O R E G A N O S Y S T E M S
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MC8051 - VHDL 8051 Microcontroller IP Core

Instruction	Programm Bytes	mc8051 IP-Core Clock Cycles	Original 8051 Instruction Cycles	Original 8051 Clock Cycles	Performance Advantage
ACALL	2	2	2	24	12
ADD_A_RR	1	2	1	12	6
ADD_A_D	2	3	1	12	4
ADD_A_ATRI	1	2	1	12	6
ADD_A_DATA	2	2	1	12	6
ADDC_A_RR	1	2	1	12	6
ADDC_A_D	2	3	1	12	4
ADDC_A_ATRI	1	2	1	12	6
ADDC_A_DATA	2	2	1	12	6
AJMP	2	2	2	24	12
ANL_A_RR	1	2	1	12	6
ANL_A_D	2	3	1	12	4
ANL_A_ATRI	1	2	1	12	6
ANL_A_DATA	2	2	1	12	6
ANL_D_A	2	3	1	12	4
ANL_D_DATA	3	3	2	24	8
ANL_C_BIT	2	3	2	24	8
ANL_C_NBIT	2	3	2	24	8
CJNE_A_D	3	3	2	24	8
CJNE_A_DATA	3	3	2	24	8
CJNE_RR_DATA	3	3	2	24	8
CJNE_ATRI_DATA	3	3	2	24	8
CLR_A	1	1	1	12	12
CLR_C	1	1	1	12	12
CLR_BIT	2	2	1	12	6
CPL_A	1	1	1	12	12
CPL_C	1	1	1	12	12
CPL_BIT	2	3	1	12	4
DA_A	1	1	1	12	12
DEC_A	1	1	1	12	12
DEC_RR	1	2	1	12	6
DEC_D	2	3	1	12	4
DEC_ATRI	1	2	1	12	6
DIV_AB	1	3	4	48	16
DJNZ_RR	2	2	2	24	12
DJNZ_D	3	3	2	24	8
INC_A	1	1	1	12	12
INC_RR	1	2	1	12	6
INC_D	2	3	1	12	4
INC_ATRI	1	2	1	12	6
INC_DPTR	1	4	2	24	6
JB	3	3	2	24	8
JBC	3	3	2	24	8
JC	2	2	2	24	12

JMP_A_DPTR	1	1	2	24	24
JNB	3	3	2	24	8
JNC	2	2	2	24	12
JNZ	2	2	2	24	12
JZ	2	2	2	24	12
LCALL	3	3	2	24	8
LJMP	3	3	2	24	8
MOV_A_RR	1	2	1	12	6
MOV_A_D	2	3	1	12	4
MOV_A_ATRI	1	2	1	12	6
MOV_A_DATA	2	2	1	12	6
MOV_RR_A	1	1	1	12	12
MOV_RR_D	2	3	2	24	8
MOV_RR_DATA	2	2	1	12	6
MOV_D_A	2	2	1	12	6
MOV_D_RR	2	2	2	24	12
MOV_D_D	3	3	2	24	8
MOV_D_ATRI	2	2	2	24	12
MOV_D_DATA	3	3	2	24	8
MOV_ATRI_A	1	1	1	12	12
MOV_ATRI_D	2	3	2	24	8
MOV_ATRI_DATA	2	2	1	12	6
MOVC_A_ATDPTR	1	2	2	24	12
MOVC_A_ATPC	1	2	2	24	12
MOVX_A_ATRI	1	2	2	24	12
MOVX_A_ATDPTR	1	2	2	24	12
MOVX_ATRI_A	1	1	1	12	12
MOVX_ATDPTR_A	1	1	2	24	24
MOV_C_BIT	2	3	1	12	4
MOV_BIT_C	2	2	2	24	12
MOV_DPTR_DATA	3	3	2	24	8
MUL_AB	1	3	4	48	16
NOP	1	1	1	12	12
ORL_A_RR	1	2	1	12	6
ORL_A_D	2	3	1	12	4
ORL_A_ATRI	1	2	1	12	6
ORL_A_DATA	2	2	1	12	6
ORL_D_A	2	3	1	12	4
ORL_D_DATA	3	3	2	24	8
ORL_C_BIT	2	3	2	24	8
ORL_C_NBIT	2	3	2	24	8
POP	2	2	2	24	12
PUSH	2	3	2	24	8
RET	1	3	2	24	8
RETI	1	3	2	24	8
RL_A	1	1	1	12	12
RLC_A	1	1	1	12	12
RR_A	1	1	1	12	12
RRC_A	1	1	1	12	12
SETB_C	1	1	1	12	12
SETB_BIT	2	2	1	12	6
SJMP	2	2	2	24	12
SUBB_A_RR	1	2	1	12	6
SUBB_A_D	2	3	1	12	4
SUBB_A_ATRI	1	2	1	12	6
SUBB_A_DATA	2	2	1	12	6
SWAP_A	1	1	1	12	12
XCH_A_RR	1	3	1	12	4

XCH_A_D	2	4	1	12	3
XCH_A_ATRI	1	3	1	12	4
XCHD_A_ATRI	1	3	1	12	4
XRL_A_RR	1	2	1	12	6
XRL_A_D	2	3	1	12	4
XRL_A_ATRI	1	2	1	12	6
XRL_A_DATA	2	2	1	12	6
XRL_D_A	2	3	1	12	4
XRL_D_DATA	3	3	2	24	8
		Average Performance Gain:			8.405405405