

ProTone®

STAGE V4

Public Technical Overview



**Programmable analog instruments. Expandable architecture.
Integrated control.**

A partner-facing overview of ProTone® Stage V4 architecture, analog control, expansion, MIDI integration, cloud services, AI Assist, and OEM customization.

PUBLIC INFORMATION BOUNDARY

This document intentionally describes Stage V4 at the system and integration level. Proprietary circuit topology, internal signal-routing implementation, component-level design, calibration algorithms, firmware internals, manufacturing data, and other NDA-protected details are intentionally omitted.

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ProTone® Stage V4

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1 Executive Overview

Stage V4 moves the guitar or bass from the edge of the programmable rig into the rig itself.

ProTone® Stage V4 is a programmable analog guitar and bass platform designed to make the instrument itself an active, addressable, expandable part of modern performance, recording, and production systems.

The platform keeps the instrument's actual pickup audio signal in the analog path while using embedded digital control to configure supported analog functions, store repeatable settings, coordinate external equipment, and provide a browser-based control environment. The result is not a modeled guitar or bass. It is the actual instrument made programmable.

Stage V4 combines four layers that are normally separated: instrument-level analog control, local embedded intelligence, system-level MIDI integration, and optional cloud/AI services. Each layer can operate independently enough to preserve practical instrument use, while together they create a broader platform for OEMs, pickup manufacturers, modeler and processor companies, software developers, artists, and other music-technology partners.

CORE POSITION

ProTone does not require the rest of the rig to revolve around a proprietary external gateway. The Guitar Core resides inside each equipped instrument, allowing the instrument to participate directly in the wider system.

Stage V4 at a Glance

- Analog instrument - actual pickup audio remains analog while supported pickup, coil, blending, loading, tone, gain, and output functions become programmable and repeatable.
- Recall & MIDI - Presets, Scenes, and Songs connect the instrument to bidirectional MIDI control and coordinated system changes.
- Multi-instrument addressing - each equipped guitar or bass can maintain an independent identity and address within the same environment.
- Expandable hardware - interchangeable Expansion Tone Cards extend the platform without replacing the Guitar Core.
- Cloud & AI Assist - optional context-aware backup/sharing, private collaboration, and instrument-aware AI assistance use known instrument and rig context.
- Partner platform - browser-based access plus mechanical, pickup, MIDI, branding, content, and partner-specific integration around a common architecture.

2 Why ProTone® Stage V4

The instrument remained largely manual while the rest of the rig became programmable.

Analog pickups have always had more to say, but traditional guitar electronics could only access a fraction of their potential. Coil splits were on/off. Blending was limited. Phase was typically a fixed reversal. More advanced configurations often required additional switches, specialized wiring, or manual control, with little ability to store and recall the complete instrument setup.

At the same time, the rest of the guitar world moved forward. Amps, modelers, effects, MIDI controllers, DAWs, and production systems gained instant recall. Yet the guitar or bass - the instrument that starts the entire signal chain - stayed largely manual.

PROTONE® STAGE V4 BRINGS THE INSTRUMENT INTO THE MODERN SYSTEM

Stage V4 makes the guitar's or bass's analog electronics programmable, then connects those capabilities to stored recall, expandable hardware, bidirectional MIDI, multi-instrument addressing, cloud services, and AI-assisted tone creation.

Stage V4 can make pickup and coil configurations, series and parallel relationships, phase relationships, continuously adjustable coil blending, pickup blending, tone shaping, programmable loading, gain, output level, and other supported analog functions part of a stored and repeatable instrument configuration.

The actual pickup audio signal remains in the analog path. Digital control configures the instrument's electronics rather than replacing the pickups with a modeled representation.

Stage V4 then extends the instrument through interchangeable Expansion Tone Cards, individually addressed guitars and basses, bidirectional MIDI, Presets, Scenes and Songs, coordinated multi-device control, browser-based configuration, ProTone Cloud, and AI Assist.

THE PRACTICAL RESULT

Your guitar or bass becomes part of the Preset. Part of the Scene. Part of the Song. Part of the show. ProTone does not replace the rest of the rig; it integrates the instrument with it.

