Fixed Mount Scanner

- FC80 -



User Manual

Version 1.0

Revision History

Date	Change Description	Version
2025/11/7	Initial Version	1.0

Preface

About This Manual

Thank you for purchasing the Unitech product.

This manual explains how to install, operate and maintain our product.

No part of this publication may be reproduced or used in any form, or by any electrical or mechanical means, such as photocopying, recording, or information storage and retrieval systems, without permission in writing from the manufacturer. The material in this manual is subject to change without notice.

Regulatory Compliance Statements

FCC Warning Statement

This device 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 with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference with 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.

1. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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2. This device complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. To maintain compliance with FCC RF exposure requirements, avoid direct contact to the transmitting antenna during transmitting.
3. Any changes or modifications (including the antennas) made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment.

FCC Label Statement

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.
2. This device must accept any interference received, including interference that may cause undesired operation.

RF Radiation Exposure Statement

For body contact during operation, this device has been tested and meets FCC RF exposure guidelines when used with an accessory that contains no metal and that positions the handset a minimum of 1.0 cm from the body.

Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

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RoHS Statement

This device conforms to RoHS (Restriction Of Hazardous Substances) European Union regulations that set maximum concentration limits on hazardous materials used in electrical and electronic equipment.

Waste electrical and electronic equipment (WEEE)



Unitech has set up a policy and process to meet the 2012/19/EU concerning electronic waste disposal.

For more detailed information of the electronic waste disposal of the products you have purchased from Unitech directly or via Unitech's resellers, you shall either contact your local supplier or visit us at: https://portal.Unitech.eu/public/WEEE

CE RF Exposure Compliance

For body-worn operation, this device has been tested and meets the ICNIRP guidelines and the European Standard EN 62209-2, for use with dedicated accessories, SAR is measured with this device at a separation of 0.5 cm to the body, while transmitting at the highest certified output power level in all frequency bands of this device. Use of other accessories which contain metals may not ensure compliance with ICNIRP exposure guidelines.

CE Mark Warning

CE

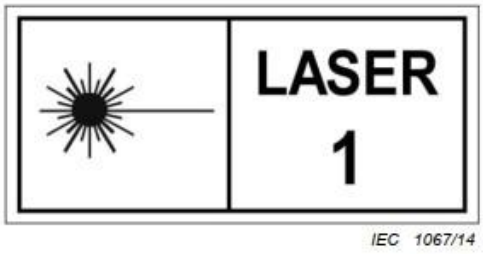
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Laser Information

This Unitech product complies with the FDA performance standards for laser products, except for conformance with IEC 60825-1 Ed. 3 and IEC 60601-2-22 Ed. 3.1, as described in Laser Notice No. 56, dated May 8, 2019.
This product contains an internal Visible Laser Diode (VLD) whose emissions do not exceed the maximum limits established by the above regulations.
The laser safety warning label required by the DHHS/IEC for the Unitech product's optional laser scanner module is located on the memory compartment cover, on the back of the unit.

* Laser information applies only to the products with laser components.

CAUTION! Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser light. Use of optical instruments with the scanner, including binoculars, microscopes, and magnifying glasses, will increase eye damage. This does not include eyeglasses worn by the user.



LED Information

The Unitech product contains LED indicator(s) or LED ring whose luminance is not harmful to human eyes during normal operation, user maintenance or prescribed service operations.

*LED information only applies to the products with LED components.

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Adapter Notice

1. Please do not leave the power adapter in the socket when it is not connected to your Unitech product for charging.
2. Please remove the power adapter when the battery is fully recharged.
3. The bundled power adapter that comes with your Unitech product is not meant to be used outdoors. An adapter exposed to water or rain, or a very humid environment can cause damage to both the adapter and the product.
4. Please only use the bundled power adapter or same specification of adapter to charge your Unitech product. Using the wrong power adapter can damage your Unitech product.

** The message above only applies to the product connected to the adapter.*
For the products without using the adapters, please refer to the specification of each product.

Product Operation and Storage Notice

The Unitech product has applicable operation and storage temperature conditions. Please follow the limitation of suggested temperature conditions to avoid failure, damage or malfunction.

**For applicable temperature conditions, please refer to the specification of each product.*

Personnel Requirement

Quality requirements for installation and maintenance personnel: Qualification certificate or working experience in weak current system installation and maintenance, and relevant working experience and qualifications. Besides, the personnel must possess the following knowledge and operation skills:

- The basic knowledge and operation skills of low voltage wiring and low voltage electronic circuit connection.
- The ability to comprehend the contents of this Manual.

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Worldwide Support

Unitech's professional support team is available to quickly answer questions or assist with technical-related issues. Should an equipment problem occur, please contact the nearest Unitech regional service representative.

For complete contact information please visit the Web sites listed below:

Taipei, Taiwan – Headquarters	**Europe & Africa**
Tel: +886-2-89121122 **E-mail:** info@hq.ute.com **Address:** 5F, No. 136, Lane 235, Baoqiao Road, Xindian District, New Taipei City 231, Taiwan (R.O.C.) **Website:** http://www.ute.com	**Tel:** +31-13-4609292 **E-mail:** info@eu.ute.com **Address:** Kapitein Hatterasstraat 19, 5015 BB, Tilburg, the Netherlands **Website:** http://eu.ute.com
Mainland China	**Japan**
Tel: +86-59-2310-9966 **E-mail:** info@cn.ute.com **Address:** Room401C, 4F, RIHUA International Mansion, Xinfeng 3nd Road, Huoju Hi-tech District, Xiamen, Fujan, China **Website:** http://cn.ute.com	**Tel:** +81-3-62310896 **E-mail:** info@unitech-japan.co.jp **Address:** 3F Tosei Building, 18-10, Nihonbashi-Hakozakicho, Cyuouku, Tokyo 103-0015, Japan **Website:** https://jp.ute.com
Asia & Pacific / Middle East	**Latin America**
Tel: +886-2-27911556 **E-mail:** info@tw.ute.com **Address:** 4F., No. 236, ShinHu 2nd Rd., NeiHu Chiu, 114, Taipei,Taiwan **Website:** http://apac.ute.com	**Tel:** +52-55-5171-0528 **E-mail:** info@latin.ute.com **Address:** Rio Becerra 154 Piso 3 Colonia Napoles, Delegacion Benito Juarez, CP 03810 Mexico **Website:** http://latin.ute.com
North America	**Please scan QR Code to visit us:**
Tel: +1-714-8916400 **E-mail:** info@us.ute.com / info@can.ute.com **Address:** 6182 Katella Ave, Cypress, CA 90630, USA **Website:** http://us.ute.com	

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Warranty Policy

The following items covered under the Unitech Limited Warranty are free from defects during normal use:

The warranty period is varied from each country. Please consult with your supplier or Unitech local office for actual length of warranty period to your purchased product.

Warranty becomes void if equipment is modified, improperly installed or used, damaged by accident or neglect, or if any parts are improperly installed or replaced by the user.

Disclaimer

To the maximum extent permitted by applicable law, this manual and the product described, with its hardware, software and firmware, are provided “as is” and “with all faults and errors”. Unitech makes no warranties, express or implied, including without limitation, merchantability, satisfactory quality, or fitness for a particular purpose. The use of the product by you is at your own risk. In no event will Unitech be liable to you for any special, consequential, incidental, or indirect damages, including, among others, damages for loss of business profits, business interruption, or loss of data, corruption of systems, or loss of documentation, whether based on breach of contract, tort (including negligence), product liability, or otherwise, in connection with the use of the product, even if Unitech has been advised of the possibility of such damages or loss.

You acknowledge that the nature of internet provides for inherent security risks, and Unitech shall not take any responsibilities for abnormal operation, privacy leakage or other damages resulting from cyber-attack, hacker attack, virus infection, or other internet security risks. However, Unitech will provide timely technical support if required. You agree to use this product in compliance with all applicable laws, and you are solely responsible for ensuring that your use conforms to the applicable law. Especially, you are responsible, for using this product in a manner that does not infringe on the rights of third parties, including without limitation, rights of publicity, intellectual property rights, or data protection and other privacy rights. You shall not use this product for any prohibited end-uses, including the development or production of weapons of mass destruction, the development or production of chemical or biological weapons, any activities in the context related to any nuclear explosive or unsafe nuclear fuel-cycle, or in support of human rights abuses.

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The performance data in this publication is based on Unitech's internal research and evaluation. Actual data may vary depending on specific configuration and operating conditions and Unitech shall not bear the consequences arising therefrom.

In the event of any conflicts between this Manual and the applicable low, the latter prevails.

Safety Instruction

These instructions are intended to ensure that the user can use the device correctly to avoid danger or property loss.

- Read and follow these safety instructions before installing, operating and maintaining the device.
- To ensure personal and device safety, when installing, operating and maintaining the device, follow the signs on the device and in this Manual, and all safety instructions described here.
- The note, warning and danger items in this Manual do not represent all the safety instructions that should be observed, but only serve as a supplement to all the safety instructions
- The device should be used in an environment that meets the design specifications, otherwise it may cause malfunctions, and malfunctions or component damage caused by non-compliance with relevant regulations are not within the scope of the device's quality assurance
- Our company will not bear any legal responsibility for personal safety accidents and property losses caused by abnormal operation of the device.

Electromagnetic Interference Prevention

- To avoid the accumulation of static electricity, make sure the device is well grounded to protect the internal electrical components.
- The power cable, data cable, signal cable, etc. of device must be wired separately. Make sure to ground them if the wiring groove is used to separate the wiring and the wiring groove is metal.
- During the installation and use of the device, high voltage leakage must be avoided.

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- Do not route the device together with other equipment (especially servo motors, high-power devices, etc.), and control the distance between cables to more than 10cm. Make sure to shield the cables if unavoidable.
- The control cable of the device and the power cable of the industrial light source must be wired separately to avoid bundled wiring.
- When connecting the device and metal accessories, they must be connected firmly to maintain good conductivity.
- Use a shielded network cable to connect to the device. If you use a self-made network cable, make sure that shielding shell at the aviation head is well connected to the aluminum foil or metal braid of the shielding cable.
- During the wiring process, evaluate the wiring space reasonably, and do not pull the cables hard, so as not to damage the electrical performance of the cables.
- The unused cables of the device must be insulated.
- Use the power adapter to supply power to the device separately. If centralized power supply is necessary, make sure to use a DC filter to filter the power supply of the device separately before use.
- If the device is powered on and off frequently, it is necessary to strength the voltage isolation, and consider adding a DC/DC isolation power supply module between the device and the adapter.

Caution

- In the use of the device, you must be in strict compliance with the electrical safety regulations of the nation and region
- Use the power adapter provided by the official manufacture, and the power supply should meet LPS or PS2 requirements according to IEC 60950-1 or IEC 62368-1 standard. For the specific requirements of the power adapter, please refer to the device's specifications.
- To reduce the risk of fire or electric shock, do not expose the device to rain or moisture.
- Make sure that the device is firmly fixed when installing it in the use environment.
- The plug or docket of the device is for disconnecting the power supply, and do not cover it.
- Make sure to disconnect the power supply during wiring, disassembly and other operations, and do not operate the device with electricity. Otherwise, there will be a danger of electric shock.

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- The device may contain laser for aiming purpose. In this condition, do not look directly into the laser module window, or it may cause irreversible damage to eyes.
- Avoid aiming the lens at strong light such as lighting, sunlight, or laser beams etc… otherwise the image sensor may be damaged.
- Do not touch the lens or image sensor or protective window directly, if cleaning is necessary, please slightly dampen a soft clean cloth with alcohol and gently wipe off the contamination.
- If the device does not work properly, please contact your dealer or sales representative. Never attempt to disassemble the device yourself. We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.
- Please dispose of the device in strict accordance with the relevant national or regional regulations and standards to avoid environmental pollution and property damage.
- Check whether the device's package is in good condition, whether there is damage, intrusion, moisture, deformation, etc. before unpacking.
- Check the surface of the device and accessories for damage, rust, bumps, etc. when unpacking.
- Check whether the quantity and information of the device and accessories are complete after unpacking.
- Store and transport the device according to the storage and transport conditions of the device, and the storage temperature and humidity should meet the requirements.
- It is strictly prohibited to transport the device in the combination with items that nay affect or damage the device.
- Please read the manual and safety instructions carefully before installing the device.
- The device should not be placed with exposed flame sources, such as lighted candles.
- Avoid installing the device in a vibration or shock environment, and keep it away from electromagnetic interference sites. Ignoring this may cause damage to the device.
- Do not directly touch the heat dissipation parts of the device to avoid burns.
- Do not use the device in the high temperature, low temperature or high humidity environment. For specific temperature and humidity requirements, please refer to the device's specifications.
- Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.
- To avoid electromagnetic interference, this product should not be installed or used in residential environments.

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Privacy Policy

This policy is developed in accordance with EN 18031 and the GDPR and applies to all Unitech products and services, including but not limited to rugged mobile devices, barcode scanners, mobile applications, and backend platform systems. Unitech respects your privacy and is committed to processing personal data in accordance with the principles of lawfulness, fairness, transparency, and data minimization.

Data Controller

Company Name: Unitech Electronics Co., LTD

Address: 8F, No. 122, Ln. 235, Baoqiao Rd., Xindian Dist., New Taipei City 231, Taiwan

Email: info@hq.ute.com

Website: https://www.ute.com

A. Lawful Basis of Processing

We collect and process your personal data only when there is a lawful basis to do so. These bases include:

1. To fulfill contractual obligations (e.g., account registration, device activation, after-sales support)
2. To comply with legal obligations (e.g., tax compliance, security incident reporting)
3. Based on your explicit consent (e.g., enabling location or integrating with third-party platforms)
4. To pursue legitimate interests of Unitech or third parties (e.g., abuse detection, service security)

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B. Categories of Personal Data Collected

We may collect your information through:

1. Information you voluntarily provide (e.g., repair requests, registration, technical support)
2. Data automatically generated during your use of our products or services
3. Information lawfully obtained from authorized third parties

Types of data include:

- Device Information: such as serial number, IMEI, MAC address, OS, and model name
- Application and Log Data: including installed application lists, usage records, error logs, and crash reports
- Operational Data: such as scanned barcode content, photos, GPS information, Wi-Fi or mobile IP address, and usage timestamps
- Account Data: including system login username and email address (as configured by authorization)
- Biometric Data: such as facial or fingerprint recognition (stored locally on the device and not uploaded)
- Location Information: GPS, Wi-Fi, or cell tower data collected when location services are enabled
- Configuration Parameters: system and application settings stored locally or on cloud service servers
- Mobile Network Information: such as ICCID, IMSI, carrier name, mobile network type, SIM slot usage, and phone number (if available). This data is primarily used for mobile communication features, device identification, and diagnostic analysis

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C. Use of Personal Data

When you use our products or services, we may process your personal data for the following purposes:

1. Providing core product functions, such as login, barcode scanning, data synchronization, and location services
2. Assisting with account registration, preference settings, and device activation
3. Delivering system notifications and update alerts (e.g., firmware upgrades)
4. Analyzing error data for device diagnostics and maintenance support
5. Integrating third-party enterprise management platforms (e.g., MDM or cloud systems), based on your consent
6. Enabling security authentication and device identification
7. Enhancing the overall user experience and optimizing our products and services, including statistical analysis and usage trend research

Unitech does not use your personal data for targeted advertising or profiling, nor do we sell your data to any third parties.

D. Delegated Processing, Sharing, Transfers, and Disclosures of Personal Data

We may process or share your personal data under the following circumstances:

1. Delegated Processing: We may engage trusted third-party service providers to assist with device operations, remote support, or related services. In such cases, we will enter into data protection agreements with those vendors and require that they process personal data in accordance with this policy.
2. Data Sharing: We do not share your personal data with third parties without your prior consent, unless required by law or when the service you use integrates with third-party platforms (e.g., MoboLink, device management systems).
3. Data Transfers: In the event of a corporate merger, acquisition, or bankruptcy that results in data transfer, we will notify you and ensure that the recipient continues to comply with this privacy policy.
4. Public Disclosure: Your data may be disclosed only when required by applicable law or with your explicit authorization, such as during regulatory investigations or legal proceedings.

