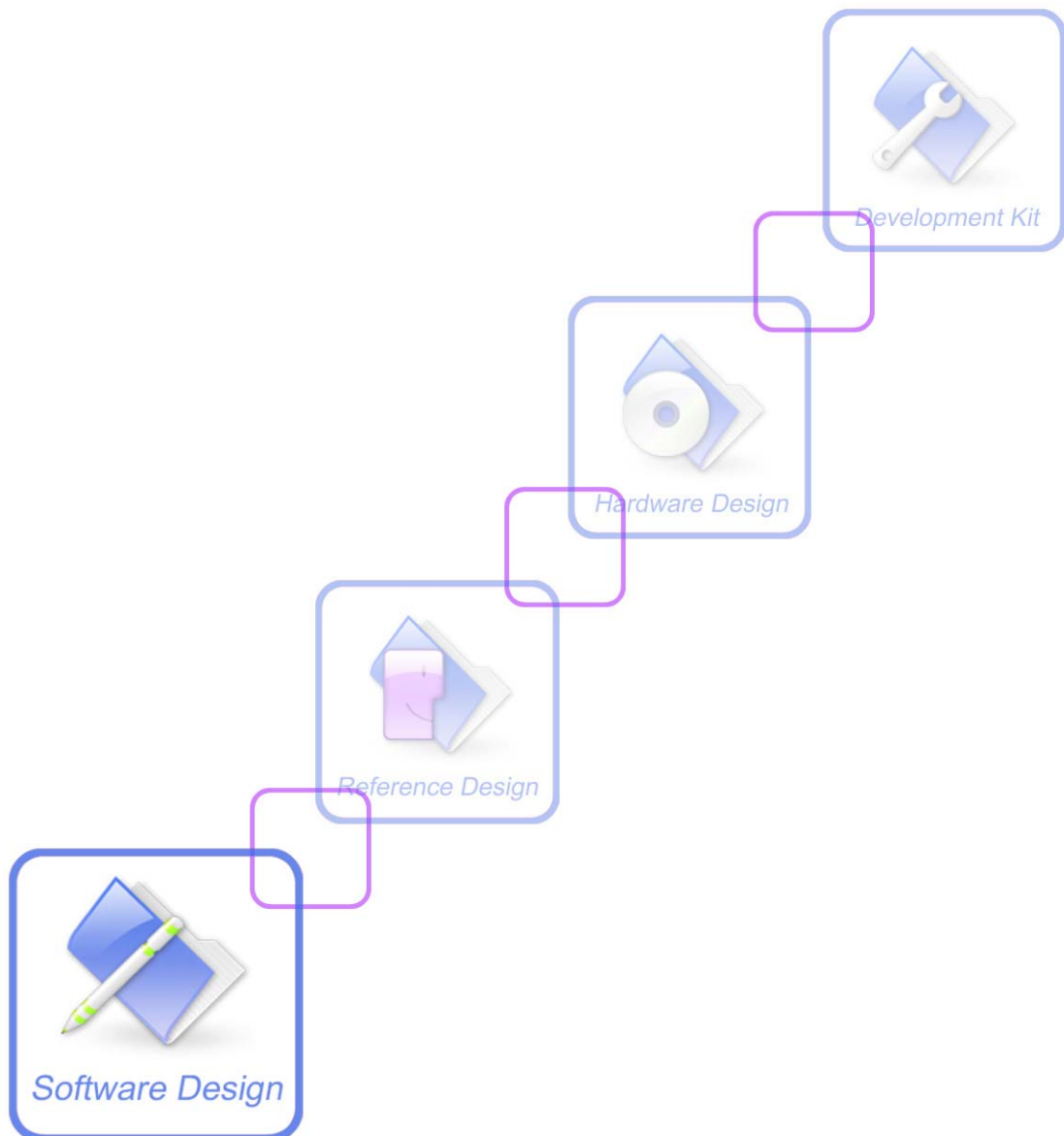




Email(SMTP/POP3) Application Note



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Version History

Version	Chapter	Comments
V0.01	New Version	

Contents

Version History	2
Contents	3
Email(SMTP/POP3) Application Note	4
1. Overview	4
2. Call Commands	6
3. SMTP Application	8
3.1 Parameter Configuration	8
3.2 Write/Send Email	8
3.3 Abort Email Application	9
4. POP3 Application	9
4.1 Parameter Configuration	9
4.2 Inquire New Email	9
4.3 Peek At New Email	10
4.4 Retrieve Email Without Delete.....	11
4.5 Retrieve Email With Delete.....	12
4.6 Abort POP3 Application.....	13
4.7 Read Email In File System.....	14
5. Conflict AT Commands	15
Contact Us.....	16

Email(SMTP/POP3) Application Note

1. Overview

Simple Mail Transfer Protocol (SMTP) is an internet standard for electronic mail (e-mail) transmission across Internet Protocol (IP) networks, and it is a text-based protocol.

To sending an e-mail successfully, TE must set some mandatory parameters for SMTP client correctly, such as SMTP server address, sender and recipient address. After the process of sending an e-mail is started, SMTP Client will initiates a Transmission Control Protocol (TCP) session with the SMTP server to send e-mail.

SMTP features:

- Support SMTP authentication basing on SMTP server.
- Multi-recipient: TO, CC and BCC.
- ASCII test as e-mail subject, up to 512 characters.
- ASCII test as e-mail body, up to 5120 characters.
- E-mail attachments from File System: total size up to 10MB or maximal number up to 10 files.
- Stop SMTP application and close TCP session directly.

SMTP URCS (Unsolicited Result Code)

+SMTP: OK	TCP session is OK, and start sending e-mail.
+SMTP: SUCCESS	Send e-mail successfully, and network is closed.
+SMTP: ONGOING	Another e-mail is being sent.
