UC15 SMTP
AT Commands Manual

UMTS/HSPA Module Series

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About the Document

History

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Contents

Table Index

1 Introduction

UC15 provides SMTP application interface for sending e-mails. This document is a reference guide to all the AT commands defined for SMTP.

1.1. Introduction about SSL Type

There are three kinds of connections between SMTP client and SMTP server:

- Without SSL
- SSL
- STARTTLS

Since some SMTP servers cannot support connection without SSL, while some can support all of them, you can choose one kind according to your mail service provider.

These three kinds of connections can be set by parameter <ssltype> in AT+QSMTPCFG="ssltype".

1. If <ssltype> is 0, it means "without SSL". You will not use SSL function and send email by insecure connection. The port of SMTP server depends on mail service provider, usually the port is 25.
2. If <ssltype> is 1, it means "SSL". You will send email by SSL/TLS encrypted SMTP, the port of SMTP server depends on mail service provider and usually the port is 465 or 587.
3. If <ssltype> is 2, it means "STARTTLS". You will upgrade the normal insecure connection to secure connection through STARTTLS function and send the mail data. The port of SMTP server depends on mail service provider and usually the port is 25, 465 or 587.

1.2. The Process of Sending Email

As UC15 module supports SMTP protocol, you can send email easily by UC15 SMTP AT command. The general process is as follows:

Step 1: Configure and activate the PDP context.

1) Configure the PDP context parameters <apn>,<username>,<password> and other parameters by AT+QICSGP (For details, please refer to *UC15_TCPIP_AT_Commands_Manual*). If QoS settings need to be updated, configure them by the commands AT+CGQMIN, AT+CGEQMIN,

AT+CGQREQ, and AT+CGEQREQ. (Please refer to *UC15_AT_Commands_Manual* for details).
2) Activate the PDP context by AT+QIACT.
3) Configure the PDP context ID for SMTP by AT+QSMTPCFG="contextid",<contextID>.

Step 2: Configure SMTP server and user account.
1) Configure SSL type by AT+QSMTPCFG="ssltype",<ssltype>. If <ssltype> is SSL or STARTTLS, you should choose a SSL context by AT+QSMTPCFG="sslctxid",<sslctxID> and configure the <sslctxID> by AT+QSSLCFG="ciphersuite",<sslctxID>,<ciphersuite> (For details, please refer to *UC15_SSL_AT_Commands_Manual*).
2) Configure SMTP server by AT+QSMTPCFG="smtpserver",<srvaddr>,<srvport>. The <srvaddr> and <srvport> depend on mail service provider.
3) Configure account information by AT+QSMTPCFG="account",<username>,<password>.
4) Configure sender information by AT+QSMTPCFG="sender",<sender_name>,<sender_email>.

Step 3: Edit the email content.
1) Configure the recipient email address by AT+QSMTPDST.
2) Configure the subject of email by AT+QSMTPSUB.
3) Configure the body of email by AT+QSMTPBODY.
4) Add attachments for the email by AT+QSMTPATT. The attachments can be RAM files or UFS files. It is strongly recommended to use RAM file to upload the attachments. You can upload a file to RAM or UFS by AT+QFUPL. (Please refer to *UC15_FILE_AT_Commands_Manual* for details). After sending email successfully, you should delete the file by AT+QFDEL. (For details, please refer to *UC15_FILE_AT_Commands_Manual*).

Step 4: Send email.

Send the email by AT+QSMTPPUT. It will take some time to send the email depending on the total size of attachments and network status. You should wait for "+QSMTPPUT: <err>,<protocol_error>", which indicates the ending of sending email.

Step 5: Clear the email contents.

AT+QSMTPCLR will clear the email contents configured by Step 3. You should delete the files as attachments by AT+QFDEL. (For details, please refer to *UC15_FILE_AT_Commands_Manual*). Then repeat step 3 and 4. Of course, if you would like to change the SMTP server information and user information, step 2 to step 4 can be repeated too. If you have not sent email for a long time, such as 30 minutes or even longer, you should deactivate the PDP context by AT+QIDEACT=<contextID> (Please refer to *UC15_TCPIP_AT_Commands_Manual* for more details).

