**Research on APN configuration with AT+CGDCONT on real modem**

**Full Form:**  
**Attention Packet Data Protocol Context Definition**

**Purpose:**  
**AT+CGDCONT** is employed to configure the **APN** for an actual modem. We can do this by setting the **context ID**, **PDP type** (generally IP), and **APN** string (e.g., "internet"). Without configuration, the modem will not recognize what gateway to use for data connections. Once you have configured the APN, you can attach and begin a data session. This command is essential in order to enable internet connectivity using cellular networks.

**Syntax:**

*AT+CGDCONT=<cid>,"<PDP\_type>","<APN>","<PDP\_addr>",<d\_comp>,<h\_comp>*

* **<cid>** = Context ID (1–16, usually 1 for default)
* **<PDP\_type>** = Type of data protocol (IP, PPP, IPV6, etc.)
* **<APN>** = Access Point Name (e.g., internet, airtelgprs.com)
* **<PDP\_addr>** = Usually empty (""), lets network assign IP
* **<d\_comp>** = Data compression (0 = off)
* **<h\_comp>** = Header compression (0 = off

**Example:**

Step 1: Set the APN: AT+CGDCONT=1,"IP","internet"

Response: OK

Step 2: Verify the configuration: AT+CGDCONT?

Response: +CGDCONT: 1,"IP","internet","","0","0"

For data connection,

Step 1: Attach to packet service: AT+CGATT=1

Step 2: Start data connection: ATD\*99#

**Importance:**

* Without setting APN correctly, our modem cannot connect to the mobile data network, even if the SIM and signal are fine.
* Each operator has its own APN name, so we must configure this before dialing.