+SMTP: PARAM ERROR	Mandatory parameter is invalid.
+SMTP: NETWORK ERROR	Network is unavailable for SMTP.
+SMTP: SERVER ERROR	Invalid SMTP server, or network is bad for establishing session or sending data to SMTP server.
+SMTP: AUTH REQUIRED	SMTP server released the session, or SMTP server rejects the operation with wrong response, or SMTP server doesn't give SMTP client a response in time.
+SMTP: AUTH REQUIRED	Authentication is required by SMTP server.
+SMTP: AUTH ERROR	SMTP server rejects the session because of bad user name and password combination.
+SMTP: BAD RCPT [<recipient address>]	Invalid recipient address, or SMTP server can't forward this e-mail to the address.

SMTP elements to construct e-mail's header

sender's address and name, recipient's address and name, mail subject, Real Time Clock (RTC) and time-zone. It is recommended to set RTC and time-zone (refer to command +CCLK).

Post Office Protocol – Version 3 (POP3) is an application-layer internet standard protocol used by local e-mail client (POP3 client) to retrieve and delete e-mail from a remote POP3 server over a TCP/IP connection.

POP3 features:

- POP3 server authentication.
- Number and total size of new e-mails.
- Get e-mail ID size of each e-mail.
- Peek at e-mail's header.
- Get and delete e-mail from POP3 server.
- Save e-mail and attachment basing on File System (Local storage or storage card).
- Read the latest e-mail directly, or read e-mail from File System.
- Stop POP3 application and close TCP session directly.

POP3 basic functionality:

- Inquire whether new e-mail has arrived but not retrieve it.
- Peek at e-mail whether it is worth retrieving (read mail header).
- Retrieve e-mail from POP3 server but not delete it on the server.
- Retrieve e-mail from POP3 server and delete it on the server.

