M3Y-W Serial Command Protocol

Table of Content

1 Introduction

1.1 Introduction of this file

UART command list is provided for M3y scan engine in this docuoment.

1.2 Overview

The scanner supports three different communication interface: USB-CDC, HID POS, Serial.

2 Communication Protocol

2.1 Serial

2.1.1 Protocol

UART protocol defaul: 1 Start Bit 1 Stop Bit No Parity Check Baud Rate :9600

2.1.2 The max communication protocol length

Under UART mode a single command can not exceed 2070 bytes.

2.2 Communication Interface Description

GPIO Pinout

Interface	Function	Pinout
UART1	RX	GPIOC_9
	TX	GPIOC_8

2.3 Data Format

LEN is 2 digits big-Endian indicating CMD/DATA length which is not including BCC and ETX. BCC is the XOR value from FID to DATA.

Data format sent from host device

STX	FID	LEN		CMD	BCC	ETX
0x5A	0x00	0x00	0xxx	xxxxxxxxxxxx	(1Byte)	0xA5

Data format scanner replies:

STX	FID	LEN		DATA	BCC	ETX
0x5A	0x01	0xxx	0xxx	xxxxxxxxxxxx	(1Byte)	0xA5

Data format scanner upload automatically:

STX	FID	LEN		DATA	BCC	ETX
0x5A	0x02	0xxx	0xxx	xxxxxxxxxxxx	(1Byte)	0xA5

2.4 USB Interface

2.4.1 USB-CDC

➢ Data format sent from host device

CMD
xxxxxxxxxxxx

➢ Data format scanner send to host device

DATA
xxxxxxxxxxxx

2.4.2 HIDPOS

Protocol format
➢ vid 0x26f1
➢ pid 0x8803

Data format sent from host device

Byte	Content
0	Message ID 0x04
1	Valid data length
2-61	Data CMD
62	0x00 1 btye reserved
63	0x00(no more data behind) 0x01(more data behind)

Data format scanner send to host device:

Byte	Content
0	0x02
1	Valid data length
2-57	DATA
58-62	0x00 5 bytes reserved
63	0x00(no more data behind) 0x01(more data behind)

2.5 Feedback

Characters	Description
9000	Succeed
6A89	Failed/Error

2.6 CMD

2.6.1 CMD

Function	CMD
Enable Configuration Bar Code	S_CMD_0001
Disable Configuration Bar Code	S_CMD_0000
Transmit Configuration Bar code Data	S_CMD_0011
Do not Transmit Configuration Bar code Data	S_CMD_0010
Restore to Factory Default	S_CMD_FFFF
Save User Default	S_CMD_00F1
Restore to Factory Default	S_CMD_00F0

2.7 Communication Interface

2.7.1 Serial

Function	CMD
Switch to Serial Interface	S_CMD_01H3
Baud Rate	S_CMD_H3BR1200
	S_CMD_H3BR2400
	S_CMD_H3BR4800
	S_CMD_H3BR9600
	S_CMD_H3BR14400
	S_CMD_H3BR19200
	S_CMD_H3BR38400
	S_CMD_H3BR57600
	S_CMD_H3BR115200
No Parity Check	S_CMD_H3P0
Odd Parity Check	S_CMD_H3P1

Even Parity Check	S_CMD_H3P2

2.8 USB Interface

2.8.1 HID-KBW

Function	CMD
Switch to HID-KBW Inteface	S_CMD_01H0
No Trigger Timeout	S_CMD_H0IT00
Default Timeout	S_CMD_H0IT02
Short Trigger Timeout	S_CMD_H0IT05
Long Trigger Timeout	S_CMD_H0IT10
Set Custom Trigger Timeout	S_CMD_H0IT
Polling Time 1ms	S_CMD_H0PR01
2ms	S_CMD_H0PR02
3ms	S_CMD_H0PR03
4ms	S_CMD_H0PR04
5ms	S_CMD_H0PR05
6ms	S_CMD_H0PR06
7ms	S_CMD_H0PR07
8ms	S_CMD_H0PR08
9ms	S_CMD_H0PR09
10ms	S_CMD_H0PR10

