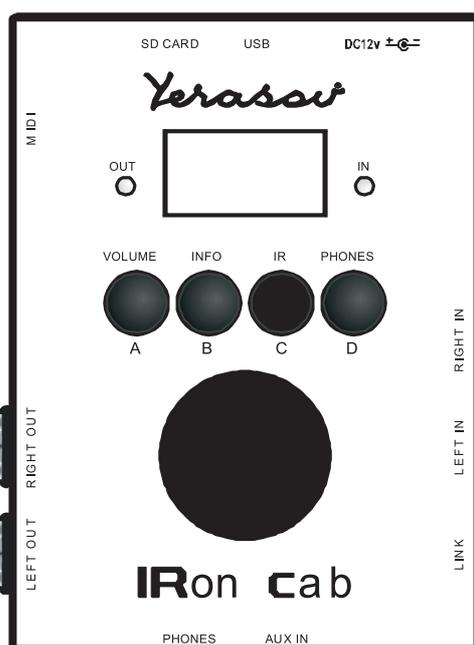# Iron Cab – the two-channel impulse response-based speaker simulator

User's manual

## 2. SAFETY PRECAUTIONS

• Do not store or use the device in extremely humid conditions (normal humidity not more than 80%, no condensation).

• After storage/transportation in case of low temperature please let the equipment warm up to room temperature for 2 hours at least.

• Protect the equipment from falling, impacts and letting any obstacles, dirt, liquids or precipitations inside the device.

3. GENERAL INFORMATION

Iron Cab is an impulse response based speaker simulator. It precisely emulates the tones of the guitar cabinets being miked with microphones located in different positions. IRon Cab has two independent channels; each of them can be assigned with its own impulse; and a preset management system, controlled with A,B,C and D buttons. This system is designed to store the needed routing and impulses settings, to access and switch between them quickly. IRon Cab is equipped with an AUX input and headphones output for silent practicing and playing to a backing track. IRon Cab can be loaded with any guitar cabinets' impulses , this makes it extremely flexible and allows to use it either for live performance (using it with a mixing console/broadband PA system) or for studio recording sessions, obtaining precise and authentic guitar tone with no need to choose a proper cabinet or hassle with microphone positioning.

4. CONTROLS

1. Main screen
2. Output signal LED indicator
3. Input signal LED indicator
4. Assignable quick access button A
5. Assignable quick access button B
6. Assignable quick access button C
7. Assignable quick access button D
8. Right channel input
9. Left channel input
10. Parallel connection (Through/Link) jack for left channel
11. AUX in
12. Headphones out
13. Left channel out
14. Right channel out
15. MIDI in
16. SD card slot
17. USB
18. DC in
19. Encoder wheel
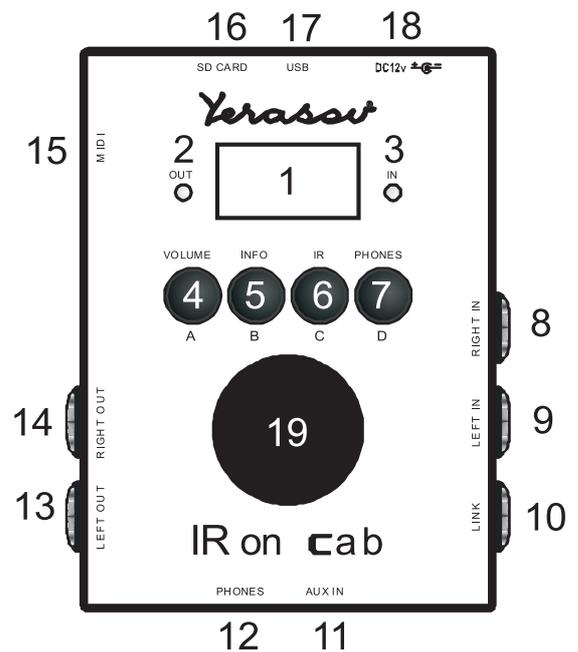
Alongside with the impulses, there is an FX-section for each channel, which consists of NoiseGate, Equalizer, Saturation, FX Room/Reverb. IRon Cab is also very flexible for signal routing. All the settings are stored to presets (100 presets available).

