TECHNICAL NOTE

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DMI-AVB User Information

The DMI-AVB provides 64 inputs and 64 outputs at both 48kHz and 96kHz. This is in the form of 16 streams of up to 8 channels. It has 2 EtherCON ports which can be used in Redundant mode or Bridged (switched) mode. It also has a USB port for software updates. The DMI-AVB works at 48kHz, 96kHz and mixed mode.

Main Features
64 input channels
64 output channels
1 USB-B port
2 EtherCON ports
2 Two port modes – Redundant and Bridged
48kHz or 96kHz Sample Rate
Milan Certified
Compatible with Quantum Range, SD12 and Orange Box

Configuration

In order to use the DMI-AVB in the context of an AVB network, a controller application running on a separate networked PC is required for setup purposes. The Open Source Controller known as HIVE is used in the following examples, but there are other controllers which can be used as alternatives – see below.

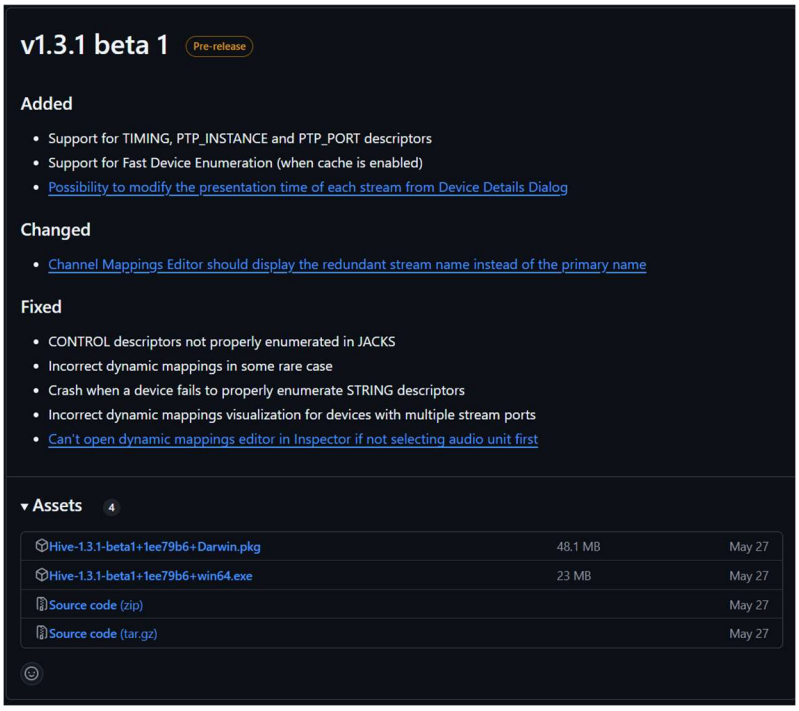
Milan Manager Link – **recommended for general use**
https://milanmanager.com/#Downloads

Hive Link - The standard Open Source controller
https://github.com/christophe-calmejane/Hive/releases

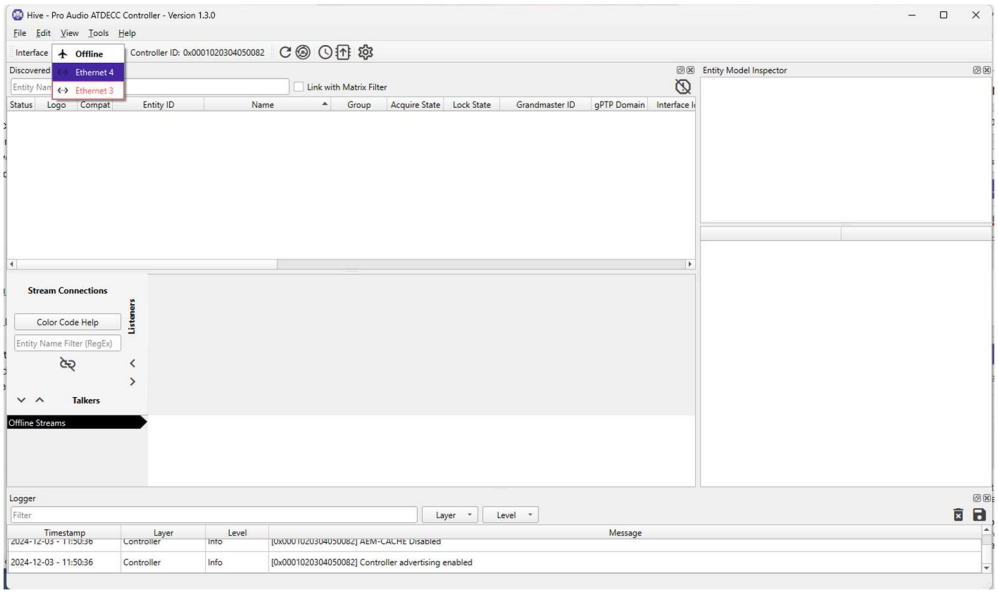
Nebra Link
https://software.meyersound.com/nebra

