

Android Phone USB to serial communication with EC1x

This procedure will allow you to send/receive commands and upload/download local programs using an android phone with an EC1x chamber.

Equipment required:

- EC1x chamber.
- 3 wire DE9-F to DB25-M RS232 cable (Sun part number: 930026) or null modem adapter board, or a 3 wire user built cable such that pin 2 of DE9 is wired to pin 2 of DB25, pin 3 of DB9 to pin 3 of DB25 and pin 5 of DE9 to pin 7 of DB25. This cable/adaptor allows connection from the DB25 connector on the chamber to the DE9-M connector on the USB-C cable.
- [USB-C to DE9-M RS232 cable](#) with FTDI chip set such as this one from US converters.
- Android Phone with “Serial USB Terminal” app ver 1.55 and above is installed (free from Google play store)

Turn on chamber, go into the SDEF menu and select:

RSCHAR ECHO ON set to (N)

38400 baud rate (1)

DTR-CTS ON set to (N)

Download the Serial USB Terminal app from google play store.

Open app, select settings menu on top left, and select Settings with following selections:

Baud rate: 38400

Data bits: 8

Parity: None

Stop Bits: 2

Flow Control: None

BREAK duration: default of 100ms ok

Select the Receive tab and for Newline character select: CR+LF.

Select Send tab and verify Newline set to Auto. The remaining defaults should be fine.

Exit Settings menu and return to the main screen.

Connect the USB-C end of the cable to the phone and the 9 pin male end to the DE9-F to DB25 male cable (such as 930026 from Sun) or a DE9 to DB25 null modem adapter (Also

available from Sun). Plug the DB25-M end of cable to the EC1x chamber. “USB device detected” message should be displayed in the app.

In the Serial USB Terminal app, select the “connect” symbol on the top right of the screen to connect your phone to the chamber. The message “Connected to FTDI device” should appear.

Enter a valid EC1x command (such as CHAM?) in the text field to the left of the “Send” and press the “Send” arrow button. The REM LED on the front panel should turn on and a response representing the chamber probe temperature should be received and displayed in the window above.

To upload a local program you can store multi-line text into ‘macros’ represented by letters on bottom row of app:

Long press the M1 macro button to allow editing.

Select Multiline Text for Edit Mode.

Enter 500 for Line delay [ms].

Verify Send is selected for Action.

Enter a local program in the field labeled “Value”

The following sample LP can be entered in the Value field and stored into location 0 on the controller:

```
DELP0  
STORE0  
WAIT=5  
SET=75  
WAIT=5  
SET=-20  
END
```

Save this by pressing the “check” symbol on top right

From the main screen, tap the M1 macro button to upload the LP stored in M1.

To download and verify that the LP above was uploaded, send the command LIST0.

To run the program, above send the command RUN0.

Troubleshooting:

- Verify USB-C cable is connected from phone to RS232 cable and RS232 cable connected to DB25 connector on EC1x chamber/controller.
- Verify baud rate in app is same as baud rate in chamber’s SDEF menu. 38400 is default.
- Verify 2 stop bits selected, flow control set to NONE and 8 DATA bits in serial to USB app.
- Press the “connection” symbol in the top right of the app to make a connection after cables are connected.