AT&T MetroCell 9962 Installation Guide

For the Alcatel-Lucent 9962 Multi-standard Enterprise Cell v1

AT&T Business

Effective 07/28/2023 this MetroCell self-service portal that is used for device registration, activation, cancel, deactivation, and move functions will be disabled for these functions.

Please ensure any devices requiring these functions have the tasks completed by the effective date. The normal operation of activated devices, status of devices, approved user list management, and performance reports will remain available within the portal after the effective date until the MetroCell product is retired.

Before you begin

Installation

The AT&T MetroCell website:

Appendix

Warranty

Before you begin

The time required to install your AT&T MetroCell device varies with local circumstances; allow 1-2 hours for a simple installation. Once the device is installed and activation is initiated via the MetroCell website, it will take up to another 2 hours for your MetroCell to be ready for use.

For accessibility information about the AT&T MetroCell, please visit att.com/metrocell.

To install AT&T MetroCell, you will need:

1. A central location where you can attach the access point to an interior wall or column. This location should be:
   - Within 100 feet of an exterior window, glass wall or door (to receive GPS signals), and preferably no closer than 15 feet to minimize propagation of the signal into areas served by the public network. Note that "Low-E" glass windows may interfere with the reception of GPS signals and should be avoided.
   - At least 2 feet away from metal obstructions, microwave ovens, cordless phones, fans, motors, and fluorescent lighting in order to avoid interference with the radio signal.
   - At least 1 foot away from any work station or place where people may gather in order to avoid excessive exposure to radio frequency emissions.
   - A substantial distance from any other small cell (MetroCell, MicroCell or repeater) to avoid radio wave interference – see Appendix C when installing multiple MetroCells.

2. An available Ethernet port on a router or switch with sufficient available bandwidth to support the traffic that will be carried over the AT&T MetroCell (see Appendix B for bandwidth requirements).

3. An AT&T Premier username and password. If you do not already have a Premier admin username and password, go to att.com/premier and select **Register now**.

4. Some basic tools and hardware (drill, hammer, screw driver, screws, wall anchors, cable fasteners).
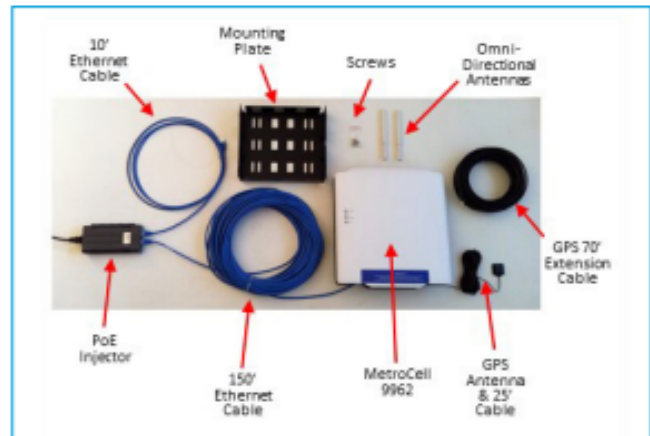
What's in the kit

Examine the contents of the MetroCell kit. If you notice any damage, please notify the carrier who delivered the unit and contact your AT&T representative.

The MetroCell 9962 kit contains the following components:

- Box 1:   AT&T MetroCell 9962, mounting plate, GPS antenna, package of screws
- Box 2/5: Two omni-directional ("stick") antennas, power supply (not used in typical installations)

- Box 3:   Power over Ethernet 4p (PoE) injector
- Box 4/6/7: 10' Ethernet cable, 150' Ethernet cable (shielded Cat5e), and 70' GPS antenna extension

Box 1 is the largest, followed in size by Box 4/6/7, Box 3, and Box 2/5. Note: packaging may not be exactly as described.

Note that the typical installation described in these instructions may not require several components in the kit, including the 48V AC/DC power adaptor and power cord.

Getting to know AT&T MetroCell

The AT&T MetroCell is an Alcatel-Lucent 9962 Multi-standard Enterprise Cell v1, or "9962".

Several features you should be aware of:

- Two "stick" antennas screw into the top edge of the MetroCell near the sides.
- There are 4 LED lights on the left side of the front cover.

- A small section of the bottom of the back cover slides off to reveal various cable connection points. A similar section at the top of the back cover slides off to reveal 7 antenna connection terminals. The latter are not used in standard installations. Each cover section is secured by 2 recessed phillips-head screws, which must be removed to open them.

Back of AT&T MetroCell 9962

Cable Cover · RJ45 Connector For Ethernet Cable · Pinhole for Reset · GPS Antenna Connector

Installation

LAN configuration requirements

To activate an AT&T MetroCell, it must be able to communicate with a dynamic Internet address in the AT&T Mobility network. If you're connecting the MetroCell to a customer-provided router that has a simple configuration and hasn't been customized, it likely won't be necessary to make any changes to the router settings.

