Migration Guide for UC15 to M10

WCDMA/GSM Module Series

Rev. Migration_Guide_for_UC15_to_M10_V1.0

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About the Document

History

Revision	Date	Author	Description
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Contents

1 Introduction

This document provides the detailed differences between Quectel UMTS/HSPA UC15 module and GSM/GPRS M10 module, which will help you migrate to UC15 from M10 easily and conveniently.

2 Differences between UC15 and M10

2.1. URC Commands

Function	M10	UC15
Configure URC Indication Option	/	**AT+QURCCFG="urcport"[,<urcportvalue>]** URC will be outputted from USB AT port by default. You can configure the interface for URC output by "AT+QURCCFG" command. <urcportvalue> can be "usbat", "usbmodem" or "uart1".
Ring Line Behavior of RING	/	**AT+QCFG="urc/ri/ring"[,<typeri>[,<pulseduration>[,<activeduration>[,<inactiveduration>[,<ringnodisturbing>]]]]]**
Ring Line Behavior of Incoming SMS	**AT+QINDRI=<status>**	**AT+QCFG="urc/ri/smsincoming"[,<typeri>[,<pulseduration>]]**
Ring Line Behavior of Other URCs		**AT+QCFG="urc/ri/other"[,<typeri>[,<pulseduration>]]**
URC Indication Configuration		**AT+QINDCFG=<urctype>[,<enable>[,<savetonvram>]]**

2.2. URC Message Commands

2.2.1. Power on/off

Function	M10	UC15
Main Switch of All URCs is on by default	/	/ Condition: AT+QINDCFG="all",1
Successful ME Initialization	**RDY**	**RDY**
Enable All Functions of ME	**+CFUN: 1**	**+CFUN: 1**
SIM Card Pin State	**+CPIN: <state>**	**+CPIN: <state>**
Use SIM Card	/	**+QUSIM: 0**
Use USIM Card	/	**+QUSIM: 1**
Finished SMS Initialization	/	**+QIND: SMS DONE**
Finished Phonebook Initialization	**Call Ready**	**+QIND: PB DONE**
Module Power Down	**NORMAL POWER DOWN** Condition: AT+QPOWD=1	**POWERED DOWN** Condition: AT+QPOWD

2.2.2. Network

Function	M10	UC15
Indication of Error Rate Change on Signal Strength and Channel Bit	**+CSQN: <rssi>,<ber>** Condition: AT+QEXTUNSOL="SQ",1	**+QIND: "csq",<rssi>,<ber>** Condition: AT+QINDCFG="csq",1
Indicate Registration Status of ME	**+CREG: <stat>** Condition: AT+CREG=1	**+CREG: <stat>** Condition: AT+CREG=1
Show Whether the Network Has Currently Indicated the Registration of ME. Location Area Code will be reported when Serving Cell is Changed	**+CREG: <n>,<stat>[,<lac>,<ci>]** Condition: AT+CREG=2	**+CREG: <n>,<stat>[,<lac>,<ci>[,<Act>]]** Condition: AT+CREG=2
Indicate Network Registration Status of the ME	**+CGREG: <stat>** Condition: AT+CGREG=1	**+CGREG: <stat>** Condition: AT+CGREG=1
Indicate Network Registration and Location Information of ME	**+CGREG: <n>,<stat>[,<lac>,<ci>]** Condition: AT+CGREG=2	**+CGREG: <n>,<stat>[,<lac>,<ci>[,<Act>]]** Condition: AT+CGREG=2
Time Zone Reporting	**+CTZV: <tz>** Condition: AT+CTZR=1	**+CTZV: <tz>** Condition: AT+CTZR=1
Extended Time Zone Reporting	**+CTZE: <tz>,<dst>,<time>** Condition: AT+CTZR=2	**+CTZE: <tz>,<dst>,<time>** Condition: AT+CTZR=2

2.2.3. SMS

Function	M10	UC15
Receive New Message and Save to Memory	**+CMTI: <mem>,<index>** Condition: See AT+CNMI	**+CMTI: <mem>,<index>** Condition: See AT+CNMI
Receive New Short Message and Output Directly to TE (PDU Mode)	**+CMT: [<alpha>],<length><CR><LF><pdu>** Condition: See AT+CNMI	**+CMT: [<alpha>],<length><CR><LF><pdu>** Condition: See AT+CNMI
Receive New Short Message and Output Directly to TE (Text Mode)	**+CMT:** **<oa>,[<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs>,<sca>,** **<tosca>,<length>]<CR><LF><data>** Condition: See AT+CNMI	**+CMT:** **<oa>,[<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs>,<sca>,** **<tosca>,<length>]<CR><LF><data>** Condition: See AT+CNMI
Receive New CBM and Output Directly (PDU Mode)	**+CBM: <length><CR>** Condition: See AT+CNMI	**+CBM: <length><CR>** Condition: See AT+CNMI
Receive New CBM and Output Directly to TE (Text Mode)	**+CBM:** **<sn>,<mid>,<dcs>,<page>,<pages>,<CR>,<LF><data>** Condition: See AT+CNMI	**+CBM:** **<sn>,<mid>,<dcs>,<page>,<pages>,<CR>,<LF><data>** Condition: See AT+CNMI
Receive New CDS and Output Directly (PDU Mode)	**+CDS: <length><CR><LF><pdu>** Condition: See AT+CNMI	**+CDS: <length><CR><LF><pdu>** Condition: See AT+CNMI
Receive New CDS and Output Directly to TE (Text Mode)	**+CDS: <fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st>** Condition: See AT+CNMI	**+CDS: <fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st>** Condition: See AT+CNMI
Indication of SMS Storage Full	**+TSMSINFO: 322** Condition: AT+QEXTUNSOL="SM",1	**+QIND: “smsfull”,<storage>** Condition: AT+QINDCFG="smsfull",1
Indication of Incoming Message	/	**+CMTI,+CMT,+CDS,+CDSI,+CBM,+CBMI** Condition: AT+QINDCFG="smsincoming",1

2.2.4. Call

Function	M10	UC15
"RING" Indication	**RING** Condition: None	**RING** Condition: AT+QINDCFG="ring",1
The Presentation of the COL (connected line) at the TE for a Mobile Originated Call	**+COLP: <number>,<type>[,<subaddr>,<satype>[CLI validity]],** Condition: AT+COLP=1	**+COLP: <number>,<type>[,<subaddr>,<satype>[,<alpha>]]** Condition: AT+COLP=1
Mobile Terminating Call Indication	**+CLIP: <number>,<type>,"",,<alphaID>,<CLI validity>** Condition: AT+CLIP=1	**+CLIP: <number>,<type>,"",,<alphaId>,<CLI validity>** Condition: AT+CLIP=1
An Incoming Call is Indicated to the TE with Unsolicited Result Code Instead of the Normal RING	**+CRING: <type>** Condition: AT+CRC=1	**+CRING: <type>** Condition: AT+CRC=1
Call Waiting Indication	**+CCWA: <number>,<type>,<class>[,<alpha>]** Condition: AT+CCWA=1,1	**+CCWA: <number>,<type>,<class>[,<alpha>]** Condition: AT+CCWA=1,1
Show the +CSSI Intermediate Result Code Presentation Status to the TE	**+CSSI: <code1>[,<index>]** Condition: AT+CSSN=1	**+CSSI: <code1>** Condition: AT+CSSN=1
Show the +CSSU Unsolicited Result Code Presentation Status to the TE	**+CSSU: <code2>** Condition: AT+CSSN=<n>,1	**+CSSU: <code2>** Condition: AT+CSSN=<n>,1
USSD Response from the Network, or a Network Initiated Operation	**+CUSD: <status>[,<rspstr>,[<dcs>]]** Condition: AT+CUSD=1	**+CUSD: <status>[,<rspstr>,[<dcs>]]** Condition: AT+CUSD=1

