



## Serial Port Setup

<b>Baud Rate</b>	9600 bps
<b>Data Length</b>	8 bits
<b>Parity</b>	None
<b>Stop Bit Length</b>	1 bit
<b>Flow Control</b>	None

## Serial Commands Explanation

The serial commands consists of 8 data bits, followed by 1 stop bit. The commands are constructed:

1	2	3	4	5	6	7	8	9
Opening Bit	Device ID		Command Type	Command Category	Command Value			Stop Bit
0x3A	0x30	0x31	0x53 (SET) 0x47 (GET) 0x72 (reply)	(see command table below)				0x0D

Every serial command starts with the same **opening bit** 0x3A (colon character ":" in ASCII).

The **second and third bits**, specify the device ID. The default device ID is "01", which is 0x30 0x31 in hexadecimal notation.

The **fourth bit** defines the type of the command.

0x53 ("S" in ASCII) indicates a SET command.

0x47 ("G" in ASCII) indicates a GET request command.

0x72 ("r" in ASCII) indicates a reply from the device. Replies are returned by the device.

The **fifth bit** is reserved for the category of the command. (eg. Power Control, Audio Control, etc...)

Consult the command table below for the bits corresponding with each category.

The **sixth, seventh and eight bits** are used to perform a specific command within the category, or write a value to a specific command.

Values are set with 3 characters, even in hexadecimal notation.

Example values:

0x30 0x30 0x30 equals "000"

0x30 0x35 0x32 equals "052"

0x30 0x38 0x35 equals "085"

0x31 0x30 0x30 equals "100"

When sending a GET request, after the category bit, the value bits should be 0x30 0x30 0x30 (000). The device will reply with the current active setting in that category using the value bits.

Every serial command ends with the same **stop bit** 0x0D (return character).

## Command Table (SET commands)

	CATEGORY BIT (5th bit)	VALUE BITS (6th, 7th, 8th bits)	FULL COMMAND EXAMPLES (with Device ID = 01)
<b>Power Control</b>	0x30	000: Standby On	0x3A 0x30 0x31 0x53 <b>0x30 0x30 0x30 0x30</b> 0x0D
		001: Standby Off	0x3A 0x30 0x31 0x53 <b>0x30 0x30 0x30 0x31</b> 0x0D
		002: Power Off	0x3A 0x30 0x31 0x53 <b>0x30 0x30 0x30 0x32</b> 0x0D
		003: Power On	0x3A 0x30 0x31 0x53 <b>0x30 0x30 0x30 0x33</b> 0x0D
<b>Audio Control: Treble</b>	0x31	Value 000 - 100	0x3A 0x30 0x31 0x53 <b>0x31 0x30 0x35 0x30</b> 0x0D (example value 050)
<b>Audio Control: Bass</b>	0x32	Value 000 - 100	0x3A 0x30 0x31 0x53 <b>0x32 0x30 0x35 0x30</b> 0x0D (example value 050)

