MSB TECHNOLOGY

The Select DAC
User Guide

Check our website for the most recent user guides,
firmware and drivers at:
www.msbtechnology.com

Technical support email is:
Hello@msbtechnology.com

07.23.2024

Select DAC Support Page

All Select DAC support topics, as well as a full PDF version of this user guide, can be found online by visiting the URL listed below or by scanning the following QR Code.

https://msbtechnology.com/dacs/select-support/

Select Series Youtube Playlist

Any Select DAC support videos, as well as other related product videos, can be found online by visiting the URL listed below or by scanning the following QR Code.

www.youtube.com/@msbtechnology

This user guide is modeled after the following firmware revisions:
The Select DAC: 3.1.2.1
The Select Digital Director: 11.11

Setup and Quick Start

The Select DAC interface is simple with few user controls. The input source defaults to auto switching and the display will let you know if you have an active input. Make the necessary connections, power on your system and turn the volume knob up until you hear music.

Step 1.
Unbox the units and place the units into their desired locations in your audio system.

Step 2.
When connecting to the Select Powerbases, you'll have two Hybrid Power cables. Use both cables to connect the power connectors located on each of the Select Powerbases to both of the power connectors located on the back of the Select DAC.
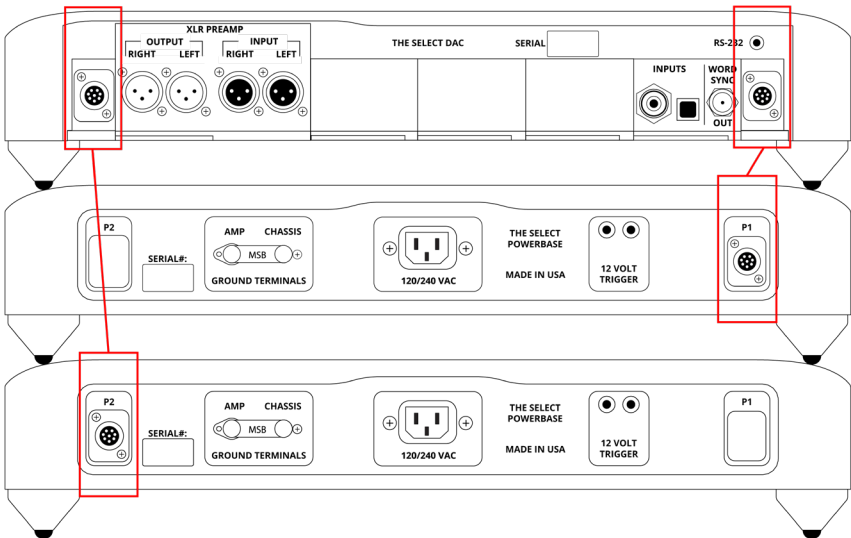

How to Disconnect Hybrid Power Cables
To disconnect a Hybrid Power cable, simply pinch the collar portion of the cable where the arrow symbol is located and pull the collar of the cable directly back from the jackpanel. No twisting or rotating is required to disconnect the cable.

Step 3.
Connect the Analog outputs of your Select DAC to the power amplifier(s) in your audio system.
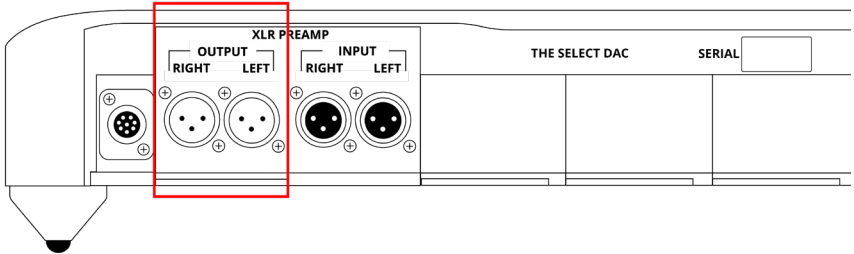

