



Z08030/8530

***Serial Communications
Controller***

Customer Procurement Specification

PS011301-0601



This publication is subject to replacement by a later edition. To determine whether a later edition exists, or to request copies of publications, contact:

ZiLOG Worldwide Headquarters

910 E. Hamilton Avenue
Campbell, CA 95008
Telephone: 408.558.8500
Fax: 408.558.8300
www.ZiLOG.com

Windows is a registered trademark of Microsoft Corporation.

Document Disclaimer

©2001 by ZiLOG, Inc. All rights reserved. Information in this publication concerning the devices, applications, or technology described is intended to suggest possible uses and may be superseded. ZiLOG, INC. DOES NOT ASSUME LIABILITY FOR OR PROVIDE A REPRESENTATION OF ACCURACY OF THE INFORMATION, DEVICES, OR TECHNOLOGY DESCRIBED IN THIS DOCUMENT. ZiLOG ALSO DOES NOT ASSUME LIABILITY FOR INTELLECTUAL PROPERTY INFRINGEMENT RELATED IN ANY MANNER TO USE OF INFORMATION, DEVICES, OR TECHNOLOGY DESCRIBED HEREIN OR OTHERWISE. Devices sold by ZiLOG, Inc. are covered by warranty and limitation of liability provisions appearing in the ZiLOG, Inc. Terms and Conditions of Sale. ZiLOG, Inc. makes no warranty of merchantability or fitness for any purpose Except with the express written approval of ZiLOG, use of information, devices, or technology as critical components of life support systems is not authorized. No licenses are conveyed, implicitly or otherwise, by this document under any intellectual property rights.

Zilog

200030/8530 Customer Procurement Spec (CPS)

DC Characteristics	Symbol	Parameter	Min	Max	Unit	Condition
V_{IH}		Input High Voltage	2.0 ^a	$V_{CC} + 0.3^b$	V	$I_{OH} = -250 \mu A$ $I_{OL} = +2.0 mA$ $0.4 \leq V_{IH} \leq +2.4V$ $0.4 \leq V_{OH} \leq +2.4V$
V_{IL}		Input Low Voltage	-0.3 ^c	0.8 ^a	V	
V_{OH}		Output High Voltage	2.4 ^d		V	
V_{OL}		Output Low Voltage		0.4 ^d	V	
I_{IH}		Input Leakage	$\leq 10.0^e$		μA	
I_{OL}		Output Leakage	$\leq 10.0^e$		μA	
I_{CC}		V_{CC} Supply Current		250	μA	

$V_{CC} = 5V \pm 5\%$ unless otherwise specified, over specified temperature range.

- a Tested
- b Guaranteed by Design
- c Guaranteed by Characterization

Absolute Maximum Ratings

Voltages on all pins with respect to GND..... -0.3V to +7.0V
 Operating Ambient Temperature See Ordering Information
 Storage Temperature..... -65°C to +150°C

Stresses greater than those listed under Absolute Maximum Ratings may cause permanent damage to the device. This is a stress rating only; operation of the device at any condition above those indicated in the operational sections of these specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

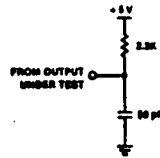
Standard Test Conditions

The DC characteristics and capacitance section below apply for the following standard test conditions, unless otherwise noted. All voltages are referenced to GND. Positive current flows into the referenced pin.

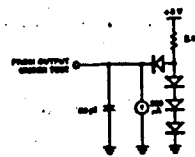
Standard conditions are as follows:

- $+4.75V \leq V_{CC} \leq +5.25V$
- $GND = 0V$
- T_A as specified in Ordering Information

All ac parameters assume a load capacitance of 50 pF max.



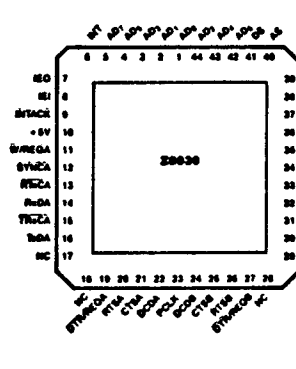
Open-Drain Test Load



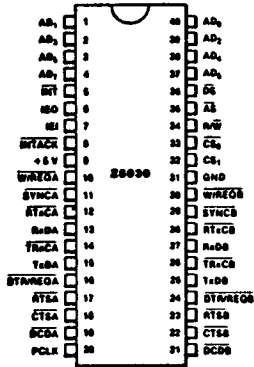
Standard Test Load

Z8000 is a registered trademark of Zilog, Inc. © 1989 by Zilog, Inc. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of Zilog. The information contained herein is subject to change without notice. Zilog assumes no responsibility for the use of any circuitry other than circuitry embodied in a Zilog product. No other circuit patent licenses are implied. All specifications (parameters) are subject to change without notice. The applicable Zilog test documentation will specify which parameters are tested. Zilog, Inc. 210 Hacienda Ave., Campbell, CA 95008-6600 Telephone (408) 376-8000 FAX 916-338-7621