<b>Audio Control: Balance</b>	0x33	Value 000 - 100	0x3A 0x30 0x31 0x53 <b>0x33 0x30 0x35 0x30</b> 0x0D (example value 050)
<b>Image Control: Contrast</b>	0x34	Value 000 - 100	0x3A 0x30 0x31 0x53 <b>0x34 0x30 0x35 0x30</b> 0x0D (example value 050)
<b>Image Control: Brightness</b>	0x35	Value 000 - 100	0x3A 0x30 0x31 0x53 <b>0x35 0x30 0x35 0x30</b> 0x0D (example value 050)
<b>Image Control: Sharpness</b>	0x36	Value 000 - 100	0x3A 0x30 0x31 0x53 <b>0x36 0x30 0x35 0x30</b> 0x0D (example value 050)
<b>Audio Control: Sound Preset</b>	0x37	000: Movie	0x3A 0x30 0x31 0x53 <b>0x37 0x30 0x30 0x30</b> 0x0D
		001: Standard	0x3A 0x30 0x31 0x53 <b>0x37 0x30 0x30 0x31</b> 0x0D
		002: Custom	0x3A 0x30 0x31 0x53 <b>0x37 0x30 0x30 0x32</b> 0x0D
		003: Classroom	0x3A 0x30 0x31 0x53 <b>0x37 0x30 0x30 0x33</b> 0x0D
		004: Meeting	0x3A 0x30 0x31 0x53 <b>0x37 0x30 0x30 0x34</b> 0x0D
<b>Audio Control: Volume</b>	0x38	Value 000 - 100	0x3A 0x30 0x31 0x53 <b>0x38 0x30 0x35 0x30</b> 0x0D (example value 050)
<b>Audio Control: Mute</b>	0x39	000: Mute Off	0x3A 0x30 0x31 0x53 <b>0x39 0x30 0x30 0x30</b> 0x0D
		001: Mute On	0x3A 0x30 0x31 0x53 <b>0x39 0x30 0x30 0x31</b> 0x0D
<b>Video Input Source Switching</b>	0x3A	000: VGA	0x3A 0x30 0x31 0x53 <b>0x3A 0x30 0x30 0x30</b> 0x0D
		001: HDMI 1	0x3A 0x30 0x31 0x53 <b>0x3A 0x30 0x30 0x31</b> 0x0D
		002: HDMI 2	0x3A 0x30 0x31 0x53 <b>0x3A 0x30 0x30 0x32</b> 0x0D
		003: AV	0x3A 0x30 0x31 0x53 <b>0x3A 0x30 0x30 0x33</b> 0x0D
		021: HDMI 3	0x3A 0x30 0x31 0x53 <b>0x3A 0x30 0x32 0x31</b> 0x0D
		022: HDMI 4	0x3A 0x30 0x31 0x53 <b>0x3A 0x30 0x32 0x32</b> 0x0D
		101: Android	0x3A 0x30 0x31 0x53 <b>0x3A 0x31 0x30 0x31</b> 0x0D
		103: OPS	0x3A 0x30 0x31 0x53 <b>0x3A 0x31 0x30 0x33</b> 0x0D
		104: USB-C	0x3A 0x30 0x31 0x53 <b>0x3A 0x31 0x30 0x34</b> 0x0D
<b>Video Control: Aspect Ratio</b>	0x3B	000: Aspect ratio 16:9	0x3A 0x30 0x31 0x53 <b>0x3B 0x30 0x30 0x30</b> 0x0D
		001: Aspect ratio 4:3	0x3A 0x30 0x31 0x53 <b>0x3B 0x30 0x30 0x31</b> 0x0D
		002: PTP (Pixel To Pixel)	0x3A 0x30 0x31 0x53 <b>0x3B 0x30 0x30 0x32</b> 0x0D
<b>Device Settings: Language</b>	0x3C	000: English	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x30 0x30</b> 0x0D
		001: French	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x30 0x31</b> 0x0D
		002: Spanish	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x30 0x32</b> 0x0D
		003: Chinese Traditional	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x30 0x33</b> 0x0D
		004: Chinese Simplified	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x30 0x34</b> 0x0D
		005: Portuguese	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x30 0x35</b> 0x0D
		006: German	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x30 0x36</b> 0x0D
		007: Dutch	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x30 0x37</b> 0x0D
		008: Polish	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x30 0x38</b> 0x0D
		009: Russian	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x30 0x39</b> 0x0D
		010: Czech	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x31 0x30</b> 0x0D
		011: Danish	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x31 0x31</b> 0x0D
		012: Swedish	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x31 0x32</b> 0x0D
		013: Italian	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x31 0x33</b> 0x0D
		014: Romanian	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x31 0x34</b> 0x0D
		015: Norwegian	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x31 0x35</b> 0x0D
		016: Finnish	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x31 0x36</b> 0x0D
		017: Greek	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x31 0x37</b> 0x0D
		018: Turkish	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x31 0x38</b> 0x0D

