

# RS-232 Protocol Commands

Operation | TV & Soundbars | 03/31/2023



# RS-232 PROTOCOL CONTROL COMMANDS

The information herein contained is an exact replication of the end segment found in all LG Electronics TV Owner’s Manuals. Should you wish to skip this text and download yourself a PDF copy, click on this [MANUAL SUPPORT link](#), type in any LG TV model number, preferably yours, then click on the Owner’s Manual PDF link. RS-232 Protocol command instructions can only be found in the Owner’s Manual. They are not provided in either the Online Manual, User Guide or Quick Set-Up Guide.

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## KEY CODES

• This feature is not available for all models.

Code (Hexa)	Function	Note	Code (Hexa)	Function	
00	CH +, PR +	R/C Button	53	List	R/C
01	CH -, PR -	R/C Button	5B	Exit	R/C
02	Volume +	R/C Button	60	PIP(AD)	R/C
03	Volume -	R/C Button	61	Blue	R/C
06	> (Arrow Key / Right Key)	R/C Button	63	Yellow	R/C
07	< (Arrow Key / Left Key)	R/C Button	71	Green	R/C
08	Power	R/C Button	72	Red	R/C
09	Mute	R/C Button	79	Ratio / Aspect Ratio	R/C
0B	Input	R/C Button	91	AD (Audio Description)	R/C
0E	SLEEP	R/C Button	9E	LIVE MENU	R/C
0F	TV, TV/RAD	R/C Button	7A	User Guide	R/C
10 - 19	* Number Key 0 - 9	R/C Button	7C	Smart / Home	R/C
1A	Q.View / Flashback	R/C Button	7E	SIMPLINK	R/C
1E	FAV (Favorite Channel)	R/C Button	8E	▶▶ (Forward)	R/C
20	Text (Teletext)	R/C Button	8F	◀◀ (Rewind)	R/C
21	T. Opt (Teletext Option)	R/C Button	AA	Info	R/C
28	Return (BACK)	R/C Button	AB	Program Guide	R/C
30	AV (Audio / Video) Mode	R/C Button	B0	▶ (Play)	R/C
39	Caption/Subtitle	R/C Button	B1	■ (Stop / File List)	R/C
40	^ (Arrow Key / Cursor Up)	R/C Button	B5	RECENT	R/C
41	v (Arrow Key / Cursor Down)	R/C Button	BA	(Freeze / Slow Play / Pause)	R/C
42	My Apps	R/C Button	BB	Soccer	R/C
43	Menu / Settings	R/C Button	BD	● (REC)	R/C
44	OK / Enter	R/C Button	DC	3D	R/C
45	Q.Menu	R/C Button	99	AutoConfig	R/C
4C	List, -	R/C Button	9F	App / *	R/C
4D	PICTURE	R/C Button	9B	TV / PC	R/C
52	SOUND	R/C Button			

\* Key code 4C (0x4C) is available on ATSC/ISDB models which use major/minor channel.  
(For South Korea, Japan, North America, Latin America except Colombia models)

# EXTERNAL CONTROL DEVICE SETUP

- Image shown may differ from your TV.

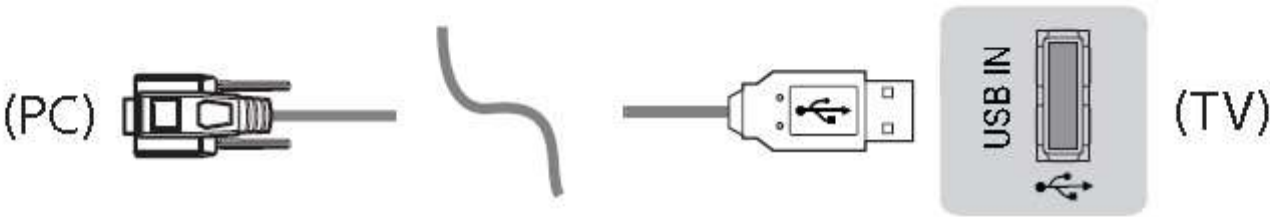
Connect the USB to Serial(RS-232C) converter/RS-232C(Serial) input jack to an external control device (such as a computer or an A/V control system) to control the product's functions externally.

Note: The type of control port on the TV can be different between model series.

- \* Please be advised that not all models support this type of connectivity.
- \* Cable is not provided.

