# Before you start

## Further information

This *getting started guide* enables you to set up your 950AP in order to connect Bluetooth devices to it wirelessly. For more advanced information, refer to the *950AP User Guide* on the Red-M website, www.red-m.com.

The *getting started guide* describes how to complete the installation of typical corporate and home configurations. Follow the procedures that most closely describe your setup.

## Requirements

To complete the installation of your 950AP, you need:

- An IP Ethernet network.
- Category 5 Ethernet cables with RJ-45 plugs.
- The DC 12 V power adapter (included).
- If mounting to a wall or ceiling:
    - Two screws
    - A mounting bracket (included)
    - A screwdriver

**Note**: Some jurisdictions require special wiring if installing cables into a ceiling cavity. They may also have special conditions about installing products on a ceiling or installing the power adapter. If in doubt, contact your local authority.

# Installing the 950AP

Decide where you want to position your 950AP(s). We recommend installing to a wall for superior Bluetooth coverage (see Figure 3). For optimum Bluetooth performance, install the 950AP in direct line-of-sight with connecting devices, avoiding obstacles such as walls or partitions. Ensure your wall (or ceiling) can support the 950AP's weight (around 200g or 7oz.).

Next, install the power cable and the Ethernet cable to connect to the 950AP(s). Cabling requirements depend on whether you have a single 950AP connected to an Ethernet port or multiple 950APs connected in a star-wire configuration. Complete the cable installation **before** you fix the 950AP to a wall or ceiling.

The 950AP is powered by a 12V adapter connected to the mains electricity. You may need to consider this when positioning the 950AP and installing the cables.

## Corporate installations

**To connect a single 950AP to the LAN**

1.  Connect a Category 5 Ethernet cable to the 950AP's *Network* port using RJ-45 connectors.
2.  Connect the other end of the cable to the Ethernet port on your LAN.

## Star-wire installations

A star-wire connection for multiple 950APs uses an Ethernet switch or hub to connect 950APs to the LAN.
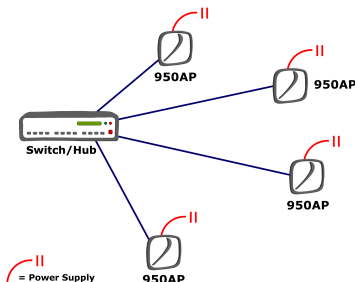
*Figure 1: Star-wire configuration*

### To connect to the LAN in a star-wire configuration

1.  Connect Category 5 Ethernet cables to the *Network* port of each 950AP using RJ-45 connectors.
2.  Connect the other end of each cable into an Ethernet hub/switch.

## Home installation

### To connect a single 950AP for home use

1.  Connect a Category 5 Ethernet cable to the 950AP's *Network* port using RJ-45 connectors.
2.  Connect the other end of the cable to your ADSL/ISDN/cable modem or Broadband router. Refer to your device's documentation for more information.

    -   If you're only going to use a Bluetooth-enabled device, such as a PDA or laptop, to configure and manage your 950AP, the 950AP will be set up as shown in Figure 2. See *To configure the 950AP using Bluetooth* for more information.
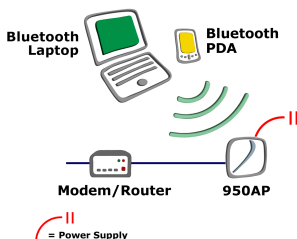
*Figure 2: Home setup with a Bluetooth-enabled PDA or laptop*

    -   If you have a Home Gateway or router with a built-in hub, we recommend connecting the 950AP directly to the hub. This allows you to manage the 950AP with either your PC or Bluetooth-enabled device.

ⓘ **Note**: If your ISP only provides one IP address, you must have NAT enabled on the 950AP or on your router/modem. See *Initial Configuration for home installation* to enable NAT on the 950AP.

## Connecting power

The 950AP is connected to the mains electricity supply via a 12V d.c. power adapter and country-specific power cable (both supplied). Depending on your building configuration, you may need to fit the adapter and cable inside a wall or ceiling cavity when you install the 950AP.

