

Qblinks Qmote GATT Specification

This document is for Qmote Developers and Community

Advertising Format

Advertising Data includes the following information:

0x19 (Appearance):

0x0180 (Type Code)¹

0x02 (16-bit UUID available):

0x1812 (Service Code)

0xff (Manufacturer Specific):

HI_UINT16(QBLINKS_COMPANY_ID),

LO_UINT16(QBLINKS_COMPANY_ID),

0x51, // 'Q'

0x6D, // 'm'

0xmm,

0xmm,

0xmm,

0xmm,

0xmm,

0xmm // 0xmm is BD-Address (MAC Address)

0xbn // last button combination code

0xsh // sequence number (high byte)

0xsl // sequence number (low byte)

Qblinks Bluetooth SIG Company Identifier is:

```
#define QBLINKS_COMPANY_ID 0x016B
```

Scan Response Data is "Qmote xxxx" (xxxx is the last 4 digits of BD Address)

¹ The Type Code was changed to 0x0180 since firmware version 2.15. Versions before 2.15 was 0x03C1



App shall filter Qmote Devices by the advertising data. DO NOT use Scan Response Data for the BLE devices scanning and screening.

Advertised Button Combination Code

(Advertised Button Combination Code is available only since firmware version 2.11)

The last three bytes of advertising data indicates the last click pattern. 0xbn is the button combination code, 0x00 if it is invalid or clicking is in progress. 0xsH and 0xsL is a 16-bit sequence number. 0xsH is the high byte of the sequence number and 0xsL is the low byte of it. Each identified click-pattern increases the sequence number by 1, so the receiver can determine if this is a new click action. The application of button code advertising is for the broadcasting based remote control.

Device Keep-Alive

Once App (for Qmote) enters Foreground mode, the App must write a Keep-Alive packet to each connected Qmote before its idle timer expires in order to avoid Qmote entering Sleep Mode. App shall NOT start sending Keep-Alive until the Callback notification listening is ready. Write-without-Response is recommended to use to send Keep-Alive packets. The Keep-Alive packet contains a Platform ID. The Platform ID is listed below:

Unknown:	0x00	(Not intent to be used by App)
iOS:	0x01	
Android:	0x02	
Android-S:	0x03	Short Idle Time: 15 seconds
Android-N	0x04	
RESERVED	0x0D	
Unlisted:	0xFE	
(Unassigned Platform)		Default Idle Time: 10 minutes

For 3rd Party and non-smartphone platform IDs, please use Unlisted



*If you need Qmote to do any special processing for your product, please contact support@qblinks.com

Paired but Sleep Qmote Devices

When the user wants to configure an unconnected Qmote (in Sleep Mode) that has been paired (which means it is in the device list of the App), an alert message shall pop up to ask the user to click the Qmote button. The App shall confirm the connectivity with the Qmote to be configured to continue to the Qmote configuration menu of the App. Once the Qmote is reconnected, the App shall start sending the Keep-Alive packets.

Qmote UUID Information

Qmote uses 128-bit UUID Format:

```
#define QBLINKS_128BIT_UUID(uuid)      0xec, 0x73, 0x6b, 0x6e, 0x69,
0x6c, 0x62, 0x51, 0x53, 0x54, 0x43, 0x41, LO_UINT16(uuid),
HI_UINT16(uuid), 0x00, 0xe8
```

Button Combination Code

Each click pattern represents a different button combination code listed below:

[Release]	0x00	
•	0x01	
• •	0x02	
• • •	0x03	
• • • •	0x04	
– •	0x05	
• – •	0x06	
– – •	0x07	
– • •	0x08	
– • • •	0x09	
– – • •	0x0A	(App does not have this combination)
– – – •	0x0B	(App does not have this combination)



[UARTmsg Frag E]	0xFB	(Maker's Module Only)
[UARTmsg Frag M]	0xFC	(Maker's Module Only)
[UARTmsg Frag S]	0xFD	(Maker's Module Only)
[Invalid Button]	0xFE	
_____	0xFF	(continuous click for 6 clicks or more)

– Long Click

- Short Click

Please be aware, there is no long or short click difference of the last click of each pattern.

[Release] is the code when the button is released.

When the button is clicked for 6 times, code 0xFF notification is sent. When the consecutive clicks stop, 0xFE is sent, then the release code 0x00 is sent.

When the button is on-hold, the combination code of the last click pattern is sent.

When the button remains on-hold until the fifth second, 0xFF is sent. When the button is released, 0x00 is sent.

