

SERIAL/PARALLEL, I/O ADAPTER

FOR 286 MICROCOMPUTERS

USER'S MANUAL

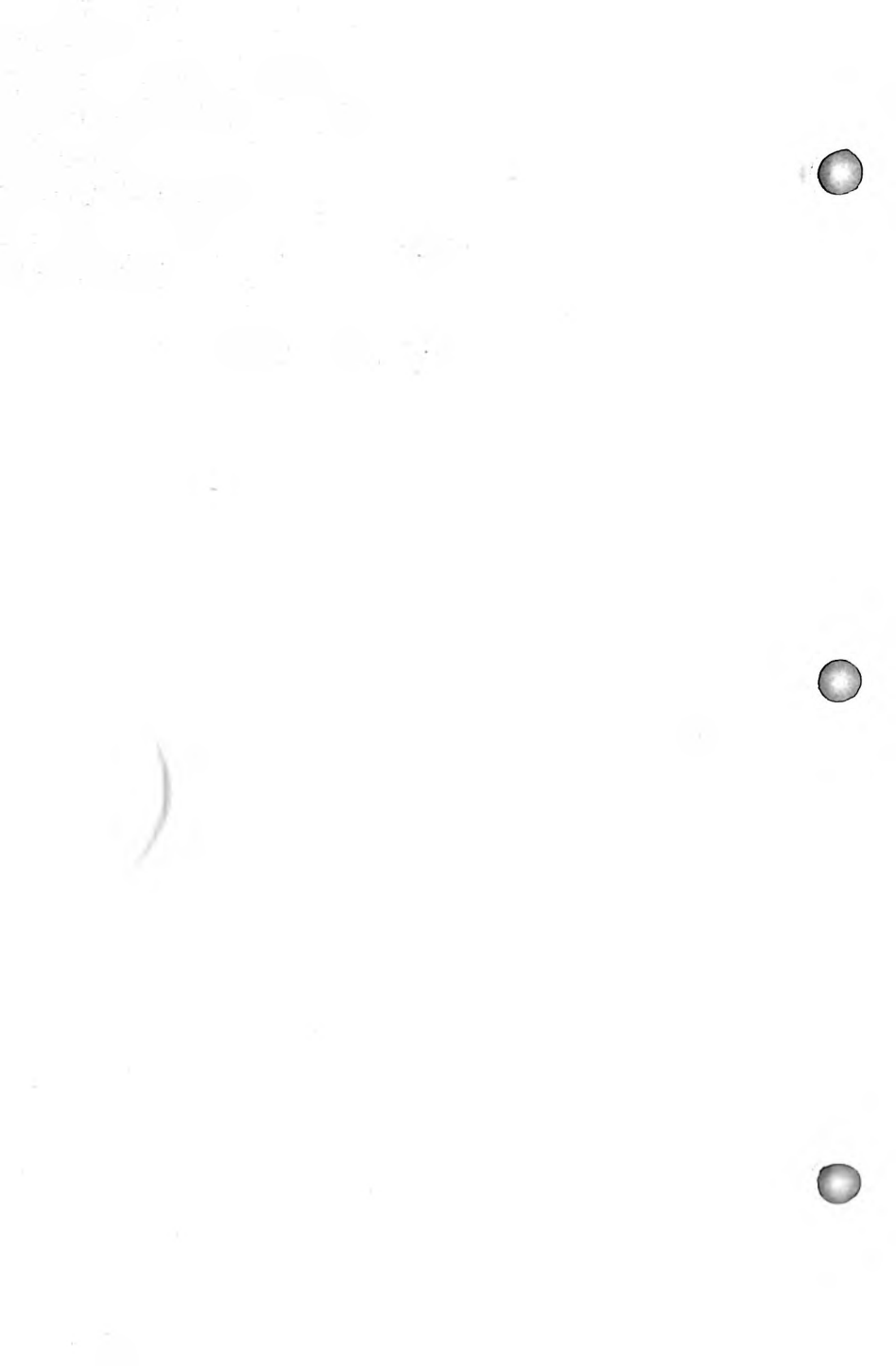


TABLE OF CONTENTS

	Page
SECTION 1 INTRODUCTION	1
1.1 Checklist	1
1.2 Features	1
1.3 Connector Profile	1
1.4 Installation	2
SECTION 2 SERIAL PORTS	4
2.1 General Description	4
2.2 I/O Ports Selection	4
2.3 Interrupts	5
2.4 Forced Active Signals	5
2.5 I/O Signals at Serial Ports	6
2.6 The Serial Communication Parameters	7
SECTION 3 PARALLEL PORT	8
3.1 I/O Port Selection	8
3.2 Interrupt	8
3.3 LPT Assignment	8
3.4 I/O Signals at the Parallel Port	9
 FIGURES:	
Fig 1.1 The board Layout	3



SECTION 1 INTRODUCTION

1.1 CHECKLIST

Each set of ATA-5061 shipped contains the following standard items:

1. One ATA-5061 serial/parallel/game adapter
2. A twin cable mounted together at one end which includes:
 - a. One 26-pin to 25-pin cable for serial port at J14
