

# PIC18 CONFIGURATION SETTINGS ADDENDUM

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## PIC18 CONFIGURATION SETTINGS ADDENDUM

### **Configuration Settings**

This addendum lists the configuration settings available for each of the PIC18 devices for use with MPLAB<sup>®</sup> C18's #pragma config directive and MPASM™ assembler's CONFIG directive.

#### PIC18C242

#### **Code Protect:**

CP = ON	Enabled
CP = OFF	Disabled

#### **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

#### Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

#### **Power-up Timer:**

	PWRT = ON	Enabled
I	PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

#### **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

WDT = OFF	Disabled
WDT = ON	Enabled

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

#### **CCP2 MUX:**

CCP2MUX = OFF	Disable (RB3)
CCP2MUX = ON	Enable (RC1)

#### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

#### PIC18C252

#### **Code Protect:**

CP = ON	Enabled
CP = OFF	Disabled

#### **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

#### Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

#### **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

#### **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

#### **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

#### Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

#### **CCP2 MUX:**

CCP2MUX = OFF	Disable (RB3)
CCP2MUX = ON	Enable (RC1)

#### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

#### PIC18C442

#### **Code Protect:**

CP = ON	Enabled
CP = OFF	Disabled

#### **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

#### Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

#### Power-up Timer:

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

#### **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

#### Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

#### Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

#### **CCP2 MUX:**

CCP2MUX = OFF	Disable (RB3)
CCP2MUX = ON	Enable (RC1)

#### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

#### PIC18C452

#### **Code Protect:**

CP = ON	Enabled
CP = OFF	Disabled

#### **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

#### Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

#### **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

#### **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

#### **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

#### Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

#### **CCP2 MUX:**

CCP2MUX = OFF	Disable (RB3)
CCP2MUX = ON	Enable (RC1)

#### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

#### PIC18C601

#### **Oscillator Selection:**

OSC = LP	LP Oscillator
OSC = EC	EC Oscillator
OSC = HS	HS Oscillator
OSC = RC	RC Oscillator

#### **Power-up Timer:**

PWRT = ON	Enable
PWRT = OFF	Disable

#### **External Bus Data Width:**

BW = 8	8-bit External Bus mode
BW = 16	16-bit External Bus mode

WDT = OFF	Disabled
WDT = ON	Enabled

#### **Watchdog Timer Postscale Selection:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

#### Stack Full/Underflow Reset:

STVR = OFF	Disabled
STVR = ON	Enabled

#### PIC18C658

#### **Code Protect:**

CP = ON	Enabled
CP = OFF	Disabled

#### **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

#### Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

#### **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

#### **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

WDT = OFF	Disabled
WDT = ON	Enabled

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

#### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

#### PIC18C801

#### **Oscillator Selection:**

OSC = LP	LP Oscillator
OSC = EC	EC Oscillator
OSC = HS	HS Oscillator
OSC = RC	RC Oscillator

#### **Power-up Timer:**

PWRT = ON	Enable
PWRT = OFF	Disable

#### **External Bus Data Width:**

BW = 8	8-bit External Bus mode
BW = 16	16-bit External Bus mode

#### **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

#### **Watchdog Timer Postscale Selection:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

#### Stack Full/Underflow Reset:

STVR = OFF	Disabled
STVR = ON	Enabled

#### PIC18C858

#### **Code Protect:**

CP = ON	Enabled
CP = OFF	Disabled

#### **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

#### Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

#### **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

#### **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

#### **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

#### **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

#### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

#### PIC18F1220

#### **Oscillator Selection:**

OSC = LP	LP Oscillator
OSC = XT	XT Oscillator
OSC = HS	HS Oscillator
OSC = EC	External Clock on OSC1, OSC2 as FOSC/4
OSC = ECIO	External Clock on OSC1, OSC2 as RA6
OSC = HSPLL	HS + PLL
OSC = RCIO	External RC on OSC1, OSC2 as RA6
OSC = INTIO2	Internal RC, OSC1 as RA7, OSC2 as RA6
OSC = INTIO1	Internal RC, OSC1 as RA7, OSC2 as FOSC/4
OSC = RC	External RC on OSC1, OSC2 as FOSC/4

#### **Fail-Safe Clock Monitor:**

FSCM = OFF	Fail-Safe Clock Monitor disabled
FSCM = ON	Fail-Safe Clock Monitor enabled

#### **Internal External Switch Over mode:**

IESO = OFF	Internal External Switch Over mode disabled
IESO = ON	Internal External Switch Over mode enabled

#### **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

#### **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

WDT = OFF	Disabled
WDT = ON	Enabled

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

#### MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

#### Stack Full/Overflow Reset:

STVR = OFF	Disabled
STVR = ON	Enabled

#### Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

#### **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

#### **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

#### PIC18F1230

#### **Oscillator Selection:**

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OSC = LP	LP Oscillator
OSC = XT	XT Oscillator
OSC = HS	HS Oscillator
OSC = EC	External Clock on OSC1, OSC2 as FOSC/4
OSC = ECIO	External Clock on OSC1, OSC2 as RA6
OSC = HSPLL	HS + PLL
OSC = RCIO	External RC on OSC1, OSC2 as RA6
OSC = INTIO2	Internal RC, OSC1 as RA7, OSC2 as RA6
OSC = INTIO1	Internal RC, OSC1 as RA7, OSC2 as FOSC/4
OSC = RC	External RC on OSC1, OSC2 as FOSC/4

#### **Fail-Safe Clock Monitor:**

FSCM = OFF	Fail-Safe Clock Monitor disabled
FSCM = ON	Fail-Safe Clock Monitor enabled

#### **Internal External Switch Over mode:**

IESO = OFF	Internal External Switch Over mode disabled
IESO = ON	Internal External Switch Over mode enabled

#### **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = SBORENCTRL	Controlled by SBOREN
BOR = BOACTIVE	Enabled whenever Part is Active - SBOREN Disabled
BOR = BOHW	Enabled in HW, SBOREN Disabled

#### **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

#### **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

#### Watchdog Postscaler:

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

#### **High-Side Transistors Polarity:**

HPOL = LOW	Active low
HPOL = HIGH	Active high

#### **Low-Side Transistors Polarity:**

LPOL = LOW	Active low
LPOL = HIGH	Active high

#### PWM output pins Reset state control:

PWMPIN = ON	Enabled
PWMPIN = OFF	Disabled

#### **FLTA MUX Bit:**

FLTAMX = RA7	Multiplexed with RA7
FLTAMX = RA5	Multiplexed with RA5

#### T10SC MUX bit:

T1OSCMX = LOW	T1OSC pins reside on RB2 and RB3
T1OSCMX = HIGH	T1OSC pins reside on RA6 and RA7

#### MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

#### **Stack Overflow Reset Enable Bit:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

#### **Dedicated In-Circuit Port Enable Bit:**

ENICPORT = OFF	Disabled
ENICPORT = ON	Enabled

#### **Boot Block Size Select Bits:**

BBSIZ = BB256	256 W Boot Block Size
BBSIZ = BB512	512 W Boot Block Size

#### **Extended Instruction Set Enable bit:**

XINST = OFF	Disabled
XINST = ON	Enabled

#### **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

#### **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

#### PIC18F1231

#### **Oscillator Selection:**

OSC = LP	LP Oscillator
OSC = XT	XT Oscillator
OSC = HS	HS Oscillator
OSC = EC	External Clock on OSC1, OSC2 as FOSC/4
OSC = ECIO	External Clock on OSC1, OSC2 as RA6
OSC = HSPLL	HS + PLL
OSC = RCIO	External RC on OSC1, OSC2 as RA6
OSC = INTIO2	Internal RC, OSC1 as RA7, OSC2 as RA6
OSC = INTIO1	Internal RC, OSC1 as RA7, OSC2 as FOSC/4
OSC = RC	External RC on OSC1, OSC2 as FOSC/4

#### **Fail-Safe Clock Monitor:**

FSCM = OFF	Fail-Safe Clock Monitor disabled
FSCM = ON	Fail-Safe Clock Monitor enabled

#### **Internal External Switch Over mode:**

IESO = OFF	Internal External Switch Over mode disabled
IESO = ON	Internal External Switch Over mode enabled

#### **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = SBORENCTRL	Controlled by SBOREN
BOR = BOACTIVE	Enabled whenever Part is Active - SBOREN Disabled
BOR = BOHW	Enabled in HW, SBOREN Disabled

#### **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

#### **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

#### Watchdog Postscaler:

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

#### **High-Side Transistors Polarity:**

HPOL = LOW	Active low
HPOL = HIGH	Active high

#### **Low-Side Transistors Polarity:**

LPOL = LOW	Active low
LPOL = HIGH	Active high

#### PWM output pins Reset state control:

PWMPIN = ON	Enabled
PWMPIN = OFF	Disabled

#### **FLTA MUX Bit:**

FLTAMX = RA7	Multiplexed with RA7
FLTAMX = RA5	Multiplexed with RA5

#### T10SC MUX bit:

T1OSCMX = LOW	T1OSC pins reside on RB2 and RB3
T1OSCMX = HIGH	T1OSC pins reside on RA6 and RA7

#### MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

#### Stack Overflow Reset Enable Bit:

STVREN = OFF	Disabled
STVREN = ON	Enabled

#### **Dedicated In-Circuit Port Enable Bit:**

ENICPORT = OFF	Disabled
ENICPORT = ON	Enabled

#### **Boot Block Size Select Bits:**

BBSIZ = BB256	256 W Boot Block Size
BBSIZ = BB512	512 W Boot Block Size

#### **Extended Instruction Set Enable bit:**

XINST = OFF	Disabled
XINST = ON	Enabled

#### **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

#### **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

#### PIC18F1320

#### **Oscillator Selection:**

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OSC = LP	LP Oscillator
OSC = XT	XT Oscillator
OSC = HS	HS Oscillator
OSC = EC	External Clock on OSC1, OSC2 as FOSC/4
OSC = ECIO	External Clock on OSC1, OSC2 as RA6
OSC = HSPLL	HS + PLL
OSC = RCIO	External RC on OSC1, OSC2 as RA6
OSC = INTIO2	Internal RC, OSC1 as RA7, OSC2 as RA6
OSC = INTIO1	Internal RC, OSC1 as RA7, OSC2 as FOSC/4
OSC = RC	External RC on OSC1, OSC2 as FOSC/4

#### **Fail-Safe Clock Monitor:**

FSCM = OFF	Fail-Safe Clock Monitor disabled
FSCM = ON	Fail-Safe Clock Monitor enabled

#### **Internal External Switch Over mode:**

IESO = OFF	Internal External Switch Over mode disabled
IESO = ON	Internal External Switch Over mode enabled

#### **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

#### **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

#### Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

#### Watchdog Postscaler:

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

#### MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

#### Stack Full/Overflow Reset:

STVR = OFF	Disabled
STVR = ON	Enabled

#### Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

#### **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

#### **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

#### PIC18F1330

#### **Oscillator Selection:**

OSC = LP	LP Oscillator
OSC = XT	XT Oscillator
OSC = HS	HS Oscillator
OSC = EC	External Clock on OSC1, OSC2 as FOSC/4
OSC = ECIO	External Clock on OSC1, OSC2 as RA6
OSC = HSPLL	HS + PLL
OSC = RCIO	External RC on OSC1, OSC2 as RA6
OSC = INTIO2	Internal RC, OSC1 as RA7, OSC2 as RA6
OSC = INTIO1	Internal RC, OSC1 as RA7, OSC2 as FOSC/4
OSC = RC	External RC on OSC1, OSC2 as FOSC/4

#### **Fail-Safe Clock Monitor:**

FSCM = OFF	Fail-Safe Clock Monitor disabled
FSCM = ON	Fail-Safe Clock Monitor enabled

#### **Internal External Switch Over mode:**

IESO = OFF	Internal External Switch Over mode disabled
IESO = ON	Internal External Switch Over mode enabled

#### **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = SBORENCTRL	Controlled by SBOREN
BOR = BOACTIVE	Enabled whenever Part is Active - SBOREN Disabled
BOR = BOHW	Enabled in HW, SBOREN Disabled

#### **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

WDT = OFF	Disabled
WDT = ON	Enabled

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

#### **High-Side Transistors Polarity:**

HPOL = LOW	Active low
HPOL = HIGH	Active high

#### **Low-Side Transistors Polarity:**

LPOL = LOW	Active low
LPOL = HIGH	Active high

#### PWM output pins Reset state control:

PWMPIN = ON	Enabled
PWMPIN = OFF	Disabled

#### **FLTA MUX Bit:**

FLTAMX = RA7	Multiplexed with RA7
FLTAMX = RA5	Multiplexed with RA5

#### T10SC MUX bit:

T1OSCMX = LOW	T1OSC pins reside on RB2 and RB3
T1OSCMX = HIGH	T1OSC pins reside on RA6 and RA7

#### MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

#### Stack Overflow Reset Enable Bit:

STVREN = OFF	Disabled
STVREN = ON	Enabled

#### **Dedicated In-Circuit Port Enable Bit:**

ENICPORT = OFF	Disabled
ENICPORT = ON	Enabled

#### **Boot Block Size Select Bits:**

BBSIZ = BB256	256 W Boot Block Size
BBSIZ = BB512	512 W Boot Block Size
BBSIZ = BB1K	1 KW Boot Block Size

#### **Extended Instruction Set Enable bit:**

XINST = OFF	Disabled
XINST = ON	Enabled

#### **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

#### **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

#### PIC18F1331

#### **Oscillator Selection:**

OSC = LP	LP Oscillator
OSC = XT	XT Oscillator
OSC = HS	HS Oscillator
OSC = EC	External Clock on OSC1, OSC2 as FOSC/4
OSC = ECIO	External Clock on OSC1, OSC2 as RA6
OSC = HSPLL	HS + PLL
OSC = RCIO	External RC on OSC1, OSC2 as RA6
OSC = INTIO2	Internal RC, OSC1 as RA7, OSC2 as RA6
OSC = INTIO1	Internal RC, OSC1 as RA7, OSC2 as FOSC/4
OSC = RC	External RC on OSC1, OSC2 as FOSC/4

#### Fail-Safe Clock Monitor:

FSCM = OFF	Fail-Safe Clock Monitor disabled
FSCM = ON	Fail-Safe Clock Monitor enabled

#### Internal External Switch Over mode:

IESO = OFF	Internal External Switch Over mode disabled
IESO = ON	Internal External Switch Over mode enabled

#### **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = SBORENCTRL	Controlled by SBOREN
BOR = BOACTIVE	Enabled whenever Part is Active - SBOREN Disabled
BOR = BOHW	Enabled in HW, SBOREN Disabled

#### **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

WDT = OFF	Disabled
WDT = ON	Enabled

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

#### **High-Side Transistors Polarity:**

HPOL = LOW	Active low
HPOL = HIGH	Active high

#### **Low-Side Transistors Polarity:**

LPOL = LOW	Active low
LPOL = HIGH	Active high

#### PWM output pins Reset state control:

PWMPIN = ON	Enabled
PWMPIN = OFF	Disabled

#### **FLTA MUX Bit:**

FLTAMX = RA7	Multiplexed with RA7
FLTAMX = RA5	Multiplexed with RA5

#### T10SC MUX bit:

T1OSCMX = LOW	T1OSC pins reside on RB2 and RB3
T1OSCMX = HIGH	T1OSC pins reside on RA6 and RA7

#### MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

#### Stack Overflow Reset Enable Bit:

STVREN = OFF	Disabled
STVREN = ON	Enabled

#### **Dedicated In-Circuit Port Enable Bit:**

ENICPORT = OFF	Disabled
ENICPORT = ON	Enabled

#### **Boot Block Size Select Bits:**

BBSIZ = BB256	256 W Boot Block Size
BBSIZ = BB512	512 W Boot Block Size
BBSIZ = BB1K	1 KW Boot Block Size

#### **Extended Instruction Set Enable bit:**

XINST = OFF	Disabled
XINST = ON	Enabled

#### **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

#### **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

#### PIC18F2220

#### **Oscillator Selection:**

OSC = LP	LP Oscillator
OSC = XT	XT Oscillator
OSC = HS	HS Oscillator
OSC = EC	External Clock on OSC1, OSC2 as FOSC/4
OSC = ECIO	External Clock on OSC1, OSC2 as RA6
OSC = HSPLL	HS + PLL
OSC = RCIO	External RC on OSC1, OSC2 as RA6
OSC = INTIO2	Internal RC, OSC1 as RA7, OSC2 as RA6
OSC = INTIO1	Internal RC, OSC1 as RA7, OSC2 as FOSC/4
OSC = RC	External RC on OSC1, OSC2 as FOSC/4

#### **Fail-Safe Clock Monitor:**

FSCM = OFF	Fail-Safe Clock Monitor disabled
FSCM = ON	Fail-Safe Clock Monitor enabled

#### Internal External Switch Over mode:

IESO = OFF	Internal External Switch Over mode disabled
IESO = ON	Internal External Switch Over mode enabled

#### **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

#### **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

WDT = OFF	Disabled
WDT = ON	Enabled

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

#### MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

#### **PORTB A/D Enable:**

PBAD = DIG	Digital
PBAD = ANA	Analog

#### **CCP2 Pin Function:**

CCP2MX = B3	RB3
CCP2MX = OFF	RB3
CCP2MX = C1	RC1
CCP2MX = ON	RC1

#### Stack Full/Overflow Reset:

STVR = OFF	Disabled
STVR = ON	Enabled

#### Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

#### **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

#### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

#### **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

#### PIC18F2221

#### **Oscillator Selection:**

OSC = LP	LP Oscillator
OSC = XT	XT Oscillator
OSC = HS	HS Oscillator
OSC = EC	External Clock on OSC1, OSC2 as FOSC/4
OSC = ECIO	External Clock on OSC1, OSC2 as RA6
OSC = HSPLL	HS + PLL
OSC = RCIO	External RC on OSC1, OSC2 as RA6
OSC = INTIO2	Internal RC, OSC1 as RA7, OSC2 as RA6
OSC = INTIO1	Internal RC, OSC1 as RA7, OSC2 as FOSC/4
OSC = RC	External RC on OSC1, OSC2 as FOSC/4

#### **Fail-Safe Clock Monitor:**

FSCM = OFF	Disabled
FSCM = ON	Enabled

#### Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

#### **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled Always
BOR = SOFT	Enabled by SBOREN
BOR = NOSLP	Enabled except in Sleep
BOR = ON	Enabled Always

#### **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

WDT = OFF	Disabled
WDT = ON	Enabled

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WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

#### MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

#### T1 Oscillator Enable:

LPT1OSC = HIGH	High Power - High Noise Immunity
LPT1OSC = LOW	Low Power - Low Noise Immunity

#### **PORTB A/D Enable:**

PBAD = DIG	PORTB<4:0> digital on Reset
PBAD = ANA	PORTB<4:0> analog on Reset

#### **CCP2 MUX:**

CCP2MX = RB3	Multiplexed with RB3
CCP2MX = RC1	Multiplexed with RC1

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

#### Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

#### **ICD Port Enable:**

ICPORT = OFF	Disabled
ICPORT = ON	Enabled

#### **Boot Block Size:**

BBSIZ = BB256	256 Word
BBSIZ = BB512	512 Word

## XINST Enable:

XINST = OFF	Disabled
XINST = ON	Enabled

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Protected
CP0 = OFF	Open

#### **Code Protection Block 1:**

CP1 = ON	Protected
CP1 = OFF	Open

### **Code Protect - Boot Block:**

CPB = ON	Protected
CPB = OFF	Open

## **Code Protect - Data EEPROM:**

CPD = ON	Protected
CPD = OFF	Open

## Write Protection Block 0:

WRT0 = ON	Protected
WRT0 = OFF	Open

#### Write Protection Block 1:

WRT1 = ON	Protected
WRT1 = OFF	Open

## **Configuration Register Write Protection:**

WRTC = ON	Protected
WRTC = OFF	Open

## **Boot Block Write Protection:**

WRTB = ON	Protected
WRTB = OFF	Open

#### **Data EEPROM Write Protection:**

WRTD = ON	Protected
WRTD = OFF	Open

#### **Table Read Protection Block 0:**

EBTRO = ON	Protected
EBTR0 = OFF	Open

## **Table Read Protection Block 1:**

EBTR1 = ON	Protected
EBTR1 = OFF	Open

## **Boot Block Table Read Protection:**

EBTRB = ON	Protected
EBTRB = OFF	Open

## PIC18F2320

## **Oscillator Selection:**

OSC = LP	LP Oscillator
OSC = XT	XT Oscillator
OSC = HS	HS Oscillator
OSC = EC	External Clock on OSC1, OSC2 as FOSC/4
OSC = ECIO	External Clock on OSC1, OSC2 as RA6
OSC = HSPLL	HS + PLL
OSC = RCIO	External RC on OSC1, OSC2 as RA6
OSC = INTIO2	Internal RC, OSC1 as RA7, OSC2 as RA6
OSC = INTIO1	Internal RC, OSC1 as RA7, OSC2 as FOSC/4
OSC = RC	External RC on OSC1, OSC2 as FOSC/4

## **Fail-Safe Clock Monitor:**

FSCM = OFF	Fail-Safe Clock Monitor disabled
FSCM = ON	Fail-Safe Clock Monitor enabled

## **Internal External Switch Over mode:**

IESO = OFF	Internal External Switch Over mode disabled
IESO = ON	Internal External Switch Over mode enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## PORTB A/D Enable:

PBAD = DIG	Digital
PBAD = ANA	Analog

## **CCP2 Pin Function:**

CCP2MX = B3	RB3
CCP2MX = OFF	RB3
CCP2MX = C1	RC1
CCP2MX = ON	RC1

## Stack Full/Overflow Reset:

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP =	OFF	Disabled
LVP =	ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

