

Tipro HID API

Communication with Tipro Controller over HID Interface



REFERENCE MANUAL

Operating and Programming Instructions

Tipro_HID_API_17.docx

Version 17

March 2021



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A. Introduction

HID API is Tipro's Application Programming Interface.

By default the communication between Tipro hardware and Application software is one-way (if we ignore all low-level protocols); HID Keyboard events are sent on actions (e.g. PTT press), which can be defined in the configuration software ChangeMe.

Tipro HID API is needed in the following cases:

- a) Change settings of Tipro Device (e.g. microphone sensitivity) from within the application software
- b) Query a Tipro Device (e.g. get volume setting of loudspeakers in speakerbox)

Tipro HID API can be used in combination with Tipro devices that support HID Telephony to register a callback function and in this way to be notified of events (e.g. handset pick-up or PTT key pressed)

HID Telephony can also be used without HID API, if the application software supports HID Telephony devices directly.

Requirements HID API:

- Operating system: Windows XP and later
- Tipro Device with controller version 05.xx.31 and above

Requirements HID Telephony:

- Tipro Device with support for HID Telephony:
 - o Handsets: TM-HTx
 - o Speakerbox: TM-FxT
 - o BeFREE 10
 - o BeFREE 20
 - o BeFREE 22
 - o BeFREE 07

Note: HID Telephony is supported on a module base, not controller based. E.g. a Terminal comprising a BeFREE15, a handset –HTA- and a Speakerbox –FSU- can be accessed by the HID API if the controller firmware (in the BeFREE15) is 05.xx.31 or higher. HID Telephony specific HID API functions are available only for the handset

B. Supported Command Set

| COMMAND | | | Directed to | SHORT DESCRIPTION |
|---------------------------------|-----|-----|-------------|---|
| NAME | ARG | ANS | | |
| Detect devices | - | - | Controller | Detect Tipro HID API supported devices |
| Enumerate modules | - | - | Controller | Enumerate TiproBus modules |
| Set Luminance | 1 | - | BeFREE15 | Sets the luminance of the LCD screen. |
| Touchscreen disable | - | - | BeFREE15 | Disables touchscreen. |
| Touchscreen enable | - | - | BeFREE15 | Enables touchscreen. |
| Set LEDs | 1 | - | BeFREE15 | Sets the user-defined LED state. |
| Set External Device Level | 2 | - | Speaker Box | Sets the volume of the handset / headset |
| Get External Device Level | 1 | 1 | Speaker Box | Returns the volume of the handset / headset |
| Set Sbx LED State | 3 | - | Speaker Box | Sets the LED state of the illuminated keys |
| Get Sbx LED State | 2 | 1 | Speaker Box | Returns the LED state of the illuminated keys |
| Set Speaker Level | 2 | - | Speaker Box | Sets the level of the handsfree speakers |
| Get Speaker Level | 1 | 1 | Speaker Box | Returns the level of the handsfree speakers |
| Get External Headset State | 1 | 1 | Speaker Box | Returns the state of the headset connected to Speaker Box module (connected/disconnected) |
| Mute Microphone | 2 | - | Speaker Box | Mutes/un-mutes the microphone signal |
| Set Microphone Level | 2 | - | Speaker Box | Sets the level of the microphone signal |
| Get Microphone Level | 1 | 1 | Speaker Box | Returns the level of the microphone signal |
| Set Microphone Level Ex | 3 | - | Speaker Box | Sets the level of the microphone signal for specific device |
| Set Microphone Optimal Distance | 2 | - | Speaker Box | Sets the optimal distance for the hands-free microphone |
| Get Microphone Optimal Distance | 1 | 1 | Speaker Box | Returns the optimal distance of the hands-free microphone |
| Set Microphone Threshold | 2 | - | Speaker Box | Sets the microphone threshold |
| Get Microphone Threshold | 1 | 1 | Speaker Box | Returns the microphone threshold |
| Set Microphone Compression | 2 | - | Speaker Box | Sets the microphone compression |
| Get Microphone Compression | 1 | 1 | Speaker Box | Returns the microphone compression |
| Set Microphone Threshold Ex | 3 | - | Speaker Box | Sets the microphone threshold for specific device |
| Set Microphone Compression Ex | 3 | - | Speaker Box | Sets the microphone compression for specific device |
| Speakerbox Go Online | 1 | - | Speaker Box | Puts Speaker Box to On-line mode |
| Is Speakerbox Online | 1 | 1 | Speaker Box | Returns On-line / Off-line mode |
| Set Alert Line | 2 | - | Speaker Box | Sets the function (mode) of the alert line |
| Get Alert Line | 1 | 1 | Speaker Box | Returns the function (mode) of the alert line |
| Set Active Device | 2 | - | Speaker Box | Sets the device where both speaker and microphone signals will be switched to. |
| BF10 Set Luminance | 1 | - | BeFREE10 | Sets the luminance of the stripe and LCD screen. |
| BF10 Touchscreen disable | - | - | BeFREE10 | Disables touchscreen. |
| BF10 Touchscreen enable | - | - | BeFREE10 | Enables touchscreen. |
| BF10 Set Speaker Level | 1 | - | BeFREE10 | Sets the level of the BF10 speakers |
| BF10 Get Speaker Level | - | 1 | BeFREE10 | Returns the level of the BF10 speakers |
| BF10 Mute Microphone | 1 | - | BeFREE10 | Mutes/un-mutes the microphone signal |
| BF10 Set Microphone Level | 1 | - | BeFREE10 | Sets the level of the microphone signal |
| BF10 Get Microphone Level | - | 1 | BeFREE10 | Returns the level of the microphone signal |

| COMMAND | | | Directed to | SHORT DESCRIPTION |
|--------------------------------------|-----|-----|-------------|---|
| NAME | ARG | ANS | | |
| BF10 Set Microphone Optimal Distance | 1 | - | BeFREE10 | Sets the optimal distance of the microphone |
| BF10 Get Microphone Optimal Distance | - | 1 | BeFREE10 | Returns optimal distance of the microphone |
| BF10 Set Microphone Threshold | 1 | - | BeFREE10 | Sets the microphone threshold |
| BF10 Get Microphone Threshold | - | 1 | BeFREE10 | Returns the microphone threshold |
| BF10 Set Microphone Compression | 1 | - | BeFREE10 | Sets the microphone compression |
| BF10 Get Microphone Compression | - | 1 | BeFREE10 | Returns the microphone compression |
| BF10 Set PTT Key LED State | 1 | - | BeFREE10 | Sets the LED state of illuminated PTT key |
| BF10 Set PTT Key LED State Ex | 3 | - | BeFREE10 | Sets the operation of the illuminated PTT key with more parameters |
| BF10 Get PTT Key LED State | - | 1 | BeFREE10 | Returns the LED state of the illuminated PTT Key |
| BF10 Set Analog Audio | 1 | - | BeFREE10 | Sets the Analog audio options |
| BF10 Get Analog Audio | - | 1 | BeFREE10 | Returns Analog audio options |
| BF20 Touchscreen Disable | - | - | BeFREE20 | Disables touchscreen |
| BF20 Touchscreen Enable | - | - | BeFREE20 | Enables touchscreen |
| BF20 Set Left Speaker Level | 1 | - | BeFREE20 | Sets the level of the left BF20 speaker |
| BF20 Get Left Speaker Level | - | 1 | BeFREE20 | Returns the level of the left BF20 speaker |
| BF20 Set Right Speaker Level | 1 | - | BeFREE20 | Sets the level of the right BF20 speaker |
| BF20 Get Right Speaker Level | - | 1 | BeFREE20 | Returns the level of the right BF20 speaker |
| BF20 Set PCM Scenario | 1 | - | BeFREE20 | Sets PCM scenario |
| BF20 Get PCM Scenario | - | 2 | BeFREE20 | Returns PCM scenario |
| BF20 Set Line Out 2 Spk Mode | 1 | - | BeFREE20 | Sets mode of connecting analog line out signal to speakers |
| BF20 Get Line Out 2 Spk Mode | - | 2 | BeFREE20 | Returns mode of connecting the analog line out signal to the speakers |
| BF20 Set LF Speaker State | 1 | - | BeFREE20 | Sets state of central (low frequency) speaker |
| BF20 Get LF Speaker State | - | 2 | BeFREE20 | Returns state of central (low frequency) speaker |
| BF20 Mute Microphone | 1 | - | BeFREE20 | Mutes/un-mutes microphone signal |
| BF20 Set Mic Amp Mode | 1 | - | BeFREE20 | Sets microphone amplifier mode |
| BF20 Get Mic Amp Mode | - | 2 | BeFREE20 | Returns microphone amplifier mode |
| BF20 Set Microphone Threshold | 1 | - | BeFREE20 | Sets microphone threshold |
| BF20 Get Microphone Threshold | - | 1 | BeFREE20 | Returns microphone threshold |
| BF20 Set Mic 2 Line In State | 1 | - | BeFREE20 | Sets state of connecting microphone signal to analog line in |
| BF20 Get Mic 2 Line In State | - | 2 | BeFREE20 | Returns state of connecting microphone signal to analog line in |
| BF20 Set Mic On VU State | 1 | - | BeFREE20 | Sets state of showing microphone signal on VU meter |
| BF20 Get Mic On VU State | - | 2 | BeFREE20 | Returns state of showing microphone signal on VU meter |
| BF20 Set Echo Mode | 1 | - | BeFREE20 | Sets mode of echo canceller |
| BF20 Get Echo Mode | - | 2 | BeFREE20 | Returns mode of echo canceller |

| COMMAND | | | Directed to | SHORT DESCRIPTION |
|------------------------------------|-----|-----|-------------|---|
| NAME | ARG | ANS | | |
| BF20 Set PTT Key LED State | 1 | - | BeFREE20 | Sets backlight state of illuminated PTT key |
| BF20 Get PTT Key LED State | - | 1 | BeFREE20 | Returns backlight state of illuminated PTT key |
| BF20 Set PTT Key LED State Ex | 3 | - | BeFREE20 | Sets operation of illuminated PTT key with more parameters |
| BF22 Touchscreen Disable | - | - | BeFREE22 | Disables touchscreen |
| BF22 Touchscreen Enable | - | - | BeFREE22 | Enables touchscreen |
| BF22 Set Left Speaker Level | 1 | - | BeFREE22 | Sets the level of the left BF22 speaker |
| BF22 Get Left Speaker Level | - | 1 | BeFREE22 | Returns the level of the left BF22 speaker |
| BF22 Set Right Speaker Level | 1 | - | BeFREE22 | Sets the level of the right BF22 speaker |
| BF22 Get Right Speaker Level | - | 1 | BeFREE22 | Returns the level of the right BF22 speaker |
| BF22 Set PCM Scenario | 1 | - | BeFREE22 | Sets PCM scenario |
| BF22 Get PCM Scenario | - | 2 | BeFREE22 | Returns PCM scenario |
| BF22 Set Line Out 2 Spk Mode | 1 | - | BeFREE22 | Sets mode of connecting analog line out signal to speakers |
| BF22 Get Line Out 2 Spk Mode | - | 2 | BeFREE22 | Returns mode of connecting the analog line out signal to the speakers |
| BF22 Set LF Speaker State | 1 | - | BeFREE22 | Sets state of central (low frequency) speaker |
| BF22 Get LF Speaker State | - | 2 | BeFREE22 | Returns state of central (low frequency) speaker |
| BF22 Mute Microphone | 1 | - | BeFREE22 | Mutes/un-mutes microphone signal |
| BF22 Set Mic Amp Mode | 1 | - | BeFREE22 | Sets microphone amplifier mode |
| BF22 Get Mic Amp Mode | - | 2 | BeFREE22 | Returns microphone amplifier mode |
| BF22 Set Microphone Threshold | 1 | - | BeFREE22 | Sets microphone threshold |
| BF22 Get Microphone Threshold | - | 2 | BeFREE22 | Returns microphone threshold |
| BF22 Set Mic 2 Line In State | 1 | - | BeFREE22 | Sets state of connecting microphone signal to analog line in |
| BF22 Get Mic 2 Line In State | - | 2 | BeFREE22 | Returns state of connecting microphone signal to analog line in |
| BF22 Set Mic On VU State | 1 | - | BeFREE22 | Sets state of showing microphone signal on VU meter |
| BF22 Get Mic On VU State | - | 2 | BeFREE22 | Returns state of showing microphone signal on VU meter |
| BF22 Set Echo Mode | 1 | - | BeFREE22 | Sets mode of echo canceller |
| BF22 Get Echo Mode | - | 2 | BeFREE22 | Returns mode of echo canceller |
| BF22 Set PTT Key LED State | 1 | - | BeFREE22 | Sets backlight state of illuminated PTT key |
| BF22 Get PTT Key LED State | - | 1 | BeFREE22 | Returns backlight state of illuminated PTT key |
| BF22 Set PTT Key LED State Ex | 3 | - | BeFREE22 | Sets operation of illuminated PTT key with more parameters |
| BF22 Set LineKeys Led State | 16 | - | BeFREE22 | Sets state of LEDs on 16 keys of line-keys |
| BF22 Get LineKeys Led State | - | 16 | BeFREE22 | Returns state of LEDs on 16 keys of line-keys |
| Handset Set Microphone Compression | 2 | - | Handset | Sets microphone compression setting |
| Handset Set Microphone Threshold | 2 | - | Handset | Sets microphone noise gate threshold |
| Handset Set Microphone Level | 2 | - | Handset | Sets level of microphone signal |

