nRF51 Series Compatibility Matrix

Version 2.5

This document shows the compatibility between the nRF51422 and nRF51822 IC revisions, SDKs, the relevant SoftDevices with corresponding SoftDevice Specifications, and development kits.

This document will be updated on every new nRF51 IC revision release, and on every new release of the SDK or SoftDevice for the nRF51 Series IC.

Revision History

Date	Version	Description
November 2015	2.5	Updated for SDK v10.0.0 and S130 v2.0.0-4 alpha. **Updated:** • ***Table 4 "IC revisions, SDK, and SoftDevice compatibility matrix"*** on page 7 • ***Table 5 "Development HW compatibility matrix"*** on page 8
August 2015	2.4	Updated for SDK v9.0.0, S210 v5.0.0, and S310 v 3.0.0. **Updated:** • ***Table 4 "IC revisions, SDK, and SoftDevice compatibility matrix"*** on page 7 • ***Table 6 "Qualified Design ID matrix"*** on page 9
July 2015	2.3	**Updated:** • ***Table 4 "IC revisions, SDK, and SoftDevice compatibility matrix"*** on page 7
June 2015	2.2	Updated for S110 v7.3 and S120 v2.1. **Updated:** • ***Table 4 "IC revisions, SDK, and SoftDevice compatibility matrix"*** on page 7 • ***Table 6 "Qualified Design ID matrix"*** on page 9
May 2015	2.1	Updated for SDK v8.1.0 and S130 v1.0 production version. **Updated:** • ***Table 4 "IC revisions, SDK, and SoftDevice compatibility matrix"*** on page 7 • ***Table 6 "Qualified Design ID matrix"*** on page 9
April 2015	2.0	Updated for S130 v1.0 Restructured ***Table 4***, moved the Development HW content into a new ***Table 5 "Development HW compatibility matrix"*** on page 8. **Updated:** • Front page, added text about update on every new SoftDevice release • ***Table 4 "IC revisions, SDK, and SoftDevice compatibility matrix"*** on page 7 • ***Table 6 "Qualified Design ID matrix"*** on page 9
March 2015	1.2	Updated for SDK v8.0.0 **Updated:** • ***Table 4 "IC revisions, SDK, and SoftDevice compatibility matrix"*** on page 7 • ***Table 6 "Qualified Design ID matrix"*** on page 9

Date	Version	Description
February 2015	1.1	Updated for SDK v7.2.0. **Added:** • Front page • Revision history **Updated:** • ***Table 4 "IC revisions, SDK, and SoftDevice compatibility matrix"*** on page 7 • ***Table 6 "Qualified Design ID matrix"*** on page 9
December 2014	1.0	First release, valid for SDK v7.1.0 and older.

nRF51422 IC revision overview

This table shows the packet and memory variants for each nRF51422 IC revision.

nRF51422 IC revision	Device marking			Package	Flash [kB]	RAM [kB]
	Packet/ Variant	Build code	HWID			
1	QF AA	CA	001E	QFN48	256	16
		C0	0024			
	CE AA	A0A	0031	WLCSP		
2	QF AA	DAA	002D	QFN48	256	16
		Ex0[a]	002E			
	QF AB	A00	0061		128	
	CE AA	Bx0[a]	0050	WLCSP	256	
3	QF AA	Fx0[a]	0073	QFN48	256	16
	QF AB	Bx0[a]	007C		128	
	QF AC[b]	Ax0[a]	0085		256	32
	CD AB[c]	Ax0[a]	007E	WLCSP	128	16
	CE AA	Cx0[a]	007A		256	
	CF AC[b]	Ax0[a]	0088			32

a. The x in the build code could be A..Z for engineering release, or 0..9 for production release. (HWID is given for x = 0, if X ≠ 0 the HWID will be different).
b. New chip variant with 256 kB FLASH/32 kB RAM.
c. New packet variant of the 128 kB FLASH/16 kB RAM variant.

***Table 1** nRF51422 IC revision overview*

nRF51822 IC revision overview

This table shows the packet and memory variants for each nRF51822 IC revision.

nRF51822 IC revision	Device marking			Package	Flash [kB]	RAM [kB]
	Packet/ Variant	Build code	HWID			
1	QF AA	CA	001D	QFN48	256	16
		C0	001D			
	QF AB	AA	0026		128	
		A0	0027			
	CE AA	BA	0020	WLCSP	256	
		B0	002F			
2	QF AA	FA0	002A	QFN48	256	16
		GC0	0044			
		Gx0[a]	003C			
	QF AB	Bx0[a]	004C		128	
	CE AA	CA0	0040	WLCSP	256	
		DA0	0047			
		Dx0[a]	004D			
3	QF AA	Hx0[a]	0072	QFN48	256	16
	QF AB	Cx0[a]	007B		128	
	QF AC[b]	Ax0[a]	0083		256	32
	CD AB[c]	Ax0[a]	007D	WLCSP	128	16
	CE AA	Ex0[a]	0079		256	
	CF AC[b]	Ax0[a]	0087			32

a. The x in the build code could be A..Z for engineering release, or 0..9 for production release. (HWID is given for x = 0, if X ≠ 0 the HWID will be different).
b. New chip variant with 256 kB FLASH/32 kB RAM.
c. New packet variant of the 128 kB FLASH/16 kB RAM variant.

