PERCEPTUAL SOUNDMAX™

Q24-4888

BROADCAST PROCESSOR · ENCODER · DECODER · STREAMER · MULTIPLEXER · DEMULTIPLEXER

8 stereo channels.
Six jobs in one 2U box.

A 2U multi-channel audio processor for eight independent stereo channels, each with its own 24-band Aideal Audio™ processing. The same box encodes, decodes, streams, multiplexes and demultiplexes — over IP and ASI.

8 stereo
independent channels, each with its own input, processing, encoder and outputs

8 streams
independent StreamMax™ streams, one for each channel

24-band
Signature SoundMax audio processing

MPEG-TS
multiplexer and demultiplexer, over IP and ASI

WHAT IT DOES

One platform, *six application scenarios.*

Broadcast processing, encoding, decoding, streaming, multiplexing and demultiplexing in one hardware platform — less cost, rack space and power.

01 High-quality streaming

Process up to eight feeds and stream them as multi-rate HLS or plain AAC and MP3 — from the unit's own server, pushed to your CDN, or sent to an Icecast server.

02 Stream decoding

Decode up to eight independent internet streams — or audio taken from a transport stream — with standard-compliant decoders, each played out on its own AES output.

03 Multiplexing

Process and encode up to eight feeds, and combine them into one transport stream for the network or ASI.

04 Multiplexing with pass-through

Build that same transport stream, and carry selected channels (PES) from an incoming transport stream straight into it.

05 Audio processing for video

Take the audio out of a video transport stream, process up to eight tracks for level and quality, re-encode them and put them back.

06 General-purpose processor

Simply an eight-channel broadcast processor — eight independent stereo channels, each with its own processing.

Every scenario runs on the same eight independent stereo channels, each with its own 24-band Aideal Audio™ processing.

AIDEAL AUDIO™ PROCESSING

The Signature SoundMax sound — *on every channel.*

The 24-band high-resolution core
Linear-phase processing in 24 psychoacoustically tailored bands; compression, limiting, expansion and gating in a single stage.

Dynamic Listening Fatigue Reduction
Unique to SoundMax: conditions the audio envelope in six bands to minimise listener fatigue.

SmoothClip™ look-ahead limiting
Loud, clean peaks, with the final level set for your link or your codec.

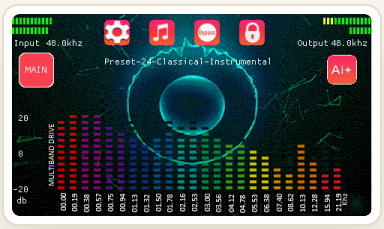
The Aideal+™ genie
Recommends the best-matching profile, or keeps tuning toward your target.

Aided by AI
Deep-learning networks read noise profile, content, mood and genre, and gently adapt the processing — true to your profile.

Intelligent Loudness Control
Steady, filling and consistent loudness, held at your target on every programme.

Noise reduction & SpatialMax™
Wideband noise removal, band noise gating, and SpatialMax™ to widen the sound stage.

18 genre presets + custom profiles
Refine any preset with 1000+ parameters and save unlimited custom profiles.



The main screen of a path. On the unit, 14 processing blocks are switched in or out.

1000+ parameters, every channel.
Basic and Advanced tuning in SoundMaxManager™ — per-band thresholds, attack and release, compression, expansion and graphic EQ.

Eight in, eight out, *and the network.*

Configuration 1 shown. Configuration 2 is inputs only — balanced analog left on the upper XLRs; analog right (XLR) or AES/EBU (TRS) on the combo row.

AES/EBU OUTPUTS
8 × XLR, each an independently processed stereo stream

INPUTS
8 × combo: XLR for AES/EBU, TRS for stereo analog

NETWORK
AUDIO: AES67 in and out · CONTROL: Manager, streams

TRANSPORT STREAM
Over either network port; MUX/ASI in and out on 75 Ω BNC

StreamMax™ streaming

- **A stream for every channel**, each on its own settings
- AAC, HE-AAC v1/v2 at 24–384 kbps; MP3 at 32–320 kbps
- Two-bitrate adaptive HLS, 3–10 s chunks
- CDN push incl. Amazon S3 (AWS SigV4); Icecast — yours or ATC's
- Built-in HTTP server; UDP unicast / multicast

Nielsen™ watermarking

- CBET watermarking encoder, in the box
- Station SID and check digits, as issued by Nielsen
- Time-code insertion; radio mode set for your region
- Prior-watermark detection, with overwrite
- EAS handling; no external encoder in the chain

THE MULTIPLEXER

Eight processed programmes, one MPEG transport stream

Every channel keeps its AES/EBU output, its AES67 output and its StreamMax™ stream.

DEMULTIPLEX, PROCESS, MULTIPLEX AGAIN

Take the audio out of a transport stream, process it, and put it back

The processed audio is also on its channel's AES/EBU output and its StreamMax™ stream.

SoundMaxManager™

One PC controls every SoundMax on the network. On the unit itself, the touchscreen selects inputs, levels and profiles.

- Finds SoundMax units on the network automatically; SNMP compliant
- The Multiplexer and the Demultiplexer, each in one panel
- Profiles, Basic and Advanced tuning — export and import between units
- Eight streams, the network-stream inputs and AES67 in and out
- Monitoring with VU meters; firmware and configuration over the network

Also available: Q24-4880 — the same eight stereo channels, Multiplexer and Demultiplexer, over IP; no analog inputs and no ASI.

