

This document outlines how to configure your Dante® AES67 device for interoperability with Ross Video's BACH Minuet/Liberty. Note that these steps could apply to any Dante product that is licensed with AES67 mode. For this application note, we will use a Yamaha® TF-RACK Digital Mixer with a NY64-D I/O card installed.

Before You Begin

Figure 1 shows a simplified network configuration with the BACH Minuet/Liberty (on a Virtuoso Development Kit) and a PTP Master that supports AES67. In addition, there is a computer connected to the switch for management/control of the devices. The instructions in this document follow the configuration in **Figure 1**.

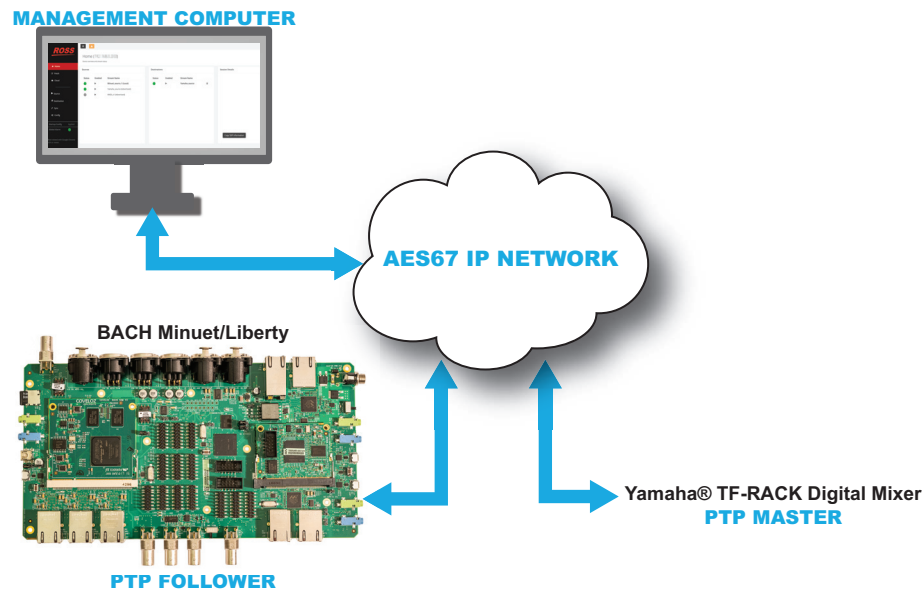


Figure 1 Simplified Network Configuration

Keep the following in mind:

- Both devices have a data RJ-45 ethernet port which is simultaneously the data and the control access to the BACH Minuet/Liberty. Since it is a non-redundant configuration, the secondary RJ-45 ports are not connected.
- Do not connect the separate RJ-45 port on the Yamaha TF-Rack Digital Mixer that is only for controlling the mixer remotely. This port is not need in this configuration.
- The Dante Controller software is used to access and configure the NY64-D I/O card in the Yamaha TF-Rack Digital Mixer.
- A Google® Chrome web browser is required to access to the BACH Minuet/Liberty Web UI.

Network Configuration

This document assumes the user has the necessary software installed on their computer and the Yamaha TF-Rack Digital Mixer and BACH Minuet/Liberty are already connected to their respective software controllers.

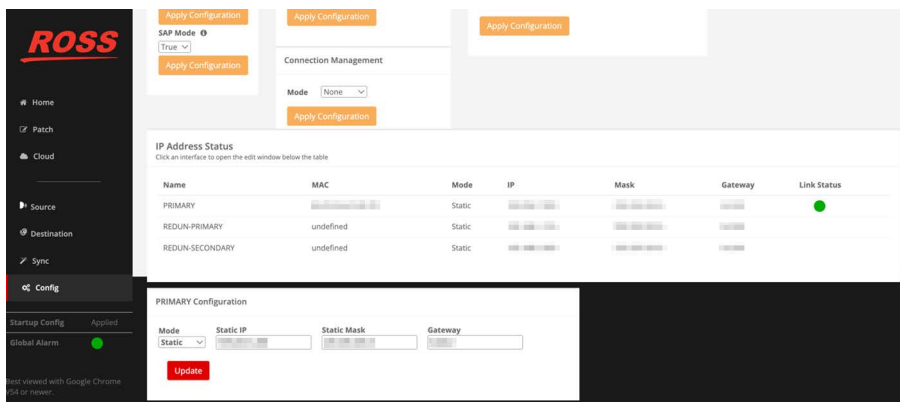
If you are using a PTP-aware switch

1. Set the port connected to the Yamaha TF-Rack Digital Mixer as **Follower**.
2. Set the port connected to the BACH Minuet/Liberty as **Master**.

