

EG800Q&EG91xQ Series

Wi-Fi Scan Application Note

LTE Standard Module Series

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About the Document

Revision History

Version	Date	Author	Description
-	2023-04-13	Alwyn YE	Creation of the document
1.0	2023-05-16	Alwyn YE	First official release
1.1	2023-08-25	Alwyn YE	Updated the applicable modules: <ul style="list-style-type: none">● Added EG916Q-GL.● Updated EG800Q-EU to EG800Q series.
1.2	2024-05-22	Alwyn YE	Updated EG915Q-NA to EG915Q series.

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1 Introduction

This document outlines Wi-Fi Scan-related AT command. It is applicable to Quectel EG800Q series and EG91xQ family (EG915Q series and EG916Q-GL) modules.

2 Related AT Command

2.1. AT Command Introduction

2.1.1. Definitions

- **<CR>** Carriage return character.
- **<LF>** Line feed character.
- **<...>** Parameter name. Angle brackets do not appear on the command line.
- **[...]** Optional parameter of a command or an optional part of TA information response. Square brackets do not appear on the command line. When an optional parameter is not given in a command, the new value equals its previous value or the default settings, unless otherwise specified.
- **Underline** Default setting of a parameter.

2.1.2. AT Command Syntax

All command lines must start with **AT** or **at** and end with **<CR>**. Information responses and result codes always start and end with a carriage return character and a line feed character: **<CR><LF><response><CR><LF>**. In tables presenting commands and responses throughout this document, only the commands and responses are presented, and **<CR>** and **<LF>** are deliberately omitted.

Table 1: Types of AT Commands

Command Type	Syntax	Description
Test Command	AT+<cmd>=?	Test the existence of the corresponding command and return information about the type, value, or range of its parameter.
Read Command	AT+<cmd>?	Check the current parameter value of the corresponding command.
Write Command	AT+<cmd>=<p1>[,<p2>[,<p3>[...]]]	Set user-definable parameter value.
Execution Command	AT+<cmd>	Return a specific information parameter or perform a specific action.

2.2. Declaration of AT Command Examples

The AT command examples in this document are provided to help you learn about the use of the AT commands introduced herein. The examples, however, should not be taken as Quectel's recommendations or suggestions about how to design a program flow or what status to set the module into. Sometimes multiple examples may be provided for one AT command. However, this does not mean that there is a correlation among these examples, or that they should be executed in a given sequence.

2.3. Description of Related AT Command

2.3.1. AT+QWIFISCAN Set Wi-Fi Scan Parameters

This command sets Wi-Fi Scan parameters.

AT+QWIFISCAN Set Wi-Fi Scan Parameters	
Test Command AT+QWIFISCAN=?	Response +QWIFISCAN: (range of supported <time>s),(range of supported <round>s),(range of supported <max_bssid_num>s),(range of supported <scan_timeout>s),(list of supported <priority>s) OK
Read Command AT+QWIFISCAN?	Response +QWIFISCAN: <time> , <round> , <max_bssid_num> , <scan_timeout> , <priority> OK
Write Command AT+QWIFISCAN[=<time>[,<round>[,<max_bssid_num>[,<scan_timeout>[,<priority>]]]]]	Response If parameters are set successfully, scanning result is reported: OK +QWIFISCAN: (<ecn> , <ssid> , <rssi> , <mac> , <channel>) OK If there is no Wi-Fi hotspot: OK +QWIFISCAN:TIMEOUT

	<p>If parameter value(s) exceed(s) the supported range: +CME ERROR: 50</p> <p>If more than 5 parameters are set: ERROR</p>
Maximum Response Time	13 s
Characteristics	<p>This command takes effect immediately.</p> <p>The configurations are not saved.</p>

Parameter

<time>	Integer type. Wi-Fi Scan time. +QWIFISCAN:TIMEOUT will be reported, if there is no scanning result after the time. Range: 4000–255000. Default value: 12000. Unit: millisecond.
<round>	Integer type. Number of Wi-Fi Scan round(s). Range: 1–3. Default value: 1.
<max_bssid_num>	Integer type. Expected number of scanned Wi-Fi hotspots. Range: 4–10. Default value: 5.
<scan_timeout>	Integer type. RRC polling timeout period of Wi-Fi Scan. Range: 0–255. Default value: 5. Unit: second.
<priority>	Integer type. Wi-Fi Scan prioritization parameter. 0 Data prioritization 1 Wi-Fi Scan prioritization
<ecn>	Wi-Fi hotspot encryption mode. Currently this parameter is not supported and the fixed value is "-".
<ssid>	Name of the connected Wi-Fi hotspot. Currently this parameter is not supported and the fixed value is "-".
<rssi>	Integer type. Signal strength of the Wi-Fi hotspot. Unit: dBm.
<mac>	String type. Wi-Fi hotspot MAC address.
<channel>	Integer type. Channel used by the Wi-Fi hotspot. Range: 1–13.

NOTE

The Parameter **<max_bssid_num>** specifies the number of reported MAC addresses. For instance:

- Set the number of Wi-Fi Scan rounds to 1 and the expected number of scanned Wi-Fi hotspots to 5. If 5 or more MAC addresses are scanned, only 5 of them will be reported. If 5 MAC addresses or less are scanned, all of them will be reported.
- Set the number of Wi-Fi Scan rounds to 3 and the expected number of scanned Wi-Fi hotspots to 10. If 10 MAC addresses or more are scanned at the first round, then 10 MAC addresses will be reported, and the second and third rounds of scanning will not proceed. If 5 MAC addresses are scanned at the first round, Wi-Fi Scan continues; the scanning proceeds if 3 MAC addresses are scanned at the second round; if 6 MAC addresses are scanned at the third round, then the results

of the three rounds of scanning (5 + 3 + 6) will be reported. If the total number of MAC addresses at the first and second rounds exceeds 10, the third round of scanning will not proceed. If there are identical MAC addresses, the duplicate data will be subtracted.

Example

AT+QWIFISCAN

OK

+QWIFISCAN: (-,-,-30,"1C:20:DB:8D:D7:80",1)

+QWIFISCAN: (-,-,-30,"1C:20:DB:8D:D7:81",1)

+QWIFISCAN: (-,-,-55,"1C:20:DB:8D:C2:81",1)

+QWIFISCAN: (-,-,-61,"44:00:4D:D5:26:01",1)

+QWIFISCAN: (-,-,-68,"A4:00:E2:EF:F8:80",1)

OK

AT+QWIFISCAN=12000,1,6,5,0

OK

+QWIFISCAN: (-,-,-35,"1C:20:DB:8D:D7:80",1)

+QWIFISCAN: (-,-,-35,"1C:20:DB:8D:D7:81",1)

+QWIFISCAN: (-,-,-58,"60:38:E0:C5:A6:49",6)

+QWIFISCAN: (-,-,-63,"A4:00:E2:EF:F8:81",1)

+QWIFISCAN: (-,-,-66,"44:00:4D:D5:26:00",1)

+QWIFISCAN: (-,-,-70,"44:00:4D:D5:23:60",6)

OK

//Wi-Fi scan without Wi-Fi hotspot.

AT+QWIFISCAN

OK

+QWIFISCAN:TIMEOUT

3 Appendix References

Table 2: Terms and Abbreviations

Abbreviation	Description
MAC	Medium Access Control
RRC	Radio Resource Control
RSSI	Received Signal Strength Indicator