Building on Proven Ideas

The music-technology industry has already validated demand for individual elements of this direction. Electronic pickup switching, expanded pickup voicing, programmable analog control, MIDI-enabled instruments, preset recall, and digital rig integration have appeared in different products and systems.

Stage V4 does not depend on claiming that those ideas never existed. Its positioning is the broader combination: programmable instrument control, interchangeable expansion, repeatable recall,

bidirectional MIDI, multi-instrument addressing, context-aware cloud services, AI assistance, and system integration within one expandable guitar and bass platform.

3 Platform Architecture

Separate the analog audio path from the digital control path, then connect them through a common instrument-level platform.

3.1 Guitar Core

At the center of every ProTone-equipped instrument is the Guitar Core. It provides local embedded processing, storage, communications, system identity, user-interface services, configuration management, calibration support, and control of the instrument's supported analog functions.

The Guitar Core is installed inside the guitar or bass. This is a defining architectural choice: the intelligence travels with the instrument instead of living in an external gateway. A compatible modeler, DAW, MIDI source, browser-capable device, or show-control environment can therefore interact with the instrument directly through supported interfaces.

3.2 Analog Audio Path / Digital Control Path

Stage V4 deliberately separates what the player hears from what the control system does. The pickup signal remains in the analog audio path. Digital processing is used to select, configure, store, recall, address, and coordinate the analog state.

Capability	Stage V4 Public-Level Description
Analog domain	Pickup and coil signals, analog switching, buffering, loading, tone shaping, gain/output functions, and other supported audio-path functions.
Digital control domain	State management, preset recall, MIDI, addressing, browser services, setup, calibration management, cloud synchronization, and AI Assist interaction.
Design objective	Allow modern programmability without requiring the pickup signal itself to be converted into a digital guitar model.

3.3 Mixed-Signal Design Approach

An instrument-integrated digital platform places high-speed electronics, communications, power conversion, and high-impedance pickup signals in the same physical product. Stage V4 addresses

this as a mixed-signal design problem rather than treating the guitar as a conventional passive cavity.

- Analog, digital, and power functions are treated as separate physical design zones.
- High-impedance pickup routing is kept physically isolated from high-speed digital and power-switching activity.
- Sensitive analog paths are kept short and transitioned to lower-impedance buffered stages as early as the design allows.
- Local decoupling, controlled return-current paths, shielding strategy, and layout discipline are used to reduce conducted and radiated coupling.
- Unused high-speed interfaces are not routed merely because the embedded compute platform makes them available.

These are standard mixed-signal engineering principles applied specifically to an instrument environment. Component-level implementation and PCB details are intentionally outside this public overview.

4 Programmable Analog Instrument Control

The familiar guitar-electronics functions form the foundation; stored recall and system integration are what expand their value.

Stage V4 can support different guitar and bass pickup architectures. The available configuration set is matched to the installed topology rather than forcing every instrument into one universal set of pickup combinations.

Supported Analog Function Categories

- Pickup and individual coil selection appropriate to the installed pickup architecture.
- Series and parallel relationships where supported by the instrument configuration.
- In-phase and out-of-phase relationships.
- Continuously adjustable coil blending.
- Pickup blending across supported pickup combinations.
- Programmable pickup loading.
- Programmable analog tone functions and selectable tone characteristics.
- Programmable gain and output-level functions.
- Other supported analog functions defined by the instrument and installed Expansion Tone Card.

Because these parameters can be stored rather than recreated manually, the value of each analog function extends beyond tonal variety. It becomes repeatable, addressable, and available to the wider performance system.

Instrument-Specific Configuration

Different pickup topologies naturally expose different useful combinations. A two-humbucker instrument, an SSS guitar, an HSS guitar, a bass, or a custom OEM pickup system should not be forced into the same configuration model. Stage V4 therefore uses the installed instrument configuration as part of its operating context.

This same context becomes important later in Cloud sharing and AI Assist, where a configuration is more meaningful when the system knows what instrument and pickups produced it.

5 Presets, Scenes, Songs & Bidirectional MIDI

Stage V4 connects repeatable instrument states to the broader programmable rig.

5.1 Presets

A Preset stores a repeatable supported instrument configuration. Instead of requiring a player to reconstruct pickup selections, blend positions, loading, tone, gain, and related parameters manually, Stage V4 can recall the stored state as a coordinated configuration.

