

Wi-DG

WI-FI DONGLE FOR ACCESSING MINIDSP DEVICES
OVER THE NETWORK

WITH AMAZON ALEXA/ECHO SUPPORT

User Manual



Revision history

Revision	Description	Date
V1.0	First version	9 Jan 2018
V1.1	Updated URL to access the device's management console	27Apr2018
V1.2	Added descriptions for Alexa setup; added product screenshots	4May2018
V1.3	Updated web GUI screenshot	14May2018
V1.4	Added first login screen and descriptions; updated reboot GUI screenshot; added more supported devices; corrected the host name; added keep alive time setting section; Renamed STATUS LED to WI-FI LED; Updated descriptions for WI-FI LED	29May2018
V1.5	Updated for preliminary release	21 June 2018
V1.6	Public release	26 June 2018
V1.7	Adding Android/iOS app control	19 October 2018
V1.8	Updated support links	6 July 2018

CONTENTS

Important Information	4
1 Product overview	6
1.1 Supported plugins and miniDSP hardware	6
1.2 How it works	6
1.2.1 Station Mode	6
1.2.2 AP (Access Point) Mode	7
1.3 Limitations	7
2 Hardware overview	8
3 Setup and configuration	9
3.1 Note for Windows	9
3.2 Connecting to the Wi-DG	9
3.2.1 Connecting over Wi-Fi	9
3.2.2 Direct Ethernet connection	10
3.3 Wi-DG password setup	10
3.4 Wi-DG login	11
3.5 System Information	11
3.6 Configuring Station Mode	12
3.7 Configuring AP Mode	13
3.8 Repeater Mode	13
4 Using the plugin	14
4.1 Getting the IP address	14
4.2 Connecting	14
5 Amazon Alexa support	15
6 Android/iOS app	16
7 Additional information	17
7.1 Specifications	17
7.2 Device Recovery	17
7.3 Setting the keep-alive time	18
7.4 Obtaining support	18

IMPORTANT INFORMATION

Please read the following information before use. In case of any questions, please contact miniDSP via the support portal at support.minidsp.com.

System Requirements

To configure the Wi-DG and use it with the miniDSP plugins and hardware, you will require a Windows PC or Apple Mac computer with the following minimum specification:

Windows

- PC with 1GHz or higher processor clock speed. Intel® Pentium®/Celeron® family, or AMD K6®/AMD Athlon®/AMD Duron® family, or compatible processor recommended.
- 512 megabytes (MB) of RAM or higher
- Keyboard and mouse or compatible pointing device
- Network accessibility through Wi-Fi or Ethernet cable
- Microsoft® Windows® Win7/Win8.1/Win10
- Microsoft® .NET framework v3.5 or later
- Adobe AIR environment (latest version)
- Adobe Flash player (latest version)
- A web browser (e.g. IE, Chrome, etc.)
- Bonjour print service (For Windows 7 only)

Mac

- Intel-based Mac with 1 GHz or higher processor clock speed
- 512 megabytes (MB) of RAM or higher
- Keyboard and mouse or compatible pointing device
- Network accessibility through Wi-Fi or Ethernet cable
- OS X 10.8 or higher, macOS 10.12 or higher
- Adobe AIR environment (latest version)
- Adobe Flash player (latest version)
- A web browser (e.g. Safari)

Disclaimer/Warning

miniDSP cannot be held responsible for any damage that may result from the improper use of this product or incorrect configuration of its settings. As with any other product, we recommend that you carefully read this manual and other technical notes to ensure that you fully understand how to operate this product. The miniDSP audio processor is a powerful tool, and misuse or misconfiguration, such as incorrectly set gains or excessive boost, can produce signals that may damage your audio system.

As a general guideline, you should perform the initial configuration of the miniDSP audio processor before enabling audio through any connected output device or amplification. Doing so will help ensure that the software is correctly configured.

Finally, note that the miniDSP audio processor is a very flexible device, and many of the questions we receive at the tech support department are already answered in this user manual and in the online [application notes](#)



on the miniDSP.com website. So please take the time to carefully read this user manual and the online technical support. Thanks for your understanding!

Warranty Terms

miniDSP Ltd warrants this product to be free from defects in materials and workmanship for a period of one year from the invoice date. Our warranty does not cover failure of the product due to incorrect connection or installation, improper or undocumented use, unauthorized servicing, modification or alteration of the unit in any way, or any usage outside of that recommended in this manual. If in doubt, contact miniDSP prior to use.

FCC Class B Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

Warning: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Notice: Shielded interface cable must be used in order to comply with emission limits.

Notice: Changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device is acting as slave and operating in the 2.4 GHz (2412 ~ 2462 MHz) band. Ad Hoc function is supported but not able to operate on non-US frequencies.

