Your PDF Guides

You can read the recommendations in the user guide, the technical guide or the installation guide for LG M4214TCBA. You'll find the answers to all your questions on the LG M4214TCBA in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

> **User manual LG M4214TCBA**
> **User guide LG M4214TCBA**
> **Operating instructions LG M4214TCBA**
> **Instructions for use LG M4214TCBA**
> **Instruction manual LG M4214TCBA**

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OWNER'S MANUAL
MONITOR SIGNAGE
Please read this manual carefully before operating your set and retain it for future reference.

MONITOR SIGNAGE MODELS
M4214T

www.lg.com

Manual abstract:

@@@@Toggles through aspect ratio options. · Auto Button Automatic adjustment function (Operational for the analog signal only) There is not a function which is supported There is not a function which is supported There is not a function which is supported · Exit Button · Volume Button Volume up and down · Check Button There is not a function which is supported · Menu Button · UP and Down buttons Bring up and down direction adjustment. · Mute button 4 Using the Remote Control · AV Button Toggles through video AV Component RGB PC HDMI/DVI · Input Select Button If you press the button once, the following Input Signal Window will appear. Select the signal type you want using the button. Input AV Component RGB PC HDMI/DVI Inserting batteries into remote control. 1. Open the battery compartment cover on the back side and install the batteries matching correct polarity (+ with +,- with -) 2. Install two 1.5 V AAA batteries. Don't mix old or used batteries with new ones.

*3. Close cover. 4. To remove the batteries, perform the installation actions in reverse. AAA Type 5 Name and Function of the Parts * The product image in the user's guide could be different from the actual image.*

Rear View Power Connector : Connect the power cord RS-232C Serial Ports RGB PC, HDMI/DVI Ports - HDMI Supports High Definition input and HDCP (High-bandwidth Digital Content Protection). Some devices require HDCP in order to display HD signals. @@@@@@@@If the Audio Out of the PC sound card supports both Speaker Out and Line Out, convert to Line Out using the card jumper of the program (Refer to the Sound Card Manual). 6 Connecting to External Devices When Connecting to your PC First of all, see if the computer, product and the peripherals are turned off. Then, connect the signal input cable.

*A When connecting with the D-Sub signal input cable. B When connecting with the HDMI to DVI signal input cable (not included). * When HDMI PC is used, a compatiblity problem might occur. A PC Rear side of the product. MAC PC/MAC Macintosh Adapter (not included) Use the standard Macintosh adapter since an incompatible adapter is available in the market. (Different signaling system) B (not included) Rear side of the product. PC * User must use shielded signal interface cables (D-sub 15 pin cable, DVI cable) with ferrite cores to maintain standard compliance for the product. Connect the Audio cable. Rear side of the product. PC Connect the USB cable.*

Rear side of the product. PC Note · The monitor's USB terminal supports USB 2.0 and full speed (12Mbps). 7 Connecting to External Devices Connect the power cord. Rear side of the product. 1 Turn on power by pressing the power button on the product. Power button 2 Turn on the PC. Select an input signal. Press the INPUT button on the remote control to select the input signal. INPUT SET Or, press the SOURCE button on the back of the product. SOURCE AUTO/SET Input AV Component RGB PC HDMI/DVI Input AV Component RGB PC HDMI/DVI A B When connecting with a D-Sub signal input cable. · Select RGB PC : 15-pin D-Sub analog signal. When connecting with a HDMI to DVI signal input cable. · Select HDMI/DVI : HDMI to DVI Digital signal. Note · How to connect to two computers.

Connect the signal cables (HDMI to DVI and D-Sub) to each computer. Press the INPUT button on the remote control to select the computer to use. · Directly connect to a grounded power outlet on the wall or a power bar with a ground wire. 8 Connecting to External Devices When using the LAN Connect the LAN cable as shown in the below figure . A Connect PC to Monitor directly.

LAN B Using a router(Switch) LAN Switch Product PC Product PC C Using the Internet. LAN Network Network Product Network PC Connect the LAN cable and install the eZ-Net Manager program on the CD-ROM. For more information about the program, please refer to eZ-Net Guide in the enclosed CD-ROM. Note · Using LAN establishes communication between your PC and the monitor and enables to use the OSD menus on the PC as well as on the monitor. 9 Connecting to External Devices VESA FDMI wall Mounting This product supports a VESA FDMI compliant mounting interface. These mounts are purchased separately and not available from LG. Refer to the instructions included with wall mount for more info. Kensington Security Slot The Set is equipped with a kensington Security System connector on the back panel. The cable and lock are available separate and are not sold by LG. For more info, visit http://www.

kensington.com, the internet home page of the Kensington company. 10 Connecting to External Devices Video Input Connect the video cable as shown in the below figure and then connect the power cord (See page 8). A When connecting with a BNC cable. · Connect the input terminal with a B When connecting with a S-Video cable. watch high image quality movies. Product proper color match. · Connect to the S-Video input terminal to Product Audio Cable (not included) BNC Cable (not included) Audio Cable (not included) S-Video Cable (not included) VCR/DVD Receiver VCR/DVD Receiver Select an input signal. Press the INPUT button on the remote control to select the input signal. INPUT SET Input AV Component RGB PC HDMI/DVI Or, press the SOURCE button on the back of the product.

