

Hearing Substitution Using Haptic Feedback

Exploring AAC to substitute hearing through Neosensory Buzz's haptic feedback for deaf parents to connect to their kids.

Things used in this project

Hardware components



[Arduino Nano 33 BLE Sense](#)

× 1



[Pimoroni BME680 Breakout](#)

× 1

I used Sparkfun BME680 which is very precise



Li-Ion Battery 1000mAh

× 1

TP4056 Charging module

× 1

5V Voltage Boost Converter

× 1

TP4046 with 5V boost converter

× 1

You can use this instead which has both charging module and 5V booster



[Neosensory Buzz](#)

× 1



[Apple iPad](#)

× 1

Or any iOS device

Software apps and online services



[Arduino IDE](#)



[Apple Xcode](#)

Hand tools and fabrication machines



3D Printer (generic)

Parents face unique challenges in each phase of parenting.

Newborn babies do not speak. Only communication they know is to cry. They cry when hungry, they cry when fussy, they cry when in pain. Imagine a deaf parent, little way from babies crib, they hear nothing! Baby's cry is unheard. Baby might be in real pain or discomfort which needs immediate attention but her scream will be unheard. How about a device which will listen to baby's cry and notify deaf parents via haptic feedback on a wearable device in real time?

Pre-schoolers are different than newborns. They learn new ways of communication, they learn to speak but problem with deaf parents remain the same. They are not able to hear what their little ones are trying to communicate. But on a positive side, kids can learn to use smart phone or tablets and can distinguish different image or icons. Yes, I am talking about Augmentative and Alternative Communication (**AAC**) for deaf parents not hearing impaired children!

Baby Connect

Introducing "Baby Connect", an app running on tablet. App is connected to Neosensory **Buzz** over the **bluetooth** and sends haptic feedback via vibration when an icon is tapped on the screen or a word is spoken holding down the on-screen record button.