

Application Sheet

# DAB+ Audio Encoder

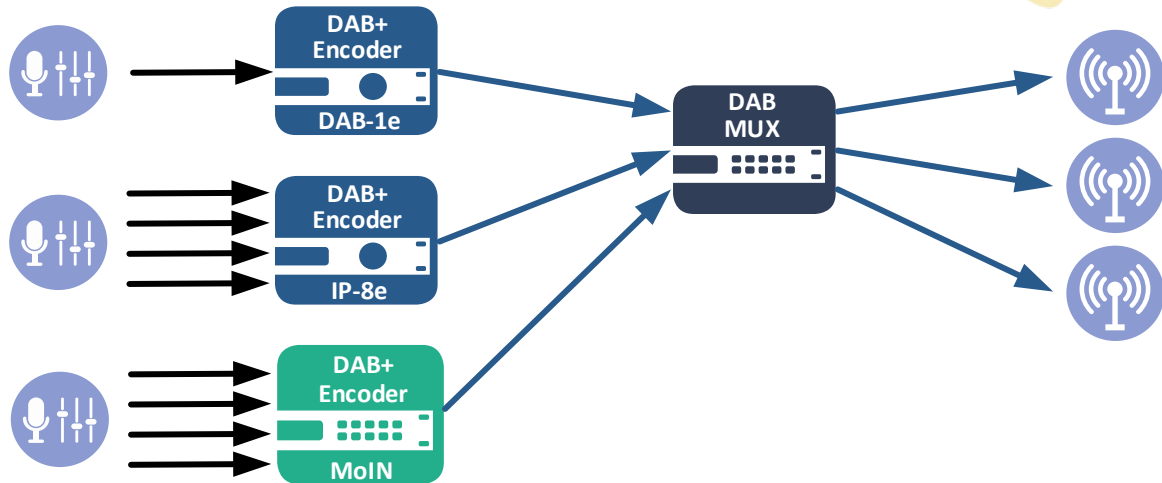
DAB-1e Compact DAB+ Encoder

IP-4c Audio over IP Codec

IP-8e Audio over IP Encoder

MoIN Distribution

# DAB+ Audio Encoder



The DAB+ Audio Encoder supports the generation of a DAB+ subchannel to be distributed to the multiplexer in a DAB head-end.

Depending on the requirements and infrastructure of the operator, it can be licensed for 2wcom hardware platforms as well as for the MoIN software solution.

## Use-case

- ▶ Remote DAB+ encoding in the radio studio
- ▶ Central high-density DAB+ encoding at the head-end
- ▶ Software-based DAB+ encoding
- ▶ DAB+ re-broadcast applications

## Features

- ▶ Proven FRAUNHOFER Professional DAB+ Codec
- ▶ EDI/STI-D or FhG MuxEnc (optional) to DAB Multiplexer
- ▶ Local insertion of PAD (DLS, SLS), TA, PTy
- ▶ Secure and stable connection to FhG DAB ContentServer via FhG MuxEnc – configuration, PAD insertion and monitoring of the remote hardware encoders possible at the multiplexer

## Benefits

- ▶ Reduce rackspace and gain flexibility with scalable multi-purpose hardware and software
- ▶ Integrate in any studio infrastructure with analog, digital or AES67/Livewire audio
- ▶ Use audio inputs from AoIP, webstream or satellite (DVB-S/S2 tuner optional in IP-4c) as main or backup source
- ▶ Multi-encoding of the same audio service with different parameters (requires separate DAB+ encoder license)
- ▶ Cover multiple distribution paths (DAB+, FM, web stream) with the same hardware or software platform
- ▶ Fault-proof encoder configuration and PAD import controlled by the platform operator with the FhG MuxEnc protocol (optional)
- ▶ Interconnect to any multiplexer with the standardized STI-D/DCP protocol
- ▶ Synchronous output stream to multiplexer with NTP or PTP clock source and selectable sample rate conversion of the audio input



