OX

AMP TOP BOX

OX Operation Manual

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UNIVERSAL AUDIO

www.uaudio.com

A Letter from Bill Putnam Jr.

Thank you for choosing the OX Amp Top Box as part of your music making experience. We know that any new piece of gear requires an investment of time and money — and our goal is to make your investment pay off.

Universal Audio's family of products represent the best examples of what UA has stood for over its long history; from its original founding in the 1950s by my father, to our current vision of delivering the best of both analog and digital audio technologies.

The OX Amp Top Box allows you to play and record your tube amp in its perfect tonal sweet spot — anywhere, and at any volume. Featuring the world's best all-analog reactive load, OX also offers album-quality mic and speaker cabinet emulations, UA's Dynamic Speaker Modeling, onboard UAD effects, and much more.

At UA, we are dedicated to the idea that technology should serve the creative process — not be a barrier. These are the very ideals my father embodied as he invented audio equipment. We believe the OX Amp Top Box will earn its way into your creative workflow by providing stunning guitar tones and rock-solid reliability for years to come.

Please feel free to reach out to us via our website www.uaudio.com, and via our social media channels. We look forward to hearing from you, and thank you once again for choosing Universal Audio.

Sincerely,

Bill Putnam Jr.

Important Safety Information

Before using this unit, be sure to carefully read these operating instructions and the safety suggestions. Afterwards, keep them handy for future reference. Take special care to follow the warnings indicated on the unit, as well as in the operating instructions.

1. Read the instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat source such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use with attachments/accessories specified by the manufacturer.
12. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Note: *It is safe to install and operate OX Amp Top Box on top of a guitar or bass amplifier.*

Description of symbols used

The lightning flash represented by the arrow symbol in an equilateral triangle is intended to alert users to the presence of high voltage within the unit that could cause an electrical shock hazard.

The exclamation mark in an equilateral triangle is intended to alert users to the existence of important instructions in the manual relating to the use and maintenance of the unit.

Table Of Contents

Tip: *Click any section or page number to jump directly to that page.*

A Letter from Bill Putnam Jr. 2

Important Safety Information 3

Welcome to OX Amp Top Box! 6

- About OX Documentation 7

Critical Operation Notes 8

- Critical Notes — Avoid Equipment Damage 8
- Important Notes — Reduce Equipment Wear 10

Quick Start 11

- Important Setup Steps 11
- Amp & Speaker Connections 12
- Output Connections 14
- Control Knobs 15
- Quick Operation Notes 15

Controls & Connectors 16

- Front Panel 16
- Rear Panel 19

OX Software App 24

- OX App Features 24
- Essential App Concepts 25
- RIG View 27
- Presets Management 30
- Loading Presets 32
- Saving Presets 33
- Effect Editors 35
- ASSIGN Views 36
- Rig Slots Assign 36
- Rig Sets Assign 38
- Footswitch Assign 39
- Footswitch Assign Controls 41
- Footswitch Instructions 43
- SETTINGS View 45

Rig, Cabinet, & Mic Descriptions 46
Default RIG Control Cab & Mic Presets 46
Default Rig Sets 47
Speaker Cabinets 48
Cabinet Microphones 52
Room Microphones 54
OX System Overview 55
OX Wi-Fi Networking 59
OX Wi-Fi Hotspot 59
External Wi-Fi Networking 60
OX Registration 61
OX Registration Overview 61
OX Registration Procedure 62
Troubleshooting 64
Wi-Fi Reset 64
Factory Reset 64
Windows Computer Wi-Fi Reset 65
Specifications 66
Block Diagram 68
Notices 69
Warranty 69
Repair Service 69
Maintenance 69
Compliance 71
Technical Support 73
Universal Audio Knowledge Base 73
YouTube Support Channel 73
Universal Audio Community Forums 73
Contact Universal Audio Support 73

Welcome to OX Amp Top Box!

Get Legendary Studio Tones from your Tube Amp — Anywhere, at Any Volume.

OX is a premium reactive load box and guitar recording system, giving you perfectly studio-miked amp sounds from your favorite tube amp. OX lets you play and record your amp in its sweet spots — from huge clean tones and edge-of-breakup to fully cranked — at any volume level, and with mic, room, and speaker cabinet emulations at the turn of a knob.

Featuring Universal Audio's breakthrough Dynamic Speaker Modeling, OX is the first system to accurately emulate speaker drive, breakup, and cone cry — making it the world's finest speaker attenuator and guitar amp recording solution.

Now You Can:

- Play and record your tube amp in its tonal sweet spot — anywhere, at any volume, with full dynamics
- Get stunning mic and guitar cabinet combinations at the turn of a RIG knob — no miking required
- Audition, tweak, and save more than 125 jaw-dropping custom Rigs from compatible iPad and Mac/Windows computers
- Get authentic "edge of destruction" sounds, complete with UA Dynamic Room Modeling, speaker breakup, and cone cry
- Choose from 22 speaker cabinets, six cabinet mics, six room mics, and four studio-quality effects with the OX software app to dial in the perfect combination for your amp
- Use external footswitches for fast hands-free control of OX's effects

The World's Best Reactive Load Box

With decades of analog hardware engineering expertise, Universal Audio's dream team of engineers set out to design a reactive load box that retains the tone, dynamics, and feel of your tube amp — no matter how much it's attenuated. The goal was for your tube amp to "see" OX as an actual speaker — with continuously variable impedance and response — so you don't lose a drop of tone or playing dynamics.

A Complete Guitar Recording System

OX's front-panel, six-position RIG control allows you to quickly choose from complete setups — including emulated speaker cabinets, close mics, ambient room mics, and up to four simultaneous studio effects. OX is also the only guitar recording system to offer a complete selection of expertly placed room mics, giving you the authentic experience of pushing air while recording your cranked amp in a world-class tracking room.

Dynamic Speaker Modeling

UA's groundbreaking Dynamic Speaker Modeling faithfully emulates speaker breakup, drive, and cone cry — an essential ingredient to authentic tube amp tones. Using the Speaker Breakup knob in the OX app, you can control the harmonics and sonic complexity that occurs only at certain frequencies and volume levels on various speakers — far beyond a static Impulse Response system — giving you the same sonic phenomenon that occurs with a real speaker cabinet.

A Beautiful Software App

Most guitar products do digital awkwardly. They're ugly and hard to understand. The OX software app, on the other hand, offers slick, intuitive control over all of OX's RIG settings via Wi-Fi — letting you tweak, store and recall hundreds of presets from your iPad, Mac, or Windows 10 computer. You can then save your six favorite tones onto OX's front-panel RIG knob for instant recall in the studio or at a gig.

All The Right Connections

Not only does OX Amp Top Box feature a front-panel headphone jack for silent practice with your cranked tube amp, it also sports a bevy of connections for all kinds of recording and live workflows. Stereo S/PDIF digital outputs via RCA and optical TOSLINK, as well as balanced TRS stereo line outputs with front panel level control, give you the necessary connections for studio monitors, DAW, or live mixing console inputs.

About OX Documentation

This manual is your primary resource for connecting and operating OX hardware and software. See the Table Of Contents at the beginning of the manual to find the information you're looking for, or use the search function in your PDF reader.

Links to other manual sections and web pages are highlighted in blue text. Click the link to jump directly to the item.

> ***Tip:*** *Use the "back" button in the PDF reader application to return to the previous page after clicking a link.*

For additional resources such as videos and knowledge base articles, or to contact our technical support team, see Technical Support.

Critical Operation Notes

Caution: *Connecting and/or operating OX incorrectly can cause permanent damage to your amplifier, OX, and/or other equipment connected to OX. Universal Audio is not responsible for equipment damage resulting from improper OX connections and/or operations. Review the important information in this chapter before connecting or using OX!*

Critical Notes — Avoid Equipment Damage

Tube Amp Output Load

DON'T operate any tube amp without an output load such as a guitar speaker or OX. Using a tube amp without an output load can permanently damage the tube amp.

> ***Caution:*** *Always POWER OFF the tube amp before connecting or disconnecting its speaker output to guitar speakers or OX.*

OX's RED "FROM AMPLIFIER" Input Jack

DON'T connect the amp's high-power speaker output to ANYTHING other than OX's FROM AMPLIFIER input jack. The nut on this jack is RED to indicate this input is ONLY for the amp's speaker output!

OX's "TO SPEAKER" Output Jack

To avoid equipment damage to other gear, DON'T connect OX's high-power TO SPEAKER output jack to ANYTHING other than a guitar speaker cabinet!

Amp Power Rating

DON'T use OX with amplifiers exceeding 150 Watts RMS output power. Any amp with an output power rating of 150 Watts RMS or less can be safely used with OX.

Speaker Cable Insertions

DON'T partially insert ¼" speaker cable plugs halfway into the jack or only to the first click. The cable from the amp's speaker output must be fully inserted into OX's **RED** FROM AMPLIFIER jack to connect the ground return for proper amp loading.

Speaker Cables

Use only high-quality 12 to 16 gauge unshielded ¼" mono TS (tip-sleeve) speaker cables for OX's high-power FROM AMPLIFIER and TO SPEAKER connections. "Speaker" is usually printed on these cables.

> ***Tip:*** *As a general guideline, the longer a speaker cable is, the smaller its cable gauge needs to be (smaller gauge = bigger wires).*

Rated Speaker Power

DON'T connect OX's TO SPEAKER output to any speaker that is rated for a power level that is significantly less than the connected amplifier's output power to avoid speaker damage.

Moisture and Liquids

DON'T expose OX to moisture or liquids. Make a habit of never putting beverages on your OX. If liquid is spilled into the unit, immediately unplug the power cord from the AC socket.

Cooling Airflow

DON'T cover OX's air vents or otherwise restrict airflow around OX. The amp's output power is converted to heat by OX's fanless attenuation circuit, and the air vents must be unrestricted to dissipate this heat.

Solid State Amplifiers

OX can be used with solid state amplifiers (amps without vacuum tubes). However, when connecting OX to solid state amps, extra caution is advised so as not to exceed OX's maximum input power rating of 150 Watts RMS or less.

An amp's output power rating is sometimes labeled near the amp's speaker output jack, or contact the amp manufacturer for the power output specification.

Caution: *Many solid state amps exceed 150W output power and those that do can permanently damage OX. Damage that occurs from exceeding OX's 150W input power rating is not covered under warranty.*

Important Notes — Reduce Equipment Wear

Circuit Wear with Power Attenuation

Circuitry within an attenuated amp is subject to the same wear and tear that would occur if its output power was not attenuated. If an amp is constantly run at higher power levels, the lifespan of an amp's components is reduced accordingly.

Increased circuit wear applies especially to the amp's vacuum tubes, capacitors, and transformers due to the increased heat and current generated at higher power levels.

> ***Tip:*** *A tube amp's sweet spot might not be at full output power — a "dimed" amp doesn't always sound better. Less power and soak might deliver better tone AND better tube life.*

Impedance

Set OX's IMPEDANCE knob to match the impedance of the amp's speaker output. Similarly, the total impedance of speaker(s) connected to OX's TO SPEAKER jack should match OX's IMPEDANCE knob setting.

Many amps have multiple speaker output jacks with different impedance labels (4Ω, 8Ω, etc.) for each output jack. If the amp's speaker output impedance cannot be determined, set OX's IMPEDANCE knob to 8 ohms.

Note that when multiple speakers are combined (such as in a multi-speaker cabinet), the total impedance depends on how the speakers are wired together. For example, two 8 ohm speakers wired in series has a total combined impedance of 16 ohms, but if they are wired in parallel, the total combined impedance is 4 ohms.

Quick Start

Caution: *To avoid equipment damage, read the Critical Operation Notes before connecting or using OX!*

This chapter provides brief instructions to help you get started with OX. For complete details about every knob, switch, and jack, see Controls & Connectors.

Important Setup Steps

Follow these steps to properly connect and power OX and your amp. For visual references, see the Amp & Speaker Connections and Output Connections diagrams on the following pages.

Caution: *Always POWER OFF the amp before connecting or disconnecting its speaker output!*

1. POWER OFF the amplifier.
2. Connect OX's included power supply to an AC outlet and the power input jack on OX's rear panel.
3. Set OX's rear panel IMPEDANCE knob to match the amp's speaker output impedance. If the amp's speaker output impedance cannot be determined, set this knob to 8 ohms.
4. Connect a ¼" speaker cable between the **amp's speaker output** and the **RED "FROM AMPLIFIER"** input jack on OX's rear panel.
5. Set OX's SPEAKER VOLUME, LINE OUT, and HEADPHONE knobs to position 0.
6. Connect OX's outputs as desired (see Output Connections).
7. Power on OX with its rear panel POWER switch, then power on the amp.

After following the important setup steps, OX is ready for use. Adjust the amp and OX controls as desired.

> ***Important:*** *If your amp doesn't seem loud enough or the SPEAKER VOLUME knob behaves unexpectedly (for example, it changes line/mon output levels or OX app signal levels, or speaker volume levels are not smoothly stepped), the amp connections may be reversed. Confirm the amp's speaker output is connected to OX's* ***RED "FROM AMPLIFIER"*** *input jack,* ***NOT*** *OX's TO SPEAKER output jack!*

Setup Notes

- Remember to connect OX to AC power. OX requires the included external power supply to be operated.
- To download the full-color Quick Start Guide and Rig Control Cab & Mic Presets reference sheets included in the OX retail package, click here.

Amp & Speaker Connections

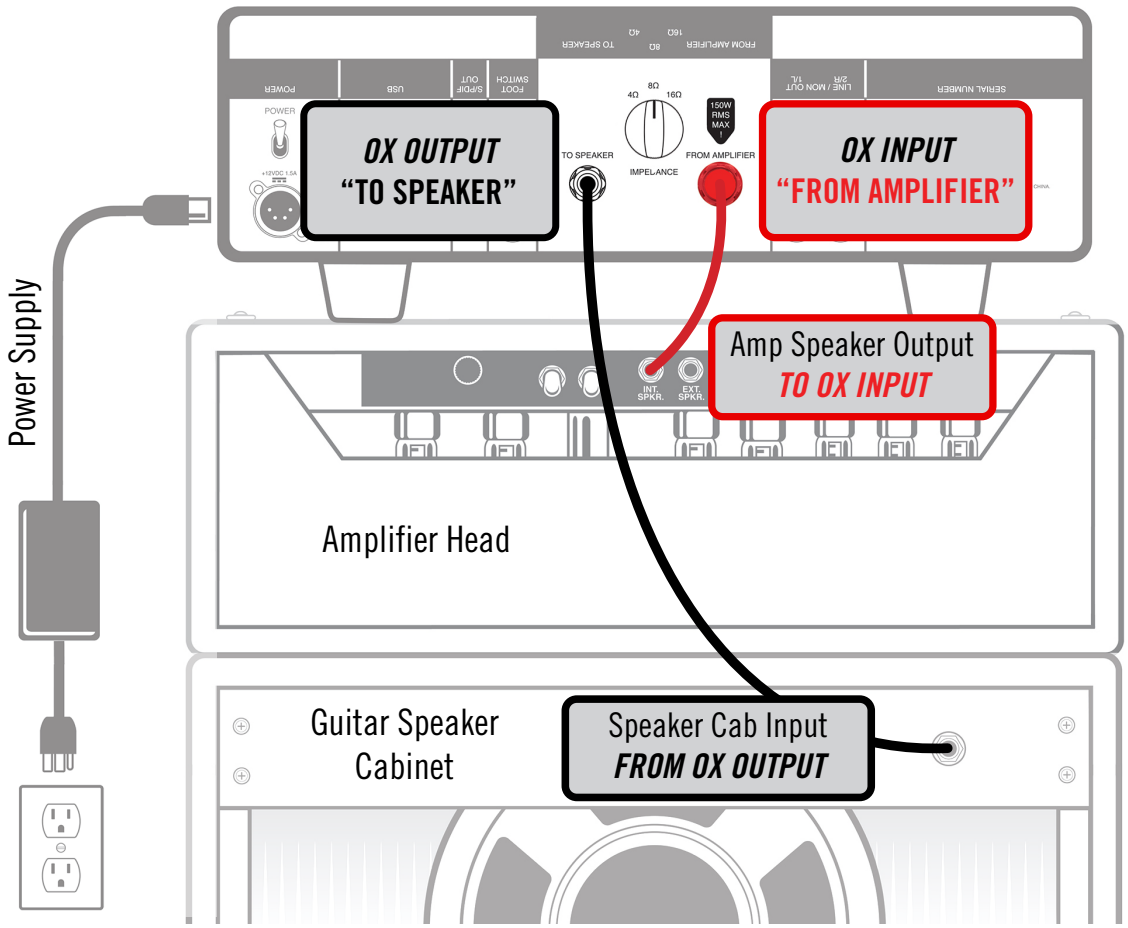
Caution: *Always POWER OFF the amp before connecting or disconnecting its speaker output!*

OX High-Power Wiring Notes

Caution: *To avoid equipment and/or hearing damage, be careful to connect and power the amp and OX in the proper sequence. See the Important Setup Steps for specific instructions.*

