datavideo

PRO AUDIO DELAY BOX

AD-300

Instruction Manual

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FCC Compliance

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:
1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Warnings and Precautions

1. Read all of these warnings and save them for later reference.
2. Follow all warnings and instructions marked on this unit.
3. Unplug this unit from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
4. Do not use this unit in or near water.
5. Do not place this unit on an unstable cart, stand, or table. The unit may fall, causing serious damage.
6. Slots and openings on the cabinet top, back, and bottom are provided for ventilation. To ensure safe and reliable operation of this unit, and to protect it from overheating, do not block or cover these openings. Do not place this unit on a bed, sofa, rug, or similar surface, as the ventilation openings on the bottom of the cabinet will be blocked. This unit should never be placed near or over a heat register or radiator. This unit should not be placed in a built-in installation unless proper ventilation is provided.
7. This product should only be operated from the type of power source indicated on the marking label of the AC adapter. If you are not sure of the type of power available, consult your Datavideo dealer or your local power company.
8. Do not allow anything to rest on the power cord. Do not locate this unit where the power cord will be walked on, rolled over, or otherwise stressed.
9. If an extension cord must be used with this unit, make sure that the total of the ampere ratings on the products plugged into the extension cord do not exceed the extension cord's rating.
10. Make sure that the total amperes of all the units that are plugged into a single wall outlet do not exceed 15 amperes.
11. Never push objects of any kind into this unit through the cabinet ventilation slots, as they may touch dangerous voltage points or short out parts that could result in risk of fire or electric shock. Never spill liquid of any kind onto or into this unit.
12. Except as specifically explained elsewhere in this manual, do not attempt to service this product yourself. Opening or removing covers that are marked "Do Not Remove" may expose you to dangerous voltage points or other risks, and will void your warranty. Refer all service issues to qualified service personnel.
13. Unplug this product from the wall outlet and refer to qualified service personnel under the following conditions:
    a. When the power cord is damaged or frayed;
    b. When liquid has spilled into the unit;
    c. When the product has been exposed to rain or water;

d. When the product does not operate normally under normal operating conditions. Adjust only those controls that are covered by the operating instructions in this manual; improper adjustment of other controls may result in damage to the unit and may often require extensive work by a qualified technician to restore the unit to normal operation;

e. When the product has been dropped or the cabinet has been damaged;

f. When the product exhibits a distinct change in performance, indicating a need for service.

Warranty

Standard Warranty

- Datavideo equipment are guaranteed against any manufacturing defects for one year from the date of purchase.
- The original purchase invoice or other documentary evidence should be supplied at the time of any request for repair under warranty.
- The product warranty period begins on the purchase date. If the purchase date is unknown, the product warranty period begins on the thirtieth day after shipment from a Datavideo office.
- All non-Datavideo manufactured products (product without Datavideo logo) have only one year warranty from the date of purchase.
- Damage caused by accident, misuse, unauthorized repairs, sand, grit or water is not covered under warranty.
- Viruses and malware infections on the computer systems are not covered under warranty.
- Any errors that are caused by unauthorized third-party software installations, which are not required by our computer systems, are not covered under warranty.
- All mail or transportation costs including insurance are at the expense of the owner.
- All other claims of any nature are not covered.
- All accessories including headphones, cables, and batteries are not covered under warranty.
- Warranty only valid in the country or region of purchase.
- Your statutory rights are not affected.

Three Year Warranty

- All Datavideo products purchased after July 1st, 2017 are qualified for a free two years extension to the standard warranty, providing the product is registered with Datavideo within 30 days of purchase.

- Certain parts with limited lifetime expectancy such as LCD panels, DVD drives, Hard Drive, Solid State Drive, SD Card, USB Thumb Drive, Lighting, Camera module, PCIe Card are covered for 1 year.
- The three-year warranty must be registered on Datavideo's official website or with your local Datavideo office or one of its authorized distributors within 30 days of purchase.

Disposal
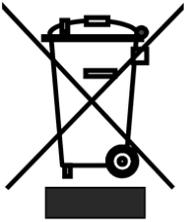
For EU Customers only - WEEE Marking
This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

CE Marking is the symbol as shown on the left of this page. The letters "**CE**" are the abbreviation of French phrase "Conformité Européene" which literally means "European Conformity". The term initially used was "EC Mark" and it was officially replaced by "CE Marking" in the Directive 93/68/EEC in 1993. "CE Marking" is now used in all EU official documents.

1. Product Introduction

The Datavideo AD-300 Pro Audio Delay Box allows you to synchronize an audio or mic signal to video. Featuring not only an audio delayer, it is also an audio mixer providing flexible matrix mapping of 5 audio input channels to two audio output channels.

The AD-300 offers an audio delay time of up to 3000ms. Moreover, it also supports audio level adjustment and gain control and equipped with advanced audio processing functions such as limiting, equalization, filtering, compression and expanding.

Housed in a rugged metal enclosure, the AD-300 is perfect for use in the studio or in the field.

