REFLASHING DKWF121 WITH PICKIT 3

APPLICATION NOTE

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Version 0.2



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1 Preconditions

You should always prefer using the Device Firmware Update (DFU) provided with the Wi-Fi GUI software. The DFU does not require extra hardware and preserves the MAC address of your module.



If you have the possibility to retrieve the MAC address of you module prior to re-flashing, please do so.

1.1 Required components

You will need the following:

- Microchip PICkit3 device
- PICkit 3 Stand Alone Programmer for Windows.
- WF121 development kit

Connect the PICkit 3 to the ICSP port of your DKWF121 board. Make sure you align the arrow to the pin number 1 on the DKWF121 board.



2 Programming the module

- 1. Open the PICkit 3 application.
- 2. Select the Device PIC32MX695F512H from the drop down list
- 3. Go to **File->Import** hex and select the desired .hex file either from the fw/ directory or one of the examples from the examples/ directory. The WF121.hex in the fw directory has the second UART enabled and operating at a 115200 baudrate.
- 4. Click on the Write button

🗃 PICkit 3 Programm	er					
File Device Famil	y Programmer	Tools Vi	ew Help			
- Device Configuration						
Device: 🥝 PIC3	2MX695F512H	•	configuration:	0018 27BD 1EDB FF74	FFD9 F FFF7 7	FF8 ÆFF
User IDs:						
Checksum: 0000				BandGap:	0000	
Found PICkit 3, SN: BUR110376606 Loaded device file with 679 devices.						
Read Write	Verify	Erase	ank Check	MCL	R	-,
Program Memory						
V Enabled Hex (Dnly 🔻	Source: C:	\\wifi\fw\WF	121.hex		
1D000000	3C1A9D00	275A0010	0340	8000	000000	A 00
1D000010	401A6000	7F5A04C0	1340	0005	000000	00 🔲
1D000020	3C1A9D04	275AA4CC	0340	8000	000000	00
1D000030	3C1DA002	27BDFFF0	3C10	A001	279C80	30
1D000040	40096002	01205820	7D2A	1E80	7D4949	84
1D000050	40896002	000000000	41D0	E000	408B60	02
1D000060	3C089D04	2508A5D0	0100	F809	000000	00
1D000070	3C08A000	25080088	3009	A000	25290F	3C
1D000080	10000006	0000000	ADOO	0000	AD0000	04
1D000090	AD000008	AD00000C	2508	0010	010908	2B
1D0000A0	1420FFF9	0000000	3008	9D01	2508E0	D8
1D0000B0	8D090000	11200018	2508	0004	8D0A00	- 00
EEPROM Data	Dnly v			[Auto Im + Write Read D Export	port Hex Device Device + Hex File
					PIC	kit™ 3

3 Setting the MAC address after recovery

Since the PICkit 3 software will erase the MAC address you will need to re-write the MAC address.

Open the wifigui.exe application and attach to the module. If you reflashed using fw/WF121.hex, then connect using the baudrate 115200.

MainWindow	Augures Talk Con-	-				
		DFURe	set USB Serial Port (COM32) : 1:	15200 Sync	ыл	agiga
Device						
		Refresh	USB Serial Port (COM32)	2500000	Attach	
			Standard Serial over Bluetooth link (CON	123) 2000000	Detach	
Network			Standard Serial over Bluetooth link (CON	126) 1000000		
			Standard Serial over Bluetooth link (CON	124) 500000		
			Standard Serial over Bluetooth link (CON	125) 256000		
Endnoints			ECP Printer Port (LPT1)	128000		
			Communications Port (COM1)	115200		
			Standard Serial over Bluetooth link (CON	127) 57600		
			Standard Serial over Bluetooth link (CON	122) 38400		
PS				19200		
				14400		
				9600		
Hardware				4800		
				2400		
				1200		
DEU						
						Clear Clear Clear

After this switch to the "Network" view (the menu on the left). There you will be able to enter the new address, and it will be programmed when you hit enter.

	DFU Reset USB Serial Port (COM32) : 115200 Sync	egiga
Device	Off Scan MAC-Address 00:07:80:00:01	
Network	IP-Address DHCP_Enabled 192.166.11.50 Netmask	
Endpoints	255.255.0 Gateway 192.168.11.1 Link DOWN DNS 0	
PS	208.67.222.222 DNS 1 0 .0 .0 .0	
Hardware		
DFU		
2012.04.19 09:01:49.0675 wifi_cmd 2012.04.19 09:01:49.0686 wifi_rsp_	config_set_mac hw_interface: 0 mac:000780000001 config_set_mac result: 0 [No Error] hw_interface: 0	
		Clear V Enable logging

4 Updating the firmware after recovery

Once you have successfully recovered your module, there should not be a reason to use the PICKit3 for updates. Instead the recommended way of doing updates is by using the DFU update tool.

The DFU update process will not erase the MAC address.

- 1. Go to the DFU view (the menu on the left)
- 2. Click on the "DFU" button on the top, this will reset the module into DFU mode
- 3. Click browse and select the file to upload. The "empty" example project has good defaults, which you can see in its project file.
- 4. Press upload
- 5. Once the update has finished, close Wi-Fi Gui, and reset the module, for example by pressing the reset button on the DKWF121 board
- 6. Re-start Wi-Fi Gui and attach using the new baudrate.

Device	DFU Reset USB Serial Port (COM32) : 115200 Sync	olue giga
Network		
Endpoints	Upload file: [/example/empty/out.bin Browse]	
PS	Uproaa 30.38/500.06KB (10.90KB/s) NOTE: Logging is disabled while upload is in progress	
Hardware		
DFU		
12.04.19 09:14:48.0294 with cmd_dhu_fta a:03000825f:ff0a24244048010000098de7f 0a3:23024a25000049ad00488040fff0a240 12.04.19 09:14:48.0302 with cmd_dhu_fta a:01022520000a2444492a7d01608a4080 0060884000008430000a530049d083c3ca50	h_upload 201500000000000093c0000292510002011000000000200093cfcff292588bf0a3c10204a25000049ad0200093cfcff2 588a400034093c00302925017889400000093c 4h_upload 00093c0068894000800840805097d494c900006608405800013c244001012540280100608840049d083cd8a50825 82508000010000000fffffffffffffffffffffffff	292588bf0a3c20204a25000049ad0200093cfcff2925 09f800010000000000600840bfff013cffff21342440

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