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Audio Assistant - AUABT-11x

Technical manual

Revised 29.08.2025

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RoHS CE

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2 Features

The Audio Assistant allows a person in need to get in contact with people outside their home.

Any alarm or event can trigger the Audio Assistant to connect to a person, an alarm central, or any other desired contact.

The audio device acts like a Bluetooth speaker phone, with additional features that make it suitable for home care and other safety solutions.

The Audio Assistant has a built-in Panic Button and two optional buttons for any use.

Mains power the Audio Assistant and has an optional battery backup, lasting for more than 10 hours power shortage.

The Audio Assistant device is connected to a compatible Squid gateway from Onics (Formerly Develco Products) via a Class 1 Bluetooth link. Once the device is commissioned, the Bluetooth link is automatically established and maintained so that no manual actions are needed to connect.

The voice link can be established by pressing the button on the device or by a command from the gateway.

The gateway command can be generated by any rule in the gateway – e.g., a panic alarm or any other event. It can also be generated by employees in the alarm central or other remote personnel.

The Audio device MMI can be customized with the Squid gateway device template concept.

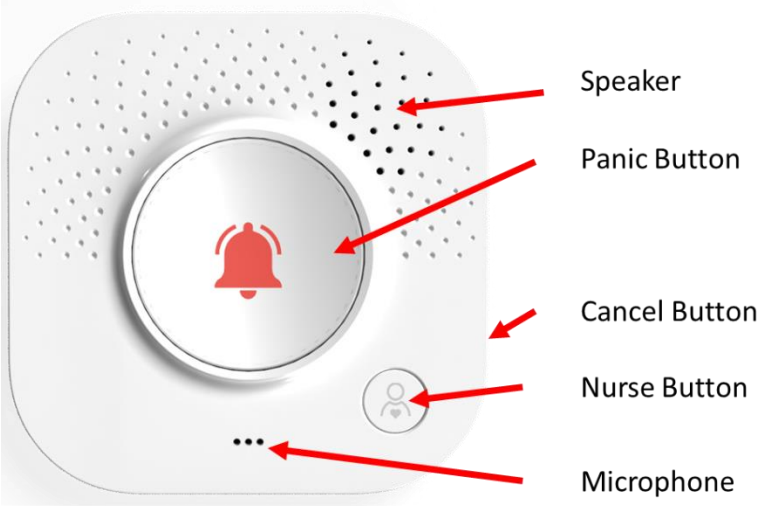
Configuring a sound trigger level. An event is sent if the sound level is above a certain level. This feature allows for surveillance of unexpected sound activity.

The speaker level and microphone sensitivity are controllable via Bluetooth.

OTA firmware upgrade of the ZigBee and Bluetooth module is supported.

Voice recording for 10 seconds is supported in model AUABT-113. The model has an audio ring buffer that allows the audio assistant to sample the audio recorded by the built-in microphone continuously. The audio is stored in a 10-sec ring buffer. The gateway can upload the recorded audio to a cloud where an operation can listen to the audio clip.

3 Interface



3.1 LED's:

LED	Name	Functionality (Primary)
LED 1	Panic	Panic alarm. "Large button"
LED 2	Nurse Call	Nurse call. Right Button
MMI	MMI	Zigbee (BT) MMI for Zigbee (and Bluetooth) installation.

LED 1 & LED2 are configurable. Configuration is done in the Audio Assistant template.

3.2 Button's:

All the buttons are generic and the integrator can name then according to the functionality triggered. Below naming as Panic, Nurse call, Cancel are examples.

Button	Name	Functionality (Primary)
Button 1	Panic	Panic alarm. "Large button"
Button 2	Nurse Call	Nurse call. Right Button
Button 3	Cancel	Cancel call (Typically by a nurse). The button on the right side
Reset	MMI	Zigbee (BT) MMI for Zigbee (and Bluetooth) installation.

Buttons 1,2 & 3 are configurable. Configuration is done in the Audio Assistant template.

Button Press

Types of button press (For button 1, 2 and 3):

- Standard press
- Long press

Differentiation between standard and long press is configurable and defined in ms. The default is 3000 ms.

4 Onics Gateway Template

The Audio Assistant parameters can be set in the Audio Assistant template uploaded to the Squid Gateway.

4.1 System indication

Commands are sent from the gateway to activate a system indication at once. For each indication, the following parameters can be configured:

- Indication timeout
- Sound Volume
- Sound Pattern
- Sound Period
- LED1 and LED2
  - Number of blinks
  - Period time
  - Percentage On
  - Light level
- Priority 0 or 1
  - Priority 0 is overruling other indications.
  - Priority 1 has the same priority as the button.

