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## Important Safety Information



### CAUTION

RISK OF ELECTRIC SHOCK  
DO NOT OPEN



**CAUTION:** TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

**Please read these instructions fully and carefully before use and keep for future reference**

**WARNING: This device is not intended for use by persons (including children) without physical, sensory or mental capabilities, or lack of experience and/or knowledge unless they have been given supervision or instruction concerning use of the device by a person responsible for their safety.**

- This product is for indoor use only.
- Use this product at an altitude of less than 2000 meters above the sea level and in dry locations and in regions with moderate or tropical climates.
- Please keep this manual for further use.
- Unplug your product before starting to clean. Do not clean the product when it is on. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning. If that does not help, please use LCD display cleansers. Do not apply the cleaner directly on the product.
- To prevent breakdown, do not use non-advised accessories.
- Please do not place your product near wash basins, sinks, water pans, pools etc.
- Do not expose the product to dripping or splashing of liquids and do not place objects filled with liquids, such as vases, cups, etc. on or over the product (e.g., on shelves above the unit).
- Please leave at least 5 cm of free space between the product and walls or other furnitures for ventilation purposes.
- That product can only be started by the defined power source on its rating plate. For further information, please contact with your dealer.
- As a safety precaution, a three-wired grounding plug is given with the product. As a safety precaution, please do not make any change on the grounding plug. Always use earthed socket outlet for product.
- Please provide the plug and socket to supply the needed power for appliance.

- Please place the product in a position that electric cables cannot be affected by the operations on the product.
- Follow all warnings and instructions marked on the product.
- Follow the on screen instructions for operating the related features.
- To prevent the risk of fire or electric shock, please do not overuse the plugs and extension cords. Please do not open the lid of the monitor to service yourself. If the required service needs are not met by an authorized service, dangerous voltage and other risks may occur.
- If you will not use the product for a long period of time, unplug the power cord from the mains.
- Put the product on a well-ventilated place and prevent from bright light, overheat and damp.
- The product should be kept in 0 C° - 40 C°. Otherwise, the appliance may be damaged permanently.
- Plug the appliance to a grounded outlet. Always use the grounded power cord supplied with your product. Manufacturer is not responsible for any damage caused unearthed usage.
- The socket-outlet shall be installed near the equipment and shall be easily accessible.
- Do not stay in contact with the parts of the product that become hot for long periods of time. Doing so may result in low-temperature burns.
- The LCD panel used in this product is made of glass. Therefore, it can break when the product is dropped or applied with impact. Be careful not to be injured by broken glass pieces in case the LCD panel breaks.
- Usage of the monitor must not be accompanied by fatal risks or dangers that, could lead directly to death, personal injury, severe physical damage or other loss, including nuclear reaction control in nuclear facility, medical life support system, and missile launch control in a weapon system.
- Do not expose the product to direct sunlight or do not place open flames such as lit candles on the top of or near the product.
- Do not place any heat sources such as electric heaters, radiators, etc. near the product.
- In order to prevent a potential electrical shock, in extreme weather (storms, lightning) disconnect the product from the mains.
- Do not touch the controls other than those described in the operating instructions. Improper adjustment of controls not described in the instructions can cause damage, which often requires extensive adjustment work by a qualified technician.

- Do not shake the product. Ensure that it stays in a balanced stance on its position.
- Do not throw or drop any object on your product.
- Do not interfere on your products screen or any other surface with a sharp object.
- Do not keep your product in a humid environment.
- Do not keep your product in an extremely cold environment.
- Do not keep your product in an extremely hot environment.
- Do not place the product on the floor and inclined surfaces.
- To avoid danger of suffocation, keep plastic bags out of the reach of the babies, children and domestic animals.

### **Vent holes of the product**

The vent holes are designed to provide the product to work constantly and prevent it from overheat. Do not block these openings in anyway. For the same reason, please do not place your product on beds, sofas, carpets and similar surfaces.

Never insert an object into the product through vents or openings. High voltage flows in the product, and inserting any objects in the vents or openings of the product may cause electric shock, short circuit of the internal parts and/or fire. For the same reason, do not spill water or liquid on the product.

### **Repair**

Unless a basic implementation on the product is specified by the producers' technical department on a document, do not repair your product by yourself. Otherwise, your guarantee may get suspended and you may risk your health or your product. In case of need, consult your authorized service.

- When the cable is worn off or harmed.
- If the product has been dropped or the cabinet has been damaged.
- If the performance of the product is changed or the appliance needs to be repaired.
- When a liquid was spilled on the product or when objects have fallen into the product.
- When the product has been exposed to rain or water.
- When the product does not operate properly as described in the operating instructions.

### **Replacement parts**

In case the product needs replacement parts, make sure that the service person uses replacement parts specified by the manufacturer, or those with the same characteristics and performance as the original parts. Use of unauthorized parts can result in fire, electric shock and/or other danger.

### **Safety checks**

Upon completion of service or repair work, request the service technician to perform safety checks to ensure that the product is in proper operating condition.

### **Wall mounting**

When mounting the product on a wall, be sure to install the product according to the method recommended by the manufacturer.

- Read the instructions before mounting the product on the wall.
- The wall mount kit is optional. You can obtain from your local dealer, if not supplied with the product.
- Do not install the product on a ceiling or on an inclined wall.
- Use the specified wall mounting screws and other accessories.
- Tighten the wall mounting screws firmly to prevent the product from fall. Do not over-tighten the screws.

### **Power Cord**

- The power cord is used to disconnect the product from the mains and therefore it must remain readily operable. If the product is not disconnected electrically from the mains, the device will still draw power for all situations even if the product is in standby mode or switched off.
- Use only the power cord supplied with the monitor.
- Do not damage the power cord nor place heavy objects on it, stretch it, over bend it or step on it. Also, do not add extension cords. Damage to the cord may result in fire or electric shock.
- When unplugging the appliance, always pull directly on the plug. Do not pull from the cable when unplugging the appliance.
- Do not use the power cord with a power tap. Adding an extension cord may lead to fire as a result of overheating.
- Do not remove or insert the power plug with wet hands. Doing so could result in electric shock.
- Unplug the power cord if it is not used for a long time.
- Do not attempt to repair the power cord if it is broken or malfunctioning. When damaged it must be replaced, this should only be done by qualified personnel.


### **Especially for child safety**

- Don't allow children to climb on or play with the monitor.
- Don't place the monitor above furniture that can easily be used as steps.
- Remember that children can become excited while watching a program, especially on a "larger than life" monitor. Care should be taken to place or install the

monitor where it cannot be pushed, pulled over, or knocked down.

- Care should be taken to route all cords and cables connected to the monitor so that they cannot be pulled or grabbed by curious children.

### Connections

 Be sure to turn off the main power switch and disconnect the plug from the power outlet before connecting/disconnecting cables. Also, read the manual of the equipment to be connected.

Be careful not to confuse the input terminal with the output terminal when connecting cables. Accidentally reversing cables connected to the input and output terminals may cause malfunctions and other problems.

### Positioning

If a monitor is positioned in an unstable or inclined location, it can be potentially hazardous due to falling. Many injuries, particularly to children, can be avoided by taking simple pre-cautions such as:

- Using fixing devices like wall mount brackets recommended or supplied by the manufacturer.
- Educating children about the dangers of climbing on furniture to reach the monitor or its controls. If your existing product is being retained and relocated, the same considerations as above should be applied

### Transport and Shipping

- Your device must be kept in its original package to protect from damage to its accessories during transport and shipping.
- Keep the product in normal position during transport.
- Do not drop the device during transport and protect it against impacts.
- Damages and faults that occur during transport after the delivery of the appliance to the customer are not included in the warranty cover.
- Product transportation, installation, repair and servicing must be done by qualified technical service personnel.

### Intended Use

- This product is intended to be used in public places such as schools, offices, theatres, places of worship.
- Product is only suitable for connecting commercial mains socket outlets. Do not connect product industrial socket outlets.

### Foreseeable misuse and incorrect use

- For apparatus intended to be used in vehicles, ships or aircraft or at altitudes exceeding 2000m above sea level, for outdoor use or in general for the application other than mentioned in user manual additional requirements may be necessary.



**CAUTION**



Do not leave a static image displayed for prolonged period of time. If a static image is displayed continuously for a long period of time, that image may cause image sticking on the display. This condition is not permanent, but may require a considerable amount of operational display time to dissipate, depending upon the degree of image stick. 120 minutes of continuous motion display will eliminate most image sticking effects at normal room temperature (not lower than 10 C).

As the nature of the TFT technology, you may see some amount of bright, dark, red, green and blue dots and sparklings on the screen, those do not affect the performance of the computer and are not accepted as a defect.

### Warning

This is a class A. In a domestic environment this may cause radio interference in which case the user may be required to take adequate measures.

### **BATTERY SAFETY GUIDELINES**

Used correctly, domestic batteries are a safe and dependable source of portable power. Problems can occur if they are misused or abused resulting in leakage or, in extreme cases, fire or explosion.

Here are some simple guidelines to safe battery use designed to eliminate any such problems.

- Take care to fit your batteries correctly, observing the plus and minus marks on the battery and appliance. Incorrect fitting can cause leakage or, in extreme cases, fire or even an explosion.
- Replace the whole set of batteries at one time, taking care not to mix old and new batteries or batteries of different types, since this can result in leakage or, in extreme cases, fire or even an explosion.
- Store unused batteries in their packaging and away from metal objects which may cause a short-circuit resulting in leakage or, in extreme cases, fire or even an explosion.
- Remove dead batteries from equipment and all batteries from equipment you know you are not going

to use for a long time. Otherwise the batteries may leak and cause damage.

- Batteries must not be exposed to excessive heat such as sunshine, fire or the like.
- Never dispose of batteries in fire or with hazardous or flammable materials as this can cause them to explode. Please recycle dead batteries; do not put with the normal household waste.
- Never attempt to recharge ordinary batteries, either in a charger or by applying heat to them. They may leak, cause fire or even explode. There are special rechargeable batteries which are clearly marked as such.
- Supervise children if they are replacing batteries themselves in order to ensure these guidelines are followed.
- Do not ingest the battery, Chemical Burn Hazard.
- This product or the accessories supplied with the product may contain a coin/button cell battery. If the coin/button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.
- Remember that small button cell batteries such as used in some hearing aids, toys, games and other appliances, are easily swallowed by young children and this can be dangerous.
- Keep new and used batteries away from children.
- Make sure battery compartments are secure. If the battery compartment does not close securely, stop using the product and keep it away from children.
- Seek immediate medical attention if you believe batteries might have been swallowed or placed inside any part of the body.
- If leaked battery fluid gets on your skin or clothing, rinse immediately and thoroughly. If it gets into your eye, bathe your eye well rather than rubbing and seek medical treatment immediately. Leaked battery fluid that gets into your eye or your clothing may cause a skin irritation or damage your eye.

### CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

## Markings on the Product

The following symbols are used **on the product** as a marker for restrictions and precautions and safety instructions. Each explanation shall be considered where the product bears related marking only. Note such information for security reasons.



**Class II Equipment:** This appliance is designed in such a way that it does not require a safety connection to electrical earth.



**Class II Equipment With Functional Earthing:** This appliance is designed in such a way that it does not require a safety connection to electrical earth, the earth connection is used for functional purposes.



**Protective Earth Connection:** The marked terminal is intended for connection of the protective earthing conductor associated with the supply wiring.



**Hazardous Live Terminal:** The marked terminal(s) is/are hazardous live under normal operating conditions.



**Caution, See Operating Instructions:** The marked area(s) contain(s) user replaceable coin or button cell batteries.

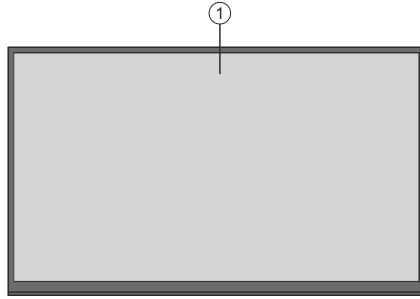
*Any issues which are caused by customer mis-adjustment of any software including the operating system are not covered by the warranty.*

*Depending on the model you buy, the actual appearance of the product may differ from the images used in this manual.*

# General View

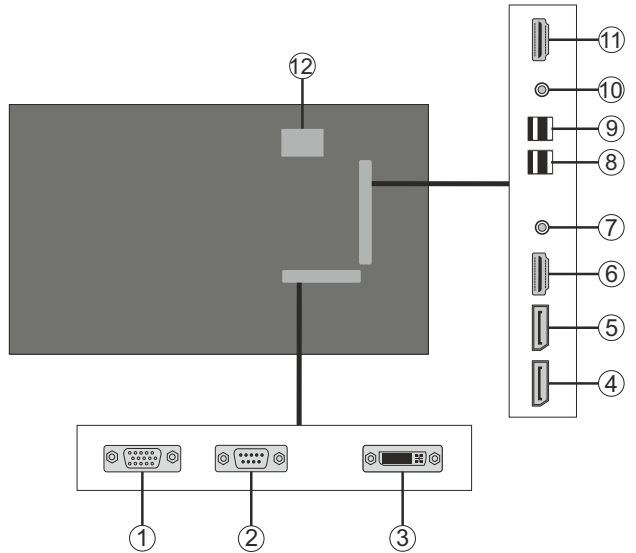
## Front Side

1. LCD Panel



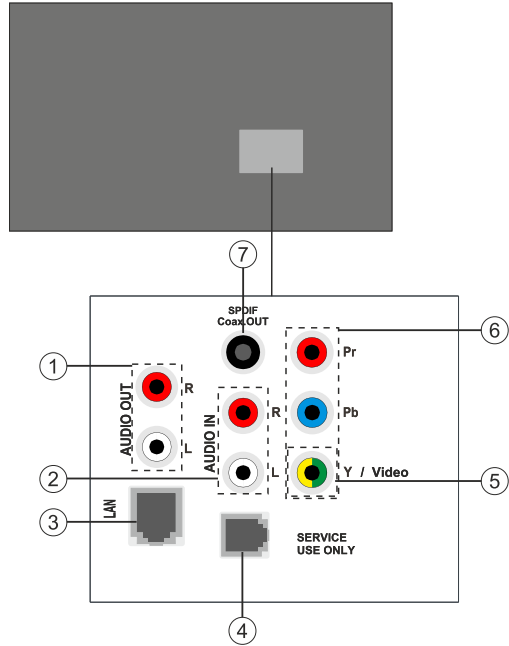
## Rear Side (1)

1. VGA
2. RS232
3. DVI
4. Display Port Input
5. Display Port Output
6. HDMI1 (In)
7. Headphone
8. USB (2.0)
9. USB (3.0)
10. IR Input
11. HDMI2 (Out)
12. Internal USB Compartment



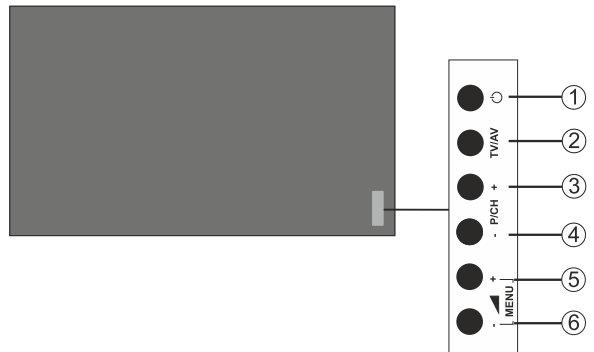
## Rear Side (2)

1. Audio Out
2. Audio In
3. Ethernet
4. RJ12 (service use only)
5. Video In
6. YPbPr
7. SPDIF Coaxial Out



## Control Buttons on the Display

1. Standby/On
2. Source / Select in Display menu
3. Open the brightness setting / Move the focus up (when in Display menu)
4. Open the contrast setting / Move the focus up down (when in Display menu)
5. Volume + / Set or move the focus right (when in Display menu)
6. Volume - / Move the focus left (when in Display menu)

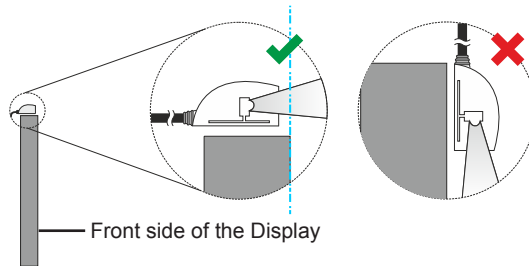


**Note:** Press the **Volume +/-** buttons simultaneously to view the main menu and use **P/CH +/-** buttons to navigate and **Volume +/-** buttons to change value.

## Connecting the IR Receiver

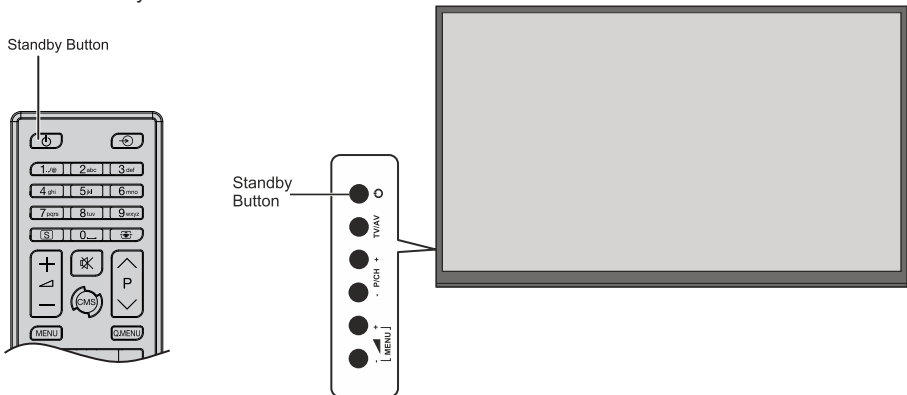
Before plugging the Display into the mains supply, connect the supplied IR receiver to the IR input on the Display. Place the IR receiver in sight of your own remote control. Simply operate your remote control whilst pointed at the IR receiver and it will relay the control signal to your Display.

