AURALiC

Sound of Innovation

SIRIUS G2.1

Upsampling Processor

User's Guide

Welcome

We present our flagship upsampling processor: SIRIUS G2.1. As a specialized enhancement product, SIRIUS G2.1 stands as the fourth addition to the award-winning G2.1 Series of AURALiC products. As a system, ARIES G2.1, VEGA G2.1, LEO GX.1 and SIRIUS G2.1 now represent one of the most advanced digital sources available for your system today.

SIRIUS G2.1 improves and optimizes signal from all sources, whether they are high-resolution files or from an inferior source or format. With SIRIUS G2.1, compressed, lossy, and poor recordings all have the potential to be improved, thereby upgrading your overall experience.

Because of using an open standard protocol, SIRIUS G2.1 can also be connected to any brand of DAC, delivering a variety of sample rates and formats among other functions and features. SIRIUS G2.1 will provide balance to a world of varied formats, resolutions, DAC chip topologies and algorithm types.

SIRIUS G2 engineering

The key to these innovations lies in SIRIUS G2.1's state of the art **AURALiC Proteus G2 Co-Processing Platform**; which harnesses a Xilinx XC7A200T FPGA chip at its heart, bolstered by 512 MB of DDR3 memory. This FPGA chip contains more than 200,000 logic cells and 740 DSP slices, all combining to provide unparalleled levels of data processing capability. SIRIUS G2.1's computational power and efficiency are achieved in part because of the design decision to employ a dual-processing platform structure, while an AURALiC Tesla G1 handles hardware control, an AURALiC Proteus G2 focuses all of its efforts on music data processing.

USB and other digital outputs are protected by **Dual Galvanic Isolation**. **Dual Femto clocks** are employed for the USB and other digital outputs, as well as Proteus G2 FPGA co-processing platform. SIRIUS G2.1 also utilizes a triple-channel **Purer-Power Supply**, where discrete power supplies are used for the Proteus G2 Co-Processing Platform, the general data processing circuit, and the audio circuit. **Flexible Filter Mode** is also included, allowing the user to select from four different digital filter groups, providing four different sound characteristics (Precise, Dynamic, Balance, Smooth) based on the listener's personal taste.

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CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

TO REDUCE THE RISK OF ELECTRIC SHOCK,

DO NOT REMOVE COVER.

NO USER-SERVICEABLE PARTS INSIDE.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

IMPORTANT SAFETY INSTRUCTIONS

- All safety and operating instructions must be read before operation, and retained for future reference.
- This product should be connected only to the type of power source indicated on the back of the unit. If you are not sure of the type of your mains power supply, please consult your dealer or local power company.
- To completely disconnect this product from the AC mains, disconnect the power supply cord plug from the AC receptacle.
- Do not use the product near water, i.e. near a bathtub, kitchen sink, laundry tub, in a wet basement, near a swimming pool etc.
- Do not install the product near heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat. See “Placement and Cabling” on page 7.
- Do not let objects or liquids fall into the product. Do not expose the product to dripping or splashing. Do not place a vessel containing liquid on top of the product.
- Clean only with a soft, dry cloth.
- Do not attempt to service this product yourself. Opening or removing covers may expose you to dangerous voltage. Refer all servicing to authorized service personnel. See “Service” on page 32.

Declaration of Conformity

AURALiC (Beijing) Technology Co., Ltd.
Room 101, Building No.17, 1A Chaoqian Road
Beijing, 102200, China

declares under our sole responsibility as the manufacturer of the product:

SIRIUS G2, SIRIUS G2.1
Upsampling Processor

is compliant with Directive 2011/65/EC (RoHS) Restriction on Hazardous Substances,
and is in conformity with the provisions of the following EC Directive, including all amendments,
and with national legislation implementing these directives:

2014/35/EU Low Voltage Directive (LVD)
2014/30/EU Electromagnetic Compatibility Directive (EMC)
2012/19/EU Waste of Electrical and Electronic Equipment Directive

The following harmonized standards were applied:

Health and safety of the user:	EN 60065:2002+A1:2006+A11:2008+A2:2010 +A12:2011
Electromagnetic compatibility:	EN301489-1 V1.9.2(2011-09) EN301489-17 V2.2.1(2012-09) EN55013:2013 EN55020:2007+A11:2011 EN61000-3-2:2014 Class A EN61000-3-3:2013 EN61000-4-2:2009 EN61000-4-3:2006+A1:2008+A2:2010 EN61000-4-4:2012 EN61000-4-5:2014 EN61000-4-6:2014 EN61000-4-11:2004

This product that carries the CE Mark, which was first affixed in 2020.

Warranty

AURALiC offers a 90-day factory warranty from the date of purchase that can be extended to a 3-Year limited warranty. This non-transferable warranty is available to the original owner by completing the product registration form including the original sales information from the customer's authorized AURALiC dealer within 30 days of purchase. The customer may fill out the 'AURALiC Product Registration Form' on page 35 and send it back to the email address provided to finish the registration.

Warranty coverage includes all parts and labor. Warranty is void if damage is due to abuse, neglect or unauthorized modifications. Costs associated with the return of this product are the sole responsibility of the owner. All repair work must be done by AURALiC or by an authorized AURALiC repair agency. Work done by unauthorized persons will void any and all warranty coverage.

AURALiC products are uniquely identified with a serial number (S/N) printed on the label attached under the unit. This number is required to validate your warranty. Please provide AURALiC with the product's serial number if service is required.

Before the product can be returned for service, an RMA (Return Material Authorization) number must be issued by AURALiC. Customer must contact their dealer or AURALiC for further information. Units without an RMA number will not be accepted for service.

Unpacking

Please check that the following items are in the box:

- SIRIUS G2.1
- AC Power Cord
- USB Cable
- Lightning-Link Cable
- User's Guide

Carefully unpack each piece; if there is any damage, or if anything is missing, please contact your dealer or AURALiC.

ONLY SHIP THIS PRODUCT IN ITS ORIGINAL PACKAGING!

Please be sure to retain the original shipping carton and all packing materials as they are specially designed to protect the unit during transportation and shipping.

Placement and Cabling

Placement

SIRIUS G2.1 should be placed on a solid and stable surface with good ventilation. Do not install this product near any heat sources such as radiators or other products (such as amplifiers) that produce heat. Place the product so that its location or position does not interfere with its proper ventilation. For example, it should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings, or be placed in a built-in installation such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

Ventilation Requirement

SIRIUS G2.1 dissipates up to 40 Watts of power during normal operation. It should be installed in a space with at least one inch of clearance above, behind and on both sides of its enclosure to provide adequate ventilation. Avoid placing it directly above other equipment that produces heat.

Check Your AC Mains Voltage

SIRIUS G2.1 is shipped with its mains voltage preset for operation in the destination country. The mains voltage setting is written on the back of the unit, besides the power cord socket. Mains voltage setting is not intended to be changed by the user. If it needs to be changed, contact your dealer or AURALiC.

The power cord has a three-wire grounding type plug (a plug having a third pin for grounding). It will only fit into a grounded power outlet. If you are unable to insert the plug fully into the outlet, contact your dealer or AURALiC. Do not defeat the safety purpose of the grounded plug.

SIRIUS G2.1 MUST BE USED WITH CORRECT MAINS VOLTAGE AND PROPERLY EARTHED!

Cabling

The I/O ports on the rear of SIRIUS G2.1:

- **AC Mains**

  For the best sound quality, we suggest using a standalone power supply for SIRIUS G2.1 to isolate it from other digital source components that use switching power supplies. The power consumption of SIRIUS G2.1 is less than 40W. A heavy gauge power cord is not recommended as the weight of the power cord connector may damage the power cord socket on the back of the unit. Please double-check the AC mains voltage on the back of the unit before connecting to the power.

Please make sure to power off all units in your system before any cabling job; failure to follow this instruction may result in permanent damage to the device and void any warranty.

ALWAYS POWER OFF SIRIUS G2.1 BEFORE CABLING!

- **AES IN, COAX IN and TOS IN**

  For those legacy digital inputs, the maximum sampling rates supported by AES/EBU, Coaxial and Toslink inputs are 44.1K-192KHz in 16-24bit and DSD64 via DoP V1.1 format, both 44x and 48x.

- **USB IN**

For the USB audio input, the maximum sampling rates supported are 44.1K-384K in 16-32bit, DSD64 to DSD512 in native DSD format or DSD64 to DSD256 in DoP format, both 44x and 48x.

The USB audio input uses advanced asynchronous transmission protocol, it can minimize input jitter. The USB audio input does not require a driver to work with Mac OS and Linux operating systems. However, there is no native DSD format support under Mac OS. For the Windows operating system, we suggest you go to support.auralic.com to download and install AURALiC's USB Audio driver for Windows in order to enable ASIO and native DSD formats support.

- **L-LINK (Lightning Link)**

AURALiC Lightning Link connections. The maximum sampling rates supported by Lightning Link are 44.1K-384K in 16-32bit, DSD64 to DSD512 in native DSD format. Lightning Link is the preferred connection if you use any of AURALiC's products that support Lightning Link. Please only use Lightning Link with the cable that comes with our Processor and DAC.

Lightning Link uses an HDMI type of physical connector, but it is neither an HDMI port nor an I2S output. Please do not attempt to connect it to any HDMI or I2S device.

Please see Lightning Link chapter at page 10 for detailed cabling instruction.

- **AES OUT, COAX OUT and TOS OUT**

The AES/EBU, Coaxial and Toslink ports are driven by the same Femto Clock source but are individually buffered. These ports can be used together. The maximum sampling rates supported by AES, Coaxial and Toslink outputs are 44.1K-192KHz in 16-24bit and DSD64 via DoP V1.1 format, both 44x and 48x.

Select 'SIRIUS G2 Digital Outputs' as the output channel inside the Output menu to active them. Digital outputs and USB audio output cannot be used at the same time due to different signal clocks that SIRIUS G2.1 needs to sync to.

