jünger

D*AP4 LM - 4 Channel Level Magic Audio Processor

With 4 processing channels, 3G SDI and optional logging features, the D*AP4 LM is the ideal solution for automatic and intelligent loudness management in real-time stereo TV or radio broadcast playout environments. Level Magic ensures maximum audio quality whilst maintaining compliance with all worldwide loudness standards.

The D*AP4 LM audio processor provides automatic and adaptive loudness management compliant with all current broadcast audio loudness recommendations including ITU-R BS.1770 standards as well as recommended practices ATSC A/85, ARIB TR-B32, Free TV OP-59, Portaria 354 and EBU R128.

Overview
The D*AP4 LM audio processor features loudness control plus dynamic range processing and true peak limiting for up to four channels of audio (2x 2.0). Fail Over and Voice Over are also included.

Level Magic and Dynamic Range Control
Based on a unique multi-loop control principle, the Level Magic algorithm provides adaptive wideband loudness control with exceptionally high audio quality that is free of coloration, pumping, distortion or modulation effects.
Level Magic is designed to be audibly transparent and due to its highly adaptive nature, requires only a small number of parameters to be input during initial setup. The adaptive dynamic section includes an expander/gate and upward compressor.

Fail Over and Voice Over
Fail Over permits automatic switching to a backup signal should the primary feed be lost, whilst Voice Over allows for seamless integration of voice and program content during continuity announcements or video description with automatic ducking.

Spectral Signature
The optional Spectral Signature dynamic equalizer is a powerful creative tool allowing adaptive control of the spectral balance of your content. Spectral Signature analyzes incoming audio and compares its spectral structure to a predetermined "reference" curve. This allows dynamic EQ corrections to be applied only if necessary to achieve a consistent sound image and tonal balance.

Loudness Measurement and Logging
For compliance with local regulations, loudness and true peak levels can be measured by the optional J*AM software. SNMP or GPI/O alarms can also be triggered if pre-set limits are exceeded. A real-time plot of input vs output levels can be displayed and the results logged to a destination folder anywhere on the network. A log file analyzer rebuilds the original plot for easy readout of historical data.

FM Conditioner
A powerful option for FM broadcast to pre-control the MPX power and peak deviation of a stereo FM signal, including true peak and pre-emphasis limiting.
A Phase Rotator automatically detects imbalanced audio waveforms and restores symmetry to prevent transients that may unnecessarily trigger downstream processing.

De-Esser
A powerful De-Esser is available as a license option to control and manage excessive sibilance from spoken voices.

Web Configuration
A web interface allows easy and intuitive setup and configuration from anywhere in your network. Onscreen metering and measurements are available for easy reference and a dedicated "mobile" UI is tailored specifically for touch screens or smaller displays such as tablets and smartphones.

