

BONOLO V5 Air Quality Monitor

List of Commands



This file is compatible with the latest firmware at the date of the file. Newer commands may not be available in older firmware. Please update the firmware on your device accordingly.

Table of Contents

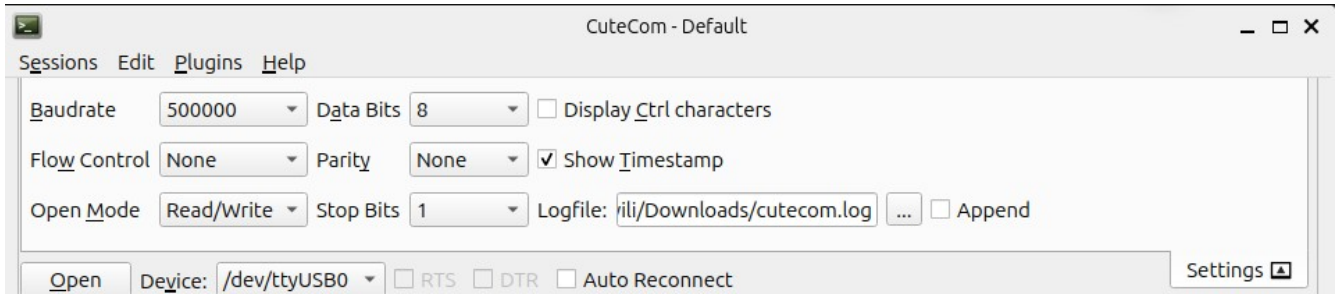


1. UART Port setting.....	3
2. Check communication. “Hi”.....	3
3. Check battery Level.....	3
4. Check time setting.....	4
5. Set time manually.....	4
6. Set time through a WIFI connection.....	5
7. Set time through an LTE connection.....	6
8. Check the serial number of the unit.....	6
9. Test Sensors.....	7
10. Rebooting the device.....	7
11. Check project status.....	8
12. Set a project’s sampling period.....	8
13. Enable WIFI Uploads.....	8
14. Enable LTE Uploads.....	9
15. Set a project’s upload interval.....	9
16. Start a one hour long project.....	9
17. Start a one day long project.....	10
18. Start a one month long project.....	10
19. Start a one year long project.....	11
20. Start a project with a specific start and end date.....	11
21. Stop a project.....	12
22. Check or set the WIFI SSID and password.....	12
23. Check or set the LTE access point name (APN).....	13
24. Download data directly.....	14
25. Manually upload data to a server through WIFI.....	15
26. Check device operation logs.....	15

1. UART Port setting

To communicate with the unit through a UART terminal software application the following settings apply. See the screenshot example. See the document Bonolo V5 Software Guide for more.

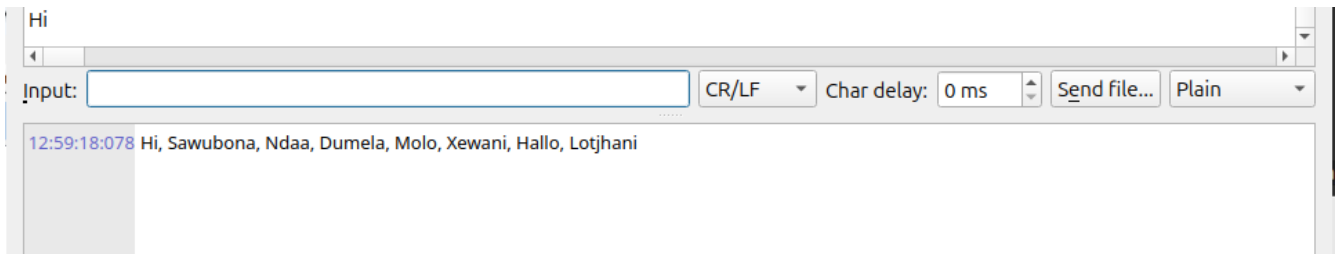
- Baudrate = 500 000, Data = 8 bits, Parity = None, Stop bit = 1, Flow control = None.



2. Check communication. “Hi”

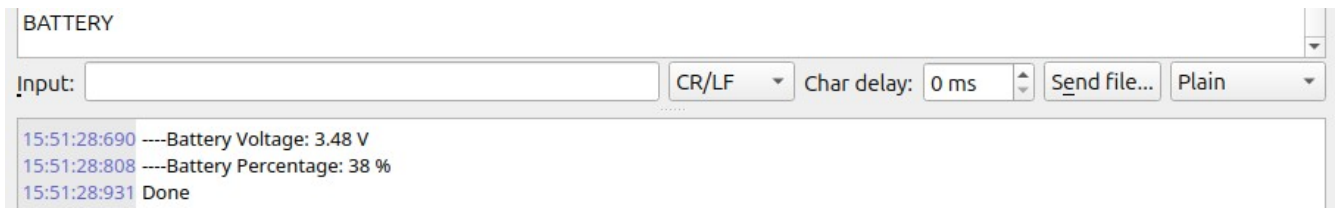
A basic command to test two way communication is given below.

