



TF Series with Tio1608-D System Setup Guide

1st Edition: June 2016



This guide introduces the setup procedure for the Yamaha TF Series digital mixing console and Tio1608-D I/O rack, as well as system examples based on the number of Tio1608-D units.

Although the TF Series can be used by itself as an all-in-one console, the I/O capacity can be easily expanded by adding a Tio1608-D, allowing you to build a stagebox system with up to 40 INs/24 OUTs. The system can be set up by connecting each device with an Ethernet cable, and by making simple settings with DIP switches.

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Introduction

The systems explained in this guide use the "Quick Config" function found in the TF Series. This function can facilitate the system setup by automatically patching the Dante network between the TF series and Tio1608-D.

To build a more flexible system, use the Dante controller instead of the Quick Config function, and do the patching manually. For details on Dante Controller, refer to the Dante Controller User Guide.

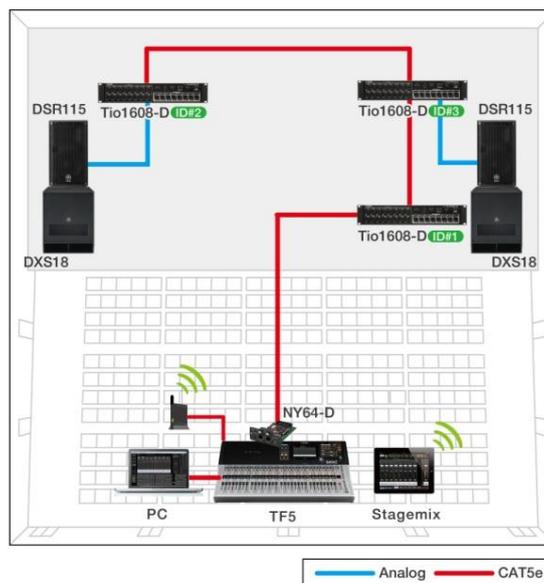
<http://www.yamahaproaudio.com/global/en/downloads/manuals/?lang=en&q=DANTE-MY16-AUD>

Device List

1. Yamaha digital mixing console: TF Series (TF5/TF3/TF1)
2. Yamaha I/O rack: Tio1608-D
3. Yamaha Dante I/O card: NY64-D
4. CAT5e or CAT6 network cable
5. (as necessary) Dante Controller software (can be downloaded for free from the Audinate website) and a compatible computer

Connections

In order to connect the TF Series and the Tio1608-D, it is necessary to install the Dante I/O card (NY64-D) on the TF Series. Connect the NY64-D (installed onto the TF Series) and the Tio1608-D in a daisy chain, using the CAT5e or CAT6 network cables. Up to three Tio1608-D racks can be connected to one TF Series console. There is no need to make the ID order of the Tio1608-D match the order of the physical connection.



Stagebox system using the TF5 and three Tio1608-D racks

Setup Procedure

TF Series settings

To begin, enable the Quick Config and the HA Control functions on the TF Series. The Quick Config function can automatically patch the Dante network between the TF series and Tio1608-D. Enabling HA Control will allow you to operate the head amp of the Tio1608-D from the TF Series.

Open the "SLOT SETUP" screen, and make sure that both the Quick Config and the HA Control buttons are ON (the default setting is "ON").



Note:

- Up to two TF Series consoles can be connected to a single Tio1608-D at once. Make sure only up to two TF Series consoles are connected to the same network. In addition, only one console among them should have HA Control enabled.
- When "with OUTPUT" on the Quick Config function is turned OFF (the default is ON), only the input from the Tio1608-D to the TF Series will be patched automatically, and the output from the TF Series will not be patched. When you wish to freely patch only the output channels, turn this option OFF.
- When two TF Series are connected to a single Tio1608-D and the Quick Config "with OUTPUT" options are both ON, the "with OUTPUT" option on the TF Series that is connected afterwards will automatically be set to OFF. Set "with OUTPUT" on only one of the TF Series to ON beforehand as appropriate.

