# Thermo Scientific Orbitrap Astral Series 1.0 SP1 Instrument Control Software Release Notes

This document lists installation notes, new features and improvements regarding the Thermo Scientific™ Orbitrap Astral Series 1.0 SP1 Instrument Control Software release. For information regarding the installation, features, functionality, and use of this product, refer to the following sources of information:

- *Orbitrap Astral Operating Manual*

**Contents**

## Installation Notes

### Supported Target Systems

Thermo Scientific Orbitrap Astral™ mass spectrometer

### System Requirements

The minimum hardware and software configurations required for the Orbitrap Astral Series 1.0 SP1 Instrument Control Software operation are as follows:

| System | Requirements |
| --- | --- |
| PC | 3.0 GHz Quad Core Intel™ Processor<br>32 GB RAM<br>512 GB SSD Hard Drive<br>Display Monitor Resolution of 1920 × 1080<br>Two Network Interface Cards (NIC), 1000 MBit/s |
| Software | Microsoft™ Windows™ 10 Enterprise 2021 LTSC<br>Thermo Scientific Xcalibur 4.7 |

**Tip** The Orbitrap Astral Series 1.0 SP1 Instrument Control Software was only tested within the delivered composition.

## Installation

**Tip** Prepare the computer in advance of any new installation.

**Note for FAIMS Users** Please reboot the FAIMS unit after the installation of the Orbitrap Astral Series 1.0 SP1 Instrument Control Software (switch Main Control Box off and on).

This guidance addresses a standard installation of a Windows computer acting as an access point for Orbitrap Astral based instruments. The current software version is 1.0 SP1. The guidance is valid at least up to this version. There are differences between nearly all computers, so even if you have a receipt of installation, be aware that the operating system or language settings might be different. The current explanations have Microsoft Windows 10 Enterprise LTSC 2021 and English in focus.

Thermo Fisher Scientific does not accept any warranty claims about the completeness of this instruction list. Consulting a Thermo Fisher Scientific support team member of Orbitrap Astral instruments is highly recommended for setting up a new PC.

### Technical Requirements

Choose a PC equipped as described at "System Requirements" on .

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**Operating System Language**

English is the only tested language. It is recommended to switch to English language before installation. This installation instruction refers to names of English operating systems.

**Network Setup**

At least two NICs must be present in the system. The one connected to the instrument must not be connected to the regular Internet connection. Only the instrument to be driven by this particular PC may be connected to the PC using a 1 GBit switch or hub. Additional devices like autosampler or LC systems may be connected to that switch, too.

Configure the IPv4 interface as follows:

- address 172.16.0.101
- network mask 255.255.0.0
- manual DNS selection with empty fields

**Physical Links**

Use at least a Cat 6 patch cable. Double-check the quality of the cable if errors occur.

**Virus Scanner and Firewall**

Disable virus scanner and firewall during installation. Virus scanning can happen in advance and may stay turned on, if it is guaranteed that the firewall is turned off. The installation program informs only the built-in firewall of Windows properly. Other firewalls have to be informed that the program Thermo Exploris Core Service (file locations see below) needs access to incoming and outgoing network traffic. Remember that the dedicated NIC is usually considered to be a "public network." Firewall and virus scanner can be turned on after installation. Reboot the instrument to be sure that everything works.

**Software Installation**

> **Tip** Do not start the software installation before the network setup has been completed. See "Network Setup" on page 2.

**File Locations**

The default installation folder on the computer is C:\ProgramData\Thermo\Astral.

This instruction list uses C:\ProgramData\Thermo\Astral for easy reading, but depending on the installation package like Orbitrap Astral Instrument Control Software kit, this may be different.

When the Orbitrap Astral software has been installed on a system, the folder of the previous installation will be reused.

**Backup**

Several files and folders require a backup for later installation, either for crash recovery or for replacing the computer. The backup can be performed during normal operation.

These files and folders (see "File Locations" on page 2) should be saved if present:

- C:\ProgramData\Thermo\Astral\instrument\msx_instrument_files
- C:\ProgramData\Thermo\Astral\Licenses.txt
- C:\Thermo\Instruments\Astral\[version]\System\Programs\dependencies\msi\TNGConfig.xmb

Setup of a new computer without any backup requires assistance of the Orbitrap Astral support team of Thermo Fisher Scientific. The computer may require licenses or some extra configuration files.

**Uninstalling**

The Installer will automatically remove outdated versions prior to the installation of a new version.

**Installation**

Install using the ISO image or a copy of its content by executing the installation program OrbitrapAstralFullSetup.exe. Use the regular way of installation for best results. It detects several problems, if they exist at all.

**Restoring a Backup**

This step is not needed, if the installation was just an upgrade of the Orbitrap Astral software. All present configuration settings remain on uninstalling.

For setting up a replacement computer or after a disk crash, the restore procedure needs to be performed. The procedure requires administrator privileges. The restore procedure should happen after installation of the new software.

The installation place in the backup may be different to that of the present installation. Either use Instrument Configuration and look where files are located or check the folders appearing at "File Locations" on page 2.

