

```

LIST
; P16F628.INC Standard Header File, Version 1.01    Microchip Technology, Inc.
NOLIST

```

```

; This header file defines configurations, registers, and other useful bits of
; information for the PIC16F628 microcontroller.  These names are taken to match
; the data sheets as closely as possible.

```

```

; Note that the processor must be selected before this file is
; included.  The processor may be selected the following ways:

```

- ```

;     1. Command line switch:
;         C:\ MPASM MYFILE.ASM /PIC16F628
;     2. LIST directive in the source file
;         LIST P=PIC16F628
;     3. Processor Type entry in the MPASM full-screen interface

```

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;
;     Revision History
;
=====

```

```

;Rev:   Date:   Reason:
;1.01  13 Sept 2001  Added _DATA_CP_ON and _DATA_CP_OFF
;1.00  10 Feb 1999  Initial Release

```

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=====
;
;     Verify Processor
;
=====

```

```

IFNDEF __16F628
    MESSG "Processor-header file mismatch.  Verify selected processor."
ENDIF

```

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;
;     Register Definitions
;
=====

```

```

W           EQU    H'0000'
F           EQU    H'0001'

```

```

;----- Register Files-----

```

```

INDF           EQU    H'0000'
TMR0           EQU    H'0001'
PCL            EQU    H'0002'
STATUS        EQU    H'0003'
FSR           EQU    H'0004'
PORTA         EQU    H'0005'
PORTB         EQU    H'0006'
PCLATH        EQU    H'000A'
INTCON        EQU    H'000B'
PIR1          EQU    H'000C'
TMR1L         EQU    H'000E'
TMR1H         EQU    H'000F'
T1CON         EQU    H'0010'
TMR2          EQU    H'0011'
T2CON         EQU    H'0012'
CCPR1L        EQU    H'0015'
CCPR1H        EQU    H'0016'
CCP1CON       EQU    H'0017'
RCSTA         EQU    H'0018'
TXREG         EQU    H'0019'
RCREG         EQU    H'001A'
CMCON         EQU    H'001F'

```

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OPTION_REG    EQU    H'0081'
TRISA         EQU    H'0085'
TRISB         EQU    H'0086'
PIE1          EQU    H'008C'
PCON          EQU    H'008E'
PR2           EQU    H'0092'

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TXSTA          EQU    H'0098'
SPBRG          EQU    H'0099'
EEDATA         EQU    H'009A'
EEADR          EQU    H'009B'
EECON1         EQU    H'009C'
EECON2         EQU    H'009D'
VRCON          EQU    H'009F'

```

;----- STATUS Bits -----

```

IRP            EQU    H'0007'
RP1            EQU    H'0006'
RP0            EQU    H'0005'
NOT_TO         EQU    H'0004'
NOT_PD         EQU    H'0003'
Z              EQU    H'0002'
DC             EQU    H'0001'
C              EQU    H'0000'

```

;----- INTCON Bits -----

```

GIE            EQU    H'0007'
PEIE           EQU    H'0006'
TOIE           EQU    H'0005'
INTE           EQU    H'0004'
RBIE           EQU    H'0003'
TOIF           EQU    H'0002'
INTF           EQU    H'0001'
RBIF           EQU    H'0000'

```

;----- PIR1 Bits -----

```

EEIF           EQU    H'0007'
CMIF           EQU    H'0006'
RCIF           EQU    H'0005'
TXIF           EQU    H'0004'
CCP1IF         EQU    H'0002'
TMR2IF         EQU    H'0001'
TMR1IF         EQU    H'0000'

```

;----- T1CON Bits -----

```

T1CKPS1        EQU    H'0005'
T1CKPS0        EQU    H'0004'
T1OSCEN         EQU    H'0003'
NOT_T1SYNC     EQU    H'0002'
TMR1CS         EQU    H'0001'
TMR1ON         EQU    H'0000'

```

;----- T2CON Bits -----

```

TOUTPS3        EQU    H'0006'
TOUTPS2        EQU    H'0005'
TOUTPS1        EQU    H'0004'
TOUTPS0        EQU    H'0003'
TMR2ON         EQU    H'0002'
T2CKPS1        EQU    H'0001'
T2CKPS0        EQU    H'0000'

```

;----- CCP1CON Bits -----

```

CCP1X          EQU    H'0005'
CCP1Y          EQU    H'0004'
CCP1M3         EQU    H'0003'
CCP1M2         EQU    H'0002'
CCP1M1         EQU    H'0001'
CCP1M0         EQU    H'0000'

