

PAMS Technical Documentation

RPM-1 Series Transceivers

General Information and Installation

AMENDMENT RECORD SHEET

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Introduction to RPM-1

The Nokia RPM-1 is a dualband PC card transceiver designed for operation in GSM900, GSM1800 and GSM900/GSM1800 dualband networks. It supports the high-speed circuit switched data service (HSCSD) which offers data rates up to 43.2 kbps by using multiple receive and transmit time slots.

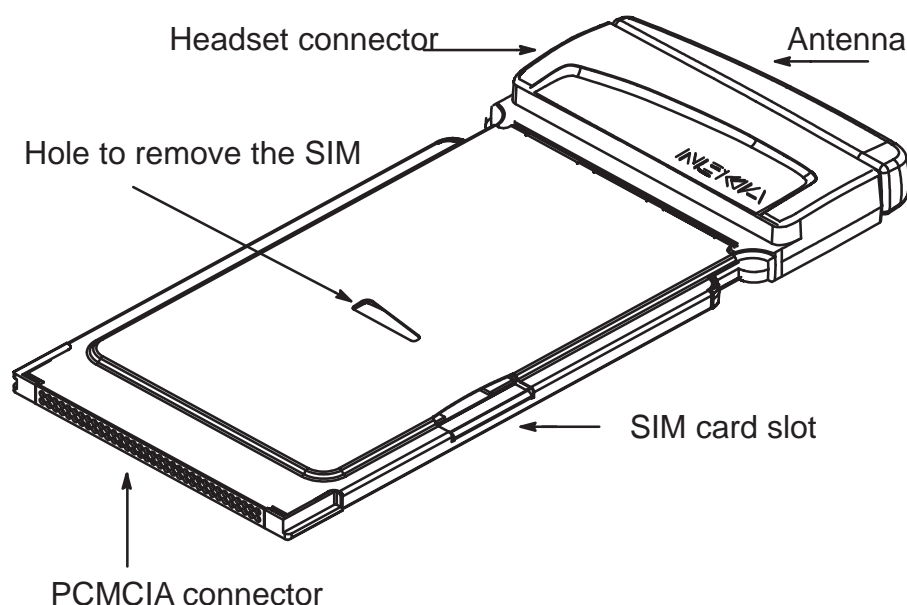
The RPM-1 does not have a battery or user interface of its own. Instead, the device is powered and controlled through the standard 68-pin PCMCIA connector. Physically and electrically the RPM-1 is compatible with the PC Card Standard (type II extended card).

The antenna element is of PCB type. The antenna can be removed and same connector used for connecting an external antenna cable.

The SIM (Subscriber Identity Module) card slot is located on the side of the RPM-1 as shown in the figure below.

Audio (voice) services are available through an analog headset.

RPM-1 Product



Item Name:	Type code:	Material code:
1. Transceiver	RPM-1	0630181

Product and Module List

Name of module	Type code	Material code	Notes
Transceiver	RPM-1	0630181	No SIM lock or Colabel in basic transceiver
RF/BB module	GX9	0201215	Not for sale as a spare part
Assembly parts	MRPM1	0261772	Assembly parts must be ordered as separate spare parts
CMT SW module	SW	0240605	

Technical Specifications

Mechanical Characteristics

Unit	Dimensions (mm) (W x H x D)	Weight (g)	Volume (cc ³)	Notes
RPM-1 module (including antenna)	124 x 54 x 10	58	36	
Radio/System module GX9	106.1 x 51			

User Interface Features

All user interface functionality is contained in the software application running in the host computer.

Environmental Conditions

Temperature Conditions

Parameter	Ambient temperature (degrees Celsius)	Notes
Max operation temperature range	-10 to +55	
Storage temperature	-25 to +85	

Vibration and Free Fall

The RPM-1 will meet the RMS phase error requirements under 0.005 g²/Hz acceleration spectral density in the range 10 Hz ... 20 Hz and 0.005 g²/Hz at 20 Hz thereafter -3 dB/octave in the range 20 Hz ... 150 Hz. This equates to a total RMS vibration in the range 10 Hz to 150 Hz of 0.5 g.