SOURCE AUTO/SET A B When connecting with an BNC cable. · Select AV. When connecting with an S-Video cable. · Select AV. Note · When the BNC cable is connected simultaneously with S-Video cable, S-Video input has a priority.

11 Connecting to External Devices Component Input (480i/480p/576i/576p/720p/1080i/1080p) Connect the video/audio cable as shown in the below figure and then, connect the power cord (See page 8). · Connect the input terminal with a proper color match. Product BNC Cable (not included) Audio Cable (not included) HDTV Receiver Note - Some devices may require HDCP in order to display HD signals. - Component doesn't support HDCP. Select an input signal.

Press the INPUT button on the remote control to select the input signal. INPUT SET Or, press the SOURCE button on the back of the product. SOURCE AUTO/SET Input AV Component RGB PC HDMI/DVI · Select Component 12 Connecting to External Devices HDMI Input (480p/576p/720p/1080i/1080p) - HDMI Supports High Definition input and HDCP (High-bandwidth Digital Content Protection). Some devices require HDCP in order to display HD signals. Connect the video/audio cable as shown in the below figure and then connect the power cord (See page 8). Product Product HDMI to DVI Signal Cable (not included) RCA-PC Audio Cable (not included) HDMI Signal Cable (not included) VCR/DVD/Set-top Box Note : Dolby Digital is not supported.

VCR/DVD/Set-top Box Select an input signal. Press the INPUT button on the remote control to select the input signal. INPUT SET Or, press the SOURCE button on the back of the product. SOURCE AUTO/SET Input AV Component RGB PC HDMI/DVI When connecting with a HDMI to DVI signal input cable.

When connecting with a HDMI signal input cable. · Select HDMI/DVI 13 Connecting to External Devices Daisy Chain Monitors Use this function when displaying ANALOG RGB inputs of a PC to the other product. · To use different products connected to each other Connect one end of the signal input cable (15-pin D-Sub Signal Cable) to the RGB OUT connector of product 1 and connect the other end to the RGB IN connector of other products. 15-pin D-Sub Signal Cable PC Product 1 Product 2 Product 3 Product 4 Watching AV Outputs - When using AV input, you can connect the AV Out to other monitors. Audio Cable (not included) Video/TV BNC Cable (not included) Product 1 Note Product 2 Product 3 · When multi-connecting in/out cascade format, no loss cables are recommended. We recommend that you should use cable distributor. 14 User Menus Screen Adjustment options Power Button · Press this button to turn on the power. Press this button again to turn it off. · This Indicator lights up blue when the display operates normally(on mode). IStandard, Cinema, Sport or Game the subsequent menus will be automatically set.

19 User Menus Adjusting Screen Color Color Temperature Picture Picture Mode Color Temperature Advanced Aspect Ratio Picture Reset Screen MENU Cool Medium Warm User Color Settings · Cool : Slightly purplish white. · Medium : Slightly bluish white. · Warm : Slightly reddish white. · User : Select this option to use the user-defined settings. User Red Green Blue 0 0 0 MENU Red / Green / Blue Set your own color levels.

20 User Menus Adjusting Screen Color Advanced Picture Picture Mode Color Temperature Advanced Aspect Ratio Picture Reset Screen MENU To set · Gamma : Set your own gamma value. : -50/0/50 On the monitor, high gamma values display whitish images and low gamma values display high contrast images. · Film Mode : (Function works in the following mode - AV, Component 480i/576i) When you watch a movie, this function adjusts the set to the best picture appearance. · Black Level : (Function works in the following mode - AV(NTSC), Component, HDMI-DTV adjusts the contrast and the brightness of the screen using the black level of the screen. · High : The reflection of the screen gets brighter.

· Low : The reflection of the screen gets darker. · NR : Removing the noise up to the point where it does not damage the original picture. 21 User Menus Adjusting Screen Color Aspect Ratio To select the image size of the screen. Picture Picture Mode Color Temperature Advanced Aspect Ratio Picture Reset Screen MENU 16:9 Original 4:3 14:9 Zoom1 Zoom2 <AV> 16:9 Just Scan Widescreen mode. Allows you to enjoy the transmitted data fully without any images cut off. (* This menu is activated only in 720p, 1080p and 1080i in Component mode.) The aspect ratio is not adjusted from the original. It is set by the program being watched. This picture format is 4:3 aspect ratio. The aspect ratio is not adjusted from the original.

Used in PC mode. (Only HDMI/ DVI PC, RGB PC) 14:9 programs are viewed normally in 14:9 with black bars added to the top and bottom. 4:3 programs are magnified on the top/bottom and left/right sides. 4:3 programs are magnified until they fill the 16:9 screen. The top and bottom will be cut off. Original 4:3 1:1 14:9 Zoom1, 2 22 User Menus Adjusting Screen Color Picture Reset Return Picture Mode, Color Temperature, Advanced, Aspect Ratio to the default factory settings. Picture Picture Mode Color Temperature Advanced Aspect Ratio Picture Reset Screen MENU To set Screen Adjust the screen video. Picture Picture Mode Color Temperature Advanced Aspect Ratio Picture Reset Screen MENU MENU Screen Auto Config. Manual Config. XGA Mode Reset To set To set · Auto Config.

