united object

<English>

Smart Beam Laser
Operation manual

Safety warning and caution

It is to protect the safety of user and to prevent property damage and inconvenience due to accidents. Please read carefully prior to using this product for proper instructions.

> ⚠️ **Warning**
>
> **There may be death or serious injury if violated.**

Do not use it while driving.
Viewing while driving may cause a traffic accident. It may be punishable by law.

Do not install, disassemble or modify.
Arbitrary installation, disassembling or modification may cause device failure, explosion, fire or electrocution. Manufacturer is not liable for such damages.
　※ **Warning: You may be exposed to harmful radiation if you arbitrarily install, disassemble or modify.**

Do not submerge in water.
Do not leave or use in excessively humid area.
This product is not water-proofed. There is a danger of fire or electrocution if exposed to water or excessive humidity.

Packaging material included is not suitable as toys.
There are plastic bags and metal parts in the packaging material which may cause suffocation or injury if children or pets play with them.

Do not excessively heat using a heater, microwave oven, or hair dryer.
It may cause deformation, explosion or malfunctioning.

Avoid leaving or using the product in direct sunlight,
excessively dusty area, possible water splashing area,
excessively humid area, near heating appliance (heater, microwave oven, etc.),
or near flammable substance (gasoline, painter thinner, flammable spray, etc.).
It may cause fire or electrocution as well as malfunctioning due to damage to product.

Do not insert metallic object such as hair pin,
or easily flammable paper or match.
It may cause fire or electrocution as well as malfunctioning due to damage
to product.

Do not block the ventilation outlet while using the product with
table cloth or curtain.
It may cause fire or explosion due to raised internal temperature.

Please maintain proper temperature (10℃ to 40℃) while using or storing.
It may cause poor performance or hardware damage.
Please be extra careful since temperature inside a car may reach up to 80℃
which may cause an explosion.

Do not handle the product or plug with wet hands.
It may cause electrocution.

Do not look directly into the lens while the product is operating or
do not direct it directly into anybody or pet.
Strong ray may cause damage eye sight.

Stop using in the event of smoke or unpleasant order.
Turn the power off and unplug.
It may cause fire or electrocution.

In the event of foreign object being inserted into the product,
turn the power off, unplug and call the service center.
Foreign object or water in the product may cause fire or electrocution.

⚠ Caution
If the following caution is neglected, there may be injury or
property damage.

Before using this product, please read the operating instructions
enough after use.
Use of controls or adjustments or performance of procedures other than
those specified herein may result in hazardous radiation exposure

Do not handle the product with hands wet with water or flammable
substance.
It may damage the product and cause malfunction.

Do not block the ray from lens with book or other object.
Long exposure of ray on an object may cause fire due to high heat.
Reflected heat may also damage the product.

Prevent an impact on the product or do not scratch with a sharp object.
It may cause damage the product and cause malfunction.

Do not let children or pet lick the product.
Exterior material may cause allergic reactions as well as causing damage to
the product.

Do not use the product while holding in hands or making body contact.
Heat from the beam project may cause burn injuries. It is recommended to
use at least 20cm away from the wireless product.

Recommended distance from the screen is 2 to 3 times
the diagonal length of the screen.
Viewing in close approximation for prolonged time may damage
the eye sight.

Do not use it for a prolonged time.

It may damage the eye sight. It is recommended to take a rest each hour.
Stop viewing as soon as there is peculiarity in eye sight.

You shall only use authentic charger and cable authorized by manufacturer.

Charger and cable not authorized may not charge properly and
cause battery to explode or failures.

Be sure to check voltage and plug type before use.

Voltage and plug type may vary depending on the nation.
Please check before use.

Do not pull cable enclosed by force or twist.
Do not place heavy objects on top of cable or change arbitrarily.

It may cause damage cable and may cause malfunction or
cause electric shorts, shock or fire.

Do not touch lens with hands.

Contaminated lens may produce sharp videos.

Use soft dry cloth to wipe products slowly.