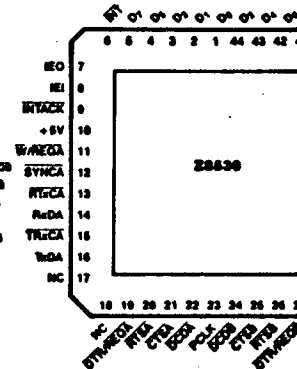
00-2837-02



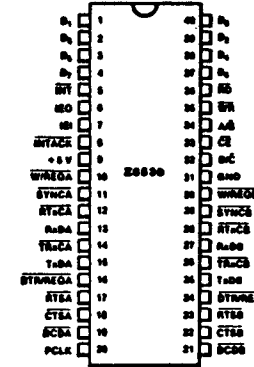
Chip Carrier Pin Assignments, Z8000



DIP Pin Assignments, Z8000



Chip Carrier Pin Assignments, Z8530



DIP Pin Assignments, Z8530

General Description

The SCC Serial Communications Controller is a dual-channel, multi-protocol data communications peripheral designed for use with conventional non-multiplexed buses and the Zilog Z-BUS.® The SCC functions as a serial-to-parallel-parallel-to-serial converter/controller. The SCC can be software-configured to satisfy a wide variety of serial communications applications. The device contains a variety of new, sophisticated internal functions including on-chip baud rate generators, Digital PhaseLocked Loops, and crystal oscillators that dramatically reduce the need for external logic.

The SCC handles asynchronous formats, Synchronous byte-oriented protocols such as IBM Bisync, and Synchronous bit-oriented protocols such as HDLC and IBM SDLC. This versatile device supports virtually any serial data transfer application (cassette, diskette, tape drives, etc.).

The device can generate and check CRC codes in any Synchronous mode and can be programmed to check data integrity in various modes. The SCC also has facilities for modem controls in both channels. In applications where these controls are not needed, the modem controls can be used for general-purpose I/O.

The daisy-chain interrupt hierarchy is also supported—as is standard for Zilog peripheral components.

Maximum data rate: 1/4 PCLOCK using external phase lock loop.

Minimum data rate: 50 baud for any PCLK period.

Z8030 AC CHARACTERISTICS

Number	Symbol	Parameter	4 MHz		6 MHz		8 MHz		Notes†
			Min	Max	Min	Max	Min	Max	
1	T _{wAS}	\overline{AS} Low Width	70 ^a		50 ^a		35 ^a		
2	T _{dDS(AS)}	\overline{DS} ↑ to \overline{AS} ↓ Delay	50 ^c		25 ^c		15 ^c		
3	T _{cCS0(AS)}	\overline{CS}_0 to \overline{AS} ↑ Setup Time	0 ^a		0 ^a		0 ^a		1
4	T _{HCS0(AS)}	\overline{CS}_0 to \overline{AS} ↑ Hold Time	60 ^a		40 ^a		30 ^a		1
5	T _{cCS1(DS)}	\overline{CS}_1 to \overline{DS} ↓ Setup Time	105 ^a		80 ^a		65 ^a		1
6	T _{HCS1(DS)}	\overline{CS}_1 to \overline{DS} ↓ Hold Time	55 ^c		40 ^c		30 ^c		1
7	T _{elA(AS)}	\overline{INTACK} to \overline{AS} ↑ Setup Time	10 ^c		10 ^c		10 ^c		
8	T _{hA(AS)}	\overline{INTACK} to \overline{AS} ↑ Hold Time	250 ^a		200 ^a		150 ^a		
9	T _{rR/W(DS)}	R/W (Read) to \overline{DS} ↓ Setup Time	100 ^a		80 ^a		65 ^a		
10	T _{hR/W(DS)}	R/W to \overline{DS} ↓ Hold Time	55 ^a		40 ^a		35 ^a		
11	T _{rR/W(DS)}	R/W (Write) to \overline{DS} ↓ Setup Time	0 ^c		0 ^c		0 ^c		
12	T _{dAS(DS)}	\overline{AS} ↑ to \overline{DS} ↓ Delay	60 ^c		40 ^c		30 ^c		
13	T _{wDSI}	\overline{DS} Low Width	240 ^a		200 ^a		150 ^a		
14	T _{rC}	Valid Access Recovery Time	4T _{cPC} ^a		4T _{cPC} ^a		4T _{cPC} ^a		2
15	T _{elA(AS)}	Address to \overline{AS} ↑ Setup Time	30 ^a		10 ^a		10 ^a		1
16	T _{hA(AS)}	Address to \overline{AS} ↑ Hold Time	50 ^a		30 ^a		25 ^a		1
17	T _{dW(DS)}	Write Data to \overline{DS} ↓ Setup Time	30 ^a		20 ^a		15 ^a		
18	T _{hW(DS)}	Write Data to \overline{DS} ↓ Hold Time	30 ^a		20 ^a		20 ^a		
19	T _{dDS(DA)}	\overline{DS} ↓ to Data Active Delay	0 ^c		0 ^c		0 ^c		
20	T _{dDS(DR)}	\overline{DS} ↑ to Read Data Not Valid Delay	0 ^a		0 ^a		0 ^a		
21	T _{dDS(DR)}	\overline{DS} ↓ to Read Data Valid Delay		250 ^a		180 ^a		140 ^a	
22	T _{dAS(DR)}	\overline{AS} ↑ to Read Data Valid Delay		520 ^a		300 ^a		250 ^a	

