

# Klau PPK

## 719 & 729 Series

### User Manual



[www.klauppk.com](http://www.klauppk.com)

Rev- 1.00

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**KLAU**  
GEOMATICS

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# Introduction

KlauPPK 719 & 729 series is a survey grade GNSS solution designed for accurate aerial mapping from drones and manned aircraft. The product is light weight, designed to attach to many different drones using KlauPPK mounting solutions. GNSS data is logged onto the micro SD card for later post-processing with survey grade base station data. The system connects to various cameras to capture precise shutter event timing in order to create accurate camera coordinates in post-processing.

KlauPPK is intended to be used on drones with a specified mounting kit, or inside the cabin in manned aircraft. The system is designed to be connected to a camera for photogrammetric mapping applications.

## Disclaimer

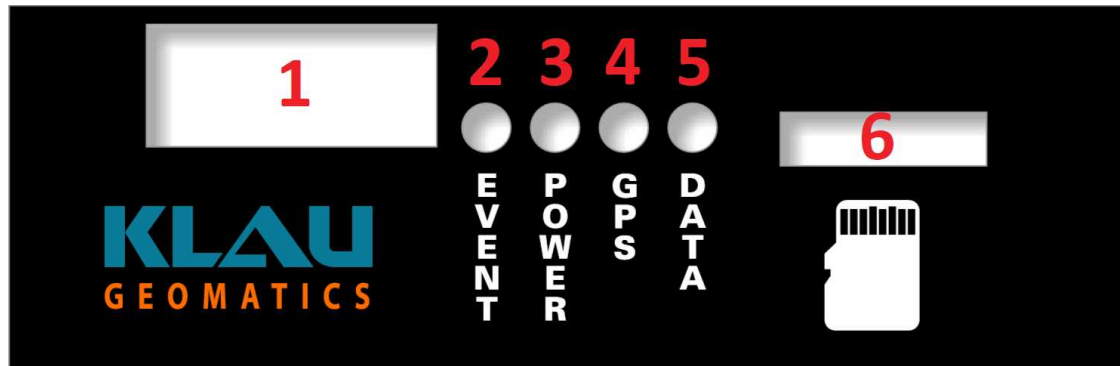
We strongly recommend that you remove aircraft propellers before installing any Klau products.

To avoid any performance degradation or damage caused by imbalanced payloads, please follow Klau Geomatics' guides for correct installation.

As we are not able to control the end user's specific usage, installation, modification (including the use of non-specified parts), and improper use. Direct or indirect damage or injury caused by the behaviour above, our company will not cover any loss and responsibility.

# Overview

## 719 Series PPK



1 – Wire harness connector

2 – Event LED (Yellow) – Illuminates when a signal from the camera is received.

3 – Power LED (Red) – Illuminates solid when unit is turned on.

4 – GPS LED (Green) – Illuminates when 5 or more satellites are being tracked.

