

1 Introduction

Read this information before you install the MagIC MS software to better understand the installation process.

MagIC MS is a "glue" software which links Agilent ChemStation or Agilent ICP-MS ChemStation to Metrohm MagIC Net.

With MagIC MS installed, sample data can be sent from your Agilent software to MagIC Net, a MagIC Net method can be started, and measured signals can be sent back to your Agilent software via an interface.

This document gives you the information needed to **install** the MagIC MS software:

- *Chapter 1.1 "Installation Prerequisites" (p. 2)* explains what must be fulfilled before you can install MagIC MS.
- *Chapter 1.2 "Description of the MagIC MS distribution" (p. 2)* describes the contents of the MagIC MS distribution.
- *Chapter 1.3 "Directories" (p. 3)* explains how to find out the installation directories on the target computer.
- *Chapter 2 "Installing MagIC MS" (p. 4)* gives detailed instructions on how to install MagIC MS for the Agilent software that you are using.
- *Chapter 3 "Additional information" (p. 8)* provides additional information, e.g. how changes to your MagIC Net installation will affect your MagIC MS installation.

1.1 Installation Prerequisites

Before you install MagIC MS, ensure that the following requirements are met:

- **MagIC Net 2.2 (Professional or Multi)** (or higher versions) and either **Agilent ChemStation B.02** (or higher) or **Agilent ICP-MS ChemStation B.04** (or higher) must be installed on the same computer. Please consult the installation instructions of these programs if you need more details.
- Your Metrohm IC system should be properly connected to your Agilent MS system.

1.2 Description of the MagIC MS distribution

Where to find MagIC MS

MagIC MS is distributed together with MagIC Net 2.2 (and higher). You find it on the MagIC Net CD-ROM in a directory named **MagicMS**.

In the installation instructions (*see Chapter 2, page 4*) this is referred to as the **MagicMS source directory**.

Contents of the MagicMS source directory

Here we briefly describe the contents of the MagicMS source directory. More detailed information about these files and how they have to be installed is given later in this document.

Directory doc	contains the MagIC MS 1.0 documentation
Directory examples	contains 2 example files: MagicMS.ini : the parameter file for MagicMS.exe which must be edited (customized) after installation. param.txt : this file shall not be installed, instead it will be created by one of the macros listed below; it is provided here as an example of how a (generated) sample data file looks like.
Directory macros	contains 2 macros: MagicMS.mac : a macro for Agilent ChemStation ICPglue.mac : a macro for Agilent ICP-MS ChemStation
File MagicMS.jar	a file needed by MagicMS.exe
File MagicMS.exe	the MagIC MS executable

1.3 Directories

There are 3 base directories involved in the installation. Their exact names and paths vary with the environment, as explained in this chapter.

Base directory	Referred to as
The directory where MagIC Net has been installed.	[MagicDir]
The directory where your Agilent software has been installed.	[AgilentDir]
The directory where the files MagicMS.ini and param.txt have to be.	[DataDir]



Note

For the sake of simplicity, this document considers only the **English** versions of **Microsoft Windows XP**, **Microsoft Windows Vista**, and **Microsoft Windows 7**. If a different version or language of Windows is installed on your target computer, then some path names will be different.

Typical examples for [MagicDir]

If a standard installation of MagIC Net on an English version of Microsoft Windows XP, Vista or 7 was done, then the first part of **[MagicDir]** depends on the language, and the second part is **Metrohm\MagIC Net**:

Microsoft Windows (English)	[MagicDir]
XP	C:\Program files\Metrohm\MagIC Net\
Vista and 7	C:\Programs\Metrohm\MagIC Net\

During installation, files need to be copied to the **bin** and **lib** subdirectories of [MagicDir]. These are referred to as **[MagicDir]\lib** and **[MagicDir]\bin**.

Typical examples for [AgilentDir]

If a standard installation of your Agilent software was done, then **[AgilentDir]** depends on the type of software:

Agilent software	[AgilentDir]
ChemStation	C:\Chem32\CORE
ICP-MS ChemStation	C:\ICPCHEM\ICPEXE

Typical examples for [DataDir]

The first part of **[DataDir]** depends on the Windows version and language, whereas the second part must be **Metrohm\MagicMS**:



Note

It might be necessary to select **Show hidden files and folders** in Microsoft Windows' **Folder options** dialog to see these directories!

Microsoft Windows (English) [DataDir]

XP	C:\Documents and Settings\All Users Application data\Metrohm\MagicMS\
Vista and 7	C:\ProgramData\Metrohm\MagicMS\

2 Installing MagIC MS



Warning

Due to User Account Control (UAC) on Windows Vista and Windows 7, you will need **elevated administration rights** to do the installation.

Help on UAC is available in the Microsoft Support Center:
<http://support.microsoft.com/>.

Installing MagIC MS is easy. It is done by copying files to their correct locations, as explained in this chapter.

The installation consists of two major steps:

1. Installation of the MagIC MS files **MagicMS.exe**, **MagicMS.jar**, and **MagicMS.ini** (see Chapter 2.1, page 5).
2. Installation of the proper macro for your Agilent software.
Instructions for **Agilent ChemStation** are given in chapter 2.2, page 6.
Instructions for **Agilent ICP-MS ChemStation** are given in chapter 2.3, page 7.

