

### Features

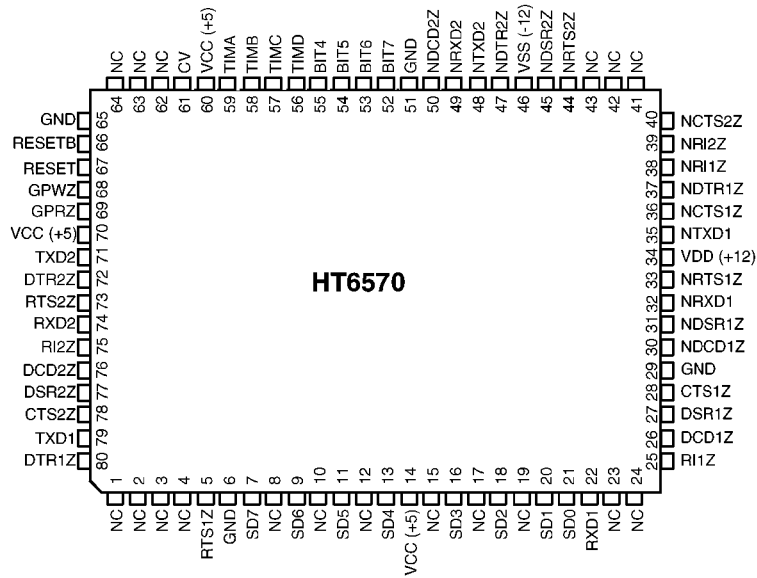
- 6 line drivers (1488), 10 line receivers (1489), 4 timers (558).
- Supports 2 RS232 serial port and 2 game controllers glue logic.
- 80 pin QFP package.
- Needs 4 power supplies: 0V, 5V, -12V, +12V.
- HOLTEK high voltage CMOS process, tolerance 30V.

### General Description

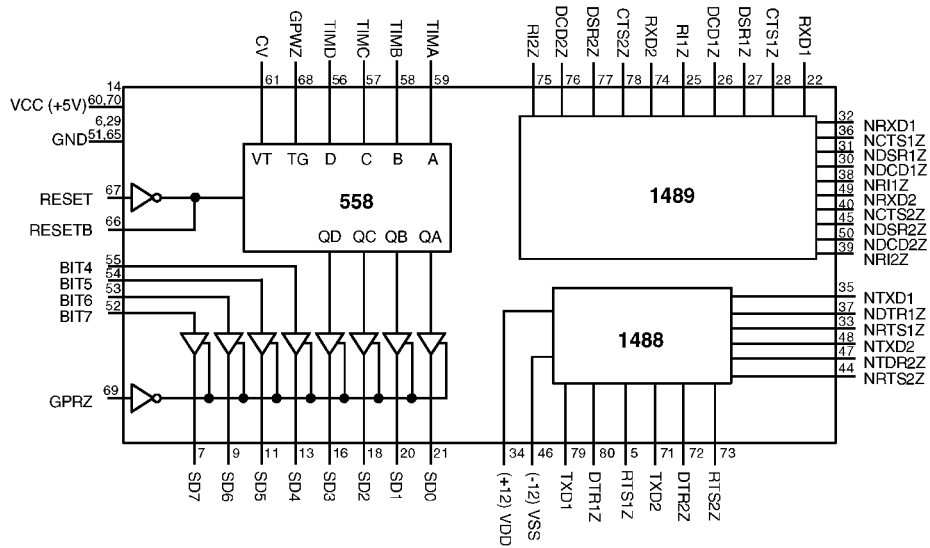
HT6570 is an integrated chip of 6 line drivers, 10 line receivers, and 4 timers. It can support 2 serial ports and 2 game controllers without any additional TTL devices. HT6570 is designed to interface data terminal equipment with data

communication equipment in conformance with the specification of EIA standard No. RS-232C and for use in super I/O cards or all-in-one PC systems.

