ZigBee Light Link Profile: PICS Proforma Version 1.0

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Accepted by	This document has been accepted for release by the ZigBee Alliance Board of Directors
Abstract	As a part of formal conformance testing, manufacturers will be asked to submit a statement of protocol conformance with respect to the appropriate ZigBee devices required by the application profile under test. This document is intended to provide the form of that statement of conformance for the Light Link profile.
Keywords	ZLL, consumer, residential, lighting, Light Link, profile.

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ZigBee Alliance, Inc.

2400 Camino Ramon, Suite 375

San Ramon, CA 94583

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1 Introduction

To evaluate conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented for a given standard. Such a statement is called a protocol implementation conformance statement (PICS).

1.1 Scope

This document provides the protocol implementation conformance statement (PICS) proforma for the ZigBee Light Link profile [R3] in compliance with the relevant requirements, and in accordance with the relevant guidance, given in ISO/IEC 9646-7.

1.2 Purpose

The supplier of a protocol implementation claiming to conform to the ZigBee Light Link profile shall complete the following PICS proforma and accompany it with the information necessary to identify fully both the supplier and the implementation.

The PICS is in the form of answers to a set of questions in the PICS proforma. The questions in a proforma consist of a systematic list of protocol capabilities and options as well as their implementation requirements. The implementation requirement indicates whether implementation of a capability is mandatory, optional, or conditional depending on options selected. When a protocol implementer answers questions in a PICS proforma, they would indicate whether an item is implemented or not, and provide explanations if an item is not implemented.

1.3 Abbreviations and special symbols

Notations for requirement status:

M	Mandatory
O	Optional
O.n	Optional, but support of at least one of the group of options labeled O.n is required.
N/A	Not applicable
X	Prohibited
Item Number:*Status*	Status is conditional on support of item number

"*Item Number*": Conditional, status dependent upon the support marked for the "*Item Number*".

For example, FD1: O.1 indicates that the status is optional but at least one of the features described in FD1 is required to be implemented, if this implementation is to follow the standard of which this PICS Proforma is a part.

1.4 Instructions for completing the PICS proforma

If a given implementation is claimed to conform to this standard, the actual PICS proforma to be filled in by a supplier shall be technically equivalent to the text of the PICS proforma in this annex, and shall preserve the numbering and naming and the ordering of the PICS proforma.

A PICS which conforms to this document shall be a conforming PICS proforma completed in accordance with the instructions for completion given in this annex.

The main part of the PICS is a fixed-format questionnaire, divided into five tables. Answers to the questionnaire are to be provided in the rightmost column, either by simply marking an answer to indicate a restricted choice (such as Yes or No), or by entering a value, set, or range of values.

1.5 PICS proforma tables

The tables in clauses 4 onwards are composed of the detailed questions to be answered, which make up the PICS proforma.

2 References

The following standards contain provisions, which, through reference in this document, constitute provisions of this standard. All the standards listed are normative references. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

2.1 ZigBee Alliance documents

[R1] ZigBee document 053474: ZigBee Specification

[R2] ZigBee document 08006: ZigBee-2007 Layer PICS and Stack Profiles

[R3] ZigBee document 11-0037: ZigBee Light Link Profile Specification

[R4] ZigBee document 075123: ZigBee Cluster Library

3 Implementation declaration

3.1 Identification of the implementation

Implementation under test (IUT) identification

IUT name	Z-Stack Lighting ZLL Advanced Remote Control
IUT software version	1.0.0
IUT hardware version	CC2530
Operating system (optional)	

Product supplier

Name	Texas Instruments
Address	9276 Scranton, Suite 450, San Diego, CA 92121
Telephone number	8586384294
Fax number	8586384204
Email address	gdeng@ti.com
Additional information	

Client

Name	
Address	
Telephone number	
Fax number	
Email address	
Additional information	

PICS contact person

Name	
Address	
Telephone number	
Fax number	
Email address	
Additional information	

3.2 Identification of the protocol

This PICS proforma applies to ZigBee Light Link profile [R3].

3.3 Global statement of conformance

The implementation described in this PICS proforma meets all of the mandatory requirements of the referenced standards:

Application Profile: ZigBee Light Link [R3]

(•) Yes

( ) No

Note -- Answering 'No' indicates non-conformance to the specified protocol standard. Non-supported mandatory capabilities are to be identified in the following tables, with an explanation by the implementer explaining why the implementation is non-conforming.