- **USB OUT #1 and #2**

The USB audio host will output to a compatible DAC. The attached DAC needs to be compatible with Linux without the need for installing additional drivers. Most USB DACs that do not require a driver to work with the Mac OS system should work with SIRIUS G2.1's USB audio outputs. Please check with your DAC manufacturer to get more advice on compatibility.

The maximum sampling rates supported by USB outputs are 44.1K-384K in 16-32bit, DSD64 to DSD512 in native DSD format or DSD64 to DSD256 in DoP format, both 44x and 48x. The actual supported sampling rates are limited by the DAC to which SIRIUS G2.1 connects. Please refer to your DAC's specifications for the maximum sampling rate it supports.

The port marked "#1" functions as the primary output port and is galvanically isolated, offering the lowest noise level. The #2 USB output port is a regular low-noise USB output, providing better compatibility with some USB DACs.

Select your DAC's name as the output channel inside the Output menu to active USB audio output. USB audio output and digital outputs cannot be used at the same time due to different signal clocks with which SIRIUS G2.1 needs to sync to.

- **LAN**

The Ethernet connection, this port is currently designed for firmware update use. To update device firmware (when available), please connect your SIRIUS G2.1 to the Internet via an Ethernet cable, wait for one minute for SIRIUS G2.1 to establish network connection then use the Firmware Update option inside the "SYSTEM" menu to download the latest firmware.

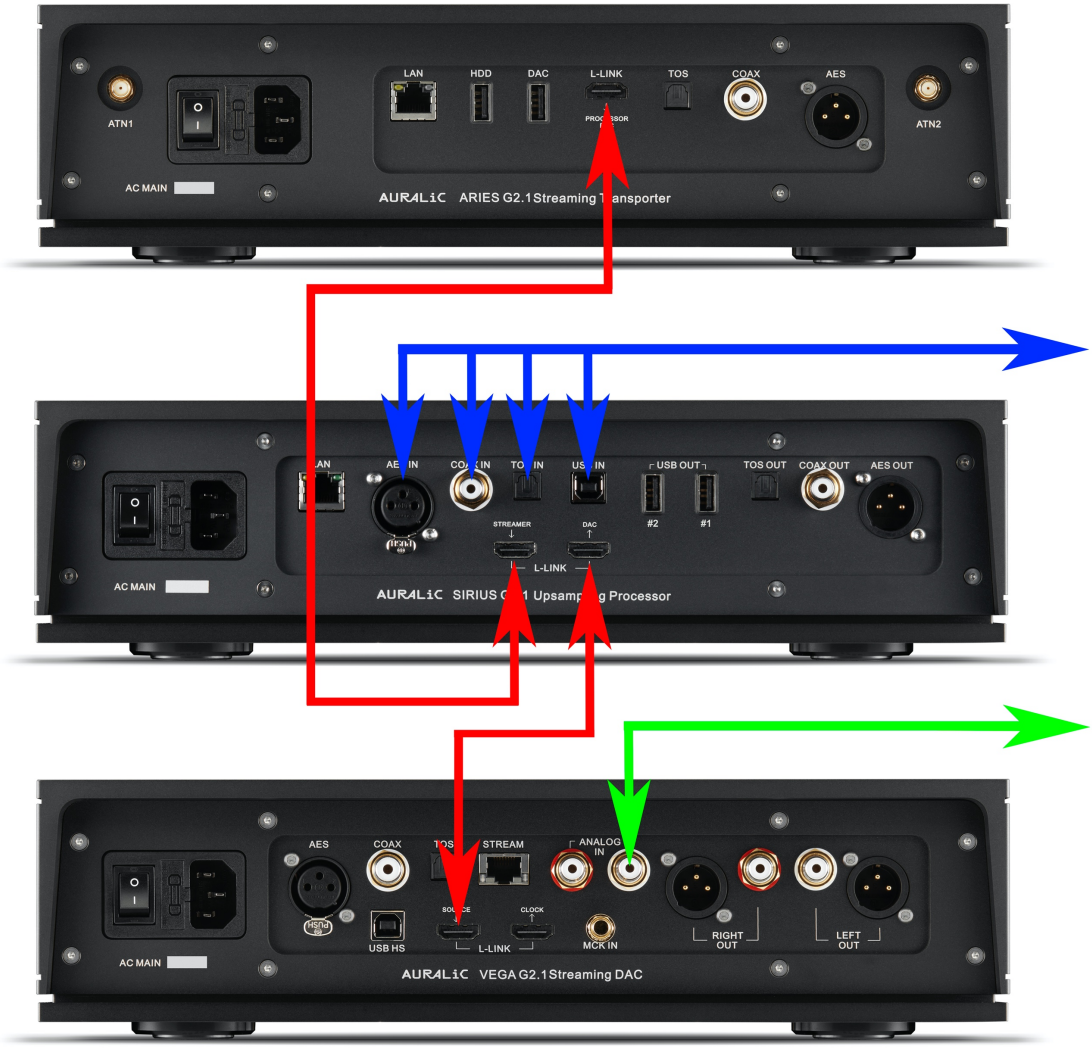
Lightning Link

Lightning Link is a low-jitter, bi-directional 18Gbps coupling that takes advantage of high-speed HDMI-type hardware connectors to provide a superior level of transmission control, making today's ultra-high-resolution digital music shine like never before.

Different from other HDMI based I2S connections, Lightning Link's bi-directional ability opens the door to jitter-free operation of *all* the devices in your system. Lightning Link also carries system control data for everything from volume control to processor engine setup, allowing all linked AURALiC devices to appear in a single, unified control interface.

The following wiring diagrams show the ideal ways to connect SIRIUS G2.1 with different AURALiC devices using a Lightning Link connection:

Connect to ARIES G2.1 (G2) and VEGA G2.1 (G2)



- **Lightning Link**: Connect ARIES G2.1, SIRIUS G2.1 and VEGA G2.1 using Lightning Link cables. Connect LEO GX.1 to VEGA G2.1 (not showing on this diagram).
- **Digital Source**: Connect all external digital sources to SIRIUS G2.1's input.
- **Analog Source**: Connect analog source to VEGA G2.1's analog input.

VEGA G2.1's streaming and digital inputs will be disabled automatically when it detects ARIES G2.1 and SIRIUS G2.1.

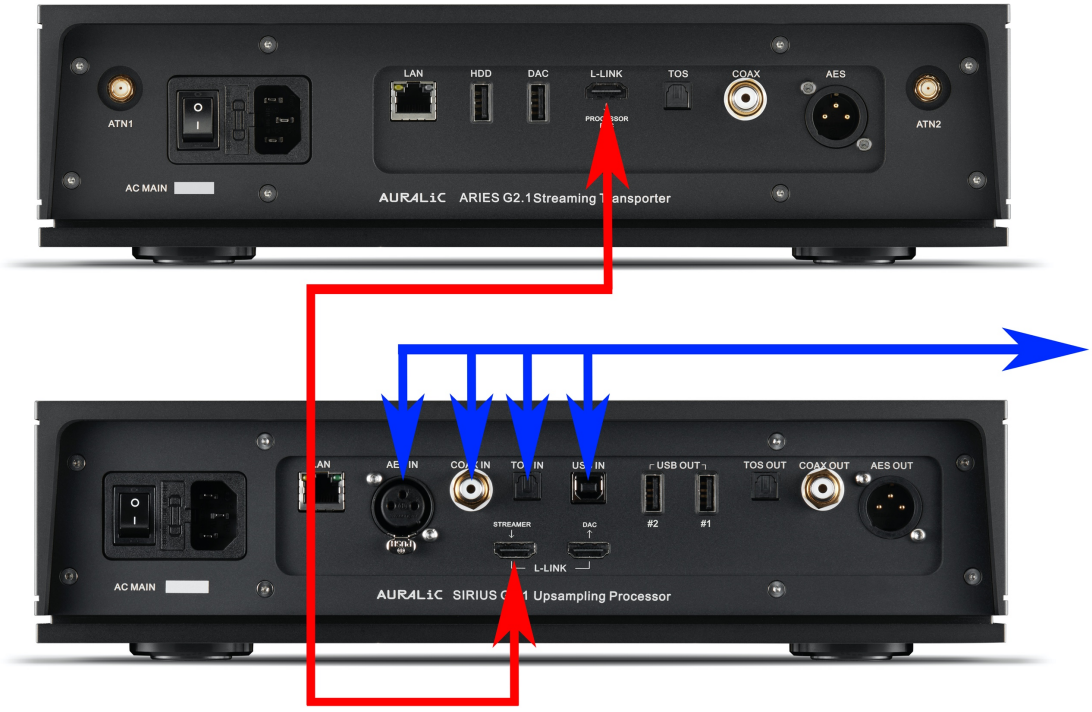
VEGA G2.1 will send its volume status and display settings to SIRIUS G2.1 and ARIES G2.1 when you select Lightning Link as the input and output on those devices.

When using remote control to operate your system, please follow instructions below:

- System power on/off, display on/off, volume up/down, mute/unmute and selection of analog source to be assigned via VEGA G2.1's Smart-IR menu.
- Selection of digital sources to be assigned via SIRIUS G2.1's Smart-IR menu.
- Streaming transport control related operations, such as play/stop, next/previous track, assigned via ARIES G2.1's Smart-IR menu.
- Please refer to 'Smart-IR Remote Control' on page 28 for detailed instructions.

You can switch between ARIES streaming source, SIRIUS digital sources and VEGA analog input via Lightning DS. When accessing ARIES G2.1's web control interface, you can setup SIRIUS G2.1 and VEGA G2.1 using "Processor Setup" and "DAC Setup".

Connect to ARIES G2.1 (G2)



- **Lightning Link**: Connect ARIES G2.1 and SIRIUS G2.1 using a Lightning Link cable.
- **Digital Source**: Connect all external digital sources to SIRIUS G2.1's input.

