





### SK-FM3-48PMC-USBSTICK Quick Start







All Rights Reserved.© Fujitsu Limited 2012



### Warranty and Disclaimer











The use of the deliverables (e.g. software, application examples, target boards, evaluation boards, starter kits, schematics, engineering samples of IC's etc.) is subject to the conditions of Fujitsu Semiconductor Europe GmbH ("FSEU") as set out in (i) the terms of the License Agreement and/or the Sale and Purchase Agreement under which agreements the Product has been delivered, (ii) the technical descriptions and (iii) all accompanying written materials.

Please note that the deliverables are intended for and must only be used for reference in an evaluation laboratory environment.

- The software deliverables are provided on an as-is basis without charge and are subject to alterations. It is the user's obligation to fully test the software in its environment and to ensure proper functionality, qualification and compliance with component specifications.
- Regarding hardware deliverables, FSEU warrants that they will be free from defects in material and workmanship under use and service as specified in the accompanying written materials for a duration of 1 year from the date of receipt by the customer.
- Should a hardware deliverable turn out to be defect, FSEU's entire liability and the customer's exclusive remedy shall be, at FSEU's sole discretion, either return of the purchase price and the license fee, or replacement of the hardware deliverable or parts thereof, if the deliverable is returned to FSEU in original packing and without further defects resulting from the customer's use or the transport. However, this warranty is excluded if the defect has resulted from an accident not attributable to FSEU, or abuse or misapplication attributable to the customer or any other third party not relating to FSEU or to unauthorised decompiling and/or reverse engineering and/or disassembling.
- FSEU does not warrant that the deliverables do not infringe any third party intellectual property right (IPR). In the event that the deliverables infringe a third party IPR it is the sole responsibility of the customer to obtain necessary licenses to continue the usage of the deliverable.
- In the event the software deliverables include the use of open source components, the provisions of the governing open source license agreement shall apply with respect to such software deliverables.
- To the maximum extent permitted by applicable law FSEU disclaims all other warranties, whether express or implied, in particular, but not limited to, warranties of merchantability and fitness for a particular purpose for which the deliverables are not designated.
- To the maximum extent permitted by applicable law, FSEU's liability is restricted to intention and gross negligence. FSEU is not liable for consequential damages.

Should one of the above stipulations be or become invalid and/or unenforceable, the remaining stipulations shall stay in full effect.

The contents of this document are subject to change without a prior notice, thus contact FSEU about the latest one.



### **CD** Contents



- FLASH USB DIRECT Programmer
- FLASH Serial Programmer
- SerialPortViewerAndTerminal
- Fujitsu OpenOCD Starter (GUI)
- Fujitsu USB Assistant

#### Documents

- Schematic: <u>'SK-FM3-48PMC-USBSTICK'</u>
- User Guide: <u>'SK-FM3-48PMC-USBSTICK'</u>
- Data Sheet: <u>MB9A310K Series</u>
- Manual: <u>Peripheral Manual</u>
- Manual: <u>Technical Reference Manual</u>
- Manual: <u>Flash Programming Manual</u>
- Application Note: <u>Virtual Com Port</u>; Example Files: <u>Virtual Com Port</u>
- Application Note: <u>Using Fujitsu USB Assistant</u>
- Application Note: <u>FSEU USB Host</u>
- Application Note: <u>FujitsuUsbLib (PC)</u>
- Application Note: <u>FSEU Embedded USB Device Library</u>
- Application Note: <u>OpenOCD GUI Frontend</u>
- Application Note: <u>USB Host Mass Storage Bootloader</u>













### **CD Contents (continued)**

#### Examples

Further examples are available on the <u>CD</u> and on our website

http://mcu.emea.fujitsu.com/mcu\_tool/detail/SK-FM3-48PMC-USBSTICK.htm

• <u>Note:</u> Please copy the examples to your local drive!

