

TORPEDO C.A.B.

Professional Speaker Simulator

User's Manual

V 1.11- 07/04/2012



Two notes
AUDIO ENGINEERING

TORPEDO C.A.B. User's Manual

Manual Version V 1.11- 07/04/2012.

The complete electronic version of this manual, as well as the Two Notes Audio Engineering software and hardware products, are subject to updates. You can download the most recent versions of the products on the following website: <http://www.two-notes.com>.

This manual describes the TORPEDO C.A.B. and provides instructions for its operation. It is highly recommended to read this document before using this product. The contents of this manual have been thoroughly verified and it is believed, unless stated otherwise, to accurately describe the product at the time of shipment from the factory or download from our website.

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Contents

1 Foreword	7
1 Safety instructions	7
1.1 Reader warning	7
1.2 Mains power	7
1.3 Conditions for safe use	7
1.4 Cleaning	7
1.5 Maintenance	8
2 Contents of the package	8
3 Disposal of Waste Equipment by Users in Private Household in the European Union	8
4 Declaration of conformity	8
5 Warranty	9
2 About the TORPEDO C.A.B.	11
1 Introducing the TORPEDO C.A.B.	11
2 C.A.B. overview	12
3 Only a speaker simulation ?	12
3.1 Tube Stage Output	13
3.2 Section EQ	13
3.3 The TORPEDO technology, convolution and Impulse Responses	13
3.4 Third-party impulse responses	13
3.5 Create your own IRs	14
3 Connecting the TORPEDO C.A.B.	15
1 Overview	15
2 Using the C.A.B with pedals, preamplifier or amplifier	15
3 Using the C.A.B with another modeling product	16
4 Remote control	16
4 Configuring and using the TORPEDO C.A.B.	19
1 The TORPEDO C.A.B. interface	19
2 Level control	19
3 Programmable Footswitches	19
4 Three modes: PERFORM, EDIT & SETUP	20
5 PERFORM mode	20
6 EDIT mode	21
6.1 Power Amp	22
6.2 Miking	23
6.3 EQ	23
7 SETUP mode	24

8	MIDI setup	25
9	Continuous save, preset save	25
10	Want more cabinets?	25
10.1	.tsr files	26
10.2	.tur files	26
10.3	Third-party IRs in .WAV or .AIF format	26
10.4	Uploading new Two Notes cabinets or third-party IRs	27
5	MIDI	29
1	PROGRAM CHANGE (PC)	29
2	CONTROL CHANGE (CC)	29
6	Specifications	31
1	Power Amplifier list	31
2	Microphones list	31
3	Cabinets list	32
4	Technical data	34
7	Technical support	37
1	Two Notes Website	37
2	By e-mail	37

Part 1

Foreword

1 Safety instructions

Before using the product, it is necessary to carefully read and to bear in mind the following information. **Keep this document in a safe place as it is important for the protection of the user and the product.** If any malfunction of the machine is suspected, you should always seek the assistance of a qualified technician.

1.1 Reader warning



The triangle symbol with an exclamation mark indicates important messages concerning the correct operation of the machine.

1.2 Mains power

Please verify that the voltage required by the mains power adapter matches the voltage in your country. If not or if unsure, do not connect the machine to the wall outlet. This could result in damages to the mains power adapter, the machine and injuries to the user. This product must not be used when there is lightning present. In case of severe weather with a risk of lightning, unplug the power adapter to reduce the risk of electric shock and fire.

The mains power adapter provided with the machine complies with the standards of the country where you purchased the product. If replacement is needed, please use a standard compliant mains power adapter.

1.3 Conditions for safe use

The TORPEDO C.A.B. must never be used near a heat source, near a flame, in the rain, in damp areas, near any liquid of any sort. When transporting the unit, care needs to be taken to avoid any shocks that could cause damage that would require the assistance of a qualified technician.

1.4 Cleaning

Always use a piece of dry and soft cloth with no alcohol or solvents for cleaning. Please keep the unit clean and free from dust.

1.5 Maintenance

All maintenance operations must be done by service centers approved by OROSYS SAS or by qualified technicians. Never try to repair the machine by yourself.

2 Contents of the package

The shipped package contains:

1. One TORPEDO C.A.B. unit in a protecting sleeve,
2. One mains power adapter,
3. One USB cable,
4. One user's manual.

The complete electronic version of this manual, as well as the TORPEDO Remote and TORPEDO Capture software are subject to updates. You can download the most recent versions of these products on the following website: <http://www.two-notes.com>.

3 Disposal of Waste Equipment by Users in Private Household in the European Union



This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

4 Declaration of conformity

Manufacturer: OROSYS SAS

Category of product: digital audio signal processor

Product: TORPEDO C.A.B.

Test Manager: Guillaume Pille

The Two Notes TORPEDO C.A.B. and the provided mains power adapter are certified to be compliant to the CE and FCC standards:

- EN 55103-1 : 1996 and EN 55103-2 : 1996.
- EN 60065 05/2002 + A1 05/2006.

- EMC directive 89/336/EEC and Low Voltage Directive 73/23/EEC.
- FCC Part 15 : 2008.
- ICES-003 : 2004.
- AS/NZS 3548 class B for Australia and New Zealand.
- IEC : 2008 - CISPR 22 class B.



5 Warranty

OROSYS SARL warrants that this TWO NOTES AUDIO ENGINEERING product shall be free of defects in parts and workmanship when used under normal operating conditions for a period of two (2) years from the date of purchase. This warranty shall apply to the original purchaser when purchased from an Authorized TWO NOTES AUDIO ENGINEERING dealer.

IMPORTANT: PLEASE RETAIN YOUR SALES RECEIPT, AS IT IS YOUR PROOF OF PURCHASE COVERING YOUR LIMITED WARRANTY. THIS LIMITED WARRANTY IS VOID WITHOUT YOUR SALES RECEIPT.