The supplier will have fully complied with the requirements for a statement of conformance by completing the statement contained in this sub-clause. That means, by clicking the above, the statement of conformance is complete.

5 [DD] Device descriptions

Item number	Item description	Reference	Status	Support
DD1	Is the product programmed as an On/Off Light? Note: If this is supported, fill out section 5.2.1.	[R3]/5	O.3	No
DD2	Is the product programmed as an On/Off plug-in unit? Note: If this is supported, fill out section 5.2.2.	[R3]/5	O.3	No
DD3	Is the product programmed as a dimmable light? Note: If this is supported, fill out section 5.2.3.	[R3]/5	O.3	No
DD4	Is the product programmed as a dimmable plug-in unit? Note: If this is supported, fill out section 5.2.4.	[R3]/5	O.3	No
DD5	Is the product programmed as a color light? Note: If this is supported, fill out section 5.2.5.	[R3]/5	O.3	No
DD51	Is the product programmed as an extended color light? Note: If this is supported, fill out section 5.2.6.	[R3]/5	O.3	No
DD52	Is the product programmed as a color temperature light? Note: If this is supported, fill out section 5.2.7.	[R3]/5	O.3	No
DD6	Is the product programmed as a color controller? Note: If this is supported, fill out section 5.3.1.	[R3]/5	O.3	No
DD7	Is the product programmed as a color scene controller? Note: If this is supported, fill out section 5.3.2.	[R3]/5	O.3	Yes

6 ZCL usage and enhancements

6.1 [GCF] General command frames

Item number	Item description	Reference	Status	Support
GCF1	Does the device support the transmission of the **read attributes** command?	[R4]/2.4.1	O	Yes
GCF1a	Does the device support the reception of the **read attributes** command?	[R4]/2.4.1	M	Yes
GCF2	Does the device support the transmission of the **read attributes response** command?	[R4]/2.4.2	M	Yes
GCF2a	Does the device support the reception of the **read attributes response** command?	[R4]/2.4.2	GCF1: M	Yes
GCF3	Does the device support the transmission of the **write attributes** command?	[R4]/2.4.3	O	Yes
GCF3a	Does the device support the reception of the **write attributes** command?	[R4]/2.4.3	M	Yes
GCF4	Does the device support the transmission of the **write attributes undivided** command?	[R4]/2.4.4	O	Yes
GCF4a	Does the device support the reception of the **write attributes undivided** command?	[R4]/2.4.4	M	Yes
GCF5	Does the device support the transmission of the **write attributes response** command?	[R4]/2.4.5	M	Yes
GCF5a	Does the device support the reception of the **write attributes response** command?	[R4]/2.4.5	GCF3: M GCF4: M	Yes
GCF6	Does the device support the transmission of the **write attributes no response** command?	[R4]/2.4.6	O	Yes
GCF6a	Does the device support the reception of the **write attributes no response** command?	[R4]/2.4.6	M	Yes
GCF7	Does the device support the transmission and reception of the **default response** command?	[R4]/2.4.12	M	Yes

6.2 Basic cluster

6.2.1 [BCS] Server

Item number	Item description	Reference	Status	Support
BCS1	Does the device support the **basic** cluster as a server?	[R4]/3.2.2	M	Yes

6.2.1.1 [BCSA] Attributes

Item number	Item description	Reference	Status	Support
BCSA1	Does the device support the **ZCLVersion** attribute?	[R4]/3.2.2.2.2	M	Yes
BCSA2	Does the device support the **ApplicationVersion** attribute?	[R4]/3.2.2.2.3	M	Yes
BCSA3	Does the device support the **StackVersion** attribute?	[R4]/3.2.2.2.4	M	Yes
BCSA4	Does the device support the **HWVersion** attribute?	[R4]/3.2.2.2.5	M	Yes
BCSA5	Does the device support the **ManufacturerName** attribute?	[R4]/3.2.2.2.6	M	Yes
BCSA6	Does the device support the **ModelIdentifier** attribute?	[R4]/3.2.2.2.7	M	Yes
BCSA7	Does the device support the **DateCode** attribute?	[R4]/3.2.2.2.8	M	Yes
BCSA8	Does the device support the **PowerSource** attribute?	[R4]/3.2.2.2.9	M	Yes
BCSA9	Does the device support the **SWBuildID** attribute?	[R3]/6.2.1.1.1	M	Yes

