

Installation Guide

ProMax ProMedia Converter



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Table of Contents

Welcome	3
ProMedia Converter Should Include.....	3
Packing Material.....	3
About This Owner's Manual	3
Return Packing Procedures	3
ProMedia Overview	4
Front View	5
LCD Control Menu	5
Rear View	7
Example Configurations	8
Operating Notes and Recommendations	9
Firmware Upgrades	9
Safety and ESD Precautions.....	10
Specifications	11
Warranty.....	12

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Welcome

Congratulations on selecting a ProMax ProMedia Converter. The PMC is shipped from the factory in the most secure packaging available. Please inspect the contents of the package and make sure to call us at 949-727-3626 or Toll Free 1-800-977-6629 if you find any shipping damage or missing components in your package, as soon as possible.

The ProMax ProMedia Converter Should Include:

- A ProMedia Converter
- A grounded A/C power cord
- Installation Guide

Packing Material

Please store all original containers. ProMax will not take responsibility for any products shipped to ProMax without the original shipping material. We have engineered a full damage proof packaging for the unit and without this package your unit may be damaged beyond repair when being shipped using FedEx, UPS, or other freight companies. Please make sure to keep the packaging in a safe location for future use.

About This Users Manual

This manual provides information needed to operate the ProMax ProMedia Converter. This manual assumes that the reader is familiar with basic analog and digital video and audio connections.

This manual reflects operating firmware version 1.0

Return Packing Procedures

Please keep all packing material for future shipping purposes. Never ship delicate equipment in styro-foam pellets. Systems returned to ProMax in unacceptable packing will be refused and the warranty could be void. Please see last page for more warranty information.

ProMedia Overview

The ProMax ProMedia Converter is a low-cost, high-performance audio/video format converter for a range of editing and broadcast applications. Unlike some other converters, ProMedia is compatible with a variety of editing applications on both Power Mac and PC hardware platforms. Through its intrinsic hardware DV CODEC and menu-based user interface, it can also be configured as a stand-alone device for frame synchronization and format conversion without any intervention from a host computer. In addition to the DV format commonly transmitted over the 1394 bus, ProMedia also supports uncompressed digital video captured to and played back from a host computer.

Format Conversions

- DV over 1394 <-> Analog Video and Analog / Digital Audio
- DV over 1394 <-> SDI (with embedded audio) and Analog / Digital Audio
- Uncompressed Video/Audio/Time Code over 1394 <-> Analog Video and Analog / Digital Audio
- Uncompressed Video / Audio over 1394 <-> SDI (with embedded audio) and Analog/Digital Audio
- Analog Video and Analog/Digital Audio <-> SDI (with embedded audio)
- Multiple Deck Control Options: 1394 -> RS-422, RS422 -> 1394 and RS-422 (from PC) -> RS-422 (to deck) loop-thru mode

Features

- DV over 1394 Support: DV25: DV / DV CAM / DVC Pro (NTSC: 4:1:1, PAL 4:2:0), DVC Pro PAL (4:1:1) at 100/200/400 Mbits/sec
- Uncompressed Video / Audio / Time Code over 400 Mbits/sec 1394
- Analog Video I/O (12-Bit A/D and D/A with 4x / 16x oversampling)
- Composite Video I/O with 5-Line Super Adaptive Comb Filter
- S-Video I/O
- Component Video I/O
- Video Standards: NTSC, NTSC-J and PAL (BGHID)
- SDI I/O with 4-Channels of Embedded 20-Bit Audio
- 4-Channel Balanced Analog Audio I/O, (24-bit A/D and D/A)
- 4-Channel AES/EBU Digital Audio I/O
- On-Board 2nd generation Hardware DV CODEC
- All outputs simultaneously active
- TBC (Time Base Corrector) and Frame Synchronizer Capable
- Web-Based Control, including comprehensive proc amp
- Web-Based Firmware upgrades with auto-checking for updates
- Front Panel LCD screen control and Error message display
- Standalone and PC/MAC editing modes
- Compatible with Apple Final Cut Pro, Adobe Premiere, Avid XpressDV, Sony Vegas Video, DV Camcorders and Decks