Defective products that qualify for coverage under this warranty will be repaired or replaced, (at OROSYS SAS's sole discretion) with a like or comparable product, without charge. In the event that warranty service be required, Please contact your authorized TWO NOTES AUDIO ENGINEERING dealer in order to obtain an RMA to return the complete product to the Authorized TWO NOTES AUDIO ENGINEERING Service Center closest to you, with proof of purchase, during the applicable warranty period.

Transportation costs to the service center ARE NOT INCLUDED in this limited warranty. OROSYS SAS will cover the cost of standard ground return transportation for repairs performed under this warranty.

This limited warranty becomes void if the serial number on the product is defaced or removed, or if the product has been damaged by alteration, misuse including connection to faulty or unsuitable ancillary equipment, accident including lightning, water, fire, or neglect; or if repair has been attempted by persons not authorized by OROSYS SAS.

Any implied warranties, including without limitation, any implied warranties of merchantability or fitness for any particular purpose, imposed under state or provincial law are limited to the duration of this limited warranty. Some states or provinces do not allow limitations on how long an implied warranty lasts, so the above limitations may not be applicable.

OROSYS SAS ASSUMES NO LIABILITY FOR PROPERTY DAMAGE RESULTING FROM ANY FAILURE OF THIS PRODUCT NOR ANY LOSS OF INCOME, SATISFACTION, OR DAMAGES ARISING FROM THE LOSS OF USE OF SAME DUE TO DEFECTS OR AVAILABILITY OF IT DURING SERVICE.

In case you have to send your TWO NOTES AUDIO ENGINEERING product to any other location, it is of vital importance to retain the original packing materials. It is very difficult to avoid damage when shipping the product without these materials. OROSYS SAS is not responsible for damages to the product due to improper packaging and reserves the right to charge a reboxing fee for any unit returned for service without the original packing materials.

THE FOREGOING CONSTITUTES THE ONLY WARRANTY MADE BY OROSYS SAS WITH RESPECT TO THE PRODUCTS AND IS MADE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED

Part 2

About the TORPEDO C.A.B.

1 Introducing the TORPEDO C.A.B.

Two Notes Audio Engineering is proud to introduce the TORPEDO C.A.B. (Cabinets in A Box), a version of the critically acclaimed TORPEDO hardware series, optimized for live playing. This product has been developed through years of technical research, with great attention to the needs of guitarists, bassists and sound technicians confronted to the challenges of miking instrument amplifiers, on stage or in the studio. Our goal is to provide ease of use, reliability, versatility and, above all, perfect audio quality.

The TORPEDO technology was created as an answer to the high pressure musicians have to deal with: lack of time, limited gear availability, loud amplifiers that cannot be played at desired volume, as well as bulky and heavy cabinets to carry. In addition, many musicians are more comfortable with their analog amplifier and effect pedals, and do not want to perform using digital modeling systems, which may compromise their playing style and sound.

For them, the TORPEDO C.A.B. offers a "virtual" alternative to traditional miking, using a technology derived from the convolution reverberation, to achieve a degree of realism never experienced with a simulator previously. The TORPEDO C.A.B. is the perfect line output everybody should have at the final stage of their pedalboard to send the sound directly to a PA or a recorder.

You can use the TORPEDO C.A.B. on stage or in the studio, after your favorite distortion pedal or a rack preamplifier, or even after an amplifier modeling unit (with the speaker simulation turned off). You will be able to explore the unlimited possibilities of the best speaker miking simulator.

The TORPEDO C.A.B. comes with a large library of 45 cabinets (32 factory cabinets + other cabinets available for download) and 8 microphones among the most commonly used models in the world. The virtual miking is achieved by choosing one cabinet and one microphone, and fine-tuning the position of the microphone in front of the cabinet. The TORPEDO allows the user to assume the role of the sound engineer in a professional studio.

The TORPEDO Technology: to bring you realism and playing comfort, Two Notes has developed a unique technology based on an adaptation of convolution techniques. Starting with the measurement of an actual cabinet + microphone setup, the TORPEDO C.A.B. can accurately reproduce the system as it was measured, as well as the microphone's position in space. In order to take full advantage of these digital algorithms, the highest-quality audio design assures a perfect analog-to-digital conversion and a huge dynamic range to retain the ultimate playing experience.

This product has been thoroughly tested in professional studio and stage environments and is the alternative many musicians were waiting for, to achieve a professional sound capture of their amplified instruments. The TORPEDO C.A.B. will give you the elusive sound of the greatest recording studios and producers, anytime, anywhere.

2 C.A.B. overview



Figure 2.1: Front panel of the TORPEDO C.A.B.

- | | | | | | | | |
|---|-----------------------|---|-------------------------------|----|--------------------------|----|-----------------------|
| 1 | Input level selector | 5 | Phones output | 9 | Display screen | 13 | A function footswitch |
| 2 | GTR/Line input | 6 | MIDI IN | 10 | EDIT/SAVE button | 14 | B function footswitch |
| 3 | Output level selector | 7 | USB | 11 | PRESET/PARAMETER encoder | | |
| 4 | AMP/Line output | 8 | Mains power adapter connector | 12 | OUT LEVEL/VALUE encoder | | |

3 Only a speaker simulation ?

The TORPEDO C.A.B. is a standalone unit you can bring with you in any situation, whenever silent playing is needed.

The role of the TORPEDO C.A.B. is to replace the following elements of the traditional guitar or bass setup:

- the guitar/bass power amplifier
- the speaker cabinet
- the microphone
- the microphone preamplifier

to provide a signal that is the closest possible to a traditional guitar/bass miking in a professional studio environment.

The miking is achieved in 3 steps with the TORPEDO C.A.B.:

1. choose a power amplifier (or switch it off if you are using a loadbox), a speaker cabinet and a microphone,
2. place the microphone in the virtual studio,
3. shape the signal (Eq).

With each step, Two Notes Audio Engineering implements its know-how to offer the most advanced simulations on the market and ensure total realism both for the musician (playing sensations) and the listener (sound quality).

