

OCXHD



OCX HD

768kHz HD Master Clock USER MANUAL



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BEFORE YOU BEGIN



For over a decade, Antelope's legendary OCX Master Clock has been a dominant force in the audio world. This legacy now continues with the newest master clock by Antelope Audio - Isochrone OCX HD.

OCX HD raises the bar yet again, delivering sample rate support of up to 768 kHz, Antelope's best-in-class 4th generation Acoustically Focused Clocking (AFC) jitter management algorithm and oven-controlled crystal oscillator.

OCX HD Master Clock offers a great variety of clocking options – 10 configurable in pairs Word Clock outputs on BNC, four AES/EBU outputs and two more on S/PDIF. This vast assortment of connectivity make the OCX HD the most versatile audio master clock on the market. Our proven advanced proprietary clocking technology delivers the most musical and reliable audio sync generation.

Additionally, OCX HD offers two word clock inputs and a video sync input, which can resolve to a huge variety of SD and HD formats, as well as clock distribution with gearboxing, and pull-up and pull-down rates, as featured in the triple clock powerhouse, Trinity Master Clock. A 10 MHz input allows for syncing with Antelope's newest atomic clock – 10MX.

Antelope's newest master clock benefits a user-friendly software control panel, available for both macOS and Windows. The desktop app provides convenient remote control to simplify project workflow. The device is also easily configurable from an elegant front panel, which adds futuristic appeal to any gear rack.

Enjoy working with the OCX HD!

Best wishes,



MANDATORY ONLINE ACTIVATION

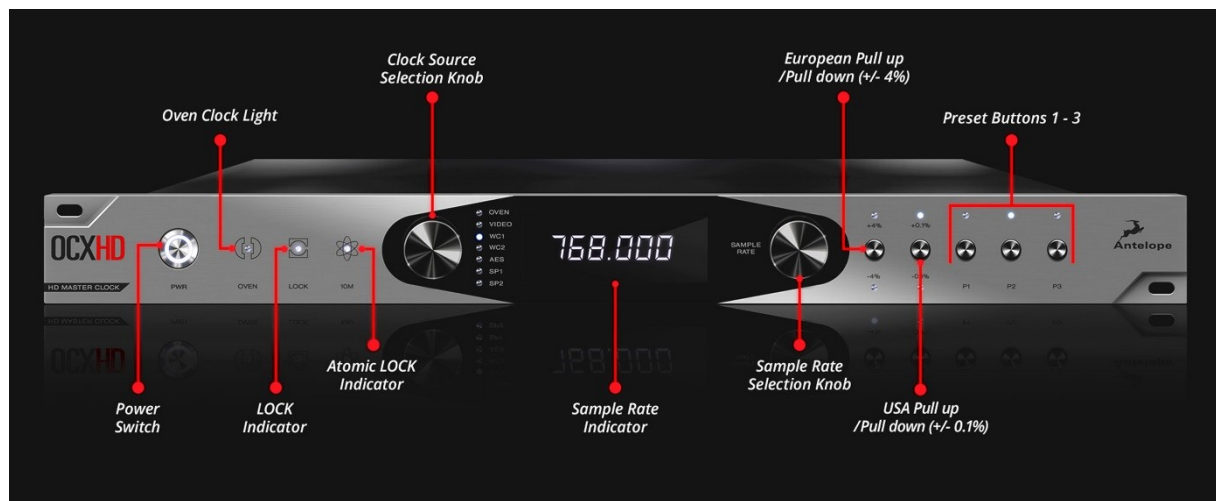
Please note that the mandatory device activation procedure requires an active Internet connection on your computer. Activating an Antelope device offline is not possible.

ACTIVATION GUIDE

It is essential to activate your OCX HD before using it. Once connected to your power outlet and your computer's USB port, follow the steps below:

1. Download the OCX HD Launcher [from here](#).
2. Start the application (If you are on a PC, install the launcher first). The launcher will automatically download the control panel software.
3. You will be greeted by the activation screen. Enter your information and click Done.
4. Check your email account's inbox for the email with the activation link and click on it
6. Go back to the launcher and enter your information. Click Done.
7. You are good to go!