2.8.2 USB-CDC

Function	CMD
Switch to USB-CDC	S_CMD_01H2

2.8.3 HID-POS

Function	CMD

Switch to HID-POS	S_CMD_01H1

2.9 Scan Mode

2.9.1 Batch Mode

Function	CMD
Batch Mode	S_CMD_MB00

2.9.2 Trigger Mode

Function	CMD
Set the scanner to Trigger Mode	S_CMD_MT00
Decode Attempt Duration 3000ms	S_CMD_MTRS3000
Decode Attempt Duration 5000ms	S_CMD_MTRS5000
Set Custom Decode Attempt Duration	S_CMD_MTRS
Level Mode	S_CMD_MT10
Pulse Mode	S_CMD_MT11
No Reread Timeout	S_CMD_MT30
Enable Reread Timeout	S_CMD_MT31
Do not Reread the same barcode	S_CMD_MT40
Reread the same barcode	S_CMD_MT41
Set Reread Timeout to 0ms	S_CMD_MTRI0000
Set Reread Timeout to 1000ms	S_CMD_MTRI1000
Set Reread Timeout to 1500ms	S_CMD_MTRI1500
Set Reread Timeout to 3000ms	S_CMD_MTRI3000
Set Reread Timeout to 5000ms	S_CMD_MTRI5000

Set Custom Reread Timeout	S_CMD_MTRI

2.9.3 Auto-Sensing Mode

Function	CMD
Set up Auto-Sensing Mode	S_CMD_020F
Set Single Decode Attempt Duration to 3000ms	S_CMD_MSRS3000
Set Single Decode Attempt Duration to 5000ms	S_CMD_MSRS5000
Set Custom Single Decode Attempt Duration	S_CMD_MSRS
Set Image Stability Duration 60ms	S_CMD_MSRP60
Set Image Stability Duration 500ms	S_CMD_MSRP500
Set Image Stability Duration 1000ms	S_CMD_MSRP1000
Set Custom Image Stability Duration	S_CMD_MSRP
No Reread Timeout	S_CMD_MS30
Enable Reread Timeout	S_CMD_MS31
Do not Reread the same barcode	S_CMD_MS40
Reread the same barcode	S_CMD_MS41
Set Reread Timeout to 0ms	S_CMD_MSRI0000
Set Reread Timeout to 1000ms	S_CMD_MSRI1000
Set Reread Timeout to 1500ms	S_CMD_MSRI1500
Set Reread Timeout to 3000ms	S_CMD_MSRI3000
Set Reread Timeout to 5000ms	S_CMD_MSRI5000
Set Custom Reread Timeout	S_CMD_MSRI
Normal Sensitivity	S_CMD_MS51

Low Sensitivity	S_CMD_MS52
High Sensitivity	S_CMD_MS53
Extra-high Sensitivity	S_CMD_MS54
Modify sensitivity automatically	S_CMD_MS50

2.9.4 Continuous Mode

Function	CMD
Continuous Mode	S_CMD_020E
Set Single Decode Session Timeout to 3000ms	S_CMD_MARS3000
Set Single Decode Session Timeout to5000ms	S_CMD_MARS5000
Set Single Decode Session Timeout to限定	S_CMD_MARS
Set Reread Timeout to 0ms	S_CMD_MARR000
Set Reread Timeout to 500ms	S_CMD_MARR500
Set Reread Timeout to 1000ms	S_CMD_MARR1000
Set Reread Timeout to 2000ms	S_CMD_MARR2000
Set Reread Timeout to 5000ms	S_CMD_MARR5000
Set Custom Reread Timeout	S_CMD_MARR
No Reread Timeout	S_CMD_MA30
Enable Reread Timeout	S_CMD_MA31
Do not Reread the same barcode	S_CMD_MA40
Reread the same barcode	S_CMD_MA41
Set Reread Timeout to 0ms	S_CMD_MARI0000
Set Reread Timeout to 1000ms	S_CMD_MARI1000
Set Reread Timeout to 1000ms	S_CMD_MARI1000

Set Reread Timeout to 1500ms	S_CMD_MARI1500
Set Reread Timeout to 3000ms	S_CMD_MARI3000
Set Reread Timeout to 5000ms	S_CMD_MARI5000
Set Custom Reread Timeout	S_CMD_MARI

