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UPPER NIBBLE	LOWER NIBBLE 0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NOP	AJMP page+00XX	LJMP 0000-FFFF	RR A	INC A	INC direct	INC @R0	INC @R1	INC R0	INC R1	INC R2	INC R3	INC R4	INC R5	INC R6	INC R7
1	JBC bit, -128+127	ACALL page+00XX	LCALL 0000-FFFF	RRC A	DEC A	DEC direct	DEC @R0	DEC @R1	DEC R0	DEC R1	DEC R2	DEC R3	DEC R4	DEC R5	DEC R6	DEC R7
2	JB bit, -128+127	AJMP page+01XX	RET	RL A	ADD A, #data	ADD A, direct	ADD A, @R0	ADD A, @R1	ADD A, R0	ADD A, R1	ADD A, R2	ADD A, R3	ADD A, R4	ADD A, R5	ADD A, R6	ADD A, R7
3	JNB bit, -128+127	ACALL page+01XX	RETI	RLC A	ADDC A, #data	ADDC A, direct	ADDC A, @R0	ADDC A, @R1	ADDC A, R0	ADDC A, R1	ADDC A, R2	ADDC A, R3	ADDC A, R4	ADDC A, R5	ADDC A, R6	ADDC A, R7
4	JC -128+127	AJMP page+02XX	ORL direct, A	ORL direct, #data	ORL A, #data	ORL A, direct	ORL A, @R0	ORL A, @R1	ORL A, R0	ORL A, R1	ORL A, R2	ORL A, R3	ORL A, R4	ORL A, R5	ORL A, R6	ORL A, R7
5	JNC -128+127	ACALL page+02XX	ANL direct, A	ANL direct, #data	ANL A, #data	ANL A, direct	ANL A, @R0	ANL A, @R1	ANL A, R0	ANL A, R1	ANL A, R2	ANL A, R3	ANL A, R4	ANL A, R5	ANL A, R6	ANL A, R7
6	JZ -128+127	AJMP page+03XX	XRL direct, A	XRL direct, #data	XRL A, #data	XRL A, direct	XRL A, @R0	XRL A, @R1	XRL A, R0	XRL A, R1	XRL A, R2	XRL A, R3	XRL A, R4	XRL A, R5	XRL A, R6	XRL A, R7
7	JNZ -128+127	ACALL page+03XX	ORL C, bit	JMP @A+DPTR	MOV A, #data	MOV direct, #data	MOV @R0, #data	MOV @R1, #data	MOV R0, #data	MOV R1, #data	MOV R2, #data	MOV R3, #data	MOV R4, #data	MOV R5, #data	MOV R6, #data	MOV R7, #data
8	SJMP -128+127	AJMP page+04XX	ANL C, bit	MOVC A, @A+PC	DIV AB	MOV direct1, direct2	MOV direct, @R0	MOV direct, @R1	MOV direct, R0	MOV direct, R1	MOV direct, R2	MOV direct, R3	MOV direct, R4	MOV direct, R5	MOV direct, R6	MOV direct, R7
9	MOV DPTR, #data16	ACALL page+04XX	MOV bit, C	MOVC A, @A+DPTR	SUBB A, #data	SUBB A, direct	SUBB A, @R0	SUBB A, @R1	SUBB A, R0	SUBB A, R1	SUBB A, R2	SUBB A, R3	SUBB A, R4	SUBB A, R5	SUBB A, R6	SUBB A, R7
A	ORL C, /bit	AJMP page+05XX	MOV C, bit	INC DPTR	MUL AB	???	MOV @R0, direct	MOV @R1, direct	MOV R0, direct	MOV R1, direct	MOV R2, direct	MOV R3, direct	MOV R4, direct	MOV R5, direct	MOV R6, direct	MOV R7, direct
B	ANL C, /bit	ACALL page+05XX	CPL bit	CPL C	CJNE A, #data, -128+127	CJNE A, direct, -128+127	CJNE @R0, #data, -128+127	CJNE @R1, #data, -128+127	CJNE R0, #data, -128+127	CJNE R1, #data, -128+127	CJNE R2, #data, -128+127	CJNE R3, #data, -128+127	CJNE R4, #data, -128+127	CJNE R5, #data, -128+127	CJNE R6, #data, -128+127	CJNE R7, #data, -128+127
