

IRT-Studio

IRONHEART

Laney
POWER TO THE MUSIC

www.Laney.co.uk

IMPORTANT SAFETY INSTRUCTIONS

WARNING: When using electrical products, basic cautions should always be followed, including the following:

1. Read these instructions.
2. Keep these instructions safe.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any of the ventilation openings. Install in accordance with manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
9. An apparatus with Class I construction shall be connected to a mains socket outlet with a protective connection. 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. A grounding type plug has two blades and a third grounding prong. The wide blade or third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point they exit from the apparatus.
11. Only use attachments/accessories provided by the manufacturer.
12. Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. The mains plug or appliance coupler is used as the disconnect device and shall remain readily operable. The user should allow easy access to any mains plug, mains coupler and mains switch used in conjunction with this unit thus making it readily operable. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when 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.
15. Never break off the ground pin. Connect only to a power supply of the type marked on the unit adjacent to the power supply cord.
16. If this product is to be mounted in an equipment rack, rear support should be provided.
17. Note for UK only: If the colours of the wires in the mains lead of this unit do not correspond with the terminals in your plug, proceed as follows:
 - a) The wire that is coloured green and yellow must be connected to the terminal that is marked by the letter E, the earth symbol, coloured green or coloured green and yellow.
 - b) The wire that is coloured blue must be connected to the terminal that is marked with the letter N or the colour black.
 - c) The wire that is coloured brown must be connected to the terminal that is marked with the letter L or the colour red.
18. This electrical apparatus should not be exposed to dripping or splashing and care should be taken not to place objects containing liquids, such as vases, upon the apparatus.
19. Exposure to extremely high noise levels may cause a permanent hearing loss. Individuals vary considerably in susceptibility to noise-induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a sufficient time.

The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the following permissible noise level exposures: According to OSHA, any exposure in excess of the above permissible limits could result in some hearing loss. Earplugs or protectors to the ear canals or over the ears must be worn when operating this amplification system in order to prevent a permanent hearing loss, if exposure is in excess of the limits as set forth above. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels such as this amplification system be protected by hearing protectors while this unit is in operation.

Duration Per Day in Hours	Sound Level dBA, slow response
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 or less	115

GENERAL INSTRUCTIONS

	<p>Intended to alert the user to the presence of uninsulated 'Dangerous Voltage' within the products enclosure that may be sufficient to constitute a risk of electrical shock to persons.</p> <p>Ce symbole est utilisé pour indiquer à l'utilisateur de ce produit de tension non-isolée dangereuse pouvant être d'intensité suffisante pour constituer un risque de choc électrique.</p> <p>Este símbolo tiene el propósito de alertar al usuario de la presencia de '(voltaje) peligroso' que no tiene aislamiento dentro de la caja del producto que puede tener una magnitud suficiente como para constituir riesgo de corrientazo.</p> <p>Dieses Symbol soll den Anwender vor unisolierten gefährlichen Spannungen innerhalb des Gehäuses warnen, die von Ausreichender Stärke sind, um einen elektrischen Schlag verursachen zu können.</p>
	<p>Intended to alert the user of the presence of important operating and maintenance (Servicing) instructions in the literature accompanying the product.</p> <p>Dieses Symbol soll den Anwender vor unisolierten gefährlichen Spannungen innerhalb des Gehäuses warnen, die von Ausreichender Stärke sind, um einen elektrischen Schlag verursachen zu können.</p> <p>Este símbolo tiene el propósito de la alertar al usuario de la presencia de instrucciones importantes sobre la operación y mantenimiento en la literatura que viene con el producto.</p> <p>Dieses Symbol soll den Benutzer auf wichtige Instruktionen in der Bedienungsanleitung aufmerksam machen, die Handhabung und Wartung des Produkts betreffen.</p>
<p>CAUTION:</p> <p>ATTENTION:</p> <p>PRECAUCION:</p> <p>VORSICHT:</p>	<p>Risk of electrical shock - DO NOT OPEN. To reduce the risk of electrical shock, do not remove the cover. No user serviceable parts inside. Refer servicing to qualified personnel.</p> <p>Risques de choc électrique - NE PAS OUVRIER Afin de réduire le risque de choc électrique, ne pas enlever le couvercle. Il ne se trouve à l'intérieur aucune pièce pouvant être réparée par l'utilisateur. Confier l'entretien à un personnel qualifié.</p> <p>Riesgo de corrientazo - no abra Para disminuir el riesgo de corrientazo, no abra la cubierta. No hay piezas adentro que el pueda reparar. Deje todo mantenimiento a los técnicos calificados.</p> <p>Risiko - Elektrischer Schlag! Nicht offen! Um das Risiko eines elektrischen Schläges zu vermeiden, nicht die Abdeckung entfernen. Es befinden sich keine Teile darin, die vom Anwender repariert werden könnten. Reparaturen nur von qualifiziertem Fachpersonal durchführen lassen.</p>
<p>WARNING:</p> <p>ADVERTISSEMENT:</p> <p>ADVERTENCIA:</p> <p>ACHTUNG:</p>	<p>To prevent electrical shock or fire hazard, do not expose this appliance to rain or moisture. Before using this appliance please read the operating instructions for further warnings.</p> <p>Afin de prévenir les risques de décharge électrique ou de feu, n'exposez pas cet appareil à la pluie ou à l'humidité. Avant d'utiliser cet appareil, lisez les avertissements supplémentaires situés dans le guide.</p> <p>Para evitar corrientazos o peligro de incendio, no deja expuesto a la lluvia o humedad este aparato Antes de usar este aparato, lea mas advertencias en la guía de operación.</p> <p>Um einen elektrischen Schlag oder Feuergefahr zu vermeiden, sollte dieses Gerät nicht dem Regen oder Feuchtigkeit ausgesetzt werden. Vor Inbetriebnahme unbedingt die Bedienungsanleitung lesen.</p>