FCC Radio Frequency Exposure Statement

The device has been evaluated to meet general RF exposure requirements. The device can be used in fixed/mobile/portable exposure conditions. The min separation distance is 20cm.

CE Mark Statement

The Wi-DG has passed the test performed according to European Standard EN 55022 Class B.

A note on this manual

This User Manual is designed for reading in both print and on the computer. If printing the manual, please print double-sided. The embedded page size is 8 ½" x 11". Printing on A4 paper will result in a slightly reduced size.

1 PRODUCT OVERVIEW

Thank you for choosing the miniDSP Wi-DG. The Wi-DG is a tiny adaptor that interfaces to the USB port of a miniDSP hardware unit and acts as a Wi-Fi to USB bridge. Supported miniDSP plugins transparently detect and communicate with the miniDSP via the Wi-DG, enabling control and configuration over the network.

A miniDSP hardware unit connected to a Wi-DG can also be controlled with voice commands, with the aid of an Amazon Echo and the Amazon Alexa voice recognition service (Section 5).

In combination with miniDSP's Controller App (Android/iOS compatible), the Wi-DG provides remote control of your miniDSP devices from your phone.

1.1 SUPPORTED PLUGINS AND MINIDSP HARDWARE

The Wi-DG works with most miniDSP products that can be configured over USB, except for the original 2x4 platform. We are in the process of updating all suitable plugins for Wi-DG support. See the [Wi-DG product page](#) for the list of currently supported hardware and plugins.

1.2 HOW IT WORKS

Normally, the computer running the appropriate miniDSP plugin is connected directly to the miniDSP hardware unit using a USB cable. With the Wi-DG, however, the computer connects using Wi-Fi. There are two modes of operation.

1.2.1 Station Mode

Station Mode is used when there is an existing Wi-Fi network to join, such as in a home or studio environment. It is illustrated in Figure 1. The computer – also on this network - can communicate with the Wi-DG via the wireless router. The miniDSP plugin running on the computer is able to transparently detect the miniDSP hardware connected to the Wi-DG and operates just as though the hardware were connected directly via USB.

