Synertek.

SYE6520/SYE6820
SYE6520A/SYE68B20
Peripheral Interface Adapter (PIA)
Extended Temperature Range (-40° C to +85° C)

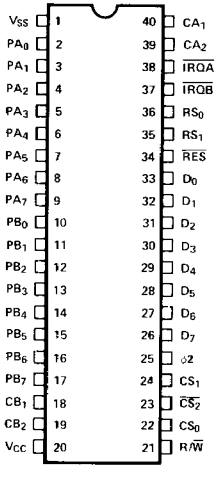
Features

- Direct Replacement for MC6820
- Single +5V Power Supply
- Two 8-bit Bi-directional I/O Ports with Individual Data Direction Control
- CMOS-Compatible Peripheral Port A Lines
- Automatic "Handshake" Control of Data Transfers
- Programmable Interrupt Capability
- Automatic Initialization on Power Up
- 1 and 2 MHz Versions
- Operation over wide temperature range (-40°C to +85°C)

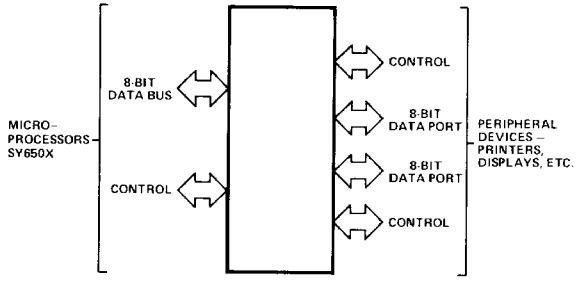
Description

The SYE6520 Peripheral Interface Adapter (PIA) is designed to provide a broad range of peripheral control to microcomputer systems. Control of peripheral devices is accomplished through two 8-bit bi-directional I/O ports. Each I/O line may be programmed to be either an input or an output. In addition, four peripheral control lines are provided to perform "handshaking" during data transfers.

Pin Configuration



Basic SY6520 Interface Diagram



Absolute Maximum Ratings*

Rating	Symbol	Value	Unit
Supply Voltage	V_{CC}	-0.3 to +7.0	V
Input Voltage	V_{in}	-0.3 to +7.0	V
Operating Temperature Range	T_A	-40 to +85	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C

Comment*

This device contains circuitry to protect the inputs against damage due to high static voltages, however, it is advised that normal precautions be taken to avoid application of any voltage higher than maximum rated voltages to this circuit.

D.C. Characteristics

(V_{CC} = 5.0V ± 5%, V_{SS} = 0, T_A = -40°C to +85°C unless otherwise noted)

Characteristic	Symbol	Min.	Max.	Unit
Input High Voltage	V_{IH}	2.0	V_{CC}	V
Input Low Voltage	V_{IL}	-0.3	0.8	V
Input Leakage Current V_{IN} = 0 to 5.0 V R/$\overline{W}$, $\overline{Reset}$, RS_0, RS_1, CS_0, CS_1, $\overline{CS_2}$, CA_1, CB_1, ϕ_2	I_{IN}	–	±2.5	μA
Three-State (Off State Input Current) (V_{IN} = 0.4 to 2.4 V, V_{CC} = max), D_0-D_7, PB_0-PB_7, CB_2	I_{TSI}	–	±10	μA
Input High Current (V_{IH} = 2.4 V), PA_0-PA_7, CA_2	I_{IH}	-100	–	μA
Input Low Current (V_{IL} = 0.4 V), PA_0-PA_7, CA_2	I_{IL}	–	1.6	mA
Output High Voltage (V_{CC} = min, I_{OH} = -100 μA)	V_{OH}	2.4	–	V
Output Low Voltage (V_{CC} = min, I_{OL} = 1.6mA)	V_{OL}	–	+0.4	V
Output High Current (Sourcing) (V_{OH} = 2.4 V) (V_O = 1.5 V, the current for driving other than TTL, e.g., Darlington Base), PB_0-PB_7, CB_2	I_{OH}	-100 -1.0	– -10	μA mA
Output Low Current (Sinking) (V_{OL} = 0.4 V)	I_{OL}	1.6	–	mA
Output Leakage Current (Off-State), $\overline{IRQA}$, $\overline{IRQB}$	I_{OFF}	–	10	μA
Power Dissipation V_{CC} = 5.25V	P_D	–	500	mW
Input Capacitance (V_{IN} = 0, T_A = 25°C, f = 1.0 MHz) D_0-D_7, PA_0-PA_7, PB_0-PB_7, CA_2, CB_2 R/W, $\overline{Reset}$, RS_0, RS_1, CS_0, CS_1, CS_2, CA_1, CB_1, ϕ_2	C_{IN}	 – – –	 10 7.0 20	pF
Output Capacitance (V_{IN} = 0, T_A = 25°C, f = 1.0 MHz)	C_{OUT}	–	10	pF

Note: Negative sign indicates outward current flow, positive indicates inward flow.

MICRO PROCESSORS