

All-in-One Velocity Radar Station

Water Surface Velocity | Hydrology

General Description

HyQuant Edge V is KISTERS' advanced single-device radar water surface velocity monitoring station powered by KIPTEC (KISTERS Intelligent Platform for Embedded Connectivity). Minimal infrastructure and fast installation make the autonomous sensor ideal for both permanent deployments and time-limited monitoring campaigns – without compromising accuracy. TLS secured data with **minimal infrastructure, zero calibration, and low maintenance**. Flexible measurement ranges up to 50 m / 164 ft (L20 and L50) cover diverse applications.

Using 60 GHz V band FMCW radar, the **low-power device delivers long term stability**. Configuration via KISTERS' HyComm software is **fast and intuitive, requiring no radar expertise**. Designed for harsh outdoor environments, non-contact measurement combined with a rugged IP68 housing **withstands temporary submersion and reduces site visits**.

Product Highlights

Fast deployment: All-in-one (sensor, logger, modem, telemetry), HyQuant Edge V requires only power and a SIM to start operating. Its compact form and low weight enable quick mounting on bridges or space-constrained locations. Open interfaces support any cloud-based system, and optional pre-configured links to KISTERS datasphere enable immediate cloud data transmission.

Remote management: Remote configuration and OTA firmware updates reduce site visits. Continuous health monitoring helps detect power or connectivity issues early, minimizing downtime.

Future-Proof: software upgrades to HyQuant Edge L+V (level + velocity) or Q (discharge) add functionality without hardware changes.

High precision long-term stable radar performance: The integrated 60 GHz FMCW radar-on-chip ensures superior accuracy and resolution, unaffected by temperature or ageing, ensuring drift-free long-term stability.

Get data when it matters: Adaptive algorithms dynamically adjust transmission intervals to site conditions, delivering relevant data while minimizing power use. Event-driven logging captures critical changes, with all data securely stored and automatically transmitted once connectivity returns. Optional Solar Power Pack enables fully autonomous, off-grid operation.

Secure, end-to-end connectivity: LTE Cat M1 / NB IoT enables reliable wireless transmission even from remote sites. TLS 1.3 with unique device and server certificates ensures secure, authenticated, data exchange. Secure boot guarantees only trusted firmware runs. Standard protocols (MQTT, HTTPS, SFTP) and data formats for file-based data transfer support easy integration with any data platform – no vendor lock-in.

Typical applications

- Rivers, streams, canals, inland waterways
- Flood monitoring and urban risk management
- Irrigation and water resource operations
- Network densification or remote monitoring
- Temporary/emergency or permanent deployments
- Industrial use (hydropower, mining, brownfields)



*FMCW: Frequency Modulated Continuous Wave

Technical Specifications

Radar type/Frequency band	FMCW* 60 GHz V-band water surface velocity radar sensor station	
Measurement range	V: 0.05 .. 15 m/s (0.1640 ... 49.212 ft/s)	
Accuracy	V: 1% of measured value (in a range from 0.05 m/s ... 4.50 m/s (0.1640 ft/s ... 14.763 ft/s)) V: 2% of measured value (in a range from 4.50 m/s ... 15 m/s (14.763 ft/s ... 49.212 ft/s))	
Resolution	V: 1 mm/s (0.003 ft/s)	
Min. ripple	2 ... 3 mm (0.07 ... 0.118 in)	
Blanking distance	0.1 m (3.937 in)	
Supply voltage (range)	10 ... 30 VDC	
Power consumption at 12V	Typical ~50 mA; Wi-Fi activated: ~90 mA (incl. optional upgrade to Q)	
Beam angle	V: 8° azimuth, 12° elevation	
Ingress protection	IP68	
Communication and interfaces	- remote: - technology: LTE-M/NB-IoT, - protocols: MQTTS; upcoming: https + SFTP - all remote communication: mutual TLS 1.3 authentication	- local: - Wi-Fi for configuration via HyComm
Unit system	Metric or imperial	
Data Processing and Logging	Fixed data logging: 1-min minimum interval (1-min steps); up to 24 h. Adaptive transmission: user-selectable base interval (5 min to 24 h, 1-min steps), dynamically adjusted by intelligent site-condition analysis. Local storage: 4 GB onboard memory.	
Operating temperature range	-40 ... +80 °C (-40 ... 176 °F)	
Humidity range	0 ... 100 % non-condensing RH	
Dimensions and weight	HyQuant sensor with backplate: L x W x H: 160 x 97 x 91 mm; 1.15 kg (6.29 x 3.81 x 3.58 in, 2.53 lb) Packaged dimensions: LxWxH: 300 x 300 x 187 mm, 2.5 kg (11.81 x 11.81 x 7.36 in, 5.51 lb)	
Connectors	Nano SIM Extender M12 8-pin supply voltage SMA antenna connector	
Materials	Housing: powder-coated aluminum; cover/radome: HDPE	
Compliance	CE, FCC Class B, UL, RoHS	

Accessories

KISTERS datasphere and add-on modules:

automatic cloud connectivity when paired with KISTERS telemetry. Remote station configuration, health monitoring and over-the-air (OTA) updates. Add-on modules include smart alarming, advanced data access, reporting and publishing, QA/QC, and forecasting tools.

Solar power pack:

for long-term remote deployments. Solar panel, lithium backup batteries, mounting frame, HyQuant range bracket.

Optional pole-mount bracket:

for pole diameters ranging from 20 mm (3/4") to 60 mm (2").

Tailor-made arm/boom structure(s)

[Please ask for details.](#)



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