Step 4.
Connect all of your desired digital audio sources to the matching digital inputs on your Select DAC. The DAC will automatically switch to any active digital input source. The Frequency of the incoming digital source will be displayed on the unit when a source has been switched to.
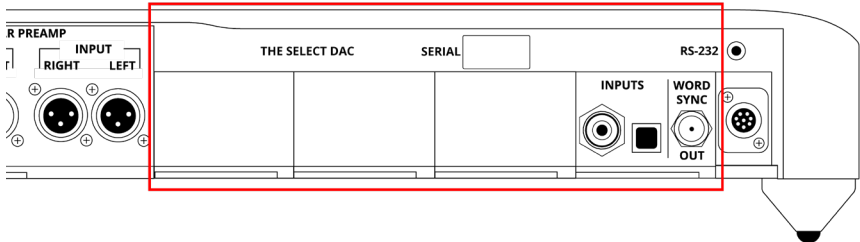
Step 5.
Connect both powerbases with the supplied 3.5mm mini jack cable by plugging it into the 12 volt remote trigger connections. Be sure to check that the primary powerbase 'power control switch' is set to the 'NORMAL' position. The secondary powerbase switch set to 'LINKED'. This allows the primary powerbase to control the secondary one without them having to be turned on/off seperatley.
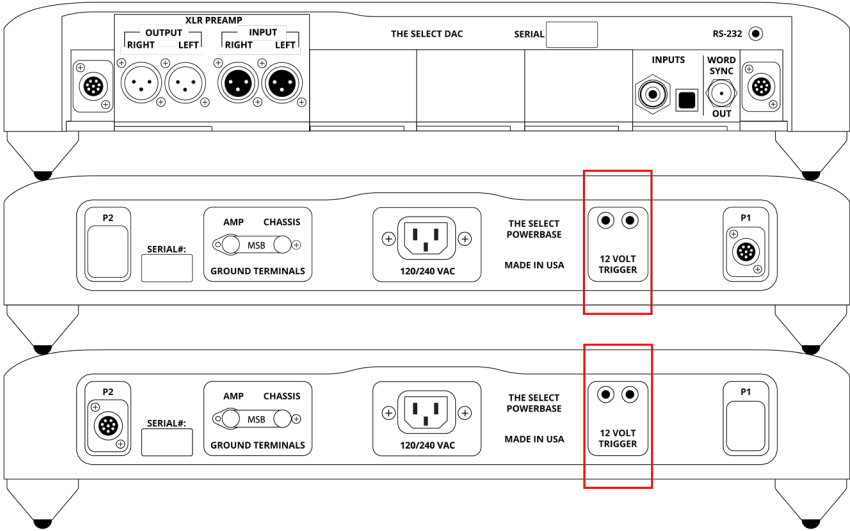
12 Trigger Setup Diagram
The diagram below represents how you would connect the full lineup of MSB products. If you do not have a portion of the product line represented below, disregard that portion of the connections and the system will function the same.
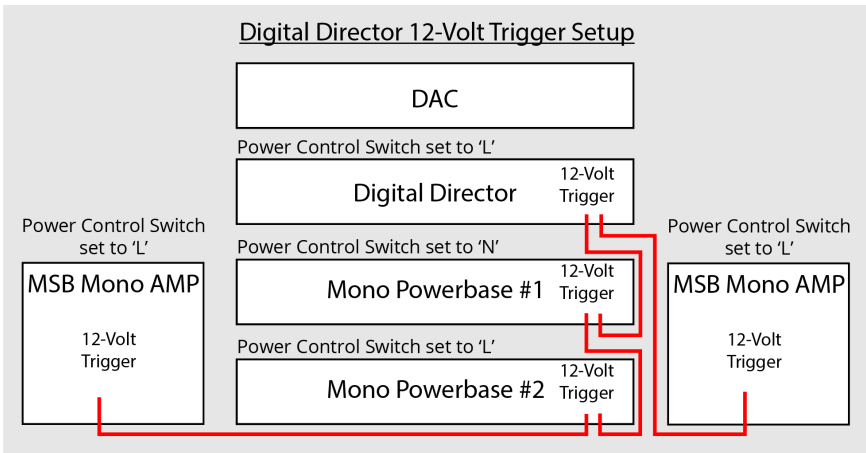
Step 6.
Connect the Select Powerbase using the supplied IEC cable. The unit will automatically switch to the required mains voltage.
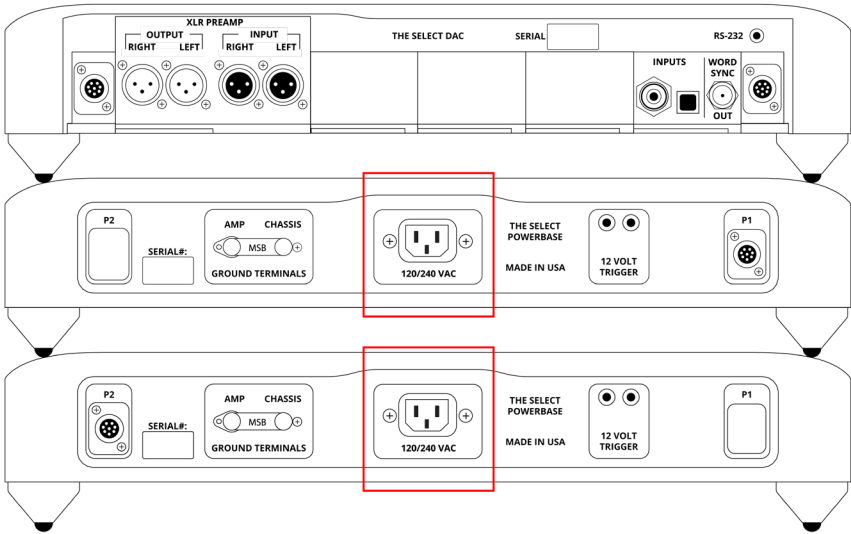
Step 7.
Turn on your DAC using the button on the front of your Primary Select Powerbase, play a digital audio file, and slowly turn up the volume on your Select DAC until you can hear music.