NOTES:

- Parameter does not apply to Interrupt Acknowledge transactions.
- Parameter applies only between transactions involving the SCC.

†Timings are preliminary and subject to change.

†Units in nanoseconds (ns).

a Tested

b Guaranteed by Design

c Guaranteed by Characterization

Z8030 AC CHARACTERISTICS (Continued)

Number	Symbol	Parameter	4 MHz		6 MHz		8 MHz		Notes†
			Min	Max	Min	Max	Min	Max	
23	T _{dDS(DR)}	\overline{DS} ↑ to Read Data Float Delay	70 ^a		40 ^a		40 ^c		3
24	T _{elDR}	Address Required Valid to Read Data Valid Delay	570 ^a		310 ^a		200 ^a		
25	T _{dDS(W)}	\overline{DS} ↓ to Wait Valid Delay	240 ^a		200 ^a		170 ^a		4
26	T _{dDS(REQ)}	\overline{DS} ↓ to \overline{TRREQ} Not Valid Delay	240 ^a		200 ^a		170 ^a		
27	T _{dDS(REQ)}	\overline{DS} ↓ to \overline{DTRREQ} Not Valid Delay	5T _{cPC} ^a +300 ^a		5T _{cPC} ^a +250 ^a		5T _{cPC} ^a +200 ^a		
28	T _{elAS(NT)}	\overline{AS} ↑ to \overline{INT} Valid Delay	600 ^a		500 ^a		500 ^a		4
29	T _{elAS(DSA)}	\overline{AS} ↑ to \overline{DS} ↓ (Acknowledge) Delay	250 ^a		250 ^a		250 ^a		5
30	T _{wDSA}	\overline{DS} (Acknowledge) Low Width	280 ^a		200 ^a		150 ^a		
31	T _{dDSA(DR)}	\overline{DS} ↓ (Acknowledge) to Read Data Valid Delay	250 ^a		180 ^a		140 ^a		
32	T _{el(DSA)}	\overline{EI} to \overline{DS} ↓ (Acknowledge) Setup Time	120 ^a		100 ^a		80 ^a		
33	T _{h(DSA)}	\overline{EI} to \overline{DS} ↓ (Acknowledge) Hold Time	0 ^c		0 ^c		0 ^c		
34	T _{elE(EO)}	\overline{EI} to \overline{EO} Delay	120 ^a		100 ^a		80 ^a		
35	T _{elAS(EO)}	\overline{AS} ↑ to \overline{EO} Delay	250 ^a		250 ^a		200 ^a		6
36	T _{dDSA(NT)}	\overline{DS} ↓ (Acknowledge) to \overline{INT} Inactive Delay	600 ^a		500 ^a		460 ^a		4
37	T _{dDS(ASQ)}	\overline{DS} ↑ to \overline{AS} ↓ Delay for No Reset	30 ^a		15 ^a		15 ^a		
38	T _{elASQ(DS)}	\overline{AS} ↑ to \overline{DS} ↓ Delay for No Reset	30 ^a		30 ^a		30 ^a		
39	T _{wRES}	\overline{AS} and \overline{DS} Coincident Low for Reset	250 ^a		200 ^a		150 ^a		7
40	T _{wPCL}	PCLK Low Width	105 ^a	2000 ^a	70 ^a	1000 ^a	50 ^a		
41	T _{wPCh}	PCLK High Width	105 ^a	2000 ^a	70 ^a	1000 ^a	50 ^a		
42	T _{cPC}	PCLK Cycle Time	250 ^a	4000 ^a	165 ^a	2000 ^a	125 ^a		
43	T _{rPC}	PCLK Rise Time	20 ^a		10 ^a		10 ^a		
44	T _{fPC}	PCLK Fall Time	20 ^a		10 ^a		10 ^a		

NOTES:

- Float delay is defined as the time required for a $\pm 0.5V$ change in the output with a maximum dc load and a minimum ac load.
- Open-drain output, measured with open-drain test load.
- Parameter is system dependent. For any Z-BCC in the data chain, T_{elAS(DSA)} must be greater than the sum of T_{elAS(EO)} for the highest priority device in the data chain, T_{elDS(DA)} for the Z-BCC, and T_{elE(EO)} for each device appearing there in the data chain.
- Parameter applies only to a Z-BCC pulling \overline{INT} Low at the beginning of the Interrupt Acknowledge transaction.
- Internal circuitry allows for the reset provided by the Z8 to be recognized as a reset by the Z-BCC.
- Timings are preliminary and subject to change. All timing references assume 2.5V for a logic "1" and 0.5V for a logic "0".
- †Units in nanoseconds (ns).

