



## Password Change Guide: PIC 16F84A DTMF Repeater/Remote Controller

### Password change for RPC2A:

Change of password requires update of firmware:

1. Open DTMF.ASM file in notepad (or other text editor)

```
dtmf - Notepad
File Edit Format View Help
movlw B'00011111'          ;set all port A pins to input mode
movwf TRIS_A

movlw B'10000111'
movwf OPTREG              ;sets: pull-up on port B OFF
                           ; RTCC counts internal clock
                           ; prescaler connected to RTCC
                           ; prescaler divides by 256
                           ; (other bits unimportant)
                           ;clear the working register
                           ;switch back to register page 0
                           ;all outputs off

clrw
movwf STATUS
clrf PORTE
clrf relays
clrf timeout
movlw B'10100000'
movwf INTCON              ;global and RTCC interrupts enabled

set_sec movlw H'01'        ;put the 4 access codes into memory
        movwf numa        ;note for a 0 the hex is H'0A'
        movlw H'02'
        movwf numb
        movlw H'03'
        movwf numc
        movlw H'04'
        movwf numd

decode  call wait_no_strobe ;start running when no tone present
        clrf timeout       ;set timeout condition until later
        call wait_strobe   ;wait for a tone to be received
        movlw H'0B'        ;0B is the code for DTMF "w"
        subwf mfcodes,w    ;set zero flag if "w" was received
        btfsc STATUS,2    ;skip next if it was not a "w"
        goto got_star
        goto decode        ;look for another one

got_star
        call start_timer   ;start time-out timer
        call wait_no_strobe ;wait for second tone
        call wait_strobe   ;abort if timed out
        btfsc STATUS,2
        goto decode
        movf numa,w
        subwf mfcodes,w    ;set zero flag if second tone was 1
        btfsc STATUS,2    ;skip next if it was not a 1
        goto got_A
```

2. As seen in picture above - go to line : set\_sec

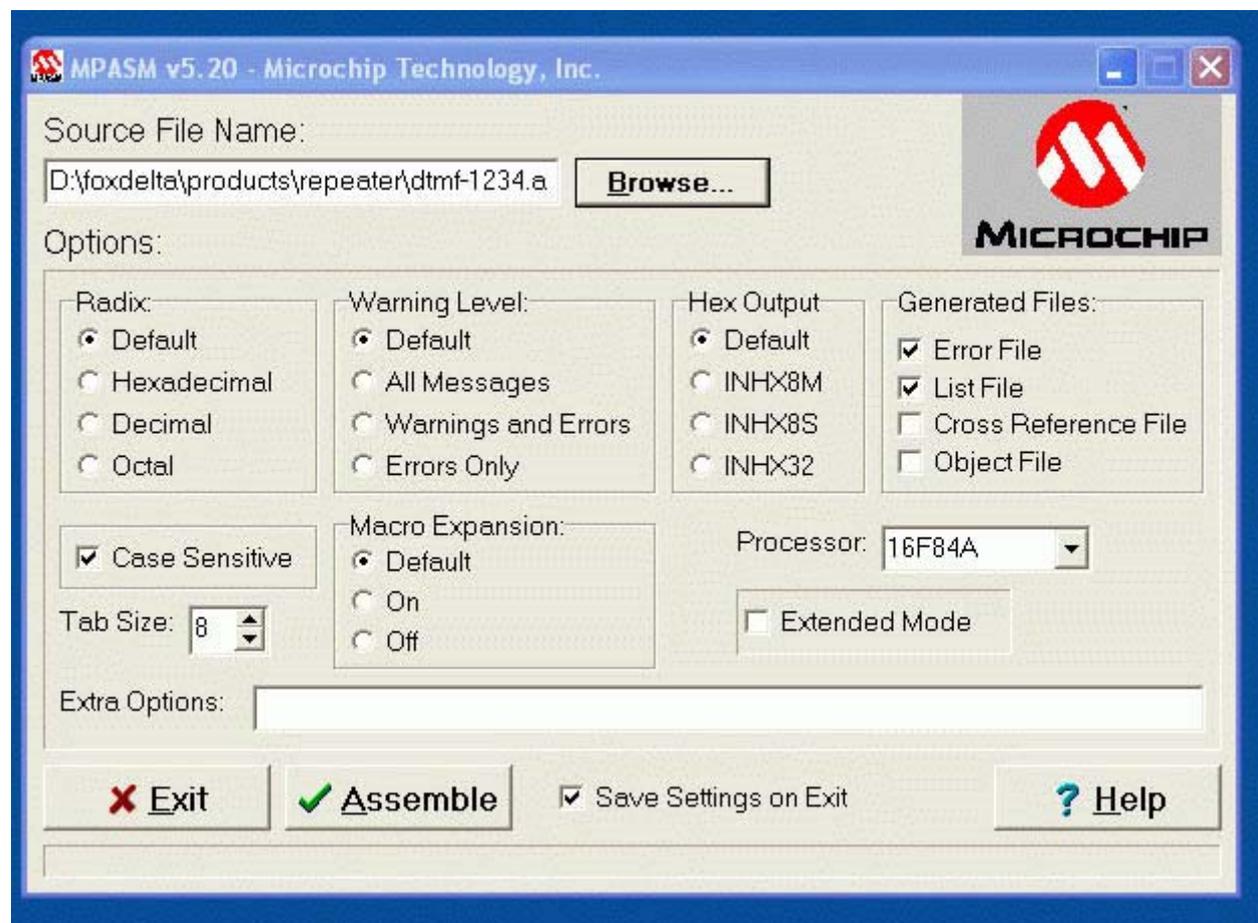
3. Here you will see 4 codes as 1, 2, 3, 4. Listed as '01' etc

4. Change this to your required PW code

5. Save and close asm file

## Creating new hex in MPASMWIN:

### 1. Open MPASMWIN (a part of microchip's MPLAB)



### 2. Open dtmf.asm in this program

### 3. Press "Assemble"

### 4. A new hex is now created with your new password.

## PIC Programming:

**PICkit 2 Programmer**

File Device Family Programmer Tools Help

Midrange Configuration

Device: PIC16F84A Configuration: 3FFF

User IDs: FF FF FF FF

Checksum: 3BFF OSCCAL: BandGap:

PICkit 2 found and connected.  
PIC Device Found.