- If the router configuration has been customized or you are using a firewall, please consult the Local transport requirements in Appendix A, as well as documentation from the router manufacturer and/or Internet Service Provider.

Make sure that there is an available Ethernet port on a router or Ethernet switch with sufficient available bandwidth to support the traffic that will be carried over the MetroCell. See Appendix B for bandwidth requirements.

Serial number

Record the 18-character serial number before mounting the MetroCell. You will need this identifier during activation. It can be found on the label on the back of the 9962 ("Serial No. 3G/4G") and also on the shipping label.

Serial No.

Site-specific hardware

All site-specific installation materials such as screws and wall anchors are the responsibility of the party performing the installation and are not included in the MetroCell kit.

Placement guidelines

The AT&T MetroCell is for indoor use only.

The following are guidelines for placement of the MetroCell:

- Install the MetroCell in a central location, relative to the desired coverage area.
- The MetroCell should be installed on an interior wall or column near the ceiling.
- Do not install the MetroCell close to metal obstructions such as heating and air-conditioning ducts, large roof or ceiling trusses, or major power cables.
- Walls between the MetroCell and users will reduce signal strength. Solid metal or metal mesh can block a radio signal entirely. Signals can typically penetrate one or two solid concrete walls, three or four cinder block walls, five or six drywall or wood walls.
- Avoid installing the MetroCell within a few feet of microwave ovens, cordless phones, fans, motors, and fluorescent lighting.
- The MetroCell should not be mounted where any person will spend more than a minute within a 12-inch radius of the device when it is active. See Appendix E for additional details.
- Locate the device in a spot which will permit the GPS Antenna, with its 30 ft. cord and 70 ft. extension, to reach an exterior window, glass wall or door to receive GPS signals. If the device is unable to receive a GPS signal, it may not be able to complete activation. Note that "Low-E" glass windows may interfere with the reception of GPS signals and should be avoided.

- The MetroCell kit includes 150 ft. of shielded Cat5e Ethernet cable. Select a location for the MetroCell that is within 150 ft. of the router or switch port to which it will be connected. If necessary, the MetroCell can be as far away as 300 feet from the router or switch.

   If a cable longer than 150 feet is required, the customer or installer must provide this cable, which must be shielded Cat 5e with metallic "boots".

- The MetroCell being installed should be 50 to 100 feet away from any other MetroCell, MicroCell, or repeater. AT&T MetroCells may not be used as an RF source for a Distributed Antenna System. See Appendix C for additional information on installing multiple MetroCells.

Connectivity between the key components is as follows:

- A customer-provided router or switch is connected to the Internet.
- The router/switch is connected by a short Ethernet cable to a PoE injector, which is also connected to 110V AC power and an electrical ground.
- The PoE injector is connected over Cat5e shielded Ethernet cable to the MetroCell.
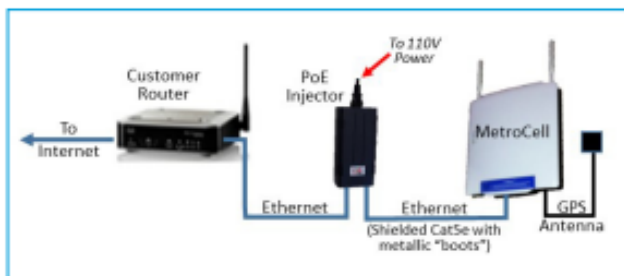
Environmental Requirements

The following are the environmental requirements for the MetroCell device:

Parameter	Value
Temperature range	0°C to 50°C [32°F to 122°F]
Relative humidity	Up to 93%

The MetroCell and all its components (including cables and power adaptor) must be placed in a dry area and kept away from any wet or damp environments such as lavatories or any other areas with exposure to moisture, sprays, drips, or running water.

Device assembly

Unpack the MetroCell.

Find the 2 "stick" antennas, each about 8 inches long, and screw them into the connection points on the top edge of the MetroCell.

Step 1: Mount AT&T MetroCell

Wall mount installation

The 9962 requires a mounting plate to be installed on the wall. It is mounted with the large side against the wall and the hooks on the sides away from the wall and pointing up.

Note: The wall mount implies that the MetroCell is vertically installed with the stick antennas pointing upwards (not downwards or sideways). The stick antennas cannot be bent. Failure to comply with these requirements may change and degrade the performance of the MetroCell.

To mount the device onto a wall or column, perform the following steps.

1. Select a location where the MetroCell can be mounted in a vertical position.
2. Hold the mounting plate against the wall where it is to be installed and mark the positions for 4 holes to be drilled near the corners.
3. For each marking, drill a hole in the wall with the appropriately sized drill bit. Insert an anchor into each drilled hole. Use an anchor that is appropriate for the wall material. These must be provided by the installer.

