

OMNEO Discovery Q-SYS Plugin



Release Notes

Release Date	Version	Changes
09/2020	V0.0.1	<ul style="list-style-type: none">• Early adopters preview.
02/2021	V1.0.0	<ul style="list-style-type: none">• First release.

Introduction

OMNEO is a media networking architecture that combines studio-quality multi-channel audio and a common control system over standard IT networks. OMNEO's media transport uses Dante, while the control system uses Open Control Architecture (OCA). OCA is an open public standard, also known as AES70, for control and monitoring of professional media networks.

The plugin allows you to discover OMNEO enabled devices on a network, and connect to them by name without having to worry about IP addressing or TCP/IP port numbers. As devices are discovered, the plugin sends all the connection information to other Dynacord plugin components in your Q-SYS project, so you can simply select the device you want to control and connect.

The plugin then continues to monitor the network ensuring the list of discovered devices is always up to date as hardware is added and removed.

Because the plugin shares the information with all other Dynacord plugins, only one Discovery plugin is required per Q-SYS design. This ensures network resources are not unnecessarily wasted by each plugin having to maintain its own discovery mechanism.

This guide explains how to integrate the plugin into a Q-SYS design.

More information about Q-SYS and the Q-SYS Designer software can be found on the QSC website at; <https://www.qsc.com/resources/software-and-firmware/q-sys-designer-software/>

More information about OMNEO can be found on the Dynacord website at;
<https://dynacord.com/technology/omneo/>

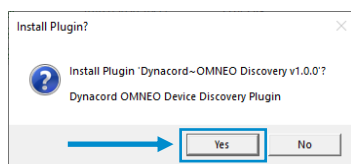
1. Installing the plugin

The plugin requires Q-SYS Designer version 8.3 or higher. The latest version can be downloaded from the QSC website. If necessary, install Q-SYS Designer following the instructions given by QSC.

Note: Plugins use the Q-SYS Scripting Engine, which is a licensed feature on certain Cores. You may need to purchase and install a feature license from QSC in order to deploy this plugin on a Core. More information can be found in the Q-SYS Designer Help and on the QSC website.

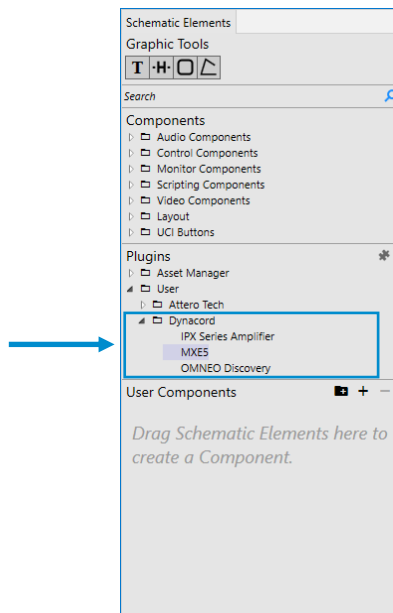
To install the plugin:

1. Double-click the plugin file **Dynacord OMNEO Discovery vx.x.x.qplug** then click **Yes** in the confirmation dialog to complete the installation.



2. Open Q-SYS Designer. The plugin is located in the right-side **Schematic Elements** pane. It can be found in the Plugins section by expanding the menu option, **User > Dynacord**.
3. The plugin is now installed and ready for use in your Q-SYS designs.

You can also manually install the plugin by copying the file into the Plugins folder (typically located) at: C:\Users\username\Documents\QSC\Q-Sys Designer\Plugins



2. Removing the plugin

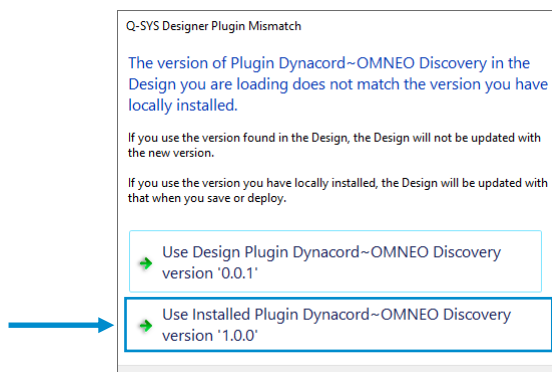
If you need to remove the plugin you can do this by deleting it from the Plugins folder at:
C:\Users\username\Documents\QSC\Q-Sys Designer\Plugins

Note: This will not remove the plugin from any of your design projects. If you need to remove it from a design you will need to manually delete each plugin component added to the design.

3. Updating the plugin

If a newer version of the plugin becomes available you can update it by following the procedure to install the plugin above. Once the newer version is installed, Q-SYS Designer will ask if you want to update to that version when you next open a design containing the plugin.

Select the option to **Use Installed Plugin** to update the design. The design will be updated when you next save and deploy it.

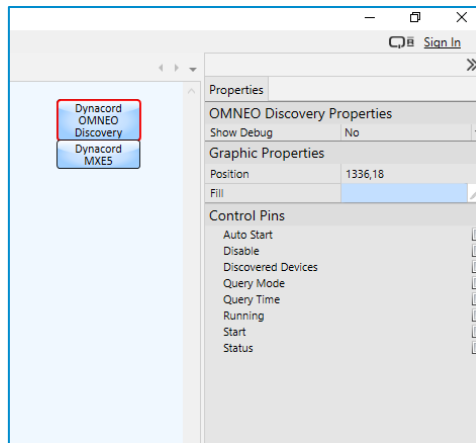


Note: If you don't want to update the plugin at this time select the option to **Use Design Plugin** instead.

