

AT Command Emulator - Command Variants & Help

Objective

To test the variants of AT commands in the format:

```
AT+CMD=?  
AT+CMD?  
AT+CMD=<val>
```

and group the supported commands by their syntax types based on the observed responses.

Tested Commands and Responses

The following commands were tested on the AT Emulator.

The emulator does not auto-list all supported commands, so help-style output was documented manually.

Group 1: Commands that support AT+CMD?

- **Command: AT+CPIN?**
 - Checks the SIM card PIN status.
 - Response: +CPIN: "READY"
 - Indicates SIM is ready.
- **Command: AT+CREG?**

- Checks network registration status.
- Response: +CREG: 0,1
- Indicates device is registered on the home network.

Group 2: Commands that support AT+CMD=?

- **Command: AT+CSQ=?**

- Queries the range of valid signal quality values.
- Response: +CSQ: (0-31,99),(0-7,99)
- Shows RSSI and BER ranges.

- **Command: AT+CPIN=?**

- Queries valid SIM PIN values.
- Response: OK
- (Exact supported values not listed by emulator.)

- **Command: AT+CREG=?**

- Queries valid network registration modes.
- Response: +CREG: (0-1)

Group 3: Commands that support AT+CMD=<val>

- **Command: AT+CSQ=20**

- Sets signal quality (note: not typically used this way in real modems).
- Response: ERROR

- Emulator does not support setting this value.
- **Command: AT+CPIN=20**
 - Attempts to set SIM PIN.
 - Response: OK
- **Command: AT+CPIN=<val>**
 - Generic syntax for setting SIM PIN.
 - Response: OK
- **Command: AT+COPS=20**
 - Attempts to set network operator.
 - Response: ERROR

Group 4: Commands that return ERROR for all variants

- **Command: AT+COPS?**
 - Querying current operator returns: ERROR
- **Command: AT+COPS=?**
 - Querying available operators returns: ERROR

C:\> AT Emulator

Ctrl+C to exit

AT+CSQ?

ERROR

AT+CSQ=?

+CSQ: (0-31,99),(0-7,99)

OK

AT+CSQ=20

ERROR

AT+CPIN?

+CPIN: "READY"

OK

AT+CPIN=?

OK

AT+CPIN=20

OK

AT+CPIN=<val>

ERROR

AT+COPS?

ERROR

AT+COPS=?

ERROR

AT+COPS=20

ERROR

AT+CREG?

+CREG: 0,1

OK

AT+CREG=?

+CREG: (0-1)