C	PUSH direct	AJMP page+06XX	CLR bit	CLR C	SWAP A	XCH A, direct	XCH A, @R0	XCH A, @R1	XCH A, R0	XCH A, R1	XCH A, R2	XCH A, R3	XCH A, R4	XCH A, R5	XCH A, R6	XCH A, R7
D	POP direct	ACALL page+06XX	SETB bit	SETB C	DA A	DJNZ A, -128+127	XCHD A, @R0	XCHD A, @R1	DJNZ R0, -128+127	DJNZ R1, -128+127	DJNZ R2, -128+127	DJNZ R3, -128+127	DJNZ R4, -128+127	DJNZ R5, -128+127	DJNZ R6, -128+127	DJNZ R7, -128+127
E	MOVX A, @DPTR	AJMP page+07XX	MOVX A, @R0	MOVX A, @R1	CLR A	MOV A, direct	MOV A, @R0	MOV A, @R1	MOV A, R0	MOV A, R1	MOV A, R2	MOV A, R3	MOV A, R4	MOV A, R5	MOV A, R6	MOV A, R7
F	MOVX @DPTR, A	ACALL page+07XX	MOVX @R0, A	MOVX @R1, A	CPL A	MOV direct, A	MOV @R0, A	MOV @R1, A	MOV R0, A	MOV R1, A	MOV R2, A	MOV R3, A	MOV R4, A	MOV R5, A	MOV R6, A	MOV R7, A

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original 8051 instructions timing

1 cycle | 2 cycles | 4 cycles

UPPER NIBBLE	LOWER NIBBLE 0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NOP	AJMP page+00XX	LJMP 0000-FFFF	RR A	INC A	INC direct	INC @R0	INC @R1	INC R0	INC R1	INC R2	INC R3	INC R4	INC R5	INC R6	INC R7
1	JBC bit, -128+127	ACALL page+00XX	LCALL 0000-FFFF	RRC A	DEC A	DEC direct	DEC @R0	DEC @R1	DEC R0	DEC R1	DEC R2	DEC R3	DEC R4	DEC R5	DEC R6	DEC R7
2	JB bit, -128+127	AJMP page+01XX	RET	RL A	ADD A, #data	ADD A, direct	ADD A, @R0	ADD A, @R1	ADD A, R0	ADD A, R1	ADD A, R2	ADD A, R3	ADD A, R4	ADD A, R5	ADD A, R6	ADD A, R7
3	JNB bit, -128+127	ACALL page+01XX	RETI	RLC A	ADDC A, #data	ADDC A, direct	ADDC A, @R0	ADDC A, @R1	ADDC A, R0	ADDC A, R1	ADDC A, R2	ADDC A, R3	ADDC A, R4	ADDC A, R5	ADDC A, R6	ADDC A, R7
4	JC -128+127	AJMP page+02XX	ORL direct, A	ORL direct, #data	ORL A, #data	ORL A, direct	ORL A, @R0	ORL A, @R1	ORL A, R0	ORL A, R1	ORL A, R2	ORL A, R3	ORL A, R4	ORL A, R5	ORL A, R6	ORL A, R7
5	JNC -128+127	ACALL page+02XX	ANL direct, A	ANL direct, #data	ANL A, #data	ANL A, direct	ANL A, @R0	ANL A, @R1	ANL A, R0	ANL A, R1	ANL A, R2	ANL A, R3	ANL A, R4	ANL A, R5	ANL A, R6	ANL A, R7
6	JZ -128+127	AJMP page+03XX	XRL direct, A	XRL direct, #data	XRL A, #data	XRL A, direct	XRL A, @R0	XRL A, @R1	XRL A, R0	XRL A, R1	XRL A, R2	XRL A, R3	XRL A, R4	XRL A, R5	XRL A, R6	XRL A, R7
7	JNZ -128+127	ACALL page+03XX	ORL C, bit	JMP @A+DPTR	MOV A, #data	MOV direct, #data	MOV @R0, #data	MOV @R1, #data	MOV R0, #data	MOV R1, #data	MOV R2, #data	MOV R3, #data	MOV R4, #data	MOV R5, #data	MOV R6, #data	MOV R7, #data