4. Attach the mounting plate to the wall using appropriate screws.
5. Line up the 4 slots in the back of the MetroCell with the 4 hooks protruding from the mounting plate.
6. There are screw holes in the sides of the mounting plate which align with holes in the sides of the MetroCell. Insert the 4 screws (provided in the wall mounting kit) to attach the 9962 to the mounting plate.
7. The mounting plate also has a hole in the side which can be used to insert a lock (not provided).

Step 2: Connect AT&T MetroCell

Power supply

The MetroCell must be powered by either the provided Power over Ethernet (4p PoE) injector or by the provided 48V AC/DC power adaptor. Do NOT use both at the same time, and do NOT use Power over Ethernet from a router or switch. In most cases, the PoE injector is recommended since it requires that only one cable be run to the MetroCell.

If the PoE Injector is used, the cable connecting the PoE injector and the MetroCell must be shielded Cat5e, and the connectors at both ends must have metallic "boots".

PoE injector use and mounting

1. PoE Injectors should be mounted in data equipment locations and must not be mounted above the ceiling or near the MetroCell.

2. The PoE Injector should be secured to an equipment rack, if the customer has one available, or to another secure fixture.

PoE Injector

"Data & Power Out" To MetroCell

"Data In" From Router

Connect the Ethernet cables

To attach the Ethernet cables, perform the following steps.

1. Route the supplied 10 foot Ethernet cable from the router or switch to the PoE Injector and plug it into the Data In jack in the injector.

2. Remove 2 recessed screws securing the small section of the bottom back cover of the MetroCell and remove it to reveal the Ethernet and GPS connectors.

3. Plug one end of the 150 foot Ethernet cable into the RJ45 Ethernet jack on the back of the MetroCell. Put the cable cover back on.

150 foot Ethernet cable

GPS Antenna

4. Route the supplied long Ethernet cable from the MetroCell to the PoE+ Injector, and plug it into the Data & Power Out jack on the PoE Injector.

5. Secure the long Ethernet cable to the wall.

GPS antenna cable connection

The MetroCell has GPS capability for localization of the unit, which is required to comply with FCC Enhanced 911 (E911) regulations.

1. Connect the 30 foot GPS antenna cable, with or without the 70 foot extension, to the MetroCell GPS connector, also on the bottom of the MetroCell.

2. Route the GPS antenna to (or as close as possible to) an exterior window, glass wall or door for satellite access and secure the end in place to a horizontal surface. Secure the cable along its length.

Note: If the MetroCell is unable to acquire a GPS signal, the device may be unable to complete activation.

Grounding

1. Each MetroCell must be grounded via shielded CAT5e cable with metallic boots back to the associated PoE Injector.

2. The PoE Injector must be grounded through the 3-prong power plug.

Power Up

Finally, power up the MetroCell by connecting the PoE Injector power cord to the PoE Injector and plugging it into a 110V outlet. There is no On/Off switch on the MetroCell or the PoE injector. When on and plugged in, you will see the LED indicator lights on the front of the MetroCell come on. If you need to power the unit down, unplug the Ethernet cable at either end (when Power over Ethernet is used).

Radio frequency (RF) safety compliance

The Terms and Conditions agreed to by every customer purchasing a MetroCell from AT&T require that the customer respond to inquiries about the MetroCell from employees and members of the general public who might come into proximity with the MetroCell antennas. Information to assist the customer in responding to inquiries is provided in Appendix E and must be followed prior to and while operating the MetroCell. FCC rules require that this information be maintained with the MetroCell and made available when requested.

Station authorization

The MetroCell radio is permitted by the FCC to operate on spectrum licensed to AT&T. In accordance with FCC rules, AT&T requires the customer to maintain the notice provided in Appendix F with or near the MetroCell and to present it when requested.

Activation

Your MetroCell is now ready for activation. This is done through the MetroCell website, described in the next section.

The AT&T MetroCell website: att.com/metrocell

The MetroCell website provides access to a wealth of information about the MetroCell, as well as access to the management functions you can perform.

Contents and use of the website are described in greater detail in the full AT&T MetroCell 9962 User Guide, which is available at att.com/metrocell. Operation of the unit is controlled via a web interface, which is compatible with standard screen readers used by persons with visual impairment.

Premier username & password

If you do not already have a Premier admin username and password, the following document explains how to obtain these credentials: Register for Premier.

The individual designated in Premier as the Company Administrator, sometimes referred to as the Telecom Manager or TCM, will by default have access to all functions in the MetroCell website. A second tier of Premier users, called BAN (Billing Account Number) Administrators, will by default have access to all MetroCell functions but can be restricted by the TCM. See the MetroCell User Guide for more information about the functions of the MetroCell.

One or more MetroCells are associated with a BAN. A BAN Admin will be able to manage any MetroCells associated with the BAN; a TCM may be able to manage MetroCells associated with multiple BANs.

Note that while you will need a Premier username and password to access the Manage My MetroCell portion of the MetroCell website, you will not need to enter the main Premier website to do so.