System Integration
All system parameters are remotely accessible allowing the unit to be integrated and operated by broadcast control systems. An advanced built-in Event Management tool allows the loading of parameter presets either by hotkeys on the optional X*AP RM1 remote panel, by 8 onboard GPI/O's or by network commands using the Ember+™ control protocol. This helps users to apply individual processing to their programs or content and thereby ensure maximum audio performance in all situations.
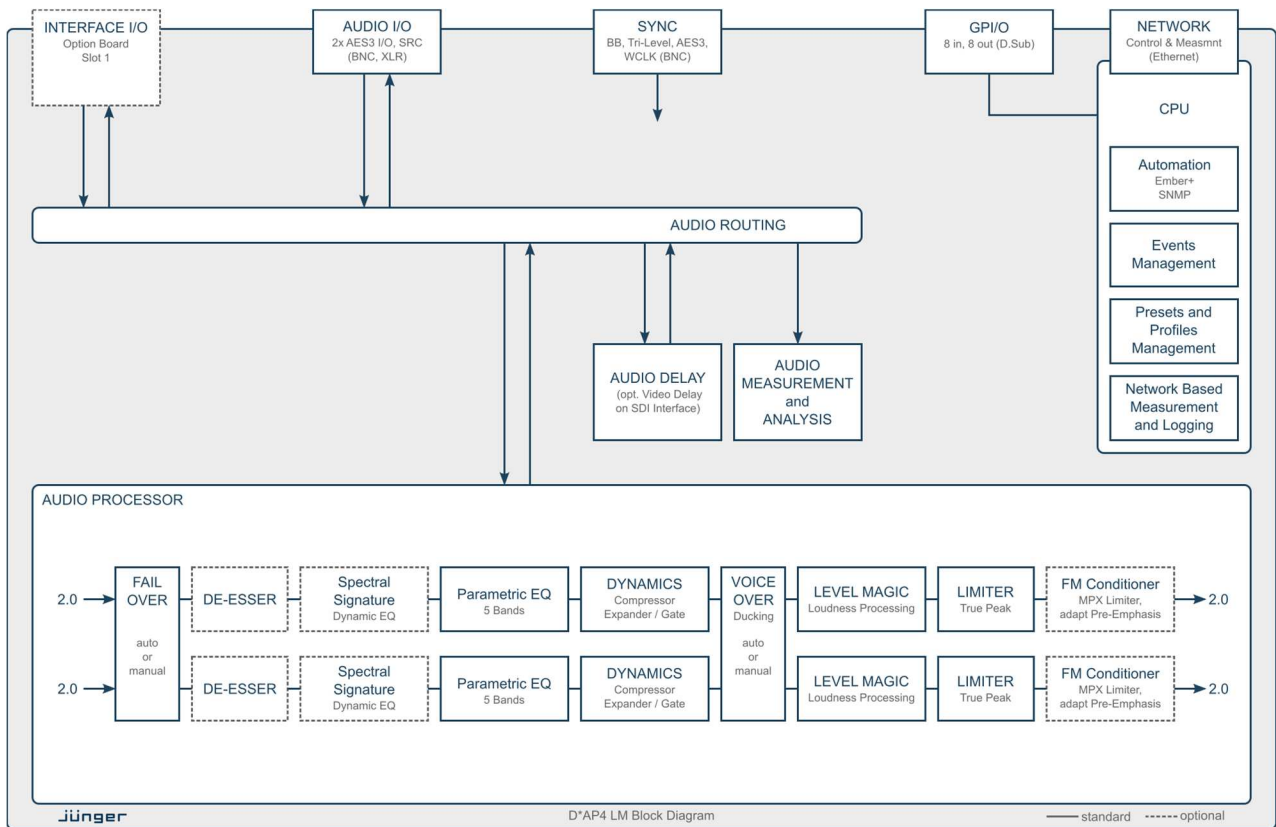
Interfaces and System Security
Audio I/O's range from onboard AES3 to optional 3G SDI including video delay, MADI, Dante™ audio over IP and analog. With power fail bypass relays, dual redundant PSU's and SNMP integration, the unit ensures maximum operational safety and peace of mind for today's critical 24/7 broadcast or content delivery facilities.

| FAIL OVER | DE-ESSER | DYNAMIC EQ Spectral Signature | PARAMETRIC EQ | DYNAMICS Compr / Expander | VOICE OVER | LOUDNESS PROCESSING Level Magic | LIMITER | FM CONDITIONER | LIP SYNC DELAY |

| LOUDNESS MEASUREMENT | LOUDNESS LOGGING |

| AES/EBU | ANALOG | SDI (SD, HD, 3G-A/B) (incl. Video Delay) | MADI (BNC, OPTICAL) | Dante™ AES67 | SYNC (BB, Tri-Level, WCLK, AES/EBU) |

Audio Processing and Interfaces
—— standard ------ optional

jünger

D*AP4 LM - 4 Channel Level Magic Audio Processor

D*AP4 LM Block Diagram — standard ------ optional

Key Features

- Level Magic loudness management according to:
  ITU-R BS.1770 (all revisions), EBU R128, ATSC A/85,
  ARIB TR-B32, Free TV OP-59 and Portaria 354
- Loudness measurement supporting all worldwide standards
- True Peak Limiter
- Dynamics with compressor and expander/gate
- Fail Over with signal loss detection
- Voice Over functionality
- 5 band parametric EQ
- Optional Spectral Signature dynamic EQ
- Optional loudness logging software (J*AM)
- Optional FM Conditioner
- I/O modularity via 1 interface slot
- On board interfaces: 2x AES/EBU I/O (XLR & BNC), Sync in,
  Sync out, 8 GPI/O
- Ethernet connectivity for setup and control via web browser
- External control via network or GPI/O's
- Power fail bypass relays
- 19", 1RU device, redundant PSU

Versions and Options

- D*AP4 LM: D*AP4 base unit plus LM feature set
- X*AP RM1: hardware remote control linked via Ethernet

- Option Board 16ch SDI I/O (3G/HD/SD)
- Option Board 4ch analog I/O
- Option Board 8ch analog Out
- Option Board 8ch AES/EBU I/O
- Option Board 16ch Dante™ Audio over IP
- Option Board 16ch MADI I/O
- License Spectral Signature dynamic EQ
- License FM Conditioner
- License De-Esser

Product Brief – D*AP8 TAP - 8 Channel Surround Television Audio Processor