(RGB PC input only) : This button is for the automatic adjustment of the screen position, clock and phase. This function is available for analog signals only. · Manual Config. : If the picture isn't clear after auto adjustment and characters are still trembling, adjust the picture phase manually. * Phase, Clock function are not available in Component, HDMI/DVI DTV.

Phase : To adjust the focus of the display. This item allows you to remove any horizontal noise and clear or sharpen the image of characters. This function is available for analog signals only. Clock : To minimize any vertical bars or stripes visible on the screen background. The horizontal screen size will also change.

This function is available for analog signals only. H-Position : Moving the screen position horizontally. V-Position : Moving the screen position vertically. H-Size : Adjust the horizontal size of the screen. V-Size : Adjust the vertical size of the screen. · XGA Mode (RGB-PC only). : For more improved oel: Total 4 screen brightness levels are provided. - Off: 100% light - Level 1: 80% light - Level 2: 60% light - Level 3: 40% light · On Time : Enables to automatically turn on the Power Saving option at a scheduled time. · Off Time : Enables to automatically turn off the Power Saving option at a scheduled time. *The Power Saving option becomes in effect only during the scheduled time frame.

The On Time and Off Time menus become disabled if Level Off is selected. 26 User Menus Selecting the options Option Language Key Lock ISM Method Power Indicator DPM Select Network Setup Factory Reset MENU To set Language Key Lock To choose the language in which the control names are displayed. Use the buttons to select On or Off. The monitor can be set up so that it can only be used with the remote control. This feature can prevent unauthorized viewing. In order to lock the OSD screen adjustment, set the Key Lock tab to the 'On' position. In order to unlock it, do the following : · Push the MENU button on the remote control and set Key Lock to the 'Off' position. A frozen or still picture from a PC/Video game displayed on the screen for prolonged periods could result in a ghost image remaining even when you change the image. Avoid allowing a fixed image to remain on the screen for a long period of time. · Normal : Leave on normal if you don't foresee image burn in being a problem.

· White wash : White wash fills the screen with solid white. This helps removes permanent images burned into the screen. A permanent image may be impossible to clear entirely with white wash. · Orbiter : May help prevent ghost images. However, it is best not to allow any fixed image to remain on the screen.

To avoid a permanent image on the screen, the screen will move every 2 minutes. · Inversion : This function inverts the panel color of the screen. The panel color is automatically inverted every 30 minutes. · Dot Wash : This function moves the black dots of the screen. The black dots is automatically moved every 5 second.

ISM Method Power Indicator DPM Select Use this function to set the power indicator on the front side of the product to On or Off. A user can choose to turn the power saving mode on / off. 27 User Menus Selecting the options Network Setup Sets up network information. Option Language Key Lock ISM Method Power Indicator DPM Select Network Setup Factory Reset MENU MENU Network Setup Network Select DHCP Manual To set LAN RS-232C · Network Select Sets up network connections. -LAN : Enables communication via Ethernet. - RS-232C : Enables communication via Serial. Allocates and sets up IP automatically. Sets up IP address, Gateway, Subnet Mask, Primary DNS and Secondary DNS. The setup process is complete when you select Execute, and "IP Setup Completed" is displayed at the bottom of the screen. @@@@000 .

000 . 000 000 . 000 . 000 . 000 000 . 000 . 000 . 000 000 . 000 . 000 . 000 000 . 000 . 000 . @@and SW version. Information Set ID Serial No. @@Specify the number (01H~63H) using the button and exit. @@This menu shows the serial number of the product. This menu shows the software version. Displays a selected network's IP address. Serial No.

@@ Is the power indicator light on? @@ The power indicator amber? · See if the power cord is properly connected to the outlet. · See if the power switch is turned on. · May need service. · Adjust brightness and contrast again. · Backlight may need repair. @@· Turn both devices off and then back on. @@@@@@Check the signal cable. · Press the 'INPUT' menu in the remote Control to check the input signal. Does the 'Out of range' message appear? Does the 'Check signal cable' message appear? 'UnknownProduct'messageappearswhentheproductisconnected. Did you install the driver? · Install the product driver, which is provided with the product, or download it from the web site.

(http://www. lg.com) · See if the plug&play function is supported by referring to the video card user manual. 'Key Lock On' message appears. The 'Key Lock On' message appears when pressing the Menu button. · The control locking function prevents unintentional OSD setting change due to careless usage. To unlock the controls, simultaneously press the Menu button and button for several seconds. (You cannot set this function using the remote control buttons. @@@@The unit is Hz. @@@@The unit is kHz. @@@@If adjustment is not satisfactory, use the Position OSD menu. @@@@@@If adjustment is not satisfactory, use the Clock OSD menu. @@If adjustment is not satisfactory, use the Phase OSD menu. · The proper input signal is not connected to the signal port. @@@@@@· See if the audio cable is connected properly.