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E. Protection of Children’s Personal Data

This product and its associated services are not intended for children under the age of 13, and we do not knowingly collect personal data from children. If we become aware that personal data from a child has been inadvertently collected, we will take prompt steps to delete the data and cease any further processing. Parents or legal guardians may contact us to request deletion.

F. Security Measures for Personal Data Protection

We are committed to ensuring the security of your personal data and have implemented a range of measures, including but not limited to, the following:

1. Use of encrypted communication and secure storage technologies
2. Implementation of user authentication and access control mechanisms
3. Logging of data access and monitoring of abnormal behavior
4. Restriction of access to personal data to authorized personnel only, all of whom are bound by confidentiality obligations
5. Regular vulnerability scanning, patching, and risk assessments

In the event of a data breach, we will take appropriate action and notify the relevant authorities in accordance with applicable laws and regulations.

G. Data Accuracy and Integrity

We collect and process personal data solely for specified and legitimate purposes. Measures such as data validation, user authorization, and system controls are implemented to ensure the accuracy, integrity, and timeliness of the information.

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H. Cross-Border Transfer of Personal Data

Some of our servers or services may be located outside your jurisdiction. Where cross-border transfer of personal data is necessary, we will comply with applicable local laws and implement appropriate safeguards, such as Standard Contractual Clauses (SCCs), encryption measures, or security assessments, to ensure the confidentiality and integrity of your information.

I. Data Retention

We retain your personal data only for as long as necessary to fulfill the purposes for which it was collected. Once the retention period has expired, we will delete, anonymize, or de-identify the data in accordance with its nature and applicable legal requirements, ensuring that it can no longer be identified or reconstructed.

Certain types of data—such as transaction records, customer support logs, and error reports—may be retained for longer periods to comply with legal obligations, auditing requirements, information security policies, dispute resolution needs, or service improvement purposes. We regularly review the necessity of such retention in accordance with data minimization and security principles.

J. Personal Data Rights

You have the following rights regarding your personal data:

- To request access to the personal data we hold about you
- To request rectification, supplementation, or erasure of inaccurate or outdated data
- To withdraw your consent to data processing (where applicable)
- To request data portability or the deletion of your account

To exercise any of the above rights, please contact us at info@hq.ute.com. In accordance with the GDPR, we will respond to your request within 30 days of receipt. If your request is particularly complex or numerous, we may extend this period by up to an additional two months and will inform you of the reason for the extension within the first month.

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K. Privacy Policy Updates

This Privacy Policy may be updated from time to time to reflect changes in our business practices or legal obligations. If any material changes are made to the purposes or scope of personal data usage, we will notify you in accordance with applicable legal requirements. The latest version will be incorporated into the product user manual.

L. Disclaimer

While we implement reasonable and appropriate security measures to protect your personal data, you acknowledge that no system can eliminate all risks inherent in operating over open networks. Unitech shall not be held liable for any unauthorized access, use, disclosure, or destruction of personal data caused by third parties beyond our control. You are responsible for safeguarding your account credentials, and Unitech will not be held liable for any data breach or damages resulting from user negligence.

M. Contact Us

If you have any questions, suggestions, or requests regarding this Privacy Policy or the protection of your personal data, please contact us using the information below:
Email: info@hq.ute.com
Website: https://www.ute.com/en/contact

Note:

Please read this Privacy Policy carefully before using this product. You may choose whether to enable certain features (such as location services or network synchronization). By enabling such features, you consent to the collection and processing of your personal data as necessary for the operation of those features.

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Chapter 1 - Overview

1.1 Package

Please make sure the following contents are in the FC80 gift box. If something is missing or damaged, please contact your Unitech representative.

The Package Contents

- FC80 Fixed Mount Reader with RS232 Cable
- Power Adapter

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1.2 Product Detail

Note: *Appearance here is for reference only. Refer to the device's specification for detailed dimension information.*

- Device Body



No.	Name	Description
1	Screw Hole	M3 screw holes for installing and fixing the code reader, total 4 screws holes with 2 at each side.
2	LNK Indicator	It is network status indicator. The indicator will be on if there is network connected during the powering process, it will be off after the powering completed.
3	Decoding Indicator	It is decoding indicator, green stands for good reading.
4	Power Indicator	It is power indicator. The indicator is green when the device operates normally
5	Trigger Button	Press this button will trigger the device once
6	Laser Aimer	Laser aimer is used for assisting camera to capture the target.
7	Internal Illumination	The device contains internal illumination to illuminate the target. Some models have a polarizer on the window, but not all.

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- Cable Wire Sequence Table

DB15 Male		DB9 Female	RJ45 Male	I/O	Power
TP	1		1		
24V_TREM	2				VCC
IN1	3			1 (Red)	
IN_COM	4			2 (White)	
OUT1	5			3 (Green)	
NC	6				
OUT2	7			4 (Black)	
NC	8				
OUT_COM	9			5 (Yellow)	
GND	10	5			GND
TN	11		2		
TXD	12	2			
RP	13		3		
RXD	14	3			
RN	15		6		

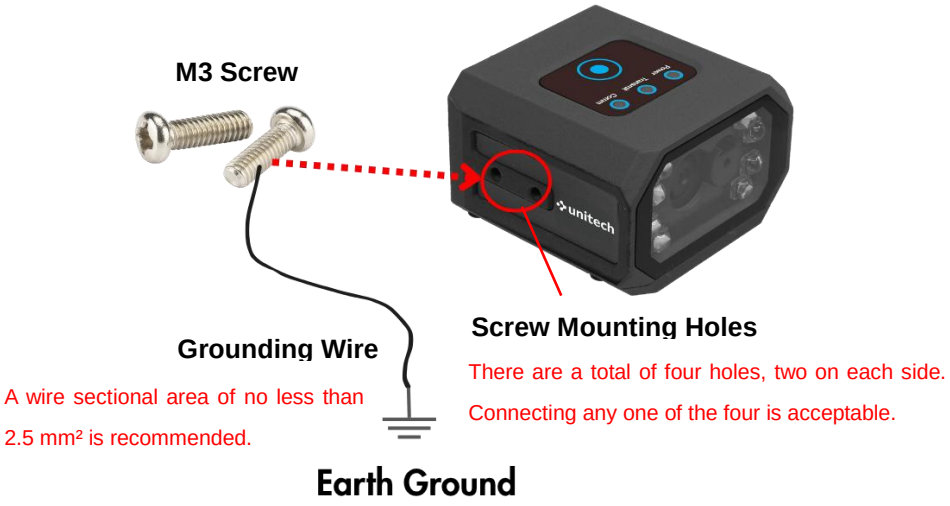
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1.3 Installation and Wiring

1.3.1 Device Installation

Note: *Make sure that the device is grounded, either by mounting the device to a fixture that is electrically grounded or by attaching a wire from the device's mounting fixture to Earth ground. If using a grounding point on the side of the device, attach it to one of the four mounting points. Use a digital multimeter to validate the grounding. Below shows one of the grounding methods.*

Note: *When the product is affected by ESD (Electrostatic Discharge), it may require a power cycle or program restart.*

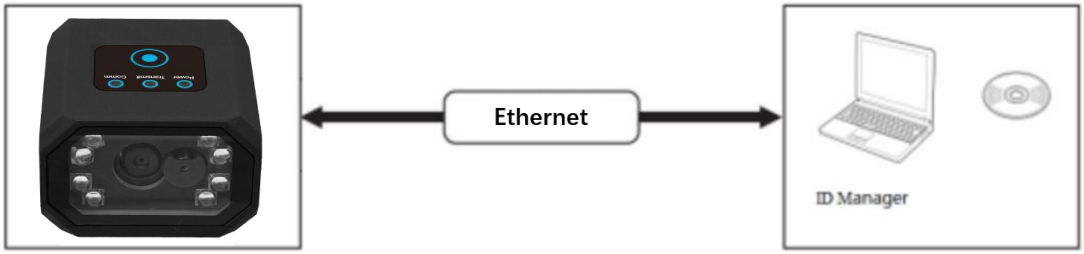


Installation Steps:

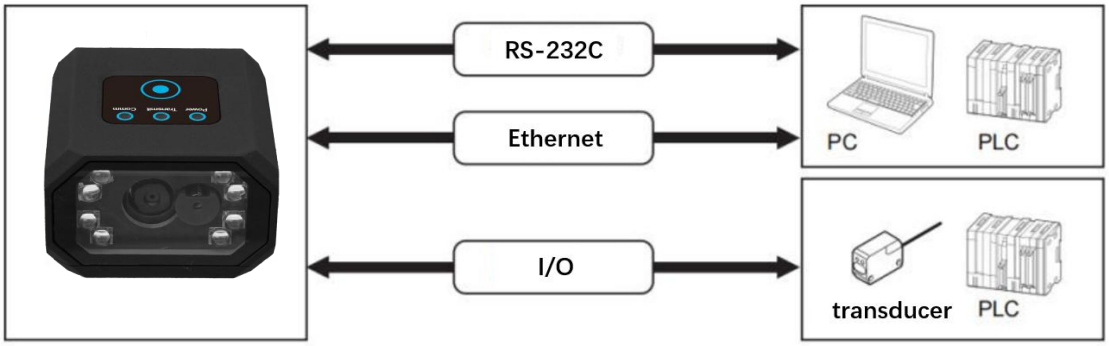
1. Bond the grounding wire around the screw.
2. Drive the screw into the mounting hole of the device.

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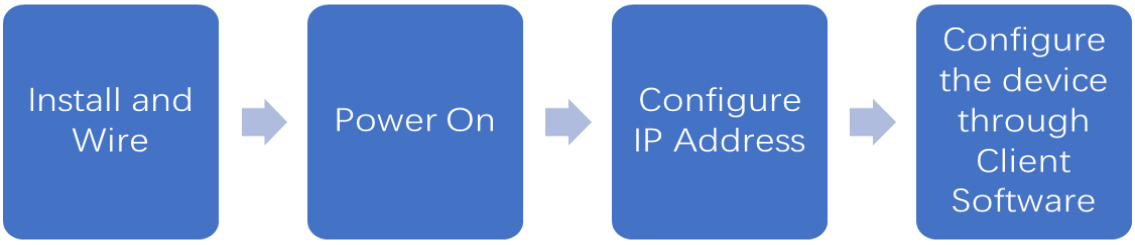
- When configuring the device, use ethernet cable to connect the device to the PC.



- When using the device, use RS-232C, Ethernet or I/O to connect the device to PC/PLC.



- Configuration Process.

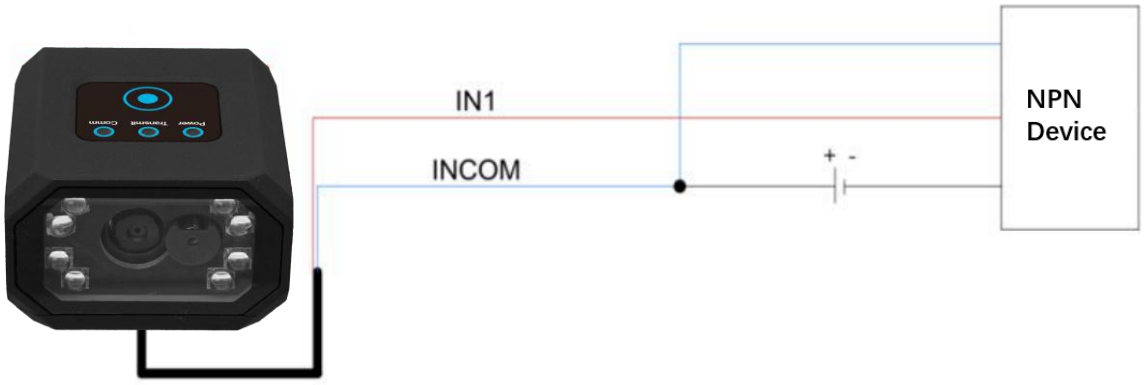


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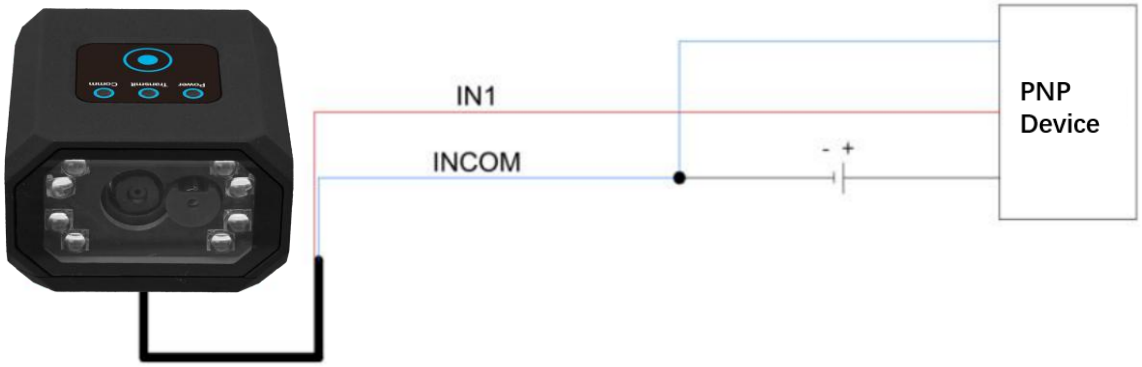
1.4 Device Wiring

1.4.1 Input Signal

- NPN Wiring

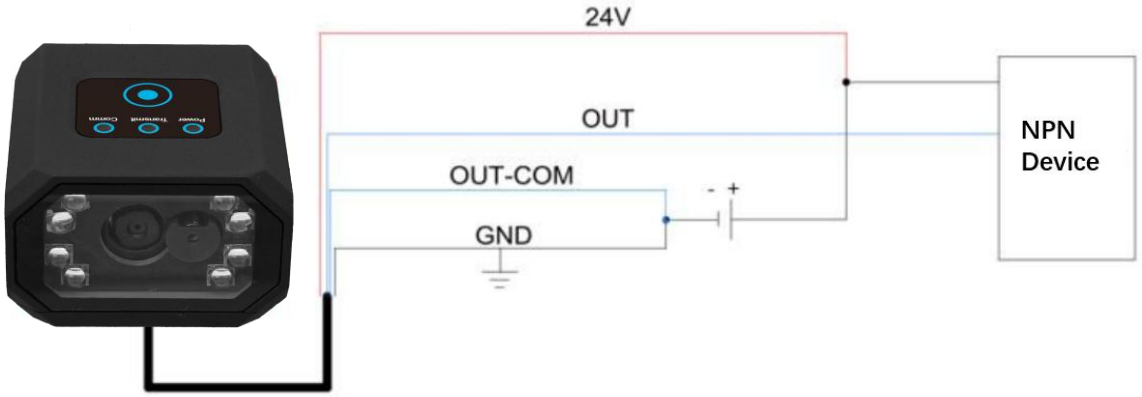


- PNP Wiring



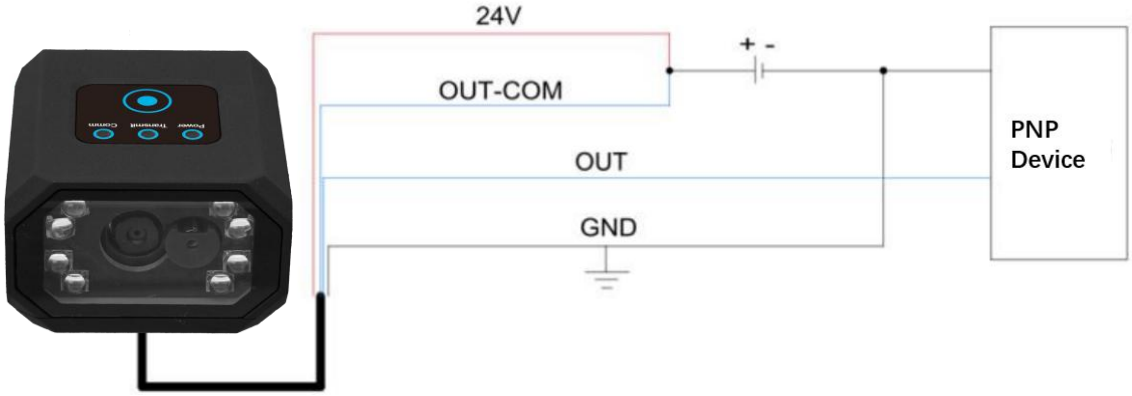
1.4.2 Output Signal

- NPN Wiring



- PNP Wiring

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Chapter 2 - Device Connection

2.1 Introduction

The device is required to connect to a client software for device's configuration. This section introduces the steps for client software installation, PC and device network configuration, and device connection to the client software.

