

# Klau PPK & PPP

## Manned - 7700B

### User Manual



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

Rev- 1.00

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**KLAU**  
GEOMATICS

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# Introduction

KlauPPK 7700 series is a survey grade GNSS solution designed for accurate aerial mapping from drones and manned aircraft. GNSS data is logged in the USB drive 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

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

## PPK & PPP Unit



- 1 – Event/Top of Frame Input from Camera.
- 2 – Data Output – USB or RS232 connections available on request.
- 3 – Antenna Connection.
- 4 – Event/Top of Frame Feedback Output.
- 5 – Power Input.
- 6 – Fuse Socket.
- 7 – GNSS LED (Green) – Pulses when a GNSS signal is received.
- 8 – Event LED (Yellow) – Illuminates when a signal from the camera is seen.
- 9 – Fault LED (Red) – Illuminated when fault detected. Restart required.
- 10 – Power Button + LED (Blue) – Press to power on. Illuminated when device is running.
- 11 – End Log Button + LED (White) – Press and hold for 3 seconds to end logging to USB drive. LED pulses while data is being logged to USB drive.
- 12 - USB port for data logging.

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## **Cables Included**

**1** – Event In, Camera Cable – 2meters

**2** – Antenna Cable – 5 meters (*or as requested*)

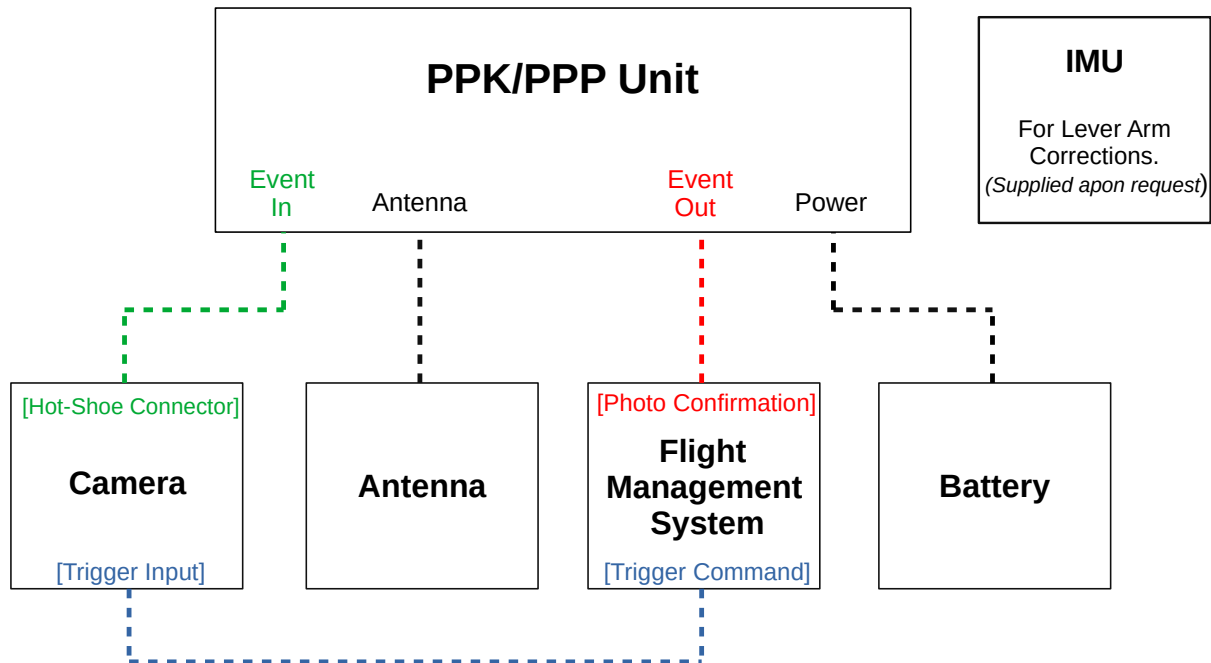
**3** – Event Out Cable – 2 meters

**4** – Power Cable, Main\*\* – 1 meter

**5** – Power Cable, Extension – 4 meters

*\*\*Kit includes both spade and ring connections to suite a wide variety of battery terminals.*