| COMMAND | | | Directed to | SHORT DESCRIPTION |
|---|-----|-----|-------------|--|
| NAME | ARG | ANS | | |
| Handset Get Microphone Compression | 1 | 1 | Handset | Returns microphone compression setting |
| Handset Get Microphone Threshold | 1 | 1 | Handset | Returns microphone noise gate threshold |
| Handset Get Microphone Level | 1 | 1 | Handset | Returns level of microphone signal |
| Handset Set Speaker Level | 2 | - | Handset | Sets level of speaker signal |
| Handset Get Speaker Level | 1 | 1 | Handset | Returns level of speaker signal |
| HAA Handset Set Microphone Optimal Distance | 2 | - | HAA Handset | Sets the optimal distance for the handset microphone. |
| HAA Handset Get Microphone Optimal Distance | 1 | 1 | HAA Handset | Returns the optimal distance for the handset microphone. |
| HAA Handset Set Sidetone Level | 2 | - | HAA Handset | Sets the level of the handset sidetone. |
| HAA Handset Get Sidetone Level | 1 | 1 | HAA Handset | Returns the level of the handset sidetone |
| HAA Handset Set Sidetone | 2 | - | HAA Handset | Turns handset sidetone on or off |
| BF07 Set Speaker Level | 1 | - | BeFREE07 | Sets the level of the hands-free speakers. |
| BF07 Get Speaker Level | - | 1 | BeFREE07 | Returns the level of the hands-free speakers. |
| BF07 Set PTT LED State | 1 | - | BeFREE07 | Sets the LED state of the PTT key. |
| BF07 Get PTT LED State | - | 1 | BeFREE07 | Returns the LED state of the PTT key. |
| BF07 Set Handset Speaker Level | 1 | - | BeFREE07 | Sets the level of the handset speaker. |
| BF07 Get Handset Speaker Level | - | 1 | BeFREE07 | Returns the level of the handset speaker. |
| BF07 Set Alert Line | 1 | - | BeFREE07 | Sets the function (mode) of the alert line. |
| BF07 Get Alert Line | - | 1 | BeFREE07 | Returns the function (mode) of the alert line. |
| BF07 Set Microphone Level | 2 | - | BeFREE07 | Sets the level of the microphone signal. |
| BF07 Get Microphone Level | 1 | 1 | BeFREE07 | Returns the level of the microphone signal. |
| BF07 Set Microphone Threshold | 2 | - | BeFREE07 | Sets the microphone noise threshold level. |
| BF07 Get Microphone Threshold | 1 | 1 | BeFREE07 | Returns the microphone noise threshold level. |
| BF07 Set Microphone Compression | 2 | - | BeFREE07 | Sets the microphone compression. |
| BF07 Get Microphone Compression | 1 | 1 | BeFREE07 | Returns microphone compression. |
| BF07 Set Microphone Optimal Distance | 2 | - | BeFREE07 | Sets the optimal distance for the microphone. |
| BF07 Get Microphone Optimal Distance | 1 | 1 | BeFREE07 | Returns the optimal distance for the microphone. |
| BF07 Set LED Blink Speed | 2 | - | BeFREE07 | Sets the LED blink timings. |
| BF07 Get LED Blink Speed | - | 2 | BeFREE07 | Returns LED blink timings. |
| BF07 Touchscreen Disable | - | - | BeFREE07 | Disables touchscreen. |
| BF07 Touchscreen Enable | - | - | BeFREE07 | Enables touchscreen. |
| BF07 Disable Echo | - | - | BeFREE07 | Disables echo cancelation. |
| BF07 Enable Echo | - | - | BeFREE07 | Enables echo cancelation. |
| BF07 Get Echo State | - | 1 | BeFREE07 | Returns echo cancelation status |
| BF07 Set Mic On VU State | 1 | - | BeFREE07 | Sets if microphone level is shown on vu-meter |
| BF07 Get Mic On VU State | - | 1 | BeFREE07 | Returns if microphone level is shown on vu-meter |
| BF07 Set Handset Sidetone Level | 1 | - | BeFREE07 | Sets the level of the handset sidetone. |

| COMMAND | | | Directed to | SHORT DESCRIPTION |
|---|-----|-----|------------------|--|
| NAME | ARG | ANS | | |
| BF07 Set Handset Sidetone | 1 | - | BeFREE07 | Turns handset sidetone on or off |
| BF07Get Handset Sidetone Level | - | 1 | BeFREE07 | Returns the level of the handset sidetone |
| BF07 Emulate Key Press | 1 | - | BeFREE07 | Emulates PTT key press |
| BF07 Emulate Key Release | 1 | - | BeFREE07 | Emulates PTT key release |
| Detect Telephony Devices | - | - | Telephony Device | Scans for telephony devices |
| Get Num Of Detected Telephony Devices | - | 1 | Telephony Device | Returns number of the connected telephony devices |
| Get Telephony Devices Product String | 2 | 1 | Telephony Device | Returns product string of the specific telephony device |
| Get Telephony Devices VID PID | 1 | 2 | Telephony Device | Returns vendor ID and product ID of the specific telephony device |
| Get Telephony Devices Manufacturer String | 2 | 1 | Telephony Device | Returns manufacturer string of the specific telephony device |
| Get Telephony Devices Path | 2 | 1 | Telephony Device | Returns the path of the specific telephony device |
| Register Telephony Callbacks | 3 | - | Telephony Device | Registers callbacks for key and status events |
| Register Telephony Callbacks Ex | 3 | - | Telephony Device | Registers callbacks for key and status events with support for classes |
| Stop Telephony Key Device | 1 | - | Telephony Device | Stops the processing if the callbacks for the specific device |

C. COMMAND description

C.1. General commands

These are general purpose commands, not directly targeted to a specific module. This set of commands might have to communicate with more modules over the TiproBus to get required data. It is expected that they will take more time to finish, but they are required to be called only at initialization phase and only if module specific commands are to be used later.

C.1.1. Detect devices

The command rescans the USB ports to detect if any Tipro devices supporting HID API are connected.

Syntax :

```
int HIDDetectDevices(void);
```

Return value:

Returns command status code

C.1.2. Enumerate modules

This command must be called before any commands that are directed to TiproBus modules are used. The command enumerates TiproBus modules and detects their supported command sets.

Syntax :

```
int HIDEnumerateModules (void);
```

Return value:

Returns command status code

C.2. BeFREE 15 Commands

These commands are directed to the controller inside of the BeFree module. Controller processes this commands internally, so they are generally very quickly executed.

C.2.1. Set Luminance

Sets the relative luminance of the LCD screen in 20 steps of approximately 5%. Valid range is from 0 (darkest) to 20(brightest).

Syntax :

```
int HIDSetLuminance(int nLum);
```

Parameters:

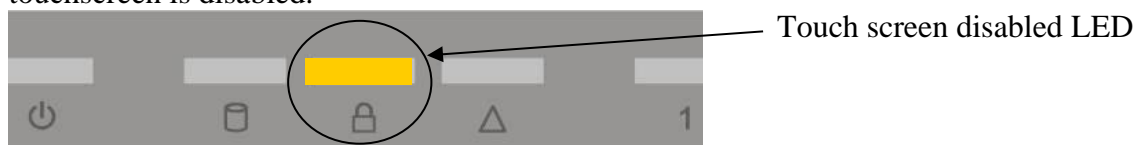
| | |
|-------------|---------------------------|
| nLum | Relative luminance (0-20) |
|-------------|---------------------------|

Return value:

Returns command status code

C.2.2. Touchscreen disable

Disables the touchscreen. Touch screen disabled LED automatically lights up when touchscreen is disabled.



Syntax :

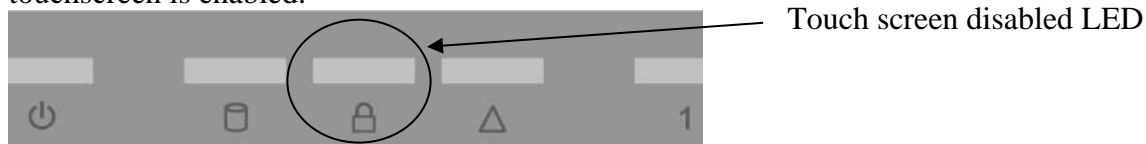
```
int HIDTouchScreenDisable(void);
```

Return value:

Returns command status code

C.2.3. Touchscreen enable

Enables the touchscreen. Touch screen disabled LED automatically turns off when touchscreen is enabled.



Syntax :

```
int HIDTouchScreenEnable(void);
```

Return value:

Returns command status code

C.2.4. Set LEDs

Sets the user defined LEDs. Each bit of the parameter corresponds to a LED on a BeFree as shown on picture below. When issuing this command the LED mode will automatically switch to user defined, overwriting any previously shown information (except error code).



Syntax :
int HIDSetLeds(int nLEDs);

Parameters:
nLEDs LEDs to turn ON/OFF (0x00-0x0F)

Return value:
Returns command status code

Examples:
Sending command *HIDSetLeds(5)* would result in turning on the LED 1 and 3.
Sending command *HIDSetLeds(15)* would result in turning on all LEDs. To turn off all LEDs command *HIDSetLeds(0)* should be sent.

| | |
|-----------------------|--|
| <i>HIDSetLeds(5)</i> | |
| <i>HIDSetLeds(15)</i> | |
| <i>HIDSetLeds(0)</i> | |

C.3. Speakerbox commands

These commands can be used to control any SpeakerBox module successfully enumerated on TiproBus. If no SpeakerBox is present the commands will return corresponding error. These commands are sent over the TiproBus and might take approximately 100ms to complete.

C.3.1. Set External Device Level

Sets the level of the connected headset/handset device.

Syntax :

```
int HIDSetExternalDeviceLevel(int nFsNum, int nLevel);
```

Parameters:

| | |
|---------------|--|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| nLevel | Level of the handset/headset device: <ul style="list-style-type: none"> - SBX_HANDSET_HEADSET_LEVEL_9DB - SBX_HANDSET_HEADSET_LEVEL_6DB - SBX_HANDSET_HEADSET_LEVEL_3DB - SBX_HANDSET_HEADSET_LEVEL_0DB - SBX_HANDSET_HEADSET_LEVEL_M6DB - SBX_HANDSET_HEADSET_LEVEL_M12DB - SBX_HANDSET_HEADSET_LEVEL_M18DB - SBX_HANDSET_HEADSET_LEVEL_M24DB - SBX_HANDSET_HEADSET_LEVEL_M30DB - SBX_HANDSET_HEADSET_LEVEL_M36DB - SBX_HANDSET_HEADSET_LEVEL_M42DB - SBX_HANDSET_HEADSET_ILLEGAL |

Return value:

Returns command status code

C.3.2. Get External Device Level

Returns the the current level of the connected headset/handset device.

Syntax :

```
int HIDGetExternalDeviceLevel(int nFsNum, int *nLevel);
```

Parameters:

| | |
|---------------|---|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
|---------------|---|

| | |
|----------------|--|
| *nLevel | Current level of the handset/headset device: |
| | - SBX_HANDSET_HEADSET_LEVEL_9DB |
| | - SBX_HANDSET_HEADSET_LEVEL_6DB |
| | - SBX_HANDSET_HEADSET_LEVEL_3DB |
| | - SBX_HANDSET_HEADSET_LEVEL_0DB |
| | - SBX_HANDSET_HEADSET_LEVEL_M6DB |
| | - SBX_HANDSET_HEADSET_LEVEL_M12DB |
| | - SBX_HANDSET_HEADSET_LEVEL_M18DB |
| | - SBX_HANDSET_HEADSET_LEVEL_M24DB |
| | - SBX_HANDSET_HEADSET_LEVEL_M30DB |
| | - SBX_HANDSET_HEADSET_LEVEL_M36DB |
| | - SBX_HANDSET_HEADSET_LEVEL_M42DB |
| | - SBX_HANDSET_HEADSET_ILLEGAL |

Return value:

Returns command status code

C.3.3. Set Sbx LED State

Sets the LED state of the illuminated keys.

Syntax :

```
int HIDSetSbxLEDState(int nFsNum, int nKey, int nState);
```

Parameters:

| | |
|---------------|---|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| nKey | Illuminated key reference number looking from the left side of the module |
| nState | State of the LED to set: - LED_ON - LED_OFF |

Return value:

Returns command status code

C.3.4. Get Sbx LED State

Returns the LED state of the illuminated keys.

Syntax :

```
int HIDGetSbxLEDState(int nFsNum, int nKey, int *nState);
```

Parameters:

| | |
|----------------|---|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| nKey | Illuminated key reference number looking from the left side of the module |
| *nState | State of the LED: - LED_ON - LED_OFF |

Return value:

Returns command status code

C.3.5. Set Speaker Level

Sets the level of the handsfree speakers.

Syntax :

```
int HIDSetSpeakerLevel(int nFsNum, int nLevel);
```

Parameters:

| | |
|---------------|--|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| nLevel | - Sets the speaker level to one of the predefined values (valid range is from 0 to 20) |

Return value:

Returns command status code

C.3.6. Get Speaker Level

Returns the level of the handsfree speakers.

Syntax :

```
int HIDGetSpeakerLevel(int nFsNum, int *nLevel);
```

Parameters:

| | |
|----------------|---|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| *nLevel | Current level of the handsfree speakers |

Return value:

Returns command status code

C.3.7. Get External Headset State

Returns the state of the headset device connected to the Speakerbox module.

Syntax :

```
int HIDGetExternalHeadsetState(int nFsNum, int *nState);
```

Parameters:

| | |
|----------------|--|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| *nState | State of the headset: <ul style="list-style-type: none">- HEADSET_CONNECTED- HEADSET_DISCONNECTED |

Return value:

Returns command status code

C.3.8. Mute Microphone

Mutes/un-mutes the microphone signal.

Syntax :

```
int HIDMuteMicrophone(int nFsNum, int nMute);
```

Parameters:

| | |
|---------------|--|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| nMute | State of the microphone: <ul style="list-style-type: none">- SBX_MIC_ACTIVE- SBX_MIC_MUTE |

Return value:

Returns command status code

C.3.9. Set Microphone Level

Sets the level of the microphone signal (microphone sensitivity).

Syntax :

```
int HIDSetMicrophoneLevel(int nFsNum, int nLevel);
```

Parameters:

| | |
|---------------|---|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| nLevel | Microphone sensitivity setting: <ul style="list-style-type: none"> - SBX_MIC_LEVEL_P7 - SBX_MIC_LEVEL_P6 - SBX_MIC_LEVEL_P5 - SBX_MIC_LEVEL_P4 - SBX_MIC_LEVEL_P3 - SBX_MIC_LEVEL_P2 - SBX_MIC_LEVEL_P1 - SBX_MIC_LEVEL_0 - SBX_MIC_LEVEL_M1 - SBX_MIC_LEVEL_M2 - SBX_MIC_LEVEL_M3 - SBX_MIC_LEVEL_M4 - SBX_MIC_LEVEL_M5 - SBX_MIC_LEVEL_M6 - SBX_MIC_LEVEL_M7 |

Return value:

Returns command status code

C.3.10. Get Microphone Level

Returns the level of the microphone signal (microphone sensitivity).

