Alcatel·Lucent

Alcatel-Lucent 9364

Metro Cell - Outdoor V2 2100MHz and 1900/850MHz

Installation and commissioning

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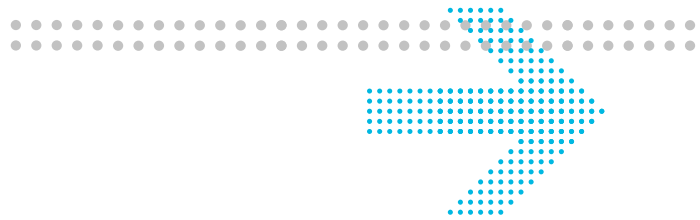
About this document

Purpose

The purpose of this document is to provide hardware installation instructions for the Alcatel-Lucent 9364 Metro Cell - Outdoor V2 2100MHz and 1900/850MHz products.

Procedures are provided for product handling, placement, grounding, powering on and off, and cabling.

Reason for revision

The reissue reasons are:

Issue number	Issue Date	Reason for reissue
3	September 2011	Standard issue
2	May 2011	Standard issue
1	April 2011	Standard issue

New in this release

New features:

- None

Other changes:

- Information added in support of the 9364 Metro Cell 1900/850 MHz variant with A-GPS
- Overcasing kit and installation instructions added
- Editorial updates

Intended audience

The audience for this document is Installation personnel.

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Supported systems

This document applies to the Alcatel-Lucent Metro Cell - Outdoor 2100MHz and 1900/850MHz.

How to use this document

Start with the first chapter and work through the manual to the end. Once you have done this, you will have carried out the hardware installation completely and in the proper sequence.

Prior to installing the product, the installer should be familiar with the safety precautions, warnings, and product conformance statements.

Safety information

For your safety, this document contains safety statements. Safety statements are given at points where risks of damage to personnel, equipment, and operation may exist. Failure to follow the directions in a safety statement may result in serious consequences.

Prerequisites

None

Conventions used

Vocabulary conventions

None

Typographical conventions

None

Related information

For information on subjects related to the content of this document, refer to the documents listed in the following table:

Refer to this document	At this location	For more information on
Alcatel-Lucent W-CDMA System - Safety Guide, 401-382-880	*http://support.alcatel-lucent. com.*	Safety guidelines and the catalog of hazard statements that appear in the Alcatel-Lucent UMTS customer documents.

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Refer to this document	At this location	For more information on
Alcatel-Lucent 9364, Metro Cell Outdoor Troubleshooting, 401-387-076	*http://support.alcatel-lucent. com.*	Troubleshooting procedures for the 9364 Metro Cell Outdoor
Standard for Installation of Lightning Protection Systems, NFPA		Lightning protection systems
Recommended Practices on Surge Voltages in Low Voltage AC Power Circuits, IEEE C62.41 (Latest Edition)		Power

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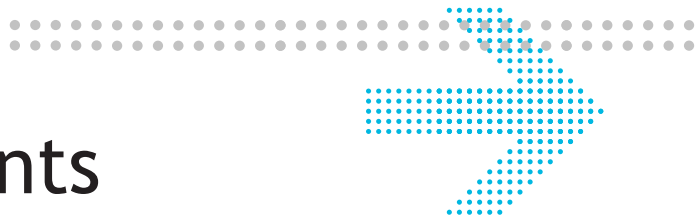
1   Safety statements

Overview

Purpose

This chapter provides general information on the structure of safety instructions and summarizes general safety requirements.

General safety and residual risk

The equipment has been developed in line with state-of-the-art technology and conforms with current national and international safety requirements.

The equipment is considered safe during normal operation when safe working practices are complied with. However, hazards may arise if procedures are not followed correctly or safe working practices are not complied with.

Contents

Structure of safety statements

Overview

Safety statements describe the safety risks relevant while performing tasks on Alcatel-Lucent products during deployment and/or use. Failure to avoid the hazards may have serious consequences.

General structure

Safety statements include the following structural elements:

CAUTION

Lifting hazard

Lifting this equipment by yourself can result in injury due to the size and weight of the equipment.

Always use three people or a lifting device to transport and position this equipment.   [ABC123]
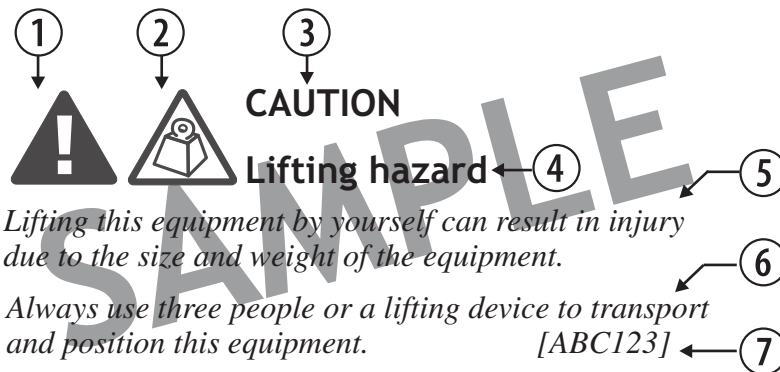
Item	Structure element	Purpose
1	Safety alert symbol	Indicates the potential for personal injury (optional)
2	Safety symbol	Indicates hazard type (optional)
3	Signal word	Indicates the severity of the hazard
4	Hazard type	Describes the source of the risk of damage or injury
5	Safety message	Consequences if protective measures fail
6	Avoidance message	Protective measures to take to avoid the hazard
7	Identifier	The reference ID of the safety statement (optional)

Signal words

The signal words identify the hazard severity levels as follows:

Signal word	Meaning
DANGER	Indicates an extremely hazardous situation which, if not avoided, will result in death or serious injury.
WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates a hazardous situation not related to personal injury.

Safety

General precautions for installation procedures

⚠ **WARNING**

Failure to observe these safety precautions may result in personal injury or damage to equipment.

- *Read and understand all instructions.*

- *Follow all warnings and instructions marked on this product.*

- *Installation and maintenance procedures must be followed and performed by trained personnel only.*

- *The equipment must be provided with a readily accessible disconnect device as part of site preparation.*

- *Grounding and circuit continuity is vital for safe operation of the equipment. Never operate the equipment with grounding/bonding conductor disconnected.*

- *Install only equipment identified in the product's installation manual. Use of other equipment may result in an improper connection which could lead to fire or injury.*

- *Use caution when installing or modifying telecommunications lines.*

- *The product has multiple power inputs. Before servicing, Disconnect all inputs to reduce the risk of energy hazards.*

- *For continued protection against risk of fire, all fuses used in this product must be replaced only with fuses of the same type and rating.*

- *Never install telecommunications wiring during a lightning storm.*

- *Never install telecommunications connections in wet locations.*

- *Never touch uninsulated wiring or terminals carrying direct current or ringing current, and never leave this wiring exposed. Protect and tape uninsulated wiring and terminals to avoid risk of fire, electrical shock, and injury to personnel.*

- *Never spill liquids of any kind on the product.*

- *To reduce the risk of an electrical shock, do not disassemble the product. Opening and removing covers and/or circuit boards may expose you to dangerous voltages or other risks. Incorrect reassembly can cause electrical shock when the unit is subsequently used.*

Safety - specific hazards

DANGER
Electric-shock hazard

Working in severe weather can result in personal injury or death and damage to the equipment.

Never install or perform maintenance during severe weather (high winds, lightning, blizzards, hurricane etc.).

DANGER
Noxious-substance hazard

Use of unspecified cleaning agents can result in personal injury.

Use only specified cleaning agents. Never use flammable solvents.

Always ensure there is adequate ventilation in the work area and wear the appropriate personal protective equipment.

CAUTION
RF hazard

RF exposure in excess of applicable limits can result in personal injury.

Metro Cells are designed and installed in order that they are compliant with the international exposure guidelines laid down by the International Commission on Non-Ionizing Radiation Protection (ICNIRP).

