# Installation manual for OneBASE Pico Node B, IP version

## Contents

# 1 Document Data

## *1.1 Revision History*

| Ver. | Date | Author | Reviewers *(FR indicated)* | Comments |
|---|---|---|---|---|
| 1 | 2006-10-13 | Åke Jernberger | A. Declercq | Created when splitting DOC001/DE01 into a “installation manual” (this document) and a dedicated“ commissioning manual” |
| 2 | 2007-01-12 | Erik Blom | Å Jernberger, Erik Blom(FR) | Added information needed for safety approval in Nordic Countries. |
| 3 | 2011-10-07 | Mats Arnebjer | Peter Wahlström | Only IP versions |
| 4 | 2012-10-09 | Mats Arnebjer | Peter Wahlström | Correction updates |

## *1.2 References*

| Reference | Doc no | Title |
|---|---|---|
| [Pico-description] | DOC001/DE04 | “Description OneBASE Pico Node B” |
| [O&M-manual] | DOC001/DE02 | “Operation and maintenance manual for OneBASE Node B” |
| [LMT-manual] | DOC001/DE03 | “Manual for Local maintenance tool for OneBASE Node B” |
| [office-data-manual] | DOC001/DE05 | “Office data parameters for OneBASE Node B” |
| [alarm-list] | DOC001/DE08 | “OneBASE Node B alarms” |
| [commissioning-manual] | DOC001/DE11 | “Manual for commissioning of OneBASE Node B” |

# 2 General

## *2.1 About this manual*

This manual describes installation and maintenance of OneBASE™ Pico Node B. The manual is intended for on-site installation and maintenance personnel.

## *2.2 CE conformance*

Hereby, CommScope, declares that this OneBASE™ Pico Node B is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

## *2.3 FCC*

### 2.3.1 Part 15 – Class B digital device or peripheral

This equipment has been tested and found to comply to with the limits for 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 of 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 in connected. –Consult the dealer or an experienced radio/TV technician for help.

## *2.4 Safety and warnings*

The safety information provided in this manual is a supplement to local regulations and is only valid for the OneBASE™ Node B. Any other equipment supplied by CommScope or any local supplier may have its own safety instructions. Study all instructions carefully before starting work.

### 2.4.1 General

**CAUTION**

**Make sure that local regulations on safety and installation methods are known and followed.**

**Note: Failure to follow the requirements, instructions or local regulations may void the product warranty and may expose the equipment owner or the service provider to legal and financial liabilities.**

**CommScope and its resellers or distributors are not liable for injury, damage or violation of regulations associated with the installation of the equipment in breach with instructions or local regulations.**

### 2.4.2 High voltage

**WARNING**

**Improper mains power installation may cause fire or electrical shock. Only a qualified and authorized electrician is permitted to install or modify the mains installation.**

### 2.4.3 Electromagnetic radiation

The OneBASE™ internal antenna transmits radio energy during normal operation.

The output power is less than 250 mW and the energy level even at close distance is well below the recommended exposure limits for the general public.

The safety distance to fulfill the occupational exposure limits (OEL) is 0.2 m. This means that it is recommended to not stand or work closer than 0.2 m from the front of the internal antenna for extended periods of time.

### 2.4.4 Equipment alterations

**Note: The casing of the OneBASE™ Node B unit may on no occasion be opened. In case the sealing has been broken CommScope voids the product warranty and assumes no responsibility of the safety.**

**Note: The OneBASE™ Node B may not be covered, painted, or altered in any way. Ensure sufficient airflow for ventilation.**

# 3 Product overview

## *3.1 General*

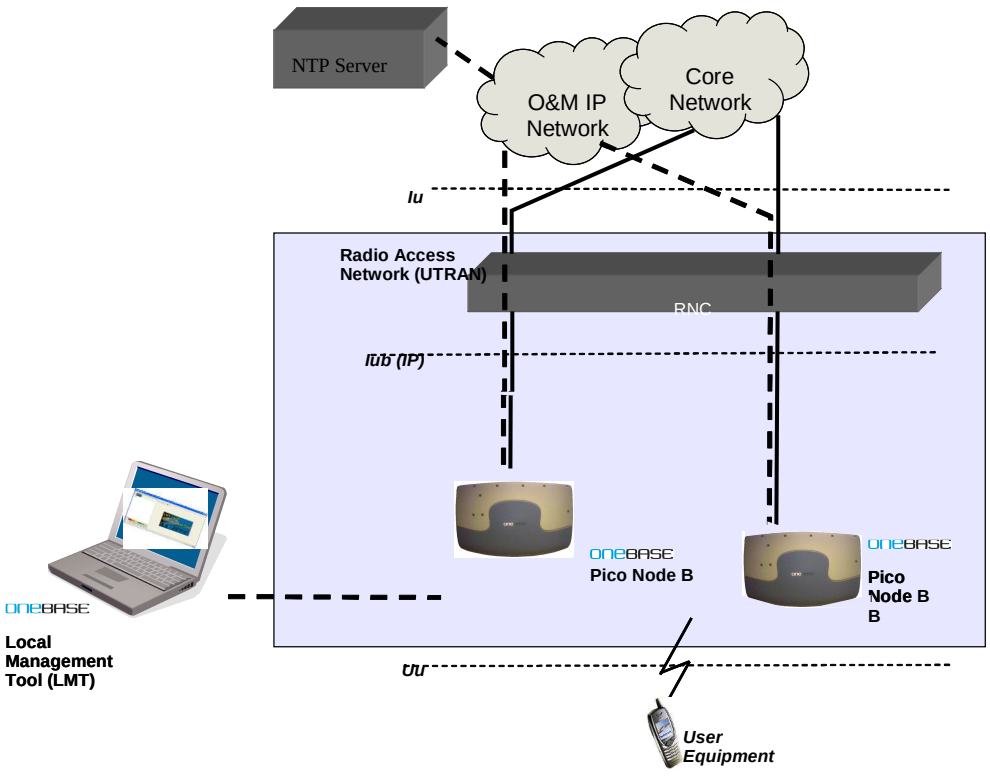
OneBASE™ Pico Node B is a complete pico cell radio base station intended to enhance coverage and increase capacity in 3G (UMTS) systems. The OneBASE™ Pico Node B connects to the UTRAN system using the Iub interface.

If the UTRAN operation and maintenance system (OMC) has integrated support for OneBASE™ Node B, then this can be used for centralized operation and maintenance.

Local configuration is handled with the Local Management Tool – LMT. The LMT runs on a standard portable PC and is connected directly to an OneBASE™ Node B unit through an Ethernet interface.

For remote control it is possible to use an LMT via the same IP network as would be used for used centralized operation and maintenance.

