



# DM 2000

DIGITAL PRODUCTION CONSOLE

*Version 2*



DEDICATED DSP LSIS DELIVER UNPRECEDENTED 24-BIT, 96 KHZ PERFORMANCE



Unlike equipment that achieves operation in 96K mode with reduced number of tracks, the DM2000 imposes no such limitations — whether running at 44.1kHz, 48kHz, 88.2kHz or 96kHz. In the DM2000, 96kHz with 32-bit internal processing is the standard. To achieve this, no fewer than 14 newly-developed YAMAHA DSP7 LSIs are utilized in the mixer section, and eight DSP6 LSIs for effects, achieving performance that stretches the limits of the most advanced technology currently available. By way of comparison, the Yamaha 02R — the digital mixing console that almost single-handedly started the digital production revolution, and rapidly became the industry standard — uses six DSP3 chips in it's mixer section. A single DSP7 chip has more than four times the processing power of a DSP3. The DM2000 provides more than 9 times the processing power of the 02R. We're talking about 96 channels of super-clean, super-dynamic, noise-free 24-bit/ 96 kHz audio, plus all the additional effects and processing you'll ever need for most applications. At 44.1 or 48 kHz the DM2000 is barely idling.



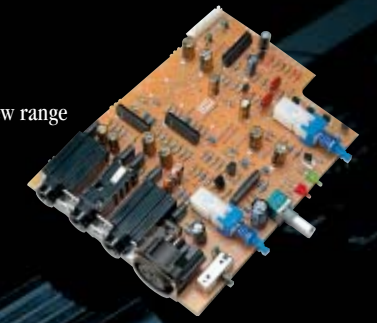
INTERNAL EFFECTS FULLY SUPPORT 96 KHZ PROCESSING

What's the point of having 24 bit/96 kHz audio if you have to convert down to a lower sampling rate for effect processing? The point may seem obvious, but that's exactly what's happening if you're using hardware or software processors that don't offer 24 bit/96 kHz performance anywhere in your signal chain. That's why Yamaha included a comprehensive range of 96 kHz compatible stereo effects in the DM2000 — plus several designed specifically for surround. And you can use as many as eight individual effect processors simultaneously.

FINEST MIC-PREAMPS WITH ONBOARD 24BIT/96KHZ AD/DA CONVERSION

Taking the preceding discussion a step further, what about analog-to-digital and digital-to-analog conversion? The same applies: if you don't have all 24 bits at the full 96 kHz in top-quality converters, you're definitely going to be missing something (i.e. part of your sound). Once again, the DM2000 imposes no limitations. All onboard A/D and D/A conversion makes use of top-performance 24 bit/96 kHz converters. This is particularly important in the DM2000 because it features some of the finest analog mic preamps available in any console, anywhere. The on-board converters ensure that you get an excellent digital representation of the warm, transparent output from

these remarkable mic preamps. A new range of Mini-YGDAI digital and analog I/O cards also provide full 24 bit/96 kHz capability.



COMPREHENSIVE AUTOMATION AND SCENE CONTROL

Version 2

Automation and Scene Memory recall capability are essential elements of modern digital mixing consoles. With the DM2000, Yamaha takes these functions to an even higher level of precision and ease-of-use. While providing full automation of virtually all console parameters, DM2000 features smooth and quiet touch-sensitive, 100mm motorized faders that make writing and updating automated mixes faster and more intuitive than ever. And all automation data is recorded at 1/4-frame accuracy to ensure excellent precision. Global Fade Time and Global Recall Safe are in addition to independent fade time and recall safe settings for each scene, you can set global fade time and recall safe settings that apply to all scenes.

This ability can dramatically reduce setup time when you will be using multiple scenes with the same settings.



INPUT FADE TIME

COMPLETE SURROUND SOLUTION



The DM2000 provides everything required for a complete surround solution. All the facilities you need for surround processing, panning and monitoring — including joystick — are provided as standard equipment. The joystick is the perfect (and generally preferred) tool for smooth, continuous positioning of 5.1 or 6.1 surround sound for DVDs or other surround media. And since accurate monitoring is so essential to surround production, extra care was taken to ensure that the DM2000 offers the ideal mixing environment — it includes a downmix matrix which can deliver 3-1 (LCRS) and stereo mixes while you are burning a surround mix to DVD, bass management, and speaker alignment facilities for optimum speaker system tuning. The DM2000 will even handle multiple surround stem mixes with ease.

INTUITIVE INTERFACE DESIGNED FOR MAXIMUM PRODUCTIVITY

Anyone who is familiar with the 02R will immediately feel comfortable with the DM2000. While the comprehensive, efficient display format of the 02R has been inherited by the DM2000, the control surface and user interface system has been greatly expanded and enhanced to allow analog-style hands-on operation with minimum need to refer to the LCD. The motto: mix with your ears, not with your eyes. 16 user-defined keys which can be assigned the functions of your choice are also provided.

THE FIRST CHOICE FOR DIGITAL AUDIO PRODUCTION JUST GOT BETTER

It wasn't that long ago that Yamaha's groundbreaking DM2000 Digital Mixing Console took the professional audio world by storm, establishing digital mixing and the 24-bit/96-kHz format as the industry's standards.

In the same way that the Yamaha DMC1000, 02R and then the PM1D revolutionized the fledgling field of digital mixing as it grew in rapidly increasing leaps and bounds throughout the last decade, the Yamaha DM2000 Digital Production Console has defined the industry standard.

Much more than simply a high-performance digital mixer, the DM2000 is a total production tool that also offers 96 kHz effects, advanced surround production facilities, extensive integrated DAW and machine control, computer and memory-card based data management, an extraordinarily flexible bus system with digital patching, inserts.

Moreover, the "smaller brothers" in the new range, DM1000, 02R96 and 01V96 follow the common user interface of the DM2000, and mix data is interchangeable using the supplied Studio Manager Application software.

These consoles can be linked and cascaded interactively within a multi-complex studio, or a tour engineer can do a basic console setup on his laptop computer anywhere, and then simply load the settings into the console at the venue.

Now the DM2000 Version 2 offers, in addition to the significant overall performance enhancements, a range of new features that add advanced capabilities for audio production, broadcast, and live applications.

But there's more. You also get the capability to install the new optional ADD-ON EFFECTS, providing a range of state-of-the-art effect programs in addition to the current internal effect list.

Experience another step into the future with the DM2000 Version 2.



Musikmesse International Press Award



2002-03 Best Mixing Desk - High End 2005 Best Mixing Desk - Live



DM 2000

19th Annual Technical Excellence & Creativity (TEC) Award Sound Reinforcement Console Technology



## 96 CHANNELS IN 4 LAYERS

Version 2

One of the advantages of working with digital is that it allows maximum power and flexibility to be packed into minimum space. The DM2000's 24 precision 100-millimeter motorized channel faders, for example, can be instantaneously layer-switched to control any of 96 channels. So you have 96 channels in the space of 24, and switching between layers with the channels right in front of you can be a lot faster and easier than trying to locate a desired channel on a massive spread-out console. More importantly, all operations can be carried out without having to move away from the monitoring "sweet spot". Encoder mode now features an assignable function, Alternative Layer, which enables you to control the channel level for all 48 channels without switching between layers.

## EXTRAORDINARY PATCHING FLEXIBILITY

All available inputs, outputs, effects, and channel inserts can be assigned to any of the console's channels or outputs via the DM2000's remarkably versatile, easy-to-use digital patching system. For example, any of the 8 effect processors can be assigned to an auxiliary buss for send-type operation, or inserted directly into any input channel as required. A direct out function also allows the signal from any of the 96 input channels to be routed directly to any digital or analog output in the system. Further, a 22 by 8 (4-stereo) matrix mix system in the DM2000 can be used to provide cue monitor mixes, downmix monitoring for surround production, or zone level control for sound reinforcement applications. The fully flexible patching system makes 22 of DM2000's busses (eight record/subgroup busses, 12 auxiliary sends, L/R stereo buss) and four stereo matrixes — to be assigned to any available output connector.

## I/O EXPANDABILITY AND PLUG-IN CAPABILITY

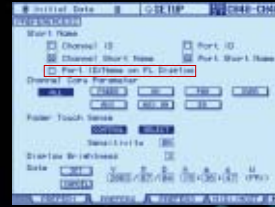
The DM2000's real I/O versatility comes in the form of six Mini-YGDAI expansion slots. The expansion slots are 24 bit/96 kHz compatible, so you can select I/O and processing cards to provide the input/output configuration and processing capabilities that are perfect for your needs. Whether you need digital I/O in ADAT, TASCAM, or AES/EBU format, CobraNet connectivity, or extra analog I/O capability, the appropriate Mini-YGDAI cards are available.



## CHANNEL NAME AND FL DISPLAY

Version 2

A much-appreciated feature of Yamaha's ground-breaking PMID digital sound reinforcement console is individual channel name displays. The DM2000 has inherited this feature so you can identify channels at a glance — a particular advantage when switching between mixing layers. In addition to the default 4-character channel name display, you can hold down the SEL key for any channel to see a long name of up to 16 characters displayed across the 8-channel section. Version 2 adds fader level and port name display functions. With graphic FL display, you can see the status of the channel at a glance.