1. Connect the power cable to your mains electricity supply and to the 12V adapter.
2. When you are ready to configure the 950AP, insert the end of the 12V adapter cable into the its power port. The 950AP's LED indicator will light and display the LED boot sequence (see *Reading the LED* for more information.

## Mounting to a wall (or ceiling)

The 950AP has a mounting bracket that can be attached to a wall or ceiling using suitable screws and fastenings. See *Installing the* 950AP for information on where to position the 950AP for optimum performance.
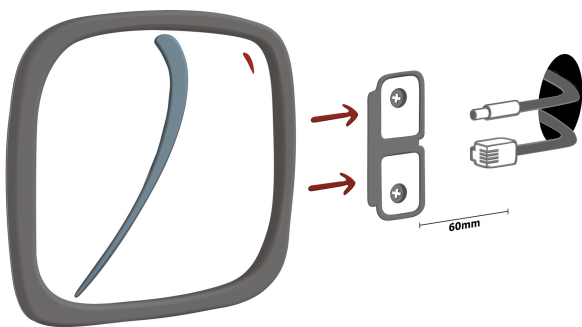


*Figure 3: Mounting the 950AP to a wall or ceiling*

ⓘ **Note:** The following instructions assume that you have completed the necessary Ethernet and power cable installation explained previously.

### To mount to a wall or ceiling

1. Use the mounting bracket as a template to mark out drill positions.
2. Drill two holes 43 mm apart using a 5.5 mm drill bit. The holes must be 75 mm from where the cabling emerges in the wall or ceiling to ensure a flush fitting (or 60 mm from the mounting bracket's edge).
3. Insert suitable fastenings such as wall plugs into the holes.
4. Position the mounting bracket over the two holes and insert the appropriate screws.
5. Connect the cables from the hole in the wall/ceiling to the 950AP.
6. Slide the 950AP over the mounting bracket until it fits into the groove. Continue sliding until it locks into place.

# Configuring the 950AP

950APs are configured and managed via a web browser. Up to 32 users and 32 devices can be configured to connect securely to the 950AP, with up to seven devices connecting simultaneously.

Once you have installed the 950AP, you can begin the short configuration process. You can complete the setup over Bluetooth or using an Ethernet connection.

## To configure the 950AP using Bluetooth:

1.  Make a note of the 950AP's Bluetooth address, which is displayed on a label underneath the unit.
2.  Perform a device discovery on your Bluetooth-enabled PDA or laptop. Refer to your device's documentation for more information.
3.  Look for the 950AP's Bluetooth address and connect to it.
4.  Launch your web browser and enter the 950AP's default IP address 'http://192.168.1.1'. The *Initial Configuration* screen appears.

> **Note:** Your 950AP is supplied to you in initial configuration mode. This means you can only initially connect a Bluetooth device to complete the *Initial Configuration*. Once this is completed, you can set up Bluetooth connectivity for other devices.

## To configure a 950AP using an Ethernet connection:

1.  Visit www.red-m.com and to download the Red-M Setup application from the support area.
2.  Install and run Red-M Setup. This finds the 950AP's IP address and provides a link to it.
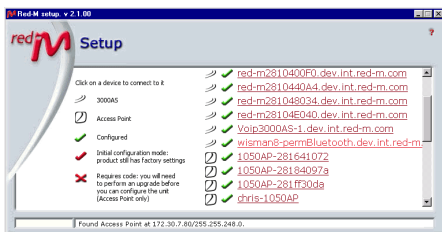


*Figure 4: Red-M Setup screen*

3.  Look for your 950AP's Bluetooth address in the list of access points displayed by Red-M Setup. A new 950AP has a red tick by its name while previously configured 950APs have a green tick. An 950AP's name will be in the format: 950AP-*xxxxxxxxx.*

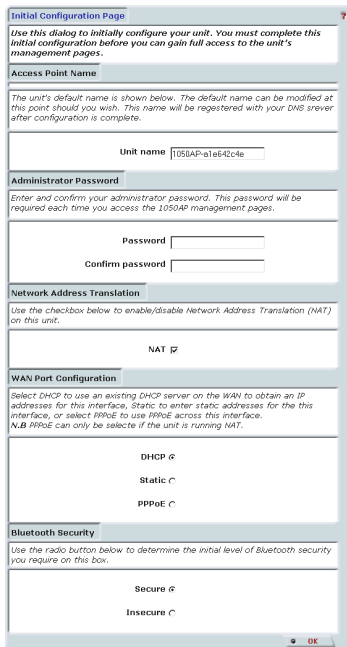> **Hint:** The 950AP's Bluetooth address is displayed on a label underneath the unit.