Download the latest version from the following website:



Open Questions? Contact: mcu\_ticket.FSEU@de.fujitsu.com









### **Overview**













- **Requirements**
- The hardware
- Installation of Serial Port Viewer & Terminal

#### Try yourself

- USB Host and Device
- Open OCD Debugger
- IAR-Embedded Workbench
- MCU Programming Via USB
- Create Own USB Applications

#### **Contacts**





#### About the SK-FM3-48PMC-USBSTICK











The SK-FM3-48PMC-USBSTICK includes a low-cost evaluation board based on the Fujitsu FM3 microcontroller MB9A310k Series



- The MB9A310K Series includes the following features:
  - Up to 128 KByte Flash Memory
  - Up to 16 KByte RAM
  - Up to 4 LIN-USART-I<sup>2</sup>C interfaces
  - USB-Host/-Device interface
  - Timers (ICUs, OCUs, PPGs, others)
  - Up to three 12 bit ADC
  - External interrupts
  - Low Power Mode
  - DMA Controller (8 channels)
  - Quadrature Position/Revolution Counter



#### About the SK-FM3-48PMC-USBSTICK

Mi









#### Features of the SK-FM3-48PMC-USBSTICK board:

- Microcontroller MB9AF312K
- 1x USB to serial converter (Type-B connector)
- JTAG integrated
- 1x USB-MiniHost (Type-A connector)
- 1x USB-Device (Type-B connector)
- Optional USB On-The-Go (assembly option for USB Mini connector)
- 3x LED controlled with PWM
- 1x 'User'-button
- 1x 'Reset'-button
- All 48 pins routed to pin-header
- Power supply via USB
- Voltage filter for ADC
- Light sensor



### Requirements

#### Embedded Development & MCU Flash Programming

- Windows 2000, Windows XP or Windows7
- Administrator Rights
- For some applications .NET Framework 2.0 and higher is required

#### PC Frontend Development

- Microsoft Visual C# Express
- Microsoft .NET Framework 2.0 and higher

#### Virtual Com Port Example

- Windows 2000, XP, Vista or Windows 7 (32-bit)
- Mac OS X or Linux

#### HID Communication Example

- Windows 2000, XP, Vista or Windows 7 (32- and 64-bit)
- Microsoft .NET Framework 3.5 and higher















#### Main features













#### For a detailed description please see User Manual

Fujitsu Semiconductor Europe - http://emea.fujitsu.com/microelectronics



Top side















The jumpers (bottom side)



Fujitsu Semiconductor Europe - http://emea.fujitsu.com/microelectronics



#### • The microcontroller pins











Pin	Pin-name	Pin-Function on SK-FM-100PMC
1	VCC	vcc
2	P50/ INT00_0/AIN0_2/ SIN3_1	
3	P51/INT01_0/BIN0_2/SOT3_1	
4	P52/INT02_0/ZIN0_2/SCK3_1	
5	P39/DTTI0X_0/ADTG_2	
6	P3A/RTO00_0/TIOA0_1/RTCCO_2/SUBOU T_2	R-RGB LED
7	P3B/RT001_0/TIOA1_1	
8	P3C /RT002_0 /TIOA2_1	G-RGB LED
9	P3D/ RT003_0/ TIOA3_1	
10	P3E/ RT004_0/ TIOA4_1	B-RGB LED
11	P3F/ RTO05_0/ TIOA5_1	
12	VSS	GND

Pin	Pin-name	Pin-Function on SK-FM-100PMC
13	C	N.C.
14	VCC	vcc
15	P46/ X0A	32KHz Crystal
16	P47/ X1A	32KHz Crystal
17	ΙΝΙΤΧ	Reset
18	P49/ TIOB0_0	
19	P4A/ TIOB1_0	
20	PE0/ MD1	
21	MD0	SW3 Run Mode
22	PE2 X0	4MHz Crystal
23	PE3 X1	4MHz Crystal
24	VSS	GND

Fujitsu Semiconductor Europe - http://emea.fujitsu.com/microelectronics



#### • The microcontroller pins (continued)











Pin	Pin-name	Pin-Function on SK-FM-100PMC
25	P10/ AN00	Fotoresistor LDR 03
26	P11/ AN01/SIN1_1 /INT02_1/ FRCK0_2/ IC02_0/ WKUP1	USB Overcurrent
27	P12/ AN02/ SOT1_1/ IC00_2	USB HOST Pull- Down
28	P13/ AN03/ SCK1_1/ IC01_2/ RTCCO_1/ SUBOUT_1	USB VBUS EN
29	P14/ AN04/ SIN0_1/ INT03_1/ IC02_2	
30	P15/ AN05/ SOT0_1/ IC03_2	USB ID
31	AVCC	vcc
32	AVRH	vcc
33	AVSS	GND
34	P23/ AN06/ SCK0_0/ TIOA7_1	
35	P22 / AN07 / SOT0_0 / TIOB7_1	UART0 (TXD)
36	P21 / SIN0_0 / INT06_1 / WKUP2	UART0 (RXD)

