

Anchor 9 (Model-no.: A010002) - User Manual

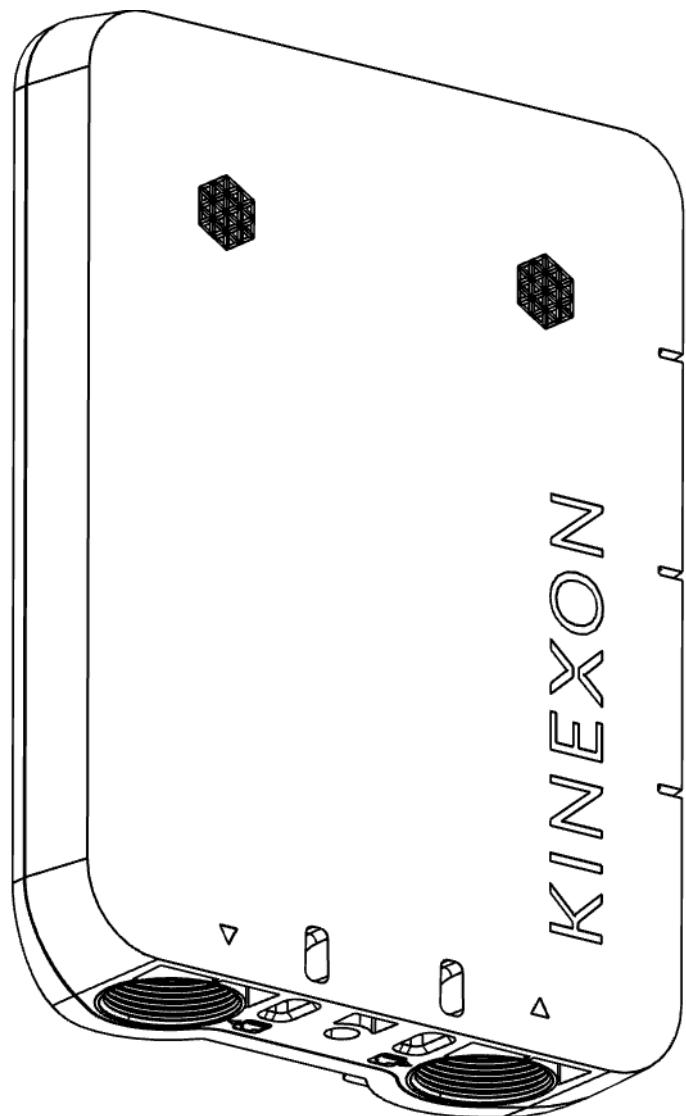
Product Management

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Table of Contents

1	KINEXON Anchor 9	5
1.1	Intended use.....	5
1.2	Introduction	5
1.3	Facts / Factsheet	5
2	Keyfacts.....	9
2.1	RF specification	9
2.2	Physical specification.....	9
2.3	Environmental specification.....	10
3	Specification	12
3.1	Mechanical drawing.....	12
3.2	Label	12
3.2.1	Label size.....	12
3.2.2	Label content.....	13
3.3	External interfaces	13
3.3.1	Wireless interfaces	13
3.3.1.1	Ultra-Wideband (UWB)	13
3.3.1.2	Bluetooth low energy (BLE) (optional - enable/disable by SW)	13
3.3.2	LED.....	13
3.3.3	Wired interfaces	15
3.3.3.1	Power over Ethernet	15
3.4	Electrical Parameter	16
3.5	Variants	16
4	Accessories.....	17
4.1	MikroTik.....	17
4.2	Threads for tripods	18
4.3	Cable glands.....	18
4.4	Cable caps	19

5	Regulatory and legal information.....	20
5.1	Disclaimer.....	20
5.2	For the US market only	20
5.2.1	FCC compliance.....	20
5.3	For the Canadian market only	21
5.3.1	ISED Compliance.....	21
5.3.2	Important Notice	22
5.4	Safety information	22



1 KINEXON Anchor 9

1.1 Intended use

This manual describes the setup and use of the KINEXON Anchor 9. Use this product only for the purpose it was designed for.