Syntax :

```
int HIDGetMicrophoneLevel(int nFsNum, int *nLevel);
```

Parameters:

| | |
|----------------|---|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| *nLevel | Microphone sensitivity setting: <ul style="list-style-type: none"> - SBX_MIC_LEVEL_P7 - SBX_MIC_LEVEL_P6 - SBX_MIC_LEVEL_P5 - SBX_MIC_LEVEL_P4 - SBX_MIC_LEVEL_P3 - SBX_MIC_LEVEL_P2 - SBX_MIC_LEVEL_P1 - SBX_MIC_LEVEL_0 - SBX_MIC_LEVEL_M1 - SBX_MIC_LEVEL_M2 - SBX_MIC_LEVEL_M3 - SBX_MIC_LEVEL_M4 - SBX_MIC_LEVEL_M5 - SBX_MIC_LEVEL_M6 |

- SBX_MIC_LEVEL_M7
- SBX_MIC_LEVEL_ILLEGAL

Return value:

Returns command status code

C.3.11. Set Microphone Level Ex

Sets the level of the microphone signal (microphone sensitivity).

Syntax :

```
int HIDSetMicrophoneLevelEx(int nFsNum, int nLevel, int
nDevice);
```

Parameters:

| | |
|----------------|---|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| nLevel | Microphone sensitivity setting: <ul style="list-style-type: none"> - SBX_MIC_LEVEL_P7 - SBX_MIC_LEVEL_P6 - SBX_MIC_LEVEL_P5 - SBX_MIC_LEVEL_P4 - SBX_MIC_LEVEL_P3 - SBX_MIC_LEVEL_P2 - SBX_MIC_LEVEL_P1 - SBX_MIC_LEVEL_0 - SBX_MIC_LEVEL_M1 - SBX_MIC_LEVEL_M2 - SBX_MIC_LEVEL_M3 - SBX_MIC_LEVEL_M4 - SBX_MIC_LEVEL_M5 - SBX_MIC_LEVEL_M6 - SBX_MIC_LEVEL_M7 |
| nDevice | Device microphone to set : <ul style="list-style-type: none"> - SBX_DEVICE_HANDSFREE - SBX_DEVICE_HANDSET_HEADSET |

Return value:

Returns command status code

C.3.12. Set Microphone Optimal Distance

Sets the optimal distance for the hands-free microphone.

Syntax :

```
int HIDSetMicrophoneOptimalDistance(int nFsNum, int nDistance);
```

Parameters:

nFsNum

Speakerbox module reference number looking from the left side of the configuration.

nDistance

Microphone optimal distance:

- SBX_MIC_DISTANCE_VERY_SHORT
- SBX_MIC_DISTANCE_SHORT
- SBX_MIC_DISTANCE_MEDIUM
- SBX_MIC_DISTANCE_LONG

Return value:

Returns command status code

C.3.13. Get Microphone Optimal Distance

Returns the optimal distance for the hands-free microphone.

Syntax :

```
int HIDGetMicrophoneOptimalDistance(int nFsNum, int *nDistance);
```

Parameters:

nFsNum

Speakerbox module reference number looking from the left side of the configuration.

***nDistance**

Microphone optimal distance:

- SBX_MIC_DISTANCE_VERY_SHORT
- SBX_MIC_DISTANCE_SHORT
- SBX_MIC_DISTANCE_MEDIUM
- SBX_MIC_DISTANCE_LONG
- SBX_MIC_DISTANCE_ILLEGAL

Return value:

Returns command status code

C.3.14. Set Microphone Threshold

Sets the microphone noise gate threshold.

Syntax :

```
int HIDSetMicrophoneThreshold(int nFsNum, int
nThreshold);
```

Parameters:

| | |
|-------------------|---|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| nThreshold | Microphone noise gate threshold. <ul style="list-style-type: none"> - SBX_MIC_THRESHOLD_VERY_LOW - SBX_MIC_THRESHOLD_LOW - SBX_MIC_THRESHOLD_MID - SBX_MIC_THRESHOLD_HIGH |

Return value:

Returns command status code

C.3.15. Get Microphone Threshold

Returns the microphone noise gate threshold.

Syntax :

```
int HIDGetMicrophoneThreshold(int nFsNum, int
*nThreshold);
```

Parameters:

| | |
|--------------------|--|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| *nThreshold | Microphone noise gate threshold. <ul style="list-style-type: none"> - SBX_MIC_THRESHOLD_VERY_LOW - SBX_MIC_THRESHOLD_LOW - SBX_MIC_THRESHOLD_MID - SBX_MIC_THRESHOLD_HIGH - SBX_MIC_THRESHOLD_ILLEGAL |

Return value:

Returns command status code

C.3.16. Set Microphone Compression

Sets the microphone compression.

Syntax :

```
int HIDSetMicrophoneCompression(int nFsNum, int
nCompression);
```

Parameters:

| | |
|---------------------|--|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| nCompression | Microphone compression settings. <ul style="list-style-type: none"> - SBX_MIC_COMPRESSION_OFF - SBX_MIC_COMPRESSION_LOW - SBX_MIC_COMPRESSION_MID |

Return value:

Returns command status code

C.3.17. Get Microphone Compression

Returns microphone compression settings.

Syntax :

```
int HIDGetMicrophoneCompression(int nFsNum, int *nCompression);
```

Parameters:

| | |
|----------------------|---|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| *nCompression | Microphone compression settings. <ul style="list-style-type: none"> - SBX_MIC_COMPRESSION_OFF - SBX_MIC_COMPRESSION_LOW - SBX_MIC_COMPRESSION_MID - SBX_MIC_COMPRESSION_ILLEGAL |

Return value:

Returns command status code

C.3.18. Set Microphone Threshold Ex

Sets the microphone noise gate threshold for specific device.

Syntax :

```
int HIDSetMicrophoneThresholdEx(int nFsNum, int nThreshold, int nDevice);
```

Parameters:

| | |
|---------------|---|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
|---------------|---|

| | |
|-------------------|--|
| nThreshold | Microphone noise gate threshold. <ul style="list-style-type: none"> - SBX_MIC_THRESHOLD_VERY_LOW - SBX_MIC_THRESHOLD_LOW - SBX_MIC_THRESHOLD_MID - SBX_MIC_THRESHOLD_HIGH |
| nDevice | Device microphone for which threshold will be set : <ul style="list-style-type: none"> - SBX_DEVICE_HANDSFREE - SBX_DEVICE_HANDSET_HEADSET |

Return value:

Returns command status code

C.3.19. Set Microphone Compression Ex

Sets the microphone compression for specific device.

Syntax :

```
int HIDSetMicrophoneCompressionEx(int nFsNum, int
nCompression, int nDevice);
```

Parameters:

| | |
|---------------------|---|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| nCompression | Microphone compression settings. <ul style="list-style-type: none"> - SBX_MIC_COMPRESSION_OFF - SBX_MIC_COMPRESSION_LOW - SBX_MIC_COMPRESSION_MID |
| nDevice | Device microphone for which compression will be set : <ul style="list-style-type: none"> - SBX_DEVICE_HANDSFREE - SBX_DEVICE_HANDSET_HEADSET |

Return value:

Returns command status code

C.3.20. Speakerbox Go Online

Puts speakerbox to on-line mode.

Syntax :

```
int HIDSpeakerboxGoOnLine(int nFsNum);
```

Parameters:

| | |
|---------------|---|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
|---------------|---|

Return value:

Returns command status code

C.3.21. Is Speakerbox Online

Returns if the Speakerbox is either in on-line or off-line mode.

Syntax :

```
int HIDIsSpeakerboxOnline (int nFsNum, int *nOnline);
```

Parameters:

| | |
|-----------------|---|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| *nOnline | If speakerbox is in on-line mode 1 is returned, 0 otherwise. |

Return value:

Returns command status code

C.3.22. Set Alert Line

Sets the function (mode) of the alert audio channel. This function only works if the speakerbox is put to on-line mode.

Syntax :

```
int HIDSetAlertLine(int nFsNum, int nMode);
```

Parameters:

| | |
|---------------|--|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| nMode | Mode of the alert audio channel: <ul style="list-style-type: none">- SBX_ALERT_AS_ALERT (used as ALERT)- SBX_ALERT_AS_VOICE (used as VOICE) |

Return value:

Returns command status code

C.3.23. Get Alert Line

Returns the function (mode) of the alert audio channel. This function only works if the speakerbox is put to on-line mode.

Syntax :

```
int HIDGetAlertLine(int nFsNum, int *nMode);
```

Parameters:

| | |
|---------------|--|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| *nMode | Mode of the alert audio channel: <ul style="list-style-type: none"> - SBX_ALERT_AS_ALERT (used as ALERT) - SBX_ALERT_AS_VOICE (used as VOICE) - SBX_ALERT_ILLEGAL |

Return value:

Returns command status code

C.3.24. Set Active Device

Sets the device where both speaker and microphone signals will be switch to. This function only works if the speakerbox is put to on-line mode.

Syntax :

```
int HIDSetActiveDevice (int nFsNum, int nDevice);
```

Parameters:

| | |
|----------------|---|
| nFsNum | Speakerbox module reference number looking from the left side of the configuration. |
| nDevice | Device to switch to: <ul style="list-style-type: none"> - SBX_DEVICE_HANDSFREE - SBX_DEVICE_HANDSET - SBX_DEVICE_HEADSET |

Return value:

Returns command status code

C.4.BeFREE 10 Commands

These commands can be used to control BF10 operation. Both controller module and audio module are supported. Speakerbox commands can be used for backwards compatibility

where functionality allows it. If BF10 module is not present the commands will return corresponding error.

C.4.1. BF10 Set Luminance

Sets the luminance for both stripe LED and LCD backlight.

Syntax :

```
int HIDBF10SetLuminance (int nIndex);
```

Parameters:

nIndex Luminance index (0 – darkest, 10 – brightest).

Return value:

Returns command status code

C.4.2. BF10 Touchscreen disable

Disables touchscreen.

Syntax :

```
int HIDBF10TouchscreenDisable (void);
```

Return value:

Returns command status code

C.4.3. BF10 Touchscreen enable

Enables touchscreen.

Syntax :

```
int HIDBF10TouchscreenEnable (void);
```

Return value:

Returns command status code

C.4.4. BF10 Set Speaker Level

Sets the level of the BF10 speakers.

Syntax :

```
int HIDBF10SetSpeakerLevel(int nLevel);
```

Parameters:

| | |
|---------------|---|
| nLevel | Sets the speaker level to one of the predefined values (valid range is from 0 to 20) |
|---------------|---|

Return value:

Returns command status code

C.4.5. BF10 Get Speaker Level

Returns the level of the BF10 speakers.

Syntax :

```
int HIDBF10GetSpeakerLevel(int *nLevel);
```

Parameters:

| | |
|----------------|------------------------------------|
| *nLevel | Current level of the BF10 speakers |
|----------------|------------------------------------|

Return value:

Returns command status code

C.4.6. BF10 Mute Microphone

Mutes/un-mutes the microphone signal.

Syntax :

```
int HIDBF10MuteMicrophone(int nMute);
```

Parameters:

| | |
|--------------|--------------------------|
| nMute | State of the microphone: |
| | - SBX_MIC_ACTIVE |
| | - SBX_MIC_MUTE |

Return value:

Returns command status code

C.4.7. BF10 Set Microphone Level

Sets the level of the microphone signal (microphone sensitivity).

Syntax :

```
int HIDBF10SetMicrophoneLevel(int nLevel);
```

Parameters:

nLevel

Microphone sensitivity setting:

- SBX_MIC_LEVEL_P7
- SBX_MIC_LEVEL_P6
- SBX_MIC_LEVEL_P5
- SBX_MIC_LEVEL_P4
- SBX_MIC_LEVEL_P3
- SBX_MIC_LEVEL_P2
- SBX_MIC_LEVEL_P1
- SBX_MIC_LEVEL_0
- SBX_MIC_LEVEL_M1
- SBX_MIC_LEVEL_M2
- SBX_MIC_LEVEL_M3
- SBX_MIC_LEVEL_M4
- SBX_MIC_LEVEL_M5
- SBX_MIC_LEVEL_M6
- SBX_MIC_LEVEL_M7

Return value:

Returns command status code

C.4.8. BF10 Get Microphone Level

Returns the level of the microphone signal (microphone sensitivity).

Syntax :

```
int HIDBF10GetMicrophoneLevel(int *nLevel);
```

Parameters:

***nLevel**

Microphone sensitivity setting:

- SBX_MIC_LEVEL_P7
- SBX_MIC_LEVEL_P6
- SBX_MIC_LEVEL_P5
- SBX_MIC_LEVEL_P4
- SBX_MIC_LEVEL_P3
- SBX_MIC_LEVEL_P2
- SBX_MIC_LEVEL_P1
- SBX_MIC_LEVEL_0

- SBX_MIC_LEVEL_M1
- SBX_MIC_LEVEL_M2
- SBX_MIC_LEVEL_M3
- SBX_MIC_LEVEL_M4
- SBX_MIC_LEVEL_M5
- SBX_MIC_LEVEL_M6
- SBX_MIC_LEVEL_M7
- SBX_MIC_LEVEL_ILLEGAL

Return value:

Returns command status code

C.4.9. BF10 Set Microphone Optimal Distance

Sets the optimal distance for the hands-free microphone.

Syntax :

```
int HIDBF10SetMicrophoneOptimalDistance(int nDistance);
```

Parameters:

nDistance

Microphone optimal distance:

- SBX_MIC_DISTANCE_VERY_SHORT
- SBX_MIC_DISTANCE_SHORT
- SBX_MIC_DISTANCE_MEDIUM
- SBX_MIC_DISTANCE_LONG

Return value:

Returns command status code

C.4.10. BF10 Get Microphone Optimal Distance

Returns the optimal distance for the hands-free microphone.

Syntax :

```
int HIDBF10GetMicrophoneOptimalDistance(int *nDistance);
```

Parameters:

***nDistance**

Microphone optimal distance:

- SBX_MIC_DISTANCE_VERY_SHORT
- SBX_MIC_DISTANCE_SHORT
- SBX_MIC_DISTANCE_MEDIUM
- SBX_MIC_DISTANCE_LONG
- SBX_MIC_DISTANCE_ILLEGAL

Return value:

Returns command status code

C.4.11. BF10 Set Microphone Threshold

Sets the microphone noise gate threshold.

