AT Command Emulator – Command Variants & Help Report

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July 18, 2025

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1. Overview

This report explores AT command variants using the following formats:

- `AT+CMD=?` – Test Command
- `AT+CMD?` – Read Command
- `AT+CMD=<value>` – Write Command

Screenshot:

Five supported AT commands were tested and grouped by their syntax capabilities.

2. Command Grouping by Syntax Type

Group 1: All Variants Supported (Test, Read, Write)

Command: AT+CMGF – Message Format

- `AT+CMGF=?` → Returns: `+CMGF: (0,1)`
- `AT+CMGF?` → Returns current format (e.g., `+CMGF: 1`)
- `AT+CMGF=1` → Sets SMS to text mode
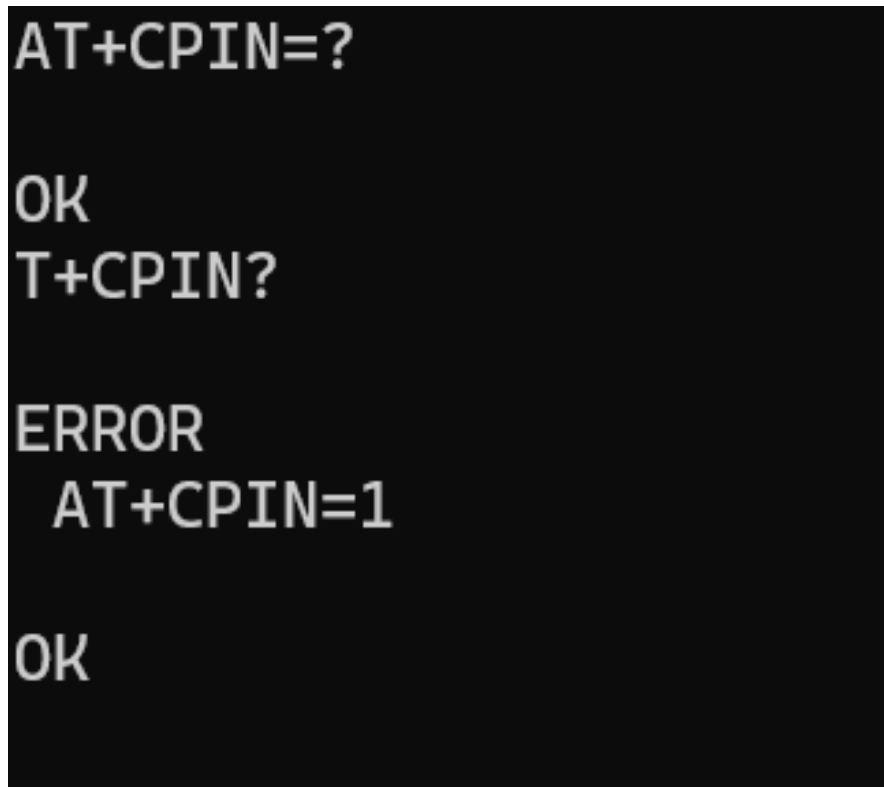
Screenshot:

```
 AT+CMGF=?

+CMGF: (0-1)

OK
AT+CMGF?

+CMGF: 1

OK
AT+CMGF=1

OK
```

Group 2: Read Only

Command: AT+CPIN – SIM Status

- `AT+CPIN=?` → Not supported (ERROR)