5.2 Scenes

A Scene coordinates supported changes within ProTone and across compatible external MIDI equipment. The purpose is not merely to recall a guitar sound, but to allow the guitar or bass to participate in the same coordinated state change as the rest of the rig.

5.3 Songs

Songs organize Scenes into the sequence required for a performance. This creates a structured live workflow in which instrument states and supported external equipment can follow the song rather than forcing the player to manage each device independently.

5.4 Bidirectional MIDI

Stage V4 is designed for two-way MIDI communication. Compatible external systems can send supported commands to the ProTone instrument, and the ProTone instrument can transmit supported commands to compatible external equipment.

CONTROL CAN START ANYWHERE

Rig → Instrument | Instrument → Rig. A modeler, DAW, controller, or show-control system can initiate a change, or a command originating from the ProTone-equipped guitar or bass can initiate supported changes elsewhere in the system.

Partner-specific MIDI mapping, validation, and workflow integration can be developed for supported external platforms under commercial integration agreements. The public architecture does not expose proprietary mapping logic or firmware implementation.

6 Multiple Addressed Instruments & Coordinated Rig Control

Stage V4 is designed to scale beyond one guitar.

Each ProTone-equipped guitar or bass can maintain its own system identity and address. Supported commands can therefore target the intended instrument rather than requiring every ProTone instrument in the environment to respond identically.

Example: One Guitar Switch, One Coordinated Scene

A single action on one ProTone-equipped guitar can be assigned to initiate a Scene in which multiple compatible devices change together:

Target	Example Coordinated Action
Lead guitar	Recall its required ProTone instrument configuration.
Rhythm guitar	Recall a different independently addressed ProTone configuration.
Bass	Recall its independently addressed ProTone configuration.
Synthesizer	Change to the required MIDI program or supported state.
Vocal processor	Recall the required vocal-processing preset.
Modeler / effects system	Recall the required amp, cabinet, effects, preset, or Scene configuration.

All of those actions can be part of one coordinated command. Because communication is bidirectional, the same change could instead originate from a compatible modeler, DAW, MIDI controller, or show-control system.

WHY ADDRESSING MATTERS

Addressing turns ProTone from a single-instrument feature into a multi-instrument platform suitable for individual performers, bands, studios, touring systems, and integrated production environments.

7 Interchangeable Expansion Tone Cards

A common Guitar Core can support an evolving family of partner, artist, genre, and application-specific analog products.

The Expansion Tone Card architecture is one of the defining Stage V4 capabilities. Rather than permanently fixing every tonal function into the Guitar Core, ProTone provides an interchangeable hardware layer that can add supported analog tone circuits, specialized functions, selected effects, and future capabilities without replacing the core platform.

Expansion Card Categories

Capability	Stage V4 Public-Level Description
Genre Tone Cards	Tonal functions and circuit options developed around particular musical styles or applications.
Artist & Signature Tone Cards	Authorized artist-specific concepts, configurations, or supported processing.
Pickup-Specific Cards	Applications designed around the characteristics of particular pickup systems.
OEM & Custom Cards	Manufacturer-specific instruments, product families, markets, or custom requirements.
Specialized Analog Tone Cards	Additional analog shaping, filtering, loading, or related supported functions.
FX-Oriented Cards	Selected effects or additional analog processing integrated through the Expansion Tone Card architecture.
Future Partner Cards	New capabilities introduced without redesigning or replacing the common Guitar Core.

Partner Value

For the player, the instrument does not have to remain permanently limited to the electronics installed at the time of manufacture. For a partner, the opportunity is larger: the same Stage V4 platform can support additional products, artist programs, pickup-specific applications, co-branded offerings, and future development after the initial instrument is sold.

PLATFORM, NOT ACCESSORY

The Expansion Tone Card is intended as an ongoing product and development layer around Stage V4, not merely as a replaceable component.

8 Browser-Based Access & Standalone Operation

The interface can move between devices; the instrument intelligence stays with the instrument.

