

RS-232 Control of TeachLogic Amplifier/Receiver

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This document provides the codes to control TeachLogic products using RS-232 commands. Different products have different commands sets set forth below.

The RS-232 communications settings for all products are 9600 baud, 8 data bits, no parity, and one stop bit.

Send commands using hexadecimal numeric values for the ASCII character and end each command with CR (carriage return) (ASCII hex value 0D, decimal value 13).

For example, if the command is **Power:ON**, send these characters representing hexadecimal value (last one is a carriage return): 50 6f 77 65 72 3a 4f 4e 0D

- **P** is 50,
- **o** is 6f,
- **w** is 77 and so forth.

You may use a tool such as <https://www.binaryhexconverter.com/ascii-text-to-hex-converter>.

For further reading also

https://www.cisco.com/c/en/us/td/docs/ios/12_4/cfg_fund/command/reference/cfnapp.html.

Ovation OA-50 Amplifier

| <u>Function</u> | <u>ASCII TL Command</u> | | |
|--------------------|-------------------------|---|----|
| POWER On | TL:Power:ON | 54 4c 3a 50 6f 77 65 72 3a 4f 4e | 0D |
| POWER Off | TL:Power:OFF | 54 4c 3a 50 6f 77 65 72 3a 4f 46 46 | 0D |
| Mic Channel A Up | TL:CH:A:UP | 54 4c 3a 43 48 3a 41 3a 55 50 | 0D |
| Mic Channel A Down | TL:CH:A:DOWN | 54 4c 3a 43 48 3a 41 3a 44 4f 57 4e | 0D |
| Mic Channel A Mute | TL:CH:A:MUTE | 54 4c 3a 43 48 3a 41 3a 4d 55 54 45 | 0D |
| Mic Channel B Up | TL:CH:B:UP | 54 4c 3a 43 48 3a 42 3a 55 50 | 0D |
| Mic Channel B Down | TL:CH:B:DOWN | 54 4c 3a 43 48 3a 42 3a 44 4f 57 4e | 0D |
| Mic Channel B Mute | TL:CH:B:MUTE | 54 4c 3a 43 48 3a 42 3a 4d 55 54 45 | 0D |
| DVD Gain Up | TL:Gain:DVD:UP | 54 4c 3a 47 61 69 6e 3a 44 56 44 3a 55 50 | 0D |
| DVD Gain Down | TL:Gain:DVD:DOWN | 54 4c 3a 47 61 69 6e 3a 44 56 44 3a 44 4f 57 4e | 0D |
| DVD Mute | TL:Gain:DVD:MUTE | 54 4c 3a 47 61 69 6e 3a 44 56 44 3a 4d 55 54 45 | 0D |
| AUX Gain Up | TL:Gain:AUX:UP | 54 4c 3a 47 61 69 6e 3a 41 55 58 3a 55 50 | 0D |
| AUX Gain Down | TL:Gain:AUX:DOWN | 54 4c 3a 47 61 69 6e 3a 41 55 58 3a 44 4f 57 4e | 0D |
| AUX Mute | TL:Gain:AUX:MUTE | 54 4c 3a 47 61 69 6e 3a 41 55 58 3a 4d 55 54 45 | 0D |
| COMPUTER Gain Up | TL:Gain:COM:UP | 54 4c 3a 47 61 69 6e 3a 43 4f 4d 3a 55 50 | 0D |
| COMPUTER Gain Down | TL:Gain:COM:DOWN | 54 4c 3a 47 61 69 6e 3a 43 4f 4d 3a 44 4f 57 4e | 0D |
| COMPUTER Mute | TL:Gain:COM:MUTE | 54 4c 3a 47 61 69 6e 3a 43 4f 4d 3a 4d 55 54 45 | 0D |