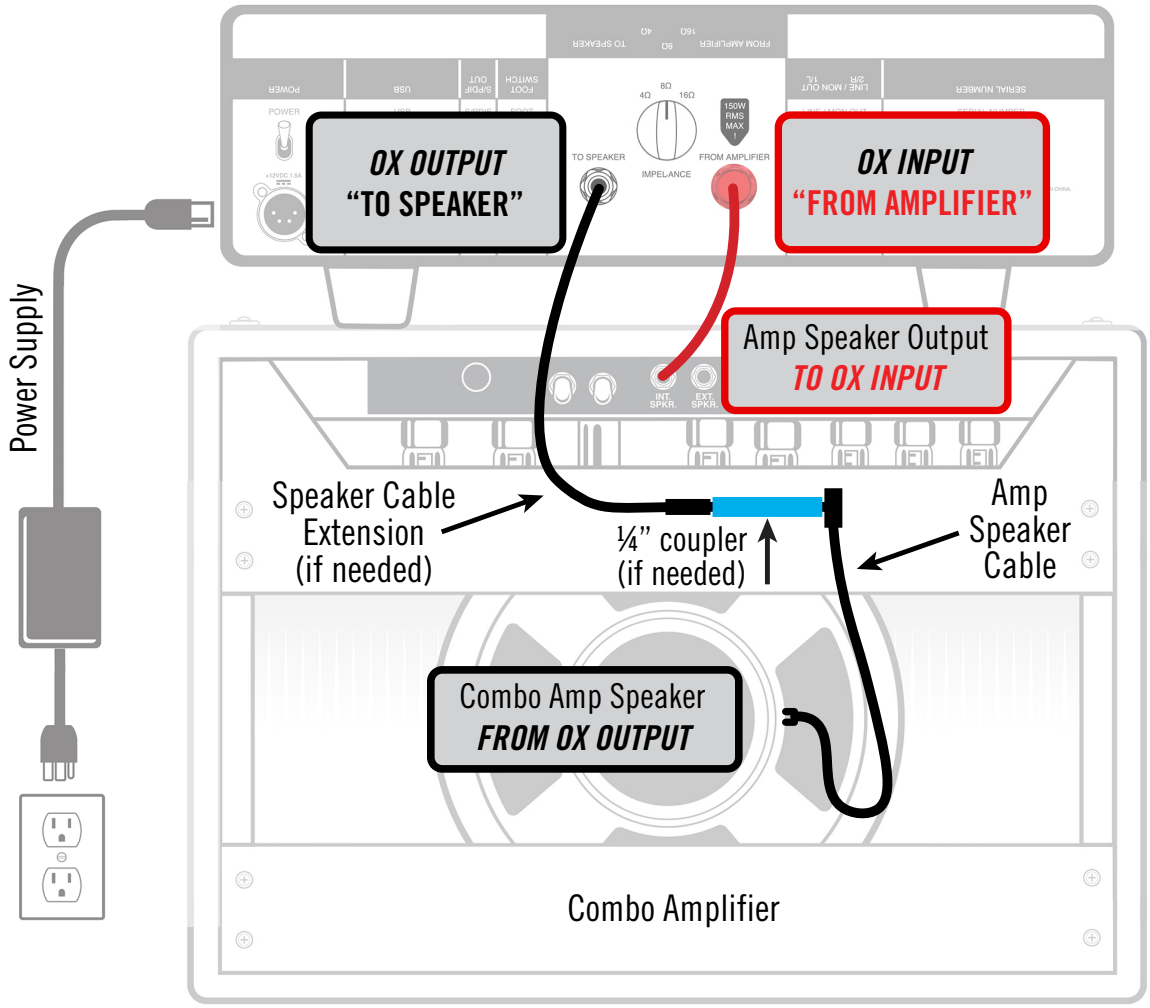
- Use only high-quality 12 to 16 gauge unshielded ¼" mono TS (tip-sleeve) speaker cables for OX's high-power FROM AMPLIFIER and TO SPEAKER connections. "Speaker" is usually printed directly on these cables.
- As a general guideline, the longer a speaker cable is, the smaller its cable gauge needs to be (smaller gauge = bigger wires).
- Use the amp's "internal speaker" jack if there is more than one speaker output.

Amp Head and Cabinet Wiring



OX high-power connections with an amp head and separate speaker cabinet

Combo Amp Wiring



OX high-power connections with a combo amp (speaker and amp in the same cabinet)

Combo Amp Wiring Notes

When connecting a combo amp to OX, the amp's internal speaker cable might not be long enough to reach OX. The methods below can be used to extend the length of the internal speaker cable so it can reach OX's "TO SPEAKER" output jack.

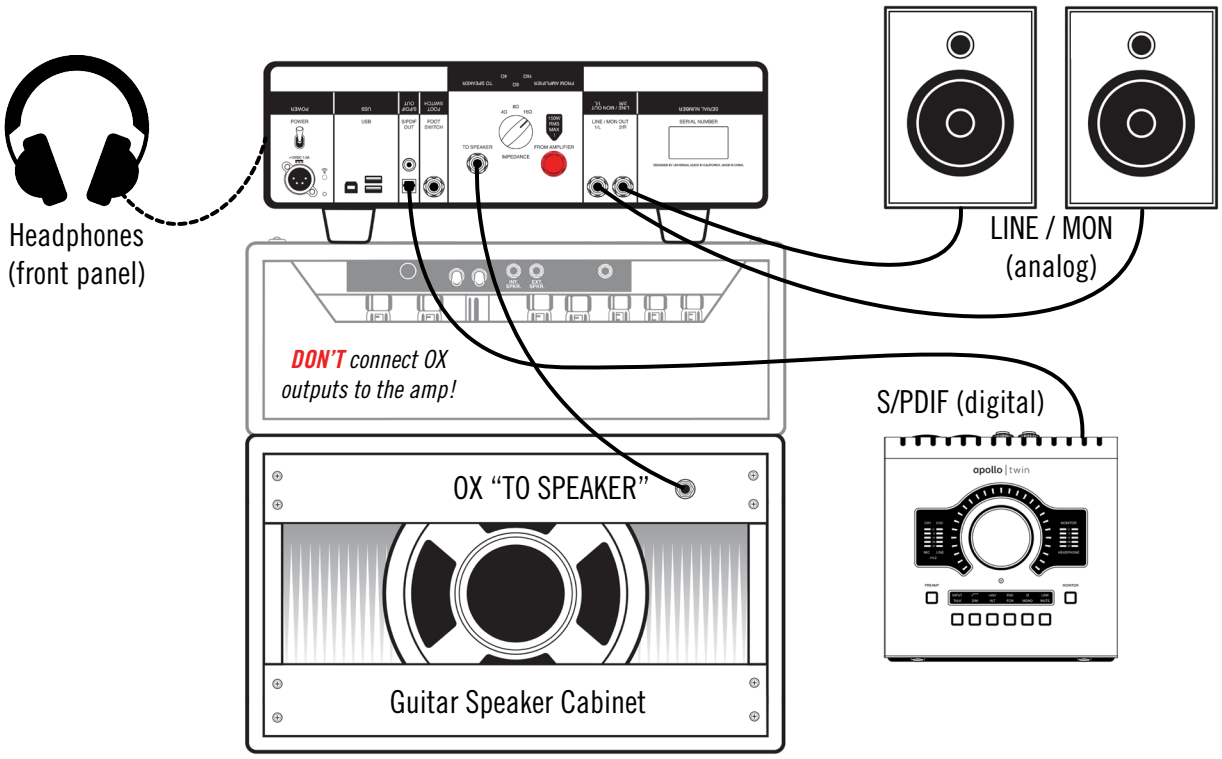
Speaker cable extension – A speaker extension cable has a ¼" female jack at one end (which connects to the internal speaker's ¼" plug), and a ¼" male plug at the other end (which connects to OX's "TO SPEAKER" output jack).

Female/Female coupler plus speaker cable – The barrel coupler has a ¼" female jack at both ends. In this case, plug the internal speaker into one side of the coupler, and an additional ¼" speaker cable (male/male) into the other side of the coupler. Plug the other end of the additional speaker cable into OX's "TO SPEAKER" output jack.

No speaker jacks or plugs? – Speakers in older combo amps might be wired directly to the internal amplifier, without removable connectors. In this case, a qualified amp technician can modify the amp to accommodate ¼" connections.

Output Connections

Tip: *All of OX's output connections are optional. You only need to connect the outputs you want to use.*



Typical OX output connections

Guitar Speaker Cabinet

Connect a 1/4" speaker cable between OX's rear panel TO SPEAKER jack and the guitar speaker cabinet.

Line / Monitor Outputs

Connect OX's rear panel LINE / MON OUT jacks to the line-level inputs of a stereo monitor system, computer audio interface, or other audio gear. Use shielded 1/4" balanced TRS or unbalanced TS line / instrument cables (*not* speaker cables).

Headphones

Connect stereo headphones to the 1/4" jack on OX's front panel.

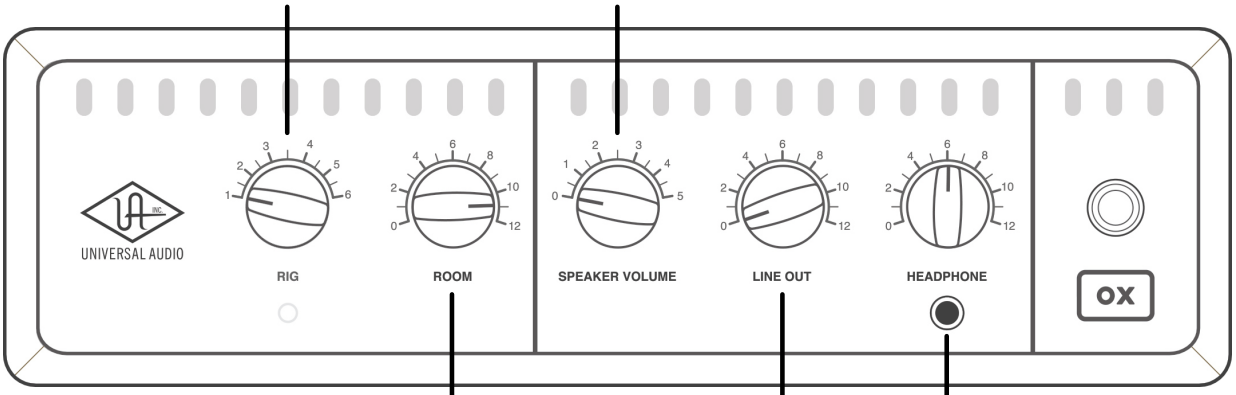
S/PDIF Digital Outputs

Connect OX's rear panel S/PDIF digital output(s) to the digital input(s) of a computer audio interface or other digital audio gear. The optical TOSLINK and coaxial RCA outputs can both be used at the same time.

Control Knobs

RIG
Choose from six complete guitar cabinet+mic +room+effect presets. With OX app, select/adjust 22 cabs, six mics, & four FX and assign to knob.

SPEAKER VOLUME
Adjusts the volume of the guitar speaker cabinet connected to OX. Set to 0 for silent operation.



ROOM
Instant access to mic'd studio ambience and air.

LINE OUT
Adjusts the level at OX's stereo LINE/MON outputs.

HEADPHONE
Adjusts the volume of stereo headphones connected here.

Quick Operation Notes

Tip: *See Controls & Connectors for complete details about OX's knobs and jacks.*

- RIG and ROOM knobs don't affect OX's guitar speaker output. Rig preset sounds are heard in OX's Headphone, Line/Mon, and Digital S/PDIF outputs only. OX's guitar speaker output is pure analog amp tone.
- Changing RIG presets and/or settings can cause sudden level jumps in OX's headphone, line/mon, and digital outputs. Be careful when adjusting the RIG knob, and settings in the OX software app, when volumes are at higher levels.
- Digital output levels can be adjusted with the OX software app.

Tweak and Save Your Rigs with Free OX Software

OX includes free software (OX registration required) for iPad, Mac, and Windows. With the OX software app, 22 cabinets, six cab microphones, six room mics, four simultaneous effects, and hundreds of RIG presets can be wirelessly browsed, adjusted, and assigned to the RIG knob over Wi-Fi. For complete details, see OX Software App.

Get the OX Software App

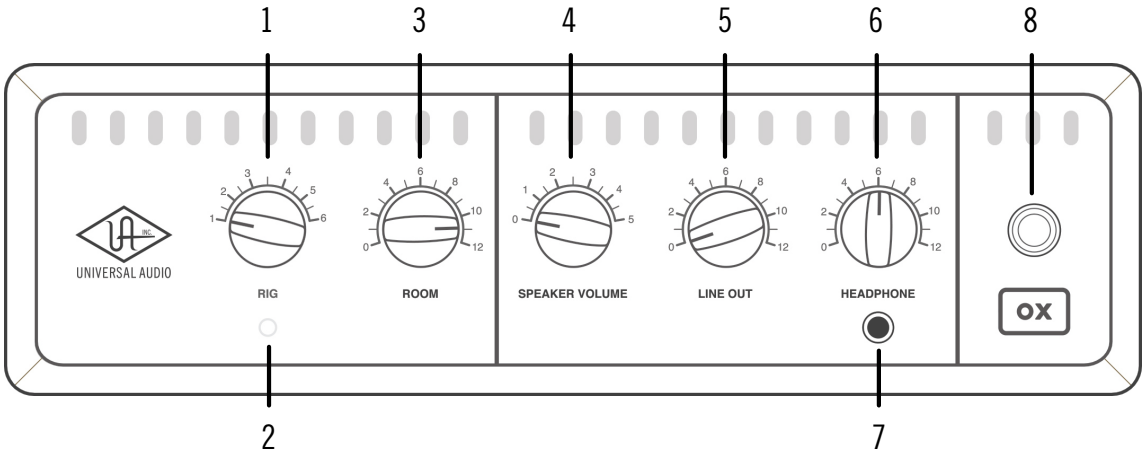
- From your Mac or Windows computer, visit www.uaudio.com/ox/app
- From your iPad, search "OX Amp Top Box" in the iOS App Store

Controls & Connectors

Important: *See Quick Start for important power sequence and setup instructions.*

Front Panel

Refer to the illustration below for numbered descriptions in this section.



OX's front panel elements

RIG (1)

Each of the six available RIG knob positions recalls a complete cabinet/mic/room/effects preset. RIG tones are heard in the HEADPHONE, LINE / MON, and S/PDIF outputs, but not in the TO SPEAKER output.

For a table of the six factory RIG knob assignments and the cabinet/mic/room/effect settings used in each RIG knob position, see Default RIG Control Cab & Mic Presets.

> ***Tip:*** *The OX software app provides deep access to all RIG cab/mic/effects settings and 100 carefully crafted factory presets. You can assign customized presets to the RIG knob for instant hardware access when the app is not in use.*

RIG LED (2)

The LED beneath the RIG knob illuminates to indicate certain operating conditions. The LED states encountered during normal operation are listed in the table below.

> ***Note:*** *If RIG LED states not listed below are encountered, please contact UA Technical Support.*

RIG LED State	Indication	Notes
Off	OX is not powered	Rear panel POWER switch is in down position and/or AC adapter is not properly connected
Green (solid)	RIG is not modified	Active RIG has been loaded via RIG knob or OX app and is unchanged from stored version
Amber (solid)	RIG is modified	Active RIG has been edited via ROOM knob or OX app and is not stored
Amber (blinking)	Firmware updating	Firmware update is in process
Green (blinking)	Wi-Fi reset is initiated and awaiting user confirmation	Press reset switch again within 10 seconds to confirm Wi-Fi reset
Red (blinking)	Factory reset is initiated and awaiting user confirmation	Press reset switch again within 10 seconds to confirm factory reset

ROOM (3)

The ROOM knob adjusts the amount of mic'd studio ambience and air. Increase this knob for more room ambience, or decrease for a drier close-mic tone.

When ROOM is adjusted, the RIG LED illuminates in amber, indicating the ROOM amount is different than the value stored in the active RIG preset.

ROOM sounds are heard in the LINE / MON, HEADPHONE, and S/PDIF outputs, but not in the TO SPEAKER output.

> ***Tip:*** *ROOM settings can be edited and stored with the OX software app.*

SPEAKER VOLUME (4)

This knob adjusts the loudness of the guitar speaker(s) connected at OX's rear panel TO SPEAKER output jack. Six knob positions and five carefully crafted attenuation levels are available.

Position 1 is the quietest available setting. Position 5 is the loudest available setting. At position 0, the speaker is OFF for silent operation.

SPEAKER VOLUME does not change the signal level being routed into the digital section, which receives signal before this loudness control. This feature allows you to change the guitar speaker volume without changing levels at the LINE / MON, HEADPHONE, and S/PDIF outputs.

> ***Note:*** *The guitar speaker volume is determined by the overall combination of amplifier power and output impedance, guitar speaker impedance, and OX's rear panel IMPEDANCE knob.*

LINE OUT (5)

The signal level at OX's rear panel stereo LINE / MON outputs is adjusted with this knob. LINE OUT does not change the level at OX's SPEAKER, HEADPHONE, or S/PDIF outputs.

Rotating this knob fully counter-clockwise to the "0" position shuts off the LINE / MON outputs.

HEADPHONE Knob (6)

The volume of OX's front panel stereo HEADPHONE output is adjusted with this knob. HEADPHONE does not change the level at OX's SPEAKER, LINE / MON, or S/PDIF outputs.

Rotating this knob fully counter-clockwise to the "0" position shuts off the HEADPHONE output.

HEADPHONE Output (7)

This TRS stereo unbalanced output jack accepts standard ¼" stereo headphones. Headphone volume is adjusted with the HEADPHONE knob above the jack.