Activating your AT&T MetroCell

First, make sure you have all of the following information, which will be required to activate your MetroCell:

- Your AT&T Premier username and password (for TCMs and BAN Admins).
- The serial number of the MetroCell you are activating (found on the device label or shipping label).
- The street address at which the MetroCell is installed.
- A "nickname" which you want to assign to the MetroCell to make it easier to identify (this is optional).
- The location of the MetroCell in the building, which will be sent to emergency responders in the event of a 911 call (e.g., Room 3-456, 2nd floor telephone closet, etc.).

- The name, email address, and phone number of an individual who will serve as a technical contact when AT&T needs to communicate with you about the MetroCell.
- The name of the Internet Service Provider which will provide Internet access for the MetroCell. This may be helpful in resolving problems that may arise.

From the MetroCell website entry page (att.com/metrocell), select Manage My MetroCell.

The resulting page (after logging in) provides a listing of the MetroCells that you are authorized to manage, with associated status and other information. The MetroCell you have just installed should be listed with a status of "Inactive." Click on "Device 1" (or Device 2 or 3) to go to the Activation page.

Enter all of the requested information and click the Submit button.

Note: It is strongly recommended that the operational Mode of the device be initially set to Open on the Device Information page. This will ensure that the LTE radio in the MetroCell is tested and will make it simpler to place test calls at the completion of activation. If you prefer to operate the MetroCell in Closed mode (to be able to limit usage to pre-approved users), you can return to the Edit Settings page and change to Closed mode after activation and testing are complete.

The MetroCell will initialize, establish IP connectivity, update its software, reboot, and configure itself. This process can take up to 2 hours to complete. The LEDs may be green or red, steady or flashing at various stages of the process.

When the device is ready for use and provisioned for use of both the 3G and LTE radios, all 4 LEDs will be green and steady. When the system is fully working for 15 minutes, the LEDs are all turned off.

Please Note: All MetroCell customers are provided with Premium edition at no additional charge. With Premium edition you will be able to operate your MetroCell in "Closed" mode, which means the MetroCell will be accessible only to users of those AT&T cellular phone numbers that you specify.

When checking for signal strength and placing test calls, please be sure either that the MetroCell is in "Open" mode or that the phone you are using to check performance is on the Approved User List if the MetroCell is in "Closed" mode (see the AT&T MetroCell 9962 User Guide available at att.com/metrocell).

If any problems occur during the activation process, refer to the Troubleshooting Guide in Appendix D to this Installation Guide.

When activation is complete, you will receive an email message and, depending on what screen you are on, an on-screen message as well, confirming successful activation. The email will be sent to the Technical Contact email address entered in the activation process.

After activation, you should perform the following checks to ensure that your MetroCell is operating properly:

1. Check that AT&T handsets within range of the MetroCell display more "bars" of signal strength than they did before the MetroCell was activated. If the handset is connected to the public or "macro" network, it may be necessary to power it off and on or put it in and out of airplane mode in order to have it connect to the MetroCell.

2. Make at least one test call and test at least one data application.

Providing an accurate address for the building where the MetroCell is located is critical for ensuring 911 emergency first responders (fire, police, and medical) are dispatched to the correct location.

The address you provide is used in two important ways: (1) for routing 911 calls from your MetroCell to the appropriate 911 dispatch center; and (2) ensuring that 911 emergency first responders are dispatched to the building where the MetroCell has been installed. Failure to provide the correct and complete address may delay or prevent first responders from arriving at the location of the emergency. If you are activating multiple MetroCells located in different buildings (e.g., an office park or campus), you must provide the correct building identifier for each MetroCell location; otherwise, emergency first responders may go to the wrong building. Additionally, providing one address for an entire office park may delay the emergency service response.

Appendix A: Local transport requirements

Confirm the following router/switch settings prior to activating your AT&T MetroCell:

1. DHCP is ON
   [Note: For installations where static assignment of an IP address is desired the use of MAC Binding and static DHCP Reservation is suggested. Static IP is not supported]

2. MTU size is set to 1492 or higher

3. MAC address filtering is either turned off or allows the MAC address of the MetroCell

4. IPSec Pass-Through is Enabled

5. Block Fragmented Packets is Disabled

If using multiple routers, the MetroCell must be connected to the first router connected to the broadband modem.

If the MetroCell is connected to a router that is connected to a modem and both the router and the modem have NAT (Network Address Translation) enabled, disable NAT either in the router or in the modem.

Because of the wide variety of network configurations, AT&T recommends consultation with a network specialist, router manufacturer, and/or Internet Service Provider to answer specific network setup questions.

