SIEMENS

Thread Border Router, KNX IoT/Thread

OCT110.BR

Thread Border Router

- Wireless & wired communication with KNX IoT via Thread & Ethernet
- Seamless protocol bridging between Thread based wireless networks and Ethernet based infrastructure
- Operates as a Thread Border Router or Mesh Extender, enabling scalable and resilient mesh networking
- Ensures deterministic and low-latency communication within the Thread mesh topology
- Compatible with all Siemens KNX IoT over Thread devices
- Easy mounting on walls or ceilings using included mounting accessories
- Mains power supply via USB-C (DC 5 V)
- International power adapter (AC 100...240 V) included in package
- Dimensions: 76 × 76 × 29 mm

Use

The Thread Border Router OCT110.BR enables bidirectional IoT communication between Thread (IEEE 802.15.4) and Ethernet (IEEE 802.3) networks, facilitating seamless integration of Siemens KNX IoT over Thread devices into local IP-based infrastructures, edge controllers, and conventional building automation systems.

The Thread Border Router is commonly used in various application types, including:

- Office buildings
- Educational buildings
- Public buildings
- Hospitality buildings
- Healthcare buildings

Functions

Protocol bridging

The Thread Border Router enables seamless protocol bridging between Thread-based wireless networks and Ethernet-based infrastructure via integrated Thread (IEEE 802.15.4) and Ethernet (IEEE 802.3) interfaces. The application layer protocol (e.g., KNX IoT) remains consistent across both media, ensuring interoperability and minimal commissioning overhead.

Status indication

Equipped with three dedicated status LEDs, the device provides clear visual feedback on:

- Operational status
- Backbone (Ethernet) connectivity
- Thread network connectivity

Thread Mesh Extender (TME) mode

The device can be switched to Thread Mesh Extender mode via push button when in ex-factory or factory reset state, allowing flexible deployment in mesh network topologies.

Firmware update

The device supports over-the-air (OTA) firmware updates. Update the device to the latest firmware version during commissioning.

Cybersecurity

Enables end-to-end encryption and authentication for all KNX IoT communications. All telegrams are digitally signed and encrypted, ensuring data integrity and confidentiality. Security mechanisms apply to both ETS-based commissioning and runtime communication between devices and visualizations.

REST API

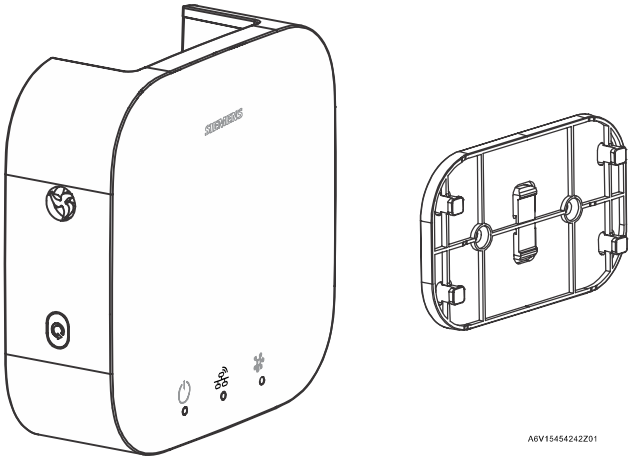
Provides a secure RESTful API (e.g., HTTPS) for managing the Thread network. This interface enables integration with software tools, edge devices, and automation controllers for advanced network diagnostics and control.

Mechanical design

The Thread Border Router is designed for wall and ceiling mount.

The device consists of two parts:

- Plastic housing including electronics
- Mounting plate



Type summary

Product number	SSN NO.	Operating voltage	Communication
OCT110.BR	S55812-Y103	USB-C (DC 5 V)	KNX IoT via Thread and Ethernet

Delivery

When ordering, specify name and product number, e.g.: Thread Border Router OCT110.BR.

