A08-RTK

.:GEO-MICHEL®:.

RTK Surveying System

Key features

- Compact and user-friendly L1/L2 handheld RTK system
- Versatile smartphone, tablet and rover rod attachments
- Lightweight sensor (approx. 300 g)
- E-paper display for system information
- Can be used without external control unit (precise IoT, robotics)
- Configurable data flow, configuration changes via the internet
- Flexible GNSS antenna solutions (helix or patch antennas)
- Secure transmission of correction data (TLS)

Integrated sensor hardware

- Multi-frequency GNSS RTK receiver
- Mobile network module (4G LTE with 2G fallback)
- BT/WLAN module
- Data storage
- Power supply (LiPo battery with 3.2 Ah)
- Additional sensors (inertial, temperature, pressure)

Examples of application fields

Surveying

GIS data collection

Machine positioning

Precise online tracking

System description

The Alberding A08-RTK GEO-MICHEL® is a compact, powerful and scalable sensor for precise GNSS positioning. After automatically connecting to RTK services, the GEO-MICHEL® provides centimetre-accurate positions in just a few seconds.

When using an app for data acquisition, these precise positions are transmitted wirelessly to smartphones or tablets (Android, Apple iOS). The standardised NMEA data format is supported by many GIS software packages (e.g. AGIS, QField).

When used without an external control device, point and line information is transmitted to the ALPOS® Service via mobile network. Mobile data recording is controlled by the FN button.

The GEO-MICHEL® is also used in conjunction with ALPOS® for staking out and locating points. Directions, distances, and coordinate differences to the staked points (e.g. boundary stones) are displayed on the easy-to-read e-paper display.

While data is being acquired in the field, RTK positions can be transmitted to a server via mobile communications. For vehicle-mounted or robotic applications, the precise position of the receiving antenna can be visualised online on the server.

The Alberding A08-RTK GEO-MICHEL® is a flexible and cost-effective alternative to GNSS smart antennas.

Technical specifications

Physical

Dimensions (LxWxH):	16.7 cm x 8.2 cm x 4.1 cm (6.57" x 3.23" x 1.61")
Weight (incl. battery):	308 g (0.68 lb)
Display:	1.54" e-paper
Status indicators (LEDs):	Charge status, mobile network, Bluetooth, GNSS status, data transfer
Buttons:	"Power" button, "Function" button
GNSS antenna connector:	SMA female (optional second socket for heading)

Communications

Bluetooth v4.2 + EDR:	Range: ~15 m, SPP protocol
Cellular:	LTE Cat M1/NB2, GSM/GPRS Fallback
Data/Power:	USB-C

Electrical

External power input:	5 V max. 2 A
Power consumption:	Typ. 1.8 W
max. battery life:	> 7 h at 20°C
Rechargeable battery:	3.7 V, 3.2 Ah
Recharge power consumption:	max. 8 W
Full recharge time:	~ 2,5 h with LED status indicator
Protections:	Short circuit
	Overcurrent charge and discharge
	Overvoltage charge (overcharge)
	Undervoltage charge (over-discharge)
	Temperature

Data and memory

Data storage:	Integrated memory card
Wireless data output:	BT, WLAN, mobile internet
Wireless data input:	BT, WLAN, mobile internet
Wired data output:	Serial USB-C
Wired data input:	Serial USB-C

Environmental

Operating temperature:	-20 °C to +55 °C (-4 °F to +131 °F)
Humidity:	up to 80%
Ingress protection:	IP65
Enclosure material:	ABS, TPE seal
Compliance:	CE, RoHS and Lead-free

Optional accessories

1. USB-C power supply, max. 15 W
2. Pole mount
3. External GNSS antennas

GNSS manufacturer specifications (u-blox F9P)

GNSS tracking

GNSS signals:	
GPS	L1C/A & L2C code and carrier phase
GLONASS	L1OF & L2OF code and carrier phase
BeiDou	B1I & B2I code and carrier phase
Galileo	E1-B/C & E5b
QZSS	L1C/A & L2C
SBAS	L1C/A
Number of channels:	184
Max. update rates:	RTK: 1 Hz
	RAW: up to 1 Hz

Accuracy[1]

Autonomous L1:	1.5 m
RTK[2]:	0.01 m + 1 ppm CEP
RTK convergence time:	< 10 s

Time to First Fix

Cold start:	24 s
Warm start:	2 s
Signal re-acquisition:	2 s

The A08-RTK GEO-MICHEL® features the u-blox ZED-F9P L1/L2 GNSS RTK module as standard. GNSS modules from other manufacturers (Septentrio Mosaic X5, Trimble BD9250-S) can also be used with the GEO-MICHEL®.

External connections

SMA GNSS antenna

USB-C with dust protection

Display

Display - Position finder

[1]Depends on baseline length, number of satellites in view, satellite geometry, GNSS antenna, multipath environment and atmospheric conditions
[2]ppm limited to baseline up to 20 km