2.1.1 Install Client Software (optional)

Note:

- *The graphic user interface may differ by different versions of client software you use or different device models you get.*
- *If the client software you have is installation-free version, then you can ignore this installation section and directly go to the PC and device network configuration.*

Steps:

1. Double click the installation .exe file to start installing the client software
2. Follow the installation instructions according to the interface prompts till completion.

2.1.2 Turn off Firewall

To ensure stable client running and image transmission, you are recommended turning off Windows firewall before using the client software. For detailed steps to turn off firewall, please refer to related Microsoft Windows system's instruction.

2.1.3 Set PC Network

To ensure stable image transmission and normal communication between the PC and the device through client software, you need to set the PC network before using the client software. You can manually set the PC IP address or let PC obtain the IP address automatically.

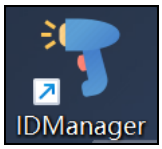
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2.1.4 Set Device Network

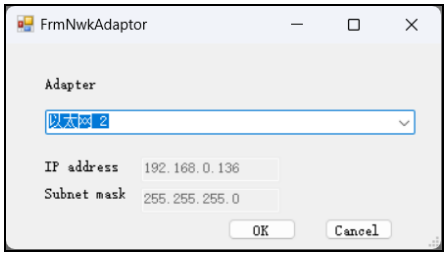
The device can be configured by the client software only when the device is in the same network segment with the PC where the client software is installed.

Steps:

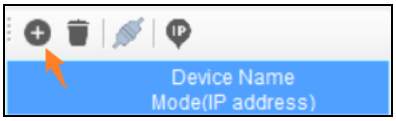
1. Double click the client software to run it.



2. Click **Setting** → Select **Network Card**, then FrmNwkAdaptor window will prompt as below:



3. Select the correct adapter from the drop-down list.
4. Select **System** → Register Device, or click plus icon

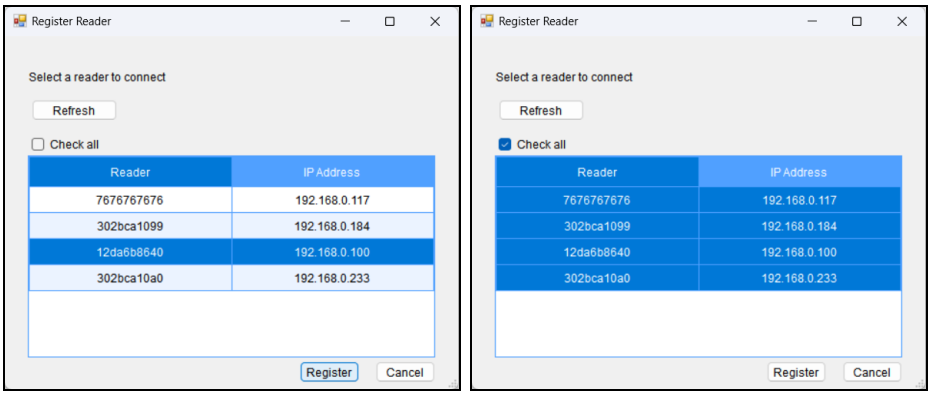


5. Select first icon. Then Register Reader window should show up.

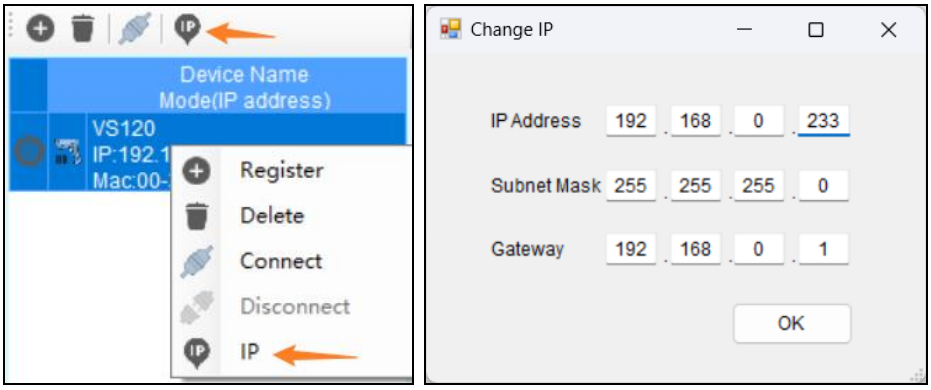


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6. Here will show all the devices connected to the specific network adapter selected in the step 3. Select the related device and click **Register**. You can also select multiple device and click **Register**. If you do not see the device, click Refresh. Sometimes you may need to refresh several times since some device may take more time to power on or the network quality is not so good.



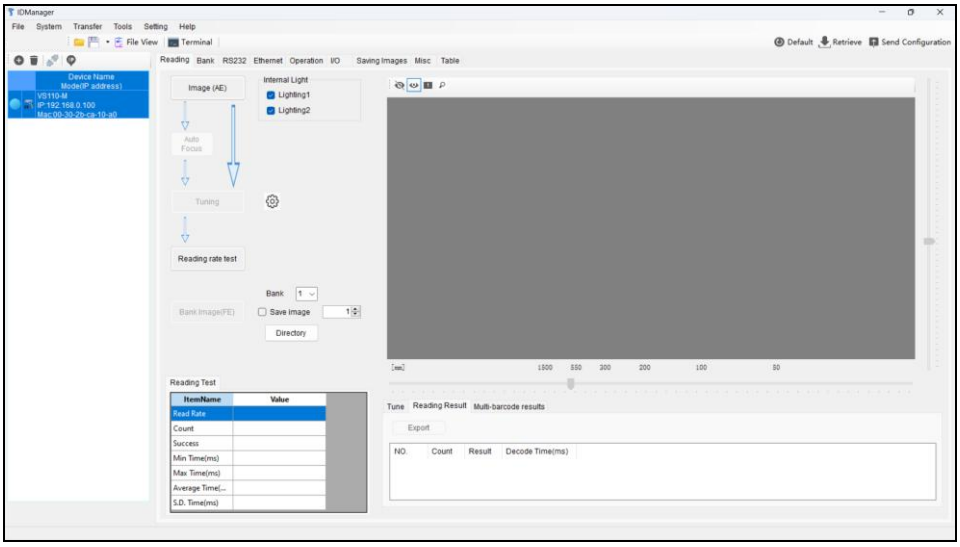
7. Select the device, check if the device IP is in the same network segment with PC whose IP is shown in the step 2. If not, right click on the desired device then click IP icon, or select the device click the IP icon on the top of device list. Change IP window will allow you to change the IP. When the IP is changed, the device will restart automatically. Then you will wait for some time and repeat from step 4.



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2.1.5 Connect Device to Client Software

Click the device then it will show the interactive user interface as below. The user interface may differ from different device models.



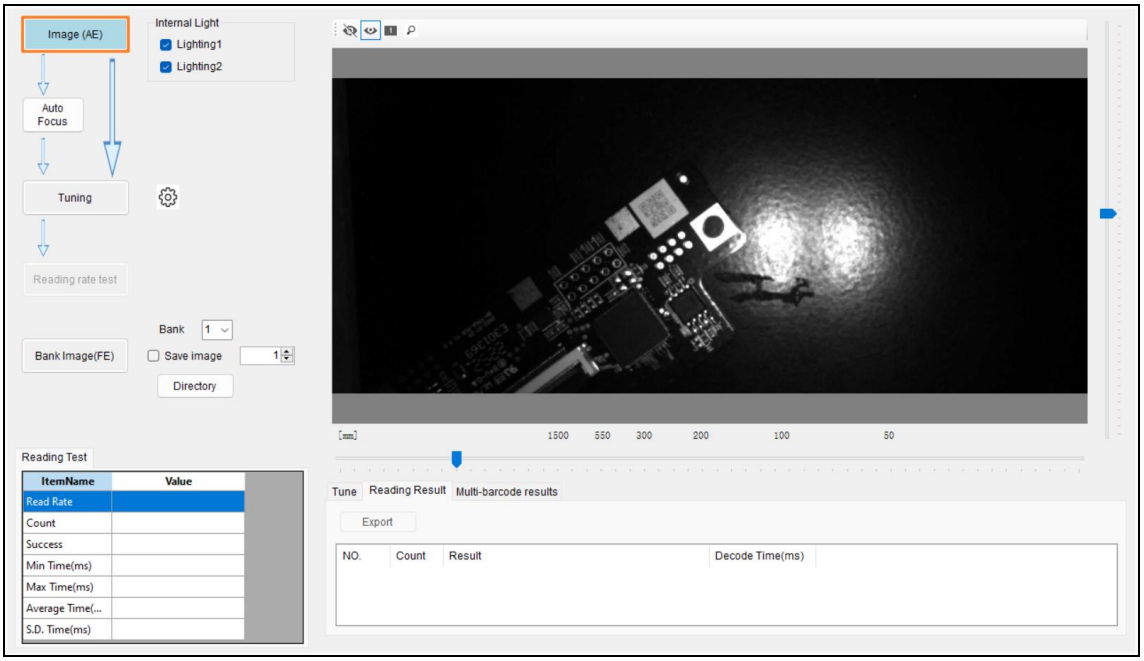
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2.2 Device Settings

2.2.1 Read Setting

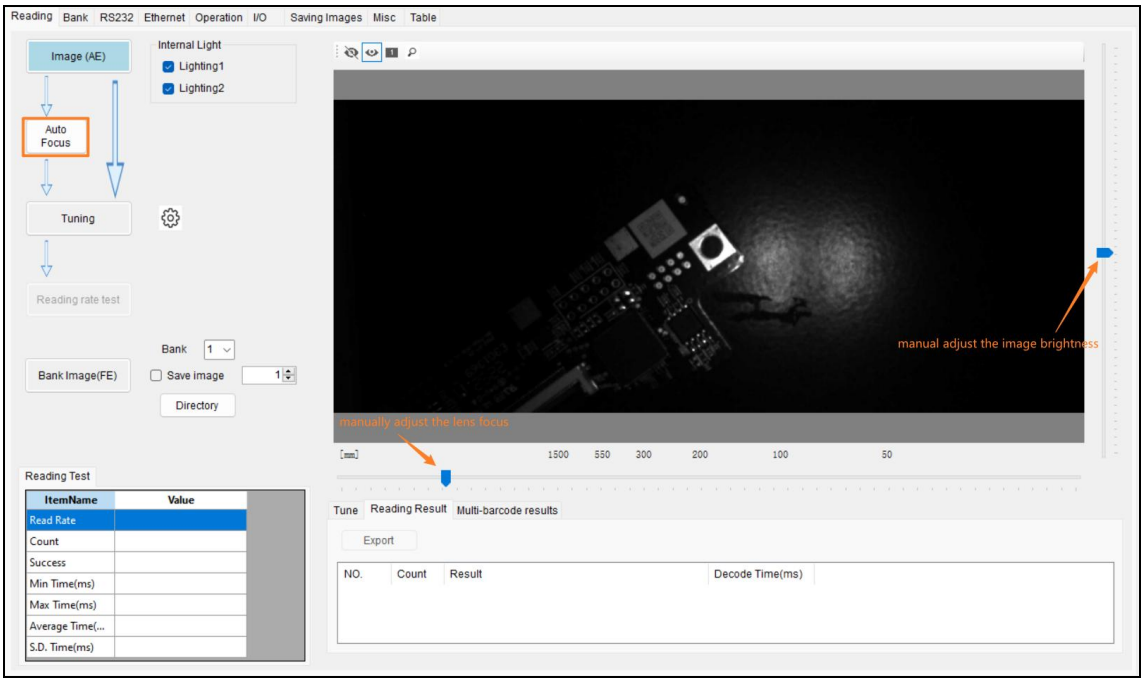
Tuning:

1. Click **Image (AE)**. It will show live images captured by the device. The image brightness may be changed if you move the target since it is under **Auto Exposure mode**. You can select or change the **Internal Light** if you want.

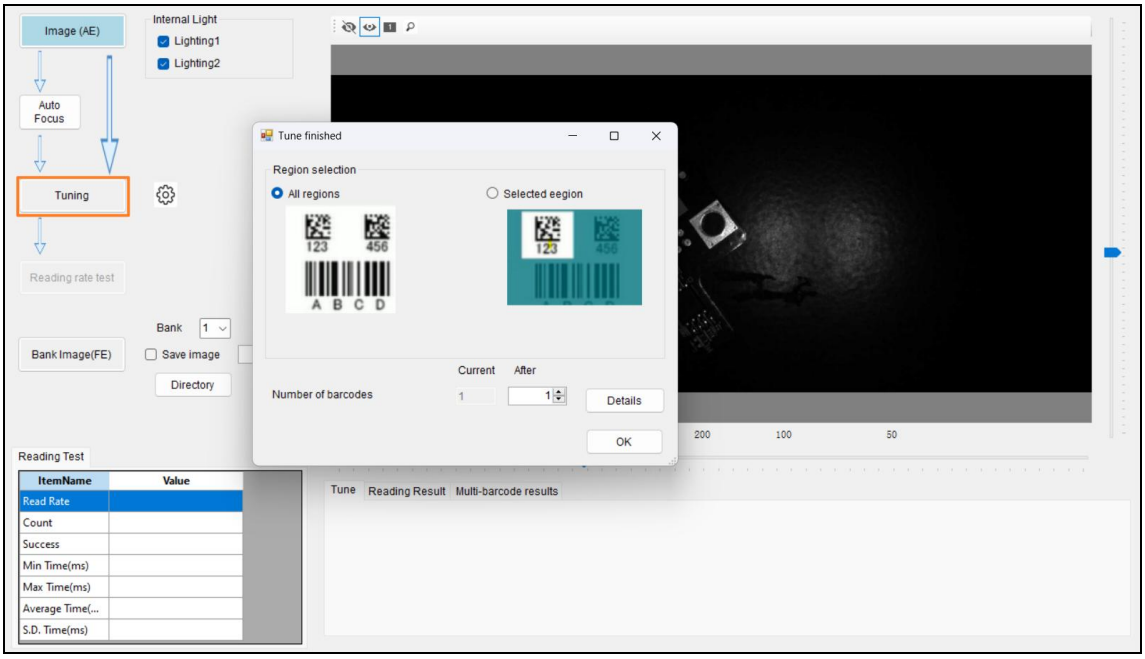


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2. Click **Auto Focus**. It is optional, you can also manually adjust the focus left-right bar at the bottom of the image, you may also need adjust the image brightness up-down bar on the right of the image.

