

Hardware V1.2, App v. 2.0 (November 2025), firmware 2.00 or higher

FAI certified altimeter compliant with F1 Sporting Code regulations

Congratulations on acquiring the All-Tee altimeter, currently recognized as the most compact and lightweight altimeter featuring integrated Bluetooth technology. This innovative device operates on both 1S and 2S LiPo batteries, as well as any power source within a voltage range of 3 to 10 volts. It meticulously records altitude data with a precision of 10 centimeters in non-volatile storage for durations extending up to 200 minutes (exceeding 3 hours) at a rate of 5 data points per second. The integrated Bluetooth functionality facilitates the seamless transfer of stored data to the All-Tee application, enabling graphical visualization and comprehensive analysis of altitude data over time. The Bluetooth module identifies itself by the designation ‘All-Tee’ followed by the user’s fixed FAI ID number, which is permanently programmed and cannot be altered by the user. The All-Tee is further enhanced with a miniature push button that allows for resetting the PIN code or activating the Bluetooth functionality. A tri-colored LED -red, yellow, and green- provides visual indicators for memory and power source status, in addition to Bluetooth functionality. The All-Tee is distinguished by its exceptional temperature stability and zero start-up drift, eliminating the need for a stabilization period post-activation. Moreover, it boasts automatic initiation and cessation of data recording, equipped with advanced start and landing detection capabilities.

Specifications

-Dimensions 9 x 17 x 6 mm

-Weight 0.8 gram

-Waterproof sensor (gel filled)

-Pressure sensor height noise 7 cm

-Minimum relative height accuracy +/- 0.3 %

-Resolution: 10 cm

-Communication: Bluetooth (integrated)

-Power supply voltage range: 3.5 – 10 Volt, connect to on-board LiPo battery or to stand-alone LiPo, 1S or 2S (e.g. a 100 mAh capacity LiPo will do)

-Current consumption aprox. 10 mA

-Non-volatile memory: 1 Mb (switching off the All-Tee will not result in a loss of data)

-Data logging capacity: 200 minutes (3 hours and 20 minutes)

-Data frequency 5 Hz (5 recordings per second, 0.2 s intervals)

-Unique personalized FAI ID pre- programmed

-Temperature compensated and calibrated pressure sensor

-No start-up drift, plug and play

-Integrated push button to reset pin-code or enable Bluetooth

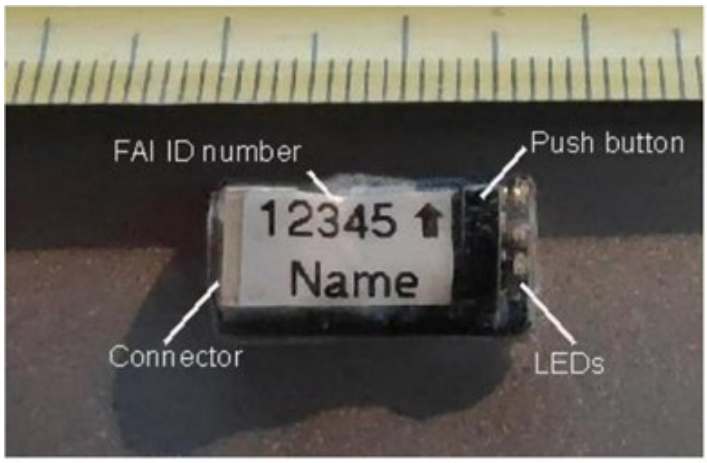
-Colored LEDs to indicate battery status (for 1S and 2S LiPo only)

-All-Tee app (Android and Apple) for graphical representation of height and sink rates (variometer).

-Auto start and stop of recording (note, when memory is empty, recording starts upon powering up the All-Tee. When a pre- recorded flight is present, recording starts if height exceeds 5 meters).

-Automatic start and end of flight detection (‘About Time’ flight time calculation)

Hardware



Push button: press between fingers to trigger events (see below)

LEDs: to signal All-Tee status

FAI ID number: unique number for FAI sporting license holder

Name competitor: competitor's name of FAI ID number holder

Cable: Power wire (red) to be connected to positive (+), black to negative (-) of battery. V1.2 All-Tee is reverse polarity protected (**NOTE for V1.1: reverse polarity damages the All-Tee!)**

Connector: to connect the All-tee to the power wire

First use

The All-Tee will start recording data the moment it is powered up (when its memory with recorded height data is empty, LED blinks green) or the height exceeds 5 meters (when previous flights are already stored in memory, LED blinks red) measured from the location it is switched on. It will keep track of the latest memory position, so the next time you hook it up to a battery it will record height data after the previously recorded data up to a total of 200 minutes of recording time. A blinking LED signals the All-Tee is operational.
After powering up the All-Tee, the 3 LEDs are tested after which the red LED blinks a second only in case the connected LiPo is empty or another type of power source is used (e.g. via a voltage regulator). After this start up sequence, a blinking green LED signals the memory is empty. If there are flight data in memory, the All-Tee will enter its Bluetooth communication mode and the LED blinks yellow. After the height exceeds 5 meters, Bluetooth is switched off and flight recording starts; a blinking red LED signals there are flight data already stored and recording has started.

Note: pressing the push button on the All-Tee will enable the Bluetooth again and the LED will blink yellow.

Push button

-Pressing the button will enable the Bluetooth on the All-Tee. The LED blinks yellow and a connection can be made with the All-Tee V2 app.
-Pressing the button while switching on power to the All-Tee, will reset its pincode to the default value of 1234.

LED functionality

LEDs: a red, yellow and green LED are integrated into the All-Tee for signaling different information to its user:

- status of battery (1S or 2S Lipo) after start up a red blinking LED signals an empty battery. If the battery is charged, the All-Tee will start immediately.
- Bluetooth enabled: blinking yellow LED
- Bluetooth connection active (yellow LED blinking faster)
- Flushed (cleared) memory (green LED blinks)
- Flight data stored in memory and recording active (red LED blinks)

All-Tee app v.2

The All-Tee app v.2 comes for Android and Apple devices and is obtainable from the Android Play store or Apple App store free of charge. Ensure your Bluetooth is switched on in your device. Make sure to answer ‘yes’ on all questions during the installation when permissions are requested. If the Android app does not want to operate the Bluetooth connection, most likely the permission ‘location services’ has been disabled. Long-press on the All-Tee icon, select ‘App-info’ and then select app permissions. Make sure all permission are ‘on’.

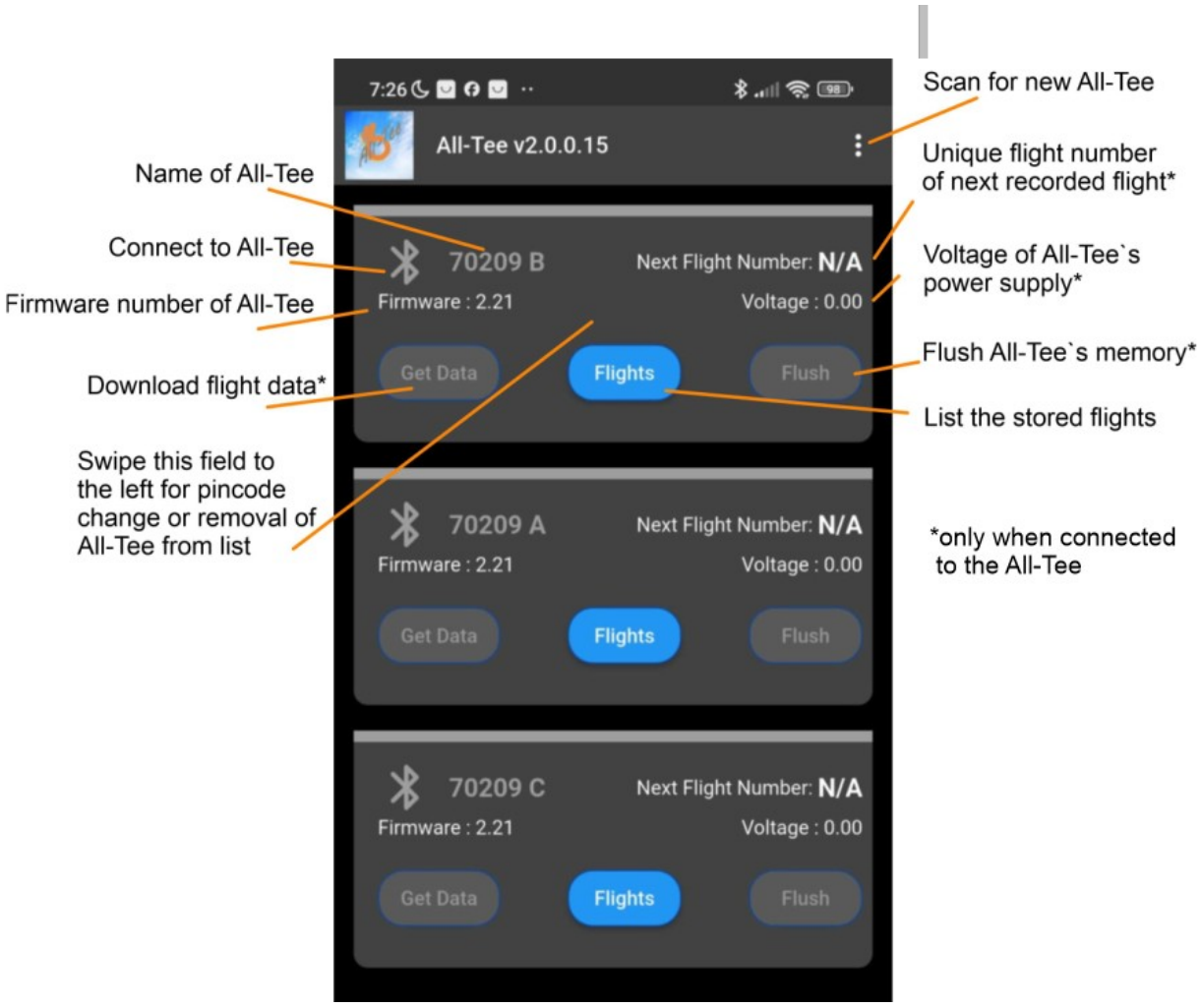
Step 1 (connecting your All-Tee for the first time)