TCP/UDP Ports

The following ports need to be Open for inbound and outbound connections:

- UDP Ports 123, 500, 4500, 33434, 33435, 33436
- TCP Ports 443, 7004, 7014

IP Address Pass-Through

If the local network has a firewall with specific IP addresses allowed to pass through, traffice to and from the following addresses must be allowed to pass:

Fully Qualified Doman Name (FQDN)	IP Address	Port
bootstrap-ipsecrouter1.metro.wireless.att.com	12.230.211.36	udp 500, 4500, 33434 thru 33450 (Content in **BOLD** is new and must be permitted on networks with custom firewalls)
	107.122.134.64/26	
	166.194.142.64/26	
initial-ipsecrouter.metro.wireless.att.com	12.230.211.12	udp 500, 4500 (Content in **BOLD** is new and must be permitted on networks with custom firewalls)
	107.122.134.64/26	
	166.194.142.64/26	
fileserver.metro.wireless.att.com	166.147.105.25	tcp 443, tcp 7014
hnm.metro.wireless.att.com	166.147.105.25	tcp 443, tcp 7004
N/A	12.230.208.133	udp 123 (Content in **BOLD** is new and must be permitted on networks with custom firewalls)
N/A	12.230.209.5	
N/A	12.230.208.48	
N/A	12.230.209.133	
N/A	**216.239.35.8**	
N/A	**216.239.35.12**	
N/A	**129.134.25.123**	
N/A	**17.253.4.125**	
alumsmci-crtn-oam.metro.wireless.att.com	12.230.211.4	udp 500, 4500, 33434, 33435, 33436
alumsmci-crtn-4gb.metro.wireless.att.com	12.230.211.44	
alumsmci-hzwd-oam.metro.wireless.att.com	12.230.211.68	
alumsmci-hzwd-4gb.metro.wireless.att.com	12.230.211.76	
alumsmci-clmb-oam.metro.wireless.att.com	12.230.210.196	
alumsmci-clmb-4gb.metro.wireless.att.com	12.230.210.204	
alumsmci-rcpk-oam.metro.wireless.att.com	12.230.210.132	
alumsmci-rcpk-4gb.metro.wireless.att.com	12.230.210.140	
alumsmci-dctr-oam.metro.wireless.att.com	12.230.210.4	
alumsmci-dctr-4gb.metro.wireless.att.com	12.230.210.36	
alumsmci-lkmr-oam.metro.wireless.att.com	12.230.210.68	
alumsmci-lkmr-4gb.metro.wireless.att.com	12.230.210.100	
alumsmci-snap-oam.metro.wireless.att.com	12.230.211.196	
alumsmci-snap-4gb.metro.wireless.att.com	12.230.211.204	
alumsmci-sntd-oam.metro.wireless.att.com	12.230.211.132	
alumsmci-sntd-4gb.metro.wireless.att.com	12.230.211.140	

Fully Qualified Doman Name (FQDN)	IP Address	Port
akr3-oam.metro.wireless.att.com akr3-4gb.metro.wireless.att.com	166.198.56.64/26	
all4-oam.metro.wireless.att.com all4-4gb.metro.wireless.att.com	107.122.134.64/26	
atn3-oam.metro.wireless.att.com atn3-4gb.metro.wireless.att.com	166.192.42.64/26	
atl3-oam.metro.wireless.att.com atl3-4gb.metro.wireless.att.com	107.122.135.64/26	
brp1-oam.metro.wireless.att.com brp1-4gb.metro.wireless.att.com	166.192.80.64/26	
chg3-oam.metro.wireless.att.com chg3-4gb.metro.wireless.att.com	166.198.57.64/26	udp 500, 4500 (Content in **BOLD** is new and must be permitted on networks with custom firewalls)
fro2-oam.metro.wireless.att.com fro2-4gb.metro.wireless.att.com	166.192.81.64/26	
hst5-oam.metro.wireless.att.com hst5-4gb.metro.wireless.att.com	166.194.142.64/26	
lsa4-oam.metro.wireless.att.com lsa4-4gb.metro.wireless.att.com	107.122.136.64/26	
scr1-oam.metro.wireless.att.com scr1-4gb.metro.wireless.att.com	108.144.26.64/26	
wah2-oam.metro.wireless.att.com wah2-4gb.metro.wireless.att.com	166.198.59.64/26	
wnd4-oam.metro.wireless.att.com wnd4-4gb.metro.wireless.att.com	166.198.58.64/26	

In the event that a MetroCell does not successfully activate, it may be useful to perform a packet trace of the messaging between the MetroCell and the AT&T network to aid in troubleshooting

Appendix B: Bandwidth requirements

Customer is responsible for providing connectivity to the Internet.

The required bandwidth will depend on the number of simultaneous users you want to be able to support and whether data-intensive applications are being used.

The maximum total traffic that can be carried by a MetroCell 9962 across all simultaneous users, based on its radio interface, is up to 100 Mbps. Lesser Internet access bandwidth may limit overall throughput.

