



RMX 2000 Installation & Configuration Guide

General Safety Precautions

Follow these rules to ensure general safety:

- Keep the area around the Polycom RMX 2000 unit clean and free of clutter and well ventilated.
- Decide on a suitable location for the equipment rack that will hold the RMX, ensuring that it is near a grounded power outlet.
- Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor with the full weight of the rack resting on them. Always make sure the rack is stable before extending a component from the rack.
- In a single rack installation, attach stabilizers to the rack. In multiple rack installations, the racks should be coupled together.
- Use a regulating uninterruptable power supply (UPS) to protect the RMX from power surges and voltage spikes, and to keep it operating in case of a power failure.
- Allow the power supply units to cool before touching them.
- Always keep the rack's trays and board's closed when not servicing, to maintain proper cooling.

Preparations

Obtain the following information from your network administrator:

- IP addresses, Subnet Mask and Default Gateway IP address (optional) for the RMX control unit and RMX Shelf Management
- IP addresses for the RMX Signaling Host and Media Boards
- Gatekeeper IP address
- SIP server IP address, if applicable

If ISDN/PSTN is installed in your conferencing environment, obtain the following information from your ISDN/PSTN Service Provider:

- Switch Type, Line Coding and Framing, Numbering Plan and Numbering Type
- Dial-in number range



If the RMX is connected to the public ISDN Network, an external CSU or similar equipment is needed.

Unpacking and Installing the RMX

- 1** Place the RMX 2000 on a stable flat surface in the selected location.
- 2** Remove the RMX 2000 from its package. You can install it either in a rack or place it on a flat surface:
 - Install the RMX on a rack using one of two methods:
 - Install the brackets supplied by the rack manufacturer on each side of the rack on which the RMX is placed. Secure the system by fastening four screws to the rack on the front panel.
 - Install a shelf supplied by the rack manufacturer on top of which the RMX is placed. Secure the system by fastening four screws to the rack on the front panel.
 - Place the RMX 2000 on a secure, flat and clean surface.
- 3** Connect the following cables to the RMX rear panel:



Do not remove the protective caps from LAN1, LAN3 and ShMG ports.

- Power cable - insert the connector firmly into the socket so that almost all of the narrow section of the connector is inserted.
- LAN cable to the **LAN 2** port.
- E1/T1 Cables to **PRI** ports (if applicable)

Product Registration and Activation Key Retrieval

Before starting the initial configuration process, register your RMX at the Polycom Resource Center website and download the product activation key file to the computer you will use for the configuration:

- 1 Using a Web browser, connect to www.polycom.com.
- 2 In the *Resource Center* section, click the **Register Your Product** link.
- 3 If required, select to open a **New User Account** or enter your **User ID** and **Password** and then click **Sign In**.
- 4 Follow the on-screen instructions to complete product registration. Write down the Product Activation Key number or copy it for later.

Initial RMX Configuration

The system is shipped with the following default IP addresses:

- Control unit IP address – 192.168.1.254
- Control unit subnet mask – 255.255.255.0
- Default Router IP Address – 192.168.1.1

When the RMX is installed for the first time, you must change the default IP addresses to your local network settings. This can be done by modifying the default settings in the USB key shipped with the unit using the LAN Configuration Utility and uploading them to the RMX.

- 1 Plug the USB key into a PC.
- 2 Double-click **LanConfigUtility.exe** to start the utility.
- 3 Modify the required network parameters in the utility's dialog box using the information supplied by your network administrator.
- 4 Click **OK**.
- 5 Insert the USB key with the modified IP addresses in the USB port on the back panel.
- 6 Power the RMX **On**.
The parameters in the *lan.cfg* file are uploaded from the USB key to the RMX's memory and applied during the power-up sequence.

The First-time Power-up is complete when the red *ERR* LED on the RMX's front panel remains ON.

On subsequent power-ups, with a defined Management Network Service, the red *ERR* LED remains OFF if there is no System Error.

- 7 Remove the USB key.

Connecting to the MCU

- 1 Start the *RMX Web Client* application on the workstation, by entering `http://<Control Unit IP Address>` as defined in the *USB key* in your browser's address line and pressing **Enter**.
- 2 **Optional:** Select the language for the *RMX Web Client*. The language is selected by clicking on the corresponding country flag. If a language is selected the *RMX Web Client* that is not supported by the browser or the workstation's operating system, the *RMX Web Client* is displayed in English.
- 3 In the *RMX Web Client Welcome Screen*, enter the default *Username* (**POLYCOM**) and *Password* (**POLYCOM**) and click **Login**.
The *RMX Web Client* opens and the *Product Activation* dialog box appears with the serial number filled in.
- 4 In the *Activation Key* field, enter or **paste** the *Product Activation Key* retrieved earlier and click **OK**.
If you do not have an *Activation Key*, click the **Polycom Resource Center** button to access the *Service & Support* page of the Polycom website.
The system prompts with a reset dialog box.
- 5 In the dialog box, click **No**.
As no *Default IP Network Service* is defined, the system automatically starts the *Fast Configuration Wizard*.
The *Fast Configuration Wizard* appears.

