



## **AmpedUp HID Profile User Manual**

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# 1 Overview

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The Bluetooth HID profile specifies an adaptation of the USB HID Specification to operate over a Bluetooth wireless link, with the goal of creating wireless human interface devices that are interoperable, are easy to set-up and use, have performance comparable to wired devices, and that provide good consumer value.

Concepts from the USB HID Specification are used but not explained in this document. The USB HID Specification are recommended pre-reading for understanding the content of this document.

# 2 Commands

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## 2.1 HidConnect

The HidConnect command is used to initiate a connection with the specified host. The remote BD address must be specified.

### 2.1.1 Syntax

```
AT+AB HidConnect [BD Addr]
```

Where [BD Addr] is the remote hosts BD Address to page.

### 2.1.2 Responses

If the connection is successful, the response is:

```
AT-AB HidConnectPending
```

```
AT-AB HidConnectionUp
```

If the connection cannot be completed, the response is:

```
AT-AB HidConnectPending
```

```
AT-AB HidConnectionDown
```

```
AT-AB ConnectionDown
```

## 2.2 HidDisconnect

The HidDisconnect command is used to terminate a connection with the remote host.

### 2.2.1 Syntax

```
AT+AB HidDisconnect
```

### 2.2.2 Responses

If the disconnection is successful, the response is

```
AT-AB HidConnectionDown
```

```
AT-AB ConnectionDown
```

## 2.3 HidSendUnPlug

The HidSendUnPlug command is used to send VIRTUAL\_CABLE\_UNPLUG command to the remote host, and wait remote host disconnect HID channels. And then remote Host may delete our bond information.

### 2.3.1 Syntax

```
AT+AB HidSendUnPlug
```

### 2.3.2 Responses

If the disconnection is successful, the response is

```
AT-AB HidSendSuccess
```

```
AT-AB HidConnectionDown
```

```
AT-AB ConnectionDown
```

## 2.4 HidStatus

The HidStatus command is used to inquire current HID connection status.

### 2.4.1 Syntax

```
AT+AB HidStatus
```

### 2.4.2 Responses

If the connection is Up, the response is:

```
AT-AB HidConnectionUp
```

If the connection is Down, the response is:

```
AT-AB HidConnectionDown
```

## 2.5 HidIntSend

The HidIntSend command is used to send a hex report string to the remote host interrupt channel.

### 2.5.1 Syntax

```
AT+AB HidIntSend [DATA]
```

For example: AT+AB HidIntSend 0200E20000

### 2.5.2 Responses

If the transmission is successful, the response is

```
AT-AB HidSendSuccess
```

But the length we send should be accordance with our report descriptor, or the remote host may not received correctly.

## 2.6 HidCtrSend

The HidCtrSend command is used to send a hex report string to the remote host Control channel.

### 2.6.1 Syntax

```
AT+AB HidCtrSend [DATA]
```

For example: AT+AB HidCtrSend 0200E20000

### 2.6.2 Responses

If the transmission is successful, the response is

```
AT-AB HidSendSuccess
```

But the length we send should be accordance with our report descriptor, or the remote host may not received correctly.

# 3 Configuration Commands

---

## 3.1 HidProductName

The HidProductName command is used to config the HID product name. This configuration is effective before system reset.

### 3.1.1 Syntax

```
AT+AB HidProductName [ProductName]
```

For example: AT+AB HidProductName BluetoothHIDMoudle

The Length of ProductName should less than 25.

### 3.1.2 Responses

If the configuration is successful, the response is

```
AT-AB ConfigOk
```

## 3.2 HidProviderName

The HidProviderName command is used to config the HID provider name. This configuration is effective before system reset.

### 3.2.1 Syntax

```
AT+AB HidProviderName [ProviderName]
```

For example: AT+AB HidProviderName AMP'ed RF

The Length of ProviderName should less than 25.

### 3.2.2 Responses

If the configuration is successful, the response is

```
AT-AB ConfigOk
```

## 3.3 HidReportDescriptor

The HidReportDescriptor command is used to config the HID report descriptor. This configuration is effective before system reset.

### 3.3.1 Syntax

```
AT+AB HidReportDescriptor [ReportDescriptor]
```

Example 1: Configuration of Mouse Report Descriptor

```
AT+AB HidReportDescriptor  
05010902a10185020901a10005091901290315002501950375018102950175  
05810305010930093109381581257f750895028106c0c0
```

Example 2: Configuration of User Defined duplex transmission application, 10 bytes packet length.

```
AT+AB HidReportDescriptor  
050c09011581257fa10109307508950A810209307508950A9102c0
```

The ReportDescriptor is hex string mode, and should less than 100 bytes.

User should well know USB HID Report Descriptor, Bluetooth HID Report Descriptor is the same with it.

### 3.3.2 Responses

If the configuration is successful, the response is

```
AT-AB ConfigOk
```

## 3.4 HidSubClass

The HidSubClass command is used to config the HID SubClass. This configuration is effective before system reset.

### 3.4.1 Syntax

```
AT+AB HidSubClass [SubClass]
```

For example: AT+AB HidSubClass 80

The example is the mouse SubClass code.

The SubClass is hex mode, and should be one byte length.

About the definition of "HIDDeviceSubclass", User can reference Bluetooth HID\_SPEC.

### 3.4.2 Responses

If the configuration is successful, the response is

```
AT-AB ConfigOk
```

# 4 Message

---

Message is received form HID host.

## 4.1 HidOutReport

The HidOutReport message indicated a output report received form HID host.

### 4.1.1 Syntax

```
AT-AB HidOutReport [DATA]
```

For example: AT-AB HidOutReport 30313233343536373839

All DATA are hex mode.

## 4.2 HidControl

The HidControl message indicated a Hid Control Command have received form HID host.

### 4.2.1 Syntax

```
AT-AB HidControl [CMD]
```

For example:



```
AT-AB HidControl SUSPEND
```

[CMD] have three value:

```
SUSPEND
```

```
EXIT_SUSPEND
```

```
VIRTUAL_CABLE_UNPLUG
```

### 4.3 HidGetReport

The HidGetReport message indicated that Hid host ask us to send back a report.

#### 4.3.1 Syntax

```
AT-AB HidGetReport [Type]
```

For example:

```
AT-AB HidGetReport INPUT
```

[Type] have one value at present:

- INPUT

## 5 Usage

---

1. For more information about Bonding/Pairing/Security modes, please refer to the abSerial Reference Guide.
2. When the remote HID Host have no our module's Bond information, and module initiate the first connection, we needs delete our bond information first. We can use "AT+AB EraseBondTable" Command to erase all bond information.