Instruction Execution Times

In This Appendix...

Introduction

This appendix contains several tables that provide the instruction execution times for the DL205 CPUs. One thing you will notice is that many of the execution times depend on the type of data being used with the instruction. For example, you'll notice that some of the instructions that use V-memory locations are further defined by the following items:

- Data Registers
- Bit Registers

V-memory Data Registers

Some V-memory locations are considered data registers. For example, the V-memory locations that store the timer or counter current values, or just regular user V-memory, would be considered as a V-memory data register. Don't think that you cannot load a bit pattern into these types of registers, you can. It's just that their primary use is as a data register. The following locations are considered as data registers.

Data Registers	D2-230	D2-240	D2-250-1	D2-260/D2-262
Timer Current Values	V0 - V77	V0 - V177	V0 - V377	V0 - V377
Counter Current Values	V1000 - V1077	V1000 - V1177	V1000 - V1177	V1000 - V1377
User Data Words	V2000 - V2377 V4000 - V4177	V2000 - V3777 V4000 - V4377	V1400 - V7377 V10000 - V17777	V400 - V777 V1400 - V7377 V10000 - V35777

V-Memory Bit Registers

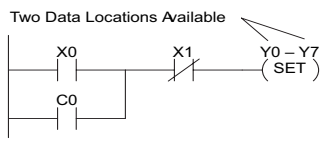
You may recall that some of the discrete points such as X, Y, C, etc., are mapped automatically into V-memory. The following locations that contain this data are considered bit registers.

Bit Registers	D2-230	D2-240	D2-250-1	D2-260/D2-262
Input Points (X)	V40400 - V40407	V40400 - V40423	V40400 - V40437	V40400 - V40477
Output Points (Y)	V40500 - V40507	V40500 - V40523	V40500 - V40537	V40500 - V40577
Control Relays (C)	V40600 - V40617	V40600 - V40617	V40600 - V40677	V40600 - V40777
Timer Status Bits	V41100 - V41103	V41100 - V41107	V41100 - V41117	V41100 - V41177
Counter Status Bits	V41040 - V41143	V41040 - V41147	V41040 - V41147	V41140 - V41157
Stages	V41000 - V41017	V41000 - V41037	V41000 - V41077	V41000 - V41077

How to Read the Tables

Some of the instructions can have more than one parameter. For example, the SET instruction shown in the ladder program to the right can set a single point or a range of points.

In these cases, execution times depend on the number and type of parameters. The execution time tables list execution times for both situations, as shown below:



SET	1st #: X, Y, C, 2nd #: X, Y, C, S (N pt)	9.2 µs 9.6 µs + 0.9 µs x N
RST	1st #: X, Y, C, 2nd #: X, Y, C, S (N pt)	9.2 µs 9.6 µs + 0.9 µs x N

Execution depends on numbers of locations and types of data used

Boolean Instructions

Boolean Instructions		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
STR	X, Y, C, T, CT, S, SP	3.3 µs	3.3 µs	1.4 µs	1.4 µs	0.67 µs	0 µs	0.67 µs	0 µs
STRN	X, Y, C, T, CT, S, SP	3.9 µs	3.9 µs	1.6 µs	1.6 µs	0.67 µs	0 µs	0.67 µs	0 µs
OR	X, Y, C, T, CT, S, SP	2.7 µs	2.7 µs	1.0 µs	1.0 µs	0.51 µs	0.51 µs	0.51 µs	0.51 µs
ORN	X, Y, C, T, CT, S, SP	3.3 µs	3.3 µs	1.4 µs	1.4 µs	0.55 µs	0.55 µs	0.55 µs	0.55 µs
AND	X, Y, C, T, CT, S, SP	2.1 µs	2.1 µs	0.8 µs	0.8 µs	0.42 µs	0.42 µs	0.42 µs	0.42 µs
ANDN	X, Y, C, T, CT, S, SP	2.7 µs	2.7 µs	1.2 µs	1.2 µs	0.51 µs	0.51 µs	0.51 µs	0.51 µs
ANDSTR	None	1.2 µs	1.2 µs	0.7 µs	0.7 µs	0.37 µs	0.37 µs	0.37 µs	0.37 µs
ORSTR	None	1.2 µs	1.2 µs	0.7 µs	0.7 µs	0.37 µs	0.37 µs	0.37 µs	0.37 µs
OUT	X, Y, C	3.4 µs	3.4 µs	7.95 µs	7.65 µs	1.82 µs	1.82 µs	1.82 µs	1.82 µs
OROUT	X, Y, C	8.6 µs	8.6 µs	8.25 µs	8.4 µs	2.09 µs	2.09 µs	2.09 µs	2.09 µs
NOT		-	-	-	-	1.04 µs	1.04 µs	1.04 µs	1.04 µs
SET	1st #: X, Y, C, S, 2nd #: X, Y, C, S (N pt)	17.4 µs 12.0 µs + 5.4 µs x N	6.8 µs 6.8 µs	11.4 µs 11.0 µs + 7.0 µs x N	8.4 µs 8.4 µs	9.2 µs 9.6 µs + 0.9 µs x N	1.0 µs 1.1 µs	9.2 µs 9.6 µs + 0.9 µs x N	1.0 µs 1.1 µs
RST	1st #: X, Y, C, S 2nd #: X, Y, C, S (N pt)	17.7 µs 10.5 µs + 5.2 µs x N	6.8 µs 6.8 µs	11.4 µs 11.0 µs + 7.0 µs x N	8.4 µs 8.4 µs	9.2 µs 9.6 µs + 0.9 µs x N	1.0 µs 1.1 µs	9.2 µs 9.6 µs + 0.9 µs x N	1.0 µs 1.1 µs
	1st #: T, CT 2nd #: T, CT (N pt)	31.6 µs 17 µs + 14.6 µs x N	6.8 µs 6.8 µs	29.0 µs 24.3 µs + 4.7 µs x N	8.4 µs 8.4 µs	25.7 µs 16.8 µs + 2.7 µs x N	1.1 µs 1.4 µs	25.7 µs 16.8 µs + 2.7 µs x N	1.1 µs 1.4 µs
PAUSE	1wd: Y 2wd: Y (N points)	19.0 µs 15 µs + 4 µs x N	19.0 µs 15 µs + 4 µs x N	13.0 µs 11 µs + 3 µs x N	13.0 µs 11 µs + 3 µs x N	5.6 µs 9.2 µs + 0.3 µs x N	5.4 µs 4.8 µs	5.6 µs 9.2 µs + 0.3 µs x N	5.4 µs 4.8 µs

Comparative Boolean Instructions

Comparative Boolean Instructions			D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
STRE	*1st*	*2nd*								
	V: Data Reg.	V: Data Reg.	77 µs	13.8 µs	46 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	158 µs	13.8 µs	135 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	57 µs	13.8 µs	46 µs	16.2 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	141 µs	111.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	235 µs	115.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	V: Bit Reg.	V: Data Reg.	158 µs	13.8 µs	135 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	240 µs	13.8 µs	225 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	139 µs	13.8 µs	135 µs	16.2 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	231 µs	111.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	324 µs	115.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	P: Indir. (Data)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.7 µs	27.7 µs	27.7 µs	27.7 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
	P: Indir. (Bit)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.7 µs	27.7 µs	27.7 µs	27.7 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
STRNE	*1st*	*2nd*								
	V: Data Reg.	V: Data Reg.	77 µs	13.8 µs	46 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	158 µs	13.8 µs	136 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	57 µs	13.8 µs	46 µs	16.2 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	141 µs	111.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	235 µs	115.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	V: Bit Reg.	V: Data Reg.	158 µs	13.8 µs	135 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	240 µs	13.8 µs	225 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	139 µs	13.8 µs	135 µs	16.2 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	231 µs	111.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	324 µs	115.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	P: Indir. (Data)	V: Data Reg.	-	-	-	-	30.3 µs	30.3 µs	30.3 µs	30.3 µs
		V: Bit Reg.	-	-	-	-	30.3 µs	30.3 µs	30.3 µs	30.3 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
	P: Indir. (Bit)	V: Data Reg.	-	-	-	-	30.3 µs	30.3 µs	30.3 µs	30.3 µs
		V: Bit Reg.	-	-	-	-	30.3 µs	30.3 µs	30.3 µs	30.3 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs

Comparative Boolean Instructions (cont'd)

Comparative Boolean Instructions			D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
ORE	*1st*	*2nd*								
	V: Data Reg.	V: Data Reg.	75 µs	12.0 µs	44 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	55 µs	12.0 µs	44 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	140 µs	110.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	234 µs	114.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	V: Bit Reg.	V: Data Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	239 µs	12.0 µs	223 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	137 µs	12.0 µs	133 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	230 µs	110.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	324 µs	114.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	P: Indir. (Data)	V: Data Reg.	-	-	-	-	30.3 µs	30.3 µs	30.3 µs	30.3 µs
		V: Bit Reg.	-	-	-	-	30.3 µs	30.3 µs	30.3 µs	30.3 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	50.4 µs	50.4 µs	50.4 µs	50.4 µs
		P: Indir. (Bit)	-	-	-	-	50.4 µs	50.4 µs	50.4 µs	50.4 µs
	P: Indir. (Bit)	V: Data Reg.	-	-	-	-	30.3 µs	30.3 µs	30.3 µs	30.3 µs
		V: Bit Reg.	-	-	-	-	30.3 µs	30.3 µs	30.3 µs	30.3 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	50.4 µs	50.4 µs	50.4 µs	50.4 µs
		P: Indir. (Bit)	-	-	-	-	50.4 µs	50.4 µs	50.4 µs	50.4 µs
ORNE	*1st*	*2nd*								
	V: Data Reg.	V: Data Reg.	75 µs	12.0 µs	44 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	55 µs	12.0 µs	44 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	141 µs	110.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	234 µs	114.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	V: Bit Reg.	V: Data Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	239 µs	12.0 µs	223 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	137 µs	12.0 µs	133 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	230 µs	110.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	323 µs	114.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	P: Indir. (Data)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
	P: Indir. (Bit)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs

