Preliminary Data Sheet Supplement

Subject:	Additional Information for MAS 3507D
Data Sheet Concerned:	MAS 3507D 6251-459-3PD, Edition March 16, 2000
Supplement:	No. 8/ 6251-459-8PDS
Edition:	Dec. 20, 2000

1. Extended Temperature Range for MAS 3507D-G10 and MAS 3507D-G12

Recommended Operating Conditions

Symbol	Parameter	Pin Name	Min.	Typ.	Max.	Unit
T_A	Ambient Temperature Range		–40		+85	°C

2. I²C-Bus Interface: Update of Protocol Description

4.2.4.1. Absolute Maximum Ratings

Symbol	Parameter	Pin Name	Min.	Max.	Unit
V_{II2C}	Input voltage, I²C-Pins	I2CC, I2CD	–0.3	5.5	V

3.1. I²C Bus Interface

Due to the internal architecture of the MAS 3507D, the IC cannot react immediately to an I²C request. The typical response time is about 0.5 ms. If the MAS 3507D cannot accept another complete byte of data until it has performed some other function (for example, decoding MP3 data), it will hold the clock line I2C_CL LOW to force the transmitter into a wait state. The positions within a transmission where this may happen are indicated by 'Wait' in section 3.4.. The maximum wait period of the MAS 3507D during normal operation mode is less than 4 ms.

4.2.4.3.1. I²C Characteristics

at T_A = –40 to 85 °C, V_{SUP} = 2.5 to 3.6 V, typ. values at T_A = 27°C, V_{SUP} = 2.7 V, CLK_F = 14.725 MHz, duty cycle = 50%

Symbol	Parameter	Pin Name	Min.	Typ.	Max.	Unit	Test Conditions
t_W	Wait time	I2CC, I2CD	0	0.5	4	ms	

3.4. Protocol Description

3.4.1. Run Command

S	$3A	Wait	ACK	$68	Wait	ACK	a3, a2	ACK	a1, a0	Wait	ACK	P

3.4.2. Read Control Interface Data

Send Command

S	$3A	Wait	ACK	$68	Wait	ACK	$3, x2	ACK	x1, x0	Wait	ACK	P

Get Ancillary Data Values

S	$3A	Wait	ACK	$69	Wait	ACK	S	$3B	Wait				
							ACK	d3, d2	ACK	d1, d0	Wait		
							.... repeat for n data values						
							ACK	d3, d2	ACK	d1, d0	Wait	Nak	P

3.4.3. Write to MAS 3507D Register

S	$3A	Wait	ACK	$68	Wait	ACK	$9,r1	ACK	r0,d0	Wait	ACK	
							d4,d3	ACK	d2,d1	Wait	ACK	P

3.4.4. Write to MAS 3507D D0 Memory

S	$3A	Wait	ACK	$68	Wait	ACK	$A, $0	ACK	$0, $0	Wait
						ACK	n3, n2	ACK	n1, n0	Wait
						ACK	a3, a2	ACK	a1, a0	Wait
						ACK	d3, d2	ACK	d1, d0	Wait
						ACK	$0, $0	ACK	$0, $d4	Wait
						.... repeat for n data values				
						ACK	d3, d2	ACK	d1, d0	Wait
						ACK	$0, $0	ACK	$0, $d4	Wait	Ack	P

3.4.5. Write to MAS 3507D D1 Memory

S	$3A	Wait	ACK	$68	Wait	ACK	$B, $0	ACK	$0, $0	Wait	
						ACK	n3, n2	ACK	n1, n0	Wait	
						ACK	a3, a2	ACK	a1, a0	Wait	
						ACK	d3, d2	ACK	d1, d0	Wait	
						ACK	$0, $0	ACK	$0, $d4	Wait	
						.... repeat for n data values					
						ACK	d3, d2	ACK	d1, d0	Wait	
						ACK	$0, $0	ACK	$0, $d4	Wait	Ack	P

3.4.6. Read Register

Send Command

S	$3A	Wait	ACK	$68	Wait	ACK	$D, r1	ACK	r0, $0	Wait	ACK	P

Get Register Value

S	$3A	Wait	ACK	$69	Wait	ACK	S	$3B	Wait			
							ACK	d3, d2	ACK	d1, d0	Wait	
							ACK	X, X	ACK	X, d4	Wait	Nak	P

3.4.7. Read D0 Memory

Send Command

S	$3A	Wait	ACK	$68	Wait	ACK	$E, $0	ACK	$0, $0	Wait	
						ACK	n3, n2	ACK	n1, n0	Wait	
						ACK	a3, a2	ACK	a1, a0	Wait	ACK	P

Get Memory Values

S	$3A	Wait	ACK	$69	Wait	ACK	S	$3B	Wait												
							ACK	d3, d2	ACK	d1, d0	Wait	ACK	$0, $0	ACK	$0, d4	Wait					
							.... repeat for n data values														
							ACK	d3, d2	ACK	d1, d0	Wait	ACK	d3, d2	ACK	d1, d0	Wait	Nak	P			

3.4.8. Read D1 Memory

Send Command

S	$3A	Wait	ACK	$68	Wait	ACK	$F, $0	ACK	$0, $0	Wait		
						ACK	n3, n2	ACK	n1, n0	Wait		
						ACK	a3, a2	ACK	a1, a0	Wait	ACK	P

Get Memory Values

S	$3A	Wait	ACK	$69	Wait	ACK	S	$3B	Wait									
							ACK	d3, d2	ACK	d1, d0	Wait	ACK	$0, $0	ACK	$0, d4	Wait		
							.... repeat for n data values											
							ACK	d3, d2	ACK	d1, d0	Wait	ACK	d3, d2	ACK	d1, d0	Wait	Nak	P

3.4.9. Default Read

S	$3A	Wait	ACK	$69	Wait	ACK	S	$3B	Wait			
							ACK	d3, d2	ACK	d1, d0	Wait	Nak	P

3.4.10. Write Data to the Control Register

S	$3A	Wait	ACK	$6A	Wait	ACK	d3, d2	ACK	d1, d0	Wait	ACK	P