DAC User Interface

Menu Button ≡	The Menu button is single purpose: it will enter the setup menu at the top of the menu tree. If in the setup menu (it doesn't matter where), this button will exit the setup menu and return to the normal audio listening function.
Arrow Buttons ‹ ›	The right and left arrows switch inputs. The 'Auto' mode will be in the list of inputs. If 'Auto' is selected, the unit will automatically switch inputs based on priority (Input slot D being the highest priority and slot A being the lowest priority). When a source with a higher priority becomes active, the unit will automatically switch to the new, higher priority input. Toggling through the inputs manually will defeat any auto switching. When in the setup menu, the arrows move right and left through the menu structure.
Circle Button ○	The circle button is used for muting your DAC audio output. While in the menu, this button can also be used as an enter command.
Volume Knob	This knob adjusts the volume between 0 and 106. It also navigates the menu options.
Display	The display shows the Input, bit-depth, sample rate, and/or volume level.
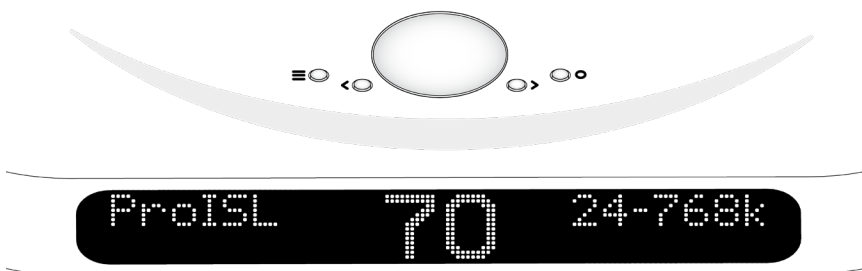
Select Powerbase

The powerbase contains isolation technology. The powerbase detects the input voltage and switches to 120 volt or 240 volt operation. It is also available in a fixed 100 volt configuration. The Select powerbase has over-voltage protection.
Two fuses are provided:
 - 5A 250V SLO BLO - 5 mm x 20 mm miniature fuse (This is the main fuse).
 - 100mA 250V SLO BLO - 5 mm x 20 mm miniature fuse
(This is for the standby supply only).

Select Powerbase User Interface

There is one button on the front of the powerbase— as well as two control features just under the front of the powerbase, on the bottom.

LED indications	**White** - Power On **Red** - Power off **White/Red** - Unit is in "Normal" mode, but the 12v trigger has turned it off. **Flashing Red** - The unit is over voltaged or has over heated and has gone into protection. (Once the problem has been resolved, be sure to cycle the unit's power.)
Display brightness	This is a spinning wheel to control the brightness for the power indicator light.
Power control	**Normal** - This sets the powerbase as the 12 volt trigger master. **Linked** - This sets the powerbase as the 12 volt trigger slave. The 'Normal' powerbase will control this unit.

Front of Unit

LED Indicator

Power Button

IR Sensor

Power Control

Normal   Linked

Display Brightness

Darker   Brighter

9
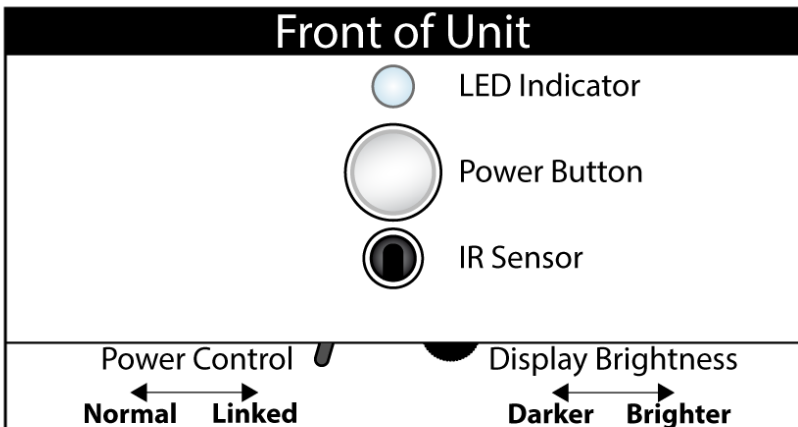
The MSB Remote

1	Power On/Off	Powerbase on and off. When the powerbase is linked to an amplifier or MSB product via the 12 volt trigger system, this button will turn off the entire system.

2	Indicator LED	**While in use:**
		    White - Command Sent
		    Red and White - Command Sent
		    and Low Battery
		    Red Flashing - Needs Charging
		While charging:
		    Red - Charging
		    White - Fully Charged

3	Input	Toggles directly through DAC inputs
4	Phase Invert	Toggles phase invert (Ø - on display)
5	Video Mode	Toggles video mode ("Video" - on display)
6	Display Mode	Toggles between the three display modes.
7	Volume/Scroll	The center scroll wheel controls DAC volume and scrolls when in the menu.
8	Mute/Select	DAC mute and select when in the menu.
9	Backward	Skip backward *(Renderer and MSB Transport only)*
10	Play/Pause	Play and pause *(Renderer and MSB Transport only)*
11	Forward	Skip forward *(Renderer and MSB Transport only)*

