



# KNX System Specifications

## Document Overview

### Summary

This document contains the document overview of the KNX Standard. It is intended for information before reading the entire specification.

**Document Updates**

Version	Date	Modifications
1.0	2002.03.04	Preparation of the Final Version.
1.1	2004.03.02	Update for KNX Standard v1.1.
2.0	2009.06.09	Update for KNX Specifications V2.0
2.1	2013.12.02	Update for KNX Specifications v2.1.

Filename: KTB\_DocOverview v2.1.docx  
Version: 2.1  
Status: --  
Savedate: 2013.12.02  
Number of pages: 8

## Contents

<b>1</b>	<b>Foreword .....</b>	<b>4</b>
1.1	How to use these Specifications .....	4
1.2	Commercial in Confidence .....	4
1.3	Copyright .....	4
1.4	Disclaimer .....	4
<b>2</b>	<b>Overview of Volumes and Parts.....</b>	<b>6</b>

## 1 Foreword

The KNX Standard is intended to help any KNX Association member develop, manufacture and technically support KNX conformant products. As such, it will be a useful manual for all people involved in this task within every KNX Association Member company.

The KNX Standard covers all KNX Association technical topics from the first contact with the KNX technology, through the specification, certification rules and testing, and application descriptions. The different parts are clearly separated, and intended for the various responsibilities within a company.

To reach this aim, the **KNX Standard** is divided into **Volumes** that can be distributed to different organizations or departments.

These are then structured into **Parts**, and **Chapters**.

Please refer to the **KNX Browser**, which is a navigator file provided with this edition.

This edition is the fourth release of the KNX Standard. Also in this version a major part of the application notes that were drawn up since version 2.0 were integrated into the body text. Consequently, it is released as version 2.1. In this version, also the Volume 2 'Development Guide' was added, which was developed in-between version 2.0 and 2.1.

At the time of publication, some documents had moreover still not reached the stage of approved standard and are therefore contained in the section "Working Documents and Drafts".

As given by the Certification Rules, documents can be used as a basis for certification as soon as the relevant specifications have been positively voted in a KTB Release for voting cycle.

### 1.1 How to use these Specifications

These Specifications are structured in **Volumes**, **Parts** and **Chapters**. These are indicated as "Chapter V/P/C". "Chapter 3/5/2" for example means Volume 3, Part 5, Chapter 2. This information is located on the front page of every document.

Below, a global overview of the **Parts** of the Specifications is given.

### 1.2 Commercial in Confidence

This KNX Standard is communicated to all KNX Association Members for their exclusive use. These parties are committed to treat its contents confidentially, and may not communicate its contents in full or in part to third parties other than to subcontractors under condition of a non-disclosure agreement.

### 1.3 Copyright

The copyright to the contents of these KNX-Specifications resides with the KNX Association cvba. No reproduction in full or in part is permitted without explicit written consent from KNX Association cvba.

### 1.4 Disclaimer

KNX Association cvba in performing its functions in accordance with its statutes, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. The KNX Association cvba shall not be responsible to anyone for the use or reliance upon this KNX Standard by anyone. The KNX Association cvba shall not incur any obligation or liability for damages, including consequential damages, arising out of or in connection with the use, interpretation of or reliance of this KNX Standard. The KNX Association cvba may amend the contents of these Specifications without any prior explicit warning either verbally or in writing.

The KNX Association continuously improves the current specification by editing so called Application Notes (ANs), which are part of the standard after their approval. Some already approved ANs or ANs in the course of being approved are provided in a separate section.

The additional contents to version 2.0 of this KNX Standard, with the publication of version 2.1 will be subject to the KNX IPR clearance process, according to the IPR agreement within the KNX Association. As a result of this clearance process, IPRs directly related with the specification will be included in the so called free list, i.e. will be available free of charge for the KNX Association members only for use in KNX certified products. Would any IPR not be authorized by its owner to be included in the free list, then the KNX Association would be obliged to change the contents of the specification or to renounce to the relevant specification. The IPR clearance process is expected to be closed for version 2.1 approximately 6 month after its publication.

Version 1.0 of the KNX Standard has already been submitted to the IPR clearance process, which ended successfully by the approval of the “free” and the “safe” list of IPRs by the KNX Association Board on May 9, 2003.

The clearance of Version 1.1 of the KNX Standard ended positive as well in April 2005, that of version 2.0 in July 2011.

The KNX Association cannot be held for responsible for the consequences of the IPR rights applied by any company on the contents of these KNX-Specifications during and after the clearance process.

For current information about the IPR clearance process, please contact the KNX Association.

## 2 Overview of Volumes and Parts

**Volume 1 “Primer”** shall give a general overview of the whole KNX system and philosophy, and will be useful to all people like product managers, developers, quality people, ... wanting to have a basic knowledge of the system. For the time being please refer to Chapter 3/1/1 “Architecture”.

**Volume 2 “Cookbook”** contains a development guide for manufacturers wishing to develop KNX compatible products on the basis of a number of commonly used and available KNX system components. This Volume 2 does not contain any specifications/requirements and is only intended as an aid for starting developers.

