

diamond



MODULAR
BROADCAST
CONSOLE



POWERFUL
ELEGANT
INSPIRING

diamond

MODULAR BROADCAST CONSOLE



Every job requires the proper tools. The more demanding the job, the higher quality the tools must be. And to achieve the highest levels of productivity, your tools must operate as extensions of yourself. This is why Lawo created the diamond broadcast console for radio and TV applications.

Our design philosophy is simple: give broadcast professionals a mixing console so intuitive, so easy to use, that using it feels as natural as breathing. A seamless synergy of physical and virtual operation, with intelligent context-sensitive controls that fall naturally to hand.

diamond is an IP native, completely modular and configurable to your most specific wishes. Scalable from as few as 2 to as many as 60 physical faders. Virtual Extensions that provide immediate information for every function. Touch-sensitive faders and rotary controls with vibrant, full-color displays. So much power — delivered with all the style and finesse that broadcasters expect from Lawo broadcast consoles.

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DESIGNED FOR SUPERIOR PERFORMANCE

The same qualities that make diamond a work of art also make it a radio production workhorse. One look tells you that diamond stands apart from other radio mixers, but its beauty is more than just skin-deep. diamond's thoughtful design is the result of more than 50 years learning, thinking and innovating.

Every control on diamond's surface has been exactly placed. Our team of talented designers observed the way that producers, hosts and talent work in facilities both large and small, taking note of every motion. They also drew upon their personal radio broadcast experiences and intimate knowledge of radio operations.

The result is masterful. There's the visually stunning Virtual Extension*, a full-size HD touchscreen display filled with context-sensitive information that augments advanced workflows; illuminated controls that group functions by color; two full-color displays per fader strip with input names, input metering and source-type icons; and of course, there's Lawo AutoMix hands-free mixing, which automates the task of keeping levels optimized.

All of this, plus a host of other assistive mixing technologies, enable diamond operators to produce technically superior radio programs — while simultaneously creating compelling, engaging content.

* Optional



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OVERVIEW

DESIGNED FOR HIGH PERFORMANCE

Like the cockpit of a high-end sports car, the diamond mixing console exemplifies performance, quality, and most especially, purposeful design. There are no unnecessary distractions to divert operators' attention: every switch, selector and display has been thoughtfully placed for maximum utility, exactly where the operator expects it to be, in order to eliminate errors and streamline workflow. This operational design allows customization to suit nearly any radio and workflow setup, whether self-op, remote control, remote production, in-studio, OB van, etc. Native IP connectivity means even more flexibility: a large variety of modules can be arranged so that needed controls are exactly where you want them, for maximum workflow efficiency. Those familiar with Lawo console design will find diamond exhilarating; those new to Lawo will find it a revelation.

EXTENSIVE VISUALIZATION

Today's operators rely on screens and graphical feedback more than ever before. diamond's Virtual Extension (powered by Lawo VisTool) integrates on-screen displays with physical controls in a way that's both visually pleasing and highly functional. In addition to metering, clocks and timers, the optional Virtual Extension 13.3" HD touchscreen displays context-sensitive data related to active controls. See the effects of EQ, compression and other DSP functions using the Gain Reduction meter; view PPM and/or loudness metering for every input and output; adjust input settings; make changes to routing, user management, snapshots and more. An optional upgrade to VisTool Unlimited facilitates integration of controls for third-party playout software, codecs, and applications such as social media platforms. Virtual Extension screens may be mounted directly to the console frame when used on the desktop. If the console is flush-mounted, screens locate adjacent to the console, providing an integrated, "all-in-one" mixing experience without need for external monitors.



COMPLETELY MODULAR

diamond has been designed from the ground up as a completely modular console, with an incredible array of control modules and exceptional flexibility in arranging them, making it easy to envision and build surfaces customized to match your organization's specific needs. Begin with your choice of central control modules: extended controls for large consoles; "combo" modules with faders, system and multi-function keys for smaller studios. Select fader modules with control keys above or below the fader, to suit your preferred style. Then, add programmable key or rotary selector panels for direct control of advanced options. A unique invisible mounting mechanism fixes modules securely in place without the need for unsightly screws. Finally, add integrated touchscreen control with optional Virtual Extension modules to provide instantaneous control of active functions, with visual feedback. From simple EQ curve adjustments to complex routing and scene changes, control and information are just a touch away. Multiple Virtual Extension modules may be deployed to provide a comprehensive display that spans the width of the console.

THE POWER OF LUX

diamond's incredibly intuitive controls are designed using LUX: the Lawo Unified Experience, a framework for conceiving, designing, and building solutions that put users first. Its design elements present users with a familiar and consistent interface across the entire Lawo product portfolio. In today's fast-paced radio production environment, it isn't enough for talent to simply be provided with knobs and switches. Whether interviewing guests, delivering breaking news, creating an energetic breakfast show or a late-night music program, operators need tools that help them remain in the creative moment — solutions that are effortless and invisible, so that thought is spent less on how to use your console and more on creating your "theatre of the mind". LUX provides informative visual elements, both onscreen and on the console surface itself, ensuring that common workflows are as simple and efficient as possible, with more advanced control features just a touch away. In this way, diamond helps keep content creators focused, while bringing them the tools they need when and where they need them.



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MODULAR BROADCAST CONSOLE



HIGHLIGHTS

PREMIUM COMPONENTS

diamond consoles are constructed using the same well-tested, high-end faders, keys, and rotary encoders found in our flagship Lawo mc² live-mixing consoles to ensure long life and perfect operation every time. Silent motorized faders permit flawless integration with program automation and playout systems — perfect for multiple-layer operations involving voice tracking, remote production, or DAW control. Programmable LED button lighting highlights common control functions. And diamond's familiar Lawo design language puts operators instantly at ease.