Be sure that charger is disconnected from product and power is turned off.
Do not use solvent, alcohol, thinner to wipe the product.
It may cause failures or deformation.

Risk Group 2

Caution : Possibly hazardous optical radiation emitted from this device
Do not stare at operating lamp. It could be harmful to the eyes.

S/N : AAA-BBB-CCC-DDD

Be sure to follow the instructions below to use battery safely.

▶ It takes about 4 hours to charge and the standard usage is
about 2 hours.
  * Charging time is measured with authentic charger and cable.
  * Battery usage is based on the initial state of battery and
    on the electricity measured in laboratory.
▶ When there is no battery charge left, lamp on the product does not
light up even if you connect the charger.
Charge at least few minutes before use.
▶ When there is no battery charge left, lamp on the product does not
light up even if you connect the charger.
Charge at least few minutes before use.
▶ Battery life degrades gradually after repeated use.
If the battery usage is reduced to a half of what the new battery was,
replace it with authentic one from service center.

Cautions in installing the product.

▶ Install product on a flat, stable place.
▶ When using connected to charger, make sure to install with a certain distance
so that it won't be separated from power outlet. If shocks are inflicted on
charger and cable, it may fall from its installed position and
terminal can be damaged.
▶ This product is wireless and therefore can cause some wave interference.
Please refrain from using at the following location.
  * Hospital or near medical equipment that is affected by high frequency.
  * Near cardiac defibrillator or hearing aid.
  * Place where there are many electronic products and wireless devices.
    (kitchen, car, airplane cabin)

Product features

Laser Projector
It conveys a clear picture by using laser power source.
You can enjoy the clear picture even with a 100" screen.

HD high resolution image
With 1280x720 resolutions, you can watch presentation documents and video.

Wire/wireless modes
It support wireless connection through WiFi in addition to wire connection using HDMI/MHL.

Focus Free function
It can control the size of screen without having to go through a focus adjusting process through laser light source and advanced optical technology.

Battery operating life
With a 100% charge, it can operate for 120 minutes and can watch a movie without recharging. Battery life is subject to user environment and batteries.

Accessories

<body>   <charger>   <MHL>   <5-11 pin converter>   <user manual>

※ The product accessory can be changed without notice for improvements.
   (some accessories must be purchased separately)
※ Content of user manual can be different depending on the software version,
   and may be partially changed without prior notice to users.
   (Refer for latest user manual: www.cremotech.co.kr)
※ Charger and cable enclosed must be used with **Smart Beam Laser**.
※ Images in the user manual are for reference and actual model may be different.
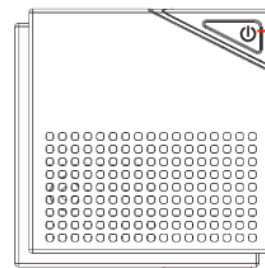
Parts and their functions

Reset button
- You can reset the hardware by pressing button with a pin if it no longer operates due to failures.
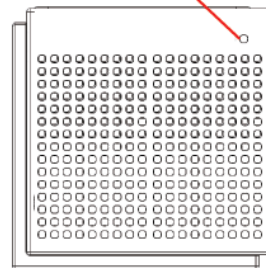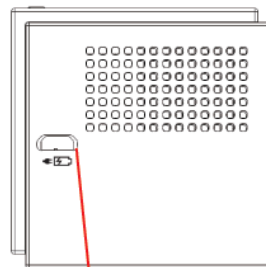
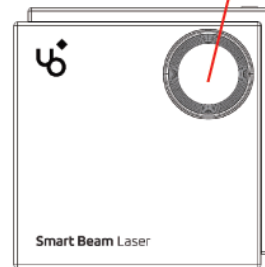Rear   Top

Power button
- Press for 3 to 4 seconds to turn its power on or off.
- Touch twice while the power is on to change to wireless transmission mode.
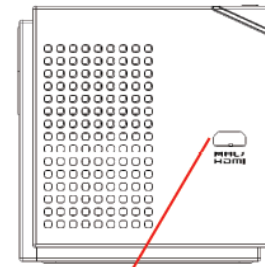(Miracast <-> DLNA)

Projection Lens
It is a place to project an image.

