

Charging protocols, fleet telemetry, and device communications

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Pebble Logic builds the software between energy hardware and the systems that depend on it: device and charging protocols, fleet telemetry at scale, and the monitoring and commissioning tools around them. Before founding the firm, its principal wrote a charging protocol server from scratch and led the rebuild of the platform behind a fleet of more than 40,000 installations.

ON STANDARDS

OCPP 1.6 is implementation experience: a server written from scratch, interoperating with third-party chargers in the field.

IEEE 2030.5 and CSIP, SunSpec Modbus, IEEE 1547, UL 1741 SA and SB, and CPUC Rule 21 are not. We follow that landscape and can talk through where a product sits in it, but we have not implemented them, tested to them, or earned credentials in them. Certification testing requires a test lab.

CORE COMPETENCIES

- **Charging and device protocols.** OCPP 1.6 server implementation, third-party charger interoperability, RFID authorization, session and usage tracking
- **Fleet telemetry and time-series data.** sustained high-rate ingest, partitioned and tiered storage, date-range query routing, sub-two-second dashboards over months of history
- **Device communications.** MQTT, SNMP, BLE, serial and gateway integration, with the telemetry path behind it
- **Monitoring, alerting and field operations.** anomaly detection for underperforming assets with owner alerting, fleet dashboards, remote device control
- **Cloud data platform.** AWS, PostgreSQL, Redshift, Elasticsearch, Kafka, Docker and Kubernetes, with APIs in Python or Node.js
- **Test and measurement integration.** data acquisition hardware, signal chain validation, synthetic signal injection rigs
- **Certification-grade documentation.** development plans, architecture descriptions, dependency risk analysis, traceability and verification records
- **Edge and desktop applications.** Python with PySide6 and Qt for equipment interfaces, C# Windows agents

DIFFERENTIATORS

The protocol layer, written rather than consumed.

A complete OCPP 1.6 server, written solo by the principal before Pebble Logic, talking to chargers the company did not build. Protocol work is where these projects stall, and it is work most application developers have never done.

A production fleet, at scale.

The principal led the rebuild of a platform serving more than 40,000 installations: over 9,000 database inserts per second, roughly 500 million rows and 100 GB per month.

Documentation discipline from regulated device work.

More than five years on FDA-regulated medical device software before Pebble Logic: traceable requirements, architecture documentation, dependency risk analysis and verification evidence, for programs facing certification, interconnection review or grant-funder diligence.

Principal-level engineers, local to California.

Three prior CTO roles and more than fifteen years of senior and staff engineering, in the Sacramento region near the Bay Area, Berkeley and Livermore.

CURRENT WORK

Client name withheld under a confidentiality agreement.

Instrument console, federally funded device program 2026, current
Windows application in Python and PySide6 for a real-time sensor measurement instrument. Signal chain validated from sensor through conditioning to the acquisition device, hardware selected by formal trade study against 18 hard and 22 soft requirements, with a synthetic waveform injection rig for verification. Subcontracted under a negotiated PO with the prime's written consent; export compliance cleared.

PRINCIPAL'S PRIOR WORK, BEFORE PEBBLE LOGIC

Performed as an employee, before the firm was founded.

EV charging platform, sole engineer 2019 to 2021

Built the complete platform: an OCPP 1.6 server written from scratch, a Flask and PostgreSQL REST API, and a React operator frontend, with RFID authorization, usage tracking, charge-complete notification, and third-party charger interoperation.

Commercial solar monitoring platform, staff engineer 2017 to 2019

Led the rebuild from scratch for a fleet of more than 40,000 installations, sustaining over 9,000 inserts per second across roughly 500 million rows and 100 GB per month. Storage split by access pattern, partitioned PostgreSQL for recent data and Redshift for full history, with query routing by date range, taking dashboards from minutes to under two seconds.

Infrastructure monitoring platform 2019 to 2021

C# Windows agent collecting WMI, SNMP and Event Log data into a NestJS and PostgreSQL time-series backend, with a React dashboard and remote power-cycling.

WHERE ENGAGEMENTS START

Device Telemetry and Protocol Review

\$7,500 fixed · two weeks

Telemetry requirements captured with you, candidate device-to-platform protocols evaluated with disqualifications explained, a recommended architecture, a capacity projection at fleet scale, a risk register, and a scoped estimate for the build. An engineering review, not a compliance service.

Credited in full against a build engagement of \$25,000 or more started within 90 days.

Build engagements typically run \$25,000 to \$120,000 over six to sixteen weeks.

ENTITY	Pebble Logic, LLC California single-member LLC, formed 2026	SAM.GOV	Registered, active	CONTACT	Jim Hickey, Principal jim@pebblelogic.net · 530-830-2211
NAICS	541511 (primary) · 541512 · 541330 · 541690 · 541715	SIZE	California Certified Small Business (Microbusiness) DGS Cert. No. 2056377	INSURANCE	Professional liability and general liability. Certificates of insurance on request.