Statistics
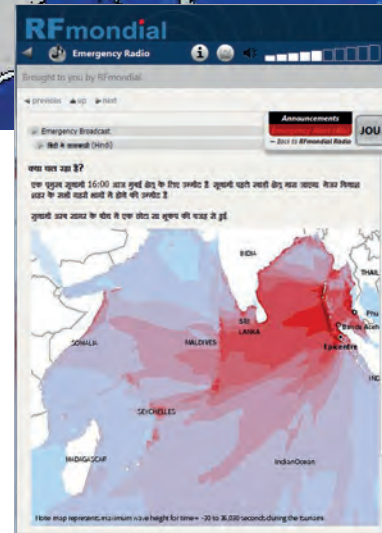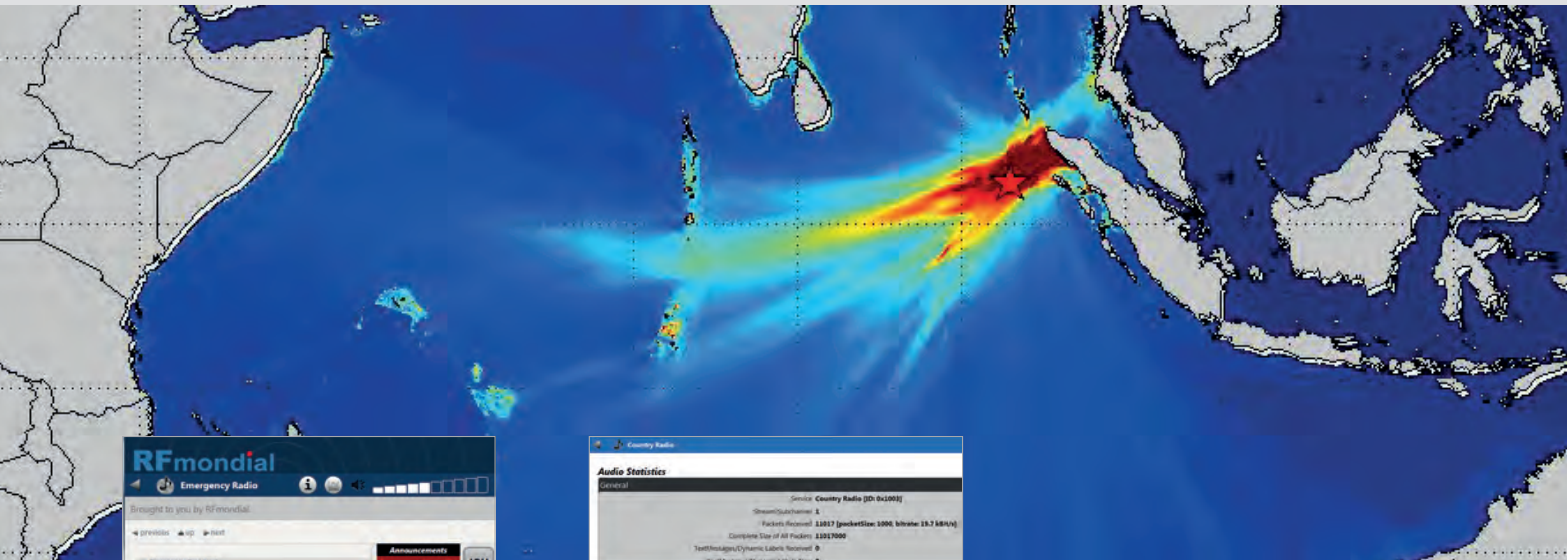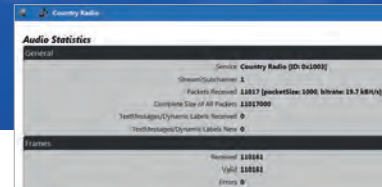


Emergency Warning Feature

## DRM / DAB MultimediaPlayer™ Professional

The MultimediaPlayer™ Professional based on Fraunhofer Technology exploits the full potential of digital radio on a PC. Along with providing radio programs in stereo and 5.1 surround sound, it offers the full spectrum of standardized radio services:

- DAB classic (MPEG-1 Audio Layer 2), DAB+/DRM (HE AAC v2, xHE, optional: HVXC/CELP) all with MPEG Surround, DMBRadio
- Service and ensemble metadata, announcements and emergency alerts (EWF)
- Dynamic Labels, Dynamic Label+, Intellitext, TextMessages
- Journaline, SlideShow, EPG/SPI, TPEG
- In-depth statistics

