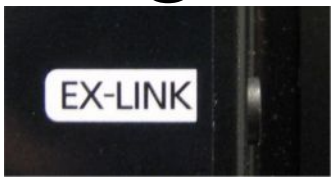
Samsung Ex-link



RS-232 Control

Product Support

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Samsung TV's can be controlled via RS232 by connecting to the Ex-Link port (Note: if the TV does not have an Ex-Link port, it does not support RS232).

The Ex-Link port is a 3.5mm 3 point connection.

Although there is both a Tx and Rx line, control data can only be sent to the TV through 2011 product. There is no support for status.

The following work book outlines the structure of the Samsung coding, connector pin-out for Ex-Link, testing application and a copy of supported coding.

Insam_Tool(Auto AV Control).exe
Insam Tool (Auto AV Control)

Byte1	Byte2	Byte3	Byte4	Byte5	Byte6	Byte7
0x08	0x22	Cmd1	Cmd2	Cmd3	Value	CS

Do not change Byte 1 and Byte 2 as they are fixed value

Bytes 3 through 6 are the command bytes (see slides 4 through 7)

Byte 7 (check sum) is the two's complement of Byte 1 through 6 (see slide 3)

Example:

Byte 3 = '0x4' Channel Direct Tuning:

Byte 4 = selects between DTV and ATV (select '0080' for DTV)

Byte 5 = major channel in DTV multiplied by 4
(i.e. if major channel is 4, Byte 5 = 4 * 4 = 16 = 10 in hex. Byte = '0x10')

Byte 6 = minor channel (i.e. channel 4-2 Byte 6 = '0x2')

Example: To direct tune Channel 4-2:
The 7 byte structure would be:
0x8 0x22 0x4 0x80 0x10 0x2 0x40

RS232 Check Sum Calculation for command codes

	Do not change	Do not Change	Command 1	Command 2	Command 3	Value			
Input Hex	0x8	0x22	4	80	10	2	Dec sum	converted to hex	Binary
Hex	8	22	4	80	10	2			
Dec	8	34	4	128	16	2	192	00C0	11000000
Dec				192					
Invert				63					
add 1				64					
Dec2Bin				1000000					
Dec2Hex			4	0					
Final	0x8	0x22	0x4	0x80	0x10	0x2	0x40		

Enter Command 1, 2, 3 and Value as listed in Coding sheet within blue area; result in yellow at left

Enter hex code for command 1, 2, 3 and value within orange box

Do not change the first two bytes as they are set by system requirements

Two's compliment is created from the 7 byte packet

Code to enter is in yellow

Example 0x8 0x22 0x00 0x00 0x00 0x01 0xD4 Power off

2's compliment calculation

Example: Direct tuning of channel 4-2 0x8 0x22 0x4 0x80 0x10 0x2 0x40

Ex-Link cable pin out

Part number: AA39-00311A

Available through GPCA or Samsungparts.com

SamsungParts.com

SamsungParts.com

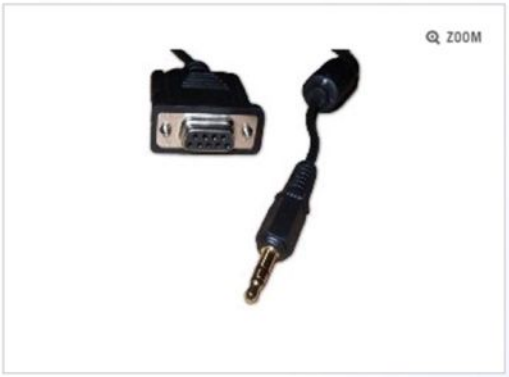
LOGIN | CUSTOMER SERVICE | CART (0 items)

SAMSUNG Authorized Distributor of Parts & Accessories

MODEL # Search Go | PART # Search Go | KEYWORD Search Go

AA39-00311A

BACK TO LIST



Part #: AA39-00311A
Product: TV
Stock: Ships within 1 business day
Price: $11.33

Shipping Cost Calculator

Description:
SIGNAL CABLE / RS-232C CABLE with Stereo connector.
(9 Pin Serial Connector <-> 1 Stereo Connector cable)