## USB to Serial(RS-232C) converter with USB Cable

USB Type



- LGTV supports PL2303 chip-based (Vendor ID : 0x0557, Product ID : 0x2008) USB to serial(RS-232C) converter which is not made nor provided by LG.
- It can be purchased from computer stores that carry accessories for IT support professionals.

## RS-232C(Serial) With RS-232C(Serial) Cable

DE9 (D-Sub 9pin) Type

- You need to purchase the RS-232C (DE9, D-Sub 9pin female-to-female type) to RS-232C(Serial) cable required for the connection between the PC and the TV, which is specified in the manual.

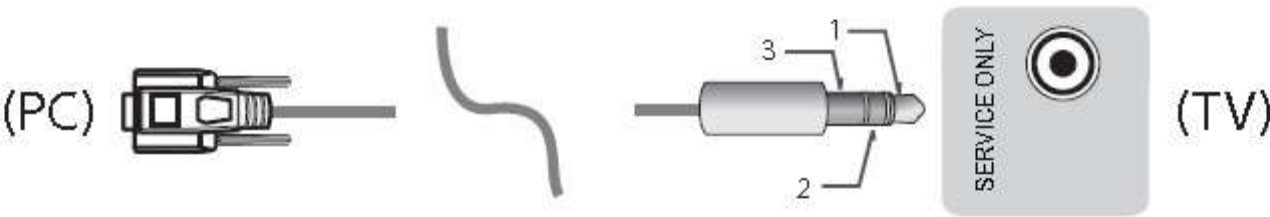


The connection interface may differ from your TV.

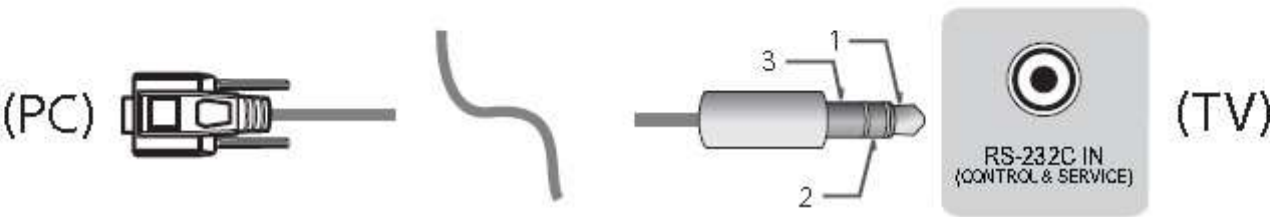
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Phone jack Type

- You need to purchase the phone-jack to RS-232 cable required for the connection between the PC and the TV, which is specified in the manual.
- \* For other models, connect to the USB port.
- \* The connection interface may differ from your TV.

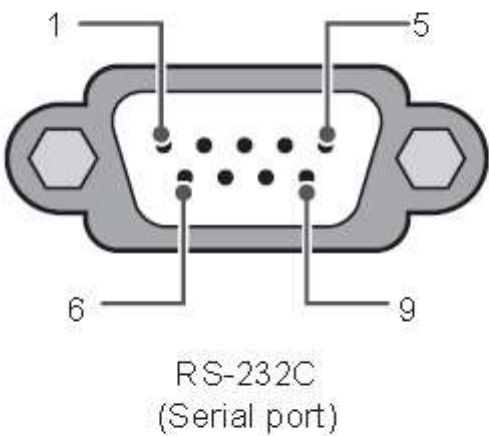


- or -



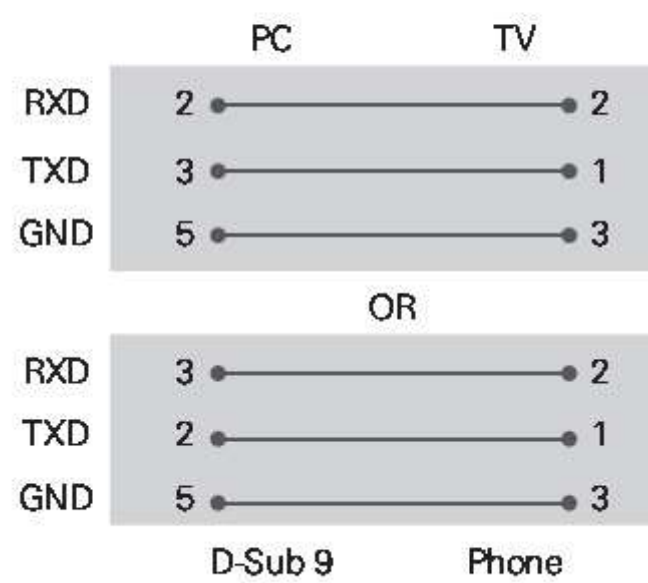


Customer Computer



RS-232C configurations

3-Wire Configurations(Not standard)