Command: “Hi”



3. Check battery Level

Command: “BATTERY”





4. Check time setting

Command: "TIME"

```
TIME
Input:
15:52:16:028 ----Current time: Time: 2026/2/12 (Thursday) 15:52:15
15:52:16:030 Done
```

5. Set time manually

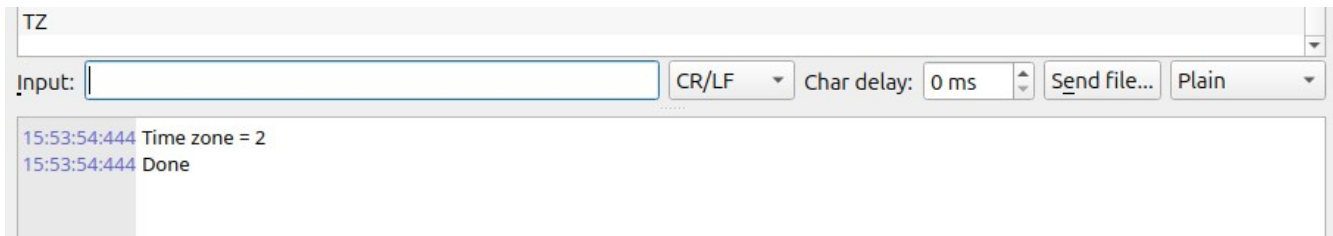
Command: "TIME:2026-02-12 15:54:00"

```
TIME:2026-02-12 15:54:00
Input:
15:53:14:148 Setting the clock
15:53:14:359 Input>: 2026-02-12 15:54:00
15:53:14:359 ----Current time: Time: 2026/2/12 (Thursday) 15:54:0
15:53:14:363 Done
```

6. Set time through a WIFI connection

First check the time zone for the region.

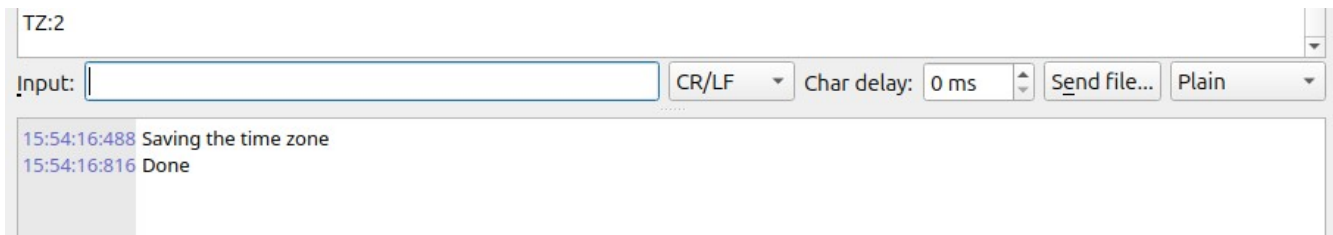
Command: "TZ"



```
TZ
Input:
15:53:54:444 Time zone = 2
15:53:54:444 Done
```

If the time zone is wrong, set it to the correct one. And check again


Command: "TZ:2". Then Command "TZ" to check



```
TZ:2
Input:
15:54:16:488 Saving the time zone
15:54:16:816 Done
```

Assuming the WIFI SSID and password are already set. Correct the time as follows.

Command: "TIMEWF"



```
TIMEWF
Input:
15:54:37:107 Connecting to: CIRCOR
15:54:37:607 ...Connected.
15:54:38:610 Connected
15:54:40:074 HTTP Response code: 200
15:54:40:074 2026-02-12 13:54:39
15:54:40:086 Web response >
15:54:40:086 2026-02-12 13:54:39
15:54:40:086 year = 2026
15:54:40:086 month = 02
15:54:40:086 day = 12
15:54:40:087 hr = 13
15:54:40:087 min = 54
15:54:40:087 sec = 39
15:54:40:089 Time: 2026/2/12 (Thursday) 15:54:39
15:54:40:089 >>> Clock corrected <<<
15:54:40:091 Done
```



See following chapters for how to set the SSID and password.

7. Set time through an LTE connection

First check the time zone for the region as indicated in the previous section.

Command: “TZ”

If the time zone is wrong, set it to the correct one. And check again

Command: “TZ:2”. Then Command “TZ” to check

Assuming there is a SIM card with network access and the Access Point Name is correct. Set the time as follows.

Command: “TIMELTE”

```
TIMELTE
Input:
23:20:51:087 OK
23:20:51:295 GET passed
23:20:51:295
23:20:52:295
23:20:52:295 Connection Level: 9
23:20:52:302 Time string: 2025-11-11 21:20:51
23:20:53:313 Processing web response >
23:20:53:313 2025-11-11 21:20:51
23:20:53:313 year = 2025
23:20:53:313 month = 11
23:20:53:314 day = 11
23:20:53:314 hr = 21
23:20:53:314 min = 20
23:20:53:315 sec = 51
23:20:53:315 >>> Updating the RTC From Web <<<
```

8. Check the serial number of the unit

Command: “SN”

```
SN
Input:
16:16:05:638 SN = CCSBN0009
16:16:05:638 Done
```

9. Test Sensors

Command: "SENSORS"

