



DiGiGrid D

User Guide



Contents

INTRODUCTION.....	3
HARDWARE AND CONNECTIONS	4
GETTING STARTED.....	5
Connect the Hardware	5
One I/O.....	5
Add I/Os	6
Download and Install Software.....	7
Configure the System	8
Manual Device Configuration	9
Automatic Device Configuration	9
Device Firmware	10
Identify a Device on the SoundGrid Network.....	10
DIGIGRID D CONTROL PANEL	11
Clock Page	12
System Info Page and About Page	13
Presets.....	13
USING AN I/O DEVICE WITH A DAW	14
SPECIFICATIONS	15
RESETTING THE UNIT	17

Waves Inc
2800 Merchants Drive, Knoxville, TN 37912 USA
1-865-909-9200
www.waves.com



Introduction

DiGiGrid D Desktop Interface is a SoundGrid I/O for studio and location applications. It has four inputs and six outputs. Two outputs are fixed level and two have level controls for precision monitoring using the headphone outputs or loudspeakers. Top-quality converters and mic preamps provide audio capture of the highest order, and the device can be networked with other SoundGrid devices. DiGiGrid D is powered by a twist-lock 12V DC power supply (provided).

DiGiGrid **D** does not need an external power source when connected to a DiGiGrid **S** network switch. DiGiGrid **S** provides power over Ethernet (PoE) for DiGiGrid D, M, and Q interfaces.

SoundGrid is the Waves high-speed networking protocol for moving audio, clock, and other information between a host system and I/O devices—and between I/O devices themselves. A SoundGrid host configures the network, assigning servers and I/O devices to mix, process, or record, depending on the host. SoundGrid devices link to the SoundGrid network with standard Ethernet cable.

SoundGrid is scalable. Connect one I/O device to a DAW and you have a high-quality sound card. Add more I/Os and your system becomes more flexible and powerful. Depending on the host application, a SoundGrid host can assign up to sixteen I/O devices. Complete SoundGrid systems can be networked together to share devices.

Add a server to a SoundGrid system to offload plugin processing from the host CPU to a SoundGrid DSP server. This dramatically increases processing power and enables greater plugin counts, as well as providing very low system latency.



Hardware and Connections

DIGIGRID D FRONT PANEL



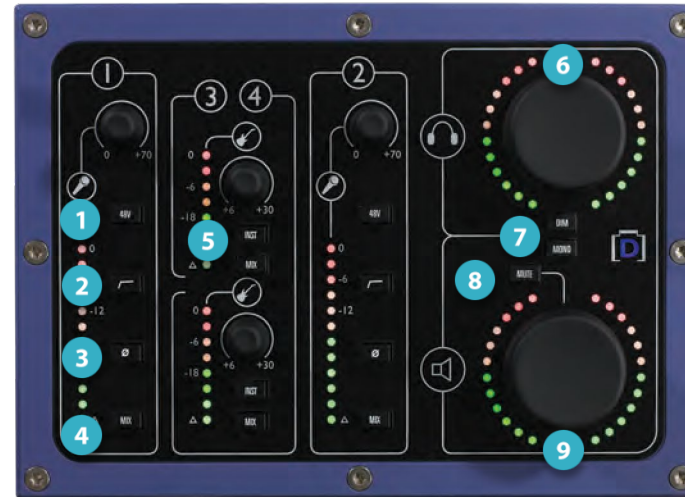
- 1 Headphone Output

DIGIGRID D REAR PANEL



- 1 Monitor Outputs
- 2 Line Outputs
- 3 Reset button
- 4 DC In
- 5 SoundGrid Network
- 6 Guitar Inputs
- 7 Mic/Line Inputs, 0 to +70 dB

DIGIGRID D TOP PANEL



- 1 Phantom Power
- 2 High-Pass Filter
- 3 Phase Invert
- 4 MIX (Direct Listen): routes mono feed of this input to the monitor and headphone outputs bypassing all other paths.
- 5 INST: switches to Instrument input (Hi Z).
- 6 Headphone Level Control
- 7 Dim and Mono: control headphones and Outputs 1 and 2 (monitor outputs). Dim: -20 dB
- 8 Mute: affects monitor outputs only
- 9 Monitor Output Level: controls levels of Outputs 1 and 2



