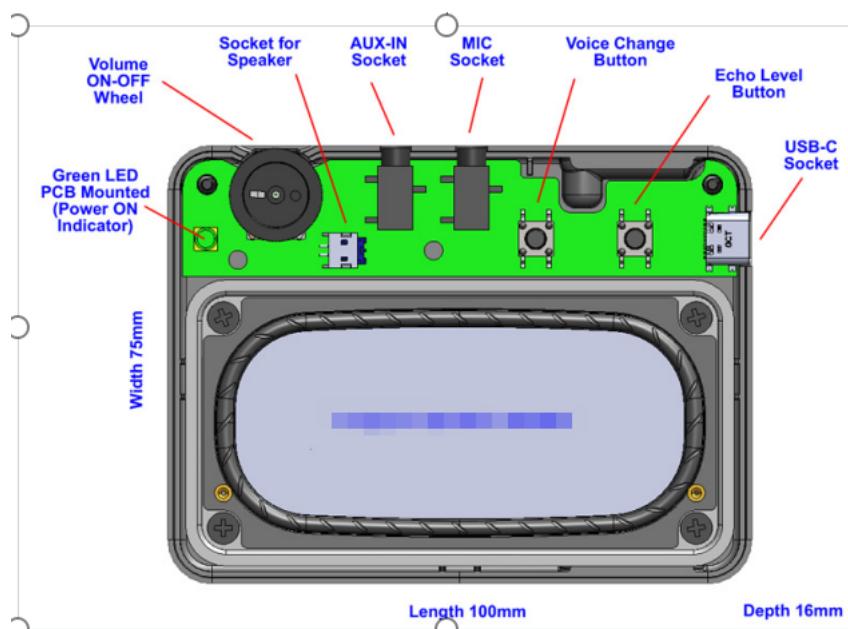


## Operation Description



## 1) Bluetooth MP3 Player/Speaker Module



- 1a) Required size 100(W) x 75(L) x 16mm (H). To achieve approx 120ml internal volume.
- 1b) Plastic Material: ABS, colour Black, texture to match version 1 COSVOX module.
- 1c) Power supplied by USB socket, (no built-in battery or battery compartment needed).
- 1d) The internal flash memory size must be 16MB.
- 1e) AUX-IN Socket, to allow sound from other devices to be played, (3.5mm phono).
- 1f) MIC-IN Socket, to allow voice from a wired microphone to be played, (3.5mm phono).
- 1g) Volume Control Wheel to adjust volume level and includes power ON-OFF feature.
- 1h) Green LED to indicate power ON.
- 1i) Detachable Belt Clip, (wire design similar to sample sent). XDT supplier.
- 1j) USB-C Socket for MP3 sound file transfer and power supply. Input voltage range 4.5V to 6V DC. Enables input from USB Power Bank or USB mains adapter.
- 1k) Module must be compatible with Windows PC and MAC computers for file transfer.
- 1l) Voice Change select Button, (see Point #5)
- 1m) Echo Level Button, (see Point #6)
- 1n) Speaker – as per data sheet and 3D file attached.  
Built-in sound amplification on PCB circuit chip.

1o) Please use a PCB mounted socket to connect the speaker to the PCB. i.e. the wires from the Speaker must have a plug that connects to a socket on the PCB. This will allow the customer to disassemble the module, disconnect and extend the wires if required for a custom project.

**2) Key Fob with Play Buttons and detachable cover**



2a) The key fob has 4 buttons on the front. There must be Bluetooth connection between the Sound Module and the Key Fob.

2b) Approx size of key fob 60x35x12mm.

2c) We need an 8 way socket to enable connection of 4x extension play buttons. We suggestion 8 pin JST 'ZH' type socket, but TBC from factory.

2d) There is a power ON/OFF slide switch on the top. I – 0 moulded text to indicate.

2e) We need an Auto Power Off feature, if the unit is left on with no use after 30 minutes.

2f) The key fob will be powered by 1x 27A battery.

2g) To replace the battery, the user will have to open the case using the 2 screws.