Syntax :

```
int HIDBF10SetMicrophoneThreshold(int nThreshold);
```

Parameters:

| | |
|-------------------|----------------------------------|
| nThreshold | Microphone noise gate threshold. |
| | - SBX_MIC_THRESHOLD_VERY_LOW |
| | - SBX_MIC_THRESHOLD_LOW |
| | - SBX_MIC_THRESHOLD_MID |
| | - SBX_MIC_THRESHOLD_HIGH |

Return value:

Returns command status code

C.4.12. BF10 Get Microphone Threshold

Returns the microphone noise gate threshold.

Syntax :

```
int HIDBF10GetMicrophoneThreshold(int *nThreshold);
```

Parameters:

| | |
|--------------------|----------------------------------|
| *nThreshold | Microphone noise gate threshold. |
| | - SBX_MIC_THRESHOLD_VERY_LOW |
| | - SBX_MIC_THRESHOLD_LOW |
| | - SBX_MIC_THRESHOLD_MID |
| | - SBX_MIC_THRESHOLD_HIGH |
| | - SBX_MIC_THRESHOLD_ILLEGAL |

Return value:

Returns command status code

C.4.13. BF10 Set Microphone Compression

Sets the microphone compression.

Syntax :

```
int HIDBF10SetMicrophoneCompression(int nCompression);
```

Parameters:

| | |
|---------------------|---------------------------------|
| nCompression | Microphone compression setting. |
| | - SBX_MIC_COMPRESSION_OFF |
| | - SBX_MIC_COMPRESSION_LOW |
| | - SBX_MIC_COMPRESSION_MID |

Return value:

Returns command status code

C.4.14. BF10 Get Microphone Compression

Returns microphone compression settings.

Syntax :

```
int HIDBF10GetMicrophoneCompression(int *nCompression);
```

Parameters:

| | |
|----------------------|---------------------------------|
| *nCompression | Microphone compression setting. |
| | - SBX_MIC_COMPRESSION_OFF |
| | - SBX_MIC_COMPRESSION_LOW |
| | - SBX_MIC_COMPRESSION_MID |
| | - SBX_MIC_COMPRESSION_ILLEGAL |

Return value:

Returns command status code

C.4.15. BF10 Set PTT Key LED State

Sets the LED state of the illuminated PTT key.

Syntax :

```
int HIDBF10SetPTTKeyLEDState (int nState);
```

Parameters:

| | |
|---------------|------------------------|
| nState | State/function of LED: |
|---------------|------------------------|

- PTT_LED_OFF
- PTT_LED_ON
- PTT_LED_BLINK

Return value:

Returns command status code

C.4.16. BF10 Set PTT Key LED State Ex

Sets the LED state of the illuminated PTT key and defines additional blink paramters.

Syntax :

```
int HIDBF10SetPTTKeyLEDStateEx (int nState, int
nTBlinkOn, int nTBlinkOff);
```

Parameters:

| | |
|-------------------|---|
| nState | State/function of LED: <ul style="list-style-type: none"> - PTT_LED_OFF - PTT_LED_ON - PTT_LED_BLINK |
| nTBlinkOn | ON period for blink mode in ms. |
| nTBlinkOff | OFF period for blink mode in ms |

Return value:

Returns command status code

C.4.17. BF10 Get PTT Key LED State

Return the LED state of the illuminated PTT key.

Syntax :

```
int HIDBF10GetPTTKeyLEDState (int *nState);
```

Parameters:

| | |
|----------------|---|
| *nState | State/function of LED: <ul style="list-style-type: none"> - PTT_LED_OFF - PTT_LED_ON - PTT_LED_BLINK |
|----------------|---|

Return value:

Returns command status code

C.4.18. BF10 Set Analog Audio

Sets the analog audio options.

Syntax :

```
int HIDBF10SetAnalogAudio (int nSettings);
```

Parameters:

nSettings

Analog channel that is added to the output:

- SBX_ANALOG_AUDIO_OFF
- SBX_ANALOG_AUDIO_LEFT
- SBX_ANALOG_AUDIO_RIGHT
- SBX_ANALOG_AUDIO_BOTH

Return value:

Returns command status code

C.4.19. BF10 Get Analog Audio

Returns analog audio options.

Syntax :

```
int HIDBF10GetAnalogAudio (int *nSettings);
```

Parameters:

***nSettings**

Analog channel that is added to the output:

- SBX_ANALOG_AUDIO_OFF
- SBX_ANALOG_AUDIO_LEFT
- SBX_ANALOG_AUDIO_RIGHT
- SBX_ANALOG_AUDIO_BOTH

Return value:

Returns command status code

C.5. BeFREE 20 Commands

These commands can be used to control BF20 operation. Both controller module and audio module are supported. If BF20 module is not present the commands will return corresponding error.

C.5.1. BF20 Touchscreen disable

Disables touchscreen.

Syntax:

```
int HIDBF20TouchscreenDisable(void);
```

Return value:

Returns command status code

C.5.2. BF20 Touchscreen enable

Enables touchscreen.

Syntax:

```
int HIDBF20TouchscreenEnable(void);
```

Return value:

Returns command status code

C.5.3. BF20 Set Left Speaker Level

Sets the level of the BF20 left speaker.

Syntax :

```
int HIDBF20SetLeftSpeakerLevel(int nLevel);
```

Parameters:

nLevel

Sets the left speaker level to one of the predefined values (valid range is from 0 to 20)

Return value:

Returns command status code

C.5.4. BF20 Get Left Speaker Level

Returns the level of the left BF20 speaker.

Syntax :

```
int HIDBF20GetLeftSpeakerLevel(int *nLevel);
```

Parameters:

***nLevel** Current level of the left BF20 speaker

Return value:

Returns command status code

C.5.5. BF20 Set Right Speaker Level

Sets the level of the BF20 right speaker.

Syntax :

```
int HIDBF20SetRightSpeakerLevel(int nLevel);
```

Parameters:

nLevel Sets the right speaker level to one of the predefined values (valid range is from 0 to 20)

Return value:

Returns command status code

C.5.6. BF20 Get Right Speaker Level

Returns the level of the right BF20 speaker.

Syntax :

```
int HIDBF20GetRightSpeakerLevel(int *nLevel);
```

Parameters:

***nLevel** Current level of the right BF20 speaker

Return value:

Returns command status code

C.5.7. BF20 Set PCM Scenario

Sets PCM scenario. There are two USB Audio Codecs in the BF20. They can be connected to the left and right speaker in one of the following ways:

- Left channels of codec A and B connected to the left speaker and right channels of codec A and B connected to the right speaker (BF20_PCM_SCENARIO_LR)
- Both channels of codec A connected to the left speaker and both channels of codec B connected to the right speaker (BF20_PCM_SCENARIO_AB)

Syntax:

```
int HIDBF20SetPCMScenario(int nScenario);
```

Parameters:

| | |
|------------------|------------------------|
| nScenario | PCM scenario. |
| | - BF20_PCM_SCENARIO_LR |
| | - BF20_PCM_SCENARIO_AB |

Return value:

Returns command status code

C.5.8. BF20 Get PCM Scenario

Returns PCM scenario – current and initial value.

Syntax:

```
int HIDBF20GetPCMScenario(int *nScenario,
                           int *nInitScenario);
```

Parameters:

| | |
|-----------------------|------------------------|
| *nScenario | PCM scenario. |
| | - BF20_PCM_SCENARIO_LR |
| | - BF20_PCM_SCENARIO_AB |
| *nInitScenario | Initial PCM scenario. |
| | - BF20_PCM_SCENARIO_LR |
| | - BF20_PCM_SCENARIO_AB |

Return value:

Returns command status code

C.5.9. BF20 Set Line Out 2 Spk Mode

Sets the connection mode (OFF/L/R/LR) of the motherboard LINE-OUT port to the speakers.

Syntax:

```
int HIDBF20SetLineOut2SpkMode(int nMode);
```

Parameters:

| | |
|--------------|---------------------------|
| nMode | Line-out connection mode. |
| | - BF20_LINE_OUT_OFF_SPK |
| | - BF20_LINE_OUT_ON_L_SPK |
| | - BF20_LINE_OUT_ON_R_SPK |
| | - BF20_LINE_OUT_ON_LR_SPK |

Return value:

Returns command status code.

C.5.10. BF20 Get Line Out 2 Spk Mode

Returns the connection mode (OFF/L/R/LR) of the motherboard LINE-OUT port to the speakers.

Syntax:

```
int HIDBF20GetLineOut2SpkMode(int *nMode, int *nInitMode);
```

Parameters:

| | |
|-------------------|-----------------------------------|
| *nMode | Line-out connection mode. |
| | - BF20_LINE_OUT_OFF_SPK |
| | - BF20_LINE_OUT_ON_L_SPK |
| | - BF20_LINE_OUT_ON_R_SPK |
| | - BF20_LINE_OUT_ON_LR_SPK |
| *nInitMode | Initial line-out connection mode. |
| | - BF20_LINE_OUT_OFF_SPK |
| | - BF20_LINE_OUT_ON_L_SPK |
| | - BF20_LINE_OUT_ON_R_SPK |
| | - BF20_LINE_OUT_ON_LR_SPK |

Return value:

Returns command status code

C.5.11. BF20 Set LF Speaker State

Sets state (ON/OFF) of central (low frequency) speaker.

Syntax:

```
int HIDBF20SetLFSpeakerState(int nState);
```

Parameters:

| | |
|---------------|------------------------|
| nState | Central speaker state. |
| | - BF20_LF_SPK_OFF |
| | - BF20_LF_SPK_ON |

Return value:

Returns command status code.

C.5.12. BF20 Get LF Speaker State

Returns state of central (low frequency) speaker.

Syntax:

```
int HIDBF20GetLFSpeakerState(int *nState,  
                               int *nInitState);
```

Parameters:

| | |
|-------------------|--|
| nState | Central speaker state. <ul style="list-style-type: none">- BF20_LF_SPK_OFF- BF20_LF_SPK_ON |
| nInitState | Initial state of central speaker. <ul style="list-style-type: none">- BF20_LF_SPK_OFF- BF20_LF_SPK_ON |

Return value:

Returns command status code.

C.5.13. BF20 Mute Microphone

Mutes/un-mutes the microphone signal.

Syntax :

```
int HIDBF20MuteMicrophone(int nMute);
```

Parameters:

| | |
|--------------|---|
| nMute | Microphone state. <ul style="list-style-type: none">- SBX_MIC_ACTIVE- SBX_MIC_MUTE |
|--------------|---|

Return value:

Returns command status code.

C.5.14. BF20 Set Mic Amp Mode

Sets mode (Linear/Logarithmic) of microphone amplifier.

Syntax :

```
int HIDBF20SetMicAmpMode(int nMicAmpMode);
```

Parameters:

| | |
|--------------------|--|
| nMicAmpMode | Microphone amplifier mode. - BF20_MICAMP_MODE_LOG - BF20_MICAMP_MODE_LIN |
|--------------------|--|

Return value:

Returns command status code.

C.5.15. BF20 Get Mic Amp Mode

Returns mode (Linear/Logarithmic) of microphone amplifier.

Syntax :

```
HIDBF20GetMicAmpMode(int *nMicAmpMode,  
int *nInitMicAmpMode);
```

Parameters:

| | |
|-------------------------|---|
| *nMicAmpMode | Microphone amplifier mode. - BF20_MICAMP_MODE_LOG - BF20_MICAMP_MODE_LIN |
| *nInitMicAmpMode | Initial mode of microphone amplifier. - BF20_MICAMP_MODE_LOG - BF20_MICAMP_MODE_LIN |

Return value:

Returns command status code.

C.5.16. BF20 Set Microphone Threshold

Sets the microphone noise gate threshold.

Syntax :

```
int HIDBF20SetMicrophoneThreshold(int nThreshold);
```

Parameters:

| | |
|-------------------|---|
| nThreshold | Microphone noise gate threshold. - SBX_MIC_THRESHOLD_VERY_LOW - SBX_MIC_THRESHOLD_LOW |
|-------------------|---|

- SBX_MIC_THRESHOLD_MID
- SBX_MIC_THRESHOLD_HIGH

Return value:

Returns command status code

C.5.17. BF20 Get Microphone Threshold

Returns the microphone noise gate threshold.

Syntax :

```
int HIDBF20GetMicrophoneThreshold(int *nThreshold);
```

Parameters:

***nThreshold**

Microphone noise gate threshold.

- SBX_MIC_THRESHOLD_VERY_LOW
- SBX_MIC_THRESHOLD_LOW
- SBX_MIC_THRESHOLD_MID
- SBX_MIC_THRESHOLD_HIGH
- SBX_MIC_THRESHOLD_ILLEGAL

Return value:

Returns command status code

C.5.18. BF20 Set Mic 2 Line In State

Sets the connection state (ON/OFF) of the gooseneck microphone to the LINE-IN port on the motherboard.

Syntax :

```
int HIDBF20SetMic2LineInState(int nState);
```

Parameters:

nState

Microphone connection state.

- BF20_MIC_OFF_LINE_IN
- BF20_MIC_ON_LINE_IN

Return value:

Returns command status code

C.5.19. BF20 Get Mic 2 Line In State

Returns the connection state (ON/OFF) of the gooseneck microphone to the LINE-IN port on the motherboard.

Syntax :

```
int HIDBF20GetMic2LineInState(int *nState,
                               int *nInitState);
```

Parameters:

| | |
|--------------------|--|
| *nState | Microphone connection state. - BF20_MIC_OFF_LINE_IN - BF20_MIC_ON_LINE_IN |
| *nInitState | Initial value of microphone connection state. - BF20_MIC_OFF_LINE_IN - BF20_MIC_ON_LINE_IN |

Return value:

Returns command status code

C.5.20. BF20 Set Mic On VU State

Sets if microphone level is shown on the VU-meter.

Syntax :

```
int HIDBF20SetMicOnVUState(int nState);
```

Parameters:

| | |
|---------------|---|
| nState | State of showing microphone level on VU meter. - BF20_VU_AB_MIC_OFF - BF20_VU_AB_MIC_ON |
|---------------|---|

Return value:

Returns command status code

C.5.21. BF20 Get Mic On VU State

Returns state of showing microphone level on the VU-meter.

