

DiGiGrid MGB/MGO

User Guide



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1. Introduction

The DiGiGrid MGB and MGO MADi-to-SoundGrid interfaces are used for connecting MADi-enabled devices to a Waves SoundGrid network for plugin processing and/or DAW playback and recording .The MGB unit is equipped with MADi BNC connectors; MGO is equipped with MADi optical connections.

- Supported sample rates: 44.1, 48, 88.2, 96 kHz
- 112/128 channel I/O @ 48kHz
- 56/64 channel I/O @ 96kHz
- Supports 64 and 56 channel modes
- Supports double wire (48k frame) and single wire (96k frame) @ 96kHz
- Clock Synchronization via Word Clock input, MADi (Port 1 or Port 2), SoundGrid (SoE), Internal
- 1 SoundGrid port (RJ45)
- Channel 57 support for DiGiCo stage racks *[Not yet implemented]*

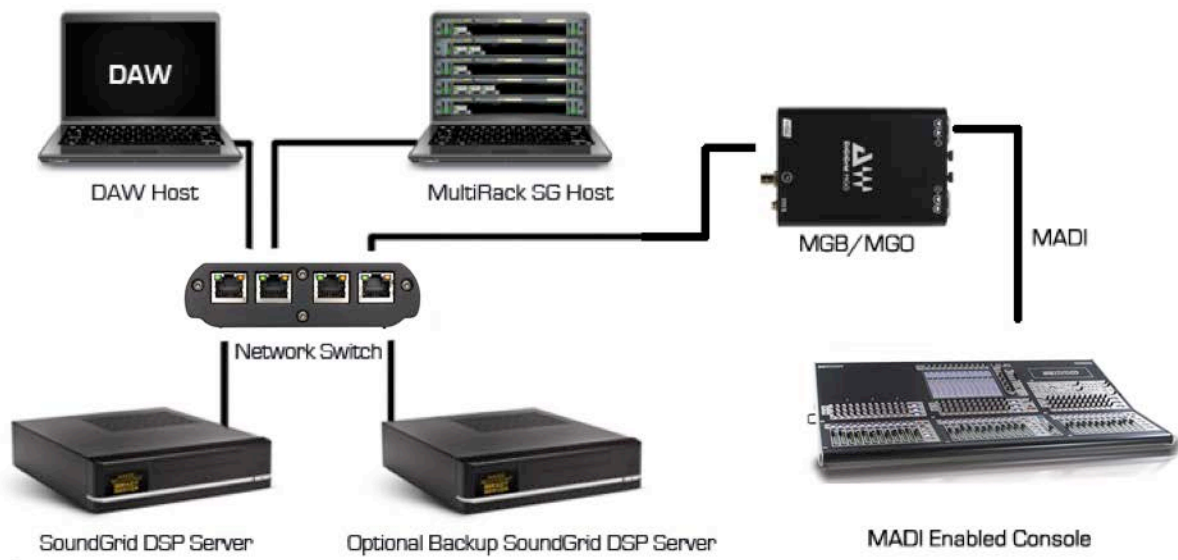
2. Configurations

The MGO and MGB interfaces may be used in both SoundGrid and Native configurations, as follows:

- **SoundGrid** – In a SoundGrid configuration, the MGB or MGO interface is used to connect a MADI-enabled console to a SoundGrid network, for plugin processing and simultaneous DAW playback and recording. The SoundGrid configuration uses a dedicated SoundGrid DSP Server to power the plugin processing, thus enabling super low-latency, high plugin counts, and networking capabilities, with the option of an additional backup DSP server.

Please note: A SoundGrid DSP server is required for SoundGrid configurations.