## **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

## **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

## **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

## Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

## **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### Write Protection Block 3:

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

## **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

## **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F2321

## **Oscillator Selection:**

OSC = LP	LP Oscillator
OSC = XT	XT Oscillator
OSC = HS	HS Oscillator
OSC = EC	External Clock on OSC1, OSC2 as FOSC/4
OSC = ECIO	External Clock on OSC1, OSC2 as RA6
OSC = HSPLL	HS + PLL
OSC = RCIO	External RC on OSC1, OSC2 as RA6
OSC = INTIO2	Internal RC, OSC1 as RA7, OSC2 as RA6
OSC = INTIO1	Internal RC, OSC1 as RA7, OSC2 as FOSC/4
OSC = RC	External RC on OSC1, OSC2 as FOSC/4

## Fail-Safe Clock Monitor:

FSCM = OFF	Disabled
FSCM = ON	Enabled

## **Internal External Osc. Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

### **Brown-out Reset:**

BOR = OFF	Disabled Always
BOR = SOFT	Enabled by SBOREN
BOR = NOSLP	Enabled except in Sleep
BOR = ON	Enabled Always

## **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## T1 Oscillator Enable:

LPT1OSC = HIGH	High Power - High Noise Immunity
LPT1OSC = LOW	Low Power - Low Noise Immunity

#### **PORTB A/D Enable:**

PBAD = DIG	PORTB<4:0> digital on Reset
PBAD = ANA	PORTB<4:0> analog on Reset

# **CCP2 MUX:**

CCP2MX = RB3	Multiplexed with RB3
CCP2MX = RC1	Multiplexed with RC1

## **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **ICD Port Enable:**

ICPORT = OFF	Disabled
ICPORT = ON	Enabled

## **Boot Block Size:**

BBSIZ = BB256	256 Word
BBSIZ = BB512	512 Word
BBSIZ = BB1K	1024 Word

#### **XINST Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Protected
CPO = OFF	Open

#### **Code Protection Block 1:**

CP1 = ON	Protected
CP1 = OFF	Open

#### **Code Protect - Boot Block:**

CPB = ON	Protected
CPB = OFF	Open

## **Code Protect - Data EEPROM:**

CPD = ON	Protected
CPD = OFF	Open

#### Write Protection Block 0:

WRTO = ON	Protected
WRT0 = OFF	Open

## **Write Protection Block 1:**

WRT1 = ON	Protected
WRT1 = OFF	Open

## **Configuration Register Write Protection:**

WRTC = ON	Protected
WRTC = OFF	Open

#### **Boot Block Write Protection:**

WRTB = ON	Protected
WRTB = OFF	Open

## **Data EEPROM Write Protection:**

WRTD = ON	Protected
WRTD = OFF	Open

## **Table Read Protection Block 0:**

EBTRO = ON	Protected
EBTR0 = OFF	Open

## **Table Read Protection Block 1:**

EBTR1 = ON	Protected
EBTR1 = OFF	Open

## **Boot Block Table Read Protection:**

EBTRB = ON	Protected
EBTRB = OFF	Open

## PIC18F2331

## **Oscillator Selection:**

LP
XT
HS
External RC, RA6 is CLKOUT
EC, RA6 is CLKOUT
EC, RA6 is I/O
HS-PLL Enabled
External RC, RA6 is I/O
Internal RC, RA6 & RA7 are I/O
Internal RC, RA6 is CLKOUT, RA7 is I/O
External RC, RA6 is CLKOUT
External RC, RA6 is CLKOUT

## Fail-Safe Clock Monitor Enable:

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## **Internal/External Switch-Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

## **Power-up Timer:**

PWRTEN = ON	Enabled
PWRTEN = OFF	Disabled

## **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	Enabled

## **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# **Watchdog Timer:**

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

# **Watchdog Timer Enable Window:**

WINEN = ON	Enabled
WINEN = OFF	Disabled

## Watchdog Postscaler:

WDPS = 1	1:1
WDPS = 2	1:2
WDPS = 4	1:4
WDPS = 8	1:8
WDPS = 16	1:16
WDPS = 32	1:32
WDPS = 64	1:64
WDPS = 128	1:128
WDPS = 256	1:256
WDPS = 512	1:512
WDPS = 1024	1:1024
WDPS = 2048	1:2048
WDPS = 4096	1:4096
WDPS = 8192	1:8192
WDPS = 16384	1:16384
WDPS = 32768	1:32768

### **Timer1 Oscillator MUX:**

T1OSCMX = OFF	Active
T1OSCMX = ON	Inactive

# **High-Side Transistors Polarity:**

HPOL = LOW	Active low
HPOL = HIGH	Active high

## **Low-Side Transistors Polarity:**

LPOL = LOW	Active low
LPOL = HIGH	Active high

## PWM output pins Reset state control:

PWMPIN = ON	Enabled
PWMPIN = OFF	Disabled

### MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Low Voltage Programming:**

LVP = OFF	Disabled
LVP = ON	Enabled

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

## **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

## **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

## **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

## **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F2410

## **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

## **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## **Internal External Osc. Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

## **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

## **Watchdog Postscaler:**

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## PORTB A/D Enable:

PBADEN = OFF	PORTB<4:0> digital on Reset
PBADEN = ON	PORTB<4:0> analog on Reset

## **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

## **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

## Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Enhanced CPU Enable:**

ENHCPU = OFF	Disabled
ENHCPU = ON	Enabled

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

## Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

#### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

## **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F242

## **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

## Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

## **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

## **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

## **CCP2 MUX:**

CCP2MUX = OFF	Disable (RB3)
CCP2MUX = ON	Enable (RC1)

## **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

## Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

## **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

## Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

## **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F2420

## **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

## **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## **Internal External Osc. Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## **PORTB A/D Enable:**

PBADEN = OFF	PORTB<4:0> digital on Reset
PBADEN = ON	PORTB<4:0> analog on Reset

## **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

## Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Enhanced CPU Enable:**

ENHCPU = OFF	Disabled
ENHCPU = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

## **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

## **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F2431

## **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC2	External RC, RA6 is CLKOUT
OSC = EC	EC, RA6 is CLKOUT
OSC = ECIO	EC, RA6 is I/O
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	External RC, RA6 is I/O
OSC = IRCIO	Internal RC, RA6 & RA7 are I/O
OSC = IRC	Internal RC, RA6 is CLKOUT, RA7 is I/O
OSC = RC1	External RC, RA6 is CLKOUT
OSC = RC	External RC, RA6 is CLKOUT

## **Fail-Safe Clock Monitor Enable:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## Internal/External Switch-Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRTEN = ON	Enabled
PWRTEN = OFF	Disabled

## **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	Enabled

## **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

## Watchdog Timer:

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

# **Watchdog Timer Enable Window:**

WINEN = ON	Enabled
WINEN = OFF	Disabled

# **Watchdog Postscaler:**

WDPS = 1	1:1
WDPS = 2	1:2
WDPS = 4	1:4
WDPS = 8	1:8
WDPS = 16	1:16
WDPS = 32	1:32
WDPS = 64	1:64
WDPS = 128	1:128
WDPS = 256	1:256
WDPS = 512	1:512
WDPS = 1024	1:1024
WDPS = 2048	1:2048
WDPS = 4096	1:4096
WDPS = 8192	1:8192
WDPS = 16384	1:16384
WDPS = 32768	1:32768

## **Timer1 Oscillator MUX:**

T1OSCMX = OFF	Active
T1OSCMX = ON	Inactive

# **High-Side Transistors Polarity:**

HPOL = LOW	Active low
HPOL = HIGH	Active high

## **Low-Side Transistors Polarity:**

LPOL = LOW	Active low
LPOL = HIGH	Active high

## PWM output pins Reset state control:

PWMPIN = ON	Enabled
PWMPIN = OFF	Disabled

### MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Low Voltage Programming:**

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

## **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

## Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

#### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

## **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F2439

#### **Oscillator Selection:**

Occinator ocioculorii	
OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

## **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

## **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

## **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

## **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

## Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

## **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

## **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

## **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

## **Write Protection Block 0:**

WRTO = ON	Enabled
WRT0 = OFF	Disabled

## **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

## **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F2450

## 96 MHz PLL Prescaler:

PLLDIV = 1	No divide (4 MHz input)
PLLDIV = 2	Divide by 2 (8 MHz input)
PLLDIV = 3	Divide by 3 (12 MHz input)
PLLDIV = 4	Divide by 4 (16 MHz input)
PLLDIV = 5	Divide by 5 (20 MHz input)
PLLDIV = 6	Divide by 6 (24 MHz input)
PLLDIV = 10	Divide by 10 (40 MHz input)
PLLDIV = 12	Divide by 12 (48 MHz input)

## **CPU System Clock Postscaler:**

CPUDIV = OSC1_PLL2	[OSC1/OSC2 Src: /1][96 MHz PLL Src: /2]
CPUDIV = OSC2_PLL3	[OSC1/OSC2 Src: /2][96 MHz PLL Src: /3]
CPUDIV = OSC3_PLL4	[OSC1/OSC2 Src: /3][96 MHz PLL Src: /4]
CPUDIV = OSC4_PLL6	[OSC1/OSC2 Src: /4][96 MHz PLL Src: /6]

## **Full-Speed USB Clock Source Selection:**

•	
USBDIV = 1	Clock source from OSC1/OSC2
USBDIV = 2	Clock source from 96 MHz PLL/2

## **Oscillator Selection bits:**

FOSC = XT_XT	XT oscillator, XT used by USB
FOSC = XTPLL_XT	XT oscillator, PLL enabled, XT used by USB
FOSC = ECIO_EC	External clock, port function on RA6, EC used by USB
FOSC = EC_EC	External clock, CLKOUT on RA6, EC used by USB
FOSC = ECPLLIO_EC	External clock, PLL enabled, port function on RA6, EC used by USB
FOSC = ECPLL_EC	External clock, PLL enabled, CLKOUT on RA6, EC used by USB
FOSC = INTOSCIO_EC	Internal oscillator, port function on RA6, EC used by USB
FOSC = INTOSC_EC	Internal oscillator, CLKOUT on RA6, EC used by USB
FOSC = INTOSC_XT	Internal oscillator, XT used by USB
FOSC = INTOSC_HS	Internal oscillator, HS used by USB
FOSC = HS	HS oscillator, HS used by USB
FOSC = HSPLL_HS	HS oscillator, PLL enabled, HS used by USB

## Fail-Safe Clock Monitor:

FCMEM = OFF	Disabled
FCMEM = ON	Enabled

# Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

## **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = SOFT	Controlled by SBOREN
BOR = ON_ACTIVE	Enabled when the device is not in Sleep, SBOREN bit is disabled
BOR = ON	Enabled, SBOREN bit is disabled

## **Brown-out Voltage:**

BORV = 46	4.6V
BORV = 43	4.3V
BORV = 28	2.8V
BORV = 21	2.1V

# **USB Voltage Regulator Enable:**

VREGEN = OFF	Disabled
VREGEN = ON	Enabled

# Watchdog Timer:

WDT = OFF	HW Disabled - SW Controlled
WDT = ON	HW Enabled - SW Disabled

# **Watchdog Postscaler:**

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## **Low Power Timer1 Oscillator Enable:**

LPT1OSC = OFF	Timer1 oscillator configured for high power
LPT1OSC = ON	Timer1 oscillator configured for low power

## PORTB A/D Enable:

PBADEN = OFF	PORTB<4:0> pins are configured as digital I/O on Reset
PBADEN = ON	PORTB<4:0> pins are configured as analog input on Reset

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Boot Block Size Select Bit:**

BBSIZ = BB2K	2KW Boot Block Size
BBSIZ = BB1K	1KW Boot Block Size

# **Dedicated In-Circuit Debug/Programming Enable:**

ICPRT = OFF	Disabled
ICPRT = ON	Enabled

## **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

## **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

### Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

## **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

## **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F2455

## 96 MHz PLL Prescaler:

PLLDIV = 1	No divide (4 MHz input)
PLLDIV = 2	Divide by 2 (8 MHz input)
PLLDIV = 3	Divide by 3 (12 MHz input)
PLLDIV = 4	Divide by 4 (16 MHz input)
PLLDIV = 5	Divide by 5 (20 MHz input)
PLLDIV = 6	Divide by 6 (24 MHz input)
PLLDIV = 10	Divide by 10 (40 MHz input)
PLLDIV = 12	Divide by 12 (48 MHz input)

# **CPU System Clock Postscaler:**

CPUDIV = OSC1_PLL2	[OSC1/OSC2 Src: /1][96 MHz PLL Src: /2]
CPUDIV = OSC2_PLL3	[OSC1/OSC2 Src: /2][96 MHz PLL Src: /3]
CPUDIV = OSC3_PLL4	[OSC1/OSC2 Src: /3][96 MHz PLL Src: /4]
CPUDIV = OSC4_PLL6	[OSC1/OSC2 Src: /4][96 MHz PLL Src: /6]

# **Full-Speed USB Clock Source Selection:**

USBDIV = 1	Clock source from OSC1/OSC2
USBDIV = 2	Clock source from 96 MHz PLL/2

## **Oscillator Selection bits:**

	1
FOSC = XT_XT	XT oscillator, XT used by USB
FOSC = XTPLL_XT	XT oscillator, PLL enabled, XT used by USB
FOSC = ECIO_EC	External clock, port function on RA6, EC used by USB
FOSC = EC_EC	External clock, CLKOUT on RA6, EC used by USB
FOSC = ECPLLIO_EC	External clock, PLL enabled, port function on RA6, EC used by USB
FOSC = ECPLL_EC	External clock, PLL enabled, CLKOUT on RA6, EC used by USB
FOSC = INTOSCIO_EC	Internal oscillator, port function on RA6, EC used by USB
FOSC = INTOSC_EC	Internal oscillator, CLKOUT on RA6, EC used by USB
FOSC = INTOSC_XT	Internal oscillator, XT used by USB
FOSC = INTOSC_HS	Internal oscillator, HS used by USB
FOSC = HS	HS oscillator, HS used by USB
FOSC = HSPLL_HS	HS oscillator, PLL enabled, HS used by USB

## **Fail-Safe Clock Monitor:**

FCMEM = OFF	Disabled
FCMEM = ON	Enabled

## **Internal/External Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOR = OFF	Disabled
BOR = SOFT	Controlled by SBOREN
BOR = ON_ACTIVE	Enabled when the device is not in Sleep, SBOREN bit is disabled
BOR = ON	Enabled, SBOREN bit is disabled

## **Brown-out Voltage:**

BORV = 46	4.6V
BORV = 43	4.3V
BORV = 28	2.8V
BORV = 21	2.1V

# **USB Voltage Regulator Enable:**

VREGEN = OFF	Disabled
VREGEN = ON	Enabled

## Watchdog Timer:

WDT = OFF	HW Disabled - SW Controlled
WDT = ON	HW Enabled - SW Disabled

### Watchdog Postscaler:

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## **Low Power Timer1 Oscillator Enable:**

LPT1OSC = OFF	Timer1 oscillator configured for high power
LPT1OSC = ON	Timer1 oscillator configured for low power

## **PORTB A/D Enable:**

PBADEN = OFF	PORTB<4:0> pins are configured as digital I/O on Reset
PBADEN = ON	PORTB<4:0> pins are configured as analog input on Reset

## **CCP2 MUX bit:**

CCP2MX = OFF	CCP2 input/output is multiplexed with RB3
CCP2MX = ON	CCP2 input/output is multiplexed with RC1

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

## Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Dedicated In-Circuit Debug/Programming Enable:**

ICPRT = OFF	Disabled
ICPRT = ON	Enabled

#### **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

## **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

## **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

## **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

## Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

## **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### Write Protection Block 2:

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

## **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

## **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## **PIC18F248**

## **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

## Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

## **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

## **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

# **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

## **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

## **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F2480

## **Oscillator Selection bits:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	External RC with OSC2 as divide by 4 clock out
OSC = EC	EC with OSC2 as divide by 4 clock out
OSC = ECIO	EC with OSC2 as RA6
OSC = HSPLL	HS with HW enabled 4xPLL
OSC = RCIO	External RC with OSC2 as RA6
OSC = IRCIO67	Internal RC with OSC2 as RA6 and OSC1 as RA7
OSC = IRCIO7	Internal RC with OSC1 as RA7 and OSC2 as divide by 4 clock out
OSC = ERC1	External RC with OSC2 as divide by 4 clock out
OSC = ERC	External RC with OSC2 as divide by 4 clock out

## **Fail-Safe Clock Monitor:**

FCMENB = OFF	Disabled
FCMENB = ON	Enabled

## Internal External Osc. Switch:

IESOB = OFF	Disabled
IESOB = ON	Enabled

# Power-up Timer:

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOR = OFF	Disabled
BOR = SBORENCTRL	Controlled by SBOREN
BOR = BOACTIVE	Enabled whenever Part is Active - SBOREN Disabled
BOR = BOHW	Enabled in HW, SBOREN Disabled

## **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# **Watchdog Timer:**

WDT = OFF	HW Disabled - SW Controlled
WDT = ON	HW Enabled - SW Disabled

# **Watchdog Postscaler:**

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## **Low Power Timer1 Oscillator:**

LPT1OSC = OFF	Timer1 Low Power Oscillator Disabled
LPT1OSC = ON	Timer1 Low Power Oscillator Active

## **PORTB Pins Configured for A/D:**

PORTB<4> and PORTB<1:0> Configured as Digital I/O Pins on Reset
PORTB<4> and PORTB<1:0> Configured as Analog Pins on Reset

# **BackGround Debug:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Extended Instruction Set CPU:**

XINST = OFF	Disabled
XINST = ON	Enabled

## **Boot Block Size:**

BBSIZ = 1024	1K words (2K bytes) Boot Block
BBSIZ = 2048	2K words (4K bytes) Boot Block

## **Low Voltage Programming:**

LVP = OFF	Disabled
LVP = ON	Enabled

## Stack Overflow/Underflow Reset:

STVREN = OFF	Disabled
STVREN = ON	Enabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

## **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

### Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

## **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

## **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F24J10

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Watchdog Timer:**

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

# **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select:**

FOSC2 = OFF	When SCS1:SCS0 = 00, INTRC is the clock source
FOSC2 = ON	When SCS1:SCS0 = 00, FOSC1:FOSC0 sets the
	clock source

# **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

# Watchdog Postscaler:

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# **CCP2 MUX:**

CCP2MX = ALTERNATE	Multiplexed with RB3
CCP2MX = DEFAULT	Multiplexed with RC1

# PIC18F2510

# **Oscillator Selection:**

LP
XT
HS
RC
EC-OSC2 as Clock Out
EC-OSC2 as RA6
HS-PLL Enabled
RC-OSC2 as RA6
INTRC-OSC2 as RA6, OSC1 as RA7
INTRC-OSC2 as Clock Out, OSC1 as RA7

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# **Internal External Osc. Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 46	4.6V
BORV = 43	4.3V
BORV = 28	2.8V
BORV = 21	2.1V

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

# **Watchdog Postscaler:**

TPS = 1
TPS = 2
TPS = 4
TPS = 8
TPS = 16
TPS = 32
TPS = 64
TPS = 128
TPS = 256
TPS = 512
TPS = 1024
TPS = 2048
TPS = 4096
TPS = 8192
TPS = 16384
 TPS = 32768
TPS = 64  TPS = 128  TPS = 256  TPS = 512  TPS = 1024  TPS = 2048  TPS = 4096  TPS = 8192  TPS = 16384

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# T1 Oscillator Enable:

LPT1OSC = OFF	Disabled
LPT1OSC = ON	Enabled

# PORTB A/D Enable:

PBADEN = OFF	PORTB<4:0> digital on Reset
PBADEN = ON	PORTB<4:0> analog on Reset

# **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

### XINST Enable:

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

# **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

# **Write Protection Block 0:**

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

# **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

# **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

### **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F2515

### **Oscillator Selection:**

LP
XT
HS
RC
EC-OSC2 as Clock Out
EC-OSC2 as RA6
HS-PLL Enabled
RC-OSC2 as RA6
INTRC-OSC2 as RA6, OSC1 as RA7
INTRC-OSC2 as Clock Out, OSC1 as RA7

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

Wateridog i ostsealer.	
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **PORTB A/D Enable:**

PBADEN = OFF	PORTB<4:0> digital on Reset
PBADEN = ON	PORTB<4:0> analog on Reset

# **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

### **Enhanced CPU Enable:**

ENHCPU = OFF	Disabled
ENHCPU = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

# Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

# **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

# **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F252

#### **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

# Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

# **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

# **CCP2 MUX:**

CCP2MUX = OFF	Disable (RB3)
CCP2MUX = ON	Enable (RC1)

### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

# **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

# **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

# **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

# **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### Write Protection Block 2:

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

### Write Protection Block 3:

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

# **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

# **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F2520

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

### **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 46	4.6V
BORV = 43	4.3V
BORV = 28	2.8V
BORV = 21	2.1V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# T1 Oscillator Enable:

LPT1OSC = OFF	Disabled
LPT1OSC = ON	Enabled

# PORTB A/D Enable:

PBADEN = OFF	PORTB<4:0> digital on Reset
PBADEN = ON	PORTB<4:0> analog on Reset

# **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# XINST Enable:

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

# **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

# **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F2525

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

# Fail-Safe Clock Monitor:

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# **Internal External Osc. Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 46	Maximum
BORV = 43	High
BORV = 28	Low
BORV = 21	Minimum

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# T1 Oscillator Enable:

LPT1OSC = OFF	Disabled
LPT1OSC = ON	Enabled

# **PORTB A/D Enable:**

PBADEN = OFF	PORTB<4:0> digital on Reset
PBADEN = ON	PORTB<4:0> analog on Reset

# **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

### **XINST Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### Code Protection Block 0:

CPO = ON	Enabled
CPO = OFF	Disabled

### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### Code Protection Block 2:

CP2 = ON	Enabled
CP2 = OFF	Disabled

### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

# **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

### Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

# **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

# **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

# **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

# **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F2539

### **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

•	
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

# **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

# **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

# **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# **Write Protection Block 0:**

WRTO = ON	Enabled
WRT0 = OFF	Disabled

# **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

# **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

# **Boot Block Write Protection:**

V	NRTB = ON	Enabled
V	WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

# **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F2550

# 96 MHz PLL Prescaler:

No divide (4 MHz input)
Divide by 2 (8 MHz input)
Divide by 3 (12 MHz input)
Divide by 4 (16 MHz input)
Divide by 5 (20 MHz input)
Divide by 6 (24 MHz input)
Divide by 10 (40 MHz input)
Divide by 12 (48 MHz input)

# **CPU System Clock Postscaler:**

CPUDIV = OSC1_PLL2	[OSC1/OSC2 Src: /1][96 MHz PLL Src: /2]
CPUDIV = OSC2_PLL3	[OSC1/OSC2 Src: /2][96 MHz PLL Src: /3]
CPUDIV = OSC3_PLL4	[OSC1/OSC2 Src: /3][96 MHz PLL Src: /4]
CPUDIV = OSC4_PLL6	[OSC1/OSC2 Src: /4][96 MHz PLL Src: /6]

# **Full-Speed USB Clock Source Selection:**

USBDIV = 1	Clock source from OSC1/OSC2
USBDIV = 2	Clock source from 96 MHz PLL/2

# **Oscillator Selection bits:**

FOSC = XT_XT	XT oscillator, XT used by USB
FOSC = XTPLL_XT	XT oscillator, PLL enabled, XT used by USB
FOSC = ECIO_EC	External clock, port function on RA6, EC used by USB
FOSC = EC_EC	External clock, CLKOUT on RA6, EC used by USB
FOSC = ECPLLIO_EC	External clock, PLL enabled, port function on RA6, EC used by USB
FOSC = ECPLL_EC	External clock, PLL enabled, CLKOUT on RA6, EC used by USB
FOSC = INTOSCIO_EC	Internal oscillator, port function on RA6, EC used by USB
FOSC = INTOSC_EC	Internal oscillator, CLKOUT on RA6, EC used by USB
FOSC = INTOSC_XT	Internal oscillator, XT used by USB
FOSC = INTOSC_HS	Internal oscillator, HS used by USB
FOSC = HS	HS oscillator, HS used by USB
FOSC = HSPLL_HS	HS oscillator, PLL enabled, HS used by USB

# **Fail-Safe Clock Monitor:**

FCMEM = OFF	Disabled
FCMEM = ON	Enabled

# **Internal/External Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = SOFT	Controlled by SBOREN
BOR = ON_ACTIVE	Enabled when the device is not in Sleep, SBOREN bit is disabled
BOR = ON	Enabled, SBOREN bit is disabled

# **Brown-out Voltage:**

BORV = 46	4.6V
BORV = 43	4.3V
BORV = 28	2.8V
BORV = 21	2.1V

# **USB Voltage Regulator Enable:**

VREGEN = OFF	Disabled
VREGEN = ON	Enabled

# **Watchdog Timer:**

WDT = OFF	HW Disabled - SW Controlled
WDT = ON	HW Enabled - SW Disabled

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **Low Power Timer1 Oscillator Enable:**

LPT1OSC = OFF	Timer1 oscillator configured for high power
LPT1OSC = ON	Timer1 oscillator configured for low power

#### PORTB A/D Enable:

PBADEN = OFF	PORTB<4:0> pins are configured as digital I/O on Reset
PBADEN = ON	PORTB<4:0> pins are configured as analog input on Reset

# **CCP2 MUX bit:**

CCP2MX = OFF	CCP2 input/output is multiplexed with RB3
CCP2MX = ON	CCP2 input/output is multiplexed with RC1

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Dedicated In-Circuit Debug/Programming Enable:**

ICPRT = OFF	Disabled
ICPRT = ON	Enabled

# **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

# **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

# **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

# **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

# **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

### **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# **PIC18F258**

### **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

# Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128

### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

# **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

# **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F2580

# **Oscillator Selection bits:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	External RC with OSC2 as divide by 4 clock out
OSC = EC	EC with OSC2 as divide by 4 clock out
OSC = ECIO	EC with OSC2 as RA6
OSC = HSPLL	HS with HW enabled 4xPLL
OSC = RCIO	External RC with OSC2 as RA6
OSC = IRCIO67	Internal RC with OSC2 as RA6 and OSC1 as RA7
OSC = IRCIO7	Internal RC with OSC1 as RA7 and OSC2 as divide by 4 clock out
OSC = ERC1	External RC with OSC2 as divide by 4 clock out
OSC = ERC	External RC with OSC2 as divide by 4 clock out

# Fail-Safe Clock Monitor:

FCMENB = OFF	Disabled
FCMENB = ON	Enabled

# **Internal External Osc. Switch:**

IESOB = OFF	Disabled
IESOB = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOR = OFF	Disabled
BOR = SBORENCTRL	Controlled by SBOREN
BOR = BOACTIVE	Enabled whenever Part is Active - SBOREN Disabled
BOR = BOHW	Enabled in HW, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# Watchdog Timer:

WDT = OFF	HW Disabled - SW Controlled
WDT = ON	HW Enabled - SW Disabled

# **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **Low Power Timer1 Oscillator:**

LPT1OSC = OFF	Timer1 Low Power Oscillator Disabled
LPT1OSC = ON	Timer1 Low Power Oscillator Active

# **PORTB Pins Configured for A/D:**

PORTB<4> and PORTB<1:0> Configured as Digital I/O Pins on Reset
PORTB<4> and PORTB<1:0> Configured as Analog Pins on Reset

# **BackGround Debug:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Extended Instruction Set CPU:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Boot Block Size:**

BBSIZ = 1024	1K words (2K bytes) Boot Block
BBSIZ = 2048	2K words (4K bytes) Boot Block

# **Low Voltage Programming:**

LVP = OFF	Disabled
LVP = ON	Enabled

# Stack Overflow/Underflow Reset:

STVREN = OFF	Disabled
STVREN = ON	Enabled

### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

# **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

# **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

# **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F2585

# **Oscillator Selection bits:**

Occinator Corcottori Bitor	
OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	External RC with OSC2 as divide by 4 clock out
OSC = EC	EC with OSC2 as divide by 4 clock out
OSC = ECIO	EC with OSC2 as RA6
OSC = HSPLL	HS with HW enabled 4xPLL
OSC = RCIO	External RC with OSC2 as RA6
OSC = IRCIO67	Internal RC with OSC2 as RA6 and OSC1 as RA7
OSC = IRCIO7	Internal RC with OSC1 as RA7 and OSC2 as divide by 4 clock out
OSC = ERC1	External RC with OSC2 as divide by 4 clock out
OSC = ERC	External RC with OSC2 as divide by 4 clock out

### **Fail-Safe Clock Monitor:**

FCMENB = OFF	Disabled
FCMENB = ON	Enabled

# **Internal External Osc. Switch:**

IESOB = OFF	Disabled
IESOB = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOR = OFF	Disabled
BOR = SBORENCTRL	Controlled by SBOREN
BOR = BOACTIVE	Enabled whenever Part is Active - SBOREN Disabled
BOR = BOHW	Enabled in HW, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# **Watchdog Timer:**

WDT = OFF	HW Disabled - SW Controlled
WDT = ON	HW Enabled - SW Disabled

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **Low Power Timer1 Oscillator:**

LPT1OSC = OFF	Timer1 Low Power Oscillator Disabled
LPT1OSC = ON	Timer1 Low Power Oscillator Active

# **PORTB Pins Configured for A/D:**

	PORTB<4> and PORTB<1:0> Configured as Digital I/O Pins on Reset
PBADEN = ON	PORTB<4> and PORTB<1:0> Configured as Analog Pins on Reset

# **BackGround Debug:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Extended Instruction Set CPU:**

XINST = OFF	Disabled
XINST = ON	Enabled

#### **Boot Block Size:**

BBSIZ = 1024	1K words (2K bytes) Boot Block
BBSIZ = 2048	2K words (4K bytes) Boot Block
BBSIZ = 4096	4K words (8K bytes) Boot Block

# **Low Voltage Programming:**

LVP = OFF	Disabled
LVP = ON	Enabled

### Stack Overflow/Underflow Reset:

STVREN = OFF	Disabled
STVREN = ON	Enabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

# **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

# **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

# **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

### **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F25J10

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Watchdog Timer:**

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

# **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# **Internal/External Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select:**

FOSC2 = OFF	When SCS1:SCS0 = 00, INTRC is the clock source
FOSC2 = ON	When SCS1:SCS0 = 00, FOSC1:FOSC0 sets the
	clock source

# **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

# **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# **CCP2 MUX:**

CCP2MX = ALTERNATE	Multiplexed with RB3
CCP2MX = DEFAULT	Multiplexed with RC1

# PIC18F2610

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# **Internal External Osc. Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **PORTB A/D Enable:**

PBADEN = OFF	PORTB<4:0> digital on Reset
PBADEN = ON	PORTB<4:0> analog on Reset

# **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Enhanced CPU Enable:**

ENHCPU = OFF	Disabled
ENHCPU = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

### **Write Protection Block 0:**

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

# **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

### Write Protection Block 3:

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

# **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

# **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F2620

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 46	Maximum
BORV = 43	High
BORV = 28	Low
BORV = 21	Minimum

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# T1 Oscillator Enable:

LPT1OSC = OFF	Disabled
LPT1OSC = ON	Enabled

# PORTB A/D Enable:

PBADEN = OFF	PORTB<4:0> digital on Reset
PBADEN = ON	PORTB<4:0> analog on Reset

# **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# XINST Enable:

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

# **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

# **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

# **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F2680

#### **Oscillator Selection bits:**

Oscillator defection bits.	
OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	External RC with OSC2 as divide by 4 clock out
OSC = EC	EC with OSC2 as divide by 4 clock out
OSC = ECIO	EC with OSC2 as RA6
OSC = HSPLL	HS with HW enabled 4xPLL
OSC = RCIO	External RC with OSC2 as RA6
OSC = IRCIO67	Internal RC with OSC2 as RA6 and OSC1 as RA7
OSC = IRCIO7	Internal RC with OSC1 as RA7 and OSC2 as divide by 4 clock out
OSC = ERC1	External RC with OSC2 as divide by 4 clock out
OSC = ERC	External RC with OSC2 as divide by 4 clock out

### **Fail-Safe Clock Monitor:**

FCMENB = OFF	Disabled
FCMENB = ON	Enabled

# **Internal External Osc. Switch:**

IESOB = OFF	Disabled
IESOB = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOR = OFF	Disabled
BOR = SBORENCTRL	Controlled by SBOREN
BOR = BOACTIVE	Enabled whenever Part is Active - SBOREN Disabled
BOR = BOHW	Enabled in HW, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# **Watchdog Timer:**

WDT = OFF	HW Disabled - SW Controlled
WDT = ON	HW Enabled - SW Disabled

# **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **Low Power Timer1 Oscillator:**

LPT1OSC = OFF	Timer1 Low Power Oscillator Disabled
LPT1OSC = ON	Timer1 Low Power Oscillator Active

# **PORTB Pins Configured for A/D:**

PBADEN = OFF	PORTB<4> and PORTB<1:0> Configured as Digital
	I/O Pins on Reset
PBADEN = ON	PORTB<4> and PORTB<1:0> Configured as Analog
	Pins on Reset

# **BackGround Debug:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Extended Instruction Set CPU:**

XINST = OFF	Disabled
XINST = ON	Enabled

#### **Boot Block Size:**

BBSIZ = 1024	1K words (2K bytes) Boot Block
BBSIZ = 2048	2K words (4K bytes) Boot Block
BBSIZ = 4096	4K words (8K bytes) Boot Block

# **Low Voltage Programming:**

LVP = OFF	Disabled
LVP = ON	Enabled

### Stack Overflow/Underflow Reset:

STVREN = OFF	Disabled
STVREN = ON	Enabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

# **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

# **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

# **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F4220

# **Oscillator Selection:**

OSC = LP	LP Oscillator
OSC = XT	XT Oscillator
OSC = HS	HS Oscillator
OSC = EC	External Clock on OSC1, OSC2 as FOSC/4
OSC = ECIO	External Clock on OSC1, OSC2 as RA6
OSC = HSPLL	HS + PLL
OSC = RCIO	External RC on OSC1, OSC2 as RA6
OSC = INTIO2	Internal RC, OSC1 as RA7, OSC2 as RA6
OSC = INTIO1	Internal RC, OSC1 as RA7, OSC2 as FOSC/4
OSC = RC	External RC on OSC1, OSC2 as FOSC/4

# **Fail-Safe Clock Monitor:**

FSCM = OFF	Fail-Safe Clock Monitor disabled
FSCM = ON	Fail-Safe Clock Monitor enabled

# **Internal External Switch Over mode:**

IESO = OFF	Internal External Switch Over mode disabled
IESO = ON	Internal External Switch Over mode enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# PORTB A/D Enable:

PBAD = DIG	Digital
PBAD = ANA	Analog

# **CCP2 Pin Function:**

CCP2MX = B3	RB3
CCP2MX = OFF	RB3
CCP2MX = C1	RC1
CCP2MX = ON	RC1

# Stack Full/Overflow Reset:

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

# **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

### Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

# **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F4221

# **Oscillator Selection:**

OSC = LP	LP Oscillator
OSC = XT	XT Oscillator
OSC = HS	HS Oscillator
OSC = EC	External Clock on OSC1, OSC2 as FOSC/4
OSC = ECIO	External Clock on OSC1, OSC2 as RA6
OSC = HSPLL	HS + PLL
OSC = RCIO	External RC on OSC1, OSC2 as RA6
OSC = INTIO2	Internal RC, OSC1 as RA7, OSC2 as RA6
OSC = INTIO1	Internal RC, OSC1 as RA7, OSC2 as FOSC/4
OSC = RC	External RC on OSC1, OSC2 as FOSC/4

# **Fail-Safe Clock Monitor:**

FSCM = OFF	Disabled
FSCM = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

### **Brown-out Reset:**

BOR = OFF	Disabled Always
BOR = SOFT	Enabled by SBOREN
BOR = NOSLP	Enabled except in Sleep
BOR = ON	Enabled Always

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# T1 Oscillator Enable:

LPT1OSC = HIGH	High Power - High Noise Immunity
LPT1OSC = LOW	Low Power - Low Noise Immunity

# **PORTB A/D Enable:**

PBAD = DIG	PORTB<4:0> digital on Reset
PBAD = ANA	PORTB<4:0> analog on Reset

### **CCP2 MUX:**

CCP2MX = RB3	Multiplexed with RB3
CCP2MX = RC1	Multiplexed with RC1

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **ICD Port Enable:**

ICPORT = OFF	Disabled
ICPORT = ON	Enabled

# **Boot Block Size:**

BBSIZ = BB256	256 Word
BBSIZ = BB512	512 Word

# XINST Enable:

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Protected
CPO = OFF	Open

### **Code Protection Block 1:**

CP1 = ON	Protected
CP1 = OFF	Open

### **Code Protect - Boot Block:**

CPB = ON	Protected
CPB = OFF	Open

### **Code Protect - Data EEPROM:**

CPD = ON	Protected
CPD = OFF	Open

# Write Protection Block 0:

WRT0 = ON	Protected
WRT0 = OFF	Open

### Write Protection Block 1:

WRT1 = ON	Protected
WRT1 = OFF	Open

# **Configuration Register Write Protection:**

WRTC = ON	Protected
WRTC = OFF	Open

# **Boot Block Write Protection:**

WRTB = ON	Protected
WRTB = OFF	Open

# **Data EEPROM Write Protection:**

WRTD = ON	Protected
WRTD = OFF	Open

### **Table Read Protection Block 0:**

EBTRO = ON	Protected
EBTR0 = OFF	Open

# **Table Read Protection Block 1:**

EBTR1 = ON	Protected
EBTR1 = OFF	Open

# **Boot Block Table Read Protection:**

EBTRB = ON	Protected
EBTRB = OFF	Open

# PIC18F4320

# **Oscillator Selection:**

OSC = LP	LP Oscillator
OSC = XT	XT Oscillator
OSC = HS	HS Oscillator
OSC = EC	External Clock on OSC1, OSC2 as FOSC/4
OSC = ECIO	External Clock on OSC1, OSC2 as RA6
OSC = HSPLL	HS + PLL
OSC = RCIO	External RC on OSC1, OSC2 as RA6
OSC = INTIO2	Internal RC, OSC1 as RA7, OSC2 as RA6
OSC = INTIO1	Internal RC, OSC1 as RA7, OSC2 as FOSC/4
OSC = RC	External RC on OSC1, OSC2 as FOSC/4

# **Fail-Safe Clock Monitor:**

FSCM = OFF	Fail-Safe Clock Monitor disabled
FSCM = ON	Fail-Safe Clock Monitor enabled

# **Internal External Switch Over mode:**

IESO = OFF	Internal External Switch Over mode disabled
IESO = ON	Internal External Switch Over mode enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# PORTB A/D Enable:

PBAD = DIG	Digital
PBAD = ANA	Analog

# **CCP2 Pin Function:**

CCP2MX = B3	RB3
CCP2MX = OFF	RB3
CCP2MX = C1	RC1
CCP2MX = ON	RC1

# Stack Full/Overflow Reset:

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

# **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

### Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

# **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

# **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

# **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F4321

# **Oscillator Selection:**

OSC = LP	LP Oscillator
OSC = XT	XT Oscillator
OSC = HS	HS Oscillator
OSC = EC	External Clock on OSC1, OSC2 as FOSC/4
OSC = ECIO	External Clock on OSC1, OSC2 as RA6
OSC = HSPLL	HS + PLL
OSC = RCIO	External RC on OSC1, OSC2 as RA6
OSC = INTIO2	Internal RC, OSC1 as RA7, OSC2 as RA6
OSC = INTIO1	Internal RC, OSC1 as RA7, OSC2 as FOSC/4
OSC = RC	External RC on OSC1, OSC2 as FOSC/4

# **Fail-Safe Clock Monitor:**

FSCM = OFF	Disabled
FSCM = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

### **Brown-out Reset:**

BOR = OFF	Disabled Always
BOR = SOFT	Enabled by SBOREN
BOR = NOSLP	Enabled except in Sleep
BOR = ON	Enabled Always

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# T1 Oscillator Enable:

LPT1OSC = HIGH	High Power - High Noise Immunity
LPT1OSC = LOW	Low Power - Low Noise Immunity

### **PORTB A/D Enable:**

PBAD = DIG	PORTB<4:0> digital on Reset
PBAD = ANA	PORTB<4:0> analog on Reset

# **CCP2 MUX:**

CCP2MX = RB3	Multiplexed with RB3
CCP2MX = RC1	Multiplexed with RC1

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

### **ICD Port Enable:**

ICPORT = OFF	Disabled
ICPORT = ON	Enabled

# **Boot Block Size:**

BBSIZ = BB256	256 Word
BBSIZ = BB512	512 Word
BBSIZ = BB1K	1024 Word

### **XINST Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

### **Code Protection Block 0:**

CPO = ON	Protected
CPO = OFF	Open

#### **Code Protection Block 1:**

CP1 = ON	Protected
CP1 = OFF	Open

#### **Code Protect - Boot Block:**

CPB = ON	Protected
CPB = OFF	Open

# **Code Protect - Data EEPROM:**

CPD = ON	Protected
CPD = OFF	Open

### Write Protection Block 0:

WRTO = ON	Protected
WRT0 = OFF	Open

# **Write Protection Block 1:**

WRT1 = ON	Protected
WRT1 = OFF	Open

# **Configuration Register Write Protection:**

WRTC = ON	Protected
WRTC = OFF	Open

### **Boot Block Write Protection:**

WRTB = ON	Protected
WRTB = OFF	Open

### **Data EEPROM Write Protection:**

WRTD = ON	Protected
WRTD = OFF	Open

# **Table Read Protection Block 0:**

EBTRO = ON	Protected
EBTR0 = OFF	Open

# **Table Read Protection Block 1:**

EBTR1 = ON	Protected
EBTR1 = OFF	Open

# **Boot Block Table Read Protection:**

EBTRB = ON	Protected
EBTRB = OFF	Open

# PIC18F4331

# **Oscillator Selection:**

LP
XT
HS
External RC, RA6 is CLKOUT
EC, RA6 is CLKOUT
EC, RA6 is I/O
HS-PLL Enabled
External RC, RA6 is I/O
Internal RC, RA6 & RA7 are I/O
Internal RC, RA6 is CLKOUT, RA7 is I/O
External RC, RA6 is CLKOUT
External RC, RA6 is CLKOUT

# Fail-Safe Clock Monitor Enable:

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal/External Switch-Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRTEN = ON	Enabled
PWRTEN = OFF	Disabled

# **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# Watchdog Timer:

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

# **Watchdog Timer Enable Window:**

WINEN = ON	Enabled
WINEN = OFF	Disabled

# Watchdog Postscaler:

WDPS = 1	1:1
WDPS = 2	1:2
WDPS = 4	1:4
WDPS = 8	1:8
WDPS = 16	1:16
WDPS = 32	1:32
WDPS = 64	1:64
WDPS = 128	1:128
WDPS = 256	1:256
WDPS = 512	1:512
WDPS = 1024	1:1024
WDPS = 2048	1:2048
WDPS = 4096	1:4096
WDPS = 8192	1:8192
WDPS = 16384	1:16384
WDPS = 32768	1:32768