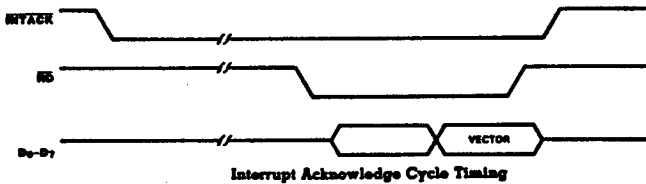
Z8030/Z8030 SYSTEM TIMING AC CHARACTERISTICS

Number	Symbol	Parameter	4 MHz		6 MHz		8 MHz		Notes*†
			Min	Max	Min	Max	Min	Max	
1	TdRXC(REQ)	RxC ↑ to W/REQ Valid Delay	8	12	8	12	8	12	2
2	TdRXC(W)	RxC ↑ to Wait Inactive Delay	8	14	8	14	8	14	1,2
3	TdRXC(SY)	RxC ↑ to SYNC Valid Delay	4	7	4	7	4	7	2
4a.	TdRXC(INT), Z8530	RxC ↑ to INT Valid Delay	10	16	10	16	10	16	1,2
4b.	TdRXC(INT), Z8030		8	12	8	12	8	12	1,2
			+2	+3	+2	+3	+2	+3	4
5	TdTXC(REQ)	TxC ↓ to W/REQ Valid Delay	5	8	5	8	5	8	3
6	TdTXC(W)	TxC ↓ to Wait Inactive Delay	5	11	5	11	5	11	1,3
7	TdTXC(DRO)	TxC ↓ DTR/REQ Valid Delay	4	7	4	7	4	7	3
8a.	TdTXC(INT), Z8530	TxC ↓ to INT Valid Delay	6	10	6	10	6	10	1,3
8b.	TdTXC(INT), Z8030		4	6	4	6	4	6	1,3
			+2	+3	+2	+3	+2	+3	4
9a.	TdSY(INT), Z8530	SYNC Transition to INT Valid Delay	2	6	2	6	2	6	1
9b.	TdSY(INT), Z8030		2	3	2	3	2	3	1,4
10a.	TdEXT(INT), Z8530	DCD or CTS Transition to INT Valid Delay	2	6	2	6	2	6	1
10b.	TdEXT(INT), Z8030		2	3	2	3	2	3	1,4

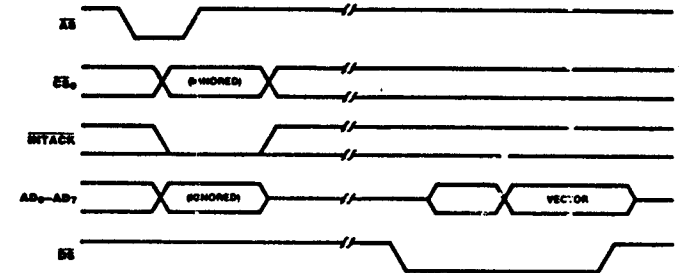
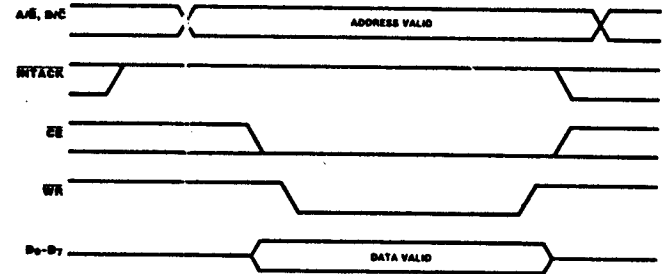
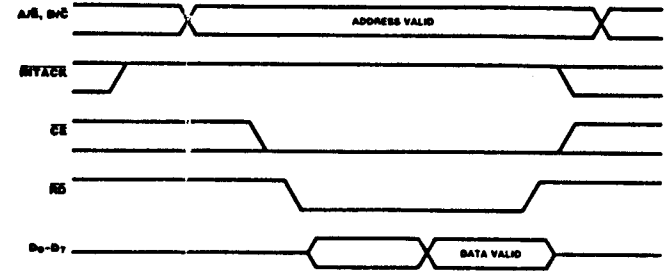
NOTES:

- Open-drain output, measured with open-drain test load.
- RxC is RTxC or TRxC, whichever is supplying the receive clock.
- TxC is TRxC or RTxC, whichever is supplying the transmit clock.
- Units equal to ΔS .

