

Quectel BG95

FTP(S) Application Note

Confidentiality Level: (Tick the Box ☒)

Top Secret ☐

Confidential ☐

Public ☐



Document Control Record

Revision History			
Date	Revision	Revision Description	Author
2023-12-27	0	Initial	Floyd.Wang

Contents

Document Control Record	1
Contents	2
1 Purpose	3
2 Scope.....	3
3 Term and Definition	3
4 API Design	3
5 FTP(S) Workflow	5
5.1. Login FTP(S).....	6
5.2. FTP(S) Folder Operation	7
5.3. Query File in FTP(S)	8
5.4. FTP(S) File Operation	9
5.5. Exit FTP(S).....	10
6 Appendix A Reference Document.....	10

1 Purpose

As one standard network protocol with pretty high transfer speed, the FTP, abbreviation of File Transfer Protocol, will be used to transmit files between client terminal and server on computer network.

While for FTPS, also named FTP over SSL or FTP Secure, is one kind of extended protocols that supports adding TLS and SSL into common FTP.

In this document, it will mainly illustrate how to apply following FTP(S) functions in Quectel Demo.

2 Scope

This document applies to MCUs that mounted with BG95 module.

3 Term and Definition

Quectel: Quectel Wireless Solution Co., Ltd.

FTP: File Transfer Protocol

4 API Design

One set of reference APIs is designed by we Quectel to implement FTP(S) based on the relevant AT commands in BG95. See **Table 1** in detail.

Table 2: TCP/IP API Reference Design

API	Implementation
QL_ftp_cfg()	Configure FTP(S) Server Parameter
QL_ftp_open()	Login FTP(S) Server
QL_ftp_path_cfg()	Configure the current directory of FTP(S) Server
QL_ftp_path_get()	Get the current directory of FTP(S) Server
QL_ftp_file_upload()	Upload file to FTP(S) Server
QL_ftp_file_download()	Download file from FTP(S) Server
QL_ftp_file_size_get()	Get FTP(S) Server file size
QL_ftp_file_delete()	Delete file from FTP(S) Server
QL_ftp_make_dir()	Make directory in FTP(S) Server

QL_ftp_delete_dir()	Delete directory in FTP(S) Server
QL_ftp_list_get()	Get directory contents in FTP(S) Server
QL_ftp_file_list_get()	Get the file name in directory of FTP(S) Server
QL_ftp_file_info_get()	Get standardized file and directory info
QL_ftp_file_rename_time_get()	Get file modification time in FTP(S) Server
QL_ftp_rename()	Rename file or folder in FTP(S) Server
QL_ftp_transferlen_get()	Get the transferred data length
QL_ftp_service_state_get()	Get FTP(S) Server status
QL_ftp_close()	Exit FTP(S) Server

For specific design on API, please refer to appendix: [Quectel BG95 FTP\(S\) API design.docx](#)

See following table for API usage and AT command.

Table 3: Mapping between API and AT command

API	AT Command
QL_ftp_cfg()	AT+QFTPCFG
QL_ftp_open()	AT+QFTPOPEN
QL_ftp_path_cfg()	AT+QFTPCWD
QL_ftp_path_get()	AT+QFTPPWD
QL_ftp_file_upload()	AT+QFTPPUT
QL_ftp_file_download()	AT+QFTPGET
QL_ftp_file_size_get()	AT+QFTPSIZE
QL_ftp_file_delete()	AT+QFTPDEL
QL_ftp_make_dir()	AT+QFTPMKDIR
QL_ftp_delete_dir()	AT+QFTPRMDIR
QL_ftp_list_get()	AT+QFTPLIST
QL_ftp_file_list_get()	AT+QFTPNLST

QL_ftp_file_info_get()	AT+QFTPMLSD
QL_ftp_file_rename_time_get()	AT+QFTPMDTM
QL_ftp_rename()	AT+QFTPRENAME
QL_ftp_transferlen_get()	AT+QFTPLEN
QL_ftp_service_state_get()	AT+QFTPSTAT
QL_ftp_close()	AT+QFTPCLOSE

In following **Chapter 5** and **Chapter 6**, it will introduce how to accomplish receiving and transmitting data of TCP and UDP via above APIs.