Indication of Change on Voice Call State	**+QGURC: <event>** Condition: AT+QEXTUNSOL="UR",1	**+QIND: "ccinfo",<idx>,<dir>,<stat>,<mode>,<mpty>[,<number>,<type>,[<alpha>]]** Condition: AT+QINDCFG="ccinfo",1

2.2.5. Hardware

Function	M10	UC15
Indicate the Lowest Temperature	/	**+QIND: "temp",-2** Condition: AT+QCFG="temp",-2,<tempvalue>,1
Indicate Low Temperature Warning	/	**+QIND: "temp",-1** Condition: AT+QCFG="temp",-1,<tempvalue>,1
Indicate High Temperature Warning	/	**+QIND: "temp",1** Condition: AT+QCFG="temp",1,<tempvalue>,1
Indicate the Highest Temperature	/	**+QIND: "temp",2** Condition: AT+QCFG="temp",2,<tempvalue>,1
The Temperature Comes Back to Normal Temperature Range	/	**+QIND: "temp",0** Condition: None
Indicate the Lowest Voltage	**UNDER_VOLTAGE POWER DOWN** Condition: None	**+QIND: "vbatt",-2** Condition: AT+QCFG="vbatt",-2,<vbattvalue>,1
Indicate Low Voltage Warning	**UNDER_VOLTAGE WARNING** Condition: None	**+QIND: "vbatt",-1** Condition: AT+QCFG="vbatt",-1,<vbattvalue>,1
Indicate High Voltage Warning	**OVER_VOLTAGE POWER DOWN** Condition: None	**+QIND: "vbatt",1** Condition: AT+QCFG="vbatt",1,<vbattvalue>,1
Indicate the Highest Voltage	**OVER_VOLTAGE WARNING**	**+QIND: "vbatt",2**

	Condition: None	Condition: AT+QCFG="vbatt",2,<vbattvalue>,1
The Voltage Comes Back to Normal Voltage Range	/	**+QIND: "vbatt",0** Condition: AT+QCFG="vbatt",0,<vbattvalue>,1

2.2.6. SIM Card

Function	M10	UC15
Indicate SIM Card is Inserted or Removed	**+QSIMSTAT: 1,<insertedstatus>** Condition: AT+QSIMSTAT=1	**+QSIMSTAT: 1,<insertedstatus>** Condition: AT+QSIMSTAT=1

2.3. Audio Commands

Function	M10	UC15
Analog Sound	Support	Support
PCM Interface	Support	Support
Loud Speaker Volume Level	**AT+CLVL=<level>** <level> range: 0-100	**AT+CLVL=<volume>** <volume> range: 0-7
Mute Control	**AT+CMUT=<on>**	**AT+CMUT=<on>**
Set Audio Mode	/	**AT+QAUDMOD=<mode>**
Digital Audio Interface Configure	/	**AT+QDAI=<io>,<mode>,<fsync>,<clock>**

PCM CLK Signal Configuration	/	/
Mute the Ring Tone	**AT+CALM=<on>**	**AT+CALM=<on>**
Set Ring Tone Value	**AT+CRSL=<level>** <level> range: 0-100	**AT+CRSL=<volume>** <volume> range: 0-7
Set Audio Path	**AT+QAUDCH=[<n>]**	**AT+QAUDPATH=<path>**
Set the Side Tone Gain	**AT+QSIDET=<gainlevel>** <gainlevel> range: 0-255	**AT+QSIDET=<st_gain>** <st_gain> range: 0-65535
Set Echo Suppression	**AT+QECHO=?** **+QECHO: control word (0-65535),nlp (0-65535), suppression value (0-65535),nr (0-65535), channel (0-2)** **OK**	**AT+QEEC=?** **+QEEC: (0-8),(0-48),(0-65535)** **OK**
Change the Microphone Gain Level	**AT+QMIC=<channel>,<gainlevel>**	**AT+QMIC=<micgain1>,<micgain2>,<micgain3>**

2.4. HW Commands

Function	M10	UC15
Power Off	**AT+QPOWD=<n>** Normal power off (Send out URC "NORMAL POWER DOWN")	**AT+QPOWD** The command AT+QPOWD is used to shut down the module. The UE will return OK immediately when the command is executed. Then the UE deactivates the network. After deactivating completely, UE outputs message “POWERED DOWN” and sets the STATE pin as low to enter

		into the shutdown state. The maximum time for unregistering network is 60 seconds. It is not allowed to turn off the power if the module STATE pin is not set as low or the URC "POWERED DOWN" is not output, in order to avoid data loss.
Clock	**AT+CCLK=<time>**	**AT+CCLK=<time>**
Battery Charge	**AT+CBC**	**AT+CBC**
Read ADC	**AT+QADC?** Directly read ADC.	**AT+QADC=<port>** <port> Channel number of the ADC. 0 ADC channel 0 1 ADC channel 1
Net LED Configuration	**AT+QLEDMODE=<ledmode>** <ledmode> 0 Network LED flashes rapidly when a call is ringing. 1 No effect on the Network LED when a call is ringing. 2 No effect on the Network LED when a call is ringing. RI will not change until the ringing ends.	/
Configure Whether or not to Enter into Sleep Mode	**AT+QSCLK=<n>**	**AT+QSCLK=<n>**
Automatically Reset	/	**AT+QRST=<mode>[,<delay>]**
Set Alarm	**AT+QALARM=<state>,<time>,<repeat>,<power>**	/
Set Critical Temperature Operating Mode or Query Temperature	**AT+QTEMP=<mode>** <mode> 0 Disable query temperature 1 Enable query temperature	**AT+QCFG="temp"[,<temptype>,<tempvalue>[,<tempon off>]]** Only support temperature detection, not support to query

	2	Reserved	temperature.

2.5. Network Light Commands

2.5.1. LED_STATUS

Function	M10	UC15
Searching or No Network	Light-on: 64ms Light-off: 800ms	Light-on: 200ms Light-off: 1.8s
Packet Transferring	Light-on: 64ms Light-off: 200ms	Light-on: 125ms Light-off: 125ms
Calling (Voice&CSD Call)	Light-on: 64ms Light-off: 200ms	Light-on
Idle Status	Light-on: 64ms Light-off: 200ms	Light-on: 1.8s Light-off: 200ms
Sleep Status	Light-on: 64ms Light-off: 800ms	**AT+QCFG="SLEEP/NETLIGHT",<N>** <N>=1: Light-on <N>=0: Light-off (default)

NOTE

The duration time of Light-on (high level) and Light-off (low level) mentioned above needs to be detected by oscilloscope.

2.6. SIM Commands

Function	M10	UC15
Facility Lock	**AT+CLCK=<fac>,<mode>,<passwd>[,<class>]**	**AT+CLCK=<fac>,<mode>,[<passwd>[,<class>]]** <fac> does not support "PS" Support PF/PN/PU/PP/PC lock, the initial password is 12341234.
Enter PIN	**AT+CPIN=<pin>[,<new pin>]**	**AT+CPIN=<pin>[,<newpin>]**
Change Password	**AT+CPWD=<fac>,<oldpwd>,<newpwd>**	**AT+CPWD=<fac>,<oldpwd>,<newpwd>** <fac> supports "PS"; The password of PF/PN/PU/PP/PC lock cannot be modified.
Generic SIM Access	**AT+CSIM=<operation>,<file_index>,<offset>,<record_id>,<length>,<data>**	**AT+CSIM= <length>,<command>**
Restricted SIM Access	**AT+CRSM=<Command>[,<fileId>[,<P1>,<P2>,<P3>[,<data>]]]**	**AT+CRSM=<command>[,<fileId>[,<P1>,<P2>,<P3>[,<data>][,<pathId>]]]**
Show ICCID	**AT+QCCID**	**AT+QCCID**
Query Status of SIM Card Initialization	**AT+QINISTAT** <state> 0 No initialization 1 Ready to execute AT command 2 Phonebook has finished initialization 3 SMS has finished initialization	**AT+QINISTAT** <status> Status of SIM card initialization. Actual value is the sum of several of the following four kinds (e.g. 7=1+2+4 means CPIN READY&SMS DONE&PHB DONE). 0 Initial state 1 CPIN READY. Operation like lock/unlock PIN is allowed 2 SMS initialization completed 4 Phonebook initialization completed