Packaging content

Name	Quantity
Thread Border Router	1
International power adapter	1
Mounting plate	1
Mounting instructions	1
Set of screws and dowels	1

Equipment combinations

Device type	Product NO.	SSN NO.
Edge Controller	CXE200	S55842-Z135-A100
KNX IoT Router	OCT200.KNR	S55812-Y107
Wireless Room Sensors	QAA2890/WI QFA2890/WI QPA2892/WI	S55720-S550 S55720-S551 S55720-S552
Wireless Room Unit	QMA230KT	S55720-S626
Wireless Radiator Actuator	SSA911.02TH	S55181-A102

Product documentation

Title	Document ID
Basic documentation	A6V13841252
Mounting instructions	A6V15299327
Operation manual	A6V14033966
Planning and installation guide	A6V14476178
Environmental product declaration	A5W01923527A
CE declaration of conformity	A5W02628233A
UKCA declaration of conformity	A5W02628234A

Related documents such as the environmental declarations, declarations of conformity, etc., can be downloaded from the following Internet address:

www.siemens.com/bt/download

Notes

Safety

⚠ CAUTION

National safety regulations

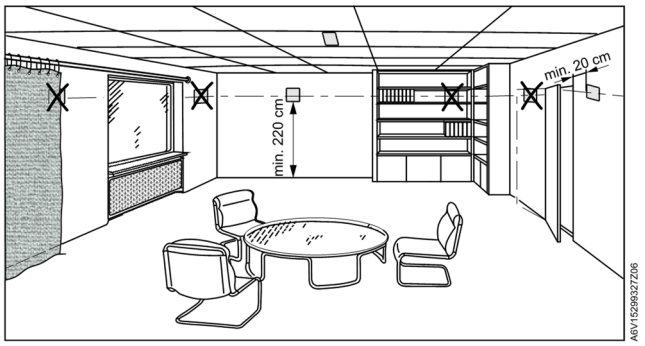
Failure to comply with national safety regulations may result in personal injury and property damage.

- Observe national regulations and comply with the appropriate safety regulations.

NOTICE	
!	**Radio frequency energy** Interference to radio communications ● Install and use equipment in accordance with the installation guide. ● Read all regulatory compliance information.

Mounting

Location



- The device is designed for wall and ceiling mounting.
- Install indoors (device is not suitable for outdoor use); do not install in recesses, behind curtains, above or close to heat sources or shelves, and not on walls where a chimney is located. Do not expose the unit to spotlights or direct sunlight.
- Do not install the device in a cabinet or metal container.
- Install the Thread Border Router about 2.2 m above the floor and at least 20 cm from the next wall or the door.

NOTICE	
!	See Mounting instructions (A6V15299327) for detailed instructions on how to mount the device.

Maintenance

Software update

Do not power off the device while updating as this may damage the device or cause data loss.

Disposal

	This symbol or any other national label indicates that the product, its packaging, and, where applicable, any batteries may not be disposed of as domestic waste. Delete all personal data and dispose of the item(s) at separate collection and recycling facilities in accordance with local and national regulations. For additional details, refer to Siemens information on disposal.

Warranty

Technical data on specific applications are only valid together with Siemens products listed under "Equipment combinations". Siemens rejects any and all warranties in the event that third-party products are used.

Power adapter

Input characteristics	
Input voltage	AC 100...240 V
Input frequency	50...60 Hz
Input current	Max. 0.8 A at AC 100/240 V input & load 1 A
Standby power consumption	≤ 0.1 W at AC 240 V input & no load

OCT110.BR

Power supply	
Operating voltage	DC 5 V
Power consumption	• Max. 5 W • Average – TBR mode: 180 mA – TME mode: 64 mA

Output characteristics	
Output voltage	DC 5 V
Representative current	1 A
Turn on delay time	Max. 3 seconds at AC 100 V & max. load

Cable length	
Material	PVC soft + (ABS + PC) + Cu + FR4
Color	White
Cable length	1.5 m
Dimensions	ϕ3.5 mm
Weight without package	151.9 g

Radio communication	
Frequency range	2.4...2.485 GHz
Maximum transmission power	11 dBm (Thread)

Radio communication	
Protocol	KNX IoT via Thread
MAC protocol	IEEE 802.15.4
Thread channels	11...26

Communication range	
Distance (line of sight) ● Thread Border Router and end device	 ● Max. 50 m *

* Communication range is based on tests conducted in a Siemens testing environment. The actual range may vary depending on building structure and environmental conditions.

