



**AINA WIRELESS FINLAND OY**

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# User Interface Specification

## AINA WIRELESS

### APTT Voice Responder

Version A.10

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## 1. SCOPE

This document defines the user interface functionality of Aina APTT voice responder devices. The device has RGB led for providing feedback and state information to the user, which is complemented with audio feedback through the speaker. User can interface with the device using the buttons.





This document is valid on Firmware version FW2251A1 or greater.



## 2. LEDS

### 2.1. States

APTT has multiple states which changes through user interaction or through AG (Audio gateway, f.e. mobile phone or radio). State patterns are repeating, i.e. they will be repeated after the defined interval until the state is changed. Following led patterns are defined:

STATE	COLOR	PATTERN	INTERVAL
Connectable		3 blinks (100 ms each)	3500 ms
Pairable		1 blink (100 ms)	100 ms
Connected		2 blinks (100 ms each)	3700 ms
Call setup		1 blink (100 ms)	100 ms

Active			Blue	1 blink (100 ms)	1900 ms
Active, muted		Blue	Orange	2 blinks (100 ms each)	1800 ms
Charging			Red	continuous (other leds mixed in)	-
Charging, full			Green	continuous (other leds mixed in)	-
Low battery			Red	Same pattern as the state would have normally, but color RED	-

## 2.2. Events

Events are non-repeating LED patterns that are triggered by certain event. Following patterns are defined:

EVENT	COLOR			PATTERN	NOTE
Power on			Green	1 blink (2000 ms)	-
Power off			Red	1 blink (2000 ms)	-
Power on and mode toggled on			Orange	1 blink (2000 ms)	Instead of normal Power on - led
Power on and mode toggled off			Purple	1 blink (2000 ms)	Instead of normal Power on - led
SW reset				Off	Off until restart and all buttons released
Link Loss	Orange	Orange	Orange	3 blinks (100 ms each)	Repeats on top of Connected state with approx 15s interval
Covert toggle			Red	1 blink (2000 ms)	-
Active LED toggle			Green	1 blink (2000 ms)	-
PTT pressed			Red	continuous	Continues until button released (in certain states)
PTTS pressed			Orange	continuous	Continues until button released (in certain states)

## 3. TIMEOUTS

Some of the states have timeouts defined, which will trigger an event if time is exceeded. Also certain events will trigger an timeout.

TRIGGER	DURATION	ACTION	NOTE
Enter Connectable state	300 s	Shutdown	-
Enter Pairable state	120 s	Shutdown	-
Link is lost	600 s	Enter Connectable state	Link loss is announced with beep and LED pattern every 15s

#### 4. BUTTONS

Button presses have 3 different lengths of presses; short (less than 2s), long (more than 2s) and very long (more than 5s). Each length can trigger a different action in different states. Following actions are defined:

BUTTON	STATE	LENGTH	ACTION
POWER	Power off	long	Power on
POWER	Any	long	Power off
POWER	Power off	Very long	Power on and enter pairable state
POWER+Vol DOWN	Power off	long	Power on and toggle Kodiak mode
POWER+MFB	Power off	long	Power on and toggle JVCKenwood mode
MFB	Call Establishment (incoming)	short	Answer
MFB	Call Establishment, Active call	long	Reject/End Call
MFB	Active call	short	Toggle Mute
MFB	A2DP streaming, Connected	short	Pause/Play stream
SWB1	A2DP streaming	short	Previous song
SWB1	Any	long	Active LED toggle
SWB2	A2DP streaming	short	Next song
SWB2	Headset with mic plugged	long	Toggle between headset and internal audio
PTT	Connectable	short	Reconnect
PTT	Muted	short	Unmute while pressed
PTTS	Connectable	short	Reconnect
SWB1+SWB2+ PTT+PTTS	Any	very long	SW reset, remove pairings and enter pairable state
SWB1+SWB2	Any	long	Toggle Covert operation
EMERGENCY + POWER	Any	long	Shutdown to storage state
EMERGENCY + POWER	Any	long	DFU state enable

## 5. OPERATION MODES

APTT has several modes of operation, some of which are stored in persistent memory and can only be disabled by initiating a SW reset or toggling the mode off, while some only last until next power off.

### 5.1. Kodiak mode

In Kodiak mode APTT will act as SPP client and use special set of commands compatible with Kodiak PTT application. BLE interface is also customized accordingly. Device Friendly Name will be Kodiak-PTT. Will reset to default value Kodiak mode disabled in SWReset.

### 5.2. JVCKenwood mode

In JVCKenwood mode APTT will act as SPP client and use special set of commands compatible with JVCKenwood LMRs. BLE interface is disabled (see 5.3.). Will reset to default value JVCKenwood mode disabled in SWReset.

### 5.8. Active LEDs disable

In this mode APTT will disable the state LEDs for **Connected, Call establishment and Active** -states. Event LED indications, audio routing and audio feedback are unaffected by Active LEDs disable. This mode can be combined with all other modes and disables, and will not be stored in persistent memory and thus set to default value Active LEDs enabled in power off.

### 5.9. Covert operation

In covert operation all LEDs and speaker are shut off. Device will not give any LED indication, even charging and power off indications are suppressed. Even though speaker is disabled, microphone (internal or wired) will work as normal. If a headset is connected, incoming audio and audio feedback notifications will be routed to the headset. This mode can be combined with all other modes and disables, and will not be stored in persistent memory and thus set to default value Covert operation disabled in power off.

## 6. AUDIO FEEDBACK

EVENT	TONE	NOTE
Pairing successful	short beep	-



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Power on	4 note rising scale	-
Power off	4 note falling scale	-
Reconnect attempt	short beep	-
Reset paired devices	long low double beep	-
Mute on	short high beep	-
Mute off	short high beep	-
Link loss	long low beep	repeats on top of Connected state with approx 15s interval
Low battery	warning tone	-
Covert toggle	short beep	-
Active LED toggle	short beep	-
Reconnect success	beep	-