Left   Front   Right

HDMI / MHL Terminal
- You can connect using a devise and cable that supports the generation of HDMI/MHL.

DC Power Supply Terminal
- You can connect charger to the product.

Description of button operations

Press power button on top of Smart Beam Laser for 3~4 seconds to turn power on and off.
- ▶ The product operates if power button is pressed for more than 3~4 seconds while the product is turned on.
- ▶ After operating the product, it converts to main screen after displaying a booting screen.
  - * After operating the product, it takes about 10 seconds before the main screen appears.

After operating device, tap power button briskly twice while on main screen, it converts to a wireless mode.
- ▶ Converts from Miracast mode to DLNA mode.
  - * When converting to a wireless mode, it must be executed after the device number appears on the main screen.
  - * When converting to a wireless mode, it takes about 5 seconds after entering key. It may malfunction if power button is pressed at this time.

Miracast Mode

DLNA Mode

⟨Main screen while in Miracast mode⟩   ⟨ Main screen while in DLNA mode⟩
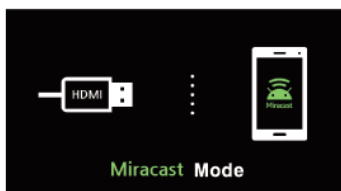
Charging

1. After connecting charger and cable enclosed, connect to the charger connection terminal located in sides of the device.
2. You can check the charging status with LED on the of power source.

Status information	LED
Battery is charging	Red lamp
Battery is charged	Green lamp
20% battery remains	Red lamp flashing(5 seconds intervals)

Check items before connecting to outside devices

- ▶ In order to connect with wires, be sure to check if the device supports HDMI/MHL output, connect using HDMI/MHL cables. (HDMI cables sold separately)
- ▶ To connect wirelessly, be sure to check if the device supports Miracast/DLNA before connecting.
  - * Miracast function supports in smart phones higher than Android 4.2 and the latest version is recommended. (it does not support in some smart phones)
  - * iOS function can support smart phones higher than iOS 5.1 and the latest version is recommended. (supports higher than iPhone 4)
  - * There can be interface problems as shot spurts of flashes or delayed connection depending on the smart phones.
  - *Screen may stop or freeze depending on the wireless environment.
- ▶ Image quality and resolutions and screen ratio can be different depending on the specification of device connected and the original file. (For **Smart Beam** Laser, 720p resolutions video is recommended)
- ▶ Depending on the device manufacturers, name of Miracast setting function can be different. Please check the manufacturer's manual or inquire with manufacturer on how to use and on the supportability.