5. GETTING STARTED. LOADING IMPULSES.

Iron Cab can store and control up to 100 presets. Impulses can be loaded with a Micro SD card. User can load either single impulses or sets of impulses stored as CAB files. CAB files are designed to arrange the groups of impulses (IRs Packs). One CAB file contains the settings of up to 15 loudspeakers (one at a time), each of them can be miked with up to 15 microphones (one at a time) and there are 15 positions for every microphone (one at a time).

CAB files are created using PC-based software, which is very convenient to control lots of different impulses from IRon Cab's menu. It is possible to run up to 100 CAB files.
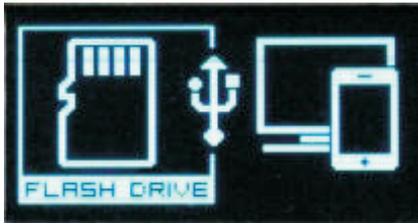
Please use the USB cable (supplied accessory) to connect IRon Cab to PC. SD card should be installed into the IRon Cab. Type of connection menu will appear on the device's display.
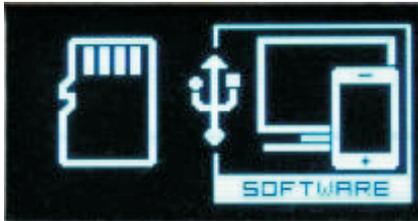
Using the encoder wheel please select Flash Drive mode. IRon Cab will now appear in the OS as a USB storage device.
Single impulses are loaded into the IR folder, sets of impulses are loaded into the CABS folder (you can create a subfolder if needed). Iron_RCI software is used to connect, control and change the parameters of the device.
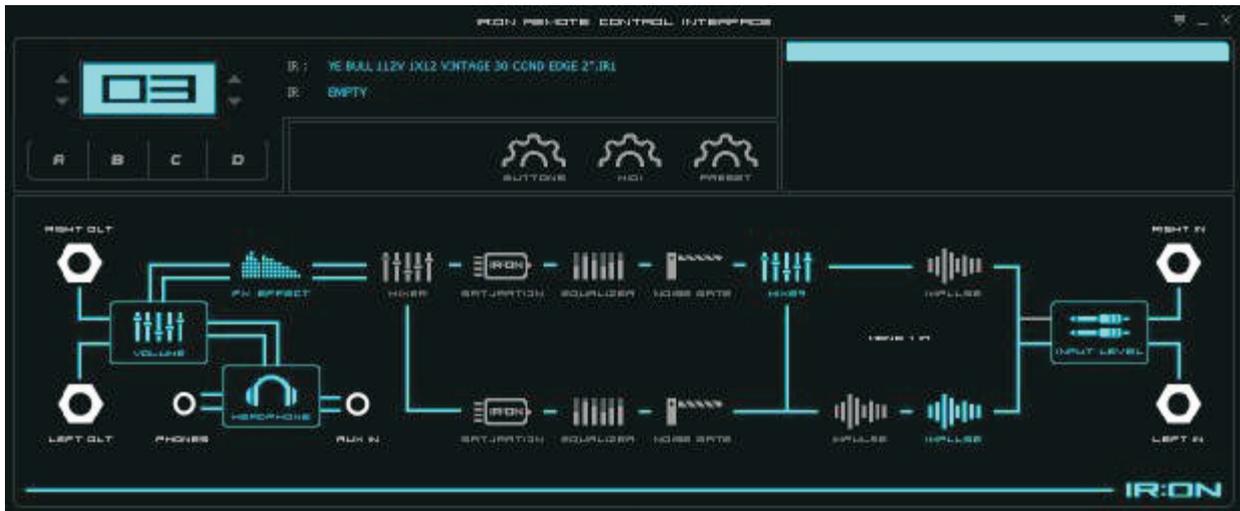
After choosing the type of connection to a PC the screen displays "*PC CONNECTION"* mark.

