Vanity TV Mirrors and Hydra Indoor Waterproof TVs

RS232 Interface Configuration

Settings Table

Baud Rate	115200 bps
Data Length	8 bits
Parity Bit	None
Stop Bit	1 bit
Flow Control	None
Start Bits	1
Stop Bits	1

Pins

RS232 – Use DB9 (9 pin d-subminiature connector male)
- RXD (Receive)—Pin 2
- TXD (Transmit)—Pin 3
- Ground—Pin 5

RS232 – 2.5 mm mini jack
- TXD (Transmit)—tip (RED)
- RXD (Receive)—ring (WHITE)
- Ground—sleeve (BLACK)
- GREEN is not used

COMPATIBLE MODELS:
- 10.5 TV Mirror
- 19.5 TV Mirror
- 19.6 TV Mirror
- 27.5 TV Mirror
- 27.5S TV Mirror
- 27.6 TV Mirror
- 19.5 Hydra Indoor Waterproof TV
- 19.6 Hydra Indoor Waterproof TV
- 27.5 Hydra Indoor Waterproof TV
- 27.6 Hydra Indoor Waterproof TV

Basic Format for Control:

The Transmission of data from the Controller (Computer or A/V Controller) starts with an STX [0x02] signal, followed by the command, then the parameters, and lastly an ETX [0x03] signal. If there are no parameters, then the parameter does not need to be sent. A colon separates the commands from the parameters.

All Commands start with STX [0x02] and end with ETX [0x03]. Any data not contained between the STX and ETX commands will be ignored by the TV. **STX and ETX must be sent as hex commands; all other data must be sent as ASCII characters.**

NOTE: The brackets [ ] in the rest of this document do not get sent or returned in the command/query. They are there to indicate characters to be sent in hex.

All responses from the TV to Queries start with STX [0x02] and end with ETX [0x03]. Any data not contained between the STX and ETX commands must be ignored by the controller. **STX and ETX must be sent as hex commands; all other data must be sent as ASCII characters.**

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- Each command is a string of ASCII characters plus a Parameter.
- A colon separates the Command from the Parameter.
- The Parameter is 1 to 5 ASCII characters long.
- After each command is received, the TV shall send back an acknowledgment.
- For most commands, this will be a simple STX[0x02] , the ASCII letters “OK”, and an ETX[0x03]
- If there is an error, the TV shall return STX [0x02], the ASCII letters “ER”, and ETX [0x03]. There may be parameters added after a colon if more details are possible.
- If a command is sent to a TV that does not support this command, i.e. a tuner command for a monitor, the set shall return STX [0x02], the ASCII letters “INVALID” or “ERR” and ETX [0x03].

NOTE: AMX programmers may need to add 100ms delays between parameters in commands.

Examples:

All commands are ASCII, except STX and ETX, which must be sent in hex. **NOTE: The brackets [ ] in the rest of this document do not get sent or returned in the command/query. They are there to indicate characters to be sent in hexadecimal form.**

Example of a Power ON for Unit 001:
COMMAND: [0x02]001;PWD:1[0x03]
TV Returns: [0x02]OK[0x03]

Example of a Power ON with No Unit Number:
COMMAND: [0x02]PWD:1[0x03]
TV Returns: [0x02]OK[0x03]

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1230 Ontario Road Green Bay, Wisconsin 54311
1-800-957-3872 contacts@seura.com
www.seura.com

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Query Examples:

Use a "?" as the parameter and the TV will return the current value for that command.
There is no "OK" returned after a query.
Example of a Power Query with no Unit Number.
[0x02]PWD:?[0x03]

Would return this status if the TV is ON:
[0x02]1[0x03]

Or, this status if the TV is OFF:
[0x02]0[0x03]

Example of a Volume Query with No Unit Number, assumes that the Volume is set at 50. [0x02]VOL:?[0x03]

TV Returns: [0x02]50[0x03]

Query only works with the Following Commands

Power	PWD
Channel	CHA
Input	INP
Volume	VOL
Mute	MUT

KEY COMMANDS: These commands are the equivalent of sending the IR code from the remote control.