2h) A detachable cover is included to protect the buttons from accidental activation when extension wires are used. This cover can be clipped on and off as required.

2i) The cover includes strap features on the side to allow the user to attach the key fob to their wrist with a strap if required.

**3) Play Button Options. (Extra cable assemblies required for Option 2 and 3)**

**Option 1**



3a) The user may wish to hold the key fob in their hand. There will be 4x 'Momentary' type Play buttons on the top of the key fob.

3b) The play buttons will activate MP3 sound files stored on the internal memory of the Sound Module. See notes on point 4.

See Option 2 and 3 on following pages...

## Option 2



3c) The user may wish to use the Palm Module with 3 buttons, and Velcro strap, (similar to COSVOX version 1).

3d) In this scenario, the Key Fob will have the cover fitted to protect the 4 buttons on top from accidental activation.

3e) The Palm module will connect to an 8 pin JST male plug, that will plug into the socket on the front of the Key Fob.

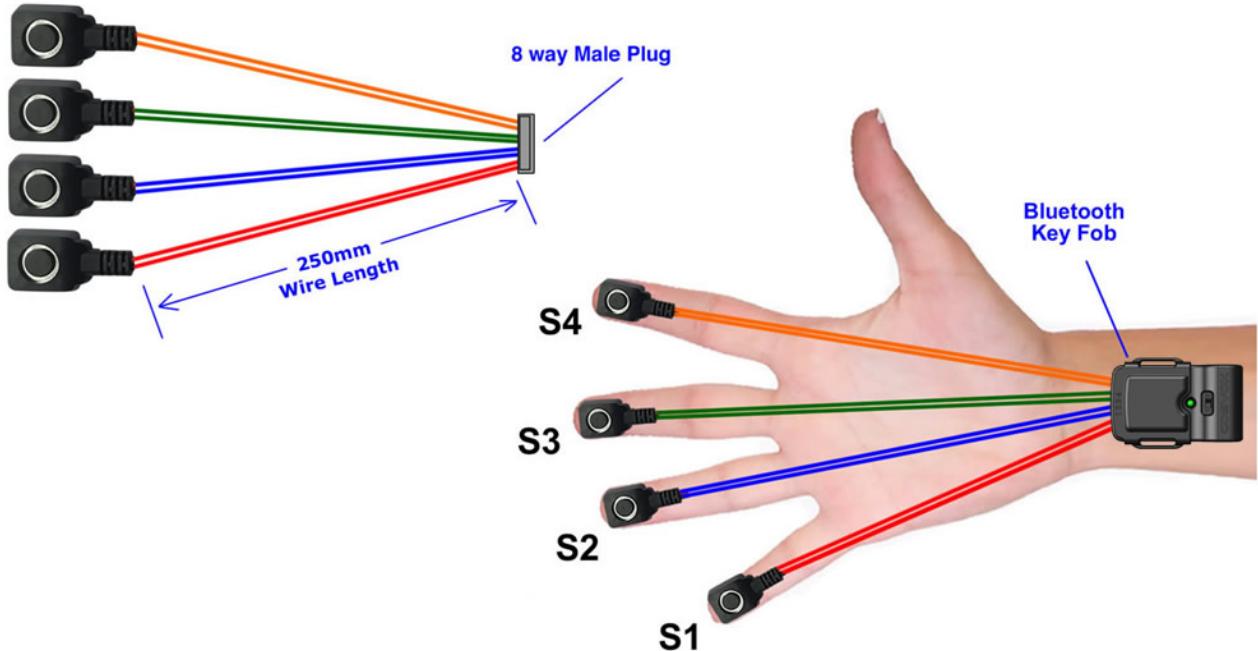
3f) Note that for point 3d, only 6 pins of the 8 way male plug are used.

3g) Length of wires leading from the palm module to the plug must be 150mm.

3h) Please use RED wires for S1, BLUE wires for S2 and GREEN wires for S3.

3i) The play buttons will activate MP3 sound files stored on the internal memory of the Sound Module. See notes on point 4.