8	SJMP -128+127	AJMP page+04XX	ANL C, bit	MOVC A, @A+PC	DIV AB	MOV direct1, direct2	MOV direct, @R0	MOV direct, @R1	MOV direct, R0	MOV direct, R1	MOV direct, R2	MOV direct, R3	MOV direct, R4	MOV direct, R5	MOV direct, R6	MOV direct, R7
9	MOV DPTR, #data16	ACALL page+04XX	MOV bit, C	MOVC A, @A+DPTR	SUBB A, #data	SUBB A, direct	SUBB A, @R0	SUBB A, @R1	SUBB A, R0	SUBB A, R1	SUBB A, R2	SUBB A, R3	SUBB A, R4	SUBB A, R5	SUBB A, R6	SUBB A, R7
A	ORL C, /bit	AJMP page+05XX	MOV C, bit	INC DPTR	MUL AB	???	MOV @R0, direct	MOV @R1, direct	MOV R0, direct	MOV R1, direct	MOV R2, direct	MOV R3, direct	MOV R4, direct	MOV R5, direct	MOV R6, direct	MOV R7, direct
B	ANL C, /bit	ACALL page+05XX	CPL bit	CPL C	CJNE A, #data, -128+127	CJNE A, direct, -128+127	CJNE @R0, #data, -128+127	CJNE @R1, #data, -128+127	CJNE R0, #data, -128+127	CJNE R1, #data, -128+127	CJNE R2, #data, -128+127	CJNE R3, #data, -128+127	CJNE R4, #data, -128+127	CJNE R5, #data, -128+127	CJNE R6, #data, -128+127	CJNE R7, #data, -128+127
C	PUSH direct	AJMP page+06XX	CLR bit	CLR C	SWAP A	XCH A, direct	XCH A, @R0	XCH A, @R1	XCH A, R0	XCH A, R1	XCH A, R2	XCH A, R3	XCH A, R4	XCH A, R5	XCH A, R6	XCH A, R7
D	POP direct	ACALL page+06XX	SETB bit	SETB C	DA A	DJNZ A, -128+127	XCHD A, @R0	XCHD A, @R1	DJNZ R0, -128+127	DJNZ R1, -128+127	DJNZ R2, -128+127	DJNZ R3, -128+127	DJNZ R4, -128+127	DJNZ R5, -128+127	DJNZ R6, -128+127	DJNZ R7, -128+127
E	MOVX A, @DPTR	AJMP page+07XX	MOVX A, @R0	MOVX A, @R1	CLR A	MOV A, direct	MOV A, @R0	MOV A, @R1	MOV A, R0	MOV A, R1	MOV A, R2	MOV A, R3	MOV A, R4	MOV A, R5	MOV A, R6	MOV A, R7
F	MOVX @DPTR, A	ACALL page+07XX	MOVX @R0, A	MOVX @R1, A	CPL A	MOV direct, A	MOV @R0, A	MOV @R1, A	MOV R0, A	MOV R1, A	MOV R2, A	MOV R3, A	MOV R4, A	MOV R5, A	MOV R6, A	MOV R7, A

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UPPER NIBBLE	LOWER NIBBLE: 0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
	instructions size													1 byte	2 bytes	3 bytes
0	NOP	AJMP page+00XX	LJMP 0000-FFFF	RR A	INC A	INC direct	INC @R0	INC @R1	INC R0	INC R1	INC R2	INC R3	INC R4	INC R5	INC R6	INC R7
1	JBC bit, -128+127	ACALL page+00XX	LCALL 0000-FFFF	RRC A	DEC A	DEC direct	DEC @R0	DEC @R1	DEC R0	DEC R1	DEC R2	DEC R3	DEC R4	DEC R5	DEC R6	DEC R7
2	JB bit, -128+127	AJMP page+01XX	RET	RL A	ADD A, #data	ADD A, direct	ADD A, @R0	ADD A, @R1	ADD A, R0	ADD A, R1	ADD A, R2	ADD A, R3	ADD A, R4	ADD A, R5	ADD A, R6	ADD A, R7
3	JNB bit, -128+127	ACALL page+01XX	RETI	RLC A	ADDC A, #data	ADDC A, direct	ADDC A, @R0	ADDC A, @R1	ADDC A, R0	ADDC A, R1	ADDC A, R2	ADDC A, R3	ADDC A, R4	ADDC A, R5	ADDC A, R6	ADDC A, R7
