PUH/CDA Cash Drawer Application Guide V0.4
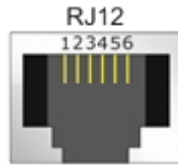
2019/06/25

Contents

1. Cash Drawer Port Pinout

- **Cash drawer port type is RJ12 with 6 pinouts**

Pin	Description
1	GND
2	Drawer 1 kick out
3	Drawer open/close status
4	PUH/PUH3 12V/24V CDA 24V
5	Drawer 2 kick out
6	GND

2. How to Access Cash Drawer

The cash drawer port of PUH/CDA is control by MCU through RS232 COM port. You need install USB-to-Serial driver to create a virtual COM port.

- **Install Driver**

  - PUH / PUH3

    Windows 10 will auto detect it and install driver for PUH/PUH3. If not please install Prolific PL2303 driver to create virtual COM port.

  - CDA

    Windows 10 will auto detect it and install driver for PUH/PUH3. If not please install Nuvoton driver to create virtual COM port.
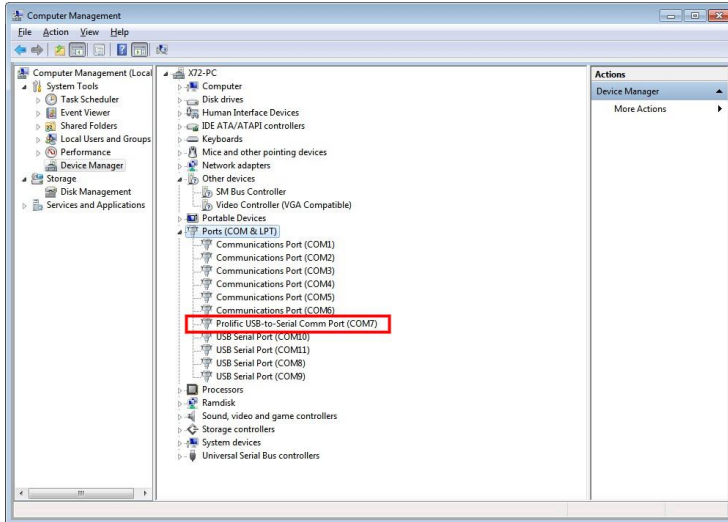
● **Find COM port**

● PUH / PUH3

Please check the Device Manager after you installed Prolific PL2303 driver.

You will find a "Prolific USB-to-Serial Comm Port (COM*)" like below picture.

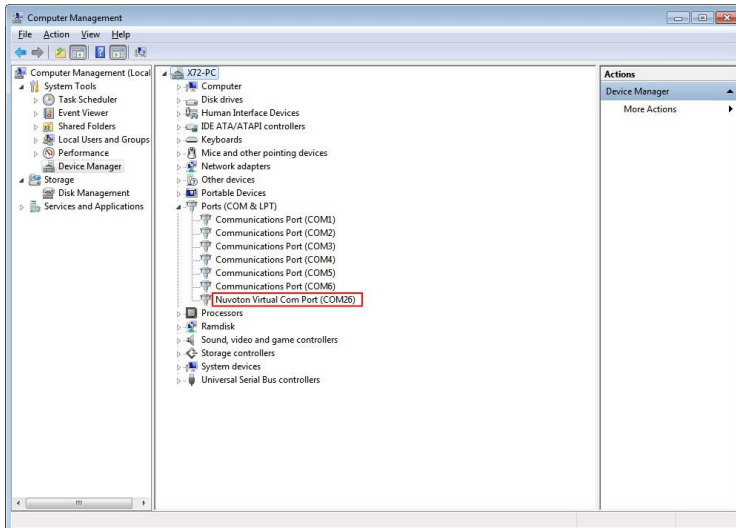This need to know this COM port number and use it to commutation with MCU.

● CDA

Please check the Device Manager after you installed Nuvoton driver.

You will find a "Nuvoton Virtual Com Port (COM*)" like below picture.

This need to know this COM port number and use it to commutation with MCU.

- ## Read FW Command

You can send below command sequence to get MCU FW version

Read FW Version	0x1D	0x41	0x30

You can read FW version after "Read FW" command. The FW version is a ASCII string.

- ## Open Command

You can send below command sequence to COM port to open drawer.

