ACB-MP™
PART #3310
USER MANUAL

SECTIONS:

FIGURES:

SECTION 1.

INSTALLATION

The ACB-MP Advanced Communications Board must be installed in one of the expansion slots of a Micro Channel™ Architecture (MCA) computer. Remove the cover from the computer and insert the board in one of the empty expansion slots. tighten the retaining screw located on the back of the computer. Replace the cover on the case and installation is complete.

NOTE: ***Be sure to refer to Section 2 for any dip jumper or shunt options which must be made before installing the ACB-MP adapter.***

SECTION 2.

OPTION SELECTION

PROGRAMMABLE OPTIONS

The Sealevel ACB-MP can be configured during the power up / initialization sequence by running the adapter setup program that is provided with by your Micro Channel™ Computer Manufacturer. If this program is missing please consult your manufacturer for a new one. The ACB-MP uses ID 61D7, so the file named ***@61D7.ADF*** (**A**dapter **D**efinition **F**ile) that is provided with the card must be copied to your reference disk. Address and IRQ (interrupt request) options are selected by changing the POS (**P**rogrammable **O**ption **S**elect) register. The software provided with the board will make all necessary modifications to the POS register. Please refer to the Micro Channel™ Technical Reference for more details on the initialization sequence and POS register programming.

The contents of the status register located at the Address Base+4 can be used to determine the current configuration of the board. The follow is a listing of the bit definitions of the register at Base+4. Please keep in mind that bits D1 - D5 correspond to the POS register and bits D6 and D7 reflect the dip jumper options that have been selected. Refer to the Micro Channel™ Technical Reference for more details on reading the pos register.

Addressing Options

I/O Base	BITS D1-D2
238 HEX	00
380 HEX	01
3A0 HEX	10
338 HEX	11

Interrupt Options

Interrupt	Bits D5-D3
IRQ3	100
IRQ4	101
IRQ5	110
IRQ9	111
IRQ10	000
IRQ11	001
IRQ12	010
IRQ15	011

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Interface	Bits-D6-D7
Invalid	00
EIA-530	01
RS-232	10
CCITT V.35	11

Status Port Register Bit Definitions:

The **Status Port** is also located at the Base +4 address

Signal **Q**uality **D**etect signal provided by some modems on pin 21 of the DB-25 connector can be read at bit D0 of the Status Port register. This signal is provided only when the RS-232 interface is selected. This bit represents the inverted status of the SQD signal. If SQD is "On", bit D0 of the Status Port register will be "0".

DIP JUMPER OPTIONS

The ACB-MP card has several dip jumper options that need to be selected before the card is installed. Dip jumpers are easily removed from their sockets by using a small flat blade screw driver .

Interface Options:

Interface	Dip Jumpers Installed
RS-232	E3, E4, E5
EIA-530	E1, E2, E3
CCITT V.35	E4, E5, E8

CLOCKING OPTIONS

The clocks (transmit and receive) for Channel A are typically supplied to the board by the modem or channel bank. The transmit clock supplied by the modem is echoed out to the interface connector as the signal TSET (**T**ransmit **S**ignal **E**lement **T**iming). If the board is to source the transmit clock, as in modem-less operation, the SCC can be programmed to generate a bit clock on the SCC TRXC pin, which will then be sent out on the TSET pin. The baud rate for the SCC can be set internally in the chip, using a programmed divisor and the oscillator frequency of 4.9152 Megahertz (MHz). Please refer to the Zilog 8530 Technical Reference for aid in programming the SCC to provide the correct clocking option.
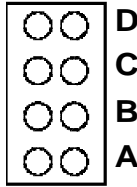
E7

E7 Positions "**A**" and "**B**" determine whether the V.35 Interface can act as a clock source. With both jumpers installed, TSET+ is located on pin 19 and TSET- is located on pin 18. *This option is valid only when the V.35 interface is selected. If any other interface is selected these jumpers should be removed.*

E7 Position "**C**" determines whether the EIA-530 (and RS-485) Transmit driver is enabled by the SCC signal **R**equest **T**o **S**end (RTS) or, always enabled. WIth the jumper installed, RTS enables the driver. Removing the jumper enables the driver regardless of RTS. This jumper should only be installed if you are running the board in a multi-drop polled environment such as RS-485, and you have software that knows how to "Talk" on the RS-485 bus. For normal point-to-point EIA-530 and RS-422, remove the jumper.