4. Plugin overview

Drag an **OMNEO Discovery** component, and a Dynacord device component (e.g. an **MXE5**) from the **Plugins** pane onto the **Schematic**. Click the OMNEO Discovery component to select it. This will also display its properties in the right-hand **Properties** pane of Q-SYS Designer.

Note: Only one OMNEO Discovery component is required in each Q-SYS design as it shares the discovery information with all other Dynacord plugins.



Properties

Show Debug: Combo box with Yes/No option, the default is No. When set to Yes, the plugin will display the Q-SYS Debug Output window below the device's control panel. The Debug Output window displays error and status messages while the plugin is running. These messages are written to the Debug Window even in emulation mode enabling you to test it before deploying to your Core.

Graphic Properties

Position: Coordinates of the plugin component on the Schematic page.

Fill: Sets the background colour of the plugin component.

Refer to the Q-SYS Designer Help for more information on Graphic Properties.

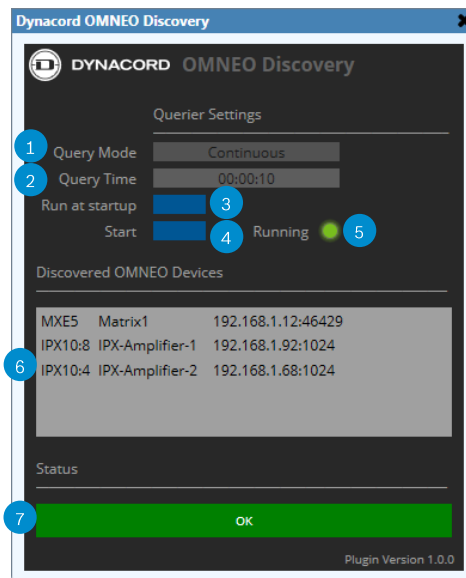
Control Pins

Control Pins are an advanced Q-SYS Designer function that enable controlling and monitoring of many of the plugin components parameters via other Q-SYS Control Components.

Using Control Pins and Control Components is beyond the scope of this user guide. However, there are a couple of simple examples shown in the MXE5 plugin user guide, section **Getting Started**. Refer to the Q-SYS Designer Help for more examples of using Control Pins.

Control Panel

Double-click the component to open its control panel.



1. **Query Mode:** Combo box to select whether discovery will run continuously or for a set amount of time.
 - **Continuous:** Once discovery has started it will continue to run until either it is manually stopped, or the Q-SYS Core is powered down.
 - **One time:** Once discovery has started it will run for the amount of time entered in the 'Query Time' box and then stop.
2. **Query Time:** The amount of time a 'One time' query will run for. This box is disabled (and the value ignored) whilst 'Continuous' query mode is selected. Enter a value between 5 seconds and 1 hour to suit your application. Discovery can take several seconds, especially on a busy network with a large number of OMNEO devices. Making the query time too short may mean not all devices are discovered before it stops.

Tip: If it is very unlikely that any of the TCP/IP settings for devices on your network are likely to change, you could select 'One time' query mode, however, if you are using link local IP addressing (i.e. no DHCP server on the network), or the device is an MXE5, it is highly likely that the IP address and/or the TCP port number of the device will change if it is power cycled or rebooted. At which point you would need to run the one-time query again to discover these new settings. Continuous query mode will automatically detect changes in TCP/IP settings thus ensuring maximum up-time and minimum user intervention. Therefore, continuous mode is highly recommended for almost every application.

3. **Run at Startup:** When this button is enabled (blue background = enabled) the plugin component will automatically start the discovery service whenever the design is saved to the Core, or the Core is rebooted/power cycled.

4. **Start:** Toggle this button to manually start and stop the discovery service (blue background = started).
5. **Running LED:** Glows green when the discovery service is running.
6. **Discovered OMNEO Devices:** List box displays the discovered OMNEO devices. Scrollbars appear when more devices are found than can fit in the display area. Use the scroll up/down buttons, or the mouse wheel, to navigate to devices at a different location in the list. Each record in the list displays the device type, the device name, and its current IP address and port number.
7. **Status:** Displays the current status of the discovery plugin;
 - Grey – Offline: Discovery is not running.
 - Blue – Initializing:
 - Green – OK: Discovery is running and no faults have been reported.

Note: Discovery uses the DNS-SD service discovery protocol which relies heavily on multicast ethernet packets. If your network utilizes managed network switches they may require additional setup steps to ensure this multicast data can pass through the network properly (such as correct configuration of IGMP Snooping). Both the Q-SYS Core, and the OMNEO device(s) you want to connect to, must have an IP address in the same range, on the same subnet. These can be assigned using a DHCP server (recommended), or link local addressing (where a DHCP server is not available). Correct setup of the network is beyond the scope of this user guide as there are many different variables to consider, especially when integrating the control system into a corporate network environment. However, it is an essential step for reliable operation especially if discovered devices regularly appear and then disappear, as this indicates the presences of an IGMP Querier but incorrectly configured IGMP Snooping settings.

DNS-SD is based on mDNS and all multicast discovery traffic is on address 224.0.0.251:5353. The plugin also communicates with discovered devices using OCA on the TCP/IP address and port number identified during the discovery process.

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