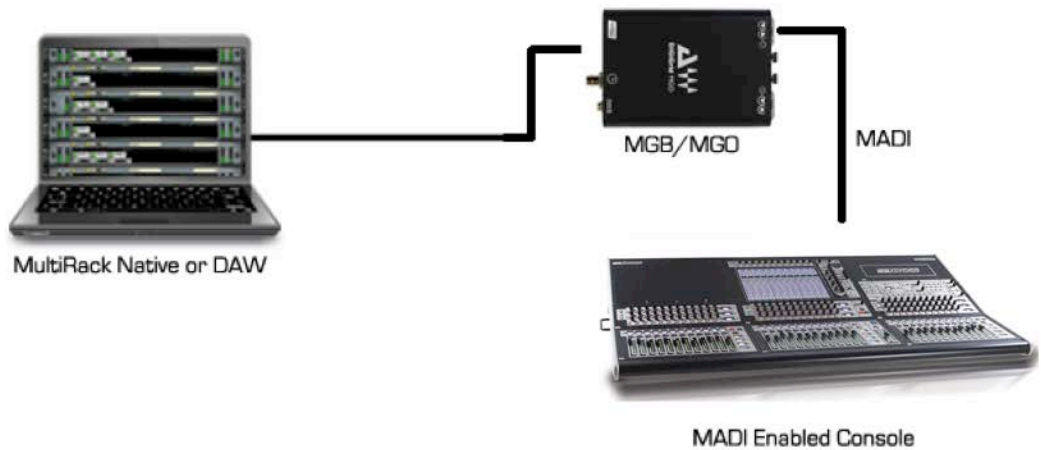
SOUNDGRID PROCESSING AND RECORDING ON MULTIPLE COMPUTERS



- **Native** – In a Native configuration, the MGB or MGO interface is used to connect a MADI-enabled console to the SoundGrid ASIO/Core Audio driver, for plugin processing and/or DAW playback and recording. Since the Native configuration utilizes the computer's CPU to power the plugin processing, plugin count and overall system latency depend on the computer's CPU and sound driver capabilities.

Please note: A SoundGrid DSP server is not required for Native configurations.

NATIVE PROCESSING OR DAW PLAYBACK/RECORDING



3. Native/SoundGrid Comparison Table

Features	Native	SoundGrid
Low Latency		✓
Processing	✓	✓
Recording	✓	✓
Simultaneous Recording and Processing		✓
CPU Load	Your DAW computer's CPU	Dedicated SoundGrid DSP server
Backup DSP Server		✓
Networking		✓
I/O Interface	MGB/MGO	MGB/MGO
Plugin Host Software	MultiRack Native	MultiRack SoundGrid
Plugin Licenses	Native	SoundGrid

4. Installing the DiGiGrid MGB/MGO Driver

The ASIO/Core Audio drivers and control panel for the MGB/MGO interfaces are installed using the dedicated standalone installer, which also installs the SoundGrid Driver application required for DAW recording and playback.

DiGiGrid MGB/MGO downloads page:

<http://www.waves.com/downloads/digigrid-mgb-mgo>

5. Using DiGiGrid MGO or MGB with the Console

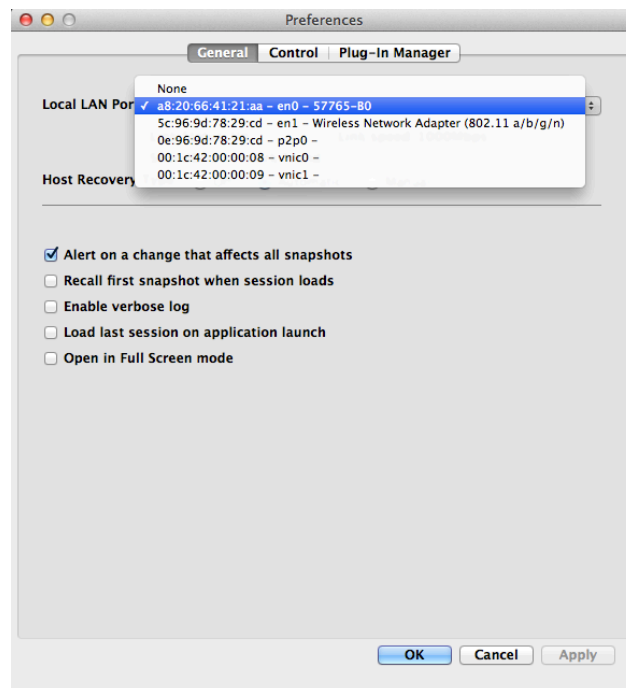
- Connect your MGB to the console using BNC MADI cables. Connect your MGO to the console using optical MADI cables.
- Connect to the SoundGrid network using Cat 5e or Cat 6 cables. Connect the MGB/MGO interfaces to your computer's local LAN port, or use two cables to connect the MGB/MGO and your computer to the SoundGrid-compatible network switch.

6. Opening the MGB/MGO Control Panel

SoundGrid Configuration

Access the MGB/MGO control panel via the Inventory window in the MultiRack SoundGrid application.