Pin	Pin-name	Pin-Function on SK-FM-100PMC
37	P00/ TRSTX	TRSTX
38	P01 /TCK / SWCLK	тск
39	P02 /TDI	TDI
40	P03 / TMS / SWDIO	тмѕ
41	P04 /TDO /SWO	TDO
42	P0F/ NMIX / CROUT_1 / RTCCO_0 /SUBOUT_0 / WKUP0	SW2 Switch
43	P61 / SOT5_0 / TIOB2_2 / UHCONX /DTTI0X_2	UHCONX
44	P60 / SIN5_0/ TIOA2_2 / INT15_1/ IC00_0/ WKUP3	USB VBUS INT
45	USBVCC	vcc
46	P80/ UDM0	UDM0
47	P81 /UDP0	UDP0
48	VSS	GND



#### • The Jumpers











Jumper	Function	Default
JP1	JTAGPWR	Closed
JP2	JTAGPWR	Closed
JP3	Use SW1	Closed
JP4	RGB LEDs	Closed
JP5	RGB LEDs	Closed
JP6	Light sensor	Closed
JP7	USB ID Pin	Closed
JP8	RGB LEDs	Closed
JP9	USB BUS low/high	2-3
JP10	USB BUS enable	Closed
JP11	AVRH Enable	Closed
JP12	USB Overcurrent	Closed
JP13	USB Host	Closed
JP14	Use 32KHz Crystal	Open
JP15	Use 32KHz Crystal	Open













- Install Serial Terminal Program: Serial Port Viewer & Terminal
- Click "Next"

 Read and accept the disclaimer and click "Next"

















 Choose a optional installation directory and click "Next"

Click "Next"

🚰 Setup - Serial Port Viewer & Terminal	_ 🗆 🗙
Select Destination Location Where should Serial Port Viewer & Terminal be installed?	Serial Com Port Nexor & Iom 12
Setup will install Serial Port Viewer & Terminal into the following folder.	
To continue, click Next. If you would like to select a different folder, click Browse.	
C\Program Files\Fujitsu Semiconductor Europe Browse.	
At least 0.9 MB of free disk space is required.	
( Back Nevt )	Cancel
	Jancor

👘 Setup - Serial Port Viewer & Terminal	_ 🗆 X
Select Additional Tasks Which additional tasks should be performed?	Serial Com Port New 75 Jan 12
Select the additional tasks you would like Setup to perform while installing Serial Port Viewer & Terminal, then click Next.	
Additional icons:	
Create a desktop icon	
☐ Create a <u>Q</u> uick Launch icon	
< <u>B</u> ack Next> C	Cancel













	Click	"Install"
--	-------	-----------

 Click "Finish" and the Serial Port Viewer & Terminal will be opened.

🕼 Setup - Serial Port Viewer & Terminal	- IX
Ready to Install Setup is now ready to begin installing Serial Port Viewer & Terminal on your computer.	Serial Com Port
Click Install to continue with the installation, or click Back if you want to review or change any settings.	
Destination location: C:\Program Files\Fujitsu Semiconductor Europe	A
Start Menu folder: Serial Port Viewer & Terminal	
<u>u</u>	
< <u>B</u> ack	Cancel















• The Serial Port Viewer & Terminal can be found as tray icon. Via right-click, the terminal for the specific com port can be opened.





- 1. Select Baud rate
- 2. Click red blinking "Disconnected" button to connect

Fujitsu Semiconductor Europe - http://emea.fujitsu.com/microelectronics



### **Virtual Com Port Example**

Used to communicate via CDC class











MCU source & binary Examples\ sk-fm3-48pmcusbstick\_usb\_device\_virtual \_com\_port-v10

COM10 elcome to FSEU Virtual ( aiting for your message	ascii/HEX	🗁 峝   Baud	d Rate: 115200	🝷 🕕 Conr	ected 💷 🦨
elcome to FSEV Virtual ( aiting for your message	omm Port				
ello World!		Example 1	for 16FX,	FR80 & FM3!	
าตั้งน				(-) [	luster France Cert



### **USB Host and Device (1)**

- Device Mode:
  - HID Communication







#### Host Mode:

- Mass Storage
- Mouse
- Keyboard





#### Example: sk-fm3-48pmc-usbstick\_usb\_host\_device-vXX





### **USB Host and Device (2)**

#### USB Device connected to PC

- LEDs turns off
- Within example sk-fm3-48pmc-usbstick\_usb\_host\_device-vXX in folder " forwindows\Binary" the PC Demo can be found: "Fujitsu\_UsbCom\_Demo.exe"
- LEDs, Sensors, Buttons and UART can be used via GUI