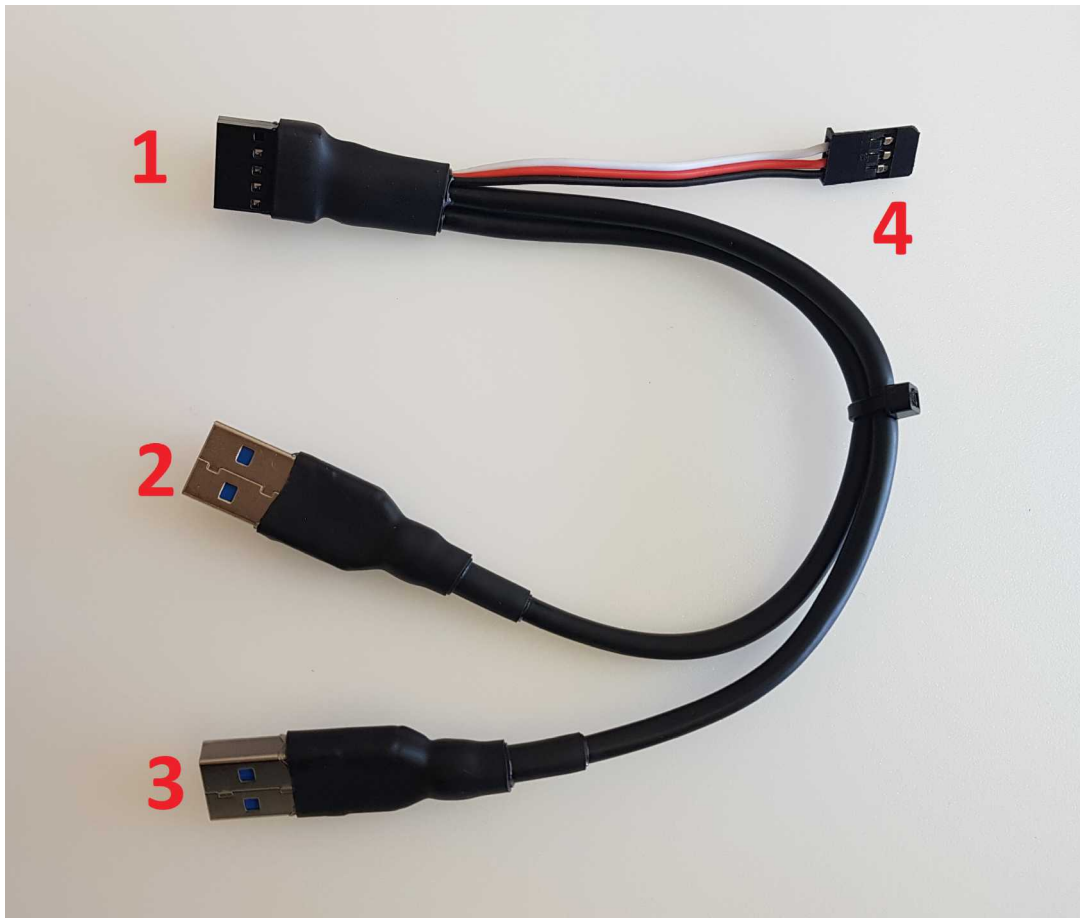
5 – Data LED (Blue) – Flickers at a fast rate when data is being written to card.

- 3 slow flashes, at 5 second intervals, indicates a card error.

6 – Micro SD Card slot – *Please refer to the technical specifications section for further details.*

7 – Antenna Connection.

## 719 Series Wire Harness



**1** - Klau PPK unit main connector. *(Please refer to Technical Specifications page for pinout)*

**2 & 3** - Power Input x2 – Connects to USB power banks.

**4** – Event/Top of frame Input from Camera.

**Note:** *The system has 2 isolated power inputs so a battery swap can be performed without turning off power to the device.*

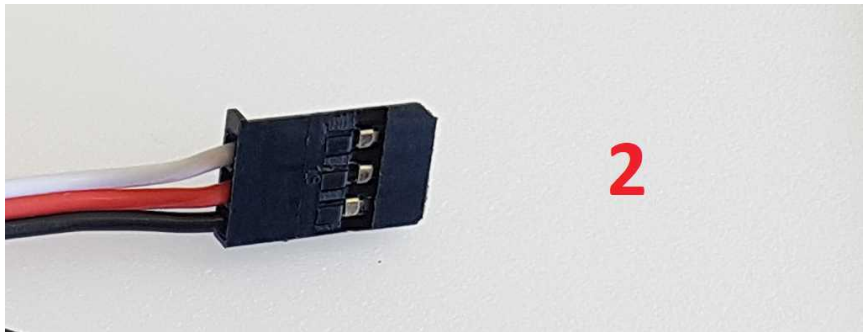
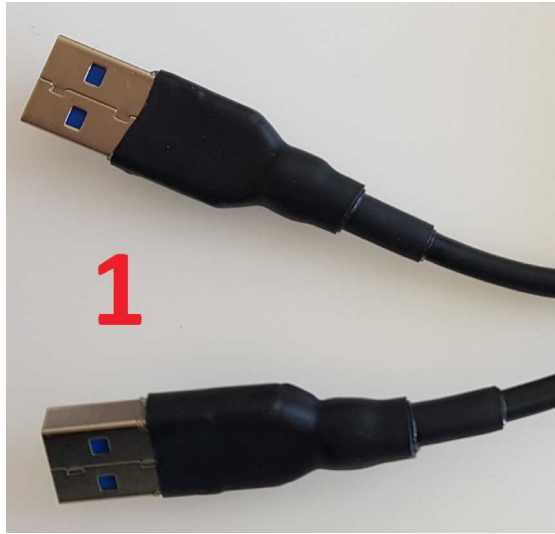
*Please see the technical specifications for further information regarding batteries and power input.*

