MB-Tester

Multi-Bus Tester

Multi Bus Tester - Demo Guide

Release 0.2.3

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CHAPTER

ONE

OVERVIEW

This demo package contains the MB-Tester python package and several examples for each bus communication.

CHAPTER

TWO

INSTALLATION

2.1 Requirements

Operating System: Windows 10 **Architecture**: x64 **Python**: 3.8+ or newer

2.2 MB-Tester Python Package

To install the MB-Tester python package in the default python environment execute package/Install.bat. If you prefer to use a different python environment, please install the package/mb_tester*.whl file manually with the appropriate pip command.

The user documentation is included in the 'whl' package file, so it can be extracted directly from it, or after installation in the python environment directory under the MultiBusTester directory.

2.3 Tools for Examples

2.3.1 Virtual Null Modem

Some examples use the MP-Simulator on the same PC as a virtual MP Slave to show the capabilities of the MB Tester. This needs a virtual COM port pair to connect the MP simulator with the MB Tester. You can use Virtual Null Modem or another similar SW for this purpose.

Download Virtual Null Modem from the link or use the installer 'installers/vnullmod20.exe'.

Setup the Virtual Null Modem and Connect the virtual serial link between the COM25 and COM26

🗑 Virtual ports			Х
First virtual serial port COM25	/		
Off Max (100%)			
Is connected with			
Second virtual serial port COM26	/		
Enable interference for data transmitting Off Max (100%)			
With full handshake			~
Line Pin CD 1	Pin 1	Line CD]
RxD 2	2	RxD	1
TxD 3	3	TxD]
DTR 4	4	DTR	
GND 5	5	GND	
DSR 6	6	DSR	4
RIS /	/	RIS	-
	<u> </u>	015	J
OK Canc	el]	
🚷 Virtual Null Modem 2.6.2.913 —		ı ×	
Devices System View Help			
Plug in all virtual null modem	s		
COM25-CO Reinitialize all virtual null modems			
Unplug all virtual null modems			
Reinstall all drivers			
Start-up mode Manual ~			
Apply OK Car	icel]	

2.3.2 Microsoft Visual 2010 Package

The **Microsoft Visual C++ 2010 Redistributable Package** package is needed for the MP-Simulator. You can use the installer 'installers/vcredist_x86.exe' or download the x86 installer from the internet.

3	ĉ	https://www.microsoft.com/en-us/download/details.aspx?id=26999

Choose the download you want

File Name	Size
vcredist_x86.exe	8.6 MB
vcredist_ia64.exe	2.9 MB

2.3.3 Modbus Slave

A modbus slave software is used as a virtual modbus slave to demonstrate the capabilities of the MB Tester. This virtual modbus slave will be connected via a virtual COM port to the MB Tester.

Download from this link or use the installer 'installers/ModbusSlaveSetup64Bit.exe'.

Setup for the modbus test

Connection Setup Connection Serial Port Serial Settings COM26 19200 Baud ~ 8 Data bits ~ None Parity ~ 1 Stop Bit ~	K OK Cancel Mode RTU ○ASCII Flow Control DSR □CTS ☑RTS Toggle 1 [ms] RTS disable delay
TCP/IP Server IP Address 127.0.0.1 Any Address Ignore Unit ID	Port 502 ● IPv4 ● IPv6

CHAPTER

THREE

EXAMPLES

Here is a short description of how each example is set up and how it works. The installation steps documented in the chapter Installation are required to execute the example scripts.

Log messages

All the log files will be stored in the 'Log' subdirectory.

Run example scripts

The examples folder contains the demo scripts in the corresponding subfolders. Start the 'Run.bat' script in the corresponding subfolder to run the example. Depending on the example some additional preparations will be needed, see the descriptions below.

3.1 MP-Bus

Demo script for testing MP slave devices.