For all staff that are required to work in close proximity to the equipment, for example maintenance personnel, contact with the antenna should be avoided.

WARNING
Electric-shock hazard

Some parts of all electrical installations are energized. Failure to observe this fact and the safety warnings may lead to bodily injury and property damage.

For this reason, only trained and qualified personnel (electrical workers as defined in IEC 60215 + A1 or EN 60215) may install or service the installation.

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⚠️⚡ **WARNING**
Electric-shock hazard

The power supply lines to the network element are energized. Contact with parts carrying voltage can cause health problems, possibly including death, even hours after the event.

Open and lockout the load disconnect switch in the distribution box to completely de-energize the network element.

⚠️⚡ **WARNING**
Electric-shock hazard

This product may be connected to an AC main power supply and may contain an internal battery supply. Disconnecting one power source may not de-energize the system, and can lead to serious injury.

Disconnect and lock out the AC main power supply, if present, and the internal battery supply, if present, before servicing the equipment.

⚠️⚠️ **WARNING**
Fall hazard

Falls can occur when working at heights resulting in serious personal injury or death.

To prevent a fall when working at heights (ladder, scaffold, manlift, roof etc.) follow safe work practices and wear appropriate fall protection equipment.

NOTICE

Condensation

Sudden changes in the weather may lead to the formation of condensation on components. Operating the unit when condensation moisture is present can destroy the unit.

Units which show signs of condensation must be dried before installation.

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....

NOTICE

Tools

Tools left in the working area can cause short circuits during operation which can lead to the destruction of units.

Make sure after finishing your work that no tools, testing equipment, flashlights, etc., have been left in or on the equipment.

Product safety

Equipment safety

Safety information for this equipment can be found on various Caution, Warning, Danger, information labels or instructions affixed to or included with the cabinet, its internal assemblies or included within this document. Informational and cautionary labels may appear near the item they address or may be grouped in a single location on the equipment. Warnings are typically adjacent to the hazard that is noted on the label. The instructions, cautions and warnings found on these labels must be understood and observed by all personnel involved with the equipment installation and maintenance.
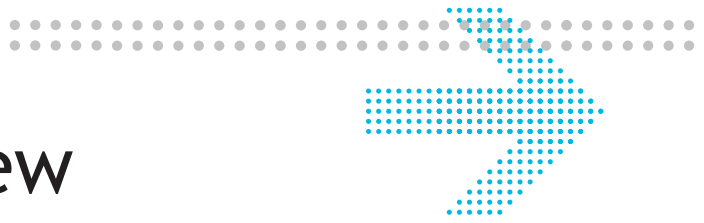
2   Product overview

Overview

Purpose

This chapter provides an overview of the Alcatel-Lucent 9364 Metro Cell Access Point - Outdoor.

Contents

....

Functional description

General description

The 9360 Small Cell solution has been developed to handle the increased demand of solutions to efficiently address the residential fixed and mobile market.

The Alcatel-Lucent 9364 Metro Cell - Outdoor is a public area wireless access node that collapses the traditional 3G Node B and RNC functions into a single small unit.

Figure 2-1 Alcatel-Lucent 9364 Metro Cell - Outdoor (with pole mounting bracket attached)

Front view

Back view

Product deployment

The product can be deployed by mobile operators to provide a transparent outdoor capacity layer to complement the macro cell "umbrella" coverage layer. In the case of private locations, such as coffee shops or restaurants, the Metro Cell may be privately owned and may be deployed by building owners or local governments but remain controlled by the operator using their spectrum resources.

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V2 product description

Two variants for the Metro Cell - Outdoor are available:

- 2100 MHz
- 1900/850 MHz

Metro Cell - Outdoor 2100 MHz

This table lists the characteristics of the 2100 MHz variant.

Metro Cell Outdoor	Features			
	Frequency	**Power**	**User capacity**	**Characteristics**
V2	Frequency Band: 2100 MHz 3G Sniffer Frequency band: 900/2100 MHz 2G Sniffer Frequency bands: 900/1800 MHz	Power is supplied by the router or a PoE+ injector Power consumption is maximum 25W and typically 20W	Supports up to 32 users with full speed HSPA (14.4 Mbps L1 HSDPA bearer and 5.7 Mbps L1 HSUPA bearer)	Supports Rx space diversity Maximum transmit power of 250 mW at antenna connector (enabling wider cell coverage) Temperature range: -33 to +45 ^{0}C Wall or pole mounted installation options Waterproof enclosure with surge protection

....

Metro Cell - Outdoor 1900/850 MHz

This table lists the characteristics of the 1900/850 MHz variant.

Metro Cell Outdoor	Features			
	Frequency	**Power**	**User capacity**	**Characteristics**
V2	Frequency Band: 1900 and 850 MHz 3G Sniffer Frequency band: 1900/850 MHz 2G Sniffer Frequency bands: 1900/850 MHz	Power is supplied by the router or a PoE+ injector Power consumption is maximum 25W and typically 20W	Supports up to 32 users with full speed HSPA (14.4 Mbps L1 HSDPA bearer and 5.7 Mbps L1 HSUPA bearer)	Supports Rx space diversity Assisted GPS capability for localization of the unit Maximum transmit power of 250 mW at antenna connector (enabling wider cell coverage) Temperature range: -33 to +45 ^{0}C Wall or pole mounted installation options Waterproof enclosure with surge protection

Installation options

The Alcatel-Lucent 9364 Metro Cell - Outdoor is designed to be used outdoors can be installed using the following options:

- pole mounted
- wall mounted

....

Physical description

Product overview

The Alcatel-Lucent 9364 Metro Cell - Outdoor is housed in an Alcatel-Lucent generic metallic case with a pair of antenna connectors located at the top of the device for external antennas, as shown below:

Figure 2-2 Alcatel-Lucent 9364 Metro Cell - Outdoor (2100 MHz variant)
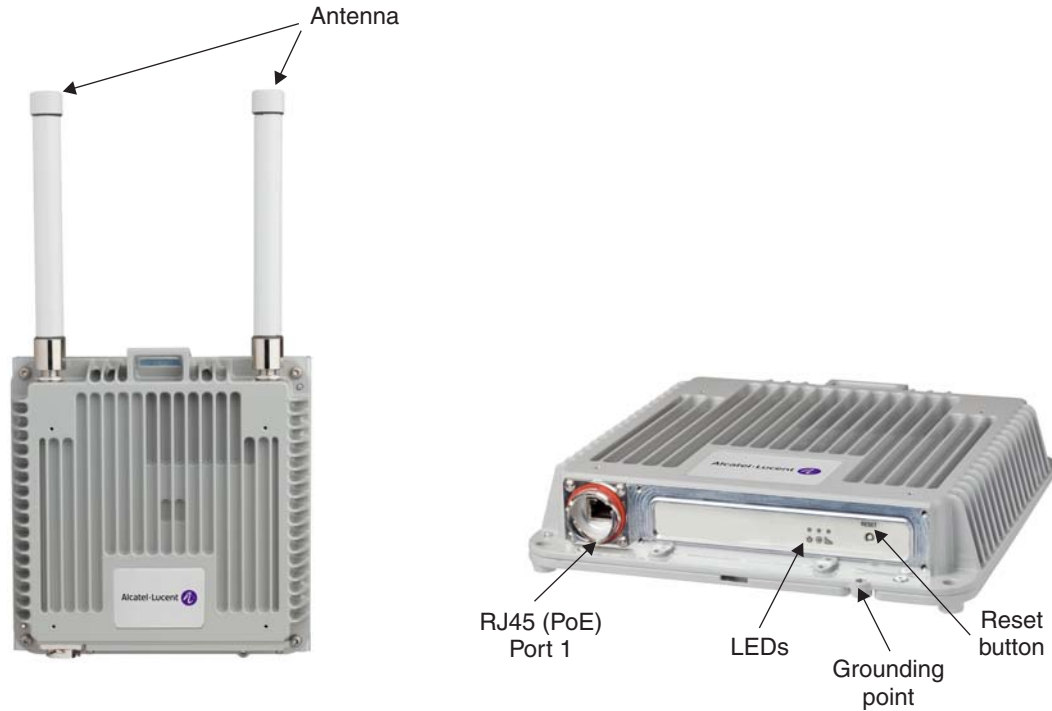
Note: The Alcatel-Lucent 9363 Metro Cell - Outdoor 1900/850 MHz variant interface panel will have a SMA connector for external GPS antenna and additional LEDs.