4.2 Configure Audio Assistant indication

- Idle
- Call
  - When a 2-way call is active, and a SIP connection is established
- Listening
  - Call without speaker; only MIC is enabled. The operator can listen for voice.
- Short button press
  - Individual for each button
- Long button press
  - Individual for each button
- Audio Assistant fault indication
  - ZigBee, BT and UART communication
- External Fault indication
  - Set via the gateway. Example – “SIP server not responding”
- Main Power Fault
  - Is only supported in models AUABT-111 & AUABT-112
- Low battery indication
  - Is only supported in models AUABT-111 & AUABT-112
- Sound threshold exceeded.
  - Is only supported in model AUABT-113

For each individual indication, the following parameters can be configured:

- Indication timeout

- Sound Volume
- Sound Pattern
- Sound Period
- LED1 and LED2
    - Number of blinks
    - Period time
    - Percentage On
    - Light level

4.3 Long press button duration

Long press is configurable and defined in ms. The default is 3000 ms.

4.4 Voice recording

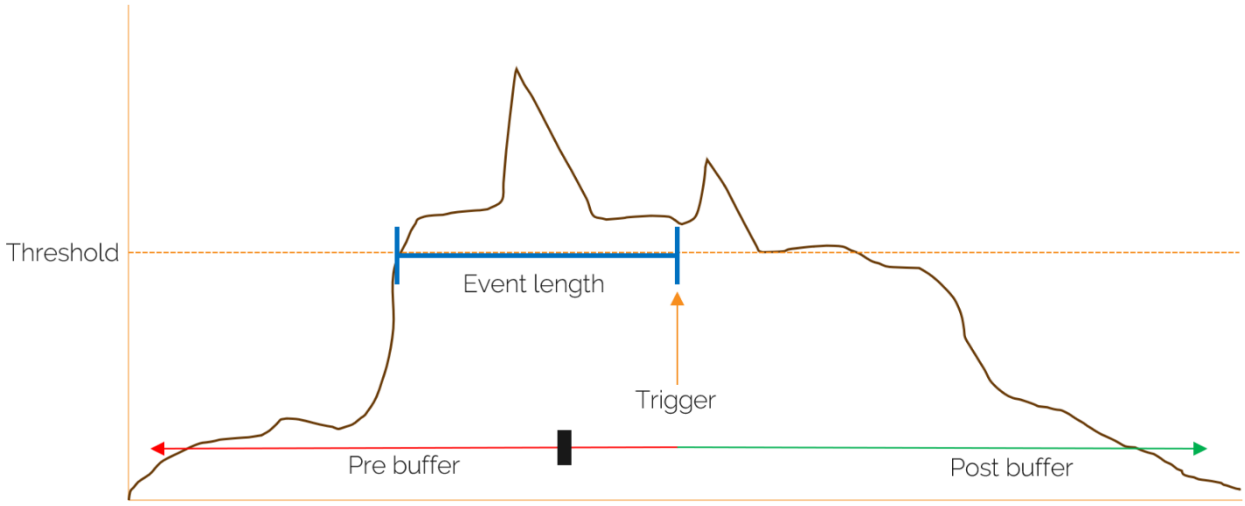
Voice recording for 10 seconds is supported in model **AUABT-113**. The model has an audio ring buffer that allows the audio assistant to sample the audio recorded by the built-in microphone continuously. The audio is stored in a 10-sec ring buffer. The gateway can upload the recorded audio to a cloud where an operation can listen to the audio clip.

The following parameters can be configured in the template for the audio assistant.

Threshold Trigger Enable: Boolean [True/False]
Threshold: [0 – 100] of MIC sensitivity, 0 = MIC disabled, 100 = Highest sensitivity
Event Length: [0 – 2500ms], as shown in the graph below, the noise level recorded by the microphone must be above the **Threshold** in the specified **Event Length** before the recording **Trigger** is enabled.
Threshold Pre Buffer length: [0 – 10 sec] recorded noise before Trigger point
Threshold Post Buffer length: [0 – 10 sec] recorded noise after Trigger point
Post and **Pre** Buffer can only be 10 sec in total due to the size of the audio ring buffer
Threshold Exceeded: UTC time stamp when the noise threshold was exceeded.
Audio Trigger Buffer Playback: [0 – 100%] To start/restart playing the recorded audio, set the parameter to 0%. When started, the parameter is automatically updated and can be used in a progress bar as an indication.