VDD PICKIT 2

On  /MCLR 5.0

Read Write Verify Erase Blank Check

**Program Memory**

Enabled Hex Only Source: None (Empty/Erased)

000	3FFF								
008	3FFF								
010	3FFF								
018	3FFF								
020	3FFF								
028	3FFF								
030	3FFF								
038	3FFF								
040	3FFF								
048	3FFF								
050	3FFF								
058	3FFF								

**EEPROM Data**

Enabled Hex Only

00	FF														
10	FF														
20	FF														
30	FF														

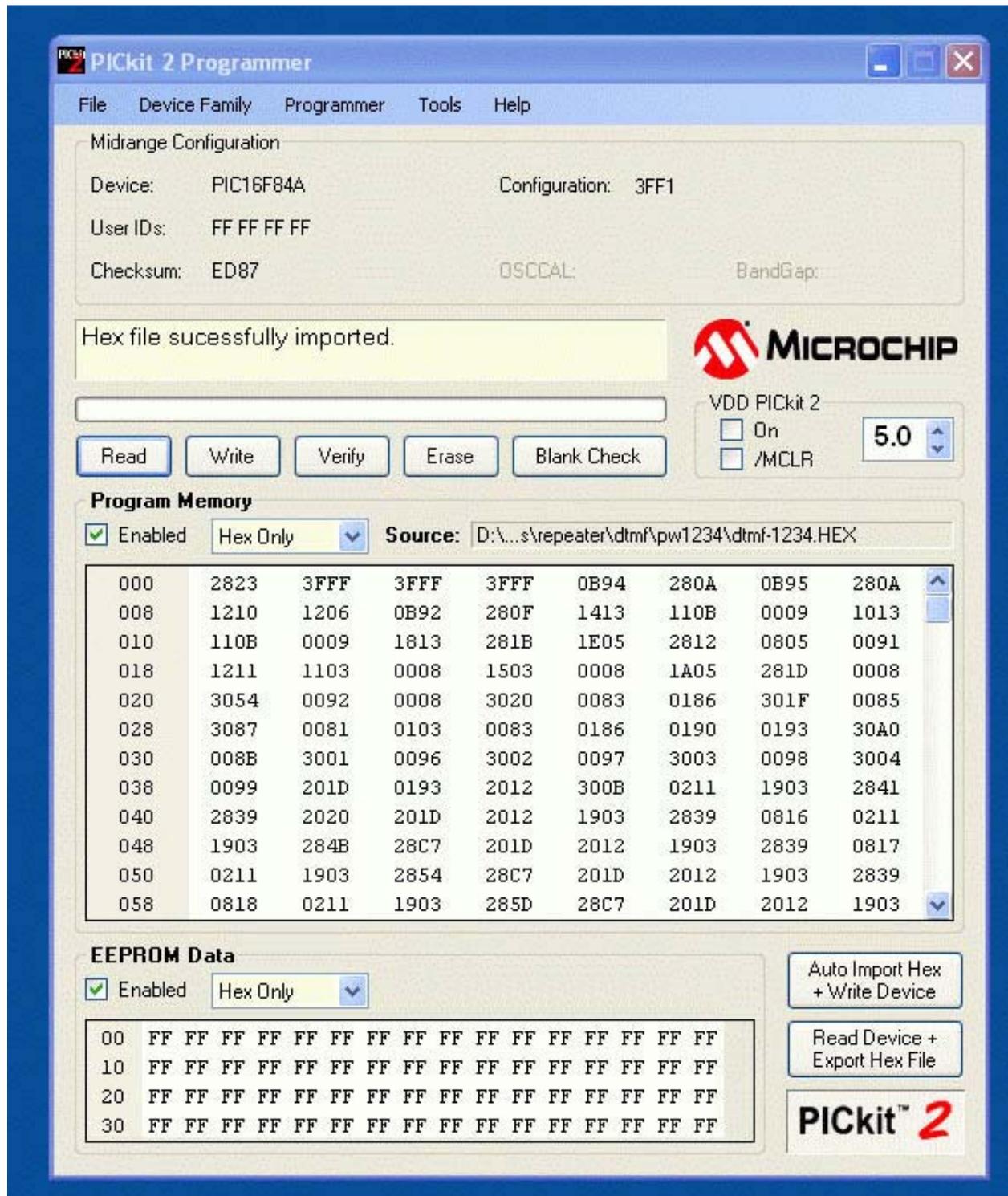
Auto Import Hex + Write Device

Read Device + Export Hex File

**PICkit™ 2**

1. Place PIC16F84A in a PIC Programmer like PICKIT2 or FD-UPP
2. Erase PIC and run "Blank Check"

### 3. Open new hex



### 4. "write" & "verify"

Place PIC in RPC2A. Its ready with your new pw.

73s/Dinesh

For more on this project, please visit Project page: <http://www.foxdelta.com>