Getting Started

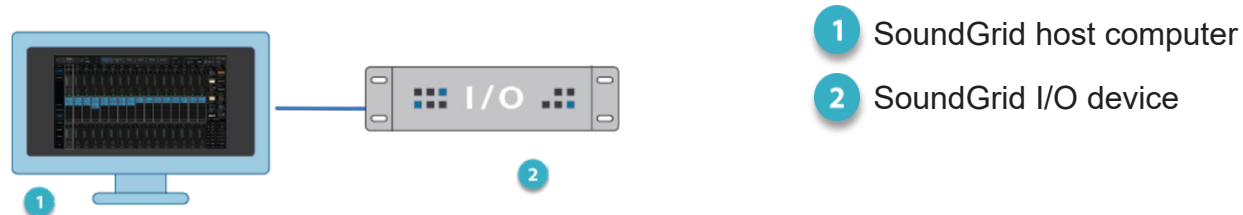
Configure SoundGrid and assign your devices as follows, however large or small your system.

- A** Connect the hardware
- B** Install the software
- C** Configure your system

A *Connect the Hardware*

One I/O

In this example, one DiGiGrid D is used to connect a console to the SoundGrid host application's SoundGrid ASIO/Core Audio driver for plugin processing and/or DAW playback/recording. The interface is connected directly to the host using a Cat 5e Ethernet cable or better.



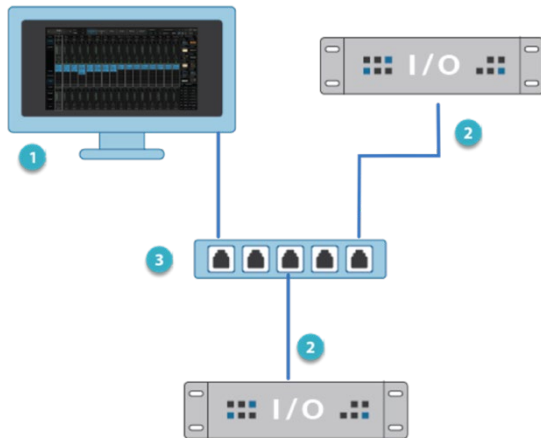
The LAN port that's connected to the SoundGrid network should be used for SoundGrid only. Do not share this port with the internet or other networks.

In this configuration, all plugin processing is carried out on the host computer. The speed and power of the host defines overall latency.



Add I/Os

Adding I/O devices not only increases the number of I/O channels, but lets you have separate devices for stage and FOH, or live room and control room. When you have more than one device in the SoundGrid network, use a "star" network configuration with a 1GB Ethernet switch. Only use switches tested and approved by Waves.



- 1 SoundGrid host computer
- 2 I/O devices
- 3 1GB Ethernet switch

See this [support article](#) for a list of supported switches.

You can connect and assign up to 16 SoundGrid I/O devices to the network, depending on the SoundGrid Host Application. All SoundGrid I/O devices, hosts, and servers are connected through the Ethernet switch. You can also add more computers to enable audio streaming among hosts. Consult your host application user guide to learn how to configure additional I/Os and servers.

ADD A SERVER

To add a server to your SoundGrid system, just connect it to the Ethernet switch and configure it in your host application. This moves all DSP processing from the host computer to the server, which provides a higher plugin count and enables the eMotion LV1 and ST mixers. Visit the [waves.com hardware pages](https://www.waves.com/hardware/pages) to learn more about SoundGrid servers. Consult your SoundGrid host application's user guide to learn about using servers.