FRONT PANEL EXPLAINED





Power Switch

Toggles standby / operation state. When the device is powered on, an illuminated ring will glow around the power button.

Oven Clock Light

When lit, this indicates OCX HD is clocked by its internal oven-controlled crystal oscillator.

LOCK Indicator

When lit, this indicates OCX HD is locked to a signal that enters through the WC, Video, S/PDIF or AES/EBU inputs.

Atomic LOCK Indicator

When lit, this indicates OCX HD is locked to an atomic signal that enters through the 10M input on the rear panel. This overrides the Oven Clock lock light as soon as it is plugged in and the Oven Clock lock light will automatically go off.

Clock Source Selection Knob

This selector allows you to select the current Clock Source for the OCX HD. 'Oven' is for the internal clock, the rest of the options are for clocking to an external source.

Sample Rate Indicator

Indicates the current sample rate of the master clock. When using DA mode, the indicator blinks if no source is present.

Sample Rate Selection Knob

This selector lets you increase and decrease the sample rate, choosing from 32kHz, 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz, 352.8kHz, 384kHz, 705.6kHz, 768kHz. The current frequency is indicated on the display when adjusting. To confirm, simply press the selector knob.

When clocked to an external source: Press and hold the knob for 2 seconds to fetch the current source's sample rate and set it.

European pull up / pull down (+/- 4%)

This button toggles +/- 4% pull ups / pull downs

USA pull up / pull down (+/- 0.1%)

This button toggles +/- 0.1% pull ups / pull down



Presets

Three Preset buttons store and recall your 'favorite' set-ups. Press and hold the button for 2 seconds to store a preset. Press to recall.

Calibration Mode Explained

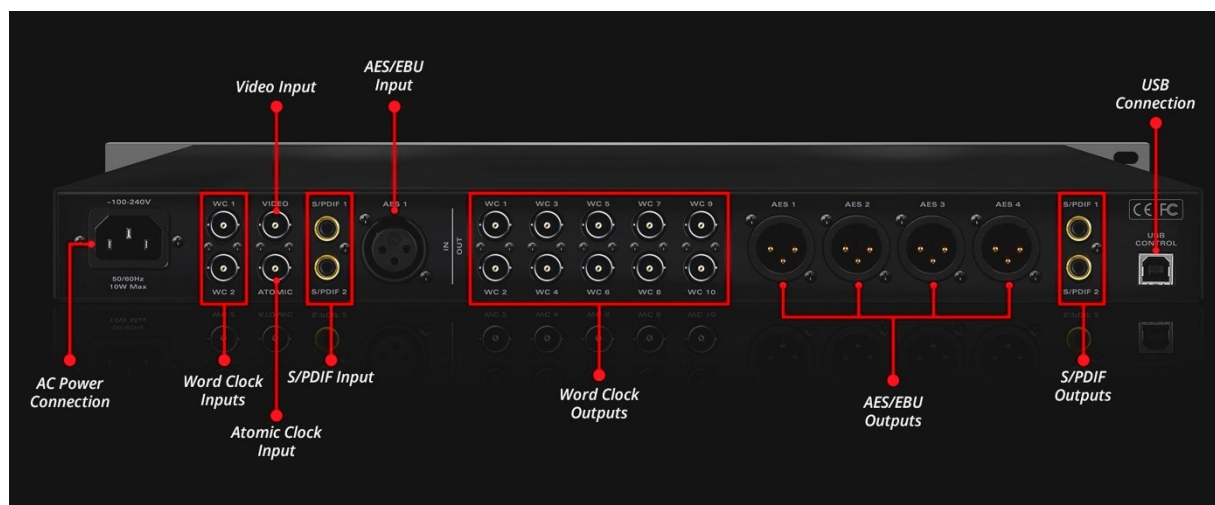
Ensure atomic signal is fed to the Atomic Input, Atomic Clock is locked and the OCX HD Atomic Clock Indicator is lit. Press both Source Selection and Sample Rate Selection knobs simultaneously. The device will enter calibration mode.