### **USB Host and Device (3)**

#### **USB Mass Storage via Host**

- Red LED turns on after a few seconds
- Content of USB Stick will be displayed via UART 0, 115200,8,N,1
- fujitsu.txt file will be written
- Red LED turns off and green LED turs on for ready to disconnect









### **USB Host and Device (4)**

#### USB Mouse via Host

- Green LED turns on after a view seconds
- Position will be displayed via UART 0, 115200,8,N,1
- LEDs can be dimmed via X/Y movement and scroll wheel













### **USB Host and Device (5)**

#### USB Keyboard via Host

- Green LED turns on after a view seconds
- Text typed will be displayed via UART 0, 115200,8,N,1
- LEDs can be switched via key 1-3













### **Create own USB Applications**











#### Using the Fujitsu USB Assistant

- Easy to use, step by step
- Creates USB Host / Device Projects
- Combines microcontroller templates, board support and USB use case
- Start installation of Fujitsu USB Assistant















#### Installation of OpenOCD Debugger

#### 1) Start installation of Fujitsu OpenOCD Starter (GUI)

2) The following window should appear. Select your preferred language



#### 3) Press Next

🕵 Setup - Fujitsu OpenOCD S	tarter	18 9	
OpenOCD	Welcome to the Fujitsu OpenOCD Starter Setup Wizard		
Graphical Frontend	This will install Fujitsu OpenOCD Starter 0.2 on your computer.		
	It is recommended that you close all other applications before continuing,		
	Click Next to continue, or Cancel to exit Setup.		
FUĴĨTSU			
	Next > Cancel		

### 4) Select "I accept agreement" and press next



Fujitsu Semiconductor Europe - http://emea.fujitsu.com/microelectronics



#### Installation of OpenOCD Debugger

5) Select the installation folder and press next



7) Select shortcuts folder and press next



6) Select "Full installation" push next

👘 Setup - Fujitsu OpenOCD Starter	_ 🗆 🗵
Select Components Which components should be installed?	
Select the components you want to install; clear the components you do not v install. Click Next when you are ready to continue.	vant to
Full installation	<b>_</b>
Program Files	7.4 MB
Current selection requires at least 8.1 MB of disk space.	
< <u>B</u> ack <u>N</u> ext >	Cancel

8) Select "Create a desktop icon" and "create quick launch icon" and press next



Fujitsu Semiconductor Europe - http://emea.fujitsu.com/microelectronics



#### Installation of OpenOCD Debugger

\_ 🗆 🗵

FUITSU

OpenOCD

Quarka Force

۵

Þ

#### 9) Push "Install"

Setup - Fujitsu OpenOCD Starter

Setup is now ready to begin installing Fujitsu OpenOCD Starter on your

C:\Program Files\Fujitsu OpenOCD Starter

Click Install to continue with the installation, or click Back if you want to review or

Ready to Install

computer.

change any settings. Destination location:

Start Menu folder: Fujitsu Semiconductor Europe

Additional tasks: Additional icons: Create a desktop icon Create a Quick Launch icon







# 11) Select to Install Drivers, and push finish





🖶 Setup - Fujitsu OpenOCD S	Rarter 📰
OpenOCD	Completing the Fujitsu OpenOCD Starter Setup Wizard
Graphical Frontend	Setup has finished installing Fujitsu OpenOCD Starter on your computer. The application may be launched by selecting the installed icons.
	Click Finish to exit Setup.
	Install Drivers (Plug in USB JTAG first)
FUĴĨTSU	
	Ensh

#### 10) Installation will begin



#### 12) Open the OpenOCD



Fujitsu Semiconductor Europe - http://emea.fujitsu.com/microelectronics



### Installation of the USB-driver

- Connect the SK-FM3-48PMC-USBSTICK via mini-USB (X5) to your PC
- The Installation of the drivers will be done through OpenOCD. Only in case the following dialog box appears, follow the next steps.
  - Windows will 'Found New Hardware: FT232R USB UART' and the Hardware Wizard should start automatically
    - Note: The dialog box may differ with different operating systems





1) Ignore this dialog box

ind New Hardware Wizard	
	Welcome to the Found New Hardware Wizard Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission). Read our privacy policy
	Can Windows connect to Windows Update to search for software? O Yes, this time only O Yes, now and every time I connect a device No, not this time
	Click Next to continue.
	< Back Next > Cancel



### Installation of the USB-driver



### 2) Open OpenOCD3) Push the button "Install Driver"

4) If a warning window appears click on "Continue Anyway". This window could appear more than one time









##FUJITSU OpenOCD Starter		Hardware Installation
Config File: /sk-fm3-176pmc-ethemet.cfg	About	
Firmware File: Qpen Commands Programming Eull Operation (E+P) Erase Program Fujitsu Semiconductor Burope	Install Driver	The software you are installing for this hardware: USB Serial Converter B has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.) Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly
OpenOCD GUI Frontend 	<u> </u>	Contact the hardware vendor for software that has passed Windows Logo testing.