RPM-1 will not break mechanically under a sinusoidal vibration of 2 ... 200 Hz, 2.0 g or after free fall from 75 cm height to concrete floor.

Humidity and Water Resistance

Relative humidity range in normal operation conditions: 20 ... 75 %.

Relative humidity range allowed: 5 ... 95 %, non-condensing.

RPM-1 is not protected against ingress of water. RPM-1 may be instantaneously subjected to dripped or condensed water. Longer term contact with water will cause permanent damage.

Warnings and Restrictions

When operating the RPM-1 the antenna should be kept in vertical position.

Introduction to Installation

This guide describes how to install the Nokia RPM-1 Phone software on a PC and how to start using it. For more detailed information, consult the RPM-1 Phone Online Help.

Contents of the sales package

In the sales package, you should find the following items:

- RPM-1 Phone, an integrated PC Card and mobile transceiver
- CD-ROM containing the software, including the Online Help
- protective case for the RPM-1phone
- Installation Guide

The license agreement is included in the Setup program and in the Online Help of the Nokia RPM-1Phone.

System requirements

The Nokia RPM-1 Phone requires:

- Intel compatible PC that runs Windows 95/98 or Windows NT 4.0 with service pack 3 or newer
- PC Card type II or III extension slot
- at least 15 MB of free disk space

Network services

Some of the features supported by the RPM-1 are network services. Before you can benefit from these services, you must subscribe to them from your service provider and obtain instructions on their use.

Services that need to be subscribed to are typically the Short Message Service (SMS), data service and fax service. Some service providers may not provide all communications services.

Contact your service provider for further information about the availability and details of the services in your home network.

To access the Internet, you must have subscribed to the data service from your service provider and obtained an Internet access point from an Internet service provider.

Communications software

To connect to the Internet, or to send and receive e-mail or faxes, or transmit data from your computer, you need the appropriate data and fax

communications software. You can use the RPM-1 with most commercially available communications applications, such as Microsoft Exchange, Microsoft Outlook and Netscape Navigator. Windows 95/98/NT4.0 include several communications applications, such as Dial-Up Networking and HyperTerminal.

For more information on data and fax communications, see the “Getting Started” section.

Installation

This section provides step-by-step instructions on how to install the RPM-1 software on your PC.

Note: There are some slight differences in the installation process between Windows 95/98 and Windows NT. If the installation differs from the steps described in this section, follow the instructions on the screen.

If you want to quit the Setup program without installing or uninstalling, just click **Cancel** and the **Exit Setup** window will offer you the possibility of quitting the Setup program. Click **Exit Setup** to quit Setup. If you want to rerun the Setup program after having quit the installation before it was completed, follow the installation steps normally as if you were installing the program for the first time.

Note: Please DO NOT INSERT the Nokia RPM-1 into the PC card slot of your computer until the Installation Program asks for it.

First installation steps

- 1 Exit all Windows programs.
- 2 Remove all other PCMCIA cards from the PC card slot.
- 3 Insert the CD-ROM into the CD-ROM drive. The Setup program should start automatically. If not, follow the steps below.
- 4 Click the Windows **START** button.
- 5 Select the **Run** command.
- 6 The Run dialog box appears on the screen. Type in the following command line: D:\SETUP
In the above command line, “D:\” is the CD-ROM drive.
- 7 Click **OK** or press Enter. Wait while the system initializes the Setup program. Next, the **Welcome** window of the Setup is displayed.
- 8 Click **Next** to continue with the Setup program.

Phone Power-up Warning

The RPM-1 will be switched on during Setup. This is not allowed in some environments, such as hospitals and aeroplanes. To continue with Setup, click **Continue**.

WARNING!

Do not switch on the phone when wireless phone use is prohibited or when it may cause interference or danger.

Additional window (Windows 95 only)

If the PC RPM-1 Modem Power Management window appears, you are being asked to disable the PC RPM-1 Modem Power Management selection in the Windows 95 settings. You must disable the selection in order to be able to install and use the RPM-1. Click **Yes** to cancel the selection.