5 FTP(S) Workflow

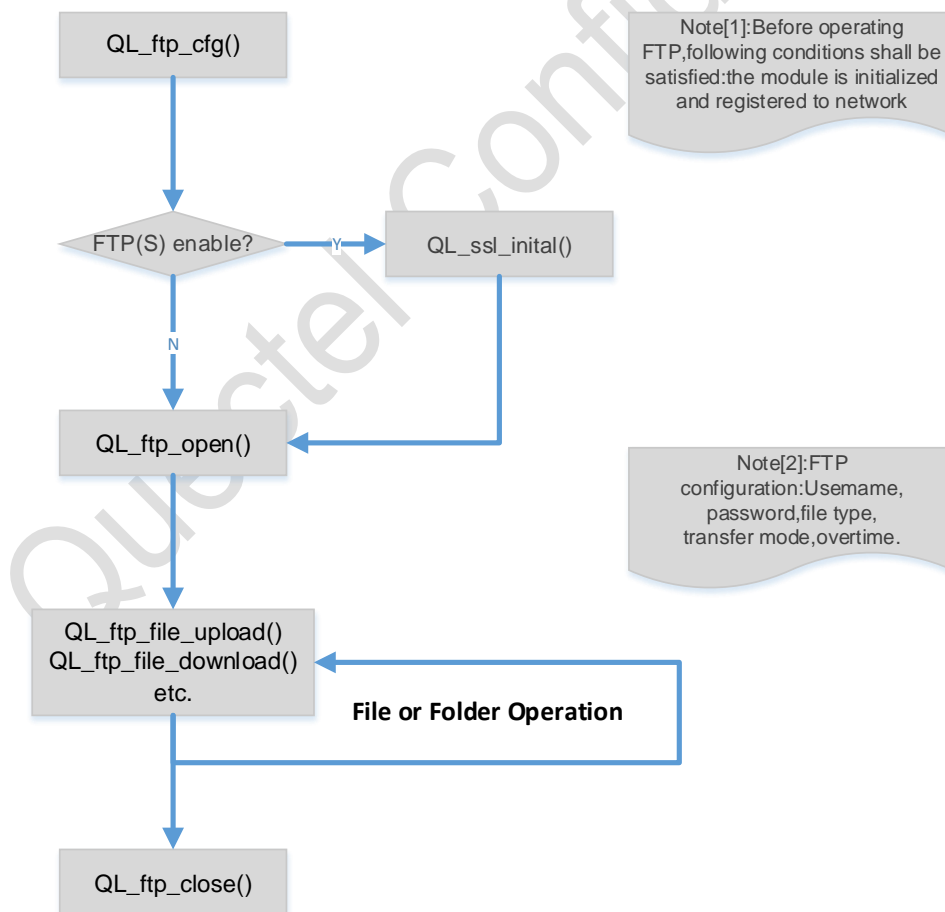


Figure 1: Recommended Flowchart of FTP(S) Application

Note [1]: Refer to Chapter 5 of [Quectel Network Application Note on BG95.doc](#)