In case your Display has touch screen feature and if the IR receiver is going to be placed on the Display it shouldn't be placed facing the inside of the screen, otherwise the signals of the touch screen and the remote may interfere with each other. To improve the performance of your remote control place the IR receiver as shown in the drawing below.



## Turning the Display On/Off

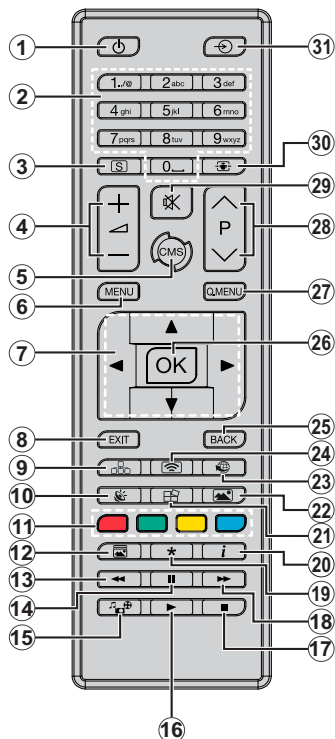
Press the **Standby** button on the remote or on rear left side of the Display to switch it on from standby or to switch it into standby mode.



| LED Status                | Status of the monitor             |
|---------------------------|-----------------------------------|
| Power LED not lit         | Power on                          |
| Power LED lit             | Power off (Standby mode)          |
| Power LED flashing (slow) | Scheduler active                  |
| Power LED flashing (fast) | Power up/down and software update |

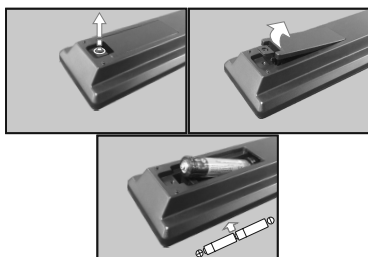


## Remote Control



## Inserting the Batteries into the Remote

Remove the screw that secures the battery compartment cover on the back side of the remote control first. Lift the cover gently. Insert two **AAA** batteries. Make sure the (+) and (-) signs match (observe correct polarity). Place the cover back on. Then screw the cover back on again.



- Standby:** Switches On / Off the Display
- Numeric buttons:** Enters a number or a letter in the text box on the screen.
- Signage:** Displays **Signage Settings** menu
- Volume +/-:** Increases or decreases the volume
- CMS:** Opens the predefined **Start url** (in **Signage Settings>Link options** menu). Press and hold 3 seconds to open the predefined **Settings url** (in **Signage Settings>Link options** menu).
- Menu:** Displays the main menu
- Directional buttons:** Helps navigate menus, content etc.
- Exit:** Closes and exits from displayed menus or returns to previous screen
- Network:** Displays **Network/Internet Settings** menu
- Sound:** Displays **Sound Settings** menu
- Coloured Buttons:** Follow the on-screen instructions for coloured button functions  
**Blue button:** Freezes the currently displayed picture on the screen. Press again to cancel the freeze function.
- Picture Mode:** Cycles between picture modes
- Rapid reverse:** Moves frames backwards in media such as movies
- Pause:** Pauses the media being played
- Media browser:** Opens the media browsing screen
- Play:** Starts to play selected media
- Stop:** Stops the media being played
- Rapid advance:** Moves frames forward in media such as movies
- No function
- Info:** Displays information about on-screen content
- Video Wall:** Displays **Video Wall Settings** menu
- Picture:** Displays **Picture Settings** menu
- Internet:** Opens the predefined **Open browser initial page** (in **Signage Settings>Link options** menu).
- Wireless Display:** Opens the wireless display connection screen
- Back/Return:** Returns to previous screen
- OK:** Confirms user selections
- Quick Menu:** Displays a list of menus for quick access
- No function
- Mute:** Completely turns off the volume of the Display
- Screen:** Changes the aspect ratio of the screen
- Source:** Shows all available content sources

## First Time Installation

When turned on for the first time, the language selection screen will be displayed. Select the desired language and press **OK**.

On the next screen, set your country preference and press **OK** to continue.

You will be asked to set and confirm a PIN at this point. For some **Country** options, the PIN cannot be set to **0000**, in this case you need to enter another 4-digit number combination. You have to enter this PIN if you are asked to enter a PIN for any menu operation later.

The **Signage Settings** menu will be displayed next. **Set ID, OSD Orientation(\*), Auto software update** options can be configured using this menu. **Model name, Serial number** and **Software version** options are for information only. They will be grayed out and not selectable. Refer to the **Signage Settings Menu Contents** section for more information on the options of this menu. While this menu is displayed on the screen you can copy database files from a connected USB device to the Display by pressing the **Yellow** button. You can also save the model information data of the Display to a connected USB device by pressing the **Blue** button. After the settings are completed, press **OK** to continue.

(\* *This option may not appear depending on the model*)

On the next screen, the **Network/Internet Settings** menu will be displayed. Please refer to **Connectivity** section to configure a wired or a wireless connection. **If you want your Display to consume less power in standby mode, you can disable the Wake On option by setting it as Off.** After the settings are completed press **OK** button to continue. To skip to the next step without doing anything press the **Rapid advance** button.

The **First Time Installation** is completed.

To repeat this process and reset the Display's settings to the factory defaults enter the **Signage Settings** menu, highlight **First time installation** and press **OK**. You will be asked to enter the PIN that you have defined in the **First Time Installation**. If the correct PIN is entered a confirmation message will be displayed asking whether you want to delete all settings and reset the Display. Select **Yes** and press **OK** to confirm.

**Note:** *Do not turn off the Display while initializing first time installation. Note that, some options may not be available depending on the country selection.*

## Media Playback via USB Input

You can connect 2.5" and 3.5" inch (hdd with external power supply) external hard disk drives or USB memory stick to your Display by using the USB input/s of the Display.

**IMPORTANT!** Back up the files on your storage devices before connecting them to the Display.

Manufacturer will not be responsible for any file damage or data loss. Certain types of USB devices (e.g. MP3 Players) or USB hard disk drives/memory sticks may not be compatible with this Display. The Display supports FAT32 and NTFS disk formatting.

Wait a little while before each plugging and unplugging as the player may still be reading files. Failure to do so may cause physical damage to the USB player and the USB device itself. Do not pull out your drive while playing a file.






You can use USB hubs with your Display's USB input/s. External power supplied USB hubs are recommended in such a case.

It is recommended to use the Display's USB input/s directly, if you are going to connect a USB hard disk.

**Note:** *When viewing image files the **Media Browser** menu can only display 1000 image files stored on the connected USB device.*

## Media Browser Menu

You can play photo, music and movie files stored on a USB disk by connecting it to your Display. Connect a USB disk to one of the USB inputs located on the side of the Display. Pressing the **Menu** button while in the **Media Browser** mode will access the **Picture, Sound** and **Settings** menu options. Pressing the **Menu** button again will exit from this screen. You can set your **Media Browser** preferences by using the **Settings** menu.

| Loop/Shuffle Mode Operation                                                                                                                                                                                                     |                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Start playback with the <b>Play</b> button and activate                                                                                        | All files in the list will be continuously played in original order         |
| Start playback with the <b>OK</b> button and activate                                                                                          | The same file will be played continuously (repeat)                          |
| Start playback with the <b>Play</b> button and activate                                                                                       | All files in the list will be played once in random order                   |
| Start playback with the <b>Play</b> button and activate   | All files in the list will be continuously played in the same random order. |

## USB Auto Play Feature

USB AutoPlay feature is to start playing the media content in removable device, automatically. It uses the **Media Browser**. The media content types have different priorities in order to be played. The reducing priority order is as Photo, Video and Audio. That means, if there is Photo content in the root directory of the removable device, MediaBrowser will play the Photos in a sequence (in file name order) instead of Video or Audio files. If not, it will be checked for Video content and as last Audio.

This feature will only work if all of the following circumstances occur:

- The USB device is plugged in.

- **Auto Play** option is enabled. It is placed in the **Media Browser>Settings** menu.

## Failover Feature

If **No Signal** option in the **Signage Settings** menu is set as **Failover** the Display checks the connected USB device for available files to play. If no playable files are available or there is no USB device connected to the Display, the No Signal image will be displayed and the Display will turn itself off after a period of 5 minutes. If there isn't any No Signal Image available, No Signal OSD will be displayed on the screen and the Display will turn itself off after a period of 5 minutes.

**Note:** *The setting of the **Auto Play** option in the **Media Browser>Settings** menu is not important, in Failover mode it will function anyway.*

## CEC and CEC RC Passthrough

This function allows to control the CEC-enabled devices, that are connected through HDMI ports by using the remote control of the Display.

The **CEC** option in the **System>Settings>More** menu should be set as **Enabled** at first. Press the **Source** button and select the HDMI input of the connected CEC device from the **Sources List** menu. When new CEC source device is connected, it will be listed in source menu with its own name instead of the connected HDMI ports name(such as DVD Player, Recorder 1 etc.).

The Display remote is automatically able to perform the main functions after the connected HDMI source has been selected.

To terminate this operation and control the Display via the remote again, press the **Quick Menu** button on the remote if available, highlight the **CEC RC Passthrough** and set as **Off** by pressing Left or Right button. If the **Quick Menu** button is not available press and hold the "0-Zero" button on the remote control for 3 seconds. This feature(**CEC**) can also be enabled or disabled under the **System>Settings>More** menu.

The Display supports also ARC(Audio Return Channel) feature. This feature is an audio link meant to replace other cables between the Display and the audio system (A/V receiver or speaker system).

When ARC is active, Display does not mute its other audio outputs automatically. So you need to decrease Display volume to zero manually, if you want to hear audio from connected audio device only (same as other optical or co-axial digital audio outputs). If you want to change connected device's volume level, you should select that device from the source list. In that case volume control keys are directed to connected audio device.

**Note:** *ARC is supported only via the HDMI1 input.*

## System Audio Control

Allows an Audio Amplifier/Receiver to be used with the Display. The volume can be controlled using the remote control of the Display. To activate this feature set the **Speakers** option in the **System>Settings>More** menu as **Amplifier**. The Display speakers will be muted and the sound of the watched source will be provided from the connected sound system.

**Note:** *The audio device should support System Audio Control feature and **CEC** option should be set as **Enabled**.*

## Usage of the Start URL

- Create a file named "starturl.txt" in the root directory of any USB storage device. Make sure that the extension is "txt".
- Open this file with a text editor software such as Notepad.
- Write the desired URL (for example, www.starturl.com) in the file and save changes.
- Connect the USB storage device to the Display. Highlight **USB Operations** option in the **Signage Settings>USB** menu and press **OK**.
- Switch the Display off and then switch it on again.

**Note:** *You can check if the Start URL have the desired link from the **Signage Settings>Link Options** menu.*

## Display Menu Contents

| System - Picture Menu Contents |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Mode</b>                    | You can change the picture mode to suit your preference or requirements. Picture mode can be set to one of these options: <b>Text, Game, Sports, Signage</b> and <b>Natural</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Contrast</b>                | Adjusts the light and dark values on the screen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Brightness</b>              | Adjusts the brightness values on the screen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Sharpness</b>               | Sets the sharpness value for the objects displayed on the screen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Colour</b>                  | Sets the colour value, adjusting the colours.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Energy Saving</b>           | <p>This Display is designed to be environmentally friendly. If you set this option to <b>Minimum, Medium, Maximum</b> or <b>Auto</b> the Display will reduce energy consumption by regulating the backlight level accordingly. If you like to set the backlight level to a fixed value set as <b>Custom</b> and adjust the <b>Backlight</b> (located under this setting) manually using Left or Right buttons on the remote. Set as <b>Off</b> to turn this setting off.</p> <p>If pressed Right button while <b>Auto</b> option is selected or Left button while <b>Custom</b> option is selected, "<b>Screen will be off in 15 seconds.</b>" message will be displayed on the screen. Select <b>Proceed</b> and press <b>OK</b> to turn the screen off immediately. If you don't press any button, the screen will be off in 15 seconds. Press any button on the remote or on the TV to turn the screen on again.</p> <p>When the Display is not in use, please switch off or disconnect the Display from the mains plug. This will also reduce energy consumption.</p> <p><b>Note: Available options may differ depending on the selected Mode.</b></p> |
| <b>Backlight</b>               | This setting controls the backlight level. The backlight function will be inactive if the <b>Energy Saving</b> is set to an option other than <b>Custom</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Advanced Settings</b>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Dynamic Contrast</b>        | You can change the dynamic contrast ratio to desired value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Noise Reduction</b>         | If the signal is weak and the picture is noisy, use the <b>Noise Reduction</b> setting to reduce the amount of noise.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Colour Temp</b>             | Sets the desired colour temperature value. <b>Cool (1300K), Normal (9300K) and Warm (8500K)</b> options are available.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Picture Zoom</b>            | Sets the desired image size format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Movie Sense</b>             | <p>Press left/right buttons to set <b>Movie Sense</b> to <b>Low, Medium, High</b> or <b>Off</b>. While <b>Movie Sense</b> is active, it will optimize the Display's video settings for motion images to acquire a better quality and readability. When <b>Movie Sense</b> option is set to <b>Low, Medium</b> or <b>High, Movie Sense</b> demo option will be available. If one of these options is selected and if you press <b>OK</b> button, then the demo mode starts. While demo mode is active, the screen will be divided into two sections, one displaying the movie sense activity, the other displaying the normal settings for Display screen.</p> <p><b>Note: This feature may not be available depending on the model of your unit.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Film Mode</b>               | Films are recorded at a different number of frames per second. Turn this feature on when you are watching films to see the fast motion scenes clearly.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>RGB Gain</b>                | Adjust the strength of the red, green and blue colours. You can use this feature for fine adjustment of white balance in the picture.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>HDMI Full Range</b>         | While watching from a HDMI source, this feature will be visible. You can use this feature to enhance blackness in the picture.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>PC Position</b>             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Autoposition</b>            | Automatically optimizes the display. Press OK to optimize.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>H Position</b>              | This item shifts the image horizontally to the right hand side or left hand side of the screen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>V Position</b>              | This item shifts the image vertically towards the top or bottom of the screen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Dot Clock</b>               | Dot Clock adjustments correct the interference that appear as vertical banding in dot intensive presentations like spreadsheets or paragraphs or text in smaller fonts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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| <b>Phase</b>                                                                                                                                                                    | Depending on the input source(computer etc.) you may see a hazy or noisy picture on the screen. You can use phase to get a clearer picture by trial and error. |
| <b>Reset</b>                                                                                                                                                                    | Resets the picture settings to factory default settings (except <b>Game</b> mode).                                                                             |
| <i>While in VGA (PC) mode, some items in <b>Picture</b> menu will be unavailable. Instead, VGA mode settings will be added to the <b>Picture Settings</b> while in PC mode.</i> |                                                                                                                                                                |

| <b>System - Sound Menu Contents</b>    |                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Volume</b>                          | Adjusts the volume level.                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Equalizer</b>                       | Selects the equalizer mode. Custom settings can be made only when in <b>User</b> mode.                                                                                                                                                                                                                                                                                                                                                         |
| <b>Balance</b>                         | Adjusts whether the sound comes from the left or right speaker.                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Headphone</b>                       | Sets headphone volume.<br>Please ensure before using headphones that the headphone volume is set to a low level, to prevent damage to your hearing. Only available if <b>Headphone/Lineout</b> option is set to <b>Headphone</b> .                                                                                                                                                                                                             |
| <b>Audio Link</b>                      | Press <b>OK</b> to open the Audio Link menu screen. Using this screen you can discover and connect the sound devices to your Display wirelessly.                                                                                                                                                                                                                                                                                               |
| <b>AVL (Automatic Volume Limiting)</b> | Sets the sound to obtain fixed output level between sources.                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Headphone/Lineout</b>               | When you connect an external amplifier to your Display using the headphone jack, you can select this option as <b>Lineout</b> . If you have connected headphones to the Display, set this option as <b>Headphone</b> .<br>Please ensure before using headphones that this menu item is set to <b>Headphone</b> . If it is set to <b>Lineout</b> , the output from the headphone socket will be set to maximum which could damage your hearing. |
| <b>Digital Out</b>                     | Sets digital out audio type. <b>PCM</b> and <b>Compressed</b> options are available.                                                                                                                                                                                                                                                                                                                                                           |
| <b>Surround Sound</b>                  | Surround sound mode can be changed as <b>On</b> or <b>Off</b> .                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Bass Gain</b>                       | Controls the bass gain level. Use Left or Right button to set.<br><b>Note:</b> <i>This feature may not be available depending on the model of your unit.</i>                                                                                                                                                                                                                                                                                   |

| <b>System - Settings Menu Contents</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Language</b>                        | Sets the OSD menu language preference.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Date/Time</b>                       | Sets date and time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Sources</b>                         | Enables or disables selected source options. There will be <b>Regular</b> , <b>Enhanced</b> and <b>Disabled</b> options available for HDMI sources, if your Display supports Ultra HD. <b>Regular</b> and <b>Enhanced</b> options are affecting the colour settings of the selected HDMI source. To be able to watch 4K images from an HDMI source related source setting should be set as <b>Enhanced</b> if the connected device is HDMI 2.0 compatible. Set as <b>Regular</b> if the connected device is HDMI 1.4 compatible. Set accordingly or disable the related HDMI source by setting as <b>Disabled</b> .<br><b>Note:</b> <i>HDMI cables which are longer than 5 metres and which are not HDMI certified can cause display problems. We recommend using a certified Premium High-Speed HDMI Cable. Source device, connection cable quality and other HDMI equipments used may affect performance.<br/>Please refer to → <a href="https://www.hdmi.org/consumer/finding_right_cable.aspx">https://www.hdmi.org/consumer/finding_right_cable.aspx</a> (for finding the right cable)<br/><a href="https://www.hdmi.org/installers/longcablelengths.aspx">https://www.hdmi.org/installers/longcablelengths.aspx</a> (for cable lengths)</i> |
| <b>Network/Internet Settings</b>       | Displays network/internet settings.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>More</b>                            | Displays other setting options of the Display.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Menu Timeout</b>                    | Changes timeout duration for menu screens.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Standby Led</b>                     | Enables or disables the functionality of the standby led. If disabled the led will not function.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Software upgrade</b>                | Ensures that your Display has the latest firmware. Press <b>OK</b> to see the menu options.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

