MH-ET LIVE Scanner v3.0

QR code barcode recognition module
scan code module
serial communication UART interface embedded

Chapter 1 Getting Started

Introduction

The product adopts a professional image processing chip for barcode recognition, which can maintain high-speed performance of fast and stable reading in a complex environment, and has the characteristics of low power consumption and low heat generation. Quick start, cold start and warm start can keep up the rapid start, no need to wait, it is ready to open.
Supports reading 1D and 2D codes on paper, screen, plastic and other carriers.

About this manual

This manual mainly provides various function setting instructions for the product. By scanning the setup function bar code in this manual, you can change function parameters such as communication interface parameters, read operation mode, prompt mode, data processing and output.

Chapter 2 System Settings

Restore factory defaults

Note: Please use the “Restore Factory Default” function carefully. After reading this setting code, the current parameter setting will be lost and replaced with the factory default value. The factory default parameters and functions can be found in Appendix A.

~MA5F01B2C.
Reset

User default setting

In addition to the factory default settings, you can save frequently used settings to the user default settings.
Reading the "Save User Defaults" code will save all parameters of the QR code scanner to the user default settings. If there is user default configuration information on the QR code scanner, the current configuration information will replace the original user default configuration information after this operation.
Reading "Restore User Defaults" will cause the engine to switch to the state of the user's default settings.
Note: The previously saved user default settings are not lost when the factory defaults are restored.

~MA5F0506A.

Save user default recovery user default

~MA5F08F37.

Use setup code

Reading the "Scan Code Configuration Function Settings: On" barcode allows the QR code scan engine to enable the function of configuring a specific barcode (setting code function). After the function is turned on, parameters can be modified for the QR code scanning engine by reading one or more setting codes. After the setting is completed, you need to read "Save User Default" to save it, then read "Scan Code Configuration Function Setting: Off" to close the setting code and enter the normal scanning mode.
After reading "Scan Code Configuration Function Setting: Off", the QR code scanning engine can only read and process the "Scan Code Configuration Function Setting: On" setting code.

~M00910001.

Sweep configuration function setting : On scan code configuration function

~M00910000.

setting : Off

Chapter 3 Communication Interface

The Scanner v3.0 QR code scanner provides USB or TTL-232 communication with the host. Through the communication interface, it can receive read data, control the output of the QR code scanner, and change the function of the QR code scanner. Can parameters, etc.

Serial communication interface

The serial communication interface is a common way to connect a QR code scanner to a host device. When using the serial communication interface, the QR code scanner and the host device must be completely matched in the communication parameter configuration to ensure smooth communication and correct content.

The serial communication interface usually provided by the QR code scanner is based on TTL level signals, which is directly applied to the special model.
RS-232 conversion circuit.

The form of TTL3.3V can be connected to most application architectures. For some systems that need to use RS-232 interface mode, level conversion must be performed. .

The default serial communication parameters of the QR code scanner are as follows. When they are inconsistent with the host device, they can be modified by reading the setup code.

Parameter	Default
Serial communication type	Standard TTL3.3V
Baud Rate	9600
Parity Type	None
Data Bits	8
Stop Bits	1
Hardware Flow Control	None

Baud rate

The Baud Rate is in bits per second (bps: bits per second). The optional configuration parameters are listed below.

~M00F50000.
1200

~M00F50001.
2400

~M00F50002.
4800

~M00F50003.
9600

~M00F50004.
19200

~M00F50005.
38400

~M00F50006.
57600

~M00F50007.
115200

USB interface

Connect the device interface (MiniUSB interface) of the USB cable to the BT100; connect the host interface (USB interface) of the USB cable to the host. This mode is USB HID KEYBOARD mode.

Chapter 4 Reading Mode

Continuous mode

Continuous mode: automatically starts decoding after power-on. After successful or failed decoding, it will automatically start the next decoding after waiting for a period of time.

Continuous mode

~M00210001.

