A R T
APPLIED RESEARCH AND TECHNOLOGY

USB Pre II
Audio Interface
Project Series

User's Manual

CUBASE LE
FREE DOWNLOAD

IMPORTANT SAFETY INSTRUCTION – READ FIRST

This symbol, whenever it appears alerts you to the presence of uninsulated dangerous voltage inside the enclosure-voltage that may be sufficient to constitute a risk of shock.

This symbol, whenever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

Read Instructions: Retain safety and operating instructions for future reference. Heed all warnings printed here and on the equipment. Follow the operating instructions printed in this user manual.

Do not open: There are no user serviceable parts inside. Refer any service work to qualified technical personnel only.

Environment: Protect from excessive dirt, dust, heat, and vibration when operating and storing. Avoid tobacco ash, drink spillage and smoke, especially that associated with smoke machines.

Handling: Protect the controls from damage during transit. Use adequate padding if you need to ship the unit. To avoid injury to yourself or damage to the equipment, take care when lifting, moving or carrying the unit.

Servicing: Refer servicing to qualified technical personnel.

Installation: Install the unit in accordance with the instructions printed in the user manual.

INTRODUCTION

The USB PRE II is a high quality, 2-IN / 4-OUT digital recording interface intended for home studio and mobile recording applications. It provides a pair of inputs that accept mic, instrument and line level signals.

Equipped with high quality digital converters, the USB PRE II offers up to 32-bit /192kHz performance. A single USB port is used to both power the unit and deliver audio content to your DAW, making it a great option for portable recording with a laptop or mobile device.

Bundled with Cubase LE and a low latency ASIO driver, the USB PRE II will perform at a level professionals expect while being simple enough for the novice user.

Key Features Include

- High-Quality 32-bit A to D and D to A Converters
- Sample rates from 44.1k to 192kHz
- Low latency ASIO and WDM driver
- Low noise mic preamps
- High Z instrument inputs
- Zero latency monitoring
- Front panel headphone output
- MIDI Input
- MIDI Output
- Compact rugged package designed for years of trouble-free use
- Perfect for Professional and Project Studios

DRIVERS

ART provides a low latency ASIO driver, which you need to download from our website to use the unit with Windows. Ensure your DAW application, such as Cubase LE, supports ASIO I/O to take advantage of this driver and its control panel.

The ASIO driver enables sample rates up to 192kHz with up to 6 streams of audio (2 in and 4 out). When you access the USB PRE II's control panel you can adjust the buffer size to minimize latency for your specific computer.

Windows

Go to www.artproaudio.com/product/usb-ii/ to find the latest ASIO drivers.

Mac OS

There are no additional drivers needed.

Cubase LE

Included with your purchase is a copy of Steinberg's Cubase LE recording software. Follow instructions on the included card to download your product.

CONNECTIONS
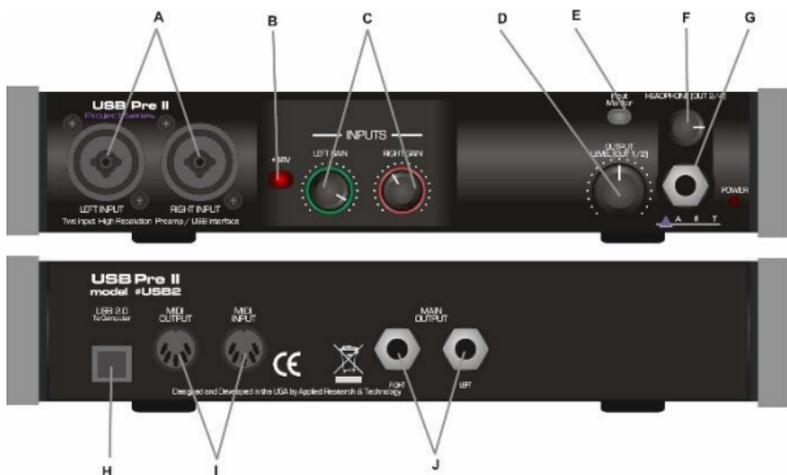
A. **Left** and **Right** "Combo" jacks on the front allow for either XLR or 1/4-inch TRS input connections.

