



USER MANUAL FOR AE-6703 AES67/AES3 32x32 CHANNEL BIDIRECTIONAL CONVERTER

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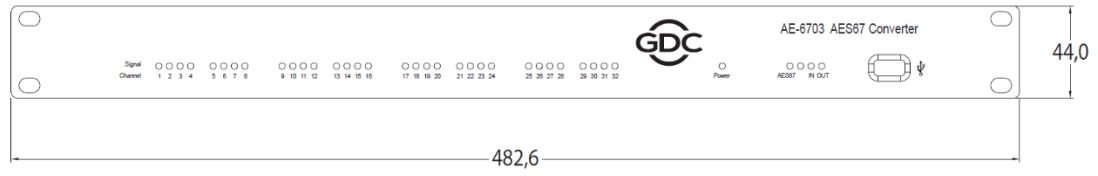
1 PRODUCT OVERVIEW

The **GDC AE-6703** is a bidirectional converter capable of converting 32 channels of audio in each direction concurrently (total of 64 channel processing). It allows 32 channels of AES3 audio input to be transmitted as AES67 network audio while at the same time allowing another 32 channels of AES67 network audio input to be output as AES3 audio.

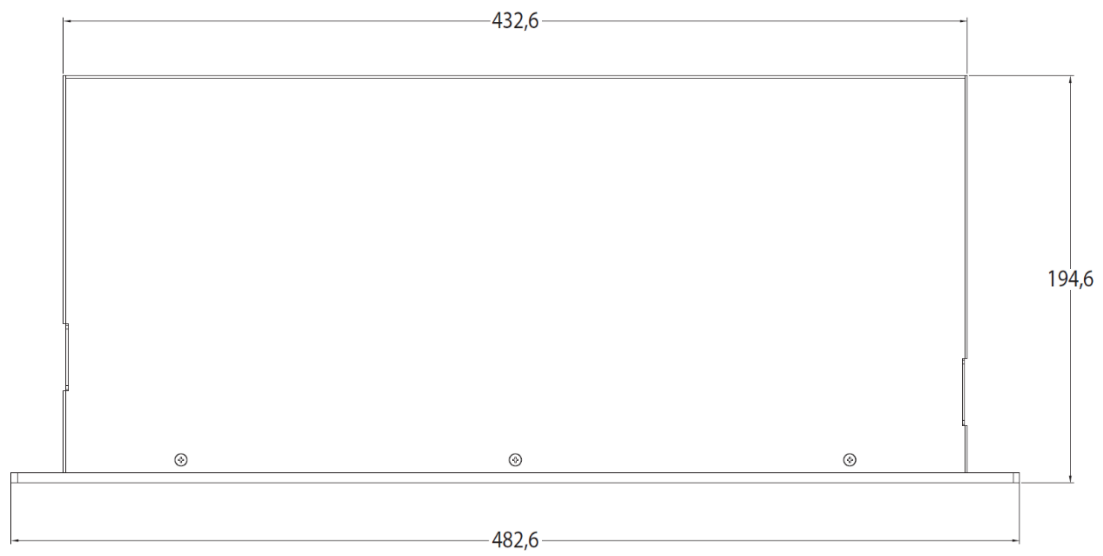
The AE-6703 AES67 Converter operates in the multicast mode based on the AES67 standard, so it can communicate with related devices. The AE-6703 can be configured according to the user's requirements via the supplied software application. The external interface of the device is AES3, which is used to connect AES3 input and output devices.

2 PRODUCT DIMENSIONS

Front View



Top View



Unit (mm)

Figure 1: Dimensions of AE-6703 Unit

3 PRODUCT SPECIFICATIONS

AES3 Input Voltage	2-7Vp-p
AES3 Impedance	110 Ohm balanced
Number of Audio Channels	32 x 32
AES67 Sample Rate	48K
Maximum Input/Output	0 dBFS
AES3 Input Sample Rate	44.1K, 48K, 88.2K, 96K
AES3 Output Sample Rate	48K
AES3 Output Voltage	3.3V p-p
AES3 Input Port	4 x RJ-45
AES3 Output Port	4 x RJ-45
AES67 In/Out Port	2 x RJ-45
Mains Plug	C14
Main Input Voltage	DC 12V, 1.0A, Max. 50 - 60Hz
Maximum Power Consumption	12W
Dimensions (WxHxD)	483 x 44 x 195 mm (1U)
Shipping Dimensions (WxHxD)	545 x 140 x 275 mm
Net Weight	3.2 KG
Shipping Weight	3.5 KG

Table 1

4 PACKING LIST

The AE-6703 AES67 Converter package consists of the components listed under **Table 2**.




Sr. No.	Part Description	Photo	Quantity
①	AE-6703 AES67 Converter unit		1 PCS.
②	Power Adapter#		1 PCS.
③	Power Cable		1 PCS.

Table 2

Refer to Section 4.1 for power adapter specifications

4.1 Power Adapter Specifications



Figure 2: AE-6703 Power Adapter

Adapter Input	AC 100V – 240V, 1.0A, Max. 50 – 60Hz
Adapter Output	DC 12V, 5.417A, Max 65W

Table 3

5 FRONT AND REAR PANEL DESCRIPTION

5.1 Front Panel



Figure 3: AE-6703 Front Panel Indicators

① → **32-Channel Audio Signal Indicator**

From left to right are the 1 to 32 channel audio signal indications, indicating whether the channel has audio signal input or output. By default, the factory setting is output indication. For more details on modifying the audio signal indicators, please refer to **Section 13.2**.

② → **Operating Status Indicator (Power)**

After the device self-test is normal, the light keeps flashing, indicating that the device is running normally.

③ → **Audio Data Reception Indicator (AES67)**

After the receive route is configured, this indicator lights up, indicating that the received audio data from AES67 is normal.

④ → **Error Indicator (!)**

When the device is operating normally, this indicator is not lit. It is lit whenever an error occurs.

⑤ → **Input Status Indicator (IN)**

This indicator is lit when the audio signal light is configured for AES3 input indication.

⑥ → **Output Status Indicator (OUT)**

This indicator is lit when the audio signal light is configured for AES3 output indication.

⑦ → **Debug Serial Port**

It is only used for engineering debugging and not used during normal operation.

5.2 Back Panel

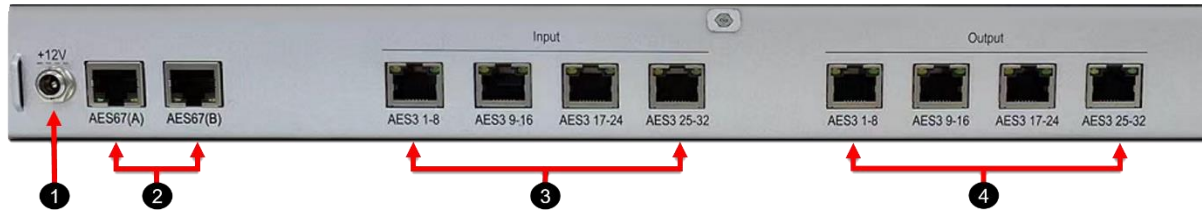


Figure 4: AE-6703 Back Panel Connectors

① → **DC 12V Power Interface (positive inside and negative outside)**

For safety, use only the supplied power adapter.

② → **Network Interface AES67(A) and AES67(B)**

When connecting a switch, users can only use one of the interfaces and cannot connect two interfaces to the same switch.

③ → **Four sets of AES3 Input Interfaces (Input)**

The interface is in the form of RJ-45 and each interface corresponds to eight input channels. There is an indicator light on each side of the interface. The left light indicates whether the first four channels have input signals and the right light indicates whether the last four channels have input signals. As long as any one of them has a signal, the corresponding indicator light will light up.

④ → **Four sets of AES3 Output Interfaces (Output)**

The form and indicator light distribution of the output interface are the same as those of the input interface. When the indicator at the corresponding position is lit, it means that the corresponding four channels have output signals.

