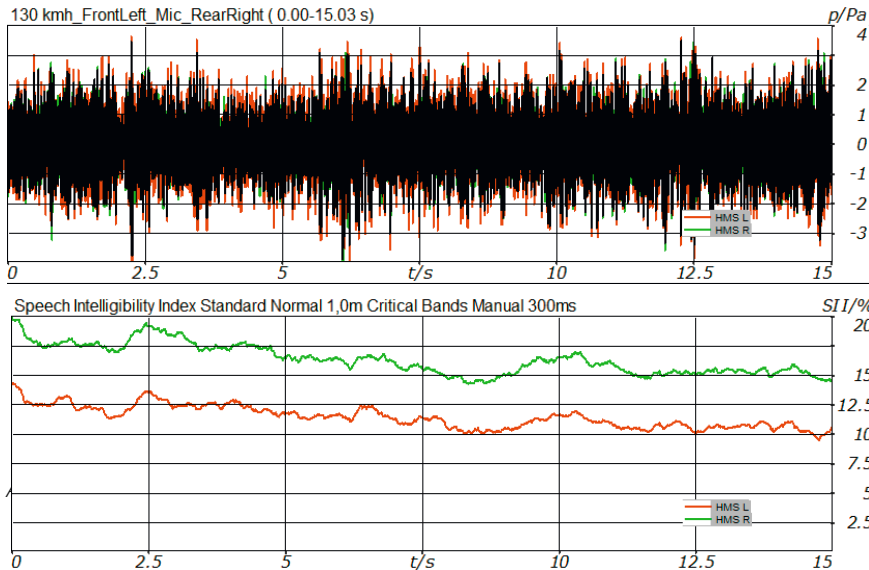


# ACOPT 34 (Code 6865) Speech Intelligibility Index

## OVERVIEW

ACOPT 34, Speech Intelligibility Index (SII) is an option for the communication quality analysis system ACQUA that allows the calculation of the speech intelligibility index of the selected signal according to ANSI S3.5-1997.

The Speech Intelligibility Index represents how much a noise impacts the intelligibility of speech.



Example: time signal of a car's driving noise (upper window) as well as the result of the corresponding analysis Speech Intelligibility Index (lower window)

## DESCRIPTION

The intelligibility of speech on the one hand depends on the level and the frequency of the background noise and on the other hand it depends on the speech spectrum itself. As an indication for how much a noise impacts the speech intelligibility the Speech Intelligibility Index is calculated according to ANSI S3.5-1997 "Methods for Calculation of the Speech Intelligibility Index". This standard is a major revision of ANSI S3.5-1969 "Methods for Calculation of the Articulation Index".

The Speech Intelligibility Index is calculated using two spectra: The noise spectrum (which is calculated from the input signal) and the speech spectrum (which is defined in the properties of the analysis). The details of the calculation depend on the method selected in the properties (based on octaves, 1/3 Octaves or critical bands) and may be looked up in ANSI 3.5-1997. The general procedure is as follows: The signal is subdivided in frequency bands

relevant for speech intelligibility. Then the differences of the speech spectrum and the disturbance spectrum (which results from the noise spectrum and the self-masking of the speech spectrum) are calculated for each band, weighted with a band importance function and added up for the Speech Intelligibility Index.

## APPLICATIONS

- Calculation of the Speech Intelligibility Index

## SYSTEM REQUIREMENTS

ACOPT 34 (Option Speech Intelligibility Index) requires the following products:

- **ACQUA (Code 6810 etc.)**, Advanced Communication Quality Analysis System, Version 3.3.200 or later  
Note: existing customers need a valid software maintenance agreement (SMA)

## DELIVERY ITEMS

- **ACOPT 34 (Code 6865)**, Option Speech Intelligibility Index, delivered as V2C file for ACQUA

Analysis properties window for Speech Intelligibility Index in ACQUAlyzer

Dataset Info						
Channels	Abcissas	Comment	Dataset	Header		
Name	Abbr.	Title	Sampling rate	Unit	Quantity	Single Value
HMS L	L		93,75	%	speech intelligibility index	11.2%(rms), 11.5%(av)
HMS R	R		93,75	%	speech intelligibility index	16.0%(rms), 16.2%(av)

Example of a dataset info (displayed when right-clicking in the SII result analysis window)

represented by