Software Licence Agreement

You must read through and accept the Nokia Mobile Phones Licence Agreement before you can continue with the installation. If you do not accept the Licence Agreement, you cannot use the program and Setup will stop the installation of the program. Select the language of the agreement from the drop-down list box. Click **Yes** to accept the Licence Agreement.

Setup Type

There are three types of setups available, depending on which components you want to install:

Typical

- installs the RPM-1 and two languages: English and the current Windows language if available.

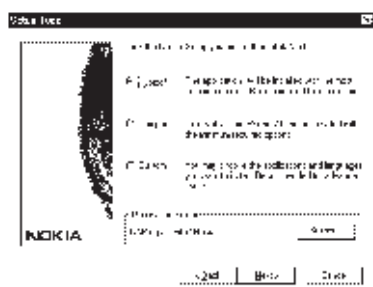
Compact

- installs the RPM-1 and the English language.

Custom

- installs the selected components. In the Select Components window, select the applications you want to install.

Screenshot of the setup window is below.



To install additional languages, click the **Languages** button, and in the **Select Languages** window select the languages you want to install. Click **Continue**. Finally, click **Next**.

The Setup program suggests C:\Program Files\Nokia as the default installation directory. If you want to install the program in another drive or directory click **Browse**.

The program places some files in your Windows directory and automatically installs and configures the Windows modem settings.

The program itself requires 10 MB of disk space, but during installation the Setup program needs approximately 15 MB of disk space. If this is acceptable, click **Next** to start the installation.

Start Copying Files

The **Start Copying Files** window displays the current settings. Click **Next** to proceed and **Back** to change the settings.

RPM-1 Phone Driver Settings (Windows NT 4.0 only)

If your PC runs Windows NT 4.0, the Setup program now checks the RPM-1 driver settings. Do not change the suggested settings unless you know that they conflict with the existing hardware. Click **OK** to continue.

User Information

In this window, you can enter your user information. Click **Next** to proceed.

Insert RPM-1 Phone 2.0

Please insert the RPM-1 into the PC card slot. Under Windows NT 4.0, click **OK**. Under Windows 95/98, wait until Setup locates the RPM-1.

Driver Installation Check (Windows 95/98)

This window appears automatically after the Setup program has located the RPM-1. Setup now checks the driver functionality, Windows Telephone Application Interface (TAPI) and Mobile Phone Application Interface (MPAPI). If the item passed the test, **OK** appears next to the tested item. In case of a failure, **Failed!** is shown. Click **Retest** to rerun the test or **Next** to continue.

If some items failed their test, refer to the Troubleshooting section for possible solutions.

Setup Complete

The installation has been completed. Select **Yes, I want to restart my computer now** to restart your computer and click **Finish**.

Note: Under Windows NT 4.0, the Driver Installation Check window appears after you have restarted your computer upon completion of the installation.

Please read the **README** file, included in the RPM-1 Phone Program Group, for the latest information about the product. This file is provided in English.

Modifying the RPM-1 Setup

If you want to modify the RPM-1 setup, by installing more languages for example, start by following the instructions given in the “First installation steps” section at the beginning of the previous main section.

After the system has initialized Setup, the **Nokia Card Phone 2.0 Setup** window is displayed. You can choose one of the following options:

- **Add/Remove**

Select this option to install or uninstall components. In the **Select Components** window, select the components that you want to install, and clear the components you do not want to install. To install or uninstall languages, click the **Languages** button.

- **Reinstall**

Select this option to reinstall all the program files. This reinstallation repeats the previous setup. Reinstallation is needed when some of the files have been corrupted.

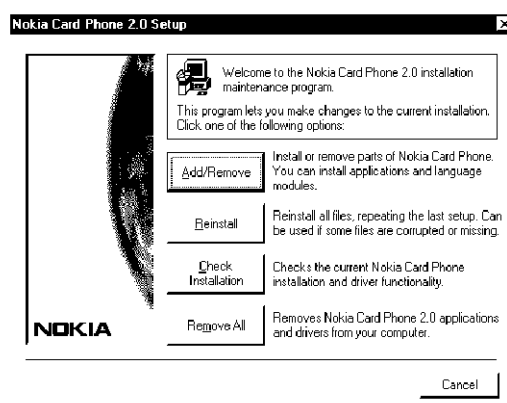
- **Check Installation**

Select this option to check the existing RPM-1 installation and driver functionality.