B Download and Install Software

INSTALLING A NEW SOUNDGRID HOST SYSTEM

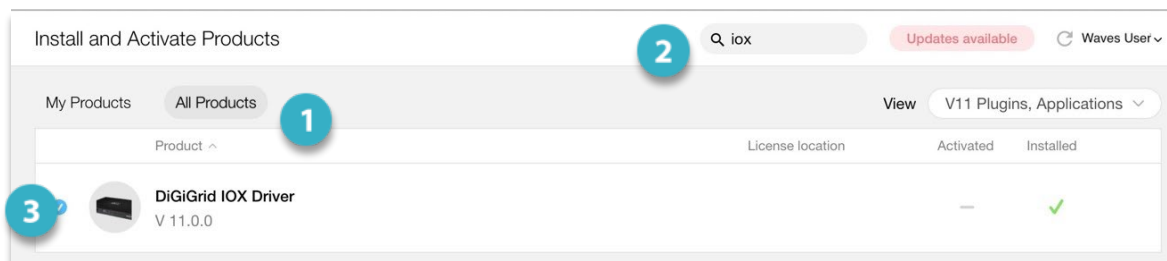
Installing the Waves SoundGrid host application will also install applicable device drivers and ASIO/Core Audio drivers. Your devices will appear in the Inventory of your host system. If a device is not visible in the Inventory, you may need to install a specific driver from **Waves Central**—please see below. First, however, check the device's connections and power.

ADDING AN I/O DEVICE TO AN EXISTING SOUNDGRID HOST SYSTEM

If you are already using a Waves SoundGrid host application and your device does not appear in the Network Devices list, use Waves Central to update the host application, which also updates the device drivers—or install just the missing device driver from Waves Central.¹

Waves Central

All Waves software is downloaded and installed via the Waves Central application. To install a specific device driver, launch Waves Central and follow these steps:



- 1 Choose **All Products**
- 2 Search for the driver by name
- 3 Choose the driver and click **Install**



If you are new to Waves products, begin by downloading the Waves Central installer from the Waves Download Page. See the Waves Central User Guide for instructions on how to install drivers, plugins, and applications.

LICENSES

You do not need a license to use this device. However, many hosts or specific host configurations do require a license. Refer to your host's [product page](#) for details.

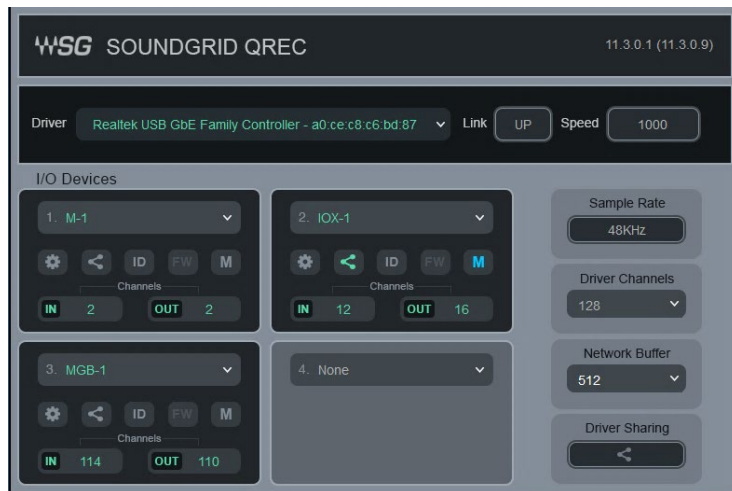
¹ The SoundGrid QRec host is installed with any I/O.