You can embed up to 32 Two Notes cabinets in the TORPEDO C.A.B.. Download the free TORPEDO Remote software (Mac OSX and Windows PC) from [the Two Notes website](#), you will be able to add and remove the embedded cabinets. There are currently 45 Two Notes cabinets, and new free cabinets available directly from your TORPEDO Remote software.

3.1 Tube Stage Output

When using a guitar/bass preamplifier with other speaker emulators, the guitarist/bassist may miss the power amplifier's contribution to the overall sonic texture. Many musicians get their sound from a specific use of that element and this possibility is present in the TORPEDO C.A.B..

To do this, Two Notes has developed an original tube-stage modeling, giving you the choice between 4 different tube models (6L6, EL34, EL84 and KT88) in Push-Pull (PP) in class AB or Single Ended (SE) in class A configurations. You can push this tube-stage like a conventional amplifier and look for this subtle and particular distortion.

The TORPEDO C.A.B. can be used as a super-DI for keyboards. The tube-amp simulation feature, developed for guitarists and bassists, is also very interesting to warm up the sound of a synthesizer, organ or digital piano.

3.2 Section EQ

When recording guitars or basses, it is common to apply a few effects to shape the sound before sending it to a PA or a recorder. In the TORPEDO C.A.B. you will find a simple but efficient EQ filter with two modes, GUITAR or BASS.

3.3 The TORPEDO technology, convolution and Impulse Responses

The impulse response (IR) of a system describes its behavior under the form of a very detailed filter. The convolution technique uses IRs to simulate the behavior of particular systems, such as reverbs, speakers, EQ...

It is the most accurate way to simulate sound signatures that are linear (*i.e.* without distortion) and time-invariant (*i.e.* without modulation, compression, hysteresis...). It is particularly well suited for speaker miking simulation.

Two Notes has developed a unique technology based on an adaptation of convolution techniques. Starting with a measure of a real cabinet + microphone setup, the TORPEDO TORPEDO C.A.B. can accurately reproduce the system as it was measured, as well as the microphone's position in space, by using **IR synthesis**.

3.4 Third-party impulse responses

The TORPEDO C.A.B. is capable of delivering the best guitar and bass tones by using the TORPEDO technology, but you can also embed impulse responses you have purchased or downloaded for free from third-party developers, in WAV or AIFF formats. **The TORPEDO C.A.B. may be seen as an "impulse loader"**.

You can upload up to 512 third-party IRs in the TORPEDO C.A.B., by using the free TORPEDO Remote software.

3.5 Create your own IRs

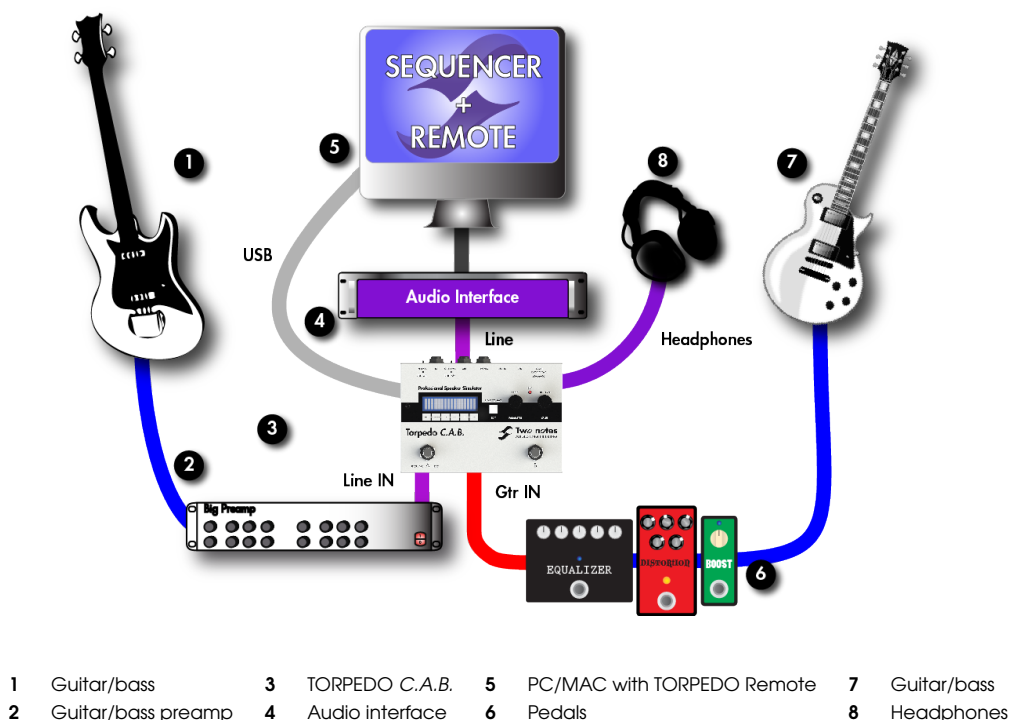
Download the free TORPEDO Capture software from [the Two Notes website](#). With this software you will be able to capture your own cabinet + microphone setup and embed its specific sound signature into the TORPEDO C.A.B..

Part 3

Connecting the TORPEDO C.A.B.

1 Overview

The TORPEDO C.A.B. offers a solution for silent and quality sound pick-up in many situations. The following illustrations show the most common situations the TORPEDO C.A.B. has been created for.



Even if it was designed to go on stage, the TORPEDO C.A.B. will also perfectly fit into a studio, to bring you the greatest tone with your pedals or preamplifiers, whatever the circumstance.

2 Using the C.A.B with pedals, preamplifier or amplifier

Plug your TORPEDO C.A.B. as the last mono pedal on your pedalboard (for example after your distortion pedal). Select GTR position on the IN LEVEL selector. If you want to use a preamplifier, plug its Line Output into the Input of the machine, select the LINE position on the INPUT LEVEL selector.