Card Setup

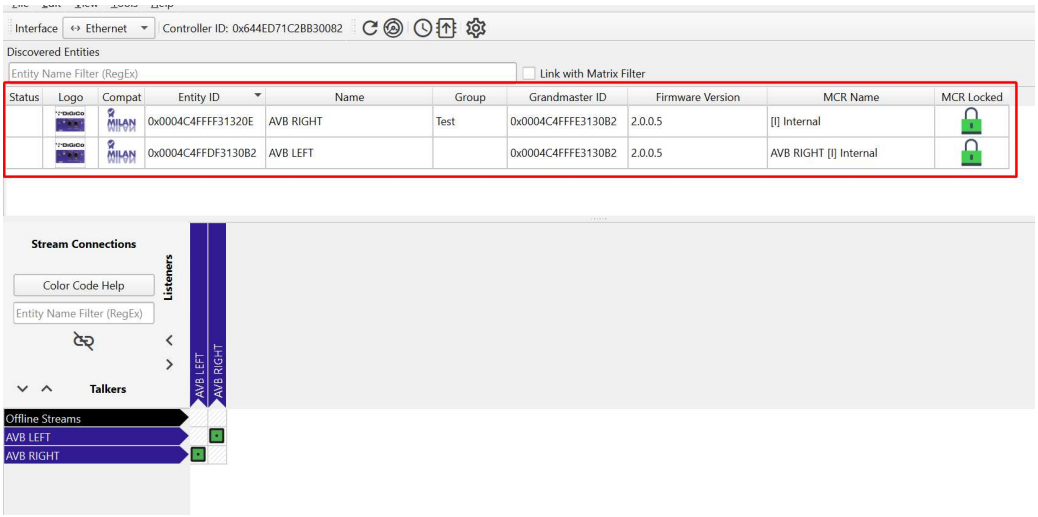
1. Install the DMI-AVB card in either a suitable console or Orange Box.
2. Connect an ethernet cable to the primary port and connect it to your PC.
3. Download the latest release of Hive: https://github.com/christophe-calmejane/Hive/releases
   - Open the Assets drop-down, click the .exe file to download, then follow the install instructions
   - An example release is shown below



4. Select your ethernet port:



5. Wait for 10 seconds for the card(s) to be detected. The image below shows two detected DMI-AVB cards. No TCP/IP configuration is required.
   AVB devices can be connected to each other using an AVB compatible network switch or they can be "daisy chained", if set to **Bridged** mode, using the primary and secondary ports to link one device to another.



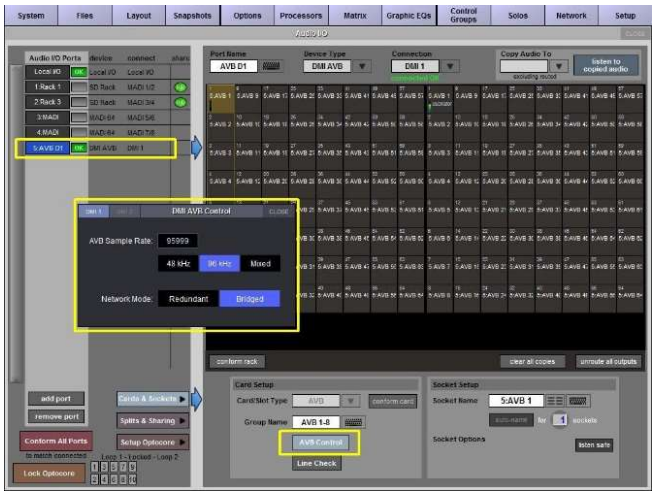
6. Ensure that all AVB devices are set to the same sampling rate (either 48KHz or 96KHz) from the control panel in the host console or Orange Box Controller.
   Console and Orange box host devices should also be set to the same sampling rate as the DMI cards themselves.

   Note that these DMI-AVB and host device sample rate settings are independent of each other. They must both be set to match.

