

Yamaha 01x mLan'less' MIDIfication

by El Tortugo

The yamaha 01x is compatible with the Mackie protocol (Cubase, StudioOne, Reaper, etc), for midi based DAW control as a remote surface. When connected with an mLan equipped DAW it is possible to use the transport controls and fader movements in the 01x to create automation events or to let the recorded automation events control the 01x.

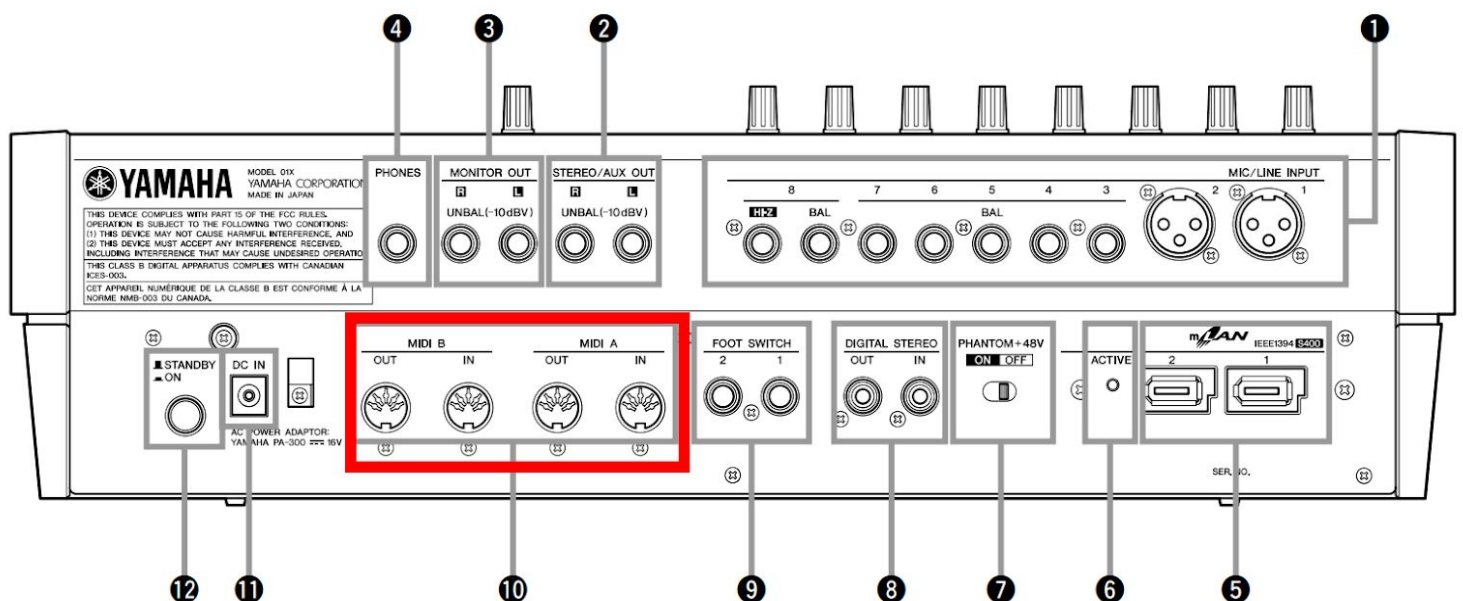
For systems where no Firewire is available or there is no software support for the mLan subsystem, it is still possible to control the surface by using the rear midi connectors after performing a small hardware modification described in this document.

The 01x uses 5 midi ports from the mLan bus voor various purposes:

- mLan midi 1 -> 01x remote(mackie)
- mLan midi 2 -> Rear port A
- mLan midi 3 -> Rear port B
- mLan midi 4 -> 01x (Studio Manager)
- mLan midi 5 -> 01x ProgramChange Ctrl/FW update

