Saved from manuals.plus.
Open the live page for links to other documents and user manuals.

SmartFly info YDLIDAR G2

YDLIDAR G2 Lidar Range Finder Sensor Module User Manual

Brand: SmartFly info | Model: YDLIDAR G2

1. Product Overview

The EAI YDLIDAR G2 is a compact and precise Lidar (Light Detection and Ranging) sensor module designed for indoor applications. It provides 360-degree laser ranging capabilities, making it suitable for environmental scanning, SLAM (Simultaneous Localization and Mapping) applications, and robot navigation.



Figure 1: The YDLIDAR G2 Lidar Sensor Module, a compact black cylindrical device with two blue illuminated sensors on its front face.

Key features of the YDLIDAR G2 include:

- **High Ranging Frequency:** Capable of up to 5000Hz ranging sample rate, ensuring rapid and accurate data acquisition.
- **Wide Ranging Range:** Offers a scanning range of up to 12 meters.

- **Configurable Scanning Frequency:** Adaptive scanning frequency from 5-12Hz, adjustable based on application requirements.
- **Compact Design:** With a height of only 4cm, it is designed for integration into various systems.
- **Industrial Grade Components:** Utilizes an industrial-grade brushless motor for stable and reliable performance.
- **Class 1 Laser Safety:** Meets FDA Class 1 laser safety standards and includes a self-developed early-warning safety system for automatic power-off under abnormal conditions.
- **Broad OS Support:** Compatible with Windows, Android, ROS (Robot Operating System), and Linux environments.

2. Package Contents and Setup

2.1 Shipping List

Upon unpacking, please verify that all items listed below are present and in good condition:



Figure 2: Contents of the YDLIDAR G2 package, including the Lidar unit, Type-C cable, mounting plate, screws, and a Serial to USB

- 1x YDLIDAR-G2 Lidar Unit
- 1x Type-C Cable
- 1x Mounting Plate
- 4x Screws
- 1x Serial to USB Adapter Board

2.2 Initial Setup

The YDLIDAR G2 is designed for ease of use, featuring complete drivers, SDK (Software Development Kit), API (Application Programming Interface), and comprehensive documentation to facilitate quick integration and development.

1. **Physical Connection:** Connect the YDLIDAR G2 to your host system (e.g., computer, robot controller) using the provided Type-C cable and Serial to USB adapter board. Ensure a secure connection.
2. **Mounting:** Use the included mounting plate and screws to securely attach the Lidar unit to your desired platform. Ensure the Lidar has an unobstructed 360-degree view for optimal performance.
3. **Driver Installation:** Install the necessary drivers for your operating system (Windows, Android, ROS, Linux). Refer to the official YDLIDAR documentation for specific driver installation instructions.
4. **SDK/API Integration:** Utilize the provided SDK and API to integrate the Lidar data into your application. Detailed examples and guides are available in the documentation.