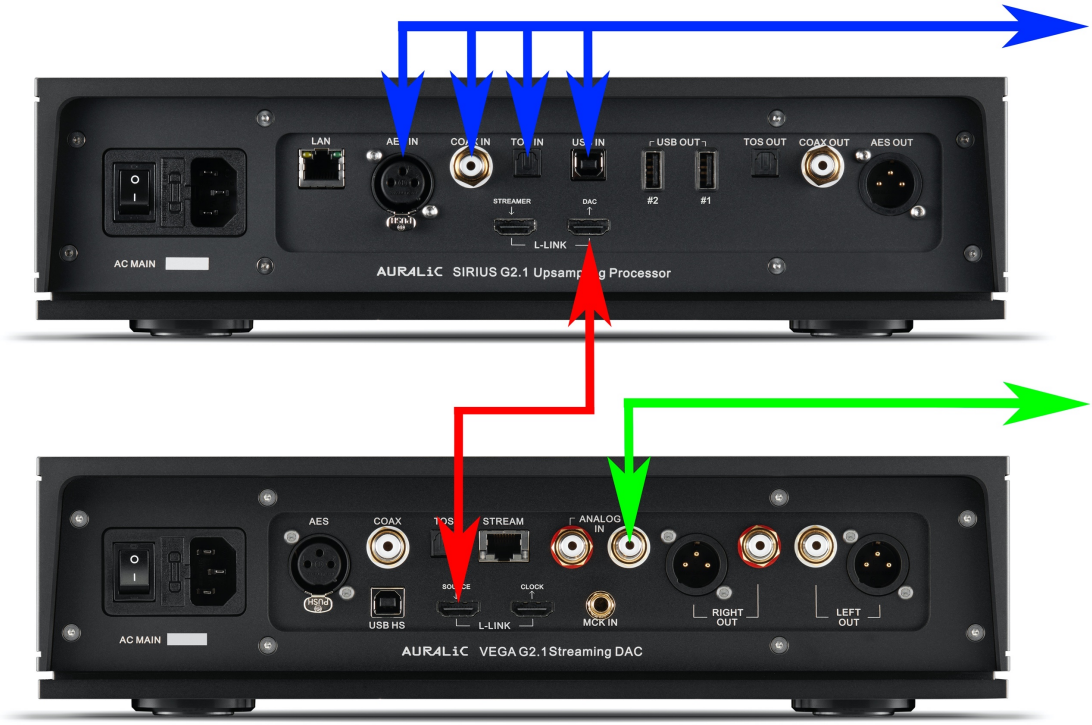
SIRIUS G2.1 will send its volume status and display settings to ARIES G2.1 when you select Lightning Link as the input or output on any of these two devices.

When using a remote control to operate your system, please follow the instructions below:

- System power on/off, display on/off, volume up/down, mute/unmute and selection of analog source to be assigned via SIRIUS G2.1's Smart-IR menu.
- Selection of digital sources to be assigned via SIRIUS G2.1's Smart-IR menu.
- Streaming transport control related operations, such as play/stop, next/previous track, assigned via ARIES G2.1's Smart-IR menu.
- Please refer to 'Smart-IR Remote Control' on page 28 for detailed instructions.

You can switch between the ARIES streaming source and SIRIUS digital sources via Lightning DS. When accessing ARIES G2.1's web control interface, you can setup SIRIUS G2.1 using "Processor Setup".

Connect to VEGA G2.1 (G2)



- **Lightning Link**: Connect SIRIUS G2.1 and VEGA G2.1 using a Lightning Link cable. Connect LEO GX.1 to VEGA G2.1 (not showing on this diagram).
- **Digital Source**: Connect all external digital sources to SIRIUS G2.1's input.
- **Analog Source**: Connect analog source to VEGA G2.1's analog input.

VEGA G2.1's digital inputs will be disabled automatically when it detects SIRIUS G2.1. You may still use VEGA G2.1's streaming input but music signal will not be processed through SIRIUS G2.1.

VEGA G2.1 will send its volume status and display settings to SIRIUS G2.1 when you select Lightning Link as the input or output on any of these two devices.

When using a remote control to operate your system, please follow the instructions below:

- System power on/off, display on/off, volume up/down, mute/unmute and selection of analog source to be assigned via VEGA G2.1's Smart-IR menu.
- Selection of digital sources to be assigned via SIRIUS G2.1's Smart-IR menu.
- Please refer to 'Smart-IR Remote Control' on page 28 for detailed instructions.

Front Panel

The front panel of SIRIUS G2.1:

- **'Power' Button**

  SIRIUS G2.1 will power up automatically after the main power on the back of the unit is switched on. Push the power button on the front panel briefly to put the unit into sleep mode after it has started. In sleep mode, SIRIUS G2.1 will keep most of its functions running, especially the Femto Clock to maximize sound quality performance.

- **Rotary Knob**

The rotary knob can be rotated clockwise or anti-clockwise through 20 steps for a full cycle and can be pushed for specific operation.

- **Front Panel Display**

  The 4-inch high-resolution true color display on the front panel gives you full access to SIRIUS G2.1's settings.

- **Smart-IR sensor**

  The IR remote control sensor is hidden behind the front panel display. SIRIUS G2.1 is equipped with AURALiC's Smart-IR control technology. You can assign the device's functions to any buttons you choose on your IR remote control. Please refer to 'Smart-IR Remote Control' on page 28 for detailed instructions.

Using your SIRIUS G2.1

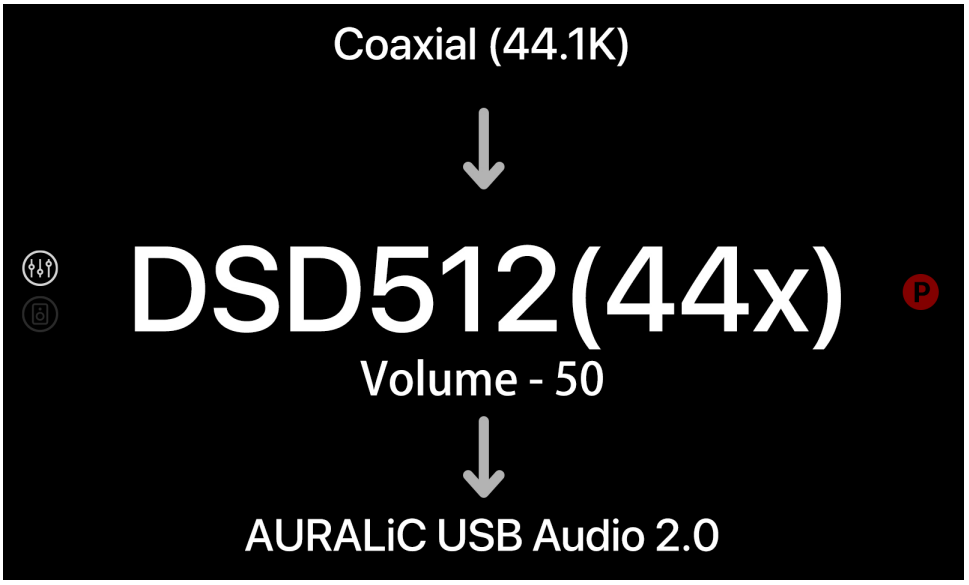
Power Up and Sleep

SIRIUS G2.1 will power up automatically after the main power on the back of the unit is switched on. Push the power button on the front panel briefly to put the unit into sleep mode after it has started. To bring the unit back to work from sleep mode, please push the power button briefly.

You can also use the Smart-IR function to assign a remote button for sleep function. Please refer to "Smart-IR Remote Control" on page 28 for detailed instruction.

Home Screen

After SIRIUS G2.1 has started successfully, the home screen will show up. The home screen indicates the current device's working status:



Your SIRIUS G2.1's current input channel, with a valid sampling rate shows up at the top of the home screen. The current output channel shows up at the bottom of the home screen. SIRIUS G2.1's current output sampling rate and current volume setting are displayed in the middle of the home screen.

Sampling rate number in the middle of the home screen will flash if your selected output sampling rate is not supported by the current output device or if your previously selected output device is not available.

On the left-hand side of the home screen, there are two small icons indicating **Equalizer** and **Speakers** processing functions' status. A highlighted icon means the corresponding function has been activated.

On the right-hand side of home screen, a small dot with color and letter indicates the current resampler filter setting:

P: Precise **D: Dynamic** **B: Balance** **S: Smooth**

You can use Smart-IR to assign remote control buttons to quickly switch between different filters as well as enable or disable a specific processing function. Please refer to "Smart-IR Remote Control" chapter at page 28 for detail.

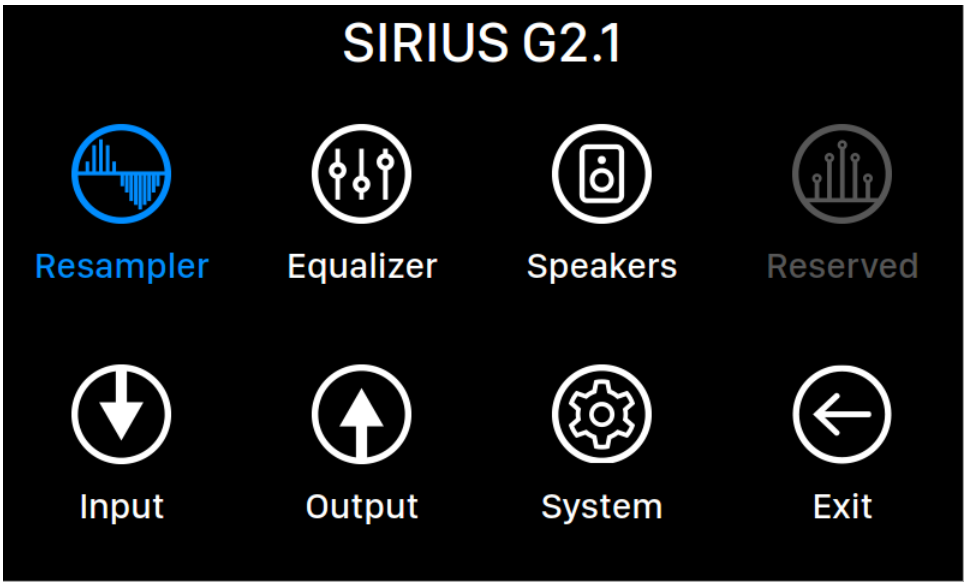
Volume Control

At home screen, you can turn the rotary knob to change SIRIUS G2.1's output volume. Volume control function can be disabled via 'SYSTEM' menu. You can also use remote

control buttons for volume up, down, mute/unmute operations. Please refer to “Smart-IR Remote Control” chapter at page 28 for detail.