Before All-Tee can be used with the app, it must be paired with your device (phone or tablet).To pair an All-Tee, perform the following steps:

Start the app by pressing the All-Tee icon:



The app opens with the following screen (note: when no All-Tees have been paired with the app yet, the screen will be mostly empty).



Switch on the All-Tee by connecting it to a battery or other 3.4-10 V power source. Wait for a steady blinking of either the green or yellow LED. If the LED blinks yellow, the Bluetooth function is switched on. If it blinks green, there are no flight data available and Bluetooth is switched off. No connection with the app is possible if the LED blinks green. However, Bluetooth can be enabled by shortly pressing the push button on the All-Tee; the LED will blink yellow.

3 DOTS IN UPPER RIGHT CORNER OF APP MAIN SCREEN

Scan All-Tee:
Press on the 3 dots in the upper right corner of the screen and select 'Scan for new device'. Make sure the LED on the All-Tee is blinking yellow. *(If it blinks green, shortly press the push button on the All-Tee, the LED should start blinking yellow.)*
Make sure the All-Tee is close to your Android / iOS device (less than 20 cm). This short range is only activated when pairing. After pairing, you will have full Bluetooth range again. This is to prevent from others pairing with your All-Tee from a distance.
The app is now searching for Bluetooth devices with the name All-Tee (note, pairing is required only once per All-Tee device).
All-Tee announces itself with its name (All-Tee) followed by the sportsman's FAI-ID number, which is permanently programmed into the All-Tee's non-volatile memory. The FAI-ID number can have a suffix letter, which identifies the unit if the competitor has more than one All-Tee. Example:

All-Tee 12345, All-Tee 12345 A, All-Tee 12345 B etc.

-All-Tee: the Bluetooth device name on which the app triggers the pairing
-12345: the competitor's unique FAI ID number
-A, B, C etc.: the second or further All-Tee of the competitor (if the competitor owns several All-Tees e.g. for a spare models).

Select your All-Tee device from the list of devices found in the scan. Now a Bluetooth link is established. The All-Tee is now listed on the main page of the app. Swipe this entry to the left on the screen to change the PIN code to your personal PIN code to enable the data transfer.

A list of All-Tees, which have been paired with the All-Tee app are shown on the main screen of the app. If desired, devices can be removed by selecting a device and swipe to the left. Then select the red 'Remove' button. The same gesture can be used to change the PIN code.

Theme settings:
Selecting this option allows a selection of a light or dark background. In low-lighting conditions, the dark theme is recommended. In bright conditions the light theme is recommended. Should you prefer you're phones background style, select 'System Default'.

Share Firmware File:
Using this function allows you to download and share the latest firmware of the All-Tee. You can send the firmware file to your own email address, so you can do the upgrade of the All-Tee on your PC. (Firmware upgrade instruction can be found in the annex of this manual).

About:
Gives contact details if you should have any questions or want to report a bug.

CONNECT

Select your All-Tee from the main page and press on the Bluetooth icon (connect to All-Tee). Make sure the Bluetooth is switched on on your All-Tee (the yellow LED should blink). If the red LED is blinking, press the small push button on the All-Tee or switch the All-Tee off and on again. At startup of the All-Tee, Bluetooth is enabled if flight data are present in the All-Tee's memory. If the memory is flushed, the green LED blinks and no Bluetooth connection is possible (it can be enabled by pressing the push button on the All-Tee).

To download your flight(s) press the 'get Data' button and select the class you have been flying with your All-Tee when opted. Height data transfer is now made instantly.

If more than one All-Tee is paired, a list with All-Tee devices appears from which you can select. Data is shown for a connected All-Tee: FAI ID number, voltage of connected power source (e.g. a LiPo battery) and the firmware number of the All-Tee. The zero (ground) level, the launch of the model (time = zero), the flight time (automatic landing detection) as well as the height at the pre-set max flight time is determined automatically and shown at the bottom of the screen in a table. The moment of launch can be set manually in the graph if the automatic launch detection was not successful by swiping the vertical cursor line with your finger over the screen. A 2-finger pinching gesture can be used for zooming in- and out.

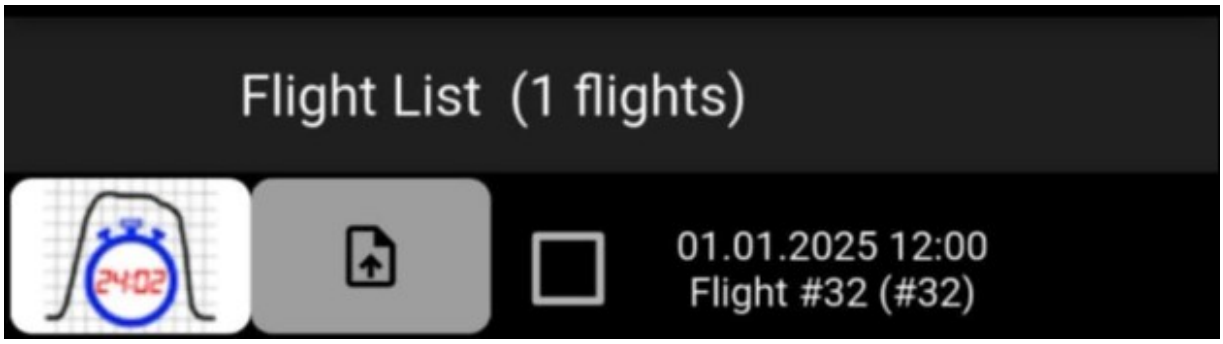
FLIGHTS

Pressing the 'Flights' button will show a list of previously recorded flights. Each flight shows the name of the All-Tee and the Date/Time the data were transferred or edited.

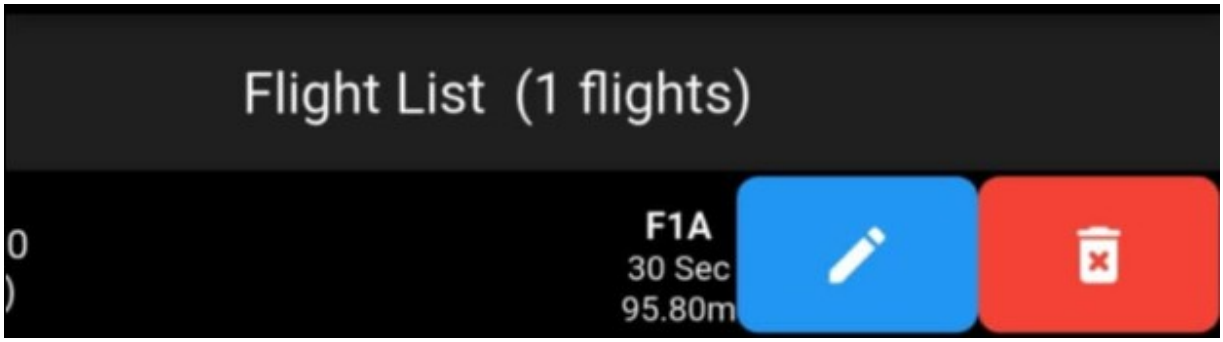
Export: data can be exported to the ‘About Time’ server as well as a CSV file, which can be exported and further analyzed in Excel by swiping the flight to the right.

A CSV file can be imported as well. If someone sends you his flight, simply select the CSV file, and select the All-Tee v2 app as preferred app for importing. Wait for the file to appear in the Flight List.

