

Ohm

Bridging the Gap Between Software and Silicon

An AI-Powered Hardware Orchestrator

The Path of Least Resistance



The Datasheet Wall



The Dream



Innovative hardware ideas come naturally

You have a brilliant idea for a smart device. The concept is clear, the possibilities are exciting.

The Reality Check

90% of hardware projects fail before prototyping



The Reality



500-Page Datasheets

Decoding cryptic technical documents for each component. Every chip requires hours of study.



Voltage Mismatches = Magic Smoke

One wrong connection destroys components. Debugging hardware failures costs time and money.



Projects Die Before They Start

Complexity kills momentum. Great ideas remain dreams, lost in documentation and errors.

The breakthrough

Meet Ohm



Your AI Co-Pilot for Hardware Development

Idea to Prototype in Minutes

Transform your hardware concepts into working prototypes with unprecedented speed. Ohm eliminates the friction between idea and execution.

The Ohm Promise

Focus on innovation, not implementation details

Intelligent Workspace Interface

From concept to code in a single conversation



Conversational Interface

"Build me a smart plant monitor with soil moisture sensing and WiFi connectivity." Ohm understands your intent and translates ideas into technical specifications.



Intelligent Part Selection

Ohm automatically selects compatible components based on your requirements. No more datasheet cross-referencing or compatibility checks—it knows what works together.



Auto-Generated Wiring Maps

Visual, color-coded wiring diagrams show exactly how to connect every component. Follow the map, make the connections, eliminate magic smoke.



Production-Ready Firmware

Ohm generates clean, documented code that works out of the box. No debugging libraries or fixing examples—just flash and run.

The technology

The Secret Sauce



Multi-Agent Architecture

Mimicking a real engineering team's collaborative intelligence



Agent 01

The Visionary

Brainstorms concepts, refines ideas, and translates high-level goals into actionable technical requirements.

Powered by

Azure OpenAI GPT-4o



Agent 02

Systems Engineer

Designs system architecture, selects compatible components, and ensures electrical specifications align perfectly.

Powered by

Azure OpenAI o1-mini



Agent 03

Firmware Developer

Writes production-ready code, implements drivers, and generates documentation that just works.

Powered by

Azure OpenAI GPT-4o



Agent 04

QA Inspector

Verifies physical wiring using Computer Vision, cross-checks connections against the design, and catches errors before they become magic smoke.

Powered by

Azure GPT-4o Vision



Azure-powered expertise at every step — Enterprise-grade AI turning complexity into clarity

Live demonstration

The Wow Moment



Demo Scenario: Smart Plant Monitor

Watch Ohm transform a simple request into a complete hardware solution in 60 seconds

1

User Input

"Build me a smart plant monitor with soil moisture sensing and WiFi connectivity."

2

Component Analysis



ESP32

Main Controller



Cap. Sensor

Moisture Data

3

Wiring Diagram



Color-coded map

4

Firmware Generation

```
void readSensor() { moisture = analogRead(A0); ... }
```

60s

From idea to implementation

What would have taken days of research

The Ohm Advantage

- ✓ No datasheet diving
- ✓ No compatibility guessing
- ✓ No wiring errors
- ✓ No debugging libraries

Result: Flash the code, wire the components, and your plant monitor is live—sending moisture data to the cloud.

Market opportunity

Market & Impact



Students

Learning hardware without the steep learning curve



Software Developers

Millions want hardware access without hardware expertise



Hobbyists

DIY projects without the pain of debugging circuits



Empowering the Software-First Generation

Software developers outnumber hardware engineers 10:1. Ohm bridges this gap, enabling millions to build hardware without specialized training.

27M+

Active software developers globally



Reducing E-Waste Through Right-First-Time

Eliminating trial-and-error reduces component waste. Every error prevented saves money and reduces environmental impact.

50M tons

Annual e-waste (we can reduce this)



Accelerating Innovation

Lowering the barrier to hardware development unlocks a new wave of physical innovation. Ideas that were once abandoned due to complexity can now be realized.