5.1. Login FTP(S)

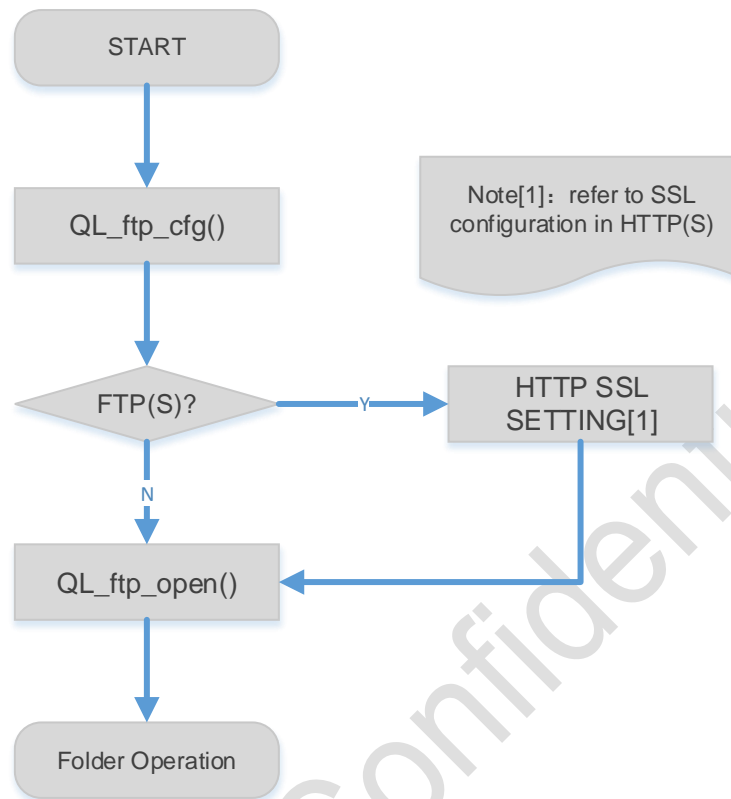


Figure 2: Login FTP(S) Server

See procedure shown as **Figure 3** above, It is needed to login FTP(S) server ahead.

- Call `QL_ftp_cfg()` to set username, password, file type, transfer method and overtime to wait response from server.
- If the FTPS Server is to be accessed, it is needed to configure SSL authentication. For specific configuration method and contents, please refer to the **HTTP SSL SETTING** illustrated in *<HTTP(S)_Application_Note>*.
- Call `QL_ftp_open()` and login via Server IP address or domain name.