Maxim and Spectrum IMA-540 and IMA-840

| <u>Function</u> | <u>ASCII TL Command</u> | <u>Hex TL Command</u> |
|------------------------------|-------------------------|---|
| POWER On | Power:ON | 50 6f 77 65 72 3a 4f 4e 0D |
| POWER Off | Power:OFF | 50 6f 77 65 72 3a 4f 46 46 0D |
| Mic Channel A Up | CH:A:UP | 43 48 3a 41 3a 55 50 0D |
| Mic Channel A Down | CH:A:DOWN | 43 48 3a 41 3a 44 4f 57 4e 0D |
| Mic Channel A Mute | CH:A:MUTE | 43 48 3a 41 3a 4d 55 54 45 0D |
| Mic Channel B Up | CH:B:UP | 43 48 3a 42 3a 55 50 0D |
| Mic Channel B Down | CH:B:DOWN | 43 48 3a 42 3a 44 4f 57 4e 0D |
| Mic Channel B Mute | CH:B:MUTE | 43 48 3a 42 3a 4d 55 54 45 0D |
| DVD Gain Up | Gain:DVD:UP | 47 61 69 6e 3a 44 56 44 3a 55 50 0D |
| DVD Gain Down | Gain:DVD:DOWN | 47 61 69 6e 3a 44 56 44 3a 44 4f 57 4e 0D |
| DVD Mute | Gain:DVD:MUTE | 47 61 69 6e 3a 44 56 44 3a 4d 55 54 45 0D |
| AUX Gain Up | Gain:AUX:UP | 47 61 69 6e 3a 41 55 58 3a 55 50 0D |
| AUX Gain Down | Gain:AUX:DOWN | 47 61 69 6e 3a 41 55 58 3a 44 4f 57 4e 0D |
| AUX Mute | Gain:AUX:MUTE | 47 61 69 6e 3a 41 55 58 3a 4d 55 54 45 0D |
| COMPUTER Gain Up | Gain:COM:UP | 47 61 69 6e 3a 43 4f 4d 3a 55 50 0D |
| COMPUTER Gain Down | Gain:COM:DOWN | 47 61 69 6e 3a 43 4f 4d 3a 44 4f 57 4e 0D |
| COMPUTER Mute | Gain:COM:MUTE | 47 61 69 6e 3a 43 4f 4d 3a 4d 55 54 45 0D |
| Confererence Input Gain Up | Gain:CONF-IN:UP | 47 61 69 6e 3a 43 4f 4e 46 2d 49 4e 3a 55 50 0D |
| Confererence Input Gain Down | Gain:CONF-IN:DOWN | 47 61 69 6e 3a 43 4f 4e 46 2d 49 4e 3a 44 4f 57 4e 0D |
| Confererence Input Gain Mute | Gain:CONF-IN:MUTE | 47 61 69 6e 3a 43 4f 4e 46 2d 49 4e 3a 4d 55 54 45 0D |

Matrix IMA-121
Function

| | | | |
|-------------------------|----------------|---|----|
| Power, toggle on or off | Power:TOGGLE | 50 6f 77 65 72 3a 54 4f 47 47 4c 45 | 0D |
| Power ON | Power:ON | 50 6f 77 65 72 3a 4f 4e | 0D |
| Power OFF | Power:OFF | 50 6f 77 65 72 3a 4f 46 46 | 0D |
| IR Mic1 (Ch A) Up | CH:A:UP | 43 48 3a 41 3a 55 50 | 0D |
| IR Mic1 (Ch A) Down | CH:A:DOWN | 43 48 3a 41 3a 44 4f 57 4e | 0D |
| IR Mic1 (Ch A) Mute | CH:A:MUTE | 43 48 3a 41 3a 4d 55 54 45 | 0D |
| IR Mic2 (Ch B) Up | CH:B:UP | 43 48 3a 42 3a 55 50 | 0D |
| IR Mic2 (Ch B) Down | CH:B:DOWN | 43 48 3a 42 3a 44 4f 57 4e | 0D |
| IR Mic2 (Ch B) Mute | CH:B:MUTE | 43 48 3a 42 3a 4d 55 54 45 | 0D |
| Aux1 Gain Up | Gain:AUX:UP | 47 61 69 6e 3a 41 55 58 3a 55 50 | 0D |
| Aux1 Gain Down | Gain:AUX:DOWN | 47 61 69 6e 3a 41 55 58 3a 44 4f 57 4e | 0D |
| Aux1 Mute | Gain:AUX:MUTE | 47 61 69 6e 3a 41 55 58 3a 4d 55 54 45 | 0D |
| Aux2 Gain Up | Gain:AUX2:UP | 47 61 69 6e 3a 41 55 58 32 3a 55 50 | 0D |
| Aux2 Gain Down | Gain:AUX2:DOWN | 47 61 69 6e 3a 41 55 58 32 3a 44 4f 57 4e | 0D |
| Aux2 Mute | Gain:AUX2:MUTE | 47 61 69 6e 3a 41 55 58 32 3a 4d 55 54 45 | 0D |
| Line Out Gain Up | Gain:LEO:UP | 47 61 69 6e 3a 4c 45 4f 3a 55 50 | 0D |
| Line Out Gain Down | Gain:LEO:DOWN | 47 61 69 6e 3a 4c 45 4f 3a 44 4f 57 4e | 0D |
| Line Out Mute | Gain:LEO:MUTE | 47 61 69 6e 3a 4c 45 4f 3a 4d 55 54 45 | 0D |

