

## NCN5120 - KNX Certification Procedure



**ON Semiconductor®**

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### APPLICATION NOTE

#### INTRODUCTION

This document gives a basic overview of the KNX certification procedure when using the ON Semiconductor KNX Transceiver NCN5120 and a KNX certified system stack<sup>1</sup>. This document is mainly intended for newcomers to the KNX world. This document will be less relevant for those who have already been through the process of certifying KNX products because the KNX certification procedure will already be well known.

The KNX certification procedure consists out of 4 phases: Introductory, Registration, Testing and Certification Phase. The Introductory Phase is actually the phase to become a KNX member and by this must only be performed once. The Registration, Testing and Certification Phase will need to be executed every time one wants to certify a KNX product.

Contact the KNX Association if more details on the KNX certification procedure are required.

#### INTRODUCTORY PHASE

During this phase one must sign the Trademark and IPR License Agreement. The first one is related to the conditions

of using the KNX logo. The second is related to the conditions for free use of KNX technology patents. Details on these agreements can be found on the documents download page of the KNX Association website (see More Information, page 4). One must also be ISO 900x unless the product is delivered by a third party company.

This phase must only be executed once and can be skipped once one is member.

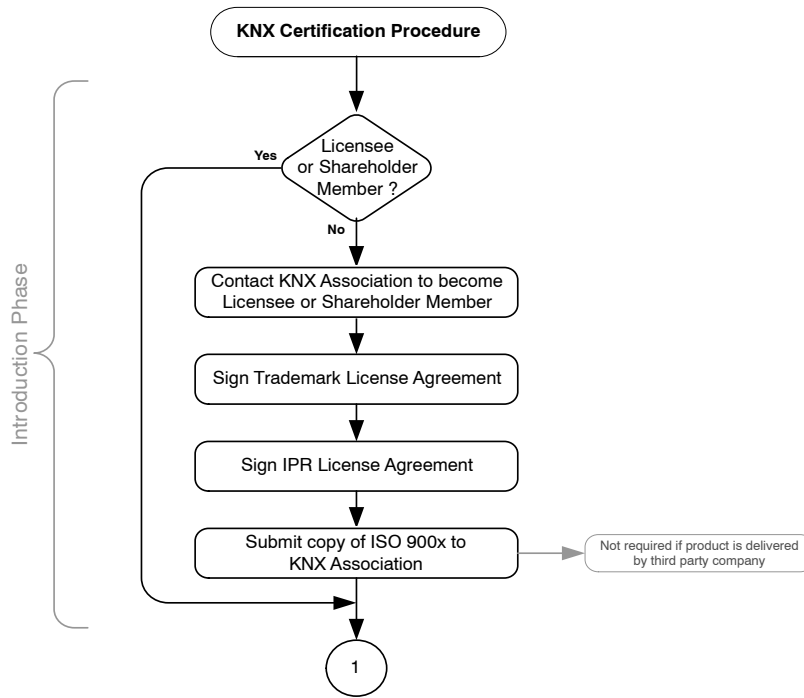
#### REGISTRATION PHASE

During this phase one must submit several documents to start the registration process (contact KNX Association if more information about these documents is required). Once all documents are submitted (and correct), the KNX Association will register your product if your product is in line with the interworking rules. At this point one can already sell the (registered) product with the KNX logo. A registered product does however not mean that the product is certified! Certification will be done in next phase (Testing Phase) and depending on the results it's still possible that your product does not get certified.

