



Table 4-9. Input Setup Times
T_{case} = 0°C to 75°C, See Figure 4-5

SYMBOL	PARAMETER	50MHz BUS	55MHz BUS	60MHz BUS	66MHz BUS	75MHz BUS	UNITS
		MIN	MIN	MIN	MIN	MIN	
T18	A20M#, FLUSH#, IGNNE#, SUSP#	5	5	5	5	3.3	ns
T19	AHOLD, BHOLD, BOFF#, DHOLD, HOLD	5	5	5	5	3.3	ns
T20	BRDY#	5	5	5	5	3.3	ns
T21	BRDYC#	5	5	5	5	3.3	ns
T22a	A31-A3, BE7#-BE0#	5	5	5	5	3.3	ns
T22b	AP	5	5	5	5	4	ns
T22c	D63-D0 (Read), DP7-DP0 (Read)	3.8	3.8	3	3	3	ns
T23	EADS#, INV	5	5	5	5	3.3	ns
T24	INTR, NMI, RESET, SMI#, WM_RST	5	5	5	5	3.3	ns
T25	EWBE#, KEN#, NA#, WB/WT#	5	4.5	4.5	4.5	3.0	ns
T26	QDUMP#	5	5	5	5	3.3	ns

Table 4-10. Input Hold Times
T_{case} = 0°C to 75°C, See Figure 4-5

SYMBOL	PARAMETER	50MHz BUS	55MHz BUS	60MHz BUS	66MHz BUS	75MHz BUS	UNITS
		MIN	MIN	MIN	MIN	MIN	
T27	A20M#, FLUSH#, IGNNE#, SUSP#	2	1	1	1	1	ns
T28	AHOLD, BHOLD, BOFF#, DHOLD, HOLD	2	1	1	1	1	ns
T29	BRDY#	2	1	1	1	1	ns
T30	BRDYC#	2	1	1	1	1	ns
T31a	A31-A3, AP, BE7#-BE0#	2	1	1	1	1	ns
T31b	D63-D0(Read), DP7-DP0 (Read)	2	2	2	2	2	ns
T32	EADS#, INV	2	1	1	1	1	ns
T33	INTR, NMI, RESET, SMI#, WM_RST	2	1	1	1	1	ns
T34	EWBE#, KEN#, NA#, WB/WT#	2	1	1	1	1	ns
T35	QDUMP#	2	1	1	1	1	ns

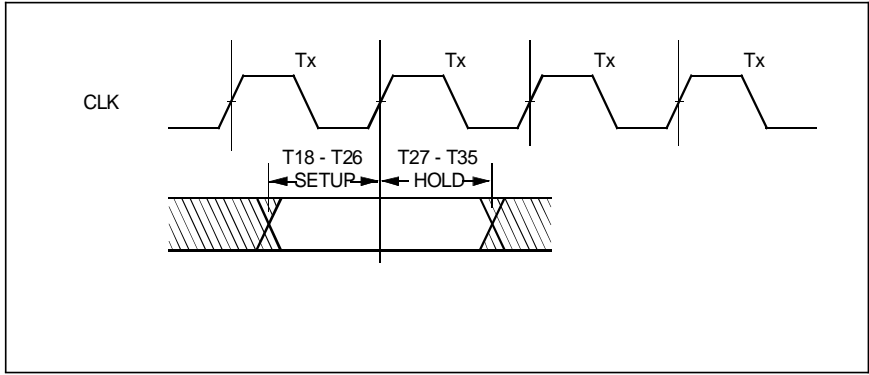


Figure 4-5. Input Setup and Hold Timing



Table 4-11. JTAG AC Specifications

SYMBOL	PARAMETER	ALL BUS FREQUENCIES		UNITS	FIGURE
		MIN	MAX		
	TCK Frequency (MHz)		20	MHz	
T36	TCK Period	50		MHz	4-6
T37	TCK High Time	25		MHz	4-6
T38	TCK Low Time	25		MHz	4-6
T39	TCK Rise Time		5	MHz	4-6
T40	TCK Fall Time		5	MHz	4-6
T41	TDO Valid Delay	3	20	MHz	4-7
T42	Non-test Outputs Valid Delay	3	20	MHz	4-7
T43	TDO Float Delay		25	MHz	4-7
T44	Non-test Outputs Float Delay		25	MHz	4-7
T45	TRST# Pulse Width	40		MHz	4-8
T46	TDI, TMS Setup Time	20		MHz	4-7
T47	Non-test Inputs Setup Time	20		MHz	4-7
T48	TDI, TMS Hold Time	13		MHz	4-7
T49	Non-test Inputs Hold Time	13		MHz	4-7

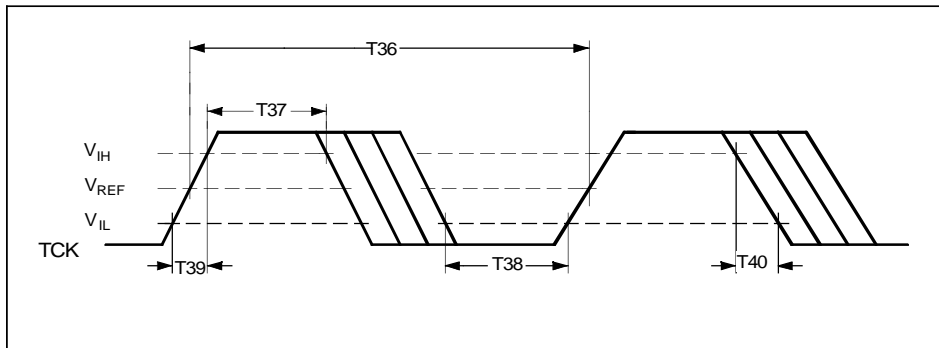


Figure 4-6. TCK Timing and Measurement Points

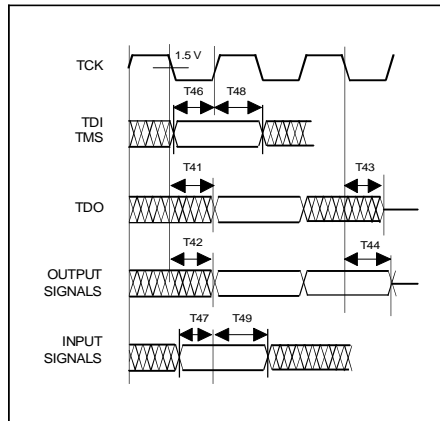


Figure 4-7. JTAG Test Timings

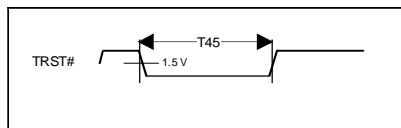


Figure 4-8. Test Reset Timing