We suggest that you first find out and write down the **actual** path and name of the 3 types of directories involved in the installation (see Chapter 1.3, page 3):

Type of directory	Actual path on the target computer
[MagicDir]	
[AgilentDir]	
[DataDir].	

2.1 Installing the files **MagicMS.exe**, **MagicMS.jar**, and **MagicMS.ini**

Get the MagIC Net installation CD-ROM where the **MagicMS source directory** is (see Chapter 1.2, page 2).

Use a file manager like Microsoft Windows Explorer to perform the following steps:

- 1 From the **MagicMS source directory**, copy the file **MagicMS.exe** to **[MagicDir]\bin**, i.e. to the subdirectory **bin** of what is your **[MagicDir]** directory.
- 2 From the **MagicMS source directory**, copy the file **MagicMS.jar** to **[MagicDir]\lib**, i.e. to the subdirectory **lib** of what is your **[MagicDir]** directory.
- 3 From the **MagicMS source directory**, subdirectory **examples**, copy the file **MagicMS.ini** to your **[DataDir]**.
- 4 In **[MagicDir]\bin**, select the file **MagicMS.exe** with the mouse, then right-click with the mouse and create a shortcut.
- 5 From **[MagicDir]\bin**, move the shortcut (which you have created in step 4) to the Desktop.



Note

The file **MagicMS.ini** needs to be edited before putting MagIC MS into operation. The customization of **MagicMS.ini** is described in the MagIC MS **Instructions for Use**. You find this document in the subdirectory **doc** of the **MagicMS source directory**.

2.2 Installing the macro MagicMS.mac for Agilent ChemStation

If your Agilent software is **ChemStation** (*not* ICP-MS ChemStation), then follow the steps described in this section.

The macro to install is **MagicMS.mac**.

The installation includes 2 logical steps. First, the macro must be copied to a specific directory. Second, another file called **user.mac** must be edited to provide ChemStation with information about MagicMS.

Get the MagIC Net installation CD-ROM where the **MagicMS source directory** is (*see Chapter 1.2, page 2*).

Use a file manager like Microsoft Windows Explorer to perform the following steps:

- 1 From the **MagicMS source directory**, subdirectory **macros**, copy the file **MagicMS.mac** to your **[AgilentDir]**.
- 2 Open the **[AgilentDir]** directory and look for a file called **user.mac**. It might or might not be there.
- 3 If there is a file called **user.mac**, you should make a backup copy of it.
- 4 If there is no file called **user.mac**, then create it as a new text file and save it to **[AgilentDir]**.
- 5 Open **user.mac** with a text editor (i.e. Windows Notepad) and add the following 2 lines to the end of the file. Please note that **[DataDir]** must be replaced against the actual directory name on your target computer:

paramFile\$="[DataDir]\param.txt"

macro "MagicMS.mac"
- 6 Save the file **user.mac** and close it.



Note

How to actually *use* **MagicMS.mac** in ChemStation is described in the MagIC MS **Instructions for Use**. You find this document in the subdirectory **doc** of the **MagicMS source directory**.

2.3 Installing the macro ICPGlue.mac for Agilent ICP-MS ChemStation

If your Agilent software is **ICP-MS ChemStation** (*not* ChemStation), then follow the steps described in this section.

The macro to install is **ICPGlue.mac**.

The installation includes 2 logical steps. First, the macro must be copied to a specific directory. Second, another file called **top.mac** must be edited to provide ICP-MS ChemStation with information about MagicMS.

Get the MagIC Net installation CD-ROM where the **MagicMS source directory** is (*see Chapter 1.2, page 2*).

Use a file manager like Microsoft Windows Explorer to perform the following steps:

- 1 From the **MagicMS source directory**, subdirectory **macros**, copy the file **ICPGlue.mac** to your **[AgilentDir]**.
- 2 Open the **[AgilentDir]** directory and look for a file called **top.mac**.
- 3 Optional, but recommended: Make a backup copy of **top.mac** before proceeding.
- 4 Open **top.mac** with a text editor (i.e. Windows Notepad) and add the following 2 lines to the end of the file but **before** the **return** statement. Please note that **[DataDir]** must be replaced against the actual directory name on your target computer:

paramFile\$="[DataDir]\param.txt"
macro "ICPGlue.mac"
- 5 Save the file **top.mac** and close it.