Query/Unlock SIM PIN2/PUK2	/	**AT+QPIN2=<pin>[,<newpin>]**
Display PIN Remainder Counter	**AT+QTRPIN** **+QTRPIN: <chv1>,<chv2>,<puk1>,<puk2>** **OK**	**AT+QPINC?** **+QPINC: "SC",<pincounter>,<pukcounter>** **+QPINC: "P2",<pincounter>,<pukcounter>** **OK**
SIM Card Detection	**AT+QSIMDET=<mode>[,<active>]**	**AT+QSIMDET=<enable>,<insertlevel>**
SIM Inserted Status Report	**AT+QSIMSTAT=<n>**	**AT+QSIMSTAT=<enable>**
Get Service Provider Name from SIM	**AT+QSPN?**	/
Set Extended Functionality of SIM Card	/	**AT+QFUN=<op>** <op> Operation 5 Perform a power-down to the SIM card 6 Perform a power-up to the SIM card

2.7. SMS Commands

Function	M10	UC15
Select TE Character Set	**AT+CSCS=<chset>** Support: GSM, UCS2, HEX, IRA, PCCP437, 8859_1. When SMS is in text mode, in default settings (AT+CSCS="GSM" and AT+QSMSCODE=1), character '@' is "0x40" in hex format outputting and character '_' (underline) is "0x11" in hex format outputting.	**AT+CSCS=<chset>** Support: GSM, UCS2, IRA UC15 is different from M10 in the conversation of several special characters when AT+CSCS="GSM". For example: When SMS is in text mode, in default settings (AT+CSCS="GSM"), character '@' is "0x00" in hex format

		outputting and character '_' (underline) is "0x11" in hex format outputting. Please refer to *Quectel_UC15_AT_Commands_Manual* for details.
Query the Amount of Unread Message(s)	/	**AT+QCFG="sms/unread"**
Select Message Service	**AT+CSMS=<service>** <service> only supports 0.	**AT+CSMS=<service>** <service> supports 0 and 1.
Message Format	**AT+CMGF[=<mode>]**	**AT+CMGF[=<mode>]**
Service Center Address	**AT+CSCA=<sca>[,<tosca>]**	**AT+CSCA=<sca>[,<tosca>]**
Preferred Message Storage	**AT+CPMS=<mem1>[,<mem2>[,<mem3>]]** Support "SM","ME","MT".	**AT+CPMS=<mem1>[,<mem2>[,<mem3>]]** Support "SM","ME","MT","SR".
Delete Message	**AT+CMGD=<index>[,<delflag>]**	**AT+CMGD=<index>[,<delflag>]**
Delete All SMS	**AT+QMGDA=<type>**	**AT+QMGDA=<type>**
List Messages	**AT+CMGL=<stat>[,<mode>]** When <mode> is 1, do not change the status of the specified SMS record.	**AT+CMGL=<stat>** Don't support <mode> parameters
Read Message	**AT+CMGR=<index>[,<mode>]** When <mode> is 1, do not change the status of the specified SMS record.	**AT+CMGR=<index>** Don't support <mode>.
Send Message	If text mode (+CMGF=1): **AT+CMGS=<da>[,<toda>]** If PDU mode (+CMGF=0): **AT+CMGS=<length><CR>**	If text mode (+CMGF=1): **AT+CMGS=<da>[,<toda>]** If PDU mode (+CMGF=0): **AT+CMGS=<length><CR>**
More Messages to Send	/	**AT+CMMS=<n>**

Write Message to Memory	If text mode (+CMGF=1): **AT+CMGW=<oa/da>[,<tooa/toda>[,<stat>]]** If PDU mode (+CMGF=0): **AT+CMGW=<length>[,<stat>]<CR>**	If text mode (+CMGF=1): **AT+CMGW=<oa/da>[,<tooa/toda>[,<stat>]]** If PDU mode (+CMGF=0): **AT+CMGW=<length>[,<stat>]<CR>**
Send Message from Storage	**AT+CMSS=<index>[,<da>[,<toda>]]**	**AT+CMSS=<index>[,<da>[,<toda>]]**
Send SMS Command	If text mode (+CMGF=1): **AT+CMGC=<fo>[,<ct><pid>,<mn>,<da>,<toda>]<CR>** If PDU mode(+CMGF=0): **AT+CMGC=<length><CR>**	/
SMS Event Reporting Configuration	**AT+CNMI[=<mode>[,<mt>[,<bm>[,<ds>[,<bfr>]]]]]** <mode>: 0,1,2,3, <mt>: 0,1,2,3, <bm>: 0,2,3, <ds>: 0,1, <bfr>: 0	**AT+CNMI[=<mode>[,<mt>[,<bm>[,<ds>[,<bfr>]]]]]** <mode>: 0,1,2, <mt>: 0,1,2,3, <bm>: 0,2, <ds>: 0,1,2, <bfr>: 0,1 According to 3GPP TS 27005: “It is possible that ME/TA result code buffer is in volatile memory. In this case, messages may get lost if the power of ME/TA is switched off before codes have been sent to TE. Thus, it is not recommended to use direct message routing (<mt>=2 or 3, <bm>=2 or 3, or <ds>=1) with <mode> value 0 or 2.” So UC15 does not support the combination of configuration above. For example: AT+CNMA=2,2 AT+CNMA=0,2 AT+CNMA=2,,,1

		AT+CNMA=0,,,1
Restore SMS Settings	**AT+CRES=[<profile>]**	/
Save SMS Settings	**AT+CSAS=[<profile>]**	/
Select Cell Broadcast Message Types	**AT+CSCB=<mode>[,mids>[,<dcss>]]**	**AT+CSCB=<mode>[,mids>[,<dcss>]]**
Show SMS Text Mode Parameters	**AT+CSDH[=<show>]**	**AT+CSDH[=<show>]**
Set SMS Text Mode Parameters	**AT+CSMP=[<fo>[<vp>[,pid>[,<dcs>]]]]**	**AT+CSMP=[<fo>[,<vp>[,<pid>[,<dcs>]]]]**
Send Concatenated Messages	If text mode (+CMGF=1): **AT+CMGS** Support to send long SMS.	If text mode (+CMGF=1): **AT+QCMGS=<da>[,<toda>][,<uid>,<msg_seg>,<msg_total>]**
Store Class 0 SMS to SIM When Receiving Class 0 SMS	**AT+QCLASS0=<mode>**	/
Configure SMS Code Mode	**AT+QSMSCODE=<mode>**	/
New Message Acknowledgement to UE/TE	/	**AT+CNMA=<n>**
Display Alphanumeric Name in SMS	**AT+QCMT=<value>**	**AT+QCFG="sms/alpha"[,<value>]**

2.8. Serial Port Commands

Function	M10	UC15
USB Modem	/	Support, support PPP Dail_up
USB AT	/	Support, does not support PPP Dail_up
Main UART	Support	Support
Hardware Flow Control	Support Default: No flow control	Support Default: No flow control
Software Flow Control	Support	/
Auto Baud Mode	Support	/
Set TE-TA Fixed Local Rate	**AT+IPR=<rate>** <rate> 0 (Autobauding),75,150,300,600,1200,2400,4800, 9600,14400,19200,28800,38400,57600,115200 The default configuration of AT+IPR is autobauding enabled (AT+IPR=0). The value of AT+IPR cannot be restored with AT&F and ATZ, but it is still storable with AT&W	**AT+IPR=<rate>** <rate> 300,600,1200,2400,4800,9600,19200,38400,57600,11520, 230400,460800,921600,3200000,3686400,4000000 Default: 115200bps. The value of AT+IPR cannot be restored with AT&F and ATZ, but it is still storable with AT&W.
Set TE-TA Control Character Framing	**AT+ICF=[<format>,[<parity>]]** <format> supports 1-6	**AT+ICF=[<format>,[<parity>]]** <format> only supports 3 (8 data 0 parity 1 stop)
Set TE-TA Local Data Flow Control	**AT+IFC=<dce_by_dte>,<dte_by_dce>** <dce_by_dte> supports: 0 None 1 XON/XOFF 2 RTS flow control	**AT+IFC=<dce_by_dte>,<dte_by_dce>** <dce_by_dte> supports: 0 None 2 RTS flow control <dte_by_dce> supports:

	<dte_by_dce> supports: 0 None 1 XON/XOFF 2 CTS flow control	0 None 2 CTS flow control
Set DCD Function Mode	**AT&C[<value>]**	**AT&C[<value>]**
Set DTR Function Mode	**AT&D[<value>]**	**AT&D[<value>]**
Switch From Data Mode to Command Mode	1. To prevent the "+++" escape sequence from being misinterpreted as data, it should comply to the following sequence: 2. Do not input any characters during T1 time (0.5 seconds) before inputting "+++". 3. Input "+++", and no other characters can be inputted during this time. For CSD call or PPP online mode, the interval between two "+" should be less than 1 second and for a transparent TCPIP connection, the interval should be less than 20ms. 4. No characters entered during T1 time (0.5 seconds). 5. Switch to command mode, otherwise go to step 1.	1. To prevent the"+++" escape sequence from being misinterpreted as data, it should comply to following sequence: 2. Do not input any character within T1 time (1000ms) before inputting "+++". 3. Input "+++" within 1000ms, and no other characters can be inputted during this time. 4. Do not input any character within T1 time (1000ms) after "+++" has been inputted.
Ring Line Behavior of RING	/	**AT+QCFG="urc/ri/ring"**
Ring Line Behavior of Incoming SMS	/	**AT+QCFG="urc/ri/smsincoming"**
Ring Line Behavior of Other URCs	/	**AT+QCFG="urc/ri/other"**
Restore Ring Line to Inactive	/	**AT+QRIR** If the behavior of ring line is "always", you should restore ring line to inactive by AT+QRIR. The behavior of ring line is

		controlled by AT+QCFG. Please refer to AT+QCFG="urc/ri/ring", AT+QCFG="urc/ri/smsincoming" and "AT+QCFG="urc/ri/other".
Ring Line Signal Outputting Carrie	/	**AT+QCFG="risignaltype",[<risignatype>]**

2.9. Call Commands

Function	M10	UC15
FAX	/	/
Answer an Incoming Call	**ATA**	**ATA**
Mobile Originated Call to Dial a Number	**ATD<n>[<mgsm][;]**	**ATD<n>[<mgsm>][;]**
Originate Call to Phone Number in Current Memory	**ATD><n> [;]**	**ATD><n> [;]**
Redial Last Telephone Number Used	**ATDL[;]**	/
Mobile Equipment Activity Status	**AT+CPAS=?** **+CPAS: (0,2,3,4)** **OK**	**AT+CPAS=?** **+CPAS: (0,3,4)** **OK**
Preference Speech Coding/AMR Codec Configuration	**AT+QSFR=<mode>**	**AT+QCFG="amrcodec"**

Speech Channel Type Report	**AT+QSPCH=<mode>**	/
Disconnect Existing Connection	**ATH**	**ATH** ATH cannot hang up package data call.
Voice Hang Up Control	/	**AT+CVHU=<mode>** <mode> 0 ATH is disconnected 1 ATH is ignored but "OK" response is returned
Hang Up Call	/	**AT+CHUP** AT+CHUP cancels all voice calls in the state of Active, Waiting and Held. For circuit data connections, use ATH.
Switch From Command Mode to Data Mode	**ATO**	**ATO**
Select Bearer Service Type	**AT+CBST=[<speed>[,<name>[,<ce>]]]** <speed> 0,4,5,6,7,12,14,68,70,71,75. Default value: 7	**AT+CBST=[<speed>[,<name>[,<ce>]]]** <speed> 0,7,12,14,16,17,39,43,48,51,71,75,80.81,83,116,134. Default value: 0
Select Type of Address	**AT+CSTA=<type>** <type> 129,161,145	**AT+CSTA=<type>** <type> 129,145
List Current Calls of ME	**AT+CLCC** **[+CLCC:** **<id1>,<dir>,<stat>,<mode>,<mpty>[,<number>,<type>[,"** **"]]** **[<CR><LF>+CLCC:** **<id2>,<dir>,<stat>,<mode>,<mpty>[,<number>,<type>[,"** **"]]** **[...]]]**	**AT+CLCC** **[+CLCC:** **<id1>,<dir>,<stat>,<mode>,<mpty>[,<number>,<type>[,** **<alpha>]]** **[+CLCC:** **<id2>,<dir>,<stat>,<mode>,<mpty>[,<number>,<type>[,** **<alpha>]]** **[...]**
Service Reporting Control	**AT+CR=[<mode>]**	**AT+CR=[<mode>]**

Set Cellular Result Codes for Incoming Call Indication	**AT+CRC=[<mode>]**	**AT+CRC=[<mode>]**
Select Radio Link Protocol Parameter	**AT+CRLP=[<iws>[,<mws>[,<T1>[,<N2>[,<ver>[,<T4>]]]]]]** <iws> 0-61 Interworking window size (IWF to MS). <mws> 0-61 Mobile window size (MS to IWF). <T1> 39-255 Acknowledgment timer T1 in a unit of 10ms. <N2> 1-255 Retransmission attempts N2. <verx> RLP RLP version number in integer format. When version indication is not presented, it shall equal 0. <T4> 3-255 Re-sequencing period in integer format, in a unit of 10ms.	**AT+CRLP=[<iws>[,<mws>[,<T1>[,<N2>[,<ver>]]]]]** <iws> 0-61 Interworking window size (IWF to MS), 0-240-488. For <ver>=2 <mws> 0-61 Mobile window size(MS to IWF),0-240-488. For <ver>=2 <T1> 38-48-255 Acknowledgment timer T1 in a unit of 10ms, 42-52-255. For <ver>=2 <N2> 1-6-255 Retransmission attempts N2. <ver> 0-2 RLP version number in integer format.
Configure Emergency Call Numbers	/	**AT+QECCNUM=<mode>,<type>[,<eccnum1>[,<eccnum2>,…[,<eccnumN>]]]**
Hang up Call with a Specific Release Cause	**ATH17** Only support cause 17 (User busy).	**AT+QHUP=<cause>[,<idx>]**
DTMF Tone	**AT+VTS=<dtmfstring>**	**AT+VTS=<dtmfstring>[,<duration>]** <dtmfstring> ASCII characters in the set 0...9,#,*, A, B, C, D. The string should be enclosed in quotation marks ("...").
Tone Duration	**AT+VTD=<n>**	**AT+VTD=<duration>[,<interval>]**

2.10. Identification Commands

Function	M10	UC15
Display Product Identification Information	**ATI** **Quectel_Ltd** **Quectel_M10** **Revision: <revision>** **OK**	**ATI** **Quectel** **UC15** **Revision: <revision>** **OK**
Request Manufacturer Identification	**AT+CGMI** **Quectel_Ltd** **Quectel_M10** **Revision: MTK 0828** **OK**	**AT+CGMI** **Quectel** **OK**
Request Manufacturer Identification	**AT+GMI** **Quectel_Ltd** **Quectel_M10** **Revision: MTK 0828** **OK**	**AT+GMI** **Quectel** **OK**
Request TA Model Identification	**AT+GMM** **Quectel_M10** **OK**	**AT+GMM** **UC15** **OK**
Request TA Revision Identification of Software	**AT+GMR** **Revision: <revision>**	**AT+GMR** **Revision: <revision>**

