APT*mpX*

- **Highest Fidelity**
- **Lowest Bitrate**
- **Lowest Delay**

Engineered by leading experts in Studio-Transmitter-Links

The uncompromising compression algorithm for highest fidelity MPX transmissions

APTmpX is the industry's leading MPX/composite compression algorithm, ensuring unparalleled sound transparency even over low-bitrate IP transmissions. With version 2, APTmpX seamlessly integrates RDS into the spectrum, enhancing broadcast efficiency.

The availability of the digital AES192 interface enabled the first end-to-end digital MPX signal chain, marking a significant milestone in simplifying FM broadcasting. By eliminating the number of equipment at each transmitter site, such as sound processors and stereo encoders, it also drives important cost savings.

APT IP codecs support the AES192 interface and allow transmission of linear MPX via the STL. However, until today, the benefits of this approach have been reserved for broadcasters operating a robust broadband IP infrastructure.

With APTmpX, broadcasters in any network infrastructure can benefit from cost-saving FM Multiplex transmission. Even with lowest bandwidth requirements at 300, 400 and 600 kbps, broadcasters no longer need to compromise between low bit rate and high audio quality. APTmpX hus eliminates the two barriers that usually discourage migration to FM MPX transmission.

300 kbps **400 kbps** **600 kbps**

Highest Signal Fidelity

APTmpX preserves the high signal fidelity of the processed MPX signal even at 300 kbps and delivers the highest sound transparency. It ensures that MPX signal characteristics (deviation, MPX power, phases, watermarking) and the stereo image are fully preserved at each transmitter site.
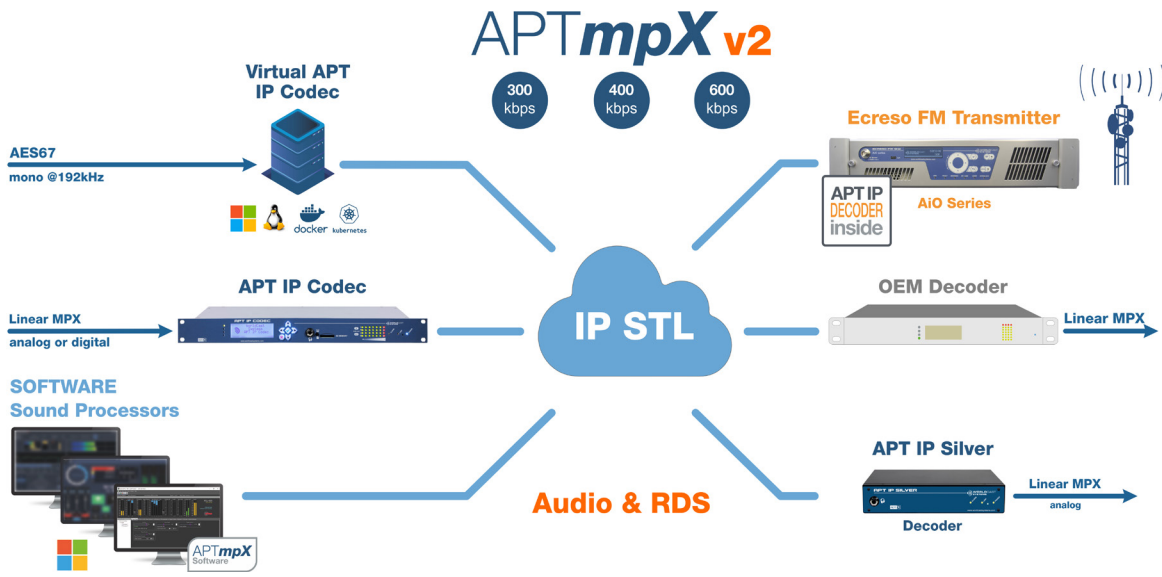
Lowest Delay

APTmpX performs on the same level as real-time audio algorithms with low and constant latency. Comparable to the latency of linear PCM, the algorithmic delay is always below 10 ms.

Resilience against Packet Loss

To minimize influences on the MPX signal, the loss of one packet shall not interfere with the decoding capability of the following packet(s). Therefore, independent packetization reduces any disturbance in the transmission to the respective affected packet.
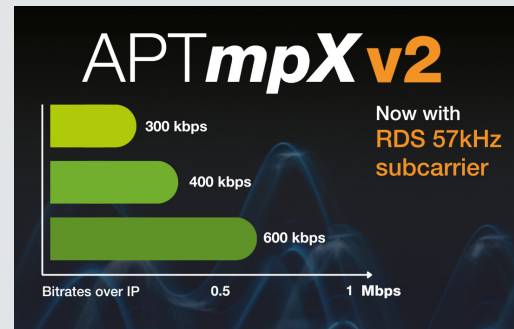
APT*mpX*

APT*mpX* Transmission | Highest Signal Fidelity - Lowest Bitrate

APT*mpX* v2

300 kbps 400 kbps 600 kbps

Virtual APT IP Codec

AES67 mono @192kHz

APT IP Codec

Linear MPX analog or digital

SOFTWARE Sound Processors

IP STL

Audio & RDS

Ecreso FM Transmitter

APT IP DECODER inside AiO Series

OEM Decoder — Linear MPX

APT IP Silver — Linear MPX analog

Decoder

The APTmpX ecosystem adapts to many transmission applications

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APT*mpX* | Multiple Formats

APTmpX comes as a complete suite of multiplex formats and provides various compressed modes.
All modes are characterized by providing highest signal quality and low latency. The versions 300, 400 and 600 kbps differ by varying sampling rates and bit depths (16/24bit). Each variation supports RDS data.

APT*mpX* v2

300 kbps
400 kbps
600 kbps

Now with **RDS 57kHz subcarrier**

Bitrates over IP   0.5   1 Mbps

Associated **Features**

RDS Transmission

Each APTmpX variation supports RDS data. In hardware codecs, RDS can be embedded as serial data (RS232) or included in the MPX signal on the 57 kHz subcarrier, while software implementations support RDS via the 57 kHz subcarrier.

What our expert says

"With APTmpX, we provide a unique, excellent compression solution for FM MPX/Composite transmission. APTmpX not only enhances our portfolio for MPX solutions, but also marks a milestone in the transition to an MPX/composite environment. We are committed to high quality, low latency, and minimal complexity and this solution meets our brand's quality standards. In the end, the user benefits from significantly lower hardware and distribution costs while maintaining the station sound." - Hartmut Foerster APT Product Manager

Listen to APTmpX audio examples on our website!

Timing & **Synchronization** Capabilities

APTmpX does not inherently require synchronization between the encoder and decoder. However, they make precise synchronization possible for SFN transmitter interlinking or content alignment in MFN setups.

APT*mpX* Characteristics	
APTmpX is available as a license option for APT IP Codec, the AoIP Codec Card, Virtual APT IP Codec and as Windows appliaction	
APTmpX300	300 kbps, 16 Bit, (RDS)
APTmpX400	400 kbps, 24 Bit, (RDS)
APTmpX600	600 kbps, 24 Bit, (RDS)
Techniques applicable	APT SureStream (redundant streaming`) APT SynchroStream (GPS/SFN synchronization`)

`License options for APT Codecs

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