ESC p m t1 t2

Name	Specify pulse				
Code	ASCII	ESC	p	m	t1	t2
	Hex.	1B	70	m	t1	t2
	Decimal	27	112	m	t1	t2

Defined Region $0 \le m \le 1, 48 \le m \le 49$

$0 \le t1 \le 255$

$0 \le t2 \le 255$

Function   This outputs a signal specified by t1 and t2 to the connector pin specified by m.

m	Connector Pin
0, 48	Drawer kick connector pin #2
1, 49	Drawer kick connector pin #5

Details   Drawer kick on time is set to t1 x 2 ms; off time is set to t2 x 2 ms.
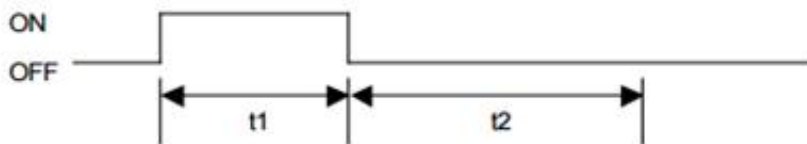
When t1 > t2, the value of t2 is processed as t2 = t1.

Drawer 1 Kick Out	0x1B	0x70	0x00	T1	T2
Drawer 2 Kick Out	0x1B	0x70	0x01	T1	T2

T1 / T2 : Drawer kick on time is set to T1 x 2 ms, off time is set to T2 x 2 ms.

The best value for T1/T2 is 7D(125 * 2ms = 250ms)

Note : CDA CD port need to charge power after each time open drawer. The charge time about 600ms, please wait 600ms at least between two open drawer command.

● **Status Command**

You can send below command sequence to COM to read drawer status.

GS r n

Name		Transmission of status		
Code	ASCII	GS	r	n
	Hex.	1D	72	n
	Decimal	29	114	n
Defined Region	n = 2, 50			
Function	Sends the specified status.			
	Drawer Kick Connector Status (n = 2, 50)			

Status		"0"	"1"

● Read Drawer Status

Read Status	0x1D	0x72	0x02

You can read drawer status after "Read Drawer Status" command.

Drawer Status	0x01	Drawer Opened
	0x00	Drawer Closed

● **ASB Command (Automatic Status Back)**

If ASB mode is activated, the PUH will report status if drawer status has changed.

You can use command to enable or disable this function.

The ASB is disabled by default when PUH power on. You need to enable ASB after each time power on.

● Enable ASB function

Enable ASB	0x1D	0x61	0x01

● Disable ASB function

Enable ASB	0x1D	0x61	0x00

● ASB Message - Status Report

The ASB message are always 4 bytes with some fixed bits which can be used to identify the message as an ASB message. Bit 2 of the first byte signals the drawer state.

Drawer Opened	0x10	0x00	0x00	0x0F
Drawer Closed	0x14	0x00	0x00	0x0F

● **How to access Cash Drawer in Windows**

You can use COMMTest to access cash drawer. The application can download at here
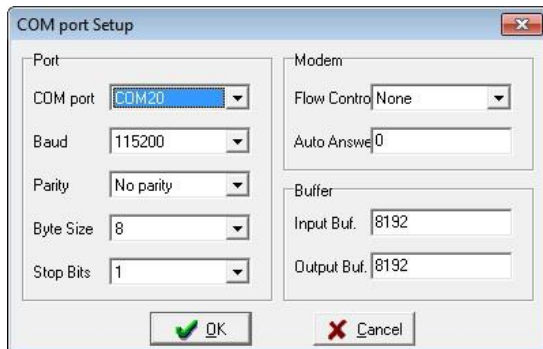http://www.cppfans.com/software/communication/serailassistant.asp

● Start COMMTest

Right click on COMMTest.exe and select "Run as Administrator" to start COMMTest.

● Setup COM port

The MCU is commutation through Prolific virtual COM port. Please find out the COM port number first than setup the COM port and baud rate to "115200, N, 8, 1".

● Read FW Version

Input "Read FW" command "1D 41 30" than enter, this command will return MCU FW version.

- Open Drawer

  Input "Open Drawer" command "1B 70 00 7F 7F" than enter, this command will open drawer.

- Read Drawer Status

  Input "Read Drawer Status" command "1D 72 02" to read status. The status will return and display after read command.