Syntax :

```
int HIDBF20GetMicOnVUState(int *nState, int *nInitState);
```

Parameters:

- | | |
|--------------------|--|
| *nState | State of showing microphone level on VU meter. |
| | - BF20_VU_AB_MIC_OFF |
| | - BF20_VU_AB_MIC_ON |
| *nInitState | Initial state of showing microphone level on VU meter. |
| | - BF20_VU_AB_MIC_OFF |
| | - BF20_VU_AB_MIC_ON |

Return value:

Returns command status code

C.5.22. BF20 Set Echo Mode

Sets the echo canceller reference: disabled, left speaker, right speaker, both speakers.

Syntax :

```
int HIDBF20SetEchoMode(int nMode);
```

Parameters:

- | | |
|--------------|----------------------|
| nMode | Echo canceller mode. |
| | - BF20_EC_OFF |
| | - BF20_EC_ON_L |
| | - BF20_EC_ON_R |
| | - BF20_EC_ON_LR |

Return value:

Returns command status code

C.5.23. BF20 Get Echo Mode

Returns the echo canceller reference: disabled, left speaker, right speaker, both speakers.

Syntax :

```
int HIDBF20GetEchoMode(int *nMode, int *nInitMode);
```

Parameters:

- | | |
|-------------------|------------------------------|
| *nMode | Echo canceller mode. |
| | - BF20_EC_OFF |
| | - BF20_EC_ON_L |
| | - BF20_EC_ON_R |
| | - BF20_EC_ON_LR |
| *nInitMode | Initial echo canceller mode. |
| | - BF20_EC_OFF |

- BF20_EC_ON_L
- BF20_EC_ON_R
- BF20_EC_ON_LR

Return value:

Returns command status code

C.5.24. BF20 Set PTT Key LED State

Sets the backlight state of the illuminated PTT key.

Syntax :

```
int HIDBF20SetPTTKeyLEDState(int nState);
```

Parameters:

| | |
|---------------|------------------------|
| nState | State/function of LED. |
| | - PTT_LED_ON |
| | - PTT_LED_OFF |
| | - PTT_LED_BLINK |

Return value:

Returns command status code.

C.5.25. BF20 Get PTT Key LED State

Returns the backlight state of the illuminated PTT key.

Syntax :

```
int HIDBF20GetPTTKeyLEDState(int *nState);
```

Parameters:

| | |
|----------------|------------------------|
| *nState | State/function of LED. |
| | - PTT_LED_ON |
| | - PTT_LED_OFF |
| | - PTT_LED_BLINK |

Return value:

Returns command status code.

C.5.26. BF20 Set PTT Key LED State Ex

Sets operation of illuminated PTT key with more parameters.

Syntax :

```
int HIDBF20SetPTTKeyLEDStateEx(int nState, int nTBlinkOn,
                                int nTBlinkOff);
```

Parameters:

| | |
|-------------------|--|
| nState | State/function of LED. - PTT_LED_ON - PTT_LED_OFF - PTT_LED_BLINK |
| nTBlinkOn | ON period for blink mode in ms. |
| nTBlinkOff | OFF period for blink mode in ms |

Return value:

Returns command status code.

C.6.BeFREE 22 Commands

These commands can be used to control BF22 operation. Both controller module and audio module are supported. If BF22 module is not present the commands will return corresponding error.

C.6.1. BF22 Touchscreen disable

Disables touchscreen.

Syntax:

```
int HIDBF22TouchscreenDisable(void);
```

Return value:

Returns command status code

C.6.2. BF22 Touchscreen enable

Enables touchscreen.

Syntax:

```
int HIDBF22TouchscreenEnable(void);
```

Return value:

Returns command status code

C.6.3. BF22 Set Left Speaker Level

Sets the level of the BF22 left speaker.

Syntax :

```
int HIDBF22SetLeftSpeakerLevel(int nLevel);
```

Parameters:

| | |
|---------------|---|
| nLevel | Sets the left speaker level to one of the predefined values (valid range is from 0 to 20) |
|---------------|---|

Return value:

Returns command status code

C.6.4. BF22 Get Left Speaker Level

Returns the level of the left BF22 speaker.

Syntax :

```
int HIDBF22GetLeftSpeakerLevel(int *nLevel);
```

Parameters:

| | |
|----------------|--|
| *nLevel | Current level of the left BF20 speaker |
|----------------|--|

Return value:

Returns command status code

C.6.5. BF22 Set Right Speaker Level

Sets the level of the BF22 right speaker.

Syntax :

```
int HIDBF22SetRightSpeakerLevel(int nLevel);
```

Parameters:

nLevel Sets the right speaker level to one of the predefined values (valid range is from 0 to 20)

Return value:

Returns command status code

C.6.6. BF22 Get Right Speaker Level

Returns the level of the right BF22 speaker.

Syntax :

```
int HIDBF22GetRightSpeakerLevel(int *nLevel);
```

Parameters:

***nLevel** Current level of the right BF22 speaker

Return value:

Returns command status code

C.6.7. BF22 Set PCM Scenario

Sets PCM scenario. There are two USB Audio Codecs in the BF22. They can be connected to the left and right speaker in one of the following ways:

- Left channels of codec A and B connected to the left speaker and right channels of codec A and B connected to the right speaker (BF22_PCM_SCENARIO_LR)
- Both channels of codec A connected to the left speaker and both channels of codec B connected to the right speaker (BF22_PCM_SCENARIO_AB)

Syntax:

```
int HIDBF22SetPCMScenario(int nScenario);
```

Parameters:

nScenario PCM scenario.
 - BF22_PCM_SCENARIO_LR
 - BF22_PCM_SCENARIO_AB

Return value:

Returns command status code

C.6.8. BF22 Get PCM Scenario

Returns PCM scenario – current and initial value.

Syntax:

```
int HIDBF22GetPCMScenario(int *nScenario,  
                           int *nInitScenario);
```

Parameters:

| | |
|-----------------------|---|
| *nScenario | PCM scenario. <ul style="list-style-type: none">- BF22_PCM_SCENARIO_LR- BF22_PCM_SCENARIO_AB |
| *nInitScenario | Initial PCM scenario. <ul style="list-style-type: none">- BF22_PCM_SCENARIO_LR- BF22_PCM_SCENARIO_AB |

Return value:

Returns command status code

C.6.9. BF22 Set Line Out 2 Spk Mode

Sets the connection mode (OFF/L/R/LR) of the motherboard LINE-OUT port to the speakers.

Syntax:

```
int HIDBF22SetLineOut2SpkMode(int nMode);
```

Parameters:

| | |
|--------------|---|
| nMode | Line-out connection mode. <ul style="list-style-type: none">- BF22_LINE_OUT_OFF_SPK- BF22_LINE_OUT_ON_L_SPK- BF22_LINE_OUT_ON_R_SPK- BF22_LINE_OUT_ON_LR_SPK |
|--------------|---|

Return value:

Returns command status code.

C.6.10. BF22 Get Line Out 2 Spk Mode

Returns the connection mode (OFF/L/R/LR) of the motherboard LINE-OUT port to the speakers.

Syntax:

```
int HIDBF22GetLineOut2SpkMode(int *nMode, int *nInitMode);
```

Parameters:

| | |
|-------------------|---|
| *nMode | Line-out connection mode. <ul style="list-style-type: none"> - BF22_LINE_OUT_OFF_SPK - BF22_LINE_OUT_ON_L_SPK - BF22_LINE_OUT_ON_R_SPK - BF22_LINE_OUT_ON_LR_SPK |
| *nInitMode | Initial line-out connection mode. <ul style="list-style-type: none"> - BF22_LINE_OUT_OFF_SPK - BF22_LINE_OUT_ON_L_SPK - BF22_LINE_OUT_ON_R_SPK - BF22_LINE_OUT_ON_LR_SPK |

Return value:

Returns command status code

C.6.11. BF22 Set LF Speaker State

Sets state (ON/OFF) of central (low frequency) speaker.

Syntax:

```
int HIDBF22SetLFSpeakerState(int nState);
```

Parameters:

| | |
|---------------|---|
| nState | Central speaker state. <ul style="list-style-type: none"> - BF22_LF_SPK_OFF - BF22_LF_SPK_ON |
|---------------|---|

Return value:

Returns command status code.

C.6.12. BF22 Get LF Speaker State

Returns state of central (low frequency) speaker.

Syntax:

```
int HIDBF22GetLFSpeakerState(int *nState,  
                               int *nInitState);
```

Parameters:

| | |
|-------------------|---|
| nState | Central speaker state. <ul style="list-style-type: none"> - BF22_LF_SPK_OFF - BF22_LF_SPK_ON |
| nInitState | Initial state of central speaker. <ul style="list-style-type: none"> - BF22_LF_SPK_OFF |

- BF22_LF_SPK_ON

Return value:

Returns command status code.

C.6.13. BF22 Mute Microphone

Mutes/un-mutes the microphone signal.

Syntax :

```
int HIDBF22MuteMicrophone(int nMute);
```

Parameters:

| | |
|--------------|-------------------|
| nMute | Microphone state. |
| | - SBX_MIC_ACTIVE |
| | - SBX_MIC_MUTE |

Return value:

Returns command status code.

C.6.14. BF22 Set Mic Amp Mode

Sets mode (Linear/Logarithmic) of microphone amplifier.

Syntax :

```
int HIDBF22SetMicAmpMode(int nMicAmpMode);
```

Parameters:

| | |
|--------------------|----------------------------|
| nMicAmpMode | Microphone amplifier mode. |
| | - BF22_MICAMP_MODE_LOG |
| | - BF22_MICAMP_MODE_LIN |

Return value:

Returns command status code.

C.6.15. BF22 Get Mic Amp Mode

Returns mode (Linear/Logarithmic) of microphone amplifier.

Syntax :

```
HIDBF22GetMicAmpMode(int *nMicAmpMode,
                     int *nInitMicAmpMode);
```

Parameters:

| | |
|-------------------------|---|
| *nMicAmpMode | Microphone amplifier mode. - BF22_MICAMP_MODE_LOG - BF22_MICAMP_MODE_LIN |
| *nInitMicAmpMode | Initial mode of microphone amplifier. - BF22_MICAMP_MODE_LOG - BF22_MICAMP_MODE_LIN |

Return value:

Returns command status code.

C.6.16. BF22 Set Microphone Threshold

Sets the microphone noise gate threshold.

Syntax :

```
int HIDBF22SetMicrophoneThreshold(int nThreshold);
```

Parameters:

| | |
|-------------------|--|
| nThreshold | Microphone noise gate threshold. - SBX_MIC_THRESHOLD_VERY_LOW - SBX_MIC_THRESHOLD_LOW - SBX_MIC_THRESHOLD_MID - SBX_MIC_THRESHOLD_HIGH |
|-------------------|--|

Return value:

Returns command status code.

C.6.17. BF22 Get Microphone Threshold

Returns the microphone noise gate threshold.

Syntax :

```
int HIDBF22GetMicrophoneThreshold(int *nThreshold);
```

Parameters:

| | |
|--------------------|--|
| *nThreshold | Microphone noise gate threshold. - SBX_MIC_THRESHOLD_VERY_LOW - SBX_MIC_THRESHOLD_LOW - SBX_MIC_THRESHOLD_MID |
|--------------------|--|

- SBX_MIC_THRESHOLD_HIGH
- SBX_MIC_THRESHOLD_ILLEGAL

Return value:

Returns command status code

C.6.18. BF22 Set Mic 2 Line In State

Sets the connection state (ON/OFF) of the gooseneck microphone to the LINE-IN port on the motherboard.

Syntax :

```
int HIDBF22SetMic2LineInState(int nState);
```

Parameters:

nState

Microphone connection state.

- BF22_MIC_OFF_LINE_IN
- BF22_MIC_ON_LINE_IN

Return value:

Returns command status code

C.6.19. BF22 Get Mic 2 Line In State

Returns the connection state (ON/OFF) of the gooseneck microphone to the LINE-IN port on the motherboard.

Syntax :

```
int HIDBF22GetMic2LineInState(int *nState,
                               int *nInitState);
```

Parameters:

***nState**

Microphone connection state.

- BF22_MIC_OFF_LINE_IN
- BF22_MIC_ON_LINE_IN

***nInitState**

Initial value of microphone connection state.

- BF22_MIC_OFF_LINE_IN
- BF22_MIC_ON_LINE_IN

Return value:

Returns command status code

C.6.20. BF22 Set Mic On VU State

Sets if microphone level is shown on the VU-meter.

Syntax :

```
int HIDBF22SetMicOnVUState(int nState);
```

Parameters:

| | |
|---------------|--|
| nState | State of showing microphone level on VU meter. |
| | - BF22_VU_AB_MIC_OFF |
| | - BF22_VU_AB_MIC_ON |

Return value:

Returns command status code

C.6.21. BF22Get Mic On VU State

Returns state of showing microphone level on the VU-meter.

Syntax :

```
int HIDBF22GetMicOnVUState(int *nState, int *nInitState);
```

Parameters:

| | |
|--------------------|--|
| *nState | State of showing microphone level on VU meter. |
| | - BF22_VU_AB_MIC_OFF |
| | - BF22_VU_AB_MIC_ON |
| *nInitState | Initial state of showing microphone level on VU meter. |
| | - BF22_VU_AB_MIC_OFF |
| | - BF22_VU_AB_MIC_ON |

Return value:

Returns command status code

C.6.22. BF22 Set Echo Mode

Sets the echo canceller reference: disabled, left speaker, right speaker, both speakers.

Syntax :

```
int HIDBF22SetEchoMode(int nMode);
```

Parameters:

| | |
|--------------|----------------------|
| nMode | Echo canceller mode. |
|--------------|----------------------|

- BF22_EC_OFF
- BF22_EC_ON_L
- BF22_EC_ON_R
- BF22_EC_ON_LR

Return value:

Returns command status code

C.6.23. BF22 Get Echo Mode

Returns the echo canceller reference: disabled, left speaker, right speaker, both speakers.

Syntax :

```
int HIDBF22GetEchoMode(int *nMode, int *nInitMode);
```

Parameters:

| | |
|-------------------|--|
| *nMode | Echo canceller mode. |
| | <ul style="list-style-type: none"> - BF22_EC_OFF - BF22_EC_ON_L - BF22_EC_ON_R - BF22_EC_ON_LR |
| *nInitMode | Initial echo canceller mode. |
| | <ul style="list-style-type: none"> - BF22_EC_OFF - BF22_EC_ON_L - BF22_EC_ON_R - BF22_EC_ON_LR |

Return value:

Returns command status code

C.6.24. BF22 Set PTT Key LED State

Sets the backlight state of the illuminated PTT key.

