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QUECTEL EC25-E LTE Standard Module Instruction Manual

Contents

QUECTEL EC25-E LTE Standard Module

Product Information

- The EC25 Series & EG21-G eSIM is an LTE Standard Module Series developed by Quectel. It provides reliable and efficient connectivity solutions for various applications. The module is designed to offer comprehensive services to customers.

Contact Information

- If you require any assistance or have any inquiries, please contact Quectel Wireless Solutions Co., Ltd. at:
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- Tel: +86 21 5108 6236
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- For more information, visit the Quectel support website.

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Document Details

Revision History	Date	Author	Description
1.0.0	2022-09-30	Neo JIANG	Creation of the document Preliminary

Product Usage Instructions

The EC25 Series & EG21-G eSIM is a versatile LTE module that can be used in various applications. To use the module effectively, please follow these instructions:

1. Ensure that the module is properly connected to the host device.
2. Power on the host device and verify that the module is receiving power.
3. Install the necessary drivers and software provided by Quectel for your operating system.
4. Refer to the EC25 Series & EG21-G eSIM AT Commands Manual for detailed instructions on how to interact with the module using AT commands.
5. Configure the module according to your application requirements using the appropriate AT commands.
6. Test the module's connectivity and functionality by sending and receiving data.
7. If you encounter any issues or require technical support, refer to the contact information provided in the user manual or visit the Quectel support website.

By following these instructions, you will be able to effectively utilize the EC25 Series & EG21-G eSIM LTE module for your specific application needs.

About the Document

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Introduction

This Document introduces the AT command of ESIM in the EC25 series and EG21-G Module.

Applicable Modules

Table 1: Applicable Modules

Module Series	Module
EC25	EC25-E
	EC25-EU
EG21	EG21-G

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**	The default setting of a parameter.

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.
- The AT Commands Set implemented by EC25 series and EG21-G is a combination of 3GPP TS 27.007, 3GPP TS 27.005 and ITU-T recommendation V.25ter as well as the AT Commands developed by Quectel.
- AT commands implemented by EC25 series and EG21-G fall into one category syntactically:

Extended

- Extended commands can be executed in several modes, as shown in the following table:

Table 2: 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.

- Multiple commands can be placed on a single line using a semi-colon (;) between commands. In such cases, only the first command should have AT prefix.
- Commands can be in upper or lower case.
- Spaces should be ignored when you enter AT commands, except in the following cases:
- Within quoted strings, where spaces are preserved;
- Within an unquoted string or numeric parameter;
- Within an IP address;
- Within the AT command name up to and including a =, ? or =?.
- On input, at least a carriage return is required. A newline character is ignored so it is permissible to use carriage return/line feed pairs on the input.
- If no command is entered after the AT token, OK will be returned. If an invalid command is entered, ERROR will be returned.
- Optional parameters, unless explicitly stated, need to be provided up to the last entered parameter.

AT Command Responses

- When the AT command processor has finished processing a line, it will output OK, ERROR+CME ERROR: <err> to indicate that it is ready to accept a new command.
- Solicited information responses are sent before the final OK, ERROR +CME ERROR: <err>.
- Responses will be in the format of: <CR><LF>+CMD1:<parameters><CR><LF> <CR><LF>OK<CR><LF>

Or

- <CR><LF><parameters><CR><LF>
  - <CR><LF>OK<CR><LF>

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.

Local Management Commands

AT+QESIM="list" List Profiles

This command lists profiles currently installed for the module.

AT+QESIM="list" List Profiles	
Write Command **AT+QESIM="list"[,<mode>]**	Response if **<result>** is 0: **+QESIM: "list",0[** **<iccid>,<status>,<nickname>,<provider>** **<iccid>,<status>,<nickname>,<provider>** **…]**
	OK
	if **<result>** is not 0: **+QESIM: "list",<result>[,<errinfo1>,<errinfo2>]**
	OK Or **ERROR**
	If there is an error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	6000 ms
Characteristics	/

Parameter

<mode>	Integer type. List mode.
	0 List profiles with profile class = 2 in eUICC
	1 List all profiles in eIUCC
<iccid>	String type. ICCID of the current profile.
<status>	Integer type. Profile state.

	0 Profile Disabled
	1 Profile Enabled
<nickname>	String type. Profile nickname.
<provider>	String type. Service provider name.
<result>	Integer type. Result code. Range: 0–3. Please refer to **Chapter 5** for specific error information.
<errinfo1>	String type. Error information 1. If <result> is 0, it will not be presented.
<errinfo2>	String type. Error information 2. If <result> is 0, it will not be presented.

Example

- **AT+QESIM=”list”**
    - **+QESIM:** “list”,0
- “8932042000000199885F”,1,”sim1″,”V-Telekom”
    - “89320420000002068839”,0,”YFL1″,”YFL1″ OK

NOTE

If the optional parameter <mode> is omitted, the default value 0 will be used.

AT+QESIM=”enable” Enable Profiles

This command enables profiles currently installed for the module.

