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Boot mode jumper settings for LPC1800 and LPC4300

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Application note

Document information

Info	Content
Keywords	Hitex Rev A4, NGX Xplorer, Keil, element14, LPC1830, LPC1850, LPC4330, LPC4350, MCB1800, MCB4300
Abstract	This application note describes the different boot mode jumpers settings for development boards using the LPC1800/LPC4300 parts.



Revision history

Rev	Date	Description
1	20120701	Initial version.

Contact information

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1. Introduction

This application note describes the boot mode jumper settings for the following evaluation boards using NXP's LPC1800 and LPC4300 microcontrollers:

- Hitex Rev A4 with LPC1850/4350
- NGX Xplorer with LPC1830 or LPC4330
- Keil MCB1800/4300
- element14 LPC4300

2. Hitex Rev A4 with LPC1850 or LPC4350

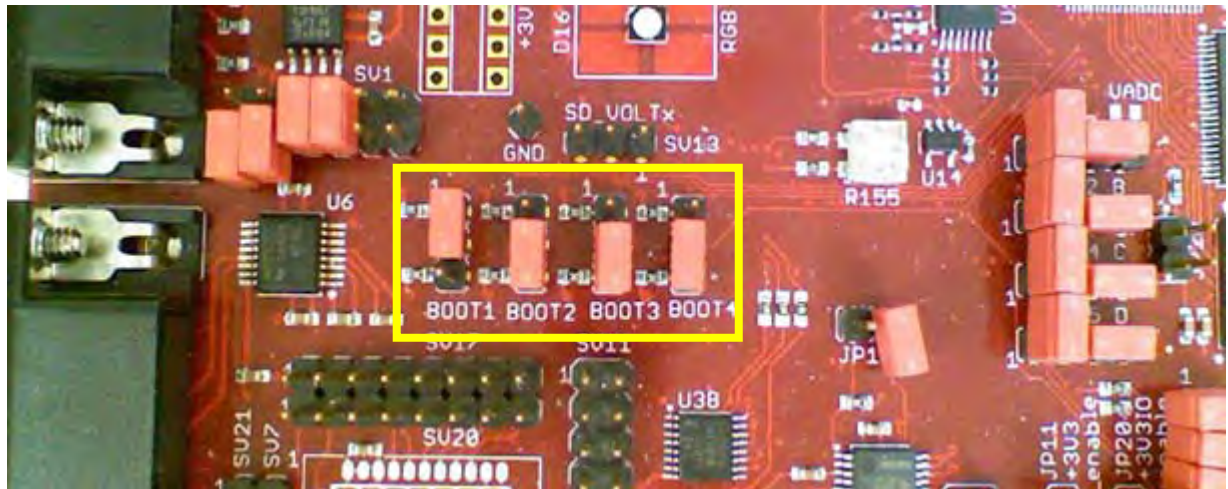


Fig 1. Hitex Rev A4 boot mode jumper location (SPIFI boot mode shown)

Table 1. Hitex Rev A4 boot mode jumper settings

Boot mode	BOOT1	BOOT2	BOOT3	BOOT4	Description
USART0	2-3	2-3	2-3	2-3	Boot from device connected to USART0 using pins P2_0 and P2_1. For flash parts, enter UART ISP mode.
SPIFI	1-2	2-3	2-3	2-3	Boot from Quad SPI flash connected to the SPIFI interface on P3_3 to P3_8. ^[1]
EMC 8-bit	2-3	1-2	2-3	2-3	Boot from external static memory (such as NOR flash) using CS0 and an 8-bit data bus.
EMC 16-bit	1-2	1-2	2-3	2-3	Boot from external static memory (such as NOR flash) using CS0 and a 16-bit data bus.
EMC 32-bit	2-3	2-3	1-2	2-3	Boot from external static memory (such as NOR flash) using CS0 and a 32-bit data bus.
USB0	1-2	2-3	1-2	2-3	Boot from USB0.
USB1	2-3	1-2	1-2	2-3	Boot from USB1.
SPI (SSP)	1-2	1-2	1-2	2-3	Boot from SPI flash connected to the SSP0 interface on P3_3 (function SSP0_SCK), P3_6 (function SSP0_MISO), P3_7 (function SSP0_MOSI), and P3_8 (function SSP0_SSEL). ^[1]
USART3	2-3	2-3	2-3	1-2	Boot from device connected to USART3 using pins P2_3 and P2_4. For flash parts, enter UART ISP mode.