5) READY!!!!



### Installation of the USB-driver

1. The second









### There are two options to check that your installation was successful:

- Start the Device Manager of the Windows Control Panel
  - START -> Settings -> Control Panel
  - Control Panel -> System -> Hardware -> Device Manager
- Check 'Ports' for the assigned virtual COMport number
  - USB Serial Port (e.g.: COM2)



- Open the Fujitsu's "SerialPort Viewer and Terminal"
  - Double click on the icon Profit the taskbar.
- It will show the opened ports, check for the assigned virtual COM-port number
  - USB Serial Port (e.g.: COM2)







### **Debugging with OpenOCD**











#### SK-FM3-176PMC-ETHERNET offers an on-chip debugger via USB X5

- 1. Connect the board on X15 to the USB-Port of your PC
- 2. Open OpenOCD
- 3. Select the sk-fm3-176pmc-ethernet in config file
- 4. Push Start Debug



Fujitsu Semiconductor Europe - http://emea.fujitsu.com/microelectronics



### **Debugging with OpenOCD**



- 1. Open the project you want to debug.
- 2. Go to Project->Options

- 3. Select Debugger
- 4. Select Setup
- 5. As driver select "GDB Server"







## **Debugging with OpenOCD**

7. Type "127.0.0.1" on the field of TCP/IP adress

#### IAR Workbench configuration

6. Select GDB Server











Category: Seneral Options	Factory 5	Settings
C/C++ Compiler		
Assembler	GDB Server Development	
Output Converter	abb server   Breakpoints	
Custom Build		
build Actions	<u>I</u> CP/IP address or hostname [,port]	
Debugger	127.0.0.1	
Simulator		
angel		
GDB Server		
A		
J-Link/J-Trace		
TI Stellaris FTDI		
Macraigor		
PE micro		
RDI		
ST-LINK	Log communication	
Third-Party Driver	\$PROJ_DIR\$\cspycomm.log	
TI XDS100	_	

8. Start debug in IAR Workbench (See next section)



Fujitsu Semiconductor Europe - http://emea.fujitsu.com/microelectronics



### **IAR Workbench Getting Started**











#### Install EWARM from IAR-CD or download latest version from IAR Website

- EWARM 30-day Evaluation Version
  - http://supp.iar.com/Download/SW/?item=EWARM-EVAL
- EWARM 32K Kickstart Version
  - http://supp.iar.com/Download/SW/?item=EWARM-KS32

Start EWARM Workbench



### **IAR Workbench Getting Started**

\\ Examples\sk-fm3-48pmc-usbstick\_usb\_device\_virtual\_com\_port-v10\example\/AR\

 $\blacksquare Choose \textit{File} \rightarrow \textit{Open} \rightarrow \textit{Workspace}$ 

Select e.g.











Maria Maria Delarez Terres			Arr III and an Array	1.03 0.07 (so also 1. a) (so 1.
Ober I	Ele STRG+O	1421		118 76 78 2 1 12
Close	Workspace.			
Soge Workspace Close Workspace	essenses of the state	CALLAND CALLAND	te Cartelle	Cardente Cardente
Solos Si 2015 Solos As a Solos Al				
Page Setyp Bint	IAR Infor	mation Ce	nter for AR	RM
Recent Blos Recent Woglopeces	projects, asser and re	ference guides, supp	int information, and role	
E::k		(	(course)	
		EE	E.C.M.	1.1
	CETTING STARTED	Usen guides	EXAMPLE PROJECTS	INTEGRATED ITTOSes
	Guidelines for setting up	Complete product	Example applications	Information, evaluation
	files compiling, inking,	format gives you all the	hardware peripherals for	projects for integrated
	and according to	information you need.	evaluation boards.	schilipha
				100
				and a second
	Tutorial to more and	SUPPORT For every from should have	RELEASE NOTES	My Pages How we are developed
	termise with the IDE	to use your WR product	features, new device	product opdates
	IAR C SPY debugger	finding support	the release sport	contact information, and
		Haddross		chark your solk status

