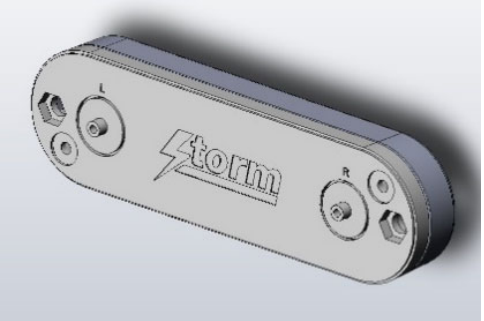


Product Features

The Microphone Array Module is an accessible interface device delivering clear voice reception in exposed, unsupervised, public applications.This enhances the accessibility of touchscreen kiosks by the addition of speech input command. Simply connect the Array Microphone to a Windows USB port and the device will enumerate as a recording device (no special drivers are required). Connection to the host system is via a Mini B USB socket with an integrated cable anchor. A suitable USB Mini B to USB A cable is sold separately

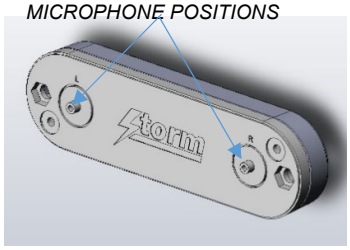
- 55mm microphone separation for max performance
- Includes Far-Field voice capture technology.
- Voice Assistant Support
- Active noise cancelling
- USB mini-B socket for connection to host
- Underpanel install to 3mm weld studs
- Dims 88mm x 25mm x 12mm

This can be used together with the Microphone Activation Sensor to implement a Voice Recognition or Speech Commanded application in public or exposed environments. To ensure privacy and protection of personal data Storm strongly recommend that the microphone is maintained, by default, in a muted (or closed) condition. More importantly, any system user or person in the immediate vicinity of the Microphone Array Module must be notified of its presence and status.

This notification is facilitated by the Microphone Activation Sensor which detects when a user is in the immediate (addressable) vicinity of the kiosk. This also features the internationally recognized microphone icon as a highly visible and tactilely discernible symbol.

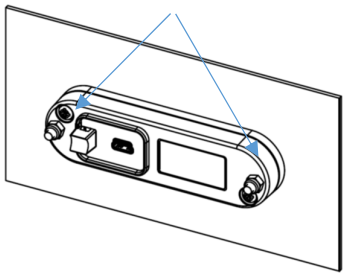
Installation Details

MICROPHONE POSITIONS



FRONT VIEW (PANEL NOT SHOWN)

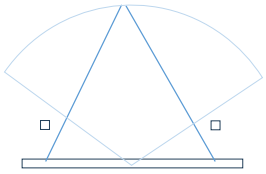
M3 locknut x 2 positions



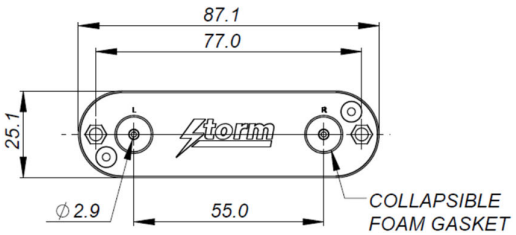
REAR VIEW (BEHIND PANEL)

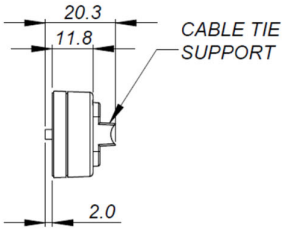
Beam Pattern (can adjust in config)

