

INSTRUCTION EXECUTION TIMES



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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	DL230	DL240	DL250-1	DL260
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

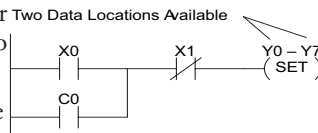
You may recall that some of the discrete points such as X, Y, C, etc., are mapped automatically into V-memory. The following locations that contain this data are considered bit registers.

Bit Registers	DL230	DL240	DL250-1	DL260
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

C

Boolean Instructions		DL230		DL240		DL250-1		DL260	
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 μ s	3.3 μ s	1.4 μ s	1.4 μ s	.67 μ s	0 μ s	.67 μ s	0 μ s
STRN	X, Y, C, T, CT, S, SP	3.9 μ s	3.9 μ s	1.6 μ s	1.6 μ s	.67 μ s	0 μ s	.67 μ s	0 μ s
OR	X, Y, C, T, CT, S, SP	2.7 μ s	2.7 μ s	1.0 μ s	1.0 μ s	.51 μ s	.51 μ s	.51 μ s	.51 μ s
ORN	X, Y, C, T, CT, S, SP	3.3 μ s	3.3 μ s	1.4 μ s	1.4 μ s	.55 μ s	.55 μ s	.55 μ s	.55 μ s
AND	X, Y, C, T, CT, S, SP	2.1 μ s	2.1 μ s	0.8 μ s	0.8 μ s	.42 μ s	.42 μ s	.42 μ s	.42 μ s
ANDN	X, Y, C, T, CT, S, SP	2.7 μ s	2.7 μ s	1.2 μ s	1.2 μ s	.51 μ s	.51 μ s	.51 μ s	.51 μ s
ANDSTR	None	1.2 μ s	1.2 μ s	0.7 μ s	0.7 μ s	.37 μ s	.37 μ s	.37 μ s	.37 μ s
ORSTR	None	1.2 μ s	1.2 μ s	0.7 μ s	0.7 μ s	.37 μ s	.37 μ s	.37 μ s	.37 μ s
OUT	X, Y, C	3.4 μ s	3.4 μ s	7.95 μ s	7.65 μ s	1.82 μ s	1.82 μ s	1.82 μ s	1.82 μ s
OROUT	X, Y, C	8.6 μ s	8.6 μ s	8.25 μ s	8.4 μ s	2.09 μ s	2.09 μ s	2.09 μ s	2.09 μ s
NOT		-	-	-	-	1.04 μ s	1.04 μ s	1.04 μ s	1.04 μ s
SET	1st #: X, Y, C, S, 2nd #: X, Y, C, S (N pt)	17.4 μ s	6.8 μ s	11.4 μ s	8.4 μ s	9.2 μ s	1.0 μ s	9.2 μ s	1.0 μ s
		12.0 μ s + 5.4 μ s x N	6.8 μ s	11.0 μ s + 7.0 μ s x N	8.4 μ s	9.6 μ s + 0.9 μ s x N	1.1 μ s	9.6 μ s + 0.9 μ s x N	1.1 μ s
RST	1st #: X, Y, C, S 2nd #: X, Y, C, S (N pt)	17.7 μ s	6.8 μ s	11.4 μ s	8.4 μ s	9.2 μ s	1.0 μ s	9.2 μ s	1.0 μ s
		10.5 μ s + 5.2 μ s x N	6.8 μ s	11.0 μ s + 7.0 μ s x N	8.4 μ s	9.6 μ s + 0.9 μ s x N	1.1 μ s	9.6 μ s + 0.9 μ s x N	1.1 μ s
	1st #: T, CT 2nd #: T, CT (N pt)	31.6 μ s 17 μ s + 14.6 μ s x N	6.8 μ s 6.8 μ s	29.0 μ s 24.3 μ s + 4.7 μ s x N	8.4 μ s 8.4 μ s	25.7 μ s 16.8 μ s + 2.7 μ s x N	1.1 μ s 1.4 μ s	25.7 μ s 16.8 μ s + 2.7 μ s x N	1.1 μ s 1.4 μ s
PAUSE	1wd: Y	19.0 μ s	19.0 μ s	13.0 μ s	13.0 μ s	5.6 μ s	5.4 μ s	5.6 μ s	5.4 μ s
	2wd: Y (N points)	15 μ s + 4 μ s x N	15 μ s + 4 μ s x N	11 μ s + 3 μ s x N	11 μ s + 3 μ s x N	9.2 μ s + 0.3 μ s x N	4.8 μ s	9.2 μ s + 0.3 μ s x N	4.8 μ s

Comparative Boolean Instructions

Comparative Boolean Instructions			DL230		DL240		DL250-1		DL260	
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			DL230		DL240		DL250-1		DL260	
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

C

Comparative Boolean Instructions (cont'd)

Comparative Boolean Instructions			DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
C 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			DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
STR	<i>1st</i>	<i>2nd</i>								
	T, CT	V: Data Reg.	76 μ s	13.8 μ s	46 μ s	16.2 μ s	7.6 μ s	7.6 μ s	7.6 μ s	7.6 μ s
		V: Bit Reg.	158 μ s	13.8 μ s	135 μ s	16.2 μ s	7.6 μ s	7.6 μ s	7.6 μ s	7.6 μ s
		K: Constant	57 μ s	13.8 μ s	46 μ s	16.2 μ s	4.8 μ s	4.8 μ s	4.8 μ s	4.8 μ s
		P: Indir. (Data)	-	-	141 μ s	111.0 μ s	30.2 μ s	30.2 μ s	30.2 μ s	30.2 μ s
		P: Indir. (Bit)	-	-	235 μ s	115.0 μ s	30.2 μ s	30.2 μ s	30.2 μ s	30.2 μ s
	<i>1st</i>	<i>2nd</i>								
	V: Data Reg.	V: Data Reg.	78 μ s	13.8 μ s	46 μ s	16.2 μ s	7.6 μ s	7.6 μ s	7.6 μ s	7.6 μ s
		V: Bit Reg.	159 μ s	13.8 μ s	135 μ s	16.2 μ s	7.6 μ s	7.6 μ s	7.6 μ s	7.6 μ s
		K: Constant	57 μ s	13.8 μ s	46 μ s	16.2 μ s	4.8 μ s	4.8 μ s	4.8 μ s	4.8 μ s
		P: Indir. (Data)	-	-	141 μ s	111.0 μ s	30.2 μ s	30.2 μ s	30.2 μ s	30.2 μ s
		P: Indir. (Bit)	-	-	235 μ s	115.0 μ s	30.2 μ s	30.2 μ s	30.2 μ s	30.2 μ s
	V: Bit Reg.	V: Data Reg.	159 μ s	13.8 μ s	135 μ s	16.2 μ s	7.6 μ s	7.6 μ s	7.6 μ s	7.6 μ s
		V: Bit Reg.	241 μ s	13.8 μ s	225 μ s	16.2 μ s	7.6 μ s	7.6 μ s	7.6 μ s	7.6 μ s
		K: Constant	139 μ s	13.8 μ s	135 μ s	16.2 μ s	4.8 μ s	4.8 μ s	4.8 μ s	4.8 μ s
		P: Indir. (Data)	-	-	231 μ s	111.0 μ s	30.2 μ s	30.2 μ s	30.2 μ s	30.2 μ s
		P: Indir. (Bit)	-	-	324 μ s	115.0 μ s	30.2 μ s	30.2 μ s	30.2 μ s	30.2 μ s
	P: Indir. (Data)	V: Data Reg.	-	-	-	-	29.9 μ s	29.9 μ s	29.9 μ s	29.9 μ s
		V: Bit Reg.	-	-	-	-	29.9 μ s	29.9 μ s	29.9 μ s	29.9 μ s
		K: Constant	-	-	-	-	27.4 μ s	27.4 μ s	27.4 μ s	27.4 μ s
		P: Indir. (Data)	-	-	-	-	51.0 μ s	51.0 μ s	51.0 μ s	51.0 μ s
		P: Indir. (Bit)	-	-	-	-	51.0 μ s	51.0 μ s	51.0 μ s	51.0 μ s
	P: Indir. (Bit)	V: Data Reg.	-	-	-	-	29.9 μ s	29.9 μ s	29.9 μ s	29.9 μ s
		V: Bit Reg.	-	-	-	-	29.9 μ s	29.9 μ s	29.9 μ s	29.9 μ s
		K: Constant	-	-	-	-	27.4 μ s	27.4 μ s	27.4 μ s	27.4 μ s
		P: Indir. (Data)	-	-	-	-	51.0 μ s	51.0 μ s	51.0 μ s	51.0 μ s
		P: Indir. (Bit)	-	-	-	-	51.0 μ s	51.0 μ s	51.0 μ s	51.0 μ s

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Comparative Boolean Instructions (cont'd)

Comparative Boolean Instructions			DL230		DL240		DL250-1		DL260	
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			DL230		DL240		DL250-1		DL260	
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

