AXIOMA
TECH SOLUTIONS

Engineering & Product Development for the Audio Industry

Consoles & Mixers · Audio interfaces · Motion control

Our team has shipped audio products for big names such as Neural DSP, Midas Consoles, Music Tribe, AVPro Global, AudioControl, Stinger Solutions, among others, and designed a complete wireless motion-based stomp box.

Hardware, firmware, DSP, multi-platform app development, industrial design & project management, all under the same roof.

10+
YEARS IN PRO AUDIO

UTC−3
FULL OVERLAP WITH US & EU

AXIOMATECHSOLUTIONS.COM

Some Audio products our team has shipped

PRODUCT	CLIENT	MODEL	WHAT WE BUILT
Quad Cortex	Neural DSP	Consulting	Firmware, embedded Linux BSP and touchscreen UI on a quad-DSP modeler — ARM Cortex-A host + SHARC DSP audio path
Nano Cortex	Neural DSP	Consulting	Firmware and UI for the compact platform — USB Audio Class 2 interface mode, capture workflow, field-updatable firmware
Heritage-D HD96-24	Midas / Music Tribe	Consulting	Firmware and DSP optimization on a 144-input live console — SHARC multicore, embedded Linux, AES50 networked I/O
CM4-750	AVPro	Consulting	Firmware and control software for a 4-channel DSP amplifier — ARM Cortex-M, multi-band crossover and limiter tuning UI
DM-810	Stinger	Consulting	Firmware and embedded UI for an 8-in / 10-out DSP matrix processor — routing, delay and EQ engine plus Unity-based editor
DM-RTA	Stinger	Consulting	Measurement firmware and desktop app for a dual-channel audio analyzer — RTA, impedance and distortion measurement, USB streaming
Constellation	MJP Audio Designs	Full ODM	Complete product: wireless motion-control instrument, hardware to app — nRF5340 + ESP32, 9-axis IMU, custom RF link, <10 ms end to end

Other projects are under NDA or currently in development.

PRODUCTS

Quad Cortex
Neural DSP

Nano Cortex
Neural DSP

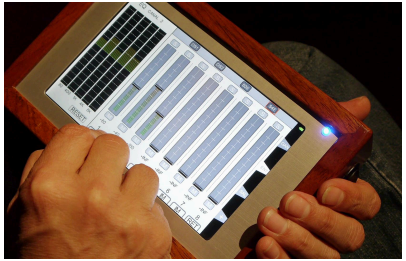
Heritage-D HD96-24
Midas

Constellation
MJP Audio Designs

CM4-750
AVPro

DM-810
Stinger

DM-RTA
Stinger



Digital Audio Console
LatinAudio

CASE STUDY · FULL ODM

Constellation

A motion-based stompbox for MJP Audio Designs.

Wireless wearable devices, AKA Satellites, track the performer's movement while a floor hub, AKA Ground Central, turns that motion into audio and MIDI messages in real-time with ultra low-latency.

Axioma designed the entire product including specification, hardware, firmware, apps, enclosures, manufacturing and shipping.

LATENCY

<5 ms end to end

WIRELESS

Custom RF link, no BLE or Wi-Fi

SILICON

nRF5340 + ESP32

SENSING

9-axis IMU + MEMS mic

GROUND CENTRAL

SATELLITE

MAIN FEATURES

- Ground Central: 2.8" colour LCD, two soft-touch footswitches, 9–12 V DC or USB-C bus power.
- Satellites: Li-ion battery powered, haptic feedback, RGB, 9-axis IMU + MEMS mic.

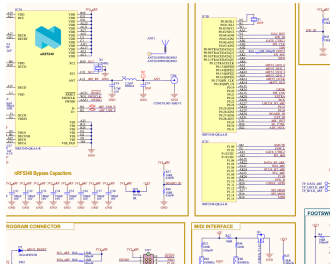
EXPANSION CARDS

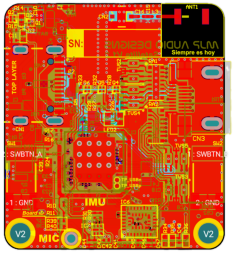
The IO cards are interchangeable. Models currently available are: XLR Audio Card, TRS Audio Card, Synth Card and Control card.

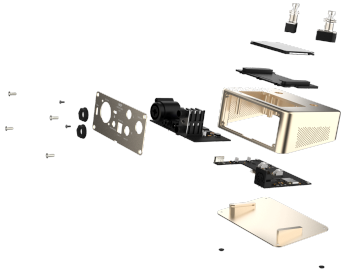
BUILD

Ground Central: Anodised aluminium chassis, 140 × 100 × 52 mm
Satellites: High-resistance plastic case with magnetic strap.

Schematics, boards, expansion cards, embedded UI, industrial design.







Schematic capture

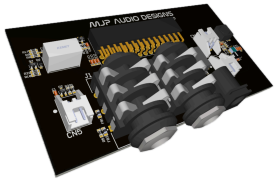
nRF5340 + ESP32 platform, RF front end (2.4-GHz), MIDI and USB-C integration, SMPS design.