2.9.5 Command Mode

Function	CMD
Command Mode	S_CMD_020D
Enable Scanning	SR030301
Disable Scanning	SR030300

Operating Command List

Function	CMD
Change to Command Mode	5A 00 00 0a 53 5f 43 4d 44 5f 30 32 30 44 65 A5
Start Decoding	5A 00 00 08 53 52 30 33 30 33 30 31 08 A5
Stop Decoding	5A 00 00 08 53 52 30 33 30 33 30 30 09 A5
Sleep	5A 00 00 08 53 52 44 46 30 30 35 30 0e A5
Activate the scanner	5A 00 00 08 53 52 44 46 30 30 35 31 0f A5

2.10 Illumination and LED

2.10.1 Illumination

Function	CMD
Normal Mode	S_CMD_03L2
Illumination always Off	S_CMD_03L0
Illumination always on	S_CMD_03L1

2.10.2 Aimer

Function	CMD
Normal	S_CMD_03A2
Aimer Disabled	S_CMD_03A0
Aimer Enabled	S_CMD_03A1

2.11 Beeper

Function	CMD
Mute	S_CMD_04F0
Restore to Mute	S_CMD_04F1
Startup Beep On	S_CMD_0401
No Startup Beep	S_CMD_0400
Good Read Beep On	S_CMD_0403
Good Read Beep Off	S_CMD_0402
Beeper Type 1	S_CMD_04T1
Beeper Type 2	S_CMD_04T2
Beeper Type 3	S_CMD_04T3
Beeper Volume High	S_CMD_04V0
Beeper Volume Medium	S_CMD_04V1
Beeper Volume Low	S_CMD_04V2
Enable Configuration Beep	S_CMD_0405
Disable Configuration Beep	S_CMD_0404
Enable Good Read Indicator Light	S_CMD_0407
Disable Good Read Indicator Light	S_CMD_0406
Set LED Indicator Duration to 100ms	S_CMD_04LR100
Set LED Indicator Duration to 200ms	S_CMD_04LR200
Set LED Indicator Duration to 500ms	S_CMD_04LR500
Set Custom LED Indicator Duration	S_CMD_04LR
Transmit NGR	S_CMD_0409
Do not Transmit NGR	S_CMD_0408
Set Custom NGR	S_CMD_04NR

2.12 Data Format

Function	CMD
Enable Data Format Edit	S_CMD_05F1
Disable Data Format Edit	S_CMD_05F0
Code ID+Prefix	S_CMD_05C1
Prefix+Code ID	S_CMD_05C0
Enable Prefix	S_CMD_0501
Disable Prefix	S_CMD_0500
Set Custom Prefix	S_CMD_051R
Enable Code ID	S_CMD_0505
Disable Code ID	S_CMD_0504
Restore Code ID default value	S_CMD_IDFF
Modify Code128Code ID	S_CMD_ID00
Modify EAN8Code ID	S_CMD_ID01
Modify EAN13Code ID	S_CMD_ID02
Modify UPCE0Code ID	S_CMD_ID03
Modify UPCE1Code ID	S_CMD_ID04
Modify UPCACode ID	S_CMD_ID05
Modify InterLeaved25Code ID	S_CMD_ID06
Modify Matrix25Code ID	S_CMD_ID07
Modify Industrial25Code ID	S_CMD_ID08
Modify IATA25Code ID	S_CMD_ID09