Set ID

For Set ID number, see "Real Data Mapping" on p.6

1. Press **SETTINGS** to access the main menus.
  2. Press the Navigation buttons to scroll to **(\*General → About this TV or OPTION)** and press **ENTER**.
  3. Press the Navigation buttons to scroll to **SET ID** and press **OK**.
  4. Scroll left or right to select a set ID number and select **CLOSE**. The adjustment range is 1-99.
  5. When you are finished, press **EXIT**.
- \* (Depending on model)

Communication Parameters

- Baud rate : 9600 bps (UART)
- Data length : 8 bits
- Parity : None
- Stop bit : 1 bit
- Communication code : ASCII code
- Use a crossed (reverse) cable.

Command reference list

(Depending on model)

	COMMAND1	COMMAND2	DATA (Hexadecimal)		COMMAND1	COMMAND2	DATA (Hexadecimal)
01. Power*	k	a	00 to 01	15. Balance	k	t	00 to 01
02. Aspect Ratio	k	c	(p.7)	16. Color (Colour) Temperature	x	u	00 to 01
03. Screen Mute	k	d	(p.7)	17. ISM Method (Only Plasma TV)	j	p	(p.8)
04. Volume Mute	k	e	00 to 01	18. Equalizer	j	v	(p.9)
05. Volume Control	k	f	00 to 64	19. Energy Saving	j	q	00 to 01
06. Contrast	k	g	00 to 64	20. Tune Command	m	a	(p.9)
07. Brightness	k	h	00 to 64	21. Channel (Programme) Add/Del(Skip)	m	b	00 to 01
08. Color/ Colour	k	i	00 to 64	22. Key	m	c	Key C
09. Tint	k	j	00 to 64	23. Control Backlight, Control Panel Light	m	g	00 to 01
10. Sharpness	k	k	00 to 32	24. Input select (Main)	x	b	(p.11)
11. OSD Select	k	l	00 to 01	25. 3D (Only 3D models)	x	t	(p.11)

12. Remote Control Lock Mode	k	m	00 to 01	26. Extended 3D (Only 3D models)	x	v	(p.12)
13. Treble	k	r	00 to 64	27. Auto Configure	j	u	(p.12)
14. Bass	k	s	00 to 64				

\* Note: During playing or recording media, all commands except Power (ka) and Key (mc) are not executed and treated as NG.  
With RS232C cable, TV can communicate "ka command" in power-on or power-off status. b  
USB-to-Serial converter cable, the command works only if TV is on.

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## Transmission / Receiving Protocol

### Transmission

[Command1][Command2][ ][Set ID][ ][Data][Cr]

- [Command 1] : First command to control the TV. (j, k, m or x)  
[Command 2] : Second command to control the TV.  
[Set ID] : You can adjust the [Set ID] to choose desired monitor ID number in option menu  
Adjustment range in TV is 1 to 99. If [Set ID] value is selected to '0', every conn  
can be controlled.  
\* [Set ID] is indicated as decimal (1 to 99) on menu and as Hexadecimal (0x00 to  
transmission/receiving protocol.  
[DATA] : To transmit command data (hexadecimal). Transmit 'FF' data to read status of c  
[Cr] : Carriage Return - ASCII code '0x0D'  
[ ] : Space - ASCII code '0x20'

### OK Acknowledgement

[Command2][ ][Set ID][ ][OK][Data][x]

\* The set transmits ACK (acknowledgement) based on this format when receiving normal data. /  
if the data is data read mode, it indicates present status data. If the data is data write mode, it i  
data of the PC computer.

### Error Acknowledgement

[Command2][ ][Set ID][ ][NG][Data][x]

\* The set transmits ACK (acknowledgement) based on this format when receiving abnormal data  
non-viable functions or communication errors.