- `AT+CPIN?` → Returns SIM status: `+CPIN: READY`

- `AT+CPIN=<val>` → Not supported

Screenshot:
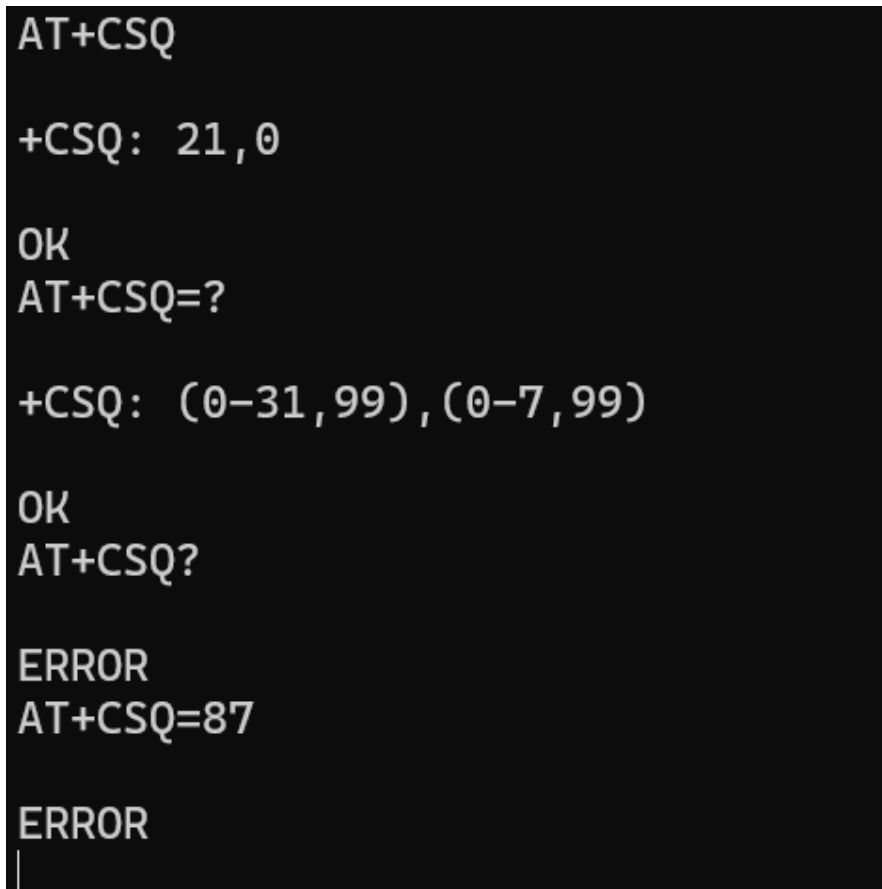
Group 3: Read Only (with network info)

Command: AT+COPS – Operator Selection

- `AT+COPS=?` → Not fully supported in emulator

- `AT+COPS?` → Returns current operator: e.g., `+COPS: 0,0,"Airtel",7`

- `AT+COPS=<val>` → not functional in emulator
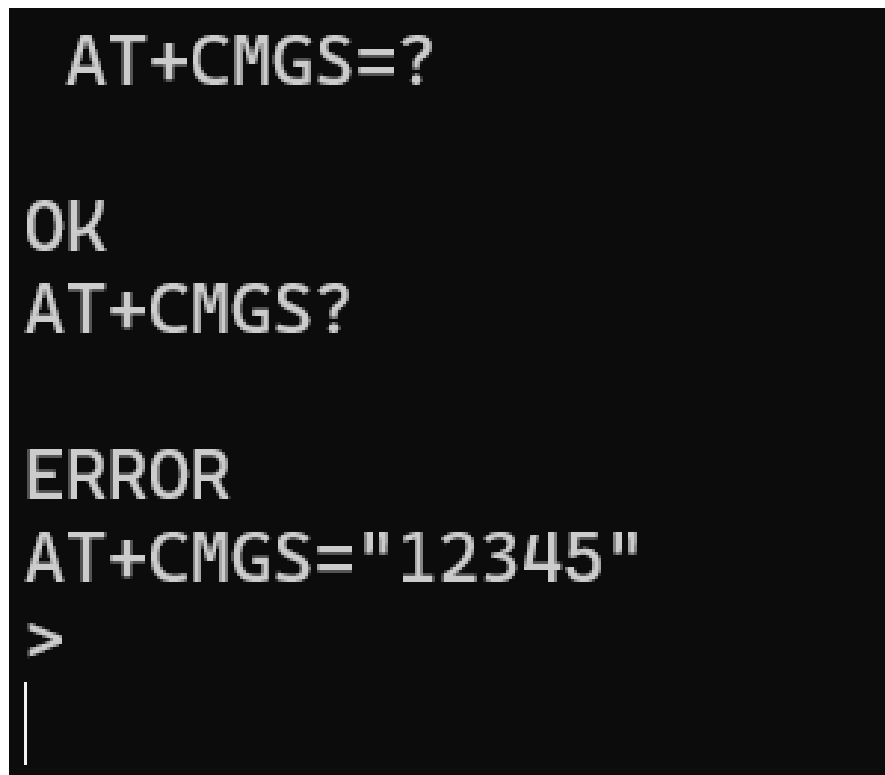
Screenshot:

```
AT+CSQ

+CSQ: 21,0

OK
AT+CSQ=?

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

OK
AT+CSQ?

ERROR
AT+CSQ=87

ERROR
```