AT+QESIM=”enable” Enable Profiles	
Write Command **AT+QESIM=”enable”,<iccid>**	Response **+QESIM: “enable”,<result>[,<errinfo1>,<errinfo2>]**
	OK Or **ERROR**
	If there is an error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	6000 ms
Characteristics	/

Parameter

| <iccid>	String type. The ICCID number of the profile.
<result>	Integer type. Result code. Range: 0–3. Please refer to **Chapter 5** for specific error information.
<errinfo1>	String type. Error information 1. If <result> is 0, it will not be presented.
<errinfo2>	String type. Error information 2. If <result> is 0, it will not be presented.

Example

- AT+QESIM="enable", "8932042000000199885F"
  - +QESIM: "enable",0
- OK

AT+QESIM="disable" Disable Profiles

- This command disables profiles currently enabled for the module.

AT+QESIM="disable" Disable Profiles	
Write Command AT+QESIM="disable",<iccid>	Response +QESIM: "disable",<result>[,<errinfo1>,<errinfo2>]
	OK Or ERROR
	If there is an error related to ME functionality: +CME ERROR: <err>
Maximum Response Time	6000 ms
Characteristics	/

Parameter

<iccid>	String type. The ICCID number of the profile.
<result>	Integer type. Result code. Range: 0–3. Please refer to **Chapter 5** for specific error information.
<errinfo1>	String type. Error information 1. If <result> is 0, it will not be presented.
<errinfo2>	String type. Error information 2. If <result> is 0, it will not be presented.

Example

- AT+QESIM="disable","8932042000000199885F"
  - **+QESIM:** "disable",0
- OK

AT+QESIM="delete" Remove Profiles

- This command removes profiles currently installed for the module.

AT+QESIM="delete" Remove Profiles	
Write Command **AT+QESIM="delete",\<iccid\>**	Response **+QESIM: "delete",\<result\>[,\<errinfo1\>,\<errinfo2\>]**
	OK Or **ERROR**
	If there is an error related to ME functionality: **+CME ERROR: \<err\>**
Maximum Response Time	6000 ms
Characteristics	/

Parameter

\<iccid\>	String type. The ICCID number of the profile.
\<result\>	Integer type. Result code. Range: 0–3. Please refer to **Chapter 5** for specific error information.
\<errinfo1\>	String type. Error information 1. If **\<result\>** is 0, it will not be presented.
\<errinfo2\>	String type. Error information 2. If **\<result\>** is 0, it will not be presented.

Example

- AT+QESIM="delete","8932042000000199885F"
    - +QESIM: "delete",0
- OK

AT+QESIM="nickname" Set New Nickname for Profiles

- This command sets new nicknames for profiles.

AT+QESIM="nickname" Set New Nickname for Profiles	
Write Command **AT+QESIM="nickname",<nickname>,** **<iccid>**	Response **+QESIM: "nickname",<result>[,<errinfo1>,<errinfo2>]**
	OK Or **ERROR**
	If there is an error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	6000 ms
Characteristics	The command takes effect immediately.

Parameter

<nickname>	String type. The new nickname of the profile. Maximum length is 32 characters.
<iccid>	String type. The ICCID number of the profile.
<result>	Integer type. Result code. Range: 0–3. Please refer to **Chapter 5** for specific error information.
<errinfo1>	String type. Error information 1. If <result> is 0, it will not be presented.
<errinfo2>	String type. Error information 2. If <result> is 0, it will not be presented.

Example

- AT+QESIM="nickname","simcad_test","8932042000000199885F"
- +QESIM: "nickname",0
- OK

AT+QESIM="eid" Get the eUICC ID of the Module

- This command gets the eUICC ID of the module.

AT+QESIM="eid" Get the eUICC ID of the Module	
Write Command **AT+QESIM="eid"**	Response If **<result>** is 0: **+QESIM: "eid",0,<eid>**
	If **<result>** is not 0: **+QESIM: "eid",<result>,<errinfo1>,<errinfo2>**
	OK Or **ERROR**
	If there is an error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	6000 ms
Characteristics	/

Parameter

<eid>	String type. eUICC ID.
<result>	Integer type. Result code. Range: 0–3. Please refer to **Chapter 5** for specific error information.
<errinfo1>	String type. Error information 1. If **<result>** is 0, it will not be presented.
<errinfo2>	String type. Error information 2. If **<result>** is 0, it will not be presented.