If you have a guitar or bass amplifier, you have two options to make it work with the TORPEDO C.A.B.:

1. **Plug a loadbox into the speaker** out, then the loadbox uncompensated Output to the TORPEDO C.A.B.. Avoid any speaker simulation before the TORPEDO C.A.B.. Depending on the output impedance and level of the loadbox try both INPUT LEVEL selector positions to find the appropriate Input level.
2. Use the **FX loop of the amplifier**, plug the **Send Output** into the TORPEDO C.A.B.. Depending on the output impedance and level of the FX loop Output try both Input selector positions to find the appropriate Input level. If you want to send the TORPEDO C.A.B. to the **Return Input** of your amplifier, try both OUT LEVEL selector positions to find the appropriate level.

When using the TORPEDO C.A.B. with an amplifier, we recommend switching OFF the Power Amp simulation section.

Playing in silence is a great feature, but at some point **you have to listen to what you play!** Here are a few options to use at home, in the studio or on stage:

1. Listening through the headphones out,
2. Having a local monitoring system on stage, by duplicating the Line OUT with a mixer,
3. Having in-ear monitors or wedge speakers controlled by a sound engineer.



When using a tube amplifier, always make sure that a proper load (cabinet or loadbox) is connected to the speaker Output.



We recommend putting any modulation, reverb and delay effects AFTER the TORPEDO C.A.B.. This is what is usually done in the studio, especially when using stereo effects. The TORPEDO C.A.B. being MONO, any stereo signal sent to the unit will be converted to MONO . Moreover, if you set up the Power Amp simulation to a high volume, some distortion will appear. It is totally different to send reverb or delay into a distortion stage (like you would do in the effect loop of an amplifier) and to send a distorted sound into a reverb or a delay (like you will do by following this advice). Try both and pick the one that fits you.

3 Using the C.A.B with another modeling product

You can use the TORPEDO C.A.B. with other modeling products, hardware or software units. Most of the time it is not possible to switch off their Power amp simulation section (a whole amplifier is simulated at a time), we recommend in the case to switch off the Power Amp simulation on the TORPEDO C.A.B..

4 Remote control

With a MIDI foot controller, you gain access to the Preset navigation and even to parameter changing in real time. The TORPEDO C.A.B. handles both PROGRAM CHANGE et CONTROL CHANGE commands.

The TORPEDO C.A.B. is a standalone unit, but you can control it from your computer (PC Windows or Mac OSX) with the **TORPEDO Remote software** using a USB connection. Create, save and load

presets, load new cabinets or Impulse Response (IR) files. Download the TORPEDO Remote for free on [the Two Notes website](#).

You will probably find innovative ways to use the TORPEDO C.A.B.. Share with other users your tips and tricks on the Two Notes user forums and other social networks. Simply go to [the Two Notes website](#) and click on "Community".

Part 4

Configuring and using the TORPEDO C.A.B.

1 The TORPEDO C.A.B. interface

The TORPEDO C.A.B. parameters are organized in menus accessible by different push-buttons and knobs you will see on figure 2.1:

- Two 2-function rotary encoders: PRESET/PARAMETER, OUTPUT LEVEL/VALUE
- One push-button: EDIT/HOLD TO SAVE.
- Two selector switches: INPUT LEVEL and OUTPUT LEVEL.
- **A** and **B** programmable footswitches.

When pushing a button or turning an encoder, you will see a parameter moving on the two-line display (item 3 in figure 2.1).

2 Level control

The Input selector switch (GTR for instrument level, Line for line level) controls the Input gain of the unit. The TORPEDO C.A.B. is a digital product, it is absolutely critical to avoid any saturation of the Input signal and avoid the risk of considerably reducing audio quality. The best signal sent to the TORPEDO C.A.B. will be loud enough to benefit of the full dynamic range of the analog to digital converter, without distortion.

The Input gain adjustment must be done in presence of an Input signal. The CLIP red led is on in case of saturation at the Input stage: lower the volume of the unit plugged into the TORPEDO C.A.B. and/or change the selector switch position.

In case you have different type of sounds that will be sent alternatively to the TORPEDO C.A.B. (clean, crunch, distortion...), try to limit the volume difference between these different sounds.

3 Programmable Footswitches

The **A** and **B** footswitches are programmable. In other words, you can assign two different functions to **A** and **B** you will activate by either a temporary, short click or a long click (hold). The factory setting is the following:

Footswitch	Short click	Long click
A	PRESET -	BYPASS
B	PRESET +	MUTE

Please refer to the SETUP mode section to assign special functions to **A** and **B**, the different functions are listed below:

Designation	Function
None	Null function.
Preset -	Change the current preset for the previous one. For example, if you are currently using the preset 10, this will load preset 09.
Preset +	Change the current preset for the next one.
Bypass	Bypass all processing, including OUT Level.
PA Bypass	Bypass the Power Amp simulation.
Cab Bypass	Bypass the cabinet-miking simulation.
EQ Bypass	Bypass the EQ. Activating the EQ while playing can be interesting to add a frequency boost, for example.
Mute	Mute the Output

4 Three modes: PERFORM, EDIT & SETUP

You will find three different MODES in the TORPEDO C.A.B., giving you access to different parameters:

1. Navigate through the 100 presets in **PERFORM** mode
2. Edit a preset in **EDIT** mode
3. Set up the global parameters of the machine in **SETUP** mode

To see and modify the various parameters, use the appropriate encoders whose function depends on the current mode.

5 PERFORM mode

The PERFORM mode is the default mode you will see when first using the TORPEDO C.A.B.. The following information will be displayed on the screen:



- First line: preset name and number (between 01 and 00 corresponding to preset 100).
- Second line: Cabinet name (or IR name) and Output volume (OUT LEVEL between -95dB and +12dB).

In this mode you can navigate the presets and set the Output volume of the machine. You will be in this mode when playing without editing or modifying any parameter. This way you can have quick access to the volume in case you have to quickly lower or increase the volume in any situation.

We recommend first looking for a preset that is close to the sound you have in mind, then tweak the selected preset in EDIT mode.



The preset's name is limited to 12 letters or numbers. The authorized characters are capital A to Z, 0 to 9 and space.