Data 00: Illegal Code

### Real data mapping (Hexadecimal to Decimal)

- \* When you enter the [data] in hexadecimal, refer to following conversion table.  
\* Channel Tune (ma) Command uses two-byte hexadecimal value([data]) to select channel num

00 : Step 0	32 : Step 50 (Set ID 50)	FE : Step 254
01 : Step 1 (Set ID 1)	33 : Step 51 (Set ID 51)	FF : Step 255
...	...	...
0A : Step 10 (Set ID 10)	63 : Step 99 (Set ID 99)	01 00 : Step 256
...	...	...
0F : Step 15 (Set ID 15)	C7 : Step 199	27 0E : Step 9998
10 : Step 16 (Set ID 16)	C8 : Step 200	27 0F : Step 9999
...	...	...



\* Commands may work differently depending on model and signal.

01. Power (Command: k a)

- To control Power \*On or Off of the set.

Transmission[k][a][ ][Set ID][ ][Data][Cr]

Data 00 : Power Off            01 : \*Power On

Ack [a][ ][Set ID][ ][OK/NG][Data][x]

- To Show TV is Power On or \*Off

Transmission [k][a][ ][Set ID][ ][FF][Cr]

Ack [a][ ][Set ID][ ][OK][Data][x]

\* Similarly, if other functions transmit 'FF' data based on this format, Acknowledgement feedback presents status about each function.

02. Aspect Ratio (Command: k c)  
(Main Picture Size)

- To adjust the screen format. (Main picture format)  
You can also adjust the screen format using the Aspect Ratio in the Q.MENU. or PICTURE menu.

Transmission [k][c][ ][Set ID][ ][Data][Cr]

Data 01 : Normal screen (4:3)	07 : 14:9 (Europe, Colombia, Mid-East, Asia except South Korea and Japan)
02 : Wide screen (16:9)	
04 : Zoom	09 : * Just Scan
05 : Zoom 2 (Latin America except Colombia Only)	0B : Full Wide (Europe, Colombia, Mid-East, Asia except South Korea and Japan)
06 : Set by Program/ Original	10 to 1F : Cinema Zoom 1 to 16 0c : 21:9 (Depending on model)

Ack [c][ ][Set ID][ ][OK/NG][Data][x]

- \* Using the PC input, you select either 16:9 or 4:3 screen aspect ratio.
- \* In DTV/HDMI/Component mode (high-definition), Just Scan is available.
- \* Full wide mode may work differently based on model and is supported for DTV fully, and ATV, AV partially.

03. Screen Mute (Command: k d)

- To select screen mute on/off.

Transmission [k][d][ ][Set ID][ ][Data][Cr]

Data 00 : Screen mute off (Picture on)  
                  Video mute off  
01 : Screen mute on (Picture off)  
10 : Video mute on

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08. Color/Colour (Command: k i)

- To adjust the screen Color(Colour).  
You can also adjust colour in the PICTURE menu.

Transmission [k][i][ ][Set ID][ ][Data][Cr]

Data Min : 00 to Max : 64

Ack [i][ ][Set ID][ ][OK/NG][Data][x]

09. Tint (Command: k j)

- To adjust the screen tint.  
You can also adjust tint in the PICTURE menu.

Ack [d][ ][Set ID][ ][OK/NG][Data][x]

\* In case of video mute on only, TV will display Screen Display(OSD). But, in case of Screen on, TV will not display OSD.

04. Volume Mute (Command: k e)

- To control volume mute on/off.  
You can also adjust mute using the MUTE button on remote control.

Transmission [k][e][ ][Set ID][ ][Data][Cr]

Data 00 : Volume mute on (Volume off)  
01 : Volume mute off (Volume on)

Ack [e][ ][Set ID][ ][OK/NG][Data][x]

05. Volume Control (Command: k f)

- To adjust volume.  
You can also adjust volume with the volume buttons on remote control.

Transmission [k][f][ ][Set ID][ ][Data][Cr]

Data Min : 00 to Max : 64

Ack [f][ ][Set ID][ ][OK/NG][Data][x]

06. Contrast (Command: k g)

- To adjust screen contrast.  
You can also adjust contrast in the PICTURE menu.

Transmission [k][g][ ][Set ID][ ][Data][Cr]

Data Min : 00 to Max : 64

Ack [g][ ][Set ID][ ][OK/NG][Data][x]

07. Brightness (Command: k h)

- To adjust screen brightness.  
You can also adjust brightness in the PICTURE menu.

Transmission [k][h][ ][Set ID][ ][Data][Cr]

Data Min : 00 to Max : 64

Ack [h][ ][Set ID][ ][OK/NG][Data][x]

13. Treble (Command: k r)

- To adjust treble.  
You can also adjust in the AUDIO menu.