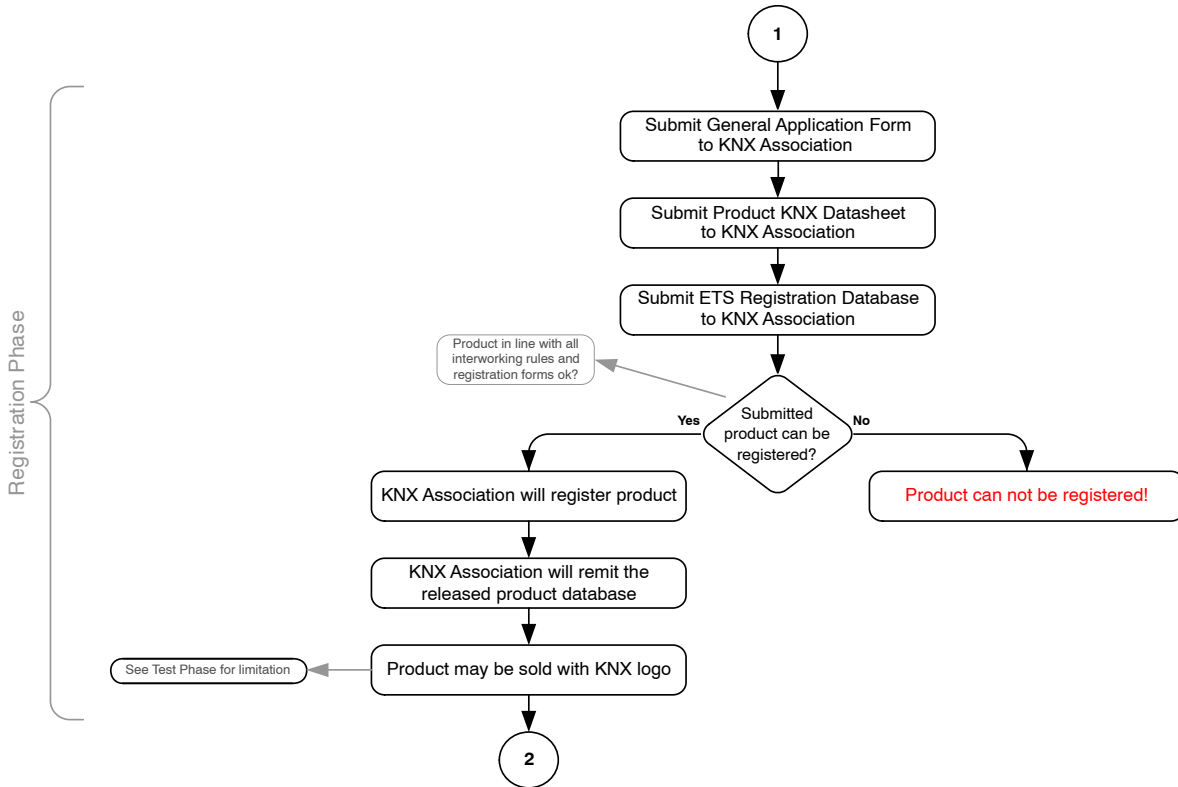
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1. KNX Certified System Stack is not supplied by ON Semiconductor and must be obtained from a 3th party company.

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**Figure 1. Introductory Phase**



**Figure 2. Registration Phase**

**TESTING PHASE**

The Testing Phase must be concluded at the latest 6 months after the Registration Phase end.