After unpacking your amplifier check that it is factory fitted with a three pin 'grounded' (or earthed) plug. Before plugging into the power supply ensure you are connecting to a grounded earth outlet.

If you should wish to change the factory fitted plug yourself, ensure that the wiring convention applicable to the country where the amplifier is to be used is strictly conformed to. As an example in the United Kingdom the cable colour code for connections are as follows.

EARTH or GROUND GREEN/YELLOW
NEUTRAL - BLUE
LIVE - BROWN



NOTE

This manual has been written for easy access of information. The front and rear panels are graphically illustrated, with each control and feature numbered. For a description of the function of each control feature, simply check the number with the explanations adjacent to each panel.

Your Laney amplifier has undergone a thorough two stage, pre-delivery inspection, involving actual play testing.

When you first receive your Laney guitar amplifier, follow these simple procedures:

(i) Ensure that the amplifier is the correct voltage for the country it is to be used in.

(ii) Connect your instrument with a high quality shielded instrument cable. You have probably spent considerable money on your amplifier and guitar - don't use poor quality cable it won't do your gear justice.

Please retain your original carton and packaging so in the unlikely event that some time in the future your amplifier should require servicing you will be able to return it to your dealer securely packed.

Care of your Laney amplifier will prolong it's life.....and yours!



FCC Compliancy Statement

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
- 2) This device must accept any interference received, that may cause undesired operation.

Warning: Changes or modification to the equipment not approved by Laney can void the user's authority to use the equipment.

Note: This equipment has been tested and found to comply with the limits for 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, uses and can radiate 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 and 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 that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help



This product conforms to the requirements of the following European Regulations, Directives & Rules:
CE Mark (93/68/EEC), Low Voltage (72/23/EEC), EMC (2004/108/EEC),
RoHS (EU2002/95/EC), WEEE (EU2002/96/EC)



In order to reduce environmental damage, at the end of its useful life, this product must not be disposed of along with normal household waste to landfill sites. It must be taken to an approved recycling centre according to the recommendations of the WEEE (Waste Electrical and Electronic Equipment) directive applicable in your country.

Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

Mac, Mac OS & iPad are trademarks of Apple Inc., registered in the U.S. and other countries.

Audacity is a trademark of Dominic Mazzoni

MixPad Audio Mixer is a trademark of NCH Software, Inc

Pro Tools is a trademark registered in the United States by Avid Technology, Inc.

WELCOME

Dear Player,

Thank you very much for purchasing your new Laney product and becoming part of the worldwide Laney family. Each and every Laney unit is designed and built with the utmost attention to care and detail, so I trust yours will give you many years of enjoyment.

Laney products have a heritage which stretches back to 1967 when I first began building valve amplifiers in my parent's garage.

Since then we have moved on from strength to strength developing an extensive range of guitar, bass, public address and keyboard amplification products along with a list of Laney endorsees that includes some of the world's most famous and respected musicians.

At the same time we believe we have not lost sight of the reason Laney was founded in the first place - a dedication to building great sounding amplification for working musicians.

Warm Regards,

A handwritten signature in black ink, appearing to read 'Lyndon Laney', with a stylized flourish at the end.

Lyndon Laney CEO

Forged deep within the Black Country - the metal beating industrial heartland of the UK - where the sound of metal guitar was born, comes the IRONHEART.



With molten metal flowing through its circuits, IRONHEART continues the legacy passed on by previous Laney amps such as KLIPP and AOR, and hits you hard between the eyes like a power hammer from hell.

As a member of the IRONHEART family, the IRT-Studio has the same ferocious DNA beneath its hard metal chassis, emitting the familiar dark red glow that warns of the power ready to be unleashed.