   Changing these sample rate settings requires a reset of the card and therefore, audio and visibility of the card in the controller software will be briefly interrupted.

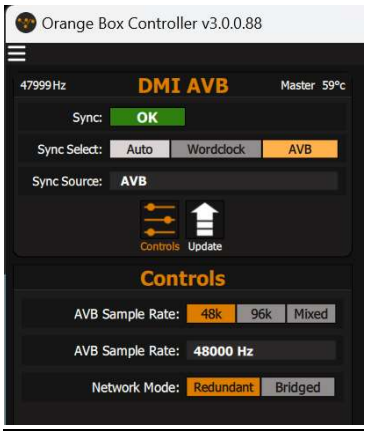
   Also note that when switching the sample rate of the DMI-AVB card from one setting to another, the stream and channel routing should be rechecked for the desired settings.

In the console Master screen > Setup > Audio IO panel, the DMI-AVB card should be included in the port list either by conforming all ports or manually selecting the card using the **Add Port** menu. Once present in the list, the Cards & Sockets display will show an AVB Control option which opens a sub panel for the DMI-AVB card settings.

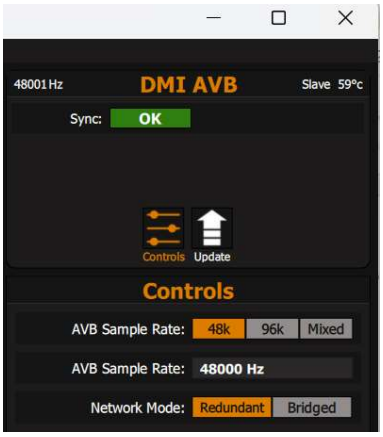


In Orange Box Controller, the same settings are available in the standard **Controls** display.
The display for the DMI-AVB will differ slightly according to its slot position, offering **Sync Select** options in when fitted in the Master slot but not in the Slave slot.
In the Slave slot the sync is provided automatically from the Master slot card.

Master Slot

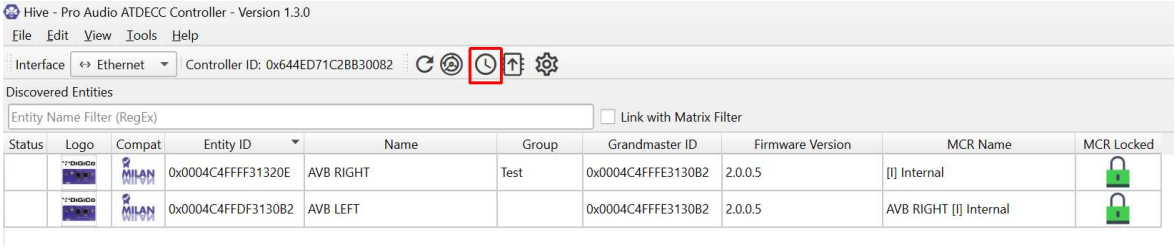


Slave Slot

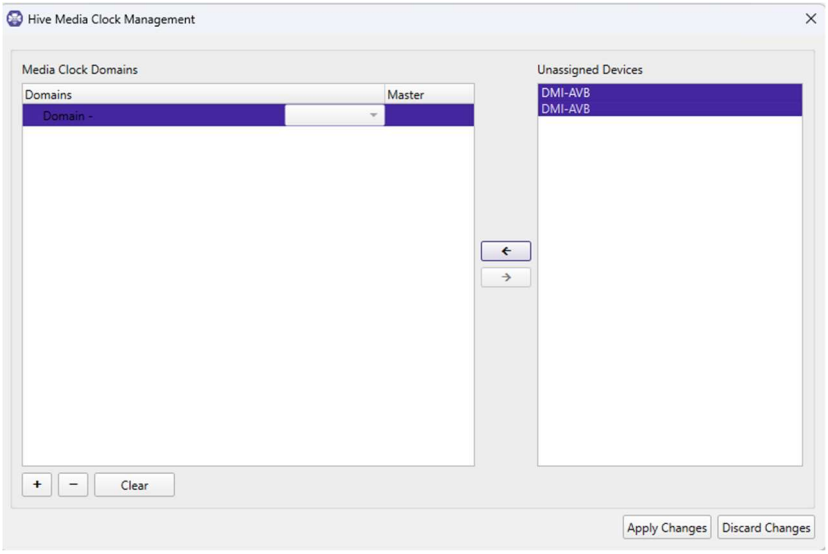


It is possible to set the DMI-AVB card into Mixed mode which allows a 96kHz device to share AVB streams with other devices set to 48kHz, but this will require additional configuration (see **Mixed mode operation** later in this document).

