RS-232 Protocol Commands

Operation | TV & Soundbars | 03/06/2024

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.

Code (Hexa)	Function	Note	Code (Hexa)	Function	Note
00	CH +, PR +	R/C Button	53	List	R/C Button
01	CH -, PR -	R/C Button	5B	Exit	R/C Button
02	Volume +	R/C Button	60	PIP(AD)	R/C Button
03	Volume -	R/C Button	61	Blue	R/C Button
06	> (Arrow Key / Right Key)	R/C Button	63	Yellow	R/C Button
07	< (Arrow Key / Left Key)	R/C Button	71	Green	R/C Button
08	Power	R/C Button	72	Red	R/C Button
09	Mute	R/C Button	79	Ratio / Aspect Ratio	R/C Button
0B	Input	R/C Button	91	AD (Audio Description)	R/C Button
0E	SLEEP	R/C Button	9E	LIVE MENU	R/C Button
		R/C			R/C

0F	TV, TV/RAD	Button	7A	User Guide	Button
10 - 19	* Number Key 0 - 9	R/C Button	7C	Smart / Home	R/C Button
1A	Q.View / Flashback	R/C Button	7E	SIMPLINK	R/C Button
1E	FAV (Favorite Channel)	R/C Button	8E	▶▶ (Forward)	R/C Button
20	Text (Teletext)	R/C Button	8F	◀◀ (Rewind)	R/C Button
21	T. Opt (Teletext Option)	R/C Button	AA	Info	R/C Button
28	Return (BACK)	R/C Button	AB	Program Guide	R/C Button
30	AV (Audio / Video) Mode	R/C Button	B0	▶ (Play)	R/C Button
39	Caption/Subtitle	R/C Button	B1	Ƀ (Stop / File List)	R/C Button
40	∧ (Arrow Key / Cursor Up)	R/C Button	B5	RECENT	R/C Button
41	∨ (Arrow Key / Cursor Down)	R/C Button	BA	↻ (Freeze / Slow Play /cPause)	R/C Button
42	My Apps	R/C Button	BD	(REC)	R/C Button
43	Menu / Settings	R/C Button	DC	3D	R/C Button
44	OK / Enter	R/C Button	99	AutoConfig	R/C Button
45	Q.Menu	R/C Button	9F	App / *	R/C Button
4C	List, -	R/C	9B	TV / PC	R/C Button

		Button
4D	PICTURE	R/C Button
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.
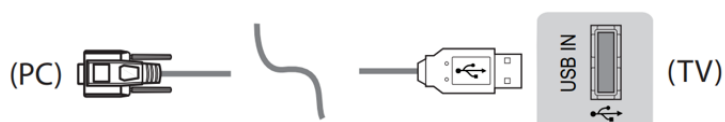
> ! **Note**
>
> The type of control port on the TV can be different between model series.
>
> Please be advised that not all models support this type of connectivity.
>
> Cable is not provided.

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.
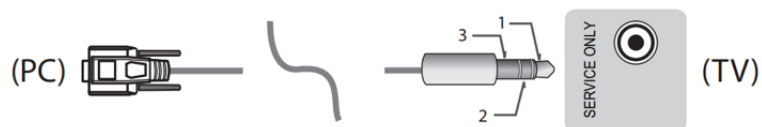

The connection interface may differ from your TV.
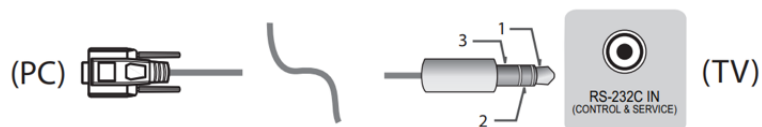
Phone jack Type

You need to purchase the phone-jack to RS-232 cable required for the connection between the PC and the TV.