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|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Application Version</b>   | Displays current software version.                                                                                                                                                                                                                                                                          |
| <b>Auto Display OFF</b>      | Sets the desired time for the Display to automatically go into standby mode when not being operated.                                                                                                                                                                                                        |
| <b>Audio Video Sharing</b>   | <b>Audio Video Sharing</b> feature allows you to share files stored on your smartphone or tablet pc. If you have a compatible smartphone or tablet pc and the appropriate software is installed, you can share/play photos on your Display. See instructions of your sharing software for more information. |
| <b>Video Wall Settings</b>   | Press <b>OK</b> to open the <b>Video Wall Settings</b> menu screen. <b>Video Wall Settings, Row Count, Column Count, Cell</b> and <b>Offset</b> options are available. You can enable or disable Video Wall feature by setting the <b>Video Wall Settings</b> option accordingly.                           |
| <b>CEC</b>                   | With this setting you can enable and disable CEC functionality completely. Press Left or Right button to enable or disable the feature.                                                                                                                                                                     |
| <b>CEC Auto Power On</b>     | This function allows the connected HDMI-CEC compatible device to turn on the Display and switch to its input source automatically. Press <b>Left</b> or <b>Right</b> button to enable or disable the feature.                                                                                               |
| <b>Speakers</b>              | To hear the Display audio from the connected compatible audio device set as <b>Amplifier</b> . You can use the remote control of the Display to control the volume of the audio device.                                                                                                                     |
| <b>DP Stream Setting (*)</b> | Sets the DisplayPort stream type. <b>MST</b> and <b>SST</b> options are available.<br>(* ) This menu item appears only when the input source is set to DP.                                                                                                                                                  |

## Signage Settings Menu Contents

|                               |                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Device Info</b>            |                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Set ID</b>                 | Sets the device ID. You can select a value between 0-99 using the numeric buttons on the remote in order to identify your Display.                                                                                                                                                                                                                                                                 |
| <b>Software upgrade</b>       | Displays current software version. Press <b>OK</b> to see the <b>Upgrade options</b> menu. You can use these options to start a manual search for software updates and set your automatic scan preference.                                                                                                                                                                                         |
| <b>Serial number</b>          | Displays serial number of the unit. (Cannot changed by user)                                                                                                                                                                                                                                                                                                                                       |
| <b>Model name</b>             | Displays model name of the unit. (Cannot changed by user)                                                                                                                                                                                                                                                                                                                                          |
| <b>Save model information</b> | Copies the model information data of the unit to a connected USB device.                                                                                                                                                                                                                                                                                                                           |
| <b>Temperature Settings</b>   | Press <b>OK</b> to open the <b>Temperature Settings</b> menu screen. Current system temperature will be displayed. You can also change the maximum system shutdown temperature using the related option.<br><i>Note: This feature may not be available depending on the model of your unit.</i>                                                                                                    |
| <b>Display Life Time</b>      | Displays the duration of life of the unit.                                                                                                                                                                                                                                                                                                                                                         |
| <b>Controls</b>               |                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>OSD Orientation</b>        | Sets the OSD (On Screen Display) rotation of your Display. <b>Landscape</b> and <b>Portrait</b> options are available.                                                                                                                                                                                                                                                                             |
| <b>Browser Orientation</b>    | Sets the rotation of the browser. <b>Landscape, Portrait1</b> and <b>Portrait2</b> options are available. One of the portrait options will be set by default depending on the model. This option will rotate the browser only and the changes will be applied after the Display is switched off and back on again.<br><i>Note: Portrait mode does not support html pages which include videos.</i> |
| <b>Pixel shift</b>            | Enables or disables pixel shifting. This option can be used to avoid image retention (after image effects) that can occur when displaying fixed patterns or still images for a long periods of time. If enabled, the picture and OSD (On-Screen Display) will be shifted at specified time intervals.                                                                                              |



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| No Signal           | <p>Sets the behavior preference of the Display, when no signal is detected from the currently set input source. <b>Failover</b> and <b>Input Search</b> options are available.</p> <p>If <b>Failover</b> is selected the Display checks the connected USB device for available files to play. If no playable files are available or there is no USB device connected to the Display, the No Signal image will be displayed. If there isn't any No Signal Image available, No Signal OSD will be displayed on the screen. The setting of the <b>Auto Play</b> option in the <b>Media Browser&gt;Settings</b> menu is not important, in Failover mode it will function anyway.</p> <p>If <b>Input Search</b> is selected the Display will search all available input sources consecutively to find signal. If no signal is detected from other available sources, No Signal OSD will be displayed and the Display will turn itself off after a period of 30 seconds.</p> |
| No Signal Delay     | <p>Sets a delay value to the 'No Signal' preferences when the Display is in No Signal state. After the set delay time is expired 'No Signal' preferences will be applied.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| No signal Power off | <p>When enabled the Display will turn itself off after a period of 5 minutes, if no signal is received from the selected source.</p> <p>This feature will only work if all of the following circumstances occur:</p> <ul style="list-style-type: none"> <li>- <b>No Signal</b> option is set as <b>Failover</b>.</li> <li>- USB device is not connected to the Display / USB device is connected but there are no playable files installed in the USB device.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Panel Lock          | <p>Set as <b>Off</b> to prohibit the use of the buttons on the Display.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| RCU Inhibit         | <p>Set as <b>On</b> to inhibit the use of the remote. Remote control will function in Stand-By mode independently from the setting of this option.</p> <p>To turn this option off and be able to use the remote again, press <b>MENU/M-1-9-7-3</b> buttons on the remote consecutively. <b>Signage Settings</b> menu will appear. Enter the <b>Controls</b> menu and set this option as <b>Off</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| UART 0              | <p>Select ASCII/HEX protocol for UART 0. Default value is ASCII. There is no need to restart the Display after selection in order to work with the protocols correctly. If the selection is changed, the latest selected protocol will be preserved and started when the Display is booted up.</p> <p>Note that ASCII/HEX selection is not working while debug logs are enabled. If it is wrongly changed to HEX while debug logs are enabled, revert the selection to ASCII and reboot the Display in order to correct the debug logs and the ASCII protocol behaviour. Also note that HEX protocol will work with the baud rate value 19200 for UART0</p>                                                                                                                                                                                                                                                                                                            |
| UART 1              | <p>Select ASCII/HEX protocol for UART 1. Default value is HEX. There is no need to restart the Display after selection in order to work with the protocols correctly. If the selection is changed, the latest selected protocol will be preserved and started when the Display is booted up.</p> <p>Note that ASCII/HEX selection is always working as expected. It does not matter if the debug logs are enabled or not.</p> <p>Also note that HEX protocol will work with the baud rate value 9600 for UART1</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Auto Source Switch  | <p>If this option is enabled the Display will switch to the currently active HDMI source automatically when a device is connected to the Display through the HDMI1 or HDMI2 (if available) input socket. Set as <b>Enabled</b> to enable this feature.</p> <p>When the HDMI source is removed the Display will switch to other active HDMI source. If there isn't any other device connected to the Display and the HDMI Wake UP option for the related HDMI source is enabled the Display will switch into the standby mode.</p> <p>There is also a 3-second restriction for the successive connected HDMI sources. This means, second HDMI device must be plugged in 3 seconds after the first HDMI device is plugged in.</p> <p><i>Note: This feature applies for HDMI1 and HDMI2 (if available) input sockets only. Refer to the <b>General View</b> section to see the HDMI inputs.</i></p>                                                                       |
| Power Up Settings   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Power Up Mode       | <p>Configures the power up mode preference. <b>Last State, Always On</b> and <b>Standby</b> options are available.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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| <b>Quick Standby</b>           | If this feature is enabled the Display can be turned on again with the RS232 and Lan commands if it is turned off through it. Press <b>Left</b> or <b>Right</b> button to enable or disable the feature.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Power on Delay</b>          | Sets a delay value at power on. This value can be set from 0 to 2000 ms in steps of 100 ms. The Display will turn on after the set delay time is expired.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Auto Launch</b>             | Configures the auto launch preference. <b>CMS(Start url)</b> , <b>Open Browser(Open Browser initial page)</b> and <b>Disabled</b> options are available.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Boot Up Picture Mode</b>    | Configures the picture mode preference at power on. If set as <b>Off</b> the last set picture mode will be used at power on.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>HDMI1 Wake Up Enabled</b>   | If this option is set as <b>Enabled</b> , the Display will turn on with the HDMI input source, when it is switched on. This feature works based on HDMI 5V signal. When this signal is active the Display wakes up and when the signal is inactive the Display shuts down. You can disable this option by setting as <b>Disabled</b> .<br>If any Scheduler is set or an OPS unit is connected to the Display, this option will be inactive and can not be set as <b>Enabled</b> .<br><i>Note: This feature may not be available depending on the model of your unit.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>USB</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Clone to USB</b>            | Copies the database files from the unit to a connected USB device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Clone from USB</b>          | Copies the database files from a connected USB device to the unit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Copy app cache from USB</b> | Copies app cache data from a connected USB device to the unit.<br><i>Note: This feature may not be available depending on the model of your unit.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>USB Information</b>         | Press <b>OK</b> to open the <b>USB information</b> menu screen. Current <b>Total space</b> and <b>Free space</b> informations of the connected USB device will be displayed. You can also format the connected USB device using the <b>Format Disk</b> option in this menu (FAT32 format only).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>USB operations</b>          | Highlight and press <b>OK</b> to perform USB operations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>USB Option</b>              | Set as <b>Off</b> to disable the USB ports on the Display. You can also set this option as <b>5V</b> to provide 5 volts power over USB. In this case it will still not be available to browse the USB content via Media Browser feature of the Display.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Video Wall Settings</b>     | Press <b>OK</b> to open the <b>Video Wall Settings</b> menu screen. <b>Video Wall Settings</b> , <b>Row Count</b> , <b>Column Count</b> , <b>Cell</b> and <b>Offset</b> options are available. You can enable or disable Video Wall function by setting the <b>Video Wall Settings</b> option accordingly.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>OPS Settings</b>            | Press <b>OK</b> to open the <b>OPS Settings</b> menu screen. Three sub-menu options are available.<br><b>OPS Information:</b> Displays read-only information about the OPS unit, if supported.<br><b>OPS Status:</b> Displays whether the OPS module is on or off. Allows the change of status via soft PSON signal (0.5s)<br><b>Boot Signal:</b> Enables or disables sending of a PSON signal. The Display checks the status signal of the OPS at bootup in order to turn it on by sending a PSON signal if it is off. Some OPS's send incorrect information on their status during the bootup of the Display, so they seem to be on even though they are off. For such non-standard OPS's, this option must be enabled. In this case, a PSON signal will be send for the OPS regardless of the received status information at bootup.<br><b>Powerdown:</b> Turns the OPS off via hard PSON signal (5s)<br><i>Note: This menu will not be available if OPS is not supported or not connected to the unit.</i> |



|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Scheduler Settings</b>      | <p>Press <b>OK</b> to open the <b>Scheduler Settings</b> menu screen. You can set up to 4 different schedulers. Highlight the <b>Status</b> column of the desired scheduler option and set as <b>Enabled</b> by using the <b>Left/Right</b> directional buttons after pressing the <b>OK</b> button. Using the scheduler options you can set the unit to turn on automatically at defined time intervals with the defined input source setting. If the <b>Source</b> option is set as <b>Last Source</b>, the input source will not be changed at the power-up. If the <b>Source</b> option is set as <b>USB</b>, the media files in the connected USB device will be played back automatically as explained in the section entitled '<b>USB Auto Play Feature</b>'.</p> <p>You can also set a backlight scheduler. After setting the <b>On, Off, Source</b> and day options highlight the checkbox under the <b>Backlight</b> column and press <b>OK</b>. The checkbox will be checked and backlight level setting screen will be displayed. Set <b>On value</b> and <b>Off value</b> using the sliders and then press <b>OK</b> to save. Mind that, in case you set a backlight scheduler, the display will not be turned on or off, only the backlight values will be changed at defined time interval. If <b>Source</b> option is set as <b>Last Source</b> the backlight settings will be applied to all sources, otherwise the settings will be applied to the selected source only.</p> <p>Press the <b>Green</b> button on the main scheduler screen to save settings when complete.</p> |
| <b>Link options</b>            | <p>Press <b>OK</b> to open the <b>Link Options</b> menu screen. Current <b>Start url</b> and <b>Settings url</b> links will be displayed. These items are for information only and not selectable. <b>Open browser initial page</b> and <b>NTP server</b> link preferences can be configured using the related options.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Volume Settings</b>         | <p>Press <b>OK</b> to see available menu options.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Reset to Default Values</b> | <p>Highlight this option and press the <b>OK</b> button on the remote to return the Display to default settings.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>First time installation</b> | <p>Highlight and press <b>OK</b> to perform <b>First Time Installation</b> and reset all settings to factory settings. You will need to enter the correct PIN to carry out this operation.</p> <p><i>Note: Enter the PIN you have defined during the <b>First Time Installation</b> process.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

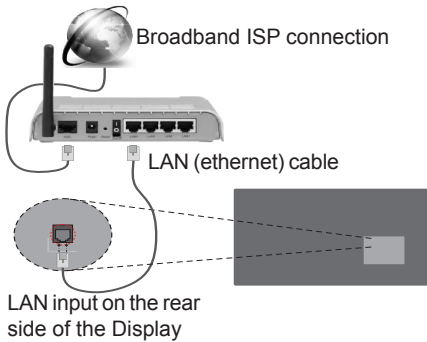
## Connectivity

To configure wired or wireless settings please refer to the **Network/Internet Settings** section in the **System>Settings** menu.

### Wired Connectivity

#### To Connect to a Wired Network

- You must have a modem/router connected to an active broadband connection.
- Connect your Display to your modem/router via an ethernet cable. There is a LAN port at the rear (back) of your Display.



#### Configuring Wired Device Settings

##### Network Type

The **Network Type** can be selected as **Wired Device**, **Wireless Device** or **Disabled**, in accordance with the active connection to the Display. Select this as **Wired Device** if you are connecting via an ethernet.

##### Internet Speed Test

Highlight **Internet Speed Test** and press the **OK** button. Display will check the internet connection bandwidth and display the result when complete.

##### Advanced Settings

Highlight **Advanced Settings** and press the **OK** button. On the next screen you can change the IP and DNS settings of the Display. Highlight the desired one and press Left or Right button to change the setting from **Automatic** to **Manual**. Now you can enter the **Manual IP** and / or **Manual DNS** values. Select the related item in the drop down menu and enter the new values using the numeric buttons on the remote. Press the **OK** button to save settings when complete.

##### Other Information

You can also enable or disable **Wake On** feature using the related option. The status of the connection will be displayed as **Connected** or **Not Connected** and

the current IP and MAC addresses, if a connection is established.

### Wireless Access Point

If the network type is set as **Wired Device** access point feature will be available. Highlight **Access Point** option and press **OK**. **Access Point**, **SSID**, **Security Type** and **Password** options will be available.

**Access Point:** Start or stop access point functionality. The function of this option will change according to the current status.

**SSID:** Set the name of the accesspoint.

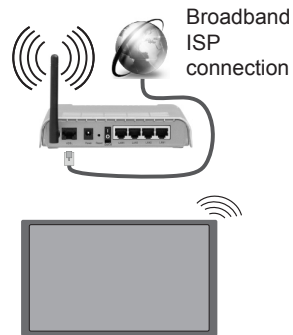
**Security Type:** Secure your network using **WPA2 PSK**. You can also set this option as **None**. In that case no password will be required to connect to the access point. This option can be set only if the access point feature is not activated.

**Password:** Define a password for the access point. This option will be available if the **Security Type** option is set as **WPA2 PSK** and can be set only if the access point feature is not activated.

### Wireless Connectivity

#### To Connect to a Wireless Network

The Display cannot connect to the networks with a hidden SSID (wireless network name). To make your modem's SSID visible, you should change your SSID settings via the modem's software.



- A Wireless-N router (IEEE 802.11a/b/g/n) with simultaneous 2.4 and 5 GHz bands is designed to increase bandwidth. These are optimized for smoother and faster HD video streaming, file transfers and wireless gaming.
- The frequency and channel differ depending on the area.
- The transmission speed differs depending on the distance and number of obstructions between the transmission products, the configuration of these products, the radio wave conditions, the line traffic and the products that you use. The transmission may also be cut off or may get disconnected depending

on the radio wave conditions, DECT phones or any other WLAN 11b appliances. The standard values of the transmission speed are the theoretical maximum values for the wireless standards. They are not the actual speeds of data transmission.