5.2. FTP(S) Folder Operation

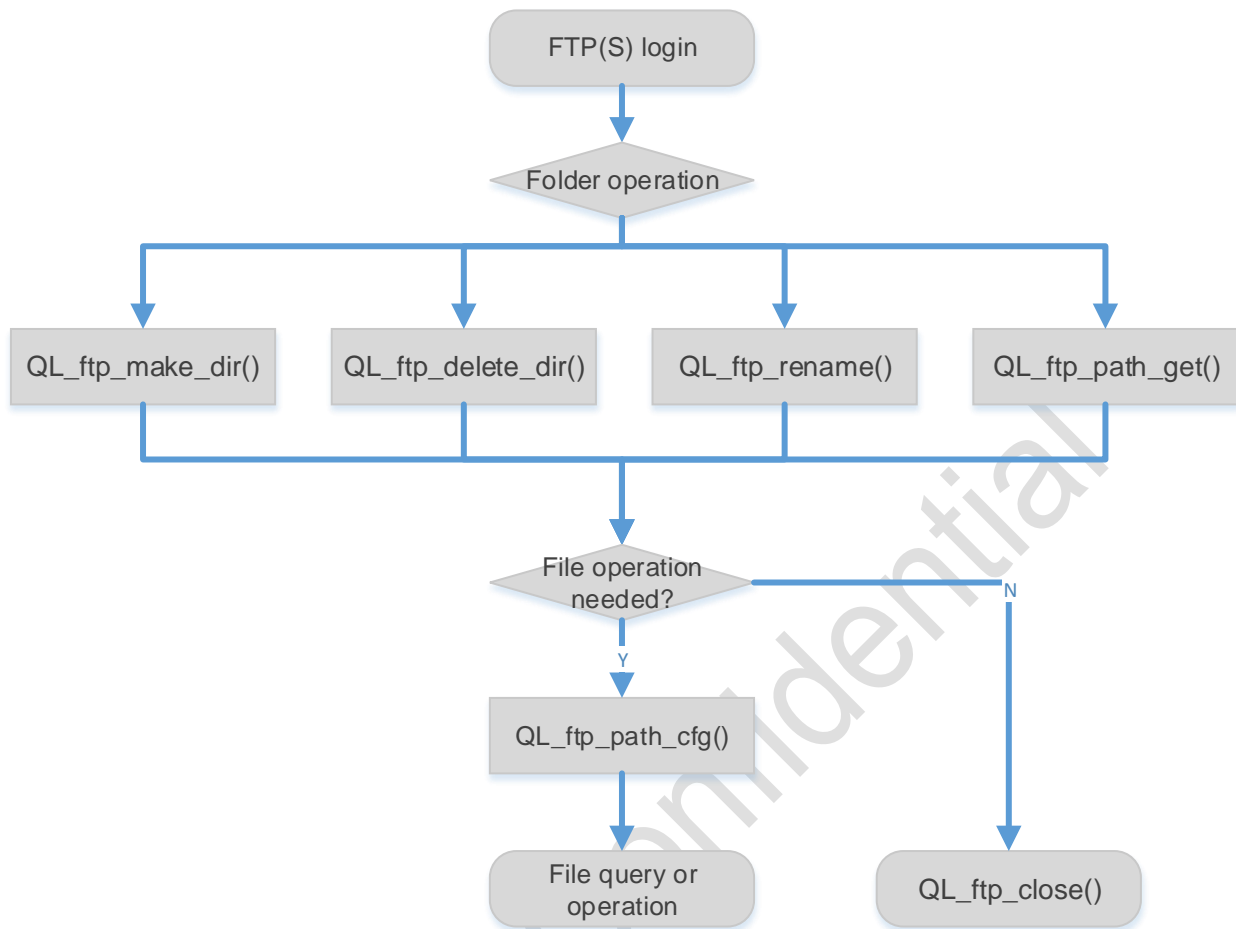


Figure 4: FTP(S) Folder Operation

Carry out folder operation based on workflow shown as **Figure 5** above.

- Call `QL_ftp_make_dir()` to make folder, `QL_ftp_delete_dir()` to delete folder, `QL_ftp_rename()` to rename folder and `QL_ftp_path_get()` to get current path.
- After above operations related to adding, deleting, modifying and checking folder are done, it is needed to enter the path in which the file is located by calling `QL_ftp_path_cfg()`.