About Time upload: Swipe a flight to the right and press on the About time icon. A new window appears where you can enter your personal data like name and country. In the model identification field you can enter your FAI ID number followed by the model number (e.g. A, B, etc. or 1, 2, 3 etc.) in accordance with the FAI sporting code, section IV aeromodelling, section C.11(identification marks). Select ‘Test’ (one day storage of flight) or ‘Official’ (permanent storage of flight). The ‘cancel’ button will get you back to the graph screen.



Delete: single flights can be deleted by swiping to the left. The red button with a waste bin can be pressed to delete a flight.



Multiple flights can be deleted by selecting each flight using the check boxes on the left followed by pressing the white waste bin icon at the top of the screen.

Graph: when pressing a flight, the selected flight will be shown in a graph for further analysis.

FLUSH

This button resets the memory pointer for the flight data to zero. Bluetooth will be disconnected, the green LED will blink (ready for a competition flight).

NOTE: PERFORM YOUR FLUSH AT YOUR STARTING POLE IN CASE OF AN ALTIMETER FLY OFF!!

This is to set the proper zero-height and to assign time and GPS location data to your flight.

GET DATA

Note that flight data since the last flush action are loaded into the app. These can be multiple flights as well. In principle you could read out all the recorded flights of a full day of flying, however it is recommended to load flight data after each and every flight followed by a 'flush' to avoid excessive download times. After pressing this button, select the class you are flying to allow correct automatic start and landing detection. The flight is now shown in a graph (see next page). Here a flight recording is shown of a failed attempt followed by a launch, DT and landing.

The top of the screen shows a flight number (each recording will be assigned a unique sequential number), FAI ID and selected class.

The bottom of the screen shows the relevant flight data. From left to right:

-Unique flight number (increases for each new flight after a flush and is permanently stored in the All-Tee).

-Flight time (from launch to landing, rounded to seconds).

-Preset maximum for altimeter fly offs (can be selected under the 3 dots in the upper right corner of the screen).

-Height at the preset max.

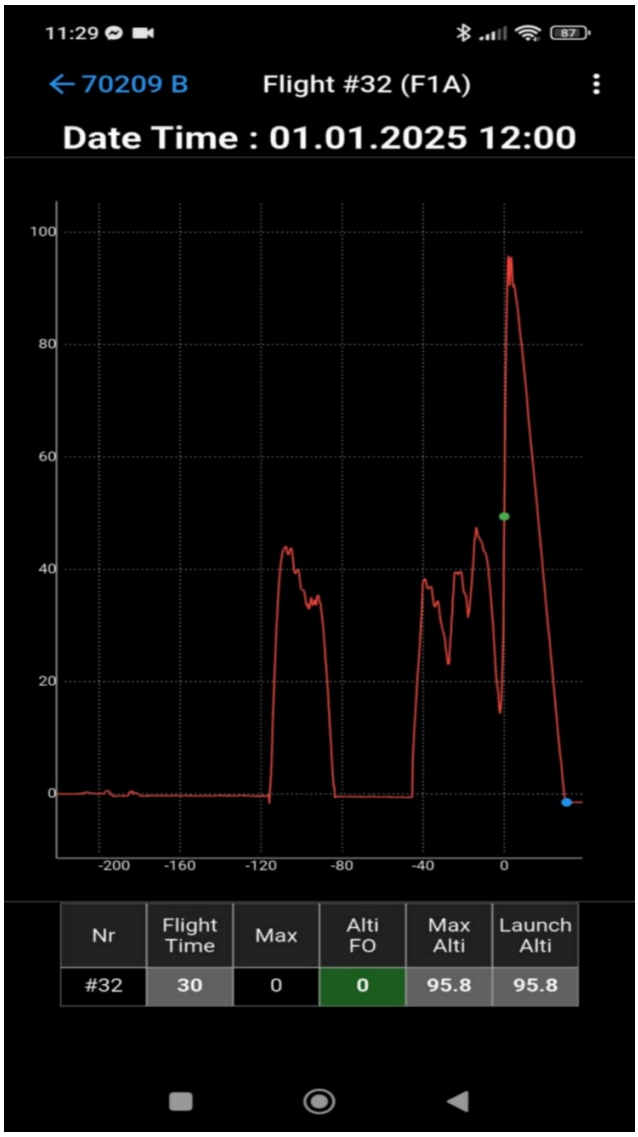
-The maximum height achieved in this flight.

-The height of your launch.

Tapping on a value will make the cursor line jump to the this time location.

You can zoom in and out, by pinching gestures, both horizontally as well as vertically. A double tap on the screen also zooms in. Keeping the finger pressed on the screen allows panning of the graph (after zooming in). Single tapping on the screen position the vertical cursor line. A small pop up window appears on the cursor line with relevant flight data (height, flown time, estimated flight time and variometer data where a negative

value is a sinking speed and a positive value is a climbing speed). Fine adjustments of the cursor line can be performed by pressing the ‘+’ and ‘-’ buttons below the grap. A long press of either of these buttons moves the cursor line slowly. A tap makes the cursor jump one time unit.

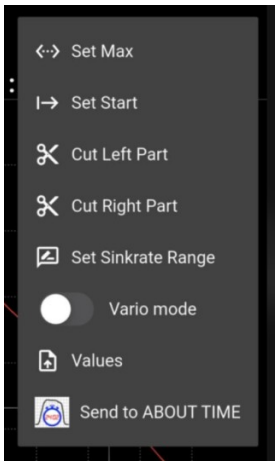


Buttons lower right corner:

The flight graphing screen has in the lower right corner two more blue < and > buttons (only if more than 1 flight is present in the flight list). These allow jumping to the next or previous flight in the list of flights.

In the left upper corner there is a blue < followed by the FAI ID number. Press on it to go back to the list of flights.

THREE DOTS (…) DROP DOWN MENU



<…> Set max: enter the max time for altimeter fly off.

¦-> Set start: in case the launch of the model is not properly detected, it can be set manually. First select the point of launch, then select this option.

Cut left part: a left part of the graph can be deleted.

Cut right part: a right part of the graph can be deleted.

Set sink rate change: in case you want to analyze the performance of your model (sink speed), you can define the time window over which the sink speed is calculated.

Vario mode: shows a graph of the sink speed over the flight.

Values: you can export a CSV file for others to analyze your flight. CSV can be imported in Excel as well as in the All-Tee app.

Send to About Time: export your flight to the About Time server, so anybody can see your achievements.

Use in competition

There are 2 possibilities to use the All-Tee in competitions according to the Sporting Code Rule F1.2.7:

Category 1 and 2 events (World- and regional championships, World Cups):
For regular fly-off use, make sure the memory of the All-Tee is empty by flushing using the app. All-Tee will start recording immediately after such a memory clearing action, so

the flight as well as circle towing and failed attempts will be recorded. See also https://www.fai.org/sites/default/files/documents/sc4_vol_f1_freeflight_21.pdf

Category 2 events (World Cups) according to the Sporting Code Rule F1.1.4:
Tap the three dots in the upper right corner of the flight graph screen and select 'Max'. Enter the maximum as defined by the contest director for 'altimeter fly off ' in case weather or terrain conditions do not allow a regular fly off. After the flight, download the flight data to the app. In case the app fails to automatically detect the launch, set the zero time at the moment of launch (pitch up start for F1A, climbing above the 0 meter ground level for F1B and –C). The app will automatically determine the height of the model at the max time. Verify that the graph level prior to launch / release is zero meters.

Follow these steps when you present your All-Tee to the jury after the fly off:

- Start your All-Tee app

- Make sure your All-Tee is switched-on and in Bluetooth mode (yellow LED blinking).

- Select the Bluetooth sign next to your All-Tee in the list of devices in the app's main page.

- Wait for connection (all buttons are blue) and download the flight data.

- Select the class you are flying (e.g. F1A)

- Wait for the download and the graph to appear.

- Press the three dots in the upper right corner and select 'Max'.

- Enter the max flight time as set by the contest director in seconds (e.g. 120, 180 etc.).

-The main screen shows the height at max in the bottom of the screen in the green cell.

NOTE: the automatic 'height at max' function is an ergonomic aid and by no means an official value. It is to aid the jury, which should always check zero ground level and moment of launch!

In case the auto-launch detection feature failed:

- Zoom-in to the point where the model was launched by using 2-finger 'pinching' gestures in horizontal direction.

-Position the hair line on the position of launch (for F1A launch, set the zero time point between 40 and 50 meters. As this is a 'fast' part of the flight (model at full speed), the time and height error will be marginal (centimeters).

- Select the three dots in the upper right corner Select 'Set Start'.

-The height at the set max is shown in the table under the graph in the green cell.

- When ready, press the blue FAI ID in the upper left corner of the screen.