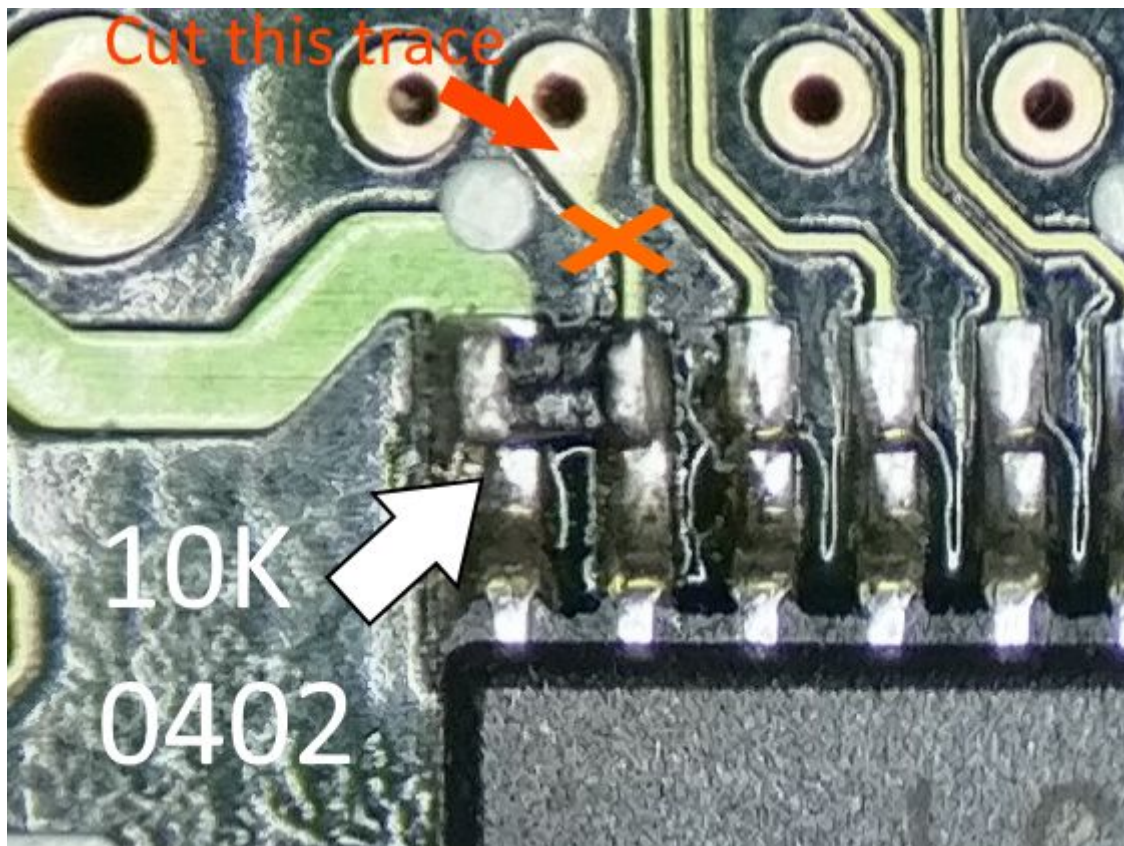
In order to use the remote(mackie) and/or Studio Manager directly and not via mLan, the hardware modification proposed here will reuse the rear ports (10) as an alternate connection

■ Rear Panel (リアパネル)



PORT A/B to Remote(Mackie)/Studio Manager:

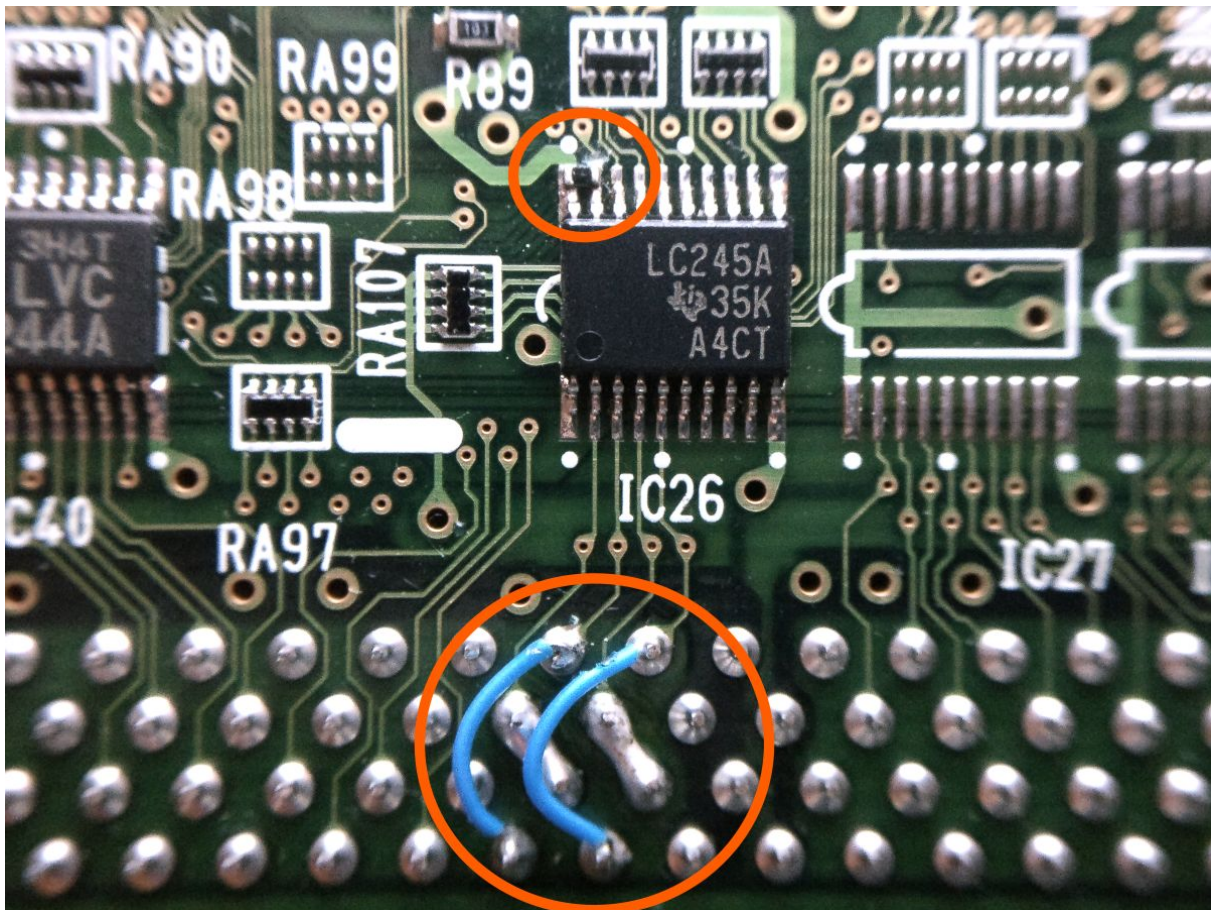
- 1) Remove the MLAN2 card from the 01x and locate IC26, close to connector CN6 at the bottom side.
- 2) Detach the mLAN midi ports from the midi interfaces 1 to 4. This is accomplished by disabling the buffer transceiver IC26 which receives an output enable(OE#)(pin19) signal from the CPLD (M_ENABLE). Perform a small cut in the copper trace between pin19 and the via as shown in the picture.
- 3) Place a 10k resistor (size 0402) between pin19 and pin20 of IC26 to pull-up the OE line. We could use this line in the future to switch the buffer on and off to enable and disable(revert) the modification if desired.



- 4) If you wish to perform a permanent modification, patch the pins on the connector (CN6 bottom side) in order to link the desired connector pairs with the necessary ports. For instance, you can patch port A permanently to remote(mackie) and port B to Studio Manager. The following table shows the pins per port function and in order to connect one port to another just patch a TX pin to an RX pin. For PortA to remote(mackie) place a wire from 24a to 25b and another from 25a to 24b.

CN6(pin/side)	Remote 01x(SCI2)	Port A Rear	Port B Rear	StudioMan 01x(SCI0)
TX	24/a	25/a	26/a	27/a
RX	24/b	25/b	26/b	27/b

Example of a complete permanent A->Mackie and B->SM modification.

