



مرکز آموزش نیرا سیستم

nirasystem.com

AT Commands

Ali Mirghasemi



Introduction

- AT commands, short for Attention commands, are a set of instructions used in the field of telecommunications and data communication.
- The "AT" prefix stands for "Attention," signaling that the following characters are commands to be interpreted by a device, typically a modem or a mobile phone.
- These commands have been a crucial part of communication protocols for decades, providing a standardized way for devices to communicate with each other



Applications

- **Modems**

- AT commands are widely used in dial-up modems for establishing and managing communication over telephone lines. They enable tasks such as dialing, answering calls, and configuring communication parameters.

- **Mobile Phones**

- In the context of mobile phones, AT commands are used for tasks like sending SMS (Short Message Service), making calls, querying network information, and configuring settings. These commands play a crucial role in the communication between the mobile device and the cellular network.

- **Embedded Systems**

- AT commands are also employed in embedded systems, where devices need to communicate with each other or with a central control unit. This can include IoT (Internet of Things) devices, where AT commands help in configuring communication parameters and controlling device behavior.

- **Bluetooth Devices**

- AT commands are used in Bluetooth modules to configure settings, establish connections, and manage data transfer between devices.



AT Command (Send)

Action	Format	Example
Execute	AT+<CMD><CR><LF>	AT+RESET<CR><LF>
Set	AT+<CMD>=<Params><CR><LF>	AT+CMGF=1<CR><LF>
Get	AT+<CMD>?<CR><LF>	AT+CMGF?<CR><LF>
Help	AT+<CMD>=?<CR><LF>	AT+CMGF=?<CR><LF>
CMD Param	AT<CMD><Param><CR><LF>	ATE0<CR><LF>
CMD	AT<CMD><CR><LF>	AT&F<CR><LF>
Test	AT<CR><LF>	AT<CR><LF>



AT Command (Response)

State	Format	Example
Ok	<CR><LF>OK<CR><LF>	<CR><LF>OK<CR><LF>
ERROR	<CR><LF>ERROR<CR><LF>	<CR><LF>ERROR<CR><LF>
Get Value	<CR><LF>+<CMD>: <Params><CR><LF> <CR><LF>OK<CR><LF>	<CR><LF>+CMGF: 1<CR><LF> <CR><LF>OK<CR><LF>
Notification Params	<CR><LF>+<ID>: <Params><CR><LF>	<CR><LF>+CMTI: "SM", 1<CR><LF>
Notification	<CR><LF><Notification><CR><LF>	<CR><LF>RING<CR><LF>