POP3 URCs (Unsolicited Result Code)

+POP3: SUCCESS	POP3 client gets an e-mail successfully.
+POP3: FAILURE	POP3 client gets an e-mail unsuccessfully.
+POP3: NETWORK ERROR	Invalid POP3 server, or network is bad to establish session or sending data to POP3 server.
+POP3: SERVER ERROR	POP3 server released the session, or POP3 server rejects the operation with wrong response, or POP3 server doesn't give POP3 client a response in time, or POP3 client gives wrong e-mail's ID. POP3 client will not close the session.
+POP3: INVALID UN	Invalid user name to log in POP3 server.
+POP3: INVALID UN/PWD	Invalid user name and password combination to log in POP3 server.
+POP3: FILE SYSTEM ERROR	File system is bad for saving E-mail or attachment, storage space isn't enough, or storage card is pulled out. If POP3 client encounters this error, POPE client will close the session with POP3 server.

NOTE SMTP timer: 30 seconds, if expired, SMTP application will stop.
POP3 timer: 30 seconds, if expired, SMTP application will stop.

2. Call Commands

This section only lists e-mail(SMTP/POP3) related commands. Please refer to AT command document to get detailed descriptions.

AT+SMTPSRV

Configure SMTP server, including server address and its port number.

E.g. AT+SMTPSRV="smtp.server.com",25

AT+SMTPAUTH

Configure if SMTP client provides user name and password SMTP server when access SMTP server.

If SMTP server requests authentication but SMTP client does not provide, Email will be sent with a failed result.

E.g. AT+SMTPAUTH=0 >> *No authentication reques.t*
 AT+SMTPAUTH=1,"un","pwd" >> *SMTP server requests authentication.*

AT+SMTPFROM

Configure sender's mail address and present name, they are used to construct email header.

E.g. AT+SMTPFROM="mike@server.com","mike"
 AT+SMTPFROM="mike@server.com" >> *Only configure mail address.*

AT+SMTPRCPT

Configure recipients' mail address and name for each email.

E.g. AT+SMTPRCPT=0,0,"toaddr@server.com","toname" >> *First normal recipient*
 AT+SMTPRCPT=0,1,"toaddr@server.com" >> *Second normal recipient without name*
 AT+SMTPRCPT=0,0 >> *Clear the first normal recipient*
 AT+SMTPRCPT=0 >> *Clear all normal recipient*
 AT+SMTPRCPT=1,0,"ccaddr@server.com","ccname" >> *First CC recipient*
 AT+SMTPRCPT=2,0,"bccaddr@server.com","bccname" >> *Frist BCC recipient*

AT+SMTPSUB

Write the subject for each mail.

E.g. AT+SMTPSUB="First email"

AT+SMTPBODY

Write the content for each mail.

E.g. AT+SMTPBODY="This is the first email!"

AT+SMTPFILE

Select files from current directory in file system (local space or storage card) as email's attachments.

E.g. AT+SMTPFILE=1,"file1" >> *Select "file1" as the first attachment*
 AT+SMTPFILE=2,"file2" >> *Select "file2" as the second attachment*
 AT+SMTPFILE=1 >> *Delete the first attachment*
 AT+SMTPFILE >> *Delete all attachments (no attachment)*

AT+SMTPSEND

Establish TCP session between SMTP client and server, construct and send email. URC "+SMTP: SUCCESS" indicates a successful result. Command +SMTPSEND? can be used to inquire if SMTP client is in idle state.

AT+SMTPSTOP

Force to stop the TCP session and then SMTP client is in idle state.

AT+POP3SRV

Configure POP3 server and access account.

E.g. AT+POP3SRV="pop3.server.com","un","pwd",110

AT+POP3IN

Establish TCP session and access POP3 server.

AT+POP3NUM

Inquire the number of unread emails and the total size of these unread emails.

AT+POP3LIST

List each email's ID(from 1 to unread emails' number) and size, or list specified email's ID and size.

AT+POP3HDR

Get specified email's header from POP3 server.

AT+POP3GET

Get specified email and save email's attachments into directory "C:/Email" or "D:/Email" (depending on the value of command +FSLOCA)

AT+POP3DEL

Mark the email and after POP3 client finishes the session normally, POP3 server will delete the specified email.