Features

- A five channel audio mixer matrix mapping the inputs to two audio output channels.
- Supports up to three second delay for each audio input channel.
- Built-in balanced and unbalanced audio conversions.
- Audio Processors: Compressors, Limiters, Gate, Expander, Filter and Equalizer
- Volume adjustment for each audio input channel.
- Audio gain control
- Microphone and Audio Line composite input.
- Supports XLR MIC IN and +48V phantom power.
- LCD display for OSD menu and mode selection.
- Standalone or rackmount design.

Example Setup
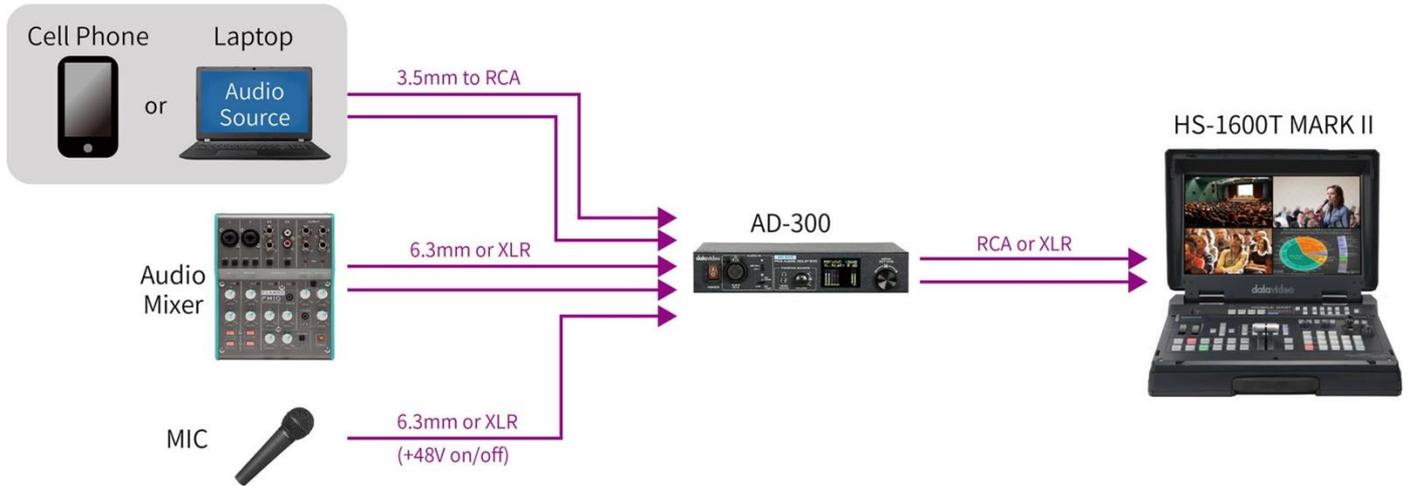
2. Connections and Controls

Front Panel
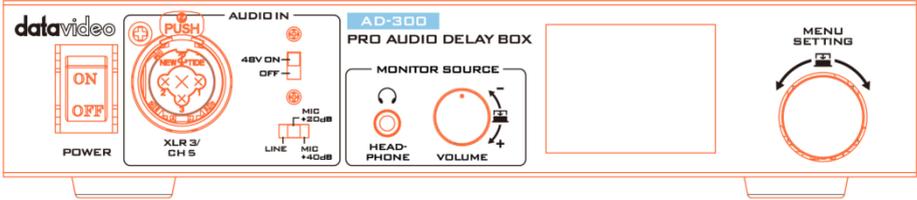
Power On/Off Switch
Switches the power On / Off

MENU Navigation Knob
Press the knob to activate the OSD menu on the LCD screen. Rotate to navigate the menu and press to select a menu option.

See *Menu Functions* for more information.

LCD Screen
In non-menu mode, the LCD screen displays the input and output volume level bars. The channel being monitored and its volume are shown at the top of the LCD screen.
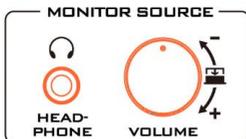
Headphone Jack/Volume Control Knob
The headphone jack accepts a stereo mini jack plug from the stereo headphones, allowing you to monitor audio input channels 1 – 5 and audio output channels 1 – 2. Press the volume control knob to switch between these audio channels. The headphone volume can be adjusted by rotating the volume control knob.
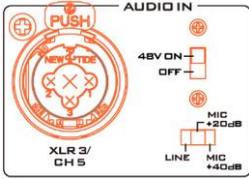
AUDIO IN (XLR 3/CH 5)
The XLR balanced audio input channel allows you to connect an **audio device** or a **condenser** or **dynamic microphone**.

There are two types of switches for configuring **AUDIO IN:**

The **LINE/MIC+20dB/MIC+40dB** switch is used to set the AUDIO IN to LINE IN, **MIC IN with a 20dB preamp** or **MIC IN with a 40dB preamp**.

