ISOCHRONE Trinity Universal High Definition Master Clock User Manual

Antelope

User's Manual

Universal High Definiton Master Clock

ISOCHRONE TRINITY

Version 1.3-2709.2021

Contents [hide

BEFORE YOU BEGIN

Congratulations! You are now the proud owner of the latest generation of master clock from the world's favorite clocking company. Based on years of research, Trinity is a brand new design that is the most flexible, best sounding, most stable, and easiest to use master clock available.

Based on Antelope's Oven Controlled Crystal Technology, Trinity has many new features including 3 Independent Audio Generators up to 384kHz, with Varispeed control; 3 Independent SD Generators, simultaneously offering PAL and NTSC; 3 Independent HD Generators, presenting a choice of 16 formats, and the latest revision of Antelope's Acoustically Focused Clocking (AFC) technology – now in its 4th generation and employing 64-bit DSP. So, that's a mind-blowing 9 Independent and Simultaneous Audio/Video Generators, all perfectly in sync.

The triple display shows the frequencies of the audio generators, varispeed values, source information, pull-ups/pull-downs, and useful messages.

Temporarily lost sync from your source? Trinity will seamlessly free-wheel until the signal returns, and then re-lock using the latest Antelope `Gentle Lock Technology`.

Trinity also maintains features from the OCX-V, such as the Antelope Jitter Management Module, Black Burst Generator, Atomic Input for connection to the 10M Rubidium Atomic Clock, and full Audio and Video Gearboxing with simultaneous 0.1% and 4% pull-ups/pulldowns.

We encourage you to take some time to read through this manual and familiarize yourself with everything that the Trinity has to offer.

Above all, we hope you enjoy your new Antelope device as much as we enjoyed designing it.

Should you ever find yourself struggling, do not hesitate to contact our **Customer Support** team over phone, live

chat and our ticket system. You can also visit **Antelope Audio on YouTube** and explore our video tutorials or join the **Antelope Audio Users** Facebook group and ask for advice. The **Knowledge Base** is also a good source of information.
Best wishes,
Team Antelope

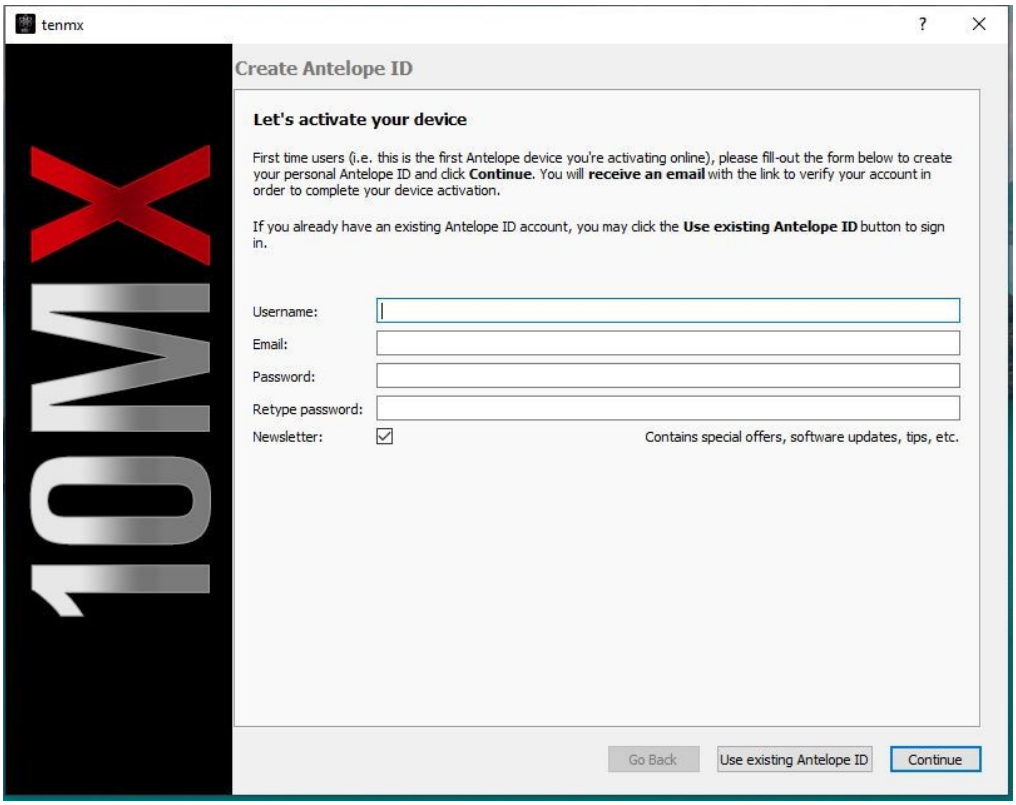
MANDATORY ONLINE ACTIVATION

Please note that the mandatory device activation procedure requires an active Internet connection on your computer. Activating an Antelope device offline is not possible.

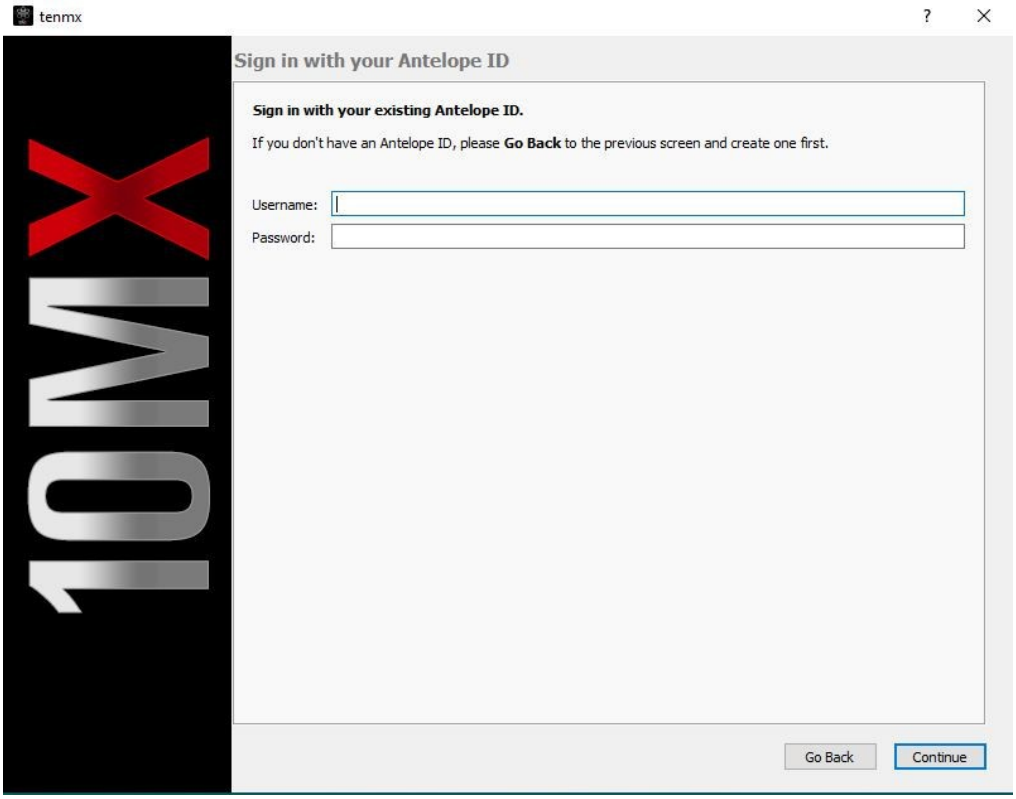
Step 1: Getting Started
Connect the Isochrone Trinity to a power outlet using an AC power cable. Plug in the device to your computer using a USB cable.

