipative mat whenever you work with it.

2.2 **Hardware Installation**

> **Note!** *Make sure you have installed the driver first before installing the card (Please refer to the software installation in Chapter 3 Driver Setup & Installation).*

When you install the MIC-3612 Card, be sure the DLL driver of the MIC-3612 installation is complete, you can now go on to install the MIC-3612 card in your CPCI computer. But it is suggested that you should refer to the computer user manual or related documentation if you have any doubt. Please follow the steps below to install the card on your system.

To install a card:

1. Remove one cover on the unused slot of your CPCI computer slot.
2. Hold the Card Vertically. Be sure that the card is pointing in the correct direction. The components of the card should be pointing to the right-hand side and the black handle of the card should be pointing to lower edge of the chassis.
3. Holding the lower handle, pull the handle down to unlock it.
4. Insert the MIC-3612 card into the CPCI chassis carefully by sliding the lower edges of the card into the card guides.
5. Please push the card into slot gently by sliding the card along the card guide until CN1 meets the long needle on the backplane.

> **Note!** *If your card is correctly positioned and has been slid all the way into the chassis, the handle should match the rectangular holes. If not, remove the card from the card guide and repeat step 3 again. Do not try to install a card by forcing it into the chassis.*

6. Push the card into the right place; secure the card by pushing the handle on to lock it into place.

> **Note!** *The Blue LED on the front panel details the installation status of the card while the system is on.*
>
> *In step 5, when CN1 meets the long needle on the backplane, Blue LED will light; after step 6, the system can configure the card automatically, and the Blue LED is turned off when the system finished the device configuration.*
>
> *If the system power is off, you can install the card step by step without attending Blue LED's state.*

To remove a card:

1. Push the handle down to unlock the card, then the CPCI system will automatically uninstall the card configuration.
2. Once the system finished the device configuration, the Blue LED on the front panel will turn on. Now you can slide the card out.

> *Note!* *Advantech MIC-3612's "Hot-Swap"function complies with CPCI Hot Swap Specification PICMG 2.1 R2.0.*

> *Note!* *Because of the "Hot-Swap", the above steps detail the card removal process while the system is on.*
>
> *If the system power is off, please follow step1 and step2 and disregard the status of the Blue LED.*

2.3 I/O Address

In this section, you will learn to set an I/O base address for the MIC-3612.

Base address setting

When the MIC-3612 is installed in the system or if the machine is first turned on, the configuration software must scan the various buses in the system. If the software locates the MIC-3612, the system will configure the device based on the parameters of the PCI device configuration registers, including the I/O base address, I/O range, memory base address, memory range, and so forth. The I/O base address is the base address on the four ports of the MIC-3612 card. The four ports address are as shown:

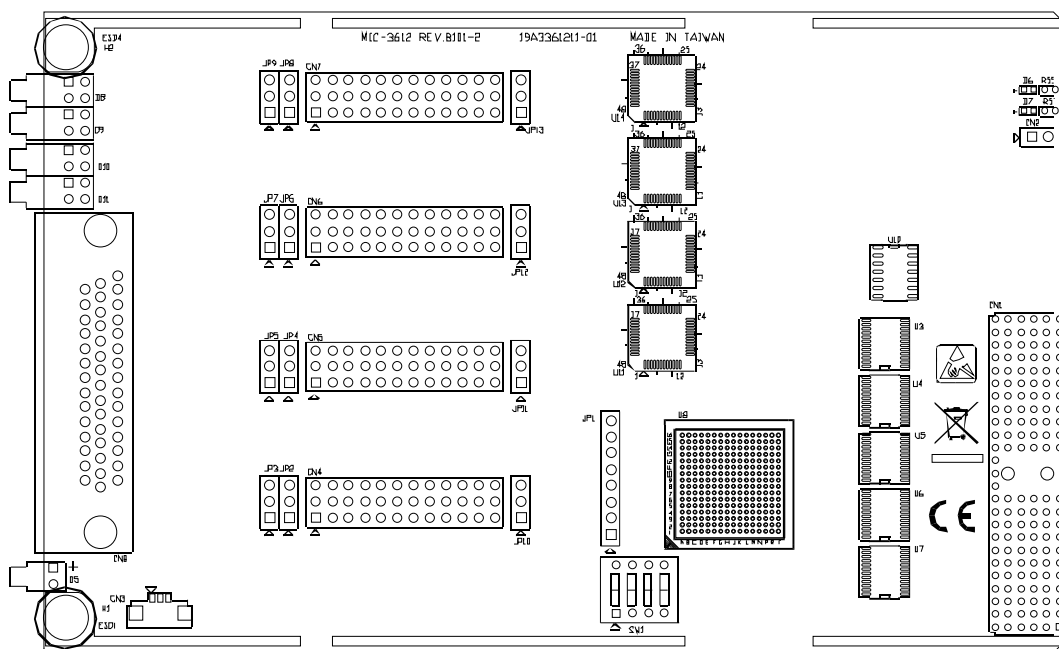| Base Address Setting	
CH 1	Base Add. + 00H
CH 2	Base Add. + 08H
CH 3	Base Add. + 10H
CH 4	Base Add. + 18H

2.4   Board Layout: Dimensions

Figure 2.1 MIC-3612 board layout: Dimensions

2.5   Jumper Setting

This section provides the card default configuration and the options for setting each jumper.