1.3. Description of Data Mode

The mode of UC15 COM port includes AT command mode and data mode. The difference between the two is that in AT command mode, the inputted data via COM port will be treated as AT command, while in

data mode, it will be treated as data.

You can exit from data mode by “+++” or DTR (AT&D1 should be set). To prevent the “+++” from being misinterpreted as data, it should comply with the following sequences:

1) Do not input any character within 1s or longer before inputting “+++”.
2) Input “+++” within 1s, and no other characters can be inputted during this time.
3) Do not input any character within 1s after “+++” has been inputted.

When you execute AT+QSMTPBODY, UC15 module will enter into data mode. All inputted data will be the body of email. If the inputted data reaches the <body_length> or the time reaches <input_time>, UC15 will exit from data mode automatically. Unless the inputted data is less than the <body_length>, you can finish editing body by inputting “+++” or changing DTR level from low to high before <input_time>, at that situation, you cannot reenter data mode by executing ATO command.

1.4. Error Handling

1.4.1. Executing SMTP AT Command Fails

If you execute SMTP AT command and receive response “ERROR” from UC15 module, please check if the SIM card is inserted and AT+CPIN? is in “+CPIN: Ready” status.

1.4.2. PDP Activation Fails

If you failed to activate PDP context by AT+QIACT command, please check the following aspects:

1. Query whether the PS domain is attached by AT+CGATT? command, if not, execute AT+CGATT=1 to attach PS domain.
2. Query the CGREG status by AT+CGREG? and make sure the PS domain has been registered.
3. Query the PDP context parameters by AT+QICSGP command, make sure the APN of specified PDP context is set.
4. Make sure the specified PDP context ID is neither used by PPP nor activated by AT+CGACT command.
5. According to 3GPP Spec, it only supports three PDP contexts activated simultaneously, so you must make sure the number of activated PDP contexts is less than 3.

If the result of checking is OK, but the result of executing AT+QIACT command always fails, please reboot the UC15 module to resolve this issue. After booting the UC15 module, please check the terms mentioned above at least three times and each time at an interval of 10 minutes to avoid frequently rebooting UC15 module.

1.4.3. DNS Parse Fails

When executing AT+QSMTPPUT commands, if it responds “+QSMTPPUT: 653,0”, please check following aspects:

1. Make sure the domain name of SMTP server is valid.
2. Query the status of PDP context by AT+QIACT? to make sure the specified PDP context is activated successfully.

1.4.4. Error Response of AT+QSMTPPUT

“+QSMTPPUT: <err>,<protocol_error>” will be returned after operating AT+QSMTPPUT.

If <err> is not 0, it indicates the sending is failed, please resend it. If resending is not successful, you should deactivate the PDP context by AT+QIDEACT command, and try again. (Please refer to Chapter 1.4.2.)

If the <protocol_error> is not 0, it indicates the error code replied from SMTP server. You can check the issue depending on the protocol error code. For example, if <protocol_error> is 535 (Authentication failed, refer to Chapter 5), <username> or <password> may be wrong. If <protocol_error> is 530 (Access denied, refer to Chapter 5), you may send email too often and the SMTP server rejects to post email. For details, you can refer to the document RFC2821 (Simple Mail Transfer Protocol).

2 Description of AT Command

2.1. AT+QSMTPCFG SMTP Configuration

Configure SMTP server, user account and SSL settings. If the write command just takes one parameter, it will query the current settings.

AT+QSMTPCFG SMTP Configuration	
Test Command **AT+QSMTPCFG=?**	Response **+QSMTPCFG: "account",<username>,<password>** **+QSMTPCFG: "sender",<sender_name>,<sender_email>** **+QSMTPCFG: "smtpserver",<srvaddr>,<srvport>** **+QSMTPCFG: "contextid",(1-16)** **+QSMTPCFG: "sslctxid",(0-5)** **+QSMTPCFG: "ssltype",(0-2)** **OK**
Write Command **AT+QSMTPCFG="account"[,<username>,<password>]**	Response If <username> and <password> are not omitted: **OK** or **+CME ERROR: <err>** Else query the current settings: **+QSMTPCFG: "account",<username>,<password>** **OK**
Write Command **AT+QSMTPCFG="sender"[,<sender_name>,<sender_email>]**	Response If <sender_name>,<sender_email> are not omitted: **OK** or **+CME ERROR: <err>** Else query the current settings: **+QSMTPCFG: "sender",<sender_name>,<sender_email>**