An NTP (Network Time Protocol) Server is required in order to get the correct time in the Node B. Each Node B has an NTP client which fetches the correct time from the NTP Server.



## *3.2 Mechanical design*

OneBASE™ is designed for indoor use in both office environments and public areas like malls, airports, arenas, garages, etc. The compact size and light weight makes it easy to place. The power consumption is low and since it uses self-convection cooling it is completely noise free.

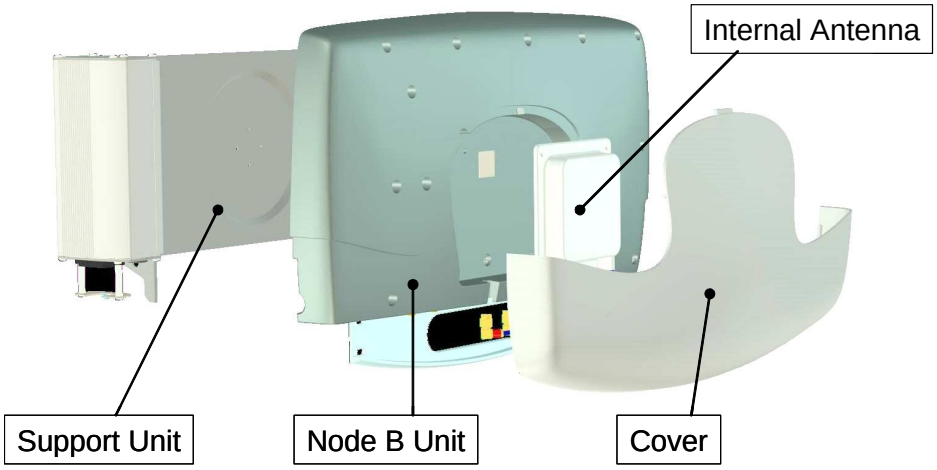
A complete OneBASE™ Pico Node B consists of:

- Node B unit
- Support unit, including AC/DC converter
- Internal antenna (optional)
- Cover
- Mains cable

The Node B unit contains all electronics and interface connectors. Integrated with the Node B unit is an optional internal antenna. External antennas may be used instead of the internal antenna, which then is omitted.

The support unit must always be used for mounting the OneBASE™ Node B unit to a wall. Optionally, mounting equipment for mounting in a ceiling or on a pole is available. The support unit includes an AC/DC converter and a mains cable with the mains end open or fitted with a protective earth plug.

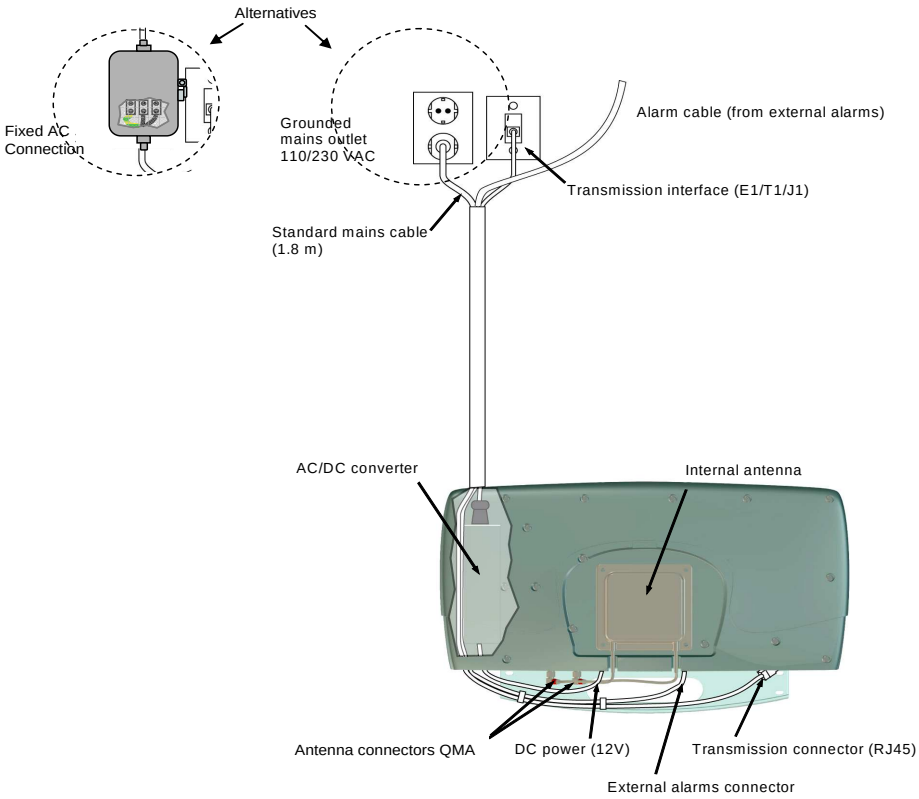
The purpose of the cover is to give OneBASE™ esthetical exterior with or without the optional internal antenna fitted. The color of the standard cover is light gray.




Installation overview

OneBASE™ is easy to install and maintain. The supplied support unit is typically screwed onto a wall and the Node B unit is hanged onto the support unit. The Node B unit is connected to a standard mains outlet and one or two transmission interface outlets.

Optional equipment may be ordered for mounting to the ceiling or on a pole.



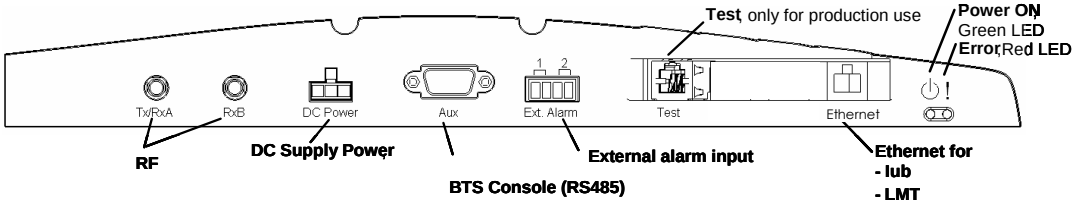

Configuration is done with the Local Management Tool (LMT), which is a software application on a standard portable PC connected through a standard Ethernet adapter directly to the OneBASE™ Node B unit. Initial configuration may be done before taking the OneBASE™ Node B unit to the installation site, or on site in connection with the hardware installation.

Periodic on site maintenance is normally not required.