8.1 Browser-Based Control

Stage V4 provides a browser-based ProTone control environment for supported setup, tone creation, Presets, Scenes, Songs, Cloud functions, AI Assist, diagnostics, and system management. A compatible phone, tablet, or computer can access the same core application without requiring installation of a full general-purpose desktop environment on the instrument.

8.2 Local Access Paths

Supported Wi-Fi access uses authentication. Direct local USB access does not depend on the Wi-Fi login. Both access methods are intended to expose the ProTone application environment rather than a general-purpose computer desktop.

8.3 Instrument-Resident Control

Because the Guitar Core contains the local control logic and serves the ProTone application, normal system operation does not depend on a proprietary external gateway. This is important for partner integration: an OEM or technology partner can integrate Stage V4 into an existing workflow rather than requiring the user to restructure the rig around another mandatory intermediary.

8.4 Standalone Instrument Operation

A ProTone-equipped guitar or bass remains an instrument first. Normal playing is not intended to depend on a Cloud connection, external computer, phone, tablet, or continuing browser session. Cloud and AI services expand the platform, but they do not replace local instrument operation.

9 ProTone® Cloud

Backup and sharing become more useful when the system preserves the instrument context behind the sound.

ProTone Cloud is an optional subscription service designed to provide backup, controlled sharing, collaboration, and the cloud-hosted data environment that supports AI Assist. The service extends Stage V4 without making basic instrument operation cloud-dependent.

9.1 Cloud Backup

Cloud backup can preserve supported Presets, Scenes, Songs, instrument setup information, ProTone configuration data, and associated system context. This provides a recoverable library separate from the copy stored locally within the instrument.

9.2 Context-Aware Sharing

Conventional modeler and processor preset sharing can omit one of the largest variables in the signal chain: the instrument feeding the processor. A preset created with one guitar and pickup system can behave very differently when used with another instrument.

Stage V4 is designed to retain relevant context alongside supported shared content. Depending on the configuration, that context can include:

- Guitar or bass configuration.
- Pickup manufacturer and model.
- Pickup architecture and relevant ProTone state.
- Instrument calibration context.
- Installed Expansion Tone Card and applicable configuration.
- Associated Preset, Scene, or Song information.
- Compatible modeler, processor, MIDI, or other supported rig information.

THE DIFFERENCE

A shared ProTone configuration can communicate not only “What settings were used?” but also “What instrument and system were those settings created around?”

The objective is not to claim that different instruments will become identical. The objective is to make shared configurations more understandable, reproducible, and adaptable.

9.3 Preset-Level Privacy

Each supported Preset can include a Private designation. Under the applicable service terms, content marked Private is excluded from broader community sharing and from contribution to the shared AI Assist knowledge base.

This gives users, artists, partners, producers, and other creators direct control over configurations they do not want incorporated into the wider ProTone ecosystem.

9.4 Private Collaboration

Private does not have to mean single-user. An account can invite selected band members, producers, engineers, technicians, collaborators, artists, or partner personnel into an authorized private area. This allows a band or development team to maintain a shared private library of Presets, Scenes, Songs, instrument configurations, and rig information without making that material public.

9.5 Public Sharing vs. AI Contribution

Public sharing and AI Assist contribution are intentionally separate concepts. Under the Cloud + AI Assist service agreement, eligible non-private configuration data can contribute to the AI Assist knowledge base. Making a Preset publicly available to other users remains a separate user-controlled sharing action.

9.6 Partner Content Ecosystem

Cloud services can support manufacturer libraries, pickup-specific collections, authorized artist content, genre collections, Expansion Tone Card libraries, modeler integrations, educational configurations, and curated system setups. The value is not merely storage; it is preserving the relationship between instrument, pickups, ProTone configuration, Expansion Tone Card, and compatible external rig.

10 ProTone® AI Assist

AI assistance becomes more useful when it understands what instrument and rig are actually available.

AI Assist is an optional cloud-based service designed to help musicians navigate the expanding capabilities of Stage V4 without replacing deterministic control of the underlying hardware.

10.1 Required Instrument Context

Participation in AI Assist requires a completed ProTone instrument setup containing relevant instrument information, including pickup manufacturer and model. This allows AI Assist to reason from the actual supported environment rather than treating every guitar, bass, pickup, Expansion Tone Card, and external system as interchangeable.