Step 2: Install the Isochrone Trinity Launcher/Control Panel (macOS & Win)
Download and install the Isochrone Trinity Launcher/Control Panel application for Windows or macOS from here (**https://support.antelopeaudio.com/support/solutions/articles/42000017495-trinitydownload-section**)
Open and install the Launcher/Control Panel by following the steps in the installation wizard.

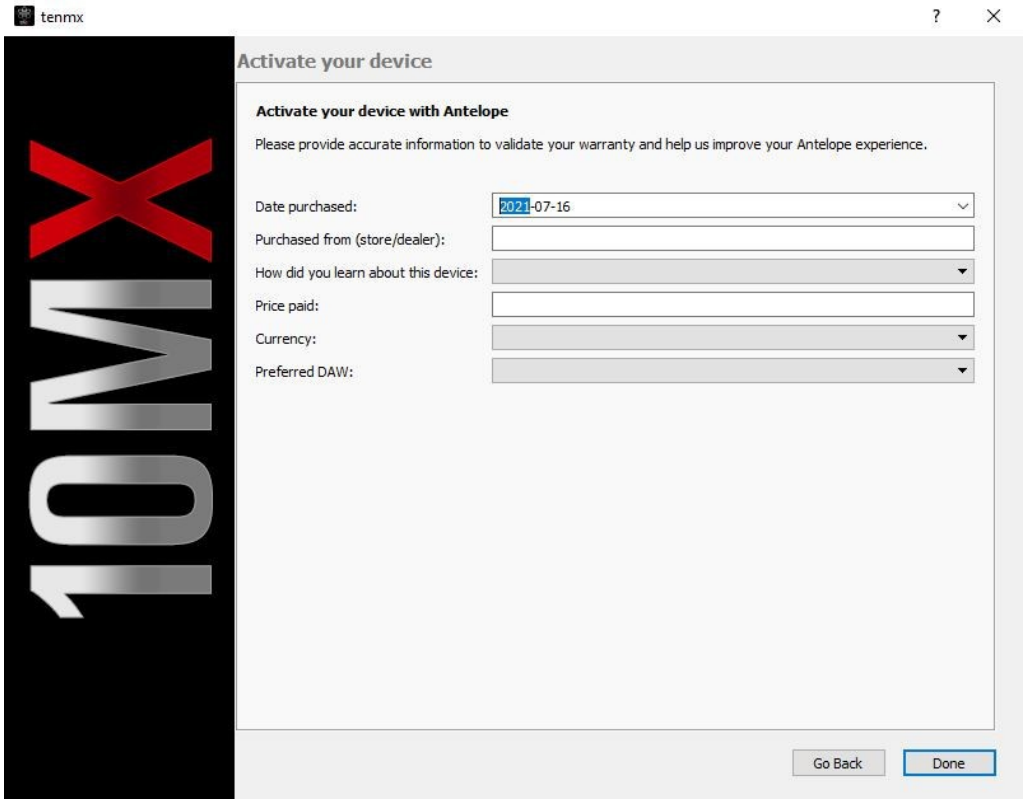
Step 3: Activate your Isochrone Trinity
Once the installation is completed, start the application. You will be prompted to create an Antelope ID directly from the application. Fill out the necessary information and click Continue. If you already have an active Antelope ID, click on Use existing Antelope ID.
Bear in mind, that your Antelope ID is different and has no relation to your user profile on **antelopeaudio.com**.



Sign in using your credentials. If you have just created your Antelope ID, do not forget to activate it using the link in the e-mail you have just received.



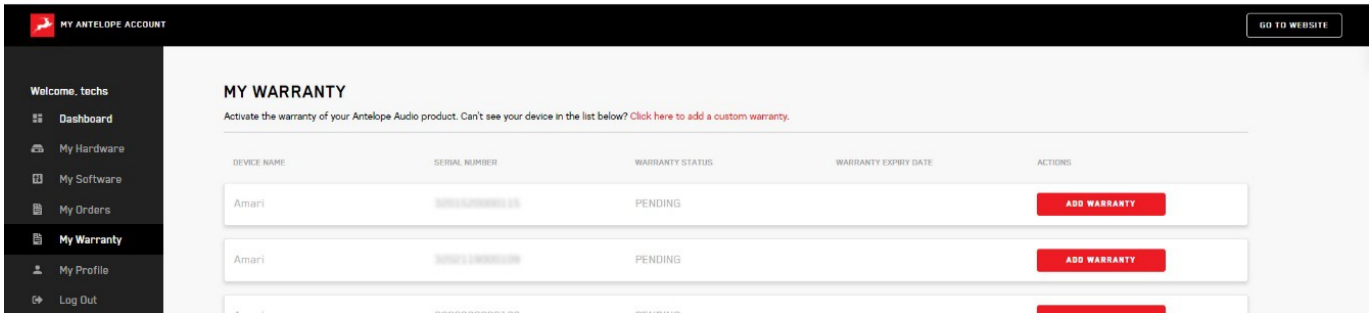
After successfully signing in your Antelope ID, you will be asked to fill in additional information concerning your recent purchase.



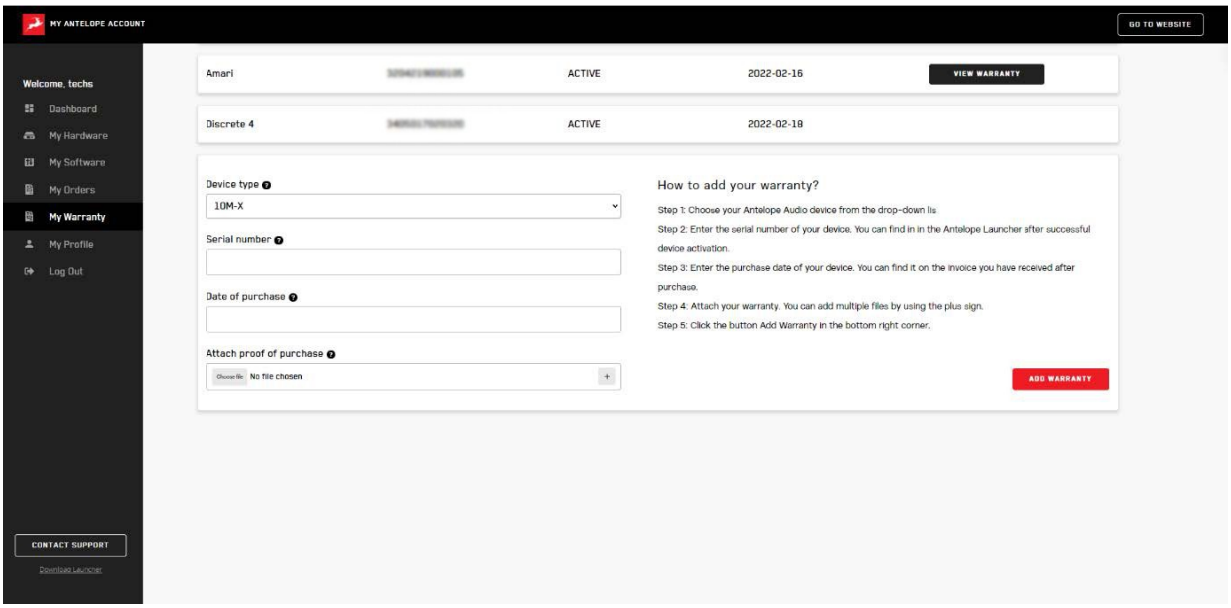
Once you have filled in the required information, click Done. You can now begin using your Isochrone Trinity.

ACTIVATE YOUR PRODUCT WARRANTY

You will be required to activate your product warranty from the My Warranty tab in My Antelope Account. To activate your product, click on the text that sends you to the page where you can add a custom warranty.