 - b. One 16-pin to 15-pin cable for game port at J15.

Optional item(s) as specified per order may include:

1. An optional second serial port chip set and/or
2. One 9-pin to 25-pin shielded communication cable for the optional second serial port

1.2 FEATURES

ATA-5061 is designed for use in the 286 micro-computer system which supports:

1. Two serial ports with EIA RS232C interface (one port is optional).
2. One parallel printer port with Centronics standard interface.
3. One game port.

1.3 CONNECTOR PROFILE

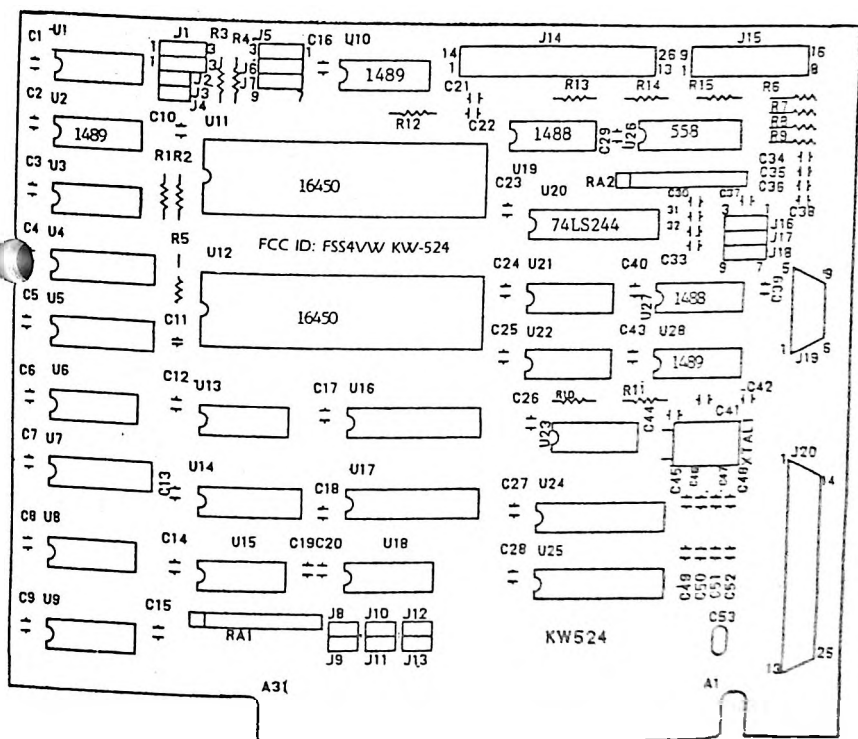
Location	Classified	Connector type	Cable to attach	Note
J14	Serial port	26-pin header type	26-pin to 25-pin	
J15	game port	16-pin header type	16-pin to 15-pin	
J19	serial port	9-pin D shell	9-pin to 25-pin	optional
J20	parallel port	25-pin D shell	not provided	

