

# **UART Protocol**

0c

## **for BC3MM BT Module**

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By

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## 1. AT Command Syntax

The modules follow standard AT command set defined in GSM 07.05 and GSM07.07. The syntax will follow TS07.07 Version 7.7.0 Release 1998.

The modules also support AT command extension to fully optimize and control the modules. The extended AT command set always started with “AT#” that distinguish from the standard AT command set.

### 1.1 Command format

The general structure of AT command line has been defined in TS07.07. Please refer to TS07.07 for details.

The extended AT command line has following syntax:

```
AT#CMD<CR><LF>
```

```
AT#CMD=12<CR><LF>
```

Here:

AT# is command line prefix

CMD is basic command

12 is Sub-Parameter

If an extended command has been performed successfully, result code <CR> <LF> OK <CR> <LF> is sent from the module to the host.

If an extended command is not accepted by the module, result code <CR> <LF> ERROR <CR><LF> is sent to the host.

### 1.2 Information responses and result codes

Final result code <CR><LF>OK<CR><LF>

### 1.3 Indication format

Indication is originated by the module and sent to the host. The extended AT command indication has following syntax:

```
<CR><LF>IND<CR><LF>
```

```
<CR><LF>IND12<CR><LF>
```

Here:

IND is basic indication

12 is Sub-Parameter

## **2. Uart Setting**

9600, one STOP bit, no PARITY bit, no flow control

### 3. Extended AT Commands

AT Commands	Command Description
#CC	Connect to Handset Command
#CD	Disconnect from Handset Command
#CE	Answer Call Command
#CF	Reject/End Call Command
#CG	End Call Command
#CH	Redial Command
#CM	Mute Command
#CN	Unmute Command
#CO	Toggle Call Transfer to/from Handset Command
#CP	Toggle Call Transfer to/from Handset Command
#CV	Delete Paired Information
#CW	Dial One Call
#CX	Send DTMF
#CY	Query HFP Status
#CZ	Reset bluetooth module
#JL	Set Phone book as Recent Dialed Call
#JM	Set Phone book as Recent Received Call
#JN	Set Phone book as Recent Missed Call
#JO	Set Phone book as Phone book in Mobile Phone
#JP	Get Previous Page of Phone book
#JQ	Get Next Page of Phone book
#MA	Play Music
#MJ	Play Music
#MB	Pause Music
#MC	Stop Music
#MD	Forward
#ME	Backword
#MI	Connect to Last AV Source
#MM	Change Local Device name
#MN	Change Local Device Pin Code
#MO	Query AVRCP Status
#PR	Clear Call History(record by module)

### **3.1 Connect to Handset #CC**

Command #CC

Description

This command causes the module to connect to a paired handset. The information response and causes will indicate the command success or failure. Connect Indication will be sent to the host after the connection is established. Otherwise Disconnect Indication will be sent to the host.

### **3.2 Disconnect from Handset #CD**

Command #CD

Description

This command causes the module to disconnect from the connected handset. The information response and causes will indicate the command success or failure. Disconnect Indication will be sent to the host after the connection is dropped.

### **3.3 Answer Call #CE**

Command #CE

Description

This command causes the module to answer an incoming call. The information response and causes will indicate the command success or failure.

### **3.4 Reject/End Call #CF**

Command #CF

Description

This command causes the module to reject an incoming call or to end an active call. The information response and causes will indicate the command success or failure.

### **3.5 End Call #CG**

Command #CG

Description

This command causes the module to end an active call. The information response and causes will indicate the command success or failure.

### **3.6 Redial #CH**

Command #CH

#### Description

This command causes the module to redial the last number called in the phone. The information response and causes will indicate the command success or failure.

### **3.7 Mute #CM**

Command #CM

#### Description

This command causes the module to mute the speaker. The information response and causes will indicate the command success or failure.

### **3.8 Unmute #CN**

Command #CN

#### Description

This command causes the module to unmute the speaker. The information response and causes will indicate the command success or failure.

### **3.9 Toggle Transfer Call to/from Handset #CO**

Command #CO

#### Description

This command causes the module to transfer the active call from the module to the handset or vice versa. The information response and causes will indicate the command success or failure.

### **3.10 Toggle Transfer Call to/from Handset #CP**

Command #CP

#### Description

This command causes the module to transfer the active call from the handset to the module or vice versa. The information response and causes will indicate the command success or failure.