- Enable ASB

  Input "Enable ASB" command "1D 61 01". The drawer will automatic report drawer status when drawer open/close status changed.

● Disable ASB

Input "Disable ASB" command "1D 61 00". The drawer will not report drawer status. You need to use read status to read drawer status.

● How to access Cash Drawer in Ubuntu

You can access Cash Drawer port through USB-to-Serial port. You can use cutecom to access it.

● Find PUH CD port

You can list all "/dev/ttyUSB*" by ls command. There are total 5 COM ports for PUH. The CD port will be the last port, like "/dev/ttyUSB4" .

```
user@D18:~$ ls /dev/ttyUSB*
/dev/ttyUSB0  /dev/ttyUSB1  /dev/ttyUSB2  /dev/ttyUSB3  /dev/ttyUSB4
```

● Find CDA CD port

You can list all "/dev/ttyACM*" by ls command. You may find more than one devices, like "/dev/ttyACM0", "/dev/ttyACM1", if you install more than one CDA.

The CDA port will like "/dev/ttyACM0"for one CDA installed.

```
user@D18:~$ ls /dev/ttyACM*
/dev/ttyACM0
```

● Install cutecom

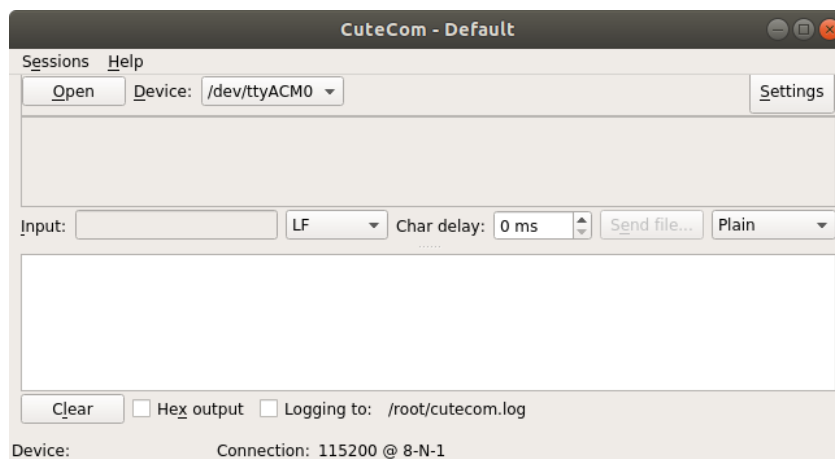You can install cutecom by "sudo apt install cutecom".

```
user@D18:~$ sudo apt install cutecom
[sudo] password for user:
```