Transmission [k][r][ ][Set ID][ ][Data][Cr]

Data Min : 00 to Max : 64

Ack [r][ ][Set ID][ ][OK/NG][Data][x]

\* (Depending on model)

14. Bass (Command: k s)



Transmission [k][ ][Set ID][ ][Data][Cr]

Data Red : 00 to Green : 64

Ack [ ][Set ID][ ][OK/NG][Data][x]

10. Sharpness (Command: k k)

- To adjust the screen sharpness.  
You can also adjust sharpness in the PICTURE menu.

Transmission [k][k][ ][Set ID][ ][Data][Cr]

Data Min : 00 to Max : 32

Ack [k][ ][Set ID][ ][OK/NG][Data][x]

11. OSD Select (Command: k l)

- To select OSD (On Screen Display) on/off when controlling remotely.

Transmission [k][ ][Set ID][ ][Data][Cr]

Data 00 : OSD off                      01 : OSD on

Ack [ ][Set ID][ ][OK/NG][Data][x]

12. Remote control lock mode (Command: k m)

- To lock the front panel controls on the monitor and remote control.

Transmission [k][m][ ][Set ID][ ][Data][Cr]

Data 00 : Lock off                      01 : Lock on

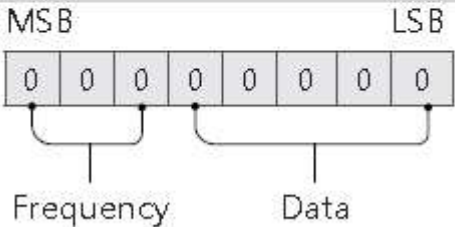
Ack [m][ ][Set ID][ ][OK/NG][Data][x]

- \* If you are not using the remote control, use this mode.  
When main power is off & on (plug-off and plug-in, after 20 - 30 seconds), external control lock is released.
- \* In the standby mode (DC off by off timer or 'ka', 'mc' command), and if key lock is on, TV will not turn on by power on key of IR & Local Key.

18. Equalizer (Command : j v)

- Adjust EQ of the set.

Transmission [j][v][ ][Set ID][ ][Data][Cr]



7	6	5	Frequency	4	3	2	1	0	Step
0	0	0	1st Band	0	0	0	0	0	0(decimal)
0	0	1	2nd Band	0	0	0	0	1	1(decimal)
0	1	0	3rd Band	...	...	...	...	...	...
0	1	1	4th Band	1	0	0	1	1	19(decimal)
1	0	0	5th Band	1	0	1	0	1	20(decimal)

Acknowledgement [v][ ][Set ID][ ][OK/NG][Data][x]

- \* It depends on model, and can adjust when sound mode is EQ adjustable value.

19. Energy Saving (Command: j q)

- To reduce the power consumption of the TV. You can also adjust Energy Saving in PICTURE menu.

- To adjust Bass.  
You can also adjust in the AUDIO menu.

Transmission [k][s][ ][Set ID][ ][Data][Cr]

Data Min : 00 to Max : 64

Ack [s][ ][Set ID][ ][OK/NG][Data][x]

\* (Depending on model)

15. Balance (Command: k t)

- To adjust balance.  
You can also adjust balance in the AUDIO menu.

Transmission [k][t][ ][Set ID][ ][Data][Cr]

Data Min : 00 to Max : 64

Ack [t][ ][Set ID][ ][OK/NG][Data][x]

16. Color(Colour) Temperature (Command: x u)

- To adjust colour temperature. You can also adjust Color(Colour) Temperature in the PICTURE menu.

Transmission [x][u][ ][Set ID][ ][Data][Cr]

Data Min : 00 to Max : 64

Ack [u][ ][Set ID][ ][OK/NG][Data][x]

17. ISM Method (Command: j p) (Only FHD)

- To control the ISM method. You can also adjust ISM Method in OPTION menu.