[1] The boot loader programs the appropriate pin function at reset to boot using SSP0 or SPIFI.

3. NGX Xplorer with LPC1830 or LPC4330

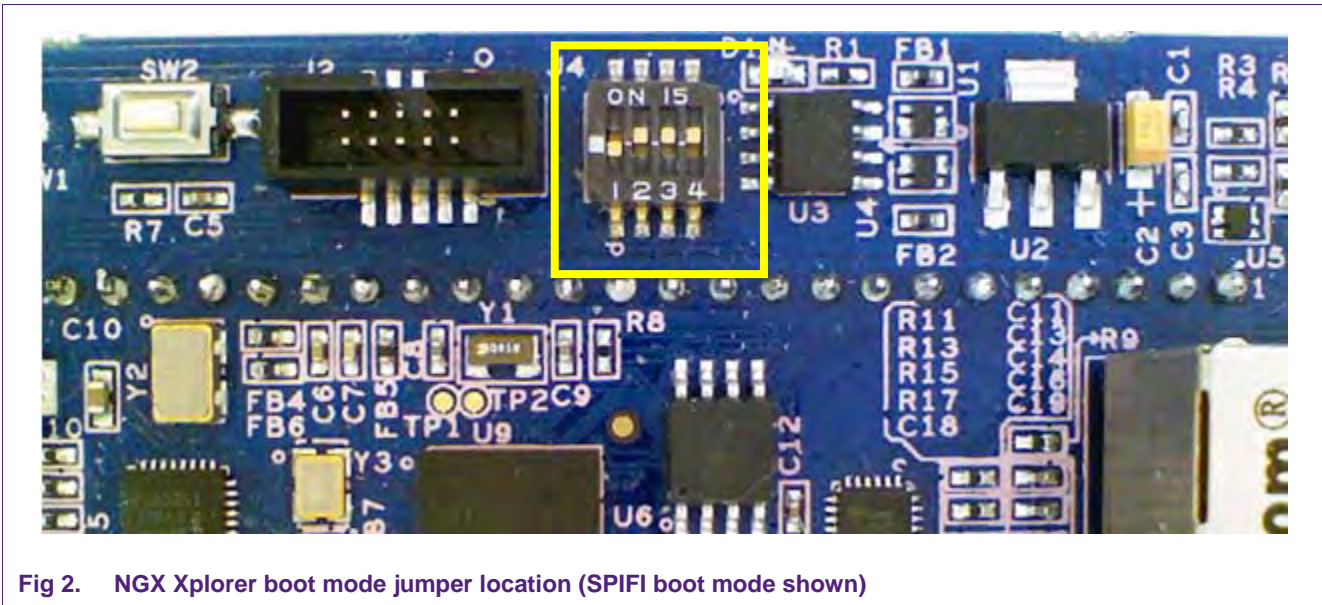


Fig 2. NGX Xplorer boot mode jumper location (SPIFI boot mode shown)

Table 2. NGX Xplorer boot mode jumper settings

Boot mode	1	2	3	4	Description
USART0	ON	ON	ON	ON	Boot from device connected to USART0 using pins P2_0 and P2_1. For flash parts, enter UART ISP mode.
SPIFI	OFF	ON	ON	ON	Boot from Quad SPI flash connected to the SPIFI interface on P3_3 to P3_8. ^[1]
EMC 8-bit	ON	OFF	ON	ON	Boot from external static memory (such as NOR flash) using CS0 and an 8-bit data bus.
EMC 16-bit	OFF	OFF	ON	ON	Boot from external static memory (such as NOR flash) using CS0 and a 16-bit data bus.
EMC 32-bit	ON	ON	OFF	ON	Boot from external static memory (such as NOR flash) using CS0 and a 32-bit data bus.
USB0	OFF	ON	OFF	ON	Boot from USB0.
USB1	ON	OFF	OFF	ON	Boot from USB1.
SPI (SSP)	OFF	OFF	OFF	ON	Boot from SPI flash connected to the SSP0 interface on P3_3 (function SSP0_SCK), P3_6 (function SSP0_MISO), P3_7 (function SSP0_MOSI), and P3_8 (function SSP0_SSEL). ^[1]
USART3	ON	ON	ON	OFF	Boot from device connected to USART3 using pins P2_3 and P2_4. For flash parts, enter UART ISP mode.

[1] The boot loader programs the appropriate pin function at reset to boot using SSP0.