Example

- AT+QESIM="Eid"
- +QESIM: "eid",0,"89049032000001000000092092075457"
- OK

Profile Download Commands

External Network Mode

- In this mode, the MCU acts as a communication channel between the module and DP+ to transfer messages. The MCU should establish a connection with DP+ via HTTPS, and use UART to communicate with the module. This applies to scenarios where the eUICC does not have an initial profile and the MCU has networking capability (e.g. WIFI). Please refer to Chapter 3.1.3 for the detailed process.
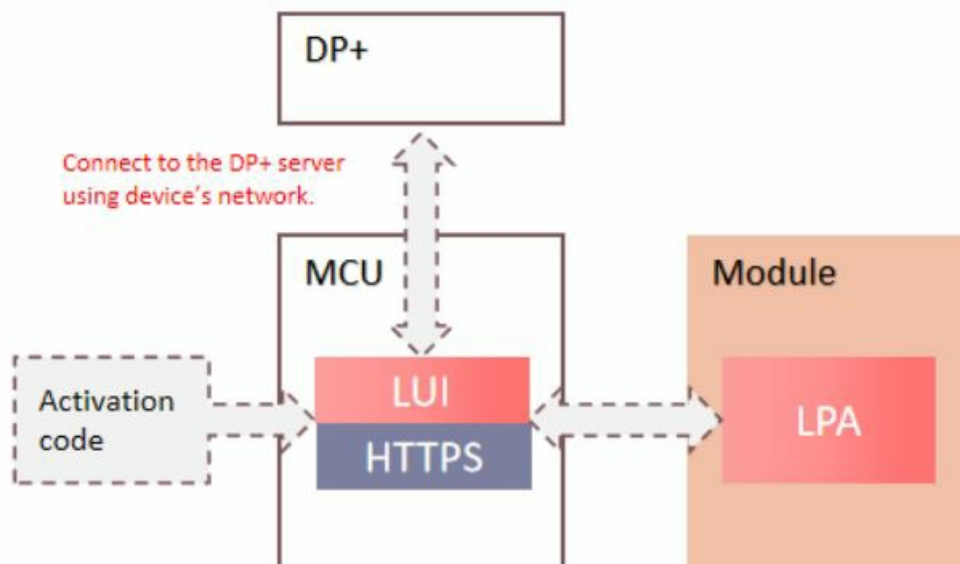
- AT+QESIM="download" Initiate the Download Process of Profiles
- This command initiates the download process of the profile. The module will report an unsolicited result code : +QESIM: "Download",<ret> to indicate the profile download result when the process of download and the profile installation end.

AT+QESIM="download" Initiate the Download Process of Profiles	
Write Command **AT+QESIM="download",<activationC od e>[,<confirmationCode>]**	Response If **<result>** is 0: **+QESIM: "trans",0,<url>,<payloadlen>,<payload>**

	If **<result>** is not 0: **+QESIM: "trans",<result>,<errinfo1>,<errinfo2>** **OK** Or **ERROR** If there is an error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	6000 ms
Characteristics	/

Parameter

\<activationCode\>	String type. From the QR code scan.
\<confirmationCode\>	String type. A code used to authorize the usage of the MatchingID to confirm the download and installation of the profile.
\<url\>	String type. HTTP URL. This is the specific address used by DP+ to process messages.
\<payloadlen\>	Integer type. The length of \<payload\>.
\<payload\>	String type. The jason format data that needs to be sent to DP+.
\<result\>	Integer type. Result code. Range: 0–3. Please refer to **Chapter 5** for specific error information.
\<errinfo1\>	String type. Error information 1. If \<result\> is 0, it will not be presented.
\<errinfo2\>	String type. Error information 2. If \<result\> is 0, it will not be presented.
\<ret\>	Integer type. Range: 0–1. The profile download and installation result. 0 Success 1 Failure

Example

AT+QESIM="download","LPA:1$testsmdpplus.infineon.com$0000000000003003"+QESIM:"trans",0,"/gsma/rsp2/es9plus/initiateAuthentication",239{"euiccChallenge":"hOuZDcgULnLzkOZv8hWO3w==","euiccInfo1":"vyBhggMCAgKpLAQUwLxwujaSnUO0Z/9XVwUw5Xq4/NgEFPVBcr35ipXWXL64ijihwR2ACoXDqiwEFMC8cLo2kp1DtGf/V1cFMOV6uPzYBBT1QXK9+YqV1ly+uIo4ocEdgAqFww==","smdpAddress":"**testsmdpplus.infineon.com**"}"OK

NOTE

1. If the Confirmation code required Flag in \<activationCode\> is 1, \<confirmationCode\> is required. Please refer to Chapter 3.1.3 for the download process.

2. Activation Codes are typically obtained from Mobile Network Operator and are structured as follows:

Name	Description	MO C
AC_Format	Format of the Activation Code. SHALL be set to "1" for this Format of the Activation Code and any subsequent backward compatible Format	M
Delimiter	SHALL be set to "$"	M
SM-DP+ Address	FQDN (Fully Qualified Domain Name) of the SM-DP+ (e.g., SMDP.GSMA.COM) restricted to the Alphanumeric mode character set defined in table 5 of ISO/IEC 18004 [15] excluding '$'	M
Delimiter	SHALL be set to "$"	M
AC_Token	MatchingID as described in section (4.1.1)	M
Delimiter	SHALL be present and set to "$" if any of the following optional parameters is present	C
SM-DP+ OID	SM-DP+ OID in the CERT.DPauth.ECDSA	O
Delimiter	SHALL be present and set to "$" if any of the following optional parameters is present	C
Confirmation Code Required Flag	SHALL be present and set to "1" if Confirmation Code is required; otherwise it SHALL be absent	O

AT+QESIM="trans" Forward DP+ Messages

This command forwards DP+ messages to the module during the process of downloading and installing the profile, and the module will report an unsolicited result code: +QESIM: "trans",0,<url>,<payloadlen>,<payload> or +QESIM: "trans",<result>[,<errinfo1>,<errinfo2>] when the module receives a complete and correct DP+ message.