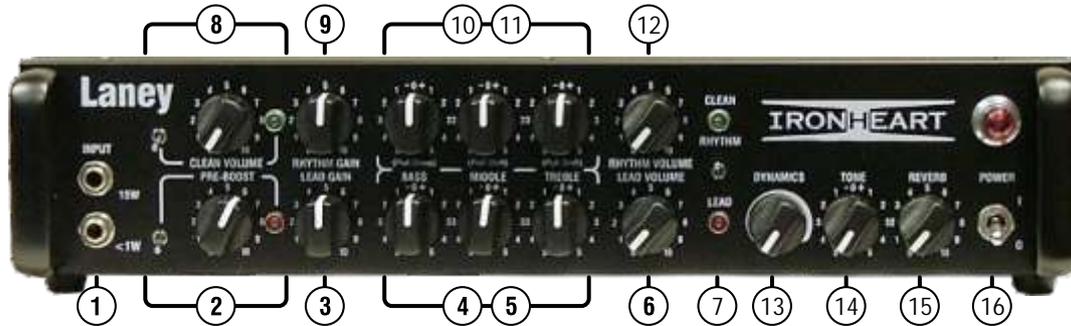
The IRT-Studio has been designed to bring the versatility and power of the IRONHEART family into the studio, capturing the essence of its bigger brothers, but in a 2U rack-mountable sturdy steel cabinet. Emulated speaker outputs and a low power input socket allow you to push the 15W output stage to its limits at a more controllable volume level. A USB2.0 socket enables connection to most recording software and re-amping if required. A dummy load is connected if a loudspeaker is not present, allowing you to record silently if required.

The IRT-Studio features the same familiar Pre-Boost and pull-shift EQ as the bigger IRT60 and IRT120 models, as well as the flexible Dynamics and Tone controls that operate on the output section.

Combine your IRT-Studio with an IRT412, IRT212 or IRT112 speaker cabinet for the ultimate tonal experience.



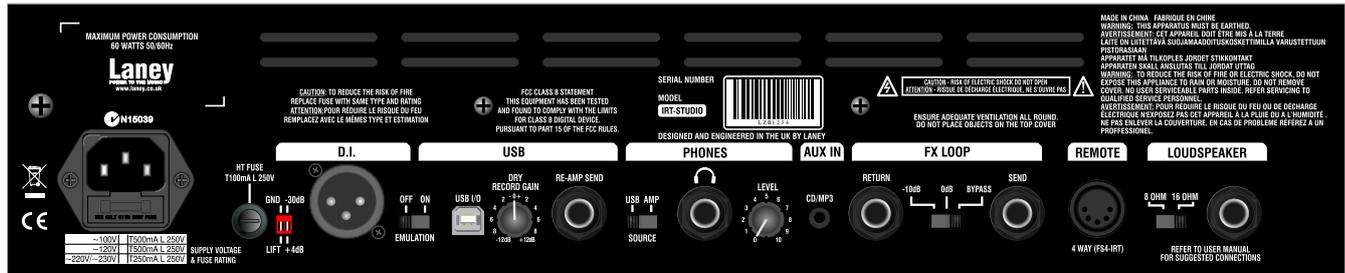
FRONT PANEL CONTROLS



- ① **15W INPUT:** Mono jack socket. Connect your guitar here to get full volume output. Use only high quality guitar cable.
- ② **<1W INPUT:** Mono jack socket. Connecting your guitar here switches the output stage to under 1W. This allows you to drive the output stage hard at bedroom volume levels. Note: Both sockets should not be used simultaneously.
- ③ **PRE-BOOST SWITCH:** Switches the input boost circuit on or off. The Pre-Boost circuit increases the input signal to the preamp tubes, just like placing a boost pedal in your signal path. This drives the preamp tubes harder, resulting in more distortion. This works on all channels.
- ④ **PRE-BOOST CONTROL:** Controls the level of boost applied to the guitar signal.
- ⑤ **PRE-BOOST LED:** This LED will illuminate when the Pre-Boost controls are activated.
- ③ **LEAD GAIN:** Controls the level of preamp distortion on the Lead channel. Turning this control clockwise will add more distortion to your guitar signal, ranging from light overdrive, to full on metal. Use this in conjunction with the Lead Volume Control (6) to achieve the correct volume and distortion level you require. With the volume control below 6, you will only get preamp distortion. Turning past 6 will progressively add power amp distortion.
- ④ **LEAD EQ CONTROLS:** These are a traditional set of passive tone controls. Passive controls have the advantage of always sounding musical at any of their settings, due to their unique interactive nature. This gives the player a more natural set of tools to shape their ideal sound. Set these midway at (0) as a good starting point.
- ⑤ **LEAD EQ PULL SWITCHES:** Pulling on each of the EQ control knobs will shift the response of each control as follows:
 - Bass: Deep - This extends the low-end frequency response, resulting in a fuller, heavier sound for lower notes.
 - Mid: Shift - This lowers the frequency range of the Mid control to give a tighter sound.
 - Treble: Shift - This broadens the Treble control frequency response, to give a rounder sound to higher notes, especially when used with thin sounding pickups.
- ⑩

