



LightConn

Dreamcast Wireless Gun

USER MANUAL



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General Description and Specs

LightConn is a unique wireless gun for the Sega Dreamcast console which also operates with any type of TV including modern HDTVs.

LightConn utilizes Bluetooth technology in conjunction with powerful custom firmware & hardware and is manufactured with high quality electronic components.

General Specifications and Features

- Bluetooth interface
- Embedded Li-Po battery with up to 10hrs operation time.
- USB charging
- ON/OFF switch and power state LED indication.
- Internal memory emulating the presence of 2 VMUs.
- Support for in-game VMU screen indications
- Support for Rumble Pack
- Embedded VMU menu for calibration
- PC Connectivity for VMU managing
- Region-Free
- Auto-reload feature

➤ LightConn Wireless Gun



➤ Base Unit

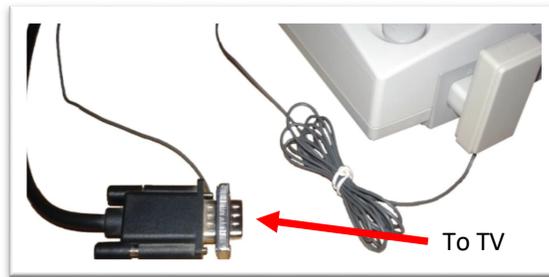
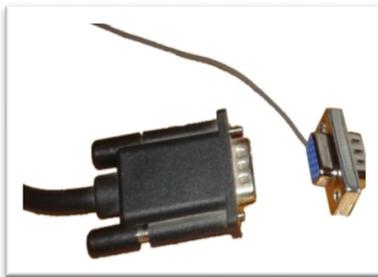


Getting Started

1. Plug the Base Unit to any available port of your Dreamcast console



2. Connect the VGA sensor to the output of your VGA Cable and then to your TV / PC monitor's VGA port



In case you are using a VGA Box with a standard VGA cable, then you can plug the VGA sensor to either ends of the VGA cable.

3. Place the IR bar in front of your TV (see "**How to Place the IR bar**") and switch it on
4. Switch on your Dreamcast and LightConn wireless gun



*It will take 5 to 10 seconds for the LightConn to connect to its Base Unit.
If a VMU is connected to the LightConn, then the "Waiting to connect.." message will initially show up in the LCD screen.*

Memory Function

The VMU system works as an independent system of 2 VMUs.

Upon power-up LightConn will make use of the internal memory and emulate the presence of 2 VMUs. The virtual VMUs act like the real ones supporting save, copy and move functionality.

In case that you want your existing saves to be transferred to/from LightConn VMUs, then you may plug a normal wired controller to another Dreamcast's port and copy saves between the virtual and real VMUs as normal.

LCD Screen Function

Upon power-up, if a real VMU is detected, then LightConn will make use ONLY of its LCD screen for various indications.

The supported LCD indications are:

1. "Waiting to connect.." initial message
2. In-game artwork
3. Internal menu for settings

Vibration Function

Jumper Pak is fully supported with hot-swap function: The user can plug or unplug a Jumper Pak at any time and the game will be informed instantly.

When a Jumper Pak is plugged-in, then the 1st internal VMU (slot 1) will be disabled and replaced with vibration functions (slot 1 will appear as empty - this is the normal Dreamcast's functionality).

When a Jumper Pak is un-plugged, then the 1st internal VMU (slot 1) will be instantly enabled again (slot 1 will show a VMU to be plugged-in) and will be available for saving.

Charging / Discharging

LightConn has a battery operation time of up to 10 hours and warns the user that it needs charging when the **Power State** LED turns from green to red.

Charging

1. Plug one end of the provided USB cable to your PC or wall-charger.
2. Plug the other end of the cable to the LightConn charging port.
3. Charging cycle will take approx. 2 hours.

(CHARGING NOTES)

- *While charging, the **Charging State** LED will glow red.*
- *When the battery is fully charged, the **Charging State** LED will glow blue.*
- *LightConn may be used normally while charging.*

Calibrating the LightConn

For proper use with a game, the user must first calibrate the LightConn. There are 2 types of calibration:

1. **ViewPort** calibration (must be performed before any In-game calibration)
2. **In-game** calibration (must be performed after a ViewPort calibration)

(CALIBRATION NOTES)

- *Proper calibration must be done in the above order.*
- *For any new **ViewPort** calibration, it is recommended to apply **In-game** calibration as well.*
- ***In-game** calibration can be performed as many times without having to re-apply the ViewPort calibration*

I. ViewPort Calibration

The **ViewPort** calibration refers to calibrating the LightConn in regard to the actual user's position/viewpoint relatively to the TV/IR bar.