AT+QESIM="trans" Forward DP+ Messages	
Write Command **AT+QESIM="trans",<totallen>,<state>** **,<seq>,<len>,<data>**	Response **+QESIM: "trans",<result>[,<errinfo1>,<errinfo2>]**
	OK Or **ERROR**
	If there is an error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	500 ms
Characteristics	/

Parameter

<totallen>	Integer type. The total length of the DP+ message after it is converted into a HEX string. Range: 0–65535. If the DP+ message is greater than the maximum value of **<len>**, the DP+ message needs to be divided into multiple data packets for forwarding.
<state>	Integer type. Data block status. 0 Last packet of DP+ message 1 Not last packet of DP+ message
<seq>	Integer type. Serial number. Range: 0–255.
<len>	Integer type. The length of data to be sent. Range: 0–1400. If **<totallen>** is greater than the maximum value of **<len>**, the DP+ message needs to be divided into multiple data packets for forwarding.
<data>	Hex string type. The send data of DP+ message.
<url>	String type. HTTP URL. This is the specific address used by DP+ to process messages.
<payloadlen>	Integer type. The length of **<payload>**.
<payload>	String type. The jason format data that needs to be sent to DP+.
<result>	Integer type. Result code. Range: 0–3. Please refer to Chapter 5 for specific error information.
<errinfo1>	String type. Error information 1. If **<result>** is 0, it will not be presented.
<errinfo2>	String type. Error information 2. If **<result>** is 0, it will not be presented.

NOTE

The maximum data length that AT+QESIM="trans" command can send per packet is 1400 hex string, If the data is

greater than 1400, it needs to be sent in multiple packets.

Example

AT+QESIM="download","LPA:1$democonsumer.validspereachdpplus.com$1BINSTP8J0EFCWLLE4JY4S0YGO7II4
0ZXSQESI06THYWPLZW65CXYWK5KPZJCZ"+QESIM:"trans",0,"/gsma/rsp2/es9plus/initiateAuthentication",195{"
euiccChallenge":"WbVmuflnshaRFR2d/Vm+1w==","euiccInfo1":"vyA1ggMCAgKpFgQUgTcPUSXQsdQI1MOyMubS
Xnlb6/uqFgQUgTcPUSXQsdQI1MOyMubSXnlb6/uQAA==","smdpAddress":"**demo-
consumer.validspereachdpplus.com**"}"