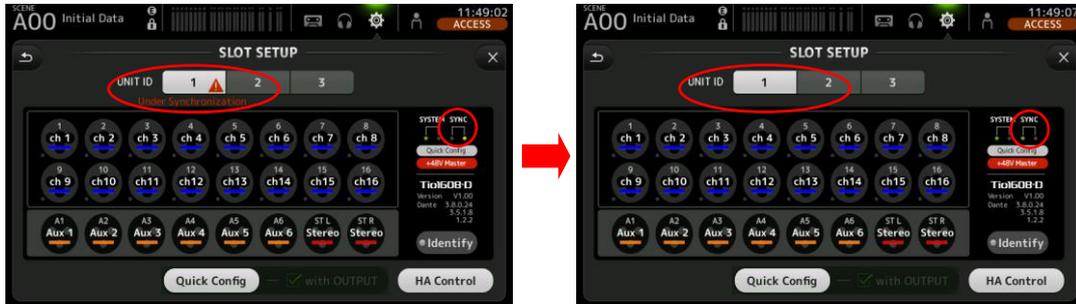
Tio1608-D settings

Turn the Quick Config switch on the Tio1608-D front panel to ON. By doing this, automatic Dante patching between the TF Series and Tio1608-D will be made. Use the front panel ID switches to assign a unique ID (1 to 3) to each unit. The I/O patches are predetermined for each ID when using the Quick Config function. After changing the Quick Config or ID settings, reboot the Tio1608-D.



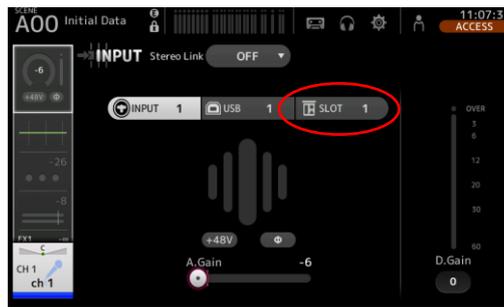
Synchronizing the TF Series and Tio1608-D

The TF series and Tio1608-D will automatically sync up about one minute after turning on the power switches, provided that the connections and settings have already been made. The synchronization status can be confirmed on the SLOT SETUP screen. Once the Sync indicators on the SLOT SETUP screen turn green, synchronization is complete.

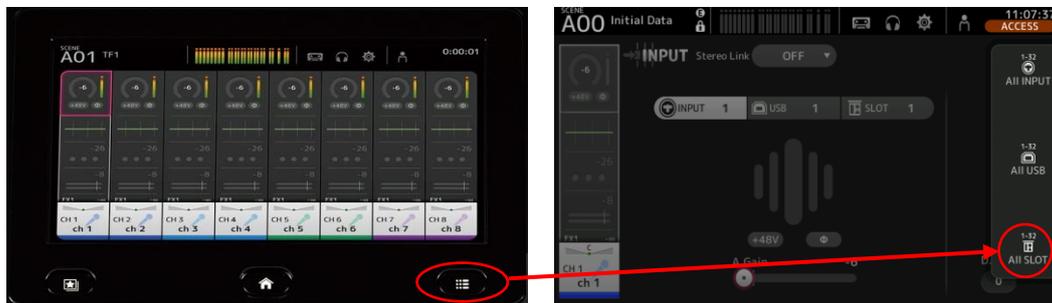


Selecting the input source

Configure the input source for each INPUT channel. The Quick Config function will enable automatic Dante patching between the TF Series slot and the Tio1608-D; however, the input source must be selected manually for each INPUT channel on the TF Series. Open the screen for each INPUT channel, and select SLOT for the input source.



Input sources can also be set for multiple channels simultaneously. Open the menu screen on the INPUT screen by pressing the menu key, and select All SLOT to switch all the designated input sources at the same time.



System Examples

Here we will introduce some representative system examples when connecting the TF Series Digital Mixer and the Tio1608-D. The system examples shown in this guide can all be created by using the "Quick Config" function.

As shown in the diagram below, the I/O patches on the Tio1608-D are automatically determined by ID when the Quick Config function is used.



I/O patches on the Tio1608-D when using Quick Config

With three Tio1608-D racks

Three Tio1608-D racks can be connected to build a stagebox system of up to 40 INs/24 OUTs. As the TF1 has 32 input channels, the number of available inputs will be the same, even when two Tio1608-D racks are used. Only the number of outputs will differ. Set the IDs of each Tio1608-D to 1, 2 and 3 respectively, and switch the input sources for INPUT CH 1-40 on the TF Series to SLOT. This will allow the input from the INPUT connectors of each Tio1608-D to be assigned to INPUT CH 1-16, 17-32 and 33-40 respectively.

The I/O patches for each TF Series are shown below.