	OK
Write Command **AT+QSMTPCFG="smtpserver"[,<srvaddr>,<srvport>]**	Response If <srvaddr> and <srvport> are not omitted: **OK** or **+CME ERROR: <err>** Else query the current settings: **+QSMTPCFG: "smtpserver",<srvaddr>,<srvport>** **OK**
Write Command **AT+QSMTPCFG="contextid"[,<contextID>]**	Response If <contextID> is not omitted: **OK** or **+CME ERROR: <err>** Else query the current settings: **+QSMTPCFG: "contextid",<contextID>** **OK**
Write Command **AT+QSMTPCFG="sslctxid"[,<sslctxID>]**	Response If <sslctxID> is not omitted: **OK** or **+CME ERROR: <err>** Else query the current settings: **+QSMTPCFG: "sslctxid",<sslctxID>** **OK**
Write Command **AT+QSMTPCFG="ssltype"[,<ssltype>]**	Response If <ssltype> is not omitted: **OK** or **+CME ERROR: <err>** Else query the current settings: **+QSMTPCFG: "ssltype",<ssltype>** **OK**

Parameter

<username>	String type, the user name for the authentication. The maximum size of the parameter is 50 bytes.
<password>	String type, the password for the authentication. The maximum size of the parameter is 50 bytes.
<sender_email>	String type, the email address of the sender. The maximum size of the parameter is 50 bytes.
<sender_name>	String type, the sender's name that will be shown when the recipients receiving the email. The maximum size of the parameter is 50 bytes.
<srvaddr>	String type, the IP address or domain name of the SMTP server. The maximum size of the parameter is 50 bytes.
<srvport>	Integer type, the port of the SMTP server. The default value is 25. It may be different depending on different SMTP server. For details, please query the corresponding mail service provider.
<contextID>	Integer type, the PDP context ID, the range is 1-16, default value is 1. It should be activated by AT+QIACT before sending email. (For details, please refer to *UC15_TCPIP_AT_Commands_Manual*)
<sslctxID>	Integer type, choose a SSL context ID for SMTP. The range is 0-5, default value is 1. You should configure the SSL context ID by AT+QSSLCFG="ciphersuite",<sslctxID>,<ciphersuite>. (For details, please refer to the command AT+QSSLCFG in *UC15_SSL_AT_Commands_Manual*)
<ssltype>	Integer type, configure the SSL type, please choose SSL type according to the mail service provider, since some SMTP servers do not support sending email without SSL. 0 Without SSL 1 SSL 2 STARTTLS
<err>	Integer type, indicates the error code of the operation. It is the type of error (For details, please refer to Chapter 4).

2.2. AT+QSMTPDST Add or Delete Recipients

You can add recipients by AT+QSMTPDST. The maximum number of recipients is 20, including CC recipients and BCC recipients. You can run AT+QSMTPDST=0 to delete all recipients.

AT+QSMTPDST Add or Delete Recipients	
Test Command **AT+QSMTPDST=?**	Response **+QSMTPDST: (0,1),(1-3),<emailaddr>** **OK**

Read Command **AT+QSMTPDST?**	Response **[+QSMTPDST: <type>,<emailaddr><CR><LF>]** **OK**
Write Command **AT+QSMTPDST=<mode>[,<type>[,<emailaddr>]]**	Response If format is right and it is not sending email: **OK** or **+CME ERROR: <err>**

Parameter

<mode>	Integer type, indicates to add a recipient or delete a recipient. 0 Delete 1 Add
<type>	Integer type, indicates the type of the recipient. 1 Recipient 2 CC recipient 3 BCC recipient
<emailaddr>	String type, the email address of recipient. The maximum size of the parameter is 50 bytes.
<err>	Integer type, indicates the operation error code. It is the type of error (For details, please refer to the Chapter 4).