Physical data

The physical characteristics of the Metro Cell - Outdoor (without the power supply unit) are:

Dimensions (Height x Width x Depth)	241 x 241 x 53 mm (9.48 x 9.48 x 2.08 in)
Weight	<2.0 Kg (<4.4 lb)

....

Connectors

Connectors provided are:

Connection location	Description
At the top of the unit	Two external antenna connectors, type N
At the bottom of the unit	1 Ethernet connector for backhauling connection: 10/100 Base T RJ45 connector. This connector is connected to a PoE+ capable router or a PoE+ power injector in order to supply power. A ground connector. SMA connector for external GPS antenna (1900/850 MHz variant only)

Connectors provided are external and waterproof. They are also protected by surge and lightning arrestor.

Power supply

The Metro Cell - Outdoor can be powered via:

- 48V PoE+ (if supported)
- When the router is not 48V PoE+ capable, a power injector must be added to supply power.

....

....

Antenna

The Metro Cell - Outdoor has two external RF antenna connectors, type N, located on the top the device. The pair of antennas provide TX/RX and sniffing and enable Rx diversity capability on the Metro Cell - Outdoor.

Debug interface

Three LEDs and a reset button are hidden behind a removable cover for debugging purposes.

The LEDs provide status indication for:

- Power
- System
- Phone (Device)

The Alcatel-Lucent 9363 Metro Cell - Outdoor 1900/850 MHz variant will have additional LEDs providing status indication for:

- GPS

Additional LEDs for Ethernet connectivity status are available at the Ethernet Port.

Product labelling

A product label provides the following information:

- Model name
- Part number
- serial number
- MAC address
- CE Approval marking
- Environmental marking (WEEE/ROHS) applicable to the device.

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Product base items

The Metro Cell - Outdoor product is delivered with the following base items:

- Metro Cell - Outdoor unit (with R2CT mini short plug)
- Pole/Wall mounting kit:
    - 4 Torx Screw M5
    - 4 flat washers
    - Wall/Pole bracket

Note: Metro Cell - Outdoor unit can be supplied with or without a USIM card reader (for authentication purposes).

Product configuration

In addition to the base items the Metro Cell - Outdoor can be configured with the following variable and ancillary items:

- Antenna:
    - +2dBi Omnidirectional
    - +4dBi Omnidirectional
    - +8dBi Omnidirectional (with relevant mounting kit)
- GPS Antenna with cable and support brackets (1900/850 MHz variant only)
- PoE+ injector
- A pair of RF jumpers (2 meters)
- Overcasing installation kit

....

3   Metro Cell installation and commissioning

Overview

Purpose

This chapter provides the installation and commissioning procedures for theAlcatel-Lucent 9364 Metro Cell Access Point - Outdoor.

Contents

Pre-installation information

Product delivery contents

The V2 Metro Cell - Outdoor is provided in a standard paper box. The contents are as follows:

- The V2 Metro Cell - Outdoor access point
- R2CT mini short plug
- Pole/Wall mounting kit (excluding collar kit)

Variable parts and ancillary items

In addition to the standard delivered parts the following variable and ancillary items are available:

- Antennas:
    - 2dBi omni directional antenna
    - 4dBi omni directional antenna
    - 8dBi omni directional antenna with mounting kit
- External GPS antenna with 1.48 feet (450 mm) of cable (1900/850 MHz variant only)
- RF jumper, 2 meters
- A PoE+ power injector, with user guide
- Pole mounting collar kit

Device placement

The V2 Metro Cell - Outdoor emits a radio signal similar to a Wi-Fi router. The quality of coverage achieved therefore depends upon where the device is placed.

For best results it should be located:

- In a central place within the public space
- As high as possible, for example, high shelving, wall mounted

To improve coverage, avoid installing near the following:

- Other radio transmitters
- Other metallic devices or objects
- Windows

    Tip: In order to limit the amount of solar radiation on the Metro Cell when the device is pole mounted, it is recommended to orientate the Metro Cell in a northerly direction. With this orientation the pole mounting bracket acts as a solar shield.

Installation tools required

The following is a list of the tools that may be used during installation:

- Drill and assorted drill bits
- Pliers
- Adjustable spanners
- Screwdrivers (power and/or manual):
  – Phillips (flat blade)
  – Torx, T-10, T-20
- Crimping tool (for RJ45 cable)
- Measuring tape
- Marker, to mark wall mounting holes
- Vacuum cleaner or equivalent (required for clearing debris from wall mounting holes)
- Spirit level

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To mount the hardware to a wall

Purpose

This topic describes the procedures to be followed when installing the Metro Cell - Outdoor onto a solid concrete wall.

Prerequisites

A site survey has been conducted and a location for the device has been selected that is both central to the public space and elevated in order to maximize coverage.

Before installation begins you should ensure the following are in place:

- Internet service is available.
- The Ethernet cable has been routed and is in place.
- The Ground cable has been routed and is in place.
- Site specific fixing materials (screws, washers, wall plugs) for wall mounting the Metro Cell - Outdoor.

Wall mounting

Important! The Metro Cell - Outdoor weighs less than 2kg and can be easily mounted onto any flat, sturdy wall, either directly, or by using the wall mounting kit (in circumstances where the device needs to by mounted away from the wall).

However, various building materials and construction methods dictate that the device be fastened to the wall with appropriate mounting hardware. It is the responsibility of the customer to provide any necessary support material and structures to ensure that the installation will be in compliance with Building Officials and Code Administrators (BOCA), Uniform Building Code (UBC), and all local codes.

Before you begin

Note: Record the 11 digit serial number before mounting the Metro Cell - Outdoor.

If the Metro Cell overcasing is to be installed, attach the overcasing support plate before wall mounting, see Appendix A, "Overcasing installation"

Wall mount installation

WARNING
Fall hazard

Falls can occur when working at heights resulting in serious personal injury or death.

To prevent a fall when working at heights (ladder, scaffold, manlift, roof etc.) follow safe work practices and wear appropriate fall protection equipment.

To mount the device onto a wall or flat surface perform the following steps.

1 At the selected installation location:

If..	Then..
the Metro Cell is to be mounted directly onto a wall	mark the points on the wall for the four fixing holes using the template in Appendix B, "Metro Cell wall mount spacer" as a guide.
the Metro Cell is to be mounted onto a wall using the wall mounting kit	use the wall mounting bracket as a guide to mark the points on the wall for the four bracket fixing holes.

2 Check the horizontal position of the marked holes with a spirit level.

3 Drill holes at the marked points and insert wall plugs into the fixing holes.

4

If..	Then..
The Metro Cell is to be mounted directly onto a wall	Proceed with the next Step
The Metro Cell is to be mounted onto a wall using the wall mounting kit	Attach the wall mounting bracket to the wall using appropriate screw fixings. **Note:** Depending on the wall the device is to be mounted onto, different screw fixings might be needed. After site survey these mounting accessories must be procured locally.