ProMedia Front View



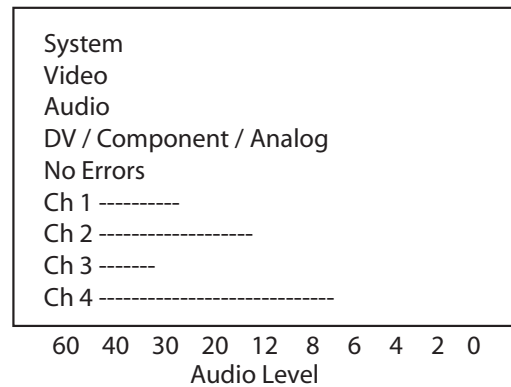
ProMedia utilizes a simple menu-driven interface via a 128x64 graphics LCD panel and rotary knob for menu and data selection. The LCD display is divided into four regions.

Typical LCD Display

LCD Screen Regions

- 1) Operating mode selections (System, Video, Audio)
- 2) Currently selected mode, video input, audio input
- 3) Error Status Line
- 4) Audio Level (Channels 1-4)

Rotate the Menu Selector knob to select a top-level menu (System, Video or Audio). Press the Menu Selector knob to enter this menu. Rotate the menu selector knob to select the desired action, then press this knob to enter the selection. The LCD menu is outlined on the next page.



LCD Menu Selection Tree

System

Direction	Capture Playback	(Audio/Video In -> 1394 Out) (1394 In -> Audio/ Video Out)
1394 Mode	DV Uncompressed	(DV/DV CAM/DVC Pro) (Uncompressed Audio / Video)
IP Addresses	Device Gateway DNS	(IP Address of ProMedia Box) (IP Address of Gateway) (IP Address of DNS Server)
LCD Backlight	Level	(Adjust LCD Backlight Level)
Update	Enter to update Firmware	

Video

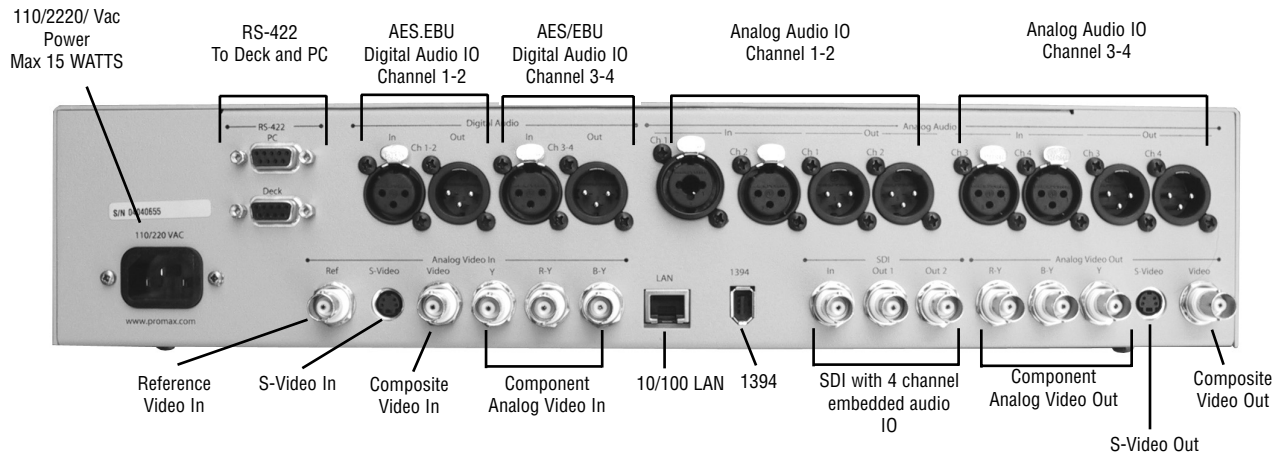
Standard	NTSC PAL	(NTSC with 7.5 IRE Setup) (PAL BGHID, no setup)
Source	Reference CVBS S-Video Component SDI Test	(Reference-In (Default)) (Composite Video Input) (S-Video Input) (Component Video Input) (SDI Video Input) (Color Bars)

