

# Features of the Nasalance and Nasal Emission Visualization Systems



\*These products are not a medical device. They are not intended to be used in the diagnosis, cure, treatment, mitigation or prevention of disease and it is not intended to affect the structure or function of the body.

# Nasal Emission Visualization System (NEM)



**Glottal Enterprises is the only company that offers a system that measures nasal emission during speech and/or singing.**

- Nasal Emission is the abnormal passing of air through the nose during speech.
- A common example of this is when someone has a cleft palate. Our system is the only one that can quantitatively measure the amount of air that is passing through the opening in the palate.
- Another method currently used is holding a mirror under the nose and looking to see if there is fogging.
- Also Used to measure and track (VPI) Velopharyngeal Incompetence.

# Proprietary OroNasal Mask



**Nasal Emission System uses the dual chamber circumferentially-vented OroNasal mask**

***All Aerodynamic measurement systems and Nasality Measurement System use this proprietary CV mask. The masks are easily removed for use on a different handle or for cleaning.***

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# Low Speech Distortion



[Kay Pentax PAS System](#)



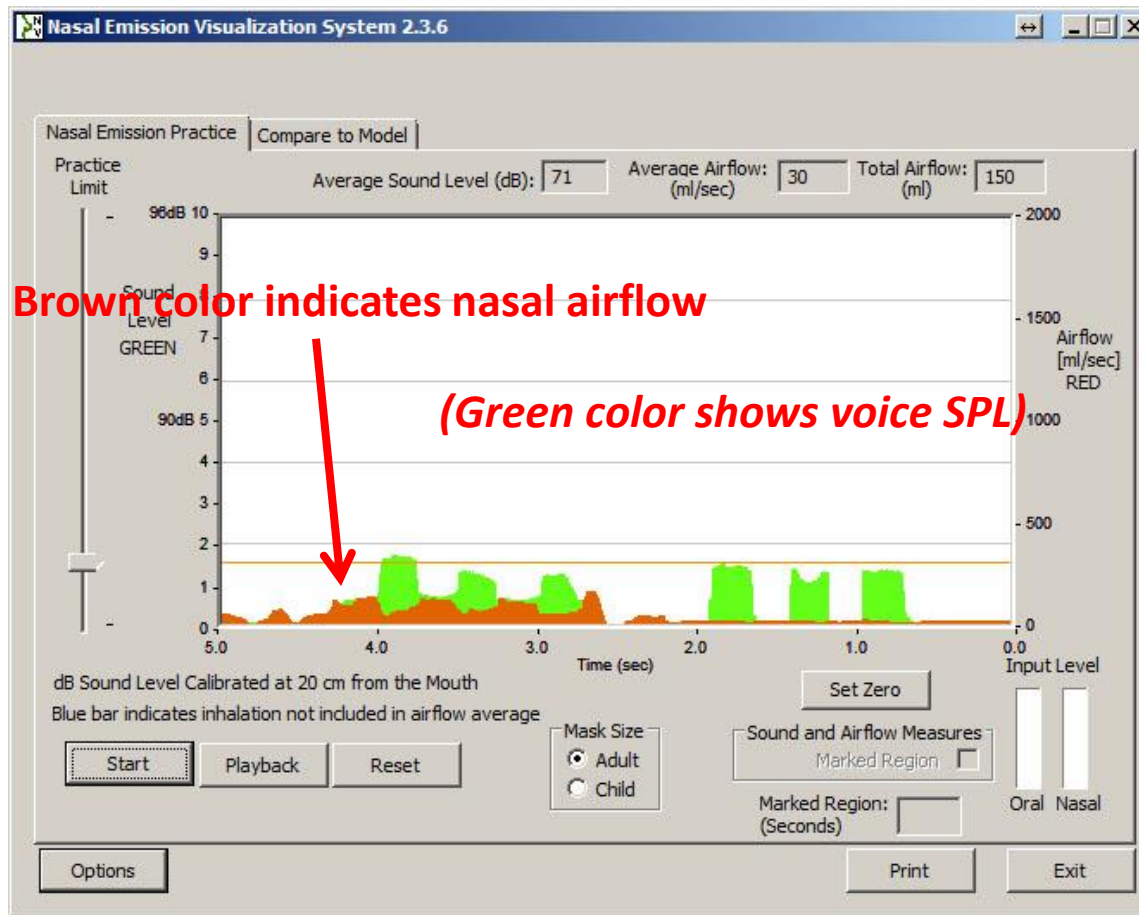
[Microphone Only](#)



[Glottal Enterprises  
OroNasal Mask](#)

*(For audio sample, click on links above)*

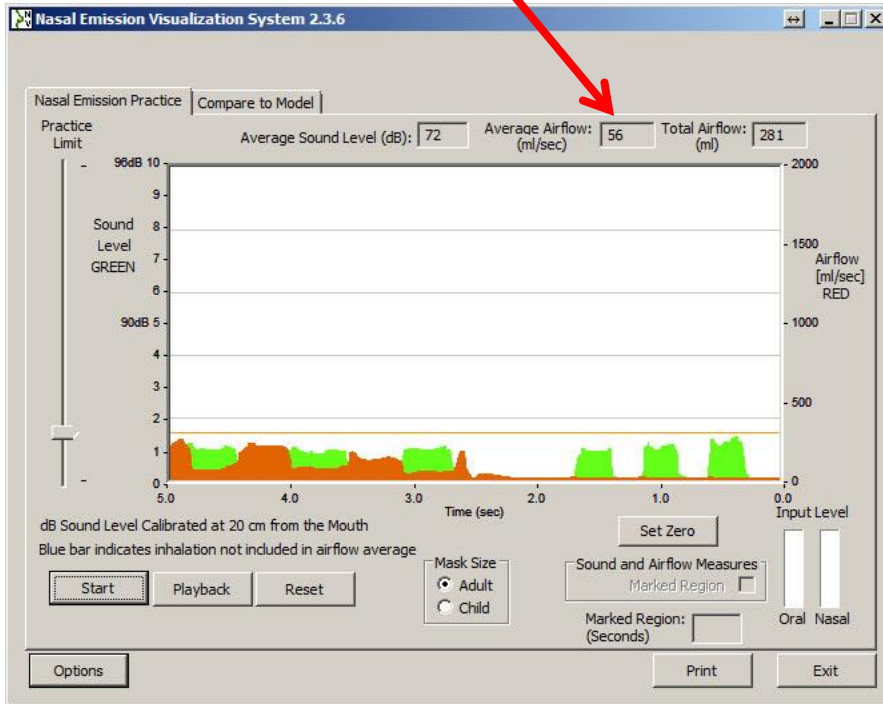
# NEM Displays Magnitude and Pattern of Nasal Airflow