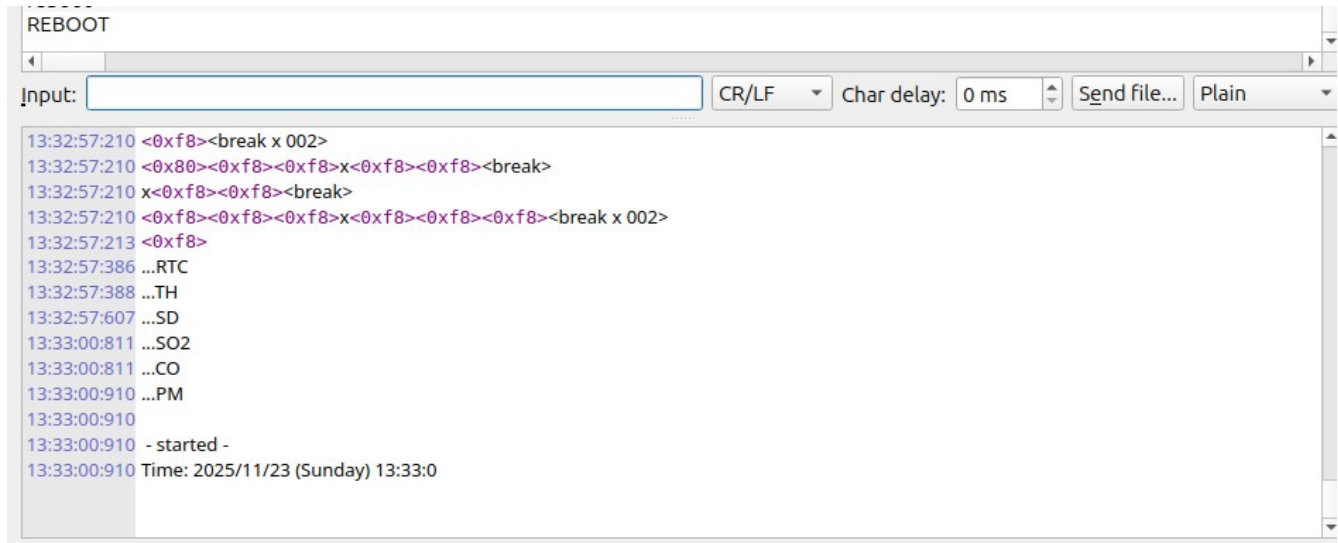
A screenshot of a terminal window titled "SENSORS". The window has a toolbar with "Input:", "CR/LF", "Char delay: 0 ms", "Send file...", and "Plain". The terminal output shows the following text:

```
13:18:10:696 ----Reading Sensors. Takes 30 seconds
13:18:45:605 Sensor Values:
13:18:45:605 Temperature:      23.0 *C
13:18:45:606 Relative Humidity: 43 %
13:18:45:606 CO2:           613 PPM
13:18:45:607 PM1:          2 ug/m3
13:18:45:607 PM2.5:       5 ug/m3
13:18:45:607 PM10:        6 ug/m3
13:18:45:607 Battery: 71 %
13:18:45:608 Time: Time: 2025/10/27 (Monday) 13:18:10
```

10. Rebooting the device

To reboot the unit use the following command. The project settings saved and will be active after reboot.

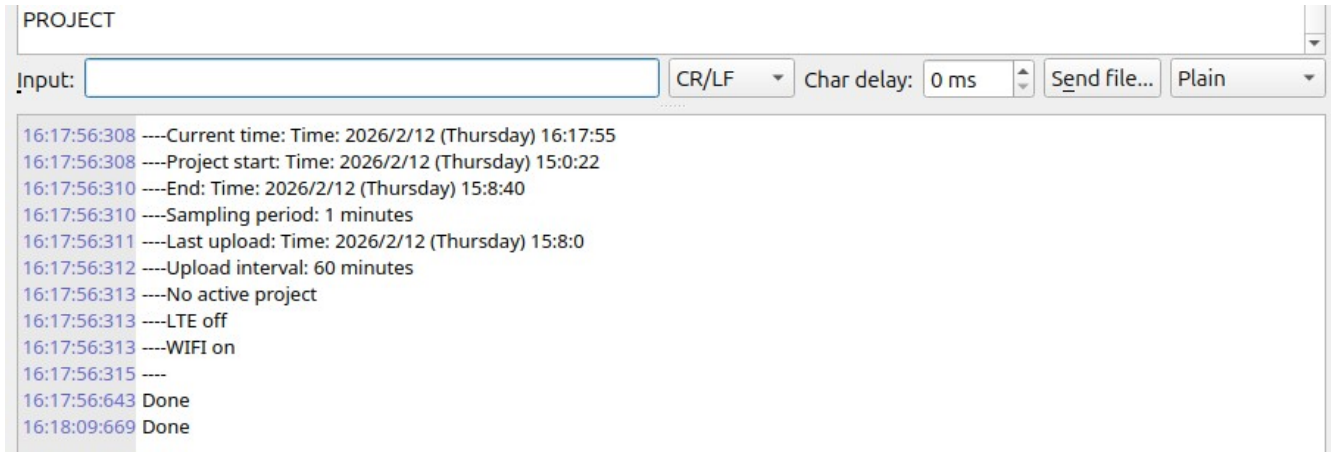
Command: "REBOOT"

A screenshot of a terminal window titled "REBOOT". The window has a toolbar with "Input:", "CR/LF", "Char delay: 0 ms", "Send file...", and "Plain". The terminal output shows the following text:

```
13:32:57:210 <0xf8><break x 002>
13:32:57:210 <0x80><0xf8><0xf8>x<0xf8><0xf8><break>
13:32:57:210 x<0xf8><0xf8><break>
13:32:57:210 <0xf8><0xf8><0xf8>x<0xf8><0xf8><0xf8><break x 002>
13:32:57:213 <0xf8>
13:32:57:386 ...RTC
13:32:57:388 ...TH
13:32:57:607 ...SD
13:33:00:811 ...SO2
13:33:00:811 ...CO
13:33:00:910 ...PM
13:33:00:910
13:33:00:910 - started -
13:33:00:910 Time: 2025/11/23 (Sunday) 13:33:0
```

11. Check the status of a project

Command: "PROJECT"