6.5.2.2 [SCCCR] Commands received

Item number	Item description	Reference	Status	Support
SCCCR1	Does the device support the reception of the **add scene response** command?	[R3]/6.5.2.2	SCCCG1: M	Yes
SCCCR2	Does the device support the reception of the **view scene response** command?	[R3]/6.5.2.2	SCCCG2: M	Yes
SCCCR3	Does the device support the reception of the **remove scene response** command?	[R3]/6.5.2.2	SCCCG3: M	Yes
SCCCR4	Does the device support the reception of the **remove all scenes response** command?	[R3]/6.5.2.2	SCCCG4: M	Yes
SCCCR5	Does the device support the reception of the **store scene response** command?	[R3]/6.5.2.2	SCCCG5: M	Yes
SCCCR6	Does the device support the reception of the **get scene membership response** command?	[R3]/6.5.2.2	SCCCG7: M	Yes
SCCCR7	Does the device support the reception of the **enhanced add scene response** command?	[R3]/6.5.1.4.1	SCCCG8: M	Yes
SCCCR8	Does the device support the reception of the **enhanced view scene response** command?	[R3]/6.5.1.4.2	SCCCG9: M	Yes
SCCCR9	Does the device support the reception of the **copy scene response** command?	[R3]/6.5.1.4.3	SCCCG10: M	Yes

6.5.2.3 [SCCCG] Commands generated

Item number	Item description	Reference	Status	Support
SCCCG1	Does the device support the generation and transmission of the **add scene** command?	[R4]/3.7.2.4.1	SCC1: O	No
SCCCG2	Does the device support the generation and transmission of the **view scene** command?	[R4]/3.7.2.4.2	SCC1: O	No
SCCCG3	Does the device support the generation and transmission of the **remove scene** command?	[R4]/3.7.2.4.3	SCC1: O	No
SCCCG4	Does the device support the generation and transmission of the **remove all scenes** command?	[R4]/3.7.2.4.4	SCC1: O	No
SCCCG5	Does the device support the generation and transmission of the **store scene** command?	[R4]/3.7.2.4.5	SCC1: O	Yes
SCCCG6	Does the device support the generation and transmission of the **recall scene** command?	[R4]/3.7.2.4.6	SCC1: O	Yes
SCCCG7	Does the device support the generation and transmission of the **get scene membership** command?	[R4]/3.7.2.4.7	SCC1: O	No
SCCCG8	Does the device support the generation and transmission of the **enhanced add scene** command?	[R3]/6.5.1.3.1	SCC1: O	No
SCCCG9	Does the device support the generation of the **enhanced view scene** command?	[R3]/6.5.1.3.2	SCC1: O	No
SCCCG10	Does the device support the generation of the **copy scene** command?	[R3]/6.5.1.3.3	SCC1: O	No

Item number	Item description	Reference	Status	Support
CCCCCG101	Does the device support the generation and transmission of the **move to color temperature** command?	[R4]/5.2.2.3.12	CCCC1: O	No
CCCCCG11	Does the device support the generation and transmission of the **enhanced move to hue** command?	[R3]/6.8.1.3.2	CCCC1: O	Yes
CCCCCG12	Does the device support the generation and transmission of the **enhanced move hue** command?	[R3]/6.8.1.3.3	CCCC1: O	No
CCCCCG13	Does the device support the generation and transmission of the **enhanced step hue** command?	[R3]/6.8.1.3.4	CCCC1: O	Yes
CCCCCG14	Does the device support the generation and transmission of the **enhanced move to hue and saturation** command?	[R3]/6.8.1.3.5	CCCC1: O	No
CCCCCG15	Does the device support the generation and transmission of the **color loop set** command?	[R3]/6.8.1.3.6	CCCC1: O	No
CCCCCG16	Does the device support the generation and transmission of the **stop move step** command?	[R3]/6.8.1.3.7	CCCC1: O	No
CCCCCR17	Does the device support the generation of the **move color temperature** command?	[R3]/6.8.1.3.8	CCCC1: O	No
CCCCCR18	Does the device support the generation of the **step color temperature** command?	[R3]/6.8.1.3.9	CCCC1: O	No