6 ETHERNET/ AES3 WIRE CONNECTION

- **Network Connection:** AES6703 uses a standard gigabit network interface. Please use a Gigabit Switch and a network cable to connect the equipment, please refer to **T568B** for the interface standard.
- **AES3 Digital Connection:** When AE-6703 is connected to AES3 input/output device, use a good quality shielded Category 6 network cable. The interface standard is **T568B** and the corresponding relationship between the four pairs and the channel is as follows:
 - **Pair 1** corresponds to **channel 1-2**
 - **Pair 2** corresponds to **channel 3-4**
 - **Pair 3** corresponds to **channel 5-6**
 - **Pair 4** corresponds to **channel 7-8**

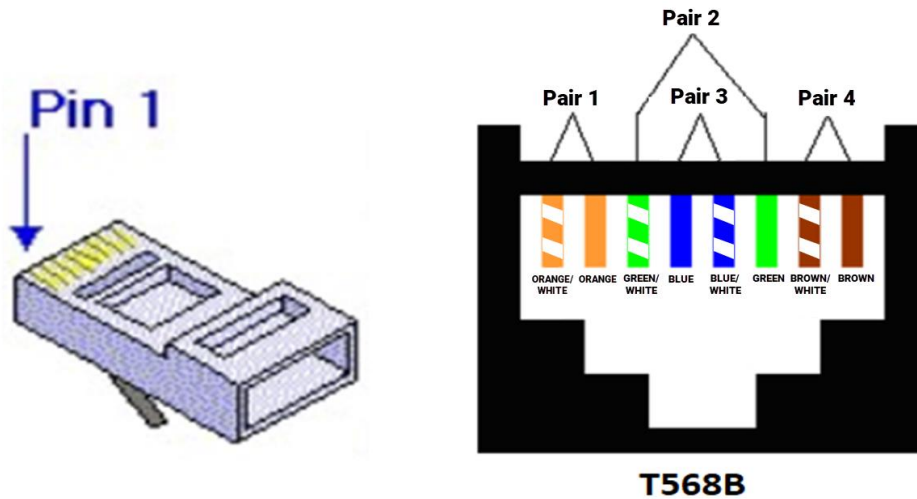


Figure 5: AES3 Connection

NOTE: For details regarding the AES3 connections on the SR-1000 Extreme-24 IMB; please refer to the '[GDC SR-1000 Installation Manual](#)'.

7 SAFETY INSTRUCTIONS

Explanation of Graphical Symbols:



The triangle with the lightning bolt is used to alert the user to the risk of electric shock.



The triangle with the exclamation point is used to alert the user to important operating or maintenance instructions.



The CE-mark indicates compliance with low voltage and electromagnetic compatibility.



Symbol for earth/ground connection.



Symbol indicating that the equipment is for indoor use only.



Symbol for conformity with Directive 2002/96/EC and Directive 2003/108/EC of the European Parliament on waste electrical and electronic equipment (WEEE).



WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT ATTEMPT TO OPEN ANY PART OF THE UNIT. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



TO COMPLETELY DISCONNECT THIS APPARATUS FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE.



THE MAINS PLUG OF THE POWER SUPPLY CORD MUST REMAIN READILY ACCESSIBLE.



DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE, DRIPPING OR SPLASHING LIQUIDS. OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THIS APPARATUS.



WHEN THE UNIT IS INSTALLED IN RACK CABINET OR A SHELF, MAKE SURE THAT IT HAS SUFFICIENT SPACE ON ALL SIDES TO ALLOW FOR PROPER VENTILATION (50 CM FROM THE FRONT AND REAR VENTILATION OPENINGS).



CONNECTIONS TO THE MAINS SHALL BE DONE ONLY BY AN ELECTROTECHNICALLY SKILLED PERSON ACCORDING TO THE NATIONAL REQUIREMENTS OF THE COUNTRIES WHERE THE UNIT IS SOLD.



IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions carefully.
2. Do not use this equipment near water.
3. Clean only with a dry cloth.
4. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
5. Do not use near heat sources such as stoves, heat registers, radiators or other equipment (including amplifiers) that produces heat.
6. Do not use the unit near open fire sources.
7. Connect the unit only to the electric network with grounding. Use only electric plugs that provide grounding.
8. Protect the power cord from being walked on, pinched or otherwise damaged.
9. Use only accessories specified by the manufacturer.
10. Unplug this unit during lightning storms or when unused for long periods.
11. Refer all servicing to qualified service personnel. Servicing is required when the system has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the unit, the unit has been exposed to rain or moisture, does not operate normally or has been dropped.
12. **WARNING** - TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS SYSTEM UNIT TO RAIN OR MOISTURE.

THIS UNIT CONTAINS POTENTIALLY LETHAL VOLTAGES. TO PREVENT ELECTRIC SHOCK OR HAZARD, DO NOT REMOVE THE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

INSTALLING OF THIS UNIT MUST BE PERFORMED ONLY BY QUALIFIED TRAINED PERSONNEL FOLLOWING APPLICABLE SAFETY RULES. DO NOT ALLOW INSTALLING OF THIS UNIT IF INSTALLATION HARDWARE IS BROKEN, BENT, PARTS ARE MISSING OR IS OTHERWISE DAMAGED.

8 REGULATORY INFORMATION

FCC COMPLIANCE STATEMENT

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

9 ROUTING DIAGRAM AND TYPICAL APPLICATION

The below example consists of an SR-1000 Extreme-24 IMB, AE-6703, Q-SYS Core, DAC-2824 and network or analog amplifiers. In this example; the 24 channels of AES3 audio from the SR-1000 Extreme-24 are transmitted to the Q-SYS Core for audio processing via the AE-6703. The processed audio from the Q-SYS Core is then transmitted back via the AE-6703 to a Digital-to-Analog Converter (DAC-2824) and then to analog Amplifiers OR directly from the Q-SYS Core to the network amplifiers that accept AES67 inputs.

Figure 6 illustrates the routing diagram for the AE-6703. The AES3 output device (SR-1000 Extreme-24) is connected to the AES3 input interface of the AE-6703 and it can transmit its own audio signal to other AES67 devices on the network through the network.

The DAC or other AES3 receiving device is connected to the AES3 output interface of the AE-6703, which can receive digital audio signals transmitted by the network.

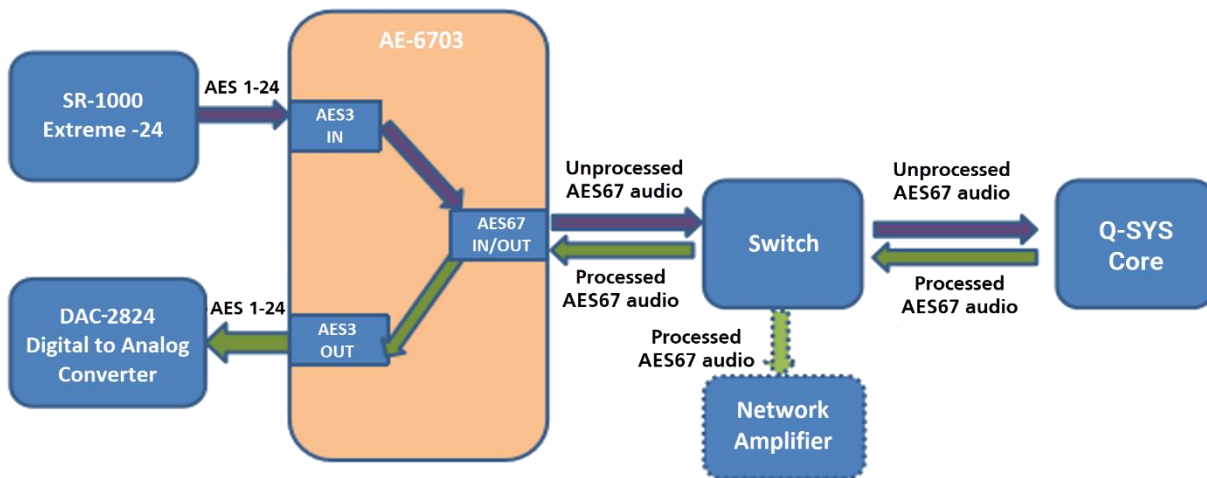


Figure 6: Routing Diagram for AE-6703

Figure 7 depicts the typical connection method for the AE-6703 with the SR-1000 Extreme-24 IMB.

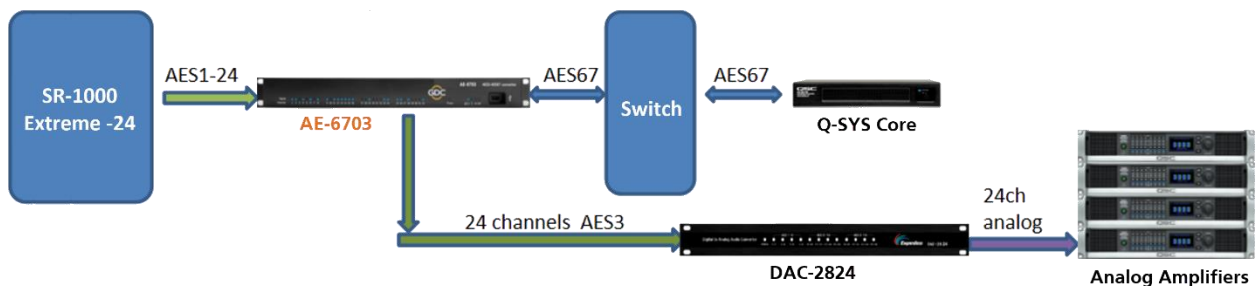


Figure 7: AE-6703 Typical Application

10 INSTALLATION AND CONFIGURATION

10.1 Device List

Sr. No.	Device Name	Photo	Quantity
①	GDC SR-1000 Extreme-24		1 PCS.
②	GDC AE-6703		1 PCS.
③	Q-SYS Core		1 PCS.
④	Gigabit Network Switch		2 PCS.
⑤	GDC DAC-2824		1 PCS.
⑥	RJ-45 AES Audio Cable		6 PCS.
⑦	Network Cable		4 PCS.