· Adjust the volume. · See if the sound is set properly. · Select the appropriate equalize sound. · Adjust the volume. Sound is too dull. @@@@· Check the connection status of the signal cable. Or, re-insert the PC video card. @@@@· Is the sleep timer set? · Check the power control settings. Power interrupted. · "CAUTION! @@In this case, contact your local service center. · Check USB cable between PC and Touch Monitor. · Calibrate Touch monitor with PC. · Disconnet and connect the touch USB cable from PC. @@@@@@@@RGB : 30 kHz to 83 kHz HDMI/DVI : 30 kHz to 83 kHz RGB : 56 Hz to 75 Hz HDMI/DVI : 56 Hz to 60 Hz Composite/Separate/Digital 15-pin D-Sub type, HDMI (digital), S-Video, Composite Video, Component, RS-232C, LAN Operational Condition Storage Condition Temperature: 0 °C to 40 °C , Humidity: 10 % to 80 % Recommended Resolution Horizontal Frequency Vertical Frequency Synchronization Type Input Connector Environmental Conditions Temperature: -20 °C to 60 °C , Humidity: 5 % to 90 % * Applicable only for models that support the speakers Audio RMS Audio Output Input Sensitivity Speaker Impedance 10 W + 10 W (R + L) 0.7 Vrms 8 NOTE Information in this document is subject to change without notice.

34 Specifications PC Mode - Preset Mode Preset mode 1 2 *3 4 *5 6 7 *8 9 *10 640 x 350 720 x 400 640 x 480 640 x 480 800 x 600 800 x 600 832 x 624 1024 x 768 1024 x 768 1280 x 720 Horizontal Frequency (kHz) 31.469 31.468 31.469 37.5 37.879 46.875 49.725 48.363 60.123 44. 772 Vertical Frequency (Hz) 70.8 70.8 59.94 75 60.317 75 74. 55 60 75.029 59.855 1~17: RGB Mode * : HDMI/DVI mode HDMI/DVI (DTV) x x o o o o o *11 *12 *13 *14 15 *16 *17 Preset mode 1280 x 768 1360 x 768 1366 x 768 1280 x 1024 1280 x 1024 1680 x 1050 1920 x 1080 Horizontal Frequency (kHz) 47.7 47.72 47. 7 63.981 79.98 65.290 67.5 Vertical Frequency (Hz) 60 59.799 60 60.02 75.02 59.954 60 DTV Mode Component 480i 576i 480p 576p 720p 1080i 1080p o o o o o o o Power Indicator Mode On Mode Sleep Mode Off Mode Product Blue Amber - NOTE DTV/PC selection on RGB and HDMI/DVI inputs is available for PC resolutions : 640 x 480 / 60 Hz, 1280 x 720 / 60 Hz, 1920 x 1080 / 60 Hz and DTV resolutions : 480p, 720p, 1080p. 35 RS-232C Controlling the Multiple Product Use this method to connect several products to a single PC.

You can control several products at a time by connecting them to a single PC. Connecting the cable Connect the RS-232C cable as shown in the picture. * The RS-232C protocol is used for communication between the PC and product. You can turn the product on/off, select an input source or adjust the OSD menu from your PC. RS-232C Cable (not included) PC monitor 1 monitor 2 monitor 3 monitor 4 RS-232C Configurations 7-Wire Configurations (Standard RS-232C cable) PC RXD TXD GND DTR DSR RTS CTS 2 3 5 4 6 7 8 D-Sub 9 (Female) Monitor 3 2 5 6 4 8 7 D-Sub 9 (Female) TXD RXD GND DSR DTR CTS RTS RXD TXD GND DTR DSR RTS CTS 3-Wire Configurations (Not Standard) PC 2 3 5 4 6 7 8 D-Sub 9 (Female) Monitor 3 2 5 6 4 7 8 D-Sub 9 (Female) TXD RXD GND DTR DSR RTS CTS Communication Parameter LLLL LLL Baud Rate : 9600 buad Rate (UART) Data Length : 8 bit Parity Bit : None Stop Bit : 1bit Flow Control : None Communication Code : ASCII code Use a crossed (reverse) cable A1 RS-232C Controlling the Multiple Product Command Reference List COMMAND1 01. Power 02. Input Select 03. Aspect Ratio 04. Screen Mute 05. Volume Mute 06. Volume Control 07. Contrast 08. Brightness 09. Color 10. Tint 11. Sharpness 12. OSD Select 13. Remote Lock/ key Lock 14. Balance 15. Color Temperature 16. Abnormal state 17. ISM mode 18. Auto configuration 19. Key 20. Picture mode(PSM) 21. Sound mode 22. Fan Fault check 23. Elapsed time return 24. Temperature value 25.

Lamp fault check 26.

Auto Volume 27. Speaker 28. Time 29. On Timer (On/Off Timer) On, Off 30. Off Timer (On/Off Timer) On, Off 31. On Timer (On/Off Timer) Time 32. Off Timer (On/Off Timer) Time 33. Sleep Time 34. Auto Sleep 35. Power On Delay 36. Language 37. DPM Select 38. Reset 39. Power Saving 40. Power Indicator 41. H Position 42. V Position 43. H Size 44. V Size 45. Scheduling input select 46.