## 729 Series PPK



- 1 – Event LED (Yellow) – Illuminates when a signal from the camera is received.
- 2 - Data LED (Blue) – Flickers at a fast rate when data is being written to card.  
- 3 slow flashes, at 5 second intervals, indicates a card error.
- 3 – Fault LED (Red) – Illuminates when the GNSS receiver fails to initialize. Please check your power connection and restart the unit.
- 4 - GPS LED (Green) – Illuminates when 5 or more satellites are being tracked.
- 5 - Power LED (Red) – Illuminates solid when unit is turned on.
- 6 - Micro SD Card slot – Located at the rear of the unit - *Please refer to the technical specifications section for further details.*

## 729 Series Wire Harness



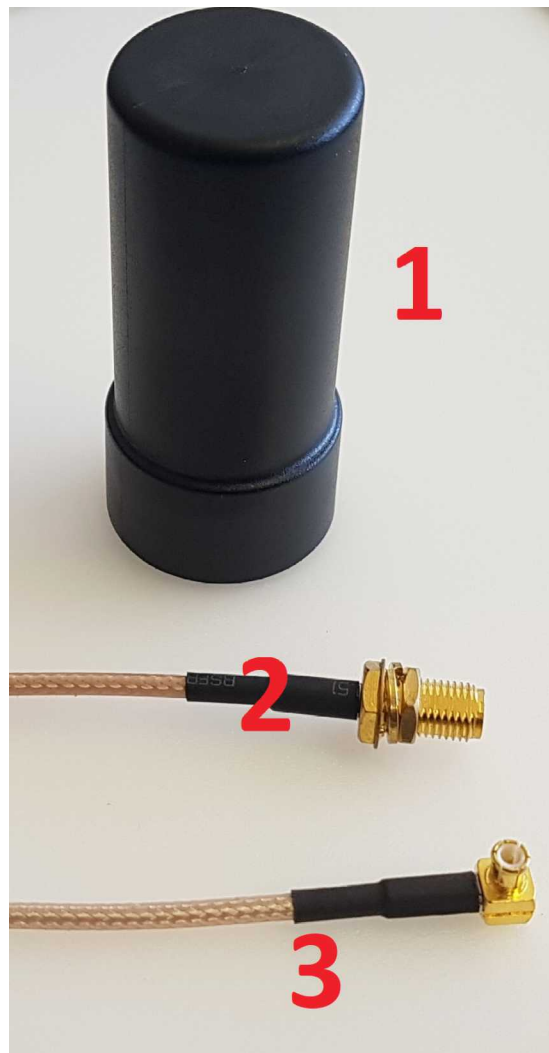
1 - Power Input x2 – Connects to USB power banks.

2 - Event/Top of frame Input from Camera.

**Note:** *The system has 2 isolated power inputs so a battery swap can be performed without turning off power to the device.*

*Please see the technical specifications for further information regarding batteries and power input.*

## Antenna



1 – PPK Antenna

2 – Antenna Cable – Antenna Connection

3 – Antenna Cable – PPK Connection (719 Model only)



# General Operation

- Run a base station on a known control point, logging GNSS data at 1 second intervals. Measure height of antenna.
  - Alternatively, you can use CORS data within 20km.
- Turn on your system by connecting one of the USB cables to the power.
- You should expect to see the Red “Power” LED illuminate. Once the initialisation process has completed, the Blue “Data” LED will begin to flicker indicating data is now being written to the micro SD card. If the LED flashes 3 times at 5 second intervals the card has failed and should be reformatted.
- The Green “GNSS” LED will illuminate when signals are being received from 5 or more satellites.
- Leave the system running continuously and stationary for at least 5 minutes.
- Fly the mission with your usual mission planner and flight control.
- After landing, allow the system to run for a few minutes undisturbed.
- The system can now be powered down and your data is ready to process with the KlauPPK software.

**To capture checkpoints coordinates:** Centre the camera over your ground mark, wait at least 2 minutes then take a photo.

***Note:** When performing a battery hot-swap ensure the fully charged battery is connected before disconnecting the flat battery.*

# Technical Specifications – 719 Series

## Connections

Antenna	MCX jack receptical to SMA Plug
Power Inputs	USB 3.0
Camera Input (Event)	Futaba Plug – 3-Pin Female

## Dimensions & Weight

Enclosure Size	79mm x 54mm x 26mm
Weight without Antenna	96g
Weight WITH Antenna	138g

## Battery Recommendations

USB Power Bank	2500mAh (Minimum)
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## Power Input

5v	800mA @ 5v
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## Operating Temperature

Minimum	Maximum
-40°C	+80°C

### WARNING

Do not exceed maximum power input.