4.  Click on the 950AP's address. Your web browser window opens and displays the 950AP management interface.
5.  Complete the *Initial Configuration* process (see below).

> **Note:** By default, the 950AP uses a DHCP server to obtain an IP address. If there is no DHCP server on your LAN or the 950AP cannot find one, you must configure the 950AP using Bluetooth and the default IP address, 192.168.1.1.

# Initial Configuration

The first time you access the 950AP's management interface, you need to set the administrator password, specify how IP addresses will be assigned and set the security level on the *Initial Configuration* screen. You can complete this with an Ethernet connection or wirelessly using Bluetooth.



*Figure 5: Initial Configuration screen*

## Initial Configuration for corporate installation

1. Enter a name for the 950AP if you want to easily recognize it.
2. Enter an administrator password (16 characters maximum) and then confirm the password.
3. Enable/disable Network Address Translation (NAT) for the 950AP. By default NAT is enabled. Clear the checkbox if you do not need to use NAT.
4. Select the WAN port (*Network* port) configuration:
   - Select *DHCP* if your 950AP receives its IP addresses from a DHCP server. If you select *DHCP* and turn NAT off, the 950AP uses the DHCP server for its WAN port IP address and to assign IP addresses to Bluetooth devices.
   - Select *Static* if you use static IP addresses. If you select *Static* and turn NAT off, enter the *Static IP Parameters* on page 2, including at least seven addresses in the Bluetooth address pool (see Figures 6 and 7). The addresses must be on the same IP network as your LAN but must not conflict with existing addresses.

5. Select a security level for your 950AP. If you select *Secure*, the unit will be discoverable, but only manually configured devices will be able to connect. Select *Insecure* to have the 950AP automatically authorize any device.

> **Note:** If you configure the 950AP using a Bluetooth device and select *Secure*, the device is automatically added to the *Devices* list and authorized to connect. See the the *950AP User Guide* on the Red-M website for more information.

6. Page 2 of the *Initial Configuration* depends on your selection in step 4. If you selected *DHCP*, page 2 does not appear.

   - If you selected *Static* and *NAT* is enabled, you must enter the *Static IP Parameters*.
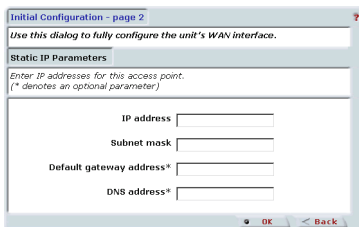


| Initial Configuration - page 2 | ? |
| --- | --- |
| Use this dialog to fully configure the unit's WAN interface. | |

**Static IP Parameters**

*Enter IP addresses for this access point.*
*(\* denotes an optional parameter)*

IP address [ ]
Subnet mask [ ]
Default gateway address* [ ]
DNS address* [ ]

OK   < Back

*Figure 6: Initial Configuration Page 2 with Static IP Parameters*

   - If you selected *Static* and cleared the *NAT* checkbox, you must enter the *Static IP Parameters* and *Bluetooth address pool*.



| Initial Configuration - page 2 | ? |
| --- | --- |
| Use this dialog to fully configure the unit's WAN interface. | |

**Static IP Parameters**

*Enter IP addresses for this access point. The Bluetooth address pool should contain at least 7 IP addresses.*
*(\* denotes an optional parameter)*

IP address [ ]
Subnet mask [ ]
Default gateway address* [ ]
DNS address* [ ]
Bluetooth address pool (start) [ ]
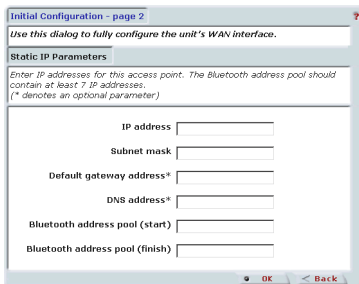Bluetooth address pool (finish) [ ]

OK   < Back

*Figure 7: Page 2 with Static IP Parameters and Bluetooth address pool*

7. Click *OK* to complete the 950AP's configuration.

If you completed the configuration of your 950AP using a Bluetooth device, the device is automatically added to your device list and authorized to connect.

