



MOTOROLA

M68FDIC/D1

**Floppy Disk
Interconnect Adapter
User's Manual**

A large graphic element consisting of a blue grid that tapers from left to right, creating a funnel-like shape. The word 'MICROSYSTEMS' is printed in a bold, sans-serif font across the middle of this graphic.

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FLOPPY DISK
INTERCONNECT ADAPTER
USER'S MANUAL

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First Edition

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FLOPPY DISK INTERCONNECT ADAPTER

The floppy disk interconnect adapter is designed to interface Motorola floppy disk controller modules with floppy disk drives. The interconnect adapter adapts the signals on the Motorola 50-pin connector to the disk drive 40-pin connector. As shown in the schematic certain signals are buffered and inverted. A BCD-to-decimal decoder/driver is provided on the drive select lines to assure proper drive selection.

Table 1 lists each pin connection, signal mnemonic, and signal characteristic for connector P2. Connector P2 interconnects through a cable to the Motorola floppy disk controller module.

TABLE 1. Connector P2 Interconnect Signals

PIN NUMBER	SIGNAL MNEMONICS	SIGNAL NAME AND DESCRIPTION
1	+5 Vdc	+5 Vdc Power - input voltage used as a pull-up on gates.
2-40 (All Even)	GND	Ground.
3	+5 Vdc	+5 Vdc Power - Same as power on pin 1.
5	<u>DIRECTION</u>	DIRECTION - this signal input is used in conjunction with the STEP signal to move the recording head from track to track. When this signal is logic low level, the recording head is moved to the lower numbered tracks (out). When this signal is a logic high level, the head moves to the higher numbered tracks (in). This signal must remain in the desired logic state during the duration of the STEP signal.
7	<u>STEP</u>	STEP - this signal input is used in conjunction with the DIRECTION signal to move the recording head from track to track. A logic low level pulse causes the head to be moved one track (step) in the direction indicated by the DIRECTION signal.
9	<u>DBL SIDE</u>	DOUBLE-SIDED INDICATION - used only with drives which have double-sided capability.
11,13		Not used.
15	<u>SELECT 0</u>	SELECT 0 - the logic low level input signal used to select disk drive 0.
17	<u>TRACK 00</u>	TRACK 00 - low level output signal used to indicate when the recording head is positioned over track 00. When low, the stepper motor drive circuits are inhibited to prevent further outward movement of the head.

TABLE 1. Connector P2 Interconnect Signals (cont'd)

PIN NUMBER	SIGNAL MNEMONICS	SIGNAL NAME AND DESCRIPTION
19	<u>HEAD LOAD</u>	HEAD LOAD - this low level input signal is used to position the flexible diskette against the recording head.
21	<u>READY</u>	READY - this low level output signal is used to indicate that the flexible diskette is inserted correctly into disk drive 0, and that the dc voltage levels and disk speed in this drive are correct.
23	<u>TRACK 43</u>	ABOVE TRACK 43 - this input signal is used to control the amplitude of the write current in the recording head. When recording on tracks 0 through 43, this signal must be a high level. Conversely, when recording on tracks 44 through 76, this signal must be a low level.
25	<u>INDEX</u>	INDEX - a low level output pulse used to indicate the beginning of a track. This pulse occurs once per revolution of the diskette.
27	<u>HEAD 1</u>	HEAD 1 - an input signal in advanced design systems to select the drive head.
29	<u>WRT ENABLED</u>	WRITE ENABLED - a low level output signal from the write tab sensor used to indicate that writing may take place.
31	<u>WRITE DATA</u>	WRITE DATA - this input signal consists of low level pulses representing data to be recorded on the flexible diskette. Write current reverses direction on the leading edge of each pulse.
33	<u>EN WRITE</u>	ENABLE WRITE - a low level input signal used to enable recording of data on the flexible diskette. When this signal is a high level, reading data from the flexible disk is enabled.
35	<u>READY 1</u>	READY 1 - this low level input signal is used to indicate that the flexible diskette is inserted correctly into disk drive 1, and that the dc voltage levels and disk speed in this drive are correct.
35	<u>SEL 2/3</u>	SELECT 2 or 3 - an input signal used in advanced design systems to select drive 2 or 3.
37	<u>READ DATA</u>	READ DATA - this output signal contains the unseparated data read from the flexible diskette.
39	<u>SELECT 1</u>	SELECT 1 - a low input signal used to select disk drive 1.

The module may be mounted on any panel. A cutout must be provided for connector P2. Figure 1 shows the mounting dimensions.