ENHANCED CONTROLS

All-new diamond module designs exemplify Lawo's attention to detail. Vibrant full-color displays adjacent to fader strips reveal useful information about sources. Guided key frames provide tactile feedback, helping talent find the right controls even when looking elsewhere. Navigation designed using the Lawo Unified Experience (LUX) ensures that users feel at home in every studio. And touch-sensitive controls impart an additional layer of logic, bringing details to adjacent displays at the slightest contact.

ASSISTIVE MIXING FEATURES

diamond employs smart algorithms that speed up production workflows. The AutoMix function automatically maintains the balance of multi-mic productions, and AutoMix Grouping allows this intelligent automatic mixing to be applied to multiple independent source groups. AutoGain, an automatic gain setting function, optimizes guest and host mic levels with a single button press. Smart tools like these help operators concentrate on creating compelling content rather than watching levels.

ALL ETHERNET

diamond connects to Lawo's Power Core mixing engine natively via Ethernet. This all-IP interface makes possible flexible new options for installing and maintaining equipment. Place the engine in the studio and connect it to diamond directly. Or, locate the engine remotely in your rack room or data center. Even install it in an entirely separate facility, connected via LAN or WAN. As many as four independent studios can share the resources of one Power Core; by using IP multicast, the diamond control modules in each studio will stay perfectly synchronized.

STANDARDS-BASED, FUTURE-PROOF

Lawo didn't just adopt IP — we helped define it with RAVENNA, the basis for the AES67 standard. Our manufacturer-agnostic approach to Audio-over-IP results in flawless performance not only with RAVENNA equipment but nearly all compliant broadcast equipment — plus seamless interfacing with major radio automation systems via Ember+ and HTML integration.

HIGHLY SCALABLE

diamond is the most flexible radio console Lawo has ever produced. Its extreme modularity allows designing consoles as small as 2 faders — or as large as 60 physical faders (plus another 60 virtual faders for a total of 120 faders). diamond's large variety of fader, key, rotary and central control modules allows you to customize your console to exactly match your workflow needs.

KEY FEATURES

- Modular by design & IP-native. Create consoles from 2 to 60 physical faders
- Single- or multiple-frame, tabletop or counter-sunk mounting
- Optional, adjustable-angle 13.3" Virtual Extension modules with HD color TFT displays for extended information & touch control
- VisTool Unlimited upgrade lets you design custom pages and create logic commands. Ember+ and HTML enables integration of third-party hardware and software
- Standards-based AES67/RAVENNA Audio-over-IP networking with ST2110-30/-31 and ST2022-7 compliance
- Premium 100 mm touch-sensitive motorized faders work seamlessly with automation and playout systems
- Fader-adjacent color displays give extended source information
- Dual fader layers instantly switch between tasks
- Fader maps allow grouping of faders with similar sources for easy one-button recall and adjustment
- Stereo, mono and multi-channel mix outputs
- Lawo AutoMix and AutoGain assistive mixing technologies
- Power Core engine with expandable I/O accommodates AES67, MADI, analog, AES3 and Dante® audio sources and destinations

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HIGHLIGHTS

MIN OR MAX: HAVE IT YOUR WAY

diamond isn't a "one-size-only" mixing console. In fact, it's exactly the opposite: a holistically-designed production system that enables you to build exactly the console you envision, tailored to your specific requirements. Since it is completely modular, custom setups are easily possible. The multiple module types (faders, central modules, combo modules and key/rotary extension panels) may be freely arranged to create consoles with single frames, multiple joined frames, or multiple split-frame configurations. Design consoles as small as 2 faders for news studios and voice recording booths. Add fader modules and rotary extensions to create 12 - 16 fader consoles for on-air studios and production rooms. Build consoles of up to 60 physical faders, along with rotary and/or key extension modules and Virtual Extensions to create large consoles with integrated, intuitive touchscreen controls suitable for production and Master Control room applications. The sky is the limit.



DIAMOND VIRTUAL EXTENSION

Today's high-performance radio demands that operators run at the pace of a Formula One driver. They have a million things to do, operations to keep watch on, and adjustments to make. And all of these events are timed down to the split-second, with no room for error. Because of this, screens are more a part of radio studios than ever before. Displays surround the radio operator: screens for playout systems, loudness monitoring, routing operations, social media... all of this can be overwhelming.

diamond solves screen proliferation with the optional Virtual Extension, which can be added to any diamond console (even those as small as two modules wide). These big HD touch displays are powered by Lawo VisTool and designed using the LUX tool set.



With desktop consoles, the sharp 13.3" (diagonal) touchscreens are fully integrated with the console frame, with viewing angle easily adjustable between three positions for optimal ergonomics. If you prefer your diamond console to be flush mounted (counter-sunk), Virtual Extension screens can also be flush mounted adjacent to console modules, or content displayed on your own choice of display monitor. As always, Lawo's thoughtful design gives you unparalleled freedom of choice when designing your ultimate radio mixing console.