Focus @ 1m distance



TOP VIEW



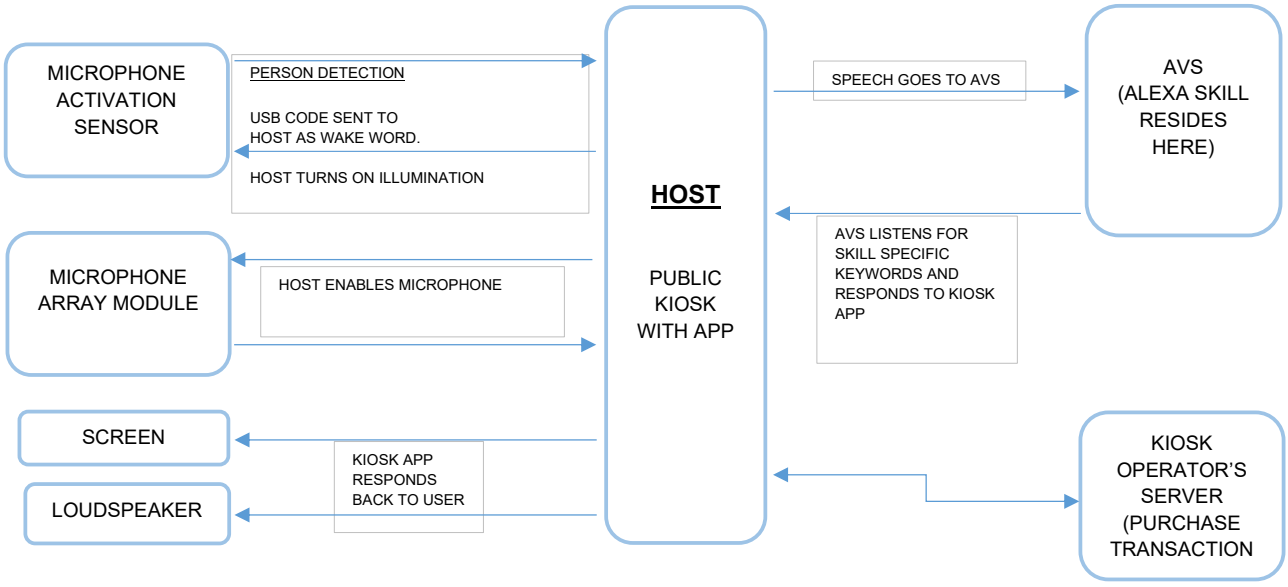


To implement the recommended mode of operation, when the Microphone Activation Sensor detects someone remaining in the 'addressable zone' it will transmit a unique Hex Code to the Customer Interface Software (CX). The CX Software should respond to that code with an audio message and visible screen text, e.g. "This kiosk is equipped with speech command technology". "To activate the microphone please press the enter key". Only when the CX Software receives that second code (from the enter key press) should it activate the microphone, transmit the audio message "Microphone On" and turn on the illumination of the microphone symbol.

When the transaction is complete and the person leaves the addressable zone, the Microphone Activation Sensor transmits another, different Hex Code. Upon receipt of this code the CX Software should mute (close) the microphone and turn off the illumination of the microphone symbol.

It is important to note that the microphone and the illumination of the microphone symbol are under the direct control of the Customer Interface Software (CX) which usually resides within the Cloud or within the host system. The CX Software is also responsible for providing any audio messages or prompts.

Example of Standard Transaction Flow between user / kiosk / host (using AVS as example)



USB Interface

- USB Advanced Recording Device
- No special drivers required

Part Numbers

AT00-15001	MICROPHONE ARRAY MODULE
AT01-12001	MICROPHONE ACTIVATION SENSOR
4500-01	USB CABLE – ANGLED MINI-B TO A, 0.9M LONG
AT00-15001-KIT	MICROPHONE ARRAY KIT(inc Microphone Activation Sensor)

Specifications

O/S Compatibility	Windows 10 / iOS/Android
Rating	5V ±0.25V (USB 2.0)
Connection	mini USB B socket
Voice Assistant	Support for : Alexa/ Google Assistant/ Cortana/Siri