Table 4

10.2 Network Connection

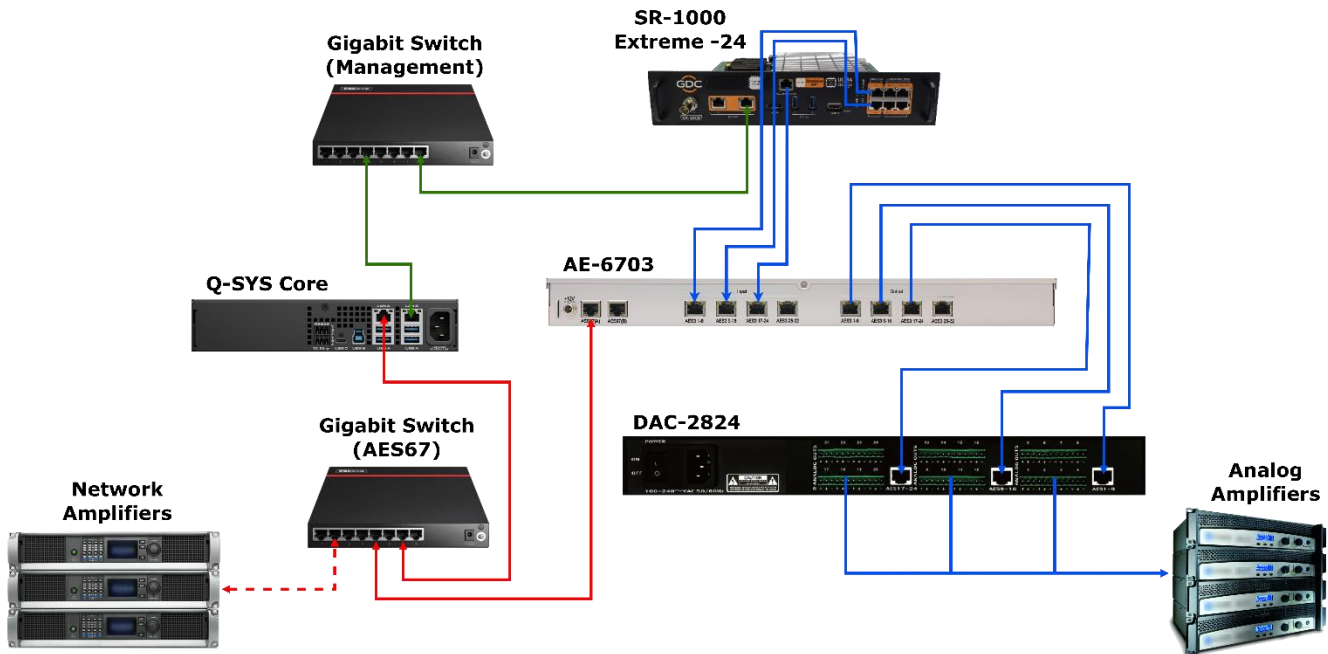


Figure 8: Network Connection Diagram for AE-6703

The wiring scheme may vary slightly depending on the Cinema's network configuration.

NOTE: Ensure that the AES67 network (marked in Red) and the Management network (marked in Green) should be on different subnets. Additionally, the **AES67(B)** port on the AE-6703 should not be used.

Furthermore, the **IMB Ethernet 2** on SR-1000 Extreme-24 should be on the Management network and not on the AES67 network. This means that it should be on a different subnet than the **LAN A** port of the Q-SYS Core and **AES67(A)** port of AE-6703.

10.3 Software required for AE-6703 Configuration

The AE-6703 device uses the **AudioGridController** software (latest version V3.3.3) to route audio signals, assign the device IP address, set clock and create multicast flows. The provided AudioGridController file needs to be renamed as “AudioGridController.exe” (please contact GDC for the AudioGridController software file). Once renamed, double-click on this file in order to open the AudioGridController interface on your Laptop/PC.

You would also require the **FirmwareUpgrade** tool to upgrade the firmware of the AE-6703 device (please contact GDC for the FirmwareUpgrade tool).

Additionally, it is recommended to download third-party application such as **Wireshark** software for network troubleshooting. This application can be downloaded free of cost.

NOTE: The “AudioGridController.exe” file can be opened on a Laptop/PC running Microsoft Windows 7/ Windows 10/ Windows 11 Operating System only.

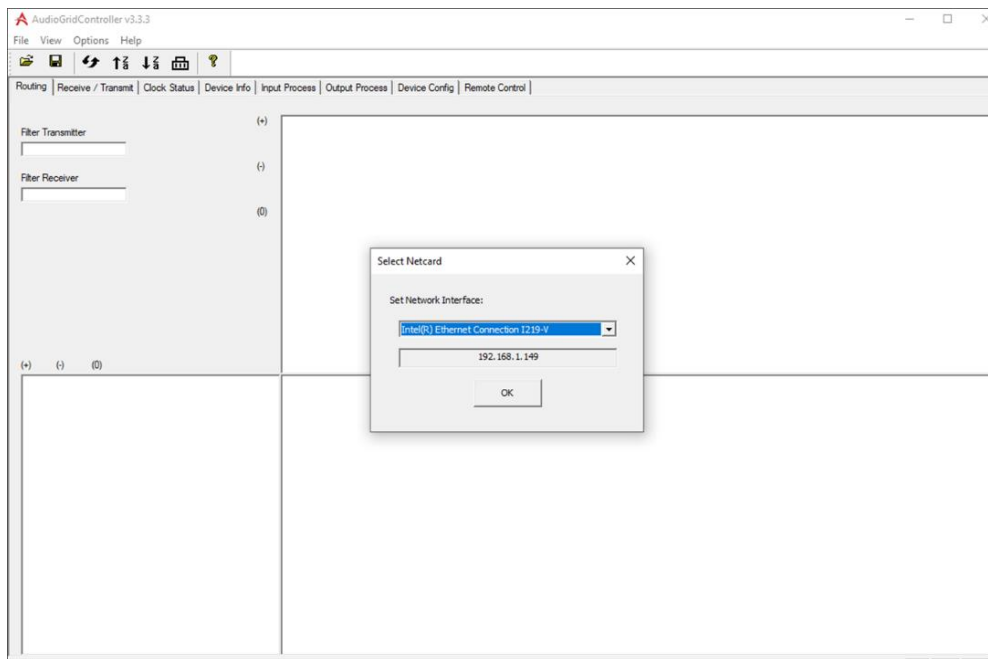


Figure 9: AudioGridController Software

10.4 Configuring the IP Address for AE-6703

WARNING: Since this step requires the device to be rebooted; please complete this step before powering-up the DAC or Amplifier in order to avoid hearing the reboot shock from the speakers.

In order to modify the IP Address of the AE-6703 device, make sure the network interface IPs of your Laptop/PC are set as follows:

- Change the 'IP Address' to "169.254. xx. xx".
- Change the 'Subnet mask' to "255.255.0.0".

Run the AudioGridController software. When the software is run for the first time, the network settings window will automatically be shown (as shown in **Figure 10**). Select the network interface card which is connected to the audio network. You also can re-select the network interface card using the **Options → choose netcard interface** option.

Once done, restart the AudioGridController software.

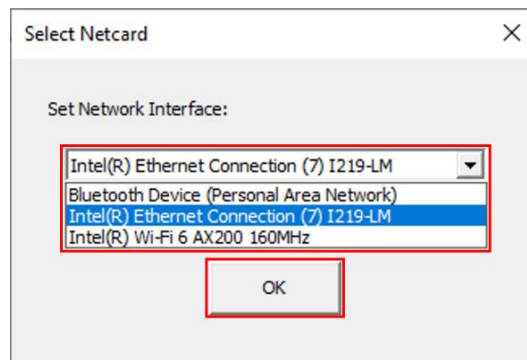


Figure 10: Select Network Interface

NOTE: In case you are unable to select any device in this drop-down list; click on the **Device Info** sub-tab and check if any 'Unknown Device' is listed (refer to **Figure 11**). Confirm that the IP Address of your Laptop/PC and the IP Address of this 'Unknown Device' belong to the same subnet (For example; as shown in **Figure 11**, it should be 169.254.xx.xx).

If you cannot see any 'Unknown Device' either, please make sure you select the correct network interface card and check the connection with AE-6703.)

...	Device Name	Model Name	Model	FPGA Version	MCU Version	IP Address	MAC/AES67 IP:Port	Tx(mb...	Rx(mb...	LinkSpeed
1	Unknown Device					169.254.125.43	00-AC-09-64-7E-2B			
2	AES67-TX-1					192.168.2.20	233.254.113.0:5004	9.6		
3	AES67-TX-2					192.168.2.20	233.254.113.1:5004	9.6		
4	AES67-TX-4					192.168.2.20	233.254.113.3:5004	9.6		
5	AES67-TX-3					192.168.2.20	233.254.113.2:5004	9.6		

Figure 11: Check Device info sub-tab

IMPORTANT: Before proceeding with the IP configuration, check the ‘Device Info’ tab and ensure that the AE-6703 device is on the latest firmware build (as of this document, the latest firmware versions have been highlighted in **Figure 12**). If not, then use the Firmware Upgrade tool to upgrade the device firmware (refer to **Section 13.1** for detailed instructions regarding the upgrade procedure).