When **LINE IN** is selected, set the **48V** switch to **OFF** in order to prevent damage to the connected audio device due to excessive current flow.

The **48V** switch is designed specifically for phantom power control. When **MIC IN** is selected, set the **48V** switch to **ON** if a **condenser microphone** is used and **OFF** if a **dynamic microphone** is used.

NOTE: Always check the microphone manual for the appropriate input voltage level and read the advice in the manual regarding phantom power as some MICs may have internal batteries.

Rear Panel
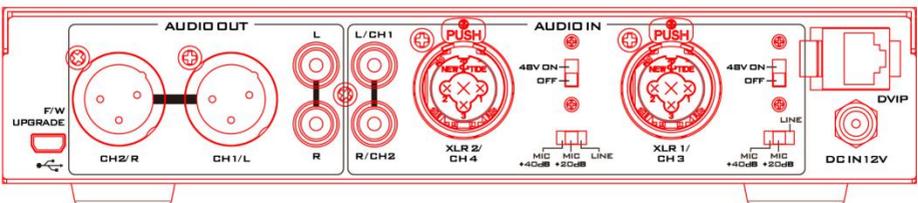
DC IN Socket
Connect the supplied 12V PSU to this socket. The power connection can be secured by screwing the outer fastening ring of the DC IN plug to the socket.
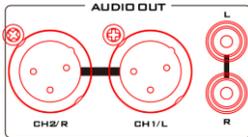
Audio Out

CH1/L and **CH2/R** ports are two XLR balanced audio output channels delivering a mixed or delayed audio output to a switcher.

L and R ports are two RCA unbalanced audio output channels delivering a mixed or delayed audio output to a display device.

Note: 4dBu (XLR) = -10dBV (RCA)

Audio IN

XLR 2/CH 4 and **XLR 1/CH 3** are two XLR balanced audio input channels and each allows you to connect an **audio device** or a **condenser** or **dynamic microphone**.

There are two types of switches for configuring **AUDIO IN:**

The **LINE/MIC+20dB/MIC+40dB** switch is used to set the AUDIO IN to **LINE IN**, **MIC IN with a 20dB preamp** or **MIC IN with a 40dB preamp**.

When **LINE IN** is selected, set the **48V** switch to **OFF** in order to prevent damage to the connected audio device due to excessive current flow.

The **48V** switch is designed specifically for phantom power control. When **MIC IN** is selected, set the **48V** switch to **ON** if a **condenser microphone** is used and **OFF** if a **dynamic microphone** is used.

NOTE: Always check the microphone manual for the appropriate input voltage level and read the advice in the manual regarding phantom power as some MICs may have internal batteries.

L/CH1 and R/CH2 are two RCA unbalanced audio input channels allowing you to connect an audio device.

F/W Upgrade
The F/W Upgrade port allows you to connect an external USB drive for firmware upgrade.
See *Firmware Update* for more information.
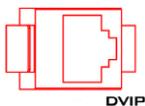
DVIP
TBD

3. MENU Functions

Main	Sub	Parameters	Parameters
Volume	RCA-L	-80 – 12 dB	Max volume can be set to 6 or 12 dB in Gain Limit.
	RCA-R	-80 – 12 dB	
	XLR-1	-80 – 12 dB	
	XLR-2	-80 – 12 dB	
	XLR-3	-80 – 12 dB	
	OUTPUT	-80 – 12 dB	
	GAIN LIMIT	RCA-L	+6 dB +12 dB
		RCA-R	+6 dB +12 dB
		XLR-1	+6 dB +12 dB
		XLR-2	+6 dB +12 dB
		XLR-3	+6 dB +12 dB
		OUTPUT	+6 dB +12 dB
		MONITOR	+6 dB +12 dB
		ESCAPE	
	ESCAPE		
MIXER	OUT-L	☐=L/OFF ☐=R/OFF ☐=1/OFF ☐=2/OFF ☐=3/OFF ☐=T/OFF	
	OUT-R	☐=L/OFF ☐=R/OFF ☐=1/OFF ☐=2/OFF ☐=3/OFF ☐=T/OFF	
	ESCAPE		
DELAY TIME	RCA-L	0 – 3000 msec	Step = 5 msec