Transmission [j][p][ ][Set ID][ ][Data][Cr]

Data Min : 02: Orbiter  
08: Normal  
20: Color(Colour) Wash

Ack [p][ ][Set ID][ ][OK/NG][Data][x]

\* Analog Antenna/Cable

[Data 00][Data 01] Channel Data  
Data 00 : High byte channel data  
Data 01 : Low byte channel data  
- 00 00 ~ 00 C7 (Decimal : 0 ~ 199)

Data 02 : Input Source (Analog)  
- 00 : Antenna TV (ATV)  
- 80 : Cable TV (CATV)

\* Digital Antenna/Cable/Satellite

[Data 00][Data 01]: Channel Data  
Data 00 : High Channel data  
Data 01 : Low Channel data  
- 00 00 ~ 27 0F (Decimal: 0 ~ 9999)

Data 02 : Input Source (Digital)  
- 10 : Antenna TV (DTV)  
- 20 : Antenna Radio (Radio)  
- 40 : Satellite TV (SDTV)  
- 50 : Satellite Radio (S-Radio)  
- 90 : Cable TV (CADTV)  
- a0 : Cable Radio (CA-Radio)

\* Tune Command Examples:

1. Tune to the Analog antenna (PAL) Channel



Transmission [j][q][ ][Set ID][ ][Data][Cr]

Data

00 : Off

01 : Minimum

02 : Medium

03 : Maximum

04 : Auto (For LCD TV / LED TV) /  
Intelligent sensor (For PDP TV)

05 : Screen off

\* (Depending on model)

Ack [q][ ][Set ID][ ][OK/NG][Data][x]

20. Tune Command (Command: m a)

- \* This command may work differently depending on model and signal.
- For Europe, Mid-East, Colombia, Asia except South Korea and Japan Model
- ▶ Select channel to following physical number.

Transmission [m][a][ ][Set ID][ ][Data 00][ ][Data 01][ ][Data 02][Cr]

Set ID = All = 00

Data 00 & 01 = Channel Data is 10 = 00 0a

Data 02 = Analog Antenna TV = 00

Result = **ma 00 00 0a 00**

2. Tune to the digital antenna (DVB-T) Channel

Set ID = All = 00

Data 00 & 01 = Channel Data is 1 = 00 01

Data 02 = Digital Antenna TV = 10

Result = **ma 00 00 01 10**

3. Tune to the satellite (DVB-S) Channel 1000

Set ID = All = 00

Data 00 & 01 = Channel Data is 1000 = 03 10

Data 02 = Digital Satellite TV = 40

Result = **ma 00 03 E8 40**

Ack [a][ ][Set ID][ ][OK][Data 00][Data 01][Data 02][x][a][ ][Set ID][ ][NG][Data 00][x]

- For South Korea, North/Latin America except Colombia Model
- ▶ To tune channel to following physical/major number.

Transmission [m][a][ ][0][ ][Data00][ ][Data 01][ ][Data02][ ][Data03][ ][Data04][ ][Data05]

Digital channels have a Physical, Major, and Minor channel number. The Physical number is the digital channel number, the Major is the number the channel should be mapped to, and the Minor is the sub-channel. Since the ATSC tuner automatically maps the channel from the Major / Minor number, the Physical number is not required when sending command in Digital.

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\* Analog Antenna/Cable

Data 00 : Physical Channel Number

- Antenna (ATV) : 02~45 (Decimal: 2 ~ 69)
- Cable (CATV) : 01, 0E~7D (Decimal : 1, 14~125)

[Data 01 ~ 04]: Major/Minor Channel Number

Data 01 & 02: xx (Don't care)

Data 03 & 04: xx (Don't care)

Data 05: Input Source (Analog)

- 00 : Antenna TV (ATV)
- 01 : Cable TV (CATV)

\* Digital Antenna/Cable

Data 00 : xx (Don't care)

[Data 01][Data 02]: Major Channel Number

Data 01 : High byte Channel Data

Data 02 : Low byte Channel Data

- 00 01 ~ 27 0F (Decimal: 1 ~ 9999)

[Data 03][Data 04]: Minor Channel Number

Data 03 : High byte Channel Data

Data 04 : Low byte Channel Data

Data 05 : Input Source (Digital)

- 02 : Antenna TV (DTV) – Use Physical Channel Number
- 06 : Cable TV (CADTV) – Use Physical Channel Number
- 22 : Antenna TV (DTV) – Don't Use Physical Channel Number
- 26 : Cable TV (CADTV) - Don't Use Physical Channel Number
- 46 : Cable TV (CADTV) – Use Physical/Major Channel Number Only (One Part Channel)
- 66 : Cable TV (CADTV) – Use Major Channel Number Only (One Part Channel)
- 0h : Cable DTV Plus – Use Physical Channel Number Only (One Part Channel)

2. Tune to the digital antenna (ATSC) channel

Set ID = All = 00

Data 00 = Don't know Physical = 00

Data 01 & 02 = Major is 30 = 00 1E

Data 03 & 04 = Minor is 3 = 00 03

Data 05 = Digital Antenna TV = 22

Total = **ma 00 00 00 1E 00 03 22**

Ack [a][ ][Set ID][ ][OK][Data 00][Data 01][Data 02][Data 03][Data 04][Data 05][x][a][ ][Set ID][ ][NG][Data 00][x]

- For Japan Model
- ▶ To tune channel to following physical/major number.