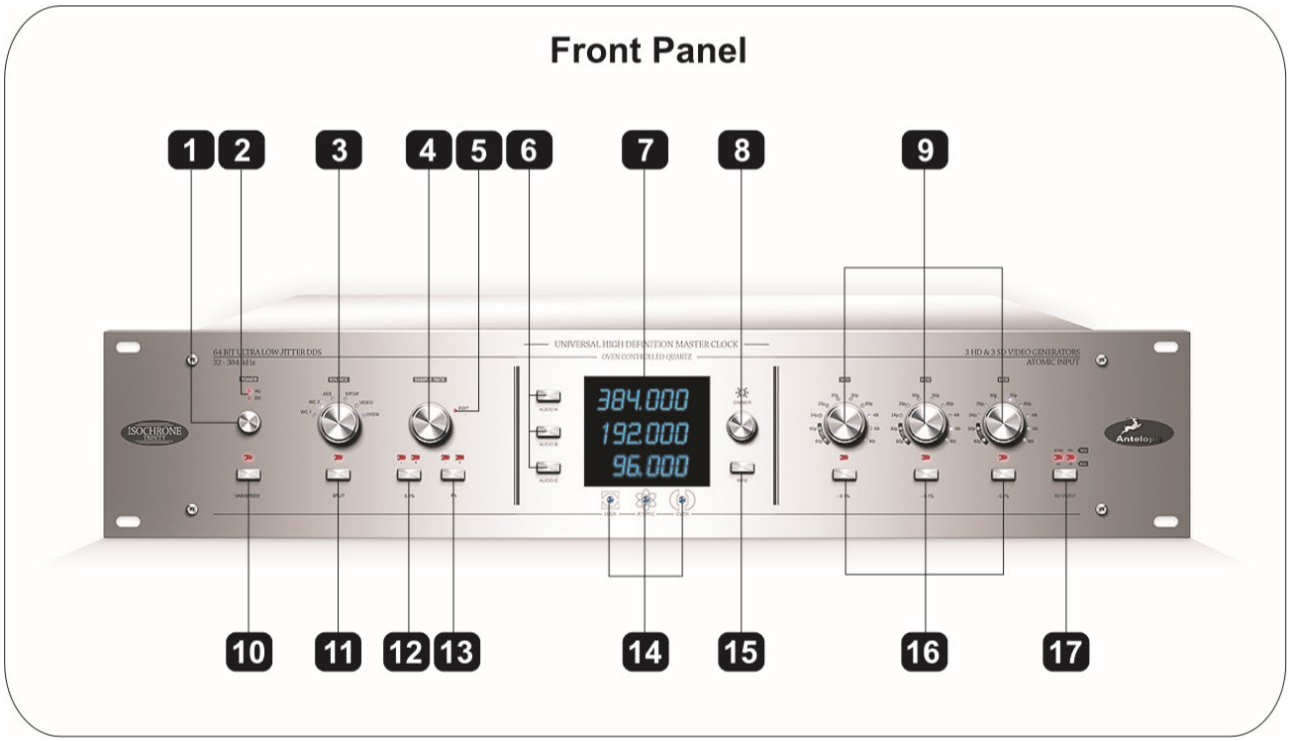
On the following screen you will be asked to enter information about your new device and to attach your warranty. Select your device from the list under Device type and add a serial number. You can find it on the back side of your device's rack ears. After entering the serial number enter the date of purchase.
The last step is to attach your warranty. You can add multiple files (up to five) by using the plus sign. Acceptable formats are .pdf, .jpg, .png, .jpeg, .heif, and the size limit is 7 MB per file. Once you have completed the steps click Add Warranty.

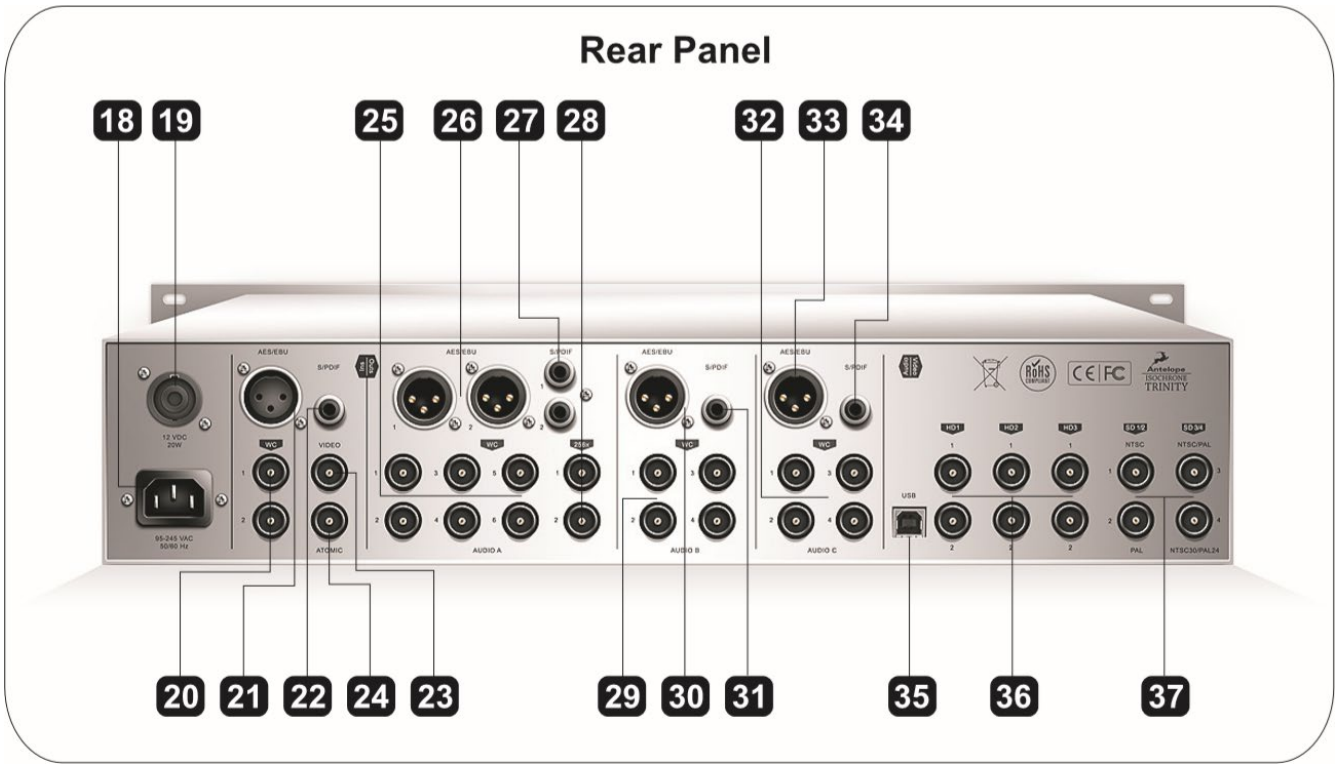


After successfully completing the process, you can click on View Warranty to see if your file has been uploaded correctly.

SETTING UP

Please look at the following images while reading the instructions and explanations below.





Connect Trinity to an AC or DC power source via rear panel connectors (18) or (19).
Power on from the front panel power button (1). To use the PC/Mac Control Panel application (Windows 10/macOS 10.11-10.14), connect Trinity to your computer via USB Type-B (35). Download and install the application **from here**.
To use Trinity's internal clock, set SOURCE knob (3) to OVEN, and press to confirm. If slaving to an external source, connect the master sync device to an input on the rear panel, and select the corresponding position with the SOURCE knob (3). Press to confirm.
Set sample rate: Press AUDIO A button (6) to allow the sample rate to be changed on Audio channel A. Select desired sample rate with the SAMPLE RATE knob (4) and press to confirm.

