

FD-RPC2

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 | | hanananananananan Mahili Mahi |
| movlw B'00011111' movwf TRIS_A | ;set all port A pins to input mode | |
| 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) | |
| clrw movwf STATUS clrf PORTB clrf relays clrf timeout movlw B'10100000' | clear the working register switch back to register page 0 ;all outputs off | |
| MOVWF INTCON | ;global and RTCC interrupts enabled | |
| set_sec movlw H'01' movwf numa movlw H'02' movwf numb movlw H'03' movwf numc movlw H'04' movwf numd | ;put the 4 access codes into memory ;note for a 0 the hex is н'ОА' | |
| decode call wait_no_strobe clrf timeout call wait_strobe movlw H'OB' subwf mfcode,w btfsc stAtUs,2 goto got_star goto decode | ;start running when no tone present ;set timeout condition until later ;wait for a tone to be received ;0B is the code for DTMF "*" ;set zero flag if "*" was received ;skip next if it was not a "*" ;look for another one | |
| got_star | | |
| call start_timer call wait_no_strobe call wait_strobe | ;start time-out timer ;wait for second tone | |
| btfsc STATUS,2 goto decode movf numa,w | ;abort if timed out | |
| subwf mfcode,w btfsc STATUS,2 goto got_A | ;set zero flag if second tone was 1 ;skip next if it was not a 1 | |

- 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)

| Source File Name: D\foxdelta\products\re | peater\dtmf-1234.a | wse | | |
|--|---|--|--|--|
| Options: | | <u></u>] | MICROCHIP | |
| Radix: C Default C Hexadecimal C Decimal C Octal | Warning Level: © Default C All Messages C Warnings and Errors C Errors Only | Hex Output C Default NHX8M NHX8S NHX32 | Generated Files: ✓ Error File ✓ List File Cross Reference File ✓ Object File | |
| I ⊂ Case Sensitive Tab Size: 8 🔹 | Macro Expansion: © Default © On © Off | Processor: 16F84A | | |
| Extra Options: | Assemble 🔽 Save | Settings on Exit | <u>? H</u> elp | |

- 2. Open dtmf.asm in this program
- 3. Press "Assemble"
- 4. A new hex is now created with your new password.

PIC Programming:

| PICkit Z | Programm | ner | av Taala | Hale | | | | - | |
|----------------------------|----------------------------|--------------|------------------------|--------------|-----------------------|----------------|--------------|---------------------------|------------|
| Midrange C | e Family Configuration | Programm | er roois | пер | | | | | |
| mulanye c | oninguration | - Southass | | | | | | | |
| Device: | PIC16F8 | 34A | | Config | uration: 3 | FFF | | | |
| User IDs: | FF FF FF | FF | | | | | | | |
| Checksum: | 3BFF | | | OSCC | AL. | | BandGap: | | |
| PICkit 2 fo PIC Devid | ound and ce Found. | connec | ted. | | | 5 | Mic | ROCI | -IIP |
| and a second second second | Concernation of the second | | Not all the second | | and the second second | VD C | D PICkit 2 | | |
| | | | | | | J C |] On | 5.0 | 1 |
| Read | Write | Verify | Eras | e BI | ank Check | |] /MCLR | | |
| Program I | Memory | | | | | | | | |
| 🗹 Enabled | Hex Or | ily 🔽 | Source: | None (En | npty/Erased |) | | | |
| 000 | 3FFF | 3FFF | 3FFF | 3FFF | 3FFF | 3FFF | 3FFF | 3FFF | > |
| 008 | 3FFF | 3FFF | 3FFF | 3FFF | 3FFF | 3FFF | 3FFF | 3FFF | |
| 010 | 3FFF | 3FFF | 3FFF | 3FFF | 3FFF | SFFF | 3FFF | 3FFF | 100 |
| 018 | 3FFF | 3FFF | 3FFF | 3FFF | 3FFF | 3FFF | 3FFF | 3FFF | |
| 020 | SFFF | SFFF | SFFF | SFFF | SFFF | SFFF | SFFF | SFFF | |
| 028 | SFFF | SFFF | SFFF | SFFF | SFFF | SFFF | SFFF | SFFF | |
| 030 | SFFF | JFFF OFFF | JFFF OFFF | 3866 3666 | JIII | SFFF | SFFF | SFFF | |
| 0.40 | TTTC TTTC | TTTC TTTC | TTTC TTTC | TTTC TTTC | TTTC TTTC | TTTC TTTC | TTTC TTTC | 3FFF | 100 |
| 040 | 3777 | 3FFF | 1110 3772 | 3FFF | 3FFF | 3FFF | TTTC | 111C 3732 | 181 |
| 050 | 3FFF | SFFF | SFFF | 3FFF | SFFF | 3FFF | SFFF | 3FFF | 100 |
| 058 | 3FFF | 3FFF | 3FFF | 3FFF | 3FFF | 3FFF | 3FFF | 3FFF | ~ |
| EEPROM | Data | | | | | | | | |
| 🗹 Enabled | Hex Or | ly 🔽 | | | | | Au + | ito Import I Write Dev | Hex ice |
| 00 FF | FF FF FF | FFFF | F <mark>F</mark> FF FF | FF FF | FF FF FF | FF FF | R | Read Device + | |
| 10 FF | FF FF FF | FFFF | FF FF FF | FF FF | FF FF FF | FF FF | E: | port Hex F | -ile |
| 20 FF 30 FF | FF FF FF FF FF FF | FF FF | FF FF FF FF FF FF | FF FF I | FF FF FF FF FF FF | FF FF FF FF | PI | Ckit" | 2 |
| | | | | | | | | | - |