Main Menu

Push the rotary knob at home screen will activate SIRIUS G2.1’s main menu:

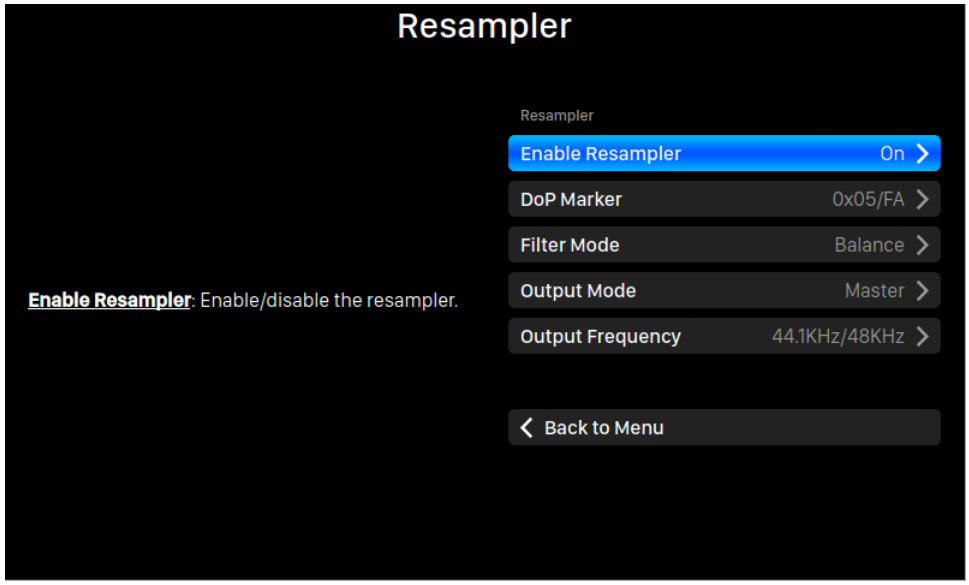


The main menu is the root level menu of your SIRIUS G2.1. There are eight options available from the main menu:

- **“Resampler”**: Access to the resampler processing function setup.
- **“Equalizer”**: Access to the parametric equalizer processing function setup.
- **“Speaker”**: Access to the speaker compensation processing function setup.
- **“Reserved”**: A menu option that is currently unavailable.
- **“Input”**: Select SIRIUS G2.1’s input channel.
- **“Output”**: Select SIRIUS G2.1’s output channel.
- **“System”**: Access to the system menu for hardware settings.
- **“Exit”**: Exit main menu and go back to home screen.

Turn the rotary knob clockwise or counter-clockwise to highlight an option, and push the rotary knob to select it. To exit main menu, please select “Exit”.

Resampler Menu

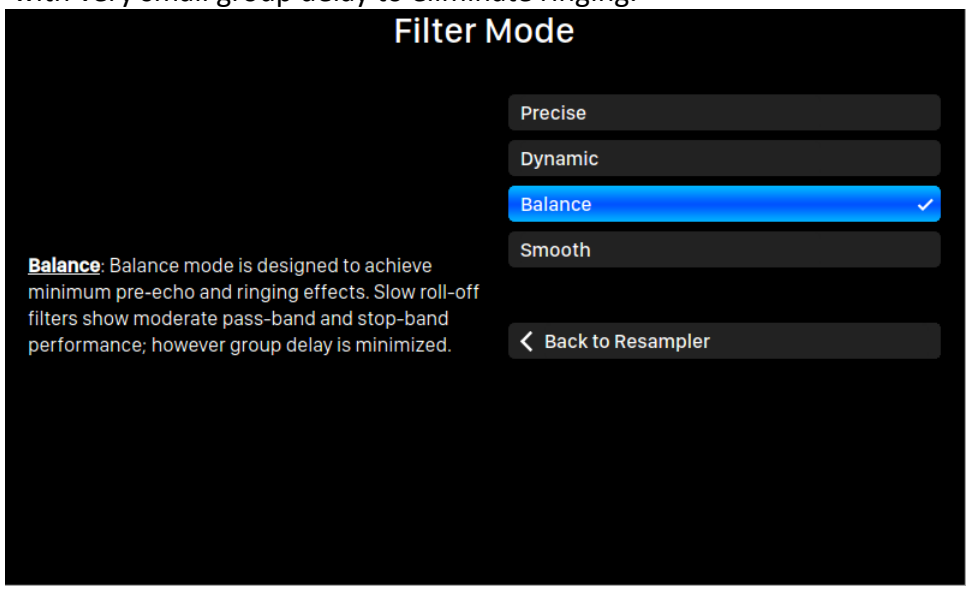


The Resampler menu contains all settings related to SIRIUS G2.1's resampler. Please turn the rotary knob clockwise or counter-clockwise to highlight an option, and push the rotary knob to select it.

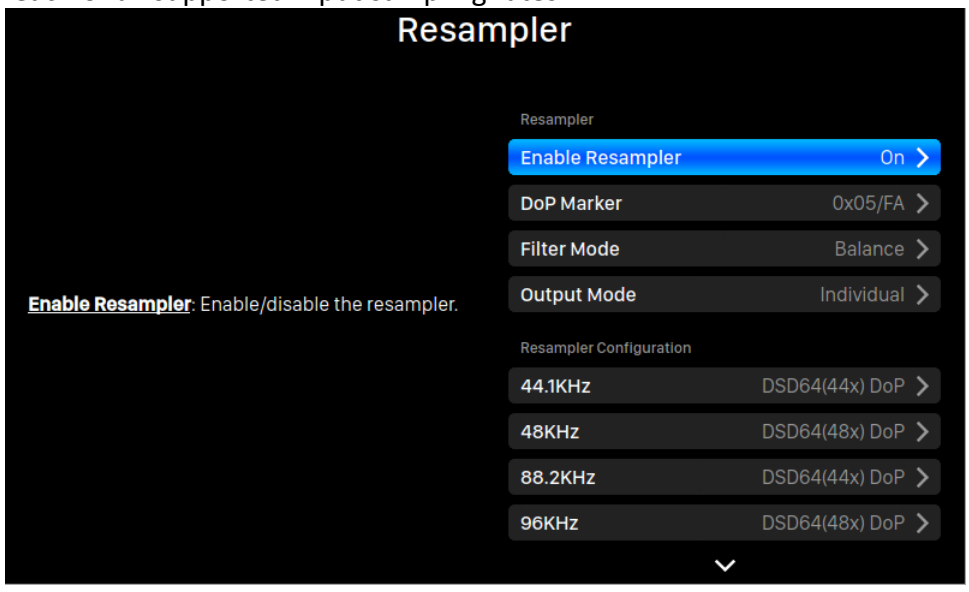
All signals coming from any input will first be converted into a high frequency multi-bit data stream for jitter removal and for any user-enabled processing. The processed data will then be resampled to your selected output frequency, and sent out of SIRIUS G2.1. This processing structure means **SIRIUS G2.1 does not have a passthrough mode**.

- **"Enable Resampler"**: Enable/disable the resampler.
- **"DoP Marker"**: Chooses between DSD-over-PCM markers. (Early versions of DoP enabled the use of 0xAA, while most devices now accept 0x05/FA.)
- **"Filter Mode"**: The resampler has four built-in filter modes, each employing five digital filters optimized for the corresponding sampling rates. Developed using a combination of objective data models and subjective testing, these modes optimize sonic quality for varying music types and formats: **Precise**: A traditional filter design using a single filter algorithm for all sampling rates. Precise mode provides the most exacting sonic representation of the source material. **Dynamic**: With the same pass-band and stop-band performance as Precise mode, but providing less group delay, Dynamic mode is the ideal balance between measurable precision and subjective quality. **Balance**: Balance mode is designed to achieve minimum pre-echo and ringing effects. Slow roll-off filters show moderate pass-band and stop-band performance; however group delay is minimized. **Smooth**: Smooth mode scored highest on subjective listening tests during development. All filters in this mode are of the minimum-phase type, which means there is no pre-echo at all. Smooth mode filters are also designed

with very small group delay to eliminate ringing.

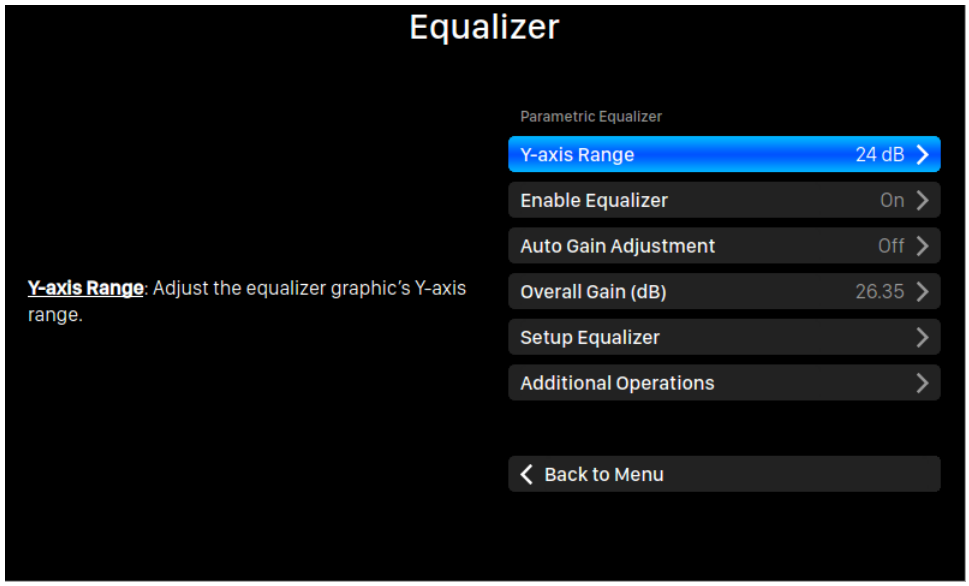


- **"Output Mode"**: Choose how the resampler will process different input sampling rates. **Master**: Use one single output frequency for all input sampling rates. **Individual**: Select different output frequencies for each input sampling rate.
- **"Output Frequency"**: If you have selected Master option as Output Mode, you will use this option to select the resampler's output sampling rate. If you have selected Individual option as Output Mode, you will set output frequency for each of all supported input sampling rates:



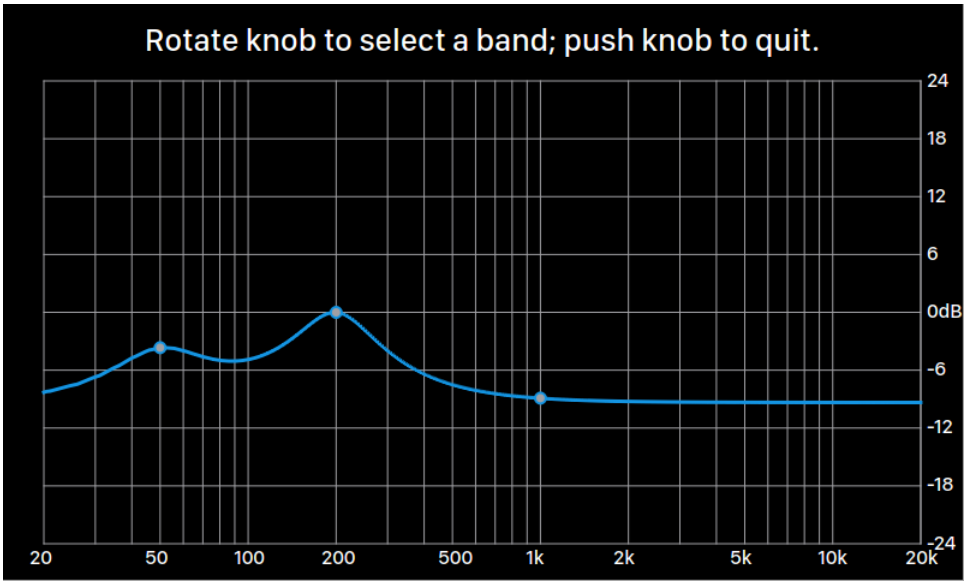
- **"Back to Menu"**: Go back to main menu.

Equalizer Menu



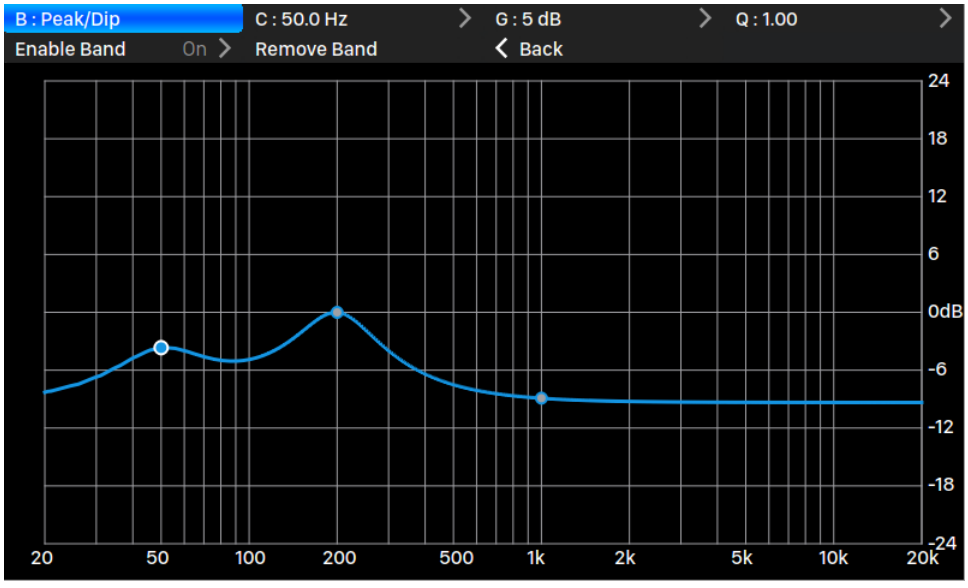
The 8-band parametric equalizer inside SIRIUS G2.1 was designed as an effective tool to correct room acoustics issues, especially at lower bass frequencies. We do not suggest you use this function for changing the sonic character. Turn the rotary knob clockwise or counter-clockwise to highlight an option, and push the rotary knob to select it.

- **"Y-axis Range"**: Adjust the graphic equalizer's Y-axis range. You can choose between 24dB and 48dB. The 24dB option gives you a display range between -12dB and +12dB. The 48dB option shows wider range but you won't be able to see the fine details on frequency response curve.
- **"Enable Equalizer"**: Enable/disable the parametric equalizer.
- **"Auto Gain Adjustment"**: Allows the Lightning Streaming device to calculate and adjust the overall equalizer gain to ensure the digital signal level does not exceed 0dBFS at any time. **We recommend you keep this option on.**
- **"Overall Gain (dB)"**: When the Auto Gain Adjustment setting is disabled you may adjust the overall gain of the parametric equalizer manually. **Please exercise caution when utilizing this feature, and make sure that the digital level does not exceed 0dBFS at any time by checking the frequency response curve displayed. Failure to do so may result in significant signal distortion and damage to your loudspeakers.**
- **"Setup Equalizer":** Start a graphic based parametric equalizer setup interface:

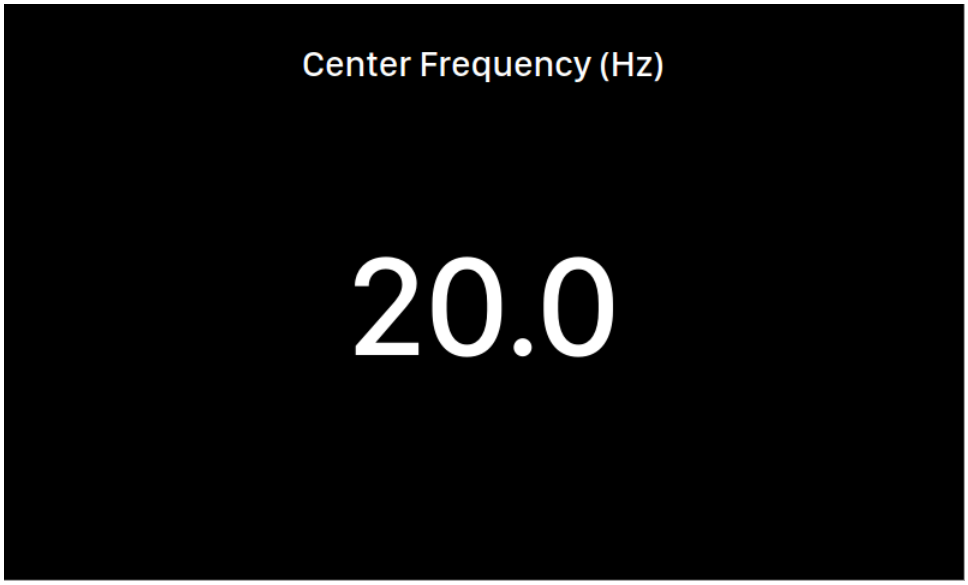


Your equalizer's current frequency response curve as well as all bands are displayed on the screen in real time. You can turn the rotary knob to highlight a band and check its parameters. Push the knob without selecting any band to quit this interface.

When a band is highlighted, you can push the rotary knob to activate band mode, which allows you to highlight and edit specific parameters of the highlighted band:



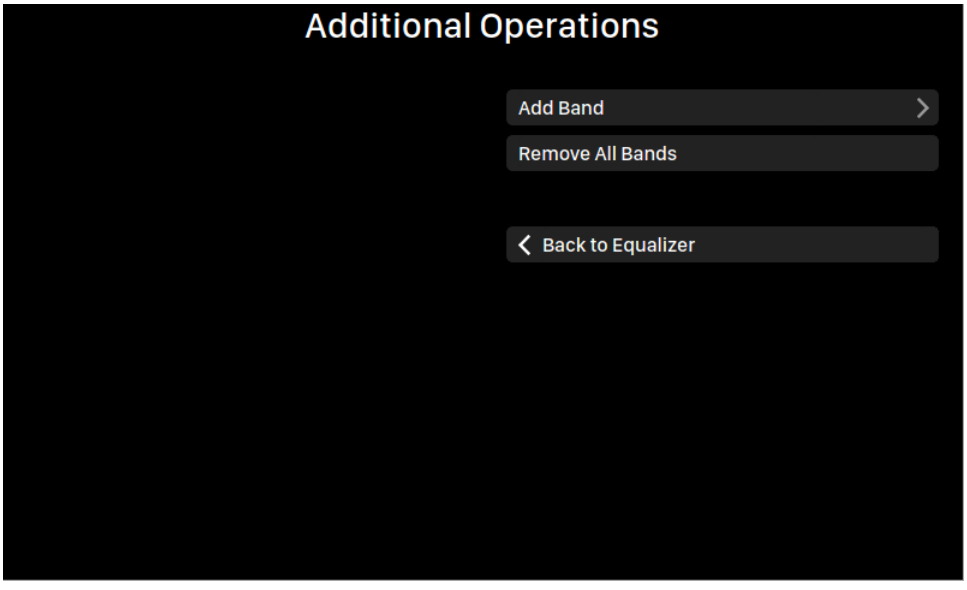
To edit a specific band parameter, turn the rotary knob and highlight the parameter then push the rotary knob to enter the editing interface:



Turn the rotary knob clockwise or counter-clockwise to increase or decrease the value, and push the rotary knob to confirm the value.

To cancel a band highlight and quit equalizer setup interface, please select "< Back" option, don't turn the knob and then push the rotary knob again.