2.5.1   How to set jumpers

You configure your card to match the needs of your application by setting the jumpers. A jumper is the simplest kind of electric switch. It consists of two metal pins and a

small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To "close" a jumper you connect the pins with the clip. To "open" a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2 or 2 and 3. You may find a pair of needle-nose pliers for setting the jumpers. If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.

Figure 2.2 Jumper setting example

2.5.2 Default Settings

The board is shipped with default settings (all ports are set to RS-422 mode without any terminator resistors). If you need to change these settings, however, see the following sections. Otherwise, you can simply install the card.

For MIC-3612, each port can support three operation modes, RS-232, RS-485 and RS-422.

■ **RS-232 mode**
For RS-232 operation mode, set the jumper group CN4(CN5,CN6,CN7) for Port 1 (2,3,4) to the RS-232 available position.

RS422/485

RS232

■ **RS-485 mode**
For RS-485 operation mode, users will have to use the following list to set the jumpers.
1. Jumper group CN4(CN5,CN6,CN7) for Port 1 (2,3,4) to the RS-422/485.

RS422/485

RS232

2. Jumper JP10(JP11,JP12,JP13)for Port 1(2,3,4) to the RS-485.

3. DIP switch SW1 have to switch to "AUTO" for RS-485 mode

	CH1	CH2	CH3	CH4
ON	ON	ON	ON	ON
OFF	AUTO	AUTO	AUTO	AUTO

■ **RS-422 Master mode**
For RS-422 Master mode, the RS-422 Tx signal will always be enabled. For this mode, users will have to use the following list to set the jumpers.
1. Jumper group CN4(CN5,CN6,CN7) for Port 1 (2,3,4) to the RS-422/485.

2. Jumper JP10(JP11,JP12,JP13) for Port 1(2,3,4) to the RS-422.
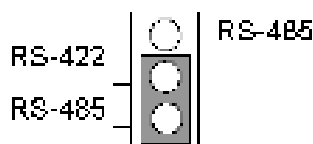
3. For RS-422 Master mode, DIP switch SW1 will have to be "ON"

	CH1	CH2	CH3	CH4
ON	ON	ON	ON	ON
OFF	AUTO	AUTO	AUTO	AUTO

■ **RS-422 Slave mode**
For RS-422 Slave mode, the RS-422 Tx signal will be auto-enabled to send the data. To set this mode, users will have to use the following list to set the jumpers.
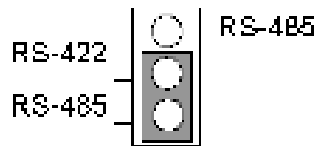1. Jumper group CN4(CN5,CN6,CN7) for Port 1 (2,3,4) to the RS-422/485.

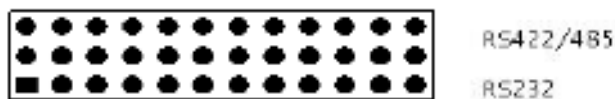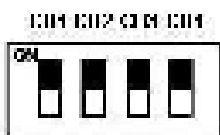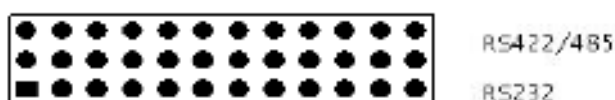2. Jumper JP10(JP11,JP12,JP13) for Port 1(2,3,4) to the RS-422.
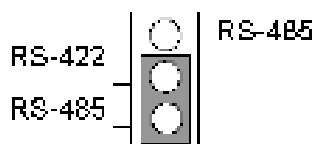
3. For RS-422 Slave mode, DIP switch SW1 will have to be switched to "AUTO"
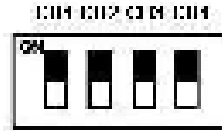
	CH1	CH2	CH3	CH4
ON	ON	ON	ON	ON
OFF	AUTO	AUTO	AUTO	AUTO

2.5.3 Terminator resistor setup (JP2~JP9)

In the RS485/422 mode, you can install terminator resistors to match line impedance.

For each signal line Tx (Data), Rx will have to be a separate resistor 120 or 300.

