adt-audio

SRC 5•1

Installation Manual

Part III:

Console Frame
Installation of the console
Operating conditions
Maintainance
Thermal Considerations

Version 1.5/13 • English

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28 Channel SRC51

Preface

This manual contains all the information that is necessary to prepare and plan the installation of the mixing console and accessory components.

Please, read this manual carefully. We point out common mistakes and problems that are connected with the installation and provide suggestions to avoid such problems. You will save a lot of time and unnecessary start up problems by investing a couple of hours in the reading of this manual.

The first part of the manual contains everything about the power supply units and crossover devices that are necessary for fail safe power supply configurations and the implementation of the mains connections. Part 2 is about the audio installation. Besides detailed information about basic principles of audio installation and the methods of grounding, this chapter contains all pinning diagrams, pictures and graphics about the locations of the connectors, and a detailed description of their functions.

Part 3 contains general information about the frame, the assembly of the console, environmental considerations, the recommended maintenance, and a couple of remarks about the operation of the console to ensure a long and problem free lifespan.

This manual concerns the 5.1 surround sound versions of the SRC51 console system for consoles without patchbay
Version V1.5/2013

1. Frames

General Information

SRC51 console frames are available in many different versions. Almost any frame size with an even number of module slots is possible. The maximum, overall width of a single frame is 3900 mm. Such a frame has 96 module slots. Several smaller frames can be combined to form a rig on a common, special floorstand. All frames are basically floorstand versions, but up to a width of approximately 1500 mm, desktop and build-in version are possible.

48 Channel SRC51 Console with IM5 input channels and Dynamics in 40 Channels

Side View

Please refer to your order confirmation and the drawings provided with the included information for the side view and floor plan of your particular console version. A side view/sectional view of the frame is on the next page and on the last page of this manual.

Frame Width

The width of the frames depends of the number of modules of a particular console. The width of a single slot is 40 mm. All input modules are arranged in a grid of 4 modules. Any number of input modules that can divided by 4 is possible. The width of the master section is 4 slots.

Master Section

The master section can be installed anywhere in the console between or next to a block of 4 input modules. The master section has a width of 4 modules slots.

Free space for the keyboard of the optional console automation system has to be considered when the width of the master section is determined. The location of the master section in the frame must be determined with the order. It is not possible to change this position later.

