MVB-Analyzer

Datasheet

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yacer 亚册
Building Blocks of Communication

Foreword

Notational Conventions

The following categorized signal words with defined meaning might appear in the manual.

Signal Words	Meaning
 DANGER	Indicates a high potential hazard which, if not avoided, will result in death or serious injury.
 CAUTION	Indicates a potential risk which, if not avoided, could result in property damage, data loss, lower performance, or unpredictable result.
 ANTISTATIC	Indicates static sensitive equipment.
 DANGER! ELECTRIC SHOCK	Indicates High voltage danger.
 TIPS	Provides methods to help you solve a problem or save you time.
 NOTE	Provides additional information as the emphasis and supplement to the text.

Table of Contents

1 Overview

1.1 Introduction

The Yacer MVB-Analyzer protocol analyzer provides 1x MVB interface, 2x Ethernet interfaces, and 2x expansion interfaces. It can collect MVB frames, WTB frames, synchronous HDLC frames, CAN frames, and UART serial port data of the train communication bus and send them to the computer through the Ethernet interface.

With the help of the Yacer MVB-Monitor monitoring and analysis software, the MVB bus data can be analyzed and diagnosed, and the MVB master station simulation can be realized to help engineers debug the MVB interface of the equipment and monitor the MVB bus operation.

Industrial wide temperature, perfect isolation protection, small size, suitable for train network communication.

1.2 Applications

- MVB (Multifunction Vehicle Bus) monitoring & analysis
- WTB (Wire Train Bus) monitoring
- HDLC (High-level Data Link Control) protocol diagnostic test
- CAN bus detection
- RS-232/422/485 serial port acquisition test
- MVB, WTB, HDLC, UART, CAN to Ethernet
- Train Communication Network (TCN)
- Development and debugging of train equipment

1.3 Features

- 1x MVB interface, optional ESD+, EMD media
- 2x 100M Ethernet interfaces
- 2x expansion interfaces, optional RS-232, RS-422, RS-485 serial or CAN bus interface
- Serial port supports asynchronous UART, synchronous HDLC protocol
- Easy-to-use MVB-Monitor analysis software
- Open programming interface

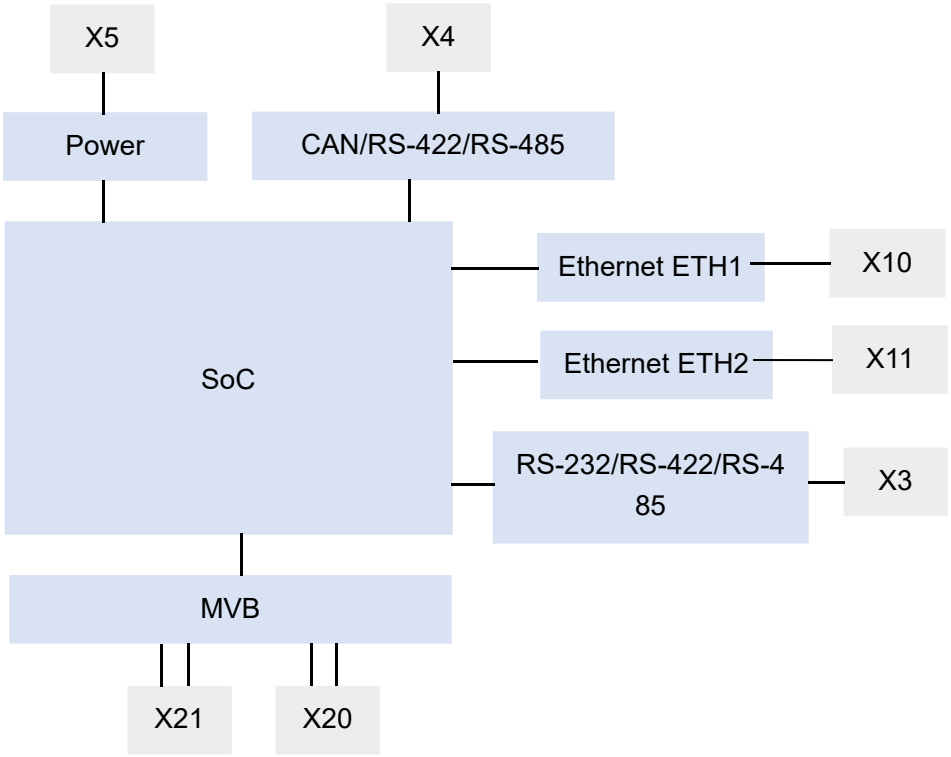
1.4 Order Information

MVB-Analyzer -	M	0	5	5	-LV	
MVB physical layer media type:						
● EMD	**M**					
● ESD+	**S**					
Protocol Support:						
● UDP		0				
● UDP, HDLC		1				
Extended Interface X3 Definition:						
● None			**0**			
● Full-duplex RS-232 serial port			**3**			
● Full-duplex RS-422 serial port			**4**			
● Half-duplex RS-485 serial port			**5**			
Extended Interface X4 Definition:						
● None				**0**		
● Full-duplex RS-422 serial port				**4**		
● Half-duplex RS-485 serial port				**5**		
● CAN Bus interface				**6**		
Supply voltage range:						
Nominal 24V, tolerance 9 ~ 36VDC					-LV	
Nominal 36V, 48V, tolerance 18 ~ 75VDC					-MV	
Nominal 72V, 96V, 110V, tolerance 40 ~ 160VDC					-HV	
MVB D-Sub Bolts:						
● M3 Bolts						**<empty>**
● UNC4-40 Bolts						**-UNC**

1.5 Function Blocks

The basic functions blocks are shown in the following figure:

- X20, X21 are dual-line redundant MVB interface;
- X3 expansion interface: Optional RS-232, RS-422 or RS-485;
- X4 expansion interface: Optional CAN, RS-422 or RS-485;
- ETH1, ETH2 are two 100M Ethernet interfaces, which are connected X10, X11;
- X5 is the power interface.



1.6 Technical Specifications

Item	Parameters	Details
MVB Interface	Connector	1 x male D-Sub 9 (X20) + 1 x female D-Sub 9 (X21)
	Physical media	Optional EMD, ESD+
	Logical media	Support EMD, ESD
	Isolation	2.5 kVrms
Expansion Interface X3	Connector	1 x male D-Sub 9
	Optional type	● RS-232 full-duplex serial port ● RS-422 full-duplex isolated serial port ● RS-485 half-duplex isolated serial port
	Working mode	Asynchronous UART Synchronous HDLC protocol (Optional)
	Baud rate	Synchronous ≤ 6 Mbps Asynchronous ≤ 1.5 Mbps
	Isolation	2.5 kVrms
Expansion Interface X4	Connector	1 x male D-Sub 9
	Optional type	● CAN bus isolation interface (CAN 2.0A, CAN 2.0B, ISO 11898) ● RS-422 full-duplex isolated serial port ● RS-485 half-duplex isolated serial port
	Working mode	Asynchronous UART Synchronous HDLC protocol (Optional)
	Baud rate	Serial port: Synchronous ≤ 6 Mbps Asynchronous ≤ 1.5 Mbps CAN: 50 Kbps ~ 1 Mbps
	Isolation	2.5 kVrms
Ethernet Interface	Connector	2 x M12 with D-coding
	Function	Ethernet switching, dual-IP
	Rate	100 Mbps
	Network protocol	TCP/IP
	Programming interface	UDP Server, UDP Client Support Unicast/Multicast/Broadcast

Item	Parameters	Details
	Isolation	1.5 kVrms
Configuration Software	Configuration tool	yacer-DMS configuration management software
	Monitor software	MVB-Monitor monitoring and analysis software
	Acquisition software	MVB-Acquisition acquisition and display software
Power	Power supply	LV: Nominal 24V, tolerance 9 ~ 36VDC MV: Nominal 36V, 48V, tolerance 18 ~ 75VDC HV: Nominal 72V, 96V, 110V, tolerance 40 ~ 160VDC
	Isolation protection	>1.5 kVrms, supporting Anti-reverse protection
	Power consumption	< 3W
	Power connector	3 pin connector with 5mm pitch (Phoenix Contact MSTB 2,5 / 3-GF or equivalent)
Mechanical Characteristics	Dimensions	H x W x D: 124 x 36 x 104 mm
	Weight	500g
Operating Environment	Operating temperature	-40 ~ +70℃
	Storage temperature	-40 ~ +85℃
	Operating humidity	5 ~ 95% RH (no condensation)

2 Hardware and Physical Interfaces

2.1 Appearance

2.2 LED Indicators

Item	Description
RUN	Running indicator, flashing when the device is running normally
ALARM	Alarm indicator, on when the device is malfunctioning, and off when the device is normal
MVB A	Line A indicator, blinking once after one frame has been received or transmitted
MVB B	Line B indicator, blinking once after one frame has been received or transmitted
X3	Expansion interface X3 indicator, blinking once after data has been received or transmitted
X4	Expansion interface X4 indicator, blinking once after data has been received or transmitted
LINK/ACT	Link/ACT indicator of the Ethernet interfaces

2.3 Ethernet Interfaces ETH1, ETH2 (X10, X11)

2.3.1 Function Description

ETH1, ETH2 are two 10/100M Ethernet interfaces with connectors X10 and X11 as M12 (D-coding).

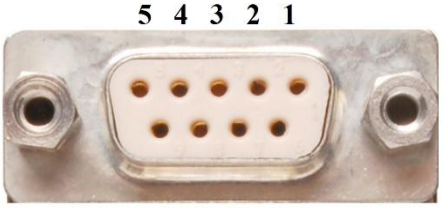
There are two working modes:

- Ethernet switching mode: Enable the built-in Ethernet switching function.
- Dual IP mode: Each Ethernet interface has an independent IP address.