PREFERENCES2



Standard Display



Long Name Display

## INTEGRATED DAW CONTROL

Advanced Protocol  
DAW control

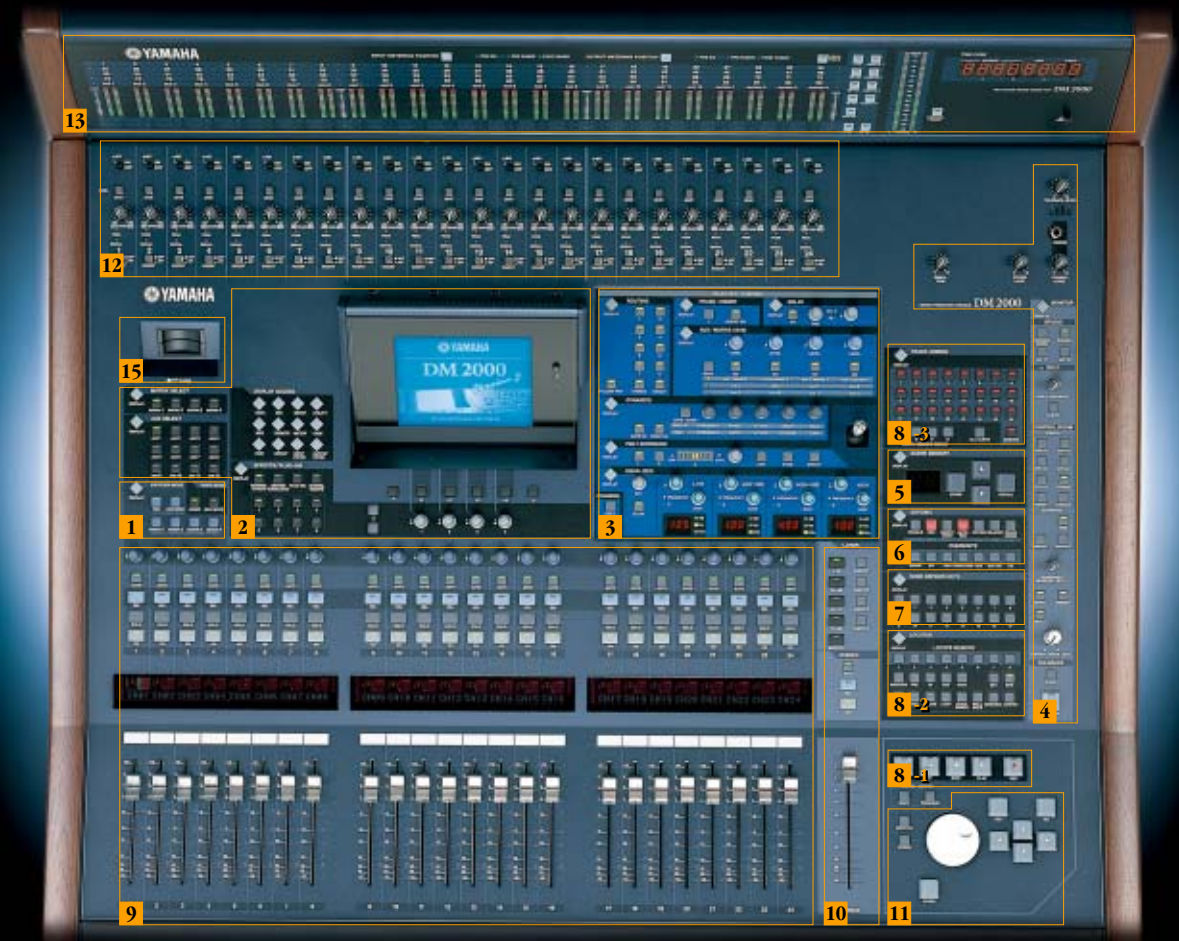
Version 2

The DM2000 has been designed to integrate tightly with leading digital audio workstations to create a complete production and mixing environment. Extensive support for Digidesign's Pro Tools® system provides full control of mixing and processing parameters, as well as transport/track-arming control and access to editing functions, directly from the DM2000 control surface. The new Advanced DAW Control Protocol, initiated by Yamaha and Steinberg, enables you to control DAW software such as Nuendo® and Cubase SX® by using DM2000's SELECTED CHANNEL section. (Controllable functions vary depending on the DAW software and version you are using.)

## STUDIO MANAGER VERSION 2 SOFTWARE SUPPLIED

SM Studio Manager Version 2

Control from a personal computer? Of course! And Yamaha even supplies the software. The DM2000 comes with the Studio manager application for both Macintosh® and Windows® platforms, allowing total control and management of all DM2000 parameters via a comprehensive graphic interface. Studio Manager Version 2 offers even more advanced networking potential than the original version, functioning as a complete central management system for digital mixing.



## EXTRAORDINARY POWER & FLEXIBILITY IN AN INTUITIVE INTERFACE

Advanced features and functions are only of real value if they are easily accessible, easy to use, and make sense within the context of the production process. The Yamaha DM2000 has been designed on the strength of past successes plus invaluable feedback from leading engineers and artists worldwide. It is the latest step in an ongoing evolution that makes more production power, creative potential, and operational efficiency available than ever before. Version 2 further builds on experience gained from the original DM2000, taking takes interface ease-of-use and versatility to unprecedented levels.



\* Rear panel shown with optional expansion boards installed.

### 8.3. TRACK ARMING

24 track arming (record on/off) buttons can be used directly for up to 24 tracks on a single recorder, or to control track arming on three separate 8-track recorders. Additionally, up to four complete track-arming setups can be memorized and recalled via TRACK ARMING GROUP keys A through D.



### 9. CHANNEL STRIPS

The 24 channel strips on the DM2000 panel provide access to the most essential operations for the corresponding channels. Depending on the currently selected layer, the channel strips will control channels 1 through 24, 25 through 48, 49 through 72, or 73 through 96. Also the channel faders and encoders will function according to the settings in the FADER MODE and ENCODER MODE sections. In addition to a fader and rotary encoder, each channel strip includes a channel ON/OFF key, a SOLO key, and AUTO key to turn mix automation on or off for that channel, and a SEL key which assigns the channel as the console's "Selected Channel". Detailed control for the currently selected channel — dynamics, EQ, buss assignment, panning and surround positioning, aux/matrix sends, delay, and phase/insert — is available via the SELECTED CHANNEL controls.



### 10. MASTER & LAYER SECTION

In addition to the master stereo fader with its own ON, SEL, and AUTO keys, the master section includes keys for input channel layer selection (Master Layer 1-24, 25-48, 49-72, 73-96) as well as selectors for four remote control layers. Using the "User Assignable Layer" feature you can create a custom layer to which any channels can be assigned in a preferred layout, and the setups can be stored in any of four banks. This system means that you have a total of 96 channels and buses right in front of you in the space of 24.



### 11. DATA ENTRY

When it does become necessary to get into detailed numeric parameter editing, the DM2000 makes the task as easy as possible. Large cursor, INC/DEC, and enter keys are complemented by a data entry dial that lets you spin in values quickly and easily. The data entry dial also doubles as a shuttle/scrub dial for recorder or DAW control. A PC-compatible computer keyboard can also be directly connected to the rear-panel keyboard connector for extra data entry ease and convenience.



### 12. ANALOG INPUT SECTION

No digital console is completely free of analog circuitry, and any analog that does exist must be of the highest quality so as not to negate the performance potential of the digital system. The DM2000 features 24 high-performance head amplifiers for microphone or line input that deliver a pristine signal to the console's precision 24 bit/96 kHz A/D converters. These head amplifiers are the result of extensive development and field testing, and deliver transparent performance that rivals — and in many cases exceeds — that of the most expensive component microphone preamplifiers. 48-volt phantom power for condenser microphones is individually switchable for each input, trim controls and pad switches facilitate optimum level matching with the source, and switchable inserts make it easy switch external analog processing gear into or out of the pre-A/D signal path.



### 13. METER BRIDGE

The MB2000 Peak Meter Bridge is a complete level-monitoring station for the DM2000. 48 12-segment level meters can be used individually or in pairs to display pre-EQ, pre-fader, or post-fader input channel signal levels. The same meters can also display levels on the console's eight buses, 12 auxiliary sends, and four stereo matrix buses. A separate 32-segment stereo meter is provided for the main stereo program. The MB2000 also features a time-code display for complete, centralized visual monitoring.

### 14. REAR PANEL



A quick look at the rear panel should tell you that the DM2000 is designed for serious production. Balanced XLR and TRS connectors are provided for all 24 inputs, and rather than the common single TRS jacks for unbalanced

insert send and return, each input channel features independent balanced send and return jacks (insert switches are provided on the console). Then there are balanced analog studio, stereo, control room, and monitor outputs as well as eight balanced "omni" bus outputs. Two analog 2-track inputs are also provided — one balanced and one unbalanced. Other connectors. Digital I/O is provided via digital 2-track inputs and outputs featuring both AES/EBU and coaxial connectors. On-board sample rate conversion allows CD players and other digital sources connected to the digital input to be monitored or routed to an input channel without having to be synchronized to the system clock. A wide range of synchronization and control options are available via word clock inputs and outputs, SMPTE and MTC time code inputs, MIDI connectors, a keyboard connector, and both serial and USB "to host" connectors. Cascade in and output connectors allow two DM2000 consoles to be cascaded to provide up to 192 channels. Even the cooling fan is specially designed for ultra-quiet operation so that machine noise doesn't interfere with critical monitoring or recording operations. The CONTROL port provides a General Purpose Interface (GPI) that you can configure to output or receive trigger signals to which you can assign various functions. In the DM2000 Version 2, the GPI Setup page has been completely renovated.

- The following are some examples of how you might utilize GPI functionality:
- You could use a fader to send a signal to start a CD player.
  - A producer could have his own remote talkback switch in the control room to communicate with the musicians in the studio.
  - You could control from the console a "Recording" warning light located outside the studio.
  - You could control the console's dimmer function using an outside switch.

### 15. MEMORY CARD DATA STORAGE

Automix and scene recall capability are important features that can dramatically streamline the production process, but data portability via compact SmartMedia™ memory cards takes this convenience to a new level. All automix and scene data can be saved to memory cards and transferred and simply archived or transferred to another DM2000. A mix you make in one studio can, for example, be instantly replicated in another so you don't have to spend time manually setting up parameters to achieve the same results.



\* SmartMedia™ is a registered trademark of the Toshiba Corporation.



# AN AWESOME PERFORMER ON THE INSIDE, TOO

The DM2000 offers as much "below the surface" as it does directly via its physical interface.

In fact, many of this remarkable console's greatest strengths are not visible from the outside.