No	Device Name	Model Name	Model	FPGA Version	MCU Version	IP Address	MAC/AES67 IP:Port
1	GDC-a203-6a20	A203R32T32		0.23.2.21	0.23.2.26		
2	AES67_AES67-TX-2	AES67					
3	AES67_AES67-TX-3	AES67					
4	AES67_AES67-TX-4	AES67					
5	AES67_AES67-TX-1	AES67					
6	AES67_GDC-a203-6a20:32	AES67					
7	AES67_GDC-a203-6a20:31	AES67					
8	AES67_GDC-a203-6a20:30	AES67					
9	AES67_GDC-a203-6a20:29	AES67					

Figure 12: Check Firmware Versions

As shown in **Figure 13**, click on the **Device Config** sub-tab. Select the device ‘GDC-a203-662d’ from the **Choose device** drop-down list. To rename the selected AE-6703 device, mention the new name under the ‘Device Name’ section and then click the **Apply** button.

Figure 13: Modify IP Address

To prevent the AE-6703 device from competing with other devices on the network for the status of the Master Clock, you need to put it in 'Slave Only' mode. To do so, click on the 'Clock Status' tab and double-click on the blank area (marked by the Red dotted lines in **Figure 14**) under the 'Slave Only' column against the AE-6703 device in question.

No	Device Name	IP Address	Sync	Mute	PTP v1 Status	PTP v2 Status	Preferred Master	Slave Only
1	GDC-a203-6a20	192.168.0.50	■		Slave	Slave		SO

Figure 14: Clock Status

Under the **Network Config** section, select the **Manually configure an IP address** option and update the **IP Address** and **Subnet Mask** values as per the cinema network. Click the **Apply** button and then click the **Reboot** button. The AE-6703 device will automatically restart to complete the IP modification process.

Once the IP Address of the AE-6703 device has been modified, ensure that the network interfaces for the Q-SYS Core, AE-6703 and SR-1000 Extreme-24 IMB are configured such that they belong to the same subnet (in this example, 192.168.0.xx) as your Laptop/PC.

The figure consists of four screenshots showing network configuration for different devices:

- SR-1000 Extreme-24:** Network Configuration section. IMB Ethernet 2: IP Address: 192.168.0.12, Subnet Mask: 255.255.255.0.
- QSC Core Nano:** LAN A section. IP Address: 192.168.0.20, Net Mask: 255.255.255.0.
- Laptop/PC:** IP address: 192.168.0.199, Subnet mask: 255.255.255.0.
- AE-6703:** Network Config section. Manually configure an IP address. IP Address: 192.168.0.50, Subnet Mask: 255.255.255.0.

Figure 15: Configure Network Interfaces for other devices

11 CONFIGURING AES67 SEND STREAM

When a multicast stream is created by a device that is compatible with this protocol, it periodically sends an SAP/SDP bulletin informing it of the information about the created multicast stream, such as the *multicast address, port, protocol type, sampling frequency, code bits, included channels, and packaging time*.

The parameters used by AE-6703 have 48KHz sampling rate, 24-bit encoding, 1ms packetization time and a single multicast stream contains up to 8 channels.

The AudioGridController software is required to operate the AE-6703 device. This section provides a brief description of the main content of the operation.

11.1 Create AES67 Output Stream (AE-6703)

As shown in **Figure 16**, open the AudioGridController software and select the device that needs to create a multicast stream in the **Choose device** drop-down box under the 'Device Config' tab. Then, click the **Create/Delete** button within the 'Multicast flow' section to open the 'Multicast Flow Manage' interface.

