



Release Notes: JN-AN-1218

ZigBee 3.0 Light Bulbs

These release notes provide information on the SDK compatibility, memory usage and change history for the JN-AN-1218 Light Bulbs Application Note

1 Public v1003 (29-Mar-2017)

NFC commissioning uses ZigBee Installation Codes.

1.1 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

1.2 Public v1003: 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)
ColorTemperatureLight_Ntaglcode_JN5169_DR1175.bin	196960	2256	24597
ColorTemperatureLight_Ntaglcode_GpCombo_JN5169_DR1175.bin	257476	2440	28137
DimmableLight_Ntaglcode_JN5169_DR1175.bin	182201	1860	24985
DimmableLight_Ntaglcode_GpProxy_JN5169_DR1175.bin	214573	2068	28285
DimmableLight_Ntaglcode_GpCombo_JN5169_DR1175.bin	242641	2164	28685
ExtendedColorLight_Ntaglcode_JN5169_DR1175.bin	207128	2384	25773
ExtendedColorLight_Ntaglcode_GpCombo_JN5169_DR1175.bin	267712	2568	29321

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)
ColorTemperatureLight_Ntaglcode_JN5179_OM15045.bin	183804	2672	24477
ColorTemperatureLight_Ntaglcode_JN5179_DR1175.bin	184120	2636	24489
ColorTemperatureLight_Ntaglcode_GpCombo_JN5179_DR1175.bin	240304	2812	28021
DimmableLight_Ntaglcode_JN5179_OM15045.bin	174632	2276	24817
DimmableLight_Ntaglcode_JN5179_DR1175.bin	174932	2240	24813
DimmableLight_Ntaglcode_GpProxy_JN5179_DR1175.bin	205332	2440	28145
DimmableLight_Ntaglcode_GpCombo_JN5179_DR1175.bin	231112	2528	28553
ExtendedColorLight_Ntaglcode_JN5179_OM15053.bin	181335	2824	25613
ExtendedColorLight_Ntaglcode_JN5179_DR1175.bin	181263	2756	25633
ExtendedColorLight_Ntaglcode_GpCombo_JN5179_DR1175.bin	248520	2940	29189

1.3 Public v1003: New Features

NTAG documentation/code issues (Ipsw8089)

NTAG_FD moved to DIO0 for JN516x, documentation updated.

Implement ICODE NFC commissioning as alternative to AES (Ipsw8099)

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 (Ipsw8116)

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 (Ipsw8127)

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

1.4 Public v1003: Bug Fixes

None

1.5 Public v1003: Known Issues

None

2 Public v1002 (29-Nov-2016)

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

2.1 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-EK001	- -	JN516x 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

2.2 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)
App_DimmableLight	166334	1456	25057
App_ExtendedColorLight	190546	1816	25877
App_ColorTemperatureLight	180143	1812	24685
App_DimmableLight_GP	226510	1764	28793
App_DimmableLight_GP_Proxy	197554	1648	28393
App_ExtendedColorLight_GP	250504	2000	29417
App_ColorTemperatureLight_GP	240466	1996	28229

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)
App_DimmableLight	172804	2240	25045
App_ExtendedColorLight	180495	2756	25865
App_ColorTemperatureLight	181992	2636	24721
App_DimmableLight_GP	229056	2528	28785
App_DimmableLight_GP_Proxy	203276	2440	28385
App_ExtendedColorLight_GP	246472	2940	29421
App_ColorTemperatureLight_GP	238252	2812	28253

2.3 Public v1002: New Features

Support for JN5179 SSBs (Ipsw7969)

Added support for the OM15045 CCTW Reference Design and support for the OM15053 RGBW Reference Design.

2.4 Public v1002: Bug Fixes

Fixed initialisation of strings for attributes in the Basic cluster (Ipsw7803)

Fixed.

Corrected file version used in Query Next Image Request (Ipsw7873)

Fixed.

Wrap up of changes for v1002 (Ipsw7973)

Modified NTAG support on OM15053 and OM15045 bulbs to use alternative pins and correct Field Detect definitions.

Corrected channels set by default.

Added new SSB projects.

Corrected pull-down on DIO3.

Added correct defines in tvUpdateBulbFromZCL for new bulb drivers.

Updated project names for RGBW to OM15053.

Fixed OTA build strings.

2.5 Public v1002: Known Issues

None

3 Public v1001 (5-Oct-2016)

Updated to add JN517x devices.

3.1 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-EK001	- -	JN516x 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

3.2 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)
App_DimmableLight	164158	1468	24977
App_ExtendedColorLight	188164	1836	25789
App_ColorTemperatureLight	177957	1828	24593
App_DimmableLight_GP	224058	1776	28701
App_DimmableLight_GP_Proxy	193984	1672	28289
App_ExtendedColorLight_GP	248084	2016	29341
App_ColorTemperatureLight_GP	237846	2020	28149

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)
App_DimmableLight	172544	2240	25045
App_ExtendedColorLight	180287	2756	25865
App_ColorTemperatureLight	181732	2636	24721
App_DimmableLight_GP	228792	2528	28785
App_DimmableLight_GP_Proxy	203016	2440	28385
App_ExtendedColorLight_GP	246208	2940	29421
App_ColorTemperatureLight_GP	237992	2812	28253

3.3 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 (Ipsw7806)

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.

3.4 Public v1001: Bug Fixes

Allow timers that do not block sleeping (Ipsw7170)

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.

OTA needs to take into account the remapping of flash by the bootloader (Ipsw7213)

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 (Ipsw7471)

All warnings for device compilation have been resolved.

Incorrect initialisation and restore of ota attributes (Ipsw7534)

Fixed

Hue is not updated when MoveToColorTemp command used (Ipsw7645)

Fixed

Simple descriptor doesn't match ZCL supported clusters (Ipsw7700)

Fixed

3.5 Public v1001: Known Issues

None

4 Public v1000 (14-Apr-2016)

First JN516x public release.

4.1 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

4.2 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)
App_DimmableLight	157029	1452	24025
App_ExtendedColorLight	180919	1820	24825
App_ColorTemperatureLight	170813	1816	23653
App_DimmableLight_GP	216833	1756	27761
App_DimmableLight_GP_Proxy	187812	1660	27369
App_ExtendedColorLight_GP	240916	2000	28385
App_ColorTemperatureLight_GP	230800	2000	27197

4.3 Public v1000: New Features

None (first release)

4.4 Public v1000: Bug Fixes

None (first release)

4.5 Public v1000: Known Issues

None (first release)

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