- 0 %, start of the audio ring buffer
- 20%, 2 sec has been played
- 80%, 8 sec has been played

100%, End of the audio ring buffer



5 Zigbee Interface

The device implements the following Zigbee endpoints and clusters:

5.1 Endpoint 0x2F

Application profile Id 0x0104 (Home Automation)

Application device Id 0x0008 (Range Extender)

Server Cluster

- Cluster ID: 0x0000 [Basic]
- Cluster ID: 0x0003 [Identify]

Manufacture specific cluster FC06 for the Audio Assistant.

- Cluster ID: 0xFC06 [AudioAssistant]
  - Attribute Id: 0x0000 [BluetoothAddress]
    - Bluetooth MAC address of the Audio Assistant device to identify the device.
    - 6 octet hex string
    - Read-only.
  - Attribute Id: 0x0001 [BluetoothPairingEnable]
    - Attribute to enable Bluetooth pairing mode.
    - Writable
    - Values:
      - Set to 0x00/false to disable Bluetooth pairing mode.
      - Set to 0x01/true to enable Bluetooth pairing mode.
  - Attribute Id: 0x0002 [BluetoothPairingTimeout]
    - Bluetooth pairing timeout in seconds. Bluetooth pairing mode will be disabled after this interval if pairing was unsuccessful.
    - Writable
    - Values:
      - 1 – 65335 (seconds)
  - Attribute Id: 0x0003 [BluetoothStatus]
    - Status of the Bluetooth connection
    - Read-only
    - Values:
      - 0x00: Initializing the Audio Assistant device.
      - 0x01: Firmware Upgrade.
      - 0x02: Not paired (Ready to be paired).
      - 0x03: Device is in pairing mode.
      - 0x04: Paired but not connected.
      - 0x05: Connected to pairing.
    - Read-only
  - Attribute Id: 0x0004 [LongPressIntervalBTN1]
    - Controls how long the button must be pressed to register as long-press.
    - Writable
    - Values: 1 – 65335 (milliseconds)
  - Attribute Id: 0x0005 [LongPressIntervalBTN2]
    - Controls how long the button must be pressed to register as long-press.
    - Writable

        - Values: 1 – 65335 (milliseconds)
    - Attribute Id: 0x0006 [LongPressIntervalBTN3]
        - Controls how long the button must be pressed to register as long-press.
        - Writable
        - Values: 1 – 65335 (milliseconds)
    - Attribute Id: 0x0007 [LongPressIntervalBTN4]
        - Controls how long the button must be pressed to register as long-press.
        - Writable
        - Values: 1 – 65535 (milliseconds)
    - Attribute Id: 0x0009 [BluetoothOfflineFaultTimeout]
        - Time in seconds before Bluetooth offline is reported and indicated. If the connection is reestablished before timeout, it is not reported or indicated.
    - Attribute Id: 0x000A [ZigbeeOnlineCheckRetrys]
        - Number of failed Zigbee online check before Zigbee offline is reported and indicated.
    - Attribute Id: 0x000B [IndicateExternalFault]
        - Attribute to enable External Fault indication.
            - Set to 0x00/false to disable External Fault indication.
            - Set to 0x01/true to enable External Fault indication.
    - Below attributes are only supported by model AUABT-113
        - Attribute Id: 0x000C [ThresholdTriggerEnabled]
            - Attribute to enable Threshold trigger. If enabled, a noise event (Audio Assistant event command) will be transmitted if the Audio Assistant device detects a sound level above the threshold and a recording will be saved. At this time, the attribute will be set to 0x00 automatically. Be aware that an old recording will be overwritten by a new recording.
                - Set to 0x00/false to disable Threshold trigger.
                - Set to 0x01/true to enable Threshold trigger.
        - Attribute Id: 0x000D [RecordingPlaybackProgress]
            - Attribute to describe the Recording playback progress in percent. Set to 0 to start the recording playback. The playback progress percentage will be updated automatically while the playback is running.
        - Attribute Id: 0x000E [NoiseEventThreshold]
            - The threshold to trig a noise event.
        - Attribute Id: 0x000F [RecordingPreBufferLength]
            - Length of the recording prebuffer in seconds. The prebuffer is the part of the recording before the noise event is trigged.
            - Value must be between 0 and 10 seconds, and the full recording buffer (RecordingPostBufferLength + RecordingPostBufferLength) can be up to 10 seconds.
        - Attribute Id: 0x0010 [RecordingPostBufferLength]
            - Length of the recording postbuffer in seconds. The postbuffer is the part of the recording after the noise event is trigged.
            - Value must be between 0 and 10 seconds, and the full recording buffer (RecordingPostBufferLength + RecordingPostBufferLength) can be up to 10 seconds.
    - Command Id: 0x01 [AudioAssistantConfigureIndicationParameters]
        - To configure the sound and LED parameters for each indication.
        - Parameters: (All parameters must be defined in the command)
            - Indication identifier
            - Indication timeout