The **1/4-inch Input** connections are used for instrument or line level balanced or unbalanced signals. The high fixed input impedance works well with guitar and other passive instrument pickups. You can use an unbalanced or balanced plug with this connection. The **XLR Input** connections are used primarily for balanced microphone input. Pin 2 is positive, pin 3 is negative, and pin 1 is ground.

B. **+48V Switch:** Phantom power is used to power Condenser microphones. The +48 Volt phantom power (when enabled) is supplied to pins 2 and 3 and pin 1 acts the ground return. Do not lift pin 1 when using phantom power.

C. **INPUTS:** These potentiometers independently vary the input gain for the Left and Right Channels.

D. **OUTPUT LEVEL:** Potentiometer controls the gain for channel 1/2.

E. **Input Monitor:** When the switch is engaged, a user can monitor the input signal from the 1/4-inch headphone jack.

F. **Headphone LEVEL (OUT CH3/4):** Allows the user to adjust the gain to the Headphone out jack.

G. **Headphone Jack:** Access point for monitoring.

H. **USB Jack:** Interface and unit power.

I. MIDI INPUT/MIDI OUTPUT: MIDI access points.

J. **Main Output:** Analog outputs.

QUICK START

1. Connect the USB PRE II to your computer or mobile device through the USB cable provided.

2. Connect your output jacks. Studio monitors are typically connected via a pair of ¼-inch cables to the Main Outputs. A pair of headphones can be connected to via the front panel. **Refer to the *Outputs – Headphone Setup* to understand how to route audio to the headphones.**

3. Set your levels. Turn your level controls up with a signal present until you see the indicator rings occasionally blinking red. If you hear distortion, turn the level down.

4. Select the USB PRE II as your input and output in your DAW. Consult with the user manual of your DAW on how to do this.

CONTROLS and OPERATION
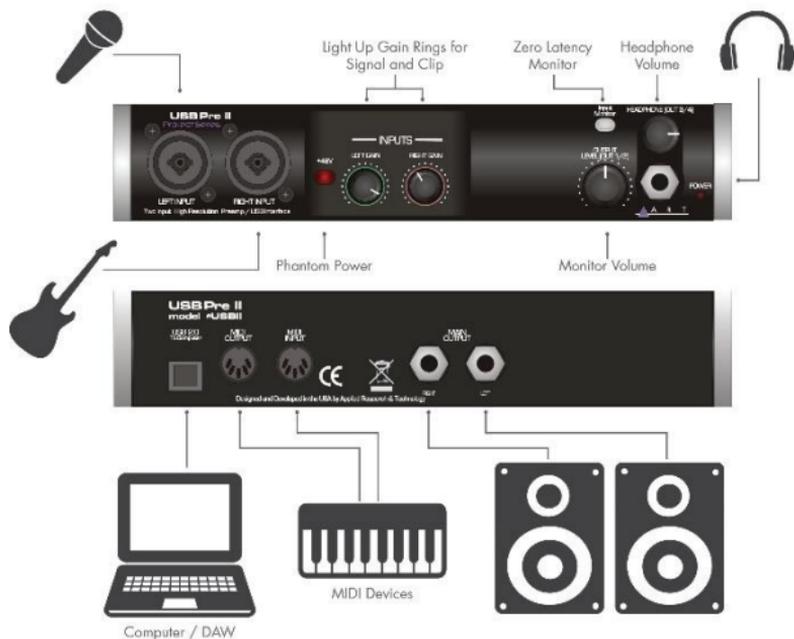
Inputs

Use the **Left** and **Right** input jacks to connect your microphone, instrument or line-level sources. Balanced and unbalanced cables are both supported.

The **Left** and **Right Gain** controls directly adjust the input amplifiers, giving you up to 50dB of clean gain. Set the controls counterclockwise to minimum gain when connecting the inputs.

The **+48V Phantom Power** switch provides power to the XLR input jacks when using condenser microphones. Minimize pops in your system and stress on the microphone by reducing the

gain prior to connecting your microphone and applying phantom power.