For other models, connect to the USB port

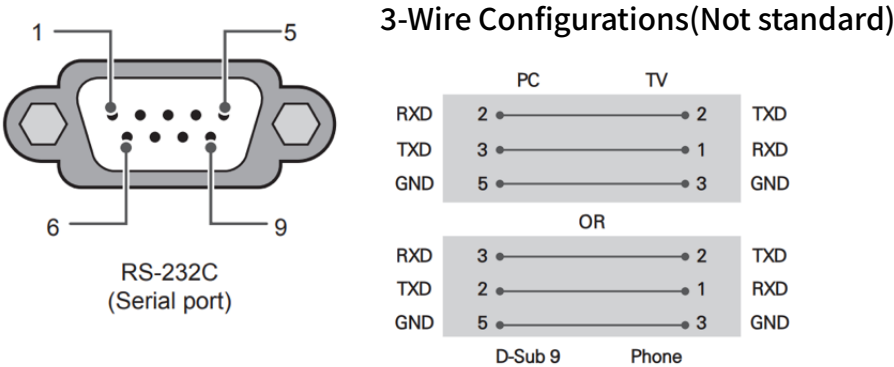The connection interface may differ from your TV.

Customer Computer   RS-232C configurations

3-Wire Configurations(Not standard)

Set ID

For Set ID number, see "Real Data Mapping" section below.

1 Press SETTINGS to access the main menus.

2 Press the Navigation buttons to scroll to (*General → About this TV or OPTION) and press OK.

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)
01. Power*	k	a	00 to 01
02. Aspect Ratio	k	c	(p.7)
03. Screen Mute	k	d	(p.7)
04. Volume Mute	k	e	00 to 01
05. Volume Control	k	f	00 to 64
06. Contrast	k	g	00 to 64
07. Brightness	k	h	00 to 64
08. Color/Colour	k	i	00 to 64
09. Tint	k	j	00 to 64
10. Sharpness	k	k	00 to 32
11. OSD Select	k	l	00 to 01
12. Remote Control Lock Mode	k	m	00 to 01
13. Treble	k	r	00 to 64
14. Bass	k	s	00 to 64
15. Balance	k	t	00 to 64
16. Color(Colour) Temperature	x	u	00 to 64
17. ISM Method (Only Plasma TV)	j	p	(p.8)
18. Equalizer	j	v	(p.9)
19. Energy Saving	j	q	00 to 05
20. Tune Command	m	a	(p.9)
21. Channel(Programme) Add/Del(Skip)	m	a	(p.9)
22. Key	m	c	Key Codes
23. Control Backlight, Control Panel Light	m	g	00 to 64

24. Input select (Main)	x	b	(p.11)
25. 3D (Only 3D models)	x	t	(p.11)
26. Extended 3D (Only 3D models)	x	v	(p.12)
27. Auto Configure	j	u	(p.12)

> ⚠ **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. but with USB-to-Serial converter cable, the command works only if TV is on.

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 connected set can be controlled. * [Set ID] is indicated as decimal (1 to 99) on menu and as Hexadecimal (0x00 to 0x63) on transmission/receiving protocol.

[DATA] : To transmit command data (hexadecimal). Transmit 'FF' data to read status of command.

[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. At this time, if the data is data read mode, it indicates present status data. If the data is data write mode, it returns the

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 from non-viable functions or communication errors.

Data 00: Illegal Code

Real data mapping (Hexadecimal b 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 number.

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
...	...	...

