Flawless Mouse solution for Amiga

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TL;DR: see bottom. A more modern mouse + adapter that translates your movements faithfully and reliably for gaming, drawing, and an enjoyable OS user experience. For the mouse part, see Flawless Sensors

Adapters support all USB and PS2 mice wheel and wheel click from at least Kickstart 3.1 and 68000+.

Key	Good	Bad	Partial support

Amiga USB/PS2 Converters

Model	Interface *	Price (EUR)	HID mice	Old non-HID mice	Negative accel	Skipping/scaling	Bulky Amiga conn.	Amiga Rating/10	Notes	Buy-link
Cocolino	PS2-USB	40			Yes **	No	No	6	Dongle city, protrudes extremely far back	https://www.amiga-shop.
Micromys V5 slim	PS2-USB	39			No	Yes	No	5	Comes with elongator cable	https://icomp.de/shop-icc
HID2AMI	USB	33		***	No	Yes	OK without case	8	Also adapts joysticks/pads	https://www.amibay.com/
TIKUS	USB	35			No	No	No	10	Also adapts joysticks/pads****, clean input	https://www.amiga-shop.

** For PS2, only the green Microsoft PS2 -> USB adapter works, and only with their old (non-HID) mice.*

*** This forces slow/actually arcing h/v movements to perfectly straight. For aligning brushes in DPaint it might be a plus, but it will affect your input which is a flaw, period. For drawing and accurate movement, even clicking in WB, faithful movement input is desirable.*

**** Captured+reported and might be fixed in a future firmware.*

***** When used for joystick, all buttons are button 1. Do not use for multi-button joystick input (must use up to jump). Note: Right mouse button after inserting/power-on changes mode on left-click (Amiga/ST/GEOS)*

Amiga USB Mice

Model (old)	HID	Accel *	Flawless sensor	DPI memory	HW DPI toggle**	Sensor skipping ***	Hard pad ****	Amiga Rating/10	Notes	Buy-link
Logitech (pre-2014)	No	Yes	No	No	See accel	Only laser sensors	No	1	General experience from several models	
Microsoft Wheel Mouse Optical	No	No	Yes	No	not needed	No	Yes	9	Always works, bog standard 400 DPI	Amazon, Ebay
Microsoft IE 3.0	No	No	Yes	No	not needed	No	Yes	8	As above but ergonomic-er shape	Amazon, Ebay
Microsoft IE 3.0 (red, unofficial)	No	No	No	No	not needed	No	No	7	Almost equal to the above	Amazon, Ebay
Microsoft laptop/mini mice	No	Yes	No	No	No	Yes	No	1	General experience from several models	
Model (new, HID)	**HID**	**Accel ***	**Flawless sensor**	**DPI memory**	**HW DPI toggle****	**Sensor skipping *****	**Hard pad ********	**Amiga Rating/10**	**Notes**	**Buy-link**
Microsoft laptop/mini mice	Yes	Yes	No	No	No	Yes	No	1	Various undisclosed sensor inside	
Microsoft	Yes	mixed, untested	mixed, untested	No	No	untested	No	untested	Various undisclosed sensor inside	https://www.amazon.com
Xtrfy M1	Yes	No	Yes ****	No, fixed big steps	Yes, but too high	No	No	3	Low and flat shape (small hands/claw grip)	
Razer Mamba TE/all laser sensor	"Special"	No	No	No, fixed big steps	Yes, but too high	Little + pointer drift	No	2	Supported by HID2AMI only	Razer optical with DPI m
Glorious Model D/all	Yes	No	Yes	Yes	Yes	No	Yes, with feet work	9	Light-weight, pro, but min. DPI 400 (!)	https://www.amazon.com
Logitech G403/all Hero sensor	"Special"	No	Yes	Yes	Yes	No	Yes	10	Supported by Tikus only	https://www.amazon.com

Amiga Vertical USB Mice

Model (new, HID)	HID	Accel *	Flawless sensor	DPI memory	HW DPI toggle**	Sensor skipping ***	Hard pad ****	Amiga Rating/10	Notes	Buy-link
Evoluent	Yes	No	No, but decent	No, fixed big steps	Yes	No	Yes	6	Slick grip (put tape), most ergonomic	https://evoluent.com/
Titanwolf Megalith	Yes	No	Yes	Yes	Yes	No	Yes	9	Left button takes some getting used to	https://www.titanwolf-gar
Zelotes C-18	"Special"	No	No	Yes	Yes	No, but see Notes	Yes	3	Uneven sensor reporting rate	
J-Tech V628R	"Special"	No	No, but decent	Yes	Yes	No	No	2	Supported by Tikus only	Plasticky & size for big h

! ** Covers both negative and positive accel, but negative accel in mice is relatively rare. Accel tampers with your input and makes movements unpredictable, which is very bad for building muscle memory.*

! *** DPI Memory = Set DPI steps for drawing/gaming/clicking on PC and save to the mouse, unplug, settings can be used on any computer. If unsupported, you get too high factory default + fantasy 'DPI war' unusable DPI.*

**** Tested on cloth pad. For all HID mice on HID2AMI, a polling rate of at least 500 Hz is recommended to lessen skipping. (Rub the mouse sideways quickly to check.) Turn Amiga scaling off! (highest speed = 3 in WB, 1 in CLI Prefs).*