10.2 Guided Tone Finder

A musician can describe a tonal or musical objective in familiar language. AI Assist can then use the known capabilities of the connected instrument, calibration context, installed Expansion Tone Card, and supported external MIDI equipment to propose valid starting-point instrument and rig configurations.

The user can audition, compare, refine, and save those starting points through the normal ProTone workflow. AI Assist is intended to reduce the amount of technical parameter-hunting required to reach a useful starting point, not to replace the musician's judgment.

10.3 Music Q&A and System Guidance

AI Assist can also provide music and system guidance within the ProTone environment, helping the user understand supported functions, available configuration choices, and how those choices may relate to the requested result.

10.4 Deterministic Hardware Control

AI ASSIST PROPOSES AND EXPLAINS. PROTONE VALIDATES AND APPLIES.

The AI layer does not replace the normal ProTone control engine. Supported commands and configurations remain subject to deterministic validation before they are applied to the instrument or associated system.

10.5 Growing Knowledge Base

The ProTone Cloud hosts the knowledge base used by AI Assist. Under the applicable service agreement, eligible configurations that are not marked Private can contribute configuration relationships to that knowledge base.

Because the system can retain relevant instrument and rig context, the database can learn from relationships such as:

CONTEXT MODEL

Instrument → Pickups → ProTone Configuration → Expansion Tone Card → External Rig → Musical Objective

This is materially more informative than learning from an isolated processor preset with no knowledge of the source instrument.

10.6 Respecting Artist and Signature Content

Community-created configurations and AI Assist data are not automatically presented as official artist or signature tones. ProTone distinguishes community-created tonal references and AI-assisted guidance from authorized artist, signature, manufacturer, or partner content.

Official artist or signature products can be identified as such when developed through an appropriate authorized relationship. This protects credibility and reduces the risk of implying endorsement where none exists.

10.7 Service Model

ProTone Cloud + AI Assist are intended as an optional monthly subscription because the AI knowledge base and associated services are cloud-hosted. Final pricing, service terms, privacy terms, and data-use disclosures are governed by the applicable customer agreement and may evolve independently of the core instrument platform.

11 Calibration, Signal Integrity & Reliability

A programmable instrument only matters if its analog behavior remains predictable and practical.

11.1 Instrument Calibration

Different guitars, basses, pickups, and pickup configurations do not behave identically. Stage V4 therefore incorporates instrument-level calibration so the Guitar Core can operate from known characteristics of the installed instrument and pickup system.

Calibration context supports repeatable configuration, system validation, Cloud sharing, and AI Assist. The proprietary calibration methods and algorithms are intentionally outside this public document.

11.2 Signal Integrity

Stage V4 is designed around the reality that high-impedance magnetic pickups can be sensitive to unintended loading, radiated energy, and shared power or ground noise. The public design philosophy is straightforward: preserve the analog path, isolate sensitive pickup circuitry from high-speed digital and power regions, and keep control functions from becoming part of the audio signal.

- Sensitive pickup paths are treated as high-impedance analog circuitry and physically separated from digital/power zones.
- Audio switching and analog-control elements are selected for low distortion, low leakage, and compatibility with the required signal range.
- Low-noise audio buffering is used where appropriate to reduce impedance sensitivity and isolate subsequent analog functions.
- Power and digital return-current paths are managed so high-current switching activity does not unnecessarily traverse sensitive analog areas.
- Wireless, high-speed buses, and switching power are treated as potential coupling sources during PCB layout and validation.

11.3 Switching Behavior

Electronic pickup configuration introduces transition behavior that does not exist in a static passive wiring harness. Stage V4 therefore treats switching-state validation, transition management, and audible artifact control as system-level functions. Exact switching sequences and proprietary control logic are omitted from this public overview.

11.4 Standalone Reliability

The core analog instrument should remain usable without requiring cloud access or a continuously connected browser. Stage V4 separates local instrument operation from optional online services so that loss of Internet access does not remove the instrument's fundamental playing capability.

12 Customization & OEM Integration

Stage V4 is a common platform intended to support differentiated partner products, not one fixed retail implementation.