For more detailed information on IP address configuration and security, refer to the *950AP User Guide* on the Red-M website.

> **Hint:** To access the online help about completing the *Initial Configuration* process, click ? .

## Initial Configuration for home installation

Refer to Figure 5 for the *Initial Configuration* screen.

1. Enter a name for the 950AP if you want to easily recognize it.
2. Enter an administrator password (16 characters maximum) and then confirm the password.
3. Ensure Network Address Translation (NAT) for the 950AP is selected. By default NAT is enabled.

> **Note:** NAT must be enabled in a home environment to translate IP addresses over a Wide Area Network (WAN). This function may be provided by a router/switch connected to your modem.

4. Select the WAN port (*Network* port) configuration:
   - Select *DHCP* if your 950AP receives its IP address from a DHCP server. If you select *DHCP* and NAT is enabled, Bluetooth device IP addresses are assigned by the 950AP's internal DHCP server while it obtains its WAN port IP address from the DHCP server.
   - Select *Static* if you use static IP addresses. If you select *Static* and NAT is *enabled*, enter the 950AP's *Static IP Parameters* on *page 2* of the *Initial Configuration*. The 950AP will assign IP addresses to Bluetooth devices.
   - Select *PPPoE* if your ISP requires you to use it. NAT must be enabled to use PPPoE (Point-to-Point Protocol over Ethernet). Enter your username, Service name and password on page 2 of the *Initial Configuration*.

5. Select a security level for your 950AP. If you select *Secure*, the unit will be discoverable, but only manually configured devices will be able to connect. Select *Insecure* to have the 950AP automatically authorize any device.

6. Page 2 of the *Initial Configuration* depends on your selection in step 4. If you selected *DHCP*, page 2 does not appear.
   - If you selected *Static*, you must enter the *Static IP Parameters* (see Figure 6).
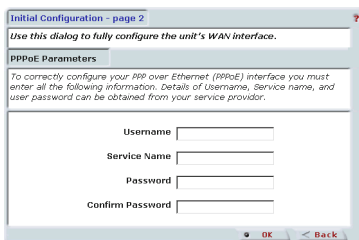   - If you enabled *PPPoE*, you must complete the PPPoE details.



*Figure 8: Initial Configuration Page 2 with PPPoE details*

7. Click *OK* to complete the 950AP's configuration.

> **Note:** If you complete the configuration of your 950AP using a Bluetooth device, that device is automatically added to your device list and authorized to connect.

For more detailed information on IP address configuration and security, refer to the *950AP User Guide* on the Red-M website.

> **Hint:** To access the online help about completing the *Initial Configuration*, click ?.

## Reading the LED

The 950AP has a multi-color LED indicator to show the unit's status and locate it in *Identify mode*.
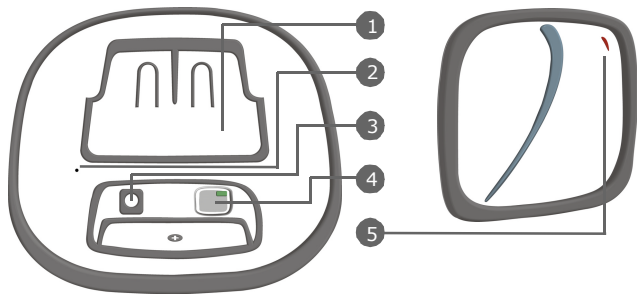
### LED startup sequence

1. When you connect to a power source, the 950AP's LED is orange for about a second to indicate it is receiving power.
2. The LED flashes orange for a few seconds to indicate that the 950AP is starting up and conducting self-tests. If any tests fail, the LED changes to steady orange to indicate a fatal error.
3. The LED is steady red after startup to indicate normal operation.