	RCA-R	0 – 3000 msec	
	XLR-1	0 – 3000 msec	
	XLR-2	0 – 3000 msec	
	XLR-3	0 – 3000 msec	
	ESCAPE		
TONE MODE	FREQ	20 – 20,000 Hz	
	LEVEL	-64 – +24 dBu	-78 – +10 dBV
	ESCAPE		
EQUALIZER	RCA-L-equalizer	125 Hz	-10 – +10 dB
		250 Hz	-10 – +10 dB
		500 Hz	-10 – +10 dB
		1 kHz	-10 – +10 dB
		2 kHz	-10 – +10 dB
		4 kHz	-10 – +10 dB
		8 kHz	-10 – +10 dB
		16 kHz	-10 – +10 dB
		ESCAPE	
	RCA-R-equalizer	125 Hz	-10 – +10 dB
		250 Hz	-10 – +10 dB
		500 Hz	-10 – +10 dB
		1 kHz	-10 – +10 dB
		2 kHz	-10 – +10 dB
		4 kHz	-10 – +10 dB
		8 kHz	-10 – +10 dB
		16 kHz	-10 – +10 dB
		ESCAPE	
	XLR-1-equalizer	125 Hz	-10 – +10 dB
		250 Hz	-10 – +10 dB
		500 Hz	-10 – +10 dB
		1 kHz	-10 – +10 dB
		2 kHz	-10 – +10 dB
		4 kHz	-10 – +10 dB
		8 kHz	-10 – +10 dB
		16 kHz	-10 – +10 dB

		ESCAPE	
	XLR-2-equalizer	125 Hz	-10 – +10 dB
		250 Hz	-10 – +10 dB
		500 Hz	-10 – +10 dB
		1 kHz	-10 – +10 dB
		2 kHz	-10 – +10 dB
		4 kHz	-10 – +10 dB
		8 kHz	-10 – +10 dB
		16 kHz	-10 – +10 dB
		ESCAPE	
	XLR-3-equalizer	125 Hz	-10 – +10 dB
		250 Hz	-10 – +10 dB
		500 Hz	-10 – +10 dB
		1 kHz	-10 – +10 dB
		2 kHz	-10 – +10 dB
		4 kHz	-10 – +10 dB
		8 kHz	-10 – +10 dB
		16 kHz	-10 – +10 dB
		ESCAPE	
	ESCAPE		
EFFECT	Compressor (RCA-L/RCA-R/XLR-1/XLR-2/XLR-3)	Threshold	+21 – 0 dBu OFF
		Ratio	1:1 1.6:1 2:1 4:1 8:1 16:1 32:1 64:1 100:1
		Attack Time	50 – 500 mS
		Decay Time	300 – 2000 mS
		ESCAPE	
	Expander (RCA-L/RCA-R/XLR-1/XLR-2/XLR-3)	Threshold	-48 – -66 dBu OFF
		Ratio	1:1 1.6:1 2:1

			4:1 8:1 16:1 32:1 64:1 100:1
		Attack Time	50 – 500 mS
		Decay Time	300 – 2000 mS
		ESCAPE	
	Limiter (RCA-L/RCA-R/XLR-1/XLR-2/XLR-3)	Threshold	-6 – +24 dBu OFF
		Attack Time	50 – 500 mS
		Decay Time	300 – 2000 mS
		ESCAPE	
	Gate (RCA-L/RCA-R/XLR-1/XLR-2/XLR-3)	Threshold	-28 – -88 dBu OFF
		Attack Time	50 – 500 mS
		Decay Time	300 – 2000 mS
		ESCAPE	
	Filter (RCA-L/RCA-R/XLR-1/XLR-2/XLR-3)	Low-Pass	10 – 20,000 Hz OFF
		High-Pass	10 – 20,000 Hz OFF
		ESCAPE	
	ESCAPE		
SYSTEM	Bright	5 – 100%	
	Dimmer	5 – 100%	
	LVL OSD	ON/OFF	
	dBu OSD	ON/OFF	
	LCD TEST	Red Green Blue Black White	
	Update Software		
	Reset All	ON	
	Output VR Lock	ON/OFF	
	ESCAPE		
ESCAPE			

Volume

VOLUME sets the audio I/O volumes. Follow the steps outlined below to adjust the volume of the respective audio channels.

- Press the **MENU SETTING** knob to access the system configuration menu.
- Because **VOLUME** is the first item of the main menu, so press the **MENU SETTING** knob again to access the **VOLUME** sub menu which allows you to set the volumes of five audio inputs and the audio output listed as follows:
  - RCA-L
  - RCA-R
  - XLR-1
  - XLR-2
  - XLR-3
  - OUTPUT
- Press the **MENU SETTING** knob to select the audio input or output.
- Rotate the **MENU SETTING** knob to adjust the volume of the selected audio input (-80 – +12 dB) or output (-80 – +12 dB).
- Select **ESCAPE** to exit and return to main menu.

Gain Limit allows you to set the maximum gain of the five audio inputs, the audio output and the headphone volume.

Follow the steps below to select the maximum gain of the I/O channels.

- Press the **MENU SETTING** knob to access the system configuration menu.
- Rotate the **MENU SETTING** knob to **GAIN LIMIT**, then press the **MENU SETTING** knob again to access the **GAIN LIMIT** sub menu which allows you to select the maximum gain of five audio inputs, one audio output and the headphone output listed as follows:
  - RCA-L
  - RCA-R
  - XLR-1
  - XLR-2
  - XLR-3
  - OUTPUT
  - MONITOR
- Rotate the **MENU SETTING** knob to the desired audio channel and press the knob to select.