Comparative Boolean Instructions (cont'd)

Comparative Boolean Instructions			D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
ANDE	*1st*	*2nd*								
	V: Data Reg.	V: Data Reg.	75 µs	12.0 µs	44 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	55 µs	12.0 µs	44 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	139 µs	109.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	233 µs	113.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	V: Bit Reg.	V: Data Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	239 µs	12.0 µs	223 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	137 µs	12.0 µs	133 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	229 µs	109.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	322 µs	113.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	P: Indir. (Data)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
	P: Indir. (Bit)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
ANDNE	*1st*	*2nd*								
	V: Data Reg.	V: Data Reg.	75 µs	12.0 µs	44 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	158 µs	12.0 µs	133 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	55 µs	12.0 µs	44 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	139 µs	109.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	233 µs	113.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	V: Bit Reg.	V: Data Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	239 µs	12.0 µs	223 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	137 µs	12.0 µs	133 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	229 µs	109.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	323 µs	113.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	P: Indir. (Data)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
	P: Indir. (Bit)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs

Comparative Boolean Instructions (cont'd)

Comparative Boolean Instructions			D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
STR	*1st*	*2nd*								
	T, CT	V: Data Reg.	76 µs	13.8 µs	46 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	158 µs	13.8 µs	135 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	57 µs	13.8 µs	46 µs	16.2 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	141 µs	111.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	235 µs	115.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	1st	*2nd*								
	V: Data Reg.	V: Data Reg.	78 µs	13.8 µs	46 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	159 µs	13.8 µs	135 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	57 µs	13.8 µs	46 µs	16.2 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	141 µs	111.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	235 µs	115.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	V: Bit Reg.	V: Data Reg.	159 µs	13.8 µs	135 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	241 µs	13.8 µs	225 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	139 µs	13.8 µs	135 µs	16.2 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	231 µs	111.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	324 µs	115.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	P: Indir. (Data)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
	P: Indir. (Bit)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs

Comparative Boolean Instructions (cont'd)

Comparative Boolean Instructions			D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
STRN	***1st***	***2nd***								
	T, CT	V: Data Reg.	78 µs	13.8 µs	46 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	158 µs	13.8 µs	136 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	57 µs	13.8 µs	46 µs	16.2 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	141 µs	111.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	235 µs	115.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	1st	***2nd***								
	V: Data Reg.	V: Data Reg.	78 µs	13.8 µs	46 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	159 µs	13.8 µs	135 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	57 µs	13.8 µs	46 µs	16.2 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	141 µs	111.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	235 µs	115.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	V: Bit Reg.	V: Data Reg.	159 µs	13.8 µs	136 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	241 µs	13.8 µs	225 µs	16.2 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	139 µs	13.8 µs	135 µs	16.2 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	231 µs	111.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	324 µs	115.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	P: Indir. (Data)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
	P: Indir. (Bit)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs

Comparative Boolean Instructions (cont'd)

Comparative Boolean Instructions			D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
OR	***1st***	***2nd***								
	T, CT	V: Data Reg.	75 µs	12.0 µs	44 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	55 µs	12.0 µs	44 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	140 µs	110.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	234 µs	114.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	1st	***2nd***								
	V: Data Reg.	V: Data Reg.	75 µs	12.0 µs	44 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	55 µs	12.0 µs	44 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	140 µs	110.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	234 µs	114.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	V: Bit Reg.	V: Data Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	240 µs	12.0 µs	223 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	137 µs	12.0 µs	133 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	230 µs	110.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	323 µs	114.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	P: Indir. (Data)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
	P: Indir. (Bit)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs

Comparative Boolean Instructions (cont'd)

Comparative Boolean Instructions			D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
ORN	***1st***	***2nd***								
	T, CT	V: Data Reg.	75 µs	12.0 µs	44 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	55 µs	12.0 µs	44 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	140 µs	110.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	234 µs	114.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	1st	***2nd***								
	V: Data Reg.	V: Data Reg.	75 µs	12.0 µs	44 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	55 µs	12.0 µs	44 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	141 µs	110.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	234 µs	114.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	V: Bit Reg.	V: Data Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	240 µs	12.0 µs	223 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	137 µs	12.0 µs	133 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	230 µs	110.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	324 µs	114.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	P: Indir. (Data)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
	P: Indir. (Bit)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs

Comparative Boolean Instructions (cont'd)

Comparative Boolean Instructions			D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
AND	***1st***	***2nd***								
	T, CT	V: Data Reg.	76 µs	12.0 µs	44 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	55 µs	12.0 µs	44 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	139 µs	109.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	233 µs	113.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	1st	***2nd***								
	V: Data Reg.	V: Data Reg.	75 µs	12.0 µs	44 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	55 µs	12.0 µs	44 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	140 µs	109.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	233 µs	113.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	V: Bit Reg.	V: Data Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	240 µs	12.0 µs	223 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	137 µs	12.0 µs	133 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	229 µs	109.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	323 µs	113.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	P: Indir. (Data)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
	P: Indir. (Bit)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs

Comparative Boolean Instructions (cont'd)

Comparative Boolean Instructions			D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
ANDN	***1st***	***2nd***								
	T, CT	V: Data Reg.	76 µs	12.0 µs	44 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	55 µs	12.0 µs	44 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	139 µs	110.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	233 µs	114.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	1st	***2nd***								
	V: Data Reg.	V: Data Reg.	75 µs	12.0 µs	44 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	55 µs	12.0 µs	44 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	139 µs	109.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	233 µs	113.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	V: Bit Reg.	V: Data Reg.	158 µs	12.0 µs	134 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		V: Bit Reg.	240 µs	12.0 µs	223 µs	13.9 µs	7.6 µs	7.6 µs	7.6 µs	7.6 µs
		K: Constant	137 µs	12.0 µs	133 µs	13.9 µs	4.8 µs	4.8 µs	4.8 µs	4.8 µs
		P: Indir. (Data)	-	-	229 µs	109.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	322 µs	113.0 µs	30.2 µs	30.2 µs	30.2 µs	30.2 µs
	P: Indir. (Data)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
	P: Indir. (Bit)	V: Data Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		V: Bit Reg.	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
		K: Constant	-	-	-	-	27.4 µs	27.4 µs	27.4 µs	27.4 µs
		P: Indir. (Data)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs
		P: Indir. (Bit)	-	-	-	-	51.0 µs	51.0 µs	51.0 µs	51.0 µs

Bit of Word Boolean Instructions

Bit of Word Boolean Instructions		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
STRB	V: Data Reg.	-	-	-	-	3.1 µs	3.1 µs	3.1 µs	3.1 µs
	V: Bit Reg.	-	-	-	-	3.1 µs	3.1 µs	3.1 µs	3.1 µs
	P: Indir. (Data)	-	-	-	-	30.0 µs	30.0 µs	30.0 µs	30.0 µs
	P: Indir. (Bit)	-	-	-	-	30.0 µs	30.0 µs	30.0 µs	30.0 µs
STRNB	V: Data Reg.	-	-	-	-	3.0 µs	3.0 µs	3.0 µs	3.0 µs
	V: Bit Reg.	-	-	-	-	3.0 µs	3.0 µs	3.0 µs	3.0 µs
	P: Indir. (Data)	-	-	-	-	29.8 µs	29.8 µs	29.8 µs	29.8 µs
	P: Indir. (Bit)	-	-	-	-	29.8 µs	29.8 µs	29.8 µs	29.8 µs
ORB	V: Data Reg.	-	-	-	-	2.9 µs	2.9 µs	2.9 µs	2.9 µs
	V: Bit Reg.	-	-	-	-	2.9 µs	2.9 µs	2.9 µs	2.9 µs
	P: Indir. (Data)	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
	P: Indir. (Bit)	-	-	-	-	29.9 µs	29.9 µs	29.9 µs	29.9 µs
ORNB	V: Data Reg.	-	-	-	-	2.8 µs	2.8 µs	2.8 µs	2.8 µs
	V: Bit Reg.	-	-	-	-	2.8 µs	2.8 µs	2.8 µs	2.8 µs
	P: Indir. (Data)	-	-	-	-	29.6 µs	29.6 µs	29.6 µs	29.6 µs
	P: Indir. (Bit)	-	-	-	-	29.6 µs	29.6 µs	29.6 µs	29.6 µs
ANDB	V: Data Reg.	-	-	-	-	2.8 µs	2.8 µs	2.8 µs	2.8 µs
	V: Bit Reg.	-	-	-	-	2.8 µs	2.8 µs	2.8 µs	2.8 µs
	P: Indir. (Data)	-	-	-	-	29.6 µs	29.6 µs	29.6 µs	29.6 µs
	P: Indir. (Bit)	-	-	-	-	29.6 µs	29.6 µs	29.6 µs	29.6 µs
ANDNB	V: Data Reg.	-	-	-	-	2.7 µs	2.7 µs	2.7 µs	2.7 µs
	V: Bit Reg.	-	-	-	-	2.7 µs	2.7 µs	2.7 µs	2.7 µs
	P: Indir. (Data)	-	-	-	-	29.6 µs	29.6 µs	29.6 µs	29.6 µs
	P: Indir. (Bit)	-	-	-	-	29.6 µs	29.6 µs	29.6 µs	29.6 µs
OUTB	V: Data Reg.	-	-	-	-	3.1 µs	3.4 µs	3.1 µs	3.4 µs
	V: Bit Reg.	-	-	-	-	3.1 µs	3.4 µs	3.1 µs	3.4 µs
	P: Indir. (Data)	-	-	-	-	30.3 µs	30.7 µs	30.3 µs	30.7 µs
	P: Indir. (Bit)	-	-	-	-	30.3 µs	30.7 µs	30.3 µs	30.7 µs
SETB	V: Data Reg.	-	-	-	-	13.4 µs	3.4 µs	13.4 µs	3.4 µs
	V: Bit Reg.	-	-	-	-	13.4 µs	3.4 µs	13.4 µs	3.4 µs
	P: Indir. (Data)	-	-	-	-	41.1 µs	29.1 µs	41.1 µs	29.1 µs
	P: Indir. (Bit)	-	-	-	-	41.1 µs	29.1 µs	41.1 µs	29.1 µs
RSTB	V: Data Reg.	-	-	-	-	13.5 µs	1.4 µs	13.5 µs	1.4 µs
	V: Bit Reg.	-	-	-	-	13.5 µs	1.4 µs	13.5 µs	1.4 µs
	P: Indir. (Data)	-	-	-	-	41.3 µs	29.1 µs	41.3 µs	29.1 µs
	P: Indir. (Bit)	-	-	-	-	41.3 µs	29.1 µs	41.3 µs	29.1 µs