5.3. Query File in FTP(S)

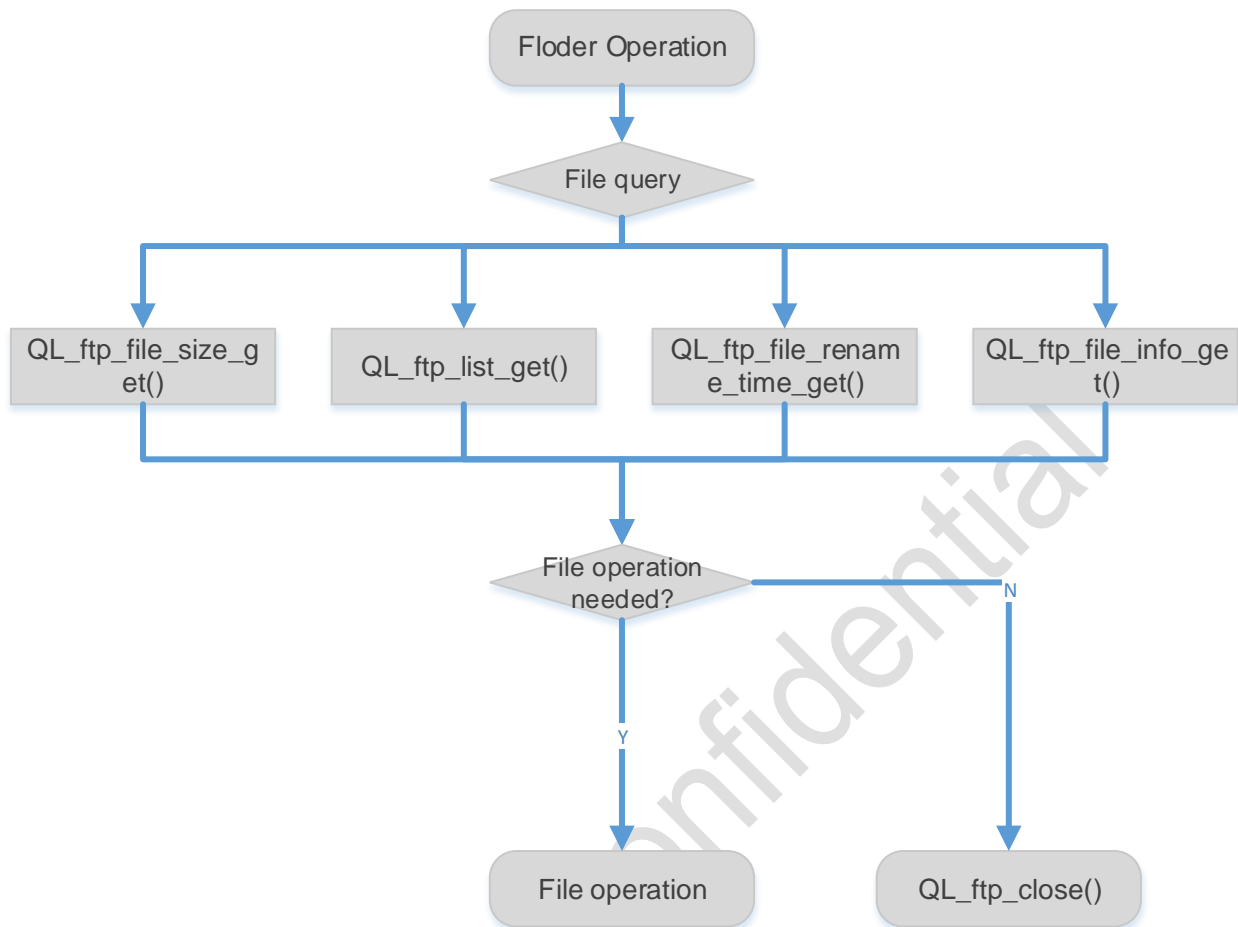


Figure 6: Query File in FTP(S)

What can be summarized from **Figure 7** above:

- In terms of single file, it is available to get file size via *QL_ftp_file_size_get()* and the last time when the file is modified via *QL_ftp_file_rename_time_get()*.
- In terms of current directory, it is valid to get the file list, specific file information and so on in current path via interfaces such as *QL_ftp_list_get()* and *QL_ftp_file_info_get()*.

5.4. FTP(S) File Operation

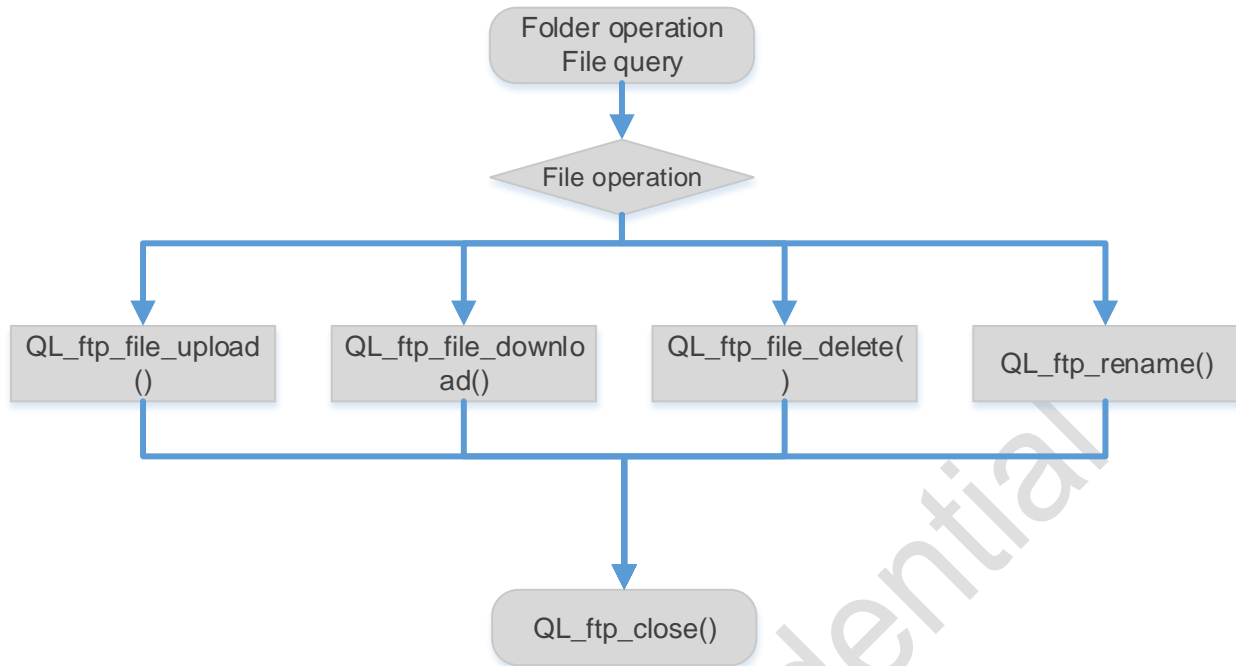


Figure 8: FTP(S) File Operation

See **Figure 9** above.

It is capable to upload and download file via *QL_ftp_file_upload()* and *QL_ftp_file_download()* respectively. The file input/output source supports UART input/output, RAM storage, UFS storage and SD card storage. For specific, please refer to file application note.