The **Level Indicators** around the channel gain pots respond to incoming signals and the level applied. Adjust levels to get a consistently green ring with occasional flashes of red. The red ring indicates 2dB below digital clipping and should light on musical peaks only. The green ring comes on about 10dB before the red ring.

Outputs

The USB PRE II is equipped with two pairs of stereo outputs. Connect your studio monitors through the ¼-inch **Main Outputs** (OUT1/2) on the rear panel using quality cables.

Headphones can be used for personal monitoring through the stereo TRS **Headphone** jack (OUT3/4) on the front panel. Press the **Input Monitor** button to listen to the signal directly from the inputs. Otherwise, leave the **Input Monitor** off to listen to the processed signal from the computer.

TIP: When using the **Input Monitor** function, reduce the level on unused channels to reduce the noise in the output.

The **Output Level (OUT1/2)** control allows you to directly adjust the **Main Output** rear jacks while the **Headphone (OUT3/4)** control sets the level to the headphones.

Both the **Main** and **Headphone** outputs can be used to send out different stereo feeds, which is handy when you want to run to a mixer and instrument amp in a live situation, or when connecting to a computer or recording system and locally monitoring your source with headphones.

Headphone Setup

The USB Pre II routes the Headphone (OUT3/4) signal on an independent stereo path from the Main Outputs (OUT1/2). This gives the user the flexibility of creating unique Main and Headphone monitor mixes in their DAW of choice.

For listening to system sounds, user must select between the Main Outputs and Headphone output as follows.

Windows 10

1. Click on the Windows home icon and type *Sound Settings* into the search bar. Alternatively, click on the speaker icon on the lower right side of your screen.
2. To direct sound to the **main outputs**, select USB II OUT1/2 or USBIV OUT1/2
3. To direct sound to the **headphones**, select USB II OUT3/4 or USBIV OUT3/4

macOS 12.x (Monterey)

1. Open Audio MIDI Setup
2. Click '+' in the lower left corner
3. Select 'Create Aggregate Device'
4. Select USB IV or USB II
5. Apply labels to Output Channels 3 and 4 (i.e. name them OUT3 and OUT4)
6. Click 'Configure Speakers'
7. Choose OUT3 and OUT4 and click Apply
8. You can rename the Aggregate Device to *USB II Headphones*
9. Go to System Preferences > Sound
10. Select the 'Aggregate Device' you just created to listen on OUT 3/4 or 'USB II Audio Interface' to listen on OUT 1/2

macOS 11.x (Big Sur) and earlier

1. Open Audio MIDI Setup
2. USB II Audio Interface > Output
3. Configure Speakers
4. Choose between Front Left,Front Right (OUT 1/2) or 3,4 (OUT 3/4)
5. Click Done
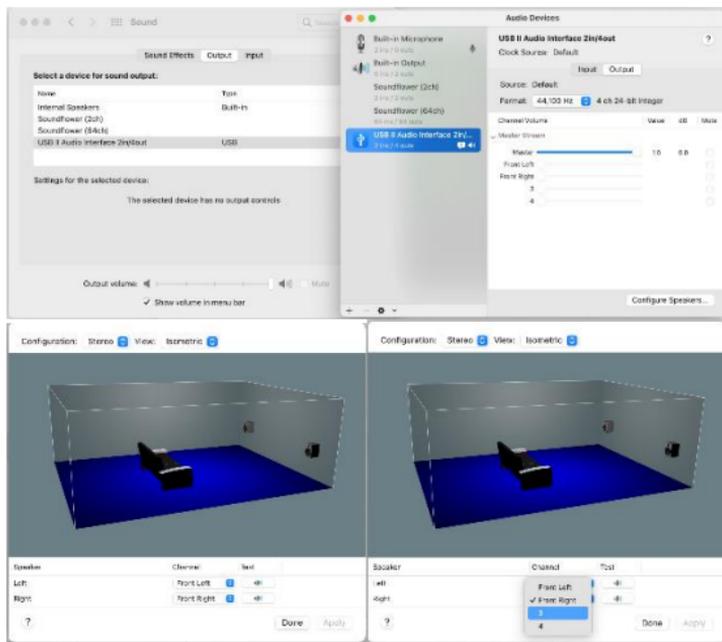
Creating a Headphone Out Bus in Cubase

