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XR16L788 Evaluation Board User's Manual
Rev 7.01

Introduction

Exar is proud to announce our new ISA 8 Port UART. The XR16L788 is fully feature and 16550 compatible. For a list of features, refer to the data sheet at www.exar.com.

This user's manual will help you to install the Windows NT 4.0 Driver and Application Program. Transmit and receive capability on all eight ports in full duplex and two channels in RS-422/485 in half duplex (option 1). The application program allows you to select operating parameters, FIFO trigger levels, hardware or software flow control, and selection of test data patterns.

Description

On the XR16L788 evaluation board, we allow selectable jumpers for addressing from 400 to B00H and IRQ3-7 and IRQ10-14. We have added a +3.3v regulator to operate the XR16L788 at +5v or +3.3v. There are eight ports that use the RS-232 ports (1Mbps) and two RS-485 (2.5Mbps) ports. (Option 1)
There is an option to select an external clock or the standard crystal 14.7456Mhz. U4 clock multiplier chip (ST49C101A-XX) is used for factory external clock test. U4 can be clocked at multiple of 2,3,4,5,6,8,10 and 12, depending on the part selected (ST49C101A-XX) parts not installed. On the XR16L788 evaluation board, there are several sets of jumpers. Jumpers and Test Points are described under default setting below.

Warning: When installing the XR16L788 board, follow ESD Safety Procedures. Ground yourself to prevent damage to the any electronic component.

Default setting for the hardware on the XR16L788 on table 1

Table 1

JUMPER	FUNCTION
JP4	IRQ5
J3-1&2	+5V TO XR16L788
JP12-2&3	RX1
JP13-2&3	RX0
J10-1&2	TXD6
J11-1&2	RXD6
J12-1&2	TXD7
J13-1&2	RXD7
J20-3&4	500H

Jumper Options on table 2
Table 2

JUMPER	FUNCTION
JP1	1RQ9
JP2	1RQ7
JP3	1RQ6
JP4	1RQ5
JP5	1RQ4
JP6	1RQ3

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Table 2

JUMPER	FUNCTION
JP7	1RQ10
JP8	1RQ11
JP9	1RQ12
JP10	1RQ15
JP11	1RQ14
J1	-RESET
J3-2&1	+5V
J3-4&3	+3.3V
J3-6&5	+VREG (OPTION 3)
J5	FACTORY ONLY
JP12-1	TXD0 (LOOP UART)
JP12-2	RX1 (LOOP UART)
JP12-3	RXD1 (LOOP UART)
JP13-1	TXD1 (LOOP UART)
JP13-2	RX0 (LOOP UART)
JP13-3	RXD0 (LOOP UART)
J6, 7, 8, 9, 14, 15, 17, 18, &	FACTORY ONLY
J10	TXD6
J11	RXD6
J12	TXD7
J13	RXD7
J19	JTAG FOR CPLD (FACTORY ONLY)
JP19	16/-68 MODE
JP14	ENIR MODE
JP20, 21	FACTORY ONLY
J20-2	ADDRESS 400H
J20-4	ADDRESS 500H
J20-6	ADDRESS 600H
J20-8	ADDRESS 700H
J20-10	ADDRESS 800H
J20-12	ADDRESS 900H
J20-14	ADDRESS A00H
J20-16	ADDRESS B00H
J21	FACTORY ONLY
J22	RS-422/485 RXD7 (OPTION 1)
J23	RS-422/485 TXD6 (OPTION 1)
J28	RS-422/485 RXD6 (OPTION 1)
J29	RS-422/485 TXD7 (OPTION 1)
J24- 1&2	RS-422/485 RTS7 (OPTION 1)
J25- 1&2	RS-422/485 RTS6 (OPTION 1)
J30- 1&2	RS-422/485 RTS6 (OPTION 1)
J25- 1&2	RS-422/485 RTS7 (OPTION 1)
J26	RS-422/485 TXD8/RXD8 (OPTION 1)
J27	RS-422/485 TXD7/RXD7 (OPTION 1)
J32	IR TX7 (OPTION 2)
J33	IR MODE SELECT (OPTION 2) SEE TABLE 3
J35	IR MODE SELECT (OPTION 2) SEE TABLE 3
J36	SIR MODE OR MIR/FIR MODE (OPTION 2) SEE TABLE 3

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TABLE 3

MODE 0	MODE 0	FIR_SEL	RX FUNCTION	TX FUNCTION
1	0	*X	SHUTDOWN	SHUTDOWN
0	0	*0	SIR	FULL DISTANCE POWER
0	1	*0	SIR	2/3 DISTANCE POWER
1	1	*0	SIR	1/3 DISTANCE POWER
0	0	*1	MIR/FIR	FULL DISTANCE POWER
0	1	*1	MIR/FIR	2/3 DISTANCE POWER
1	1	*1	MIR/FIR	1/3 DISTANCE POWER

*Notes: HSDL-2300
        SIR from 2.4kb/s to 115.2kb/
        MIR/FIR 0.576mb/s to 4.0 mb/s

Installation of NT4.0 Driver, Application and GUI Program

- Turn your computer off and insert the XR16L788 board into an ISA slot. Plug the 78-pin octopus cable (DB25) onto the XR16L788 board; hold the XR16L788 in place while doing this. On the octopus cable, port number labels each RS-232 connector. Table 4 shows the correspondence between these port number labels and XR16L788 Channels.

Table 4

XR16L788	Octopus Cable (port number label)
Channel 0	Port 1
Channel 1	Port 2
Channel 2	Port 3
Channel 3	Port 4
Channel 4	Port 5
Channel 5	Port 6
Channel 6	Port 7
Channel 7	Port 8