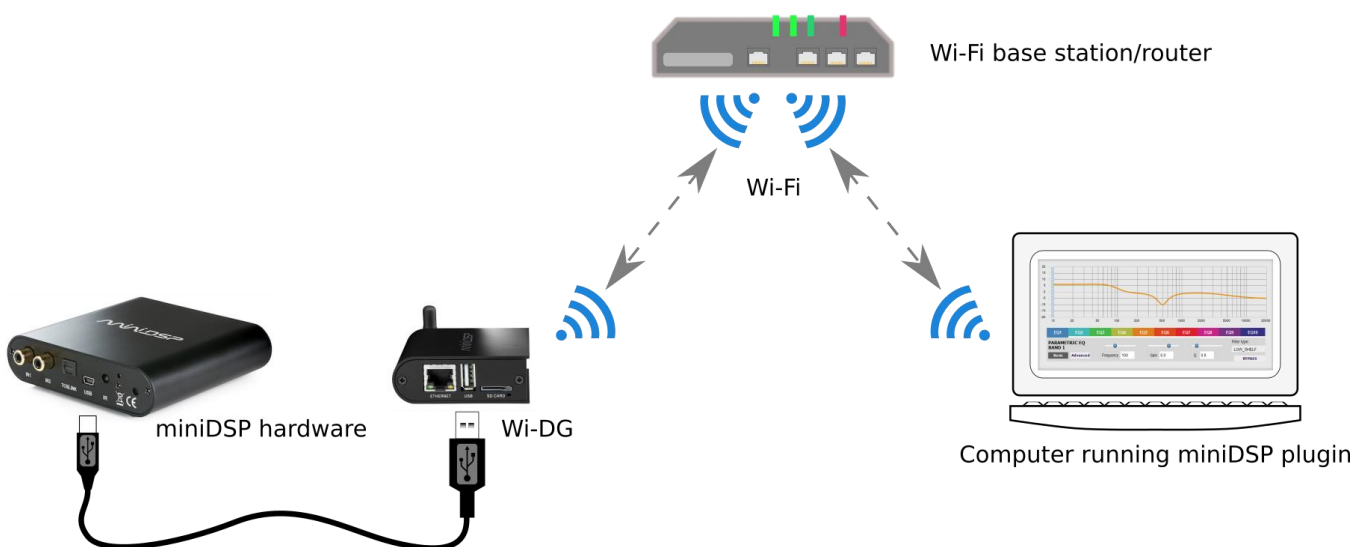


Figure 1. Wi-DG Usage - Station Mode

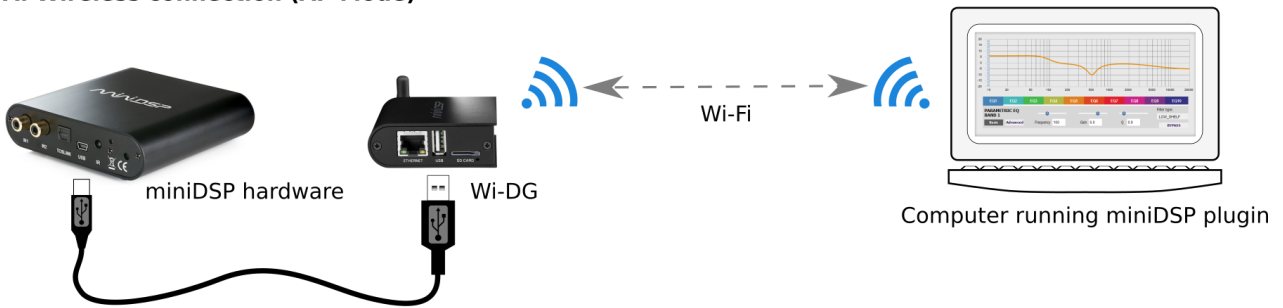
1.2.2 AP (Access Point) Mode

AP Mode is useful in situations where there is not an existing Wi-Fi network, such as in vehicles and outdoor installations. It is illustrated in Figure 2A. In this mode, the Wi-DG creates its own Wi-Fi network, and the computer running the plugin joins that network. The plugin can then communicate with the miniDSP hardware unit via the Wi-DG and Wi-Fi.

Note that the computer will not be able to access other networks when it is joined to the Wi-DG’s network, and therefore will typically not have Internet access. (Assuming the computer does not have additional network connections, such as a separate Ethernet connection.)

In AP Mode, the computer can also be connected directly to the Wi-DG using an Ethernet cable, as shown in Figure 2B. It may be useful if there is strong Wi-Fi interference. Compared to using a direct USB connection, this enables easy use of much longer cables.

