



Release Notes: JN-AN-1219

ZigBee 3.0 Controller and Switch

These release notes provide information on the SDK compatibility, memory usage and change history for the JN-AN-1219 ZigBee 3.0 Controller and Switch Application Note

1 Public v1007 (5-Sep-2018)

Rebuilt on new SDK releases.

1.1 Public v1007: Compatibility

The software provided with this Application Note has been tested with the following evaluation kits and SDK versions.

Product Type	Part Number	Version	Supported Chips
JN516x Evaluation Kits	JN516x-EK004 JN516x-EK001	- -	JN516x JN516x
Beyond Studio for NXP -Toolchain	JN-SW-4141	v1308	JN516x
JN516x ZigBee 3.0 – SDK	JN-SW-4170	V1840	JN516x
JN517x Development Kit	JN517x-DK005	-	JN517x
LPCXpresso -Toolchain		v7.9.2 build 493	JN517x
JN517x ZigBee 3.0 – SDK	JN-SW-4270	v1841	JN517x

1.2 Public v1007: Memory Usage

The applications of this Application Note have the following memory footprints on the JN516x device, when using the JN516x ZigBee 3.0 SDK [JN-SW-4170].

Application	Text Size (Bytes)	Data Size (Bytes)	BSS Size (Bytes)
DimmerSwitch_Ntaglcode_JN5169_DR1199.bin	151250	1624	23613
DimmerSwitch_Ntaglcode_Ota_JN5169_DR1199.bin	163734	1756	24369
DimmerSwitch_Ntaglcode_OtaEnc_JN5169_DR1199.bin	164134	1756	24369
ColorSceneController_JN5168_DR1159.bin	145694	1456	22601
ColorSceneController_JN5169_DR1199.bin	146182	1472	22025
EH_Switch_JN5169_DR1199.bin	12671	100	5987

The applications of this Application Note have the following memory footprints on the JN5179 device, when using the JN517x ZigBee 3.0 SDK [JN-SW-4270].

Application	Text Size (Bytes)	Data Size (Bytes)	BSS Size (Bytes)
DimmerSwitch_Ntaglcode_JN5179_DR1199.bin	147200	2016	23625
DimmerSwitch_Ntaglcode_Ota_JN5179_DR1199.bin	159532	2152	24357
DimmerSwitch_Ntaglcode_OtaEnc_JN5179_DR1199	159928	2152	24357
ColorSceneController_JN5179_DR1199.bin	138492	2132	21913
EH_Switch_JN5179_DR1199.bin	13968	460	6003

1.3 Public v1007: New Features

GP Switch added as EH_Switch

1.4 Public v1007: Bug Fixes

None

1.5 Public v1007: Known Issues

None

2 Public v1006 (12-Feb-2018)

Rebuilt on new SDK releases.

2.1 Public v1006: Compatibility

The software provided with this Application Note has been tested with the following evaluation kits and SDK versions.

Product Type	Part Number	Version	Supported Chips
JN516x Evaluation Kits	JN516x-EK004 JN516x-EK001	- -	JN516x JN516x
Beyond Studio for NXP -Toolchain	JN-SW-4141	v1308	JN516x
JN516x ZigBee 3.0 – SDK	JN-SW-4170	v1745	JN516x
JN517x Development Kit	JN517x-DK005	-	JN517x
LPCXpresso -Toolchain		v7.9.2 build 493	JN517x
JN517x ZigBee 3.0 – SDK	JN-SW-4270	v1746	JN517x

2.2 Public v1006: Memory Usage

The applications of this Application Note have the following memory footprints on the JN516x device, when using the JN516x ZigBee 3.0 SDK [JN-SW-4170].

Application	Text Size (Bytes)	Data Size (Bytes)	BSS Size (Bytes)
DimmerSwitch_Ntaglcode_JN5169_DR1199.bin	150826	1620	23601
ColorSceneController_JN5168_DR1159.bin	145006	1456	22617
ColorSceneController_JN5169_DR1199.bin	145462	1472	22025

The applications of this Application Note have the following memory footprints on the JN5179 device, when using the JN517x ZigBee 3.0 SDK [JN-SW-4270].

Application	Text Size (Bytes)	Data Size (Bytes)	BSS Size (Bytes)
DimmerSwitch_Ntaglcode_JN5179_DR1199.bin	146716	2008	23609
ColorSceneController_JN5179_DR1199.bin	137696	2132	21929

2.3 Public v1006: New Features

None

2.4 Public v1006: Bug Fixes

Provide mechanism to convert from R21 to R22 Stack (artf554497)

If OTA'ing from SDK v1731 a function has been added so that the structures can be converted to R22 before the devices run the new OTA image.