## *3.3 Connectors and LEDs*

### 3.3.1 Front panel

The picture below shows the location of the OneBASE™ external connectors and LEDs




#### 3.3.1.1 Connectors

| Label | | Interface | Type of connector |
|---|---|---|---|
| Tx/RxA | Antenna connector A | Antenna RF, Tx/RxA | QMA |
| RxB | Antenna connector B | Antenna RF, RxB | QMA |
| DC-Power | Power supply | 12 V DC | Mini Fit JR |
| Aux | BTS consol | RS485 | DSUB-9 |
| Ext.Alarm | External alarms connector | | 4-pos terminal block |
| Test | Test (not used) | | RJ11 |
| Ethernet | Transmission connector | Ethernet 100 BASE-TX | RJ45 |

#### 3.3.1.2 LEDs

| Label | | Color | Description |
|---|---|---|---|
| Ethernet | Ethernet LED (in Ethernet connector) | Yellow | Steady light: Ethernet line connection established, no transmission<br>Flickering: When any transmitting or receiving Ethernet physical layer data frame is detected |
| ⏻ | Power ON | Green | Mains power ON |
| ! | Error LED | Red | Steady light: Node B faulty<br>Blinking: Node B software load failure (Node B in boot mode) |

# 4 Site preparation

## 4.1 Prerequisites

The site of the OneBASE™ Base Station should be planned in advance on the basis of radio coverage and capacity needs. Refer to relevant information for:

- Details on positioning of OneBASE™ and any external equipment and external antennas, including antenna direction(s).
- Earthed mains power source.
- Local Area Network, LAN.

Information on configuration details regarding parameters to set during commissioning of individual OneBASE™ Node B units.

## 4.2 Positioning

If the internal antenna is used, the desired coverage and direction of the antenna determine the positioning of the OneBASE™ Node B unit. With external antennas the OneBASE™ Node B unit can be positioned more freely.

**Note: Always use the supplied support unit to fit the OneBASE™ Node B unit, and always mount the support unit vertically for sufficient cooling.**

**Never mount the OneBASE™ Node B unit horizontally, even if the internal antenna is not used.**

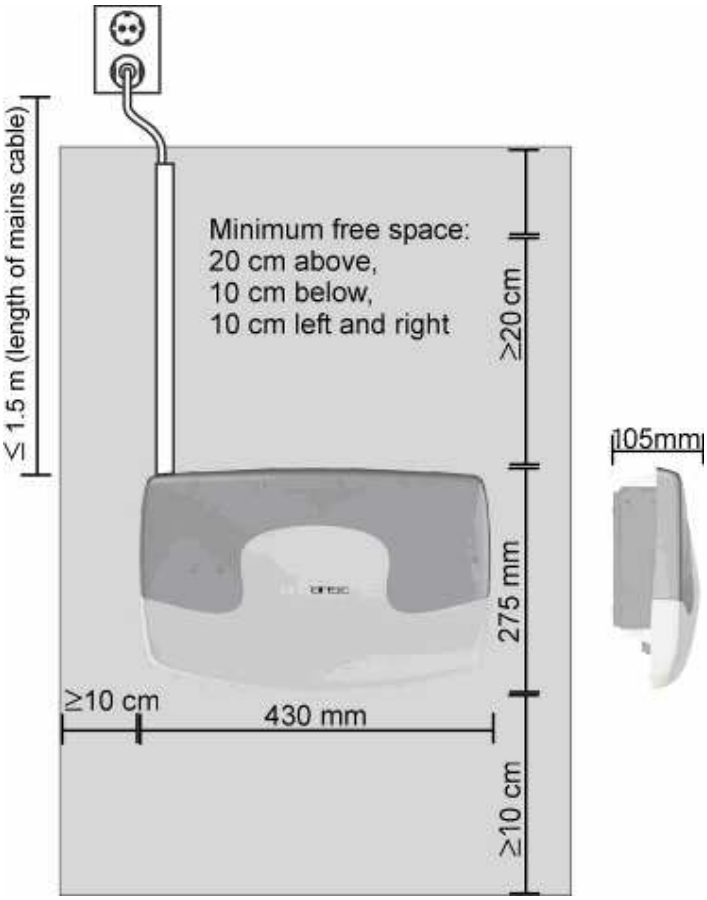
OneBASE™ is designed for "stationary use at weather protected locations". This means that it can be positioned in normal indoor environments like offices, hotels or shopping malls, but it may also be used in semi-indoor environments like train stations, subways, garages, etc. as long as the area fulfils the environmental requirements of OneBASE™. See *Environmental conditions* on page 13 for details.

The supplied support unit is used for fitting the OneBASE™ Node B unit on a wall. Optionally, mounting equipment for mounting in a ceiling or on a pole is available.

The Node B unit can be locked to the support unit by using a padlock.

The unit should be installed within reach of a Local Area Network access point and within reach of an earthed mains outlet. The unit is delivered with a power cord with or without connector. Cables can be inserted from top or bottom on the left side.

The minimum distances to any obstacles around the OneBASE™ Node B unit must be kept to ensure sufficient airflow for cooling. The cooling is of the self-convection type. No other cooling system is required if the environmental requirements are fulfilled. See *Environmental conditions* on page 13.




Make sure that the wall and wall anchors can stand the weight of the unit.

| **Positioning requirements** | |
|---|---|
| Mounting: | Fastened with screws to wall (standard). Ceiling or pole (optional) |
| Dimensions: | 430 x 275 x 105 mm (W×H×D) |
| Minimum free space: | 200 mm above, 100 mm below, 100 mm left and right. |
| Weight: | < 7kg |
| Distance from mains outlet: | 1.8 m (determined by the power cord) |

## *4.3 Environmental conditions*

OneBASE™ fulfils the environmental conditions stated in IEC 60 721-3-3 “Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 3: Stationary use at weather protected locations”, classes 3K4/3Z2/3Z7/3B1/3C2/3S2/3M4.

A subset of the environmental requirements is shown in the following table.

| Environmental requirements (subset of IEC 60 721-3-3) | |
|---|---|
| Ambient temperature: | -5 to +45 °C |
| Relative humidity: | <95% |
| Dust proof: | Yes, no impact on the operation. |
| Heat dissipation: | < 50W |
| Sealing class (according to EN 60529) | IP 30 Node B Unit<br>IP 51 Power Supply |

## *4.4 IP/Ethernet Transport*

The transport interface (Iub) on the OneBASE™ Node B is Ethernet over a twisted pair cable connected to a RJ45-socket. The socket has a yellow LED for transmission indication.

Make sure the site is equipped with a Local Area Network connection as close as possible to the OneBASE™ Node B.

The IP properties to be used must be configured during commissioning of the OneBASE™ Node B. See reference [commissioning-manual] and [office-data-manual].

The type of cable to use is a CAT5 or CAT6 twisted pair cable with symmetrical wiring and an impedance of 100 Ohm. Preferably use shielded cable. The pinning follows the standard for a RJ-45 port.

## *4.5 Mains power*

OneBASE™ is delivered with a mains cable with an IEC 60320 C15 connector in one end for connection to the AC/DC unit and either an open end or an AC Mains plug in the other end.