- The location where the transmission is most effective differs depending on the usage environment.
- The Wireless feature of the Display supports 802.11 a,b,g & n type modems. It is highly recommended that you should use the IEEE 802.11n communication protocol in order to avoid any possible problems while watching videos.
- You must change your modem's SSID when there are any other modems around with the same SSID. You can encounter connection problems otherwise. Use a wired connection if you experience problems with a wireless connection.

## Configuring Wireless Device Settings

Open the **Network/Internet Settings** menu and select **Network Type** as **Wireless Device** to start connection process.

The Display will scan the wireless networks automatically. A list of available networks will be displayed. Please select your desired network from the list.

**Note:** *If the modem supports N mode, you should set N mode settings.*

If the selected network is protected with a password, please enter the correct key by using the virtual keyboard. You can use this keyboard via the directional buttons and the **OK** button on the remote control.

Wait until the IP address is shown on the screen.

This means that the connection is now established. To disconnect from a wireless network, highlight **Network Type** and press Left or Right buttons to set as **Disabled**.

If your router has WPS button, you can directly connect your Display to the modem/router without entering a password or adding the network first. Highlight the **Press WPS on your wifi router** option and press the **OK** button. Then press the WPS button on your router/modem to connect.

Highlight **Internet Speed Test** and press the **OK** button to check your internet connection speed. Highlight **Advanced Settings** and press the **OK** button to open the advanced setting menu. Use directional and numeric buttons to set. Press the **OK** button to save settings when complete.

## Other Information

You can also enable or disable Wake On feature using the related option. The status of the connection will be displayed as **Connected** or **Not Connected** and the current IP and MAC addresses, if a connection is established.

## Other Information

The status of the connection will be displayed as **Connected** or **Not Connected** and the current IP address, if a connection is established.

## Connecting to your mobile device via WLAN

- If your mobile device has WLAN feature, you can connect it to your Display via a router, in order to access the content in your device. For this, your mobile device must have an appropriate sharing software.
- Connect to your router following the steps stated above in the **Wireless Connectivity** section.
- Afterwards, engage your mobile device with the router and then activate the sharing software on your mobile device. Then, select files that you want to share with your Display.
- If the connection is established correctly, you will be able to access the shared files from your mobile device via the **Media Browser** of your Display.
- Enter the **Media Browser** menu and the playback device selection OSD will be displayed. Select your mobile device and press the **OK** button to continue.
- If available, you can download a virtual remote controller application from the server of your mobile device application provider.

**Note:** *This feature may not be supported on all mobile devices.*

## Wireless Display

Wireless Display is a standard for streaming video and sound content. This feature provides the ability to use your Display as wireless display device.

## Using with mobile devices

There are different standards which enable sharing of screens including graphical, video and audio content between your mobile device and Display.

Then press the **Source** button on the remote and switch to **Wireless Display** source.

A screen appears stating that the Display is ready for connection.

Open the sharing application on your mobile device. These applications are named differently for each brand, please refer to the instruction manual of your mobile device for detailed information.

Scan for devices. After you select your Display and connect, the screen of your device will be displayed on your Display.

**Note:** *This feature can be used only if the mobile device supports this feature. If you experience problems with the connection check if the operating system version you use supports this feature. There may be incompatibility problems with the operating system versions which are released after the production of this TV. Scanning and connecting processes differ according to the programme you use. The maximum supported resolution is 1920x1080. Image quality may be*

affected by neighbouring wireless networks and your internet connection speed.

## Wake ON

Wake-on-LAN (WoL) and Wake-on-Wireless LAN (WoWLAN) are standards that allow a device to be turned on or woken up by a network message. The message is sent to the device by a program executed on a remote device connected to the same local area network, such as a smartphone.

Your Display is WoL and WoWLAN compatible. This feature might be disabled during the First Time Installation process. To enable this feature set the **Wake On** option in the **System>Settings>Network/Internet Settings** menu as **On**. It is necessary that both the device, from which the network message will be sent to the Display, and the Display are connected to the same network. Wake On feature is only supported for Android OS devices and can only be used via YouTube and Netflix applications.

In order to use this feature the Display and the remote device should be connected at least once while the Display is on. If the Display is powered off, the connection should be re-established, the next time it is switched on. Otherwise this feature will be unavailable. This does not apply, when the Display is switched into the standby mode.

If you want your Display to consume less power in standby mode, you can disable this feature by setting the **Wake On** option as **Off**.

## Connecting Other Wireless Devices

Your Display supports another short range wireless connection technology too. A pairing is required before using these kind of wireless devices with the Display set. You should do the followings to pair your device with the Display:

- Set the device to pairing mode
- Start device discovery on the Display

**Note:** Refer to the user manual of the wireless device to learn how to set the device to pairing mode.

You can connect audio devices wirelessly to your Display. Unplug or switch off any other connected audio device in order for wireless connection feature to work correctly. For audio devices you should use the **Audio Link** option in the **System>Sound** menu. Select the menu option and press the **OK** button to open the related menu. Using this menu you can discover and connect the devices that use the same wireless technology and start to use them. Follow the on-screen instructions. Start the device discovery. A list of available wireless devices will be displayed. Select the device you want to connect from the list and press the **OK** button to connect. If "**Device connected**" message is displayed, the connection

is successfully established. If the connection fails try it again.

**Note:** Wireless devices may operate within the same radio frequency range and may interfere with one another. To improve the performance of your wireless device place it at least 1 meter away from any other wireless devices.

## Connectivity Troubleshooting

### Wireless Network Not Available

- Ensure that any firewalls of your network allow the Display wireless connection.
- Try searching for wireless networks again, using the **Network/Internet Settings** menu screen.

If the wireless network does not function properly, try using the wired network in your home. Refer to the **Wired Connectivity** section for more information on the process.

If the Display does not function using the wired connection, check the modem (router). If the router does not have a problem, check the internet connection of your modem.

### Connection is Slow

See the instruction book of your wireless modem to get information on the internal service area, connection speed, signal quality and other settings. You need to have a high speed connection for your modem.

### Distruption during playback or slow reactions

You could try the following in such a case:

Keep at least three meters distance from microwave ovens, mobile telephones, bluetooth devices or any other WLAN compatible devices. Try changing the active channel on the WLAN router.

### Internet Connection Not Available / Audio Video Sharing Not Working

If the MAC address (a unique identifier number) of your PC or modem has been permanently registered, it is possible that your Display might not connect to the internet. In such a case, the MAC address is authenticated each time when you connect to the internet. This is a precaution against unauthorized access. Since your Display has its own MAC address, your internet service provider cannot validate the MAC address of your Display. For this reason, your Display cannot connect to the internet. Contact your internet service provider and request information on how to connect a different device, such as your Display, to the internet.

It is also possible that the connection may not be available due to a firewall problem. If you think this causes your problem, contact your internet service provider. A firewall might be the reason of a connectivity and discovery problem while using

the Display in Audio Video Sharing mode or while browsing via Audio Video Sharing feature.

## Invalid Domain

Ensure that you have already logged on to your PC with an authorized username/password and also ensure that your domain is active, prior to sharing any files in your media server program on your PC. If the domain is invalid, this might cause problems while browsing files in Audio Video Sharing mode.

## Using Audio Video Sharing Network Service

Audio Video Sharing feature uses a standard that eases the viewing process of digital electronics and makes them more convenient to use on a home network.

This standard allows you to view and play photos, music and videos stored on your media server connected to your home network.

### 1. Server Software Installation

The Audio Video Sharing feature cannot be used if the server programme is not installed onto your PC or if the required media server software is not installed onto the companion device. Please prepare your PC with a proper server programme.

### 2. Connect to a Wired or Wireless Network

See the **Wired/Wireless Connectivity** chapters for detailed configuration information.

### 3. Play Shared Files via Media Browser

Select **Media Browser** by using the **directional** buttons from the main menu and press **OK**. The media browser will then be displayed.

## Audio Video Sharing

Select the desired media type on the main media browser menu and press **OK**. If sharing configurations are set properly, **Device Selection** screen will be displayed after selecting the desired media type. If available networks are found, they will be listed on this screen. Select media server or network that you want to connect to using the Up or Down buttons and press **OK**. If you want to refresh the device list, press the **Green** button. You can press **Menu** to exit.

If you select the media type as **Videos** and choose a device from the selection menu. Then select the folder with video files in it on the next screen and all the available video files will be listed.

To play other media types from this screen, you can go back to main **Media Browser** screen and select the media type as desired and then perform the network selection again. Or press the **Blue** button to switch to next media type quickly without changing the network. Refer to the **Media Browser** menu section for further information on file playback.

If a problem occurs with the network, please switch your display off at the wall socket and back on again. Trick mode and jump are not supported with the Audio Video Sharing feature.

PC/HDD/Media Player or any other devices that are compatible should be used with a wired connection for higher playback quality.

Use a LAN connection for quicker file sharing between other devices like computers.

**Note:** There may be some PC's which may not be able to utilize the Audio Video Sharing feature due to administrator and security settings (such as business PC's).

## Internet Browser



To use the internet browser enter the main menu first by pressing the **Menu** button. Then launch the **Internet Browser** application from the **Internet** menu.


(\*) The appearance of the internet browser logo may change

In the initial screen of the browser, the thumbnails of the predefined (if any) links to web sites available will be displayed as **Speed Dial** options along with the **Edit Speed Dial** and the **Add to Speed Dial** options.

You can press the **Internet** button on the remote to open the initial internet browser page. If the **Open browser initial page** URL in the **Signage Settings>Link Options** menu is defined, the browser will open on this page. Otherwise this button will not be functional.

To navigate the web browser, use the directional buttons on the remote or a connected mouse. To see the browser options bar, move the cursor to the top of the page. **History**, **Tabs** and **Bookmarks** options and the browser bar which contains previous/next buttons, the refresh button, the address/search bar, the **Speed Dial** and the **Opera** buttons are available.

To add a desired website to the **Speed Dial** list for quick access, move the cursor to the top of the page. The browser bar will appear. Highlight the **Speed Dial** -  button and press the **OK** button. Then select **Add to Speed Dial** option and press the **OK** button. Fill in the blanks for **Name** and **Address**, highlight **OK** and press the **OK** button to add. Whilst you are on the site you wish to add to the **Speed Dial** list, highlight the **Opera** -  button and press the **OK** button. Then highlight **Add to Speed Dial** option in the submenu and press the **OK** button again. **Name** and **Address** will be filled automatically according to the site you are visiting. Highlight **OK** and press the **OK** button to add.

You can also use the **Opera** menu options to manage the browser. Highlight the **Opera** -  button and press the **OK** button to see available page specific and general options.

There are various ways to search or visit websites using the web browser.



Enter the address of a website(URL) into the search/address bar and highlight the **Submit** button on the virtual keyboard and press the **OK** button to visit the site.

Enter keyword/s into the search/address bar and highlight the **Submit** button on the virtual keyboard and press the **OK** button to start a search for the related websites.

Highlight a Speed Dial thumbnail and press the **OK** button to visit the related website.

Your Display is compatible with USB keyboard/mice. Plug your device into the USB input of your Display for easier and quicker navigation.

Some web pages include flash content. These are not supported by the browser.

Your Display does not support any download processes from the internet via the browser.

All sites on the internet might not be supported. According to the site; content problems may occur. In some circumstances video contents might not be able to be played.

## OSD Rotation Support (\*)

You can change the OSD (On Screen Display) rotation of your Display if desired. While performing **First time installation** set the **OSD Orientation** option as desired when the **Signage Settings** menu is displayed. You can also change this setting later from the **Signage Settings>Controls** menu. Available options are: **Landscapes** and **Portrait**.

(\*) This feature may not be available depending on the model of your Display

## DisplayPort

DisplayPort version 1.2 is supported via the DisplayPort input and output connectors on your Display.

**DP Stream Setting** option in the **System>Settings>More** menu is set as **MST**(Multi-Stream Transport) by default. If a MST compliant source device is connected to the Display, the streaming data should be configured on the source device (Daisy-chaining).

If DisplayPort version 1.1 compliant or SST (Single-Stream Transport) compliant source device with DisplayPort version 1.2 support is connected to the Display, DisplayPort output on the Display will work as a splitter. In this case, same image will be displayed in all connected Displays.

To be able to stream the same image to all connected Displays using a MST compliant device, **DP Stream Setting** option in the **System>Settings>More** menu should be set as **SST**.

The maximum amount of the Displays that can be connected by using daisy-chaining function may differ depending on the source device's capacity. The image

that will be displayed in all Displays will be defined by the source device. For example, to be able to stream 4 different FHD images, the source device should be capable of supporting this operation.

**Note:** It is recommended to use a DisplayPort certified cable for connection.

In **SST** operation mode the total amount of the Displays is limited (a maximum of 7 units) due to HDCP encryption. If the signal is stable and there is no cable loss, there will be no limitation in case the source content is not HDCP-encrypted. When using cascade-connected Displays, it is recommended to set the **DP Stream Setting** as **SST** on all Displays in **SST** operation mode.

For proper operation in **MST** operation mode make sure your source device is **MST** compliant. If your source device is a computer check the specifications of its graphic card to ensure **MST** compatibility. When using daisy-chained Displays, it is recommended to set the **DP Stream Setting** as **MST** on all Displays in **MST** operation mode.

## HDMI Out

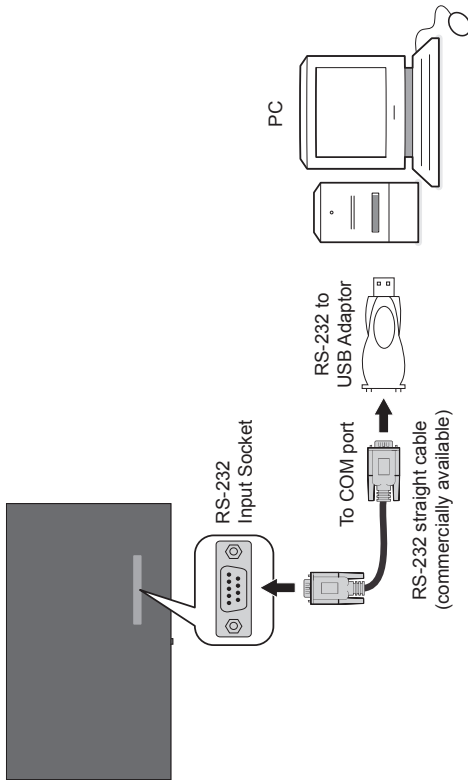
The HDMI2 port located on the rear left side of the Display functions as an output port (upper HDMI port). This port will not function as an input, thus no source devices should be connected to this port. Only the content received from the HDMI1 input port located also on the rear left side of the Display (lower HDMI port) can be outputted from this port. The contents received from other inputs, such as VGA, DVI or Display Port, can not be outputted. This is a default function and you can not disable/enable through any menu option. HDMI output port will always function if a source device is connected to the HDMI input.

## Real Time Clock (RTC)

Your Display has an RTC. It is used to maintain the real date and time information for a period of time if the energy supply is interrupted by separating the Display from the mains or by a power blackout. In this case the Display will use the date and time information stored in RTC.

- All time sources are able to override RTC date/time.
- Display tries to connect to the **NTP server** periodically (6 hours after last update) to get the current date and time information. If the Display successfully gets these informations from the NTP server, it updates itself and RTC with the received date and time information. If the NTP server update fails, the Display uses RTC time and date to update itself.
- The RTC battery provides power to the integrated real-time clock and the calendar. Without any external power source, RTC is able to function for a minimum of 14 days.
- If RTC is used as time source, manual date-time set is enabled from Date/Time option in the **System>Settings** menu.

## Controlling With An External PC



You can control the product from an external PC via RS-232 (COM port) or LAN (Ethernet port) on the PC. For instance, system source can be changed by RS-232 from remote computer. When a command is sent from the PC to the product, the product operates according to the received command and sends a response message to the PC.

### Equipment/Tools:

- RS-232 (female) to RS-232(male) cable or LAN cable (connected via router)
- USB to RS-232(male) cable
- Notebook or PC which has USB or LAN port
- Installed program on remote PC to send commands:

In general, the RS-232 commands are sent for operating the implemented functions via serial port and utility. A suitable utility can be used such as described below.

### Secure Commands

This feature is controlled by the Secure Command profile option. If option is enabled, all commands will be registered as secure.

If this profile option is disabled, commands can be run without having admin level, otherwise user must have ADMIN level privilege.

Currently there are 2 modes for user: NORMAL and ADMIN

For switching user to admin mode, use the following command:

```
SETUSERSECLEVEL ADMIN <password>
```

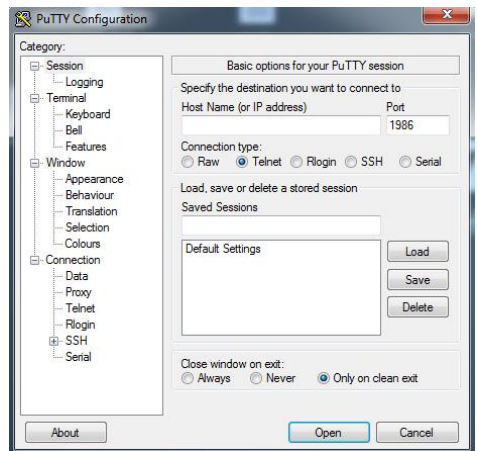
This setting is not permanent, and will be set to default (NORMAL) again in case of restart.