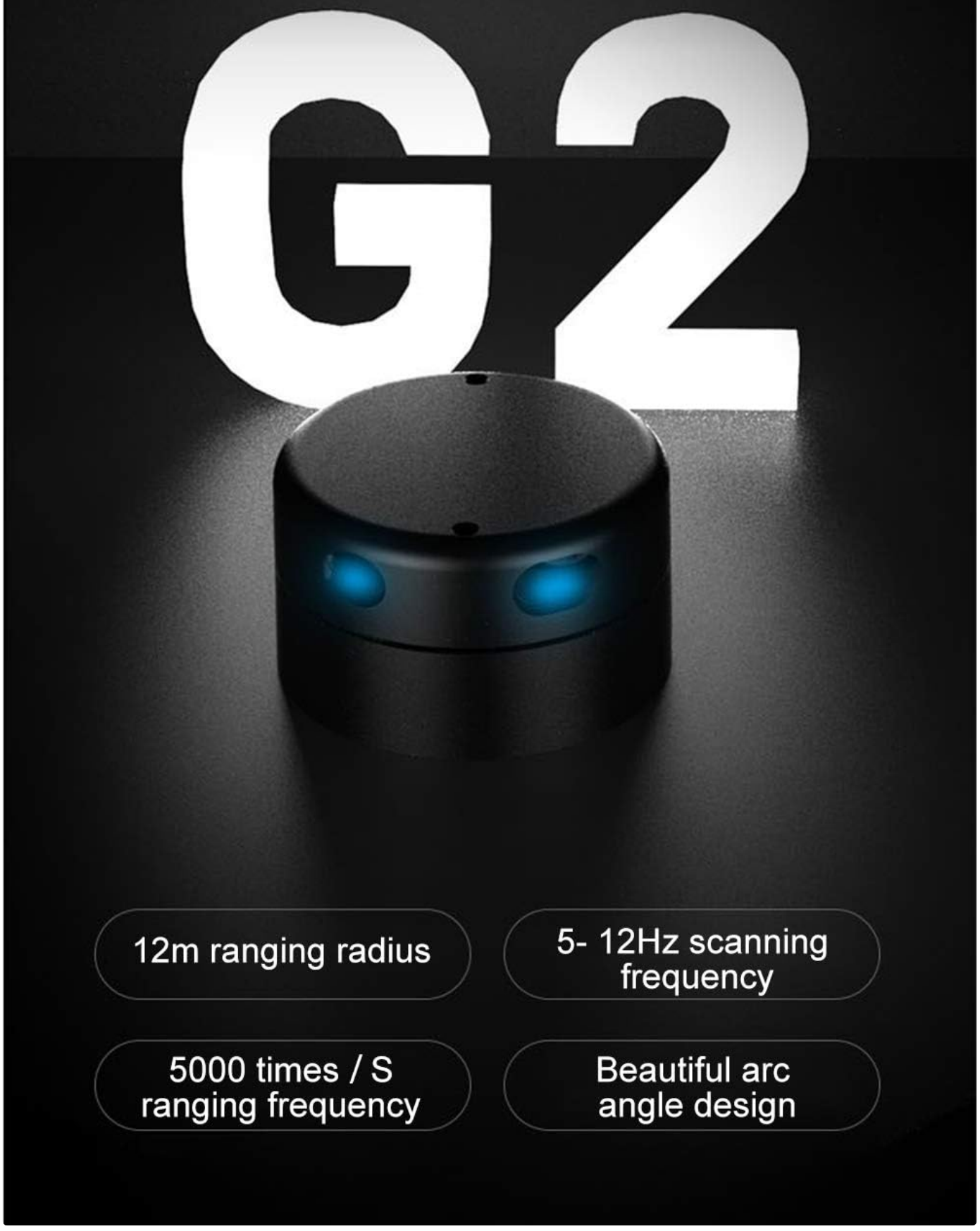
3. Operation

3.1 360-Degree Scanning

The YDLIDAR G2 performs a smooth, counter-clockwise 360-degree rotation, enabling it to accurately scan and map the contours of its surrounding environment. This continuous scanning provides a comprehensive view of the operational area.

YDLIDAR G2

360° Scanning Lidar



- 12m ranging radius
- 5- 12Hz scanning frequency
- 5000 times / S ranging frequency
- Beautiful arc angle design

Figure 3: The YDLIDAR G2 demonstrating its 360-degree scanning capability, showing its effective range and coverage.

3.2 High-Speed Ranging

Equipped with self-developed YD Image 3.0 technology, the G2 achieves a high ranging frequency of up to 5000 times per second. This allows for rapid and precise construction of environmental contours within its 12-meter range.