The site should be equipped with an easily accessible earthed AC mains outlet or an AC interconnect box with protective earth, as applicable, within range of the OneBASE™ Node B unit.

The unit must always be connected to protective earth.

### 4.5.1 Permanent AC Connection

If permanent mains installation is required:

1. Connect the unit to an AC interconnection box, instead of an AC mains outlet.
2. Lock the AC cable to the AC/DC converter as described below.

To lock down the connector at the AC/DC end of the cable for a permanent installation use the connector bracket.

- Open the bracket by loosening the screw closest to the output cable. Swing the bracket open to allow for the connector to be inserted.
- Insert the connector into the AC/DC unit.
- Swing back the bracket and tighten the screws.

Make sure that approved circuit breakers for the AC mains and the cross sectional areas of cables are selected in accordance with local laws and regulations.

**Note: Always use the AC/DC converter delivered with the support unit. No other converters are allowed.**

**DANGER**

**Improper mains power installation may cause fire or electrical shock.**

**Only a qualified and authorized electrician is permitted to install or modify the electrical installation.**

**The OneBASE™ Node B unit must always be connected to protective earth.**

| **Power requirements** | |
|---|---|
| Supply voltage: | 110/230 VAC ±10%, 50/60 Hz |
| Power consumption: | < 50 W |
| Cable length: | 1.8 m (supplied with OneBASE™) |

## *4.6 External alarms*

OneBASE™ is equipped with an alarm connector for connecting two external alarms. The type of alarms used must be configured by setting the name, function, and severity of the two alarms in the OneBASE™ Node B Office Data. See reference [commissioning-manual] and [office-data-manual]

By default the alarms are set to “Not used”.

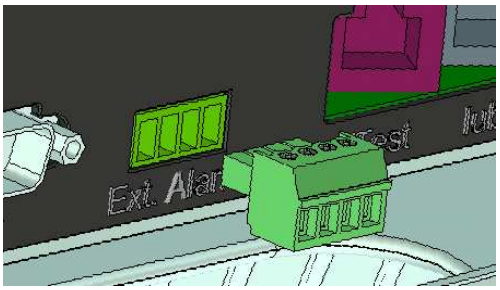
The alarm circuits can be defined as normally open or normally closed and when the alarm is activated an alarm notification is sent to NNM/OMC.

The alarm inputs are galvanic isolated.

External alarm trig points

| **Sensed impedance** | **State** | **Current/Voltage** |
|---|---|---|
| <200 Ohm | Closed | 10 mA (typical) |
| > 2 kOhm | Open | 3.0 V (typical) |

The supplied connector/plug is a 4-position terminal block connector (AMP 28513-4). Twisted pair cables should be used (2-wire or 4-wire). The wire ends are inserted into the plug and fixed with screws.



## *4.7 External antennas*

The OneBASE™ Node B unit may be used with external antennas. Since the unit includes duplex filters to provide receiver diversity, no external duplex filters are needed.

The OneBASE™ Node B unit is provided with two female QMA connectors. Antenna cables with angled (90°) male plugs should be used.

The type of cables to use depends on antenna gain, distance, acceptable loss etc. Refer to recommendations from antenna supplier.

**Note: Refer to instructions from the antenna supplier on how to install external antennas, antenna cables, and antenna distribution systems.**

**CAUTION**

**It is the responsibility of the network provider to implement prevention measures to avoid health hazards which may be associated to radiation from any external antenna connected to the unit.**

**External antennas may require lighting protection and/or over voltage protection. This is out of the scope of this manual.**

## *4.8 Other external equipment*

Other external equipment is for example booster, repeater, or antenna distribution systems. Refer to instructions from the supplier of this equipment

# 5 Installation

## 5.1 Prerequisites

Before beginning the installation of the OneBASE™ Node B unit, make sure that all materials are acquired, that is, the OneBASE™ Node B unit with it's mounting material, cables, tools and screws.

Site preparation should preferably be done in advance according to the previous chapter. However, the hardware installation may be done without transmission available.

## 5.2 Precautions

**CAUTION**

**Make a visual check of the safety of the site before starting any installation. If any risks are foreseen, do not proceed.**

**Make sure that the installation conforms to relevant national installation rules.**

## 5.3 Installation tools and material

The following tools and installation material are recommended. Other tools, equipment, or installation details may be required due to local conditions.

- Support unit for wall mounting, and possibly optional mounting kit for ceiling mounting.
- Screws and plugs for fitting the support unit to the wall (depending on type of wall). The recommended diameter of screws is 6 mm.
- Screwdriver suitable for the selected mounting screws.
- Drilling machine and drills suitable for the selected mounting screws and type of wall.
- Electrical Multi-meter, for checking the mains voltage.
- Earthed Mains plug to attach to cable end.
- Spirit level, for checking horizontal adjustment.
- Tools and material for running and/or fixing cables to wall or ceiling. For example wire straps, cable clamps, and cable grooves.
- Padlock (optional) for locking the Node B to the support unit, and thereby to the wall.

## *5.4 Unpacking*

Check the packaging for shipping damages on delivery. If there is any evidence of damage, do not proceed.

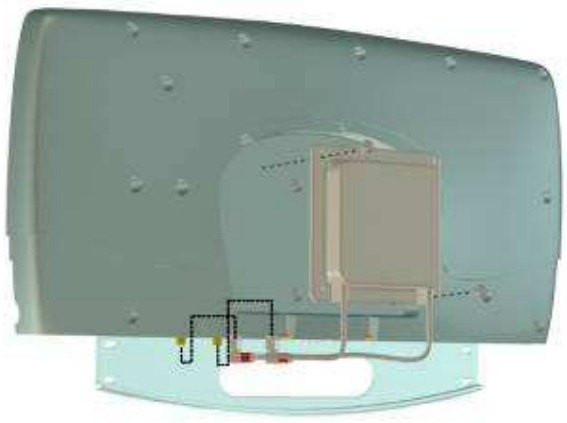
Unpack the equipment and make sure everything is included in the delivery:

- Node B unit, including:
  - Internal antenna (optional, separately packed)
  - Cover (separately packed)
- Support unit (mounting frame), including:
  - AC/DC converter (normally fitted to the Support unit)
  - Power cord, 1.8 m
- Pole mounting kit (optional)
- Ceiling mounting kit (optional)

The Node B unit and the AC/DC converter is marked with a serial number for identification.

### 5.4.1 Installing the internal antenna (optional)

1. Place the antenna in the grove one the Node B unit so that the holes lines up.
2. Fasten the antenna onto the Node B unit with the supplied screws, one in the upper left corner and one in the lower right of the antenna.
3. Push the male QMA plugs (angled 90°) to the female QMA connectors **Tx/RxA** and **RxB** on the left side of the OneBASE™ panel.



