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## **Symetrix SymNet Designer Audio Matrix driver (SYMSMC4ZDESMAT) for SymNet Designer based audio systems**

### **1. Disclaimer**

- Genesis Technologies does provide this driver as it is. There is no commitment to support, nor does Genesis Technologies assure a decent reaction time in case of a problem. Genesis Technologies can refuse all support, discontinue support, end the driver lifetime at any time. Genesis Technologies will not refund in any case licenses
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By using this driver you accept that you have read and accepted the terms above!

### **2. What is the matrix driver? What is it used for?**

This driver does integrate all SymNet Designer compatible products into the Control4 system. The driver does provide standard matrix functionality which may be extended with Programming to use additional DSP capabilities. It's not compatible with products that uses Symetrix Composer to be programmed such as Radius/Edge and Prism units

### **3. What matrix proxy features are supported?**

Input/output switching, volume, mute

### **4. Additional features**

- In Programming these features are available for control:
  - Send SymNet control numbers with values. Various encodings can be selected.
  - Recall Presets

### **5. Theory of operation / general info**

#### **5.1. SymNet communication basics**

Every fader, trim, switch and preset found in a Symetrix SymNet device configuration file can have a control number assigned. The value of the control numbers (1- 10000) can vary from 0 to 65535. This range of possible values is converted in the driver according to the SymNet Composer specifications.

#### **5.2. SymNet control numbers used by this driver**

All control numbers are fixed in the driver, not user adjustable.

(There are possibilities to customize this fixed definitions, ask Genesis Technologies for this)

If the config file does not contain all the control numbers used the driver will may show error messages which can safely be ignored.

- Gains are using the range from 100 to 132 (100 + number of outputs)  
For example the gain control number for zone 13 is calculated this way:  $100 + (13 - 1) = 112$
- Input trims are using the range from 1001 (left), 1002 (right) to 1096 or number of outputs  
For example the left trim for zone 13 is calculated this way:  $1001 + ((13 - 1) * 2) = 1025$

- Mute starts using 2001 for zone 1, Formula to calculate:  $2001 + ((\text{number of output} - 1) * 30)$   
Example: The mute control number for zone 13 is calculated like this:  
 $2001 + ((13 - 1) * 30) = 2361$

\*All\* those numbers \*need\* to be present in the Symetrix project file, **push enabled**. Without them the driver \*may\* not work properly.

### 5.3. Value conversion for SymNet control numbers

Every value sent to a control number should/is formatted properly. Using *Programming* it is possible to send values with a specific encoding to match the modules needs. This table shows the conversion when sending a value. On receive the reverse of the shown functions is applied

Function	Description	Conversion
vol	C4 volume to gain fader	0...100 -> 0-65535
gain	Gain (dB) to gain fader	-72...+12 -> 0-65535
trim	Trim (dB) to trim	-24...+24 -> 0-65535
input	Input to matrix input (Depends on the matrix size!!)	1...48 -> 0-65535
eqGain	Equalizer gain (dB) to equalizer gain	-45...+15 -> 0-65535
eqFreq	Equalizer frequency (Hz) to equalizer frequency	20...20000 -> 0-65535
eqQPos	Equalizer Q (Hz) to equalizer Q	0.02...50 -> 0-65535
raw	Does not convert, raw value	0-65535 -> 0-65535
linear	Number to number (Depends on the given range)	0-65535 @ Range -> 0-65535

Remarks:

- When sending a matrix input the *Encoding parameter* is the size of the matrix
- Sending a linear value the *Encoding parameter* is the original range (max - min)

## 6. Supermodules

### 6.1. Matrix modules

For each version of the driver a matching supermodule is available. Use the right size combination, a 8x8 matrix driver needs the 8x8 matrix supermodule.

- SYMSMDESCMAT8x8 (commercial matrix): Provides 8 inputs and 8 outputs, input trims and volume
- SYMSMDESCMAT16x16 (commercial matrix): Provides 16 inputs and 16 outputs, input trims and volume
- SYMSMDESCMAT48x32 (commercial matrix): Provides 48 inputs and 32 outputs, input trims and volume

These supermodules are password protected and have a control screen which does provide all information needed.

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## 7. Configure the SymNet device

Take a training @Symetrix USA to get introduced. Otherwise load the example project file and go from there.

Serial connection speed is 115200, dip (usually dip 2) in the back of the unit need to be set to "Acc"

## 8. Software installation Control4

### 8.1. Prerequisites

- Download the driver and placed them in %USERPROFILE%\Control4\Drivers
- Restart Composer

## 8.2. Adding the driver

Start *Composer*, go to *System Design* and select the tab *Search* in the right top window. Search for *SymNet designer*

Choose the matrix size that fits your project

**8.3.** Drag and drop the *SymNet Designer audio Matrix* driver into the wished room. Click on it and find the Properties page. (Hovering with the mouse over the Properties will show up hints)

## 8.4. Common properties

- **Info:** Does show the driver health info. If the driver experience issues this line will display it. If *Version x.x.x running* is shown the driver is fully started and works. If another message appears the driver will not work correct, a decent action is required
- **Driver name:** The product identification of the driver
- **Activation key:** Insert the activation key here
- **Volume auto release (ms):** During volume ramp a device could possible fall offline and therefore not anymore stop the volume ramp. Using this setting a automatically stop of the ramp can be issued by the driver itself to protect the customers ears and audio gear.
- **On cold boot recall preset:** Does recall a preset on Symetrix if C4 did a reboot
- **Output gain override:** Instead of the volume control inside the supermodule an external control number can be used. Adjusting volume in the supermodule can decrease audio resolution and should be avoided. A better quality audio gain control is provided on all Symetrix DSP outputs, an analog operation amplifier stage is not affecting the audio resolution. Especially when transmitting audio over Dante the level should be kept at line level until it reaches the output  
The Format to enter in this field is *zone=control number, zone=control number...*  
Example: *1=8000,1=8001*.
- **Subscribed controller numbers:** SymNet control numbers can be subscribed to get the value into Programming. The Format to enter in this field is *control number=format, control number=format*  
Example: *1234=raw, 1235=vol*. Refer to the table in section 5.3 for all formats.
- **Power off relay delay (m):** This driver support the power management with a power relay. Cut the power on the DSP may save energy, especially if not used for a long time. Once Control4 does activate the unit the relay will be closed and all commands are sent if the unit is ready, this takes usually 30 to 50 seconds. Instant switching off may be not wished, this setting sets the delay.
- **Log / Lua window:** Selects the log level printed out in Lua window from Composer. Use the level Debug to see what the driver does
- **Log / Online log server:** If a persistent problem appears that cannot be solved from the installer support may ask you to activate a decent level. Do not use until support ask you to do so
- **Log period (h):** The time frame the log should output
- **Log auth:** Developer can give you a code to see more logs. Usually not really interesting, only for in deep debug

## 8.5. Connections

- Audio inputs, outputs and room selection connections
- Serial connection for control
- SymNet device connection, for future use

## 8.6. Known issues

- None so far

## 9. Updates / Support

- Updates are available on: <https://technet.genesis-technologies.ch>
- Bugs should be reported to: [info@genesis-technologies.ch](mailto:info@genesis-technologies.ch)
- Updates from older .c4i drivers can be done via *Drivers -> Manage drivers...* in Composer. The old driver will be marked as obsolete and can be updated to the new .c4z driver. Properties are maintained.