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**FRAUNHOFER INSTITUTE FOR
INTEGRATED CIRCUITS IIS**

SONAMIC® LOUDNESS

FORGET ABOUT YOUR VOLUME CONTROLLER



SONAMIC® LOUDNESS

The number of media sources in vehicles has increased tremendously in recent years. In your car, you can easily play audio data from USB sticks, MP3 players, and smartphones. Unfortunately, the volume level from the individual audio sources varies significantly, so the volume needs to be adjusted frequently. This is not only annoying, but it also represents a safety risk because the driver's attention is interrupted for a moment. Sonamic Loudness technology by Fraunhofer is the remedy here, ensuring consistent volume when switching among radio stations, media sources, or individual audio data sources. This increases comfort and safety.

Loudness normalization is possible for any source, from line-in or Bluetooth (A2DP) to CDs, FM, and DAB on to internet streaming. Depending on the source, available additional information is used for Sonamic Loudness, e.g. "next title", "same/new CD", "known radio station". Despite automatic volume adjustment, the dynamics within the music are maintained.



For some sources (e.g. radio), a previously specified loudness value is used as the starting point for normalization. This value can be determined in various ways without disturbing the user: for radio, a second tuner in the background or online updates are used, for example.

If there is no starting value, continuous volume measurement and adjustment are active. Both can be configured in multiple ways and can be precisely adapted to customer requirements.

High-quality 3D sound in cars is now ready for series production, thanks to Symphoria by Fraunhofer IIS. The new Fraunhofer Somatic technology family expands the spectrum of offerings with intelligent audio processing technologies that raise the customer experience of automobile entertainment systems to completely new levels of comfort and quality.

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