4	JC -128+127	AJMP page+02XX	ORL direct, A	ORL direct, #data	ORL A, #data	ORL A, direct	ORL A, @R0	ORL A, @R1	ORL A, R0	ORL A, R1	ORL A, R2	ORL A, R3	ORL A, R4	ORL A, R5	ORL A, R6	ORL A, R7
5	JNC -128+127	ACALL page+02XX	ANL direct, A	ANL direct, #data	ANL A, #data	ANL A, direct	ANL A, @R0	ANL A, @R1	ANL A, R0	ANL A, R1	ANL A, R2	ANL A, R3	ANL A, R4	ANL A, R5	ANL A, R6	ANL A, R7
6	JZ -128+127	AJMP page+03XX	XRL direct, A	XRL direct, #data	XRL A, #data	XRL A, direct	XRL A, @R0	XRL A, @R1	XRL A, R0	XRL A, R1	XRL A, R2	XRL A, R3	XRL A, R4	XRL A, R5	XRL A, R6	XRL A, R7
7	JNZ -128+127	ACALL page+03XX	ORL C, bit	JMP @A+DPTR	MOV A, #data	MOV direct, #data	MOV @R0, #data	MOV @R1, #data	MOV R0, #data	MOV R1, #data	MOV R2, #data	MOV R3, #data	MOV R4, #data	MOV R5, #data	MOV R6, #data	MOV R7, #data
8	SJMP -128+127	AJMP page+04XX	ANL C, bit	MOVC A, @A+PC	DIV AB	MOV direct1, direct2	MOV direct, @R0	MOV direct, @R1	MOV direct, R0	MOV direct, R1	MOV direct, R2	MOV direct, R3	MOV direct, R4	MOV direct, R5	MOV direct, R6	MOV direct, R7
9	MOV DPTR, #data16	ACALL page+04XX	MOV bit, C	MOVC A, @A+DPTR	SUBB A, #data	SUBB A, direct	SUBB A, @R0	SUBB A, @R1	SUBB A, R0	SUBB A, R1	SUBB A, R2	SUBB A, R3	SUBB A, R4	SUBB A, R5	SUBB A, R6	SUBB A, R7
A	ORL C, /bit	AJMP page+05XX	MOV C, bit	INC DPTR	MUL AB	???	MOV @R0, direct	MOV @R1, direct	MOV R0, direct	MOV R1, direct	MOV R2, direct	MOV R3, direct	MOV R4, direct	MOV R5, direct	MOV R6, direct	MOV R7, direct
B	ANL C, /bit	ACALL page+05XX	CPL bit	CPL C	CJNE A, #data, -128+127	CJNE A, direct, -128+127	CJNE @R0, #data, -128+127	CJNE @R1, #data, -128+127	CJNE R0, #data, -128+127	CJNE R1, #data, -128+127	CJNE R2, #data, -128+127	CJNE R3, #data, -128+127	CJNE R4, #data, -128+127	CJNE R5, #data, -128+127	CJNE R6, #data, -128+127	CJNE R7, #data, -128+127
C	PUSH direct	AJMP page+06XX	CLR bit	CLR C	SWAP A	XCH A, direct	XCH A, @R0	XCH A, @R1	XCH A, R0	XCH A, R1	XCH A, R2	XCH A, R3	XCH A, R4	XCH A, R5	XCH A, R6	XCH A, R7
D	POP direct	ACALL page+06XX	SETB bit	SETB C	DA A	DJNZ A, -128+127	XCHD A, @R0	XCHD A, @R1	DJNZ R0, -128+127	DJNZ R1, -128+127	DJNZ R2, -128+127	DJNZ R3, -128+127	DJNZ R4, -128+127	DJNZ R5, -128+127	DJNZ R6, -128+127	DJNZ R7, -128+127
E	MOVX A, @DPTR	AJMP page+07XX	MOVX A, @R0	MOVX A, @R1	CLR A	MOV A, direct	MOV A, @R0	MOV A, @R1	MOV A, R0	MOV A, R1	MOV A, R2	MOV A, R3	MOV A, R4	MOV A, R5	MOV A, R6	MOV A, R7
F	MOVX @DPTR, A	ACALL page+07XX	MOVX @R0, A	MOVX @R1, A	CPL A	MOV direct, A	MOV @R0, A	MOV @R1, A	MOV R0, A	MOV R1, A	MOV R2, A	MOV R3, A	MOV R4, A	MOV R5, A	MOV R6, A	MOV R7, A