Fujitsu Semiconductor Europe - http://emea.fujitsu.com/microelectronics



### IAR Workbench – Main Window

#### IAR Workbench

- Workspace on left side of Workbench window
  - Choose:
     View→Workspace,
     if hidden
  - Open main.c on source files.
- Source files on right side of Workbench window as tabbed windows
- Project can alternatively be opened by: *File→Open→ Workspace→\*.eww*

	① ロロ
o ispate	*
cbug 👱	Simplude "nou.h"
Fles 25 mg	
1 mb9af316n 🖌	// LED mumber pettern arrey (9 - 9)
-E Cleancasa	Number of the second se
Ha Disystem	const unsigned short LEMSATTERAI[10]-{0x8002, 0x7202, 0x4802, 0x6002, 0x3202, 0x
- B C Output	const unsigned short 120PATIERE2[10]=10x0080, 0x0019, 0x0034, 0x0030, 0x0019, 0x
Dicresi	
D core	ussigned that court = 0; // constar isr Law displays
Core	signed that count_direction = 1; // count direction
Dicore	and the second se
	// 18722 1000
DLR.	ADTO MATE (THE B)
- DLB.	- Caracteria - Car
- DLB	WHERE (R1)
- DL.G.	
- intins.	
- Simb9a	which propries and propries
- M mcut	IDCJS_C KEID WORK)
- Steinth	State of the state
- Syste	// Initialize //-ports
- Sixenc	FNG GPIC-SPIRS 6- *((1980) 1 (1981)); // Select CPIC Tancelor
- Volie	FAS_071C-50005 4= ~(1000) + (1001)); // F270 5 FAper (Surrows 101 0, 202 1)
- Wolsk	FNA CATE A MARK - Records - Classe Bankl - a display and
D source lies	FAG GPIC-2ADA = 0x00003 // NSE POPTA as anythaz oneput
- mone	FAS_DITCOMPTING WARPON, AN ADDITION TO SEALCH AND ADDITION
	Phase of the second sec
- B Beadrie td	FAS OFIC-SOME TE CROOPET AN ARE THE PLAS SUBJECTS
	FMS CITE SDEDS action Processing of a solution (2010) for a start some
- Dunh0=61	THA CATCONFERENCE OF A CONTRACT OF A CONTRAC
C D wh D=0	FNS GTIC-MODEL = (COST) // Set plus to tain of 2005
	Pas_eric-scors (= carror; // mart ree pads cucputs
	stdile (1)
	FN3_GFIO->PPORI = LEDPATTERK2[count - ((count / 10) * 10));
	FH3_GFIO->PDOR3 = LEDPATTERK1[commt / 10]; // set ones' place
	weit (1000000): // weit some time
	if (!(0 (FH9_OFID)>PDIDS & OxDOD3))) // both key buttoms not pressed?
	11 (0 (FH3_GFIO->PDIRS & Ox0001)) // SW2-ZHT0 pressed?
htiget/fish_loper_counter-40	test staff















# **IAR Workbench – Menu Bar**

#### Menu Bar





#### Step 1

- Insert the CD ROM
- Switch SW3 to Prog Mode







#### Step 2

 Connect the evaluation board to the PC



















- The hardware wizard will be opened.
- Select "No, not this time" and click "Next"

 Select "Install the software automatically (Recommended)" and click "Next"

Found New Hardware Wizard	
	Welcome to the Found New Hardware Wizard
	Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission). <u>Read our privacy policy</u>
	Can Windows connect to Windows Update to search for software?
	O Yes, this time only
	e res, now and every time I connect a device
	No, not this time
	Click Next to continue.
Found New Hardware Wizard	
Found New Hardware Wizard	This wizard helps you install software for:
Found New Hardware Wizard	This wizard helps you install software for: USB Port
Found New Hardware Wizard	This wizard helps you install software for: USB Port
Found New Hardware Wizard	This wizard helps you install software for: USB Port If your hardware came with an installation CD or floppy disk, insert it now.
Found New Hardware Wizard	This wizard helps you install software for: USB Port If your hardware came with an installation CD or floppy disk, insert it now. What do you want the wizard to do?
Found New Hardware Wizard	This wizard helps you install software for: USB Port If your hardware came with an installation CD or floppy disk, insert it now. What do you want the wizard to do? install the software automatically (Recommended)
Found New Hardware Wizard	This wizard helps you install software for: USB Port USB Port If your hardware came with an installation CD or floppy disk, insert it now. What do you want the wizard to do?
Found New Hardware Wizard	This wizard helps you install software for: USB Port USB Port If your hardware came with an installation CD or floppy disk, insert it now. What do you want the wizard to do? What do you want the wizard to do? install the software automatically (Recommended) install the software automatically (Recommended) install from a list or specific location (Advanced) Click Next to continue.