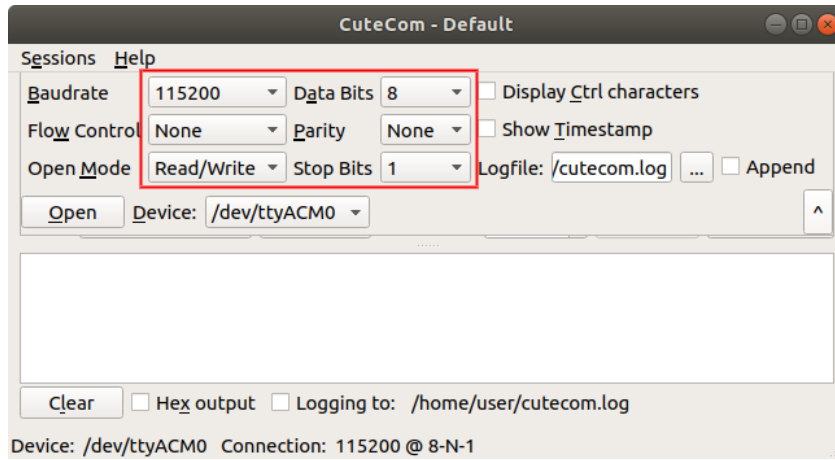● Start cutecom

You can use "sudo cutecom" to start cutecom.

```
user@D18:~$ sudo cutecom
```
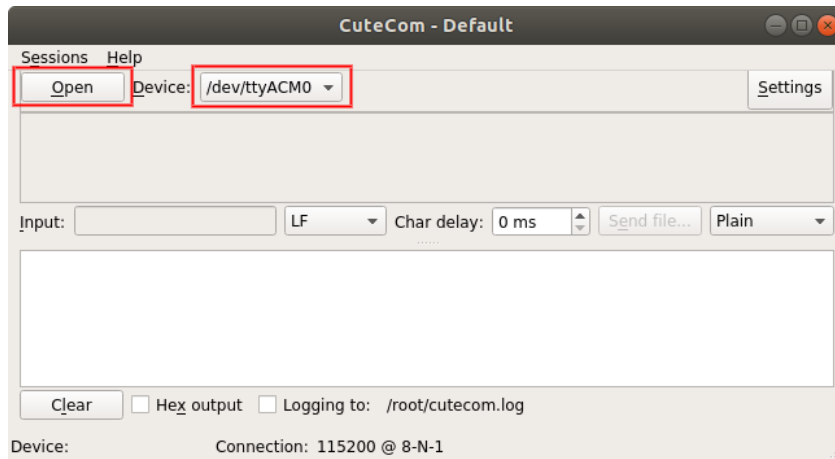
● Setup COM port

The MCU is commutation through virtual COM port. Please find out the PUH/CDA port name first than setup the COM port baud rate to "115200, N, 8, 1".
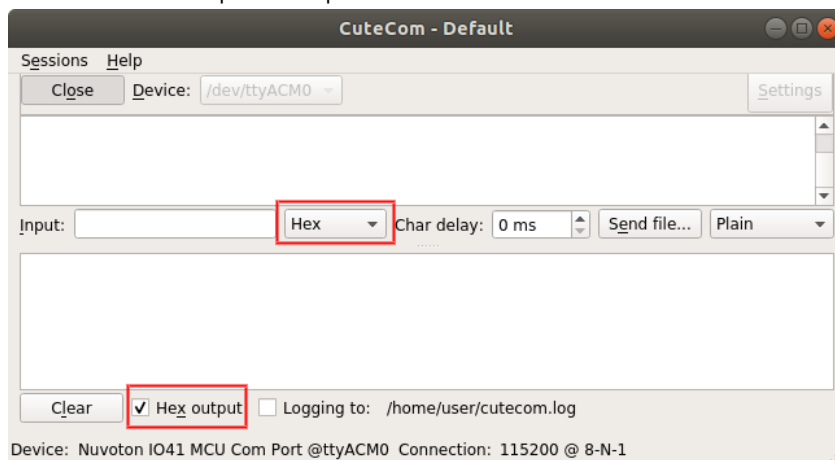
Click "Setting" to display COM port setting.

● Open COM port

Select which device for access "/dev/ttyACM0". Then click "Open" to open device for access.
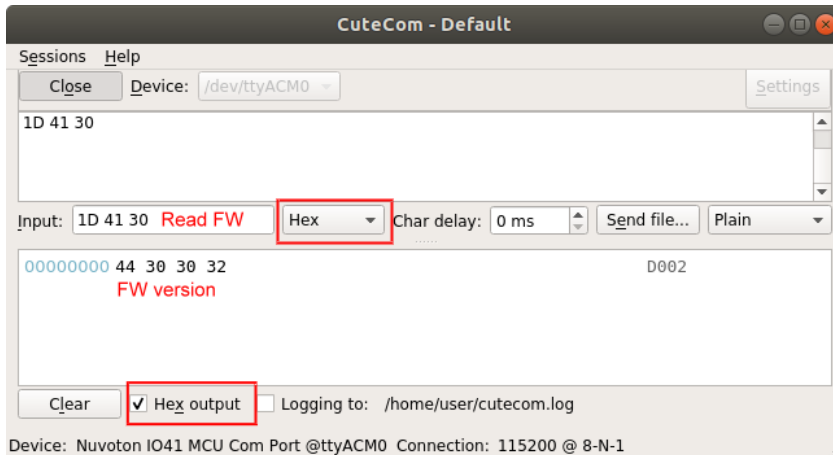