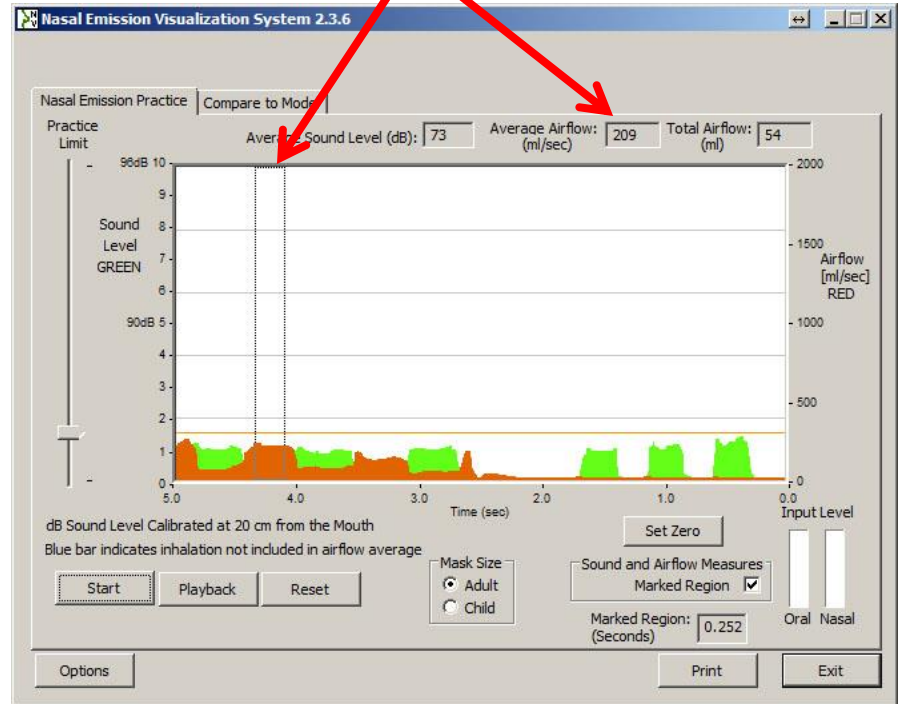
- Data is simplified to a color coded graph. Easy to read and evaluate.
- For training purposes a child can be asked to say the phrase so they see more green and less brown.
- Data is shown in real time. This is important for training/biofeedback uses

# NEM Measures Both Average and Instantaneous Airflow

Airflow is averaged over entire recording

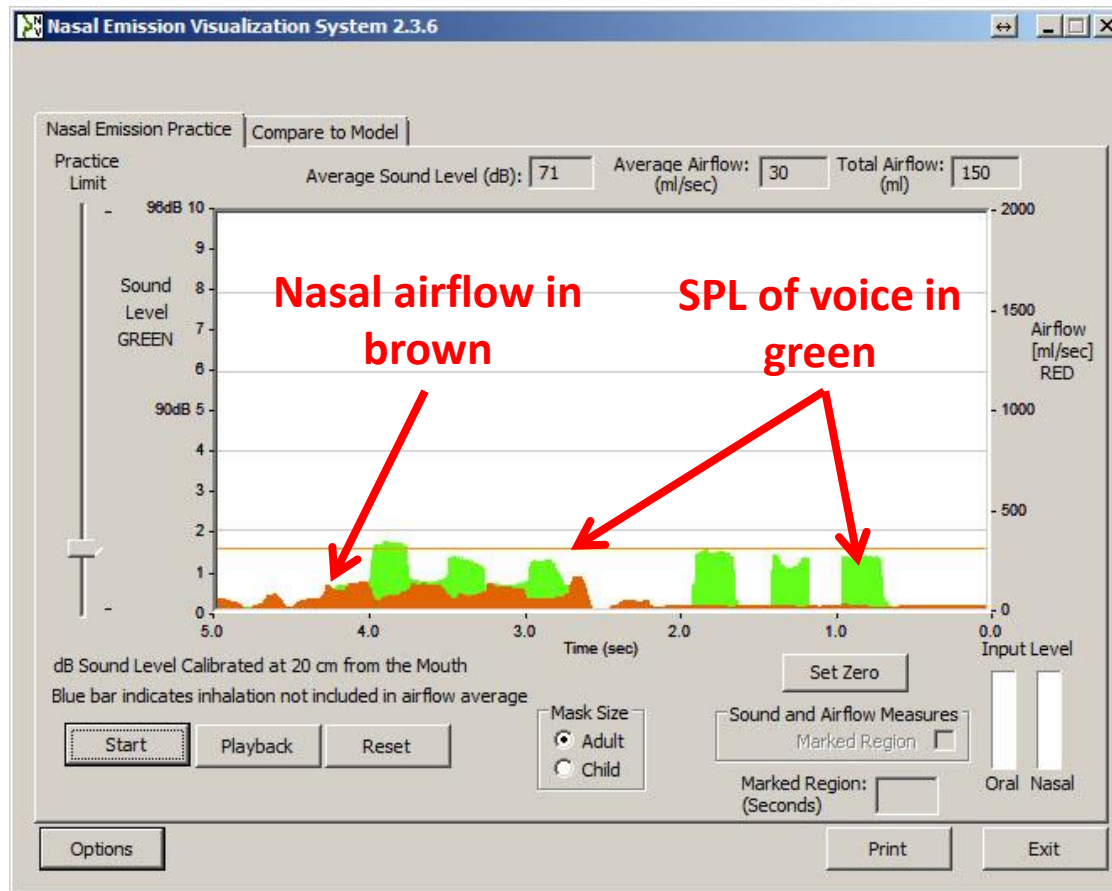


Airflow is averaged over selected interval



- You can select specific word or syllable out of a whole utterance for evaluation.