Precision 32 bit/96 kHz processing throughout is just one example. Here are a few others:

## EXPANDABLE DATA LIBRARIES

Setting up EQ, compression, and other parameters for a mix from scratch can be a daunting task, so Yamaha has provided an extensive selection of presets in a range of "libraries" that can simply be selected and used unmodified, or edited to suit specific requirements. Libraries are provided for effects, compression, gating, EQ, I/O patching, and more. Of course, your own setups can be added to the libraries for instant recall whenever they are needed.

## 32 BIT/96 KHZ EFFECTS

The DM2000 has eight independent internal 32 bit/96 kHz multi-effect processors that can be patched into any of the console's input, stereo, mix, or matrix channels, and returned to any channel. An extensive range of detailed effect parameters are adjustable via easy-to-use graphic on-screen controls. A comprehensive selection of reverb, delay, modulation, combination effects, and range of newly developed effects including multiband dynamics are provided so that unless a mix calls for a specific external effects processor, you won't need any external processing Effect at all. And, like most other parameter groups, an extensive preset "library" is provided for fast, easy setup. Of course, you can add your own setups to the library for instant recall whenever needed. In addition to stereo effects, the DM2000 features a number of preset effects specifically designed for surround applications. Up to eight stereo or surround effects can be used simultaneously (Note: Some surround effects use as many as four processors).



EFFECT

## CHANNEL COMPRESSION, GATING, EQ AND DELAY

All 96 input channels on the DM2000 feature flexible, independent compression and gating/ducking processors for dynamics control. The 4-band parameter channel equalizers also offer extra versatility with switchable "type I" or "type II" EQ algorithms to deliver the type of EQ response you prefer. Even the

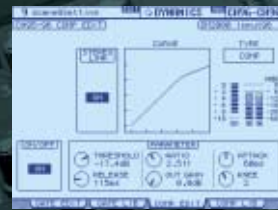


GATE

channel delay goes beyond the norm, with a maximum delay of 453 milliseconds. Version 2 even features comp/gate gain reduction metering on the meter display.



EQ



COMP

## 6 GRAPHIC EQUALIZERS

The DM2000 provides six 31-band graphic equalizers that can be patched into any of the eight busses, 12 aux sends, four stereo matrixes or the main left and right output busses. The graphic equalizers will be particularly valuable for SR applications. Each equalizer features both a graphic slider and response graph display. For the most intuitive GEQ operation possible, Version 2 allows the GEQ bands to be directly controlled via the console's faders in two groups: Low (20.0 Hz ~ 4.0 kHz) and High (100 Hz ~ 20.0 kHz).



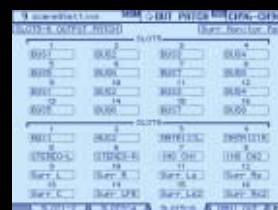
GEQ

## PATCHING

Several patch displays allow the system's inputs, inserts, and outputs to be patched to appropriate built-in inputs and outputs as well as I/O added via the rear-panel expansion slots. You can also assign channel names for easy identification. Centralized control means you'll never have to run around to physically re-patch cables whenever you need to reconfigure the system, and patch setups you might want to use again can be stored in the patch library for instant recall at any time.



IN PATCH



OUT PATCH

## UP TO 6:1 SURROUND MONITORING & PROCESSING

In surround mode the DM2000 will comfortably handle 3-1 (LCRS) 5.1, or 6.1 surround monitoring without any external equipment or the need to reassign channels for surround use. In addition to graphic monitor configuration displays, the DM2000 also provides multi-channel surround pan/position displays so you can see where multiple channels sit in the surround mix at a glance. The joystick provided for surround panning in the console's SELECTED CHANNEL control section has high 128 x 128 step resolution for exceptionally smooth control, and a divergence parameter can be used to adjust the hard/phantom center ratio for each channel. Matrix mixing and bus-to-stereo functions can be used to provide 6.1 to 5.1, 5.1 to 3-1 (LCRS) downmix or 3-1 to stereo downmix while you are working on the 5.1 mix. Furthermore, the 3-1 (LCRS) output can be fed to a 2-track master recorder via a Dolby Surround® encoder, and then back to the console via a decoder to allow instant real-time comparison between the pre-encode and post-decode sound. In Version 2 it has become possible to freely reassign surround busses as required, so you can precisely match your work environment to your surround mixing needs. You can even simultaneously monitor multiple specified surround sources assigned to the bus outs and assign keys. Surround pan can be turned on or off so that specified sources can be directly fed to a surround bus so that, for example, dialog can be fed directly to the center bus without the need for any pan adjustment. Additional facilities provided by the monitor processing section include individual bus (speaker) muting and attenuation, overall level control for all monitor outputs, stem mix monitoring via independent source selection capability for each expansion slot, advanced bass management with precision control for subwoofer delivery, and independent delays for precision speaker alignments. And if you're mixing to THX™ standards, you can use a short-cut key to set levels instantly and precisely to the theater-standard of 85dB SPL. In fact, the DM2000 is the world's first console to receive THX pm3™ approval, so by combining it with Yamaha's MSP10 STUDIO powered monitor speakers – also pm3-approved – you have a state-of-the-art production studio that is capable of turning out sound of the highest quality – just like a THX Certified Studio.



Version 2



SURROUND PAN



MONITOR MATRIX



SURROUND MONITOR ALIGNMENT



BASS MANAGEMENT

## INTEGRATED DAW CONTROL

When you purchase a DM2000, you also get a sophisticated DAW control surface in the bargain!

The DM2000 has actually been designed to provide seamless control of computer-based digital audio workstation software such as Digidesign's



Version 2

Pro Tools®. In addition to a number of controllers specifically included for this purpose, the DM2000 faders, channel switches, encoders, and other controls can be used to directly control the corresponding DAW parameters. You also have extensive control over plug-in effects. Total transport and automation control are provided as well. The new Advanced DAW Control Protocol, initiated by Yamaha and Steinberg, enables you to control DAW software such as Nuendo® and Cubase SX by using DM2000's SELECTED CHANNEL section (Controllable functions vary depending on the DAW software and version you are using). When used with Nuendo 2.0, for example, the software's mixer channel EQ and surround pan functions can be accessed directly from the DM2000 selected channel controls. If Pro Tools® is your DAW of choice you have direct control of Pro Tools® surround panning via the DM2000 joystick.



REMOTE (Pro Tools)

## ADD-ON EFFECTS

The DM2000 Version 2 is compatible with Yamaha's outstanding Add-On Effects series (sold separately).

According to your signal-processing needs you could add the Channel Strip package with high-performance EQ and compression capability, or the Master Strip Package for extraordinarily accurate sonic reproductions of some of the finest tape decks of audio's "golden age". There's also a Reverb Package featuring the latest REV-X reverb algorithms used in Yamaha's outstanding SPX2000, and other effect packages that can contribute to your production arsenal in a big way.



Version 2



## MORE...

Any parameter that can be controlled via the DM2000's physical interface can also be controlled via the LCD panel. But there are many features and functions that are only accessible via the LCD. Most of these are the set-it-and-forget-it type, so you can do all actual mixing from the control surface. Some examples would be word clock or MIDI setup. There are also a number of convenient functions that you might use more often, such as an oscillator with sine as well as pink noise and burst noise output that can also simultaneously output 1 kHz and 400 Hz signals for L/R channel checks, or channel pairing and fader grouping. There's even a password-protected operation lock feature that can be used to "lock" specified functions and parameters. The point is that it's all there. Whatever you need for the most advanced, highest quality sound production, the DM2000 has it, or can be expanded to provide it.



DUAL OSCILLATOR



PASSWORD



## THX pm3™ Approval

Yamaha Digital consoles DM2000V2, DM1000V2 & 02R96V2 are the worlds first digital consoles equipped with complete surround monitoring facilities built-in, eliminating the need to connect and feed the signal to external monitoring equipment and offer perfect solution used in combination with the Powered Monitor Speaker MSP10 STUDIO.

Known worldwide for high quality entertainment sound and picture, the THX pm3™ (Professional Multi-Channel Mixing & Monitoring) Studio Certification Program addresses the need for reliable, translatable, and superior performance in professional multi-channel mixing and monitoring studios worldwide. THX has created a performance standard that focuses on the listening and viewing environment, selection of audio and video equipment, layout of the working area, and calibration. DM2000V2, DM1000V2 & 02R96V2 are included in the THX pm3™ Approved Equipment list as Studio Monitoring Systems, and Powered Monitor Speaker MSP10 STUDIO as Front & Surround speakers.

### Yamaha Digital Consoles have the following surround functions built-in.

#### Surround production functions

- Fully compatible with 3-1, 5.1 and 6.1 surround processing, panning and monitoring
- Flexible surround bus set up
- Built-in Joy stick
- Graphical user interface and parameters to assist accurate surround PAN positioning and efficient moves of sound image.
- Built-in surround effects including "Reverb 5.1", "Comp 5.1", "Expand 5.1" etc.



SURROUND PAN POSITIONING

#### THX pm3™ Approved surround monitoring functions

- Downmix monitoring matrix
- Bass Management: comprehensive filter and attenuator setting and THX pm3™ presets
- Monitor Alignment functions (Attenuator and delay for individual speakers)
- Build-in Oscillator
- "Snap to 85dB SPL" function



SURROUND MONITOR SETUP (THX pm3™ MONITOR FLOW)

### THX Bass Management Presets:

The following presets have been approved by THX™ Ltd. for use in THX pm3™ Certified Studios\*. They are designed to provide dedicated parameters for the proper playback of multi-channel audio content in bass managed systems and to be compatible with subwoofer-satellite type consumer systems.

\* Use of a THX preset does not permit a studio to use the designation THX pm3™ Certified Studio. The THX pm3™ Studio Certification Program uses performance and design specifications to create calibrated environments for optimum sound and picture presentation. For more information, visit the THX website at <http://www.thx.com>

**[THXD] THX DVD** This preset is configured for DVD-Video production. Use this preset when mixing and/or monitoring audio content not from a theatrical film source. The parameters cannot be changed.