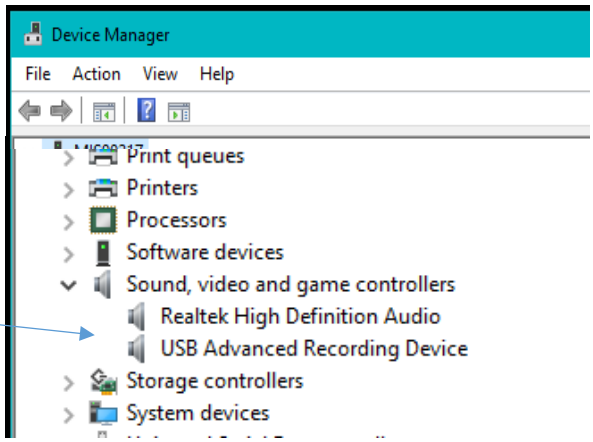
Support

Configuration Utility for Firmware Updating / loading custom firmware

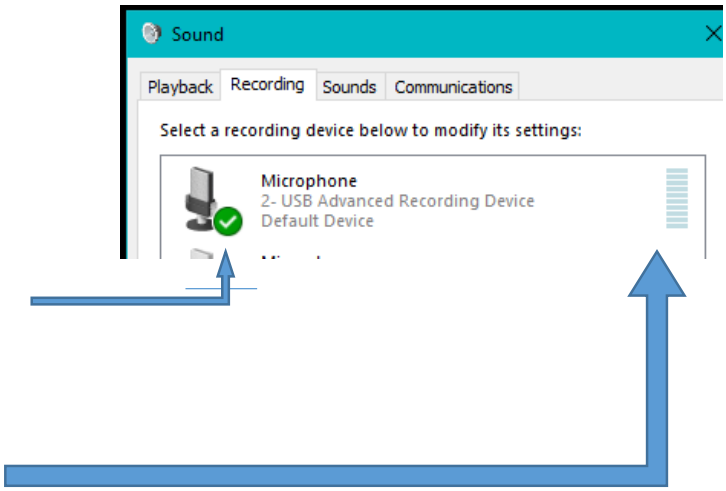
SETUP

Connect the Array Microphone to a Windows USB port and the device will enumerate as a sound device (no special drivers are required) and will show up on device manager as shown below:

The Array Microphone will
show as USB Advanced Recording Device



In the sound panel it will show up as per the screenshot below :

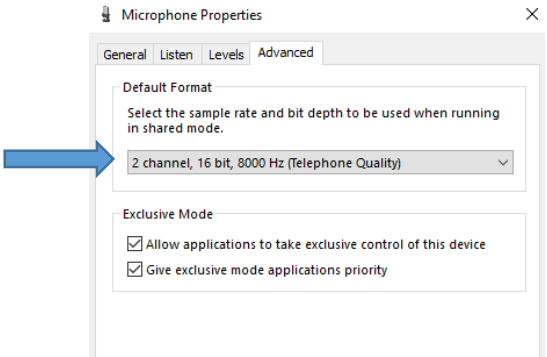


For any windows application ensure that
the array microphone is set as the default device
.
Check the array microphone is placed
directly in front of the user.

If you speak the bar on right hand side will
indicate that the microphone is picking up voice.