Transmission [m][a][ ][0][ ][Data00][ ][Data 01][ ][Data02][ ][Data03][ ][Data04][ ][Data05]

\* Digital Antenna/Satellite

Data 00: xx (Don't care)

[Data 01][Data 02]: Major Channel Number

Data 01: High byte Channel Data

Data 02: Low byte Channel Data

- 00 01 ~ 27 0F (Decimal: 1 ~ 9999)

[Data 03][Data 04]: Minor/Branch Channel Number (Don't care in Satellite)

Data 03: High byte Channel Data

Data 04: Low byte Channel Data

Data 05 : Input Source (Digital/Satellite for)

- 02 : Antenna TV (DTV)
- 42 : Antenna TV (DTV) – Use Physical Channel Number Only (One Part Channel)
- 62 : Antenna TV (DTV) – Use Major Channel Number Only (One Part Channel)
- 07 : BS (Broadcasting Satellite)
- 08 : CS1 (Communication Satellite 1)



- 0b : Cable DTV Plus – Use Physical Channel Number
- 2b : Cable DTV Plus – Don't Use Physical Channel Number
- 4b : Cable DTV Plus – Use Physical/Major Channel Number Only (One Part Channel)
- 6b : Cable DTV Plus – Use Major Channel Number Only (One Part Channel)

Two bytes are available for each major and minor channel data, but usually the low byte is used alone (high byte is 0).

- \* Tune Command Examples:
1. Tune to the Analog cable (NTSC) channel 35.
- Set ID = All = 00  
Data 00 = Channel Data is 35 = 23  
Data 01 & 02 = No Major = 00 00  
Data 03 & 04 = No Minor = 00 00  
Data 05 = Analog Cable TV = 01  
Total = **ma 00 23 00 00 00 00 01**

2. Tune to the BS (ISDB-BS) channel 30.
- Set ID = All = 00  
Data 00 = Don't know Physical = 00  
Data 01 & 02 = Major is 30 = 00 1E  
Data 03 & 04 = Don't Care = 00 00  
Data 05 = Digital BS TV = 07  
Total = **ma 00 00 00 1E 00 00 07**

- \* This feature is varied based on the model.
- Ack [a][ ][Set ID][ ][OK][Data 00][Data 01]  
[Data 02][Data 03][Data 04][Data 05]  
[x][a][ ][Set ID][ ][NG][Data 00][x]

21. Channel(Programme) Add/Del(Skip)  
(Command: m b)
- To skip current channel(programme) for next time.
- Transmission [m][b][ ][Set ID][ ][Data][Cr]

- Data 00 : Del(ATSC,ISDB)/Skip(DVB)    01 : Add
- Ack [b][ ][Set ID][ ][OK/NG][Data][x]

- \* Set the saved channel status to del(ATSC, ISDB)/skip(DVB) or add.

22. Key (Command: m c)
- To send IR remote key code.
- Transmission [m][c][ ][Set ID][ ][Data][Cr]

- Data Key code - p.2.
- Ack [c][ ][Set ID][ ][OK/NG][Data][x]

23. Control Backlight (Command: m g)
- For LCD TV / LED TV
- To control the backlight.
- Transmission [m][g][ ][Set ID][ ][Data][Cr]

- Data Min : 00 to Max : 64
- Ack [g][ ][Set ID][ ][OK/NG][Data][x]
- Control Panel Light (Command: m g)

- For Plasma TV
- To control the panel light.
- Transmission [m][g][ ][Set ID][ ][Data][Cr]

- Data Min : 00 to Max : 64
- Ack [g][ ][Set ID][ ][OK/NG][Data][x]

- 00 : CS1 (Communication Satellite 1)
- 09 : CS2 (Communication Satellite 2)

- \* Tune Command Examples:
1. Tune to the digital antenna (ISDB-T) ch#
- Set ID = All = 00  
Data 00 = Don't know Physical = 00  
Data 01 & 02 = Major is 17 = 00 11  
Data 03 & 04 = Minor/Branch is 1 = 00 01  
Data 05 = Digital Antenna TV = 02  
Total = **ma 00 00 00 11 00 01 02**