- ⑥ **LEAD VOLUME:** Controls the Lead channel volume. Experiment with different combinations of the Drive and Volume controls to achieve different sounds. Reducing the Drive while increasing the Volume will result in a warm, open, overdriven sound as the power amp is driven harder, while reducing the Volume and increasing the Drive will give a tighter, more modern sound with more distortion. Once set, try using your guitar's volume controls to interactively adjust tone and distortion levels. Use the low power input socket to push the output stage hard (settings 7-10) at quieter practice levels.
- ⑦ **CHANNEL SWITCH & LEDs:** Switches between the Lead and Clean/Rhythm channels. LEDs indicate currently active channel.
- ⑧ **CLEAN/RHYTHM SWITCH & LED:** This switch activates the Clean mode on the Rhythm channel. When operated, the Clean Volume control becomes active, while Rhythm Gain (9) and Rhythm Volume(12) are removed from the signal path. When using clean mode, the preamp gain is lowered, resulting in a cleaner tone. LED indicates that Clean mode is active.
- ⑧ **CLEAN VOLUME:** Use this to control the volume of the amplifier when using Clean mode. The amp can still be driven to overdrive with the control turned fully clockwise, and can be driven harder by using the Pre-Boost.
- ⑨ **RHYTHM GAIN:** As Lead Gain (3).
- ⑩ **CLEAN/RHYTHM EQ CONTROLS:** As Lead EQ Controls (4).
- ⑪ **CLEAN/RHYTHM EQ PULL SWITCHES:** As Lead EQ Pull Switches (5).
- ⑫ **RHYTHM VOLUME:** As Lead Volume (6).
- ⑬ **DYNAMICS:** This allows control over the response of the amplifier at lower frequencies. Turning this control clockwise gives a looser low end, while lower settings provide a tighter response. The optimum setting is dependant both on the speaker cabinet and/or the volume level being used.
- ⑭ **STONE:** This Stone control works in a similar fashion to the Tone control you probably have on your guitar except that it uniquely works at the other end of the amplification chain. This has the ability to not only control the overall top end response but also reduce upper harmonics on the output stage and preamplifier overdrive sounds. This will give you bright cutting sounds at high settings and smooth rounded sounds at lower settings. Midway (0) is a good starting point.
- ⑮ **REVERB:** Controls the level of the built in Laney-designed digital reverb.
- ⑮ **POWER SWITCH:** Main power switch for the unit. Tube amplifiers take between 30 seconds to 2 minutes to warm up and be ready to play after switching on, this is normal. To turn on, flip the switch to 1 (up).
- ⑮ **POWER LAMP:** This will illuminate when the power switch is operated, indicating the presence of mains power within the amplifier.

REAR PANEL CONTROLS



Spare fuse located in the fuse drawer.

- ① **MAINS INLET SOCKET - MAINS FUSE:** Make sure the voltage indicated on the rear panel is correct for your country! This drawer contains the main safety fuse for the unit. The fuse protects the amplifier from damage in the event of fault by disconnecting the mains power supply.
- ② **HT FUSE:** This fuse disconnects the high voltage DC power to the tubes within the amplifier in the event of a fault. Replacing fuses - **USE ONLY THE CORRECT SIZE AND RATING SPECIFIED ON THE PANEL.** - Using a fuse that is too large in current rating may cause serious, irreparable damage to the amplifier and presents a serious fire hazard. The fuse ratings are detailed in the Specifications section of this manual, as well as printed on the rear of the amplifier. Fuses are designed to protect, do not take chances.
- ③ **DI:** Use this socket to connect your amplifier to a PA system or recording interface. The socket features switchable speaker emulation to shape the tone in a similar way to the loudspeaker, allowing a closer reproduction of the entire Guitar - Amp - Speaker system. The socket has a fully balanced output, (switchable +4dB/-30dB & Ground Lift) for maximum noise reduction. You may use this socket to record without a loudspeaker connected for silent recording as there is a protective load applied when the speaker socket (9) is not used.

TIP

(Use +4dB to connect to powered monitor cabinets. Use -30dB to avoid noise and overload for mixing desks inputs)

