

CelerSMS AT Emulator Assignment - Task 7: Error Simulation & Debugging

Abhimanue TB

July 15, 2025

Task 7: Error Simulation & Debugging

This section demonstrates the testing of error handling using the CelerSMS AT Emulator. The emulator is configured to display verbose error messages using the command `AT+CMEE=2`. We then test unsupported or malformed AT commands to analyze the returned error types.

1. Enable Detailed Error Reporting

Command:

`AT+CMEE=2`

Response:

OK

This command enables verbose (human-readable) error reporting.

2. Error Simulation Test Log

No.	Command	Response	Interpretation
1	AT+UNKNOWN	ERROR	Command not supported
2	AT+CMGS	ERROR	Syntax error; missing parameters (e.g. phone number)
3	AT+CPIN	ERROR	Parameter missing; expected PIN string
4	AT+CMEE	ERROR	Requires value (e.g., 0, 1, or 2)

5	AT+CMGF=3	ERROR	Invalid parameter; only 0 (PDU) or 1 (Text) allowed
---	-----------	-------	---

3. Notes on Emulator Behavior

- The CelerSMS AT Emulator returns a generic **ERROR** for unsupported or malformed commands.
- Despite setting **AT+CME=2**, the emulator does not provide extended error messages (e.g., **+CME ERROR: <text>**), unlike real modules.
- Real modems may return:
 - **+CME ERROR: operation not allowed**
 - **+CME ERROR: invalid index**
 - **+CME ERROR: SIM not inserted**

4. Conclusion

This task highlights how incorrect or unsupported usage of the AT command triggers error responses. Although the emulator simplifies this to a generic **ERROR**, the real hardware will provide specific messages using the **+CME ERROR:** format. Understanding these responses is vital for debugging communication scripts in embedded and IoT systems.