AT+POP3OUT

Finish the session normally.

AT+POP3STOP

Force to finish the session.

AT+POP3READ

Return last or specified email's header and content.

3. SMTP Application

3.1 Parameter Configuration

Host must configure mandatory parameters for SMTP client before SMTP application. The mandatory parameters include <socket PDP context>, <server address>, <server port>, <authentication or not>, <sender address> and <sender name>.

NOTE Only configure mandatory parameters once correctly, until reboot.

```
AT+CGSOCKCONT=1,"IP","3GNET","0.0.0.0",0,0
OK
AT+SMTPSRV="smtp.server.com",25
OK
AT+SMTPAUTH=1,"UserName","password"
OK
AT+SMTPFROM="UserName@server.com","PresentName"
OK
```

3.2 Write/Send Email

Commands +SMTPSUB, +SMTPBODY and +SMTPFILE are used to complete an email.

Command +SMTPSEND is used to send the email.

For multi-email, host can control SMTP client to repeat the same process for many times.

```
AT+SMTPRCPT=0,0,"ToAddr@server.com","ToName"
OK
AT+SMTPRCPT=1,0,"CcAddr@server.com","CcName"
OK
AT+SMTPSUB="First Email"
OK
AT+SMTPBODY="This is the first Email!"
OK
AT+FSCD=C:/Picture
+FSCD: C:/Picture/
OK
AT+FSLs
+FSLs: FILES:
20100202_100006.jpg
20100202_100016.jpg
OK
```

```
AT+SMTPFILE=1,"20100202_100006.jpg"
```

```
OK
```

```
AT+SMTPFILE=2,"20100202_100016.jpg"
```

```
OK
```

```
AT+SMTPSEND
```

```
+SMTP: OK
```

```
OK
```

```
+SMTP: SUCCESS
```

3.3 Abort Email Application

Commands +SMTPSUB, +SMTPBODY and +SMTPFILE are used to complete an email.

```
AT+SMTPRCPT=0,0,"ToAddr@server.com","ToName"
```

```
OK
```

```
AT+SMTPSUB="First Email"
```

```
OK
```

```
AT+SMTPBODY="This is the first Email!"
```

```
OK
```

```
AT+SMTPSEND
```

```
+SMTP: OK
```

```
OK
```

```
AT+SMTPSTOP
```

```
OK
```

4. POP3 Application

4.1 Parameter Configuration

Host must configure mandatory parameters for POP3 client before POP3 application. The mandatory parameters include <socket PDP context>, <server address>, <server port>, <access user name>, <access password> and <email location>.

NOTE Only configure mandatory parameters once correctly, until reboot.

```
AT+CGSOCKCONT=1,"IP","3GNET","0.0.0.0",0,0
```

```
OK
```

```
AT+POP3SRV="pop3.server.com","un","pwd",110
```

```
OK
```

4.2 Inquire New Email

There is no new email on POP3 server, so release the session directly.

NOTE If no operation for long time when the session is active, POP3 server may release the session.

```
AT+POP3IN
+POP3: SUCCESS

OK
AT+POP3NUM
+POP3: 0, 0

OK
AT+POP3OUT
+POP3: SUCCESS

OK
```

4.3 Peek At New Email

Peek at email whether it is worth retrieving, if all emails are not worth, release the session directly.

```
AT+POP3IN
+POP3: SUCCESS

OK
AT+POP3NUM
+POP3: 2 2134

OK
AT+POP3LIST=1
+POP3: 1, 1050

OK
AT+POP3HDR=1
From: "FromName" <FromAddr@server.com>
Date: Tue, 9 Mar 2010 17:11:30 +0800
Subject: First Test Email

OK
AT+POP3LIST=2
+POP3: 2, 1084

OK
```

```
AT+POP3HDR=2
From: "FromName" <FromAddr@server.com>
Date: Tue, 9 Mar 2010 17:16:27 +0800
Subject: Second Test Email

OK
AT+POP3OUT
+POP3: SUCCESS

OK
```