Audio

Rate	48KHz 44.1KHz 32KHz	(48 KHz Audio Sampling) (44.1 KHz Audio Sampling) (32KHz Audio Sampling)
Source	Unbalanced Balanced AES/EBU SDI Test	(UnBalanced Audio In (Chan 1-2 Only)) (Balanced Analog Audio In (Ch. 1-2,3-4)) (Digital Audio In (Chan 1-2, 3-4)) (SDI Audio In (Chan 1-2, 3-4)) (1KHz Audio Test Tone)
Power		100 to 240 V AC (50/60 Hz) 15W maximum operating 8W maximum standby
Operating Temperature		40 F to 104 F (5C to 40C)
Storage Temperature		-5 F to 140 F (-20C to 60C)
Operating Relative Humidity		Less than 80% (non-condensing)
Storage Relative Humidity		Less than 90% (non-condensing)

ProMax ProMedia Converter Installation Guide

ProMedia Rear View



All of ProMedia's video, audio, 1394, LAN, tape deck control and power connections are located on the back on the box. In general, the inputs are located on the left side and the outputs are on the right. Video, 1394 and LAN I/Os are located on the bottom row, while audio and RS-422 connections are located on the top row.

All inputs and outputs can be simultaneously connected. The desired video and audio source can be selected via the LCD menu or via the web control. Once a given input is selected, it will appear on all the various corresponding outputs simultaneously. (all outputs are always "hot").

The 10/100 LAN connection is utilized for web based control and firmware updates. Currently, ProMedia requires a DHCP sever for LAN access, future versions of the firmware will allow specific IP addresses to be entered (and stored) on the box. The LAN connection is not required for normal operation, but is required for firmware updates and web-based control.

ProMedia does require a stable black burst input for proper operation. Connect the black burst signal to the "Ref" video input. Also connect this same reference signal to any decks connected to ProMedia.

Three modes of tape deck control (and time code read/write) are supported via two separate RS-422 connections: one for the deck and a second to the PC (or serial control device). The three modes allow 1394 to RS-422 (deck) control, RS-422 (PC) to 1394 control or RS422 (PC) to RS-422 (Deck) Control (loop-thru mode). These modes are described in detail later in this manual.

Example Configurations

Analog Deck Capture/Playback

- Connect the analog component video outputs from the deck to the corresponding Y, R-Y and B-Y inputs on the ProMedia Converter box.
- Connect the balanced audio outputs from the deck to the balanced analog audio Ch 1-2 inputs on the ProMedia Converter.
- Connect one black-burst reference output to the deck and a second output to the Ref input of the ProMedia Converter.
- Connect the analog component video outputs from ProMedia (Y, R-Y and B-Y) to the corresponding deck inputs.
- Connect the balanced audio Ch 1-2 outputs from ProMedia to the corresponding analog inputs on the deck.
- Connect an RS-422 cable from the ProMedia “Deck” output to the corresponding input on the deck. Place the deck in “Remote” mode of operation.
- Connect a 1394 cable from the back of ProMedia to the PC/MAC for capture / playback.
- Connect a composite / S-Video / SDI cable from ProMedia to a Video monitor to allow viewing of the capture or playback video.
- Select the following inputs:
 - Video: Component
 - Audio: Balanced

Digital BetaCam Capture/Playback

- Connect one black-burst reference output to the deck and a second output to the Ref input of ProMedia.
- Connect an SDI cable from your Digital BetaCam Deck output to the SDI In on ProMedia.
- Connect an SDI cable from the SDI-Out of ProMedia to the SDI-In on the Digital Deck.
- Connect the RS-422 (Deck) from ProMedia to the RS-422 of the deck. Place the deck in “Remote” mode of operation.
- Connect a 1394 cable from the back of ProMedia to the PC/MAC for capture / playback.
- Connect a composite / S-Video / SDI cable from ProMedia to a Video monitor to allow viewing of the capture or playback video.
- Select the following inputs:
 - Video: SDI
 - Audio: SDI