- Rotate the **MENU SETTING** knob to switch between 6 and 12 dB then press the knob to select.
- Select **ESCAPE** to exit and return to the **VOLUME** sub menu.

Mixer

AD-300 can also be used as a mixer which combines one or more input channels into a single output channel. You can mix different combinations of input channels onto the output channels L and R. Follow the steps outlined below to set the mixer:

- Press the **MENU SETTING** knob to access the system configuration menu.
- Rotate the **MENU SETTING** knob to **MIXER** then press the **MENU SETTING** knob again to access the **MIXER** sub menu.
- There are two mixers, one for audio out L and one for audio out R.
- Select a mixer then set the mixing combination by enabling an input channel or the test tone in the squares. The available options are listed in the order as follows:
  - L = RCA-L
  - R = RCA-R
  - 1 = XLR-1
  - 2 = XLR-2
  - 3 = XLR-3
  - T = Test tone

  Note: An empty square (☐) indicates that the input channel is disabled.
- Once done, select **ESCAPE** to exit and return to main menu.

Delay Time

Delay Time sets the delay time of the input channels listed as follows:

- RCA-L/CH 1
- RCA-R/CH 2
- XLR-1/CH 3
- XLR-2/CH 4
- XLR-3/CH 5

Follow the steps outlined below to adjust the delay of a particular input channel:

- Press the **MENU SETTING** knob to access the system configuration menu.
- Rotate the **MENU SETTING** knob to **DELAY TIME**.

- Press the **MENU SETTING** knob to open the **DELAY TIME** sub menu.
- Rotate the **MENU SETTING** knob to the audio input channel that you would like to delay.
- Press the **MENU SETTING** knob to select the audio input channel then rotate the **MENU SETTING** knob to adjust the delay. The selectable range of the delay is **0 – 3000 msec**.
- Select **ESCAPE** to exit and return to main menu.

Tone Mode

Audio test tones are a special class of artificially-created sounds. An example is the sine-wave tone usually used for testing the quality of an audio signal or audio hardware systems. They can also be used for identifying faults in your audio system.

AD-300 offers sine-wave test tones ranging from 20 Hz – 20 kHz. If you are not sure which tone to use, 1 kHz is your safe bet.

Follow the steps outlined below to set the test tone:

- Press the **MENU SETTING** knob to access the system configuration menu.
- Rotate the **MENU SETTING** knob to **TONE MODE**.
- Press the **MENU SETTING** knob to open the **TONE MODE** sub menu.
- Select **FREQ** to select the frequency of the tone output. **LEVEL** allows you to set the volume of the tone output ranging from **-48 dBu to +24 dBu**.
- Select **ESCAPE** to exit and return to main menu.

NB: The AD-300 is an Audio Delay device and it can also be used as a Tone Generator. Please DO NOT connect the AD-300 directly to a headset or set of speakers as it should not be used like an Audio AMP.

Equalizer

The equalizer allows you to customize the audio inputs by eliminating or reducing unwanted sounds or making certain sounds more prominent at a particular frequency.

The generally established audio frequency range is 20 Hz to 20,000 Hz, within which there are seven subsets of frequencies defined for sound equalization. See the table below for descriptions.

Frequency Subset	Frequency Range	Description
Sub-bass	16 – 60 Hz	Low musical range such as an upright bass, tuba and bass guitar

Bass	60 – 250 Hz	Normal speaking vocal range
Lower Midrange	250 – 500 Hz	Typical brass instruments and mid woodwinds such as the alto saxophone
Midrange	500 Hz – 2 kHz	Instruments such as the violin and piccolo
Higher Midrange	2 – 4 kHz	Harmonics of a trumpet
Presence	4 – 6 kHz	Harmonics of the violin and piccolo
Brilliance	6 – 20 kHz	Whines and whistles

Follow the steps outlined below to configure the equalizer of a particular input channel:

- Press the **MENU SETTING** knob to access the system configuration menu.
- Rotate the **MENU SETTING** knob to **Equalizer**.
- Press the **MENU SETTING** knob to open the **Equalizer** sub menu.
- Rotate the **MENU SETTING** knob to the audio input channel to which you would like to apply the equalizer.
    - RCA-L-equalizer
    - RCA-R-equalizer
    - XLR-1-equalizer
    - XLR-2-equalizer
    - XLR-3-equalizer
- Press the **MENU SETTING** knob to select the audio input channel.
- Rotate the **MENU SETTING** knob to a particular frequency range then press the **MENU SETTING** knob to select. The available frequency ranges are listed as follows:
    - 125 Hz
    - 250 Hz
    - 500 Hz
    - 1 kHz
    - 2 kHz
    - 4 kHz
    - 8 kHz
    - 16 kHz
- Lastly, rotate the **MENU SETTING** knob to set the attenuation or amplification factor (-10 dB to +10 dB) of the selected frequency range.
- Select **ESCAPE** to exit and return to main menu.