The following table shows the minimum bandwidth required for the MetroCell 9962 to operate properly, depending on whether there are 1, 2, or 3 MetroCells sharing the same access circuit:

| Number of MetroCells Supported	Minimum Downlink Bandwidth	Minimum Uplink Bandwidth
1	25 Mbps	5 Mbps
2	30 Mbps	7 Mbps
3	35 Mbps	9 Mbps

Appendix C: Installing multiple MetroCells

A single MetroCell can cover up to 15,000 square feet, depending on the building layout and construction material. If the area to be served is larger than this, a 2nd or 3rd MetroCell may be required. However, be aware of the following considerations:

- If the MetroCells are too close to each other (or to a MicroCell or repeater), their signals may interfere with each other, resulting in poor performance.
- If the MetroCells are too far away from each other, a call in progress may drop where there is no signal coverage.

If optimal performance is desired, a custom Radio Frequency (RF) design is required, performed by a qualified RF engineer using sophisticated equipment, followed by optimization of the antennas, transmit power, and other settings. This level of customization is NOT included in the standard installation option offered by AT&T.

In the absence of such a custom design, the following guidelines are provided.

1. Install the first MetroCell and activate it. If possible, allow some flexibility to be able to move it to adjust the coverage area in step 5.
2. Map out the effective coverage area of the first MetroCell by walking around while looking at the number of "bars" of signal strength on a handset. Identify the edge of the area covered by the 1st MetroCell where signal strength is between 1 and 2 bars. This is as far away from the first MetroCell as a user could be and still be properly served by that MetroCell.
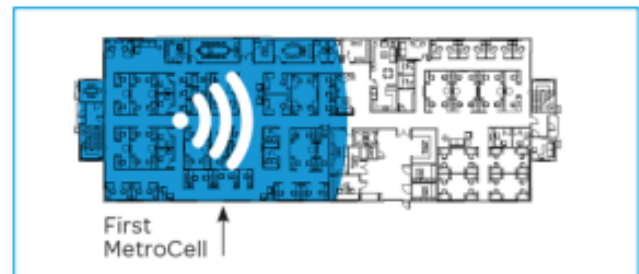
3. Find a site for the 2nd MetroCell that is as far away from the edge of the coverage area identified in step 2 as that edge is away from the first MetroCell. Map the coverage area as in step 2.
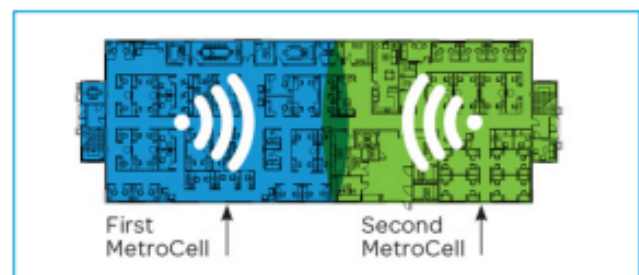
4. Install and activate the 2nd MetroCell. If possible, allow some flexibility to move it to adjust the coverage area in the next step.
5. Place test calls from points throughout the combined coverage area, especially in the overlap area, where interference between the two may adversely affect call quality. Test for the ability to place calls, the ability to maintain calls without dropping, and voice quality. Adjust the locations of the MetroCells if necessary to achieve the best performance.

Appendix D: Troubleshooting guide

If you are not able to make a voice call or use data applications, follow the troubleshooting steps in this appendix.

If you have multiple small cells at the same site and are experiencing poor voice quality, slow data speeds, or dropped calls, the cause may be interference between the cells. It may be necessary to increase the separation between cells or otherwise shield the cells from each other. If you are experiencing poor voice quality, check that the recommended Internet access bandwidth is provided and available.

Preliminary steps

- Power down the MetroCell and wait 10 minutes.
- Power up the MetroCell and wait at least 15 minutes.
- Ensure that an appropriate mobile device is available. If the handset is connected to the public or "macro" network, it may be necessary to power it off and on or put it in and out of airplane mode in order to have it connect to the MetroCell.
- If the MetroCell has been configured to operate in "Closed" mode, either change to Open mode or ensure that any device being used to make test calls is on the Approved User List (see the AT&T MetroCell 9962 User Guide available at att.com/metrocell).
- Check that an Internet router is connected and that Internet access is working properly.
- Ensure that administrative access to the router and MetroCell is available.
- Verify that the Local Transport Requirements in Appendix A are met. This may require adjustment of certain router parameters.

Debug interface

Four LED indicator lights are visible on the front face of the MetroCell. LEDs provide status indication for:

- Power
- LTE
- WCDMA (also known as 3G)
- GPS

These LEDs can be used to help diagnose problems – see the troubleshooting steps below.