### **Timer1 Oscillator MUX:**

T1OSCMX = OFF	Active
T1OSCMX = ON	Inactive

# **High-Side Transistors Polarity:**

HPOL = LOW	Active low
HPOL = HIGH	Active high

# **Low-Side Transistors Polarity:**

LPOL = LOW	Active low
LPOL = HIGH	Active high

# PWM output pins Reset state control:

PWMPIN = ON	Enabled
PWMPIN = OFF	Disabled

### MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# External clock MUX bit:

EXCLKMX = RD0	Multiplexed with RD0
EXCLKMX = RC3	Multiplexed with RC3

### **PWM4 MUX bit:**

PWM4MX = RD5	Multiplexed with RD5
PWM4MX = RB5	Multiplexed with RB5

# SSP I/O MUX bit:

SSPMX = RD1	SDO output is multiplexed with RD1
SSPMX = RC7	SD0 output is multiplexed with RC7

# **FLTA MUX bit:**

FLTAMX = RD4	Multiplexed with RD4
FLTAMX = RC1	Multiplexed with RC1

### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Low Voltage Programming:**

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

# **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

# **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# **Write Protection Block 0:**

WRTO = ON	Enabled
WRT0 = OFF	Disabled

# **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

# **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

# **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

# **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F4410

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

### **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **PORTB A/D Enable:**

PBADEN = OFF	PORTB<4:0> digital on Reset
PBADEN = ON	PORTB<4:0> analog on Reset

# **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Enhanced CPU Enable:**

ENHCPU = OFF	Disabled
ENHCPU = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

### Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

# **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F442

### **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

#### Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

### **Watchdog Postscaler:**

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128

# **CCP2 MUX:**

CCP2MUX = OFF	Disable (RB3)
CCP2MUX = ON	Enable (RC1)

### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

# **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

### Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

# **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F4420

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

### **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# PORTB A/D Enable:

PBADEN = OFF	PORTB<4:0> digital on Reset
PBADEN = ON	PORTB<4:0> analog on Reset

# **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Enhanced CPU Enable:**

ENHCPU = OFF	Disabled
ENHCPU = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

### Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

# **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F4431

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC2	External RC, RA6 is CLKOUT
OSC = EC	EC, RA6 is CLKOUT
OSC = ECIO	EC, RA6 is I/O
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	External RC, RA6 is I/O
OSC = IRCIO	Internal RC, RA6 & RA7 are I/O
OSC = IRC	Internal RC, RA6 is CLKOUT, RA7 is I/O
OSC = RC1	External RC, RA6 is CLKOUT
OSC = RC	External RC, RA6 is CLKOUT

# **Fail-Safe Clock Monitor Enable:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal/External Switch-Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRTEN = ON	Enabled
PWRTEN = OFF	Disabled

# **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# Watchdog Timer:

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

# **Watchdog Timer Enable Window:**

WINEN = ON	Enabled
WINEN = OFF	Disabled

# Watchdog Postscaler:

WDPS = 1	1:1
WDPS = 2	1:2
WDPS = 4	1:4
WDPS = 8	1:8
WDPS = 16	1:16
WDPS = 32	1:32
WDPS = 64	1:64
WDPS = 128	1:128
WDPS = 256	1:256
WDPS = 512	1:512
WDPS = 1024	1:1024
WDPS = 2048	1:2048
WDPS = 4096	1:4096
WDPS = 8192	1:8192
WDPS = 16384	1:16384
WDPS = 32768	1:32768

# **Timer1 Oscillator MUX:**

T1OSCMX = OFF	Active
T1OSCMX = ON	Inactive

# **High-Side Transistors Polarity:**

HPOL = LOW	Active low
HPOL = HIGH	Active high

# **Low-Side Transistors Polarity:**

LPOL = LOW	Active low
LPOL = HIGH	Active high

# PWM output pins Reset state control:

PWMPIN = ON	Enabled
PWMPIN = OFF	Disabled

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **External clock MUX bit:**

EXCLKMX = RD0	Multiplexed with RD0
EXCLKMX = RC3	Multiplexed with RC3

# PWM4 MUX bit:

PWM4MX = RD5	Multiplexed with RD5
PWM4MX = RB5	Multiplexed with RB5

# SSP I/O MUX bit:

SSPMX = RD1	SDO output is multiplexed with RD1
SSPMX = RC7	SD0 output is multiplexed with RC7

### **FLTA MUX bit:**

FLTAMX = RD4	Multiplexed with RD4
FLTAMX = RC1	Multiplexed with RC1

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Low Voltage Programming:**

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

# **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

# **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

### **Write Protection Block 0:**

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

# **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

# **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

# **Boot Block Write Protection:**

V	NRTB = ON	Enabled
V	WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

# **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F4439

### **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

## Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

## **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F4450

## 96 MHz PLL Prescaler:

PLLDIV = 1	No divide (4 MHz input)
PLLDIV = 2	Divide by 2 (8 MHz input)
PLLDIV = 3	Divide by 3 (12 MHz input)
PLLDIV = 4	Divide by 4 (16 MHz input)
PLLDIV = 5	Divide by 5 (20 MHz input)
PLLDIV = 6	Divide by 6 (24 MHz input)
PLLDIV = 10	Divide by 10 (40 MHz input)
PLLDIV = 12	Divide by 12 (48 MHz input)

## **CPU System Clock Postscaler:**

CPUDIV = OSC1_PLL2	[OSC1/OSC2 Src: /1][96 MHz PLL Src: /2]
CPUDIV = OSC2_PLL3	[OSC1/OSC2 Src: /2][96 MHz PLL Src: /3]
CPUDIV = OSC3_PLL4	[OSC1/OSC2 Src: /3][96 MHz PLL Src: /4]
CPUDIV = OSC4_PLL6	[OSC1/OSC2 Src: /4][96 MHz PLL Src: /6]

# **Full-Speed USB Clock Source Selection:**

USBDIV = 1	Clock source from OSC1/OSC2
USBDIV = 2	Clock source from 96 MHz PLL/2

## **Oscillator Selection bits:**

FOSC = XT_XT	XT oscillator, XT used by USB
FOSC = XTPLL_XT	XT oscillator, PLL enabled, XT used by USB
FOSC = ECIO_EC	External clock, port function on RA6, EC used by USB
FOSC = EC_EC	External clock, CLKOUT on RA6, EC used by USB
FOSC = ECPLLIO_EC	External clock, PLL enabled, port function on RA6, EC used by USB
FOSC = ECPLL_EC	External clock, PLL enabled, CLKOUT on RA6, EC used by USB
FOSC = INTOSCIO_EC	Internal oscillator, port function on RA6, EC used by USB
FOSC = INTOSC_EC	Internal oscillator, CLKOUT on RA6, EC used by USB
FOSC = INTOSC_XT	Internal oscillator, XT used by USB
FOSC = INTOSC_HS	Internal oscillator, HS used by USB
FOSC = HS	HS oscillator, HS used by USB
FOSC = HSPLL_HS	HS oscillator, PLL enabled, HS used by USB

## **Fail-Safe Clock Monitor:**

FCMEM = OFF	Disabled
FCMEM = ON	Enabled

## **Internal/External Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# Power-up Timer:

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOR = OFF	Disabled
BOR = SOFT	Controlled by SBOREN
BOR = ON_ACTIVE	Enabled when the device is not in Sleep, SBOREN bit is disabled
BOR = ON	Enabled, SBOREN bit is disabled

## **Brown-out Voltage:**

BORV = 46	4.6V
BORV = 43	4.3V
BORV = 28	2.8V
BORV = 21	2.1V

# **USB Voltage Regulator Enable:**

VREGEN = OFF	Disabled
VREGEN = ON	Enabled

# **Watchdog Timer:**

WDT = OFF	HW Disabled - SW Controlled
WDT = ON	HW Enabled - SW Disabled

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

#### Low Power Timer1 Oscillator Enable:

LPT1OSC = OFF	Timer1 oscillator configured for high power
LPT1OSC = ON	Timer1 oscillator configured for low power

#### **PORTB A/D Enable:**

PBADEN = OFF	PORTB<4:0> pins are configured as digital I/O on Reset
PBADEN = ON	PORTB<4:0> pins are configured as analog input on Reset

## **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

## Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Boot Block Size Select Bit:**

BBSIZ = BB2K	2KW Boot Block Size
BBSIZ = BB1K	1KW Boot Block Size

# **Dedicated In-Circuit Debug/Programming Enable:**

ICPRT = OFF	Disabled
ICPRT = ON	Enabled

## **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

## **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

## **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F4455

## 96 MHz PLL Prescaler:

PLLDIV = 1	No divide (4 MHz input)
PLLDIV = 2	Divide by 2 (8 MHz input)
PLLDIV = 3	Divide by 3 (12 MHz input)
PLLDIV = 4	Divide by 4 (16 MHz input)
PLLDIV = 5	Divide by 5 (20 MHz input)
PLLDIV = 6	Divide by 6 (24 MHz input)
PLLDIV = 10	Divide by 10 (40 MHz input)
PLLDIV = 12	Divide by 12 (48 MHz input)

## **CPU System Clock Postscaler:**

CPUDIV = OSC1_PLL2	[OSC1/OSC2 Src: /1][96 MHz PLL Src: /2]
CPUDIV = OSC2_PLL3	[OSC1/OSC2 Src: /2][96 MHz PLL Src: /3]
CPUDIV = OSC3_PLL4	[OSC1/OSC2 Src: /3][96 MHz PLL Src: /4]
CPUDIV = OSC4_PLL6	[OSC1/OSC2 Src: /4][96 MHz PLL Src: /6]

# **Full-Speed USB Clock Source Selection:**

USBDIV = 1	Clock source from OSC1/OSC2
USBDIV = 2	Clock source from 96 MHz PLL/2

## **Oscillator Selection bits:**

	1
FOSC = XT_XT	XT oscillator, XT used by USB
FOSC = XTPLL_XT	XT oscillator, PLL enabled, XT used by USB
FOSC = ECIO_EC	External clock, port function on RA6, EC used by USB
FOSC = EC_EC	External clock, CLKOUT on RA6, EC used by USB
FOSC = ECPLLIO_EC	External clock, PLL enabled, port function on RA6, EC used by USB
FOSC = ECPLL_EC	External clock, PLL enabled, CLKOUT on RA6, EC used by USB
FOSC = INTOSCIO_EC	Internal oscillator, port function on RA6, EC used by USB
FOSC = INTOSC_EC	Internal oscillator, CLKOUT on RA6, EC used by USB
FOSC = INTOSC_XT	Internal oscillator, XT used by USB
FOSC = INTOSC_HS	Internal oscillator, HS used by USB
FOSC = HS	HS oscillator, HS used by USB
FOSC = HSPLL_HS	HS oscillator, PLL enabled, HS used by USB

## **Fail-Safe Clock Monitor:**

FCMEM = OFF	Disabled
FCMEM = ON	Enabled

## Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

## **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOR = OFF	Disabled
BOR = SOFT	Controlled by SBOREN
BOR = ON_ACTIVE	Enabled when the device is not in Sleep, SBOREN bit is disabled
BOR = ON	Enabled, SBOREN bit is disabled

# **Brown-out Voltage:**

BORV = 46	4.6V
BORV = 43	4.3V
BORV = 28	2.8V
BORV = 21	2.1V

## **USB Voltage Regulator Enable:**

VREGEN = OFF	Disabled
VREGEN = ON	Enabled

## Watchdog Timer:

WDT = OFF	HW Disabled - SW Controlled
WDT = ON	HW Enabled - SW Disabled

## Watchdog Postscaler:

Wateriaby i Ostscaler.	
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## **Low Power Timer1 Oscillator Enable:**

LPT1OSC = OFF	Timer1 oscillator configured for high power
LPT1OSC = ON	Timer1 oscillator configured for low power

## **PORTB A/D Enable:**

PBADEN = OFF	PORTB<4:0> pins are configured as digital I/O on Reset
PBADEN = ON	PORTB<4:0> pins are configured as analog input on Reset

## **CCP2 MUX bit:**

CCP2MX = OFF	CCP2 input/output is multiplexed with RB3
CCP2MX = ON	CCP2 input/output is multiplexed with RC1

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

## Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Dedicated In-Circuit Debug/Programming Enable:**

ICPRT = OFF	Disabled
ICPRT = ON	Enabled

#### **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

## **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

## **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

## Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

## **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### Write Protection Block 2:

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### Write Protection Block 3:

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

## **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## **PIC18F448**

## **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

## Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

## **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

## **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

## **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

## **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

## **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

## **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F4480

## **Oscillator Selection bits:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	External RC with OSC2 as divide by 4 clock out
OSC = EC	EC with OSC2 as divide by 4 clock out
OSC = ECIO	EC with OSC2 as RA6
OSC = HSPLL	HS with HW enabled 4xPLL
OSC = RCIO	External RC with OSC2 as RA6
OSC = IRCIO67	Internal RC with OSC2 as RA6 and OSC1 as RA7
OSC = IRCIO7	Internal RC with OSC1 as RA7 and OSC2 as divide by 4 clock out
OSC = ERC1	External RC with OSC2 as divide by 4 clock out
OSC = ERC	External RC with OSC2 as divide by 4 clock out

## Fail-Safe Clock Monitor:

FCMENB = OFF	Disabled
FCMENB = ON	Enabled

## **Internal External Osc. Switch:**

IESOB = OFF	Disabled
IESOB = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOR = OFF	Disabled
BOR = SBORENCTRL	Controlled by SBOREN
BOR = BOACTIVE	Enabled whenever Part is Active - SBOREN Disabled
BOR = BOHW	Enabled in HW, SBOREN Disabled

## **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# Watchdog Timer:

WDT = OFF	HW Disabled - SW Controlled
WDT = ON	HW Enabled - SW Disabled

## **Watchdog Postscaler:**

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## **Low Power Timer1 Oscillator:**

LPT1OSC = OFF	Timer1 Low Power Oscillator Disabled
LPT1OSC = ON	Timer1 Low Power Oscillator Active

## **PORTB Pins Configured for A/D:**

PORTB<4> and PORTB<1:0> Configured as Digital I/O Pins on Reset
PORTB<4> and PORTB<1:0> Configured as Analog Pins on Reset

# **BackGround Debug:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Extended Instruction Set CPU:**

XINST = OFF	Disabled
XINST = ON	Enabled

## **Boot Block Size:**

BBSIZ = 1024	1K words (2K bytes) Boot Block
BBSIZ = 2048	2K words (4K bytes) Boot Block

## **Low Voltage Programming:**

LVP = OFF	Disabled
LVP = ON	Enabled

## Stack Overflow/Underflow Reset:

STVREN = OFF	Disabled
STVREN = ON	Enabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

## **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

## Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

#### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

## **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F44J10

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

## **Watchdog Timer:**

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

#### **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select:**

FOSC2 = OFF	When SCS1:SCS0 = 00, INTRC is the clock source
FOSC2 = ON	When SCS1:SCS0 = 00, FOSC1:FOSC0 sets the
	clock source

## Oscillator Selection bits:

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

## Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# **CCP2 MUX:**

CCP2MX = ALTERNATE	Multiplexed with RB3
CCP2MX = DEFAULT	Multiplexed with RC1

## PIC18F4510

### **Oscillator Selection:**

Occident ocidentiani.	
OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

## Fail-Safe Clock Monitor:

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## **Internal External Osc. Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

## **Brown-out Voltage:**

BORV = 46	4.6V
BORV = 43	4.3V
BORV = 28	2.8V
BORV = 21	2.1V

## **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

## **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## T1 Oscillator Enable:

LPT1OSC = OFF	Disabled
LPT1OSC = ON	Enabled

## PORTB A/D Enable:

PBADEN = OFF	PORTB<4:0> digital on Reset
PBADEN = ON	PORTB<4:0> analog on Reset

## **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

## **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

## Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

#### XINST Enable:

XINST = OFF	Disabled
XINST = ON	Enabled

## **Background Debugger Enable:**

DEDIIG ON	Enabled
DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

## **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

## **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

## **Write Protection Block 0:**

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

## **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

## **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

## **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

## **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F4515

#### **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

## **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

## **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## **PORTB A/D Enable:**

PBADEN = OFF	PORTB<4:0> digital on Reset
PBADEN = ON	PORTB<4:0> analog on Reset

## **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

## **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

## Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

#### **Enhanced CPU Enable:**

ENHCPU = OFF	Disabled
ENHCPU = ON	Enabled

## **Background Debugger Enable:**

DEDIIG ON	Enabled
DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

## **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

## **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Write Protection Block 0:**

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

## **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

## **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F452

## **Oscillator Selection:**

- Collinator Collocation	
OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

## Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

## **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

## **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

## **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

## Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

#### **CCP2 MUX:**

CCP2MUX = OFF	Disable (RB3)
CCP2MUX = ON	Enable (RC1)

#### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

## Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

## **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

## **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

## **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

## **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### Write Protection Block 2:

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

## **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

## **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

## **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F4520

## **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

## **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## **Internal External Osc. Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

## **Brown-out Voltage:**

BORV = 46	4.6V
BORV = 43	4.3V
BORV = 28	2.8V
BORV = 21	2.1V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

_	I
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## T1 Oscillator Enable:

LPT1OSC = OFF	Disabled
LPT1OSC = ON	Enabled

## **PORTB A/D Enable:**

PBADEN = OFF	PORTB<4:0> digital on Reset
PBADEN = ON	PORTB<4:0> analog on Reset

## **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

## **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

## Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## XINST Enable:

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

## **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

## Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

## **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F4525

## **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

## Fail-Safe Clock Monitor:

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## **Internal External Osc. Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

## **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

## **Brown-out Voltage:**

BORV = 46	Maximum
BORV = 43	High
BORV = 28	Low
BORV = 21	Minimum

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

## Watchdog Postscaler:

Traterial g i detectatori	
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## T1 Oscillator Enable:

LPT1OSC = OFF	Disabled
LPT1OSC = ON	Enabled

## **PORTB A/D Enable:**

PBADEN = OFF	PORTB<4:0> digital on Reset
PBADEN = ON	PORTB<4:0> analog on Reset

## **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

## **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

#### **XINST Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

### Code Protection Block 2:

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

## **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRT0 = ON	Enabled
WRTO = OFF	Disabled

## **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

## **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F4539

#### **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

## **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

## Watchdog Postscaler:

•	
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

## **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

## Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

## **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

## **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

## **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

## **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

## **Write Protection Block 0:**

WRTO = ON	Enabled
WRT0 = OFF	Disabled

## **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

## **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

## **Boot Block Write Protection:**

V	NRTB = ON	Enabled
V	WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F4550

#### 96 MHz PLL Prescaler:

PLLDIV = 1	No divide (4 MHz input)
PLLDIV = 2	Divide by 2 (8 MHz input)
PLLDIV = 3	Divide by 3 (12 MHz input)
PLLDIV = 4	Divide by 4 (16 MHz input)
PLLDIV = 5	Divide by 5 (20 MHz input)
PLLDIV = 6	Divide by 6 (24 MHz input)
PLLDIV = 10	Divide by 10 (40 MHz input)
PLLDIV = 12	Divide by 12 (48 MHz input)

## **CPU System Clock Postscaler:**

CPUDIV = OSC1_PLL2	[OSC1/OSC2 Src: /1][96 MHz PLL Src: /2]
CPUDIV = OSC2_PLL3	[OSC1/OSC2 Src: /2][96 MHz PLL Src: /3]
CPUDIV = OSC3_PLL4	[OSC1/OSC2 Src: /3][96 MHz PLL Src: /4]
CPUDIV = OSC4_PLL6	[OSC1/OSC2 Src: /4][96 MHz PLL Src: /6]

# **Full-Speed USB Clock Source Selection:**

USBDIV = 1	Clock source from OSC1/OSC2
USBDIV = 2	Clock source from 96 MHz PLL/2

## **Oscillator Selection bits:**

FOSC = XT_XT	XT oscillator, XT used by USB
FOSC = XTPLL_XT	XT oscillator, PLL enabled, XT used by USB
FOSC = ECIO_EC	External clock, port function on RA6, EC used by USB
FOSC = EC_EC	External clock, CLKOUT on RA6, EC used by USB
FOSC = ECPLLIO_EC	External clock, PLL enabled, port function on RA6, EC used by USB
FOSC = ECPLL_EC	External clock, PLL enabled, CLKOUT on RA6, EC used by USB
FOSC = INTOSCIO_EC	Internal oscillator, port function on RA6, EC used by USB
FOSC = INTOSC_EC	Internal oscillator, CLKOUT on RA6, EC used by USB
FOSC = INTOSC_XT	Internal oscillator, XT used by USB
FOSC = INTOSC_HS	Internal oscillator, HS used by USB
FOSC = HS	HS oscillator, HS used by USB
FOSC = HSPLL_HS	HS oscillator, PLL enabled, HS used by USB

## **Fail-Safe Clock Monitor:**

FCMEM = OFF	Disabled
FCMEM = ON	Enabled

## **Internal/External Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# Power-up Timer:

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = SOFT	Controlled by SBOREN
BOR = ON_ACTIVE	Enabled when the device is not in Sleep, SBOREN bit is disabled
BOR = ON	Enabled, SBOREN bit is disabled

## **Brown-out Voltage:**

BORV = 46	4.6V
BORV = 43	4.3V
BORV = 28	2.8V
BORV = 21	2.1V

# **USB Voltage Regulator Enable:**

VREGEN = OFF	Disabled
VREGEN = ON	Enabled

# **Watchdog Timer:**

WDT = OFF	HW Disabled - SW Controlled
WDT = ON	HW Enabled - SW Disabled

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## **Low Power Timer1 Oscillator Enable:**

LPT1OSC = OFF	Timer1 oscillator configured for high power
LPT1OSC = ON	Timer1 oscillator configured for low power

#### **PORTB A/D Enable:**

PBADEN = OFF	PORTB<4:0> pins are configured as digital I/O on Reset
PBADEN = ON	PORTB<4:0> pins are configured as analog input on Reset