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VIRTUAL EXTENSION



Diamond Virtual Extension screen for Central Module



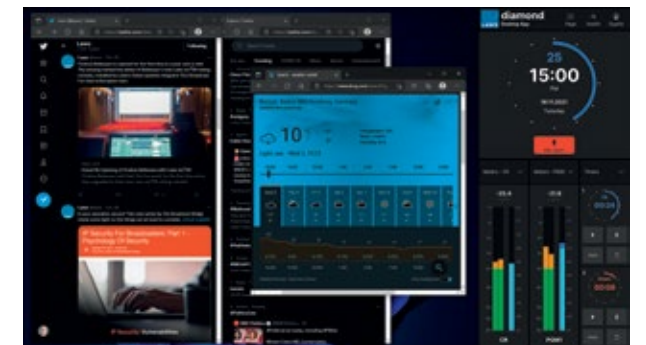
Diamond Desktop App: full control on a standard monitor



Channel options appear at the touch of an Access key



Virtual Extension screen for Combo Module



Web, direct messaging, social media integration

INTUITIVE CONTROL AND WORKFLOW

In today's radio stations, computer monitors are the studio's centerpiece. Playout system controls, phone queues, news and weather, social media platforms, even live copy are on-screen — and the number of those screens has increased dramatically. Yet, while today's talent expects interactive displays, consoles still force them to use physical controls, diverting attention from displayed information. And when focus is lost, shows suffer.

Lawo solves this problem by melding physical and virtual controls. diamond consoles with Virtual Extension modules (powered by Lawo VisTool GUI-builder software) can now use intuitive touchscreen controls that are perfectly integrated with the console itself, and are optimally located within the operator's field of focus. Or, if you prefer, you may use any standard touchscreen computer monitor in conjunction with the Diamond Display App.

THE VIRTUAL EXTENSION

If you equip your diamond with the optional multi-touch Virtual Extension module, a pre-configured collection of control screens are ready to run. Each fader strip is augmented with a real-time bargraph display and tallies that illuminate when DSP processing is active, plus bus assignment indicators and an info-strip with source name and details. An interactive parameter control page is shown when a channel's Access mode is activated. Just touch the screen to trim voice processing and other DSP parameters, fine-tune delay

times, recall console snapshots, load audio sources and adjust source and monitor gain.

When the full-width diamond Central Control Module is used with the Virtual Extension Module, 4 "slots" are provided on-screen that you can fill with program output meters, loudness metering, user short-cut keys, NTP-synchronized clock, event timers - even video feeds. When the diamond Combo Module is used, 2 user-selectable "slots" are available. Slot functions can be set in user profiles and recalled when users log in.

THE DIAMOND DESKTOP APP

Perhaps you prefer to use your favorite touchscreen monitor for control and information instead of the Virtual Extension module? No problem: the Diamond Desktop App comes with every diamond console and works with any standard touchscreen display.

The Diamond Desktop App is extremely flexible. It provides all of the touch-based console control functionality found in the Virtual Extension, and also helps combat display proliferation in the studio — operators can instantly "dock" the diamond display, which shrinks to a toolbar that continues to provide vital clock, timer, metering info and user controls, while freeing the rest of the screen for playout systems, audio editors and other tasks.

REMOTE CONTROL, SNAPSHOT & RIGHTS MANAGEMENT

IP-based studio infrastructure makes it very easy to control devices remotely and share information between studios. The diamond apps take maximum advantage of studio networking, giving you the ability to operate your console remotely with complete access to every function from a PC with LAN/WAN connection.

Thanks to an unlimited number of snapshots and DSP profiles that can be stored and recalled from any networked console, individual talent profiles or customized show setups are available anywhere - even to operators working remotely from home studios, OB setups, etc. There's also a sophisticated rights-management system that gives engineers the power to tailor access to console features based on multiple user groups, or on a user-by-user basis. Set up different access levels for technical personnel, experienced DJs, and trainees. Decide which console features are accessible, and which ones are locked. Even make designated snapshots available to only specific users.

GO UNLIMITED

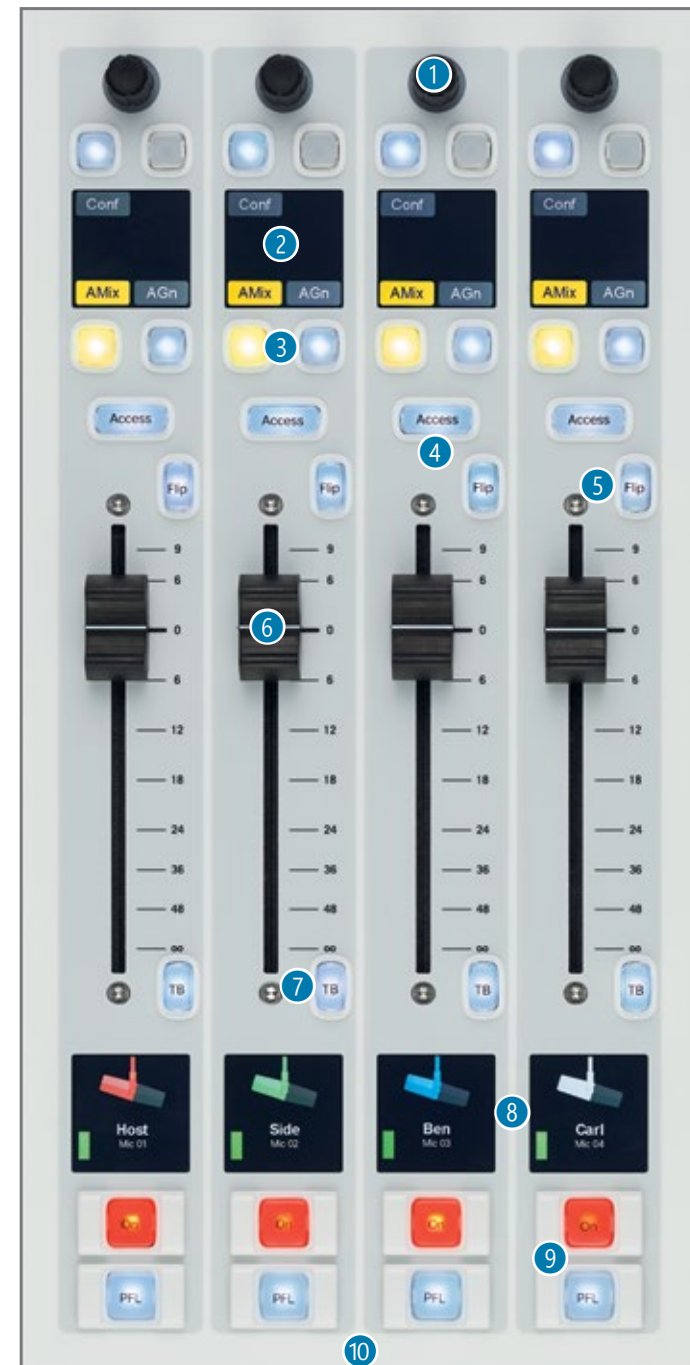
Upgrade to VisTool Unlimited to design completely original control screens. Drag-and-drop elements from a comprehensive library of included vector objects to build meter walls, embed HTML windows, control software and hardware peripherals via Ember+. Create your own workflows — even import custom graphics to create screens that match your station's unique branding.