If there is a fatal error at any time, the LED is steady orange. If it remains in this state for more than a second, try disconnecting and reconnecting power to the 950AP. Otherwise, contact Red-M technical support.

### LED indicator status chart

| Status | Meaning |
|--------|---------|
| Steady red | Normal operation |
| Steady orange | Fault mode |
| Flashing orange | Startup and self-testing |
| Flashing red | No IP address, or code upgrade needed (setup.exe will display a red cross) |
| Rapid flashing red | Upgrading software |
| Flashing red and orange | Identify mode |

## 950AP Diagram



**1. Mounting cavity**. Use the mounting cavity to mount the 950AP to a wall or ceiling. See the section *Mounting to a ceiling (or wall)*.

**2. Reset button.** Use the reset button to reset the 950AP to its factory settings. See the *950AP User Guide* on the Red-M website for more information.

**3. Power port**. Use the power port to connect the supplied DC 12 V adapter to the 950AP.

**4. Network port and indicator**. Use the *Network* port to connect to an Ethernet port. See *Installing the 950AP* for more information.

**5. LED indicator**. The LED indicator shows the 950AP's status and can be used to identify the 950AP. See the section *Reading the LED* for more information.

## Contact information

Visit www.red-m.com/support to obtain technical support and information.

## Regulatory information

The following regulatory statements apply to the 950AP LAN access point.

**North America**

By attaching the FC mark to this product, we confirm:

This equipment complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation.

To conform with FCC rules regarding RF exposure, this equipment should be installed a minimum of 20 cm away from any personnel and should not be co-located or operated in conjunction with any other antenna or transmitter.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

This device has been designed to operate with an antenna that has a maximum gain of 0 dB. Antennae that have a higher gain are strictly prohibited as per regulations of Industry Canada. The required antenna impedance is 50 ohms.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that required for successful communication.

To prevent radio interference to the licensed service in Canada, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.
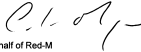
**Europe (EEA)**

This product is designed to connect to "Bluetooth" compatible radio interfaces using the 2.4 GHz frequency band in all EEA Member States with the exception of France where the use of the following frequencies is restricted:

2.4000 - 2.4460 GHz - Use Excluded - Military Band

2.4540 - 2.4835 GHz - Limited to indoor video applications

[Member States of the EEA are: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Liechtenstein, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.]

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# EC Declaration of Conformity

By attaching the CE mark to this product, we

**Red-M**
**Neptune House, Mercury Park, Wycombe Lane, Wooburn Green,**
**Buckinghamshire, HP10 0HH, United Kingdom**

declare under our sole responsibility that the following product:

**Model:**     **1050AP LAN Access Point**

is in conformity with the provisions of Council Directive 1999/5/EC on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity, based on compliance with the following relevant harmonised standards:

**EN 60950**
**EN 300 328-2**
**EN 301 489-17**

Name: C Mayne          Position: VP, R & D and Business Management.

Signature:          Date: 10th May 2002
On behalf of Red-M

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## Trademarks

# Power supply information

## English
CAUTION: Only use this product with a power source that meets the "Limited Power Source" requirements of IEC 60950 or equivalent safety standards. Use the power supply provided (if applicable) or contact Red-M for a list of suitable power sources.

## Dansk
ADVARSEL: Dette produkt må kun anvendes sammen med strømkilder, der opfylder kravene vedrørende "Limited Power Source" i IEC 60950 eller tilsvarende sikkerhedsstandarder. Anvend den medfølgende strømforsyning (hvis muligt), eller kontakt Red-M og få en liste over godkendte strømkilder.

## Deutsch
WARNUNG: Verwenden Sie dieses Produkt nur mit einer Stromquelle, die die Anforderungen bezüglich "begrenzter Stromquellen" gemäß IEC 60950 oder entsprechender Sicherheitsnormen erfüllt. Verwenden Sie das im Lieferumfang enthaltene Netzteil (sofern zutreffend), oder fordern Sie bei Red-M eine Liste der geeigneten Stromquellen an.