*Serial no. 47. S/W Version 48. Input Select k k k k k k k k k k k k k k k j j m d d d d d d d d f f f f f f f f f f f f f f f f f f f f x COMMAND2 a b c d e f g h i j k l m t u z p u c x y w l n p u v a b c d e f g h i j k l o q r s t u y z b A2 DATA1 00H to 01H 02H to 09H 01H to 09H 00H to 01H 00H to 01H 00H to 64H 00H to 64H 00H to 64H 00H to 64H 00H to 64H 00H to 64H 00H to 01H 00H to 01H 00H to 64H 00H to 03H FFH 00H to 10H 01H Key Code 00H to 06H 00H to 06H FFH FFH FFH FFH 00H to 01H 00H to 01H 00H to 06H 00H, FFH 00H, FFH 00H to 07H 00H to 07H 00H to 08H 00H to 01H 00H to 64H 00H to 09H 00H to 01H 00H to 02H 00H to 03H 00H to 01H 00H to 64H 00H to 64H 00H to 64H 00H to 64H 00H to 07H FFH FFH 20H to A0H DATA2 DATA3 00H 00H 00H 00H 00H to 17H to FFH to FFH to 17H to 17H 00 to 3BH 00 to 3BH 00 to 3BH 00H to FEH RS-232C Controlling the Multiple Product Transmission / Receiving Protocol Transmission [Command1][Command2][ ][Set ID][ ][Data][Cr] * [Command 1]: First command. (k, j, m, d, f, x) * [Command 2]: Second command.(a to u) * [Set ID]: Set up the Set ID number of product. range : 01Hto63H. by setting '0', server can control all products. * In case of operating with more than 2 sets using set ID as '0' at the same time, it should not be checked the ack message. Because all sets will send the ack message, so it's impossible the check the whole ack messages.*

* [DATA]: To transmit command data. Transmit 'FF' data to read status of command. * [Cr]: Carriage Return ASCII code '0 x 0 D' * [ ]: ASCII code Space (0 x 20)' OK Acknowledgement [Command2][ ][Set ID][ ][OK][Data][x] * The Product 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] * If there is error, it returns NG A3 RS-232C Controlling the Multiple Product Transmission / Receiving Protocol 01. Power(Command : a) To control Power On / Off of the Set. Transmission L [k][a][ ][Set ID][ ][Data][Cr] Data 0 : Power Off Acknowledgement [a][ ][Set ID][ ][OK][Data][x] To show the status of Power On / Off. Transmission [k][a][ ][Set ID][ ][FF][Cr] Acknowledgement [a][ ][Set ID][ ][OK][Data][x] Data 0 : Power Off 1 : Power On L 1 : Power On 02. Input Select (Command : b) (Main Picture Input) To select input source for the Set.

You can also select an input source using the INPUT button on the remote control. Transmission L [k][b][ ][Set ID][ ][Data][Cr] Data 2 : AV 4 : Component 7 : RGB (PC) 8 : HDMI (DTV) 9 : HDMI (PC) Acknowledgement [b][ ][Set ID][ ][OK][Data][x] Data 2 : AV 4 : Component 7 : RGB (PC) 8 : HDMI (DTV) 9 : HDMI (PC) A4 RS-232C Controlling the Multiple Product Transmission / Receiving Protocol 03. @@@@@Screen Mute(Command : d) To select screen mute on / off. @@Volume Mute(Command : e) To control On/Off of the Volume Mute. @@Volume Control(Command : f) To adjust Volume . @@Contrast(Command : g) To adjust screen contrast. You can also adjust the contrast in the Picture menu. @@@@Brightness(Command : h) To adjust screen brightness. You can also adjust the brightness in the Picture menu. @@@Color(Command : i) (Video Timing only) To adjust the screen color. You can also adjust the color in the Picture menu. @@Tint(Command : j) (Video Timing only) To adjust the screen tint. You can also adjust the tint in the Picture menu. Transmission [k][j][ ][Set ID][ ][Data][Cr] Data Red : 00H to Green: 64H (Hexadecimal code) · Refer to 'Real data mapping' page A 7. Acknowledgement [j][ ][Set ID][ ][OK][Data][x] Data Red : 00H to Green : 64H * Tint Real data mapping 0 : Step 0 to Red : 64 : Step 100 to Green A8 RS-232C Controlling the Multiple Product Transmission / Receiving Protocol 11. Sharpness(Command : k) (Video Timing only) To adjust the screen Sharpness. You can also adjust the sharpness in the Picture menu. Transmission [k][k][ ][Set ID][ ][Data][Cr] Data Min : 00H to Max : 64H (Hexadecimal code) · Refer to 'Real data mapping' page A 7. L Acknowledgement [k][ ][Set ID][ ][OK][Data][x] Data L Min : 00H to Max : 64H 12. OSD Select(Command : l) To control OSD on/off to the set.

Transmission [k][l][ ][Set ID][ ][Data][Cr] Data 0 : OSD Off Acknowledgement [l][ ][Set ID][ ][OK][Data][x] Data 0 : OSD Off L 1 : OSD On 1 : OSD On 13. Remote Lock /Key Lock (Command : m) To control Remote Lock on/off to the set. This function, when controlling RS-232C, locks the remote control and the local keys. Transmission [k][m][ ][Set ID][ ][Data][Cr] Data 0 : Off 1 : On Acknowledgement [m][ ][Set ID][ ][OK][Data][x] Data 0 : Off 1 : On A9 RS-232C Controlling the Multiple Product Transmission / Receiving Protocol 14 Balance(Command : t) To adjust the sound balance. Transmission [k][t][ ][Set ID][ ][Data][Cr] Data Min : 00H to Max : 64H (Hexadecimal code) · Refer to 'Real data mapping' page A 7. Acknowledgement [t][ ][Set ID][ ][OK][Data][x] Data Min : 00H to Max : 64H * Balance : L50 to R50 15. Color Temperature (Command : u) To adjust the screen color temperature. Transmission [k][u][ ][Set ID][ ][Data][Cr] Data 0 : Medium 1 : Cool 2 : Warm 3 : User Acknowledgement [u][ ][Set ID][ ][OK][Data][x] Data 0 : Medium 1 : Cool 2 : Warm 3 : User ·Running the Color Temperature command changes the Picture Mode settings to User1. L L A10 RS-232C Controlling the Multiple Product Transmission / Receiving Protocol 16. Abnormal state (Command : z) Abnormal State : Used to Read the power off status when Stand-by mode.

