

Short Summary of What Was Learned

1. Successful Execution

- The following AT commands were executed successfully:
 - AT : Verified communication with GSM module.
 - AT+CSQ : Confirmed signal strength was available.
 - AT+CMGF=1 : SMS Text Mode set successfully.
 - AT+CMGS : Message sending was successful using correct syntax and number format.

2. Understanding the Sequence

- Learned the **logical flow** of sending and reading SMS:

AT → CSQ → CMGF → CMGS → CMGR

- Each command has a purpose:
 - AT : Check modem
 - CSQ : Signal check
 - CMGF : Set text mode
 - CMGS : Send message
 - CMGR : Read stored message

3. Error Encountered: AT+CMGR

- **Symptom:** AT+CMGR=1 responded with an error.
- **Possible Causes:**

Cause	Explanation
No SMS stored at index 1	Memory index 1 may be empty or already read/deleted
Wrong SMS mode	If not in text mode (CMGF=1), message will appear unreadable or may error
Invalid index	Index out of bounds or not yet allocated
No SIM / SIM not ready	Sometimes affects memory read

- **Workarounds & Fixes**

Fix Attempt	Description
Use AT+CMGL="ALL"	Lists all SMS messages with their indexes (use to check if index 1 is valid)
Confirm AT+CMGF=1 again before CMGR	Reassert text mode
Use valid index from CMGL	For example, AT+CMGR=3 if SMS is stored at index 3
Ensure SMS was stored before reading	Use AT+CPMS? to check storage availability

Conclusion

- Successfully sent an SMS using AT command flow.
- The issue with AT+CMGR was likely due to invalid or empty message index.
- A useful next step is to always query with AT+CMGL to identify the correct message index before using CMGR.