2.3.2 Pin Definition

X10, X11 Pin	Description
1	TD +
2	RD +
3	TD -
4	RD -

2.4 MVB Interface

X20 (Male D-Sub 9 connector)	X21 (Female D-Sub 9 connector)
	

2.4.1 EMD Pin Definition

Pin	X20 (Male) Signal Name	X21 (Female) Signal Name	Description
1	A.Data_P		Line A positive (+)
2	A.Data_N		Line A negative (-)

Pin	X20 (Male) Signal Name	X21 (Female) Signal Name	Description
3			
4	B.Data_P		Line B positive (+)
5	B.Data_N		Line B negative (-)
6	A.Term_P		Line A matching resistor positive (+)
7	A.Term_N		Line A matching resistor negative (-)
8	B.Term_P		Line B matching resistor positive (+)
9	B.Term_N		Line B matching resistor negative (-)

2.4.2 ESD+ Pin Definition

Pin	X20 (Male) Signal Name	X21 (Female) Signal Name	Description
1	A.Data_P		Line A positive (+)
2	A.Data_N		Line A negative (-)
3			
4	B.Data_P		Line B positive (+)
5	B.Data_N		Line B negative (-)
6	A.Bus_GND		Line A ground
7	B.Bus_GND		Line B ground
8	A.Bus_5V		Line A power supply
9	B.Bus_5V		Line B power supply

2.5 RS-232/422/485 Interface (X3)

2.5.1 Function Description

X3 is an expansion serial port, which defaults to asynchronous UART working mode, optionally supports the synchronous HDLC protocol.

Users can choose one of the following types when ordering:

- RS-232 full-duplex
- RS-422 full-duplex with isolation
- RS-485 half-duplex with isolation

2.5.2 Pin Definition

X3 uses the male D-sub 9 connector, pin defined as follows:

PIN	RS-232 Full-duplex	RS-422 Full-duplex	RS-485 Half-duplex
1			
2	RxD		
3	TxD	ISO_GND	ISO_GND
4		TxD +	Data +
5	GND	TxD -	Data -
6			
7			
8		RxD +	Term +
9		RxD -	Term -

2.5.3 Terminator RS-485

In RS-485 mode, short pin 8 and 9 to enable terminal matching with a matching resistance of 120 ohms.

2.6 CAN/RS-422/485 Interface (X4)

2.6.1 Function Description

X4 is an expansion interface. Users can choose between a serial port or a CAN bus interface when placing an order. If a serial port is ordered, one of the following configurations can be selected at the time of factory shipment:

- RS-422: Full-duplex with isolation
- RS-485: Half-duplex with isolation

When configured as a serial port, it defaults to the asynchronous UART working mode and optionally supports the synchronous HDLC protocol.

2.6.2 Pin Definition

PIN	CAN	RS-422 Full-duplex	RS-485 Half-duplex
1	Term +		
2	CAN_L		
3	ISO_GND	ISO_GND	ISO_GND
4		TxD +	Data +
5		TxD -	Data -
6	Term -		
7	CAN_H		
8		RxD +	Term +
9		RxD -	Term -

2.6.3 Terminator CAN bus

In CAN interface mode, short pin 1 and 6 to enable terminal matching with a matching resistance of 120 ohms.

2.6.4 Terminator RS-485

In RS-485 mode, short pin 8 and 9 to enable terminal matching with a matching resistance of 120 ohms.

2.7 Power Interface (X5)

2.7.1 Function Description

MVB-Analyzer is powered by DC power supply, supports isolation protection and surge protection, and provides anti-inverse protection.

According to different factory configurations, the power input range is shown in the following table:

Model	Nominal Value	Minimum Value	Maximum Value
LV	24V	9V	36V
MV	36V, 48V	18V	75V
HV	72V, 96V, 110V	40V	160V

2.7.2 Pin Definition

The X5 uses a 3-pos 5mm terminal connector (Phoenix Contact MSTB 2,5 / 3-GF compatible).

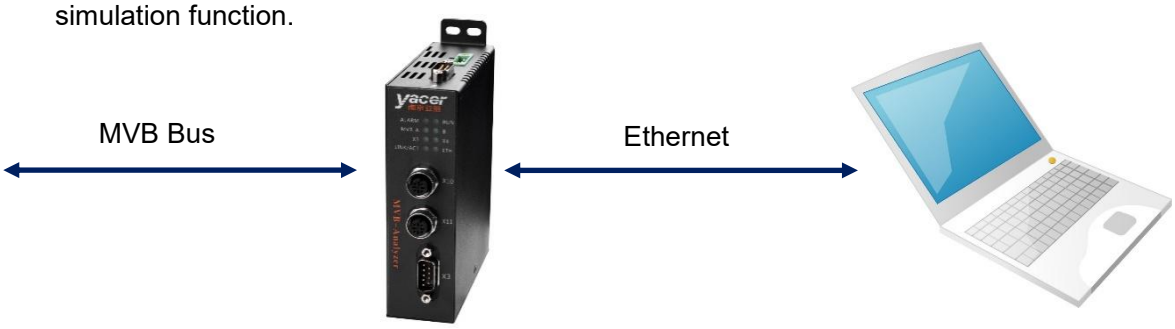
Pin	Signal Name	Description
1	V +	Power +
2	FG	Protection ground
3	V -	Power -

3 MVB-Monitor Software

3.1 Monitor and Analyze MVB Bus Data

The MVB-Analyzer monitors and collects all the data on the MVB bus through the MVB interface. After converting the data into UDP messages, it sends them to the computer in real time. The MVB-Monitor monitoring and analysis software running on the computer can scan and analyze the received MVB bus data.

The MVB-Monitor software is able to generate master station simulation data, send it to the MVB-Analyzer via Ethernet, and control the analyzer to realize the MVB master station simulation function.



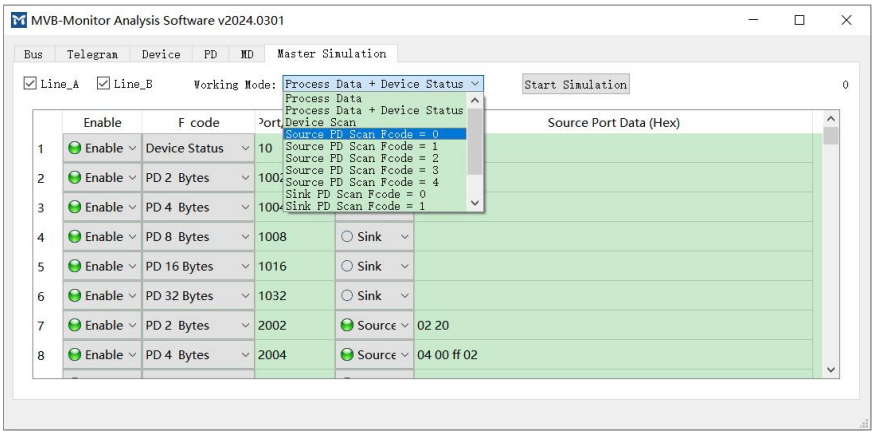
3.2 Get MVB-Monitor Software

Users can obtain the compressed package of the monitoring and analysis software, MVB-Monitor.zip, in the following ways:

- In the "Software Tools" directory of the USB flash drive that comes with the MVB-Analyzer.
- On the software channel of Yacer's official website: https://www.yacer.com.cn .

3.3 Run MVB-Monitor Software

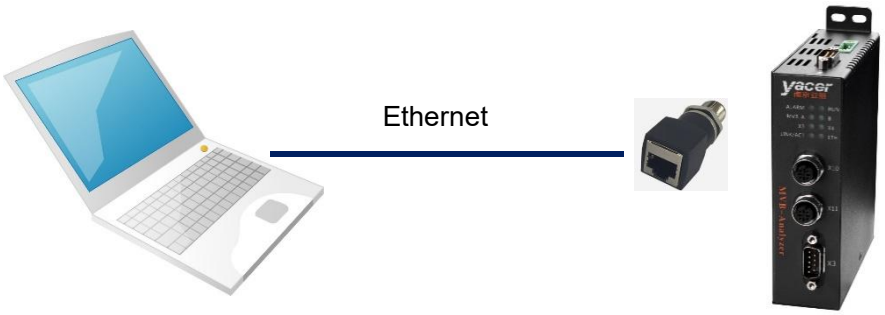
MVB-Monitor is a free installation application software, unzip MVB-Monitor.zip, enter the working directory and double click the file MVB-Monitor.exe to run.



4 Building Configuration Environment

4.1 Connect Configuration Computer to MVB-Analyzer

Connect the management computer with any Ethernet interface port of MVB-Analyzer through network cable, and run yacer-DMS configuration management software on the computer to configure the parameters and monitor the state of MVB-Analyzer.



4.2 Get yacer-DMS Configuration Management Software

The user can obtain a compressed package yacer-DMS.zip of configuration management software in the following ways:

- In the “tools” directory of the accompanied U disk of MVB-Analyzer;
- Software channel on the official website (www.yacer.com.cn).