4. Keil MCB1800/MCB4300

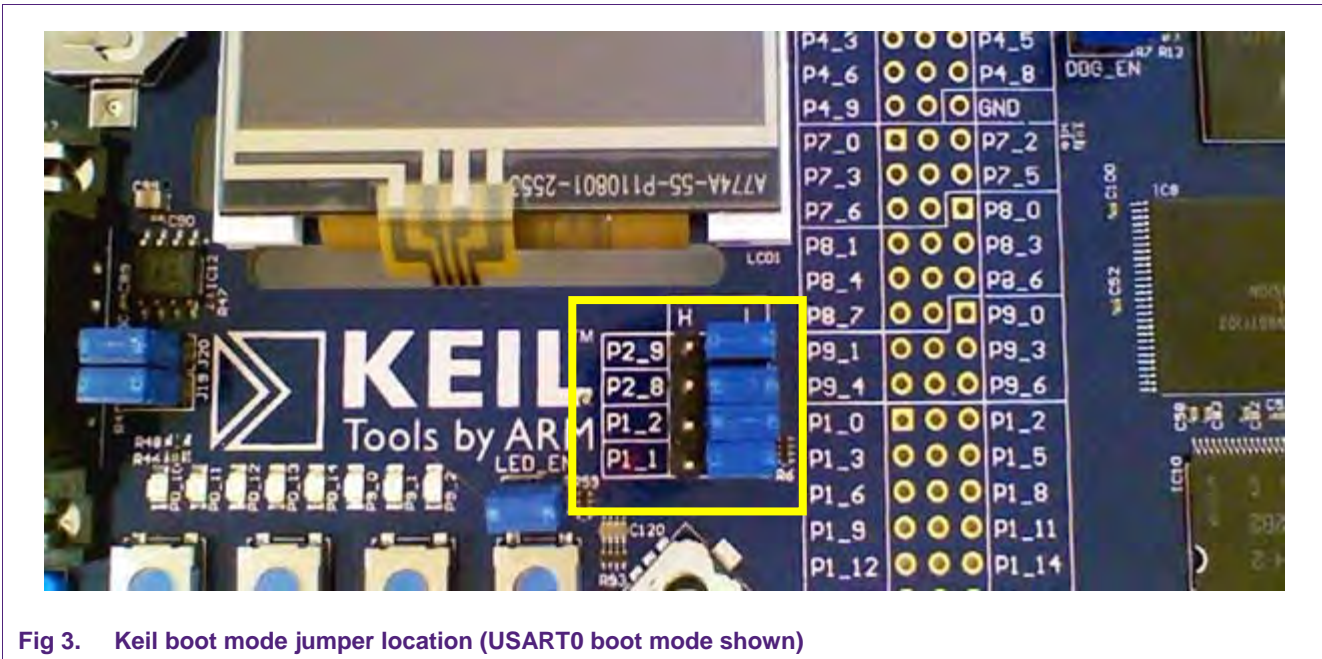


Fig 3. Keil boot mode jumper location (USART0 boot mode shown)

Table 3. Keil boot mode jumper settings

Boot mode	P2_9	P2_8	P1_2	P1_1	Description
USART0	L	L	L	L	Boot from device connected to USART0 using pins P2_0 and P2_1. For flash parts, enter UART ISP mode.
SPIFI	L	L	L	H	Boot from Quad SPI flash connected to the SPIFI interface on P3_3 to P3_8. ^[1]
EMC 8-bit	L	L	H	L	Boot from external static memory (such as NOR flash) using CS0 and an 8-bit data bus.
EMC 16-bit	L	L	H	H	Boot from external static memory (such as NOR flash) using CS0 and a 16-bit data bus.
EMC 32-bit	L	H	L	L	Boot from external static memory (such as NOR flash) using CS0 and a 32-bit data bus.
USB0	L	H	L	H	Boot from USB0.
USB1	L	H	H	L	Boot from USB1.
SPI (SSP)	L	H	H	H	Boot from SPI flash connected to the SSP0 interface on P3_3 (function SSP0_SCK), P3_6 (function SSP0_MISO), P3_7 (function SSP0_MOSI), and P3_8 (function SSP0_SSEL). ^[1]
USART3	HIGH	LOW	LOW	LOW	Boot from device connected to USART3 using pins P2_3 and P2_4. For flash parts, enter UART ISP mode.

[1] The boot loader programs the appropriate pin function at reset to boot using SSP0.

