

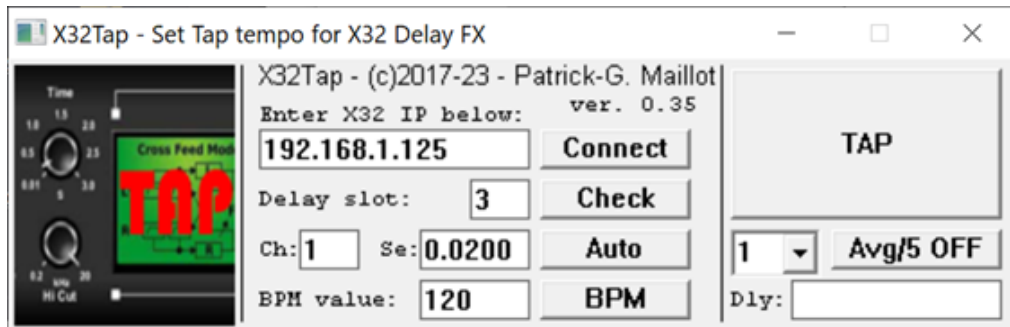
X32Tap

V0.35

A Delay tempo tap tool for X32

Description:

The program reads user taps from a GUI to set the delay value of an X32 Delay effect.



Set Delay Time value for FX

X32



Operation:

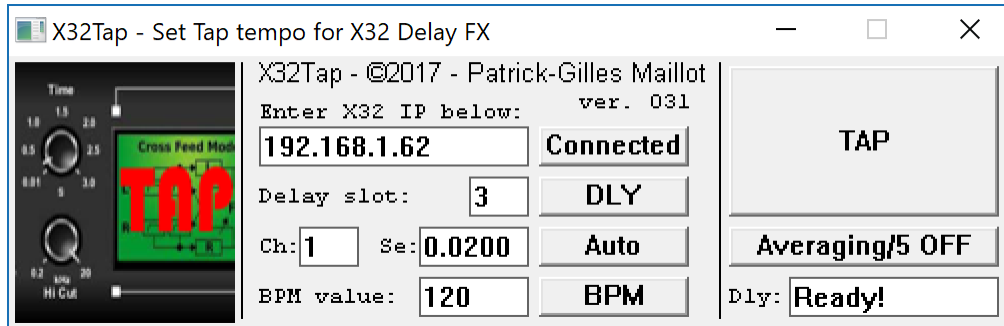
Connecting to X32 - The tool needs to connect to the X32. This is achieved with entering the IP value of the X32 in the text entry just left of the "Connect" button. The connection is established by pressing the "Connect" button. If the IP address is correct and the X32 responds to the info or status commands sent, the connection will be confirmed and the button will show "Connected".

The user can disconnect at anytime by pressing on the "Connected" button.

Selecting FX slot – FX slots 1 to 4 can accept a Delay effect. Accepted Delay effects are *DLY*, *3TAP*, *4TAP*, *D/RV*, *D/CR*, *D/FL*, and *MODD*. With the effect in place in the X32, select the FX slot by entering the FX slot number in the text entry left of the Check button. Click on the Check button to validate the presence of effect at the requested slot. If the effect is valid, the button will display the

X32Tap

acronym of the effect found (see picture below). Otherwise and by default or when the tool is not connected to X32, the button will display “Check”.



Effect “DLY” was found at FX slot #3.

TAP – With the tool connected to X32 and an effect found at the desired FX slot, pressing the “TAP” button calculates a delay time value between two consecutive taps and applies this to the X32 Delay effect. The computed value, in milliseconds, will be displayed under the TAP button. If the tool is not connected to X32 or no Delay effect has been validated yet, the text “DLY not found” will be displayed instead. Correct time values are between 0 and 3000ms.

New with ver 0.35: You can use the **ctrl-t** keystroke from your keyboard when the application has Windows’ focus to set a tap tempo; it will act as if you had pressed the TAP button.

BPM – With the tool connected to X32 and an effect found at the desired FX slot, you can directly enter a BPM (beats per minute) value and press the “BPM button. This will send the corresponding delay value and apply this to the X32 Delay effect. The computed value, in milliseconds, will be displayed under the TAP button. If the tool is not connected to X32 or no Delay effect has been validated yet, the text “DLY not found” will be displayed instead. BPM values can be set between 20 and 60000.

Auto - Pressing the “Auto” button enables the tempo to be evaluated from an X32 channel, by reading the X32 Meter corresponding to the GATE of the respective channel. Set the Channel number used for tempo, make sure the Channel Gate is activated with mode=GATE, range=60dB, Hold<50ms, Attack and Release at minimum values. Set the Channel gain and Gate Threshold to appropriate values for the Gate to open and close as the Channel signal is valid. If desirable, filtering or other treatments can be applied or tested to get a suitable Tap sensitivity. The Sensitivity (a threshold level comparing the GATE meter level) of the tool can be adjusted as well (see value 0.0200 in the above picture). Once Auto mode is engaged (the button will display Manual to offer returning to normal mode) the tool calculates from the selected Channel a delay time value between consecutive’ taps’ as gotten from the selected channel and suitable for the X32 Delay effect. The computed value, in milliseconds, will be displayed under the Tap button. If the tool is not connected to X32 or no Delay effect has been validated yet, the text “DLY not found” will be displayed instead.

Averaging/5 - Pressing the “Averaging/5” button will toggle an averaging function over the last 5 taps performed, either manually using **TAP**, or in **Auto** mode. Going from OFF to ON will reset the average counter.

Correct Timings

An important point is to keep in mind the lack of time precision one can get out of Windows, which is not a real-time Operating system. As a result, time accuracy can be affected by many events or other programs running in the Windows environment.

Tests show one can get down to 60 to 80ms and it is very hard to get a better time precision than 30 to 40ms from one set of taps to another. The Averaging/5 functionality helps in getting better consistency (a few ms) if one performs batches of 6 consecutive Taps separated by more than the searched average value.

In **Auto** mode, the program relies on continuously reading X32 Meters. Returned values are available every 50ms, it is therefore not possible to go below 50ms delays with this approach. Level variations or Gate parameters have a strong effect on threshold detection; make sure you get a stable signal.

Note:

The program uses Windows resources as it tries to best capture consecutive TAPs for setting the value of the tap tempo. Once your Tap-tempo values are set, no need to consume resources; you can disconnect the tool. This will not change the delay value set to the X32.

Notes: The bitmap on the upper left corner of the program window can be changed by replacing the 110x135 pixels ".X32Tap.bmp" file in the directory of the program. Do not remove the ".X32Tap.ini" resource file which keeps parameters from one session to the next

Tested and validated with a Windows 10 system and a Behringer X32 Standard with FW 3.09.

I welcome feedback and ideas for additional features or controls which would make sense, without building a too complex environment. Musicians should spend time playing music, not programming! ☺

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X32Tap

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