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

3. Open new hex

| PICkit 2 P | rogramn | 1er | | | million | | | - | |
|---------------------|---------------|--------------|--|--|-------------|--|---------------|---------------------|------|
| File Device | Family | Programm | er Tools | Help | | | | | |
| Midrange Co | ntiguration | | | | | | | | |
| Device: | PIC16F8 | 4A | | Config | uration: 3 | FF1 | | | |
| User IDs: | FF FF FF | FF | | | | | | | |
| Charleson | ED.07 | | | 0000 | | | | | |
| Checksum; | ED87 | | | USLU | 4.L., | | sandulap: | | |
| Hex file_su | cessfully | importe | ed. | | | ~ | MIC | ROCH | -11 |
| Martin Street House | CONTRACTOR OF | - UL - S DUK | Section 11 | Contraction of the local division of the loc | Section in | | | | |
| | | | | | | | D PILkit Z | | 13 |
| Read | Write | Verify | Eras | e Bl | ank Check | ٦F | | 5.0 | |
| Deserved M | | <u> </u> | | | | | 1 | | |
| Program M | emory | | an de la composition | | | 1004 | | | |
| Enabled | Hex Un | у 🚩 | Source: | D:/s/re | peater\dtmf | \pw1234\c | Itmr-1234.H | EX | |
| 000 | 2823 | 3FFF | 3FFF | 3FFF | 0B94 | 280A | 0B95 | 280A | |
| 008 | 1210 | 1206 | 0B92 | 280F | 1413 | 110B | 0009 | 1013 | |
| 010 | 110B | 0009 | 1813 | 281B | 1E05 | 2812 | 0805 | 0091 | |
| 018 | 1211 | 1103 | 0008 | 1503 | 0008 | 1A05 | 281D | 0008 | |
| 020 | 3054 | 0092 | 0008 | 3020 | 0083 | 0186 | 301F | 0085 | |
| 028 | 3087 | 0081 | 0103 | 0083 | 0186 | 0190 | 0193 | 30A0 | |
| 030 | 008B | 3001 | 0096 | 3002 | 0097 | 3003 | 0098 | 3004 | |
| 038 | 0099 | 201D | 0193 | 2012 | 300B | 0211 | 1903 | 2841 | |
| 040 | 2839 | 2020 | 201D | 2012 | 1903 | 2839 | 0816 | 0211 | |
| 048 | 1903 | 284B | 28C7 | 201D | 2012 | 1903 | 2839 | 0817 | |
| 050 | 0211 | 1903 | 2854 | 2807 | 201D | 2012 | 1903 | 2839 | |
| 058 | 0818 | 0211 | 1903 | 285D | 2807 | 201D | 2012 | 1903 | 1 |
| EEPROM C | 0818 Data | 0211 | 1903 | 285D | 2807 | 201D | 2012 | 1903 to Import H | +, |
| Enabled | Hex Onl | у 🔽 | | | | aur Man | - + | Write Devi | ice |
| 00 FF F | F FF FF | FF FF I | FF FF FF | FF FF I | FF FF FF | FF FF | Read Device + | | |
| 10 FF F | F FF FF | FF FF 1 | FF FF FF | FF FF I | FFFFFF | FF FF | | port Hex F | - ne |
| 20 55 5 | F FF FF | FF FF I | FF FF FF | FF FF I | FF FF FF | FF FF | DI | CL:14" | |
| 20 FF F | | | | | | 100 million (100 m | | | |

4. "write" & "verify"

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

73s/Dinesh

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