APHEX®

MAKING YOUR WORLD SOUND BETTER

IN 2™
USB 2.0 COMPUTER AUDIO INTERFACE

OWNER'S MANUAL

Safety Declarations

WARNING
SHOCK HAZARD
DO NOT OPEN
AVIS: RISQUE DE CHOC ELECTRIQUE
NE PAS OUVIR

TO PREVENT FIRE OR SHOCK HAZARD DO NOT EXPOSE
THIS DEVICE TO RAIN OR MOISTURE. DO NOT REMOVE
THE COVER. NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

ATTENTION: AFIN DÉVITER DES CHOCS ÉLECTRIQUES.
N'ENLEVEZ PAS LE COUVERCLE. IL N'Y A AUCUNE
PIECÉS D'ENTRETIEN À L'INTÉRIEUR. RÉFÉREZ LES
RÉPARACIONES À UNE PERSONNE QUALIFÉE

CAUTION: For protection against electric shock, do not remove the cover. No user serviceable parts inside.

WARNING: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the operating guide, may cause interference to radio communications. Operation of this equipment in a residential area is likely to cause interference in which case the user will be required to correct the interference at his own expense.

The user is cautioned that changes and modifications made to the equipment without approval of the manufacturer could void the user's authority to operate this equipment.

It is suggested that the user use only shielded and grounded cables to ensure compliance with FCC Rules.

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Table of Contents

1.0 Introduction

IN2 is a USB 2.0 computer audio interface featuring:

- Mac OSX and Windows compatibility
- 24-bit/192kHz A/D and D/A converters
- 2 Class A preamps
- 2 Optical Compressors
- High performance headphone amp
- 1/4″ Headphone output jack
- 2 XLR mic inputs
- 2 1/4″ instrument inputs
- S/PDIF I/O
- MIDI I/O
- 2 TRS analog outputs

2.0 Top Panel Features

INPUT LEVEL KNOBS
Turn these knobs clockwise to boost the input level as needed.

SIG/OL LED
This LED will light green when an input signal is detected, yellow when a strong input signal is detected and red when too much input signal is detected. A red LED doesn't automatically mean your signal is clipping, but that it's getting too close and it's time to back off the level.

48V PHANTOM POWER
Pressing this button will send 48V through the XLR cable to power a condenser mic. Always turn OFF the 48V when connecting and disconnecting your microphone. When using ribbon microphones, please refer to your mic's documentation for proper use, since some ribbon microphones may be damaged by phantom power.

–20DB PAD
Pressing the PAD button will lower the input signal by 20dB for use with very loud sources.

75HZ HIGH PASS FILTER
Pressing this button will roll off frequencies below 75Hz.

COMP
Pressing this button engages the optical compressor. The yellow LED will light brighter as more compression is applied to the input signal. This compressor is designed to be very transparent for recording an optimal level. Once recorded, you may want to experiment with more aggressive compression, as needed within the context of your mix.

HEADPHONE
Turn this knob clockwise to boost the output volume of the headphones as needed.
  NOTE: The IN2's headphone amplifier is very high output, so always turn the Headphone knob down before finding the right level.

VOLUME
Turn this knob clockwise to boost the output level of analog outputs 1&2 as needed.

MONO
Pressing this button will sum stereo output signal of analog outputs 1&2 to mono. This is useful for checking your mix balance.

DIM
Pressing this button lowers the output level of analog outputs 1&2 by 20dB. Use this when you want to have a quick conversation in the room without losing your monitor level or stopping playback.

3.0 Rear Panel Features

XLR INPUTS
Plug your microphones in here. If you wish to connect a "line level" signal, use the XLR inputs and engage the –20dB pad on the top panel.

CAUTION: Some dynamic and ribbon mics will be damaged by phantom power. Please consult your mic's manual before connecting it to the IN2. Always turn OFF the 48V phantom power when connecting and disconnecting your microphone.

1/4″ TRS BALANCED ANALOG OUTPUTS
Connect these outputs to the inputs of your powered studio monitors or power amp.

S/PDIF I/O
These 75Ohm, coaxial, digital inputs and outputs allow the unit to send and receive up to 24-bit/192kHz digital signals. The S/PDIF input might be used to connect external mic pres like the Aphex Project Channel. The S/PDIF output might be used to expand your headphone outputs with an Aphex HeadPod4.

> *NOTE:* When recording from the S/PDIF input your DAW must reference the clock from the S/PDIF signal. Follow this sequence: Select the sample rate on the external device. Set the sample rate in the DAW, select S/PDIF as the sync source in the Aphex driver control panel. This sequence MUST be followed for proper functionality.

MIDI I/O
These connections allow your DAW to send and receive MIDI data. Common uses would include connecting a control surface, transmitting MIDI Clock, MIDI Time Code, MIDI program changes, etc. Consult your DAW's manual for more information about the use of MIDI devices.