Induction mode

Sensing mode: When the device detects that a bar code appears in the window range, it triggers a decoding.

~M00210002.

Induction mode night vision function

~M00260001.

Induction mode night vision function: on

~M00260000.

Induction mode night vision function: off

Command mode

Command mode: After sending the start decoding command after power-on, the device starts to continue decoding until the stop decoding command is received

~M00210003.

Command continuous mode sleep setting - turn on sleep

~M00220001.

Command continuous mode sleep setting - turn off sleep

~M00220000.

Horizontal mirroring - on

~M00240001.

Horizontal mirroring - off

~M00240000.

Vertical mirroring - on

~M00250001.

Vertical mirroring - off

~M00250000.

Same code identification delay setting

In the non-manual mode, the “same reading delay” setting device automatically starts the next reading after one reading. If the barcode is exactly the same as the last successfully read barcode, the reading engine will continue. Waiting state, until the same reading delay is over, the decoding can be successfully completed. When the barcode is not repeated, the reading device will always read the code.

~M00B00000.

No delay, delay, 100mSec

~M00B00001.

~M00B0000A.

Delay 1Sec delay 10Sec

~M00B00064.

Single reading time setting:

~M00B10000.

Single reading time setting: no delay

~M00B10032.

Single reading time setting: 5 seconds

Reading interval setting

~M00B20000.

Reading interval setting: no delay

~M00B2000A.

Reading interval setting: 1 second

Sensing mode sensitivity setting

Level0 is high, level1 is medium, and level2 is low

Sensing mode: Sensitivity level 0

Sensing mode: Sensitivity level 1

Induction mode: sensitivity level 2

Chapter 5 Instruction Mode

In different application scenarios, there will be different requirements. Scanner v3.0 has specially designed the instruction setting mode, which realizes the function that can be set by means of instructions and can be set by scanning code. The format of the instruction is as follows:

Command type	Command content	Description
Setting parameters	~Mxxxxyyyy.	M: setting ; xxxx: command; yyyy: value
Set response	[ACK]	Set successfully
	[NAK]	Valid command, invalid value
	[ENQ]	Invalid command
Query parameter	~Qxxxx.	Q: query; xxxx: command;
Query response	xxxxyyyy[ACK]	Xxxx: command; yyyy: numeric
	[ENQ]	Invalid command Invalid command
Trigger scan code	~T.	T: Trigger scan code
Trigger response	T[ACK]	Trigger success
	T[NAK]	Trigger failure

Chapter 6 Lighting

Lighting

The Scanner v3.0 is equipped with four positive white LEDs to provide an auxiliary illumination source. Even in a completely dark environment,
The barcode is quickly identified by the auxiliary illumination of the product. The lighting function can be switched on or off, and the brightness level can be adjusted by setting.

Normal mode: The lighting group lights up during shooting and goes out at other times.
Sensing mode: The lighting group lights up after the QR code scanner is turned on, and goes out at other times. Constant light mode: The lighting group continues to emit light after the QR code scanner is turned on.
Off: The light group does not illuminate under any circumstances.

~M00860000.

Fill light: normal mode (Level 0) 0%

~M00860001.

Fill light: normal mode (Level 1) 25%

~M00860002.

Fill light: normal mode (Level 2) 50%

~M00860003.

Fill light: normal mode (Level 3) 75%

~M00860004.

Fill light: normal mode (Level 4) 100%

~M01030000.

Fill light: constant light mode (Level0)0%

~M01030001.

Fill light: Constant light mode (Level 1)25%

~M01030002.

Fill light: Constant light mode (Level 2)50%

~M01030003.

Fill light: Constant light mode (Level 3) 75%

~M01030004.

Fill light: Constant light mode (Level 4) 100%

~M00860004.

Fill light: sensing mode (Level 0) 0%

~M01030000.

Fill light: sensing mode (Level 1) 25%

~M01260002.

Fill light sensing mode (Level 2) 50%

~M01260003.

Fill light: Induction mode (Level 3) 75%

~M01260004.