12	DAC Menu	Enter DAC menu
		While in menu:
		    Up - Volume wheel up
		    Down - Volume wheel down
		    Enter - Mute (Center button)
		    Return - DAC menu button

13	Stop	Stop media *(Renderer and MSB Transport only)*
14	Repeat	Track or playlist repeat *(Renderer and MSB Transport only)*
15	Charging Port	Micro-USB to charge the remote battery

LED Indicator (2)
Power On/Off (1)

Phase Invert (4)

Volume/ Scroll (7)

Backward (9)

DAC Menu (12)

(3) Input
(5) Video Mode
(6) Display Mode

(8) Mute/Select

(11) Forward
(10) Pause/Play
(14) Repeat
(13) Stop

MSB TECHNOLOGY

(15) Charging Port
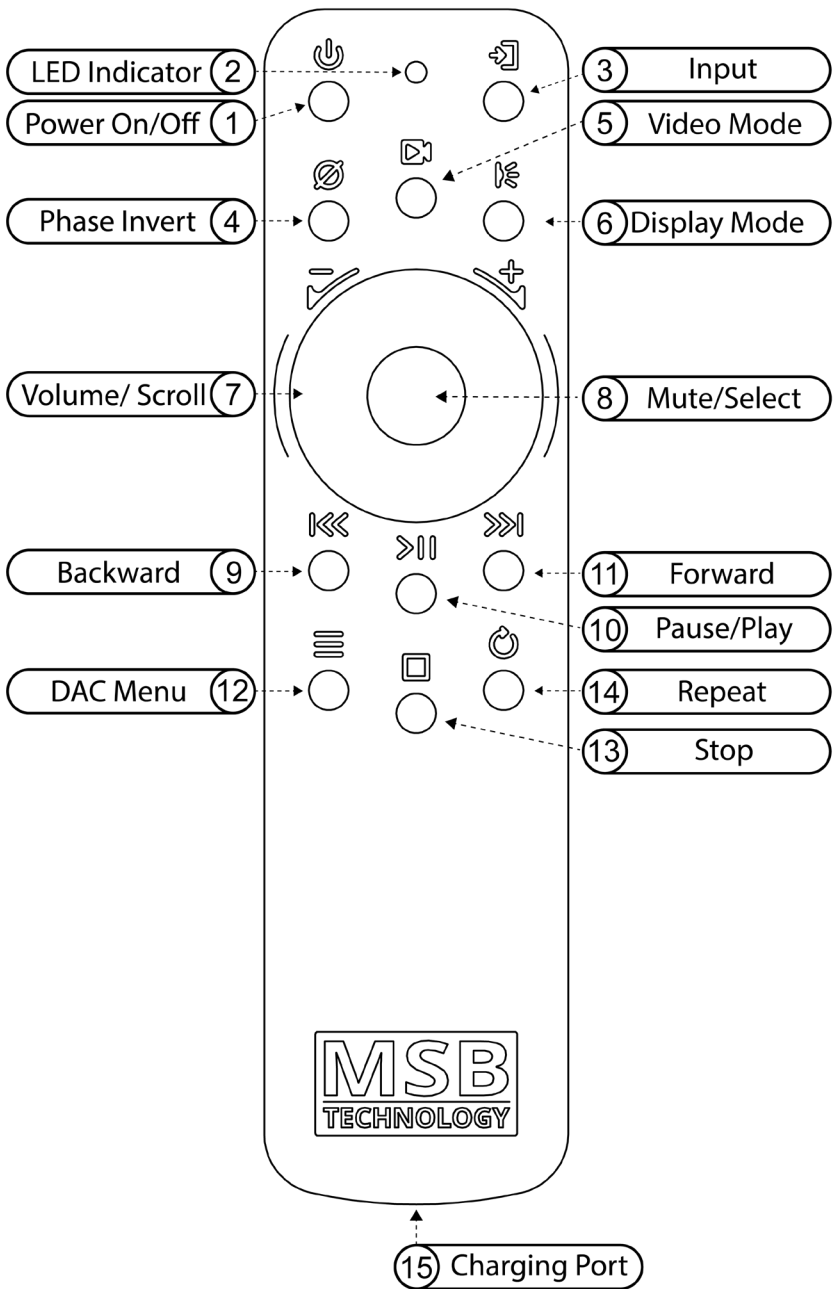
Saving Menu and Startup Settings

When changing settings in the menu, use the enter button in the center of your volume wheel on the remote or the right arrow on the Digital Director to confirm settings in the menu. In oder to save the changes you have made in the menu, use the "menu button" to exit the menu completely.

The DAC will not save any of your settings until you exit the menu.

Certain buttons on your remote will change settings on your system without navigating the menu, such as: Phase Invert, Display Modes, and Video Mode. However, these settings reset every time the system is reset or powered off. If you would like these settings to persist through resets or power offs, you simply have to choose the action button setting that you wish to make the default. Then, enter and exit the menu by double clicking the Menu button on your remote or Digital Director.

If at any point the system seems to be improperly setup or you want to start fresh with your settings and functions, there is a "Reset" option near the end of the menu. Simply select this and confirm "YES" before leaving the menu.

