



viDoc[®]

Product description



viDoc[®] for Smartphone

Included in the scope of delivery



viDoc® for Tablet

Included in the scope of delivery

GNSS antenna



USB charging cable



viDoc for Tablet



Box

viDoc[®] for Smartphone

Functional overview



8 hours of battery operation.
The viDoc is connected to the smartphone via Bluetooth.

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Technical Data

viDoc



Smartphone



Tablet

Measurements	153x72x19 mm	253x184x29 mm
Weight	242 g	484 g
Temperature range	-5 up to +35 °C	
Humidity	5-95 % (not condensing)	

GNSS antenna

Measurements	55,6 mm x 27,5 mm
Weight	< 19 g
Temperature range	-40 up to + 80 °C
Humidity	Up to 95 %
Polarization	RHCP
Satellite signals	GPS: L1/L2 GLONASS: G1/G2 Beidou: B1/B2/B3 Galileo: E1/E5b
Coverage	360°
Supply voltage	3-16 VDC
Power consumption	< 35 mA
Gain	36 ± 2 dB
Noise figure	< 1,5 dB
V.S.W.R.	< 2,0



Laser

Measurement accuracy	± 2 mm
Measuring range	Ground laser: 0,5 – 40 m Front laser: 0,5 – 20m
Laser class	2
Laser type	635 nm, < 1 mW
Measurement times	0,1 up to 4 sec.
Supply voltage	2,5 – 3,3 V
Operating temperature	0 up to 40 °C

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Performance specifications

Constellation-independent, flexible signal tracking, improved positioning under challenging environmental conditions¹ with multi-satellite use. Reduced downtime in the event of loss of signal (up to 5 seconds).

The following satellite signals are used simultaneously:

GPS: L1C/A (1575.42 MHz); L2C (1227.60 MHz)
 BeiDou: B1I (1561.098 MHz); B2I (1207.140 MHz)
 Galileo: E1-B/C (1575.42 MHz); E5b (1207.140 MHz)
 GLONASS: L1OF (1602 MHz + k*562.5 kHz, k = -7,..., 5, 6)
 L2OF (1246 MHz + k*437.5 kHz, k = -7,..., 5, 6)
 QZSS

Positioning services²

Device type	Multi-band GNSS high precision receiver
Accuracy of pulse signals	RMS 30 ns 99 % 60 ns
Frequencies of pulse signals	0,25 Hz up to 10 MHz
Convergence time	RTK < 10 sec.
Static survey	POSITION 1cm + 1ppm HIGHT 1cm + 1ppm
RTK run up/ramp up time ³	Cold start (Sec.) 24sec. At operating temperature 2sec.
RTK-Position accuracy RMS ^{4,5} (repeatability for static measurement)	POSITION 7mm at 15 min HIGHT 8mm at 15 min POSITION 15mm at 30 min HIGHT 21mm at 30 min
Speed accuracy	0,05 m/s
System limits	Height 5.000 m Acceleration < 4 g Speed 500 m/s
IMU	Prepared

Power supply

Smartphone operating times in continuous operation:

	Smartphone	iPad
receive and send	max. 9 hours	max. 9 hours
with active Lasermodule	max. 6 hours	max. 6 hours
under real conditions	max. 8 hours	max. 8 hours
battery pack	2.400 mAh	3.200 mAh

Model accuracy⁶ absolute position and height (relativ)

– with EXIF data	< 10cm (<2cm)
– with CSVdata	< 10cm (<2cm)
– with CSV+GCP data	< 2cm
– with EXIF+GCP data in cloud processing	< 2cm

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Remarks

- 1 Challenging GNSS environments are places where there is sufficient satellite availability for the receiver as a prerequisite for minimum accuracy, but where the signal can be partially shaded or reflected by trees, buildings and other objects. The actual results may vary due to the location and atmospheric activity, due to strong flickering, the condition and availability of the satellite system and the degree of multipath scattering and signal coverage.
- 2 Precision and reliability can be affected by certain factors such as multipath scattering, obstacles, satellite geometry and atmospheric conditions. The stated specifications require stable setups, a clear view of the sky, an environment free of electromagnetic interference and multipath scattering, optimal GNSS configurations and, in addition, surveying methods as they are usually used for surveys of the highest order with occupation times adapted to the base lengths. Baselines over 30 km in length require ephemeris accuracy and occupation times of up to 24 hours may be necessary to achieve high-precision static specification.
- 3 Can be influenced by atmospheric conditions, multipath signals, shadowing and satellite geometry. The reliability of the initialization is permanently monitored to ensure the highest quality.
- 4 RMS efficiency is based on repeatable on-site measurements. The achievable accuracy and the initialization time can vary depending on the type and performance data of the receiver and antenna, the geographic location of the user, atmospheric conditions, scintillation intensity, the status and availability of the GNSS constellation, the degree of multipath scattering and the proximity to shading (e.g. from large trees and buildings) vary.
- 5 Measurement iterations based on 1 minute. Better position accuracy through error rate filtering.
- 6 The models were mapped with a Vigram Rover and an iPhone 13 Pro.
The model accuracy depends on the environmental conditions and the calculation settings.
The results may vary depending on the software provider.



www.vigram.com **www.pix4d.com**

vigram AG
Zugerstrasse 116 | CH 6330 Cham

Pix4D S.A.
Route de Renens 24 | CH 1008 Prilly

vigram GmbH
Jechtinger Straße 21 | D 79111 Freiburg

Pix4D GmbH
Alte Jakobstraße 85,86 | D 10179 Berlin