Quick-Guide ▶ Flystick2+

Included in delivery:
- ✔ Flystick 2+
- ✔ 2 standard AA rechargeable batteries
- ✔ 1 USB -C battery charger (100-240 Volt, 50-60 Hz)
- ✔ 1 USB radio transceiver
- ✔ 1 wall mount

Safety advice:
- ✔ Insert the rechargeable batteries into the battery compartment in the indicated polarity.
- ✔ Use delivered or rechargeable batteries NiMH 1,2V.
- ✔ Do not use non-rechargable batteries.
- ✔ Remove batteries before shipping Flystick2+.

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The Flystick2+ is a wireless input device for all ART infrared optical tracking systems using passive markers inside two detachable compartments protected by cone-shaped enclosures. It offers a vibration motor for inducing feedback patterns and a beep function.

Input transactions (buttons & joystick) are transmitted via wireless transmission operating in the 2.4GHz band (IEEE 802.15.4).

status LEDs
buttons #7 & #8
joystick #6
trigger #1
buttons #2 - #5
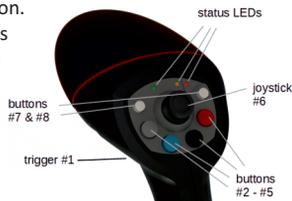
Control elements of the Flystick2+
The Flystick2+ has a trigger, six buttons and an analog joystick with an additional button functionality.
All control elements can be used simultaneously and may be used to invoke an interaction which can be defined in the user application (e.g. drag objects while button trigger pressed, open a menu dialogue).

Button sequence:
- # 1 trigger
- # 2 - # 5 colored buttons, right to left
- # 6 pressing the joystick
- # 7 - # 8 grey buttons, left to right

Flystick2+ has two LEDs to signal ist state:
1. **green flash** → active radio data transmission successful
2. **yellow flash** → initializing radio communication
3. **red flash** → low battery
4. **red active** → charging

Additionally, the Flystick2+ offers one vibration motor for vibrational feedback patterns and a beep function.

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Wall mount
Flystick2+ comes with a mount which can be used as desk stand for Flystick or wall mount. It can be assembled as shown in picture. It can also be used to charge the Flystick when not used.

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Batteries + charging
The battery compartment is at the lower end of the handle. Remove the cover of the battery compartment. To insert the batteries, take care of the polarities - also note the imprinting '+ -' on the handle. Close the compartment after inserting the batteries.

battery compartment

The charging port is at the bottom of the handle and has to be connected with the supplied battery charger. As soon as the charger is connected to Flystick2+ the charging process is started (red status LED: continuously active).

Once the battery pack is fully charged (approx. 5 h) the batteries may be used again (red status LED: off).

connector (battery charger)
charging jack
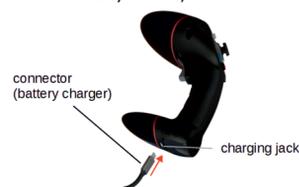
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RadioTransceiver
The RadioTransceiver3 is used for radio communication with interaction devices such as Flystick2+.
Plug-in the Radio-Transceiver3 to any free USB port of the controller, then press F2 in order to search for new hardware. Configuration is done automatically. Range with line of sight is more than 7m but can be reduced when the signal penetrates material, e.g. projection screens.

During operation, do not unplug the USB radio transceiver!
For more information or in case you need to change settings manually please refer to the DTRACK3 User's Guide .

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Flystick2+ configuration
Open 'Tracking'→'Flystick' to manage the number of Flysticks (max. 20) and to configure the corresponding settings to be used. Increase the number of Flysticks by 1 or use the numeric up down button. The corresponding entries in the list of selected Flysticks will show up.
Make sure that your Flystick2+ is listed under 'available Flysticks' - validate the serial number listed here to the one from your device.
Detach the upper marker compartment of the Flystick2+ to gain access to the serial number. Now assign your Flystick2+ to a Flystick ID:

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Therefore,

- assign the respective Flystick ID, e.g. 'F1', by moving the corresponding entry from the list of selected Flysticks.
- assign the desired Flystick2+ from the list of available Flysticks by left-clicking
- press 'Select' to finalize the assignment.

Repeat these steps if you want to use another Flystick2+. If the list of available Flysticks does not contain your Flystick2+ press any button of the device to register it at the RadioTransceiver3.
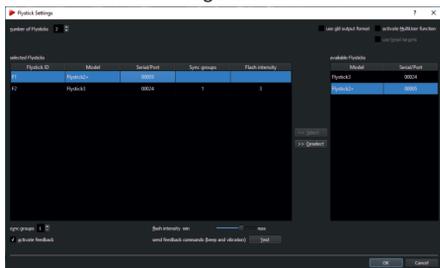
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Flystick2+ feedback

This function is only available after assignment of at least one Flystick2+ device to a corresponding Flystick ID.

Tick the checkbox 'activate feedback' in the lower left corner of the dialog to activate the feature globally on all Flystick devices providing feedback functionality. Mark the respective Flystick ID (e.g. 'F1') under selected Flysticks by left-clicking and press the button 'Test' to send a series of feedback commands to test beep and vibration of the Flystick2+.

DTRACK3 is able to receive control data from 3rd party applications via ethernet (UDP) to address the feedback and acoustic (beep) function. Six vibrational patterns are supported. Please refer to the DTRACK3 Programmer's Guide → Input of Control Data via Ethernet.

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MultiUser option + head targets
(if more than one Flystick is used):

The MultiUser option is an enhancement especially for VR/AR applications when working with more than one Flystick2+ . Tick the checkbox 'activate MultiUser function'. Please refer to the DTRACK3 Programmer's Guide → Output of Measurement Data via Ethernet for more details.

In order to use a Flystick2+ and a head target as data pair tick the checkbox 'use head targets' as well. Up to ten users can be equipped with a Flystick2+ and a head target (usually mounted on glasses). DTRACK3 is able to track them all but only the data pair (Flystick2+ and one designated head target) of one user is available as output data. Switching between the single users can be done by pressing one of the Flystick2+ buttons.

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Body Calibration

After configuration of the Flystick2+ close the Flystick dialog and open 'Tracking' →'Body calibration'. There select the body 'Flystick body 01' for calibration. Define the orien-tation of the body coordinate system relative to the body (default: due to body). Remove all disturbing reflections and place the Flystick2+ within the tracking volume. Press 'Calibrate' and the calibration will start within 5 seconds.

Confirm the results, press 'OK' and exit the dialog.
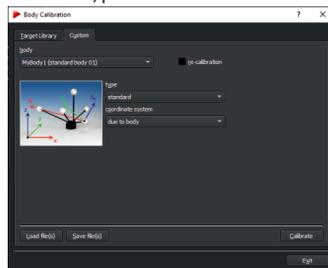
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Output Settings

Open 'Tracking' → 'Output' to define where the Flystick2+ data has to be sent to. Tick the checkboxes 'active' and 'this computer' and choose a UDP port number to send the data to the remote PC where DTRACK3 frontend is running.

Tick the checkbox '6df2' to transmit the Flystick2+ data (e.g. position and orientation of the Flystick, status of buttons and joystick).

Alternatively enter an IP address of an-other receiving client. Accept the changes and press 'OK'.

Measurement
Press 'Start' to start measurement.

Display Data
In order to view the 6DOF tracking data and button 'View' → 'Flystick'.

Please refer to the Hardware Installation Guide and the Users Guide for more information. If you need further assistance please do not hesitate to contact our support.