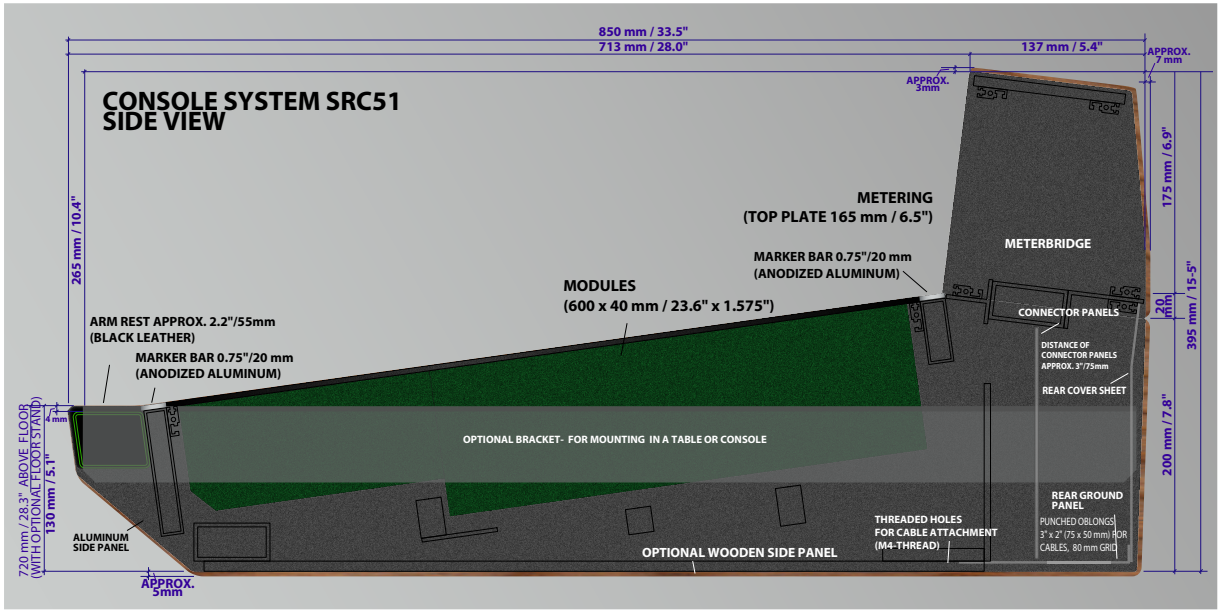
Input Modules

The frame slots that are used for input modules are compatible with all types of input modules. However, stereo modules and surround modules use the connectors and the patch bay jacks differently. Please read the description of the particular modules for details.

Blindpanels, producer tables, remote areas, writing surface

Any even number of blind panels can be installed on the left and right side of the console, between blocks of 4 input modules, and on the left and right side of the master section. The only limit is the maximum width of a single frame. These options offer the choice to adapt a particular frame exactly to the needs. The blindpanels can be standard, single slot or four slot blindpanels or complete plates of any width. It is also possible to install custom supplied equipment, like remotes or keyboards into these plates. Of course, the depth of the frame limits this possibility. Blind panels of any size can be black anodized like the standard top plates or powder coated.

It is possible to install standard channel motherboards under the blind panels if the total width of the particular panel can be devided by four. This makes it possible to install input modules when the particular blind panel section is no longer needed.



The side view of the SRC51 frame - see the last page for more details

Variantes
All frames are basically floorstand versions. The floorstands are part of the scope of supply. They are fixed to flange plates on the left and right side of the frame. Desktop versions or build-in version are possible for small frames up to a width of approximately 1.5 meters. The standard wooden side panels are made of 30 mm bonded plywood panels with beechwood veneer. They are either matte finished or stained black. Other versions are possible on special order.

Meterbridge
A meter bridge is standard for all consoles. LED PPM meters, VU meters and plasma bar graphs are available for all versions of the SRC51 console system. In addition, dynamics modules with or without meter in mono and stereo versions can be installed in the meter bridge of the SRC51 consoles.

2. Installation of the console

This chapter is only of importance if the console is not delivered and installed by adt-audio or one of its representatives. In this case, the console system is delivered by a forwarding agency. You will receive several wooden boxes that contain the console, the floor stand, the power supply units, and the accessories. To keep the total weight of the main box as low as possible, the main box contains only the main frame of the console, everything else is packed in additional boxes. Since the total weight of the console frame box is considerable, it might be a problem to unload the main case. As soon as we have shipped the console system, we will inform you about the details of shipment. Please get in touch with the local office of the forwarding agency to clear up all details about unloading the boxes. The total weight of the entire system depends on the size of the frame and on the versions of modules. In any case, the total weight of a SRC51 console system will be between 80kg/176 lbs (16 channel) and 500 kg/1100 lbs (72 channel). Two persons can easily handle the power supply, accessories and other boxes.

The packing depends on the shipping method and on the forwarder. With airfreight, in most cases only a base plate for the console frame is needed while the sides and the top of the console can be covered by stable foil and/or cardboard.

Unpacking
Make sure that you have the following tools at hand:

A set of screwdrivers for Philips head screws,
metric Allen keys 1.5 to 4 mm, a Torx 10 screwdriver and a metrix pin type socket wrench 10 mm
A set of metric wrenches, from 10 to 19 mm
A 10 mm and a 12 mm metric allen key for the screws that hold the floorstand.

Please unpack all the other boxes before unpacking the main box. The first step of installing the console ist to prepare the floorstands and the screws that fix the floorstands to the flange plates on the left and right side of the console's frame. The screws and some other accessories are packed together with the wooden side panels in the main box.

Open the main box with the console and remove everything apart from the console that is fixed to the base plate of the box with 4 M12 screws. You can reach these screws from the bottom of the box. Remove the screws, using an mm allen key, to free the main frame.