Release	OK	OK
Request Manufacturer Identification	AT+CGMI <manufacturer> OK	AT+CGMI <manufacturer> OK
Request Model Identification	AT+CGMM Quectel_M10 OK	AT+CGMM UC15 OK
Request TA Revision Identification of Software Release	AT+CGMR Revision: <revision> OK	AT+CGMR Revision: <revision> OK
Request International Mobile Equipment Identity (IMEI)	AT+GSN <IMEI> OK	AT+GSN <IMEI> OK
Request Product Serial Number Identification (Identical with +GSN)	AT+CGSN <IMEI> OK	AT+CGSN <IMEI> OK
Configure URC Indication Option	/	AT+QURCCFG="urcport"[,<urcportvalue>]

2.11. Configuration Commands

Function	M10	UC15
Set all Current Parameters to Manufacturer Defaults	**AT&F**	**AT&F** Affected AT command settings are different from M10. Please refer to *Quectel_UC15_AT_Commands_Manual* for the detail.
Display Current Configuration	**AT&V**	**AT&V** Affected AT command settings are different from M10. Please refer to *Quectel_UC15_AT_Commands_Manual* for the detail.
Store Current Parameters to User Defined Profile	**AT&W**	**AT&W** Affected AT command settings are different from M10. Please refer to *Quectel_UC15_AT_Commands_Manual* for the detail.
Set all Current Parameters to User Defined Profile	**ATZ**	**ATZ** Affected AT command settings are different from M10. Please refer to *Quectel_UC15_AT_Commands_Manual* for the detail.
Set Result Code Presentation Mode	**ATQ<n>**	**ATQ<n>**
TA Response Format	**ATV<value>**	**ATV<value>** <numeric code> does not support 9 (PROCEEDING).
Set Command Echo Mode	**ATE<value>**	**ATE<value>**
Set Number of Rings before Automatically Answering Call	**ATS0=<n>**	**ATS0=<n>**

Set Command Line Termination Character	**ATS3=<n>**	**ATS3=<n>**
Set Response Formatting Character	**ATS4=<n>**	**ATS4=<n>**
Set Command Line Editing Character	**ATS5=<n>**	**ATS5=<n>**
Set Number of Seconds to Wait for Connection Completion	**ATS7=<n>** Default: 60 ATS7 is only applicable to data call.	**ATS7=<n>** Default: 0 Support AT command, but the function is invalid now.
Set CONNECT Result Code Format and Monitor Call Progress	**ATX<value>**	**ATX<value>**
Set Phone Functionality	**AT+CFUN=<fun>,[<rst>]** <fun> is: 0,1,4 <rst> is: 0,1	**AT+CFUN=<fun>[,<rst>]** <fun> is: 0,1,4 <rst> is: 0,1 When <rst> is 1, <fun> does not support 0 or 4.
Set Phone Extended Functionality	/	**AT+QFUN=<op>** <op> 5 Perform a power down to the SIM card 6 Perform a power up to the SIM card
Error Message Format	**AT+CMEE=<n>**	**AT+CMEE=<n>**
Enable/Disable DTR to Control Power Save State	/	**AT+QCFG="pwrsavedtr"[,<value>]**
Temperature Detection	**AT+QTEMP=<mode>**	**AT+QCFG="temp"[,<temptype>,<tempvalue>[,<tempon off>]]**
Voltage Detection	/ **AT+CPROTECT=?** **+CPROTECT: <temp>(1: protect on; 0: protect off),<low**	**AT+QCFG="vbatt"[,<vbatttype>,<vbattvalue>[,<vbatono ff>]]**

	vol>,<high vol> **OK**	
Enable/Disable Airplane Mode Detection	/	**AT+QCFG="airplanecontrol"[,<airplanecontrol>]**
GPRS Attach Mode Configuration	/	**AT+QCFG="gprsattach"[,<attachmode>]**
Network Search Mode Configuration	/	**AT+QCFG="nwscanmode"[,<scanmode>[,< effect>]]**
Network Searching Sequence Configuration	/	**AT+QCFG="nwscanseq"[,<scanseq>[,<effect>]]**
Roam Service Configuration	/	**AT+QCFG="roamservice"[,<roammode>[,<effect>]]**
Service Domain Configuration	/	**AT+QCFG="servicedomain"[,<service>[,<effect>]]** <service> CS only, PS only, CS&PS
Band Configuration	**AT+QBAND=<op_band>**	**AT+QCFG="band"[,<bandval>[,<effect>]]** Parameter <bandval> is different from M10. Support: GSM900&GSM1800&GSM850&GSM1900&WCDMA2100&WCDMA1900&WCDMA900&WCDMA850&WCDMA800
HSDPA Category Configuration	/	**AT+QCFG="hsdpacat"[,<cat>]**
RRC Release Version Configuration	/	**AT+QCFG="rrc"[,<rrcr>]**
UE SGSN Release Version Configuration	/	**AT+QCFG="sgsn"[,<sgsnr>]**
UE MSC Release Version Configuration	/	**AT+QCFG="msc"[,<mscr>]**

GPRS Multislot Class Configuration	**AT+QGPCLASS=<class>** GPRS multislot class Range: 1-12 Default value: 12	**AT+QCFG="gprsmultislot"[,<gprsslot>]** GPRS multislot class Range: 1-12, 30-34 Default value: 10
EDGE Multislot Class Configuration	/	**AT+QCFG="edgemultislot"[,<edgeslot>]** EDGE multislot class Range: 1-34, Default value: 12.
DTM&EDTM Multislot Class Configuration	/	**AT+QCFG="dtmmultislot"[,<dtmslot>]**

2.12. Network Commands

Function	M10	UC15
Operator Selection	**AT+COPS=<mode>[,<format>[,<oper>]]**	**AT+COPS=<mode>[,<format>[,<oper>[,<Act>]]]** <Act> Access technology selected 0 GSM 2 UTRAN 3 GSM W/EGPRS 4 UTRAN W/HSDPA 5 UTRAN W/HSUPA 6 UTRAN W/HSDPA and HSUPA
Network Registration	**AT+CREG?** **+CREG: <n>,<stat>[,<lac>,<ci>]** **OK**	**AT+CREG?** **+CREG: <n>,<stat>[,<lac>,<ci>[,<Act>]]** **OK**

Signal Quality Report	**AT+CSQ**	**AT+CSQ**
Preferred Operator List	**AT+CPOL=<index>[,<format>[,<oper>]]**	**AT+CPOL=<index>[,<format>[,<oper>[<GSM>,<GSM_compact>,<UTRAN>]]]**
Read Operator Names	**AT+COPN**	**AT+COPN**
Automatic Time Zone Update	/	**AT+CTZU=<onoff>**
Time Zone Reporting	**AT+CTZR=<mode>** <mode> range: 0-1	**AT+CTZR=<reporting>** <reporting> range: 0-2
Obtain the Latest Network Time Synchronization	**AT+QLTS** **+QLTS: <time>,<ds>** **OK**	**AT+QLTS** **+QLTS: <time>,<ds>** **OK**
Report Cell Description in Engineering Mode	**AT+QENG**	**AT+QENG** Parameters are different from M10. Please refer to *Quectel_UC15_AT_Commands_Manual* for the details.
Scan Power of GSM Frequency	**AT+QSCANF=<band>,<freq>**	/
Lock GSM Frequency	**AT+QLOCKF=<mode>,<band1900>,<freq>**	/
Network Time Synchronization	**AT+QNITZ=<enable>**	/
Get Module Operation Band	**AT+QGBAND** **+QGBAND: <op_band>** **OK**	**AT+QGBAND** **+QGBAND: <currentband>** **OK**