The various LEDs can take one or more of these states:

- Off
- Flashing green
- Solid green
- Flashing red
- Solid red
- Toggling between red and green
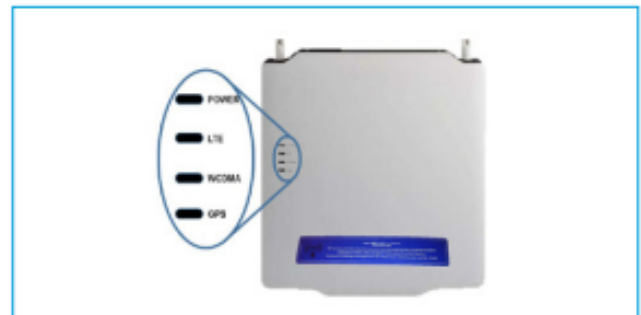
Steps to perform LED troubleshooting

Step 1 – Check the Power LED

The Power LED indicates the overall state of the MetroCell. Specific states are described in the following table:

Power LED	Other LEDs	Explanation	Action
Off	Off	All LEDs are off when there is no power to the MetroCell. All LEDs are also turned off after 15 minutes of normal operation.	• Check the number of "bars" on a handset within range to see if the MetroCell is working. • Check that power is being delivered to the MetroCell. • Reset or power cycle the MetroCell.
Red	Off	A hardware fault has been detected which prevents service from being provided.	Check that the ambient temperature is within the stated operating range.
Red	On	A hardware fault has been detected which is degrading service.	Call AT&T Customer Care at 877-996-7017 and, when prompted, enter PIN 63876 (METRO).
Flashing Red	Off	Device has not connected to the AT&T Network.	Review all local transport requirements in Appendix A.
Green			Continue to Step 2.

Step 2 – Check the LTE LED

The LTE LED indicates whether the MetroCell is configured to provide LTE service and whether any faults have been detected. Specific states are described in the following table:

LTE LED	Explanation	Action
Off	All LEDs are off when there is no power to the MetroCell. All LEDs are also turned off after 15 minutes of normal operation.	• Check the number of "bars" on a handset within range to see if the MetroCell is working. • Check that power is being delivered to the MetroCell. • Reset or power cycle the MetroCell. • In the early phase of this service, the LTE radio will be turned off if the device is operated in Closed mode. If the WCDMA LED is green, check whether putting the MetroCell into Open mode causes the LTE light to turn green.
Red	• MetroCell is booting up or restarting. • If red at other times, LTE configuration or operational failure.	Call AT&T Customer Care at 877-996-7017 and, when prompted, enter PIN 63876 (METRO).
Flashing Green	LTE is blocked.	May clear itself. If this state persists, call AT&T Customer Care at 877-996-7017 and, when prompted, enter PIN 63876 (METRO).
Toggling Red/Green	System is initializing.	
Flashing Red	Location check has failed.	Reset or power cycle the MetroCell. Verify the address that was entered on the website. Call AT&T Customer Care at 877-996-7017 and, when prompted, enter PIN 63876 (METRO).
Green	Ready for service.	

Step 3 – Check the WCDMA LED

The WCDMA LED indicates whether the MetroCell is configured to provide 3G (UMTS and HSPA+) service and whether any faults have been detected. Specific states are described in the following table:

WCDMA LED	Explanation	Action
Off	All LEDs are off when there is no power to the MetroCell. All LEDs are also turned off after 15 minutes of normal operation.	• Check the number of "bars" on a handset within range to see if the MetroCell is working. • Check that power is being delivered to the MetroCell. • Reset or power cycle the MetroCell.
Red	• MetroCell is booting up or restarting. • If red at other times, 3G configuration or operational failure.	Call AT&T Customer Care at 877-996-7017 and, when prompted, enter PIN 63876 (METRO).
Flashing Green	3G service is blocked.	May clear itself. If this state persists, call AT&T Customer Care at 877-996-7017 and, when prompted, enter PIN 63876 (METRO).
Toggling Red/Green	System is initializing.	
Flashing Red	Location check has failed.	Reset or power cycle the MetroCell. Verify the address that was entered on the website. Call AT&T Customer Care at 877-996-7017 and, when prompted, enter PIN 63876 (METRO).
Green	Ready for service.	

Step 4 – Check the GPS LED

The GPS LED indicates the status of the MetroCell's GPS systems and whether any faults have been detected. Specific states are described in the following table:

GPS LED	Explanation	Action
Off	• All LEDs are off when there is no power to the MetroCell. All LEDs are also turned off after 15 minutes of normal operation. • Turns off after location check has completed.	• Check the number of "bars" on a handset within range to see if the MetroCell is working. • Check that power is being delivered to the MetroCell.
Red	• MetroCell is booting up or restarting. • If red at other times, GPS hardware or software failure.	Call AT&T Customer Care at 877-996-7017 and, when prompted, enter PIN 63876 (METRO).
Flashing Red	Seeking GPS signal.	• If persists but the 3 other LEDs are solid green, then location has been verified by other means and this LED can be disregarded. • If the other LEDs are not solid green and you have waited 2 hours, check condition and placement of the GPS antenna. Reset or power cycle the MetroCell.
Flashing Green	The GPS signal has been lost.	Check condition and placement of the GPS antenna. Reset or power cycle the MetroCell.
Green	A GPS signal has been acquired.	