### Option 3



3j) The user may wish to have buttons at the ends of their fingers. There will be 4x 'Momentary' type Play buttons, representing S1, S2, S3 and S4.

3k) The Buttons connect to an 8 pin JST male plug, that will plug into the Key Fob.

3l) In this scenario, the Key Fob will have the cover fitted to protect the 4 buttons on top from accidental activation.

3m) The buttons will include a strain relief feature to provide strength and durability.

3n) Length of wires leading from the buttons to the plugs must be 250mm.

3o) Please use RED wires for S1, BLUE wires for S2 and GREEN wires for S3 and Orange wires for S4.

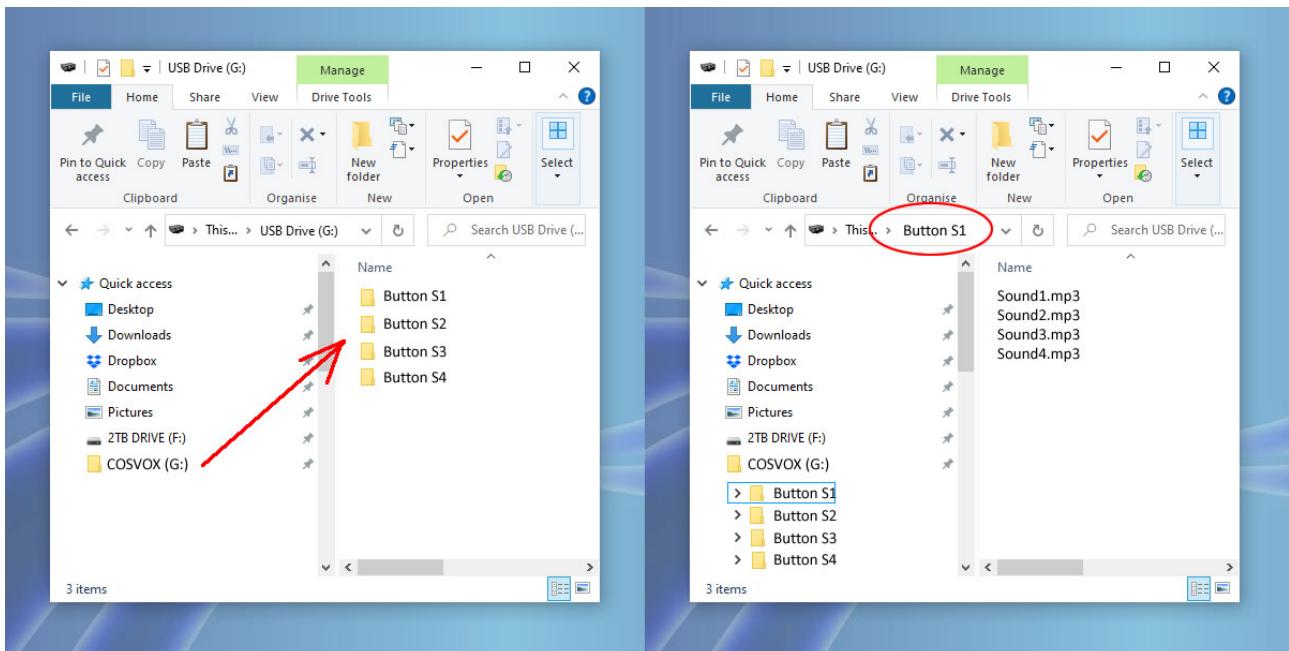
3p) The play buttons will activate MP3 sound files stored on the internal memory of the Sound Module. See notes on point 4.

#### 4) Folders in Memory

4a) When the buttons or palm module is plugged into the socket in the key fob, the four buttons on the key fob are deactivated.

4b) Ref note above, when Buttons are plugged into the socket on the key fob.

Button 1 on the Key Fob will play the same sounds as the button plugged into socket S1.  
Button 2 on the Key Fob will play the same sounds as the button plugged into socket S2.  
Button 3 on the Key Fob will play the same sounds as the button plugged into socket S3.  
Button 4 on the Key Fob will play the same sounds as the button plugged into socket S4.