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- 4 USB:** Record replay connector, (Dry on left channel, processed on right channel). USB2.0 is compatible with Windows XP ® operating system, Windows 7 ® operating system & Windows 8 ® operating system. Also compatible with Mac ® & iPad ®1-3 via camera USB adaptor, iPad ® 4 & iPad Mini ® via Lightning-USB camera adaptor cable.
- Dry signal send with level control +/-12dB gain to optimise record levels.
- Re-amp output jack allows Dry return signal from USB to be connected via jack cable to the Amp input.
- 5 PHONES:** Use this stereo socket to practice with headphones, or if you want to DI out. This socket features similar emulation circuitry as the DI out. When using headphones, ensure **Level** is set to minimum and then increase to a comfortable level. Using the Source switch, USB or the amplifier can be monitored.
- 6 AUX IN:** A 3.5mm Stereo line input for connection of a CD or MP3 player as a backing track. Control the level of the input using the volume control on your CD/MP3 player. This input is present at the DI and Headphone sockets, but not at the FX send socket.
- FX RETURN:** Mono jack socket for the connection of the output of an external FX unit. This can also be used as a slave in for the power amp. As the FX Loop is an insert type, this will mute the preamp signal.
- FX LOOP SWITCH:** Selects the FX Loop mode of operation:
- 10dBu - For connection of FX units with a -10dBu nominal output level. As this is intended for devices with a lower output level, this switch increases the gain of the FX Loop by 10dB.
 - 0 dBu - For connection of FX units with a 0dBu nominal output level.
 - Bypass - Removes the FX Loop from the signal path.
- 7 FX SEND:** Mono jack socket for connection to the input of an external FX unit.
- 8 FOOTSWITCH SOCKET:** Connect the supplied FS4-IRT here using the supplied 5 pin DIN cable. This allows you to remotely control the following functions: Channel, Clean, Reverb, and Boost. In order to operate the functions correctly, set Pre-Boost and Clean to ON, and Channel to Lead.
- 9 LOUDSPEAKER CONNECTIONS:** Connect your loudspeaker here. Ensure that the impedance switch is set correctly for the cabinet(s) you are using. Mismatching your speaker impedance will reduce the performance of your amplifier, and in extreme cases may damage the unit. The unit may be operated without a loudspeaker if desired, allowing you to record silently, or use headphones to practice. When the loudspeaker socket is not used, an internal load is applied, protecting the output transformer, and emulating the effect of loading it with a speaker. If no loudspeaker is to be used, ensure that the speaker cable is removed from the amplifier.

SPECIFICATIONS

Supply Voltage:- Factory	~100V, ~120V, ~220V, ~230V, ~240V 50/60Hz		
Mains Fuse:	~100V>~120V	T500mA L	
	~220V>~240V	T250mA L	
HT Fuse	T100mA L		
Power Consumption	60W		
Output Power Rating	15W		
Channels	3 - Clean, Rhythm & Lead		
Features:	High and low power input sockets		
	Pre-Boost Input Control		
	3 x 12AX7/ECC83 preamp tubes		
	2 x EL84 output tubes		
	Emulated DI & Phones with Level control		
	3.5mm Stereo CD/MP3 Line input		
	Laney-designed digital reverb		
	Insert-type FX Loop (0dBu, -10dBu, Bypass)		
	2U rack-mountable chassis (rack wings included)		
	Custom Gig Bag included		
	USB2.0 Socket compatible with:	Windows XP Operating System ®	
		Windows 7 Operating System ®	
		Windows 8 Operating System ®	
Mac OS ®			
iPad ®			
Equalisation	Per channel: Passive Bass, Middle Treble with switchable Deep, Mid Shift & Treble Shift Master section: Dynamics & Tone		
Footswitch	Laney FS4-IRT (included): Channel, Clean, Reverb, Boost		
Loudspeaker Outputs	8-16 Ohms (switchable)		
Input Impedance	1M Ohm/47pF		
Size	88*428*285 (H*W*D)		
Unit Weight	5.5Kg		
Packed Weight	8Kg		

Carton Contents
IRT-Studio Amplifier
FS4-IRT Footswitch
5 pin Footswitch Cable
Mains Cable
Gig Bag with shoulder strap
User Manual
Rack Wing x 2
Rack Wing Screw x 8



QUICK START SETTINGS

Set To Preference

CLEAN



ROCK

RHYTHM

LEAD



METAL

RHYTHM

LEAD



DETUNED METAL

RHYTHM

LEAD



Tube amplifiers generally sound much warmer/sweeter than solid state transistor amplifiers but they also need a little more respect due to the fragile glass tubes. The IRT-Studio uses three 12AX7 preamp tubes, and 2 EL84 output tubes which should give you years of trouble free service, however like all tube amps; it is important to treat it with a certain amount of care. Use the following steps as a guide for how to take care of your amplifier:

Take care when moving the amplifier. Tubes are fragile glass components, they can easily be damaged if thrown in and out of vans.

Make sure the impedance of your cabinets matches the setting on your amplifier. Improper impedance matching will result in reduced output power and compromised sound at best, and amplifier failure/shortened tube life at worst.

Allow the amplifier to warm up to room temperature before switching it on: the sudden thermal shock can crack a cold glass tube enclosure, plus any moisture is bad news around high voltage electronics.

After playing, allow the amplifier to cool down before moving. Hot tubes are more fragile than cool ones.

Always use good quality loudspeaker cables: instrument cables are not capable of handling the load requirements of the loudspeaker and can short out.

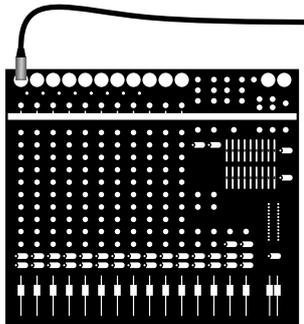
A tubes life expectancy is based upon a number of factors which include operating temperature, how hard and how often it is played, vibration due to travel, etc. Tubes should be changed in your amplifier if you notice any deterioration in your amplifiers sound or performance. Otherwise, they need not be changed at any regular interval.

