

Overview

The intuitive TouchFlow Operation™ interface is optimized for touch-panel control and provides an easy-to-use digital mixing console environment for a broad spectrum of users and uses. The TF-RACK Digital Mixer packs TF-series performance and functionality into a compact 3U size rack-mount unit.



Rear Panel

Features

- The 3U size, rack-mount form digital mixer
- Input channels: 32 mono, 2 stereo, 2 return.
- Busses: 20 Aux (8 mono, 6 stereo), Stereo, Sub, 4 matrix.
- Local I/O: 16 mic/line + 1 stereo line in, 16 out.
- Recallable “D-PRE™” Microphone Preamplifiers provide an ideal sonic foundation.
- Intuitive user interface optimized for touch panel operation.
- Traditional Overview and Selected Channel Interfaces
- “1-knob COMP™” & 1-knob EQ™ make it easy to dial in the ideal sound
- “QuickPro Presets™” provide instant access to pro sound setups.
- “GainFinder™” supports precision gain setup
- “SENDS ON FADER” buttons instantly bring the specified AUX or FX bus levels up on the faders for easy verification and adjustment.
- Seamlessly integrated remote control and offline editing via an Apple iPad® or other computing device.
- Direct 2-track recording to USB storage devices, or serious multitrack recording to a DAW via USB.
- Multitrack recordings can be used for “virtual sound checks” when performers aren’t available.
- 1 expansion slot for NY64-D audio interface card
- Other features: 8 Powerful Processing/Effect Units, User Defined Knobs, User Defined Keys, 8 DCA groups, and more.

Specifications

1/2

Functional Specifications

Mixing Capacity	Input Mixing Channels	32 mono + 2 stereo + 2 return	Output Channel Functions	Number of Inserts	0 (Insert Effect on AUX 9/10-19/20)
	Mix Buses	20		Quick Pro Preset	Yes
	Matrices	4	FX	Number of FXs	2 for Input Channels + 6 for AUX 9/10-19/20
	Stereo Buses	1		Number of FX Programs	20
	Mono Buses	1	GEQ	Available Channels	Stereo, AUX1-8
	FX Buses	2	Dante	Number of I/O Channels	32 in / 24 out(with NY64-D)
	Cue Bus	1		Dante Patch from Console	No
Local Connectors	Analog Input	16 mic/line + 1 stereo line	Recording	USB Memory Recording	Yes
	Analog Output	16		DVS Recording	Yes (Nuendo Live bundled)
	NY Slots	1	Monitor	Solo Mode	No
	Word Clock I/O	No		Oscillator	Sine Wave / Pink Noise / Burst Noise
	MIDI I/O	No	Other Functions	Port to Port	No
	USB for File Save/Load	1		GPI/MIDI	No
	USB for 2 Track Rec/Play	1		Wireless Mic Monitoring	No
	USB for Multitrack Rec/Play to/from PC	1		RTA	Yes
	Ethernet	Yes		Output Port Delay	No
	Foot Switch	Yes		Cascade	No
	Phones	1		User Level	Yes
AC Inlet	1	Help File	Yes		
Scene Memory	Number of Scenes	200	User Interface	Display	7 inch Touch Panel
	Recall Safe	Yes		Faders	0
	Focus Recall	No		Channel Encoder	No
	Fade Time	No		Channel Name / Color Display	No
	Preview	No		Custom Fader Banks	Yes
	Selective Load / Save	No		User Defined Keys	6
	Global Paste	No		User Defined Knobs	4
	Tactile Control Keys	No (on-screen)		Touch and Turn Knob	Yes
Input Channel Functions	Gain Compensation	No		Monitor Level Knob	Yes (by User Defined Knob)
	Digital Gain	Yes (-24dB~ +10dB)		Wooden Arm Rest	No
	HPF	20Hz ~ 600Hz	iPad Stay	No	
	PEQ	4 Band Full PEQ	Rack-mounting	Yes	
	Dynamics 1	Gate	Software	Editor	TF Editor
	Dynamics 2	Comp		StageMix	TF StageMix
	Input Delay	No		MonitorMix	Yes
	Pan	Center Nominal		Nuendo Live: Control integration	No
	DCA Group	8 (Input DCA)		Console File Converter	No
	DCA Rollout	Yes (Unscrollable)			
	Number of Inserts	0			
	Direct Out	Yes			
	Quick Pro Preset	Yes			
Output Channel Functions	PEQ	4 Band Full PEQ			
	GEQ	Yes			
	Dynamics 1	Compressor			
	Output Channel Delay	No			