The various functions of the buttons in PERFORM mode are described in the following table:

Button	Function
Hold footswitch A & EDIT	Switch to SETUP mode
PRESET/PARAMETER	Navigate the preset
OUT LEVEL/VALUE	Set the Output volume between -95dB and +12dB
HOLD TO SAVE/EDIT (hold)	Save a preset between 01 and 00 (preset 100)
HOLD TO SAVE/EDIT (toggle)	Switch to EDIT mode

6 EDIT mode

In the EDIT mode, you will have access to all the parameters of a preset. The various functions of the buttons in PERFORM mode are described in the following table:

Button	Function
Hold footswitch A & EDIT	Switch to SETUP mode
PRESET/PARAMETER	Navigate the parameters
OUT LEVEL/VALUE	Modify the selected parameter
HOLD TO SAVE/EDIT (hold)	Save a preset between 01 and 00 (preset 100)
HOLD TO SAVE/EDIT (toggle)	Switch to PERFORM mode



You will find three modules in the EDIT mode (Power Amp, Miking and EQ), followed by the Output volume of the preset (this volume setting is saved with the preset, so you can adjust the levels in order for the presets to be at comparable volumes).

The first line on the screen will display the **module's name** and its **current state** (On, Off, level in dB for the LEVEL).

Navigate through the modules with the PARAMETER encoder. A module is activated when it is On. You can change the module's state with the VALUE encoder. Once the module is On, you have access to the module's parameters.



On a parameter's page (change the page with the PARAMETER encoder), the first line will display the module name, the parameter index and the number of parameters of the module.

On the second line you will find the parameter name and its value. Change the value by way of the VALUE encoder. The following table contains the list of modules, their parameters with the possible values. All details about the parameters are presented below.

Module	Parameter	Value
Power Amp		On or Off
	Model	8 models, from SE 6L6 to PP KT88
	Volume	0 to 30dB
	Presence	If Model PP: 0 to 100%
	Depth	0 to 100%
	Type	Triode or Pentode
Miking		On or Off
	Bank	Cab/mic, User 0 to User 3 (in User bank, the options Mic, Distance, Center and Position are not available). 32 memory slots for Cab/mic, 128 per User bank
	Cab or File	Cabinet name or IR file name
	Mic	Microphone name
	Distance	0 to 100% (i.e. 0 to 10 feet)
	Center	0 to 100% (i.e. 0 to cabinet side, length depending on the real cabinet geometry)
	Position	Back or Front
EQ		On or Off
	Mode	Guitar or Bass
	120Hz (Guitar) or 50Hz (Bass)	-20dB to +20dB
	360Hz/120Hz	-20dB to +20dB
	800Hz/360Hz	-20dB to +20dB
	2KHz/800Hz	-20dB to +20dB
	6KHz/4KHz	-20dB to +20dB
Level		-95 to 0dB

6.1 Power Amp

When using the TORPEDO C.A.B. with any kind of guitar/bass preamplifier, or even an electric piano or a synthesizer, you need the color brought by the final stage of a traditional amplifier: the power amplifier. Plug your device into the Input of the TORPEDO C.A.B. and enjoy the typical sound of the Two Notes electrically accurate virtual tube power amplifier:

- **Power Amp On:** Activate the power amplifier simulation by turning this parameter "On" .
- **Model:** Choose the amplifier topology (Push Pull or Single Ended) and the tube type (6L6, EL34, EL84 or KT88).
- **Volume:** Set up the Output volume of your virtual power amplifier.
- **Presence:** This setting affects the tube stage frequency (loudness).
- **Depth:** this setting affects the tube-stage frequency (bandwidth).
- **Pentode/Triode:** Select how the tube is used, either in triode or in pentode mode. Pentode mode has more headroom and volume than triode.

6.2 Miking

In the "MIKING" menu, you take the place of the sound engineer. This is where you will find the "sweet spot", the perfect microphone position.

You have to choose whether you want to use the Two Notes cabinet and microphone combinations (Cab/mic) or a third party IR (User) picked from one of the three User banks.

In Cab/mic mode, you have access to 32 different cabinets, each cabinet can be miked with 1 of the 8 available microphones. **Please refer to Part 6 to discover the microphone and cabinet library.**

The next step is to place the microphone on the trapezoidal plan (you can see it in the TORPEDO Remote interface):



- **DISTANCE:**

Determine the distance between the simulated cabinet and microphone. Placing a microphone close to the cabinet will result in a precise sound with a large amount of proximity effect (depending on the chosen microphone). When you move the microphone away from the cabinet, you increase the proportion of the studio's acoustics (early reflections) in the overall sound.

Furthermore, depending on the cabinet model used, and especially with the ones with multiple speakers, moving the microphone away can bring some higher frequencies back. This is simply due to the directivity of the loudspeakers. At the maximum position (100%), the microphone is placed 3 meters (10 feet) away from the cabinet.

- **CENTER:** Determine the distance between the axis of the loudspeaker and the microphone (placed at right angle). The on-axis position (0%) allows the maximum amount of treble frequencies which are highly directional. Moving the microphone away from the axis decreases the treble, resulting in an enhancement of bass response. At maximum position (100%), the microphone is placed at the edge of the speaker when Distance is 0%, and 1 meter (3 feet) away from the axis when Distance is 100%.
- **POSITION:** in standard sound capture, the microphone is usually placed in front of the cabinet. However, placing the microphone behind the cabinet can be quite interesting. The sound is usually softer and darker. This is particularly obvious with closed cabinets, less with open ones.

6.3 EQ

This is a simple yet powerful 5-band EQ. Changing the mode (guitar or bass) shifts the band frequencies to focus on the interesting signal frequencies for the corresponding instrument.

- **EQ On:** Activate the EQ filter.
- **MODE:** Guitar or Bass mode change the center frequencies of the EQ bands to adapt it to your instrument.
- **120Hz, 360Hz, 800Hz, 2000Hz, 6000Hz (Guitar mode):** center frequency of each band, from the lowest to the highest. You can adjust the gain, measured in dB, of each band.