## **CCP2 MUX bit:**

CCP2MX = OFF	CCP2 input/output is multiplexed with RB3
CCP2MX = ON	CCP2 input/output is multiplexed with RC1

## **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Dedicated In-Circuit Debug/Programming Enable:**

ICPRT = OFF	Disabled
ICPRT = ON	Enabled

## **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

## **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

## Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

## **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

## **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F458

#### **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

## Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

## **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

# **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

# **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

# **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F4580

# **Oscillator Selection bits:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	External RC with OSC2 as divide by 4 clock out
OSC = EC	EC with OSC2 as divide by 4 clock out
OSC = ECIO	EC with OSC2 as RA6
OSC = HSPLL	HS with HW enabled 4xPLL
OSC = RCIO	External RC with OSC2 as RA6
OSC = IRCIO67	Internal RC with OSC2 as RA6 and OSC1 as RA7
OSC = IRCIO7	Internal RC with OSC1 as RA7 and OSC2 as divide by 4 clock out
OSC = ERC1	External RC with OSC2 as divide by 4 clock out
OSC = ERC	External RC with OSC2 as divide by 4 clock out

# Fail-Safe Clock Monitor:

FCMENB = OFF	Disabled
FCMENB = ON	Enabled

# Internal External Osc. Switch:

IESOB = OFF	Disabled
IESOB = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOR = OFF	Disabled
BOR = SBORENCTRL	Controlled by SBOREN
BOR = BOACTIVE	Enabled whenever Part is Active - SBOREN Disabled
BOR = BOHW	Enabled in HW, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

WDT = OFF	HW Disabled - SW Controlled
WDT = ON	HW Enabled - SW Disabled

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

#### **Low Power Timer1 Oscillator:**

LPT1OSC = OFF	Timer1 Low Power Oscillator Disabled
LPT1OSC = ON	Timer1 Low Power Oscillator Active

# **PORTB Pins Configured for A/D:**

PORTB<4> and PORTB<1:0> Configured as Digital I/O Pins on Reset
PORTB<4> and PORTB<1:0> Configured as Analog Pins on Reset

# **BackGround Debug:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Extended Instruction Set CPU:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Boot Block Size:**

BBSIZ = 1024	1K words (2K bytes) Boot Block
BBSIZ = 2048	2K words (4K bytes) Boot Block

# **Low Voltage Programming:**

LVP = OFF	Disabled
LVP = ON	Enabled

# Stack Overflow/Underflow Reset:

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

#### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

# **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

# **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

# **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F4585

#### **Oscillator Selection bits:**

Occident Dito.	
OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	External RC with OSC2 as divide by 4 clock out
OSC = EC	EC with OSC2 as divide by 4 clock out
OSC = ECIO	EC with OSC2 as RA6
OSC = HSPLL	HS with HW enabled 4xPLL
OSC = RCIO	External RC with OSC2 as RA6
OSC = IRCIO67	Internal RC with OSC2 as RA6 and OSC1 as RA7
OSC = IRCIO7	Internal RC with OSC1 as RA7 and OSC2 as divide by 4 clock out
OSC = ERC1	External RC with OSC2 as divide by 4 clock out
OSC = ERC	External RC with OSC2 as divide by 4 clock out

#### **Fail-Safe Clock Monitor:**

FCMENB = OFF	Disabled
FCMENB = ON	Enabled

# **Internal External Osc. Switch:**

IESOB = OFF	Disabled
IESOB = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOR = OFF	Disabled
BOR = SBORENCTRL	Controlled by SBOREN
BOR = BOACTIVE	Enabled whenever Part is Active - SBOREN Disabled
BOR = BOHW	Enabled in HW, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# **Watchdog Timer:**

WDT = OFF	HW Disabled - SW Controlled
WDT = ON	HW Enabled - SW Disabled

# **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **Low Power Timer1 Oscillator:**

LPT1OSC = OFF	Timer1 Low Power Oscillator Disabled
LPT1OSC = ON	Timer1 Low Power Oscillator Active

# **PORTB Pins Configured for A/D:**

	<del>-</del>
PBADEN = OFF	PORTB<4> and PORTB<1:0> Configured as Digital
	I/O Pins on Reset
PBADEN = ON	PORTB<4> and PORTB<1:0> Configured as Analog
	Pins on Reset

# **BackGround Debug:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Enhanced Instruction Set CPU:**

XINST = OFF	Disabled
XINST = ON	Enabled

#### **Boot Block Size:**

BBSIZ = 1024	1K words (2K bytes) Boot Block
BBSIZ = 2048	2K words (4K bytes) Boot Block
BBSIZ = 4096	4K words (8K bytes) Boot Block

# **Low Voltage Programming:**

LVP = OFF	Disabled
LVP = ON	Enabled

#### Stack Overflow/Underflow Reset:

STVREN = OFF	Disabled
STVREN = ON	Enabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

# **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

# **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

# **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F45J10

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Watchdog Timer:**

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

# **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# **Internal/External Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select:**

FOSC2 = OFF	When SCS1:SCS0 = 00, INTRC is the clock source
FOSC2 = ON	When SCS1:SCS0 = 00, FOSC1:FOSC0 sets the
	clock source

# **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# **CCP2 MUX:**

CCP2MX = ALTERNATE	Multiplexed with RB3
CCP2MX = DEFAULT	Multiplexed with RC1

# PIC18F4610

# **Oscillator Selection:**

LP
XT
HS
RC
EC-OSC2 as Clock Out
EC-OSC2 as RA6
HS-PLL Enabled
RC-OSC2 as RA6
INTRC-OSC2 as RA6, OSC1 as RA7
INTRC-OSC2 as Clock Out, OSC1 as RA7

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

WDT = OFF	Disabled
WDT = ON	Enabled

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **PORTB A/D Enable:**

PBADEN = OFF	PORTB<4:0> digital on Reset
PBADEN = ON	PORTB<4:0> analog on Reset

# **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Enhanced CPU Enable:**

ENHCPU = OFF	Disabled
ENHCPU = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

# **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

# **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

# **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F4620

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

#### Fail-Safe Clock Monitor:

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 46	Maximum
BORV = 43	High
BORV = 28	Low
BORV = 21	Minimum

WDT = OFF	Disabled
WDT = ON	Enabled

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# T1 Oscillator Enable:

LPT1OSC = OFF	Disabled
LPT1OSC = ON	Enabled

# **PORTB A/D Enable:**

PBADEN = OFF	PORTB<4:0> digital on Reset
PBADEN = ON	PORTB<4:0> analog on Reset

# **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# XINST Enable:

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

# **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

# **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F4680

# **Oscillator Selection bits:**

Occinator Corcottori Bitor	
OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	External RC with OSC2 as divide by 4 clock out
OSC = EC	EC with OSC2 as divide by 4 clock out
OSC = ECIO	EC with OSC2 as RA6
OSC = HSPLL	HS with HW enabled 4xPLL
OSC = RCIO	External RC with OSC2 as RA6
OSC = IRCIO67	Internal RC with OSC2 as RA6 and OSC1 as RA7
OSC = IRCIO7	Internal RC with OSC1 as RA7 and OSC2 as divide by 4 clock out
OSC = ERC1	External RC with OSC2 as divide by 4 clock out
OSC = ERC	External RC with OSC2 as divide by 4 clock out

#### **Fail-Safe Clock Monitor:**

FCMENB = OFF	Disabled
FCMENB = ON	Enabled

# **Internal External Osc. Switch:**

IESOB = OFF	Disabled
IESOB = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOR = OFF	Disabled
BOR = SBORENCTRL	Controlled by SBOREN
BOR = BOACTIVE	Enabled whenever Part is Active - SBOREN Disabled
BOR = BOHW	Enabled in HW, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# **Watchdog Timer:**

WDT = OFF	HW Disabled - SW Controlled
WDT = ON	HW Enabled - SW Disabled

# **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **Low Power Timer1 Oscillator:**

LPT1OSC = OFF	Timer1 Low Power Oscillator Disabled
LPT1OSC = ON	Timer1 Low Power Oscillator Active

# **PORTB Pins Configured for A/D:**

3	
PBADEN = OFF	PORTB<4> and PORTB<1:0> Configured as Digital
	I/O Pins on Reset
PBADEN = ON	PORTB<4> and PORTB<1:0> Configured as Analog
	Pins on Reset

# **BackGround Debug:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Enhanced Instruction Set CPU:**

XINST = OFF	Disabled
XINST = ON	Enabled

#### **Boot Block Size:**

BBSIZ = 1024	1K words (2K bytes) Boot Block
BBSIZ = 2048	2K words (4K bytes) Boot Block
BBSIZ = 4096	4K words (8K bytes) Boot Block

# **Low Voltage Programming:**

LVP = OFF	Disabled
LVP = ON	Enabled

#### Stack Overflow/Underflow Reset:

STVREN = OFF	Disabled
STVREN = ON	Enabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

# **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

# **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

# **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

# **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

# **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

# **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F6310

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC-OSC2 as Clock Out
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

WDT = OFF	Disabled
WDT = ON	Enabled

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **Low Power Timer1 Selection:**

LPT1OSC = OFF	High Power, High noise immunity T1OSC selected
LPT1OSC = ON	Low Power, Low noise immunity T1OSC selected

# **CCP2 MUX:**

CCP2MX = PORTBE	CCP2 input/output is multiplexed with RE7/RB3
CCP2MX = PORTC	CCP2 input/output is multiplexed with RC1

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Extended Instruction set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection:**

CP = ON	Enabled
CP = OFF	Disabled

# **Table Read Protection Internal Memory:**

EBTR = ON	Enabled
EBTR = OFF	Disabled

# PIC18F6390

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC-OSC2 as Clock Out
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

WDT = OFF	Disabled
WDT = ON	Enabled

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **Low Power Timer1 Selection:**

LPT1OSC = OFF	High Power, High noise immunity T1OSC selected
LPT1OSC = ON	Low Power, Low noise immunity T1OSC selected

# **CCP2 MUX:**

CCP2MX = PORTBE	CCP2 input/output is multiplexed with RE7/RB3
CCP2MX = PORTC	CCP2 input/output is multiplexed with RC1

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Extended Instruction set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection:**

CP = ON	Enabled
CP = OFF	Disabled

# **Table Read Protection Internal Memory:**

EBTR = ON	Enabled
EBTR = OFF	Disabled

# PIC18F6410

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC-OSC2 as Clock Out
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

WDT = OFF	Disabled
WDT = ON	Enabled

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **Low Power Timer1 Selection:**

LPT1OSC = OFF	High Power, High noise immunity T1OSC selected
LPT1OSC = ON	Low Power, Low noise immunity T1OSC selected

# **CCP2 MUX:**

CCP2MX = PORTBE	CCP2 input/output is multiplexed with RE7/RB3
CCP2MX = PORTC	CCP2 input/output is multiplexed with RC1

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Extended Instruction set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection:**

CP = ON	Enabled
CP = OFF	Disabled

# **Table Read Protection Internal Memory:**

EBTR = ON	Enabled
EBTR = OFF	Disabled

# PIC18F6490

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC-OSC2 as Clock Out
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# Power-up Timer:

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

WDT = OFF	Disabled
WDT = ON	Enabled

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **Low Power Timer1 Selection:**

LPT1OSC = OFF	High Power, High noise immunity T1OSC selected
LPT1OSC = ON	Low Power, Low noise immunity T1OSC selected

# **CCP2 MUX:**

CCP2MX = PORTBE	CCP2 input/output is multiplexed with RE7/RB3
CCP2MX = PORTC	CCP2 input/output is multiplexed with RC1

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Extended Instruction set Enable:**

XINST =	: OFF	Disabled
XINST =	ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection:**

CP = ON	Enabled
CP = OFF	Disabled

# **Table Read Protection Internal Memory:**

EBTR = ON	Enabled
EBTR = OFF	Disabled

# PIC18F64J15

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Watchdog Timer:**

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

# **Code Protection:**

CPO = ON	Enabled
CP0 = OFF	Disabled

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select:**

FOSC2 = OFF	When SCS1:SCS0 = 00, INTRC is the clock source
FOSC2 = ON	When SCS1:SCS0 = 00, FOSC1:FOSC0 sets the
	clock source

# **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

# **CCP2 MUX:**

CCP2MX = ALTERNATE	Multiplexed with RB3
CCP2MX = DEFAULT	Multiplexed with RC1

# PIC18F6520

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC-OSC2 as Clock Out
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

# Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

# **CCP2 MUX:**

CCP2MUX = OFF	Uses RE7
CCP2MUX = RE7	Uses RE7
CCP2MUX = ON	Uses RC1
CCP2MUX = RC1	Uses RC1

# **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

# **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

# **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

# **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

# **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

# **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

# **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F6525

#### **Oscillator Selection:**

Occinator ocioculorni	
OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6
OSC = ECIOPLL	EC-OSC2 as RA6 and PLL
OSC = ECIOSWPLL	EC-OSC2 as RA6 and SW PLL
OSC = HSSWPLL	HS with SW PLL

# Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

WDT = OFF	Disabled
WDT = ON	Enabled

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **ECCP MUX:**

ECCPMX = PORTH	Multiplexed with RH7:4
ECCPMX = PORTE	Multiplexed with RE6:3

# **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3 or RE7
CCP2MX = PORTC	Multiplexed with RC1

#### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

# **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

# **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

# **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

# **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

# **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F6527

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 46	4.5V
BORV = 43	4.2V
BORV = 28	2.7V
BORV = 21	2.0V

WDT = OFF	Disabled
WDT = ON	Enabled

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## T1 Oscillator Enable:

LPT1OSC = OFF	Disabled
LPT1OSC = ON	Enabled

## **ECCP2 MUX:**

CCP2MX = PORTB	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Boot Block Size:**

BBSIZ = BB2K	2Kb Boot Block
BBSIZ = BB4K	4Kb Boot Block
BBSIZ = BB8K	8Kb Boot Block

## **XINST Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

## **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

## **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

## **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F6585

#### **Oscillator Selection bits:**

Coomator Coloculon Bitor	
OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC with OSC2 as divide by 4 clock out
OSC = EC	EC with OSC2 as divide by 4 clock out
OSC = ECIO	EC with OSC2 as RA6
OSC = HSPLL	HS with HW enabled 4xPLL
OSC = RCIO	RC with OSC2 as RA6
OSC = ECIOPLL	EC with OSC2 as RA6 and HW enabled 4xPLL
OSC = ECIOSWPLL	EC with OSC2 as RA6 and SW enabled 4xPLL
OSC = HSSWPLL	HS with SW enabled 4xPLL

## Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

## **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# Watchdog Timer:

WDT = OFF	HW Disabled - SW Controlled
WDT = ON	HW Enabled - SW Disabled

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **CCP2 MUX bit:**

CCP2MX = OFF	CCP2 input/output is multiplexed with RE7
CCP2MX = ON	CCP2 input/output is multiplexed with RC1

## **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

## **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

## **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

## **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

#### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### Write Protection Block 2:

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F65J10

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

## **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Watchdog Timer:

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

## **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

## **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select:**

FOSC2 = OFF	When SCS1:SCS0 = 00, INTRC is the clock source
FOSC2 = ON	When SCS1:SCS0 = 00, FOSC1:FOSC0 sets the
	clock source

## **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## **CCP2 MUX:**

CCP2MX = ALTERNATE	Multiplexed with RB3
CCP2MX = DEFAULT	Multiplexed with RC1

# PIC18F65J15

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

## **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Watchdog Timer:**

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

## **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

## **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled	
FCMEN = ON	Enabled	

## Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select:**

FOSC2 = OFF	When SCS1:SCS0 = 00, INTRC is the clock source
FOSC2 = ON	When SCS1:SCS0 = 00, FOSC1:FOSC0 sets the
	clock source

## **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

# Watchdog Postscaler:

rational grant and a second and	
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# CCP2 MUX:

CCP2MX = ALTERNATE	Multiplexed with RB3
CCP2MX = DEFAULT	Multiplexed with RC1

# PIC18F6620

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

## Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

#### **Watchdog Postscaler:**

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128

## **CCP2 MUX:**

CCP2MUX = OFF	Disabled
CCP2MUX = ON	Enabled

#### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

## **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

## **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

## **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

## **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F6621

## **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6
OSC = ECIOPLL	EC-OSC2 as RA6 and PLL
OSC = ECIOSWPLL	EC-OSC2 as RA6 and SW PLL
OSC = HSSWPLL	HS with SW PLL

## Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

## **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **ECCP MUX:**

ECCPMX = PORTH	Multiplexed with RH7:4
ECCPMX = PORTE	Multiplexed with RE6:3

## **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3 or RE7
CCP2MX = PORTC	Multiplexed with RC1

#### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

l	DEBUG = ON	Enabled
	DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

## **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

## **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

## **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# **Write Protection Block 0:**

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

## **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

## **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Table Read Protection Block 2:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F6622

## **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

## **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## **Internal External Osc. Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

## **Brown-out Voltage:**

BORV = 46	4.5V
BORV = 43	4.2V
BORV = 28	2.7V
BORV = 21	2.0V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# T1 Oscillator Enable:

LPT1OSC = OFF	Disabled
LPT1OSC = ON	Enabled

## **ECCP2 MUX:**

CCP2MX = PORTB	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Boot Block Size:**

BBSIZ = BB2K	2Kb Boot Block
BBSIZ = BB4K	4Kb Boot Block
BBSIZ = BB8K	8Kb Boot Block

# XINST Enable:

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

## **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

# **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

## **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

## **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

## **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

## **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F6627

## **Oscillator Selection:**

- Collinator Collocation	
OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

## **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 46	4.5V
BORV = 43	4.2V
BORV = 28	2.7V
BORV = 21	2.0V

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

## **Watchdog Postscaler:**

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## T1 Oscillator Enable:

LPT1OSC = OFF	Disabled
LPT1OSC = ON	Enabled

# **ECCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

## **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Boot Block Size:**

BBSIZ = BB2K	2Kb Boot Block
BBSIZ = BB4K	4Kb Boot Block
BBSIZ = BB8K	8Kb Boot Block

## **XINST Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Code Protection Block 4:**

CP4 = ON	Enabled
CP4 = OFF	Disabled

## **Code Protection Block 5:**

CP5 = ON	Enabled
CP5 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

## **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

## **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

## **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

#### **Write Protection Block 4:**

WRT4 = ON	Enabled
WRT4 = OFF	Disabled

#### **Write Protection Block 5:**

WRT5 = ON	Enabled
WRT5 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

## **Table Read Protection Block 4:**

EBTR4 = ON	Enabled
EBTR4 = OFF	Disabled

## **Table Read Protection Block 5:**

EBTR5 = ON	Enabled
EBTR5 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F6680

#### **Oscillator Selection bits:**

Coomator Coloculon Bitor	
OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC with OSC2 as divide by 4 clock out
OSC = EC	EC with OSC2 as divide by 4 clock out
OSC = ECIO	EC with OSC2 as RA6
OSC = HSPLL	HS with HW enabled 4xPLL
OSC = RCIO	RC with OSC2 as RA6
OSC = ECIOPLL	EC with OSC2 as RA6 and HW enabled 4xPLL
OSC = ECIOSWPLL	EC with OSC2 as RA6 and SW enabled 4xPLL
OSC = HSSWPLL	HS with SW enabled 4xPLL

## Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

## **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# **Watchdog Timer:**

WDT = OFF	HW Disabled - SW Controlled
WDT = ON	HW Enabled - SW Disabled

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **CCP2 MUX bit:**

CCP2MX = OFF	CCP2 input/output is multiplexed with RE7
CCP2MX = ON	CCP2 input/output is multiplexed with RC1

## **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

## **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

## **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

## **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

## **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

## Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

## **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

## **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

## **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F66J10

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Watchdog Timer:**

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

#### **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select:**

FOSC2 = OFF	When SCS1:SCS0 = 00, INTRC is the clock source
FOSC2 = ON	When SCS1:SCS0 = 00, FOSC1:FOSC0 sets the
	clock source

## **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

## **CCP2 MUX:**

CCP2MX = ALTERNATE	Multiplexed with RB3
CCP2MX = DEFAULT	Multiplexed with RC1

# PIC18F66J15

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

## **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Watchdog Timer:**

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

## **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

## **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled	
FCMEN = ON	Enabled	

## Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select:**

FOSC2 = OFF	When SCS1:SCS0 = 00, INTRC is the clock source
FOSC2 = ON	When SCS1:SCS0 = 00, FOSC1:FOSC0 sets the
	clock source

#### Oscillator Selection bits:

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

## Watchdog Postscaler:

material g i detectation	
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# **CCP2 MUX:**

CCP2MX = ALTERNATE	Multiplexed with RB3
CCP2MX = DEFAULT	Multiplexed with RC1

# PIC18F66J60

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

## **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

## **Code Protection:**

CPO = ON	Enabled
CP0 = OFF	Disabled

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select Bit:**

FOSC2 = OFF	INTRC as system clock when OSCCON<1:0> = 00
FOSC2 = ON	FOSC<1:0> selects system clock for OSCCON<1:0>
	= 00

#### **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## **Ethernet LED Enable:**

ETHLED = OFF	Disabled
ETHLED = ON	Enabled

## PIC18F66J65

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

## **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

## **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

## **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select Bit:**

FOSC2 = OFF	INTRC as system clock when OSCCON<1:0> = 00
FOSC2 = ON	FOSC<1:0> selects system clock for OSCCON<1:0> = 00