Syntax :

```
int HIDBF22SetPTTKeyLEDState(int nState);
```

Parameters:

| | |
|---------------|--|
| nState | State/function of LED. |
| | <ul style="list-style-type: none"> - PTT_LED_ON - PTT_LED_OFF - PTT_LED_BLINK |

Return value:

Returns command status code.

C.6.25. BF22 Get PTT Key LED State

Returns the backlight state of the illuminated PTT key.

Syntax :

```
int HIDBF22GetPTTKeyLEDState(int *nState);
```

Parameters:

| *nState | State/function of LED. |
|----------------|------------------------|
| | - PTT_LED_ON |
| | - PTT_LED_OFF |
| | - PTT_LED_BLINK |

Return value:

Returns command status code.

C.6.26. BF22 Set PTT Key LED State Ex

Sets operation of illuminated PTT key with more parameters.

Syntax :

```
int HIDBF22SetPTTKeyLEDStateEx(int nState, int nTBlinkOn,  
                                int nTBlinkOff);
```

Parameters:

| nState | State/function of LED. |
|-------------------|---------------------------------|
| | - PTT_LED_ON |
| | - PTT_LED_OFF |
| | - PTT_LED_BLINK |
| nTBlinkOn | ON period for blink mode in ms. |
| nTBlinkOff | OFF period for blink mode in ms |

Return value:

Returns command status code.

C.6.27. BF22 Set LineKeys Led State

Sets state of LEDs on line-keys.

Syntax :

```
int HIDBF22SetLineKeysLedState(int nKey1State,
    int nKey2State, int nKey3State, int nKey4State,
    int nKey5State, int nKey6State, int nKey7State,
    int nKey8State, int nKey9State, int nKey10State,
    int nKey11State, int nKey12State, int nKey13State,
    int nKey14State, int nKey15State, int nKey16State);
```

Parameters:

| nKey1State | State/function of LED. |
|--------------------|-------------------------------|
| .. | - BF22_LED_NOCHANGE |
| | - BF22_LED_OFF |
| nKey16State | - BF22_LED_GREEN |
| | - BF22_LED_RED |
| | - BF22_LED_ORANGE |
| | - BF22_LED_BLINK_OFF_GREEN |
| | - BF22_LED_BLINK_OFF_RED |
| | - BF22_LED_BLINK_OFF_ORANGE |
| | - BF22_LED_BLINK_GREEN_OFF |
| | - BF22_LED_BLINK_GREEN_RED |
| | - BF22_LED_BLINK_GREEN_ORANGE |
| | - BF22_LED_BLINK_RED_OFF |
| | - BF22_LED_BLINK_RED_GREEN |
| | - BF22_LED_BLINK_RED_ORANGE |
| | - BF22_LED_BLINK_ORANGE_OFF |
| | - BF22_LED_BLINK_ORANGE_GREEN |
| | - BF22_LED_BLINK_ORANGE_RED |

Return value:

Returns command status code.

C.6.28. BF22 Get LineKeys Led State

Sets state of LEDs on line-keys.

Syntax :

```
int HIDBF22GetLineKeysLedState(int nKey1State,
    int nKey2State, int nKey3State, int nKey4State,
    int nKey5State, int nKey6State, int nKey7State,
    int nKey8State, int nKey9State, int nKey10State,
    int nKey11State, int nKey12State, int nKey13State,
    int nKey14State, int nKey15State, int nKey16State);
```

Parameters:

| | |
|--------------------|-------------------------------|
| nKey1State | State/function of LED. |
| .. | - BF22_LED_OFF |
| nKey16State | - BF22_LED_GREEN |
| | - BF22_LED_RED |
| | - BF22_LED_ORANGE |
| | - BF22_LED_BLINK_OFF_GREEN |
| | - BF22_LED_BLINK_OFF_RED |
| | - BF22_LED_BLINK_OFF_ORANGE |
| | - BF22_LED_BLINK_GREEN_OFF |
| | - BF22_LED_BLINK_GREEN_RED |
| | - BF22_LED_BLINK_GREEN_ORANGE |
| | - BF22_LED_BLINK_RED_OFF |
| | - BF22_LED_BLINK_RED_GREEN |
| | - BF22_LED_BLINK_RED_ORANGE |
| | - BF22_LED_BLINK_ORANGE_OFF |
| | - BF22_LED_BLINK_ORANGE_GREEN |
| | - BF22_LED_BLINK_ORANGE_RED |

Return value:

Returns command status code.

C.7.Handset Commands

These commands can be used to control handset parameters. If handset module is not present the commands will return corresponding error. In API versions 2.3.0.4 and later these functions also support HAA version of handset.

C.7.1. Handset Set Microphone Compression

Sets the level of the microphone signal (microphone sensitivity).

Syntax :

```
int HIDHandsetSetMicrophoneCompression(int nHsNum, int nCompression);
```

Parameters:

| | |
|---------------------|---|
| nHsNum | Handset module reference number looking from the left side of the configuration. |
| nCompression | Microphone compression setting: <ul style="list-style-type: none"> - HXX_MIC_COMPRESSION_OFF - HXX_MIC_COMPRESSION_ON |

Return value:

Returns command status code

C.7.2. Handset Set Microphone Threshold

Sets the handset microphone noise gate threshold.

Syntax :

```
int HIDHandsetSetMicrophoneThreshold(int nHsNum, int nThreshold);
```

Parameters:

nHsNum

Handset module reference number looking from the left side of the configuration.

nThreshold

Microphone noise gate threshold.

- HXX_MIC_THRESHOLD_VERY_LOW
- HXX_MIC_THRESHOLD_LOWER
- HXX_MIC_THRESHOLD_LOW
- HXX_MIC_THRESHOLD_MID
- HXX_MIC_THRESHOLD_HIGH

Return value:

Returns command status code

C.7.3. Handset Set Microphone Level

Sets the level of the handset microphone signal (microphone sensitivity).

Syntax :

```
int HIDHandsetSetMicrophoneLevel(int nHsNum, int nLevel);
```

Parameters:

nHsNum

Handset module reference number looking from the left side of the configuration.

nLevel

Handset microphone sensitivity setting:

- HXX_MIC_ATT_0
- HXX_MIC_ATT_1
- HXX_MIC_ATT_2
- HXX_MIC_ATT_3
- HXX_MIC_ATT_4
- HXX_MIC_ATT_5
- HXX_MIC_ATT_6
- HXX_MIC_ATT_7
- HXX_MIC_ATT_8
- HXX_MIC_ATT_9

- HXX_MIC_ATT_10
- HXX_MIC_ATT_11
- HXX_MIC_ATT_12
- HXX_MIC_ATT_13
- HXX_MIC_ATT_14

Return value:

Returns command status code

C.7.4. Handset Get Microphone Compression

Returns handset microphone compression settings.

Syntax :

```
int HIDHandsetGetMicrophoneCompression(int nHsNum, int
*nCompression);
```

Parameters:

| | |
|----------------------|---|
| nHsNum | Handset module reference number looking from the left side of the configuration. |
| *nCompression | Handset microphone compression settings. <ul style="list-style-type: none"> - HXX_MIC_COMPRESSION_OFF - HXX_MIC_COMPRESSION_ON - HXX_MIC_COMPRESSION_ILLEGAL |

Return value:

Returns command status code

C.7.5. Handset Get Microphone Threshold

Returns the handset microphone noise gate threshold.

Syntax :

```
int HIDHandsetGetMicrophoneThreshold(int nHsNum, int
*nThreshold);
```

Parameters:

| | |
|--------------------|---|
| nHsNum | Handset module reference number looking from the left side of the configuration. |
| *nThreshold | Microphone noise gate threshold. <ul style="list-style-type: none"> - HXX_MIC_THRESHOLD_VERY_LOW - HXX_MIC_THRESHOLD_LOWER - HXX_MIC_THRESHOLD_LOW |

- HXX_MIC_THRESHOLD_MID
- HXX_MIC_THRESHOLD_HIGH
- HXX_MIC_THRESHOLD_ILLEGAL

Return value:

Returns command status code

C.7.6. Handset Get Microphone Level

Returns the level of the handset microphone signal (microphone sensitivity).

Syntax :

```
int HIDHandsetGetMicrophoneLevel(int nHsNum,
                                   int *nLevel);
```

Parameters:

nHsNum

Handset module reference number looking from the left side of the configuration.

***nLevel**

Handset microphone sensitivity setting:

- HXX_MIC_ATT_0
- HXX_MIC_ATT_1
- HXX_MIC_ATT_2
- HXX_MIC_ATT_3
- HXX_MIC_ATT_4
- HXX_MIC_ATT_5
- HXX_MIC_ATT_6
- HXX_MIC_ATT_7
- HXX_MIC_ATT_8
- HXX_MIC_ATT_9
- HXX_MIC_ATT_10
- HXX_MIC_ATT_11
- HXX_MIC_ATT_12
- HXX_MIC_ATT_13
- HXX_MIC_ATT_14

Return value:

Returns command status code.

C.7.7. Handset Set Speaker Level

Sets the level of the handset speaker signal (volume).

Syntax :

```
int HIDHandsetSetSpeakerLevel(int nHsNum, int nLevel);
```

Parameters:

| | |
|---------------|---|
| nHsNum | Handset module reference number looking from the left side of the configuration. |
| nLevel | Speaker volume: <ul style="list-style-type: none"> - HXX_SPEAKER_LEVEL_P2 - HXX_SPEAKER_LEVEL_P1 - HXX_SPEAKER_LEVEL_0 - HXX_SPEAKER_LEVEL_M1 - HXX_SPEAKER_LEVEL_M2 - HXX_SPEAKER_LEVEL_M3 - HXX_SPEAKER_LEVEL_M4 - HXX_SPEAKER_LEVEL_M5 - HXX_SPEAKER_LEVEL_M6 - HXX_SPEAKER_LEVEL_M7 - HXX_SPEAKER_LEVEL_M8 |

Return value:

Returns command status code.

C.7.8. Handset Get Speaker Level

Returns the level of the handset speaker signal (volume).

Syntax :

```
int HIDHandsetSetSpeakerLevel(int nHsNum, int *nLevel);
```

Parameters:

| | |
|----------------|--|
| nHsNum | Handset module reference number looking from the left side of the configuration. |
| *nLevel | Speaker volume: <ul style="list-style-type: none"> - HXX_SPEAKER_LEVEL_P2 - HXX_SPEAKER_LEVEL_P1 - HXX_SPEAKER_LEVEL_0 - HXX_SPEAKER_LEVEL_M1 - HXX_SPEAKER_LEVEL_M2 - HXX_SPEAKER_LEVEL_M3 - HXX_SPEAKER_LEVEL_M4 - HXX_SPEAKER_LEVEL_M5 - HXX_SPEAKER_LEVEL_M6 - HXX_SPEAKER_LEVEL_M7 - HXX_SPEAKER_LEVEL_M8 - HXX_SPEAKER_LEVEL_ILLEGAL |

Return value:

Returns command status code.

C.8.HAA Handset Commands

These commands can be used to control HAA handset parameters. If HAA handset module is not present the commands will return corresponding error.

C.8.1. HAA Handset Set Microphone Optimal Distance

Sets the amplification of the handset microphone preamplifier. This results in higher sensitivity of the microphone, increasing its optimal distance.

Syntax :

```
int      HIDHandsetHAASetMicrophoneOptimalDistance      (int
nHandsetNum, int nDistance);
```

Parameters:

nHandsetNum

Handset module reference number looking from the left side of the configuration.

nDistance

Microphone distance setting:

- HAA_MIC_DISTANCE_M5
- HAA_MIC_DISTANCE_M4
- HAA_MIC_DISTANCE_M3
- HAA_MIC_DISTANCE_M2
- HAA_MIC_DISTANCE_M1
- HAA_MIC_DISTANCE_0
- HAA_MIC_DISTANCE_P1
- HAA_MIC_DISTANCE_P2
- HAA_MIC_DISTANCE_P3
- HAA_MIC_DISTANCE_P4
- HAA_MIC_DISTANCE_P5

Return value:

Returns command status code.

C.8.2. HAA Handset Get Microphone Optimal Distance

Returns current distance setting of the handset microphone signal.

Syntax :

```
int      HIDHandsetHAAGetMicrophoneOptimalDistance      (int
nHandsetNum, int *nDistance);
```

Parameters:

| | |
|--------------------|---|
| nHandsetNum | Handset module reference number looking from the left side of the configuration. |
| *nDistance | Microphone distance setting: <ul style="list-style-type: none"> - HAA_MIC_DISTANCE_M5 - HAA_MIC_DISTANCE_M4 - HAA_MIC_DISTANCE_M3 - HAA_MIC_DISTANCE_M2 - HAA_MIC_DISTANCE_M1 - HAA_MIC_DISTANCE_0 - HAA_MIC_DISTANCE_P1 - HAA_MIC_DISTANCE_P2 - HAA_MIC_DISTANCE_P3 - HAA_MIC_DISTANCE_P4 - HAA_MIC_DISTANCE_P5 |

Return value:

Returns command status code.

C.8.3. HAA Handset Set Sidetone Level

Sets the handset side tone level.

Syntax :

```
int HIDHandsetHAASetSidetoneLevel (int nHandsetNum, int nLevel);
```

Parameters:

| | |
|--------------------|---|
| nHandsetNum | Handset module reference number looking from the left side of the configuration. |
| nLevel | Handset sidetone level: <ul style="list-style-type: none"> - HAA_SIDETONE_LEVEL_M1 - HAA_SIDETONE_LEVEL_M2 - HAA_SIDETONE_LEVEL_M3 - HAA_SIDETONE_LEVEL_M4 - HAA_SIDETONE_LEVEL_M5 - HAA_SIDETONE_LEVEL_M6 - HAA_SIDETONE_LEVEL_M7 - HAA_SIDETONE_LEVEL_M8 - HAA_SIDETONE_LEVEL_M9 - HAA_SIDETONE_OFF - HAA_SIDETONE_ILLEGAL |

Return value:

Returns command status code.