**[THXF] THX Film** This preset is configured for Film pre-production. Use this preset when mixing and/or monitoring theatrical film-based content (such as a pre-mix for film). The parameters cannot be changed.

**[THXM] THX Music** This preset is configured for DVD-Music production. Use this preset when mixing and/or monitoring multi-channel music content (including DVD-Audio and SACD). Only one parameter can be changed. The LFE gain (AMP) can be set to +10dB (default) or 0dB. Select the level that complies with the standards of the target media. Please note: The LFE output gain on some DVD players, receivers, and/or decoders may already be set to +10dB. Select the 0dB setting only if the destination environment (home theatre, etc.) has the LFE gain set to 0dB. Otherwise, use the default setting.

The THX pm3™ logo is a trademark of THX Ltd. which may be registered in some jurisdictions. All rights reserved.

For more information on THX pm3™, please visit THX website at <http://www.thx.com>.

Visit Yamaha website at <http://www.yamahaproaudio.com/> to find DM2000/1000, 02R96 surround set up manual, Quick Guide and Surround Tutorial Booklet.

## STUDIO MANAGER VERSION 2



The DM2000 Studio Manager application has undergone a significant evolution and has been reborn as Studio Manager Version 2.

The hybrid Windows®/Macintosh® Studio Manager application has been rewritten as a host application which hosts the DM2000 Editor which actually controls the DM2000 console, and which can be used simultaneously with other editors for professional digital audio gear such as the 02R96 Version 2 digital mixer or the SPX2000 professional multi-effect processor.

Simply connect the console to a computer via its TO HOST port (combined USB/serial), and the computer functions as comprehensive control center for the entire system. You can even open and close Studio Manager Version 2 windows from the DM2000 console controls, for seamless system integration and optimum operation efficiency in any application.

The STUDIO MANAGER Version 2 also integrates the GUI for ADD-ON EFFECTS.



Studio Manager V2 Host Window



GEQ Editor Window



Library Window



Meter Window



Surround Editor Window



Layer Window



Patch Editor Window



Patch Editor-Effect Window



Master Window



Selected Channel Window



SPX 2000 Editor (REV-X)

### DM2000 EDITOR

The DM2000 Editor runs under the Studio Manager Version 2 host application, and offers features and functionality that have been refined and updated for professional-level control. Some of the most significant updates include:

- Master Fader Window provides independent master fader display and control.
- Meter Window shows levels on all 96 channels.
- A new Automix tab has been added to the library windows.
- Layer Window allows selection and display of effects and other sources above the panel pan controls.
- Selected Channel Window adds graphic gate displays and long-stroke channel metering.
- Patch Edit Window is now resizable, and displays effect block inputs and outputs.
- Effect Editor Window adds Add-On Effects interface and fine control.

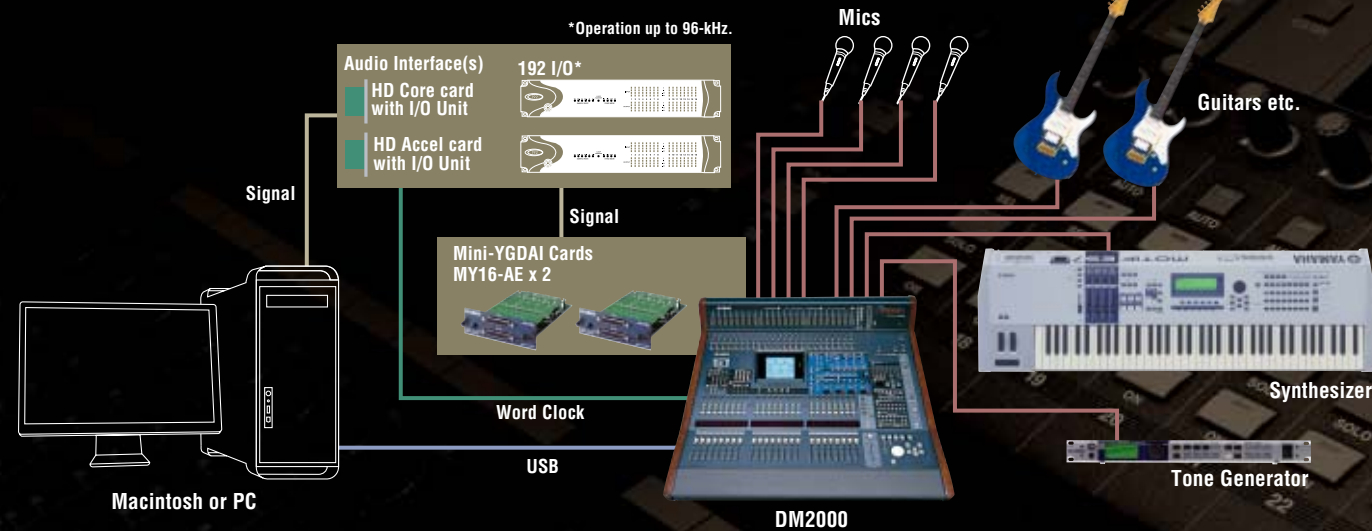




SAMPLE APPLICATIONS

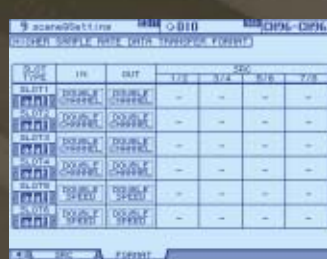
THE DM2000 WITH PRO TOOLS®

In this system the Yamaha DM2000 and a Digidesign Pro Tools® HD2 Accel setup are combined in a powerful recording and production system that provides as many as 64 input channels with up to 192 tracks at 48 kHz or up to 96 tracks at 96 kHz. While the DM2000 functions as an advanced control surface for the Pro Tools®, it can also handle critical audio processing tasks as well as monitoring.



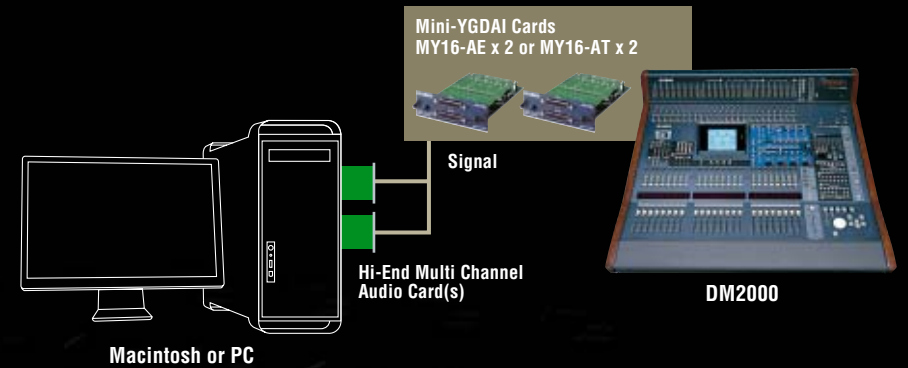
CONNECTION WITH 96-KHZ RECORDERS

Although the DM2000 handles 96-kHz audio as standard, most of the currently available digital recorders can handle 96-kHz audio only in double channel mode (using 2 tracks to make one). In this configuration, the DM2000 uses one channel for one (96-kHz) track, but twice the number of I/O connections must be used. MY8-AT/TD/AE cards work in double channel mode to handle 96-kHz audio. The MY16-AT/TD/AE cards can handle 16 channels of 44.1 / 48-kHz audio or up to 8 channels of 96-kHz audio in double channel mode. With the latest equipment that handles 96-kHz audio as standard (in double speed mode like the DM2000) you can make standard connections using the MY8-AE96 card. MY8-AE96 card can work either in double speed or double channel mode.



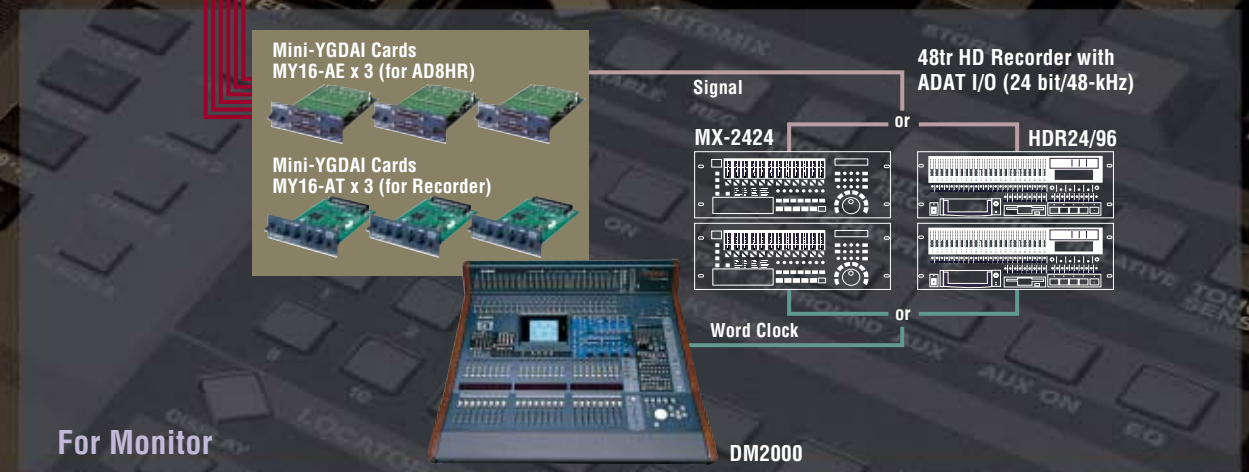
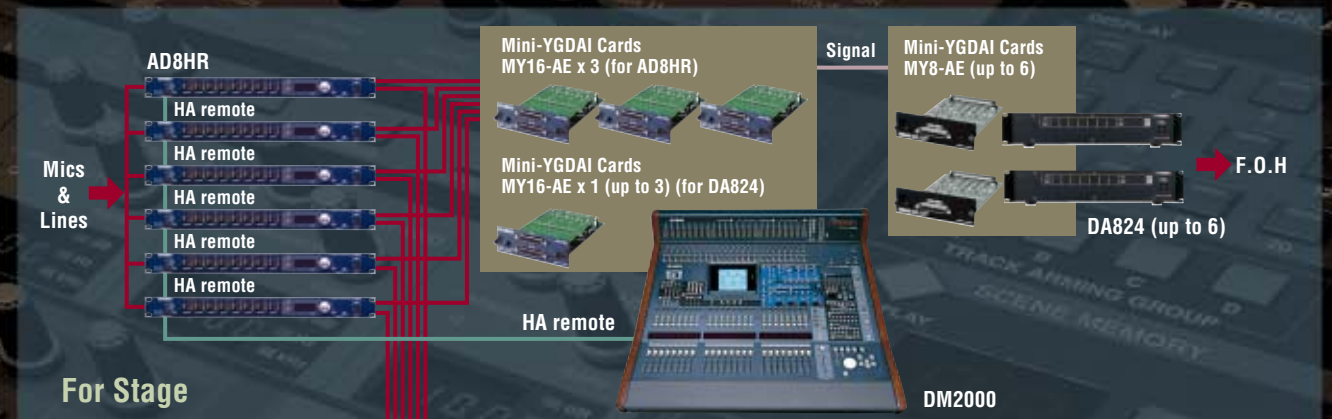
NUENDO® SETTING  
(24TR 96 KHZ RECORDING)

