



# NMIS-4004 8-CH 12-BIT ADC CARD

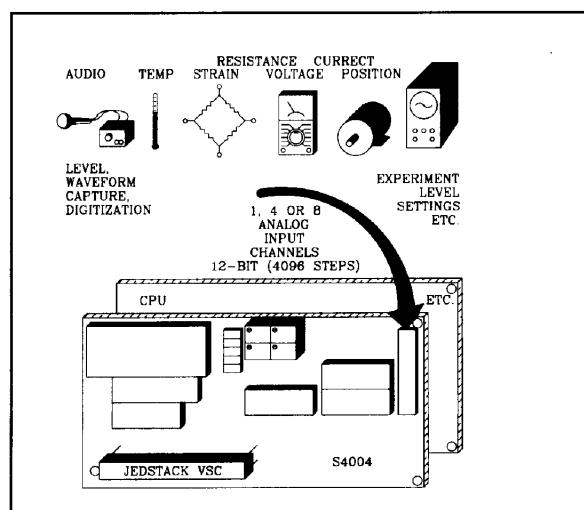
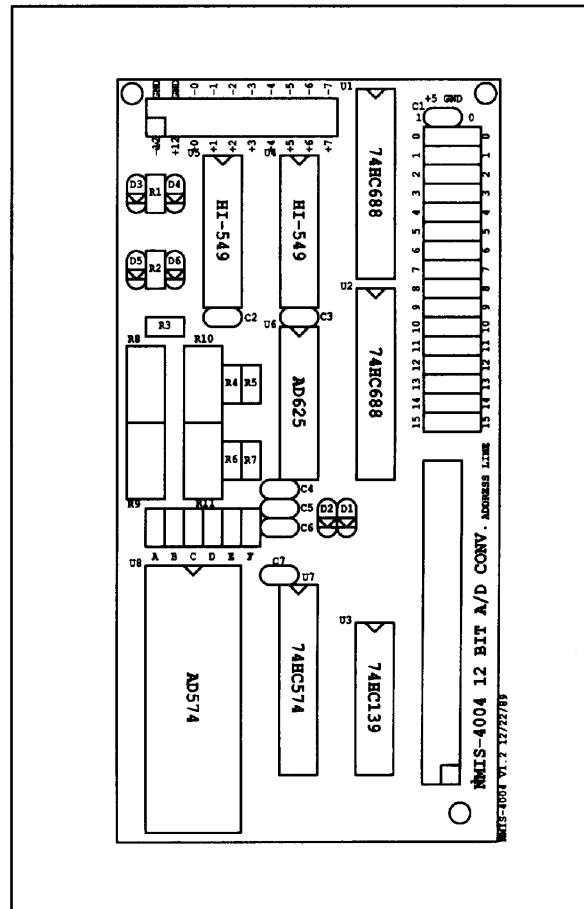
The NMIS-4004 12-Bit Analog-to-Digital Converter Card, in 2x4" s™ format, provides a JEDSTACK™ computer system with 1, 4 or 8 channels of Analog-to-Digital input. The Honeywell HADC574Z Analog-to-Digital Converter chip is memory mapped by the card. Its 12-bit A/D voltage input is buffered by a AD625 programmable-gain instrument amplifier. The NMIS-4004 can also accept 2, 1, or no HI-549 multiplexers giving it 8, 4, or 1 channels of differential input.

## FEATURES

- 12-bit A/D - 4096 full scale counts
- Differential input protected up to 70V<sub>p-p</sub>
- Unipolar/Bipolar selectable inputs
- Input ranges from +/-5mV to +/-10V full scale
- SPT Honeywell HADC574Z A/D Converter chip
- Built-in transparent sample-and-hold circuit
- Fast 25 $\mu$ s conversions (15 $\mu$ s version available)
- Optional HI-549 Multiplexers 1, 4 or 8 inputs
- AD625 Instrument Amplifier
- Gain factor of 1 to 1024, set by resistor value
- Trim pots for span/zero calibration settings
- Ext. +/-12 to 15V "analog" pwr supply accepted

A 20-pin connector, labeled J1, has the various A/D differential inputs, and two analog-voltage-supply pins and their returns. The differential signals from the connector are routed to the HI-549 multiplexers. The selected signal goes to the AD625 instrument amplifier. Then is applied to the HADC574Z for conversion.

