

PANEDA 1U ALL-IN-ONE HARDWARE

16-channel DAB+ encoder. One rack unit.

The Paneda 1U hardware platform is a versatile, generic system that can run all Paneda DAB Head-End applications, such as multiplexers and encoders.


16

Independent encoder instances in one unit

1U

Mux, encoder, data server and management

4×

AES/EBU inputs on rear XLR connectors

≈30w

Typical power consumption

Description SYSTEM OVERVIEW

— A complete system in 1U ETSI EN 300 401

The system can be configured as a complete all-in-one solution, integrating the **multiplexer, encoder, data server and management system** in a single hardware unit. It can also be deployed as a stand-alone multiplexer or as a remote encoder.



All-in-one

Complete head-end in a single unit.



Multiplexer

Stand-alone DAB multiplexer.



Remote encoder

Encoding at the studio, muxing elsewhere.

— Modular and containerized

The Paneda DAB architecture is fully modular, with clear separation of components for maximum flexibility, scalability and interoperability. **Docker containers** provide high robustness, simplified updates and optimal deployment flexibility.

— Multi-destination contribution

Each encoder can connect to multiple multiplexer systems, with individual and independent audio settings per destination. The unique **Paneda TCP-RTP** protocol carries encoded audio over public networks — no private or bidirectional link required.

— 16-channel encoder

Up to **16 independent encoder instances** run on the same hardware platform, fed from the most common AoIP and streaming formats — or directly from the **4 × AES/EBU inputs** on rear-mounted XLR connectors. Example Audio formats:

AoIP	LiveWire	AES67	Dante	Ravenna	ST 2110-30	MP-TS
STREAMING	MP3	AAC	HLS	FLAC		
HARDWARE	4 × AES/EBU · XLR					

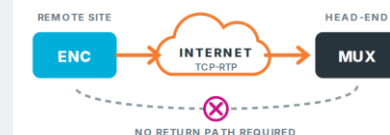
Highlights

1U ENCODER



Unidirectional ENCODER → MULTIPLEXER

Only a one-way connection from the remote encoder to the multiplexer is required.



AES/EBU interface PROFESSIONAL GRADE

A high-performance AES/EBU audio interface with four inputs on rear XLR connectors.



PANEDA 1U ALL-IN-ONE HARDWARE

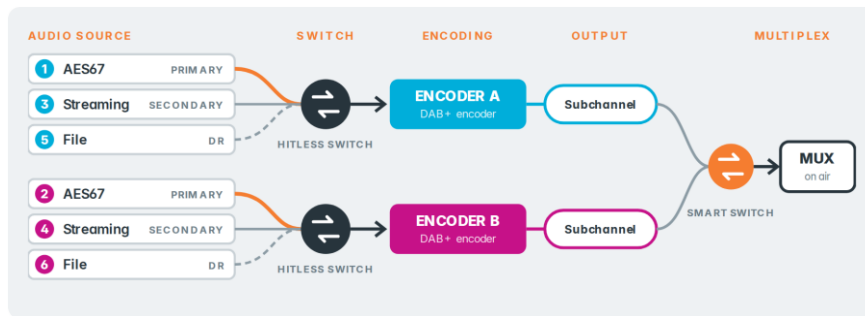
One unit. Every product.

A generic hardware platform that can host any Paneda DAB Head-End product, such as multiplexer and encoders.

FORM FACTOR
19" · 1U
POWER
≈ 30 W typical
AUDIO IN
4 × AES/EBU (XLR)
NETWORK
4 × Ethernet
ENCODERS
Up to 16
RUNTIME
 **docker** containers


— Advanced audio input redundancy

Each audio service can be configured with source redundancy — multiple audio inputs with seamless switching between them. The primary source may use AES67 or AES/EBU, while a secondary source is a web stream. In a redundant encoder setup, **SMART content-aware subchannel switching** delivers the “best possible output” from all sources. Uploaded audio files act as a disaster-recovery source, so silence never reaches the air.



Audio setup example — two redundant encoders, each with three prioritised sources.



Powered by Docker. Every Paneda component runs in its own container — robust, simple to update and flexible to deploy, on the 1U or on standard servers.



Cost efficient
 DESIGNED FOR VALUE

Developed with low cost and efficiency in focus — a complete DAB system in a single rack unit.



Power efficient
 LOW CONSUMPTION

The unit consumes only approximately 30 W of power in typical operation.



Touch OLED front panel
 STATUS AT A GLANCE

Shows status information and VU meters directly on the unit.



Technical specifications **PANEDA 1U ENCODER**

APPLICATION	Multiplexer, encoder, data server and management
ENCODERS	Up to 16 independent DAB/DAB+ encoder instances
STANDARD	ETSI EN 300 401
AUDIO INPUTS	4 × AES/EBU, XLR (rear panel)
AOIP	LiveWire, AES67, Dante, Ravenna, ST 2110-30, MP-TS
STREAMING	MP3, AAC, HLS, FLAC
CONTRIBUTION	Paneda TCP-RTP, unidirectional over public networks

NETWORK	4 × Ethernet (ETH 0–3)
SYNC	10 MHz reference input (BNC)
OTHER I/O	4 × USB 3, DisplayPort, HDMI, analogue audio in/out
FRONT PANEL	Touch OLED — status and VU meters
POWER SUPPLY	Dual PSU, 86–264 V AC, 47–63 Hz, max 120 W
CONSUMPTION	≈ 30 W typical
FORM FACTOR	19" rack, 1U
SOFTWARE	Docker containers · Fedora CoreOS