## **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# **Ethernet LED Enable:**

ETHLED = OFF	Disabled
ETHLED = ON	Enabled

# PIC18F6720

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

## Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

## Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

#### **CCP2 MUX:**

CCP2MUX = OFF	Disabled
CCP2MUX = ON	Enabled

#### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

## **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

## **Code Protection Block 4:**

CP4 = ON	Enabled
CP4 = OFF	Disabled

## **Code Protection Block 5:**

CP5 = ON	Enabled
CP5 = OFF	Disabled

#### **Code Protection Block 6:**

CP6 = ON	Enabled
CP6 = OFF	Disabled

#### **Code Protection Block 7:**

CP7 = ON	Enabled
CP7 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

## Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

#### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

## **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

#### **Write Protection Block 4:**

WRT4 = ON	Enabled
WRT4 = OFF	Disabled

## **Write Protection Block 5:**

WRT5 = ON	Enabled
WRT5 = OFF	Disabled

## Write Protection Block 6:

WRT6 = ON	Enabled
WRT6 = OFF	Disabled

## **Write Protection Block 7:**

WRT7 = ON	Enabled
WRT7 = OFF	Disabled

## **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

# **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

#### **Table Read Protection Block 4:**

EBTR4 = ON	Enabled
EBTR4 = OFF	Disabled

## **Table Read Protection Block 5:**

EBTR5 = ON	Enabled
EBTR5 = OFF	Disabled

#### **Table Read Protection Block 6:**

EBTR6 = ON	Enabled
EBTR6 = OFF	Disabled

#### **Table Read Protection Block 7:**

EBTR7 = ON	Enabled
EBTR7 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F6722

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

## **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 46	4.5V
BORV = 43	4.2V
BORV = 28	2.7V
BORV = 21	2.0V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## T1 Oscillator Enable:

LPT1OSC = OFF	Disabled
LPT1OSC = ON	Enabled

## **ECCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

## **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Boot Block Size:**

BBSIZ = BB2K	2Kb Boot Block
BBSIZ = BB4K	4Kb Boot Block
BBSIZ = BB8K	8Kb Boot Block

## **XINST Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

## **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

# **Code Protection Block 4:**

CP4 = ON	Enabled
CP4 = OFF	Disabled

#### **Code Protection Block 5:**

CP5 = ON	Enabled
CP5 = OFF	Disabled

## **Code Protection Block 6:**

CP6 = ON	Enabled
CP6 = OFF	Disabled

#### **Code Protection Block 7:**

CP7 = ON	Enabled
CP7 = OFF	Disabled

## **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

## **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### **Write Protection Block 0:**

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

## **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

## **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

## **Write Protection Block 4:**

WRT4 = ON	Enabled
WRT4 = OFF	Disabled

#### **Write Protection Block 5:**

WRT5 = ON	Enabled
WRT5 = OFF	Disabled

#### Write Protection Block 6:

WRT6 = ON	Enabled
WRT6 = OFF	Disabled

#### Write Protection Block 7:

WRT7 = ON	Enabled
WRT7 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

## **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

## **Table Read Protection Block 4:**

EBTR4 = ON	Enabled
EBTR4 = OFF	Disabled

# **Table Read Protection Block 5:**

EBTR5 = ON	Enabled
EBTR5 = OFF	Disabled

# **Table Read Protection Block 6:**

EBTR6 = ON	Enabled
EBTR6 = OFF	Disabled

#### **Table Read Protection Block 7:**

EBTR7 = ON	Enabled
EBTR7 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F67J10

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Watchdog Timer:**

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

# **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# **Internal/External Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select:**

FOSC2 = OFF	When SCS1:SCS0 = 00, INTRC is the clock source
FOSC2 = ON	When SCS1:SCS0 = 00, FOSC1:FOSC0 sets the
	clock source

# **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# **CCP2 MUX:**

CCP2MX = ALTERNATE	Multiplexed with RB3
CCP2MX = DEFAULT	Multiplexed with RC1

# PIC18F67J60

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select Bit:**

FOSC2 = OFF	INTRC as system clock when OSCCON<1:0> = 00
	FOSC<1:0> selects system clock for OSCCON<1:0>
	= 00

# **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

# **Watchdog Postscaler:**

Traterial g r Colocatori	
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# **Ethernet LED Enable:**

ETHLED = OFF	Disabled
ETHLED = ON	Enabled

# PIC18F8310

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC-OSC2 as Clock Out
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# **Processor Mode Selection:**

PM = EM	Extended Microcontroller mode
PM = MPB	Microprocessor with Boot Block mode
PM = MP	Microprocessor mode
PM = MC	Microcontroller mode

# **External Data Bus Width:**

BW = 8	8-bit External Data Bus Width
BW = 16	16-bit External Data Bus Width

#### **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **Low Power Timer1 Selection:**

LPT1OSC = OFF	High Power, High noise immunity T1OSC selected
LPT1OSC = ON	Low Power, Low noise immunity T1OSC selected

# **CCP2 MUX:**

CCP2MX = PORTBE	CCP2 input/output is multiplexed with RE7/RB3
CCP2MX = PORTC	CCP2 input/output is multiplexed with RC1

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Extended Instruction set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection:**

CP = ON	Enabled
CP = OFF	Disabled

# **Table Read Protection Internal Memory:**

EBTR = ON	Enabled
EBTR = OFF	Disabled

# PIC18F8390

# **Oscillator Selection:**

LP
XT
HS
RC-OSC2 as Clock Out
EC-OSC2 as Clock Out
EC-OSC2 as RA6
HS-PLL Enabled
RC-OSC2 as RA6
INTRC-OSC2 as RA6, OSC1 as RA7
INTRC-OSC2 as Clock Out, OSC1 as RA7

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **Low Power Timer1 Selection:**

LPT1OSC = OFF	High Power, High noise immunity T1OSC selected
LPT1OSC = ON	Low Power, Low noise immunity T1OSC selected

#### **CCP2 MUX:**

CCP2MX = PORTBE	CCP2 input/output is multiplexed with RE7/RB3
CCP2MX = PORTC	CCP2 input/output is multiplexed with RC1

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Extended Instruction set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection:**

CP = ON	Enabled
CP = OFF	Disabled

# **Table Read Protection Internal Memory:**

EBTR = ON	Enabled
EBTR = OFF	Disabled

# PIC18F8410

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC-OSC2 as Clock Out
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# **Internal External Osc. Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# **Processor Mode Selection:**

PM = EM	Extended Microcontroller mode
PM = MPB	Microprocessor with Boot Block mode
PM = MP	Microprocessor mode
PM = MC	Microcontroller mode

# **External Data Bus Width:**

BW = 8	8-bit External Data Bus Width
BW = 16	16-bit External Data Bus Width

#### **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **Low Power Timer1 Selection:**

LPT1OSC = OFF	High Power, High noise immunity T1OSC selected
LPT1OSC = ON	Low Power, Low noise immunity T1OSC selected

# **CCP2 MUX:**

CCP2MX = PORTBE	CCP2 input/output is multiplexed with RE7/RB3
CCP2MX = PORTC	CCP2 input/output is multiplexed with RC1

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Extended Instruction set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection:**

CP = ON	Enabled
CP = OFF	Disabled

# **Table Read Protection Internal Memory:**

EBTR = ON	Enabled
EBTR = OFF	Disabled

# PIC18F8490

# **Oscillator Selection:**

LP
XT
HS
RC-OSC2 as Clock Out
EC-OSC2 as Clock Out
EC-OSC2 as RA6
HS-PLL Enabled
RC-OSC2 as RA6
INTRC-OSC2 as RA6, OSC1 as RA7
INTRC-OSC2 as Clock Out, OSC1 as RA7

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# **Internal External Osc. Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **Low Power Timer1 Selection:**

LPT1OSC = OFF	High Power, High noise immunity T1OSC selected
LPT1OSC = ON	Low Power, Low noise immunity T1OSC selected

#### **CCP2 MUX:**

CCP2MX = PORTBE	CCP2 input/output is multiplexed with RE7/RB3
CCP2MX = PORTC	CCP2 input/output is multiplexed with RC1

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

#### **Extended Instruction set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection:**

CP = ON	Enabled
CP = OFF	Disabled

# **Table Read Protection Internal Memory:**

EBTR = ON	Enabled
EBTR = OFF	Disabled

# PIC18F84J15

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Watchdog Timer:

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

# **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

#### Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select:**

FOSC2 = OFF	When SCS1:SCS0 = 00, INTRC is the clock source
FOSC2 = ON	When SCS1:SCS0 = 00, FOSC1:FOSC0 sets the
	clock source

# **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

# **Watchdog Postscaler:**

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

# **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

# **Data Bus Width Select:**

BW = 8	8-bit external bus
BW = 16	16-bit external bus

# **Processor Mode Selection:**

MODE = MM	Microcontroller mode - External bus disabled
MODE = XM12	Extended Microcontroller mode - 12-bit Address mode
MODE = XM16	Extended Microcontroller mode - 16-bit Address mode
MODE = XM20	Extended Microcontroller mode - 20-bit Address mode

# **External Address Bus Shift Enable:**

EASHFT = OFF	External bus reflects PC value
EASHFT = ON	External bus starts at 000000h

# **ECCP MUX:**

ECCPMX = ALTERNATE	Multiplexed with RH7:4
ECCPMX = DEFAULT	Multiplexed with RE6:3

# **CCP2 MUX:**

CCP2MX = ALTERNATE	Multiplexed with RB3
CCP2MX = DEFAULT	Multiplexed with RC1

# PIC18F8520

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC-OSC2 as Clock Out
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

# Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

# **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

# **Processor Mode Selection:**

MODE = EM	Extended Microcontroller mode
MODE = MPB	Microprocessor with Boot Block mode
MODE = MP	Microprocessor mode
MODE = MC	Microcontroller mode

# **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

# **CCP2 MUX:**

CCP2MUX = OFF	Uses RE7
CCP2MUX = RE7	Uses RE7
CCP2MUX = ON	Uses RC1
CCP2MUX = RC1	Uses RC1

# **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

# **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

# **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

# **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

# **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### Write Protection Block 3:

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

# **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

# **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

# **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F8525

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6
OSC = ECIOPLL	EC-OSC2 as RA6 and PLL
OSC = ECIOSWPLL	EC-OSC2 as RA6 and SW PLL
OSC = HSSWPLL	HS with SW PLL

# Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# **Processor Mode Selection:**

MODE = EM	Extended Microcontroller mode
MODE = MPB	Microprocessor with Boot Block mode
MODE = MP	Microprocessor mode
MODE = MC	Microcontroller mode

# **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **ECCP MUX:**

ECCPMX = PORTH	Multiplexed with RH7:4
ECCPMX = PORTE	Multiplexed with RE6:3

# **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3 or RE7
CCP2MX = PORTC	Multiplexed with RC1

# **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### **Write Protection Block 0:**

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

# **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

# **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

# **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F8527

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 46	4.5V
BORV = 43	4.2V
BORV = 28	2.7V
BORV = 21	2.0V

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# **Processor Mode Selection:**

MODE = EM	Extended Microcontroller mode
MODE = MPB	Microprocessor with Boot Block mode
MODE = MP	Microprocessor mode
MODE = MC	Microcontroller mode

# **External Bus Address Width:**

ADDRBW = ADDR8BIT	8-bit Address Bus
ADDRBW = ADDR12BIT	12-bit Address Bus
ADDRBW = ADDR16BIT	16-bit Address Bus
ADDRBW = ADDR20BIT	20-bit Address Bus

# **External Bus Data Width:**

DATABW = DATA8BIT	8-bit Data Bus
DATABW = DATA16BIT	16-bit Data Bus

# **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# T1 Oscillator Enable:

LPT1OSC = OFF	Disabled
LPT1OSC = ON	Enabled

# **ECCP MUX:**

ECCPMX = PORTH	Multiplexed with RH7:4
ECCPMX = PORTE	Multiplexed with RE6:3

#### **ECCP2 MUX:**

CCP2MX = PORTB	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

#### **Boot Block Size:**

BBSIZ = BB2K	2Kb Boot Block
BBSIZ = BB4K	4Kb Boot Block
BBSIZ = BB8K	8Kb Boot Block

#### XINST Enable:

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

# **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

# **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

# **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

# **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

# **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

# **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F8585

# **Oscillator Selection bits:**

Oscillator delection bits.	
OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC with OSC2 as divide by 4 clock out
OSC = EC	EC with OSC2 as divide by 4 clock out
OSC = ECIO	EC with OSC2 as RA6
OSC = HSPLL	HS with HW enabled 4xPLL
OSC = RCIO	RC with OSC2 as RA6
OSC = ECIOPLL	EC with OSC2 as RA6 and HW enabled 4xPLL
OSC = ECIOSWPLL	EC with OSC2 as RA6 and SW enabled 4xPLL
OSC = HSSWPLL	HS with SW enabled 4xPLL

#### Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# **Watchdog Timer:**

WDT = OFF	HW Disabled - SW Controlled
WDT = ON	HW Enabled - SW Disabled

# Watchdog Postscaler:

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

# **Processor Mode Selection:**

MODE = EM	Extended Microcontroller mode
MODE = MPB	Microprocessor with Boot Block mode
MODE = MP	Microprocessor mode
MODE = MC	Microcontroller mode

# **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

#### **CCP2 MUX bit:**

CCP2MX = OFF	CCP2 input/output is multiplexed with RE7
CCP2MX = ON	CCP2 input/output is multiplexed with RC1

# **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

# **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

# **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# **Write Protection Block 0:**

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

# **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

# **Data EEPROM Write Protection:**

	WRTD = ON	Enabled
1	WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

# **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F85J10

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# **Watchdog Timer:**

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

#### **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# **Internal/External Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select:**

FOSC2 = OFF	When SCS1:SCS0 = 00, INTRC is the clock source
FOSC2 = ON	When SCS1:SCS0 = 00, FOSC1:FOSC0 sets the
	clock source

#### **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

# Watchdog Postscaler:

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

# **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

# **Data Bus Width Select:**

BW = 8	8-bit external bus
BW = 16	16-bit external bus

# **Processor Mode Selection:**

MODE = MM	Microcontroller mode - External bus disabled
MODE = XM12	Extended Microcontroller mode - 12-bit Address mode
MODE = XM16	Extended Microcontroller mode - 16-bit Address mode
MODE = XM20	Extended Microcontroller mode - 20-bit Address mode

# **External Address Bus Shift Enable:**

EASHFT = OFF	External bus reflects PC value
EASHFT = ON	External bus starts at 000000h

# **ECCP MUX:**

ECCPMX = ALTERNATE	Multiplexed with RH7:4
ECCPMX = DEFAULT	Multiplexed with RE6:3

# **CCP2 MUX:**

CCP2MX = ALTERNATE	Multiplexed with RB3
CCP2MX = DEFAULT	Multiplexed with RC1

# PIC18F85J15

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Watchdog Timer:

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

#### **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

#### **Internal/External Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select:**

FOSC2 = OFF	When SCS1:SCS0 = 00, INTRC is the clock source
FOSC2 = ON	When SCS1:SCS0 = 00, FOSC1:FOSC0 sets the
	clock source

# **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

# **Data Bus Width Select:**

BW = 8	8-bit external bus
BW = 16	16-bit external bus

# **Processor Mode Selection:**

MODE = MM	Microcontroller mode - External bus disabled
MODE = XM12	Extended Microcontroller mode - 12-bit Address mode
MODE = XM16	Extended Microcontroller mode - 16-bit Address mode
MODE = XM20	Extended Microcontroller mode - 20-bit Address mode

# **External Address Bus Shift Enable:**

EASHFT = OFF	External bus reflects PC value
EASHFT = ON	External bus starts at 000000h

# **ECCP MUX:**

ECCPMX = ALTERNATE	Multiplexed with RH7:4
ECCPMX = DEFAULT	Multiplexed with RE6:3

# **CCP2 MUX:**

CCP2MX = ALTERNATE	Multiplexed with RB3
CCP2MX = DEFAULT	Multiplexed with RC1

# PIC18F8620

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

# Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

# **Processor Mode Selection:**

MODE = EM	Extended Microcontroller mode
MODE = MPB	Microprocessor with Boot Block mode
MODE = MP	Microprocessor mode
MODE = MC	Microcontroller mode

# **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

# **CCP2 MUX:**

CCP2MUX = OFF	Disabled
CCP2MUX = ON	Enabled

#### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

# **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

# **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# **Write Protection Block 0:**

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

# **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

# **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

# **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

#### **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

# **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

# **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

# **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F8621

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6
OSC = ECIOPLL	EC-OSC2 as RA6 and PLL
OSC = ECIOSWPLL	EC-OSC2 as RA6 and SW PLL
OSC = HSSWPLL	HS with SW PLL

# Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

_	T
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# **Processor Mode Selection:**

MODE = EM	Extended Microcontroller mode
MODE = MPB	Microprocessor with Boot Block mode
MODE = MP	Microprocessor mode
MODE = MC	Microcontroller mode

# **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# **ECCP MUX:**

ECCPMX = PORTH	Multiplexed with RH7:4
ECCPMX = PORTE	Multiplexed with RE6:3

# **CCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3 or RE7
CCP2MX = PORTC	Multiplexed with RC1

# **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

# **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

# Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

#### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

# **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

# **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

# **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

# **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F8622

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

# Fail-Safe Clock Monitor:

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# **Internal External Osc. Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

# **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

## **Brown-out Voltage:**

BORV = 46	4.5V
BORV = 43	4.2V
BORV = 28	2.7V
BORV = 21	2.0V

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

## Watchdog Postscaler:

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WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## **Processor Mode Selection:**

MODE = EM	Extended Microcontroller mode
MODE = MPB	Microprocessor with Boot Block mode
MODE = MP	Microprocessor mode
MODE = MC	Microcontroller mode

# **External Bus Address Width:**

ADDRBW = ADDR8BIT	8-bit Address Bus
ADDRBW = ADDR12BIT	12-bit Address Bus
ADDRBW = ADDR16BIT	16-bit Address Bus
ADDRBW = ADDR20BIT	20-bit Address Bus

# **External Bus Data Width:**

DATABW = DATA8BIT	8-bit Data Bus
DATABW = DATA16BIT	16-bit Data Bus

## **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## T1 Oscillator Enable:

LPT1OSC = OFF	Disabled
LPT1OSC = ON	Enabled

## **ECCP MUX:**

ECCPMX = PORTH	Multiplexed with RH7:4
ECCPMX = PORTE	Multiplexed with RE6:3

## **ECCP2 MUX:**

CCP2MX = PORTB	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Boot Block Size:**

BBSIZ = BB2K	2Kb Boot Block
BBSIZ = BB4K	4Kb Boot Block
BBSIZ = BB8K	8Kb Boot Block

#### **XINST Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

## **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

# **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

## **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

## **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### Write Protection Block 2:

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

## **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

## **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F8627

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

## **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# **Internal External Osc. Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 46	4.5V
BORV = 43	4.2V
BORV = 28	2.7V
BORV = 21	2.0V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

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WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# **Processor Mode Selection:**

MODE = EM	Extended Microcontroller mode
MODE = MPB	Microprocessor with Boot Block mode
MODE = MP	Microprocessor mode
MODE = MC	Microcontroller mode

## **External Bus Address Width:**

ADDRBW = ADDR8BIT	8-bit Address Bus
ADDRBW = ADDR12BIT	12-bit Address Bus
ADDRBW = ADDR16BIT	16-bit Address Bus
ADDRBW = ADDR20BIT	20-bit Address Bus

## **External Bus Data Width:**

DATABW = DATA8BIT	8-bit Data Bus
DATABW = DATA16BIT	16-bit Data Bus

# **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

# MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

# T1 Oscillator Enable:

LPT1OSC = OFF	Disabled
LPT1OSC = ON	Enabled

## **ECCP MUX:**

ECCPMX = PORTH	Multiplexed with RH7:4
ECCPMX = PORTE	Multiplexed with RE6:3

#### **ECCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

## **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

## Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

#### **Boot Block Size:**

BBSIZ = BB2K	2Kb Boot Block
BBSIZ = BB4K	4Kb Boot Block
BBSIZ = BB8K	8Kb Boot Block

#### XINST Enable:

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

## **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

## **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Code Protection Block 4:**

CP4 = ON	Enabled
CP4 = OFF	Disabled

## **Code Protection Block 5:**

CP5 = ON	Enabled
CP5 = OFF	Disabled

## **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

## Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

#### **Write Protection Block 4:**

WRT4 = ON	Enabled
WRT4 = OFF	Disabled

## **Write Protection Block 5:**

WRT5 = ON	Enabled
WRT5 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

## **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

#### **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

## **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

## **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

# **Table Read Protection Block 4:**

EBTR4 = ON	Enabled
EBTR4 = OFF	Disabled

## **Table Read Protection Block 5:**

EBTR5 = ON	Enabled
EBTR5 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

# PIC18F8680

#### **Oscillator Selection bits:**

LP
XT
HS
RC with OSC2 as divide by 4 clock out
EC with OSC2 as divide by 4 clock out
EC with OSC2 as RA6
HS with HW enabled 4xPLL
RC with OSC2 as RA6
EC with OSC2 as RA6 and HW enabled 4xPLL
EC with OSC2 as RA6 and SW enabled 4xPLL
HS with SW enabled 4xPLL

# Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

## **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 20	2.0V

# **Watchdog Timer:**

WDT = OFF	HW Disabled - SW Controlled
WDT = ON	HW Enabled - SW Disabled

# Watchdog Postscaler:

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

## **Processor Mode Selection:**

MODE = EM	Extended Microcontroller mode
MODE = MPB	Microprocessor with Boot Block mode
MODE = MP	Microprocessor mode
MODE = MC	Microcontroller mode

## **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## **CCP2 MUX bit:**

CCP2MX = OFF	CCP2 input/output is multiplexed with RE7
CCP2MX = ON	CCP2 input/output is multiplexed with RC1

## **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

## **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

## **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

## Write Protection Block 0:

WRTO = ON	Enabled
WRT0 = OFF	Disabled

#### Write Protection Block 1:

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F86J10

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Watchdog Timer:

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

#### **Code Protection:**

CPO = ON	Enabled
CP0 = OFF	Disabled

#### **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select:**

FOSC2 = OFF	When SCS1:SCS0 = 00, INTRC is the clock source
FOSC2 = ON	When SCS1:SCS0 = 00, FOSC1:FOSC0 sets the
	clock source

#### Oscillator Selection bits:

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

# Data Bus Width Select:

BW = 8	8-bit external bus
BW = 16	16-bit external bus

## **Processor Mode Selection:**

MODE = MM	Microcontroller mode - External bus disabled
MODE = XM12	Extended Microcontroller mode - 12-bit Address mode
MODE = XM16	Extended Microcontroller mode - 16-bit Address mode
MODE = XM20	Extended Microcontroller mode - 20-bit Address mode

## **External Address Bus Shift Enable:**

EASHFT = OFF	External bus reflects PC value
EASHFT = ON	External bus starts at 000000h

## **ECCP MUX:**

ECCPMX = ALTERNATE	Multiplexed with RH7:4
ECCPMX = DEFAULT	Multiplexed with RE6:3

## **CCP2 MUX:**

CCP2MX = ALTERNATE	Multiplexed with RB3
CCP2MX = DEFAULT	Multiplexed with RC1

## PIC18F86J15

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

## Watchdog Timer:

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

## **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select:**

FOSC2 = OFF	When SCS1:SCS0 = 00, INTRC is the clock source
FOSC2 = ON	When SCS1:SCS0 = 00, FOSC1:FOSC0 sets the
	clock source

## **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

# **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

## **Data Bus Width Select:**

BW = 8	8-bit external bus
BW = 16	16-bit external bus

## **Processor Mode Selection:**

MODE = MM	Microcontroller mode - External bus disabled
MODE = XM12	Extended Microcontroller mode - 12-bit Address mode
MODE = XM16	Extended Microcontroller mode - 16-bit Address mode
MODE = XM20	Extended Microcontroller mode - 20-bit Address mode

## **External Address Bus Shift Enable:**

EASHFT = OFF	External bus reflects PC value
EASHFT = ON	External bus starts at 000000h

# **ECCP MUX:**

ECCPMX = ALTERNATE	Multiplexed with RH7:4
ECCPMX = DEFAULT	Multiplexed with RE6:3

## **CCP2 MUX:**

CCP2MX = ALTERNATE	Multiplexed with RB3
CCP2MX = DEFAULT	Multiplexed with RC1

# PIC18F86J60

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

## **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

## **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

## **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select Bit:**

FOSC2 = OFF	INTRC as system clock when OSCCON<1:0> = 00
FOSC2 = ON	FOSC<1:0> selects system clock for OSCCON<1:0> = 00
	- 88

## **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

# **Watchdog Postscaler:**

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

## **Ethernet LED Enable:**

ETHLED = OFF	Disabled
ETHLED = ON	Enabled

# **ECCP MUX:**

ECCPMX = OFF	Disabled
ECCPMX = ON	Enabled

#### **CCP2 MUX:**

CCP2MX = OFF	Disabled
CCP2MX = ON	Enabled

# PIC18F86J65

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

## **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

## **Code Protection:**

CPO = ON	Enabled
CP0 = OFF	Disabled

## **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select Bit:**

FOSC2 = OFF	INTRC as system clock when OSCCON<1:0> = 00
FOSC2 = ON	FOSC<1:0> selects system clock for OSCCON<1:0> = 00

# **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

# Watchdog Postscaler:

# **Ethernet LED Enable:**

ETHLED = OFF	Disabled
ETHLED = ON	Enabled

## **ECCP MUX:**

ECCPMX = OFF	Disabled
ECCPMX = ON	Enabled

# **CCP2 MUX:**

CCP2MX = OFF	Disabled
CCP2MX = ON	Enabled

## PIC18F8720

# **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO	RC-OSC2 as RA6

## Osc. Switch Enable:

OSCS = ON	Enabled
OSCS = OFF	Disabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

## **Brown-out Reset:**

BOR = OFF	Disabled
BOR = ON	Enabled

# **Brown-out Voltage:**

BORV = 45	4.5V
BORV = 42	4.2V
BORV = 27	2.7V
BORV = 25	2.5V

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

# **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128

## **Processor Mode Selection:**

MODE = EM	Extended Microcontroller mode
MODE = MPB	Microprocessor with Boot Block mode
MODE = MP	Microprocessor mode
MODE = MC	Microcontroller mode

## **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

## **CCP2 MUX:**

CCP2MUX = OFF	Disabled
CCP2MUX = ON	Enabled

#### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Code Protection Block 0:**

CPO = ON	Enabled
CP0 = OFF	Disabled

## **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

## **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

## **Code Protection Block 4:**

CP4 = ON	Enabled
CP4 = OFF	Disabled

#### **Code Protection Block 5:**

CP5 = ON	Enabled
CP5 = OFF	Disabled

## **Code Protection Block 6:**

CP6 = ON	Enabled
CP6 = OFF	Disabled

## **Code Protection Block 7:**

CP7 = ON	Enabled
CP7 = OFF	Disabled

## **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

## **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

#### **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

#### Write Protection Block 2:

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

#### **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

## **Write Protection Block 4:**

WRT4 = ON	Enabled
WRT4 = OFF	Disabled

#### Write Protection Block 5:

WRT5 = ON	Enabled
WRT5 = OFF	Disabled

## Write Protection Block 6:

WRT6 = ON	Enabled
WRT6 = OFF	Disabled

#### **Write Protection Block 7:**

WRT7 = ON	Enabled
WRT7 = OFF	Disabled

#### **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTR0 = ON	Enabled
EBTR0 = OFF	Disabled

## **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

#### **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

#### **Table Read Protection Block 4:**

EBTR4 = ON	Enabled
EBTR4 = OFF	Disabled

#### **Table Read Protection Block 5:**

EBTR5 = ON	Enabled
EBTR5 = OFF	Disabled

## **Table Read Protection Block 6:**

EBTR6 = ON	Enabled
EBTR6 = OFF	Disabled

#### **Table Read Protection Block 7:**

EBTR7 = ON	Enabled
EBTR7 = OFF	Disabled

## **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F8722

#### **Oscillator Selection:**

OSC = LP	LP
OSC = XT	XT
OSC = HS	HS
OSC = RC	RC
OSC = EC	EC-OSC2 as Clock Out
OSC = ECIO6	EC-OSC2 as RA6
OSC = HSPLL	HS-PLL Enabled
OSC = RCIO6	RC-OSC2 as RA6
OSC = INTIO67	INTRC-OSC2 as RA6, OSC1 as RA7
OSC = INTIO7	INTRC-OSC2 as Clock Out, OSC1 as RA7

## **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal External Osc. Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Power-up Timer:**

PWRT = ON	Enabled
PWRT = OFF	Disabled

#### **Brown-out Reset:**

BOREN = OFF	Disabled
BOREN = ON	SBOREN Enabled
BOREN = NOSLP	Enabled except Sleep, SBOREN Disabled
BOREN = SBORDIS	Enabled, SBOREN Disabled

# **Brown-out Voltage:**

BORV = 46	4.5V
BORV = 43	4.2V
BORV = 28	2.7V
BORV = 21	2.0V

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# Watchdog Postscaler:

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

## **Processor Mode Selection:**

MODE = EM	Extended Microcontroller mode
MODE = MPB	Microprocessor with Boot Block mode
MODE = MP	Microprocessor mode
MODE = MC	Microcontroller mode

## **External Bus Address Width:**

ADDRBW = ADDR8BIT	8-bit Address Bus
ADDRBW = ADDR12BIT	12-bit Address Bus
ADDRBW = ADDR16BIT	16-bit Address Bus
ADDRBW = ADDR20BIT	20-bit Address Bus

#### **External Bus Data Width:**

DATABW = DATA8BIT	8-bit Data Bus
DATABW = DATA16BIT	16-bit Data Bus

#### **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

## MCLR Enable:

MCLRE = OFF	Disabled
MCLRE = ON	Enabled

## T1 Oscillator Enable:

LPT1OSC = OFF	Disabled
LPT1OSC = ON	Enabled

# **ECCP MUX:**

ECCPMX = PORTH	Multiplexed with RH7:4
ECCPMX = PORTE	Multiplexed with RE6:3

## **ECCP2 MUX:**

CCP2MX = PORTBE	Multiplexed with RB3
CCP2MX = PORTC	Multiplexed with RC1

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Boot Block Size:**

BBSIZ = BB2K	2Kb Boot Block
BBSIZ = BB4K	4Kb Boot Block
BBSIZ = BB8K	8Kb Boot Block

# XINST Enable:

XINST = OFF	Disabled
XINST = ON	Enabled

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Code Protection Block 0:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Code Protection Block 1:**

CP1 = ON	Enabled
CP1 = OFF	Disabled

#### **Code Protection Block 2:**

CP2 = ON	Enabled
CP2 = OFF	Disabled

#### **Code Protection Block 3:**

CP3 = ON	Enabled
CP3 = OFF	Disabled

#### **Code Protection Block 4:**

CP4 = ON	Enabled
CP4 = OFF	Disabled

## **Code Protection Block 5:**

CP5 = ON	Enabled
CP5 = OFF	Disabled

#### **Code Protection Block 6:**

CP6 = ON	Enabled
CP6 = OFF	Disabled

## **Code Protection Block 7:**

CP7 = ON	Enabled
CP7 = OFF	Disabled

## **Boot Block Code Protection:**

CPB = ON	Enabled
CPB = OFF	Disabled

#### **Data EEPROM Code Protection:**

CPD = ON	Enabled
CPD = OFF	Disabled

#### Write Protection Block 0:

WRT0 = ON	Enabled
WRT0 = OFF	Disabled

## **Write Protection Block 1:**

WRT1 = ON	Enabled
WRT1 = OFF	Disabled

## **Write Protection Block 2:**

WRT2 = ON	Enabled
WRT2 = OFF	Disabled

## **Write Protection Block 3:**

WRT3 = ON	Enabled
WRT3 = OFF	Disabled

#### Write Protection Block 4:

WRT4 = ON	Enabled
WRT4 = OFF	Disabled

## **Write Protection Block 5:**

WRT5 = ON	Enabled
WRT5 = OFF	Disabled

#### **Write Protection Block 6:**

WRT6 = ON	Enabled
WRT6 = OFF	Disabled

#### Write Protection Block 7:

WRT7 = ON	Enabled
WRT7 = OFF	Disabled

## **Boot Block Write Protection:**

WRTB = ON	Enabled
WRTB = OFF	Disabled

# **Configuration Register Write Protection:**

WRTC = ON	Enabled
WRTC = OFF	Disabled

## **Data EEPROM Write Protection:**

WRTD = ON	Enabled
WRTD = OFF	Disabled

## **Table Read Protection Block 0:**

EBTRO = ON	Enabled
EBTR0 = OFF	Disabled

#### **Table Read Protection Block 1:**

EBTR1 = ON	Enabled
EBTR1 = OFF	Disabled

#### **Table Read Protection Block 2:**

EBTR2 = ON	Enabled
EBTR2 = OFF	Disabled

## **Table Read Protection Block 3:**

EBTR3 = ON	Enabled
EBTR3 = OFF	Disabled

## **Table Read Protection Block 4:**

EBTR4 = ON	Enabled
EBTR4 = OFF	Disabled

## **Table Read Protection Block 5:**

EBTR5 = ON	Enabled
EBTR5 = OFF	Disabled

#### **Table Read Protection Block 6:**

EBTR6 = ON	Enabled
EBTR6 = OFF	Disabled

#### **Table Read Protection Block 7:**

EBTR7 = ON	Enabled
EBTR7 = OFF	Disabled

#### **Boot Block Table Read Protection:**

EBTRB = ON	Enabled
EBTRB = OFF	Disabled

## PIC18F87J10

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

# **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

#### **Stack Overflow Reset:**

STVREN = OFF	Disabled
STVREN = ON	Enabled

# Watchdog Timer:

WDTEN = OFF	Disabled
WDTEN = ON	Enabled

#### **Code Protection:**

CPO = ON	Enabled
CP0 = OFF	Disabled

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select:**

FOSC2 = OFF	When SCS1:SCS0 = 00, INTRC is the clock source
FOSC2 = ON	When SCS1:SCS0 = 00, FOSC1:FOSC0 sets the
	clock source

#### Oscillator Selection bits:

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

# Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

# Data Bus Width Select:

BW = 8	8-bit external bus
BW = 16	16-bit external bus

## **Processor Mode Selection:**

MODE = MM	Microcontroller mode - External bus disabled
MODE = XM12	Extended Microcontroller mode - 12-bit Address mode
MODE = XM16	Extended Microcontroller mode - 16-bit Address mode
MODE = XM20	Extended Microcontroller mode - 20-bit Address mode

## **External Address Bus Shift Enable:**

EASHFT = OFF	External bus reflects PC value
EASHFT = ON	External bus starts at 000000h

## **ECCP MUX:**

ECCPMX = ALTERNATE	Multiplexed with RH7:4
ECCPMX = DEFAULT	Multiplexed with RE6:3

# **CCP2 MUX:**

CCP2MX = ALTERNATE	Multiplexed with RB3
CCP2MX = DEFAULT	Multiplexed with RC1

# PIC18F87J60

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

#### **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

#### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

## **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## **Internal/External Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select Bit:**

FOSC2 = OFF	INTRC as system clock when OSCCON<1:0> = 00
FOSC2 = ON	FOSC<1:0> selects system clock for OSCCON<1:0> = 00

## **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

# **Watchdog Postscaler:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## **Ethernet LED Enable:**

ETHLED = OFF	Disabled
ETHLED = ON	Enabled

# **ECCP MUX:**

ECCPMX = OFF	Disabled
ECCPMX = ON	Enabled

## **CCP2 MUX:**

CCP2MX = OFF	Disabled
CCP2MX = ON	Enabled

# PIC18F96J60

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

# **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

## **Code Protection:**

CPO = ON	Enabled
CP0 = OFF	Disabled

## **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select Bit:**

FOSC2 = OFF	INTRC as system clock when OSCCON<1:0> = 00
FOSC2 = ON	FOSC<1:0> selects system clock for OSCCON<1:0>
	= 00

# **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

# **Watchdog Postscaler:**

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

## **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

## **Data Bus Width Select:**

BW = 8	8-bit external bus
BW = 16	16-bit external bus

## **Processor Mode Selection:**

MODE = MM	Microcontroller mode - External bus disabled
MODE = XM12	Extended Microcontroller mode - 12-bit Address mode
MODE = XM16	Extended Microcontroller mode - 16-bit Address mode
MODE = XM20	Extended Microcontroller mode - 20-bit Address mode

#### **External Address Bus Shift Enable:**

EASHFT = OFF	External bus reflects PC value
EASHFT = ON	External bus starts at 000000h

#### **Ethernet LED Enable:**

ETHLED = OFF	Disabled
ETHLED = ON	Enabled

# **ECCP MUX:**

ECCPMX = OFF	Disabled
ECCPMX = ON	Enabled

## **CCP2 MUX:**

CCP2MX = OFF	Disabled
CCP2MX = ON	Enabled

# PIC18F96J65

## **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

#### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# **Watchdog Timer:**

WDT = OFF	Disabled
WDT = ON	Enabled

# **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

# **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

## Internal/External Switch Over:

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select Bit:**

FOSC2 = OFF	INTRC as system clock when OSCCON<1:0> = 00
FOSC2 = ON	FOSC<1:0> selects system clock for OSCCON<1:0>
	= 00

#### **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

## Watchdog Postscaler:

Material grant of the state of	
WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

## **Data Bus Width Select:**

BW = 8	8-bit external bus
BW = 16	16-bit external bus

## **Processor Mode Selection:**

MODE = MM	Microcontroller mode - External bus disabled
MODE = XM12	Extended Microcontroller mode - 12-bit Address mode
MODE = XM16	Extended Microcontroller mode - 16-bit Address mode
MODE = XM20	Extended Microcontroller mode - 20-bit Address mode

## **External Address Bus Shift Enable:**

EASHFT = OFF	External bus reflects PC value
EASHFT = ON	External bus starts at 000000h

## **Ethernet LED Enable:**

ETHLED = OFF	Disabled
ETHLED = ON	Enabled

#### **ECCP MUX:**

ECCPMX = OFF	Disabled
ECCPMX = ON	Enabled

#### **CCP2 MUX:**

CCP2MX = OFF	Disabled
CCP2MX = ON	Enabled

# PIC18F97J60

# **Background Debugger Enable:**

DEBUG = ON	Enabled
DEBUG = OFF	Disabled

## **Extended Instruction Set Enable:**

XINST = OFF	Disabled
XINST = ON	Enabled

#### **Stack Overflow Reset:**

STVR = OFF	Disabled
STVR = ON	Enabled

# Watchdog Timer:

WDT = OFF	Disabled
WDT = ON	Enabled

# **Code Protection:**

CPO = ON	Enabled
CPO = OFF	Disabled

#### **Fail-Safe Clock Monitor:**

FCMEN = OFF	Disabled
FCMEN = ON	Enabled

# **Internal/External Switch Over:**

IESO = OFF	Disabled
IESO = ON	Enabled

# **Default/Reset System Clock Select Bit:**

FOSC2 = OFF	INTRC as system clock when OSCCON<1:0> = 00
FOSC2 = ON	FOSC<1:0> selects system clock for OSCCON<1:0> = 00

## **Oscillator Selection bits:**

FOSC = HS	HS oscillator
FOSC = HSPLL	HS oscillator, Software Controlled PLL
FOSC = EC	External Clock
FOSC = ECPLL	External Clock, Software Controlled PLL

## Watchdog Postscaler:

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

# **External Bus Data Wait:**

WAIT = ON	Enabled
WAIT = OFF	Disabled

## Data Bus Width Select:

BW = 8	8-bit external bus
BW = 16	16-bit external bus

## **Processor Mode Selection:**

MODE = MM	Microcontroller mode - External bus disabled
MODE = XM12	Extended Microcontroller mode - 12-bit Address mode
MODE = XM16	Extended Microcontroller mode - 16-bit Address mode
MODE = XM20	Extended Microcontroller mode - 20-bit Address mode

## **External Address Bus Shift Enable:**

EASHFT = OFF	External bus reflects PC value
EASHFT = ON	External bus starts at 000000h

#### **Ethernet LED Enable:**

ETHLED = OFF	Disabled
ETHLED = ON	Enabled

## **ECCP MUX:**

ECCPMX = OFF	Disabled
ECCPMX = ON	Enabled

# **CCP2 MUX:**

CCP2MX = OFF	Disabled
CCP2MX = ON	Enabled

# PIC18LF2423

# **Oscillator Selection bits:**

OSC = LP	LP oscillator
OSC = XT	XT oscillator
OSC = HS	HS oscillator
OSC = RC	External RC oscillator, CLKO function on RA6
OSC = EC	EC oscillator, CLKO function on RA6
OSC = ECIO6	EC oscillator, port function on RA6
OSC = HSPLL	HS oscillator, PLL enabled (Clock Frequency = 4 x FOSC1)
OSC = RCIO6	External RC oscillator, port function on RA6
OSC = INTIO67	Internal oscillator block, port function on RA6 and RA7
OSC = INTIO7	Internal oscillator block, CLKO function on RA6, port function on RA7

# Fail-Safe Clock Monitor Enable bit:

FCMEN = OFF	Fail-Safe Clock Monitor disabled
FCMEN = ON	Fail-Safe Clock Monitor enabled

## Internal/External Oscillator Switchover bit:

IESO = OFF	Oscillator Switchover mode disabled
IESO = ON	Oscillator Switchover mode enabled

# **Power-up Timer Enable bit:**

PWRT = ON	PWRT enabled
PWRT = OFF	PWRT disabled

## **Brown-out Reset Enable bits:**

BOREN = OFF	Brown-out Reset disabled in hardware and software
BOREN = ON	Brown-out Reset enabled and controlled by software (SBOREN is enabled)
BOREN = NOSLP	Brown-out Reset enabled in hardware only and disabled in Sleep mode (SBOREN is disabled)
BOREN = SBORDIS	Brown-out Reset enabled in hardware only (SBOREN is disabled)

# **Brown-out Reset Voltage bits:**

BORV = 0	Maximum setting
BORV = 1	
BORV = 2	
BORV = 3	Minimum setting

# **Watchdog Timer Enable bit:**

WDT = OFF	WDT disabled (control is placed on the SWDTEN bit)
WDT = ON	WDT enabled

# **Watchdog Timer Postscale Select bits:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## **MCLR Pin Enable bit:**

MCLRE = OFF	RE3 input pin enabled; MCLR disabled
MCLRE = ON	MCLR pin enabled; RE3 input pin disabled

## Low-Power Timer1 Oscillator Enable bit:

LPT1OSC = OFF	Timer1 configured for higher power operation
LPT1OSC = ON	Timer1 configured for low-power operation

#### **PORTB A/D Enable bit:**

PBADEN = OFF	PORTB<4:0> pins are configured as digital I/O on Reset
PBADEN = ON	PORTB<4:0> pins are configured as analog input channels on Reset

## **CCP2 MUX bit:**

CCP2MX = PORTB	CCP2 input/output is multiplexed with RB3
CCP2MX = PORTC	CCP2 input/output is multiplexed with RC1

# Stack Full/Underflow Reset Enable bit:

STVREN = OFF	Stack full/underflow will not cause Reset
STVREN = ON	Stack full/underflow will cause Reset

# Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Extended Instruction Set Enable bit:**

	Instruction set extension and Indexed Addressing mode disabled (Legacy mode)
XINST = ON	Instruction set extension and Indexed Addressing mode enabled

## **Background Debugger Enable bit:**

Background debugger enabled, RB6 and RB7 are dedicated to In-Circuit Debug
Background debugger disabled, RB6 and RB7 configured as general purpose I/O pins