Interface	
Ethernet Type Cable Interface type Bit rates	 RJ45 CAT 5 or CAT 5e, non-shielding 100BASE-TX, IEEE 802.3 compatible 10/100 Mbps, auto-sensing

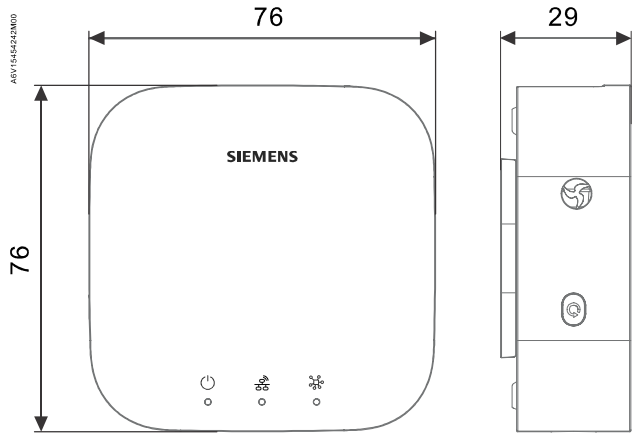
Ambient conditions and protection classification	
Protection degree of housing	IP30 according to EN60529
Protection class against electric shock OCT110.BR Power adapter	According to EN60730 III II
Environmental conditions Storage Climatic conditions Temperature Humidity Mechanical conditions Transport Climatic conditions Temperature Humidity Mechanical conditions Operation Climatic conditions Temperature (housing with electronics) Humidity Mechanical conditions	 -25...+70 °C 5...95 % r. h. (non-condensing) Class 2M4 -25...+70 °C 5...95 % r. h. (non-condensing) Class 2M4 0...50 °C 5...95 % r. h. (non-condensing) Class 3M11

Standards, directives and approvals	
Product standards	EN IEC 63000 EN 300 328 EN 55032 EN 55035 EN IEC 61000-3-2 EN 61000-3-3 EN IEC 63044-5-1 EN IEC 63044-5-2 EN IEC 62368-1 EN 301 489-1 EN 301 489-17 EN IEC 62311 EN 50563 EN 18031-1 EN IEC 63044-5-3 IEC 63044-3
Electromagnetic compatibility (Applications)	For use in residential, commercial, light-industrial, and industrial environments
EU conformity (CE)	A5W02628233A *)
UKCA conformity	A5W02628234A *)
RoHS	Directive 2011/65/EU restriction on the use of certain hazardous substances in electronic equipment
Environmental compatibility	The product environmental declaration (A5W01923527A *) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

General	
Material	ABS
Color	White (RAL9016)
Packaging	Corrugated cardboard
Dimensions	76 × 76 × 29 mm
Weight including packaging Weight excluding packaging	293 g 88 g (without power adapter)

*) The documents can be downloaded from http://siemens.com/bt/download.

Dimensions



Dimensions in mm

Regulatory compliance information

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation

FCC Caution: Changes or modifications not expressly approved by Siemens Switzerland Ltd. could void user authority to operate the equipment. United States representative https://new.siemens.com/us/en/products/buildingtechnologies/home.html

IC Statement

This device complies with Industry Canada license-exempt RSS standard(s).

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le present appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisee aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioelectrique subi, meme si le brouillage est susceptible d'en compromettre le fonctionnement.

Radiofrequency radiation exposure statement

This equipment complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

Déclaration d'exposition aux rayonnements de radiofréquence

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

Ce transmetteur ne doit pas être placé au même endroit ou utilisé simultanément avec un autre transmetteur ou antenne.

United Kingdom conformity assessed

Contact for regulatory topics: (GB) Siemens plc, Sir William Siemens House, Princess Road, Manchester, M20 2UR

Radio equipment directive

Simplified EU Declaration of Conformity

Hereby, Siemens Switzerland Ltd declares that the radio equipment type OCT110.BR is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: https://siemens.com/bt/download.

Issued by
Siemens Switzerland Ltd
Smart Infrastructure
Global Headquarters
Theilerstrasse 1a
CH-6300 Zug
+41 58 724 2424
www.siemens.com/buildingtechnologies

Document ID A6V15454242_en--_c
Edition 2025-11-12