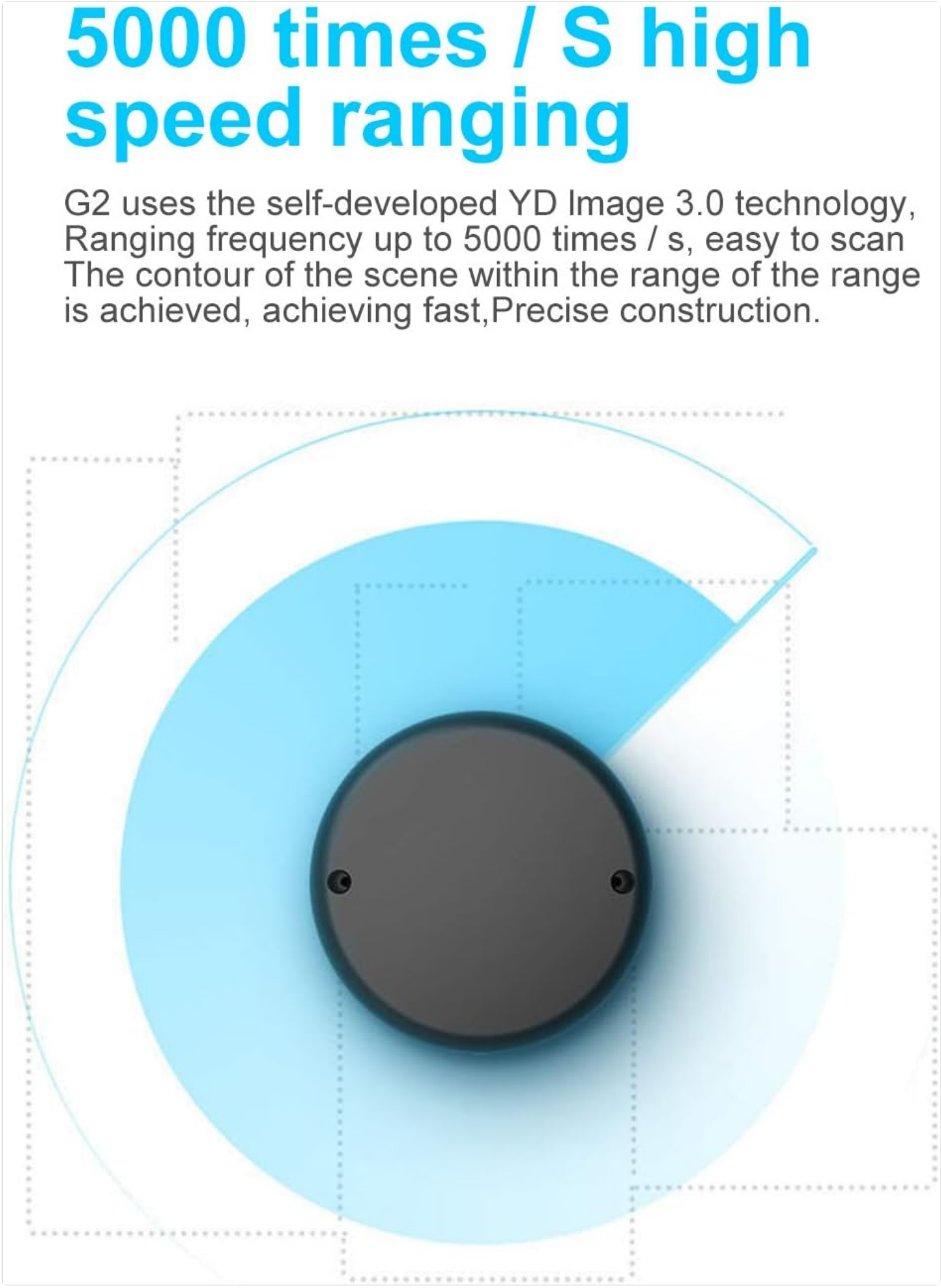


Figure 4: Diagram illustrating the high-speed ranging capability of the YDLIDAR G2, showing its rapid data acquisition for environmental mapping.

3.3 Adaptive Scanning Frequency

The G2 features an adaptive scanning frequency that can be adjusted independently from 5Hz to 12Hz. This flexibility allows users to optimize the Lidar's performance based on specific application requirements, such as speed or detail of scanning.



Figure 5: The YDLIDAR G2 operating in an indoor environment, demonstrating its ability to adapt its scanning frequency for optimal performance.

3.4 Optical Magnetic Technology for Data Transmission

The G2 incorporates innovative optical and wireless technology for high-speed data transmission. This design integrates wireless power supply and optical communication, effectively avoiding common laser radar fault rates and short lifespans associated with physical contact wear, ensuring lossless data transmission.