### Pin Assignment



**Block Diagram**



**Pin Description**

Pin No.	Pin Name	I/O	Description
14,60,70	VCC		+5V power
6,29,51,65	GND		Ground
34	VDD		+12V power
46	VSS		-12v power
1,2,3,4,8,10,12,15,17,19 23,24,41,42,43,62,63,64	NC		No connection
76	DCD2Z	O	Receiver output DCD2Z
77	DSR2Z	O	Receiver output DSR2Z
78	CTS2Z	O	Receiver output CTS2Z
79	TXD1	I	Driver input TXD1
80	DTR1Z	I	Driver input DTR1Z
5	RTS1Z	I	Driver input RTS1Z
7,9,11,13,16,18,20,21	SD7~SD0	O	Data bus bit7~bit0
22	RXD1	O	Receiver output RXD1
25	RI1Z	O	Receiver output RI1Z
26	DCD1Z	O	Receiver output DCD1Z
27	DSR1Z	O	Receiver output DSR1Z

Pin No.	Pin Name	I/O	Description
28	CTS1Z	O	Receiver output CTS1Z
30	NDCD1Z	I	Receiver input NDCD1Z
31	NDSR1Z	I	Receiver input NDSR1Z
32	NRXD1Z	I	Receiver input NRXD1Z
33	NRTS1Z	O	Driver output NRTS1Z
35	NTXD1	O	Driver output NTXD1
36	NCTS1Z	I	Receiver input NCTS1Z
37	NDTR1Z	O	Receiver output NDTR1Z
38	NRI1Z	I	Receiver input NRI1Z
39	NRI2Z	I	Receiver input NRI2Z
40	NCTS2Z	I	Receiver input NCTS2Z
44	NRTS2Z	O	Receiver output NRTS2Z
45	NDSR2Z	I	Receiver input NDSR2Z
47	NDTR2Z	O	Receiver output NDTR2Z
48	NTXD2	O	Receiver output NTXD2
49	NRXD2	I	Receiver input NRXD2
50	NDCD2Z	I	Receiver input NDCD2Z
52	BIT7	I	Game port input data 7
53	BIT6	I	Game port input data 6
54	BIT5	I	Game port input data 5
55	BIT4	I	Game port input data 4
56	TIMD	I/O	RC constant #3
57	TIMC	I/O	RC constant #2
58	TIMB	I/O	RC constant #1
59	TIMA	I/O	RC constant #0
61	CV	I	Timer threshold voltage adjust
66	RESETB	O	Invert of power reset
67	RESET	I	Power reset
68	GPWZ	I	Game port write
69	GPRZ	I	Game port read
71	TXD2	I	Driver input TXD2
72	DTR2Z	I	Driver input DTR2Z
73	RTS2Z	I	Driver input RTS2Z
74	RXD2	O	Receiver output RXD2
75	RI2Z	O	Receiver output RI2Z

**Absolute Maximum Ratings**

Ambient Operation Temperature ... 0°C to 70°C	Storage Temperature.....-50°C to 125°C
Supply Voltage .....+14V	Supply Voltage .....-14V
Supply Voltage .....-0.5V to 7V	Applied Output Voltage.....-0.5V to VCC+0.3V
Applied Input Voltage.....-0.5V to 7V	Power Dissipation.....650mΩ
Applied Output voltage (for 1488 Driver)-14V to +14V	
Applied Input Voltage (for 1489 Receiver)-14V to +14V	

**AC Characteristics**

 (V<sub>DD</sub>=+12V, V<sub>SS</sub>=-12V, V<sub>CC</sub>=5V, Ta=25°C)

Symbol	Parameter	Min.	Typ.	Max.	Unit
Driver input to driver output	1488 t <sub>PLH</sub>	—	1.8	2.5	μs
	1488 t <sub>PHL</sub>	—	1.8	2.5	μs
Receiver input to receiver output	1489 t <sub>PLH</sub>	—	185	250	ns
	1489 t <sub>PHL</sub>	—	185	250	ns
RESET to RESETB	t <sub>PHL</sub>	—	100	150	ns
	t <sub>PLH</sub>	—	100	150	ns
SD0~SD7	t <sub>D1</sub>	—	100	150	ns
	t <sub>D2</sub>	15	—	—	ns

**DC Characteristics**

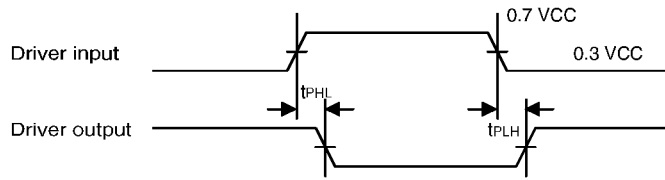
 (V<sub>CC</sub>=5V, V<sub>DD</sub>=+12V, V<sub>SS</sub>=-12V, Ta=25°C)