CONFIGURATIONS: DAB or DRM • Windows, Linux, Mac • Remote access and recording



Service List

## DCP Player RF-DCP

RF-DCP is a professional software tool for playing pre-stored DCP files for DRM and DAB broadcasting applications and testing.
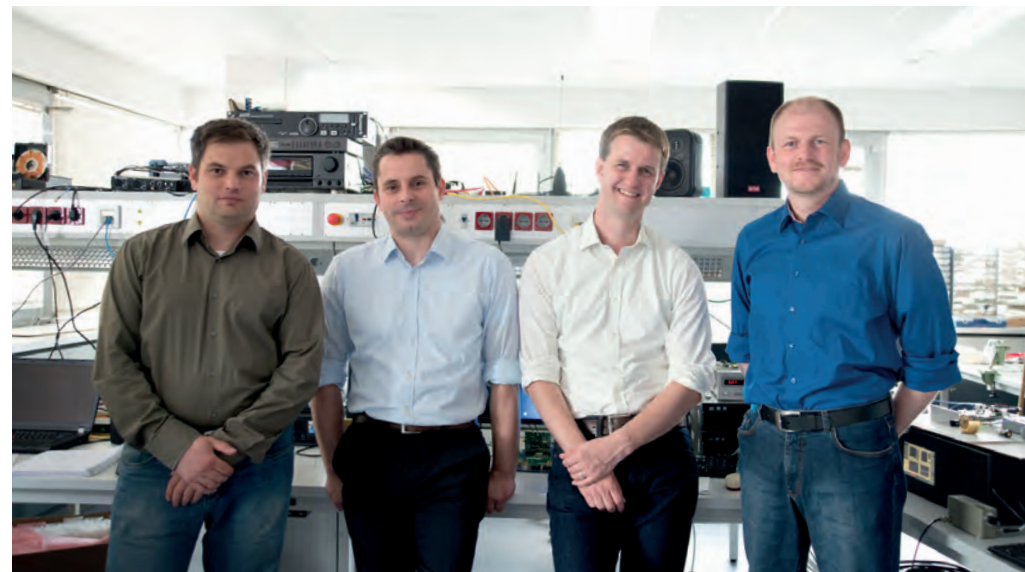
CONFIGURATIONS: Detailed parsing of DCP files for filtering and selection • DRM, DAB, AFS • With a comprehensive test set of DCP files or without • Linux, Windows



**RFmondial** offers professional products and services for the digital broadcasting industry as well as other industries with the need for innovative hardware and software. Research, development and prototype implementation for transmitter, receiver, and monitoring technology as well as design services for various industries are part of our core business.

With our broad experience in different technological areas we serve world-wide markets; „Made in Germany".



## Consultancy and engineering

- Mixed-signal circuit and PCB design
- Digital signal processing
- Embedded Linux
- Graphical user interfaces
- Matlab / Simulink incl. code generation
- Prototype implementation

## Product related services

- Installation and operation
- Off-/on-site training
- Service level agreements
- Measurement campaigns
- Field trials