- **50Hz, 120Hz, 360Hz, 800Hz, 4000Hz (Bass mode):** center frequency of each band, from the lowest to the highest. You can adjust the gain, measured in dB, of each band.

7 SETUP mode

Button	Function
HOLD TO SAVE/EDIT (toggle)	Return to PERFORM mode
PRESET/PARAMETER	Navigate the parameters
OUT LEVEL/VALUE	Set a parameter value
HOLD TO SAVE/EDIT (hold)	Save a preset between 01 and 00 (preset 100)

To enter the SETUP mode, press and hold the **A** switch, and press the EDIT button. The SETUP mode groups all the global parameters of the TORPEDO Live. In this mode, you will have access, for example, to the reception of a MIDI command or the syncing of the machine with the TORPEDO Remote.

Parameter	Value
A Sw	Short click on A function
A Ho	Hold A function
B Sw	Short click on B function
B Ho	Hold B function
MIDI CC	Control Change receive, On or Off
MIDI PC	Program Change receive, On or Off
MIDI CHANNEL	MIDI Channel selection, from 1 to 16 or ALL (the machine listens to all MIDI channels)
MIDI MONITOR	Incoming MIDI command monitoring <ul style="list-style-type: none"> • "- -": a command is received on a MIDI channel other than the one you selected for the machine. • "In": a command is received on the channel you have selected for the machine.
REMOTE MONITOR	<ul style="list-style-type: none"> • No Connection: no active USB connection • USB Connected: active USB connection • Remote connected: active USB connection, sync with the TORPEDO remote
Firmware	Current firmware version of the TORPEDO C.A.B.
Serial	Serial number

8 MIDI setup

The MIDI parameter can be found on the SETUP mode. The TORPEDO C.A.B. handles both preset change commands (PROGRAM CHANGE or PC) and parameter change commands (CONTROL CHANGE or CC). This way, you can interact with all the parameters on the machine from any kind of standard MIDI controller, like a MIDI pedalboard or a keyboard.

1. Choose whether the machine is to receive to PROGRAM CHANGE and/or CONTROL CHANGE commands. For example, if you plan to use the preset switching (PC), the CC receive can be Off.
2. Set a MIDI channel for the machine to receive. You can choose to receive all channels, which is useful when you do not know exactly onto which channel the commands are sent.
3. With the MIDI monitor, check the correct reception of the commands by the C.A.B..

9 Continuous save, preset save

The state of the machine is saved in real time, continuously, and is reloaded when you switch on the machine. The parameters continuously saved are:

- the current preset,
- the modified preset if any (with all its parameters and name),
- the SETUP mode parameters,
- and the OUT LEVEL.

The navigation is not saved (for example if you were in a particular parameter menu). The purpose is to reload the machine at its initial state, after a power outage on stage, for example.

When you edit a preset, the screen will display a star after the preset number in PERFORM mode. It is possible to navigate through the presets and to come back to the preset you are editing. This way, the modified and the non-modified preset can be compared. If you edit a second preset, this will cancel the modification on the first edited preset if it was not saved. It is only possible to edit one preset at a time.

Saving a preset can be done from any mode, by holding the HOLD TO SAVE/EDIT button. The saving process is done in three steps:

1. **"Rename & hold..."**: choose the preset's name, use PARAM to change the character's position and VALUE change the character. Hold the button to go to the next step.
2. **"Hold to save to:"**: Choose where you want to save the preset, the default slot is the current one. Hold the button to go to the next step.
3. The screen will display **"Saving, please wait..."** for less than a second, the preset is now saved.

10 Want more cabinets?

It is possible to add new cabinets or IRs files to your TORPEDO C.A.B. using the TORPEDO Remote software. Download the software from the Two Notes website: <http://www.two-notes.com>. Take control of the machine through USB, change the parameters, arrange or add/delete cabinets and IR

files or apply updates. The TORPEDO Remote will detect any new update or new Two Notes cabinets (requires a working Internet connection).

The install process of the TORPEDO Remote creates two default folders where the Impulses are stored:

- **"Program Files\Two Notes Audio Engineering\Impulses"** on Windows™.
- **"/Library/Application Support/Two Notes Audio Engineering/Impulses"** on MAC™.

All the cabinet files must be stored in in that folder without any subfolders. The TORPEDO Remote automatically saves the downloaded cabinets in that folder.

10.1 .tsr files

The .tsr files are the official Two Notes cabinet and microphones format. Two Notes provides new cabinets for free. The TORPEDO Remote will request permission to download them and you will just need to upload them into your TORPEDO C.A.B..

A .tsr file contains information regarding the cabinet response with 8 microphones variously located in our controlled studio room.



If you ever need to move .tsr files, always remember the TORPEDO Remote will only fetch the files located in the default folder, without subfolders.

10.2 .tur files

The .tur files are created by of the the free TORPEDO Capture software, available on the Two Notes website. With TORPEDO Capture you will be able to measure the sound signature of your OWN cabinet and microphone.

To upload a .tur file into your machine, place the file in your default Remote folder (or in a folder you define in the TORPEDO Remote) and use the Memory Manager of the TORPEDO Remote.



Moving the microphone is not available as an option for IRs files in .tur format.

10.3 Third-party IRs in .WAV or .AIF format

The TORPEDO C.A.B. is compatible with standard IRs in .WAV or .AIFF format. The remote will handle any kind of resolution, frequency, length, and will follow the process to convert the file into the TORPEDO format:

1. Normalizing to 0 dB
2. Troncation at 18,66 ms
3. Conversion to 24 bits/48 KHz

To upload a .WAV or AIFF file into your machine, place the file in your default Remote folder (or in a folder you define in the TORPEDO Remote) and use the Memory Manager of the TORPEDO Remote.



Moving the microphone is not available for IRs files in .WAV or .AIFF format.