Typical problems with preamp tubes can be crackly noise, hiss, hum, and microphony. If they fail or exhibit reduced performance, preamp tubes can simply be swapped out with no further action required.

Typical output tube problems can include a blown HT fuse, sound lacking in punch, sound lacking extreme highs or low, and low level hum. The output tubes can be replaced singly if you replace them with the exact same type AND grade as factory fitted, otherwise they should be replaced as a matched pair. ***The user should not attempt to service this product.***

Method of replacing tubes for Qualified Service Engineers

To change a tube, firstly switch off and unplug the amplifier from the mains supply. Wait for the tubes to cool down. Remove the top cover. Preamp tubes are protected with a screen can; to remove, push down and twist the can anti clockwise and then pull up. The tube can now be gently pulled out. Output tubes have a spring retainer which grips the base of the tube; push down on this with one hand, whilst gently rocking the tube with the other to remove. Take care when inserting the new tube to make sure all pins are correctly aligned. Replace the top cover before connecting to the mains supply.



Mixer Desk
or
Powered Cab



iPad or iPad mini®



FX Unit

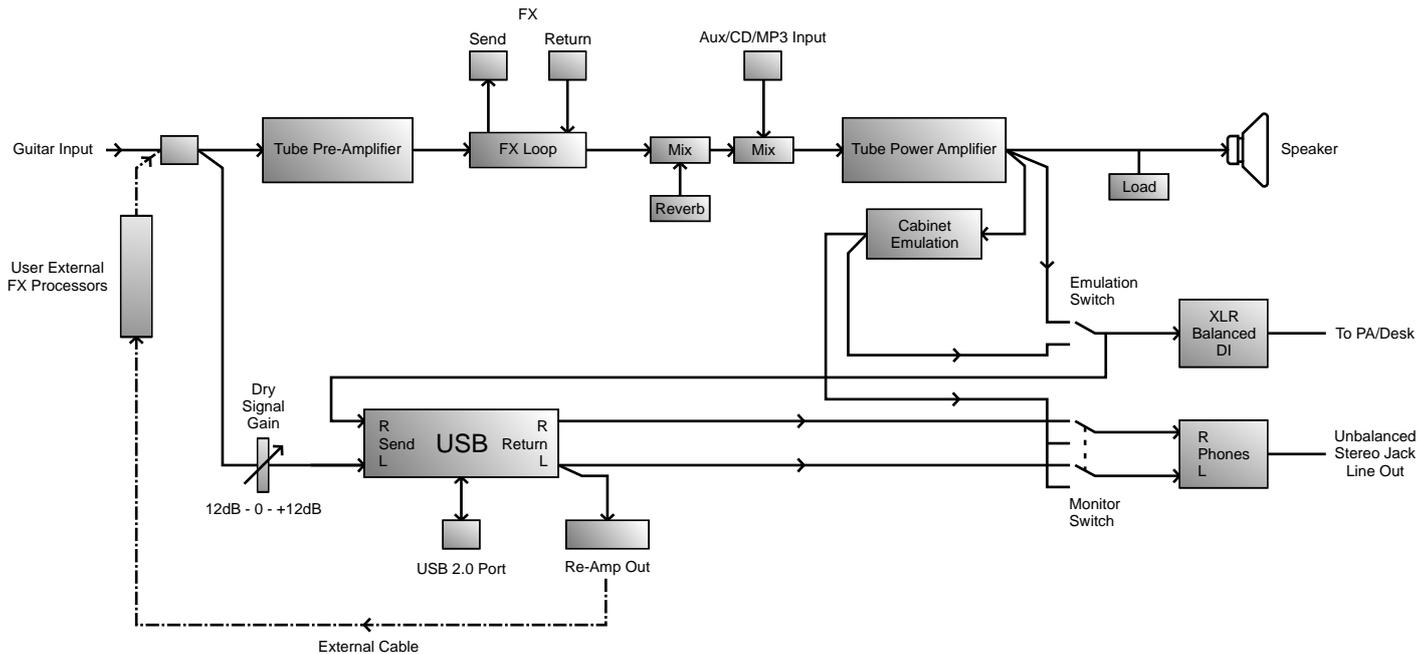


IRT-212



FS4-IRT

SIGNAL PATH BLOCK DIAGRAM



Always switch off and disconnect power cord when not in use

USB Interface options:

USB2.0 Bidirectional to PC/Mac/iPad etc.

Record output of amplifier with or without a speaker load connected

Simultaneously record dry guitar signal for later processing or Re-Amping.

Re-Amp guitar track changing the settings as required

Re-Amp guitar track with external stomp boxes as required

Add tube amplifier and/or power amplifier warmth to digital guitar tracks with or without speaker load.