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UPPER NIBBLE	affected flags				LOWER NIBBLE								none	C,OV,AC	C=0, OV	C
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NOP	AJMP page+00XX	LJMP 0000-FFFF	RR A	INC A	INC direct	INC @R0	INC @R1	INC R0	INC R1	INC R2	INC R3	INC R4	INC R5	INC R6	INC R7
1	JBC bit, -128+127	ACALL page+00XX	LCALL 0000-FFFF	RRC A	DEC A	DEC direct	DEC @R0	DEC @R1	DEC R0	DEC R1	DEC R2	DEC R3	DEC R4	DEC R5	DEC R6	DEC R7
2	JB bit, -128+127	AJMP page+01XX	RET	RL A	ADD A, #data	ADD A, direct	ADD A, @R0	ADD A, @R1	ADD A, R0	ADD A, R1	ADD A, R2	ADD A, R3	ADD A, R4	ADD A, R5	ADD A, R6	ADD A, R7
3	JNB bit, -128+127	ACALL page+01XX	RETI	RLC A	ADDC A, #data	ADDC A, direct	ADDC A, @R0	ADDC A, @R1	ADDC A, R0	ADDC A, R1	ADDC A, R2	ADDC A, R3	ADDC A, R4	ADDC A, R5	ADDC A, R6	ADDC A, R7
4	JC -128+127	AJMP page+02XX	ORL direct, A	ORL direct, #data	ORL A, #data	ORL A, direct	ORL A, @R0	ORL A, @R1	ORL A, R0	ORL A, R1	ORL A, R2	ORL A, R3	ORL A, R4	ORL A, R5	ORL A, R6	ORL A, R7
5	JNC -128+127	ACALL page+02XX	ANL direct, A	ANL direct, #data	ANL A, #data	ANL A, direct	ANL A, @R0	ANL A, @R1	ANL A, R0	ANL A, R1	ANL A, R2	ANL A, R3	ANL A, R4	ANL A, R5	ANL A, R6	ANL A, R7
6	JZ -128+127	AJMP page+03XX	XRL direct, A	XRL direct, #data	XRL A, #data	XRL A, direct	XRL A, @R0	XRL A, @R1	XRL A, R0	XRL A, R1	XRL A, R2	XRL A, R3	XRL A, R4	XRL A, R5	XRL A, R6	XRL A, R7
7	JNZ -128+127	ACALL page+03XX	ORL C, bit	JMP @A+DPTR	MOV A, #data	MOV direct, #data	MOV @R0, #data	MOV @R1, #data	MOV R0, #data	MOV R1, #data	MOV R2, #data	MOV R3, #data	MOV R4, #data	MOV R5, #data	MOV R6, #data	MOV R7, #data
8	SJMP -128+127	AJMP page+04XX	ANL C, bit	MOVC A, @A+PC	DIV AB	MOV direct1, direct2	MOV direct, @R0	MOV direct, @R1	MOV direct, R0	MOV direct, R1	MOV direct, R2	MOV direct, R3	MOV direct, R4	MOV direct, R5	MOV direct, R6	MOV direct, R7
9	MOV DPTR, #data16	ACALL page+04XX	MOV bit, C	MOVC A, @A+DPTR	SUBB A, #data	SUBB A, direct	SUBB A, @R0	SUBB A, @R1	SUBB A, R0	SUBB A, R1	SUBB A, R2	SUBB A, R3	SUBB A, R4	SUBB A, R5	SUBB A, R6	SUBB A, R7
A	ORL C, /bit	AJMP page+05XX	MOV C, bit	INC DPTR	MUL AB	???	MOV @R0, direct	MOV @R1, direct	MOV R0, direct	MOV R1, direct	MOV R2, direct	MOV R3, direct	MOV R4, direct	MOV R5, direct	MOV R6, direct	MOV R7, direct
B	ANL C, /bit	ACALL page+05XX	CPL bit	CPL C	CJNE A, #data, -128+127	CJNE A, direct, -128+127	CJNE @R0, #data, -128+127	CJNE @R1, #data, -128+127	CJNE R0, #data, -128+127	CJNE R1, #data, -128+127	CJNE R2, #data, -128+127	CJNE R3, #data, -128+127	CJNE R4, #data, -128+127	CJNE R5, #data, -128+127	CJNE R6, #data, -128+127	CJNE R7, #data, -128+127