        - Sound pattern id
        - Sound volume
        - Sound period
        - LED1, Num of blinks
        - LED1, Period
        - LED1, Percentage on
        - LED1, Light level
        - LED2, Num of blinks
        - LED2, Period
        - LED2, Percentage on
        - LED2, Light level
    - Command Id: 0x02 [AudioAssistantActivateSystemIndication]
        - Command to activate and configure system indication.
        - Parameters: (All parameters must be defined in the command)
            - Indication timeout
            - Sound pattern id
            - Sound volume
            - Sound period
            - LED1, Num of blinks
            - LED1, Period
            - LED1, Percentage on
            - LED1, Light level
            - LED2, Num of blinks
            - LED2, Period
            - LED2, Percentage on
            - LED2, Light level
            - Priority
                - To describe the priority of the system indication
                - Values:
                    - 0x00: Normal system indication. Overrules all indication but internal and external fault.
                    - 0x01: Background system indication.
    - Command Id: 0x03 [AudioAssistantGetIndicationConfigReq]
        - Command to ask for the current parameters of a specific indication.
        - Parameter:
            - Indication Identifier
    - Command Id: 0x00 [AudioAssistantEvent]
        - Event from the Audio Assistant device.
        - Parameters:
            - Event identifier
                - 0x01: Button 1
                - 0x02: Button 2
                - 0x03: Button 3
                - 0x04: Button 4
                - 0x05: Noise threshold exeeded
                - 0x06: Mains power changed
                - 0x07: Low battery
            - Event data
                - 0x00: Short press (* for Event identifier 0x01-0x04)
                - 0x01: Long press (* for Event identifier 0x01-0x04)
                - 0x02: Mains power connected (* for Event identifier 0x06)
                - 0x03: Mains power disconnected (* for Event identifier 0x06)
                - 0x04: Low battery enabled (* for Event identifier 0x07)

        - 0x05: Low battery disabled (* for Event identifier 0x07)
        - 0xFF: No event data
    - Command Id: 0x04 [AudioAssistantZigbeeOnlineCheck]
        - Command transmitted from the Audio Assistant device to the coordinator to check if the Zigbee connection is working.

Client Cluster

- Cluster ID: 0x0019 [OTAUpgrade]
    - The device will send QueryNextImage every 6 hours.
- Cluster ID: 0x000A [Time]
    - At startup, the device will scan for a Time server and create a binding if available.

5.2 Endpoint 0x01 - Onics Utility

Application profile Id 0xC0C9 (Onics (Formerly Develco Products) manufacturer specific profile).

Application device Id 0x0001.

Manufacturer code for Onics (Formerly Develco Products) is 0x1015.

6 Bluetooth Interface

Bluetooth classic Class 1 link.

Profile Headset

6.1 Commissioning

Bluetooth commissioning is done via the gateway REST API. In overall it is possible to execute the following commands on the Bluetooth interface.

- Pair Bluetooth device
- Unpair Bluetooth device
- Pairing timeout
- Stop pairing mode.

Password is not supported.

Once commissioned, the Bluetooth link is automatically established and maintained, so no manual action is required to connect.

6.2 Speaker Volume

Via the REST API on the gateway it is possible to runtime adjust the speaker volume on the Audio Assistance.

Set speaker Volume – range [0 – 100].

3rd gateways can control the speaker volume directly using Bluetooth headset profile.

6.3 MIC Sensitivity

Via the REST API on the gateway it is possible to runtime adjust the microphone sensitivity on the Audio Assistance.

Set microphone sensitivity range [0 – 100].

3rd gateways can control the MIC sensitivity directly using Bluetooth headset profile.

7 Contact Information

Technical support: Please contact Onics for support.
products@onics.com

Sales: Please contact Onics for information on prices, availability, and lead time.
info@onics.com