Channel		I/O connector		
		TF5	TF3	TF1
INPUT	CH 1-16	Tio1608-D (ID: 1) INPUT 1-16		
	CH 17-32	Tio1608-D (ID: 2) INPUT 1-16		
	CH 33-40	Tio1608-D (ID: 3) INPUT 1-8		-
OUTPUT	AUX 1-6	Tio1608-D (ID: 1) OUTPUT 1-6		
	AUX 7-12	Tio1608-D (ID: 2) OUTPUT 1-6		
	AUX 13-20	Tio1608-D (ID: 3) OUTPUT 1-8		
	MATRIX 1-4	-		
	STEREO L/R	Tio1608-D (ID: 1) OUTPUT 7-8 Tio1608-D (ID: 2) OUTPUT 7-8		

With two Tio1608-D racks

Two Tio1608-D racks can be connected together to build a stagebox system with 32 INs/16 OUTs. For this system example, we recommend that you set the IDs for the two Tio1608-D racks to 1 and 2. Set the IDs of each Tio1608-D to 1 and 2 respectively, and switch the input sources for CH 1-32 on the TF Series to SLOT. This will allow the input from the INPUT connectors of each Tio1608-D to be assigned to INPUT CH 1-16 and 17-32 respectively.

The I/O patches for each TF Series are shown below. When you want to utilize all of the input channels on the TF3/TF5, use the input connectors on the rear panel of the TF series.

Channel		I/O connector		
		TF5	TF3	TF1
INPUT	CH 1-16	Tio1608-D (ID: 1) INPUT 1-16		
	CH 17-32	Tio1608-D (ID: 2) INPUT 1-16		
	CH 33-40	TF INPUT 1-8	TF INPUT 9-16	-
OUTPUT	AUX 1-6	Tio1608-D (ID: 1) OUTPUT 1-6		
	AUX 7-12	Tio1608-D (ID: 2) OUTPUT 1-6		
	AUX 13-20	-		
	MATRIX 1-4	-		
	STEREO L/R	Tio1608-D (ID: 1) OUTPUT 7-8 Tio1608-D (ID: 2) OUTPUT 7-8		

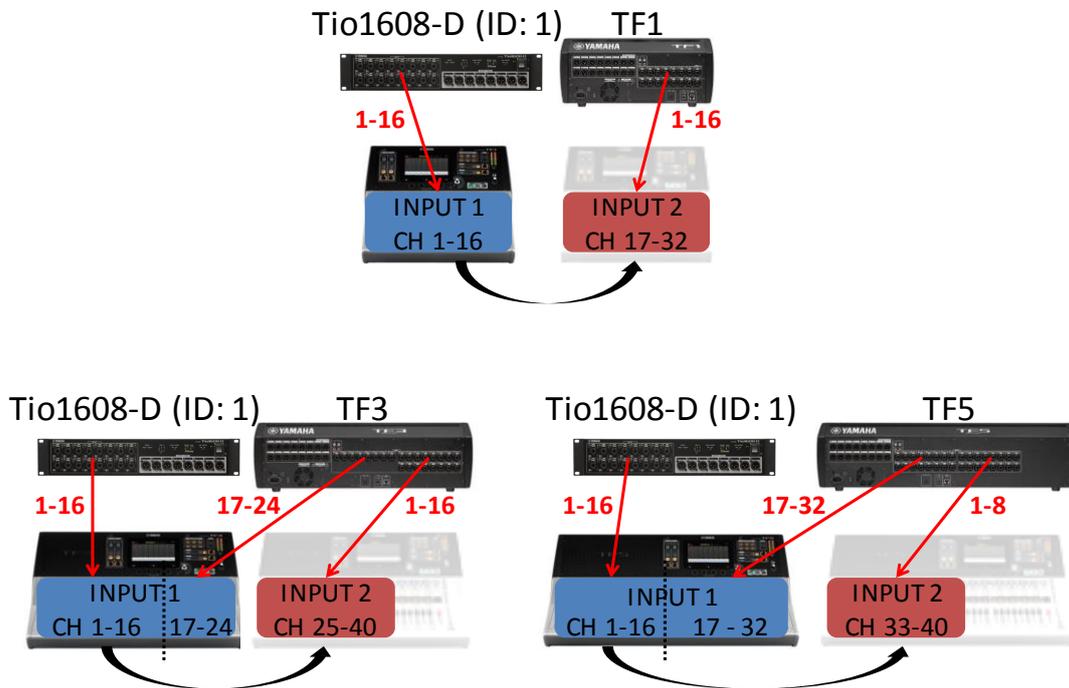
With one Tio1608-D rack

One Tio1608-D rack can be connected to build a stagebox system with 16 INs/8 OUTs. For example, if you use a TF1 and a single Tio1608-D, you can input the stage mic inputs (16 channels) from the Tio1608-D, and directly input the remaining 16 channels into the TF1. This will allow you to utilize the maximum of 32 input channels on the TF1. For this system example, we recommend that you set the ID for the Tio1608-D to 1. Set the ID of the Tio1608-D to 1, and switch the input sources for CH 1-16 on

the TF Series to SLOT. This will allow you to assign the input connectors from the Tio1608-D to INPUT CH 1-16.