C	PUSH direct	AJMP page+06XX	CLR bit	CLR C	SWAP A	XCH A, direct	XCH A, @R0	XCH A, @R1	XCH A, R0	XCH A, R1	XCH A, R2	XCH A, R3	XCH A, R4	XCH A, R5	XCH A, R6	XCH A, R7
D	POP direct	ACALL page+06XX	SETB bit	SETB C	DA A	DJNZ A, -128+127	XCHD A, @R0	XCHD A, @R1	DJNZ R0, -128+127	DJNZ R1, -128+127	DJNZ R2, -128+127	DJNZ R3, -128+127	DJNZ R4, -128+127	DJNZ R5, -128+127	DJNZ R6, -128+127	DJNZ R7, -128+127
E	MOVX A, @DPTR	AJMP page+07XX	MOVX A, @R0	MOVX A, @R1	CLR A	MOV A, direct	MOV A, @R0	MOV A, @R1	MOV A, R0	MOV A, R1	MOV A, R2	MOV A, R3	MOV A, R4	MOV A, R5	MOV A, R6	MOV A, R7
F	MOVX @DPTR, A	ACALL page+07XX	MOVX @R0, A	MOVX @R1, A	CPL A	MOV direct, A	MOV @R0, A	MOV @R1, A	MOV R0, A	MOV R1, A	MOV R2, A	MOV R3, A	MOV R4, A	MOV R5, A	MOV R6, A	MOV R7, A

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UPPER NIBBLE	memory type used / LOWER NIBBLE	0	1	2	3	4	5	6	7	8	9	A	B	(int.) bit C	internal D	external E	code F
	0	NOP	AJMP page+00XX	LJMP 0000-FFFF	RR A	INC A	INC direct	INC @R0	INC @R1	INC R0	INC R1	INC R2	INC R3	INC R4	INC R5	INC R6	INC R7
	1	JBC bit, -128+127	ACALL page+00XX	LCALL 0000-FFFF	RRC A	DEC A	DEC direct	DEC @R0	DEC @R1	DEC R0	DEC R1	DEC R2	DEC R3	DEC R4	DEC R5	DEC R6	DEC R7
	2	JB bit, -128+127	AJMP page+01XX	RET	RL A	ADD A, #data	ADD A, direct	ADD A, @R0	ADD A, @R1	ADD A, R0	ADD A, R1	ADD A, R2	ADD A, R3	ADD A, R4	ADD A, R5	ADD A, R6	ADD A, R7
	3	JNB bit, -128+127	ACALL page+01XX	RETI	RLC A	ADDC A, #data	ADDC A, direct	ADDC A, @R0	ADDC A, @R1	ADDC A, R0	ADDC A, R1	ADDC A, R2	ADDC A, R3	ADDC A, R4	ADDC A, R5	ADDC A, R6	ADDC A, R7
	4	JC -128+127	AJMP page+02XX	ORL direct, A	ORL direct, #data	ORL A, #data	ORL A, direct	ORL A, @R0	ORL A, @R1	ORL A, R0	ORL A, R1	ORL A, R2	ORL A, R3	ORL A, R4	ORL A, R5	ORL A, R6	ORL A, R7
	5	JNC -128+127	ACALL page+02XX	ANL direct, A	ANL direct, #data	ANL A, #data	ANL A, direct	ANL A, @R0	ANL A, @R1	ANL A, R0	ANL A, R1	ANL A, R2	ANL A, R3	ANL A, R4	ANL A, R5	ANL A, R6	ANL A, R7
	6	JZ -128+127	AJMP page+03XX	XRL direct, A	XRL direct, #data	XRL A, #data	XRL A, direct	XRL A, @R0	XRL A, @R1	XRL A, R0	XRL A, R1	XRL A, R2	XRL A, R3	XRL A, R4	XRL A, R5	XRL A, R6	XRL A, R7
	7	JNZ -128+127	ACALL page+03XX	ORL C, bit	JMP @A+DPTR	MOV A, #data	MOV direct, #data	MOV @R0, #data	MOV @R1, #data	MOV R0, #data	MOV R1, #data	MOV R2, #data	MOV R3, #data	MOV R4, #data	MOV R5, #data	MOV R6, #data	MOV R7, #data