Immediate Instructions

Immediate Instructions			D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
LDI	V		-	-	-	-	-	-	20.6 µs	1.1 µs
LDIF	1st#:	X	-	-	-	-	-	-	-	-
	2nd#:	K: Constant	-	-	-	-	-	-	26.6 µs + 0.9 µs x N	1.4 µs
STRI	X		27 µs	9.8 µs	29 µs	10.7 µs	19.3 µs	19.3 µs	19.3 µs	19.3 µs
STRNI	X		26 µs	8.6 µs	29 µs	10.7 µs	19.4 µs	19.4 µs	19.4 µs	19.4 µs
ORI	X		27 µs	9.8 µs	29 µs	8.4 µs	19.1 µs	18.7 µs	19.1 µs	18.7 µs
ORNI	X		26 µs	8.6 µs	29 µs	8.4 µs	19.2 µs	18.9 µs	19.2 µs	18.9 µs
ANDI	X		25 µs	8.0 µs	27 µs	8.4 µs	18.7 µs	18.7 µs	18.7 µs	18.7 µs
ANDNI	X		24 µs	6.8 µs	28 µs	8.4 µs	18.8 µs	18.8 µs	18.8 µs	18.8 µs
OROUTI	Y		45 µs	45 µs	39 µs	40 µs	27.5 µs	27.5 µs	27.5 µs	27.5 µs
OUTI	Y		45 µs	45 µs	39 µs	40 µs	25.5 µs	25.5 µs	25.5 µs	25.5 µs
OUTIF	1st#:	Y	-	-	-	-	-	-	-	-
	2nd#:	K: Constant	-	-	-	-	-	-	66.1 µs + 0.9 µs x N	1.4 µs
SETI	1st#:	Y	25.5 µs	6.8 µs	39.0 µs	8.4 µs	23.1 µs	0.9 µs	23.1 µs	0.9 µs
	2nd#:	Y (N pt)	5.5 µs + 20 µs x N	6.8 µs	44 µs + 25 µs x N	8.4 µs	22.8 µs + 1.4 µs x N	0.9 µs	22.8 µs + 1.4 µs x N	0.9 µs
RSTI	1st#:	Y	25.5 µs	6.8 µs	37 µs	8.4 µs	23.2 µs	0.9 µs	23.2 µs	0.9 µs
	2nd#:	Y (N pt)	5 µs + 20.5 µs x N	6.8 µs	45 µs + 22 µs x N	8.4 µs	22.8 µs + 1.4 µs x N	0.9 µs	22.8 µs + 1.4 µs x N	0.9 µs

Timer, Counter and Shift Register Instructions

Timer, Counter and Shift Register Instructions			D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
	1st	*2nd*								
TMR	T	V: Data Reg.	75 µs	31 µs	61 µs	23.5 µs	26.8 µs	7.3 µs	26.8 µs	7.3 µs
		V: Bit Reg.	158 µs	31 µs	158 µs	23.5 µs	26.8 µs	7.3 µs	26.8 µs	7.3 µs
		K: Constant	66 µs	31 µs	70 µs	23.5 µs	20.0 µs	4.8 µs	20.0 µs	4.8 µs
		P: Indir. (Data)	-	-	177 µs	131.0 µs	45.6 µs	30.2 µs	45.6 µs	30.2 µs
		P: Indir. (Bit)	-	-	271 µs	136.0 µs	45.6 µs	30.2 µs	45.6 µs	30.2 µs
TMRF	T	V: Data Reg.	75 µs	31 µs	61 µs	23.5 µs	51.4 µs	7.3 µs	51.4 µs	7.3 µs
		V: Bit Reg.	158 µs	31 µs	158 µs	23.5 µs	51.4 µs	7.3 µs	51.4 µs	7.3 µs
		K: Constant	66 µs	31 µs	70 µs	23.5 µs	48.4 µs	4.6 µs	48.4 µs	4.6 µs
		P: Indir. (Data)	-	-	177 µs	131.0 µs	75.9 µs	30.2 µs	75.9 µs	30.2 µs
		P: Indir. (Bit)	-	-	271 µs	136.0 µs	75.9 µs	30.2 µs	75.9 µs	30.2 µs
TMRA	T	V: Data Reg.	94 µs	56 µs	75 µs	41 µs	48.9 µs	7.3 µs	48.9 µs	7.3 µs
		V: Bit Reg.	304 µs	264 µs	253 µs	219 µs	48.9 µs	7.3 µs	48.9 µs	7.3 µs
		K: Constant	95 µs	45 µs	79 µs	49 µs	45.0 µs	4.6 µs	45.0 µs	4.6 µs
		P: Indir. (Data)	-	-	193 µs	159 µs	75.9 µs	30.2 µs	75.9 µs	30.2 µs
		P: Indir. (Bit)	-	-	366 µs	331 µs	75.9 µs	30.2 µs	75.9 µs	30.2 µs
TMRAF	T	V: Data Reg.	98 µs	54 µs	75 µs	42 µs	54.2 µs	7.3 µs	54.2 µs	7.3 µs
		V: Bit Reg.	304 µs	264 µs	253 µs	218 µs	54.2 µs	7.3 µs	54.2 µs	7.3 µs
		K: Constant	95 µs	49 µs	80 µs	50 µs	50.3 µs	4.6 µs	50.3 µs	4.6 µs
		P: Indir. (Data)	-	-	193 µs	159 µs	81.2 µs	30.2 µs	81.2 µs	30.2 µs
		P: Indir. (Bit)	-	-	366 µs	331 µs	81.2 µs	30.2 µs	81.2 µs	30.2 µs
CNT	CT	V: Data Reg.	68 µs	61 µs	59 µs	38 µs	25.8 µs	7.3 µs	25.8 µs	7.3 µs
		V: Bit Reg.	148 µs	141 µs	157 µs	133 µs	25.8 µs	7.3 µs	25.8 µs	7.3 µs
		K: Constant	56 µs	45 µs	59 µs	45 µs	22.2 µs	4.6 µs	22.2 µs	4.6 µs
		P: Indir. (Data)	-	-	176 µs	152 µs	53.5 µs	30.2 µs	53.5 µs	30.2 µs
		P: Indir. (Bit)	-	-	270 µs	245 µs	53.5 µs	30.2 µs	53.5 µs	30.2 µs
SGCNT	CT	V: Data Reg.	57 µs	64 µs	58 µs	38 µs	27.3 µs	7.3 µs	27.3 µs	7.3 µs
		V: Bit Reg.	140 µs	148 µs	155 µs	133 µs	27.3 µs	7.3 µs	27.3 µs	7.3 µs
		K: Constant	46 µs	53 µs	67 µs	45 µs	23.5 µs	4.6 µs	23.5 µs	4.6 µs
		P: Indir. (Data)	-	-	175 µs	152 µs	54.9 µs	30.2 µs	54.9 µs	30.2 µs
		P: Indir. (Bit)	-	-	268 µs	245 µs	54.9 µs	30.2 µs	54.9 µs	30.2 µs
UDC	CT	V: Data Reg.	103 µs	74 µs	80 µs	56 µs	39.8 µs	7.3 µs	39.8 µs	7.3 µs
		V: Bit Reg.	310 µs	281 µs	261 µs	224 µs	39.8 µs	7.3 µs	39.8 µs	7.3 µs
		K: Constant	102 µs	70 µs	97 µs	60 µs	35.4 µs	4.6 µs	35.4 µs	4.6 µs
		P: Indir. (Data)	-	-	202 µs	165 µs	67.8 µs	30.2 µs	67.8 µs	30.2 µs
		P: Indir. (Bit)	-	-	374 µs	336 µs	67.8 µs	30.2 µs	67.8 µs	30.2 µs
SR	C (N points to shift)		30 µs + 4.6 µs x N	17.2 µs	25 µs + 4 µs x N	19.7 µs	17.8 µs + 0.9 µs x N	9.8 µs	17.8 µs + 0.9 µs x N	9.8 µs