> **Tip**  It is important to stop the only program that interacts with the files coming from the backup. That is Thermo Exploris Core Service.

❖ **To stop the Thermo Exploris Core Service**

1. In Windows 10 desktop, open **Computer Management** (<⊞> + <X>).

2. Select **Computer Management (Local) > Services and Applications > Services > Thermo Exploris Core Service**.

3. Right-click it and select **Stop**.

   Keep the dialog open.

4. After a new installation, the instrument has already created the msx_instrument_folder with default content. Replace the content of that folder by the files from the backup.

5. Use the open dialog to start the **Thermo Exploris Core Service** again. Alternatively, reboot the computer. If in doubt, contact the Orbitrap Astral support team of Thermo Fisher Scientific.

## Operation

Set the power setting to maximal performance.

> **Tip**  Automatic updates of any kind, those of the operating system in particular, are usually set to **automatic**, but this may disturb instrument data acquisition. To not disturb your data acquisitions by automatic updates, we strongly recommend setting all updates to **manual** and checking for updates regularly.

Never put the computer to sleep (Control Panel\Hardware and Sound\Power Options\Edit Plan Settings).

## Supported Instruments

The instruments listed in Table 1 are supplied and supported in this release.

**Table 1.**  Supported instruments

| Instrument | Instrument Control Software Version | Version No. |
|---|---|---|
| Orbitrap Astral MS | 1.0 | 1.0.100.11 |
| Orbitrap Astral MS | 1.0 SP1 | 1.0.100.14 |

## New Features and Improvements

Table 2 lists defect fixes in the Orbitrap Astral Series 1.0 SP1 Instrument Control Software release that were implemented since the Orbitrap Astral Series 1.0 Instrument Control Software release.

**Table 2.**  Changes realized with Orbitrap Astral Series 1.0 SP1 Instrument Control Software relative to Orbitrap Astral Series 1.0 Instrument Control Software

| Defect Fixes | | |
|---|---|---|
| **ID** | **Severity** | **Title** |
| 412822 | 1 - Critical | Occasionally spikes can be observed in ion chromatogram while ion spray stable. |
| 419732 | 1 - Critical | EASY-IC: Lockmass expected position does not change with polarity. |
| 421872 | 1 - Critical | XML method modification interface is not functional. |
| 419661 | 2 - High | System Calibration/Check: Change PrOSA Scaling specifications. |
| 416053 | 3 - Medium | System Calibration/Check: HCD Fragmentation and Trapping Efficiency Check leads to a SW internal failure (occasionally). |

## Known Issues

Table 3 lists all known issues that exist in the Orbitrap Astral Series 1.0 SP1 Instrument Control Software release.

**Table 3.** Known Issues

| ID | Severity | Title |
|---|---|---|
| 347288 | 4 - Low | Tune: Setting incorrect Syringe Pump flow rate displays wrong message "the syringe may be out of sample". <br><br> Remedy: Remove and place the syringe again into the pump to release the backpressure. |
| 375776 | 3 - Medium | Tune: "Continue to batch reports" option is not available after running diagnostic/optimization procedure. |
| 362826 | 3 - Medium | ME: Selection of scan nodes is not possible when Method Editor window is not maximized. |
| 424800 | 3 - Medium | Orbitrap EASY-IC™ lock mass correction (Timed / Scan-to-Scan) is not functional if the first mass of the scan range is above $m/z$ 275. <br><br> Remedy: Set as first mass of the scan range an $m/z$ value < 275 or use Run Start EASY-IC Orbitrap Lock Mass Correction mode. |
| 396718 | 3 - Medium | Data Acquisition: FAIMS occasionally returns "source is open" right after the start of a method while source is closed. <br><br> Remedy: After verifying that the source is not open, reboot the instrument or the acquisition PC to recover from this issue. |
| 407881 | 3 - Medium | Data Acquisition using lock mass correction is not aborted while Internal Calibrant Source is faulty/defective. |
| 357067 | 3 - Medium | Isolation $m/z$ range below $m/z$ 40 does not trigger a validation error when resulting from an inappropriate isolation offset setting. <br><br> Remedy: Enter an isolation offset value that complies with accepted isolation range. |
| 387627 | 4 - Low | RF values are not converted to account for differences between S-lens and funnel when importing OE120/240/MX methods. <br><br> Remedy: Please manually adjust the RF value accordingly. |
| 403091 | 3 - Medium | Raw file: Scan headers of ASTMS scans report irrelevant FT resolution. <br><br> No effect on data acquisition. |
| 402163 | 3 - Medium | When Internal Calibrant Source is faulty/defective, the warning message is incomplete, missing the following text: "The mass accuracy performance may be slightly lower than in regular conditions." |
| 402347 | 4 - Low | With Fine Astral Mass Calibration (part of System Calibration), result messages are not located below the associated plots in PDF report. |
| 357681 | 4 - Low | Method execution waits for temperatures to stabilize while "Wait for Temperatures to stabilize" option is unchecked in Instrument Configuration. |
| 404844 | 3 - Medium | Xcalibur: If the file name contains the symbol µ, two raw data files are generated instead of one. <br><br> Remedy: Do not use symbol µ in file name. |

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