Notes:

- When using internal OVEN, there is a warmup period while the unit is first powered on. Pressing the INFO button just after powering on will show the oven-controlled crystal oscillator heating up. The correct operating temperature is reached when the OVEN light remains lit.
- When making initial connections, it is advised to do so with the studio volume turned down. Some devices may emit an unpleasant sound until properly configured to accept incoming clock signal.
- The Control Panel application is not supported under macOS 10.15 Catalina.

INSTALLATION PRECAUTIONS

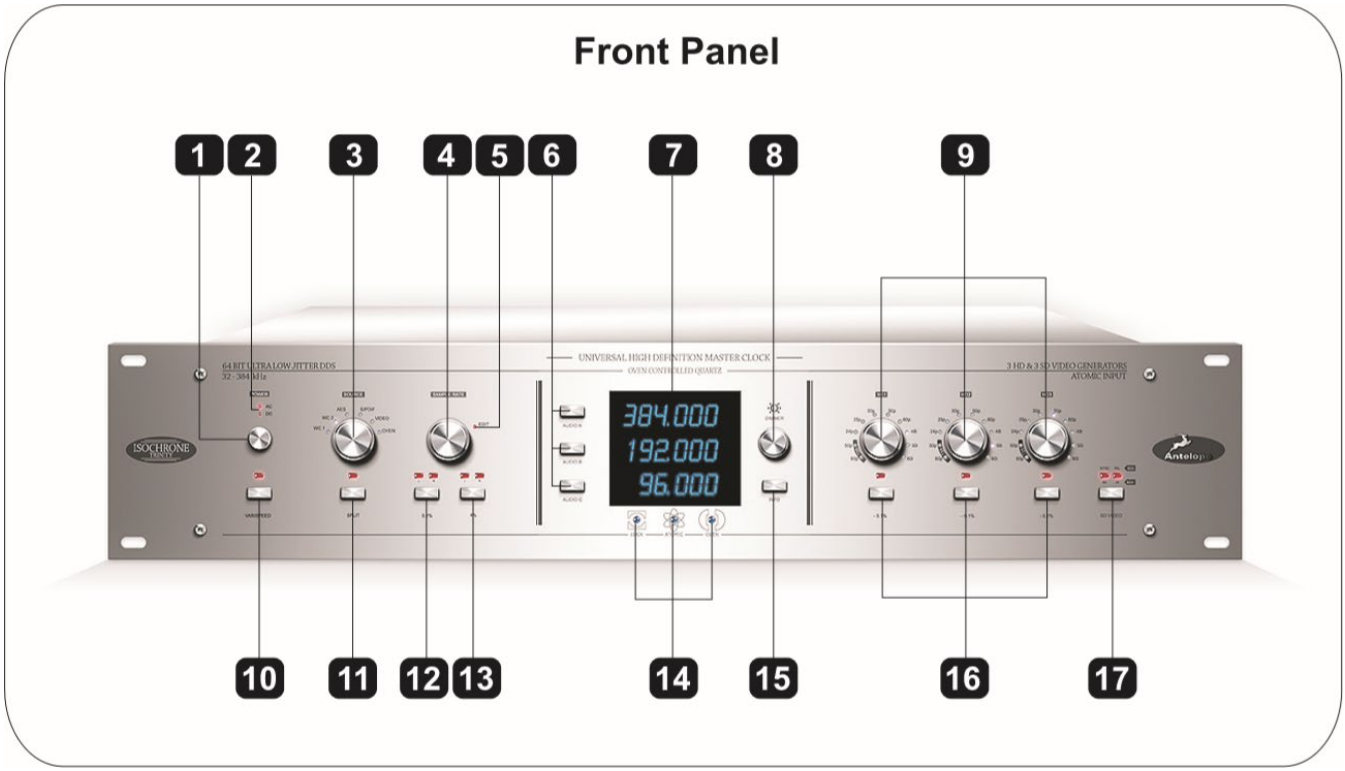
1. Before placing the device into its operating location, consider the following:
   • To minimize frequency instabilities, the device should not be placed near equipment generating strong magnetic fields, such as generators, transformers, etc.
   • To prevent possible interference, observe a minimum distance of 5cm (2in) between the cables of this device and any non-coaxial audio cables.
   • It's okay to use the device outside of a rack, as long as the above conditions are met. There is no requirement for the device to be leveled horizontally.
2. If the DC power connection (19) is to be used, make sure the power cable is wired properly, as reversed

polarity may damage the device. Refer to the table below for information on how to make the connection.

If the mark on the Speakon NL4FX plug is…	Connect to the following mark on the power supply unit circuit board / terminal:
1+	+12 V
2-	Ground
1 –	Earth (optional, use it if available on the power supply unit)

3. Connect the AC Power Connection (18) and/or the DC Power Connection (19) to the respective power outlet(s). When connecting devices, do so with the studio volume turned down as some devices may emit an unpleasant sound until properly configured to accept incoming clock signal.

FRONT PANEL EXPLAINED



1. **Power on/off button**
2. **AC/DC power indicators**
   Indicators to show whether AC or DC power is in use.
3. **SOURCE Encoder Knob**
   The source knob selects the input from which Trinity receives a timing reference. Select OVEN to use the internal oven controlled crystal oscillator, or if Trinity is connected to a 10M/MX Atomic Clock via the rear panel Atomic Input. The other five source knob positions correspond to the remaining physical inputs on the back panel input section.
   If a SOURCE light flashes, the SOURCE is in a state of edit, and needs to be confirmed by pressing the SOURCE button. If not confirmed within 10 seconds, SOURCE will revert to the previously saved position.
4. **SAMPLE RATE Encoder Knob**

The sample rate encoder is used to select standard frequencies, DA mode, adjust varispeed, and confirm settings. It is used in conjunction with the AUDIO buttons (6), VARISPEED button, and pull-up/pull-down buttons.

DA Mode

In DA mode, Trinity takes the incoming audio clock selected by the SOURCE knob (3) and puts it through the Jitter Management Module to regenerate a clean, de-jittered signal that is distributed to the outputs on any channel that is in DA mode. In DA mode, the outgoing sample rate will always match the incoming reference.

DA mode will not work if the SOURCE knob (3) is set to VIDEO or OVEN, as there is no audio reference to distribute. In this case the display will scroll the message “Cannot DA chosen source”. Note that in DA mode, Trinity can work with non-standard sample rates, and any sample rate in the range 27.340 kHz – 449.433 kHz is acceptable.

To select DA mode for any channel, press the desired AUDIO button(s) (6), turn the SAMPLE RATE knob (4) fully clockwise, and press to confirm. If not confirmed within a few seconds, the audio channel(s) will revert to their last saved settings.

Note: Trinity will exit Edit mode without saving if there is no user input for 10seconds.

5. **EDIT Indicator**

   Flashes when in Edit mode, but not for HD mode.

6. **AUDIO Channel Edit Select Buttons**

   These three buttons are used to select the audio channels for editing and can be edited individually or all at the same time. The latter results in a single channel master clock utilizing all rear panel outputs. If pressed once while in standard mode, the current state of the channel(s) will be visible, including varispeed and pull-ups/pull-downs.

   Note: In Edit mode, pull ups/downs are not only shown with lights, but are also shown with dashes after the frequency on the main display. So, if 0.1% & 4% pull ups are selected, the middle and top line of the last digit on the display are lit. If 0.1% & 4% pull downs are selected, the middle and bottom line of the last digit in the display are lit.

7. **Triple Display**

   Displays information for everything except HD.