The I/O patches for each TF Series are shown below. On the TF3 and TF5, take note that the INPUT connectors 1-8 of the TF5 (or INPUT connectors 1-16 of the TF3) are patched to the "INPUT 2" fader bank, and the numeric order of the input connectors do not coincide with that of the input channel numbers.

Channel		I/O connector		
		TF5	TF3	TF1
INPUT	CH 1-16	Tio1608-D (ID: 1) INPUT 1-16		
	CH 17-24	TF INPUT 17-32	TF INPUT 17-24	TF INPUT 1-16
	CH 25-32		TF INPUT 1-16	
	CH 33-40	TF INPUT 1-8	-	-
OUTPUT	AUX 1-6	Tio1608-D (ID: 1) OUTPUT 1-6		
	AUX 7-20	-		
	MATRIX 1-4	-		
	STEREO L/R	Tio1608-D (ID: 1) OUTPUT 7-8		



Input patching when using one Tio1608-D rack

Aside from the systems introduced in this guide, you can build more flexible systems according to the purpose of use.

Freely patching by Dante Controller

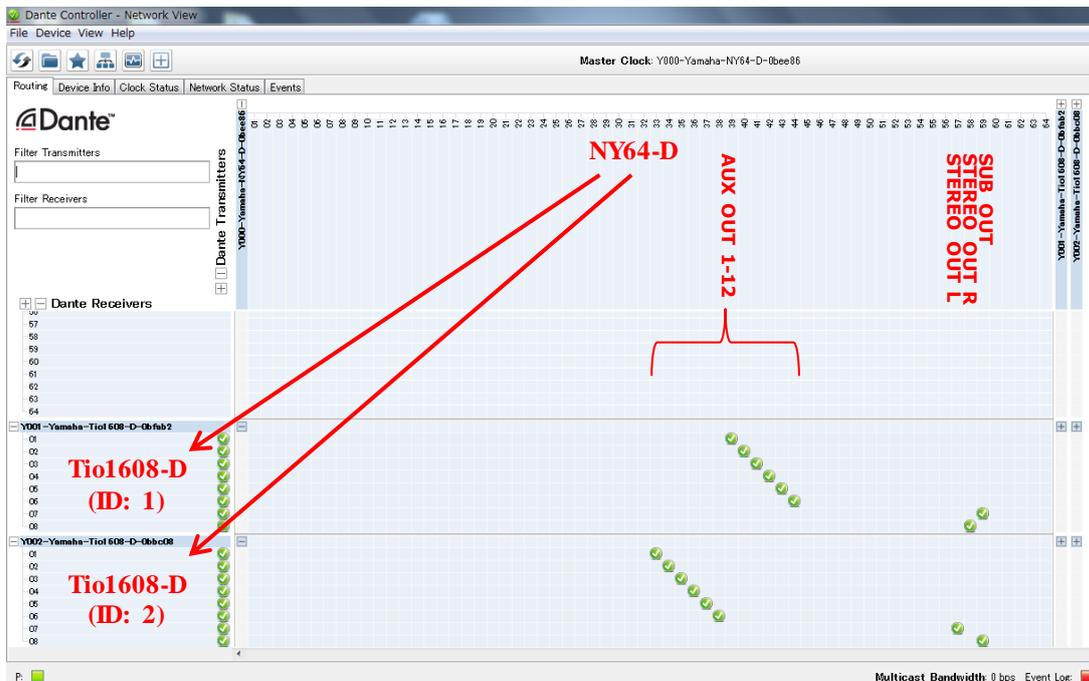
To build a more flexible system, you can manually patch the Dante network between the TF series and Tio1608-D by using the Dante controller software instead of the Quick Config function. For example, if you want to change the output destination according to the installation position of the amp rack or monitor speakers, you can change the patches with Dante controller.