4c) The memory on the Sound Module will be organised in 4 folders. Folders will be named, 'ButtonS1', 'ButtonS2', 'ButtonS3' and 'ButtonS4', as per image above. The folders will relate to the 4 play buttons on the Key Fob.

4d) Example: Folder name 'ButtonS1' corresponds to Button S1. Each time Button S1 is pressed, one of the sound files in the 'ButtonS1' folder will play.

4e) The MP3 files inside each folder will play in file name order sequence, NOT random.  
Example: The Button S1 is pressed once, Sound1.mp3 will play. When Button S1 is pressed again, Sound2.mp3 will play. When Button S1 is pressed again, Sound3.mp3 will play, and so on and so on.

4g) There is no limit to the number of sound files each folder can store. The total number of sound files in the memory for all folders is only limited by the total memory of 16MB.

4h) IMPORTANT: MP3 sound file playback requirements.

When any button is pressed and a sound file begins to play, the sound must start from the beginning and play until the end. It cannot be stopped. i.e. if another button is pressed whilst a sound is playing, it will not stop, and the original sound will continue to play until the end. After the sound has stopped, you can press another button to start a new sound.

## 5) Voice Changing Feature



5a) We need 6x pre-set voice change settings when a wired microphone is plugged into the MIC socket. A button on the speaker module will select the different voices. In addition to the 5x different voice styles, there must also be a 'Natural' voice, which is the users 'normal' voice.

5b) Example of voice types will be: 1-Natural (user's normal voice), 2-High Pitch, 3-Low Pitch, 4-Trooper, 5-Droid and 6-Horror. The specifications and examples of each voice type has been sent to you to match.

5c) Each time the Voice Change Button is pressed, the voice type will change. The button will scroll and loop i.e. 1-2-3-4-5-6 and then loop back to 1-2-3-4-5-6 again etc etc

5d) A voice prompt will announce the 'Voice Style' when the voice change button is pressed. This will help the user to navigate to the voice they want, i.e. when the button is pressed a voice file states, "**Natural**", press again "**High Pitch**", press again "**Low Pitch**" press again "**Trooper**" press again "**Droid**" and press again "**Horror**", then loop back and repeat.

## 6) Echo Feature

6a) We would like 4x pre-set 'Echo' settings when using a wired microphone. There will be a button on the speaker module to select the 4 different Echo settings which will be 1 - Off, 2 - Low, 3 – Medium and 4 - High.

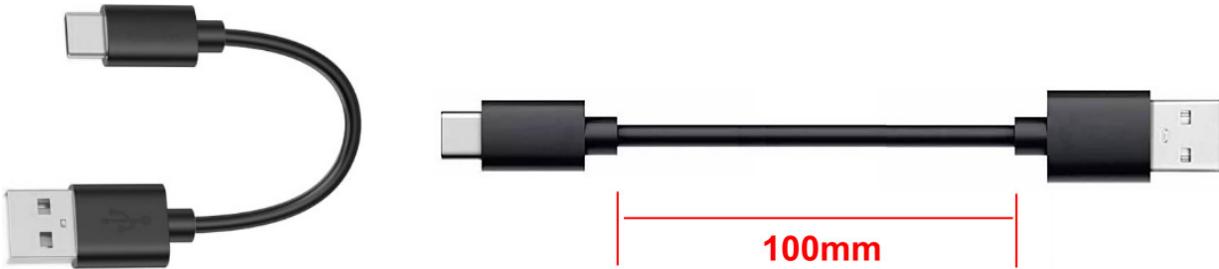
6b) Each time the Echo Change Button is pressed, the Echo level will change. The button will scroll and loop i.e. 1-2-3-4 and then loop back to 1-2-3-4 again etc etc

6c) A voice prompt will announce the Echo setting level when the echo setting button is pressed? This is to help the user to navigate to the Echo Level they require, i.e. when the button is pressed a voice file states "**Echo One**", press again "**Echo Two**" press again "**Echo Three**" press again "**Echo Off**" etc, then loop back and repeat.