1. Ensure you are using the USB II or USB IV ASIO driver
   a. Go to Studio > Studio Setup
   b. Set the ASIO Driver to USB II or USB IV depending on your product
2. Create a headphone bus
   a. Go to Studio > Audio Connections
   b. Click Add Bus
   c. Set the Bus Name to 'Headphones' and keep the configuration of Stereo / L R

You can use the Headphones bus in two ways:
1. Set the output of your individual tracks to either 'Stereo Out' (OUT1/2) or 'Headphones' (OUT3/4)
2. Create a Send on your track if you wish to monitor on both 'Stereo Out' and 'Headphones' simultaneously
   a. On the track Inspector, go to Sends
   b. Add a send to 'Headphones'
   c. Ensure the 'Activate / Deactivate Send' button is set to Activate

USB

The **USB connector** provides power to the USB PRE II while delivering audio to and from your computer or mobile device. The USB PRE II is a USB 2.0 class compliant device. Use a high-quality shielded USB cable for best performance and avoid connections through USB hubs when possible.

ASIO Driver Configuration in Cubase (Windows)

In order to take advantage of the low-latency ASIO driver provided with the USB Pre IV, make the following adjustments in Cubase.

1. Go to Studio > Studio Setup
2. Click Audio System
   a. Select the USB II or USB IV from the ASIO Driver pulldown on the right
   b. Click Switch from the popup
3. Click USB II or USB IV on the left panel
   a. Click Control Panel on the right side
   b. Use the panel to select your desired sampling rate and buffer size

MIDI

Input and Output

Use the **MIDI INPUT** and **MIDI OUTPUT** jacks to pass MIDI data back and forth between your computer and devices such as MIDI keyboard controllers, drum machines and sequencers. *The MIDI IN and MIDI OUT will show up as USB PRE II under your MIDI I/O selections.*

Setup

The USB PRE II and USB PRE IV implement a USB-MIDI interface to connect your instruments, sequencers and other MIDI equipment to your computer.

Here is how the USB PRE II's MIDI presents itself in the Windows 10 Device Manager:
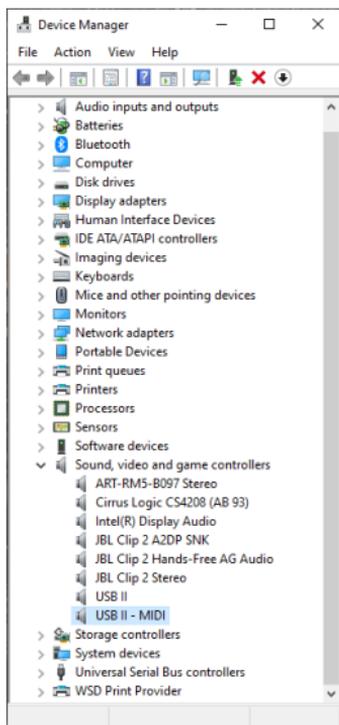
Fig. 1 – Device Manager

When your Windows application wants to use the MIDI inter-face, look for USB PRE II or USB PRE IV.

This is how the USB PRE II MIDI I/O shows up on a MAC using Audio/MIDI setup MIDI Window. As you can see there is one in-put and one output that are not yet assigned.
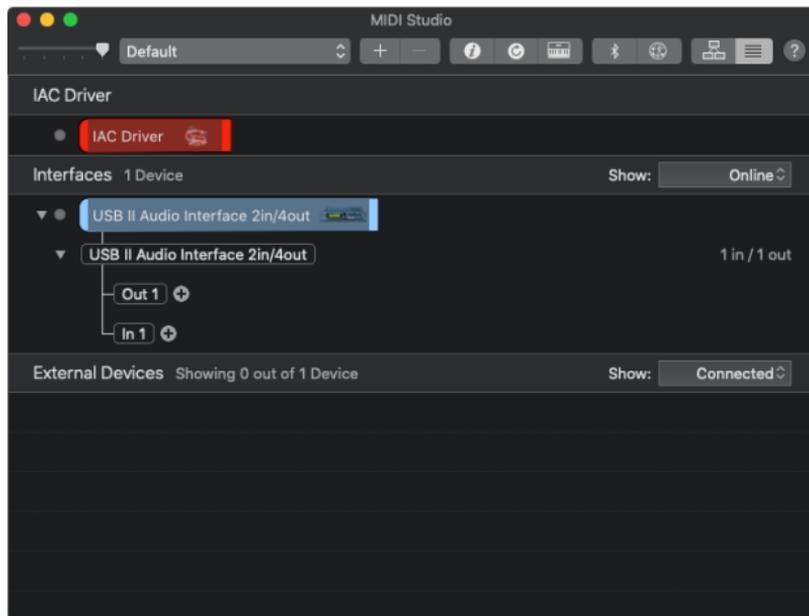
Figure 2 – MAC Audio/MIDI setup, MIDI window