8. **DIMMER Knob**

   Adjusts the brightness of the triple display.

9. **HD Select Encoders**

   Use these knobs to select HD rates for the three HD channels. Press to confirm a change. HD1, HD2, HD3 signals are sent to the corresponding rear panel output BNC connections.

10. **VARISPEED Select Button**

    Press this button when editing an audio channel allowing varispeed adjustment via the SAMPLE RATE encoder knob (4). The VARISPEED button toggles between adjustment options of cents and percent, where a ‘c’ on the display signifies cents mode, and a ‘p’ on the display signifies percent mode. Press SAMPLE RATE to confirm varispeed setting.

11. **SPLIT Mode**

    Once any channel has been saved with a varispeed setting, the varispeed indicator will always light when NOT in edit mode to show that one or more channels is using varispeed.

    The reasoning behind this function is to avoid TRINITY mislocking to an input frequency that is non-standard, but very close to a standard gear boxing frequency. See standard gear boxing frequencies in Appendix A. If you

know that your input frequency is a nonstandard, non-gearbox frequency, then use SPLIT mode to allow DA of this non-standard input.

For this function to have any effect, at least one audio channel must be in DA mode. If no audio channels are in DA mode, and SPLIT is activated, the input will be ignored. When SPLIT is activated, the audio channel(s) that is/are set to DA will lock to the SOURCE signal. All channels not in DA mode will continue to generate the frequency displayed for the respective channel(s) and will be running on internal OVEN or external Atomic clock.

Note: The SPLIT button has no function when SOURCE is set to VIDEO or OVEN.

12. **USA pull-up/pull-down (+/-0.1%)**
13. **European pull-up/pull-down (+/-4%)**
14. **Status LEDs**

    • LOCK – When lit, indicates that Trinity is locked to a valid incoming reference. The light will flash if there is no input, or a frequency present at the input is not one of the recognized valid gearboxing frequencies as in Appendix A.

    • ATOMIC – Will be lit if SOURCE is set to OVEN, and a valid signal is present at the rear panel Atomic input.

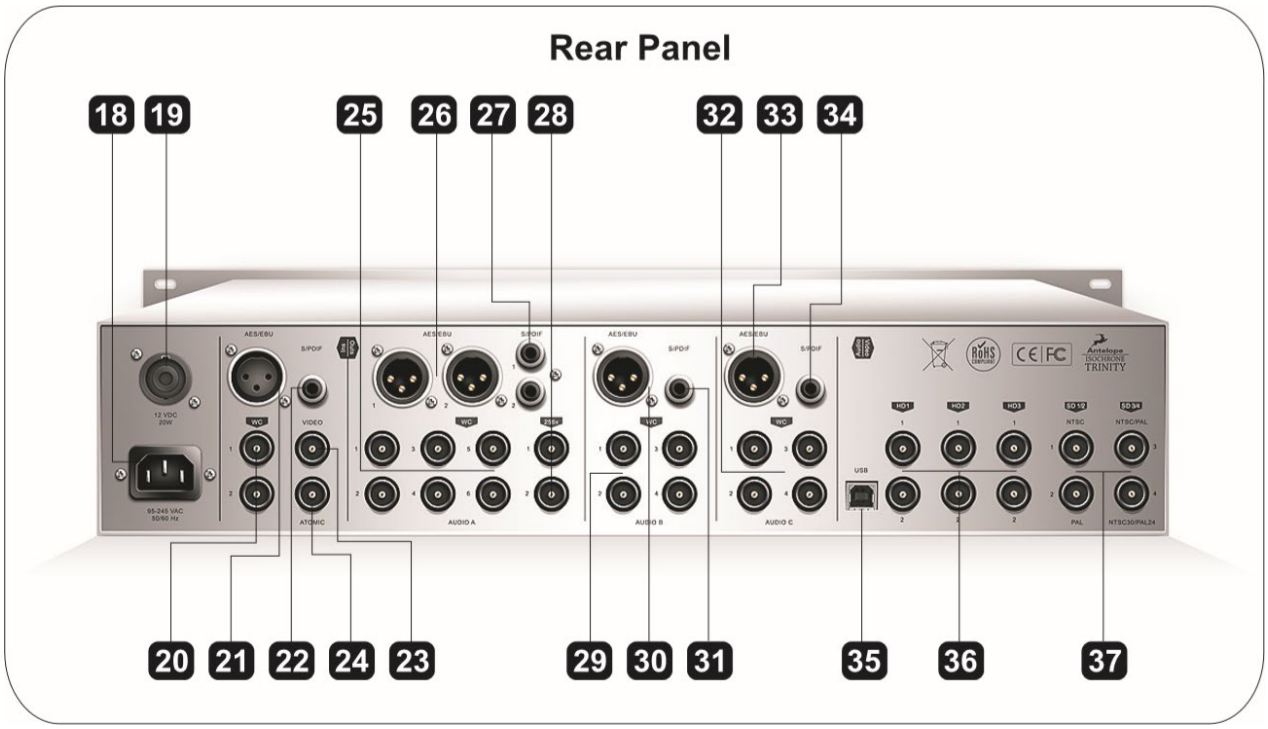
    • OVEN – Flashes when Trinity is first turned on and remains glowing when the oven reaches its operating temperature.
15. **INFO Button**

    Press to display further information on the SOURCE. Press again or wait ten seconds to return.
16. **HD Pull Down Select Buttons**

    Toggles -0.1% pull down On or Off for each HD channel. Press HD button for the given channel(s) to confirm edit(s).
17. **SD Video Select Button**

    Use this button to select the format that will be present at rear panel outputs SD 3 & 4. This is an instant change which does not require confirmation.

REAR PANEL EXPLAINED



18. AC Power Socket
The IES AC Connection supports an input range of 90-250 VAC. This enables the device to automatically accommodate mains voltages in any country.
19. DC Power Connection
Speakon NL4FX socket for 12VDC Watt power supply.
20. Word Clock Inputs 1 & 2
BNC connections used to accept Word Clock reference.
21. AES/EBU Input
The AES/EBU input is a female XLR connection that accepts AES/EBU clock or audio.
22. S/PDIF Input
The S/PDIF input is an RCA connection that accepts S/PDIF clock or audio.
23. Video Input
The video input is a BNC connection that accepts video reference. See Appendix B for supported formats. 24. Atomic Input The BNC Atomic Input connection allows Trinity to receive a 10MHz reference from an atomic clock device, such as the Antelope 10M. When locked to Atomic, the internal oven on Trinity is automatically bypassed, the front panel ATOMIC LED lights, and the atomic device becomes the primary timing reference. This effectively provides 8 day sample accuracy, which means even more detailed sound and greater stability.
Note: The user functionality of Trinity is unaffected by the presence of an Atomic device.
25. Audio Channel A – Word Clock Outputs 1 to 6
The sample rate on these outputs always matches the sample rate indicated by the frequency display for channel A on the front panel.
26. Audio Channel A – AES/EBU Outputs 1 & 2 (male)
These two outputs provide AES/EBU clock at the sample rate shown on the front panel frequency display for Channel A.
27. Audio Channel A – S/PDIF Outputs 1 & 2
These two outputs provide S/PDIF clock at the sample rate shown on the front panel frequency display for Channel A.
28. Audio Channel A – 256x Word Clock Outputs 1 & 2
These two outputs provide 256x Word Clock, a protocol used in some older DigiDesign components.
29. Audio Channel B – Word Clock Outputs 1 to 4
The sample rate on these outputs always matches the sample rate indicated by the frequency display for Channel B on the front panel.
30. Audio Channel B – AES/EBU Output (male)
This output provides AES/EBU clock at the sample rate shown on the front panel frequency display for Channel B.
31. Audio Channel B – S/PDIF Output
This output provides S/PDIF clock at the sample rate shown on the front panel frequency display for Channel B.
32. Audio Channel C – Word Clock Outputs 1 to 4
The sample rate on these outputs always matches the sample rate indicated by the frequency display for Channel C on the front panel.
33. Audio Channel C – AES/EBU Output (male)
This output provides AES/EBU clock at the sample rate shown on the front panel frequency display for Channel C.
34. Audio Channel C – S/PDIF Output
This output provides S/PDIF clock at the sample rate shown on the front panel frequency display for Channel C.
35. USB Type-B
Allows connection to PC and Mac computers for using the Control Panel application.
36. HD Video Outputs
BNC connections that provide HD video outputs corresponding to front panel HD1, HD2, HD3.
37. SD Video Outputs
BNC connections which provide SD video outputs as follows:

- SD 1 NTSC with black burst.
- SD2 PAL with black burst.
- SD3 NTSC 30 or PAL 24 composite sync. Toggled via front panel button (17).
- SD4 PAL 47.95 or PAL 48 composite sync. Toggled via front panel button (17).