2.5 Public v1006: Known Issues

None

3 Public v1005 (18-Jan-2018)

Rebuilt on new SDK releases.

3.1 Public v1005: Compatibility

The software provided with this Application Note has been tested with the following evaluation kits and SDK versions.

Product Type	Part Number	Version	Supported Chips
JN516x Evaluation Kits	JN516x-EK004 JN516x-EK001	- -	JN516x JN516x
Beyond Studio for NXP -Toolchain	JN-SW-4141	v1308	JN516x
JN516x ZigBee 3.0 – SDK	JN-SW-4170	v1735	JN516x
JN517x Development Kit	JN517x-DK005	-	JN517x
LPCXpresso -Toolchain		v7.9.2 build 493	JN517x
JN517x ZigBee 3.0 – SDK	JN-SW-4270	v1736	JN517x

3.2 Public v1005: Memory Usage

The applications of this Application Note have the following memory footprints on the JN516x device, when using the JN516x ZigBee 3.0 SDK [JN-SW-4170].

Application	Text Size (Bytes)	Data Size (Bytes)	BSS Size (Bytes)
DimmerSwitch_Ntaglcode_JN5169_DR1199.bin	149714	1620	23589
ColorSceneController_JN5168_DR1159.bin	144882	1456	22601
ColorSceneController_JN5169_DR1199.bin	145358	1472	22009

The applications of this Application Note have the following memory footprints on the JN5179 device, when using the JN517x ZigBee 3.0 SDK [JN-SW-4270].

Application	Text Size (Bytes)	Data Size (Bytes)	BSS Size (Bytes)
DimmerSwitch_Ntaglcode_JN5179_DR1199.bin	145700	2008	23605
ColorSceneController_JN5179_DR1199.bin	137532	2116	21913

3.3 Public v1005: New Features

None

3.4 Public v1005: Bug Fixes

None

3.5 Public v1005: Known Issues

None

4 Public v1004 (12-Jan-2018)

Rebuilt on new SDK releases.

4.1 Public v1004: Compatibility

The software provided with this Application Note has been tested with the following evaluation kits and SDK versions.

Product Type	Part Number	Version	Supported Chips
JN516x Evaluation Kits	JN516x-EK004 JN516x-EK001	- -	JN516x JN516x
Beyond Studio for NXP -Toolchain	JN-SW-4141	v1308	JN516x
JN516x ZigBee 3.0 - SDK	JN-SW-4170	v1731	JN516x
JN517x Development Kit	JN517x-DK005	-	JN517x
LPCXpresso -Toolchain		v7.9.2 build 493	JN517x
JN517x ZigBee 3.0 - SDK	JN-SW-4270	v1732	JN517x

4.2 Public v1004: Memory Usage

The applications of this Application Note have the following memory footprints on the JN516x device, when using the JN516x ZigBee 3.0 SDK [JN-SW-4170].

Application	Text Size (Bytes)	Data Size (Bytes)	BSS Size (Bytes)
DimmerSwitch_Ntaglcode_JN5169_DR1199.bin	149714	1620	23589
ColorSceneController_JN5168_DR1159.bin	144882	1456	22601
ColorSceneController_JN5169_DR1199.bin	145358	1472	22009

The applications of this Application Note have the following memory footprints on the JN5179 device, when using the JN517x ZigBee 3.0 SDK [JN-SW-4270].

Application	Text Size (Bytes)	Data Size (Bytes)	BSS Size (Bytes)
DimmerSwitch_Ntaglcode_JN5179_DR1199.bin	145700	2008	23597
ColorSceneController_JN5179_DR1199.bin	137532	2116	21913

4.3 Public v1004: New Features

None

4.4 Public v1004: Bug Fixes

None

4.5 Public v1004: Known Issues

None

5 Public v1003 (29-Mar-2017)

NFC commissioning uses ZigBee Installation Codes.

5.1 Public v1003: Compatibility

The software provided with this Application Note has been tested with the following evaluation kits and SDK versions.

Product Type	Part Number	Version	Supported Chips
JN516x Evaluation Kits	JN516x-EK004	-	JN516x
	JN516x-EK001	-	JN516x
Beyond Studio for NXP -Toolchain	JN-SW-4141	v1308	JN516x
JN516x ZigBee 3.0 - SDK	JN-SW-4170	v1518	JN516x
JN517x Development Kit	JN517x-DK005	-	JN517x
LPCXpresso -Toolchain		v7.9.2 build 493	JN517x
JN517x ZigBee 3.0 - SDK	JN-SW-4270	v1520	JN517x

5.2 Public v1003: Memory Usage

The applications of this Application Note have the following memory footprints on the JN516x device, when using the JN516x ZigBee 3.0 SDK [JN-SW-4170].

