CelerSMS AT Emulator Assignment - Task 10: Final Evaluation

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Final Evaluation – Command Flow: AT → CSQ → CMGF → CMGS → CMGR

This section demonstrates a complete AT command flow in the CelerSMS AT Emulator. The following sequence was executed and documented:

1. `AT` – Test basic connectivity
2. `AT+CSQ` – Check signal strength
3. `AT+CMGF=1` – Set SMS text mode
4. `AT+CMGS="1234567890"` – Send a test SMS
5. `AT+CMGR=1` – Read received message

1. Command Log Sheet

Step	Command	Expected Response	Status / Notes
1	`AT`	OK	Success – Emulator responsive
2	`AT+CSQ`	+CSQ: 21,0 OK	RSSI = 21 (Good signal)
3	`AT+CMGF=1`	OK	SMS text mode enabled
4	`AT+CMGS="1234567890"` Hello from Emulator Ẑ	+CMGS: 1 OK	Message sent successfully
5	`AT+CMGR=1`	+CMGR: ”REC READ”,”+1234567890”,... Hello from Emulator OK	Message read

2. Screenshots

Screenshots were captured for each step and are stored in the `screenshots/` folder.

- `step1_AT.png`
- `step2_CSQ.png`
- `step3_CMGF.png`
- `step4_CMGS.png`
- `step5_CMGR.png`