#### Step 3 (continued)

 While asking for Windows Logo certification, click "Continue Anyway"

 The driver installation was successful.

Step 4

Push finish



Fujitsu Semiconductor Europe - http://emea.fujitsu.com/microelectronics





Step 5









#### • Find the virtual com port number via the device

- manager. It can be found in the "System" Control Panel.
- Select the "Hardware" and click at "Device Manager"



System Prop	erties	? ×
System General	Restore Automatic apdates Remote Automatic apdates Advanced Advanced	
E Device M	1anager	
Ŵ	The Device Manager lists all the hardware devices installed on your computer. Use the Device Manager to change the properties of any device.	>
Drivers	Driver Signing lets you make sure that installed drivers are compatible with Windows. Windows Update lets you set up how Windows connects to Windows Update for drivers.	
	Driver Signing Windows Update	
- Hardware	e Profiles	
2	Hardware profiles provide a way for you to set up and store different hardware configurations.	
	Hardware <u>P</u> rofiles	
	OK Cancel Apply	



#### Step 5 (continued)

- Open the tree "Ports (COM & LPT" by clicking on the "+".
- Look for the "USB Port" entry. In this case it is com port **4**

















#### Step 5











Start the installation of the
USB DIRECT Programmer

Click "Next"

 Choose a optional installation directory and click "Next"

InstallShield Wizard		×
	Welcome to the InstallShield Wizard for FUJITSU USB DIRECT Programmer The InstallShield® Wizard will install FUJITSU USB DIRECT Programmer on your computer. To continue, click Next.	
	< Back Cancel	
InstallShield Wizard		
Choose Destination Locatio Select folder where Setup will	n install files.	
Setup will install FUJITSU US	B DIRECT Programmer in the following folder.	
To install to this folder, click N another folder.	lext. To install to a different folder, click Browse and select	
Destination Falder		
C:\\Fujitsu\FUJITSU USE	BDIRECT Programmer Biowse	
InstallShield	<back< td=""><td></td></back<>	



#### Step 5 (continued)

 The USB DIRECT Programmer was now succesfull installed.



#### Step 6

 Start the USB DIRECT Programmer from Start Menu

🚺 FLASH USB DIRECT P	rogrammer				
SELECT			FLASH INFOR	MATION	
Target MCU	MB9AF312L/M/N		Start Addr	End Addr	Size
Hex File	sk-fm3-48pmc-usbstick_usb_ <u>O</u> pen		100000H	100001H	000002H
COM (1-255)	(1-255) 4				
Command to CO	M4				
	<u>F</u> ull Operation(D+E+B+P)		<u>S</u> et Environ	ment	<u>H</u> elp
Download	Erase	Blank Check	Check SU		ersion Info
Program & Verify	<u>R</u> ead & Compare	Copy	USB D	IRECT ammer	





# Step 7











😈 FLASH USB DIRECT Programm

sk-fm3-48pmc-usbstick\_usb\_host\_device.srec

Files of type: S format files (\*.mhx;\*.srec;\*.cnv;\*.ahx)

File <u>n</u>ame

-

<u>O</u>pen

Cancel

\_ 🗆 🗙

Size

020000H

000002H

<u>H</u>elp

Version Info

End Add

01FFFFH

100001H

? ×



- Step 7 (continued)
  - Click at "Full Operation"











FLASH USB DIRECT Programmer

MB91F668/669

SELECT

Target MCU

Fujitsu Semiconductor Europe - http://emea.fujitsu.com/microelectronics

- 🗆 ×

0E0000H

FLASH INFORMATION

Start Address



Step 8











Switch SW3 to RUN

• Press the reset button







### **Further Steps**

In order to learn more about Fujitsu's microcontrollers

- Visit our microcontroller website
  - http://mcu.emea.fujitsu.com
  - http://mcu.emea.fujitsu.com/mcu\_product/detail/MB9AF312KPMC.htm
  - <u>http://mcu.emea.fujitsu.com/mcu\_tool/detail/SK-FM3-48PMC-USBSTICK.htm</u>
- See our application notes
  - http://mcu.emea.fujitsu.com/mcu\_product/mcu\_all\_appnotes.htm
- See our software examples
  - <u>http://mcu.emea.fujitsu.com/mcu\_product/mcu\_all\_software.htm</u>