Iron Cab is designed for a single-knob control using the encoder wheel. There are also 4 assignable A, B, C and D buttons – a short press selects a Favorite Preset, a long press can be assigned for menu items access.

**What a main screen looks like**

If a preset is not empty (a preset(s) assigned), then the preset number is displayed in bold, and you can see the preset's name below. Depending on the routing scheme, one or two impulse names can be displayed.

If the preset is empty (Impulse not assigned), then the preset number is written with an empty font. The encoder is used to swipe between the presets and the number of an actual preset is displayed in the upper right of the screen. Press the encoder to choose the needed preset.

Pressing the encoder in an actual preset will lead to the IRon Cab's menu:
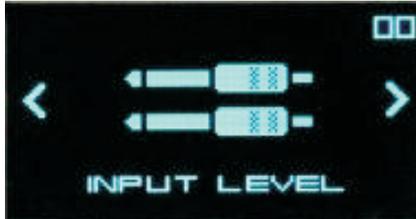
Swiping between the menu items is done by turning the encoder left or right. TO enter a desired menu item press the encoder.

7. MENU ITEMS

INPUT LEVEL – input attenuator setup menu,
IMPULSE – impulse choice, routing, extra settings,
EQUALIZER – EQ settings menu,
NOISE GATE – noise gate settings menu,
SATURATION – saturation settings menu,
FX EFFECT – FX settings menu (reverb/room/ delay L/R),
VOLUME - volume levels' settings,
HEADPHONE – headphone output settings,
SETTINGS – system settings,
RETURN – return to main screen.

8. STRUCTURAL DIAGRAM

9. INPUT LEVEL MENU

INPUT LEVEL menu is used to set up the input attenuator.
The input level can reach up to +46 dB. The user can control this level with 1 dB at a step.
LEVEL L controls the left channel input attenuator,
LEVEL R controls the right channel input attenuator,
LOCK LR – when set to ON both channels levels are being set up simultaneously. Despite the channel selected, both channels are controlled equally. When set to OFF the channels are being set up separately.

Choosing this sign reset the settings to default values.

Choosing this sign saves the settings and returns to previous menu.

Choosing this sign resets the settings to those that were made previously and returns to previous menu.
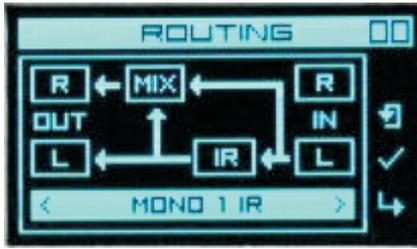
10. IMPULSE MENU

IMPULSE menu contains the main settings – routing, impulses and mixer.
TO understand the routing and mixer settings please refer to the STRUCTURAL DIAGRAM.

11. ROUTING

There are 4 types of routing:
- **MONO 1 IR**
- **MONO SERIAL**
- **MONO PARALLEL**
- **STEREO**

MONO 1 IR – signal is taken from the left input (L) and only one impulse can be assigned to it. It is a basic default setup and a particular case of MONO SERIAL setup. This is designed not to set up two impulses if only one is going to be used. In this case IRon Cab works in pure mono mode. Depending on the mixer settings, you can route either a processed or a non-processed signal to right output (R). It can be rather useful, in case of bass guitar, for instance.
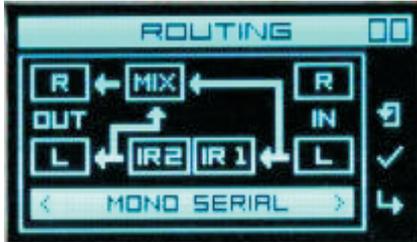
MONO SERIAL – in this mode the signal is taken from the left input (L), but two impulses can be assigned in serial (e.g. Impedance Curve Impulse and Cabinet Impulse). Depending on the mixer settings, you can route either a processed or a non-processed signal to right output (R).
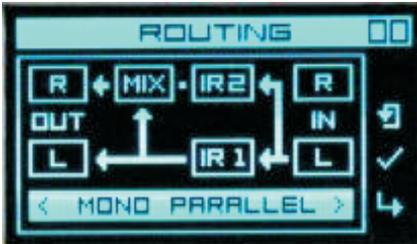
MONO PARALLEL – in this mode the signal is taken from the left input (L), but two impulses can be assigned in parallel. Depending on the mixer settings, you can route a processed, a non-processed or a signal mix to right output (R).

