

2014

# MSD100 User's Manual



[www.yerendian.com](http://www.yerendian.com)

Copyright © 2014 Reserved by Yerendian Technologies Co., Ltd.



|  |    |
|--|----|
| 1. INTRODUCTION.....                     | 3  |
| 1.1 description .....                    | 3  |
| 1.2 form factor .....                    | 4  |
| 1.3 system information .....             | 4  |
| 1.4 usb interface.....                   | 4  |
| 1.5 serial interface.....                | 4  |
| 1.6 serial communication parameters..... | 4  |
| 1.7 serial signals.....                  | 5  |
| 1.8 environmental limits.....            | 5  |
| 1.9 power requirements .....             | 5  |
| 1.10 warranty.....                       | 5  |
| 1.11 pin assignment-1.....               | 6  |
| 1.12 USB port pin assignment .....       | 6  |
| 2. GETTING STARTED.....                  | 7  |
| 2.1 開始安裝及測試.....                         | 7  |
| 3. COMMAND SET GUIDE .....               | 8  |
| 4. TECHNICAL SUPPORT CONTACT .....       | 15 |
| YERENDIAN TAIWAN.....                    | 15 |
| YERENDIAN CHINA .....                    | 15 |



## ■ Document Reversion

| Date       | Version | Author    |
|------------|---------|-----------|
| 2014-12-22 | V1.0    | Jacky Lee |
| 2014-06-09 | V1.1    | Jacky Lee |

## 1. INTRODUCTION

### 1.1 DESCRIPTION

野人電科技的MSD100 嵌入式模組是特別為了客戶設備能夠簡易的快速擁有檔案記錄能力而設計。

應用於實際產品時，只需接上 5V 電源,UART-TX 及 UART-RX 透過簡易指令就可以對 USB 端口做存取,簡易類似 linux 指令方式就可以輕易的讓原有產品具備檔案存取功能。

藉助 Cortek-M3 系統晶片的強大運算能力以及野人電科技自行開發的作業系統,並完全整合了 FAT32 功能及小巧的 PCB 尺寸,幫助客戶可以在最短時間就能夠讓產品支援檔案存取功能。

利用野人電科技研究團隊持續創新技術，MSD100 可用於將任何具有標準串列介面的設備即時轉換為具備檔案存取功能。





## 1.2 FORM FACTOR

Type: Pin header module

Dimensions: 60 x 21 x 25 mm

Weight: 9g

---

## 1.3 SYSTEM INFORMATION

CPU: 32-bit ARM Cortek-M3

RAM: 96 KB built in

Flash: 256 KB built in

USB2.0: built in

Real Time Clock: built in

---

## 1.4 USB INTERFACE

Number of Ports: 1

USB2.0: built in

---

## 1.5 SERIAL INTERFACE

Number of Ports: 1

Transmission Format: Standard TTL

---

## 1.6 SERIAL COMMUNICATION PARAMETERS

Data Bits: 8

Stop Bits: 1

Parity: None

Flow Control: None

Baud rate: 115200 Kbps

---

## 1.7 SERIAL SIGNALS

TTL: TXD, RXD, GND

---

## 1.8 ENVIRONMENTAL LIMITS

Operating Temperature:

Standard Models: 0 to 55°C (32 to 131°F)

Wide Temp. Models: -40 to 85°C (-40 to 185°F)

Storage Temperature (package included): -40 to 60°C (-40 to 140°F)

Ambient Relative Humidity: 5 to 95% (non-condensing)

---

## 1.9 POWER REQUIREMENTS

Input Voltage: 5 VDC ( $\pm 5\%$ )

Power Consumption: 200 mA @ 5 VDC input max.

---

## 1.10 WARRANTY

Warranty Period: 1 years

Details: See [www.yerendian.com](http://www.yerendian.com)

---

### 1.11 PIN ASSIGNMENT-1

| J4 (4 Pins) |               |                       |
|-------------|---------------|-----------------------|
| Pin         | Signal Name   | Function              |
| 1           | VCC +5V       | Power                 |
| 2           | UART2-TX /PA2 | Communication port TX |
| 3           | UART2-RX /PA3 | Communication port RX |
| 4           | GND           | GND                   |