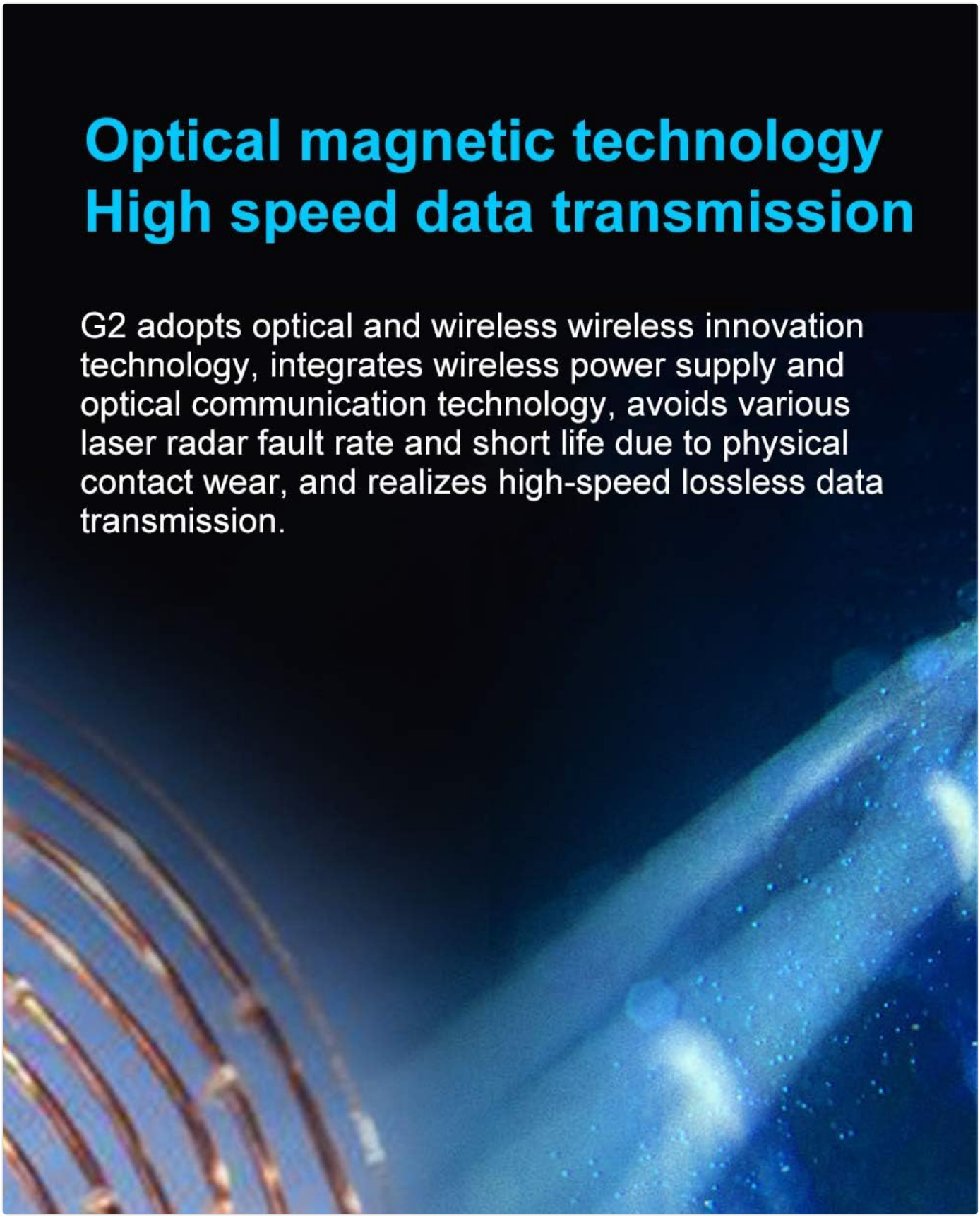


Figure 6: Visual representation of the YDLIDAR G2's optical magnetic technology, highlighting its advanced data transmission capabilities.

3.5 Class 1 Laser Safety

The YDLIDAR G2 uses an infrared point pulsed laser that complies with FDA Class 1 laser safety standards, ensuring it is safe for human eyes under normal operating conditions. Additionally, it features a self-developed early-warning safety system that can automatically power off the light source in abnormal situations to enhance safety.



Figure 7: The YDLIDAR G2 in an operational setting, emphasizing its adherence to Class 1 laser safety standards.

4. Maintenance

To ensure the longevity and optimal performance of your YDLIDAR G2, follow these maintenance guidelines:

- **Cleaning:** Gently clean the sensor's optical surfaces with a soft, lint-free cloth. Avoid abrasive materials or harsh chemicals that could scratch the lenses.
- **Environmental Protection:** While the G2 has an IP54 rating for water resistance, it is designed for indoor use. Avoid exposing the device to excessive moisture, dust, or extreme temperatures.
- **Physical Inspection:** Periodically check for any physical damage to the casing, cables, or mounting points. Ensure all connections are secure.

5. Troubleshooting

If you encounter issues with your YDLIDAR G2, consider the following common troubleshooting steps:

- **No Data Output:**
  - Verify all cable connections are secure.
  - Ensure drivers are correctly installed and recognized by your operating system.
  - Check power supply to the Lidar unit.
- **Inaccurate Readings:**
  - Ensure the Lidar's optical surfaces are clean and free from obstructions.
  - Confirm the Lidar is mounted stably and not subject to vibrations.
  - Check for strong external light sources or reflective surfaces that might interfere with readings.
- **Software/SDK Issues:**
  - Refer to the official YDLIDAR SDK documentation and examples for proper implementation.
  - Ensure your development environment is correctly configured.

For more detailed troubleshooting or technical support, please refer to the comprehensive documentation provided with the SDK or contact SmartFly Tech support.

6. Specifications

Feature	Specification
Brand	SmartFly info
Model Number	YDLIDAR G2
Measuring Range	12 Meter
Ranging Sample Rate	Max. 5000Hz
Scanning Frequency	Configurable 5-12Hz
Laser Grade	Class 1 (FDA Compliant)
Item Weight	189 Grams (6.7 ounces)

Feature	Specification
Material	Metal
Color	YDLIDAR G2 (Black)
Water Resistance Level	Water Resistant (IP54)
Package Dimensions	5.51 x 4.25 x 3.31 inches
Manufacturer	SmartFly Tech
First Available Date	November 23, 2019
UPC	020064464228

7. Support and Resources

For further assistance, technical documentation, SDKs, APIs, and community support, please refer to the official resources provided by SmartFly Tech. Regular updates and additional information may be available on their official website.

While specific warranty details are not provided in this manual, please retain your proof of purchase for any warranty claims or service requests. Contact the seller or manufacturer directly for warranty information.

© 2024 SmartFly info. All rights reserved.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question

Open the live page

https://manuals.plus/asin/B0818WZVZC

More documents and user manuals: **https://manuals.plus/**