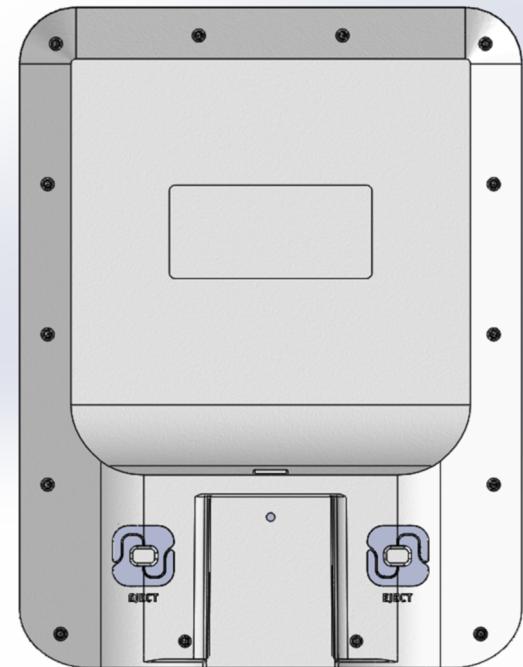
1.2 Introduction

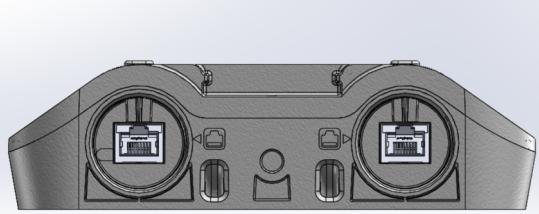
1.3 Facts / Factsheet

Countries	<ul style="list-style-type: none"> • EU • UK • US • (CAN)
KINEXON device	<ul style="list-style-type: none"> • KNX-A1.9-3.1-x
Model-number	A010002
Product Marketing Name (PMN)	Anchor 9
Hardware Version Identification Number (HVIN)	A010002
Manufacturer	KINEXON GmbH
Manufacturer address	<p>Schellingstr. 35 80799 Munich GERMANY</p>
UWB channel(s) / frequency range	<ul style="list-style-type: none"> • Channel 3: 4.5 GHz (4.25 to 4.75 GHz) • Channel 5: 6.5 GHz (6.25 to 6.75 GHz) • Channel 9: 8.0 GHz (7.75 to 8.25 GHz)

Additional wireless interfaces	<ul style="list-style-type: none">• Bluetooth module BT840F• FCC ID: X8WBT840F• IC: 4100A-BT840F
Additional information	<ul style="list-style-type: none">• 1x Power-over-Ethernet PD (PoE class 8)• 1x PoE PSE (for daisy-chain) (PoE class 7)

Photos / drawings / factsheet





2 Keyfacts

2.1 RF specification

RF Specification	
Positioning Principle	Real Time Location System (RTLS), Radio-based, Ultra-Wideband (UWB)
Positioning Update rate	Depending on system configuration; up to 500 Hz
Frequency range	<p>UWB (IEEE 802.15.4a):</p> <ul style="list-style-type: none"> • Channel 3: 4.5 GHz (4.25 to 4.75 GHz) • Channel 5: 6.5 GHz (6.25 to 6.75 GHz) • Channel 9: 8.0 GHz (7.75 to 8.25 GHz) <p>Bluetooth low energy (BLE5, IEEE 802.15):</p> <ul style="list-style-type: none"> • 2.4 GHz
Measuring precision	Depending on system configuration

2.2 Physical specification

Physical Specification	
Indicators	3x RGB side-LEDs for status information
External Power Supply	<p>Power over Ethernet (IEEE 802.3bt-2018 (type 4)):</p> <ul style="list-style-type: none"> • 1x PoE PD class 3 to class 8 (powered device) • 1x PoE PSE up to class 7 (power sourcing equipment), • Voltage: 52 V / 4-pairs

Physical Specification	
Material	<ul style="list-style-type: none"> • Luran S 778T • TPE (button)
Weight	appr. 500 g (depending on configuration, e.g. cable glands)
Dimensions	appr. (175 mm x 230 mm x 48 mm) - without cable glands