```

;----- RCSTA Bits -----

```

SPEN           EQU    H'0007'
RX9            EQU    H'0006'
SREN           EQU    H'0005'
CREN           EQU    H'0004'
ADEN           EQU    H'0003'
FERR           EQU    H'0002'
OERR           EQU    H'0001'
RX9D           EQU    H'0000'

```

;----- CMCON Bits -----

```

C2OUT          EQU    H'0007'
C1OUT          EQU    H'0006'
C2INV          EQU    H'0005'
C1INV          EQU    H'0004'
CIS            EQU    H'0003'
CM2            EQU    H'0002'
CM1            EQU    H'0001'
CM0            EQU    H'0000'

```

----- OPTION Bits -----

```

NOT_RBPU      EQU    H'0007'
INTEDG        EQU    H'0006'
TOCS          EQU    H'0005'
TOSE          EQU    H'0004'
PSA           EQU    H'0003'
PS2           EQU    H'0002'
PS1           EQU    H'0001'
PS0           EQU    H'0000'

```

----- PIE1 Bits -----

```

EEIE          EQU    H'0007'
CMIE          EQU    H'0006'
RCIE          EQU    H'0005'
TXIE          EQU    H'0004'
CCPIE         EQU    H'0002'
TMR2IE        EQU    H'0001'
TMR1IE        EQU    H'0000'

```

----- PCON Bits -----

```

OSCF          EQU    H'0003'
NOT_POR       EQU    H'0001'
NOT_BO        EQU    H'0000'
NOT_BOR       EQU    H'0000'
NOT_BOD       EQU    H'0000'

```

----- TXSTA Bits -----

```

CSRC          EQU    H'0007'
TX9           EQU    H'0006'
TXEN          EQU    H'0005'
SYNC          EQU    H'0004'
BRGH          EQU    H'0002'
TRMT          EQU    H'0001'
TX9D          EQU    H'0000'

```

----- EECON1 Bits -----

```

WRERR         EQU    H'0003'
WREN          EQU    H'0002'
WR            EQU    H'0001'
RD            EQU    H'0000'

```

----- VRCON Bits -----

```

VREN          EQU    H'0007'
VROE          EQU    H'0006'
VRR           EQU    H'0005'
VR3           EQU    H'0003'
VR2           EQU    H'0002'
VR1           EQU    H'0001'
VR0           EQU    H'0000'

```

=====

;

RAM Definition

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```

__MAXRAM H'01FF'
__BADRAM H'07'-H'09', H'0D', H'13'-H'14', H'1B'-H'1E'
__BADRAM H'87'-H'89', H'8D', H'8F'-H'91', H'93'-H'97', H'9E'
__BADRAM H'105', H'107'-H'109', H'10C'-H'11F', H'150'-H'16F'
__BADRAM H'185', H'187'-H'189', H'18C'-H'1EF'

```

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;

```

;      Configuration Bits
;
;=====
_BODEN_ON          EQU    H'3FFF'
_BODEN_OFF         EQU    H'3FBF'
_CP_ALL            EQU    H'03FF'
_CP_75             EQU    H'17FF'
_CP_50             EQU    H'2BFF'
_CP_OFF            EQU    H'3FFF'
_DATA_CP_ON        EQU    H'3EFF'
_DATA_CP_OFF       EQU    H'3FFF'
_PWRTE_OFF         EQU    H'3FFF'
_PWRTE_ON          EQU    H'3FF7'
_WDT_ON            EQU    H'3FFF'
_WDT_OFF           EQU    H'3FFB'
_LVP_ON            EQU    H'3FFF'
_LVP_OFF           EQU    H'3F7F'
_MCLRE_ON          EQU    H'3FFF'
_MCLRE_OFF         EQU    H'3FDF'
_ER_OSC_CLKOUT     EQU    H'3FFF'
_ER_OSC_NOCLKOUT   EQU    H'3FFE'
_INTRC_OSC_CLKOUT  EQU    H'3FFD'
_INTRC_OSC_NOCLKOUT EQU    H'3FFC'
_EXTCLK_OSC        EQU    H'3FEF'
_LP_OSC             EQU    H'3FEC'
_XT_OSC             EQU    H'3FED'
_HS_OSC             EQU    H'3FEE'

```

LIST