Steinberg's Nuendo® software is designed to handle 96 kHz audio, so it is an ideal companion for the DM2000. While the DM2000 functions as a basic controller for the Nuendo® software in this 24 track, 96 kHz system (full Nuendo® support is currently under development), it also handles extra mixing and processing of the outputs from high-end audio cards.



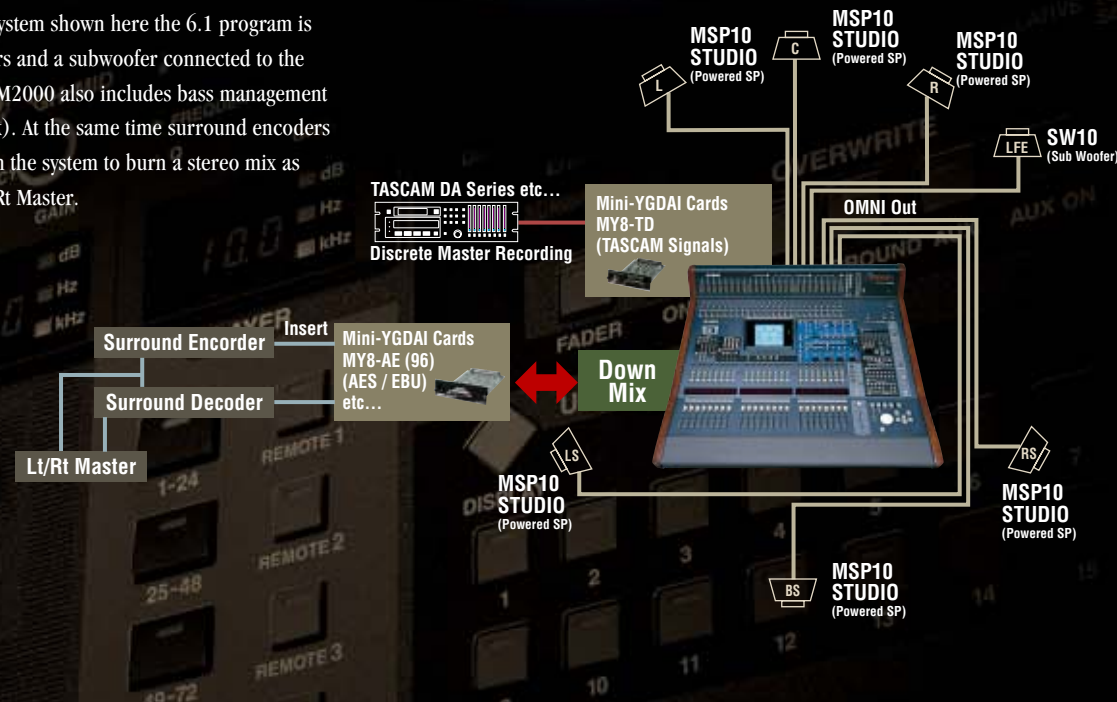
HIGH-CAPACITY SOUND REINFORCEMENT WITH REMOTE HEAD AMP CONTROL

Using Yamaha's AD8HR highest quality 8-channel AD converter it is possible to put together a 48 mic/line input system with digital signal transfer at 48-kHz/24-bit resolution. The AD8HR head amps can be remotely controlled from the DM2000 via the REMOTE terminal, so the head amps themselves can be located right on stage. Up to 48 channels of high-resolution digital (AES/EBU) audio can then be transferred to the console over distances of up to 200 meters without loss or degradation. If you also use the DM2000's 24 built-in microphone inputs you have a total of 72 inputs available – on a par with large live-sound systems, but with relatively simple setup and operation. In the system example a second DM2000 is used for monitoring as well as live recording.



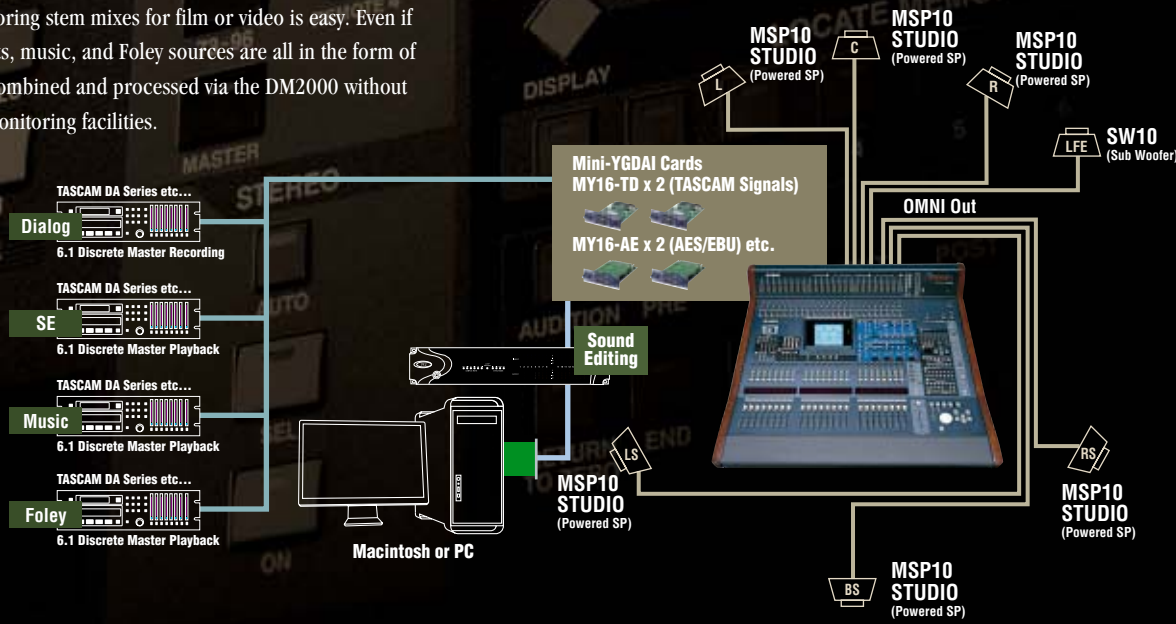
DVD AUTHORING  
(6.1 SURROUND MONITORING)

Both the DM2000 and Yamaha's MSP10 STUDIO powered monitor speakers have been officially approved for use in THX pm3™ Certified Studios, and are thus ideal choices for the most advanced DVD authoring applications. In the system shown here the 6.1 program is monitored via powered monitors and a subwoofer connected to the console's OMNI outputs (the DM2000 also includes bass management facilities for full-range playback). At the same time surround encoders and decoders can be inserted in the system to burn a stereo mix as well as the surround mix to L/Rt Master.



STEM MIX MONITORING

With the DM2000 monitoring stem mixes for film or video is easy. Even if your dialog, sound effects, music, and Foley sources are all in the form of 6.1 mixes, they can be combined and processed via the DM2000 without the need for any extra monitoring facilities.



EFFECT LIST

The DM2000 effect library includes a total 52 superb effects — 44 stereo and 8 surround.

All feature full 24 bit/96 kHz processing for unprecedented resolution and quality with any type of program material.