2.3 Environmental specification

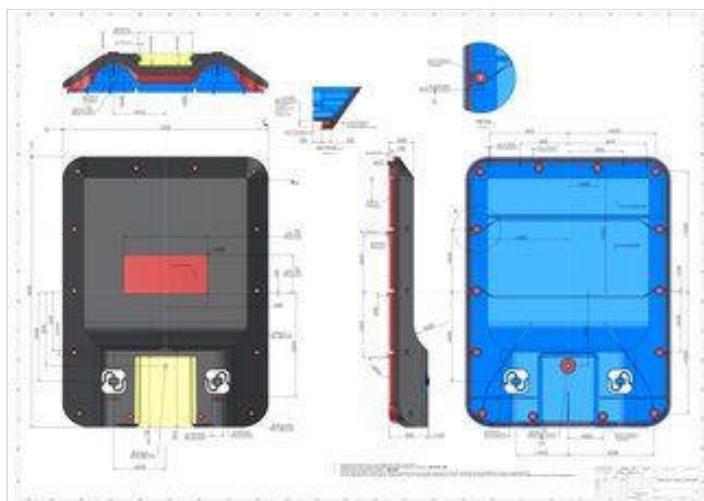
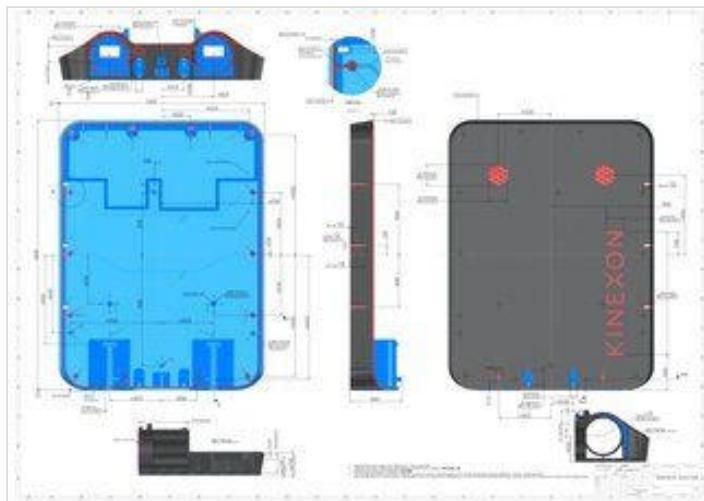
Environmental Specifications	
Operating Temperature	0 °C to +50°C
Storage Temperature	tbd.
Protection Class	IP56 with cable glands IP22 without cable glands

Environmental Specifications

Regulatory Compliance	<p>EU</p> <p>EN 301 489-17 V3.2.4 EN 301 489-33 V2.2.1 EN 300 328 V2.2.2 EN 62479:2010 EN 302 065-1 V2.1.1</p> <p>FCC/ISED</p> <p>FCC §15.517 dated Nov 2023 FCC §15.247 dated Nov 2023 FCC 15B dated Nov 2023 KDB 447498 dated Aug 2023 RSS-220 issue 1 RSS-247 issue 3 ICES-003 issue 7 RSS-102 issue 6</p> <p>Safety</p> <p>IEC 62368-1:2018/COR1:2020; EN IEC 62368-1:2020+A11:2020; IEC 62368-3:2017</p> <p>Anchor 9 FCC ID: 2ALC5-KNX-A9-1 Anchor 9 IC ID: 25557-KNXA91</p>
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3 Specification