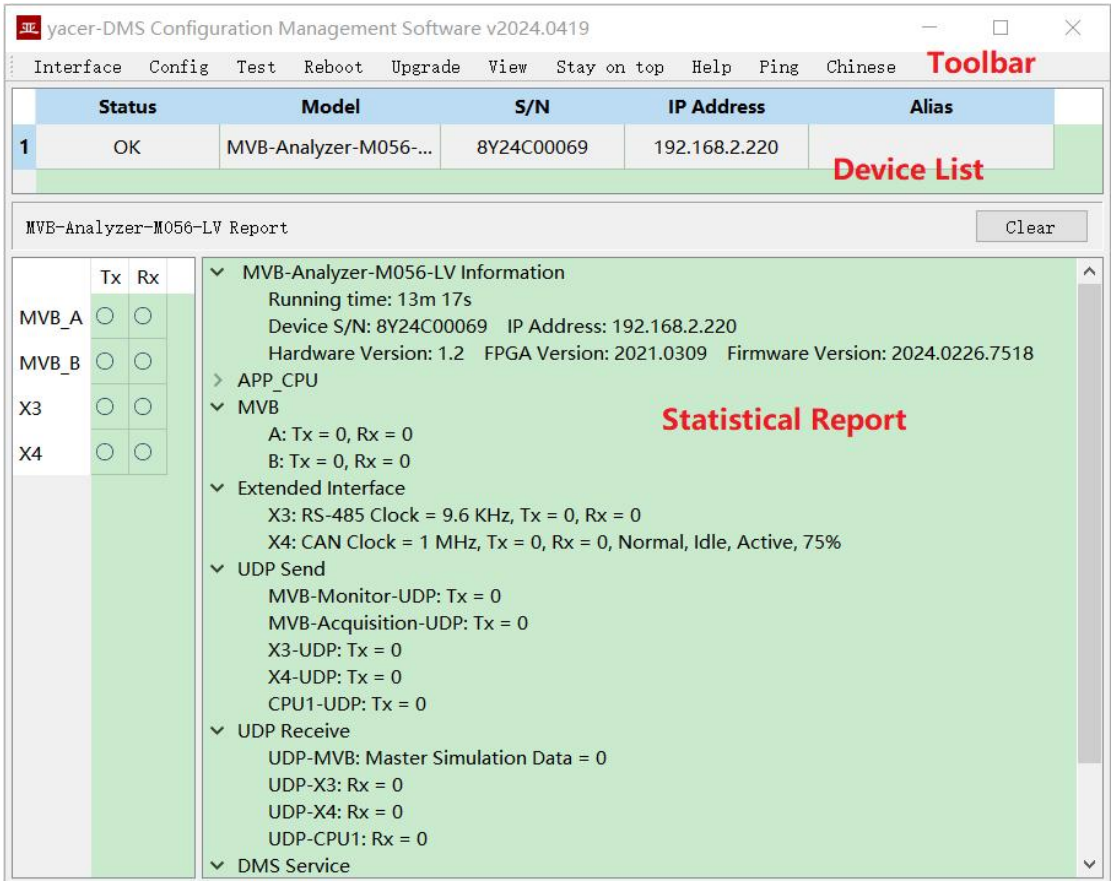
4.3 Run yacer-DMS software

The yacer-DMS is a free installation application software, unzip yacer-DMS.zip, enter the working directory and double click the file yacer-DMS.exe to run.

4.4 Main Window of yacer-DMS

The following figure is the main interface of the configuration management software, which can be divided into three parts:

- Toolbar: Functional operation buttons;
- Device List: Displaying the basic information and operation status of devices;
- Statistical Report: Displaying the receive/transmit indication & statistics, and device details.



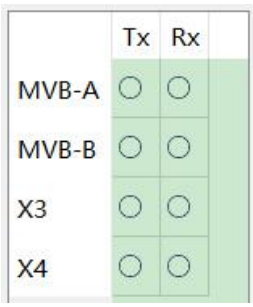
4.5 Statistical Report

The statistical report has three panels: control panel, receive/transmit indication panel and information panel.

4.5.1 Control Panel

The statistics report is refreshed once per second and the statistics can be cleared by clicking the “Clear” button.

4.5.2 Receive/Transmit Indication Panel



- Tx: The interface sends a frame of data, corresponding Tx indicator blinks once;
- Rx: The interface receives a frame of data, corresponding Rx

indicator blinks once.

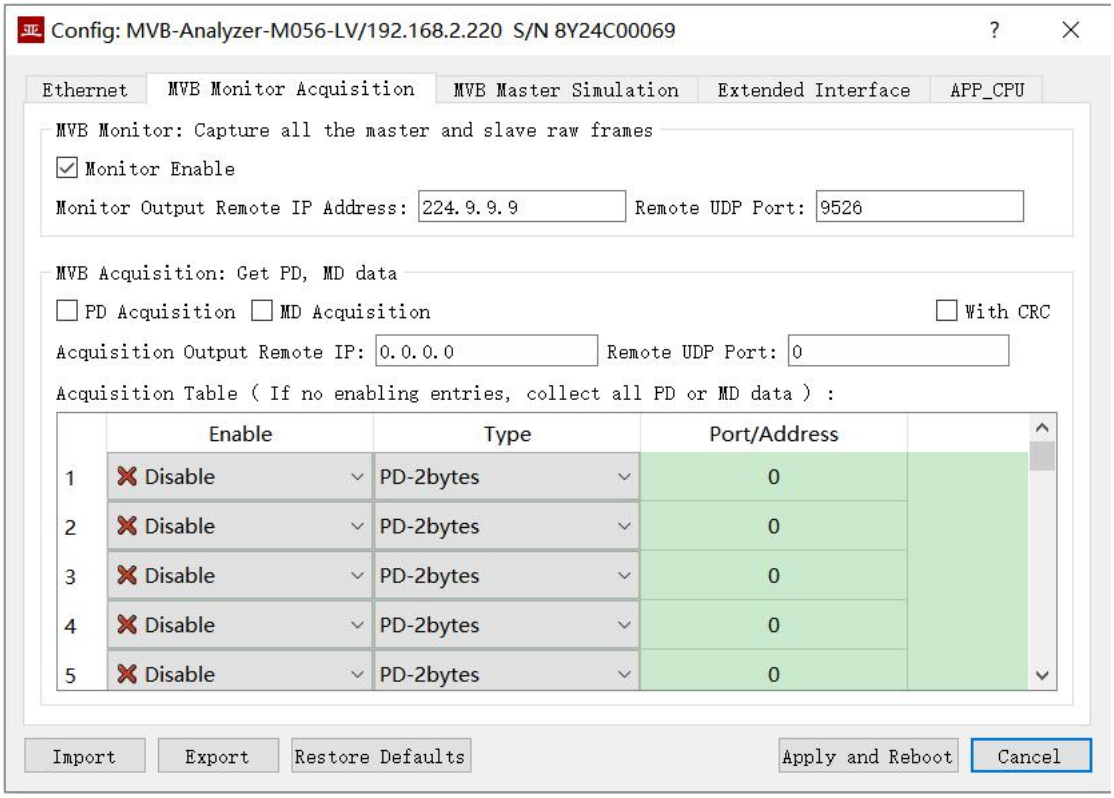
4.5.3 Information Panel

The right side of the statistical report is the information panel, which can display the following contents:

- Device information: Running time, S/N number, version number;
- APP_CPU: Application CPU operation information;
- MVB：MVB interface status information, receive/transmit statistics;
- Extended Interface: Status and receive/transmit statistics of extended interfaces;
- UDP Send: Number of packets sent from MVB and extended Interfaces to UDP;
- UDP Receive: Number of packets received on UDP to MVB and extended Interfaces;
- DMS Service: DMS message receive/transmit statistics.

4.6 Configure Device

Click on the “Config” button on the toolbar or double-click the selected device in the device list, yacer-DMS pops up the configuration dialog. According to the interface and function, the dialog divides the configuration items into several configuration pages.



The following operation buttons are located at the bottom of the dialog:

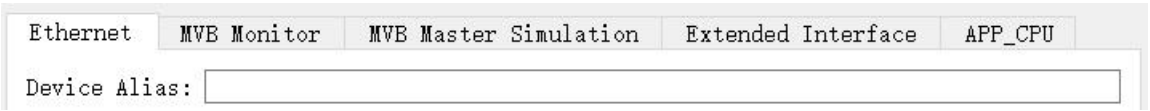
Button	Function
Import	Open the configuration file, read the configuration parameters refresh the configuration dialog
Export	Export configuration parameters from the configuration dialog to a file for saving
Restore Defaults	Refresh the configuration dialog with the factory paramters
Apply and Reboot	Write the configuration parameters in the dialog to the deivce, and restart the device to make the configuration take effect
Cancel	Cancel current configuration operation

5 Function and Configuration

5.1 Ethernet Configuration

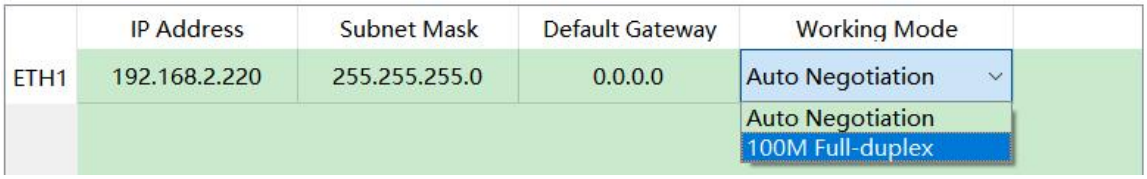
5.1.1 Device alias

Allow users to set aliases for MVB-Analyzer to add descriptions or mnemonic identities to the device.