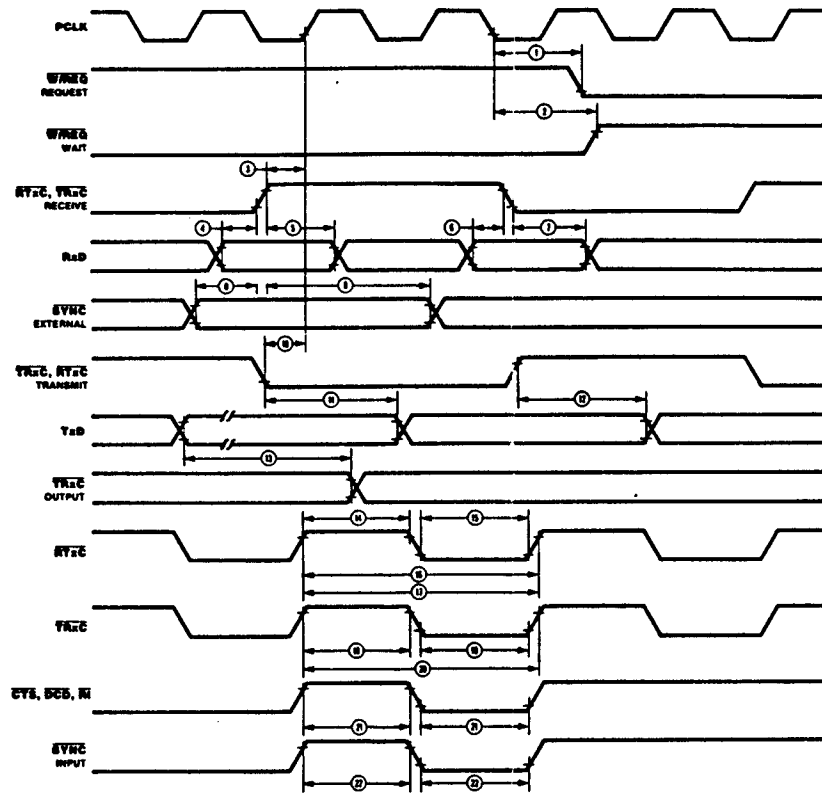
*Timings are preliminary and subject to change.
†Units equal to TcPC.