> ***Caution:*** *Changing RIG settings and/or presets can cause a sudden jump in headphone output levels. Exercise caution when adjusting Rigs (via RIG knob or OX software app) when the HEADPHONE output is at higher levels.*

POWER Lamp (8)

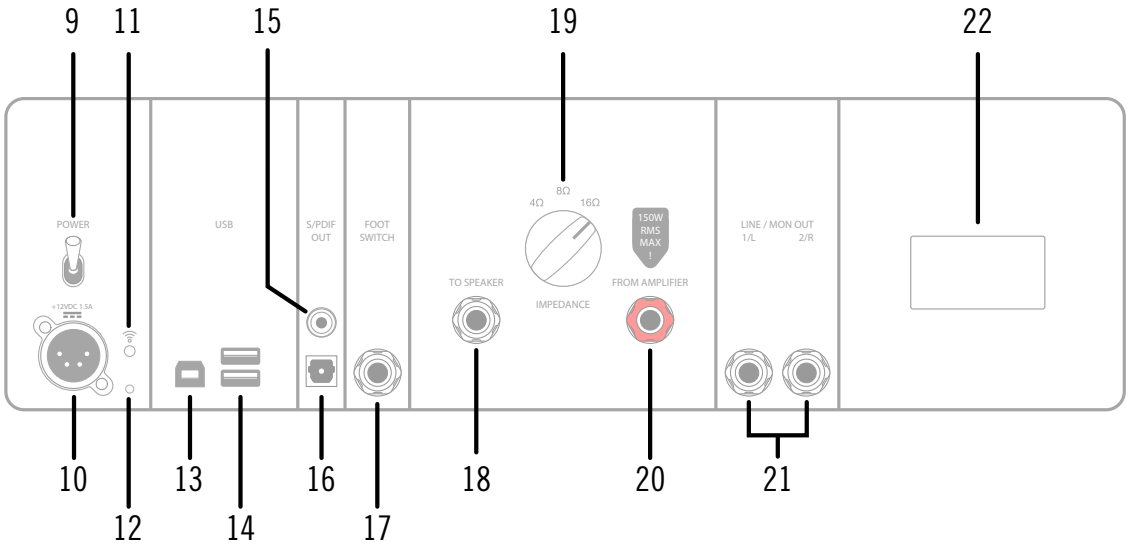
The power lamp illuminates when OX is properly connected to AC power and the rear panel POWER switch is in the UP position. When power is OFF, the lamp is unlit.

During system startup, OX's outputs are inactive.

> ***Important:*** *OX outputs are active only when OX is powered on and system startup is complete.*

Rear Panel

Refer to the illustration below for numbered descriptions in this section.



OX's rear panel elements

POWER Switch (9)

Use this toggle switch to apply power to OX. The included external power supply must be properly connected (10) to apply power to OX.

> ***Important:*** *Power must be ON to enable OX outputs.*

In the up position, power is ON and the front panel POWER lamp (8) illuminates. In the down position, OX power is OFF and the POWER lamp (8) is unlit.

System startup begins when OX is powered ON. While the system is starting, OX outputs remain inactive. After startup is complete, the POWER lamp remains lit and OX outputs are enabled.

> ***Note:*** *When power is OFF, OX presents a 16 ohm load at the FROM AMPLIFIER input to prevent tube amp damage that could occur with an unloaded amp output.*

POWER Input (10)

Caution: *Connect only the included external power supply to the POWER input. Using a different power supply could damage OX and void the warranty.*

This 4-pin locking XLR jack accepts the DC output plug from OX's included external power supply. OX requires 12 volts DC power and its power supply draws approximately 18 Watts.

Connect the included IEC power cable to the inlet of the included external power supply and an AC power outlet.

Note: *Use the POWER switch above this jack to power the unit on and off. The AC MAINS plug is the disconnect device.*

Wi-Fi Status LED (11)

This LED indicates activity on OX's built-in WI-Fi network. The LED states encountered during normal operation are listed in the table below. For instructions on how to use OX's Wi-Fi networking, see OX Software.

Note: *If Wi-Fi LED states not listed below are encountered, please contact UA Technical Support.*

Wi-FI LED State	Indication	Notes
Off	No network connection	No device is paired with OX's internal Wi-Fi hotspot and OX is not paired with external Wi-Fi network
Blue (solid)	Hotspot connection	Device is paired with OX's internal Wi-Fi hotspot
Green (solid)	External network connection	OX is paired with external Wi-Fi network
Green (blinking)	Attempting external network connection	OX is attempting to pair with external Wi-Fi network that was selected in OX app

Reset Switch (12)

This small push-button switch is used to reset OX's Wi-Fi settings and reset OX to factory defaults. For more information, see Troubleshooting.

Note: *Reset is not necessary during normal operation.*

USB Type-B Port (13) and USB Type-A Ports (14)

These ports are not functional.

S/PDIF Digital Outputs

The S/PDIF digital output ports are for connecting OX's left/right stereo output signals to the digital input(s) of a computer audio interface or other digital audio equipment

The stereo signal at the digital outputs is the same stereo signal as the analog signals at the MON / LINE and HEADPHONE outputs. Both digital outputs carry the same stereo signal, and both digital outputs can be used at the same time.

Digital signal levels can be adjusted with the master fader in the OX software app. Digital levels cannot be changed with OX's hardware controls.

> ***Note:*** *The sample rate of the digital outputs is fixed at 44.1 kHz.*
>
> ***Tip:*** *Using the S/PDIF outputs instead of the analog outputs (LINE/MON or HEADPHONE) delivers the purest signal path into other digital audio gear by reducing D/A and A/D conversions.*
>
> ***Tip:*** *If connecting OX to the S/PDIF input of an Apollo audio interface, activate the realtime S/PDIF sample rate conversion feature (SR CONVERT) in Apollo Console's S/PDIF channel input strip to enable compatibility with all Apollo sample rates.*

Coaxial S/PDIF Digital Output (15)

This stereo S/PDIF digital output jack accepts a 75-ohm coaxial RCA (phono) digital audio cable.

> ***Tip:*** *Use this port to digitally connect OX's stereo output signal to the S/PDIF input port on Universal Audio's Apollo FireWire and Apollo 8/x8 audio interfaces.*
>
> ***Note:*** *For optimum results, use a 75-Ohm RCA cable that is specifically designed for digital audio.*

Optical S/PDIF Digital Output (16)

This stereo S/PDIF digital output port accepts a TOSLINK optical cable.

> ***Tip:*** *Use this port to digitally connect OX's stereo output signal to the S/PDIF optical input port on Universal Audio's Apollo Twin and Apollo 8p/x8p audio interfaces.*
>
> ***Important:*** *Although TOSLINK optical cables are also used for digital connections in ADAT format, this port outputs S/PDIF format only and is incompatible with ADAT optical inputs.*

FOOTSWITCH Input (17)

This jack accepts 1, 2, and 3 button footswitches with TS (tip-sleeve) and TRS (tip-ring-sleeve) plugs for external control of OX's built in effects. For details, see "Footswitch Assign" beginning on page 39.

TO SPEAKER Output (18)

Caution: *This is a high-power output! To avoid equipment damage, DO NOT connect this output to the input of studio monitors, audio mixers, PA speakers, audio interfaces, computers, or similar inputs. Connect this output to a guitar speaker cabinet ONLY.*

Caution: *To avoid equipment damage, DO NOT connect this output to a guitar speaker cabinet that is rated for a power level that is significantly less than the connected amplifier's output power.*

> ***Important:*** *Use only a high-quality 12 to 16 gauge unshielded ¼" mono TS (tip-sleeve) speaker cable for the high-power TO SPEAKER connection. "Speaker" is usually printed directly on these cables.*

The guitar amp's attenuated (power soaked) speaker signal with OX's reactive load is output here. Connect a high quality ¼" speaker cable between this jack and a guitar speaker cabinet.

OX's front panel SPEAKER VOLUME knob controls the loudness at this output. At the knob's minimum position (0), the speaker connected here is OFF for silent operation.

The signal path between OX's FROM AMPLIFIER and TO SPEAKER jacks is pure analog. Because this output is dry without cabinet/mic/room/effects processing, OX's RIG and ROOM knobs do not change the sound of the guitar speaker connected here.

SPEAKER Output Notes

- To avoid sudden loud speaker volume, reduce the amp's volume knob and/or OX's front panel SPEAKER VOLUME knob to before connecting a guitar speaker cabinet.
- This output is designed specifically for guitar speakers. Full-range flat-response speakers are not recommended for this output connection.

IMPEDANCE Knob (19)

This three-position knob sets the reactive load impedance that is present at OX's FROM AMPLIFIER input (and the tube amp's speaker output). Settings of 4, 8, and 16 ohms are available.

> ***Note:*** *Set the IMPEDANCE knob to match your tube amp's speaker output impedance. If the amp's speaker output impedance cannot be determined, set this knob to 8 ohms.*

FROM AMPLIFIER Input (20)

Caution: *To avoid permanent damage to the amplifier and/or OX:*

- **POWER OFF** the amp before connecting or disconnecting its speaker output.
- **DON'T** power or operate any tube amp without an output load such as a guitar speaker or OX.
- **DON'T** partially insert ¼" speaker cable plugs halfway or only to the first click. DO fully insert all speaker cable plugs to ensure proper ground returns.
- **DON'T** use OX with amplifiers exceeding 150 Watts RMS output power.

This jack is OX's reactive load input. Connect a ¼" speaker cable between the tube amp's speaker output and this **RED** input jack. The signal received here is attenuated (soaked) by the reactive load then passed to OX's SPEAKER OUT jack.

Important: *Use only a high-quality 12 to 16 gauge unshielded ¼" mono TS (tip-sleeve) speaker cable for the high-power FROM AMPLIFIER connection. "Speaker" is usually printed directly on these cables.*

Note: *When OX power is OFF, OX presents a 16 ohm load at the FROM AMPLIFIER input to prevent tube amp damage that could occur with an unloaded amp output.*

LINE / MONITOR Outputs (21)

Note: *Use only shielded line/instrument cables with these outputs. Don't connect unshielded speaker cables here.*

The Left and Right LINE / MON outputs are for connecting OX to the analog line-level stereo inputs of studio monitors, a computer audio interface, or other audio equipment. Both ¼" jacks can accept balanced TRS (tip-ring-sleeve) or unbalanced TS (tip-sleeve) connections. OX's front panel LINE OUT knob controls the level at these outputs. At the minimum position (0), the LINE / MON outputs are off.

Note: *These stereo outputs are not summed to mono when only one output is connected. When using a stereo preset (such as when microphones are panned or with stereo effects), connect both outputs to hear both stereo channels.*

Wi-Fi Address (22)

The hotspot name (SSID) and password for OX's built-in wireless Wi-Fi network is printed here. These login credentials are used when connecting the device running OX's remote control software application to the unit.

Note: *Every OX unit as a unique hotspot name and password.*

Tip: *OX's default hotspot name and password can be changed from within the software OX app.*

OX Software App

OX includes free software (OX registration required) for iPad and Mac/Windows computers. With the OX software application, OX Rigs can be wirelessly accessed, modified, and stored with OX's built-in Wi-Fi networking.

The OX app provides deep access to all RIG and ROOM settings, allowing you to create a near-infinite variety of complete guitar tones and store hundreds of Rig presets. 125 carefully crafted default Rigs provide a wide variety of album-quality tones, or use the default Rigs as a starting place for your own custom tones.

With the OX app, you can easily assign different Rigs to the OX's six RIG knob slots, for access to your favorite Rigs when the OX app is not being used. Rig Sets can be easily assembled to quickly assign a batch of six Rigs to OX's RIG knob slots for standalone stage and studio use.

The OX app can control OX by pairing directly to its built-in Wi-Fi hotspot, or by connecting both OX and the device running the app to an existing Wi-Fi network.

OX App Features

- Full control of OX Amp Top Box Rigs via Wi-Fi on iPad or Mac/Windows computers
- 125 Rig presets for instant album-quality guitar tones
- Select from 22 classic speaker cabinets with vintage, NOS, and modern speakers
- Choose from 8 boutique direct mics and 6 room mic combinations
- Perfect your studio amp tones with EQ, Compression, Delay, and Plate Reverb
- Create, manage, and save your own Rigs to OX hardware for standalone use
- Assign external footswitches (not included) for hands-free control of OX's effects

OX App Requirements

- OX Amp Top Box
- 2.4 Ghz Wi-Fi network with internet connection to register (once only)
- (Mac) macOS 10.14 Mojave or 10.15 Catalina
- (Win) Windows 10 64-Bit Edition
- (iPad) iOS 12 or iPadOS 13
- For complete compatibility information, visit help.uaudio.com

Note: *Operating systems not listed above are untested. Although untested operating systems may work, they are not supported by Universal Audio.*

Get OX App

- From your Mac or Windows computer, visit www.uaudio.com/ox/app
- From your iPad, search "OX Amp Top Box" in the iOS App Store
- For app installation instructions, visit this KB article at help.uaudio.com

Essential App Concepts

This section outlines several key concepts that will help you understand how the OX app interacts with the OX hardware so you can get the most from your OX system. Similarly, reviewing the OX System Overview and OX Wi-Fi Networking chapters is recommended to help you get the most from the app.

OX's Remote Control

The OX app is simply a wireless remote control interface to the completely self-contained OX hardware unit. The app literally has no controls or settings of its own — EVERY control and setting you see in the app is an exact mirror of OX's current internal state.

The app controls OX's digital functions. The app cannot control or store OX's SPEAKER VOLUME knob value because the reactive load and attenuation circuitry is pure analog.

> ***Note:*** *OX signal processing — Dynamic Speaker/Room Modeling, mic mixing, EQ, master effects, and everything else — is performed in the OX hardware, not the app.*

Everything Is Stored In OX

All OX data is stored within the OX hardware. Stored data includes all user Rig presets, Rig Sets, effect presets, assignments, networking, and system settings. OX data is not stored within the OX app or the iPad/Mac/Windows file system.

> ***Tip:*** *The OX app can be safely deleted — or all iPad/Mac/Windows data removed (via reformat, reset, etc.) — and user data will remain intact in the OX hardware.*

Current State Is Retained

When OX is powered off, the current state of all OX settings and data is retained. When OX is powered on, OX will be in the exact same state as when it was powered off. This includes all Wi-Fi networking/system settings, and RIG knob/footswitch assignments.

This feature lets you set OX the way you want with the app, and OX will sound the same later without the app, even if OX was powered down.

For example, you can assign your favorite Rigs to the RIG knob, and access those Rigs later — even if you power off OX and/or don't have the OX app with you.

> ***Tip:*** *If a Rig was modified but not yet saved when OX is powered off then on again, the Rig LED is amber, indicating the Rig is still in the same modified state that it was in before powering off.*

Accessing Factory Rigs

OX includes 125 carefully-crafted factory Rig presets for instant album-quality guitar tones. The factory Rigs can be used as-is, or as starting points when creating custom Rigs. Factory Rig presets are loaded in the same way as user Rig presets.

> ***Tip:*** *To access the factory Rigs, see Loading Presets.*

App Views

The app has three main view screens: RIG, ASSIGN, and SETTINGS. Each view contains the settings related to these functions.

RIG – Rig settings are adjusted in Rig view. Every sonic setting that changes the tone of an individual Rig is contained within this view. Individual Rig presets are also managed in this view.

ASSIGN – Individual Rigs and Rig Sets are assigned to OX's RIG knob slots in Assign view.

SETTINGS – OX's Wi-Fi networking settings and global system settings are accessed in Settings view. A link to UA's OX Knowledge Base is available here for technical support.

Choosing App Views

To display any app view, select its view name at the top right of any app view.

Tip: *The name of the active view is highlighted in amber.*

App view selectors with RIG view active

Terms

Specific terms are used in this chapter when describing the various OX component functions. These terms are defined below.

OX – The self-contained OX hardware unit. OX does not refer to the OX software app or the iPad/Mac/Windows device unless specifically noted otherwise.

App – OX's remote control software application.

Rig – One complete guitar tone that contains the settings of all available sonic controls.

Rig Set – A collection of six individual Rigs that can be quickly assigned to OX's RIG knob.

Effect(s) – OX's four independent effect processors (EQ, compression, delay, and reverb).

Preset – One complete set control values stored within OX. OX has Rig presets and effect presets. Presets are loaded, saved and renamed in the Presets Manager.

RIG View

All Rig settings are adjusted in Rig view. Every sonic setting that changes the tone of a Rig is contained in this view. Individual Rig presets are also managed within this view.

In all, more than 60 parameters (many with dozens, and even hundreds, of possible values) are available for sonic control of a Rig, for vast tonal possibilities.

Displayed Settings

All settings displayed in Rig view are a mirror of the current RIG knob selection on OX's front panel. If the RIG knob selection is changed, or the ROOM knob is adjusted, the settings in Rig view are updated to reflect the new settings.

Note: *As with all OX app views, Rig view is simply a mirror of OX's internal state.*

RIG view with typical settings

Modifying Rigs

Every control and setting in Rig view is always active. To modify (edit) the Rig, simply adjust any control to any available value, and the new setting is active.

Sonic settings available for modifying include the speaker cabinet, two cab mics, stereo room mic, four master effects (each with individual controls), and the mic mixer with its individual channel controls (mic off-axis and low-cut filter, mic EQ, pan, solo, mute, channel faders), and master fader.

Modified (and unmodified) Rigs can be stored as a user preset. For methods, see Saving Presets.