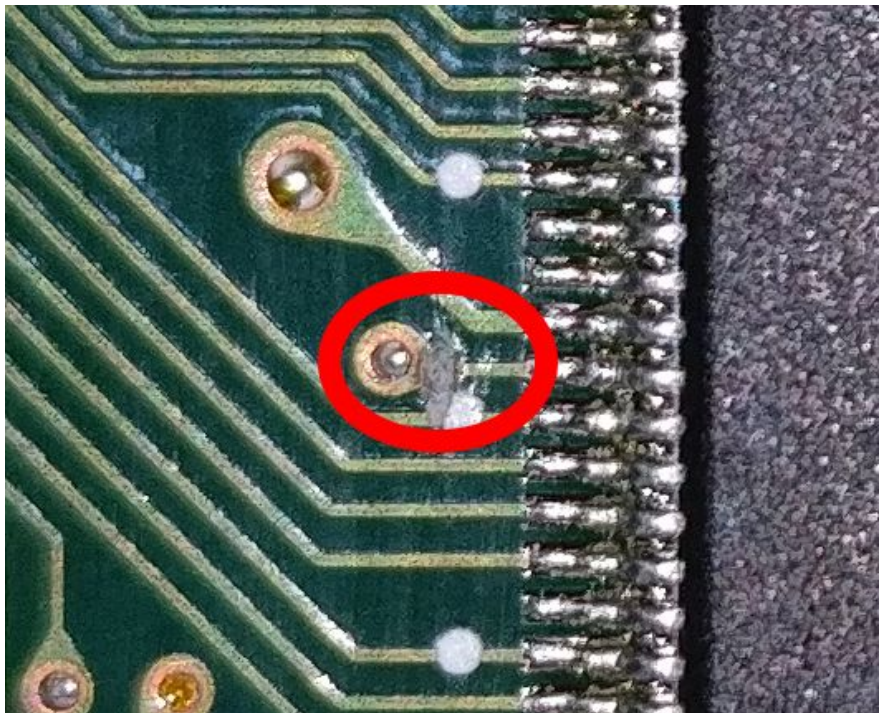
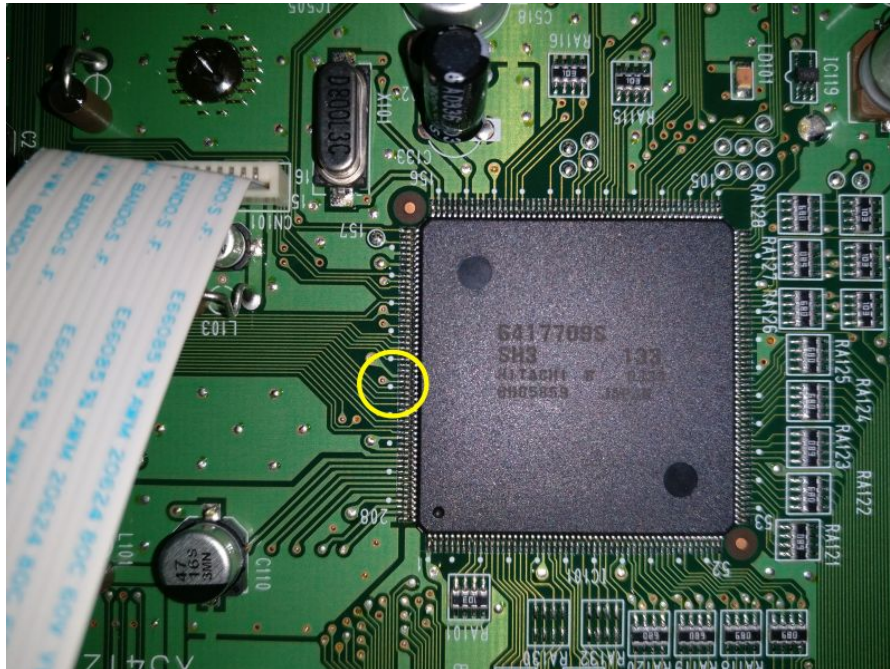


- 5) If you wish to be able to revert back to normal mLAN functionality and make the modification switchable, you can install a small switch in the rear panel and use a small flat cable to the pins/points in question. For both ports you will need a 6PDT switch similar to this one <https://www.mouser.com/datasheet/2/140/PBH-346373.pdf>

PORT B to Program Change(SCI1)

It is possible to route the program change functionality from the 01x to the rear MIDI B by using(forcing) the very same firmware update bypass circuit already present in the unit by unlinking the PgmChg(SCI1) port from mlan_midi5 and patching it to Midi B. On the 01X Mainboard DM, pin1 of the muxes IC301 and IC306 do this when instructed by the CPU(p184) through the MIDISEL signal when 0(low). To achieve this we can cut the trace from the CPU and leave the pin's 1 of the muxes pulled down by the internal resistor. **This will of course override (if) any modification you made to port B in the previous section.**

REMEMBER!!! In order for the Program Change function to work you **MUST** disable the **RECALL CONFIRMATION** (set to OFF) in **UTILITY PREFERENCE 1/5**.



Optionally, solder two wires to a back panel mounted spst switch to restore the line when needed.

Veel plezier en enjoy modding.
Salu2, El Tortugo.