TECHNICAL SPECIFICATIONS

GNSS Performance (1)	
Channels	1608 channels
GPS	L1C/A, L2C, L2P(Y), L5
GLONASS	L1, L2, L3*
Galileo	E1,E5a,E5b,E6*
BeiDou	B1I, B2I, B3I, B1C, B2a, B2b*
QZSS	L1C/A, L1C, L2C, L5
NavIC/ IRNSS	L5
SBAS	EGNOS (L1, L5*)

GNSS Accuracies (2)	
Real time kinematic (RTK)	Horizontal: 8 mm + 1 ppm RMS Vertical: 15 mm + 1 ppm RMS Initialization time: < 10 s Initialization reliability: >99.9%
Post - processing kinematics (PPK)	Horizontal: 3 mm + 1 ppm RMS Vertical: 5 mm + 1 ppm RMS
PPP	Support PPP-B2b, E6B-HAS H: 10cm I V: 20cm
Post - processing static	Horizontal: 2.5 mm+ 0.5 ppm RMS Vertical: 5 mm+ 0.5 ppm RMS
Code differential	Horizontal : 0.4m RMS Vertical : 0.8 m RMS
Autonomous	Horizontal : 1.5 m RMS Vertical : 2.5 m RMS
Vision stakeout	H : 8 mm + 1 ppm RMS V : 15 mm + 1 ppm RMS
Positioning rate (3)	1 Hz, 5 Hz and 10 Hz
Time to first fix (4)	Cold start: < 45 s , Hot start: < 10 s Signal re-acquisition: < 1 s

Laser Sensor (5)	
High-accuracy Laser survey	2 cm within range 5 m 3 cm within range 10 m
Rapid Laser survey	3 cm within range 5 m 5 cm within range 10 m
Laser Range	Up to 50m
Range Accuracy	2mm
Laser Type	Class 3R, Green(6)

IMU Sensor	
IMU Type	4D AUTO-IMU
IMU update rate	200Hz
IMU tilt angle	0-60°
Additional horizontal pole-tilt	Typically less than 2.5 cm within 30°

Hardware	
Size (L x W x H)	Φ133 mm x 90 mm (Φ 5.24 in × 3.54 in)
Weight	800 g (1.76 lb)
Front panel	4 LED + 2 Button
Environment	Operating: -40°C to +65°C (-40°F to +149°F) Storage: -40°C to +85°C (-40°F to +185°F)
Humidity	100% non-condensation
Ingress protection	IP68 waterproof and dustproof, protected from temporary immersion to depth of 1 m
Shock resistance grade	IK08
Drop	Survive a 2-meter pole drop
Tilt sensor	Calibration-free IMU for pole-tilt compensation. Immune to magnetic disturbance

Camera	
Sensor pixels	5 & 2 MP
Field of view	75°
Video frame rate	25 fps

Communication	
Wi-Fi	802.11 b/g/n/ac, access point mode
Bluetooth®	v 4.2
Others	NFC
Ports	1 x USB Type-C port (external power, data download, firmware update) 1 x UHF antenna port (SMA male)
UHF radio (7)	Standard Internal Tx/Rx: 410 - 470 MHz Transmit Power: 0.5 W, 1W Protocol: EFIX, Transparent, TT450, Satel (8) Link rate: 9,600 bps to 19,200 bps Range: Typical 3 km, up to 8 km with optimal conditions
Data formats	RTCM2.x, RTCM3.x, CMR input / output, Full Star RINEX2.11, 3.02 NMEA 0183 output ECN and RINEX static formats NTRIP Client, NTRIP Caster
Data storage	8 GB high-speed memory

Electrical	
Power consumption	Typical 2.0 W (depending on user settings)
Li-ion battery capacity	Rechargeable and built-in Lithium Battery 4900mAh, 7.2 V
Operating time on internal battery (9)	RTK Rover, UHF mode wo camera: up to 20 h RTK Rover, Laser Survey: up to 15h RTK Rover, Vision Stakeout: up to 15 h UHF RTK Base: up to 12 h
External power input	5 V / 2 A