For more details about jumper locations please refer to Figure 2-1

2.5.4 66MHZ_ENABLE pin Setup

The 66MHZ_ENABLE pin indicates to a device whether the bus segment is operating at 66 or 33 MHz. However, MIC-3612 can only operate at 33MHz limited by FPGA model. By default, the jumper CN2 is closed, that indicates bus segments are limited to 33MHz.

Chapter 3

Pin Assignment &
Wiring

3.1 Pin assignments

The following diagrams show the pin assignments for the MIC-3612 DB44P connector.

3.1.1 RS-232 Mode

The MIC-3612 has 4 RS-232 ports. The following lists the pin assignments of the DB44 connector on the bracket. You may fabricate the cable for DB44 to 4 x DB9 with these output pin.

Table 3.1: MIC-3612 DB44 Connector Pin Assignment for RS-232 Mode					
Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	TX0	17	DTR0	3	RTS0
2	RX0	18	DSR0	16	CTS0
31	DCD0	32	RI0	33	GND
5	TX1	21	DTR1	7	RTS1
6	RX1	22	DSR1	20	CTS1
35	DCD1	36	RI1	37	GND
9	TX2	25	DTR2	11	RTS2
10	RX2	26	DSR2	24	CTS2
39	DCD2	40	RI2	41	GND
13	TX3	29	DTR3	15	RTS3
14	RX3	30	DSR3	28	CTS3
42	DCD3	43	RI3	44	GND

The Table 3-2 is the description of DB9P male connector.

Table 3.2: RS232 Mode DB9 Male Connector Description			
Signal	Name	Pin#	Mode
GND	Ground	5	
TX	Transmit Data	3	Output
DTR	Data Terminal Ready	4	Output
RTS	Request To Send	7	Output
RX	Receive Data	2	Input
DSR	Data Set Ready	6	Input
CTS	Clear To Send	8	Input
DCD	Data Carrier Detect	1	Input
RI	Ring Indicator	9	Input

Figure 3.1 MIC-3612 DB44 Connector RS-232 Mode

3.1.2 RS-485 Mode

The MIC-3612 has 4 RS-485 ports. The following lists the pin assignments for the DB44 connectors on the bracket. You may copy the octopus cable for DB44 to 4 x DB9 with these output pin.

Table 3.3: MIC-3612 DB44 Connector Pin Assignment for RS-485 Mode					
Pin No.	**Signal**	**Pin No.**	**Signal**	**Pin No.**	**Signal**
2	DATA0+	31	DATA0-	33	GND
6	DATA1+	35	DATA1-	37	GND
10	DATA2+	39	DATA2-	41	GND
14	DATA3+	42	DATA3-	44	GND

The Table 3-2 is the description of DB9P male connector.

Table 3.4: RS-485 Mode DB9P Male Connector Description		
Signal	**Name**	**Pin#**
GND	Ground	5
DATA-	Transmit Data	1
DATA+	Data Terminal Ready	2

Figure 3.2 MIC-3612 DB44 Connector RS-232 Mode

3.1.3 RS-422 Mode

MIC-3612 has 4 RS-422 ports. The following lists the pin assignments of the DB44 connector on the bracket. You may fabricate octopus cable for DB44 to 4 x DB9 with these output pin.

Table 3.5: MIC-3612 DB44 Connector Pin Assignment for RS-422 Mode					
Pin No.	**Signal**	**Pin No.**	**Signal**	**Pin No.**	**Signal**
2	TX0+	3	RTS0+	33	GND
31	TX0-	18	RTS0-		
1	RX0+	16	CTS0+		
17	RX0-	32	CTS0-		
6	TX1+	7	RTS1+	37	GND
35	TX1-	22	RTS1-		
5	RX1+	20	CTS1+		
21	RX1-	36	CTS1-		
10	TX2+	11	RTS2+	41	GND
39	TX2-	26	RTS2-		
9	RX2+	24	CTS2+		
25	RX2-	40	CTS2-		
14	TX3+	15	RTS3+	44	GND
42	TX3-	30	RTS3-		
13	RX3+	28	CTS3+		
29	RX3-	43	CTS3-		

The Table 3-6 is the description of DB9P male connector.

Table 3.6: RS-422 Mode DB9 Male Connector Description		
Signal	Name	Pin#
GND	Ground	5
TX+	Transmit Data+	2
TX-	Transmit Data-	1
RX+	Receive Data+	3
RX-	Receive Data-	4
RTS+	Request To Send+	7
RTS-	Request To Send-	6
CTS+	Clear To Send+	8
CTS-	Clear To Send-	9

Figure 3.3 MIC-3612 DB44 Connector RS-422 Mode

Chapter 4

Register Structure

4.1 Register Structure

This chapter gives short descriptions of each of the module's registers. For more information please refer to the data book for the OX16C850 UART chip.

All registers are one byte. Bit 0 is the least significant bit, and bit 7 is the most significant bit. The address of each register is specified as an offset from the port base address (BASE).