C

Comparative Boolean Instructions (cont'd)

Comparative Boolean Instructions			DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
C ORN	<i>1st</i>	<i>2nd</i>								
	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
	<i>1st</i>	<i>2nd</i>								
	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			DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
AND	<i>1st</i>	<i>2nd</i>								
	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
	<i>1st</i>	<i>2nd</i>								
	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

C

Comparative Boolean Instructions (cont'd)

Comparative Boolean Instructions			DL230		DL240		DL250-1		DL260	
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		DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
STRB	V: Data Reg.	-	-	-	-	3.1 μ s	3.1 μ s	3.1 μ s	3.1 μ s
	V: Bit Reg.	-	-	-	-	3.1 μ s	3.1 μ s	3.1 μ s	3.1 μ s
	P: Indir. (Data)	-	-	-	-	30.0 μ s	30.0 μ s	30.0 μ s	30.0 μ s
	P: Indir. (Bit)	-	-	-	-	30.0 μ s	30.0 μ s	30.0 μ s	30.0 μ s
STRNB	V: Data Reg.	-	-	-	-	3.0 μ s	3.0 μ s	3.0 μ s	3.0 μ s
	V: Bit Reg.	-	-	-	-	3.0 μ s	3.0 μ s	3.0 μ s	3.0 μ s
	P: Indir. (Data)	-	-	-	-	29.8 μ s	29.8 μ s	29.8 μ s	29.8 μ s
	P: Indir. (Bit)	-	-	-	-	29.8 μ s	29.8 μ s	29.8 μ s	29.8 μ s
ORB	V: Data Reg.	-	-	-	-	2.9 μ s	2.9 μ s	2.9 μ s	2.9 μ s
	V: Bit Reg.	-	-	-	-	2.9 μ s	2.9 μ s	2.9 μ s	2.9 μ s
	P: Indir. (Data)	-	-	-	-	29.9 μ s	29.9 μ s	29.9 μ s	29.9 μ s
	P: Indir. (Bit)	-	-	-	-	29.9 μ s	29.9 μ s	29.9 μ s	29.9 μ s
ORNB	V: Data Reg.	-	-	-	-	2.8 μ s	2.8 μ s	2.8 μ s	2.8 μ s
	V: Bit Reg.	-	-	-	-	2.8 μ s	2.8 μ s	2.8 μ s	2.8 μ s
	P: Indir. (Data)	-	-	-	-	29.6 μ s	29.6 μ s	29.6 μ s	29.6 μ s
	P: Indir. (Bit)	-	-	-	-	29.6 μ s	29.6 μ s	29.6 μ s	29.6 μ s
ANDB	V: Data Reg.	-	-	-	-	2.8 μ s	2.8 μ s	2.8 μ s	2.8 μ s
	V: Bit Reg.	-	-	-	-	2.8 μ s	2.8 μ s	2.8 μ s	2.8 μ s
	P: Indir. (Data)	-	-	-	-	29.6 μ s	29.6 μ s	29.6 μ s	29.6 μ s
	P: Indir. (Bit)	-	-	-	-	29.6 μ s	29.6 μ s	29.6 μ s	29.6 μ s
ANDNB	V: Data Reg.	-	-	-	-	2.7 μ s	2.7 μ s	2.7 μ s	2.7 μ s
	V: Bit Reg.	-	-	-	-	2.7 μ s	2.7 μ s	2.7 μ s	2.7 μ s
	P: Indir. (Data)	-	-	-	-	29.6 μ s	29.6 μ s	29.6 μ s	29.6 μ s
	P: Indir. (Bit)	-	-	-	-	29.6 μ s	29.6 μ s	29.6 μ s	29.6 μ s
OUTB	V: Data Reg.	-	-	-	-	3.1 μ s	3.4 μ s	3.1 μ s	3.4 μ s
	V: Bit Reg.	-	-	-	-	3.1 μ s	3.4 μ s	3.1 μ s	3.4 μ s
	P: Indir. (Data)	-	-	-	-	30.3 μ s	30.7 μ s	30.3 μ s	30.7 μ s
	P: Indir. (Bit)	-	-	-	-	30.3 μ s	30.7 μ s	30.3 μ s	30.7 μ s
SETB	V: Data Reg.	-	-	-	-	13.4 μ s	3.4 μ s	13.4 μ s	3.4 μ s
	V: Bit Reg.	-	-	-	-	13.4 μ s	3.4 μ s	13.4 μ s	3.4 μ s
	P: Indir. (Data)	-	-	-	-	41.1 μ s	29.1 μ s	41.1 μ s	29.1 μ s
	P: Indir. (Bit)	-	-	-	-	41.1 μ s	29.1 μ s	41.1 μ s	29.1 μ s
RSTB	V: Data Reg.	-	-	-	-	13.5 μ s	1.4 μ s	13.5 μ s	1.4 μ s
	V: Bit Reg.	-	-	-	-	13.5 μ s	1.4 μ s	13.5 μ s	1.4 μ s
	P: Indir. (Data)	-	-	-	-	41.3 μ s	29.1 μ s	41.3 μ s	29.1 μ s
	P: Indir. (Bit)	-	-	-	-	41.3 μ s	29.1 μ s	41.3 μ s	29.1 μ s

Immediate Instructions

Immediate Instructions			DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
LDI	V		-	-	-	-	-	-	20.6 μ s	1.1 μ s
LDIF	1st#:	X	-	-	-	-	-	-	-	-
	2nd#:	K:Constant	-	-	-	-	-	-	26.6 μ s + 0.9 μ s x N	1.4 μ s
STRI	X		27 μ s	9.8 μ s	29 μ s	10.7 μ s	19.3 μ s	19.3 μ s	19.3 μ s	19.3 μ s
STRNI	X		26 μ s	8.6 μ s	29 μ s	10.7 μ s	19.4 μ s	19.4 μ s	19.4 μ s	19.4 μ s
ORI	X		27 μ s	9.8 μ s	29 μ s	8.4 μ s	19.1 μ s	18.7 μ s	19.1 μ s	18.7 μ s
ORNI	X		26 μ s	8.6 μ s	29 μ s	8.4 μ s	19.2 μ s	18.9 μ s	19.2 μ s	18.9 μ s
ANDI	X		25 μ s	8.0 μ s	27 μ s	8.4 μ s	18.7 μ s	18.7 μ s	18.7 μ s	18.7 μ s
ANDNI	X		24 μ s	6.8 μ s	28 μ s	8.4 μ s	18.8 μ s	18.8 μ s	18.8 μ s	18.8 μ s
OROUTI	Y		45 μ s	45 μ s	39 μ s	40 μ s	27.5 μ s	27.5 μ s	27.5 μ s	27.5 μ s
OUTI	Y		45 μ s	45 μ s	39 μ s	40 μ s	25.5 μ s	25.5 μ s	25.5 μ s	25.5 μ s
OUTIF	1st#:	Y	-	-	-	-	-	-	-	-
	2nd#:	K:Constant	-	-	-	-	-	-	66.1 μ s + 0.9 μ s x N	1.4 μ s
SETI	1st#:	Y	25.5 μ s	6.8 μ s	39.0 μ s	8.4 μ s	23.1 μ s	0.9 μ s	23.1 μ s	0.9 μ s
	2nd#:	Y (N pt)	5.5 μ s + 20 μ s x N	6.8 μ s	44 μ s + 25 μ s x N	8.4 μ s	22.8 μ s + 1.4 μ s x N	0.9 μ s	22.8 μ s + 1.4 μ s x N	0.9 μ s
RSTI	1st#:	Y	25.5 μ s	6.8 μ s	37 μ s	8.4 μ s	23.2 μ s	0.9 μ s	23.2 μ s	0.9 μ s
	2nd#:	Y (N pt)	5 μ s + 20.5 μ s x N	6.8 μ s	45 μ s + 22 μ s x N	8.4 μ s	22.8 μ s + 1.4 μ s x N	0.9 μ s	22.8 μ s + 1.4 μ s x N	0.9 μ s