Q24-4888 Technical specifications

24-band audio processing · MPEG-TS multiplexer and demultiplexer

MPEG-TS MULTIPLEXER

Function	The selected channels in one MPEG transport stream, each a programme of its own
Per Channel	PID, service ID, service name and provider
Audio	AAC (LC, HE-v1, HE-v2; stereo or dual-mono) or MP3
Bitrates	32, 64, 96, 128, 192, 256 or 320 kbps
IP Output	UDP unicast or multicast, on the CONTROL or AUDIO port
ASI Output	75 Ω BNC
Destinations	IP, ASI, or both at the same time

MPEG-TS DEMULTIPLEXER

Input	IP network (unicast or multicast) or the ASI input
Scan	Lists video, audio and data streams — PID, codec, details, language, bitrate; up to 32
Live View	New and lost streams are marked
Assign to Channel	An audio stream as a channel input: processed and multiplexed again
Passthrough	Video, audio and data streams unchanged into the Multiplexer output

CHANNELS

Configuration	8 independent stereo channels (a channel can also carry mono), each with its own input, processing and encoder
Input Selection	AES/EBU, analog, network stream, AES67 or MUX_IN (from the Demultiplexer)
Analog Fallback	From the AES/EBU input to the analog input, automatic
De-emphasis	Off, 50 µs, 75 µs or J.17 (AES/EBU, analog)

AUDIO OVER IP INPUT/OUTPUT

Configuration	AES67 in and out, on the AUDIO port (RJ-45)
Format	L16 or L24, 44.1 or 48 kHz, stereo or mono
Packet Time (output)	0.125, 0.333, 1 or 4 ms; PTPv2 clock

DIGITAL AUDIO INPUTS (AES/EBU)

Configuration	8 × stereo
Sampling Rate	32, 44.1 or 48 kHz (Auto Sense)
Word Length	16 bit or 24 bit
Input Reference Level	–25.0 to 0 dBFS
Connector	XLR Female (combo; TRS in Config. 2), 110 Ω

ANALOG AUDIO INPUTS

Configuration	8 × stereo: unbalanced TRS (Config. 1), balanced XLR (Config. 2)
Maximum Level	+24 dBu, > 10 kΩ
Reference Level	–10 to +12 dBu
Peak Level	0 to +12 dBu
Prescale	–10 to +20 dB
A/D Conversion	24 Bits
Connector	TRS (combo) or XLR female

DIGITAL AUDIO OUTPUTS (AES/EBU)

Configuration	8 × stereo, individual software level control
Output Levels	–20.0 to 0 dBFS
Sampling Rate	44.1 or 48 kHz
Frequency Response	±0.3 dB (5 Hz – 20 kHz)
Pre-emphasis	Flat, 50 µs or 75 µs (software)
Connectors	AES – XLR Male

AUDIO PROCESSING

Core	24-band Aideal Audio™, linear phase
Profiles	18 factory presets, unlimited custom profiles
AI	Aideal+™ genie: profile recommendation, adaptive processing
Level	Intelligent Loudness Control, SmoothClip™ limiting
Watermarking	Nielsen™ CBET, in the box

DIMENSIONS

Width / Height / Depth	19″ · 2U (3.5″) · 16.9″ (430 mm)

STREAMING AUDIO OUTPUT

Configuration	A StreamMax™ stream for each of the 8 stereo channels
Encoding Formats	Enhanced AAC profiles: LC, HE-v1, HE-v2; MP3
Encapsulation Format	ADTS or MPEG2-TS for AAC; MP3 or MPEG2-TS for MP3
Bitrates	24–384 kbps for AAC; 32–320 kbps for MP3
HLS Generation	Up to 2 bitrates for adaptive HLS; chunking 3–10 s
Distributions	CDN primary/secondary push (incl. Amazon S3, AWS SigV4) · Icecast — your own or ATC Labs' servers · in-built HTTP server · UDP unicast/multicast
Network Stream Input	HTTP/UDP AAC-ADTS/TS, MP3-TS or HLS
Players	iOS / Android, VLC; Edge, Chrome, Safari, Firefox

ETHERNET & REMOTE PC MANAGEMENT CONTROL

Configuration	Auto Presence Broadcast on Ethernet
Management	SoundMaxManager™ on any networked PC — monitoring, configuration & control; SNMP compliant
Connectors	AUDIO and CONTROL, RJ-45, EMI-Suppressed
Front Panel	Colour touchscreen, rotary knob, headphone jack; test tones and diagnostics
GPIO (optional)	8 in / 2 out, opto-isolated, DB-25

POWER

Power Requirements	100–240 V AC, 50–60 Hz
Connector	IEC, EMI Suppressed, detachable 3-wire cord with earthing
Safety Standards	ETL listed to UL standards, CE

ENVIRONMENT

Weight	5.5 kg
Working Altitude	3000 m ASL
Operating Temperature	0° to 50° C
Relative Humidity	95%, non-condensing

October 2026. Specifications are subject to change without notice, as the product is continually improved.

AFTER-SALES & SERVICE

Engineered with premium components for 24/7 continuous operation. ATC Labs provides 24×7 after-sales and service support from its own team, with software upgrades as part of that support.

ABOUT ATC LABS

Founded by former Bell Labs researchers, ATC Labs brings decades of signal-processing and acoustics expertise to broadcasting — its technology serves over 20 million listeners through FM, satellite and internet radio worldwide.

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