LUCIA Serial Dongle - RS-232 Quick Start Guide

EN

General

This section describes general features of the LUCIA RS232 protocol. The LUCIA has the following features:

- Volume control
- Mute control
- DSP Matrix control (and thereby source-selection)
- Status readings

About the hardware

GND, TX and RX

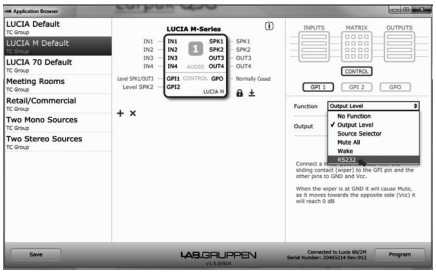
The three connections compounds a regular RS232 interface.

GPO

GPO is directly linked to the Lucia amp's GPO interface (explained in the Lucia quick start guide).

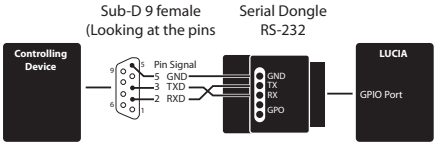
Preparations

- In order to use the Serial Dongle the Lucia amp must be updated to software rev:924 or higher.
- In the Lucia Application Browser the control port must be setup to function RS232.



RS-232 Connection schematic

A RS-232 connection to a LUCIA unit can be established from a computer via a USB Serial Adapter and a LAB.GRUPPEN Serial Dongle as sketched below:



Communication Settings

The LUCIA uses 9600 bit/s, 8 databit, no parity and 1 stopbit. Flow control (software or hardware) are not employed.

Command/Response

All commands/responses are in clear ASCII text and must be terminated with a <CR> Carriage Return (0x0D).

Synchronization

A single <CR> can be used to empty the LUCIA command buffer to synchronize further communications.

Unknown/Unsupported Commands

If the LUCIA receives an unknown command string, it will respond with "ERROR UNKNOWN COMMAND".

Visibility and persistence of settings

Parameters set through the RS-232 protocol are added on top of the persistent settings of the LUCIA as set by the Application Browser. Thus RS-232 inflicted settings are read with the available RS-232 status polling commands and are not visible through the Application Browser. The parameters set through RS-232 remain when LUCIA enters and exits standby, but only volume settings for RS-232 control persist when LUCIA is powered down. Application Browser set settings persist throughout the power cycle.

Controls

Step output volume up or down		
Command	stepvolume [output channels 1 to 4] [+/- level in dB]<CR>	
Function description	Adjusts the output volume a number of steps on the given channels. It is possible to adjust the volume on multiple output channels at once by using comma as separator. The step level range is **-100 to 0 dB**. When the volume is at **-100 dB** the channel is considered muted. The resolution of the volume control is 0.5 dB	
Usage examples	One channel	stepvolume 1 -2
	Multiple channels	stepvolume 1,2 -2
Returns	One channel	OK STEP VOLUME CH1:-2
	Multiple channels	OK STEP VOLUME CH1:-4 CH2:-2
	Error in parameters	ERROR STEP VOLUME
	Note: The returned volume level is the resulting volume level. **Note:** If multiple outputs are adjusted the volume levels are only reported for available outputs.	

Set output volume to a specific level		
Command	setvolume [output channels 1 to 4] [level -100 to 0 dB] <CR>	
Function description	Adjusts the output volume to a specific level for the given channels. It is possible to adjust the volume on multiple output channels at once by using comma as separator. The level range is **-100 to 0 dB**. When the volume is at **-100 dB** the channel is considered muted. The resolution of the volume control is 0.5 dB	
Usage examples	One channel	setvolume 1 0
	Multiple channels	setvolume 1,2 -11.5
Returns	One channel	OK SET VOLUME CH1:0
	Multiple channels	OK STEP VOLUME CH1:-11.5 CH2:-11.5
	Error in parameters	ERROR STEP VOLUME
	Note: If multiple outputs are adjusted the volume levels are only reported for available outputs.	