		019: Arabic	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x31 0x39</b> 0x0D
		020: Japanese	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x32 0x30</b> 0x0D
		021: Ukrainian	0x3A 0x30 0x31 0x53 <b>0x3C 0x30 0x32 0x31</b> 0x0D
<b>Image Control: Presets</b>	0x3D	000: Standard	0x3A 0x30 0x31 0x53 <b>0x3D 0x30 0x30 0x30</b> 0x0D
		001: Bright	0x3A 0x30 0x31 0x53 <b>0x3D 0x30 0x30 0x31</b> 0x0D
		002: Soft	0x3A 0x30 0x31 0x53 <b>0x3D 0x30 0x30 0x32</b> 0x0D
		003: Custom	0x3A 0x30 0x31 0x53 <b>0x3D 0x30 0x30 0x33</b> 0x0D
<b>Image Control: Color Hue</b>	0x3E	Value 000 - 100	0x3A 0x30 0x31 0x53 <b>0x3E 0x30 0x35 0x30</b> 0x0D (example value 050)
<b>Device Setting: Backlight</b>	0x3F	Value 000 - 100	0x3A 0x30 0x31 0x53 <b>0x3F 0x30 0x35 0x30</b> 0x0D (example value 050)
<b>Image Control: Color Temp</b>	0x40	000: Cool	0x3A 0x30 0x31 0x53 <b>0x40 0x30 0x30 0x30</b> 0x0D
		001: Standard	0x3A 0x30 0x31 0x53 <b>0x40 0x30 0x30 0x31</b> 0x0D
		002: Warm	0x3A 0x30 0x31 0x53 <b>0x40 0x30 0x30 0x32</b> 0x0D
<b>Remote Control Commands</b>	0x41	000: Volume Up (incremental)	0x3A 0x30 0x31 0x53 <b>0x41 0x30 0x30 0x30</b> 0x0D
		001: Volume Down (incremental)	0x3A 0x30 0x31 0x53 <b>0x41 0x30 0x30 0x31</b> 0x0D
		010: Navigate Up	0x3A 0x30 0x31 0x53 <b>0x41 0x30 0x31 0x30</b> 0x0D
		011: Navigate Down	0x3A 0x30 0x31 0x53 <b>0x41 0x30 0x31 0x31</b> 0x0D
		012: Navigate Left	0x3A 0x30 0x31 0x53 <b>0x41 0x30 0x31 0x32</b> 0x0D
		013: Navigate Right	0x3A 0x30 0x31 0x53 <b>0x41 0x30 0x31 0x33</b> 0x0D
		014: Confirm / OK	0x3A 0x30 0x31 0x53 <b>0x41 0x30 0x31 0x34</b> 0x0D
		020: Menu	0x3A 0x30 0x31 0x53 <b>0x41 0x30 0x32 0x30</b> 0x0D
		021: Input	0x3A 0x30 0x31 0x53 <b>0x41 0x30 0x32 0x31</b> 0x0D
		022: Exit	0x3A 0x30 0x31 0x53 <b>0x41 0x30 0x32 0x32</b> 0x0D
		031: Blank (black screen)	0x3A 0x30 0x31 0x53 <b>0x41 0x30 0x33 0x31</b> 0x0D
		032: Freeze (freeze screen)	0x3A 0x30 0x31 0x53 <b>0x41 0x30 0x33 0x32</b> 0x0D
<b>Device Setting: Infrared Control</b>	0x42	000: Enable Infrared Remote	0x3A 0x30 0x31 0x53 <b>0x42 0x30 0x30 0x30</b> 0x0D
		001: Disable Infrared Remote	0x3A 0x30 0x31 0x53 <b>0x42 0x30 0x30 0x31</b> 0x0D

### Command Table (GET requests and Replies)

	CATEGORY BIT (5th bit)	FULL REQUEST EXAMPLES (with Device ID = 01)	REPLY BITS (6th, 7th, 8th bits)	FULL REPLY EXAMPLES (returned by device)
<b>Power Status</b>	0x30	0x3A 0x30 0x31 <b>0x47 0x30</b> 0x30 0x30 0x30 0x0D	000: Standby On	0x3A 0x30 0x31 <b>0x72</b> 0x30 <b>0x30 0x30 0x30</b> 0x0D
			001: Standby Off	0x3A 0x30 0x31 <b>0x72</b> 0x30 <b>0x30 0x30 0x31</b> 0x0D
			002: Power Off	0x3A 0x30 0x31 <b>0x72</b> 0x30 <b>0x30 0x30 0x32</b> 0x0D
			003: Power On	0x3A 0x30 0x31 <b>0x72</b> 0x30 <b>0x30 0x30 0x33</b> 0x0D
<b>Audio Status: Treble</b>	0x31	0x3A 0x30 0x31 <b>0x47 0x31</b> 0x30 0x30 0x30 0x0D	Value 000 - 100	0x3A 0x30 0x31 <b>0x72</b> 0x31 <b>0x30 0x35 0x30</b> 0x0D
<b>Audio Status: Bass</b>	0x32	0x3A 0x30 0x31 <b>0x47 0x32</b> 0x30 0x30 0x30 0x0D	Value 000 - 100	0x3A 0x30 0x31 <b>0x72</b> 0x32 <b>0x30 0x35 0x30</b> 0x0D (example status 050)
<b>Audio Status: Balance</b>	0x33	0x3A 0x30 0x31 <b>0x47 0x33</b> 0x30 0x30 0x30 0x0D	Value 000 - 100	0x3A 0x30 0x31 <b>0x72</b> 0x33 <b>0x30 0x35 0x30</b> 0x0D (example status 050)
<b>Image Status: Contrast</b>	0x34	0x3A 0x30 0x31 <b>0x47 0x34</b> 0x30 0x30 0x30 0x0D	Value 000 - 100	0x3A 0x30 0x31 <b>0x72</b> 0x34 <b>0x30 0x35 0x30</b> 0x0D (example status 050)