> ! **Note**
> 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)
02 : Wide screen (16:9)
04 : Zoom
05 : Zoom 2 (Latin America except Colombia Only)
06 : Set by Program/ Original
07 : 14:9 (Europe, Colombia, Mid-East, Asia except South Korea and Japan)
09 : * Just Scan
0B : Full Wide (Europe, Colombia, MidEast, Asia except South Korea and Japan)
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 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 00 : Screen mute off (Picture on)
Video mute off
01 : Screen mute on (Picture off)
10 : Video mute on

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

In case of video mute on only, TV will display On Screen Display(OSD). But, in case of Screen mute 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][f][ ][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]

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

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

Data Red : 00 to Green : 64

Ack [j][ ][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][l][ ][Set ID][ ][Data][Cr]

Data 00 : OSD off 01 : OSD on

Ack [l][ ][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

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)

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 Plasma TV)

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

Transmission [j][p][ ][Set ID][ ][Data][Cr]
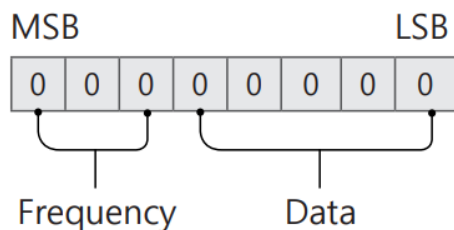
Data Min : 02: Orbiter
08: Normal
20: Color(Colour) Wash

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

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)
0	0	0	1st Band	0	0	0	0	0	0(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.

Transmission [j][p][ ][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 [p][ ][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]

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 [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 10. 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 01. 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 E8 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/minor number.

Transmission [m][a][ ][0][ ][Data00][ ][Data01] [ ][Data02][ ][Data03][ ][Data04][ ] [Data05][Cr] Digital channels have a Physical, Major, and Minor channel number. The Physical number is the actual digital channel number, the Major is the number that 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 a command in Digital.

⁝ 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)

  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**

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

Tune to the digital antenna (ATSC) channel 30-3.

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 Models**

To tune channel to following physical/major/minor number.

Transmission [m][a][ ][0][ ][Data00][ ][Data01] [ ][Data02][ ][Data03][ ][Data04][ ] [Data05][Cr]

! **Tune Command Examples**

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

Tune to the digital antenna (ATSC) channel 30-3.

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 Models**

To tune channel to following physical/major/minor number.

Transmission [m][a][ ][0][ ][Data00][ ][Data01] [ ][Data02][ ][Data03][ ][Data04][ ] [Data05][Cr]

! **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 Japan)

  02 : Antenna TV (DTV)

  42 : Antenna TV (DTV) – Use Physical/Major

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)

  09 : CS2 (Communication Satellite 2)

! **Tune Command Examples**

Tune to the digital antenna (ISDB-T) channel 17-1.

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

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]

Tune to the digital antenna (ATSC) channel 30-3.

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 Models**

To tune channel to following physical/major/minor number.

Transmission [m][a][ ][0][ ][Data00][ ][Data01] [ ][Data02][ ][Data03][ ][Data04][ ] [Data05][Cr]

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]**

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

  02 : Satellite DTV ISDB-BS (Japan)

  03 : ISDB-CS1 (Japan)

  04 : ISDB-CS2 (Japan)

  11 : CATV

  01 : CADTV

  10 : ATV

  20 : AV or AV1 21 : AV2

  40 : Component1

  60 : RGB

  41 : Component2

  90 : HDMI1

  92 : HDMI3

  91 : HDMI2

  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]

Data Key code - p.2.

(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 : 14 (*transmit by Hexadecimal code)

[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].

When [Data 00] is 00
00 : Right to Left
01 : Left to Right

When [Data 00] is 01, 02 Data Min: 0 - Max: 14 (*transmit by Hexadecimal code)

Data value range(0 - 20) converts Viewpoint range (-10 - +10) automatically (Depending on model) This option works when 3D Mode (Genre) is manual only.

When [Data 00] is 06, 07
00 : Off
01 : On

When [Data 00] is 08
00 : Revert to 3D video from 3D-to-2D converted 2D video
01 : Change 3D video to 2D video, except 2D-to-3D video
* If conversion condition doesn't meet, command is treated as NG.

When [Data 00] is 09

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

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

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

To adjust picture position and minimize image shaking automatically. It works only in RGB (PC) mode.

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

Data 01 : To set Auto Configure

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