10.4 Uploading new Two Notes cabinets or third-party IRs

The TORPEDO C.A.B. includes an innovative function named **QUICK PREVIEW**. Simply select an IR or a new cabinet in QUICK PREVIEW to load it almost instantaneously. This way you can browse a huge IR's folder and listen to the result on the fly. To use this mode:

1. Create a folder where you put all your IRs and select it with the TORPEDO Remote (folder icon below "IMPULSE").
2. Click on the QUICK PREVIEW button (on the Remote main window). Choose a cabinet or an IR file from the gear window.

To permanently upload a Two Notes cabinet or an IR file, when you are in QUICK PREVIEW, simply click to the SEND button.

When you are not in QUICK PREVIEW mode, open the Memory Manager window in the TORPEDO Remote software. Simply drag-and-drop files from your computer onto an empty memory slot, wait for the transfer to be complete and you are ready to bring that new cabinet on stage.

Part 5

MIDI

Your TORPEDO C.A.B. can receive MIDI PROGRAM CHANGE (PC) and CONTROL CHANGE (C) commands sent by any kind of MIDI controller connected to the MIDI IN of the machine.



It is important to set up the TORPEDO C.A.B. so it will be listening to the MIDI control commands. Please refer to part 5.7 of this manual.

1 PROGRAM CHANGE (PC)

Each preset on the TORPEDO C.A.B. has a single program number. Preset 01 of the machine is triggered by a MIDI PC 00. You can address the 100 presets (from 01 to 00 meaning 100), with MIDI PC 00 to MIDI PC 99. That way, it is possible to randomly access the preset by sending the appropriate MIDI PC number.

2 CONTROL CHANGE (CC)

The following table contains the assignment of the parameters of the machine and the MIDI CC numbers and values.

Parameter name	CC#	Range	Behaviour
Power Amp			
On/Off	0	0 - 1	0 = Off ; 1 = On
Model	1	0 - 7	0 = Model #0 ; 1 = Model #1...
Volume	2	0 - 30	0 = 0dB ; 30 = 30dB
Presence	3	0 - 127	0 = 0% ; 63 = 50% ; 127 = 100%
Depth	4	0 - 127	0 = 0% ; 63 = 50% ; 127 = 100%
Character	5	0 - 1	0 = Triode ; 1 = Pentode
Cab/Mic			
On/Off	6	0 - 1	0 = Off ; 1 = On
Mode	7	0 - 4	0 = Cab/Mic ; 1 = User 0 ; 2 = User 1 ; 3 = User 2 ; 4 = User 3
Cab	8	0 - (Cab Qty-1)	0 = Cab #0 ; 1 = Cab #1...
User 0 File	9	0 - (File Qty-1)	0 = File #0 ; 1 = File #1...
User 1 File	10	0 - (File Qty-1)	0 = File #0 ; 1 = File #1...
User 2 File	11	0 - (File Qty-1)	0 = File #0 ; 1 = File #1...
User 3 File	12	0 - (File Qty-1)	0 = File #0 ; 1 = File #1...
Mic	13	0 - 7	0 = Mic #0 ; 1 = Mic #1...
Distance	14	0 - 127	0 = 0% ; 63 = 50% ; 127 = 100%
Center	15	0 - 127	0 = 0% ; 63 = 50% ; 127 = 100%
Position	16	0 - 1	0 = Back ; 1 = Front
EQ			
On/Off	17	0 - 1	0 = Off ; 1 = On
Mode	18	0 - 1	0 = Guitar ; 1 = Bass
EQ - Low	19	0 - 40	0 = -20dB ; 20 = 0dB ; 40 = 20dB
EQ - Low Mid	20	0 - 40	0 = -20dB ; 20 = 0dB ; 40 = 20dB
EQ - Mid	21	0 - 40	0 = -20dB ; 20 = 0dB ; 40 = 20dB
EQ - High Mid	22	0 - 40	0 = -20dB ; 20 = 0dB ; 40 = 20dB
EQ - High	23	0 - 40	0 = -20dB ; 20 = 0dB ; 40 = 20dB
GENERAL			
Preset Level	24	0 - 107	0 = -95dB ; 95 = 0dB
Out Level	25	0 - 107	0 = -95dB ; 95 = 0dB ; 107 = 112dB
Mute	26	0 - 1	0 = Off ; 1 = Mute
Bypass	27	0 - 1	0 = Bypass ; 1 = The C.A.B. is active

Table 5.1: TORPEDO C.A.B. MIDI map

Part 6

Specifications

1 Power Amplifier list

Designation	Characteristics
SE 6L6	Configuration Single Ended - Class A with 6L6
SE EL34	Configuration Single Ended - Class A with EL34
SE EL84	Configuration Single Ended - Class A with EL84
SE KT88	Configuration Single Ended - Class A with KT88
PP 6L6	Configuration Push-Pull - Class AB with 6L6
PP EL34	Configuration Push-Pull - Class AB with EL34
PP EL84	Configuration Push-Pull - Class AB with EL84
PP KT88	Configuration Push-Pull - Class AB with KT88

2 Microphones list

Designation	Inspired by
Dynamic 57	Dynamic microphone Shure™ SM57
Dynamic 421	Dynamic microphone Sennheiser™ MD421
Knightfall	Condenser microphone Blue™ Dragonfly
Condenser 87	Condenser microphone Neumann™ U87
Ribbon 160	Ribbon microphone Beyerdynamic™ M160N
Ribbon 121	Ribbon microphone ruban Royer™ R121
Bass 20	Dynamic microphonee Electrovoice™ RE20
Bass 5	Dynamic microphone Shure™ Beta52