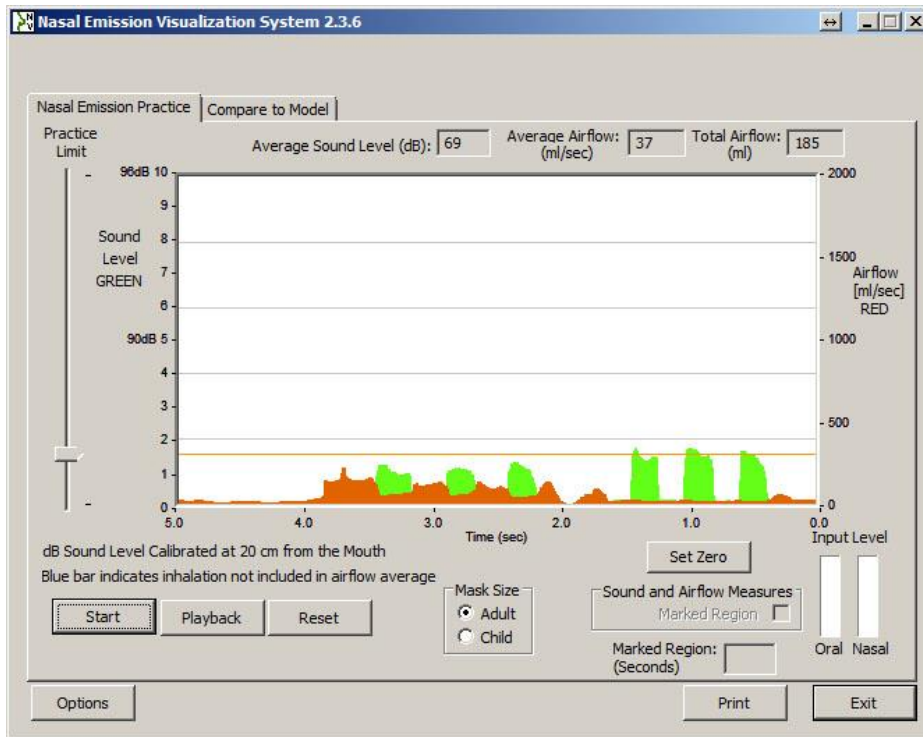
# NEM Measures SPL (Sound Pressure Level) During Vowels Along With Nasal Airflow



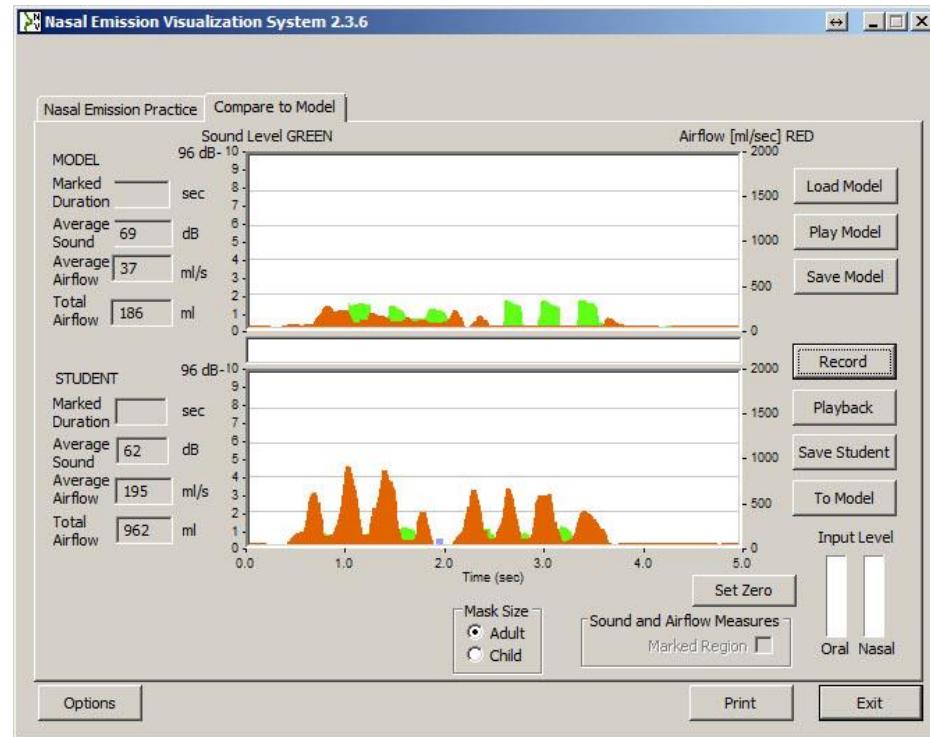
- In this application this measurement is important as it helps determine if lower nasal emission is due to lower SPL or a true decline in nasal emission. (talking softer can give a false lowered nasal emission measurement)
- This is the “loudness” of the voice, indicates voice strength
- Not available when using a closed respiratory mask as with the KayPentax PAS system.