POWER ON/OFF
This button will turn the IN2 on/off. When the unit is on, the Aphex logo on the top panel will light up.

USB 2.0 CONNECTOR
Connect the IN2 to your computer with the supplied USB 2.0 cable.

DC POWER CONNECTOR
Connect the included IN2 DC power supply here. Only use the official APHEX power supply with the IN2 or you may harm your unit and void your warranty.

4.0 Front Panel Features

HEADPHONE OUTPUT
The 1/4″ TRS jack is located on the front, left of the IN2.

INSTRUMENT INPUTS
Connect instruments like bass and guitar to these 10MOhm inputs to record the instruments directly to the DAW without using amplifiers. These inputs override the rear panel XLR inputs allowing you to keep your microphones plugged in at all times.

5.0 Installation

SYSTEM REQUIREMENTS
(please go to **www.aphex.com** for the latest information)

Apple Macintosh with Intel CPU and an available USB 2.0 port
OS: Mac OS X 10.5 – 10.8 and beyond.

Windows compatible computer with an available USB 2.0 port
OS: Windows XP SP3 (32-bit), Windows Vista SP2 (32-bit/64-bit), Windows 7 SP1 (32-bit/64-bit).

DRIVERS AND FIRMWARE

All drivers required by the IN2 are available for download from the Aphex website. Be sure that you download and install the most up-to-date drivers before you connect the IN2 to your computer.

If you don't have Internet access, drivers are on the CD-ROM included in the box.

MAC OS ONLY:

The IN2 does not require special drivers on OSX. Just connect the IN2 to the Mac with a high quality USB cable and it will be recognized automatically.

Your OS should automatically switch the computer's default audio outputs to be the USB port to which the IN2 is connected. To verify this, go to System Preferences > Sound, and ensure that the input and output are set to IN2. For more detailed setup options on a Mac, open Applications > Utilities > Audio MIDI Setup.

WINDOWS ONLY:

Before connecting the IN2 to your computer, install the driver from the included CD or from the driver installer you can download from **www.aphex.com**. If Windows presents any dialogs during the installation process, click OK, Accept or Allow. Connect the IN2 after the driver installation process has completed. Your OS should automatically switch the computer's default audio outputs to be the USB port to which the IN2 is connected. To verify this, go to Start > Control Panel > Hardware and Sound > Sound > Manage Audio Devices and ensure that "Default Playback" and "Recording" are set to IN2.

Some DAWs will not launch the IN2 control panel. Access it from the Windows system tray in the lower right of your screen.

Except for Pro Tools, Aphex recommends setting the driver latency (buffer size) in the Aphex driver control panel rather than in your DAW. Pro Tools instructions are included on the next page.

Additional Windows 7 notes:
The UI Theme must be sent to Windows Basic for best performance. Right-click on the desktop and select "Personalize" to change this.

USB CONNECTION
The IN2 has a single USB 2.0 port on the rear panel. Once the software installation is complete, simply connect the IN2 to your computer using the USB cable provided. Note that the IN2 is a USB 2.0 device, and thus the USB connection requires a USB 2.0 compatible port on your computer. It will not operate correctly with USB 1.0/1.1 ports. You MUST connect the IN2 directly to your computer and NOT to a USB hub.

AUDIO SETUP IN YOUR DAW
After installing the drivers and connecting the hardware, you can start using the IN2 with the DAW of your choice.

NOTES to Pro Tools 9, 10 and 11 users:

When switching to the IN2 from another interface, you must have that interface connected when launching Pro Tools for the first time with the IN2 connected. Once Pro Tools has recognized it, the other interface may be left connected or disconnected. Pro Tools will not launch properly if the interface it is expecting is not connected.

Pro Tools 9 and 10 require the DAW to be exited and relaunched when changing the hardware buffer size. Pro Tools 11 does not unless Ignore Errors During Playback/Record is checked in the Playback Engine window.

Pro Tools will take control of the IN2 driver. Leave the Lock Sample Rate checkbox in the driver control panel unchecked.

If you experience difficulty trying to set up your I/O with the IN2, try this:

· Open Pro Tools.
· When the Pro Tools launch screen becomes visible, hold down

the "N"key on your keyboard. This allows you back door access to the playback engine.

· Select the IN2 as your device and continue.
· Once Pro Tools finishes launching go to the Setup menu and select I/O.
· Select the Input tab, delete all input paths and then select Default.
· Now click the Output tab, delete all of the output paths and select Default.
· Open a new session and select "Stereo Mix" in the I/O Settings drop down menu.

Once this is done the IN2 should work with your Pro Tools system.

SETTING WINDOWS DRIVER LATENCY

Since USB sends data in "packets" and each packet can have a different number of samples, audio buffers which are aligned on the power of two basis (64, 128, 256) may not always be in sync.

