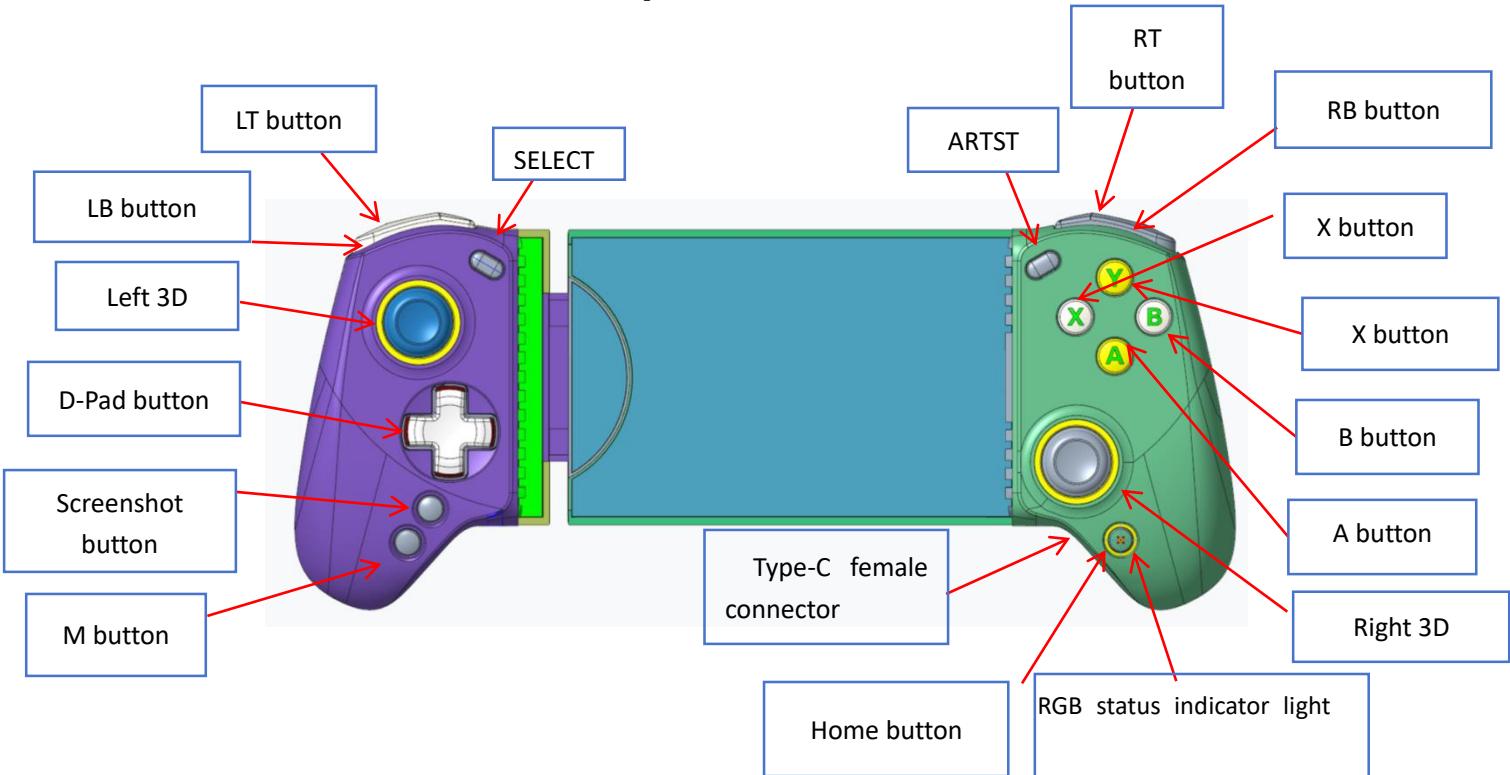


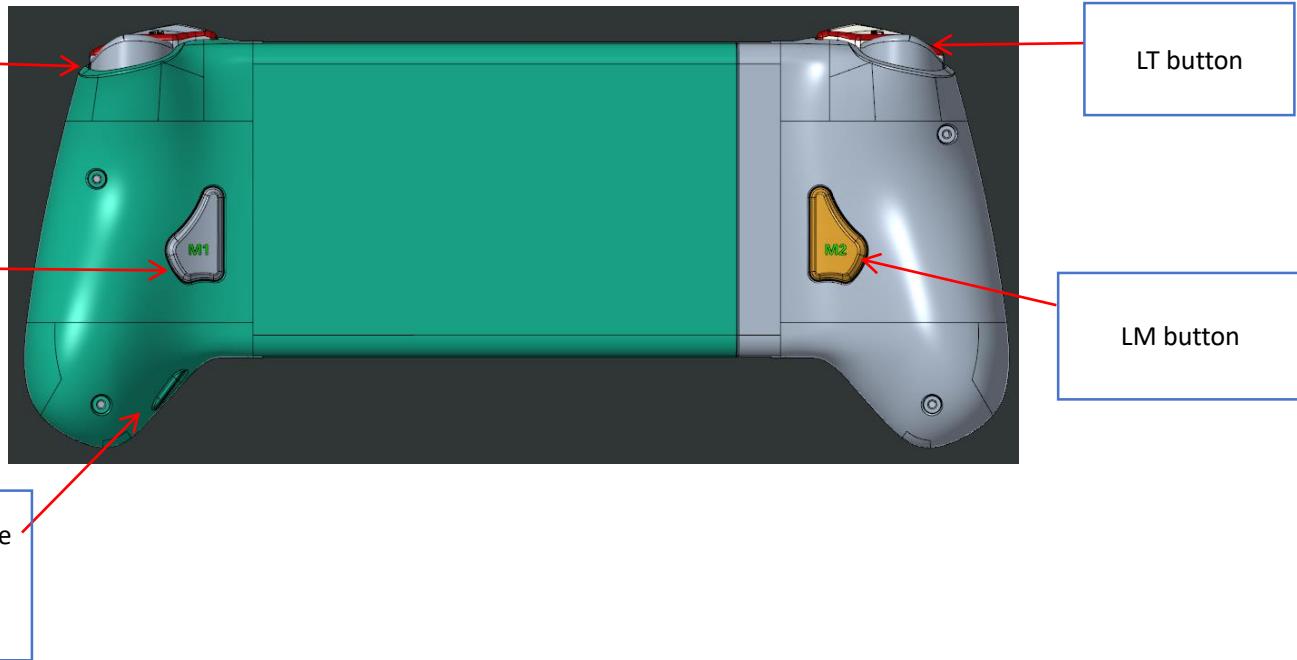
# GA9101 Wireless stretch controller manual

## 1. Scope of application

This product is suitable for Andriod/iOS mobile phones and tablets, with a built-in battery, and only supports Bluetooth connection. The mobile phone can be used with the app to set the controller parameters.

## 2. Product reference pictures





### 3. Products description

- \* Exclusive local game/cloud game launch desktop and controller configuration mobile software;
- \* The Xbox controllers are asymmetrical and has a misplaced joystick layout.
- \* Bluetooth 5.3 low-latency communication controller, supporting Xbox/PS/NS/HID multiple controller protocols;
- \* Firmware-level virtual touch, implemented through a mobile app, only compatible with Android devices;
- \* The maximum stretching length is 216mm, suitable for mobile phones and gaming tablets such as Y700, iPad mini 6/7;
- \* Asymmetric rotor motor, recreating the vibration feel of the original Xbox

controller;

- \* Equipped with a six-axis gyroscope, it can output native gyroscope signals in NS mode and can be mapped to the joystick in other modes;
- \* Equipped with back buttons, supporting firmware-level macro buttons;
- \* Support firmware upgrade could Turbo
- \* Supports OTA firmware;

## 4. Controller firmware parameters

project	definition
ABXY buttons	Conductive glue
Function buttons	Start button, Select button, screenshot button, home button,
joystick	Hall effect large joystick
trigger button	Hall trigger,button travel is more than 6.5mm