Timer, Counter and Shift Register Instructions

Timer, Counter and Shift Register Instructions			DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
	<i>1st</i>	<i>2nd</i>								
TMR	T	V: Data Reg.	75 μ s	31 μ s	61 μ s	23.5 μ s	26.8 μ s	7.3 μ s	26.8 μ s	7.3 μ s
		V: Bit Reg.	158 μ s	31 μ s	158 μ s	23.5 μ s	26.8 μ s	7.3 μ s	26.8 μ s	7.3 μ s
		K: Constant	66 μ s	31 μ s	70 μ s	23.5 μ s	20.0 μ s	4.8 μ s	20.0 μ s	4.8 μ s
		P: Indir. (Data)	-	-	177 μ s	131.0 μ s	45.6 μ s	30.2 μ s	45.6 μ s	30.2 μ s
		P: Indir. (Bit)	-	-	271 μ s	136.0 μ s	45.6 μ s	30.2 μ s	45.6 μ s	30.2 μ s
TMRF	T	V: Data Reg.	75 μ s	31 μ s	61 μ s	23.5 μ s	51.4 μ s	7.3 μ s	51.4 μ s	7.3 μ s
		V: Bit Reg.	158 μ s	31 μ s	158 μ s	23.5 μ s	51.4 μ s	7.3 μ s	51.4 μ s	7.3 μ s
		K: Constant	66 μ s	31 μ s	70 μ s	23.5 μ s	48.4 μ s	4.6 μ s	48.4 μ s	4.6 μ s
		P: Indir. (Data)	-	-	177 μ s	131.0 μ s	75.9 μ s	30.2 μ s	75.9 μ s	30.2 μ s
		P: Indir. (Bit)	-	-	271 μ s	136.0 μ s	75.9 μ s	30.2 μ s	75.9 μ s	30.2 μ s
TMRA	T	V: Data Reg.	94 μ s	56 μ s	75 μ s	41 μ s	48.9 μ s	7.3 μ s	48.9 μ s	7.3 μ s
		V: Bit Reg.	304 μ s	264 μ s	253 μ s	219 μ s	48.9 μ s	7.3 μ s	48.9 μ s	7.3 μ s
		K: Constant	95 μ s	45 μ s	79 μ s	49 μ s	45.0 μ s	4.6 μ s	45.0 μ s	4.6 μ s
		P: Indir. (Data)	-	-	193 μ s	159 μ s	75.9 μ s	30.2 μ s	75.9 μ s	30.2 μ s
		P: Indir. (Bit)	-	-	366 μ s	331 μ s	75.9 μ s	30.2 μ s	75.9 μ s	30.2 μ s
TMRAF	T	V: Data Reg.	98 μ s	54 μ s	75 μ s	42 μ s	54.2 μ s	7.3 μ s	54.2 μ s	7.3 μ s
		V: Bit Reg.	304 μ s	264 μ s	253 μ s	218 μ s	54.2 μ s	7.3 μ s	54.2 μ s	7.3 μ s
		K: Constant	95 μ s	49 μ s	80 μ s	50 μ s	50.3 μ s	4.6 μ s	50.3 μ s	4.6 μ s
		P: Indir. (Data)	-	-	193 μ s	159 μ s	81.2 μ s	30.2 μ s	81.2 μ s	30.2 μ s
		P: Indir. (Bit)	-	-	366 μ s	331 μ s	81.2 μ s	30.2 μ s	81.2 μ s	30.2 μ s
CNT	CT	V: Data Reg.	68 μ s	61 μ s	59 μ s	38 μ s	25.8 μ s	7.3 μ s	25.8 μ s	7.3 μ s
		V: Bit Reg.	148 μ s	141 μ s	157 μ s	133 μ s	25.8 μ s	7.3 μ s	25.8 μ s	7.3 μ s
		K: Constant	56 μ s	45 μ s	59 μ s	45 μ s	22.2 μ s	4.6 μ s	22.2 μ s	4.6 μ s
		P: Indir. (Data)	-	-	176 μ s	152 μ s	53.5 μ s	30.2 μ s	53.5 μ s	30.2 μ s
		P: Indir. (Bit)	-	-	270 μ s	245 μ s	53.5 μ s	30.2 μ s	53.5 μ s	30.2 μ s
SGCNT	CT	V: Data Reg.	57 μ s	64 μ s	58 μ s	38 μ s	27.3 μ s	7.3 μ s	27.3 μ s	7.3 μ s
		V: Bit Reg.	140 μ s	148 μ s	155 μ s	133 μ s	27.3 μ s	7.3 μ s	27.3 μ s	7.3 μ s
		K: Constant	46 μ s	53 μ s	67 μ s	45 μ s	23.5 μ s	4.6 μ s	23.5 μ s	4.6 μ s
		P: Indir. (Data)	-	-	175 μ s	152 μ s	54.9 μ s	30.2 μ s	54.9 μ s	30.2 μ s
		P: Indir. (Bit)	-	-	268 μ s	245 μ s	54.9 μ s	30.2 μ s	54.9 μ s	30.2 μ s
UDC	CT	V: Data Reg.	103 μ s	74 μ s	80 μ s	56 μ s	39.8 μ s	7.3 μ s	39.8 μ s	7.3 μ s
		V: Bit Reg.	310 μ s	281 μ s	261 μ s	224 μ s	39.8 μ s	7.3 μ s	39.8 μ s	7.3 μ s
		K: Constant	102 μ s	70 μ s	97 μ s	60 μ s	35.4 μ s	4.6 μ s	35.4 μ s	4.6 μ s
		P: Indir. (Data)	-	-	202 μ s	165 μ s	67.8 μ s	30.2 μ s	67.8 μ s	30.2 μ s
		P: Indir. (Bit)	-	-	374 μ s	336 μ s	67.8 μ s	30.2 μ s	67.8 μ s	30.2 μ s
SR	C (N points to shift)		30 μ s + 4.6 μ s x N	17.2 μ s	25 μ s + 4 μ s x N	19.7 μ s	17.8 μ s + 0.9 μ s x N	9.8 μ s	17.8 μ s + 0.9 μ s x N	9.8 μ s

C

Accumulator Data Instructions

Accumulator/Stack Load and Output Data Instructions		DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
LD	V: Data Reg.	68 μ s	8.4 μ s	68 μ s	8.4 μ s	11.8 μ s	1.0 μ s	11.8 μ s	1.0 μ s
	V: Bit Reg.	149 μ s	8.4 μ s	143 μ s	8.4 μ s	11.8 μ s	1.0 μ s	11.8 μ s	1.0 μ s
	K: Constant	62 μ s	8.4 μ s	159 μ s	8.4 μ s	9.0 μ s	1.0 μ s	9.0 μ s	1.0 μ s
	P: Indir. (Data)	169 μ s	8.4 μ s	238 μ s	8.4 μ s	33.9 μ s	0.9 μ s	33.9 μ s	0.9 μ s
	P: Indir. (Bit)	256 μ s	8.4 μ s	62 μ s	8.4 μ s	33.9 μ s	0.9 μ s	33.9 μ s	0.9 μ s
LDA	O: (Octal constant for address)	58 μ s	8.4 μ s	56 μ s	8.4 μ s	10.4 μ s	1.0 μ s	10.4 μ s	1.0 μ s
LDD	V: Data Reg.	72 μ s	8.4 μ s	67 μ s	8.4 μ s	12.2 μ s	1.0 μ s	12.2 μ s	1.0 μ s
	V: Bit Reg.	266 μ s	8.4 μ s	228 μ s	8.4 μ s	12.2 μ s	1.0 μ s	12.2 μ s	1.0 μ s
	K: Constant	64 μ s	8.4 μ s	69 μ s	8.4 μ s	9.0 μ s	1.0 μ s	9.0 μ s	1.0 μ s
	P: Indir. (Data)	172 μ s	8.4 μ s	158 μ s	8.4 μ s	37.8 μ s	0.9 μ s	37.8 μ s	0.9 μ s
	P: Indir. (Bit)	373 μ s	8.4 μ s	323 μ s	8.4 μ s	37.8 μ s	0.9 μ s	37.8 μ s	0.9 μ s
LDF	1st	2nd							
	X, Y, C, S, T, CT, SP	K: Constant	-	-	86 μ s + 5 μ s x N	8.4 μ s	20.5 μ s + 0.9 μ s x N	0.9 μ s	20.5 μ s + 0.9 μ s x N
LDR	V: Data Reg.	-	-	-	-	29.5 μ s	1.0 μ s	29.5 μ s	1.0 μ s
	V: Bit Reg.	-	-	-	-	29.5 μ s	1.0 μ s	29.5 μ s	1.0 μ s
	K: Constant	-	-	-	-	25.5 μ s	1.0 μ s	25.5 μ s	1.0 μ s
	P: Indir. (Data)	-	-	-	-	54.9 μ s	1.0 μ s	54.9 μ s	1.0 μ s
	P: Indir. (Bit)	-	-	-	-	54.9 μ s	1.0 μ s	54.9 μ s	1.0 μ s
LDSX	K: Constant	-	-	79 μ s	8.4 μ s	14.6 μ s	1.0 μ s	14.6 μ s	1.0 μ s
LDX	V: Data Reg.	-	-	-	-	10.8 μ s	1.0 μ s	10.8 μ s	1.0 μ s
	V: Bit Reg.	-	-	-	-	10.8 μ s	1.0 μ s	10.8 μ s	1.0 μ s
	P: Indir. (Data)	-	-	-	-	45.2 μ s	1.0 μ s	45.2 μ s	1.0 μ s
	P: Indir. (Bit)	-	-	-	-	45.2 μ s	1.0 μ s	45.2 μ s	1.0 μ s
OUT	V: Data Reg.	60 μ s	8.4 μ s	21 μ s	8.4 μ s	9.3 μ s	1.0 μ s	9.3 μ s	1.0 μ s
	V: Bit Reg.	132 μ s	8.4 μ s	126 μ s	8.4 μ s	9.3 μ s	1.0 μ s	9.3 μ s	1.0 μ s
	P: Indir. (Data)	162 μ s	8.4 μ s	112 μ s	8.4 μ s	35.2 μ s	0.9 μ s	35.2 μ s	0.9 μ s
	P: Indir. (Bit)	239 μ s	8.4 μ s	222 μ s	8.4 μ s	35.2 μ s	0.9 μ s	35.2 μ s	0.9 μ s
OUTD	V: Data Reg.	68 μ s	8.4 μ s	26 μ s	8.4 μ s	10.2 μ s	1.0 μ s	10.2 μ s	1.0 μ s
	V: Bit Reg.	276 μ s	8.4 μ s	235 μ s	8.4 μ s	10.2 μ s	1.0 μ s	10.2 μ s	1.0 μ s
	P: Indir. (Data)	196 μ s	8.4 μ s	116 μ s	8.4 μ s	35.8 μ s	0.9 μ s	35.8 μ s	0.9 μ s
	P: Indir. (Bit)	384 μ s	8.4 μ s	331 μ s	8.4 μ s	35.8 μ s	0.9 μ s	35.8 μ s	0.9 μ s