### **3.11 Delete Paired Infomation #CV**

Command #CV

#### Description

This command causes the module to delete all paired information. The information response and causes will indicate the command success or failure.

### 3.12 Dial One Call #CW

Command #CW

Description

This command causes the module to dial one call. The information response and causes will indicate the command success or failure.

The format:

```
AT#CW13800138000\r\n
```

### 3.13 Send DTMF #CX

Command #CX

Description

This command causes the module to send one DTMF. The information response and causes will indicate the command success or failure.

The format:

```
AT#CX1\r\n
```

```
AT#CX5\r\n
```

### 3.14 Query HFP Status #CY

Command #CY

Description

This command queries the module's HFP current status. The information response and causes will indicate the command success or failure.

Syntax: AT#CY

### 3.15 Reset #CZ

Command #CZ

Description

This command causes the module to reset. The information response and causes will indicate the command success or failure.

### 3.16 Set Phone Book List as Recent Dialed Call #JL

Command #JL

Description

This command causes the module to set the phone book list as the "Recent Dialed Call". It is firstly set as the recent dialed call in the connected cellphone. If it could not be

set successfully, the recent dialed call list in the module will be set to phone book list.

### **3.17 Set Phone Book List as Recent Received Call #JM**

Command #JM

Description

This command causes the module to set the phone book list as the “Recent Received Call”. It is firstly set as the recent received call in the connected cellphone. If it could not be set successfully, the recent received call list in the module will be set to phone book list.

### **3.18 Set Phone Book List as Recent Missed Call #JN**

Command #JN

Description

This command causes the module to set the phone book list as the “Recent Missed Call”. It is firstly set as the recent missed call in the connected cellphone. If it could not be set successfully, the recent missed call list in the module will be set to phone book list.

### **3.19 Set Phone Book List as Phone Book in Mobile Phone #JO**

Command #JN

Description

This command causes the module to set the phone book list as the phone book in the connected cellphone.

### **3.20 Get Previous Page of Phone book #JP**

Command #JP

Description

This command causes the module to send the previous page of phone book to the host. One page contains 4 items maximumly.

### **3.21 Get Next Page of Phone book #JQ**

Command #JQ

Description

This command causes the module to send the next page of phone book to the host. One page contains 4 items maximumly. Maximum page no. is 50. Minimum page no. is 1.

### **3.22 Play Music #MA**

Command #MA

Description

If the module is connected with a AV Source, this command causes the AV Source to Play Music. The information response and causes will indicate the command success or failure.

### **3.23 Play Music #MJ**

Command #MJ

Description

If the module is connected with a AV Source, this command causes the AV Source to Play Music. The information response and causes will indicate the command success or failure.

### **3.24 Pause Music #MB**

Command #MB

Description

If the module is connected with a AV Source, this command causes the AV Source to Pause Music. The information response and causes will indicate the command success or failure.

### **3.25 Stop Music #MC**

Command #MC

Description

If the module is connected with a AV Source, this command causes the AV Source to Stop Music. The information response and causes will indicate the command success or failure.

### **3.26 Forward Music #MD**

Command #MD

Description

If the module is connected with a AV Source, this command causes the AV Source to Play next song. The information response and causes will indicate the command success or failure.

### 3.27 Backward Music #ME

Command #ME

Description

If the module is connected with a AV Source, this command causes the AV Source to play last song. The information response and causes will indicate the command success or failure.

### 3.28 Connect to Last AV Source #MI

Command #MI

Description

If the module is neither connected with a AV Source nor connected with a HFP AG, this command causes the module to connect to the Last used AV Source. The information response and causes will indicate the command success or failure.

### 3.29 Change Local Device name #MM

Command #MM

Description

This command causes the module to change the Device name. The information response and causes will indicate the command success or failure.

The format:

AT#MMMMy Car Kit\r\n :the new name is “My Car Kit”

### 3.30 Change Local Device Pin Code #MN

Command #MN

Description

This command causes the module to change the Device pin code. The information response and causes will indicate the command success or failure.

The format:

AT#MN1234\r\n :the new pin is :1234

### 3.31 Query HFP Status #MO

Command #MO

Description

This command queries the module’s AVRCP current status. The information response and causes will indicate the command success or failure.

**3.32 Clear Call History (record by module) #PR**

Command #PR

Description

This command causes the module to clear call history recorded by module. The information response and causes will indicate the command success or failure.