Application	Text Size (Bytes)	Data Size (Bytes)	BSS Size (Bytes)
DimmerSwitch_Ntaglcode_JN5169_DR1199.bin	140474	1508	23337
ColorSceneController_JN5168_DR1159.bin	138026	1352	22273
ColorSceneController_JN5169_DR1199.bin	138462	1360	21673

The applications of this Application Note have the following memory footprints on the JN5179 device, when using the JN517x ZigBee 3.0 SDK [JN-SW-4270].

Application	Text Size (Bytes)	Data Size (Bytes)	BSS Size (Bytes)
DimmerSwitch_Ntaglcode_JN5179_DR1199.bin	137304	1900	23341
ColorSceneController_JN5179_DR1199.bin	131508	2024	21593

5.3 Public v1003: New Features

NTAG documentation issues (Ipsw8088)

Documentation and images updated

Implement ICODE NFC commissioning as alternative to AES (Ipsw8100)

NFC NTAG support for commissioning using ZigBee installation codes can be enabled by setting APP_NTAG_ICODE=1 and APP_NTAG_AES=0 in the makefile or on the command line.

The original NFC NTAG support for commissioning using AES encryption can be enabled by setting APP_NTAG_ICODE=0 and APP_NTAG_AES=1 in the makefile or on the command line.

Provide mechanism in makefile to build for single channel (Ipsw8117)

Setting the SINGLE_CHANNEL makefile variable on the command line or in the makefile will build binaries that only operate on the specified channel.

Rationalise binary file names and Eclipse build configurations (Ipsw8128)

Binary filenames and Eclipse build configurations have been rationalised across all ZigBee 3.0 Application Notes formed from the following components: Device Type, Software Features, Hardware Platform

5.4 Public v1003: Bug Fixes

None

5.5 Public v1003: Known Issues

None

6 Public v1002 (25-Nov-2016)

Updated for new JN-SW-4170 and JN-SW-4270 SDK releases.

6.1 Public v1002: Compatibility

The software provided with this Application Note has been tested with the following evaluation kits and SDK versions.

Product Type	Part Number	Version	Supported Chips
JN516x Evaluation Kits	JN516x-EK004	-	JN516x
	JN516x-EK001	-	JN516x
Beyond Studio for NXP -Toolchain	JN-SW-4141	v1308	JN516x
JN516x ZigBee 3.0 – SDK	JN-SW-4170	v1518	JN516x
JN517x Development Kit	JN517x-DK005	-	JN517x
LPCXpresso -Toolchain		v7.9.2 build 493	JN517x
JN517x ZigBee 3.0 – SDK	JN-SW-4270	v1520	JN517x

6.2 Public v1002: Memory Usage

The applications of this Application Note have the following memory footprints on the JN5169 device, when using the JN5169 ZigBee 3.0 SDK [JN-SW-4170].

Application	Text Size (Bytes)	Data Size (Bytes)	BSS Size (Bytes)
DimmerSwitch_JN5169_DR1199.bin	126325	1444	23465
ColorSceneController_JN5168_DR1159.bin	138026	1352	22273
ColorSceneController_JN5169_DR1199.bin	138462	1360	21673

The applications of this Application Note have the following memory footprints on the JN5179 device, when using the JN5179 ZigBee 3.0 SDK [JN-SW-4270].

Application	Text Size (Bytes)	Data Size (Bytes)	BSS Size (Bytes)
DimmerSwitch_JN5179_DR1199.bin	135260	1900	23573
ColorSceneController_JN5179_DR1199.bin	131508	2024	21593

6.3 Public v1002: New Features

None

6.4 Public v1002: Bug Fixes

Basic cluster ResetToFactoryDefault command is always unicast (Ipsw7871)

Now groupcast when in group mode.

OTA client adds 1 to Image Version in Query Next Image Request (Ipsw7873)

Fixed

Wrap up of changes for v1002 (Ipsw7972)

Ported to latest versions of JN-SW-4170 and JN-SW4270

LEDs are initialized correctly in GUI following a reset

6.5 Public v1002: Known Issues

None

7 Public v1001 (6-Oct-2016)

Updated to add JN517x devices.

7.1 Public v1001: Compatibility

The software provided with this Application Note has been tested with the following evaluation kits and SDK versions.