STEREO - in this mode the signal is taken both from the left input (L) and right input (R). You can choose a separate impulse for each channel. This mode allows one musician to play in a stereo mode or two musicians using their own FX chains separately.

12. IR1 And Ir2

These are the main menu items to choose impulses. There are 6 different options:
NOT USED – impossibility to load an impulse for this channel (e.g. when MONO 1 IR routing is used, an impulse for the right channel (R) cannot be selected.
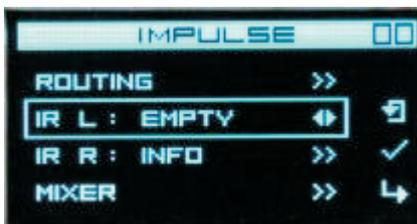
EMPTY – if an impulse is not loaded into the preset, this menu item displays EMPTY. If the impulse is loaded, once the EMPTY option is chosen – the Bypass mode will be loaded.
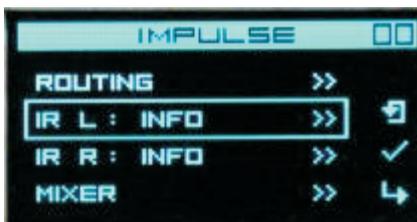
INFO – after choosing this item a full file name of the impulse is displayed.

USER IR – this is the main menu to choose the impulse. All the user impulses should be saved to a /IR folder located in the root directory of the SD card. Impulses should be 24 bit 48 kHz WAVE PCM1 format. IRon Cab can display up to 1000 impulses. Subfolders not supported.
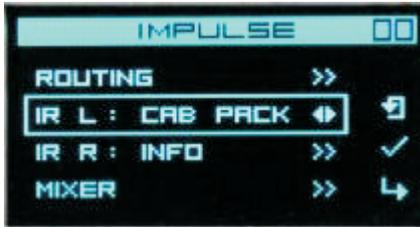
CAB PACK – is the mode for loading the CAB files. A CAB file is a user library of impulses. They are used to arrange the impulses for convenient use. It is essential when using commercial (paid) packs. Navigation is understandable, convenient and quick. You can create your own CAB files using special PC software. CAB file arranges impulses using 4 categories (e.g. loudspeaker, microphone, microphone position). Each category can contain up to 15 values (e.g. up to 15 different loudspeakers, a selection of 15 microphones for each loudspeaker (one at a time) and up to 15 different positions for every microphones (one at a time).

CHOOSING AN IMULSE FROM THE /IR FOLDER
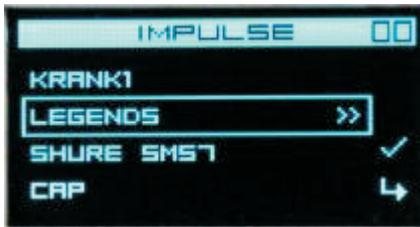
CAB FILE MODE

13. MIXER MENU ITEMS

This menu is used to set the input and output signal levels for each impulse and the channels balance using the MIX fader. Depending on the routing scheme, an input signal can be mixed to the after-impulse signal, the signals processed with different impulses can be mixed, or channels can be mixed as well.

An important feature of the mixer is that you can choose, when the channels are mixed – before (PRE) or after (POST) the FX section. You can choose the mode using the M (Mode) button in the upper right of the screen.

