

FRAUNHOFER INSTITUTE FOR
INTEGRATED CIRCUITS IIS

SONAMIC® TIMESCALING

SYNCHRONIZED TRANSITION FOR HYBRID RADIO



With hybrid radio, passengers can continuously listen to a radio station during a car ride even when leaving the broadcast area. This works by combining a radio transmission with the accompanying web stream. Compared to a radio signal's reception, a web stream can have a delay of 20 seconds or more. When switching to the web stream, portions of the delayed feed are either lost or played twice; both of which are irritating to the listener. Fraunhofer Sonamic TimeScaling synchronizes both signals with each other to produce a precise, indistinguishable transition.

This seamless switch works by having the system recognize in advance that the radio signal will soon be interrupted. The radio begins to calculate the existing offset to the web stream. The resulting value is needed to delay the signal in a way that is inaudible to the customer. Compensating this time difference allows seamless switching, which means passengers can continue to listen to the radio station far beyond the transmission area.

The process also works in reverse, when the system recognizes that the radio signal is strong enough again for good reception. This means it can seamlessly switch from the web stream to the radio signal while keeping the amount of mobile data used for Internet access to a minimum.

High-quality 3D sound in cars is now ready for series production, thanks to Symphoria by Fraunhofer IIS. The new Fraunhofer Sonamic 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.

**Fraunhofer Institute for
Integrated Circuits IIS**

Management of the Institute
Prof. Dr.-Ing. Albert Heuberger
(executive)
Dr.-Ing. Bernhard Grill

Contact

Sebastian Scharrer
Product Manager Automotive Products
Phone +49 9131 776 6170
sebastian.scharrer@iis.fraunhofer.de
www.sonamic.de

Am Wolfsmantel 33
91058 Erlangen, Germany