1. Launch the MultiRack SoundGrid application.
2. Enter the Preferences window by typing **Ctrl+P** (Windows) or **Cmd+,** (Mac), or from the appropriate application menus.
3. Under Local LAN Port, choose the adapter that is connected to the SoundGrid network/MGB/MGO. Network adapters are displayed as MAC addresses and port names.



4. When you select the correct port, the message “SoundGrid Network Found” will appear on the panel. Close this window.
5. Open the SoundGrid Inventory window from the Audio Menu (F2). The Inventory window displays all SoundGrid I/O devices connected to your network.
6. Assign SoundGrid drivers in the Assign column. Use consecutive numbers for multiple devices, with the first unit assigned as number 1.

- Assign SoundGrid DSP servers in the Assign column. The primary SoundGrid DSP server will be assigned as number 1. If you are using a redundant SoundGrid DSP server, assign it as number 2.

SOUNDGRID INVENTORY

SYSTEM PARAMETERS
 SAMPLE RATE: 48000 NETWORK LATENCY: 96 DRIVER LATENCY: 256

SYSTEM INVENTORY [TEST REDUNDANCY] [REFRESH]

I/O DEVICES

ASSIGN	DEVICE	CONTROL PANEL	CHANNEL	NAME	MAC ADDRESS / COMPUTER NAME	STATUS	CLOCK	MASTER	ID	DEVICE FIRMWARE
1	IO: MGO	SETTINGS	128	MGO-1	00:1c:d1:00:65:1d	On	INT: Sync OK	<input checked="" type="radio"/>	ID	[UPDATE]
1	DRV: SG Driver		16		Valery-milon.loc	On				
1	MR: MultiRack		128	MultiRack-1	a8:20:66:41:21:aa	On				

SOUNDGRID SERVERS

ASSIGN	DEVICE	MAC ADDRESS / COMPUTER NAME	STATUS	DEVICE FIRMWARE
1	SG Server	00:e0:40:69:14:1b	On	[UPDATE]

- Assign your MGB/MGO devices in the Assign column. Use consecutive numbers for multiple devices, with the first unit assigned as number 1.

SOUNDGRID INVENTORY

SYSTEM PARAMETERS
 SAMPLE RATE: N/A NETWORK LATENCY: 96 DRIVER LATENCY: 256

SYSTEM INVENTORY [TEST REDUNDANCY] [REFRESH]

I/O DEVICES

ASSIGN	DEVICE	CONTROL PANEL	CHANNEL	NAME	MAC ADDRESS / COMPUTER NAME	STATUS	CLOCK	MASTER	ID	DEVICE FIRMWARE
1	DRV: SG Driver		16		Valery-milon.loc	On				
1	MR: MultiRack		128	MultiRack-1	a8:20:66:41:21:aa	On				
1	IO: MGO	SETTINGS	128	MGO-1	00:1c:d1:00:65:1d	On	DIG: No Sync	<input type="radio"/>	ID	[UPDATE]

SOUNDGRID SERVERS

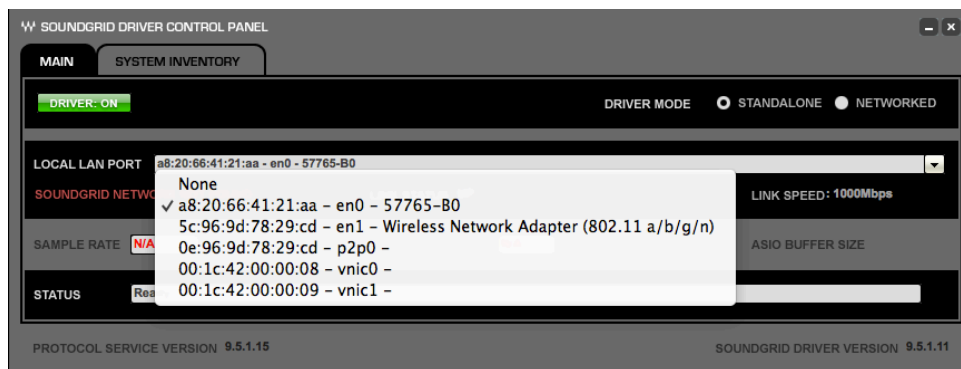
ASSIGN	DEVICE	MAC ADDRESS / COMPUTER NAME	STATUS	DEVICE FIRMWARE
1	SG Server	00:e0:40:69:14:1b	On	[UPDATE]

- Click Settings to open the Control Panel.