### 1.12 USB PORT PIN ASSIGNMENT



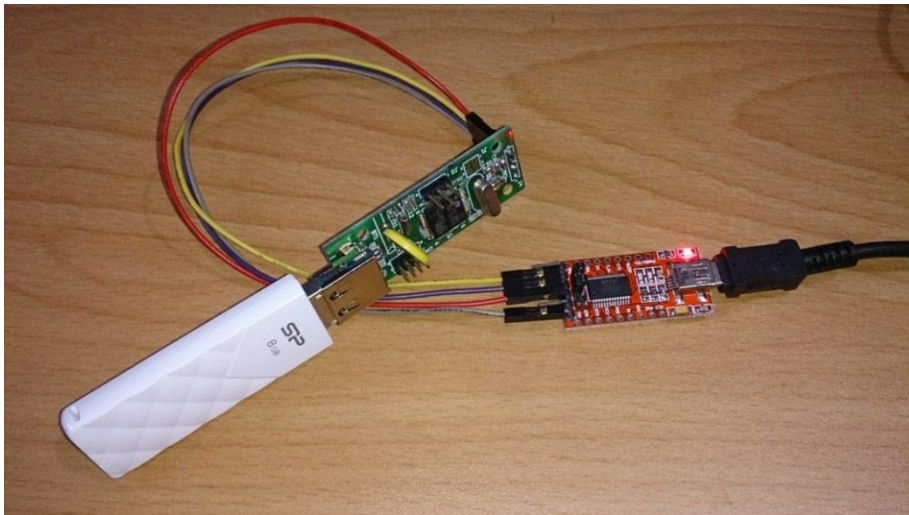
| Pin | Name | Cable color | Description |
|-----|------|-------------|-------------|
| 1   | VCC  | Red         | +5 VDC      |
| 2   | D-   | White       | Data -      |
| 3   | D+   | Green       | Data +      |
| 4   | GND  | Black       | Ground      |

## 2. GETTING STARTED

### 2.1 開始安裝及測試

可以參考下圖，MSD100 可以接上市售 USB TO UART 模組，USB TO UART 模組可以供電出 5V 給 MSD100 用，並且可以透過電腦上的超級終端機來做測試，這裡野人電是用免費軟體 Tera term 來作測試(<http://logmett.com/index.php?/download/tera-term-485-freeware.html>)，當電源 5V /GND /TX/RX 都接好後就可以進行測試。

\* USB TO UART 模組，如下圖紅色板子，野人電也有代理出售。





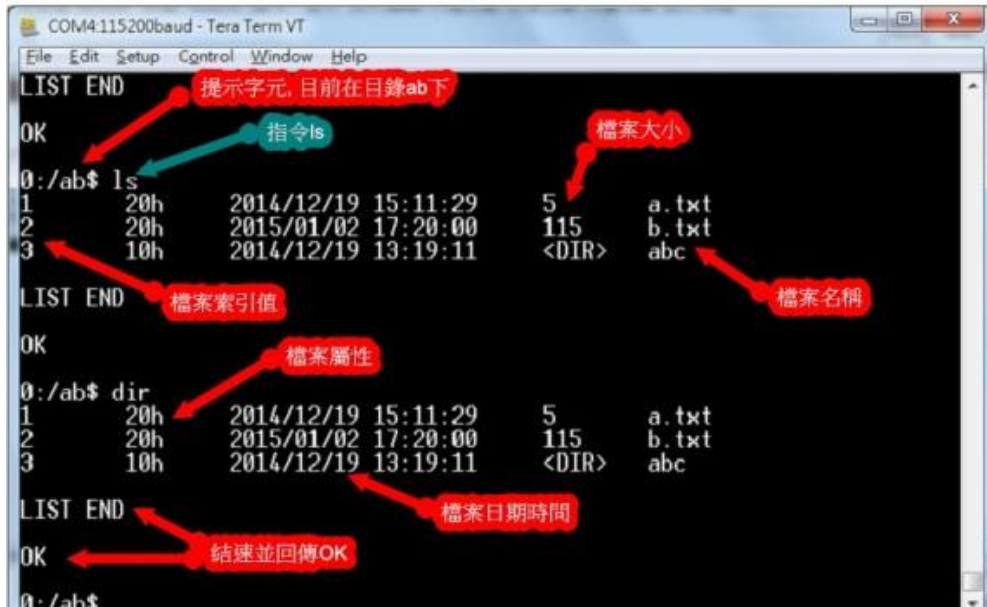


### 3. COMMAND SET GUIDE

MSD100 支援底下幾種指令

| 指令        | 描述                                 |
|-----------|------------------------------------|
| ls or dir | 用來列印出目前的目錄的清單                      |
| cd        | 切換目錄                               |
| cat       | 讀取檔案內容                             |
| touch     | 寫檔                                 |
| mkdir     | 建立目錄                               |
| rm        | 刪除檔案或目錄                            |
| rename    | 檔案或目錄改名字                           |
| pwd       | 查詢當前目錄                             |
| dt        | 讀取或寫入時間日期 (MSD 內建 RTC，可以供客戶現有板子讀取) |
| cp        | 檔案複製                               |
| echo      | 開啟或關閉 echo 模式，使用終端機測試時，可以開啟，方便測試   |
| ver       | 查詢版本                               |
| reboot    | Reset MSD100                       |
| off       | USB 退出                             |
|           |                                    |