3 Cabinets list

Designation	Inspired by
Default factory GUITAR cabinets	
2Notes CSG	Two Notes Custom 1x12" ElectroVoice® EVM12L
Angl VintC	Engl® 4x12" Celestion® V30
Blonde 63	Fender® Bassman '63 Blonde Tolex Piggy Back 2x12"
Brit 65C	Marshall® 1965A 4x10" Celestion® G10L-35 close back
Brit VintC	Marshall® Slash Signature 4x12" Celestion® V30 close back
Calif StdC	Mesa/Boogie® Rectifier® Standard 4x12" Celestion® V30 close back
Eddie	Peavey® 5150 2x12" Sheffield 1200
Free Rock2	VHT® Deliverance 2x12" Eminence® P50E
Green Tri	Hughes&Kettner® Triamp 4x12" Celestion® Greenback
Jazz 120	Vintage Roland® JC120 2x12"
JubilGreen	Marshall® 2550 2x12" Celestion® Greenback
Kerozen	Diezel® 4x12" Celestion® V30
Silver77	Vintage Fender® Twin Reverb® 2x12" orange JBL®
SilverJen	Vintage Fender® Twin Reverb® 2x12" Jensen® C12K
The One	Brunetti® Neo1512 1x15" + 1x12"
Vibro Utah	Vintage 1961 Fender® Vibrolux® 1x12" original Utah speaker
Vibro V30	Vintage 1961 Fender® Vibrolux® 1x12" Celestion® V30
Voice 30	Original Vox® AC30 JMI 2x12" Celestion® « Silver Bell »
Voice 65	1965 Vox® 2x12"
VoiceModrn	Vox® V212H, 2x12" Celestion® Alnico Blue
Watt FanC	Hiwatt® 2x12" Fane close back
XTCab	Bogner® 4x12" Celestion® V30
New GUITAR cabinets to download with TORPEDO Remote	
BDeLuxe	Fender® Blues Deluxe 1x12"
Brit 65O	Marshall® 1965A 4x10" Celestion® G10L-35 open back
Brit Std	Marshall® JCM900 2x12" Celestion® G12T
Brit VintO	Marshall® Slash Signature 4x12" Celestion® V30 open back
Calif C90	Mesa/Boogie® 1x12" Celestion® C90 (Black Shadow)
Calif StdO	Mesa/Boogie® Rectifier® Standard 4x12" Celestion® open back
Forest	Elmwood® 2x12" Celestion® V30
Free Rock	VHT® Deliverance 4x12" Eminence® P50E
JubilV30	Marshall® 2550 2x12" Celestion® V30
StrongBack	VHT® Fat Bottom 4x12" Eminence® P50E
Watt FanO	Hiwatt® 2x12" Fane open back

Designation	Inspired by
Default factory BASS cabinets	
2Notes CSB	Two Notes Custom 1x15"
Alu XL	Hartke® XL 4x12"
AZ Ben	SWR® Big Ben 1x18"
AZ Work	SWR® WorkingMan 4x10"
Calif Low	Mesa/Boogie® 2x10"
Fridge	Ampeg® 8x10"
Heaven Bot	David Eden® 1x15"
Heaven Top	David Eden® 4x10"
Marco	Markbass® 2x10"
Voice V125	Vox® V125 2x12"
New BASS cabinets to download with TORPEDO Remote	
New York	Markbass® 4x6"
Rea One	AER® Cab One 2x10"

4 Technical data

Designation	Characteristics
GTR/LINE Input	<p>Jack 6.35mm (1/4") balanced (TRS, Tip/Ring/Sleeve). We recommend the use of a TS jack cable if the output of the product/instrument you plug into the TORPEDO C.A.B. is unbalanced.</p> <p>IN LEVEL switch sets level and impedance of the input.</p> <p>GTR:</p> <ul style="list-style-type: none"> • Max input level 4.7dBu • Impedance 100KOhms <p>LINE:</p> <ul style="list-style-type: none"> • Max input level 10.3dBu • Impedance 10KOhms
AMP/LINE Output	<p>Jack 6.35mm (1/4") balanced (TRS)</p> <p>Impedance: 470 Ohms</p> <p>OUT LEVEL switch sets the output level.</p> <p>AMP: maximum output levels</p> <ul style="list-style-type: none"> • No load, balanced: 10.7dBu • 10KOhms load, balanced: 10.5dBu • No load, unbalanced: 4.7dBu • 10KOhms load, unbalanced: 4.2dBu <p>Line: maximum output levels</p> <ul style="list-style-type: none"> • No load, balanced: 16.5dBu • 10KOhms load, balanced: 16.3dBu • No load, unbalanced: 10.5dBu • 10KOhms load, unbalanced: 10dBu <p>Noise: less than -94 dBu from 20 Hz to 20 KHz</p>
Headphones Output	MONO out, Jack 6.35mm (1/4") balanced (TRS)

Designation	Characteristics
ADC	Minimal full-scale input level: 4.7dBu (GTR), 10.3dBu(LINE) Sampling frequency: 96 KHz Resolution: 24 bits Signal to noise ratio: 100 dB
DAC	Sampling frequency: 96 KHz Resolution: 24 bits Signal to noise ratio: 105 dB
Frequency response (-1db)	12 - 19 KHz
Latency	2.875 ms (Line Input to Line Output)
Power supply	Mains power adaptor DC Jack 2.1mm, negative center C.A.B. Input voltage: 12V DC Power consumption: approx. 3.6W Current draw: 300mA
Dimensions	Width: 178mm Depth: 120mm (metal housing only), 127.8mm including connectors Height: 37mm (metal housing only), 58.3mm including knobs Weight: 500g

Part 7

Technical support

Should you encounter a problem with your TORPEDO C.A.B. or if you need help on some technical aspects, please note that Two Notes Audio Engineering has developed on-line services to give you fast and efficient technical support.

1 Two Notes Website

On the <http://www.two-notes.com> website, you will find:

- news about the company and the products (news at the homepage),
- comprehensive information about the TORPEDO C.A.B. and its many applications (FAQ),
- firmware and software update to download (products/TORPEDO C.A.B./downloads),
- new speaker cabinets (products/TORPEDO C.A.B./downloads),
- the Torpedo Capture software (products/TORPEDO C.A.B./downloads),
- an official forum where you can share tips and advice with other Torpedo users (forum).

2 By e-mail

Please contact us at the following e-mail address: support@two-notes.com.