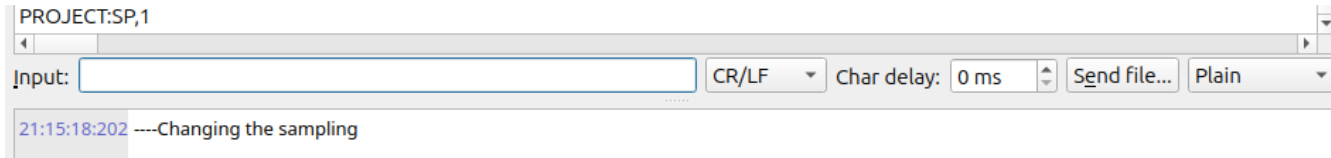
A terminal window titled "PROJECT" showing the output of the "PROJECT" command. The output includes: "Current time: Time: 2026/2/12 (Thursday) 16:17:55", "Project start: Time: 2026/2/12 (Thursday) 15:0:22", "End: Time: 2026/2/12 (Thursday) 15:8:40", "Sampling period: 1 minutes", "Last upload: Time: 2026/2/12 (Thursday) 15:8:0", "Upload interval: 60 minutes", "No active project", "LTE off", "WIFI on", and "Done" at two different times.

```
PROJECT
Input:
16:17:56:308 ----Current time: Time: 2026/2/12 (Thursday) 16:17:55
16:17:56:308 ----Project start: Time: 2026/2/12 (Thursday) 15:0:22
16:17:56:310 ----End: Time: 2026/2/12 (Thursday) 15:8:40
16:17:56:310 ----Sampling period: 1 minutes
16:17:56:311 ----Last upload: Time: 2026/2/12 (Thursday) 15:8:0
16:17:56:312 ----Upload interval: 60 minutes
16:17:56:313 ----No active project
16:17:56:313 ----LTE off
16:17:56:313 ----WIFI on
16:17:56:315 ----
16:17:56:643 Done
16:18:09:669 Done
```

12. Set a project's sampling period

Command: "PROJECT:SP,1"

1 is the sampling period in minutes. Minimum 1, maximum 60. Use "PROJECT" to see the change.

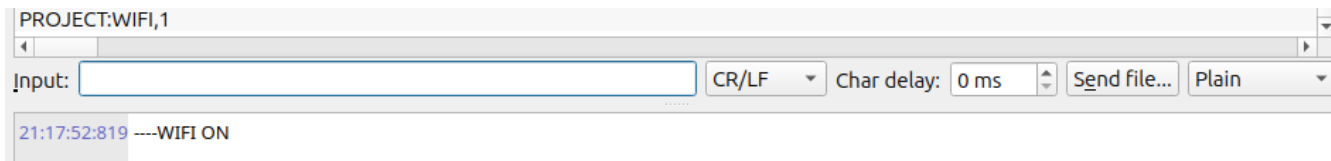
A terminal window titled "PROJECT:SP,1" showing the output of the "PROJECT:SP,1" command. The output is: "Changing the sampling".

```
PROJECT:SP,1
Input:
21:15:18:202 ----Changing the sampling
```

13. Enable WIFI Uploads

Command: "PROJECT:WIFI,1"

To disable the WIFI uploads change 1 to 0.

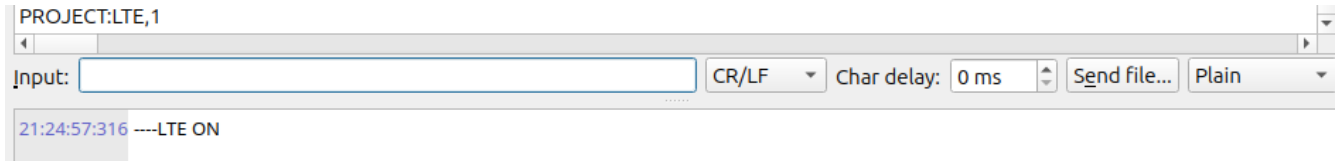
A terminal window titled "PROJECT:WIFI,1" showing the output of the "PROJECT:WIFI,1" command. The output is: "WIFI ON".

```
PROJECT:WIFI,1
Input:
21:17:52:819 ----WIFI ON
```

14. Enable LTE Uploads

Command: “PROJECT:LTE,1”

To disable the LTE uploads change 1 to 0.

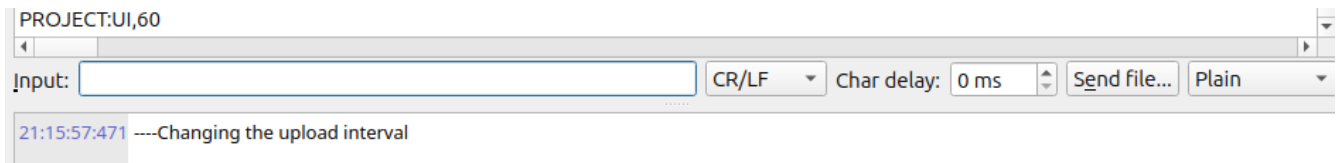
A screenshot of a terminal window. The title bar reads "PROJECT:LTE,1". Below the title bar is an "Input:" field with a text cursor. To the right of the input field are controls for "CR/LF" (a dropdown menu), "Char delay: 0 ms" (a spinner), "Send file..." (a button), and "Plain" (a dropdown menu). The terminal output shows a timestamp "21:24:57:316" followed by the text "----LTE ON".

15. Set a project’s upload interval

If the project is set to upload samples. The upload interval can be set with the following command.