### 3.1 ls and dir example



The screenshot shows a terminal window titled 'COM4:115200baud - Tera Term VT'. The user enters the command 'ls' in the directory '/ab'. The output is as follows:

```

0:/ab$ ls
1  20h   2014/12/19 15:11:29   5   a.txt
2  20h   2015/01/02 17:20:00  115  b.txt
3  10h   2014/12/19 13:19:11   <DIR> abc

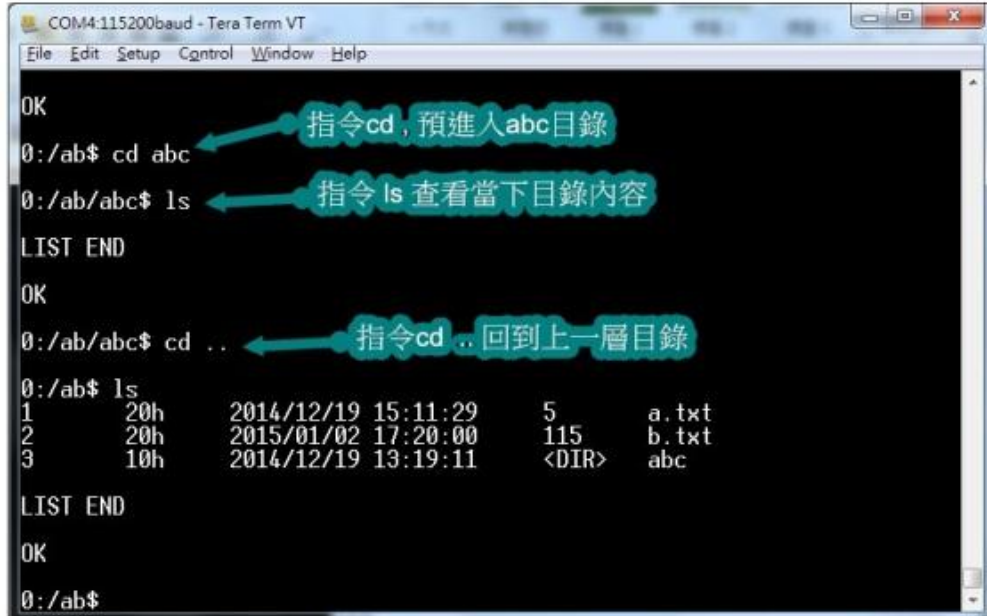
```

Annotations in red boxes point to specific parts of the output:

- '提示字元, 目前在目錄ab下' points to the prompt '0:/ab\$'.
- '指令ls' points to the command 'ls'.
- '檔案大小' points to the file sizes '5' and '115'.
- '檔案索引值' points to the file indices '1', '2', and '3'.
- '檔案名稱' points to the file names 'a.txt', 'b.txt', and 'abc'.
- '檔案屬性' points to the permissions '20h' and '10h'.
- '檔案日期時間' points to the timestamps '2014/12/19 15:11:29', '2015/01/02 17:20:00', and '2014/12/19 13:19:11'.
- '結速並回傳OK' points to the 'OK' response after the command.

The user then enters the command 'dir', which produces the same output as 'ls'. The terminal ends with 'LIST END' and 'OK'.

### 3.2 cd and cd .. example



The screenshot shows a terminal window titled 'COM4:115200baud - Tera Term VT'. The user enters the command 'cd abc' in the directory '/ab'. The prompt changes to '0:/ab/abc\$'. The user then enters 'ls', and the output is:

```

0:/ab/abc$ ls
LIST END

```

Annotations in green boxes point to the commands:

- '指令cd, 預進入abc目錄' points to 'cd abc'.
- '指令ls 查看當下目錄內容' points to 'ls'.
- '指令cd .. 回到上一層目錄' points to 'cd ..'.

After entering 'cd ..', the prompt returns to '0:/ab\$'. The user then enters 'ls', and the output is:

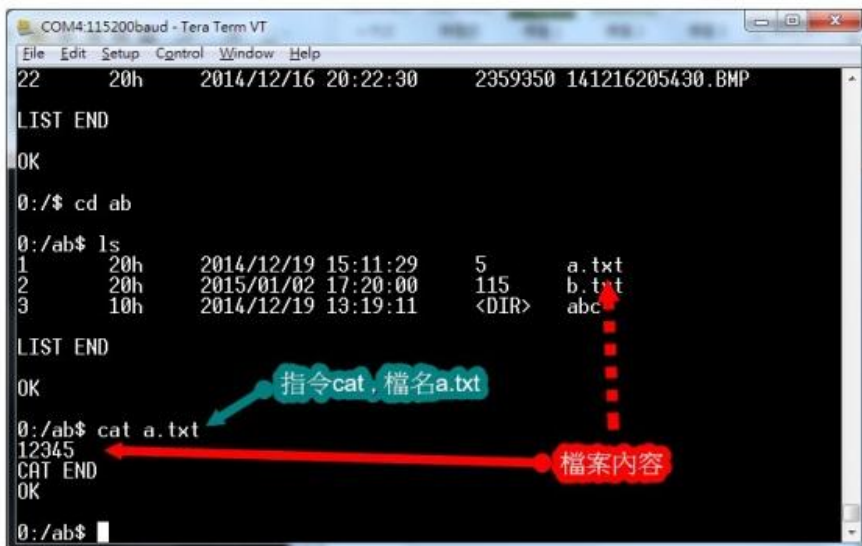
```

0:/ab$ ls
1  20h   2014/12/19 15:11:29   5   a.txt
2  20h   2015/01/02 17:20:00  115  b.txt
3  10h   2014/12/19 13:19:11   <DIR> abc

```

The terminal ends with 'LIST END' and 'OK'.

### 3.3 cat example

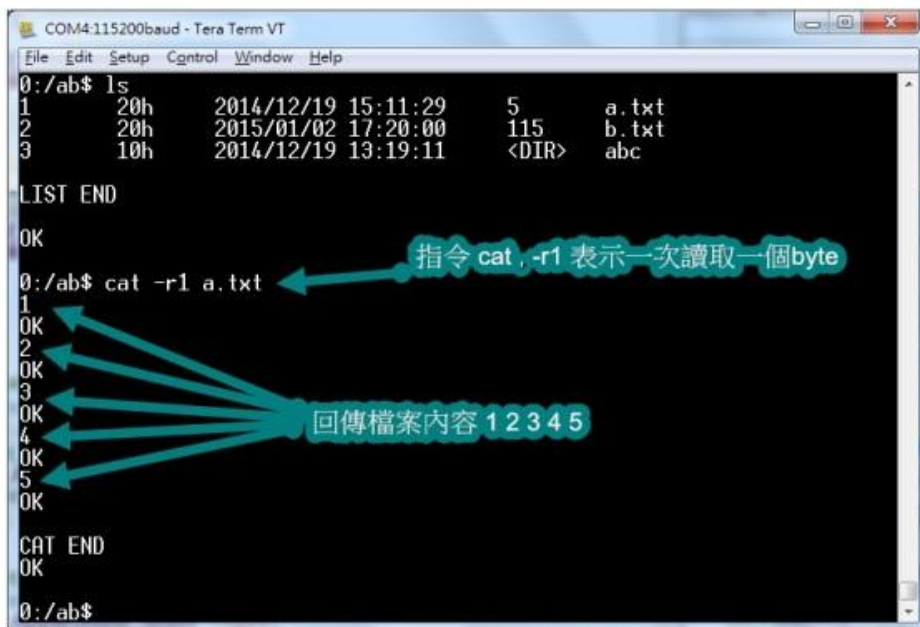


```
COM4:115200baud - Tera Term VT
File Edit Setup Control Window Help
22 20h 2014/12/16 20:22:30 2359350 141216205430.BMP
LIST END
OK
0:/$ cd ab
0:/ab$ ls
1 20h 2014/12/19 15:11:29 5 a.txt
2 20h 2015/01/02 17:20:00 115 b.txt
3 10h 2014/12/19 13:19:11 <DIR> abc
LIST END
OK
0:/ab$ cat a.txt
12345
CAT END
OK
0:/ab$
```

指令cat, 檔名a.txt

檔案內容

### 3.4 cat -r example



```
COM4:115200baud - Tera Term VT
File Edit Setup Control Window Help
0:/ab$ ls
1 20h 2014/12/19 15:11:29 5 a.txt
2 20h 2015/01/02 17:20:00 115 b.txt
3 10h 2014/12/19 13:19:11 <DIR> abc
LIST END
OK
0:/ab$ cat -r1 a.txt
1
OK
2
OK
3
OK
4
OK
5
OK
CAT END
OK
0:/ab$
```

