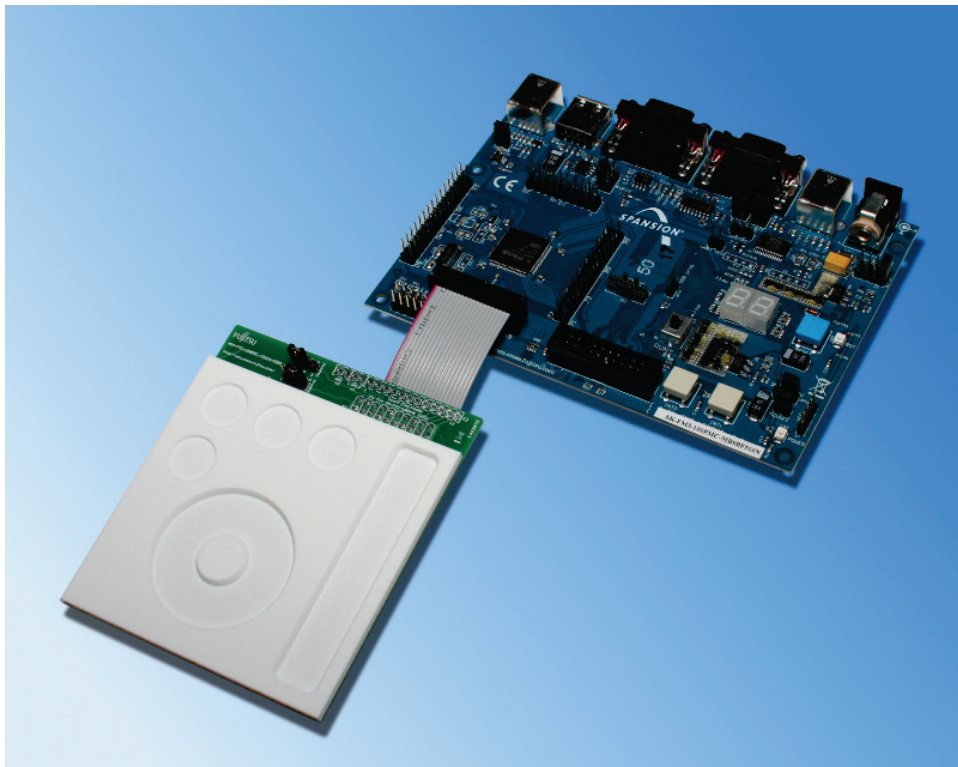


# FM3 FAMILY EVALUATION BOARD SK-FM3-9BF516N-TOUCHKIT

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## USER GUIDE



## Revision History

<b>Date</b>	<b>Issue</b>
04-May-2011	CHa First version
13-Jan-2015	CHa Spansion document style

This document contains 12 pages.

## Warranty and Disclaimer

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1. Please note that the deliverables are intended for and must only be used for test applications in an evaluation laboratory environment.
2. 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.
3. Regarding hardware deliverables, the following limited warranty shall apply:

Except as otherwise provided in the following paragraphs, for a period of one (1) year from date of shipment to customer ("Warranty Period"), SPANSION warrants the hardware deliverables (i) are free of defects in material and workmanship, and (ii) conform to SPANSION applicable data sheet specifications (available at [www.spansion.com](http://www.spansion.com) or upon request).

This warranty does not extend beyond the first purchaser of the deliverables. The liability of SPANSION under this warranty is limited, at SPANSION's option, solely to repair the deliverable, to send replacement deliverable, or to make an appropriate credit adjustment or refund in an amount not to exceed the original purchase price actually paid for the deliverable returned to SPANSION. SPANSION'S warranty obligations are conditioned upon the following: (a) SPANSION is promptly notified in writing by customer during the applicable warranty period of any defect or nonconformance in the deliverable, (b) customer obtains authorization from SPANSION to return the defective deliverable, (c) the defective deliverable is returned to SPANSION in accordance with SPANSION'S shipping instructions set forth below, and (d) SPANSION'S examination of such deliverable discloses to its satisfaction that any defect or nonconformance actually existed and was not caused by improper use or operation outside of the data sheet specifications for the deliverable, abuse, negligence, improper installation, accident, loss or damage in transit, or unauthorized repair or alteration by a person other than SPANSION. Customer shall ship such defective deliverable to SPANSION via SPANSION'S carrier, collect. Risk of loss will transfer to SPANSION when the defective deliverable is provided to SPANSION'S carrier. If customer fails to adhere to these warranty returns guidelines, customer shall assume all risk of loss and shall pay for all freight to SPANSION'S specified location. This warranty shall not apply to any deliverables that have been repaired or altered, except those which have been repaired or altered by SPANSION. The aforementioned provisions do not extend the original