D-pad button	Switch button, supports replacing the D-pad button
Home button	Equipped with LED lights around to show the status of the device.
Mode button	Equipment
Vibration motor	Small motor with eccentric rotor shaft
Back buttons	One button on each side
gyroscope	Support
Type-C female port	Supports various common power inputs and prevents overload circuits.
Replace the D-pad buttons	Not supported
Mobile phone compatible	Android、iOS
Product size	Maximum stretch length
Bare metal weight	

## 5. Controller embedded function description

### 5.1 Controller Support Mode

Mode	Mode description
PS mode	It can be used on iPhone and Android. Use Vid and Pid with PS controller.
HID-Dinput mode	Support playing old games on Android devices and PC
Xinput mode	Using Vid and Pid of the Xbox controller requires adapting to multiple Android kernels.
Nintendo Switch mode	Simulate the Switch Pro controller and recognize the gyroscope in the simulator
Virtual mapping mode	Android-specific mode, you need to enter from the Android app

The factory default is Xinput mode.

### 5.2 Controller Mode Switching

Mode	
PS mode	In the off state, press Home+B and enter the pairing state
HID-Dinput mode	In the off state, press Home+A to enter the pairing state
Xinput mode	In the off state, press Home+X to enter the pairing state
Nintendo Switch mode	In the off state, press Home+Y to enter the pairing state
Virtual mapping mode	Manual connection in App

The controller needs to remember the mode it's in, and maintain the same mode after a power outage or restart.