Mute/Unmute all outputs		
Command	setmute [state]<CR>	
Function description	Mutes or unmutes all outputs	
Usage examples	Mute all outputs	setmute 1
	Unmute all outputs	setmute 0
Returns	Mute all outputs	OK MUTE 1
	Unmute all outputs	OK MUTE 0
	Error in outputs	ERROR MUTE

Set a matrix patch point gain		
Command	setmtx [channel in][channel out]:[gain]... <CR>	
Function description	Sets gain for one or more matrix patch points. A patch point is specified by input and output channels concatenated without separator. It is possible to set multiple patch points in one go (see usage examples). The gain range is **-31 to 0 dB**. When gain is at **-31 dB** the patch point is considered unset. The resolution of the set gain is **0.5 dB**	
Usage examples	Patch in1 to out1	setmtx 11:0
	Patch multiple channels	setmtx 11:0 12:-1 22:-2
	Unset one patch point	setmtx 11:-31
Returns	Patch in1 to out1	OK SETMTX 11:0
	Patch multiple	OK SETMTX 11:0 12:-1 22:-2
	Unset one patch point	OK SETMTX 11:-31
	Error in parameters	ERROR SETMTX

Clear matrix and optionally set patch points gain	
Command	clrmtx [channel in][channel out]:[gain]... <CR>
Function description	Clears the matrix (all patch point gains are set to -31 dB), then sets the gain for one or more specified patch points. It is possible to set multiple patch points in one go (see usage examples). The gain range is **-31 to 0 dB**. When gain is at **-31 dB** the patch point is considered unset. The resolution of the gain is **0.5 dB**

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Usage examples	Clear matrix	clrmtx
	Clear matrix and set in1 to out1	clrmtx 11:0
	Clear matrix and set multiple channels	clrmtx 11:0 12:-1 22:-2
Returns	Clear matrix	OK CLRMTX
	Clear matrix and set in1 to out1	OK CLRMTX 11:0
	Clear matrix and set multiple channels	OK CLRMTX 11:0 12:-1 22:-2
	Error in parameters	ERROR CLRMTX

Put the LUCIA on standby		
Command	standby<CR>	
Function description	Puts the amplifier on standby	
Usage examples	Standby	Standby
Returns	Standby	OK STANDBY

Wake up the LUCIA		
Command	[20 or more spaces]	
Function description	The amplifier, and thus the RS232 port wakes on logic level change. Therefore to wake the amplifier, you have to send 20 or more spaces	
Usage examples	Wakeup	[20 spaces]
Returns	Wakeup	OK WAKEUP

Status

The following commands allows the user to get system feedback from the LUCIA amplifiers

Get output volume level		
Command	getvolume [output channels 1 to 4] <CR>	
Function description	Get the volume of one or more outputs. It is possible to get the volume of multiple output channels at once by using comma as separator. The resolution of the returned volume is 0.5 dB	
Usage examples	One channel	getvolume 1
	Multiple channels	getvolume 1,2
Returns	One channel	OK GET VOLUME CH1:-10
	Multiple channels	OK GET VOLUME CH1:-10 CH2:-11.5
	Error in parameters	ERROR GET VOLUME
	Note: If multiple outputs levels are queried the volume levels are only reported for available outputs.	