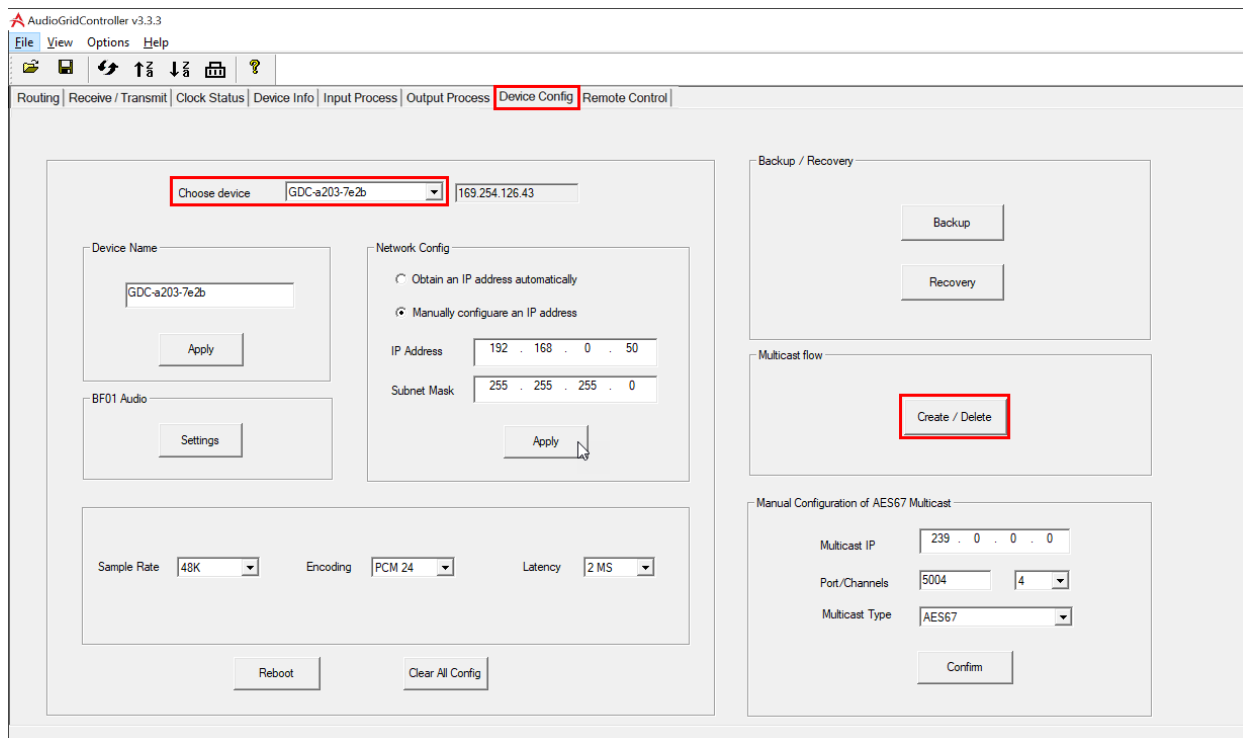


Figure 16: Create AES67 Output Stream on AE-6703

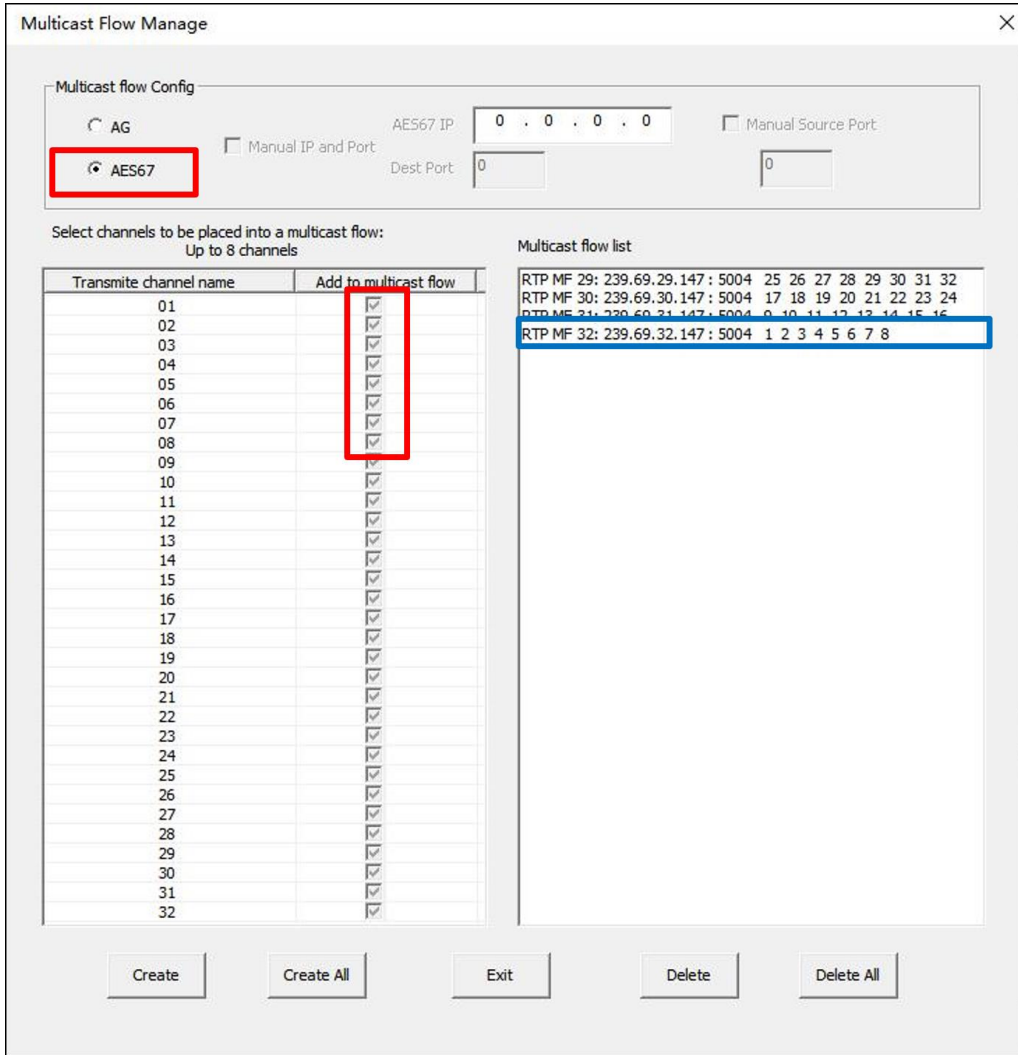


Figure 17: Multicast Flow Config.

As shown in **Figure 17**, a AES67 multicast stream can be created by following the steps mentioned below:

Step 1: Select AES67 type

Under the 'Multicast flow Config' section, select "AES67". Unless the receiving device has special requirements, it is generally not necessary to specify the multicast **AES67 IP** and **Dest port**. When you need to specify related parameters, check **Manual IP and Port** and fill in the specified multicast IP and port.

Step 2: Select the send channel

Under the 'Channel list' on the left below, select the check-box against the channel to be sent. After more than 8 channels, it will automatically prompt that the maximum value has been reached. It is no longer allowed to join, but it can be modified.

Step 3: Create AES67 multicast stream

Click the **Create** button to create an AES67 multicast stream OR click the **Create All** button. It will automatically generate four streams per group of 8 channels.

WARNING: If you use the **Create All** button to create a multicast stream, all multicast streams which have been previously created will be overwritten.

As indicated in **Figure 17**, the 'Multicast flow list' box (highlighted in Blue) displays the information of the multicast stream just created, including the multicast IP, port and the channel it contains. The successfully created multicast streams will also be displayed under the list of sending devices in the **Routing** sub-tab. These streams will be broadcasted and available to any AES67 receiving device on the same network.

11.2 Delete AES67 Output Stream (AE-6703)

As shown in **Figure 17**, all multicast streams created by the device are displayed on the right side under the 'Multicast flow list' box. Click to select the multicast stream to be deleted and then click the **Delete** button OR click the **Delete All** button to delete all multicast streams.

11.3 Create AES67 Output Stream (Q-SYS Core)

Open the **Q-SYS Designer** software and create an AES67 Transmitter (TX) block. Provide the **Name**, set the **Channel Count** to "8" per block and make sure the **Connection Mode** is set to "Auto", as shown in **Figure 18**. It will automatically generate 8 channel AES67 streams named after the TX block. Similarly, you can transmit upto 32 channels to the AE-6703 device (using 4x AES67 TX blocks).

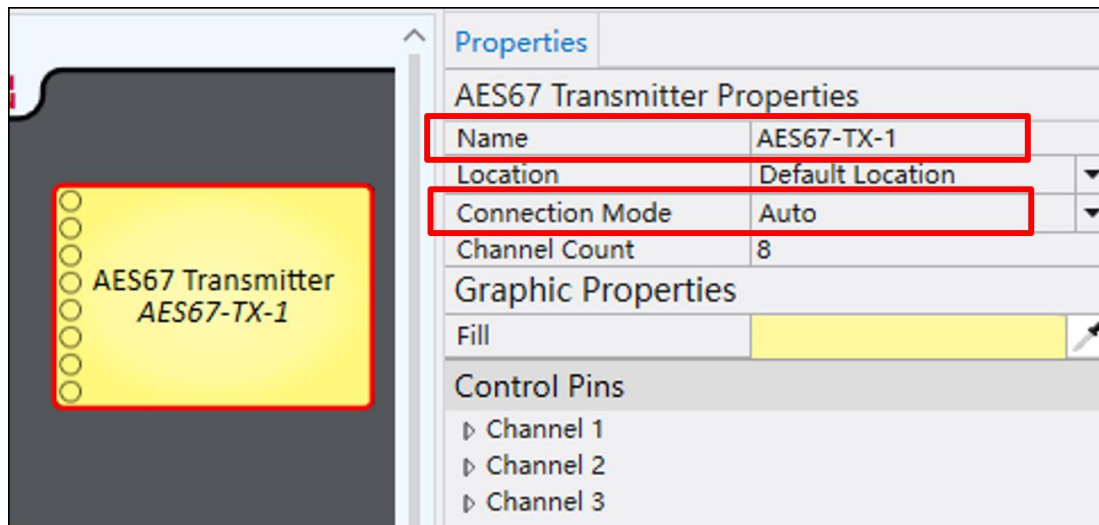




Figure 18: Create AES67 transmitter on Q-SYS Core

12 CONFIGURING AES67 RECEIVE STREAM

Since the maximum interval between SAP/SDP announcements is 30 seconds, some multicast streams may not be displayed when the software is first opened. After 30 seconds, the AES67 multicast streams in the LAN will be displayed on the top of the interface.

To ensure normal reception, please do not create a multicast stream with more than 8 channels.

12.1 AE-6703 receives AES67 Multicast Stream

Open the 'AudioGridController' software. Under the 'Routing' tab, "AES67-TX-1" is the AES67 multicast stream created by Q-SYS Core (which contains 8 channels) and "GDC-a203-662d" is the receiving device, as shown in **Figure 19**. Click on the intersection with the sending channel. When the box turns into a Green  symbol, it means the receiving is successful. Click on the Green  symbol to cancel reception for this channel.

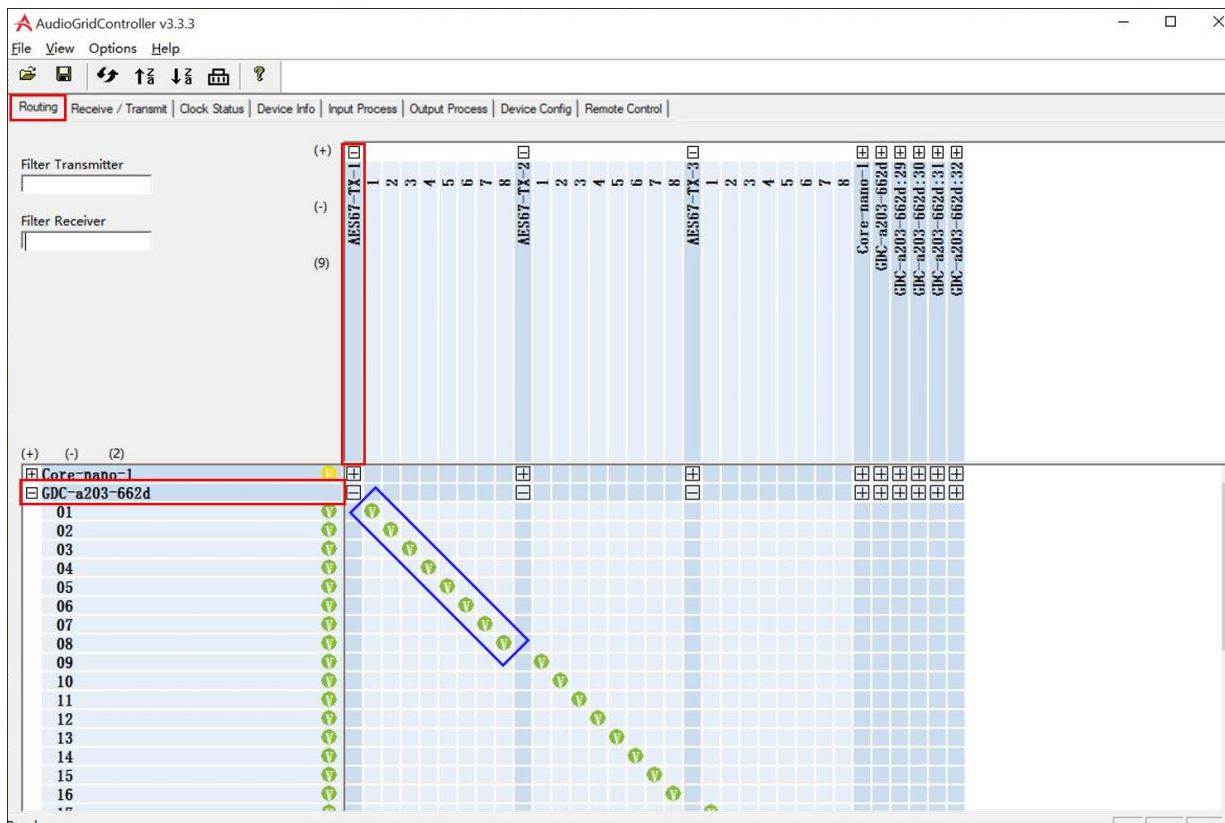


Figure 19: Create AES67 Receive Stream on AE-6703

12.2Q-SYS Core receives Multicast Stream created by AE-6703

Open the **Q-SYS Designer** software and select the corresponding configuration. Press **F5** to go online and double-click 'AES67-Receiver' to open the AES67 multicast receiving interface.