Using the MIDI I/O in Cubase

When you want to use the MIDI interface in Cubase, select the Studio Setup function and then select the MIDI Port Setup. Select USB PRE II as seen in Fig. 3.
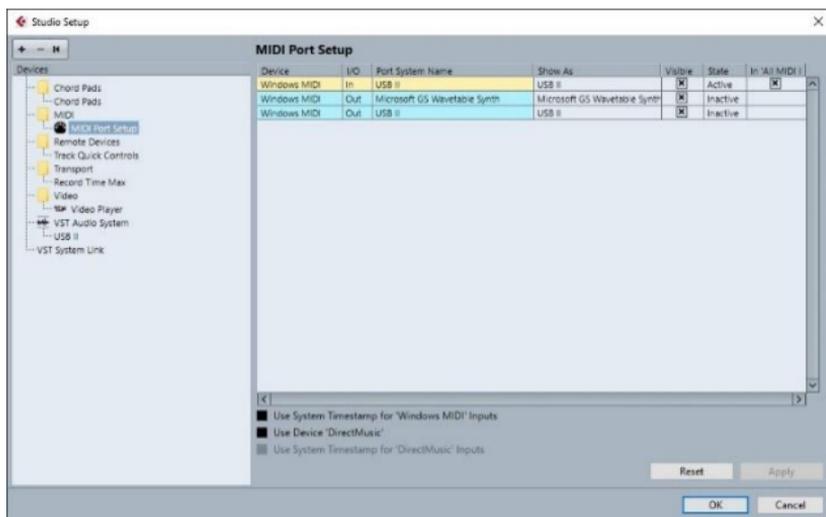
Fig. 3 – Cubase MIDI Port setup

Using the MIDI Device Manager, you can use the MIDI output after installing a device and setting the output to USB PRE II.

Once a MIDI output is assigned, it will show up as an output selection on a MIDI track and Active in the MIDI Port Setup window. Fig. 4 shows an example of assigning the USB PRE II MIDI output to a GM (General MIDI) device.
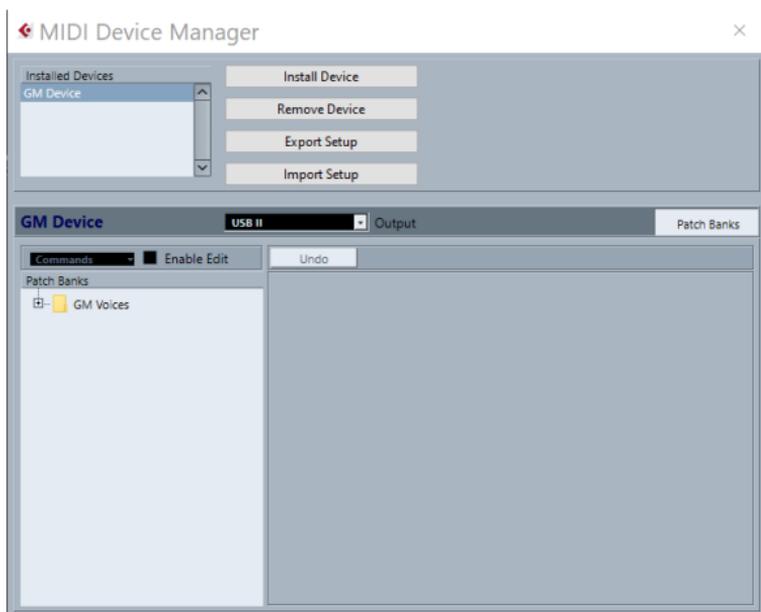
Fig. 4 – MIDI Device Manager