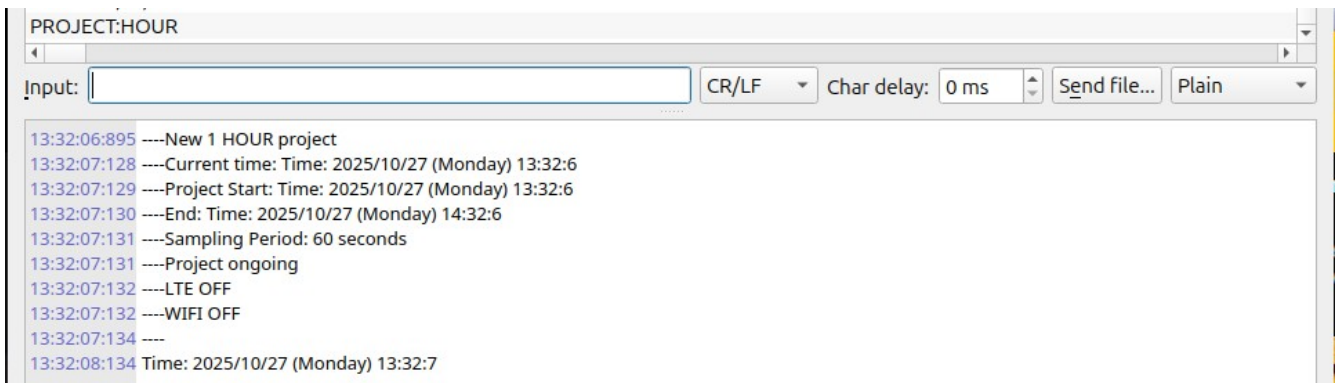
PROJECT:UI,60

Where 60 is the upload interval in minutes. Use “PROJECT” to see the change. The upload interval will only be displayed if either WIFI or LTE uploads are enabled.

A screenshot of a terminal window. The title bar reads "PROJECT:UI,60". Below the title bar is an "Input:" field with a text cursor. To the right of the input field are controls for "CR/LF" (a dropdown menu), "Char delay: 0 ms" (a spinner), "Send file..." (a button), and "Plain" (a dropdown menu). The terminal output shows a timestamp "21:15:57:471" followed by the text "----Changing the upload interval".

16. Start a one hour long project

Command: “PROJECT:HOURL”

A screenshot of a terminal window. The title bar reads "PROJECT:HOURL". Below the title bar is an "Input:" field with a text cursor. To the right of the input field are controls for "CR/LF" (a dropdown menu), "Char delay: 0 ms" (a spinner), "Send file..." (a button), and "Plain" (a dropdown menu). The terminal output shows a series of status messages: "13:32:06:895 ----New 1 HOUR project", "13:32:07:128 ----Current time: Time: 2025/10/27 (Monday) 13:32:6", "13:32:07:129 ----Project Start: Time: 2025/10/27 (Monday) 13:32:6", "13:32:07:130 ----End: Time: 2025/10/27 (Monday) 14:32:6", "13:32:07:131 ----Sampling Period: 60 seconds", "13:32:07:131 ----Project ongoing", "13:32:07:132 ----LTE OFF", "13:32:07:132 ----WIFI OFF", "13:32:07:134 ----", and "13:32:08:134 Time: 2025/10/27 (Monday) 13:32:7".



17. Start a one day long project

Command: "PROJECT:DAY"

The screenshot shows a terminal window titled "PROJECT:DAY". At the top, there is an "Input:" field and a "CR/LF" dropdown menu. Below the input field, the terminal displays the following output:

```
13:32:34:162 ----New 1 day project
13:32:34:398 ----Current time: Time: 2025/10/27 (Monday) 13:32:33
13:32:34:398 ----Project Start: Time: 2025/10/27 (Monday) 13:32:33
13:32:34:400 ----End: Time: 2025/10/28 (Tuesday) 13:32:33
13:32:34:400 ----Sampling Period: 60 seconds
13:32:34:401 ----Project ongoing
13:32:34:401 ----LTE OFF
13:32:34:401 ----WIFI OFF
13:32:34:404 ----
```

18. Start a one month long project

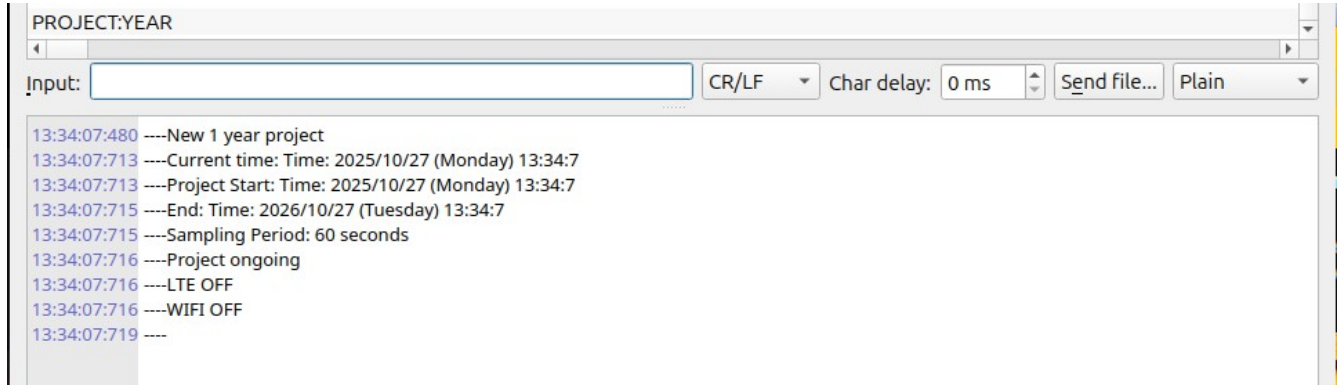
Command: "PROJECT:MONTH"