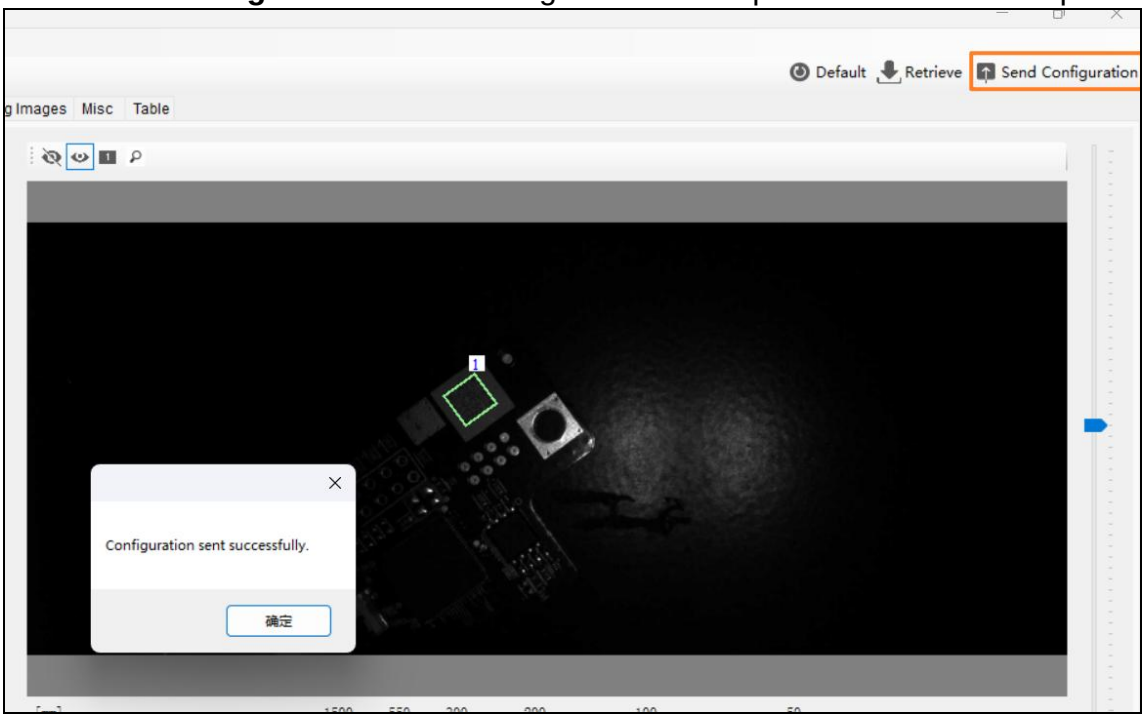


3. Click **Tuning**. The device will adjust the parameters automatically. If it succeeds, Tune finished dialog window will pop up, you can select a few things before clicking **OK**. There will be green rectangular to show the successful decoding code in the image. And, you will see decoding content in the **Reading Result** session at the bottom of the UI window.



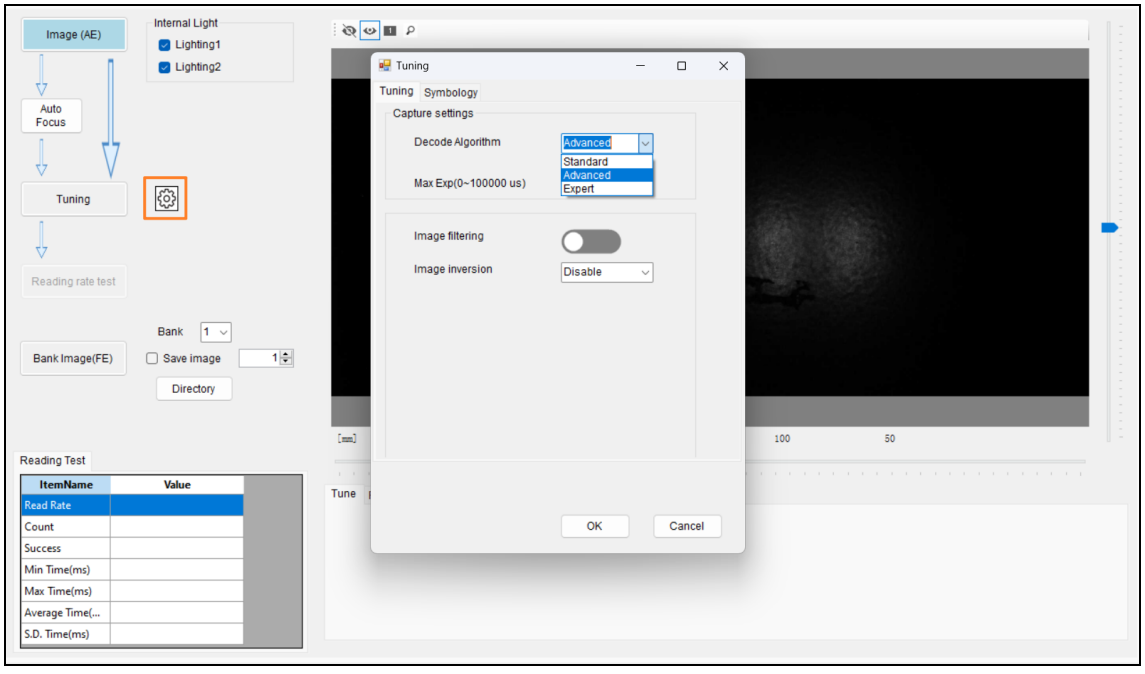
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4. Click **Send Configuration**. It will configure the tuned parameters into bank parameters.



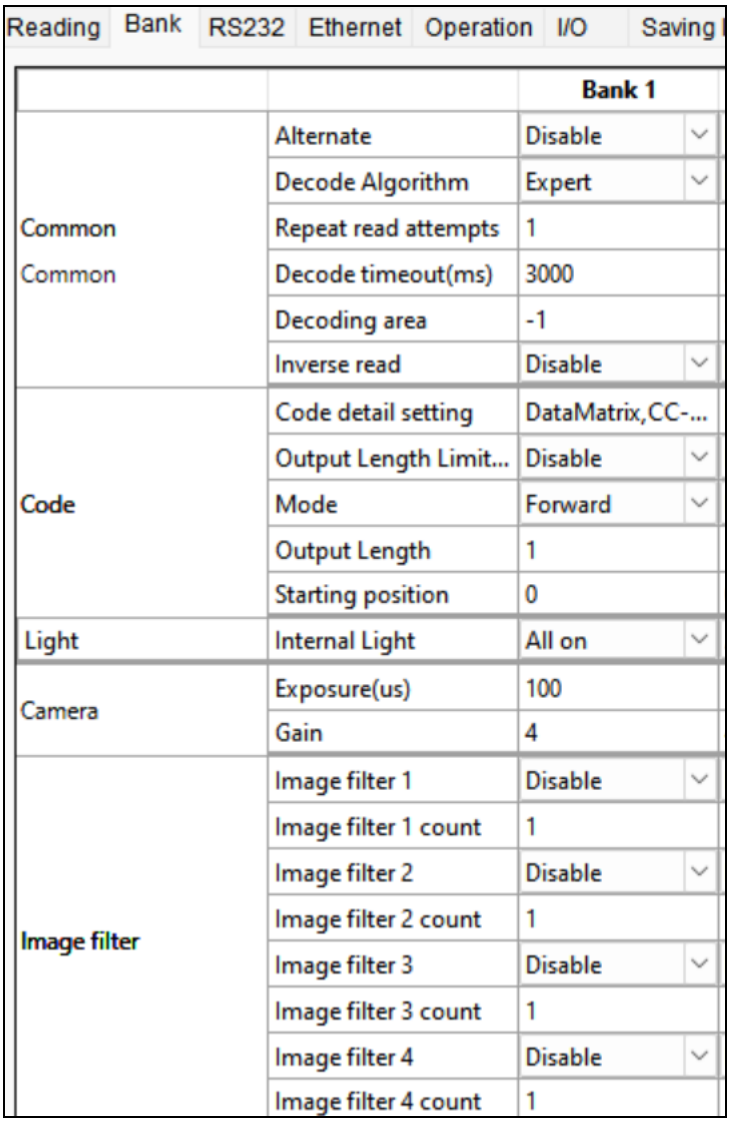
Note:

- *If it shows Tuning Failed in the step 3, you can change some Tuning parameters to repeat step 3.*
- *One critical parameter is Decode Algorithm: Standard, Advanced and Expert. Generally decoding time order is Standard < Advanced < Expert and decoding, decoding ability order Standard < Advanced < Expert. But it is not so absolute, you may need to try different options according to your application.*
- *It is recommended to select the specific symbologies if you know the code type(s) you want to read. Because more symbologies will consume more tuning time.*



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- *You can also manually configure the bank parameters in the Bank tab. Typically only enable one Bank is enough. Don't forget to click Send Configuration after parameters change to make it/them effective.*



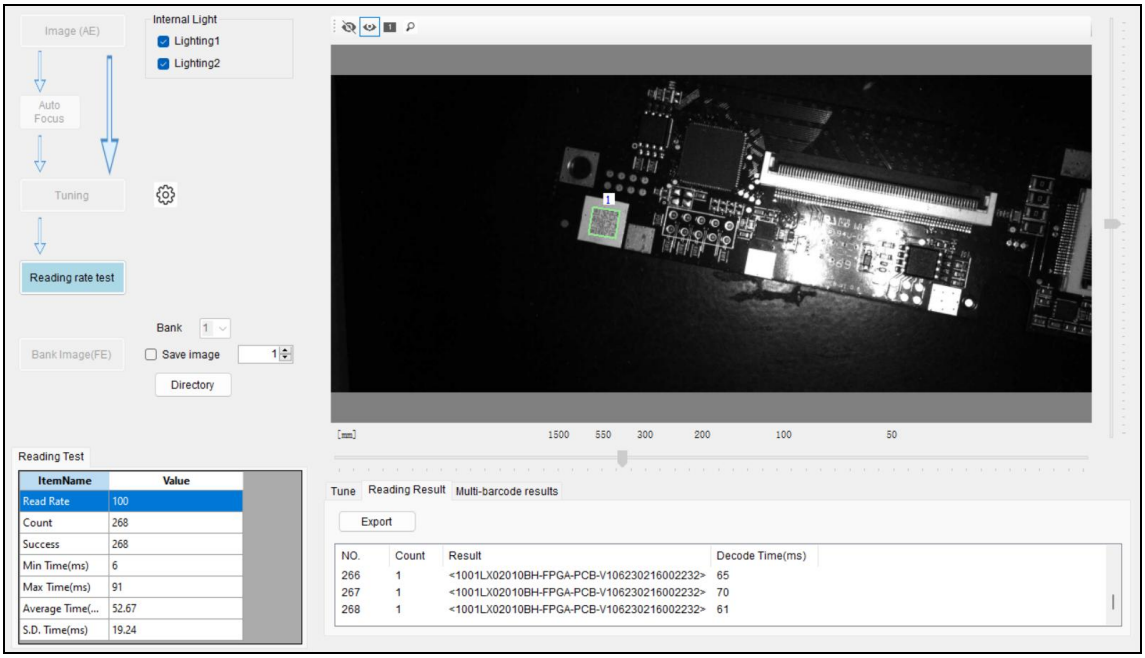
5. Click **Bank Image (FE)**. You can check the live images under bank parameters.

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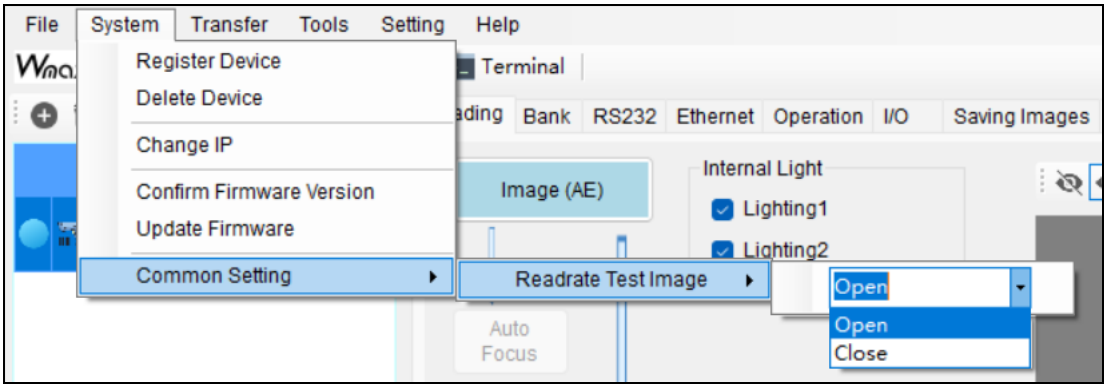
2.2.2 Reading Rate Test

After configuring the parameters, reading rate test can help you to check if the configured parameters is good enough for your application. It will adopt the parameters in the Bank (it can be configured manually or automatically by Tuning step). The **Reading Rate Test** can only be activated when live image is turned off.

- When you click the **Reading Rate Test**, the device will try to start decoding and report detailed and statistical data in the **Reading Test** and **Reading Result** sessions.
- When you click the Reading rate test again, the device will stop decoding. You can also export the reading result in a csv file for the detail review.



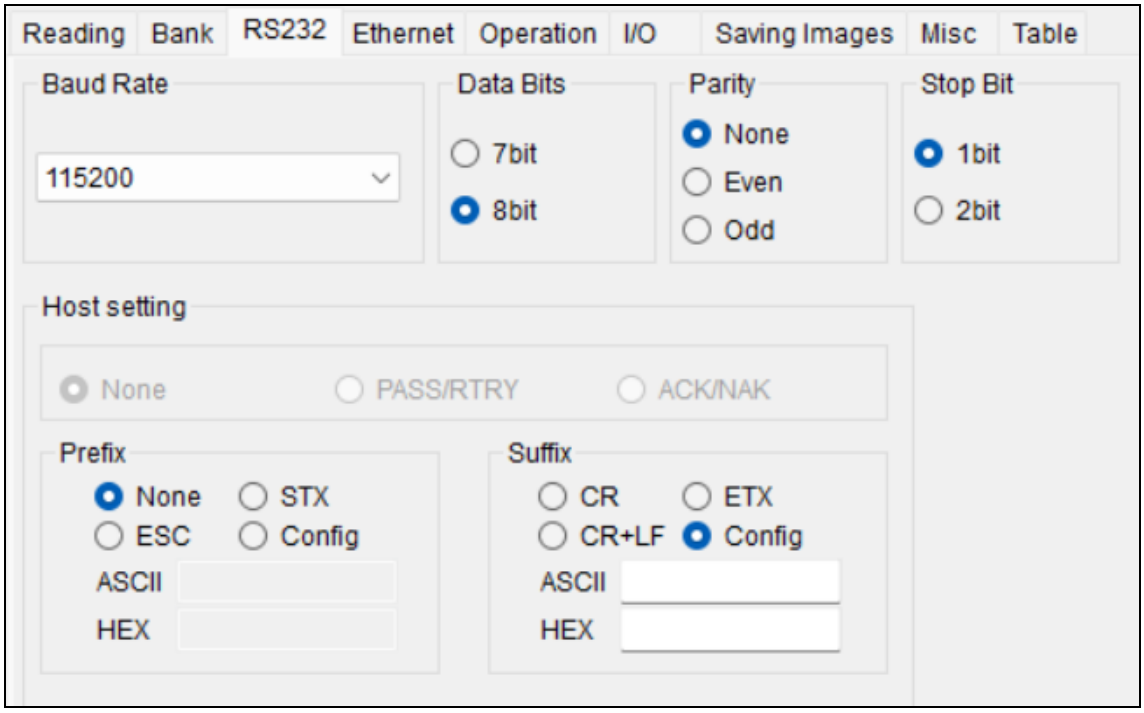
- You may not be able to see the live image during the reading rate test. If needed, you can enable it by clicking **System** → **Common Setting** → **Read Rate Test Image** → **Open**. Note that this may affect decoding performance.