指令 cat, -r1 表示一次讀取一個byte

回傳檔案內容 1 2 3 4 5

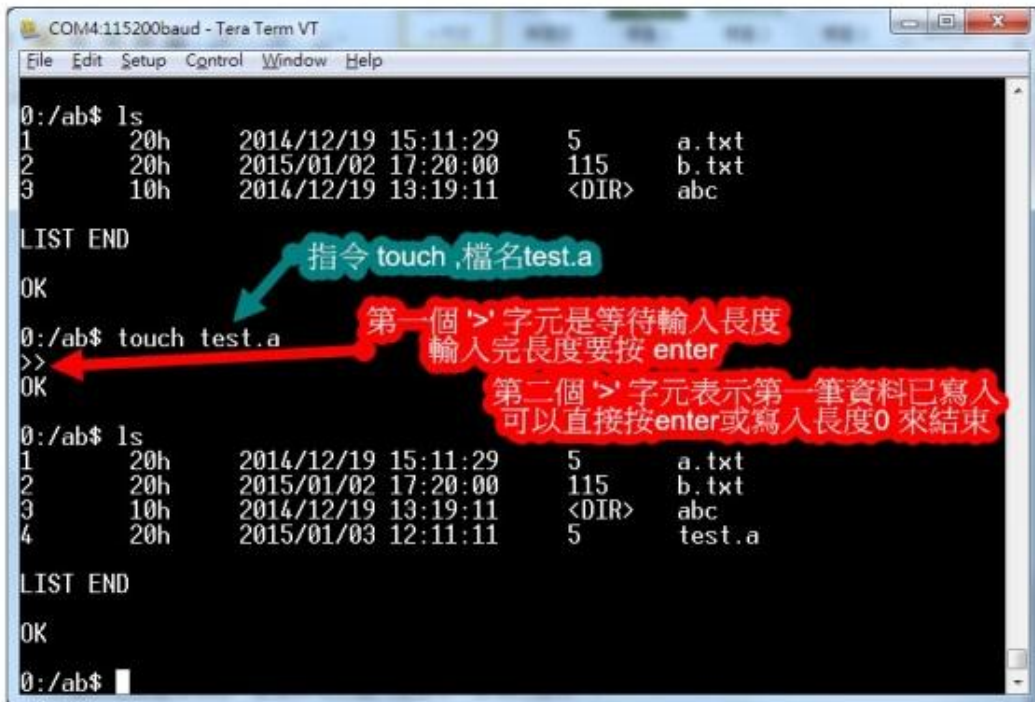
### 3.5 touch example

touch test.a 是創建一個新的檔案，若檔名已存在，會覆蓋過去

當輸入 touch test.a 後，系統會回傳 '>' 字元等待輸入。

此時要輸入要寫入的單筆長度(單次最大只可以寫入 1024bytes)，這個範例是輸入 5 後，按下 enter key。

然後接著輸入 5 bytes 的值，等待輸入滿後，系統又會出現 '>' 字元，進入等待輸入狀態，可以重覆以上直到檔案寫完為止，要結束可以寫入長度 0 或直接按 enter key，即表示結束。



```
COM4:115200baud - Tera Term VT
File Edit Setup Control Window Help
0:/ab$ ls
1 20h 2014/12/19 15:11:29 5 a.txt
2 20h 2015/01/02 17:20:00 115 b.txt
3 10h 2014/12/19 13:19:11 <DIR> abc
LIST END
OK
0:/ab$ touch test.a
>>
OK
0:/ab$ ls
1 20h 2014/12/19 15:11:29 5 a.txt
2 20h 2015/01/02 17:20:00 115 b.txt
3 10h 2014/12/19 13:19:11 <DIR> abc
4 20h 2015/01/03 12:11:11 5 test.a
LIST END
OK
0:/ab$
```