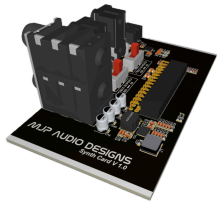
PCB layout

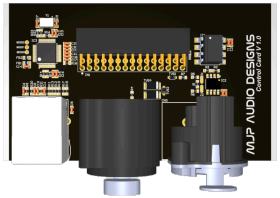
Satellite: IMU, MEMS mic, integrated antenna, Li-ion charging.

Industrial design

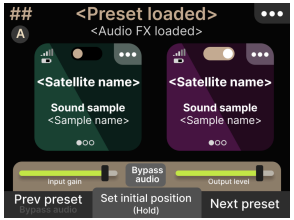
Anodised aluminium chassis, machined panels and full mechanical assembly.







3D mechanical development



Embedded UI

UI designed in Figma and implemented with LVGL including preset and Satellite management and MIDI message editor.

AUDIO ENGINEERING CAPABILITIES

From the AD/DA converters all the way to the Companion Apps and Cloud

Signal path & DSP

- Multicore DSP on any hardware platform including SHARC, SHARC-FX, ARM, RISC-V & FPGA-based (hard and soft-cores).
- Ultra low-latency audio paths
- Custom DSP engine & algorithm development
- AI-based audio processing: NPU and accelerator integration, model training pipelines
- Auto-mixing and gain, audio classification and event detection
- Low-noise hybrid (Analog & Digital) audio development
- Clocking, jitter and noise-floor optimization

Networking & control

- AoIP (Dante, AES67 and AVB / Milan, Ravenna, MADI, etc.)
- MIDI integration
- Custom RF links for wireless audio and control
- USB Audio (class compliant)
- Custom analog synthesis engines development, including CV/gate interfacing
- OSC protocol integration

Firmware, apps and Cloud

- Embedded Linux (Yocto, Buildroot, U-Boot, BSP and drivers) on Cortex-A cores.
- FreeRTOS, Zephyr, ROS, and bare metal development on ARM Cortex-M or RISC-V cores.
- UI development in Qt, LVGL Flutter, etc.
- Desktop, mobile and web editors: Qt, Flutter, Unity, React
- OTA firmware update infrastructure, field updates and preset sync
- Cloud back ends on AWS: user accounts, device registration and REST APIs, with CI/CD for firmware and app releases

Product engineering

- UX design and product conceptualization
- Schematic and PCB design in Altium 365, 12+ layers, rigid-flex
- Enclosures and panels in SolidWorks and Fusion, in-house 3D printing
- DFM, DFA, DFT and EMC pre-compliance in our own lab
- BOM, manufacturing pack and prototype runs with vetted factories

HOW USUALLY WE ENGAGE

MODEL A

ODM · we design the whole product

We can help define the product from the concept stage, and then deliver a manufacturable product against a fixed scope, schedule and price. You sell it under your own brand and own the full design.

TYPICAL DELIVERABLES

- Schematics and PCB layout with Gerbers
- Firmware and DSP source or binaries
- Desktop, mobile and web apps
- Enclosure CAD and renders
- BOM and manufacturing documentation
- Production test procedures and fixtures
- Prototype runs and mass production with vetted factories

MODEL B

Staff Augmentation

Our in-house Senior engineers can join your team, your tools and your backlog.

PROFILES AVAILABLE

- DSP and audio signal processing
- Embedded firmware and RTOS
- Embedded Linux, BSP and drivers
- Audio hardware and PCB layout
- On-device UI and cross-platform companion applications
- Networked audio and connectivity
- Industrial design
- Project management
- Product ownership and development

If neither of these models adjust to your needs, we're open to discussing alternative frameworks.

WHY US?

We love audio product development

A life spent among audio products such as digital and analogue audio consoles, digital modelers, audio amplifiers and DSP processors.

We pride ourselves in not only developing the products but also using them. This gives us an extra edge when it comes to figuring out what the product may actually need.

Strong time zone alignment with the US and Europe

Argentina is in UTC–3 time zone which guarantees a full overlap with the US and Europe. Same-day answers, not next-day handovers.

Western-standard engineering, off-shore cost

Our rate for a Senior audio engineer is a fraction of a US or EU in-house hire, with the same tooling, review discipline and documentation.

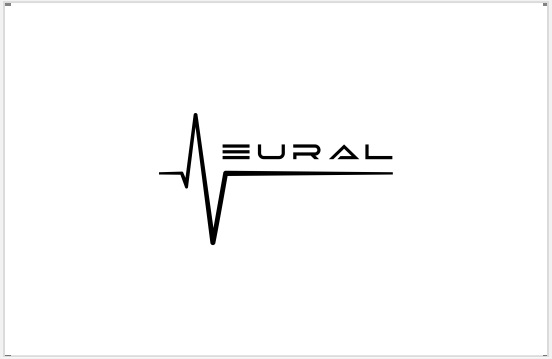
Clean IP and NDA terms

NDA before the first technical call. Everything we design for you is yours: source, schematics and manufacturing files, assigned on delivery.

Our in-house lab

200 MHz oscilloscope, 5 GHz spectrum analyzer, TEM cell for EMC pre-compliance, USB protocol analyzer, near-field probes and audio measurement rigs.

Proven track record with industry leaders



CONTACT

Let's talk about your next audio product.

We are available to arrange a call and discuss the project, its scope and the engagement model.

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AXIOMA
TECH SOLUTIONS