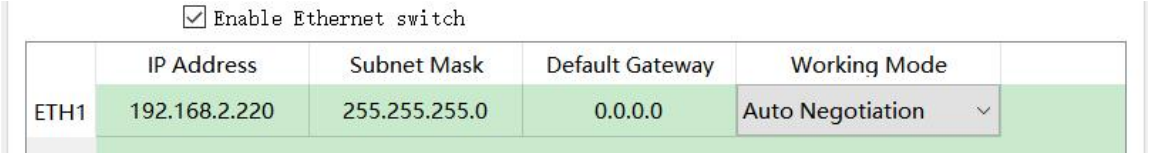
5.1.2 Ethernet Interface Working Mode

Ethernet interface can choose between auto negotiation and forced 100M full-duplex operation modes.

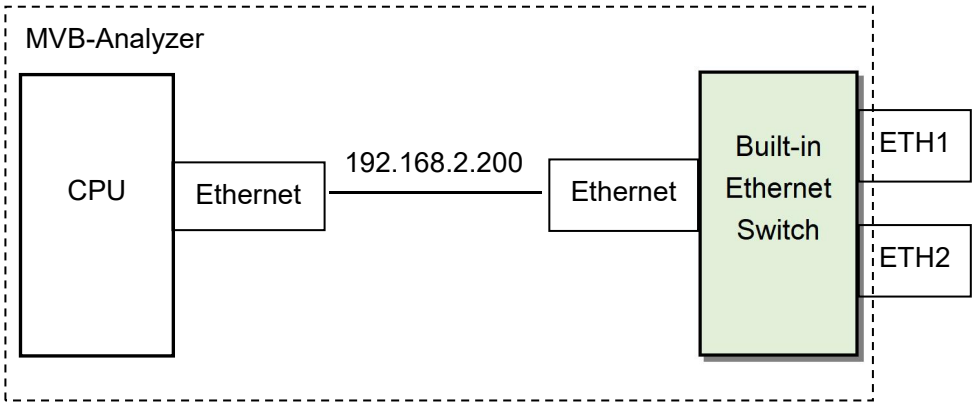


5.1.3 Enable Ethernet Switch

By default, check the “Enable Ethernet switch” checkbox to enable the built-in Ethernet switch, providing the Ethernet switching function between ETH1 and ETH2.

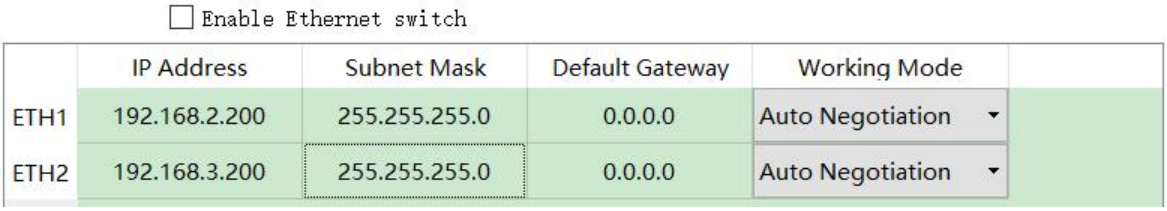


While the Ethernet switching function has been enabled, MVB-Analyzer only has one IP address. The network function figure as follows:

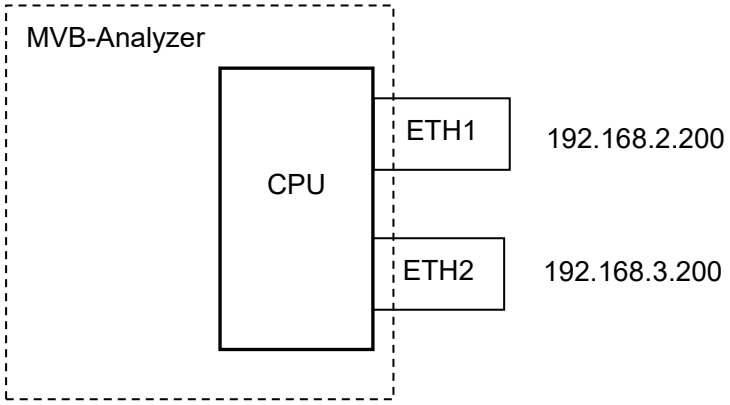


5.1.4 Dual IP Configuration

When the “Enable Ethernet switch” checkbox is unchecked, ensure ETH1 and ETH2 are not on the same subnet for configuration as they have an independent IP address.



With the dual-IP function figure as follows, the MVB-Analyzer is equivalent to a PC equipped with two network cards.

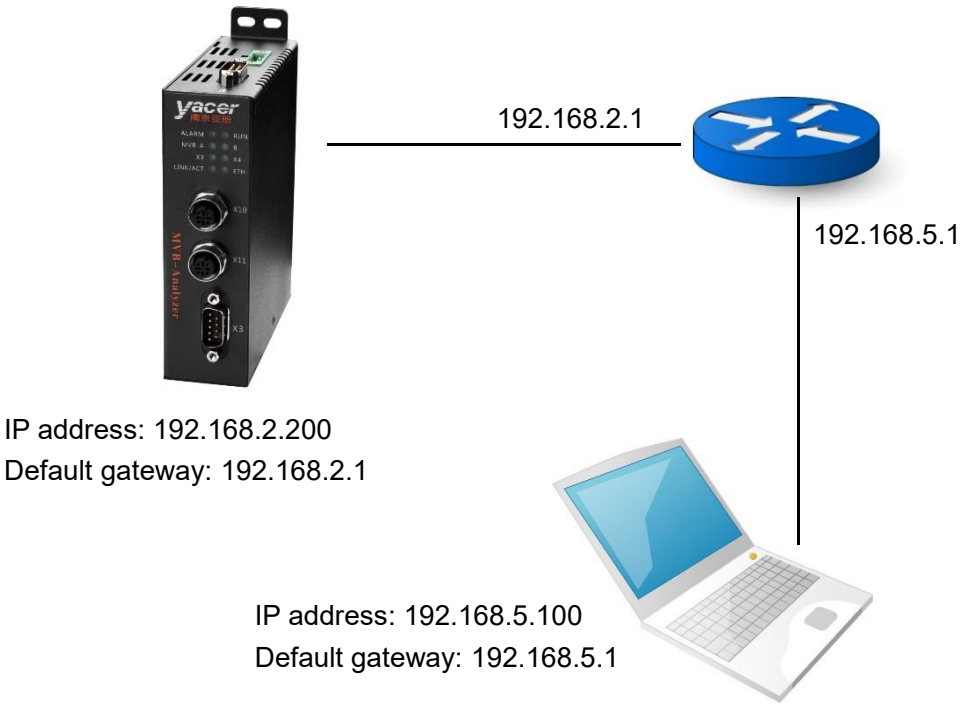


5.1.5 Default Gateway

By default, the default gateway is 0.0.0.0, representing that there is no gateway configuration.

If MVB-Analyzer needs to communicate with the host on other subnet, it must rely on an external router. At this time, the MVB-Analyzer's IP address must be on the same subnet with the IP address of the connected router port. Meanwhile, the IP address of router is set to the default gateway.

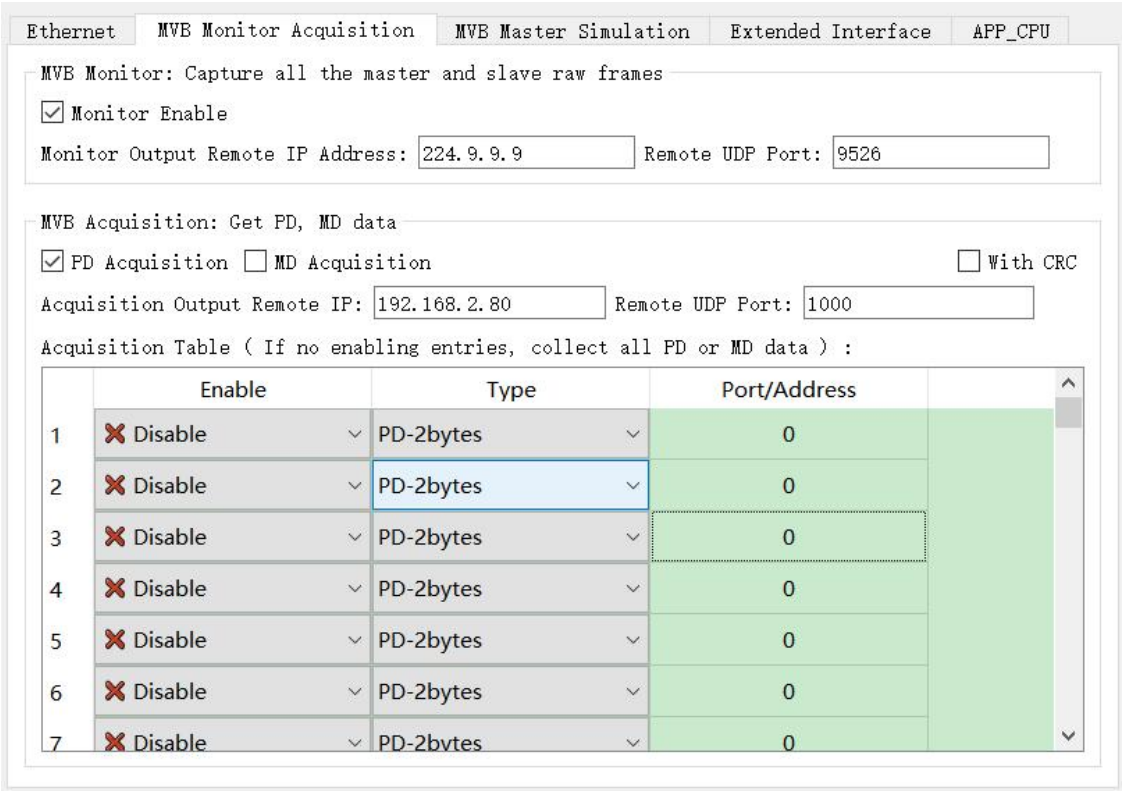
As shown below, the IP address of MVB-Analyzer is 192.168.2.200 and the IP address of remote PC is 192.168.5.100 respectively. As they do not belong to the same subnet, they must rely on the router for communication. MVB-Analyzer and computer need to set the IP address of the connected router port to the default gateway of this device.