### Connecting to the Display (LAN port)

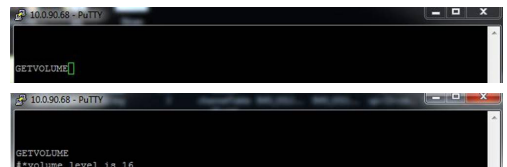
Download and install the PuTTY software from the following link first: <http://www.putty.org/>.

Run the software and enter the Display's IP address in the field **Host Name**. Enter "1986" as a default value in the field **Port**. Then select "Telnet" as **Connection type** and click the **Open** button.

**Note:** Refer to the **Connectivity** section of this manual for information on connecting the Display to a network and displaying the IP address of the Display.



Use the commands in the **RS232 Command Table**. For example, if "GETVOLUME" command is entered, current volume level should be displayed on the putty window as shown in the pictures below.



Another example;

Volume level can be changed by using "VOLUME" command. After sending this command, you can verify the changes from the Display.

```
VOLUME 15
#*ec volume to 15
```

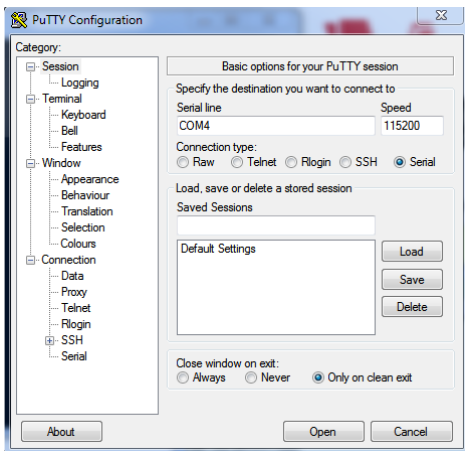
The last example ;

When “GETSOURCE” command is entered, current source should be displayed on the putty window as shown in the picture below.

```
GETSOURCE
#*source is HDMI1
```

### Connecting to the Display (RS232 port)

Run the software and select **Serial** as **Connection Type**. Enter the Display's serial port in the field **Serial Line** (in the following example it is COM4) and “115200” in the field **Speed**. Then click the **Open** button.





## RS232/LAN Command Tables

### AUDIO COMMANDS

| Command                   | Description                                           | Parameter                                                                                                       | Return                                                                                                                                    |
|---------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>GETVOLUME</b>          | Volume level information.                             | no parameter                                                                                                    | #*volume level is ...                                                                                                                     |
| <b>HEADPHONEVOLUME</b>    | "Set headphone volume level."                         | integer n ( $0 \leq n \leq 100$ )                                                                               | #*set headphone volume to n                                                                                                               |
| <b>GETHEADPHONEVOLUME</b> | "Headphone volume level information."                 | no parameter                                                                                                    | #*headphone volume is ...                                                                                                                 |
| <b>GETMUTE</b>            | Get mute value on/off.                                | no parameter                                                                                                    | "#*MUTE OFF<br>or<br>#*MUTE ON"                                                                                                           |
| <b>SETMUTE</b>            | Set mute value on/off.                                | no parameter                                                                                                    | "#*MUTE OFF<br>or<br>#*MUTE ON"                                                                                                           |
| <b>SETSOUNDMODE</b>       | "Set sound mode.<br>SETEQUUSERFREQ<br>100Hz 10"       | "integer n (0 = mono, 1 = stereo, 2 = dual I, 3 = dual II, 4 = mono left, 5 = mono right)"                      | "#*setSoundMode() set to n<br>or<br>#*Invalid sound mode entered"                                                                         |
| <b>SETBALANCE</b>         | Set balance value.                                    | integer n ( $-50 < n < 50$ )                                                                                    | "#*set balance level to n<br>or<br>#*invalid balance level entered"                                                                       |
| <b>GETBALANCE</b>         | Get balance value.                                    | no parameter                                                                                                    | #*balance level is ...                                                                                                                    |
| <b>SETAVL</b>             | Set AVL state.                                        | integer n (0 = off, 1 = on)                                                                                     | #*set avl state to n                                                                                                                      |
| <b>GETAVL</b>             | Get AVL state.                                        | no parameter                                                                                                    | #*avl state is ...                                                                                                                        |
| <b>SETDYNAMICBASS</b>     | Set dynamic bass state.                               | integer n (0 = off, 1 = on)                                                                                     | #*set dynamic bass state to n                                                                                                             |
| <b>SETEQUUSERFREQ</b>     | Set equalizer user freq. value for any band.          | "string n (120Hz, 500Hz, 1.5KHz, 5KHz, 10KHz)<br>integer n -13 < n < 13<br>Example:<br>SETEQUUSERFREQ 120Hz 10" | "#*setEQUserFreq() set to n or<br>#*Incorrect sound system parameter entered<br>or<br>#*Incorrect equalizer mode. It should be USER mode" |
| <b>GETDIGITALOUT</b>      | Get digital out.                                      | no parameter                                                                                                    | #*digital out is pcm or #*digital out is compressed                                                                                       |
| <b>SETEQMODE</b>          | Set equalizer mode.                                   | string n (Music, Movie, Speech, Flat, Classic, User)                                                            | "#*setEQMode() set to n<br>or<br>#*Incorrect equalizer parameter entered"                                                                 |
| <b>SETDIGITALOUT</b>      | Set digital out.                                      | string n (compressed, pcm)                                                                                      | #*setDigitalOut() set to n OR<br>#*Incorrect digital out mode parameter entered                                                           |
| <b>VOLUMEUP</b>           | "Increase Volume Level by 1 step (Until max volume) " | no parameter                                                                                                    | "#*volume LEVEL is increased to ...<br>or<br>#*You can NOT increase volume LEVEL further. Confirmed Max Volume Level is ..."              |
| <b>VOLUMEDOWN</b>         | Decrease Volume Level by 1 step                       | no parameter                                                                                                    | "#*volume LEVEL is decreased to ..<br>or<br>#*You can NOT decrease volume LEVEL further. Current Volume level is ... "                    |

|                           |                                                     |                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SETHEADPHONEOUTPUT</b> | Set headphone output                                | string n (headphone,lineout)                    | "##*set headphone output to n<br>or<br>##*Invalid Parameter"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>GETHEADPHONEOUTPUT</b> | Get headphone output                                | no parameter                                    | ##*LINEOUT or ##*HEADPHONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>GETDYNAMICBASS</b>     | Get dynamic bass state.                             | no parameter                                    | ##*the dynamic bass state is ...<br>(0 = off, 1 = on)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>GETBASSGAIN</b>        | Get bass gain                                       | no parameter                                    | "##*the bass gain level is n<br>Note: Above n is -6 <= n <= 6"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>GETEQUSERFREQ</b>      | Get equalizer user freq.<br>value of specified band | string n (120Hz, 500Hz,<br>1.5KHz, 5KHz, 10KHz) | "##*the equalizer value for the<br>band is n<br>or<br>##*Incorrect sound system<br>parameter entered<br>Note: Above n is -13 < n < 13"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>GETEQMODE</b>          | Get equalizer mode                                  | no parameter                                    | "##*the equalizer mode is n<br>Note: Above n is one of Music,<br>Movie, Speech, Flat, Classic,<br>User"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>SOUNDRESET</b>         | Reset sound settings                                | no parameter                                    | "##*Fixed Volume is set to ...<br>##*Fixed volume availability is<br>set to ...<br>##*Headphone volume control<br>availability is set to ...<br>##*Start volume availability is set<br>to ...<br>##*Start volume limit is set to ...<br>##*Start headphone volume limit<br>is set to ...<br>##*Lower volume limit is set to ...<br>##*Upper volume limit is set to ...<br>##*Headphone volume limit is<br>set to ...<br>##*Wakeup time volume is set<br>to ...<br>##*All equalizer bands are set<br>to ...<br>##*Volume is set to ...<br>##*Headphone volume is set to ...<br>##*Headphone balance is set to ...<br>##*Headphone bass is set to ...<br>##*Headphone treble is set to ...<br>##*Digital audio out is set to ...<br>##*Audio output description path<br>is set to ...<br>##*Audio description is ...<br>##*Audio description relative<br>volume is set to ...<br>##*Audio description language is<br>set to ...<br>##*Sound Loudness is set to ...<br>##*Sound mode digital is set to ...<br>##*Sound mode is set to ...<br>##*Sound subwoofer is set to ...<br>##*SPDIF out is ...<br>##*DTS is ...<br>##*Bass gain is set to .. or<br>##*Dynamic bass is ...<br>" |

| BROWSER COMMANDS  |                                                                 |                                   |                       |
|-------------------|-----------------------------------------------------------------|-----------------------------------|-----------------------|
| Command           | Description                                                     | Parameter                         | Return                |
| OPENURL           | Starts the given URL and returns web page load status directly. | string-integer n <load url='n' /> | ##*status= ... url=n  |
| GETURL            | Gets URL of the current page if the portal is active.           | no parameter                      | ##*URL : ...          |
| GETUSERAGENT      | Gets portal user agent.                                         | no parameter                      | ##*Current UA : ...   |
| GETCURSORPOSITION | Gets cursor position in the browser.                            | no parameter                      | ##*X: ... Y: ...      |
| SETCURSORPOSITION | Sets cursor position in the browser.                            | string-integer a,b                | ##*X: a Y: b          |
| SETSETTINGSURL    | Sets the settings URL                                           | string                            | ##*Setting URL is set |
| GETSETTINGSURL    | Gets the settings URL                                           | no parameter                      | ##*Setting URL is ... |
| SETSTARTURL       | Sets the start URL                                              | string                            | ##*Start URL is set   |
| GETSTARTURL       | Gets the start URL                                              | no parameter                      | ##*Start URL is ...   |

| GENERAL DISPLAY COMMANDS |                                                                                                                                                  |                                                                                                                                                                                             |                                                                                                                                                                                                                       |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Command                  | Description                                                                                                                                      | Parameter                                                                                                                                                                                   | Return                                                                                                                                                                                                                |
| SETRC                    | Enables/disables remote control commands.                                                                                                        | string-integer n (n = ON, n = OFF)                                                                                                                                                          | set remote state On or set remote state OFF                                                                                                                                                                           |
| SETSOURCE                | Set source as enable/disable.                                                                                                                    | "string n, integer b (n = SCART1, n = SCART2, n = FAV, n = SVHS, n = HDMI1, n = HDMI2, n = HDMI3, n = HDMI4, n = YPBPR, n = VGA, n = SCART1S, n = SCART2S) (b = 1(enable), b = 0(disable))" | ##*Selected source n<br>##*Enable/Disable state : b"                                                                                                                                                                  |
| GETSOURCE                | Gets source.                                                                                                                                     | no parameter                                                                                                                                                                                | ##*source is ...                                                                                                                                                                                                      |
| GETCOUNTRY               | Get country in channels state.                                                                                                                   | no parameter                                                                                                                                                                                | ##*COUNTRY IS : ...                                                                                                                                                                                                   |
| GETSWVERSION             | Returns the software version of tv.                                                                                                              | no parameter                                                                                                                                                                                | ##*V...                                                                                                                                                                                                               |
| KEY                      | Send key to Eclipse.                                                                                                                             | string-integer n (n = 0, n = 1, ....., n = up, ....., n = menu, .....ext.)                                                                                                                  | n key send to Eclipse                                                                                                                                                                                                 |
| RESET                    | Reset the device.                                                                                                                                | no parameter                                                                                                                                                                                | Reset process was successfully accomplished. You need to establish the connection again.                                                                                                                              |
| STANDBY                  | Switch display to hard standby.<br><i>(Note: Don't use this command with the product that has OPS. You can use other "KEY standby" command.)</i> | no parameter                                                                                                                                                                                | ##*enterLowPowerMode() returns successfully.<br>or<br>##*enterLowPowerMode() returns unsuccessfully!<br>or<br>##*enterStandbyMode() returns successfully.<br>or<br>##*enterStandbyMode() returns unsuccessfully!<br>" |

|                        |                                                                              |                                                                                           |                                                                                                                                                   |
|------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MENUTIMEOUT</b>     | Set menu time out mode.                                                      | integer n (n = 0 , n = 15, n = 30, n = 60)                                                | "#*set menu timeout mode to OFF<br>or<br>#*set menu timeout mode to 60<br>or<br>#*Invalid menu timeout mode<br>"                                  |
| <b>GETMODELNO</b>      | Get model no.                                                                | no parameter                                                                              | #*Model no: ...                                                                                                                                   |
| <b>GETSERIALNO</b>     | Get serial no.                                                               | no parameter                                                                              | #*Serial no: ...                                                                                                                                  |
| <b>GETLED</b>          | Get led on/off state.                                                        | no parameter                                                                              | "#*LED is on<br>#*LED is off"                                                                                                                     |
| <b>GETRC</b>           | Get remote control commands enabled status                                   | no parameter                                                                              | "#*remote control commands are on<br>#*remote control commands are off"                                                                           |
| <b>USBOPERATIONS</b>   | Perform USB Operations                                                       | no parameter                                                                              | You may observe prints Bank 0, Bank 1 etc. Be sure or observe debug print outs: "MFC ISP: done" will be written... This may take over 10 minutes. |
| <b>GETMENUTIMEOUT</b>  | Get menu time out mode                                                       | no parameter                                                                              | "#*menu timeout mode is OFF<br>#*menu timeout mode is n<br>#*can not get menu timeout mode<br>Note: Above n is one of (15, 30, 60)"               |
| <b>GETTVLIFETIME</b>   | Prints Monitor life time in minutes.                                         | no parameter                                                                              | #*Monitor Life Time: n                                                                                                                            |
| <b>SETPOWERONDELAY</b> | Set poweron delay level                                                      | integer n (0<=n<=20, delay is calculated as 100ms*n)                                      | "#*Poweron delay set to ... Ms<br>#*NACK"                                                                                                         |
| <b>GETPOWERONDELAY</b> | Get poweron delay level                                                      | no parameter                                                                              | #*The power on delay is ... ms                                                                                                                    |
| <b>SIGNAGERESET</b>    | Set all items in the signage settings menu to their default values.          | no parameter                                                                              | #*All signage settings set to default values                                                                                                      |
| <b>SELECTSOURCE</b>    | Select source.<br>(0=TV, other source indexes(some of them are not enabled)) | integer n (5=FAV,<br>7=HDMI1, 8=HDMI2,<br>11=YpPr, 12=Vga,<br>18=DVI , 19=DP ,<br>20=OPS) | " #*select TV source<br>or<br>#*select External source ..."                                                                                       |
| <b>KEY standby</b>     | Switch box to Standby mode. ( For quick standby)                             | no parameter                                                                              | standby key send to Eclipse                                                                                                                       |
| <b>TIME</b>            | Display the current date and time.                                           | no parameter                                                                              | Time = ...                                                                                                                                        |
| <b>GETSTANDBY</b>      | Get standby on/off.                                                          | no parameter                                                                              | "#*standby off<br>or<br>#*standby on"                                                                                                             |
| <b>STARTFTI</b>        | Start First Time Installation.                                               | no parameter                                                                              | #*FTI was initialising.                                                                                                                           |

|                           |                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                  |
|---------------------------|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CHANGELNG</b>          | Change active language.                         | <p>"integer-integer x y<br/> x = language type (0 = System Language, 1 = Event Language, 2 = Primary Audio Language, 3 = Secondary Audio Language, 4 = Primary Subtitle Language, 5 = Secondary Subtitle Language, 6 = Primary Teletext Language, 7 = Secondary Teletext Language)<br/> y = language (0 = Danish, 1 = German, 2 = Estonian, 3 = English, 4 = Spanish, 5 = Greek, 6 = French, 7 = Gaelic, 8 = Croatian, 9 = Italian, 10 = Latvian, 11 = Lithuanian, 12 = Hungarian, 13 = Dutch, 14 = Norwegian, 15 = Polish, 16 = Portuguese, 17 = Russian, 18 = Romanian, 19 = Albanian, 20 = Slovenian, 21 = Slovak, 22 = Serbian, 23 = Finnish, 24 = Swedish, 25 = Turkish, 26 = Czech, 27 = Ukranian, 28 = Bulgarian, 29 = Arabic, 30 = Persian, 31 = Hebrew , 32 = Belarussian, 33 = Macedonian, 34 = Montenegrin, 35 = Kazakh, 36 = Thai)<br/> Example: CHANGELNG 0 25<br/> (To set system language to Turkish)<br/> "</p> | <p>##*Active language was changed or<br/> ##*Incorrect item parameter entered"</p>                                                               |
| <b>SETCOUNTRY</b>         | Set country in no channels state.               | string-integer n( TURKEY, GERMANY, ...)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <p>##* setCountry() set to n or<br/> ##*Country should be set only in the FTI mode (no channels state)"</p>                                      |
| <b>SETQUICKSTANDBY</b>    | SETQUICKSTANDBY n, where n is one of (off, on). | string-integer n (n = ON, n = OFF)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <p>##*Set Quick Standby on or<br/> ##*Set Quick Standby off or<br/> ##*Quick Standby is not enabled"</p>                                         |
| <b>GETQUICKSTANDBY</b>    | Returns Quick Standby state n (on or off)       | no parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ##*Quick Stanby is n                                                                                                                             |
| <b>USBOPERATIONS</b>      | Perform USB Operations                          | no parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | You may observe prints Bank 0, Bank 1 etc. Be sure or observe debug print outs: "MFC ISP: done" will be writen... This may take over 10 minutes. |
| <b>ENTERACTIVESTANDBY</b> | Enter active standby state                      | no parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p>##*TV will be sent to Active Standby state!<br/> or<br/> ##*TV is in Active Standby state already!</p>                                        |
| <b>EXITACTIVESTANDBY</b>  | Exit active standby state                       | no parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ##* TV is not in                                                                                                                                 |

