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## *HOW 2 Load and Build Pd Patches into LICH*

*Tutorial by Xavi Manzanares  
by-sa // 2021*

**LICH Module by ://  
Befaco & Rebel Technologies**

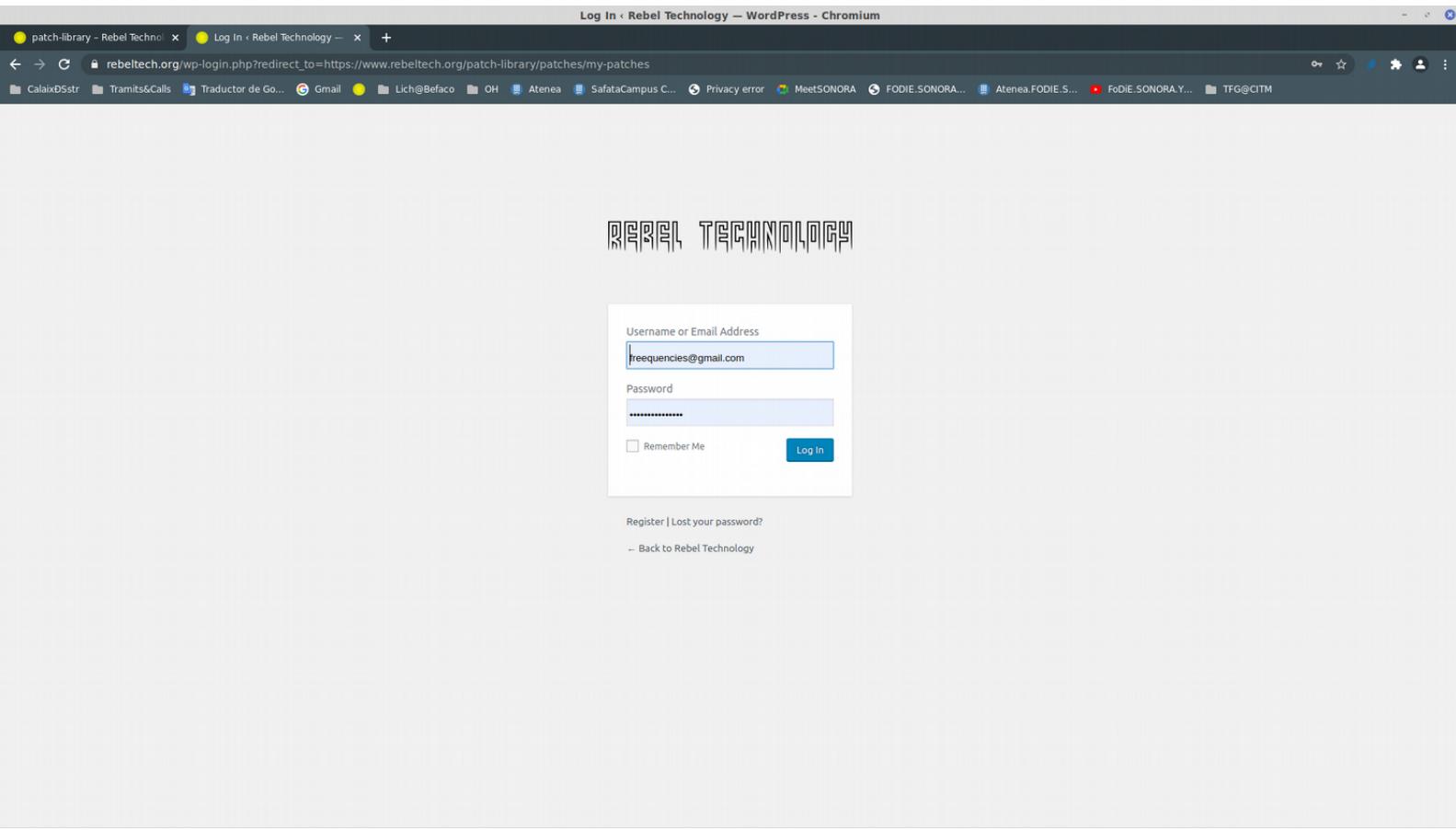
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## HOW 2 Load and Build Pd Patches into LICH Firmware

Enter at <https://www.rebeltech.org/patch-library/patches/latest>

Will ask you for your login in order to contribute to the public repos and developments for Lich.