# Can Be Used in Real-Time Mode and Teacher-Student Mode

## Real-time practice mode



## Teacher-student mode



- In Teacher – Student mode, a Speech Language Pathologist can provide the student with a sample to mimic.
- The students attempts can be saved to show progress over time.



# NEM Offers A Convenient and Comfortable One-Handed Operation



- Comfortable for the user to hold.
- Light weight handle can be easily held by users of all ages.
- Mask sits comfortably against the face.
- No competitor comparison available as no other company manufactures a Nasal Emission Measurement System.

# Low Speech Distortion



[Kay Pentax PAS System](#)



[Microphone Only](#)



[Glottal Enterprises  
OroNasal Mask](#)

*(For audio sample, click on links above)*

# NEM Connects to Any Windows Desktop or Laptop Computer Using the USB Port



- Can easily unplug and plug into the USB port of another computer, including any Windows Laptop.
- The software provided can be installed in up to three computers at no extra charge.
- Allows the system to be shared by multiple locations.

# Multiple Mask Sizes



# Easy to Clean

**Masks are removable and interchangeable**



**Silicone masks are hospital-grade and may be sterilized using autoclave, alcohol, or any standard sterilization formula**

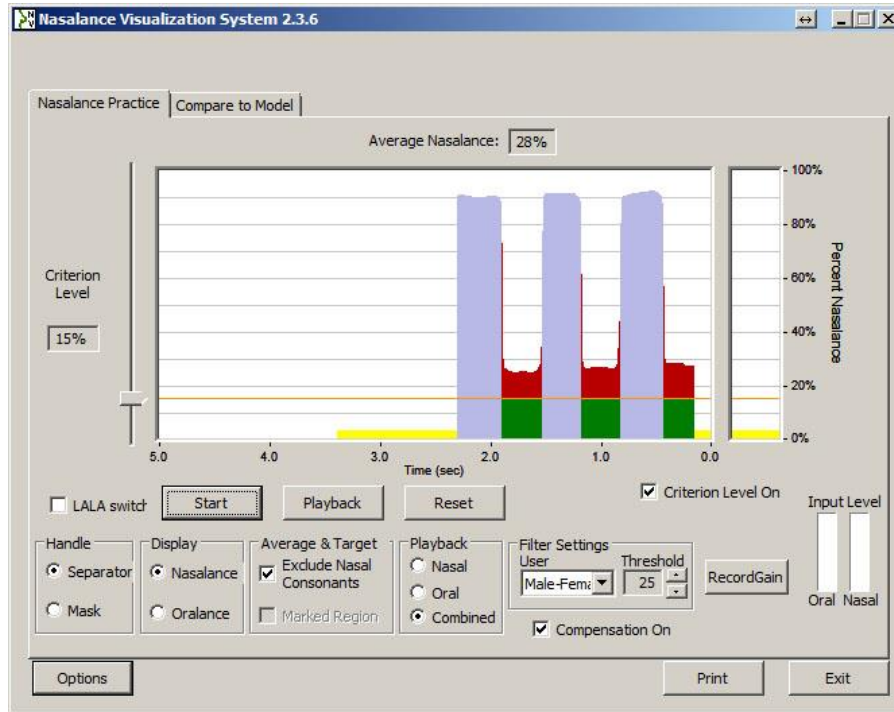
# Nasalance Visualization System (NAS)



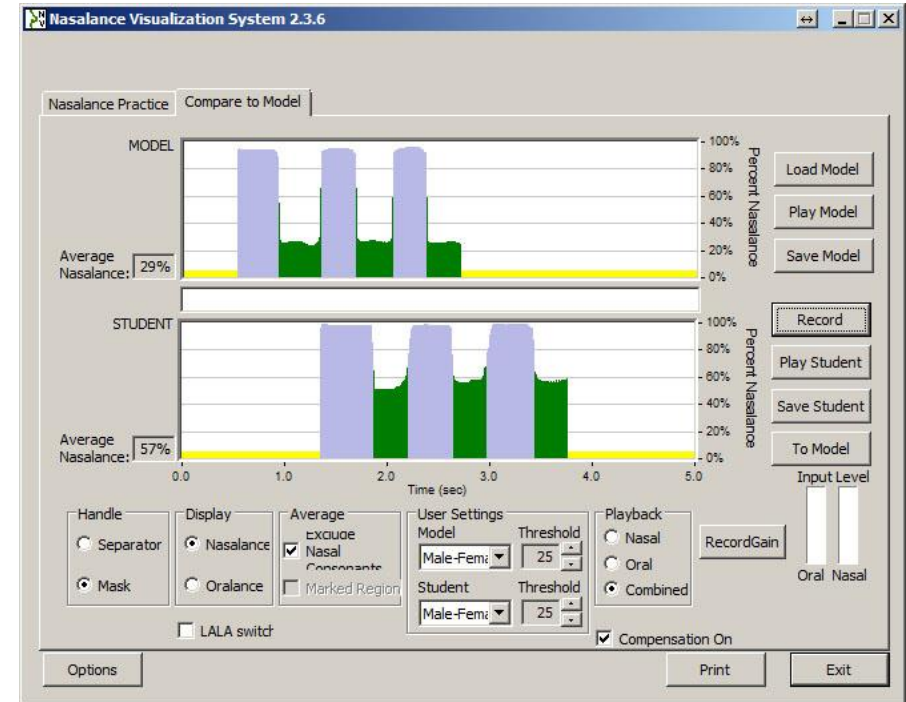
- Measures Nasalance, also known as Nasal Resonance