Configuring the IP Network Service

The *Fast Configuration Wizard* enables you to configure the *Default IP Service*. It starts automatically if no *Default IP Network Service* is defined. This happens during *First Time Power-up*, before the service has been defined or if the *Default IP Service* has been deleted, followed by an RMX reset.

The IP Management Service tab in the Fast Configuration Wizard is enabled only if the default Management IP addresses were not modified.

- 1 In the *Fast Configuration Wizard - IP* dialog box, define the following parameters:

Field	Description
<i>IP Service Name</i>	Use the default name (Default IP Service) or enter a name using up to 20 characters. Note: This field is displayed in all dialog boxes.
<i>Signaling Host IP Address</i>	Enter the IP address of the Central Signaling host. This is the address used by endpoints for dialing in to the MCU.
<i>MPM 1 IP Address</i>	Enter the IP addresses of the Media Boards. The Signaling Host connects endpoints to the Media Processors via these addresses.
<i>MPM 2 IP Address</i>	
<i>Subnet Mask</i>	Enter the subnet mask of the MCU. Default value: 255.255.255.0.

- 2 Click **Next**.
- 3 In the *Fast Configuration Wizard - Routes* dialog box, enter the IP address of the default router.
- 4 Click **Next**.

- 5 Enter the required **DNS** information in the dialog box.

Field	Description
<i>MCU Host Name</i>	Enter the name of the MCU on the network. Default name is RMX
<i>DNS</i>	Select: <ul style="list-style-type: none"> • Off – if DNS servers are not used in the network. • Specify – to enter the IP addresses of the DNS servers. <p>Note: The IP address fields are enabled only if Specify is selected.</p>
<i>Register Host Names Automatically to DNS Server</i>	Select this option to automatically register the MCU Signaling Host and Shelf Management with the DNS server.
<i>Local Domain Name</i>	Enter the name of the domain where the MCU is installed.
<i>Primary DNS Server IP Address</i>	The static IP addresses of the primary DNS server.

- 6 Click the **Next** button.
- 7 In the *Fast Configuration Wizard - Environment* dialog box, select the *IP Network Type*: **H.323, SIP** or **H.323 & SIP**.
- 8 Click **Next**.
- 9 If you selected **SIP** go to **Step 13**.

10 In the *Fast Configuration Wizard - Gatekeeper* dialog box, enter the required information:

Field	Description
<i>Gatekeeper</i>	Select Specify to enable configuration of the gatekeeper IP address. When Off is selected, all gatekeeper options are disabled.
Primary Gatekeeper	
<i>IP Address or Name</i>	Enter either the gatekeeper's host name (if a DNS Server is used) or IP address.
<i>MCU Prefix in Gatekeeper</i>	Enter the string with which the MCU registers itself with the gatekeeper. The gatekeeper uses this string to identify the MCU when forwarding calls to it. H.323 endpoints use this number as the first part of their dial-in string when dialing the MCU.
Aliases	
<i>Alias</i>	The alias by which the RMX's Control Unit is identified within the network. Up to five aliases can be defined for each RMX. Note: When a gatekeeper is specified, at least one prefix or alias must be entered in the table.

Field	Description
<i>Type</i>	<p>Select the type that defines the format in which the card alias is sent to the gatekeeper.</p> <ul style="list-style-type: none"> • H.323 ID (alphanumeric ID) • E.164 (0-9, * #) • URL ID (URL style address) • Transport ID (IP address: port number) • Email ID (email address format) • Party Number (identical to the E.164 format) <p>Note: Although all alias types are supported (with H.323 and E.164 being the most common), the type to be used depends on your gatekeeper's capabilities.</p>

11 Click **Next**.

12 If you selected **H.323** only go to **Step 15**.

13 In the *Fast Configuration Wizard - SIP* dialog box, enter the following information:

Field	Description
<i>SIP Server</i>	<p>Select:</p> <ul style="list-style-type: none"> • Specify – to manually configure SIP servers. • Off – if SIP servers are not present in the network.
<i>SIP Server IP Address</i>	Enter either the IP address of the preferred SIP server or its host name (if a DNS server is used).
<i>Transport Type</i>	Select the protocol that is used for signaling between the MCU and the SIP Server or the endpoints according to the protocol supported by the SIP Server:

Field	Description
<i>Transport Type</i> (cont.)	<p>UDP – Select this option to use UDP for signaling.</p> <p>TCP – Select this option to use TCP for signaling.</p> <p>TLS – The <i>Signaling Host</i> listens on secured port 5061 only and all outgoing connections are established on secured connections. Calls from SIP clients or servers to non secured ports are rejected. The following protocols are supported:</p> <ul style="list-style-type: none"> • TLS 1.0 • SSL 2.0 • SSL 3.0.