The ViewPort calibration must be performed at least once; it is saved internally into the LightConn and restored at every power-up.

Generally, there is no need to perform the ViewPort calibration many times unless the user changes dramatically his relative position to the TV or the IR bar, or experiences inaccurate targeting.

The user can apply the calibration at any time – even during a game – by accessing the LightConn's internal VMU menu (please refer to "**Embedded VMU menu**").

For applying the ViewPort calibration, open the LightConn's internal menu and select the "**Calibrate**" option.



The 2-step calibration will start and the VMU will show the first step:



In the first step, the user is instructed to aim the LightConn at the Top-Left corner of his TV and then pull the trigger. For best results, it is highly recommended to aim with as much accuracy as possible and make use of the gun's iron sight.



Recommended aiming point

If the aiming was unsuccessful (aiming was out of range or due to IR bar issues) the LightConn will respond with 3 consecutive beeps and wait for the user to repeat the aiming. If the aiming was successful, the LightConn will respond with a single beep and proceed with the second step:

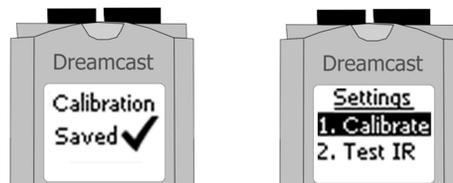


In this step, the user is instructed to aim the LightConn at the Bottom-Right corner of his TV and then pull the trigger. For best results, it is highly recommended to aim with as much accuracy as possible and make use of the gun's iron sight.



Recommended aiming point

If the aiming was unsuccessful (aiming was out of range or due to IR bar issues) the LightConn will respond with 3 consecutive beeps and wait for the user to repeat the aiming. If the aiming was successful, the LightConn will respond with a single beep and proceed with the next step; which is saving the calibration data and returning to the menu:



II. In-game Calibration

The **In-game** calibration refers to the classic gun calibration that every light gun game provides through its options menu. The In-game calibration **must** be performed at least once for every new game; it is usually saved internally into the virtual VMU as a normal game save (automatically or by user's selection) and restored at the next time that the game starts.

Generally, the user can repeat the In-game calibration as many times as he wants.

In case that the user re-applies a ViewPort calibration or experiences inaccurate aiming, then it is recommended to re-apply the In-game calibration as well.

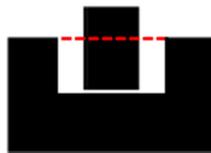


Ex. Confidential Mission [Gun Calibration option]

(GUN AIMING NOTES)



Incorrect Alignment, Front Post too Low



Incorrect Alignment, Front Post too High



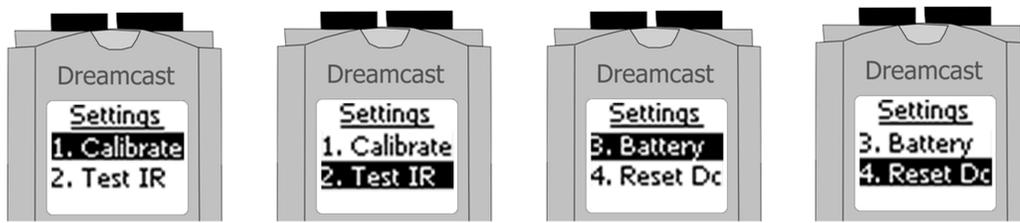
Correct Alignment, Front Post matches rear Posts

Embedded VMU menu

LightConn incorporates an embedded VMU menu for allowing the user to access certain functionality.

A VMU is required to be plugged into the LightConn and the user can access the menu at any time. During that time, the LightConn's controls are focused to the VMU menu and the Dreamcast will not receive any data until the menu is closed.