Specification:
PDP,9P/1P,UL2851#28,5000MM,UL

Quantity 1

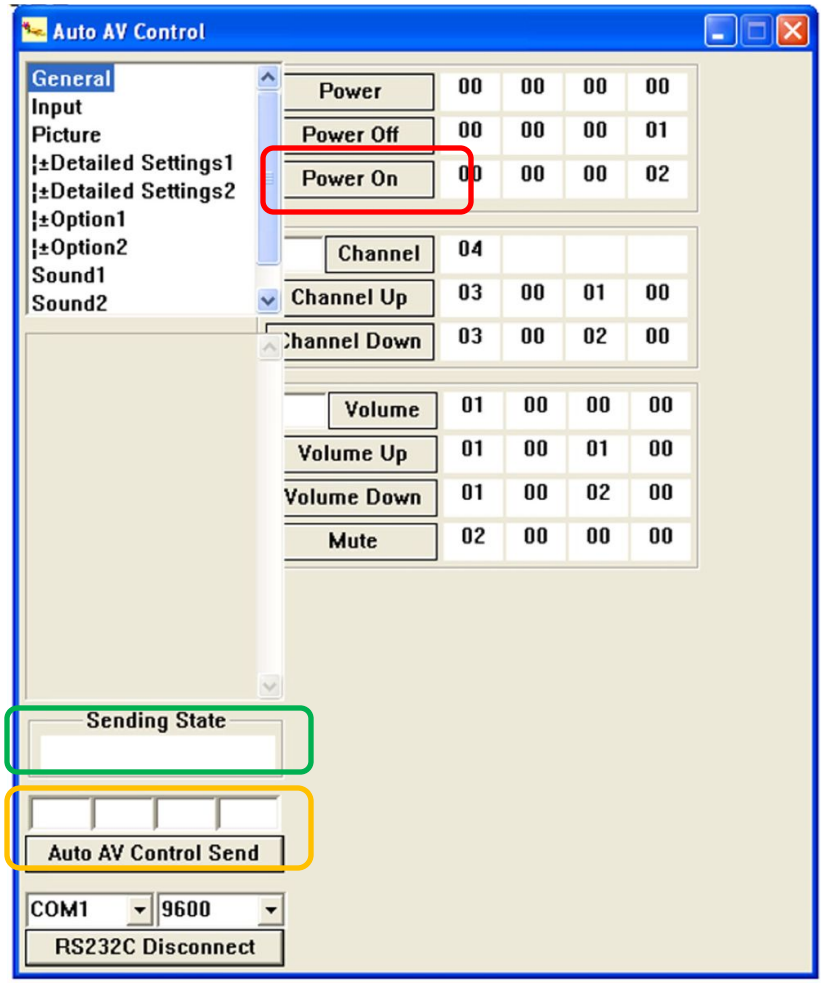
ADD TO CART

SUPPORTED MODELS

HPR8082, PPM42H3, PPM42S2, PPM42S3, PPM42S3Q, PPM50H2, PPM50H3, PPM50H3Q, PPM63H3, PPM63H3Q, PS42D4SMR, PS42P2ST

Ex-Link test app
2009 and prior

Basic operation can be verified using this application.
All basic operations can be verified by simple key press.
Selecting "Power On" should generate the code (byte 3 thru 6) and send it to the TV via the Ex-Link port.
In the "Sending State" window, the status of code will be displayed.
Once the TV accepts the code, "success" should be displayed in the window

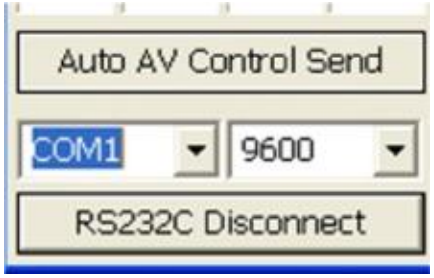


Communication settings:

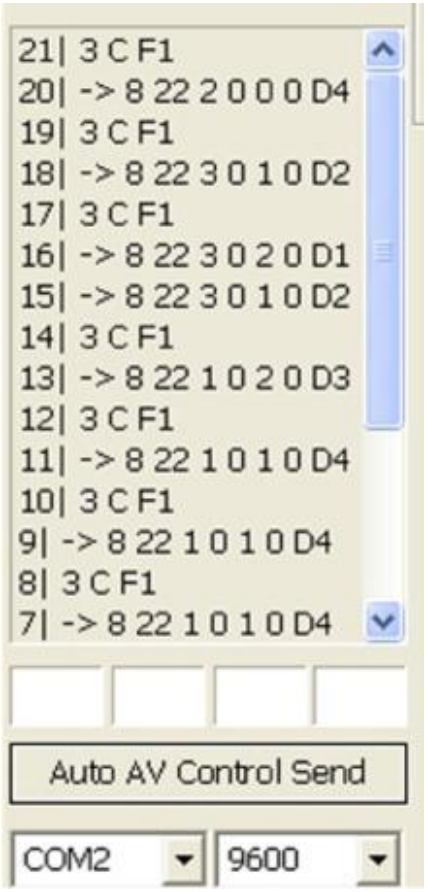
Baud rate: 9600

Set com port to match your PC

Once com port selected, click on the RS232C Connect button



Once connected
As you select the functions within the app, the window will display both the sending 7 byte command as well as show whether the TV acknowledged the command.
Ex. Line 15, no “3CF1” acknowledge return