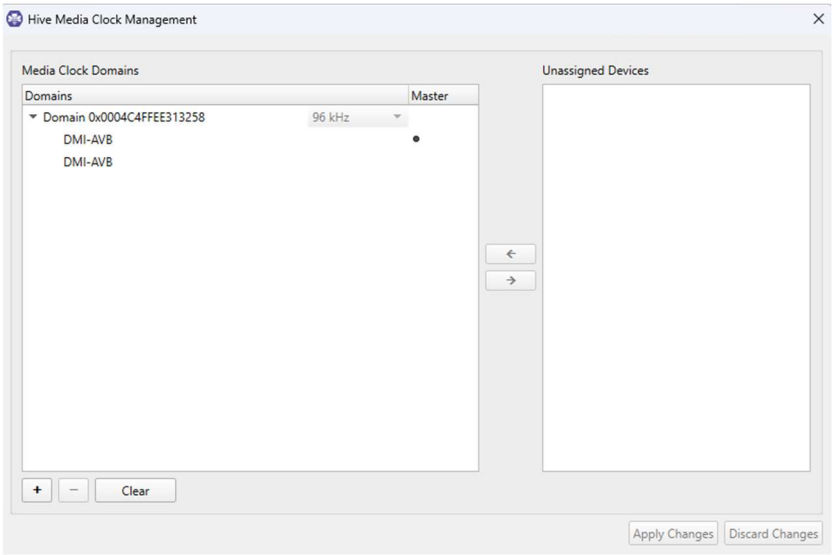
7. Click on the clock icon in the Hive controller to setup the audio sync mastership.



8. Click on + and select the Domain and the two unassigned devices while keeping the shift key pressed:

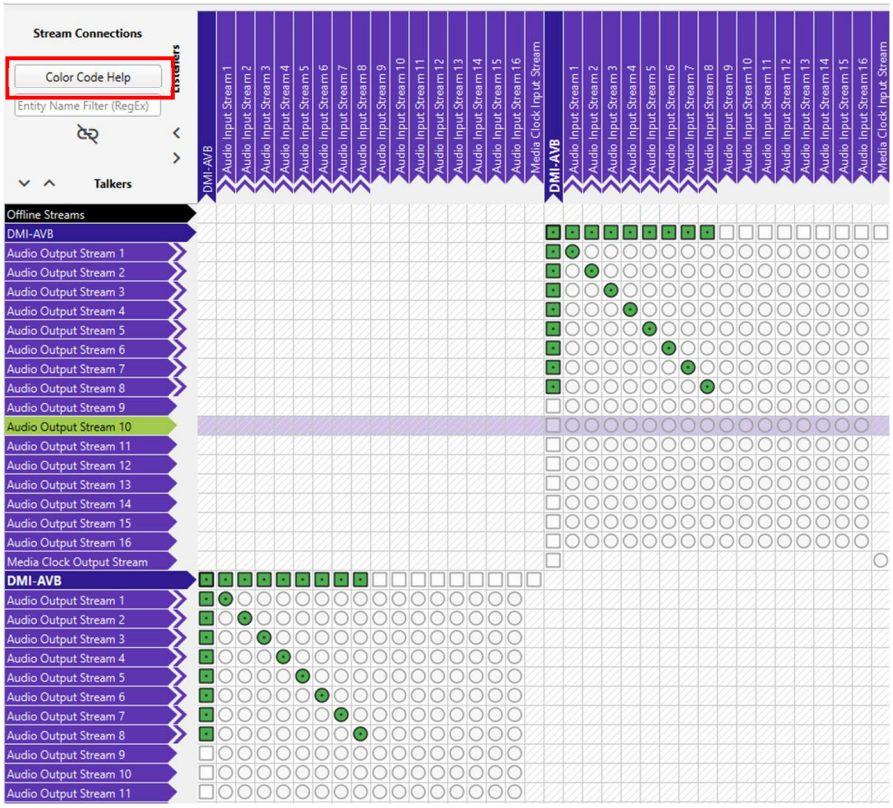


9. Use the left arrow and press Apply changes:



The cards are now setup.