Please select input/output to "Hex" for later access. All command is HEX value.
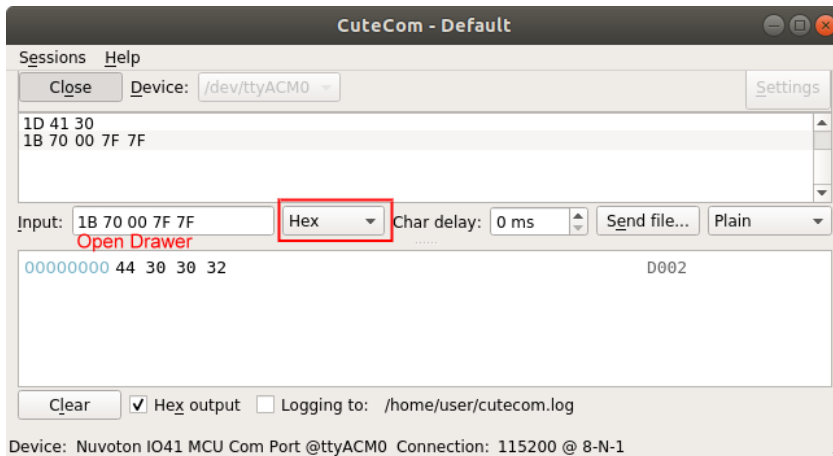
- **Read FW Version**

    Input "Read FW" command "1D 41 30" than enter, this command will return MCU FW version.
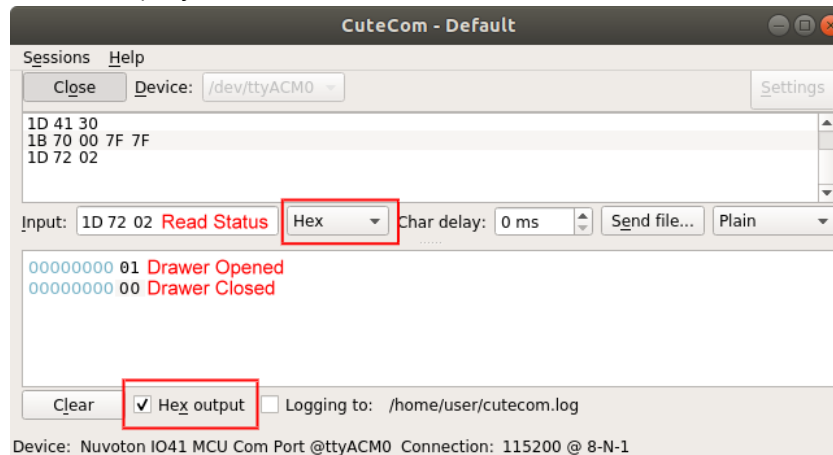

- **Open Drawer**

    Input "Open Drawer" command "1B 70 00 7F 7F" than enter, this command will open drawer.
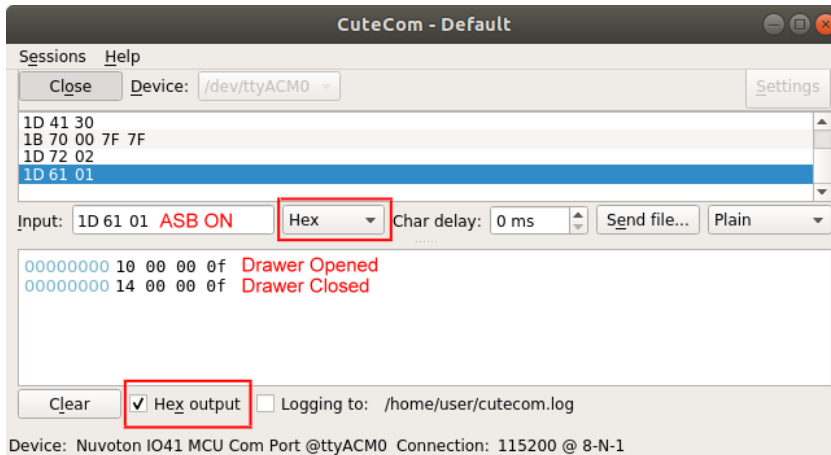

- **Read Drawer Status**

    Input "Read Drawer Status" command "1D 72 02" to read status. The status will return and display after read command.

- Enable ASB

  Input "Enable ASB" command "1D 61 01". The drawer will automatic report drawer status when drawer open/close status changed.

- Disable ASB

  Input "Disable ASB" command "1D 61 00". The drawer will not report drawer status. You need to use read status to read drawer status.