	8	SJMP -128+127	AJMP page+04XX	ANL C, bit	MOVC A, @A+PC	DIV AB	MOV direct1, direct2	MOV direct, @R0	MOV direct, @R1	MOV direct, R0	MOV direct, R1	MOV direct, R2	MOV direct, R3	MOV direct, R4	MOV direct, R5	MOV direct, R6	MOV direct, R7
	9	MOV DPTR, #data16	ACALL page+04XX	MOV bit, C	MOVC A, @A+DPTR	SUBB A, #data	SUBB A, direct	SUBB A, @R0	SUBB A, @R1	SUBB A, R0	SUBB A, R1	SUBB A, R2	SUBB A, R3	SUBB A, R4	SUBB A, R5	SUBB A, R6	SUBB A, R7
	A	ORL C, /bit	AJMP page+05XX	MOV C, bit	INC DPTR	MUL AB	???	MOV @R0, direct	MOV @R1, direct	MOV R0, direct	MOV R1, direct	MOV R2, direct	MOV R3, direct	MOV R4, direct	MOV R5, direct	MOV R6, direct	MOV R7, direct
	B	ANL C, /bit	ACALL page+05XX	CPL bit	CPL C	CJNE A, #data, -128+127	CJNE A, direct, -128+127	CJNE @R0, #data, -128+127	CJNE @R1, #data, -128+127	CJNE R0, #data, -128+127	CJNE R1, #data, -128+127	CJNE R2, #data, -128+127	CJNE R3, #data, -128+127	CJNE R4, #data, -128+127	CJNE R5, #data, -128+127	CJNE R6, #data, -128+127	CJNE R7, #data, -128+127
	C	PUSH direct	AJMP page+06XX	CLR bit	CLR C	SWAP A	XCH A, direct	XCH A, @R0	XCH A, @R1	XCH A, R0	XCH A, R1	XCH A, R2	XCH A, R3	XCH A, R4	XCH A, R5	XCH A, R6	XCH A, R7
	D	POP direct	ACALL page+06XX	SETB bit	SETB C	DA A	DJNZ A, -128+127	XCHD A, @R0	XCHD A, @R1	DJNZ R0, -128+127	DJNZ R1, -128+127	DJNZ R2, -128+127	DJNZ R3, -128+127	DJNZ R4, -128+127	DJNZ R5, -128+127	DJNZ R6, -128+127	DJNZ R7, -128+127
	E	MOVX A, @DPTR	AJMP page+07XX	MOVX A, @R0	MOVX A, @R1	CLR A	MOV A, direct	MOV A, @R0	MOV A, @R1	MOV A, R0	MOV A, R1	MOV A, R2	MOV A, R3	MOV A, R4	MOV A, R5	MOV A, R6	MOV A, R7
	F	MOVX @DPTR, A	ACALL page+07XX	MOVX @R0, A	MOVX @R1, A	CPL A	MOV direct, A	MOV @R0, A	MOV @R1, A	MOV R0, A	MOV R1, A	MOV R2, A	MOV R3, A	MOV R4, A	MOV R5, A	MOV R6, A	MOV R7, A

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jump types: relative | page | absolute | indirect

UPPER NIBBLE \ LOWER NIBBLE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NOP	AJMP page+00XX	LJMP 0000-FFFF	RR A	INC A	INC direct	INC @R0	INC @R1	INC R0	INC R1	INC R2	INC R3	INC R4	INC R5	INC R6	INC R7
1	JBC bit, -128+127	ACALL page+00XX	LCALL 0000-FFFF	RRC A	DEC A	DEC direct	DEC @R0	DEC @R1	DEC R0	DEC R1	DEC R2	DEC R3	DEC R4	DEC R5	DEC R6	DEC R7
2	JB bit, -128+127	AJMP page+01XX	RET	RL A	ADD A, #data	ADD A, direct	ADD A, @R0	ADD A, @R1	ADD A, R0	ADD A, R1	ADD A, R2	ADD A, R3	ADD A, R4	ADD A, R5	ADD A, R6	ADD A, R7
3	JNB bit, -128+127	ACALL page+01XX	RETI	RLC A	ADDC A, #data	ADDC A, direct	ADDC A, @R0	ADDC A, @R1	ADDC A, R0	ADDC A, R1	ADDC A, R2	ADDC A, R3	ADDC A, R4	ADDC A, R5	ADDC A, R6	ADDC A, R7