For example, when the button is click-click and held on the second click, 0x02 is sent. When the on-hold time reaches the fifth second, 0xFF is sent. When the button is released, 0x00 is sent.

Other combination code that is not used by the App:

– – – •	0x0B
• • • • •	0x0C (This recalls the iOS Virtual Keyboard)
• • • • • •	0x0D (This triggers the Finder)
• • • • • • •	0x0E
• • • • • • • •	0x0F
• • • • • • • • •	0x10
• • • • • • • • • •	0x11



Response Time Control

Response time determines how quickly or slowly the Qmote needs to decide what the click pattern is. For example, if a user wants to make click-click-click, the interval time between two clicks can be varied user by user. If the response time is too short, the interpretation can be click-click, click (two clicks and then one click, instead of three clicks pattern)

There are total 16 scales of the response time defined as in the list below:

0x80 Fastest. The response time is about 300ms.

0xB0 Default Value. The response time is about 550ms.

0x00 Middle Value. The response time is about 950ms.

0x70 Slowest. The response time is about 1,500ms.

The 16 scales of the values are:

(Fast) (Slow)

0x80-0x90-0xA0-0xB0-0xC0-0xD0-0xE0-0xF0-0x00-0x10-0x20-0x30-0x40-0x50-0x60-0x70

(It is interpreted as 2's compliment.) If the value of the low byte is not zero (e.g. 0xC5), this configuration is considered as an error and it will not be saved.

Each Qmote has only one Response Time configuration. If the second paired central changes the response time, the latest response time configuration is applied to the first paired central device as well. App shall obtain the response time value dynamically from the connected Qmote. It shall not store the value in App. The latest configuration lasts even when the Qmote is in the disconnected mode.



Requirements of Newly Paired Device

When a Qmote accomplished the pairing or reconnection, it will send one of the following three notifications back to the App through CallBack Characteristics:

0x03 0x00: Device successfully paired

0x04 0x00: Device pairing failed (user hit cancel on Pairing dialog)

0x05 0x00: Device successfully bonded (reconnected to paired device)

Central Device shall enable the notification of CallBack Characteristics when the Qmote device is connected. The App may not be fast enough to receive the notification, so the App shall read the CallBack Characteristic once after the notification is enabled. (Note: CallBack Characteristics is notifiable/read-only. Read operation obtains the last notification.)

*Note1: Android Device does not have the “Device Pairing Failed” notification. This is an iOS only notification. The Android App shall wait for the Paired Notification (or its associated Service Status) before it can continue to the Qmote configuration menu.

*Note2: “**0x03 0x01: HIDCCC received**” is available on iOS and some Android devices. It indicates the system is ready to receive HID commands.

If a connected Qmote is new to the App, the App shall send the following commands through Command Characteristics:

Step 1:

0x2F 0x01 0x00: Reset configuration (of current connected device)

Step 2:

0x2C [Platform ID]: Keep-Alive Command

That is to avoid the supposed-to-be-a-new Qmote still has old configuration data in it.



Bonding Keys Full

Due to the limitations of the BLE chip architecture, each Qmote can be bonding (pairing) with maximum 6 central devices, including Smart Phones or PC/Mac. When the number of bonding devices exceed 6, the security key for the communication exchange of the 7th central device will not be able to be stored. Some Qmote functions will not work properly when that happens. Qmote will send a Callback notification, **0x03 0x02**, to inform the App to inform the user to perform a Total Factory Reset. This Callback notification is sent after each Keep-Alive command is received until it is clear by the control command, **0x2F 0x08 0x00**. To perform a Total Factory Reset, the user has to click Qmote 10 times and hold the 11th click for more then 5 seconds, then release. Total Factory Reset will erase every configuration, including all bonding keys and all Qmote configurations on the Qmote.

Note: Maximum number of bonding devices was reduced to 6 since the firmware version 2.10.



F-Code List

Each function that Qmote can perform has an associated F-Code. All the functions except [App Defined] are the OS-level native functions, which are handled by the Qmote-OS directly. [App Defined] has to be performed by the App itself. If you are not running the Qmote App, your App is responsible to take care of those.

Here is the list of the F-Code:

0x00	[Reserved]
0x01	App Defined (Action to be performed by App)
0x02	Amazing Button
0x03	Home
0x04	Music Play
0x05	Music Next
0x06	Music Previous
0x07	Take Snapshot
0x08	Reserved
0x09	Reserved
0x0A	Reserved ^{Note 4}
0x0B	Quick Siri Call on iOS ^{Note 6}
0x0C	Presenter Next
0x0D	Presenter Previous
0x0E	Reserved
0x0F	Disable the function of the click pattern

Note 1: Any code between 0x10 through 0xFF is considered as Disable.