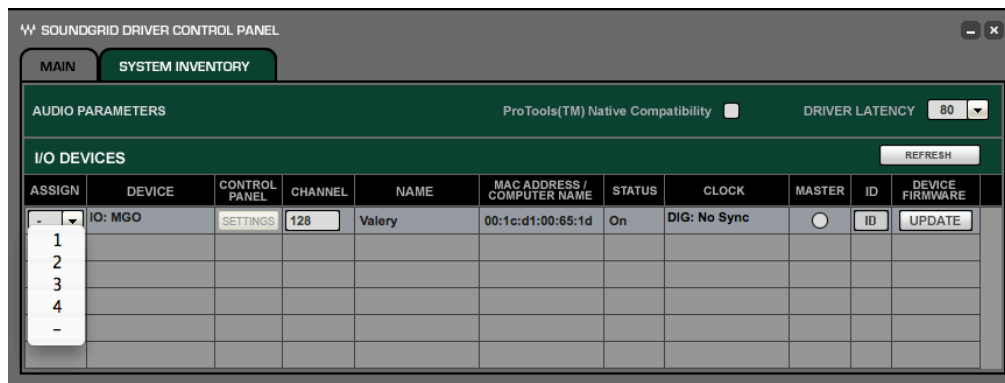
Native Configuration

Access the MGB/MGO control panel through the System Inventory tab in the SoundGrid Driver Control Panel Application.

1. Open the SoundGrid driver control panel.
 - Mac: Shortcut is located on the Mac Dock or in Applications > Waves > SoundGrid
 - PC: Shortcut is located on the desktop or in C:\Program Files (x86)\Waves\SoundGrid
2. In the MAIN tab, turn the driver ON.
3. Under Driver Mode, set the driver to Standalone mode.
4. Under Local LAN Port, choose the adapter that is connected to the SoundGrid network/ MGB/MGO. Network adapters are displayed as MAC addresses and port names. When you select the correct port, the message “SoundGrid Network Found” will appear on the panel.



5. Click on the System Inventory tab to display all SoundGrid I/O devices connected to your network.
6. Assign MGB/MGO in the Assign column. Use consecutive numbers for multiple devices, with the first unit assigned as number 1.

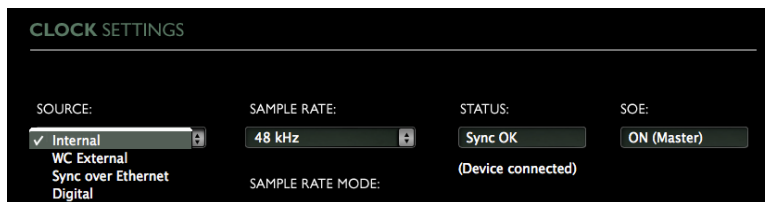


7. Click Settings to open the control panel.

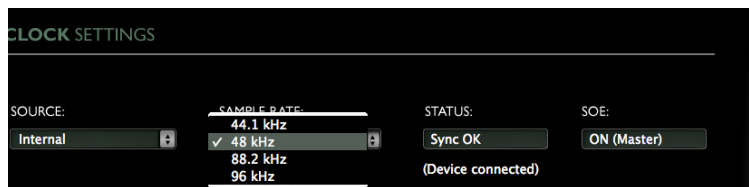
7. MGB/MGO Control Panel

When you launch the DiGiGrid MGB/MGO driver control panel, it will load the Clock tab. The following settings are available in the Clock Settings window.

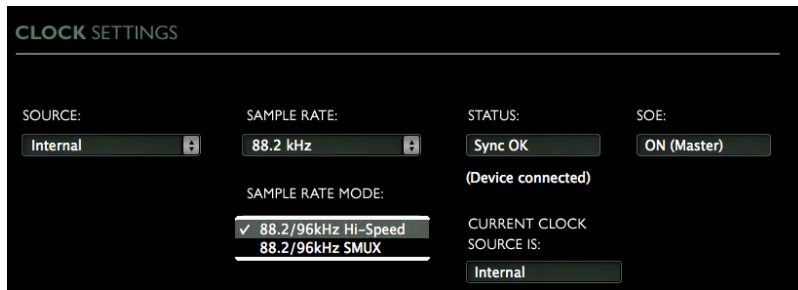
- **SOURCE** sets the clock source.
 - Internal – The interface itself provides the clock.
 - External WC – The interface has a Word Clock Input connector to connect an external clocking source in order to sync all devices in your network to the external clock.
 - Sync-over-Ethernet – Send or receive Word Clock / Sample Rate over an Ethernet cable between DiGiGrid network devices.
 - Digital – Syncs via the BNC or optical MADI connection on MADI Port 1 or Port 2 (selectable). The MGB/MGO interfaces sync to the incoming MADI from the console.