10. To route audio from one device to another, use the check boxes in the grid. In the example below you will see the first 8 output (Talker) streams of one DMI card routed to first 8 input (Listener) streams of the other DMI card and vice versa

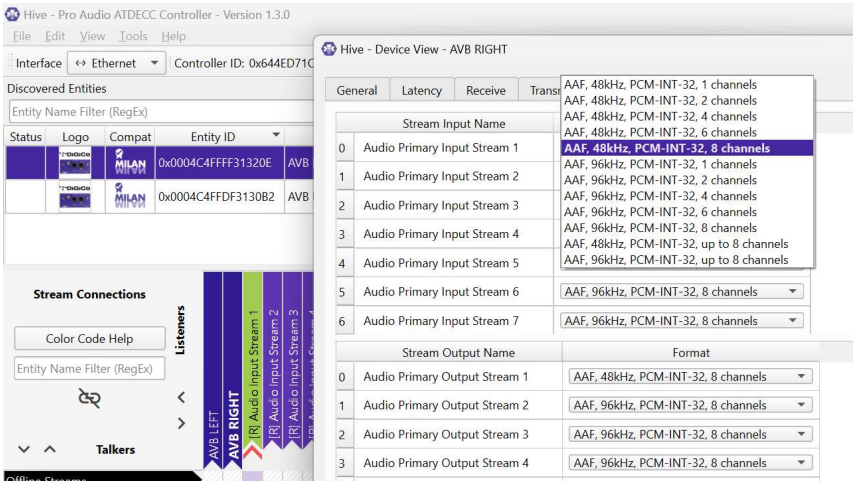


11. Check that each of the streams has a black dot within a green circle as above. If this is not the case, there is possibly a configuration issue. The **Colour Code Help** button will display a key related to the different icon colours and their meanings.

Mixed Mode operation

If a DMI-AVB card is set to Mixed Mode in a host device (e.g. console) which must run at 96Khz, it is then capable of sharing AVB audio streams with other devices running at 48KHz.
In this situation, the format of the streams routing to/from the Mixed Mode device to the 48KHz device must be changed accordingly.
In Hive, double click on the listed Mixed Mode device to display its detailed settings an select the **Stream Format** tab.
Each Input and Output Stream will typically be set to AAF, PCM-INT-32, 8 channel format either at 48KHz or 96KHz and for a Mixed Mode device both sample rates will be available in the drop-down menu.
Select 48KHz for any streams that are intended to be connected to a device running at 48KHz.

Note that Milan Manager does not offer access to this Stream Format information.



Redundant setup

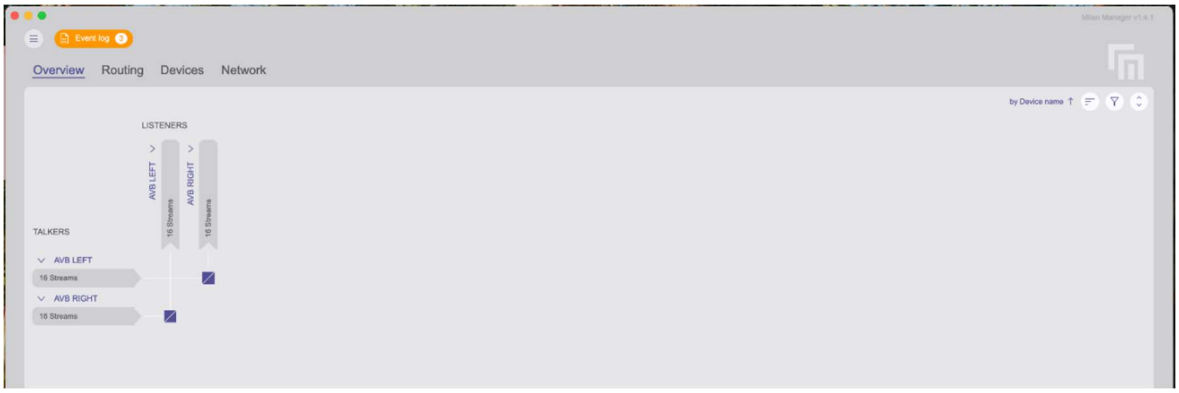
To configure a redundant setup:

1. Connect Secondary ports together or to another AVB switch.
2. On the console, go to AUDIO I/O > AVB Card > AVB Control.
3. Select Redundant Mode.
4. In Milan Manager > Overview, the top left corner of the square is your primary AVB network, the bottom right corner is your secondary network. (see images below).

Milan Manager

The recommended AVB Controller software application for general use is Milan Manager and this provides very similar functionality to the Hive software referenced above. It has a very simple layout and the tabs provide access to an overview of the system, device management and routing options.

Overview



Milan Manager Devices

Milan Manager Routing