**RFmondial**
Products and Services for Digital Broadcasting

## Transmitter Solutions

## Receiver Solutions

## Monitoring and Logging

## DRM/DAB ContentServer™

The RFmondial DRM/DAB ContentServer™ is a highly reliable professional broadcast system for Digital Radio Mondiale (DRM) and Digital Audio Broadcasting (DAB/DMB), based on Fraunhofer technology:
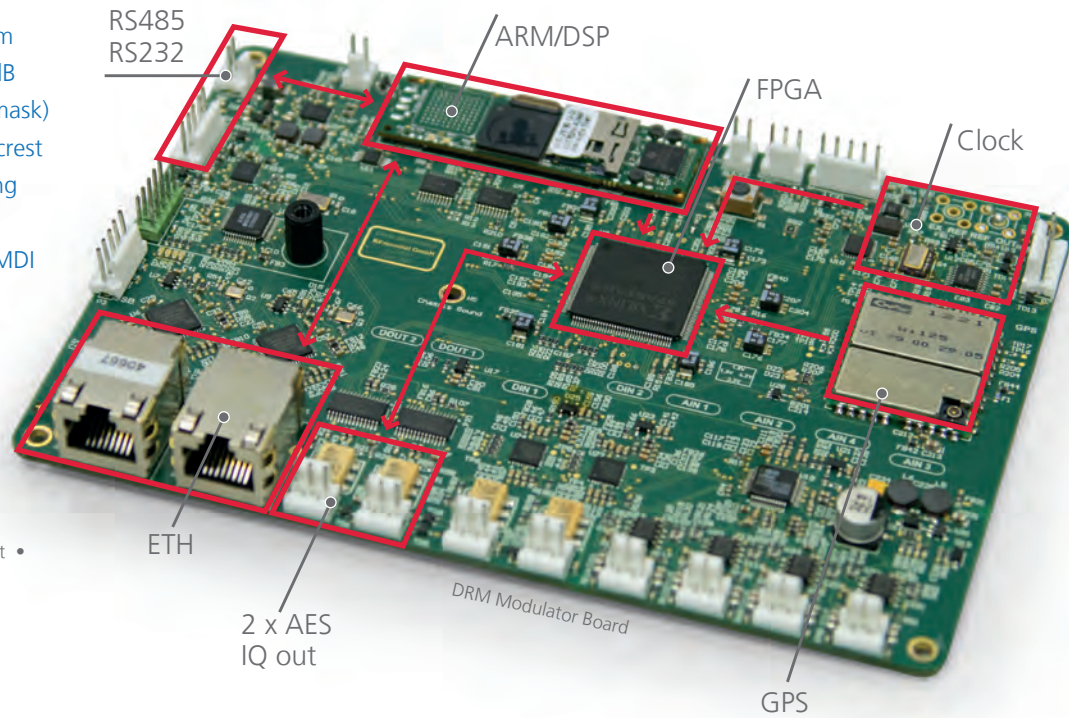


ContentServer™ Screen

- AudioServer
- Multimedia DataServer
- Multiplex Generator (Ensemble/Service)

CONFIGURATIONS: DAB or DRM • Various editions depending on customer's needs • Installed on dedicated server or virtual machine

## DRM Modulator / Exciter / Signal Generator

The DRM modulator family uses MDI-delivered radio content to produce a modulated and/or RF-transformed radio signal which conforms to ETSI ES 201980:

- Highly reliable embedded platform
- Superior performance (MER >45dB with >20dB distance to spectral mask)
- Supports SFN, transmit diversity, crest factor reduction, spectrum shaping and pre-correction
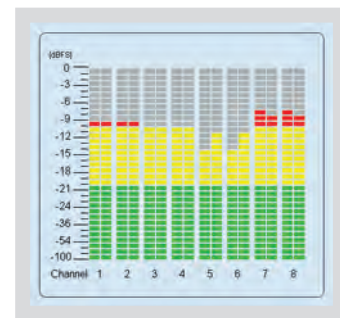- Synchronization via GPS, NTP or MDI (patent pending)

CONFIGURATIONS:
DRM30 or DRM+ • 1RU modulator with baseband output and/or exciter with RF output • IP core / PCB reference design



RS485
RS232

ARM/DSP

FPGA

Clock

ETH

2 x AES
IQ out

GPS

DRM Modulator Board

## Livewire Input Node

The Livewire input node is specifically targeted for professional broadcasting applications:

- 1RU incl. integrated XLR connectors
- Sends synchronous audio channels via Ethernet link
- Outstanding audio performance
- Seamless ContentServer integration

CONFIGURATIONS: 4 analog and 4 digital input channels • 8 digital or 8 analog input channels



## DRM Monitoring Receiver RF-SE

RF-SE is a professional DRM monitoring and measurement receiver, which is available in different models depending on the desired application:



- Fully compliant with DRM standard incl. xHE/AAC and all data services
- High-end fully digital tuner
- Advanced GUI to evaluate receiver characteristics in real-time
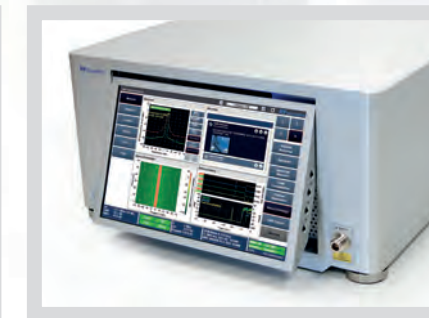- Proven long term stability