4	JC -128+127	AJMP page+02XX	ORL direct, A	ORL direct, #data	ORL A, #data	ORL A, direct	ORL A, @R0	ORL A, @R1	ORL A, R0	ORL A, R1	ORL A, R2	ORL A, R3	ORL A, R4	ORL A, R5	ORL A, R6	ORL A, R7
5	JNC -128+127	ACALL page+02XX	ANL direct, A	ANL direct, #data	ANL A, #data	ANL A, direct	ANL A, @R0	ANL A, @R1	ANL A, R0	ANL A, R1	ANL A, R2	ANL A, R3	ANL A, R4	ANL A, R5	ANL A, R6	ANL A, R7
6	JZ -128+127	AJMP page+03XX	XRL direct, A	XRL direct, #data	XRL A, #data	XRL A, direct	XRL A, @R0	XRL A, @R1	XRL A, R0	XRL A, R1	XRL A, R2	XRL A, R3	XRL A, R4	XRL A, R5	XRL A, R6	XRL A, R7
7	JNZ -128+127	ACALL page+03XX	ORL C, bit	JMP @A+DPTR	MOV A, #data	MOV direct, #data	MOV @R0, #data	MOV @R1, #data	MOV R0, #data	MOV R1, #data	MOV R2, #data	MOV R3, #data	MOV R4, #data	MOV R5, #data	MOV R6, #data	MOV R7, #data
8	SJMP -128+127	AJMP page+04XX	ANL C, bit	MOVC A, @A+PC	DIV AB	MOV direct1, direct2	MOV direct, @R0	MOV direct, @R1	MOV direct, R0	MOV direct, R1	MOV direct, R2	MOV direct, R3	MOV direct, R4	MOV direct, R5	MOV direct, R6	MOV direct, R7
9	MOV DPTR, #data16	ACALL page+04XX	MOV bit, C	MOVC A, @A+DPTR	SUBB A, #data	SUBB A, direct	SUBB A, @R0	SUBB A, @R1	SUBB A, R0	SUBB A, R1	SUBB A, R2	SUBB A, R3	SUBB A, R4	SUBB A, R5	SUBB A, R6	SUBB A, R7
A	ORL C, /bit	AJMP page+05XX	MOV C, bit	INC DPTR	MUL AB	???	MOV @R0, direct	MOV @R1, direct	MOV R0, direct	MOV R1, direct	MOV R2, direct	MOV R3, direct	MOV R4, direct	MOV R5, direct	MOV R6, direct	MOV R7, direct
B	ANL C, /bit	ACALL page+05XX	CPL bit	CPL C	CJNE A, #data, -128+127	CJNE A, direct, -128+127	CJNE @R0, #data, -128+127	CJNE @R1, #data, -128+127	CJNE R0, #data, -128+127	CJNE R1, #data, -128+127	CJNE R2, #data, -128+127	CJNE R3, #data, -128+127	CJNE R4, #data, -128+127	CJNE R5, #data, -128+127	CJNE R6, #data, -128+127	CJNE R7, #data, -128+127
C	PUSH direct	AJMP page+06XX	CLR bit	CLR C	SWAP A	XCH A, direct	XCH A, @R0	XCH A, @R1	XCH A, R0	XCH A, R1	XCH A, R2	XCH A, R3	XCH A, R4	XCH A, R5	XCH A, R6	XCH A, R7
D	POP direct	ACALL page+06XX	SETB bit	SETB C	DA A	DJNZ A, -128+127	XCHD A, @R0	XCHD A, @R1	DJNZ R0, -128+127	DJNZ R1, -128+127	DJNZ R2, -128+127	DJNZ R3, -128+127	DJNZ R4, -128+127	DJNZ R5, -128+127	DJNZ R6, -128+127	DJNZ R7, -128+127
E	MOVX A, @DPTR	AJMP page+07XX	MOVX A, @R0	MOVX A, @R1	CLR A	MOV A, direct	MOV A, @R0	MOV A, @R1	MOV A, R0	MOV A, R1	MOV A, R2	MOV A, R3	MOV A, R4	MOV A, R5	MOV A, R6	MOV A, R7
F	MOVX @DPTR, A	ACALL page+07XX	MOVX @R0, A	MOVX @R1, A	CPL A	MOV direct, A	MOV @R0, A	MOV @R1, A	MOV R0, A	MOV R1, A	MOV R2, A	MOV R3, A	MOV R4, A	MOV R5, A	MOV R6, A	MOV R7, A