14. EQUALIZER

Each channel is equipped with its own parametric 5-band equalizer as well as with HIGH PASS and LOW PASS filters.
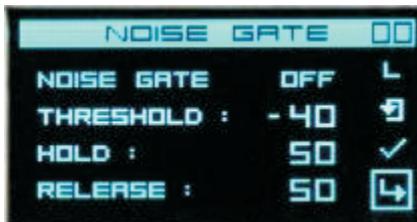
- 40 - 240 Hz
- 200 - 700 Hz
- 500 - 1500 Hz
- 1 - 6 kHz
- 4 - 14 kHz
- HP : 20 - 120 Hz
- LP : 6 - 16 kHz
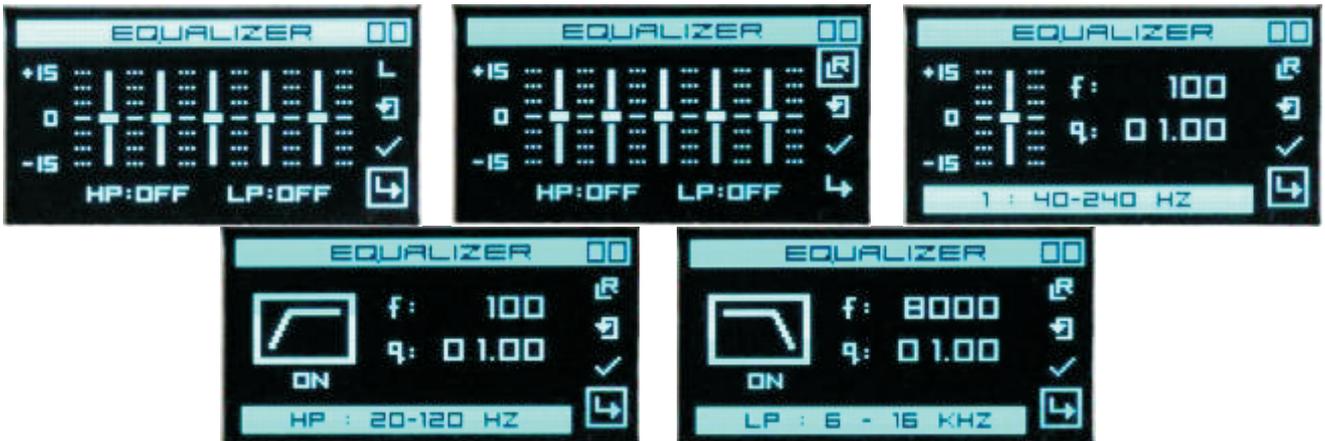
The parameters can be set by choosing a needed fader or a button. The EQ can be adjusted either separately for each channel or simultaneously for both by choosing L+R mode in the upper right of the screen.

15. NOISE GATE

Each channel is equipped with its own noise gate.

NOISE GATE: ON/OFF activates/deactivates the noise gate
TRESHOLD – adjusts the level of signal that triggers the Noise **Gate to activate**
HOLD – hold time
RELEASE – release time
The NOISE GATE can be adjusted either separately for each channel or simultaneously for both by choosing L+R mode in the upper right of the screen.

16. SATURATION

Emulation of the tubes saturation and **PRESENCE** control.
This parameter controls the amount of the saturation from lower to higher. The values from 80 to 100 are the most audibly noticeable.
SATURATION can be adjusted either separately for each channel or simultaneously for both by choosing L+R mode in the upper right of the screen.

17. FX EFFECT

This is the effects section. You can use one of the three effects: ***ROOM, REVERB, DELAYR***

ROOM – is a simulation of room sonic reflections – good to use with headphones. Adds "space" to overall tone. Options available: Short, Medium-Small, Medium-Large, Long,
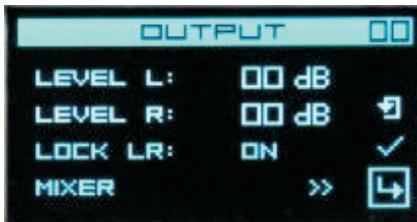
REVERB – reverberation effect,

DelayR – right channel signal delay, used for a pseudo-double tracking effect. The values are in samples. Most audibly noticeable when set to 20,

All of the effects work in parallel mode. Activating and adjusting the balance is made with the MIX control.