Effect

Dynamic effects play a crucial role in modern audio mixing. They are designed to alter the dynamic range of an audio signal. There are four main dynamic effects, namely, compressor, limiter, expander and gate. They will be described in detail in this section.

Compressor

The process of compression reduces the level of loud sections of the audio signal while leaving lower levels unchanged, thereby reducing the dynamic range.

Threshold: The threshold control sets the level above which compression will take place. The audio signal will not be compressed if it stays below the threshold level. The audio signal will be compressed by the compression ratio (see *Ratio* for more information) if it rises above the threshold. AD-300 offers a threshold range of 0 to +21 dBu. Setting it to OFF disables the compressor.

Ratio: The compression ratio determines how much gain reduction the compressor applies when the audio signal passes the threshold level. For example, a ratio of 4:1 means that if the signal rises above the threshold by 4 dB, the output signal from the compressor will only be 1 dB higher than the threshold.
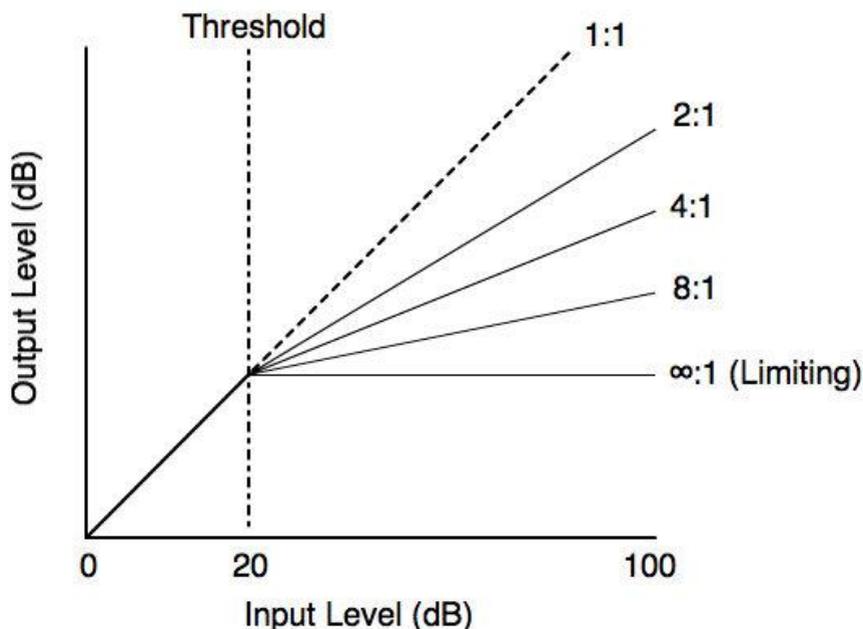
The available compression ratios on AD-300 are listed as follows:

- 1:1 applies no compression. The input and output levels remain the same, regardless of the threshold level.
- 1.6:1 applies subtle compression. This ratio is gentle and transparent sounding. It will preserve the natural peaks and valleys.
- 2:1 applies light compression. This ratio smoothly controls the dynamics without causing noticeable changes to tone and punch.
- 4:1 applies moderate compression. This ratio setting is slightly more aggressive. It applies gentle transient control while retaining natural dynamics.
- 8:1 applies medium compression. This ratio has tighter control over transients. There will be subtle changes to tone, punch and loudness.
- 16:1 applies heavy compression. This ratio is aggressive. It will dramatically reduce dynamic range, causing a signal to lose punch, clarity and presence if pushed hard.
- 32/64/100:1 are limiting. At 100:1, the compressor essentially blocks the signal from crossing the threshold.

Attack time (50 – 500 msec) is the time it takes for the compressor to complete the gain reduction based on the compression ratio.

Decay time or **release time** (300 – 2000 msec) is the time it takes for the compressor to bring up the output level to be the same as the input level once compression is not needed anymore (input level is now below the threshold level).

Expander

An expander can be used to reduce background noise. It reduces the level of an audio signal by applying gain reduction similar to a compressor but below the threshold instead of above it.

The **threshold** control sets the level below which expanding will take place. The audio signal will not be gain reduced if it stays above the threshold level. The audio signal will be gain reduced by a ratio (see *Ratio* for more information) if it falls below the threshold. AD-300 offers a threshold range of -66 to -48 dBu. Setting it to OFF disables the expander.

Ratio determines how much gain reduction the expander applies when the audio signal falls below the threshold level. For example, a ratio of 4:1 means that if the input signal falls below the threshold by 1 dB, the output signal from the expander will be 4 dB lower than the threshold.

The available ratios on AD-300 are listed as follows:

- 1:1
- 1.6:1
- 2:1
- 4:1
- 8:1
- 16:1
- 32:1
- 64:1
- 100:1

The **attack time** (50 – 500 msec) sets how quickly the expander starts to reduce the gain after the audio level drops below the threshold.

The **decay time** or **release time** (300 – 2000 msec) sets how quickly the expander stops having an effect after the level crosses above the threshold.

