

IZT S1000/IZT S1010 Signal Generators

Complex Scenario Testing with Less Effort



- Playback of recorded signals
- Testing eCall systems
- Simulate impacts of adjacent band interference
- Supports state of the art broadcast technologies
- Closed loop simulations and Hybrid Radio



The revolutionary signal generators IZT S1000 and IZT S1010 combine 31 virtual signal generators in a platform for testing radio receivers, including DAB and HD radio receivers, and for creating complex mixed signal RF scenarios. The signal generator platform combines the functions of multiple conventional RF generators in one compact, flexible RF test source with support of most radio broadcast standards – FM-RDS, DVB-T2, ISDBT, HD radio, CDR, DAB+, DMB, Sirius and XM.

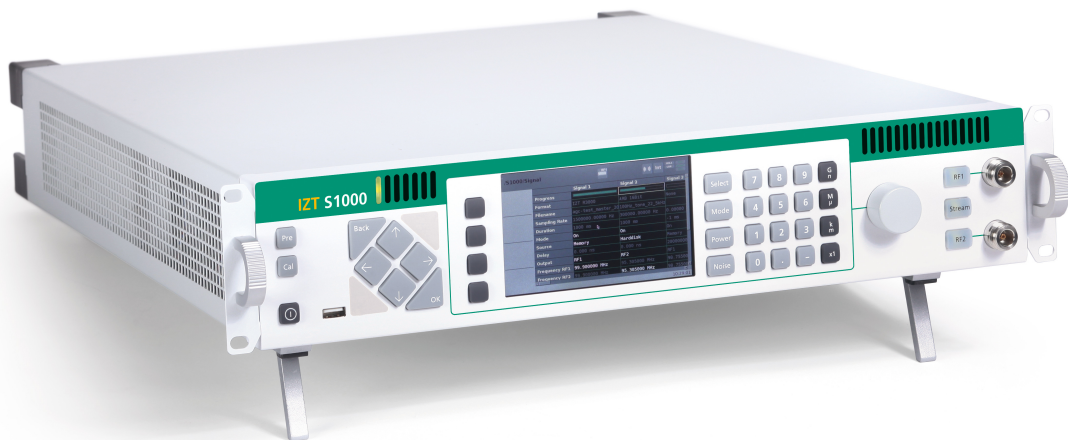


Figure 1: The IZT S1000 offers a compact multi-channel high-performance platform for complex and versatile simulation and testing in one device

The IZT S1010 consists of the IZT S1000 Memory Extension with the IZT S1000 and allows extensive streaming options. It enables to run the DAB/DRM ContentServer in the same unit and live broadcasting tests can be performed.

The IZT S1000/IZT S1010 digital multi-channel signal generator is the perfect source of today's RF waveforms with increasing complexity and bandwidth. They comprise in one unit the simultaneous replaying of 31 RF signal channels and allow to replace extensive setups while reducing time and cost. It enables the user to consolidate multiple conventional RF generators into one compact, cost effective, flexible, and easy-to-use RF test source.



Figure 2: The IZT S1010 Signal Generator with integrated memory extension

Modern radio receivers no longer gather information from a single modulated carrier, but often from multiple sources simultaneously. The multiple signals can be derived from more than one antenna, with independent carriers and different modulation formats. The IZT S1000 with its revolutionary architecture and IZT's patented signal processing algorithm combines multiple technologies to match the receiver's test requirements without a costly batch of standard RF generators.