DIAMOND DESKTOP APP

- Preconfigured and included with every Lawo console
- Vector-graphic engine with stylish LUX design elements provides clear, attractive screen output at all resolutions
- Runs on standard Windows PCs
- Docked, windowed or full screen modes
- Overview screen includes docking bar with timer and clock, main output monitors and meters, and Snapshot management
- Onscreen X-Y matrix for output routing
- Multi-touch operation enables simultaneous onscreen control of a wide range of parameters
- Outstanding user management with custom snapshots available locally or across the network

VISTOOL UNLIMITED (OPTIONAL)

- Unlimited possibilities for configuring customized layouts
- Open existing configurations and adapt them to your needs
- Save and re-use groups of items as snippets
- Large included library of scalable vector objects includes buttons, meters, text displays, faders and rotary controls, loudness indicators, confidence meters, processing curves and more, plus import your own custom graphic elements
- Create multiple pages of different layouts, display them on multiple screens and switch as you like during operation



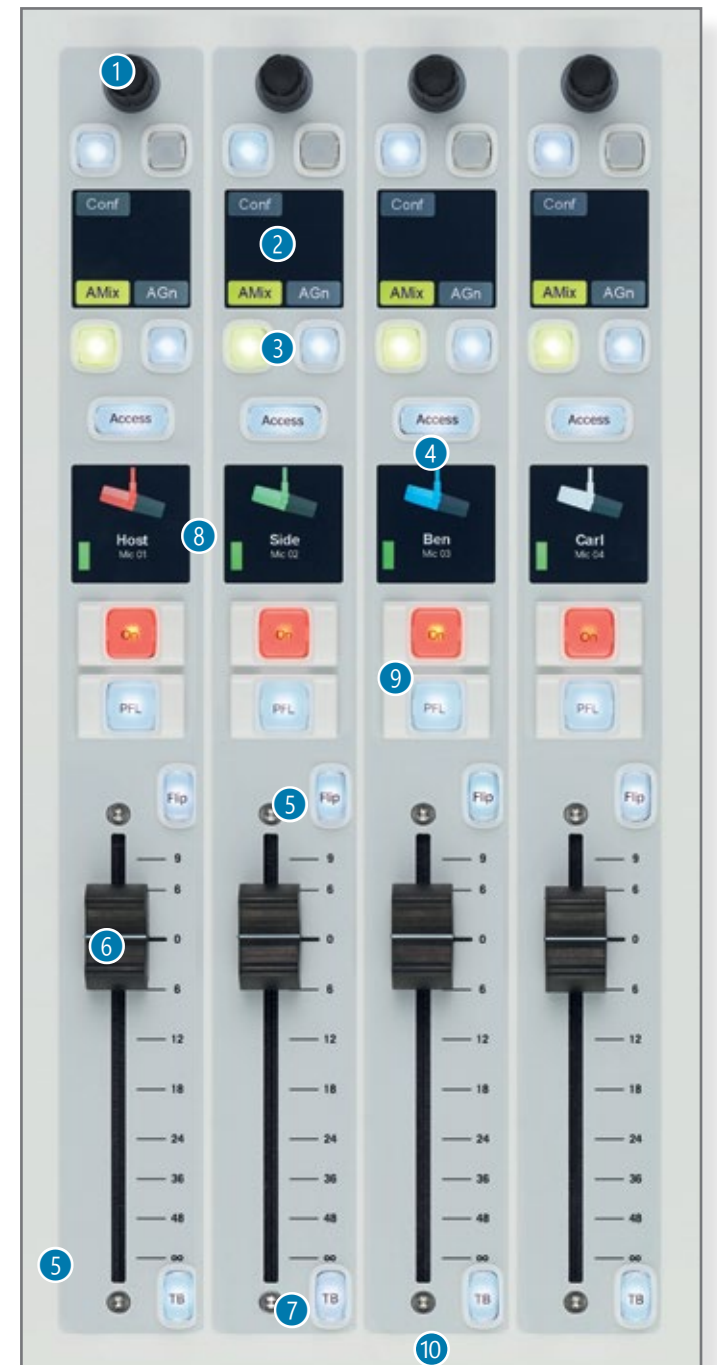
FADER MODULES

The heart of any mixing console. diamond modules are 4 faders wide, with fast, silent motorized faders that respond instantly to layer changes, playout systems and remote operator input. Styled after our award-winning line of mc² audio production consoles, color-guided controls provide instant visual feedback for active functions; full-color displays above or below faders supply source information, confidence metering, and more.