1. Receive Multicast Stream

Click in the box corresponding to Stream Name to open the drop-down list and select the name of the multicast stream to be received. The reception from AE-6703 device is successful when the **Status** button is shown in Green and displays "OK", as shown in **Figure 20**.

WARNING: If the **Status** button is displayed in Yellow, it is generally because the clock cannot be synchronized. Ensure that the AE-6703 device is in 'Slave Only' mode (refer to **Section 10.4**) there is only one master clock in the LAN. Also check whether all network connections, subnets, etc., are correct.

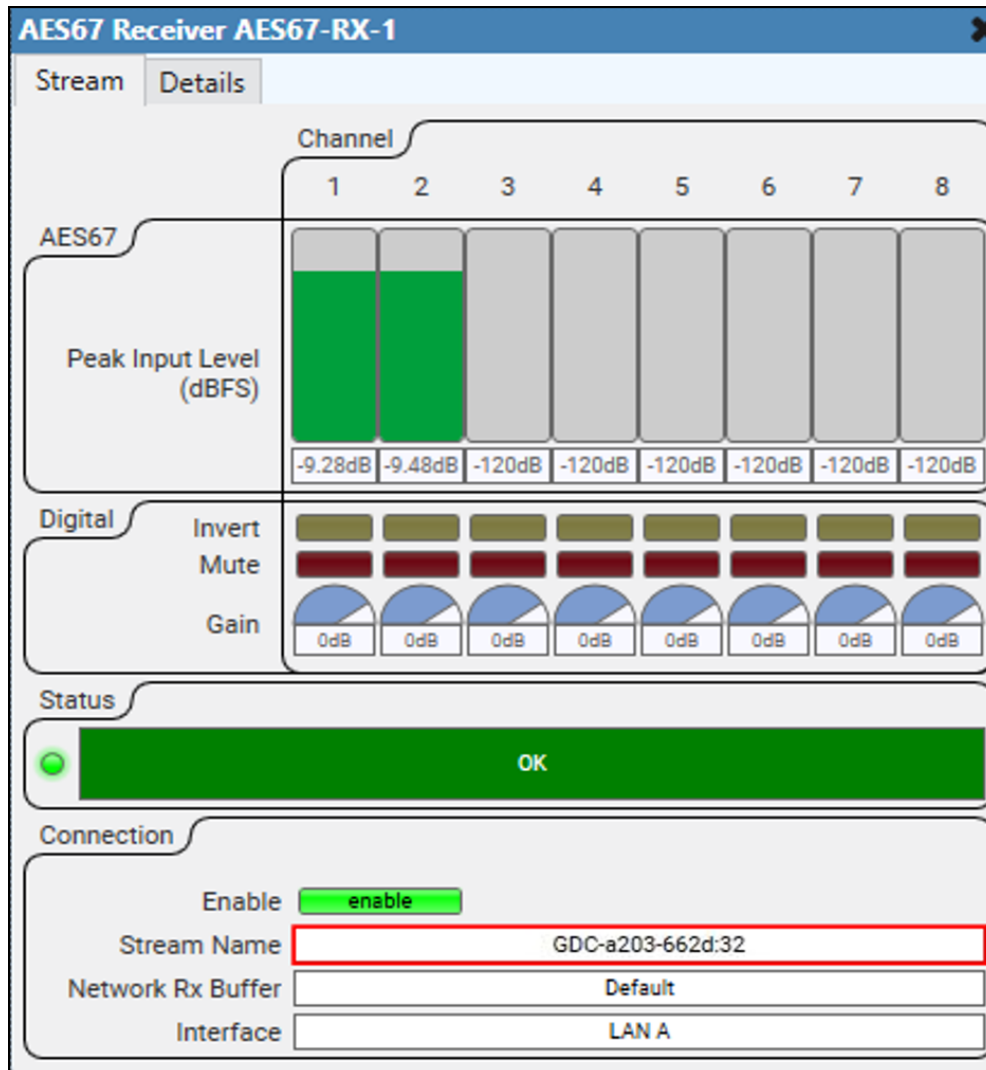


Figure 20: Receive Multicast Stream

2. View Multicast Stream Information

Click the **Details** tab to display the statistics of the received data and the details of the sending stream.

The received data statistics information shows the specific situation of the current received data, including the number of received data packets and the number of discarded, lost, and duplicated data packets.

As shown in **Figure 21**, click on the drop-down list to the right of **Session Name** and select the multicast stream that needs to be viewed in order to display the detailed information of the multicast stream. This includes the *multicast stream ID (SID)*, *originating source IP*, *multicast stream name*, *number of channels included*, *multicast IP*, *sending port*, *protocol number*, *number of encoding bits*, *sampling rate*, etc.

If the receiving device is using manual settings, it can be set according to the above information.

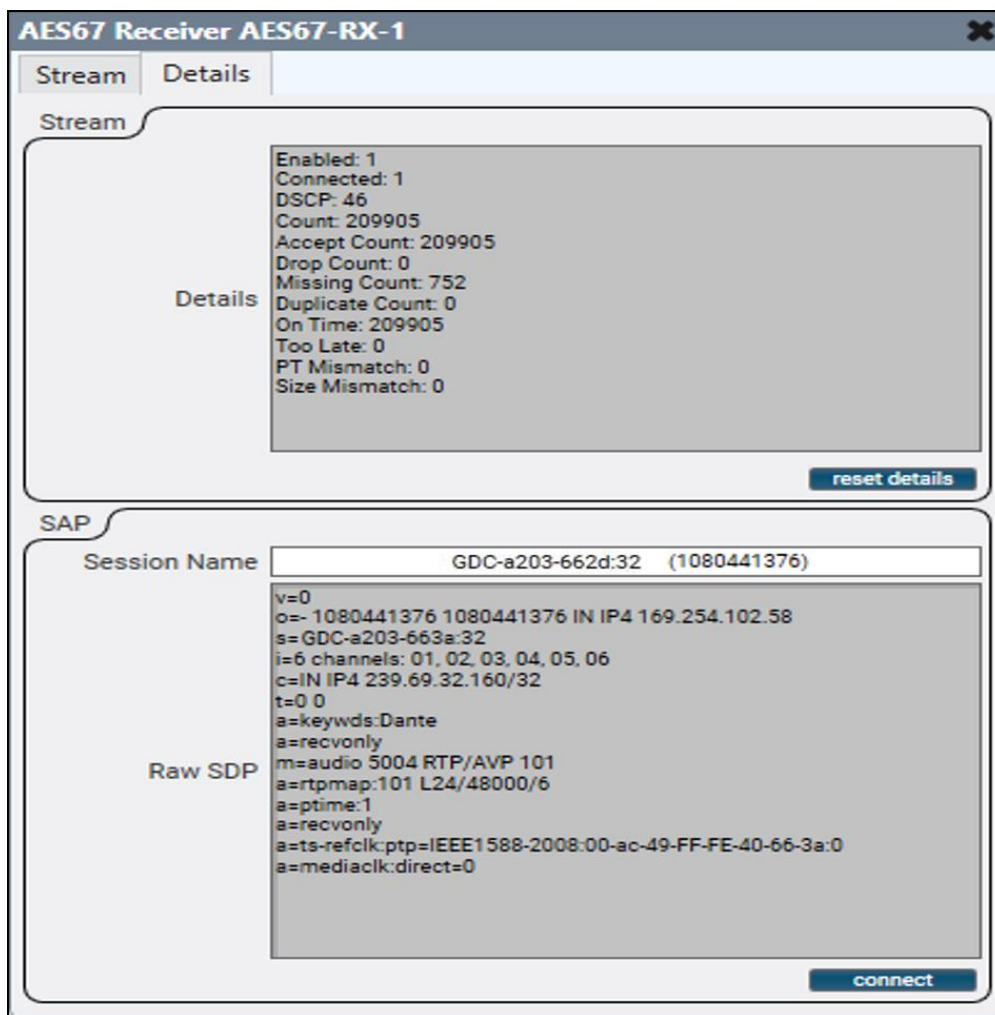


Figure 21: View Multicast Stream Information

13 APPENDIX

13.1 AE-6703 Firmware Version Upgrade Procedure

Step 1: Open the Firmware Upgrade tool (please contact GDC for the Firmware Upgrade tool file) and set the **Local IP** address to the correct IP address of your Laptop/PC. Ensure that the IP address of the AE-6703 device and IP address of your laptop/PC belong to the same network segment.