***Table 2** nRF51822 IC revision overview*

nRF51422/nRF51822 documentation and reference design files overview

This table shows the relevant documentation for the nRF51422 and nRF51822 IC revisions.

nRF51 IC revision	Chip	Documentation				Reference design files	
		Product Specification	Reference Manual	Product Anomaly Notice	Product Change Notification[a]	nRF51x22-QFAx-DF[b]	nRF51x22-CxAx-DF[c]
1	nRF51422	nRF51422 PS v1.2	nRF51 RM v1.1	nRF51422-PAN v2.3	-	-	-
	nRF51822	nRF51822 PS v1.3		nRF51822-PAN v2.4			
2	nRF51422	nRF51422 PS v2.1	nRF51 RM v2.1	nRF51422-PAN v2.3	PCN-084 v1.0	2.4	1.3
	nRF51822	nRF51822 PS v2.0		nRF51822-PAN v2.4	PCN-082 v1.0		
3	nRF51422	nRF51422 PS v3.1	nRF51 RM v3.0	nRF51422-PAN v3.0	PCN-093 v1.1	2.4	1.3
	nRF51822	nRF51822 PS v3.1		nRF51822-PAN v3.0	PCN-092 v1.1		

a. The PCNs listed here describe HW changes that affects the chip features or behavior, see www.nordicsemi.com for a complete PCN listing.
b. nRF51x22-QFAx-DF = nRF51x22 Reference Layout files for the QFN48 packet variants (Old Code: nRF51x22-DF).
c. nRF51x22-CxAx-DF = nRF51x22 Reference Layout files for the WLCSP Package variants (Old Code: nRF51x22-CEAA-DF).

Table 3 *Document and reference design files overview*

nRF51422 and nRF51822 IC revisions compatibility with SDK and SoftDevices

Table 4 shows the compatibility between the nRF51422 and nRF51822 IC revisions, the relevant SoftDevices and their corresponding SoftDevice Specifications, and SDKs.

nRF51 IC rev.	nRF51 SDK	SoftDevices									
		nRF51422/nRF51822						nRF51422			
		S110		S120		S130		S210		S310	
		SD	SDS	SD	SDS	SD	SDS	SD	SDS	SD	SDS
1	4.4.2	5.2.1[a]	1.1	-	-	-	-	2.0.0[b]	1.0	-	-
2	4.4.2	5.2.1	1.1	-	-	-	-	3.0.0	1.2	-	-
	5.2.0	6.0.0 6.2.1	1.2					3.0.0	1.2	1.0.0	1.0
	6.1.0	7.x.x	1.3	1.0.1	1.1			3.0.0	1.2	1.0.0	1.0
	-	8.0.0	2.0	2.x	2.1			4.0.1	2.0	2.0.1	2.0
3	-	5.2.1	1.1	-	-	-	-	-	-	-	-
	-	6.2.1	1.2	-	-	-	-	-	-	-	-
	6.1.0	7.x.x	1.3	1.0.1	1.1	-	-	3.0.0	1.2	1.0.0	1.0
	7.0.1					0.5.0-1 alpha	0.5	4.0.1	2.0	-	-
	7.1.0									2.0.1	2.0
	7.2.0										
	8.0.0	8.0.0	2.0	2.x	2.1	0.9.0-1 alpha	0.5	4.0.1	2.0	-	-
	8.1.0					1.0.0	1.0				
	9.0.0							5.0.0	3.0	3.0.0	3.0
	10.0.0										
	-	-	-	-	-	2.0.0-4 alpha	-	-	-	-	-

a. Valid for nRF51822 only.
b. Preprogrammed in factory.

Table 4 *IC revisions, SDK, and SoftDevice compatibility matrix*

nRF51422 and nRF51822 IC revisions compatibility with development HW

Table 5 shows the compatibility between the nRF51422 and nRF51822 IC revisions and development kits. When using the Master Control Panel, nRFgo Studio, or nRF51 Tools, use the latest available version.

nRF51 IC rev.	Chip	Development HW			
		nRF51x22 Evaluation Kit[a]	nRF51x22 Development Kit[a]	nRF51 Development Kit[b]	nRF51 Dongle[b]
1	nRF51422	2.0	2.0	-	-
	nRF51822	1.0, 2.0	1.0, 2.0		
2	nRF51422	3.0.0	3.0.0	-	-
	nRF51822	2.1.0, 2.2.0	2.1.0, 2.2.0		
3	nRF51422	-	-	1.0.0 1.1.0	1.0.0 1.1.0
	nRF51822				

a. The nRF51422/nRF51822 Development and Evaluation kit is using the QFAA variant of the chip.
b. The nRF51-DK and nRF51-Dongle is using the nRF51422-QFAC variant of the chip.

Table 5 *Development HW compatibility matrix*

nRF51422 and nRF51822 *Bluetooth* low energy QD ID qualification matrix

This table shows you the Qualified Design ID (QD ID) that applies when you use different IC and SoftDevice combinations.

SoftDevice	nRF51422/nRF51822 QD IDs			
	QFAA/QFAB/QFAC	CEAA	CDAB	CFAC
S110 v5.x.x	44505	49155	-	-
S110 v6.x.x	51744	51745	-	-
S110 v7.0.x	58616	58540	-	-
S110 v7.1.x	62791	62792	63874	63880
S110 v7.3.x				
S110 v8.0.0				
S120 v1.x.x	56426	56425	-	-
S120 v2.x.x	66453	66455	66456	66457
S130 v1.0.0	68915	68916	68917	68918
S310 v1.0.0[a]	51744	51745	-	-
S310 v2.0.x[a]	62791	62792	-	-
S310 v3.0.x[a]				

a. The S310 SoftDevice is only valid for the nRF51422 IC.

Table 6 *Qualified Design ID matrix*