5. element14 LPC4300 board

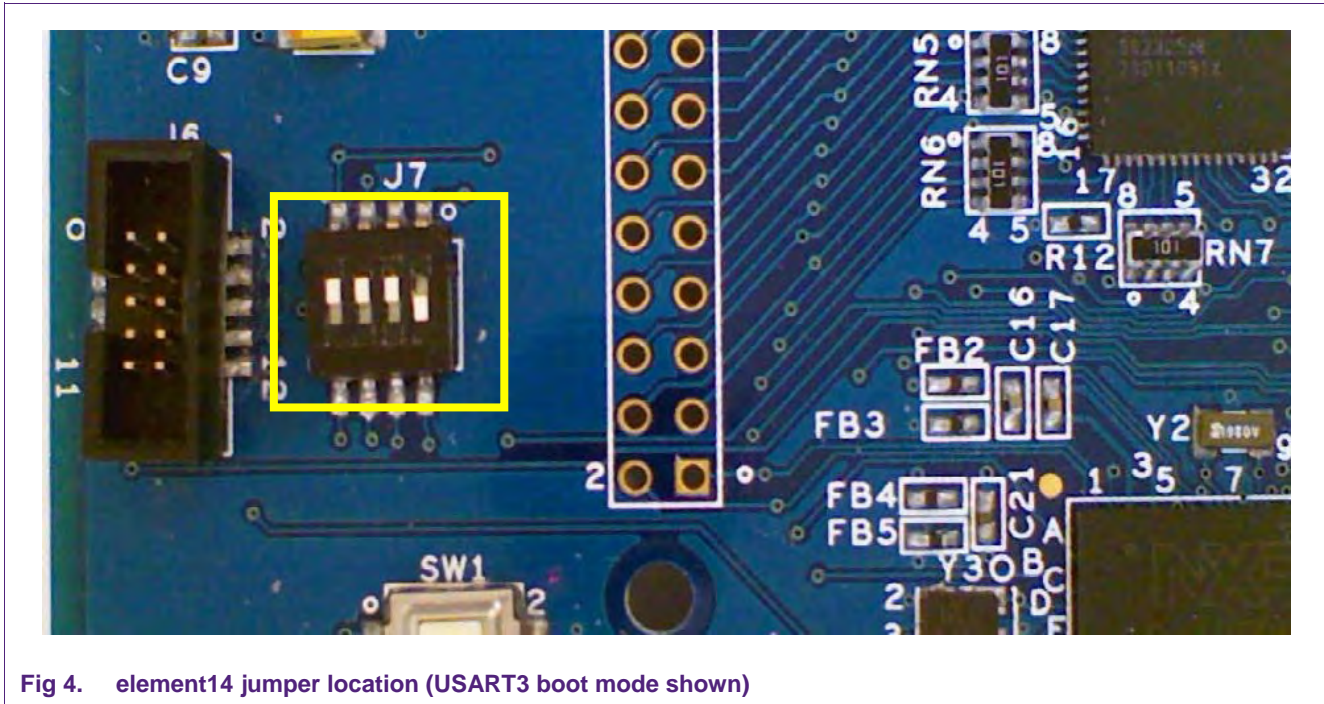


Fig 4. element14 jumper location (USART3 boot mode shown)

Table 4. element14 boot mode jumper settings

Boot mode	1	2	3	4	Description
USART0	UP	UP	UP	UP	Boot from device connected to USART0 using pins P2_0 and P2_1. For flash parts, enter UART ISP mode.
SPIFI	DN	UP	UP	UP	Boot from Quad SPI flash connected to the SPIFI interface on P3_3 to P3_8. ^[1]
EMC 8-bit	UP	DN	UP	UP	Boot from external static memory (such as NOR flash) using CS0 and an 8-bit data bus.
EMC 16-bit	DN	DN	UP	UP	Boot from external static memory (such as NOR flash) using CS0 and a 16-bit data bus.
EMC 32-bit	UP	UP	DN	UP	Boot from external static memory (such as NOR flash) using CS0 and a 32-bit data bus.
USB0	DN	UP	DN	UP	Boot from USB0.
USB1	UP	DN	DN	UP	Boot from USB1.
SPI (SSP)	DN	DN	DN	UP	Boot from SPI flash connected to the SSP0 interface on P3_3 (function SSP0_SCK), P3_6 (function SSP0_MISO), P3_7 (function SSP0_MOSI), and P3_8 (function SSP0_SSEL). ^[1]
USART3	UP	UP	UP	DN	Boot from device connected to USART3 using pins P2_3 and P2_4. For flash parts, enter UART ISP mode.

[1] The boot loader programs the appropriate pin function at reset to boot using SSP0.

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