Group 4: Test Only

Command: AT+CSQ – Signal Quality

- `AT+CSQ=?` → Supported. Returns range: `+CSQ: (0-31,99),(0-7,99)`

- `AT+CSQ?` → `ERROR` – Read not supported in emulator
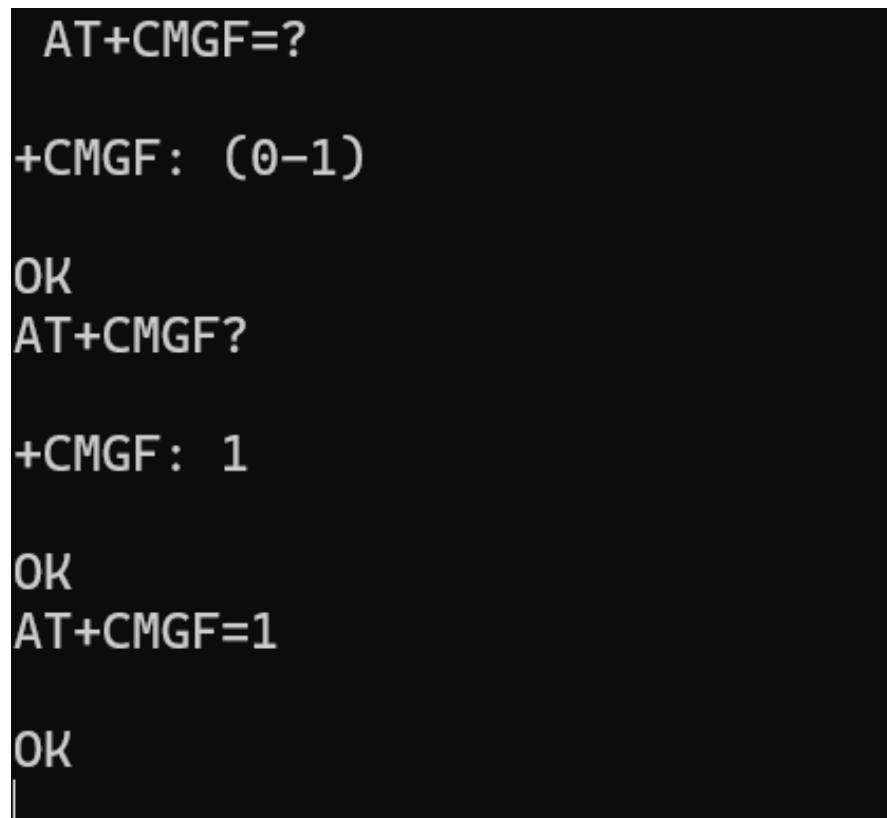
- `AT+CSQ=87` → `ERROR` – Write not supported

Screenshot:

Group 5: Write Only

Command: AT+CMGS – Send SMS (simulated)

- `AT+CMGS=?` → Not supported

- `AT+CMGS?` → Not supported

- `AT+CMGS="<number>"` → Starts SMS (may be partially functional)

Screenshot:

3. Conclusion

This exercise validated different syntax variants for AT commands in the emulator environment. While not all commands support every form (Test/Read/Write), these differences closely resemble behavior on real modules.

Summary:

- Some commands like `AT+CMGF` support all three formats.

- Others like `AT+CSQ` only allow testing, not reading or writing.

- Manual grouping is necessary as help listings are not auto-generated by the emulator.

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