Fill light: normal mode (Level 4) 100%

Chapter 7 Prompt Output

Read success tone

The Scanner v3.0 QR code scanning engine can output a beep after successful reading.

The corresponding settings can be made with the following setting codes.

~M00EA0000.
Buzzer: Start successful tone one

~M00EA0001.
Buzzer: Start successful tone two

~M00EA0002.
Buzzer: Start successful tone three

~M00EA0003.
Buzzer: Start successful tone four

~M00EA0004.
Buzzer: Start successful tone five

~M00EB0000.
Buzzer: Decoded successfully tone 1

~M00EB0001.
Buzzer: Decoded successful tone 2

~M00EB0002.

Buzzer: Decoded successfully tone 3

~M00EB0003.

Buzzer: Decoded successful tone 4

~M00EB0004.

Buzzer: Decoded successful tone 5

~M00EC0000.

Buzzer: Configure successful tone 1

~M00EC0001.

Buzzer: Configure successful tone 2

~M00EC0002.

Buzzer: Configure successful tone 3

~M00EC0003.

Buzzer: Configure successful tone 4

~M00EC0004.
Buzzer: Configure successful tone 5

~M00FA0000.
Buzzer: Start successful (Level 0) 0%

~M00FA0001.
Buzzer: Start successful (Level 1) 20%

~M00FA0002.
Buzzer: Start successful (Level 2) 40%

~M00FA0003.
Buzzer: Start successful (Level 3) 60%

~M00FA0004.
Buzzer: Start successful (Level 4) 80%

~M00FA0005.
Buzzer: Start successful (Level 5) 100%

~M00FB0000.

Buzzer: Decoding Successful (Level 0) 0%

~M00FB0001.

Buzzer: Decoding Successful (Level 1) 20%

~M00FB0002.

Buzzer: Decoding Successful (Level 2) 40%

~M00FB0003.

Buzzer: Decoding Successful (Level 3) 60%

~M00FB0004.

Buzzer: Decoding Successful (Level 4) 80%

~M00FB0005.

Buzzer: Decoding Successful (Level 5) 100%

~M00FC0000.

Buzzer: Configuration successful (Level 0) 0%

~M00FC0001.

Buzzer: Configuration successful (Level 1) 20%

~M00FC0002.

Buzzer: Configuration successful (Level 2) 40%

~M00FC0003.

Buzzer: Configuration successful (Level 3) 60%

~M00FC0004.

Buzzer: Configuration successful (Level 4) 80%

~M00FC0005.

Buzzer: Configuration successful (Level 5) 100%

Chapter 8 Output Format Settings

Automatically add a line feed switch

~M00920000.

Automatically add line breaks

~M00920001.

Automatically add line breaks

Automatically add TAB switch

~M00930000.

Automatically add TAB off

~M00930001.

Automatically add TAB to open

Automatically add prefix switch

~M00940000.

Automatically add prefix off

~M00940001.

Automatically add prefix to open

Automatically add suffix switch

~M00950000.

Automatically add suffixes off

~M00950001.

Automatically add suffixes to turn on

Command trigger mode answer setting

~M00730000.

No answer

~M00730001.

Answer

Code system distinguishing function setting

~M009B0000.

Add CODE ID off

~M009B0001.

Add CODE ID to open

Letter case switch

~M009C0000.

Not converted

~M009C0001.

Convert to uppercase

~M009C0002.

Convert to lowercase

~M009C0003.

Uppercase lowercase conversion

Chapter 9 Barcode Settings

Operation on all 1D barcode symbol types

Read the following setup code to perform unified operations on all 1D barcode symbol types, or all read, or all prohibited.

~M00010001.

All 1D code (on)

~M00010000.

All 1D code (off)

Read the following setup code to perform a unified operation on all 2D barcode symbol types, or all read, or all read prohibited.

Operation on all 2D barcode symbol types

~M00020001.

All 2D code (on)

~M00020000.