12.1 Mechanical Integration

The Stage V4 electronics architecture can be adapted mechanically to different instrument cavities, body layouts, and manufacturer packaging constraints while preserving the required analog, digital, power, and high-impedance zoning principles.

The public platform should therefore be understood as electrically consistent but mechanically adaptable. Exact PCB geometry, component placement, thermal design, and manufacturing files are partner-specific engineering data and are not included here.

12.2 Pickup and Instrument Topology

Partner implementations can be configured around different supported pickup topologies and instrument categories. Available ProTone functions are matched to the installed architecture rather than presented as a single universal configuration set.

12.3 MIDI / External-System Integration

Modeler, processor, DAW, MIDI, and show-control partners can support ProTone through platform-specific mappings and validated workflows. Partner-specific mapping, maintenance, and validation can be handled as a separate engineering/integration workstream under commercial agreement.

12.4 Expansion Tone Card Development

Partners can develop instrument-specific, pickup-specific, genre, artist, custom, or selected FX-oriented Expansion Tone Cards around their own products and markets while retaining the common Guitar Core architecture.

12.5 Branding and User Experience

Supported OEM implementations can incorporate partner branding, logos, naming, interface presentation, startup presentation, Presets/profiles, documentation, and other partner-specific user-experience elements without transferring ownership of the underlying ProTone platform.

12.6 Cloud and AI Content

Partner-specific configuration libraries, modeler integrations, pickup collections, artist-authorized content, Expansion Tone Card content, and guided AI Assist experiences can be developed around supported partner products.

PARTNER PRINCIPLE

The objective is not to force every partner into the same ProTone product. It is to provide a common architecture from which partners can build differentiated instruments, integrations, content, and expansion products.

13 Partner Opportunities

Stage V4 is designed for collaboration across the instrument and music-technology ecosystem.

Capability	Stage V4 Public-Level Description
Guitar & Bass OEMs	Integrate programmable analog control, local intelligence, addressing, recall, Cloud/AI capability, and partner-specific UX into new instrument families.
Pickup Manufacturers	Develop programmable applications around actual pickup and coil designs, including pickup-specific Expansion Tone Cards and cloud content.
Modeler / Processor Companies	Bring the instrument itself into existing preset and Scene environments through supported bidirectional MIDI and validated integration.
DAW / MIDI / Show-Control Companies	Address ProTone instruments directly as part of automation, production, and coordinated live systems.
Artists / Signature Programs	Develop authorized instrument configurations, Expansion Tone Cards, Presets, Scenes, Songs, cloud content, and signature experiences.
Effects / Analog Technology Partners	Develop selected Expansion Tone Card functions or partner-specific analog capabilities within the supported architecture.

Commercial Separation of Core Platform and Partner Work

The ProTone platform and reusable integration framework remain distinct from partner-specific engineering. Custom MIDI mapping, mechanical adaptation, branding, Expansion Tone Card development, configuration libraries, and other partner-specific work can be scoped separately from the underlying platform license or commercial relationship.

14 Market Context & Positioning

Credibility comes from describing the combination accurately, not from pretending every individual idea is unprecedented.

Multiple companies and products across the guitar industry have independently demonstrated demand for pieces of the Stage V4 direction: electronic pickup configuration, expanded pickup voicing, programmable analog behavior, MIDI-enabled instrument control, preset recall, and digital rig integration.

Stage V4 should therefore not be positioned with absolute claims such as “first,” “only,” or “no one has ever done this.” Those statements are unnecessary and brittle.

The stronger and more defensible position is that Stage V4 combines a broader set of capabilities within one instrument-centered architecture:

- Programmable analog guitar and bass control using the actual installed pickups.
- Continuously adjustable coil blending and other advanced analog parameters as stored states.
- Interchangeable Expansion Tone Cards.
- Bidirectional MIDI.
- Multiple individually addressed guitars and basses.
- Presets, Scenes, Songs, and coordinated multi-device control.
- Browser-based instrument management without a mandatory external gateway.
- Context-aware Cloud backup, sharing, and private collaboration.
- Instrument-aware AI Assist built on known instrument, pickup, calibration, expansion, and compatible rig context.

POSITIONING STATEMENT

Stage V4 builds on proven ideas by integrating programmable analog instrument control, expandable hardware, system-level communications, structured recall, cloud context, and AI-assisted workflow into one extensible guitar and bass platform.