2.13. PHB Commands

Function	M10	UC15
Subscriber Number	**AT+CNUM** **[+CNUM:** **[<alpha>],<number>,<type>[,<speed>,<service>[,<itc>]]]** **[+CNUM:** **[<alpha>],<number>,<type>[,<speed>,<service>[,<itc>]]]** **OK**	**AT+CNUM** **[+CNUM: [<alpha>],<number>,<type>]** **[+CNUM: [<alpha>],<number>,<type>]** **OK**
Find Phonebook Entries	**AT+CPBF=[<findtext>]** **[+CPBF: <index>,<number>,<type>,<text>]** **[…]** **OK**	**AT+CPBF=<findtext>** **[+CPBF: <index>,<number>,<type>,<text>]** **[…]** **OK**
Read Phonebook Entries	**AT+CPBR=<index1>[,<index2>]** **+CPBR: <index1>,<number>,<type>,<text>** **[+CPBR: <index2>,<number>,<type>,<text>** **[…]]** **OK** If the index in AT+CPBR=<index> has no record, OK will be returned.	**AT+CPBR=<index1>[,<index2>]** **+CPBR: <index1>,<number>,<type>,<text>** **[+CPBR: <index2>,<number>,<type>,<text>** **[…]]** **OK** If the index in AT+CPBR=<index> has no record, +CME ERROR: 22 will be returned.
Select Phonebook Memory Storage	**AT+CPBS=<storage>** <storage> "MC","RC","DC","LA","ME","BN","SD", "VM","FD","LD","ON","SM"	**AT+CPBS=<storage>** <storage> "SM","DC","FD","LD","MC","ME","RC","EN","ON"

Write Phonebook Entry	AT+CPBW=<index>[,<number>,[<type>,[<text>]]]	AT+CPBW=[<index>][,<number>[,<type>[,<text>]]]

2.14. PS Commands

Function	M10	UC15
Define PDP Context	AT+CGDCONT=<cid>[,<PDP_type>,[APN>[,<PDP_addr>[,<d_comp>[,<h_comp>]]]]] AT+CGDCONT=? +CGDCONT: (1-3),"IP",,,(0),(0) OK	AT+CGDCONT=<cid>[,<PDP_type>[,<APN>[,<PDP_addr>[,<data_comp>[,<head_comp>]]]]] AT+CGDCONT=? +CGDCONT: (1-16),"IP",,,(0-2),(0-3) +CGDCONT: (1-16),"PPP",,,(0-2),(0-3) +CGDCONT: (1-16),"IPV6",,,(0-2),(0-3) +CGDCONT: (1-16),"IPV4V6",,,(0-2),(0-3) OK
Quality of Service Profile (Requested)	AT+CGQREQ=<cid>[,<precedence>[,<delay>[,<reliability>[,<peak>[,<mean>]]]]] AT+CGQREQ=? +CGQREQ: "IP",(0-3),(0-4),(0-5),(0-9),(0-18,31) OK	AT+CGQREQ=<cid>[,<precedence>[,<delay>[,<reliability>[,<peak>[,<mean>]]]]] AT+CGQREQ=? +CGQREQ: "IP",(0-3),(0-4),(0-5),(0-9),(0-18,31) +CGQREQ: "PPP",(0-3),(0-4),(0-5),(0-9),(0-18,31) +CGQREQ: "IPV6",(0-3),(0-4),(0-5),(0-9),(0-18,31) +CGQREQ: "IPV4V6",(0-3),(0-4),(0-5),(0-9),(0-18,31) OK

Quality of Service Profile (Minimum Acceptable)	AT+CGQMIN=<cid>[,<precedence>[,<delay>[,<reliability>[,<peak>[,<mean>]]]]] AT+CGQMIN=? +CGQMIN: "IP",(0-3),(0-4),(0-5),(0-9),(0-18,31) OK	AT+CGQMIN=<cid>[,<precedence>[,<delay>[,<reliability>[,<peak>[,<mean>]]]]] AT+CGQMIN=? +CGQMIN: "IP",(0-3),(0-4),(0-5),(0-9),(0-18,31) +CGQMIN: "PPP",(0-3),(0-4),(0-5),(0-9),(0-18,31) +CGQMIN: "IPV6",(0-3),(0-4),(0-5),(0-9),(0-18,31) +CGQMIN: "IPV4V6",(0-3),(0-4),(0-5),(0-9),(0-18,31) OK
3G Quality of Service Profile (Requested)	AT+CGEQREQ=? +CGEQREQ: "IP", (0-4), (0-63, 64+8m, 576+64n [m=0~63, n=0~126]), (0-63, 64+8m, 576+64n [m=0~63, n=0~126]), (0-63, 64+8m, 576+64n [m=0~63, n=0~126]), (0-63, 64+8m, 576+64n [m=0~63, n=0~126]), (0-2), (0, 10-1500, 1502, 1510, 1520), ("0E0","1E2","7E3","1E3","1E4","1E5","1E6","1E1"), ("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E5","1E6","6E8"), (0-3), (0, 10-150, 200-950, 1000-4100), (0-3) OK	AT+CGEQREQ=[<cid>[,<Traffic class>[,<Maximum bitrate UL> [,<Maximum bitrate DL> [,<Guaranteed bitrate UL> [,<Guaranteed bitrate DL> [,<Delivery order> [,<Maximum SDU size> [,<SDU error ratio> [,<Residual bit error ratio> [,<Delivery of erroneous SDUs> [,<Transfer delay> [,<Traffic handling priority> [,<Source statistics descriptor> [,<Signaling indication>]]]]]]]]]]]]]] AT+CGEQREQ=? +CGEQREQ: "IP",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),(

		"0E0","1E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3),(0,1),(0,1) +CGEQREQ: "PPP",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","1E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3),(0,1),(0,1) +CGEQREQ: "IPV6",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","1E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3),(0,1),(0,1) +CGEQREQ: "IPV4V6",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","1E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3),(0,1),(0,1) OK
3G Quality of Service Profile (Minimum Acceptable)	AT+CGEQMIN=? +CGEQMIN: "IP", (0-3), (0-63, 64+8m, 576+64n [m=0~63, n=0~126]), (0-63, 64+8m, 576+64n [m=0~63, n=0~126]), (0-63, 64+8m, 576+64n [m=0~63, n=0~126]), (0-63, 64+8m, 576+64n [m=0~63, n=0~126]), (0-1), (0, 10-1500, 1502, 1510, 1520), ("0E0","1E2","7E3","1E3","1E4","1E5","1E6","1E1"),	AT+CGEQMIN=[<cid>[,<Traffic class> [,<Maximum bitrate UL> [,<Maximum bitrate DL> [,<Guaranteed bitrate UL> [,<Guaranteed bitrate DL> [,<Delivery order> [,<Maximum SDU size> [,<SDU error ratio>

	("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E5","1E6","6E8"), (0-2), (0, 10-150, 200-950, 1000-4100), (0-3) OK	[,<Residual bit error ratio> [,<Delivery of erroneous SDUs> [,<Transfer delay> [,<Traffic handling priority> [,<Source statistics descriptor> [,<Signalling indication>]]]]]]]]]]]]] AT+CGEQMIN=? +CGEQMIN: "IP",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","1E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3),(0,1),(0,1) +CGEQMIN: "PPP",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","1E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3),(0,1),(0,1) +CGEQMIN: "IPV6",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","1E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3),(0,1),(0,1) +CGEQMIN: "IPV4V6",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","1E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3),(0,1),(0,1)

		OK
Activate or Deactivate PDP Context	**AT+CGACT=<state>,<cid>** **AT+CGACT=0,<cid>** **NO CARRIER**	**AT+CGACT=<state>,<cid>** **AT+CGACT=0,<cid>** **OK**
Show PDP Address	**AT+CGPADDR[=<cid>[,<cid>[,…]]]**	**AT+CGPADDR[=<cid>[,<cid>[,…]]]**
GPRS Mobile Station Class	**AT+CGCLASS=<class>** <class> A string parameter indicates the GPRS mobile class (Functionality in descending order) "B" Class B "CG" Class C in GPRS only mode "CC" Class C in circuit switched only mode	**AT+CGCLASS=<class>** <class> A string parameter indicates the GPRS mobile class (Functionality in descending order) "A" Class A
Network Registration Status	**AT+CGREG=[<n>]** **+CGREG: <n>,<stat>[,<lac>,<ci>]** **OK**	**AT+CGREG=[<n>]** **+CGREG: <n>,<stat>[,<lac>,<ci>[,<Act>]]** **OK**
Select Service for MO SMS Messages	**AT+CGSMS=[<service>]** <service> range: 0-3 Default: 3	**AT+CGSMS=[<service>]** <service> range: 0-3 Default: 1
Configure 3G Parameters by QCFG	/	**AT+QCFG="hsdpacat"[,<cat>]** **AT+QCFG="rrc"[,<rrcr>]**

