Operations Manual

PUC2

Thank you
for purchasing the Yellowtec PUC portable soundcard

The Yellowtec PUC² is a professional-quality USB soundcard for use with MAC or Windows PCs. It is capable of recording high-resolution audio at up to 192 kHz sample rate and 24 bit word-lenghts. The PUC is designed after Yellowtec's standards of simple perfection. The idea is to provide a high-quality soundcard with a plug n' play concept so you can start using it right away. It provides a USB plug n' play option for fast use plus the optional use of our ASIO* driver for the advanced operator.

Several versions of the PUC are available, offering different audio input and output formats and connections. The AES-3 interface is common to all versions. For more information go to www.yellowtec.com and check out our products.

Yellowtec has a policy of continually improving and updating it's products. For firmware updates or dedicated software you should check out our website from time to time. All updates will be free of charge.

* The USB ASIO driver for Windows uses ASIO Driver Interface Technology by Steinberg Media Technologies GmbH. ASIO is a registered trademark of Steinberg Media Technologies GmbH.

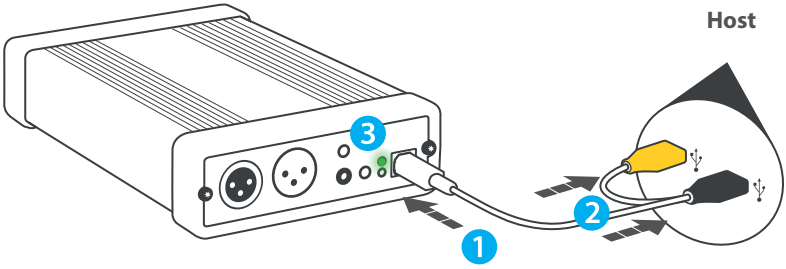
Ready, Set up, Go !

So what‘s in the box? Your PUC comes with a USB Y-Cord to interconnect with your PC or MAC.

Simply interconnect PUC with your computer (Mac / Windows/Linux) using the USB Y-Cord. Make sure both USB A-Plugs (yellow and black) are connected to your PC. The yellow connector carries no data but will be needed to secure sufficient power supply.

When connecting the PUC for the first time to your PC or Mac your system will perform an automatic USB device installation. Your device will be identified as YELLOWTEC PUC. (For using PUC with high-res audio (192KHz) you need to install the ASIO* driver suite for windows from www.yellowtec.com)

The green Rdy LED will indicate a proper connection.
You can now use PUC in native mode.



* The USB ASIO driver for Windows uses ASIO Driver Interface Technology by Steinberg Media Technologies GmbH.
ASIO is a registered trademark of Steinberg Media Technologies GmbH.

PUC² Front Panel *

AES 3 Input

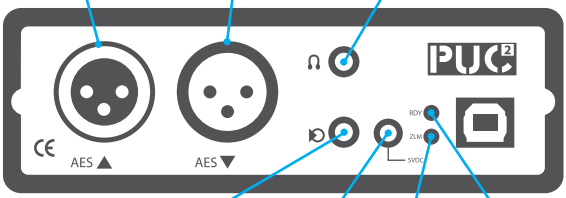
The AES-3 input is the default audio input to the PUC². This input will override any other inputs when a digital input carrier is detected and locked, even if there is no active audio in the digital stream. The audio signal is converted into a USB format and available to any audio recording application on the computer.

AES 3 Output

The AES-3 output is always active at the sample rate selected by the application running the computer

AUX Output

The stereo 3.5mm jack supplies an analogue audio signal for monitoring. It can be used to drive a set of headphones, although there is no control of the AUX output level.
**Note that PUC Lite comes without an AUX out*.



ZLM Jack

In order to route the input signal directly to the output you can apply an external contact closure. This bypasses the OS kernel for true Zero Latency Monitoring.