A. Wireless connection (AP Mode)



B. Wired connection (AP Mode)

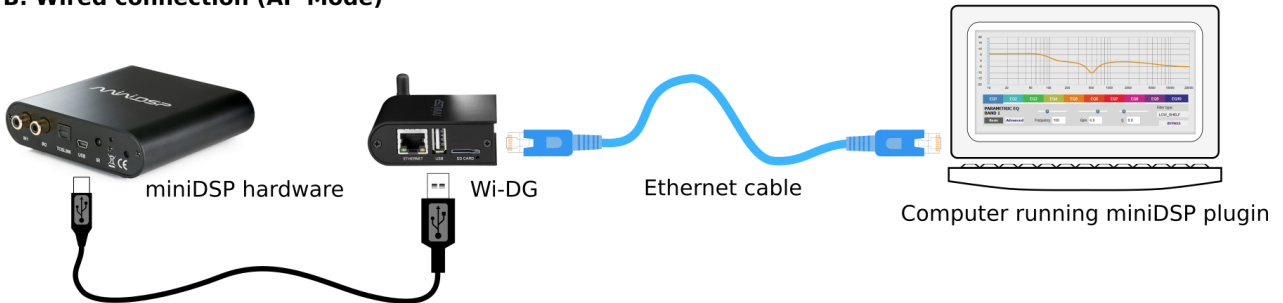


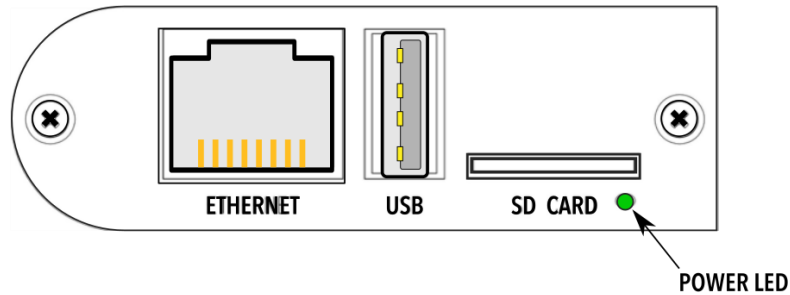
Figure 2. Wi-DG usage – AP Mode

1.3 LIMITATIONS

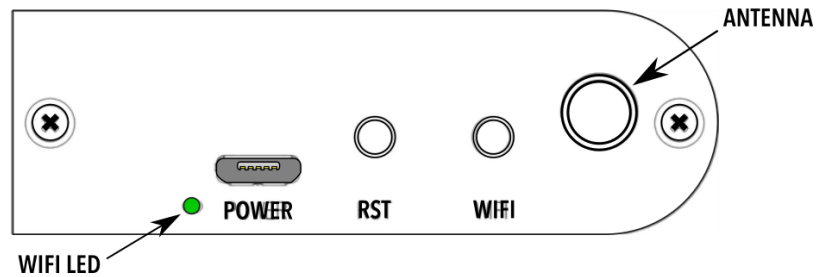
1. Wi-DG does not support audio streaming to the USB port of the connected miniDSP unit. Therefore, miniDSP products that support USB audio streaming (2x4 HD, DDRC-24, SHD Series, and others) can use the Wi-DG for control and configuration **only**.
2. miniDSP products that are already networked, such as the plate amplifiers PWR-ICE125 and PWR-ICE250, can not be used with Wi-DG.
3. Currently, use of multiple Wi-DG on the same network is not supported.

2 HARDWARE OVERVIEW

Connections side



Power side



- ETHERNET** Use to directly connect the Wi-DG to the computer with an Ethernet cable.
- USB** The USB host port used to connect to a powered miniDSP hardware unit.
- SD CARD** Reserved for future use.
- POWER LED** Lights green to indicate the device is powered up.
- ANT** Antenna port for installing a Wi-Fi antenna.
- WIFI** Restore to factory default button. See page 178.
- RST** Device reset button. Pressing this button once will reboot the Wi-DG.
- POWER** Connect a micro-USB cable from a USB charger or USB port on your computer to power the Wi-DG.
- WI-FI LED** Displays Wi-Fi status:
- Turns amber for about 30 seconds while booting, and turns green after successful boot.
 - In AP Mode: blinks 3 times per second (green/amber) if a computer is joined to its network.
 - In Station Mode: blinks once per second if the Wi-DG is connected to a Wi-Fi network and data is being transmitted (i.e. if the plugin is running on your computer).

3 SETUP AND CONFIGURATION

The Wi-DG is shipped in AP Mode. Before use with a miniDSP plugin and hardware unit, it is strongly recommended that you run through the configuration process and set the needed passwords. This will involve:

1. Connecting to the Wi-DG control interface with a web browser.
2. Setting the login password for the Wi-DG.
3. Choosing AP Mode or Station Mode.
4. Entering a Wi-Fi password.
5. Rebooting the Wi-DG.

3.1 NOTE FOR WINDOWS

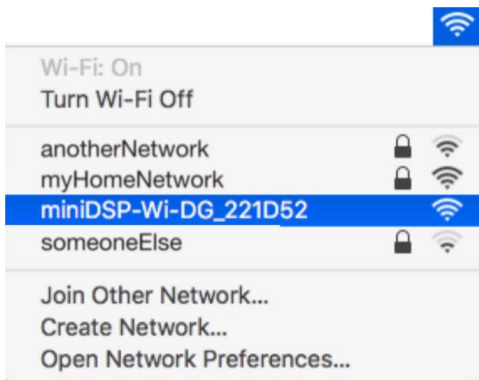
Windows requires that a service named mDNS be installed in order to find the Wi-DG by name. One way to install this service is to install [iTunes from the Apple download page](#). (The Windows Store version will not work.)

3.2 CONNECTING TO THE WI-DG

You can use either of the methods below. If connecting over Wi-Fi fails, try the direct Ethernet connection.

3.2.1 Connecting over Wi-Fi

Use the network settings on your computer to connect to the Wi-DG network. Locate the network named “miniDSP-Wi-DG-xxxxxx”, and join it. The first time, you will not need to enter a password for the Wi-Fi



Mac



Windows

network.

Open a non-Microsoft web browser (e.g. [Firefox](#), [Chrome](#), [Opera](#), [Brave](#)) and enter this address:

- <http://minidsp-wi-dg.local/>

If successful, you will see the Wi-DG password setup or login screen.



If the browser fails to find the Wi-DG and you have an Ethernet network connected to your computer, try unplugging the Ethernet cable and trying again. If it still fails, try entering the factory default IP address: 192.168.100.1 into the web browser.

3.2.2 Direct Ethernet connection

Connect an Ethernet cable directly from your computer to the Wi-DG Ethernet port. Do not connect any other networking equipment (routers or hubs).

Open a non-Microsoft web browser (e.g. [Firefox](#), [Chrome](#), [Opera](#), [Brave](#)) and enter this address:

- <http://minidsp-wi-dg.local/>

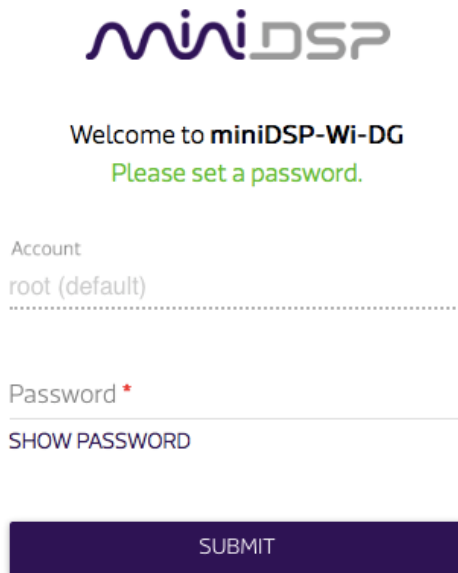
If successful, you will see the Wi-DG password setup or login screen.