Check carefully to verify that the console was not damaged during transit. If there is any damage, inform the forwarder before you continue. Do not alter anything and make sure to take some pictures of the damage. In most cases, transport insurance will cover any damage; this however, depends on the details of the purchase. In any case, you are supposed to inform the forwarding agency and us immediately. A mechanical damage can be the cause for electrical problems, damaged or broken pcb's or other problems that might be hidden until you make a final and complete test of the entire system.

Depending on the size and the weight of the frame you might need up to 6 persons for the next step, the installation of the floor stand. There are two separate floor stands, one for each side of the frame. They are fixed with 2 M12 allen screws each thru the upper plate of each stand to the flange plate on the left and right bottom of the main frame. It is the same point that was used to fix the main frame in the transport box.

Left Rear with Floorstand and wood

Do not use the meter bridge as a handle or lifting point when lifting and/ or moving the console.

Use the flange plates and the side panels. In case that you need to transport the frame thru windows, stairways, or if you have to lift the frame, it's a good idea to use the M12 screws for the floorstands as fixing point for handles or ropes that you might need for the transport. The flange plates on the console bottom are very stable and can hold the entire weight of the console frame in any position.

Additional M12 threads in the side panels of the console can be used for M12 eyeball screws for easier handling of the frame. The eyeball screws are part of the standard accessory kit.

The easiest way to install the floor stand is to sit the console frame on its connector panel with the fader bank up (in the air). Depending on the weight of the frame, 4 or 6 persons will be required to lift the frame. For safety, two persons, (one on either end of the console) should securely hold the console in place at all times when it is in this position. The bottom of the frame can now be accessed easily. Attach the two floor stands to the flange plates and fix them in place with the M16 allen screws. Make sure that you include the washers and the snap rings. After this part is accomplished, you can carefully tilt the entire frame up into the normal operating position. Make sure that there are enough persons to handle the weight of the console safely.

To avoid damage, the wooden side panels are packed separately. After the installation of the floor stand, place the console into the final position and unpack the side panels. Usually the panels contain threaded inserts or have pre-drilled holes. They are fixed to the side panels by a couple of screws. The position of the panels explains itself, just match the threaded inserts or pre-drilled holes with the free holes in the side panels of the frame. In most cases, the small wooden panels for the meter bridge will be already mounted. If this is not the case with your console, remove the rear cover sheets on both sides of the meter bridge and fix the wooden panels with the wood screws included in the accessory kit.
In most cases, the armrest is already mounted when you get the console. If this is the case, it is protected by a foil. Just remove the foil covering the armrest.

In case that the transport is very complicated, the armrest might not be mounted. If this is the case you need to fix it to the rectangular tube at the front of the

Rear View with Cover Sheets partly removed

console frame. You will find the necessary screws in the accessorie box. The armrest has been prepared for mounting at the factory. It's fixed by screws thru holes in the frame. Please check for the pre drilled holes in the armrest, put it in place and fix the armrest from the inside. If the modules are installed, you need to remove modules to access the holes.

You are now ready to install the power supply. Read the first chapter of the manual that contains important information on the installation of the power supply. Mount the power supply, make sure that it is switched off, and connect the power cord to the mains socket.

If you have a failsafe power supply, you can use one of the two power supply units for a first check. Of course, you can also install the complete power supply system. Mount both power supply units and the crossover unit into a rack or put it into its permanent location. Make sure that everything is switched off and connect all units to the mains supply.

Important note:
Make sure that you install the two power supply units to two different

fuses. If you do not do so, a problem on one of the units that is connected to this fuse will disable the crossover system.

Switch all units on and check if all control LED's are working. Switch everything off again and install the included cables. With a standard console, you will have only one cable to connect the power supply and the console. With a failsafe unit, there are 2 additional cables to connect the two power supply units to the crossover device. The console

Cable Inlets

must be connected to the crossover device.

After you have installed all connections, double check for any transport damage. Check if all the modules are properly installed in the frame. If you are sure that everything is okay, switch the system on and check if all control LED's of the power supply are on. It is a good idea to install the speaker system in the next step and make a quick test if all channels are working.

It is a good idea to make a complete check of all console functions, before you plug in your audio installation. If you do so, you are sure that the console is working properly and any problem can only be caused by the installation. This makes it a lot easier to find the reasons for any problems.