Get output mute status		
Command	getmute<CR>	
Function description	Get the mute status for all outputs. A returned 1 signifies muted, a returned 0 signifies unmuted.	
Usage examples	Get mute for all outputs	getmute
Returns	Mute all outputs	OK GET MUTE 0

Get matrix patch point gain		
Command	getmtx [channel in][channel out] …<CR>	
Function description	Get gain for one or more matrix patch points. A patch point is specified by input and output channels concatenated without seperator, e.g. "12" for in1 and out2. It is possible to get all or multiple specified patch points in one go (see usage examples). When gain is at -31 dB the patch point is considered unset. The resolution of the printed gain is 1 dB	
Usage examples	Get gain for all	getmtx
	Get gain of in1 to out1	getmtx 11
	Get gain of multiple	getmtx 11 12 21
Returns	Get gain for all	OK GETMTX 11:0 12:-1 13:-2 14:-3 21:-4 …
	Get gain of in1 to out1	OK GETMTX 11:0
	Get gain of multiple	OK GETMTX 11:0 12:-1 21:-4
	Error in parameters	ERROR GETMTX

Get temperature		
Command	gettemp<CR>	
Function description	Returns the internal temperature of the amplifier in degrees Celsius	
Usage examples	Get temperature	gettemp
Returns	Get temperature	OK TEMP 37

Get rail voltage		
Command	getrail<CR>	
Function description	Returns the rail voltage for the PSU	
Usage examples	Get rail voltage	getrail
Returns	Get rail voltage	OK RAIL 65

Get amplifier status	
Command	getstatus<CR>
Function description	Returns the overall status of the amplifier, indicating whether a fault has occurred that prevents the amplifier from playing. Sources of error can be either a short-circuit of an output or overheat.

Usage examples	Get status	getstatus
Returns	Get status	OK STATUS OK
	Get status (amp error)	OK STATUS FAULT

Get model name		
Command	getprodname<CR>	
Function description	Returns the name of the model	
Usage examples	Get model name	getprodname
Returns	Get model name	OK NAME Lucia 120/2M

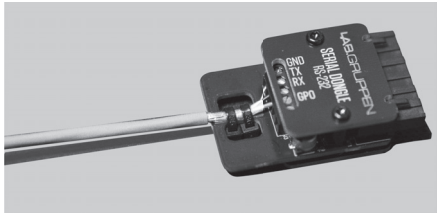
Get software version		
Command	getswver [mode]<CR>	
Function description	Returns the software version of the amplifier	
Usage examples	Get version	getswver v
	Get revision	getswver r
Returns	Get version	OK SW 1.4
	Get revision	OK SW 807
	Error in parameters	ERROR SW

Get serial number		
Command	getserial<CR>	
Function description	Returns the serial number of the amplifier	
Usage examples	Get serial number	getserial
Returns	Get serial number	OK SERIAL 1441233

Best practice for optimal performance

The two slots in the protruding PCB handle allows for fixation of the cables. In order to obtain the highest EMC performance on the RS232 interface, we recommend using the ground pad between the two slots.

Expose the cable screen and tie it to the ground pad with cable ties.



Specifications

Absolute Maximum Ratings
Receiver input voltage min –25 V
Receiver input voltage max 25 V
Input threshold low TA = 25°C 0.8 V
Input threshold high TA = 25°C 2.1 V
Output voltage low IOUT = 0.5 mA 0.3 V
Output voltage high IOUT = –0.5 mA 2.7 V

Legal Disclaimer

LIMITED WARRANTY

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EN Important information

1. Register online. Please register your new MUSIC Group equipment right after you purchase it by visiting Labgruppen.com. Registering your purchase using our simple online form helps us to process your repair claims more quickly and efficiently. Also, read the terms and conditions of our warranty, if applicable.

2. Malfunction. Should your MUSIC Group Authorized Reseller not be located in your vicinity, you may contact the MUSIC Group Authorized Fulfiller for your country listed under "Support" at Labgruppen.com. Should your country not be listed, please check if your problem can be dealt with by our "Online Support" which may also be found under "Support" at Labgruppen.com. Alternatively, please submit an online warranty claim at Lab gruppen.com BEFORE returning the product.

3. Power Connections. Before plugging the unit into a power socket, please make sure you are using the correct mains voltage for your particular model. Faulty fuses must be replaced with fuses of the same type and rating without exception.