Limiter

A limiter limits the audio signal to a certain threshold. While a compressor smoothly reduces the gain above the threshold, a limiter completely prevents any additional gain above the threshold. The graph below shows a limiting ratio of infinity to one.
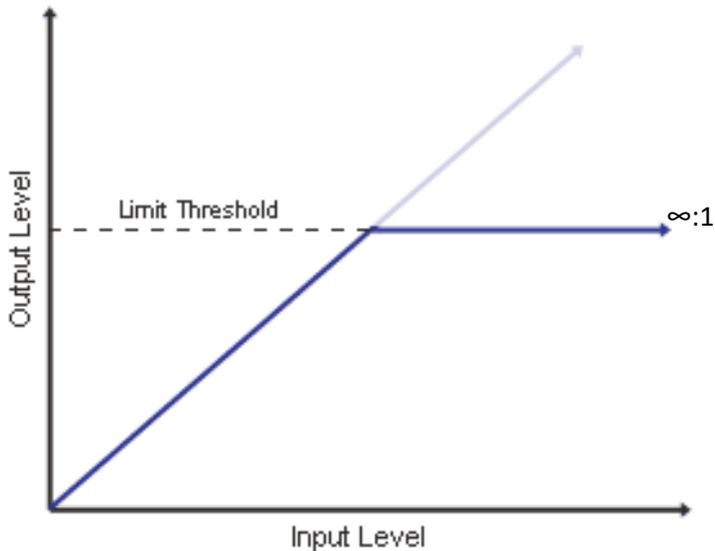
Threshold (-6 – +24 dBu) is the signal level at which the limiter will be activated. Setting it to OFF disables the limiter.

Attack Time (50 – 500 msec) is the reaction time of the limiter. The limiter has a much faster attack time than a typical compressor.

Decay Time or **release time** (300 – 2000 msec) is the time the limiter takes to return to zero compression.

Gate

The noise gate mutes an audio signal when it goes below the threshold. Therefore, it can be used to reduce the noise.

Threshold (-88 – -28 dBu) is the signal level at which the gate will be activated. Setting it to OFF disables the limiter.

Attack Time (50 – 500 msec) is the reaction time of the gate, which determines how quickly the noise gate reacts to the changes in the input signal level.

Decay Time or **release time** (300 – 2000 msec) determines how quickly the gate stops having an effect after the input signal level crosses above the threshold.

Filter

Other than the dynamic effects, AD-300 also offers audio filters to allow either high or low frequencies to pass through.

A low-pass filter attenuates content above a cutoff frequency (threshold frequency), allowing lower frequencies to pass through the filter.

A high-pass filter attenuates content below a cutoff frequency (threshold frequency), allowing higher frequencies to pass through the filter.

System

Access this sub menu to adjust the system settings. Available options are described as follows:

Bright sets brightness of the LCD screen ranging from 5 – 100%.

Dimmer sets the idle duration after which the LCD screen will be dimmed.

LVD OSD turns ON/OFF the volume bar display.

dBu OSD turns ON/OFF the dBu unit display.

LCD TEST allows you to change the background color of the LCD screen. The available colors are **Red**, **Green**, **Blue**, **Black** or **White**.

UPDATE SW upgrades the device's firmware. See ***Firmware Update*** for more information.

RESET ALL restores the factory defaults.

Output VR Lock, once enabled, locks the headphone volume control knob, preventing unintentional volume change.

Select **ESCAPE** to exit and return to main menu.

4. Firmware Update

Datavideo usually releases new firmware containing new features or reported bug fixes from time to time. Customers can either download the AD-300 firmware as they wish or contact their local dealer or reseller for assistance.

This section outlines the firmware upgrade process which should take ***approximately few minutes to complete***.

The existing AD-300 settings should persist through the *firmware upgrade process, which should not be interrupted once started* as this could result in a non-responsive unit.

Tools Required
- OTG Cable: A female USB to male mini-USB cable
- USB flash Drive < 16G
- Latest firmware files (can be downloaded from the product page)

Procedure
1. Copy the latest firmware file to the USB flash drive.
   - File name: A300FGA.BIN

