CatKnobz

Thank you for purchasing CatKnobz.

CatKnobz is an easy to connect controller for the Yaesu FTDX10 transceiver. Six easy use knobs control various settings. Any knob cab be any setting, in any order. Add another CatKnobz if you need more knobs. Add a CatDisplay232, CatMeters or CatTouch for more information about your Transceiver. The settings controlled are:

- *APF*
- *AGC*
- *AMC LVL*
- *BAND*
- *CTR FRQ*
- *CW BKN*
- *CW SPD*
- *CW PCH*
- *DNR*
- *D IN SSB*
- *D IN PSK*
- *D OUT SSB*
- *D OUT PSK*
- *MEM*
- *Mic LVL*
- *Mic PRC*
- *MODE*
- *MONI*
- *NB*
- *NTCH*
- *RF LVL*
- *SCP LVL*
- *SCP MODE*
- *SCP PEAK*
- *SCP SPAN*
- *SCP SPD*
- *SHFT*
- *SQLCH*
- *TX W*
- *VFO*
- *WDTH*

Compatibility

This version of CatKnobz was developed for the Yaesu FTDX10 which supports the latest Yaesu CAT command set.

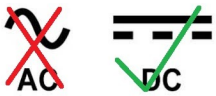
Installation

Set FTDX10 menu options as follows:

- **Operation Settings > General > 232C RATE > 19200bps**
- **Operation Settings > General > 232C TIME OUT TIMER > 10msec**
- **Operation Settings > General > CAT RTS > OFF**

Plug the supplied CAT cable into the transceiver's RS232 CAT jack. Plug the other end into the CatKnobz RJ45 jack.

CatKnobz requires 7VDC to 30VDC at around 160mA to operate. It has a standard 2.1mm DC jack and is wired centre pin positive (tip positive), an industry standard for may plug-packs (wall warts).



You must use a power supply with a DC output.

Do not use a power supply with AC output.

CatKnobz can also provide power to CatDisplay232 or CatMeters via the CAT pass through port. Short the jumper on the back of CatKnobz labelled “CatDisplay232 Power Link”. DC is then passed through to the connected device via the CAT cable. If you purchased CatKnobz with CatDisplay232 or CatMeters, the link will be jumpered.

If you have multiple CatKnobz solder “CatDisplay232 Power Link” & apply power to the CatKnobz directly connected to the transceiver. Then for each daisy chained CatKnobz, solder the “CatKnobz Power Link” & “CatDisplay232 Power Link”. The CAT cable connecting the two CatKnobz will then carry power to the second CatKnobz (or CatDsipaly232 or CatMeters).

Mounting

CatKnobz is supplied with a a bracket designed for FTDX10. Remove the bottom front 2x case screws. Position the bracket holes over screw holes & reinstall screws. Do not over-tighten the screws. Extend the bottom transceiver bail foot.

For other mounting ideas, you could remix this STL design file: https://www.thingiverse.com/thing:4838885

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Operation

To control a setting, simply turn a knob left or right. The display indicates what setting you are changing & its value. The change is sent to the transceiver when the knob is turned. The display continues to show the setting for a few seconds.

If a setting does not appear to change on the transceiver, like Contour (& others), check to make sure it has been turned on in the transceivers' menu. Also, the setting must be valid for the current transceiver band or mode.

Customising a knob

To customise a knob:

1. Momentarily press in the knob
2. Turn the knob, left or right, and stop on the setting you want

When display again shows “CatKnobz”, the setting is now associated with that knob & the next time the knob is turned, that setting will change. After a 2 minutes of no use, changes are saved to permanent memory & “*Saved..*” is displayed.

Changing CAT Baud Rate

CatKnobz is set to 19200bps by default. To change it, **press the left knob in twice** then turn it & stop on the baud rate you want. After a few seconds delay the selected baud rate will be set.

- The speed must match the CAT speed on your transceiver.
- The speed change effects both CAT port and pass through port. They cannot be set differently.
- Changes are not permanent until the 2 minute timer is up & you see “Saved..” on the screen.
- If 38400bps causes interference to a device plugged into the pass through port, reduce speed until reliable operation.

Restoring Factory Defaults

Press the right most knob in twice then turn it. RESET is displayed and all knobs and baud rate will be restored to factory default. This procedure clears any corrupted EEPROM data that may be caused from close proximity to a high RF field.

Important !

- When a knob is turned, the display shows what is being changed for a few seconds. During this time, turning another knob has no effect.
- When first turned on, the transceiver model is checked. If “???” is displayed it means CatKnobz was turned on before the transceiver or it cannot communicate with the transceiver. Make sure baud rate matches transceiver setting, the CAT port is activated & CatKnobz is being turned on after or at the same time the transceiver.
- If a transceiver setting does not change as expected, it may be the setting was not valid for the mode or band.
- If power is removed from CatKnobz before a customisation has been saved, any changes will be lost. This occurs 2 minutes after the last knob was turned.
- When another serial device is plugged into the pass through DB9 RS232 connector (EG. CatDisplay232), serial data is cut off while a CatKnobz knob is working. Communication will resume when CatKnobz is idle again.
- On the CatKnobz CAT pass through port, both TXD & RXD are at RS232 levels and not suitable for connecting to devices requiring TTL voltage levels.
- CatKnobz contains biodegradable PLA which is not suitable for extreme temperature or direct sunlight environments.
- A noisy power supply or high RF field may cause interference or lock up. If the display or buttons become corrupted or unresponsive, one of these will be the cause which you need to remedy.
- CatKnobz is a digital device that has an internal oscillator. Even though TDK EMI filters are used in its design, you may experience interference when in close proximity to some transceiver installations. It can be particularly noticeable if the transceiver has a poor earth, open line antenna feeders or is using a simple rubber-duck type antenna. In this instance, it may be necessary to add further RFI suppression techniques. One article on this is “A Ham's Guide to RFI, Ferrites, Baluns, and Audio Interfacing” by Jim Brown K9YC.

CatKnobz is proudly designed, programmed and marketed for Amateur Radio use by ZL1CVD Chris Day, New Zealand. It was not designed for commercial or life saving purposes.

Thank you for your custom...

...73s de Chris ZL1CVD

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