Symbol	Parameter	Test Condition		Min.	Max.	Unit
		V <sub>DD</sub>	Condition			
V <sub>IL</sub> (TTL)	Input Low Voltage		—	-0.3	+0.8	V
V <sub>IH</sub> (TTL)	Input High Voltage		—	+2.0	V <sub>CC</sub> +0.3	V
V <sub>IL</sub> (CMOS)	Input Low Voltage		—	-0.3	0.3 V <sub>CC</sub>	V
V <sub>IH</sub> (CMOS)	Input High Voltage		—	0.7V <sub>CC</sub>	V <sub>CC</sub> +0.3	V
V <sub>IL</sub> (Hi-volt)	Input Low Voltage		—	V <sub>SS</sub>	0.8	V
V <sub>IH</sub> (Hi-volt)	Input High Voltage		—	2.4	V <sub>DD</sub>	V
V <sub>OL</sub>	Output Low Voltage		@ I <sub>OL</sub> Max.		0.4	V
V <sub>OH</sub>	Output High Voltage		@ I <sub>OH</sub> Max.	2.4		V
V <sub>OL</sub> (Hi-volt)	Output Low Voltage		V <sub>IH</sub> =0.7V <sub>CC</sub> R <sub>L</sub> =3KΩ	-8		V
V <sub>OH</sub> (Hi-volt)	Output High Voltage		V <sub>IL</sub> =0.3V <sub>CC</sub> R <sub>L</sub> =3KΩ	+8		V

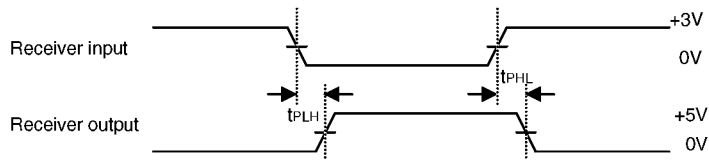
Symbol	Parameter	Test Condition		Min.	Max.	Unit
		V <sub>DD</sub>	Condition			
I <sub>IL</sub>	Input Low Current		V <sub>IL</sub> =0V	-55	-105	μA
I <sub>IL</sub> (Hi-volt)	Input Low Current		V <sub>IL</sub> (Hi-volt)=-3V	-0.43	-1	mA
I <sub>IH</sub> (Hi-volt)	Input High Current		V <sub>IH</sub> (Hi-volt)=+3V	0.43	1	mA
I <sub>O</sub> L	Output Low Current (sink Current)		@ V <sub>OL</sub> Max.	16		mA
				24		
				2		
I <sub>O</sub> H	Output High Current (source Current)		@ V <sub>OH</sub> Min.	-8	—	mA
				-12		
				-5		
I <sub>OS+</sub>	Positive Output short-circuit Current		V <sub>IL</sub> (Hi-volt)=-3V V <sub>O</sub> =0V	+6	+14	mA
I <sub>OS-</sub>	Negative Output short-circuit Current		V <sub>IH</sub> (Hi-volt)=+3V V <sub>O</sub> =0V	-6	-14	mA
V <sub>ref</sub>	Timer (558) Reference Voltage		—	2.7	3.3	V

**Timing Diagrams**

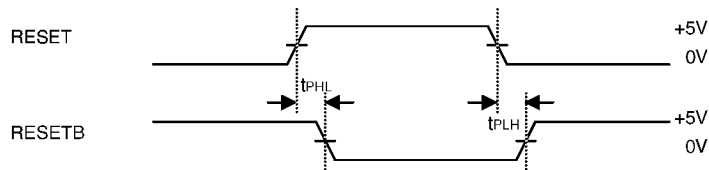
**(1488) Driver Output Timing**



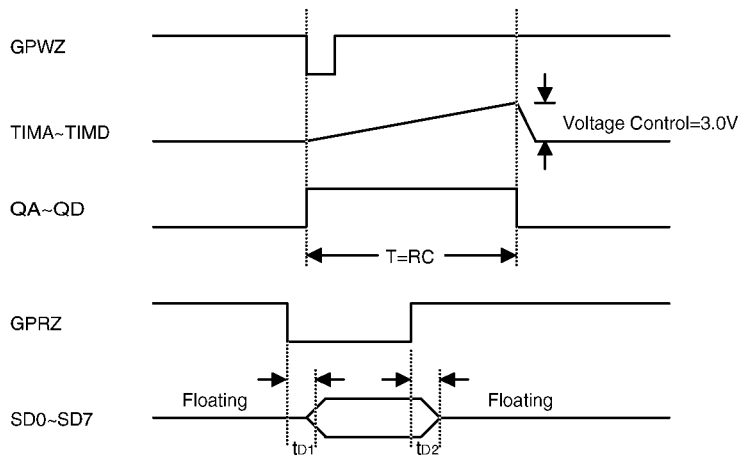
**(1489) Receiver Output Timing**



**Reset Timing**



**Timer Timing**



Application Diagram

