
Si CPE Quick Installation Guide

This Quick Installation Guide is intended for operator's installer staff. For more information refer to the relevant sections in the *Self Install CPE Product Manual*.

Si CPE Package Content

Check that the package contains:

- Si CPE
- Power Adapter and Mains Power Cord
- 3 meters Ethernet Cable

Additional (Optional) Equipment and Tools required for Installation

- Wall mounting bracket for Si CPE
- Wall/window mountable detached antenna kit, including wall/window mounting accessories and a 2 meters SMA-SMA (M/F) RF cable
- Wall mounting kit with pan/tilt capabilities for the detached antenna
- Mains plug adapter or termination plug (if the power plug on the supplied AC power cord does not fit local power outlets).
- Portable PC with an Ethernet card and a straight Ethernet cable for configuring parameters using Telnet.

Equipment Location Guidelines

The unit can be placed on a desktop or a shelf. It can also be wall mounted using the optional bracket. Select the optimal locations for the equipment using the following guidelines:

1. It is recommended to position the unit near a window facing the direction of the Base Station, with the selected antenna aimed at the direction of the Base Station. Do not cover the unit. Leave at least 50 cm free space around the unit. Do not place any object between the selected antenna and the window towards which the antenna is directed.
2. If a detached antenna is used, install it on a window or on a wall according to specific conditions of the location. The antenna should be facing the required direction. Use only the RF cable supplied with the antenna (if needed, use a longer Ethernet cable).

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3. Avoid metal obstacles such as metal window frames or metal film anti-glare windows in the transmission path.
4. Position the unit (or the detached antenna) away from electrical equipment, including the data equipment, monitor etc., metal furniture, and moving metal objects such as metal fans or doors.

Connecting the Si CPE

1. Connect the Power Adapter DC cable to the POWER jack. Connect the AC power cord to the Power Adapter. Connect the other end of the power cord to the AC mains.

NOTE: The color codes of the power cord are:

<i>Brown</i>	<i>Phase</i>	<i>~</i>
<i>Blue</i>	<i>Neutral</i>	<i>0</i>
<i>Yellow/green</i>	<i>Grounding</i>	<i>⏏</i>

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2. Verify that the orange Status LED located on the unit's top panel illuminates, indicating that the power supply to the unit is OK and the unit is not yet connected to a Base Station (the LED will change to green when the unit is connected to a Base Station).
 3. If a detached antenna is used, remove the cap on the unit's top panel to expose the RF connector and connect to it the RF cable supplied with the antenna. Install the antenna using the instructions provided below, and connect to it the other end of the RF cable. To tighten the SMA connectors, use only the torque key supplied with the antenna.
 4. Configure the basic parameters as described below.
 5. Align the antenna as described below.
 6. Connect the 10/100 Base-T ETHERNET connector to the data equipment. The cable connection should be a crossed Ethernet if connecting to a hub/switch and a straight cable if connecting directly to a PC Network Interface Card (NIC).
 7. Verify proper operation of the Ethernet link. The Ethernet Activity green LED should be on and the Ethernet Integrity yellow LED should blink when there is Ethernet traffic. To verify data connectivity from the end-user's PC or from a portable PC connected to the unit, ping a known device in the network, or try connecting to the Internet.

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Wall Mounting the Si CPE

1. If anchors are needed (wall-board, plaster board, etc.), drill two holes for the anchors using a 6 mm drill bit and insert anchors. The distance between the two holes should be 86 mm. Use the drilling template supplied with the Si CPE wall mount option.
2. Fasten the two screws provided with the kit directly to the anchors.
3. Use the two hangers on the rear to hang the mounting bracket on the two screws. Make sure the bracket is stable.
4. Insert one side of the Si CPE's base diagonally under the designated rail.
5. Gently apply pressure on the opposite side of the Si CPE, until a clicking sound is heard and the two bracket studs are locked onto the Si CPE's base.

Wall Mounting the Detached Antenna

1. If anchors are needed (wall-board, plaster board, etc.), drill two holes for the anchors using a 5 mm drill bit and insert anchors. Use a 9/64" drill bit for screwing directly into a solid surface (stud).
2. Fasten the antenna to the wall. Use the two screws provided with the kit. Do not over tighten.
3. Connect the antenna cable to the connector located on the bottom side of the antenna. Use only the torque key supplied with the antenna. Do not over tighten. Do not use a wrench or a similar tightening tool.

Window Mounting the Detached Antenna

1. Attach the suction cups to the antenna.
2. Determine the location of the antenna on the glass. Attach it to the window by pressing the suction cups onto the glass.
3. Connect the antenna cable to the connector located on the bottom side of the antenna. Use only the torque key supplied with the antenna. Do not over tighten. Do not use a wrench or a similar tightening tool.

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Window Mount with Rotation Capability

1. Attach the rotation bars to the antenna and the suction cups to the rotation bars.
2. Determine the location of the antenna on the glass. Attach it to the window by pressing the suction cups onto the glass.
3. Connect the antenna cable to the connector located on the bottom side of the antenna. Use only the torque key supplied with the antenna. Do not over tighten. Do not use a wrench or a similar tightening tool.
4. Rotate the antenna left or right so the domed surface of the antenna is facing the direction of the Base Station. Check the received Signal LEDs to ensure the antenna is aimed correctly.