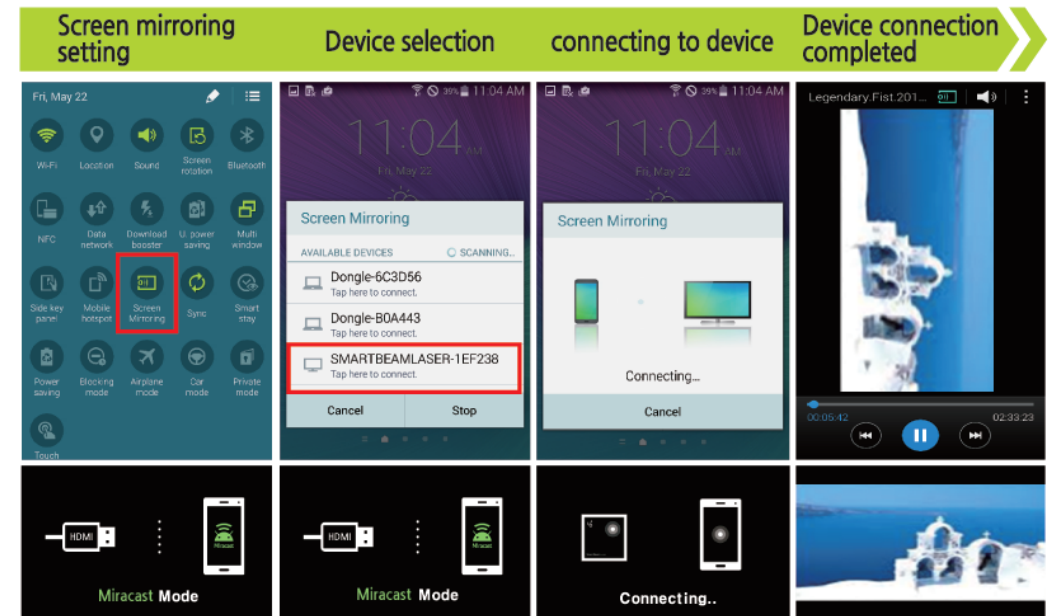| Manufacturer	Setting function name	Supporting smart phones
Samsung	Setting⟩connection⟩Screen Mirroring	Galaxy S3, S4, Note2, Note 3, etc.
L G	Setting⟩connection and file sharing⟩ Miracast	G, G Pro, G2, G3
Google	Setting⟩display⟩screen transfer	Models after Nexus 5
Apple	Setting⟩connection⟩select device⟩AirPlay⟩Mirroring	iModels after iPhone 4

How to connect HDMI / MHL

1. Turn power on for devices that can output HDMI/MHL and **Smart Beam** Laser.
2. When main screen appears on Smart Beam Laser projection screen, connect HDMI/MHL output device and **Smart Beam** Laser using HDMI or MHL cables. (When connecting HDMI/MHL, a wireless connection mode of **Smart Beam** Laser does not get affected)
3. When connection is completed, the same videos as with HDMI/MHL output device are being projected through **Smart Beam** Laser.

※ For devices higher than Samsung Galaxy 3, Note 2, MHL cable converter enclosed must be connected with MHL cable Phone.

※ Check or inquire with manufacturer or manual for the supportability and on how to use.