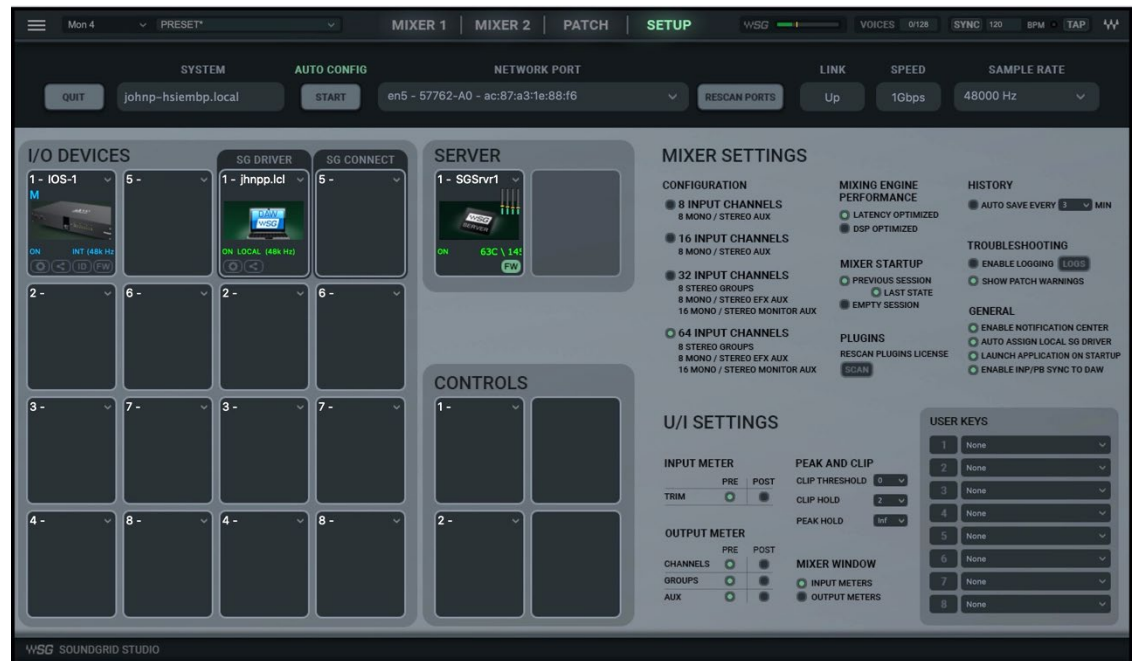
C Configure the System

A SoundGrid network is configured and devices are assigned in a host's **Setup** window. At the heart of this window are racks where devices are assigned. Any compatible device that's part of the host's SoundGrid network will be available for assignment. This collection of devices is called the **Inventory**. Setup is similar with all hosts: identify the host's LAN port, select a device slot, and use the drop-down menu to choose an available device.

Please consult the user guide of your host application for specific instructions.



SoundGrid QRec

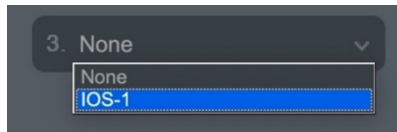


SoundGrid Studio Setup Window

All SoundGrid devices are configured in a similar manner. Throughout this section, we show DiGiGrid IOS as an example.



Manual Device Configuration



SoundGrid QRec



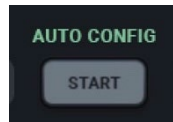
SoundGrid Studio

You can assign, remove, and manage a device manually. Click on the **plus** or **arrow** symbol in a device slot to open its the **Device Menu**, then select a device.

Any device not already used will be available for assignment. If no other devices are assigned, the current device will become your clock master. Drivers and servers are assigned in the same manner.

See the user guide of your host system for specific instructions on device assignment and I/O channel patching.

Automatic Device Configuration



Certain SoundGrid hosts—including SoundGrid Studio, eMotion LV1 or SuperRack SoundGrid—offer an **Auto-Config** tool. Once your devices are connected and powered up, click **Auto** to start the configuration.

Auto-Config chooses the correct LAN port on the host computer and scans the SoundGrid network for devices. It then patches the devices to the host. We recommend that you let Auto-Config take care of things, at least when you are getting started. If later you add, remove, or swap a device, Auto-Config will reconfigure your inventory and re-patch.

Note that SoundGrid Studio assigns the SoundGrid driver automatically. SuperRack SoundGrid and eMotion LV1 require that the SoundGrid ASIO/Core Audio driver is assigned manually.

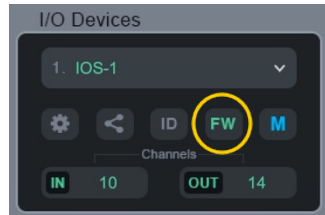


Device Firmware

An I/O that is using outdated or incompatible firmware will not work properly in a SoundGrid network until its firmware is updated. The color of the **FW** button in a device slot indicates the current firmware status.