E7- Position "**D**" selects whether the transmit clock is supplied as an input on the TXC PIN(S) of P2 (DB-25) or is output from the SCC on the TSET pin(s) of P2. The SCC can be programmed for TXC to be input or output.

NOTE: **E7 Position "D" must be removed and Write Register 11 of the SCC must be programmed appropriately if the TRXC pin is to be an output signal. Leaving E2 position "D" installed, and programming the TRXC pin to be an input signal allows the TXC input signal to be echoed back out on the TSET pin (TXC DTE source). Please refer to the Zilog 8530 Technical Reference and the included Toolkit Disk for aid in programming the SCC.**

SECTION 3.

CONNECTOR PINOUTS

RS-232 SIGNALS:

SIGNAL	NAME	PIN #	MODE
GND	Ground	7	
RD	Receive Data	3	Input RS-232
CTS	Clear To Send	5	Input RS-232
DSR	Data Set Ready	6	Input RS-232
DCD	Data Car. Detect	8	Output RS-232
TD	Transmit Data	2	Output RS-232
RTS	Request To Send	4	Output RS-232
TXC	Transmit Clock	15	Input RS-232
RXC	Receive Clock Positive	17	Input RS-232
TSET	Transmit Signal Element Timing	24	Output RS-232
DTR	Data Terminal Ready	20	Output RS-232
RI	Ring Indicator	22	Input RS-232
SQD	Signal Quality Detect	21	Input RS-232

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V.35 SIGNALS:

SIGNAL		NAME	DB-25 PIN #	V.35 PIN #	MODE (Signal level)
GND		Ground	7	B	
RDB	RX+	Receive Positive	10	T	Input V.35
RDA	RX-	Receive Negative	11	R	Input V.35
CTS		Clear To Send	5	D	Input RS-232
DSR		Data Set Ready	6	E	Input RS-232
DCD		Data Carrier. Detect	8	F	Input RS-232
TDB	TX+	Transmit Positive	12	S	Output V.35
TDA	TX-	Transmit Negative	13	P	Output V.35
RTS		Request To Send	4	C	Output RS-232
TXCB	TXC+	Transmit Clock Positive	21	AA	Input V.35
TXCA	TXC-	Transmit Clock Negitive	23	Y	Input V.35
RXCB	RXC+	Receive Clock Positive	24	X	Input V.35
RXCA	RXC-	Receive Clock Negitive	25	V	Input V.35
TSETB	TSET+	Tx. Signal Timing Positive	19	W	Output V.35
TSETA	TSET-	Tx. Signal Timing Negitive	18	U	Output V.35
DTR		Data Terminal Ready	20	H	Output RS-232
RI		Ring Indicator	22	J	Input RS-232

EIA- 530, RS-422, RS-485

Signal		Name	Pin #	Mode
GND		Ground	7	
RDB	RX+	Receive Positive	16	Input
RDA	RX-	Receive Negative	3	Input
CTSB	CTS+	Clear To Send Positive	13	Input
CTSA	CTS-	Clear To Send Negitive	5	Input
DSRB	DSR+	Data Set Ready Positive	22	Input
DSRA	DSR	Data Set Ready Negitive	6	Input
DCDB	DCD+	Data Carrier Detect Positive	10	Input
DCDA	DCD-	Data Carrier Detect Negitive	8	Input
TDB	TX+	Transmit Positive	14	Output
TDA	TX-	Transmit Negative	2	Output
RTSB	RTS+	Request To Send Positive	19	Output
RTSA	RTS-	Request To Send Negitive	4	Output
DTRB	DTR+	Data Terminal Ready Positive	23	Output
DTRA	DTR-	Data TerminalReady Negitive	20	Output
TXCB	TXC+	Transmit Clock Positive	12	Input
TXCA	TXC-	Transmit Clock Negitive	15	Input
RXCB	RXC+	Receive Clock Positive	9	Input
RXCA	RXC-	Receive Clock Negitive	17	Input
TSETB	TSET+	Terminal Timing Positive	11	Output
TSETA	TSET-	Terminal Timing Negitive	24	Output
RIA	RI-	Ring Indicator Negitive	18	Input
RIB	RI+	Ring Indicator Positive	25	Input

NOTE: The EIA-530 pinout is adhered to except for the addition of the signal *Ring Indicator* which is not specified by EIA-530.