5 Using the lifting point on the device align the bolt holes on the Metro Cell with the drilled wall bolt holes or, if the wall mounting bracket is used, with the bolt holes on the bracket:
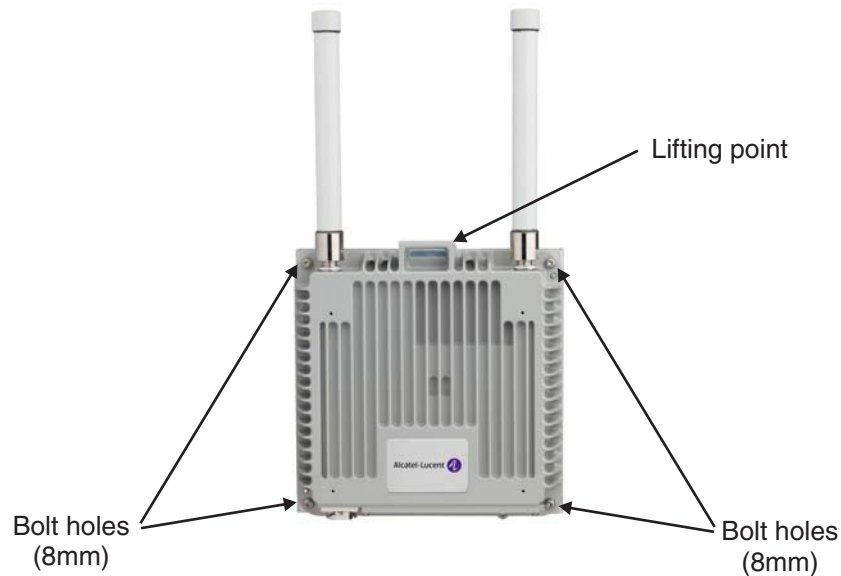
6 Attach the device to the wall mounting bracket using the supplied screws or directly onto the wall using appropriate screw fixings.

Note: Depending on the wall the device is to be mounted onto, different screw fixings might be needed. After site survey these mounting accessories must be procured locally.

Device attach points   Device attach points
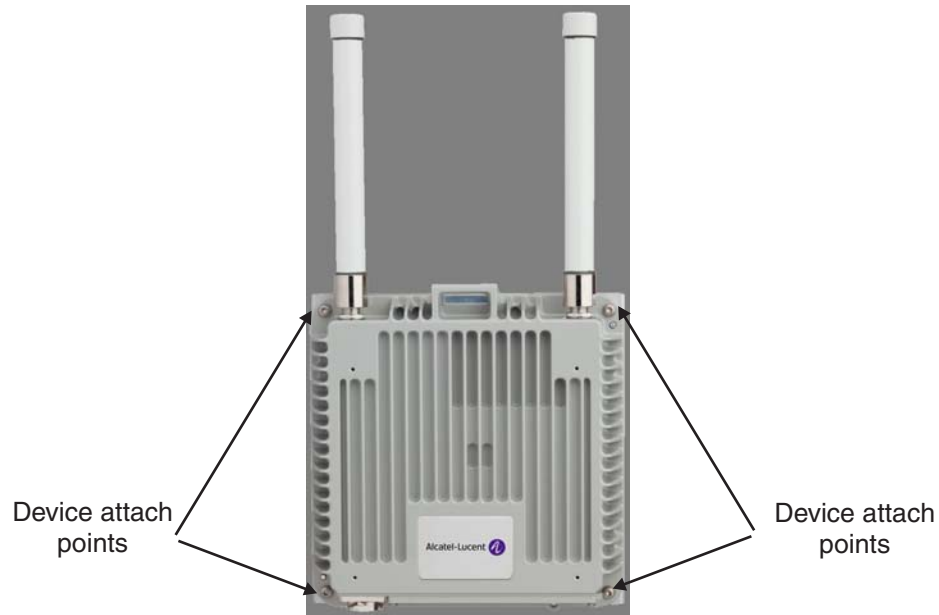
7   After mounting the Metro Cell - Outdoor to the wall the cables must be connected. Continue with, "Metro Cell - Outdoor cabling" (p. 3-11).

E ND OF STEPS

....

To mount the hardware to a pole

Purpose

> This topic describes the procedures to be followed when installing the Metro Cell -
> Outdoor onto a pole.

Prerequisites

> A site survey has been conducted and a location for the device has been selected that is
> both central to the public space and elevated in order to maximize coverage.
>
> Before installation begins you should ensure the following are in place:
>
> - Internet service is available.
> - The Ethernet cable has been routed and is in place.
> - The Ground cable has been routed and is in place.

Pole mounting

> **Important!** The Metro Cell - Outdoor is less than 2kg and can be easily mounted on a
> pole (48mm to 114mm in diameter) using the supplied pole mounting kit.

Before you begin

> **Note:** Record the 11 digit serial number before mounting the Metro Cell - Outdoor.
>
> If the Metro Cell overcasing is to be installed, attach the overcasing support plate before
> wall mounting, see Appendix A, "Overcasing installation"

Pole mount installation

> ⚠️ **WARNING**
> **Fall hazard**
>
> *Falls can occur when working at heights resulting in serious personal injury or death.*
>
> *To prevent a fall when working at heights (ladder, scaffold, manlift, roof etc.) follow safe
> work practices and wear appropriate fall protection equipment.*
>
> To mount the device onto a pole perform the following steps.
>
> ....

1　Using the supplied pole bracket thread metal pole bands through the pole channel groove
on the pole bracket.

....

Recommended pole band clips, 16mm stainless steel of type:

- Jubilee® High Torque
- JCS HI-Torque or Tamtorque®

2　At the selected installation location assemble the bracket onto the pole as shown, ensuring the bracket metal bands are securely tightened. Recommended torque setting: 15 N.m

3　Using the lifting point on the device align the bolt holes on the Metro Cell with the pole bracket bolt holes:
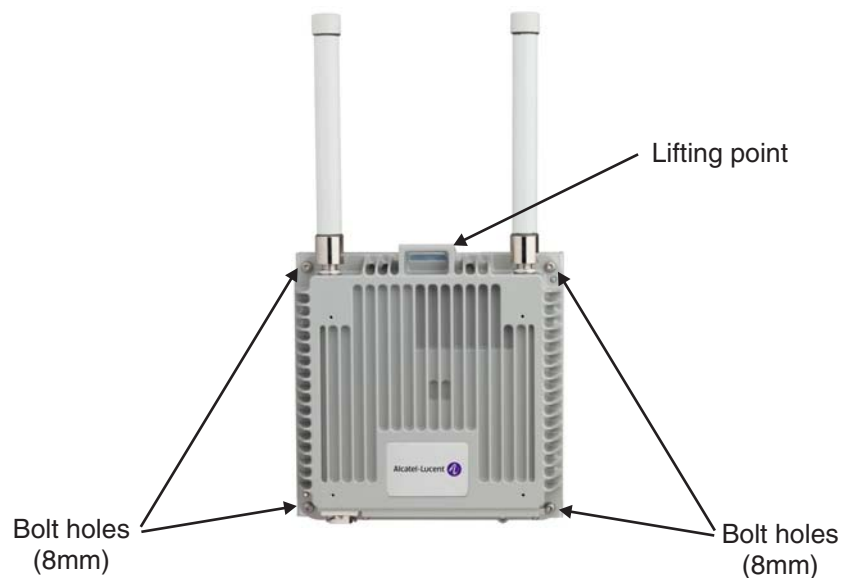
4   Use the following installation materials to bolt the Metro Cell to the pole bracket:

    •   4 x Screw (M5x25)

    •   4 x Washer (5.2mm)

Device attach points

Device attach points

5   After mounting the Metro Cell - Outdoor to the pole the cables need to be connected. Continue with, "Metro Cell - Outdoor cabling" (p. 3-11).

E ND OF STEPS

Metro Cell - Outdoor cabling

Purpose

This topic describes the procedures to be followed when connecting the Metro Cell - Outdoor cables.

Before you begin

Connect the pair of omni-directional antenna to the antenna connectors on the device.

Important! It is recommended that the antenna connection nuts are torqued to between 0,7 N.m minimum and 1,1 N.m maximum in order to avoid a potential loose connection.

