

# DSP 550

## Technical Reference

### FEATURES

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- Compatible with the 82C550 and 16550 Universal Asynchronous Receiver Transmitters (UARTs).
- Two high speed RS-232 serial ports which support baud rates of up to 112K.
- One full bi-directional parallel port capability.
- On board status registers to provide error conditions type and status of the transfer operations being performed.
- Complete MODEM handshaking capability.
- FIFO (First In First Out) mode capability with 16 byte buffer for data transmit/receive to reduce the number of interrupts presented to the CPU.
- Processor interrupt system, software configurable to minimize computing required to handle the communications link.
- IRQ and address selection flexibility for each I/O port.

### HARDWARE CONFIGURATION

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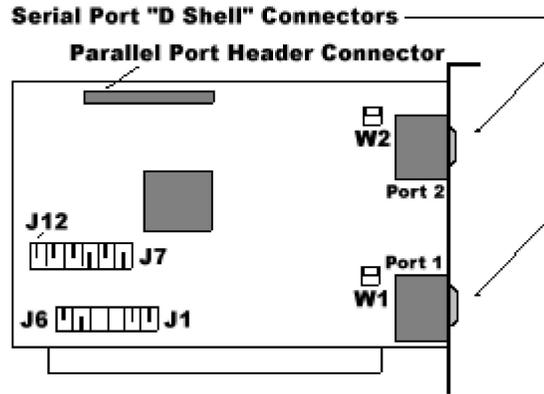
Use the 14 jumpers to configure the adapter for use in your system. The following table describes the various jumpers.

<b>Jumper</b>	<b>Function</b>
J1	Parallel Port IRQ Select
J2	Serial Port #1 IRQ Select
J3	Serial Port #1 IRQ Select
J4	Serial Port #2 IRQ Select
J5	Serial Port #2 IRQ Select
J6	Parallel Port Bi-directional Enable/Disable
J7 & J8	Serial Port #1 Enable/Disable
J9 & J10	Serial Port #2 Enable/Disable
J11 & J12	Parallel Port Enable/Disable
W1 & W2	+5 Volt/Ring Indicator Select

### BOARD LAYOUT

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The layout of the DSP 550 adapter is shown below. See table above for a description of the jumpers.

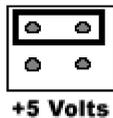


*Diagram of the DSP 550*

## +5 VOLT/RING INDICATOR SELECT

W1 and W2 (W1 for Port #1 and W2 for Port #2) provide a flexibility not found on many asynchronous adapters. These jumpers determine whether a "Ring Indicator" signal or "+5 Volt" power supply line is provided to the serial device connected to the respective serial port. Typically, the "+5 Volt" supply is required only for **early** generation mouse systems or specialty serial devices. Shown below is the respective jumper settings for W1 and W2.

### Ring Indicator\*



+5 Volts

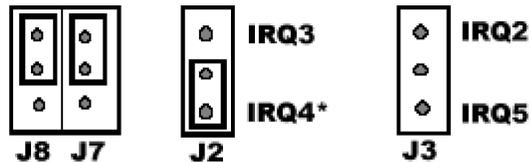
The Ring Indicator setting shown here is the default for W1 and W2. This diagram is representative of W1 and W2.

\* Default Setting

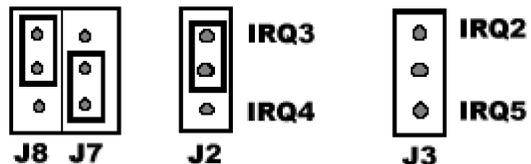
## ASYNCHRONOUS SERIAL PORT #1

This serial port is functionally identical to an IBM Asynchronous Serial Communications Adapter. By using the proper cable, this port can be connected to any serial device that support asynchronous RS-232 C communications. Below are the jumper settings for enabling the serial port as COM1:, COM2:, or COM3:, and disabling the serial port. Note - You may set the port IRQ for 2, 3, 4 or 5.