Item number	Item description	Reference	Status	Support
ZCCCCR2	Does the device support the reception of the **device information response** inter-PAN command?	[R3]/7.1.2.3.2	ZCCC1: M	Yes
ZCCCCR3	Does the device support the reception of the **network start response** inter-PAN command?	[R3]/7.1.2.3.3	ZCCC1: M	Yes
ZCCCCR4	Does the device support the reception of the **network join router response** inter-PAN command?	[R3]/7.1.2.3.4	ZCCC1: M	Yes
ZCCCCR5	Does the device support the reception of the **network join end device response** inter-PAN command?	[R3]/7.1.2.3.5	ZCCC1: M	Yes
ZCCCCR6	Does the device support the reception of the **endpoint information** command?	[R3]/7.1.2.3.6	ZCCUC1: O	No
ZCCCCR7	Does the device support the reception of the **get group identifiers response** command?	[R3]/7.1.2.3.7	ZCCCCG9: M	Yes
ZCCCCR8	Does the device support the reception of the **get endpoint list response** command?	[R3]/7.1.2.3.8	ZCCCCG10: M	Yes

7.1.3.3 [ZCCCCG] Commands generated

Item number	Item description	Reference	Status	Support
ZCCCCG1	Does the device support the generation and transmission of the **scan request** inter-PAN command?	[R3]/7.1.2.2.1	ZCCC1: M	Yes
ZCCCCG2	Does the device support the generation and transmission of the **device information request** inter-PAN command?	[R3]/7.1.2.2.2	ZCCC1: M	Yes
ZCCCCG3	Does the device support the generation and transmission of the **identify request** inter-PAN command?	[R3]/7.1.2.2.3	ZCCC1: M	Yes
ZCCCCG4	Does the device support the generation and transmission of the **reset to factory new request** inter-PAN command?	[R3]/7.1.2.2.4	ZCCC1: M	Yes
ZCCCCG5	Does the device support the generation and transmission of the **network start request** inter-PAN command?	[R3]/7.1.2.2.5	ZCCC1: M	Yes
ZCCCCG6	Does the device support the generation and transmission of the **network join router request** inter-PAN command?	[R3]/7.1.2.2.6	ZCCC1: M	Yes
ZCCCCG7	Does the device support the generation and transmission of the **network join end device request** inter-PAN command?	[R3]/7.1.2.2.7	ZCCC1: M	Yes
ZCCCCG8	Does the device support the generation and transmission of the **network update request** inter-PAN command?	[R3]/7.1.2.2.8	ZCCC1: M	Yes

8 Functional description

8.1 General

8.1.1 [ZSP] ZigBee Stack Profile

Item number	Item description	Reference	Status	Support
ZSP1	Is the device built on a ZigBee Compliant Platform certified for the ZigBee PRO stack profile?	8.1.1	M	Yes

8.1.2 [C] Channels

Item number	Item description	Reference	Status	Support
C1	Is the device able to operate on any of the 16 channels available at 2.4GHz?	8.1.2	M	Yes

8.1.3 [ADV] Application device version

Item number	Item description	Reference	Status	Support
ADV1	Is the **application device version** field of all simple descriptors supported by the device, and hence the **version** field used in the *scan response*, *device information response*, *endpoint information* and *get endpoint list response* inter-PAN command frames, equal to 0x2?	8.1.3	M	Yes

8.1.4 [PI] Profile identifier

Item number	Item description	Reference	Status	Support
PI1	Does the device indicate the **profile identifier** field of the corresponding ZLL simple descriptor as 0xc05e or 0x0104?	8.1.4	M	Yes

Item number	Item description	Reference	Status	Support
PI2	When the device transmits a ZLL commissioning cluster command is the profile identifier indicated as being 0xc05e?	8.1.4	M	Yes
PI3	When the device transmits a ZLL specified ZCL cluster command is the profile identifier indicated as being 0x0104?	8.1.4	M	Yes

8.1.5 ZDO requirements

There are no PICS requirements for this section.

8.1.6 Startup attribute set

There are no PICS requirements for this section.