Transmission [k][z][ ][Set ID][ ][Data][Cr] Data FF : Read 0 : Normal (Power on and signal exist) 1 : No signal (Power on) 2 : Turn the monitor off by remote control 3 : Turn the monitor off by sleep time function 4 : Turn the monitor off by RS-232C function 8 : Turn the monitor off by off time function 9 : Turn the monitor off by auto off function L Acknowledgement [z][ ][Set ID][ ][OK][Data][x] 17. ISM mode(Command: j p) Used to select the afterimage preventing function. Transmission [j][p][ ][Set ID][ ][Data][Cr] Data 1H : Inversion 2H : Orbiter 4H : White Wash 8H : Normal 10H : Dot Wash L Acknowledgement [p][ ][Set ID][ ][OK][Data][x] A11 RS-232C Controlling the Multiple Product Transmission / Receiving Protocol 18. Auto Configure(Command: j u) To adjust picture position and minimize image shaking automatically.

it works only in RGB(PC) mode.

Transmission [j][u][ ][Set ID][ ][Data][Cr] Data 1 : To set Acknowledgement [u][ ][Set ID][ ][OK][Data][x] 19. Key(Command : m c) To send IR remote key code. Transmission [m][c][ ][Set ID][ ][Data][Cr] Data Key code : Refer to page A 29. Acknowledgement [c][ ][Set ID][ ][OK][Data][x] 20. Picture Mode (Command : d x) To adjust the picture mode.

*Transmission [d][x][][Set ID][][Data][x] Data Structure L L L Data(Hex) 00 01 02 03 04 05 06 Acknowledgement MODE Vivid Standard Cinema Sport Game User1 User2 [x][][Set ID][][OK/NG][Data][x] A12 RS-232C Controlling the Multiple Product Transmission / Receiving Protocol 21. Sound Mode (Command : d y) To adjust the Sound mode. Transmission [d][y][][Set ID][][Data][x] Data Structure L Data(Hex) 00 01 02 03 04 05 06 Acknowledgement Mode Clear Voice Standard Music Cinema sport Game User [y][][Set ID][][OK/NG][Data][x] 22. Fan Fault check (Command : d w) To check the Fan fault of the TV. Transmission [d][w][][Set ID][][Data][x] * The data is always FF(in Hex). Data ff: Read Status L Acknowledgement [w][][Set ID][][OK/NG][Data][x] * Data is the status value of the Fan fault. Data 0: Fan fault 1: Fan OK 2: N/A(Not Avaliable) A13 RS-232C Controlling the Multiple Product Transmission / Receiving Protocol 23. Elapsed time return(Command : d l) To read the elapsed time. Transmission [d][l][][Set ID][][Data][x] * The data is always FF(in Hex). Acknowledgement [l][][Set ID][][OK/NG][Data][x] * The data means used hours.*

*(Hexadecimal code) 24. Temperature value (Command : d n) To read the inside temperature value. Transmission [d][n][][Set ID][][Data][x] * The data is always FF(in Hex). Acknowledgement [n][][Set ID][][OK/NG][Data][x] * The data is 1 byte long in Hexadecimal. L L L 25. Lamp fault Check(Command : d p) To check lamp fault. Transmission [d][p][][Set ID][][Data][x] * The data is always FF(in Hex). Acknowledgement [p][][Set ID][][OK/NG][Data][x] Data 0 : Lamp Fault 1: Lamp OK A14 RS-232C Controlling the Multiple Product Transmission / Receiving Protocol 26. Auto volume (Command : d u) Automatically adjust the volume level. Transmission [d][u][][Set ID][][Data][x] Data 0 : Off 1 : On Acknowledgement [u][][Set ID][][OK/NG][Data][x] L L 27.*

*Speaker (Command : d v) Turn the speaker on or off. Transmission [d][v][][Set ID][][Data][x] Data 0 : Off 1 : On Acknowledgement [v][][Set ID][][OK/NG][Data][x] A15 RS-232C Controlling the Multiple Product Transmission / Receiving Protocol 28. Time (Command : f a) Set the current time. Transmission [f][a][][Set ID][][Data1][][Data2][][Data3][Cr] [Data1] 0 : Monday 1 : Tuesday 2 : Wednesday 3 : Thursday 4 : Friday 5 : Saturday 6 : Sunday [Data2] 0H to 17H (Hours) [Data3] 00H to 3BH (Minutes) Acknowledgement [a][][Set ID][][OK/NG][Data1][Data2][Data3][x] *When reading data, FFH is inputted for [Data1], [Data2] and [Data3]. @@@@@30.*