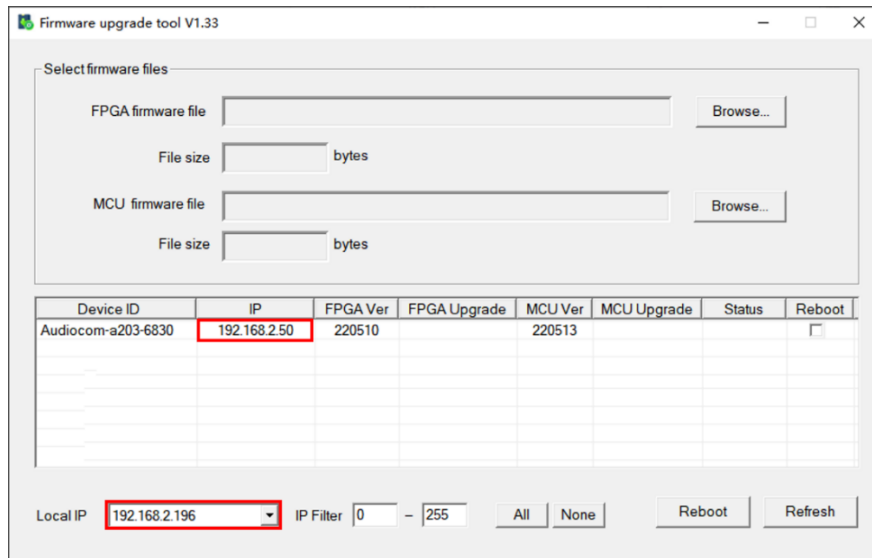


Figure 22: Set Local IP

Step 2: In order to upgrade the FPGA firmware version, select the new FPGA firmware upgrade file (please contact GDC for the FPGA firmware file) by clicking on the **Browse** button alongside the **FPGA firmware file** option.

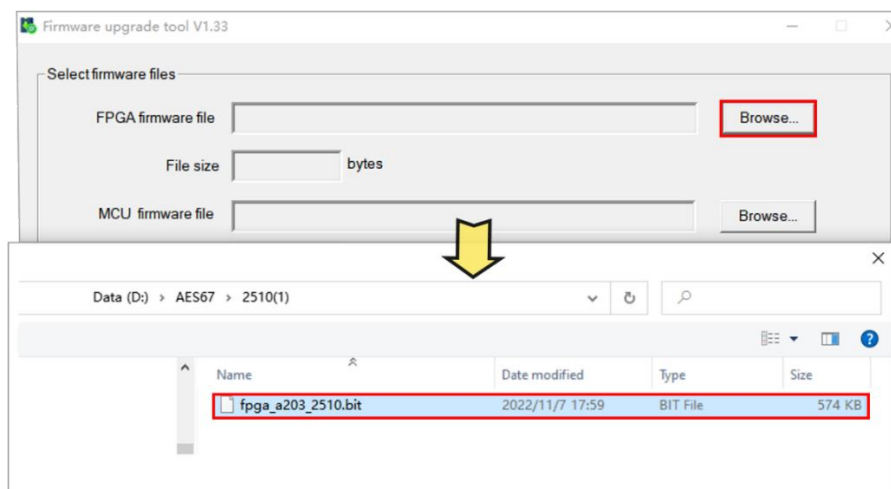


Figure 23: Select firmware version file

Step 3: After selecting the FPGA firmware version file, click on the blank area (marked by the Red dotted lines in **Figure 24**) under the 'FPGA Upgrade' column.

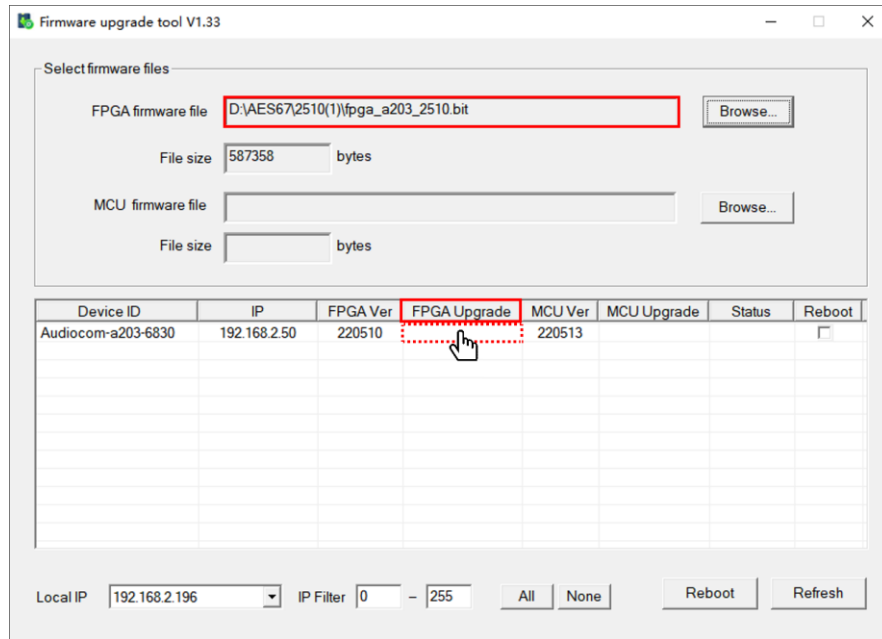


Figure 24: Initiate FPGA firmware upgrade

Step 4: Once the upgrade is complete; the 'FPGA Upgrade' column will display "100%" and the 'Status' column will display "Completed", as shown in **Figure 25**.

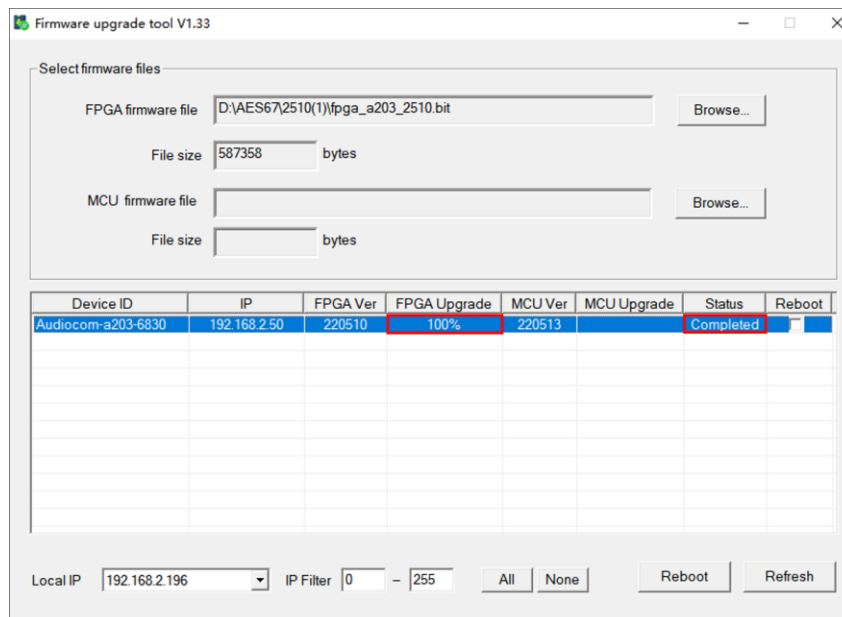


Figure 25: FPGA Upgrade Complete

Step 5: In order to upgrade the MCU firmware version, select the new MCU firmware file (please contact GDC for the MCU firmware file) by clicking on the **Browse** button alongside the **MCU firmware file** option.

Similar to **Steps 3 and 4**, click on the blank area under the 'MCU Upgrade' column to initiate the upgrade and wait until the 'MCU Upgrade' column displays "100%" and the 'Status' column displays "Completed" (as shown in **Figure 26**).