The Sample Rate indicator will show a number which will stabilize with time. Wait for the number to become stable. This number represents the error of the OCX HD's clock related to the Atomic Clock.

To compensate for this error, press the Sample Rate Selection knob. Repeat the procedure as many times as necessary so that the number becomes as close as possible to Zero and relatively stable (number may have small deviations in a few seconds).

To exit this mode, press the Standby button.

REAR PANEL EXPLAINED



AC Power Connection

This IEC connection supports inputs of 100 – 240 V~ to automatically accommodate mains voltages in any country.

Word Clock Inputs

BNC Connectors used to accept World Clock reference.



Video Input

BNC Connector used to accept Video reference. When active the OCX HD will lock to the sample rate of the incoming video signal.

10M Atomic Clock Input

This BNC Input Connector allows the OCX HD to receive timing reference from an Atomic Clock, such as the Antelope 10M and 10MX, to increase the Oscillator accuracy.

If the device is in Oven mode, plugging in the atomic clock causes the “Atomic LED” light to illuminate on the device front panel and the atomic device becomes the primary timing reference.

S/PDIF Inputs

These two inputs can receive S/PDIF clocking reference up to 192 kHz.

AES/EBU Input

This input can receive AES/EBU clocking reference up to 192kHz.

Word Clock Outputs

Ten Word Clock Outputs on BNC connectors.

AES/EBU Outputs

These four outputs provide AES/EBU clock at sample rates up to 192kHz. Note that if the OCX HD is working at a higher sample rate than the receiving device, the Word Clock signal cannot be output via this AES/EBU connector.

S/PDIF Outputs

These four outputs provide AES/EBU clock at sample rates up to 192kHz. Note that if the OCX HD is working at a higher sample rate, the Word Clock signal cannot be output via this S/PDIF connector.

USB Type B Connector

Allows connection to PC and Mac for the Control Panel application and firmware updates.



CONTROL PANEL



The PC/Mac Control Panel application is organized into these sections and offers the following functionality:

1. Function Strip



From left to right:

On/Standby button

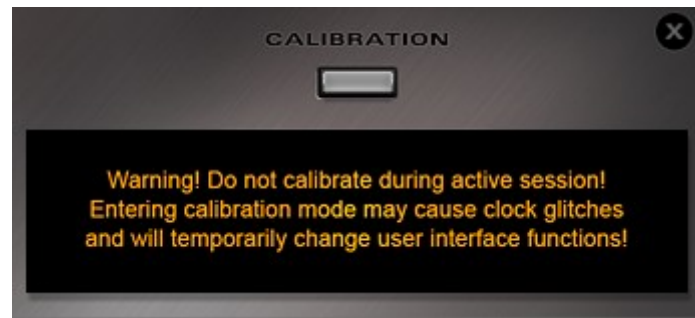
Powers the OCX HD on and off.

Device S/N

Shows which device is currently controlled. If you have multiple devices connected to your PC/MAC computer (or different computers wired in the same Local Area Network), you can select which one to control.

Calibration Mode

Opens the calibration panel:



To calibrate an Atomic Master Clock, ensure atomic signal is fed to the OCX HD's Atomic Input, the Atomic Clock is warmed up and the OCX HD Atomic Clock Indicator is lit.

1. Click 'Calibration' and the device will enter calibration mode
2. The indicator below will show a number which will stabilize with time. Wait for the number to become stable. This number represents the error of the OCX HD's clock related to the Atomic Clock. To compensate for this error, click the 'Calibrate' button.



3. Repeat the procedure as many times as necessary so that the number becomes as close as possible to 0 and relatively stable (it may have small deviations of a few seconds). To exit Calibration Mode, press the X button.