Accumulator Data Instructions

Accumulator/Stack Load and Output Data Instructions			D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	**Legal Data Types**		**Execute**	**Not Execute**	**Execute**	**Not Execute**	**Execute**	**Not Execute**	**Execute**	**Not Execute**
LD	V: Data Reg.		68 µs	8.4 µs	68 µs	8.4 µs	11.8 µs	1.0 µs	11.8 µs	1.0 µs
	V: Bit Reg.		149 µs	8.4 µs	143 µs	8.4 µs	11.8 µs	1.0 µs	11.8 µs	1.0 µs
	K: Constant		62 µs	8.4 µs	159 µs	8.4 µs	9.0 µs	1.0 µs	9.0 µs	1.0 µs
	P: Indir. (Data)		169 µs	8.4 µs	238 µs	8.4 µs	33.9 µs	0.9 µs	33.9 µs	0.9 µs
	P: Indir. (Bit)		256 µs	8.4 µs	62 µs	8.4 µs	33.9 µs	0.9 µs	33.9 µs	0.9 µs
LDA	O: (Octal constant for address)		58 µs	8.4 µs	56 µs	8.4 µs	10.4 µs	1.0 µs	10.4 µs	1.0 µs
LDD	V: Data Reg.		72 µs	8.4 µs	67 µs	8.4 µs	12.2 µs	1.0 µs	12.2 µs	1.0 µs
	V: Bit Reg.		266 µs	8.4 µs	228 µs	8.4 µs	12.2 µs	1.0 µs	12.2 µs	1.0 µs
	K: Constant		64 µs	8.4 µs	69 µs	8.4 µs	9.0 µs	1.0 µs	9.0 µs	1.0 µs
	P: Indir. (Data)		172 µs	8.4 µs	158 µs	8.4 µs	37.8 µs	0.9 µs	37.8 µs	0.9 µs
	P: Indir. (Bit)		373 µs	8.4 µs	323 µs	8.4 µs	37.8 µs	0.9 µs	37.8 µs	0.9 µs
LDF	**1st**	**2nd**								
	X, Y, C, S, T, CT, SP	K: Constant	-	-	86 µs + 5 µs x N	8.4 µs	20.5 µs + 0.9 µs x N	0.9 µs	20.5 µs + 0.9 µs x N	0.9 µs
LDR	V: Data Reg.		-	-	-	-	29.5 µs	1.0 µs	29.5 µs	1.0 µs
	V: Bit Reg.		-	-	-	-	29.5 µs	1.0 µs	29.5 µs	1.0 µs
	K: Constant		-	-	-	-	25.5 µs	1.0 µs	25.5 µs	1.0 µs
	P: Indir. (Data)		-	-	-	-	54.9 µs	1.0 µs	54.9 µs	1.0 µs
	P: Indir. (Bit)		-	-	-	-	54.9 µs	1.0 µs	54.9 µs	1.0 µs
LDSX	K: Constant		-	-	79 µs	8.4 µs	14.6 µs	1.0 µs	14.6 µs	1.0 µs
LDX	V: Data Reg.		-	-	-	-	10.8 µs	1.0 µs	10.8 µs	1.0 µs
	V: Bit Reg.		-	-	-	-	10.8 µs	1.0 µs	10.8 µs	1.0 µs
	P: Indir. (Data)		-	-	-	-	45.2 µs	1.0 µs	45.2 µs	1.0 µs
	P: Indir. (Bit)		-	-	-	-	45.2 µs	1.0 µs	45.2 µs	1.0 µs
OUT	V: Data Reg.		60 µs	8.4 µs	21 µs	8.4 µs	9.3 µs	1.0 µs	9.3 µs	1.0 µs
	V: Bit Reg.		132 µs	8.4 µs	126 µs	8.4 µs	9.3 µs	1.0 µs	9.3 µs	1.0 µs
	P: Indir. (Data)		162 µs	8.4 µs	112 µs	8.4 µs	35.2 µs	0.9 µs	35.2 µs	0.9 µs
	P: Indir. (Bit)		239 µs	8.4 µs	222 µs	8.4 µs	35.2 µs	0.9 µs	35.2 µs	0.9 µs
OUTD	V: Data Reg.		68 µs	8.4 µs	26 µs	8.4 µs	10.2 µs	1.0 µs	10.2 µs	1.0 µs
	V: Bit Reg.		276 µs	8.4 µs	235 µs	8.4 µs	10.2 µs	1.0 µs	10.2 µs	1.0 µs
	P: Indir. (Data)		196 µs	8.4 µs	116 µs	8.4 µs	35.8 µs	0.9 µs	35.8 µs	0.9 µs
	P: Indir. (Bit)		384 µs	8.4 µs	331 µs	8.4 µs	35.8 µs	0.9 µs	35.8 µs	0.9 µs

Accumulator Data Instructions (cont'd)

Accumulator/Stack Load and Output Data Instructions			D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	**Legal Data Types**		**Execute**	**Not Execute**	**Execute**	**Not Execute**	**Execute**	**Not Execute**	**Execute**	**Not Execute**
OUTF	**1st**	**2nd**								
	X, Y, C	K: Constant	-	-	53 µs + 7 µs x N	8.4 µs	54 µs + 1.0 µs x N	0.9 µs	54 µs + 1.0 µs x N	0.9 µs
OUTL	V: Data Reg.		-	-	-	-	-	-	13.5 µs	1.0 µs
	V: Bit Reg.		-	-	-	-	-	-	13.5 µs	1.0 µs
OUTM	V: Data Reg.		-	-	-	-	-	-	13.7 µs	1.0 µs
	V: Bit Reg.		-	-	-	-	-	-	13.7 µs	1.0 µs
OUTX	V: Data Reg.		-	-	-	-	-	-	17.2 µs	1.0 µs
	V: Bit Reg.		-	-	-	-	-	-	17.2 µs	1.0 µs
	P: Indir. (Data)		-	-	-	-	-	-	43.4 µs	1.0 µs
	P: Indir. (Bit)		-	-	-	-	-	-	43.4 µs	1.0 µs
POP	None		55 µs	7.2 µs	50 µs	8.4 µs	8.4 µs	1.0 µs	8.4 µs	1.0 µs

Logical Instructions

Logical (Accumulator) Instructions			D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
AND	V: Data Reg.		58 µs	10.4 µs	54 µs	8.4 µs	7.9 µs	1.0 µs	7.9 µs	1.0 µs
	V: Bit Reg.		261 µs	10.4 µs	145 µs	8.4 µs	7.9 µs	1.0 µs	7.9 µs	1.0 µs
	P: Indir. (Data)		-	-	162 µs	8.4 µs	33.4 µs	0.9 µs	33.4 µs	0.9 µs
	P: Indir. (Bit)		-	-	241 µs	8.4 µs	33.4 µs	0.9 µs	33.4 µs	0.9 µs
ANDD	V: Data Reg.		-	-	-	-	8.9 µs	1.0 µs	8.9 µs	1.0 µs
	V: Bit Reg.		-	-	-	-	8.9 µs	1.0 µs	8.9 µs	1.0 µs
	K: Constant		53 µs	8.4 µs	60 µs	8.4 µs	5.7 µs	1.0 µs	5.7 µs	1.0 µs
	P: Indir. (Data)		-	-	-	-	34.4 µs	0.9 µs	34.4 µs	0.9 µs
	P: Indir. (Bit)		-	-	-	-	34.4 µs	0.9 µs	34.4 µs	0.9 µs
ANDF	**1st**	**2nd**								
	X, Y, C, S, T, CT, SP GX, GY	K: Constant	-	-	-	-	21.6 µs + 0.9 µs x N	1.0 µs	21.6 µs + 0.9 µs x N	1.0 µs
ANDS	None		-	-	-	-	-	-	10.0 µs	1.0 µs
OR	V: Data Reg.		59 µs	10.4 µs	54 µs	8.4 µs	8.1 µs	1.0 µs	8.1 µs	1.0 µs
	V: Bit Reg.		257 µs	10.4 µs	144 µs	8.4 µs	8.1 µs	1.0 µs	8.1 µs	1.0 µs
	P: Indir. (Data)		-	-	160 µs	8.4 µs	33.8 µs	0.9 µs	33.8 µs	0.9 µs
	P: Indir. (Bit)		-	-	239 µs	8.4 µs	33.8 µs	0.9 µs	33.8 µs	0.9 µs
ORD	V: Data Reg.		-	-	-	-	9.0 µs	1.0 µs	9.0 µs	1.0 µs
	V: Bit Reg.		-	-	-	-	9.0 µs	1.0 µs	9.0 µs	1.0 µs
	K: Constant		49 µs	8.4 µs	60 µs	8.4 µs	5.8 µs	1.0 µs	5.8 µs	1.0 µs
	P: Indir. (Data)		-	-	-	-	34.5 µs	0.9 µs	34.5 µs	0.9 µs
	P: Indir. (Bit)		-	-	-	-	34.5 µs	0.9 µs	34.5 µs	0.9 µs
ORF	**1st**	**2nd**								
	X, Y, C, S, T, CT, SP GX, GY	K: Constant	-	-	-	-	20.9 µs + 0.9 µs x N	1.0 µs	20.9 µs + 0.9 µs x N	1.0 µs
ORS	None		-	-	-	-	-	-	10.2 µs	1.0 µs
XOR	V: Data Reg.		60 µs	10.4 µs	69 µs	8.4 µs	8.0 µs	1.0 µs	8.0 µs	1.0 µs
	V: Bit Reg.		257 µs	10.4 µs	144 µs	8.4 µs	8.0 µs	1.0 µs	8.0 µs	1.0 µs
	P: Indir. (Data)		-	-	160 µs	8.4 µs	33.6 µs	0.9 µs	33.6 µs	0.9 µs
	P: Indir. (Bit)		-	-	239 µs	8.4 µs	33.6 µs	0.9 µs	33.6 µs	0.9 µs
XORD	V: Data Reg.		-	-	-	-	9.0 µs	1.0 µs	9.0 µs	1.0 µs
	V: Bit Reg.		-	-	-	-	9.0 µs	1.0 µs	9.0 µs	1.0 µs
	K: Constant		49 µs	8.4 µs	62 µs	8.4 µs	5.4 µs	1.0 µs	5.4 µs	1.0 µs
	P: Indir. (Data)		-	-	-	-	34.4 µs	0.9 µs	34.4 µs	0.9 µs
	P: Indir. (Bit)		-	-	-	-	34.4 µs	0.9 µs	34.4 µs	0.9 µs