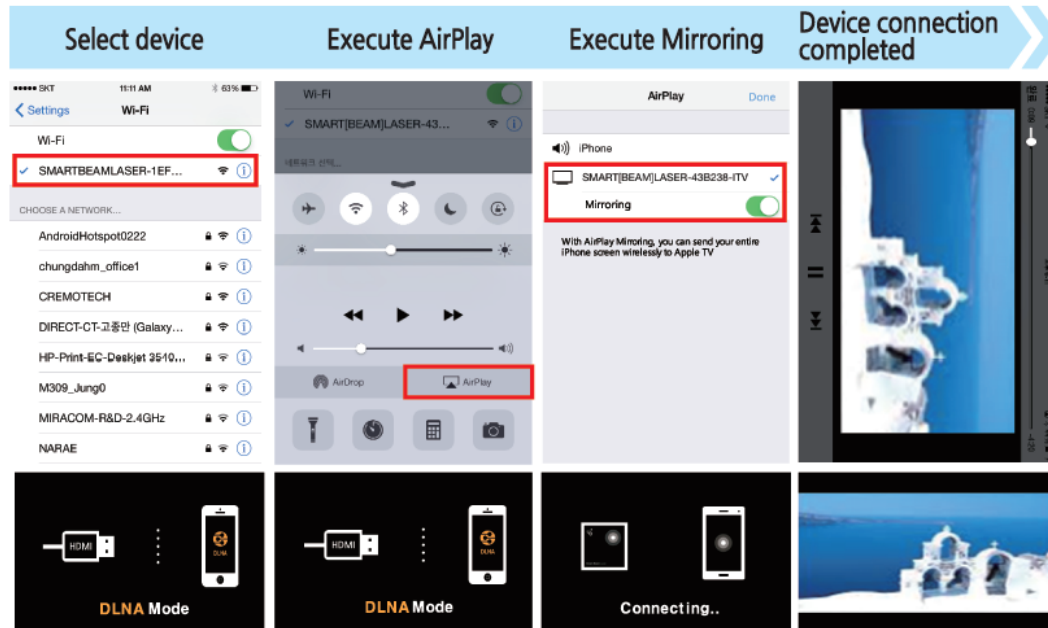## Connecting with Miracast - Android

1. Turn power on for devices that support Miracast function and **Smart Beam** Laser.
2. Check if the wireless connection mode of **Smart Beam** Laser is in a Miracast mode.
3. In device setting, select names that support in the device you have from modes of Miracast, Screen Mirroring, and Screen transfer.
4. Select **Smart Beam** Laser from the select screen of the device to be connected. (you can check the name of device in the main screen)
5. When connection is completed, the same videos as with the connected device are being projected through **Smart Beam** Laser.

※ check the manufacturer's manual or inquire with manufacturer on how to use and on the supportability.
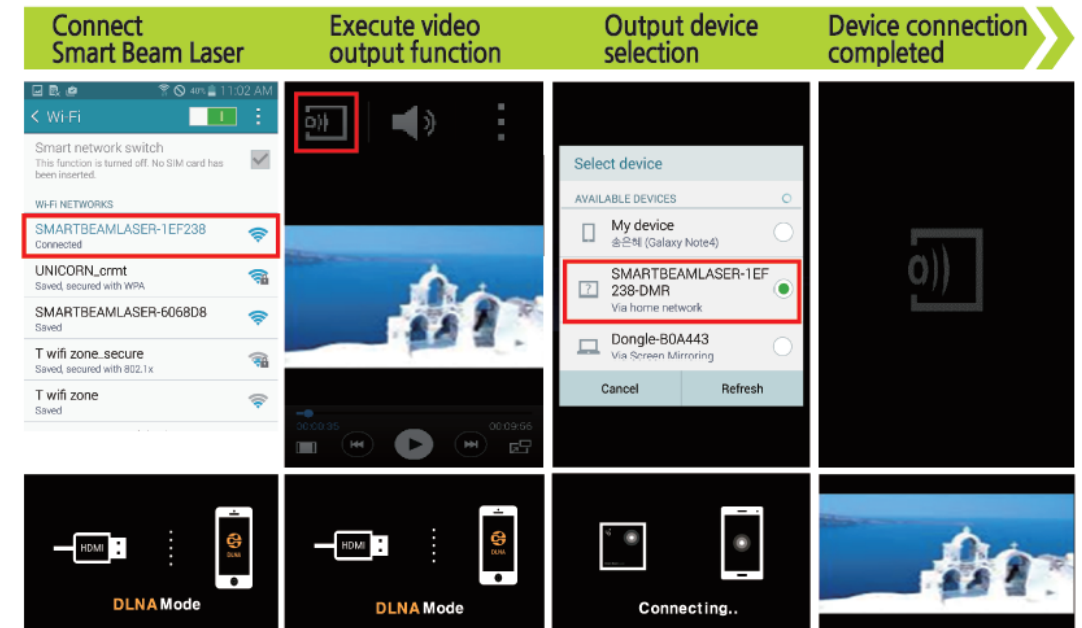
Connect in mirroring method - iOS

1. Turn power on for devices that support Mirroring function and **Smart Beam** Laser.
2. Check if the Smart Beam Laser wireless connection mode of **Smart Beam** Laser is in a DLNA mode.
3. Select **Smart Beam** Laser from the setting of the device to be connected Wi-Fi connection device.
   (you can check the name of device in the main screen)
4. Execute AirPlay from the device to be connected and select **Smart Beam** Laser. After making selection, activate the Mirroring function.
5. When connection is completed, the same videos as with the connected device are being projected through **Smart Beam** Laser.