18. VOLUME

The channels' output level is adjusted here. Like the input attenuator menu, ***LOCK LR*** parameter combines the volume level control for both channels.

19. HEADPHONES

Headphones out settings are made here. The headphones out can also be used as a stereo output. It is important to notice that the AUX input works only with the Headphones Out.

LEVEL – this control adjusts the volume level for the headphones

LEVEL LOCK – ON – the settings are active for all presets/OFF – the settings are stored for each preset separately. For silent practicing using headphones the ON mode will be more suitable, as when you change the headphones the signal level will be equal. If you are using the headphones output as a stereo out and you need some precise settings for each channel level, the OFF mode is more suitable.

SOURCE – choose the signal source – left channel, right channel, left+right.

PAN – panoramic control/balance control.
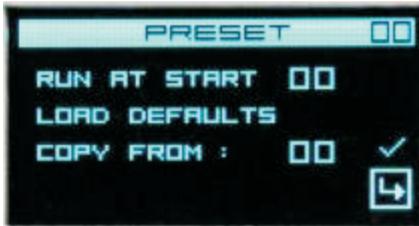
20. SETTINGS

System settings:

PRESET – current preset settings,

BUTTONS – button assignment for A, B, C and D buttons,

MIDI – MIDI input setup,

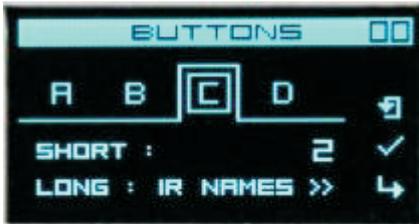*ABOUT* – general information.

21. PRESET

RUN AT START – choose the initial preset to start with when turning on the device,

LOAD DEFAULTS – initializing all the preset settings to their defaults,

COPY FROM – copying settings from another preset.

22. BUTTONS

Assigning the quick access buttons.

SHORT – choosing the preset that is dialed by pressing the button shortly,

LONG – choosing the menu item that is dialed by pressing the button longer.

23. MIDI

MIDI in settings:

CC RECEIVE – to react or not when receiving the CC commands,

PC RECEIVE – to react or not when receiving the PC commands,.

PC REMAP – remapping the commands (e.g. dial the preset #10 when receiving the PC 3 command),

MIDI MONITOR – monitoring the incoming MIDI commands.

24. ABOUT

The firmware version and the device's serial number are displayed.

25. CONNECTING AND RUNNING THE DEVICE

IRon Cab is a versatile and flexible device.
Its structural diagram is designed to run each channel with its own settings, which allows using RIGHT IN and LEFT IN channels to obtain a high quality stereo signal output, or plugging a separate instrument to each input and playing them with their own settings. In this case IRon Cab can be set so that the LEFT OUT and RIGHT OUT will have independent settings for each instrument. Using the LEFT OUT and RIGHT OUT outputs you can plug the IRon Cab to a broadband PA system, PC Audio Interface or a mixing console directly, thereby modeling a guitar tone signal path without using cabinets and microphones. You can connect an external audio source (backing track) and this signal goes only to the headphones out (to PHONES jack, together with the guitar signal processed by IRon Cab). The PHONES OUT can be used together with the RIGHT/LEFT OUTs running using your headphones for additional monitoring.
IRon Cab can also be used in a traditional guitar FX chain. IRon Cab will then process the signal from the amp sending it to the cabinet through the LINK jack. The LEFT OUT/RIGHT OUT guitar amp signals will be processed with the impulses. The overall output level can be adjusted in the VOLUME menu.
Attention! When using IRon Cab with a guitar amp, be sure that the guitar cabinet/load emulation is connected to the LINK jack. Otherwise IRon Cab and the amp will be damaged.

26. TECHNICAL SPECIFICATIONS

Power supply, V 12
Current draw, not more, mA 200
Size, mm ....60,5 x 90 x 124

27. PACKAGE CONTENTS

Iron Cab 1
Power Supply 1
Micro SD card 1
USB Cable (0,5 m) 1
User's manual 1