Compliance with Laws and Regulations	
International standards	IEC 62133-2:2017, EN IEC 62368-1:2020, UN Manual Section 38.3, IEC60825-1-2007

*All specifications are subject to change without notice.
(1) Compliant, but subject to availability of BDS ICD, GLONASS, Galileo, QZSS and IRNSS commercial service definition. GLONASS L3, Galileo E6, Galileo E6 High Accuracy Service (HAS), BDS B2b and SBAS L5 will be provided through future firmware upgrade.
(2) Accuracy and reliability are determined under open sky, free of multipaths, optimal GNSS geometry and atmospheric condition. Performances assume minimum of 5 satellites, follow up of recommended general GPS practices.
(3) Compliant and 10 Hz to be provided through future firmware upgrade.
(4) Typical observed values.
(5) Data sourced from EFIX Lab. Actual results may vary depending on testing environment and conditions.
(6) Avoid Direct Eye Contact with Beam
(7) The use of UHF datalink may be subject to local regulations. Users must ensure that the device is not operated without the permission of the local authorities on frequencies or power output other than those specifically reserved and intended for use without required permit.
(8) Compliant and Satel protocol to be provided through future firmware upgrade.
(9) Battery life is subject to operating temperature.

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EFIX
Laser to Fix, Easy to Use

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F8L

ADVANCED LASER POCKET-SIZE IMU-RTK

EFIX

Laser to Fix, Easy to Use

FULL-STAR **AUTO-IMU**

LASER SURVEY **VISION STAKEOUT**

The EFIX F8L seamlessly integrates cutting-edge laser, GNSS, and IMU technologies to meet professional surveyors' demands. It delivers unparalleled accuracy and efficiency for surveying tasks.

With its integrated laser detector, the F8L's advanced laser system enables effortless surveying of challenging terrain—including difficult-to-fix, hard-to-reach, and hazardous points. Real-time AR stakeout feedback provides quick and precise stakeout without complex offset methods, enhancing both efficiency and accuracy.

By leveraging the F8L's capabilities, surveyors streamline workflows, boost productivity, and achieve exceptional project outcomes.

LASER SURVEY WITH AI: ACCURATELY AND QUICKLY MEASURE COMPLEX SCENES IN REAL-TIME

- Quickly obtain high-precision 3D coordinates via laser targeting, enabling accurate measurements in challenging environments—such as signal-blocked, hard-to-reach, or hazardous locations.
- Bright green laser provides a prominent and clear laser dot, while AI-powered edge computing SOC chip ensures seamless and intuitive aiming and collection assistance.

FULL CONSTELLATION SUPPORT AND ADVANCED RTK ENGINE: RTK SIGNAL BOOSTED BY 60%!

- 1608 signal channels and advanced Full-Star algorithm to track full constellation and frequencies.
- High-efficiency SoC provides a 60% increase in processing speed.

EFFORTLESS AR VISION NAVIGATION + VISION STAKEOUT

- Convenient AR navigation with bold, easy-to-follow arrows and real-time distance readouts ensures clear, intuitive guidance even in complex environments.
- Immersive AR Vision Stakeout within the eField software vividly overlays actual ground stakeout points—boosting field efficiency by around 50%.

FULLY INTEGRATED GNSS AND 4D AUTO-IMU

- Automatic 4D IMU initialization in motion removes traditional static startup restrictions, enabling the inertial unit to initialize automatically while in movement.
- Continuous IMU readiness during field operations ensures uninterrupted positioning precision throughout surveys.

eField: EMPOWER ENGINEERING & CONSTRUCTION PROFESSIONALS

- Effortless stakeout with dynamic map orientation—the CAD base map auto-rotates to align with the surveyor’s viewpoint, streamlining layout tasks.
- Seamless large-scale CAD handling allows smooth navigation and editing of extensive drawings, improving graphical performance and user experience.
- Optimize Triangulated Irregular Networks (TIN) for accurate earthwork calculations using advanced filtering techniques.
- Road stakeout simplified via LandXML cut-fill visualization—imported cut/fill values are graphically overlaid, enabling intuitive interpretation and faster execution.