Example

```
//Add recipients.
AT+QSMTPDST=1,1,“quectel_test@aol.com”      //Add a recipient and the recipient type is 1 which means recipients.

OK
AT+QSMTPDST=1,2,“quectel_test@21cn.com”     //Add a recipient and the recipient type is 2 which means CC recipients.

OK
AT+QSMTPDST?
+QSMTPDST: 1,“quectel_test@aol.com”
+QSMTPDST: 2,“quectel_test@21cn.com”

OK

//Delete all recipients.
AT+QSMTPDST=0                               //Delete all recipients.
OK
AT+QSMTPDST?
OK
```

2.3. AT+QSMTPSUB Edit the Subject of the Email

Edit the subject of the email. If the <charset> is not ASCII, the inputted data should be the hex string of the original subject.

AT+QSMTPSUB Edit the Subject of the Email	
Test Command **AT+QSMTPSUB=?**	Response **+QSMTPSUB: (0-3),<subject>** **OK**
Read Command **AT+QSMTPSUB?**	Response **+QSMTPSUB: <charset>,<subject>** **OK**
Write Command **AT+QSMTPSUB=<charset>,<subject>**	Response **OK** or **+CME ERROR: <err>**

Parameter

<charset>	Integer type, indicates the character set of the subject. 0 ASCII 1 UTF-8 2 GB2312 3 BIG5
<subject>	String type, the subject of the email. If <charset> is 0, this string will be the subject of the email. Otherwise, it is formatted as a hex string, e.g. “41” means the hex value 0x41. If the character set is ASCII, the length of <subject> is 0-100. If the character set is not ASCII, the length of <subject> should be even and the range is 0-200.
<err>	Integer type, indicates the operation error code. It is the type of error (For details, please refer to Chapter 4).

Example

```
//Add subject for email and the <charset> is ASCII.
AT+QSMTPSUB=0,“TEST SMTP”          //Edit subject and the character set is 0 which means ASCII.
OK
AT+QSMTPSUB?                       //Query the subject of email.
+QSMTPSUB: 0,“TEST SMTP”
```

```
OK

//Add subject for email and the <charset> is UTF8. “7465737420534D5450” is the hex string of “TEST SMTP”.

AT+QSMTPSUB=1,"7465737420534D5450"        //Edit subject and the character set is 1 which means UTF8.

OK
AT+QSMTPSUB?                              //Query the subject of email.
+QSMTPSUB: 1,“7465737420534D5450”

OK
```

2.4. AT+QSMTPBODY Edit the Body of the Email

Edit the body of the email. When you execute AT+QSMTPBODY, UC15 module will enter into data mode. All inputted data will be the body of email. If the inputted data reaches the <body_length> or the time reaches <input_time>, UC15 will exit from data mode automatically. If the inputted data is less than the <body_length>, you can finish editing body by inputting “+++” or changing DTR level from low to high before <input_time>. The maximum size of the email body is 10 Kbytes. The actual body length is the inputted data length.

AT+QSMTPBODY Edit the Body of the Email	
Test Command **AT+QSMTPBODY=?**	Response **+QSMTPBODY: (0-3),(1-10240),(1-65535)** **OK**
Read Command **AT+QSMTPBODY?**	Response **OK**
Write Command **AT+QSMTPBODY=<charset>,<body_length>[,<input_time>]**	Response If format is right and it is not sending email: **CONNECT** <Input body data> **+QSMTPBODY: <input_length>** **OK** Else response: **+CME ERROR: <err>**

Parameter

<charset>	Integer type, indicates the character set of the body. 0 ASCII 1 UTF-8 2 GB2312 3 BIG5
<body_length>	Integer type, the specific length of body. If the length of inputted data is less than the specific value <body_length>, you can exit from data mode by "+++", the actual length of the body is the inputted data length. The range is 1-10240 bytes.
<input_length>	The actual length of the inputted body.
<input_time>	Integer type, the maximum time to upload email body from COM port. The unit is second. The range is 1-65535, default value is 90.
<err>	Integer type, indicates the operation error code. It is the type of error (For details, please refer to Chapter 4).