#### Contact your local distributor ...

- for individual support
- to register for our monthly FM3 seminar
- to order the latest 'Fujitsu Micros DVD' containing all information regarding Fujitsu's 8-bit, 16-bit, and 32-bit microcontrollers













### **Contacts - Distribution**

#### European distributors











- EBV Elektronik
- Farnell
- Glyn
- Ineltek
- Melchioni Electronica
- PN Electronics
- Rutronik Elektronische Bauelemente

www.anatec.ch www.ebv.com www.farnell.com www.glyn.de , www.glyn.ch www.ineltek.com www.melchioni.it www.pne.fr www.rutronik.com



### **Fujitsu Semiconductor Europe**

#### http://www.fujitsu.com/emea/contact/microelectronics/salesoffices/











Germany (Headquarters)
63225 Langen

- France 91300 Massy
  - Italy 20080 Milano
- United Kingdom Maidenhead
- Hungary 1143 Budapest
  - Turkey 34180 Istanbul

Tel: +49 (0) 61 03 69 00

Tel: +33 (0) 1 64 47 97 00

Tel: +39 02 90 45 02 1

Tel: +44 (0) 1628 50 46 00

Tel: +36 1 471 21 29

Tel: +90 212 557 18 81

#### World Wide Web

- http://emea.fujitsu.com/microelectronics
- http://mcu.emea.fujitsu.com
- Contact: <u>mcu\_ticket.FSEU@de.fujitsu.com</u>



Fujitsu Semiconductor Europe - http://emea.fujitsu.com/microelectronics

All Rights Reserved.© Fujitsu Limited 2011



### EG-Konformitätserklärung / EC declaration of conformity





Hiermit erklären wir, Fujitsu Semiconductor Europe GmbH, Pittlerstrasse 47, 63225 Langen, Germany dass dieses Board aufgrund seiner Konzipierung und Bauart sowie in den von uns in Verkehr gebrachten Ausführung(en) den grundlegenden Anforderungen der EU-Richtlinie 2004/108/EC "Elektromagnetische Verträglichkeit" entspricht. Durch eine Veränderung des Boards (Hard- und/ oder Software) verliert diese Erklärung ihre Gültigkeit!

CE



We, Fujitsu Semiconductor Europe GmbH, Pittlerstrasse 47, 63225 Langen, Germany hereby declare that the design, construction and description circulated by us of this board complies with the appropriate basic safety and health requirements according to the EU Guideline 2004/108/EC entitled 'Electro-Magnetic Compatibility'. Any changes to the equipment (hardware and/ or software) will render this declaration invalid!

#### Note:



All data and power supply lines connected to this starter kit should be kept as short as possible, with a maximum allowable length of 3m. Shielded cables should be used for data lines. As a rule of thumb, the cable length used when connecting external circuitry to the MCU pin header connectors for example should be less than 20cm. Longer cables may affect EMC performance and cause radio interference.

Fujitsu Semiconductor Europe - http://emea.fujitsu.com/microelectronics



### Recycling











#### Gültig für EU-Länder:

- Gemäß der Europäischen WEEE-Richtlinie und deren Umsetzung in landesspezifische Gesetze nehmen wir dieses Gerät wieder zurück.
- Zur Entsorgung schicken Sie das Gerät bitte an die folgende Adresse:

#### Valid for European Union Countries:

- According to the European WEEE-Directive and its implementation into national laws we take this device back.
- For disposal please send the device to the following address:

#### Fujitsu Semiconductor Europe GmbH Warehouse/Disposal Monzastraße 4a D-63225 Langen





This board is compliant with China RoHS

All Rights Reserved.© Fujitsu Limited 2011

#### **X-ON Electronics**

Authorized Distributor

Click to view similar products for Fujitsu manufacturer.

Other Similar products are found below :

 037243G
 043189H
 24A02C19B
 24A02C21EX
 24A02C81E
 24A02C82C
 24A04C14E
 24A12C09C
 24A12C14E

 24A12C20C
 24A12C24C
 24A12C61E
 25A04C09E
 25A04C14E
 25A04C20C
 25A04C20E
 25A04C24C
 25A04C24E

 25A04C28C
 25A14C09C
 25A14C20C
 25A14C20E
 26A06C08C
 26A06C24C
 26A06C54E