WARRANTY INFORMATION

Limited Warranty

Applied Research and Technology will provide warranty and service for this unit in accordance with the following warrants:

Applied Research and Technology, (A R T) warrants to the original purchaser that this product and the components thereof will be free from defects in workmanship and materials for a period of **three** years from the date of purchase. Applied Research and Technology will, without charge, repair or replace, at its option, defective product or component parts upon prepaid delivery to the factory service department or authorized service center, accompanied by proof of purchase date in the form of a valid sales receipt.

Exclusions

This warranty does not apply in the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs. This warranty is void if the serial number is altered, defaced, or removed.

A R T reserves the right to make changes in design or make additions to or improvements upon this product without any obligation to install the same on products previously manufactured.

A R T shall not be liable for any consequential damages, including without limitation damages resulting from loss of use. Some states do not allow limitations of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific rights and you may have other rights, which vary from state to state.

For units purchased outside the United States, an authorized distributor of Applied Research and Technology will provide service

Fill in the following information for your reference:

Date of purchase _____

Purchased from _____

SERVICE

The following information is provided in the unlikely event that your unit requires service.

1. Be sure that the unit is the cause of the problem. Check to make sure the unit has power, all cables are connected correctly, and the cables themselves are in working condition. You may want to consult with your dealer for assistance in troubleshooting or testing your particular   configuration.

2. If you believe that the ART unit is at fault, go to www.artpro-audio.com.

3. Select "*Support*", then "*Return Authorization Request*" to request a return authorization number.

4. If you are returning the unit for service, pack the unit in its original carton or a reasonable substitute. The original packaging may not be suitable as a shipping carton, so consider putting the packaged unit in another box for shipping. Print the RA number clearly on the outside of the shipping box. Print your return shipping address on the outside of the box.

5. Include, with your unit, a note with the RA number and your contact information, including a return shipping address (we cannot ship to a P.O. box) and a daytime phone number, and a description of the problem, preferably attached to the top of the unit. Also include a copy of your purchase receipt.

SPECIFICATIONS

Input Connections:	2 - XLR/1/4-inch combo jacks, USB 1.0/2.0, MIDI DIN 5
Output Connections:	Impedance Balanced 1/4-inch, 1/4-inch Headphone output, MIDI output
Max input level:	+15dBu Inst.,19dBu Bal. Line, +3.5dBu mic
Input Impedance:	>1M Ohms 1/4-inch input, >7k Ohms XLR input
Max output level:	+12dBu (CH1/2), +6.5dBu (CH3/4)
Output Impedance:	300 Ohms (balanced 1/4-inch), 32 Ohms (headphone stereo 1/4-inch)
Headphone output:	60mW/ channel maximum
Frequency Response:	20Hz to 20KHz +/- 1dB
THD:	<0.002% 20-20k, ADC-USB USB-DAC
CMRR:	>87dB(mic), 60dB(line)
Channel Separation:	>75 dB
Signal to Noise Ratio:	>ADC: 115dB, DAC: 110dB
Equiv. Input Noise:	-128 dBu typical (XLR balanced, gain @ maximum)

Phantom Power:	+48 dB switch selectable, +48Volts DC, filtered, current limited
A/D-D/A:	32 Bit, 44.1 kHz to 192 kHz, USB selectable from computer
Computer Interface:	USB class compliant plug-and-play Mac and PC interface
Power Requirements:	USB 2.0, 400mA
Dimensions (HWD):	8.75-inch x 1.75-inch x 6.2-inch (222mm x 44mm x 157mm)
Weight:	2.15 lbs. (.974kg)
Chassis Type:	All aluminum

Note: 0 dBu = 0.775Vrms

ART maintains a policy of constant product improvement. Therefore, specifications are subject to change without notice.

Go to www.artproaudio.com for the latest information and support on the USB PRE II Project Series.

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USB Pre II Project Series

USB2-5004-103