Logical Instructions (cont'd)

Logical (Accumulator) Instructions			D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	**Legal Data Types**		**Execute**	**Not Execute**	**Execute**	**Not Execute**	**Execute**	**Not Execute**	**Execute**	**Not Execute**
XORF	**1st**	**2nd**								
	X, Y, C, S, T, CT, SP GX, GY	K: Constant	-	-	-	-	20.9 µs + 0.9 µs x N	1.0 µs	20.9 µs + 0.9 µs x N	1.0 µs
XORS	None		-	-	-	-	-	-	10.1 µs	1.0 µs
CMP	V: Data Reg.		59 µs	10.4 µs	69 µs	8.4 µs	9.4 µs	1.0 µs	9.4 µs	1.0 µs
	V: Bit Reg.		259 µs	10.4 µs	115 µs	8.4 µs	9.4 µs	1.0 µs	9.4 µs	1.0 µs
	P: Indir. (Data)		-	-	130 µs	8.4 µs	34.9 µs	0.9 µs	34.9 µs	0.9 µs
	P: Indir. (Bit)		-	-	211 µs	8.4 µs	34.9 µs	0.9 µs	34.9 µs	0.9 µs
CMPD	V: Data Reg.		63 µs	8.4 µs	47 µs	8.4 µs	9.9 µs	1.0 µs	9.9 µs	1.0 µs
	V: Bit Reg.		257 µs	8.4 µs	206 µs	8.4 µs	9.9 µs	1.0 µs	9.9 µs	1.0 µs
	K: Constant		54 µs	8.4 µs	49 µs	8.4 µs	6.7 µs	1.0 µs	6.7 µs	1.0 µs
	P: Indir. (Data)		-	-	133 µs	8.4 µs	35.4 µs	1.0 µs	35.4 µs	1.0 µs
	P: Indir. (Bit)		-	-	303 µs	8.4 µs	35.4 µs	1.0 µs	35.4 µs	1.0 µs
CMPF	**1st**	**2nd**								
	X, Y, C, S, T, CT, SP GX, GY	K: Constant	-	-	-	-	29.2 µs+ 1.0 µs x N	1.0 µs	29.2 µs+ 1.0 µs x N	1.0 µs
CMPR	V: Data Reg.		-	-	-	-	42.8 µs	1.0 µs	42.8 µs	1.0 µs
	V: Bit Reg.		-	-	-	-	42.8 µs	1.0 µs	42.8 µs	1.0 µs
	K: Constant		-	-	-	-	38.4 µs	1.0 µs	38.4 µs	1.0 µs
	P: Indir. (Data)		-	-	-	-	69.0 µs	1.0 µs	69.0 µs	1.0 µs
	P: Indir. (Bit)		-	-	-	-	69.0 µs	1.0 µs	69.0 µs	1.0 µs
CMPS	None		-	-	-	-	-	-	11.2 µs	1.0 µs

Math Instructions

Math Instructions (Accumulator)		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
ADD	V: Data Reg.	198 µs	10.6 µs	291 µs	8.4 µs	78.4 µs	0.9 µs	78.4 µs	0.9 µs
	V: Bit Reg.	397 µs	10.6 µs	363 µs	8.4 µs	78.4 µs	0.9 µs	78.4 µs	0.9 µs
	P: Indir. (Data)	-	-	441 µs	8.4 µs	101.2 µs	0.9 µs	101.2 µs	0.9 µs
	P: Indir. (Bit)	-	-	520 µs	8.4 µs	101.2 µs	0.9 µs	101.2 µs	0.9 µs
ADDD	V: Data Reg.	198 µs	8.4 µs	291 µs	8.4 µs	83.3 µs	0.9 µs	83.3 µs	0.9 µs
	V: Bit Reg.	397 µs	8.4 µs	512 µs	8.4 µs	83.3 µs	0.9 µs	83.3 µs	0.9 µs
	K: Constant	188 µs	8.4 µs	298 µs	8.4 µs	67.7 µs	0.9 µs	67.7 µs	0.9 µs
	P: Indir. (Data)	-	-	442 µs	8.4 µs	101.2 µs	0.9 µs	101.2 µs	0.9 µs
	P: Indir. (Bit)	-	-	608 µs	8.4 µs	101.2 µs	0.9 µs	101.2 µs	0.9 µs
SUB	V: Data Reg.	200 µs	10.6 µs	287 µs	8.4 µs	77.4 µs	0.9 µs	77.4 µs	0.9 µs
	V: Bit Reg.	397 µs	10.6 µs	360 µs	8.4 µs	77.4 µs	0.9 µs	77.4 µs	0.9 µs
	P: Indir. (Data)	-	-	434 µs	8.4 µs	95.1 µs	0.9 µs	95.1 µs	0.9 µs
	P: Indir. (Bit)	-	-	513 µs	8.4 µs	95.1 µs	0.9 µs	95.1 µs	0.9 µs
SUBD	V: Data Reg.	198 µs	8.4 µs	288 µs	8.4 µs	82.5 µs	0.9 µs	82.5 µs	0.9 µs
	V: Bit Reg.	392 µs	8.4 µs	504 µs	8.4 µs	82.5 µs	0.9 µs	82.5 µs	0.9 µs
	K: Constant	190 µs	8.4 µs	294 µs	8.4 µs	66.0 µs	0.9 µs	66.0 µs	0.9 µs
	P: Indir. (Data)	-	-	434 µs	8.4 µs	99.7 µs	0.9 µs	99.7 µs	0.9 µs
	P: Indir. (Bit)	-	-	600 µs	8.4 µs	99.7 µs	0.9 µs	99.7 µs	0.9 µs
MUL	V: Data Reg.	497 µs	10.6 µs	311 µs	8.4 µs	266.1 µs	0.9 µs	266.1 µs	0.9 µs
	V: Bit Reg.	483 µs	10.6 µs	385 µs	8.4 µs	266.1 µs	0.9 µs	266.1 µs	0.9 µs
	K: Constant	487 µs	8.4 µs	334 µs	8.4 µs	286.9 µs	0.9 µs	286.9 µs	0.9 µs
	P: Indir. (Data)	-	-	401 µs	8.4 µs	290.0 µs	0.9 µs	290.0 µs	0.9 µs
	P: Indir. (Bit)	-	-	461 µs	8.4 µs	290.0 µs	0.9 µs	290.0 µs	0.9 µs
MULD	V: Data Reg.					839.1 µs	0.9 µs	839.1 µs	0.9 µs
	V: Bit Reg.	-	-	-	-	839.1 µs	0.9 µs	839.1 µs	0.9 µs
	P: Indir. (Data)	-	-	-	-	863.1 µs	0.9 µs	863.1 µs	0.9 µs
	P: Indir. (Bit)					863.1 µs	0.9 µs	863.1 µs	0.9 µs
DIV	V: Data Reg.	909 µs	10.6 µs	601 µs	8.4 µs	363.9 µs	0.9 µs	363.9 µs	0.9 µs
	V: Bit Reg.	1108 µs	10.6 µs	675 µs	8.4 µs	363.9 µs	0.9 µs	363.9 µs	0.9 µs
	K: Constant	699 µs	8.4 µs	573 µs	8.4 µs	384.4 µs	0.9 µs	384.4 µs	0.9 µs
	P: Indir. (Data)	-	-	691 µs	8.4 µs	419.8 µs	0.9 µs	419.8 µs	0.9 µs
	P: Indir. (Bit)	-	-	771 µs	8.4 µs	419.8 µs	0.9 µs	419.8 µs	0.9 µs
DIVD	V: Data Reg.					398.3 µs	0.9 µs	398.3 µs	0.9 µs
	V: Bit Reg.	-	-	-	-	398.3 µs	0.9 µs	398.3 µs	0.9 µs
	P: Indir. (Data)	-	-	-	-	390.9 µs	0.9 µs	390.9 µs	0.9 µs
	P: Indir. (Bit)					390.9 µs	0.9 µs	390.9 µs	0.9 µs
INC	V: Data Reg.					48.5 µs	1.0 µs	48.5 µs	1.0 µs
	V: Bit Reg.	-	-	-	-	48.5 µs	1.0 µs	48.5 µs	1.0 µs
	P: Indir. (Data)	-	-	-	-	74.7 µs	1.0 µs	74.7 µs	1.0 µs
	P: Indir. (Bit)					74.7 µs	1.0 µs	74.7 µs	1.0 µs

Math Instructions (cont'd)