# Can Be Used in Real-Time Mode and Teacher-Student Mode

## Real-time practice mode

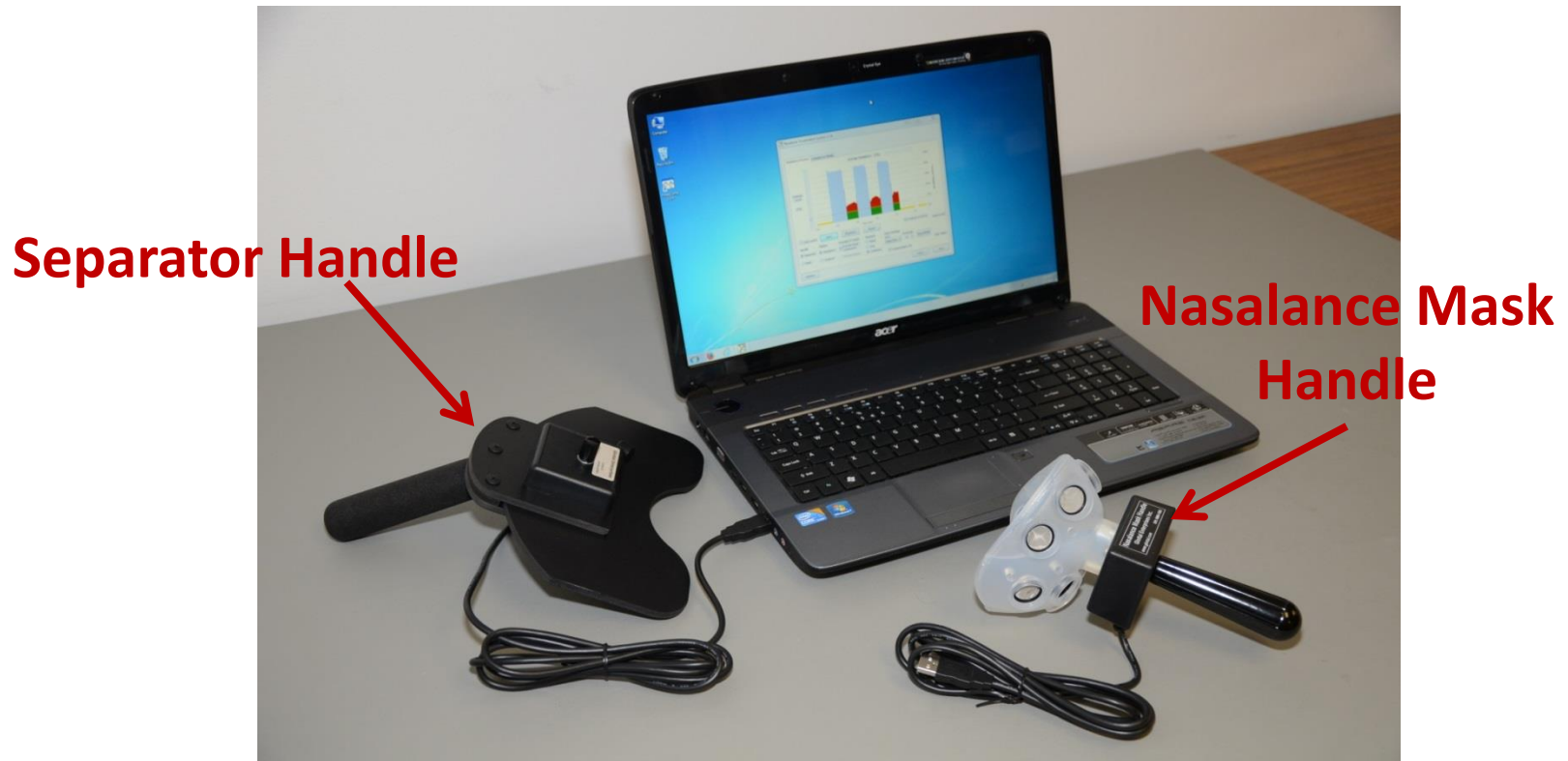


## Teacher-student mode



- In Teacher – Student mode, a Speech Language Pathologist can provide the student with a sample to mimic.
- The students attempts can be saved to show progress over time.