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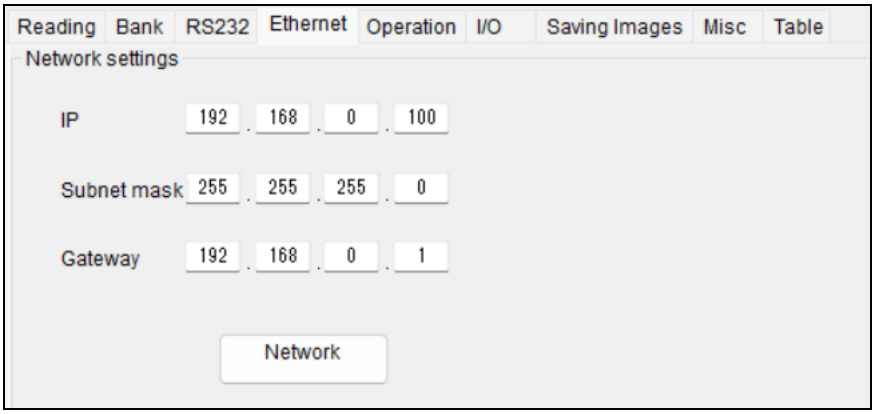
2.3 Communication Settings

2.3.1 RS-232 Setting



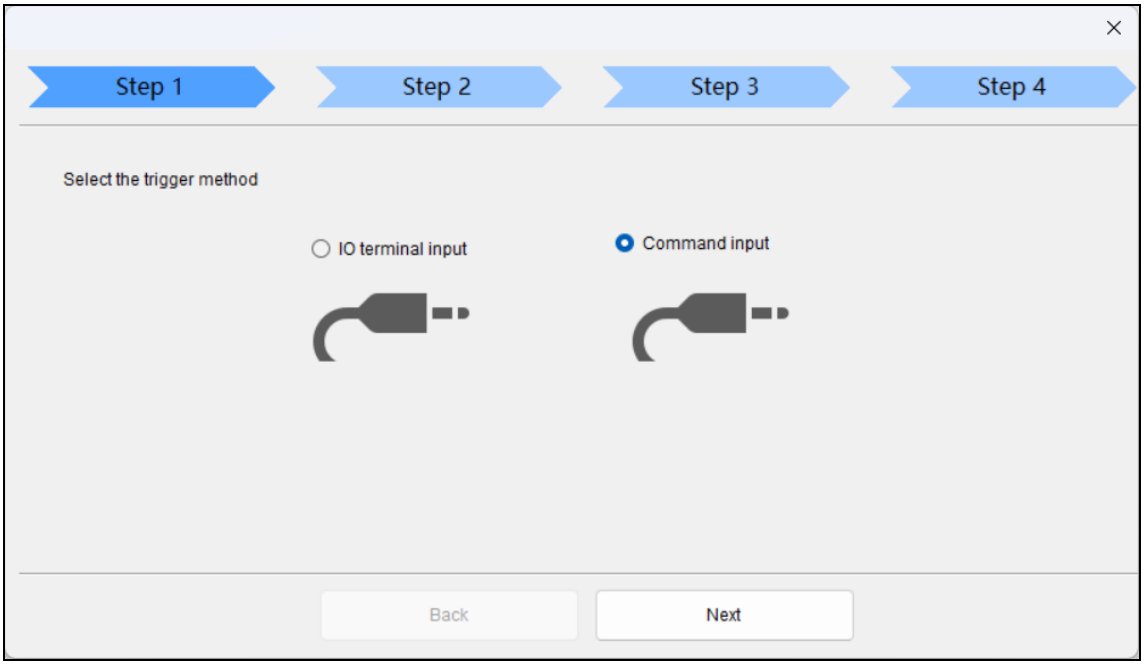
2.3.2 Ethernet Setting

- Click **Ethernet** tab. Change the IP address if needed.

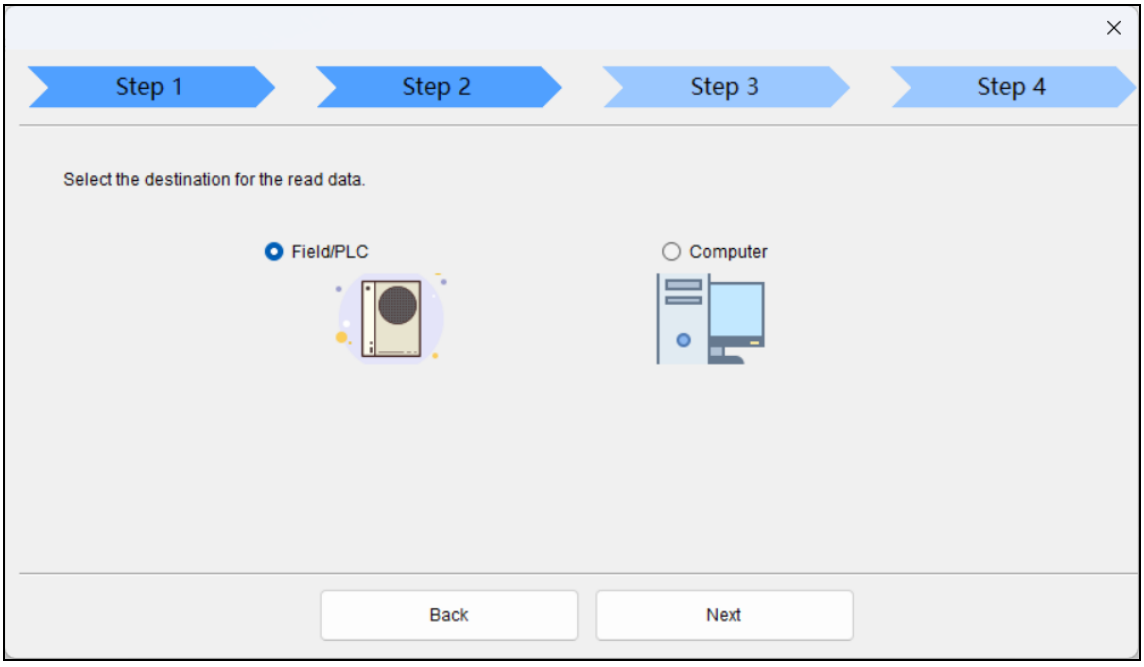


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- Click **Network**. Select the trigger method then click **Next**.

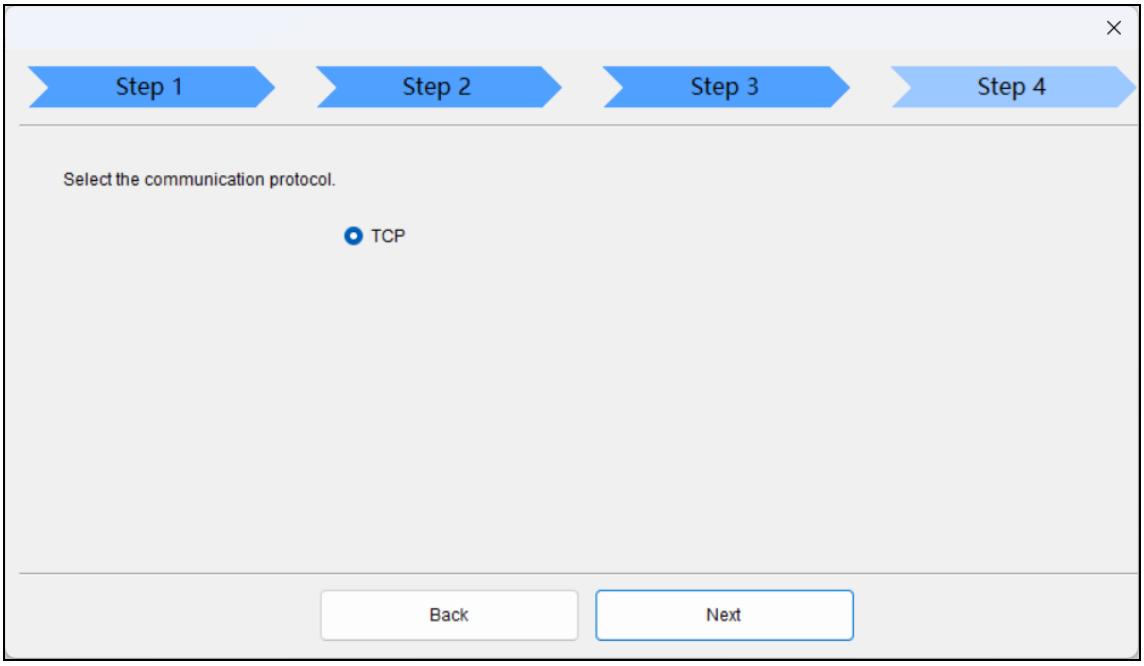


- Select the destination for the read data, and click **Next**.

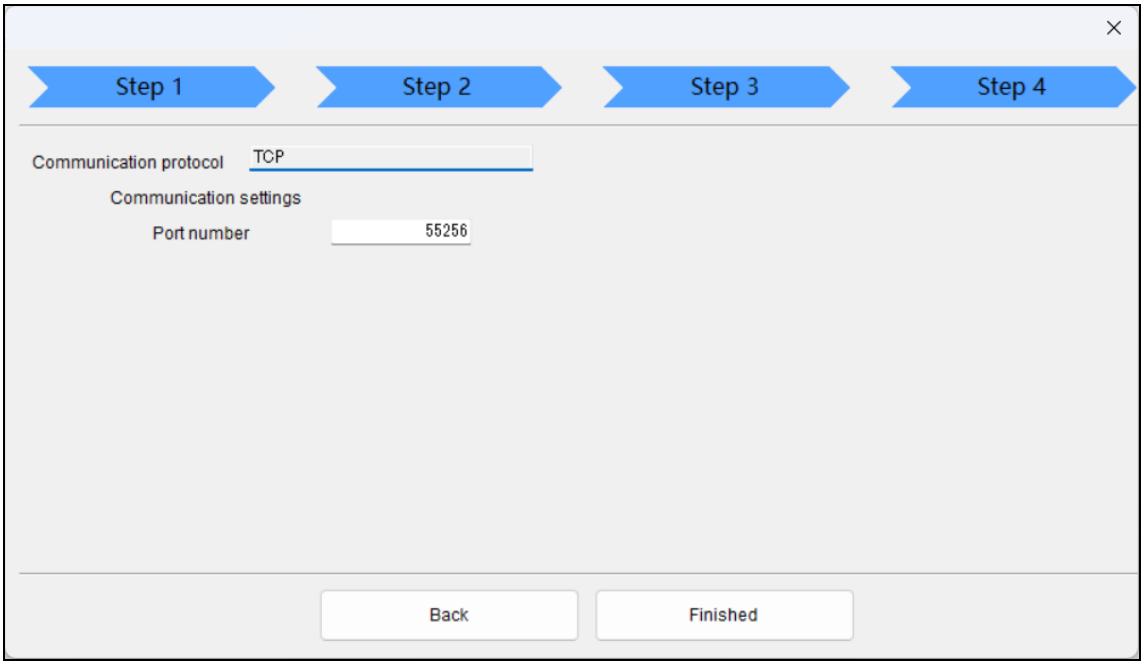


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- Select the protocol, and click **Next**.



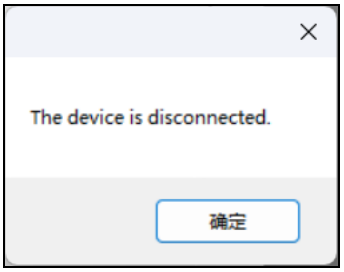
- Input the **Port number**, and click **Finished**.



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- Click Send Configuration.

Note: *After clicking Send Configuration, a window may show device disconnected shown as below. If so the device will be restarted automatically to make sure the configuration take effective. Then you will need to reconnect the device through the client software.*



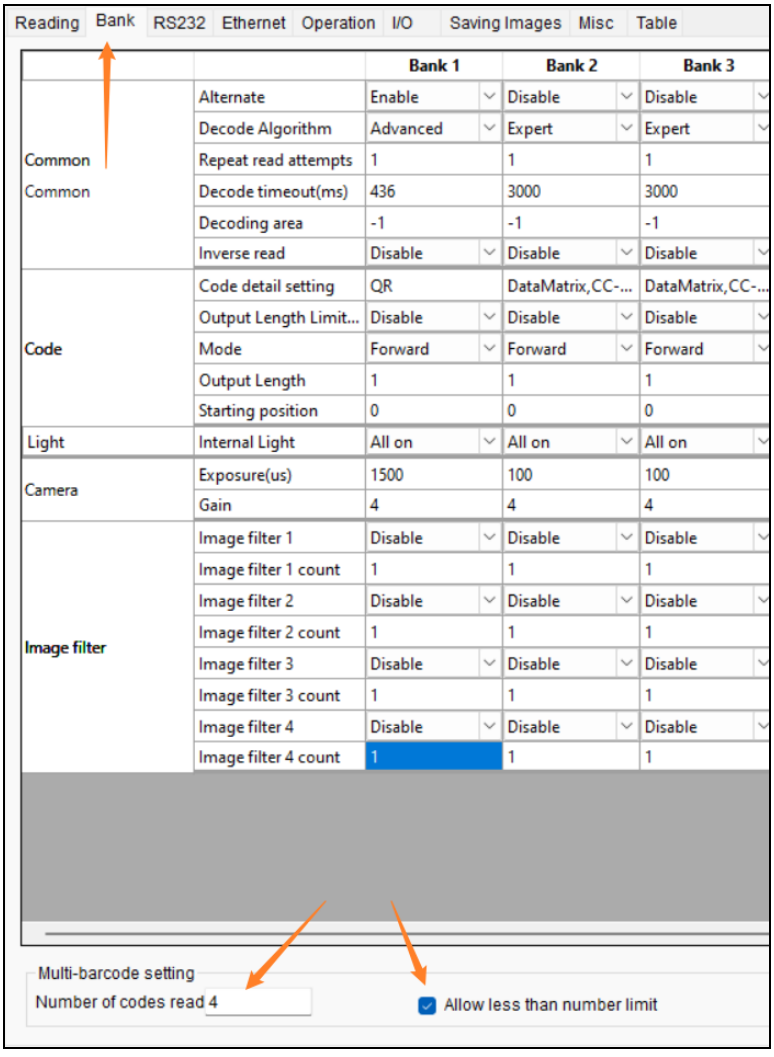
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2.4 Device Operation

2.4.1 Multiple Codes Read

Click the **Bank** tab. At the bottom, input the desired number of codes read, and send configuration.

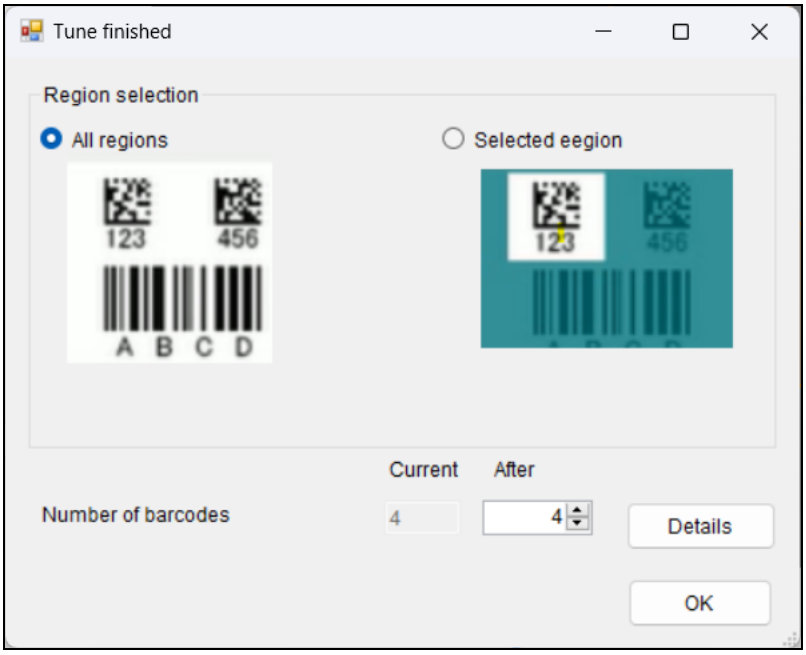
- It is recommended to click **Enter** key after inputting the number, or sometimes it may not take effective.
- If box of Allow less than number limit is checked, then it will still output code read result even when decoding number is less than the number of codes read. For example, if number of codes read is 4, when only 3 codes are decoded, then 3 codes' result will be output when the box is checked, or ERROR (can be configured in Read Error String under Working session of Operation tab) will be output when the box is un-checked.