2.15. SS Commands

Function	M10	UC15
Call Forwarding Number and Conditions Control	**AT+CCFC=<reads>,<mode>[,<number>[,<type>[,<class>[,<subaddr>[,<satype>[,time]]]]]]**	**AT+CCFC=<reads>,<mode>[,<number>[,<type>[,<class>[,<subaddr>[,<satype>[,time]]]]]]**
Call Waiting Control	**AT+CCWA=[<n>[,<mode>[,<class>]]]**	**AT+CCWA[=<n>][,<mode>[,<class>]]**
Call Related Supplementary Services	**AT+CHLD[=<n>]**	**AT+CHLD[=<n>]** <n> supports 4 (ECT)
Calling Line Identification Presentation	**AT+CLIP[=<n>]**	**AT+CLIP[=<n>]**
Calling Line Identification Restriction	**AT+CLIR[=<n>]**	**AT+CLIR[=<n>]**
Connected Line Identification Presentation	**AT+COLP[=<n>]**	**AT+COLP[=<n>]**
Supplementary Service Notifications	**AT+CSSN=<n>[,<m>]**	**AT+CSSN=<n>[,<m>]**
Unstructured Supplementary Service Data	**AT+CUSD=[<n>[,<str>[,<dcs>]]**	**AT+CUSD=<mode>[,<reqstr>[,<dcs>]]**

2.16. TCP Commands

With respect to the compatibility, we follow the rules listed as below:

1. When executing UC15 TCPIP AT commands, we will ensure that the operation procedure of UC15 is consistent with 2G modules as far as possible.

2. For some functions, we added many TCPIP AT commands into our 2G module, including AT+QIREGAPP, AT+QIFGCNT, AT+QIMODE, AT+QISERVER, AT+QIMUX, AT+QISRVC, AT+QIHEAD, AT+QISHOWRA, AT+QISHOWPT, AT+QISHOWLA and AT+QIND. Meanwhile, switch between TCP server and client, and multi-connection management are complicated on 2G platform. Therefore, we simplified UC15's command syntax, which can avoid customer's confusion, thus improving the efficiency of customer development and reducing the complexity of support.

Function	M10	UC15
Select a Context as Foreground Context	**AT+QIFGCNT=<id>** M10 can be configured to 2 scenarios: 0, 1	**AT+QICSGP=<contextid>,<contexttype>[,<apn>[,<username>,<password>[,<authentication>]]]** UC15 can be configured to 16 scenarios: 1-16, but only supports at most 3 scenarios activated at the same time.
Select GPRS as the Bearer	**AT+QICSGP=<mode>,[<apn>,<username>,<password>]**	**AT+QICSGP=<contextid>,<contexttype>[,<apn>[,<username>,<password>[,<authentication>]]]**
Select CSD as the Bearer	**AT+QICSGP=<mode>,[<dialnumber>,<username>,<password>,<rate>]**	/
Start TCPIP Task and Set APN, User Name and Password	**AT+QIREGAPP=<apn>,<username>,<password>[,<rate>]**	**AT+QICSGP=<contextid>,<contexttype>[,<apn>[,<username>,<password>[,<authentication>]]]**
Control Whether to Enable Multiple TCPIP Session	**AT+QIMUX=<mode>** M10 could activate 2 scenarios, and support up to 6 sockets for the multiple connection.	/ UC15 supports the parameter <connectid> in AT+QIOPEN to configure multiple connections. It can also activate 3 scenarios and support up to 12 sockets.
Select TCPIP Transfer Mode	**AT+QIMODE=<mode>** <mode> 0 Non transparent access mode 1 Transparent access mode AT+QINDI=<m> can be used to configure buffer access mode or direct push mode	**AT+QIOPEN=<contextid>,<connectid>,<servicetype>,<ipaddress>/<domainname>,<remoteport>[,<localport>[,<accessmode>]]** <accessmode> 0 Buffer access mode 1 Direct push mode 2 Transparent access mode

		You can configure the parameter <accessmode> to set transfer mode.
Activate GPRS/CSD Context	**AT+QIACT**	**AT+QIACT=<contextid>** <contextid> supports 1-16 and can activate 3 scenarios.
Get Local IP Address	**AT+QILOCIP**	**AT+QIACT?**
Deactivate GPRS/CSD PDP Context	**AT+QIDEACT**	**AT+QIDEACT=<contextid>**
Connect with IP Address or Domain Name Server	**AT+QIDNSIP=<mode>**	/
Set Local Port	**AT+QILPORT=<mode>,<port>**	/
Configure as TCP Server	**AT+QISERVER**	**AT+QIOPEN=<contextid>,<connectid>,<servicetype>,<ipaddress>/<domainname>,<remoteport>[,<localport>[,<accessmode>]]**
Configure as TCP/UDP Server	**AT+QISERVER=<type>[,<max>]**	
Single Start up TCP or UDP Connection	**AT+QIOPEN=<mode>,<IP address>/<domain name>,<port>**	
Multiple Start up TCP or UDP Connection	**AT+QIOPEN=<index>,<mode>,<IP address>/<domain name>,<port>**	
Choose Connection	**AT+QISRVC=<connection>**	
Switch Data Access Mode	/	**AT+QISWTMD=<connectid>,<accessmode>**
Single/Multiple Query Current Connection Status	**AT+QISTAT**	**AT+QISTATE=<querytype>,<contextid>**
Multiple Close TCP or UDP Connection	**AT+QICLOSE=<index>**	**AT+QICLOSE=<connectid>[,<timeout>]**
Single Close TCP or UDP Connection	**AT+QICLOSE**	

Single Send Data through TCP or UDP Connection	**AT+QISEND** **AT+QISEND=<length>**	If <servicetype> is “TCP”, “UDP” or “TCP INCOMING”, send data with changeable length: **AT+QISEND=<connectid>** If<servicetype> is “TCP”, “UDP” or “TCP INCOMING”, send data with fixed length: **AT+QISEND=<connectid>,<sendlength>** If <servicetype> is “UDP SERVICE”: **AT+QISEND=<connectid>,<sendlength>,<remoteip>,<remoteport>**
Multiple Send Data through TCP or UDP Connection	**AT+QISEND=<index>,<length>**	
Query the Data Information for Sending	**AT+QISACK=<n>**	**AT+QISEND=<connectid>,0**
Set Auto Sending Timer	**AT+QIAUTOS=<mode>[,<time>]**	/
Set Prompt of ">" When Sending Data	**AT+QIPROMPT=<sendprompt>** 0 No prompt ">" and show "SEND OK" when sending is successful. 1 Echo prompt ">" and show "SEND OK" when sending is successful. 2 No prompt and not show "SEND OK" when sending is successful.	/ Not implemented, the default echo prompt ">" and show "SEND OK”
Control Whether or not to Echo the Data for QISEND	**AT+QISDE=<m>** 0 Not echo 1 Echo	**AT+QISDE=<m>** 0 Not echo 1 Echo
Set the Method to Handle Received TCP/IP Data in Buffer Access Mode or Direct Push Mode	**AT+QINDI=<m>**	The <accessmode> parameter of **AT+QIOPEN** can set the buffer mode or direct push mode