CONFIGURATIONS: DRM30/AM or DRM+ • Full feature monitoring receiver • 1 RU compact measurement receiver • Mobile semi-professional receiver • IP core / PCB reference design
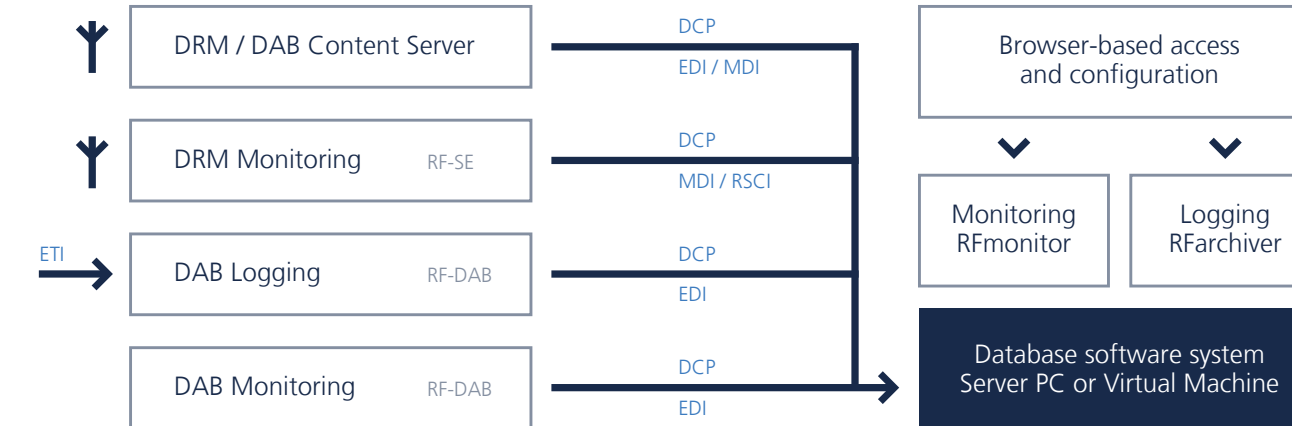


RF-SE19



RF-SE2



RF-SE12

## DAB Monitoring Receiver RF-DAB

RF-DAB is a professional DAB monitoring receiver for transmitter, content and field monitoring:
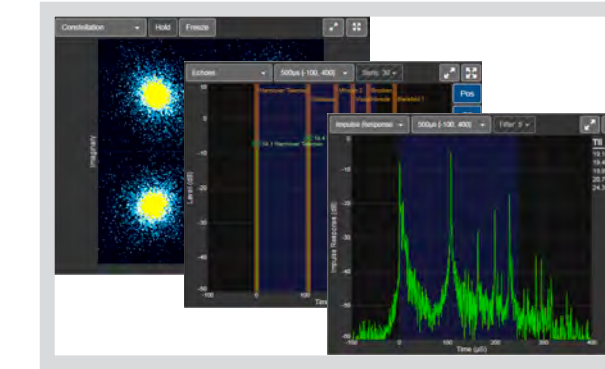
- Field proven DAB demodulator
- Parallel full Ensemble decoding
- Complete EDI reconstruction from RF
- Simultaneous decoding of all audio and data services
- Extensive RF measurements
- Browser-based HTML5 user interface with audio and data streaming

## RF-DAB Applications

- RF measurements monitoring
- SFN synchronization monitoring
- Content verification and monitoring
- Listen to DAB over IP
- Relay (ball) reception with AES out, e.g. for FM
- Off-air EDI reconstruction for DAB retransmission
- Field measurements and verification
- Long-term logging and analysis



Content monitoring



SFN monitoring



Legend

Signal to Noise Ratio
- >20 dB
- 15 - 20 dB
- 10 - 20 dB
- 5 - 20 dB
- 0 - 5 dB
- < 0 dB

Mobile measurement drive



DRM / DAB Content Server — DCP, EDI / MDI

DRM Monitoring — RF-SE — DCP, MDI / RSCI

ETI

DAB Logging — RF-DAB — DCP, EDI

DAB Monitoring — RF-DAB — DCP, EDI

Browser-based access and configuration

Monitoring RFmonitor

Logging RFarchiver

Database software system
Server PC or Virtual Machine

## Logging System RFarchiver

RFarchiver is a fully integrated, pure digital solution for comprehensive archiving of the entire broadcast content.

CONFIGURATIONS: Database system (dedicated server or virtual machine) • DCP input (EDI, MDI) • Interfaces to off-air receivers or ETI-streams • Browser-based archive access and decoding of all audio and data services