GEARBOXING MODE

In Gearboxing Mode, Trinity always generates an output clock at the sample rate set by the SAMPLE RATE knob for each channel, regardless of the incoming reference frequency. This output clock is still phase-locked to the reference input, but the sample rates need not match.
For example, you may set the SAMPLE RATE for AUDIO Channel A at 48kHz and apply a 44.1kHz reference. The device then 'gearboxes' 44.1kHz into 48kHz output as chosen by the SAMPLE RATE knob for that channel. The ability to lock to one sample rate and generate another is very useful for sample rate conversions. Gearboxing Mode dramatically improves the sound quality of sample rate conversions.
For Gearboxing to work, the incoming reference must be one of 81 recognized valid frequencies. A valid frequency is:

- One of the standard frequencies: 32, 44.1, 48, 88.2, 96, 176.4, 192, 352.8, 384kHz
- A standard frequency subjected to any of 8 possible combinations of US/European pull-ups/pull-downs. Appendix A below contains a complete table with the valid frequencies.

  Note: Gearboxing can be disabled by using SPLIT mode. For this to work, at least one of the AUDIO channels must be set to DA, otherwise the input is ignored. SPLIT mode is to be used only if the input signal is known to be a varispeed frequency and not a standard gearbox frequency.

CLOCK CALIBRATION

Trinity can be calibrated periodically by connecting it to the 10M/MX Atomic Clock. This is not something that necessarily needs to be done very often, but if desired, here is how to do it:

1. Connect 10M to Trinity as normal.
2. Power on both devices and wait for 10M/MX to reach operating temperature.
3. Set the Trinity SOURCE knob (3) to OVEN, and be sure that the ATOMIC LED (14) is lit.
4. Wait one minute to let the units stabilize. If the middle display line is stable at +/0 0.5ppm or greater, you should proceed with the calibration. If not, wait until the display stabilizes before deciding whether to proceed with the calibration or not.
5. Press the Display button (15) and then the Varispeed button (10). Trinity is now in Calibration mode.
6. To proceed with calibration, press the SAMPLE RATE knob (4). Trinity is now calibrated to an accuracy greater than +/- 0.001ppm.
7. Exit Calibration Mode by pressing the INFO button (15).

CUSTOMER SUPPORT INFORMATION

Antelope Audio Customer Support can be reached by the following means:

Online
Visit **support.antelopeaudio.com**

Phone
We are there for you around the clock, 21 hours/day, Monday to Friday.
North America +1-916-238-1643 01:00 a.m. 10:00 p.m. (EST)
International +44 19 2593 3423 06:00 a.m. 03:00 a.m. (GMT)
Pour le Support francophone: +44 20 3389 8108 09:00 a.m. – 17:30 p.m. (GMT+1)

Live Chat
Live Chat is available during the following hours Monday to Friday International 06:00 a.m. 06:00 p.m. (GMT)
Note: If you're trying to reach us outside working hours, we advise you to file a ticket in our customer support

system or leave a voice message.

Additional Resources

- The **Antelope Audio YouTube channel** is home to various tutorial videos and endorser content which you may find helpful and inspiring.
- The **Antelope Audio Users Facebook group** lets you interact with fellow users and some of our employees. Note, however, that it is not meant to be a support group. Please contact our customer support team for such inquiries.
- The **Knowledge Base** in our Customer Support section is an oftenoverlooked source of troubleshooting information, answers to commonly asked questions and Antelope know-how.

MY ANTELOPE AUDIO PRODUCT ISN'T WORKING.

WHAT SHOULD I DO?
If you can't find a solution on your own, please get in touch with us so we check if you are having a hardware-related issue. If this is the case, we'll guide you through the repair process. If the product should be returned, a RMA number will be issued so we can begin the procedure.

What's an RMA number?
Issuing a RMA (Return Merchandise Authorization) number is required for any factory service or repair procedure. Please, don't attempt to send us your device without receiving a RMA number first, as the device will be returned and not serviced.

How do I get an RMA number?
The Antelope Audio Customer Support team is in charge of issuing RMA numbers. Visit **support.antelopeaudio.com** and get in touch.
After your RMA has been issued, you will receive an email with instructions on how to proceed.

RMA shipping information
Alongside the product you are returning please, include a letter containing your full name, shipping address, RMA number issued by our technical support team and a note with a short information about the technical issue.
Please use the original box if possible, because a worn out one will surely not protect your product sufficiently on its way to the Antelope Audio HQ. Additional cushioning materials in multiple layers between the unit and the box walls to prevent from shock, vibration and various tears and scratches.
Please remove any labels or old shipment markings it may have and ensure you add your shipping address inside the box in case the original shipment label becomes illegible during transportation.
The shipping costs are covered by the owner of the product. Antelope Audio will not cover any local customs charges.
We recommend using a courier service of your choice (e.g. DHL, UPS, FedEx). The package should be insured for its real value, marked as fragile and a tracking number should be provided. We do not recommend using standard mail delivery services.
Please, don't forget to add the RMA number, issued by the Antelope Audio technical support, on all shipping paperwork.
Antelope Audio cannot be held responsible for undelivered packages lost or damaged on the way to the Antelope Audio HQ. For damage claims, please contact your shipping service provider of choice.
Antelope Audio cannot cover any repair costs for product damages due to poor packaging.

LIMITED WARRANTY POLICY

This is a non-transferable voluntary Limited Product Warranty provided to end-customers who have purchased Antelope Audio-branded hardware product (hereinafter referred to as "Product") from an authorized Antelope Audio re-seller.

For customers covered by consumer protection laws or regulations in their country of purchase or, if different, their country of residence, the benefits conferred by Antelope Audio's Limited Warranty are in addition to, and not instead of, rights and remedies convened by such consumer protection laws and regulations and it does not exclude, limit or suspend buyer's rights arising from consumer law. Consumers have the right to choose whether to claim service under the Antelope Audio Limited Warranty or under their consumer law rights.
All claims made under the Antelope Audio Limited Warranty will be governed by the terms set out in this warranty document.

Warranty Coverage
Antelope Audio warrants that the Product will be free from defects in material and workmanship for the period of 1 (one) year commencing on the date of purchase of Product by end-customer from authorized Antelope Audio's re-seller.
Except where explicitly prohibited by applicable local law, this warranty is limited to the original purchaser and is non-transferable. This warranty provides you with specific legal rights, and you may have additional rights that vary under local laws.
In general, this warranty means your Antelope Audio hardware product will operate in accordance with published technical specifications, as specified by its data-sheet, and in the operating environment for which it was intended for the length of the warranty period.
This version of the warranty applies to products purchased on or after January1,2018. For prior versions of the Antelope Audio limited warranty, please contact customer service.