Note: See Fig. 1.1 for locations

1.4 INSTALLATION

1. To start, insert the optional chip set if purchased as follows:
 - insert 16450 to the socket at U12
 - insert 1488 to the socket at U27
 - insert 1489 to the socket at U28
2. Plug the socket-type ends of the twin cable into J14, J15. Align pin 1 on J14/J15 with the red-lined side of the cable.
3. Configure the jumper settings on the adapter following the instructions in the manual.
4. Make sure the power is turned off then plug the card edge connector on the adapter into one of the 2 by 31 slots in the I/O channel area on the system board.
5. Screw the built-in bracket on ATA-5061 to the rear-panel of personal computer to let the connectors facing out from a rear-panel window.
6. Screw the bracket at the remote end of twin cable to the rear panel of personal computer to let the connectors facing out from another rear-panel window.

Fig. 1.1 THE BOARD LAYOUT OF ATA-5061



SECTION 2 SERIAL PORTS

2.1 GENERAL DESCRIPTION

ATA-5061 supports up to two serial ports for asynchronous communications of the system as DTE to access serial devices such as modem.

J14 is a 26-pin header-type connector which mates with the 26-pin to 25-pin flat cable come along to form an EIA standard RS232C interface.

J19 needs the insertion on board of the optional serial port chip set to be classified as an RS232C port. The connector on J19 is a male 9-pin, D-shell type which can be connected to the optional communications cable (9-pin to 25-pin, shielded) and carries all the signals of a standard EIA RS232C interface at the 25-pin end.

2.2 I/O PORTS SELECTION

COM1 and COM2 are the two system-designated I/O ports for serial communications with the following hex range:

COM 1.....3F8 hex to 3FF hex
COM 2.....2F8 hex to 2FF hex

J14/J19 can be addressed as COM1/COM2 or made to be disabled by shorting pins on J1 and J2 as follows:

NOTE: J1 and J2 are 3-pin Berg-strip connectors, both with pin 1 on the left side.

pins to be shorted		port defined	
J1	J2	J14	J19
1,2	2,3	COM1	COM2
2,3	1,2	COM2	COM1
None	2,3	disable	COM2
None	1,2	disable	COM1
1,2	None	COM1	disable
2,3	None	COM2	disable
None	None	disable	disable

2.3 INTERRUPTS

Having addressed the system serial ports to J14 and/or J19, the interrupts to COM1 and COM2 (IRQ4 and IRQ3 in turn) does not associate with J14/19 automatically unless a matching configuration on jumpers J10, J11, J12 and J13 are made according to the following:

IRQ accessed by		configuration			
J14	J19	J10	J11	J12	J13
IRQ4	IRQ3	open	short	short	open
IRQ3	IRQ4	short	open	open	short

*short means to bridge the two pins on the jumper.

2.4 FORCED ACTIVE SIGNALS

The computer will not proceed communication if one or more of the input signals were not received. This happens, for instance, in certain kinds of serial communications where some input signal(s) are excluded. To facilitate communication in these applications, there are two group of 3-pin Berg-strip connectors on the adapter which can be configured to force such signals to be constant active at the serial port(s).

a. GROUP J5, J6, J7 vs. port J14.

Shorting the underlined pin pairs with jumpers by the diagram at left defines "forced active" for input signals on J14. On the other hand, shorting by the diagram at right will keeps J14 perceiving the input signals "as is".

J5	<u>3</u>	<u>2</u>	1	J5	3	<u>2</u>	<u>1</u>
J6	<u>6</u>	<u>5</u>	4	J6	6	<u>5</u>	<u>4</u>
J7	<u>9</u>	<u>8</u>	7	J7	9	<u>8</u>	<u>7</u>

b. GROUP J16, J17, J18 vs. port J19

Shorting the underlined pin pairs with jumpers as the diagram at left defines "forced active" for

input signals on J19. On the other hand, shorting by the diagram at right will keep J19 perceiving the input signals "as is".