> ***Important:*** *If a Rig is modified and a preset is loaded before the modified Rig is saved, the modified Rig is discarded. If you want to keep the modified Rig, save the modified Rig as a preset before loading Rig presets.*

Stored or Modified?

- If a Rig is not modified, the Rig name (at the upper left of the view screen) is white, and the Rig LED on OX's front panel is green, indicating the Rig was previously stored.
- If a Rig has been modified with the app, or with the ROOM knob on OX's front panel, the Rig name and OX's Rig LED are amber, indicating the modified Rig is not yet stored.
- Additionally, SAVE appears in amber next to the Rig name to indicate the modified Rig is not yet stored.

Stored Rig (left) and modified Rig (right) in OX app

Input Level

The INPUT LEVEL switch sets the level from the amp (after OX's reactive load) into OX's processors. The switch helps match the power output of the tube amp with optimum levels for Dynamic Speaker Modeling.

As a general guideline when modifying Rigs, this switch should be "set-and-forget" to the following values:

- If the tube amp outputs 50 Watts or less, set INPUT LEVEL to 50W.
- If the tube amp outputs more than 50 Watts, set INPUT LEVEL to 100W.

This general guideline does not mean you need to be concerned about levels being set correctly, or that you need change this switch in factory Rigs to match your amp, or that input levels are too low or too high.

Even if INPUT LEVEL is set to 50W with a 100-watt amp, or set to 100W with 5-watt amp, you never need to worry. OX is designed to ensure input levels are never wrong.

Speaker Drive

SPEAKER DRIVE adjusts (in the simplest terms) the dynamic response of the speaker cabinet. This unique and powerful control adjusts different aspects of OX's Dynamic Speaker Modeling.

At lower SPEAKER DRIVE ranges, the cabinet sounds more like the speaker(s) is new: tighter and thicker, with more punch and bottom end. As SPEAKER DRIVE is increased, you can hear, and *feel*, the cab get softer and spongy with more breakup, like a broken-in speaker.

At higher ranges, breakup is more obvious, with crumbling of the lows and smearing of the highs as the speaker is pushed harder. At the highest ranges, the speaker approaches end of life: weaker, looser, darker, and sub-octave notes (cone cry) may be apparent with certain note/cab combinations.

Master Fader and Output Meters

The master fader (at the lower right of RIG view) is the output level control for OX's stereo outputs. The stereo output level meters (next to the master fader) indicate signal levels at the outputs.

When OX's digital output level exceeds 0 on the meter, the top LED segment is RED, indicating that the digital outputs are clipped. If connecting OX digitally to the inputs of other digital audio equipment, avoid clipping the stereo output meters by reducing the master fader.

> ***Tip:*** *When creating Rigs, it's optimum to keep the output meters below maximum so OX's digital outputs won't clip when connecting to other digital audio gear.*

Presets Management

A preset is one complete set related control values stored within OX. OX has Rig presets and effect presets. Effect presets include the cab/room mic EQ presets and the master effect presets. OX presets are saved, loaded, and renamed within the Presets Manager.

Preset Contents

- A Rig preset contains ALL Rig settings, including all mic EQ and effect settings. EQ and effect settings don't need to be saved separately from the Rig.
- An effect preset contains all settings for one individual effect (EQ, compression, delay, or reverb). To save all Rig effect settings at once, simply save the Rig.

Preset Types

Factory Preset

OX includes 125 factory Rig presets and dozens of factory effect presets. Factory presets are read-only; they can be loaded and modified, but not overwritten. All factory presets are within the FACTORY folders.

If a factory preset is modified, pressing SAVE opens the presets manager so the preset can be named and saved into a user folder.

User Preset

User presets can be created, renamed, and deleted. Any Rig or effect preset you save is a user preset. By default, user presets are saved in the USER folders.

If a user preset is modified, pressing SAVE stores the preset in place, overwriting the existing preset. To create a new user preset, press SAVE AS (located within the presets manager popover) instead.

> ***Important:*** *Deleting a user preset permanently erases the preset. A confirmation dialog appears when deleting presets so you can cancel the operation.*

Favorite Preset

Any factory or user preset can be tagged as a favorite. Favorite presets appear in the FAVORITES folders for quick access. To tag favorite presets, press the STAR icon in preset lists. To un-favorite, press the STAR icon again.

> ***Note:*** *Favorite presets remain in their original folders when tagged as a favorite.*

Preset Folders

By default, the preset manager has three folders: FACTORY, FAVORITES, and USER. All presets are within these folders.

- **FACTORY** folders, and their presets, cannot be renamed or deleted.
- **FAVORITES** folders cannot be renamed or deleted, but their contents can be changed by tagging favorite presets with the STAR icon.
- **USER** folders can be created, renamed, and deleted. More than one user folder can exist for more precise organization if desired.

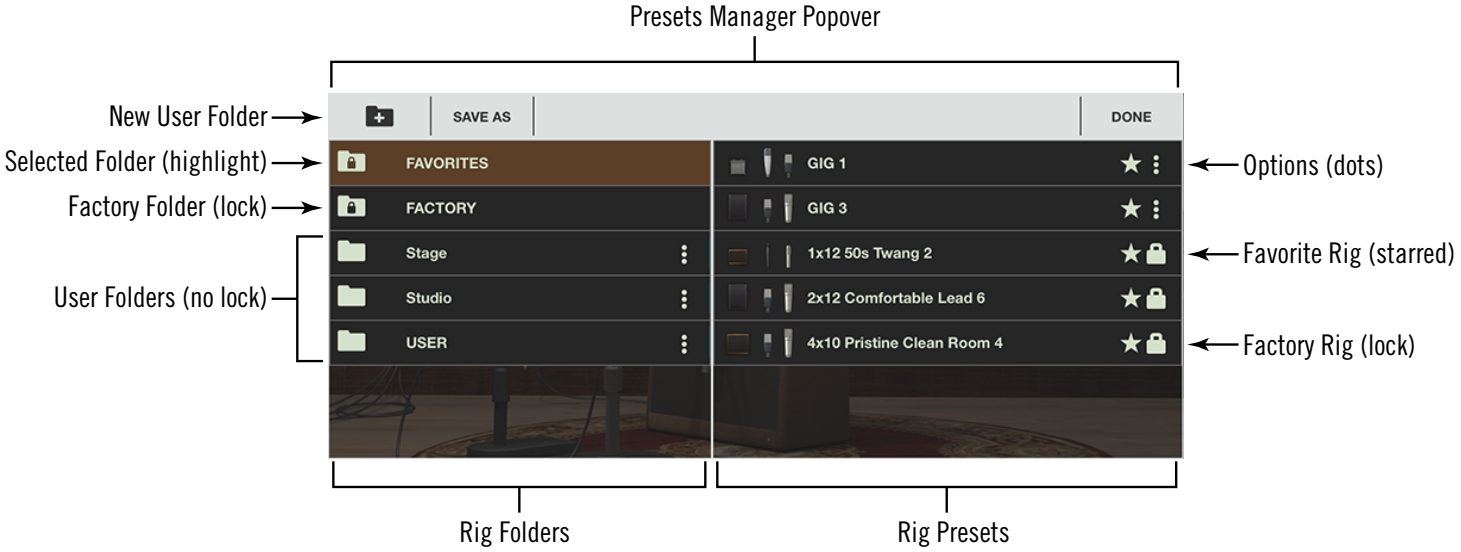
Important: *Deleting a user folder permanently erases the folder AND all user presets within the folder. A confirmation dialog appears when deleting folders so you can cancel the operation.*

Presets Manager

Preset management functions — such as load, save, rename, delete, and favorites tagging — are done in the presets manager popover within Rig view. How the presets manager is accessed depends on the preset type:

- **Rig presets –** The popover appears when the RIG NAME area (at top left of RIG view) is pressed.
- **Effect presets –** The popover appears when PRESET (at top left of effect editor) is pressed.

Tip: *You can keep the presets manager open to perform additional preset operations. When finished, press DONE to close the popover.*



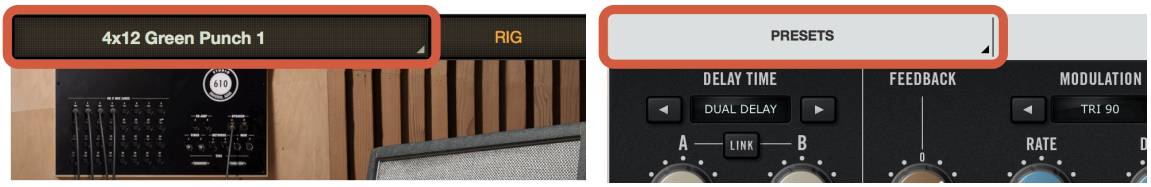
Elements in the presets manager popover. In this example, FAVORITES is the selected folder (left column) and all favorite Rig presets are in the right column.

Loading Presets

Important: *If a Rig is modified and a preset is loaded before the modified Rig is saved, the modified Rig is discarded. If you want to keep the modified Rig, save the modified Rig as a preset before loading Rig presets.*

How to load Rig and Effect presets:

1. Access the Presets Manager popover:
    - **Rig preset** – Press the RIG NAME area at top left of RIG view screen.
    - **Effect preset** – Press PRESETS at top left of the effect editor view.



Accessing the presets manager for Rigs (left) and effects (right)

2. Select any folder in left column of the popover. All presets within the folder are displayed in the right column.

Note: *You may need to scroll to see all presets in the folder.*

3. Select a preset in the right column. The preset is loaded immediately.

Tip: *Keep the presets manager open to continue auditioning presets. When finished, press DONE to close the popover.*

Saving Presets

How a preset is saved varies slightly depending on if you're saving a modified factory preset, saving an existing user preset, or creating a new user preset. Each method is detailed below. Refer to the Presets Manager illustration if needed.

How to save modified factory presets:

1. Press SAVE at the top left of RIG view. The presets manager popover appears.

SAVE is visible when a Rig is modified

2. Select any user folder in left column of the presets manager popover. To create a new user folder, press the new folder icon at top left of the popover.
3. Press SAVE AS, enter a name for the new user preset (optional), then press OK. The new preset is saved in the selected user folder.

How to save an existing user preset in place:

To save a user preset to the same location and with the same name (overwriting the existing preset), simply press SAVE at the top left of RIG view (*not* the Rig name). The preset is saved, the existing preset is replaced with the new settings, and the popover does not open.

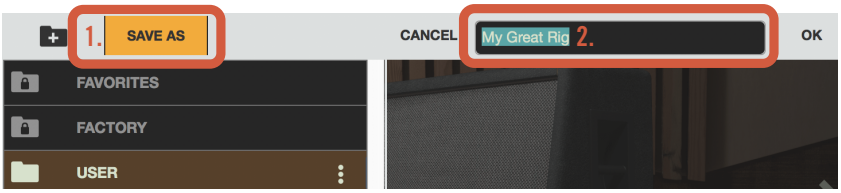
Press SAVE to replace (discard) the same user preset

How to create a new user preset (SAVE AS):

1. Press the PRESET NAME area at top left of RIG view (*not* SAVE). The presets manager popover appears.

To SAVE AS, press the preset name instead of SAVE

2. Select any user folder in left column of the popover. To create a new user folder, press the new folder icon at top left of the popover.
3. Press SAVE AS, enter a name for the new user preset, then press OK. The new user preset is created in the selected user folder.

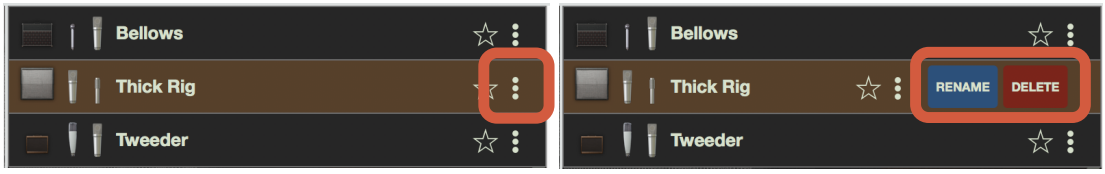


The rename field appears after pressing SAVE AS

Renaming & Deleting Presets & Folders

User presets and user folders can be renamed and deleted. To access the rename and delete functions, press the options dots to the right of any user preset or user folder to see the rename and delete options.

> ***Important:*** *Deleting a user preset or user folder permanently erases the preset or folder (AND all user presets within the folder). A confirmation dialog appears when deleting presets and folders so you can cancel the operation.*



Press the options dots to display the rename and delete options

Effect Editors

The effect editors are where the controls for each individual effect processor are viewed and adjusted. Press any effect name to open its editor in a popover.

Effect presets are also loaded and saved within its effect editor. For details, see Presets Management.

Each of OX's four studio-quality effects — 4-band EQ, 1176 SE compression, stereo modulated delay, and stereo plate reverb — has a unique editor. EQ has two editors; it can be viewed in graphic mode or touch mode.

Each effect editor is shown below.

OX's effect editors

ASSIGN Views

The OX App has three views where you can assign (store) these setups:

Rig Slots Assign – Store individual Rigs to any of OX's six hardware RIG knob slots.

Rig Sets Assign – Store a complete batch of six Rigs to OX's hardware RIG knob.

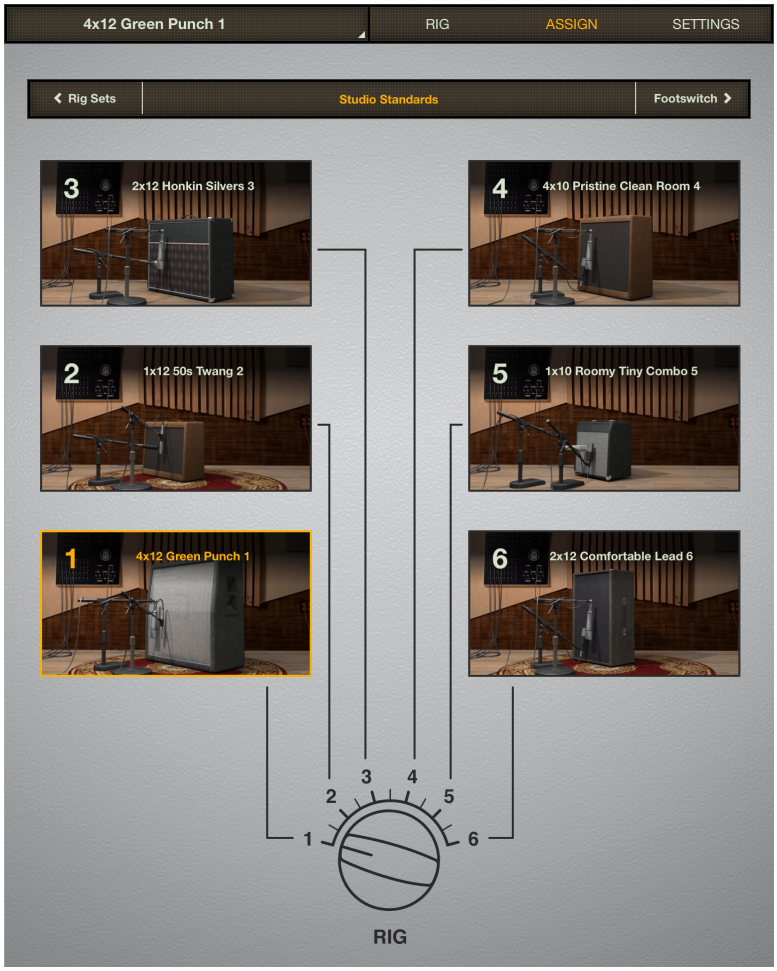
Footswitch Assign – Store external footswitch settings that toggle OX's built-in effects.

All assignments in these views reflect current assignments stored in the OX hardware. As with all OX app views, the ASSIGN views are simply a mirror of OX's internal state.

Rig Slots Assign

When you first press ASSIGN at the top of the app, you see the Rig Slots Assign view.

> ***Important:*** *A Rig that is modified but not yet saved can be discarded by assign operations in Rig Slots Assign view. If you want to keep a modified Rig, save the modified Rig as a preset in RIG view before entering any ASSIGN view.*



Rig Slots Assign view. The six Rigs displayed here are the contents of one Rig Set. The Rig Set displayed here always mirrors OX's current RIG knob slot assignments.

Rig Slots

OX's hardware RIG knob has six position slots. The six Rig slots displayed in Rig Slots Assign view mirror OX's current RIG knob slot assignments. When a different Rig is assigned to a knob slot in the app, the Rig is instantly assigned to the hardware RIG knob slot and the assignment is stored in OX.

Tip: *Rig Slot Assign view displays the contents of one complete Rig Set.*

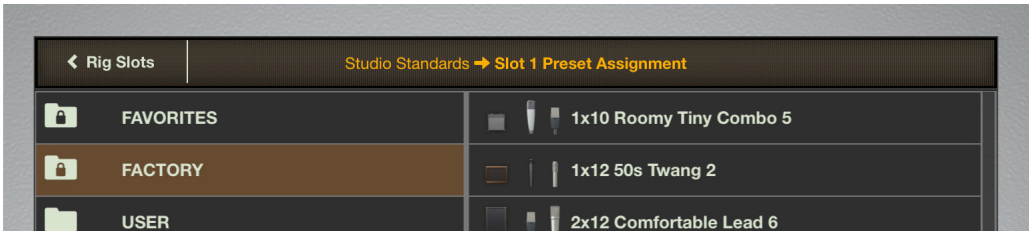
Graphic RIG Knob

The graphic RIG knob displayed at the bottom of Rig Slot Assign view mirrors the position of OX's hardware RIG knob. The lines from the knob to each Rig indicate which Rig is assigned to each slot. To change the knob position in the app, change OX's hardware RIG knob position.