SoundGrid Studio



SoundGrid QRec

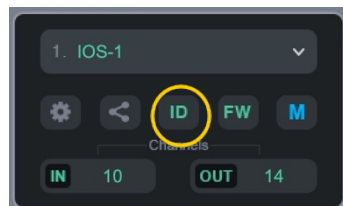
Grey	Compatible firmware
Blue	Compatible firmware, but a newer version exists
Red	Firmware not compatible and must be updated in order to use

If a device requires updated firmware, click on the FW button to start a hardware scan. Do not disconnect the device or turn off the computer before **Done** appears. Once the update is ready, turn the device off and on to reset.

Identify a Device on the SoundGrid Network



SoundGrid Studio



SoundGrid QRec

Click on the **ID** button to activate a hard-to-miss LED on the panel of the corresponding hardware device. You can also activate the LED from the top bar of the device's control panel.

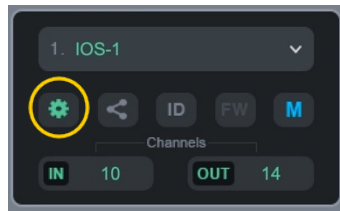
DiGiGrid D Control Panel

There are two ways to open the device control panel:

FROM THE DEVICE RACK



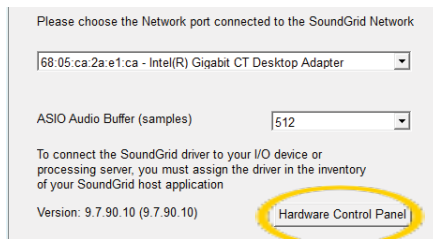
SoundGrid Studio



SoundGrid QRec

Click on the **Gear** button on a device in the rack slot.

FROM THE DRIVER CONTROL PANEL



Open the driver control panel and then click the Hardware Control Panel button. The driver control panel is located here in the host computer:

PC: C:\Program Files (x86)\Waves\SoundGrid\Driver Control Panel

Mac: System HD/Applications/Waves/SoundGrid

CONTROL PANEL PAGES

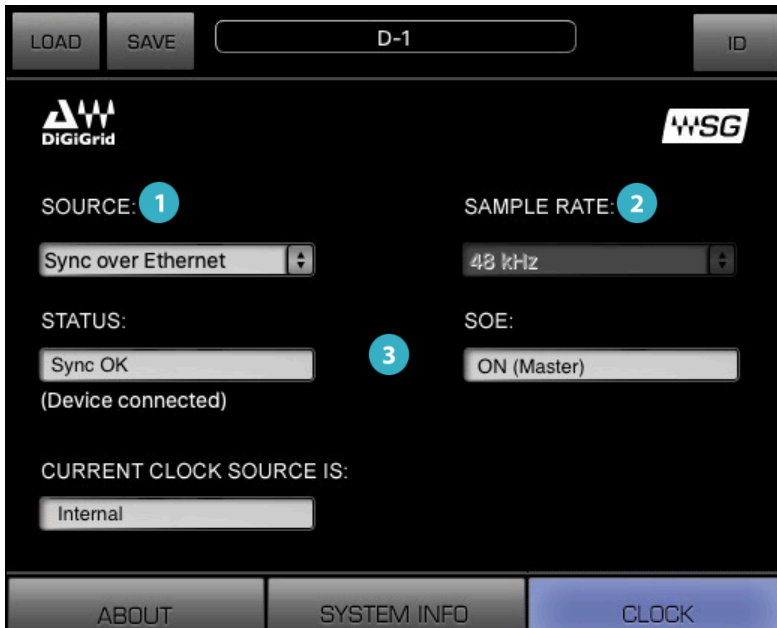


The **About** and **System Info** pages provide information about the unit, such as MAC address, SoE master MAC Address, firmware version, and more. The **Clock** page is used to set the clock source and monitor clock status.



Clock Page

Use the Clock page to set the clock source and sample rate for the device and to assess clock status. Clock controls are on the left side of the page, status indicators are on the right.