Example

```
//Edit email body and the body length is 100bytes.
AT+QSMTPBODY=0,100,120          //Edit email body, the character set is 0 which means ASCII, and the maximum input length is 100 bytes and the maximum input time is 120s.

CONNECT
<Input 100 bytes data>          //Input 100 bytes data.
+QSMTPBODY: 100

OK

//If the actual inputted data is less than specified length and you want to end the editing of body, you should input "+++".
AT+QSMTPBODY=0,100,120          //Edit email body, the character set is 0 which means ASCII, and the maximum input length is 100 bytes and the maximum input time is 120s.

CONNECT
<Input 90 bytes data>
                                //Input "+++"
+QSMTPBODY: 90

OK

//If the actual inputted data is less than specified length and the maximum input time expired, UC15 will end the editing of body automatically.
AT+QSMTPBODY=0,100,120          //Edit email body, the character set is 0 which means ASCII, and
```

	the maximum input length is 100 bytes and the maximum input time is 120s.
CONNECT **<Input 90 bytes data>**	
	//120s later.
+QSMTPBODY: 90 **OK**	

2.5. AT+QSMTPATT Edit the Attachments of the Email

UC15 can add attachments for email by AT+QSMTPATT. When adding an attachment, you should specified the file index. As a result, different attachments should have different file index. The maximum number of attachments is 10.

The attachments can be RAM files or UFS files. It is strongly recommended to use RAM file to upload the attachments. You can upload a file to RAM or UFS by AT+QFUPL (For details, please refer to *UC15_FILE_AT_Commands_Manual*). After sending email successfully, you should delete the file by AT+QFDEL (For details, please refer to *UC15_FILE_AT_Commands_Manual*). The mail service provider may have some restriction on single file size and total size. If you want to delete attachments, you can run AT+QSMTPATT=0 to delete all attachments.

AT+QSMTPATT Edit the Attachments of the Email	
Test Command **AT+QSMTPATT=?**	Response **+QSMTPATT: (0,1),(1-10),<file_name>** **OK**
Read Command **AT+QSMTPATT?**	Response **[+QSMTPATT: <file_index>,<file_name>,<file_size><CR><LF>]** **OK**
Write Command **AT+QSMTPATT=<mode>[,<file_index>,<file_name>]**	Response **OK** or **+CME ERROR: <err>**

Parameter

<mode>	Integer type, indicates to add or delete an attachment.	
	0	Delete
	1	Add

<file_index>	Integer type, the index of the attachment. The range is 1-10.
<file_name>	String type, the file name of the attachment to be added. The maximum size of the parameter is 50 bytes. If it is started with "RAM:" it will get the specified file in RAM. Otherwise it will get the specified file in UFS as the attachment.
<file_size>	Integer type, the size of the attachment. The unit is byte.
<err>	Integer type, indicates the operation error code. It is the type of error (For details, please refer to Chapter 4).

Example

//You can add attachments from RAM and UFS. After the email is sent, you should delete the file by AT+QFDEL. It is strongly recommended to use the file in RAM as the attachments, not to use UFS to store the file. The detailed example is shown as follows:

```
AT+QFUPL="RAM:test.txt",200,300,1        //Upload a file to RAM, the file will be saved as "test.txt" and the maximum size of file is 200 bytes. 300 indicates timeout, 1 indicates ACK mode. (For details, please refer to UC15_FILE_AT_Commands_Manual)
CONNECT
<Input 200 bytes data>
+QFUPL: 200,707

OK

AT+QFLST="RAM:*"
+QFLST: "RAM:test.txt",200

OK
AT+QSMTPATT=1,1,"RAM:test.txt"           //Add an attachment for email and the file index is 1.
OK
AT+QSMTPATT?                             //Query the attachments.
+QSMTPATT: 1,"RAM:test.txt",200

OK
```

//You can add attachments from UFS. After sending email successfully, you should delete the file by AT+QFDEL. It is strongly recommended to use RAM file to upload the attachments, not to use UFS to store file. The detailed example is shown as follows:

```
AT+QFUPL="smtp.txt",100,200,1            //Upload a file to UFS, the file will be saved as "smtp.txt" and the maximum size of file is 100 bytes. 200 indicates timeout, 1 indicates ACK mode. (For details, please refer to UC15_FILE_AT_Commands_Manual)
CONNECT
<Input 100 bytes data>
+QFUPL: 100,707
```

```
OK
AT+QFLST
+QFLST: “smtp.txt”,100

OK
AT+QSMTPATT=1,2,“smtp.txt”          //Add an attachment for email and the file index is 2.
OK
AT+QSMTPATT?                        //Query the attachments.
+QSMTPATT: 1,“RAM:test.txt”,200
+QSMTPATT: 2,“smtp.txt”,100

OK

//Of course, you can delete all attachments as follows:

AT+QSMTPATT=0                       //Delete all attachments for email.
OK
AT+QSMTPATT?                        //Query the attachments.
OK
```

2.6. AT+QSMTPCLR Clear the Content of Email

AT+QSMTPCLR will clear the content of AT+QSMTPDST, AT+QSMTPSUB, AT+QSMTPBODY and AT+QSMTPATT.