Phase Invert

The Phase Invert button is located on the remote to allow the user an easy way to invert the audio phase. This is a situational feature that is not always needed, but it can be used to fix certain recording or system setup requirements.

Video Mode

The Video Mode button is located on the remote to reduce signal latency and compensate for lip-sync delays when using the DAC for video playback. This should only be used for video playback as it increases unwanted jitter in the system.

The Select DAC Menu

Display Brightness
Display Brightness

1 - 10 (Default 8)
Brightness of display

Display
Display on/off

On (Default)
Display always on

Auto Off
Display is off, turns on momentarily when information changes

Note: Setting your display to "off" helps reduce the chances of burn-in on your display. This can also be done with a button on the remote.

DSD Mode
Display on/off

Optomized (Default)
DSD with MSB Optimized algorithm

Native DSD
Native DSD

Startup Volume
Startup volume

0 - 100 (Default 70)
Set startup volume from 0 - 100 or disabled

Off
Volume control disabled

Note: If you choose to use the DAC with an external preamp, we recommend turning the volume control off. To do this, turn the knob past 100 to "off". If the volume is set to "off" the display setting above will also default to off since volume is no longer being used.

Continued...

13

Input Switching
Input switching

Manual with Smart
Manual switching between active and previously active inputs

Auto with Smart (Default)
Manual and auto switching between active inputs

Auto with All Inputs
Manual and auto switching between all installed inputs

Note: Auto switching only works if you have not manually selected a prior input. To go back to auto again simply switch inputs until the arrow in front of the selection dissapears from the display.

Digital Director
Digital Director audio filter

Note: Option only shown when a director is installed in audio system

Passthrough
Audio filtering is off.

Filter (Default)
Audio filtering is on. A "+" will appear on the display.

Note: The Digital Director audio filter must be set to "Passthrough" when updating DAC firmware.

Restore DAC Settings
Factory Reset

Renderer Remote
Remote controls renderer audio playback

Note: Option only shown when renderer module installed in DAC or DD

On (Default)
Playback buttons on remote will control audio playback in roon

Off
Playback buttons on remote will not function

Continued...

14

Analog
Analog Input

Off (Default)
Analog input disconnected

On - Volume Controlled
Analog input on and DAC controls volume level

On - Volume Bypassed
Analog input on and the DAC does not control volume level

SN:DS######
DAC serial number

DAC Software
DAC firmware #

Director Software
Director firmware #

Note: Option only shown when a director is installed in audio system

Input A
DAC firmware #

Input B
DAC firmware #

Input C
DAC firmware #

Input D
DAC firmware #

Output
Output Module

About the Input Module Slots

The Digital Director has four input module slots. They are labeled A through D. Input modules can be placed in any position. Each module is completely self-contained. It is recognized by the Digital Director and identified on the display. When the module is not in use, it is disabled.
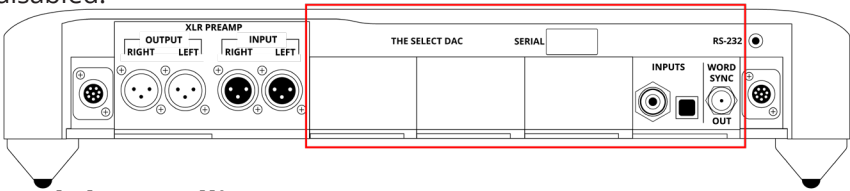
Module Handling

It is important that you refrain from touching the circuit board or rear connector of any input module when removing or installing any input modules in your Digital Director. You should only handle it by the metal case of the module, or the front edge of the module where the cam arm is located. **Improper handling of your modules can result in static shock and damage to the module and/or DAC.**
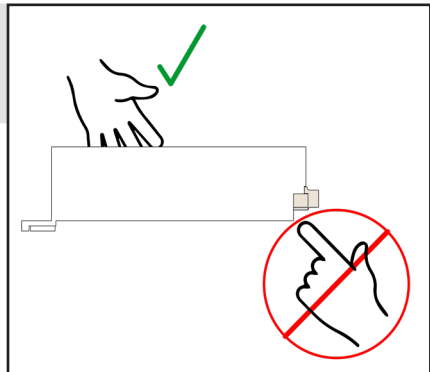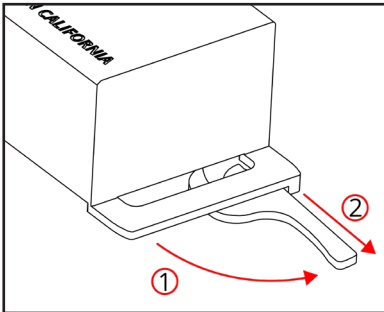
Removing and Installing Modules

Removal and installation of modules is a tool-free process that is easily performed at the back of the unit. Under the lower lip of each module is a lever. Simply pull the lever out and away until it is perpendicular with the back of the unit. Then, gently, but firmly pull the module and lever until the module releases. Slide it out of the unit. Refer to the "Module Handling" portion of your manual before attempting.

