DANGEROUS MUSIC



CONVERT-2®

USER GUIDE



SAFETY REVIEW



The Exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying this product

Certain precautions should be taken when using electrical products. Please observe the safety hints by reading the manual and obtaining qualified help if necessary to adhere to the precautions.



1. Always use a properly grounded power supply cord with this product. Please do not defeat the ground pin on the mains plug. This connection provides earth to the chassis and signal grounds inside the device for clean and quiet operation.



2. Avoid high temperature operation in equipment racks by providing air circulation. The number one killer of electronic gear is HEAT. Vented rack panels may look like wasted space to an interior decorator, but they look like beauty to a technician or equipment designer! If the front panel is hot, it is roasting inside the box.



3. Avoid areas of high magnetic fields. The steel chassis is designed to shield the circuits from EMI and RFI (magnetic and radio interference). When installing equipment in racks, it is prudent to put power amplifiers and large power supplies at least several rack spaces, if not in a different rack, away from equipment that deals with low level signals. Separation of high level and low level equipment can pre-empt trouble caused by heat and EMI.



4. Care should be taken to avoid liquid spills around equipment. If a spill occurs, please shut off the gear and disconnect the mains. A qualified technician should investigate accidents to prevent further equipment damage or personnel hazards caused by spills.



5. If one is uncomfortable with opening gear and changing jumpers or making adjustments, please seek qualified help if necessary.



6. If adjustments or jumper changes are required, please disconnect the mains plug before opening the top. Dropped screws or tools on a live circuit board can manifest themselves as burn marks and smoked components. While we feel your pain, (been there) subsequent damage is not covered by the warranty.

Dangerous Music Incorporated reserves the right to change the specifications or modify the designs of its equipment. Sending in the registration card is our way of keeping in touch with users of our equipment should this become necessary. Registration information is always kept confidential and never disclosed to third parties for any reason. Company contact information is on the last page of this manual.



The CE sign on this product signifies the fact that this product has been tested and verified to conform to the applicable standards of 89/336/EEC.EN55103-1 (emissions) EN61000-2 (immunity) and EN60065:2002 (safety requirements)



This product uses components of the types and quantities that comply with the EC RoHS standard 2002/95/EC. A list of suppliers and materials is available from DMI. We tightly control production to use top quality materials.

THANK YOU

Thank you for choosing products from the exciting and innovative line of Dangerous Music recording equipment. Many years of reliable service can be expected from our gear. This is made possible through careful design, construction, and component choices by recording industry veterans.

D/A Conversion has been an integral part of the Dangerous Music audio legacy since 2002, when the MONITOR® set the standard for mastering engineers worldwide. Even with these golden-eared luminaries satisfied, Dangerous chose to raise the bar once again. There are comprehensive tips and application notes in this user's guide, so don't skip the read.

If you have any suggestions for applications or future products, feel free to forward them. We are users like you.

DANGEROUS MUSIC

ABOUT DANGEROUS MUSIC

"Audio Integrity: non-negotiable." This is the credo upon which Dangerous Music is founded. Conceived and designed by end users–not by engineers in lab coats- the results are products that resurrect dynamic range, punch, intelligibility and emotion. These high-fidelity, uncompromising signal paths are achieved by harnessing several decades of real-world experience. Then the critical listening skills of top tier engineers are applied, with the result being musical tools that fulfill the actual needs of today's flexible computer based studio.

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OVERVIEW

D/A Conversion has been an integral part of the Dangerous Music legacy since 2002, when the Dangerous Monitor® created a new reference for mastering engineers. The legacy continued with the DAC-ST, D-Box, and Source. The CONVERT series represents a new generation of D/A conversion that maintains all the qualities that have made Dangerous converters the choice of tracking, mixing and mastering engineers worldwide, while incorporating the latest advancements in audio electronics technology to once again raise the bar. (Pronounced \kän- v rt\ or KHAN-vert as in a person who has changed to a different religion, belief, etc...)



Inside the box you'll find the CONVERT-2, this manual and a standard 3 Pin IEC power cable (don't let your guitar player steal this for his Marshall™ head.)

Warning: Heat is enemy #1 for electronic equipment. Converters and interfaces run hot. Let 'em breathe. Leave a rack space above and below your Convert to insure a long and happy life.

Note: We recommend reading the entire manual (it's short- and so is life).

Convert-2: Front Panel Features & Benefits

1. SAMPLE RATE SELECT



[SAMPLE RATE SELECT SECTION PICTURED ABOVE]

Feature: Adjustable Sample Rate via the select switch.