# To connecting in a DLNA method of smart phone - Android

1. Turn power on for devices that support DLNA function and **Smart Beam** Laser.
2. Check if the **Smart Beam** Laser wireless connection mode of **Smart Beam** Laser is in a DLNA mode.
3. Select **Smart Beam** Laser from the setting of the device to be connected Wi-Fi connection device.
   (you can check the name of device in the main screen)
4. Execute video replay from the device to be connected and execute a video output function. Select **Smart Beam** Laser from device selection. After execution, select Smart Beam Laser form the device selection.
5. When connection is completed, the videos are being projected through **Smart Beam** Laser.

※ check the manufacturer's manual or inquire with manufacturer on how to use and on the supportability.

To connecting in a DLNA method of smart phone - iOS

1. Turn power on for devices that support DLNA function and **Smart Beam** Laser.
2. Check if the **Smart Beam** Laser wireless connection mode of **Smart Beam** Laser is in a DLNA mode.
3. Select **Smart Beam** Laser from the setting of the device to be connected Wi-Fi connection device.
   (you can check the name of device in the main screen)
4. Execute AirPlay from the device to be connected and select **Smart Beam** Laser. (when connecting with a DLNA mode, the Mirroring function must be inactive)
5. When connection is completed, the same videos are being projected through **Smart Beam** Laser.

Select device | execute video | Execute AirPlay | Device connection completed

DLNA Mode | DLNA Mode | Connecting..
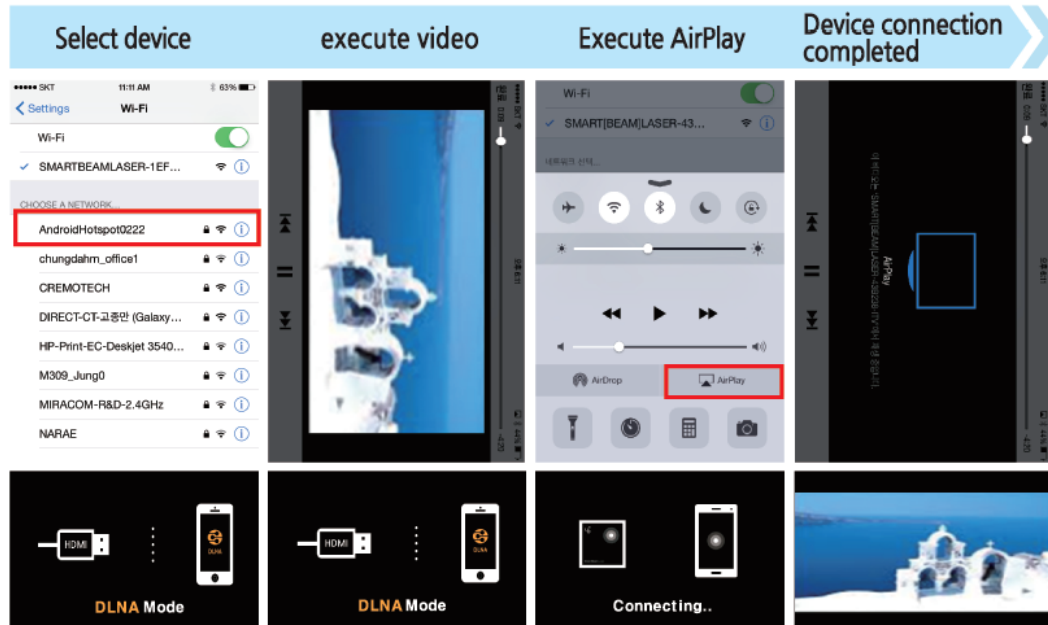
Software upgrade