If you are still unable to complete calls and use data applications, please call AT&T Customer Care at 877-996-7017 and, when prompted, enter PIN 63876 (METRO).

Appendix E: Radio frequency (RF) safety compliance

When operated in accordance with manufacturer specifications and AT&T's instructions, the MetroCell meets FCC Radio Frequency (RF) safety compliance requirements. Details are provided below.

The terms and conditions agreed to by every customer purchasing a MetroCell from AT&T require that the customer take the following actions to avoid excess RF exposure to employees, contract workers, and other persons who may gain proximity to the MetroCell antennas ("Persons with Access"):

a. Install the MetroCell antennas at a distance of at least 1 foot away from any work station or other area where Persons with Access may routinely be present (i.e. for a time period greater than one minute), including areas of short-term duration such as, but not limited to, areas where there is a light, light switch, thermostat, HVAC unit or vent, electrical outlet, or sign.

b. Instruct all Persons with Access to remain at least 1 foot from the MetroCell antennas;

c. Instruct all Persons with Access to inform someone responsible for the MetroCell if there is a need to get closer than 1 foot from the MetroCell antennas;

d. Instruct all Persons with Access to coordinate work near the MetroCell antennas with customer;

e. Deactivate the system or MetroCells when needed, in the manner instructed by AT&T or the Manufacturer, if Persons with Access need to work near the MetroCell antennas. When deactivation is required, Customer will notify the Persons with Access when the system or

MetroCells are deactivated, ensure that the system or MetroCells remain deactivated while work is performed, and reactivate the system or MetroCells when all work is complete and all Persons with Access are located at least the required distance away from the MetroCells; and

f. Follow such other instructions as AT&T or the Manufacturer may deem appropriate from time to time, including, but not limited to, the installation and maintenance of any notice, caution, and warning signs, and any RF transparent screen/shield. Customer should specifically refer to Appendix F to this Installation Guide, which contains specific instructions for maintaining a record identifying AT&T as the custodian of the station's license to operate.

Definition of small cells included in this certification

This certification covers only the Alcatel-Lucent 9962 transmitting with powers of 250 mW in the 700 Band or 850 band into either Antenna 1 (or Antenna 2) and 200 mW at frequencies above 1500 MHz into Antenna 2 (or Antenna 1). If any RF modifications are made, AT&T must also reassess the technical parameters of the small cells identified above to confirm continued compliance with the FCC exposure limits.

Date of certification: 17 July 2015

Appendix F: Station authorization

The MetroCell radio is permitted by the FCC to operate on spectrum licensed to AT&T. In accordance with FCC rules, AT&T requires customer to maintain the following notice with or near the MetroCell and to present it when requested.

Customer must enter a "station name" below and keep this record with the MetroCell. The name can be anything of customer's choosing, such as the "nickname" entered during the activation process, or the serial number, or the street address where the device is located (if there is more than one MetroCell at the same address, add a unique number or other identifier).

STATION NAME:

_____

PURSUANT TO FCC RULE 22.303 AND 101.215, THE CUSTODIAN OF THIS STATION'S LICENSE IS:

AT&T
ATTN: FCC-FAA REGULATORY COMPLIANCE TEAM
3300 E. RENNER ROAD, B3132
RICHARDSON, TEXAS 75082
855-699-7073

Warranty

One-Year Limited Warranty: AT&T warrants to the first retail purchaser of an AT&T MetroCell device that, should this product or any part be proved defective in materials or workmanship, from date of purchase, as evidenced by AT&T billing records for a period of one (1) year, then it will be subject to the terms of this one-year limited warranty. Such defects will be repaired or replaced without charge for parts or labor directly related to the defect.

Limitations And Exclusions: This warranty does not apply to any cost incurred for removal or reinstallation, or to any product or part thereof which has suffered through normal wear and tear, alteration, improper installation, physical abuse, misuse, neglect or accident. Damage resulting from an act of God, including but not limited to fire, flood, earthquake and other natural disasters will be excluded. This limited warranty is in lieu of all other warranties, express or implied either in fact or by operations of law, statutory or otherwise, including, but not limited to, any implied warranty of merchantability or fitness for a

particular use. AT&T does not authorize any other person to assume any liability beyond the warranty herein described. In no event, whether based in contract, tort or any other legal theory, shall AT&T or any of its agents or sellers be liable for incidental, consequential, indirect, special, or punitive damages of any kind resulting from the use of this product, including but not limited to interrupted or incomplete phone calls, omission or negligence arising out of any breach of this warranty. In no event shall AT&T or its agents or sellers be liable for any damages however defined in an amount in excess of the purchase price.

Customers who believe they require warranty service should call AT&T Customer Care at 877-996-7017 and, when prompted, enter PIN 63876 (METRO). A Customer Care representative will take information over the phone to attempt to diagnose and remedy the issue. If the Customer Care representative determines that warranty service is required, the representative will provide instructions on how to return the device for repair or replacement.