Accumulator Data Instructions (cont'd)

Accumulator/Stack Load and Output Data Instructions			DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
OUTF	1st	2nd								
	X, Y, C	K: Constant	-	-	$53 \mu\text{s} + 7 \mu\text{s} \times N$	8.4 μs	$54 \mu\text{s} + 1.0 \mu\text{s} \times N$	0.9 μs	$54 \mu\text{s} + 1.0 \mu\text{s} \times N$	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

C

Logical Instructions

Logical (Accumulator) Instructions			DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
AND	V: Data Reg.		58 μ s	10.4 μ s	54 μ s	8.4 μ s	7.9 μ s	1.0 μ s	7.9 μ s	1.0 μ s
	V: Bit Reg.		261 μ s	10.4 μ s	145 μ s	8.4 μ s	7.9 μ s	1.0 μ s	7.9 μ s	1.0 μ s
	P: Indir. (Data)		-	-	162 μ s	8.4 μ s	33.4 μ s	0.9 μ s	33.4 μ s	0.9 μ s
	P: Indir. (Bit)		-	-	241 μ s	8.4 μ s	33.4 μ s	0.9 μ s	33.4 μ s	0.9 μ s
ANDD	V: Data Reg.		-	-	-	-	8.9 μ s	1.0 μ s	8.9 μ s	1.0 μ s
	V: Bit Reg.		-	-	-	-	8.9 μ s	1.0 μ s	8.9 μ s	1.0 μ s
	K: Constant		53 μ s	8.4 μ s	60 μ s	8.4 μ s	5.7 μ s	1.0 μ s	5.7 μ s	1.0 μ s
	P: Indir. (Data)		-	-	-	-	34.4 μ s	0.9 μ s	34.4 μ s	0.9 μ s
	P: Indir. (Bit)		-	-	-	-	34.4 μ s	0.9 μ s	34.4 μ s	0.9 μ s
ANDF	1st	2nd								
	X, Y, C, S, T, CT, SP GX, GY	K: Constant	-	-	-	-	21.6 μ s + 0.9 μ s x N	1.0 μ s	21.6 μ s + 0.9 μ s x N	1.0 μ s
ANDS	None		-	-	-	-	-	-	10.0 μ s	1.0 μ s
OR	V: Data Reg.		59 μ s	10.4 μ s	54 μ s	8.4 μ s	8.1 μ s	1.0 μ s	8.1 μ s	1.0 μ s
	V: Bit Reg.		257 μ s	10.4 μ s	144 μ s	8.4 μ s	8.1 μ s	1.0 μ s	8.1 μ s	1.0 μ s
	P: Indir. (Data)		-	-	160 μ s	8.4 μ s	33.8 μ s	0.9 μ s	33.8 μ s	0.9 μ s
	P: Indir. (Bit)		-	-	239 μ s	8.4 μ s	33.8 μ s	0.9 μ s	33.8 μ s	0.9 μ s
ORD	V: Data Reg.		-	-	-	-	9.0 μ s	1.0 μ s	9.0 μ s	1.0 μ s
	V: Bit Reg.		-	-	-	-	9.0 μ s	1.0 μ s	9.0 μ s	1.0 μ s
	K: Constant		49 μ s	8.4 μ s	60 μ s	8.4 μ s	5.8 μ s	1.0 μ s	5.8 μ s	1.0 μ s
	P: Indir. (Data)		-	-	-	-	34.5 μ s	0.9 μ s	34.5 μ s	0.9 μ s
	P: Indir. (Bit)		-	-	-	-	34.5 μ s	0.9 μ s	34.5 μ s	0.9 μ s
ORF	1st	2nd								
	X, Y, C, S, T, CT, SP GX, GY	K: Constant	-	-	-	-	20.9 μ s + 0.9 μ s x N	1.0 μ s	20.9 μ s + 0.9 μ s x N	1.0 μ s
ORS	None		-	-	-	-	-	-	10.2 μ s	1.0 μ s
XOR	V: Data Reg.		60 μ s	10.4 μ s	69 μ s	8.4 μ s	8.0 μ s	1.0 μ s	8.0 μ s	1.0 μ s
	V: Bit Reg.		257 μ s	10.4 μ s	144 μ s	8.4 μ s	8.0 μ s	1.0 μ s	8.0 μ s	1.0 μ s
	P: Indir. (Data)		-	-	160 μ s	8.4 μ s	33.6 μ s	0.9 μ s	33.6 μ s	0.9 μ s
	P: Indir. (Bit)		-	-	239 μ s	8.4 μ s	33.6 μ s	0.9 μ s	33.6 μ s	0.9 μ s
XORD	V: Data Reg.		-	-	-	-	9.0 μ s	1.0 μ s	9.0 μ s	1.0 μ s
	V: Bit Reg.		-	-	-	-	9.0 μ s	1.0 μ s	9.0 μ s	1.0 μ s
	K: Constant		49 μ s	8.4 μ s	62 μ s	8.4 μ s	5.4 μ s	1.0 μ s	5.4 μ s	1.0 μ s
	P: Indir. (Data)		-	-	-	-	34.4 μ s	0.9 μ s	34.4 μ s	0.9 μ s
	P: Indir. (Bit)		-	-	-	-	34.4 μ s	0.9 μ s	34.4 μ s	0.9 μ s

Logical Instructions (cont'd)

Logical (Accumulator) Instructions			DL230		DL240		DL250-1		DL260	
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 μ s + 0.9 μ s x N	1.0 μ s	20.9 μ s + 0.9 μ s x N	1.0 μ s
XORS	None		-	-	-	-	-	-	10.1 μ s	1.0 μ s
CMP	V: Data Reg.		59 μ s	10.4 μ s	69 μ s	8.4 μ s	9.4 μ s	1.0 μ s	9.4 μ s	1.0 μ s
	V: Bit Reg.		259 μ s	10.4 μ s	115 μ s	8.4 μ s	9.4 μ s	1.0 μ s	9.4 μ s	1.0 μ s
	P: Indir. (Data)		-	-	130 μ s	8.4 μ s	34.9 μ s	0.9 μ s	34.9 μ s	0.9 μ s
	P: Indir. (Bit)		-	-	211 μ s	8.4 μ s	34.9 μ s	0.9 μ s	34.9 μ s	0.9 μ s
CMPD	V: Data Reg.		63 μ s	8.4 μ s	47 μ s	8.4 μ s	9.9 μ s	1.0 μ s	9.9 μ s	1.0 μ s
	V: Bit Reg.		257 μ s	8.4 μ s	206 μ s	8.4 μ s	9.9 μ s	1.0 μ s	9.9 μ s	1.0 μ s
	K: Constant		54 μ s	8.4 μ s	49 μ s	8.4 μ s	6.7 μ s	1.0 μ s	6.7 μ s	1.0 μ s
	P: Indir. (Data)		-	-	133 μ s	8.4 μ s	35.4 μ s	1.0 μ s	35.4 μ s	1.0 μ s
	P: Indir. (Bit)		-	-	303 μ s	8.4 μ s	35.4 μ s	1.0 μ s	35.4 μ s	1.0 μ s
CMPF	1st	2nd								
	X, Y, C, S, T, CT, SP GX, GY	K: Constant	-	-	-	-	29.2 μ s+ 1.0 μ s x N	1.0 μ s	29.2 μ s+ 1.0 μ s x N	1.0 μ s
CMPR	V: Data Reg.		-	-	-	-	42.8 μ s	1.0 μ s	42.8 μ s	1.0 μ s
	V: Bit Reg.		-	-	-	-	42.8 μ s	1.0 μ s	42.8 μ s	1.0 μ s
	K: Constant		-	-	-	-	38.4 μ s	1.0 μ s	38.4 μ s	1.0 μ s
	P: Indir. (Data)		-	-	-	-	69.0 μ s	1.0 μ s	69.0 μ s	1.0 μ s
	P: Indir. (Bit)		-	-	-	-	69.0 μ s	1.0 μ s	69.0 μ s	1.0 μ s
CMPS	None		-	-	-	-	-	-	11.2 μ s	1.0 μ s