To bring up the VMU menu, simply press **B + START**. The LightConn will respond with 2 consecutive beeps and the menu will appear to the LCD screen:



VMU Menu controls:

- UP, DOWN: Navigate menu options
- LEFT, RIGHT: Navigate menu pages
- B: Cancel / Close menu
- Trigger: Select / Proceed

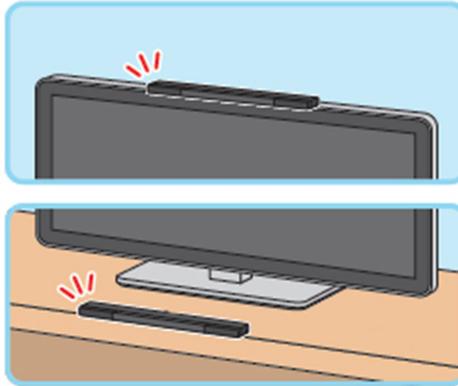
VMU Menu options:

1. **Calibrate**: Starts the **ViewPort** calibration (see "Calibrating the LightConn")
2. **Test IR**: Performs a test on the IR bar & camera functionality (see "Self-Testing")
3. **Battery**: Shows LightConn's battery state
4. **Reset DC**: Sends the "reset to menu" command to the Dreamcast.

How to Place the IR bar

The initial recommended distance for using the LightConn is 3 - 8 feet from the IR Bar.

Place the IR bar either on the television or under it (on the television stand) following the guidelines outlined below.



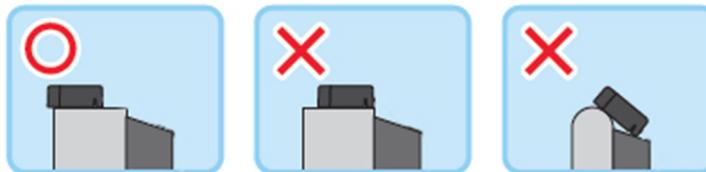
- Place the IR bar parallel to the television screen.



- Align the center of the IR bar with the center of the television screen.



- Place the IR bar lying flat and jutting out a little bit in front of the television or television stand.



- Ensure the IR bar is as close as possible to the screen.



Self-Testing

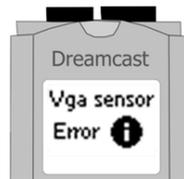
LightConn incorporates various self-checks in order to ensure proper functionality and warn the user in case of an issue. LightConn makes use of a VMU for informing the user, either with screen messages or with certain beeps.

A. Bluetooth connectivity

LightConn constantly checks for proper Bluetooth connection with its base unit. In case of a connection loss then the **“Waiting to connect...”** message will appear to the VMU’s screen.

B. VGA sensor

LightConn constantly checks for proper VGA sensor connection. In case of a connection error then the **“VGA sensor Error”** message will appear to the VMU’s screen.



In this case, the LightConn will continue to operate normally as a controller, but will not make proper aiming. It is recommended for the user to check that the VGA sensor is properly connected according to the given instructions (see **“Getting Started”**).

C. IR bar & camera

In case that the user experiences no-aiming issues, then he may apply an **IR Test** (see **“Embedded VMU menu”**) to ensure proper IR bar & camera functionality.

In this test, the user is instructed to point at the IR bar and pull the trigger.



- A single beep indicates that everything works normally
- Three consecutive beeps indicate that the IR bar is not working properly

Possible reasons for IR bar issues could be:

1. The IR bar is turned-off
2. The IR bar batteries are empty or at very low level
3. The IR bar is not placed properly (see **“How to Place the IR bar”**)
4. The user is either too close or too far from the IR bar
5. The user is not pointing at the IR bar

Frequently Asked Questions

1. *What video formats does LightConn support?*

At the moment, LightConn supports only Dreamcast's VGA output. The user must be using either a VGA box or a VGA cable. Other video formats (composite, RGB, S-Video) are not supported.

2. *Is it possible to have two LightConns at the same time for 2-player mode?*

Yes. LightConn supports 2-player mode and a user can have two LightConns connected at the same time. Only requirement is to connect the two VGA sensors to each other (like if there was only one) and then both of them as an intermediate connection.

3. *Is it possible to have both a LightConn and a DreamConn at the same time?*

Yes. LightConn and DreamConn are fully compatible and can co-exist in the same console with no issues.

4. *Will LightConn work with an overclocked Dreamcast?*

No. LightConn is not compatible and will not function properly with an overclocked Dreamcast.

5. *Is LightConn compatible with DC emulators (i.e. for NES or Master System)?*

If a game or emulator works with a normal wired light gun, then it will work with LightConn as well.

Contact Information

For any issues or concerns regarding the LightConn, please contact me at:

➤ **daioglouc@yahoo.gr**

Or through my eBay account (seller ID):

➤ **chrisvcpp**

THANK YOU FOR READING AND ENJOY THE LIGHTCONN!

