Naphome Specs
Core Specs
Speakers: Premium audio (Nest/Bose class)
Microphones: Dual, far field, Alexa-grade noise-canceling
Buttons & Controls: Tap buttons + volume knob
Custom PCB
Access Point Mode/ Wifi connection
Display: E-Ink (minimal light, elegant)
Battery: Compact backup (2–3 hrs)
Power Board: Optimized power management HAT
Lights: Power + Wi-Fi indicators, soft diffuser
Firmware: Stable OTA-enabled, end-to-end tested
Wake word detection for basic commands.
Voice-to-Voice capabilities for two-way interaction.
Spotify Integration: Capability to connect and stream Spotify playlists via a pre-configured backend without user login.
iOT capabilities- Control everything from cloud / Need API's
Sensors (7)
Temperature
Humidity
CO_2
VOC
Light sensor
Sound sensor
PM 2.5 (Air Quality)
Quality & Testing
All components must pass electrical, acoustic, and thermal testing.
End-to-end prototype to be validated for acoustic quality, light diffusion, sensor accuracy, and thermal stability before full batch manufacturing.

What have we used in our current prototypes-

Progress made so far –

Integrated the Raspberry Pi 5 with the WM8960 Audio HAT, enabling microphone input and speaker output for user interaction and audio feedback.
Implemented functionality to process user voice prompts and interact with a Language Learning Model (LLM).
Connected and controlled an addressable LED strip for visual feedback, triggered dynamically.
Integrated a temperature and humidity sensor to collect data and send it to AWS IoT for monitoring.
Configured AWS IoT to send JSON payloads to control the device, triggering light, sound, and text-to-speech actuation.
Modified the IR blaster functionality to regulate the AC temperature, ensuring the user sleeps in an ideal temperature environment.
Developed a Python-based system setup that runs as a service, ensuring all functionalities start automatically on boot.
Implemented backend automation to fetch routines and execute them on the device dynamically.

(Scheduler)
Integrated spotifyd service and connected the same to AWS backend to play music/songs directly on Naphome.
Access point, Device/User registration working end to end for first time users.
Implemented Voice 2 Voice capability (Eleven Labs) where user can have a conversation with the device.