Limited Factory Refurbished (B-stock) Warranty
Antelope Audio warrants products sold as "B-stock, Factory Refurbished or Open Box" to be free from defects in materials (unless otherwise stated in product description) and workmanship. Only products purchased from an authorized dealer or directly from Antelope Audio are covered by this Warranty.
The Limited Factory Refurbished (B-stock) Warranty is valid for the period of 6 (six) months, commencing on the date of purchase of Product, if local regulations do not require otherwise.
All warranty terms contained hereunder apply also to the B-stock Warranty, unless otherwise specified.

Remedies
Antelope Audio's entire liability and your exclusive remedy for any Antelope Audio Product that is not operating in accordance with its published technical specifications is at Antelope Audio's discretion:

1. to repair the Product at Antelope Audio's expense using new or equivalent-to new refurbished parts in good working condition; or
2. to replace the Product at Antelope Audio's expense with a product with equivalent functionality formed from new and/or equivalent-to new refurbished parts in good working condition, or
3. to refund the price paid. Should Antelope Audio decide to refund the price paid, it may deduct from the paid Product's price any damages caused to the Product; where, within fourteen (14) days of the expiration of the warranty period,(i) Antelope Audio has received written notice of any nonconformity;(ii) after Antelope Audio's written authorization, customer has returned the nonconforming product to the designated place; and (iii)Antelope Audio has determined that the Product is nonconforming and that such non conformity is not the result of any of the exclusions designated below.

These warranty obligations are conditioned upon the hardware being returned to the original place of purchase, or another place as directed by Antelope Audio, with the original sales receipt attached. You will be required to pay shipping and handling charges for returning the product. You may be required to pay any other applicable tariffs, duties, taxes, or other fees with regard to returning the products.
Any repaired or replacement Product will be warranted for the remainder of the original warranty period.

Obsolete or Discontinued Products
An obsolete or discontinued product will be repaired or replaced with the same product if available. If Antelope Audio is unable to replace your obsolete or discontinued product with the same product, Antelope Audio will

replace the obsolete or discontinued product, in its sole discretion, with a product having similar function and capacity.

Exclusions

This warranty does not cover problems or damage resulting from, but not limited to, any of the following: (i)Wear and tear associated with normal use; (ii)Any modification, abuse, accident, disassembly, misapplication, misuse, negligence, acts of God, accident; (iii)Unauthorized repair or attempted repair by anyone other than Antelope Audio or someone authorized by Antelope Audio to do warranty work; any unauthorized repairs will void this warranty(iv)Any improper operation, maintenance or installation, including any use not in accordance with any supplied product instructions; (v)Connection to any improper voltage supply; (vi)Use of consumables or spare parts not supplied by Antelope Audio, except where such restriction is prohibited by applicable local law; (vii)Any other cause which does not relate to a Product defect in materials or workmanship.

The warranty does not apply to any Products which have been subject to misuse, neglect, accident or modification or which have been soldered or altered such that they are not capable of being tested under normal test conditions.

This warranty does not cover (i) any counterfeit products, i.e. Products that Antelope Audio, at its sole discretion, determines were not manufactured by Antelope Audio or any of its authorized manufacturing partners; (ii) Products purchased from a person or entity which is not an authorized dealer or re-seller of Antelope Audio; (iii)Product sold “as is” or “with all faults”, to the extent permitted by local law.

This warranty is not valid in case any manufacturer label(s), serial numbers, date stamp(s) or warranty sticker(s) has been altered or removed from the Product.

Limitation of Liability

ANTELOPE AUDIO SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES WHATSOEVER, INCLUDING BUT NOT LIMITED TO LOSS OF PROFITS, REVENUE, OR DATA (WHETHER DIRECT OR INDIRECT) OR COMMERCIAL LOSS FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON YOUR PRODUCT EVEN IF Antelope Audio HAS BEEN ADVISED PREVIOUSLY OF THE POSSIBILITY OF SUCH DAMAGES. Some local laws do not allow the exclusion or limitation of special, indirect, incidental or consequential damages, so this limitation or exclusion may not apply in your jurisdiction. ANTELOPE AUDIO WILL NOT ASSUME OR AUTHORIZE ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH ITS PRODUCTS.

Data Recovery

In the event of data loss using Antelope Audio storage devices, Antelope Audio is not responsible for backing up or recovering any data that you may have lost.

No Other Warranties

No Antelope Audio employee, dealer, re-seller, or other agent is authorized to make any modification, extension, or addition to this warranty.

How to Make a Warranty Claim

Valid warranty claims should be processed through your point of purchase. Please also verify the return policy directly with the retailer where you purchased your product. Any warranty claims that cannot reprocessed through your original point of purchase should be addressed directly to Antelope Audio. Our customer service contact information can be found on the web or in the documentation included with your Product.

Returning Your Product

In the event that you need to return your Antelope Audio products for repair or replacement, Antelope Audio will provide you with a Return Merchandise Authorization Number (RMA#) as well as return instructions. Do not return your product without prior approval from Antelope Audio. Any product returned without a valid unique RMA# will be refused and returned to the sender at the sender’s expense. To avoid problems at the time of receipt, clearly write your RMA# on the outside of the package and include a copy of your RMA confirmation-mail within the package.

In certain situations, for in-warranty units, we may (entirely at our opinion) offer you a temporary replacement unit, provided that we have such on stock in your state. To request a temporary replacement unit, a valid credit card must be provided to secure the new replacement unit for shipping prior to Antelope Audio receiving the defective

one.

Request a Return Material Authorization Number (RMA#)
Please follow these steps to obtain an RMA number:
(I) For end user customers, submit a claim online at: support.antelopeaudio.com. For business to business (B2B) / Direct customers of Antelope Audio please email us at **techsupport@antelopeaudio.com**
(ii) A valid proof of purchase is required for RMA processing (i.e. receipt, invoice, etc). Antelope Audio will provide you with the RMA number within 2 working days as of the claim submission date.

RMA Return Addresses
We have multiple RMA receiving locations worldwide. Your RMA confirmation will specify the specific return address you must use when sending your RMA package. Any packages received at an unauthorized location may be refused and returned to the sender at the sender's expense.

Products Lost or Damaged During Transit
The original packaging material should be used to pack the product for return; if the original packaging is not available, you should use such materials that provide the same or greater protection to the product. All packages that arrive with any external damage or appear inadequately packed will be refused and returned to the sender at the sender's expense. We are not responsible for damage incurred during shipping to our RMA receiving locations or for lost or stolen products.

Company information
Antelope Audio is the trade name, under which the company Elektrosfera ltd., registered under the legislation of the Republic of Bulgaria with UIN: 131052590, is doing business and is worldwide known. Elsewhere in this document where the trade name Antelope Audio is used shall refer to Elektrosfera ltd., with address of management: Tsarigradsko Shose Blvd., 7th km, Building of BIC IZOT, floor 6, Mladost region, Sofia, Bulgaria.
If any term hereunder is held to be illegal or unenforceable, it shall be severed from this warranty and the legality or enforce ability of the remaining terms shall not be affected.