15 Technical Capability Summary

Public-level capabilities suitable for partner evaluation before NDA-level engineering review.

Capability	Stage V4 Public-Level Description
Audio signal path	Analog pickup signal retained through supported instrument electronics; digital system provides control and state management.
Pickup architectures	Instrument-specific; supported configurations depend on installed guitar/bass topology.

Capability	Stage V4 Public-Level Description
Analog controls	Pickup/coil selection, series/parallel, phase, continuously adjustable coil blending, pickup blending, loading, tone, gain, output, and other supported functions.
Local intelligence	Embedded Guitar Core inside each equipped instrument.
Recall	Presets, Scenes, Songs.
MIDI	Bidirectional; partner-specific integrations can be mapped and validated.
Addressing	Multiple independently addressable ProTone guitars and basses.
Expansion	Interchangeable Expansion Tone Cards for genre, artist, pickup, OEM, specialized analog, and selected FX applications.
User access	Browser-based application over supported local connections.
Wi-Fi security	Authenticated access.
Direct USB local access	Local application access independent of the Wi-Fi login.
Cloud	Optional backup, context-aware sharing, private areas, invite-only collaboration, partner content.
Preset privacy	Per-Preset Private designation for exclusion from broader sharing/AI contribution under applicable terms.
AI Assist	Cloud-hosted Music Q&A and guided Tone Finder using known system context; deterministic ProTone engine validates applied states.
Calibration	Instrument-level calibration and normalization context; proprietary methods omitted.
Standalone use	Normal instrument operation is not cloud-dependent.

Capability	Stage V4 Public-Level Description
OEM customization	Mechanical adaptation, pickup topology, MIDI mapping, branding, content, Expansion Tone Cards, and partner-specific integration.
Public confidentiality boundary	No proprietary circuit topology, internal routing logic, firmware internals, calibration algorithms, or manufacturing data disclosed.

16 Public / NDA Boundary

This document is intentionally detailed enough for public technical evaluation without disclosing proprietary implementation.

The following information is intentionally not included in this public overview and should be discussed only under the appropriate confidentiality and partner framework:

- Detailed schematics, circuit values, or component-level signal routing.
- Proprietary analog switching topology and state-transition implementation.
- Internal PCB placement, routing, stack-up, manufacturing data, or test fixtures.
- Calibration algorithms, calibration sequences, limits, or internal data structures.
- Firmware architecture, source code, internal APIs, state machines, or recovery logic.
- Partner-specific MIDI maps, command translation logic, validation data, or proprietary integration documentation.
- Cloud service internals, database schema, security implementation, AI model architecture, or proprietary data-processing methods.
- Unreleased product roadmaps, costed BOM information, manufacturing partners, or other commercial information designated confidential.

The purpose of the boundary is straightforward: prospective partners should be able to understand what Stage V4 is, what it enables, how it integrates, and where partner opportunities exist before an NDA is required. Implementation details that create defensible technical value remain protected.

17 Conclusion

The guitar or bass becomes part of the programmable system without ceasing to be the actual instrument.

ProTone® Stage V4 is designed around a simple premise: the guitar or bass should no longer be the one major element of a modern rig that remains outside structured recall and system control.

The platform retains the analog identity of the installed pickup system while adding programmable control, repeatable Presets, coordinated Scenes and Songs, bidirectional MIDI, multiple instrument addressing, interchangeable Expansion Tone Cards, browser-based management, context-aware Cloud services, and AI Assist.

For partners, the value is not one isolated feature. It is the ability to build differentiated instruments, pickup applications, modeler integrations, content libraries, artist programs, and expansion products around a common architecture.

PROTONE® STAGE V4

Programmable analog instruments. Expandable hardware. Bidirectional control. Multi-instrument addressing. Context-aware Cloud services. AI-assisted workflow. One integrated platform.

ProTone does not ask the modern rig to revolve around the instrument. Stage V4 is designed to make the instrument itself part of the modern system.

PUBLIC TECHNICAL OVERVIEW

Capabilities and service descriptions are subject to final product validation, partner configuration, applicable service terms, and commercial agreements.