*@@Transmission [f][c][][Set ID][][Data1][][Data2][Cr] [Data1] 0 (Write), FFH(Read) [Data2] 00HtoFFH bit0 : Monday Off Timer On(1), Off(0) bit1 : Tuesday Off Timer On(1), Off(0) bit2 : Wednesday Off Timer On(1), Off(0) bit3 : Thursday Off Timer On(1), Off(0) bit4 : Friday Off Timer On(1), Off(0) bit5 : Saturday Off Timer On(1), Off(0) bit6 :Sunday Off Timer On(1), Off(0) bit7 : Everyday Off Timer On(1), Off(0) Acknowledgement [c][][Set ID][][OK/NG][Data1][Data2][x] * Ignore from bit6 to bit0 when bit7(Everyday) is 1. A17 L L RS-232C Controlling the Multiple Product Transmission / Receiving Protocol 31. On Timer (On/Off Timer) Time (Command : f d) Set On Timer. Transmission [f][d][][Set ID][][Data1][][Data2][Data3][Cr] [Data1] 0 : Monday 1: Tuesday 2 : Wednesday 3 : Thursday 4 : Friday 5 : Saturday 6 : Sunday 7 : Everyday [Data2] 00H to 17H (Hours) [Data3] 00H to 3BH (Minutes) Acknowledgement [d][][Set ID][][OK/NG][Data1][Data2][Data3][x] *When reading data, FFH is inputted for [Data2], [Data3]. In other cases, all are treated as NG.*

*L A18 RS-232C Controlling the Multiple Product Transmission / Receiving Protocol 32. Off Timer (On/Off Timer) Time (Command : f e) Set Off Timer. Transmission [f][e][][Set ID][][Data1][][Data2][][Data3][Cr] [Data1] 0 : Monday 1 : Tuesday 2 : Wednesday 3 : Thursday 4 : Friday 5 : Saturday 6 : Sunday 7 : Everyday [Data2] 00H to 17H (Hours) [Data3] 00H to 3BH (Minutes) Acknowledgement [e][][Set ID][][OK/NG][Data1][Data2][Data3][x] *When reading data, FFH is inputted for [Data2], [Data3]. @@Sleep Time (Command : f f) Set Sleep Time. @@Auto Sleep (Command : f g) Set Auto Sleep. @@@@Transmission [f][h][][Set ID][][Data][Cr] Data : 00H to 64H (Data value) · Refer to Real data mapping' page A 7. L L Acknowledgement [h][][Set ID][][OK/NG][Data][x] 36. Language (Command : f i) Set the OSD language. Transmission [f][i][][Set ID][][Data][Cr] Data 0 : English 1 : French 2 : German 3 : Spanish 4 : Italian 5 : Portuguese 6 : Chinese 7 : Japanese 8 : Korean 9 : Russian Acknowledgement [i][][Set ID][][OK/NG][Data][x] A21 RS-232C Controlling the Multiple Product Transmission / Receiving Protocol 37. DPM Select (Command : f j) Set the DPM (Display Power Management) function.*

*Transmission [f][j][][Set ID][][Data][Cr] Data 0 : Off 1: On Acknowledgement [j][][Set ID][][OK/NG][Data][x] L L 38. Reset (Command : f k) Execute the Picture, Screen and Factory Reset functions. Transmission [f][k][][Set ID][][Data][Cr] Data 0 : Picture Reset 1 : Screen Reset 2 : Factory Reset Acknowledgement [k][][Set ID][][OK/NG][Data][x] A22 RS-232C Controlling the Multiple Product Transmission / Receiving Protocol 39. Power saving(Command : f l) To set the Power saving mode. Transmission [f][l][][Set ID][][Data][Cr] Data 0 : Off 1: (static level 1) 2: (static level 2) 3: (static level 3) Acknowledgement [l][][Set ID][][OK/NG][Data][x] 40. Power Indicator (Command : f o) To set the LED for Power Indicator Transmission [f][o][][Set ID][][Data][Cr] Data 0 : Off 1: On Acknowledgement [o][][Set ID][][OK/NG][Data][x] 41. H Position (Command : f q) To set the Horizontal position Transmission [f][q][][Set ID][][Data][Cr] * The data range is from 00 to 64(in Hex) · Refer to Real data mapping' page A 7. L L L Acknowledgement [q][][Set ID][][OK/NG][Data][x] A23 RS-232C Controlling the Multiple Product Transmission / Receiving Protocol 42. V Position (Command : f r) To set the Horizontal position Transmission [f][r][][Set ID][][Data][Cr] * The data range is from 00 to 64(in Hex) · Refer to Real data mapping' page A 7. * H Size Real Data Mapping [Data1] 0x00: Step 0 0x0A: Step 10 0x14: Step 20 0x1E: Step 30 0x28: Step 40 0x32: Step 50 0x3C: Step 60 0x46: Step 70 0x50: Step 80 0x5A: Step 90 0x64: Step 100 L L Acknowledgement [r][][Set ID][][OK/NG][Data][x] 43.*

*H Size (Command : f s) To set the Horizontal size. Transmission [f][s][][Set ID][][Data][Cr] * The data range is from 00 to 64(in Hex) · Refer to Real data mapping' page A 7.*