Do not operate device outside of recommended operating temperature.

# Technical Specifications – 719 Series

## Event/Top of Frame Input

High Pulse Signal (White wire)	Requires a rising edge pulse above 1.5v
Low Pulse Signal (Red wire)	Requires a falling edge pulse below 4.4v

## Antenna

Harxon HX-CH4601A	GPS L1/L2+GLONASS L1/L2 Gain:33dB
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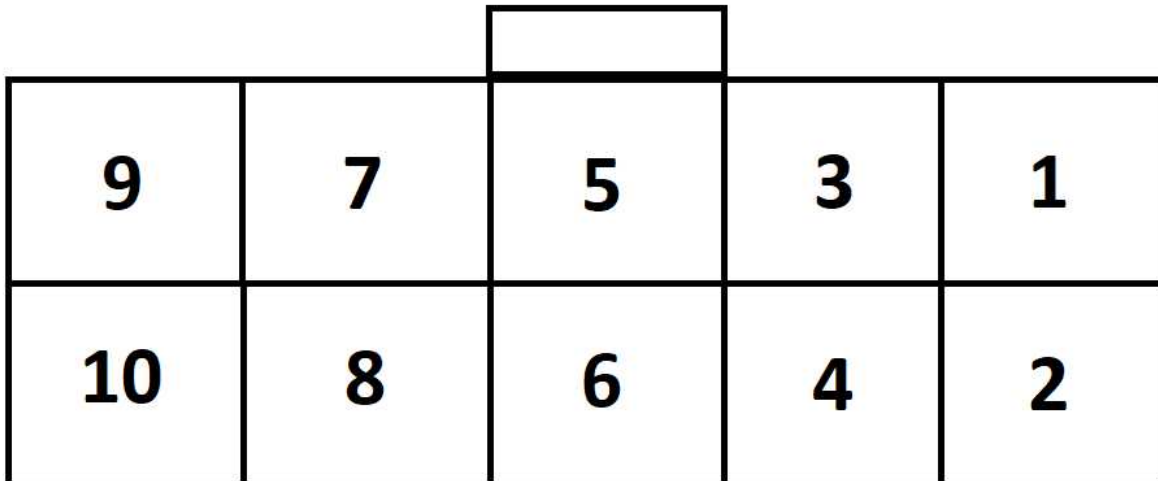
## Micro SD Card

Recommended (included in kit)	SanDisk Extreme Pro v30 - 32GB
Other cards may be used, please ensure they are rated as 'High Speed' or 'Ultra High Speed'.	

# Technical Specifications – 719 Series

## Main Connector

### View from rear of connector



1. Main USB cable - Positive (red)
2. Main USB cable - Negative (black)
3. Aux USB cable - Positive (red)
4. Aux USB cable - Negative (black)
6. Servo cable - Black
7. Servo cable - White
8. Servo cable - Red

# Technical Specifications – 729 Series

## Connections

Antenna	SMA Plug
Power Inputs	USB 3.0
Camera Input (Event)	Futaba Plug – 3-Pin Female

## Dimensions & Weight

Enclosure Size	120mm x 73mm x 30mm
Weight without Antenna	170g
Weight WITH Antenna	189g

## Battery Recommendations

USB Power Bank	2500mAh (Minimum)
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## Power Input

5v	710mA @ 5v
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## Operating Temperature

Minimum -40°C	Maximum +80°C
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### WARNING

Do not exceed maximum power input.

Do not operate device outside of recommended operating temperature.

# Technical Specifications – 729 Series

## Event/Top of Frame Input

High Pulse Signal (White wire)	Requires a rising edge pulse above 1.5v
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## Antenna

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## Micro SD Card

Recommended (included in kit)	SanDisk Extreme Pro v30 - 32GB
Other cards may be used, please ensure they are rated as 'High Speed' or 'Ultra High Speed'.	

## Warning

The KlauPPK GNSS antenna must have a clear view of the sky to track satellites and will not function indoors or under vegetation.

Do not use your device if there is any signs of damage to the enclosure, wire harness or antenna. This includes but is not limited to damage caused by moisture.

The KlauPPK 719 & 729 series have no user serviceable internal parts. For repairs and maintenance please contact your local authorised distributor or the Klau Geomatics office.

For information on safe disposal of electronic equipment please check your local rules and regulations with the necessary authorities. Alternatively, contact your local distributor or Klau Geomatics office.

Klau Geomatics

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