# Choice of Separator Handle or Two-Chamber CV Mask with Handle

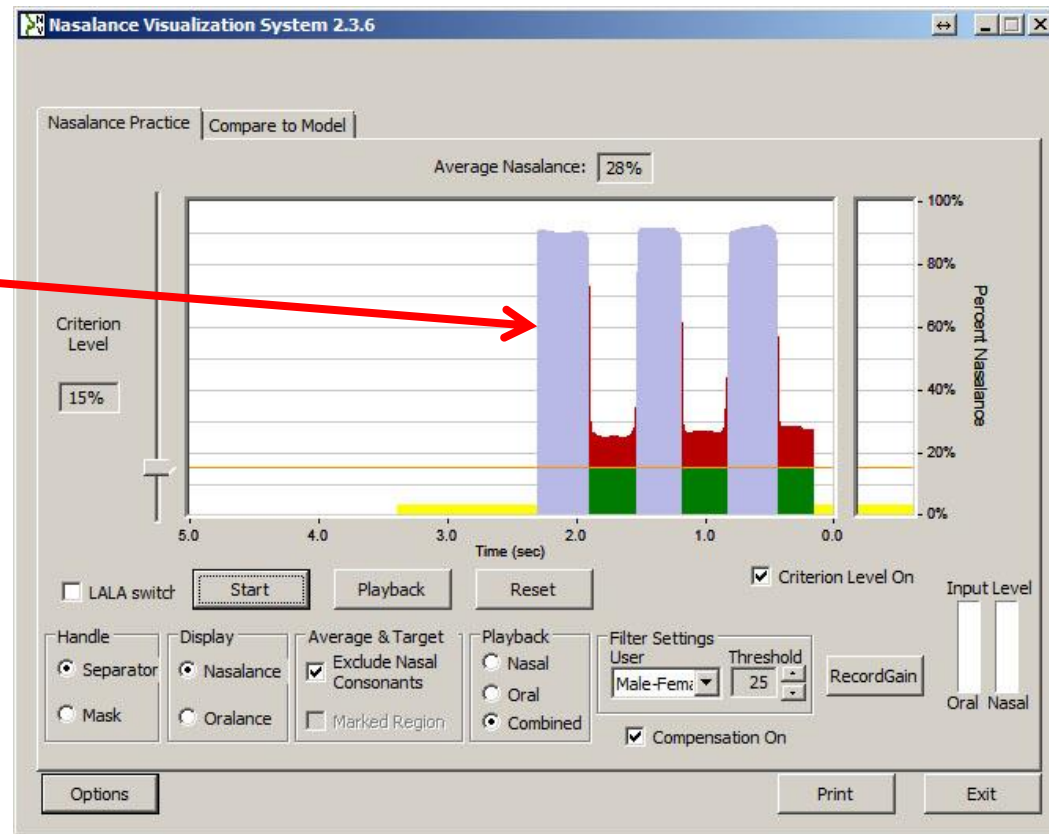


- Both a separator style handle and a mask handle are offered. (KayPentax) only offers a divider style helmet.
- All the electronics are in the handle and they both plug directly into the USB port so are VERY portable. No other equipment is needed.



# NAS Differentiates Between Nasal Consonants and Vowels

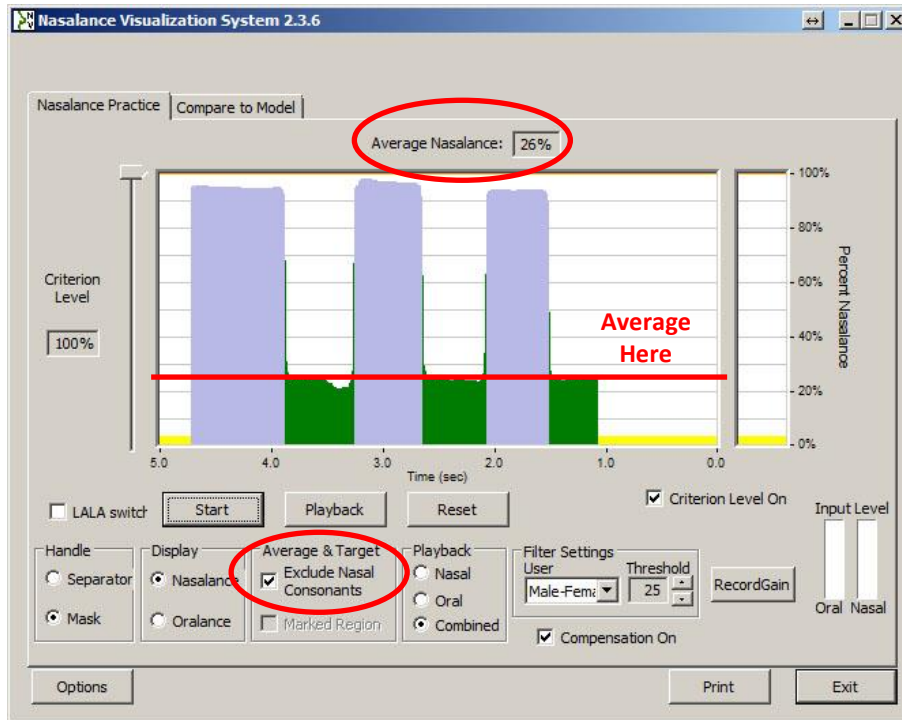
Purple color visually differentiates nasal consonants



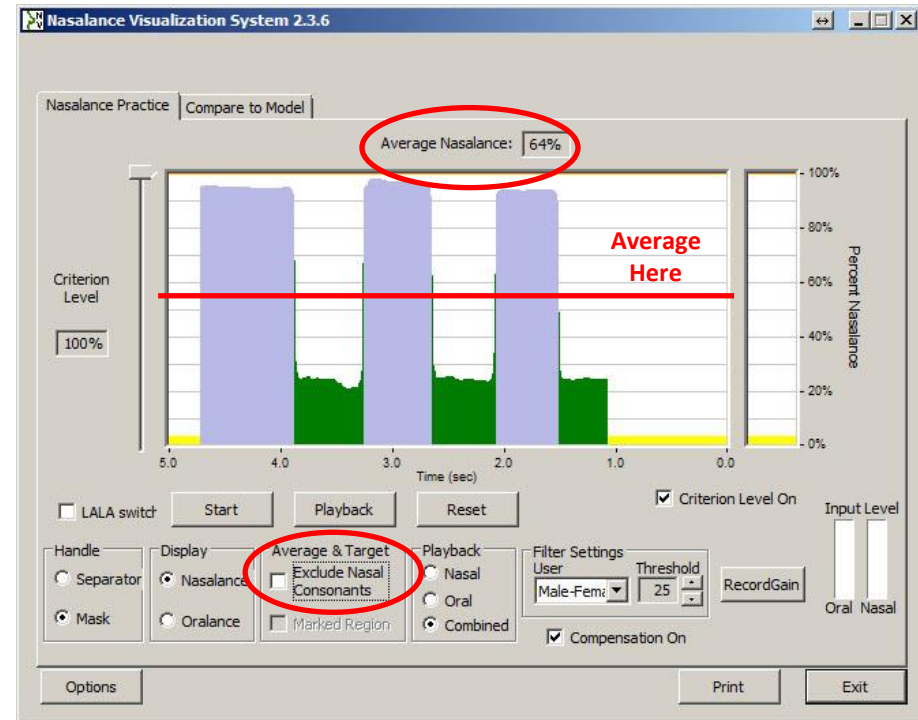
- It is important to differentiate between the sounds that are supposed to be nasalized and the vowel sounds where the value of nasalization is more critical.
- No other nasality measurement device does this.