***** Hard pads = smooth, exact tracking, but also test sensors, feet, and lift-off well. More consistent than cloth pads (not pressure-sensitive, 100x finer "weave"), most are too slick for drawing and fast double-clicking - SkyPad is an exception, offering texture.*

Conclusions

Adapters

- PS2-USB adapters **only** work with old (non-HID) mice.
- For HID mice, you **must** use a HID USB adapter.
- TIKUS support both old mice and HID mice. Only a few old mice work in HID2AMI. The old mice tested here have been captured+reported and might be fixed in a future firmware.
- **TIKUS was the best plug and play USB adapter without scaling/negative acceleration!**
- HID2AMI unfortunately scales input when polling rate is increased to fight its skipping. With some configuration, it can still be a great adapter. Supports scroll wheel and with firmware updates can support any HID and non-HID mouse.
- Cocolino was the least bad PS2-USB adapter, due to the skipping in the Micromys V4. (Perhaps V5 fixes this? Not tested.)
- The A600 has a protruding wall near the mouse port. For HID2AMI and Cocolino, you must get an elongator cable. Or (for Cocolino only) cut/remove the case and cut the metal surrounding the adapter connector.
- All adapters fit, and are tested working with, two types of joystick/mouse switchers. The German active switcher (red and green LED) is not fully wired - button 3 is not usable. IDK if this affects scroll wheel support.
- All adapters seem to support scroll wheel on KS2.0+. (Not tested here.)
- It's not likely that any adapter for Amiga can be free of negative acceleration **and** display no skipping when moved very quickly. "No negative acceleration" means that any negative acceleration doesn't appear to affect the input in a discernable way.

Mice

- PS2 mice are not considered, because they have old/cheap sensors - none will have the properties I test for - the spreadsheet would be filled with No and a rating of 1/10. Same for direct-to-DB9 mice (cheap sensor with unknown PS2 converter inside the mouse).
- Wireless mice are not considered because no Bluetooth one has a flawless sensor, and the 2019+ radio frequency ones with specs equal to wired mice have a rechargeable battery, which if connected by wire to the Amiga can damage the Amiga and the USB adapter.
- PS2 and old USB-PS2 mice offer 0 lag, 2014+ wired HID mice, and 2019+ (known brand) wireless (radio frequency) mice offer < 8 ms lag (standard, still much lower than the monitor refresh rate). Only Bluetooth mice can have lag close to or greater than the monitor refresh rate.
- Even modern Bluetooth mice will fail to register completely, if the receiver is not seen by the mouse. 2019+ radio frequency wireless mice don't have this problem.
- Any wireless mouse may have HW sleep mode/micro napping (in the battery life wars), and the same could be true for wired mice (to conserve battery of a laptop). When in doubt, prefer a PWM sensor over a PAW one, although it's not a 1:1 indicator.
- A mouse sold for gaming with recent good reviews typically means reliable tracking, <8 ms lag, and no sleep mode. Technically, the sensor doesn't have to be on the list of flawless ones, since not all flawless sensors are known.

Mouse + Adapter combos

- **Best old USB mouse combo: TIKUS + MS IE 3.0 or WMO.** (No sensitivity adjustment, but the DPI is the bog standard, medium 400 DPI which works fairly well.)
- **Best HID USB mouse combo: Logitech Hero + TIKUS, 2nd place Glorious Model D + TIKUS/HID2AMI.**
- **Best Vertical HID mouse combo: Titanwolf Megalith + TIKUS/HID2AMI.**

Notes about scoring

- As per the title, we are looking for a solution that performs well and translates your input perfectly, hence some low scores. All but a few combos CAN be used on Amiga, or the score would be 0. Red=not recommended, however.
- HID2AMI's score is lower because a few more modern HID mice were not supported, meaning you have to check the GitHub list/test yourself. The score assumes that the scaling/skipping issue I experienced for several flawless sensors will be solved, else 5.

About the tests

The aptitude of a solution for drawing, gaming, and clicking in WB is tested in freehand drawing mode (D) in DPaint (Screen mode: Lores)

- Negative acceleration is tested by trying to draw a perfectly horizontal line slowly. If it's "too easy", too long streaks of perfectly horizontal pixels, the solution has negative acceleration.
- Acceleration is tested by drawing freehand lines of equal length (measured on the mousemat, e.g. from edge to edge) very slowly, then very quickly. If they are the same length, there is no acceleration.
- Skipping is tested by drawing horizontal freehand lines very quickly from side to side. If the length is limited to a horizontal span of the screen, or not horizontal, or the cursor skips vertically, there's skipping.
- Mouse movement input rate is tested by drawing freehand circles **extremely** quickly and look at the "lowest poly" circle. PS/2 (really, the mice in PS/2 mode) might give ~7 corner polygons, as opposed to ~10 corner polygons for HID.

^ Note that this tests the whole solution. If you suspect the mouse, do the same tests in a paint program on a PC. If you suspect the adapter, swap to a known flawless mouse in it.

While not part of these tests, HID2AMI supports mapping joystick and controller buttons. It's worth picking one up for this alone.

This is just a start. Feel free to steal this document and let users add test results! //Photon