Installing the audio cables

The entire connector bay is located inside the console and can be hidden behind cover sheets with ventilation slots. The inlets for the audio cables are in the rear bottom of the console frame.

3. Operating conditions

Environments
Environmental conditions have great influence on the long-term stability and reliability of the entire console.

Temperature
The recommended operating temperature range is from 10 °C to 45 °C. The console will also operate at temperatures above and below this limit of course. However, operating at temperatures outside this range for long periods can reduce the lifespan of the console.

Under normal conditions, we recommend that you power down the console if it is not in use. The console is ready for use within a minute. It will reach a steady operating temperature within the first hour of operation. There is no reason to leave the system switched on constantly.

For some reasons it can be of advantage as far as the lifespan of the console is concerned to leave the system powered on if, for example, the temperature is not stable, and drops down far below 10 degrees at night. In this case, it will take a longer period to reach its steady operating state. Within the first weeks of operation, the console should not run in continuous operation. Failure of an IC, an electrolytic or other early failure is most likely in the first weeks of operation.

Soiling
The console and all its connectors should be kept as dust and dirt free as possible. If drinks or other liquids are accidentally spilled onto the console, the concerned modules must be immediately removed and cleaned. We recommend the use of isopropyl alcohol for cleaning the console. Isopropyl alcohol will not damage the components of the console. The sooner the remains of any spilled liquid is cleaned, is the less risk there is of damage.

4. Maintainance

A SRC51 console requires no regular maintenance. Service is only required, if there is a failure that makes repair necessary. Almost all problems can be fixed by exchanging a defective module. Following our recommended procedures for the use and care of the console will result in an extended lifespan of the console.

Console use
All electromechanical components of the console, such as potentiometers, switches, faders, and relays are self-cleaning. However, self-cleaning only occurs when the particular component is in use. The electrical and mechanical lifespan of these components exceeds the useful life of the system in any case. A rotary pot, for instance, that has a lifespan of 50000 rotation, will work properly for a period of more than 30 years if it is used one time in an hour for 8 hours a day and 200 work days per year. Long-term reliability is directly connected to continuous operation. Fine dust and hardened grease, will be a problem for components that remain unused for years. If it is not possible to use all the components of a console constantly, we recommend that you actuate all pots and switches at least one time per 6 months 3 to 6 times to keep the self cleaning process

running.

Testing the console
From time to time, (we recommend at least one time per year) all functions of the mixer should be tested. Check every function, all the inputs and outputs and all controls and switches of the entire console. If you are not able to make any necessary repairs immediately, make a note of all problems that were found for future repairs. With large, complex consoles, it is a good idea to maintain a logbook at hand that is used to note all problems in the studio. Since it is likely that most of the problems will be discovered while working with the console, it is good idea to make a quick note which includes all the details of the problems such as; the particular channel, the source signal and any special setting that caused the problem. This helps a service technician to locate problems. Many problems that come up in a particular setting only, may not be easily reconstructed after the end of a session. The more precise the notation in the logbook, the more likely it is that problems that are caused by a bad cable or anything else that is not a problem of a function of the console itself, can be found and repaired.

Cleaning
Only non-corrosive cleaners such isopropyl alcohol should be used for cleaning the console and its components. Isopropyl alcohol is he best choice for all parts, including the plastic knobs and caps and the pushbutton knobs, all electric components and the top plates. More aggressive cleaners can cause problems because they might corrode mechanical or electrical components. **Do not use any kind of thinner** – you will have to replace all plastic parts that were exposed to the thinner.

Potentiometers and push buttons
Depending on the environmental situation at the location, the grease inside the switches, rotary pots and slider faders begins to harden within a period between approximately 6 years and 15 years. It is not possible to determine an exact time when this occurs, since the environmental influence is different from location to location and the frequency of use of the different components has an influence on this condition as well.

It is very easy to prevent these effects just by following these simple maintenance steps. We recommend that this be done after 6 six years of operation.

Rotary pots and slider faders:
When the grease between bushing and shaft begins to harden, the pot will run tight. Apply a small drop of penetrating oil between the shaft and the bushing and turn the pot 5 to 10 times. Doing this will keep the pots in good shape for many years.