- Press the flush button in the app (Bluetooth must be connected) at your starting pole in case of an altimeter fly off, or at any time prior to your official flight for a non-altimeter fly off flight (e.g. training, regular round or normal fly off).

Note: any manual adjustment of the launch, cutting of parts of the graph or using an imported graph, will be indicated by a warning text superimposed over the graph. This is to alert a contest official the graph flight results might not be correct.

Note: Make sure the device you are using to read the flight data with the All-Tee V2 app has the correct date and time, as this time is stored together with your flight data. The time is also used in the flight graph for the contest director to verify that the shown graph is indeed valid for your contest flight.

Maintenance:

Use the altimeter when possible inside the nose pod of the fuselage where it is easily accessible both for removal as well as checking the status of the LEDs.

Make sure the All-Tee is protected by porous foam padding as impacts (hard landing, broken rubber motor) may damage the quartz crystal resulting in erratic timing.

Connect the cable to the power source and only if a proper connection is made, connect the All-Tee to the cable: NOTE: a wrong polarity of the power source (+ and – switched) will damage the All-Tee (note, V1.2 All-Tee is reverse polarity protected). Familiarize yourself with the way the LEDs blink. If the blinking seems odd, like too slow or erratic in some way, disconnect and reconnect the battery.

Never remove the connector by pulling the cables. Remove the connector by pulling on the connector itself.

Never use water or aggressive cleaning agents.

Store in a dry space.

Note that a magnet is no longer required for operation of the All-Tee. The All-Tee can now be safely placed close to a servo, a magnet or other magnetic sources.

FAQ:

*1 If I am practicing, will 3 hours of recording data be **enough** if I keep All-tee switched on all the time?*

After the first flight has been recorded, the All-tee will switch off recording by an automatic landing detection and start recording by an automatic launch detection. If the All-tee memory is not flushed, many flights can be stored as the period between flights the recording is stopped automatically. It is however good practice to regularly flush the memory to avoid excessive data download times.

*2 How is **tampering** with the firmware and data prevented?*

Multiple security features are implemented in the design. The designer of the hardware and firmware can check if the All-Tee is an original manufacture and if the firmware is the original firmware. Each All-Tee is unique and there are not two the same.

*3 My F1A towing sequence shows heights of over **50 meters**. My towline is not too long. What is wrong?*

Increased airflow speeds over the fuselage will cause slight pressure drops inside the nose pod. This will cause an increase in calculated height. Normal glide speeds do not have this effect, so during the glide regime the heights are accurate. This has been verified in the open wind tunnel at Delft Technical University, faculty of Aerospace, with both altimeters inside as well as outside of the fuselage.

*4 All-Tee yields substantially **lower** heights than my altimeter of brand xxx.*

Each All-Tee has been individually checked for proper functioning and compared to a reference All-Tee altimeter, which has been checked in a 100 m office building every second floor. The heights of these floors have been checked with a Leica laser range finder out of a window down to ground level. It is likely that your altimeter of brand xxx did not undergo this type of rigorous testing and yields wrong height data.

*5 What if the All-Tee of my fellow competitor gives **higher** results than mine?*

Each All-Tee is compared with a reference to make sure the differences between All-Tees are marginal and do not affect competition outcome. If trust between competitors is lacking still, the altimeters of the fly-off pool could be randomly exchanged between the competitors.

*6 What **power** supply should I use?*

Any source between 3.5 and 10V will do. Typically a 1S LiPo can be used or a power source coming directly from an on board electronic timer. Only when a 1S or 2S LiPo is used, the low battery indicator will work. When using a voltage regulator (e.g. built in timers), All-tee will signal ‘empty battery’ by blinking a red LED after switch on. This is no reason for concern.

*7 Can I use a separate power source, e.g. a small **LiPo**?*

A small LiPo of min. 80 mAh (100 mAh recommended) can be used such that LiPo and All-tee form a single package, which can be strapped to a fuselage or positioned inside the fuselage. There will be enough capacity for about 8 hours of continuous use.

8 *The app doesn't **work***

Location services and memory access should be allowed by your Android device for the All-Tee app. Check this by going to your Android settings, select Apps', select the All-Tee app then Permissions. Switch on location services. Alternatively a long press on the All-Tee icon allows you to do these settings. Another problem could be so called 'overlays'. This is where Android apps are allowed to project information over your screen. Some screenshot apps do this. Disable the overlay functionality:

https://www.howtogeek.com/271519/how-to-fix-the-screen-overlay-detected-error-on-android/

Disable any COVID-related or contact tracing apps.

*9 How is the **zero** meters height determined by All-tee?*

The All-Tee sets the height to zero after switch-on, when flushing memory, when making a Bluetooth connection and prior to release/launch of the model. The zero height is finally stored 10 seconds prior to release of the model (F1A, B, C, Q).

10 *How is the moment of **launch** automatically determined?*

In F1A the moment the glider passes the 60 meters is detected. The time typically needed for an F1A to reach this height is deducted and at the obtained time, the flight is started (time = 0). In the classes launched from the hand, the moment the model passes 5 meters is detected. For each class the typical time the model needs to reach the 5 meters is deducted and time is set to zero.

11 *My F1C / F1Q model creates prop **turbulence** and I can't get a valid zero-height*

Use the flight graph and move the red hair line to the left (back in time) to the point where the engine/motor was not yet started and set this point to ground ('Set ground'). Time = 0 is automatically determined by the app. If this didn't work, simply extrapolate the climb of the model down to the zero meters line. It will provide an accurate moment of launch. Firmware 2.02 is mandatory* for F1C as it contains additional prop wash filtering. (*a new EDIC certification rule will be issued beginning of 2027).

Note that All-Tee must be switched on prior to starting the motor/engine (also to show the time keeper the green blinking LED to indicate the memory is flushed). By no means should All-Tee be switched on upon launching the model.

*12 What if an alternative fly off is desired but some participants have **no certified altimeter**?*

For a fair outcome of the competition, all participants should have a certified altimeter. Maybe an altimeter can be borrowed. However, the contest director is in his right to call for an altimeter fly off. A certified altimeter should become standard equipment for competitors, similar to towlines, rubber, fuel etc.

13 *I finished the fly off but **I lost** because my All-Tee didn't work.*

Proper functioning of the All-Tee should be checked prior to fly off and is the responsibility of the competitor according to the Sporting Code rule F1.2.7. The All-Tee performs a series of checks after switch-on (memory, pressure sensor). If a check fails, all three LEDs will be blinking repetitively. The All-Tee must be replaced or repaired. One trick to test the functioning is to place All-Tee and power source in a closed hand and suck out the air from your hand. Upload the data to the app, which should show a height spike. Flush the memory and continue as usual. Note that an (almost) empty battery, bad wiring or contact is often the main cause of malfunction!!
If an All-Tee is regularly unplugged from its power source, do not use the plug supplied with the All-Tee. Leave this plug in the All-Tee and solder an extra power plug in the cable to connect to your battery:



14 *My model landed in **water**. Is my All-Tee damaged?*

Although the All-Tee is not waterproof, it is water resistant provided the water is not contaminated (e.g. soap, salts or other chemicals). The pressure sensor is gel-sealed so water cannot damage it. Leave the All-Tee to dry and it can be used again. If the water was contaminated, flush the All-Tee under running tap water and leave it to dry properly.

15 *My model landed in a **tree** and I can't get my flight data in time to the contest director / jury.*

The All-Tee has an automatic landing detection. If a landing is detected, Bluetooth is switched on and data can be read, even with the model up in a tree. Please note that if the All-tee is inside a carbon fibre fuselage, radio signals are blocked by the carbon fibre and range is reduced.

*16 Where can I get extra **cables / connectors** and what type is used?*

These can be purchased from Ali Express. Search for “Mini Micro SH 1.0 4-Pin JST “

17 *Where can I get **small LiPo** batteries?*

Also Ali Express. Search for 80mAh LiPo or any capacity preferred e.g. 100mAh (preferred). As these are shipped over land/sea, allow up to 2 months of delivery time.

18 *I get a communication time out **error** on device ‘X’ while on device ‘Y’ all works just fine.*

Check if location services is enabled for the All-Tee app. Check if Corona/Covid functionality (like apps and Samsung settings) is switched off.

*19 At home I walked up and down the **stairs** but when getting the data to the All-Tee app, it says ‘flushed’.*

The All-tee system is intended for competition use. For instance, there are minimum time and height limits below which the app will register the All-Tee as being ‘flushed’. So when doing any kind of home testing it is recommended to put the All-tee in you closed fist and suck out the air with your mouth. Then wait for 20 seconds before connecting the All-Tee via Bluetooth to the All-Tee app.

*20 Does All-Tee register **negative heights**, i.e. below the zero level of the launch area?*

All-Tee can also register negative height data should your model fly down a slope or dip in the landscape.

