

A07-RTK: Key features

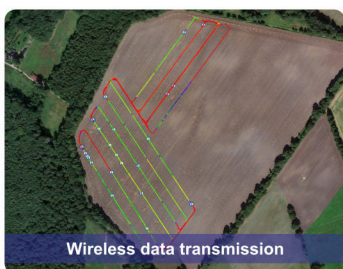
- Affordable surveying solution
- RTK and post-processing
- User friendly
- Customised configuration
- Automatic data transmission
- Server/Client communication

A07-RTK: Integrated hardware

- Low-cost GNSS RTK receiver
- GPRS modem with antenna
- Bluetooth module with antenna
- Data storage (installed: 32 GB)
- Power supply (Li-Po battery)
- Processor for data management



Examples of application fields



System description

The Alberding A07-N-11 sensor combines a low-cost GNSS chip, a GPRS modem with antenna, a Bluetooth module with antenna, a memory card, a battery and several other components in one case. The core of the system is an integrated processor, controlling the sensor components and transferring data automatically.

In the "RTK" variant, the Alberding A07-N-11 delivers centimetre accurate GNSS positions in real time. After pre-configuring the system, Ntrip-based RTK correction data reception starts with a single press of a button. Depending on the application, the RTK positions (NMEA format) can be stored internally, transmitted via Bluetooth to a tablet PC or sent to a server via mobile Internet.

Since the Alberding A07-N-11 can be used independently as an intelligent sensor (without a tablet PC or smartphone), the system is also suitable as a geo-monitoring sensor, or for precise positioning of persons or moving objects (machines, UAV's). The Alberding A07-N-11 supports file transfer and real time streaming for data transmission (server/client).

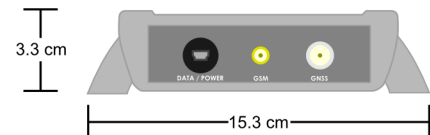
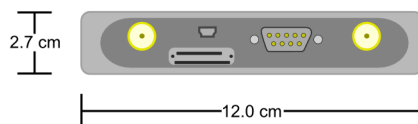
GNSS specifications

Tracking	GNSS signals tracked:	L1C/A code and carrier	Horizontal accuracy	Autonomous:	2.5 m CEP
	GPS	L1OF code and carrier		RTK ^{1,2} :	0.025 m + 1 ppm CEP
	GLONASS	B1I code and carrier		RTK Convergence time ¹ :	~ 2-3 min
	BeiDou				
	Number of channels:	72	Time to First Fix	With systems:	GPS & GLONASS
	Max. update rates:	RTK: 5 Hz		Cold start:	26 s
		RAW: 10 Hz		Aided start:	2 s
				Reacquisition:	1 s

Technical specifications

Standard

Robust



Physical	Dimensions (LxWxH):	12.0 cm x 7.5 cm x 2.7 cm (4.72" x 2.95" x 1.06")	13.0 cm x 15.3 cm x 3.3 cm (5.12" x 6.02" x 1.30")
	Weight:	190 g (0.42 lb)	734 g (1.62 lb) 1305 g (2.88 lb) with pole holder
	Status indicators (LEDs):	System, GSM, Bluetooth, GNSS status	System, GSM, Bluetooth, GNSS status, charging status
	Buttons:	Power	Power, Log
	Antenna connector:	GNSS: SMA female, GSM: SMA female (optional)	GNSS: TNC female, GSM: SMA female
Communications	Bluetooth 2.1 + EDR:	Class 2, range: ~30 m, SPP protocol, Apple iAP	Class 2, range: ~5 m, SPP protocol, Apple iAP
	Cellular ³ :	Quadband GSM/GPRS (850/900/1800/1900 MHz), class 10	Quadband GSM/GPRS (850/900/1800/1900 MHz), class 10
	Mini-USB:	USB V2.0, virtual serial port	USB V2.0, virtual serial port
	Serial ⁴ :	RS-232 Sub-DB9	
Data and memory	Data storage:	Integrated memory card	Integrated memory card
	Real-time data output:	NMEA 0183, Binary, RTCM version 3.x	NMEA 0183, Binary, RTCM version 3.x
	Real-time data input:	RTCM version 3.x	RTCM version 3.x
Environmental	Operating temperature:	-20 °C to +55 °C (-4 °F to +131 °F)	-20 °C to +55 °C (-4 °F to +131 °F)
	Humidity:	up to 80%	up to 80%
	Ingress protection:	IP40	IP67
	Enclosure material:	ABS plastic (UL94 HB)	Metal (AlMgSi 0.5) powder coated
	Compliance:	CE, RoHS and Lead-free	CE, RoHS and Lead-free
Electrical	External power input:	5 V DC (USB-mini)	5 V DC (USB-mini)
	Rechargeable LiPo battery:	3.7 V, 1.25 Ah with LED status indicator	3.7 V, 5 Ah with LED status indicator
	Power consumption ⁵ :	1.3 W	1.3 W
	Battery life ⁶ :	~ 3:00 h at 20 °C	~ 12:00 h at 20 °C
	Recharge power consumption:	max. 5 W	max. 5 W
	Full recharge time ⁷ :	~ 2 h with LED status indicator	~ 6 h with LED status indicator
	Protections:	Short-circuit	Short-circuit
		Overcurrent charge and discharge	Overcurrent charge and discharge
Optional accessories		Overvoltage charge (overcharge)	Overvoltage charge (overcharge)
		Undervoltage charge (over-discharge)	Undervoltage charge (over-discharge)
		Temperature	Temperature
		1. AC-DC power supply 100-240 V USB-charger	1. AC-DC power supply 100-240 V USB-charger
		2. USB cable 2.0, A-plug to mini-USB 1.5 m	2. USB cable 2.0, A-plug to mini-USB 1.5 m
		3. External GNSS antenna	3. External GNSS antenna
		4. External battery (e.g. Power Bank)	4. External battery (e.g. Power Bank)
		5. Memory card	

¹Depends on baseline length, number of satellites in view, satellite geometry, GNSS antenna, multipath environment and atmospheric conditions

²ppm limited to baselines up to 10 km

³External GSM antenna, optional

⁴Optional, only for standard variant

⁵Varies with temperature and wireless data rate

⁶At 1 Hz NMEA output rate with RTCM 3.x corrections

⁷AC-DC 5V USB charger 1A

Specifications subject to change without notice. © January 2018, Alberding GmbH

Registration Number: GOM-1403-3647-C-V01

P/N: A07-N-11

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