AT+QSMTPCLR Clear the Content of Email	
Test Command **AT+QSMTPCLR=?**	Response **OK**
Execute Command **AT+QSMTPCLR**	Response **OK** or **+CME ERROR: <err>**

Parameter

<err>	Integer type, indicates the operation error code. It is the type of error (For details, please refer to Chapter 4).

Example

```
AT+QSMTPCLR                    //Clear the recipients, subject, body and attachments for email.

OK
AT+QSMTPDST?                   //Query the recipients of email
OK
AT+QSMTPSUB?                   //Query the subject of email.
+QSMTPSUB: 0,""

OK
AT+QSMTPATT?                   //Query the attachments of email.
OK
```

2.7. AT+QSMTPPUT Send Email

AT+QSMTPPUT may take some time to complete depending on the total size of attachments and network status. You should not send email again before receiving "+QSMTPPUT: <err>,<protocol_error>", which indicates the ending of sending email. If <err> is not 0, you can resend the email by executing AT+QSMTPPUT=<timeout> directly.

AT+QSMTPPUT Send Email	
Test Command **AT+QSMTPPUT=?**	Response **+QSMTPPUT: (60-65535)** **OK**
Write Command **AT+QSMTPPUT=<timeout>**	Response If format is right and it is not sending email: **OK** **+QSMTPPUT: <err>,<protocol_error>** or **+CME ERROR: <err>**

Parameter

<timeout>	Integer type, the maximum time to send email. The unit is second. The range is 60-65535.
<err>	Integer type, indicates the error code of sending email. If it is not 0, it is the type of error (For details, please refer to the Chapter 4). If it is 0, it means the operation is successful.
<protocol_error>	Integer type, for reference only, indicates the original error code from SMTP

	server which is defined in SMTP protocol (For details, please refer to Chapter 5). If it is 0, it is invalid.

Example

```
AT+QSMTPPUT=300                    //Send email and the maximum time is 300s.
OK

+QSMTPPUT: 0,0                     //Send email successfully, If <err> is not 0, you
                                     can resend the email by executing
                                     AT+QSMTPPUT=<timeout> directly.
```