*Installing internal antenna*

## *5.5 Mounting*

Always use the supplied support unit to mount the OneBASE™ Node B. To mount the unit to a wall, see *Wall mounting* below.

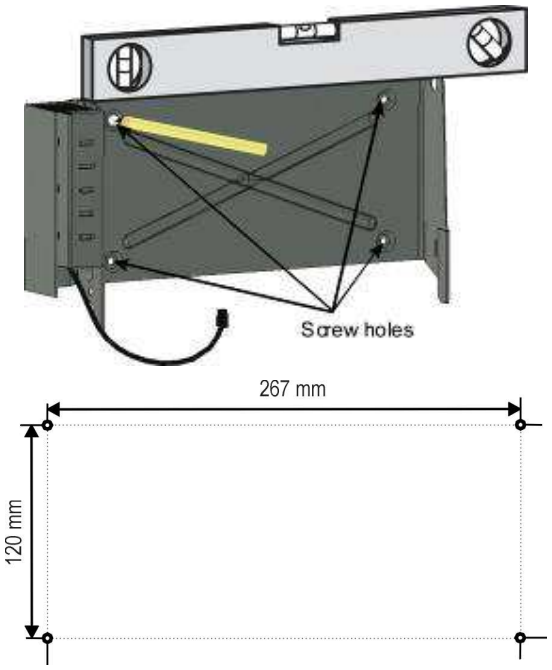
**Note: Make sure that the requirements on positioning the OneBASE™ Node B unit are fulfilled. See *Positioning* on page 12 for details.**

Mounting to a ceiling or on a pole requires an optional mounting kit to be ordered separately. See **Pole** or **ceiling** mounting on page 27.

### 5.5.1 Wall mounting

#### 5.5.1.1 Fitting the support unit

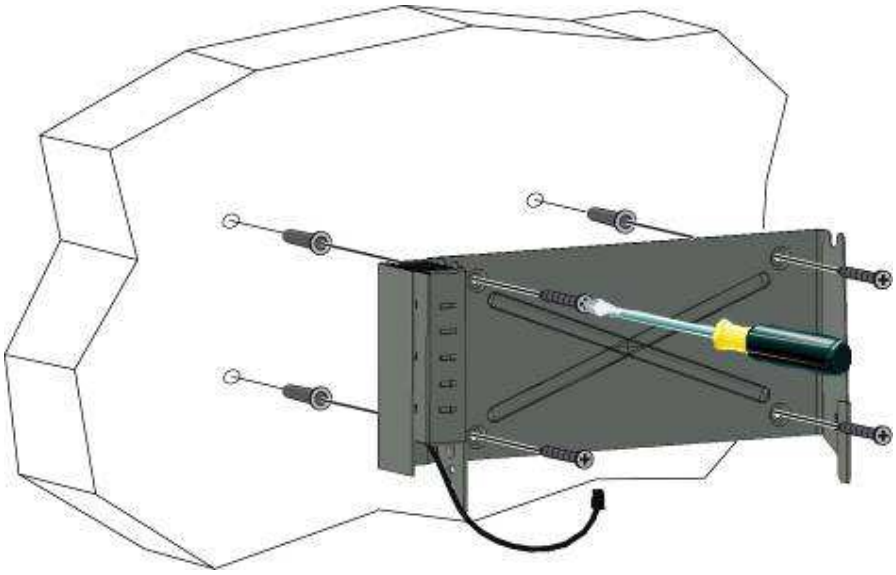
1) Use the support unit to mark up the position of the screw holes on the wall. Use a spirit level to make sure that the holes are level.




2) Remove the support unit and drill holes suitable for the applicable wall material. The recommended diameter of the screws to use is 6 mm. Plugs should be used for concrete, brick, and plaster walls. Follow the instructions by the supplier of plugs.

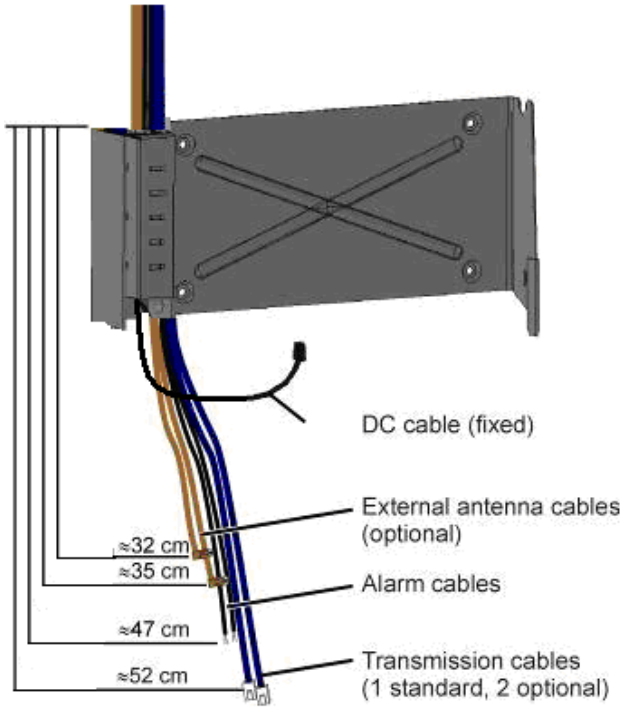
**Note: Make sure to consider any specific local conditions and regulations to securely fix the OneBASE™ to the wall.**

3) Fasten the support unit onto the wall with screws. The AC/DC converter is already mounted on the left side of the support unit.