1 Source sets the clock source

Internal	The device itself provides the SEO clock
Sync over Ethernet	The device receives clock from the SoundGrid network

2 Sample Rate sets the sample rate when Clock Source is set to Internal. Range: 44.1 / 48 / 88.2 / 96 kHz.

3 CLOCK STATUS INDICATORS

Three windows on the Clock control panel help you to quickly assess the network status of the DiGiGrid D.

Status	Reports the presence or absence of sync between the D and the SoundGrid network
Current Clock Status	Displays the current sync method. This may differ from the choice made in the Source menu
SOE	Indicates whether this D is the master or a slave in the SoundGrid network



System Info Page and About Page

The **About** page is a description of the device. The **System Info** page contains technical details about the device, including MAC address, Firmware version, and Module version. This information is useful for troubleshooting. Please have this information handy if you contact Waves technical support concerning the device.



Presets



A bar at the top of the control panel lets you save and load presets. A preset describes the condition of the control panel status, including clock source and sample rate.

Click the **ID** button on the right to illuminate a LED on the device. This helps to quickly identify the hardware device associated with control panel.



Using an I/O Device with a DAW

Setting up SoundGrid devices with a DAW involves these steps:

PATCH THE I/O DEVICE AND THE SOUNDGRID ASIO/CORE AUDIO DRIVER

When using a DAW on a SoundGrid network, the SoundGrid ASIO/Core Audio driver serves as a bridge between the I/O device and the DAW. It enables the I/O to communicate with the DAW and it provides patches. Patching an I/O to the SoundGrid ASIO/Core Audio driver differs slightly among hosts. When you use a host's Auto-Config tool, the host input channels are patched automatically, in an order based on rack. The order of the devices in the Device Rack determines the default patching order. Please refer to your SoundGrid host's user guide for details.

CONFIGURE THE DAW FOR SOUNDGRID

1. Set the DAW playback engine to "Waves SoundGrid." The SoundGrid driver channels will now appear in the DAW I/O preferences and in the Input/Output selector in each DAW channel.
2. Route the DAW inputs and outputs to SoundGrid.



Specifications

MIC INPUT

Input Impedance: 1.5 kilohms
Gain Range: 0 to +70 dB
Frequency Response: -3 dB <10 Hz to 100 kHz
(Analog to Analog)
Harmonic Distortion: 0.005% (40 dB Gain)
Noise EIN: Typically -127 dB (70 dB Gain)
High Pass Filter: -3 dB 100 Hz 18 dB/Octave

LINE INPUT

Input Impedance: 1 megaohm/10 kilohm
Gain Range: +6 to +30 dB
Frequency Response: -3 dB <10 Hz to 100 kHz
(Analog to Analog)
Harmonic Distortion: 0.005%

NOISE

Min Gain -82 dBu
Max Gain -73 dBu

MONITOR OUTPUTS

Maximum Output Level: +22 dBu
Residual Output Noise: <92 dbu
Output Impedance: 50 ohm
Harmonic Distortion: 0.005%



HEADPHONES

Gain Range Infinity: To +10 dB

Max Output Level:

Load	RMS
16Ω	2.3V
32Ω	3.7V
100Ω	6.0V
200Ω	7.5V
600Ω	8.8V

XLR CONNECTORS

Phase Termination Point

Positive (+) Pin 2

Negative (-) Pin 3

Signal Ground Pin 1

Chassis Ground Case

1/4" TRS CONNECTORS

Phase Termination Point

Positive (+) Tip

Negative (-) Ring

Signal Ground Sleeve

DIMENSIONS

Width: 22.05 cm / 8.68 inches

Height: 7.85 cm / 3.09 inches

Depth: 16 cm / 6.29 inches

Device Weight: 1.7 kg / 3.75 lbs

Package Weight: 2.72 kg / 6 lbs



Resetting the Unit

If after an unsuccessful firmware update the DiGiGrid D is not recognized by the SoundGrid Host Application (the DiGiGrid D device does not appear in the Inventory panel), use the Reset button (located on the DiGiGrid D back panel), to try and recover the unit.

1. Turn off the unit.
2. Press and hold the Reset button.
3. Restart the unit while holding the button.
4. Release the Reset button once the device has fully booted.
5. The unit is now in “force update” mode, and a new firmware update can be performed.