Modify Code39Code ID	S_CMD_ID0A
Modify Code93Code ID	S_CMD_ID0B
Modify CodebarCode ID	S_CMD_ID0C
Modify PDF417Code ID	S_CMD_ID0D
Modify QRCode ID	S_CMD_ID0E
Modify DMCode ID	S_CMD_ID0F
Modify Code11Code ID	S_CMD_ID10
Modify MSICode ID	S_CMD_ID11
Modify Micro QRCode ID	S_CMD_ID12
Modify Code32Code ID	S_CMD_ID13
Modify ISBNCode ID	S_CMD_ID14
Modify ISSNCode ID	S_CMD_ID15
Disable Prefix	S_CMD_0506
Set Custom Prefix	S_CMD_057R
Add Terminator Suffix	S_CMD_0509
No Terminator Suffix	S_CMD_0508
Set Terminator Suffix to 0x0D	S_CMD_059D
Set Terminator Suffix to 0x0D 0x0A	S_CMD_059A
Set Custom Terminator Suffix	S_CMD_059R
Transmit **Original** DATA	S_CMD_05D0
Only Transmit **SATRT** Data	S_CMD_05D1
Only Transmit **END** Data	S_CMD_05D2
Only Transmit **Center** Data	S_CMD_05D3
Modify START Data Length	S_CMD_05SL
Modify END Data Length	S_CMD_05EL
Set Decode Standard GBK	S_CMD_05OG
Set Decode Standard UNICODE	S_CMD_05ON
Set Decode Standard UTF8	S_CMD_05O8
Default Decode Standard	S_CMD_05OO
Enable ECI Mode	C_CMD_ECI1
Disable ECI Mode	C_CMD_ECI0

2.13 Symbologies

Function	CMD
Enable All Symbolgoies	C_CMD_R111
Disable All Symbologies	C_CMD_R000
Enable All 1D Symbolgoies	C_CMD_R011
Disable All 1D Symbologies	C_CMD_R010
Enable All 2D Symbolgoies	C_CMD_R101
Disable All 2D Symbologies	C_CMD_R100
Inverse Bar Code	
Enable Inverse Barcode	C_CMD_INV1
Disable Inverse BarCode	C_CMD_INV0
Enable 1D Inverse Barcode	C_CMD_OIM1
Disable 2D Inverse Barcode	C_CMD_OIM0
Enable Inverse PDF417	C_CMD_PIM1
Disable Inverse PDF417	C_CMD_PIM0

Enable Inverse DM	C_CMD_DIM1
Disable Inverse DM	C_CMD_DIM0
Enable Inverse QR	C_CMD_QIM1
Disable Inverse QR	C_CMD_QIM0
Code128	
Restore Code128 default	C_CMD_28FF
Enable Code128	C_CMD_2801
Disable Code128	C_CMD_2800
Set Minimum Length to 00	C_CMD_280A00
Set Minimum Length to 04	C_CMD_280A04
Set the Minimum Length	C_CMD_280A
Set Maximum Length to 32	C_CMD_280B20
Set Maximum Length to 255	C_CMD_280BFF
Set Custom Maximum Length	C_CMD_280B
EAN8	
Restore EAN8 default	C_CMD_08FF
Enable	C_CMD_0801
Disable	C_CMD_0800
Transmit Check Character	C_CMD_0803
Do not Transmit Check Character	C_CMD_0802
Decode 2 add-on Code	C_CMD_0821
Do Not Decode 2 add-on code	C_CMD_0820
Decode 5 Add-On Code	C_CMD_0851
Do not Decode 5 Add-On Code	C_CMD_0850
EAN13	
Restore EAN13 default	C_CMD_13FF
Enable	C_CMD_1301
Disable	C_CMD_1300
Transmit Check Character	C_CMD_1303
Do not Transmit Check Character	C_CMD_1302
Decode 2 Add-On Code	C_CMD_1321
Do not Decode 2 Add-On Code	C_CMD_1320
Decode 5 Add-On Code	C_CMD_1351
Do not Decode 5 Add-On Code	C_CMD_1350
Do not Convert EAN13 to ISBN	C_CMD_BN00
Convert EAN13 to ISBN	C_CMD_BN01
Do not Convert EAN13 to ISSN	C_CMD_SN00
Convert EAN13 to ISSN	C_CMD_SN01
UPCE0	
Restore UPCE0 default	C_CMD_E0FF
Enable	C_CMD_E001
Disable	C_CMD_E000
Transmit Check Character	C_CMD_E003
Do Not Transmit Check Character	C_CMD_E002
Transmit System Character	C_CMD_E005
Do not Transmit System Character	C_CMD_E004
UPCE1	
Restore UPCE1 Default	C_CMD_E1FF