3 Example

3.1. Send Email without SSL

Send email without SSL, you will not use SSL function and send email by insecure connection. For example:

```
//Step 1: Configure and activate the PDP context.
AT+QICSGP=1,1,“UNINET”,“”,“”,1          //Configure PDP context 1, APN is “UNINET” for China Unicom.

OK
AT+QIACT=1                              //Activate PDP context 1.
OK                                      //Activate successfully.
AT+QIACT?                               //Query the state of PDP context.
+QIACT: 1,1,1,“10.7.157.1”

OK
AT+QSMTPCFG=“contextid”,1               //Set the PDP context ID as 1. The PDP context ID must be activated first.

OK

//Step 2: Configure SMTP server and user account.
AT+QSMTPCFG=“ssltype”,0                 //Set the SSL type as without SSL for SMTP. You will not use SSL function and send email by insecure connection.
AT+QSMTPCFG=“smtpserver”,“smtp.aol.com”,25  //Set the IP address or domain name and port of SMTP server. The port of SMTP server depends on mail service provider

OK
AT+QSMTPCFG=“account”,“quectel_test@aol.com”,“aol123456789”  //Set username and password.
OK
AT+QSMTPCFG=“sender”,“quectel_test”,“quectel_test@aol.com”   //Set sender name and sender address. The sender name will be shown when the email is received.
```

```
OK

//Step 3: Edit the email content.

AT+QSMTPDST=1,1,“quectel_test@163.com”        //Add a recipient and the recipient type is 1 which means recipients.

OK
AT+QSMTPDST=1,2,“quectel_test@21cn.com”       //Add a recipient and the recipient type is 2 which means CC recipients.

OK
AT+QSMTPDST?
+QSMTPDST: 1,“quectel_test@163.com”
+QSMTPDST: 2,“quectel_test@21cn.com”

OK
AT+QSMTPSUB=0,“TEST  SMTP”                    //Edit subject and the character set is 0 which means ASCII.

OK
AT+QSMTPSUB?                                  //Query the subject of email.
+QSMTPSUB: 0,“TEST SMTP”

OK
AT+QSMTPBODY=0,100,120                        //Edit email body, the character set is 0 which means ASCII, and the maximum input length is 100 bytes and the maximum input time is 120s.

CONNECT
<Input 100 bytes data>
+QSMTPBODY: 100

OK
AT+QFUPL=“RAM:smtp.txt”,100,200,1             //Upload a file to RAM, the file will be saved as “smtp.txt” and the maximum size of file is 100 bytes. 200 indicates timeout, 1 indicates ACK mode. (For details, please refer to documents UC15_FILE_AT_Commands_Manual).

CONNECT
<Input 100 bytes data>
+QFUPL: 100,707

OK
AT+QFLST=“RAM:*”
+QFLST: “RAM:smtp.txt”,100

OK
AT+QSMTPATT=1,1,“RAM:smtp.txt”                //Add an attachment for email and the file index is 1.
```

```
OK
AT+QSMTPATT?                                    //Query the attachment.
+QSMTPATT: 1, “RAM:smtp.txt”,100

OK

//Step 4: Send email.

AT+QSMTPPUT=300                                 //Send email and the maximum time is 300s.
OK

//It may take a few minutes.

+QSMTPPUT: 0,0                                  //Send email successfully. If <err> is not 0, you can
                                                  resend the email by executing
                                                  AT+QSMTPPUT=<timeout> directly.

//Step 5: Clear email contents and deactivate PDP context.

AT+QSMTPCLR                                     //Clear recipients, subject, body and attachments
OK
AT+QFDEL=“RAM:smtp.txt”                         //Delete the file as attachment.
OK

//You can repeat step 3 and step 4 to send emails. Of course, you can also repeat step 2 to step 4 to send
emails

AT+QIDEACT=1                                    //Deactivate the PDP context which is activated for
                                                  SMTP
OK
```

3.2. Send Email by SSL

Send email by SSL, you will send email by SSL/TLS encrypted SMTP, the port of SMTP server depends on mail service provider and usually the port is 465 or 587. The difference between sending email without SSL is in configuring SMTP server and user account.

```
//Configure SSL type.

AT+QSMTPCFG=“ssltype”,1                         //Set the SSL type as 1 which means you
                                                  will send email by SSL.
OK
AT+QSMTPCFG=“sslctxid”,1                        //Choose SSL context 1 for SMTP
OK
AT+QSSLCFG=“ciphersuite”,1, 0xffff              //Configure SSL cipher suite type as 0xffff,
                                                  which supports all cipher suite type .

OK
```

```
AT+QSSLCFG="seclevel",1,0                    //Configure SSL security level as 0, which means the SSL CA cert is not needed .

OK
AT+QSSLCFG="sslversion",1,1                  //Configure SSL version as 1, which means TLS1.0.

OK

//Configure SMTP server.

AT+QSMTPCFG="smtpserver","smtp.gmail.com",465    //Set SMTP server address and port.
OK

//As the SMTP server is different, the account information will be different too. As an example, we provide the following information.

AT+QSMTPCFG="account","quecteltestmail@gmail.com","yy123456"    //Set user name and password.

OK
AT+QSMTPCFG="sender","quectel","quecteltestmail@gmail.com"      //Set sender name and sender address.

OK
```