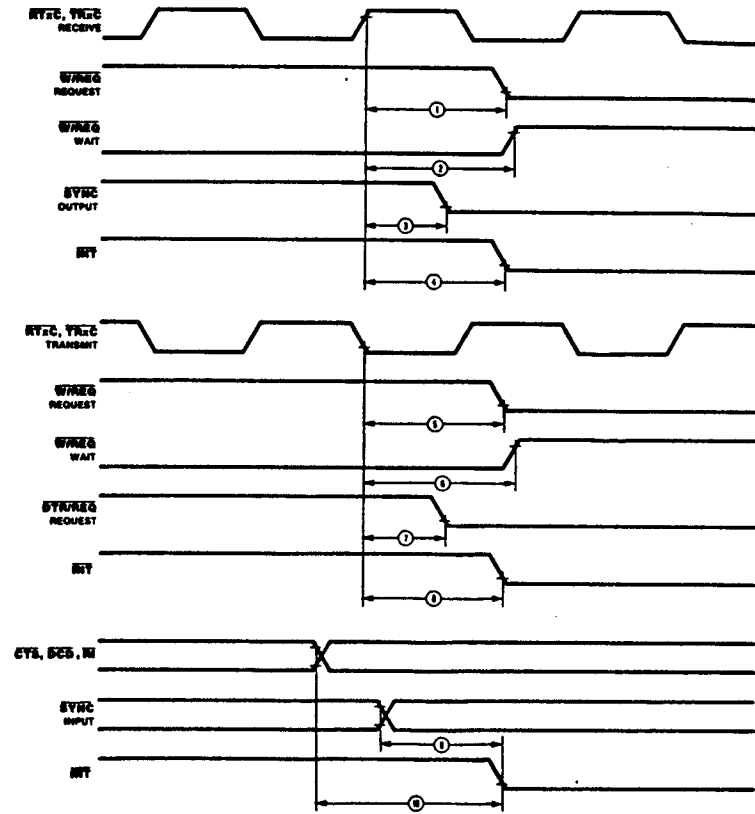
Z8530 Timing



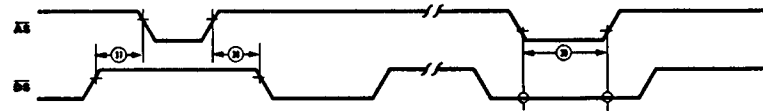
**General
Timing**



**System
Timing**



**Reset
Timing
Z8030**



Z8530 AC CHARACTERISTICS

Number	Symbol	Parameter	4 MHz		6 MHz		8 MHz		Notes*†
			Min	Max	Min	Max	Min	Max	
1	TwPCI	PCLK Low Width	105 ^a	2000 ^a	70 ^a	1000 ^a	50 ^a	1000 ^a	
2	TwPCh	PCLK High Width	105 ^a	2000 ^a	70 ^a	1000 ^a	50 ^c	1000 ^a	
3	TfPC	PCLK Fall Time		20 ^a		10 ^a		10 ^a	
4	TrPC	PCLK Rise Time		20 ^a		10 ^a		10 ^a	
5	TcPC	PCLK Cycle Time	250 ^a	4000 ^a	165 ^a	2000 ^a	125 ^a	2000 ^a	
6	TsA(WR)	Address to WR ↓ Setup Time	80 ^a		80 ^a		70 ^a		
7	ThA(WR)	Address to WR ↑ Hold Time	0 ^c		0 ^c		0 ^c		
8	TsA(RD)	Address to RD ↓ Setup Time	80 ^a		80 ^a		70 ^a		
9	ThA(RD)	Address to RD ↑ Hold Time	0 ^c		0 ^c		0 ^c		
10	TsIA(PC)	INTACK to PCLK ↑ Setup Time	10 ^a		10 ^a		10 ^a		
11	TsIAi(WR)	INTACK to WR ↓ Setup Time	200 ^a		160 ^a		145 ^a		1
12	ThIA(WR)	INTACK to WR ↑ Hold Time	0 ^c		0 ^c		0 ^c		
13	TsIAi(RD)	INTACK to RD ↓ Setup Time	200 ^a		160 ^a		145 ^a		1
14	ThIA(RD)	INTACK to RD ↑ Hold Time	0 ^a		0 ^a		0 ^a		
15	ThIA(PC)	INTACK to PCLK ↑ Hold Time	100 ^a		100 ^a		85 ^a		
16	TsCEi(WR)	CE Low to WR ↓ Setup Time	0 ^a		0 ^a		0 ^a		
17	ThCE(WR)	CE to WR ↑ Hold Time	0 ^a		0 ^a		0 ^a		
18	TsCEh(WR)	CE High to WR ↓ Setup Time	100 ^a		70 ^a		60 ^a		
19	TsCEi(RD)	CE Low to RD ↓ Setup Time	0 ^a		0 ^a		0 ^a		1
20	ThCE(RD)	CE to RD ↑ Hold Time	0 ^a		0 ^a		0 ^a		1
21	TsCEh(RD)	CE High to RD ↓ Setup Time	100 ^a		70 ^a		60 ^a		1
22	TwRDi	RD Low Width	390 ^a		200 ^a		150 ^a		1
23	TdRD(DRA)	RD ↓ to Read Data Active Delay	0 ^c		0 ^c		0 ^c		
24	TdRDr(DR)	RD ↑ to Read Data Not Valid Delay	0 ^a		0 ^a		0 ^a		
25	TdRDv(DR)	RD ↓ to Read Data Valid Delay		250 ^a		180 ^a		140 ^a	
26	TdRDz(DRz)	RD ↑ to Read Data Float Delay		70 ^a		45 ^a		40 ^a	2

NOTES:

- Parameter does not apply to Interrupt Acknowledge transactions.
 - Float delay is defined as the time required for a ±0.5V change at the output with a maximum dc load and minimum ac load.
- *Timings are preliminary and subject to change.
 †Units in nanoseconds (ns).

Z8530 AC CHARACTERISTICS (Continued)

Number	Symbol	Parameter	4 MHz		6 MHz		8 MHz		Notes*†
			Min	Max	Min	Max	Min	Max	
27	TdA(DR)	Address Required Valid to Read Data Valid Delay		300 ^a		280 ^a		220 ^a	
28	TwWRi	WR Low Width	240 ^a		200 ^a		150 ^a		
29	TdWR(WR)	Write Data to WR ↓ Setup Time	10 ^a		10 ^a		10 ^a		
30	ThDW(WR)	Write Data to WR ↑ Hold Time	0 ^c		0 ^c		0 ^c		
31	TdWR(W)	WR ↓ to Wait Valid Delay		240 ^a		200 ^a		170 ^a	4
32	TdRD(W)	RD ↓ Wait Valid Delay		240 ^a		200 ^a		170 ^a	4
33	TdWR(REQ)	WR ↓ to W/REQ Not Valid Delay		240 ^a		200 ^a		170 ^a	
34	TdRD(REQ)	RD ↓ to W/REQ Not Valid Delay		240 ^a		200 ^a		170 ^a	
35	TdWRr(REQ)	WR ↓ DTR/REQ Not Valid Delay		5TcPC ^a +300 ^a		5TcPC ^a +250 ^a		5TcPC ^a +225 ^a	
36	TdRDr(REQ)	RD ↑ to DTR/REQ Not Valid Delay		5TcPC ^a +300 ^a		5TcPC ^a +250 ^a		5TcPC ^a +200 ^a	
37	TdPC(INT)	PCLK ↓ to INT Valid Delay		500 ^a		500 ^a		500 ^a	4
38	TdAi(RD)	INTACK to RD ↓ (Acknowledge) Delay	250 ^a		200 ^a		150 ^a		5
39	TwRDA	RD (Acknowledge) Width	250 ^a		200 ^a		150 ^a		
40	TdRDA(DR)	RD ↓ (Acknowledge) to Read Data Valid Delay		250 ^a		180 ^a		140 ^a	
41	TsEi(RDA)	IEI to RD ↓ (Acknowledge) Setup Time	120 ^c		100 ^c		95 ^c		
42	ThEi(RDA)	IEI to RD ↑ (Acknowledge) Hold Time	0 ^a		0 ^a		0 ^a		
43	TdEi(IEO)	IEI to IEO Delay Time		120 ^c		100 ^c		95 ^c	
44	TdPC(IEO)	PCLK ↑ to IE ↓ Delay		250 ^a		250 ^a		200 ^a	
45	TdRDA(INT)	RD ↓ to INT Inactive Delay		500 ^c		500 ^c		450 ^a	4
46	TdRD(WRQ)	RD ↑ to WR ↓ Delay for No Reset		30 ^c		15 ^c		15 ^c	
47	TdWRQ(RD)	WR ↑ to RD ↓ Delay for No Reset		30 ^c		30 ^c		20 ^c	
48	TwRES	WR and RD Coincident Low for Reset		250 ^a		200 ^a		150 ^a	
49	Trc	Valid Access Recovery Time		4TcPC ^a		4TcPC ^a		4TcPC ^a	3