Tip: *You never need to move the hardware RIG knob to do any assignments.*

How To Store Individual Rigs to OX's RIG Knob

1. In Rig Slots Assign view, press the Rig image in any of the six Rig slots. The slot's Rig selector appears.
2. In the slot's Rig selector, choose a Rig to store in the slot. The Rig is instantly stored to OX's hardware RIG knob slot.

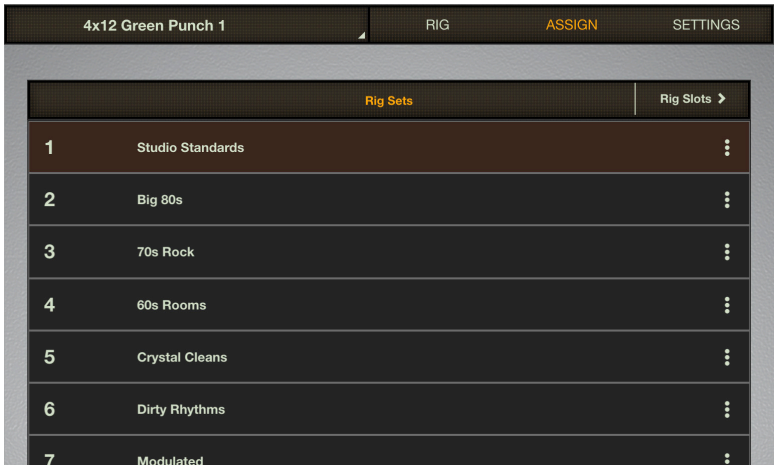


Rig slot selector — choose any Rig to assign it to the knob slot

Rig Sets Assign

A Rig Set is a collection of six individual Rigs. OX features 16 Rig Sets. In Rig Sets Assign view, Rig Sets can be renamed or instantly assigned to OX's hardware RIG knob.

Tip: *To change the six Rigs within an individual Rig Set, use Rig Slots Assign view.*



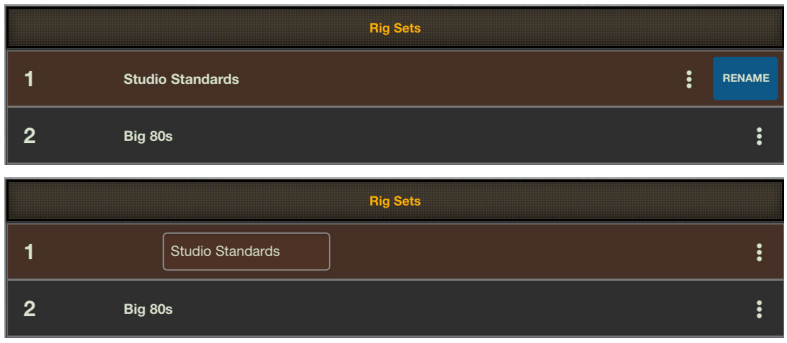
Rig Sets Assign (partial view). Pressing any Rig Set in the list instantly stores its contents to all six OX's hardware RIG knob slots.

How To Store Rig Sets to OX's RIG Knob

1. Press ASSIGN at the top of the app, then press "< Rig Sets" at upper left of the app. The Rig Sets list is displayed.
2. Press any Rig Set in the list. The Rig Set is instantly stored to OX's six hardware RIG knob slots.

How To Rename a Rig Set

1. In Rig Sets Assign view, press the vertical options dots to the right of any Rig Set name. The rename field appears.
2. Enter a new Rig Set name.

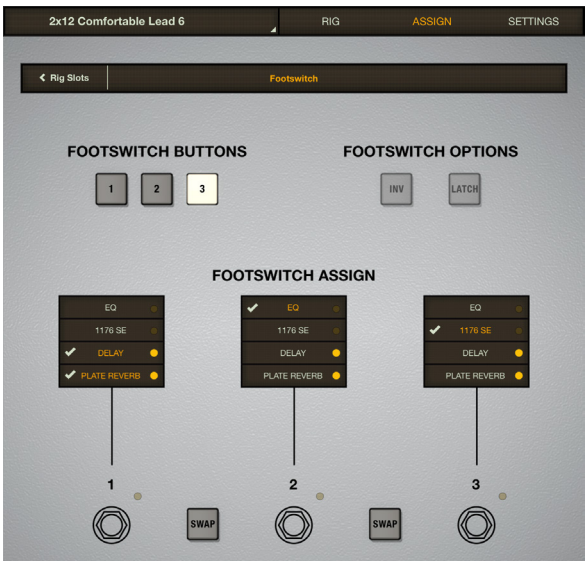


Renaming a Rig Set

Footswitch Assign

External control of OX effects is configured in Footswitch Assign view. Press ASSIGN at the top of the app, then press “Footswitch >” to see the footswitch controls.

Tip: *See Footswitch Instructions for step-by-step details.*



Footswitch Assign view

About OX Footswitch Control

You can enable and disable OX’s four built-in effects (EQ, Compressor, Delay, Reverb) with external footswitches connected to OX’s rear panel FOOTSWITCH jack. OX’s footswitch controls are configured with a flexible assignment matrix.

- Assign one, two, or three footswitches to toggle any OX effects
- Assign multiple effects to the same footswitch for flexible creative options
- Footswitch assignments are global – they only need to be setup once for all Rigs

Note: *More than one footswitch cannot toggle the same effect.*

Supported Footswitch Types

OX can be used with a wide variety of footswitch types:

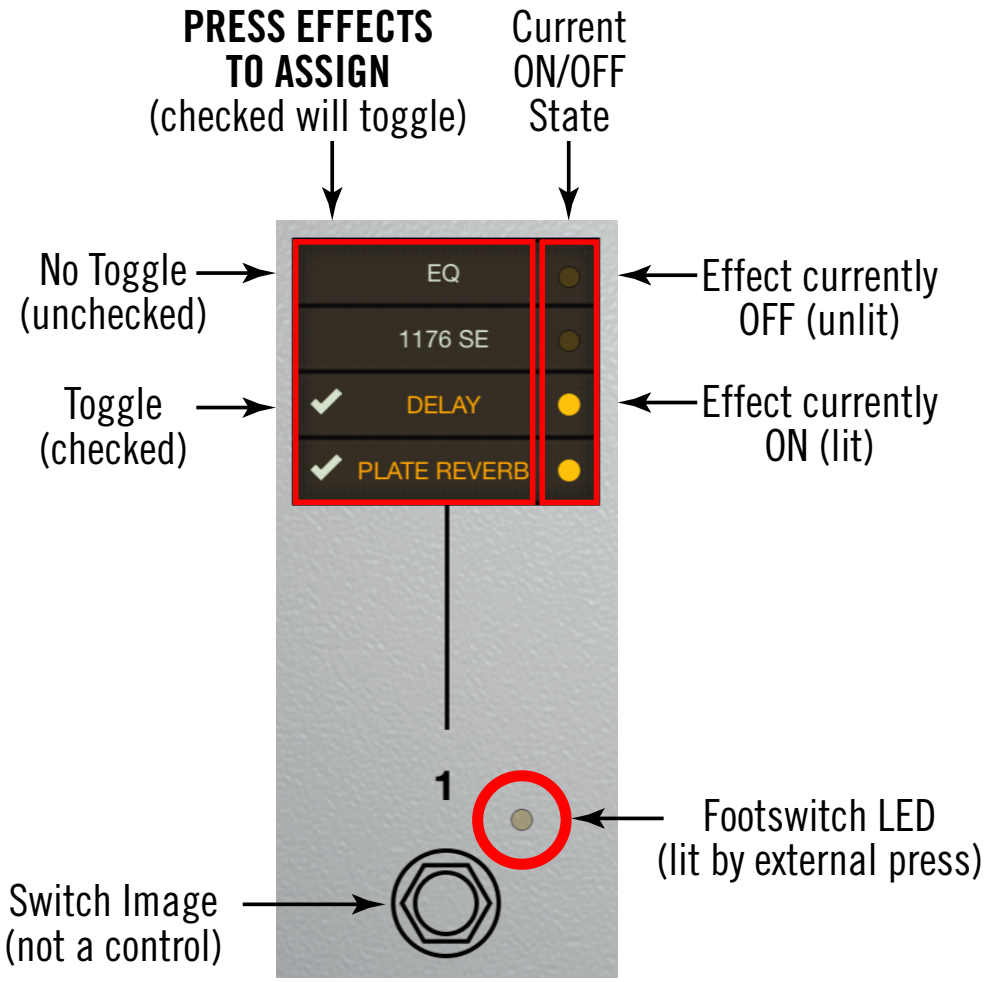
- TS (tip-sleeve) connection supports a single switch
- TRS (tip-ring-sleeve) connection supports one, two, or three switches
- LATCH option supports momentary or latching switches
- INVERT option supports normally-open or normally-closed switches
- SWAP option supports re-ordering of footswitch positions
- Passive and active switches can be used

Note: *OX is designed to accommodate typical effect control footswitches. However, due to product variations in the marketplace, Universal Audio cannot guarantee that your particular footswitch will work correctly.*

Footswitch Assign Matrix

Effect toggling is setup with the footswitch assign matrix. Each footswitch has its own matrix column. To assign/unassign a footswitch, simply press an effect. When a white check mark is next to the effect, its effect state will toggle when the footswitch is pressed.

Tip: *See Footswitch Instructions for step-by-step details.*

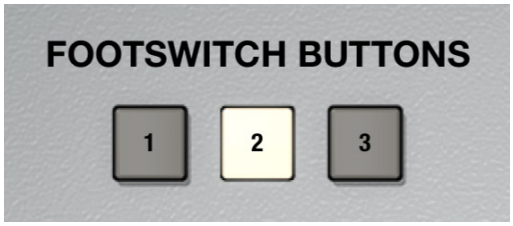


The footswitch assign matrix for switch #1. In this example, delay and reverb are toggled when the external switch is pressed.

Footswitch Assign Controls

Footswitch Buttons 1, 2, 3

Use these buttons to set the number of external footswitches that are connected to OX.



Set the number of connected footswitches here

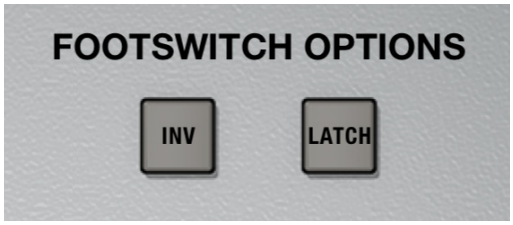
- If a single footswitch is connected, set button #1.
- If a dual footswitch is connected, set button #2.
- If a triple footswitch is connected, set button #3.

Note: *When set to 1 or 2, the unused footswitch controls are disabled and gray.*

Footswitch Options

Use these buttons to accommodate different footswitch types. The footswitch options apply globally to all connected footswitches.

> ***Note:*** *When Footswitch Buttons is set to 3, the INV and LATCH options are disabled. A TRS connection can't distinguish the possible wiring states when three switches are connected.*



These buttons adjust footswitch behavior

Invert (INV)

Enable INV when normally-closed footswitches are connected. Leave INV off for normally-open switches.

Latch

Enable LATCH when latching footswitches are connected. Leave LATCH off for momentary switches.

Active Latching Switch LED

OX supports external active (powered) latching switches that contain an LED to indicate its on/off state. With these switch types, the on/off state of the switch LED matches the on/off state of its assigned OX effect.

Exception: If the switch LED state doesn't match the stored OX effect state when a Rig is recalled, the external LED will be out of sync (because OX can't detect and change the state of the external LED). In this case, the first switch press re-syncs the LED without toggling the OX effect, and subsequent presses remain synchronized.

For example: If an OX effect is OFF when a Rig is stored and the active switch LED is ON when that Rig is recalled, the OX effect remains off and the switch LED remains on. The first switch press turns the switch LED off without toggling the OX effect. Subsequent presses toggle both the switch LED and the OX effect.

Note: *This behavior also applies with latching switches that don't have indicator LEDs.*

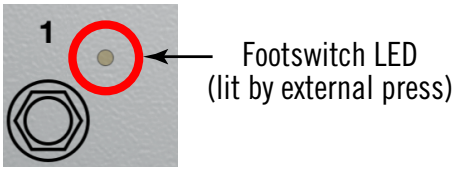
SWAP Button

SWAP reverses the mapping of adjacent switches. The two SWAP buttons accommodate external footswitch wiring that doesn't align with OX's footswitch ordering.

For example: A dual footswitch connected, but pressing external footswitch #1 lights OX's Footswitch LED #2. Pressing the SWAP button between switches 1 and 2 in the app will reverse this mapping, so external footswitch #1 is aligned with OX's footswitch #1.

Footswitch LED

The yellow LED next to each switch image illuminates when an external footswitch press is detected by OX. The three LEDs (one for each switch matrix) show you how the external switches are operating, so you can know when to use the INVERT, LATCH, and/or SWAP options.



Important: *Perform the Initial Footswitch Setup to make the Footswitch LEDs respond correctly.*

Footswitch Instructions

Learn how to setup OX for external footswitch control.

> ***Tip:*** *Watch the Footswitch LEDs in the app when pressing and assigning your external switches. The LEDs are important for setting OX's footswitch options and understanding how your footswitch assignments are controlling OX's effects.*

Initial Footswitch Setup

Follow these steps to configure OX for use with your particular footswitch type. You only need to do the initial setup once.

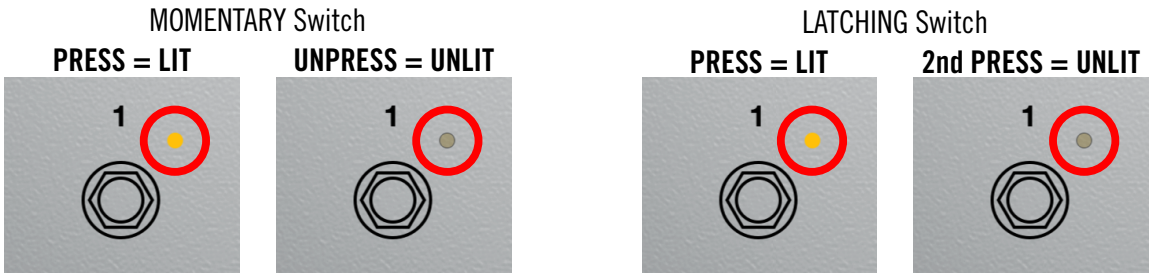
> ***Note:*** *If you change to a different footswitch type, do the initial setup again.*

1. Connect your external footswitch to the FOOT SWITCH jack on OX's rear panel.
2. Press ASSIGN at the top of the OX software app, then press "Footswitch >" to enter Footswitch Assign view.
3. Set FOOTSWITCH BUTTONS to match the number of physical switches on your connected external footswitch.
4. If your switches are latching type, set the LATCH option. If they are normally-closed type, set the INV option. (These options can be changed at any time.)
5. Press each external switch on your footswitch while watching the yellow Footswitch LEDs in the app. If the app LEDs behave differently than as described and illustrated below, try different LATCH and INV settings until the switches operate correctly.

   Each LED in the app should light when its associated external switch is pressed. The correct unlit behavior depends on the connected switch type:

   Momentary – The app LED turns off when the external switch is released.

   Latching – The app LED turns off when the switch is pressed a second time.
6. If using two or more footswitches and the external footswitch order doesn't align with OX's order (for example, pressing physical switch #1 lights Footswitch LED #2 in the OX app), press SWAP between the switches in the app to remap and align the ordering.

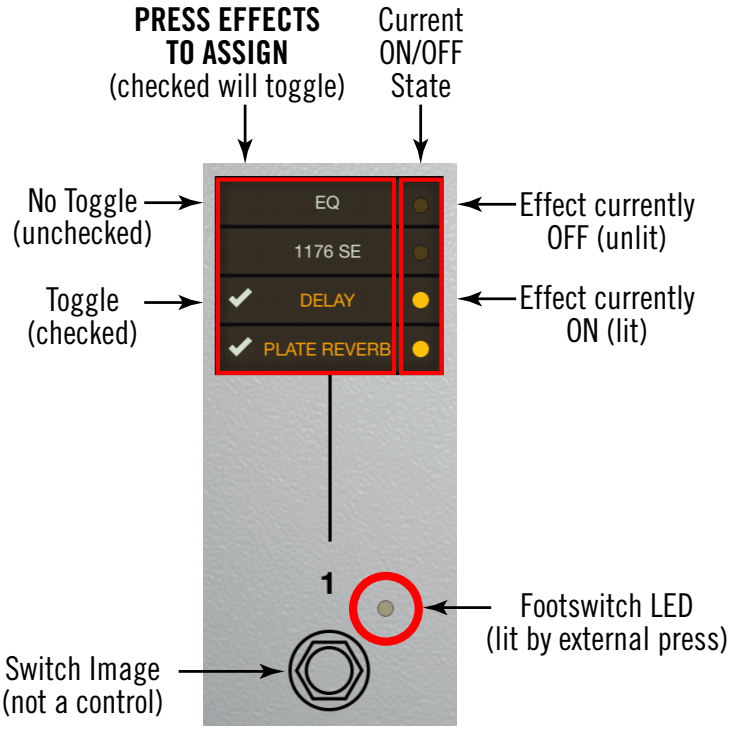


Footswitch LED behavior when OX is properly configured

How To Assign Footswitches

Note: *For predictable behavior (especially after disconnecting the app and/or during live performance), do the Initial Footswitch Setup before making your assignments.*

1. Press any effect in the Footswitch Assign Matrix. A white check mark appears next to the effect, indicating it will toggle when its associated footswitch is pressed.
2. To de-assign any checked effect, press the effect again to remove its check mark.
3. Repeat as desired for other footswitches (if any).