Antenna
Connectors
(N female)
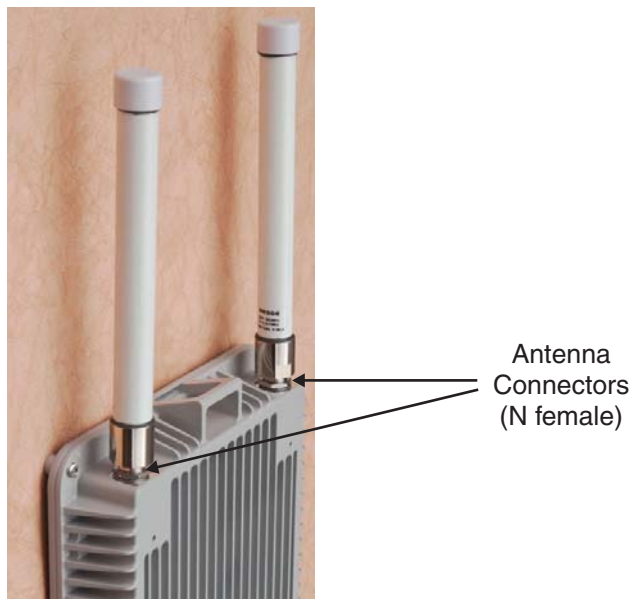
Connect the ground cable

Note: The Metro Cell Outdoor has to be grounded with a 16 mm² ground cable (Type NYY-1x16mm² or similar) to a grounding system.

The grounding cable and cable lug are not included in delivery and must be locally supplied.

To attach the ground cable perform the following steps.

....

1   Route the ground cable from the ground system to the Metro Cell - Outdoor.

2   At the Metro Cell - Outdoor cut the cable to a proper length, strip the cable end and crimp a ground lug, with a hole suitable for an M6 screw, on the end of the cable.

Clean the contact surface area and use antioxidant to avoid oxidation.

3   Connect the ground cable to the grounding point on the Metro Cell - Outdoor.
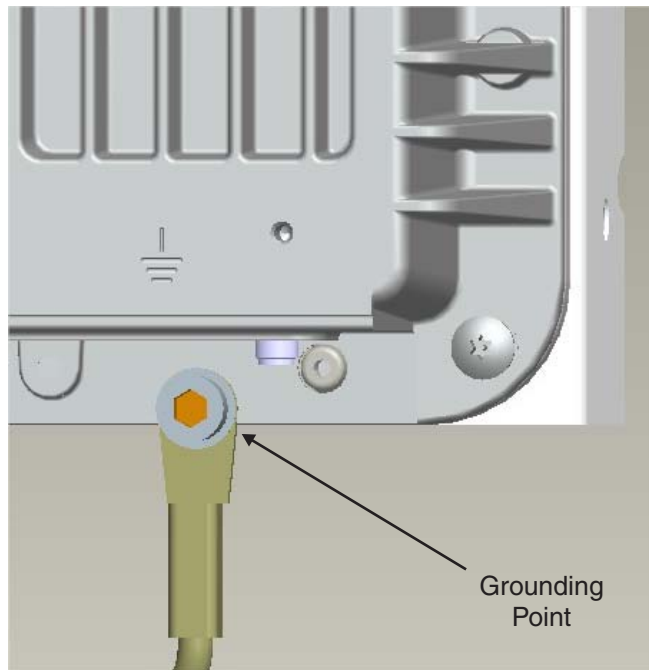
Grounding
Point

4   Finally, secure grounding cable to the wall/pole.

E ND OF STEPS

Ethernet cable lengths

The following diagram outlines the maximum cable length of the Metro Cell- Outdoor ethernet cable connection.

Total cable length 100m max

| Metro Cell - Outdoor | Ethernet Cable | DSL Router with PoE+ function |

Total cable length 100m max

| Metro Cell - Outdoor | Ethernet Cable | PoE+ Power Injector | DSL Router with PoE+ function |

Connect the Ethernet cable

To attach the Ethernet cable perform the following steps.

....
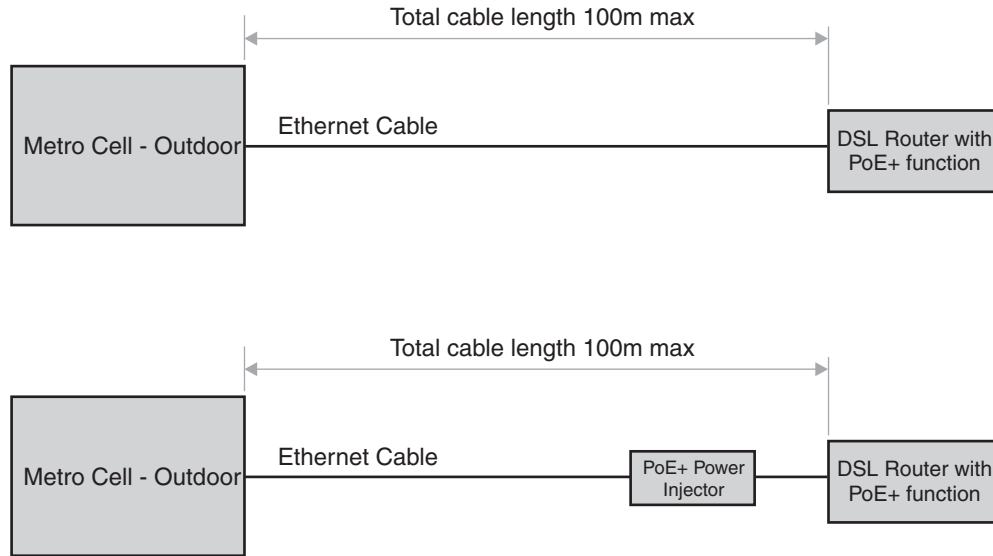
1   Route the supplied Ethernet cable from the Metro Cell - Outdoor to the router or 48V
PoE+ injector.

....

2   At the Metro Cell - Outdoor, assemble the supplied R2CT mini short plug onto the
ethernet cable following the R2CT mating sequence assembly instructions.

....

3   Connect the Ethernet cable to the device as shown.

Ethernet connection
point

....
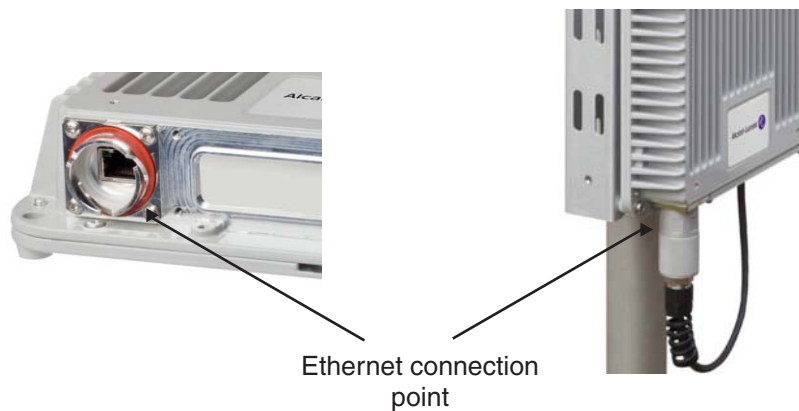
Important! It is recommended that the Ethernet cable screw nut is torqued to between 3 N.m minimum and 3,5 N.m maximum in order to avoid a potential loose connection.

....

4 At the Router/PoE+ injector cut the cable to the required length and crimp the supplied RJ45 connector onto the end of the cable.

....

5 Connect the Ethernet cable to the Router/PoE+ injector.

....

6 Finally, secure Ethernet cable to the wall/pole.

E ND OF STEPS
....


A-GPS antenna cable connection (1900/850 MHz only)

The Alcatel-Lucent 9364 Metro Cell - Outdoor 1900/850 MHz has Assisted GPS capability for localization of the unit.

An SMA connector is provided for the connection of an external GPS antenna.