Setup Procedure

Download the installer appropriate for your computer's OS from the Audinate website shown below, and install the Dante Controller software.
<https://www.audinate.com/products/software/dante-controller>

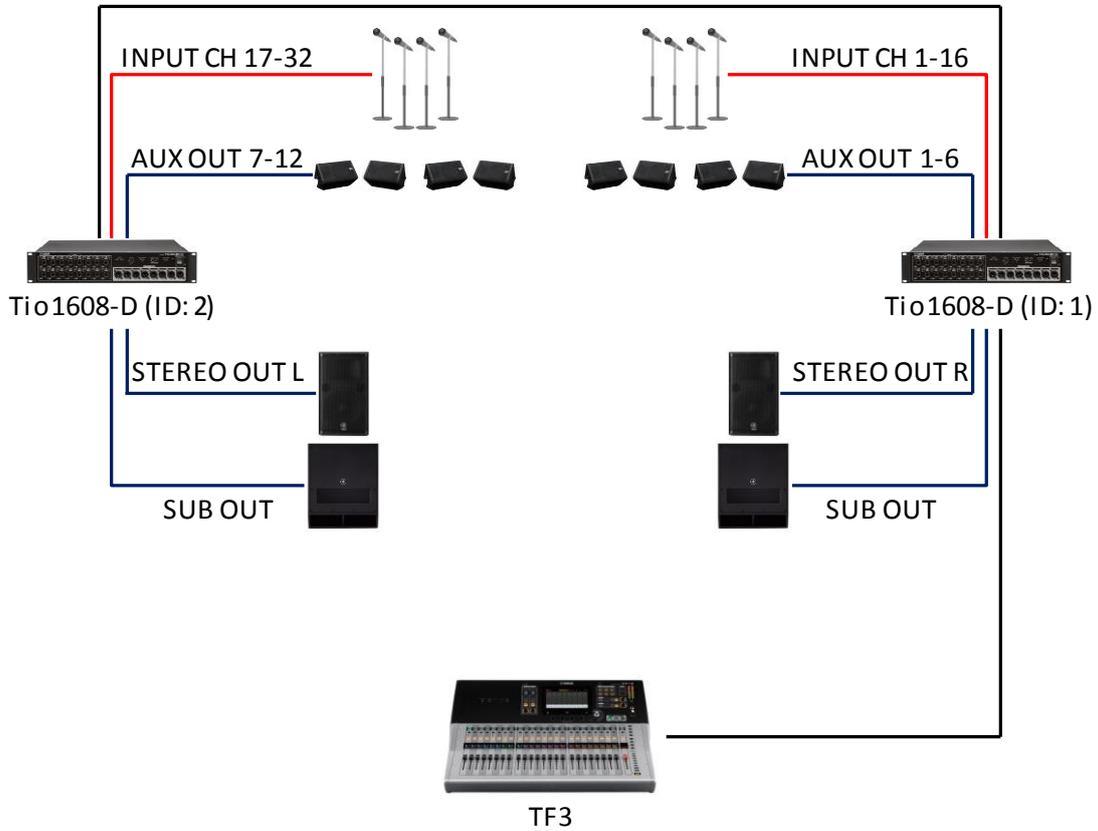
Following this, connect your computer to the Dante connector on either your TF Series or the Tio1608-D with a network cable. When you wish to freely change just the output patches, turn the Quick Config function on the TF Series and Tio1608-D ON, with the TF Series "with OUTPUT" option turned OFF. This will automatically patch only the inputs. When you wish to freely patch the inputs as well, turn the Quick Config function on the TF Series and Tio1608-D OFF.

When you start the Dante Controller, all devices on the Dante network will be automatically detected. Open the Dante Controller "Routing" screen to do the I/O patching. The channels on the transmitting devices (shown in each column) and the channels of the receiving devices (shown in each row) are displayed in a grid. Patch the I/O on this grid according to your needs.



Dante Controller "Routing" screen

The diagram below is an example of a stagebox system including two Tio1608-D racks, which is patched by Dante Controller. To output the SUB OUT channel to the subwoofers, turn the "with OUTPUT" option OFF, and change the output patching.



System example of patching the SUB OUT to Tio1608-D units

Dante slot I/P port list

When patching using the Dante Controller, refer to the list below, which shows the corresponding TF Series I/O channels and slot I/O ports. The port and connector numbers for both input and output match on the Tio1608-D.

Channel		Dante slot		
		TF5	TF3	TF1
INPUT	CH 1-32	SLOT IN 1-32		
	CH 33-40	SLOT IN 33-40		-
	STEREO IN L/R	SLOT IN 63, 64		
OUTPUT	DIRECT OUT 1-32	SLOT OUT 1-32		
	AUX OUT 1-20	SLOT OUT 33-52		
	MATRIX OUT 1-4 (V2.5 or later)	SLOT OUT 53-56		
	STEREO OUT L/R	SLOT OUT 57, 58		
	SUB OUT	SLOT OUT 59		
	MONITOR OUT	SLOT OUT 61, 62		