| NETWORK COMMANDS         |                                                                                                                         |                                                |                                                                                        |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------|
| Command                  | Description                                                                                                             | Parameter                                      | Return                                                                                 |
| <b>set_IP_address</b>    | Set static IP address of eth0 network interface.                                                                        | str-int n Example: set_IP_address 192.168.0.15 | "#*IP address setting Succesfull<br>#*IP address setting NOK"                          |
| <b>get_IP_address</b>    | Get IP address of eth0 network interface. Usage: get_IP_address                                                         | no parameter                                   | #*IPAddr: ...                                                                          |
| <b>SETNETWORKTYPE</b>    | set network type (eg. SETNETWORKTYPE value) (value should be 'wired', 'wireless' or 'disabled' as string)               | string n ('wired', 'wireless' or 'disabled')   | #*Network type is set to: <network-type>                                               |
| <b>GETNETWORKTYPE</b>    | get network type (eg. GETNETWORKTYPE)                                                                                   | no parameter                                   | #*the network type is <network-type>                                                   |
| <b>SETSUBNETMASK</b>     | set subnet mask (subnet mask value should be of format nnn.nnn.nnn.nnn) (eg. SETSUBNETMASK nnn.nnn.nnn.nnn)             | string "nnn.nnn.nnn.nnn"                       | "#*set subnet mask: nnn.nnn.nnn.nnn<br>#*setting subnet mask is failed"                |
| <b>GETSUBNETMASK</b>     | get subnet mask (eg. GETSUBNETMASK)                                                                                     | no parameter                                   | #*the subnet mask is nnn.nnn.nnn.nnn                                                   |
| <b>SETDEFAULTGATEWAY</b> | set default gateway (default gateway value should be of format nnn.nnn.nnn.nnn) (eg. SETDEFAULTGATEWAY nnn.nnn.nnn.nnn) | string "nnn.nnn.nnn.nnn"                       | "#*set default gateway: nnn.nnn.nnn.nnn<br>#*setting default gateway is failed"        |
| <b>GETDEFAULTGATEWAY</b> | get default gateway (eg. GETDEFAULTGATEWAY)                                                                             | no parameter                                   | #*the default gateway is nnn.nnn.nnn.nnn                                               |
| <b>GETDNS1</b>           | get DNS server 1 (eg. GETDNS1)                                                                                          | no parameter                                   | #*DNS server 1 is nnn.nnn.nnn.nnn                                                      |
| <b>GETDNS2</b>           | get DNS server 2 (eg. GETDNS2)                                                                                          | no parameter                                   | #*DNS server 1 is nnn.nnn.nnn.nnn                                                      |
| <b>INTERNETSPEED</b>     | start internet speed test                                                                                               | no parameter                                   | " Speed test is started.<br>Prints ""No internet connection found"" message if fails." |

| VGA/PC COMMANDS          |                          |                      |                                                                                       |
|--------------------------|--------------------------|----------------------|---------------------------------------------------------------------------------------|
| Command                  | Description              | Parameter            | Return                                                                                |
| <b>HPOS</b>              | Set horizontal position. | int n (-25 ≤ n ≤ 25) | "set horizontal position to ... (percentage in the range)<br>#*invalid value entered" |
| <b>VPOS</b>              | Set vertical position.   | int n (-25 ≤ n ≤ 25) | "#*set vertical position to ... (percentage in the range)<br>#*invalid value entered" |
| <b>DOTCLOCK</b>          | Set dot clock.           | int n (-50 ≤ n ≤ 50) | "#*set dot clock to ... (percentage in the range)<br>#*invalid value entered"         |
| <b>AUTOPOS</b>           | Set auto position        | no parameter         | #*set auto position                                                                   |
| <b>GETOSDORIENTATION</b> | Get OSD orientation      | no parameter         | #*The OSD orientation ...                                                             |
| <b>GETHPOS</b>           | Get horizontal position. | no parameter         | #*The horizontal position is ...                                                      |
| <b>GETVPOS</b>           | Get vertical position.   | no parameter         | #*The vertical position is ...                                                        |
| <b>GETDOTCLOCK</b>       | Get dot clock.           | no parameter         | #*The dot clock is ...                                                                |

|                    |                      |                                |                                                                                                                                                                                     |
|--------------------|----------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SETOPSPower</b> | Set OPS power status | string parameter "on" or "off" | #*Turning OPS on<br>#*Turning OPS off<br>#*The OPS is already on<br>#*The OPS if already off<br>#*The OPS is not enabled<br>#*The OPS is not plugged in<br>#*invalid value entered" |
|--------------------|----------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### PICTURE COMMANDS

| Command               | Description                   | Parameter                                                                                                       | Return                                                                                                                              |
|-----------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| <b>COLOURTEMP</b>     | Set colour temperature.       | str-int n (n = normal, warm, cool)                                                                              | #*setColourTemp() set to n                                                                                                          |
| <b>GETPICTUREMODE</b> | Get picture mode.             | no parameter                                                                                                    | #*Picture Mode is ... for current source                                                                                            |
| <b>PICTUREMODE</b>    | Select picture mode.          | int n (1 = dynamic, 2 = natural, 3 = cinema, 4 = game)                                                          | "#*setPictureMode() set to n<br>#*Incorrect picture mode parameter entered"                                                         |
| <b>GETCONTRAST</b>    | Get picture contrast value.   | no parameter                                                                                                    | #*THE CONTRAST VALUE : ...                                                                                                          |
| <b>SETCONTRAST</b>    | Set picture contrast value.   | int n (0 ≤ n ≤ 100)                                                                                             | "#*Picture contrast value is set to n<br>#*Same value is set. Do nothing.<br>#*Incorrect value must between defined ranges 0-100"   |
| <b>GETBRIGHTNESS</b>  | Get picture brightness value. | no parameter                                                                                                    | #*THE BRIGHTNESS VALUE : ...                                                                                                        |
| <b>SETBRIGHTNESS</b>  | Set picture brightness value. | int n (0 ≤ n ≤ 100)                                                                                             | "#*Picture brightness value is set to n<br>#*Same value is set. Do nothing.<br>#*Incorrect value must between defined ranges 0-100" |
| <b>GETSHARPNESS</b>   | Get picture sharpness value.  | no parameter                                                                                                    | #*THE SHARPNESS VALUE : ...                                                                                                         |
| <b>SETSHARPNESS</b>   | Set picture sharpness value.  | int n (0 ≤ n ≤ 100)                                                                                             | "#*Picture brightness value is set to n<br>#*Same value is set. Do nothing.<br>#*Incorrect value must between defined ranges 0-100" |
| <b>GETCOLOUR</b>      | Get picture colour value.     | no parameter                                                                                                    | #*THE COLOUR VALUE : ...                                                                                                            |
| <b>SETCOLOUR</b>      | Set picture colour value.     | int n (0 ≤ n ≤ 100)                                                                                             | "#*Picture colour value is set to n<br>#*Same value is set. Do nothing.<br>#*Incorrect value must between defined ranges 0-100"     |
| <b>SETSKINTONE</b>    | Set picture skin tone value.  | int n (-5 ≤ n ≤ 5)                                                                                              | "#*Picture skin tone value is set to n<br>#*Same value is set. Do nothing.<br>#*Incorrect value must between defined ranges -5-5"   |
| <b>PICTUREZOOM</b>    | Set picture zoom mode.        | str-int n (n = auto, 16:9, subtitle, 14:9, 14:9zoom, 4:3, full(only for HD channels), panoramic, cinema)        | "#*setPictureZoomMode() set to n<br>#*Incorrect picture zoom mode parameter entered"                                                |
| <b>SETWB</b>          | Set white balance value.      | str-int type, value (type = redgain, greengain, bluegain, redoffset, greenoffset, blueoffset) (0 ≤ value ≤ 250) | "#*White Balance is set to value<br>Invalid value for White Balance (0-255)<br>Invalid type for White Balance"                      |

|                        |                                                                              |                                                                                        |                                                                                |
|------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>GETWB</b>           | Get white balance value.                                                     | str-int type (type = redgain, greengain, bluegain, redoffset, greenoffset, blueoffset) | #* type ...                                                                    |
| <b>SET3DMODE</b>       | Set 3D mode values (values are off, auto, side by side, top bottom and game) | int n (n = off, auto, side by side, top bottom, game)                                  | "#*set3DMode() set to n<br>#*Incorrect 3d mode parameter entered"              |
| <b>SETVIRTUAL3D</b>    | Set virtual 3d values.                                                       | int n (0 = off, 1 = low, 2 = medium, 3 = high)                                         | "seMonitorvirtual3D() set to n<br>Incorrect virtual 3d mode paramater entered" |
| <b>CONTRASTUP</b>      | Increase Contrast Level by 1 step                                            | no parameter                                                                           | Picture contrast value is set to ...                                           |
| <b>CONTRASTDOWN</b>    | Decrease Contrast Level by 1 step                                            | no parameter                                                                           | Picture contrast value is set to ...                                           |
| <b>GETENERGYSAVING</b> | Get energy saving mode. (if enabled from profile)                            | no parameter                                                                           | #*The energy saving mode is ...                                                |
| <b>GETPOWERSAVE</b>    | Get power save mode                                                          | no parameter                                                                           | "#*Powersavemode is ON<br>#*Powersavemode is OFF"                              |
| <b>GETCOLOURTEMP</b>   | Get colour temperature.                                                      | no parameter                                                                           | #*Colour temp is ...                                                           |
| <b>GETHUE</b>          | Get picture hue value.                                                       | no parameter                                                                           | #*Hue level is ...                                                             |
| <b>GETSKINTONE</b>     | Get picture skin tone value.                                                 | no parameter                                                                           | #*Picture skin tone is ...                                                     |
| <b>GETPATTERN</b>      | Get selected pattern of the Monitor screen                                   | no parameter                                                                           | The pattern is ...                                                             |

### VIDEO WALL COMMANDS

| Command               | Description              | Parameter                                                                                               | Return                                                                              |
|-----------------------|--------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>SETROWCOUNT</b>    | Set row count.           | integer n ( $0 \leq n \leq 100$ )                                                                       | #*set row count to n                                                                |
| <b>GETROWCOUNT</b>    | Get row count.           | no parameter                                                                                            | #*row count is ...                                                                  |
| <b>SETCOLUMNCOUNT</b> | Set column count.        | integer n ( $0 \leq n \leq 100$ )                                                                       | #*set column count to n                                                             |
| <b>GETCOLUMNCOUNT</b> | Get column count.        | no parameter                                                                                            | #*column count is ...                                                               |
| <b>SETCELL</b>        | Set cell.                | integer n ( $0 \leq n \leq 100$ )                                                                       | #*set cell to n                                                                     |
| <b>GETCELL</b>        | Get cell.                | no parameter                                                                                            | #*cell is ...                                                                       |
| <b>SETOFFSET</b>      | Set offset.              | integer n ( $0 \leq n \leq 100$ ). n is the number of pixels which will be cropped from all four sides. | #*set offset to n                                                                   |
| <b>GETOFFSET</b>      | Get offset.              | no parameter                                                                                            | #*offset is ...                                                                     |
| <b>SETVIDEOWALL</b>   | Set videowall parameters | "parameters for items in following format:<br>RowCount-ColumnCount-Cell-Offset"                         | #*set row count to ..., set column count to ..., set cell to ..., set offset to ... |
| <b>GETVIDEOWALL</b>   | Get videowall parameters | no parameter                                                                                            | #*row count is ..., column count is ..., cell is ..., offset is ...                 |



|                        |                                   |                                                                                                                                                                                                     |                                                                                                                                                         |
|------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SETALLVIDEOWALL</b> | Set all videowall parameters      | "parameters for items in following format:<br>picture_mode-contrast-brightness-sharpness-color-powesave_mode-backlight_mode-colortemp-zoom_mode-hdmi_trueblack-picture_hue-volume-headphone_volume" | ##*... ("set to" for each parameter in order)                                                                                                           |
| <b>GETALLVIDEOWALL</b> | Get all videowall parameters      | no parameter                                                                                                                                                                                        | ##*picture_mode-contrast-brightness-sharpness-color-powesave_mode-backlight_mode-colortemp-zoom_mode-hdmi_trueblack-picture_hue-volume-headphone_volume |
| <b>SETPIXELSHIFT</b>   | Set pixel shift is enabled or not | string-integer n ( n = on, n = off)                                                                                                                                                                 | ##*ACK<br>##*NACK"                                                                                                                                      |
| <b>GETPIXELSHIFT</b>   | Get pixel shift                   | no parameter                                                                                                                                                                                        | ##*Pixel Shift is ...                                                                                                                                   |
| <b>SETSIGNAGEID</b>    | Set Signage ID                    | integer n (1 ≤ n ≤ 100). n is the Signage ID                                                                                                                                                        | ##*ACK<br>##*NACK"                                                                                                                                      |
| <b>GETSIGNAGEID</b>    | Get Signage ID                    | no parameter                                                                                                                                                                                        | ##*The signage ID is ...<br>(If return value is 0, then it means no signage id is assigned. 0 is the default value.)"                                   |

### MEDIA BROWSER COMMANDS

| Command                     | Description                     | Parameter                           | Return                                           |
|-----------------------------|---------------------------------|-------------------------------------|--------------------------------------------------|
| <b>SETVIEWSTYLE</b>         | set view style (Flat or Folder) | string n (Flat, Folder)             | ##*The view style is set to ... (Flat or Folder) |
| <b>GETVIEWSTYLE</b>         | get view style (Flat or Folder) | no parameter                        | ##*The view style is ... (Flat or Folder)        |
| <b>SETSLIDESHOWINTERVAL</b> | set slide show interval         | integer n ( 5, 10, 15, 20, 25, 30 ) | ##*The slideshow interval is set to ... seconds  |
| <b>GETSLIDESHOWINTERVAL</b> | get slide show interval         | no parameter                        | ##*The slideshow interval is ... seconds         |
| <b>SETUSBPLAY</b>           | set usb autoplay mode           | string n (ON, OFF)                  | ##*The USB autoplay is set to ... (ON, OFF)      |
| <b>GETUSBPLAY</b>           | get usb autoplay mode           | no parameter                        | ##*The USB autoplay is ... (ON, OFF)             |

### ADMIN PANEL COMMANDS

| Command       | Description                                                       | Parameter                                                                                 | Return                          |
|---------------|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------|
| <b>RST</b>    | Restart                                                           | no parameter                                                                              | #Monitor will be restarted      |
| <b>STV</b>    | Sets Monitor Volume, parameter value will be set for volume level | integer (volume level)                                                                    | #Volume set level= ...          |
| <b>STL</b>    | Set Monitor Language                                              | string-int (please look at abbreviations of languages)                                    | #Language changed to ...        |
| <b>STWA</b>   | Stop wake up alarm                                                | no parameter                                                                              | #WakeupAlarm stopped !!!        |
| <b>STEA</b>   | Stop emergency alarm                                              | none                                                                                      | #Emergency Alarm is stopped !!! |
| <b>UNP</b>    | Send Message                                                      | "string-int (message text - 0)<br>[message content should be ""word1+ word2+word3 ..."""] | #Message Sent in SUCCESS !!!    |
| <b>GTSURL</b> | Get Monitor Portal URL                                            | none                                                                                      | #StartUp url is ...             |

| SIGNAGE SETTINGS COMMANDS |                                                       |                                                                    |                                                                                                       |
|---------------------------|-------------------------------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Command                   | Description                                           | Parameter                                                          | Return                                                                                                |
| GETTOTALSPACE             | get total usb space (in MB)                           | no parameter                                                       | #*The total space is ... MB                                                                           |
| GETFREESPACE              | get free usb space (in MB)                            | no parameter                                                       | #*The total space is ... MB                                                                           |
| SAVEMODELINFO             | saves model name and sw version to a removable device | no parameter                                                       | #*Model info is saved<br>OR<br>#*No Removable drive is connected<br>(If there is no device connected) |
| SETSCHEDULER              | enables/disables scheduler                            | string n (ON, OFF)                                                 | #*The scheduler is set to .... (ON, OFF)                                                              |
| GETSCHEDULER              | get scheduler enabled/disabled                        | no parameter                                                       | #*The scheduler is .... (ON, OFF)                                                                     |
| SETSCHEDULEOP             | set scheduler parameters                              | string n ( on time_off time_source in format: hh:mm_hh:mm_source ) | #*Schedule parameters are ... (set/not set).                                                          |
| GETSCHEDULEOP             | get scheduler parameters                              | no parameter                                                       | #*Scheduler on/off time and source is: .....<br>(hh:mm_hh:mm_source)                                  |

## RS232 HEX Commands

### Protocol Test Steps

- Before testing, please know the board type you have. There are two types of board. The UART 0 and UART 1 connections of the these boards are explained below:
  1. RJ12 is connected to UART 0, DSUB9 is connected to UART 1. Therefore, UART 0 and UART 1 could be tested separately in this type of the board
  2. RJ12 and DSUB9 both are connected to UART 0. UART 1 is supported for OPS module but not reachable. Therefore, only UART 0 could be tested in this type of the board.
- Activate HEX protocol on Display.
  - a. Enter Signage Settings Menu.
  - b. Change ASCII option to HEX in UART 0 or UART 1 sub-menu item
- Open any serial port communications program (e.g Realterm). Configure serial communication settings as below:
 

**Baud Rate** : 19200 for UART0, 9600 for UART1  
**Parity** : None  
**Data Bits** : 8  
**Stop Bits** : 1  
**Handshake** : None
- Note that UART0 default value: ASCII, UART1 default value: HEX  
 In the tables given below, XY represents are variable byte.  
 All byte values are hexadecimal.