J16	<u>3</u>	<u>2</u>	1	J16	3	<u>2</u>	<u>1</u>
J17	<u>6</u>	<u>5</u>	4	J17	6	<u>5</u>	<u>4</u>
J18	<u>9</u>	<u>8</u>	7	J18	9	<u>8</u>	<u>7</u>

2.5 I/O SIGNALS AT THE SERIAL PORTS

a. J14

A colored line on the 26-pin to 25-pin cable (for J14) indicates the pin-1 side which needs to be aligned with same on J14 when connecting. The 25-pin end is to be connected to a serial device with RS232C standard interface.

The pin assignment at the 25-pin end are:

pin #	Signal control line	
2	TX	Transmit Data
3	RX	Receiving Data
4	RTS	Request To Send
5	CTS	Clear To Send
6	DSR	Data Set Ready
7	GND	Signal Ground
8	DCD	Data Carrier Detect
20	DTR	Data Terminal Ready
22	RI	Ring Indicator

*pins not shown above do not carry signals.;

b. J19

J19 needs the insertion of the optional serial port chip set (refer to 1.4) to be activated.

The optional 9-pin to 25-pin communication cable will extend J19 to the versatile EIA RS232C interface. The wiring diagram for this cable is as the following:

pin # at DE9S	Control signal	pin # at DB25P
1	DCD Data Carrier Detect	8
2	RX Receiving Data	3
3	TX Transmit Data	2
4	DTR Data Terminal Ready	20
5	GND Signal Ground	7
6	DSR Data Set Ready	6
7	RTS Request To Send	4
8	CTS Clear To Send	5
9	RI Ring Indicator	22

DE9S — female 9-pin D shell connector

DB25P — male 25 pin D-shell connector

2.6 THE SERIAL COMMUNICATION PARAMETERS

Serial communication parameters are programmable for the serial ports on ATA-5061 with MODE command under disk operation system.

These parameters are baud rate, parity, number of data bits, number of stop bits, and option for continuous retry, they need to be properly set to harmonize with those of the serial device connected.

SECTION 3 PARALLEL PORT

3.1 I/O PORT SELECTION

A parallel printer port with the standard Centronics interface is located at J20 with a female 25-pin, D-shell connector. This parallel port can be addressed as either LPTA or LPTB (which are system-located at hex range 378 to 37A and 278 to 27A in turn) or made disabled by configuring on jumpers J3, J4, as below:

assignment to J20	configuration on	
	J3	J4
LPTA	open	short
LPTB	short	open
disabled	open	open

*short means to bridge the two pins on the jumper

3.2 INTERRUPT

Having addressed one of the system parallel port to J20, the interrupts to LPTA and LPTB (IRQ7 and IRQ5 in turn) does not associate to J20 automatically unless a matching configuration on jumpers J8, J9 are made as the following:

IRQ accessed by J20	configuration	
	J8	J9
IRQ5	open	short
IRQ7	short	open

3.3 LPT ASSIGNMENT

The disk operation system can access up to 3 parallel printers, naming them LPT1, LPT2 and LPT3. Their I/O port addresses are variable depending on whether there is a monochrome/printer adapter installed in the system.

- a. There is a monochrome/printer adapter installed:
LPT1 is addressed to the I/O port reserved to such an adapter (at 3BC hex), LPT2, LPT3 are addresses at LPTA (378 hex) and LPTB (278 hex) respectively.
- b. No adapter with printer interface is installed other than ATA-5061, then:
LPT1 is addressed to LPTA (378 hex), LPT2 is addressed to LPTB (278 hex), LPT3 is not addressed.

3.4 I/O SIGNALS AT THE PARALLEL PORT

pin # at the 25-pin connector	I/O signal
1	— STROBE
2	data bit 0
3	data bit 1
4	data bit 2
5	data bit 3
6	data bit 4
7	data bit 5
8	data bit 6
9	data bit 7
10	— ACK
11	BUSY
12	PE
13	SLCT
14	— AUTO FEED XT
15	— ERROR
16	— INIT
17	— SLCT IN
18—25	GROUND