**Volume 3 “System Specifications”** is the whole KNX specification. It shall be used as a reference for hardware and software development of products. As such you need only to refer to the corresponding parts relevant for your development.

**Part 3/1 “Architecture”** outlines and interconnects the communication stack, the application environment and management features described in the next parts. It shows the various possibilities offered by the KNX specification.

**Part 3/2 “Communication Media”** specifies referring to the OSI-model the Physical Layer and Link Layer for each communication medium for which the KNX-system has been implemented.

**Part 3/3 “Communication”** bases on the OSI model for communication to give the requirements for the implementation of a KNX compliant communication stack (common kernel) from Network Layer upwards.

**Part 3/4 “Application Environment”** defines the KNX specific environment on top of the communication stack for application development.

**Part 3/5 “Management”** draws the specifications for management server features in the devices and management client features within the different configuration modes.

**Part 3/6 “Standard Interfaces”** gives the standardised environment in which application programs may reside: the routines provided by a number of defined flavours of the Application Programmer's Interface and the hard- and software features of the Physical External Interface.

**Part 3/7 “Interworking”** defines the rules to be followed to build devices and applications able to interwork with other manufacturers' products within the world of KNX certified products.

**Part 3/8 “KNXnet/IP”** defines the use of the KNX protocol on top of the IP protocol. This feature is particularly useful to link and/or extend the KNX network with this now worldwide used communication means. This specification covers all the functionalities for communication, management and remote actions, making KNX networks accessible from “anywhere in the world”.

**Volume 4 “Hardware Specifications and Tests”** provides you with the constructional requirements for KNX devices, dealing mainly with Electrical, Functional, Environmental Conditions and Quality features needed to comply with the KNX certified design quality level.

**Part 4/1 “Hardware Requirements for KNX products”** lays down hardware requirements to be met for KNX certification by any KNX product. The requirements are based on European standardisation and fix the obligatory use for hardware certification of the European family standard for Home and Building Electronic Systems EN 50491-x in conjunction with an appropriate product standard.

**Part 4/2 “Safety and Environmental Requirements EMC Test Setup”** is intended as a further elucidation of the EN50491-x and a support for manufacturers while testing compliance of bus products to the EMC requirements of the before-said standard.

**Part 4/3 “Assessment and Test of Electrical Safety”** is intended to support the manufacturer while assessing the compliance of developed bus products to electrical safety requirements. This part amongst others provides a test report form for electrical safety and guidelines for execution of the high voltage tests.

**Part 4/4 “Installation Safety Requirements”** lays down requirements, which have to be taken into account when installing a (Twisted Pair) bus system.

**Volume 5 “Certification”** defines the necessary requirements, steps, and procedures to obtain from the KNX Association the granting of the KNX marking for products or services. It will be particularly useful for people in charge for obtaining the KNX mark.

### **Volume 6 “Profiles”**

Each profile defines a set of minimum requirements for each of the system specifications categories, enabling development and certification of KNX certifiable devices and systems.

Profiles are certification relevant, as only devices or systems compliant to at least one profile may be KNX certified.

### **Volume 7 “Application Descriptions”**

This Volume describes the functional blocks (FB) specifications for the use in the various application fields. Part 7/1 “Common Functional Blocks” specifies FB of common use, mandatory for certification, if used in an application. They have been submitted for approval as KNX standard specification.

Some of the functional blocks specified in the next Chapters are marked as Working Group Interworking Approved: these become Approved Standard after having gathered the necessary experience with these specifications in the field.

### **Volume 8 “System Conformance Tests”**

#### **Part 8/1 “Introduction”**

This chapter gives the overall guidelines for testing.

**Part 8/2 “Medium Dependent Layers Tests”** contains test specifications for the media on which the KNX protocol has been implemented. These test specifications are especially related to the various physical layer implementations and their respective Link Layer Medium Access Units.

**Part 8/3 “Medium Independent Layer Tests”** contains test specifications for the KNX protocol stack layers, i.e. for those independent of a physical layer implementation. These test specifications especially relate to the KNX Link Layer, Transport Layer, Network Layer and Application Layer.

#### **Part 8/4 and 8/5 Empty**

**Part 8/6 “Application Interfaces Tests”** contains test specifications for the Standardised Interfaces.

**Part 8/7 “Interworking Tests”** contains test specifications for the defined KNX Interworking Standards.

**Test suite supplements** cover testing of specifications related to some distinct system features.

### **Volume 9 “Standardised Components and Devices and Tests”**

**Part 9/1 “Cables and Connectors”** describes the requirements and tests for certification of standardised and non-standardised KNX cables and connectors.

**Part 9/2 “Basic Components”** contains the requirements and tests for certification of standardised and non-standardised KNX basic components.

**Part 9/3 “Couplers”** includes requirements and tests for certification of standardised KNX interfaces and couplers.

**Part 9/4 “BCUs and BIMs”** contains the requirements and tests for all currently available and standardised Bus Coupling units and Bus Interface Modules (in their various mechanical constructions).

**Volume 10: “Application Domain specific Standards”**

This Volume describes the specifications for use in specific application fields.

This is mainly the HVAC Easy Extension (HEE) part, designed especially for complex application fields like HVAC.