Maxim III, Spectrum III (IMA-520, IMA-820)

TL Command set only in 2.11 and later; 2.11 also contains Original (ver 2.10) commands at right.

2.11 Command Set

| Function | ASCII Command | Hex Command |
|--------------------|---------------|---|
| POWER On | Power:ON | 50 6f 77 65 72 3a 4f 4e 0D |
| POWER Off | Power:OFF | 50 6f 77 65 72 3a 4f 46 46 0D |
| Mic Channel A Up | CH:A:UP | 43 48 3a 41 3a 55 50 0D |
| Mic Channel A Down | CH:A:DOWN | 43 48 3a 41 3a 44 4f 57 4e 0D |
| Mic Channel A Mute | CH:A:MUTE | 43 48 3a 41 3a 4d 55 54 45 0D |
| Mic Channel B Up | CH:B:UP | 43 48 3a 42 3a 55 50 0D |
| Mic Channel B Down | CH:B:DOWN | 43 48 3a 42 3a 44 4f 57 4e 0D |
| Mic Channel B Mute | CH:B:MUTE | 43 48 3a 42 3a 4d 55 54 45 0D |
| DVD Gain Up | Gain:DVD:UP | 47 61 69 6e 3a 44 56 44 3a 55 50 0D |
| DVD Gain Down | Gain:DVD:DOWN | 47 61 69 6e 3a 44 56 44 3a 44 4f 57 4e 0D |
| DVD Mute | Gain:DVD:MUTE | 47 61 69 6e 3a 44 56 44 3a 4d 55 54 45 0D |
| AUX Gain Up | Gain:AUX:UP | 47 61 69 6e 3a 41 55 58 3a 55 50 0D |
| AUX Gain Down | Gain:AUX:DOWN | 47 61 69 6e 3a 41 55 58 3a 44 4f 57 4e 0D |
| AUX Mute | Gain:AUX:MUTE | 47 61 69 6e 3a 41 55 58 3a 4d 55 54 45 0D |
| COMPUTER Gain Up | Gain:COM:UP | 47 61 69 6e 3a 43 4f 4d 3a 55 50 0D |
| COMPUTER Gain Down | Gain:COM:DOWN | 47 61 69 6e 3a 43 4f 4d 3a 44 4f 57 4e 0D |
| COMPUTER Mute | Gain:COM:MUTE | 47 61 69 6e 3a 43 4f 4d 3a 4d 55 54 45 0D |
| MP3 Gain Up | Gain:MP3:UP | 47 61 69 6e 3a 4d 50 33 3a 55 50 0D |
| MP3 Gain Down | Gain:MP3:DOWN | 47 61 69 6e 3a 4d 50 33 3a 44 4f 57 4e 0D |
| MP3 Mute | Gain:MP3:MUTE | 47 61 69 6e 3a 4d 50 33 3a 4d 55 54 45 0D |