### Error Responses

- **NAK reply: 15** When the display cannot understand the received command, it returns this value. In such a case, check the sending code and send the same command again.
- **Error reply: 1C 00 00** When the display cannot execute the received command for any reasons, it returns this value. In such a case, check the sending code and the setting status of the display.

| Command received by display |                  |             |    |        |           |    |          |      |        |    |      |    |              | Reply sent by display for successful operation |    |    | Notes |                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------|------------------|-------------|----|--------|-----------|----|----------|------|--------|----|------|----|--------------|------------------------------------------------|----|----|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Byte Number                 |                  | 0           | 1  | 2      | 3         | 4  | 5        | 6    | 7      | 8  | 9    | 10 | 11           | 12                                             | 0  | 1  |       | 2                                                                                                                                                                                                                                                                                                                               |
|                             |                  | Header      |    |        |           |    |          | Data |        |    |      |    |              |                                                |    |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             |                  | Header code |    | Packet | Data Size |    | CRC flag |      | Action |    | Type |    | Setting code |                                                |    |    |       |                                                                                                                                                                                                                                                                                                                                 |
| Name                        | Operation        | L           | H  |        | L         | H  | L        | H    | L      | H  | L    | H  | L            | H                                              |    |    |       |                                                                                                                                                                                                                                                                                                                                 |
| Monitor                     | ON               | BE          | EF | 03     | 06        | 00 | 19       | D3   | 02     | 00 | 00   | 60 | 02           | 00                                             | 06 |    |       | Quick standby should be enabled to be able to turn on tv with this command.                                                                                                                                                                                                                                                     |
|                             | OFF              | BE          | EF | 03     | 06        | 00 | 19       | D3   | 02     | 00 | 00   | 60 | 01           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | GET              | BE          | EF | 03     | 06        | 00 | 19       | D8   | 03     | 00 | 00   | 60 | 07           | 00                                             | 1D | 00 | XY    |                                                                                                                                                                                                                                                                                                                                 |
| Mute                        | ON               | BE          | EF | 03     | 06        | 00 | D6       | D2   | 01     | 00 | 02   | 20 | 01           | 00                                             | 06 |    |       | XY can be either 00 or 01. 00 means OFF, 01 means ON.                                                                                                                                                                                                                                                                           |
|                             | OFF              | BE          | EF | 03     | 06        | 00 | 46       | D3   | 01     | 00 | 02   | 20 | 00           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | GET              | BE          | EF | 03     | 06        | 00 | 75       | D3   | 02     | 00 | 02   | 20 | 00           | 00                                             | 1D | 00 | XY    |                                                                                                                                                                                                                                                                                                                                 |
| Screen                      | ON               | BE          | EF | 03     | 06        | 00 | 6B       | D9   | 01     | 00 | 20   | 30 | 01           | 00                                             | 06 |    |       | XY can be either 00 or 01. 00 means OFF, 01 means ON.                                                                                                                                                                                                                                                                           |
|                             | OFF              | BE          | EF | 03     | 06        | 00 | FB       | D8   | 01     | 00 | 20   | 30 | 00           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | GET              | BE          | EF | 03     | 06        | 00 | C8       | D8   | 02     | 00 | 20   | 30 | 00           | 00                                             | 1D | 00 | XY    |                                                                                                                                                                                                                                                                                                                                 |
| Source                      | OPS              | BE          | EF | 03     | 06        | 00 | FE       | D2   | 01     | 00 | 00   | 20 | 00           | 00                                             | 06 |    |       | XY can be one of the following:<br>01: OPS, 02: HDMI, 03: VGA,<br>04: SCART2(CVBS), 05: FAV,<br>06: S-Video, 08: HDMI2, 09:<br>HDMI3, 0A: HDMI4, 0B: YPbPr,<br>0D: SCART2(S-Video), 0E:<br>TV, 0F: SCART1(CVBS), 10:<br>SCART1(S-Video), 11: DVD,<br>12: DVI, 13: DP, 15: WIDI<br>Note that all of the sources are not enabled. |
|                             | HDMI             | BE          | EF | 03     | 06        | 00 | 0E       | D2   | 01     | 00 | 00   | 20 | 03           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | VGA              | BE          | EF | 03     | 06        | 00 | 6E       | D2   | 01     | 00 | 00   | 20 | 01           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | SCART2(CVBS)     | BE          | EF | 03     | 06        | 00 | 00       | 00   | 01     | 00 | 00   | 20 | 04           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | FAV              | BE          | EF | 03     | 06        | 00 | 00       | 00   | 01     | 00 | 00   | 20 | 05           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | S-Video          | BE          | EF | 03     | 06        | 00 | 00       | 00   | 01     | 00 | 00   | 20 | 06           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
| Source                      | HDMI2            | BE          | EF | 03     | 06        | 00 | 00       | 00   | 01     | 00 | 00   | 20 | 08           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | HDMI3            | BE          | EF | 03     | 06        | 00 | 00       | 00   | 01     | 00 | 00   | 20 | 09           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | HDMI4            | BE          | EF | 03     | 06        | 00 | 00       | 00   | 01     | 00 | 00   | 20 | 0A           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | YPbPr            | BE          | EF | 03     | 06        | 00 | 00       | 00   | 01     | 00 | 00   | 20 | 0B           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | SCART2 (S-Video) | BE          | EF | 03     | 06        | 00 | 00       | 00   | 01     | 00 | 00   | 20 | 0D           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | TV               | BE          | EF | 03     | 06        | 00 | 00       | 00   | 01     | 00 | 00   | 20 | 0E           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | SCART1(CVBS)     | BE          | EF | 03     | 06        | 00 | 00       | 00   | 01     | 00 | 00   | 20 | 0F           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | SCART1 (S-Video) | BE          | EF | 03     | 06        | 00 | 00       | 00   | 01     | 00 | 00   | 20 | 10           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | DVD              | BE          | EF | 03     | 06        | 00 | 00       | 00   | 01     | 00 | 00   | 20 | 11           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | DVI              | BE          | EF | 03     | 06        | 00 | 00       | 00   | 01     | 00 | 00   | 20 | 12           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | DP               | BE          | EF | 03     | 06        | 00 | 00       | 00   | 01     | 00 | 00   | 20 | 13           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | WIDI             | BE          | EF | 03     | 06        | 00 | 00       | 00   | 01     | 00 | 00   | 20 | 15           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
|                             | GET              |             | BE | EF     | 03        | 06 | 00       | CD   | D2     | 02 | 00   | 00 | 20           | 00                                             | 00 | 1D | 00    | XY                                                                                                                                                                                                                                                                                                                              |
|                             | Volume           | GET         | BE | EF     | 03        | 06 | 00       | 31   | D3     | 02 | 00   | 01 | 20           | 00                                             | 00 | 1D | 00    | XY                                                                                                                                                                                                                                                                                                                              |
|                             |                  | INCREMENT   | BE | EF     | 03        | 06 | 00       | 57   | D3     | 04 | 00   | 01 | 20           | 00                                             | 00 | 06 |       |                                                                                                                                                                                                                                                                                                                                 |
| DECREMENT                   |                  | BE          | EF | 03     | 06        | 00 | 86       | D2   | 05     | 00 | 01   | 20 | 00           | 00                                             | 06 |    |       |                                                                                                                                                                                                                                                                                                                                 |
| SET                         |                  | BE          | EF | 03     | 06        | 00 | 31       | D3   | 03     | 00 | 01   | 20 | 01           | XY                                             | 06 |    |       | XY can take 00 as a minimum and 1D as a maximum.                                                                                                                                                                                                                                                                                |

| Command received by display |           |        |    |        |           |    |          |    |      |    |        |    |      |    | Reply sent by display for successful operation |    |    | Notes                                                                                         |
|-----------------------------|-----------|--------|----|--------|-----------|----|----------|----|------|----|--------|----|------|----|------------------------------------------------|----|----|-----------------------------------------------------------------------------------------------|
| Byte Number                 |           | 0      | 1  | 2      | 3         | 4  | 5        | 6  | 7    | 8  | 9      | 10 | 11   | 12 | 0                                              | 1  | 2  |                                                                                               |
| Name                        |           | Header |    | Packet | Data Size |    | CRC flag |    | Data |    | Action |    | Type |    |                                                |    |    |                                                                                               |
|                             |           | L      | H  |        | L         | H  | L        | H  | L    | H  | L      | H  | L    | H  |                                                |    |    |                                                                                               |
| OPS Power                   | ON        | BE     | EF | 03     | 06        | 00 | BA       | D2 | 01   | 00 | 05     | 20 | 01   | 00 | 06                                             |    |    |                                                                                               |
|                             | OFF       | BE     | EF | 03     | 06        | 00 | 2A       | D3 | 01   | 00 | 05     | 20 | 00   | 00 | 06                                             |    |    |                                                                                               |
|                             | GET       | BE     | EF | 03     | 06        | 00 | 19       | D3 | 02   | 00 | 05     | 20 | 00   | 00 | 1D                                             | 00 | XY | XY can be either 00 or 01. 00 means OFF, 01 means ON.                                         |
| Backlight                   | GET       | BE     | EF | 03     | 06        | 00 | 89       | D2 | 02   | 00 | 03     | 20 | 00   | 00 | 1D                                             | 00 | XY |                                                                                               |
|                             | INCREMENT | BE     | EF | 03     | 06        | 00 | EF       | D2 | 04   | 00 | 03     | 20 | 00   | 00 | 06                                             |    |    |                                                                                               |
|                             | DECREMENT | BE     | EF | 03     | 06        | 00 | 3E       | D3 | 05   | 00 | 03     | 20 | 00   | 00 | 06                                             |    |    |                                                                                               |
|                             | SET       | BE     | EF | 03     | 06        | 00 | 89       | D2 | 03   | 00 | 03     | 20 | 01   | XY | 06                                             |    |    | range: 0x64-0x1E                                                                              |
| Auto Adjust                 | ON        | BE     | EF | 03     | 06        | 00 | 32       | D4 | 01   | 00 | 19     | 20 | 01   | 00 | 06                                             |    |    | Auto Adjust command is for only VGA.                                                          |
|                             | OFF       | BE     | EF | 03     | 06        | 00 | A2       | D5 | 01   | 00 | 19     | 20 | 00   | 00 | 06                                             |    |    |                                                                                               |
| Keypad Lock                 | ON        | BE     | EF | 03     | 06        | 00 | 93       | 97 | 01   | 00 | 11     | 24 | 01   | 00 | 06                                             |    |    |                                                                                               |
|                             | OFF       | BE     | EF | 03     | 06        | 00 | 03       | 96 | 01   | 00 | 11     | 24 | 00   | 00 | 06                                             |    |    |                                                                                               |
|                             | GET       | BE     | EF | 03     | 06        | 00 | 30       | 96 | 02   | 00 | 11     | 24 | 00   | 00 | 1D                                             | 00 | XY | XY can be either 00 or 01. 00 means OFF, 01 means ON.                                         |
| Remote Controller Lock      | ON        | BE     | EF | 03     | 06        | 00 | 77       | 97 | 01   | 00 | 16     | 24 | 00   | 00 | 06                                             |    |    |                                                                                               |
|                             | OFF       | BE     | EF | 03     | 06        | 00 | E7       | 96 | 01   | 00 | 16     | 24 | 01   | 00 | 06                                             |    |    |                                                                                               |
|                             | GET       | BE     | EF | 03     | 06        | 00 | 44       | 97 | 02   | 00 | 16     | 24 | 00   | 00 | 1D                                             | 00 | XY | XY can be either 00 or 01. 00 means OFF, 01 means ON.                                         |
| OSD Menu                    | ON        | BE     | EF | 03     | 06        | 00 | 6A       | 63 | 01   | 00 | 00     | 37 | 01   | 00 | 06                                             |    |    |                                                                                               |
|                             | OFF       | BE     | EF | 03     | 06        | 00 | FA       | 62 | 01   | 00 | 00     | 37 | 00   | 00 | 06                                             |    |    |                                                                                               |
| Contrast                    | GET       | BE     | EF | 03     | 06        | 00 | FD       | D3 | 02   | 00 | 04     | 20 | 00   | 00 | 1D                                             | 00 | XY |                                                                                               |
|                             | SET       | BE     | EF | 03     | 06        | 00 | FD       | D3 | 03   | 00 | 04     | 20 | 01   | XY | 06                                             |    |    | range: 0x4E - 0xB2                                                                            |
|                             | INCREMENT | BE     | EF | 03     | 06        | 00 | 9B       | D3 | 04   | 00 | 04     | 20 | 00   | 00 | 06                                             |    |    |                                                                                               |
| Auto Position               | EXECUTE   | BE     | EF | 03     | 06        | 00 | 91       | D0 | 06   | 00 | 0A     | 20 | 00   | 00 | 06                                             |    |    |                                                                                               |
|                             | INCREMENT | BE     | EF | 03     | 06        | 00 | 0B       | F5 | 10   | 00 | B0     | 30 | 03   | 00 | 06                                             |    |    | 9300K, 6500K, 13000K                                                                          |
|                             | DECREMENT | BE     | EF | 03     | 06        | 00 | CB       | F8 | 01   | 00 | B0     | 30 | 13   | 00 | 06                                             |    |    | 9300K, 6500K, 13000K                                                                          |
| Color Temperature           | GET       | BE     | EF | 03     | 06        | 00 | C8       | F5 | 02   | 00 | B0     | 30 | 00   | 00 | 1D                                             | 00 | XY | XY takes one of the followings:<br>00=9300K, 01=6500K, 02=13000K                              |
|                             | INCREMENT | BE     | EF | 03     | 06        | 00 | 19       | D4 | 03   | 00 | 02     | 21 | 03   | 00 | 06                                             |    |    | Clock commands are for VGA Clock. They would work independently of the selected source.       |
|                             | DECREMENT | BE     | EF | 03     | 06        | 00 | 19       | D5 | 03   | 00 | 02     | 21 | 04   | 00 | 06                                             |    |    |                                                                                               |
| Clock                       | GET       | BE     | EF | 03     | 06        | 00 | 19       | D7 | 03   | 00 | 02     | 21 | 06   | 00 | 1D                                             | 00 | XY | XY would be in the range of 00 and 64                                                         |
|                             | INCREMENT | BE     | EF | 03     | 06        | 00 | 2F       | 83 | 04   | 00 | 03     | 21 | 00   | 00 | 06                                             |    |    | Phase commands are for VGA Phase shift. They would work independently of the selected source. |
|                             | DECREMENT | BE     | EF | 03     | 06        | 00 | FE       | 82 | 05   | 00 | 03     | 21 | 00   | 00 | 06                                             |    |    |                                                                                               |
| Phase                       | GET       | BE     | EF | 03     | 06        | 00 | 49       | 83 | 02   | 00 | 03     | 21 | 00   | 00 | 1D                                             | 00 | XY | XY would be in the range of 00 and 64                                                         |
|                             | INCREMENT | BE     | EF | 03     | 06        | 00 | 97       | 82 | 04   | 00 | 01     | 21 | 00   | 00 | 06                                             |    |    |                                                                                               |
|                             | DECREMENT | BE     | EF | 03     | 06        | 00 | 46       | 83 | 05   | 00 | 01     | 21 | 00   | 00 | 06                                             |    |    |                                                                                               |
| H-Position                  | GET       | BE     | EF | 03     | 06        | 00 | F1       | 82 | 02   | 00 | 01     | 21 | 00   | 00 | 1D                                             | 00 | XY | XY would be in the range of 00 and 64. Central position is 32.                                |
|                             | INCREMENT | BE     | EF | 03     | 06        | 00 | 6B       | 83 | 04   | 00 | 00     | 21 | 00   | 00 | 06                                             |    |    |                                                                                               |
|                             | DECREMENT | BE     | EF | 03     | 06        | 00 | BA       | 82 | 05   | 00 | 00     | 21 | 00   | 00 | 06                                             |    |    |                                                                                               |
| V-Position                  | GET       | BE     | EF | 03     | 06        | 00 | 0D       | 83 | 02   | 00 | 00     | 21 | 00   | 00 | 1D                                             | 00 | XY | XY would be in the range of 00 and 64. Central position is 32.                                |

|                   |           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                              |
|-------------------|-----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|------------------------------|
| Color Temp Gain R | INCREMENT | BE | EF | 03 | 06 | 00 | 52 | F4 | 04 | 00 | B1 | 30 | 00 | 00 | 06 |    |    |                              |
|                   | DECREMENT | BE | EF | 03 | 06 | 00 | 83 | F5 | 05 | 00 | B1 | 30 | 00 | 00 | 06 |    |    |                              |
|                   | GET       | BE | EF | 03 | 06 | 00 | 34 | F4 | 02 | 00 | B1 | 30 | 00 | 00 | 1D | 00 | XY |                              |
| Color Temp Gain G | INCREMENT | BE | EF | 03 | 06 | 00 | 16 | F4 | 04 | 00 | B2 | 30 | 00 | 00 | 06 |    |    |                              |
|                   | DECREMENT | BE | EF | 03 | 06 | 00 | C7 | F5 | 05 | 00 | B2 | 30 | 00 | 00 | 06 |    |    |                              |
|                   | GET       | BE | EF | 03 | 06 | 00 | 70 | F4 | 02 | 00 | B2 | 30 | 00 | 00 | 1D | 00 | XY |                              |
| Color Temp Gain B | INCREMENT | BE | EF | 03 | 06 | 00 | EA | F5 | 04 | 00 | B3 | 30 | 00 | 00 | 06 |    |    |                              |
|                   | DECREMENT | BE | EF | 03 | 06 | 00 | 3B | F4 | 05 | 00 | B3 | 30 | 00 | 00 | 06 |    |    |                              |
|                   | GET       | BE | EF | 03 | 06 | 00 | 8C | F5 | 02 | 00 | B3 | 30 | 00 | 00 | 1D | 00 | XY |                              |
| Freeze            | EXECUTE   | BE | EF | 03 | 06 | 00 | 00 | 06 | 00 | C0 | 30 | 00 | 00 | 06 |    |    |    | Toggles video freeze status. |