2. Connect the USB flash drive to the USB end of the OTG cable and the mini-USB end of the OTG cable to the AD-300.

3. Turn on the device power.

4. Press the MENU SETTING knob and follow the menu path below to start firmware upgrade:
   - MENU→SYSTEM→UPDATE SW

5. Select **"FPGA"** to upgrade the FPGA firmware (A300FGA.BIN) only or **"UPDATE ALL"** to upgrade the FPGA and MCU firmware (A300FPGA.BIN/A300MCPU.BIN) simultaneously.
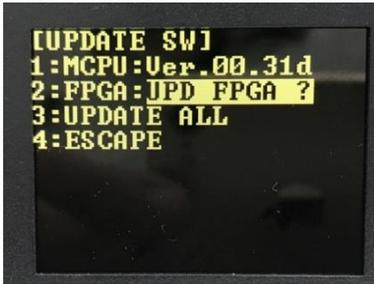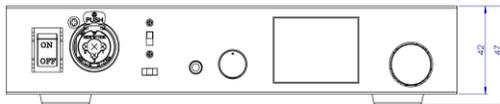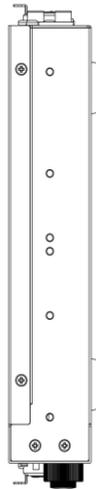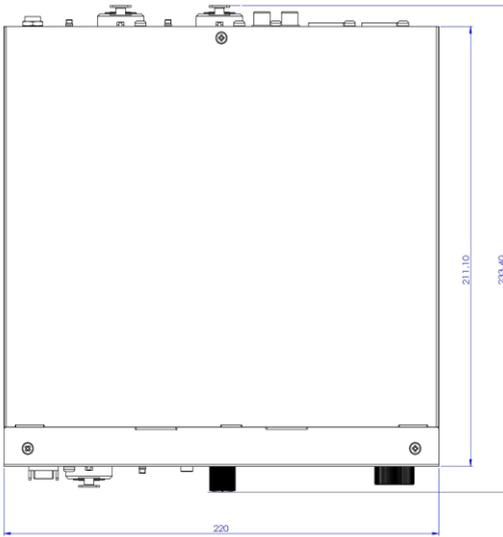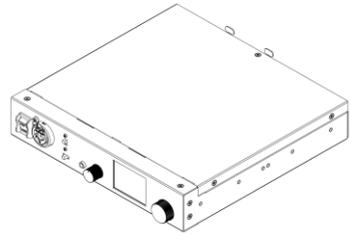
6. After the firmware has been successfully upgraded, you should see the following on the LCD screen. Remove the OTG cable and reboot the device.
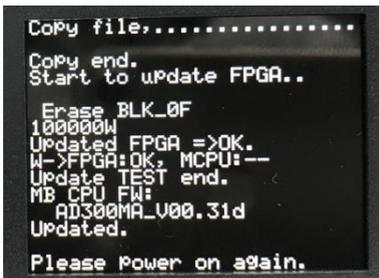
7. Finally, check the firmware version.
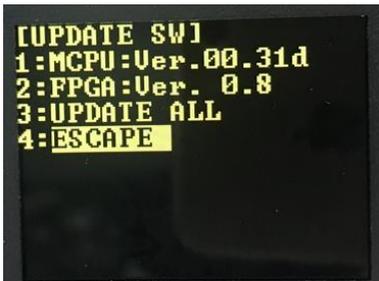
5. Dimensions

All measurements in millimeters (mm)

6.   Specifications

Interfaces	
Audio Input	3 x balanced stereo audio / Microphone (3 Pin XLR / 1/4" (6.3mm) Socket) 2 x unbalanced stereo audio, RCA sockets
Audio Output	2 x balanced stereo audio, XLR connectors 2 x unbalanced stereo audio, RCA sockets
Headphone	1 x 3.5mm Stereo headphone with volume control
Display	2" LCD screen
MIC Gain / LINE Switch	MIC phantom power: 48V (ON / OFF) MIC+40dB/MIC+20dB/LINE
Firmware Update	Mini USB
Power	DC In 12V

Audio Specification		
Audio Delay		Up to 3000ms
Output Max Level		+24dBu
Line Input (XLR)	**Bandwidth**	20Hz~20KHz < +/- 3dB
	S/N Ratio	> 80 dB @1KHz, 14dBu (signal level)
	T.H.D.	< 0.01% @1KHz,14dBu
	Isolation	> 75dB
Line Input (RCA)	**Bandwidth**	20Hz~20KHz < +/- 3dB
	S/N Ratio	> 80 dB @1KHz,0dBV (signal level)
	T.H.D.	< 0.01% @1KHz,0dBV
	Isolation	> 75dB

Microphone Input (XLR)	Bandwidth	20Hz~20KHz < +/- 3dB
	S/N Ratio	> 75 dB @1KHz, +20dB gain > 70 dB @1KHz, +40dB gain
	T.H.D.	< 0.03% @1KHz, +20dB gain < 0.5% @1KHz, +40dB gain
	Isolation	> 75dB @+20dB gain > 70dB @+40dB gain
Audio Processors		
Compressor		Yes
Limiter		Yes
Gate		Yes
Expander		Yes
Equalizer		Yes
Filter		Yes
Delay		Yes
General		
Operating Temperature		0°C to 40°C (32°F to 104°F)
Storage Temperature		-20°C to 60°C (-4°F to 140°F)
Humidity		10% to 80% (non-condensing)
Dimensions (mm)		205mm (W) x 235mm (D) x 45mm (H)
Weight		1.3 Kg

Notes

Service & Support

It is our goal to make your products ownership a satisfying experience. Our supporting staff is available to assist you in setting up and operating your system. Please refer to our web site www.datavideo.com for answers to common questions, support requests or contact your local office below.

Please visit our website for latest manual update.

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