All 2D code (off)

One-dimensional barcode type

Code39

~M01600001.

~M01600000.

Code39(open)

Code39(close)

Code128

~M01500001.

Code128(open)

~M01500000.

Code128(close)

UPC/EAN/JAN

~M01BA0001.

UPC/EAN/JAN (open)

~M01BA0000.

UPC/EAN/JAN (close)

Code93

~M01C00001.

~M01C00000.

Code93 (open)

Code93(close)

Interleaved 2 of 5

~M01850001.

~M01850000.

Interleaved 2 of 5 (open)

Interleaved 2 of 5 (close)

Codabar

~M01450001.

~M01450000.

Codabar(open)

Codabar (close)

Code 11

Code 11(open)

Code 11(close)

Matrix 2 of 5

Matrix 2 of 5 (open)

Matrix 2 of 5 (close)

MSI code

MSI code (open)

MSI code (close)

Industrial 2 of 5

Industrial 2 of 5 (open)

Industrial 2 of 5 (close)

GS1 Databar

GS1 Databar (open)

GS1 Databar (close)

2D barcode type

QR

QR(open)

QR(close)

Appendix

Appendix A Default Settings Table

SET	Parameter name	Default setting	Remarks
System	reset		
	User default setting	Save user default	

settings	Boot music settings	Open	
	Scan code configuration function settings	Shut down	
Communication settings	Serial communication	Open	
	Serial port baud rate setting	9600	
External device	Aiming light	On (flashing)	
	Indicator light	Startup success (on) Successful decoding (on) Successful configuration (on)	
	Fill light	Trigger mode (Level 4) 100% Continuous mode (Level 4) 100% Sensing mode (Level 4) 100%	
	Buzzer tone	Start successful tone 4 Decoding successful tone 1 Configure successful tone 2	
	Buzzer volume	Startup success (Level5) 100% Successful decoding (Level5) 100% Successful configuration (Level5) 100%	
Output format setting	Automatically add a line feed switch	Add line break 0X0d0a	
	Automatically add TAB switch	Add TAB off	
	Automatically add prefix switch	Do not use a prefix	
	Automatically add suffix switch	Do not use suffix	
	Command trigger mode answer setting	Have a response	
	Code system distinguishing function setting (Add Code ID)	Shut down	
	Letter case conversion	Do not convert (output raw data)	
Working mode setting	System working mode setting	Induction mode	
	Same code reading delay setting	1500ms	
Barcode setting	Code39	Open	
	Code128	Open	
	UPC/EAN/JAN	Open	
	Code93	Open	
	Interleaved 2 of 5	Open	

	Codabar	Open	
	Code 11	Open	
	Matrix 2 of 5	Close	
	MSI code	Open	
	Industrial 2 of 5	Open	
	GS1 Databar	Open	
	QR	Open	
	All 1D code	Open	
	All 2D code	Open	

Appendix B CODE ID Definition

Barcode type	CODE ID
EAN8	d
UPCE	c
UPC-A	c
EAN13	d
Interleaved 2 of 5	e
Codabar	a
Code39	b
Code93	i
Code128	j
Code 11	H
Matrix 2 of 5	v
MSI code	m
Industrial 2 of 5	e
QR	Q

Appendix C Instruction Description

	Types	Features	Set command code	Query command code
Product information	Read product information	Read product information B		~QF672.
		Read all setup codes information		~QFA50.
	Reset	Reset	~MA5F01B2C.	
		Save user	~MA5F0506A.	