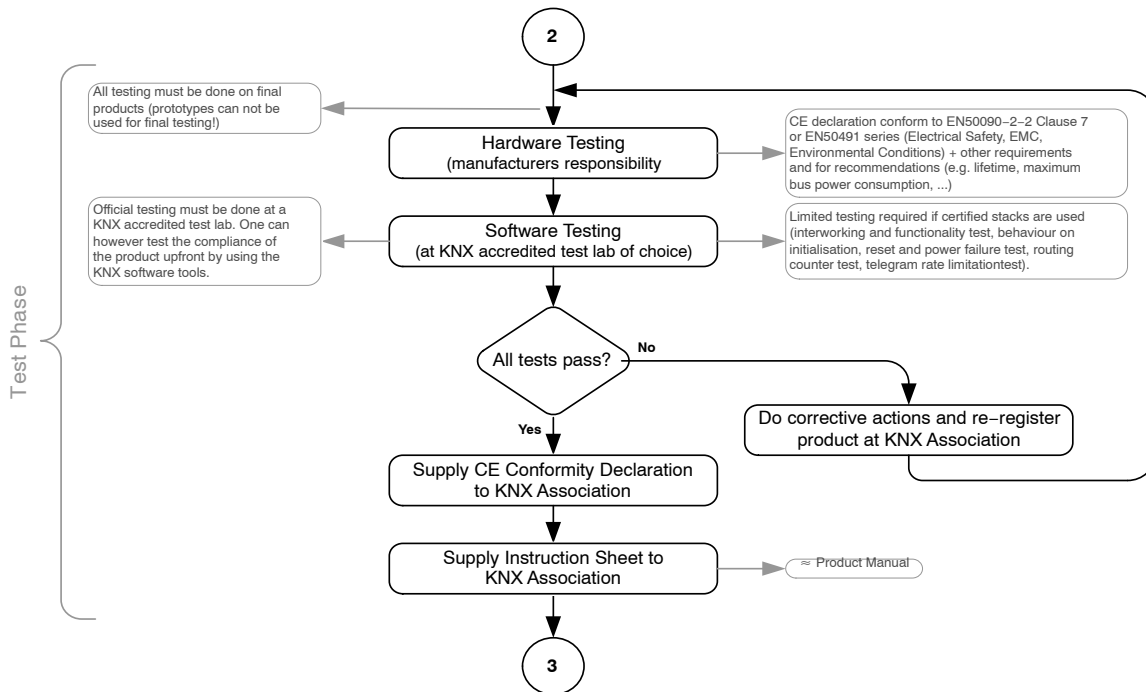
During this phase hardware and software (system) tests will be performed. All these tests need to be done on final products (= the product as if to be sold). By no means can prototypes be used for the final testing. Hardware testing consists out of CE Conformity testing added with some other requirements and/or recommendations (details can be found back in the KNX Specifications). These tests can be done in-house and do not need to be done by accredited test labs. The hardware testing as given in assumes that NCN5120 is used as KNX transceiver and that the recommended circuit diagram is used with the correct component tolerances.

Software testing needs to be performed by a KNX accredited test lab (see More Information, page 4 for a list

of KNX accredited test labs). One can of course pre-test the product upfront in-house by using the KNX software tools (these are the same tools as used by the KNX accredited test labs). When a KNX certified system stack<sup>2</sup> is used these system tests are limited (details can be found back in the KNX Specifications).

If one or more of the tests fail, one needs to make corrective actions and retest the product. It's advised to contact the KNX Association if this situation occurs.

If all tests pass within the respected time, one can supply all necessary data to the KNX Association (the accredited test lab will submit the system test reports to the KNX Association automatically) and the Testing Phase can be ended.



**Figure 3. Testing Phase**

Although hardware and software tests still need to be run even when using NCN5120 and a KNX certified 3th party system stack, these tests are very limited compared to using uncertified transceivers and system stacks. Using NCN5120 and a certified KNX system stack lowers the design cost,

gives a shorter design-to-market time and minimizes the risk (which reduces the design-to-market time even more). One can also focus more on the application itself and put more effort in distinguishing your product from the other KNX products on the market.

2. KNX Certified System Stack is not supplied by ON Semiconductor and must be obtained from a 3th party company.

## AND9102/D

### CERTIFICATION PHASE

During the Certification Phase the KNX Association will verify all documents (if NCN5120 and a KNX certified

system stack<sup>3</sup> are used, verification by KNX Association is limited). If all are ok the KNX Certificate will be provided.