Once registered you'll enter into this interface showing the last developments done by the community.

The screenshot shows the main website interface for Rebel Technology. The top navigation bar includes links for NEWS, PRODUCTS, PATCHES, TUTORIALS, COMMUNITY, RESELLERS, and ABOUT. Below the navigation is a dark header bar with icons for Latest (C), Popular (star), Tags, Authors, Search, My Patches, and Device. A message indicates "309 PUBLIC PATCHES BY 86 AUTHORS". The main content area displays a grid of nine patch cards:

- Lich DMTF** by cavitas: "Uses left and right audio inputs as X and Y lookups for 2d Perlin noise."
- [Lich] Perlin Noise Field** by damikyu: "Very simple Dual VCA"
- DualVCA** by jesper: "Very simple Dual VCA"
- FlynnsFrontier** by Kenromero1337: "A: Amplitude, B: LP Filter, C: LFO Rate, D: LFO Depth, CV1: 6sec rise/fall envelope, CV2: 3sec rise/fall envelope, Sequential Button 1 then 2: Gate Out"
- [Lich] Polygonal VCO** by Stas Shtin: "This is a polygonal oscillator similar to E-RM Polyogo with some spatial effects on top of it. It's bandlimited, includes FM modulation source, effect for rotating output signals in 2D space and 2 CV generators. You really need to
- [Lich] Melsputter** by befacosynth: "Dual melody sputter synced to an external clock and quantized to several scales. Patch by Death Whistle."
- [Lich] Wavenular** by befacosynth: "A: Amplitude, B: LP Filter, C: LFO Rate, D: LFO Depth, CV1: 6sec rise/fall envelope, CV2: 3sec rise/fall envelope, Sequential Button 1 then 2: Gate Out"
- [Lich] Windrone** by befacosynth: "A: Amplitude, B: LP Filter, C: LFO Rate, D: LFO Depth, CV1: 6sec rise/fall envelope, CV2: 3sec rise/fall envelope, Sequential Button 1 then 2: Gate Out"
- [Lich] Knoscillator** by damikyu: "A: Amplitude, B: LP Filter, C: LFO Rate, D: LFO Depth, CV1: 6sec rise/fall envelope, CV2: 3sec rise/fall envelope, Sequential Button 1 then 2: Gate Out"

*Let's imagine we have build a patch in the computer and we want to upload it into the LICH firmware.  
The first thing is to turn on the LICH module and connect it via USB to the computer.*

The screenshot shows the Rebel Technology website with a dark header. The main navigation bar includes links for NEWS, PRODUCTS, PATCHES, TUTORIALS, COMMUNITY, RESELLERS, and ABOUT. Below the navigation is a row of icons for Latest, Popular, Tags, Authors, Search, My Patches, and Device. A large central box is labeled 'DEVICE STATUS' and contains a single button labeled 'CONNECT TO DEVICE'. At the bottom of the page are social media links for Facebook, Twitter, Instagram, and YouTube, along with a copyright notice: 'Copyright © 2018 Rebel Technology'.

*Note : You'll need a browser that supports Web MIDI (for ex. Google Chrome) due to the fact that the RebelTechnology's Browser tool requires the MIDI protocol to talk with Lich firmware. In case you still don't have set it up, a pop-up will ask you if you want to allow communication permissions of Midi devices within the browser.*

*Once connected, there appears the algorythms already loaded in LICH firmware.*

The screenshot shows the same website after connecting to the LICH module. The 'DEVICE STATUS' box now displays 'LOADED PATCH: Stokastic5PentaOSCillat', 'CONNECTED TO: Lich v20.10', 'CPU: 63% Memory: 26504', and a message about storage usage. The 'MIDI INPUT' and 'MIDI OUTPUT' dropdown menus both show 'OWL-MIDI MIDI 1'. The 'PRESETS' section on the right lists four slots: Slot 1 is 'Stokastic5PentaOSCillat' (Selected), Slot 2 is 'GNRTV.BandPass', Slot 3 is 'Stokastic5PentaOSCillat', and Slot 4 is 'Stokastic.Patterns.v4'. Each slot has a 'SELECT' button next to it. Below the status and preset sections are 'DEVICE COMMANDS' buttons for REFRESH, ERASE STORAGE, and RESET DEVICE.