Syntax: AT#PR

## 4. General Indications

Indication	Indication Description
IA	Disconnect Indication
IB	Connect Indication
IC	Outgoing Call Indication
ID	Incoming Call Indication
IF	Hang-Up Indication
IG	Pick-Up Indication
IH	Call Rejected Indication
IP	Length of Call ID
IR	Call Transfer To HS Indication
IO	Call Transfer From HS Indication
IS	Module Initialized
IV	Connecting Indication
IW	Phone nubmer indication of one index in one page
MA	AV suspend/stop Indication
MB	AV play Indication
MC	SCO Connected Indication
MD	SCO Disconnected Indication
MG	Report Current HFP Status
ML	Report Current AVRCP Status
MP	Active Call Initiate from AG #MP

#### **4.1 Disconnect Indication IA**

Indication IA

Description

This indication informs the host that the module is in disconnect mode.

#### **4.2 Connect Indication IB**

Indication IB

Description

This indication informs the host that the module is in connect mode.

#### **4.3 Outgoing Call Indication IC**

Indication IC

Description

This indication informs the host that an outgoing call is in progress.

#### **4.4 Incoming Call Indication ID**

Indication ID

Description

This indication informs the host that an incoming call is in progress.

Syntax: ID (number)

Value:

(number):caller number

#### **4.5 Hang-Up Call Indication IF**

Indication IF

Description

This indication informs the host that the active call has been hung-up.

#### **4.6 Pick-Up Call Indication IG**

Indication IG

Description

This indication informs the host that a new call has been picked-up.

#### **4.7 Reject Call Indication IH**

Indication IH

Description

This indication informs the host that a new call has been rejected or the call has never been answered.

#### **4.8 Length of Call ID IP**

Indication IP

Description

This indication informs the host that the length of Call ID.

Syntax: IP(length)

Value:

(length):"01"-“99”, 2 bytes, length of Call ID

#### **4.9 Call Transfer To HS Indication IR**

Indication IR

Description

This indication informs the host that the call will transfer to headset.

#### **4.10 Call Transfer From HS Indication IO**

Indication IO

Description

This indication informs the host that the call will transfer to handset.

#### **4.11 Module Initialized IS**

Indication IS

Description

This indication informs the host that the module has been initialized.

#### **4.12 Connecting Indication IV**

Indication IV

Description

This indication informs the host that the module has been connecting mobile phone or others.

#### **4.13 Phone Number Indication IW**

Indication IW

Description

This indication informs the host that the phone name and phone number stored in the

BT module or in the cellphone

Syntax: IW<index\_in\_one\_page><page no> <0xFF>(name)<0xFF>(number)

Value:

<index\_in\_one\_page>:0x01-0x04 index in a page

<page\_no>:0x01-0x50 page number

(name): Related Information

(number): Phone number

#### **4.14 AV Suspend/Stop MA**

Indication MA

Description

This indication informs the host that the av has been suspended.

#### **4.15 AV Play Indication MB**

Indication MB

Description

This indication informs the host that the av has been started.

#### **4.16 MC**

Indication MC

Description

This indication informs the host that one SCO connection is established.

#### **4.17 MD**

Indication MD

Description

This indication informs the host that the SCO connection has been disconnected.

#### **4.18 Report Current HFP Status MG**

Indication MG

Description

This indication informs the host that the current HFP status

Syntax: MG<status>

Value:

<status>:0x0-0x6, status of HFP, where

0x0 Initialising

- 0x1 Ready
- 0x2 Connecting
- 0x3 Connected
- 0x4 OutgoingCallEstablish
- 0x5 IncomingCallEstablish
- 0x6 ActiveCall

#### **4.19 Report Current AVRCP Status ML**

Indication ML

Description

This indication informs the host that the current AVRCP status

Syntax: ML<status>

Value:

<status>:0x0-0x3, status of AVRCP, where

- 0x0 Initialising
- 0x1 Ready
- 0x2 Connecting
- 0x3 Connected

#### **4.20 Active Call Initiate from AG MP**

Indication MP

Description

This indication informs the host that an active call initiate from AG.

Syntax: MP

## 5. Examples

### 5.1 Power On

Once powered, the module is powered on and enters discoverable mode.

### 5.2 Send and receive commands and indications

Command: AT#XXX\r\n

Indication: \r\nYYY\r\n

Here:

XXX is a command sent to the module.

YYY is an indication received by the host. It could be “ERROR” indicated the command XXX is failed,

“OK” indicated the command XXX is success, or other indication described in this document.

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