Product Type	Part Number	Version	Supported Chips
JN516x Evaluation Kits	JN516x-EK004	-	JN516x
	JN516x-EK001	-	JN516x
Beyond Studio for NXP -Toolchain	JN-SW-4141	v1308	JN516x
JN516x ZigBee 3.0 - SDK	JN-SW-4170	v1396	JN516x
JN517x Development Kit	JN517x-DK005	-	JN517x
LPCXpresso -Toolchain		v7.9.2 build 493	JN517x
JN517x ZigBee 3.0 - SDK	JN-SW-4270	v1483	JN517x

7.2 Public v1001: Memory Usage

The applications of this Application Note have the following memory footprints on the JN5169 device, when using the JN5169 ZigBee 3.0 SDK [JN-SW-4170].

Application	Text Size (Bytes)	Data Size (Bytes)	BSS Size (Bytes)
DimmerSwitch_JN5169_DR1199.bin	124601	1448	23357
ColorSceneController_JN5168_DR1159.bin	135858	1356	22149
ColorSceneController_JN5169_DR1199.bin	137286	1376	21593

The applications of this Application Note have the following memory footprints on the JN5179 device, when using the JN5179 ZigBee 3.0 SDK [JN-SW-4270].

Application	Text Size (Bytes)	Data Size (Bytes)	BSS Size (Bytes)
DimmerSwitch_JN5179_DR1199.bin	135104	1900	23573
ColorSceneController_JN5179_DR1199.bin	131228	2024	15484

7.3 Public v1001: New Features

Initialisation of Flash sector details for OTA upgrade on JN517x (Ipsw7378)

The Flash sector size, start sector and maximum sectors per image are now initialised in app_ota_client.c when using external Flash memory for JN517x devices.

Definition of Touchlink supported keys by application (Ipsw7658)

The definition of Touchlink supported keys in the application is now possible. The bitmask TL_SUPPORTED_KEYS can be redefined in the zcl_options file for a device.

Over-ride of Touchlink master key by application (Ipsw7659)

A definition of the Touchlink master key can now be provided by the application in the bdb_options.h file for a device.

OTA Upgrade attribute updated (Ipsw7754)

The OTA Upgrade attribute MinimumRequestDelay was defined in milliseconds in the previous ZCL specification. In the latest version, ZCLv6, this attribute value is defined in seconds and the software has been updated to reflect this change.

JN517x module configuration function (lpsw7806)

A new function `vAHI_ModuleConfigure()` has been added to the JN517x Integrated Peripherals API to allow the JN517x device to be configured for particular JN517x module types. This feature is not yet available for JN516x.

7.4 Public v1001: Bug Fixes

Allow timers that do not block sleeping (lpsw7170)

End Device applications use some timers that should block sleeping and some that allow sleeping, and this must be handled in the application code. A flag has been introduced into the function `ZTIMER_eOpen()` to indicate whether the relevant timer should allow sleeping while running.

Dimmer Switch not sleeping after deep sleep as activity count is not 0 (lpsw7206)

Fixed.

OTA needs to take into account the remapping of flash by the bootloader (lpsw7213)

The bootloader remaps logical to physical Flash memory sectors, which may result in an OTA upgrade image being unusable if the data is stored in non-contiguous sectors. OTA upgrade now takes into account the remapping of Flash memory by the bootloader.

There should be no warnings during compilation (lpsw7471)

All warnings for device compilation have been resolved.

The initialisation and restore of optional OTA attributes was incorrect (lpsw7534)

Fixed.

Simple Descriptor response does not match the supported clusters in the ZCL (lpsw7700)

Fixed.

OTA Upgrade initialisation disabled Brown-Out Reset (BOR) for the chip (lpsw7776)

It now leaves BOR enabled.

7.5 Public v1001: Known Issues

None

8 Public v1000 (14-Apr-2016)

First JN516x public release.

8.1 Public v1000: Compatibility

The software provided with this Application Note has been tested with the following evaluation kits and SDK versions.

Product Type	Part Number	Version	Supported Chips
JN516x Evaluation Kits	JN516x-EK004	-	JN516x
	JN516x-EK001	-	JN516x
Beyond Studio for NXP -Toolchain	JN-SW-4141	v1308	JN516x
JN516x ZigBee 3.0 - SDK	JN-SW-4170	v1396	JN516x

8.2 Public v1000: Memory Usage

The applications of this Application Note have the following memory footprints on the JN5169 device, when using the JN516x ZigBee 3.0 SDK [JN-SW-4170].

Application	Text Size (Bytes)	Data Size (Bytes)	BSS Size (Bytes)
DimmerSwitch_JN5169_DR1199.bin	114091	1436	22537
ColorSceneController_JN5168.bin	135858	1356	22149
EH_Switch_JN5168_DR1199.bin	12595	104	5983

8.3 Public v1000: New Features

None (first release)

8.4 Public v1000: Bug Fixes

None (first release)

8.5 Public v1000: Known Issues

None (first release)

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