Power Supply

5V DC power supply adapter

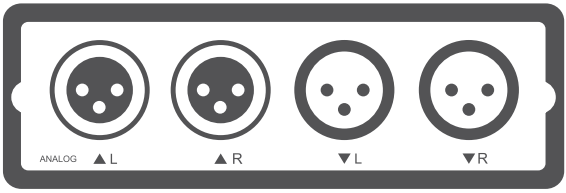
ZLM LED

Red indicates „Zero Latency Monitoring“ (See advanced operations)

RDY LED

Green indicates proper connection and working. Red indicates the activation process when you connect PUC² to the computer

PUC² Back Panel



XLR Input*

The backside of the PUC features the Analogue Balanced Inputs. The analogue input will be disregarded when an AES-3 input signal is present and locked.

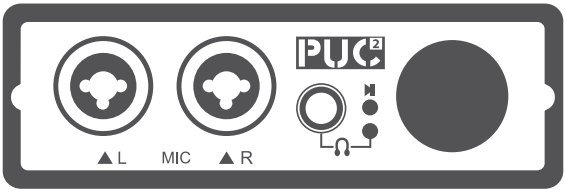
XLR output*

Analogue Balanced Output. This output is always active. Confirm that the correct digital headroom values are being used. (see advanced operations)

*PUC² comes in two different version. One for german levels and one for international levels.

	Output @ FS	Headroom	Rated Ouput
German	+15 dBU	-9 dB FS	+6 dBU
International	+18 dBU	-14 dB FS	+4 dBU

PUC² MIC LEA Back Panel



XLR Mic Input

The rear of the PUC features the Analogue Balanced Microphone Inputs. The analogue input will be disregarded when an AES-3 input signal is present and locked.

Platzhalter

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Headphone Out

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Volume Control

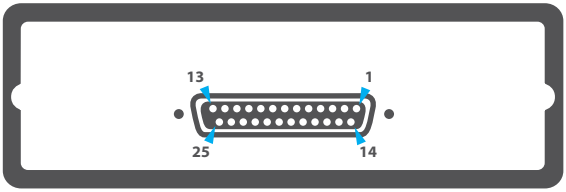
The PUC features volume control

PUC² Lite Back Panel

PUC² Lite

The PUC Lite has all the features of the PUC² family except for analogue ports or AUX output. For users who don't need these options this is the perfect compromise.

PUC² Multipin Back Panel



D-Typ connector Pin Layout

Digital Audio Input			**Sub-D**
Standard: s/PDIF		Signal	Pin 14
		Shield	Pin 2
Optional	AES/EBU	Signal+	Pin 14
		Signal-	Pin 2
		Shield	Pin 15
Digital Audio Ouput			**Sub-D**
Standard: S/PDIF		Signal	Pin 3
		Shield	Pin 16
Optional:	AES/EBU	Signal+	Pin 3
		Signal-	Pin 16
		Shield	Pin 15

GPI		**Sub-D**
ZLM	Zero Latency Mon.	Pin 18
BYPASS	Dig. Bypass	Pin 17
INT LVL	International Level	Pin 5

AUX Power Out	**Sub-D**
digital +5V/max.40mA	Pin 6
digital 0V	Pin 19
analog +15V/max.10mA	Pin 20
analog -15V/max.10mA	Pin 7
analog OV	Pin 8

D-Typ

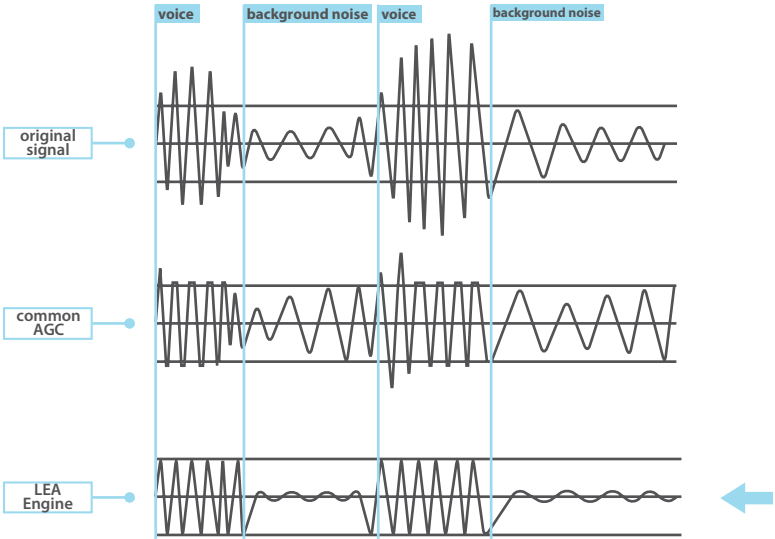
The backside of the PUC features an analogue D-Typ pin connector. It features the same pin-out as the PUC Classic.