# Connection Diagram



# 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 the 7700 system by connecting power and pressing the “OFF/ON” button.
- You should expect to see the Blue “OFF/ON” LED illuminate. Once the initialisation process has completed, the White “End Log” button will begin to flash indicating data is now being written to the USB drive.
- The Green “GNSS” LED will begin to flash slowly once a signal has been received. When the signal quality has increased to a satisfactory level, the Green “GNSS” LED will flash in sync with the White “End” button.
- Leave the system running continuously and stationary for at least 5 minutes. (20 minutes for Real-Time systems).
- Power on IMU and commence logging (if applicable).
- Fly the mission as you normally would.
- After landing, allow the system to run for a few minutes undisturbed.
- **BEFORE** turning off the device, push and hold the “End Log” button for 3 or more seconds to close the file currently being written to the USB drive. If the file has been closed successfully the White “End Log” button will have now stopped flashing.
- Your data is now ready for use in all KlauPPK Processing Software.

# Technical Specifications

## Connections

|                               |                              |
|-------------------------------|------------------------------|
| Antenna                       | TNC Female                   |
| Power Input                   | GX-16 Connector – 4 Pin Male |
| Battery Connection            | Spade and Ring Terminals     |
| Data Output Stream            | USB3.0 or DB9 socket         |
| Camera Input (Event/ToF IN)   | 6.5mm Jack                   |
| Camera Output (Event/ToF OUT) | GX-16 Connector – 2 Pin Male |
| USB Drive                     | USB 2.0 socket               |

## Dimensions & Weight

|        |                     |
|--------|---------------------|
| Size   | 150mm x 85mm x 50mm |
| Weight | <b>TBA</b>          |

## Battery Recommendation

|              |                     |
|--------------|---------------------|
| PPK/PPP unit | 12volt -1500mAh min |
|--------------|---------------------|

## Power

|            |             |              |
|------------|-------------|--------------|
| 6v Minimum | 25v Maximum | 1000mA @ 12v |
| Fuse       |             | 1Amp         |

## Operating Temperature

|         |         |
|---------|---------|
| Minimum | Maximum |
| -40'C   | +80'C   |

### WARNING

Do not exceed maximum power input.

Do not operate device outside of recommended operating temperature.



## Event/Top of Frame Input

|                                   |  |
|-----------------------------------|--|
| Low Pulse Signal (Standard Model) | Requires a falling edge pulse below 4.4v |
| High Pulse Signal (Custom Model)  | Requires a rising edge pulse above 1.7v  |

## Antenna Recommendation

|                  |   |
|------------------|---|
| Novatel GNSS-502 | GPS L1/L2/L5/L-band + GLONASS L1/L2 + BDS B1/B2/B3 + Galileo E1/E5b/E5a |
|------------------|---|

## USB Storage

|                               |                                       |
|-------------------------------|---------------------------------------|
| Recommended (included in kit) | Sandisk 16GB Ultra Fit High Speed 3.1 |
|-------------------------------|---------------------------------------|

|                                   |  |
|-----------------------------------|--|
| Other confirmed compatible drives | Kingston Technology DataTraveller 3.0 – 32GB |
|                                   | Kingston Technology DataTraveller 2.0 – 32GB |
|                                   | Toshiba Corporation DTSE9 - 8GB              |
|                                   | Sony Corporation Storage Media – 8GB         |
|                                   | Teclast CoolFlash – 32GB                     |

**Note:** The USB device must be classed as ‘High-Speed’. If the USB device has multiple partitions, only the first partition will be written to.

## 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 7700 series has 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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