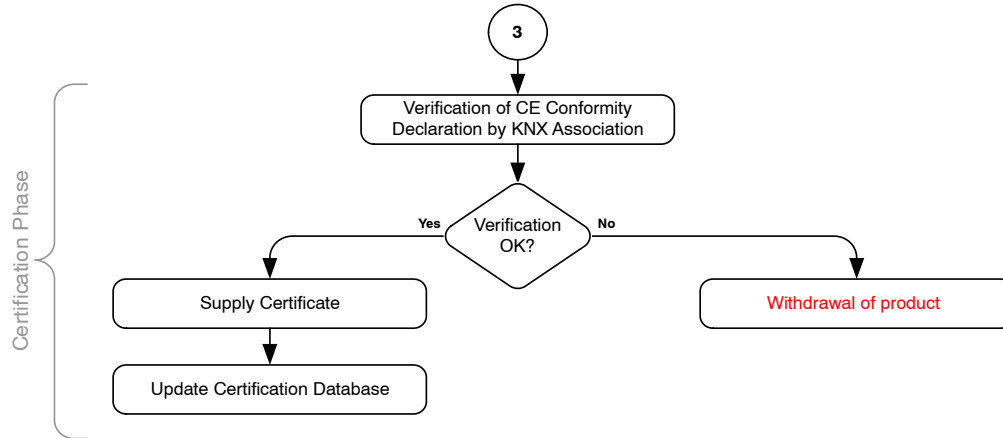


Figure 4. Certification Phase

### MORE INFORMATION

Below some links are given for additional information. If more information is required one must contact the KNX Association

(<http://www.knx.org/knx-association/contact-secretariat/>).

KNX website: [www.knx.org](http://www.knx.org)

What is KNX?:

<http://www.knx.org/knx/what-is-knx/>

KNX contact information:

<http://www.knx.org/knx-association/contact-secretariat/>

KNX Membership information:

<http://www.knx.org/knx-members/about/>

KNX Membership fees:

<http://www.knx.org/knx-members/joining-fees/>

KNX Certification:

<http://www.knx.org/knx-certification/of-products/>

KNX Documents Downloads:

<http://www.knx.org/downloads-support/downloads/>

KNX Accredited test labs:

<http://www.knx.org/knx-certification/test-labs/>

### FAQ

1. Do I need to become a member to certify my KNX products?  
Yes. To be able to certify your own products one must be a Licensee or Shareholder member.
2. How much does membership and certification cost?  
All fees related to membership and certification can be found on the KNX website ([www.knx.org](http://www.knx.org)).
3. Can ON Semiconductor do the certification for me?  
No, all tests need to be performed by yourself and/or third party companies.
4. Where can I find the KNX Association contact information?  
All contact information can be found on the KNX website (<http://www.knx.org/knx-association/contact-secretariat/>)

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3. KNX Certified System Stack is not supplied by ON Semiconductor and must be obtained from a 3th party company.

## Source

- KNX Association Website ([www.knx.org](http://www.knx.org))
- KNX Specifications (KNX membership required to access these documents) :
  - ◆ Part 3/1/2 “System Specifications, Architecture, Glossary”
  - ◆ Part 4 “KNX Hardware Requirements and Tests”
  - ◆ Part 5 “KNX Certification of Products, Procedure”
  - ◆ Part 8/1 “KNX System Conformance Testing, Introduction”
  - ◆ Part 8/2/2 “KNX System Conformance Testing, Medium Dependant Layers Tests, TP1 Physical and Link Layer Test”
  - ◆ Part 8/7/1 “KNX System Conformance Testing, Interworking & Functionality Tests”

## Disclaimer

This document gives a simplified overview and is only intended to get a better understanding of the KNX certification procedure without the need to become a KNX member. This document also assumes that the ON Semiconductor KNX Transceiver NCN5120 is used together with a KNX certified system stack<sup>4</sup>.

The document is also based on a standard KNX product as for example a lighting actuator or sensor. The real KNX certification procedure could deviate for special KNX products (e.g. tools). The procedure could also be different or shorter when an already KNX certified product is modified. More detailed information can be found in the KNX specification or can be requested by contacting the KNX Association.

By no means can the KNX certification procedure as given in this document be used as the official procedure. The official KNX certification procedure can only be given by the KNX Association. One must always contact the KNX Association to obtain the correct and official procedure.

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4. KNX Certified System Stack is not supplied by ON Semiconductor and must be obtained from a 3th party company.

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**Email:** [orderlit@onsemi.com](mailto:orderlit@onsemi.com)

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