- Click **Auto Focus**. (optional)

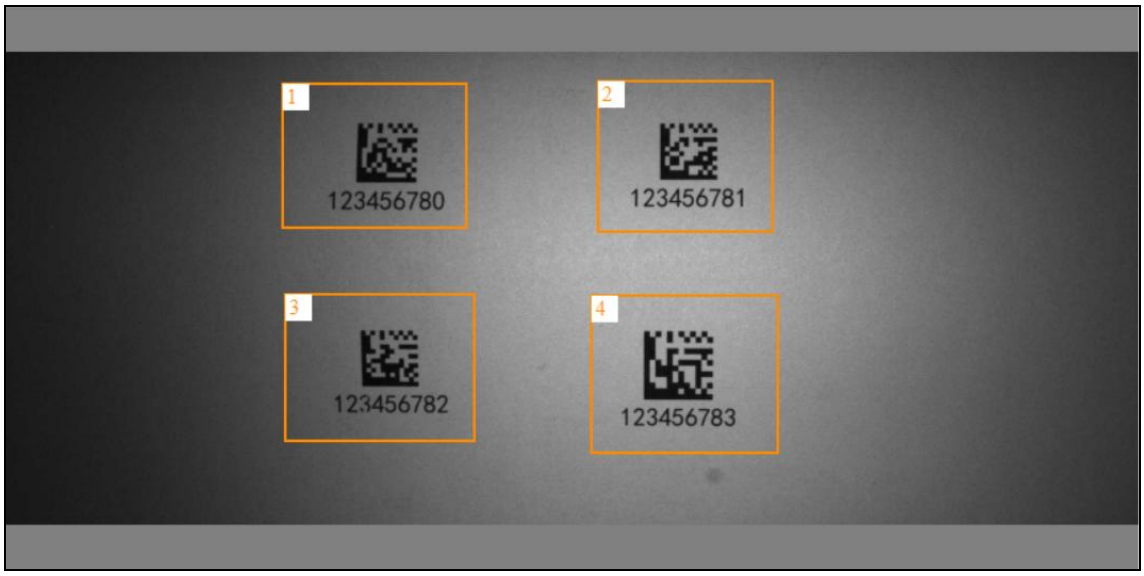
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- Case 1, suitable for flexible code locations.
  - Click **Tuning**, and click **OK** when the tuning completed.



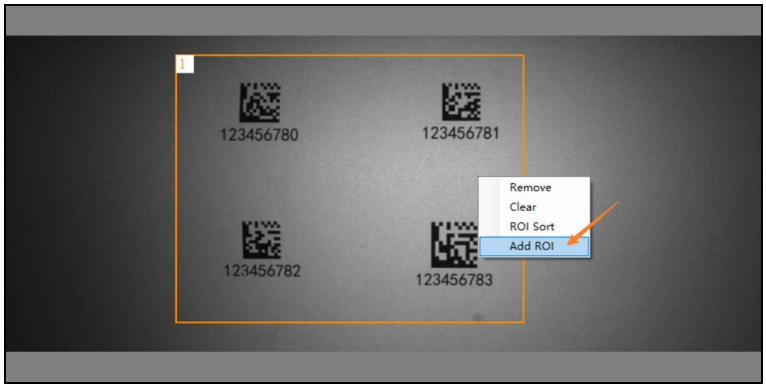
  - Click Send Configuration.

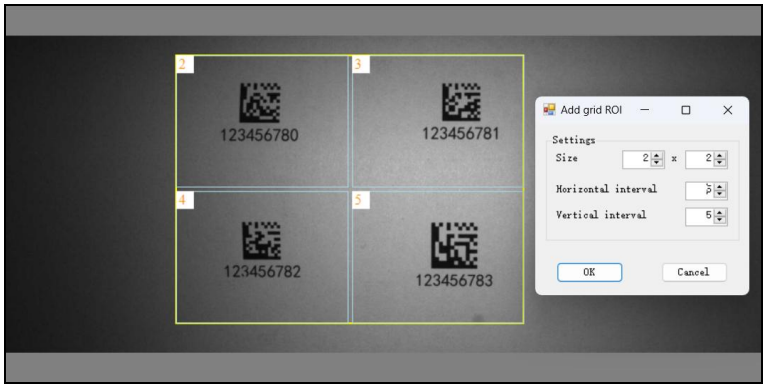
- Case 2, suitable for fixed code locations, typically faster than case 1.
  - Draw ROI boxes.
    - Draw one ROI box on each code by clicking left button of the mouse, dragging and releasing when the box covers the code. Then click Send Configuration. ROI box and ROI ID can be hidden by clicking the icons on the top left of the image show area.

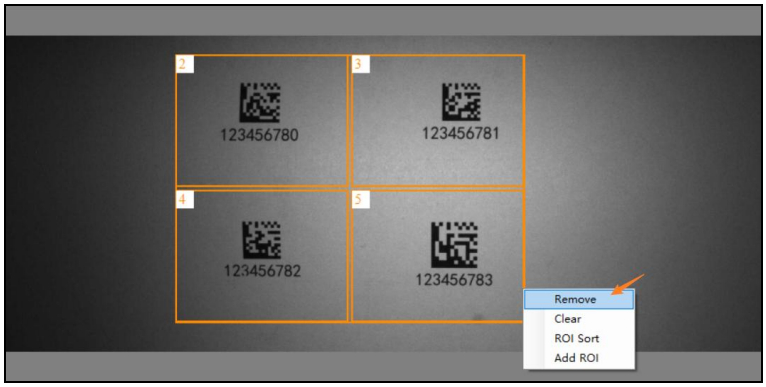


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- If the codes align well, draw a big box to cover all the codes, then in the box area, right-click and select **Add ROI**, and input the row and column number in the size and intervals if needed. It is recommended to remove the biggest ROI box by right-clicking on the big ROI box and select **Remove**. At last, click **Send Configuration**.

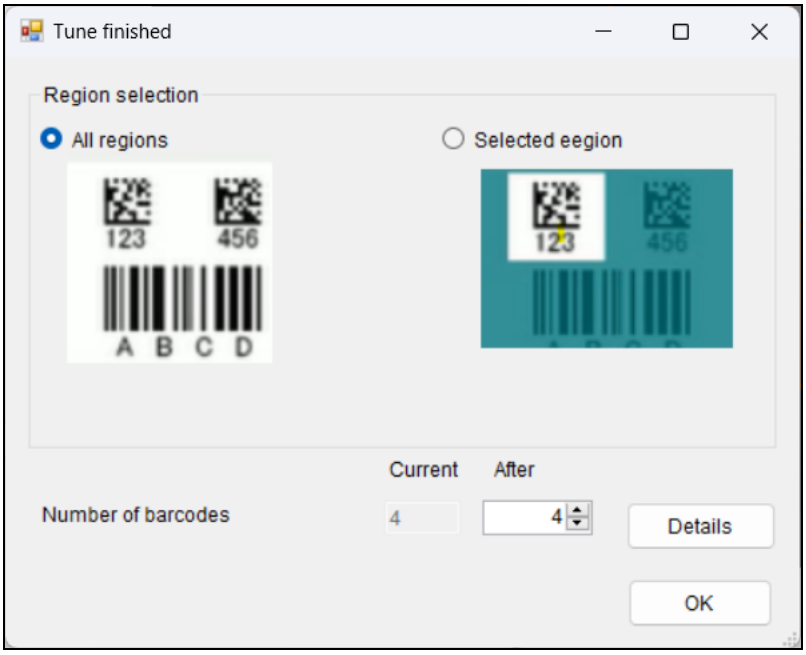




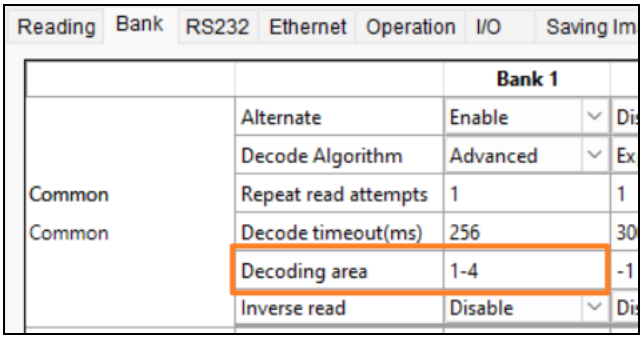


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- Click Tuning for automatic parameters adjustment. When succeed, you can check **All regions** or **Selected region**. Click **OK** and then **Send Configuration**.



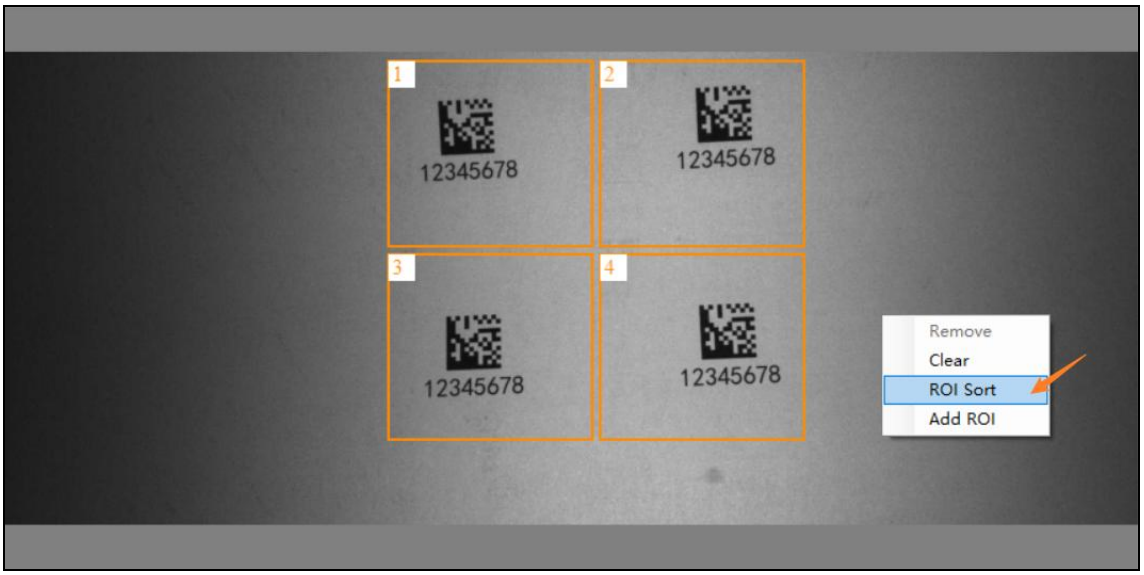
  - Selected region: It will only try to decode the ROI areas. When you select this one, you can see the Decoding area in Bank will be changed, the default value is -1. 1-4 means that it will try to decode ROI ID 1, 2, 3, 4 areas. If you change the value as 1-2, it will only try to decode the ROI ID 1 and 2 areas.



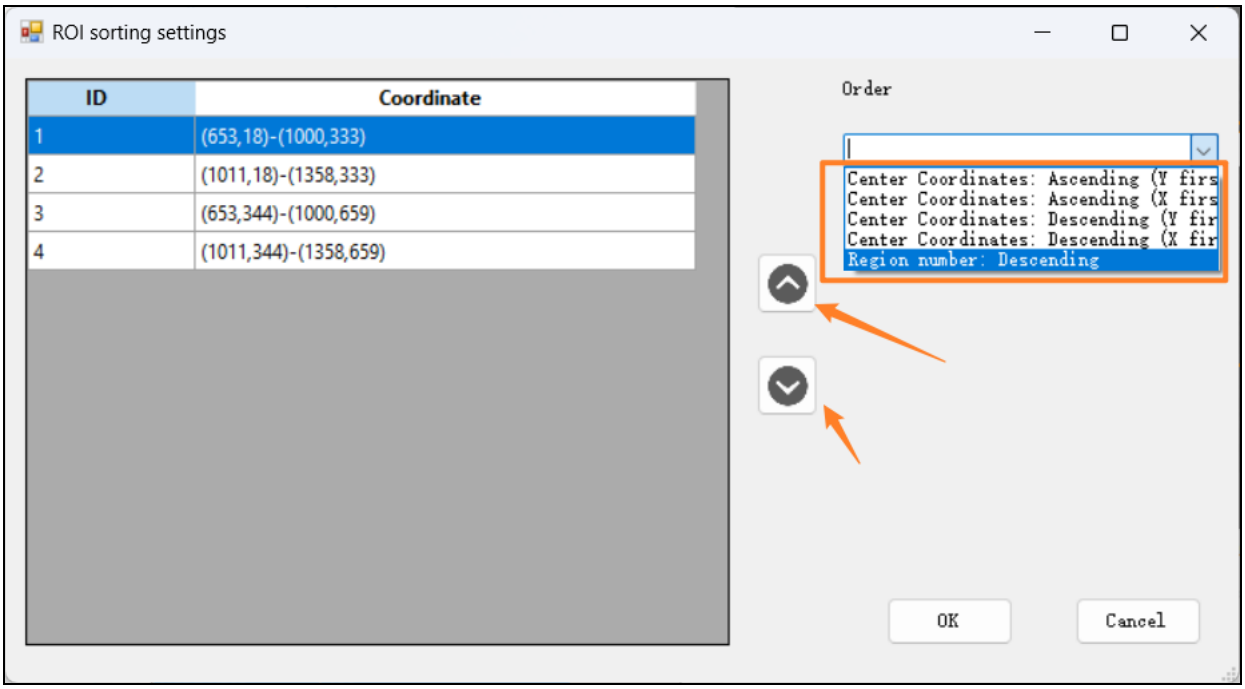
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2.4.2 ROI Number Sorting

- Right-click the image area, select **ROI Sort**



- Select the ROI and click up or down to move the ROI order, or select the desired option from the drop-down list, and click **OK**.

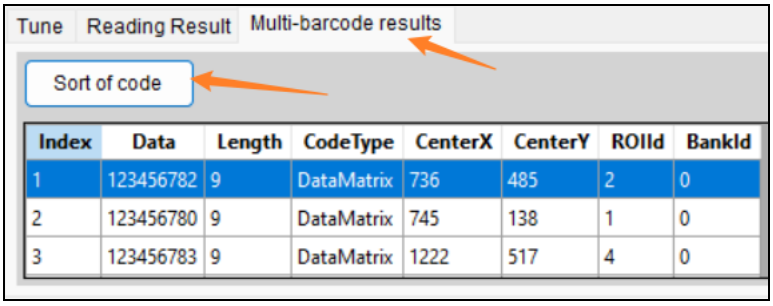


- Send Configuration.

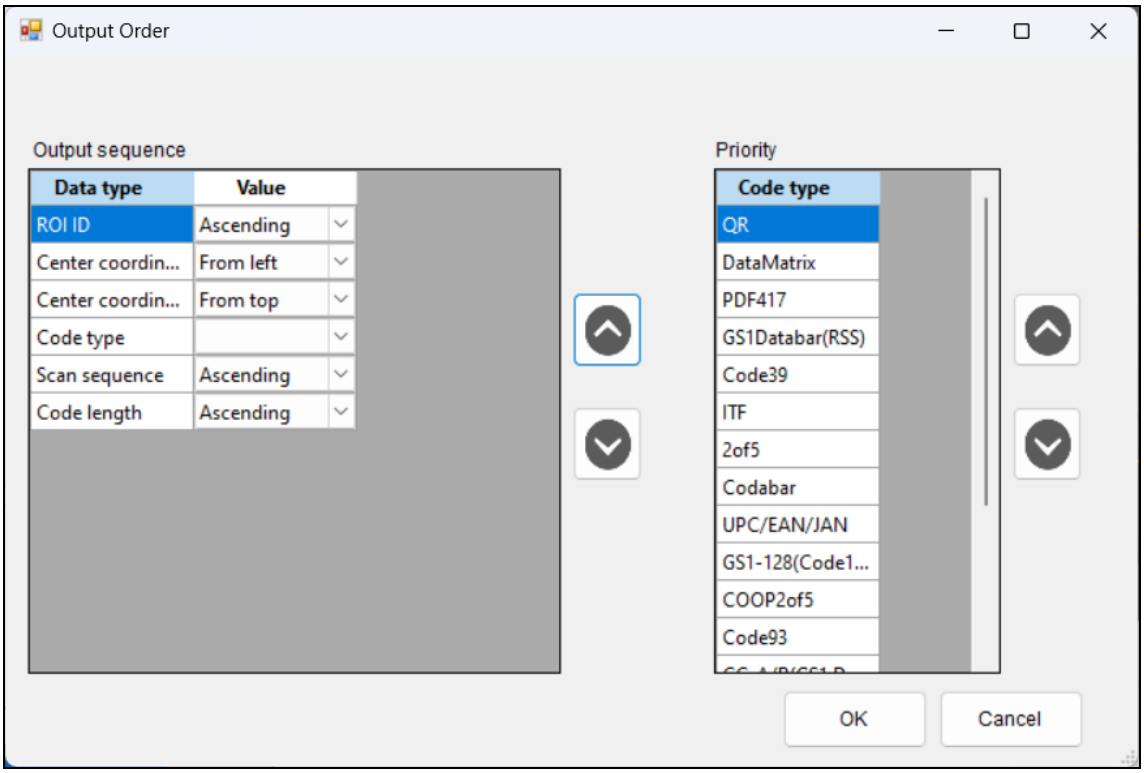
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2.4.3 Data Output Order Setting

- Click **Multi-barcode results → Sort of code**.