Operating Notes and Recommendations

- PMC requires a black-burst reference-in for operation. This same black burst should be connected to the deck and other devices associated with the PMC box.
- Always connect the PMC to an un-interruptible power source (UPS). If the power is accidentally cut-off during the last phase of the firmware update, your box may be rendered unusable and will require shipment back to the dealer for repair. Note that the download of new code over the internet can be interrupted without causing a fatal error.
- Always use high-quality cables to connect the PMC to any video and/or audio device. This recommendation is especially critical for composite video and SDI connections. Always ensure that the three component cables are matched in length, so as to avoid potential color shifts.
- Route all cables away from computer monitors and other video monitors as they often emit EMI interference which can effect the video quality.
- Avoid “T” connections and couplers in the coaxial cable as much as possible.
- We recommend the use of high quality SDI grade cables for all connections. These cables have a very-high bandwidth and low attenuation and distortion characteristics.
- Whenever possible, maintain power to the PMC and the black burst generator. PMC uses crystal controlled clocks which can shift in frequency with temperature changes. Leaving the box powered-on and the black-burst generator also enabled, will minimize any drifts in clock frequency. PMC can be left in standby mode (by pressing the “power button”) as the clocks will continue running.
- When operating PMC in a stand-alone mode (no connection to a PC/MAC via 1394), set the “Mode” to “Capture”. Select the desired video and audio input, all of the outputs are simultaneously “hot”.
- During DV playback mode, only audio channels 1-2 are active. (Audio channels 3-4 are muted). ProMedia does not support the 4-channel 32-KHz DV audio mode.

Firmware Updates

The user may update ProMedia firmware through access to new versions maintained on a remote server. Though the update process remains under the control of the user, ProMedia will periodically check on the availability of a new firmware version and advise the user when an update is available. Version 1.0 firmware requires a DHCP server to provide an IP, Gateway and DNS address for firmware updates. A future version of the firmware will allow the entry of these parameters via the front panel.

Your local area network must have a DHCP server and permit an FTP client.

The firmware update process is divided into two steps, which occur concurrently without user intervention. The first step downloads the updated operating software and writes this software into the upper portion of Flash memory. After confirming 100% successful download of the new operating software, the new code is copied to the lower portion of the Flash. (During this copy operation, a loss of power to the box will cause a corruption of the data and require a return of the box to ProMax). After the new operating code has been copied to lower Flash memory, the latest version of the FPGA (Field Programmable Gate Array) code is downloaded to the upper area of Flash memory.

The update process takes 5-10 minutes, depending on your Internet connection speed.

Safety and ESD Precautions

- Always connect the box to specified power source: 100 to 240 VAC, 50/60 Hz. Ensure that the ground pin on the power plug is connected to earth ground (ie do not use a “cheater plug” which bypasses the 3rd prong on the power plug)
- Do not operate the unit in an unprotected outdoor installation or in wet area. Do not expose this product to rain or snow.
- Keep the operating temperature between 5°C and 40°C. Avoid conditions which would cause moisture condensation on the outside cover.
- There are no user serviceable components inside the box. Only a qualified technician should perform servicing of the unit. Opening the box may void the warranty.
- Do not pour water or any other fluid over the box. Avoid the use of sharp objects near the box as they may scratch the LCD panel.
- Clean only with a damp cloth.
- CAUTION: Electrostatic discharge (ESD) can damage components in this product. Avoid ESD by wearing a ground strap to discharge static voltage from your body before touching any of the outside surfaces, especially any of the connectors on the back side of the box.
- Do not touch exposed connector pins and do not insert any metal objects in the connector.
- Ensure that all connections made to the box (including at the “other end of the cable”) are made in ESD safe environments.
- Always transport and store the box in a static protected bag.

Specifications

Analog Video Input

Composite / S-Video:	NTSC, NTSC-J, PAL (BGHID) 12-Bit A/D, 4x oversampling 5-line adaptive comb filter < 1% Diff Phase < 1% Diff Gain
Component	Betacam, SMPTE/EBU N10 12-Bit A/D, 4x oversampling

Analog Video Output

Composite / S-Video:	NTSC, NTSC-J, PAL (BGHID) 12-Bit D/A, 16x oversampling < 1% Diff Phase < 1% Diff Gain
Component	12-Bit D/A, 16x oversampling