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5. 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 by SPANSION without a prior notice, thus contact SPANSION about the latest one

**This board and its deliverables must only be used for  
test applications in an evaluation laboratory  
environment.**

# Contents

<b>REVISION HISTORY</b> .....	<b>2</b>
<b>WARRANTY AND DISCLAIMER</b> .....	<b>3</b>
<b>CONTENTS</b> .....	<b>5</b>
<b>1 OVERVIEW</b> .....	<b>6</b>
1.1 Abstract .....	6
1.2 Features of the ADA-FM3-100PMC-TOUCH-SSBS adapter board.....	6
1.3 Features of the SK-FM3-100PMC-MB9BF516N .....	6
<b>2 HARDWARE</b> .....	<b>7</b>
2.1 Installation .....	7
<b>3 FMTOUCH SOFTWARE</b> .....	<b>9</b>
3.1 CalTool.....	9
3.2 Other FMtouch packages .....	9
3.3 Further information .....	9
<b>4 INFORMATION IN THE WWW</b> .....	<b>10</b>
<b>5 CHINA-ROHS REGULATION</b> .....	<b>11</b>
<b>6 RECYCLING</b> .....	<b>12</b>

# 1 Overview

## 1.1 Abstract

The SK-FM3-9BF516N-TOUCHKIT contains an SK-FM3-100PMC-9BF516N Starter Kit and an ADA-FM3-100PMC-TOUCH-SSBS touch electrode board with four buttons, a scroll wheel with three elements, and a slider with five elements. In addition, a shield ring driven is provided, which can be used to decouple the touch electrodes from the surrounding ground pattern.

## 1.2 Features of the ADA-FM3-100PMC-TOUCH-SSBS adapter board

- ▶ Directly connectable to SK-FM3-100PMC or SK-FM3-100PMC-9BF516N Starter Kits
- ▶ Direct mount or via short ribbon cable
- ▶ Optional pin headers for 'free-wire' connections
- ▶ Plastic cover

## 1.3 Features of the SK-FM3-100PMC-MB9BF516N

- ▶ 1x UART-Transceiver (SUB-D9 connector)
- ▶ 1x USB to serial converter (Type-B connector)
- ▶ 1x High-speed CAN-Transceiver (SUB-D9 connector)
- ▶ 1x USB Host / USB Function connector
- ▶ 2x LED display (MODIFIED: 7-Segment SEG1 disconnected to free ADC pins)
- ▶ 2x User-button
- ▶ 1x Reset-button, Reset-LED
- ▶ All 100 pins routed to pin-header
- ▶ On-board 5V and 3V voltage regulators, Power-LED
- ▶ USB power supply (external power supply possible)

For further details about the SK-FM3-100PMC-MB9BF516N Starter Kit, please refer to the documentation on the accompanying CD.

## 2 Hardware

### 2.1 Installation

Remove carefully the board from the shipping box and check for any damages.