5.2 MVB Monitor Acquisition Configuration

MVB monitoring includes two parts:

- MVB Monitor: Capture all master and slave raw frames from the MVB bus and send them to the host computer via UDP protocol;
- MVB Acquisition: Capture PD and MD data and send them to the host computer via UDP protocol.



Users can specify up to 128 acquisition entries through the acquisition table.

If you do not enable any acquisition table entries, i.e., when all table entries of the acquisition list are set to Disable for the above figure, all process and message data on the MVB bus are acquired.

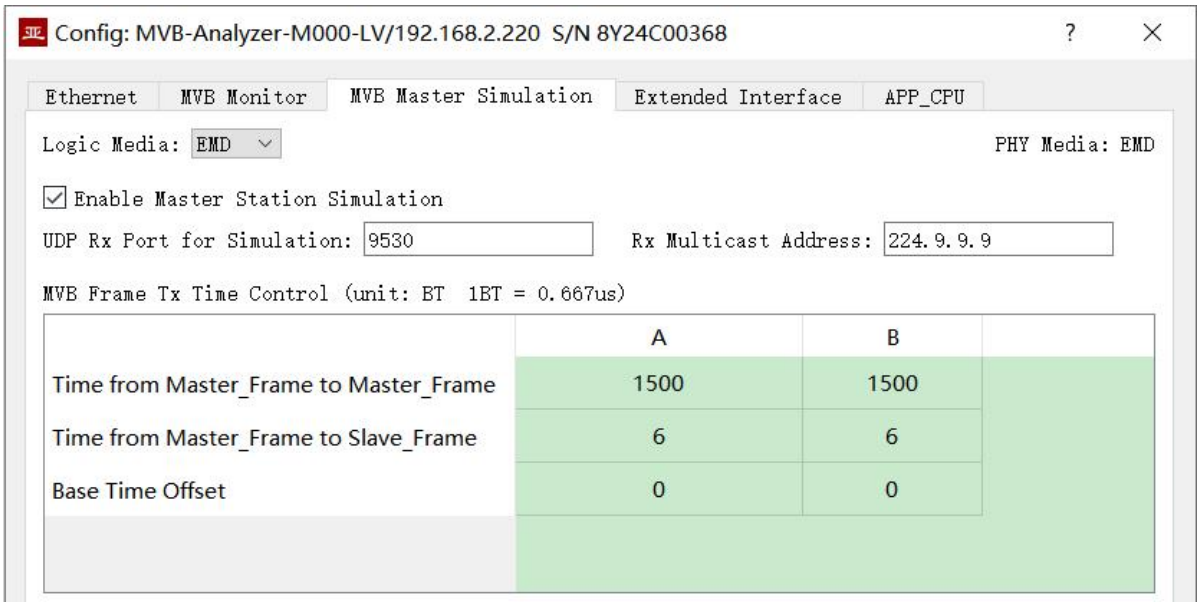
5.3 MVB Master Simulation

To avoid bus conflicts, the MVB master simulation function is turned off when the device is manufactured.

Configure the following parameters, and then use the MVB-Monitor monitoring and analyzing software to achieve the MVB Master Simulation function:

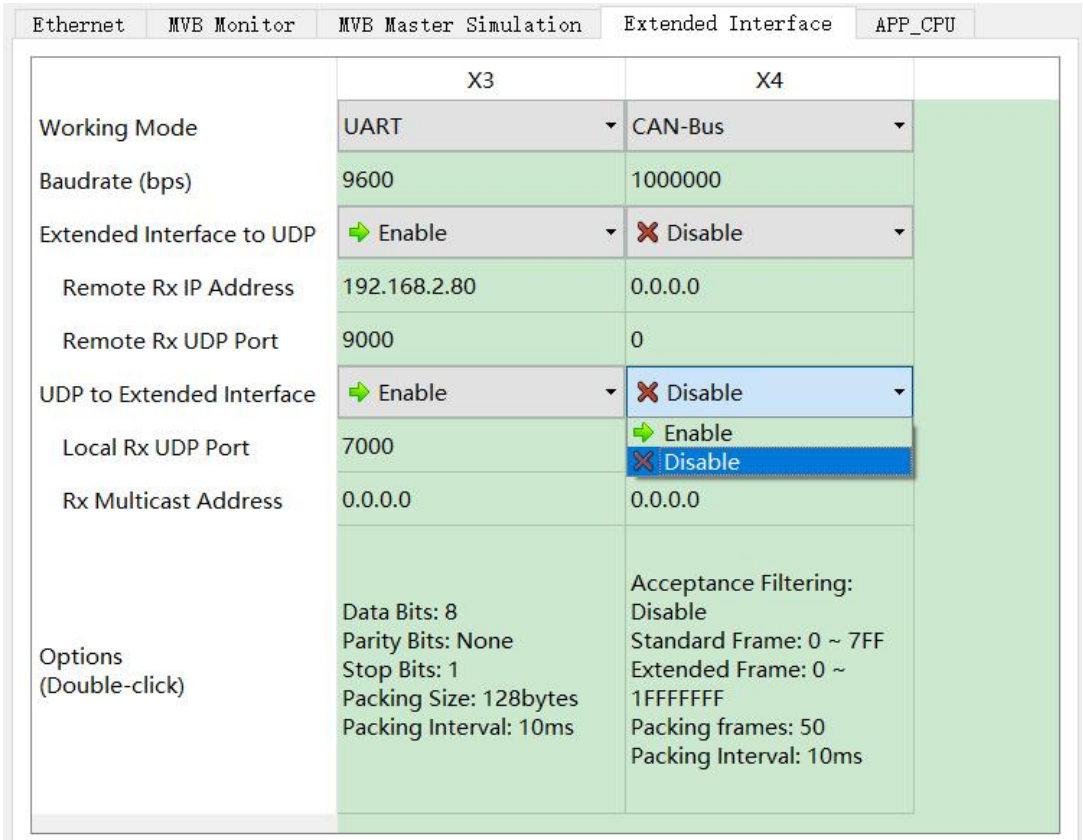
- MVB logical layer media type: configure the media type for sending master and slave frames;
- Allow master simulation checkbox: enable the master simulation function;
- Simulation data reception port and multicast address: configure the reception port and address for receiving simulation data from MVB-Monitor software;

- MVB frame sending time control: configure Tmm, Tms time interval.



5.4 Extended Interface Configuration

Configure the working mode, parameters, baud rate and forwarding relationship with UDP for extended interfaces X3 and X4.



5.4.1 Working Mode

Extended interfaces X3 and X4 can be configured as CAN or serial ports in the factory. When configured as a serial port, it can support a variety of synchronous and asynchronous working modes described in the table below.

Working Mode		Description
Asynchronous	UART	universal asynchronous serial, equivalent to the serial port on the common computer
	UART-PPP	Frame transfer on UART interface using PPP protocol
Synchronous	HDLC-NRZI	Synchronous HDLC protocol based on the NRZI encoding
	HDLC-DBPL	Synchronous HDLC protocol based on the Differential Bi-Phase Level encoding
	HDLC-MAN	Synchronous HDLC protocol based on the Manchester encoding
	HDLC-DiffMAN	Synchronous HDLC protocol based on the differential Manchester encoding formats

Users can select the desired working mode from the “working mode” combo box. Due to different parameter configuration of each working mode, contents of the “Options” cell will be adjusted automatically according to the determined working mode.