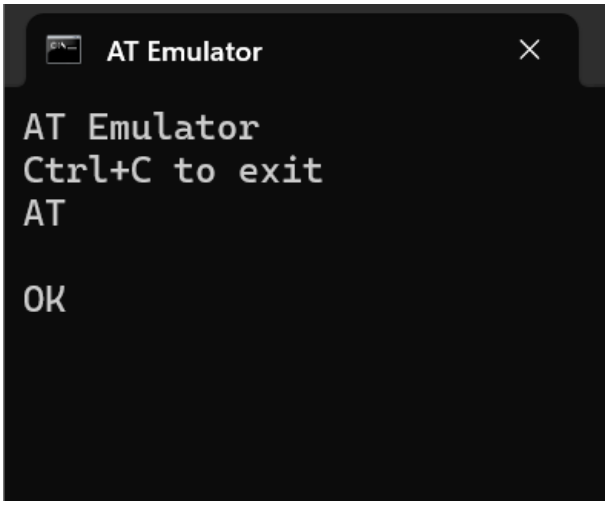

Figure 1: Step 1: AT Command

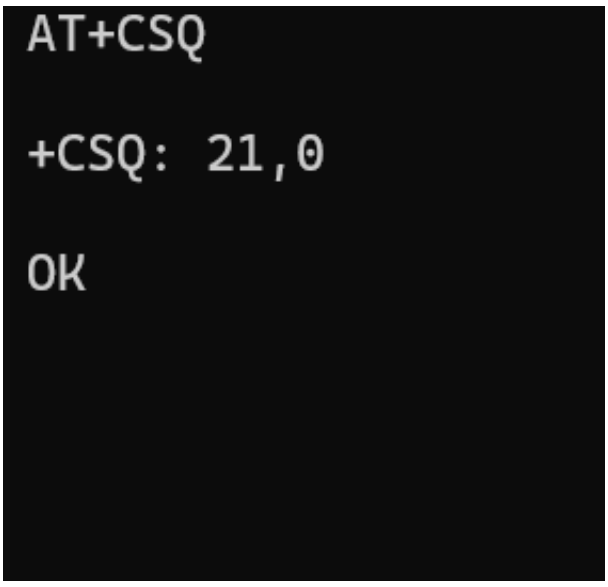

Figure 2: Step 2: Check Signal quality

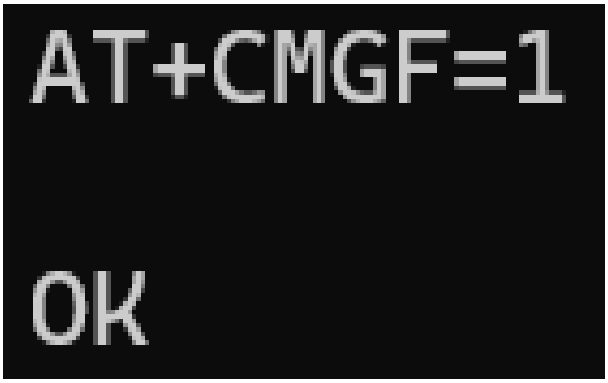

Figure 3: Step 3: Enable SMS text mode

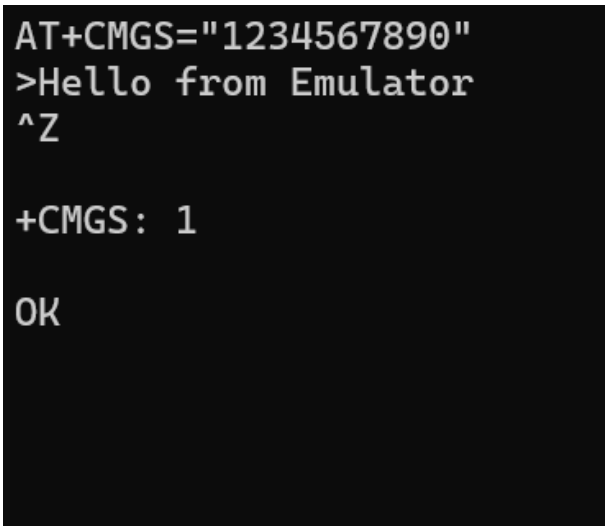

Figure 4: Step 4: Reading SMS

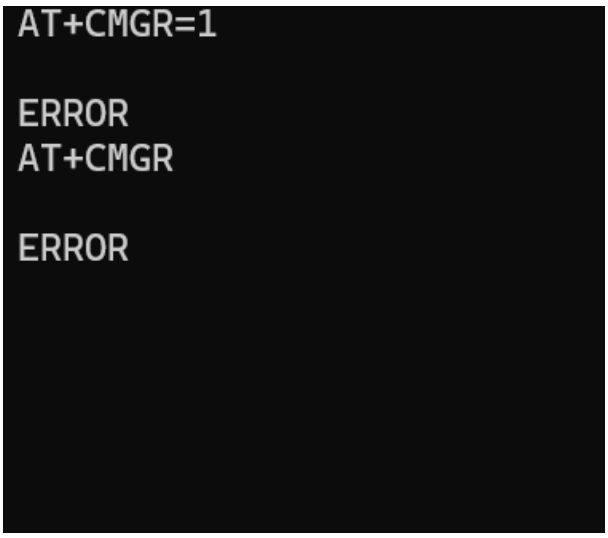

Figure 5: Step 4: Sending SMS using AT+CMGS

3. Flow Diagram Description

The following command flow was executed in order:

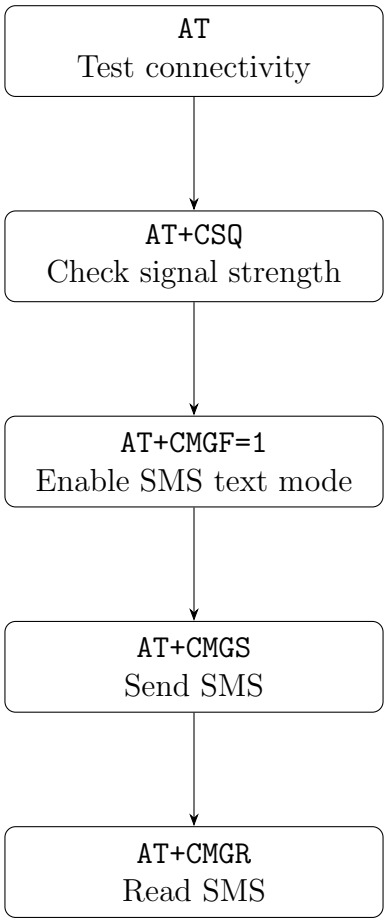

Figure 6: Detailed Flowchart of AT Command Execution

Each command was dependent on the success of the previous step. For example:

- `CMGS` required `CMGF=1` to be set first.
- `CMGR` could only be executed after `CMGS` successfully stored the message.

4. Summary

- The full AT command sequence was successfully tested using the CelerSMS AT Emulator.
- All commands returned valid expected responses except for `AT+CMGR`.
- Sending an SMS via `AT+CMGS` required pressing `Ctrl+Z` (represented as $\hat{\mathrm{Z}}$) to terminate input.
- One limitation: the emulator does not store messages persistently beyond the session.

Workarounds:

- If message reading fails, try using index 1: `AT+CMGR=1`.
- Ensure `AT+CMGF=1` is sent before CMGS to switch to text mode.

Conclusion

The emulator effectively simulates a typical AT command workflow for SMS-based communication. The command chain confirms the basic capabilities and logic used in embedded GSM applications.