Discover the DAB+ Monitoring Receiver

RF-DAB is a professional DAB monitoring receiver for transmitter, content and field monitoring. Its modular design enables flexible configuration for various specific applications.

Key Features

- Depending on the configuration, the following key features are available:
- Field proven DAB demodulator
- Parallel full Ensemble decoding
- Complete EDI reconstruction from RF
- Full Ensemble EDI output to LAN
- Simultaneous decoding of all audio and data services
- Extensive RF measurements
- Browser-based HTML5 user interface with remote audio and data streaming

Applications

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

Technical Specification

Common Features
- Stand-alone monitoring receiver for reception analysis and content verification
- Fully compliant to DAB standards family (ETSI EN 300 401)
- DAB Mode I, II, III & IV
- VHF Band III
- Field proven demodulator
- Browser based configuration and services decoding. No installation of software necessary.
- Proven long term stability
- Extendable to work with RFmonitor / RFarchiver network for long-term monitoring and content archiving

RF-Frontend
- Input frequency range 168-240 MHz
- 1452-1492 MHz (optional)
- Input level 0 dBm
- 1452-1492 MHz (optional)
- IIP3 -15 dBm typ.
- Noise figure 2.2 dB
- DAB Decoder
- Full ensemble decoding
- Decoding status
- Display of all services
- Audio decoding of a single service
- Full ensemble EDI output to Ethernet
- DCP/EDI output via Ethernet (including multicast support)

Advanced GUI
- The RF-DAB graphical user interface (GUI) is designed to provide the full experience of a modern and professional measurement device.
- State-of-the-art HTML5 technology
- No software / plug-in installation necessary
- Same browser based advanced GUI remotely and locally (if available)
- Touchscreen and mouse capability
- Adapts to different screen sizes
- Either four window view or full screen display of diagrams

Front Panel Signaling
- LCD display with status information and IP address
- LED status

Remote Control
- Full remote control via Ethernet
- Browser-based user interface

Interfaces
- Antenna 50 Ohm BNC (N optional)
- 2 Ethernet
- USB
- 10 MHz ref. input 3 – 4.5 V TTL, BNC
- HDMI / Displayport (optional)
- Digital/analog audio output (optional)
- Internal GPS (optional)
- External GPS input 10 MHz, 1 pps, NMEA (optional)
- ETI in / out (optional)

Mechanical
- Aluminum extrusion front bezel
- Industrial 19” 1RU, rack mountable
- 420 x 431 x 250 x 44 mm
- Weight: 5.5 kg
- Operating temperature: 0 – 50°C
- Humidity: 20 – 80% non-condensing

Power Supply AC Input
- Auto-sensing supply, 100 AC to 240VAC, 50-60 Hz, internal fuse
- Power consumption: 20 W
- DC input (optional)

Options
RF Measurements (RFM)
- High quality measurements on various stages of the reception and decoding chain:
  - Spectrum
  - QAM constellation
  - Channel impulse response
  - RF input power
  - Frequency offset
  - SNR
  - MER over carrier
  - Til decoding
  - BER (MSC, FIC) before Viterbi
  - BER (Audio, FIB) after Viterbi
- Relevant measurement values are available on SNMP

Advanced Application Decoder (AAD)
- Integrated audio and data decoding, licensed by Fraunhofer IIS:
  - Parallel full ensemble decoding and access of all audio and data services
  - Browser-based selection and decoding of audio and data services
  - Audio decoding: MPEG-1 Audio Layer 2 (DABClassic), HE AAC v2 (DAB+), each incl. MPEG Surround
  - Optional: DMB-Audio
  - Display of audio related information, e.g. audio rate, sampling rate, mode
  - Streaming of selected audio service to remote PC
  - Download of selected audio service in original Format and wave
  - Service information (Service label, Ensemble label, Service country, Program Type)
  - Dynamic Label and DL +, Intellitext
  - Journaline®
  - MOT Slideshow, MOT Broadcast Website
  - Optional: TPEG
  - EPGSPI
  - PAD and NPAD, primary and secondary services
  - Statistical information of each service
  - Display of all audio levels in parallel
  - Relevant audio values are available on SNMP

Local GUI and Audio (LGA)
- Displayport / HDMI touch screen can be attached locally
- Local digital (SPDIF) and analog (3.5TRS) audio output

Ball Receiver (BAL)
- 2 AES/EBU XLR outputs
- 2 selectable audio services
- Requires AAD option
- Smart conversion of Dynamic Label or Journaline content for RDS

SNF monitoring (SNF)
- SNF synchronization monitoring
- Display of echoes of an null symbol
- Impulse response alarms for synchronization monitoring and TII
- Alert and status signaling via SNMP (Traps, Informs)
- Requires RFM and ALM options

Alarm System (ALM)
- Flexible, built-in alarm system with the following features:
  - Configurable thresholds
  - Measurements and content parameters, e.g. MER, input level, BER, single stream data rate

Field Measurements (FIM)
- This package provides a comprehensive tool set for mobile field measurements:
  - Delivery with USB GPS mouse
  - Integration of external GPS information into rgs tag
  - ±1 dB power level measurement
  - ±3 mHz spectrum mask compliance measurement according to ETSI EN 302077
  - Crest factor measurement
  - Requires additional hardware

EDI Input (EDI)
- DCP/EDI input via Ethernet
- Either RF frontend or EDI input can be used
- Requires AAD option

ETI (G.703/704) (ETI)
- ETI input hardware interface
- ETI output hardware interface

Mask Measurement (MAM)

3 day logging / analysis (LOG)
- All RF measurements and content information are logged for 3 days
- Display of parameter over time
- Export of all measurements and content information incl. audio as wav/MP3
- Playback of audio and data services at selected point of time
- ETI Analyzer (EAN)
- The ETI Analyzer option parses ST/ETI/EDI content and displays the following information in detail:
  - Service structure (services, service components and data application signaling)
  - MSC layout (position within MSC, protection level)
  - Announcement information (when was which announcement signaled)
  - Service linking information (which alternatives are signaled for which service; what dynamic changes are made to the service linking)
  - Dynamic PTY information
  - List of all FIGs
  - MNSS information
  - The ETI Analyzer checks for correct and consistent FIG signaling, especially regarding signaling of data applications. Also audio and data applications are checked on various protocol levels and errors are reported.
  - Conversion of EDI/ETI