Panel lock indicator

You can lock or unlock the Control Panel by clicking on the Pad Lock symbol. When the Control Panel is locked, the device will not accept commands from its front panel interface and/or the application, thus preventing accidental changes during sessions or live events.

Info button

Displays Control Panel version, hardware version, device serial number, and firmware version. You can also launch the Firmware Update wizard to check for and initiate firmware updates.



2. Clock indicators



- Oven - When lit, this indicates OCX HD is clocked by its internal oven-controlled crystal oscillator.
- Atomic - When lit, this indicates OCX HD is locked to an atomic signal that enters through the 10M input on the rear panel. This overrides the Oven Clock lock light as soon as it is plugged in and the Oven Clock lock light will automatically go off.
- Lock - When lit, this indicates OCX HD is locked to a signal that enters through the WC, Video, S/PDIF or AES/EBU inputs.

3. Clock Sources



Choose between the available clock and sample rate sources from the drop-down menus.

4. Pull up/pull down controls



Adjusts the Word Clock sample rate to sync to PAL/NTSC video.

5. Brightness slider



Adjusts the device's screen brightness from 0 to 100%.



6. Clock Source Out



Indicates the output sample rate. This might change if the sample rate is affected by pull ups / pull downs.

7. Multipliers



5 dropdown menus used to multiply or divide the current selected sample rate on pairs of 2 Word Clock outputs. This way, the OCX HD can output up to 5 different sample rates on each pair of 2 Word Clock outs. That is, if the sample rate is 96kHz, dividing it by two makes 48kHz and multiplying it by for 4 makes 384kHz.

8. Presets

Three preset buttons to store your favorite set-ups. Single click recalls the desired preset. Holding Ctrl on Windows or Command on MAC and clicking saves the current set-up.

CUSTOMER SUPPORT INFORMATION

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

Online

Visit support.antelopeaudio.com

Phone

US time: 12AM (midnight) – 8PM (CST), Monday – Friday



US Phone Number: [\(916\) 238-1643](tel:(916)238-1643)

European time: 6AM – 2AM (GMT), Monday – Friday.

UK Phone Number: [+44 1925933423](tel:+441925933423)

Live Chat

US time: 12AM (midnight) – 2PM (CST), Monday – Friday

European time: 6AM – 8PM (GMT), Monday – Friday.

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 often-overlooked 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 January 1, 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 be 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
Clock Stability	<+/- 0.02 ppm, oven controlled at 64.5 C/148.1 F
Clock Aging	< 1 ppm per year
Clock Calibration	<+/- 0.001 ppm
Atomic Clock Input	10 MHz
Sample Rates Generated	32, 44.1, 48, 88.2, 96, 176.4, 192, 352.8, 384, 705.6, 768kHz
Master Clock Outputs	10x Word Clock Outputs up to 768kHz 4x AES/EBU Outputs up to 192kHz 2x S/PDIF Outputs up to 192kHz
Inputs	2x Word Clock Inputs up to 768kHz 1x Video Input accepting wide range of SD and HD video signals 1x Atomic Input 2x S/PDIF Inputs up to 192kHz 1x AES/EBU Input up to 192kHz 1x USB Input for control
Maximum shock withstanding	Non-operating, flight case mounted: 100m/s ² (~10.2 g*), 11 msec half-sine pulse per IEC 60068-2-27:2008 Non-operating, in original packing: 300m/s ² (~30.6 g*), 5 msec half-sine pulse per IEC 60068-2-27:2008
Power supply	AC Universal Input ~100-240V, 10 Watts Max
Operating Temperature	0-50 C / 32-122 F
Weight	2.65 kg/ 5.84 lb
Dimensions (unit)	Width: 482.6 mm / 19" Height: 44 mm / 1.75"



	Depth: 230 mm / 9.05"
In The Box	Isochrone OCX HD Warranty Card Owner's Manual 1x USB Cable 1x Power Cable