The screenshot shows a terminal window titled "PROJECT:MONTH". At the top, there is an "Input:" field and a "CR/LF" dropdown menu. Below the input field, the terminal displays the following output:

```
13:33:35:957 ----New 1 month project
13:33:36:190 ----Current time: Time: 2025/10/27 (Monday) 13:33:35
13:33:36:191 ----Project Start: Time: 2025/10/27 (Monday) 13:33:35
13:33:36:192 ----End: Time: 2025/11/27 (Thursday) 13:33:35
13:33:36:193 ----Sampling Period: 60 seconds
13:33:36:194 ----Project ongoing
13:33:36:194 ----LTE OFF
13:33:36:194 ----WIFI OFF
13:33:36:197 ----
```

19. Start a one year long project

Command: "PROJECT:YEAR"



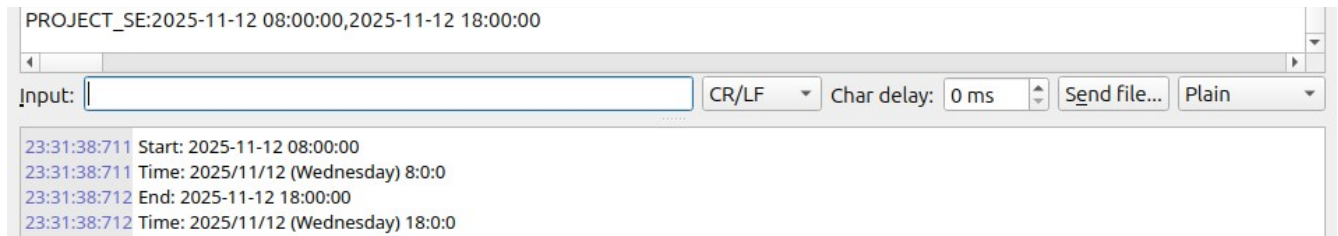
```
PROJECT:YEAR
Input:
13:34:07:480 ----New 1 year project
13:34:07:713 ----Current time: Time: 2025/10/27 (Monday) 13:34:7
13:34:07:713 ----Project Start: Time: 2025/10/27 (Monday) 13:34:7
13:34:07:715 ----End: Time: 2026/10/27 (Tuesday) 13:34:7
13:34:07:715 ----Sampling Period: 60 seconds
13:34:07:716 ----Project ongoing
13:34:07:716 ----LTE OFF
13:34:07:716 ----WIFI OFF
13:34:07:719 ----
```

20. Start a project with a specific start and end date

Both dates must be in the future. The end date must be at-least an hour ahead of the start date.

Where start date = 2025-11-11 08:00:00 and end date date = 2025-11-11 18:00:00.

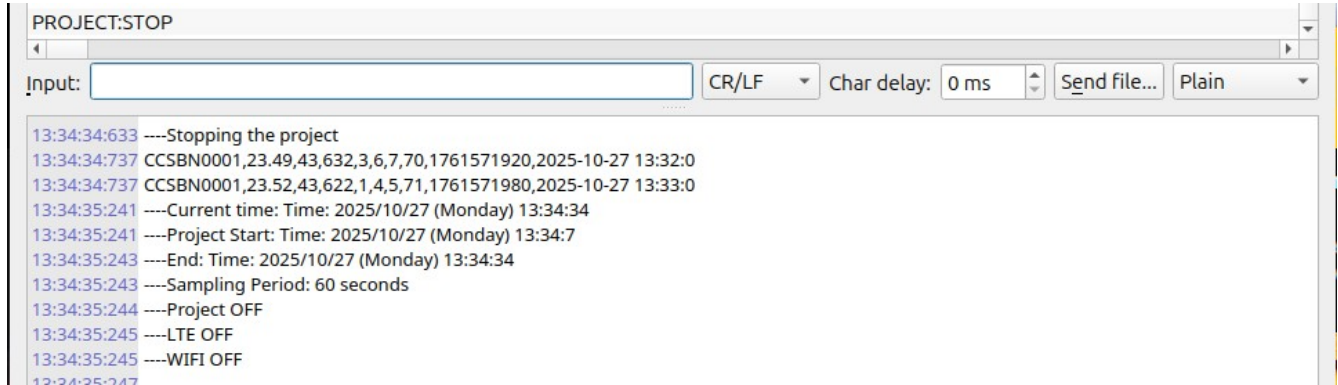
Command: "PROJECT_SE:2025-11-12 08:00:00,2025-11-12 18:00:00"



```
PROJECT_SE:2025-11-12 08:00:00,2025-11-12 18:00:00
Input:
23:31:38:711 Start: 2025-11-12 08:00:00
23:31:38:711 Time: 2025/11/12 (Wednesday) 8:0:0
23:31:38:712 End: 2025-11-12 18:00:00
23:31:38:712 Time: 2025/11/12 (Wednesday) 18:0:0
```

21. Stop a project

Command: "PROJECT:STOP"