SAFETY NOTES

To reduce the risk of electrical shocks, fire, and related hazards:

- Do not remove screws, cover, or cabinet. There are no user serviceable parts inside. Refer servicing to qualified service personnel.
- Do not expose this device to rain, moisture or spillover of liquid of any kind.
- Should any form of liquid or a foreign object enter the device, do not use it. Switch off the device and then unplug it from the power source. Do not operate the device again until the foreign object is removed, or the liquid has completely dried and its residues fully cleaned up.
- Do not handle the power cables with wet hands!
- Make sure the device is switched off when plugging/unplugging it to/from the power source.
- Avoid placing things on the cabinet or using the device in a narrow and poorly ventilated place which could affect its operation or the operation of other closely located components.
- If anything goes wrong, turn off the device first and then unplug the power. Do not attempt to repair the device yourself. Consult authorized service personnel or your dealer instead.
- Do not install near any heat sources such as radiators, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not use harsh chemicals to clean your unit. Clean only with specialized cleaners for electronics equipment.
- Connect all your devices before powering your unit.
- This unit is connected via its power cord to the mains safety earth.

- Never operate the unit without this earth connection.
- DC power supply cable should be routed so that it is not likely to be walked on or squeezed by items placed upon or against it.
- To completely turn off the device, unplug the power cable first from the outlet and then from the rear panel of the unit.
- Both occasional and continued exposure to high sound pressure levels can cause permanent ear damage via headphones and monitors.
- Your unit should always be un-racked when traveling or in a flight case.
- The device is designed to operate in a temperate environment, with a correct Operating Temperature of 0-50° C, 32-122° F.

TECHNICAL SPECIFICATIONS

Clocking System
4th Generation Acoustically Focused Clocking
64 bit DDS
Oven Controlled Crystal Oscillator

Stability:
< +/-0.02ppm @ 64.5°C

Ageing
< 1 ppm per year

Calibration
< +/-0.001 ppm

Atomic Clock Input
10MHz@1Vpp, BNC

Basic Sampling Rates (KHz)
32, 44.1, 48, 88.2, 96, 176.4, 192, 352.8, 384

Generators
9 Independent and simultaneous: 3 audio, 3 HD, 3 SD

Varispeed
+/-200 cents
+12.246%
-10,910%

Pull Ups/Downs
+/- 0.1% NTSC and/or +/- 4% PAL
-0.1% HD

Inputs
Universal video input on BNC.
Recognizes all video formats automatically
2 selectable Word Clock on BNC 32kHz 384kHz
1 AES/EBU on XLR. 32kHz 192kHz @110 terminated
1 S/PDIF on RCA. 32kHz 192kHz @75 terminated

USB
2.0 full-speed

Outputs
HD Video 6xBNC @75Ω
SD 1 BNC @75 fixed for NTSC video standard. Black Burst
SD 2 BNC @75 fixed for PAL video standard. Black Burst
SD 3 BNC @75 PAL 24/NTSC 30 selectable.Composite Sync
SD 4 BNC @75 PAL 48/PAL 47.95 selectable. Composite Sync
Wordclock 16 BNC, 3Vpp @ 75Ω
AES/EBU 4 XLR @ 110Ω
S/PDIF 4 RCA @ 75Ω

Operating Temperature
0-50°C, 32-122°F

Weight
4 kg / 8.8 lb

Dimensions (Approx)
482 mm (W) × 89 mm (H) × 203 mm (D)
19” (W) x 3.5” (H) x 8” (D)

Wordclock:
16 BNC, 3Vpp @ 75 Ohms

WC Basics	Word clock outputs except Audio A 256x				Audio A 256x
	x1	x2	x4	x8	x256
32.0 kHz	32.0 kHz				8.192 MHz
44.1 kHz	44.1 kHz	88.2 kHz	176.4 kHz	352.8 kHz	11.2896 MHz
48.0 kHz	48.0 kHz	96.0 kHz	192.0 kHz	384.0 kHz	12.288 MHz

AES/EBU:
4 XLR @ 110 Ohms

WC Basics	Word clock outputs except Audio A 256x				Audio A 256x
	x1	x2	x4	x8	x256
32.0 kHz	32.0 kHz				
44.1 kHz	44.1 kHz	88.2 kHz	176.4 kHz		
48.0 kHz	48.0 kHz	96.0 kHz	192.0 kHz		

S/PDIF:
4 RCA @ 75 Ohms

WC Basics	Word clock outputs except Audio A 256x				Audio A 256x
	x1	x2	x4	x8	x256
32.0 kHz	32.0 kHz	–	–	–	–
44.1 kHz	44.1 kHz	88.2 kHz	176.4 kHz		–
48.0 kHz	48.0 kHz	96.0 kHz	192.0 kHz		

APPENDIX A

Table of valid input frequencies in Gear boxing mode:

	32	44.1	48	88.2	96	176.4	192	352.8	384
USPD+EUPD	30.689	42.294	46.034	84.587	92.068	169.175	184.136	338.350	368.272
EUPD	30.720	42.336	46.080	84.672	92.160	169.344	184.320	338.688	368.640
USPU+EUPD	30.751	42.378	46.126	84.757	92.252	169.513	184.504	339.027	369.009
USPD	31.968	44.056	47.952	88.112	95.904	176.224	191.808	352.448	383.616
None	32.000	44.100	48.000	88.200	96.000	176.400	192.000	352.800	384.000
USPU	32.032	44.144	48.048	88.288	96.096	176.576	192.192	353.153	384.384
USPD+EUPU	33.300	45.892	49.950	91.783	99.900	183.566	199.800	367.133	399.600
EUPU	33.333	45.938	50.000	91.875	100.000	183.750	200.000	367.500	400.000
USPU+EUPU	33.367	45.983	50.050	91.967	100.100	183.934	200.200	367.868	400.400

APPENDIX B
Table of valid input video formats:

PAL 47.95	1080i - 60	1080p - 30	1080psf - 60	720p - 60
PAL 48	1080i - 59.94	1080p - 29.97	1080psf - 59.94	720p - 59.94
PAL 50	1080i - 50	1080p - 25	1080psf - 50	720p - 50
	1080i - 49.95	1080p - 24.975	1080psf - 49.95	720p - 30
NTSC 59.94	1080i - 48	1080p - 24	1080psf - 48	720p - 25
NTSC 60	1080i - 47.952	1080p - 23.976	1080psf - 47.952	

APPENDIX C
Error messages explained:
CANNOt dA CHOSEN SOUCE

- **Display says:** CANNOt dA CHOSEN SOUCE
- **Read:** Cannot DA Chosen Source
- **Reason:** The Audio channel is set to DA, and SOURCE is set to either OVEN or VIDEO.
- **Solution 1:** Continue in DA mode by changing SOURCE knob to a position corresponding to a valid rear panel input.
- **Solution 2:** Leave DA mode, choosing an internal sample rate.

NO IPUt

- **Display says:** NO IPUt
- **Read:** No Input

- **Reason:** The Audio channel is set to DA, but there is no input on the chosen SOURCE.
- **Solution 1:** Continue in DA mode by applying a valid rear panel input that corresponds to the front panel SOURCE knob.
- **Solution 2:** Continue in DA mode by changing SOURCE knob to a position where there is a valid rear panel input.
- **Solution 3:** Leave DA mode, choosing a standard sample rate.

SOURCE OFF-AtE

- **Read:** Source Off-Rate
- **Reason:** Input is a non-standard frequency that is not one of the recognized gearboxing frequencies as in Appendix A and is likely a varispeed input frequency.
- **Solution 1:** Continue with the off-rate input and select SPLIT mode. The audio channel must also be in DA mode.
- **Solution 2:** Change SOURCE knob to OVEN and run on internal clock.

Isochrone Trinity User Manual

Documents / Resources

	ISOCHRONE Trinity Universal High Definition Master Clock [pdf] User Manual Trinity Universal High Definition Master Clock, Trinity Universal High Definition Clock, Clock, Trinity Clock, Master Clock

References

- Antelope Audio | Interfaces | Modeling Mics | Plugins
- Support | Antelope Audio Customer Support
- Trinity - Download Section | Antelope Audio Customer Support