C

Math Instructions

Math Instructions (Accumulator)		DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
C ADD	V: Data Reg.	198 μ s	10.6 μ s	291 μ s	8.4 μ s	78.4 μ s	0.9 μ s	78.4 μ s	0.9 μ s
	V: Bit Reg.	397 μ s	10.6 μ s	363 μ s	8.4 μ s	78.4 μ s	0.9 μ s	78.4 μ s	0.9 μ s
	P: Indir. (Data)	-	-	441 μ s	8.4 μ s	101.2 μ s	0.9 μ s	101.2 μ s	0.9 μ s
	P: Indir. (Bit)	-	-	520 μ s	8.4 μ s	101.2 μ s	0.9 μ s	101.2 μ s	0.9 μ s
ADDD	V: Data Reg.	198 μ s	8.4 μ s	291 μ s	8.4 μ s	83.3 μ s	0.9 μ s	83.3 μ s	0.9 μ s
	V: Bit Reg.	397 μ s	8.4 μ s	512 μ s	8.4 μ s	83.3 μ s	0.9 μ s	83.3 μ s	0.9 μ s
	K: Constant	188 μ s	8.4 μ s	298 μ s	8.4 μ s	67.7 μ s	0.9 μ s	67.7 μ s	0.9 μ s
	P: Indir. (Data)	-	-	442 μ s	8.4 μ s	101.2 μ s	0.9 μ s	101.2 μ s	0.9 μ s
	P: Indir. (Bit)	-	-	608 μ s	8.4 μ s	101.2 μ s	0.9 μ s	101.2 μ s	0.9 μ s
SUB	V: Data Reg.	200 μ s	10.6 μ s	287 μ s	8.4 μ s	77.4 μ s	0.9 μ s	77.4 μ s	0.9 μ s
	V: Bit Reg.	397 μ s	10.6 μ s	360 μ s	8.4 μ s	77.4 μ s	0.9 μ s	77.4 μ s	0.9 μ s
	P: Indir. (Data)	-	-	434 μ s	8.4 μ s	95.1 μ s	0.9 μ s	95.1 μ s	0.9 μ s
	P: Indir. (Bit)	-	-	513 μ s	8.4 μ s	95.1 μ s	0.9 μ s	95.1 μ s	0.9 μ s
SUBD	V: Data Reg.	198 μ s	8.4 μ s	288 μ s	8.4 μ s	82.5 μ s	0.9 μ s	82.5 μ s	0.9 μ s
	V: Bit Reg.	392 μ s	8.4 μ s	504 μ s	8.4 μ s	82.5 μ s	0.9 μ s	82.5 μ s	0.9 μ s
	K: Constant	190 μ s	8.4 μ s	294 μ s	8.4 μ s	66.0 μ s	0.9 μ s	66.0 μ s	0.9 μ s
	P: Indir. (Data)	-	-	434 μ s	8.4 μ s	99.7 μ s	0.9 μ s	99.7 μ s	0.9 μ s
	P: Indir. (Bit)	-	-	600 μ s	8.4 μ s	99.7 μ s	0.9 μ s	99.7 μ s	0.9 μ s
MUL	V: Data Reg.	497 μ s	10.6 μ s	311 μ s	8.4 μ s	266.1 μ s	0.9 μ s	266.1 μ s	0.9 μ s
	V: Bit Reg.	483 μ s	10.6 μ s	385 μ s	8.4 μ s	266.1 μ s	0.9 μ s	266.1 μ s	0.9 μ s
	K: Constant	487 μ s	8.4 μ s	334 μ s	8.4 μ s	286.9 μ s	0.9 μ s	286.9 μ s	0.9 μ s
	P: Indir. (Data)	-	-	401 μ s	8.4 μ s	290.0 μ s	0.9 μ s	290.0 μ s	0.9 μ s
	P: Indir. (Bit)	-	-	461 μ s	8.4 μ s	290.0 μ s	0.9 μ s	290.0 μ s	0.9 μ s
MULD	V: Data Reg.					839.1 μ s	0.9 μ s	839.1 μ s	0.9 μ s
	V: Bit Reg.	-	-	-	-	839.1 μ s	0.9 μ s	839.1 μ s	0.9 μ s
	P: Indir. (Data)	-	-	-	-	863.1 μ s	0.9 μ s	863.1 μ s	0.9 μ s
	P: Indir. (Bit)					863.1 μ s	0.9 μ s	863.1 μ s	0.9 μ s
DIV	V: Data Reg.	909 μ s	10.6 μ s	601 μ s	8.4 μ s	363.9 μ s	0.9 μ s	363.9 μ s	0.9 μ s
	V: Bit Reg.	1108 μ s	10.6 μ s	675 μ s	8.4 μ s	363.9 μ s	0.9 μ s	363.9 μ s	0.9 μ s
	K: Constant	699 μ s	8.4 μ s	573 μ s	8.4 μ s	384.4 μ s	0.9 μ s	384.4 μ s	0.9 μ s
	P: Indir. (Data)	-	-	691 μ s	8.4 μ s	419.8 μ s	0.9 μ s	419.8 μ s	0.9 μ s
	P: Indir. (Bit)	-	-	771 μ s	8.4 μ s	419.8 μ s	0.9 μ s	419.8 μ s	0.9 μ s
DIVD	V: Data Reg.					398.3 μ s	0.9 μ s	398.3 μ s	0.9 μ s
	V: Bit Reg.	-	-	-	-	398.3 μ s	0.9 μ s	398.3 μ s	0.9 μ s
	P: Indir. (Data)	-	-	-	-	390.9 μ s	0.9 μ s	390.9 μ s	0.9 μ s
	P: Indir. (Bit)					390.9 μ s	0.9 μ s	390.9 μ s	0.9 μ s
INC	V: Data Reg.					48.5 μ s	1.0 μ s	48.5 μ s	1.0 μ s
	V: Bit Reg.	-	-	-	-	48.5 μ s	1.0 μ s	48.5 μ s	1.0 μ s
	P: Indir. (Data)	-	-	-	-	74.7 μ s	1.0 μ s	74.7 μ s	1.0 μ s
	P: Indir. (Bit)					74.7 μ s	1.0 μ s	74.7 μ s	1.0 μ s

Math Instructions (cont'd)

Math Instructions (Accumulator)		DL230		DL240		DL250-1		DL260	
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)		DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
DIVB	V: Data Reg.	-	-	-	-	28.7 μ s	1.0 μ s	28.7 μ s	1.0 μ s
	V: Bit Reg.	-	-	-	-	28.7 μ s	1.0 μ s	28.7 μ s	1.0 μ s
	K: Constant	-	-	-	-	26.1 μ s	1.0 μ s	26.1 μ s	1.0 μ s
	P: Indir. (Data)	-	-	-	-	54.9 μ s	1.0 μ s	54.9 μ s	1.0 μ s
	P: Indir. (Bit)	-	-	-	-	54.9 μ s	1.0 μ s	54.9 μ s	1.0 μ s
ADDR	V: Data Reg.	-	-	-	-	48.1 μ s	1.0 μ s	48.1 μ s	1.0 μ s
	V: Bit Reg.	-	-	-	-	48.1 μ s	1.0 μ s	48.1 μ s	1.0 μ s
	K: Constant	-	-	-	-	41.7 μ s	1.0 μ s	41.7 μ s	1.0 μ s
	P: Indir. (Data)	-	-	-	-	74.3 μ s	1.0 μ s	74.3 μ s	1.0 μ s
	P: Indir. (Bit)	-	-	-	-	74.3 μ s	1.0 μ s	74.3 μ s	1.0 μ s
SUBR	V: Data Reg.	-	-	-	-	50.1 μ s	1.0 μ s	50.1 μ s	1.0 μ s
	V: Bit Reg.	-	-	-	-	50.1 μ s	1.0 μ s	50.1 μ s	1.0 μ s
	K: Constant	-	-	-	-	58.7 μ s	1.0 μ s	58.7 μ s	1.0 μ s
	P: Indir. (Data)	-	-	-	-	76.3 μ s	1.0 μ s	76.3 μ s	1.0 μ s
	P: Indir. (Bit)	-	-	-	-	76.3 μ s	1.0 μ s	76.3 μ s	1.0 μ s
MULR	V: Data Reg.	-	-	-	-	54.2 μ s	1.0 μ s	54.2 μ s	1.0 μ s
	V: Bit Reg.	-	-	-	-	54.2 μ s	1.0 μ s	54.2 μ s	1.0 μ s
	K: Constant	-	-	-	-	42.7 μ s	1.0 μ s	42.7 μ s	1.0 μ s
	P: Indir. (Data)	-	-	-	-	80.4 μ s	1.0 μ s	80.4 μ s	1.0 μ s
	P: Indir. (Bit)	-	-	-	-	80.4 μ s	1.0 μ s	80.4 μ s	1.0 μ s
DIVR	V: Data Reg.	-	-	-	-	50.1 μ s	1.0 μ s	50.1 μ s	1.0 μ s
	V: Bit Reg.	-	-	-	-	50.1 μ s	1.0 μ s	50.1 μ s	1.0 μ s
	K: Constant	-	-	-	-	58.7 μ s	1.0 μ s	58.7 μ s	1.0 μ s
	P: Indir. (Data)	-	-	-	-	76.3 μ s	1.0 μ s	76.3 μ s	1.0 μ s
	P: Indir. (Bit)	-	-	-	-	76.3 μ s	1.0 μ s	76.3 μ s	1.0 μ s
ADDF	1st	2nd							
	X, Y, C, S, T, CT, SP GX, GY	K: Constant	-	-	-	-	-	109.3 μ s + 0.9 μ s x N	1.0 μ s
SUBF	1st	2nd							
	X, Y, C, S, T, CT, SP GX, GY	K: Constant	-	-	-	-	-	107.3 μ s + 0.9 μ s x N	1.0 μ s
MULF	1st	2nd							
	X, Y, C, S, T, CT, SP GX, GY	K: Constant	-	-	-	-	-	352.5 μ s + 0.8 μ s x N	1.0 μ s