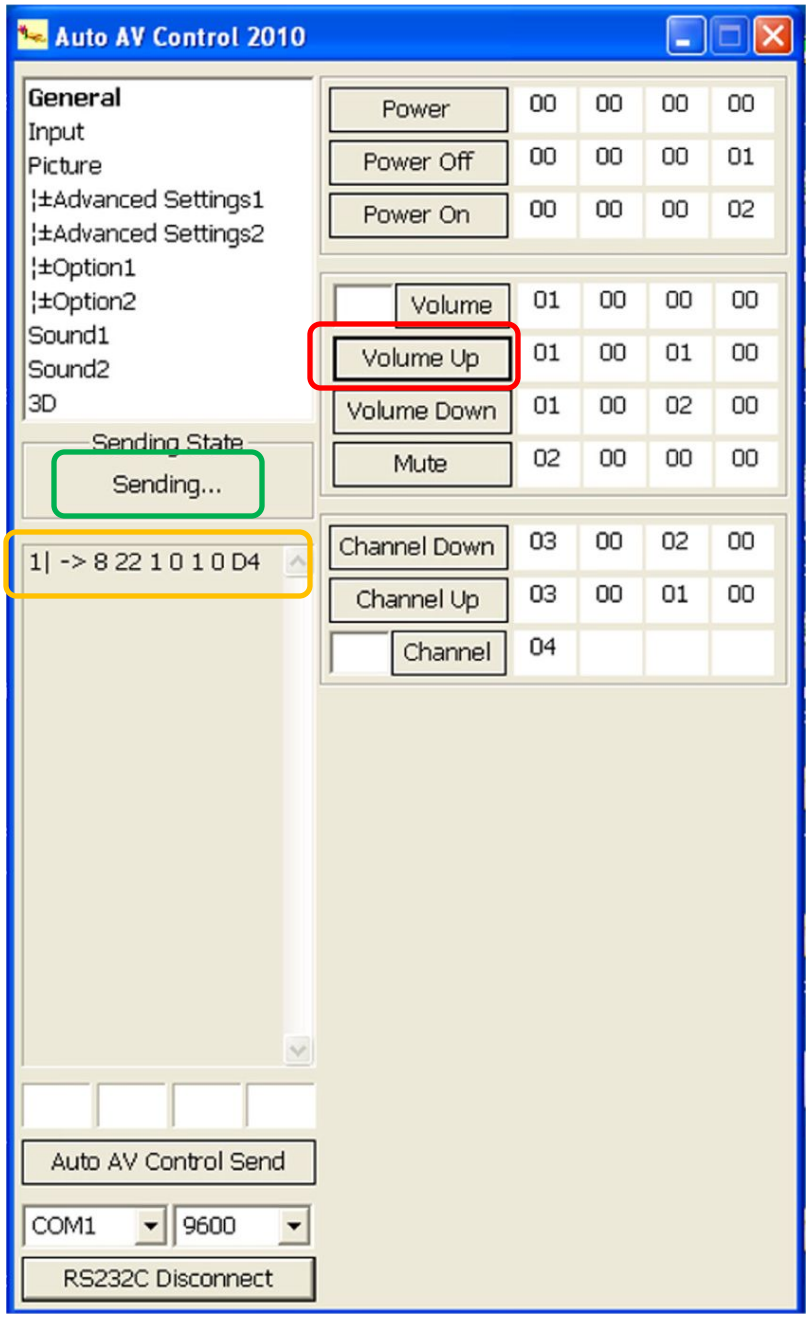


Model list:

2011~2013

Ex-Link test app and RS232 coding for 2010/2011/2012/2013

Basic operation can be verified using this application.
All basic operations can be verified by simple key press.
Selecting "Volume Up" should generate the code (byte 3 thru 6) and send it to the TV via the Ex-Link port.
In the "Sending State" window, the status of code will be displayed.
Once the TV accepts the code, "success" should be displayed in the window



Embedded files

- 2010 RS232
- 2010 Exlink app
- 2011 Coding
- 2011 RS232 Simulator app
- 2012/2013 Coding
- 2012/2013 RS232 Simulator app

End

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