GPS Antenna
connector
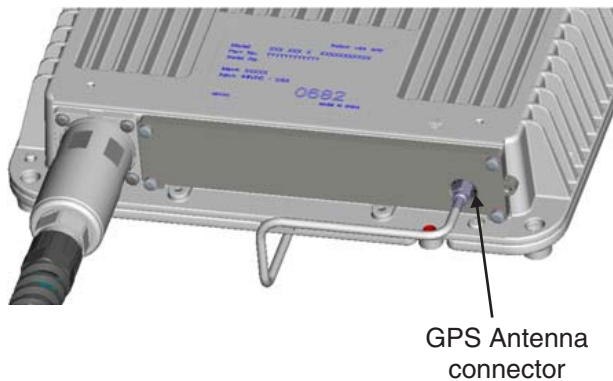
The GPS antenna cable can be routed around the back of the unit and, using the GPS antenna bracket and support plate, attached to the Metro Cell as shown.

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Assembled view with
support plate and bracket

Antenna support
plate

Antenna support
bracket
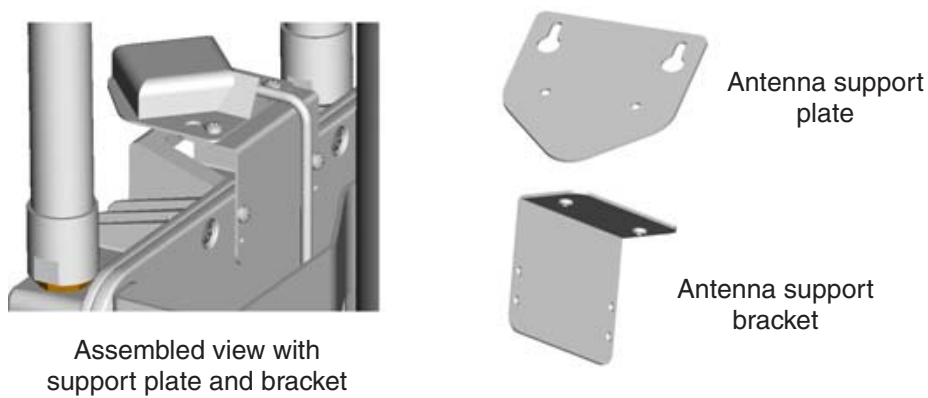
Power supply

Power is supplied to the Metro Cell - Outdoor using 48V PoE+ (Power over Ethernet). The PoE+ is supplied through the Ethernet cable connection. This Ethernet cable has to be connected to a PoE+ capable router or to the supplied 48V DC Power Injector.

If no PoE+ capable router is available, the 48V DC Power Injector has to be installed between the router and the Metro Cell Outdoor.

For installation instructions, refer to the user guide located in the Power Injector box, document number *06-0062-056*.

How to continue

After antenna and cable connections are completed continue onto, "To commission the Metro Cell - Outdoor".

....

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Metro Cell - Outdoor commissioning process

Purpose

This section describes the Metro Cell - Outdoor commissioning process. The Metro Cell - Outdoor is self commissioning in the case of single device deployments. Where multiple device deployments occur the operator may compliment zero-touch commissioning with appropriate cell planning.

Troubleshooting

If any problems occur during the commissioning process refer to the following document:

- *Alcatel -Lucent 9364 Metro Cell - Indoor and Outdoor Troubleshooting,* 401-387-076.

Commissioning process

The following steps outline the zero-touch commissioning process.

....

1   Power on the Metro Cell - Outdoor. After 1-3 seconds the power supply status indicator will light up and the Ethernet port status indicator will flash green.

....

2   After approximately 2 minutes the 9363 Metro Cell will initialize and establish connectivity. During this operation the System status indicator will blink slowly.

....

3   After the device has established a network connection the 9364 Metro Cell will automatically update it's software. This process takes approximately 15 minutes. During this operation both the System and Phone (device) indicators will blink.

....

4   Once the software update has completed the 9364 Metro Cell will carry out an automatic reboot. During reboot the Power and System indicators will be on.

....

5   After rebooting the device will automatically auto-configure itself. During this operation the System status indicator will blink slowly.

....

6   When the device is ready for use the Power, System and Phone (device) status indicators will all be ON.

E ND OF STEPS

....

Post installation activities and checks

Faceplate attachment

Once the Metro Cell is commissioned and ready for use attach the faceplate cover:

....

1   Check all cable connections are secure and correctly routed.

....

2   Using the supplied four faceplate screws, connect the faceplate to the device:

E ND OF STEPS ....

Final installation checks

Before leaving the installation site, check the following:

1   Secure all cables along their routes.

2   Verify that all the exterior conduit and cable connections are secure.

3   Inspect the site for loose tools, materials, and parts. Remove all such loose tools, materials, and parts.

E ND OF STEPS
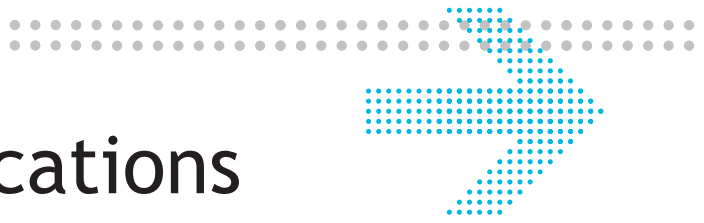
4   Product specifications

Overview

Purpose

This chapter details the Alcatel-Lucent 9364 Metro Cell - Outdoor product environmental specifications.

Contents

....

Environmental and regulatory specifications

Overview

The Metro Cell - Outdoor is CE certified and is compliant to RoHS and WEEE as well as the standards listed in the following sections.

Environmental operating conditions

Metro Cell - Outdoor operating temperature range: -33° to +45°.

The Metro Cell - Outdoor is compliant to the following environmental operating standards:

- ETS300 019 class 4.1 (temperature range: -33° to +55°), "Non-weather protected locations"

Health, safety, and environmental standards

The Metro Cell - Outdoor is compliant with the following health, safety, and environmental standards:

- IEC 60950-1 (International)
- EN 50383, EN 50385
- Directive 2002/95/EC RoHS6.
- Directive 2002/96/EC, Waste Electrical and Electronic Equipment (WEEE)

EMC (Electromagnetic Compatibility)

The Metro Cell - Outdoor product complies with the following EMC emission and immunity requirements:

- ETSI EN 301 489-1
- ETSI EN 301 489-23
- ETSI EN 301 908-1
- ETSI EN 301 908-3

The Metro Cell - Outdoor product complies with the following standards:

- 3GPP TS 25.113 Rel 8

....
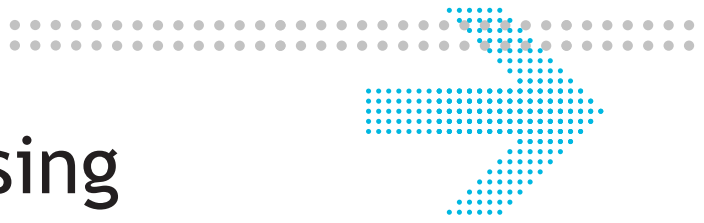
Appendix A: Overcasing installation

Overview

Purpose

This section provides the instructions for installing the overcasing applicable to the Alcatel-Lucent 9364 Metro Cell - Outdoor V2 2100 MHz and 1900/850 MHz.
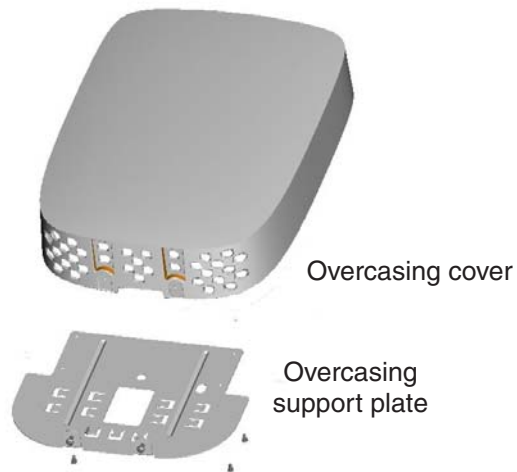
Contents

....