- **Remove All**

Select this option to uninstall the RPM-1 program files and drivers.

Finally, click **Next**.



Getting started

Starting the RPM-1

Note: If you are running Windows NT 4.0, insert the Nokia RPM-1 into the PC card slot before you turn on the computer.

Slide the SIM card into the SIM card slot of the RPM-1 and insert the RPM-1 into the PC card slot of your computer. The RPM-1 program starts automatically when the RPM-1 is inserted. You may have to enter the PIN (Personal Identity Number) code if the PIN code request is activated in the SIM card.

The PIN code is usually supplied with the SIM card. If you enter an incorrect PIN code three times in a row, you will need a PUK (Personal Unblocking Key) code to unblock the SIM card.

The PUK code may be supplied with the SIM card. If not, contact your service provider.

Using the RPM-1

The RPM-1 is automatically switched on when you insert it in the PC card slot of your computer. The RPM-1 program consists of five applications: Contacts, Messages, Dialler, Call Register and Settings. To open an application, click the application icon you want in the left-hand icon bar.

You can view the status of the RPM-1 in a separate Monitor window. To open the Monitor window, click the **Go** menu and then click **Monitor**. To exit the RPM-1 program, remove the RPM-1 from the PC card slot and select the **Exit** command from the **File** menu.

Detailed information on how to use the RPM-1 is available as an Online Help. To open Help, click the Help menu or Help buttons in the RPM-1 windows.

Text messages

The Short Message Service (SMS) is a network service that enables you to send and receive short text messages over the digital cellular network.

Messages can be read on any mobile phone that has SMS capability.

The sending and receiving of text messages requires that the Short Message Service (SMS) be available in the network you are using and activated for your SIM card. Contact your service provider for details.

Before you can send text messages, you must store the SMS message centre number in the Settings window, Messages tab.

Voice calls

It is possible to make voice calls from your PC with the Headset HDC-6D which is available as an accessory.

Data and fax communication

The RPM-1 provides the functionality of a cellular modem. To send and receive e-mail and faxes, connect to remote computers and access the Internet, you also need the appropriate data and fax communications software. You can use the RPM-1 with a variety of commercially available Windows 95/98/NT 4.0 compatible data and fax communications applications. These applications must be correctly configured for use with the RPM-1, according to the instructions given in the documentation of these applications and your computer. Remember to select the RPM-1 as the modem in each application. The data transfer and fax functions depend on the applications you have chosen, not on the computer or the RPM-1. For information on how to use an application, please refer to that application's documentation.

The RPM-1 supports three PC Fax standards: EIA/TIA Class 1, Class 2 and Class 2.0. If you have problems with using the RPM-1 for fax transmissions, make sure that the remote end fax machine is Group 3 compatible.

The RPM-1 can also be controlled with AT Commands. For more information, refer to the RPM-1 AT Command Help, included in the RPM-1 Program Group.

High Speed Circuit Switched Data (HSCSD)

The RPM-1 supports High Speed Circuit Switched Data (HSCSD) which enables a data transmission speed that is more than four times higher than the standard speed of 9.6 kilobits per second. HSCSD technology is based on the use of multiple timeslots at the same time. In the RPM-1, the data transmission speed in a single timeslot is 9.6 or 14.4 Kbps, depending on the network. When sending and receiving e-mail, the 14.4 Kbps data transmission speed can be doubled up to 28.8 Kbps, and when downloading Web pages, the RPM-1 is able to triple the transmission speed to 43.2 Kbps.

You can change the HSCSD settings of your RPM-1 in the Settings window, Modem tab. The use of these settings requires that your home network supports HSCSD technology and that you have subscribed to this service. Contact your service provider for more information.

Dual-band Functionality

When you are travelling, dual-band functionality gives you more roaming possibilities, depending on your network operator's roaming agreement.

Electrostatic Discharge (ESD)

A discharge of static electricity from a finger or a conductor may cause errors in the function of electric devices. The discharge can result in a "garbled" display and unstable software operation. Cellular connections

may become unreliable, data may be corrupted, and the transmission may be halted. In this case you need to end the existing call (if any), and exit the RPM-1Phone program.