*21 Can I use the All-Tee in **F1E** (magnet steered slope soaring)?*

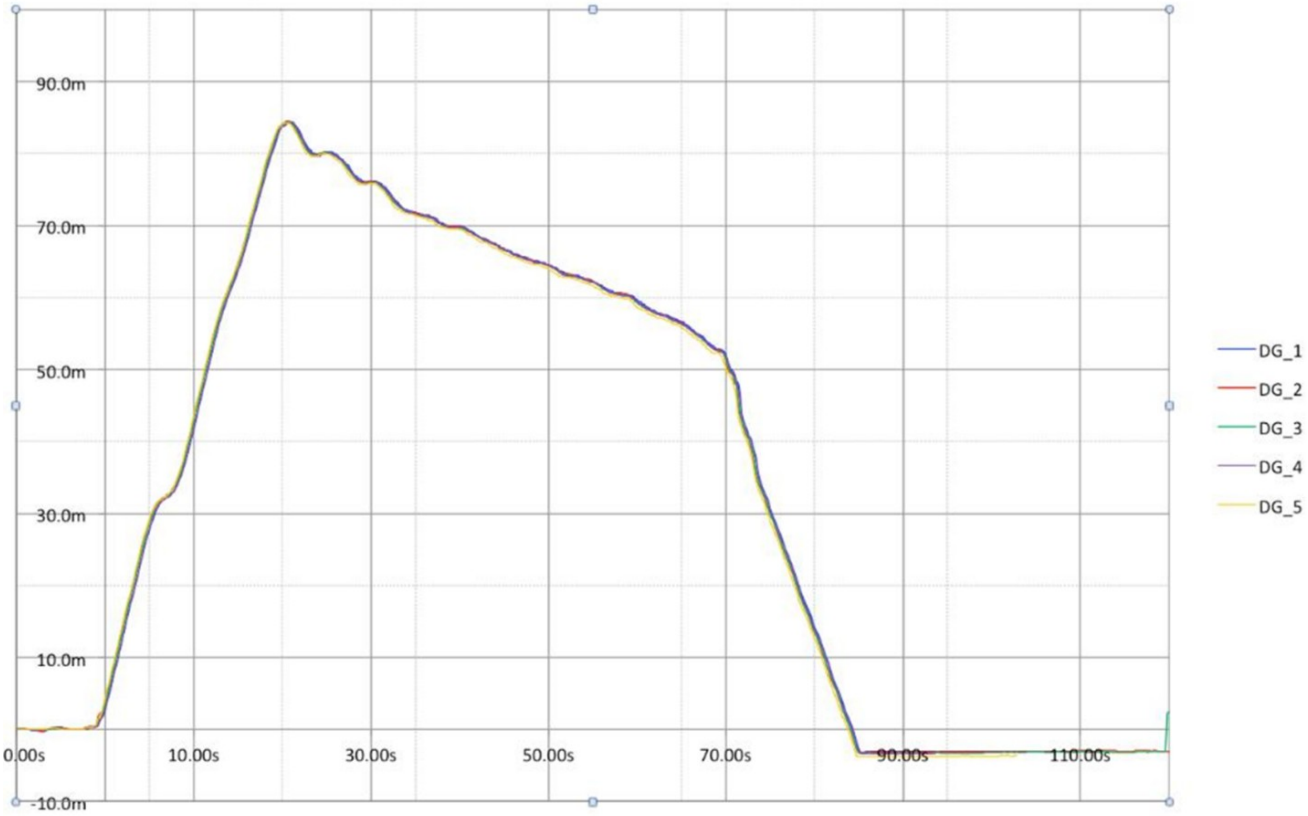
Yes, the All-Tee can be used in F1E, but you must trigger the start of the recording by

- holding the powered up All-Tee in your closed fist and such out the air from your fist shortly to trigger a height peak in the data or
-throw the model more than 5 meters high or
-flush the All-Tee at least 5 meters down the hill, then walk up the hill to start the recording.

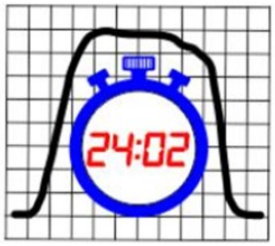
Short list of actions for use in altimeter fly off

Action	Function
Wait for a blinking yellow or green LED on your All-Tee after connecting The battery	Indicate memory status, Green=flushed with Bluetooth disabled Yellow=Flight data in memory and Bluetooth enabled
If Led blinks green	Press the small push button on the All-Tee to enable Bluetooth: LED blinks now yellow
Connect to the app and flush the All-Tee	Remove flight data from the All-Tee, Assign a new flight number Assign GPS and time data to your next flight
Make your flight	Record flight data
Go and retrieve your model	To get within Bluetooth range
Don't pick up the model yet, Connect to the App and download your flight **Or** Switch off the All-Tee, return to starting area, switch on the All-Tee and connect to app to download your flight	Avoid starting a new recording and Get your flight data
Press the … in the upper right corner of the screen and select Set the Max	Enter the max as announced by the contest director
Analyze the flight if needed and show your result to the contest official	For the result list
Optional: press 'Flush' for a next flight	Clear the memory

Relative accuracy



This is a graphic representation of 5 different All-Tees being taken up in an F1Q model simultaneously. It shows just how low the relative error is, making it the ideal tool for altimeter fly-offs. The ‘Export Data’ function in the All-Tee app has been used to create a ‘CSV’ (comma separated values) file. Such a file can be imported into Excel and the data can be analyzed. The file can also be sent via your social media of choice or email and can subsequently be opened on any device which has the All-Tee V2 app installed: Save the CSV file to your downloads folder. Use your file manager to find the CSV file. Long press the file and select ‘open with’ (Android) or ‘share’ (iOS) followed by selecting the All-Tee app. The imported flight file will now appear in the list of flights depending under which All-Tee ID the file has been saved.



’About Time’ functionality

The All-Tee app can automatically detect the launch (in all classes) as well as the landing and can determine the actual flight time between launch and landing. As you can see in the graph on the previous page, the height remains relatively constant after landing. The app detects the discontinuity in the graph between the flight part and the landed part and will determine the time of landing using these data. In some situations, e.g. when the model hangs in a tree in windy conditions or has landed on a hill, the app cannot detect the landing as the model is moving about too much / is still to highh compared to the launch site elevation. In this case, enable the Bluetooth of the All-Tee by shortly pressing its push button. The yellow LED blinks and data can be read by the app and uploaded (note for upload: cell coverage / internet access required). In any case, you should allow the model untouched after it has landed for about a minute for the landing detection to be triggered. Lifting up the model directly after landing will induce height changes and the landing will not be detected.

Note that this function is only possible for single and unedited flights (so when reading the All-Tee after a ‘flush’ followed by a flight followed by a download of the flight). In a graph with multiple flights, the flight time cannot be established.

Also flight data, which have already been edited (like cutting the left or right part of the graph, setting the start manually) cannot be used for the ‘About Time’ functionality.

Your flight can be retrieved from the ‘About Time’ server for everybody to see at the following internet address:

https://abouttime.flyingneurons.io/

The data uploaded to the About Time server are:

-height vs. time of the flight
-time of launch and landing, calculated flight time
-GPS location data
-time and date
-All-Tee ID data
-FAI ID number

Fact sheet for All-Tee V.1 users:

-Both V1 and V2 apps can be run in parallel on your Android device.

-For V2 firmware, a magnet is no longer needed, Bluetooth management is automatic.

-All-Tee is now safe from magnetic sources (e.g. servos, magnets, electric motors, hall switches, magnetic locks etc.). Place it anywhere in fuselage.

-Improved Bluetooth connection and data transfer.

-Personal PIN code protects your All-Tee .

-GPS and time data of flight location are now part of the flight data set and can be sent to About Time server.

-Push button on the All-Tee no longer flushes the memory, the app must be used for this purpose.

-Push button is used to force-enable Bluetooth on the All-Tee.

-Keeping the push button pressed while switching on the All-Tee, resets the PIN code to '1234' in case you forgot your personal PIN code. With '1234' stored in the All-Tee, any one can access your All-Tee to read data but also to flush your data. **That it is why it is strongly recommended to use a personal PIN code!**

-All All-Tees versions are compatible with the v2 app (after a firmware update). firmware version 1.3 and older cannot be used with the v2 app.

-An Both Android as well as iOS app are available in the App Store / Play Store. Search for 'All-Tee V2'.

Guarantee

The All-Tee is guaranteed for the duration of 2 years starting at the day of (mail) delivery. If the FAI-ID requires a change or if there are questions, bugs or malfunctions, please contact by email: All-Tee@ziggo.nl

ANNEX

All-Tee Firmware upgrade

Needed for the upgrade of the All-Tee:

-All-Tee to be upgraded

-Firmware (name of firmware is All-Tee xx.bin, with xx the number), download with All-Tee app.