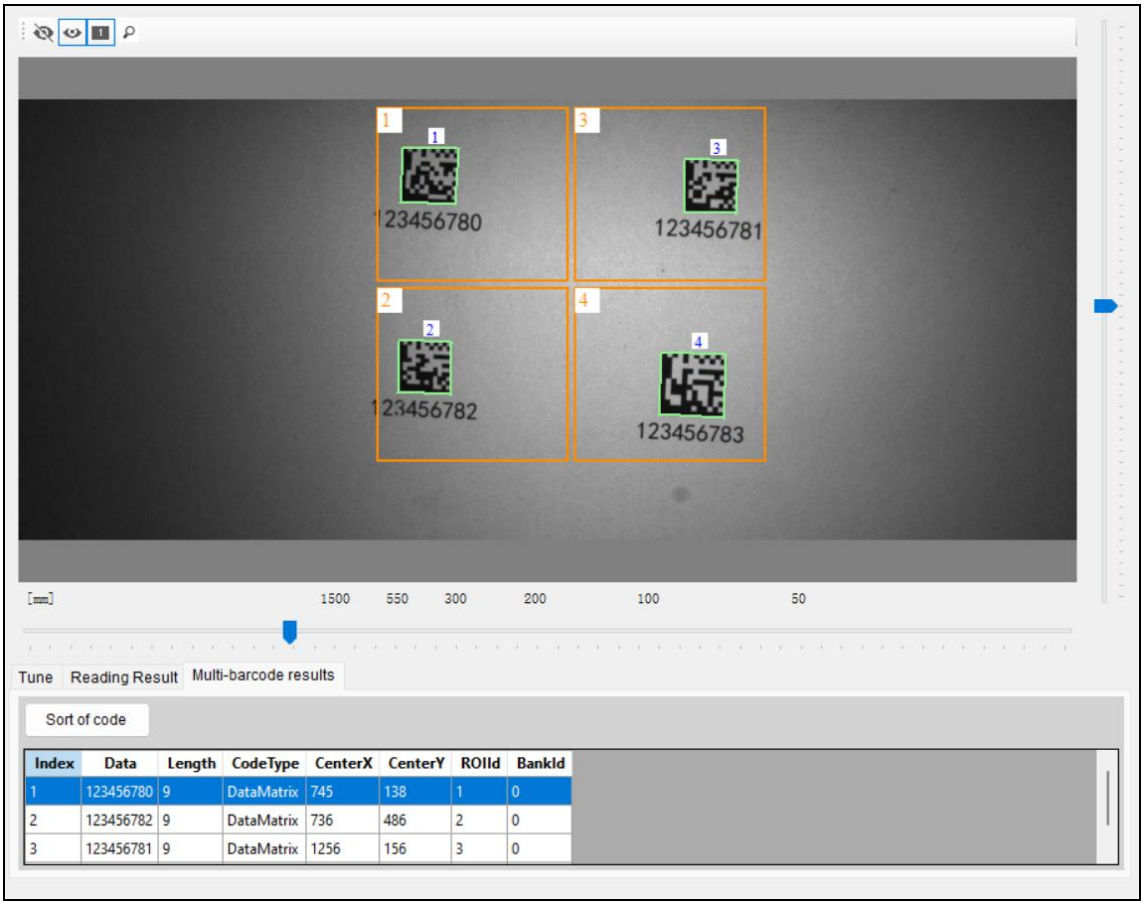


- In the **Output Order** window, you can configure the output order. There are a few options including:
  - Center coordinates X: From left, From right.
  - Center coordinates Y: From top, From bottom.
  - ROI ID: Ascending, Descending.
  - Code type: (move up and down in the Priority on the right)
  - Scan sequence: Ascending, Descending.
  - Code length: Ascending, Descending.



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- Click **OK** and **Send Configuration**.
- You can check if the output order is correct or not in the Multi-barcode results. The Index column shows the output order.



Index	Data	Length	CodeType	CenterX	CenterY	ROIId	BankId
1	123456780	9	DataMatrix	745	138	1	0
2	123456782	9	DataMatrix	736	486	2	0
3	123456781	9	DataMatrix	1256	156	3	0

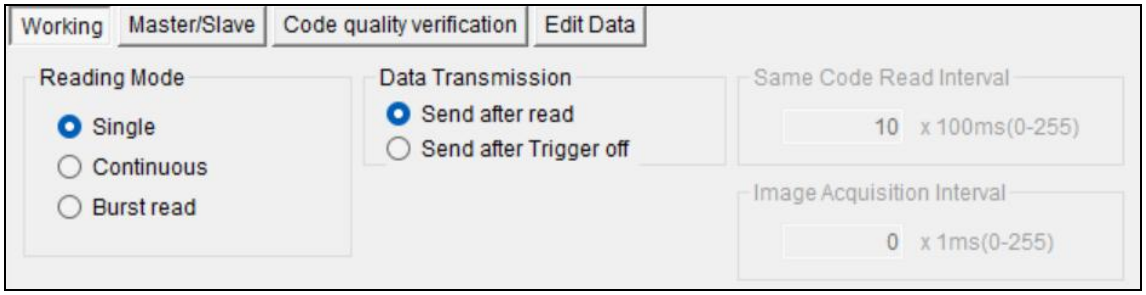
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2.4.4 Read Mode Setting

Under Working session of Operation tab…

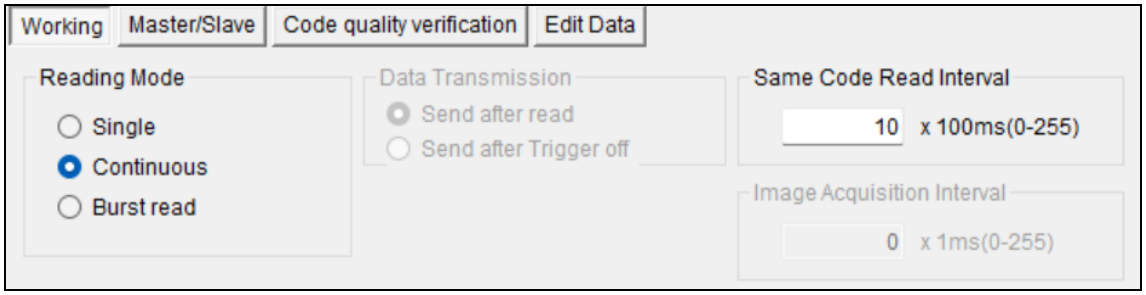
2.4.4.1 Single Mode

One time code reading after the device is activated.



2.4.4.2 Continuous Mode

Continuous code reading after the device is activated. Same Code Read Interval can be configured to control the same code content output.

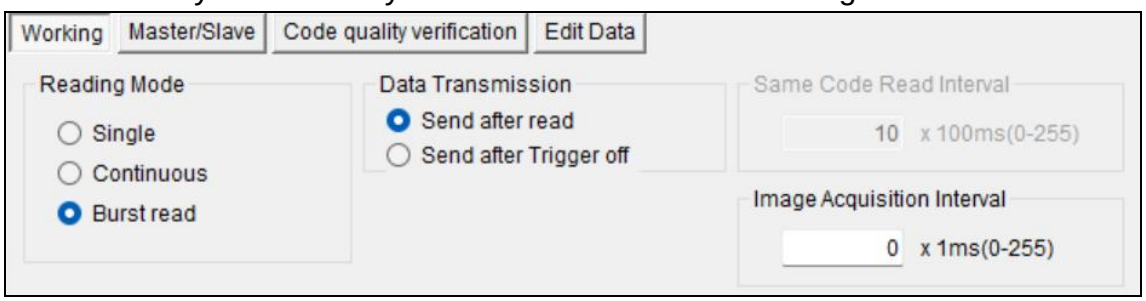


2.4.4.3 Burst read Mode

In this mode, the device will capture the images and save them in the buffer, then will try to decode those saved images.

Note: *It is useful in reading code in high speed motion.*

- Image Acquisition Interval can control if the device save the captured images in row or selectively controlled by time which is related to the single frame time.



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2.4.5 Multiple Devices Control

- **Master/Slave**

Master: Gather all the reading data and output to the host
Slave: Output the reading data to the Master

- **Operation Setting**

Not used	Single device only control
Multi Drop	Master will output all the reading data from all slaves and master itself
Multi Head	Master will remove the duplicated data before output. You can specify Number of codes read if you select this mode

- **Group Name**

Normally you do not need to change it, unless there are multiple master device in the same network.

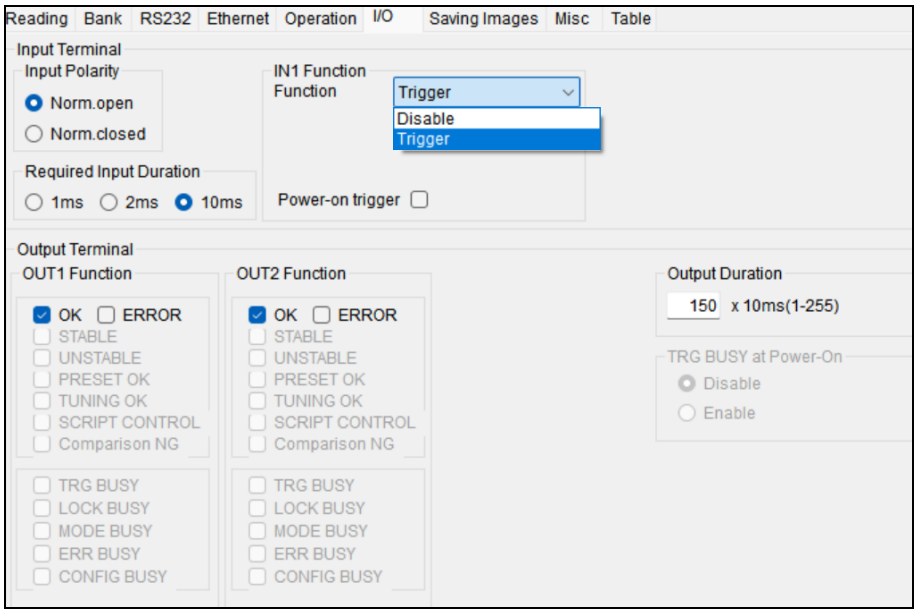
- **Unit ID**

Check the check-box if you want to set the device as the master, or you will need to define the unique Slave ID.

- **Append Information**

You can add group name and / or Master/Slave ID to the reading data.

2.4.6 I/O Setting



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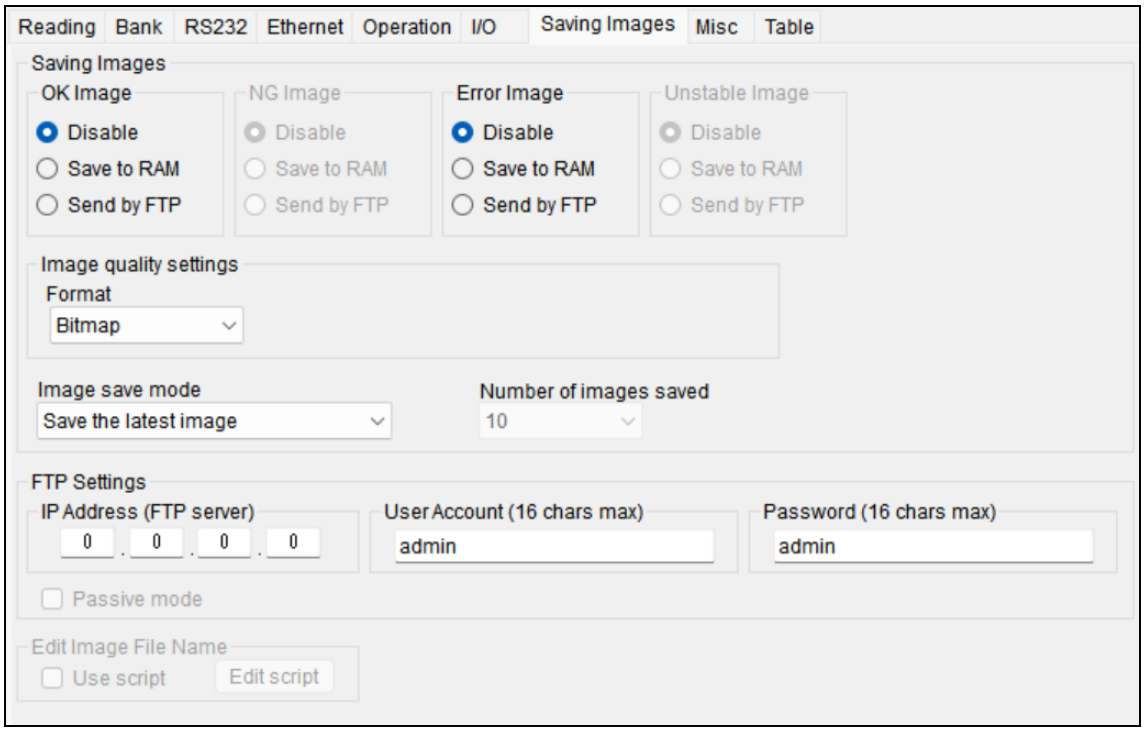
- Input Terminal
  - Input Polarity

Norm. Open	Normal status is closed. It is open when activated by the input signal
Norm. Closed	Normal status is open. It is closed when activated by the input signal

  - Required Input Duration
    The duration from the input signal detected by IN to action start. 1ms, 2ms and 10ms are available. Longer duration can prevent false trigger caused by any unexpected interference signal.
  - IN1 Function
    You can define the IN1 function as trigger or just disable it.
  - Power-on trigger
    If checked, the device will start working once powered on.
- Output Terminal
  - Output function
    Define which kind of signal to output, OK or ERROR
  - Output Duration
    Set the output signal duration.

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2.4.7 Saving Images



- Image Saving
  You can select save the **OK** (successful read) image and/or **Error** (failed read) image. “Save to RAM” is not supported so far.
- Image quality settings
  You can choose the format for the image saving
- Image save mode
  - Save the latest image: only the last captured image before device is deactivated.
  - Save images after Trigger input on: saving the specific number of images from device is activated.
  - Save images before Trigger input off: saving the specific number of images before device is deactivated.
- FTP Settings
  - If you select Send by FTP for the images, then you need to fill FTP server’s IP address, User Account and Password

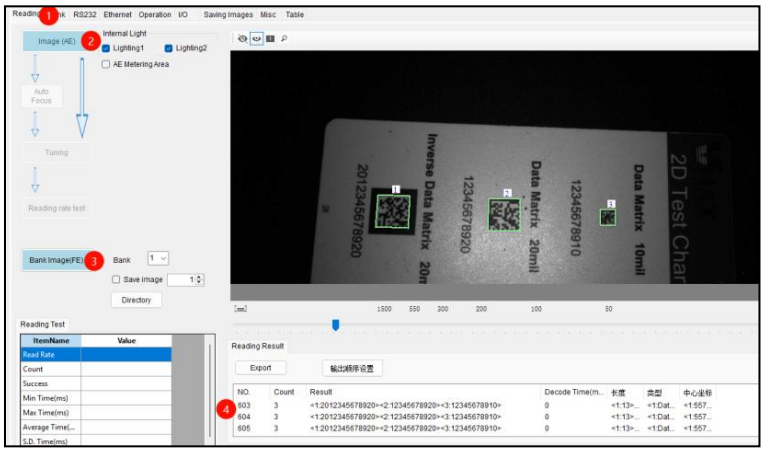
Note: *Use a FTP setting Tool on the server where you would like to save the images, input the User Account and Password identical to the above settings. It may need to reboot the device to take effect.*

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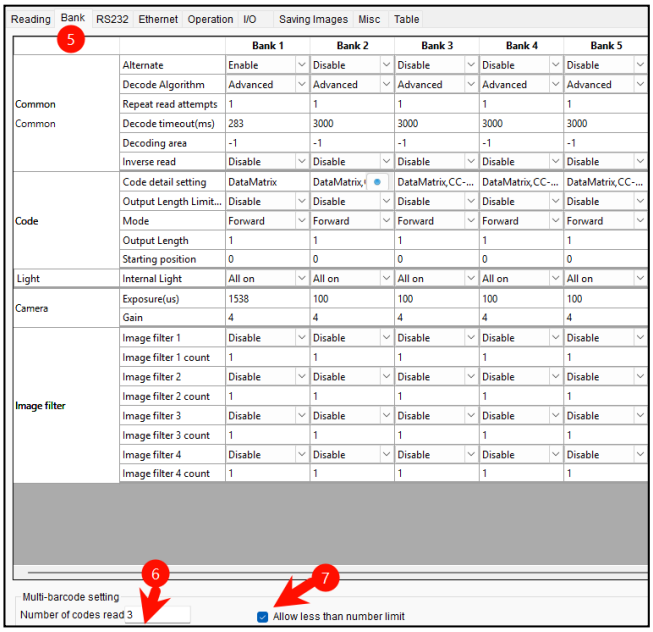
Chapter 3 - Data Output Validation with Network Interface

3.1 Configure the Device

1. Adjust the reader's parameters through IDManager to confirm normal decoding. Make sure the device can decode the desired code(s) under the target Bank Image.