OK

AT+QESIM="trans",2924,1,0,1400,"485454502F312E312032303041646D696E2D50726F746F636F6C
3A2067736D612F7273702F76322E322E32436F6E74656E742D547970653A206170706C69636174696F
6F6E2F6A736F6E3B636861727365743D5554462D38436F6E74656E742D4C656E6774683A2031333
230446174653A204D6F6E2C203235204F6374202032303312030323A32393A343820474D547B22686
561646572223A7B2266756E6374696F6E457865637574696F6E537461747573223A7B227374617475
73223A2245786563757465642D53756363657373227D7D2C227472616E73616374696F6E4964223A2
23334364333383935383944393641453842424239443141393241423935364637372C22736572766572
5369676E656431223A224D463241454452734F4A574A3257726F753530616B7175566623654245466
D315A726E794A3749576B5255646E66315A767465444A57526C62657387459323975633356615A584
975646D46736731727A634475695A7466A61475277634778316379356A623653623232454545724C34342F
59427344704F42706B507A43694671733D222C227365727665725369676E617475726531223A22587
A6441396D6573684A5178787231426A616E5874304268416A656E646B627A373958396C7530337A6E426244
C6A36696C4A6C525A6C464577726A614154656E53714B34736633397A496B41505652542F415266
315564644E556C75773D3D222C2265756563363436950B4964546F426555736564223A22424253424
E7739524A64443781416A557737497935744A465655676722B773D3D222C22736572726657243657274
69666963617465223A224D494943674443434A434316961674177494241674951637A6A456B4B5362B7646523
8335936656B4E36363644784A414B42676771686B6A4F50515144416A454D52267774466675944455651
4B4577394845855303306751584E7A62324E7059585276636233234784B44416D" +QESIM: "trans",0 +QESIM: "trans",0
OK AT+QESIM="trans",2924,0,2,124,"776167517071436145596C5A75514967725243594A78646461135784
767546C7073436A317A5868376E496666624261536B7537386683462617734F6F3D227D" +QESIM: "trans",0
OK +QESIM: "trans",0,"/gsma/rsp2/es9plus/authenticateClient",2304,"{"transactionId":"346C389589
D96AE8BB9D1A92AB956F77","authenticateServerResponse":"vziCBnugggZ3MIIBGYAQNGw4lYn
Zaui7nRqSq5Vvd4MlZGVtby1jb25zdW1lci52YWxpZHNwZXJlYWNoZHBwbHVzLmNvbYQQSsvjj9g
GwOk4GmQ/MKIWq78ieYEDAgMBggMCAgKDAyIBAYQPgQEAggQABry/gwQAACjBhQUGfz7/wIY
DDAAAhwMCAwCIAgPYqRYEFIE3D1EI0LHUCNTDsjLm0l55W+v7qhYEFIE3D1EI0LHUCNTDsjLm0l
55W+v7BAMAAAAMDVZELU1ELVVQLTA0MjCgUIBAMUJJTINUUDhKMEVGQ1dMTEU0Slk0UzBZR
083SUk0MFpYU1FFU0kwNlRIWVddQTFotVzY1Q1hZV0s1LUtQWkpDWqEMgAgAAAQEAAEHAqEA
XzdAzD6neWNZxq/vR1JBGEpydKWcDs3e+QvcyrS0x+8sTMb4MlKvdPMrxJsTzHRMAlBKEEoTc+b
E2VXXYgMPfikowjCCAkYwggHsoAMCAQICFHB1/k3F6BXsigxdtCmDaWD94qPrMAoGCCqGSM49
BAMCMGYxCzAJBgNVBAYTAkVTMSowKAYDVQQKDCFWQUxJRCBTT0xVQ0lPTkVTIFRFRFQ05PTE
9HSUNBUyBTQVUxDjAMBgNVBAsMBVZBTElEMRswGQYDVQQDDBJWQUxJRCBFVU0gQ09OU1
VNRVIwIBcNMjEwNjE3MTExODU0WhgPOTk5OTEyMzEyMzU5NTlaMHExCzAJBgNVBAYTAkVTMQ
4wDAYDVQQKDAVWQUxJRDEXMBUGA1UEAwwOVkFMSUQgRVVJQ0MgQ0QxDjAMBgNVBAsM
BVZBTElEMSkwJwYDVQQFDCA4OTAzNDAxMTAyMjEwMDAwMDAwMDAwMDAzMDk5NTB
ZMBMGByqGSM49AgEGCCqGSM49AwEHA0IABOyOsVYzzQY6ZWBe6CaaYXOqW9hc+WGTAIx1z
JPQXw2RW1+Xp8dfNO1sV+l6ho8L73L3e3/RvSyZC73d3UUEKN+jazBpMB8GA1UdIwQYMBaAFK8
6bAvGg+vfM7W6a8nluW4KaMyvMB0GA1UdDgQWBBSckuC9eUHD1i29kzzQ3rfhgVbaqzAOBgNV
HQ8BAf8EBAMCB4AwFwYDVR0gAQH/BA0wCzAJBgdngRIBAgEBMAoGCCqGSM49BAMCA0gAM
EUCIHPceNKEuYDE3jkqjtceEB2oI/cimWoIA51jGC5hhqhyAiEAhz11sJUNpPevPCd8i5a08U+VLPXY
/fvUvR8C6Y9XPA8wggLJMIICb6ADAgECAhBYZ3wyc4kb0hv8uYDONcsLMAoGCCqGSM49BAMC
MEQxGDAWBgNVBAoTD0dTTSBBc3NvY2lhdGlvbjEoMCYGA1UEAxMfR1NNIEEzc29jaWF0aW9ul
C0gUlNQMiBSb290IENJMTAeFw0xOTA0MTEwMDAwMDBaFw00OTA4MTAyMzU5NTlaMGYxCzAJ
BgNVBAYTAkVTMSowKAYDVQQKDCFWQUxJRCBTT0xVQ0lPTkVTIFRFRFQ05PTE9HSUNBUyBTQV
UxDjAMBgNVBAsMBVZBTElEMRswGQYDVQQDDBJWQUxJRCBFVU0gQ09OU1VNRVIwWTATBgc
qhkjOPQIBBggqhkjOPQMBBwNCAASCUaycu5eQY6sAG2oPkh+DTDwPWKXIKFb2of/fAmgqjezB
GgVFSlj70I4uNEDV/E2e4RUe+B8ZNtrL+aazZLc0o4IBHzCCARswHQYDVR0OBBYEFK86bAvGg+vf
M7W6a8nluW4KaMyvMBIGA1UdEwEB/wQIMAYBAf8CAQAwFwYDVR0gAQH/BA0wCzAJBgdngRI

BAgECME0GA1UdHwRGMEQwQqBAoD6GPGh0dHA6Ly9nc21hLWNybC5zeW1hdXRoLmNvbS9v
ZmZsaW5lY2EvZ3NtYS1yc3AyLXJvb3QtY2kxLmNybDAOBgNVHQ8BAf8EBAMCAQYwNwYDVR0e
AQH/BC0wK6ApMCekJTAjMQ4wDAYDVQQKDAVWQUxJRDERDERMA8GA1UEBRMIODkwMzQwMTE
wFAYDVR0RBA0wC4gJKwYBBAGC40wEMB8GA1UdIwQYMBaAFIE3D1El0LHUCNTDsjLm0l55W+
v7MAoGCCqGSM49BAMCA0gAMEUCIQDIIjMVONpYB9krm994uZJ2MfX11ZB4jCPOorIfd2XcJAIgG
2h/eUPzuma4UZ/I2j4GOUh1ZeSxQYk2KpMLBvcqt4Y="}"