EFFECT TYPE LIST

EFFECT	TYPE	Input	Output	DSP
1 Reverb Hall	Hall simulation reverb with gate	1	2	1
2 Reverb Room	Room simulation reverb with gate	1	2	1
3 Reverb Stage	Reverb for vocals with gate	1	2	1
4 Reverb Plate	Plate simulation reverb with gate	1	2	1
5 Early Ref.	Early reflections	1	2	1
6 Gate Reverb	Gate reverb setting of early reflections	1	2	1
7 Reverse Gate	Reverse gate setting of early reflections	1	2	1
8 Mono Delay	Very simple repeat delay	1	2	1
9 Stereo Delay	Simple stereo delay	2	2	1
10 Mod.Delay	Simple repeat delay with modulation	1	2	1
11 Delay Lcr	3 taps ( left, center, right) delay	1	2	1
12 Echo	Stereo delay with cross feedback loop	2	2	1
13 Chorus	Chorus effect	2	2	1
14 Flange	Flange effect	2	2	1
15 Symphonic	Symphonic effect	2	2	1
16 Phaser	16 stage phase sifter.	2	2	1
17 Auto Pan	Auto-pan	2	2	1
18 Tremolo	Tremolo effect	2	2	1
19 Hq.Pitch	High quality pitch change effect	1	2	1
20 Dual Pitch	2 voice pitch change	2	2	1
21 Rotary	Rotary speaker simulation	1	2	1
22 Ring Mod.	Ring modulator	2	2	1
23 Mod.Filter	LFO modulation type filter	2	2	1
24 Distortion	Distortion	1	2	1
25 Amp Simulate	Guitar amp simulator	1	2	1
26 Dyna.Filter	A filter controlled by input dynamics	2	2	1
27 Dyna.Flange	Flange effect controlled by input dynamics	2	2	1
28 Dyna.Phaser	Phase sifter controlled by input dynamics.	2	2	1
29 Rev+Chorus	Parallel combination of reverb and chorus	1	2	1
30 Rev->Chorus	Series combination of reverb and chorus	1	2	1
31 Rev+Flange	Parallel combination of reverb and flange	1	2	1
32 Rev->Flange	Series combination of reverb and flange	1	2	1
33 Rev+Sympho.	Parallel combination of reverb and symphonic	1	2	1
34 Rev->Sympho	Series combination of reverb and symphonic	1	2	135

EFFECT	TYPE	Input	Output	DSP
35 Rev->Pan	Series combination of reverb and auto-pan	1	2	1
36 Delay+Er	Parallel combination of delay and early reflections	1	2	1
37 Delay->Er	Series combination of delay and early reflections	1	2	1
38 Delay+Rev	Parallel combination of delay and reverb	1	2	1
39 Delay->Rev	Series combination of delay and reverb	1	2	1
40 Dist->Delay	Series combination of distortion and modulation delay	1	2	1
41 Multi Filter	Three-band parallel filter (24 dB/oct.)	2	2	1
42 Freeze	A simple sampler.	1	2	1
43 St Reverb	Stereo reverb.	2	2	1
44 Reverb 5.1*	Reverb with surround positioning.	1	6	4
45 Octa Reverb*	8-channel reverb.	8	8	4
46 Auto Pan 5.1*	LFO-controlled 5.1 surround pan.	6	6	1
47 Chorus 5.1*	5.1 surround chorus.	6	6	1
48 Flange 5.1*	5.1 surround flange.	6	6	1
49 Sympho. 5.1*	5.1 surround symphonic.	6	6	1
50 M.Band Dyna.	Multi-band dynamics processor.	2	2	1
51 Comp 5.1*	5.1 surround multi-band compressor.	6	6	4
52 Compand 5.1*	5.1 surround multi-band compander.	6	6	4
53 Comp276	Channel Strip Package of ADD-ON EFFECTS	2	2	1
54 Comp276S	Channel Strip Package of ADD-ON EFFECTS	2	2	1
55 Comp260	Channel Strip Package of ADD-ON EFFECTS	2	2	1
56 Comp260S	Channel Strip Package of ADD-ON EFFECTS	2	2	1
57 Equalizer601	Channel Strip Package of ADD-ON EFFECTS	2	2	1
58 OpenDeck	Master Strip Package of ADD-ON EFFECTS	2	2	1
59 REV-X Hall	Reverb Package of ADD-ON EFFECTS	2	2	1
60 REV-X Room	Reverb Package of ADD-ON EFFECTS	2	2	1
61 REV-X Plate	Reverb Package of ADD-ON EFFECTS	2	2	1

\*Effects marked with an asterisk (\*) can only be recalled for the EFFECT 1 and EFFECT 2 processors.  
\* If an effect which uses 4 DSP processors is used the total number of effects that can be used simultaneously is reduced by three. For example, if REVERB 5.1 is selected for EFFECT 1 and DYNAMICS 5.1 is selected for EFFECT 2, EFFECT 3 through EFFECT 8 cannot be used.  
\* Effects 53 - 61 are optional Add-On Effects. These effects become fully available after installation and authorization. Prior to installation effects 53 - 61 function in demo mode only.

COMP LIBRARY

TITLE	TYPE	TITLE	TYPE
1 Comp	COMP	19 Strings1	COMP
2 Expand	EXPAND	20 Strings2	COMP
3 Compander(H)	COMPAND-H	21 Strings3	COMP
4 Compander(S)	COMPAND-S	22 BrassSection	COMP
5 A.Dr.BD	COMP	23 Syn.Pad	COMP24
6 A.Dr.BD	COMPAND-H	24 SamplingPerc	COMPAND-S
7 A.Dr.SN	COMP	25 Sampling BD	COMP
8 A.Dr.SN	EXPAND	26 Sampling SN	COMP
9 A.Dr.SN	COMPAND-S	27 Hip Comp	COMPAND-S
10 A.Dr.Tom	EXPAND	28 Solo Vocal1	COMP
11 A.Dr.OverTop	COMPAND-S	29 Solo Vocal2	COMP
12 E.B.Finger	COMP	30 Chorus	COMP
13 E.B.Slap	COMP	31 Click Erase	EXPAND
14 Syn.Bass	COMP	32 Announcer	COMPAND-H
15 Piano1	COMP	33 Limiter1	COMPAND-S
16 Piano2	COMP	34 Limiter2	COMP
17 E.Guitar	COMP	35 Total Comp1	COMP
18 A.Guitar	COMP	36 Total Comp2	COMP

GATE LIBRARY

TITLE	TYPE
1 Gate	GATE
2 Ducking	DUCKING
3 A.Dr.BD	GATE
4 A.Dr.SN	GATE

EQ LIBRARY

TITLE	TITLE
1 Bass Drum 1	21 A.G.Stroke 2
2 Bass Drum 2	22 A.G.Arpeg. 1
3 Snare Drum 1	23 A.G.Arpeg. 2
4 Snare Drum 2	24 Brass Sec.
5 Tom-tom 1	25 Male Vocal 1
6 Cymbal	26 Male Vocal 2
7 High Hat	27 Female Vo. 1
8 Percussion	28 Female Vo. 2
9 E.Bass 1	29 Chorus&Harmo
10 E.Bass 2	30 Total EQ 1
11 Syn.Bass 1	31 Total EQ 2
12 Syn.Bass 2	32 Total EQ 3
13 Piano 1	33 Bass Drum 3
14 Piano 2	34 Snare Drum 3
15 E.G.Clean	35 Tom-tom 2
16 E.G.Crunch 1	36 Piano 3
17 E.G.Crunch 2	37 Piano Low
18 E.G.Dist. 1	38 Piano High
19 E.G.Dist. 2	39 Fine-EQ Cass
20 A.G.Stroke 1	40 Narrator



## OPTIONS

The DM2000's real I/O versatility comes in the form of six mini-YGDAI expansion slots. The expansion slots are 24 bit/96 kHz compatible, so you can select mini YGDAI plug-in cards to create the input/output configuration that's perfect for your needs. Whether you need digital I/O in ADAT, TASCAM, or AES/EBU format, Ethernet or CobraNet connectivity, extra analog I/O capability, or other functions, the appropriate cards are available.

### 16 I/O SERIES



MY16-C  
CobraNet™ I/O

#### MY16-C COBRANET™ EXPANSION CARD

The MY16-C CobraNet™ expansion card allows transmission and reception of 16 in/16 out of uncompressed digital audio data. CobraNet™ is an audio networking system developed by Peak Audio (a division of Cirrus Logic, Inc.) that allows real-time transmission and reception of multiple channels of uncompressed digital audio signals via a Fast Ethernet (100 megabits/sec.) network.



MY16-AT  
16 channel ADAT format I/O



MY16-AE  
16 channel AES/EBU format I/O



MY16-TD  
16 channel TDIF format I/O



MY16-mLAN  
mLAN format I/O

### 96-KHZ SERIES



MYS-AD96  
8 channel Analog Input Card



MYS-DA96  
8 channel Analog Output Card



MYS-AE96  
8 channel AES/EBU format I/O



MYS-AE96S  
8 channel AES/EBU format I/O  
(w/sample rate converter)

### STANDARD SERIES



MYS-AE  
8 channel AES/EBU format I/O



MYS-AT  
8 channel ADAT format I/O



MYS-TD  
8 channel TDIF format I/O



MYS-AD24  
8 channel Analog Input Card (24 bit)



MY4-AD  
4 channel Analog Input Card (24 bit)



MY4-DA  
4 channel Analog Output Card (20 bit)

### PLUG-IN DSP CARD



Y96K  
Waves Effects and ADAT I/O

The Y96K contains many of Waves "greatest hits", including Waves Renaissance Compressor and EQ, TrueVerb reverb, L1 Ultramaximizer, SuperTap delay, and DeEsser. These processors are all available in addition to your on-board effects.

Developed, Manufactured & Supported by:

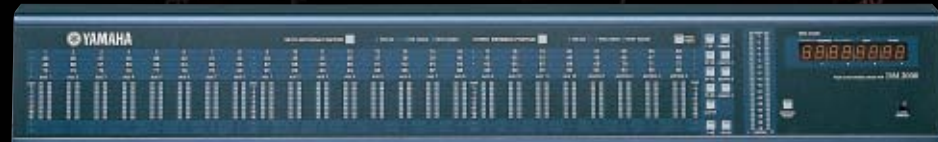


www.waves.com

Exclusively distributed worldwide by:  
YAMAHA CORPORATION

For details, go to Y96K product page at  
www.yamahaproaudio.com

### MB2000 PEAK METER BRIDGE



### LA5000 GOOSENECK LAMP



# ADD-ON EFFECTS

Software packages are available for adding unique and valuable effect programs to the DM2000 internal effect programs. You can edit, store and recall ADD-ON EFFECTS on the console in the usual way.

In addition, a special GUI is available in the DM2000 editor to manage these effects.

### CHANNEL STRIP PACKAGE (AE-011)

This Package includes 5 models that employ VCM (Virtual Circuitry Modeling) technology to recreate the sound and characteristics of several classic compression and EQ units from the 70's.