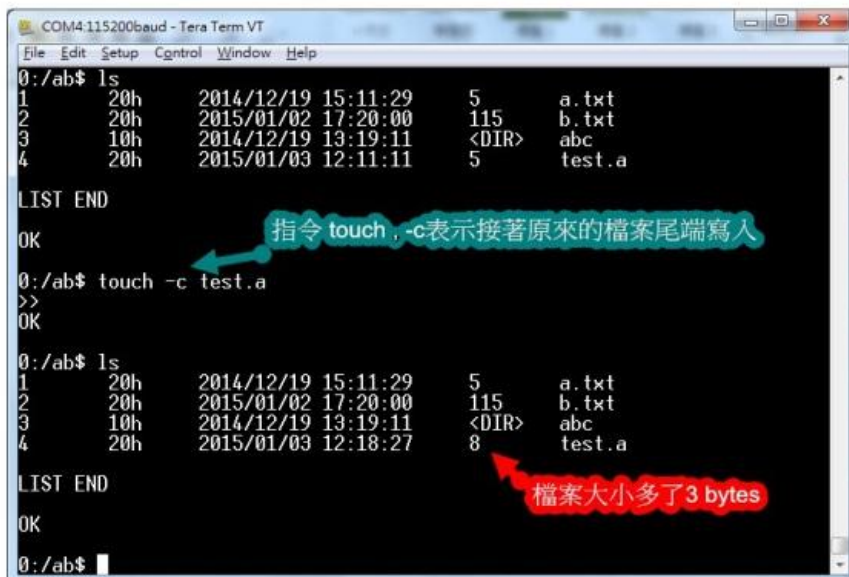
指令 touch, 檔名 test.a

第一個 '>' 字元是等待輸入長度  
輸入完長度要按 enter

第二個 '>' 字元表示第一筆資料已寫入  
可以直接按 enter 或寫入長度 0 來結束

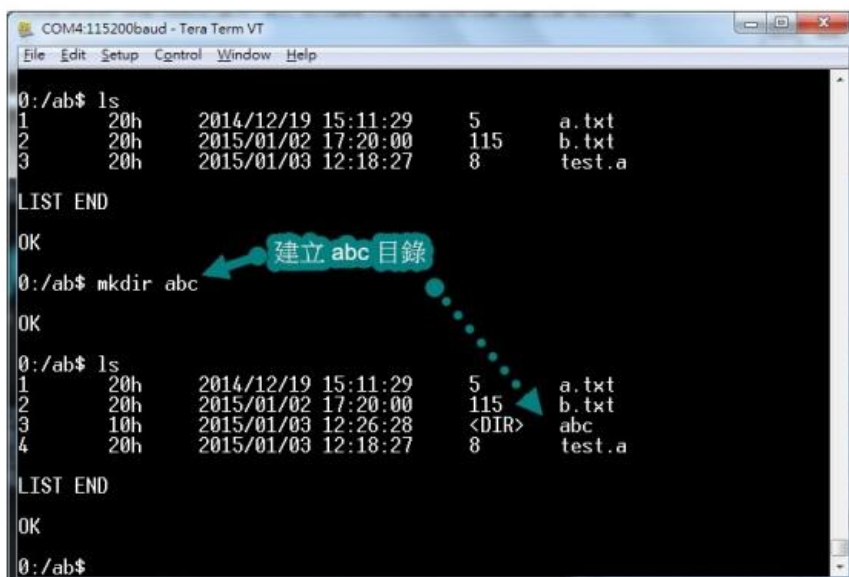
### 3.6 touch -c example

操作方式同上，只是寫入會接著原來檔案的尾端。



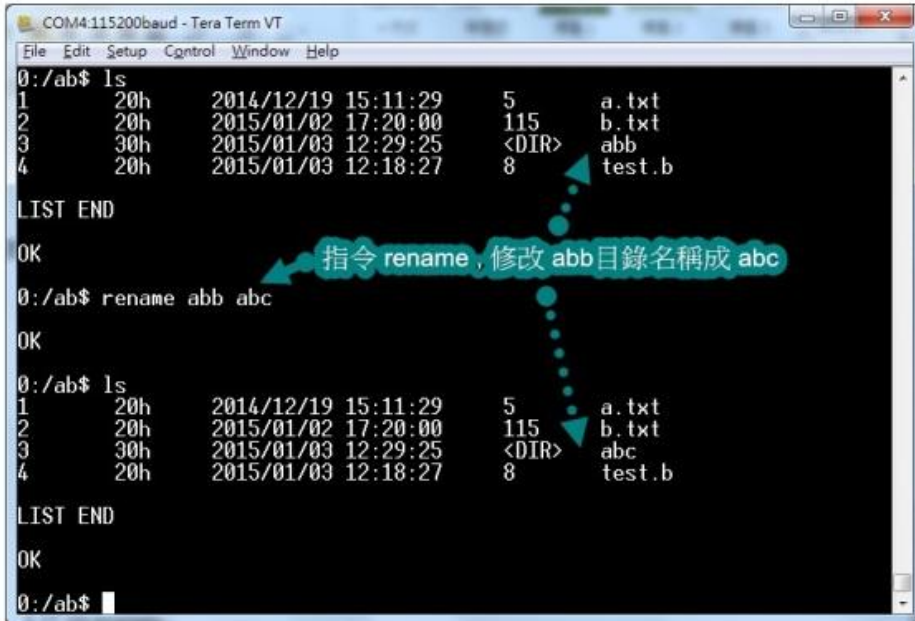
```
COM4:115200baud - Tera Term VT
File Edit Setup Control Window Help
0:/ab$ ls
1 20h 2014/12/19 15:11:29 5 a.txt
2 20h 2015/01/02 17:20:00 115 b.txt
3 10h 2014/12/19 13:19:11 <DIR> abc
4 20h 2015/01/03 12:11:11 5 test.a
LIST END
OK
0:/ab$ touch -c test.a
>>
OK
0:/ab$ ls
1 20h 2014/12/19 15:11:29 5 a.txt
2 20h 2015/01/02 17:20:00 115 b.txt
3 10h 2014/12/19 13:19:11 <DIR> abc
4 20h 2015/01/03 12:18:27 8 test.a
LIST END
OK
0:/ab$
```