8.1.7 [DIT] Device information table

Item number	Item description	Reference	Status	Support
DIT1	Does the device maintain a device information table with an entry for each sub-device in accordance with the device information table record format?	[R3]/8.1.7	M	Yes

8.1.8 Constants

There are no PICS requirements for this section.

8.1.9 ZLL profile attributes

There are no PICS requirements for this section.

8.1.10 [IPFF] Inter-PAN frame format

Item number	Item description	Reference	Status	Support
IPFF1	Does the device support generation of inter-PAN command frames according to the general inter-PAN command frame format?	[R3]/8.1.10	M	Yes
IPFF2	Does the device support reception of inter-PAN command frames according to the general inter-PAN command frame format?	[R3]/8.1.10	M	Yes

8.1.11 [IPTI] Inter-PAN transaction identifier

Item number	Item description	Reference	Status	Support
IPTI1	Does the device transmitting a scan request inter-PAN command frame preserve the same transaction identifier within the same inter-PAN transaction?	[R3]/8.1.11	TC1: M	Yes
IPTI2	Does the device receiving a scan request inter-PAN command frame reuse the same transaction identifier in all responses within the same inter-PAN transaction?	[R3]/8.1.11	M	Yes

8.1.12 Commissioning scenarios

There are no PICS requirements for this section.

8.2 ZigBee-pro stack requirements

8.2.1 [INS] Initialization NIB settings

Item number	Item description	Reference	Status	Support
INS1	Does the device set *nwkUseMulticast* to FALSE?	[R3]/8.2.1	M	Yes

8.2.5 [EDP] End device polling

Item number	Item description	Reference	Status	Support
EDP1	Does the end device poll its parent?	[R3]/8.2.5	FDT3: O	No
EDP2	If the end device polls at a rate greater than *aplcMaxPollInterval* or does not poll at all, does it transmit a NWK rejoin command frame to its assumed parent before transmitting any application data?	[R3]/8.2.5	FDT3: M	Yes
EDP3	If the NWK rejoin was successful, does the end device NOT transmit a device_annce command frame?	[R3]/8.2.5	EDP2: M	Yes
EDP4	If the NWK rejoin was not successful, does the end device continue to scan for suitable parents?	[R3]/8.2.5	EDP2: M	Yes
EDP5	If the end device has been in contact with its parent for a time greater than *aplcMaxPollInterval*, does it attempt a rejoin before transmitting any application data?	[R3]/8.2.5	EDT3: M	Yes

8.2.6 [CTM] Child table maintenance

Item number	Item description	Reference	Status	Support
CTM1	Are the contents of the child table preserved through a power cycle?	[R3]/8.2.6	FDT2: M	N/A
CTM2	If a parent device does not receive a message from one of its child devices within *aplcMinChildPersistenceTime*, does it remove that device from its child table?	[R3]/8.2.6	FDT2: O	N/A
CTM3	On receipt of a message from a device which is listed in its child table, does the parent device verify that this device is indeed one of its children, removing it from the child table if not?	[R3]/8.2.6	FDT2: M	N/A

Item number	Item description	Reference	Status	Support
CTM4	On receipt of a message from a device which is not listed in its child table, does the parent device transmit a NWK leave request to the device using its short network address?	[R3]/8.2.6	FDT2: O	N/A

8.3 Device startup

8.3.1 [EDSU] End-device

Item number	Item description	Reference	Status	Support
EDSU2	If the device is an end device and is not factory new, does it resume ZigBee functionality on start up based on information stored in NVRAM?	[R3]/8.3.1	FDT3: M	Yes
EDSU3	If the device is an end device and is not factory new, does it transmit a **device_annce** command after a successful network rejoin to a new parent?	[R3]/8.3.1	FDT3: M	Yes

8.3.2 [RSU] Router

Item number	Item description	Reference	Status	Support
RSU2	If the device is a router and is not factory new, does it resume ZigBee functionality on start up based on information stored in NVRAM?	[R3]/8.3.2	FDT2: M	N/A
RSU5	If the device is a router and is not factory new, does it transmit a **device_annce** command after a successful startup?	[R3]/8.3.2	FDT2: M	N/A

8.4 [TC] Touchlink commissioning

Item number	Item description	Reference	Status	Support
TC1	Is the device capable of initiating a touchlink operation?	[R3]/8.4.1.1	AA1: M	Yes

