

# All-in-One Level Radar Station

Water Level | Hydrology

## General Description

HyQuant Edge L is KISTERS' advanced single-device radar water level 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 L requires only power and a SIM to start operating. Its compact form and low weight enable quick mounting on bridges or other 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.

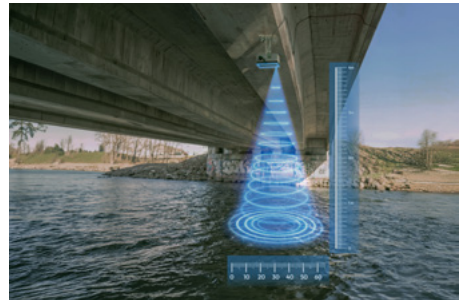
**High precision long-term stable radar performance:** The integrated 60 GHz FMCW radar-on-chip ensures superior accuracy and resolution, unaffected by temperature or ageing, ensuring drift-free long-term stability.

**Get Data When It Matters:** Adaptive algorithms dynamically adjust transmission intervals to site conditions, delivering relevant data while minimizing power use. Periodic logging captures all 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

<b>Radar type/Frequency band</b>	FMCW* 60 GHz V-Band water level radar sensor-based station	
<b>Measurement range</b>	L20: 0.10 ... 20 m (0.32 ... 65.61 ft)	L50: 0,15 m... 50 m (0.49... 164.04 ft)
<b>Accuracy</b>	L: <=2 mm (<= 0.07 in) – meets USGS HIF requirements	
<b>Resolution</b>	L: 1 mm (0.039 in)	
<b>Min. ripple</b>	2 ... 3 mm (0.07 ... 0.118 in)	
<b>Blanking distance</b>	0.1 m (3.937 in)	
<b>Supply voltage (range)</b>	10 ... 30 VDC	
<b>Power consumption at 12V</b>	Typical (sleep): ~7 mA; Measurement: ~40 mA; Wi-Fi activated: ~90 mA (including optional upgrade to Q)	
<b>Beam angle</b>	L: 8° x 8° (azimuth by elevation)	
<b>Ingress protection</b>	IP68	
<b>Communication and interfaces</b>	<b>– remote:</b> – technology: LTE-M/NB-IoT, – protocols: MQTTS; upcoming: https + SFTP – all remote communication: mutual TLS 1.3 authentication	<b>– local:</b> – Wi-Fi for configuration via HyComm
<b>Unit system</b>	Metric or imperial	
<b>Data Processing and Logging</b>	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.	
<b>Operating temperature range</b>	-40 ... +80 °C (-40 ... 176 °F)	
<b>Humidity range</b>	0 ... 100 % non-condensing RH	
<b>Dimensions and weight</b>	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)	
<b>Connectors</b>	Nano SIM Extender   M12 8-pin supply voltage   SMA antenna connector	
<b>Materials</b>	Housing: powder-coated aluminum; cover/radome: HDPE	
<b>Compliance</b>	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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