Analog Audio Input		**Sub-D**
Left Channel	Signal+	Pin 25
	Signal-	Pin 13
	Shield	Pin 12
Right Channel	Signal+	Pin 24
	Signal-	Pin 11
	Shield	Pin 12
Analog Audio Ouput		**Sub-D**
Left Channel	Signal+	Pin 9
	Signal-	Pin 21
	Shield	Pin 22
Right Channel	Signal+	Pin 10
	Signal-	Pin 23
	Shield	Pin 22

Level Engine Automation (LEA)

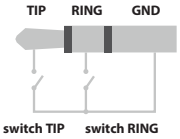
The LEA Engine is a unique technology for levelling your interviews while recording. In comparison to standart AGC`s and Limiters the LEA engine knows to excel by not creating artefacts or common pumping noises. Even with blanking levels or loud ambient noise the LEA Engine works perfectly and levels smoothly, just like an engineer inside your mic. The Engine also uses limiters to avoid sudden lash outs and levels smoothly within (common volumes levels). It also perfectly avoids raising noise floors during mute seconds of an interview.

The user himself doesn't need to bother with setups. All he has to do is start a recording. The LEA Engine provides the freedom to solemnly concentrate on the interview while guaranteeing to process your recording in the highest possible quality. ***For the LEA software manual visit** yellowtec.com/lea/download



PUC² advanced operation (Zero Latency Monitoring)

PUC² has a special feature which allows the user to monitor it's input signal directly at all of it's outputs simultaneously. This bypasses the USB conversion and computer, offering very low unput to output times, typically less than 5ms, even at low sample rates. This can be turned on by closing the tip sand sleeve (ground) contacts on the 3.5mm sterei ZLM siwtch jack on the unit. The USV sound output of the computer ist mioxed into the input signal, and by default, both sign als are dimmed (reduced in level) by 6dB to avoid overloading the output stages. This automiatic level adjustment can be over-ridden by connecting the ring and sleeve (ground) contact on the ZLM switch jack, or by using a mono 3.5mm jack (or dummy plug) to switch on ZLM mode.