8.4.1 [TDD] Device discovery

Item number	Item description	Reference	Status	Support
TDD1	Is the device capable of carrying out a series of scan operations, first 5 times on a single channel, then once each on the remaining channels?	[R3]/8.4.1.1	TC1: M	Yes
TDD2	Is the device capable of being discovered by a scan operation?	[R3]/8.4.1.2	M	Yes
TDD3	Is the device capable of generating a broadcast **scan request** inter-PAN command frame at 0dBm, and waiting for a response?	[R3]/8.4.1.1	TC1: M	Yes
TDD4	Is the device capable of receiving a broadcast **scan request** inter-PAN command frame?	[R3]/8.4.1.2	M	Yes
TDD5	Is the device capable of generating a **scan response** inter-PAN command frame containing the RSSI correction factor, the device information table if it has only one sub-device, and the value of its nwkUpdateId attribute?	[R3]/8.4.1.2 [R3]/8.4.1.1 [R3]/8.6	M	Yes
TDD6	Does the device include in its **scan response** inter-PAN command frame the logical channel on which it is currently operating, and if not factory new, also its other network settings?	[R3]/8.4.1.2	M	Yes
TDD8	Is the device capable of receiving a **scan response** inter-PAN command frame, and discarding it if the RSSI is too low?	[R3]/8.4.1.2	TC1: M	Yes
TDD9	Is the device capable of gathering detailed device information by use of the **device information request** and **device information response** inter-PAN command frames?	[R3]/8.4.1.1	TC1: O	No

Item number	Item description	Reference	Status	Support
TDD10	Is the device capable of providing detailed device information by use of the **device information request** and **device information response** inter-PAN command frames?	[R3]/8.4.1.2	M	Yes

8.4.2 [TI] Identify

Item number	Item description	Reference	Status	Support
TI1	Following the touch-link operation, does the device select one or more devices for further processing?	[R3]/8.4.2	TC1: M	Yes
TI2	Is the device capable of requesting another device to identify itself using the **identify request** inter-PAN command frame?	[R3]/8.4.2.1	O	Yes

8.4.3 [TSNN] Starting a new network

Item number	Item description	Reference	Status	Support
TSNN1	Is the device capable of requesting another device to start a network using the **network start request** inter-PAN command frame?	[R3]/8.4.3.1	TC1: M	Yes
TSNN2	Is the device capable of receiving a **network start request** inter-PAN command frame and carrying out the steps required to start a network, taking account of whether or not it is factory new?	[R3]/8.4.3.2	FDT2: M	No
TSNN3	Is the device capable of generating a **network start response** inter-PAN command frame?	[R3]/8.4.3.2	FDT2: M	No

Item number	Item description	Reference	Status	Support
TSNN4	Is the device capable of receiving a **network start response** inter-PAN command frame and carrying out the steps required to join the new network?	[R3]/8.4.3.1	TC1: M	Yes

8.4.4 [TJR] Joining routers to the network

Item number	Item description	Reference	Status	Support
TJR1	Is the device capable of requesting another device to join a network using the **network join router request** inter-PAN command frame?	[R3]/8.4.4.1	TC1: M	Yes
TJR2	Is the device capable of receiving a **network join router request** inter-PAN command frame and carrying out the steps required to join a network?	[R3]/8.4.4.2	FDT2: M	No
TJR3	Is the device capable of generating a **network join router response** inter-PAN command frame?	[R3]/8.4.4.2	FDT2: M	No
TJR4	Is the device capable of receiving a **network join router response** inter-PAN command?	[R3]/8.4.4.1	TC1: M	Yes

8.4.5 [TJED] Joining end devices

Item number	Item description	Reference	Status	Support
TJED1	Is the device capable of requesting a factory new end device to join a network using the **network join end device request** inter-PAN command frame?	[R3]/8.4.5.1	TC1: M	Yes
TJED2	Is the device capable of receiving a **network join end device request** inter-PAN command and carrying out the steps required to join a network?	[R3]/8.4.5.2	FDT3: M	Yes

Item number	Item description	Reference	Status	Support
TJED3	Is the device capable of generating a **network join end device response** inter-PAN command frame?	[R3]/8.4.5.2	FDT3: M	Yes
TJED4	Is the device capable of receiving a **network join end device response** inter-PAN command?	[R3]/8.4.5.1	TC1: M	Yes