KEY	COMMAND	RESPONSE
DIGIT 0	[0x02]KEY:0[0x03]	[0x02]OK[0x03]
DIGIT 1	[0x02]KEY:1[0x03]	[0x02]OK[0x03]
DIGIT 2	[0x02]KEY:2[0x03]	[0x02]OK[0x03]
DIGIT 3	[0x02]KEY:3[0x03]	[0x02]OK[0x03]
DIGIT 4	[0x02]KEY:4[0x03]	[0x02]OK[0x03]
DIGIT 5	[0x02]KEY:5[0x03]	[0x02]OK[0x03]
DIGIT 6	[0x02]KEY:6[0x03]	[0x02]OK[0x03]
DIGIT 7	[0x02]KEY:7[0x03]	[0x02]OK[0x03]
DIGIT 8	[0x02]KEY:8[0x03]	[0x02]OK[0x03]
DIGIT 9	[0x02]KEY:9[0x03]	[0x02]OK[0x03]
SLEEP	[0x02]KEY:11[0x03]	[0x02]OK[0x03]
CC	[0x02]KEY:12[0x03]	[0x02]OK[0x03]
MENU (TOGGLE)	[0x02]KEY:21[0x03]	[0x02]OK[0x03]
DISPLAY (TOGGLE)	[0x02]KEY:22[0x03]	[0x02]OK[0x03]
VOL+ (Navigate Right)	[0x02]KEY:23[0x03]	[0x02]OK[0x03]
VOL- (Navigate Left)	[0x02]KEY:24[0x03]	[0x02]OK[0x03]
CH+ (Navigate Up)	[0x02]KEY:25[0x03]	[0x02]OK[0x03]
CH- (Navigate Down)	[0x02]KEY:26[0x03]	[0x02]OK[0x03]
PICTURE MODE STANDARD	[0x02]KEY:27[0x03]	[0z02]OK[0x03]
PICTURE MODE DYNAMIC	[0x02]KEY:28[0x03]	[0x02]OK[0x03]
PICTURE MODE THEATER	[0x02]KEY:29[0x03]	[0x02]OK[0x03]
PICTURE MODE PERSONAL	[0x02]KEY:30[0x03]	[0x02]OK[0x03]
PLAY	[0x02]KEY:115[0x03]	[0x02]OK[0x03]
PAUSE	[0x02]KEY:116[0x03]	[0x02]OK[0x03]
STOP	[0x02]KEY:117[0x03]	[0x02]OK[0x03]
SKIP FORWARD/CHAPTER +	[0x02]KEY:118[0x03]	[0x02]OK[0x03]
PREVIOUS CHANNEL [1]	[0x02]KEY:35[0x03]	[0x02]OK[0x03]
ENTER	[0x02]KEY:36[0x03]	[0x02]OK[0x03]
OK	[0x02]KEY:37[0x03]	[0x02]OK[0x03]
INPUT SELECT (TOGGLE)	[0x02]KEY:38[0x03]	[0x02]OK[0x03]
SKIP BACKWARD/CHAPTER -	[0x02]KEY:19[0x03]	[0x02]OK[0x03]
FAST FORWARD	[0x02]KEY:109[0x03]	[0x02]OK[0x03]
FAST BACKWARD	[0x02]KEY:112[0x03]	[0x02]OK[0x03]
EXIT	[0x02]KEY:110[0x03]	[0x02]OK[0x03]
DIGIT . (dot) (ATSC SUB-CH) [1]	[0x02]KEY:104[0x03]	[0x02]OK[0x03]
GUIDE [1] (TOGGLE)	[0x02]KEY:105[0x03]	[0x02]OK[0x03]
RED	[0x02]KEY:32[0x03]	[0x02]OK[0x03]
GREEN	[0x02]KEY:114[0x03]	[0x02]OK[0x03]
YELLOW	[0x02]KEY:111[0x03]	[0x02]OK[0x03]
BLUE	[0x02]KEY:113[0x03]	[0x02]OK[0x03]

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INPUT (INP)

	COMMAND	RESPONSE	QUERY	RESPONSE
VGA	[0x02]INP:0[0x03]	[0x02]OK[0x03]	[0x02]INP:? [0x03]	[0x02]0[0x03]
HDMI 1	[0x02]INP:1[0x03]	[0x02]OK[0x03]	[0x02]INP:?[0x03]	[0x02]1[0x03]
TUNER	[0x02]INP:2[0x03]	[0x02]OK[0x03]	[0x02]INP:?[0x03]	[0x02]2[0x03]
AV1	[0x02]INP:3[0x03]	[0x02]OK[0x03]	[0x02]INP:?[0x03]	[0x02]3[0x03]
HDMI 2	[0x02]INP:6[0x03]	[0x02]OK[0x03]	[0x02]INP:?[0x03]	[0x02]6[0x03]
COMPONENT	[0x02]INP:7[0x03]	[0x02]OK[0x03]	[0x02]INP:?[0x03]	[0x02]7[0x03]

POWER (PWD)

	COMMAND	RESPONSE	QUERY	RESPONSE
OFF	[0x02]PWD:0[0x03]	[0x02]OK[0x03]	[0x02]PWD:?[0x03]	[0x02]0[0x03]
ON	[0x02]PWD:1[0x03]	[0x02]OK[0x03]	[0x02]PWD:?[0x03]	[0x02]1[0x03]
TOGGLE	[0x02]PWD:3[0x03]	[0x02]OK[0x03]	N/A	N/A

MUTE (MUT)

	COMMAND	RESPONSE	QUERY	RESPONSE
MUTE	[0x02]MUT:1[0x03]	[0x02]OK[0x03]	[0x02]MUT:?[0x03]	[0x02]1[0x03]
UN-MUTE	[0x02]MUT:0[0x03]	[0x02]OK[0x03]	[0x02]MUT:?[0x03]	[0x02]0[0x03]

CHANNEL (CHA) [1]

COMMAND	RESPONSE	QUERY	RESPONSE
[0x02]CHA:xxx.x[0x03]	[0x02]OK[0x03]	[0x02]CHA:?[0x03]	[0x02]xxx.x[0x03]

VOLUME (VOL)

COMMAND	RESPONSE	QUERY	RESPONSE
[0x02]VOL:xxx[0x03]	[0x02]OK[0x03]	[0x02]VOL:?[0x03]	[0x02]xxx[0x03]

xxx = Volume value 000 -100

FORMAT (FOR)

FORMAT	COMMAND	RESPONSE
4:3	[0x02]FOR:0[0x03]	[0x02]OK[0x03]
16:9	[0x02]FOR:1[0x03]	[0x02]OK[0x03]
ZOOM	[0x02]FOR:3[0x03]	[0x02]OK[0x03]
1:1	[0x02]FOR:5[0x03]	[0x02]OK[0x03]

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