-Programming cable (colors red-black-white-yellow or red-black-green-yellow)

-USB to RS232 adapter

-Bootloader Windows program

The cable

Name of the cable is' *SH 1.0 4-pin'*, use this name to search on Ali Express or Amazon. This cable can also be used to power your All-Tee, just cut off the white/green and yellow wire. Cable looks like this:



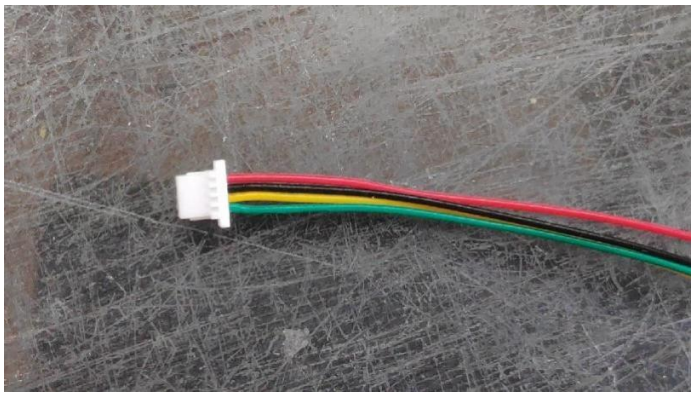


Fig. 1 Cable for programming

The USB to RS232 adapter

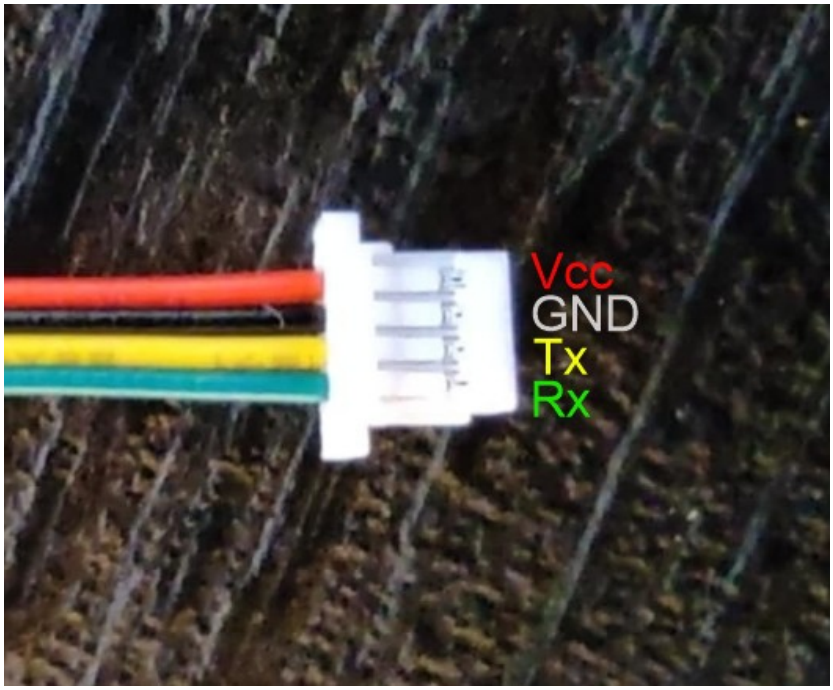


Fig. 2 Pin assignment of All-Tee connector

Cable assignment. Note that cables can have a different (sequence of) colors. Make sure that the ORDER of the cables matches the figures 2 and 3 pin assignments. In fig. 2 above, each cable is inserted into the white connector. Should the sequence of colors not match, the cables can be removed by lifting the corresponding white plastic tab with a needle. The cables can then be re inserted in the correct order if needed.

https://www.amazon.com/Serial-Adapter-Converter-Development-Projects/dp/B07G9G2LM7/ref=sr_1_52?crid=3VZHC89H66SHW&keywords=ft232rl&qid=1650001035&sprefix=ft232rl%2Caps%2C162&sr=8-52 (this one can be plugged directly into your pc)

or

https://www.aliexpress.com/item/4000086020245.html?gatewayAdapt=glo2fra&spm=a2g0o.detail.1000060.1.4a8e288aZgpYrz&gps-id=pcDetailBottomMoreThisSeller&scm=1007.13339.274681.0&scm_id=1007.13339.274681.0&scmurl=1007.13339.274681.0&pvid=940c8f51-1737-4089-a5e2-97726afb00a1&_t=gps-id:pcDetailBottomMoreThisSeller,scm-url:1007.13339.274681.0,pvid:940c8f51-1737-4089-a5e2-97726afb00a1,tpp_buckets:668%232846%238108%231977&pdp_ext_f=%257B%2522sku_id%2522%253A%252210000000229609037%2522%252C%2522sceneId%2522%253A%25223339%2522%257D&pdp_pi=-1%253B2.43%253B-1%253B-1%2540salePrice%253BEUR%253Brecommend-recommend

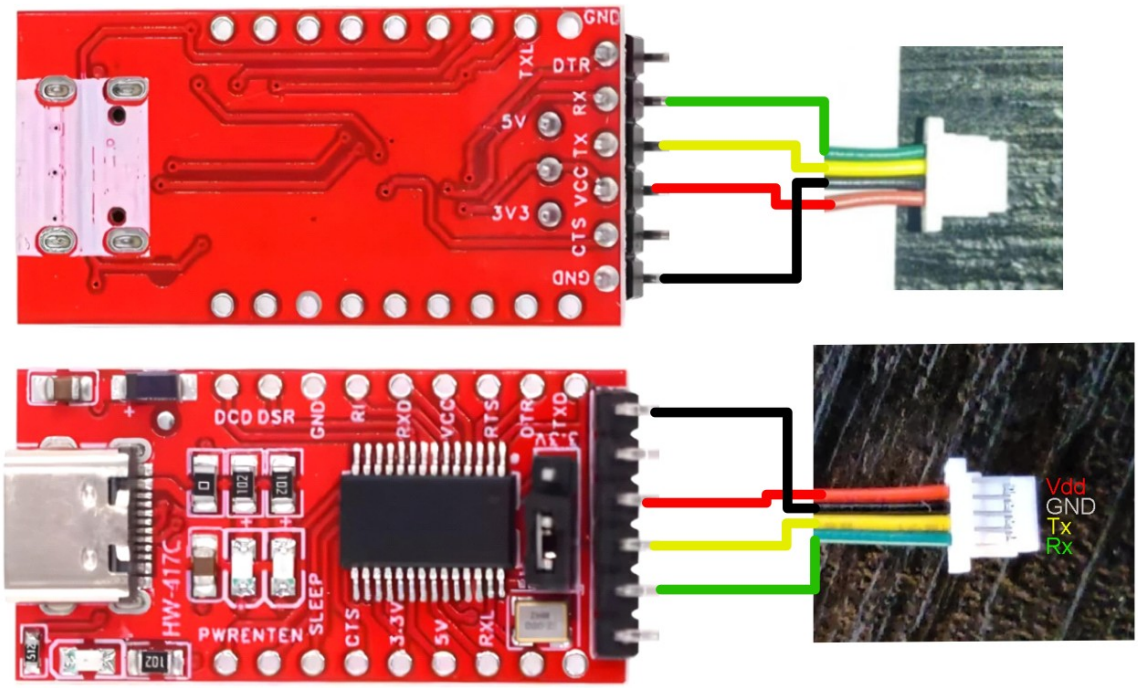


Fig 3. USB to serial adapter module

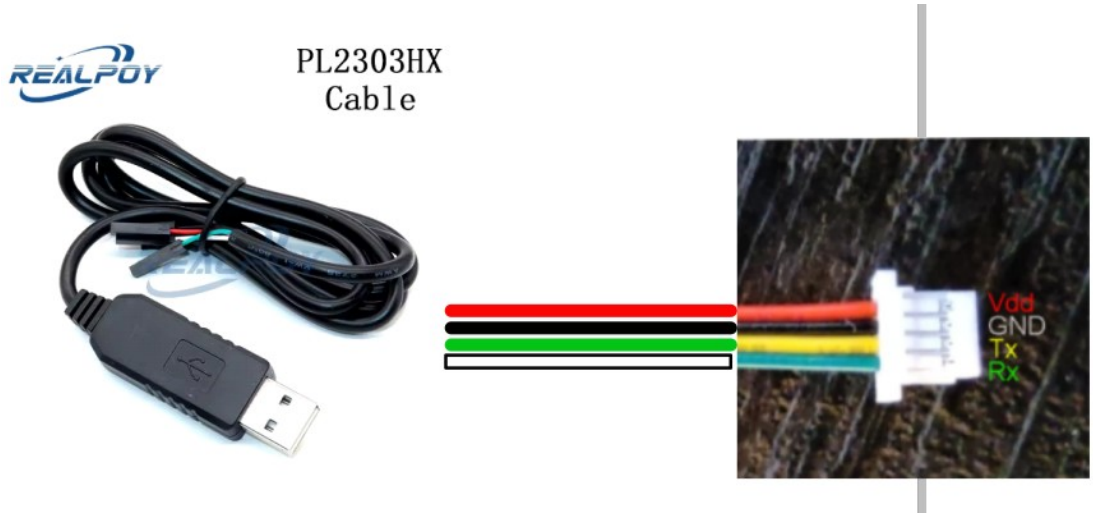


Fig. 4 PL2303HX USB to serial cable (recommended, can plug directly into PC or laptop)

The USB to serial adapter must be based on FT232RL chip as other types might give problems. Note the GND (or minus), Vcc (power supply 'plus'), Tx (serial transmit) and Rx (serial receive) markers on the adapter board. These should match the pin assignment of the All-Tee plug as depicted in figure 2.