Math Instructions (Accumulator)		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
DEC	V: Data Reg.	-	-	-	-	47.5 µs	1.0 µs	47.5 µs	1.0 µs
	V: Bit Reg.	-	-	-	-	47.5 µs	1.0 µs	47.5 µs	1.0 µs
	P: Indir. (Data)	-	-	-	-	71.5 µs	1.0 µs	71.5 µs	1.0 µs
	P: Indir. (Bit)	-	-	-	-	71.5 µs	1.0 µs	71.5 µs	1.0 µs
INCB	V: Data Reg.	88 µs	10.4 µs	35 µs	8.4 µs	13.2 µs	1.0 µs	13.2 µs	1.0 µs
	V: Bit Reg.	349 µs	10.4 µs	211 µs	8.4 µs	13.2 µs	1.0 µs	13.2 µs	1.0 µs
	P: Indir. (Data)	-	-	126 µs	8.4 µs	38.6 µs	0.9 µs	38.6 µs	0.9 µs
	P: Indir. (Bit)	-	-	307 µs	8.4 µs	38.6 µs	0.9 µs	38.6 µs	0.9 µs
DECB	V: Data Reg.	82 µs	10.4 µs	33 µs	8.4 µs	13.2 µs	1.0 µs	13.2 µs	1.0 µs
	V: Bit Reg.	351 µs	10.4 µs	210 µs	8.4 µs	13.2 µs	1.0 µs	13.2 µs	1.0 µs
	P: Indir. (Data)	-	-	123 µs	8.4 µs	38.0 µs	0.9 µs	38.0 µs	0.9 µs
	P: Indir. (Bit)	-	-	304 µs	8.4 µs	38.0 µs	0.9 µs	38.0 µs	0.9 µs
ADDB	V: Data Reg.	-	-	-	-	24.9 µs	1.0 µs	24.9 µs	1.0 µs
	V: Bit Reg.	-	-	-	-	24.9 µs	1.0 µs	24.9 µs	1.0 µs
	K: Constant	-	-	-	-	23.5 µs	1.0 µs	23.5 µs	1.0 µs
	P: Indir. (Data)	-	-	-	-	51.1 µs	1.0 µs	51.1 µs	1.0 µs
	P: Indir. (Bit)	-	-	-	-	51.1 µs	1.0 µs	51.1 µs	1.0 µs
ADDBD	V: Data Reg.	-	-	-	-	-	-	24.4 µs	1.0 µs
	V: Bit Reg.	-	-	-	-	-	-	24.4 µs	1.0 µs
	K: Constant	-	-	-	-	-	-	20.7 µs	1.0 µs
	P: Indir. (Data)	-	-	-	-	-	-	50.7 µs	1.0 µs
	P: Indir. (Bit)	-	-	-	-	-	-	50.7 µs	1.0 µs
SUBB	V: Data Reg.	-	-	-	-	24.7 µs	1.0 µs	24.7 µs	1.0 µs
	V: Bit Reg.	-	-	-	-	24.7 µs	1.0 µs	24.7 µs	1.0 µs
	K: Constant	-	-	-	-	23.3 µs	1.0 µs	23.3 µs	1.0 µs
	P: Indir. (Data)	-	-	-	-	50.6 µs	1.0 µs	50.6 µs	1.0 µs
	P: Indir. (Bit)	-	-	-	-	50.6 µs	1.0 µs	50.6 µs	1.0 µs
SUBBD	V: Data Reg.	-	-	-	-	-	-	24.2 µs	1.0 µs
	V: Bit Reg.	-	-	-	-	-	-	24.2 µs	1.0 µs
	K: Constant	-	-	-	-	-	-	20.2 µs	1.0 µs
	P: Indir. (Data)	-	-	-	-	-	-	50.2 µs	1.0 µs
	P: Indir. (Bit)	-	-	-	-	-	-	50.2 µs	1.0 µs
MULB	V: Data Reg.	-	-	-	-	10.8 µs	1.0 µs	10.8 µs	1.0 µs
	V: Bit Reg.	-	-	-	-	10.8 µs	1.0 µs	10.8 µs	1.0 µs
	K: Constant	-	-	-	-	8.2 µs	1.0 µs	8.2 µs	1.0 µs
	P: Indir. (Data)	-	-	-	-	37.1 µs	1.0 µs	37.1 µs	1.0 µs
	P: Indir. (Bit)	-	-	-	-	37.1 µs	1.0 µs	37.1 µs	1.0 µs

Math Instructions (cont'd)

Math Instructions (Accumulator)			D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
DIVB	V: Data Reg.		-	-	-	-	28.7 µs	1.0 µs	28.7 µs	1.0 µs
	V: Bit Reg.		-	-	-	-	28.7 µs	1.0 µs	28.7 µs	1.0 µs
	K: Constant		-	-	-	-	26.1 µs	1.0 µs	26.1 µs	1.0 µs
	P: Indir. (Data)		-	-	-	-	54.9 µs	1.0 µs	54.9 µs	1.0 µs
	P: Indir. (Bit)		-	-	-	-	54.9 µs	1.0 µs	54.9 µs	1.0 µs
ADDR	V: Data Reg.		-	-	-	-	48.1 µs	1.0 µs	48.1 µs	1.0 µs
	V: Bit Reg.		-	-	-	-	48.1 µs	1.0 µs	48.1 µs	1.0 µs
	K: Constant		-	-	-	-	41.7 µs	1.0 µs	41.7 µs	1.0 µs
	P: Indir. (Data)		-	-	-	-	74.3 µs	1.0 µs	74.3 µs	1.0 µs
	P: Indir. (Bit)		-	-	-	-	74.3 µs	1.0 µs	74.3 µs	1.0 µs
SUBR	V: Data Reg.		-	-	-	-	50.1 µs	1.0 µs	50.1 µs	1.0 µs
	V: Bit Reg.		-	-	-	-	50.1 µs	1.0 µs	50.1 µs	1.0 µs
	K: Constant		-	-	-	-	58.7 µs	1.0 µs	58.7 µs	1.0 µs
	P: Indir. (Data)		-	-	-	-	76.3 µs	1.0 µs	76.3 µs	1.0 µs
	P: Indir. (Bit)		-	-	-	-	76.3 µs	1.0 µs	76.3 µs	1.0 µs
MULR	V: Data Reg.		-	-	-	-	54.2 µs	1.0 µs	54.2 µs	1.0 µs
	V: Bit Reg.		-	-	-	-	54.2 µs	1.0 µs	54.2 µs	1.0 µs
	K: Constant		-	-	-	-	42.7 µs	1.0 µs	42.7 µs	1.0 µs
	P: Indir. (Data)		-	-	-	-	80.4 µs	1.0 µs	80.4 µs	1.0 µs
	P: Indir. (Bit)		-	-	-	-	80.4 µs	1.0 µs	80.4 µs	1.0 µs
DIVR	V: Data Reg.		-	-	-	-	50.1 µs	1.0 µs	50.1 µs	1.0 µs
	V: Bit Reg.		-	-	-	-	50.1 µs	1.0 µs	50.1 µs	1.0 µs
	K: Constant		-	-	-	-	58.7 µs	1.0 µs	58.7 µs	1.0 µs
	P: Indir. (Data)		-	-	-	-	76.3 µs	1.0 µs	76.3 µs	1.0 µs
	P: Indir. (Bit)		-	-	-	-	76.3 µs	1.0 µs	76.3 µs	1.0 µs
ADDF	**1st**	**2nd**								
	X, Y, C, S, T, CT, SP GX, GY	K: Constant	-	-	-	-	-	-	109.3 µs + 0.9 µs x N	1.0 µs
SUBF	**1st**	**2nd**								
	X, Y, C, S, T, CT, SP GX, GY	K: Constant	-	-	-	-	-	-	107.3 µs + 0.9 µs x N	1.0 µs
MULF	**1st**	**2nd**								
	X, Y, C, S, T, CT, SP GX, GY	K: Constant	-	-	-	-	-	-	352.5 µs + 0.8 µs x N	1.0 µs

Math Instructions (cont'd)

Math Instructions Accumulator			D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
DIVF	1st	2nd								
	X, Y, C, S, T, CT, SP GX, GY	K: Constant	-	-	-	-	-	-	477.3 µs + 0.8 µs x N	1.0 µs
ADDS	None		-	-	-	-	-	-	99.5 µs	1.0 µs
SUBS	None		-	-	-	-	-	-	97.5 µs	1.0 µs
MULS	None		-	-	-	-	-	-	342.5 µs	1.0 µs
DIVS	None		-	-	-	-	-	-	467.3 µs	1.0 µs
ADDBS	None		-	-	-	-	-	-	24.3 µs	1.0 µs
SUBBS	None		-	-	-	-	-	-	23.7 µs	1.0 µs
MULBS	None		-	-	-	-	-	-	11.7 µs	1.0 µs
DIVBS	None		-	-	-	-	-	-	29.7 µs	1.0 µs
SQRTR	None		-	-	-	-	-	-	87.9 µs	1.0 µs
SINR	None		-	-	-	-	-	-	226.8 µs	1.0 µs
COSR	None		-	-	-	-	-	-	213.1 µs	1.0 µs
TANR	None		-	-	-	-	-	-	285.5 µs	1.0 µs
ASINR	None		-	-	-	-	-	-	489.8 µs	1.0 µs
ACOSR	None		-	-	-	-	-	-	508.3 µs	1.0 µs
ATANR	None		-	-	-	-	-	-	317.1 µs	1.0 µs