## Maximum Pixel Rates

For Ultra HD panels,

| Source         | Max. Resolution | Colour Space | Bits/Component | Pixel/Rate |
|----------------|-----------------|--------------|----------------|------------|
| HDMI           | 4k@60Hz         | YCbCr4:2:0   | 12 bit         | 445.50MHz  |
| DVI            | 1080p@60Hz      | YCbCr4:4:4   | 8 bit          | 165MHz     |
| OPS            | 4k@60Hz         | YCbCr4:2:0   | 12 bit         | 445.50MHz  |
| HDMI (DVI opt) | 4k@60Hz         | YCbCr4:2:0   | 12 bit         | 445.50MHz  |

For FHD panels,

| Source         | Max. Resolution | Colour Space | Bits/Component | Pixel/Rate |
|----------------|-----------------|--------------|----------------|------------|
| HDMI           | 1080p@60Hz      | YCbCr4:4:4   | 12 bit         | 222,75MHz  |
| DVI            | 1080p@60Hz      | YCbCr4:4:4   | 8 bit          | 165MHz     |
| OPS            | 1080p@60Hz      | YCbCr4:4:4   | 12 bit         | 222,75MHz  |
| HDMI (DVI opt) | 1080p@60Hz      | YCbCr4:4:4   | 12 bit         | 222,75MHz  |

## Input Matrix

| Timing                   |                             | Input |      |               |                |
|--------------------------|-----------------------------|-------|------|---------------|----------------|
|                          |                             | VGA   | HDMI | DP (optional) | DVI (optional) |
| HD                       | 640x480p @ 60 Hz 4:3        | ○     | ○    | ○             | ○              |
|                          | 720(1440)x480i @ 60 Hz 4:3  | ○     | ○    | ○             | ○              |
|                          | 720(1440)x480i @ 60 Hz 16:9 | ○     | ○    | ○             | ○              |
|                          | 720x480p @ 60 Hz 4:3        | ○     | ○    | ○             | ○              |
|                          | 720x480p @ 60 Hz 16:9       | ○     | ○    | ○             | ○              |
|                          | 720(1440)x576i @ 50 Hz 4:3  | ○     | ○    | ○             | ○              |
|                          | 720(1440)x576i @ 50 Hz 16:9 | ○     | ○    | ○             | ○              |
|                          | 720x576p @ 50 Hz 4:3        | ○     | ○    | ○             | ○              |
|                          | 720x576p @ 50 Hz 16:9       | ○     | ○    | ○             | ○              |
|                          | 1280x720p @ 50 Hz 16:9      | ○     | ○    | ○             | ○              |
|                          | 1280x720p @ 60 Hz 16:9      | ○     | ○    | ○             | ○              |
|                          | 1920x1080i @ 50 Hz 16:9     | ○     | ○    | ○             | ○              |
| 1920x1080i @ 60 Hz 16:9  | ○                           | ○     | ○    | ○             |                |
| FHD                      | 1920x1080p @ 50 Hz 16:9     | ○     | ○    | ○             | ○              |
|                          | 1920x1080p @ 60 Hz 16:9     | ○     | ○    | ○             | ○              |
|                          | 1920x1080p @ 24 Hz 16:9     | ○     | ○    | ○             | ○              |
|                          | 1920x1080p @ 25 Hz 16:9     | ○     | ○    | ○             | ○              |
|                          | 1920x1080p @ 30 Hz 16:9     | ○     | ○    | ○             | ○              |
| UHD (Only for 4K models) | 3840x2160p @ 24 Hz 16:9     |       | ○    | ○             |                |
|                          | 3840x2160p @ 25 Hz 16:9     |       | ○    | ○             |                |
|                          | 3840x2160p @ 30 Hz 16:9     |       | ○    | ○             |                |
|                          | 4096x2160p @ 24 Hz 256:135  |       | ○    | ○             |                |
|                          | 4096x2160p @ 25 Hz 256:135  |       | ○    | ○             |                |
|                          | 4096x2160p @ 30 Hz 256:135  |       | ○    | ○             |                |

## Supported Media Formats from USB

Supported Video File Formats for USB Mode

| Video Codec    | Resolution                      | Bit Rate | Container                                                                                                                                                       |
|----------------|---------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MPEG1/2        | 1080P@30fps,<br>1080P@60fps     | 40Mbps   | MPEG program stream (.DAT, .VOB, .MPG, .MPEG), MPEG transport stream (.ts, .trp, .tp), MP4 (.mp4, .mov), 3GPP (.3gpp, .3gp), AVI (.avi), MKV (.mkv), ASF (.asf) |
| MPEG4          |                                 |          | MPEG program stream (.MPG, .MPEG), MP4 (.mp4, .mov), 3GPP (.3gpp, .3gp), AVI (.avi), MKV (.mkv), ASF (.asf)                                                     |
| XviD           |                                 |          | MP4 (.mp4, .mov), AVI (.avi), MKV (.mkv), ASF (.asf)                                                                                                            |
| Sorenson H.263 |                                 |          | FLV (.flv), AVI (.avi), SWF (.swf)                                                                                                                              |
| H.263          |                                 |          | MP4 (.mp4, .mov), 3GPP (.3gpp, .3gp), AVI (.avi), MKV (.mkv)                                                                                                    |
| H.264          | 3840x2160@30fps,<br>1080P@60fps | 135Mbps  | FLV (.flv), MP4 (.mp4, .mov), 3GPP (.3gpp, .3gp), MPEG transport stream (.ts, .trp, .tp), ASF (.asf), AVI (.avi), MKV (.mkv)                                    |
| Motion JPEG    | 720P@30fps                      | 10Mbps   | AVI (.avi), 3GPP (.3gpp, .3gp), MP4 (.mp4, .mov), MKV (.mkv), ASF (.asf)                                                                                        |
| VP8            | 1080P@30fps                     | 20Mbps   | MKV (.mkv), WebM (.webm)                                                                                                                                        |

|            |             |         |                                                                                          |
|------------|-------------|---------|------------------------------------------------------------------------------------------|
| HEVC/H.265 | 4K2K@60fps  | 100Mbps | MP4 (.mp4, .mov), MKV (.mkv), MPEG transport stream (.ts, .trp, .tp)                     |
|            | 1080P@60fps | 50Mbps  | MP4 (.mp4, .mov), MKV (.mkv), MPEG transport stream (.ts, .trp, .tp), 3GPP (.3gpp, .3gp) |
| VP9        | 4K2K@30fps  | 100Mbps | MKV (.mkv), WebM (.webm)                                                                 |

#### Supported Picture File Formats for USB Mode

| Image | Photo         | Resolution (width x height) | Remark                                            |
|-------|---------------|-----------------------------|---------------------------------------------------|
| JPEG  | Base-line     | 15360x8640                  | The limit for max resolution depends on DRAM size |
|       | Progressive   | 1024x768                    |                                                   |
| PNG   | non-interlace | 9600x6400                   |                                                   |
|       | interlace     | 1200x800                    |                                                   |
| BMP   |               | 9600x6400                   |                                                   |

#### Supported Audio File Formats for USB Mode

| Audio Codec    | Sample rate                        | Bit Rate         | Container                                                                                                                                                                                                                       |
|----------------|------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MPEG1/2 Layer1 | 16KHz ~ 48KHz                      | 32Kbps ~ 448Kbps | MP3 (.mp3), AVI (.avi), ASF (.asf), Matroska (.mkv, .mka), MPEG transport stream (.ts, .trp, .tp), MPEG program stream (.DAT, .VOB, .MPG, .MPEG), WAV (.wav)                                                                    |
| MPEG1/2 Layer2 | 16KHz ~ 48KHz                      | 8Kbps ~ 384Kbps  | MP3 (.mp3), AVI (.avi), ASF (.asf), Matroska (.mkv, .mka), MPEG transport stream (.ts, .trp, .tp), MPEG program stream (.DAT, .VOB, .MPG, .MPEG), WAV (.wav)                                                                    |
| MPEG1/2 Layer3 | 16KHz ~ 48KHz                      | 8Kbps ~ 320Kbps  | MP3 (.mp3), AVI (.avi), ASF (.asf), Matroska (.mkv, .mka), 3GPP (.3gpp, .3gp), MP4 (.mp4, .mov, m4a), MPEG transport stream (.ts, .trp, .tp), MPEG program stream (.DAT, .VOB, .MPG, .MPEG), FLV (.flv), WAV (.wav), SWF (.swf) |
| AC3            | 32KHz, 44.1KHz, 48KHz              | 32Kbps ~ 640Kbps | AC3 (.ac3), AVI (.avi), Matroska (.mkv, .mka), 3GPP (.3gpp, .3gp), MP4 (.mp4, .mov, m4a), MPEG transport stream (.ts, .trp, .tp), MPEG program stream (.DAT, .VOB, .MPG, .MPEG)                                                 |
| EAC3           | 32KHz, 44.1KHz, 48KHz              | 32Kbps ~ 6 Mbps  | EAC3 (.ec3), 3GPP (.3gpp, .3gp), MP4 (.mp4, .mov, m4a), MPEG transport stream (.ts, .trp, .tp), MPEG program stream (.DAT, .VOB, .MPG, .MPEG)                                                                                   |
| AAC, HEAAC     | 8KHz ~ 48KHz                       |                  | AAC (.aac), AVI (.avi), Matroska (.mkv, .mka), 3GPP (.3gpp, .3gp), MP4 (.mp4, .mov, m4a), MPEG transport stream (.ts, .trp, .tp), MPEG program stream (.DAT, .VOB, .MPG, .MPEG), FLV (.flv), RM (.ra)                           |
| WMA            | 8KHz ~ 48KHz                       | 128bps ~ 320Kbps | ASF (.wma, .asf), AVI (.avi), Matroska (.mkv, .mka)                                                                                                                                                                             |
| WMA 10 Pro M0  | 48KHz                              | < 192kbps        |                                                                                                                                                                                                                                 |
| WMA 10 Pro M1  | 48KHz                              | < 384kbps        |                                                                                                                                                                                                                                 |
| WMA 10 Pro M2  | 96KHz                              | < 768kbps        |                                                                                                                                                                                                                                 |
| G711 A/mu-law  | 8KHz                               | 64Kbps ~ 128Kbps | WAV (.wav), AVI (.avi), Matroska (.mkv, .mka), 3GPP (.3gpp, .3gp), MP4 (.mp4, .mov, m4a)                                                                                                                                        |
| LBR (cook)     | 8KHz, 11.025KHz, 22.05KHz, 44.1KHz | 6Kbps ~ 128Kbps  | RM (.ra)                                                                                                                                                                                                                        |
| FLAC           | 8KHz~96KHz                         | < 1.6Mbps        | Matroska (.mkv, .mka)                                                                                                                                                                                                           |

## System Features

### Panel

|                 |               |   |
|-----------------|---------------|---|
| Panel type      | X             |   |
| Resolution      | X             |   |
| Visual angle    | Horizontal    | X |
|                 | Perpendicular | X |
| Max. brightness | X             |   |
| Response time   | X             |   |
| H-Frequency     | X             |   |
| V-Frequency     | X             |   |

### Audio

2 x 15 W Audio Output Power

### Network Connection

Ethernet (LAN) for Internet connectivity

802.11 a/b/g/n built in WLAN support (optional)

### Input/Output Ports

1 x USB 2.0 port

1 x USB 3.0 port

1 x Internal USB 3.0 port

1 x HDMI 2.0 In port (1.4 for FHD panels)

1 x HDMI Out port

1 x VGA port

1 x Audio input port

1 x Audio output port

1 x RS232 port

1 x RJ12 port

1 x Video In port

1 x YPbPr port

1 x SPDIF Coaxial Out port

1 x DVI port

1 x DisplayPort v1.2 In

1 x DisplayPort v1.2 Out

1 x Headphone port

1 x IR port

### Power

110-240V AC 50-60Hz

### Weight (kg)

xxx

### Display Dimensions DxLxH (mm)

xxx

## Wireless LAN Transmitter Specifications

| Frequency Ranges                | Max Output Power |
|---------------------------------|------------------|
| 2400 - 2483,5 MHz (CH1-CH13)    | < 100 mW         |
| 5150 - 5250 MHz (CH36 - CH48)   | < 200 mW         |
| 5250 - 5350 MHz (CH52 - CH64)   | < 200 mW         |
| 5470 - 5725 MHz (CH100 - CH140) | < 200 mW         |

### Country Restrictions

This device is intended for home and office use in all EU countries (and other countries following the relevant EU directive) without any limitation except for the countries mentioned below.

| Country            | Restriction                                                                                                       |
|--------------------|-------------------------------------------------------------------------------------------------------------------|
| Bulgaria           | General authorization required for outdoor use and public service                                                 |
| Italy              | If used outside of own premises, general authorization is required                                                |
| Greece             | In-door use only for 5470 MHz to 5725 MHz band                                                                    |
| Luxembourg         | General authorization required for network and service supply(not for spectrum)                                   |
| Norway             | Radio transmission is prohibited for the geographical area within a radius of 20 km from the centre of Ny-Ålesund |
| Russian Federation | In-door use only                                                                                                  |
| Israel             | 5 GHz band only for 5180 MHz-5320 MHz range                                                                       |

The requirements for any country may change at any time. It's recommended that user checks with local authorities for the current status of their national regulations for 5 GHz wireless LAN's.

### Warning

Surges could cause data loss except monitoring modes.

### Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is en-



couraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**FCC Caution:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

#### **IMPORTANT NOTE**

#### **FCC Radiation Exposure Statement**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

### **Accessories Included**

- Remote Control
- Batteries: 2 x AAA
- Instruction Book
- Quick Start Guide
- IR Extender
- OPS
- Infrared Overlay Touch Screen Kit
- Wall Mount Kit

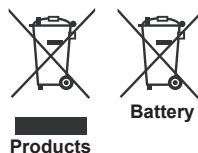
### **Information for Users on Disposal of Old Equipment and Batteries**

#### **[European Union only]**

Equipment bearing these symbols should not be disposed as general household waste.

You should look for appropriate recycling facilities and systems for the disposal of these products.

**Notice:** The sign Pb below the symbol for batteries indicates that this battery contains lead.



### **License Notification**

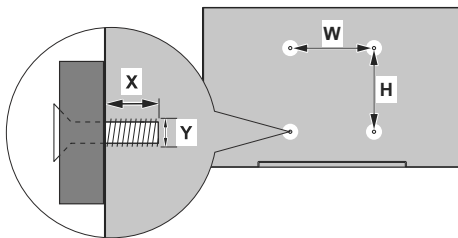
The terms HDMI, HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.



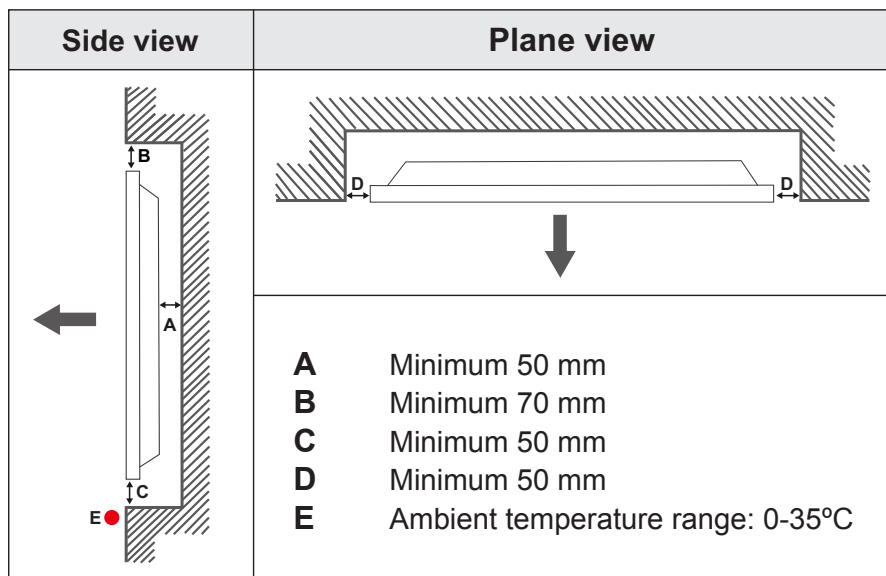
This product is protected by certain intellectual property rights of Microsoft Corporation. Use or distribution of such technology outside of this product is prohibited without a license from Microsoft or an authorized Microsoft subsidiary.

## Vesa Wall Mount Measurements

|                         |           |     |
|-------------------------|-----------|-----|
| Hole Pattern Sizes (mm) | W         | H   |
|                         | XXX       | XXX |
| Screw Sizes             |           |     |
| Length (X)              | min. (mm) | X   |
|                         | max. (mm) | X   |
| Thread (Y)              | MX        |     |



## Installation On An Indented Wall



When installing the product on an indented wall, allow at least the space specified above between the product and wall for ventilation and ensure that the ambient temperature is kept between 0°C-35°C.

Do not expose the product to direct sunlight.

We will take no responsibility for any damages or failures in case our products are not being used subject to these recommendations and/or instructions for use.