The MCS bootloader program:

Download from here:
https://www.mcselec.com/index.php?option=com_docman&task=doc_download&gid=153&Itemid=54
Step 1:

Connect / solder the cable to the adapter as follows:

Red cable to 5V terminal

Black cable to GND terminal

Yellow cable to TX terminal

Green cable to RX terminal

Any other terminal (like CTS, DTR, TXL, 3V3) are not used.

Step 2:

Start the All-Tee V2 app. From the main screen, press the 3 dots in the upper right corner and select 'Share Firmware File'. Select your target of choice (email, Whatsapp etc.) to send the file to. From your computer, download the file from this target (e.g. email) and save it to a directory of choice.

Step 3

Insert the USB-to RS232 adapter in a USB port on your Windows PC or laptop. Windows should recognize it, install the driver and assign a COM port to it (e.g. COM3, COM4 etc) automatically.

Step 4

Install the bootloader program on your Windows PC. Run the bootloader program 'bootloader.exe'

The bootloader program looks like this:

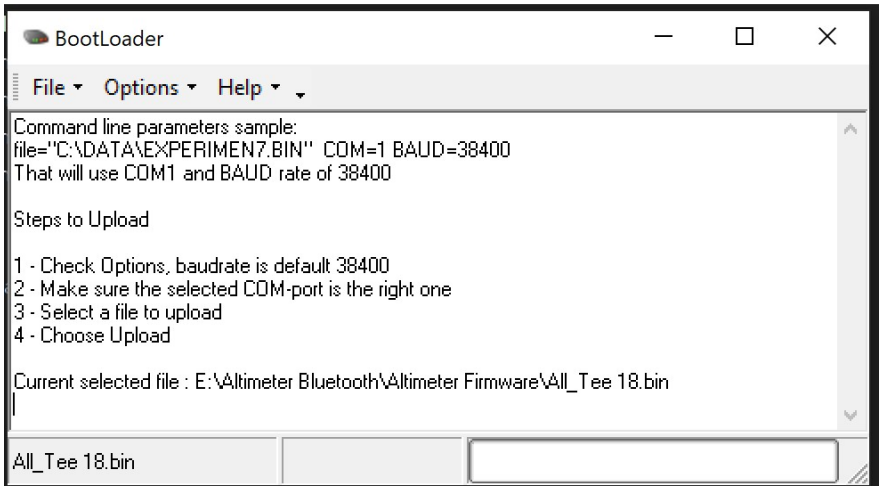


Fig. 4 Bootloader main screen

Step 5:

Select options, Baud 115200, and the COM port assigned to your adapter. If you don't know the COM port number, no worries, you can find it using the ANNEX below.

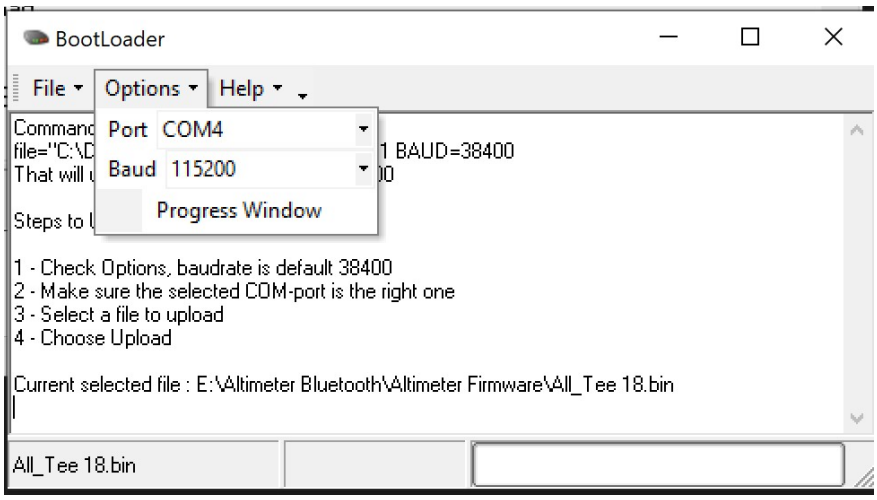


Fig. 5 Bootloader, setting the serial communication settings

Step 6:

In the Bootloader program, select 'file', then 'Select file' and select the firmware (All-Tee xx .bin) you just saved in step 2.

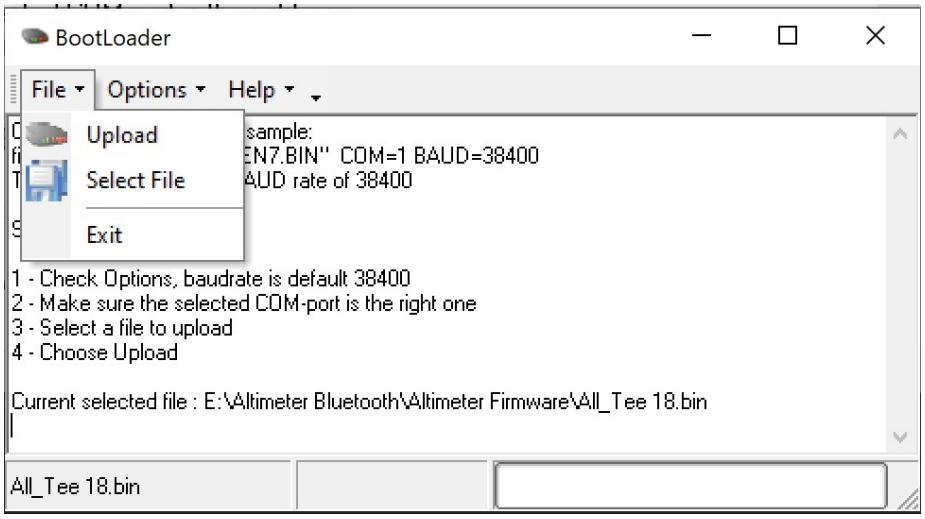


Fig. 6 Selecting the Firmware file

Step 7:

Select ‘file’ then ‘Upload’. A red led should start blinking on your USB to serial adapter. If it does not, select another COM port from ‘Options’ , ‘Port’ and retry ‘File’ Upload’.

The program should respond as shown below and a led (if present on the adapter) on the USB to serial adapter will start blinking. Note: some adapters do not have a led.

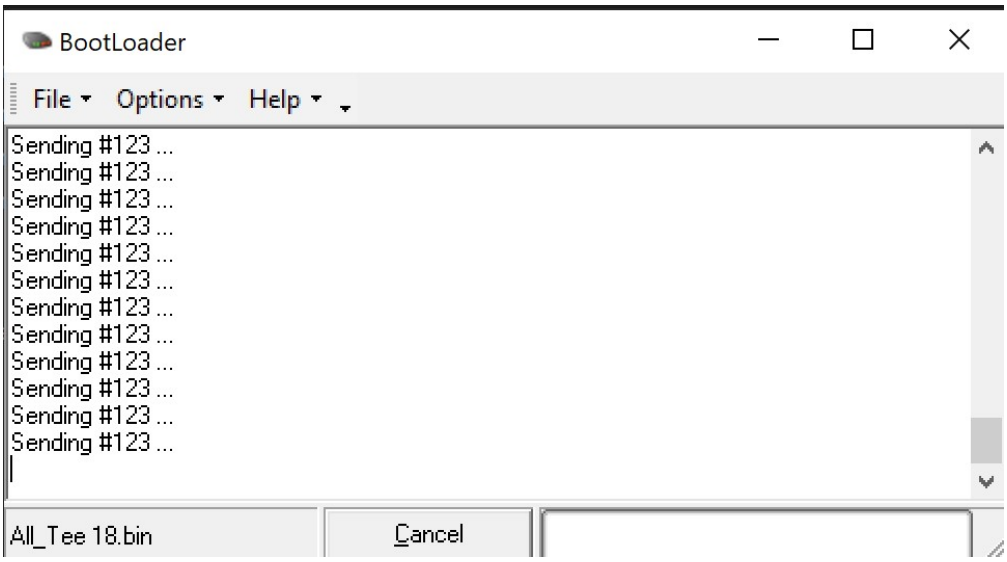


Fig. 7 Starting the bootloader process and firmware flashing

Step 8:

Now plug your All-Tee on the programming cable and the firmware flashing should start.