Moreover, it is also available to delete specified file via *QL_ftp_file_delete()* and rename file via *QL_ftp_rename()* individually.

5.5. Exit FTP(S)

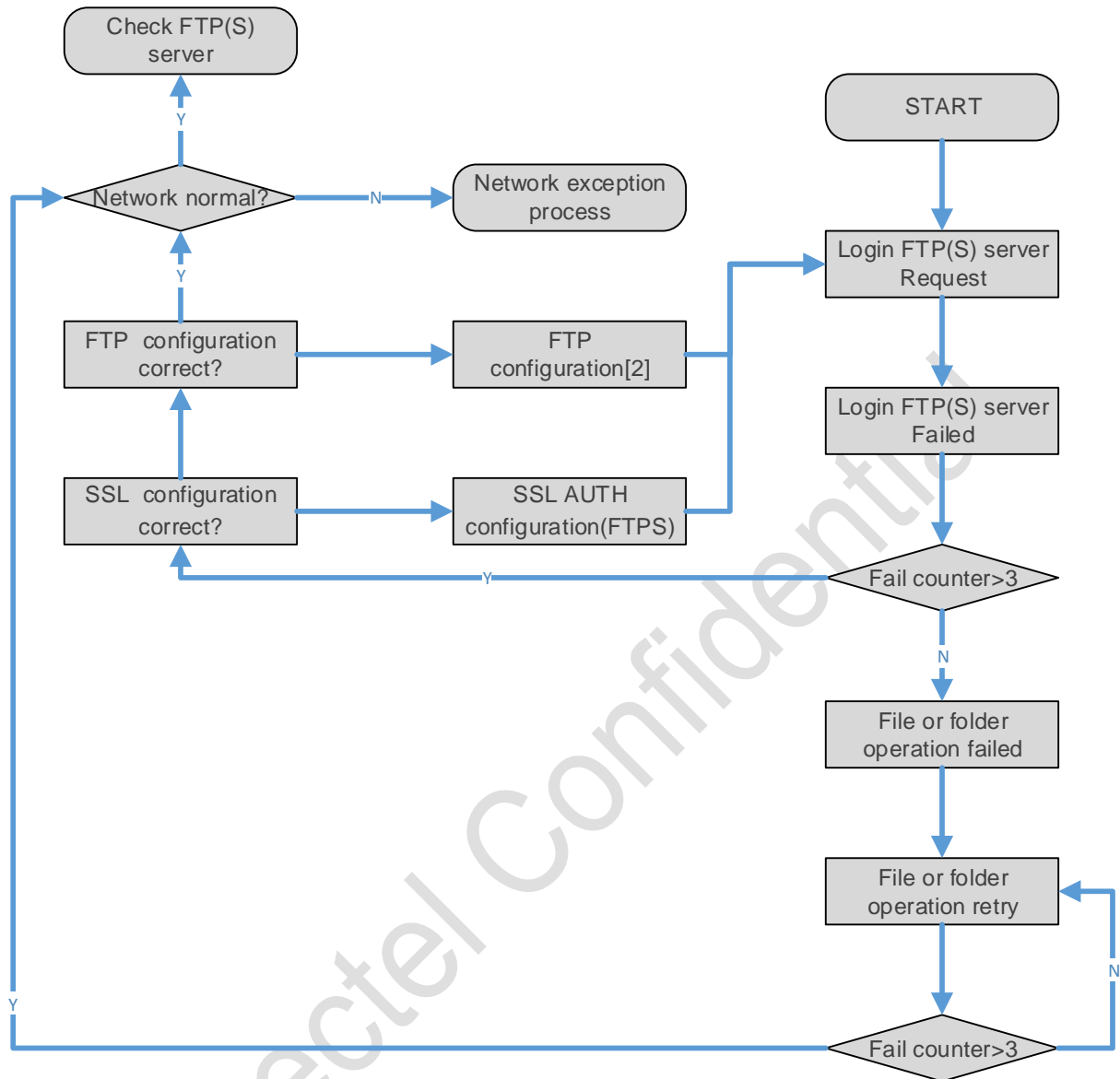


Figure 10: FTP(S) Exception Handling

6 Appendix A Reference Document

[Quectel_BG95&BG77&BG600L_Series_FTP\(S\)_Application_Note_V1.2.pdf](#)

[Quectel_BG95_FTP\(S\)_API_design.docx](#)