Available Input Modules

If the digital inputs in the Digital Director do not fulfill your full digital input requirements, a list of the currently available modules and their intended uses are listed below. A full digital list of these inputs, as well as a comprehensive list of pros and cons for each input format, can be found online by scanning the following QR Code or by visiting the URL listed below.

www.msbtechnology.com/dacs/digital-inputs/

Pro ISL	MSB proprietary interface for use with MSB sources. This module provides one input.
Renderer	A renderer interface for use on a home network or server. (See Renderer manual for operation and setup details.)
MQA USB	A single USB interface for playback via a computer-based source. (See USB manual for operation and setup details.)
Optical/Coaxial S/PDIF	A Toslink and Coaxial digital input with a word-sync output.
XLR S/PDIF	A single XLR digital input with a word sync output.
ProI^{2}S	MSB's proprietary interface for use with classic MSB transports. This module provides two inputs.

Burn-In

The feedback we receive leads us to recommend at least 100 hours of burn-in on this product. Customers generally report improvement in up to one month.

Updating Firmware

The following firmware instructions are for updating DAC and Digital Director firmware. If you do not have a Digital Director installed in your system, then ignore any Digital Director instructions. The firmware files are .WAV audio files.

Updating DAC Firmware - Before Digital Director Install

To start, if you have not installed your digital director in your system, first begin by updating the DAC firmware. This is important; your DAC will not recognize the Digital Director and the firmware updates will not work. Your Discrete DAC firmware must be updated to 31.21 or later. Please check your DAC firmware before installing your Digital Director. This can be done by scrolling through your DAC's menu until you see the "Code" or "DAC Software" screen where the currently installed revision number will be displayed.

Begin by downloading both the Digital Director Firmware and the DAC firmware. Add these files to your bit perfect playback software. Please note, these must be played by a bit perfect source. If the update fails, it is not being played bit perfect. These updates include two upgrades within the same file. The file is several minutes long. Please do not interrupt the process and let the file finish to the end. When you play the file, you will hear instructions and two upgrade tones. Following each tone, you will either hear silence for about 30 seconds (this varies) or you will hear the message 'upgrade failed'. If all the upgrades fail, it is because you did not play the file bit-perfect. You may have computer upsampling on or digital volume control somewhere in your playback system. The screen on the DAC will confirm when the upgrade is happening. Contact MSB if you need help.

After the DAC firmware is updated, you can now install your Digital Director. Please see our other video on Digital Director Setup for more specific instructions.

Updating Firmware with a Digital Director

For any updates after the initial setup, you will need to follow this order for updating.

Power on the DAC and the director. Always begin by updating the DAC firmware first. The Firmware file will not be able to update the DAC while Digital Director processing is on. Enter the menu, scroll to the "Director" screen, then select "passthrough mode" for the Digital Director. This will allow the firmware update to reach the DAC bit perfect.

18

Updating Firmware with a Digital Director (cont.)
Now, play the DAC firmware update. After the DAC firmware is installed and complete, you can now play the Digital Director firmware. Finally, go back into the menu and enable the Digital Director filtering again.

After the firmware updates are complete, you can check for a successful connection between the Digital Director and DAC indicated by a small "+" sign on the display. If you do not see this "+" sign, the Digital Director is not performing the improved digital filtering. Please check the menu to see if the filtering is enabled. If it is, please check and confirm the currently installed firmware numbers reflect the new update files.

If you see an error message with "Err" it means there is an issue with the quality of the ProISL connection or toslink control cable. Check your cables and replace them if need be.

If you need further clarification or are encountering issues with your update, please reach out to our technical support team.

https://msbtechnology.com/dacs/select-support/

Bit-Perfect Source Testing
Files can be downloaded from the MSB website to verify bit-perfect playback on any transport. They are .WAV music test files that, when played, will be identified and checked by the Digital Director. It will be reported on the display if they are bit-perfect. If there is a problem with the test, it will play, but the display will not indicate any change. Be sure upsampling is turned off in any transport, as this prevents a file from remaining bit-perfect. This system will allow you to easily test your source, especially computer sources, to see if all your settings are correct. There are files at all sample rates for both 16-bit and 24-bit operation. Detailed instructions can be found online by scanning the following QR Code or by visiting the URL listed below.