Record out via USB

To run into iPad or iPad mini connect via a Camera USB adaptor, PC/MAC connects via standard A-B USB cable, for use with the likes of Garage Band ®, Audacity ®, MixPad Audio Mixer ®, Pro Tools and similar. It should be noted that the audio output of an iPad or iPad mini is disengaged and returned via the USB. This can be picked up via a rear panel monitor switch on the amplifier headphones in stereo, or if required, routed into a PA system/powered cabinets.

D.I. remains directly after the amplifier cabinet emulation but has a switch to enable a non-emulated output for post digital cabinet emulation etc. A level control feeds headphones/line out which are permanently emulated.

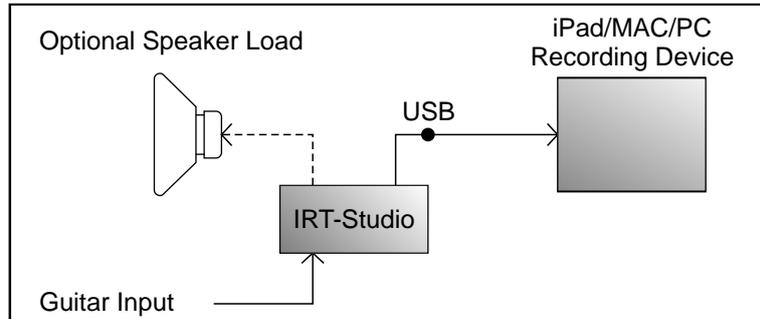
Re-Amp Facility

During recording the amplifier processed signal is sent to the right hand channel. the left hand channel carries the guitar signal totally unprocessed. On an iPad using Garage Band if the track is recorded in stereo then copied with one track panned left and the other track panned right, then both raw and processed signals are available independently.

This allows for the re-amplifying of a sound that may have been over processed initially. To re-amp via Garage Band on the iPad, solo the original channel and record a new one with the link in place from the rear re-amp socket and the guitar input. The newly processed signal will now appear on the right channel with the guitar direct signal again on the left. Other effects may be added into the link cable but the guitar original sound will not be recorded. It will instead record to the left channel the sound directly after the effects with no amplifier and the fully processed signal after the amplifier and effects on the right.

TIP *(The processed signal can be emulated or non-emulated dependant on the cabinet emulation switch selection).*

IRT Studio USB Recording:



Connect your USB recording device (PC/MAC or iPad) via an appropriate USB cable.

Your amplifier will send two audio tracks to your recording device:

(1) On the Left channel the direct unaffected guitar signal.

TIP (This can be used at a later date for "Re-Amping".)

(2) On the Right channel the amplified fully processed signal.

These can be split into separate tracks in various ways dependent on your software. The signal level of the left channel, sent to the recording device, can be adjusted with the rear panel level control.

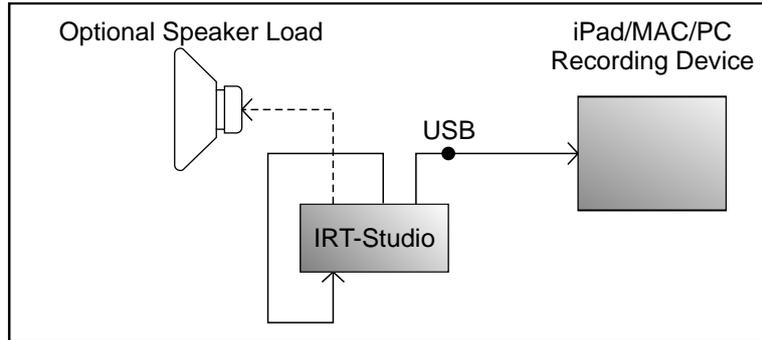
The signal level of the right channel is controlled by the IRT Studio volume controls.

The processed signal sent to the right channel can be emulated or left untreated via the emulation switch. (Note this switch also affects the signal being sent via the XLR DI out).

TIP (Alternatively record left & right as two separate tracks for maximum flexibility)

All this can be done without a speaker load connected.

However adding a speaker can in some cases give extra mechanical dynamics to the recorded sound.

IRT Studio USB “Re-Amping”:

Connect USB cable as for recording.

Then connect a good quality screened guitar cable from the rear panel “Re-Amp” output jack and loop round the front panel to guitar input jack.

TIP (Route lead in an anti-clockwise direction around the amplifier to avoid hum pick-up from the power transformer)

Output the original unprocessed guitar track by monitoring it on your record device.

TIP (For lowest noise performance, adjust the Dry signal send control for the maximum undistorted record level on your DAW).

Start your record device. The monitored track will be sent to the amplifier input and the device will record the now processed signal from the amplifier output. The controls on the amplifier can be adjusted to obtain the new sound you require.

You will now have the original track and the new re-processed version.