Benefit: Cycle through the 6 sample rates and Auto Mode for universal compatibility with other devices.

Operation: For 88.2kHz both the 48kHz and 96kHz LEDs will light. For 176.4 both the 96kHz and 192kHz LEDs will light.

Tip: ✌ Auto Mode detects the appropriate rate from an external source and selects it automatically (except for ADAT*).

Tip: ✌ Lock Light turns green when the Convert-2 has achieved sync from an external source. (i.e. valid input data at selected sample rate). Red means there is no valid connection or that the user has selected the wrong sample rate.

*Note: Since the ADAT lightpipe specification was never officially completed for sample rates above 48kHz, the sample rate must

be selected manually. ADAT recognizes 2 base rates - 44.1 kHz and 48 kHz. If the base rate from the ADAT source and front panel settings match (i.e. 44.1kHz for 88.2 kHz and 174.4 kHz, or 48kHz for 96kHz and 192 kHz) the lock light will turn green. If an incorrect base sample rate is selected, the lock light will turn red. If an incorrect sample rate is selected within the same base rate, for example if the input source is 88.2 and 44.1 is selected on the front panel, the audio will likely be garbled or distorted and channels may appear to be mixed together.

2. CALIBRATION



[CALIBRATION SELECT SECTION PICTURED ABOVE]

Feature: Choose Calibration Level via the Select Switch.

Benefit: Cycle through the three calibration levels for compatibility with other devices. For example, while Avid is generally -18dBFS, Apogee is generally -16dBFS and much of the mastering community prefers -14dBFS. If DACs are not calibrated, then the sonics will not translate to our ears equally (search "Fletcher-Munson curve" for more on this topic).

3. INPUT SOURCE



[INPUT SOURCE SELECT SECTION PICTURED ABOVE]

Feature: Five Selectable Inputs.

Benefit: Choose between 5 input sources: USB*, AES/SPDIF-1, AES/SPDIF-2, ADAT and OPTICAL SPDIF (TOSLINK), thus allowing toggling between sources (i.e. iTunes via USB vs. your final mix via AES/SPDIF-1).

Operation: To activate OPTICAL SPDIF (TOSLINK), simply hold the ADAT Ch. 1-2/OPTICAL button for 5 seconds until the green OPTICAL SPDIF LED lights.

Tip: When connecting to SPDIF coaxial, simply purchase a high quality 75 ohm RCA - XLR(M) cable (Mogami and Redco both manufacture these). The converter will automatically recognize and lock to either AES or SPDIF sources.

*Note: USB input is plug-and-play when running Mac OS. For Windows systems, please visit our website for a download link to the correct driver.

4. AES/SPDIF-2: USB UPSTREAM RETURN

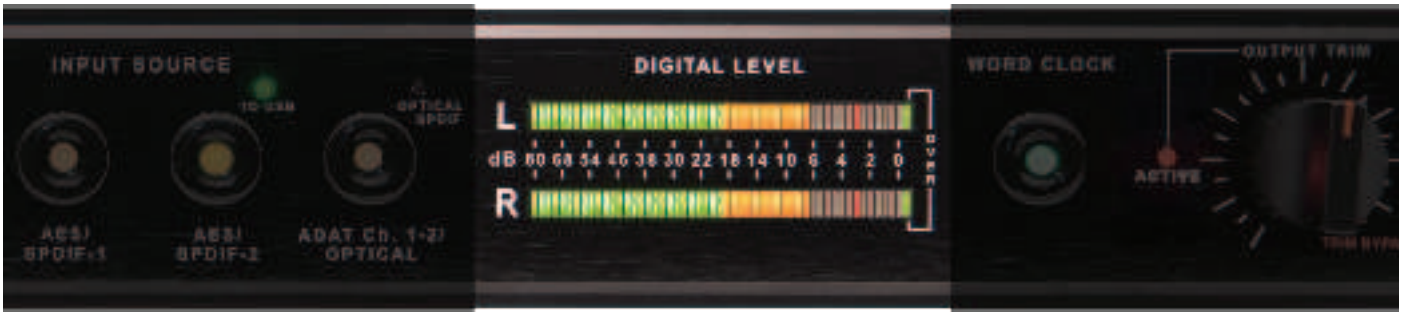
Feature: The input source connected to AES/SPDIF-2 can actually be routed back up USB and into the session.

Benefit: This can be leveraged as a digital through for a final mixdown, thus allowing the engineer to toggle between AES/SPDIF-2 and USB (pre plug-in treatments and post plug-in treatments).