Enable	C_CMD_E101
Disable	C_CMD_E100
Decode 2 Add-On Code	C_CMD_E121
Do Not Decode 2 Add-On Code	C_CMD_E120
Decode 5 Add-On Code	C_CMD_E151
Do Not Decode 5 Add-On Code	C_CMD_E150
Transmit Check Character	C_CMD_E103
Do Not Transmit Check Character	C_CMD_E102
Transmit System Character	C_CMD_E105
Do not Transmit System Character	C_CMD_E104
UPCA	
Restore UPCA default	C_CMD_CAFF
Enable	C_CMD_CA01
Disable	C_CMD_CA00
Do not Convert UPCA to EAN13	C_CMD_CAE0
Convert UPCA to EAN13	C_CMD_CAE1
Decode 2 Add-On Code	C_CMD_CA21
Do not Decode 2 Add-On Code	C_CMD_CA20
Decode 5 Add-On Code	C_CMD_CA51
Do not Decode 5 Add-On Code	C_CMD_CA50
Transmit Check Character	C_CMD_CA03
Do not Transmit Check Character	C_CMD_CA02
Transmit System Character	C_CMD_CA05
Do not Transmit System Character	C_CMD_CA04
InterLeaved25	
Restore InterLeaved25 default	C_CMD_ITFF
Enable	C_CMD_IT01
Disable	C_CMD_IT00
Set the Minimum Length to 00	C_CMD_IT0A00
Set the Minimum Length to 04	C_CMD_IT0A04
Set Custom Minimum Length	C_CMD_IT0A
Set the Maximum Length to 32	C_CMD_IT0B20
Set the Maximum Length to 255	C_CMD_IT0BFF
Set Custom Maximum Length	C_CMD_IT0B
Disable Check Character	C_CMD_IT02
Enable USS but do not Transmit USS	C_CMD_IT04
Enable and Transmit USS	C_CMD_IT03
Matrix25	
Restore Matrix25 default	C_CMD_MAFF
Enable	C_CMD_MA01
Disable	C_CMD_MA00
Set the Minimum Length to 00	C_CMD_MA0A00
Set the Minimum Length to 04	C_CMD_MA0A04
Set the Minimum Length to	C_CMD_MA0A
Set the Maximum Length to 32	C_CMD_MA0B20
Set the Maximum Length to 255	C_CMD_MA0BFF
Set the Maximum Length to	C_CMD_MA0B
Disable Check Character	C_CMD_MA02

Enable Check Character But Do not Transmit Check Character	C_CMD_MA04
Enable and Transmit Check Character	C_CMD_MA03
Industrial25	
Restore Industrial25 default	C_CMD_INFF
Enable	C_CMD_IN01
Disable	C_CMD_IN00
Set the Minimum Length to 00	C_CMD_IN0A00
Set the Minimum Length to 04	C_CMD_IN0A04
Set the Minimum Length to	C_CMD_IN0A
Set the Maximum Length to 32	C_CMD_IN0B20
Set the Maximum Length to 255	C_CMD_IN0BFF
Set the Maximum Length to	C_CMD_IN0B
No Check Character	C_CMD_IN02
Enable but Do not Transmit Check Character	C_CMD_IN04
Enable and Transmit Check Character	C_CMD_IN03
IATA25	
Restore IATA25 default	C_CMD_IAFF
Enable	C_CMD_IA01
Disable	C_CMD_IA00
Set the Minimum Length to 00	C_CMD_IA0A00
Set the Minimum Length to 04	C_CMD_IA0A04
Set the Minimum Length to	C_CMD_IA0A
Set the Maximum Length to 32	C_CMD_IA0B20
Set the Maximum Length to 255	C_CMD_IA0BFF
Set the Maximum Length to	C_CMD_IA0B
Disable Check Character	C_CMD_IA02
Enable But Do not Transmit Check Character	C_CMD_IA04
Enable and Transmit Check Character	C_CMD_IA03
CODE39	
Restore CODE39 default	C_CMD_39FF
Enable	C_CMD_3901
Disable	C_CMD_3900
Transmit Start/Stop Character	C_CMD_3907
Do not Transmit Start/Stop Character	C_CMD_3906
Set the Minimum Length to 00	C_CMD_390A00
Set the Minimum Length to 04	C_CMD_390A04
Set the Minimum Length to	C_CMD_390A
Set the Maximum Length to 32	C_CMD_390B20
Set the Maximum Length to 255	C_CMD_390BFF
Set the Maximum Length to	C_CMD_390B
Disable Check Character	C_CMD_3902
Enable But Do not Transmit Check	C_CMD_3904