Charge in computer batteries

The RPM-1 does not have its own internal battery. Instead, it uses the computer battery as its power source.

It is possible to charge the computer battery while the RPM-1 is in use. For more information on charging the computer battery, refer to the documentation of the computer.

The power consumption of the phone is approximately the same for data/fax calls as it is for voice calls of the same length.

Signal strength affecting cellular transmissions

You need to be in an area that is covered by a network to use the RPM-1 Phone.

Accessories

To make and receive voice calls with the RPM-1, the headset HDC-6D is needed. Kindly refer to the Accessories section of this manual.

To improve the reception and operating range of the RPM-1, the external antenna cable XRP-2 can be used to replace the standard antenna of the phone. Kindly refer to the Accessories section of this manual.

Troubleshooting

The RPM-1Phone cannot be installed or used.

The Interrupt Request (IRQ) resources may be in conflict. Check the RPM-1 resources from Control Panel/System/Device Manager/Modem RPM-1/select Properties/Resources. If there is a resource conflict, consult the Windows online help on changing the resource settings.

If you have Windows 95 OSR#2, do not start the installation by first inserting the RPM-1. If you already have done this, you may have an incorrect modem driver selected. To change the driver, select the Control Panel/System/Device Manager/Modems, and remove the Standard PCMCIA modem. Then remove the RPM-1 and restart setup.exe.

In Windows NT 4.0, there may be problems when third-party RPM-1Services are used. For example, hot swapping may not be possible. Currently, the RPM-1 supports SystemSoft CardWizard and Softex RPM-1Services.

The RPM-1 is not properly inserted. Make sure that the PC RPM-1slot of the computer is functioning properly and that the RPM-1 driver is installed

(in Control Panel: Modems). Also make sure that the SIM RPM-1 has been inserted.

Make sure that the RPM-1 is fully compatible with the communications application. If in doubt, contact your dealer.

You want to change the language of the program.

The language is changed in the Settings main view, General tab. Select the language in the Language drop-down box and click **Apply**.

The languages available are those that were selected during the installation. The change takes effect after you restart the program.

The program cannot be reinstalled.

The RPM-1 program may be running. Remove the RPM-1 from the PC RPM-1 slot and exit the program by selecting the File menu and clicking Exit, or by right-clicking the RPM-1 icon on the taskbar and then clicking **Close**.

You can also remove the RPM-1 from the PC RPM-1 slot and restart the computer. After this, try again.

The network signal is weak, and you also suspect interference from the laptop.

In addition to the regular antenna attached to the RPM-1, an external antenna may be used. Attach it to the laptop, and the call quality may improve.

There seems to be problems with call quality.

Do not obstruct the antenna with anything, your hand for instance.

A data call is in progress, and this is not shown in the RPM-1 Monitor window or in the Dialler main view, Dialler tab.

This depends on the communications application that is being used.

After removing the RPM-1 and inserting it again, Windows stops responding.

After you remove the RPM-1, wait for a while before you reinsert it.

Care and maintenance

When using your phone OR any accessory:

Keep it and all its parts and accessories out of small children's reach.

Keep it dry. Precipitation, humidity and liquids contain minerals that will corrode electronic circuits.

Do not use or store it in dusty, dirty areas. Its moving parts can be damaged.

Do not store it in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.

Do not store it in cold areas. When the phone warms up (to its normal temperature), moisture can form inside the phone, which may damage electronic circuit boards.

Do not attempt to open it. Non-expert handling of the device may damage it.

Do not drop, knock or shake it. Rough handling can break internal circuit boards.

Do not use harsh chemicals, cleaning solvents, or strong detergents to clean it. Wipe it with a soft cloth slightly dampened in a mild soap-and-water solution.

Do not paint it. Paint can clog the device's moving parts and prevent proper operation.

Use only the supplied or an approved replacement antenna. Unauthorised antennas, modifications or attachments could damage the phone and may violate regulations governing radio devices.

If the phone or any accessory is not working properly, take it to your nearest qualified service facility. The personnel there will assist you and, if necessary, arrange for service.