NOTES:

- Parameter applies only between transactions involving the SCC.
 - Open-drain output, measured with open-drain test load.
 - Parameter is system dependent. For any SCC in the daisy chain, TdAi(RD) must be greater than the sum of TdPC(IEO) for the highest priority device in the daisy chain, TsEi(RDA) for the SCC, and TdEi(IEO) for each device separating them in the daisy chain.
- *Timings are preliminary and subject to change.
 †Units in nanoseconds (ns).

- a Tested
- b Guaranteed by Design
- c Guaranteed by Characterization

Z8030/Z8530 GENERAL TIMING AC CHARACTERISTICS

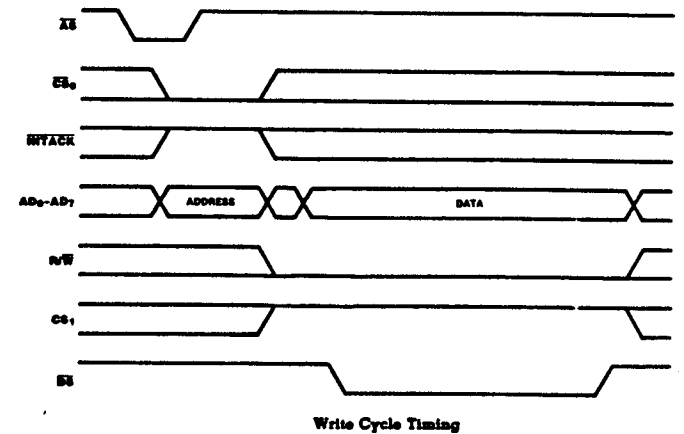
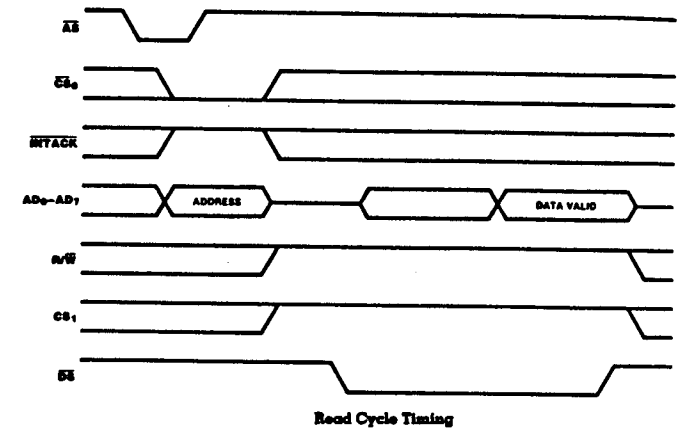
Number	Symbol	Parameter	4 MHz		6 MHz		8 MHz		Notes*†
			Min	Max	Min	Max	Min	Max	
1	TdPC(REQ)	PCLK ↓ to $\overline{W}/\overline{REQ}$ Valid Delay		250 ^a	250 ^a	250 ^a			
2	TdPC(W)	PCLK ↓ to Wait Inactive Delay		350 ^a	350 ^a	350 ^a			
3	TsRXC(PC)	\overline{RxC} ↑ to PCLK ↑ Setup Time (PCLK + 4 case only)	80	TwPCL ^c	70	TwPCL ^c	60	TwPCL ^c	1,4
4	TsRXD(RXCr)	RxD to \overline{RxC} ↑ Setup Time (X1 Mode)	0 ^a		0 ^a		0 ^a		1
5	ThRXD(RXCr)	RxD to \overline{RxC} ↑ Hold Time (X1 Mode)	150 ^a		150 ^a		150 ^a		1
6	TsRXD(RXCf)	RxD to \overline{RxC} ↓ Setup Time (X1 Mode)	0 ^a		0 ^a		0 ^a		1,5
7	ThRXD(RXCf)	RxD to \overline{RxC} ↓ Hold Time (X1 Mode)	150 ^c		150 ^c		150 ^c		1,5
8	TsSY(RXC)	SYNC to \overline{RxC} ↑ Setup Time	-200 ^a		-200 ^a		-200 ^a		1
9	ThSY(RXC)	SYNC to \overline{RxC} ↑ Hold Time	3TcPC ^c +400		3TcPC ^c +320		3TcPC ^c +250		1
10	TsTXC(PC)	\overline{TxC} ↓ to PCLK ↑ Setup Time	0 ^a		0 ^a		0 ^a		2,4
11	TdTXC(TXD)	\overline{TxC} ↓ to TxD Delay (X1 Mode)		300 ^a		230 ^a		200 ^a	2
12	TdTxCr(TXD)	\overline{TxC} ↑ to TxD Delay (X1 Mode)		300 ^a		230 ^a		200 ^a	2,5
13	TdTXD(TRX)	TxD to \overline{TRxC} Delay (Send Clock Echo)		200 ^a		200 ^a		200 ^a	
14	TwRTXh	\overline{RTxC} High Width	180 ^a		180 ^a		150 ^a		6
15	TwRTXl	\overline{RTxC} Low Width	180 ^a		180 ^a		150 ^a		6
16	TcRTX	\overline{RTxC} Cycle Time (Rx/D, Tx/D)	1000 ^a		640 ^a		500 ^a		6,7
17	TcRTXX	Crystal Oscillator Period	250 ^c	1000 ^c	165 ^c	1000 ^c	125 ^c	1000 ^c	3
18	TwTRXh	\overline{TRxC} High Width	180 ^a		180 ^a		150 ^a		6
19	TwTRXl	\overline{TRxC} Low Width	180 ^a		180 ^a		150 ^a		6
20	TcTRX	\overline{TRxC} Cycle Time	1000 ^a		640 ^a		500 ^a		6,7
21	TwEXT	\overline{DCD} or \overline{CTS} Pulse Width	200 ^a		200 ^a		200 ^a		
22	TwSY	SYNC Pulse Width	200 ^a		200 ^a		200 ^a		