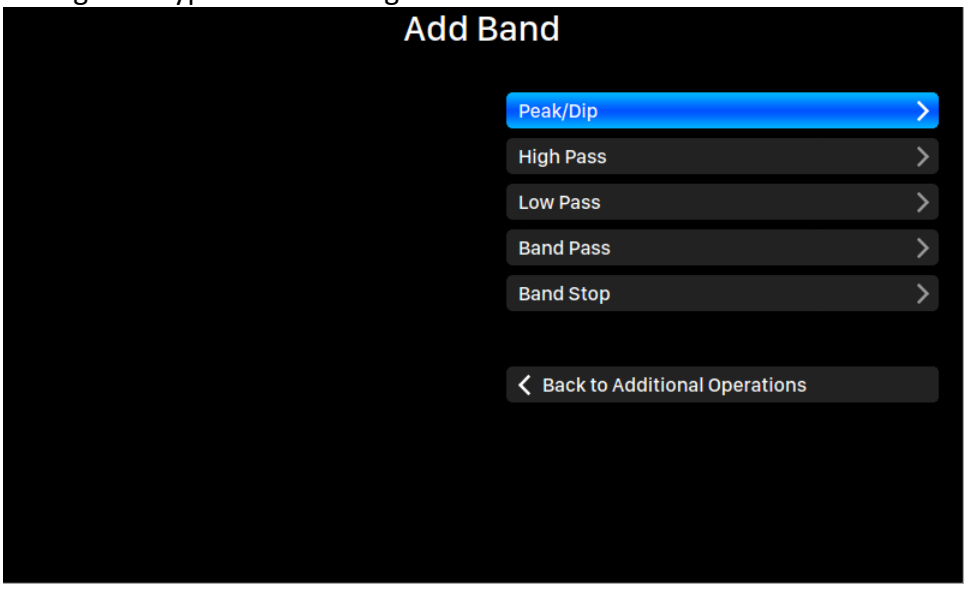
- **"Additional Operations"**: Access the options to add a band or remove all bands at one time:



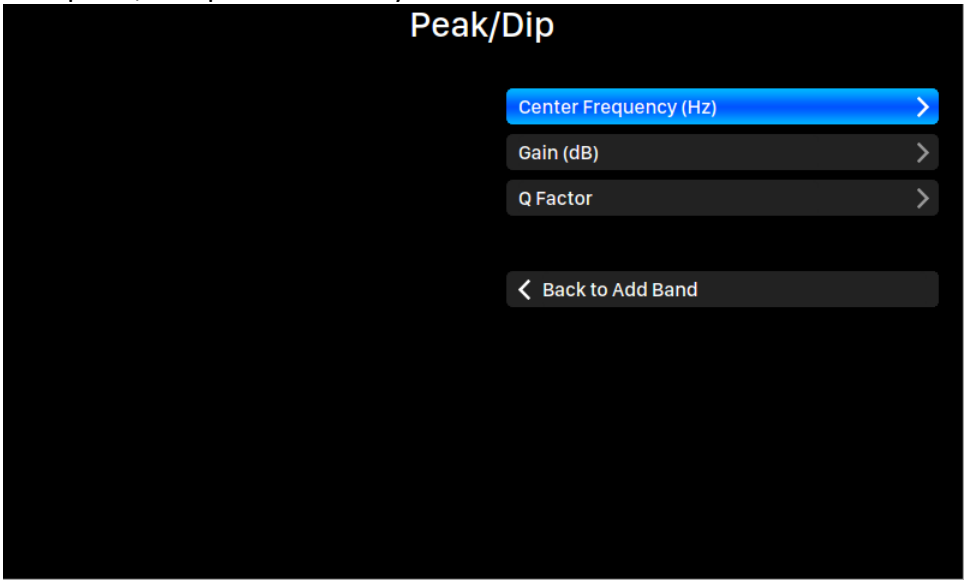
  - **"Add Band"**: Add a new band to the equalizer. You can add up to 8 bands in total.

- **“Remove All Bands”**: Remove all band effects.
- **“Back to Equalizer”**: Go back to Equalizer menu.

You will be asked for the type of band when adding a new band. You cannot change the type of an existing band:



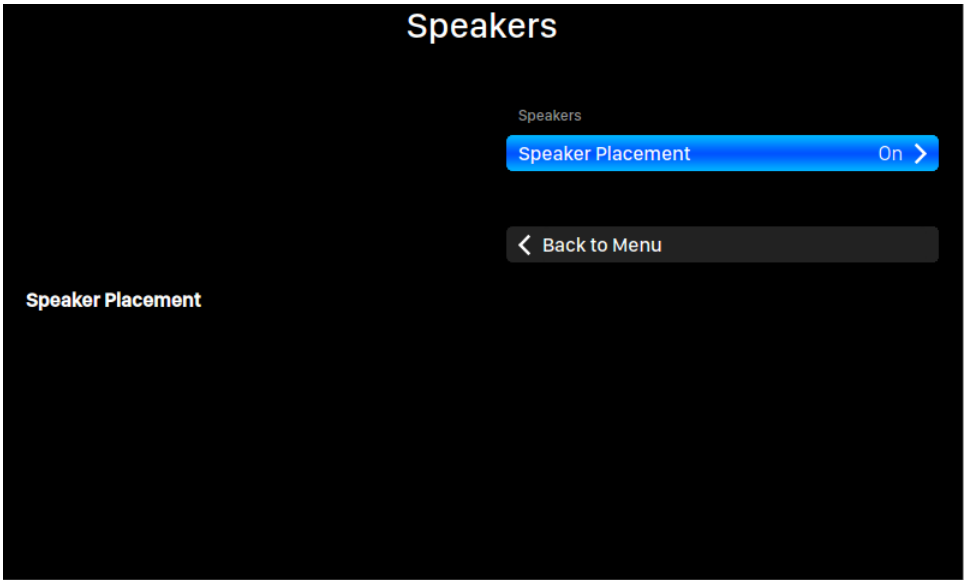
After band type has been selected, you will need to enter all parameters of the added band. Turn the rotary knob clockwise or counter-clockwise to highlight an option, and push the rotary knob to enter value:



Turn the rotary knob clockwise or counter-clockwise to increase or decrease the value, and push the rotary knob to confirm the value:

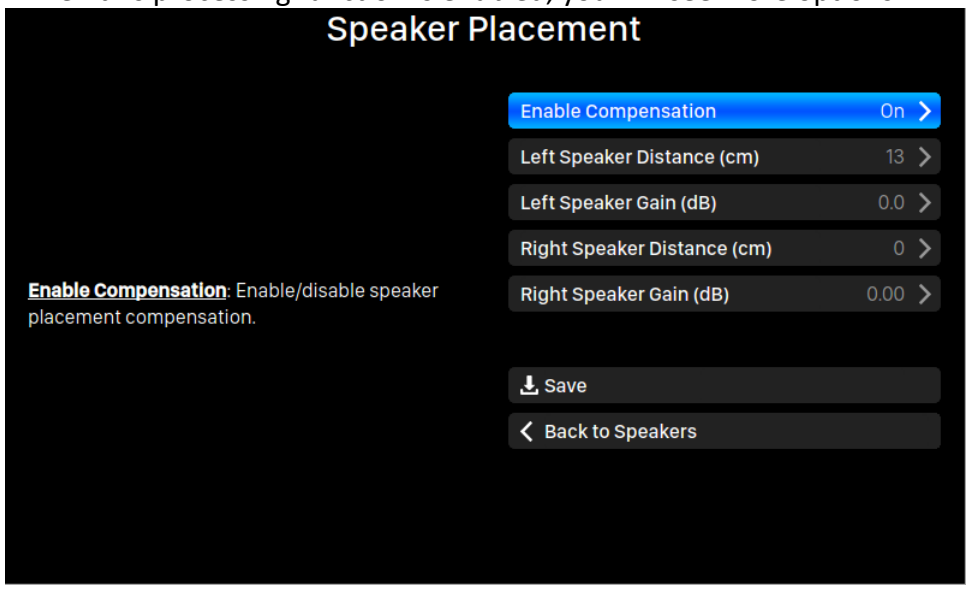
- **“Back to Menu”**: Go back to main menu.

Speaker Menu



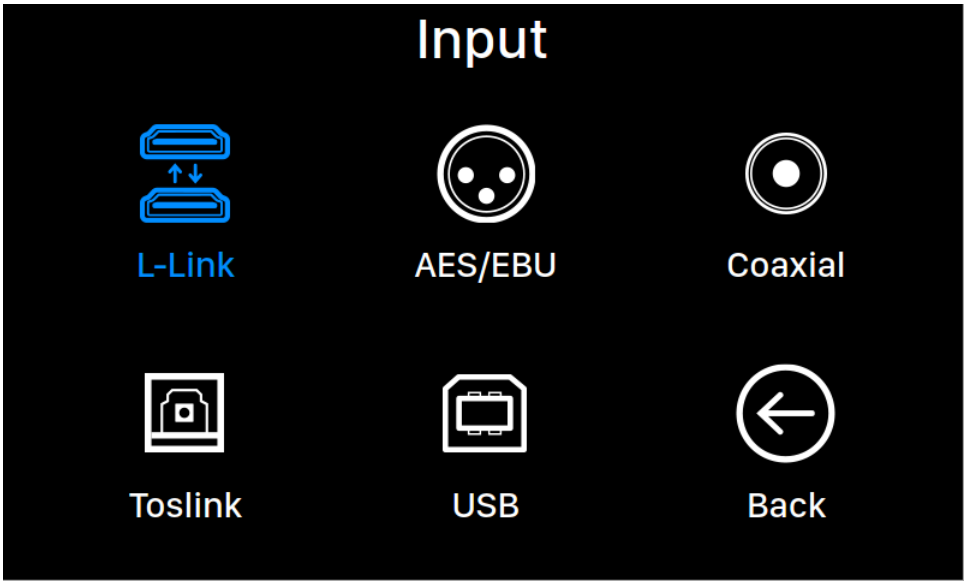
The Speaker menu allows the user to add distance-based left- and right- channel delay as well as change the gain of individual channel to compensate for non-ideal speaker placement. Turn the rotary knob clockwise or counter-clockwise to highlight an option, and push the rotary knob to select it.