1. **ROTARY CONTROL** with color-guided LED ring for setting DSP parameters or making quick manual adjustments to mic, line and send levels. Workflow is immediately intuitive: just touch, rotate, or push.
2. **MULTIFUNCTION DISPLAY** shows the action assigned to each of the four multifunction keys, such as parameter control, source assignment, even dynamic stream patching.
3. **CONTEXT-SENSITIVE MULTIFUNCTION KEYS** control bus assignments, DSP settings, AutoMix, Conference and Talkback assignments. The nearby TFT display indicates the function of each key. All buttons have multi-color backlights, programmable to help users quickly identify functions by color.
4. **ACCESS KEYS** select sources for parameter control. Double-tap for quick source assign and stream patching.
5. **FLIP KEY** switches between layers. It can also be programmed for use as an additional multifunction key.

Smooth workflows are paramount to successful radio production. But not everyone's workflow is identical. So we've designed two different styles of fader modules for diamond, one with displays and control keys below the fader; the other with these items above the fader. So you can manage your on-air productions in the way you're most comfortable with.

6. **TOUCH-SENSITIVE MOTORIZED FADERS** are premium Lawo quality for smoothness and durability. They are completely silent and feature a selectable 0dB notch. Programmable Fader-Start and Fader Over-Press features allow custom logic functions to execute when faders are opened or closed.
7. **TALKBACK KEY** allows users to quickly talk to hosts, guests or remote talent. May also be programmed as an additional multifunction key.
8. **CHANNEL DISPLAY** indicates currently-assigned audio source as well as confidence and PPM metering, source graphics, user labels, and information from playout system, editing software, etc.
9. **CHANNEL ON & PFL KEYS** with guided key frames and color-guided lighting provide On/Off, Mute and PFL (Cue) functions, plus manual start of audio devices if desired. May also be programmed as multi-function keys.
10. **SMOOTH, CLEAN WORK SURFACE** resists dirt, fingerprints and other marks, remaining tidy even with constant use.





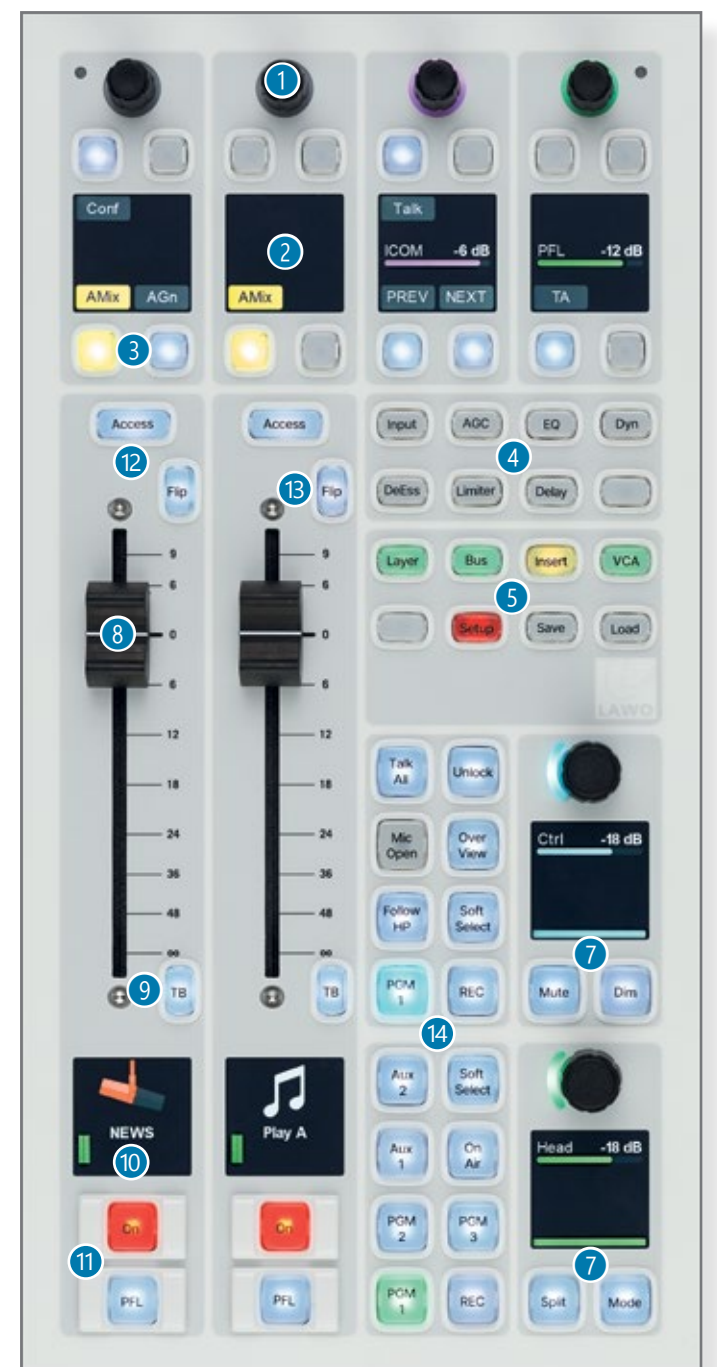
CENTRAL & COMBO MODULES

diamond Central Modules feature a comprehensive set of controls, with virtually every feature capable of being programmed to provide exactly the functions needed for your studio workflow. The full-width Central Module shown at left provides superior control for large consoles such as those found in Master Control or program production suites. Ambient light sensors on Central and Combo modules automatically adjust the brightness of console displays.