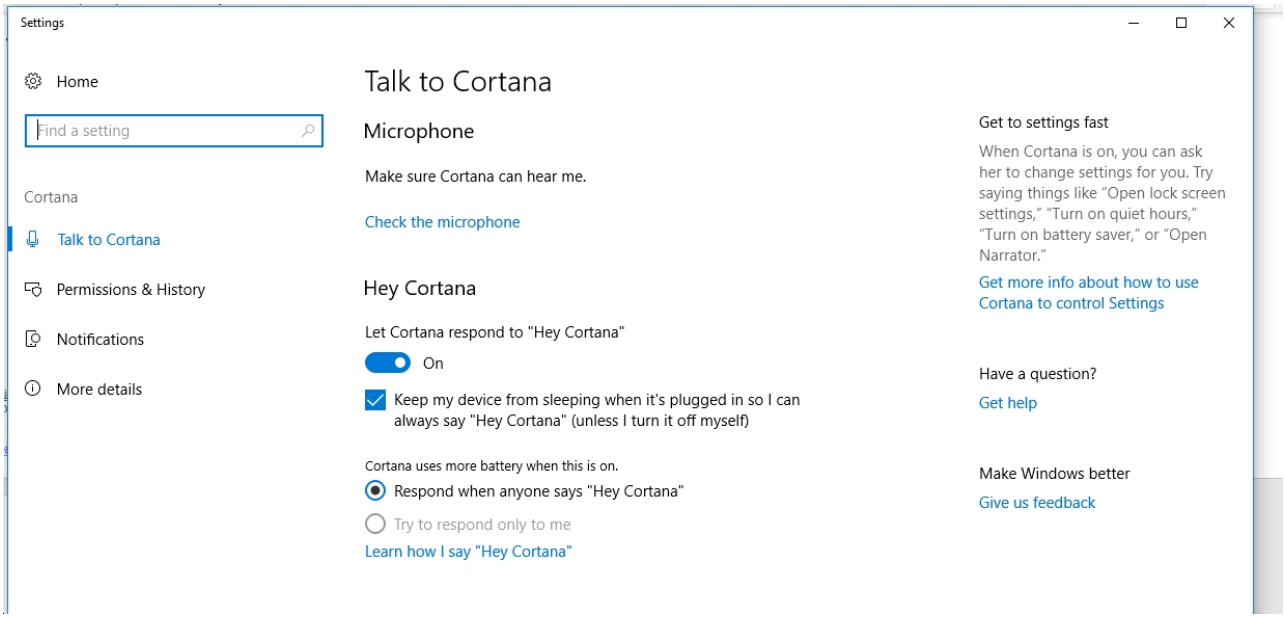
It is recommended for speech recognition
that the sample rate is set to 8 kHz : click on
Properties and then select the sample rate

(in the Advanced tab).



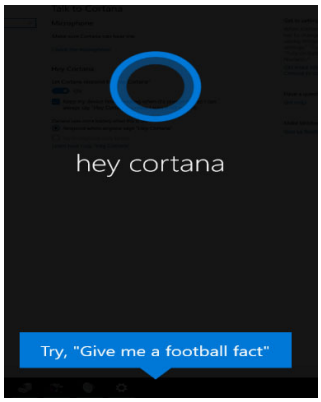
TESTING WITH CORTANA

Using Windows 10, check that Cortana is enabled. Go to Cortana settings and enable it as shown below:



Then if you say "Hey Cortana" the screen will be displayed:
say "Tell me a joke"
Cortana will respond with a joke.

Or
say "Hey Cortana" … "Give me a football fact"



You can also issue windows command for instance
e.g. to open file explorer: "Hey Cortana" .. "Open file explorer"

TESTING WITH AMAZON VOICE SERVICES

We have used two types of application to test the Array microphone with Amazon Voice Services:

- Alexa AVS sample
- Alexa online simulator.

ALEXA AVS SAMPLE

We have installed the following application on the host system and modified the app to work with the Storm Array Microphone and Storm AudioNav.

https://github.com/alexa/alexa-avs-sample-app/wiki/Windows

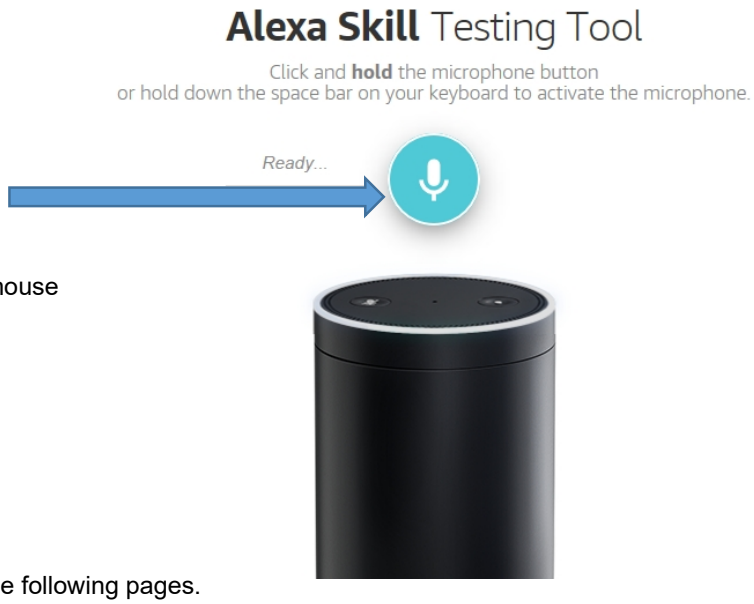
To install this requires an AVS developer account and other components.
If you would like more details about the installation of this modified application, please contact us