In order to load your patch from the computer, click **MyPatches** section, and **Create Patch**

patch-library - Rebel Technology - Chromium

rebeltech.org/patch-library/patches/my-patches/

NEWS PRODUCTS PATCHES TUTORIALS COMMUNITY RESELLERS ABOUT

Latest Popular Tags Authors Search My Patches Device

35 PATCHES

Create patch

Stokastic.Patterns.v5.pd

StokasticSPentaOSCillators+2ADCv3

GNRTVbandPass

StokasticSPentaOSCillators+2ADC\_v2

StokasticSPentaOSCillators+2ADC+

GRain.gnrtvblockst

GNRTV.BandPass

It appears an interface to Upload the Algorythm\* (in our case Pd). We can write the name we want, click type pd in the compilation type after we'll browse the patch in our computer in the upload files section. Alternatively we can add the github's file url of the patch instead of upload it from our computer. Then we can click 'Save and Compile' button in the bottom.

\* can be different codes programmed in C++, pd, heavy, faust, gen , maximilian or soul.

patch-library - Rebel Technology - Chromium

rebeltech.org/patch-library/create-patch/

NEWS PRODUCTS PATCHES TUTORIALS COMMUNITY RESELLERS ABOUT

Latest Popular Tags Authors Search My Patches Device

CREATE PATCH

Patch Name

Name HelloLICH

Compilation Type

Type cpp  
pd  
heavy  
faust  
gen  
maximilian  
soul

GitHub File Url

Source Files

HelloLICH.pd Main File REMOVE

SAVE SAVE AND COMPILE CANCEL

Few seconds later of being pressed 'Save and Compile' button, will appear a pop-up informing about the compiling process.

patch-library - Rebel Technology - Chromium

rebeltech.org/patch-library/patch>HelloLICH

CalixDSstr Tramits&Calls Traductor de Go... Gmail Lich@Befaco OH Atenea SafataCampus C... Privacy error MeetSONORA FODIE.SONORA... Atenea.FODIE.S... FoDIE.SONORA.Y... TFG@CITM

REBEL TECHNOLOGY NEWS PRODUCTS PATCHES TUTORIALS COMMUNITY RESELLERS ABOUT

Latest Popular Tags Authors Search My Patches Device

**HelloLICH**

Xavi Manzanares

DESCRIPTION

INSTRUCTIONS

SYSEX : [Download](#) (built on 5/25/2020)

JS : [Download](#) (built on 5/25/2020)

**Patch Compilation Succeeded**

Stdout Stderr

Building patch HelloLICH Built sysex HelloLICH in /tmp/owl/owl-build-7tnih/patch.syx INFO: make exit code is 0. INFO: Build successful!

CLOSE

PATCH CODES

COMPILE NIGHT

HelloLICH.pd

Button\_1 @owl B1 incoming from Left button and GATE1 (C)

E IN 35 Exp

A IN B IN C IN D IN

In case there is an error, pd patch will not be loaded into LICH and we have to re-program and debug our patch in the computer, following the clues and errors described in the shell.

Otherwise, in case it appears 'Build Successful!' in the pop-up terminal, we have to Close the pop-up, and complete another tweaks : Click Store > It will appear another popup asking us for the slot we want to store the new patch (or code) into the LICH's firmware.