The footswitch assign matrix for switch #1. In this example, delay and reverb are toggled when the external switch is pressed.

Footswitch Control Notes

- You can assign multiple effects to the same switch, for a variety of creative options – especially when using OX live.
- A single switch doesn't have to toggle all of its assigned effects to the same state. For example, you can cross-assign a single switch so a one press will turn compression and reverb OFF while simultaneously turning EQ and delay ON.
- Remember that a switch simply toggles an effect's current off/on state. If a switch is assigned to delay and a Rig that was stored with delay OFF is recalled, the switch will toggle the delay to ON. However, if a Rig that was stored with delay ON is recalled, the switch will toggle the delay to OFF. This behavior allows for very flexible and creative effect arrangements when assigning multiple effects to the same switch.

SETTINGS View

OX's Wi-Fi networking settings and global system settings are accessed on two different screens in Settings view.

System View

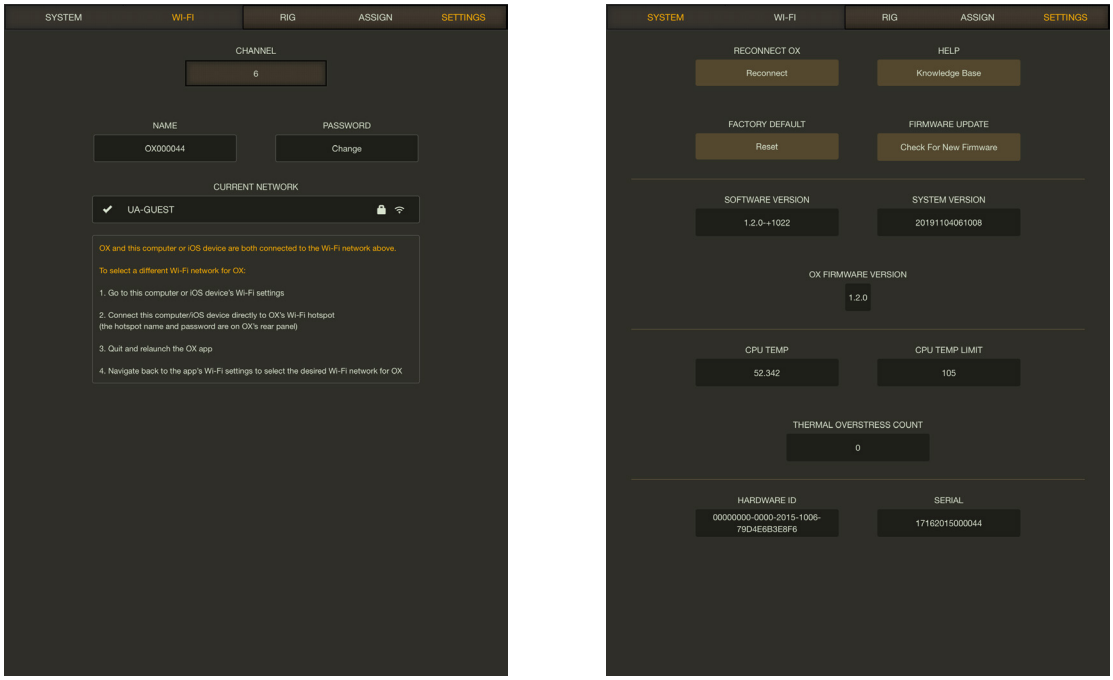
This view includes a convenient link to the OX Knowledge Base for technical support.

Wi-Fi View

This view contains the Wi-Fi network selector. Use this function to pair OX to a different external Wi-Fi network.

Pairing OX to a Wi-Fi Network

For instructions, follow steps 2, 3, and 4 in the OX Registration Procedure.



Settings view — Wi-Fi settings (left) and system settings (right)

Rig, Cabinet, & Mic Descriptions

This chapter contains descriptions of the guitar speaker cabinets, close cabinet mics, and room ambience mics used in OX's Dynamic Speaker Modeling and Dynamic Room Modeling, as well as the factory RIG knob assignments and Rig Sets.

Default RIG Control Cab & Mic Presets

The default Rig values for each of the six RIG knob settings when OX is shipped from the factory are listed in the table below. RIG knob assignments can be changed with the OX app.

> ***Tip:*** *A full-color RIG Control Cab & Mic Presets pamphlet is included in the OX retail package.*

Download the RIG Control Cab & Mic Presets Pamphlet

RIG Knob	RIG Name	Cabinet	Close Mics	Room	Master Effects
1	4x12 Green Punch 1	4x12 GB 25 PUNCH	Condenser 67 & Ribbon 121	Carpeted w/ Condenser Stereo Mics	None
2	1x12 50s Twang 2	1x12 BLUE J	Dynamic 57 & Ribbon 121	Carpeted w/ Ribbon Stereo Mic	Plate Reverb
3	2x12 Honkin Silvers 3	2x12 ACE TOP	Ribbon 160 & Condenser 67	Live w/ Condenser Mono Mic	None
4	4x10 Pristine Clean Room 4	4x10 BMAN	Condenser 414 & Condenser 67	Live w/ Condenser Stereo Mics	Plate Reverb
5	1x10 Roomy Tiny Combo 5	1x10 BLACK CHA	Dynamic 421 & Condenser 414	Live w/ Condenser Stereo Mics	None
6	2x12 Comfortable Lead 6	2x12 BOUTIQUE D65	Condenser 414 & Condenser 67	Carpeted w/ Condenser Stereo Mics	Delay & Plate Reverb

Default Rig Sets

The default Rig Sets when OX is shipped from the factory are listed in the table below. Rig Sets can be customized, renamed, and/or assigned to OX's RIG knob in ASSIGN view within the OX app.

	RIG SET NAME		RIG SET NAME
1	Studio Standards	9	Stoner Rock
2	Big 80s	10	Open Backs
3	70s Rock	11	Closed Backs
4	60s Rooms	12	Warm and Lush
5	Crystal Cleans	13	Ambient Post
6	Dirty Rhythms	14	UK Tones
7	Modulated	15	Studio DI Tricks
8	Squashed	16	Bright and Tweaky

Speaker Cabinets

The 22 speaker cabinets available with OX's Dynamic Speaker Modeling are listed below. The cabinets can be individually selected within the OX software app.

1x10 Black Cha

This small, open-back vintage 10-inch speaker has that classic small amp honk. When SPEAKER DRIVE is pushed, this speaker has resonant sub-octave tones in the high F and B range.

1x12 Blue J

This 50s-era cabinet and speaker delivers classic American open-back 12-inch speaker tones. When SPEAKER DRIVE is pushed, this well worn speaker breaks up on high notes around E, A, B, and C#.

1x12 GB25

This '50s-era open-back cabinet is paired with a more overdrive-friendly British 25 "green" speaker. When SPEAKER DRIVE is pushed, this speaker breaks up on high notes in the F and A range.

1x12 Blu 15

Using a low-wattage "blue" 15-watt speaker, this open-back cabinet breaks up on high notes in the F, G#, and C range when SPEAKER DRIVE is pushed.

1x12 Black D-ux

This mid '60s-era cabinet and speaker delivers classic open-back 12-inch speaker combo tones. This pristinely-kept speaker breaks up on high notes around F, G#, and C when SPEAKER DRIVE is pushed.

1x12 Black GB30

This open-back cabinet is paired with a more overdrive friendly British 30 "green" speaker. When SPEAKER DRIVE is pushed, this speaker breaks up on high notes around E, G#, B, and C.

1x12 JBG 125

Similar to the extended range and power handling of the JBF 120 with its aluminum dust cap, this speaker also has a large voice coil, but with a paper dust cap. This rare speaker, favored by the most famous boutique amp builders of the '70s and '80s, delivers an articulate sound for cleans but with a warmer overall tone. This speaker breaks up on high notes around C#.

2x10 V-UX

This late '60s-era cabinet and speaker delivers classic open-back two 10-inch speaker combo tones. These pristinely-kept speakers break up on high notes around F when SPEAKER DRIVE is pushed.

2x12 Two Verb

The classic pairing of american made 12-inch vintage speakers in an open-back cabinet has great bottom and punch. When SPEAKER DRIVE is pushed these speakers break up on high notes around A and C#.

2x12 JBF 120

This late '60s-era cabinet, used by the biggest players in Country, Surf, and Psychedelic Rock, relied on the incredible punch and articulation of these speakers. This cabinet really shines with loud and clean tube amps and will break up on high notes around D.

2x12 Black 8H

This custom half-closed cabinet features the highly sought after "black" high-wattage speakers favored by early '80s metal players. These aluminum-capped speakers cut right through any mix with ease. These vintage speakers break up on high notes around G and F# when SPEAKER DRIVE is pushed.

2x12 Ace Top

This mid '60s-era cabinet with "silver" speakers delivers classic British open-back 12-inch speaker combo tones. When SPEAKER DRIVE is pushed, these well-used speakers break up on high notes around G# and C.

2x12 Boutique D65

This custom ported cabinet features British style 65-watt speakers and is the choice of many modern blues and rock players. The speaker and cabinet combination delivers tight bottom end clarity. When SPEAKER DRIVE is pushed, these speakers break up on high notes around F# and C#.

2x12 Alnico 50

This closed-back cabinet features two modern, American made Alnico 50-watt speakers. Designed for smooth and singing single note tones when using high-gain, these speakers break up on high notes in the F#, A#, B, and C# range when SPEAKER DRIVE is pushed.

4x10 Bman

Although this classic pairing of four 10-inch speakers in an open-back cabinet was originally meant for bass, it's just as great for guitar tones. This setup has a scooped midrange and extended presence. When SPEAKER DRIVE is pushed, these speakers break up on high notes around C.

4x12 GB25 Thick

This vintage closed-back cabinet with four 12-inch speakers is the sound of rock guitar. With original “green” 25-watt speakers, it breaks up on high notes around F#, G#, and C when SPEAKER DRIVE is pushed. This specific vintage cabinet has an extended low midrange and bass response.

4x12 GB25 Punch

This vintage closed-back cabinet with four 12-inch speakers is the sound of rock guitar. With original “green” 25-watt speakers, it breaks up on high notes around F#, G#, and C when SPEAKER DRIVE is pushed. This specific vintage cabinet has a moderately scooped midrange delivering a tighter sound.

4x12 GB 30

This vintage style basketweave, closed-back cabinet with four 12-inch speakers is great for distorted classic rock tones. These “green” 30-watt speakers have lots of treble definition with a tight bass response. They break up on notes around high D.

4x12 UK VEE 30

This vintage style closed-back cabinet with four 12-inch speakers is one of the industry standards for modern rock and metal guitar. This cabinet and speaker setup has an aggressive upper midrange edge. These speakers break up on notes around high C.

4x12 CA VEE 30

This modern and deep closed-back cabinet with four 12-inch speakers was designed for heavy, distorted, and scooped amp tones. This cabinet and speaker setup has a forward low midrange with high end edge. These speakers break up on notes around high D.

4x12 Super 80

This custom ported cabinet features four 12-inch vintage “lead” 80-watt speakers. These speakers have a soft treble response, but with an aggressive and forward midrange. They break up on high notes around F, A#, and C# when SPEAKER DRIVE is pushed.

4x12 White 75

This custom ported cabinet features 12-inch “white/cream” 75-watt modern British speakers. These speakers have an extended treble/presence frequency response and break up on high notes around G# and C# when SPEAKER DRIVE is pushed.


Marshall
OX

Cabinet Microphones

The six close mics (and one DI box) used on each of the speaker cabinets are listed below. The close mics can be individually accessed for any cabinet within the OX software app.

Dynamic Speaker Modeling allows any single close mic, or any two different close mics, to be used on any cabinet. The close mics can be panned for stereo captures.

Additionally, because Dynamic Speaker Modeling allows each close mic to be individually positioned on or off axis, an extraordinarily broad sonic pallet is available.

DYN 57

The dynamic “57” has been the industry standard in the US for recording loud guitar amps since the late ’60s. Our model is based on a vintage unit from the ’70s. With a natural bass roll off and accentuated upper midrange, this mic always cuts through any mix with practically no need for console EQ.

DYN 421

The dynamic “421” has been a favorite choice for guitar in Europe since the early ’60s. Our model is based on a vintage white unit from 1963. The “421” has thicker bottom end and smoother treble response than the dynamic “57” making it a great choice for smooth distorted tones.

RIB 160

The ribbon “160” was used by England-based recording engineers to capture loud guitar amps and drums on some of the greatest rock records of the late ’60s. Our model is based on a vintage silver unit from the ’60s. It has a smooth midrange and warm treble response.

RIB 121

The ribbon “121” is a modern classic for electric guitar. With its silky high end and extended bass frequency range, many engineers pair the “121” with the “57” to even out the sound. The “121” is also great on its own, but depending on the speaker, you may want to use LOW CUT on the mic channels.

CON 414

The condenser “414” is the perfect mic for capturing high end clarity and low end punch. This solid-state condenser mic can instantly deliver a modern-sounding “smile” EQ curve. Depending on the speaker, you may want to use LOW CUT on the mic channels.

CON 67

The condenser “67” can be heard on the biggest pop and rock records of the ’60s, ’70s, and ‘80s. This tube condenser mic has a wide frequency range without sounding harsh or bottom heavy. It has a gentle upper midrange that’s great for distorted rhythm guitars.

DIRECT

In direct mode you get the raw sound of your amp, without a guitar speaker, while still responding as if the amp is driving a proper reactive speaker load.

Room Microphones

The five room mics capture the ambience of a high quality recording studio room for OX's Dynamic Room Modeling. Matched stereo pairs are available for stereo ambience.

The room mics can be individually accessed for every Rig within the OX software app.

RIBBON STEREO

These ribbon mics are placed in the drum area of the tracking room. In "live" mode (DAMP off), this pair has a warm treble response with an overall vintage '50s and '60s session vibe. With DAMP enabled, baffles and carpeting remove midrange and make for a quicker response time.

CONDENSER STEREO

These tube condenser mics are placed in the drum area of the tracking room. In "live" mode (DAMP off), this pair has high-end clarity and a thick bottom end. With DAMP enabled, baffles and carpeting help tighten up the bottom end and make for a quicker response time.

CONDENSER MAN MONO

This tube condenser mic is placed in the left side of the tracking room (when viewed from control room). In "live" mode (DAMP off), this mic has a punchy midrange and thick bottom end. With DAMP enabled, baffles and carpeting help tighten up the bottom end and tame the midrange.

CONDENSER 67 MONO

This tube condenser mic is placed in the right side of the tracking room by the drum overheads (when viewed from control room). In "live" mode (DAMP off), this mic has a smooth midrange and aggressive low end. With DAMP enabled, baffles and carpeting remove subsonic low end.

RIBBON 84 MONO

This ribbon mic has an old school recording studio vibe. In "live" mode (DAMP off), it has a dark treble response and overall midrange-based sound. With DAMP enabled, baffles and carpeting remove midrange, add some treble, and make for a quicker response time.

RIBBON 121 MONO

This modern ribbon mic adds depth and punch without getting in the way of the close mics' high end. In "live" mode (DAMP off), it has a smooth treble response and extended bass response. With DAMP enabled, baffles and carpeting tighten up the bottom end and there is a quicker response time.

OX System Overview

> ***Note:*** *This chapter provides a general overview of OX features. Complete details about all OX hardware and software functions are provided in other chapters.*

OX is a reactive load, power attenuator, and speaker cabinet/microphone/room simulator, and effects processor. When combined with a tube guitar amplifier, OX delivers album-quality studio tones without compromise.

OX connects to the speaker output of a tube amp and features a variety of output connections for interfacing with other audio gear.

Key Features

- Premium, no-compromise analog reactive load box and guitar recording system for tube guitar amps
- Instant album-quality mic and speaker cabinet tones via front-panel RIG knob
- Get record-ready sounds quickly with expertly-placed virtual mics and cabs — no amp miking needed
- Choose from 22 speaker cabinets, six cabinet mics, and four studio-quality effects using OX software to dial in the perfect combination for your guitar amp
- Five finely-tuned guitar amp attenuation levels, from off to whisper quiet to full band volume
- UA Dynamic Speaker Modeling emulates speaker drive, breakup and cone cry
- World-class Universal Audio EQ, compression, delay, and reverb effects built-in
- Footswitch control of built-in effects
- Selectable 4, 8, and 16-ohm operation
- Front-panel Headphone out for silent practice with cranked tones
- Balanced TRS line outs and S/PDIF digital outs for stereo recording
- Pair with OX mobile or desktop app over Wi-Fi for editing and saving Rig presets
- Fanless design for silent operation

Reactive Load

OX's reactive load presents a dynamically responsive impedance to the amplifier's output. OX's impedance varies according to the amp's output signal, just as a real speaker does — which makes the amp respond to a guitarist's touch and a speaker's tonal characteristics as if a real speaker is connected to the amp.

Power Attenuator

The reactive load safely attenuates (soaks) a tube guitar amp's high-power speaker output so the amp's power tubes can be pushed to where they sound and feel best.