2. To output a specified number of barcodes, go to the Bank page and select **Multil-barcode Setting > Number of codes read**.



		Bank 1	Bank 2	Bank 3	Bank 4	Bank 5
Common	Alternate	Enable	Disable	Disable	Disable	Disable
	Decode Algorithm	Advanced	Advanced	Advanced	Advanced	Advanced
	Repeat read attempts	1	1	1	1	1
Common	Decode timeout(ms)	283	3000	3000	3000	3000
	Decoding area	-1	-1	-1	-1	-1
	Inverse read	Disable	Disable	Disable	Disable	Disable
Code	Code detail setting	DataMatrix	DataMatrix,(	DataMatrix,CC-...	DataMatrix,CC-...	DataMatrix,CC-...
	Output Length Limit...	Disable	Disable	Disable	Disable	Disable
	Mode	Forward	Forward	Forward	Forward	Forward
	Output Length	1	1	1	1	1
	Starting position	0	0	0	0	0
Light	Internal Light	All on	All on	All on	All on	All on
Camera	Exposure(us)	1538	100	100	100	100
	Gain	4	4	4	4	4
Image filter	Image filter 1	Disable	Disable	Disable	Disable	Disable
	Image filter 1 count	1	1	1	1	1
	Image filter 2	Disable	Disable	Disable	Disable	Disable
	Image filter 2 count	1	1	1	1	1
	Image filter 3	Disable	Disable	Disable	Disable	Disable
	Image filter 3 count	1	1	1	1	1
	Image filter 4	Disable	Disable	Disable	Disable	Disable
	Image filter 4 count	1	1	1	1	1

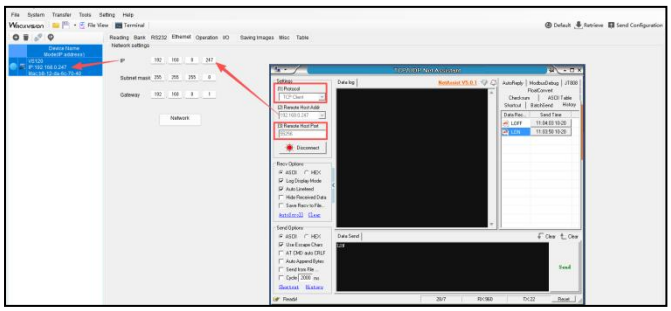
3. Before debugging and exporting data through the network port tool, ensure the image (AE) is turned off. Otherwise, the device cannot be transferred to other tools.

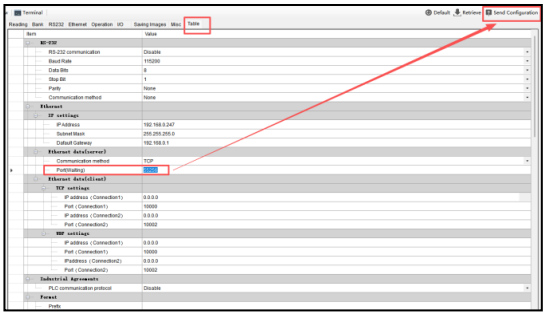
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3.2 Configure Network Assist Tool

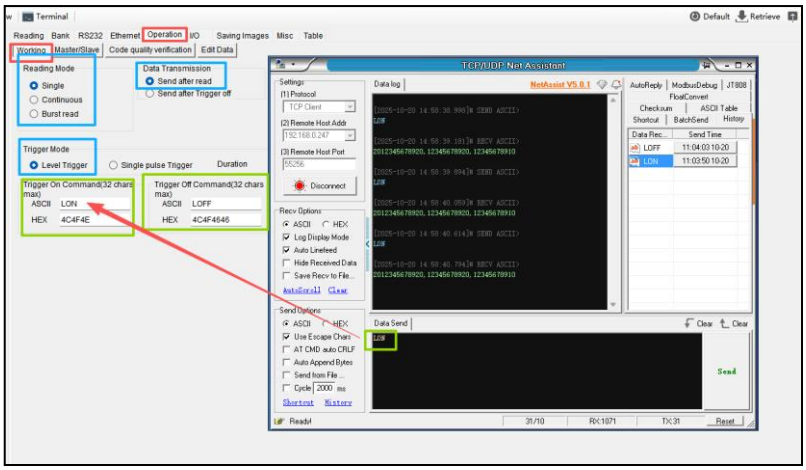
Note: *Here we use **TCP/UDP Net Assistant** for data output validation through network interface.*

1. Set protocol type, here we select **TCP Client**. (The device acts as a Server)
2. Input the device's IP in Remote Host Addr.
3. Input port in Remote Host Port (Default 55256). To modify the port number, go to the Table page and adjust the TCP port under Ethernet data (Server).





4. The default trigger on command is LON. You can customize the command on the operation page. Each trigger generates one output and decodes one data. Test with single reading mode and level trigger as follows:

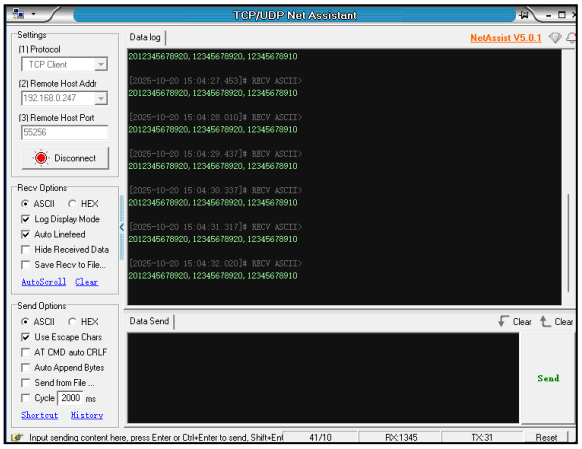


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3.3 Network Data Output with Button Trigger

An alternative method of activating the device is to manually press the physical button to trigger the device on, the decoded result will also be sent to the **Net Assistant** as shown below.



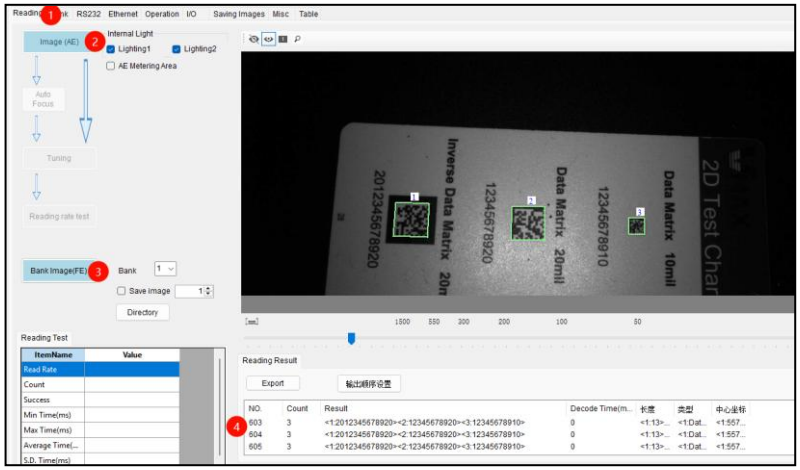


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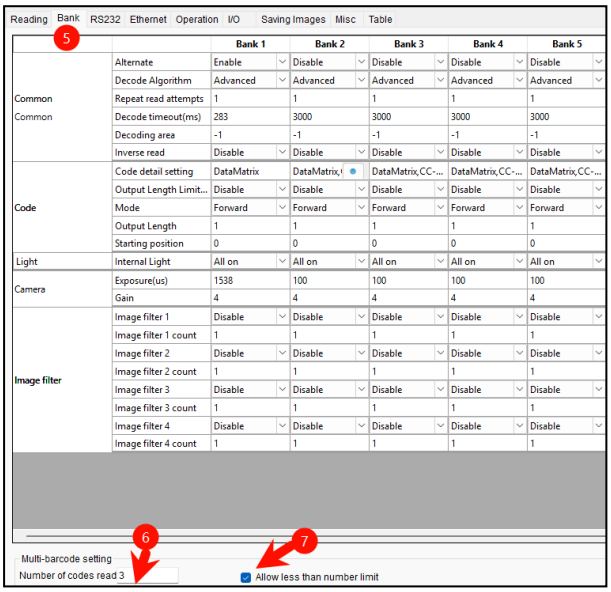
Chapter 4 - Data Output Validation with Serial Interface

4.1 Configure the Device

1. Adjust the reader's parameters through IDManager to confirm normal decoding. Make sure the device can decode the desired code(s) under the target Bank Image.



2. To output a specified number of barcodes, go to the Bank page and select **Multi-barcode Setting > Number of codes read**

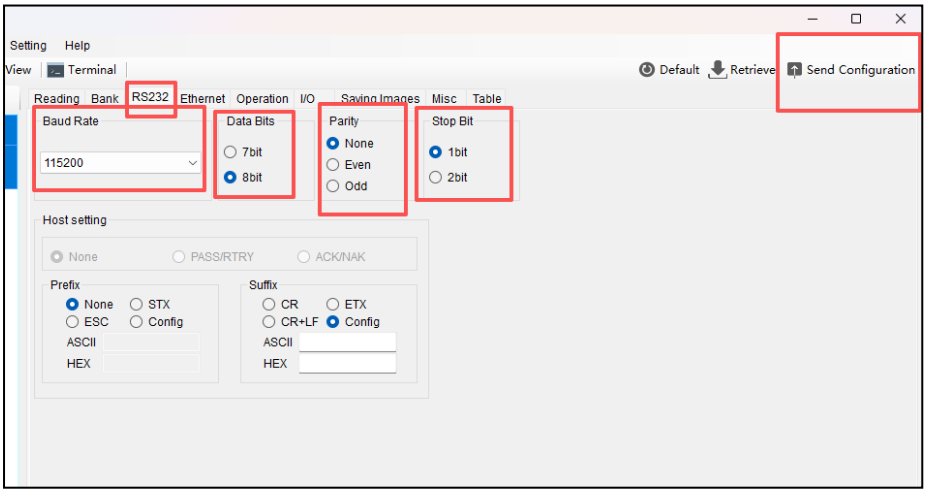


3. Before debugging and exporting data through the serial port tool, ensure the image (AE) is turned off. Otherwise, the device cannot be transferred to other tools

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4.2 Set Serial Parameters

The baud rate is 115200, with 8-bit data bits, no parity, and 1 stop bit. (Windows default) Set the sending Configuration.

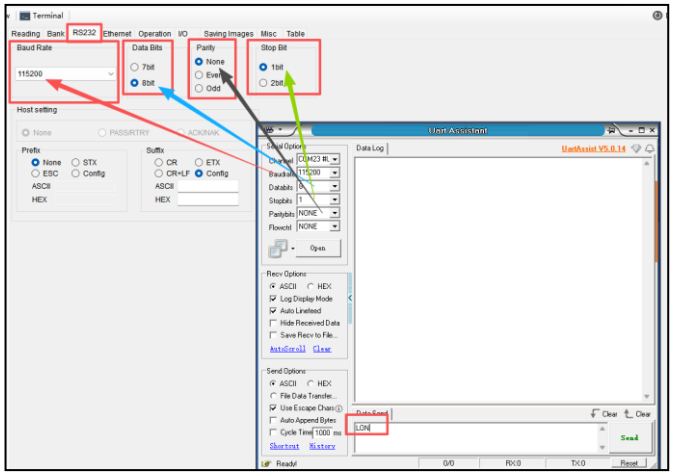


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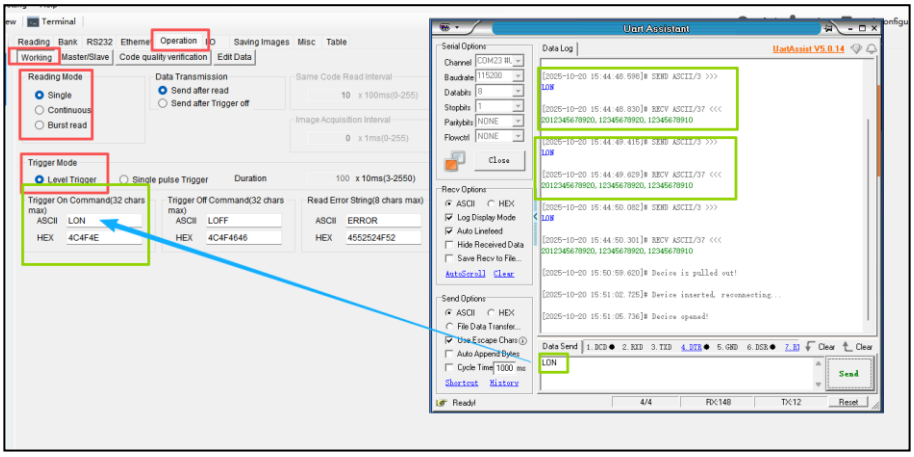
4.3 Configure Serial Assist Tool

Note: *Here we use Uart Assistant tool for data output validation through RS232.*

1. Connect the PC and the device through the DB9 connector
2. The serial port selection follows the actual display interface. The baud rate, stop bit, data bit, and parity check settings are configured as on the host computer. The connection is established upon opening the serial port.
3. The default trigger command is LON. In the serial port tool, sending the command once will output decoded data.



4. You can customize serial port commands on the operation mode page. Modify and send Configuration. Test with single reading mode and level trigger as follows:

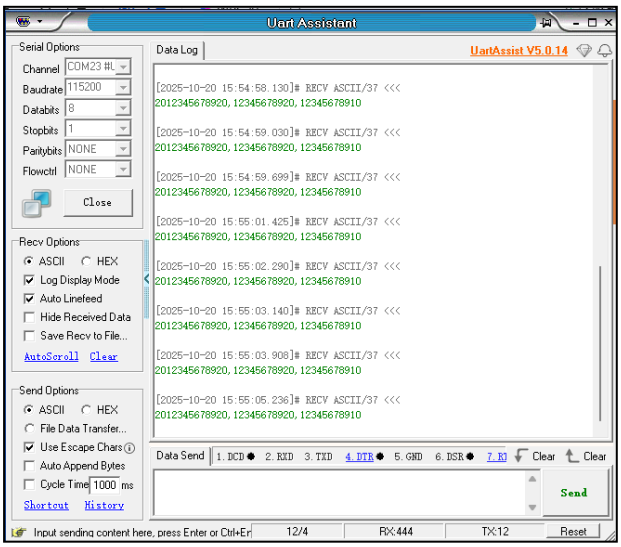


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4.4 Serial Data Output with Button Trigger

An alternative method of activating the device is to manually press the physical button to trigger the device on, the decoded result will also be sent to the **Serial Assistant** as shown below.





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