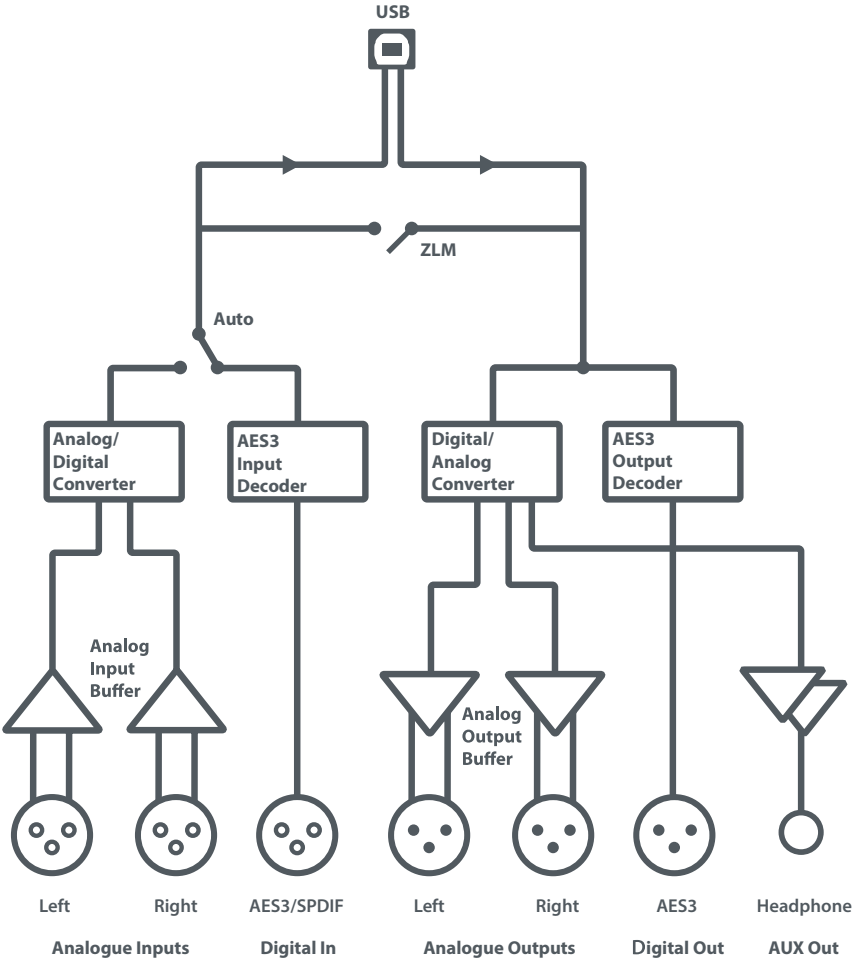


ZLM Jack Tip (ZLM enable)	**ZLM Jack Ring** (ZLM level)	Audio signal at all outputs
		Computer Audio output from USB only
closed		Computer Audio output from USB at -6dB and input at -6dB mixed
closed	**closed**	Computer Audio output from USB at 0dB and input at 0B mixed
	closed	Computer Audio output from USB only

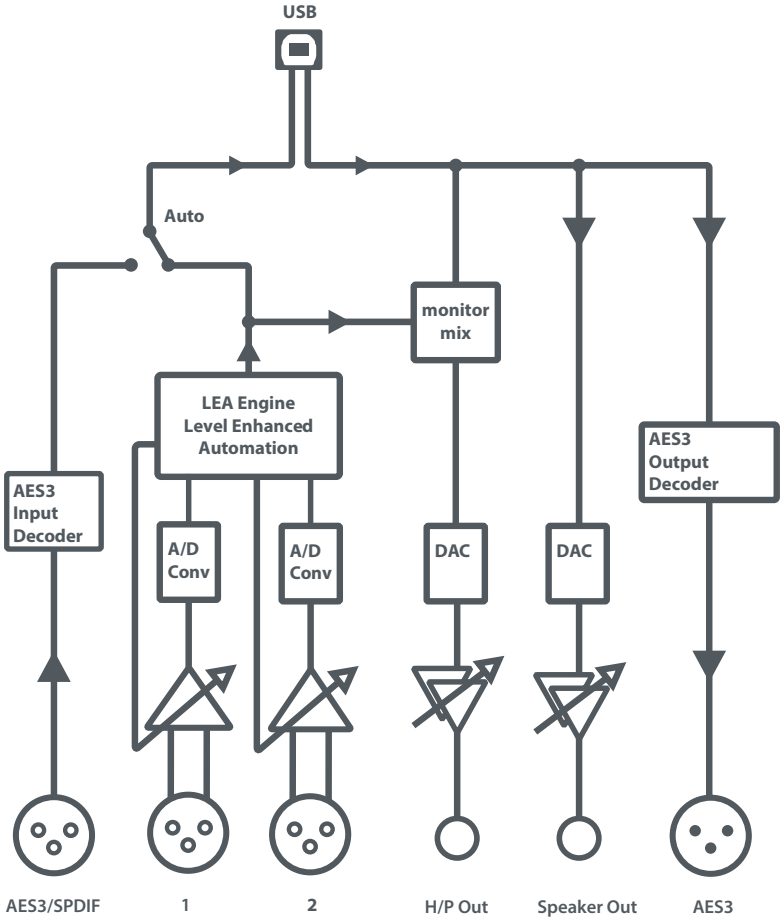
Bypasses windows internal kernels offering lower latency (delay) and bit identical transfer between the software application and the sound card's audio converters. It is NOT available with all version of the PUC² family.