C.8.4. HAA Handset Get Sidetone Level

Returns current side tone level.

Syntax :

```
int HIDHandsetHAASetSidetoneLevel (int nHandsetNum, int
*nLevel) ;
```

Parameters:

| | |
|--------------------|---|
| nHandsetNum | Handset module reference number looking from the left side of the configuration. |
| *nLevel | Handset sidetone level: <ul style="list-style-type: none"> - HAA_SIDETONE_LEVEL_M1 - HAA_SIDETONE_LEVEL_M2 - HAA_SIDETONE_LEVEL_M3 - HAA_SIDETONE_LEVEL_M4 - HAA_SIDETONE_LEVEL_M5 - HAA_SIDETONE_LEVEL_M6 - HAA_SIDETONE_LEVEL_M7 - HAA_SIDETONE_LEVEL_M8 - HAA_SIDETONE_LEVEL_M9 - HAA_SIDETONE_OFF - HAA_SIDETONE_ILLEGAL |

Return value:

Returns command status code.

C.8.5. HAA Handset Set Sidetone

Controls side tone for the handset. With this command the side tone can be turned off or on, without changing the side tone level.

Syntax :

```
int HIDHandsetHAASetHandsetSidetone (int nHandsetNum,
bool bOn) ;
```

Parameters:

| | |
|--------------------|---|
| nHandsetNum | Handset module reference number looking from the left side of the configuration. |
| bOn | <ul style="list-style-type: none"> - 1 (true) , side tone is ON - 0 (false), side tone is OFF |

Return value:

Returns command status code

C.9.BeFREE 07 Commands

These commands can be used to control BeFREE 07 parameters. If BeFREE 07 is not present the commands will return corresponding error.

C.9.1. BF07 Set Speaker Level

Sets the level of the hands-free speakers.

Syntax :

```
int HIDBF07SetSpeakerLevel(int nLevel);
```

Parameters:

nLevel

Sets the speaker level to one of the predefined values (valid range is from 0 to 20)

Return value:

Returns command status code

C.9.2. BF07 Get Speaker Level

Returns the level of the hands-free speakers.

Syntax :

```
int HIDBF07GetSpeakerLevel(int *nLevel);
```

Parameters:

***nLevel**

Current level of the hands-free speakers

Return value:

Returns command status code

C.9.3. BF07 Set PTT LED State

Sets the LED state of the PTT key.

Syntax :

```
int HIDBF07SetPTTLEDState(int nState);
```

Parameters:

nState

PTT LED state:

- BF07_PTT_LED_OFF
- BF07_PTT_LED_ON
- BF07_PTT_LED_BLINK

Return value:

Returns command status code

C.9.4. BF07 Get PTT LED State

Returns the state of PTT LED.

Syntax :

```
int HIDBF07getPTTLEDState(int *nState);
```

Parameters:

***nState**

PTT LED state:

- BF07_PTT_LED_OFF
- BF07_PTT_LED_ON
- BF07_PTT_LED_BLINK

Return value:

Returns command status code

C.9.5. BF07 Set Handset Speaker Level

Sets the level of the handset speaker.

Syntax :

```
int HIDBF07SetHandsetSpeakerLevel(int nLevel);
```

Parameters:

nLevel

Hands-free speaker level:

- BF07_HANDSET_SPEAKER_LEVEL_P4
- BF07_HANDSET_SPEAKER_LEVEL_P3
- BF07_HANDSET_SPEAKER_LEVEL_P2

- BF07_HANDSET_SPEAKER_LEVEL_P1
- BF07_HANDSET_SPEAKER_LEVEL_M1
- BF07_HANDSET_SPEAKER_LEVEL_M2
- BF07_HANDSET_SPEAKER_LEVEL_M3
- BF07_HANDSET_SPEAKER_LEVEL_M4
- BF07_HANDSET_SPEAKER_LEVEL_M5
- BF07_HANDSET_SPEAKER_LEVEL_M6
- BF07_HANDSET_SPEAKER_LEVEL_M7

Return value:

Returns command status code

C.9.6. BF07 Get Handset Speaker Level

Returns the level of the handset speaker.

Syntax :

```
int HIDBF07GetHandsetSpeakerLevel(int *nLevel);
```

Parameters:

***nLevel**

Hands-free speaker level:

- BF07_HANDSET_SPEAKER_LEVEL_P4
- BF07_HANDSET_SPEAKER_LEVEL_P3
- BF07_HANDSET_SPEAKER_LEVEL_P2
- BF07_HANDSET_SPEAKER_LEVEL_P1
- BF07_HANDSET_SPEAKER_LEVEL_M1
- BF07_HANDSET_SPEAKER_LEVEL_M2
- BF07_HANDSET_SPEAKER_LEVEL_M3
- BF07_HANDSET_SPEAKER_LEVEL_M4
- BF07_HANDSET_SPEAKER_LEVEL_M5
- BF07_HANDSET_SPEAKER_LEVEL_M6
- BF07_HANDSET_SPEAKER_LEVEL_M7
- BF07_HANDSET_HEADSET_ILLEGAL

Return value:

Returns command status code

C.9.7. BF07 Set Alert Line

Sets the function (mode) of the alert audio channel. If alert audio channel is used as alert only voice audio channel is switched to the handset. Alert audio channel stays at hands-free

speakers. In case alert audio channel is used as voice, both voice and alert audio channels are switched to the handset. If alert is not used, only voice audio channel is switched to the handset, while alert audio channel is muted.

Syntax :

```
int HIDBF07SetAlertLine(int nMode);
```

Parameters:

nMode

Mode of the alert audio channel:

- BF07_ALERT_AS_ALERT
- BF07_ALERT_AS_VOICE
- BF07_ALERT_NOT_USED

Return value:

Returns command status code

C.9.8. BF07 Get Alert Line

Returns the function (mode) of the alert audio channel.

Syntax :

```
int HIDBF07GetAlertLine(int *nMode);
```

Parameters:

***nMode**

Mode of the alert audio channel:

- BF07_ALERT_AS_ALERT
- BF07_ALERT_AS_VOICE
- BF07_ALERT_NOT_USED
- SBX_ALERT_ILLEGAL

Return value:

Returns command status code

C.9.9. BF07 Set Microphone Level

Sets the level of the microphone signal for either handset or hands-free microphone. The level of the microphone signal is set after the input amplification (optimal distance setting) and after signal conditioning (compression and threshold).

Syntax :

```
int HIDBF07SetMicrophoneLevel(int nLevel, int nDevice);
```

Parameters:

nLevel

Microphone level setting:

- BF07_MIC_LEVEL_P3
- BF07_MIC_LEVEL_P2
- BF07_MIC_LEVEL_P1
- BF07_MIC_LEVEL_0
- BF07_MIC_LEVEL_M1
- BF07_MIC_LEVEL_M2
- BF07_MIC_LEVEL_M3
- BF07_MIC_LEVEL_M4
- BF07_MIC_LEVEL_M5
- BF07_MIC_LEVEL_M6
- BF07_MIC_LEVEL_M7
- BF07_MIC_LEVEL_M8
- BF07_MIC_LEVEL_M9
- BF07_MIC_LEVEL_M10
- BF07_MIC_LEVEL_M11

nDevice

Device microphone to set :

- BF07_DEVICE_HANDSFREE
- BF07_DEVICE_HANDSET
- BF07_DEVICE_HANDSFREE_HANDSET

Return value:

Returns command status code

C.9.10. BF07 Get Microphone Level

Returns current level setting of the microphone signal.

Syntax :

```
int HIDBF07GetMicrophoneLevel(int *nLevel, int nDevice);
```

Parameters:

***nLevel**

Microphone level setting:

- BF07_MIC_LEVEL_P3
- BF07_MIC_LEVEL_P2
- BF07_MIC_LEVEL_P1
- BF07_MIC_LEVEL_0
- BF07_MIC_LEVEL_M1
- BF07_MIC_LEVEL_M2
- BF07_MIC_LEVEL_M3
- BF07_MIC_LEVEL_M4
- BF07_MIC_LEVEL_M5
- BF07_MIC_LEVEL_M6
- BF07_MIC_LEVEL_M7
- BF07_MIC_LEVEL_M8

- BF07_MIC_LEVEL_M9
 - BF07_MIC_LEVEL_M10
 - BF07_MIC_LEVEL_M11
- nDevice** Device microphone :
- BF07_DEVICE_HANDSFREE
 - BF07_DEVICE_HANDSET
 - BF07_DEVICE_HANDSFREE_HANDSET

Return value:

Returns command status code

C.9.11. BF07 Set Microphone Threshold

Sets the level of the noise gate threshold for the non-liner microphone amplifier. The higher the threshold, less background noise is introduced into the microphone signal.

Syntax :

```
int HIDBF07SetMicrophoneThreshold(int nThreshold, int nDevice);
```

Parameters:

- nThreshold** Microphone threshold setting:
- BF07_MIC_THRESHOLD_HIGH
 - BF07_MIC_THRESHOLD_MID
 - BF07_MIC_THRESHOLD_LOW
 - BF07_MIC_THRESHOLD_LOWER
 - BF07_MIC_THRESHOLD_VERY_LOW
- nDevice** Device microphone to set :
- BF07_DEVICE_HANDSFREE
 - BF07_DEVICE_HANDSET
 - BF07_DEVICE_HANDSFREE_HANDSET

Return value:

Returns command status code

C.9.12. BF07 Get Microphone Threshold

Returns current threshold setting of the microphone signal.

Syntax :

```
int HIDBF07GetMicrophoneThreshold(int *nThreshold, int nDevice);
```

Parameters:

| | |
|--------------------|--|
| *nThreshold | Microphone threshold setting: <ul style="list-style-type: none"> - BF07_MIC_THRESHOLD_HIGH - BF07_MIC_THRESHOLD_MID - BF07_MIC_THRESHOLD_LOW - BF07_MIC_THRESHOLD_LOWER - BF07_MIC_THRESHOLD_VERY_LOW |
| nDevice | Device microphone to set : <ul style="list-style-type: none"> - BF07_DEVICE_HANDSFREE - BF07_DEVICE_HANDSET - BF07_DEVICE_HANDSFREE_HANDSET |

Return value:

Returns command status code

C.9.13. BF07 Set Microphone Compression

Sets the compression for the non-liner microphone amplifier. The compression feature enables compression of the output signal dynamics in order to minimize the difference between soft/low and loud speech.

Syntax :

```
int HIDBF07SetMicrophoneCompression(int nCompression, int nDevice);
```

Parameters:

| | |
|---------------------|--|
| nCompression | Microphone compression setting: <ul style="list-style-type: none"> - BF07_MIC_COMPRESSION_OFF - BF07_MIC_COMPRESSION_ON |
| nDevice | Device microphone to set : <ul style="list-style-type: none"> - BF07_DEVICE_HANDSFREE - BF07_DEVICE_HANDSET - BF07_DEVICE_HANDSFREE_HANDSET |

Return value:

Returns command status code

C.9.14. BF07 Get Microphone Compression

Returns current compression setting of the microphone signal.

Syntax :


```
int HIDBF07GetMicrophoneCompression(int *nCompression,
int nDevice);
```

Parameters:

***nCompression**

Microphone compression setting:

- BF07_MIC_COMPRESSION_OFF
- BF07_MIC_COMPRESSION_ON

nDevice

Device microphone to set :

- BF07_DEVICE_HANDSFREE
- BF07_DEVICE_HANDSET
- BF07_DEVICE_HANDSFREE_HANDSET

Return value:

Returns command status code

C.9.15. BF07 Set Microphone Optimal Distance

Sets the amplification of the microphone preamplifier. This results in higher sensitivity of the microphone, increasing its optimal distance.

Syntax :

```
int HIDBF07SetMicrophoneOptimalDistance(int nDistance,
int nDevice);
```

Parameters:

nDistance

Microphone optimal distance setting:

- BF07_MIC_DISTANCE_M2
- BF07_MIC_DISTANCE_M1
- BF07_MIC_DISTANCE_0
- BF07_MIC_DISTANCE_P1
- BF07_MIC_DISTANCE_P2
- BF07_MIC_DISTANCE_P3
- BF07_MIC_DISTANCE_P4
- BF07_MIC_DISTANCE_P5
- BF07_MIC_DISTANCE_P6
- BF07_MIC_DISTANCE_P7
- BF07_MIC_DISTANCE_P8

nDevice

Device microphone to set :

- BF07_DEVICE_HANDSFREE
- BF07_DEVICE_HANDSET
- BF07_DEVICE_HANDSFREE_HANDSET

Return value:

Returns command status code

C.9.16. BF07 Get Microphone Optimal Distance

Returns current distance setting of the microphone signal.

Syntax :

```
int HIDBF07GetMicrophoneOptimalDistance(int *nDistance,
int nDevice);
```

Parameters:

***nDistance**

Microphone optimal distance setting:

- BF07_MIC_DISTANCE_M2
- BF07_MIC_DISTANCE_M1
- BF07_MIC_DISTANCE_0
- BF07_MIC_DISTANCE_P1
- BF07_MIC_DISTANCE_P2
- BF07_MIC_DISTANCE_P3
- BF07_MIC_DISTANCE_P4
- BF07_MIC_DISTANCE_P5
- BF07_MIC_DISTANCE_P6
- BF07_MIC_DISTANCE_P7
- BF07_MIC_DISTANCE_P8

nDevice

Device microphone to set :

- BF07_DEVICE_HANDSFREE
- BF07_DEVICE_HANDSET
- BF07_DEVICE_HANDSFREE_HANDSET

Return value:

Returns command status code

C.9.17. BF07 Set LED Blink Speed

Sets blink parameters for all LEDs.

Syntax :

```
int HIDBF07SetLEDBlinkSpeed( int nTBlinkA, int nTBlinkB);
```

Parameters:

nTBlinkA

ON period for blink mode in ms.

nTBlinkB

OFF period for blink mode in ms

Return value:

Returns command status code.

C.9.18. BF07 Get LED Blink Speed

Returns blink parameters.

Syntax :

```
int HIDBF07GetLEDBlinkSpeed( int *nTBlinkA, int *nTBlinkB );
```

Parameters:

***nTBlinkA** ON period for blink mode in ms.

***nTBlinkB** OFF period for blink mode in ms

Return value:

Returns command status code.

C.9.19. BF07 Touchscreen disable

Disables touchscreen.