Wall Mount with Tilt & Pan Capabilities

1. Attach the adjustable arm to the wall.
2. Assemble the antenna to back plate with supplied screws and washers.
3. Screw the back plate to the adjustable arm.
4. Remove the cap from the antenna connector located on the bottom side of the antenna and connect the cable. Use only the torque key supplied with the antenna. Do not over tighten. Do not use a wrench or a similar tightening tool.
5. Align the antenna by releasing the spike knob located next to the base bracket. The bracket's arm can be adjusted sideways or tilted up and down. Position the antenna such that it faces the base station cell site. Tighten the spike knob to lock the antenna into position.
6. Check your receive signal strength (RSSI) LEDs in the Si CPE to ensure the antenna is optimally aligned. If necessary, re-align antenna following the steps described above.

Basic Configuration

Initial configuration can be performed using Telnet, PC/Notebook for accessing the Installer Monitor program/Web Configuration Server.

1. To configure parameters using Telnet, connect a PC/Notebook to the Ethernet port of the IDU, using a straight Ethernet cable.

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2. To configure parameters using the Web Configuration Server, connect a PC/Notebook or a Pocket PC/PDA with a web browser to the Ethernet port of the IDU, using a straight Ethernet cable.
3. Configure the PC's IP parameters to enable connectivity with the unit. The IP address of the SU for local management access is 192.168.254.251. The Subnet Mask is 255.255.255.0. The recommended IP address for the PC is 192.168.254.250, as this is also the default TFTP Sever IP Address (required for downloading SW versions and for downloading/uploading configuration files).
4. Run the Telnet program or open a web browser, and connect to 192.168.254.251. Enter the username password (the default username is "installer" and the default password is "installer") and press the Enter key or click OK.
5. Configure the basic parameters required for connectivity with the base station. The following table includes the basic parameters and their default values (see also Figure 1 for the Quick Configuration page in the Web Configuration Server):

Table 1: Basic Parameters

Parameter	Default Value	Comment
Ethernet Port Operation Mode	Auto Negotiation	
Common Name		Must be supplied by administration to ensure uniqueness in the entire network
Organization Name		Optional – according to administrator policy
Address		Optional – according to administrator policy
Country Code		Optional – according to administrator policy
Operator ID	186.190.0	
Cell ID	0.0	
Sector ID	0	

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Parameter	Default Value	Comment
Base Sector ID Mask	255.255.255.0.0.0	
Bandwidth	3.5 MHz	Cannot be changed in the current version
Uplink (Tx) Frequency	3450.00 MHz	
Select Antenna	3 (internal, opposite the connectors' side – see scheme to the right)	<p>The diagram shows a top-down view of the Si CPE device. It is an elongated, rounded rectangular device with a dashed border. On the left side, there are two circular connectors. An arrow labeled 'Connectors Side' points to this area. Seven antennas are indicated by blue arrows pointing outwards from the device, labeled ANT 0 through ANT 6. ANT 0 is located at the bottom center, pointing downwards. ANT 1 points left, ANT 2 points right, ANT 3 points right, ANT 4 points down-left, ANT 5 points up-left, and ANT 6 points up-right. Inside the device, there are labels for 'ANTENNA', 'SIGNAL', and 'SIGNAL' near the center, and 'SIGNAL' near the right connector.</p>

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Configuration
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Quick Configuration

Registration Parameters

Common Name:
Coresh

BS ID Parameters

Operator: 186.190. 0
Cell: 0.250
Sector: 206
BS Mask: 255.255.255. 0. 0. 0

Radio Parameters

Bandwidth: 3.5MHz
Tx (UL) Frequency: 3450.000 MHz
Select Antenna: External

Update Refresh Home Help

Figure 1: Web Configuration Server - Quick Configuration Page

6. Reset the unit to apply the changes.

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Aligning the Antenna

1. Point the antenna towards the general direction of the Base Station.
2. Verify that the power indication of the unit is on.
3. Verify that the green Status LED illuminates and at least one LED of the Signal LEDs is on, indicating that the unit is synchronized with the Base Station. If the SU is not synchronized with the Base Station, ensure that all parameters are configured properly. If the unit is still not synchronized with the Base Station, try improving the quality of the link by changing the direction of the antenna or by placing the unit/antenna at a higher or alternate location.
4. Try changing the location/direction of the antenna until the maximum link quality reading is achieved (maximum signal LEDs are illuminating). If you encounter prolonged difficulty in achieving the expected link quality, try improving the reception quality by placing the unit/antenna at an alternate location.
5. Ensure that the front of the antenna is always facing the Base Station. However, in certain conditions, such as when the line of sight to the Base Station is hampered, better reception may be achieved using a reflected signal. In this case, the antenna is not necessarily directed toward the Base Station.

FCC Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to ETSI EN 301 489-1 rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment notwithstanding use in commercial, business and industrial environments. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

R&TTE Compliance Statement

This equipment complies with the appropriate essential requirements of Article 3 of the R&TTE Directive 1999/5/EC.