<b>Image Status: Brightness</b>	0x35	0x3A 0x30 0x31 <b>0x47 0x35</b> 0x30 0x30 0x30 0x0D	Value 000 - 100	0x3A 0x30 0x31 <b>0x72 0x35 0x30 0x35 0x30</b> 0x0D (example status 050)
<b>Image Status: Sharpness</b>	0x36	0x3A 0x30 0x31 <b>0x47 0x36</b> 0x30 0x30 0x30 0x0D	Value 000 - 100	0x3A 0x30 0x31 <b>0x72 0x36 0x30 0x35 0x30</b> 0x0D (example status 050)
<b>Audio Status: Sound Preset</b>	0x37	0x3A 0x30 0x31 <b>0x47 0x37</b> 0x30 0x30 0x30 0x0D	000: Movie	0x3A 0x30 0x31 <b>0x72 0x37 0x30 0x30 0x30</b> 0x0D
			001: Standard	0x3A 0x30 0x31 <b>0x72 0x37 0x30 0x30 0x31</b> 0x0D
			002: Custom	0x3A 0x30 0x31 <b>0x72 0x37 0x30 0x30 0x32</b> 0x0D
			003: Classroom	0x3A 0x30 0x31 <b>0x72 0x37 0x30 0x30 0x33</b> 0x0D
			004: Meeting	0x3A 0x30 0x31 <b>0x72 0x37 0x30 0x30 0x34</b> 0x0D
<b>Audio Status: Volume</b>	0x38	0x3A 0x30 0x31 <b>0x47 0x38</b> 0x30 0x30 0x30 0x0D	Value 000 - 100	0x3A 0x30 0x31 <b>0x72 0x38 0x30 0x35 0x30</b> 0x0D (example status 050)
<b>Audio Status: Mute</b>	0x39	0x3A 0x30 0x31 <b>0x47 0x39</b> 0x30 0x30 0x30 0x0D	000: Mute Off	0x3A 0x30 0x31 <b>0x72 0x39 0x30 0x30 0x30</b> 0x0D
			001: Mute On	0x3A 0x30 0x31 <b>0x72 0x39 0x30 0x30 0x31</b> 0x0D
<b>Video Input Source Status</b>	0x3A	0x3A 0x30 0x31 <b>0x47 0x3A</b> 0x30 0x30 0x30 0x0D	000: VGA	0x3A 0x30 0x31 <b>0x72 0x3A 0x30 0x30 0x30</b> 0x0D
			001: HDMI 1	0x3A 0x30 0x31 <b>0x72 0x3A 0x30 0x30 0x31</b> 0x0D
			002: HDMI 2	0x3A 0x30 0x31 <b>0x72 0x3A 0x30 0x30 0x32</b> 0x0D
			003: AV	0x3A 0x30 0x31 <b>0x72 0x3A 0x30 0x30 0x33</b> 0x0D
			021: HDMI 3	0x3A 0x30 0x31 <b>0x72 0x3A 0x30 0x32 0x31</b> 0x0D
			022: HDMI 4	0x3A 0x30 0x31 <b>0x72 0x3A 0x30 0x32 0x32</b> 0x0D
			101: Android	0x3A 0x30 0x31 <b>0x72 0x3A 0x31 0x30 0x31</b> 0x0D
			103: OPS	0x3A 0x30 0x31 <b>0x72 0x3A 0x31 0x30 0x33</b> 0x0D
			104: USB-C	0x3A 0x30 0x31 <b>0x72 0x3A 0x31 0x30 0x34</b> 0x0D
			<b>Video Status: Aspect Ratio</b>	0x3B
001: Aspect ratio 4:3	0x3A 0x30 0x31 <b>0x72 0x3B 0x30 0x30 0x31</b> 0x0D			
002: PTP (Pixel To Pixel)	0x3A 0x30 0x31 <b>0x72 0x3B 0x30 0x30 0x32</b> 0x0D			
<b>Device Status: Language</b>	0x3C	0x3A 0x30 0x31 <b>0x47 0x3C</b> 0x30 0x30 0x30 0x0D	000: English	0x3A 0x30 0x31 <b>0x72 0x3C 0x30 0x30 0x30</b> 0x0D
			001: French	0x3A 0x30 0x31 <b>0x72 0x3C 0x30 0x30 0x31</b> 0x0D
			002: Spanish	0x3A 0x30 0x31 <b>0x72 0x3C 0x30 0x30 0x32</b> 0x0D
			003: Chinese Traditional	0x3A 0x30 0x31 <b>0x72 0x3C 0x30 0x30 0x33</b> 0x0D
			004: Chinese Simplified	0x3A 0x30 0x31 <b>0x72 0x3C 0x30 0x30 0x34</b> 0x0D
			005: Portuguese	0x3A 0x30 0x31 <b>0x72 0x3C 0x30 0x30 0x35</b> 0x0D
			006: German	0x3A 0x30 0x31 <b>0x72 0x3C 0x30 0x30 0x36</b> 0x0D