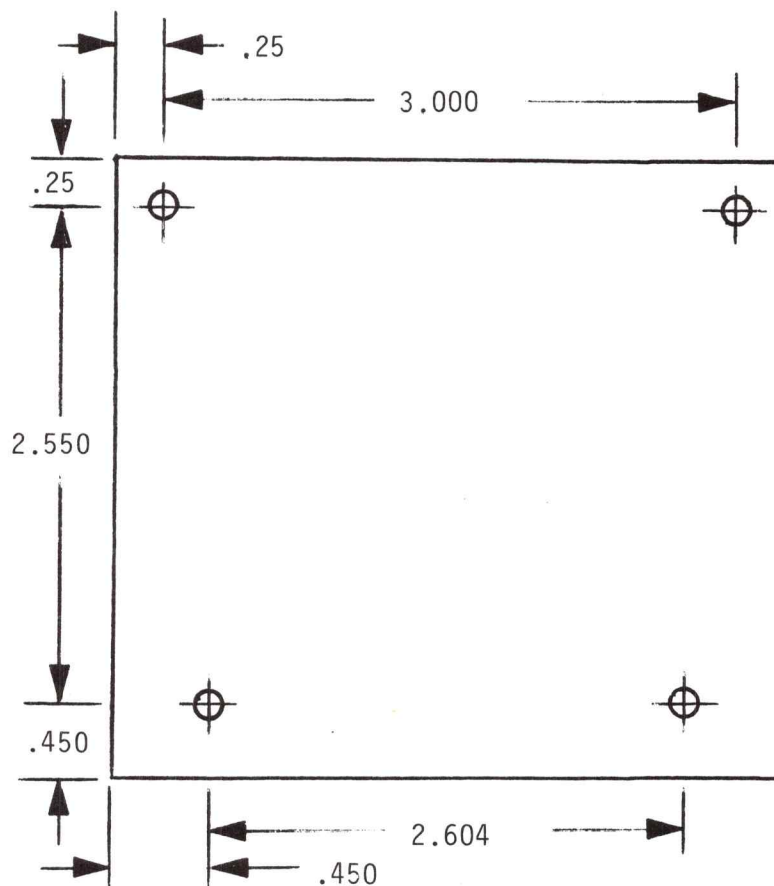


FIGURE 1. Mounting Dimensions

Table 2 lists the components of the interconnect adapter. The parts locations are illustrated in Figure 2. This parts list reflects the latest issue of hardware at the time of printing.

TABLE 2. Interconnect Adapter Parts List

REFERENCE DESIGNATION	MOTOROLA PART NUMBER	DESCRIPTION
	84CW6744X01	Printed wiring board
C1	23NW9618A33	Capacitor, electrolytic, 22 uF @ 16 Vdc
C2,4,5,6	21NW9702A09	Capacitor, fixed, ceramic, 0.1 uF @ 50 Vdc
C3	21NW9702A01	Capacitor, fixed, ceramic, 0.1 uF @ 50 Vdc
P1	28NW9802A90	Connector, 50-pin
P2	28NW9802C48	Header, double row post, 40-pin
P3	28NW9802B83	Header, PCB, 4-pin
R1	06SW-124A58	Resistor, fixed, film, 2.4k ohm, 5%, 1/4 W
R2	06SW-124A11	Resistor, 27 ohm, 5%, 1/4 W
R3	06SW-124A17	Resistor, 47 ohm, 5%, 1/4 W
U1	51NW9615A35	I.C. MC7404P
U2	51NW9615A20	Resistor network, 7/220-330 ohm
U3	51NW9615A32	I.C. MC7400P
U4	51NW9615A69	I.C. MC7445P

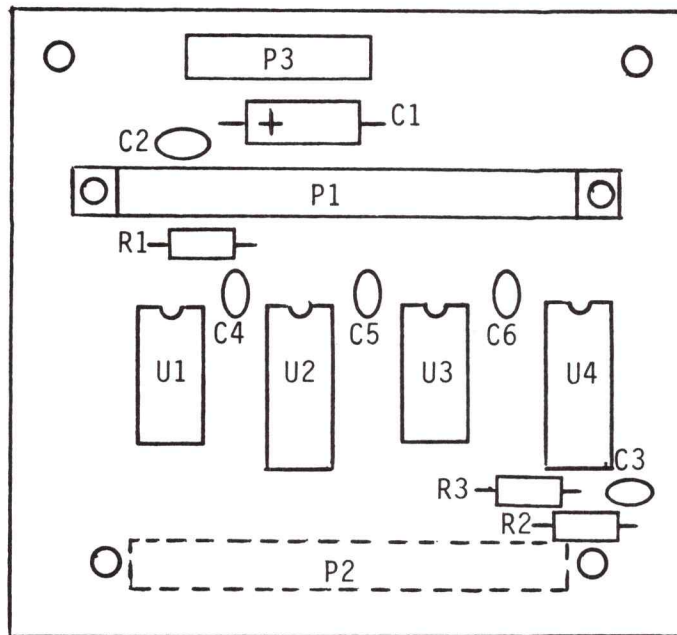


FIGURE 2. Interconnect Adapter Parts Location

Figure 3 illustrates the schematic diagram for the interconnect adapter.