Please refer details on how to upgrade software and the latest software information at www.cremotech.co.kr.
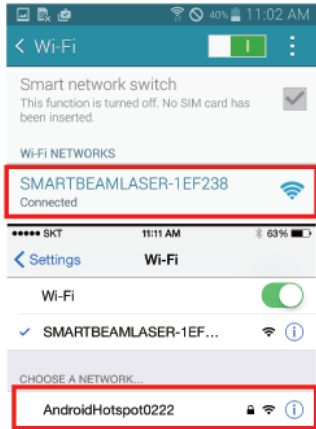
- You can use the optimized product by upgrading with the latest software.
- In order to upgrade the product function, customers can directly upgrade software conveniently through internet.
- Please proceed with upgrade after thoroughly understanding cautions before and after software upgrades.
- Product may malfunction if the power is turned off in the middle of software upgrade or computer is terminated due to low battery.
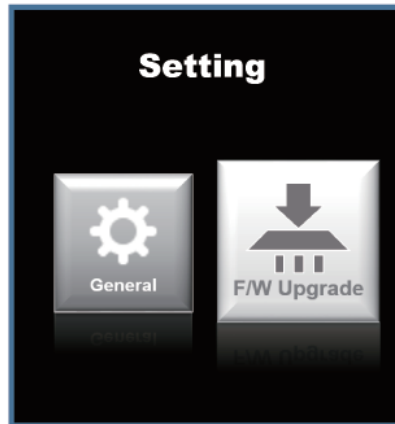 (please fully charge the battery before start upgrading)

How to upgrade software

1. Turn power on for devices that support DLNA function and **Smart Beam** Laser.
2. Check if the Smart Beam Laser wireless connection mode of **Smart Beam** Laser is in a DLNA mode.
3. Select **Smart Beam** Laser from the setting of the device to be connected Wi-Fi connection device.
   (you can check the name of device in the main screen)
4. Execute the web browser from the device to be connected and enter address http://192.168.49.1.
5. Select F/W Upgrade menu form the Setting screen connected.
6. Select Search menu from F/W Upgrade screen.
7. Select Access Point possible to connect to internet and make connection.
8. Select connect menu after entering network password.
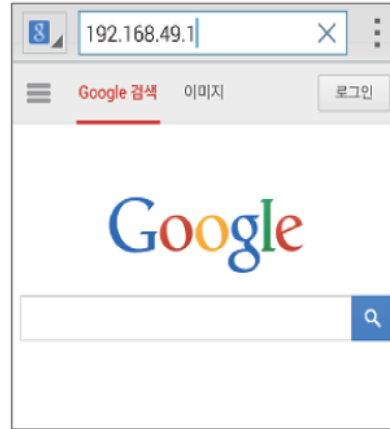
How to upgrade software
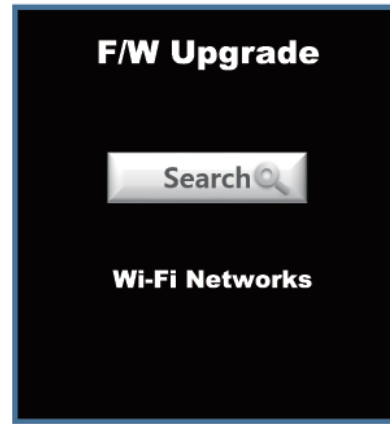
1. Connect with **Smart Beam** Laser with a DLNA mode