Differential Instructions

Differential Instructions		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
PD	X, Y, C	13.5 µs	13.5 µs	15.9 µs	14.6 µs	14.4 µs	14.4 µs	14.4 µs	14.4 µs
STRPD	X, Y, C, S, T, CT	-	-	-	-	5.4 µs	5.4 µs	5.4 µs	5.4 µs
STRND	X, Y, C, S, T, CT	-	-	-	-	7.3 µs	7.3 µs	7.3 µs	7.3 µs
ORPD	X, Y, C, S, T, CT	-	-	-	-	6.8 µs	5.2 µs	6.8 µs	5.2 µs
ORND	X, Y, C, S, T, CT	-	-	-	-	7.1 µs	4.9 µs	7.1 µs	4.9 µs
ANDPD	X, Y, C, S, T, CT	-	-	-	-	6.8 µs	5.2 µs	6.8 µs	5.2 µs
ANDND	X, Y, C, S, T, CT	-	-	-	-	7.1 µs	4.9 µs	7.1 µs	4.9 µs

Bit Instructions

Bit Instructions (Accumulator)		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
SUM	None	-	-	-	-	-	-	6.7 µs	1.0 µs
SHFR	V: Data Reg. (N bits)	44 µs + 14 .6 µs x N	10.4 µs	35 µs + 6 µs x N	8.4 µs	12.1 µs + 0.1 µs x N	0.9 µs	12.1 µs + 0.1 µs x N	0.9 µs
	V: Bit Reg (N bits)	243 µs + 14.6 µs x N	8.4 µs	110 µs + 6 µs x N	8.4 µs	12.1 µs + 0.1 µs x N	0.9 µs	12.1 µs + 0.1 µs x N	0.9 µs
	K: Constant (N bits)	34 µs + 14.6 µs x N	8.4 µs	35 µs + 6 µs x N	8.4 µs	8.4 µs + 0.1 µs x N	0.9 µs	8.4 µs + 0.1 µs x N	0.9 µs
SHFL	V: Data Reg. (N bits)	44 µs + 14.6 µs x N	10.4 µs	33 µs + 6 µs x N	8.4 µs	12.1 µs + 0.1 µs x N	0.9 µs	12.1 µs + 0.1 µs x N	0.9 µs
	V: Bit Reg (N bits)	243 µs + 14.6 µs x N	8.4 µs	107 µs + 6 µs x N	8.4 µs	12.1 µs + 0.1 x N	0.9 µs	12.1 µs + 0.1 µs x N	0.9 µs
	K: Constant (N bits)	34 µs + 14.6 µs x N	8.4 µs	33 µs + 6 µs x N	8.4 µs	8.4 µs + 0.1 µs x N	0.9 µs	8.4 µs + 0.1 µs x N	0.9 µs
ROTR	V: Data Reg. (N bits)	-	-	-	-	-	-	16.4 µs	1.0 µs
	V: Bit Reg (N bits)	-	-	-	-	-	-	16.4 µs	1.0 µs
	K: Constant (N bits)	-	-	-	-	-	-	12.9 µs	1.0 µs
ROTL	V: Data Reg. (N bits)	-	-	-	-	-	-	16.4 µs	1.0 µs
	V: Bit Reg (N bits)	-	-	-	-	-	-	16.4 µs	1.0 µs
	K: Constant (N bits)	-	-	-	-	-	-	12.7 µs	1.0 µs
ENCO	None	62 µs	7.2 µs	98 µs	8.4 µs	33.9 µs	0.9 µs	33.9 µs	0.9 µs
DECO	None	34 µs	7.2 µs	28 µs	8.4 µs	5.7 µs	1.0 µs	5.7 µs	1.0 µs

Number Conversion Instructions

Number Conversion Instructions (Accumulator)		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
BIN	None	359 µs	7.2 µs	267 µs	8.4 µs	100.2 µs	0.9 µs	100.2 µs	0.9 µs
BCD	None	403 µs	7.2 µs	383 µs	8.4 µs	95.2 µs	0.9 µs	95.2 µs	0.9 µs
INV	None	27 µs	5.0 µs	12 µs	8.4 µs	2.5 µs	1.0 µs	2.5 µs	1.0 µs
BCDPL	None	296 µs	7.2 µs	69 µs	8.4 µs	75.6 µs	1.0 µs	75.6 µs	1.0 µs
ATH	V	-	-	-	-	-	-	25.4 µs	1.0 µs
HTA	V	-	-	-	-	-	-	25.4 µs	1.0 µs
GRAY	None	-	-	227 µs	9.0 µs	110.8 µs	1.0 µs	110.8 µs	1.0 µs
SFLDGT	None	-	-	258 µs	9.0 µs	23.1 µs	1.0 µs	23.1 µs	1.0 µs
BTOR	None	-	-	-	-	18.6 µs	1.0 µs	18.6 µs	1.0 µs
RTOB	None	-	-	-	-	8.6 µs	1.0 µs	8.6 µs	1.0 µs
RADR	None	-	-	-	-	-	-	51.4 µs	1.0 µs
DEGR	None	-	-	-	-	-	-	81.5 µs	1.0 µs

Table Instructions

Table Instructions		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
FILL	V: Data Reg.	-	-	-	-	-	-	29.4 µs + 8.0 µs x N	1.0 µs
	V: Bit Reg.	-	-	-	-	-	-		-
	K: Constant	-	-	-	-	-	-	26.2 µs+ 8.0 µs x N	1.0 µs
	P: Indir. (Data)	-	-	-	-	-	-	55.1 µs + 8.0 µs x N	1.0 µs
	P: Indir. (Bit)	-	-	-	-	-	-		-
FIND	V: Data Reg. (N bits)	-	-	-	-	-	-	66.8 µs	1.0 µs
	V: Bit Reg. (N bits)	-	-	-	-	-	-	66.8 µs	1.0 µs
	K: Constant (N bits)	-	-	-	-	-	-	64.0 µs	1.0 µs
FDGT	V: Data Reg. (N bits)	-	-	-	-	-	-	66.1 µs	1.0 µs
	V: Bit Reg. (N bits)	-	-	-	-	-	-	66.1 µs	1.0 µs
	K: Constant (N bits)	-	-	-	-	-	-	55.2 µs	1.0 µs
FINDB	V: Data Reg. (N bits)	-	-	-	-	-	-	210.8 µs	1.0 µs
	V: Bit Reg. (N bits)	-	-	-	-	-	-	210.8 µs	1.0 µs
	P: Indir. (Data)	-	-	-	-	-	-	237.0 µs	1.0 µs
	P: Indir. (Bit)	-	-	-	-	-	-	237.0 µs	1.0 µs

Table Instructions (cont'd)

Table Instructions		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
MOV	Move V: data reg. to V: data reg	450 µs + 17 µs x N	6.2 µs	586 µs + 8 µs x N	8.4 µs	60.2 µs + 9.5 µs x N	0.9 µs	60.2 µs + 9.5 µs x N	0.9 µs
	Move V: bit reg. to V: data reg.	430 µs + 244 µs x N	6.2 µs	629 µs + 114.7 µs x N	8.4 µs				
	Move V: data reg to V: bit reg.	460 µs + 215 µs x N	6.2 µs	569 µs + 94.4 µs x N	8.4 µs				
	Move V: bit reg. to V:bit reg. N = #of words	490 µs + 448 µs x N	6.2 µs	693 µs + 198 µs x N	8.4 µs				
TTD	V: Data Reg.	-	-	-	-	-	-	66.9 µs	1.0 µs
	V: Bit Reg.							66.9 µs	1.0 µs
RFB	V: Data Reg.	-	-	-	-	-	-	66.8 µs	1.0 µs
	V: Bit Reg.							66.8 µs	1.0 µs
STT	V: Data Reg.	-	-	-	-	-	-	67.8 µs	1.0 µs
	V: Bit Reg.							67.8 µs	1.0 µs
	K: Constant							65.0 µs	1.0 µs
RFT	V: Data Reg.	-	-	-	-	-	-	51.1 µs	1.0 µs
	V: Bit Reg.							51.1 µs	1.0 µs
ATT	V: Data Reg.	-	-	-	-	-	-	53.5 µs	1.0 µs
	V: Bit Reg.							53.5 µs	1.0 µs
	K: Constant							50.8 µs	1.0 µs
TSHFL	V: Data Reg.	-	-	-	-	-	-	134.0 µs	1.0 µs
	V: Bit Reg.							134.0 µs	1.0 µs
TSHFR	V: Data Reg.	-	-	-	-	-	-	133.9 µs	1.0 µs
	V: Bit Reg.							133.9 µs	1.0 µs
ANDMOV	V: Data Reg.	-	-	-	-	-	-	80.2 µs	1.0 µs
	V: Bit Reg.							80.2 µs	1.0 µs
ORMOV	V: Data Reg.	-	-	-	-	-	-	80.4 µs	1.0 µs
	V: Bit Reg.							80.4 µs	1.0 µs
XORMOV	V: Data Reg.	-	-	-	-	-	-	80.4 µs	1.0 µs
	V: Bit Reg.							80.4 µs	1.0 µs
SWAP	V: Data Reg.	-	-	-	-	-	-	84.1 µs	1.0 µs
	V: Bit Reg.							84.1 µs	1.0 µs
SETBIT	V: Data Reg. (N bits)	-	-	-	-	-	-	59.5 µs	1.0 µs
	V: Bit Reg. (N bits)							59.5 µs	1.0 µs
RSTBIT	V: Data Reg. (N bits)	-	-	-	-	-	-	59.5 µs	1.0 µs
	V: Bit Reg. (N bits)							59.5 µs	1.0 µs

Table Instructions (cont'd)

