qEQ

EQDIRECT with backlash reducer

Operation Manual

2021/12/3

Ver 3.0

stellartech.science

About this product

- This device is hand-made-electronics, with "Seeeduino Xiao" micro-computer board.

Cautions on use

- Do not write any other program on qEQ.

- Make sure qEQ and USB cable does not be interfere with telescope or mount by axis rotation. Fix cable if necessary.

- qEQ is for Sky-Watcher® AZ GTi/GTe mount only.

- qEQ follow the protocol defined in "Sky-Watcher Motor Controller Command Set" by Sky-Watcher®, and transfer ONLY ascii messages such as motor move, motor stop, Goto, or auto guiding. **Do NOT USE qEQ for binary message like FIRMWARE UPDATE. That may result in severe damage on your mount.**

- Sky-Watcher® pointed that AZ GTi/GTe mounts are not for astrophotography, and does not give any guarantee about astrophotography. Therefore, qEQ can not guarantee the result of astrophotography, either.

- Make sure that children do NOT eat nor put device or wrapping package into their mouth, to prevent choking.

- Do not use in wet or condensed condition. It may cause device broken.

- Do not dissemble qEQ.

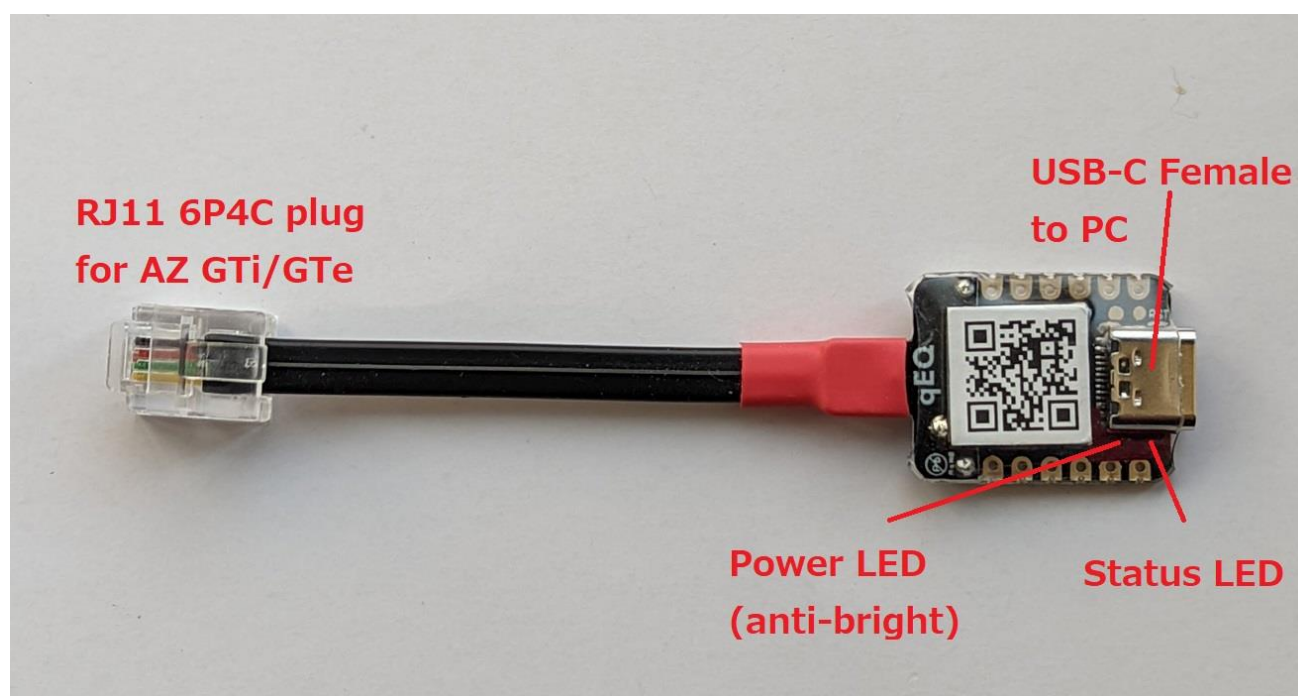- Do not pull cable. Also, do not put heavy object on qEQ.

Disclaimer

We will not be liable for any direct or indirect economic or opportunity loss arising from the use of this device, except in cases of intentional or gross negligence on the part of us or our distributors.

About qEQ

qEQ is a device to connect Hand-Controller port of Sky-Watcher® AZ GTi or AZ GTe and PC with USB-C cable.

qEQ has active backlash reducer program, that works when DEC axis starts to move opposite direction

Parts

RJ11 6P4C plug for AZ GTi/GTe

USB-C Female to PC

Power LED (anti-bright)

Status LED

Power LED

Power LED is always ON. LEDs are covered with anti-bright film, and power LED has little brightness.

Status LED

Status LED shows following.

・When start up (**BEFORE** the communication to the mount established): Repeat blink 4 times
・When start up (**AFTER** the communication to the mount established): OFF
・While backlash-reduce-moving: ON

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How to connect

Connection to AZ GTi/AZ GTe

Connect RJ11 cable to the hand-controller port of the mount.

Connection to PC

Prepare USB-C cable by yourself.
Connect qEQ with USB-C cable. qEQ take power from USB-C port. Therefore qEQ is ON only USB-C cable is connected to PC

Use USB-Ccable for data communication. Some USB-C cable "for Charge" only enable power charge but data communication.

How to Power ON

Connect qEQ to PC with USB-Ccable.

Once qEQ start up, it repeat "blink 4 times", until communication to AZGTi/GTe is established.

How to set backlash compensation value

Use web application for setting qEQ's backlash value.
Please access following with **modern we browser (Chrome, Edge, or Opera)**
https://qeq.stellartech.science/setting.html

If you need to use setting application offline, simple save the setting page on your local PC and open it with browser.

How to judge backlash value is OK?

1. Setup your AZGTi/AZGTe and telescope as alt-azimuth mount mode, in a daytime.
2. Point to fixed object, such as building on the ground.
3. Set high magnification ratio.
4. Open setting page, and connect your qEQ.
5. Use mount control button on setting page. Arrow keys on your keyboard can also move mount.
6. Adjust backlash value with checking real movement and its delay.
7. [SAVE] before you leave setting page. Or, setting will not be saved and reset when next power off.

Other Information

Please refer latest information on product page.
https://qeq.stellartech.science

- End of ducument -

Warranty

In case of malfunction under usual usage, it will be replaced with new one as warranty.
Warranty period is one year from the day of purchase.