د در ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰	×
د (\WINDOWSkystem21cmd.exe – ۲	×
2022.11.06 1934401.986 [60000_W0000] INFO Set Point : 5912	Î
2022.11.10 19:34:01.986 [E0000,W00000] INFO Set Point : 5912	î
2022.11.10 19:34:01.986 [E0000] WHO I [E5T 29 - 165T L0g1n and L0g0UT Commands	
2022.11.10 19:34:02.002 [E0000] UDIPUT LOGIN [0X504ED/8TD/9U4.5]	
2022.11.10 15.34.02.114 [coded,weeded] INFUT Logar [codeded]	
APSimulator Device and a set of the	
2022.11.10 19:34:02.330 [E0000,W0000] INFO Command bytes generated [0x28660180cf]	
2022.11.10 19:34:02.345 [E0000,W0000] OUTPUT SpecialFunction [0x28660180cf]	
2022.11.10 19:34:02.424 [E0000,W0000] INPUT SpecialFunction [0x00808d]	
2022.11.10 19:34:02.470 [E0000,W0000] INFO Command bytes generated [0x187680ee]	
2022.11.10 19:34:02.486 [E0000,W0000] OUTPUT GetSummary [0x187680ee]	
2022.11.10 19:34:02.564 [E0000,W0000] INPUT GetSummary [0x7d251000000000064e]	
2022.11.10 19:34:02.596 [E0000,W0000] INFO Expected : type: <class 'list'=""> len:7 value:['37', '16', '0', '0', '0</class>	
2022.11.10 19:34:02.590 [E0000,M0000] INFO Value : type: <class list=""> len:/ value:[3/, 10, 0, 0, 0, 0]</class>	
2022 11 10 19:34:02 596 [E0000 W0000] INFO AreFound - Match	
2022.11.10 19:34:02.556 [E0000.W0000] INCO Command Dytes generated [0x183280aa]	
2022.11.10 19:34:02.626 [E0000.W0000] OUTPUT GetSeriesNo [0x183280aa]	
2022.11.10 19:34:02.787 [E0000,W0000] INPUT GetSeriesNo [0x7d565758595a5b5c4c6c]	
2022.11.10 19:34:02.830 [E0000,W0000] INFO Expected : type: <class 'list'=""> len:7 value:['86', '87', '88', '89',</class>	90.
00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F [300]	
2022.11.10 19:34:02.830 [E0000,W0000] INFO Value : type: <class 'list'=""> len:7 value:['86', '87', '88', '89',</class>	90.
· · · · · · · · · · · · · · · · · · ·	
Persistent file not found! 2022.11.10 19:34:02.830 [E0000,W0000] INFO AreEqual : Match.	
2022.11.10 19734782.830 [E0000,W0000] INFO Series Number: [0x565758595a5055]	
2022.11.10 19:34702.830 [E0000,N00000] INFO Test 31 - Update Model 50030 value with 0x112233++e212 and read it	- ×

Set Up the Connection

The user has to connect two COM ports of the computer to enable the MPSimulator and MBTester to communicate. This can be done for example by connecting two ZIP-USB-MP modules or with a virtual COM port simulator (for example *Virtual Null Modem*)

Set Up the MPSimulator

Before running the script using Run.bat, the user must start the MPSimulator by opening the 'Simulator' folder and running 'StartSimulator.bat'. The script can be modified, for example to change the COM port used. The default port for MPSimulator is COM26.

3.2 Belimo NFC Protocol (BNPV4)

Demo script for testing BNPV4 devices.

Open the 'examples/BNP' folder, which contains the prepared MB-Tester based test file. To run this test would require special hardware (NFC Speedup), so for now this is just example code for using the BNPV4.

3.3 NFC

Demo script for testing NFC devices.