## **Code Protection Block 0:**

CPO = ON	Block 0 (000800-001FFFh) code-protected
CPO = OFF	Block 0 (000800-001FFFh) not code-protected

## **Code Protection Block 1:**

CP1 = ON	Block 1 (002000-003FFFh) code-protected
CP1 = OFF	Block 1 (002000-003FFFh) not code-protected

## **Boot Block Code Protection bit:**

CPB = ON	Boot block (000000-0007FFh) code-protected
CPB = OFF	Boot block (000000-0007FFh) not code-protected

## **Data EEPROM Code Protection:**

CPD = ON	Data EEPROM code-protected
CPD = OFF	Data EEPROM not code-protected

#### Write Protection Block 0:

WRT0 = ON	Block 0 (000800-001FFFh) write-protected
WRT0 = OFF	Block 0 (000800-001FFFh) not write-protected

#### **Write Protection Block 1:**

WRT1 = ON	Block 1 (002000-003FFFh) write-protected
WRT1 = OFF	Block 1 (002000-003FFFh) not write-protected

## **Boot Block Write Protection bit:**

WRTB = ON	Boot block (000000-0007FFh) write-protected
WRTB = OFF	Boot block (000000-0007FFh) not write-protected

## **Configuration Register Write Protection bit:**

	T
WRTC = ON	Configuration registers (300000-3000FFh) write-pro-
	tected
WRTC = OFF	Configuration registers (300000-3000FFh) not
WRIC - OFF	Configuration registers (Socood Socon 11) not
	write-protected
	wite protocted

## **Data EEPROM Write Protection bit:**

WRTD = ON	Data EEPROM write-protected
WRTD = OFF	Data EEPROM not write-protected

## **Table Read Protection Block 0:**

EBTR0 = ON	Block 0 (000800-001FFFh) protected from table reads executed in other blocks
EBTRO = OFF	Block 0 (000800-001FFFh) not protected from table reads executed in other blocks

## **Table Read Protection Block 1:**

EBTR1 = ON	Block 1 (002000-003FFFh) protected from table reads executed in other blocks
EBTR1 = OFF	Block 1 (002000-003FFFh) not protected from table
	reads executed in other blocks

## **Boot Block Table Read Protection bit:**

EBTRB = ON	Boot block (000000-0007FFh) protected from table reads executed in other blocks
EBTRB = OFF	Boot block (000000-0007FFh) not protected from table reads executed in other blocks

## PIC18LF2523

#### **Oscillator Selection bits:**

OSC = LP	LP oscillator
OSC = XT	XT oscillator
OSC = HS	HS oscillator
OSC = RC	External RC oscillator, CLKO function on RA6
OSC = EC	EC oscillator, CLKO function on RA6
OSC = ECIO6	EC oscillator, port function on RA6
OSC = HSPLL	HS oscillator, PLL enabled (Clock Frequency = 4 x FOSC1)
OSC = RCIO6	External RC oscillator, port function on RA6
OSC = INTIO67	Internal oscillator block, port function on RA6 and RA7
OSC = INTIO7	Internal oscillator block, CLKO function on RA6, port function on RA7

## Fail-Safe Clock Monitor Enable bit:

FCMEN = OFF	Fail-Safe Clock Monitor disabled
FCMEN = ON	Fail-Safe Clock Monitor enabled

## Internal/External Oscillator Switchover bit:

IESO = OFF	Oscillator Switchover mode disabled
IESO = ON	Oscillator Switchover mode enabled

## **Power-up Timer Enable bit:**

PWRT = ON	PWRT enabled
PWRT = OFF	PWRT disabled

## **Brown-out Reset Enable bits:**

BOREN = OFF	Brown-out Reset disabled in hardware and software
BOREN = ON	Brown-out Reset enabled and controlled by software (SBOREN is enabled)
BOREN = NOSLP	Brown-out Reset enabled in hardware only and disabled in Sleep mode (SBOREN is disabled)
BOREN = SBORDIS	Brown-out Reset enabled in hardware only (SBOREN is disabled)

## **Brown-out Reset Voltage bits:**

BORV = 0	Maximum setting
BORV = 1	
BORV = 2	
BORV = 3	Minimum setting

## Watchdog Timer Enable bit:

WDT = OFF	WDT disabled (control is placed on the SWDTEN bit)
WDT = ON	WDT enabled

## **Watchdog Timer Postscale Select bits:**

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

## MCLR Pin Enable bit:

MCLRE = OFF	RE3 input pin enabled; MCLR disabled
MCLRE = ON	MCLR pin enabled; RE3 input pin disabled

## Low-Power Timer1 Oscillator Enable bit:

LPT1OSC = OFF	Timer1 configured for higher power operation
LPT1OSC = ON	Timer1 configured for low-power operation

## **PORTB A/D Enable bit:**

PBADEN = OFF	PORTB<4:0> pins are configured as digital I/O on Reset
PBADEN = ON	PORTB<4:0> pins are configured as analog input channels on Reset

## **CCP2 MUX bit:**

CCP2MX = PORTB	CCP2 input/output is multiplexed with RB3
CCP2MX = PORTC	CCP2 input/output is multiplexed with RC1

## Stack Full/Underflow Reset Enable bit:

STVREN = OFF	Stack full/underflow will not cause Reset
STVREN = ON	Stack full/underflow will cause Reset

## Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

#### **Extended Instruction Set Enable bit:**

Instruction set extension and Indexed Addressing mode disabled (Legacy mode)
Instruction set extension and Indexed Addressing mode enabled

## **Background Debugger Enable bit:**

DEBUG = ON	Background debugger enabled, RB6 and RB7 are dedicated to In-Circuit Debug
DEBUG = OFF	Background debugger disabled, RB6 and RB7 configured as general purpose I/O pins

## **Code Protection Block 0:**

CPO = ON	Block 0 (000800-001FFFh) code-protected
CPO = OFF	Block 0 (000800-001FFFh) not code-protected

#### **Code Protection Block 1:**

CP1 = ON	Block 1 (002000-003FFFh) code-protected
CP1 = OFF	Block 1 (002000-003FFFh) not code-protected

#### **Code Protection Block 2:**

CP2 = ON	Block 2 (004000-005FFFh) code-protected
CP2 = OFF	Block 2 (004000-005FFFh) not code-protected

#### **Code Protection Block 3:**

CP3 = ON	Block 3 (006000-007FFFh) code-protected
CP3 = OFF	Block 3 (006000-007FFFh) not code-protected

## **Boot Block Code Protection bit:**

CPB = ON	Boot block (000000-0007FFh) code-protected
CPB = OFF	Boot block (000000-0007FFh) not code-protected

#### **Data EEPROM Code Protection:**

CPD = ON	Data EEPROM code-protected
CPD = OFF	Data EEPROM not code-protected

#### Write Protection Block 0:

WRT0 = ON	Block 0 (000800-001FFFh) write-protected
WRT0 = OFF	Block 0 (000800-001FFFh) not write-protected

## **Write Protection Block 1:**

WRT1 = ON	Block 1 (002000-003FFFh) write-protected
WRT1 = OFF	Block 1 (002000-003FFFh) not write-protected

## **Write Protection Block 2:**

WRT2 = ON	Block 2 (004000-005FFFh) write-protected
WRT2 = OFF	Block 2 (004000-005FFFh) not write-protected

#### Write Protection Block 3:

WRT3 = ON	Block 3 (006000-007FFFh) write-protected
WRT3 = OFF	Block 3 (006000-007FFFh) not write-protected

#### **Boot Block Write Protection bit:**

WRTB = ON	Boot block (000000-0007FFh) write-protected
WRTB = OFF	Boot block (000000-0007FFh) not write-protected

## **Configuration Register Write Protection bit:**

WRTC = ON	Configuration registers (300000-3000FFh) write-protected
WRTC = OFF	Configuration registers (300000-3000FFh) not write-protected

## **Data EEPROM Write Protection bit:**

WRTD = ON	Data EEPROM write-protected
WRTD = OFF	Data EEPROM not write-protected

## **Table Read Protection Block 0:**

EBTR0 = ON	Block 0 (000800-001FFFh) protected from table
	reads executed in other blocks
EBTR0 = OFF	Block 0 (000800-001FFFh) not protected from table
	reads executed in other blocks

## **Table Read Protection Block 1:**

EBTR1 = ON	Block 1 (002000-003FFFh) protected from table reads executed in other blocks
EBTR1 = OFF	Block 1 (002000-003FFFh) not protected from table reads executed in other blocks

## **Table Read Protection Block 2:**

EBTR2 = ON	Block 2 (004000-005FFFh) protected from table reads executed in other blocks
EBTR2 = OFF	Block 2 (004000-005FFFh) not protected from table reads executed in other blocks

## **Table Read Protection Block 3:**

Block 3 (006000-007FFFh) protected from table reads executed in other blocks
Block 3 (006000-007FFFh) not protected from table
reads executed in other blocks

## **Boot Block Table Read Protection bit:**

EBTRB = ON	Boot block (000000-0007FFh) protected from table reads executed in other blocks
EBTRB = OFF	Boot block (000000-0007FFh) not protected from table reads executed in other blocks

## PIC18LF4423

#### **Oscillator Selection bits:**

LP oscillator
XT oscillator
HS oscillator
External RC oscillator, CLKO function on RA6
EC oscillator, CLKO function on RA6
EC oscillator, port function on RA6
HS oscillator, PLL enabled (Clock Frequency = 4 x FOSC1)
External RC oscillator, port function on RA6
Internal oscillator block, port function on RA6 and RA7
Internal oscillator block, CLKO function on RA6, port function on RA7

## Fail-Safe Clock Monitor Enable bit:

FCMEN = OFF	Fail-Safe Clock Monitor disabled
FCMEN = ON	Fail-Safe Clock Monitor enabled

## Internal/External Oscillator Switchover bit:

IESO = OFF	Oscillator Switchover mode disabled
IESO = ON	Oscillator Switchover mode enabled

## Power-up Timer Enable bit:

PWRT = ON	PWRT enabled
PWRT = OFF	PWRT disabled

## **Brown-out Reset Enable bits:**

BOREN = OFF	Brown-out Reset disabled in hardware and software
BOREN = ON	Brown-out Reset enabled and controlled by software (SBOREN is enabled)
BOREN = NOSLP	Brown-out Reset enabled in hardware only and disabled in Sleep mode (SBOREN is disabled)
BOREN = SBORDIS	Brown-out Reset enabled in hardware only (SBOREN is disabled)

## **Brown-out Reset Voltage bits:**

BORV = 0	Maximum setting
BORV = 1	
BORV = 2	
BORV = 3	Minimum setting

## **Watchdog Timer Enable bit:**

WDT = OFF	WDT disabled (control is placed on the SWDTEN bit)
WDT = ON	WDT enabled

## **Watchdog Timer Postscale Select bits:**

WDTPS = 1	1:1
WDTPS = 2	1:2
WDTPS = 4	1:4
WDTPS = 8	1:8
WDTPS = 16	1:16
WDTPS = 32	1:32
WDTPS = 64	1:64
WDTPS = 128	1:128
WDTPS = 256	1:256
WDTPS = 512	1:512
WDTPS = 1024	1:1024
WDTPS = 2048	1:2048
WDTPS = 4096	1:4096
WDTPS = 8192	1:8192
WDTPS = 16384	1:16384
WDTPS = 32768	1:32768

## **MCLR Pin Enable bit:**

MCLRE = OFF	RE3 input pin enabled; MCLR disabled
MCLRE = ON	MCLR pin enabled; RE3 input pin disabled

## Low-Power Timer1 Oscillator Enable bit:

LPT1OSC = OFF	Timer1 configured for higher power operation
LPT1OSC = ON	Timer1 configured for low-power operation

#### **PORTB A/D Enable bit:**

PBADEN = OFF	PORTB<4:0> pins are configured as digital I/O on Reset
PBADEN = ON	PORTB<4:0> pins are configured as analog input channels on Reset

## **CCP2 MUX bit:**

CCP2MX = PORTB	CCP2 input/output is multiplexed with RB3
CCP2MX = PORTC	CCP2 input/output is multiplexed with RC1

## Stack Full/Underflow Reset Enable bit:

STVREN = OFF	Stack full/underflow will not cause Reset
STVREN = ON	Stack full/underflow will cause Reset

## Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

## **Extended Instruction Set Enable bit:**

Instruction set extension and Indexed Addressing mode disabled (Legacy mode)
Instruction set extension and Indexed Addressing mode enabled

## **Background Debugger Enable bit:**

DEBUG = ON	Background debugger enabled, RB6 and RB7 are dedicated to In-Circuit Debug
DEBUG = OFF	Background debugger disabled, RB6 and RB7 configured as general purpose I/O pins

## **Code Protection Block 0:**

CPO = ON	Block 0 (000800-001FFFh) code-protected
CPO = OFF	Block 0 (000800-001FFFh) not code-protected

#### **Code Protection Block 1:**

CP1 = ON	Block 1 (002000-003FFFh) code-protected
CP1 = OFF	Block 1 (002000-003FFFh) not code-protected

## **Boot Block Code Protection bit:**

CPB = ON	Boot block (000000-0007FFh) code-protected
CPB = OFF	Boot block (000000-0007FFh) not code-protected

## **Data EEPROM Code Protection:**

CPD = ON	Data EEPROM code-protected
CPD = OFF	Data EEPROM not code-protected

#### Write Protection Block 0:

WRT0 = ON	Block 0 (000800-001FFFh) write-protected
WRT0 = OFF	Block 0 (000800-001FFFh) not write-protected

#### **Write Protection Block 1:**

WRT1 = ON	Block 1 (002000-003FFFh) write-protected
WRT1 = OFF	Block 1 (002000-003FFFh) not write-protected

## **Boot Block Write Protection bit:**

WRTB = ON	Boot block (000000-0007FFh) write-protected
WRTB = OFF	Boot block (000000-0007FFh) not write-protected

## **Configuration Register Write Protection bit:**

WRTC = ON	Configuration registers (300000-3000FFh) write-protected
WRTC = OFF	Configuration registers (300000-3000FFh) not write-protected

## **Data EEPROM Write Protection bit:**

WRTD = ON	Data EEPROM write-protected
WRTD = OFF	Data EEPROM not write-protected

## **Table Read Protection Block 0:**

EBTRO = ON	Block 0 (000800-001FFFh) protected from table reads executed in other blocks
EBTR0 = OFF	Block 0 (000800-001FFFh) not protected from table reads executed in other blocks

## **Table Read Protection Block 1:**

EBTR1 = ON	Block 1 (002000-003FFFh) protected from table reads executed in other blocks
EBTR1 = OFF	Block 1 (002000-003FFFh) not protected from table
	reads executed in other blocks

## **Boot Block Table Read Protection bit:**

EBTRB = ON	Boot block (000000-0007FFh) protected from table reads executed in other blocks
EBTRB = OFF	Boot block (000000-0007FFh) not protected from table reads executed in other blocks

## PIC18LF4523

#### **Oscillator Selection bits:**

OSC = LP	LP oscillator
OSC = XT	XT oscillator
OSC = HS	HS oscillator
OSC = RC	External RC oscillator, CLKO function on RA6
OSC = EC	EC oscillator, CLKO function on RA6
OSC = ECIO6	EC oscillator, port function on RA6
OSC = HSPLL	HS oscillator, PLL enabled (Clock Frequency = 4 x FOSC1)
OSC = RCIO6	External RC oscillator, port function on RA6
OSC = INTIO67	Internal oscillator block, port function on RA6 and RA7
OSC = INTIO7	Internal oscillator block, CLKO function on RA6, port function on RA7

## Fail-Safe Clock Monitor Enable bit:

FCMEN = OFF	Fail-Safe Clock Monitor disabled
FCMEN = ON	Fail-Safe Clock Monitor enabled

## Internal/External Oscillator Switchover bit:

IESO = OFF	Oscillator Switchover mode disabled
IESO = ON	Oscillator Switchover mode enabled

## **Power-up Timer Enable bit:**

PWRT = ON	PWRT enabled
PWRT = OFF	PWRT disabled

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## **Brown-out Reset Enable bits:**

BOREN = OFF	Brown-out Reset disabled in hardware and software
BOREN = ON	Brown-out Reset enabled and controlled by software (SBOREN is enabled)
BOREN = NOSLP	Brown-out Reset enabled in hardware only and disabled in Sleep mode (SBOREN is disabled)
BOREN = SBORDIS	Brown-out Reset enabled in hardware only (SBOREN is disabled)

## **Brown-out Reset Voltage bits:**

BORV = 0	Maximum setting
BORV = 1	
BORV = 2	
BORV = 3	Minimum setting

## Watchdog Timer Enable bit:

WDT = OFF	WDT disabled (control is placed on the SWDTEN bit)
WDT = ON	WDT enabled

## **Watchdog Timer Postscale Select bits:**

1:1
1:2
1:4
1:8
1:16
1:32
1:64
1:128
1:256
1:512
1:1024
1:2048
1:4096
1:8192
1:16384
1:32768

## MCLR Pin Enable bit:

MCLRE = OFF	RE3 input pin enabled; MCLR disabled
MCLRE = ON	MCLR pin enabled; RE3 input pin disabled

## Low-Power Timer1 Oscillator Enable bit:

LPT1OSC = OFF	Timer1 configured for higher power operation
LPT1OSC = ON	Timer1 configured for low-power operation

## **PORTB A/D Enable bit:**

PBADEN = OFF	PORTB<4:0> pins are configured as digital I/O on
	Reset
PBADEN = ON	PORTB<4:0> pins are configured as analog input
	channels on Reset

## **CCP2 MUX bit:**

CCP2MX = PORTB	CCP2 input/output is multiplexed with RB3
CCP2MX = PORTC	CCP2 input/output is multiplexed with RC1

## Stack Full/Underflow Reset Enable bit:

STVREN = OFF	Stack full/underflow will not cause Reset
STVREN = ON	Stack full/underflow will cause Reset

## Low Voltage ICSP:

LVP = OFF	Disabled
LVP = ON	Enabled

#### **Extended Instruction Set Enable bit:**

Instruction set extension and Indexed Addressing mode disabled (Legacy mode)
Instruction set extension and Indexed Addressing mode enabled

## **Background Debugger Enable bit:**

DEBUG = ON	Background debugger enabled, RB6 and RB7 are dedicated to In-Circuit Debug
DEBUG = OFF	Background debugger disabled, RB6 and RB7 configured as general purpose I/O pins

## **Code Protection Block 0:**

CPO = ON	Block 0 (000800-001FFFh) code-protected
CPO = OFF	Block 0 (000800-001FFFh) not code-protected

#### **Code Protection Block 1:**

CP1 = ON	Block 1 (002000-003FFFh) code-protected
CP1 = OFF	Block 1 (002000-003FFFh) not code-protected

#### **Code Protection Block 2:**

CP2 = ON	Block 2 (004000-005FFFh) code-protected
CP2 = OFF	Block 2 (004000-005FFFh) not code-protected

## **Code Protection Block 3:**

CP3 = ON	Block 3 (006000-007FFFh) code-protected
CP3 = OFF	Block 3 (006000-007FFFh) not code-protected

## **Boot Block Code Protection bit:**

CPB = ON	Boot block (000000-0007FFh) code-protected
CPB = OFF	Boot block (000000-0007FFh) not code-protected

#### **Data EEPROM Code Protection:**

CPD = ON	Data EEPROM code-protected
CPD = OFF	Data EEPROM not code-protected

#### Write Protection Block 0:

WRT0 = ON	Block 0 (000800-001FFFh) write-protected
WRT0 = OFF	Block 0 (000800-001FFFh) not write-protected

## **Write Protection Block 1:**

WRT1 = ON	Block 1 (002000-003FFFh) write-protected
WRT1 = OFF	Block 1 (002000-003FFFh) not write-protected

## **Write Protection Block 2:**

WRT2 = ON	Block 2 (004000-005FFFh) write-protected
WRT2 = OFF	Block 2 (004000-005FFFh) not write-protected

#### Write Protection Block 3:

WRT3 = ON	Block 3 (006000-007FFFh) write-protected
WRT3 = OFF	Block 3 (006000-007FFFh) not write-protected

#### **Boot Block Write Protection bit:**

WRTB = ON	Boot block (000000-0007FFh) write-protected
WRTB = OFF	Boot block (000000-0007FFh) not write-protected

## **Configuration Register Write Protection bit:**

WRTC = ON	Configuration registers (300000-3000FFh) write-protected
WRTC = OFF	Configuration registers (300000-3000FFh) not write-protected

## **Data EEPROM Write Protection bit:**

WRTD = ON	Data EEPROM write-protected
WRTD = OFF	Data EEPROM not write-protected

## **Table Read Protection Block 0:**

EBTRO = ON	Block 0 (000800-001FFFh) protected from table reads executed in other blocks
EBTR0 = OFF	Block 0 (000800-001FFFh) not protected from table reads executed in other blocks

## **Table Read Protection Block 1:**

EBTR1 = ON	Block 1 (002000-003FFFh) protected from table reads executed in other blocks
EBTR1 = OFF	Block 1 (002000-003FFFh) not protected from table reads executed in other blocks

## **Table Read Protection Block 2:**

EBTR2 = ON	Block 2 (004000-005FFFh) protected from table reads executed in other blocks
EBTR2 = OFF	Block 2 (004000-005FFFh) not protected from table reads executed in other blocks

## **Table Read Protection Block 3:**

Block 3 (006000-007FFFh) protected from table reads executed in other blocks
Block 3 (006000-007FFFh) not protected from table
reads executed in other blocks

# **Configuration Settings**

## **Boot Block Table Read Protection bit:**

EBTRB = ON	Boot block (000000-0007FFh) protected from table reads executed in other blocks
EBTRB = OFF	Boot block (000000-0007FFh) not protected from
	table reads executed in other blocks



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