- Includes five models that employ VCM technology to recreate the sound and characteristics of classic compression and EQ units from the 70's.
- Fine-tuned by leading engineers, and featuring carefully selected parameters in a simple interface.
- **Compressor 276 (mono)/Compressor 276S (stereo):** Recreate the fast response, frequency characteristics, and tube-amp saturation of the most in-demand analog compressors for studio use.
- **Compressor 260 (mono)/Compressor 260S (stereo):** Features faithful modeling of the solid-state VCA and RMS detection circuitry of the late 70's for live sound reinforcement applications.
- **Equalizer 601:** Delivers the unique characteristics of 70's analog EQ circuitry, featuring graphical editing capability on both the console and PC displays.



Compressor 260(mono)/Compressor 260S

Compressor 276 (mono)  
Compressor 276S

E0601

### MASTER STRIP PACKAGE (AE-021)

The Master Strip Package Open Deck employs Virtual Circuitry Modeling technology to recreate both the analog circuitry and tape characteristics that shaped the sound of open-reel tape recorders.



- Employs VCM technology to recreate both the analog circuitry and tape characteristics that shaped the sound of open-reel tape recorders.
- The Open Deck provides models of four machine types: Swiss '70, Swiss '78, Swiss '85, and American '70. You can even combine different record and playback decks for a wider range of variation.
- You also have a choice of "old" and "new" tape types, tape speed, bias, and EQ settings that can vary the "focus" of the sound, distortion, and saturation characteristics.



Swiss '85 with New

American '70 with New

Swiss '70 with New

### REVERB PACKAGE (AE-031)

The REV-X programs feature the richest reverberation and smoothest decay available, based on years of dedicated research and development.



- Reverb ADD-ON EFFECTS employing the latest REV-X algorithms first introduced in Yamaha's SPX2000 Professional Multi Effect Processor.
- The REV-X programs feature the richest reverberation and smoothest decay available, based on years of dedicated research and development.
- Hall, Room, and Plate programs are provided.
- The Hall and Room programs have a very open sound, while Plate delivers a brighter tonality that is ideal for vocals.



REV-X HALL

REV-X ROOM

REV-X PLATE

### SURROUND POST PACKAGE (AE-041) *Coming Soon*

The Surround Post Package uses Yamaha's Interactive Spatial Sound Processing technology that takes full advantage of the 96-kHz audio DSP power of the Yamaha digital consoles. The AE-041 will include three effect programs: Room ER, Auto Doppler and Field Rotation. These unique effect programs not only can vastly simplify the complex operation in Post-Production requirements, but also can be used creatively in the musical context.



### VINTAGE STOMP PACKAGE (AE-051) *Coming Soon*

In this package Virtual Circuitry Modeling technology delivers faithful models of classic much-in-demand stomp boxes from the 70's that helped shape the sound of music history. The AE-051 package will include three phaser models: the MAX100, Vintage Phaser, and Dual Phase. Although the vintage equipments are hard to come by, they are in considerable demand for both live performance and studio production. All models feature graphical user interfaces that reflect the image of the times.



### WHAT IS ISSP?

ISSP stands for "Interactive Spatial Sound Processing," and is a new sound effect system created originally by Yamaha. Designed through comprehensive and extensive research, this technology offers unparalleled reality, operability and originality. It delivers unprecedented soundfield positioning and highly realistic sound source movement effects, with simple operation that allows simulations.



### WHAT IS VCM TECHNOLOGY?

VCM (Virtual Circuitry Modeling) technology actually models the characteristics of analog circuitry – right down to the last resistor and capacitor. VCM technology goes well beyond simply analyzing and modeling electronic components and emulating the sound of old equipment. It's capable of capturing subtleties that simple digital simulations cannot even approach, while actually creating ideal examples of sought-after vintage gear.



The names of programs or menus incorporated in ADD-ON EFFECTS are for descriptive purposes only. Reference to product names, trademarks, artists and songs is made for the sole purpose of identifying products and sounds studied for modeling and describing the sound nuances Yamaha attempted to create through use of its proprietary technology. Such reference does not constitute representations that they physically possess equal qualities, and does not imply any cooperation or endorsement by such manufacturers or artists. The products, trademarks are the property of their respective owners.

# DM2000 VERSION 2 SPECIFICATIONS

## GENERAL SPECIFICATIONS

Internal Signal Processing	32-bit (Accumulator 58-bit)
Sampling Frequency	Internal 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz External Normal rate 44.1 kHz-10% to 48 kHz+6% Double rate 88.2 kHz-10% to 96 kHz+6%
Signal Delay	Less than 2.3 ms CH INPUT to STEREO OUT (@ Sampling frequency = 48 kHz) Less than 1.2 ms CH INPUT to STEREO OUT (@ Sampling frequency = 96 kHz)
Fader	motorized, touch sensitive: 100mm x 25
Total Harmonic Distortion CH INPUT to STEREO OUT Input Gain = Min.	Less than 0.05% 20Hz to 20 kHz @ +14dB into 600 Ω Less than 0.01% 1 kHz @ +18dB into 600 Ω (@ Sampling frequency = 48kHz) Less than 0.05% 20Hz to 40 kHz @ +14dB into 600 Ω Less than 0.01% 1 kHz @ +18dB into 600 Ω (@ Sampling frequency = 96kHz)
Frequency Response CH INPUT to STEREO OUT	0.5 - 1.5dB 20Hz - 20 kHz @ +4dB into 600 Ω (@ Sampling frequency = 48 kHz) 0.5 - 1.5dB 20Hz - 40 kHz @ +4dB into 600 Ω (@ Sampling frequency = 96 kHz)
Dynamic Range (maximum level to noise level)	110 dB typ. DA Converter (STEREO OUT) 108 dB typ. AD+DA (to STEREO OUT) @ fs=48 kHz 106 dB typ. AD+DA (to STEREO OUT) @ fs=96 kHz
Hum & Noise* (20Hz-20 kHz) Rs=150W	-128dB Equivalent Input Noise.
Input Gain = Max. Input Pad = 0dB Input Sensitivity = -60dB	-92dB residual output noise. STEREO OUT STEREO OUT off. -92dB (96dB S/N) STEREO OUT STEREO fader at nominal level and all CH INPUT faders at minimum level -64dB (68dB S/N) STEREO OUTPUT STEREO fader at nominal level and one CH INPUT fader at nominal level
Maximum Voltage Gain	74dB CH INPUT (CH1-24) to STEREO OUT / OMNI (BUS) OUT 74dB CH INPUT (CH1-24) to OMNI (AUX) OUT (via pre input fader) 74dB CH INPUT (CH1-24) to CONTROL ROOM MONITOR OUT (via STEREO bus)

\* Hum & Noise are measured with a 6dB/octave filter @ 12.7 kHz; equivalent to a 20 kHz filter with infinite dB/octave attenuation.

\* Input Gain = Min.

\* Total Harmonic Distortion is measured with a 6dB/octave filter @ 80kHz

Crosstalk (@ 1 kHz)	80dB adjacent input channels (CH1-24) 80dB input to output.
Power Requirements	U/C 120V 300W 60Hz H 230V 300W 50Hz B 230V 300W 50Hz
Dimensions	Height 257mm (including LCD) Depth 821mm Width 906mm
Net Weight	43kg
Operating free-air temperature range	10-35°C
Storage temperature range	-20-60°C

## LIBRARIES

Effect libraries (EFFECT1-8)	Number of factory presets Number of user libraries	61 (EFFECT3-8 :53)** 67
Compressor libraries	Number of factory presets Number of user libraries	36 92
Gate libraries	Number of factory presets Number of user libraries	4 124
EQ libraries	Number of factory presets Number of user libraries	40 160
Channel libraries	Number of factory presets Number of user libraries	2 127
GEQ libraries (EQ1-6)	Number of factory presets Number of user libraries	1 128
Surround Monitor libraries	Number of factory presets Number of user libraries	1 32
Input patch libraries	Number of factory presets Number of user libraries	1 32
Output patch libraries	Number of factory presets Number of user libraries	1 32
Bus to stereo libraries	Number of factory presets Number of user libraries	1 32

\*\*1 Effects 53-61 are optional Add-On Effects. These effects become fully available after installation and authorization. Prior to installation effects 53-61 function in demo mode only.

## ANALOG OUTPUT CHARACTERISTICS

Output Terminals	Actual Source Impedance	For Use With Nominal	GAIN SW	Output Level		Connector in Console
				Nominal	Max. before clip	
STEREO OUT [L,R]	600 Ω	10k Ω Lines	-	-10dBV (0.316V)	+4dBV (1.58V)	RCA Pin Jack (Unbalanced)
	150 Ω	600 Ω Lines	-	+4dB (1.23 V)	+18dB (6.16 V)	XLR-3-32 type (Balanced) *1
STUDIO MONITOR OUT [L,R]	150 Ω	10k Ω Lines	-	+4dB (1.23 V)	+18dB (6.16 V)	Phone Jack (TRS) (Balanced) *2
C-R MONITOR OUT LARGE [L,R]	150 Ω	600 Ω Lines	-	+4dB (1.23 V)	+18dB (6.16 V)	XLR-3-32 type (Balanced) *1
C-R MONITOR OUT SMALL [L,R]	150 Ω	600 Ω Lines	-	+4dB (1.23 V)	+18dB (6.16 V)	XLR-3-32 type (Balanced) *1
OMNI OUT 1-8	150 Ω	10k Ω Lines	+18dB (default)	+4dB (1.23 V)	+18dB (6.16 V)	Phone Jack (TRS) (Balanced) *2
			+4dB	-10dB (0.245V)	+4dB (1.23 V)	
INSERT OUT 1-24	150 Ω	10k Ω Lines	-	+4dB (1.23 V)	+18dB (6.16 V)	Phone Jack (TRS) (Balanced) *2
PHONES	100 Ω	8 Ω Lines	-	4mW	25mW	Stereo Phone Jack (TRS) (Unbalanced) *3
		40 Ω Lines	-	12mW	75mW	

\*1. XLR-3-32 type connectors are balanced. (1 = GND, 2 = HOT, 3 = COLD)  
\*2. Phone jack are balanced. (Tip = HOT, Ring = COLD, Sleeve = GND)

\*3. PHONES stereo phone jack is unbalanced. (Tip = LEFT, Ring = RIGHT, Sleeve = GND)

• STEREO OUT [L,R], 0dBV is referenced to 1.00 Vrms.  
• In these specifications, when dB represents are specific voltage, 0dB is referenced to 0.775 Vrms.  
• All output (except INSERT OUT 1-24) DA converters are 24 bit, 128times oversampling.