- 1. ROTARY CONTROLS** with color-guided LED rings for adjustment of guest and studio monitor controls; intercom, PFL and talkback levels; EQ, dynamics and other DSP functions.
- 2. MULTIFUNCTION DISPLAYS** indicate the actions available for selection by the adjacent rotary control, and the functions of the four adjacent keys. Metering and gain level displays are shown as needed.
- 3. CONTEXT-SENSITIVE KEYS** with programmable multicolor backlights allow operators to select functions shown on the multifunction display.
- 4. DSP MENU KEYS** give operators direct access to audio processing functions.
- 5. SYSTEM KEYS** for global layer switching, snapshot save & recall, and other commonly-used system settings.
- 6. 46 MULTIFUNCTION KEYS** on Central Modules are freely programmable for frequently-used functions, and may be individually labeled.
- 7. TWO INDEPENDENT MONITOR CONTROL SECTIONS** may be used for separate monitor and headphone adjustments.

The diamond Combo Module shown at right is perfect for less-demanding applications such as small-to-medium sized on-air studios, production rooms, or OB applications. Along with comprehensive controls, it includes two faders and like four-fader modules is available with ON/PFL buttons and displays placed either above or below the fader strips.

- 8. TOUCH-SENSITIVE MOTORIZED FADERS** are premium Lawo quality for smoothness and durability. They are completely silent and feature a selectable 0dB notch. Programmable Fader-Start and Fader Over-Press features allow custom logic functions to execute when faders are opened or closed.
- 9. TALKBACK KEY** allows users to quickly talk to hosts, guests or remote talent. May also be programmed as an additional multifunction key.
- 10. CHANNEL DISPLAY** indicates currently-assigned audio source as well as confidence and PPM metering, source graphics, user labels, and information from playout system, editing software, etc.
- 11. CHANNEL ON & PFL KEYS** with guided key frames and color-guided lighting provide On/Off, Mute and PFL (Cue) functions, plus manual start of audio devices if desired. May also be programmed as multi-function keys.
- 12. ACCESS KEYS** select sources for parameter control. Double-tap for quick source assign and stream patching.
- 13. FLIP KEY** switches between layers. It can also be programmed for use as an additional multifunction key.
- 14. 20 MULTIFUNCTION KEYS** on Combo Modules are freely programmable for frequently-used functions, and may be individually labeled.



diamond

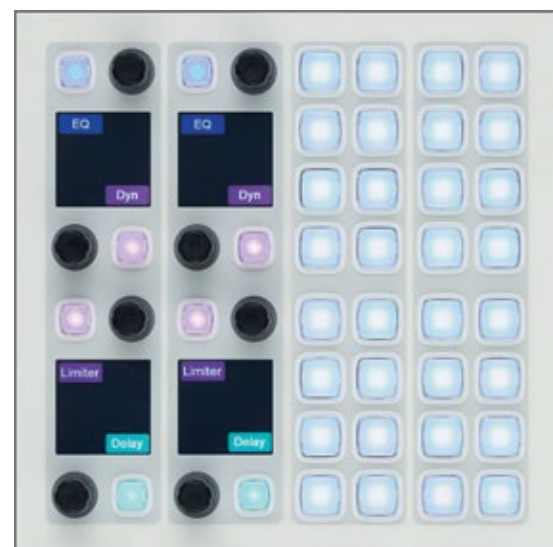
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EXTENSION MODULES

Radio stations that demand configurability will find it in abundance with diamond. In addition to the fully programmable keys on each fader strip and Central Modules (40 keys on full-width Central Modules and 16 on Combo Modules), diamond can also be outfitted with any or all of these useful extension modules:

1. **KEY EXTENSION MODULE** has 64 keys with multi-color backlighting. Perfect for commonly-used control functions common to all users, these can be used to recall snapshots, change layers, fire routing salvos, et cetera.
2. **ROTARY EXTENSION MODULE** features 8 color displays, each with adjacent rotary selectors and back-lighted buttons. Use these for quick access to input or output selections, EQ, compression and other DSP functions, bus assignments, and other operations where multiple choices are available. Rotary knobs feature color-guided lighting rings for easy operation.
3. **COMBO EXTENSION MODULE** combines color displays, rotary controls, and 32 color-backlit function keys to deliver maximum control options in small or medium-sized diamond consoles. An excellent choice, in combination with the Combo Module, for production or remote applications where a bit of extra control is required.



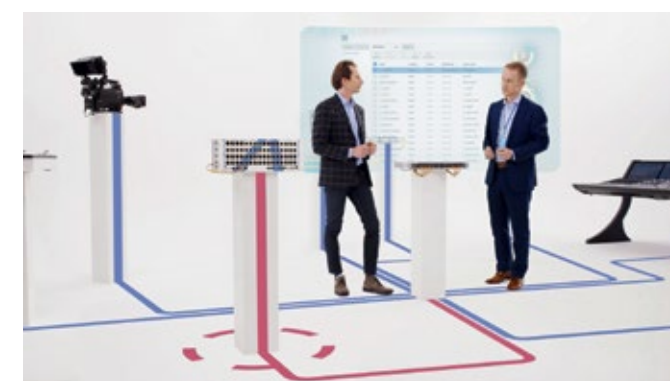
MORE UNIQUE FEATURES



MODULAR BY DESIGN

How can a product so powerful be so configurable? diamond was designed from the ground up to be completely modular, with sturdy, RF-immune aluminum construction. Interlocking modular frames make it possible to position faders, control extensions and central modules in nearly any combination. An ingenious screwless mounting system requires no tools for module

installation. The diamond surface connects to the Power Core mixing engine natively via IP, which gives you even more design flexibility. For instance, a single console can be made up of many separate independent modules, with “mini-consoles” placed next to hosts, talent, producers, or operators. No other IP console gives you this much flexibility.



WELCOME HOME

diamond integrates beautifully with HOME, Lawo's management platform for today's complex IP-based media infrastructures. With HOME, the cloud starts on your campus, private and locally. HOME helps connect, manage and secure all aspects of live production environments, providing centralized services for swift, effective interaction of engineers with their tools. HOME turns an array of devices, setups, sites, hubs and data centers into a powerful, agile network — quickly and in a perfectly secure way. Find out more at www.lawo.com.