Note 2: When a click pattern (button combination code) is disabled and the Qmote is in Sleep-Mode, clicking the pattern will wake up Qmote. If Qmote is connected in 60 seconds, this click pattern will be sent. (Wake



Up means the Qmote is switched from Waiting to Advertising.)

Note 3: If a click pattern is disabled, to re-enable it will require reconfiguration of the F-Code.

Note 4: Since firmware version 2.15, Samsung/Sony/HTC camera shutter is no more supported.

Note 5: The Amazing Button includes Camera Shutter (Non-S), Alarm Snooze, and Ringtone Mute

Note 6: Quick Siri Trigger is designed for iOS platform. It may or may not work for Android platform.

Siri Call

Quick Siri Trigger function is designed for iOS platform. It is a unique OS-level control. The purpose is to let the user trigger Siri with a single click pattern. It works the opposite way of Home button. For example, assume one-click is used as Quick Siri Trigger. When the user presses Qmote with one-click (push-release), Siri will be activated. If the user holds the one-click, a regular home button will be sent to exit Siri.

Find Phone

There isn't F-Code as Finder. Button on-hold or continuous clicking (6 times or more) will generate 0xFF. The App is responsible for generating siren until the release code, 0x0, is received or a time duration is reached.

Virtual Keyboard Enable/Disable

There is a F-Code for this feature, or 5 clicks (Button Combination = 0x0C) will send this command by default. Virtual Keyboard Enable/Disable only works for iOS. For Android, turn off the Hardware Keyboard in the Input Method configuration will recall the Virtual Keyboard.

LED Flashing Speed

0x00: Just Once



- 0x01: Slow (F)
- 0x02: Medium (F-F)
- 0x03: Fast (F-F-F)
- 0x05: Non-Stop (F-F-F-F-F-...)

Any LED flash command remains only for 60 seconds. After 60 seconds, the LED flash will stop. If you want to keep the LED flashing all the time, the App has to send the command in each 60 seconds.

Configuration Saving Acknowledgement

The following commands that involve with a configuration saving will generate Callback acknowledgements.

- 0x10 F-Code Configuration
- 0x2E Response Time Configuration
- 0x2F 0x01 0x00 Configuration Reset

Please refer to the list of Callback Characteristics, Type Code 0x07.

Short Connection Interval

Connection update is for the power saving. In the case that the central requires shorter interval, use the command 0x2F 09 01. It limits the max connection interval to 120. Once the short connection interval is used, it increases the power consumption.

Auto Wake Up

(This feature is supported in the firmware version v2.26 or later.)

Once auto wakeup is enabled, Qmote will run in the always-connected/always-broadcasting mode. This feature is designed for the used cases like PRES button. Use command 0x03 0xFF 0x01 to enable it and 0x03 0xFF 0x00 to disable it. Please be aware, once this is enabled, the battery scenarios will be very different. The



estimated battery time of Qmote is listed below:

Always connected with an Android: 12-15 months

Always connected with an iOS: 5 months

Auto-wakeup enabled but not connected to any phone: 6 weeks

PTT Mode

PTT mode is designed for the application of Push-To-Talk. By the default, PTT mode is disabled. Once PTT mode is enabled, the following things happen:

- There is only Push and Release as 1-click on and off. For example, double-click interprets as 1-click push-release-push-release.
- If you have set 1-click as a HID function, the HID function temporarily stops until PTT mode is disabled.
- No responsive time delay. The push/release event will be sent as soon as possible. Though, the Bluetooth LE connection interval may still cause minor delay.
- PTT mode will not be stored as a configuration. Once Qmote is disconnected or enters the sleep mode, this mode will be disabled automatically until it is enabled through the QPS command again.

HID Disable

HID service is enabled by the default. It can be disabled in the middle of the connection with the QPS command `0x2F 0x0C 0x01`, or re-enable it with the command `0x2F 0x0C 0x00`. Once the command is issued, the following actions will be triggered:

- Software Reset will be generated when HID enabled→disabled
- Disconnect-Reconnect will be performed when HID disabled→enabled
- Battery Service still exists (However, the OS may not recognize this as an active service since it is part of HID)
- Power-on or reset will initiate the advertising (in case this was a switch from the request of the app)

Please be aware, this is a system-wide configuration. It is all-on or all-off for all the paired centrals.