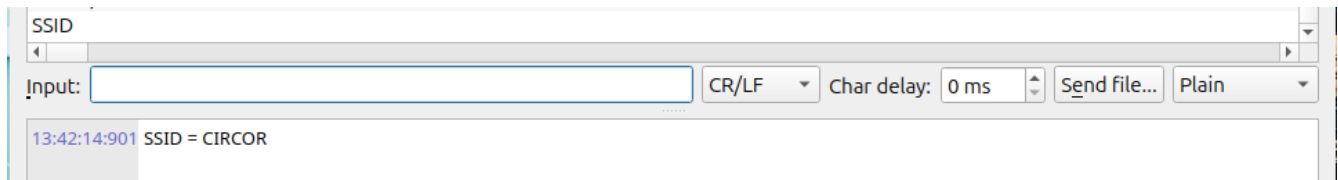
```
PROJECT:STOP
Input:
13:34:34:633 ----Stopping the project
13:34:34:737 CCSBN0001,23.49,43,632,3,6,7,70,1761571920,2025-10-27 13:32:0
13:34:34:737 CCSBN0001,23.52,43,622,1,4,5,71,1761571980,2025-10-27 13:33:0
13:34:35:241 ----Current time: Time: 2025/10/27 (Monday) 13:34:34
13:34:35:241 ----Project Start: Time: 2025/10/27 (Monday) 13:34:7
13:34:35:243 ----End: Time: 2025/10/27 (Monday) 13:34:34
13:34:35:243 ----Sampling Period: 60 seconds
13:34:35:244 ----Project OFF
13:34:35:245 ----LTE OFF
13:34:35:245 ----WIFI OFF
13:34:35:247
```

Note that a project will also stop when the end date is reached or when the battery is depleted.

22. Check or set the WIFI SSID and password

To check the SSID.

Command: "SSID"

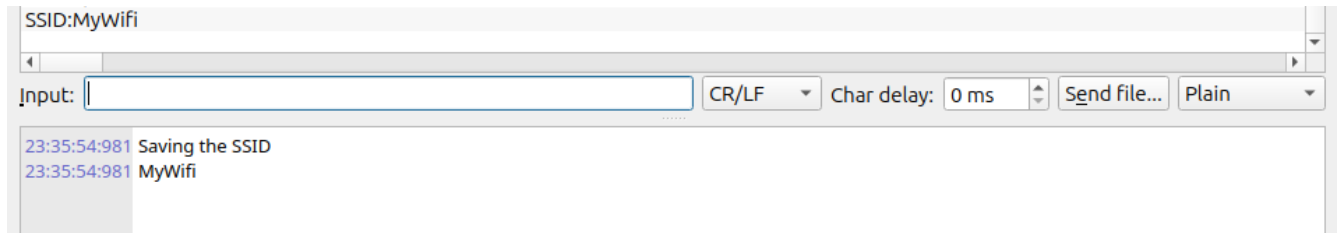


```
SSID
Input:
13:42:14:901 SSID = CIRCOR
```

The password will not be displayed.

To set a new SSID.

Command: "SSID:MyWifi", where MyWifi is the new SSID.

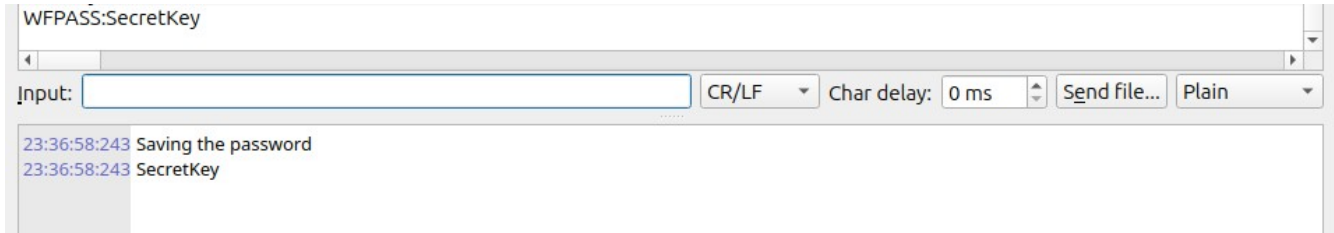


```
SSID:MyWifi
Input:
23:35:54:981 Saving the SSID
23:35:54:981 MyWifi
```



To set the password for the new SSID.

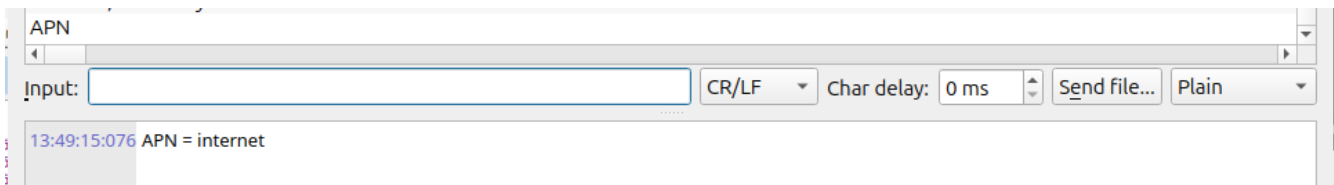
Command: “WFPASS:SecretKey”, where SecretKey is the password for the set SSID.



23. Check or set the LTE access point name (APN)

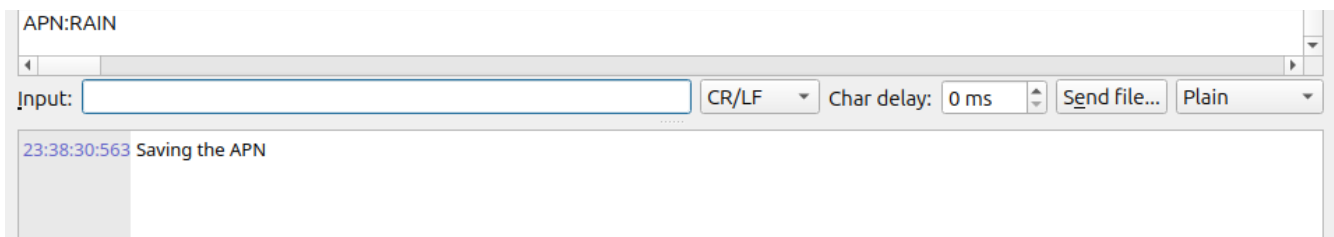
To check the APN.