## DIGITAL INPUT CHARACTERISTICS

Terminal		Format	Data Length	Level	Connector in Console
2TR IN DIGITAL	1	AES/EBU	24 bit	RS422	XLR-3-31 type (Balanced) *1
	2	AES/EBU	24 bit	RS422	XLR-3-31 type (Balanced) *1
	3	IEC-60958	24 bit	0.5Vpp/75Ω	RCA Pin Jack
CASCADE IN	-	-	-	RS422	D-SUB Half Pitch Connector 68P (Female)

\*1. XLR-3-31 type connectors are balanced. (1 = GND, 2 = HOT, 3 = COLD)

## DIGITAL OUTPUT CHARACTERISTICS

Terminal		Format	Data Length	Level	Connector in Console
2TR OUT DIGITAL	1	AES/EBU *1 Professional use	24 bit *3	RS422	XLR-3-32 type (Balanced) *4
	2	AES/EBU *1 Professional use	24 bit *3	RS422	XLR-3-32 type (Balanced) *4
	3	IEC-60958 *2 Consumer use	24 bit *3	0.5Vpp/75 Ω	RCA Pin Jack
CASCADE OUT	-	-	-	RS422	D-SUB Half Pitch Connector 68P (Female)

\*1. channel status of DIGITAL OUT 1, 2  
type : 2 audio channels  
emphasis : NO  
sampling rate : depends on the internal configuration

\*2. channel status of DIGITAL OUT 3  
type : 2 audio channels  
category code : 2 channel PCM encoder/decoder  
copy prohibit : NO  
emphasis : NO  
clock accuracy : Level II (1000 ppm)  
sampling rate : depends on the internal configuration

\*3. dither : word length 16 - 24 bit

\*4. XLR-3-32 type connectors are balanced. (1 = GND, 2 = HOT, 3 = COLD)

## ANALOG INPUT CHARACTERISTICS

Input Terminals	GAIN	Actual Load Impedance	For Use With Nominal	Input Level			Connector in Console
				Sensitivity *1	Nominal	Max. before clip	
CH INPUT A/B 1-24	0	3K Ω	50-600 Ω Mics & 600 Ω Lines	-70dB (0.245mV)	-60dB (0.775mV)	-46dB (3.88mV)	A: XLR-3-31 type (Balanced) *2
	26			-26dB (38.8mV)	-16dB (0.123V)	-2dB (616mV)	B: Phone Jack (TRS) (Balanced) *3
INSERT IN 1-24		10K Ω	600 Ω Lines	0dB (775mV)	+10dB (2.45V)	+24dB (12.28V)	Phone Jack (TRS) (Balanced) *3
2TR IN ANALOG 1 [L,R]		10K Ω	600 Ω Lines	-6dB (388mV)	+4dB (1.23 V)	+18dB (6.16V)	Phone Jack (TRS) (Balanced) *3
2TR IN ANALOG 2 [L,R]		10K Ω	600 Ω Lines	-10dBV (0.316 V)	-10dBV (0.316 V)	+4dBV (1.58V)	RCA Pin Jack (Unbalanced)

\*1. Sensitivity is the lowest level that will produce an output of +4dB (1.23V) or the nominal output level when the unit is set to maximum gain. (all faders and level controls are maximum position.)

\*2. XLR-3-31 type connectors are balanced. (1/Sleeve = GND, 2/Tip = HOT, 3/Ring = COLD)

\*3. Phone jacks are balanced. (Tip = HOT, Ring = COLD, Sleeve = GND)

- In these specifications, when dB represents are specific voltage, 0dB is referenced to 0.775 Vrms.
- For 2TR IN ANALOG 2 levels, 0dBV is referenced to 1.00 Vrms.
- All 24 AD converters (CH1-24) are 24 bit linear, 128times oversampling.
- +48V DC (phantom power) is supplied to CH INPUT (1-24) XLR type connectors via each individual switch.

## AVAILABLE MINI-YGDAI CARD SPECIFICATIONS

### Yamaha

Maker	Model	Function	IN	OUT	Format	Res / Freq	Connector	Note
Yamaha	MY8-AT	Digital I/O	8	8	ADAT	24 bit 44.1/48 kHz	Toslink x 2	Can handle 24 bit/96 kHz by double channel mode
	MY8-AE	Digital I/O	8	8	AES/EBU	24 bit 44.1/48 kHz	D-sub 25pin	Can handle 24 bit/96 kHz by double channel mode
	MY8-TD	Digital I/O	8	8	TDIF	24 bit 44.1/48 kHz	D-sub 25pin	Can handle 24 bit/96 kHz by double channel mode
	MY8-AD24	A to D In	8	-	-	24 bit 44.1/48 kHz	TRS x 8	Replacing MY8-AD (20 bit 44.1/48 kHz)
	MY4-AD	A to D In	4	-	-	24 bit 44.1/48 kHz	XLR x 4	
	MY4-DA	D to A Out	-	4	-	20 bit 44.1/48 kHz	XLR x 4	
	MY8-AD96	A to D In	8	-	-	24 bit 44.1/48/88.2/96 kHz	D-sub 25pin	
	MY8-DA96	D to A Out	-	8	-	24 bit 44.1/48/88.2/96 kHz	D-sub 25pin	
	MY8-AE96S	Digital I/O	8	8	AES/EBU	24 bit 44.1/48/88.2/96 kHz	D-sub 25pin	Sampling Rate Converter for Input, 3 cards max. with DM2000
	MY8-AE96	Digital I/O	8	8	AES/EBU	24 bit 44.1/48/88.2/96 kHz	D-sub 25pin	
	MY16-C	CobraNet Interface	16	16	CobraNet	20/24bit, 44.1/48/88.2/96kHz	RJ45 x 4	Check instructions for multiple use
	MY16-AT	Digital I/O	16	16	ADAT	24 bit 44.1/48/88.2/96 kHz	Toslink x 2	Can handle 24 bit/96 kHz by double channel mode
	MY16-AE	Digital I/O	16	16	AES/EBU	24 bit 44.1/48/88.2/96 kHz	D-sub 25pin	Can handle 24 bit/96 kHz by double channel mode
	MY16-TD	Digital I/O	16	16	TDIF	24 bit 44.1/48/88.2/96 kHz	D-sub 25pin	Can handle 24 bit/96 kHz by double channel mode
	MY16-mLAN	mLAN Interface	16	16	IEEE 1394	24bit, 44.1/48kHz	1394 6pin	Check instructions for multiple use

### Third Party

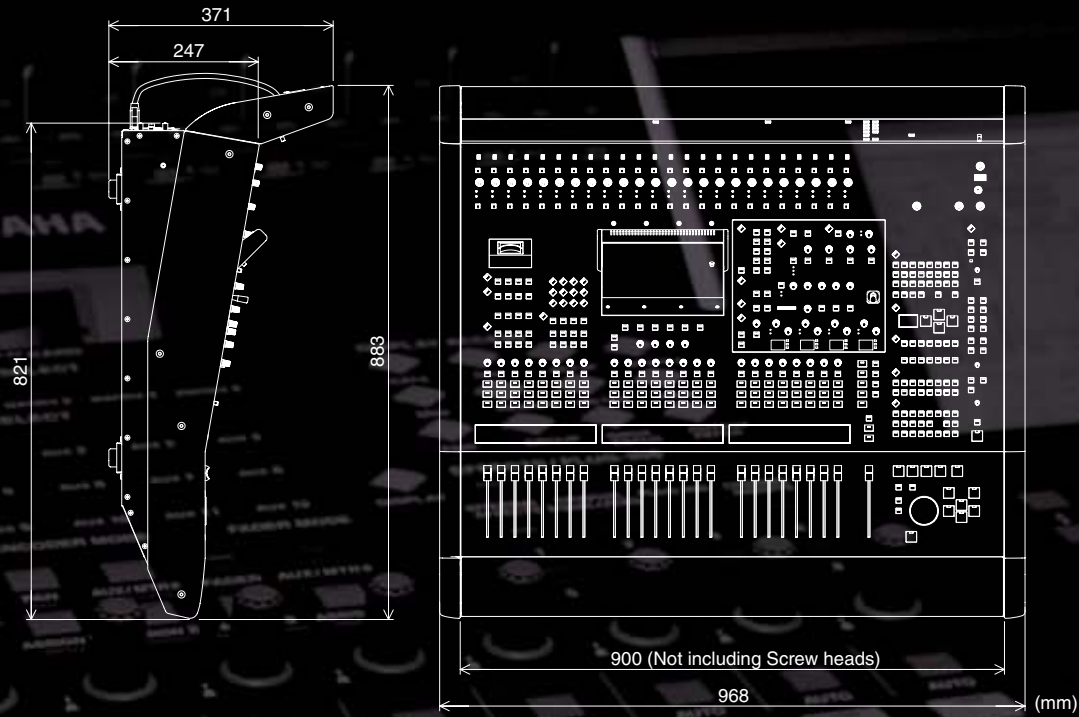
Maker	Model	Function	IN	OUT	Format	Res / Freq	Connector	Note
Waves	Y96K	Effect & I/O	8	8	Effect&I/O	24bit, 44.1/48/88.2/96kHz	Toslink x 2	Check instructions for multiple use

Guidance on the use of Mini-YGDAI cards

Go to [www.yamahaproaudio.com](http://www.yamahaproaudio.com) to check "Guidance on the use of Mini-YGDAI cards"

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# DIMENSIONS



# SURROUND MONITORING DIAGRAM