Primary Service and Characteristics

Primary Service:

QPS (Qblinks Peripheral Service), App plays GATT Client role:

QBLINKS_128BIT_UUID (0x8802)

Characteristics:

Command Characteristics:

UUID: QBLINKS_128BIT_UUID (0x9A01)

Property: Write-Only (allow Write with/without Response)

Length: Max 18 bytes

Data Structure: (Network Byte Order)

CMD DATA...

0x10 [Button Combination Code] [F-Code]: Configure F-Code

Note: Regardless of whether the F-code is handled by the OS or the App, it shall be configured into Qmote.

0x10 [BCC1] [F1][BCC2][F2]...: Bulky F-Code Configurations

Note: BCC=Button Combination Code, F=F-Code. The total length of the bulky configuration cannot exceed 17 bytes, so you can configure 8 sets at most in one command.

0x2C [Platform ID]: Keep-Alive Command to ensure Qmote will not enter Sleep-Mode during the following 60 seconds. For more information, please refer to the section regarding Device Keep-Alive.

0x2D 0x00: Force Qmote to enter Standard Mode

0x2D 0x01: Force Qmote to enter Presenter Mode

Note: If Qmote is in the Presenter Mode, one-click and two-click will not trigger the actions on the Qmote App.

0x2E [Response Time Control Code]: Configure Response Time



0x2F 0x00 0x00: Force Commit (to NVRAM)
0x2F 0x01 0x00: Configuration Reset (of current connected device)
0x2F 0x02 0x00: Total Factory Reset (device will restart)
0x2F 0x03 0x00: Restart Device
0x2F 0x05 0x00: Restart Device and Enter OAD mode
0x2F 0x06 0x00: Disconnect and no re-advertising
0x2F 0x07 0x00: Disconnect but Remain Advertising
0x2F 0x08 0x00: Clear Bonding Key Storage Full Call Back Alert
0x2F 0x09 0x00: Use Regular Connection Interval (default)
0x2F 0x09 0x01: Use Short Connection Interval
0x2F 0x0A 0x00: Reserved system call
0x2F 0x0B 0x00: Disable PTT mode (default)
0x2F 0x0B 0x01: Enable PTT mode
0x2F 0x0C 0x00: Enable HID (default)
0x2F 0x0C 0x01: Disable HID

Note 1: Reserved CMD: 0x20~0x29, 0xfd, 0xfe, 0xff

Note 2: Force Commit is not required, Qmote will automatically perform the NVRAM Commit

Note 3: Each phone can have a different NVRAM configuration, but only the last 9 paired phones will be kept. If there are more than 9, the oldest configuration will be removed first.

Note4: Total Factory Reset (every single configurations including bonding keys) can be triggered by 10-click-and-hold-on-11th-click-for-more-than-5-seconds or ATZ7 command in Qmote Maker's Module.

0x30 0x00: Stop LED Flashing
0x30 0x02 0x01 [LED Flashing Speed]: Enable LED Flashing
0x03 [TimeSec]: Enable Timer Notification, [TimeSec] is from 1 to 64 seconds. This timer stops if Qmote is disconnected
0x03 0x00: Stop Timer Notification
0x03 0xFF 0x01: Enable auto wake up



0x03 0xFF 0x00: Disable auto wake up

[Inquiry Commands, Result will be send back through Callback

Characteristics with Type 0x06]

0x06 0x01: Service Status

0x06 0x02: Configuration Retrieve

0x06 0x03: Manufacturer Information

0x06 0x04: Serial Number

0x06 0x05: Model Information

0x06 0x06: Hardware Version

0x06 0x07: Firmware Version

0x06 0x08: FCC Information

0x06 0x09: IC Information

0x06 0x0A: NCC Information

0x06 0x0B: Bonding Status

0x06 0x0C: Connection Parameters

0x06 0x0D: JRF Information

[Maker's Module ONLY]

0x31 [Message to the UART]

Note: The max size of Message is 63 bytes.

Callback Characteristics

UUID: QBLINKS_128BUT_UUID (0x9A02)

Property: Notifiable/Read-Only

Length: 2 bytes or Variable

Data Structure: (Network Byte Order, the first byte is the type code)

0x00 0x00: Nil (value does not exist)

0x01 0x00: Timer to Wake App Up (Refer to Command 0x03)

0x02 0x00: Device has not been configured yet

Note: If a never-before paired phone connects to Qmote, Qmote will generate this notification to the App to ask the App to resend all the configurations or App can erase all the configurations regarding this new device. This is in case Qmote has performed



an all reset and that all the configurations have been erased from the Qmote device. This notification will not be sent until the first Keep-Alive command is received.

