

TC UNIT·Y SIGNAL PROCESSING ENGINE

O2R
DIGITAL RECORDING CONSOLE



EXPLORE A NEW WORLD OF OPTIONS

Plug-in processing is now available on your Yamaha O2R Digital mixer.

With A TC UnitY card, you can mix more signals without giving up any channels, and simultaneously add high quality plug-in effects to your mix.

One software module is included in the price of a UnitY card. After a demo period, giving you access to all the software modules, you decide which one to keep. Other modules are obtainable at an additional cost.

Extend your Yamaha O2R Digital mixer with new effect and I/O options today!



EXPAND YOUR YAMAHA

TC UnitY will revolutionize the way you work with your Yamaha O2R Digital mixer. The use of expansion slots has been augmented by adding signal processing to your capabilities. Along with UnitY version 2 software, Plug-in Processing has arrived for the O2R, enabling the TC UnitY card to become an M2000, a Finalizer or BOTH. More plug-ins are on the way...

INTEGRATED SYSTEM

When you use the O2R combined with the TC UnitY it even beats having an external effect machine because you are working a unique fully integrated system. That goes for the automix features, system clock optimization and dither as well.

PRESETS

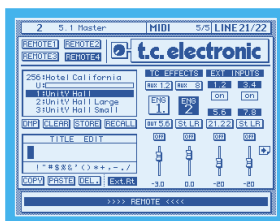
RAM presets may be dumped and loaded through the O2R MIDI ports, and new ROM preset banks may be loaded through the PC/Mac Host port on the mixer.

O2R LOOK AND FEEL

Every new product requires some user learning time before it performs at its best. In this case the learning time has been spent at TC, integrating the TC UnitY effects into your console, with the look & feel you already know.

You can go directly into creating impressive high quality effects from the very moment the TC card is installed.

TC INSIDE

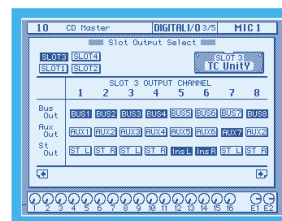


On normal O2R screens, the UnitY card will identify itself and may be controlled the same way as Yamaha I/O extension boards. If mixers are cascaded, upstream O2Rs may take advantage of down-stream TC UnitY cards. If desired several slots may be fitted with TC UnitY cards.

AUTOMATION

As an O2R owner you are accustomed to programmable automation of more than faders during an automix. TC UnitY is one of the first processors that will allow you to include effect parameters to the list of dynamic controls. Extra processing power needed to provide parameter gliding is obtained by using high-speed DSPs in combination with custom circuitry.

SENDS



Engines can be fed from Aux 1, 2, 5, 6, 7 or 8, Bus 5-8, Main Stereo or Main insert. A standard O2R can handle up to 40 external inputs and two internal giving you 44 audio channels. If you use a TC UnitY card 2 internal TC effects are added, giving you a total of 52 audio channels!

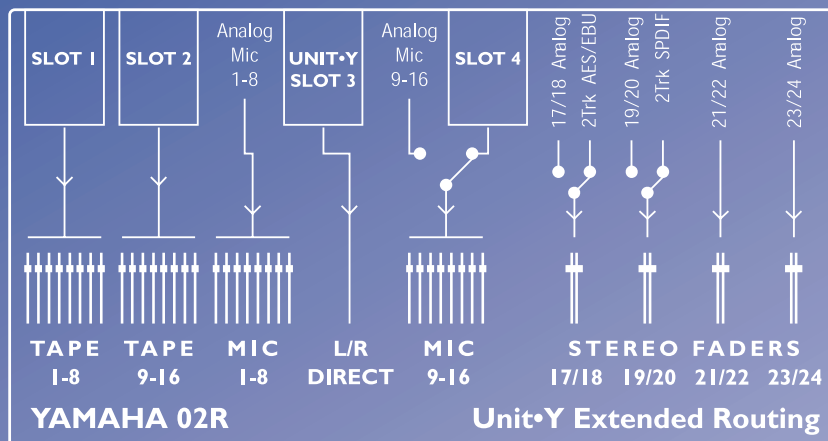
EXTENDED ROUTING

With Extended Routing, additional routing options are available, regardless if you have I/O extension or not on your UnitY card. You can now route signals directly to the Stereo Bus or to channels 21/22 without giving up other O2R inputs, channels or internal effects.

By adding Digital I/O to the UnitY card, you'll have more inputs than the console ever had before. On a standard O2R you can now mix up to 52 signals!

Note:

In co-operation with Yamaha the newest O2R operating system is supplied on the EPROMs with each TC UnitY card.



YAMAHA O2R DIGITAL MIXER

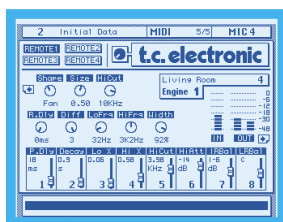
OPTION NUMBER ONE

► M2000 D.C. MULTI-EFFECTS PLUG-IN

Famous TC M2000 effects such as Reverb algorithms, Delay, Pitch Change, Phaser, De-esser, Chorus and Flanger.