A Vertical Stacking Connector in the lower right hand corner (top view) provides connections to the processor's address and data bus, control signals, 5V power and ground. Address decoding of the chip's space in memory is accomplished by two octal comparators and 16 two-position jumpers. Each jumper setting corresponds to the state of a particular address line. The NMIS-4004 occupies four addresses. Any 4-byte boundary in the 64K address space of the JEDSTACK™ bus can be selected by correct jumper placement.



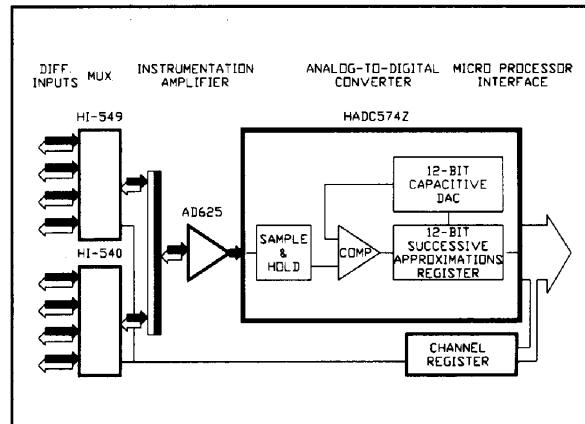
## Application

**NMIS-4004****8-CH 12-BIT ADC CARD****2x4" s**

## DESCRIPTION

The NMIS-4004 D/A card is designed to stack on the 2x4's™ NMIS Series, the "100 Squared"™ NMIX and the "Generic Target Computer"™ NMIT Series (with the Vertical Stacking Connector added to the latter) of single board computers. The JEDSTACK™ provides the interface signals to the board including address lines, data lines, control lines and 5V power and ground. The fast HADC574Z allows 150nS access times.

A 20-pin connector, labeled J1, has the various A/D differential inputs, and two analog-voltage-supply pins and their grounds. The differential signals from the connector are routed to the HI-549 multiplexers. One of the eight possible channels will be selected. The channel is selected by writing to the channel register. The selected signal then goes through a protection circuit that prevents overvoltage damage to the rest of the board, and then to the AD625 instrument amplifier. The conditioned signal is now applied to the HADC574Z for conversion. A write to the A/D Converter starts conversion. The conversion is complete, and ready to read, 25uS later.

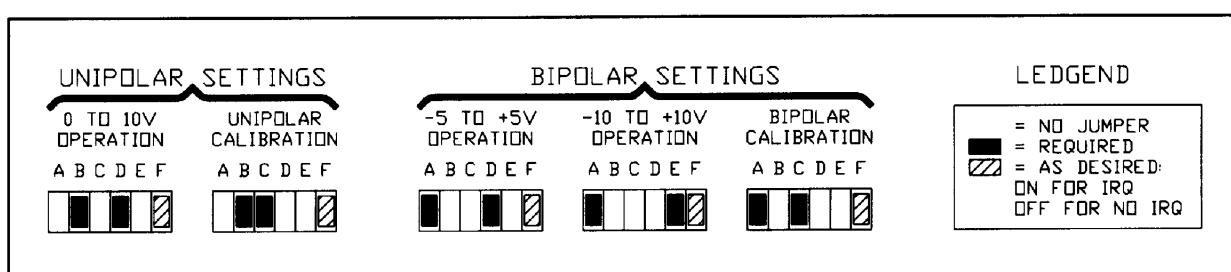


**Block Diagram**

ADDRESS	READ	WRITE
XXX0	DO NOT READ	CHANNEL SELECTION
XXX1	DO NOT READ	CHANNEL SELECTION
XXX2	MSB DATA	START CONVERSION
XXX3	LSB DATA	START CONVERSION

**Register Summary**

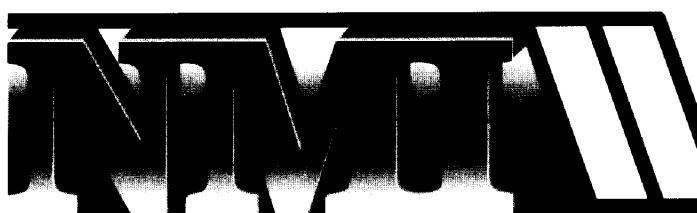
## Jumper Settings



### WORLD HEADQUARTERS

### WORLDWIDE REPRESENTATIVES

AMERICA (N, C & S)	CENTRAL EUROPE	SOUTHERN EUROPE	SCANDINAVIA	ASIA
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