3. You do not need to set anything if you are using a simple unmanaged switch.

To configure the BACH Minuet/Liberty

1. Open a web browser on a computer that is connected to the same network as your other devices.
2. In the address bar, enter the IP address assigned to the BACH Minuet/Liberty.
The Web UI opens in the browser tab.
3. Select the **Config** tab from the left toolbar.
4. Locate the **Ethernet Status** area.
5. Set **PRIMARY** to a static IP in the same subnet as the Yamaha TF-Rack Digital Mixer port.
6. Verify that the **PRIMARY**, **REDUN-PRIMARY** and **REDUN-SECONDARY** ports are set to different subnets.
7. Modify the port settings to avoid IP address conflicts.



To configure the Yamaha TF-Rack Digital Mixer

1. In the Dante Controller, locate the **Device Info** area.
2. Double-click the Yamaha device.
3. In the **AES67 Config** area, enable the **AES67 mode**.
★ By default, the TX multicast address range is 239.69.X.X.
4. In the **Network Config** area:
 - a. Set the IP address for the primary port.
 - b. Set the Netmask for the primary port.
5. Verify that the Subnet is the same value as set on the BACH Minuet/Liberty.

To configure your management computer

1. Configure the network port of your computer to the same subnet as the primary network.
2. Connect this network port to one of the switch primary ports.

PTP Configuration

In this application, the BACH Minuet/Liberty is set to PTP Follower and the Yamaha TF-Rack Digital Mixer to PTP Master. However, the BACH Minuet/Liberty can be configured as the network PTP Master.

★ Native Dante devices do not support PTPv2. Be careful when choosing the PTP Master.

To configure the PTP settings for the BACH Minuet/Liberty

1. On the Web UI, select the **Sync** tab from the left toolbar.
2. Locate the **PTP Profile Configuration** area.
3. Set the **Profile** to **AES67 Media**.
4. Enable the **Follower Only** mode.
5. Leave all settings at the default values.
6. Click **Apply**.

The BACH Minuet/Liberty listens to the network until it finds the PTP Master, then locks to it.

★ If the BACH Minuet/Liberty is on a network that includes native Dante devices, it is highly recommended to refer to the Yamaha TF-Rack Digital Mixer user documentation for details on clocking notices.

To configure the PTP settings for the Yamaha TF-Rack Digital Mixer

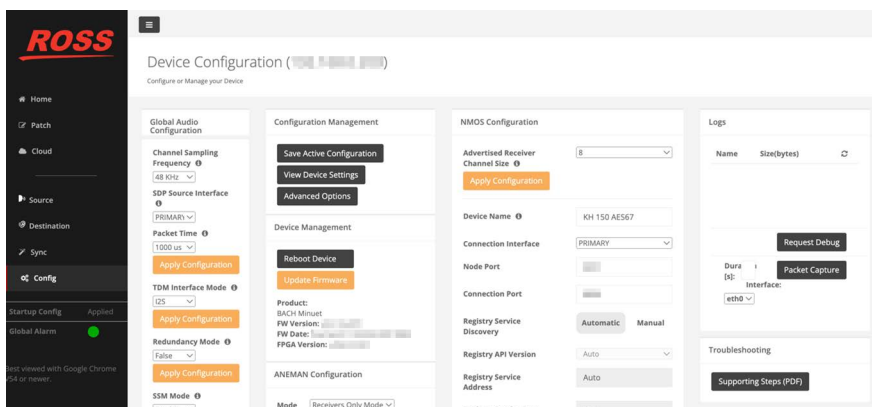
1. On the Dante Controller, locate the **Clock Status** area.
2. Select **Preferred Master**.
3. Verify that the:
 - a. Sync status is green.
 - b. Primary, Secondary, and AES67 status fields report Master.