Each receiver of the RS-422 / 530 line has a 100 ohm resistor across the input and a 1k ohm pull-up/pull-down combination to bias the receiver inputs.

MODEM CONTROL SIGNALS

To provide a means of "Interrupt On Status Change" for **R**ing **I**ndicator (RI) and **D**ata **S**et **R**eady (DSR) the modem control signals of the second port on the SCC are utilized. Please refer to the following table for the modem control signal assignments and the Zilog 8530 Technical Manual for information on programming the SCC for "Interrupt On Status Change."

Signal Name	Location On SCC
CTS	CTS A
RI	DCD B
DSR	CTS B
DCD	DCD A

SECTION 4.

TECHNICAL DESCRIPTION

The Sealevel Systems ACB-MP **A**dvanced **C**ommunications **B**oard is a single channel high speed synchronous / asynchronous serial adapter for your Micro Channel™ Architecture (MCA) computer. The ACB-MP can be configured for RS-232, EIA-530, or CCITT V.35 communications. The IBM Corporation Registration Number for the ACB-MP is 61D7 Hex.

Features Of The ACB-MP:

- Versatile configuration options allow for easy integration into existing systems

- One channel of synchronous / asynchronous communications using 8530 Channel A

- Selectable Port Address and IRQ level (3-5,9,10-12,15) through the POS Register

- Selectable RS-232 or CCITT V.35 or RS-422/485/EIA 530 Interface on a DB-25 male connector

- Supports TD, RD, RTS, CTS, DSR, DCD, TXC, RXC, DTR, RI, and TSET signals on all interfaces and includes SQD on the RS-232 interface

The board occupies eight Input/Output (I/O) addresses. The first four are used by the SCC chip, while the fifth address (Base+4) is the address of the on-board status register. The addresses at Base+5, 6, and 7 are not used.

SECTION 5.

SPECIFICATIONS

ENVIRONMENTAL SPECIFICATIONS

Specification	Operating	Storage
Temperature Range	0 - 50 Degrees C 32 - 122 Degrees F	-20 - 70 Degrees C -40 - 100 Degrees F
Humidity Range	0- 90% R.H.Non-Condensing	0- 90% R.H. Non-Condensing

POWER CONSUMPTION

INTERFACE	+5 Vdc	-12 Vdc	+12 Vdc
V.35	535 mA	140 mA	35 mA
RS-232	520 mA	150 mA	35 mA
RS-422/EIA-530	575 mA	N/A	N/A

MEAN TIME BETWEEN FAILURES (MTBF)

- Greater than 150,000 Hrs. (Calculated)

MANUFACTURING SPECIFICATIONS

- IPC 610-A Class-III standards adhered to with a 0.1 Visual A.Q.L. and 100% Functional testing.

- Boards are built to U.L. 94V0 rating and are 100% Electrically tested. Boards are Solder Mask over bare Copper or Solder Mask over Tin Nickel.

SECTION 6.

WARRANTY

Sealevel Systems, Inc. provides a lifetime warranty for this product. Should this product fail to be in good working order at any time during this period, Sealevel Systems will, at it's option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster.

Sealevel Systems assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, or inability to use this product. Sealevel Systems will not be liable for any claim made by any other related party.

RETURN AUTHORIZATION MUST BE OBTAINED FROM SEALEVEL SYSTEMS BEFORE RETURNED MERCHANDISE WILL BE ACCEPTED. AUTHORIZATION CAN BE OBTAINED BY CALLING SEALEVEL SYSTEMS AND REQUESTING A RETURN MERCHANDISE AUTHORIZATION (RMA) NUMBER.

Sealevel Systems Incorporated
PO Box 830
155 Technology Place
Liberty, Sc 29657 USA
(864) 843-4343   FAX (864) 843-3067
E-Mail: support@sealevel.com
Internet: www.sealevel.com

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