Operation: To activate this feature, simply press and hold the AES/SPDIF-2 button until the green "TO USB" light engages.

Note: AES/SPDIF-1 & ADAT inputs are disabled in this mode to maintain clock bidirectionally.

5. CUSTOM METERING



[DIGITAL LED METER PICTURED ABOVE]

Feature: Premium custom crafted digital meter.

Benefit: Simultaneously view "Peak Over Average". This reveals the audio's crest factor by supplying both RMS information and Peak information, aiding the quest to retain dynamics and music's emotive properties.

Tip: The meters change from green to yellow at the user determined calibration point. In other words, -14dBFS, -16dBFS or -18dBFS depending on the Calibration selected (see section 2. Calibration).

Tip: At -6dBFS, the LEDs turn red and the scale changes: instead of 1dB steps per LED, they are very refined 0.5dB steps.

Tip: When the "3 Word Over Indicator" turns the last LED from green to red, this signifies that three consecutive samples have clipped. This is the limit of tolerance for a CD pressing plant to reject the project and a warning- cease flirting with digital overs.

6. WORD CLOCK



[WORD CLOCK SELECT SECTION PICTURED ABOVE]

Feature: 3 Modes: Normal, External and Master.

Benefit: Normal: With the button de-selected (dim light) the Convert-2 will sync to any incoming clock via any of the digital

sources.

External: Selecting this button will make the Convert-2 slave to an external word clock source. For example, if utilizing a master studio clock, this would distribute WC to the Convert-2.

Master: Depress the button for 5 seconds. The LED will blink. Now the Convert-2 is the master studio clock and other digital sources will slave to it. Audition the difference.

Note: When in Master clock mode, the sample rate must be manually selected and the destination devices must be set to the identical sample rate (i.e. all units at 192kHz).

Tip: Try utilizing the Convert-2 as the master clock. Our high profile beta testers found it "remarkably revealing & detailed" and "...this is the best sounding clock auditioned to date- and we've tried everything."

Footnote: The Convert-2 leverages JetPLL*, widely regarded as one of the lowest jitter clock designs in the world. As expected, Dangerous diverges from other manufacturers through a custom implementation of the JetPLL that exceeds its design specification for jitter performance.

7. BYPASSABLE VOLUME CONTROL (OUTPUT TRIM)



[OUTPUT TRIM SECTION PICTURED ABOVE]

Feature: Custom Potentiometer.

Benefit: This custom pot provides two options.

1. Use it as a volume knob, with the Analog Outputs connected directly to a pair of studio monitors.

2. Turned fully clockwise, a small detent will be detected, triggering a relay, thus removing the pot entirely from the signal path and allowing the user to utilize a separate, dedicated monitor controller (i.e. Dangerous Monitor ST).

Convert-2: Rear Panel Connections

8. ANALOG OUTPUT



[REAR PANEL ANALOG OUTPUTS PICTURED ABOVE]

Feature: High-Quality XLR Connectors.

Benefit: More contact surface area for happy electrons to migrate through & no offshore look alike connectors that almost fit.

Note: All connections wired pin 2 hot as per AES standards.

9. AES/SPDIF INPUTS 1 & 2



[REAR PANEL AES/SPDIF INPUT 1 & 2 PICTURED ABOVE]

Feature: AES/SPDIF inputs are format agnostic.

Benefit: They can utilize both AES or SPDIF on an XLR connector. Simply obtain the appropriate cable from your favorite audio dealer. When connecting to SPDIF coaxial, purchase a high quality 75 ohm RCA - XLR(M) cable and for AES, 110 ohm (Mogami and Redco both manufacture these). The converter will automatically recognize and lock to either AES or SPDIF sources.

10. AES/SPDIF THRU INPUTS 1 & 2



[REAR PANEL AES/SPDIF THRU 1 & 2 PICTURED ABOVE]

Feature: AES/SPDIF thru ports.

Benefit: Monitor an external A/D converter while simultaneously utilizing the “thru” for sending to another recorder or route the audio back into the session for more processing. Send the thru to a secondary D/A (i.e. Dangerous Source in the client lounge) or into an external digital meter.

11. ADAT IN 1&2 OR SPDIF OPTICAL (TOSLINK)



[REAR PANEL ADAT OPTICAL 1-2 INPUT CONNECTOR PICTURED ABOVE]

Feature: Accept channels 1-2 of ADAT optical.

Benefit: Leverage that unused ADAT output on your interface.

12. WORD CLOCK IN & OUT



[REAR PANEL WORD CLOCK INPUT & OUTPUT CONNECTORS PICTURED ABOVE]

Feature: High Quality BNC Connectors.

