TCP/IP Communication Guide for Cavli C16QS

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Module Overview

Module: Cavli C16QS
Cellular Technology: LTE Cat-M1 / NB-IoT / GSM fallback
TCP Support: Yes
AT Command Compatibility: Quectel-based (e.g., EC2x / BC26)

Pre-Connection Setup

- Before establishing a TCP connection, configure the PDP (Packet Data Protocol) context using your network's APN (Access Point Name).
- 1.1 Set the APN
  AT+CGDCONT=1,"IP","apn"
- 1.2 Activate the PDP Context
  AT+QIACT=1
- 1.3 Confirm IP Allocation
  AT+QIACT?
- Expected Response:
  +QIACT: 1,1,1,"10.124.45.77"
  OK

Open a TCP Connection using AT+QIOPEN

Syntax:

AT+QIOPEN=1,0,"TCP","<server>",<port>,0,1

- 1: PDP context ID
- 0: Socket ID (range: 0–11)
- "TCP": Protocol type
- <server>: Destination domain or IP address
- <port>: Server port number
- 0: Local port (auto assigned)
- 1: Enable keep-alive

Example:

AT+QIOPEN=1,0,"TCP","example.com",80,0,1

Expected URC:

OK

+QIOPEN: 0,0 // Socket 0 opened successfully

Send Data Using AT+QISEND

Syntax:

AT+QISEND=<socket_id>,<length>

> <data> + Ctrl+Z

Example:

AT+QISEND=0,18

> GET / HTTP/1.1\r\n\r\n + Ctrl+Z

Expected Response:

SEND OK

Read Incoming TCP Data

AT+QIRD=0

Expected Response:
+QIRD: 1,128
<received TCP data>

Close the TCP Socket

AT+QICLOSE=0

Expected Response:
OK

Check TCP Socket Status

AT+QISTATE=1,0

Expected Response:
+QISTATE: 0,"TCP","example.com",80,1,0,0

Conclusion

The Cavli C16QS module provides robust support for TCP/IP socket communication through its Quectel-compatible AT command set. By using commands such as AT+QIOPEN and AT+QISEND, embedded systems can effectively establish and maintain data connections with remote servers over cellular networks.

Thank You