*Acknowledgement [s][][Set ID][][OK/NG][Data][x] A24 RS-232C Controlling the Multiple Product Transmission / Receiving Protocol 44. V Size (Command : f t) To set the Vertical size Transmission [f][t][][Set ID][][Data][Cr] * The data range is from 00 to 64(in Hex) · Refer to 'Real data mapping' page A 7. L Acknowledgement [t][][Set ID][][OK/NG][Data][x] * V Size Real Data Mapping [Data1] 0x00: Step 0 0x0A: Step 10 0x14: Step 20 0x1E: Step 30 0x28: Step 40 0x32: Step 50 0x3C: Step 60 0x46: Step 70 0x50: Step 80 0x5A: Step 90 0x64: Step 100 A25 RS-232C Controlling the Multiple Product Transmission / Receiving Protocol 45.*

*Scheduling Input select (Command : f u) (Main Picture Input) To select input source for TV depending on day. Transmission [f][u][][Set ID][][Data1][][Data2][Cr] Data 1 Structure Min: 0toMax:7(0:Monday, 1: Tuesday, 2: Wednesday, 3: Thursday, 4: Friday 5: Saturday, 6: Sunday, 7: Everyday) Data 2 Structure L L Data(Hex) 02 04 07 08 09 FE Acknowledgement INPUT AV Component RGB-PC HDMI/DVI-DTV HDMIDVI-PC No change [u][][Set ID][][OK/NG][Data 1][Data2][x] 46. Serial no.Check (Command : f y) To read the serial numbers Transmission [f][y][][Set ID][][Data][Cr] Data FF (to read the serial numbers) Acknowledgement [y][][Set ID][][OK/NG][Data1] to [Data13] [x] * The data format is ASCII Code. A26 RS-232C Controlling the Multiple Product Transmission / Receiving Protocol 47.*

S/W Version (Command : f z) Check the software version. Transmission [f][z][][Set ID][][Data][Cr] Data FFH : Read Acknowledgement [z][][Set ID][][OK/NG][Data][x] L 48. Input Select (Command : x b) To select input source for the Set. Transmission [x][b][ ][Set ID][ ][Data][Cr] Data 20H : AV 40H : Component 60H : RGB (PC) 90H : HDMI/DVI (DTV) A0H : HDMI/DVI (PC) Acknowledgement [b][ ][Set ID][ ][OK][Data][x] Data 20H : AV 40H : Component 60H : RGB (PC) 90H : HDMI/DVI (DTV) A0H : HDMI/DVI (PC) L A27 RS-232C Controlling IR Codes Product the Multiple Remote Control IR Code How to connect Connect your wired remote control to Remote Control port on the Product. L L L L L L Output waveform single pulse, modulated with 37.917kHz signal at 455kHz Tc Carrier frequency FCAR = 1 / Tc = fosc / 12 Duty ratio = T1 / Tc = 1 / 3 T1 Configuration of frame · 1st frame Low custom code Lead code High custom code Data code Data code C0 C1 C2 C3 C4 C5 C6 C7 C0 C1 C2 C3 C4 C5 C6 C7 D0 D1 D2 D3 D4 D5 D6 D7 D0 D1 D2 D3 D4 D5 D6 D7 · Repeat frame Repeat code Tf Lead code 9 ms 4.5 ms 0.55ms Repeat code 9 ms 2.25 ms Bit description · Bit "0" 0.56 ms 1.

12 ms · Bit "1" 0.56 ms 2.24 ms Frame interval : Tf · The waveform is transmitted as long as a key is depressed. Tf Tf Tf = 108 ms @ 455 kHz A28 RS-232C Code(Hex) Function L M VOL( ) L VOL( ) L Controlling IR Codes Product the Multiple Note R/C Button R/C Button R/C Button R/C Button R/C Button (Power On / Off) Discrete IR Code(Only Power On) Discrete IR Code(Only Power Off) R/C Button R/C Button R/C Button R/C Button R/C Button R/C Button R/C Button R/C Button R/C Button R/C Button R/C Button R/C Button R/C Button Discrete IR Code(Input AV Selection) Discrete IR Code(Input COMPONENT Selection) Discrete IR Code(Input RGB PC Selection) Discrete IR Code(Input HDMI/DVI Selection) R/C Button Discrete IR Code(Only 4 : 3 mode) Discrete IR Code(Only 16 : 9 mode) Discrete IR Code(Only ZOOM1, ZOOM2 mode) Discrete IR Code 00 01 02 03 08 C4 C5 09 98 0B 0E 43 5B 6E 44 10 11 12 13 14 15 16 17 18 19 5A BF D5 C6 79 76 77 AF 99 POWER ON/OFF POWER ON POWER OFF MUTE AV INPUT SLEEP MENU EXIT PSM SET Number Key 0 Number Key 1 Number Key 2 Number Key 3 Number Key 4 Number Key 5 Number Key 6 Number Key 7 Number Key 8 Number Key 9 AV COMPONENT RGB PC HDMI/DVI ARC ARC (4 : 3) ARC (16 : 9) ARC (ZOOM) AUTO CONFIG A29 Make sure to read the Safety Precautions before using the product. Keep the Owner 's Manual(CD) in an accessible place for furture reference. The model and serial number of the SET is located on the back and one side of the SET. Record it below should you ever need service. MODEL SERIAL Temporary noise is normal when powering ON or OFF this device. .