IP TO THE CORE

diamond is a native AoIP device; its Power Core mixing engine adheres to RAVENNA and AES67 standards and works flawlessly with standards-based third-party AoIP equipment. It also complies with SMPTE 2110-30/-31, facilitating audio interchange between the radio and video sides of your facility. The innate flexibility of IP networks enables you to place your mixing engines and I/O access points in the locations that best suit your needs: in-studio, in a remote rack room or data center, even in a separate facility connected via LAN or WAN.

Power Core

AOIP MIXING ENGINE + I/O NODE

Don't let its size fool you



MEET THE RACK SPACE REDUCER

Never judge a book by its cover — or a mixing engine by its rack size. At just 1RU, Power Core's compact form belies the immense capabilities inside; capabilities that dramatically increase signal capacity, reduce rack space requirements and expand operational flexibility – while helping to reduce installed cost.

Standard front-panel I/O in Power Core Rev3 includes 4 RAVENNA / AES67 Ethernet ports with SFP, capable of up to 256 bi-directional AoIP streams (512 audio channels). Or use them to provide LAN segment separations or LAN-WAN gateway applications using bi-directional Unicast streams. 4 high-density MADI ports supply up to 256 total channels of audio, making Power Core perfect for native MADI-to-AES67 AoIP conversion. A high-resolution color display gives status and setup information, while USB and SD Card access simplify maintenance operations; two Ethernet control ports plus CAN and serial control ports complete the scene.

Around back, 8 expansion slots accept a variety of optional I/O interface cards. Auto-switching, redundant power connections are standard; Power Core's internal auto-ranging AC power supply is complemented by a 12VDC backup power supply inlet.

Where Power Core really shines in raw audio processing horsepower. A single Power Core can handle thousands of simultaneous signals. As many as 96 channels of DSP input processing can be unlocked to use for anything from EQ to de-essing, from dynamics to delay sync. Depending on license package, Power Core boasts resources enough to power as many as 4 independent mixing consoles (hardware or software).

SOFTWARE-DEFINED FLEXIBILITY

Because Power Core is so agile, we use software to configure it for different applications. A variety of license packs are available to tailor Power Core to any performance or budget requirement. Used with a Lawo control surface, it's a powerful mixing / routing engine with an internal routing matrix of up to 1,920 x 1,920 crosspoints. By itself, it can be an “Über-Node” capable of ingesting massive amounts of audio to make available to your AES67 AoIP network. In its most advanced configuration, Power Core's massive DSP capabilities can be unlocked to apply audio correction to vast numbers of signals plant-wide. And the MAX license allows connection of as many as four independent mixing surfaces to a single Power Core engine — a unique ability perfectly suited to today's multi-studio radio facilities. Whatever your workflow, Power Core is always optimized for the task at hand.

AUDIO STANDARDS @ HOME

Power Core is standards-based from the ground up. It uses RAVENNA, the standards-based advertising and discovery protocol that's AES67 compliant. It employs the open-source EMBER+ control protocol to connect and control any studio hardware or software. ST2110-30 compliance ensures seamless operation in combined radio/TV broadcast plants, while ST2022-7 Seamless Protection Switching enables simultaneous, redundant network links. And naturally Power Core works with Lawo HOME, the management platform for IP-based media infrastructures, benefitting from all of HOME's next-generation management features: user access control, quarantining of unknown devices, stream and audio routing, and real-time health monitoring.

MAXIMUM DSP











Power Core DSP features include a unique low-latency Loudness Leveler that matches audio to a pre-set loudness target, a self-keyed side-chain filter for dynamics processing, realtime de-essing with adjustable trigger frequency and AutoGain for each mic input, high-granularity EQ with extended “Q” values for fine-tuning and five parameters: three fully-parametric bands and two semi-parametric bands that can be high- and low-shelf filters, plus gate, expansion, limiting and compression. There's additional support for up to 8 AutoMix groups and 16 VCA groups; up to 5,280 ms of

synchronization delay with switchable units (milliseconds, meters, or frames) is also available.

EXPANDABLE I/O, À LA CARTE

Power Core comes with a staggering amount of AES67 and MADI I/O, but you can easily add more I/O. 8 rear-panel slots accommodate a variety of audio and control modules. Simply pick the I/O cards you need and slide them into Power Core's waiting expansion ports — it couldn't be simpler.



	8x MIC / LINE IN Switchable inputs with Phantom power		STUDIO I/O 2 Mic / Line in, 2 Line outputs, 2 HP outputs
	8x LINE IN Eight mono / four stereo inputs		4x AES3 I/O 4 inputs and outputs on DB25 (bit-transparent; SRC on inputs)
	8x LINE OUT Eight mono / four stereo outputs		4x AES3 I/O 4 HD-BNC inputs and outputs (bit-transparent; SRC on inputs)
	8x GPIO 8 GPI+8 GPO and 2 VCA inputs		2x MADI I/O 64 channels per SFP connection
	DANTE I/O incl. SRC Two redundant ports; 64 total channels		1x MADI I/O incl. SRC 64 channels I/O with Sample Rate Conversion



