PIC16F84A INSTRUCTION SET



| Operan | ds | Description | Cycles | 14-Bit Opcode | | | | Status | Neter |
|--|------|------------------------------|--------|---------------|------|------|------|----------|-------|
| | | | | MSb | | | LSb | Affected | Notes |
| BYTE-ORIENTED FILE REGISTER OPERATIONS | | | | | | | | | |
| ADDWF | f, d | Add W and f | 1 | 00 | 0111 | dfff | ffff | C,DC,Z | 1,2 |
| ANDWF | f, d | AND W with f | 1 | 00 | 0101 | dfff | ffff | Z | 1,2 |
| CLRF | f | Clear f | 1 | 00 | 0001 | lfff | ffff | Z | 2 |
| CLRW | - | Clear W | 1 | 00 | 0001 | 0xxx | xxxx | Z | |
| COMF | f, d | Complement f | 1 | 00 | 1001 | dfff | ffff | Z | 1,2 |
| DECF | f, d | Decrement f | 1 | 00 | 0011 | dfff | ffff | Z | 1,2 |
| DECFSZ | f, d | Decrement f, Skip if 0 | 1 (2) | 00 | 1011 | dfff | ffff | | 1,2,3 |
| INCF | f, d | Increment f | ì | 00 | 1010 | dfff | ffff | Z | 1,2 |
| INCFSZ | f, d | Increment f, Skip if 0 | 1 (2) | 00 | 1111 | dfff | ffff | | 1,2,3 |
| IORWF | f, d | Inclusive OR W with f | 1 | 00 | 0100 | dfff | ffff | Z | 1,2 |
| MOVF | f, d | Move f | 1 | 00 | 1000 | dfff | ffff | Z | 1,2 |
| MOVWF | f | Move W to f | 1 | 0.0 | 0000 | lfff | ffff | _ | - ,= |
| NOP | - | No Operation | 1 | 00 | 0000 | 0xx0 | 0000 | | |
| RLF | f. d | Rotate Left f through Carry | 1 | 0.0 | 1101 | dfff | ffff | С | 1,2 |
| RRF | f, d | Rotate Right f through Carry | 1 | 00 | 1100 | | ffff | Č | 1,2 |
| SUBWF | f, d | Subtract W from f | 1 | 00 | 0010 | | ffff | C,DC,Z | 1,2 |
| SWAPF | f, d | Swap nibbles in f | 1 | 00 | 1110 | dfff | ffff | 0,00,2 | 1,2 |
| XORWF | f, d | Exclusive OR W with f | 1 | 0.0 | 0110 | dfff | ffff | Z | 1,2 |
| BIT-ORIENTED FILE REGISTER OPERATIONS | | | | | | | | | |
| BCF | f, b | Bit Clear f | 1 | 01 | | bfff | ffff | | 1,2 |
| BSF | f, b | Bit Set f | 1 | 01 | | | ffff | | - |
| _ | , | | - | | | | | | 1,2 |
| BTFSC | f, b | Bit Test f, Skip if Clear | 1 (2) | 01 | | | ffff | | 3 |
| BTFSS | f, b | Bit Test f, Skip if Set | 1 (2) | 01 | 11bb | bfff | ffff | | 3 |
| LITERAL AND CONTROL OPERATIONS | | | | | | | | | |
| ADDLW | k | Add literal and W | 1 | 11 | 111x | kkkk | kkkk | C,DC,Z | |
| ANDLW | k | AND literal with W | 1 | 11 | 1001 | kkkk | kkkk | Z | |
| CALL | k | Call subroutine | 2 | 10 | 0kkk | kkkk | kkkk | | |
| CLRWDT | - | Clear Watchdog Timer | 1 | 00 | 0000 | 0110 | 0100 | TO,PD | |
| GOTO | k | Go to address | 2 | 10 | 1kkk | kkkk | kkkk | | |
| IORLW | k | Inclusive OR literal with W | 1 | 11 | 1000 | kkkk | kkkk | Z | |
| MOVLW | k | Move literal to W | 1 | 11 | 00xx | kkkk | kkkk | | |
| RETFIE | - | Return from interrupt | 2 | 00 | 0000 | 0000 | 1001 | | |
| RETLW | k | Return with literal in W | 2 | 11 | 01xx | kkkk | kkkk | | |
| RETURN | - | Return from Subroutine | 2 | 00 | 0000 | 0000 | 1000 | | |
| SLEEP | - | Go into standby mode | 1 | 00 | 0000 | 0110 | 0011 | TO,PD | |
| SUBLW | k | Subtract W from literal | 1 | 11 | 110x | kkkk | kkkk | C,DC,Z | |
| XORLW | k | Exclusive OR literal with W | 1 | 11 | 1010 | kkkk | kkkk | Z | |

Note 1: When an I/O register is modified as a function of itself (e.g., MOVF PORTB, 1), the value used will be that value present on the pins themselves. For example, if the data latch is '1' for a pin configured as input and is driven low by an external device, the data will be written back with a '0'.

^{2:} If this instruction is executed on the TMR0 register (and, where applicable, d = 1), the prescaler will be cleared if assigned to the Timer0 Module.

^{3:} If Program Counter (PC) is modified or a conditional test is true, the instruction requires two cycles. The second cycle is executed as a NOP.