When a guitar speaker is optionally connected, the amp's attenuated signal can be delivered to the speaker at different levels so the amp's high-volume output can be heard at lower volumes. Five carefully crafted volume levels are available. The speaker can also be turned off for silent operation.

> ***Tip:*** *OX's reactive load includes a safety load feature. When OX power is OFF, OX presents a 16 ohm load at the FROM AMPLIFIER input to prevent tube amp damage that could occur with an unloaded amp output.*

Dynamic Modeling

OX's breakthrough Dynamic Speaker Modeling and Dynamic Room Modeling are advanced technologies developed by Universal Audio. Together, these technologies deliver the most authentic simulations available.

Far more advanced than simple static impulse responses, the individual components that comprise Dynamic Modeling — guitar speakers, cabinet microphones, recording rooms, and room microphones — are all dynamically interactive and respond differently depending on which elements within each component are active.

Dynamic Speaker Modeling

Guitar Speakers – The complex dynamic response of guitar speaker cabinets are captured, including nuances such as speaker breakup and cone cry. A huge backline of 22 coveted vintage, new original stock, and modern guitar speakers and cabinet combinations are available.

Cabinet Microphones – Six high-end cabinet microphones and expert mic placements capture the complex tonal interactions that occur between real guitar cabinets and mics. A Direct Input (DI) box is also available to bypass the microphones if desired.

Dynamic Speaker Modeling presets can be selected with OX's front panel RIG knob. RIG presets can be accessed, edited, and stored with the OX app.

Dynamic Room Modeling

Dynamic Room Modeling adds air, weight, and three dimensional space to Dynamic Speaker Modeling. Room ambience is a critical component of how it feels to play in a great-sounding room with a cranked tube amp.

With OX, six selectable high-end room microphone options capture the reverberant characteristics of a great sounding live recording studio.

The amount of Dynamic Room Modeling ambience and air can be instantly adjusted with OX's front panel ROOM knob. ROOM settings can be accessed, edited, and stored with the OX app.

Master Effects

OX includes four studio-quality master effects by Universal Audio. 4-band EQ, 1176 SE compression, stereo modulated delay, and stereo plate reverb are available, and each of these effects can be used individually or all at the same time. OX's master effects are completely independent from the Dynamic Modeling processors and the 4-band EQ available on each mic mixer channel.

Master Effects are applied after Dynamic Modeling. Note that the master effects cannot be applied to OX's speaker output, nor inserted before cabinet/mic/room processing.

Rigs

A RIG is a complete album-quality studio tone preset. Each OX Rig is comprised of the various Dynamic Speaker Modeling, Dynamic Room Modeling, and Master Effects settings. Six Rig presets can be instantly recalled with OX's front panel RIG knob. Complete wireless Rig control is available with the OX app.

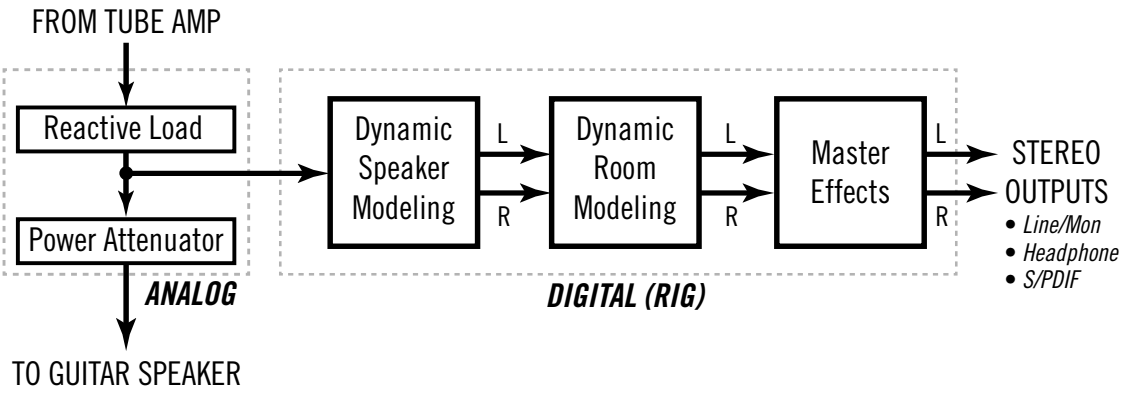
Rig Set

One Rig Set is a collection of six individual Rig presets that can be assigned to OX's front panel RIG knob. With Rig Sets, you can quickly store your six favorite Rigs to the RIG knob for standalone use without the OX app. Rig Sets are assembled and assigned to the RIG knob with the OX app.

Signal Flow

OX has analog and digital signal paths. The reactive load and power attenuation circuitry is pure analog — the tube amp's output feeds OX's reactive load and power attenuator, which can then be sent to a real guitar speaker cabinet.

Dynamic Speaker Modeling, Dynamic Room Modeling, and UA master effects use stereo digital signal processing (DSP) to generate the finished album-quality studio tones. The output of the analog portion feeds the input of the digital path. Finally, the stereo path is routed to the line, headphone, and digital outputs for monitoring and/or recording, as illustrated below.



Simplified signal flow within OX

Outputs

All OX outputs can be used at the same time, and all OX output connections are optional — you can mix-and-match any or all outputs as desired. For example, you can connect a guitar speaker without connecting LINE / MON or HEADPHONE outputs, and/or use headphones without connecting a guitar speaker. See Controls & Connectors for details.

Analog Speaker Output

OX's SPEAKER OUT is the analog reactive load output without digital signal processing — it's a pass-through of the tube amp's output signal after power attenuation. Because the SPEAKER OUT is purely analog and doesn't contain Dynamic Speaker Modeling, Dynamic Room Modeling, or master effects, the RIG and ROOM controls don't change the sound of OX's speaker output.

DSP Outputs

The LINE / MON, HEADPHONE, and S/PDIF outputs contain OX's reactive load with digital signal processing (DSP). The RIG and ROOM controls change the sound at these outputs.

OX App

OX includes a free software application (registration required) for iPad and Mac/Windows computers. With the OX app, Rig presets can be wirelessly accessed, edited, and stored over OX's built-in Wi-Fi network.

The app provides deep access to all RIG and ROOM settings, allowing you to create a near-infinite variety of complete guitar tones and store hundreds RIG presets. 100 carefully crafted factory Rigs deliver a wide variety of album-quality tones, or use the factory Rigs as a starting point for your own custom tones.

With the OX app, you can easily assign different Rigs to the six front panel RIG knob slots, for quick standalone access to your favorite Rigs without the app. Rig Sets can be easily assembled to quickly assign a batch of six Rigs for standalone stage and studio use.

For complete details, see OX Software App.

Additional Resources

For additional resources such as videos and the UA Knowledge Base, or to contact our technical support team, please see Technical Support.

OX Wi-Fi Networking

Note: *In this chapter, the "OX app device" is the iPad or Mac/Windows computer that runs the OX software, not the OX app itself.*

OX has built-in Wi-Fi network connectivity. OX's Wi-Fi is used by the OX software app for wireless remote control of OX's Rigs, Rig Sets, and all other OX settings.

To view all OX app screens and settings, the OX app device must be connected to OX via Wi-Fi. The OX app device can connect to OX via Wi-Fi in two different ways:

- **Direct Wi-Fi connection.** The OX app device can be paired directly to OX's Wi-Fi hotspot for wireless remote control of OX. This method is typically used when an existing Wi-Fi network is unavailable.
- **Shared connection to an existing Wi-Fi network.** The OX app device and OX can both be paired to an existing external 2.4 GHz Wi-Fi network at the same time. This method is used so the OX app device can access the internet and run OX software at the same time.

OX Wi-Fi Hotspot

OX's standalone Wi-Fi hotspot is always active. OX's default Wi-Fi hotspot network name (SSID) and password are printed on OX's serial number label on the rear panel. Every OX hardware unit has a unique hotspot name and password.

Tip: *OX's default hotspot name and password can be changed in SETTINGS View within the OX software app.*

How To Pair With OX's Hotspot

Important: *Pairing to OX's Wi-Fi hotspot is done within the system settings of the iPad or Mac/Windows computer, not within the OX app.*

To pair the OX app device with OX, go into the device's system Wi-Fi settings and select OX's hotspot name, then enter the password — just as you would when connecting the device to any other Wi-Fi network.

Note: *If your Windows computer doesn't recognize OX when following the instructions above, please see Windows Computer Wi-Fi Reset.*

External Wi-Fi Networking

Note: *To use the OX app, the OX hardware must be paired to an internet-connected external Wi-Fi network at least once to complete OX registration.*

The OX hardware can be paired as a client to an existing external 2.4 GHz Wi-Fi network. By pairing both the OX hardware and the OX app device to the same external Wi-Fi network, the OX app device can connect to the internet and OX at the same time.

Tip: *Pairing OX and the OX app device to the same external Wi-Fi network is the most convenient setup because you don't need to change Wi-Fi settings when you want to use the OX app.*

How To Pair OX With External Wi-Fi Network

Important: *Pairing OX to an external Wi-Fi network is done within the system settings of the iPad or Mac/Windows computer, not within the OX app.*

Pairing OX to an external Wi-Fi network is a three-step process. For detailed step-by-step instructions, follow the OX Registration Procedure.

1. Within the system settings of the OX app device, pair the device to OX's internal hotspot so the OX app can control OX's network settings.
2. Within the OX app, pair the OX hardware to the external 2.4 GHz Wi-Fi network.
3. Within the system settings of the OX app device, pair the device back to the same external Wi-Fi network as OX.

Now the OX app device and the OX hardware are both clients of the external Wi-Fi network, with internet connectivity.

Note: *If your Windows computer doesn't recognize OX when following the instructions above, please see Windows Computer Wi-Fi Reset.*

OX Registration

To enable the OX app, the OX hardware needs to be registered with Universal Audio. To register the OX hardware, OX must be connected to the internet via Wi-Fi. After registration is complete, the OX app can access and control all available OX settings. This chapter will guide you through the Wi-Fi and registration process.

Note: *The OX registration process needs to be completed only once.*

During registration, you'll use the OX app to control OX's network settings and connect OX to an external Wi-Fi network. Registration occurs automatically when the OX hardware and the OX app are both connected to the external Wi-Fi network at the same time.

Note: *The existing external Wi-Fi network must be connected to the internet to complete registration.*

OX Registration Overview

To register OX, you'll follow the steps below. Complete details for each step are provided in the OX Registration Procedure on the next page.

1. From the iPad or Mac/Windows computer, download and open the OX app.
2. Pair the device that will run the OX app with OX's Wi-Fi hotspot.
3. Connect OX to an external Wi-Fi network that is connected to the internet.
4. Pair the OX app device to the same external Wi-Fi network as OX.
5. Open the OX app and complete registration. The app guides you through creating your UA account, then OX registration is completed automatically through its internet connection.

Note: *If your Windows computer doesn't recognize OX when following the OX Registration Procedure, please see Windows Computer Wi-Fi Reset.*

OX Registration Procedure

Note: *In this procedure, the "OX app device" is the iPad or Mac/Windows computer that runs the OX software, not the OX app itself.*

To register OX:

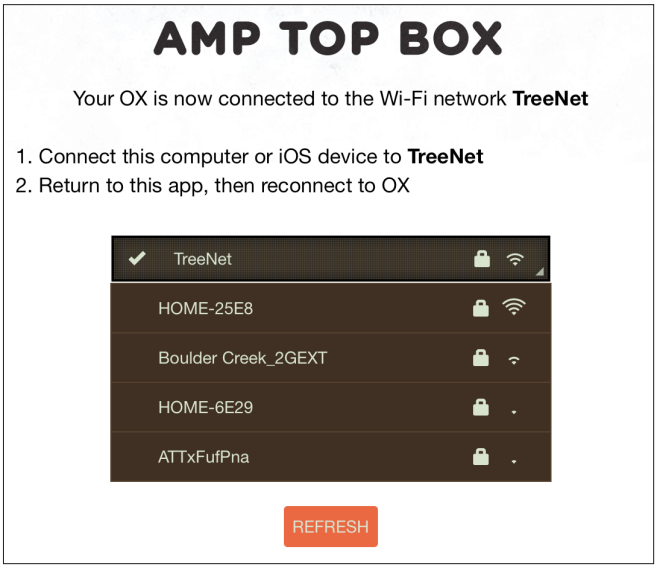
1. **Download and open the OX software app.**
   - From your Mac/Windows computer, visit www.uaudio.com/ox/app
   - From your iPad, search "OX Amp Top Box" in the iOS App Store

2. **Pair the OX app device with OX's Wi-Fi hotspot.**
   Go to the Wi-Fi system settings within the OX app device (the iPad or Mac/Windows computer system settings, *not* settings within the OX app), then select OX's Wi-Fi hotspot and enter the unique hotspot password from OX's rear panel label.

OX's hotspot name & password label on rear panel
(example only – every unit has a unique name and password)

3. **Pair OX to an external Wi-Fi network.**
   Open the OX app and press Find My OX to display the available 2.4 GHz Wi-Fi network names. Choose a network from the list, enter its password, then press OK.

   Note: *Enter the external Wi-Fi network password, not OX's hotspot password.*



At right: OX app screenshot showing OX connected to the external Wi-Fi network named "TreeNet"

4. **Pair the OX app device to the same external Wi-Fi network as OX.**

   Go to the Wi-Fi system settings within the OX app device (the iPad or Mac/Windows computer system settings, not settings within the OX app), and pair the device to the same external 2.4 GHz Wi-Fi network that was selected for OX in step 3.

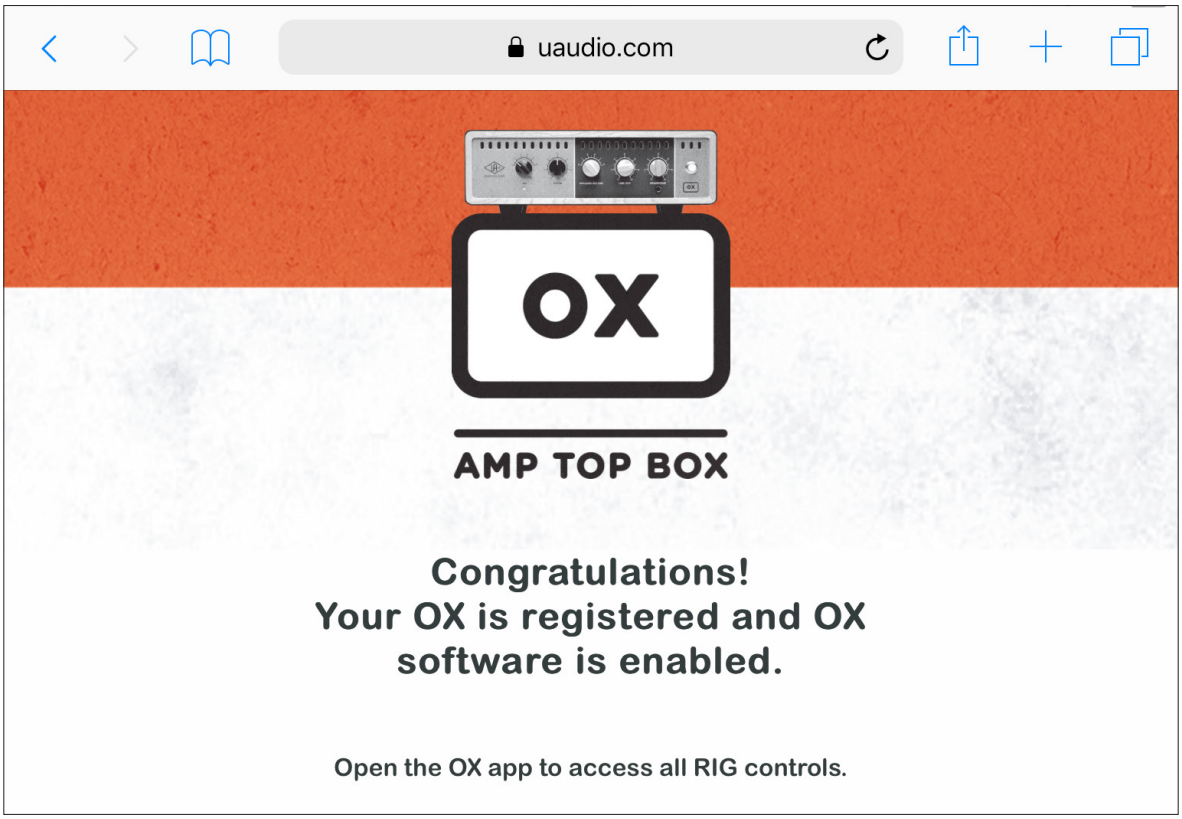
Tip: *Enter the external Wi-Fi network password, not OX's hotspot password.*

Note: *OX and the OX app device are now paired to the same Wi-Fi network and both are connected to the internet.*

5. **Open the OX app and complete registration.**

   The OX app takes you to the OX registration web pages and they will guide you. Press "Create an account" if you don't already have one (or login if you do). After account creation or login, OX is registered automatically.

When you see the confirmation page in the web browser, registration is complete. Return to the OX app, then press Find My OX again for complete access to all OX controls.



Registration confirmation in web browser

Troubleshooting

If OX isn't behaving as expected, first check all system setups, connections, cables, and operating instructions. For answers to most questions and solutions for most issues, or to contact our support team, see the Technical Support page.