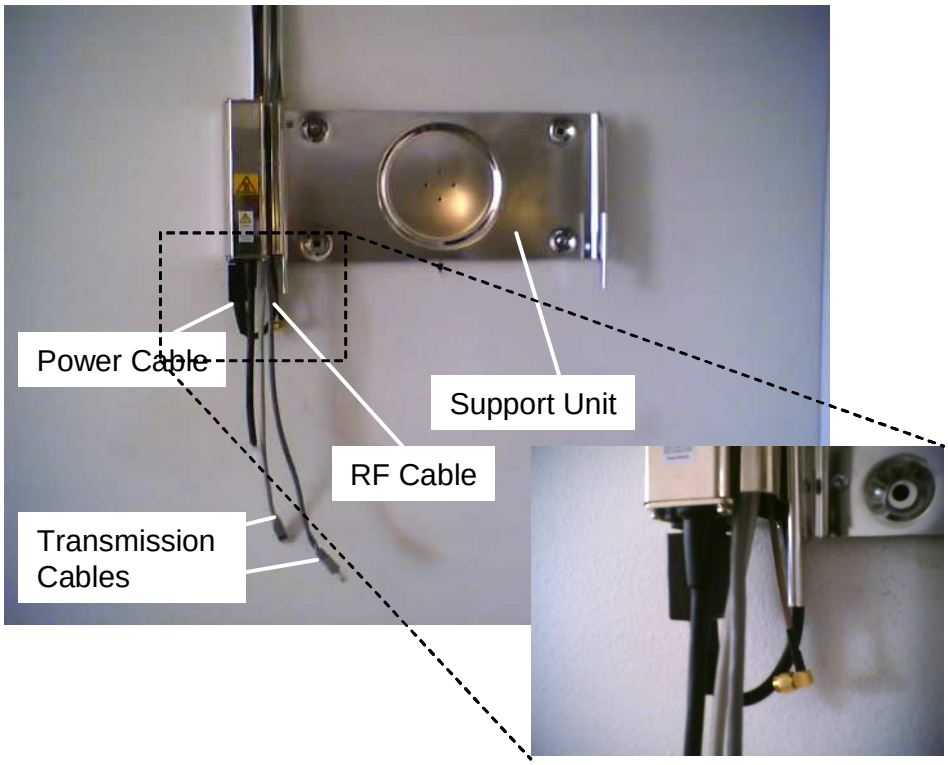
*Fitting the support unit*

4) Run all external cables inside the space under the clamp along the right side of the AC/DC unit. Make the cables only as long as needed, to avoid excess cabling at the Node B unit. Excess cabling should be hidden at the other end, on a cable ladder under the ceiling or similar.




*Running cables*

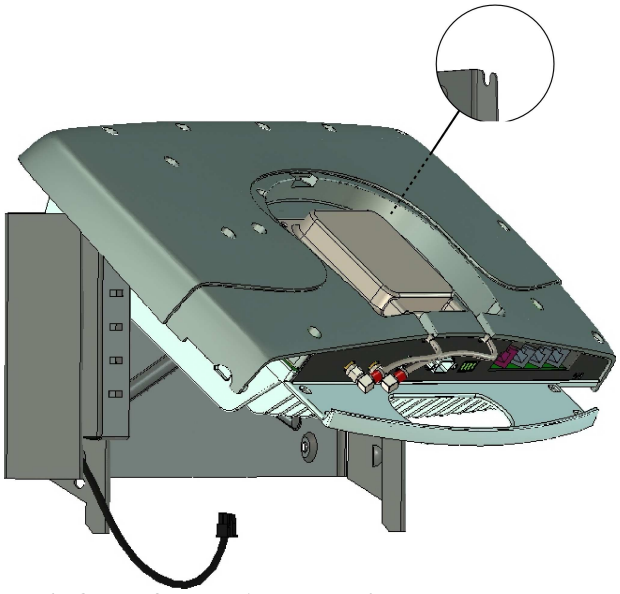
5) Connect the plug of the supplied AC cable to the bottom of the AC/DC converter. Make sure that the plug is angled to the right.




The cable cover is closed before the Pico Unit is mounted

### 5.5.1.2 Fitting the Node B unit

1) Make sure the cable cover is closed before hanging the Node B unit onto the support unit.
2) Hang the Node B unit onto the hinges of the support unit.
3) Gently fold the unit down and snap it firmly into position. To remove the unit push the levers towards the center while lifting the handle.

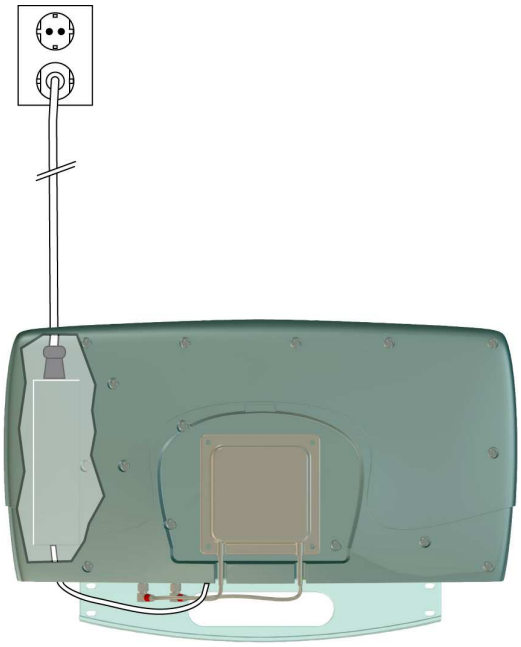


*Fitting the OneBASE™ Node B unit on the support unit*

### 5.5.1.3 Connecting the cables

**Note: Make sure the Node B unit is connected to earth by connecting the power cables before connecting any other cables.**

1) Connect the AC mains cable from the AC/DC converter of the OneBASE™ support unit to a mains outlet (unless the mains cable is permanently connected).
2) Connect the DC power cable from the AC/DC converter to the DC-Power input on the OneBASE™ panel.

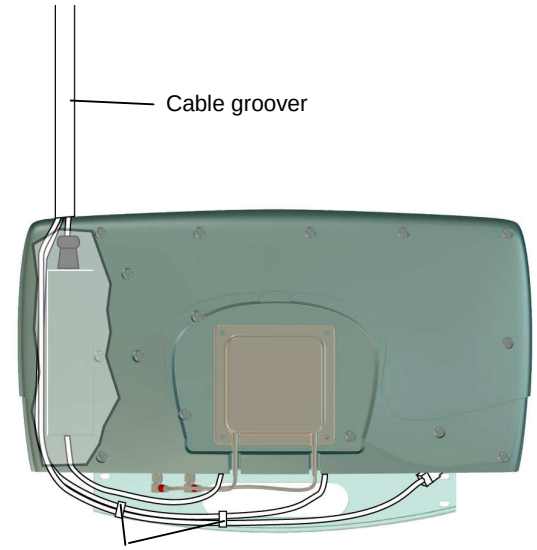


*Power cables of the OneBASE™*

The Node B unit is now earthed. Then connect the remaining cables from left to right:

3) Connecting the antenna:
    a. If internal antenna is used, the connectors may already fitted on delivery. Otherwise see 5.4.1
    b. If external antenna is used, push the male QMA plugs (angled 90°) to the female QMA connectors Tx/RxA and RxB on the left side of the OneBASE™ panel.
4) Connect the external alarm cable to the Ext-Alarm connector on the OneBASE™ panel. The connector is a 4-position terminal block where the alarm wires are screwed to a plug, which is then fitted to the connector. See External alarms on page 16 for more information.
5) IP transmission:

    Connect the LAN cable to the Ethernet connector.
6) LMT can be connected to the LAN.
7) Check that all cables are correctly and securely connected.
8) Pull back excess cabling and strap the cables close to the connectors.

