

TOA D-901



Product: TOA D-901 digital mixer

Price: \$2,190 MSRP (modules are \$158 - \$282 each)

Company website: www.toaelectronics.com

Plus: Highly flexible, compact, good sound quality

Minus: Difficult to program without free PC software

Final Grade: **A**

GRADES AT A GLANCE

TOA D-901

Design	A
Performance	A-
Value	A
Final Grade	A

TOA'S LATEST entry into the AV and commercial sound mixer market, the D-901, packs a lot of digital signal processing (DSP) power into a compact unit. They've taken all the functionality of today's small-format digital mixing consoles, including parametric EQ and dynamics on every channel, digital filters, and feedback control, and packaged it into three standard rackspaces. Fundamentally, it's a 12-input, eight-buss, and eight-output digital mixer with a comprehensive set of DSP functions, a cross-point matrix, and optional cards for audio input and output.

Design

The D-901 takes a page from small-format mixing consoles with its Spartan front panel, where all functions are adjustable using a common set of buttons and multiple menu pages. The panel is divided into three sections, with the entry section taking the leftmost portion. This section has four buttons for navigating menus, a parameter knob, and dedicated buttons for accessing utilities and saving presets. Preset recall buttons provide access to the first eight of 16 total presets; accessing the other eight require the inconvenient use of the knob and backlit LCD display. The center section of the front panel is devoted to controlling the 12 inputs via select buttons and a rotary level knob, while the right section is home to an eight-segment LED output meter, eight-output select buttons, and an output level knob. The level knobs are continuous rotary encoders with surrounding LEDs that indicate the current setting.

The rear panel consists of eight slots for audio input and output cards, plus one slot for an optional serial control card that interfaces to AMX and Crestron control systems, and a serial port for connecting the mixer to a PC. TOA offers several different versions of analog audio input and output modules, with onboard 20- or 24-bit A/D and D/A converters. Customers will appreciate being able to buy only the inputs and outputs they need for a specific application.

TOA provides D-901 control software as a free download from its website, and this greatly simplifies preset programming. It runs on modest PCs under Windows 98SE, ME, 2000, or XP, and connects to a D-901 via a DB9 serial cable (not included). When launched, all the functions of the mixer become visible as part of an informative, onscreen block diagram. Clicking on any block reveals its settings in the pane below, where adjustments are simple and intuitive. The control software is well written, easy-to-use, and makes the setup process quick and enjoyable.

Design Grade: **A**

Performance

The review unit was shipped with four modules: a two-channel, XLR-equipped input card, a four-stereo channel input card, a four-channel XLR output card, and a four-stereo channel RCA output card. Because there are a total of eight outputs in the mixer, I alternated between the XLR and RCA cards for outputs.

I tested the D-901 in a large multimedia hall at a university, where it replaced a conventional analog mixing console. With music, the D-901 provided a more accurate and open-sounding high-frequency response than the existing mixer, and was on par with other digital mixers I've used. The EQ was transparent and the level compressors were competent, although they have a sterile quality common to most digital mixers. Once presets were stored, it was convenient to make small level adjustments using the channel select buttons and level knobs. The microphone preamplifiers on the two-channel XLR cards are clean and uncolored, although I had to boost the gain substantially on one wireless microphone with a low output.

I also exercised the automatic microphone mixing, which operates on the principle of Number of Open Microphones (NOM). In this mode, each time a channel's gate opens, the D-901 recognizes it as an open

MANUFACTURER SPECIFICATIONS

Frequency Response: 20–20,000Hz (±1dB) (±4dB input)

Parametric Equalizer: 20–20,000Hz, ±15dB, Q: 0.267–69.249

Filters: High-pass, low-pass, notch, all-pass, high- and low-shelf, horn EQ

Crossover Filter: Selectable between 20–20,000Hz, slopes; 6dB/oct, 12dB/oct, 18 dB/oct, 24dB/oct

Compressor Threshold: –20dB to +20dB, 1dB steps

Ratio: 1:1, 2:1, 3:1, 4:1, 8:1, 12:1, 20:1, ∞:1

Attack Time: 0.2ms–5 seconds

Release Time: 10ms–5 seconds

Gain: –∞ to +10dB

Delay Time: 0–682.6ms, 0.021ms steps

Preset Memory: 16

Auxiliary Function: System lock capability

Control: RS232C D-sub connector (9-pin); optional remote control module (D-981)

Dimensions (WxHxD): 482.6mm x 132.6mm x 320mm

Weight: 15.2 lbs.

Accessories: Power cord x 1, rack-mounting screw x 4, rack-mounting brackets x 2 (comes installed on the main unit)

mic and adjusts the gain each time the number of open microphones doubles by an amount set as a preference. It worked as advertised.

The D-901 comes with a five-year warranty, and based on its solid construction, there's little reason to believe the warranty will see much action. I contacted customer support to troubleshoot the PC-to-mixer connection, and although I ended up in voicemail, my call was returned within the hour by a polite tech who suggested that my serial cable might be dodgy (which it was).

You'll get to know the entry section of the front panel well when you set up presets in the D-901 as you select channels and tweak them. Combine this with the multiple-page menu nature of the display, and the programming experience becomes tedious. (I suggest you bring a laptop and a serial cable to the job to program the D-901). That aside, this unit deserves high marks for performance. An Ethernet connection to the PC would be even more convenient than the serial connection, but what's there works well enough.

Performance Grade: **A-**

Value

TOA has a history of success in commercial sound, and the D-901 is a worthy addition to its product line. At \$2,190 plus cards, a likely price for a complete D-901 might be around \$2,700. This is just slightly higher than current digital mixing consoles with comparable interconnections, and those units lack the D-901's space-saving, anti-feedback, and preset-locking features. **AV**

Value Grade: **A**

by Steve Cunningham

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