Download Profiles Through AT Commands

HTTPS establishes a connection between the MCU and SM-DP+. The MCU uses the POST method to send data, where the URL and payload are obtained from the result code returned for each step of the module +QESIM: "trans",0,<url>,<payloadlen>,<payload>. The content of the HTTPS header during POST is as follows:

Header	Value
X-Admin-Protocol:	gsma/rsp/v2.2.0
Content-Type:	application/json
charset:	utf-8
User-Agent:	gsma-rsp-lpad
Host:	Host and port, e.g. demo-consumer.validspereachdpplus.com:443
Content-Length:	Content length
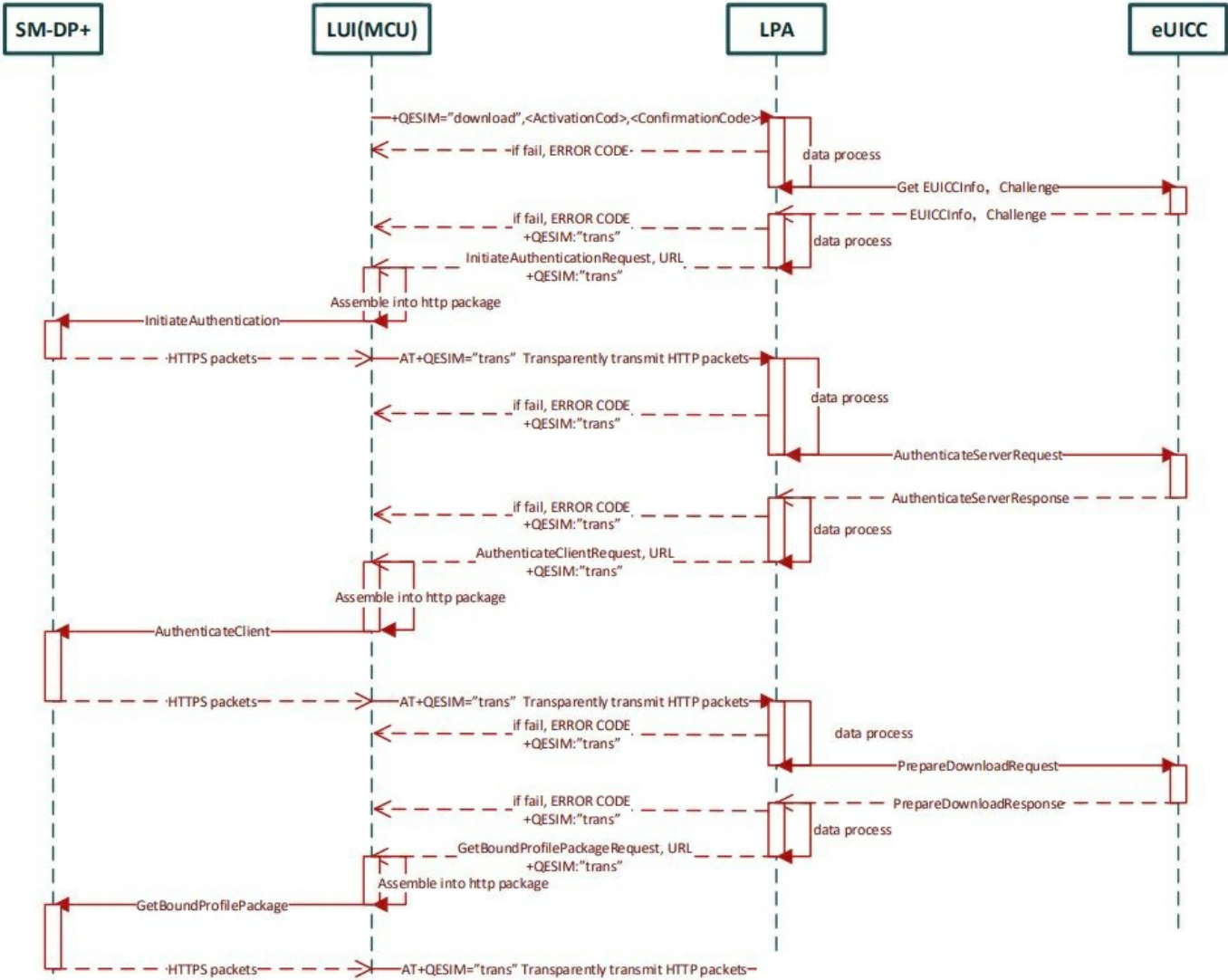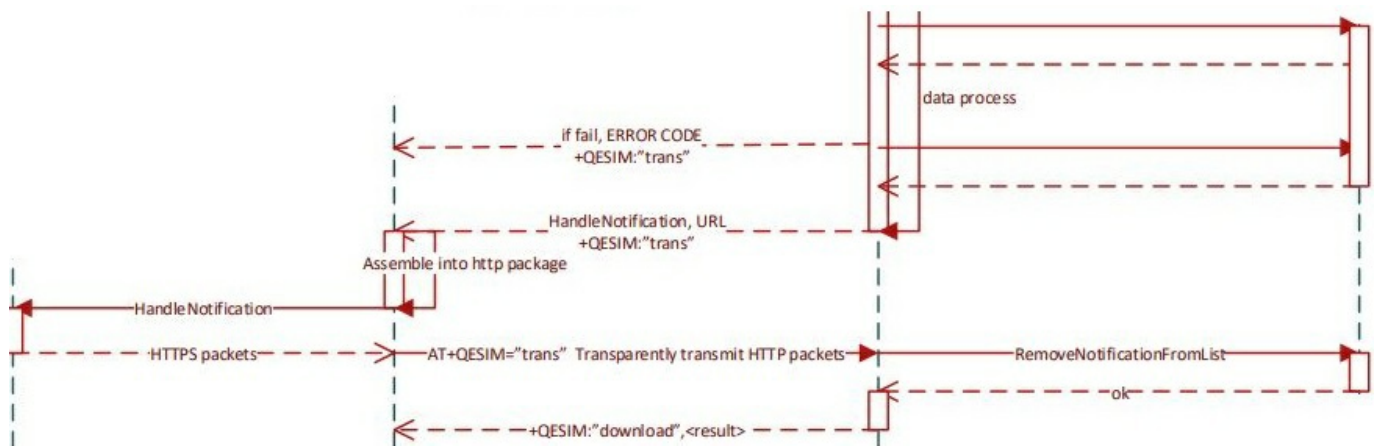
Internal Network Mode