3.1 Mechanical drawing



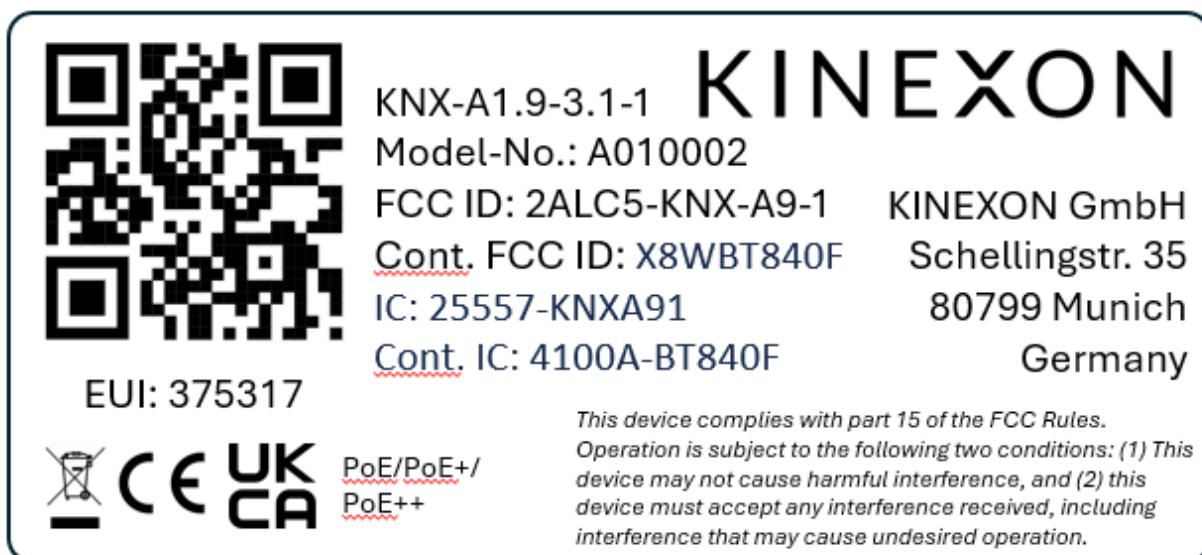
3.2 Label

3.2.1 Label size

max. 32.0 mm x 70.0 mm

3.2.2 Label content

Example:



3.3 External interfaces

3.3.1 Wireless interfaces

3.3.1.1 Ultra-Wideband (UWB)

For wireless connection to the sensors a Ultra-Wideband (UWB) interface according to IEEE 802.15.4 standard is implemented.

3.3.1.2 Bluetooth low energy (BLE) (optional - enable/disable by SW)

As second wireless interface a Bluetooth module according to IEEE 802.15 is implemented in the Anchor 9 design. That feature can be activated / deactivated by SW.

3.3.2 LED

3 RGB-LEDs are used in the Anchor 9 design. All LEDs were used to show different status information of the device.

- Top LED

- Status information of integrated System-on-Module (SoM)

Color	Pattern	Function / Indication	Additional Notes
Green	On	System has booted correctly.	-
	Blinks	Something has gone wrong during system boot.	Please contact KINEXON customer support for a replacement
	Off (for long time)	System did not boot	Please contact KINEXON customer support

- Middle LED
 - Shows status information of the system

Color	Pattern	Function / Indication	Additional Notes
Teal	Off	Sleep	
	Flushing	Active	

- Bottom LED
 - Indicates output port status information

Color	Pattern	Function / Indication	Additional Notes
Yellow	On	PSE enabled Ethernet Out Port Inactive/ Unconnected Clock TX disabled	
	Blinks (*)	PSE disabled Ethernet Out Port Inactive/ Unconnected Clock TX disabled	

Color	Pattern	Function / Indication	Additional Notes
Blue	On	PSE enabled Ethernet Out Port Active/Connected	"KINEXON blue" -> Normal operation mode in a wired sync setup
	Blinks (*)	PSE disabled Ethernet Out Port Active/Connected	
Green	On	PSE enabled Ethernet Out Port Active/Connected	
	Blinks (*)	PSE disabled Ethernet Out Port Active/Connected	
Purple	On	PSE enabled PSE Stress load enabled	
	Blinks (*)	PSE disabled PSE Stress load enabled	
Red	Alternate Blinking between solid red, and other color/pattern (changes every 5 seconds)	PSE Stress Load overheat detected . Stress load deactivated.	
(*) Blinking status side LED indicates disabled PSE regardless of color			

3.3.3 Wired interfaces

3.3.3.1 Power over Ethernet

A standard Ethernet interface according to IEEE 802.3bt-2018 (type 4) is implemented. Max. data rate is 100MBit/s full-duplex. RJ45 connectors are used for the connection from and to the Anchor 9.

3.4 Electrical Parameter

Interface	Parameter [Unit]	Min	Typ	Max	Comment
Power over Ethernet	V	41.1		57.0	

3.5 Variants

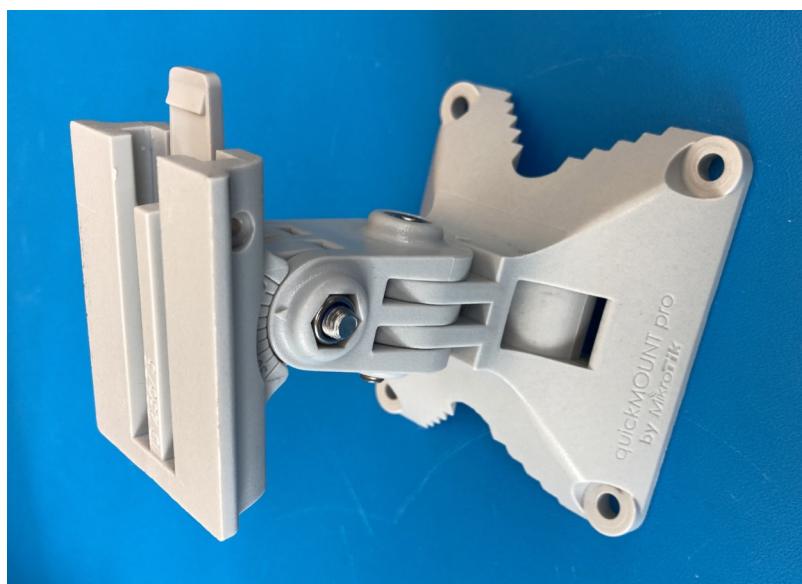
Variant	Description
KNX-A1.9-3.1-x	

4 Accessories

4.1 MikroTik

To mount the Anchor 9 on a wall or pillar an additional accessory can be used:

The quickMOUNT pro (QMP) holder of the company MikroTik. The Anchor 9 has the counterpart of that holder implemented in the enclosure.



Specification:

Product code	QMP
Dimensions	95x88x112mm
Tube diameter	35mm
Max. tube diameter to which mount can be attached	65mm
Max. antenna load	1.5kg
Max. wind load	100N

Material	anvINVITE
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Remark: Be careful with mounting that type of holder in an oily atmosphere - double check material data

4.2 Threads for tripods

An 1/4" thread insert for standard tripods is also used as mounting option. That mounting option is good for temporary deployments in sports.



4.3 Cable glands

To ensure watertightness of protection class IP56 cable glands are necessary.



(M32 Nylon black, 15 mm / 21 mm, IP66, IP68)

4.4 Cable caps

To ensure watertightness of protection class IP56 for a stand alone Anchor 9 a cable cap is necessary for the 2nd Ethernet interface (PSE for other Anchor 9 devices in a chain).



5 Regulatory and legal information

5.1 Disclaimer

The information in this document is subject to change without notice. KINEXON GmbH assumes no responsibility for inaccuracies or omissions and specifically disclaims any liabilities, losses, or risks, personal or otherwise, incurred as a consequence, directly or indirectly, of the use or application of any of the contents of this document. For the latest documentation, contact KINEXON GmbH.

5.2 For the US market only

5.2.1 FCC compliance

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.

The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device may not be employed for the operation of toys. Operation onboard an aircraft, a ship or a satellite is prohibited.

The use of this device mounted on outdoor structures, e.g., on the outside of a building or on a telephone pole, or any fixed outdoors infrastructure is prohibited.

Note: 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 to 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.

Moreover, the following statements apply:

Note: This equipment may only be operated indoors. Operation outdoors is in violation of 47 U.S.C. 301 and could subject the operator to serious legal penalties.

At any time, a minimum separation of 20 cm must be maintained from the operating device and any person or persons.

The KINEXON Receiver will only operate (i.e. transmit UWB signals) when activated within a KINEXON network. The operator must be able to exercise control of the device at all times.

This network needs to be professionally installed, and must be configured to cover only the volume indoors, preventing the KINEXON Receiver from emitting UWB signals outdoors. Contact KINEXON GmbH if you are unsure about the extent of coverage of your network system.

User information according to FCC 15.19

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

(1) This device may not cause interference.

(2) This device must accept any interference, including interference that may cause undesired operation.

User information according to FCC 15.21

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment may only be operated indoors. Operation outdoors is in violation of 47 U.S.C. 301 and could subject the operator to serious legal penalties.

5.3 For the Canadian market only

5.3.1 ISED Compliance

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

(1) This device may not cause interference

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) L'appareil ne doit pas produire de brouillage;

(2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement

A tout moment, une distance minimale de 20 cm doit être maintenue entre l'appareil de commande et toute personne.

5.3.2 Important Notice

This equipment may only be operated indoors. Operation outdoors is in violation of 47 U.S.C. 301 and could subject the operator to serious legal penalties.

At any time, a minimum separation of 20 cm must be maintained from the operating device and any person or persons.

The KINEXON Anchor 9 will only operate (i.e. transmit UWB signals) when activated within a KINEXON network. The operator must be able to exercise control of the device at all times.

This network needs to be professionally installed, and must be configured to cover only the volume indoors, preventing the KINEXON Receiver from emitting UWB signals outdoors. Contact KINEXON GmbH if you are unsure about the extent of coverage of your network system.

5.4 Safety information

- Read and follow all instructions before using the KINEXON Anchor 9 device.
- Never open the case of the KINEXON Anchor 9. There are no user serviceable parts or replaceable parts inside the case.
- Do not use the KINEXON Anchor 9 if it has been damaged.