Specifications

General Specifications

Sampling frequency rate	Internal	48 kHz
Signal delay	Less than 2.6 ms, INPUT to OMNI OUT, Fs=48 kHz	
Fader	Resolution = 10-bit, +10 dB to -138 dB, -∞ dB all faders	
Total harmonic distortion	Less than 0.05% 20 Hz–20 kHz @+4 dBu into 600 Ω, INPUT to OMNI OUT, Input Gain=Min. (Measured with a -18 dB/octave filter@80 kHz)	
Frequency response	+0.5, -1.5 dB 20 Hz–20 kHz, refer to +4 dBu output @1kHz, INPUT to OMNI OUT	
Dynamic range	110 dB typ., DA Converter, 107 dB typ., INPUT to OMNI OUT, Input Gain=Min.	
Hum & noise level	Equivalent input noise	-128 dBu typ., Input Gain=Max. (Measured with an A-Weight filter)
	Residual output noise	-85 dBu, ST master off (Measured with an A-Weight filter)
Crosstalk	-100 dB (Measured with a -30 dB/octave filter@22 kHz), adjacent INPUT/OMNI OUT channels, Input Gain=Min.	
Power requirements	100–240 V 50/60 Hz	
Power consumption	85 W	
Dimensions (W x H x D)	480 mm x 132 mm x 409 mm (18.9" x 5.2" x 16.1")	
Net weight	9.2 kg (20.3 lbs)	
Accessories	Quick Guide, Power Cord NUENDO LIVE (DAW Software), Rubber stoppers(4)	
Options	Audio Interface Card (NY-64D), Foot Switch (FC5)	
Others	Operating temperature range: 0–40 °C, Storage temperature range: -20–60 °C	

Analog Input Characteristics

Input Terminals	GAIN	Load Impedance	For Use With Nominal	Input Level			Connector	Balanced / Unbalanced
				Sensitivity ¹	Nominal	Max. before clip		
INPUT 1-16 (TF1)	+66dB	7.5K Ω	50-600 Mics or 600 Lines	-82dBu (61.6μV)	-62dBu (0.616mV)	-42dBu (6.16mV)	Combo Jack (XLR-3-31 type ² or TRS phone ³)	Balanced
	-6dB			-10dBu (245mV)	+10dBu (2.45V)	+30dBu (24.5V)		
ST IN 1,2	—	10k	600 Lines	-30dBV (31.6μV)	-10dBV (316mV)	+10dBV (3.16V)	RCA Pin Jack	Unbalanced

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

*2 1: GND, 2: HOT, 3: COLD

*3 Tip: HOT, Ring: COLD, Sleeve: GND

*4 In these specifications, 0dBu = 0.775Vrms.

*5 +48V DC (phantom power) can be supplied to INPUT XLR type connectors via each individual software controlled switch.

Analog Output Characteristics

Output Terminals	Source Impedance	For Use With Nominal	Output Level		Connector	Balanced / Unbalanced
			Nominal	Max. before clip		
OMNI OUT 1-16	75Ω	600 Lines	+4dBu (1.23 V)	+24dBu (12.3 V)	XLR-3-32 type ¹	Balanced
OMNI OUT 9-16			TRIS Phone Jack ⁶			
PHONES ⁵	100Ω	40 Phones	3mW	75mW	Stereo Phone Jack (TRS) ²	Unbalanced

*1 1: GND, 2: HOT, 3: COLD

*2 Tip: LEFT, Ring: RIGHT, Sleeve: GND

*3 In these specifications, 0dBu = 0.775Vrms.

*4 All output DA converters are 24bit, 128times oversampling.

*5 The position of the level control is lowered by 16dB from the maximum.

*6 Tip: HOT, Ring: COLD, Sleeve: GND

Digital Input/Output Specifications

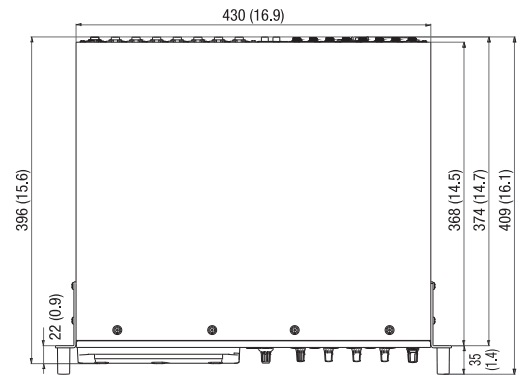
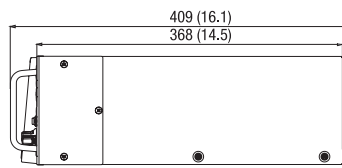
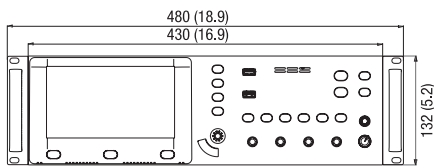
Terminals	Format	Data length	Audio	Connector
USB (TO HOST)	USB	24bit	34ch input / 34ch output, PCM	USB (B type)
iPad	USB	—	Playback: MP3 or WAV file data / Record: WAV file data	USB (A type)

Control I/O Specifications

Terminals	Format	Level	Connector
NETWORK	IEEE802.3	10BASE-T/100Base-TX	RJ-45
FOOT SW	—	—	TS Phone

Dimensions

Unit: mm (inch)



Options

- | | |
|------------------------|-----------|
| • I/O Rack | Tio1608-D |
| • Dante Interface Card | NY64-D |
| • Foot Switch | FC5 |