2. Execute web browser and enter address http://192.168.49.1

3. Select F/W Upgrade from Setting menu window connected

Setting

General F/W Upgrade

4. Select Search menu from F/W Upgrade menu window

F/W Upgrade

Search

Wi-Fi Networks

5. Select Access Point that can connect from Search menu window

Search

Available Wi-Fi Networks

AXXXX123   Secured

bXXXX1   Secured

CXX1   Secured

CYXYUUU1   Secured

6. Enter network password

bXXXX1

BSSID :
C8:3a:35:1c:74:a0

Security :
[WPA-PSK-CCMP]{ESS}
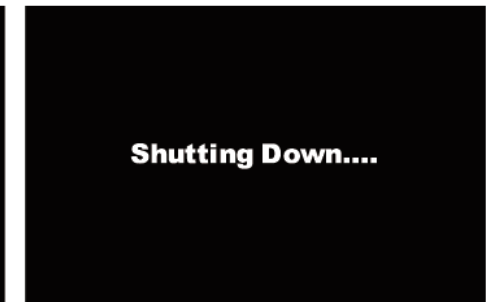
Password

Connect

7. After connecting to the network, update will automatically downloaded.

Writing....   1 / 8
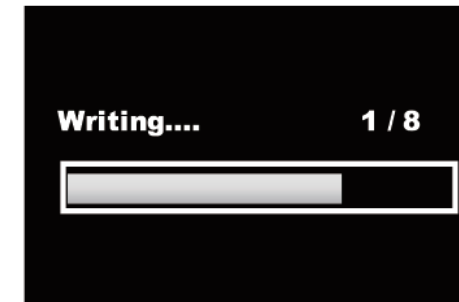
8. After the update is completed, it is automatically shut down.

Shutting Down....

Specification and certification

Microdisplay Panel	LCoS(Liquide Crystal On Silicon)
Resolution	720p（1280×720）
Aspect Ratio	16 : 9
Screen Size	20″ ~ 100″
Throw Ratio	1.4
Offset	100%
Focus	Free Focus
Laser Lifetime	At Least 10,000 hours
Video input	HDMI/MHL/Miracast/DLNA
WiFi Band Dual	802.11 b/g/n(HT20) : 2412~2462MHz 802.11 a : 5180~5240MHz 802.11 a : 5745~5825MHz
Audio	Built-in 1W Mono
Weight	195g
Dimension	55 × 55 × 55 (mm)
Power supply	DC 5V, 3A
Battery	Li-Po 3.7V 4200mAh
Operating Temper	10 ℃ ~ 40℃

KC FC CE

HDMI **MHL**

WiFi **RoHS** ✓

CLASS 1 LASER PRODUCT
IEC60825-1 ed3.0 : 2014

■ Name of device (Model No.) :
Smart Beam Laser (LB-UH6CB)

■ Certification No. :
KCC : MSIP-CMM-CRb-LB-UH6CB
FCC : 2AEQF-LB-UH6CB

■ Certified business :
CREMOTECH Co.,Ltd

■ Manufacturer / Country of origin :
CREMOTECH Co.,Ltd / Korea

FCC (Federal Communications Commission)

This equipment has been tested and found to comply with the limits for a 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 encouraged to try to correct the interference by one or more 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

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your 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.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with minimum 20 cm between the radiator and your body.

This transmitter must not be collocated or operating in conjunction with an other antenna or transmitter unless authorized to do so by the FCC.

Checking items before calling for service

Please check the following before making calls to A/S center when your product is malfunctioning.

Power cannot be turned on	- Make sure battery is charged. - Make sure the plug is connected to outlet.
Product makes noise	- Make sure if it is not from motor or fan. Those are needed to maximize features of the projector. - If loud machine or part is continuing to make a noise, do not use and call service center.
Files cannot be played	- Check the executable files. (The product may not able to project in a certain program) (Contents circulating through internet may not be reproduced)
Images on screen are not clear	- Move it to a location where it is not too bright. - You can see the image more clearly in the dark. - If product is used for a long period, the focus of lens can be temporarily blurred. Turn off the machine for 10 minutes before use it again.
Projector generates heat	- Since it requires a lot of current to use, it can generate heat if used for long time.
Button does not work and screen freezes during the use	- Turn off the power by pressing the RESET switch on the side.

Battery life is different from the manual's	- If a fully charged battery is left unattended in low or high temperature, the life shortens.
When playing a video, screen freezes or a mosaic phenomenon appears	- These phenomena of screen freeze and a mosaic screen occur when Wi-Fi power is low. Use the beam projector by either fully charging a smart phone battery or connecting to an authentic smart phone charger. - Wireless interference in the ambient environment can influence the connection. Restart or move the location and try again for wireless connection.
No sound	- Check the volume of smart phone.
Screen turns off frequently	- Either screen auto-lock is on or it can happen if the video signal is interrupted for a certain interval. - In a certain smart phone, this can happen due to compatibility issue. (Please check the compatibility item at our home page)

You can view the latest product information and manuals from www.cremotech.co.kr.