Character	
Enable and Transmit Check Character	C_CMD_3903
Disable Code32	C_CMD_39M0
Enable Code32	C_CMD_39M1
Disable FULLAscii	C_CMD_39M2
Enable FULLAscii	C_CMD_39M3
CODE93	
Restore CODE93 default	C_CMD_93FF
Enable	C_CMD_9301
Disable	C_CMD_9300
Set the Minimum Length to 00	C_CMD_930A00
Set the Minimum Length to 04	C_CMD_930A04
Set the Minimum Length to	C_CMD_930A
Set the Maximum Length to 32	C_CMD_930B20
Set the Maximum Length to 255	C_CMD_930BFF
Set the Maximum Length to	C_CMD_930B
CodeBar	
Restore CodeBar default	C_CMD_BAFF
Enable	C_CMD_BA01
Disable	C_CMD_BA00
Set the Minimum Length to 00	C_CMD_BA0A00
Set the Minimum Length to 04	C_CMD_BA0A04
Set the Minimum Length to	C_CMD_BA0A
Set the Maximum Length to 32	C_CMD_BA0B20
Set the Maximum Length to 255	C_CMD_BA0BFF
Set the Maximum Length to	C_CMD_BA0B
No Check Character	C_CMD_BA02
Enable Mod 10 But Do not Transmit Check Character	C_CMD_BA04
Enable Mod 10 and Transmit Check Character	C_CMD_BA03
Enable Mod 16 But Do not Transmit Check Character	C_CMD_BA06
Enable Mod 16 and Transmit Check Character	C_CMD_BA05
Do not Transmit Start/Stop Character	C_CMD_BAS0
Start/Stop Character ABCD	C_CMD_BAS2
Start/Stop Character ABCD/TN*E	C_CMD_BAS3
Start/Stop Character abcdabcd	C_CMD_BAS4
Start/Stop Character abcdtne	C_CMD_BAS5
CODE11	
Restore CODE11 default	C_CMD_11FF
Enable	C_CMD_1101
Disable	C_CMD_1100
Set the Minimum Length to 00	C_CMD_110A00
Set the Minimum Length to 04	C_CMD_110A04
Set the Minimum Length to	C_CMD_110A

Set the Maximum Length to 32	C_CMD_110B20
Set the Maximum Length to 255	C_CMD_110BFF
Set the Maximum Length to	C_CMD_110B
MSI	
Restore MSI default	C_CMD_MSFF
Enable	C_CMD_MS01
Disable	C_CMD_MS00
Set the Minimum Length to 00	C_CMD_MS0A00
Set the Minimum Length to 04	C_CMD_MS0A04
Set the Minimum Length to	C_CMD_MS0A
Set the Maximum Length to 32	C_CMD_MS0B20
Set the Maximum Length to 255	C_CMD_MS0BFF
Set the Maximum Length to	C_CMD_MS0B
PDF417	
Enable	C_CMD_PDF1
Disable	C_CMD_PDF0
Micro QR	
Enable	C_CMD_MQ01
Disable	C_CMD_MQ00
QR	
Enable	C_CMD_QR01
Disable	C_CMD_QR00
DM	
Enable	C_CMD_DM01
Disable	C_CMD_DM00

Digit Characters	CMD
0	S_CMD_D000
1	S_CMD_D001
2	S_CMD_D002
3	S_CMD_D003
4	S_CMD_D004
5	S_CMD_D005
6	S_CMD_D006
7	S_CMD_D007
8	S_CMD_D008
9	S_CMD_D009
A	S_CMD_D00A
B	S_CMD_D00B
C	S_CMD_D00C
D	S_CMD_D00D
E	S_CMD_D00E
F	S_CMD_D00F
Save	S_CMD_DFFF
Cancel last digit	S_CMD_DF01
Cancel Last String	S_CMD_DF0F

Cancel Current Setting	S_CMD_DF00

2.15 Read Firmware Version

Function	CMD
Read Firmware Version	T_OUT_CVER