- **SAMPLE RATE** sets the sample rate when Clock Source is set to Internal. Range: 44.1 / 48 / 88.2 / 96 kHz.



- **SAMPLE RATE MODE** sets the MADI mode for 88.2 / 96 kHz operation; check your console manual for the proper selection. Range: High Speed, SMUX.

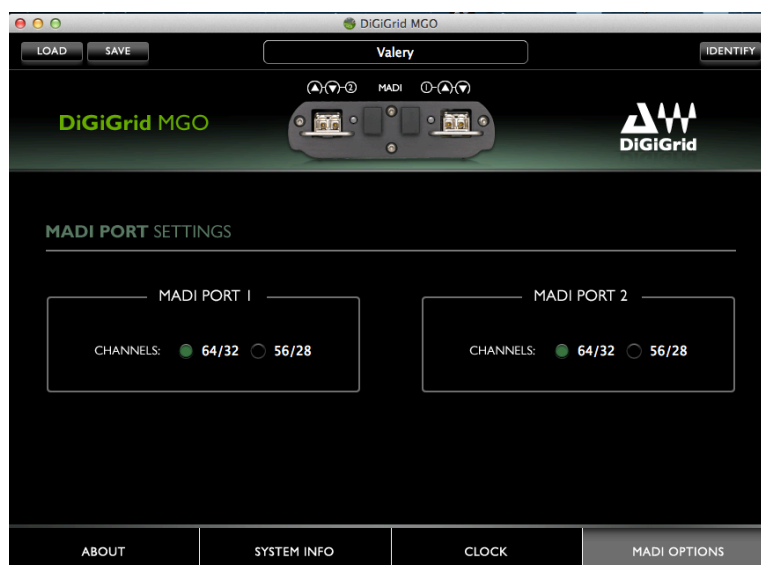


- **STATUS** displays synchronization status.
Range: Sync, No Sync
- **CURRENT CLOCK SOURCE IS** displays the current sync method.
- **SOE** displays Sync-over-Ethernet status (On or Off).
- **CLOCK SOURCE AUTO-SWITCHING** allows the MGB/MGO driver to switch between clock sources if it finds a higher priority source than the currently selected source. Sync priority order is: SoE, WC, Digital 1, Digital 2, and Internal.

MADI OPTIONS Tab

One MADI connection supports 56 or 64 in/out channels at 44.1/48 kHz, and 28 or 32 in/out channels at 88.2/96 kHz.

In MADI Port Settings, set the number of available channels according to your console settings.



LOAD and **SAVE** (at the top left corner of the control panel window) allow you to save and load your MGB/MGO settings.

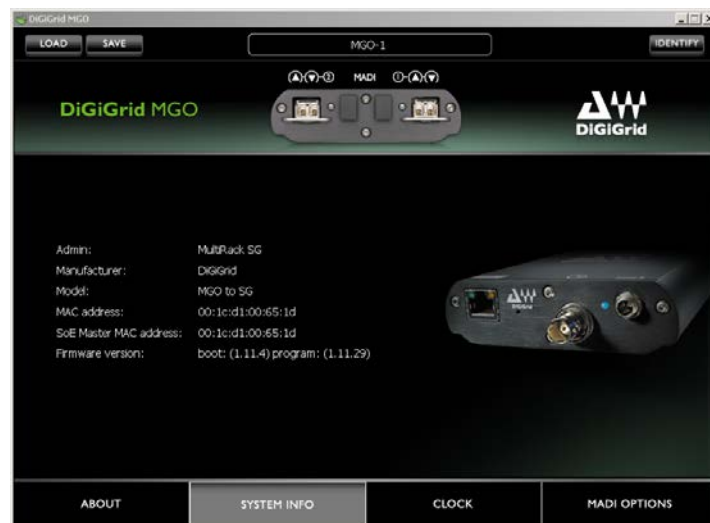
IDENTIFY (at the top right corner of the control panel window) allows you to identify connected devices if multiple MGB/MGO interfaces are being used. The Status LED will cycle through colors instead of displaying a single status color.