Configuring the Sources

★ Do not proceed until you verify that the BACH Minuet/Liberty and the Yamaha TF-Rack Digital Mixer are PTP locked.

To configure the BACH Minuet/Liberty

1. On Web UI, select the **Config** tab from the left toolbar.
2. Locate the **Global Audio Configuration** area.



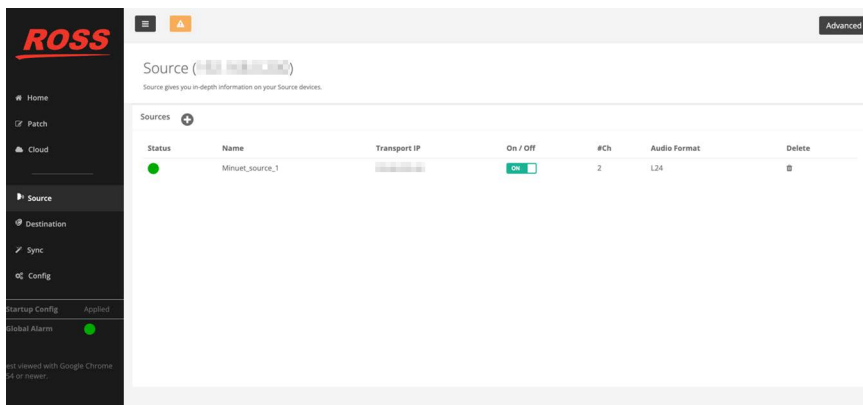
3. Set the **Packet Time** to **1ms**.

★ Most Dante devices running in AES67 mode do not support 125us packet time. Therefore, you need to set the BACH Minuet/Liberty to 1ms packet time.

4. Click **Apply Configuration**.
5. Set the **SAP Mode** to **True**.
 - ★The Dante Controller detects sources that support SAP for advertisement.
6. Click **Apply Configuration**.
7. Reboot the BACH Minuet/Liberty.

To create a source on the BACH Minuet/Liberty

1. In the Web UI, select the **Source** tab from the left toolbar.
2. Click **+**.
3. Enter the source name.
4. Select channels **TDM.0-I2S: #0** and **TDM.0-I2S: #1**.
5. Enter the Transport IP (must be in the range of 239.69.x.x).
6. Set the UDP value.
7. Set the **Codec** to **AES67 (L24)**.
8. Click **Add Source**.
9. Verify that the **Status** field for the new source status displays a green indicator.



To create a source on the Yamaha TF-Rack Digital Mixer

1. On the Dante Controller, locate the Device Info area.
2. Double-click the Yamaha device.
3. Create a source that has **AES67 Flow** enabled.
4. Select the channels.
5. Click **Create**.
6. Select the **Transmit** tab to verify that the new sources are reported.

Making Connections

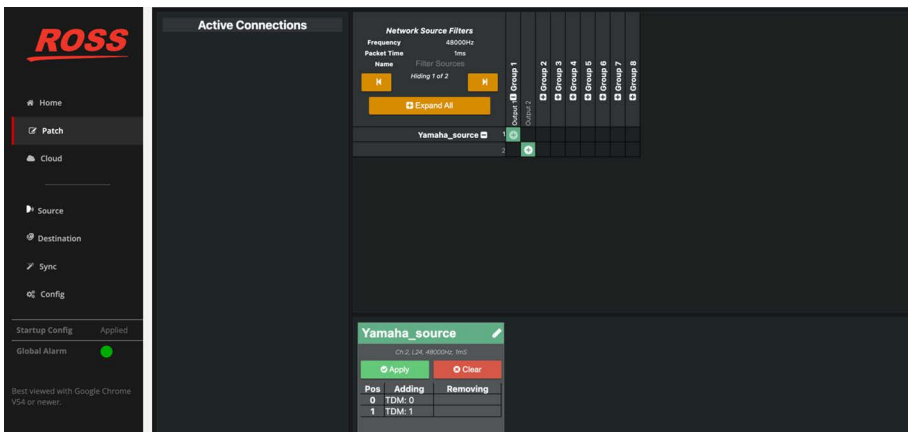
Since the BACH Minuet/Liberty does not support the native Dante API, the BACH destinations (receivers) are not automatically reported in the Dante Controller. Therefore, you need to connect the BACH

Minuet/Liberty receivers to the Yamaha TF-Rack Digital Mixer sources via the BACH Web UI. Once the BACH Minuet/Liberty sources display in the Dante Controller, you can patch them to any Dante receiver.