If the browser fails to find the Wi-DG and your computer is also connected to a wireless network, try turning off your Wi-Fi card and trying again.

3.3 WI-DG PASSWORD SETUP

The **first** time you connect to the Wi-DG, you will need to enter a password. This password will enable you to log in to the Wi-DG.



The screenshot shows the miniDSP logo at the top. Below it, the text reads "Welcome to miniDSP-Wi-DG" followed by "Please set a password." in green. There are two input fields: "Account" with the text "root (default)" and "Password" with a red asterisk. Below the password field is a "SHOW PASSWORD" link. At the bottom is a dark blue "SUBMIT" button.

Enter a password of at least six characters (letters and number) and press SUBMIT.

Note the green “Please set a password” message below the welcome message. If this green message doesn’t appear, clear the web browser’s cache and try again.



3.4 WI-DG LOGIN

Enter the password that you set for the login user (root), and press SIGN IN.

The login form features the miniDSP logo at the top, followed by the text "Welcome to miniDSP Wi-DG." Below this, there are two input fields: "Account" with the value "root(default)" and "Password" with masked characters "*****". A "SHOW PASSWORD" link is positioned below the password field. At the bottom of the form is a dark blue button labeled "SIGN IN".

If you have forgotten the password, you will need to reset the Wi-DG to factory defaults. See page 17.

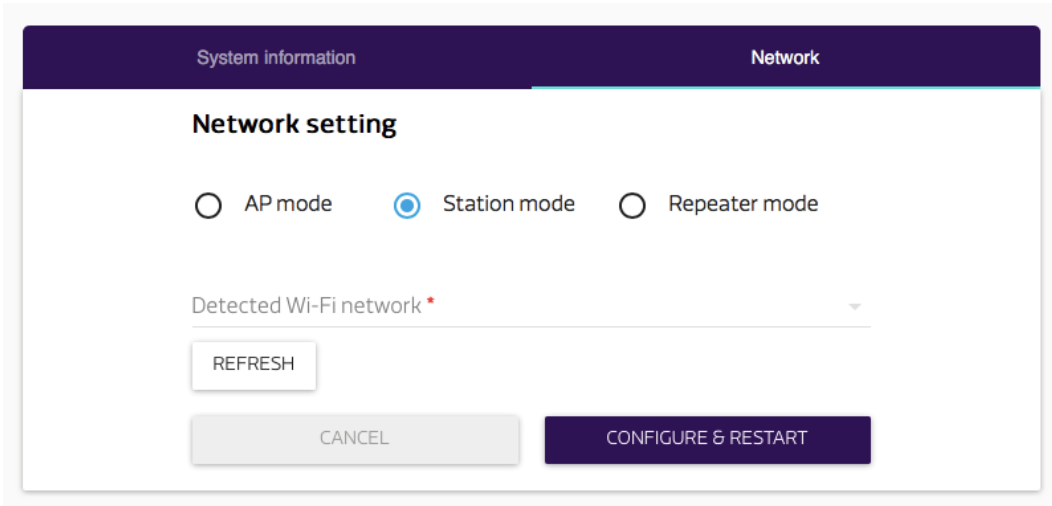
3.5 SYSTEM INFORMATION

After logging in, you will see the System Information screen:

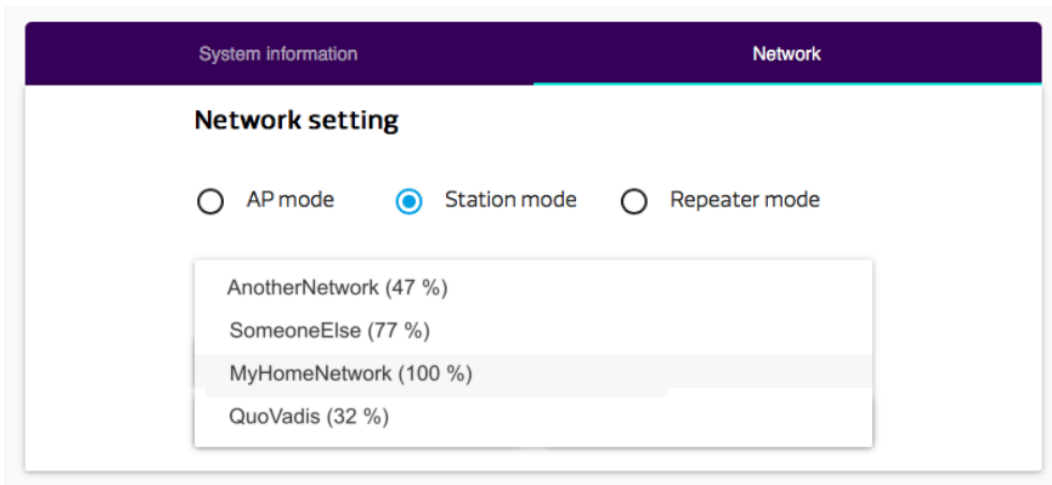
The System Information screen displays the miniDSP logo and a "Sign out" link in the top right corner. Below the logo, it says "Welcome to miniDSP-Wi-DG". A navigation bar at the top of the main content area has "System information" (active) and "Network". The "Platform information" section lists "Device name" as miniDSP-Wi-DG and "Current IP address" as 192.168.100.1. The "Account information" section shows "Account" as root(default) and "Password" as masked characters. A dark blue "CONFIGURE" button is located at the bottom of the screen.

3.6 CONFIGURING STATION MODE

Connect to and log into the Wi-DG interface. Click on the Network tab. If the Wi-DG is already in Station Mode, you will see the screen shown below. If the Wi-DG is in AP Mode, click the Station Mode radio button, then this screen will appear:



To select the network that you want the Wi-DG to join, click on “Detected Wi-Fi network.” A popup menu will show the detected networks:



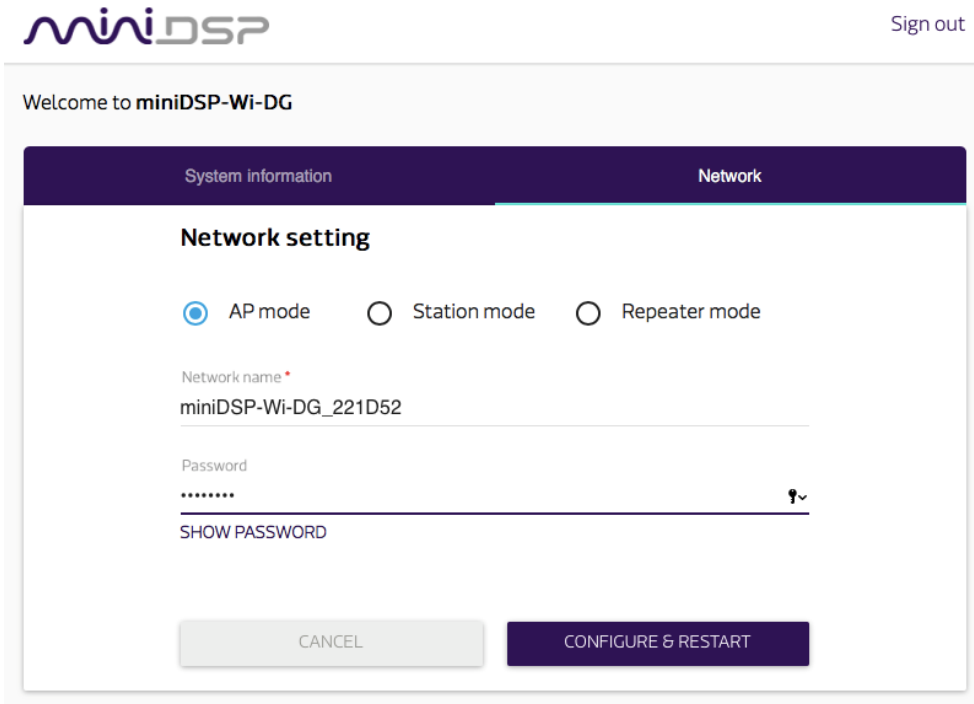
Select the network that you want the Wi-DG to join, enter the network’s password, and click CONFIGURE & RESTART.

If you are connected to the Wi-DG by Ethernet, unplug the Ethernet cable now. If your computer was joined to the Wi-DG’s Wi-Fi network, change your computer’s wireless network settings so that it joins the same network that the Wi-DG is now joined to.

Wait until the WIFI LED turns orange and then green again. This can take up to a minute. Then connect from the miniDSP plugin to your miniDSP hardware as described in Section 4.

3.7 CONFIGURING AP MODE

Connect to and log into the Wi-DG interface. Click on the Network tab. If the Wi-DG is in AP Mode, you will see the screen shown below. If the Wi-DG is in Station Mode, click the AP Mode radio button, then this screen will appear:



Enter the password you want to use to join the Wi-DG's Wi-Fi network, then click **CONFIGURE & RESTART**. The password must be 8 characters or more.

