

x8300 - sidetone adjustment for audio devices

Version 1

AudioSidetoneAdjustment

This feature describes the adjustment of sidetone gain for audio devices.

[0] **getSidetoneLevel()** → level

[1] **setSidetoneLevel(level)**

[2] **getSidetoneMute()** → muteStatuses

[3] **setSidetoneMute(changeMask, muteStatuses)**

[event0] **sidetoneChangeEvent** → levelChannelID, level, muteStatuses

Overview

Sidetone is a loopback mechanism by which sound from an audio device's microphone is transmitted directly to the earpiece.

Functions and Events

[0] **getSidetoneLevel()** → level

Returns the current sidetone level from 0-100.

Parameters

none

Returns

Table 1. *getSidetoneLevel()* response packet format

| byte \ bit | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|------------|---------------|---|---|---|---|---|---|---|
| 0 | level (0-100) | | | | | | | |
| 1..15 | reserved | | | | | | | |

level

Current sidetone level from 0-100.

[1] setSidetoneLevel(level)

Sets the current sidetone level. The level must be a value from 0-100.

Parameters

Table 2. setSidetoneLevel request packet format

| byte \ bit | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|------------|---------------|---|---|---|---|---|---|---|
| 0 | level (0-100) | | | | | | | |
| 1..15 | reserved | | | | | | | |

level

Value from 0-100.

Returns

none

Errors

INVALID_ARGUMENT (2)

level is out of range

[2] getSidetoneMute() → muteStatuses

Returns the current sidetone mute status for a specific channel. 0 = Mute OFF (sidetone on). 1 = Mute ON (no sidetone).

Parameters

none

Returns

Table 3. getSidetoneMute() response packet format

| byte \ bit | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|------------|--------------|------|------|------|------|------|------|------|
| 0 | muteStatuses | | | | | | | |
| | mute | mute | mute | mute | mute | mute | mute | mute |
| 1..15 | reserved | | | | | | | |

mute

Current sidetone mute status for a specific sidetone channel. Example: First sidetone-jack will return its status for BIT 0. Second Jack on BIT 1 and so on... Bit values: 0 = Mute OFF (sidetone on). 1 = Mute ON (no sidetone).

[3] setSidetoneMute(changeMask, muteStatuses)

Sets the current mute status for every channel (up to 8). 0 = Mute OFF (sidetone on). 1 = Mute ON (no sidetone). You can individually control up to 8 sidetone channels. BIT 0 is for the first channel.

Parameters

Table 4. setSidetoneMute request packet format

| byte \ bit | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|------------|--------------|------|------|------|------|------|------|------|
| 0 | changeMask | | | | | | | |
| | mask | mask | mask | mask | mask | mask | mask | mask |
| 1 | muteStatuses | | | | | | | |
| | mute | mute | mute | mute | mute | mute | mute | mute |
| 2..15 | reserved | | | | | | | |

mask

Set 1 to change sidetone value of this channel. Set 0 to ignore that channel.

mute

Set 0 to enable sidetone. Set 1 to MUTE sidetone.

Returns

none

[event0] sidetoneChangeEvent → levelChannelID, level, muteStatuses

This event gets triggered when the user changes either the sidetone level or the mute status on the device. There might be a dedicated button or a dial for this.

| byte \ bit | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|------------|----------------|------|------|------|------|------|------|------|
| 0 | levelChannelID | | | | | | | |
| 1 | level | | | | | | | |
| 2 | muteStatuses | | | | | | | |
| | mute | mute | mute | mute | mute | mute | mute | mute |
| 3..15 | reserved | | | | | | | |

levelChannelID

uint8_t of channels from [1 to 8] that specify on which channel the level was changed. 1 is the first channel, 2 is the second and so on. Set this 'levelChannelID' to 0 if no level was adjusted (i.e.: Only mute changed).

level

New level for the channel specified in 'levelChannelID'.

mute

Returns the 8 current mute statuses. BIT0 is the first channel.

Examples

- Assumptions:
 - Feature is on index 0x01 (will vary for device)
 - Software id = 0x0c

Table 5. Example Control ID table

| Action | Request | Response | Comments |
|---|-------------------|--------------------------|--|
| Get the current sidetone | 11 FF 01 0c | 11 FF 01 0c 00 15 | Current sidetone is 90 |
| Set a sidetone of 0 | 11 FF 01 1c 00 | 11 FF 01 0c 00 | |
| Set a sidetone of 100 | 11 FF 01 1c 64 | 11 FF 01 0c 64 | |
| Set a sidetone of 255 (invalid value) | 11 FF 01 1c FF | 11 FF FF 01 1c 02 | Returns HID++ error 'INVALID_ARGUMENT' (02) |
| Mute first sidetone channel | 11 FF 01 3c 01 01 | 11 FF 01 3c | |
| Mute second sidetone channel and unmute first | 11 FF 01 3c 03 02 | 11 FF 01 3c | |

ChangeLog

- Version 0: Initial version
- Version 1: Add broadcast event when the device changes the sidetone & Add mute