24. Input select (Command: x b)  
(Main Picture Input)
- To select input source for main picture.
- Transmission [x][b][ ][Set ID][ ][Data][Cr]

- Data
- |                       |                 |
|-----------------------|-----------------|
| 00 : DTV              | 01 : CADTV      |
| 02 : Satellite DTV    | 10 : ATV        |
| ISDB-BS (Japan)       |                 |
| 03 : ISDB-CS1 (Japan) |                 |
| 04 : ISDB-CS2 (Japan) |                 |
| 11 : CATV             |                 |
| 20 : AV or AV1        | 21 : AV2        |
| 40 : Component1       | 41 : Component2 |
| 60 : RGB              |                 |
| 90 : HDMI1            | 91 : HDMI2      |
| 92 : HDMI3            | 93 : HDMI4      |
- Ack [b][ ][Set ID][ ][OK/NG][Data][x]

- \* This function depends on model and signal.

25. 3D(Command: x t) (only 3D models)  
(Depending on model)
- To change 3D mode for TV.
- Transmission [x][t][ ][Set ID][ ][Data 00][ ][Data 01][ ][Data 02][ ][Data 03][Cr]

- \* (Depending on model)
- Data Structure
- [Data 00] 00 : 3D On  
01 : 3D Off  
02 : 3D to 2D  
03 : 2D to 3D
- [Data 01] 00 : Top and Bottom  
01 : Side by Side  
02 : Check Board  
03 : Frame Sequential  
04 : Column interleaving  
05 : Row interleaving
- [Data 02] 00 : Right to Left  
01 : Left to Right
- [Data 03] 3D Effect(3D Depth): Min : 00 - Max : 63  
(\*transmit by Hexadecimal code)

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- \* [Data 02], [Data 03] functions depend on model and signal.
- \* If [Data 00] is 00 (3D On), [Data 03] has no meaning.
- \* If [Data 00] is 01 (3D off) or 02 (3D to 2D), [Data 01], [Data 02] and [Data 03] have no meaning.
- \* If [Data 00] is 03 (2D to 3D), [Data 01] and [Data 02] have no meaning.
- \* If [Data 00] is 00 (3D On) or 03 (2D to 3D), [Data 03] works when 3D Mode (Genre) is manual only.
- \* All 3D pattern options ([Data 01]) may not be available according to broadcasting/video signal.

[Data 00]	[Data 01]	[Data 02]	[Data 03]
00	O	O	O
01	X	X	X
02	X	X	X
03	X	O	O

X: don't care

Ack [t][ ][Set ID][ ][OK][Data00][Data01][Data02][Data03][x]  
[t][ ][Set ID][ ][NG][Data00][x]

26. Extended 3D(Command: x v) (only 3D models) (Depending on model)

- To change 3D option for TV.

Transmission [x][v][ ][Set ID][ ][Data 00][ ][Data 01][Cr]

- [Data 00] 3D option
- 00 : 3D Picture Correction
  - 01 : 3D Depth (3D Mode is Manual Only)
  - 02 : 3D Viewpoint
  - 06 : 3D Color Correction
  - 07 : 3D Sound Zooming
  - 08 : Normal Image View
  - 09 : 3D Mode (Genre)

[Data 01] It has own range for each 3D option determined by [Data 00].

- 1) When [Data 00] is 00
- 00 : Right to Left
  - 01 : Left to Right

- 3) When [Data 00] is 06, 07
- 00 : Off
  - 01 : On
- 4) When [Data 00] is 08
- 00 : Revert to 3D video from 3D-to-2D converted 2D video
  - 01 : Change 3D video to 2D video from 2D-to-3D video
- \* If conversion condition doesn't meet, correct treated as NG.

5) When [Data 00] is 09

- 00 : Standard
- 01 : Sport
- 02 : Cinema
- 03 : Extreme
- 04 : Manual
- 05 : Auto

Ack [v][ ][Set ID][ ][OK][Data00][Data01][v][ ][Set ID][ ][NG][Data00][x]

27. Auto Configure (Command: j u) (Depending on model)

- To adjust picture position and minimize shaking automatically. It works only in full mode.

Transmission [j][u][ ][Set ID][ ][Data][Cr]

Data 01 : To set Auto Configure

Ack [u][ ][Set ID][ ][OK/NG][Data][x]