Table Instructions		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
MOVMC	Move V: Data Reg. to EEPROM	-	-	356 µs + 7689 µs x N	8.4 µs	-	-	33.5 µs + 10.4 µs x N	0.9 µs
	Move V: Bit Reg. to EEPROM	-	-	392 µs + 7843 µs x N	8.4 µs	-	-	33.5 µs + 10.4 µs x N	0.9 µs
	Move from EEPROM to V: Data Reg.	250 µs + 201 µs x N	6.2 µs	520 µs + 181 µs x N	8.4 µs	50 µs + 15 µs x N	1.2 µs	33.5 µs + 10.4 µs x N	0.9 µs
	Move from EEPROM to V: Bit Reg. N=#of words	-	-	565 µs + 344 µs x N	8.4 µs	50 µs + 15 µs x N	1.2 µs	33.5 µs + 10.4 µs x N	0.9 µs
LDLBL	K	58 µs	8.4 µs	56 µs	8.4 µs	7.4 µs	1.5 µs	6.4 µs	1.3 µs

CPU Control Instructions

CPU Control Instructions		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
NOP	None	0 µs	0 µs	0 µs	0 µs	0.5 µs	0.5 µs	0.5 µs	0.5 µs
END	None	27 µs	27 µs	16 µs	16 µs	12.8 µs	0 µs	12.8 µs	0 µs
STOP	None	16 µs	5 µs	15 µs	7.4 µs	0 µs	0.9 µs	0 µs	0.9 µs
RSTWT	None	-	-	19 µs	8.4 µs	4.7 µs	0.9 µs	4.7 µs	0.9 µs

Program Control Instructions

Program Control Instructions		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
GOTO	K	-	-	14 µs	8.4 µs	5.1 µs	4.8 µs	5.1 µs	4.8 µs
LBL	K	-	-	0.6 µs	0.6 µs	5.7 µs	0.0 µs	5.7 µs	0.0 µs
FOR	V, K	-	-	32 µs	16.4 µs	85.8 µs	5.8 µs	85.8 µs	5.8 µs
NEXT	None	-	-	19 µs	0 µs	10.2 µs	0.0 µs	10.2 µs	0.0 µs
GTS	K	-	-	37 µs	11.4 µs	10.9 µs	5.5 µs	10.9 µs	5.5 µs
SBR	K	-	-	0.6 µs	0 µs	0.5 µs	0.0 µs	0.5 µs	0.0 µs
RT	None	-	-	35 µs	0 µs	9.9 µs	0.0 µs	9.9 µs	0.0 µs
RTC	None	-	-	-	-	-	-	11.4 µs	5.9 µs
MLS	K (1-7)	12 µs	12 µs	11.5 µs	11.5 µs	3.7 µs	3.7 µs	3.7 µs	3.7 µs
MLR	K (0-7) N=1 to 7	13 µs + 2.4 µs x N	13 µs + 2.4 µs x N	12.7 µs + 2.3 µs x N	12.7 µs + 2.3 µs x n	3.5 µs	3.5 µs	3.5 µs	3.5 µs

Interrupt Instructions

Interrupt Instructions		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
ENI	None	9 µs	5 µs	10.5 µs	8.4 µs	5.0 µs	1.0 µs	5.0 µs	1.0 µs
DISI	None	8 µs	5 µs	11 µs	8.4 µs	5.7 µs	0.9 µs	5.7 µs	0.9 µs
INT	O	0 µs	0 µs	0 µs	0 µs	0 µs	0 µs	0 µs	0 µs
IRT	None	1.6 µs	0 µs	8 µs	0 µs	1.3 µs	0 µs	1.3 µs	0 µs
IRTC	None	-	-	-	-	-	-	0.5 µs	0 µs

Network Instructions

Network Instructions		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
RX	X, Y, C, T, CT, SP, S	-	-	TBD	TBD	251.3 µs	1.1 µs	251.3 µs	1.1 µs
	V: Data Reg.					251.3 µs	1.1 µs	251.3 µs	1.1 µs
	V: Bit Reg.					251.3 µs	1.1 µs	251.3 µs	1.1 µs
	P: Indir. (Data)					270.3 µs	1.9 µs	270.3 µs	1.9 µs
	P: Indir. (Bit)					270.3 µs	1.9 µs	270.3 µs	1.9 µs
WX	X, Y, C, T, CT, SP, S	-	-	TBD	TBD	252.0 µs	2.7 µs	252.0 µs	2.7 µs
	V: Data Reg.					252.0 µs	2.7 µs	252.0 µs	2.7 µs
	V: Bit Reg.					252.0 µs	2.7 µs	252.0 µs	2.7 µs
	P: Indir. (Data)					271.3 µs	3.4 µs	271.3 µs	3.4 µs
	P: Indir. (Bit)					271.3 µs	3.4 µs	271.3 µs	3.4 µs

Intelligent I/O Instructions

Intelligent I/O Instructions		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
RD	V: Data Reg.	TBD	TBD	TBD	TBD	385.7 µs	1.2 µs	385.7 µs	1.2 µs
	V: Bit Reg.					385.7 µs	1.2 µs	385.7 µs	1.2 µs
WT	V: Data Reg.	TBD	TBD	TBD	TBD	385.6 µs	1.2 µs	385.6 µs	1.2 µs
	V: Bit Reg.					385.6 µs	1.2 µs	385.6 µs	1.2 µs

Message Instructions

Message Instructions		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
FAULT	V: Data Reg.	171 µs	8.4 µs	23176 µs	8.4 µs	84.9 µs	1.1 µs	84.9 µs	1.1 µs
	V: Bit Reg.	253 µs	8.4 µs	23206 µs	8.4 µs	84.9 µs	1.1 µs	84.9 µs	1.1 µs
	K: Constant	2798 µs	8.4 µs	29108 µs	8.4 µs	80.8 µs	1.2 µs	80.8 µs	1.2 µs
DLBL	K	0 µs	0 µs	0 µs	0 µs	0 µs	0 µs	0 µs	0 µs
NCON	K	0 µs	0 µs	0 µs	0 µs	0 µs	0 µs	0 µs	0 µs
ACON	K	0 µs	0 µs	0 µs	0 µs	0 µs	0 µs	0 µs	0 µs
PRINT	Text Data	-	-	-	-	36.3 µs	1.1 µs	36.3 µs	1.1 µs

RLL*PLUS* Instructions

RLL*PLUS* Instructions		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
ISG	S	31 µs	32 µs	28 µs	27 µs	20.9 µs	9.2 µs	20.9 µs	9.2 µs
SG	S	31 µs	32 µs	28 µs	27 µs	20.9 µs	9.2 µs	20.9 µs	9.2 µs
JMP	S	14 µs	8 µs	14.3 µs	8.4 µs	20.9 µs	3.7 µs	20.9 µs	3.7 µs
NJMP	S	14 µs	8 µs	13.3 µs	8.4 µs	21.0 µs	4.0 µs	21.0 µs	4.0 µs
CV	S	43 µs	27 µs	20 µs	20 µs	12.1 µs	12.1 µs	12.1 µs	12.1 µs
CVJMP	S (N stages, 1 to 16)	33 µs + 14.5 µs x N	23 µs	22.9 µs + 6.1 µs x N	10 µs	11.0 µs	11.0 µs	11.0 µs	11.0 µs
BCALL	C	18 µs	17 µs	17 µs	18 µs	22.1 µs	22.6 µs	22.1 µs	22.6 µs
BLK	C	32 µs	30 µs	17 µs	13 µs	17.1 µs	14.6 µs	17.1 µs	14.6 µs
BEND	None	17 µs	17 µs	9 µs	9 µs	8.7 µs	0.0 µs	8.7 µs	0.0 µs

DRUM Instructions

Drum Instructions		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
DRUM	CT	-	-	-	-	265.2 µs	48.8 µs	265.2 µs	48.8 µs
EDRUM	CT	-	-	-	-	189.5 µs	78.0 µs	189.5 µs	78.0 µs
MDRMD	CT	-	-	-	-	411.3 µs	216.4 µs	411.3 µs	216.4 µs
MDRMW	CT	-	-	-	-	378.6 µs	147.0 µs	378.6 µs	147.0 µs

Clock / Calender Instructions

Clock / Calender Instructions		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
DATE	V: Data Reg.	-	-	-	-	24.0 µs	1.2 µs	24.0 µs	1.2 µs
	V: Bit Reg.								
TIME	V: Data Reg.	-	-	-	-	50.8 µs	1.2 µs	50.8 µs	1.2 µs
	V: Bit Reg.								

Modbus Instructions

Modbus Instructions		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
MRX	Input, Input Register Coil, Holding Register	-	-	-	-	-	-	120.2 µs	1.3 µs
MWX	Input, Input Register Coil, Holding Register	-	-	-	-	-	-	21.3 µs	1.3 µs

ASCII Instructions

ASCII Instructions		D2-230		D2-240		D2-250-1		D2-260/D2-262	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
AIN	V	-	-	-	-	-	-	13.9 µs	12.0 µs
AFIND	V	-	-	-	-	-	-	111.5 µs	1.3 µs
AEX	V	-	-	-	-	-	-	111.7 µs	1.3 µs
CMPV	V	-	-	-	-	-	-	12.2 µs	1.3 µs
SWAPB	V	-	-	-	-	-	-	109.8 µs	1.3 µs
VPRINT	Text Data	-	-	-	-	-	-	161.6 µs	1.3 µs
PRINTV	V	-	-	-	-	-	-	163.3 µs	1.3 µs
ACRB	V	-	-	-	-	-	-	3.9 µs	1.1 µs