



**NEWKEY/80 User's Guide v1.1**  
TRS80 Keyboard Adapter (PS/2)  
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Plaid Vest Software, LLC.  
[www.plaidvest.com/newkey80](http://www.plaidvest.com/newkey80)



**IMPORTANT NOTE:**

**MAKE SURE TO TURN OFF YOUR TRS-80 BEFORE ATTACHING NEWKEY/80 KEYBOARD RIBBON CABLE AND POWER CABLE.**

You can easily damage NEWKEY/80 or your TRS-80 if you attach or remove the keyboard ribbon cable or power connections while the computer is on.

The use of an anti-static wrist strap is recommended when working with your TRS80 and the NEWKEY/80 adapter.

**THE TRS80 MONITOR CONTAINS EXTREMELY HIGH VOLTAGE EVEN WHEN THE POWER IS OFF. NEVER TOUCH OR MODIFY THE MONITOR OR ATTACHED CIRCUIT BOARD.**

Plaid Vest Software, LLC is not responsible or liable for any damage caused by NEWKEY/80. If you are not comfortable performing the installation and/or power connections please return your adapter for a full refund.

**Contents:**

- NEWKEY/80 Adapter and protective bottom case
- Keyboard stickers (@, Clear, Break)
- Power Cable (requires regulated +5v)
- Cable Splice Connectors (x2)

**Optional:**

- Keyboard Ribbon Cable (if you want to use your existing keyboard at the same time as PS/2 keyboard or if your existing cable does not have a female 20-pin connector on the keyboard end)



**Opening Your TRS80**

YouTube has several good videos on how to open your TRS-80. Make sure to be careful when pulling up the cover to avoid breaking the CRT neck. You can look through the top vents to watch the neck clearance as you gently lift the top.

TRS-80 checks before powering up <https://www.youtube.com/watch?v=76bVeQP8m3Y>



## Keyboard Ribbon Cable Installation

**Important:** Pin 1 of the TRS80 keyboard ribbon cable is located at the TOP of the TRS80 motherboard. Contrary to industry standard markings, the TRS80 keyboard cable usually has a red or black mark on the pin 20 edge of the cable. Pin 1 on the NEWKEY/80 adapter is the side closest to the power connector (and is marked as "1").

Step 1: Unplug your existing keyboard from the TRS80 motherboard connector.

Step 2: Plug the NEWKEY/80 ribbon cable (single plug end) into TRS80 motherboard connector with Pin 1 at the TOP.

Step 3: Plug the other end of the NEWKEY/80 ribbon cable into the NEWKEY/80 adapter, aligning Pin 1 markings.

### Optional: Using OLD and PS/2 Keyboards at the same time:

Plug your TRS keyboard ribbon cable (that you unplugged in Step 1) into the NEWKEY/80 ribbon cable white box connector (aligning Pin 1).



## Power

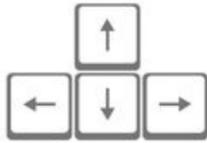
The NEWKEY/80 keyboard adapter requires a regulated +5v power and a ground connection. This can be provided either by an external +5v adapter (not included) or by using your existing TRS80 power supply (recommended). The NEWKEY/80 adapter requires very low current so you should be able to tap into existing power wires used by the TRS80's disk drives, motherboard, or RS232 adapter.

If you are connecting to the TRS-80 internal power supply you may use the included wire connectors to attach the NEWKEY/80 power cable onto existing +5v power wires.

**Make sure to test the power connections with a multimeter before connecting power to the NEWKEY/80 adapter. Red wire should be +5v and black wire should be ground (-).**



**CAUTION:** The TRS80 monitor, related circuit board and power connections contain DANGEROUS VERY HIGH VOLTAGE. Never touch or modify the monitor or related circuit board. Only use the lower voltage connections that supply power to the motherboard, RS232 interface, or disk drives.



## Special Keys (Use included keyboard stickers if desired)

<u>PS/2 Key</u>	<u>TRS-80 Key</u>
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\ (backslash)	@
ESC	<Break>
Home	<Clear>

### Special Key Combinations:

- CTL-ALT-DELETE = Reset TRS80
- CTL-ALT-R = Reset NEWKEY/80 adapter
- CTL-ALT-A = About NEWKEY/80, shows current version and settings
- CTL-ALT-H = Help Screen, shows keyboard shortcuts
- CTL-ALT-3 = Switch to Model III mode
- CTL-ALT-4 = Switch to Model 4 mode (enables Ctrl, Caps, F1, F2, F3 keys)



## FIRST STEPS:

When connected correctly, NEWKEY/80 green power LED should be lit. If not, please check your power connections. (+5v = red wire, ground = black wire).

Make sure to set the type of TRS80 you are using with CTL-ALT-3 (Model III) or CTL-ALT-4 (Model 4). This setting is saved even when the power is turned off.



## Updates

Firmware updates available at [www.plaidvest.com/newkey80](http://www.plaidvest.com/newkey80)

To update the firmware you will need to upload a new .hex file to the Arduino micro-controller via a mini USB cable and a Windows PC.

You can use an ISP programmer but the Windows utility XLoader is much easier.

<http://xloader.russeotto.com>

The chip type is Mega (ATMEGA2560). Port is usually COM3 but you will need to check (Control Panel >> Device Manager >> Ports) to be sure.

You can verify the version with the CTL-ALT-A command on your TRS-80.



## Contact/Questions/Comments/Bugs

Send any questions or comments to [support@plaidvest.com](mailto:support@plaidvest.com)  
Thank you for your feedback!



## FAQ (Frequently Asked Questions)

Why is <CAPS LOCK> key not working, or why am I seeing a "0" when I press <CAPS LOCK>?

You are probably not using the correct machine setting. Set the type of TRS80 you are using with CTL-ALT-3 (Model III) or CTL-ALT-4 (Model 4).