ABOUT and SYSTEM INFO Tabs

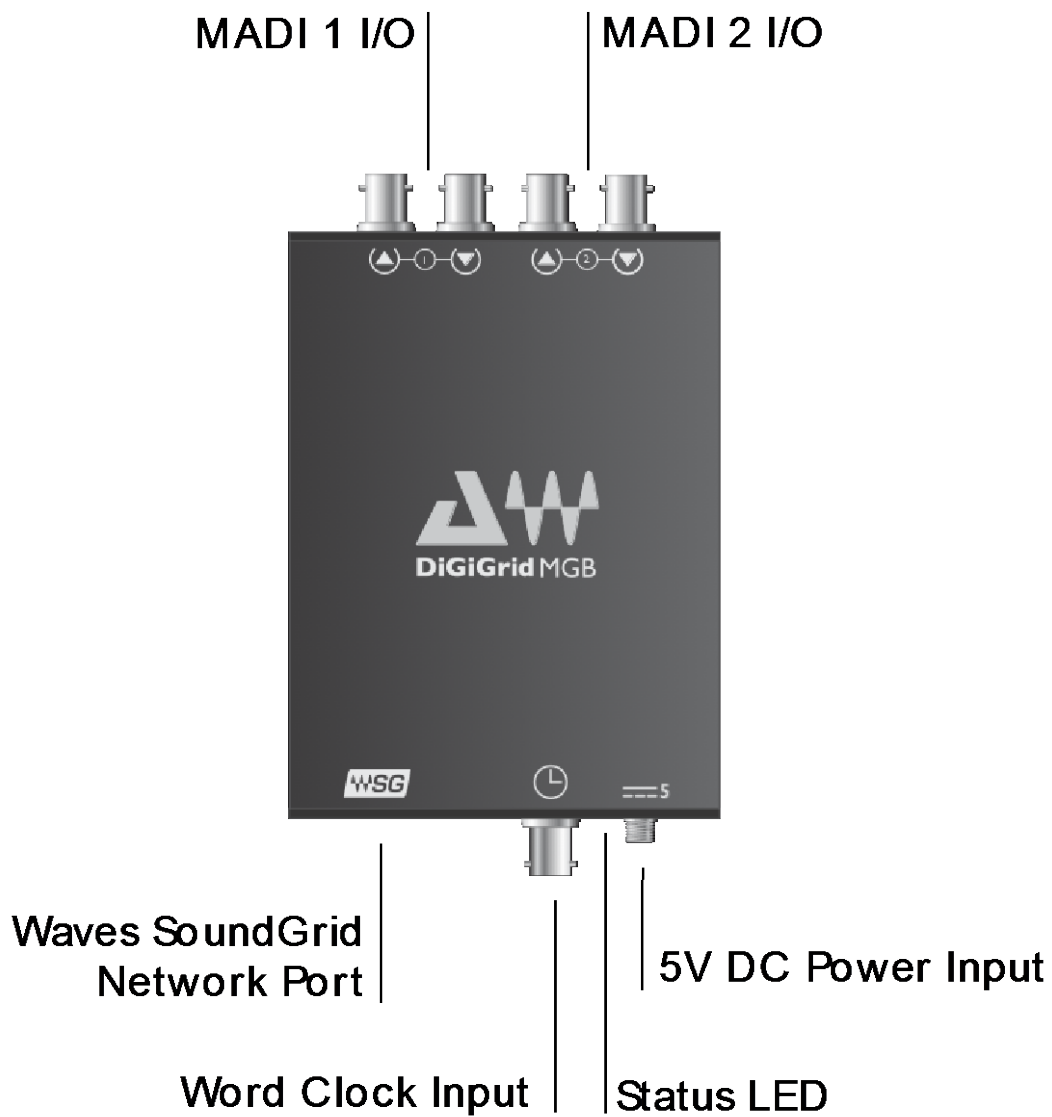
ABOUT displays an overview of the device specifications.



SYSTEM INFO displays the device's connection status, manufacturer, model, MAC and SoE Master MAC addresses, and firmware version.



8. Hardware Connections



MADI 1 & MADI 2 – Either BNC (MGB) or optical (MGO). Connect to any MADI device.

Waves SoundGrid Port – Connect to SoundGrid Network.

Word Clock Input – Connect to external Word Clock source.

5V Power Input. Use only DiGiGrid-supplied or approved external power supply.

Status LED: Colors and respective status as follows:

- Green = MADI Link
- Off = no MADI Link



- Flashing Red = network cable not connected
- Blue = network connected
- ALL colors sequence = IDENTIFY
- Red = while re-flashing or when card is stuck in boot