0x02 0x01: Request App to send Device Keep-Alive

Note: When the App receives this, The App shall send at least one Keep-Alive packet (includes Platform ID), this is for Qmote to confirm if the App is still running

0x03 0x00: Device successfully paired

0x03 0x01: HIDCCC received

0x03 0x02: Bonding key storage full (refer to “Bonding Keys Full”)

0x03 0x03: Connection parameters update failed

0x04 0x00: Device pairing failed (user hit cancel on Pairing dialog)

0x05 0x00: Device successfully bonded (reconnect with a previously-paired phone)

[Return of the Inquiry Commands]

0x06 0x01 [Service Status]

[Service Status]:

0x00: Not connected (not really a status can be obtained)

0x01: Connected (not Bonded)

0x02: Connected + Bonded

0x06 0x02 [Current Configuration]

[Current Configuration]	[default value]
[F-code – 9 bytes]	
[HID – 1 byte]	(false:not-disabled)
[Auto Wakeup – 1 byte]	(false:disabled)
[Platform ID – 1 byte]	
[Responsive Speed – 1 byte]	
[Presenter Mode – 1 byte]	(false:disabled)
[Use Short Connection Interval – 1 byte]	(false:disabled)

Note: First byte of F-code is for the combination 1. Second byte is for the combination 2, etc.



0x06 0x03 [Manufacturer Info in ASCII]

0x06 0x04 [Serial Number]

0x06 0x05 [Model Info in ASCII]

0x06 0x06 [Hardware Version in ASCII]

0x06 0x07 [Firmware Version in ASCII]

0x06 0x08 [FCC Info in ASCII]

0x06 0x09 [IC Info in ASCII]

0x06 0x0A [NCC Info in ASCII]

0x06 0x0B [NCB] [MTB]

NCB = Number of central devices have been bonding with

MTB = Max number of central devices can be bonding with

0x06 0x0C [INT] [LAT] [TO]

INT = Connection Interval (2 bytes in little endian)

LAT = Slave Latency (1 byte)

TO = Supervision Timeout (2 bytes in little endian)

0x06 0x0D [JRF Info in ASCII]

[Configuration Saving Acknowledgement]

0x07 0x10 [F-Code Configuration(s)]

0x07 0x2E [Response Time Configuration]

0x07 0x2F 0x01 0x00: Configuration Reset Ack

Button Characteristics

UUID: QBLINKS_128BIT_UUID (0x9A03)

Property: Notifiable

Note: If the click-pattern is assigned with non-OS-level F-Code, the App is responsible to handle the associated feature using this button combination code.

Standard Qmote:

Length: 1 Byte

Data Structure: **[Button Combination Code]**

Qmote Maker's Module Only:



Length: 1 Byte or Variable

Data Structure: [Button Combination Code] + [UARTmsg]

Note: The first byte is the Button Combination Code. If there is more than one byte, the other bytes are the data sent from the AT command. If the pattern for this button combination code is set for IFTTT on the App, the UARTmsg will be sent to IFTTT. If not, UARTmsg will be ignored.

[UARTmsg] The length cannot exceed 19 byte within the notifications. Otherwise, UARTmsg fetch is required. Please refer to the section Long UART Message.

Long UART Message

(This section applies for the Qmote Maker's Module only.)

If the UARTmsg is longer than 19 bytes, the notification will be sent differently. UARTmsg is fragmented and is sent with the combination code 0xFD for the first notification, the middle parts are sent with the combination code 0xFC until the last part of the message is sent with the combination code 0xFB. The actual combination code is placed on the second byte of the first notification. Here is the example:

Assume the following command is used:

ATBN=0x01, "very long message ..."

1st notification: **[0xFD] [0x01] ["very long message ..."]**

2nd notification: **[0xFC] ["continued message..."]**

3rd notification: **[0xFC] ["continued message..."]**

Last notification: **[0xFB] ["...end of message"]**

Please be aware. If a physical button is pressed before the last fragmented notification is sent, another regular button notification may be generated in the middle of the fragmented notification series. Due to memory constraint, the max size of Long UART Message is 63 bytes if the message is in plain ASCII text.