			007: Dutch	0x3A 0x30 0x31 0x72 0x3C 0x30 0x30 0x37 0x0D
			008: Polish	0x3A 0x30 0x31 0x72 0x3C 0x30 0x30 0x38 0x0D
			009: Russian	0x3A 0x30 0x31 0x72 0x3C 0x30 0x30 0x39 0x0D
			010: Czech	0x3A 0x30 0x31 0x72 0x3C 0x30 0x31 0x30 0x0D
			011: Danish	0x3A 0x30 0x31 0x72 0x3C 0x30 0x31 0x31 0x0D
			012: Swedish	0x3A 0x30 0x31 0x72 0x3C 0x30 0x31 0x32 0x0D
			013: Italian	0x3A 0x30 0x31 0x72 0x3C 0x30 0x31 0x33 0x0D
			014: Romanian	0x3A 0x30 0x31 0x72 0x3C 0x30 0x31 0x34 0x0D
			015: Norwegian	0x3A 0x30 0x31 0x72 0x3C 0x30 0x31 0x35 0x0D
			016: Finnish	0x3A 0x30 0x31 0x72 0x3C 0x30 0x31 0x36 0x0D
			017: Greek	0x3A 0x30 0x31 0x72 0x3C 0x30 0x31 0x37 0x0D
			018: Turkish	0x3A 0x30 0x31 0x72 0x3C 0x30 0x31 0x38 0x0D
			019: Arabic	0x3A 0x30 0x31 0x72 0x3C 0x30 0x31 0x39 0x0D
			020: Japanese	0x3A 0x30 0x31 0x72 0x3C 0x30 0x32 0x30 0x0D
			021: Ukrainian	0x3A 0x30 0x31 0x72 0x3C 0x30 0x32 0x31 0x0D
<b>Image Status: Presets</b>	0x3D	0x3A 0x30 0x31 0x47 0x3D 0x30 0x30 0x30 0x0D	000: Standard	0x3A 0x30 0x31 0x72 0x3D 0x30 0x30 0x30 0x0D
			001: Bright	0x3A 0x30 0x31 0x72 0x3D 0x30 0x30 0x31 0x0D
			002: Soft	0x3A 0x30 0x31 0x72 0x3D 0x30 0x30 0x32 0x0D
			003: Custom	0x3A 0x30 0x31 0x72 0x3D 0x30 0x30 0x33 0x0D
<b>Image Status: Color Hue</b>	0x3E	0x3A 0x30 0x31 0x47 0x3E 0x30 0x30 0x30 0x0D	Value 000 - 100	0x3A 0x30 0x31 0x72 0x3E 0x30 0x35 0x30 0x0D (example status 050)
<b>Device Status: Backlight</b>	0x3F	0x3A 0x30 0x31 0x47 0x3F 0x30 0x30 0x30 0x0D	Value 000 - 100	0x3A 0x30 0x31 0x72 0x3F 0x30 0x35 0x30 0x0D (example status 050)
<b>Image Status: Color Temp</b>	0x40	0x3A 0x30 0x31 0x47 0x40 0x30 0x30 0x30 0x0D	000: Cool	0x3A 0x30 0x31 0x72 0x40 0x30 0x30 0x30 0x0D
			001: Standard	0x3A 0x30 0x31 0x72 0x40 0x30 0x30 0x31 0x0D
			002: Warm	0x3A 0x30 0x31 0x72 0x40 0x30 0x30 0x32 0x0D
<b>Device Setting: Infrared Control</b>	0x42	0x3A 0x30 0x31 0x47 0x42 0x30 0x30 0x30 0x0D	000: Enable Infrared Remote	0x3A 0x30 0x31 0x72 0x42 0x30 0x30 0x30 0x0D
			001: Disable Infrared Remote	0x3A 0x30 0x31 0x72 0x42 0x30 0x30 0x31 0x0D