Syntax:

```
int HIDBF07TouchscreenDisable(void);
```

Return value:

Returns command status code

C.9.20. BF07 Touchscreen enable

Enables touchscreen.

Syntax:

```
int HIDBF07TouchscreenEnable(void);
```

Return value:

Returns command status code

C.9.21. BF07 Disable Echo

Disables Echo canceler.

Syntax:

```
int HIDBF07DisableEcho(void);
```

Return value:

Returns command status code

C.9.22. BF07 Enable Echo

Enables echo canceler if present.

Syntax:

```
int HIDBF07EnableEcho(void);
```

Return value:

Returns command status code

C.9.23. BF07 Get Echo State

Returns current echo canceler settings. It is advisable to use this function to check if echo canceler hardware is present before using other echo functions.

Syntax :

```
int HIDBF07GetEchoState(int *nState);
```

Parameters:

***nState**

State of the echo canceler:

- BF07_EC_OFF
- BF07_EC_ON
- BF07_EC_NOT_PRESENT

Return value:

Returns command status code

C.9.24. BF07 Set Mic On VU State

Sets if microphone level is shown on the VU-meter.

Syntax :

```
int HIDBF07SetMicOnVUState(int nState);
```

Parameters:

nState State of showing microphone level on VU meter.

- BF07_VU_MIC_OFF
- BF07_VU_MIC_ON

Return value:

Returns command status code

C.9.25. BF07 Get Mic On VU State

Returns state of showing microphone level on the VU-meter.

Syntax :

```
int HIDBF07GetMicOnVUState(int *nState);
```

Parameters:

***nState** State of showing microphone level on VU meter.

- BF07_VU_MIC_OFF
- BF07_VU_MIC_ON

Return value:

Returns command status code

C.9.26. BF07 Set Handset Sidetone Level

Sets the side tone level for the handset.

Syntax :

```
int HIDBF07SetHandsetSidetoneLevel(int nLevel);
```

Parameters:

nLevel Level of handset sidetone:

- BF07_SIDETONE_LEVEL_M1
- BF07_SIDETONE_LEVEL_M2
- BF07_SIDETONE_LEVEL_M3
- BF07_SIDETONE_LEVEL_M4
- BF07_SIDETONE_LEVEL_M5
- BF07_SIDETONE_LEVEL_M6
- BF07_SIDETONE_LEVEL_M7
- BF07_SIDETONE_LEVEL_M8
- BF07_SIDETONE_LEVEL_M9

Return value:

Returns command status code

C.9.27. BF07 Get Handset Sidetone Level

Returns the side tone level for the handset.

Syntax :

```
int HIDBF07GetHandsetSidetoneLevel(int *nLevel);
```

Parameters:

***nLevel**

Level of handset sidetone:

- BF07_SIDETONE_LEVEL_M1
- BF07_SIDETONE_LEVEL_M2
- BF07_SIDETONE_LEVEL_M3
- BF07_SIDETONE_LEVEL_M4
- BF07_SIDETONE_LEVEL_M5
- BF07_SIDETONE_LEVEL_M6
- BF07_SIDETONE_LEVEL_M7
- BF07_SIDETONE_LEVEL_M8
- BF07_SIDETONE_LEVEL_M9

Return value:

Returns command status code

C.9.28. BF07 Set Handset Sidetone

Controls sidetone for the handset. With this command the sidetone can be turned off or on, without changing the sidetone level.

Syntax :

```
int HIDBF07SetHandsetSidetoneLevel(bool bOn);
```

Parameters:

bOn

- 1 (true) , side tone is ON
- 0 (false), side tone is OFF

Return value:

Returns command status code

C.9.29. BF07 Emulate Key Press

Emulates keys with specific functionality. Both PTT (hands-free and handset) keys and hook can be emulated. When this function is used for any of the PTT keys it acts as an additional mute key in the system. If push-to-talk functionality is set this means that the microphone is active until at least one of the PTT keys is still pressed. The emulated key stays pressed until

BF07EmulateKeyRelease is called. Emulated keys are not automatically released, so it is up to the user software to properly release all keys when exiting.

Syntax :

```
int HIDBF07EmulateKeyPress(int nKey);
```

Parameters:

nKey

Key (functionality to emulate):

- BF07_KEY_PTT_HANDSFREE
- BF07_KEY_PTT_HANDSET
- BF07_KEY_HOOK

Return value:

Returns command status code

C.9.30. BF07 Emulate Key Release

Releases the emulated key. Nothing happens if key was not pressed.

Syntax :

```
int HIDBF07EmulateKeyRelease(int nKey);
```

Parameters:

nKey

Key (functionality to emulate):

- BF07_KEY_PTT_HANDSFREE
- BF07_KEY_PTT_HANDSET
- BF07_KEY_HOOK

Return value:

Returns command status code

C.10. Telephony Commands

These commands can be used to communicate with the telephony enabled modules. There could be more telephony modules connected to the same configuration / PC.

C.10.1. Detect Telephony Devices

Scans all USB ports and updates the list of connected telephony devices. This function should be called before using other telephony commands or when new device is connected to the system.

Syntax :

```
int HIDDetectTelephonyDevices (void);
```

Return value:

Returns command status code

C.10.2. Get Num Of Detected Telephony Devices

Returns the number of connected telephony devices.

Syntax :

```
int HIDGetNumOfDetectedTelephonyDevices (void);
```

Return value:

Returns number of connected telephony devices.

C.10.3. Get Telephony Device Product String

Returns telephony device product string.

Syntax :

```
int HIDGetTelephonyDeviceProductString(USHORT hidIx,  
PVOID pString, ULONG lBufferLen);
```

Parameters:

| | |
|-------------------|--|
| hidIx | Telephony device index. |
| pString | Pointer to user defined buffer where the string will be returned to. |
| lBufferLen | Length of a supplied buffer. |

Return value:

Returns command status code

C.10.4. Get Telephony Device VID PID

Returns telephony device vendor ID and product ID.

Syntax :

```
int HIDGetTelephonyDevice_VID_PID(USHORT hidIx, USHORT *nVID,  
USHORT *nPID);
```

Parameters:

| | |
|--------------|-------------------------|
| hidIx | Telephony device index. |
| nVID | Vendor ID. |
| nPID | Product ID. |

Return value:

Returns command status code

C.10.5. Get Telephony Device Manufacturer String

Returns telephony device manufacturer string

Syntax :

```
int HIDGetTelephonyDeviceManufacturerString(USHORT hidIx, PVOID pString,  
ULONG lBufferLen);
```

Parameters:

| | |
|-------------------|--|
| hidIx | Telephony device index. |
| pString | Pointer to user defined buffer where the string will be returned to. |
| lBufferLen | Length of a supplied buffer. |

Return value:

Returns command status code

C.10.6. Get Telephony Device Path

Returns telephony device path that can be used to access the device directly.

Syntax :

```
int HIDGetTelephonyDevicePath(USHORT hidIx, PVOID pString, ULONG  
lBufferLen);
```

Parameters:

| | |
|--------------|-------------------------|
| hidIx | Telephony device index. |
|--------------|-------------------------|

| | |
|-------------------|--|
| pString | Pointer to user defined buffer where the path will be returned to. |
| lBufferLen | Length of a supplied buffer. |

Return value:

Returns command status code

C.10.7. Register Telephony Callbacks

Register callback functions that will be called when status of the selected telephony device has changed or event has been send over the telephony interface.

Syntax :

```
int HIDRegisterTelephonyCallbacks(USHORT hidIx, tfnCallback fnKeyCallback,
tfnThreadStatus fnKeyStatusCallback);
```

Parameters:

| | |
|----------------------------|--|
| hidIx | Telephony device index. |
| fnKeyCallback | Pointer to function that will be called when a new key with telephony content is captured. |
| fnKeyStatusCallback | Pointer to function that will be called when new status is captured. |

Return value:

Returns command status code

tfnCallback callback function prototype:

```
int fnKeyCallbackEx (USHORT nID,USHORT nUsagePage ,USHORT
nLinkUsage ,USHORT nUsage ,bool bPressed);
```

Callback function Parameters:

| | |
|-------------------|--|
| nID | ID of the telephony device (supporting more than one telephony devices on the same PC). |
| nUsagePage | Top collection usage page. |
| nLinkUsage | Usage of the specific link collection <ul style="list-style-type: none"> - 0x01 = Phone - 0x06 = Key Pad - 0x07 = Programmable Button |
| nUsage | Usage at the specific collection. |
| bPressed | Key pressed = TRUE or released = FALSE |

tfnThreadStatus callback function prototype:

```
int fnKeyStatusCallback (USHORT nID, int nStatus, int nErrCode, int nRFUParam);
```

Callback function Parameters:

| | |
|------------------|---|
| nID | ID of the telephony device (supporting more than one telephony devices on the same PC). |
| nStatus | Status of the thread. |
| nErrCode | Error code for reported status. |
| nRFUParam | Reserved for future use (not used in current version). |

C.10.8. Register Telephony Callbacks Ex

Register callback functions that will be called when status of the selected telephony device has changed or event has been send over the telephony interface. This function allows callback to be used inside of the class by using std::bind. Visual Studio 2010 or later must be used in order to use this function, otherwise *HIDRegisterTelephonyCallbacks* should be used.

Syntax :

```
int HIDRegisterTelephonyCallbacksEx(USHORT hidIx, tfnCallbackEx fnKeyCallback, tfnThreadStatusEx fnKeyStatusCallback);
```

Parameters:

| | |
|----------------------------|--|
| hidIx | Telephony device index. |
| fnKeyCallback | Pointer to function that will be called when a new key with telephony content is captured. |
| fnKeyStatusCallback | Pointer to function that will be called when new status is captured. |

Return value:

Returns command status code

Example how to register callback function that is part of a class:

```
using namespace std::placeholders;
HIDRegisterTelephonyKeysCallbackEx(
    0,
    std::bind(&CExampleDlg::OnTelKeyPress,this,_1,_2,_3,_4,_5),
    NULL);
```

tfncallbackEx callback function prototype:

```
int fnKeyCallbackEx (USHORT nID, USHORT nUsagePage, USHORT
nLinkUsage, USHORT nUsage, bool bPressed);
```

Callback function Parameters:

| | |
|-------------------|--|
| nID | ID of the telephony device (supporting more then one telephony devices on the same PC). |
| nUsagePage | Top collection usage page. |
| nLinkUsage | Usage of the specific link collection <ul style="list-style-type: none"> - 0x01 = Phone - 0x06 = Key Pad - 0x07 = Programmable Button |
| nUsage | Usage at the specific collection. |
| bPressed | Key pressed = TRUE or released = FALSE |

tfnThreadStatusEx callback function prototype:

```
int fnKeyStatusCallback (USHORT nID, int nStatus, int nErrCode, int
nRFUParam);
```

Callback function Parameters:

| | |
|------------------|---|
| nID | ID of the telephony device (supporting more then one telephony devices on the same PC). |
| nStatus | Status of the thread. |
| nErrCode | Error code for reported status. |
| nRFUParam | Reserved for future use (not used in current version). |

C.10.9. Stop Telephony Key Device

Stops background thread that catches and reports keys and status of telephony device.

Syntax :

```
int HIDStopTelephonyKeyDevice(USHORT hidIx);
```

Parameters:

| | |
|--------------|-------------------------|
| hidIx | Telephony device index. |
|--------------|-------------------------|

Return value:

Returns command status code

D. STATUS CODES

D.1. Common Status Codes

| | |
|---|-----|
| ♦ API_ERR_None: | 00h |
| Everything is OK. | |
| ♦ API_ERR_WrongParameter: | 01h |
| Parameter out of valid range. | |
| ♦ API_ERR_InvalidHandleValue: | 02h |
| Nonexistent handle to a HID device. | |
| ♦ API_ERR_DeviceNotOpened: | 03h |
| Connection to HID device is not opened. | |
| ♦ API_ERR_GetFeature: | 04h |
| Communication error at GetFeature stage. | |
| ♦ API_ERR_SetFeature: | 05h |
| Communication error at SetFeature stage. | |
| ♦ API_ERR_Unknown: | 06h |
| Error appeared on lower level. | |
| ♦ API_ERR_CmdNotSupportedAtFWLevel: | 07h |
| This command is not supported in current firmware version. | |
| ♦ API_ERR_FWLevelNotAvailable: | 08h |
| Firmware doesn't support HID communication features required by the command. | |
| ♦ API_ERR_FWLevelChangeFailed: | 09h |
| Firmware doesn't support HID communication features. | |
| ♦ API_ERR_EnumerateModulesFailed: | 10h |
| Error during the TiproBus modules enumeration. | |
| ♦ API_ERR_ModulesNotEnumerated: | 11h |
| Enumeraion of TiproBus modules was not performed. <i>EnumerateModules</i> command must be called before any module specific command is used. | |
| ♦ API_ERR_NonexistantModule: | 12h |
| TiproBus module does not exist. | |

| | |
|---|------------|
| ♦ API_ERR_CommunicationError: | 20h |
| Error in communication between controller and module. | |
| ♦ API_ERR_ResponseError: | 21h |
| Wrong response from module. | |
| ♦ API_ERR_UnexpectedResponse: | 22h |
| Unexpected response from module. | |
| ♦ API_ERR_UnsupportedParameter: | 23h |
| Parameter is not supported by the connected hardware (firmware). | |
| ♦ API_ERR_UnsupportedCommand: | 24h |
| Command is not supported by the connected hardware (firmware) | |
| ♦ API_ERR_NoStringDescriptor: | 30h |
| String descriptor was not reported or doesn't exist. | |
| ♦ API_ERR_VID_PID_NotReported: | 31h |
| VendorID and/or ProductID were not reported or don't exist. | |
| ♦ API_ERR_SBXMode: | 40h |
| Command returning this error requires Speakerbox to be in On-Line mode. | |
| ♦ API_ERR_GeneralLowLevelError: | E0h |
| Error at lower level. | |
| ♦ API_ERR_NoDevicesDetected: | F1h |
| No Tipro devices that support HID communication were detected. | |
| ♦ API_ERR_DeviceUnplugged: | F2h |
| Tipro HID device was unplugged. | |
| ♦ API_ERR_DeviceNotConnected: | F3h |
| Tipro HID device is not connected. | |

E. REFERENCES

- [1] BeFREE V3.0 (Intel ATOM based) User Manual