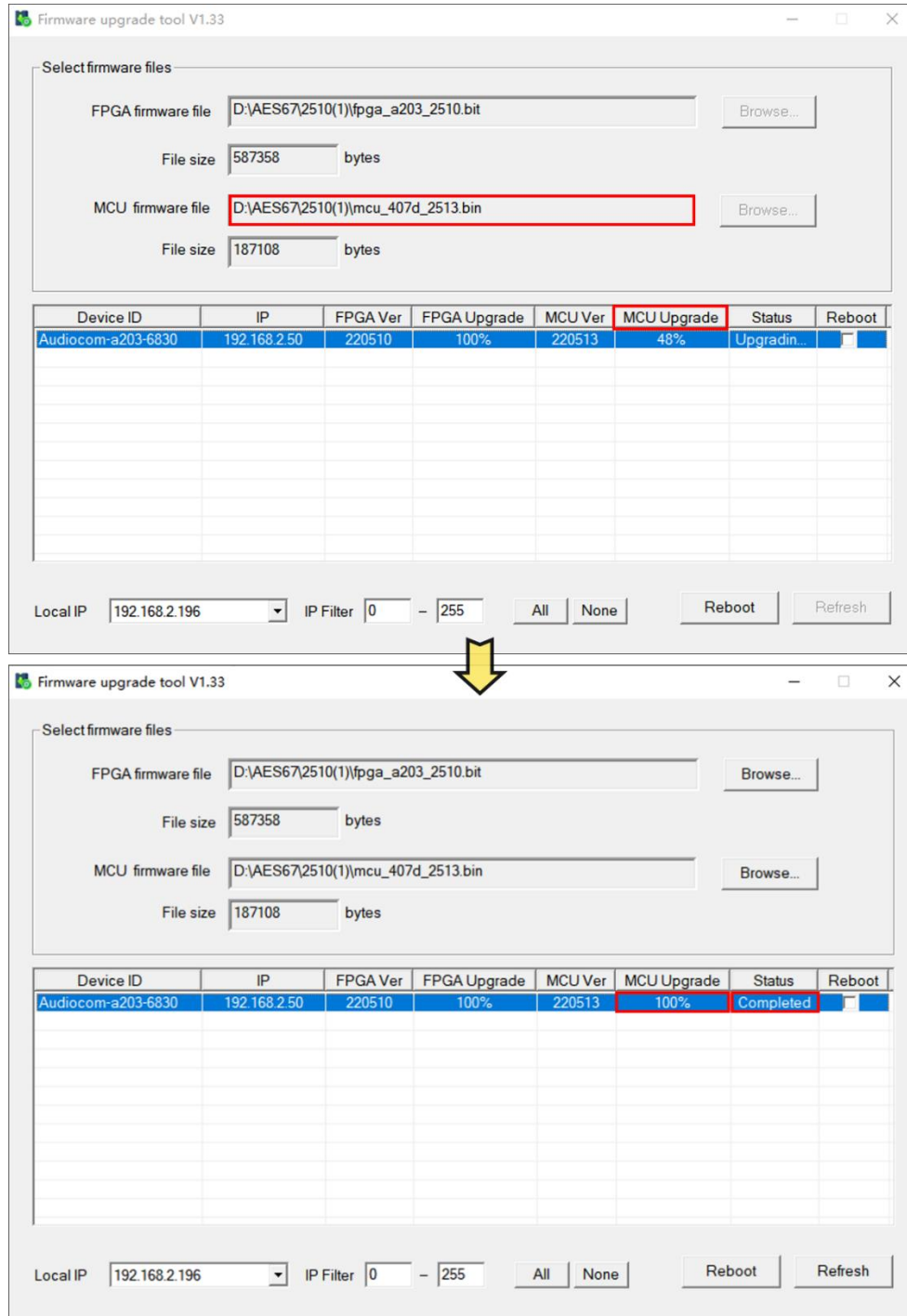


Figure 26: MCU upgrade complete

Step 6: After completing both the FPGA and MCU firmware version upgrades, select the checkbox under the 'Reboot' column and click on the **Reboot** button (as shown in **Figure 27**). Then, switch off and restart the AE-6703 device.

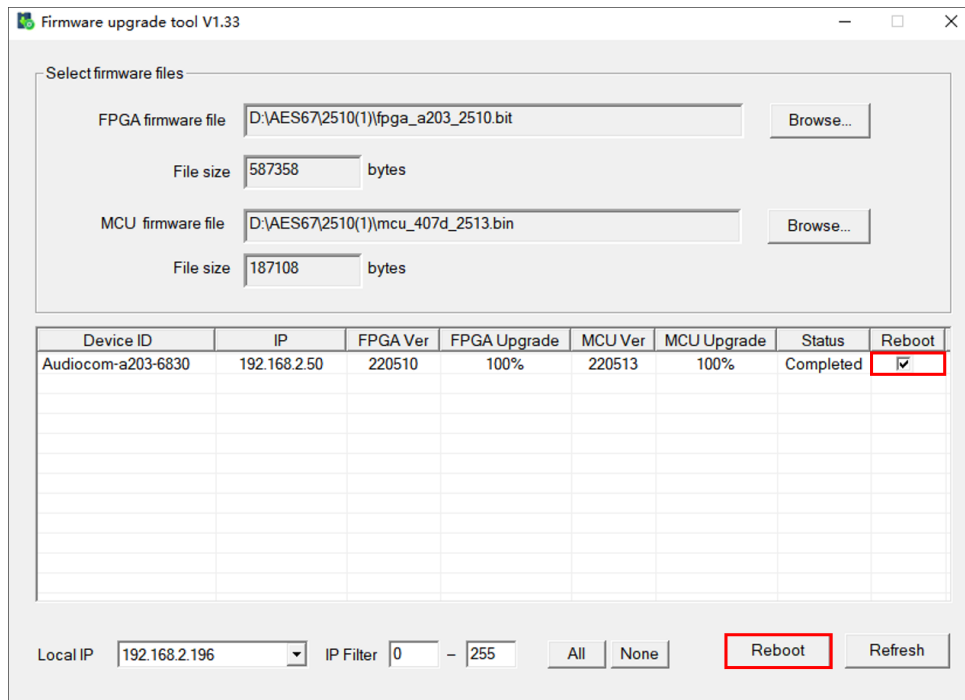


Figure 27 : Reboot device

13.2 AE-6703 Input/Output LED Indicator Switch

The 'AudioGridController' software version 1.51 or later supports the modification of audio signal indicator display mode and threshold value. As shown in **Figure 28**, select the AE-6703 device from the **Choose device** drop-down box within the 'Remote Control' tab. Under the 'AE6703 LED Indicator' section, you can then select the type of audio signal (**Input** or **Output**) which the front panel LEDs should indicate.

You can also set a **Threshold** value here. If the level of the audio signal exceeds the set threshold value, the LED indicator will turn ON. The threshold value can range from -120dB to 0dB, which means this field will only accept an integer value between "0" and "120" (the negative sign is already present). By default, the **Threshold** value is set to -40dB. The larger the value, the smaller the threshold.

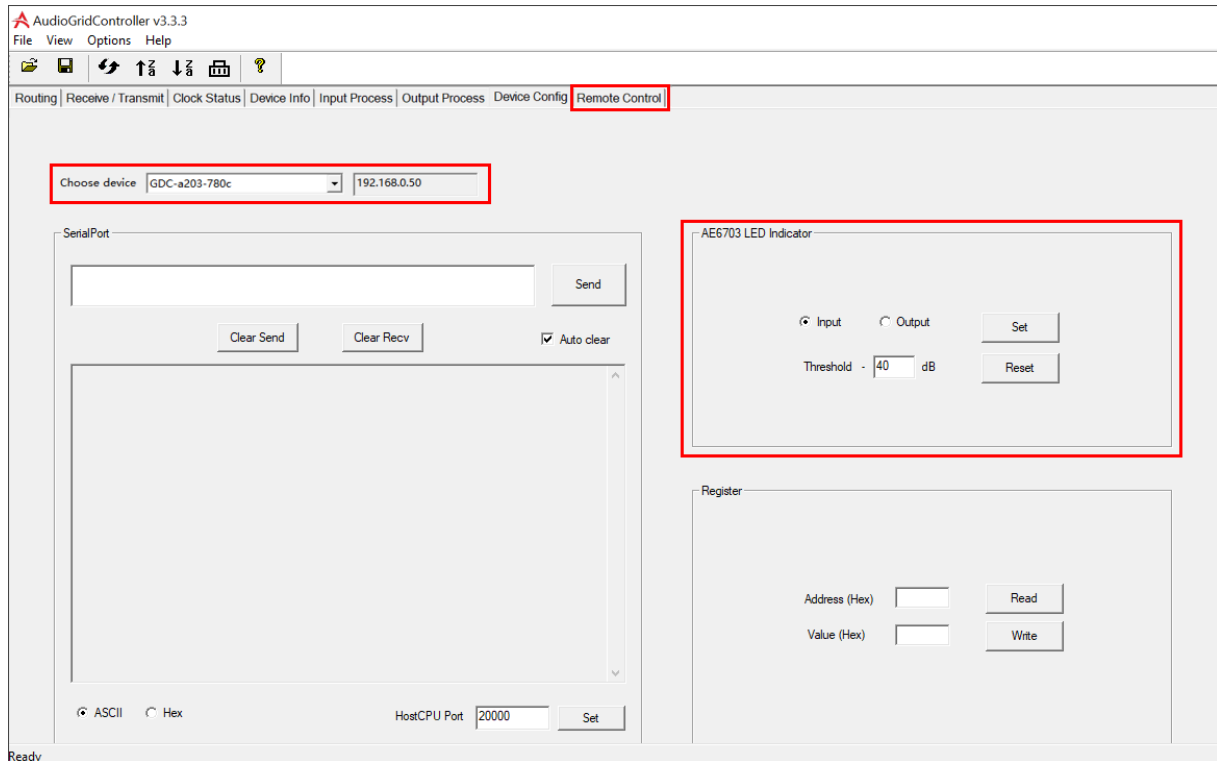


Figure 28: AE-6703 Audio Signal Indicator Switch



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Specifications are subject to change without notice due to ongoing product development and improvement.