3.3. Send Email by STARTTLS

Send email by STARTTLS, you will upgrade the normal insecure connection to secure connection through STARTTLS function and send the mail data. The difference between sending email without SSL is configuring SMTP server and user account. The port of SMTP server depends on mail service provider and usually the port is 25,465 or 587.

```
//Configure SSL type.

AT+QSMTPCFG="ssltype",2                      //Set the SSL type as 2, which means you will send email by STARTTLS.

OK
AT+QSMTPCFG="sslctxid",1                     //Choose SSL context 1 for SMTP
OK
AT+QSSLCFG="ciphersuite",1, 0xffff           //Configure SSL cipher suite type as 0xffff, which supports all cipher suite type .

OK
AT+QSSLCFG="seclevel",1,0                    //Configure SSL security level as 0, which means the SSL CA cert is not needed .

OK
AT+QSSLCFG="sslversion",1,1                  //Configure SSL version as 1, which means TLS1.0.

OK
```

```
//Configure SMTP server.
AT+QSMTPCFG="smtpserver","smtp.gmail.com",25          //Set SMTP server address and port.
OK
//As the SMTP server is different, the account information will be different as well. As an example, the following information is provided.
AT+QSMTPCFG="account","quecteltestmail@gmail.com","yy123456"          //Set username and password.
OK
AT+QSMTPCFG="sender","quectel","quecteltestmail@gmail.com"          //Set sender name and sender address.
OK
```

4 Summary of Error Codes

The error code <err> indicates an error related to mobile equipment or network. The details about <err> are described in the following table.

Table 1: Summary of Error Codes

<err>	Meaning
651	Unknown error
652	The SMTP service is busy. Such as, uploading body or sending email
653	Failed to get IP address according to domain name
654	Network error. Such as, failed to activate GPRS/CSD context, failed to establish the TCP connection with the SMTP server or failed to send email to the SMTP server, etc.
655	Unsupported authentication type
656	The connection for the SMTP service is closed by peer.
657	GPRS/CSD context is deactivated
658	Timeout
659	No recipient for the SMTP service
660	Failed to send email
661	Failed to open file
662	No enough memory for the attachment
663	Failed to save the attachment
664	The input parameter is wrong
665	SSL authentication fail
666	Service not available, closing transmission channel
667	Requested mail action not taken: mailbox unavailable

668	Requested action aborted: local error in processing
669	Requested action not taken: insufficient system storage
670	Syntax error, command unrecognized
671	Syntax error in parameters or arguments
672	Command not implemented
673	Bad sequence of commands
674	Command parameter not implemented
675	<domain> does not accept mail (see rfc1846)
676	Access denied
677	Authentication failed
678	Requested action not taken: mailbox unavailable
679	User not local; please try <forward-path>
680	Requested mail action aborted: exceeded storage allocation
681	Requested action not taken: mailbox name not allowed
682	Transaction failed

5 Summary of SMTP Protocol Error Codes

The protocol error code <protocol_error> indicates an error replied from SMTP server. Please refer to RFC2821 (Simple Mail Transfer Protocol). The details about <protocol_error> are described in the following table.

Table 2: Summary of SMTP Protocol Error Codes

<protocol_error>	Meaning
421	Service not available, closing transmission channel
450	Requested mail action not taken: mailbox unavailable
451	Requested action aborted: local error in processing
452	Requested action not taken: insufficient system storage
500	Syntax error, command unrecognized
501	Syntax error in parameters or arguments
502	Command not implemented
503	Bad sequence of commands
504	Command parameter not implemented
521	<domain> does not accept mail (see rfc1846)
530	Access denied
535	Authentication failed
550	Requested action not taken: mailbox unavailable
551	User not local; please try <forward-path>
552	Requested mail action aborted: exceeded storage allocation
553	Requested action not taken: mailbox name not allowed
554	Transaction failed

6 Appendix A Reference

Table 3: Related Documents

SN	Document Name	Remark
[1]	RFC2821	Simple Mail Transfer Protocol
[2]	RFC3207	SMTP service extension for secure SMTP over transport layer security
[3]	UC15_TCPIP_AT_Commands_Manual	Introduction about UC15 TCPIP AT commands
[4]	UC15_FILE_AT_Commands_Manual	Introduction about UC15 file AT commands
[5]	UC15_AT_Commands_Manual	UC15 AT commands manual
[6]	UC15_SSL_AT_Commands_Manual	Introduction about UC15 SSL AT commands

Table 4: Terms and Abbreviations

Abbreviation	Description
SMTP	Simple Mail Transfer Protocol
SSL	Security Socket Layer
TLS	Transport Layer Security
PDP	Packet Data Protocol
CC	Carbon Copy
BCC	Blind Carbon Copy
DTR	Data Terminal Ready
PPP	Point-to-Point Protocol
DNS	Domain Name Server