Math Instructions (cont'd)

Math Instructions Accumulator			DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
DIVF	1st X, Y, C, S, T, CT, SP GX, GY	2nd K: Constant	-	-	-	-	-	-	477.3 μ s + 0.8 μ s x N	1.0 μ s
ADDS	None		-	-	-	-	-	-	99.5 μ s	1.0 μ s
SUBS	None		-	-	-	-	-	-	97.5 μ s	1.0 μ s
MULS	None		-	-	-	-	-	-	342.5 μ s	1.0 μ s
DIVS	None		-	-	-	-	-	-	467.3 μ s	1.0 μ s
ADDBS	None		-	-	-	-	-	-	24.3 μ s	1.0 μ s
SUBBS	None		-	-	-	-	-	-	23.7 μ s	1.0 μ s
MULBS	None		-	-	-	-	-	-	11.7 μ s	1.0 μ s
DIVBS	None		-	-	-	-	-	-	29.7 μ s	1.0 μ s
SQRTR	None		-	-	-	-	-	-	87.9 μ s	1.0 μ s
SINR	None		-	-	-	-	-	-	226.8 μ s	1.0 μ s
COSR	None		-	-	-	-	-	-	213.1 μ s	1.0 μ s
TANR	None		-	-	-	-	-	-	285.5 μ s	1.0 μ s
ASINR	None		-	-	-	-	-	-	489.8 μ s	1.0 μ s
ACOSR	None		-	-	-	-	-	-	508.3 μ s	1.0 μ s
ATANR	None		-	-	-	-	-	-	317.1 μ s	1.0 μ s

Differential Instructions

Differential Instructions		DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
PD	X, Y, C	13.5 μ s	13.5 μ s	15.9 μ s	14.6 μ s	14.4 μ s	14.4 μ s	14.4 μ s	14.4 μ s
STRPD	X, Y, C, S, T, CT	-	-	-	-	5.4 μ s	5.4 μ s	5.4 μ s	5.4 μ s
STRND	X, Y, C, S, T, CT	-	-	-	-	7.3 μ s	7.3 μ s	7.3 μ s	7.3 μ s
ORPD	X, Y, C, S, T, CT	-	-	-	-	6.8 μ s	5.2 μ s	6.8 μ s	5.2 μ s
ORND	X, Y, C, S, T, CT	-	-	-	-	7.1 μ s	4.9 μ s	7.1 μ s	4.9 μ s
ANDPD	X, Y, C, S, T, CT	-	-	-	-	6.8 μ s	5.2 μ s	6.8 μ s	5.2 μ s
ANDND	X, Y, C, S, T, CT	-	-	-	-	7.1 μ s	4.9 μ s	7.1 μ s	4.9 μ s

Bit Instructions

Bit Instructions (Accumulator)		DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
SUM	None	-	-	-	-	-	-	6.7 μ s	1.0 μ s
SHFR	V: Data Reg. (N bits)	44 μ s + 14.6 μ s x N	10.4 μ s	35 μ s + 6 μ s x N	8.4 μ s	12.1 μ s + 0.1 μ s x N	0.9 μ s	12.1 μ s + 0.1 μ s x N	0.9 μ s
	V: Bit Reg (N bits)	243 μ s + 14.6 μ s x N	8.4 μ s	110 μ s + 6 μ s x N	8.4 μ s	12.1 μ s + 0.1 μ s x N	0.9 μ s	12.1 μ s + 0.1 μ s x N	0.9 μ s
	K: Constant (N bits)	34 μ s + 14.6 μ s x N	8.4 μ s	35 μ s + 6 μ s x N	8.4 μ s	8.4 μ s + 0.1 μ s x N	0.9 μ s	8.4 μ s + 0.1 μ s x N	0.9 μ s
SHFL	V: Data Reg. (N bits)	44 μ s + 14.6 μ s x N	10.4 μ s	33 μ s + 6 μ s x N	8.4 μ s	12.1 μ s + 0.1 μ s x N	0.9 μ s	12.1 μ s + 0.1 μ s x N	0.9 μ s
	V: Bit Reg (N bits)	243 μ s + 14.6 μ s x N	8.4 μ s	107 μ s + 6 μ s x N	8.4 μ s	12.1 μ s + 0.1 μ s x N	0.9 μ s	12.1 μ s + 0.1 μ s x N	0.9 μ s
	K: Constant (N bits)	34 μ s + 14.6 μ s x N	8.4 μ s	33 μ s + 6 μ s x N	8.4 μ s	8.4 μ s + 0.1 μ s x N	0.9 μ s	8.4 μ s + 0.1 μ s x N	0.9 μ s
ROTR	V: Data Reg. (N bits)	-	-	-	-	-	-	16.4 μ s	1.0 μ s
	V: Bit Reg (N bits)	-	-	-	-	-	-	16.4 μ s	1.0 μ s
	K: Constant (N bits)	-	-	-	-	-	-	12.9 μ s	1.0 μ s
ROTL	V: Data Reg. (N bits)	-	-	-	-	-	-	16.4 μ s	1.0 μ s
	V: Bit Reg (N bits)	-	-	-	-	-	-	16.4 μ s	1.0 μ s
	K: Constant (N bits)	-	-	-	-	-	-	12.7 μ s	1.0 μ s
ENCO	None	62 μ s	7.2 μ s	98 μ s	8.4 μ s	33.9 μ s	0.9 μ s	33.9 μ s	0.9 μ s
DECO	None	34 μ s	7.2 μ s	28 μ s	8.4 μ s	5.7 μ s	1.0 μ s	5.7 μ s	1.0 μ s

Number Conversion Instructions

Number Conversion Instructions (Accumulator)		DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
BIN	None	359 μ s	7.2 μ s	267 μ s	8.4 μ s	100.2 μ s	0.9 μ s	100.2 μ s	0.9 μ s
BCD	None	403 μ s	7.2 μ s	383 μ s	8.4 μ s	95.2 μ s	0.9 μ s	95.2 μ s	0.9 μ s
INV	None	27 μ s	5.0 μ s	12 μ s	8.4 μ s	2.5 μ s	1.0 μ s	2.5 μ s	1.0 μ s
BCDPL	None	296 μ s	7.2 μ s	69 μ s	8.4 μ s	75.6 μ s	1.0 μ s	75.6 μ s	1.0 μ s
ATH	V	-	-	-	-	-	-	25.4 μ s	1.0 μ s
HTA	V	-	-	-	-	-	-	25.4 μ s	1.0 μ s
GRAY	None	-	-	227 μ s	9.0 μ s	110.8 μ s	1.0 μ s	110.8 μ s	1.0 μ s
SFLDGT	None	-	-	258 μ s	9.0 μ s	23.1 μ s	1.0 μ s	23.1 μ s	1.0 μ s
BTOR	None	-	-	-	-	18.6 μ s	1.0 μ s	18.6 μ s	1.0 μ s
RTOB	None	-	-	-	-	8.6 μ s	1.0 μ s	8.6 μ s	1.0 μ s
RADR	None	-	-	-	-	-	-	51.4 μ s	1.0 μ s
DEGR	None	-	-	-	-	-	-	81.5 μ s	1.0 μ s