12 Block Diagram PUC

The **Block Diagram** will give you a detailed overview of the internals of our PUC^2 system.

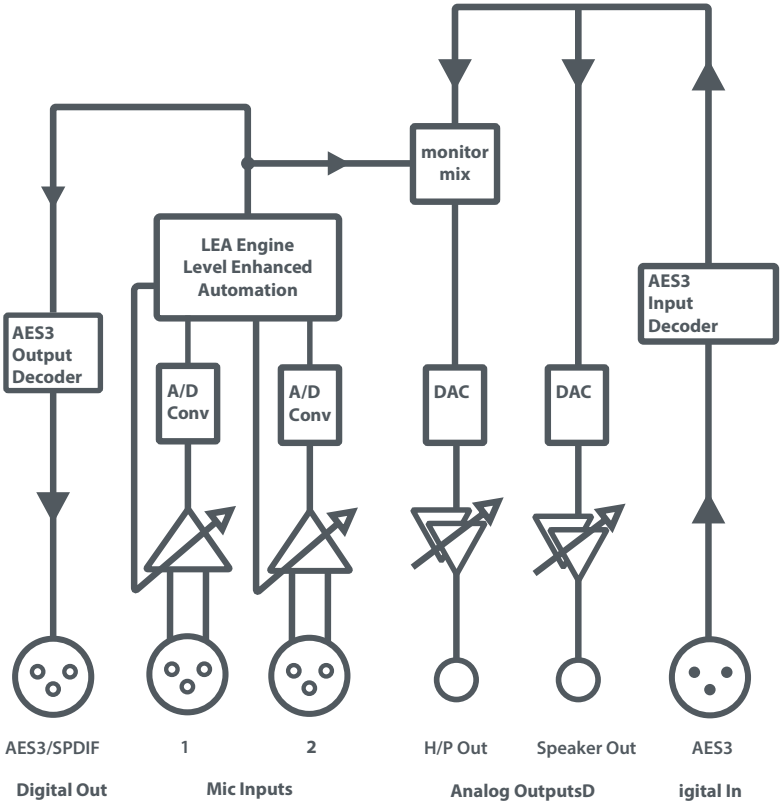


The **PUC LEA Block Diagram** will give you a detailed overview of the internals of our PUC LEA in PC/USB Mode



14 Block Diagram PUC LEA

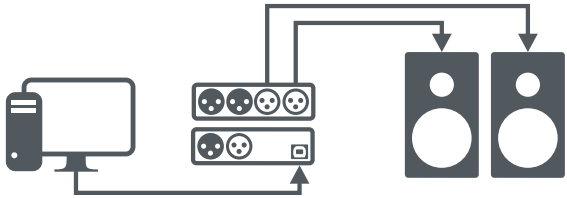
The **Block Diagram** of the PUC LEA in Stand Alone (non USB) mode will give you a detailed overview of the internals of our PUC² system. *Please not that Digital In and Digital Out switched places.



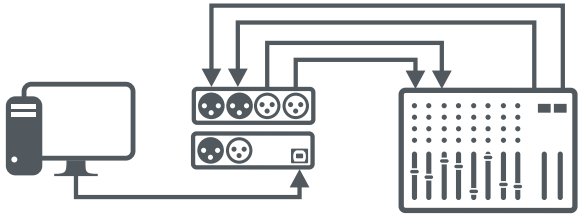
PUC² in use!

The PUC² is a versatile external USB soundcard which can be used for many different applications. In order to show and tell you some of the most common ways to use the PUC² we illustrated a couple of field applications.