c. (oscis (onnin) (AppData (cocal (Frograms (Fython)	
2.11.10 20:35:59.363 [E0000,W0000] INFO	Expected : type: <class 'list'=""> len:4 value:['26', '43', '60', '77']</class>
2.11.10 20:35:59.363 [E0000,W0000] INFO	Value : type: <class 'list'=""> len:4 value:['26', '43', '60', '//']</class>
2.11.10 20:35:59.363 [E0000,W0000] INFO	Arecqual: match.
2.11.10 20:35:59.393 [E0000,W0000] UUIPUI	Write to block 0x05 -> 0x0000000 [0x00000000] Dead [c-r-kl-kl, 0 [c-r000000000]
2.11.10 20:35:59.081 [E0000,W00000] INPUT	
000000000000000000000000000000000000000	
0 11 10 20:35:50 608 [E0000 W0000] TNEO	Evnertad - type=class 'int's value:0
11 10 20:35:59 699 [E0000,W0000] TNFO	Value - type://lass.int/value.0
11 10 20:35:59 700 [E0000 W0000] TNFO	AreFould Match
2 11 10 20:35:59 704 [E0000 W0000] TNPUT	Set sector A [Mxhd0100ff100dc2ff]
.11.10 20:35:59.742 [E0000.W0000] OUTPUT	Set sector Ø [Øxbd020a]
.11.10 20:35:59.744 [E0000.W0000] INFO	Set sector 0 : Ignored (2151) b'Status byte (0x02) Data False'
.11.10 20:35:59.746 [E0000,W0000] INPUT	Set sector 0 [0xbd0100ff100d0000000]
.11.10 20:35:59.789 [E0000,W0000] OUTPUT	Set sector 0 [0xbd01]
.11.10 20:35:59.791 [E0000,W0000] INFO	Set sector 0 : Ignored (2150) b'Status byte (0x01) No Transponder'
.11.10 20:35:59.792 [E0000,W0000] INFO	Expected : type: <class 'int'=""> value:0</class>
.11.10 20:35:59.794 [E0000,W0000] INFO	Value : type: <class 'int'=""> value:0</class>
.11.10 20:35:59.794 [E0000,W0000] INFO	AreEqual : Match.
.11.10 20:36:00.096 [E0000,W0000] INPUT	Read from block 0 [0x047534dacc5580004400000000000000319d101555555570702e62656c696d6f2e63682f3030300000000000000000000000000000000
000000000000000000000000000000000000000	366666666666666666666666666666666666666
000000000000000000000000000000000000000	3000000000000000000
2.11.10 20:36:00.109 [E0000,W0000] INFO	Expected : type: <class 'list'=""> len:4 value:['85', '85', '85', '85']</class>
.11.10 20:36:00.109 [E0000,W0000] INFO	Value : type: <class 'list'=""> len:4 value:['85', '85', '85', '85']</class>
.11.10 20:36:00.110 [E0000,W0000] INFO	AreEqual : Match.
.11.10 20:36:00.114 [E0000,W0000] INPUT	Set sector 1 [0xbd0100ff100dc2ff]
.11.10 20:36:00.147 [E0000,W0000] OUTPUT	Set sector 1 [0xbd020a]
.11.10 20:36:00.149 [E0000,W0000] INFO	Set sector 1 : Ignored (2151) b'Status byte (0x02) Data False
.11.10 20:36:00.153 [E0000,W0000] INPUT	Set sector 1 [0x0a01007100001000000]
.11.10 20:36:00.196 [E0000,W0000] OUTPUT	Set sector 1 [0x000]
.11.10 20:35:00.199 [E0000,W0000] INFO	Set sector 1 : Ignorea (2130) b Status byte (0x01) No Transponder
11 10 20.36.00 201 [E0000, W0000] INFO	Value type: Class Int Value.0
11 10 20.36.00 203 [E0000,W0000] INFO	Value . type. Class Int / Value.0
11 10 20:36:00.204 [20000,W0000] INFO	
20000000000000000000000000000000000000	
000000000000000000000000000000000000000	

Open the 'examples/NFC' folder. Before running each script, the user must connect a Feig reader and place an NXP NT3H2x11 chip in the reader's field. This is required if the user wants to run the scripts without an error log message.

3.4 Modbus

Demo script for testing Modbus slave devices.

📓 Modbus Slave - Mbslave1 - 🗆 🗙	
File Edit Connection Setup Display View Window Help	🖬 C\WINDOWS\system32\cmd.exe - 🗆 🗙
Image: Contraction decip on party view vincow ritep Image: Contraction decip on party view view view view view ritep Image: Contraction decip on party view view view view view view view view	2022.11.10 19:41:48.448 [E0000, M0008] MARNING Modbus protocol error: (1) - Illegal function 2022.11.10 19:41:48.448 [E0000, M0008] INPUT Diagnostics [&MileBobec.00020008] 2022.11.10 19:41:48.498 [E0000, M0009] OUTPUT Diagnostics [&MileBobec.00020008] 2022.11.10 19:41:48.498 [E0000, M0009] OUTPUT Diagnostics [&MileBobec.0002008] 2022.11.10 19:41:48.494 [E0000, M0009] OUTPUT Diagnostics [&MileBobec.0002008] 2022.11.10 19:41:48.544 [E0000, M001] MARNING Modbus protocol error: (1) - Illegal function 2022.11.10 19:41:48.606 [E0000, M001] MARNING Modbus protocol error: (1) - Illegal function 2022.11.10 19:41:48.606 [E0000, M001] OUTPUT Diagnostics [&MileBobec.0000208] 2022.11.10 19:41:48.606 [E0000, M001] OUTPUT Diagnostics [&MileBobec.0000208] 2022.11.10 19:41:48.606 [E0000, M012] WINTW Modbus protocol error: (1) - Illegal function 2022.11.10 19:41:48.606 [E0000, M013] MRNING Modbus protocol error: (1) - Illegal function 2022.11.10 19:41:48.73 <
For Help, press F1. Port 26: 19200-8-N-1	

Set up the Modbus simulator

Before running the scrip, the Modbus Slave simulator must be installed and started. The test uses the COM ports 25 and 26 by default, which can be changed in the corresponding scripts.