BASE+1 Interrupt Enable Register (IER)

Bit0 Enable received-data-available interrupt

Bit1 Enable transmitter-holding-register-empty interrupt

Bit2 Enable receiver-line-status interrupt

Bit3 Enable modem-status interrupt

Bit4: Sleep Mode Enable (requires EFR bit-4 = 1)

Bit5: Xoff Interrupt Enable (requires EFR bit-4=1)

Bit6: RTS# Output Interrupt Enable (requires EFR bit-4=1)

Bit7: CTS# Input Interrupt Enable (requires EFR bit-4=1)

BASE+2 (read) Interrupt status register (ISR)

Table 4.1: BASE+2 (read) Interrupt status register (ISR)

Register	ISR
Bit0	Interrupt pending
Bit1	
Bit2	
Bit3	Interrupt priority
Bit4	
Bit5	
Bit6	FIFO Enable Status
Bit7	

Table 4.2: Interrupt Source And Priority Level

Level	ISR[5:0]	Interrupt source
1	000110	LSR (Receiver Line Status Register)
2	001100	RXRDY (Receive Data Time-out)
3	000100	RXRDY (Receive Data Ready)
4	000010	TXRDY (Transmit Ready)
5	000000	MSR (Modem Status Register)
6	010000	RXRDY (Received Xoff or Special character)
7	100000	CTS#, RTS# change of state
-	000001	None (default)

BASE+2 (write) FIFO Control Register (FCR)

> Bit0 Enable transmit and receive FIFO
> Bit1 Clear contents of receive FIFO
> Bit2 Clear contents of transmit FIFO
> Bit3: DMA Mode Select
> Bits4-5: Transmit FIFO Trigger Select
> Bits6-7: Receive FIFO Trigger Select (logic 0 = default, RX trigger level =1)

Table 4.3: Transmit and Receive FIFO Trigger Table And Level Selection

Trigger table	FCTR[5:4]	FCR[7:4]	Receive Trigger Level	Transmit Trigger Level
Table-A	00	xx00		1(default)
		00xx	1(default)	
		01xx	4	
		10xx	8	
		11xx	14	
Table-B	01	xx00		16
		xx01		8
		xx10		24
		xx11		30
		00xx	8	
		01xx	16	
		10xx	24	
		11xx	28	
Table-C	10	xx00		8
		xx01		16
		xx10		32
		xx11		56
		00xx	8	
		01xx	16	
		10xx	56	
		11xx	60	
Table-D	11	xxxx	Programmable via TRG register. FCTR[7] = 0	Programmable via TRG register. FCTR[7] = 1

BASE+3 Line Control Register (LCR)

        Bit 0 Word length select bit 0

        Bit 1 Word length select bit 1

        Bit 2 Number of stop bits

        Bit 3 Parity enable

        Bit 4 odd/even parity select

        Bit 5 Force parity

        Bit 6 Tx break

        Bit 7 Divisor Latch Access Bit (DLAB)

Table 4.4:

Bit1	Bit0	Word Length (bits)
0	0	5
0	1	6
1	0	7
1	1	8

Table 4.5:   **Table 4.6:**   **Table 4.7:**

Bit2	Word Length	Stop bit Length (Bit Time(s))
0	5,6,7,8	1(default)
1	5	1-1/2
1	6,7,8	2

Table 4.8: Parity Selection

Bit5	Bit4	Bit3	Word Length (bits)
X	X	0	No Parity
0	0	1	Odd Parity
0	1	1	Even Parity
1	0	1	Force parity to mark, "1"
1	1	1	Force parity to space, "0"

BASE+4 Modem Control Register (MCR)

     Bit 0 DTR

     Bit 1 RTS

     Bit 2 OP1# Output/Auto RS485 Control

     Bit 3 OP2# or IRQn Enable during PC Mode

     Bit 4 Internal Loopback Enable

     Bit 5 Xon-Any Enable

     Bit 6 Infrared Encoder/Decoder Enable

     Bit 7 Clock prescale select

BASE+5 Line Status Register (LSR)

     Bit 0 Receiver data ready

     Bit 1 Overrun error

     Bit 2 Parity error

     Bit 3 Framing error

     Bit 4 Break interrupt

     Bit 5 Transmitter holding register empty

     Bit 6 Transmitter shift register empty

     Bit 7 At least one parity error, framing error or break indication in the FIFO

BASE+6 Modem Status Register (MSR)

     Bit 0 Delta CTS

     Bit 1 Delta DSR

     Bit 2 Delta RI

     Bit 3 Delta CD

     Bit 4 CTS

     Bit 5 DSR

     Bit 6 RI

     Bit 7 CD

BASE+7 SPR Temporary data register and indexed control

Register offset value bits

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