ALEXA ONLINE SIMULATOR

The Alexa online simulator performs same task as an Alexa device.

The tool can be accessed from here: https://echosim.io/welcome

You will need to login to Amazon. Once logged in the following screen will be displayed:



Click on the microphone ICON
and keep it pressed.

Alexa will start listening, just say:
“Tell me a joke” and then release the mouse

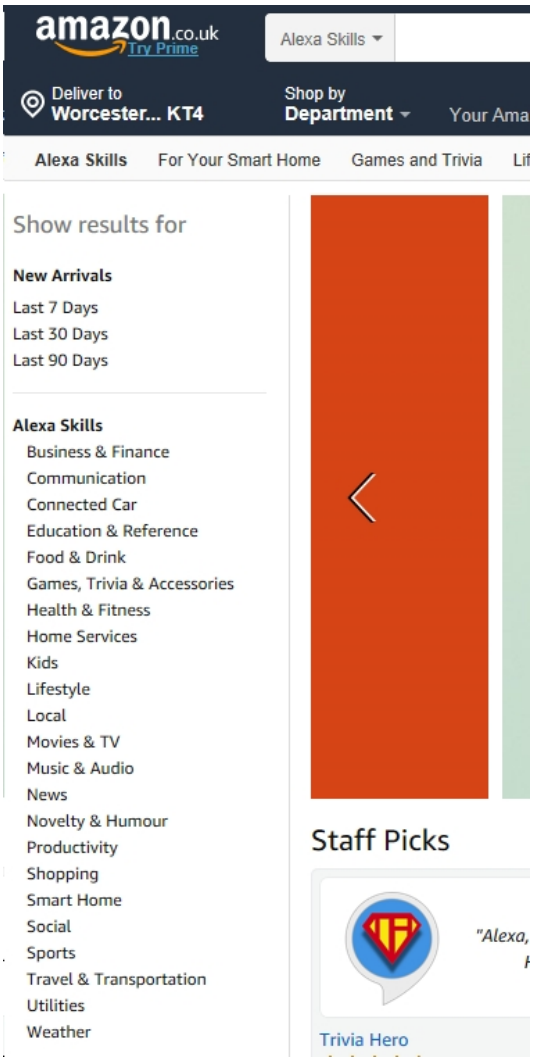
Alexa will respond with a joke.

You can try other skills in Amazon – see following pages.

Go to the Alexa skills page

Click on Travel & Transportation

Select a skill and make sure you enable it.



National Rail Enquiries Skill

In the UK we have a transportation skill that allows two way voice communication between the user and the app:

https://www.amazon.co.uk/National-Rail-Enquiries/dp/B01LXL4G34/ref=sr_1_1?s=digital-skills&ie=UTF8&qid=1541431078&sr=1-1&keywords=alexa+skills

Once you have enabled it then try the following:

Click on the microphone icon, keep it pressed,
say:

"Alexa, ask National Rail to plan a journey"

Alexa will respond with:

"Okay this will save your commute, do you want to continue"
say :

"yes"

Alexa will respond with

"Lets plan a journey, what is your departure station"
say:

"London Waterloo"

Alexa will respond with

"Waterloo in London, right"
say:

"Yes"

Then Alexa will ask you how long it will take you to walk to the station.

Then repeat to choose your destination station.

Once it has all the information, Alexa will respond with the next three trains that will depart.