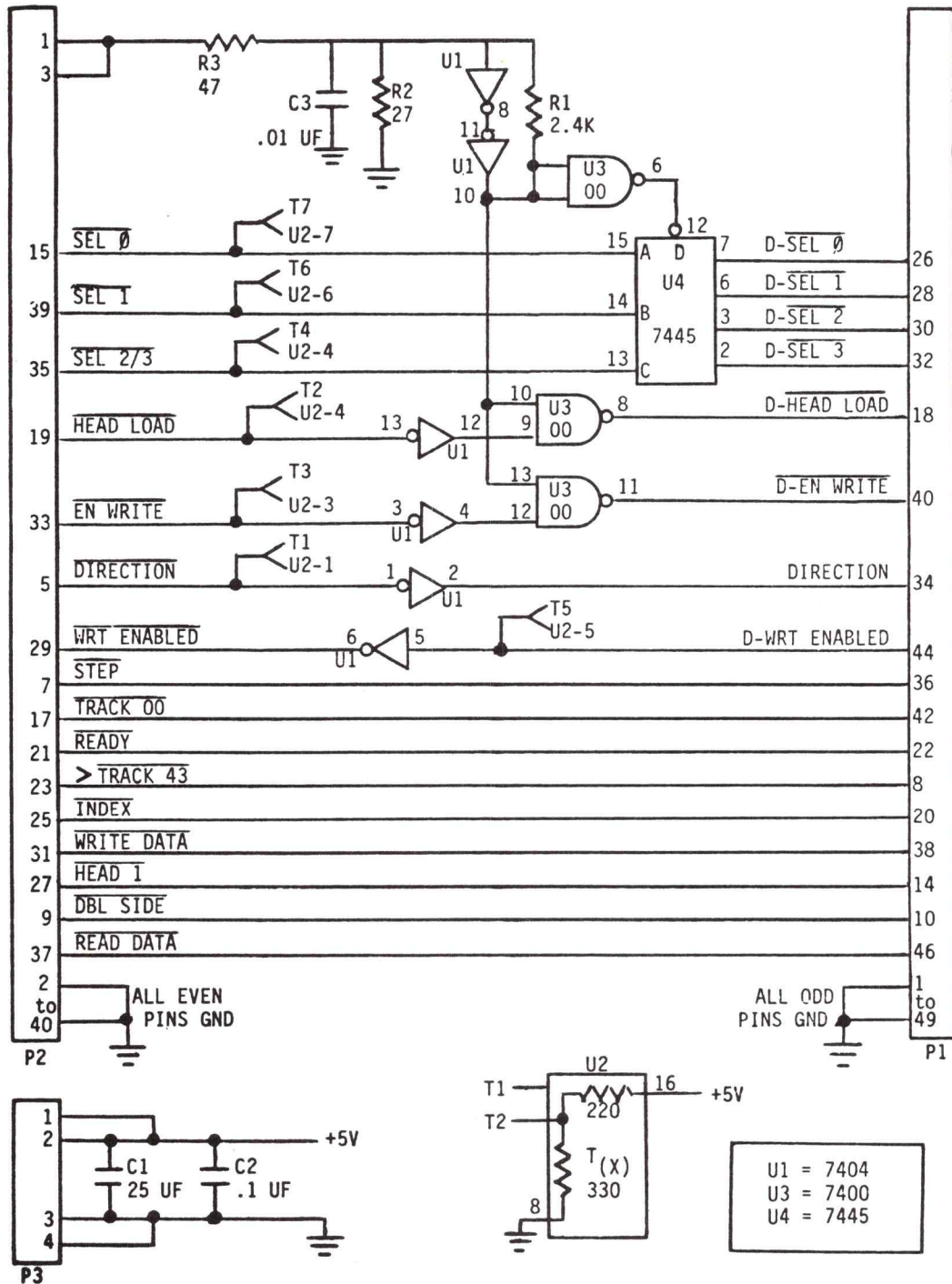


FIGURE 3. Interconnect Adapter Schematic Diagram