- ★ Each mode requires a unique Bluetooth address, and each mode can be paired with a single device.

### 5.3 Power on/off and Bluetooth pairing

When the device is powered off, short press the home button to power it on. After powering on, it will be in the last successful pairing mode and in the reconnection state. If there is no other operation and the reconnection is not successful within 30 seconds, it will automatically shut down.

When the device is powered on, press and hold the home button for 10 seconds to power it off.

### 5.4 LED light indication

Mode	Home button light color
PS mode	Abxylute Purple (174,31,234. #AE1FEA)
HID-Dinput mode	Green (133,210,0. #85D200)
Xinput mode	Blue (0,131,221. #0083DD)
Nintendo Switch mode	Rose red (220, 37, 60. #DC253C)
Virtual mapping mode	Orange (252, 124, 29. #FC7C1D)

scene	Home button light logic
Bluetooth mode - reconnecting	Current mode color, breathing status
Bluetooth Mode-Pairing Status	Current mode color, fast flashing state
Bluetooth Mode-Successful Connection	Current mode color, always bright
Calibration & Macro button setting	red, breathing state

## 5.5 Summary of Scenario Mode Pattern Matching Practice

game scene	Android	iPhone
Moonlight	Xinput Mode PS Mode	Xinput Mode PS Mode
XGP	Xinput Mode PS Mode	Xinput Mode PS Mode
GFN	Xinput Mode PS Mode	PS Mode
Native game-support controller	Hid mode	PS Mode
Native Games - Touch	virtual touch mode	Not supported
Android emulator	Nintendo Switch Mode (Best, supports gyroscope and vibration) Hid Mode PS Mode	-----
IGBA/Delta		NS mode

## 5.6 Turbo Function

In any mode, clicking the M button and the function button (A/B/X/Y/L/L/ZR/ZL buttons) together can set the turbo function. After it has been set to turbo, clicking the current button combination again can set it to automatic turbo function. After the current buttons combination has been set to automatic turbo, clicking the combination can clarify the turbo function of the current button combination.

Press and hold the M button for 10 seconds to clear the turbo function of all buttons. After clearing successfully, the home button light will flash 4 times in succession and the motor will vibrate briefly once.

Each time you turn on the power, all the buttons will not have the turbo function.

The turbo speed is adjustable, defaulting to the slowest setting. There are three speed settings: 5, 10, and 20 turbo per second. Pressing the M button and the left joystick fully up speeds up one setting, while pressing the M button and the left joystick fully down slows down one setting. The settings cannot be cycled through. Each time a successful switch is made, the home button light flashes four times in succession, and the motor briefly vibrates.

## 5.7 Macro buttons

The default function of the left back button is to press the left joystick down, and the default function of the right back button is to press the right joystick down.

In any mode, press the M button and the left/right back button for two seconds to program the current back button macro. Once successfully entered, the home button light will illuminate red.

The following function buttons can be recorded: left joystick, right joystick, A, B, X, Y, left and right shoulder buttons, left trigger, right trigger, D-pad (requires recording 45-degree buttons), Select, and Start.

After recording, press the corresponding back button again to end the recording.

To clear the back button macro, press the back button immediately after starting recording. You can also set it to blank.

## 5.8 Motor Vibration Adjustment

Hold down the M-mode button while pressing the up arrow button on the D-pad button to increase the vibration intensity.

Hold down the M-mode button while pressing the down arrow button to decrease the vibration intensity.

Each time you adjust the motor, a vibration prompt appears based on the

current level. The motor vibration has four levels: 100%-70%-40%-0% (no vibration). The vibration intensity remembers the last adjustment. The default intensity is 70% upon initial use.

【Need to be linked with mobile app】

## 5.9 Quick Trigger

Press and hold the M Mode button while simultaneously pressing the left and right trigger buttons for 2 seconds to toggle the Quick Trigger feature on and off. Once enabled, the home button light will flash four times and the motor will briefly vibrate. Quick Trigger will be reset to off upon power-up.

[Requires integration with the mobile app]

## 5.10 Gyroscope

The gyroscope is enabled by default.

### 1) Gyroscope Mapping to Joysticks

Press and hold the M Mode button while simultaneously pressing L3 on the left joystick or R3 on the right joystick for 2 seconds to toggle gyroscope simulation on and off for the corresponding joystick. Each time you enable simulation, set the current angle as the initial gyroscope angle. Once successfully set, the home button light will flash four times in succession, and the motor will briefly vibrate once. Simulation will be reset to off upon power-up.