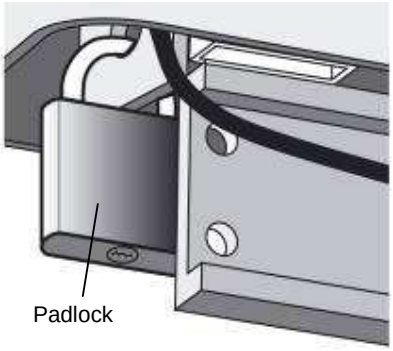



*Fixing cables*

9) Fix the cables to the wall and/or to the ceiling by using wire clamps or cable grooves, as applicable.

#### 5.5.1.4 Fitting a padlock

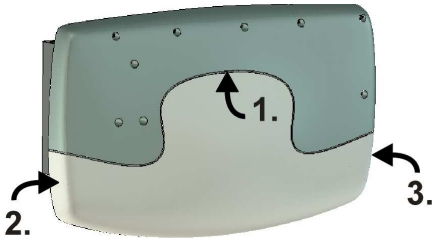
Fit a padlock (not supplied), if required, to lock the Node B unit to the support unit.



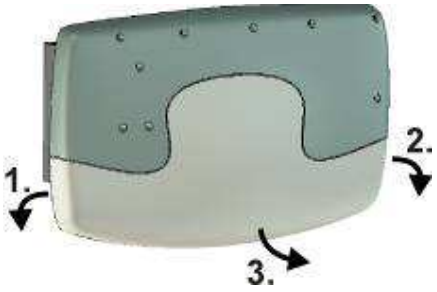

*Fitting a padlock*

#### 5.5.1.5 Fitting the cover

1) Fit the cover by first fitting the tab on the top of the cover into the corresponding slot on the Node B unit, and then firmly press the left and right edges until they click into position.




*Removing cover*




*Fitting cover*

2) Remove the cover by firmly loosen the left and right edges of the cover from the Node B unit and then lift the cover upwards.

The cover can be left off if commissioning is done as the next step after the hardware installation.

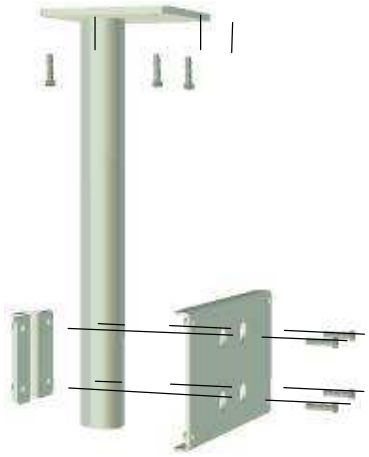
### 5.5.2 Pole or ceiling mounting

To mount the OneBASE™ to the ceiling or on a flat surface, a pole with a mounting plate is available as an option. The mounting plate can also be used separately to mount the OneBASE™ to an existing pole.

1) Use the pole of the ceiling mounting kit to mark up the position of the screw holes on the horizontal surface.
2) Drill holes suitable for the applicable surface material. The recommended diameter of the screws to use is 6 mm. Plugs should be used for concrete, brick, and plaster surfaces. Follow the instructions by the supplier of plugs.

**Note: Make sure to consider any specific local conditions and regulations to securely fix the OneBASE™.**

3) Fasten the pole into the ceiling or onto the flat horizontal surface with screws.
4) Clamp the mounting plate onto the pole using the four supplied M6 screws. Before tightening the screws, make sure that the mounting plate is positioned in the correct direction considering any internal antenna in the OneBASE™ Node B.



*Pole mounting*

5) Fit the support unit onto the pole with the four supplied M6 screws.

*Fitting the support unit onto the pole*

6) Then run all cables and fit the OneBASE™ Node B as described in step 4) on page 21 and onwards in the section Wall mounting.

## *5.6 Replacement of units*

Faulty OneBASE™ Node B units are *not* to be repaired in the field. However, some field replaceable parts may be changed on site. Note that other articles not listed below may be available. Contact your CommScope representative for a complete article list and ordering information.

- OneBASE™ Node B unit
- Internal antenna, including antenna cables
- Cover
- AC/DC converter

See the respective sub-sections below for replacement instructions.

---

**Note: The casing of the OneBASE™ Node B unit may on no occasion be opened.**

**There are no parts inside which can be repaired or replaced in field; Opening the unit may destroy the calibration of the unit, in which case it has be sent back to CommScope for control and recalibration.**

**In case the sealing has been broken CommScope voids the product warranty and assumes no responsibility of the safety or performance.**

---

### 5.6.1 Replacing OneBASE™ Node B unit

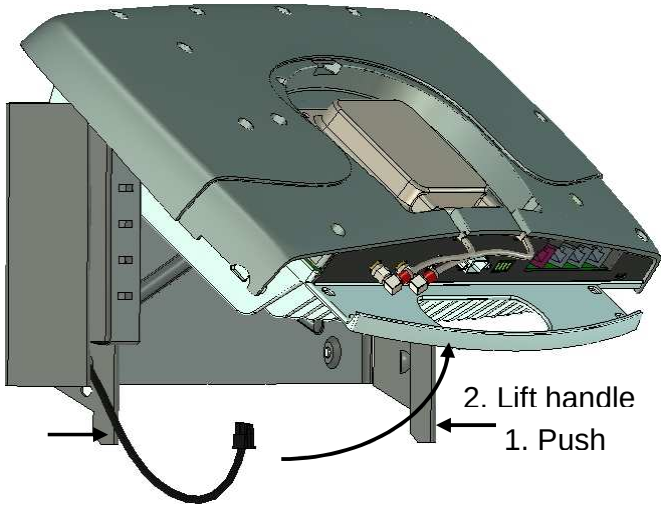
#### 5.6.1.1 Disconnecting

Before disconnecting any OneBASE™ in operation, make sure that the O&M staffs is informed.

1. Disconnect the mains power cable.
2. Remove the cover.
3. Remove any padlock.
4. Disconnect all cables from right to left.
5. If an internal antenna is fitted, remove it as described in “Replacing internal antenna” on page 30.

#### 5.6.1.2 Dismounting

1. Loosen the unit from the support unit by pushing the levers on the lower left and right sides towards the centre while lifting the handle.