Benefit: Route clock signals with word clock cables using the Convert-2 as either a master or a slave.

Tip: You do not need to use a 75 ohm terminator on the Convert-2 while slaving.

13. OPTICAL SPDIF (TOSLINK) IN



[REAR PANEL OPTICAL SPDIF INPUT CONNECTOR PICTURED ABOVE]

Feature: Optical SPDIF (Toslink) Input.

Benefit: Another option for digital input.

Tip: Find Optical SPDIF on CD Players, Portable Field Recorders, Mac Digital Outputs...

14. USB I/O



[REAR PANEL USB INPUT / OUTPUT CONNECTOR PICTURED ABOVE]

Feature: USB Input / Output.

Benefit: Connect the Convert-2 to any USB 2.0 compliant computer to receive input.

Mac products are driverless.

Windows products require a driver download from the Dangerous website.

Tip: The input source connected to AES/SPDIF-2 can actually be routed back up USB and into the session. For example, this can be leveraged as a digital through for a final mixdown, thus allowing the engineer to toggle between AES/SPDIF-2; pre plug-in treatments and USB (post plug-in treatments).

15. MONITOR ST REMOTE I/O



[REAR PANEL MONITOR ST REMOTE IN & THRU CONNECTORS PICTURED ABOVE]

Feature: Connect the Dangerous Music Monitor ST Remote here.

Benefit: Control four input selection options on the Convert-2 directly from the Monitor ST. (Optical SPDIF [Toslink] activated from Convert-2 via a manual button press).

Tip: Add D/A to your existing Monitor ST.

16. POWER & SWITCHING



[REAR PANEL 3 PIN IEC CONNECTOR PICTURED ABOVE]

Feature: Three pin IEC cable.

Benefit: Simple to replace if lost.

Feature: Switching power supply auto detects voltage.

Benefit: Travel with your favorite gear anywhere in the world while spreading the audio truth.

Operation: Unit ships with voltage appropriate fuse value. To change it, use a screwdriver to gently pry the mains inlet module's cover open and insert the correct voltage. Fuses for the alternate voltage are included in the shipping box.

Tip: The power switch is on the inlet module. Seat the AC cable completely and use properly grounded power mains for safe and quiet operation.

Tip: If the Convert-2 will not power on and the power is known to be good, check the fuses under the inlet module's cover. Use 2 amp slo-blow for 120V (America) and 1 amp slo-blow for 240V (Europe).

SPECIFICATIONS

Note: Dangerous Music, Inc. publishes actual measured specifications, not theoretical numbers derived from data sheets published by chip manufacturers.

Signal to Noise Ratio	A-weighted, 20Hz to 20KHz: < 114dB
Signal to Noise Ratio	Unweighted, 20Hz to 20KHz: < 113dB
Dynamic Range	A-weighted, 20Hz to 20KHz: < 114dB
Dynamic Range	Unweighted, 20Hz to 20KHz: < 113dB
THD+N	THD+N, 1kHz, unweighted, 20Hz to 20kHz, +4dBu out: <94.5dB (0.00188%)
	THD+N, 1kHz, unweighted, 20Hz to 20kHz, +22dBu out: <106.5dB (0.00048%)
Frequency Response @ 96KHz sample rate	DC to 20KHz: +0, -0.25dB
	DC to 30KHz: +0, -0.5dB
	DC to 40KHz: +0, -1.0dB
Jitter	16ps (100Hz to 40KHz), 18ps (100Hz to 1MHz)
Crosstalk rejection	> 114dBu @ 1kHz
Replacement Fuses:	USA 2 amp slo-blow for 120V
	Europe 1 amp slo-blow for 240V
*JetPLL:	JET and Jitter Elimination Technology are trademarks of TC Applied Technologies Ltd. JET is patented technology used under sublicense from TC Applied Technologies, and is the intellectual property of Sonopsis Ltd.

WARRANTY

Free 2 year extended warranty with online registration.

Standard warranty: 90 days parts and labor, subject to inspection.

Does not include damage incurred through shipping damage, abusive operation or modifications/attempted repair by unauthorized technicians.

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Dangerous Music, Inc. reserves the right to alter the software and design of their equipment.

If after reading the manual more information for an application is needed, please contact us via email for the quickest response.

- Factory contact for RA# must occur before shipping a unit to us for service.
- Please keep the original cartons in case storage or transportation of units is required.
- Always insure shipment as these damages are not covered by the warranty.
- Thank you for actually reading the manual. Now go make some Dangerous Music!

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