RAVENNA



lives@HOME

diamond

SYSTEM SPECIFICATIONS

DIAMOND CONTROL SURFACE

- Table-top or counter-sunk versions
- Single-frame, split-frame or independent module configurations
- Single console units of up to 8 modules in width may be constructed. Multiple modules and frames may be combined to create systems of up to 60 faders
- Unique “invisible” module mounting system
- Touch-sensitive motorized 100mm faders with selectable 0dB-notch allow instant override of pre-programmed levels
- Touch-sensitive color-guided rotary controls
- Context-sensitive full-color displays
- Multiple operating layers with fader maps support up to 60 physical or 120 virtual faders
- Integrated mix-minus (clean feed)/conference logic and two independent conference busses
- Snapshots for instant recall of console layouts, user settings and other operational parameters
- Sophisticated user- and rights-management system with on-screen, SSO (single-sign-on) or RFID login
- Diamond Apps (powered by Lawo VisTool) included for integrated workflows using both the Virtual Extension module and “off-console” external displays. Features metering, graphical parameter controls, timers, user functions, audio routing and much more. (Apps require separate Windows workstation; ask your Lawo representative for details)
- Connects to Power Core engine natively, via LAN or WAN

DIMENSIONS

- Fader & Central Modules: 468 mm x 366 mm
- Extension Modules: 168 mm x 168 mm
(Blank plates are available in both sizes.)
- Virtual Extension Module: 336 mm x 195 mm
- End-plates for desktop mounting: 10 mm each

OPTIONAL EXTENSION PANELS

Several different rack-mounted 1RU panels with illuminated buttons, LCD keys, pots & GPIO are available to provide control logic and control level adjustments for conferences, talkback and monitoring. Up to 30 panels can be connected via CAN-Bus or TCP/IP.

	KSC.T20 (950/80)	19”/1RU panel with 20 backlit buttons
	KSC.LCD16 (950/81)	19”/1RU panel with 16 LCD buttons
	KSC.LCD15P1 (950/82)	19”/1RU panel with 15 LCD buttons, and 1 rotary control (e.g. for level control)
	KSC.LCD14P2 (950/83)	19”/1RU panel with 14 LCD buttons, and 2 rotary controls (e.g. for level control)
	KSC.GPIO32 (950/84)	19”/1RU panel with 32 GPIO contacts and 8 VCA inputs



CONFIGURATION AND MAINTENANCE

- Console Designer software for system and logic programming
- Secured Web interface for system setup and diagnostics
- Software tool for remote software updates
- Remote maintenance via IP

POWER CORE

SIGNAL PROCESSING - POWER CORE

- Maximum of 96 Input channels, each with Input gain, a signal presence indicator, direct outs, Inserts, Aux sends with Pre/Post switching, pan/balance, AutoGain for each mic input
- 5-parameter equalizer: 3 fully-parametric bands plus 2 semi-parametric bands (can also be shelf, high-pass or low-pass filters. High-granularity EQ with extended “Q” values
- Dynamics: gate, expander, limiter, compression with self-keyed side-chain filter, De-Esser with adjustable trigger frequency
- Maximum of 8 individual AutoMix groups (up to 96 channels each) and 16 VCA groups allow creation of multiple independent mixes
- All sources and all busses may be metered onscreen using EBU R128 Loudness Metering and/or PPM
- Sync delays of up to 5,300ms with switchable units (meters, milliseconds, frames)
- Up to 80 summing busses depending on license, configurable as Program, Record, Aux, Group, Mix-Minus (clean feed) or General Purpose. A full DSP channel with EQ, Dynamics and Delay functions may be applied to any of these busses (up to 16 stereo or 32 mono busses)
- Channels and busses may be grouped into Stereo and 5.1 Surround bundles

SOFTWARE DEFINED FUNCTIONS

- Some features described are extra-cost options. Power Core may be configured as a pure audio I/O device, mixing console engine, shared core for up to 4 independent mixing consoles (MAX version), or a router with extensive DSP capabilities. Ask your Lawo representative for detailed options and prices.

SYNCHRONISATION

- PTP (IEEE 1588)
- BMCA-PTP interface support
- Wordclock input and output
- MADI input and internal generator
- 48 kHz or 44.1 kHz

STANDARD AUDIO INTERFACES

- 4 MADI (each 64 channels I/O) with SFP cages (MADI ports 1 / 2 and 3 / 4 can be grouped as redundant interfaces)
- 4 RAVENNA / AES67 with SFP (up to 256 bi-directional streams with up to 512 I/O channels in total). May be grouped as redundant interfaces using SMPTE 2022-7 standard or LACP
- ST2110-30 compliant for seamless audio interchange in combined radio / TV broadcast plants
- Some interfaces may not be active with certain license packages. Please consult your Lawo representative for details.

AVAILABLE I/O EXPANSION CARDS

- 8 Mic / Line inputs
- 8 Mono / 4 Stereo Line inputs
- 8 Mono / 4 Stereo Line outputs
- 4 Stereo AES inputs with SRC + 4 AES output (bit-transparent)
- 4 HD-BNC AES inputs with SRC + 4 HD-BNC AES outputs (bit-transparent)
- GPIO: 8 GPI & 8 GPO + 2 VCA inputs
- 2 Mic / Line in + 2 Line out + 2 Stereo Headphone out
- 2 MADI (64 I/O channels each) with SFP cages
- 1 MADI incl. SRC (64 I/O channels) with SFP cage
- 2 DANTE (two redundant connections, 64 total channels)

CONTROL

- RAVENNA / AES67 discovery, connection management, and dynamic stream patching
- Ember+ and RAS control protocols for integration with automation, playout, hybrid and codec applications
- Integration with and control via Lawo VisTool, HOME, VSM, A__ devices, DSA Line Scheduler and RAVENNA matrix server
- Programmable logic core for external “On-Air” tallies, Fader Start commands, Talkback integration and Studio Environment
- IP multicast control protocol in solutions featuring multiple diamond frames and panels
- TCP/IP, CAN, and RS422 control protocols supported

diamond

MODULAR BROADCAST CONSOLE

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