14 Click the **Next** button.

15 Enter the required **Security** information in the dialog box.

Field	Description
<i>Authentication User Name</i>	Enter the conference, Entry Queue or Meeting Room name as registered with the proxy. This field can contain up to 20 ASCII characters.
<i>Authentication Password</i>	Enter the conference, Entry Queue or Meeting Room password as defined in the proxy. This field can contain up to 20 ASCII characters.

16 Click the **Save &Continue** button.

During the initial RMX setup, if the system detects the presence of the RTM ISDN card, the ISDN /PSTN Network Service definition screens of the *Fast Configuration Wizard* are enabled.

If there is no RTM ISDN card in the RMX or if you do not want to define an ISDN/PSTN Network Service, go to **Step 34**.

The *Fast Configuration Wizard's* ISDN/PSTN configuration sequence begins with the *ISDN/PSTN* dialog box.

17 Define the following parameters:

Field	Description
<i>Network Service Name</i>	<p>Specify the service provider's (carrier) name or any other name you choose, using up to 20 characters. The Network Service Name identifies the ISDN/PSTN Service to the system.</p> <p>Default name: PSTN Service</p> <p>Note: This field is displayed in all ISDN/PSTN Network Properties tabs and can contain character sets that use Unicode encoding.</p>
<i>Span Type</i>	<p>Spans are ISDN/PSTN lines, supplied by the service provider, that are connected to the RMX. Each span can be defined as a separate Network Service, or all the spans from the same carrier can be defined as part of the same Network Service.</p> <p>Select the Span Type from the drop-down menu:</p> <ul style="list-style-type: none">• T1 (U.S. – 23 B channels + 1 D channel)• E1 (Europe – 30 B channels + 1 D channel) <p>Default: T1</p> <p>Note: Only one <i>Span Type</i>, E1 or T1, is supported on the RMX. The <i>Span Type</i> of the first ISDN/PSTN Service defined determines the <i>Span Type</i> of subsequently defined ISDN/PSTN Services.</p>
<i>Service Type</i>	<p>PRI is the only supported service type. It is automatically selected.</p>

18 Click Next.

19 In the *PRI Settings* dialog box, define the following parameters:

Field	Description
<i>Default Num Type</i>	<p>The Num Type defines how the system handles the dialing digits. For example, if you type eight dialing digits, the Num Type defines whether this number is national or international.</p> <p>Select the Default Num Type from the list.</p> <p>If the PRI lines are connected to the RMX via a network switch, the selection of the Num Type is used to route the call to a specific PRI line. If you want the network to interpret the dialing digits for routing the call, select Unknown.</p> <p>Default: Unknown</p> <p>Note: For E1 spans, this parameter is set by the system.</p>
<i>Num Plan</i>	<p>Select the type of signaling (Number Plan) from the list according to information given by the service provider.</p> <p>Default: ISDN</p> <p>Note: For E1 spans, this parameter is set by the system.</p>
<i>Net Specific</i>	<p>Some service providers (carriers) may have several service programs that can be used.</p> <p>Default: None</p>
<i>Dial-out Prefix</i>	<p>Enter the prefix that the PBX requires to dial out. Leave this field blank if a dial-out prefix is not required. The field can contain be empty (blank) or a numeric value between 0 and 9999.</p> <p>Default: Blank</p>

20 Click Next.

21 In the *Span Definition* dialog box, define the following parameters:

Field	Description
<i>Framing</i>	The frame format used by the carrier for the network interface. Select the Framing format from the list. <ul style="list-style-type: none">• For T1 spans, default is SFSF.• For E1 spans, default is FEBE.
<i>Side</i>	Select one of the following options: <ul style="list-style-type: none">• User side (default)• Network side• Symmetric side Note: If the PBX is configured on the network side, then the RMX unit must be configured as the user side, and vice versa, or both must be configured symmetrically.
<i>Line Coding</i>	Select the PRI line coding method from the list. <ul style="list-style-type: none">• For T1 spans, default is B8ZS.• For E1 spans, default is HDB3.
<i>Switch Type</i>	Select the brand and revision level of switch equipment installed in the service provider's central office. <ul style="list-style-type: none">• For T1 spans, default is AT&T 4ESS.• For E1 spans, default is EURO ISDN.