NOTES

- RxC is RTxC or TRxC, whichever is supplying the receive clock.
- TxC is TRxC or RTxC, whichever is supplying the transmit clock.
- Both RTxC and SYNC have 30 pF capacitors to ground connected to them.
- Parameter applies only if the data rate is one-fourth the PCLK rate. In all other cases, no phase relationship between RxC and PCLK or TxC and PCLK is required.

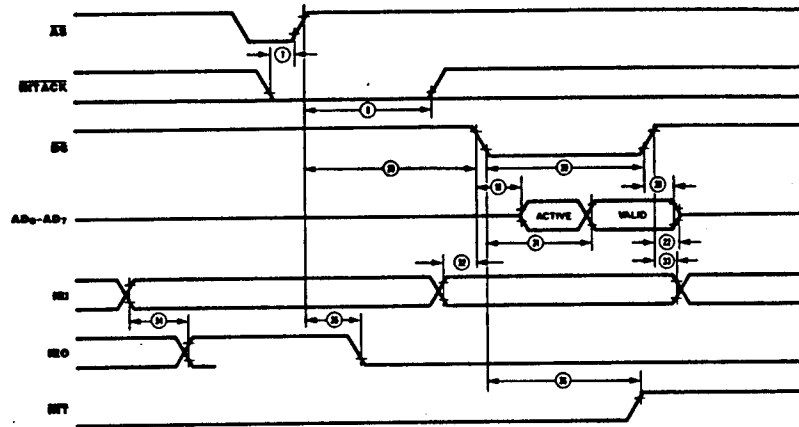
- Parameter applies only to FM encoding/decoding.
 - Parameter applies only for transmitter and receiver; DPLL and baud rate generator timing requirements are identical to case PCLK requirements.
 - The maximum receive or transmit data is 1/4 PCLK.
- *Timings are preliminary and subject to change.
†Units in nanoseconds (ns).

Z8030 Timing

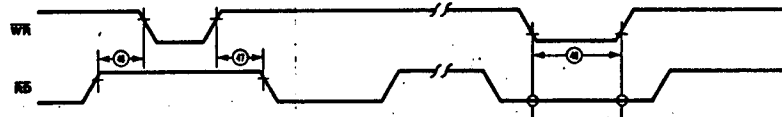


- a Tested
- b Guaranteed by Design
- c Guaranteed by Characterization

**Interrupt
Acknowledge
Timing
Z8030**



**Reset
Timing
Z8530**



**Cycle
Timing
Z8530**