Wi-Fi Reset

OX Wi-Fi reset clears all OX network and password settings.

> ***Important:*** *Wi-Fi reset permanently deletes previously-entered network passwords.*

To perform a Wi-Fi reset:

1. Make sure nothing is plugged into OX's USB ports.
2. Make sure OX is powered on and system startup is complete (RIG LED lit solid green or amber).
3. Press and hold the reset switch.
4. When OX's front panel RIG LED begins blinking green (after approximately 10 seconds), release the reset switch. The RIG LED continues to blink green.
5. Press the reset switch again within six seconds to confirm the action. The RIG LED is unlit, indicating Wi-Fi initialization is in process.
6. When the RIG LED is solid green again, OX Wi-Fi is reset and ready for use.

Factory Reset

OX factory reset deletes all user settings and returns OX to its original factory state.

> ***Important:*** *Factory Reset permanently deletes ALL user data, including ALL user Rigs, Rig Sets, effect presets, networks, network passwords, and registration status.*

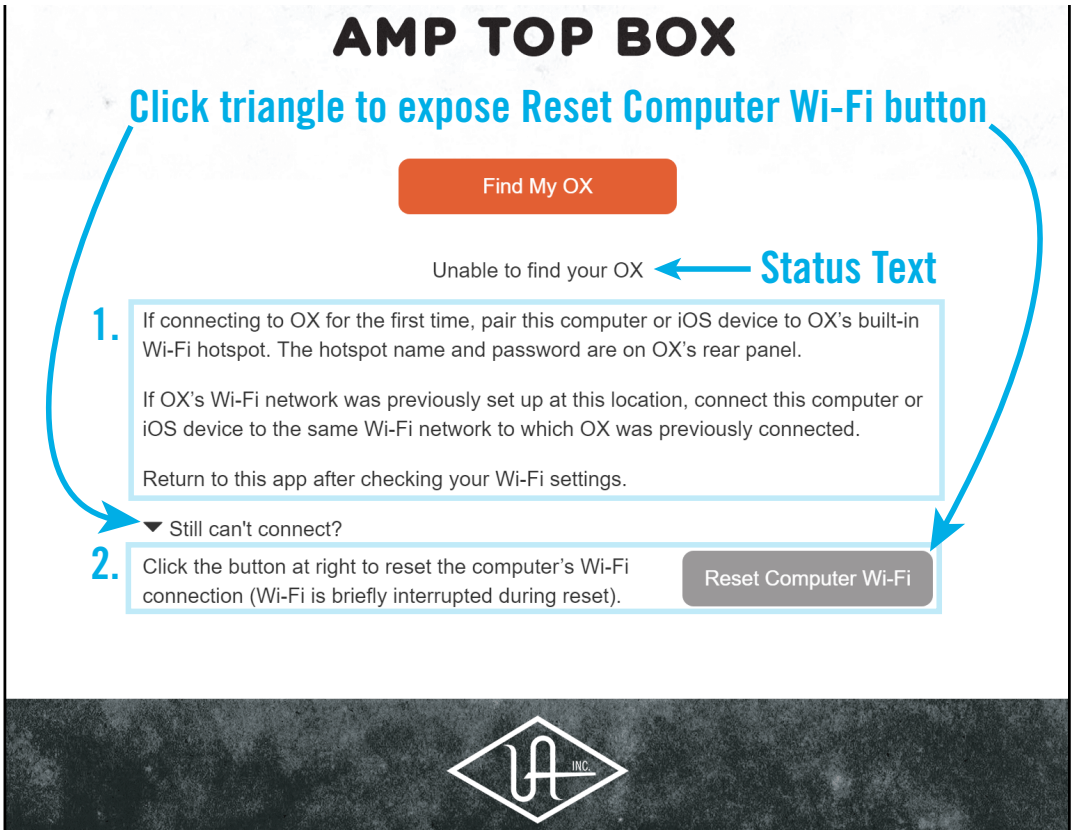
To perform a factory reset:

1. Make sure nothing is plugged into OX's USB ports.
2. Power off OX with the rear panel POWER switch.
3. Press AND HOLD the reset switch while powering on OX. Continue depressing the reset switch.
4. When OX's front panel RIG LED begins blinking red (after approximately 10 seconds), release the reset switch. The RIG LED continues to blink red.
5. Press the reset switch again within six seconds to confirm the action. The RIG LED is unlit, indicating OX initialization is in process.
6. When the RIG LED is solid green again, OX is in its factory state and ready for use.

Windows Computer Wi-Fi Reset

If the “Unable to find your OX” status text appears after pushing the orange “Find My OX” button within the OX app (as shown in the “Status Text” area in screenshot below):

1. First, follow the main instructions on the screen (#1 in screenshot below). Pairing the computer to OX’s built-in Wi-Fi hotspot or an external Wi-Fi network is part of the normal setup process, as described in the OX Registration Procedure.
2. If step one is unsuccessful, click the disclosure triangle to expose the gray “Reset Computer Wi-Fi” button, then click the button to initiate the reset (#2 in screenshot below). After a few moments, updated status text will appear below the orange Find My OX button. Follow the updated instructions in the status text area to complete the pairing process.



Windows OX app screen text when the computer doesn’t recognize OX’s Wi-Fi hotspot

Windows Wi-Fi Reset Background

Pairing Windows computers to OX can require extra Wi-Fi setup steps if system-level software installed by certain third-party (non-Microsoft) programs is on the computer. You may need the extra steps if Apple iTunes, PACE iLok, or other software that uses zero-configuration networking protocols such as Bonjour has been installed.

To pair the computer to OX in this case, the computer’s Wi-Fi needs to be reset in order to recognize OX’s built-in Wi-Fi hotspot. The OX app can perform the computer Wi-Fi reset when needed, but the reset must be manually initiated from within the OX app.

Specifications

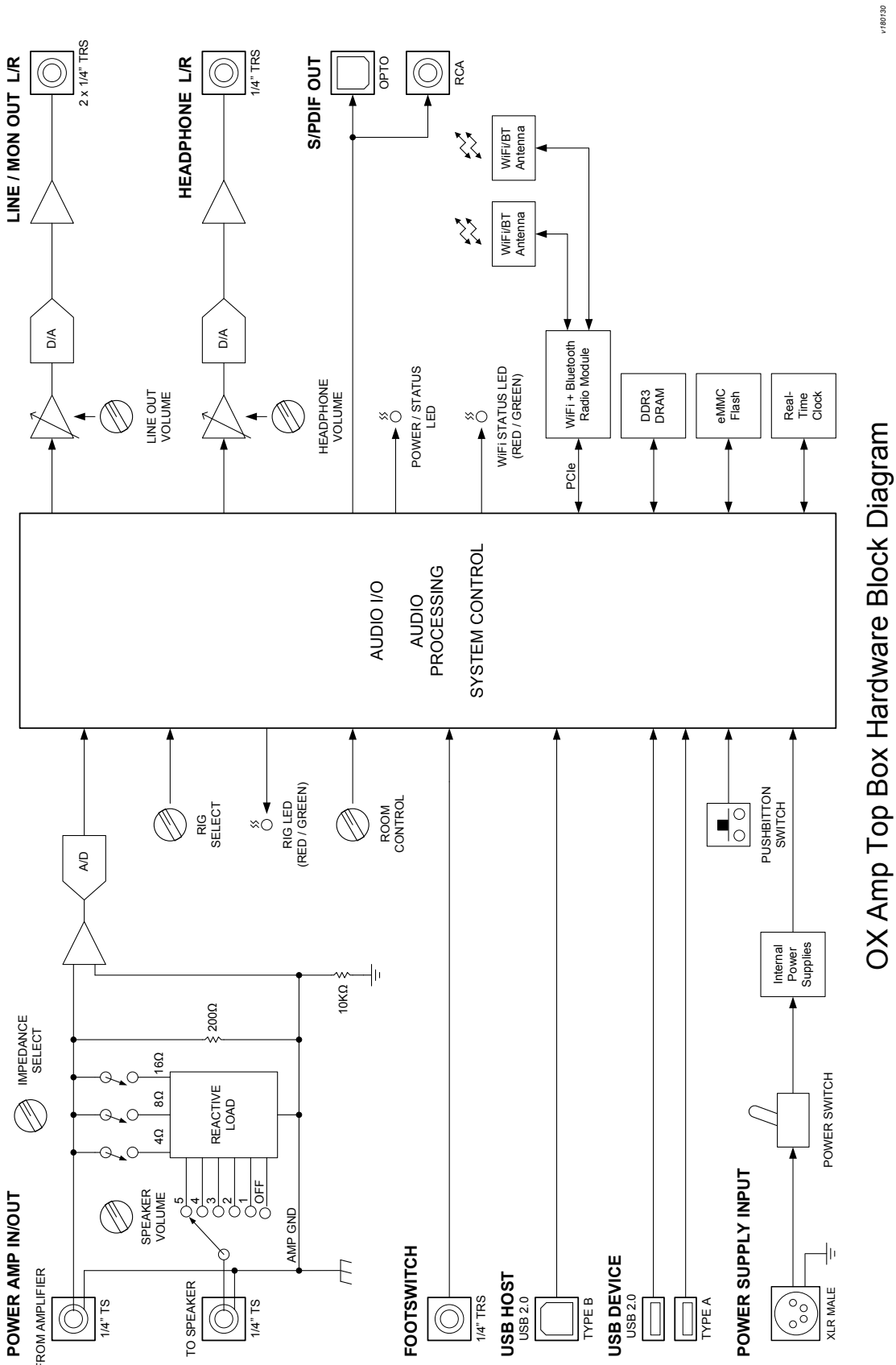
Note: *All OX Amp Top Box specifications are subject to change without notice.*

SYSTEM	
I/O Complement	
Amplifier Input	One
Speaker Output	One
Line Outputs	Two (one stereo left/right)
Headphone Output	One (stereo left/right)
Digital Outputs	Two (mirrored)
ANALOG I/O	
Amplifier Input	
Connector Type	¼" Female TS Unbalanced
Input Impedance	4/8/16 Ohms (selectable)
Maximum Input Power	150 Watts RMS, 200 Watts peak
Safety Load (power off)	16 Ohms
Speaker Output	
Connector Type	¼" Female TS Unbalanced
Output Attenuation	Five Attenuation Steps and Speaker Off
Output Latency	None (pure analog)
Line Outputs 1 – 2	
Connector Type	¼" Female TRS Balanced
Dynamic Range	114.5 dB (A-weighted)
Frequency Response	20 Hz – 20 kHz, ±0.1 dB
Signal-to-Noise Ratio	114.0 dB (A-weighted)
Total Harmonic Distortion + Noise	-110 dB @ -3 dBFS
Channel Separation	129 dB
Output Impedance	100 Ohms
Maximum Output Level	20.2 dBu (balanced)
Output Latency	2.77 milliseconds (122 samples @ 44.1 kHz)
Stereo Headphone Outputs	
Connector Type	¼" Female TRS Stereo
Dynamic Range	113.0 dB (A-weighted)
Frequency Response	20 Hz – 20 kHz, ±0.1 dB
Signal-to-Noise Ratio	113.0 dB (A-weighted)
Total Harmonic Distortion + Noise	-107 dB @ -3 dBFS
Maximum Output Power	80 milliwatts into 600 Ohms
Output Latency	2.77 milliseconds (122 samples @ 44.1 kHz)

(continued)

DIGITAL OUTPUTS		
Format	S/PDIF IEC958	
Connector Type 1	Female Phono (RCA)	
Connector Type 2	Optical TOSLINK JIS F05	
Sample Rate & Bit Depth	44.1 kHz, 24-bit	
Output Latency	2.57 milliseconds (113 samples @ 44.1 kHz)	
ELECTRICAL		
Power Supply	External AC to DC Power Supply, Level VI compliant	
AC Input Connector Type	IEC Male	
AC Requirements	100V – 240V AC, 50 – 60 Hz	
DC Connector Type	XLR 4-Pin Locking Male (Neutrik P/N NC4MDM3-H)	
DC Requirements	12 VDC ±5%, 1.5A	
Maximum Power Consumption	18 Watts	
Operating Temperature Range	32° to 104° Fahrenheit (0° to 40° Celsius)	
Storage Temperature Range	–40° to 176° Fahrenheit (–40° to 80° Celsius)	
Operating Humidity Range	10% – 95%, non-condensing	
COMPLIANCE		
EMC and Safety Standards		
FCC Part 15 for Class B digital device	EN 610003-3-3:2013	EN 301489-17
ICES-003	EN 55103-2	KN 301489-1
VCCI-CISPR 32:2016	KN32	KN 301489-17
EN 55032	KN35	UL/cUL 60065
CIPSR 32:2012	CNS 13438	EN 60065
EN 61000-3-2:2014	EN 301489-1	IEC 60065
PHYSICAL		
Dimensions		
Width	15.01 in / 381.25 mm	
Height, Chassis Only	4.45 in / 112.94 mm	
Height, Including Rubber Feet	5.45 in / 138.44 mm	
Depth, Chassis Only	8.05 in / 204.5 mm	
Depth, Including Knob & Jack Protrusions	9.04 in / 229.58 mm	
Shipping Box (Width x Depth x Height)	20 3/4" x 12 15/16" x 11 5/16" (52.7 cm x 32.9 cm x 28.7 cm)	
Weight		
Weight (unit only)	14.1 Lbs / 6.40 Kg	
Package Contents		
OX Amp Top Box Unit		
External Power Supply		
IEC Power Cable — US, EU, or UK (region dependent)		
Quick Start Guide		
RIG Control Presets		
Safety & License Sheet		

Block Diagram



Notices

Warranty

Universal Audio provides a limited warranty on all UA hardware products. To learn more, visit help.uaudio.com. The limited warranty gives you specific legal rights. You may also have other rights which vary by state or country.

Repair Service

If OX isn't behaving as expected, first check all system setups, connections, cables, and operating instructions. Answers to most questions are available in the Universal Audio Knowledge Base at help.uaudio.com.

If you still need help, or to learn about repair service, please visit help.uaudio.com.

Maintenance

- OX does not contain a fuse or any other user-replaceable parts.
- OX circuitry contains a replaceable lithium battery. The battery should only be replaced by a qualified technician.
- **CAUTION:** Danger or explosion if battery is incorrectly replaced. Replace only with the same or equivalent type battery.
- **CAUTION:** The servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Disclaimer

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End User License Agreement

Your rights to the Software are governed by the accompanying OX Software End User License Agreement, a copy of which can be found at: www.uaudio.com/eula

Open Source License Information

OX open source license information can be found at: www.uaudio.com/eula

Universal Audio Trademarks

UA trademark information can be found at: www.uaudio.com/terms.html

Copyright

Compliance

Safety

- UL 62368-2
- EN 62368-1

FCC Compliance Information

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.

This product does not contain any user serviceable components. Any unauthorized product changes or modifications will invalidate warranty and all applicable regulatory certifications and approvals, including authority to operate this device.

FCC Part 15 Digital Emissions Compliance

We Universal Audio, Inc., 4585 Scotts Valley Drive, Scotts Valley, CA, 95066, USA, +1-831-440-1176, declare under our sole responsibility that the product OX Amp Top Box 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.

WARNING: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and radiates radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from the one the receiver is connected to.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement

The product comply with the FCC portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.

Industry Canada Notice

This device complies with Canadian RSS-210.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Industry Canada Radiation Exposure Statement

The product complies with the Canada portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.

Europe – EU Declaration of Conformity

Marking by the above symbol indicates compliance with the Essential Requirements of the R&TTE Directive of the European Union (1999/5/EC). This equipment meets the following conformance standards:

EN300 328, EN 301 893, EN 301 489-17, EN60950, EN 62311

Radiolan Compliance Statements

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de	Deutsch [German]	Hiermit erklärt Universal Audio, Inc. dass sich das Gerät Radiolan in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
et	Eesti [Estonian]	Käesolevaga kinnitab Universal Audio, Inc. seadme Radiolan vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
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fr	Français [French]	Par la présente Universal Audio, Inc. déclare que l'appareil Radiolan est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
	Íslenska [Icelandic]	Hér með lýsir Universal Audio, Inc. yfir því að Radiolan er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC.
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no	Norsk [Norwegian]	Universal Audio, Inc. erklærer herved at utstyret Radiolan er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.
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sl	Slovensko [Slovenian]	Universal Audio, Inc. izjavlja, da je ta Radiolan v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
sk	Slovensky [Slovak]	Universal Audio, Inc. týmto vyhlasuje, že Radiolan spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
sk	Suomi [Finnish]	Universal Audio, Inc. vakuuttaa täten että Radiolan tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
fi	Svenska [Swedish]	Härmed intygar Universal Audio, Inc. att denna Radiolan står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

Technical Support

Universal Audio Knowledge Base

The UA Knowledge Base is your complete online technical resource for configuring, operating, troubleshooting, and repairing all UA products.

You can watch helpful support videos, search the Knowledge Base for answers, get updated technical information that may not be available elsewhere, and more.

UA Knowledge Base

YouTube Support Channel

The Universal Audio Support Channel at youtube.com includes helpful support videos for setting up and using UA products.

UA YouTube Support Channel

Universal Audio Community Forums

The unofficial UA discussion forums are a valuable resource for all Universal Audio product users. This website is independently owned and operated.

www.uadforum.com

Contact Universal Audio Support

To contact the UA support team for technical or repair assistance, please visit:

help.uaudio.com

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