Pushbutton switches
The grease in the pushbutton switches will also begin to harden. Since it is the same process, this will usually happen at the same time and it depends on the environmental conditions and the frequency of use. The best way to maintain pushbutton switches is the use of a special lubricant, type CRC3-36, brand CRC, Belgium. If you cannot get this oil, you can order it from the factory.

This cleaner contains a non-aggressive, non-permanent solvent that dissolves hardened fat and grease effectively. The second component is a good, non-hardening, penetrating oil that protects the cleaned surface for a long time. CRC3-36 comes as aerosols that make it easy to apply the agent.

Using CRC3-36 with pushbutton switches is very easy. Remove a module and put it on a table so that you can see the topside of the switches. Press the knob of the aerosol tin carefully while you put the end of the little tube that comes with the tin next to the locker block at the top of the switch. By pressing the knob carefully, you can produce oil foam. Apply approximately 1 cubic cm of this foam to each switch that has to be cleaned. Wait some minutes before you operate each switch 5 to 20 times. With this procedure, you can keep all the switches in a good shape for an unlimited period.

DO NOT USE ANY KIND OF CONTACT SPRAYS!
DO NOT USE VASELINE OR SIMILAR GREASE!
DO NOT DIP AN ENTIRE MODULE INTO A CLEANING BATH!

Please follow these rules to avoid trouble. Once you have applied conventional contact spray to a module, you have to use this repeatedly. There is no way to remove the spray out of switches or faders unless these components are replaced. Some technicians use Vaseline as a protection against corrosion. The biggest problem with Vaseline is that it starts to melt when the temperature is higher than 40 °C. If Vaseline is used for cleaning of switches, you have to deal with the problem that after the temperature exceeds 40 ° C, the entire contact area of the switch will be covered in Vaseline. As soon as the temperature drops down below 40 degrees, the fat hardens again. This causes considerable contact problems. If you put an entire module into a cleaning bath, for instance of an ultrasonic cleaner, the only effect is, that you distribute all the dirt equally to the entire module. This means that the dirt will be inside pots, switches, and everything else. Modules that were treated in this way, will never work properly again.

Screws
After a period of about 4 years, the power supply unit should be opened and all screws of the transformer and the pcb's should be re-tightened. The thermal situation in a power supply makes it likely that screws in terminator blocks will loose their contact pressure due to the high temperature difference between the on and off state.

5. Thermal Considerations

Any console will dissapate a considerable amount of heat to the room. A typical average value of the power dissapation of a console with 40 channel is 1000 watts. Depending on the number and version of the input modules and the setting of the console, output load, and the actual levels, it may be a little less or a lot more. From that perspective, please consider the console just like an electric heater system. As far as air flow is concerned, any console is a faulty design. Rising heat from the electronics on the module's pbc's is blocked by the face plates and causes the entire console to heat up. Any SRC51 console has ventilation slots in the cover sheets below the armrest and a free pass for hot air at the rear side above the connector panels. However, the console cannot terminate the heat and without appropriate measures in the room the temperature in the console and on the face plates will rise the more the longer the console is powered on.

It is up to you to take care that an appropriate ventilation system and/or air condition system is installed in the control room. If you don't install such a system, the temperature of the console will be considerably higher than necessary. This will reduce the life span and cause more problems with defective components and wear and tear.

Please follow these basic rules:

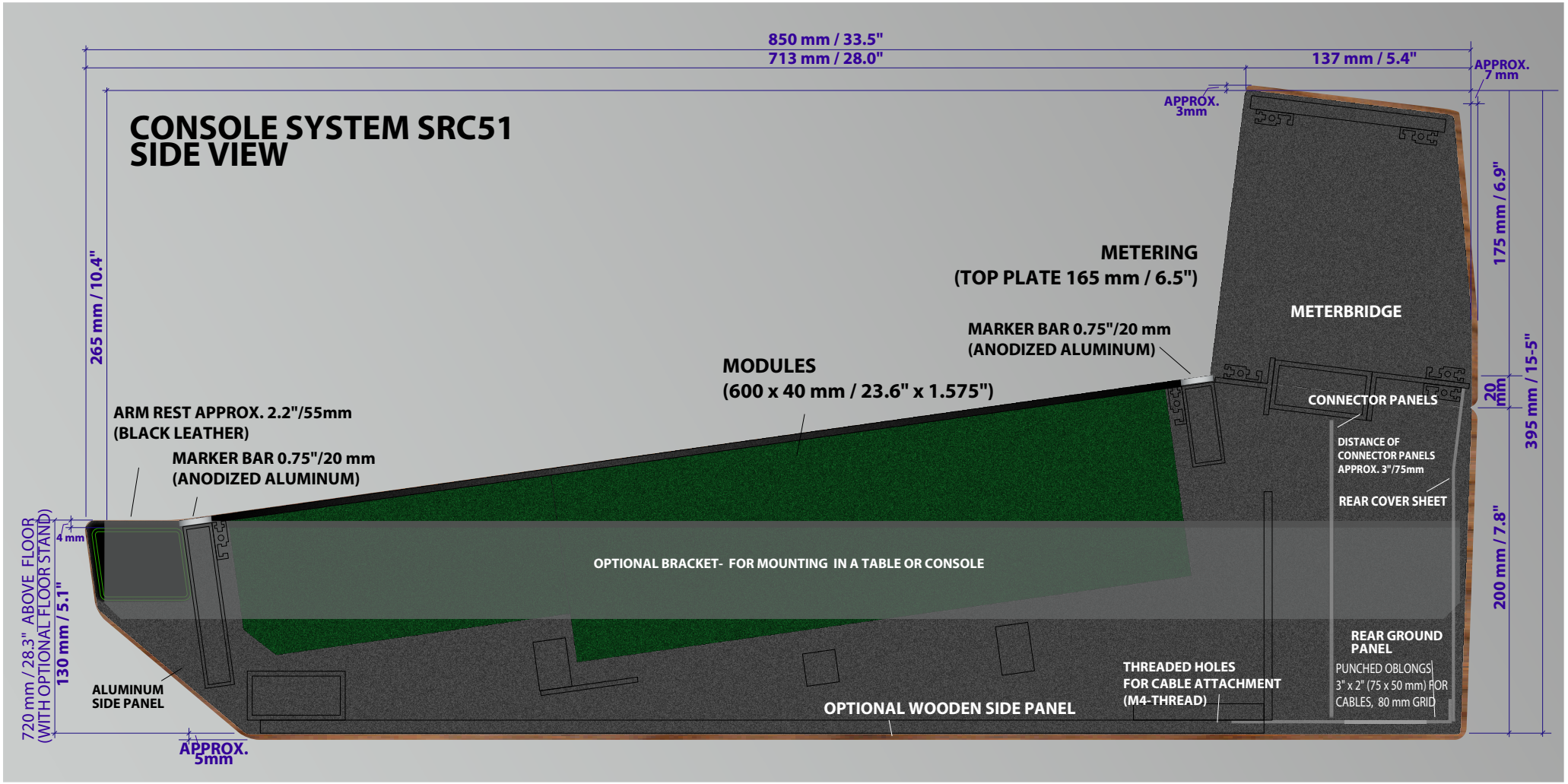
Do not cover the ventilation slots below the armrest and make sure that the air outlet above the connector panels is free.

The offtake of your ventilation system or air condition should be directly behind the air outlet on the rear side of the console.

The capacity of the air condition should at least match the average power dissapation of the console. If you're in doubt, please ask for the power dissapation of your setup.

Optional, forced Ventilation
If the natural ventilation system of the console frame is not sufficient to maintain an appropriate airflow, an optional forced ventilation by fans can be installed in all versions of the SRC51 console frames. This might be the case if the console is installed directly in front of a wall or in any other way that causes limited efficiency of the natural ventilation.

With this option, a 60 mm fan is installed per two channels in the frame right behind the air outlet. An additional supply voltage is included with all UPS10 and UPS25 power supply units. This voltage can be controlled by a trimpot on the top plate of the unit. The control range of the voltage makes it possible to find a compromize between efficient cooling and noise. Setting the fans to the lowest possible speed will cause a drop in temperature of approx. 15 °C, which is more than sufficient to maintain 'cool' top plates and appropriate operating conditions for the electronics. The additional noise that is caused by such a setting if very low; the noise

of a single computer system is higher.

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