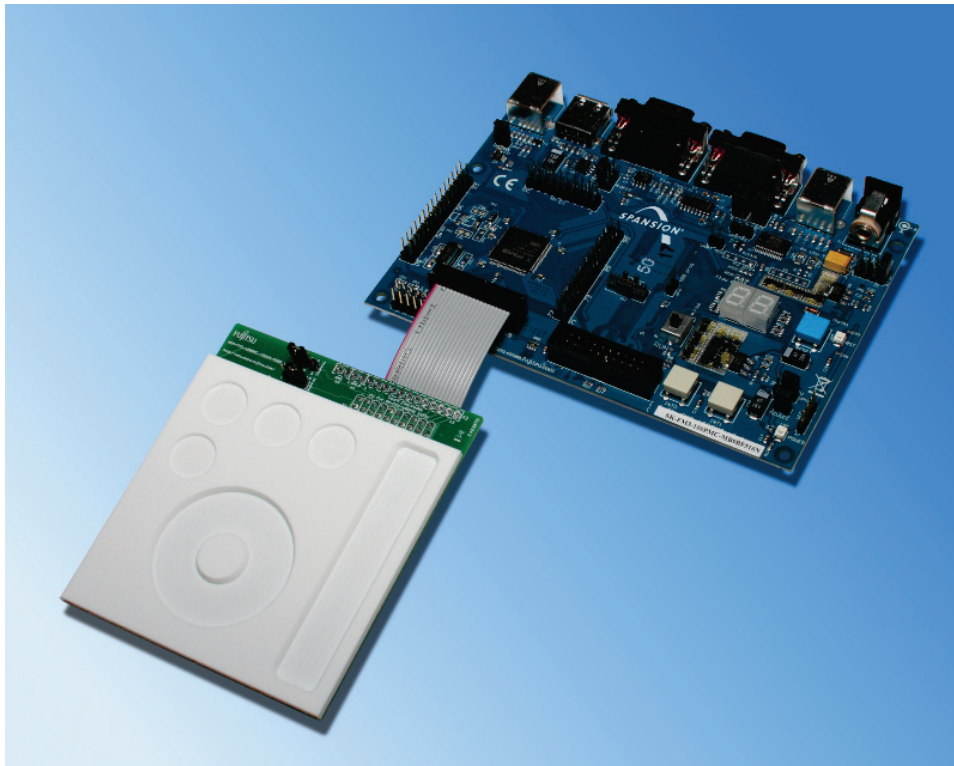
Check the content of the box

- 1x ADA-FM3-100PMC-TOUCH-SSBS
- 1x SK-FM3-100PMC-MB9BF516N Starter Kit  
Modified (RN1 and RN2 removed) and pre-programmed
- 1x CD / DVD
- 1x Ribbon Cable
- 1x USB cable
- 1x User guide and schematics of the ADA-FM3-100PMC-TOUCH-SSBS

Disconnect the evaluation board from USB and any external power supply.

Attach the adapter board to the evaluation board so that X1 on the bottom side of the adapter board and X22 on the evaluation board align. Press both boards together.

In case the ribbon cable is used (recommended), connect the female connector (black) to X22 on the MCU Board, and the male (grey) connector to the adapter board as shown in the picture below.



**NOTE:**

On the SK-FM3-100PMC-9BF516N Starter Kit, the 7-segment LED display SEG1 is connected to the MCU on port pins which are used by the ADA-FM3-TOUCH-SSBS as touch inputs. In order to make full use of the touch electrodes, the resistor networks RN1 and RN2 were already removed from the starter kit to disconnect SEG1.

Therefore, SEG1 is not operational on the modified Starter Kit contained in this package.

Please refer to the documentation of the evaluation board (on CD) for detailed information about USB driver installation and jumper settings of the SK-FM3-100PMC-9BF516N. No special jumper settings on the Starter Kit are required for the ADA-FM3-100PMC-TOUCH-SSBS.

Connection of the touch electrodes:

Electrode	X1 Pin no.	X2 Pin no.	ADC ch.
Button 1	6	1	AN04
Button 2	7	2	AN05
Button 3	8	3	AN06
Button 4	9	4	AN07
Scroll ch.1	13	5	AN08
Scroll ch.2	14	6	AN09
Scroll ch.3	15	7	AN10
Slider ch.1	16	8	AN11
Slider ch.2	17	9	AN12
Slider ch.3	18	10	AN13
Slider ch.4	19	11	AN14
Slider ch.5	20	12	AN15
Shield rings	5	n/c (X4 Pin 1)	(AN03)
Shield hatch	4	n/c (X4 Pin 2)	(AN02)



## 3 FMTouch software

### 3.1 CalTool

CalTool is a graphical PC frontend to monitor and tune touch parameters, such as sensitivity etc. CalTool can be installed from the CD included in the Starter Kit package, or from the web page shown below. By default, the communication is done via X5 (USB virtual COM port). Please refer to the SK-FM3-100PMC-MB9BF516N documentation for details about jumper settings and driver installation.

### 3.2 Other FMTouch packages

Ready-to-use FMTouch example projects are available for different hardware setups. These can be found on the CD included in the Starter Kit package, or downloaded from the webpage below.

### 3.3 Further information

Further information about FMTouch can be found in the application note 'FMx\_AN706-00085' included on the CD in the starter kit package, or the web page below:

<http://www.spansion.com/Products/microcontrollers/32-bit-ARM-Core/fm3/pages/touch.aspx>

## 4 Information in the WWW

Information about SPANSION INC Products can be found on the following Internet pages:

Microcontroller Products

<http://www.spansion.com/Products/microcontrollers>

Power Management Products

<http://www.spansion.com/Products/Analog>

Memory Products

<http://www.spansion.com/Products/memory>

For more information about SPANSION INC.

<http://www.spansion.com>

## 5 China-RoHS regulation

This board is compliant with China RoHS.



## 6 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:

CCS Express GMBH  
c/o Spansion International Inc.  
Frankfurter Str. 83-107  
D-65479 Raunheim  
Germany

### **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:

CCS Express GMBH  
c/o Spansion International Inc.  
Frankfurter Str. 83-107  
D-65479 Raunheim  
Germany



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