If the progress bar stops or you get an error message, just unplug the All-Tee, select ‘File’ ‘upload’ and plug it back on the cable.

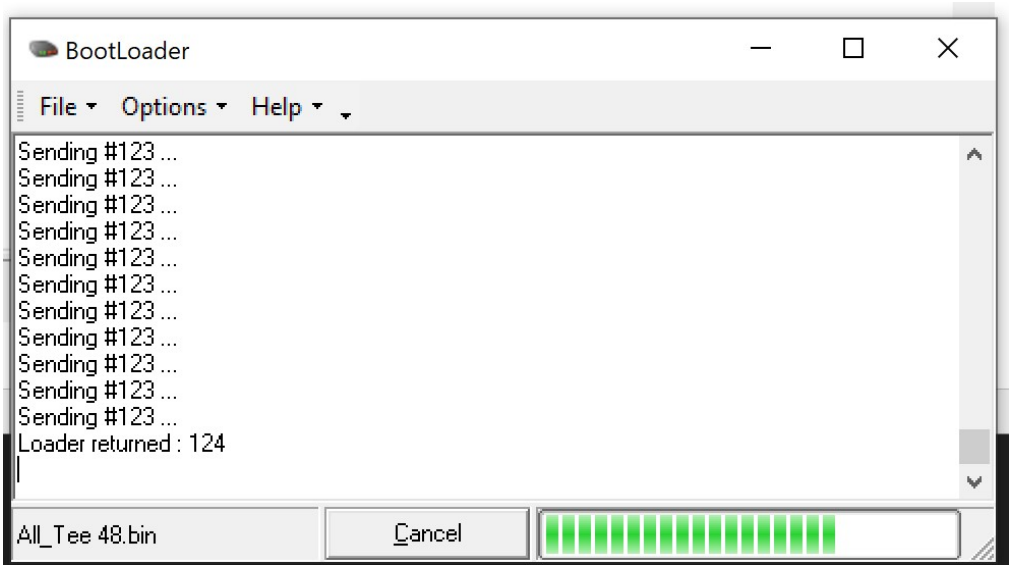


Fig. 8 Firmware flashing in progress

If successful, the led on the All-Tee should blink (yellow or green) and the program reports a finish code 0.

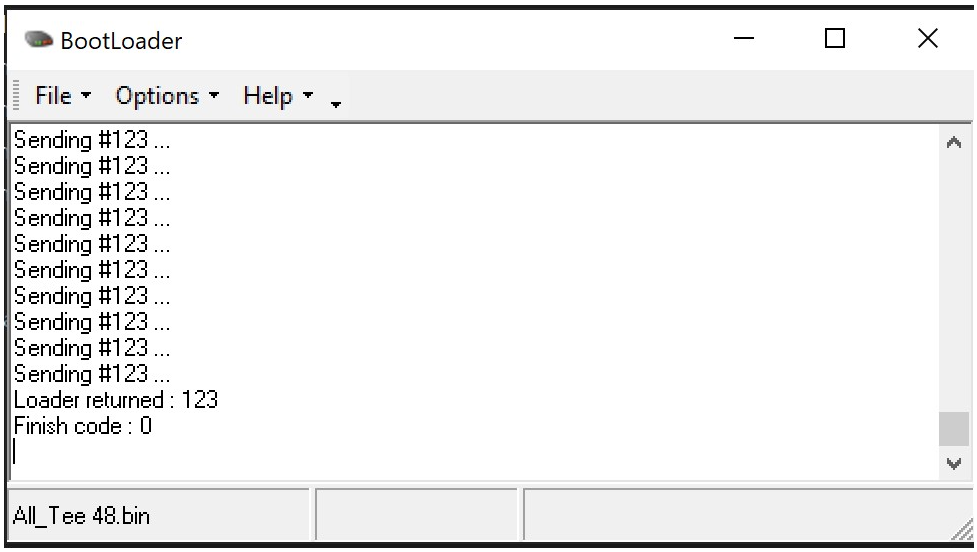


Fig. 9 termination of firmware flashing

ANNEX 1: Finding the COM port for your USB to serial adapter

In the left lower corner of your Windows desktop, enter devmgmt.msc in the search box and press enter.

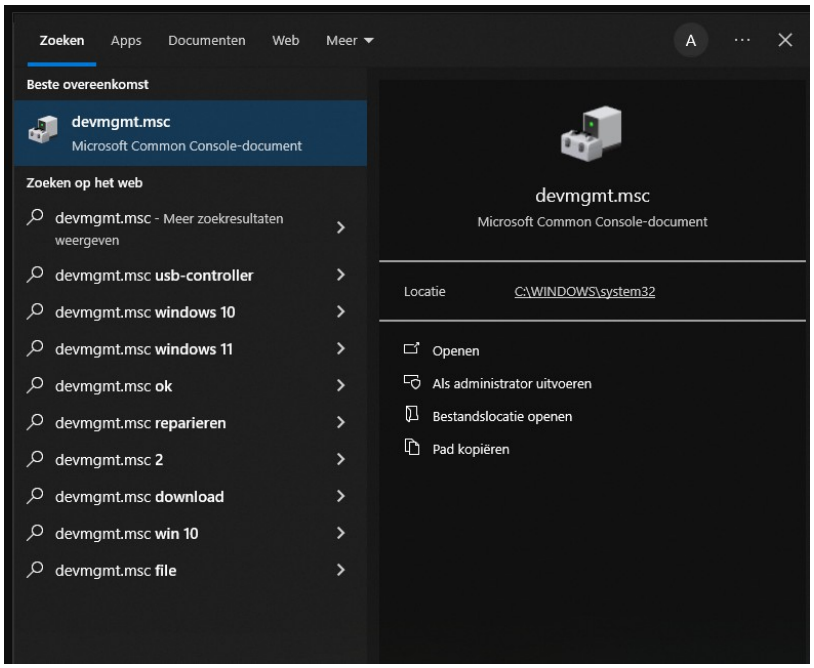


Fig. 10 WIndows device manager

From the right side of this window, select ‘open’. The device manager now opens:

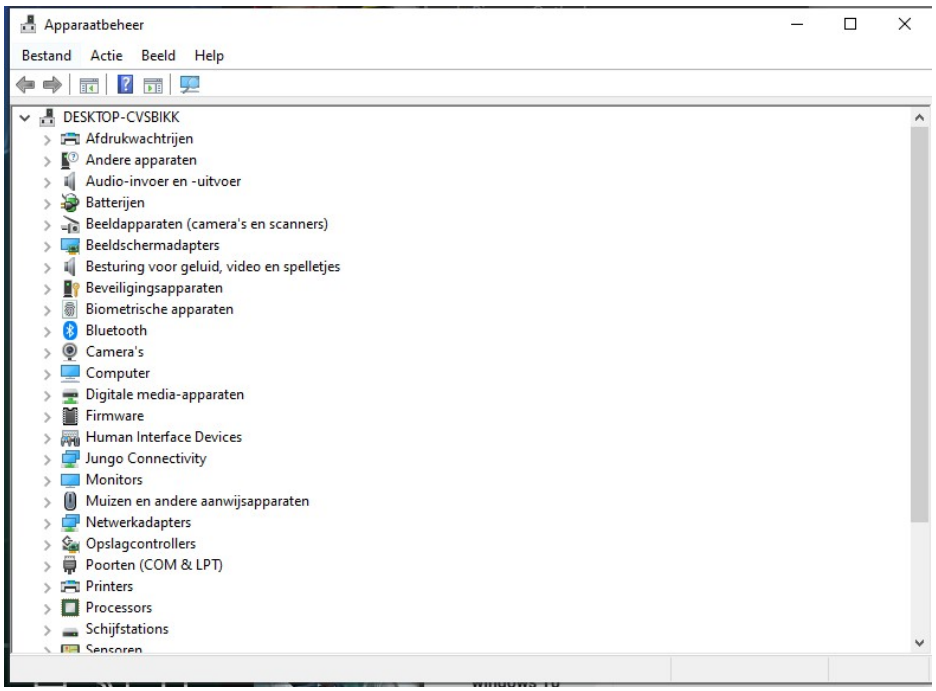


Fig. 11 Finding Serial port

Double click on the line ‘Ports (COM &LPT).
You will see the correct COM port number where it reads ‘USB Serial Port’, in this case it is COM5.



Fig. 12 Serial port COM 5

So in the Bootloader program settings as described above, select the Com port (here in this example COM5) belonging to your USB to serial adapter (it must be plugged in of course).