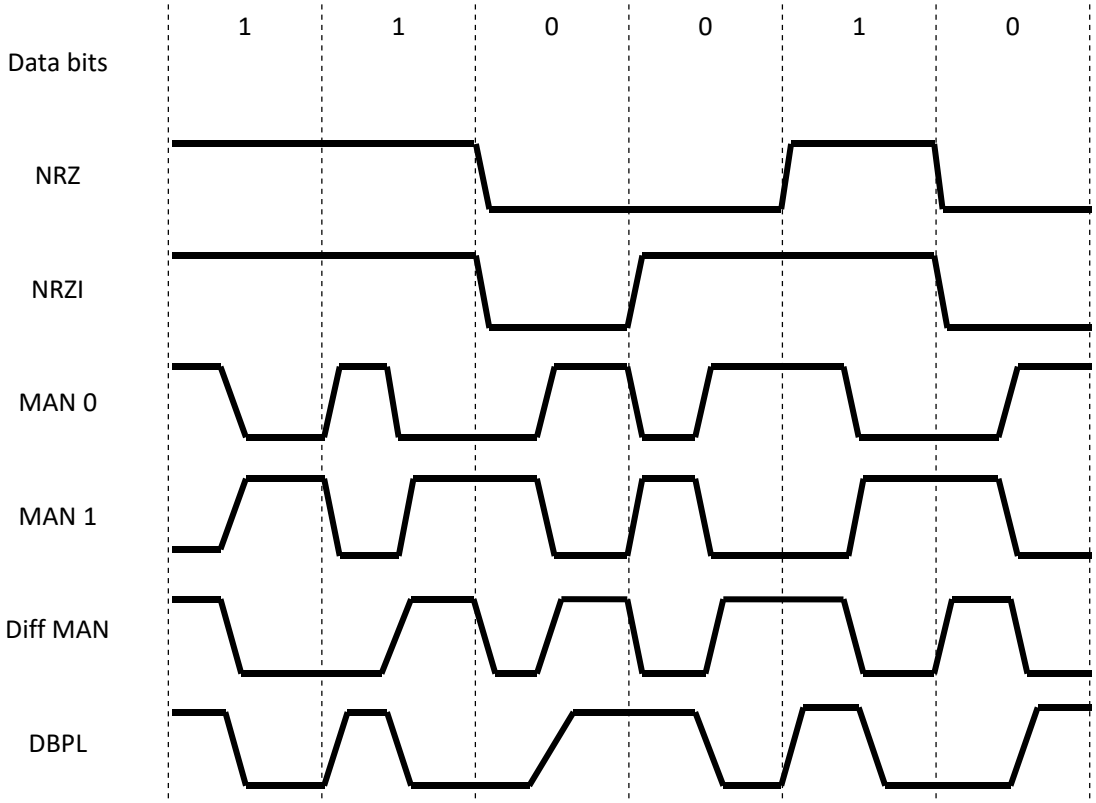
If further configuration of working parameters of the selected working mode is required, mouse double-click on the “Options” cell to pop up the parameter configuration dialog.

5.4.2 Baud rate

No matter which mode the serial port works in, the baud rate of both sides of the communication must be the same to ensure reliable and stable data communication.

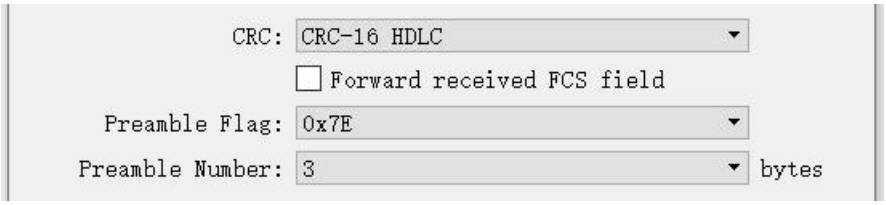
5.4.3 Encoding format of the synchronous serial port

For HDLC-NRZI, HDLC-DBPL, HDLC-MAN, HDLC-DiffMAN and other synchronous working modes, the link layer adopts the HDLC protocol with the encoding format difference as follows:



5.4.4 HDLC-NRZI Parameter Configuration

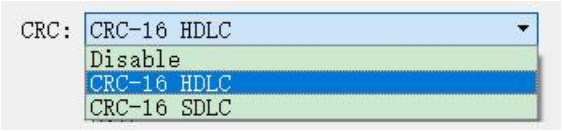
The option dialog of the HDLC-NRZI working mode is shown as follows:



5.4.4.1 CRC

To verify the correctness of data communication, CRC functionality should be enabled.

By default, the CRC-16-HDLC check mode should be selected for HDLC communication.



CRC Type	Description
Disable	CRC disabled: ● Send: No CRC calculation, no FCS field for HDLC frame ● Receive: No CRC verification
CRC-16 HDLC	16-bit ISO HDLC CRC verification
CRC-16 SDLC	16-bit IBM SDLC CRC verification

5.4.4.2 Forward received FCS field

This configuration will only take effect if CRC is enabled.

The HDLC frame structure is shown in the following table, where FCS is the frame check sequence field.

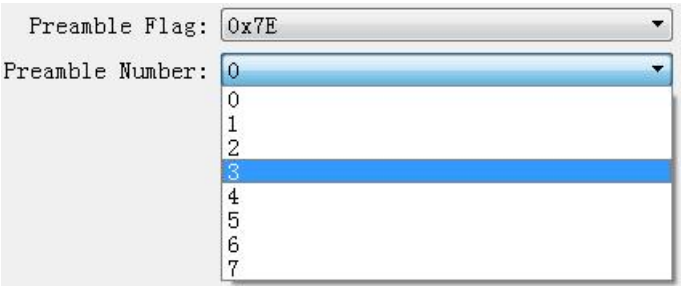
Open Flag	Address Field	Control Field	Information Field	FCS Field	Closing Flag
0x7E	1 byte	1 byte	variable length	CRC 2 bytes	0x7E
0x7E	User data			CRC 2 bytes	0x7E

If this check box is checked, the user data + FCS field is forwarded.

If this check box is unchecked, MVB-Analyzer discards the FCS field of the last 2 bytes of data and forwards only user data after receiving the HDLC frame and performing the CRC checksum.

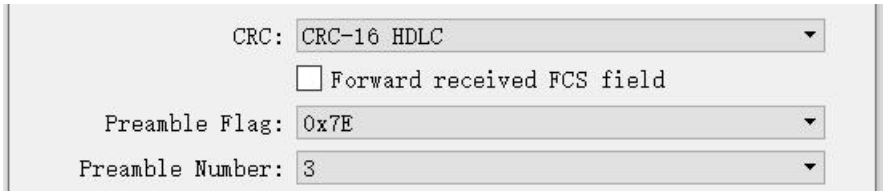
5.4.4.3 Preamble Flag & Number

In half-duplex communication, it is often necessary to add preamble flags in front of the frame for receiver synchronization. The most common is to add 2-5 0x7E flag.



5.4.5 HDLC-DBPL Parameter Configuration

HDLC-DBPL uses the Differential Bi-Phase Level encoding format, and its Options dialog box is shown below:

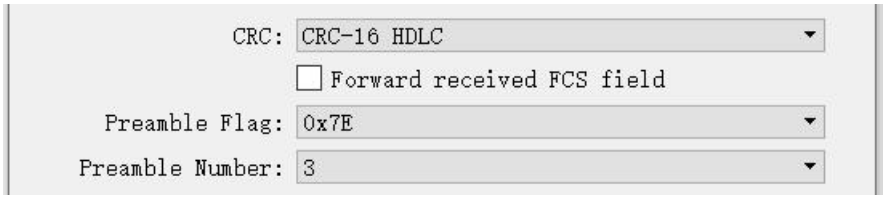


The parameters of HDLC-DBPL have the same meaning as HDLC-NRZI.

It is important to note that many claims that DBPL encoding is in fact differential Manchester encoding, so users need to carefully refer to the definition of the Synchronous Serial Encoding Format chapter to choose the correct working mode.

5.4.6 HDLC-DiffMAN (differential Manchester) Configuration

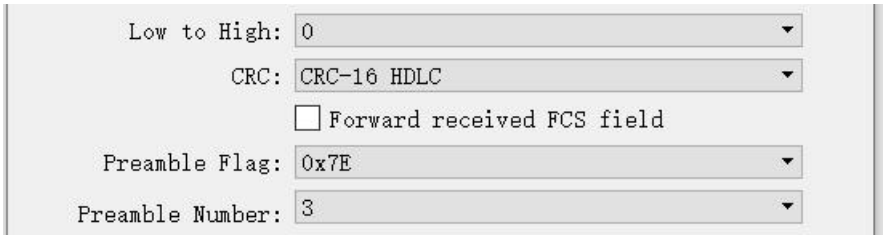
The Differential Manchester Options dialog box is shown below:



The parameters of HDLC-DiffMAN have the same meaning as HDLC-NRZI.

5.4.7 HDLC-MAN (Manchester) Parameter Configuration

The Manchester Options dialog box is shown below:



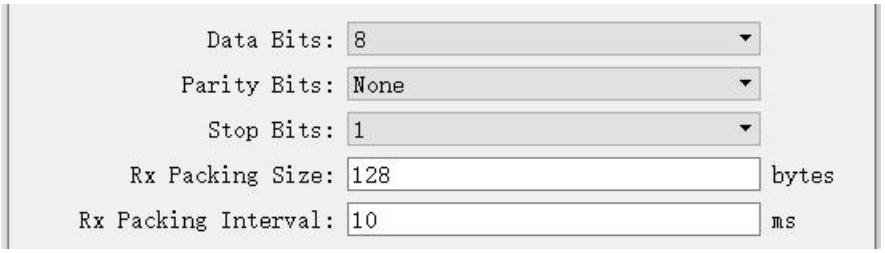
In addition to the same configuration parameters as NRZI, the Manchester encoding format has parameters with the meaning of edges with low to high waveforms for data lines:

- 0: Low to high edges represent logical 0;
- 1: Low to high edges represent logic 1.

5.4.8 UART Parameter Configuration

UART is a type of character stream communication. Data bits, parity bits and stop bits define the basic working parameters of the asynchronous serial port, which must be identical to the configuration of opposite device.

Generally, data bits are defined as 8 bits (1 byte), so that UART corresponds to the communication of byte streams.



When converting the byte stream of UART into UDP message or HDLC frame, if every byte is converted into a UDP message for transmission, the overhead is too large and the efficiency is too low.

In order to improve the efficiency, MVB-Analyzer will buffer the received byte stream, and then send out a UDP message composed of several buffered bytes. This process is called packing.

Packing is controlled by two parameters, which are called Packing Size & Packing interval.