# Ordering Guide

## Available Hardware and Software Platforms

Product	Key features
<b>DAB-1e</b> <b>DAB+ Audio Encoder</b>  <i>available Q4/2023</i>	<ul style="list-style-type: none"><li>▶ Dedicated DAB+ encoder for 1 audio service</li><li>▶ Analog or AES/EBU inputs</li><li>▶ Cost-efficient remote DAB+ encoding in the studio and contribution to a DAB head-end</li><li>▶ Designed for easy setup and reliable operation</li></ul>
<b>IP-8e</b> <b>Audio over IP Encoder</b> 	<ul style="list-style-type: none"><li>▶ High-density DAB+ encoding for up to 8 audio services (pay as you grow)</li><li>▶ Analog, AES/EBU or AES67 (Ravenna, Livewire) inputs</li><li>▶ Perfect for DAB+ encoding of multiple programs</li><li>▶ Transcoding from AoIP contribution, TS over IP and web stream</li><li>▶ Shared high-density platform for DAB+, AoIP distribution and webstream encoding</li></ul>
<b>IP-4c</b> <b>Audio over IP Codec</b> 	<ul style="list-style-type: none"><li>▶ Flexible DAB+ encoding for up to 4 audio services (pay as you grow)</li><li>▶ Analog, AES/EBU or AES67 (Ravenna, Livewire) inputs</li><li>▶ Perfect for DAB+ encoding with additional requirements and in complex scenarios</li><li>▶ Transcoding from AoIP contribution, TS over IP and webstreams</li><li>▶ Optional FM/DAB tuner and Satellite input for DAB rebroadcasting applications</li><li>▶ Flexible automatic switch over concept, free definition of backup sources</li><li>▶ Shared high-density platform for DAB+, AoIP contribution/distribution and webstream encoding</li></ul>
<b>MoIN All-in-One audio software solution</b>  <b>Studio</b> <i>available Q4/2023</i>	<ul style="list-style-type: none"><li>▶ DAB+ encoding in a scalable IP infrastructure</li><li>▶ AES67 (Ravenna, Livewire) inputs</li><li>▶ Transcoding from AoIP</li><li>▶ Shared IT-based platform for DAB+, AoIP contribution/distribution and webstream encoding</li></ul>



# Specifications

	DAB-1e	IP-8e with DAB+ Encoder option	IP-4c with DAB+ Encoder option	MoIN with DAB+ Encoder option
<b>Audio source</b>				
AES/EBU	1 ch	8 ch	4 ch	–
Analog stereo	1 ch	4 ch	2 ch	–
AES67 – Livewire/Ravenna	optional	optional	optional	N ch
Additional sources	–	AoIP, TS/IP, SRT, SIP, Icecast, file/playlist	AoIP, TS/IP, SRT, SIP, Icecast, file/playlist optional SAT tuner optional ASI input	AoIP, TS/IP, SRT, SIP, Icecast, file/playlist
Backup audio	–	2 sources per audio channel	4 sources per audio channel with automatic switching	4 sources per audio channel with automatic switching
<b>Audio encoder</b>				
FRAUNHOFER Professional DAB+ Codec	1	up to 8	up to 4	✓
<b>Synchronization</b>				
NTP	✓	✓	✓	✓
PTP	–	optional	optional	optional
1PPS	–	optional	optional	–
AES/EBU	✓	✓	✓	–
<b>Output formats</b>				
EDI (STI-D)	✓	✓	✓	✓
FhG MuxEnc	upgrade	upgrade	upgrade	upgrade
<b>TCP/IP Output streaming</b>				
multicast	✓	✓	✓	✓
unicast	✓	✓	✓	✓
dual streaming	✓	✓	✓	✓
<b>PAD/Service information</b>				
Dynamic Label (+)	FTP upload, FhG Muxenc (upgrade)	FTP upload, UECP (on request), API (on request), FhG Muxenc (upgrade)		
MOT Slideshow	FTP upload, FhG Muxenc (upgrade)	FTP upload, API (on request), FhG Muxenc (upgrade)		
TA	GPI, UECP	GPI, UECP (on request), API (on request)		
PTy	fixed, UECP	fixed, UECP (on request), API (on request)		