In this mode, the module needs to establish a HTTPS connection with DP+. This applies to scenarios where the eUICC has an initial profile and module can use this profile to connect to the network.
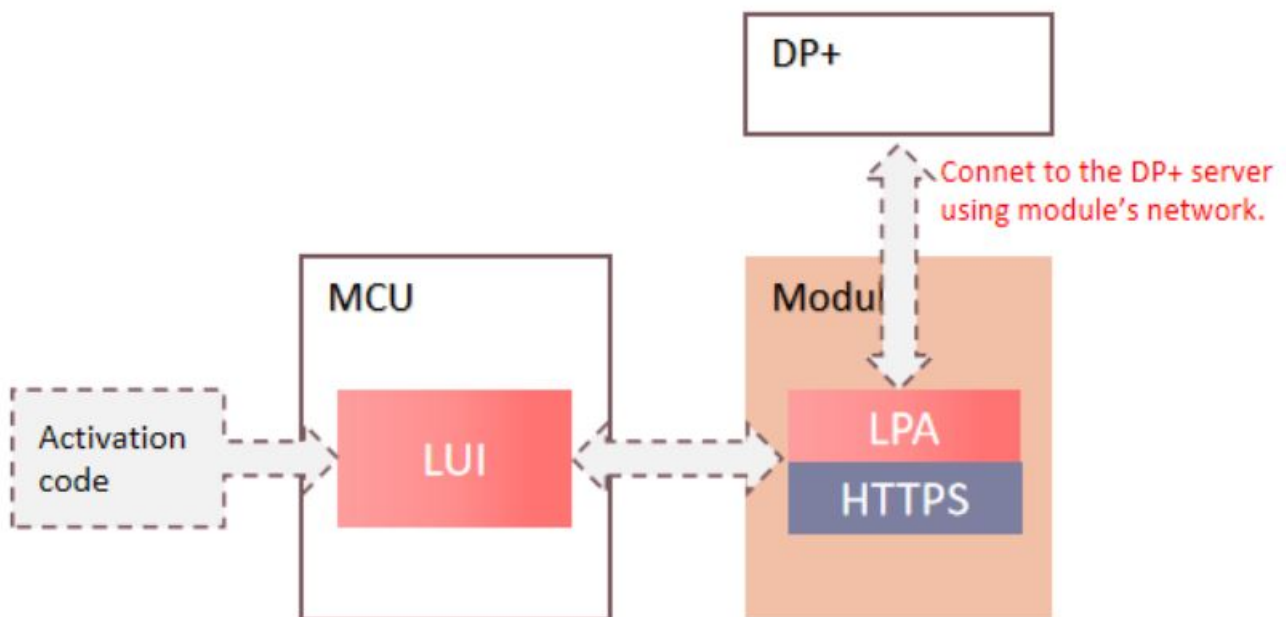
AT+QESIM="ota" Download the Profile from DP+ and Install It to the eUICC	
Write Command **AT+QESIM="ota",<activationCode>[,** **<confirmationCode>]**	Response **OK** Or **ERROR**
	If there is an error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	500 ms
Characteristics	/

Parameter

<activationCode>	String type. From the QR code scan.	
<confirmationCode>	String type. A code used to authorize the usage of the MatchingID to confirm the download and installation of the profile.	
<result>	Integer type. Result code. Range: 0–3. Please refer to **Chapter 5** for specific error information.	
<errinfo1>	String type. Error information 1. If <result> is 0, it will not be presented.	
<errinfo2>	String type. Error information 2. If <result> is 0, it will not be presented.	