https://www.msbtechnology.com/support/bit-perfect-testing/

Select Powerbase - Advanced Setup

The Select Powerbase has a ground shield network that can offer a slight increase in sonic performance by connecting all of your MSB products in a chain and lifting the chassis ground connections.
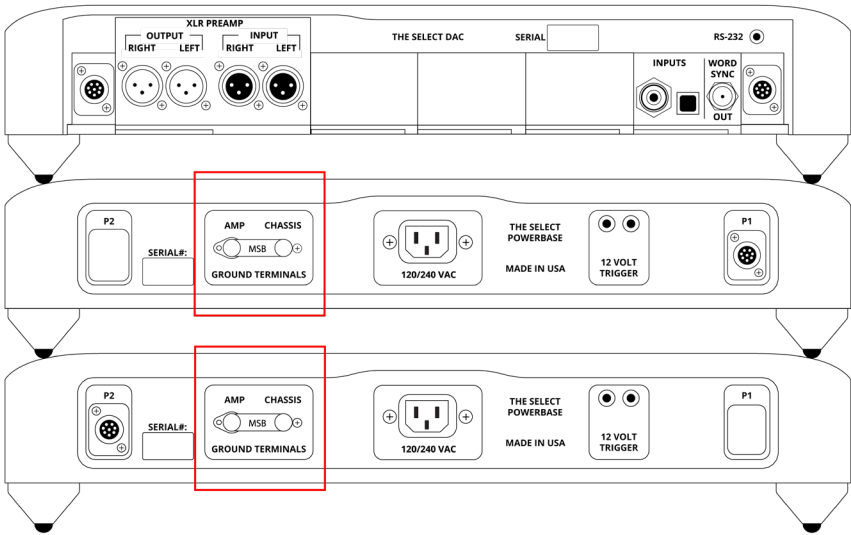
Shielding Ground - Basic Operation

The Basic Operation provides isolation only for the DAC. This gets you half the shielding available. For full shielding, be sure the jumper is in place between the Chassis Ground and Amplifier Ground. This is the shipping configuration.

NEVER OPERATE WITHOUT THE JUMPER OR A GROUND WIRE ATTACHED.

Shielding Ground - Enhanced Operation

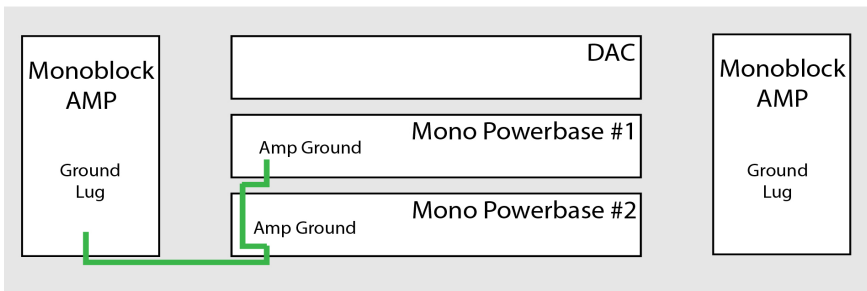The Enhanced Operation provides isolation for both the DAC and the amplifier. This gets you the full isolation available. In this configuration you will lift the Grounding lug jumper on both powerbases and then make a connection between the "Amp Ground" lug on both the powerbases.

It is important that both grounding lug jumpers are disconnected on each of your powerbases to ensure proper ground isolation.
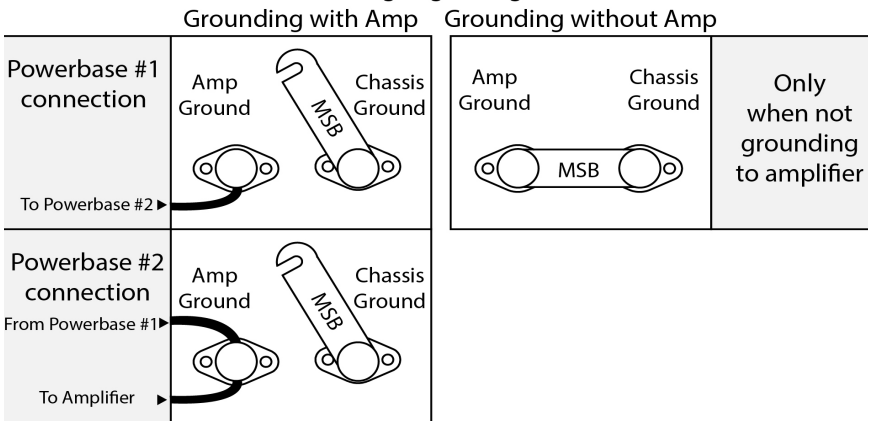
Shielding Ground - Enhanced Operation (cont.)

With the jumpers disconnected, connect the supplied ground wire from the AMPLIFIER GROUND lug of ONE powerbase to the chassis of ONE of your mono-block amplifiers or to your single stereo amplifier. Note this connection is dependent on the amplifier so you will have to look for the best place to attach the wire. Generally the easiest place would be to loosen a screw on the Amplifier Chassis and slip the open Spade lug under the screw head and tighten the screw. The only other place a true ground may be found is on the ground pin of the power connector to the AMP but this will not be easy to connect to.

Enhanced Shielding Ground Operation - Diagram

Grounding Lug Configuration

	Grounding with Amp	Grounding without Amp	
Powerbase #1 connection	Amp Ground MSB Chassis Ground	Amp Ground MSB Chassis Ground	Only when not grounding to amplifier
To Powerbase #2 ▶			
Powerbase #2 connection From Powerbase #1 ▶	Amp Ground MSB Chassis Ground		
To Amplifier ▶			

Powerbase Connection
Attach the ground wire to the "Amp Ground" lug of both powerbases. Lift the jumpers between "Amp Ground" and "Chassis Ground" as shown above

Amp Connection
Attach the ground wire to the Ground Lug on the jack panel of the MSB amp. If there is is no ground lug, attach wire to a chassis screw.
Never connect the ground wire to the negative speaker terminal

The Select DAC Warranty Registration

All MSB Technology products come with a standard 2-year warranty. Details are defined below. We offer an additional 3 years of extended warranty for the original owner (a total of 5 years) if the following warranty registration form is completed within one year of the manufacture date. Instructions can be found online by scanning the following QR Code or by visiting the URL listed below.

www.msbtechnology.com/support/msb_warranty/

The Select DAC Limited Warranty

Warranty includes:

• MSB warranty covers the unit against defects in materials and workmanship for a period of _**2 years**_ from the original manufacture date.