By default, the gyroscope controls up and down as the X-axis, and left and right as a mixed Z-Y axis. You can set the left and right direction on your phone. Options include Z-axis, Y-axis, and mixed Z-Y.

The gyroscope compensation value can be set via the mobile app. Switches and logic can also be configured directly via the mobile app.

[Requires integration with the mobile app]

## 5.11 Swapping the Left joystick and D-pad Functions

Pressing the M and Select buttons together for 2 seconds swaps the left joystick's function with the D-pad's. Repeated presses cycle through the two options. A successful switch results in a double flash on the LED and a short motor vibration. This setting is not retained and will return to default after a power cycle.

## 5.12 Joystick Circle and Square-Circle Drawing

Because this controller needs to handle a variety of usage scenarios, such as playing retro emulator games or older Windows games, it supports two joystick modes:

circle and circle-square.

Circle drawing should achieve a value as close to 0% as possible as measured on the gamepad-tester website.

Circle-square drawing should resemble the performance of a Steamdeck joystick, with a slightly squared circle.

Use the left shoulder button + Select + M buttons for two seconds to switch between modes. When the mode is successfully switched, the home button light will flash four times in succession and the motor will briefly vibrate once. This mode cycles through the settings. The default setting is circle drawing mode, and the last setting will be memorized.

This feature will also be adjustable on mobile devices in the future.

[Requires integration with the mobile app]

### 5.13 Shutdown due to no operation timeout

The controller will automatically sleep or shut down if there is no operation for 10 minutes. In sleep or shutdown state, press the home button to wake up.

## 5.14 Screenshot button function

Need to support screenshot function of Android and iOS.

Mode	Send button value
PS Mode	Touchpad press down
Android Mode	Android screenshot
Xinput Mode	-
Nintendo Switch Mode	NS controller screenshot button value

## 5.15 Calibration Mode

Press and hold the right shoulder button, start button, and home button for 2 seconds to enter calibration mode. Once in calibration mode, the home button light will turn red and breathe. You will then need to rotate the joystick at least three times, press the trigger button three times, place the controller on a level surface, and press the home button. The home button light will return to normal. The final press of the home button will reset the gyroscope to zero.

You can also initiate and exit calibration mode from the

mobile app.

[Requires integration with the mobile app]

### 5.16 BLE Naming

To facilitate mobile gamepad configuration and in-app identification when connecting to the controller's BLE, you need to name the BLE device "**abxy-s8XXXXXX**," where XXXXXX represents the last six digits of the Bluetooth address.

### 5.17 Resetting the Controller

To facilitate packaging and user operation after production line testing, a combination of buttons is required to reset the controller. With the power on, press and hold the left back button, right back button, left shoulder button, and home button for 5 seconds to reset the controller. Upon successful reset, the home button light will flash four times and the motor will briefly vibrate once.

### 5.18 Controller Light Intensity Adjustment

Press and hold the M-mode button while pressing the right D-pad button to increase the brightness.

Press and hold the M-mode button while pressing the left

D-pad button to decrease the brightness.

Brightness is divided into three levels: 100%-60%-20%. The brightness remembers the last adjustment, and the default brightness is 60%.

When the brightness is set to 20%, press and hold the M button + the left D-pad button for 5 seconds to adjust the LED brightness to 0%. The brightness returns to 20% when the M button is pressed again or after restarting the device.

## 5.19 Charging and Battery Display

Press and hold the M button and the Screenshot button for 2 seconds to view the current battery level. The Home button light flashes once from 0-25%, twice from 26-50%, three times from 51-75%, and four times from 76-100%.

When the battery is plugged in, the Home button light flashes white four times, accompanied by a short motor vibration. While charging, the red light cycles every 5 seconds. When the battery is fully charged, the white light cycles every 10 seconds. This logic is independent of the power-off and pairing logic and can be interrupted at any time. This logic also applies when the device is powered off and charging.

When the battery level is lower than 10%, the Home button

light will breathe red every 5 seconds. This logic is not restricted by the light-off logic and the pairing light logic, and can interrupt the current light-on logic at any time.

## 6. Electrical parameters

Operating Voltage: DC 3.4V-4.2V

Operating Current: 50mA (without light and no vibration), 70-100mA (with light on)

Battery Capacity: 1000mAh (500mAh lithium battery in each handle)

Continuous Use: 9-16 hours (use time varies depending on usage scenario)

Charging Voltage/Current: DC 5V / 300mA (DC 5V / 600mA for dual batteries)

Charging Time: 3-4 hours

Sleep Current: Less than 35uA

## **FCC warning statements:**

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 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.

The device has been evaluated to meet general RF exposure requirement.