22 Click **Next**.

The *Phones* dialog box opens:

23 To define dial-in number ranges click the **Add** button.

24 In the *Add Phone Number* dialog box, define the first and the last numbers in the phone number range.

25 Click **OK**.

The new range is added to the table.

26 Optional. Repeat steps **23** to **25** to define additional dial-in ranges.

27 Enter the *MCU CLI* (Calling Line Identification).

In a dial-in connections, the *MCU CLI* indicates the MCU's number dialed by the participant. In a dial-out connection, indicates the MCU (CLI) number as seen by the participant

28 Click **Save & Continue**.

After clicking **Save & Continue**, you cannot use the **Back** button to return to previous configuration dialog boxes.

The ISDN/PSTN Network Service is created and confirmed.

29 Click **OK** to continue the configuration.

The *Spans* dialog box opens displaying the following read-only fields:

- *ID* - the connector on the ISDN/PSTN card (PRI1 - PRI12).
- *Slot* - the MPM board that the ISDN/PSTN card is connected to (1 or 2)
- *Service* - the name of the assigned Network Service (ISDN)
- *Clock Source* - the RTM board providing the clock source. The first span to synchronize becomes the primary clock source.
- *State* - the ISDN/PSTN card's clock source (Primary, Backup or None)

30 Attach spans to existing network services, by marking the appropriate check boxes in the *Attached* field.

Each ISDN/PSTN card can support 7 E1 or 9 T1 PRI lines.

31 Click **Next**.

The Video/Voice Ports dialog box opens.

32 Move the slider to the required setting.



The maximum number of video ports displayed in the dialog box is taken from the license key. Only this number can be converted into voice ports.

The slider moves only in multiples of 10, converting video ports to voice ports in groups of ten, with each video port converting to five voice ports.

All available ports are initially allocated as video ports.

33 Click **Save & Close**.

The ISDN/PSTN Network Service is created by the RMX and is added to the ISDN/PSTN Network Services list.

If the system cannot create the Network Service, an error message is displayed indicating the cause and allowing you access the appropriate dialog box in the *Fast Configuration Wizard* for corrective action.

The *System Flags* dialog box is displayed.

34 In the *Fast Configuration Wizard - System Flags* dialog box, enter the following information

Flag	Value	
<i>Conference ID Length (MCU)</i>	The number of digits of the Conference ID that will be assigned by the MCU. Range: 2-16 (Default: 5)	Note: Selecting 2 digits limits the number of simultaneous ongoing conferences to 99.
<i>Minimum Conference ID Length (User)</i>	The minimum number of digits that the user must enter when manually assigning a numeric ID to a conference. Range: 2-16 (Default: 4)	
<i>Maximum Conference ID Length (User)</i>	The maximum number of digits that the user can enter when manually assigning a Numeric ID to a conference. Range: 2-16 (Default: 8)	
<i>MCU Display Name</i>	The MCU name that appears at the endpoints. Default: <i>Polycom RMX 2000</i>	
<i>Terminate Conference when Chairperson Exits</i>	Yes/No (Default: Yes)	

Flag	Value
<i>Auto Extend Conferences</i>	When selected (default) allows conferences running on the RMX to be automatically extended as long as there are participants connected.

These flags can be modified later, if required, via the *Setup* menu's *System Configuration* option. For more information, see the *RMX 2000 Administrator's Guide*, "System Configuration" on page 11-5.

35 Click **Save & Close**.

The RMX confirms successful configuration.

36 In the *Success Message* box, click **OK**.

The RMX requests confirmation of reset.

37 Click **Yes**.

The *Please wait for system reset* request is displayed.

38 Click **OK**.

The language selection options of the *RMX Web Client* can be modified via the *Multilingual Setting* of the system.

For more information see the *RMX 2000 Administrator's Guide*.

Conferencing Entities

The RMX is shipped with one Entry Queue and four Meeting Rooms:

- Entry Queue **DefaultEQ** whose ID is **1000**, and it is used to access the default Meeting Rooms
- Four Meeting Rooms whose IDs are **1001**, **1002**, **1003** and **1004**.

The default Entry Queue and Meeting Rooms are set to line rate of 384 Kbps.

These conferencing entities can be used to start new conferences without any additional settings. However, if required, additional Entry Queues and Meeting Rooms can be created if required, for example, for conferencing at different line rates.

To start ongoing conferences and monitor their status see the *RMX 2000 Getting Started Guide*.

You can customize the conferencing entities to your organization's requirements and define additional conferencing entities. For more details, see the *RMX 2000 Administrator's Guide*.

User Definition

The RMX is shipped with a default Administrator user called POLYCOM. Once you have defined other authorized administrator users, it is recommended to remove the default user to prevent unauthorized users from logging into the system.

For a detailed description of User definition, see the *RMX 2000 Administrator's Guide*.



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