*Removing the OneBASE™ Node B unit from the support unit*

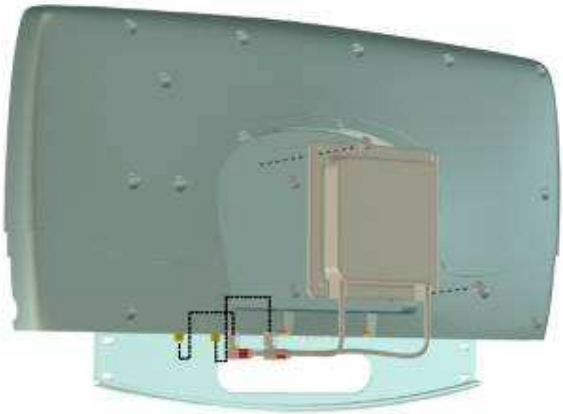
2. Gently lift the unit off the hinges of the support unit.

Then follow the Fitting the Node B unit at page 5.5.1.2 to install a replacement unit.

If any internal antenna is to be re-fitted, follow the instructions below.

### 5.6.2 Replacing internal antenna

4. Remove the cover by sliding it downwards.
5. Unplug the QMA connectors fitted to the panel (**Tx/RxA** and **RxB**) by holding on to the ring of the connector and pull outwards.
6. Loosen the two screws that hold the antenna to the OneBASE™ Node B unit and remove the antenna.

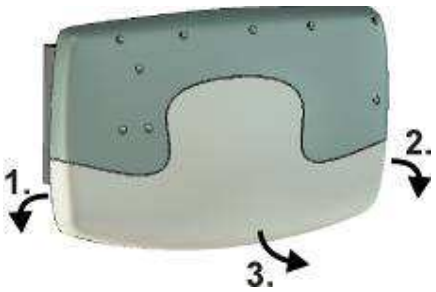


*Replacing internal antenna*

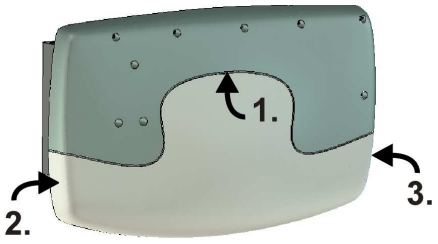
7. Fit a new antenna by reversing the above steps.

### 5.6.3 Replacing cover

1. Remove the cover by firmly loosening the left and right bottom edges, and then lifting the cover upwards.
2. Fit a new cover by first fitting the top tab and then pressing firmly on the left and right edges until they click into position.



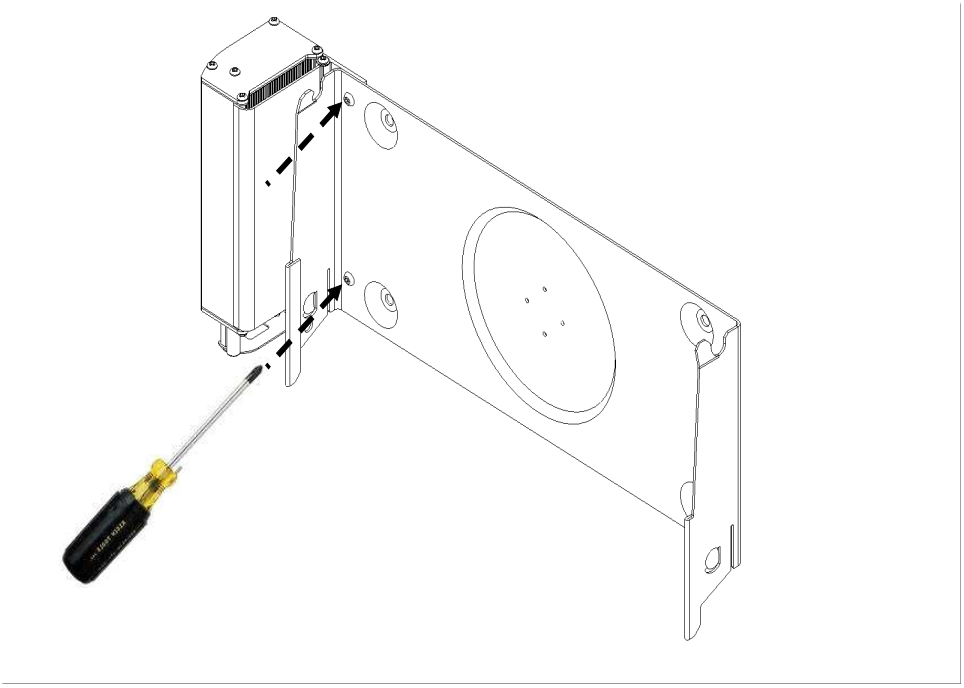

*Removing cover*




*Fitting cover*

### 5.6.4 Replacing AC/DC converter

1. Remove the Node B unit as described in *Replacing OneBASE™ Node B unit* on page 29.
2. Remove the AC/DC converter from the support unit by removing the two screws that holds the AC/DC converter. A T20 torx driver is needed.



*Removing the AC/DC converter*

3. Fit a new AC/DC converter by reversing the above steps.

## *5.7 Handling of faulty units and replacement units*

### 5.7.1 Disposal

Dispose of defective and/or broken components or units according to local regulations, or return to the supplier, according to warranty or service agreements.

### 5.7.2 Packing requirements

Always use the original packaging. If this is not available, use enough protective material to avoid transport damages.

See *Unpacking* on page 19 for information on original packaging.

### 5.7.3 Transport and storage requirements

The packed equipment must be stacked with care and properly secured to prevent damage during transportation and storage.

The following environmental conditions must be followed during storage and transportation:

| **Environmental conditions during storage and transportation** | |
|---|---|
| Temperature: | –25 to +70 ºC |
| Relative humidity: | <95% |

# 6 Technical data

## *6.1 Power supply*

| | |
|---|---|
| Supply voltage | Single phase 110/230 VAC ±10%, 50/60 Hz<br>Withstands 20 ms interruption of AC input. @ 230 V |
| Power consumption | < 50 W |

## *6.2 Internal antenna (option)*

| | |
|---|---|
| Antenna gain | 6 dBi |
| Polarization | Dual Slant ±45° |
| Half Power Beam width | 65° |

## *6.3 Environmental data*

| | |
|---|---|
| Standards compliance | IEC 60 721-3-3 “Classification of environmental |

| | |
|---|---|
| | conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 3: Stationary use at weather protected locations", classes 3K3/3Z2/3Z4/3Z7/3B1/3C2/3S2/3M1. |
| Operating temperature | -5 to +45°C |
| Storage/transport temperature | –25 to +70°C |
| Relative humidity | <95% |
| Sealing class (according to EN60529) | IP 30 Node B unit<br>IP 51 for AC/DC unit |

## 6.4 Physical data

| | |
|---|---|
| Mechanical dimensions (mm) | 275 (H) x 430 (W) x 105 (D) |
| Weight | 7 kg, incl. AC/DC and internal antenna |

## 6.5 Safety

| | |
|---|---|
| Product safety | EN60950 |
| Vandalism proof | TORX screws. Possible to lock with padlock |