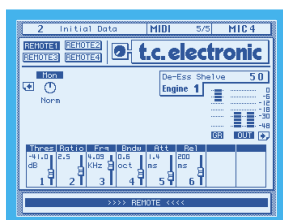
► REVERB

Several reverb algorithms from TC's extensive catalog are available. Sophisticated room simulation is obtainable using a combination of real world early reflection patterns and dense reverb decay. Extra processing power is used to glide many of the parameters, e.g. Decay Time. TC reverbs are equally suitable for work in Mono, Stereo and Dolby™ Surround formats. With the UnityY you even gain access to 5.1 reverb presets.



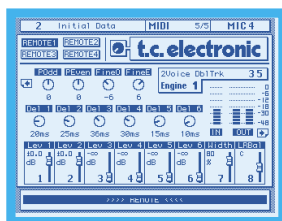
► DE-ESSER

In a Digital audio environment some of the virtues of analog production are lost. Tape saturation is often used to roll off overly bright or sibilant sounds in speech and singing. The De-esser and Dynamic EQ algorithms let you perform comparable notching and hi-frequency shelving at full resolution and stay in the Digital domain. A side-chain monitoring function is available for tuning in on specific frequencies.



► PITCH CHANGE

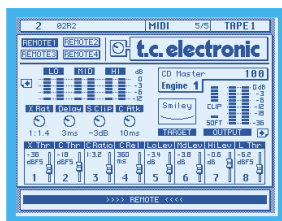
This is a polyphonic 6 voice pitch change algorithm for double tracking and beyond. Other uses include pitch off-set in combination with associated 24 bits delays. Fader parameters are dynamically automatable.



OPTION NUMBER TWO

► FINALIZER D.C. MULTI-BAND PLUG-IN

Multi-Band compression integrated with your Yamaha O2R. Choose this software if you want to equalize your master with selective compression and add real energy and clarity without worrying about "overs".



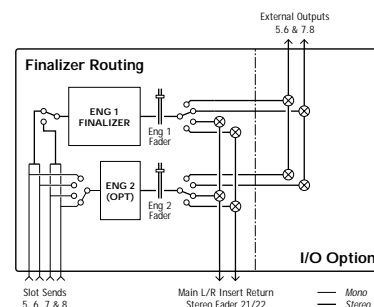
► ALGORITHM STRUCTURE

The Award Winning Finalizer Technology is part of this software module. It consists of a 3-band Expander, 3-band Compressor and 3-band Limiter followed by a broadband Soft Clipping circuit. All the 3-band structures may utilize a look ahead delay to make the processing unobtrusive and free of dynamic distortion.

The number of consecutive samples at full scale is displayed on the Clip meter.

► ROUTING

Insert the Finalizer D.C. on the O2R Stereo bus or use the Finalizer engine fader as the master fader for direct outs from the UnityY card. The output resolution is 24 bit.



► SPECTRAL BALANCE

In the Finalizer D.C. the spectral balance is set as the Target type of the compressor. By setting the Target parameter, you select what sort of frequency response to aim for when dynamics processing takes place. Try the "Mix Pilot" preset. This kind of multi-band processing is a great mix assistance, even during live performance or transmission.

OPTION NUMBER THREE

► DIGITAL I/O EXTENSION

The UnityY card may be fitted with one of two digital I/O extensions:

- 1) AES/EBU 8 channel, 24 bit I/O or
 - 2) ADAT and TDIF 8 channel, 24 bit I/O
- On the combined ADAT and TDIF card, format conversion is available. The I/O extension may also be used to gain external access to Aux 7-8 and Main Insert.

MORE TO COME

New options including both software and hardware will continuously be developed to the TC UnityY card. For more information about this, please visit our website: www.tcelectronic.com

EXTEND YOUR POSSIBILITIES

TC UnitY main board
Extension

TC UnitY AES/EBU
I/O Extension

TC UnitY main board
incl. I/O Extension

TC UnitY ADAT/TDIF
I/O Extension



TECHNICAL SPECIFICATIONS:

PROCESSING

Number of effects per UnitY card	2 simultaneous (stereo)
Input resolution (signals from 02R)	24 bit
Output resolution (signals to 02R)	24 bit
External I/O resolution*	24 bit
Sample Rates	All rates supported by the 02R
Processing delay	6 cycles, 0.136 ms @ 44.1 kHz 0.125 ms @ 48 kHz

PRESETS

Number of presets	max 250 per card
Preset dump and load	via 02R MIDI ports
Backup battery life	>10 years

AUTOMATION

Scene Memory automation	All parameters based on Presets
Dynamic automation	16 parameters per card

Note *: Only applicable to UnitY cards including I/O extension boards.
For more information, please visit our website: www.tcelectronic.com

EXTERNAL I/O EXTENSION CARD

Number of channels using external inputs*	8
Number of channels using external outputs*	8
Formats supported*	AES/EBU, ADAT, TDIF
External I/O connectors*	AES/EBU: 25 pin SubD ADAT/TDIF: 25 pin SubD, Lightpipe

GENERAL

EMC complies with	EN 55103-1, EN 55103-2, FCC part 15 Class B, CISPR 22 Class B
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Number of UnitY cards	Max 4 cards in one 02R
Main board dimensions	111 x 223 mm (4.4" x 8.8")
I/O Extension board* dimensions	111 x 88 mm (4.4" x 3.5")
Full UnitY assembly dimensions	111 x 311 mm (4.4" x 12.2")

Note: Due to continuous development and standardization all specifications are subject to change without notice.

t.c. electronic®
ULTIMATE SOUND MACHINES

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