Depending on your computer's speed and other tasks it may be trying to perform while streaming audio, such as network operations, sync errors can cause various audio artifacts. This is usually computer-specific, leading to the need for some experimentation with the Latency (buffer) setting in the Aphex control panel. For example, 9.5ms or 10.5ms may be better than 10ms on some computers while 6ms may give better results than higher buffer sizes on other computers. Once configured, it usually does not need any subsequent changes.

USING IN2 WITH IPAD

The Aphex IN2 has been tested and found to work with iPad-2 and iPad-4 running iOS version 6.1.3 and using the Apple Camera Connection kit and the Lightning to USB Camera Adapter.

The IN2 was tested with the following apps:

· Apple GarageBand for iOS version 1.4 (180.6)
· WaveMachine Labs Inc. Auria version 1.091

No other iPads, iOS versions or apps were tested.

Please check www.aphex.com for up to date testing results with new iPads, new versions of iOS and other apps.

NOTE: Apple does not officially endorse the use of the Camera Connection kit and the Lightning to USB Camera Adapter for anything other than camera connections. Further information can be found at:

http://support.apple.com/kb/HT4106

6.0 Specifications

ANALOG INPUTS

Microphone Inputs:	XLR-3F
Type:	Transformerless, Instrumentation first stage, Class-A second stage
Input Impedance:	2k ohms nominal
Maximum Input Level (MIL):	–2dBu (+18dBu with pad)
CMRR:	>80 dB @ 60 Hz
Instrument Connectors:	1/4″ TS
Instrument Input Impedance:	10Mohm nominal
Preamp Gain Range:	38dB without pad
Phantom Power:	+48VDC
Pad:	20dB
Compressor:	Fixed parameters, Aphex custom optical element
Low Cut Filter:	75Hz nominal cutoff, 2nd order

MAIN OUTPUTS

Connector:	1/4″ TRS phone jacks
Type:	True Balanced (may be used unbalanced)
Output Impedance:	100 ohms
SNR (typical):	109dB, unweighted
THD+N (typical):	0.002%
Nominal Level:	+4dBu
Maximum Output Level:	>+21dBu before clipping

HEADPHONE OUTPUT

Output Impedance:	10 ohms
Output Power:	>800mW into 25 ohms

DIGITAL AUDIO

Sample Rates:	44.1KHz, 48KHz, 88.2KHz, 96KHz, 176.4kHz, 192kHz
Resolution:	24 bits

OTHER SPECIFICATIONS

Power requirements:	12VDC, center positive, 1000mA minimum

All specifications are subject to change without notice.

7.1 LIMITED WARRANTY

PERIOD
One year from date of original purchase.

SCOPE
All defects in materials and workmanship. The following are not covered:
· Voltage conversions.
· Units on which the serial number has been defaced, modified or removed.
· Damage or deterioration resulting from: Installation and/or removal of the unit; Accident, misuse, neglect, unauthorized product modification; Failure to follow instructions in the Owner's Manual, User Guide or other official Aphex documentation.
· Repair or attempted repair by anyone not authorized by Aphex; Shipping damage claims must be presented to the shipper.

WHO IS PROTECTED
This warranty will be enforceable by the original purchaser and by any subsequent owner during the warranty period, so long as a copy of the original Bill of Sale is submitted whenever warranty service is required.

WHAT APHEX WILL PAY FOR
All labor and material expenses for covered items. Aphex will pay all return shipping charges if the repairs are covered by the warranty.

LIMITATION OF WARRANTY
No warranty is made, either expressed or implied, as to the merchantability and fitness for any particular purpose. Any and all warranties are limited to the duration of the warrant stated above.

EXCLUSION OF CERTAIN DAMAGES
Aphex liability for any defective unit is limited to the repair or replacement of said unit, out our option, and shall not include damages of any kind, whether incidental, consequential, or otherwise. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you. This warranty gives you specific rights which vary from state to state.

7.2 SERVICE INFORMATION

If it becomes necessary to return this unit for repair, you must first contact Aphex LLC for a Return Authorization (RMA number), which will need to be included with your shipment for proper identification. If available, repack this unit in its original carton and packing material. Otherwise, pack the equipment in a strong carton containing at least 2 inches of padding on all sides. Be sure the unit cannot shift around inside the carton. Include a letter explaining the symptoms and/or defect(s). Be sure to reference the RMA number in your letter and mark the RMA number on the outside of the carton. If you believe the problem should be covered under the terms of the warranty, you must also include proof of purchase. Insure your shipment and send it to:

Aphex
3500 N. San Fernando Blvd.
Burbank, CA 91505 USA

IN2 OWNER'S MANUAL

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a DWV ENTERTAINMENT company