- **“Enable Compensation”:** Enable/disable speaker placement compensation. When this processing function is enabled, you will see more options:



- **“Left Speaker Distance (cm)”**: The distance between the left speaker and your listening position, in centimeters.
- **“Left Speaker Gain (dB)”**: Attenuation of the left channel. Use this option if the left speaker is closer to the listening position than the right speaker. (Allows only negative values.)
- **“Right Speaker Distance (cm)”**: The distance between the right speaker and your listening position, in centimeters.
- **“Right Speaker Gain (dB)”**: Attenuation of the right channel. Use this option if the right speaker is closer to the listening position than the left speaker. (Allows only negative values.)
- **“Save”**: Save the previously input value and let SIRIUS G2.1 to apply them to the processing engine.
- **“Back to Menu”**: Go back to main menu.

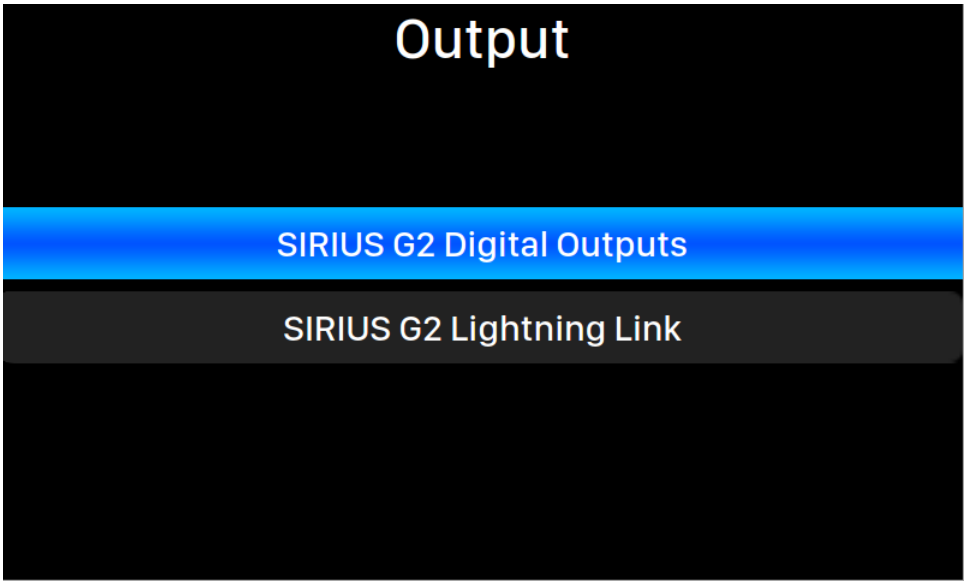
Input Menu



Select the physical input channel of your SIRIUS G2.1. Turn the rotary knob clockwise or counter-clockwise to highlight an input channel, and push the rotary knob to select it.

The L-Link (Lightning Link) input channel will only be available to select when SIRIUS G2.1 is connecting to a music source, such as ARIES G2 or ARIES G2.1 using a Lightning Link cable.

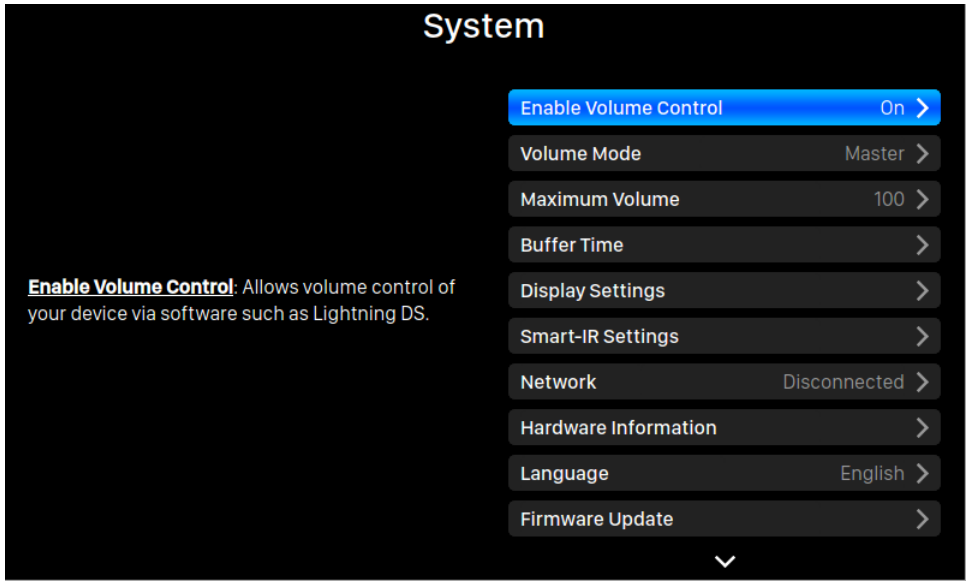
Output Menu



Select the active output channel of your SIRIUS G2.1. Turn the rotary knob clockwise or counter-clockwise to highlight an output channel, and push the rotary knob to select it.

“SIRIUS G2 Digital Outputs”, “SIRIUS G2 Lightning Link” and any USB output cannot be used simultaneously, as they utilize separate clocks for signal timing. The Lightning Link output channel will only be available to select when SIRIUS G2.1 is connecting to a DAC, such as VEGA G2 or VEGA G2.1 using a Lightning Link cable.

System Menu

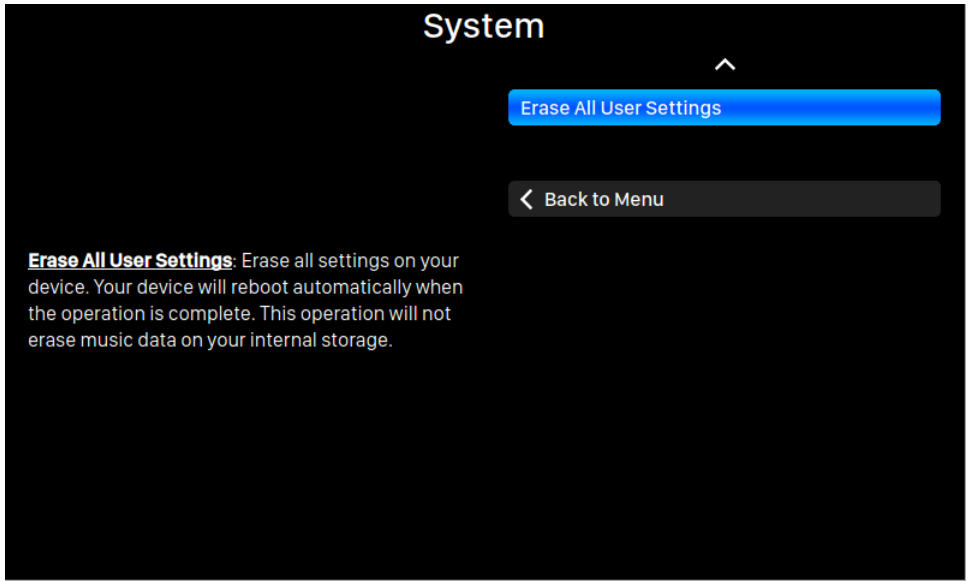


The System menu contains all hardware related settings. Turn the rotary knob clockwise or counter-clockwise to highlight an option, and push the rotary knob to select it.

- **“Enable Volume Control”**: Allows volume control of your device. If SIRIUS is connecting to ARIES G2 or G2.1 via Lightning Link, you will be able to change its volume remotely via Lightning DS software.
- **“Volume Mode”**: Set up how SIRIUS volume control is working. **Master Control**: All input channels share the same volume number. **Separate Channel**: Each input channel has its own volume number.
- **“Maximum Volume”:** Define a maximum volume that any control software can set for the streaming device. Use this option if you want to prevent accidental operation that may result in potential damage to your loudspeakers with excessive volume. You can select a maximum number between 10 and 100.
- **‘Buffer Time’**: The Lightning platform saves input signals to system memory to remove jitter then sends them to the DAC. A larger buffer time will add more

latency between input and output but may be more stable with various music sources.

- '**Display Settings**': Set preferences for the front panel display.
    - **Idle Status**: Select whether you'd like the display to always remain on, or to turn off automatically.
    - **Display Brightness**: Select the brightness of your device's front display.
- '**Smart-IR Settings**': Use this feature to assign your device's functions to any buttons you choose on your IR remote control. Please refer to page 28 for detail.
- '**Network**': Set up your device's network connection.
- '**Hardware Information**': Display device hardware information such as S/N and firmware version.
- '**Language**': Select a different interface language for your device.
- **'Firmware Update'**: Check and update device firmware. Please make sure your device is connected to Internet.

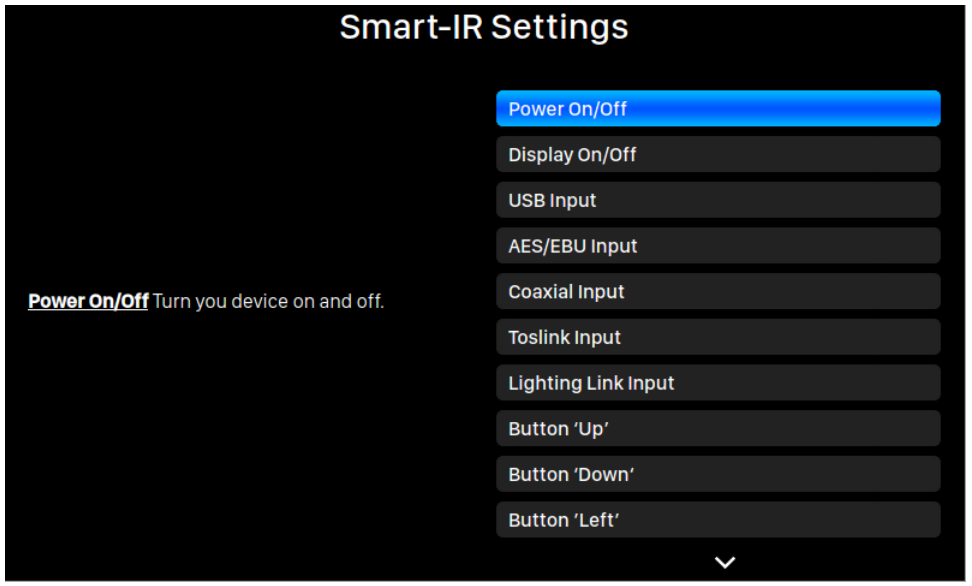


- '**Erase All User Settings**': Erase all settings on your device. Your device will reboot automatically when the operation is complete.
- **"Back to Menu"**: Go back to main menu.