Table Instructions

Table Instructions		DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
FILL	V: Data Reg.	-	-	-	-	-	-	29.4 μ s + 8.0 μ s x N	1.0 μ s
	V: Bit Reg.	-	-	-	-	-	-	-	-
	K: Constant	-	-	-	-	-	-	26.2 μ s + 8.0 μ s x N	1.0 μ s
	P: Indir. (Data)	-	-	-	-	-	-	55.1 μ s + 8.0 μ s x N	1.0 μ s
	P: Indir. (Bit)	-	-	-	-	-	-	-	-
FIND	V: Data Reg. (N bits)	-	-	-	-	-	-	66.8 μ s	1.0 μ s
	V: Bit Reg. (N bits)	-	-	-	-	-	-	66.8 μ s	1.0 μ s
	K: Constant (N bits)	-	-	-	-	-	-	64.0 μ s	1.0 μ s
FDGT	V: Data Reg. (N bits)	-	-	-	-	-	-	66.1 μ s	1.0 μ s
	V: Bit Reg. (N bits)	-	-	-	-	-	-	66.1 μ s	1.0 μ s
	K: Constant (N bits)	-	-	-	-	-	-	55.2 μ s	1.0 μ s
FINDB	V: Data Reg. (N bits)	-	-	-	-	-	-	210.8 μ s	1.0 μ s
	V: Bit Reg. (N bits)	-	-	-	-	-	-	210.8 μ s	1.0 μ s
	P: Indir. (Data)	-	-	-	-	-	-	237.0 μ s	1.0 μ s
	P: Indir. (Bit)	-	-	-	-	-	-	237.0 μ s	1.0 μ s

Table Instructions (cont'd)

Table Instructions		DL230		DL240		DL250-1		DL260	
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 μ s + 17 μ s x N	6.2 μ s	586 μ s + 8 μ s x N	8.4 μ s	60.2 μ s + 9.5 μ s x N	0.9 μ s	60.2 μ s + 9.5 μ s x N	0.9 μ s
	Move V: bit reg. to V: data reg.	430 μ s + 244 μ s x N	6.2 μ s	629 μ s + 114.7 μ s x N	8.4 μ s				
	Move V: data reg to V: bit reg.	460 μ s + 215 μ s x N	6.2 μ s	569 μ s + 94.4 μ s x N	8.4 μ s				
	Move V: bit reg. to V:bit reg. N = #of words	490 μ s + 448 μ s x N	6.2 μ s	693 μ s + 198 μ s x N	8.4 μ s				
TTD	V: Data Reg.	-	-	-	-	-	-	66.9 μ s	1.0 μ s
	V: Bit Reg.							66.9 μ s	1.0 μ s
RFB	V: Data Reg.	-	-	-	-	-	-	66.8 μ s	1.0 μ s
	V: Bit Reg.							66.8 μ s	1.0 μ s
STT	V: Data Reg.	-	-	-	-	-	-	67.8 μ s	1.0 μ s
	V: Bit Reg.							67.8 μ s	1.0 μ s
	K: Constant							65.0 μ s	1.0 μ s
RFT	V: Data Reg.	-	-	-	-	-	-	51.1 μ s	1.0 μ s
	V: Bit Reg.							51.1 μ s	1.0 μ s
ATT	V: Data Reg.	-	-	-	-	-	-	53.5 μ s	1.0 μ s
	V: Bit Reg.							53.5 μ s	1.0 μ s
	K: Constant							50.8 μ s	1.0 μ s
TSHFL	V: Data Reg.	-	-	-	-	-	-	134.0 μ s	1.0 μ s
	V: Bit Reg.							134.0 μ s	1.0 μ s
TSHFR	V: Data Reg.	-	-	-	-	-	-	133.9 μ s	1.0 μ s
	V: Bit Reg.							133.9 μ s	1.0 μ s
ANDMOV	V: Data Reg.	-	-	-	-	-	-	80.2 μ s	1.0 μ s
	V: Bit Reg.							80.2 μ s	1.0 μ s
ORMOV	V: Data Reg.	-	-	-	-	-	-	80.4 μ s	1.0 μ s
	V: Bit Reg.							80.4 μ s	1.0 μ s
XORMOV	V: Data Reg.	-	-	-	-	-	-	80.4 μ s	1.0 μ s
	V: Bit Reg.							80.4 μ s	1.0 μ s
SWAP	V: Data Reg.	-	-	-	-	-	-	84.1 μ s	1.0 μ s
	V: Bit Reg.							84.1 μ s	1.0 μ s
SETBIT	V: Data Reg. (N bits)	-	-	-	-	-	-	59.5 μ s	1.0 μ s
	V: Bit Reg. (N bits)							59.5 μ s	1.0 μ s
RSTBIT	V: Data Reg. (N bits)	-	-	-	-	-	-	59.5 μ s	1.0 μ s
	V: Bit Reg. (N bits)							59.5 μ s	1.0 μ s

Table Instructions (cont'd)

Table Instructions		DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
MOVMC	Move V: Data Reg. to EEPROM	-	-	$356 \mu\text{s} + 7689 \mu\text{s} \times N$	$8.4 \mu\text{s}$	-	-	$33.5 \mu\text{s} + 10.4 \mu\text{s} \times N$	$0.9 \mu\text{s}$
	Move V: Bit Reg. to EEPROM	-	-	$392 \mu\text{s} + 7843 \mu\text{s} \times N$	$8.4 \mu\text{s}$	-	-	$33.5 \mu\text{s} + 10.4 \mu\text{s} \times N$	$0.9 \mu\text{s}$
	Move from EEPROM to V: Data Reg.	$250 \mu\text{s} + 201 \mu\text{s} \times N$	$6.2 \mu\text{s}$	$520 \mu\text{s} + 181 \mu\text{s} \times N$	$8.4 \mu\text{s}$	$50 \mu\text{s} + 15 \mu\text{s} \times N$	$1.2 \mu\text{s}$	$33.5 \mu\text{s} + 10.4 \mu\text{s} \times N$	$0.9 \mu\text{s}$
	Move from EEPROM to V: Bit Reg. N=#of words	-	-	$565 \mu\text{s} + 344 \mu\text{s} \times N$	$8.4 \mu\text{s}$	$50 \mu\text{s} + 15 \mu\text{s} \times N$	$1.2 \mu\text{s}$	$33.5 \mu\text{s} + 10.4 \mu\text{s} \times N$	$0.9 \mu\text{s}$
LDLBL	K	$58 \mu\text{s}$	$8.4 \mu\text{s}$	$56 \mu\text{s}$	$8.4 \mu\text{s}$	$7.4 \mu\text{s}$	$1.5 \mu\text{s}$	$6.4 \mu\text{s}$	$1.3 \mu\text{s}$

C

CPU Control Instructions

CPU Control Instructions		DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
NOP	None	$0 \mu\text{s}$	$0 \mu\text{s}$	$0 \mu\text{s}$	$0 \mu\text{s}$	$0.5 \mu\text{s}$	$0.5 \mu\text{s}$	$0.5 \mu\text{s}$	$0.5 \mu\text{s}$
END	None	$27 \mu\text{s}$	$27 \mu\text{s}$	$16 \mu\text{s}$	$16 \mu\text{s}$	$12.8 \mu\text{s}$	$0 \mu\text{s}$	$12.8 \mu\text{s}$	$0 \mu\text{s}$
STOP	None	$16 \mu\text{s}$	$5 \mu\text{s}$	$15 \mu\text{s}$	$7.4 \mu\text{s}$	$0 \mu\text{s}$	$0.9 \mu\text{s}$	$0 \mu\text{s}$	$0.9 \mu\text{s}$
RSTWT	None	-	-	$19 \mu\text{s}$	$8.4 \mu\text{s}$	$4.7 \mu\text{s}$	$0.9 \mu\text{s}$	$4.7 \mu\text{s}$	$0.9 \mu\text{s}$

