AirQuality Unit – UART Command Reference

Document revision

- Oct 10. 2025 - added WLAN settings
- Aug 30. 2025 - initial release

The AirQuality Unit accepts ASCII commands over the UART interface.

UART / VCP USB settings: `115200 baud, 8 data bits, no parity, 1 stop bit (115200/8/n/1)`

Each command must be terminated with a newline character (`\n`).
Responses are returned either as text messages or simple `"OK" / "Error"` .

📌 System Commands

Command	Description	Example Response
`VER?`	Returns firmware build date.	`AirQuality Unit build: Jan 15 2025`
`BOOTL`	Prepares device for bootloader mode and resets.	`OK`
`IWDG`	Triggers a watchdog-like delay (6 seconds).	`OK`
`RESET`	Triggers a reset.	`OK`

📡 RF / Wireless Control

Command	Description	Example Response
`RF?`	Resets NB-IoT modem and sends initial AT commands.	`OK`
`WIFIEN`	Enables Wi-Fi module, waits 3s, scans networks (`AT+CWLAP`).	`OK`

🌍 Sensor Data

Command	Description	Example Response
METEO	Returns environmental measurements.	PM1.0: 5.1 PM2.5: 12.3 PM4.0: 15.7 PM10: 20.2 VOC: 0.4 NOX: 0.2 T: 22.50, H: 45.20 CO2: 412.0 ALS: 123.0

⚙️ LAN Configuration Queries

Command	Description	Example Response
LANSETTINGS?	Prints current LAN configuration.	*(custom format)*
SETTINGS?	Prints general configuration values.	T offset: -0.25 ALS gain: 1.50
MAC?	Reads configured MAC address.	MAC=00:11:22:33:44:55
IPADR?	Reads configured IP address.	IPADR=192,168,1,50
SNMASK?	Reads configured subnet mask.	SNMASK=255,255,255,0
GWADR?	Reads configured gateway.	GWADR=192,168,1,1

📶 Wi-Fi Configuration Queries

Command	Description	Example Response
WLIPADR?	Reads configured Wi-Fi IP address.	WLIPADR=192,168,103,2
WLSNMASK?	Reads configured Wi-Fi subnet mask.	WLSNMASK=255,255,255,0
WLGWADR?	Reads configured Wi-Fi gateway address.	WLGWADR=192,168,103,1
WLSSID?	Reads configured Wi-Fi SSID.	WLSSID=AirQ
WLEN?	Reads configured WLAN operation.	WLEN=1
WIFISETTINGS?	Prints all Wi-Fi settings (multi-line response).	IP=192.168.103.2....

📝 Configuration Changes

Command	Description	Example Usage	Response
OFFSET=<value>	Sets temperature offset correction (saves to EEPROM).	OFFSET=-0.25	OK
ALSGAIN=<value>	Sets ALS gain (saves to EEPROM).	ALSGAIN=1.50	OK

Command	Description	Example Usage	Response
`MAC=<XX,XX,XX,XX,XX,XX>`	Sets MAC address (hex, comma-separated).	`MAC=00,11,22,33,44,55`	`OK`
`IPADR=<a,b,c,d>`	Sets LAN IP address.	`IPADR=192,168,0,100`	`OK`
`SNMASK=<a,b,c,d>`	Sets LAN subnet mask.	`SNMASK=255,255,255,0`	`OK`
`GWADR=<a,b,c,d>`	Sets LAN gateway address.	`GWADR=192,168,0,1`	`OK`
`WLIPADR=<a,b,c,d>`	Sets Wi-Fi IP address (saves to EEPROM).	`WLIPADR=192,168,103,2`	`OK`
`WLSNMASK=<a,b,c,d>`	Sets Wi-Fi subnet mask (saves to EEPROM).	`WLSNMASK=255,255,255,0`	`OK`
`WLGWADR=<a,b,c,d>`	Sets Wi-Fi gateway address (saves to EEPROM).	`WLGWADR=192,168,103,1`	`OK`
`WLSSID=<string>`	Sets Wi-Fi SSID (saves to EEPROM).	`WLSSID=AirQ`	`OK`
`WLPASS=<string>`	Sets Wi-Fi password (saves to EEPROM).	`WLPASS=pass1234`	`OK`
`WLEN=<enable>`	Enable WLAN connection if 1.	`WLEN=1`	`OK`

❌ Error Handling

If an unknown or incorrectly formatted command is received, the device responds with:
`Error`