Long UART Message is supported by the firmware version 2.07 or later.



Revision History

V1.0/2014-NOV-12

Added code for invalid button combination

V1.7/2014-DEC-30

Added continuous click button combination, Callback Command, Factory Reset

Added paired status Callback to make sure User paired device correctly

Added Callback Platform ID, and Device Restart, OAD

Added sequence requirement for newly paired device

Differentiate Android from Regular and Galaxy/Sony

V1.8/2015-JAN-01

Corrected the Service Status Check Characteristics Data Structure

V1.8b/2015-JAN-13

Revised for the developer community

V1.9b/2015-JAN-14 by Samson Chen

Added [On-Hold Timer] for the Qmote Maker's Module

V1.10/2015-FEB-23 by Samson Chen

Added Button Combination Code for 5-clicks through 10-clicks

Added F-Code for Enable Virtual Keyboard on iOS

Added Consecutive F-Code configurations

V1.11/2015-FEB-26 by Samson Chen

No more needed On-Hold Timer. Maker's Module automatically repeats the last push scan code if button status is on-hold on reconnection and the remain-discoverable pin is enabled.

V1.12/2015-MAR-27 by Samson Chen

Added 3rd party and non-smartphone platforms

V1.13/2015-MAY-15 by Samson Chen

Added "disconnect and no re-advertising"

V1.16/2015-JUNE-5 by Samson Chen

Increased Max Size of Command Characteristics to 18 bytes

V1.17/2015-JUNE-24 by Samson Chen

Removed Service Status and Configuration Retrieve Characteristics and move them to the retrieve commands and call backs

V1.18/2015-JUNE-26 by Samson Chen



- Added CallBack characteristics type code 0x00*
- V1.19/2015-JULY-2 by Samson Chen*
 - Added CallBack 0x03 0x01 HIDCCC*
- V1.20/2015-JUL-15*
 - Added "appearance" into advertising*
 - Response Time was changed to 16 scales*
 - Configuration Retrieve data format changed*
 - Added Bonding key storage full CallBack*
 - Factory Reset changed to Total Factory Reset*
- V1.21/2015-JUL-15*
 - Rearranged F-Code table*
- V1.22/2015-JUL-24*
 - Added comments of Response Time Configuration*
- V1.23/2015-AUG-05*
 - Added idle time information per platform*
- V1.24/2015-AUG-10*
 - Added configuration command acknowledgement*
- V1.25/2015-Aug-28*
 - Allow Write-without-Response for QPS Command*
- V1.26/2015-Sep-21*
 - Corrected the comments of F-Code*
- V1.27/2015-Oct-05*
 - Added 0x2F 0x07 0x00 command: Disconnect but Remain Advertising*
 - Removed F-Code 0x0B as Virtual Keyboard Recall*
 - Added F-Code 0x0B as Volume Up, 0x0E Volume Down*
- V1.28/2015-Oct-22*
 - Added Android-N platform ID*
- V1.29/2015-November-03, revised for firmware 2.07*
 - Added special processing of long UART message*
 - Added QPS to UART for Qmote Makers*
- V1.30/2015-December-21*
 - Internal revision*
- V1.31/2016-Jan-29, revised for firmware 2.09*
 - Removed F-Code of Volume Up and Volume Down*



Added F-Code of Quick Siri Trigger

V1.32/2016-Mar-24, revised for firmware 2.10

Reduced maximum bonding devices to 6

Added JRF information

V1.33/2016-Apr-05, revised for firmware 2.11

Added advertised button combination code

Added bonding key storage full notification clear command

V1.34/2016-May-11, revised for firmware 2.12

Added control command of short interval connection update

V1.35/2016-May-27, revised for firmware 2.15 and later

Removed camera shutter of Samsung/HTC (F-code 0x0A)

F-code 0x08, 0x09 Minimum/Maximum Volume were removed

V1.36/2016-Oct-13, revised for firmware 2.18 or later

Added reserved items

Removed Button Combination 11 in NV

Added 32-hour auto wake up feature

V1.37/2016-Nov-10, revised for firmware 2.20 or later

Reduced auto wake up timer to 8 hours

V1.38/2016-Dec-07, revised for firmware 2.21 or later

Added PTT mode

V1.39/2017-Jan-20, revised for firmware 2.24 or later

Added HID disable feature

V1.40/2017-Feb-16

Auto-Wakeup Information Correction

V1.41/2017-Mar-25

Auto-Wakeup is always-connected

Fixed incorrect information about find phone command