4.4 Retrieve Email Without Delete

```
AT+POP3IN
+POP3: SUCCESS

OK
AT+POP3NUM
+POP3: 2 2134

OK
AT+POP3LIST=1
+POP3: 1, 1050

OK
AT+POP3HDR=1
From: "FromName" <FromAddr@server.com>
Date: Tue, 9 Mar 2010 17:11:30 +0800
Subject: First Test Email

OK
AT+POP3LIST=2
+POP3: 2, 1084

OK
AT+POP3HDR=2
From: "FromName" <FromAddr@server.com>
Date: Tue, 9 Mar 2010 17:16:27 +0800
Subject: Second Test Email

OK
```

```
AT+FSLOCA=0
OK
AT+POP3GET=1
OK
+POP3: SUCCESS
C:/Email/100202110457/, EMAIL000.TXT
AT+POP3READ
Date: Tue, 9 Mar 2010 17:11:30 +0800
From: "FromName" <FromAddr@server.com>
To: "ToName" <ToAddr@server.com>
Subject: First Test Email

This is a test email with an attachment.

OK
AT+POP3OUT
+POP3: SUCCESS

OK
```

4.5 Retrieve Email With Delete

```
AT+POP3IN
+POP3: SUCCESS

OK
AT+POP3NUM
+POP3: 2 2134

OK
AT+POP3LIST=1
+POP3: 1, 1050

OK
AT+POP3HDR=1
From: "FromName" <FromAddr@server.com>
Date: Tue, 9 Mar 2010 17:11:30 +0800
Subject: First Test Email

OK
```

```
AT+POP3LIST=2
+POP3: 2, 1084

OK

AT+POP3HDR=2
From: "FromName" <FromAddr@server.com>
Date: Tue, 9 Mar 2010 17:16:27 +0800
Subject: Second Test Email

OK

AT+FSLOCA=0
OK

AT+POP3GET=1
OK

+POP3: SUCCESS
C:/Email/100202113456/, EMAIL000.TXT

AT+POP3READ
Date: Tue, 9 Mar 2010 17:11:30 +0800
From: "FromName" <FromAddr@server.com>
To: "ToName" <ToAddr@server.com>
Subject: First Test Email

This is a test email with an attachment.

OK

AT+POP3DEL=1
+POP3: SUCCESS

OK

AT+POP3OUT
+POP3: SUCCESS

OK
```

4.6 Abort POP3 Application

```
AT+POP3IN
+POP3: SUCCESS

OK
```

```
AT+POP3NUM
+POP3: 2 2134

OK

AT+POP3LIST=1
+POP3: 1, 1050

OK

AT+POP3HDR=1
From: "FromName" <FromAddr@server.com>
Date: Tue, 9 Mar 2010 17:11:30 +0800
Subject: First Test Email

OK

AT+POP3LIST=2
+POP3: 2, 1084

OK

AT+POP3HDR=2
From: "FromName" <FromAddr@server.com>
Date: Tue, 9 Mar 2010 17:16:27 +0800
Subject: Second Test Email

OK

AT+FSLOCA=0
OK

AT+POP3GET=1
OK

AT+POP3STOP
OK
```

4.7 Read Email In File System

```
AT+FSCD=C:/Email
+FSCD: C:/Email/

OK

AT+FSLs
+FSLs: SUBDIRECTORIES:
100202110457
```

```
100202113456

OK
AT+POP3READ=0,"100202110457/EMAIL000.TXT"
Date: Tue, 9 Mar 2010 17:11:30 +0800
From: "FromName" <FromAddr@server.com>
To: "FromName" <ToAddr@server.com>
Subject: First Test Email

This is a test email with an attachment.

OK
```

5. Conflict AT Commands

Following AT commands cannot be used with SMTP/POP3 AT commands together:

- TCP/IP AT commands
- MMS AT commands
- GPS AT commands

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