8.4.6 [TNU] Network update

Item number	Item description	Reference	Status	Support
TNU1	If an initiator receives a **scan response** inter-PAN command frame from a device on its network with a lower network update identifier than its own, does it transmit a **network update request** inter-PAN command frame to the target?	[R3]/8.4.6.1	TC1: O	Yes
TNU2	If an initiator receives a **scan response** inter-PAN command frame from a device on its network with a higher network update identifier than its own, does it update its own value and its logical channel with those values received in the **scan response** inter-PAN command frame.	[R3]/8.4.6.1	TC1: M	Yes
TNU3	If after updating its network update identifier and logical channel, does an end device initiator attempt a network rejoin?	[R3]/8.4.6.1	TC1: (FDT3: M)	Yes
TNU4	If a target receives a **network update request** inter-PAN command frame with a valid transaction identifier and a higher network update identifier than its own, does it update its own value and its logical channel with those values received in the **network update request** inter-PAN command frame.	[R3]/8.4.6.2	M	Yes

8.4.7 [TRFN] Reset to factory new

Item number	Item description	Reference	Status	Support
TRFN1	Is the device capable of requesting another device to reset to its factory new state using the **reset to factory new request** inter-PAN command frame?	[R3]/8.4.7.1	O	Yes
TRFN2	Is the device capable of resetting to its factory new state when requested to do so by reception of the **reset to factory new request** inter-PAN command frame with a valid transaction identifier?	[R3]/8.4.7.2	M	Yes

8.4.8 [AA] Address assignment

Item number	Item description	Reference	Status	Support
AA1	Is the device network address and group address assignment capable?	[R3]/8.4.8.1 [R3]/8.4.8.2	O	Yes
AA2	Does the device keep track of its current free network address range?	[R3]/8.4.8.1	AA1: M	Yes
AA3	When starting a network from factory new state, does the device assign itself network address 0x0001, and free network address range 0x0002-0xfff7?	[R3]/8.4.8.1	AA1: M	Yes
AA4	When it requests a device to join a network, is the device assigned the first free network address, and the network address range updated accordingly?	[R3]/8.4.8.1	AA1: M	Yes
AA5	If there are no free network addresses does the device not permit further devices to join the network?	[R3]/8.4.8.1	AA1: M	Yes

Item number	Item description	Reference	Status	Support
AA6	When a device requests a network assignment capable device to join the network, does it split its own network address range in two and assign the higher numbered range to the joining device, and update its own address range accordingly?	[R3]/8.4.8.1	AA1: M	Yes
AA7	When joining a network, does the device support being assigned a network address range?	[R3]/8.4.8.1	AA1: M	Yes
AA8	If splitting the range of free network addresses would result in there being less than an implementation specific threshold, then does the device not permit further address assignment capable devices to join the network?	[R3]/8.4.8.1	AA1: M	Yes
AA9	Is the device network address assignment capable but not group address assignment capable?	[R3]/8.4.8.2	X	No
AA10	Does the device keep track of its current free group address range?	[R3]/8.4.8.2	AA1: M	Yes
AA11	When starting a network from factory new state, does the device assign itself group addresses starting from 0x0001, and free group address range up to 0xfeff?	[R3]/8.4.8.2	AA1: M	Yes
AA12	When it requests a device to join a network, is the device assigned a range of free group address, and the group address range updated accordingly?	[R3]/8.4.8.2	AA1: M	Yes
AA13	When a device requests an address assignment capable device to join the network, does it, if possible, split its own group address range in two and assign the higher numbered range to the joining device, and update its own group address range accordingly?	[R3]/8.4.8.2	AA1: M	Yes
AA14	When joining a network, does the device support being assigned a group address range?	[R3]/8.4.8.2	AA1: M	Yes

Item number	Item description	Reference	Status	Support
AA15	If splitting the range of free group addresses would result in there being less than an implementation specific threshold, then does the device not permit further address assignment capable devices to join the network?	[R3]/8.4.8.2	AA1: M	Yes