**Important note:** in the popup appears slot number from 0 to 40, but I strongly recommend you just store from slots 0 to 9.

patch-library - Rebel Technology - Chromium

rebeltech.org/patch-library/patch>HelloLICH

CalixDSstr Tramits&Calls Traductor de Go... Gmail Lich@Befaco OH Atenea SafataCampus C... Privacy error MeetSONORA FODIE.SONORA... Atenea.FODIE.S... FoDIE.SONORA.Y... TFG@CITM

REBEL TECHNOLOGY NEWS PRODUCTS PATCHES TUTORIALS

PRIVATE STAR

www.rebeltech.org says  
Enter a slot number from 0 to 40  
5

Cancel OK

A IN 35 B IN 35 C IN 35 D IN 35 E IN 35

Pushbutton

AUDIO INPUT:  
No Input

STOP AUDIO

LOAD

STORE

LOADED PATCH: Stokastic5PentaOSCillat

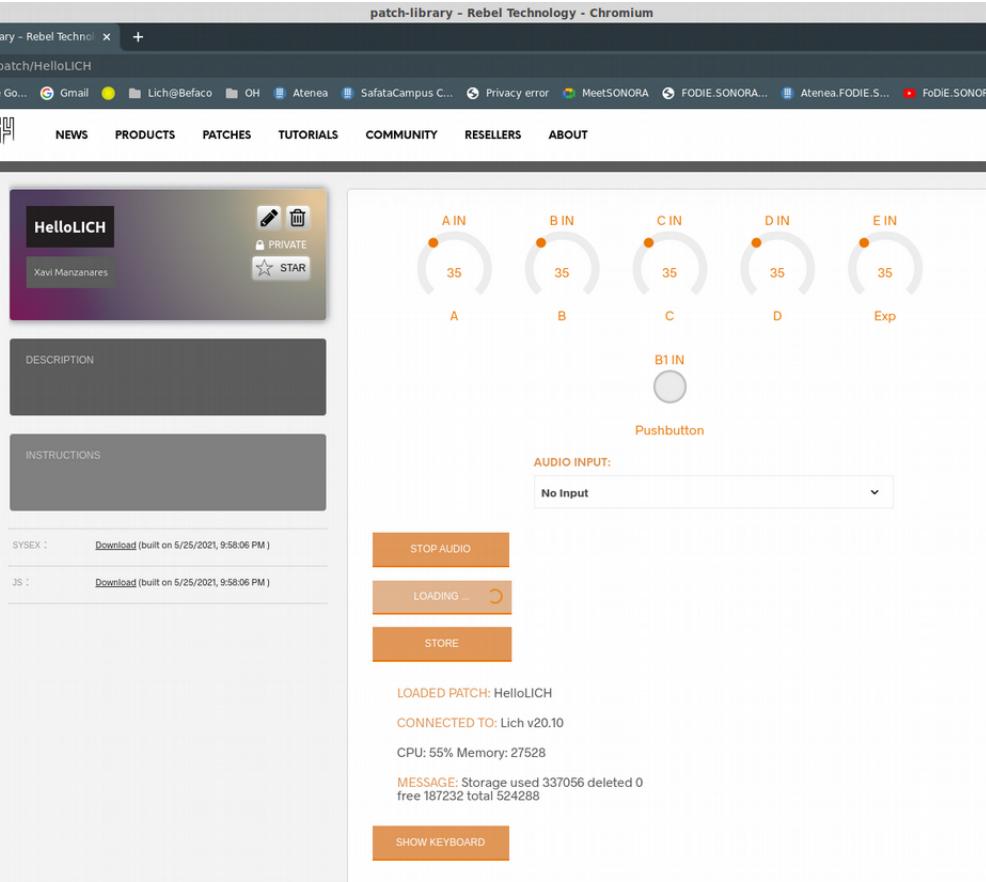
CONNECTED TO: Lich v20.10

CPU: 63% Memory: 26504

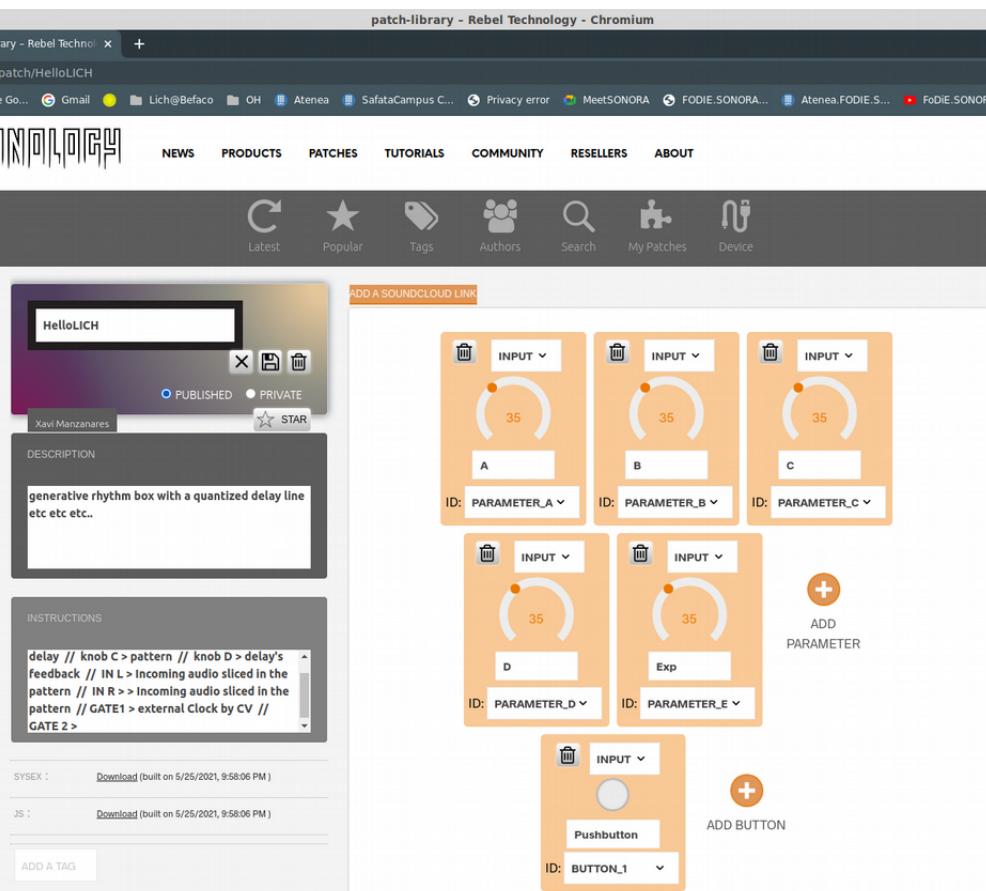
MESSAGE: Storage used 337056 deleted 0 free 187232 total 524288

SHOW KEYBOARD

After STORE the number, press LOAD, and if there is not an unexpected error, your pd patch will be running in your LICH



If you like your development and want to publish it and contribute with the community, you can add Concept Description of your Pd patch and Instructions that describes the parameters associated with the LICH's Hardware (therefore Knobs, buttons, Signal Ins, CV Ins, CV outs, Signal Outs).



*Once edited the info you can save and publish it your patch.  
Don't forget to add some tags in the Description, wich will define more details for other users searches.*

The screenshot shows a web browser window with two tabs open, both titled "patch-library - Rebel Technology". The main content area displays the "HelloLICH" patch detail page. The page includes a header with the patch name, author (Xavi Manzanares), and a "PRIVATE" status with a "STAR" icon. Below the header are sections for "DESCRIPTION" and "INSTRUCTIONS". The "DESCRIPTION" section contains a brief text about a generative rhythm box. The "INSTRUCTIONS" section provides a detailed technical description of the patch's internal logic and connections. To the right of the instructions, there is a graphical interface showing five knobs labeled A IN, B IN, C IN, D IN, and E IN, each set to value 35. Below these knobs is a "Pushbutton". Underneath the knobs is a dropdown menu labeled "AUDIO INPUT:" with the option "No Input". Below the input section are three orange buttons labeled "STOP AUDIO", "LOAD", and "STORE". At the bottom of the page, there are download links for "SYSEX" and "JS", both last updated on 5/25/2021 at 9:58:06 PM. The page also displays system status information: "CONNECTED TO: Lich v20.10", "CPU: 55% Memory: 27528", and a message about storage usage.

*Enjoy the power of building your algorythms and link them with your modular system!*