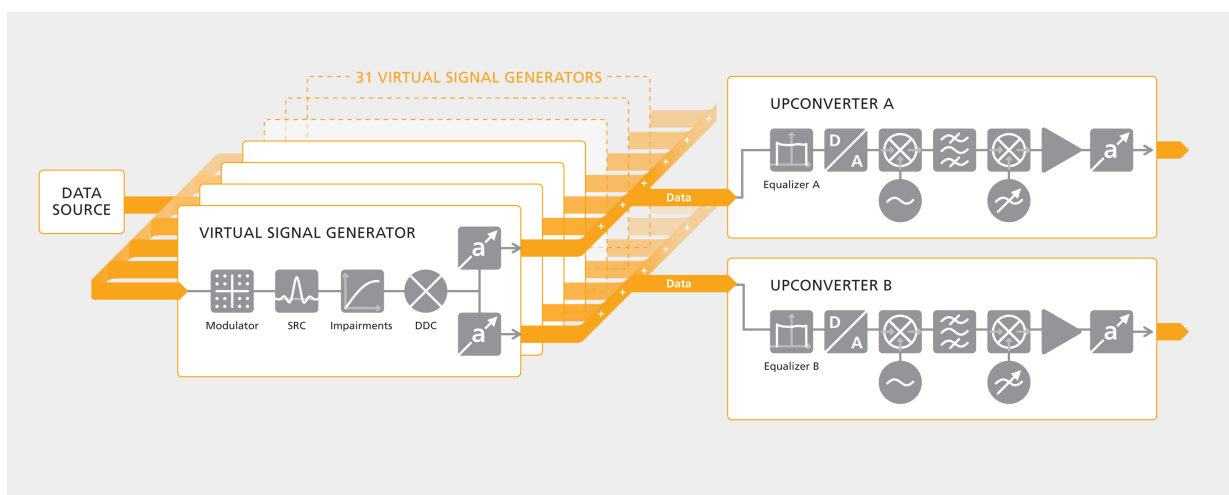


Figure 3: IZT S1000 block diagram

Playback of Recorded Signals

The IZT S1000/IZT S1010 is used as a signal generator for RF recordings. IZT's innovative high-performance record and replay system for high-quality RF signals saves costs for field-testing, enables repeatable lab tests, fidelity in reproducing real RF environment and shorter time-to-market for products.

The IZT Record and Replay System (IZT RecPlay) is the ideal platform for RF receiver design validation of analog and digital radio, broadcast standards, telecommunication systems, Global Navigation Satellite Systems (GNSS), development of automotive car infotainment systems and chipsets.



Figure 4: The IZT RecPlay system saves costs and enables shorter time-to-market for products

Testing eCall Systems

The European Union has deployed the emergency call (eCall) system, which provides fast assistance in the event of a car accident. As a result, all new vehicles sold after the first quarter of 2018 in the European market, are required to have an In-Vehicle System (IVS) supporting eCall. These systems must be tested properly before being sold. Appropriate test equipment can be found in the IZT S1000/IZT S1010.

„IZT delivers a device that supports customers in the automotive industry and their suppliers for current and future regulations and standards regarding eCall“, says Horst Heringklee, product manager for Signal Generators at IZT.

It is possible to test eCall systems with the IZT S1000/IZT S1010 Signal Generator in combination with the GIPSIE® software, which was developed with TeleOrbit and TeleConsult Austria.