Only command set in s/w ver 2.10 and earlier

Original, 2.10 Command Set

| Function | ASCII Command | Hex Command |
|--------------------|---------------------|---|
| POWER On | Linkx:Power:ON | 4c 69 6e 6b 78 3a 50 6f 77 65 72 3a 4f 4e 0D |
| POWER Off | Linkx:Power:OFF | 4c 69 6e 6b 78 3a 50 6f 77 65 72 3a 4f 46 46 0D |
| Mic Channel A Mute | Linkx:CH:A:MUTE | 43 48 3a 41 3a 4d 55 54 45 0D |
| Mic Channel B Mute | Linkx:CH:B:MUTE | 43 48 3a 42 3a 4d 55 54 45 0D |
| DVD Gain Up | Linkx:Gain:AUX:UP | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 41 55 58 3a 55 50 0D |
| DVD Gain Down | Linkx:Gain:AUX:DOWN | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 41 55 58 3a 44 4f 57 4e 0D |
| DVD Mute | Linkx:Gain:AUX:MUTE | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 41 55 58 3a 4d 55 54 45 0D |
| AUX Gain Up | Linkx:Gain:MIC:UP | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 4d 69 43 3a 55 50 0D |
| AUX Gain Down | Linkx:Gain:MIC:DOWN | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 4d 69 43 3a 44 4f 57 4e 0D |
| AUX Mute | Linkx:Gain:MIC:MUTE | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 4d 69 43 3a 4d 55 54 45 0D |
| COMPUTER Gain Up | Linkx:Gain:DVD:UP | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 44 56 44 3a 55 50 0D |
| COMPUTER Gain Down | Linkx:Gain:DVD:DOWN | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 44 56 44 3a 44 4f 57 4e 0D |
| COMPUTER Mute | Linkx:Gain:DVD:MUTE | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 44 56 44 3a 4d 55 54 45 0D |
| MP3 Gain Up | Linkx:Gain:MP3:UP | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 4d 50 33 3a 55 50 0D |
| MP3 Gain Down | Linkx:Gain:MP3:DOWN | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 4d 50 33 3a 44 4f 57 4e 0D |
| MP3 Mute | Linkx:Gain:MP3:MUTE | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 4d 50 33 3a 4d 55 54 45 0D |

Mic Channel A/B Up/Down only in REV4 and later hardware.

In late-2020 the company began shipping IMA-232, IMA-520 and IMA-820 amplifiers with revised new command sets and additional controls, but these products will continue to support the prior command set as well. The newer command set (Command Set 2.11) is in products with firmware numbered 2.11 and higher; products with no firmware version label, or firmware 2.10 and prior use the original/prior command sets (Command Set 2.10). If firmware version is unknown, and the second two characters of the product serial number are 14, 15, 16, 17, 18 or 19, then the products uses Command Set 2.10.

FORUM 232 (IMA-232)

TL Command set only in 2.11 and later; 2.11 also contains Original (ver 2.10) commands at right.

2.11 Command Set

| Function | ASCII Command | Hex Command |
|--------------------|---------------|---|
| POWER On | Power:ON | 50 6f 77 65 72 3a 4f 4e 0D |
| POWER Off | Power:OFF | 50 6f 77 65 72 3a 4f 46 46 0D |
| Mic Channel A Up | CH:A:UP | 43 48 3a 41 3a 55 50 0D |
| Mic Channel A Down | CH:A:DOWN | 43 48 3a 41 3a 44 4f 57 4e 0D |
| Mic Channel A Mute | CH:A:MUTE | 43 48 3a 41 3a 4d 55 54 45 0D |
| Mic Channel B Up | CH:B:UP | 43 48 3a 42 3a 55 50 0D |
| Mic Channel B Down | CH:B:DOWN | 43 48 3a 42 3a 44 4f 57 4e 0D |
| Mic Channel B Mute | CH:B:MUTE | 43 48 3a 42 3a 4d 55 54 45 0D |
| DVD Gain Up | Gain:DVD:UP | 47 61 69 6e 3a 44 56 44 3a 55 50 0D |
| DVD Gain Down | Gain:DVD:DOWN | 47 61 69 6e 3a 44 56 44 3a 44 4f 57 4e 0D |
| DVD Mute | Gain:DVD:MUTE | 47 61 69 6e 3a 44 56 44 3a 4d 55 54 45 0D |
| COMP/AUX Gain Up | Gain:AUX:UP | 47 61 69 6e 3a 41 55 58 3a 55 50 0D |
| COMP/AUX Gain Down | Gain:AUX:DOWN | 47 61 69 6e 3a 41 55 58 3a 44 4f 57 4e 0D |
| COMP/AUX Mute | Gain:AUX:MUTE | 47 61 69 6e 3a 41 55 58 3a 4d 55 54 45 0D |