### 3.7 mkdir example



```
COM4:115200baud - Tera Term VT
File Edit Setup Control Window Help
0:/ab$ ls
1 20h 2014/12/19 15:11:29 5 a.txt
2 20h 2015/01/02 17:20:00 115 b.txt
3 20h 2015/01/03 12:18:27 8 test.a
LIST END
OK
0:/ab$ mkdir abc
OK
0:/ab$ ls
1 20h 2014/12/19 15:11:29 5 a.txt
2 20h 2015/01/02 17:20:00 115 b.txt
3 10h 2015/01/03 12:26:28 <DIR> abc
4 20h 2015/01/03 12:18:27 8 test.a
LIST END
OK
0:/ab$
```

### 3.8 rename example

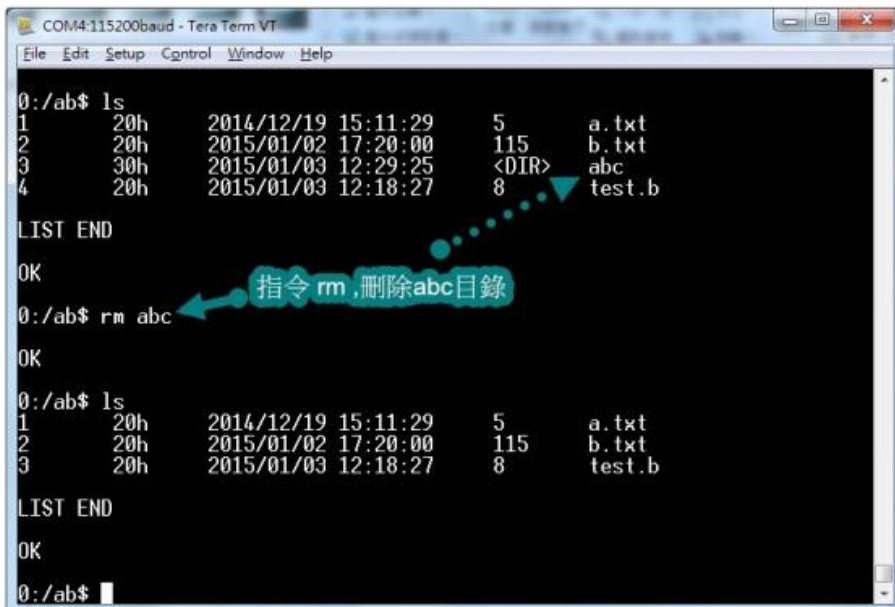


```

COM4:115200baud - Tera Term VT
File Edit Setup Control Window Help
0:/ab$ ls
1 20h 2014/12/19 15:11:29 5 a.txt
2 20h 2015/01/02 17:20:00 115 b.txt
3 30h 2015/01/03 12:29:25 <DIR> abb
4 20h 2015/01/03 12:18:27 8 test.b
LIST END
OK
0:/ab$ rename abb abc
OK
0:/ab$ ls
1 20h 2014/12/19 15:11:29 5 a.txt
2 20h 2015/01/02 17:20:00 115 b.txt
3 30h 2015/01/03 12:29:25 <DIR> abc
4 20h 2015/01/03 12:18:27 8 test.b
LIST END
OK
0:/ab$
    
```

指令 rename , 修改 abb 目錄名稱成 abc

### 3.9 rm example

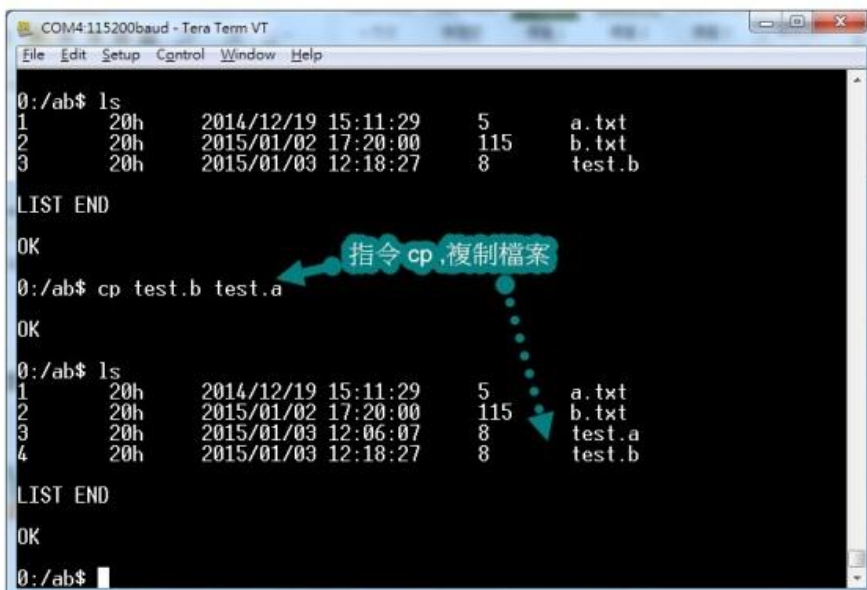


```

COM4:115200baud - Tera Term VT
File Edit Setup Control Window Help
0:/ab$ ls
1 20h 2014/12/19 15:11:29 5 a.txt
2 20h 2015/01/02 17:20:00 115 b.txt
3 30h 2015/01/03 12:29:25 <DIR> abc
4 20h 2015/01/03 12:18:27 8 test.b
LIST END
OK
0:/ab$ rm abc
OK
0:/ab$ ls
1 20h 2014/12/19 15:11:29 5 a.txt
2 20h 2015/01/02 17:20:00 115 b.txt
3 20h 2015/01/03 12:18:27 8 test.b
LIST END
OK
0:/ab$
    
```