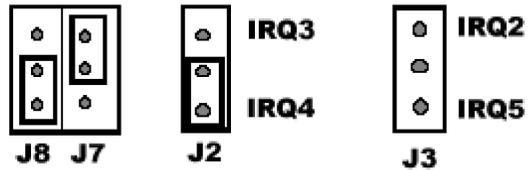
COM1: ON\*  
Address: 3F8  
IRQ4\*



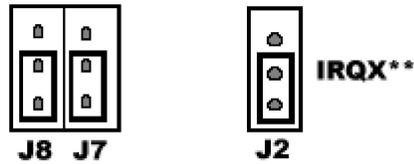
COM2: ON  
Address: 2F8  
IRQn (n=2,3,4, or 5\*)



COM3: ON  
 Address: 3E8  
 IRQn (n=2,3,4, or 5\*)



Serial  
 Port #1 OFF



**NOTE** - The serial ports must be set to different com port numbers each with unique IRQ in order to avoid bus conflict. On the DSP 550 ports cannot share a common port or interrupt.

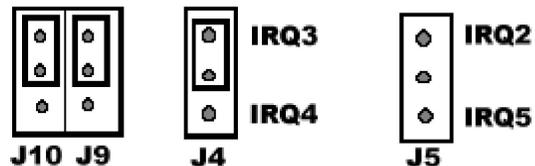
\*Default Setting

\*\*This jumper has no effect when this port is disabled

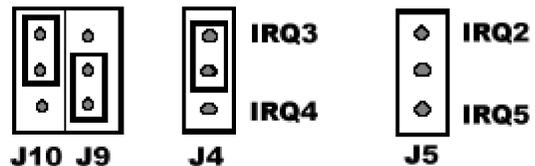
## ASYNCHRONOUS SERIAL PORT #2

This serial port is functionally identical to an IBM Asynchronous Serial Communications Adapter. By using the proper cable, this port can be connected to any serial device that support asynchronous RS-232 C communications. Below are the jumper settings for enabling the serial port as COM2:, COM3:, or COM4:, and disabling the serial port. Note - You may set the port IRQ for 2, 3, 4 or 5.

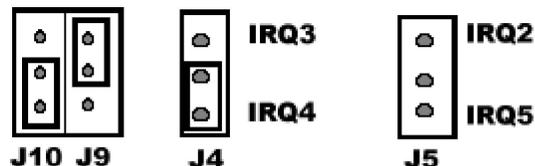
COM2: ON\*  
 Address: 2F8  
 IRQ3\*



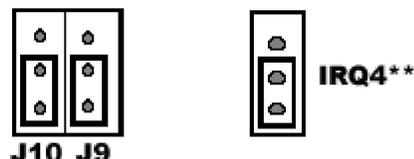
COM3: ON  
 Address: 3E8  
 IRQn (n=2,3,4, or 5\*)



COM4: ON  
 Address: 2E8  
 IRQn (n=2,3,4, or 5\*)



Serial  
 Port #2 OFF



**NOTE** - The serial ports must be set to different com port numbers each with unique IRQ in order to avoid bus conflict. On the DSP 550 ports cannot share a common port or interrupt.

\*Default Setting

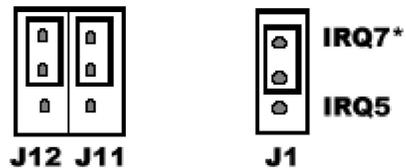
\*\*This jumper has no effect when this port is disabled

## PARALLEL PORT

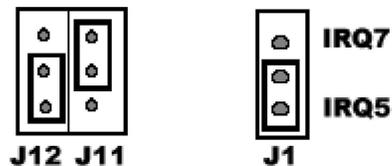
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This port can be configured as I/O port address 378H, address 278H or can be disabled to avoid addressing conflict with other installed devices. This port can also be configured as either a bi-directional (two-way data transmission) or mono-directional (one-way data transmission) parallel port.

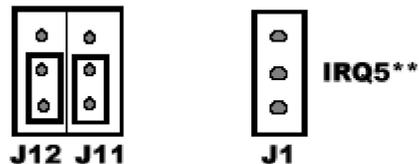
Address: 378  
IRQ7  
may also be set to IRQ 5



Address: 278  
IRQ5  
may also be set to IRQ 7



Parallel Port  
OFF



Parallel Port  
Bidirection



\*Factory Setting

\*\*This jumper setting has no effect with the Parallel Port disabled.

\*\*\*This jumper enables or disables the Bi-directional capabilities of the parallel port on the DSP 550 board. When enabled, this port looks like the bi-directional parallel port found on the IBM PS/2 systems.

**NOTE** - Be sure there are no two I/O ports in the system with the same I/O address.

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