8.5 Classical ZigBee commissioning

8.5.1 [NTLC] Classical ZigBee commissioning of ZLL devices

Item number	Item description	Reference	Status	Support
NTLC1	If requested under application control, does the device perform a network discovery over the primary channel set?	[R3]/8.5.1	FDT2: M FDT3: M	Yes
NTLC2	If requested under application control, is the device able to join a suitable network on one of the primary channels?	[R3]/8.5.1	FDT2: M FDT3: M	Yes
NTLC3	If requested under application control and its primary network discovery failed, does the device perform a network discovery over the secondary channel set?	[R3]/8.5.1	FDT2: M FDT3: M	Yes
NTLC4	If requested under application control, is the device able to join a suitable network on one of the secondary channels?	[R3]/8.5.1	FDT2: M FDT3: M	Yes

8.5.2 [NTNZD2ZR] Classical ZigBee commissioning of a non-ZLL device to a ZLL router in case there is no trust center

Item number	Item description	Reference	Status	Support
NTNZD2ZR1	If the device is a router, when requested under application control, does the device enable its permit joining flag and receiver for a predetermined period, allowing non-ZLL devices to join?	[R3]/8.5.2	FDT2: M	N/A

Item number	Item description	Reference	Status	Support
NTNZD2ZR2	If a non-ZLL device requests to join the ZLL router (as above), does the ZLL router assign an address to the new device using classical ZigBee stochastic addressing.	[R3]/8.5.2	FDT2: M	N/A

8.5.3 [NTT2NZN] Touchlinking devices on non-ZLL networks

Item number	Item description	Reference	Status	Support
NTT2NZN1	Can a factory new device initiate a touchlink operation to a ZLL device on a non-ZLL network?	[R3]/8.5.3	TC1: M	Yes
NTT2NZN2	Can a device on a non-ZLL network touchlink to another device on the same network?	[R3]/8.5.3	TC1: M	Yes
NTT2NZN3	Does a device on a non-ZLL network not send network start, network join router or network join end device request command frames (following a scan) to factory new devices or devices connected to a different network?	[R3]/8.5.3	TC1: M	Yes

8.6 [FA] Frequency agility

Item number	Item description	Reference	Status	Support
FA1	Does the device support instigation of the channel change mechanism?	[R3]/8.6	O	No
FA2	Does the device support transmission of an Mgmt_NWK_Update_req command frame broadcast to all RxOnWhenIdle devices?	[R3]/8.6	FA1: M	No
FA3	On receipt of an Mgmt_NWK_Update_req command frame, does the device update its NIB and execute the channel change procedure?	[R3]/8.6	FDT2: M	Yes
FA4	Following a channel change, does the device rejoin?	[R3]/8.6	FDT3: M	Yes

Item number	Item description	Reference	Status	Support
FA5	In that case that a router misses a channel change, does the device support use of the touch-link procedure for bringing a router back into the network?	[R3]/8.6	O	Yes
FA6	Does the device support transmission of an inter-PAN network update request command frame unicast to a router it wishes to bring back into the network?	[R3]/8.6	FA5: M	Yes
FA7	If a device detects a router reporting a nwkUpdateId attribute value newer than its own, does it update its network settings according to the values in the scan response command frame, and execute a rejoin procedure?	[R3]/8.6	TC1: M	Yes

8.7 [S] Security

Item number	Item description	Reference	Status	Support
S1	Does the device use ZigBee network layer security?	[R3]/8.7	M	Yes
S2	Does the device randomly generate the network key for use by the network when initiating starting of a new network?	[R3]/8.7	TC1: M	Yes
S3	Does the device transmit the network key encrypted as part of the start and join commands?	[R3]/8.7.1	TC1: M	Yes
S4	Is the nwkSecurityLevel NIB attribute set to 0x05? (use data encryption and frame integrity)	[R3]/8.7.2	M	Yes
S5	Is the nwkAllFresh NIB attribute set to False (do not check frame counter)?	[R3]/8.7.2	M	Yes
S6	Is the nwkSecureAllFrames NIB attribute set to True? (only accept secured frames)	[R3]/8.7.2	M	Yes
S7	Does the device use the ZLL Certification key for certification testing?	[R3]/8.7.4.1.2	M	Yes

Item number	Item description	Reference	Status	Support
S8	Does the device use the ZLL Master key in commercial products, and not use the ZLL Certification key in commercial products?	[R3]/8.7.4.1.1	M	Yes