Smart-IR Remote Control

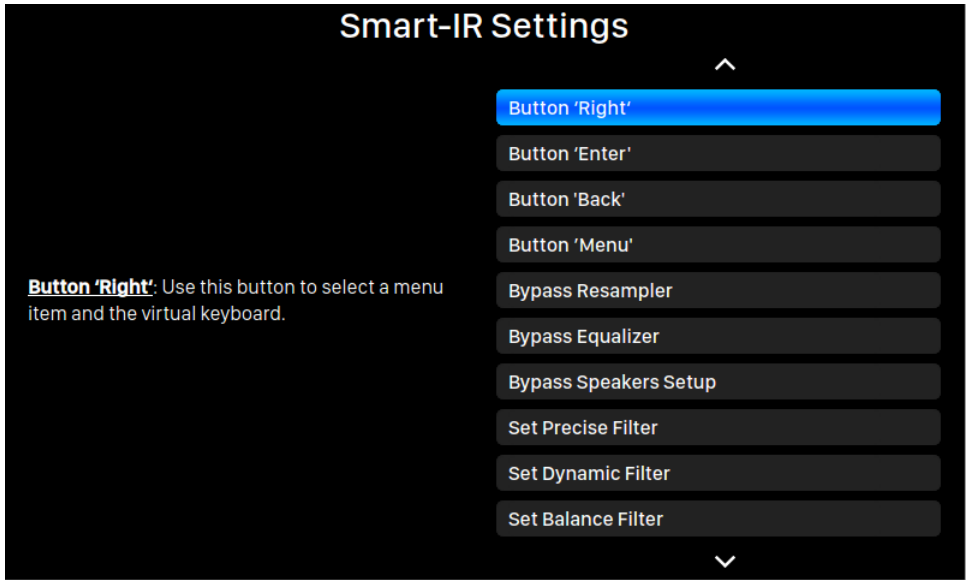
SmartIR is a technology developed by AURALiC which allows you to map your existing IR remote control buttons to operate particular functions of your AURALiC product. SmartIR works with most IR remote controls, and can come from a TV, an AV receiver or many other home appliances.

To configure Smart-IR Control, select **“SYSTEM” > “Smart-IR Settings”** from the SIRIUS G2.1 main menu:



The Smart-IR settings menu shows a list of controls that can be mapped to any button on your own remote control. Please follow the menu guide to complete your remote control setup. The following operations are especially useful for SIRIUS G2.1 operation:

- Volume Up/Down, Mute/Unmute
- Set Precise/Dynamic/Balance/Smooth filter
- Bypass Resampler/Equalizer/Speaker Setup



Please note that when learning new remote buttons, the SIRIUS G2.1 distinguishes between ‘short’ presses and ‘long’ presses (press and hold.) We suggest pressing the desired button the way you want to use it several times when the SIRIUS G2.1 is learning a new button. If you want SIRIUS G2.1 to learn both short and long presses of a specific button, we suggest you press your remote button in different ways during the learning process so SIRIUS G2.1 can learn both inputs.

Useful Tips

Two different USB Outputs

SIRIUS G2.1 offers the use of two different USB DAC output ports. The port marked “#1” functions as the primary output port and is galvanically isolated, offering the lowest noise level. The #2 USB output port is a regular low-noise USB output, providing better compatibility with some USB DACs. Please try the #1 USB output with your DAC first and keep using this port if it works with your DAC. The #2 USB output port is compatible with any DAC that does not require a driver to work with a Linux-based system.

DSD has a lower output level than PCM

Please keep in mind that any DSD output frequency from SIRIUS G2.1 will have a lower signal level by about 3dB, when compared to any PCM output level. This is common for the DSD format and is done to prevent overloading during signal processing. Because of the signal-level difference, it is hard to perform an A/B comparison between PCM and DSD. You will need to adjust the volume somewhere in your system in order to make both levels the same. We highly recommend that the volume control be adjusted in the analog domain, via an analog pre-amplifier/integrated amplifier, or a DAC with an analog volume control.

Every DAC has an optimal sampling frequency

Your DAC will perform best at a specific sampling frequency, so identifying this frequency is important. Modern delta-sigma DAC chips, such as ESS Sabre DACs and those made by AKM, love DSD; whereas R-2R DACs may work better with PCM. However, it’s not always the case that the highest sampling frequency that a DAC chip can receive will provide the best results. Identify your DAC’s chip structure before setting up SIRIUS G2.1 to output the highest DSD or PCM sampling frequency for initial listening, then try a lower

frequency in the same format (DSD or PCM) until you find the one that works best for your DAC. Always use high-quality recordings as the reference to find your DAC's "sweet spot."

Different filters for different music

Each of the four filters inside SIRIUS G2.1 will make very different presentations in terms of sound, and each one will work best with different kinds of recordings. Using a sequence of Precise>Dynamic>Balance>Smooth, our experience has been to try the Precise filter first on a good acoustic recording then move to Dynamic, then to Balance, until you find the one that sounds best to you. In most cases you'll end up choosing Precise or Dynamic. For electronic music and early digital recordings, you may want to try Smooth first then move backwards to Balance and Dynamic, you should find out that Smooth or Balance works better for those recordings.

In order for you to quickly switch between different filters, the SmartIR function inside SIRIUS G2.1 allows you to assign individual remote control buttons for each of the four filters. SmartIR is a technology developed by AURALiC which allows you to map your existing IR remote control buttons to operate particular functions of your AURALiC product. SmartIR works with most IR remote controls, and can come from a TV, an AV receiver or many other home appliances. You can access SmartIR via SIRIUS G2.1's "SYSTEM" menu.

There is no passthrough mode

All signals coming from any input will first be converted into a high frequency multi-bit data stream for jitter removal and for any user-enabled processing. The processed data will then be resampled to the customer's selected output frequency and then be sent out of SIRIUS G2.1. This processing structure means SIRIUS G2.1 does not have a passthrough mode. If you would like to compare a system with and without SIRIUS G2.1, you will need to physically disconnect it from your system rather than simply disabling the resampler or setting the input frequency to be equal to the output frequency.

You should be careful with SIRIUS G2.1 if you are a big fan of MQA technology. Since there is no passthrough mode, your MQA DAC will not receive MQA-encrypted data for decoding. However, we are very confident that SIRIUS G2.1's upsampled CD-quality FLAC music will sound superior to the same recording encoded by MQA then played via an MQA DAC.

Maintenance & Service

SIRIUS G2.1 does not require regular maintenance for normal use. However, there are a few things that will help to keep it in good operating and cosmetic condition:

Cleaning
Only clean the enclosure with a soft, dry cloth.

Extended Non-use
Disconnect SIRIUS G2.1 from mains power when it will be left unattended or unused for an extended period.

If your SIRIUS G2.1 encounters a problem, contact your dealer or AURALiC. Do not void the warranty by allowing unauthorized personnel to attempt to repair. Do not attempt to service the product yourself, any unauthorized repair of the device will void the warranty.

Before SIRIUS G2.1 can be returned for service, an RMA (Return Material Authorization) number must be issued by AURALiC. Contact your dealer or AURALiC for further information.

Contact

If you have any questions, please feel free to contact our technical support department:

AURALiC North America Inc.
711 Dawson Drive
Newark DE 19713, United States

Email: **support@auralic.com**
TEL: **+1 (302) 314-5555**

You may also find useful information through our knowledge center and community:

Knowledge Center: **support.auralic.com**
Community: **community.auralic.com**

Specifications

Input Channels	**Lightning Link** (Up to 384K/32bit, DSD512) **USB Audio** (Up to 384K/32bit, DSD512) **AES/EBU** (Up to 192K/24bit, DSD64 via DoP) **Coaxial** (Up to 192K/24bit, DSD64 via DoP) **TOSLINK** (Up to 192K/24bit, DSD64 via DoP)
Output Channels	**Lightning Link** (Up to 384K/32bit, DSD512) **USB Audio** (Up to 384K/32bit, DSD512) **AES/EBU** (Up to 192K/24bit, DSD64 via DoP) **Coaxial** (Up to 192K/24bit, DSD64 via DoP) **TOSLINK** (Up to 192K/24bit, DSD64 via DoP)
Sampling Rates	**PCM** 44.1K – 384K (16 to 32bit) ***** **DSD** DSD64 – DSD512 (Both 44x and 48x) ******
Benchmark	**THD+N: <-150dB** (Upsampling to any PCM or DSD64) *** **THD+N: <-155dB** (Upsampling to DSD128 – DSD512) *** **THD+N: <-130dB** (Downsampling to 44.1K/48K) ***
Hardware Platform	**AURALiC Tesla G1** General Control Processor **AURALIC Proteus G2** Computing Co-Processor
Internal Clock	**Triple Femto Clocks** for Digital Outputs, USB Host and Proteus G2
Noise Elimination	**Dual Galvanic Isolation** for digital and USB audio outputs **Unity Chassis II** with copper EMI shieling enclosure
Power Supply	**Triple-Channel Purer-Power** internal linear power supply 10uV low noise design for audio circuit
Dimensions - W x D x H	**13.4 x 12.6 x 3.7 in. (34cm x 32cm x 9.6cm)**
Weight	**21.0 lbs. (9.5kg)**

** 352.8K, 384K and all 32bit formats are supported through Lightning Link and USB input only*
*** DSD128 to DSD512 are only supported through Lightning Link and USB input.*
**** Tested under Filter Mode Precise for all sampling rates*

All specifications are subject to change without notice.

AURALiC Product Registration Form

Owner Information	
Your Name	
Address	
City	
Zip Code	
Country	
Email	
Telephone	
Product Information	
Product Name	
Serial Number	
Dealer Name	
Purchase Date	
Purchase Price	

Meet our “G2.1” series