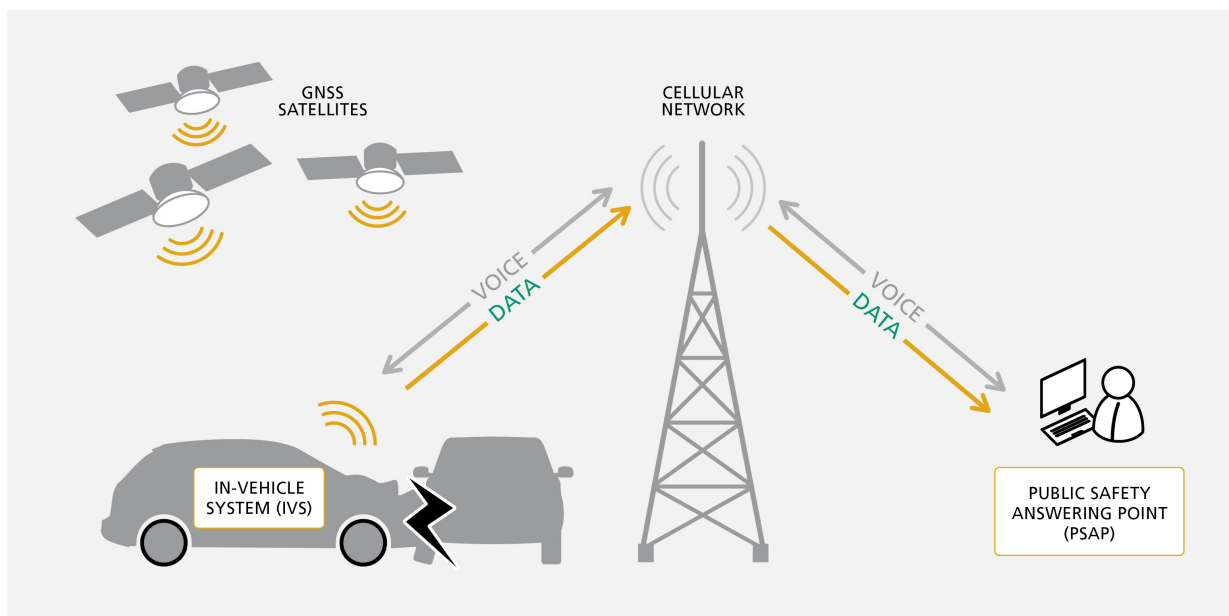


Figure 5: The eCall unit sends data about position, time and type of accident and enables fast assistance

Simulate Impacts of Adjacent Band Interference

In addition to the new eCall regulations there is a new standard to safeguard GNSS-reliant devices from the impacts of adjacent band interference. This standard was created by European Telecommunications Standards Institute (ETSI). It ensures that any new or altered GNSS product launched in the EU can withstand a level of adjacent band interference and continue to operate without interruption. The IZT S1000/IZT S1010 is also able to test it.

Supports State of the Art Broadcast Technologies

Sirius/XM launched a new overlay waveform. The overlay modulation which was used for the Sirius Waveform was exchanged and enhanced with the next generation overlay (NGO). IZT Signal Generators support the new broadcasting technology and are suitable as test equipment for upcoming broadcasting systems.

The new broadcasting technology replaced the previously used Sirius Overlay Waveform. All existing IZT S1000 and IZT S1010 Signal Generators support the NGO and are able to test upcoming broadcasting systems for the North American market after a software and firmware upgrade.

Besides, the IZT S1000 is ideally suited for a full-automated type acceptance test (TA2) of Sirius or XM receivers without additional test equipment. End-of-line testing of entertainment systems and combination with other standards such as GNSS signals are also standard applications of the IZT S1000 and the IZT S1010. Its unique 31 signal generator technology enables to simultaneously simulate a test environment with multiple sources while replacing extensive setups and reducing time and cost.

The IZT DAB ContentServer makes the complete feature set of DAB available for laboratory use. It is a powerful solution for efficient development and testing of DAB devices such as chipsets, receivers or broadcast equipment.

Closed Loop Simulations and Hybrid Radio

The IZT S1010 signal generator can be used as powerful test equipment for closed loop simulations for audio testing. Feeding the incorporated DAB ContentServer with external audio signals, which are live encoded, creates a DAB multiplex including all required service components. The real-time DAB modulator of the IZT S1010 generates the RF output while an external connected Audio Analyzer captures and verifies the decoded audio of the device under test.

It is possible to work with multiple waveforms like FM, DAB, DRM at the same time which makes testing of sophisticated Hybrid Radio implementations possible.

In addition, powerful features of the IZT S1010 enable various testing scenarios, including channel impairment simulation and DAB-FM service following.

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About IZT The Innovationszentrum fuer Telekommunikationstechnik GmbH IZT specializes in the most advanced digital signal processing and field programmable gate array (FPGA) designs in combination with high frequency and microwave technology.

The product portfolio includes equipment for signal generation, receivers for signal monitoring and recording, transmitters for digital broadcast, digital radio systems, and channel simulators. IZT offers powerful platforms and customized solutions for high signal bandwidth and real-time signal processing applications. The product and project business is managed from the principal office located in Erlangen/Germany. IZT distributes its products worldwide together with its international strategic partners. The IZT quality management system is ISO 9001:2015 certified.

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INNOVATIONSZENTRUM FÜR TELEKOMMUNIKATIONSTECHNIK GMBH IZT AM WEICHSELGARTEN 5 · 91058 ERLANGEN, GERMANY
GENERAL MANAGER: RAINER PERTHOLD · TEL: +49 (0)9131 9162-0 · FAX: -190 · SALES@IZT-LABS.DE · WWW.IZT-LABS.DE

**IZT**

Innovationszentrum
Telekommunikationstechnik