10x

Faster prototyping

90%

Reduction in errors

∞

Ideas brought to life

Technical foundation Why Azure?



Ohm Runs Entirely on Azure AI

Enterprise-grade infrastructure transforming a hobbyist tool into a professional engineering assistant



o1-mini

Complex Logic & Reasoning

Powers Ohm's systems engineering logic, ensuring component compatibility and robust system design.

Handles

Multi-step reasoning



GPT-4o Vision

Circuit Verification

Analyzes photos of physical wiring to catch errors before they become costly mistakes.

Enables

Visual QA inspection



Enterprise-Grade

Reliability & Scale

Global infrastructure ensures 99.9% uptime, with robust security and compliance standards.

Delivers

24/7 availability



Scalable Infrastructure

Azure's global cloud scales from individual makers to enterprise teams. Auto-scaling handles peak loads.



Security & Compliance

Built-in security features protect intellectual property. SOC 2, ISO 27001 compliance for enterprise adoption.

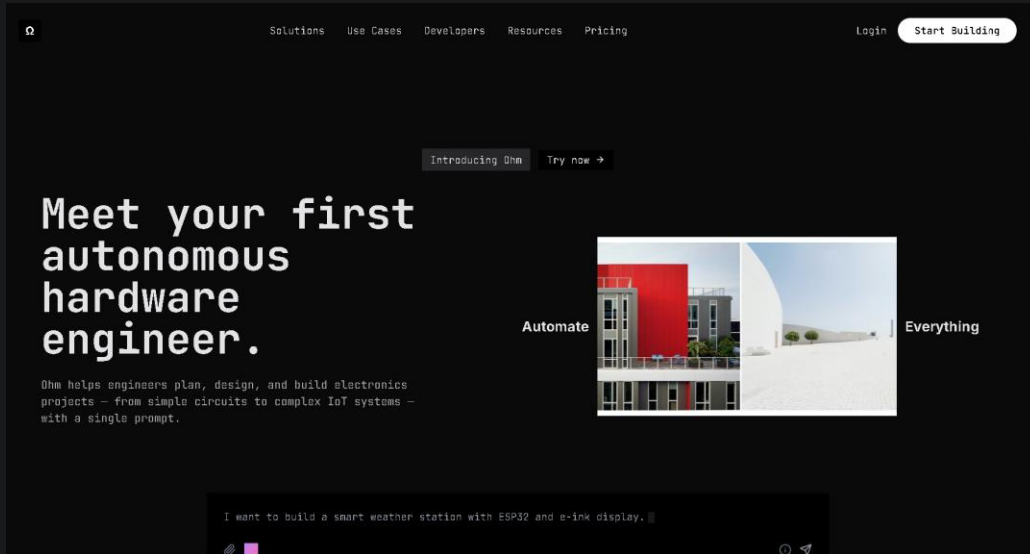


The Azure Advantage

Azure turns Ohm from a promising prototype into a production-ready platform. While others struggle with infrastructure, we leverage Microsoft's \$200B cloud investment.

Behind the vision

The Team



Nabil Thange

Solo Founder & Full Stack Engineer

Embedded Systems Architect

Obsessed with bridging the gap between software and hardware. Years of embedded systems experience revealed the pain point: hardware development is too hard, too slow, and too error-prone.



The Origin Story

Ohm is the tool I needed when I started—a full engineering team in my hands. I built Ohm to democratize hardware, empowering anyone to build physical products.

Core Expertise



Embedded C/C++



AI Systems



Full Stack

Mission: To make hardware development as accessible as software development—where ideas become prototypes in minutes, not months.



Hardware shouldn't be hard



Start Building Today

Experience the path of least resistance



View on GitHub
Will Provide



Try the Demo
<https://ohmm.vercel.app/>

With Ohm, it's the path of least resistance



Idea to prototype in minutes



Powered by Azure AI

Thank you