Only command set in s/w ver 2.10 and earlier

Original, 2.10 Command Set

| Function | ASCII Command | Hex Command |
|--------------------|---------------------|---|
| POWER On | Linkx:Power:ON | 4c 69 6e 6b 78 3a 50 6f 77 65 72 3a 4f 4e 0D |
| POWER Off | Linkx:Power:OFF | 4c 69 6e 6b 78 3a 50 6f 77 65 72 3a 4f 46 46 0D |
| Mic Channel A Mute | Linkx:CH:A:MUTE | 43 48 3a 41 3a 4d 55 54 45 0D |
| Mic Channel B Mute | Linkx:CH:B:MUTE | 43 48 3a 42 3a 4d 55 54 45 0D |
| DVD Gain Up | Linkx:Gain:AUX:UP | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 41 55 58 3a 55 50 0D |
| DVD Gain Down | Linkx:Gain:AUX:DOWN | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 41 55 58 3a 44 4f 57 4e 0D |
| DVD Mute | Linkx:Gain:AUX:MUTE | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 41 55 58 3a 4d 55 54 45 0D |
| COMP/AUX Gain Up | Linkx:Gain:DVD:UP | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 44 56 44 3a 55 50 0D |
| COMP/AUX Gain Down | Linkx:Gain:DVD:DOWN | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 44 56 44 3a 44 4f 57 4e 0D |
| COMP/AUX Mute | Linkx:Gain:DVD:MUTE | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 44 56 44 3a 4d 55 54 45 0D |

Mic Channel A/B Up/Down only in REV3 and later hardware.

Matrix

IMA-120

| <u>Function</u> | <u>ASCII Command</u> | <u>Hex Command</u> |
|-------------------------|----------------------|---|
| Power, toggle on or off | Linkx:Power:TOGGLE | 4c 69 6e 6b 78 3a 50 6f 77 65 72 3a 54 4f 47 47 4c 45 0d |
| Power ON | Linkx:Power:ON | 4c 69 6e 6b 78 3a 50 6f 77 65 72 3a 4f 4e 0d |
| Power OFF | Linkx:Power:OFF | 4c 69 6e 6b 78 3a 50 6f 77 65 72 3a 4f 46 46 0d |
| IR Mic1 (Ch A) Up | Linkx:Gain:ACH:UP | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 41 43 48 3a 55 50 0d |
| IR Mic1 (Ch A) Down | Linkx:Gain:ACH:DOWN | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 41 43 48 3a 44 4f 57 4e 0d |
| IR Mic1 (Ch A) Mute | Linkx:Gain:ACH:MUTE | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 41 43 48 3a 4d 55 54 45 0d |
| IR Mic2 (Ch B) Up | Linkx:Gain:BCH:UP | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 42 43 48 3a 55 50 0d |
| IR Mic2 (Ch B) Down | Linkx:Gain:BCH:DOWN | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 42 43 48 3a 44 4f 57 4e 0d |
| IR Mic2 (Ch B) Mute | Linkx:Gain:BCH:MUTE | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 42 43 48 3a 4d 55 54 45 0d |
| Aux1 Gain Up | Linkx:Gain:LI1:UP | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 4c 49 31 3a 55 50 0d |
| Aux1 Gain Down | Linkx:Gain:LI1:DOWN | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 4c 49 31 3a 44 4f 57 4e 0d |
| Aux1 Mute | Linkx:Gain:LI1:MUTE | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 4c 49 31 3a 4d 55 54 45 0d |
| Aux2 Gain Up | Linkx:Gain:LI2:UP | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 4c 49 32 3a 55 50 0d |
| Aux2 Gain Down | Linkx:Gain:LI2:DOWN | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 4c 49 32 3a 44 4f 57 4e 0d |
| Aux2 Mute | Linkx:Gain:LI2:MUTE | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 4c 49 32 3a 4d 55 54 45 0d |
| Line Out Gain Up | Linkx:Gain:LEO:UP | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 4c 45 4f 3a 55 50 0d |
| Line Out Gain Down | Linkx:Gain:LEO:DOWN | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 4c 45 4f 3a 44 4f 57 4e 0d |
| Line Out Mute | Linkx:Gain:LEO:MUTE | 4c 69 6e 6b 78 3a 47 61 69 6e 3a 4c 45 4f 3a 4d 55 54 45 0d |