If you are connected to the Wi-DG by Ethernet, unplug the Ethernet cable now.

Wait until the WIFI LED turns orange and then green again. This can take up to a minute. Then use your computer's wireless network settings to locate the Wi-DG network and join it. This time you will need to enter the network password that you set just above.

Then connect from the miniDSP plugin to your miniDSP hardware as described in Section 4.



It is important that you set a password on the Wi-DG wireless network. Without it, anyone can join this network.

3.8 REPEATER MODE

This mode is currently not supported.

4 USING THE PLUGIN

Once the Wi-DG is set up as in the previous section, you can use the miniDSP plugin to connect to your miniDSP hardware unit over the network.

4.1 GETTING THE IP ADDRESS

Connect the miniDSP hardware unit to the Wi-DG with a USB cable. Then start the appropriate plugin. Observe the field named “IP address,” which will be in one of the two formats below:



Check the “Auto” checkbox. The plugin will detect the presence of the miniDSP hardware unit connected to the WI-DG and fill in the IP address automatically. The discovery process may take up to a minute.



You can also uncheck the Auto checkbox and manually enter the IP address of the Wi-DG. The IP address is shown on the System Information screen of the Wi-DG interface.

4.2 CONNECTING

Click on the Connect button in the plugin user interface. The plugin will connect and change the appearance of the button. You can then use the plugin just as though it were connected directly to the hardware over



USB.

Notes:

- If the “IP address” field is empty and the “Connect” button is clicked, the plugin will try to connect to the miniDSP hardware unit through USB. It will not attempt to connect over the network via the Wi-DG.
- If you experience dropouts while using the plugin, you may need to change the Keep-Alive time (page 18).

5 AMAZON ALEXA SUPPORT

If the Wi-DG is set up in Station Mode (that is, connected to your Wi-Fi network and therefore also to the Internet), an Amazon Echo can be used to control the miniDSP hardware with voice commands. Here are some example commands:

1. Alexa, tell mini d. s. p. to mute the device
2. Alexa, tell mini d. s. p. to unmute the device
3. Alexa, tell mini d. s. p. to turn the volume up
4. Alexa, tell mini d. s. p. to turn the volume down
5. Alexa, tell mini d. s. p. to set preset X [where X is a number from 1 to 4]

You will need to register your Echo and add the [miniDSP Controller](#) skill to it. Set up is easy and takes only a few minutes, using a “link key” that you obtain from the Wi-DG interface here:

- <http://minidsp-wi-dg.local/alexa>

The step-by-step procedure to set up Alexa control is on our website here:

- <https://www.minidsp.com/applications/advanced-tools/alexa-voice-control>

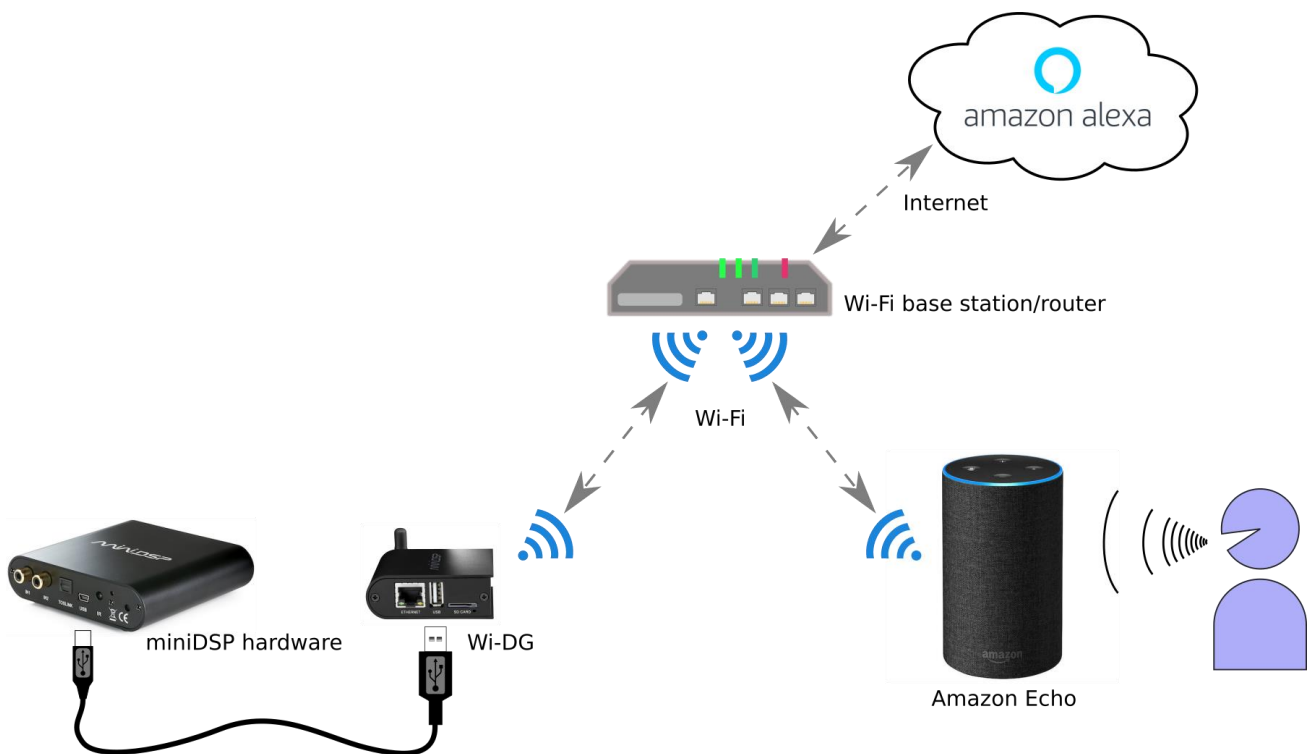


Figure 3. Controlling miniDSP hardware with Amazon Alexa and Echo

6 ANDROID/IOS APP

Thanks to the WI-DG and a new update of miniDSP's Android/iOS app, control of miniDSP platforms from your mobile phone/tablet just got a lot easier! The following controls are available:

1. Source selection
2. Master volume control
3. Master mute control
4. Preset selection
5. Dirac Live On/Off (Available for Dirac Live capable devices only)



For more information, check out our step-by-step procedure on our website here:

<https://www.minidsp.com/applications/advanced-tools/android-ios-app-control>

7 ADDITIONAL INFORMATION

7.1 SPECIFICATIONS

Supported miniDSP hardware/plugins	See the Wi-DG product page for the current list.
USB host port	USB 2.0 host port to plug in a miniDSP hardware unit
Ethernet port	10/100 Fast Ethernet interface
Wi-Fi radio	1T1R 802.11n 2.4GHz RF Supports 802.11b/g/n, 2.4 GHz
micro-SD card port	SD-XC (class 10)
Power supply	5 V DC via micro-USB connector
Dimensions (H x W x D)	68 x 64 x 24 mm (excluding antenna)

7.2 DEVICE RECOVERY

In the event of errors in the Wi-DG settings, or if you have forgotten the login password, you can restore it to its default state. In the default state, the login account name is “root” and the password is blank. There is also no security password on the Wi-DG’s Wi-Fi network.

1. Connect the Wi-DG to PC with an Ethernet cable.
2. Power up the Wi-DG and wait until the Wi-DG has booted. (The WI-FI LED will turn green for about 5 seconds, then amber for about 30 seconds, then green again.)
3. Press-and-hold the WIFI button for at least 20 seconds and then release it. The WI-FI LED will blink quickly for several seconds, then the Wi-DG will reboot in the factory default state. (The WI-FI LED will turn green for about 5 seconds, then amber for about 30 seconds, then green again.)
4. **Clear the cache of your web browser.**
5. Enter the URL <http://minidsp-wi-dg.local/> and hit the “Enter” key.
6. Proceed to set the login password and configure the Wi-DG, as described in Section 3.



7.3 SETTING THE KEEP-ALIVE TIME

The keep-alive time is the maximum time the plugin software waits for the arrival of UDP broadcast messages from the Wi-DG. If no UDP broadcast messages are received in this time, the plugin will treat the miniDSP hardware unit as disconnected.

By default, the keep-alive time is set to 40 seconds, which should be enough for most wireless environments. If, however, the plugin suffers from disconnections when connected over Wi-Fi, you can increase the keep-alive time. The steps are as follows:

1. Close the plugin software you are using.
2. Go to the Documents directory. (For Windows, this would be the “My Documents” folder.)
3. Open the MiniDSP folder.
4. Open the folder with the plugin name you are using.
5. Inside this folder, you should see a folder called “user”. Open this folder.
6. Use a text editor to open the file named “discovery.xml”.
7. Edit the value in the line: `<keep_alive_time value=40>`. The default is 40 seconds, so increase this value.
8. Save and close the file.
9. Open the plugin software and the new keep-alive time will be applied.

7.4 OBTAINING SUPPORT

1. Search the forums on miniDSP.com to see if the issue has already been raised and a solution provided.
2. Contact miniDSP via the support portal at support.minidsp.com with:
 - a. The specific product you are having an issue with (in this case, Wi-DG or accessories).
 - b. A clear explanation of the symptoms you are seeing.