Overcasing installation instructions

Overcasing installation kit

- Overcasing cover
- Overcasing retention screws
- Overcasing support plate
- Overcasing support plate fixing screws

Overcasing cover

Overcasing
support plate

Installation steps

....

1   Before carrying out wall or pole mounting of the Metro cell attach the overcasing support
plate to the reverse side of the unit using the supplied screws.

....

Overcasing support
bracket attachment

----
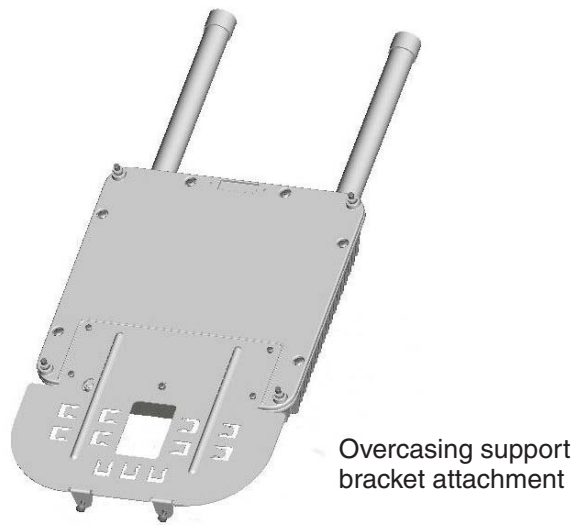
2   Install the Metro Cell at the desired location

- "To mount the hardware to a wall" (p. 3-4)
- "To mount the hardware to a pole" (p. 3-8)

----

3   Prior to attaching the overcasing route cables either through the back of the overcasing support plate or through the bottom of the overcasing and secure the cables.

GPS Antenna
cable

Ethernet
cable

----
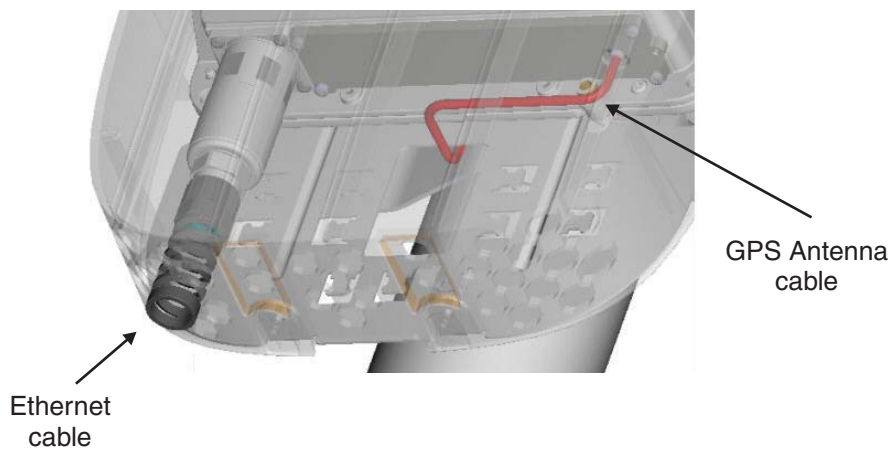
4   Attach the overcasing to the top of the Metro Cell unit and secure in place using the two retention screws at the bottom of the overcasing.
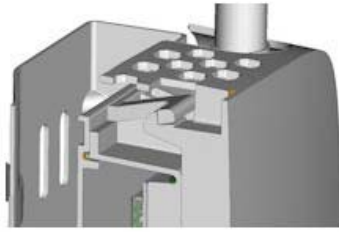
Overcasing attachment
(top of unit)
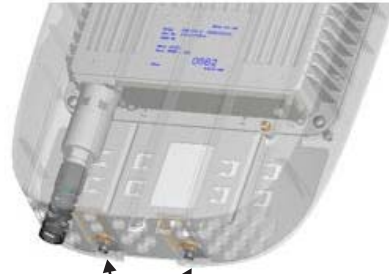
Overcasing
retention screws

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Appendix B: Metro Cell wall mount spacer

Overview

Purpose

This section details the hole spacing to be drilled when the Metro Cell unit is mounted onto a wall or flat surface.
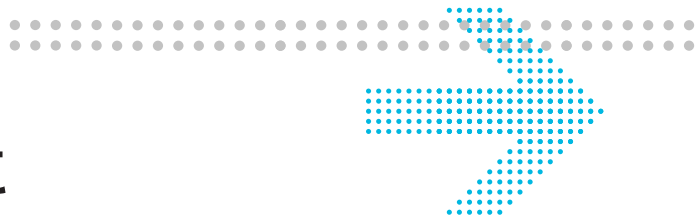
Contents

Wall mount spacer

Spacer template

218mm

2 ─ 1

218mm

Not to scale

3 ─ 4
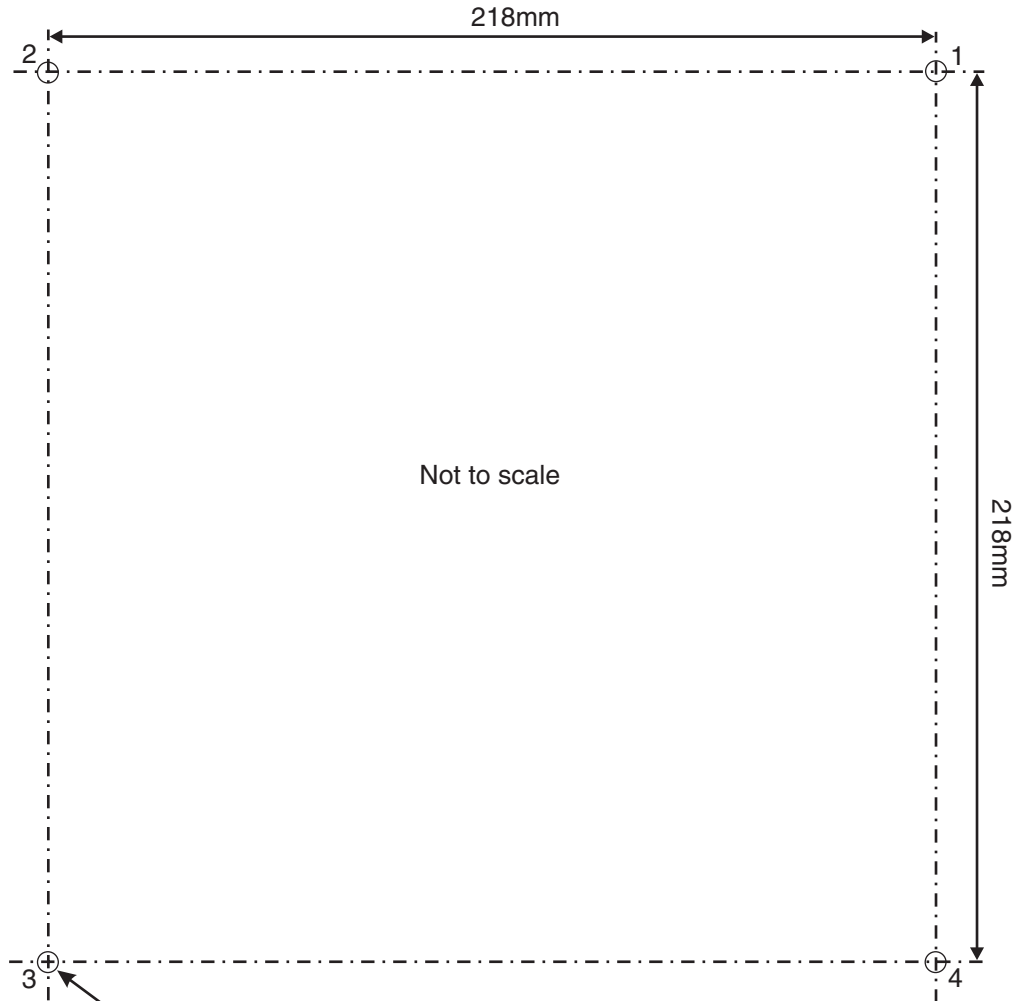
Wall drill position for screws
(Note: Use screws suitable for a 8mm bolt hole)

Max tightening torque: 3 Nm
Washer (serial large) are advised

Appendix C: Product conformance statements

Overview

Purpose

This section presents the product conformance statements that apply to the Alcatel-Lucent Metro Cell Access Point equipment.