Reference Input

Black with Color Burst (1V)
Timing Accuracy < 5 ppm

Analog Audio Input

24-Bit A/D, 48KHz sample rate
108 dB dynamic range
-90 dB THD

Analog Audio Output

24-Bit D/A, 48 KHz sample rate
100 dB dynamic range
-85 dB THD

Digital Audio I/O

24-Bit AES/EBU, 48Khz sample rate
(Sample rate converter on input)

SDI I/O

270-MBit, 10-Bit SMPTE 259M-C
4-Channel Embedded Audio
20-Bit, 48KHz, SMPTE 272M-A

FireWire

100/200/400 MBits/sec
Standard 6-Pin connector
PMC does not consume or supply bus power

Physical

6.875" (175 mm) depth x 3.47" (88 mm)
height x 19.00" (483 mm) wide
5 lbs (2.3 kg)

Power

100 to 240 V AC (50/60 Hz)
15W maximum operating
8W maximum standby

Operating Temperature

40° F to 104° F (5°C to 40°C)

Storage Temperature

-5° F to 140° F (-20°C to 60°C)

Operating Relative Humidity

Less than 80% (non-condensing)

Storage Relative Humidity

Less than 90% (non-condensing)

Obtaining a Return Merchandise

Authorization Number:

In a continuing effort to provide our customers with the best service and shortest turnaround time possible, we have initiated a Return Merchandise Authorization (RMA) Policy. It is our policy that all material and repair returns, whether in warranty or not, are only accepted if an RMA number has been issued for the products being returned. Any unauthorized returns will be returned, unrepared, to the customer at the customer's expense.

The Conditions of The Warranty are as Follows:

ProMax reserves the right to determine if a repair is subject to the warranty agreement. Damage caused by products being dropped or mishandled is not covered by the warranty. Suitable packaging may be purchased from ProMax at a nominal cost.

All products are to be shipped prepaid to ProMax. For insurance reasons, ProMax cannot accept any product that is returned via the U.S. Postal Service. Returns will be accepted from UPS, Federal Express, or a comparable freight carrier. ProMax will return the repaired product via a like carrier, in the continental United States, only if the product is under warranty and subsequently found to be faulty. Out-of-warranty repaired products are shipped at the customer's expense. Turnaround time for warranty repairs will not exceed 48 hours (not including shipping time), unless extraordinary fault conditions exist.

ProMax Limited Warranty:

Labor and defects are covered for the warranty period stated on your original invoice from the original date of purchase. Only the original purchaser of the product is covered under this warranty. The warranty is not transferable. If you discover a defect, please refer to our Return Merchandise Authority Policy. The Warranty covers all ProMax hardware defective in materials or workmanship. During this warranty period, ProMax, at its option, will repair or replace product or product components, which in its opinion prove defective. Parts and components used in the repair process may be recycled or repaired, at ProMax's discretion. This warranty service will be performed at no charge to the registered owner, provided the product is shipped prepaid to ProMax. ProMax will return the repaired product via a like carrier, in the continental United States within 48 hours, shipping time excluded. ProMax reserves the right to determine whether a needed repair is subject to the warranty as per its provisions stated herein. Transit damage caused by inadequate packing invalidates this warranty. This warranty will be void if, in the opinion of ProMax, the product in question has been damaged through accident, misuse, misapplication, or as a result of service or modification performed not authorized in writing by ProMax.

Return Merchandise Authority Policy:

Damaged or defective ProMax products that are purchased from ProMax may be returned for replacement only. ProMax Systems, Inc., will not accept returns for any other reason. All eligible returns require a Return Merchandise Authorization (RMA) number. EMAIL ProMax Systems, Inc. at support@promax.com or call toll-free 1-877-776-6292 to obtain an RMA number. Items must be returned within 10 days of receiving your RMA number. Returned product must be in its original packaging with all contents included and must have the RMA number clearly marked on the outside of the package. Please be sure to include the Product Registration Card. Incomplete or unauthorized returns will be refused.

RMA numbers and the address to return product may be obtained from Technical Support by telephoning:

ProMax Systems, Inc. 16 Technology Drive · Building #106

Irvine, California 92618

Support Direct Line: 949-727-3626

Toll Free Support: 1-877-776-6292

Support FAX: 949-727-7002

Sales TEL: 949-727-3977 or 1-800-977-6629

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