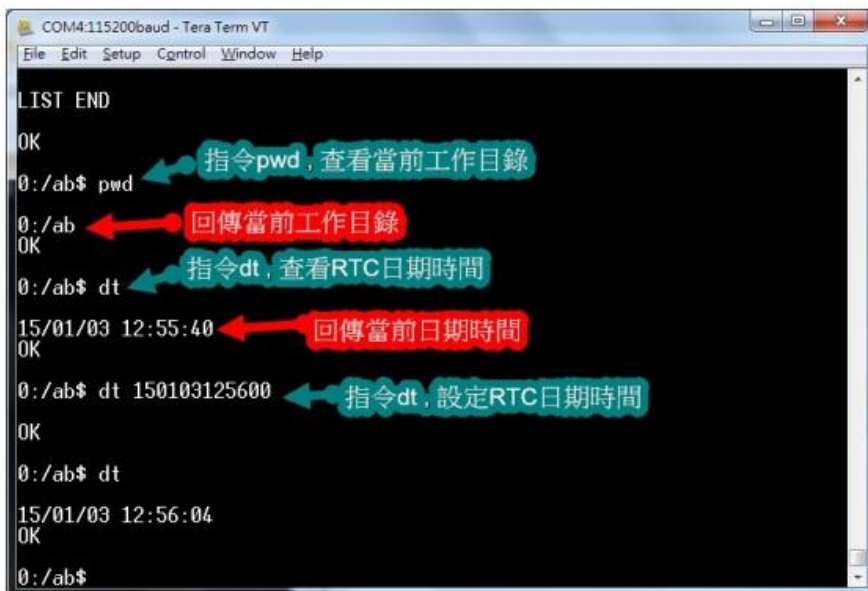
指令 rm , 刪除 abc 目錄

### 3.10 cp example



```
COM4:115200baud - Tera Term VT
File Edit Setup Control Window Help
0:/ab$ ls
1 20h 2014/12/19 15:11:29 5 a.txt
2 20h 2015/01/02 17:20:00 115 b.txt
3 20h 2015/01/03 12:18:27 8 test.b
LIST END
OK
0:/ab$ cp test.b test.a
OK
0:/ab$ ls
1 20h 2014/12/19 15:11:29 5 a.txt
2 20h 2015/01/02 17:20:00 115 b.txt
3 20h 2015/01/03 12:06:07 8 test.a
4 20h 2015/01/03 12:18:27 8 test.b
LIST END
OK
0:/ab$
```

### 3.11 dt and pwd example



```
COM4:115200baud - Tera Term VT
File Edit Setup Control Window Help
LIST END
OK
0:/ab$ pwd
0:/ab
OK
0:/ab$ dt
15/01/03 12:55:40
OK
0:/ab$ dt 150103125600
OK
0:/ab$ dt
15/01/03 12:56:04
OK
0:/ab$
```



## 4. TECHNICAL SUPPORT CONTACT

Yerendian Technologies Co., Ltd.

Website: [www.yerendian.com](http://www.yerendian.com)

### YERENDIAN TAIWAN

No.28,Fuguo Rd.,Yilan City,Yilan County 260, Taiwan (R.O.C)

Tel: +886-988-180-499

E-Mail: [sales@yerendian.com](mailto:sales@yerendian.com)

Skype: yerendian

### YERENDIAN CHINA

Moblie: +86-187-03597003

E-Mail: [randy.huang@yerendian.com](mailto:randy.huang@yerendian.com)

Skype: hain-hai

Website: [www.yerendian.com](http://www.yerendian.com)

---

[www.yerendian.com](http://www.yerendian.com)