The statements that are required are determined primarily by national or multi-national regulations. However, in some regions, contract terms determine which statements are required.

The presence of the statement indicates that the product does comply with that statement wherever it is required to do so.

Contents

European Union

Introduction

The statements that follow are the product conformance statements that apply to the Alcatel-Lucent Metro Cell Access Point equipment when deployed in the European Union.

Declaration of Conformity for radio and telecommunication terminal equipment under the scope of *Directive 1999/5/EC.*

Hereby, Alcatel-Lucent declares that the equipment documented in this publication is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

The technical documentation as required by the Conformity Assessment procedure is kept at the Alcatel-Lucent location which is responsible for this product. For more information please contact your local Alcatel-Lucent Customer Service Organization.

CE marking

This product has been CE-marked in accordance with the following European Directives:

- 1999/05/EC Radio and Telecommunication Terminal Equipment (R&TTE)

CE 0682 ①

EMC compliance

The equipment complies with the following EMC specifications:

Standard reference	Title
EN 301 489 V1.8.1/-23 V1.3.1	Electromagnetic Compatibility (Article 3.1(b) of the R&TTE Directive)
EN 55022:2006/A1:2007 Class B	EMC Directive (2004/108/EC)
EN 55024:1998/A1:2001/A2:2003	EMC Directive (2004/108/EC)

Radio spectrum compliance

The equipment complies with the following radio spectrum specifications:

Standard reference	Title
EN 301 908-1/-3 V3.2.1	Radio Frequency Spectrum usage (Article 3.2 of the R&TTE Directive)

Product safety

The equipment complies with the following product safety specifications:

Standard reference	Title
EN 60950-1:2006+A11:2009	Safety (Article 3.1(a) of the R&TTE Directive)
EN 50385:2002	Health (Article 3.1(a) of the R&TTE Directive)
EN 50383:2002	Health (Article 3.1(a) of the R&TTE Directive)

Antenna exposure

Antenna attachment for the Alcatel-Lucent 9364 Metro Cell Access Point equipment shall be performed in accordance with all applicable manufacturer's recommendations, and national laws and regulations. To ensure correct antenna installation, the antenna installer shall perform all necessary calculations and/or field measurements to evaluate compliance with applicable national laws or regulations regarding exposure to electromagnetic fields. The supplier of radio equipment, the supplier of antenna equipment and the integrator and builder of the site must provide sufficient information so that the limits of the exclusion zones can be determined. Any changes to the antenna or other equipment in the transmit path may require re-evaluation of the exposures to electromagnetic fields.

Pursuant to:

- European Council Recommendation 1999/519/EC, "*On the limitation of exposure of the general public to electromagnetic fields*"
- ICNIRP (International Commission on Non-Ionising Radiation Protection), "*Guidelines for limiting exposure to time-varying electric, magnetic, and electromagnetic fields*"

All installations must be evaluated against the Reference Levels, and if necessary exclusion zones for public and installation workers defined. For staff that are required to work in close proximity to the equipment, for example maintenance personnel, contact with the antenna should be avoided.

The following information on Alcatel-Lucent supplied equipment is available from customer representatives:

- Output power and antenna characteristic, if the product is equipped with an integral antenna

- A detailed description of at least one typical normal configuration, including antenna system (feeders, connectors, combiners, antennas, etc.), if the product is intended to be used with external antennas

- Limit distances for general public and occupational exposure. If the product is intended for use with external antennas, limit distances shall be given for the given typical system configurations.

- Information on how to specify exposure levels and limit distances for any optional system configuration not specified in detail

- Information on how to install the equipment/system or the external antennas in order to ensure that the separation between the radiating antenna and general public are exceeding the maximum allowed distances

Information on the methodology used for the determination of RF safety compliance distances and exclusion zones, and the results of the compliance evaluation shall be available for inspection by officials of the governing authorities.

Packaging collection and recovery requirements

Countries, states, localities, or other jurisdictions may require that systems be established for the return and/or collection of packaging waste from the consumer, or other end user, or from the waste stream. Additionally, reuse, recovery, and/or recycling targets for the return and/or collection of the packaging waste may be established. For more information regarding collection and recovery of packaging and packaging waste within specific jurisdictions, contact the Alcatel-Lucent Environment, Health and Safety organization.

Recycling / take-back / disposal of products and batteries

In compliance with Waste Electrical and Electronic Equipment Directive (WEEE Directive) 2002/96/EC 01/2003, amended by WEEE Directive 2003/108/EC 12/2003, electronic products and batteries bearing or referencing the symbols shown below shall be collected and treated at the end of their useful life, in compliance with applicable European Union and other local legislation. They shall not be disposed of as part of unsorted municipal waste. Due to materials that may be contained in the product and batteries, such as heavy metals, the environment and human health may be negatively impacted as a result of inappropriate disposal.

Note 1: For electronic products put on the market in the European Union, a solid bar under the crossed-out wheeled bin indicates that the product was put on the market after 13 August 2005.

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Note 2: For batteries put on the market in the European Union, a chemical symbol Hg (mercury), Cd (cadmium), or Pb (lead), or a combination of those symbols, beneath the cross-out wheeled bin indicates that the battery contains the corresponding heavy metals.

Moreover, in compliance with legal requirements and contractual agreements, where applicable, Alcatel-Lucent will offer to provide for the collection and treatment of Alcatel-Lucent products bearing the logo at the end of their useful life, or products displaced by Alcatel-Lucent equipment offers.

For information regarding take-back of equipment by Alcatel-Lucent, or for more information regarding the requirements for recycling/disposal of a product, please contact your Alcatel-Lucent account manager. Visit the Alcatel-Lucent Take-Back (http://www.alcatel-lucent.com/product_takeback) web page, or contact Alcatel-Lucent Takeback Support at (mailto:takeback@alcatel-lucent.com). For technical information on product treatment, consult the Alcatel-Lucent Recycling Information (http://www. alcatel-lucent.com/product_recycling) web page.

Material content compliance

Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS Directive) restricts the use of lead, mercury, cadmium, hexavalent chromium, and certain flame retardants in electrical and electronic equipment. This Directive applies to electrical and electronic products placed on the EU market after 1 July 2006, with various exemptions, including an exemption for lead solder in network infrastructure equipment. Alcatel-Lucent products shipped to the EU after 1 July 2006 comply with the EU RoHS Directive.

Glossary

Numerics

    2G

        Second-Generation Mobile Network

    3G

        Third-Generation Mobile Network

    3GPP

        Third-Generation Partnership Project

B   **BOAC**

        Building Officials and Code Administrators

E   **ETSI**

        European Telecommunications Standards Institute

H   **HSUPA**

        High Speed Uplink Packet Access

K   **Kg**

        kilogram

M   **MAC**

        Media Access Control.
        A protocol that determines how devices will share resources on a local area network.

    Mbps

        Megabits per second

N   **NEMA**

        National Electrical Manufacturers Association.

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Node B

Logical Node for radio Tx/Rx in one or more cells to/from UE.

....

P   **PoE**

Power over Ethernet

....

R   **RNC**

Radio Network Controller

RoHS

Restriction of Hazardous Substances Directive

....

U   **UBC**

Uniform Building Code

....

W   **WEEE**

Waste Electrical and Electronic Equipment Directive

....

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