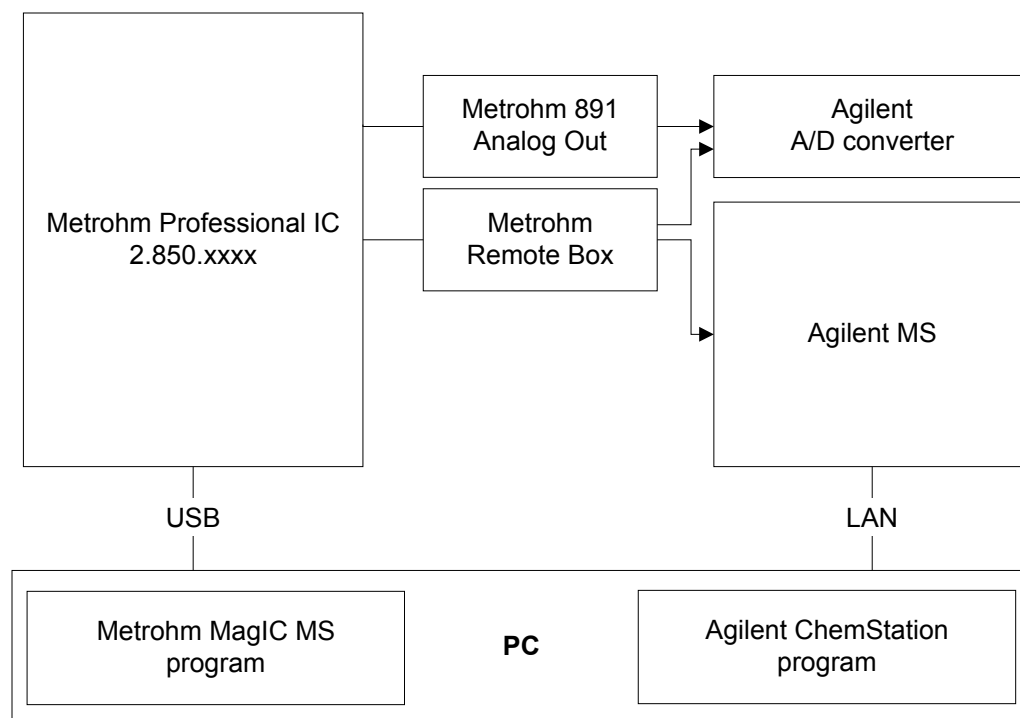
Note

How to actually *use* **ICPGlue.mac** in ICP-MS ChemStation is described in the MagIC MS **Instructions for Use**. You find this document in the subdirectory **doc** of the **MagicMS source directory**.

3 Additional information

3.1 IC / MS hardware installation notes

3.1.1 Necessary devices and accessories



Metrohm IC system

Professional IC system	850.xxxx (PC: USB)
Analog Out	891.0010 (850 Extension Module)
Remote Box	6.2148.0010 Remote Box (850 MSB 1 or 2)
Signal cable	6.2141.380 Cable (Remote Box – Agilent MS – Agilent Interface)
Analog cable	6.2128.200 Cable for 891 Analog Out

Agilent analog input

Necessary only if the analog signal from the Metrohm IC system is to be used!

CN00004686 A/D Interface (Hub)	35900E
Analog signal cable	35900-60900

IC/MS connection cables

Analog Data:

The Agilent cable 35900-60900 is connected to the Metrohm cable 6.2128.200 by connecting the following wires:

6.2128.200	35900-60900
green (signal +)	red (signal +)
white or brown (signal –)	black (signal –)
	orange (shield)

Start signal for MS signal recording:

The single end of the cable is connected to the Remote Box. The D-SUB 9 plug of the Metrohm cable 6.2141.380 (label: "MS Agilent") is to be connected to the MS input (label: Remote). The D-SUB 25 plug must be connected to the Agilent interface (label: Remote, this is only needed if the analog signal is used).

Start/Stop Signal for Agilent Interface (only needed if analog signal is used):

The D-SUB 25 plug is connected to the Metrohm Remote Box. The D-SUB 9 plug is connected to the input of the Agilent interface channel A or B (label: Analog A or B).

Pins:

Start MS	Output 1
Start AD	Output 2
Stop AD	Output 3

3.1.2 Starting up the devices

Metrohm IC system

1. Normal startup of the IC system
2. Manual start of MagicMS
3. Suppressor conditioning

Agilent MS detector

1. Nitrogen: 6 bar
2. MS Power Switch bottom left: **ON**. The pre-vacuum pump is started automatically.
3. The high-vacuum pump is automatically started at 4.
4. Wait until the red LED on the MS is off (this needs some time).
5. Start ChemStation software after all devices are powered up.
6. Run devices for at least 4 hours for warm-up.

3.2 Re-installing MagIC MS

If you need to install a new version of MagIC MS, or you think that something is wrong with your current installation, you should

1. make a backup of the file **[DataDir]\MagicMS.ini**
2. delete all previously installed MagIC MS files
3. install MagIC MS from scratch

3.3 How changing your MagIC Net installation might affect MagIC MS

MagIC Net installer actions like **Repair**, **Remove**, **Install** or **Update**, which are described in the MagIC Net Installation Guide, are likely to (partly) affect your MagIC MS installation.

The reason is that the MagIC Net installer is unaware of whether or not MagIC MS has been installed. Depending on the action chosen by the user, the installer will remove certain files and/or clear subdirectories in **[MagicDir]**. Especially the files **MagicMS.exe** and **MagicMS.jar** are likely to be deleted by the MagIC Net installer.

The MagIC Net installer will never touch files in **[AgilentDir]** or **[DataDir]**, but **be sure to check [MagicDir]\bin and [MagicDir]\lib after running the MagIC Net installer** and to repeat the appropriate installation step(s), if necessary.