

Pepper C1 module getting started guide

Document version: 1.0 Release date: 20/05/2024

Table of contents

| 1. | The first steps | .2 |
|----|--|----|
| 2. | Executing and testing C1 binary commands | .4 |
| 3. | Using the Favourites tab | .5 |
| 4. | Typical connection schematic | .6 |



1. The first steps

- Put the Pepper C1 module to the C1 module baseboard, and then connect the baseboard to your PC using a micro USB cable. If you don't have the baseboard, you will need a USB-UART converter to connect to UARTO pins (IO1 and IO3) see section 4.
- Check which COM port is assigned to the board in the Device Manager (in our case COM3)



- Download the C1 Client from our website <click here>.
- Unzip the downloaded archive.
- Click on the C1-client.exe to run the application.

| bearer | 22.01.2021 09:53 |
|-----------------------|------------------|
| , iconengines | 08.10.2020 14:53 |
| imageformats | 08.10.2020 14:53 |
| platforms | 08.10.2020 14:53 |
| sources | 27.07.2021 12:27 |
| styles | 08.10.2020 14:53 |
| translations | 08.10.2020 14:53 |
| C1-client | 03.11.2023 07:57 |
| D3Dcompiler_47.dll | 11.03.2014 11:54 |
| 🗟 libEGL.dll | 27.03.2020 20:12 |
| libgcc_s_seh-1.dll | 19.03.2018 16:14 |
| libGLESv2.dll | 27.03.2020 20:12 |
| 🗟 libstdc++-6.dll | 19.03.2018 16:14 |
| 🗟 libwinpthread-1.dll | 19.03.2018 16:14 |
| 🗟 opengl32sw.dll | 14.06.2016 14:00 |
| Qt5Core.dll | 27.03.2020 20:12 |
| Qt5Gui.dll | 27.03.2020 20:12 |
| CH5Network dll | 77 02 2020 20.12 |

• Select the proper COM port and click the "Connect" button. If the COM ports list is empty, please click the "R" button to refresh the list. The C1 Client should get a response from the C1 reader containing version information reported in the logs and on the status bar.



| C1 C1 Client v1 15 | | | | |
|---|--|--|--|--|
| CI-Client - VI.15 | - U X | | | |
| | Serial connection Network connection | | | |
| | RS485 binary protocol | | | |
| | Select port: \\COM3 V R 115200 V Disconnect Address (hex): 01 V Scan | | | |
| Command list Examples Naturals Delline | | | | |
| Command list Pavourites Network Polling | Command parameters | | | |
| Execute selected command >> | | | | |
| Select command | | | | |
| [01] Dummy command A | | | | |
| [03] Get UID | | | | |
| [04] Activate TAG | Yrotocol logs | | | |
| [05] FIALI [06] Set polling | 10:34:28.201 - Network search engine is running in the background, new devices will be automatically detected. 10:34:57.133: [TX] - Get firmware version | | | |
| [07] Set key | Data: F5 03 00 FC FF 08 98 50 10:34:57.146: [RX] - Get firmware version - ACK | | | |
| [08] Save keys | Data: F5 31 00 CE FF 00 08 32 2E 33 36 20 4E 6F 76 20 20 36 20 32 30 32 33 20 31 33 3A 31 36 3A 34 36 20 28 48 57 3A 43 31 20 76 32 2C 20 50 4E 3A 20 34 2E 30 29 62 5F | | | |
| [0A] Reboot | | | | |
| [0B] Get firmware version | | | | |
| [0C] UART2 passthru [0D] Sleen command | | | | |
| [0E] GPIO command | | | | |
| Command filter | | | | |
| Generic commands | | | | |
| Mifare Classic | | | | |
| Mifare Ultralight | | | | |
| Mifare Desfire | | | | |
| ☑ ICode | | | | |
| | | | | |
| Show legend Clear logs | | | | |
| Flash firmware Restart device | | | | |
| Download config Upload config | | | | |
| RFID configuration | | | | |
| Connected | Version:2.36 Nov 6 2023 13:16:46 (HW:C1 v2, PN: 4.0) | | | |

• To test basic RFID functionality with the C1 Client you can change the left-hand TAB to Polling and click Start. (see screenshot below)

| | 🔛 C1-Client - v1.15 | |
|----------|---|---|
| | 3 | Serial connection Network connection |
| | Eccel Go to website Get C1 user manual | Select port: \ \COM3 V R 11520 |
| Dolling | Command list Favourites Network Polling | Protocol logs |
| Politing | Software poling configuration | 10:40:07.452 - TAG is found: E0040100206D35BF |
| tab | Polling interval 1 | 10:40:07.514 - TAG is found: E0040100206D35BF |
| | Save to file C:/Users/PC/Desktop/test2.xlsx | 10:40:07.573 - TAG is found: E0040100206D35BF |
| | Select output file | 10:40:07.633 - TAG is found: E0040100206D35BF |
| | Charl | 10:40:07.697 - TAG is found: E0040100206D35BF |
| Click | Start Stop | 10:40:07.761 - TAG is found: E0040100206D35BF |
| Start | Tests (use Mifare Ultraliffit tag) | 10:40:07.821 - TAG is found: E0040100206D35BF |
| | Read page test Stop after 3k | 10:40:07.881 - TAG is found: E0040100206D35BF |
| | Write page test | 10:40:07.940 - TAG is found: E0040100206D35BF |
| | Write page address: 5 💂 | 10:40:08.000 - TAG is found: E0040100206D35BF |
| | | 10:40:08.065 - TAG is found: E0040100206D35BF |
| | | 10:40:08.129 - TAG is found: E0040100206D35BF |

• Now the C1 Client will constantly poll the Pepper C1 looking for any tags in range, and if one is found, its UID will be displayed in the log window.



2. Executing and testing C1 binary commands

The C1 Client is a demo/test tool to show how to use the binary command protocol with the Pepper C1 family products. Users can execute all commands described in the manual, test the output, check the format frame, checksum etc. If the command requires parameters, it will be displayed in the parameters area. Executing the command can also be done by double-clicking on the command.



All parts of the binary command are coloured with different color to make logs easy to analyze:

- STX Frame start
- Length Frame length + XOR length (Addr + Cmd + Params)
- Addr Address, optional for RS485
- Cmd Command number
- Params Optional parameters
- CRC (Addr + Command + Data) checksum



3. Using the Favourites tab

If users are testing or developing something requiring the use of repeatable commands, then the Favourites tab can be used to more easily execute these repeated commands plus parameters as a full binary frame sent to the Pepper C1 device if needed. To do this, the user first has to prepare and execute the command and then the command can be copied from the Protocol logs to the clipboard and then saved as a favourite.

- Copy selected command to the clipboard
- Go to the "Favourites" tab
- Click the "Add" button
- Enter your custom command name
- Paste the command body (full command starting from F5 up to CRC)
- Click the "OK" button

Now, this command can be executed by double clicking from the list.





4. Typical connection schematic



The user can also use a USB-UART converter and connect it to the module's pin: IO1 and IO3. Then the procedure is the same – Windows will assign a COM port number to the converter, and the user can connect with it using the C1 Client.

Another USB-UART converter can be used to see the console logs on UART2 (IO2 and IO4).

The default serial configuration for both: UARTO and UART2 is baud 115200, 8 bits, 1 stop, no parity. The default mode is Wi-Fi Access Point which requires a reasonable amount of current at startup so the power source should provide at least 500mA.