System settings	User default setting	default		
		Restore user defaults	~MA5F08F37.	
		Delete user default	~MA5F0D201.	
	Set code function switch	Shut down	~M00910000.	~Q0091.
		Open	~M00910001.	
Communication settings	Serial port baud rate setting	1200	~M00F50000.	~Q00F5.
		2400	~M00F50001.	
		4800	~M00F50002.	
		9600	~M00F50003.	
		19200	~M00F50004.	
		38400	~M00F50005.	
		57600	~M00F50006.	
		115200	~M00F50007.	
External device	Aiming light	Shut down	~M01050000.	~Q0105.
		On (flashing)	~M01050001.	
		Open (long light)	~M01050002.	
	Indicator light	Startup success (on)	~M010A0001.	~Q010A.
		Startup success (off)	~M010A0000.	
		Successful decoding (on)	~M010B0001.	~Q010B.
		Successful decoding (off)	~M010B0000.	
		Successful configuration (on)	~M010C0001.	~Q010C.
		Successful configuration (off)	~M010C0000.	
	Fill light	Trigger mode (Level 0) 0%	~M00860000.	~Q0086.
		Trigger mode (Level 1) 25%	~M00860001.	

		Trigger mode (Level 2) 50%	~M00860002.	
		Trigger mode (Level 3) 75%	~M00860003.	
		Trigger mode (Level 4) 100%	~M00860004.	
		Continuous mode (Level 0) 0%	~M01030000.	~Q0103.
		Continuous mode (Level 1) 25%	~M01030001.	
		Continuous mode (Level 2) 50%	~M01030002.	
		Continuous mode (Level 3) 75%	~M01030003.	
		Continuous mode (Level 4) 100%	~M01030004.	
		Induction mode (Level 0) 0%	~M01260000.	~Q0126.
		Induction mode (Level 1) 25%	~M01260001.	
		Induction mode (Level 2) 50%	~M01260002.	
		Induction mode (Level 3) 75%	~M01260003.	
		Induction mode (Level 4) 100%	~M01260004.	
		Start successful tone one	~M00EA0000.	~Q00EA.
		Start successful tone two	~M00EA0001.	
		Start successful tone three	~M00EA0002.	

	Buzzer tone	Start successful tone four	~M00EA0003.	
		Start successful tone five	~M00EA0004.	
		Decoding successful tone one	~M00EB0000.	~Q00EB.
		Decoding successful tone two	~M00EB0001.	
		Decoding successful tone three	~M00EB0002.	
		Decoding successful tone four	~M00EB0003.	
		Decoding successful tone five	~M00EB0004.	
		Configure successful tone one	~M00EC0000.	~Q00EC.
		Configure successful tone two	~M00EC0001.	
		Configure successful tone three	~M00EC0002.	
		Configure successful tone four	~M00EC0003.	
		Configure successful tone five	~M00EC0004.	
		Successful startup (Level 0) 0%	~M00FA0000.	~Q00FA.
		Successful startup (Level 1) 20%	~M00FA0001.	
		Successful startup (Level 2) 40%	~M00FA0002.	

		Successful startup (Level 3) 60%	~M00FA0003.	
		Successful startup (Level 4) 80%	~M00FA0004.	
		Successful startup (Level 5) 100%	~M00FA0005.	
	Buzzer volume	Successful decoding (Level 0) 0%	~M00FB0000.	~Q00FB.
		Successful decoding (Level 1) 20%	~M00FB0001.	
		Successful decoding (Level 2) 40%	~M00FB0002.	
		Successful decoding (Level 3) 60%	~M00FB0003.	
		Successful decoding (Level 4) 80%	~M00FB0004.	
		Successful decoding (Level 5) 100%	~M00FB0005.	
		Successful configuration (Level 0) 0%	~M00FC0000.	~Q00FC.
		Successful configuration (Level 1) 20%	~M00FC0001.	
		Successful configuration (Level 2) 40%	~M00FC0002.	
		Successful configuration (Level 3) 60%	~M00FC0003.	