# NAS Can Remove the Nasal Consonant From Your Measurement of Average Nasalance

## Nasalance measurement with nasal consonants removed



## Nasalance measurement without nasal consonants removed

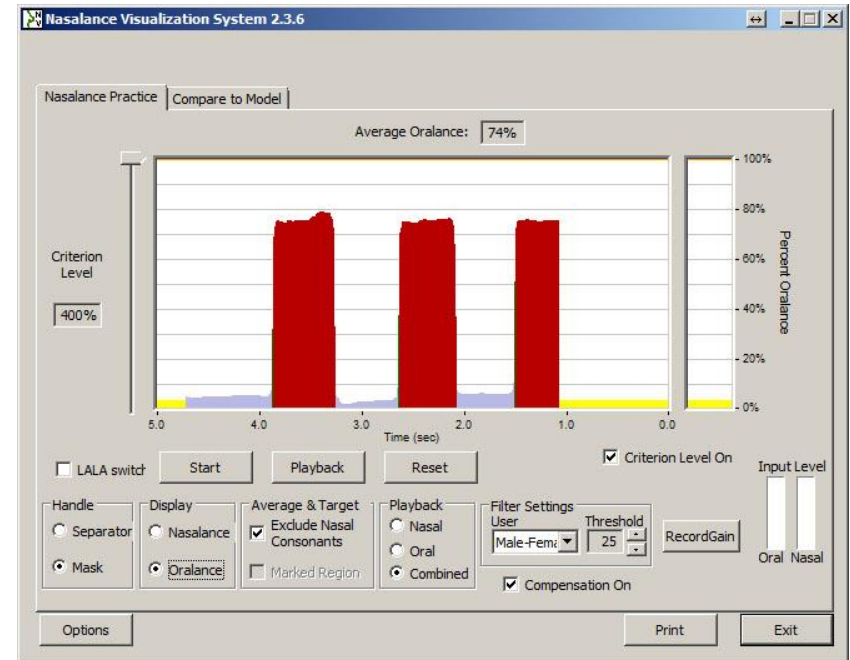
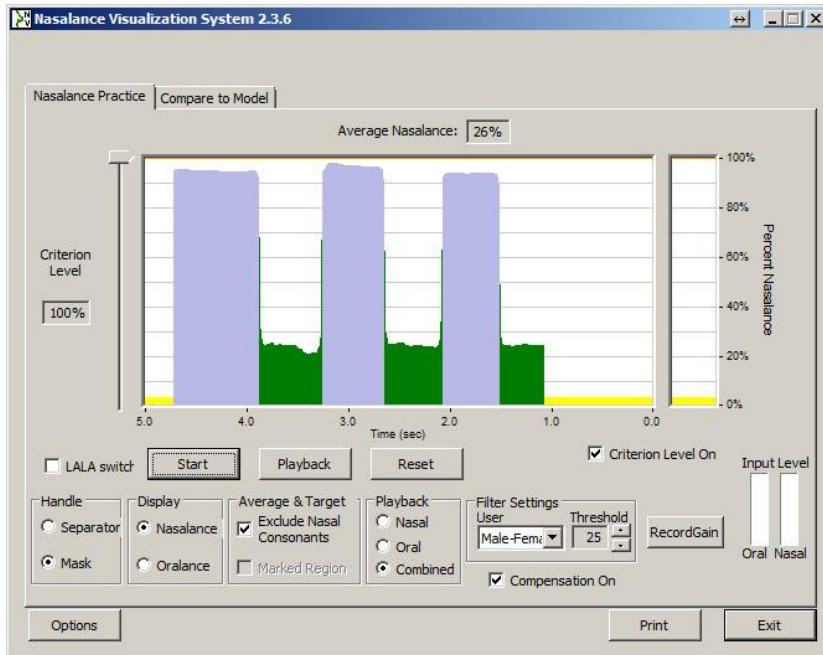


**NAS from Glottal Enterprises is the only system able to do this. Leaving in nasal consonant values can distort the nasalance value.**  
[http://www.rothenberg.org/Rethinking-Nasalance-Nasal-Emission/Rethinking\\_Nasal\\_Emission\\_and\\_Nasalance.pdf](http://www.rothenberg.org/Rethinking-Nasalance-Nasal-Emission/Rethinking_Nasal_Emission_and_Nasalance.pdf)

- NAS from Glottal Enterprises is the only system able to do this. Leaving in nasal consonant values can distort the nasalance value.
- The following is a link to a technical paper that discusses Nasality measurement in more detail.  
[http://www.rothenberg.org/Rethinking-Nasalance-Nasal-Emission/Rethinking\\_Nasal\\_Emission\\_and\\_Nasalance.pdf](http://www.rothenberg.org/Rethinking-Nasalance-Nasal-Emission/Rethinking_Nasal_Emission_and_Nasalance.pdf)

# Oralance Can Be Displayed Instead of Nasalance

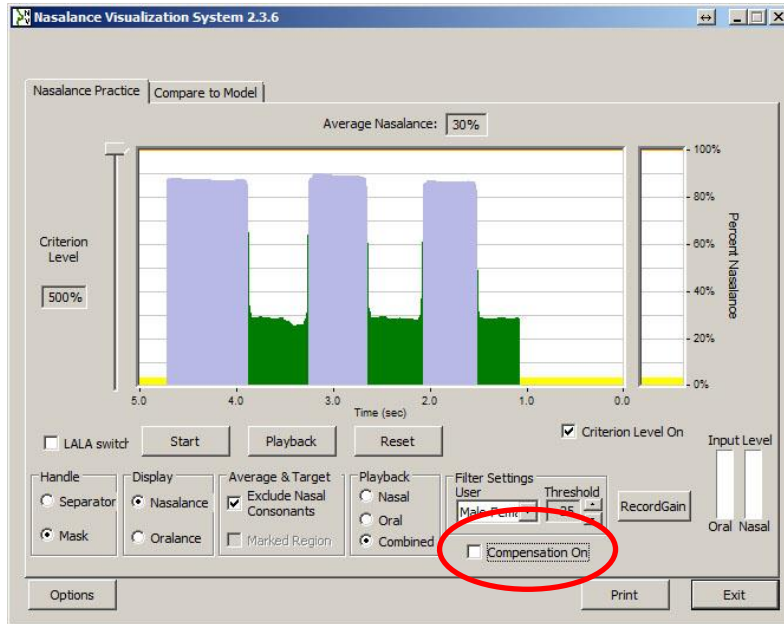
Identical recording, shown on Left as Nasalance, shown on Right as Oralance