Command: “APN”



To set a new access point name, where RAIN is the access point name for the SIM card.

Command: “APN:RAIN”





24. Download data directly

NB: Online access for internet connected devices is available at: monitor.circor.co.za

Download data for the last project only

Command: "DATA"

```
Input:  CR/LF Char delay: 0 ms Send file... Plain  
12:20:44:393 SN,Temperature (*C),Hum (%),CO2 (PPM),PM1 (ug/m^3),PM2.5 (ug/m^3),PM10 (ug/m^3),BATTERY (%),UnixTime,DateTime  
12:20:44:395 CCSBN0009,29.07,49,789,15,27,31,39,1770898140,2026-2-12 12:9:0  
12:20:44:397 CCSBN0009,29.23,49,835,15,28,30,39,1770898200,2026-2-12 12:10:0  
12:20:44:398 CCSBN0009,29.30,48,755,15,28,29,39,1770898260,2026-2-12 12:11:0  
12:20:44:399 CCSBN0009,29.36,48,767,16,26,29,38,1770898320,2026-2-12 12:12:0  
12:20:44:501 Done
```

Download all available data for the device

Command: "DATA_ALL"

```
Input:  CR/LF Char delay: 0 ms Send file... Plain  
12:22:15:889 SN,Temperature (*C),Hum (%),CO2 (PPM),PM1 (ug/m^3),PM2.5 (ug/m^3),PM10 (ug/m^3),BATTERY (%),UnixTime,DateTime  
12:22:15:891 CCSBN0009,29.19,48,736,20,31,36,39,1770896820,2026-2-12 11:47:0  
12:22:15:892 CCSBN0009,29.37,48,778,18,30,39,39,1770896880,2026-2-12 11:48:0  
12:22:15:894 CCSBN0009,28.89,49,736,7,14,14,39,1770897900,2026-2-12 12:5:0  
12:22:15:895 CCSBN0009,29.08,49,786,9,18,19,39,1770897960,2026-2-12 12:6:0  
12:22:15:896 CCSBN0009,29.12,49,825,10,23,26,39,1770898020,2026-2-12 12:7:0  
12:22:15:898 CCSBN0009,29.07,49,789,15,27,31,39,1770898140,2026-2-12 12:9:0  
12:22:15:899 CCSBN0009,29.23,49,835,15,28,30,39,1770898200,2026-2-12 12:10:0  
12:22:15:900 CCSBN0009,29.30,48,755,15,28,29,39,1770898260,2026-2-12 12:11:0  
12:22:15:901 CCSBN0009,29.36,48,767,16,26,29,38,1770898320,2026-2-12 12:12:0  
12:22:16:004 Done
```

25. Manually upload data to a server through WIFI

Only samples that have not previously been uploaded are uploaded.

Command: “SD2WF”

```

SD2WF
Input:
CR/LF Char delay: 0 ms Send file... Plain
14:01:17:187 Uploading data through WIFI
14:01:17:396 CCSBN0001,23.49,43,632,3,6,7,70,1761571920,2025-10-27 13:32:0
14:01:17:396 CCSBN0001,23.52,43,622,1,4,5,71,1761571980,2025-10-27 13:33:0
14:01:17:398 CCSBN0001,23.57,43,585,0,0,0,70,1761572040,2025-10-27 13:34:0
14:01:17:399 CCSBN0001,23.49,43,632,3,6,7,70,1761571920,2025-10-27 13:32:0
14:01:17:400 CCSBN0001,23.52,43,622,1,4,5,71,1761571980,2025-10-27 13:33:0
14:01:17:402 CCSBN0001,23.57,43,585,0,0,0,70,1761572040,2025-10-27 13:34:0
14:01:17:403 CCSBN0001,23.67,42,619,0,0,0,70,1761572280,2025-10-27 13:38:0
14:01:17:491 Connecting to WIFI
14:01:17:990 ...
14:01:18:989 Connected with IP Add: 10.217.138.108
14:01:18:990 Sending:
[{"ac":"8jZGH25H7aNekm2","Temp":23.49,"Hum":43,"CO2":632,"PM1":3,"PM2_5":6,"PM10":7,"bat":70,"dt":1761571920,"ver":1.1}],
    
```

26. Check device operation logs

To see historical user operations on the device:

Command: “READLOG”

```

READLOG
Input:
CR/LF Char delay: 0 ms Send file... Plain
14:02:45:904 PE: 2025/10/27 (Monday) 13:38:37
14:02:45:904 SP: 60
14:02:45:905
14:02:45:906 Wifi change - 2025/10/27 (Monday) 13:44:34
14:02:45:907 New SSID: MyWiFi
14:02:45:907
14:02:45:908 APN change - 2025/10/27 (Monday) 13:50:46
14:02:45:909 New APN: rain
14:02:45:909
14:02:45:909 Wifi change - 2025/10/27 (Monday) 13:54:16
14:02:45:912 New SSID: CIRCOR
14:02:45:912
14:02:45:912 Wifi change - 2025/10/27 (Monday) 13:59:56
14:02:45:914 New SSID: CIRCOR
    
```