• This warranty covers parts and labor only; it does not cover shipping charges or tax/duty. During the Warranty period, there will normally be no charge for parts or labor.

• During the warranty period, MSB will repair or, at our discretion, replace a faulty product.

• Warranty repairs must be carried out by MSB or our authorized dealer. Please contact your dealer if your unit requires service.

Warranty excludes:

• The Warranty does not cover standard wear and tear.

• The product is misused in any way.

• Any unauthorized modifications or repairs were performed.

• The product is not used in accordance with the Operating Conditions stated below.

• The product is serviced or repaired by someone other than MSB or an authorized dealer.

• The product is operated without a mains earth (or ground) connection.

• The unit is returned inadequately packed.

• MSB reserves the right to apply a service charge if the product returned for warranty repair is found to be operating correctly, or if the product is returned without a returns number (RMA) being issued.

Operating Conditions:

• Ambient temperature range: 32F to 90F, non-condensing.

• The supply voltage must remain within the AC voltage specified on the power base.

• Do not install the unit near heat sources such as radiators, air ducts, power amplifiers, or in direct, strong sunlight. This may cause the product to overheat.

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Technical Support

If you are experiencing any issues with your MSB product, please contact your nearest dealer or try our support page at www.msbtechnology.com/support. Please be sure you have the most current edition of your products' firmware installed. If your issue persists, please feel free to contact MSB directly. Emails are usually responded to in 1-2 business days. **Email:** hello@msbtechnology.com

MSB Return Procedure (RMA)

If a customer, dealer, or distributor has a problem with an MSB product, they should email tech support before sending anything back to the factory. MSB will do their best to respond within 1-2 business days. Should it be clear that a product must be returned, tech support should be informed and all the following relevant information should be provided:

1	Product in question
2	Serial number
3	Exact configuration when symptom is observed, along with a list with the input used, source material, system connections, and amplifier
4	Customer name
5	Customer shipping address
6	Customer phone number and email
7	Special return shipping instructions

MSB will issue an RMA number and create an invoice with all details outlined, except the final price as the product has not yet been seen. This invoice will be emailed so all the above information can be checked and verified by the customer.

The product should be returned with the RMA number present on the box. Work can then begin immediately and the product can be sent back quickly.

Any repair that is difficult and cannot be completed in two weeks will be identified, and the customer will be informed when it is to be expected. Otherwise, the majority of repairs should be shipped back within two weeks if all the required information is present on the invoice.

Link to page:
www.msbtechnology.com/support/repairs/

Select DAC Specifications

Supported Formats (Input dependent)	44.1kHz to 3,072kHz PCM up to 32 bits 1xDSD, 2xDSD, 4xDSD, 8xDSD Supports DSD via DoP on all inputs
Digital Inputs	4x Advanced isolated input module slots
XLR Analog Inputs	100K Ohm Balanced 12Vrms Maximum Isolated when not selected
XLR Analog Outputs	3.57Vrms Maximum (Digital Input) 12Vrms Maximum (Analog Input) 75 Ohm Balanced Galvanically isolated
Volume Control	Purely passive constant impedance analog attenuation 1dB steps
Chassis Dimensions	Width: 17.5 in (444 mm) Depth: 17.5 in (444 mm) Height without feet: 3 in (79 mm) Stack height: 3.625 in (92 mm) Weight: 35.5 lbs (16 kg) Product Feet: M6X1 Thread
Shipping Dimensions	Width: 23 in (585 mm) Depth: 23 in (585 mm) Height: 7 in (178 mm) Weight: 43 lbs (19.5 kg)
Included Accessories	User Manual MSB Remote Micro USB Charging Cable
Warranty	2 years from original manufacture date +3 years with extended warranty registration

Select Powerbase Specifications

AC Voltage	120/240V (Auto switching) Optional 100V fixed configuration
Power Consumption	100 Watts with fully configured Select DAC Less than 2W standby
Chassis Dimensions	Width: 17.5 in (444 mm) Depth: 17.5 in (444 mm) Height without feet: 3 in (79 mm) Stack height: 3.625 in (92 mm) Weight: 42 lbs (18.9 kg)
Shipping Dimensions	Width: 23 in (585 mm) Depth: 23 in (585 mm) Height: 7 in (178 mm) Weight: 49.5 lbs (22.5 kg)
Included Accessories (Per Unit)	Hybrid Power Cable Ground Cable IEC Power Cord 3.5mm Mini Jack (Primary Unit only)
Warranty	2 years from original manufacture date +3 years with extended warranty registration