Program Control Instructions

Program Control Instructions		DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
GOTO	K	-	-	$14 \mu\text{s}$	$8.4 \mu\text{s}$	$5.1 \mu\text{s}$	$4.8 \mu\text{s}$	$5.1 \mu\text{s}$	$4.8 \mu\text{s}$
LBL	K	-	-	$0.6 \mu\text{s}$	$0.6 \mu\text{s}$	$5.7 \mu\text{s}$	$0.0 \mu\text{s}$	$5.7 \mu\text{s}$	$0.0 \mu\text{s}$
FOR	V, K	-	-	$32 \mu\text{s}$	$16.4 \mu\text{s}$	$85.8 \mu\text{s}$	$5.8 \mu\text{s}$	$85.8 \mu\text{s}$	$5.8 \mu\text{s}$
NEXT	None	-	-	$19 \mu\text{s}$	$0 \mu\text{s}$	$10.2 \mu\text{s}$	$0.0 \mu\text{s}$	$10.2 \mu\text{s}$	$0.0 \mu\text{s}$
GTS	K	-	-	$37 \mu\text{s}$	$11.4 \mu\text{s}$	$10.9 \mu\text{s}$	$5.5 \mu\text{s}$	$10.9 \mu\text{s}$	$5.5 \mu\text{s}$
SBR	K	-	-	$0.6 \mu\text{s}$	$0 \mu\text{s}$	$0.5 \mu\text{s}$	$0.0 \mu\text{s}$	$0.5 \mu\text{s}$	$0.0 \mu\text{s}$
RT	None	-	-	$35 \mu\text{s}$	$0 \mu\text{s}$	$9.9 \mu\text{s}$	$0.0 \mu\text{s}$	$9.9 \mu\text{s}$	$0.0 \mu\text{s}$
RTC	None	-	-	-	-	-	-	$11.4 \mu\text{s}$	$5.9 \mu\text{s}$
MLS	K (1-7)	$12 \mu\text{s}$	$12 \mu\text{s}$	$11.5 \mu\text{s}$	$11.5 \mu\text{s}$	$3.7 \mu\text{s}$	$3.7 \mu\text{s}$	$3.7 \mu\text{s}$	$3.7 \mu\text{s}$
MLR	K (0-7) N=1 to 7	$13 \mu\text{s} + 2.4 \mu\text{s} \times N$	$13 \mu\text{s} + 2.4 \mu\text{s} \times N$	$12.7 \mu\text{s} + 2.3 \mu\text{s} \times N$	$12.7 \mu\text{s} + 2.3 \mu\text{s} \times n$	$3.5 \mu\text{s}$	$3.5 \mu\text{s}$	$3.5 \mu\text{s}$	$3.5 \mu\text{s}$

Interrupt Instructions

Interrupt Instructions		DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
ENI	None	9 μ s	5 μ s	10.5 μ s	8.4 μ s	5.0 μ s	1.0 μ s	5.0 μ s	1.0 μ s
DISI	None	8 μ s	5 μ s	11 μ s	8.4 μ s	5.7 μ s	0.9 μ s	5.7 μ s	0.9 μ s
INT	0	0 μ s	0 μ s	0 μ s	0 μ s	0 μ s	0 μ s	0 μ s	0 μ s
IRT	None	1.6 μ s	0 μ s	8 μ s	0 μ s	1.3 μ s	0 μ s	1.3 μ s	0 μ s
IRTC	None	-	-	-	-	-	-	0.5 μ s	0 μ s

Network Instructions

Network Instructions		DL230		DL240		DL250-1		DL260	
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 μ s	1.1 μ s	251.3 μ s	1.1 μ s
	V: Data Reg.					251.3 μ s	1.1 μ s	251.3 μ s	1.1 μ s
	V: Bit Reg.					251.3 μ s	1.1 μ s	251.3 μ s	1.1 μ s
	P: Indir. (Data)					270.3 μ s	1.9 μ s	270.3 μ s	1.9 μ s
	P: Indir. (Bit)					270.3 μ s	1.9 μ s	270.3 μ s	1.9 μ s
WX	X, Y, C, T, CT, SP, S	-	-	TBD	TBD	252.0 μ s	2.7 μ s	252.0 μ s	2.7 μ s
	V: Data Reg.					252.0 μ s	2.7 μ s	252.0 μ s	2.7 μ s
	V: Bit Reg.					252.0 μ s	2.7 μ s	252.0 μ s	2.7 μ s
	P: Indir. (Data)					271.3 μ s	3.4 μ s	271.3 μ s	3.4 μ s
	P: Indir. (Bit)					271.3 μ s	3.4 μ s	271.3 μ s	3.4 μ s

Intelligent I/O Instructions

Intelligent I/O Instructions		DL230		DL240		DL250-1		DL260	
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 μ s	1.2 μ s	385.7 μ s	1.2 μ s
	V: Bit Reg.					385.7 μ s	1.2 μ s	385.7 μ s	1.2 μ s
WT	V: Data Reg.	TBD	TBD	TBD	TBD	385.6 μ s	1.2 μ s	385.6 μ s	1.2 μ s
	V: Bit Reg.					385.6 μ s	1.2 μ s	385.6 μ s	1.2 μ s

Message Instructions

Message Instructions		DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
FAULT	V: Data Reg.	171 μ s	8.4 μ s	23176 μ s	8.4 μ s	84.9 μ s	1.1 μ s	84.9 μ s	1.1 μ s
	V: Bit Reg.	253 μ s	8.4 μ s	23206 μ s	8.4 μ s	84.9 μ s	1.1 μ s	84.9 μ s	1.1 μ s
	K: Constant	2798 μ s	8.4 μ s	29108 μ s	8.4 μ s	80.8 μ s	1.2 μ s	80.8 μ s	1.2 μ s
DLBL	K	0 μ s	0 μ s	0 μ s	0 μ s	0 μ s	0 μ s	0 μ s	0 μ s
NCON	K	0 μ s	0 μ s	0 μ s	0 μ s	0 μ s	0 μ s	0 μ s	0 μ s
ACON	K	0 μ s	0 μ s	0 μ s	0 μ s	0 μ s	0 μ s	0 μ s	0 μ s
PRINT	Text Data	-	-	-	-	36.3 μ s	1.1 μ s	36.3 μ s	1.1 μ s

RLL^{PLUS} Instructions

RLL ^{PLUS} Instructions		DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
ISG	S	31 μ s	32 μ s	28 μ s	27 μ s	20.9 μ s	9.2 μ s	20.9 μ s	9.2 μ s
SG	S	31 μ s	32 μ s	28 μ s	27 μ s	20.9 μ s	9.2 μ s	20.9 μ s	9.2 μ s
JMP	S	14 μ s	8 μ s	14.3 μ s	8.4 μ s	20.9 μ s	3.7 μ s	20.9 μ s	3.7 μ s
NJMP	S	14 μ s	8 μ s	13.3 μ s	8.4 μ s	21.0 μ s	4.0 μ s	21.0 μ s	4.0 μ s
CV	S	43 μ s	27 μ s	20 μ s	20 μ s	12.1 μ s	12.1 μ s	12.1 μ s	12.1 μ s
CVJMP	S (N stages, 1 to 16)	33 μ s + 14.5 μ s x N	23 μ s	22.9 μ s + 6.1 μ s x N	10 μ s	11.0 μ s	11.0 μ s	11.0 μ s	11.0 μ s
BCALL	C	18 μ s	17 μ s	17 μ s	18 μ s	22.1 μ s	22.6 μ s	22.1 μ s	22.6 μ s
BLK	C	32 μ s	30 μ s	17 μ s	13 μ s	17.1 μ s	14.6 μ s	17.1 μ s	14.6 μ s
BEND	None	17 μ s	17 μ s	9 μ s	9 μ s	8.7 μ s	0.0 μ s	8.7 μ s	0.0 μ s

DRUM Instructions

Drum Instructions		DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
DRUM	CT	-	-	-	-	265.2 μ s	48.8 μ s	265.2 μ s	48.8 μ s
EDRUM	CT	-	-	-	-	189.5 μ s	78.0 μ s	189.5 μ s	78.0 μ s
MDRMD	CT	-	-	-	-	411.3 μ s	216.4 μ s	411.3 μ s	216.4 μ s
MDRMW	CT	-	-	-	-	378.6 μ s	147.0 μ s	378.6 μ s	147.0 μ s

Clock / Calender Instructions

Clock / Calender Instructions		DL230		DL240		DL250-1		DL260	
Instruction		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
DATE	V: Data Reg.	-	-	-	-	24.0 μ s	1.2 μ s	24.0 μ s	1.2 μ s
	V: Bit Reg.								
TIME	V: Data Reg.	-	-	-	-	50.8 μ s	1.2 μ s	50.8 μ s	1.2 μ s
	V: Bit Reg.								

Modbus Instructions

Modbus Instructions		DL230		DL240		DL250-1		DL260	
Instruction		Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
MRX	Input, Input Register Coil, Holding Register	-	-	-	-	-	-	120.2 μ s	1.3 μ s
MWX	Input, Input Register Coil, Holding Register	-	-	-	-	-	-	21.3 μ s	1.3 μ s

ASCII Instructions

ASCII Instructions		DL230		DL240		DL250-1		DL260	
Instruction	Legal Data Types	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute	Execute	Not Execute
AIN	V	-	-	-	-	-	-	13.9 μ s	12.0 μ s
AFIND	V	-	-	-	-	-	-	111.5 μ s	1.3 μ s
AEX	V	-	-	-	-	-	-	111.7 μ s	1.3 μ s
CMPV	V	-	-	-	-	-	-	12.2 μ s	1.3 μ s
SWAPB	V	-	-	-	-	-	-	109.8 μ s	1.3 μ s
VPRINT	Text Data	-	-	-	-	-	-	161.6 μ s	1.3 μ s
PRINTV	V	-	-	-	-	-	-	163.3 μ s	1.3 μ s
ACRB	V	-	-	-	-	-	-	3.9 μ s	1.1 μ s