Example

AT+QESIM="ota","LPA:1$testsmdpplus.infineon.com$0000-0000-0000-3003" OK

NOTE

If the Confirmation Code Required Flag in **<activationCode>** is 1, **<confirmationCode>** is required. Please refer to **Chapter 3.1.3** for the download process.

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eSIM Related Notifications

This chapter gives eSIM-related notifications and their descriptions.

Table 3: eSIM Related Notifications

SN	URC Format	Description
[1]	+QESIM: "download",<ret>	The profile download and install process ends. The related resources of the module are released. **<ret>**: 0 Success 1 Failure
[2]	+QESIM: "trans",0,<url>,<payloadlen>,<payload>	Messages that need to be reported to DP+. **<url>**: HTTP URL **<payloadlen>**: The length of <payload>. **<payload>**: The jason format data that needs to be sent to DP+.
[3]	+QESIM: "trans",<result>[,<errinfo1>,<errinfo2>]	The profile download or installation error. **<result>**: Result code. Range: 0–3. **<errinfo1>**: Error information 1 **<errinfo2>**: Error information 2 Please refer to **Chapter 5** for specific error information.
[4]	+QESIM: "ota",<result> [,<errinfo1>,<errinfo2>]	The profile download and install process ends. **<result>**: Result code. Range: 0–3. **<errinfo1>**: Error information 1 **<errinfo2>**: Error information 2 Please refer to **Chapter 5** for specific error information.

Summary of Error Codes

If an error occurs in LPA, you can find the cause of the error by the following error code. Result code includes Success, Internal Error, eUICC Error, SMDPP Error. If Result code is 0, it means Success.

Table 4: Internal Error

<result>	<errinfo1>	<errinfo1>
InternalError（1）	Analyse False（99）	0
/	Parm Error（98）	0
/	Http Errorcode（1）	Errorcode（eg. 400,450,500）
/	APDUError（2）	SW code（eg. 6985,6A82,6700）

Table 5: eUICC Error

<result>	<errinfo1>	<errinfo1>
eUICCError（2）	ProfileInfoListResponse（1）	incorrectInputValues(1), undefinedError(127)
/	PrepareDownloadResponse（2）	invalidCertificate(1), invalidSignature(2), unsupportedCurve(3), noSessionContext(4), invalidTransactionId(5), undefinedError(127)
/	AuthenticateServerResponse（3）	invalidCertificate(1), invalidSignature(2), unsupportedCurve(3), noSessionContext(4), invalidOid(5), euiccChallengeMismatch(6), ciPKUnknown(7), undefinedError(127)
/	CancelSessionResponse（4）	invalidTransactionId(5),

/		undefinedError(127)
/	ProfileInstallationResultData（5）	incorrectInputValues(1), invalidSignature(2), invalidTransactionId(3), unsupportedCrtValues(4), unsupportedRemoteOperationType(5), unsupportedProfileClass(6), scp03tStructureError(7), scp03tSecurityError(8), installFailedDueToIccidAlreadyExistsOnEuicc(9), installFailedDueToInsufficientMemoryForProfile(10), installFailedDueToInterruption(11), installFailedDueToPEProcessingError (12), installFailedDueToDataMismatch(13), testProfileInstallFailedDueToInvalidNaaKey(14), pprNotAllowed(15), installFailedDueToUnknownError(127)
/	listNotificationsResultError（6）	undefinedError(127)
/	setNicknameResult（7）	iccidNotFound (1), undefinedError(127)
/	RetrieveNotificationsListResponse（8）	undefinedError(127)
/	NotificationSentResponse（9）	nothingToDelete(1), undefinedError(127)
/	EnableProfileResponse（10）	iccidOrAidNotFound (1), profileNotInDisabledState(2), disallowedByPolicy(3), wrongProfileReenabling(4), catBusy(5), undefinedError(127)
/	DisableProfileResponse（11）	iccidOrAidNotFound (1), profileNotInEnabledState(2), disallowedByPolicy(3), catBusy(5), undefinedError(127)
/	DisableProfileResponse（11）	iccidOrAidNotFound (1), profileNotInEnabledState(2), disallowedByPolicy(3), catBusy(5), undefinedError(127)
/	DeleteProfileResponse（12）	iccidOrAidNotFound (1), profileNotInDisabledState(2), disallowedByPolicy(3), undefinedError(127)

Table 6: SMDP+ Error

<result>	<errinfo1>	<errinfo1>
SMDPPError（3）	Subject Code（eg. 8.2）	Reason Code（eg. 3.1）

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QUECTEL **EC25 Series &EG21-G** eSIM **AT Commands Manual** LTE Standard Module Series Version: 1.0.0 Date: 2022-09-30 Status: Preliminary	[**QUECTEL EC25-E LTE Standard Module**](#) [pdf] Instruction Manual EC25-E, EC25-E LTE Standard Module, LTE Standard Module, Standard Module, Module

References

- **Contact | Quectel**
- **|**