		Successful configuration (Level 4) 80%	~M00FC0004.	
		Successful configuration (Level 5) 100%	~M00FC0005.	
Working mode setting	System working mode setting	Manual Trigger Mode - 1 (Active Lo)	~M00210000.	~Q0021.
		Continuous mode	~M00210001.	
		Induction mode	~M00210002.	
		Instruction trigger mode	~M00210003.	
		Manual trigger mode-2 (Pulse)	~M00210004.	
		Instruction continuous mode	~M00210005.	
	Command continuous mode sleep setting	Turn off sleep	~M00220000.	~Q0022.
		Start sleep	~M00220001.	
	Induction mode night fill function setting	Close function	~M00260000.	~Q0026.
		Start function	~M00260001.	
	Sensing mode sensitivity	Sensitivity level Level 0 (high)	~M00230000.	~Q0023.
		Sensitivity level Level 1 (middle)	~M00230001.	
		Sensitivity level Level 2 (low)	~M00230002.	
	Horizontal mirroring	close	~M00240000.	~Q0024.
		open	~M00240001.	
	Vertical mirroring	close	~M00250000.	~Q0025.
		open	~M00250001.	
	Same code	No delay	~M00B00000.	

	reading delay setting (support mode: continuous, sensing, command continuous)	delay unit:100mSec Max:25Sec	~M00B000yy.	~Q00B0.
	Single reading time setting (support mode: manual trigger, command trigger, continuous, induction)	No delay	~M00B10000.	~Q00B1.
		delay unit:100mSec Max:25Sec (BT: 5000 ms ; BM: 5000 ms)	~M00B100yy.	
	Reading interval duration setting (support mode: continuous, induction)	No delay	~M00B20000.	~Q00B2.
		delay unit:100mSec Max:25Sec	~M00B200yy.	
		(BT: 1000 ms ; BM: 1000 ms)		
Output format setting	Automatically add a line feed switch	Add line break close	~M00920000.	~Q0092.
		Add line break open 0x0D0A	~M00920001.	
	Automatically add TAB switch	Add TAB close	~M00930000.	~Q0093.
		Add TAB open	~M00930001.	
	Automatic prefix function switch	Prefix not used	~M00940000.	~Q0094.
		Prefix used	~M00940001.	
	Automatically add suffix function switch	Suffix not used	~M00950000.	~Q0095.
		Suffix used	~M00950001.	
	Command trigger mode answer setting	No response	~M00730000.	~Q0073.
		Have a response	~M00730001.	
	Code system	close	~M009B0000.	

	function setting (add Code ID)	open	~M009B0001.	~Q009B.
	Letter output character conversion	Do not convert (output raw data)	~M009C0000.	~Q009C.
		Convert to uppercase	~M009C0001.	
		Convert to lowercase	~M009C0002.	
		Uppercase lowercase conversion	~M009C0003.	
Barcode setting	Code39	close	~M01600000.	~Q0160.
		open	~M01600001.	
	Code128	close	~M01500000.	~Q0150.
		open	~M01500001.	
	UPC/EAN/JAN	close	~M01BA0000.	~Q01BA.
		open	~M01BA0001.	
	Code93	close	~M01C00000.	~Q01C0.
		open	~M01C00001.	
	Interleaved 2 of 5	close	~M01850000.	~Q0185.
		open	~M01850001.	
	Codabar	close	~M01450000.	~Q0145.
		open	~M01450001.	
	Code 11	close	~M10000000.	~Q1000.
			~M10000001.	
	Matrix 2 of 5	close	~M02000000.	~Q0200.
		open	~M02000001.	
	MSI code	close	~M11000000.	~Q1100.
		open	~M11000001.	
	Industrial 2 of 5	close	~M01E50000.	~Q01E5.
		open	~M01E50001.	
	GS1 Databar	close	~M12000000.	~Q1200.
		open	~M12000001.	

	ISBN	close	~M13000000.	~Q1300.
		open	~M13000001.	
	ISSN	close	~M13260000.	~Q1300.
		open	~M13260001.	
	CODE 32	close	~M13530000.	~Q1300.
		open	~M13530001.	
	QR	close	~M01B00000.	~Q01B0.
		open	~M01B00001.	
	All 1D code	close	~M00010000.	
		open	~M00010001.	
	All 2D code	close	~M00020000.	
		open	~M00020001.	