Retrieve the Received TCP/IP Data in Buffer Access Mode	**AT+QIRD=<id>,<sc>,<sid>,<len>**	**AT+QIRD=<connectid>[,<readlength>]**
Query Retrieved Data	/	**AT+QIRD=<connectid>,0**
URC Connect Closed	**CLOSED**	**+QIURC: "closed",<connectid>**
URC Receive Data in Buffer Access Mode	**+QIRDI: <id>,<sc>,<sid>**	**+QIURC: "recv",<connectid>**
URC Single Receive Data in Direct Push Mode	**Client receives data** **<data>** **or incoming receives data** **<data>** You can use AT+QIHEAD, AT+QISHOWRA, AT+QISHOWPT to set the head of data.	**+QIURC: "recv",<connectid>,<currentrecvlength><CR><LF><data>** **+QIURC: "recv",<connectid>,<currentrecvlength>,<remoteip>,<remoteport><CR><LF><data>**
URC Multiple Receive Data in Direct Push Mode	**+RECEIVE: <index>,<length>** **<data>** You can use AT+QIHEAD, AT+QISHOWRA, AT+QISHOWPT to set the head of data.	
URC of Incoming Connection Full	/	**+QIURC: "incoming full"**
URC Single Accept a Remote Client Connection	**REMOTE IP: IP Address**	**+QIURC: "incoming",<connectid>,<serverid>,<remoteip>,<remoteport>**
URC Multiple Accept a Remote Client Connection	**<index>, REMOTE IP: IP Address**	
URC PDP Deactivation	**+PDP DEACT**	**+QIURC: "pdpdeact",<contextid>**
Set Whether to Display the Address of Sender	**AT+QISHOWRA=<mode>**	/

Control Whether to Show the Protocol Type	**AT+QISHOWPT=<mode>**	/
Control Whether to Display Local IP Address	**AT+QISHOWLA=<mode>**	/
Add an IP Header When Receiving Data	**AT+QIHEAD=<mode>**	/
Save TCPIP Application Context	**AT+QISCON**	/
Ping a Remote Server	**AT+QPING="<host>"[,[<timeout>][,<pingnum>]]**	**AT+QPING=<contextid>,<host>[,<timeout>[,<pingnum>]]**
Synchronize the Local Time via NTP	**AT+QNTP**	**AT+QNTP=<contextid>,<server>[,<port>][,<autosettime>]]**
Configure Domain Name Server	**AT+QIDNSCFG=<pri_dns>[,<sec_dns>]**	**AT+QIDNSCFG=<contextid>,<pridnsaddr>[,<secdnsaddr>]**
Query the IP Address of Given Domain Name	**AT+QIDNSGIP=<domain name>**	**AT+QIDNSGIP=<contextid>,<hostname>**
Configure Transparent Transfer Mode	**AT+QITCFG=<NmRetry>,<WaitTm>,<SendSz>,<esc>**	**AT+QICFG="transpktsize"[,<transpktsize>]** **AT+QICFG="transwaittm"[,<transwaittm>]**
Query the Last Error Code	/	**AT+QIGETERROR**

2.17. FTP Commands

Function	M10	UC15
Configure Username&Password	**AT+QFTPUSER="<userName>"** **AT+QFTPPASS="<password>"**	**AT+QFTPCFG="account"[,<user name>,<password>]**
Configure Context ID	**AT+QIFGCNT=<id>**	**AT+QFTPCFG="contextid"[,<contextID>]**

Configure Active/Passive Mode	**AT+QFTPCFG=<type>[,<value>]** <value> If (<type>==1) 0 Active mode 1 Passive mode	**AT+QFTPCFG="transmode"[,<transmode>]**
Configure Transfer Type (TYPE A/TYPE B)	**AT+QFTPCFG=<type>[,<value>]** <value> If (<type>==2) 0 Set the transfer type as binary 1 Set the transfer type as ASCII	**AT+QFTPCFG="filetype"[,<file type>]**
Configure Timeout	/	**AT+QFTPCFG="rsptimeout"[,<timeout>]**
Configure Breakpoints	**AT+QFTPCFG=<type>[,<value>]** <value> If (<type>==3), it is the resuming point to resume file transfer.	**AT+QFTPPUT=<file_name>,"COM:"[,<startpos>[,<uploadlen>,<beof>]]** **AT+QFTPGET=<file_name>,"COM:"[,<startpos >[,<downloadlen>]]** **AT+QFTPPUT=<file_name>,<local_name> [,<startpos>]** **AT+QFTPGET=<file_name>,<local_name> [,<startpos >]** <local_name> is not "COM:". <startpos> is used to configure breakpoints.
Configure Local File Path	**AT+QFTPCFG=<type>[,<value>]** <value> If (<type>==4), it is a string to indicate the local position of the file to transfer.	**AT+QFTPPUT=<file_name>,<local_name> [,<startpos>]** **AT+QFTPGET=<file_name>,<local_name> [,<startpos >]** <local_name> is not "COM:" Configure local file path for UFS or RAM.
Login to FTP Server	**AT+QFTPOPEN="<hostName>", <port>**	**AT+QFTPOPEN="<host_name>", <port>**
Set the Current Directory on FTP Server	**AT+QFTPPATH="<pathName>"**	**AT+QFTPCWD=< path_name>**

Get the Current Directory on FTP Server	**AT+QFTPPATH?**	**AT+QFTPPWD**
Upload a File to FTP Server	**AT+QFTPPUT="<fileName>",<fileSz>[,<time>]**	**AT+QFTPPUT=<file_name>,"COM:"[,<startpos>[,<uploadlen>,<beof>]]** **AT+QFTPPUT=<file_name>,<local_name>[,<startpos>]** <local_name> is not "COM:".
Download a File from FTP Server	**AT+QFTPGET="<fileName>"[,fileSz]**	**AT+QFTPGET=<file_name>,"COM:"[,<startpos >[,<downloadlen>]]** **AT+QFTPGET=<file_name>,<local_name>[,<startpos>]** <local_name> is not "COM:".
List Contents of Directory on FTP Server	**AT+QFTPLIST["<name>"]**	**AT+QFTPLIST=<dirname>["COM:"]** **AT+QFTPLIST=<dirname>,<local_name>** The <local_name> is not "COM:".
List File Names of Directory on FTP Server	**AT+QFTPNLST["<dirName>"]**	**AT+QFTPNLST=<dirname>["COM:"]** **AT+QFTPNLST=<dirname>,<local_name>** <local_name> is not "COM:".
Get the File Size on FTP Server	**AT+QFTPSIZE=<file name>**	**AT+QFTPSIZE=< file_name>**
Delete the File on FTP Server	**AT+QFTPDELETE="<file name>"**	**AT+QFTPDEL =< file_name>**
Make a Folder on FTP Server	**AT+QFTPMKDIR="<path name>"**	**AT+QFTPMKDIR=< folder_name>** UC15 <folder_name> is same as M10 <path name>.
Delete a Folder on FTP Server	**AT+QFTPRMDIR="<path name>"**	**AT+QFTPRMDIR=< folder_name>**
Get the Status of FTP Service	**AT+QFTPSTAT**	**AT+QFTPSTAT**

	Response **+QFTPSTAT: <state>** **OK**	Response **OK** **+QFTPSTAT: 0,<ftpstat>**
Get the transferred data length on FTP Server	**AT+QFTPLEN** Response **+QFTPLEN: <len>** **OK**	**AT+QFTPLEN** Response **OK** **+QFTPLEN: 0,<transferlen>**
Logout from FTP Server	**AT+QFTPCLOSE** Response **OK** **+QFTPCLOSE:<err>**	**AT+QFTPCLOSE** Response **OK** **+QFTPCLOSE: <err>,<protocol error>**
FTP Command Error Code	**+QFTPXX:<err>**	**+QFTPXX: <error code>,<protocol error>**

3 Appendix A Reference

Table 1: Related Documents

SN	Document Name	Remark
[1]	Quectel_UC15_AT_Commands_Manual	UC15 AT commands Manual
[2]	Quectel_UC15_FTP_AT_Commands_Manual	UC15 FTP AT commands Manual
[3]	Quectel_M10_AT_Commands_Manual	M10 AT commands Manual