## Español
PRECAUCIÓN: Emplee este producto únicamente con una fuente de alimentación que cumpla la norma de seguridad IEC 60950 de alimentación limitada, o equivalente. Utilice la fuente de alimentación suministrada, si es el caso, o consulte a Red-M para obtener una lista de fuentes de alimentación apropiadas.

## Flemish
OPGELET: gebruik dit product enkel met een voedingsbron die voldoet aan de "Minimum voedingsbron"-vereisten van IEC 60950 of evenwaardige veiligheidsvoorschriften. Gebruik bijhorende voedingsbron (indien deze geschikt is) of neem contact op met RED-M voor een lijst van geschikte voedingsbronnen.

## Français
ATTENTION: n'utilisez ce produit qu'avec une source d'énergie conforme à la norme IEC 60950 en matière de « source d'énergie limitée », ou autre norme de sécurité équivalente. Utilisez l'alimentation en courant fournie (si applicable) ou bien contactez Red-M pour obtenir une liste des sources d'énergie adéquates.

## Íslenska
VARÚÐ: Notið þessa vöru eingöngu með aflgjafa sem stenst kröfur í kaflanum um "aflgjafa með takmarkað afl" í IEC 60950 (ÍST EN 60950) eða sambærilegra öryggisstaðla. Notið aflgjafann sem fylgir (ef viðeigandi) eða fáið lista yfir nothæfa aflgjafa hjá umboðsaðila vörunnar.

## Italiano
ATTENZIONE: Utilizzare questo prodotto solo con sorgenti di alimentazione che soddisfano i requisiti di sicurezza IEC 60950 o equivalenti. Utilizzare l'alimentatore fornito (ove applicabile) o contattare Red-M per ottenere un elenco delle sorgenti di alimentazione adeguate.

## Nederlands
WAARSCHUWING: Gebruik dit product alleen met een voedingsbron die voldoet aan de "Minimum voedingsbron"-vereisten van IEC 60950 of evenwaardige veiligheidsvoorschriften. Gebruik de bijbehorende voedingsbron (indien van toepassing) of neem contact op met Red-M voor een lijst van geschikte voedingsbronnen.

## Norsk
FORSIKTIG: Dette produktet skal bare brukes med en strømkilde som tilfredsstiller kravene til "Begrenset strømkilde" i IEC 60950 eller tilsvarende sikkerhetsstandard. Bruk den medfølgende strømforsyningen (hvis en slik finnes) eller kontakt Red-M for å få en oversikt over passende strømkilder.

## Português
Advertência: Utilize este produto apenas com uma fonte de energia que respeite os requisitos definidos em "Fontes de Energia Limitadas" da norma IEC 60950 ou dos padrões de segurança equivalentes. Utilize a fonte de alimentação fornecida (se aplicável) ou contacte Red-M para obter uma lista de fontes adequadas.

## Suomi
MUISTUTUS: Käytä tätä tuotetta vain sellaisen virtalähteen yhteydessä, joka täyttää standardin 60950 "rajoitetun virtalähteen" tai muiden vastaavien standardien asettamat turvallisuusvaatimukset. Käytä toimitettua virtalähdettä (jos asianmukaista) tai ota yhteys RedM:ään sopivien virtalähteiden luettelon saamiseksi.

## Svensk
FÖRSIKTIGT! Denna produkt får bara användas med en effektkälla som uppfyller kraven för "Begränsad effektkälla" i IEC 60950 eller motsvarande säkerhetsnormer. Använd medföljande effektkälla (i förekommande fall) eller begär en lista över lämpliga effektkällor från Red-M.

## Ελληνικά
ΠΡΟΣΟΧΗ: Χρησιμοποιήστε αυτό το προϊόν μόνο με πηγή ενέργειας που είναι σύμφω νη με την οδηγία του IEC 60950 περί «Περιορισμένης Πηγής Ενέργειας» ή αντίστοιχων προδιαγ ραφών ασφαλείας. Χρησιμοποιήστε την πηγή ενέργειας που παρέχεται (αν είναι κατάλληλη) ή επικοινωνήστε με την Red-M για να σας προμηθεύσει με κατάλογο συμβατών πηγών ενέργειας