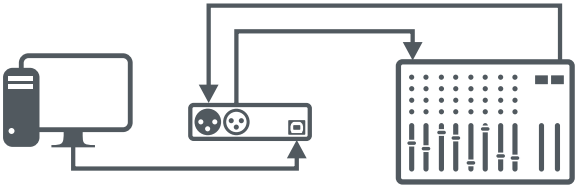
Lautsprecheranbindung



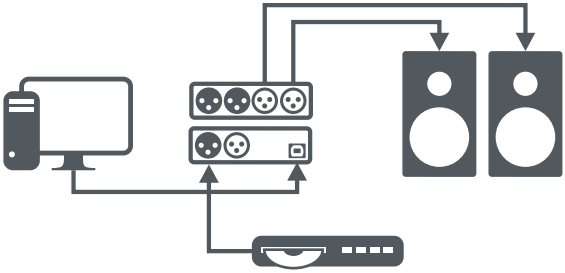
Mischpultanbindung Analog



Mischpultanbindung digital



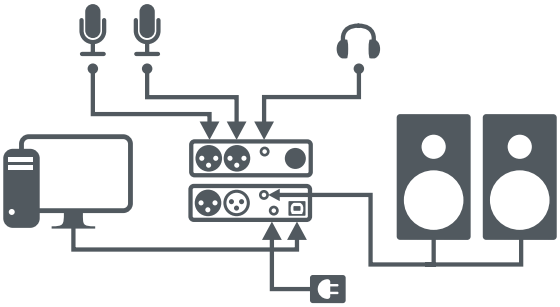
Lautsprecheranbindung und Zuspieler



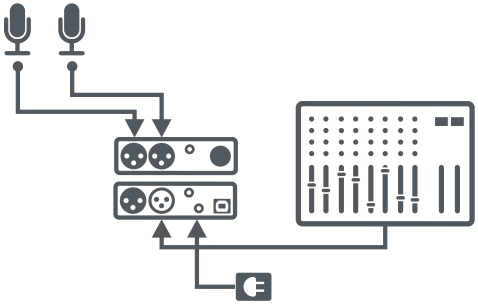
PUC LEA

The PUC LEA is an excpetional ..... platzhaltertext

Pc / Usb Mode



Standalone Mode (non USB)



EC Declaration of Conformity according EC Directive 2004/108/EC (EMC - Directive)

We, Thum+Mahr GmbH, Heinrich Hertz Str. 1-3, D-40789 Monheim, Germany
herewith declare in sole responsibility that the product
PUC 2
USB powered Soundcard
observes the essential protection and safety related requirements determined in the council directive for the adoptions of the legal regulations of the Member States about the electromagnet compability (2004/108/EC).
The judgement of the product as to electromagnetic compability was effected on the basis of the following EC harmonised standarts:
EMI EN 55022:2006, Class B
EN 55103-1:1996

EMS EN 55024:1998 +A1:2001 + A2:2003
EN 55103-2:1996
The declaration applies to all specimen manufactured according to the sample tested.
The last two digit of the year of affixing the CE marking is „09"

Address of EC responsible
Reinhard Gallos, Heinrich-Hertz Str. 1-3, D-40789 Monheim, Germany

Date and Countersign of EC represantative

10-07-2009, Hanno Mahr, CEO

FCC Declaration of Conformity

This device complies with Part 15 Subpart B of the FCC rules.
ANSI C63.4-2003 in execution to the FCC regulations, rules and limits of FCC 47 CFR §15.101 and §15.109. Operation is subject to the following two conditions:

1. This device may not cause harmful interference
2. This device must accept any interference received, including interference that may cause undesired operation.

Manufacturer:
Thum+Mahr GmbH
Heinrich Herz Str. 1-3
D-40789 Monheim
Germany

Contact Person:
Reinhard Gallos, Product Manager
Phone: +49 2173 967 323
Fax: +49 2173 967 400
e-mail: rgallos@yellowtec.com

Model Name:
PUC 2

Type of Equipment:
USB Powered Soundcard

Classification:
Class B digital device

We hereby declare that the equipment bearing the model name specified above was tested conforming to the applicable FCC rules under the most accurate measurement standards possible, and that the necessary steps have been taken and are in force to ensure that production units of the same equipment will continue to comply with the Commission's requirements.

Manufacturer's Signature: July 2009, Reinhard Gallos, Product Manager

Responsible Party's Signature: July 2009, Hanno Mahr, CEO Thum+Mahr GmbH

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