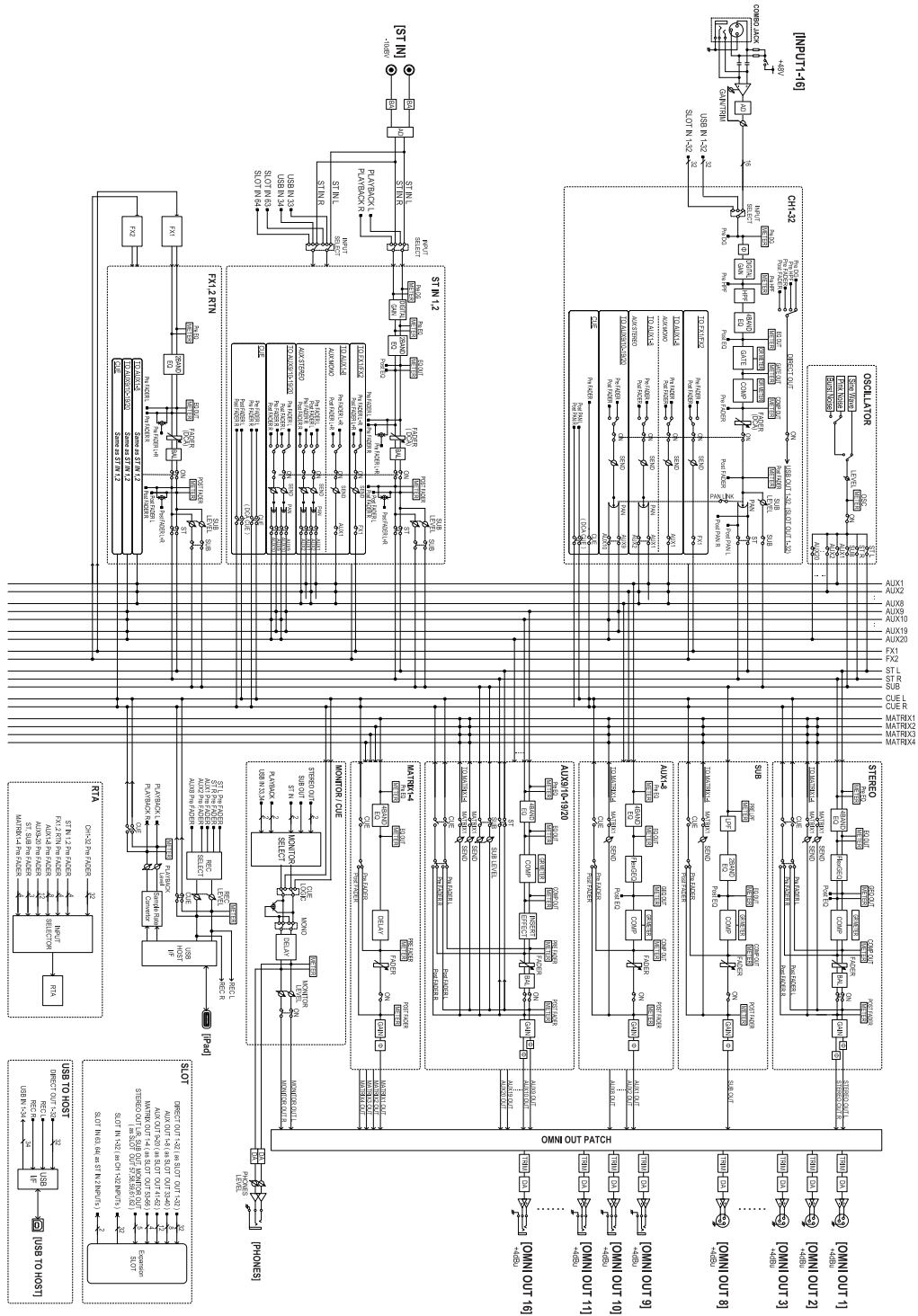
Software

- TF Editor
- TF StageMix
- MonitorMix
- Steinberg Nuendo Live

Architectural and Engineering Specifications

The Yamaha TF-RACK Digital Mixer shall feature an intuitive TouchFlow Operation™ interface that is optimized for touch-panel control. It shall be an easy-to-use, compact, 3U size rack-mount digital mixing consoles. It shall provide a mixing capacity of up to 32 mono and 2 stereo inputs, 2 returns, 20 auxiliary buses, and 4 matrix buses. It shall include recallable class-A D-PRE microphone preamplifiers, 1-knob COMP compression, and 1-knob EQ equalization facilities. For optimum live-sound workflow it shall include 8 powerful effect processors, and Flex12 EQ that allows up to 12 of 31 available EQ bands to be applied to the main L/R bus and auxiliary buses 1 through 8. The mixing console shall be compatible with TF Editor, TF StageMix, MonitorMix, and other Yamaha support software running on external computing devices. Physical controllers other than faders shall include Touch and Turn knobs and, 6 User Defined Keys, and 4 User Defined Knobs. Local I/O shall include 16 microphone/line and 2 stereo line inputs, plus 16 line outputs. An optional NY64-D Dante I/O card shall provide Dante connectivity with the Tio1608-D I/O rack unit. Dimensions shall be 480 (W) x 132 (H) x 409 (D) mm. Weight shall be 9.2 kg.

Block Diagrams



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