5.4.8.1 Packing Size

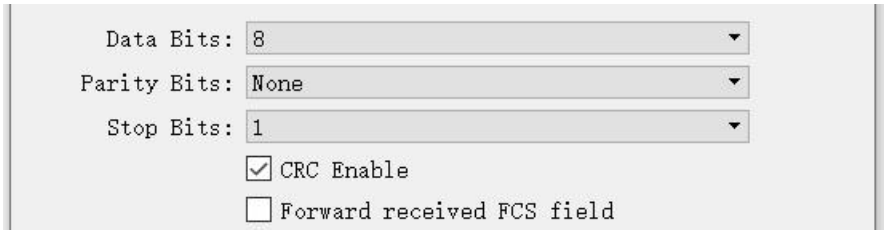
For example, if the Packing Size is set to 128 bytes, then when UART receives 128 bytes, a packet will be formed for forwarding.

5.4.8.2 Packing Interval

For example, the above example sets the Packing Interval to 10ms. If the UART does not receive new data after 10ms, the data in the buffer will be forwarded as a packet regardless of whether 128 bytes are received.

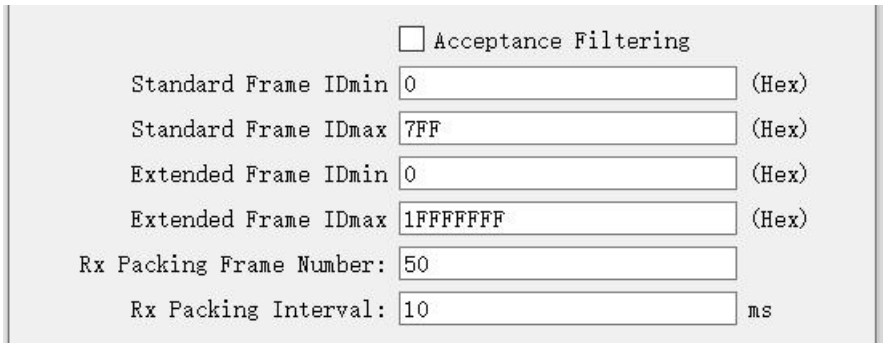
5.4.9 UART-PPP Parameter Configuration

When the serial port works in the asynchronous UART mode, the serial port sends and receives the character stream without head and tail. In order to transmit a packet, a UART-PPP frame is constructed by adding 0x7E as the start and end marks at the beginning and end of the packet, and inserting a frame check sequence.



5.4.10 CAN Interface Configuration

X4 can be selected as CAN bus interface in the factory, and the configuration is as follows:



Because the CAN frame is very short, if each CAN frame is converted into a UDP message for transmission, the overhead is too large and the efficiency is too low.

In order to improve the efficiency, MVB-Analyzer buffers the received can frames, and then forwards the buffered CAN frames into a packet, which is called packing.

Packing is controlled by two parameters, which are called Packing Frame Number & Packing interval.

5.4.10.1 Packing Frame Number

The maximum Packing Frame Number is 50.

As shown in the figure above, the Packing Frame Number is 50. When MVB-Analyzer receives 50 CAN frames, it is assembled into a data packet for forwarding.

5.4.10.2 Packing Interval

As the example above sets the packet interval to 10 ms, if no new CAN frame is received for more than 10 ms, the CAN frames of the buffer will be combined into a single packet to forward regardless of whether they are full or not.

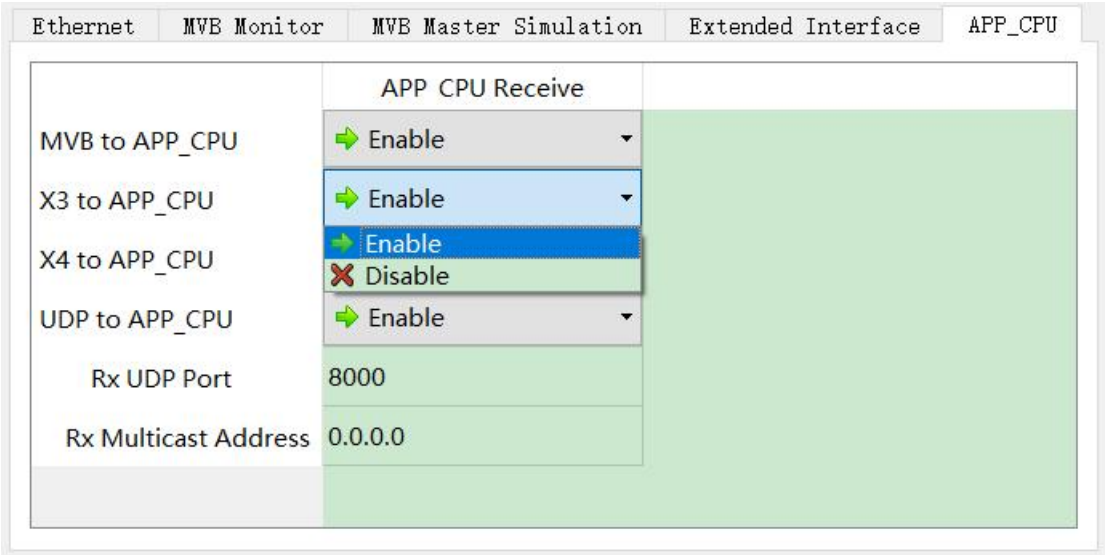
5.4.10.3 Acceptance filtering

The acceptance filtering allows users to set the frame ID range that is allowed to be received.

5.5 APP_CPU Configuration

The APP_CPU configuration page enables Ethernet, MVB and extended interface data to be forwarded to the application CPU for processing by the user's secondary development software.

All options should be disabled when the application CPU is not enabled.

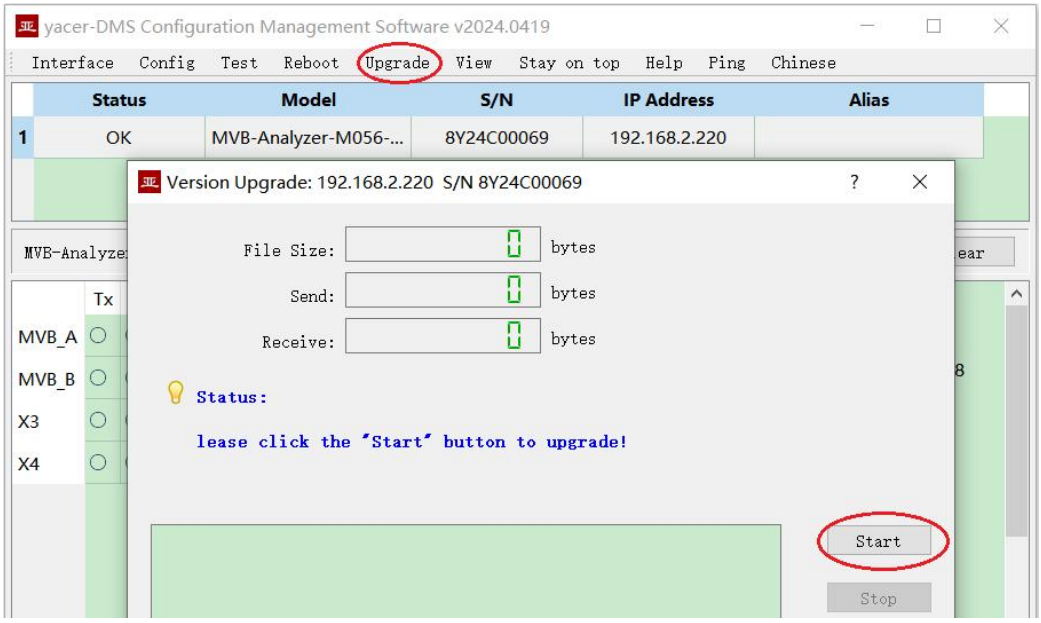


6 System Maintenance

6.1 Firmware Version Upgrade

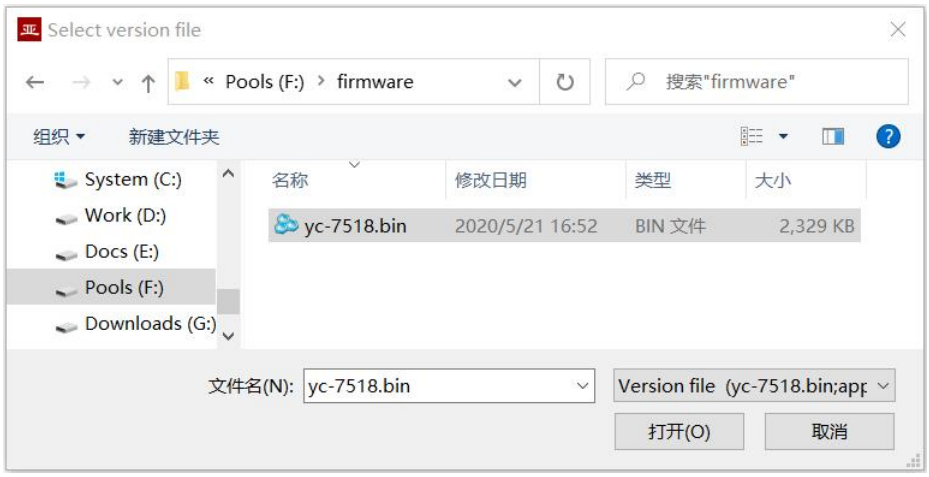
6.1.1 Start Upgrade

Click the “Upgrade” button on the toolbar to pop up the version upgrade dialog, and then click the “Start” button.