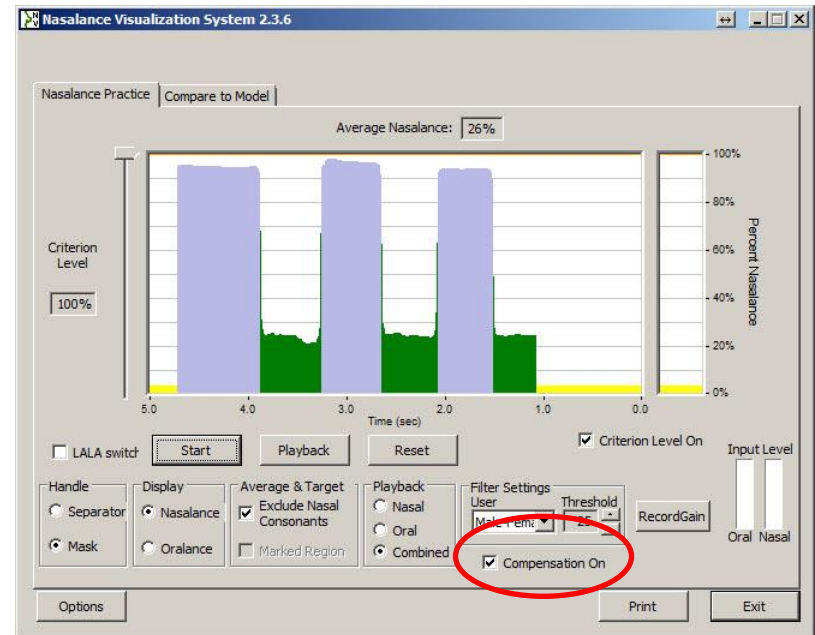
- Oralance is just the inverse of Nasalance

# Compensation for Acoustical Crossover

## Compensation not enabled

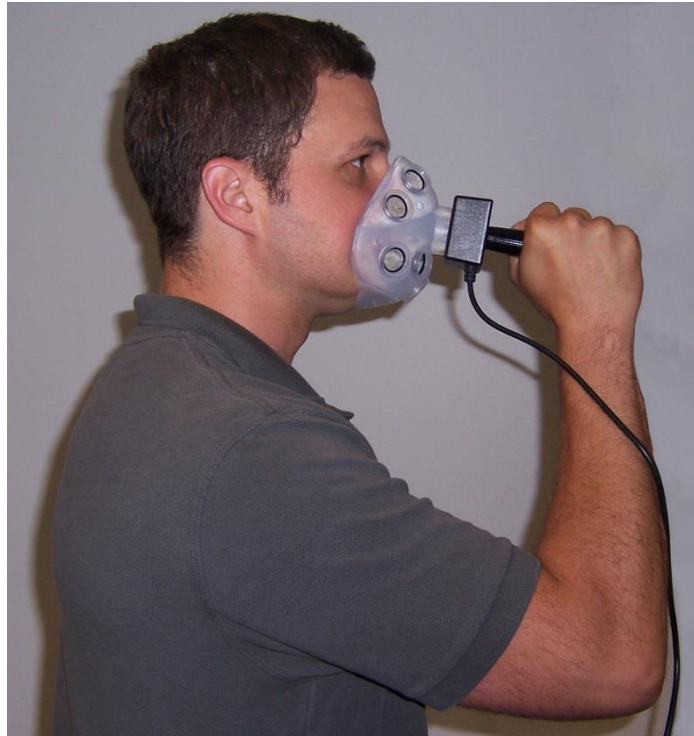


## Compensation enabled



- We are the only system that offers this feature.
- The system is programmed to automatically compensate for acoustical cross talk between the microphones for the mouth and nose.
- Feature can be disabled if desired by the user.

# NAS Offers A Convenient and Comfortable One-Handed Operation



- Comfortable for the user to hold.
- Light weight handle can be easily held by users of all ages.
- Mask sits comfortably against the face.

# Comfortable Hand Held Divider Handle

Glottal Enterprises Divider Handle\*



Competitors Divider Helmet



\* The divider plate for the Glottal Divider Handle can be easily removed for easy cleaning between users. There are no consumables to re-order.

- Our hand held unit is more sanitary as it does not get clamped on a persons head.
- The competitors head gear unit would need to be sanitized between users in addition to the divider plate.
- Only the divider plate needs to be sterilized.

# Low Speech Distortion



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*(For audio sample, click on links above)*

# USB Connectivity



- Can easily unplug and plug into the USB port of another computer, including any Windows Laptop.
- The software provided can be installed in up to three computers at no extra charge.
- Allows the system to be shared by multiple locations.



# Multiple Sizes of Mask and Separator



- Good for all face shapes.
- Custom separator plates can be made for special needs and face shapes.

# Easy to Clean Masks and Separator Plates

**Separator plates are easily removed from the handle and can be sterilized using autoclave, alcohol, or any standard sterilization formula**



**Silicone masks are hospital-grade and may be sterilized using autoclave, alcohol, or any standard sterilization formula**



# Easy-to-Use Dedicated System

## Purchase only the features that you need!

**Nasalance (NAS) System**  
(computer not included)



**Nasal Emission (NEM) System**  
(computer not included)



**Nasality Visualization (NVS) System**

- We sell the Nasalance System and Nasal Emission System separately or together as the Nasality Visualization System (NVS)