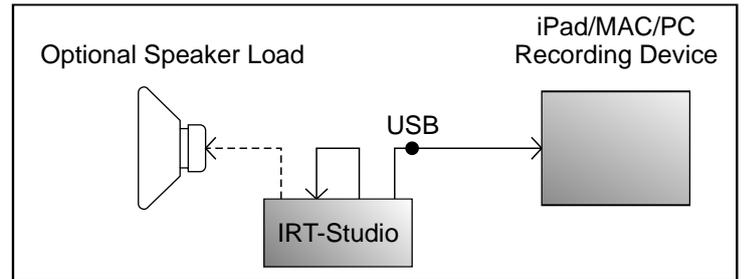
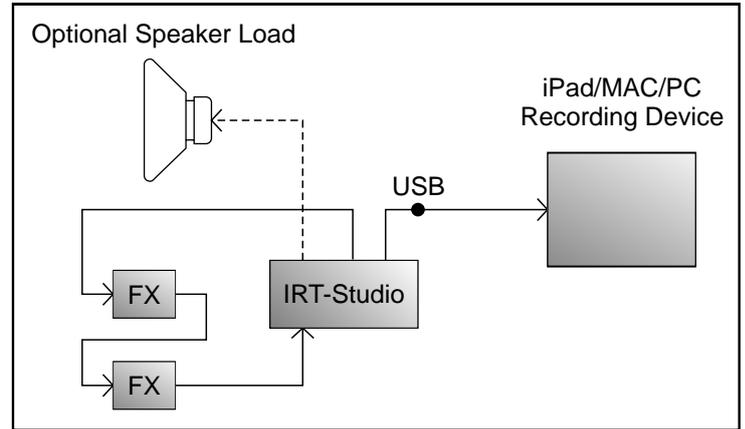
TIP (Make sure your monitor track output is being sent to the left channel output or both)

IRT Studio USB “Re-Amping” with added Stomp box Effects:

Proceed as for normal “Re-Amping” except in this case insert your FX box/s into the Guitar lead from the Re-Amp out jack to the Guitar amplifier input. The recorded Left channel will contain the original unprocessed signal now with your effects only added. The right channel will contain the same sound but also processed via the Studio amplifier.

IRT Studio USB Tube “Output Stage Warming”:

Set up in a similar manner to “Re-Amping”, except return the signal lead from the “Re-Amp” jack to the FX return Jack on the rear panel. (Set the FX switch to 0dB). Then proceed as for Re-Amping except this time only the Dynamics/Tone and Reverb controls will be operative. This can be run with or without a speaker connected with different results.

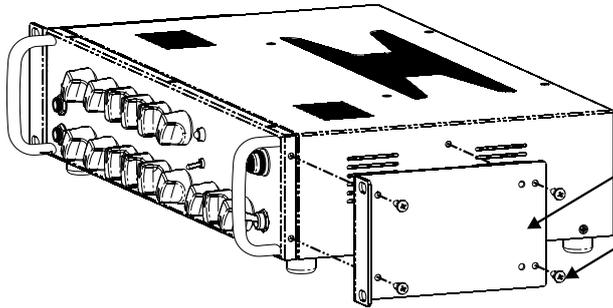


TIP (If a speaker is connected then the 15W high output option can be initiated by inserting an unconnected jack plug into the 15W front panel jack).

TIP (It should be noted that without a speaker connected the amplifier always defaults to <1W operation regardless of which input jack is used)

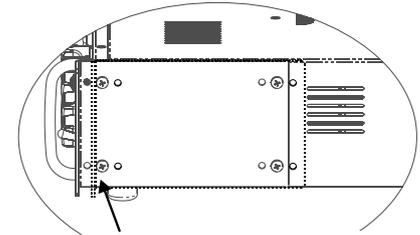
Ventilation:

Ensure the amplifier is well ventilated and that the ventilation slots in the top, bottom & sides are not obstructed in any way. Avoid dropping anything in through the vents especially liquids of any kind. If this should happen turn off the product and disconnect from the power supply immediately and leave to dry out for at least 24hrs. Seek help from a qualified service engineer.

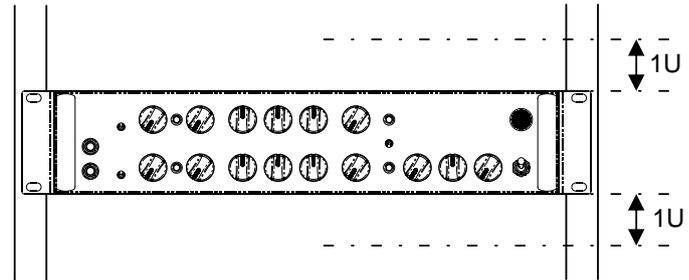


Rack Wing 008496

M4 x 10mm Screw 008497



Choice of mounting positions

**Rack Mounting:**

Using the included Rack Wings, the chassis may be fitted into a standard 2U sized slot in a 19" rack unit. The wings are provided with a choice of mounting holes to allow the fascia to be flush with or recessed into the rack mounts. Only use the supplied mounting screws to attach the wings to the amplifier, as longer items could cause internal damage.

Ventilation must also be considered when rack mounting and adequate provisions made. We recommend that a gap no less than a 1U slot is provided on top and underneath the amplifier to provide adequate air flow for cooling.