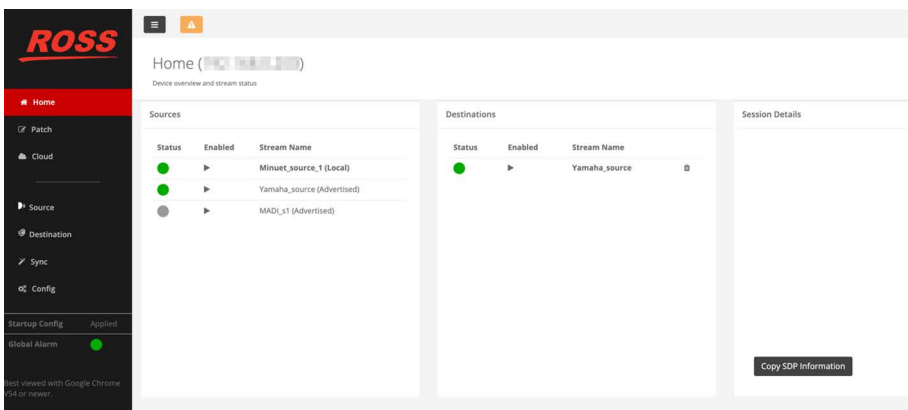
To configure the connection point for the BACH Minuet/Liberty

1. On the BACH Web UI, select the **Patch** tab from the left toolbar.
2. Select **Group1 Output 1** and **Group1 Output 2**.
3. Select the desired Yamaha TF-Rack Digital Mixer source.
4. Click **Apply**.

The **Active Connections** area displays the Yamaha TF-Rack Digital Mixer connection.



5. Select the **Home** tab from the left toolbar.
 6. Verify that the **Destinations** area reports a green status to the Yamaha TF-Rack Digital Mixer connection.
- The audio from the Yamaha TF-Rack Digital Mixer is available at the BACH Minuet/Liberty receiver audio interface.



To configure the connections on the Yamaha TF-Rack Digital Mixer

1. On the Dante Controller, select the **Routing** tab.
 2. Verify that the BACH Minuet/Liberty sources are reported in blue as the transmitters.
 3. Patch the channels to the Yamaha TF-Rack Digital Mixer receive interfaces.
- A green icon indicates a valid connection.

Troubleshooting

In this section, we outline how to troubleshoot some common problems.

PTP not locking

1. Confirm the following PTP parameters are set correctly:
 - PTP master device
 - profile
 - domain
 - sync interval
 - announce interval
2. Verify that network the switch is set to Boundary clock.
3. Verify that the network switch is not blocking the PTP packets.

Cannot see the sources

1. Confirm if the subnets are correctly set and you are able to ping each port.
2. Confirm that SAP is enabled on the BACH Minuet/Liberty (via the Config tab on the Web UI).
3. Confirm that the Multicast address is in the same range on both devices.

Connections are not successful or reporting “no packets received”

1. Confirm that the Packet Time is set to 1ms on the BACH Minuet/Liberty.
2. Verify that both devices are still PTP locked.
3. Confirm that the Multicast address and UDP ports at the receivers are the same as the sources.

Connections are successful but getting audio glitches

1. Verify that both devices are still PTP locked.
2. Confirm that both devices are set to the same Codec type (L24).

Contacting Technical Support

At Ross Video, we take pride in the quality of our products, but if problems occur, help is as close as the nearest telephone.

Our 24-hour Hot Line service ensures you have access to technical expertise around the clock. After-sales service and technical support is provided directly by Ross Video personnel. During business hours (Eastern Time), technical support personnel are available by telephone. After hours and on weekends, a direct emergency technical support phone line is available. If the technical support person who is on call does not answer this line immediately, a voice message can be left and the call will be returned shortly. This team of highly trained staff is available to react to any problem and to do whatever is necessary to ensure customer satisfaction.

- **Technical Support:** (+1) 613-652-4886
- **After Hours Emergency:** (+1) 613-349-0006
- **E-mail:** techsupport@rossvideo.com
- **Website:** <http://www.rossvideo.com>