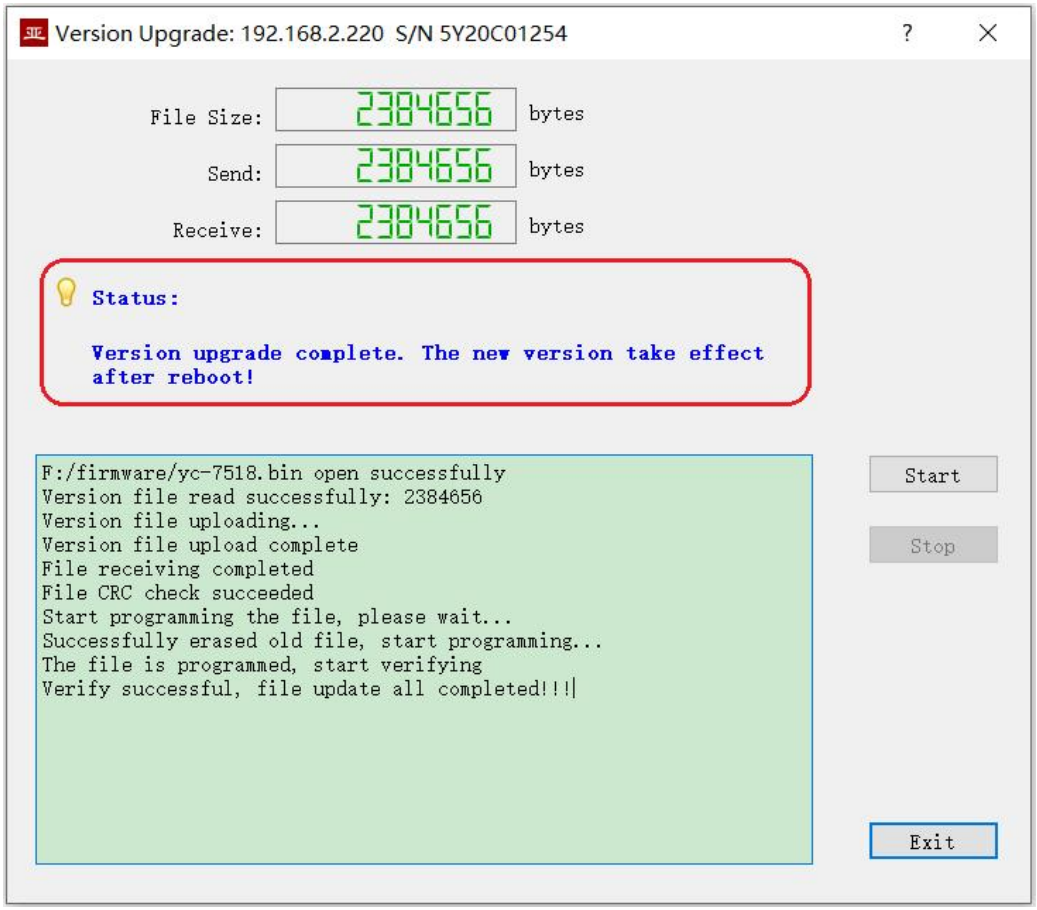
6.1.2 Select Version File

Pop up the “Select version file” dialog, and find the folder where the latest firmware version is stored, select the corresponding file, and click “Open” to start the update.



6.1.3 Complete Upgrade

When the page displays “Version upgrade complete” status, it indicates that the version upgrade is completed.

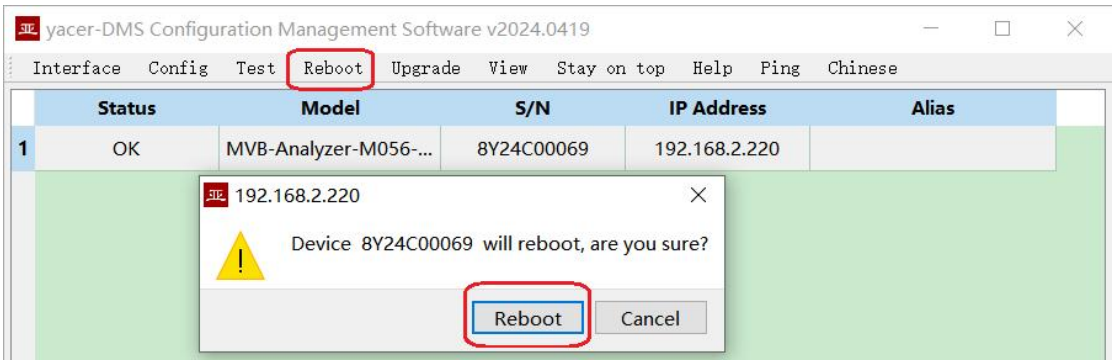


6.1.4 Confirm Upgrade

After the upgrade is completed, power up the device again, observe the version information in the statistical report, and determine whether the new version is successfully updated by the version date.

6.2 Reboot Device

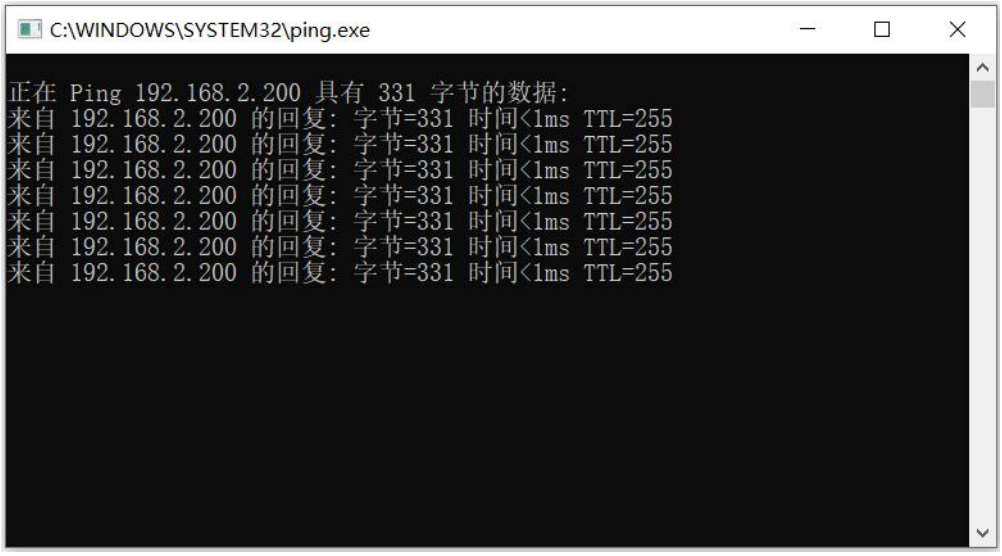
Click the “Reboot” button on the toolbar to pop up the device reboot dialog, and then click the “Reboot” button to reboot the device.



6.3 Ping

By clicking the "Ping" button on the toolbar, DMS automatically starts the ping command on the selected device to check whether the network connection between the configuration management computer and MVB-Analyzer is working properly.

Before executing the Ping command, first make sure that the IP addresses of the computer and MVB-Analyzer are in the same subnet.



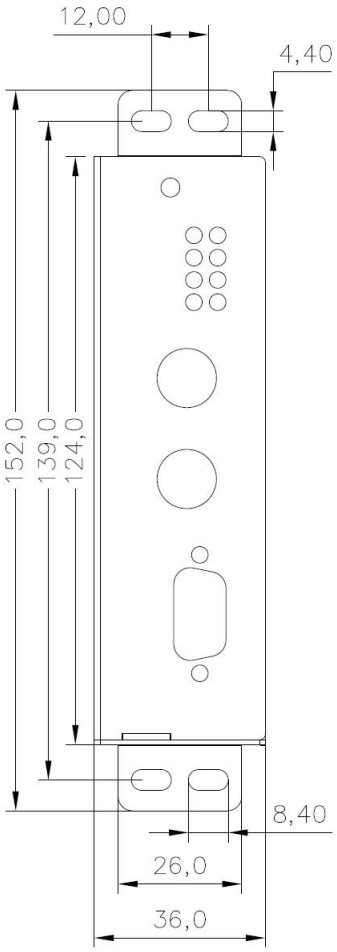
7 Mechanical Characteristics & Installation

The material of the housing shell is stainless steel. The thickness of the sheet metal is 1mm.

Dimensions (Height x Width x depth) : 124 x 36 x 104mm.

MVB-Analyzer can be mounted directly using four M4 Screws.

Mounting hole diameter = 4.4mm.


12,00
4,40
152,0
139,0
124,0
8,40
26,0
36,0


yacer
南京亚册
ALARM
RUN
MVB A
B
X3
X4
LINK/ACT
ETH
X10
X11
X3
MVB-Analyzer
124mm
104mm
36mm

8 Software Development

8.1 MVB Data Conversion Format

Reference: *MVB-Analyzer_DataFormat*

8.2 MVB Master Simulation

Reference: *MVB-Analyzer_Master_Simulation*

8.3 CAN Transmission Format in UDP Protocol

Reference: *CAN-bus_Programming_Manual*

About the Manual

- The manual is for reference only. If there is inconsistency between the manual and the actual product, the actual product shall prevail.
- We are not liable for any loss caused by the operations that do not comply with the manual.
- All the designs and software are subject to change without prior written notice. The product updates might cause some differences between the actual product and the manual. Please contact the customer service for the latest program and supplementary documentation.
- There still might be deviation in technical data, functions and operations description, or errors in print. If there is any doubt or dispute, we reserve the right of final explanation.
- Upgrade the reader software or try other mainstream reader software if the manual (in PDF format) cannot be opened.
- Please visit our website, contact the supplier or customer service if there is any problem occurring when using the device.
- If there is any uncertainty or controversy, we reserve the right of final explanation.