## 7) Packaging

7a) White Box with 1 colour print. Size/Design TBC after prototype approved.

7c) USB-C to USB-A Cable must be included. 100mm length. Black colour. See image below. Cable must include Data Transfer and charging features.



7d) Folded User Guide included in each box. 1 colour print. Size/design TBC

7f) Artwork for white box TBC, similar design as below.



7g) See point 15 for Bill of Material (BoM) and white box contents.

9) A smart phone can be connected to the Sound Module by Bluetooth. i.e. Music can be played from the phone to the Sound Module. The BT device name must be '**COSVOX**'.

## 10) Voice Prompt for Bluetooth Connection - Ref Key Fob and Smart Phone

- 10a) When sound module is turned ON, there will be a voice prompt "***Bluetooth Ready***".
- 10b) When the Key Fob or a Smart Phone is connected to the Sound Module, there will be a voice prompt "***Bluetooth Connected***".
- 10c) When the Bluetooth connection between the sound module and the key fob, (or smart phone), is broken, a voice prompt will play "***Bluetooth Disconnected***".
- 10d) When the sound module enters into 'Power Save' mode, i.e. when the device is not used for 30 minutes, there will be a voice prompt "***Powering Off***".

## 11) Increased depth options tested.

3D prints of alternative cases depths have been tested, i.e. 20mm, 25mm and 30mm, but we have chosen the lowest profile option of **16mm**.

## 12) Wire Belt Clip

- 12a) XDT will find a sub-contractor to produce the belt clip. **Action IF**
- 12b) CAD file must be supplied and approved BEFORE production starts. **Action IF**



### 13) PCB Power Output

After many tests and evaluations, we would like to choose the PCB marked **0.0** as per photo below. The power output is 7 watts.



### 14) CAD Drawings

14a) From my records, please use drawings dated **22<sup>nd</sup> Jan 2025** for the Sound Module.

14b) From my records, please use drawings dated **10<sup>th</sup> Feb 2025** for the Key Fob.

14c) I understand that your Mold Tool Maker will need to review the drawings and prepare them for actual Tool production. After this process is complete and drawings are in final revision, please send a copy back to us for our records. **Action IF**

## 15) Bill of Materials, (BoM)

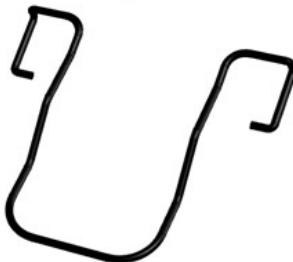
### COSVOX Version 2 Wireless Sound Module

#### BoM Components

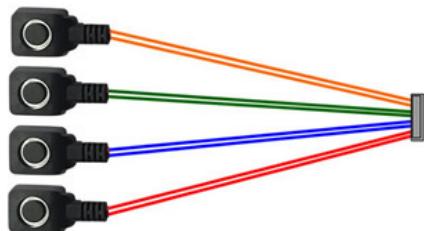
**A** Sound Module, (16mm Depth)



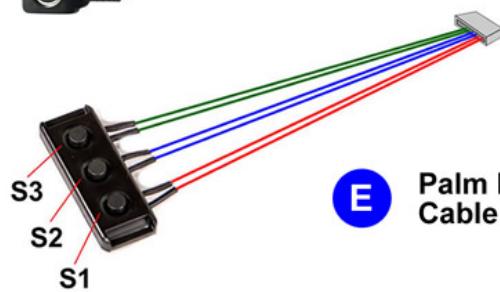
**B** Metal Belt Clip



**C** BT Wireless Key Fob  
with Button Cover  
(Including A27 Battery)



**D** Finger Button  
Cable Assembly



**E** Palm Module  
Cable Assembly

**F** Velcro Strap for  
Palm Module



**G** USB-C Cable



NOTE: This product has been tested, meet the restrictions of Class B digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna.
- Increase the separation between the device and receiver.
- Connect the device into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could

void the user's authority to operate the device.

This device complies with Part 15 of the FCC Rules. The operation needs to fulfil the following two conditions.

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

#### FCC Radiation Exposure Statement

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.