

# 4audio MPX series

Professional all-in-one RDS encoder, stereo generator,  
AoIP / MPXoIP codec, FM rebroadcast receiver

**ADV SAT**  
ADVANCED SATELLITE EQUIPMENT

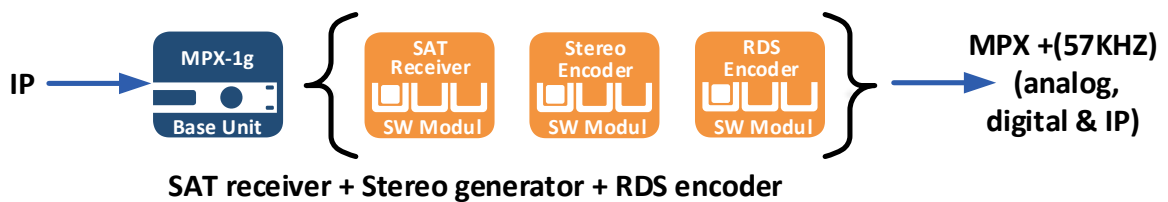
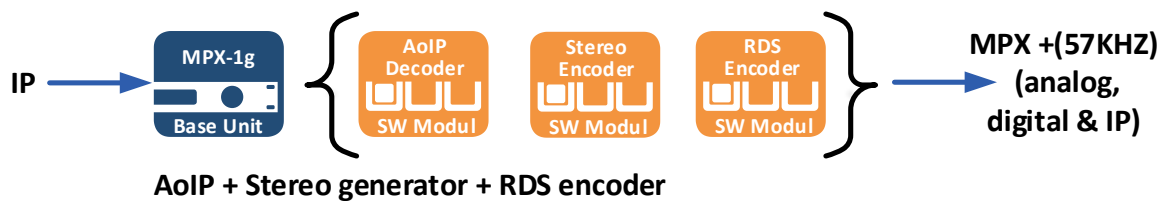
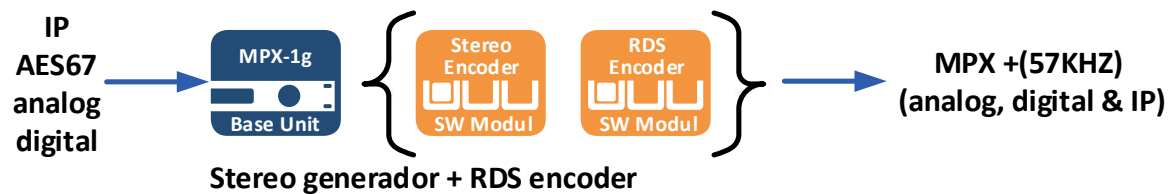
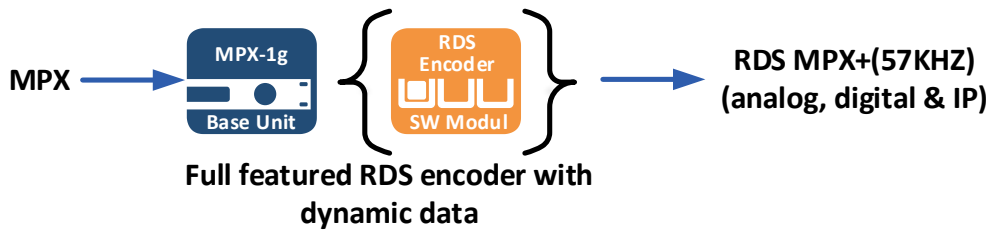
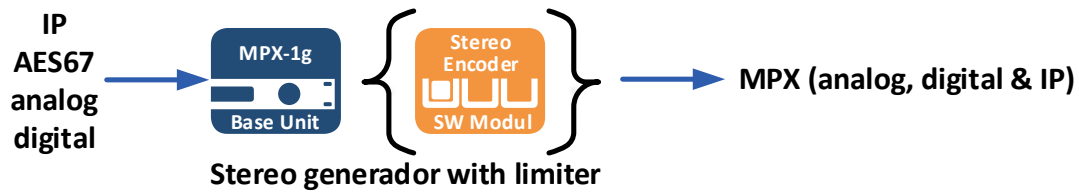
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## 4audio MPX series:

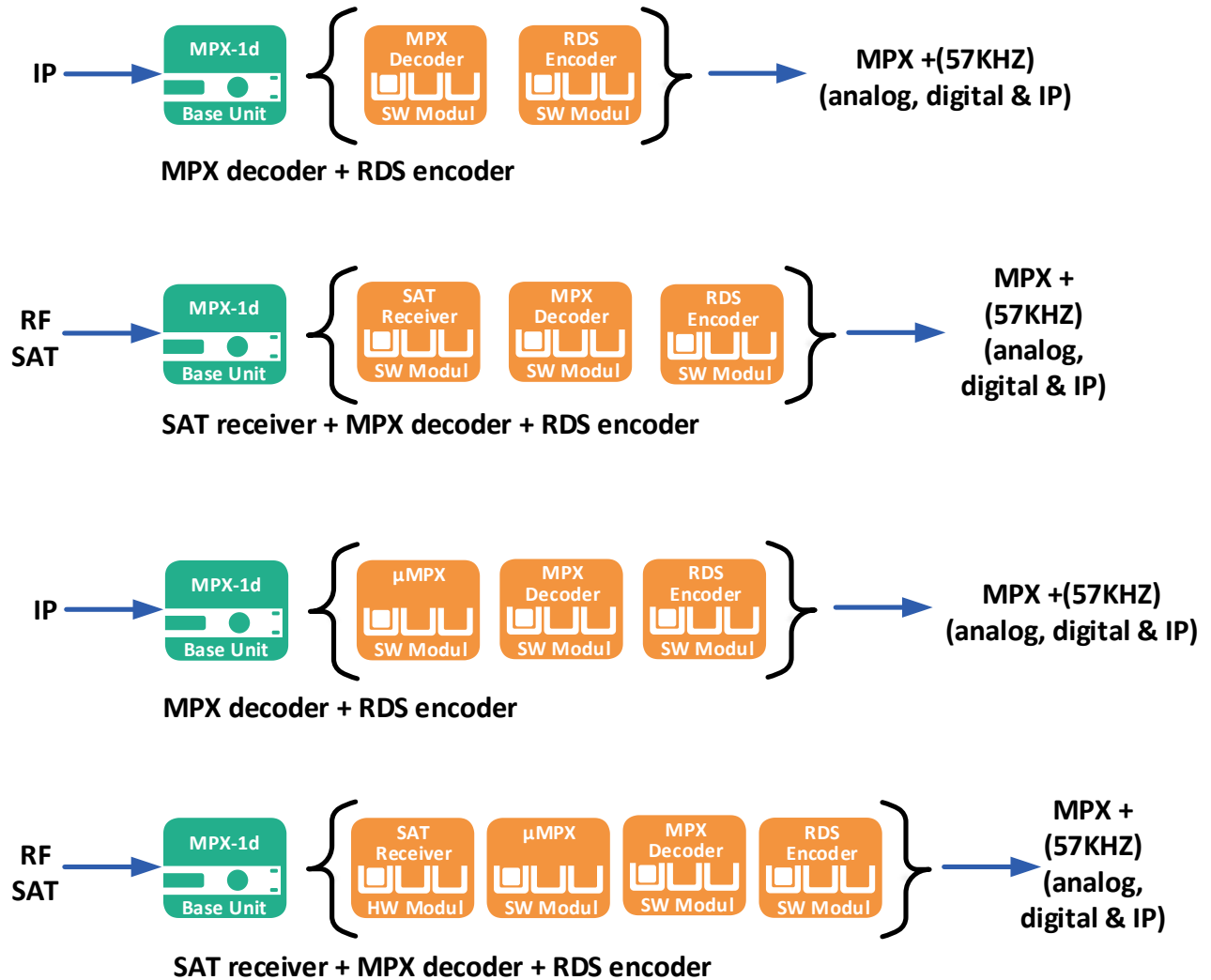
### Configuration possibilities of the basic unit





## 4audio MPX series:

### Configuration possibilities of decoders for the transmitter site





# 4audio MPX series Overview



## Flexible in application

Combines modular components of the whole transmission chain depending on the use case: Stereo generator, RDS encoder, MPX codec or SAT tuner and FM tuner.

- ▶ Inputs and outputs for Audio over IP, analog/digital MPX and audio in parallel.
- ▶ Substitution of RDS or audio data of an MPX signal already assembled in the main studio for regionalization.
- ▶ Supporting all common codecs (MPEG1L2, AAC, • E-aptX, etc.).

## High compatibility

- ▶ Audio over IP / MPX over IP streaming input
- ▶ Supports AoIP streaming and control (e.g. EBU TECH 3326, AES67, Ravenna, Livewire+, SMPTE ST 2110, PTPv2, SNMP, HTTP, HTTPS, FTP or FTPS).
- ▶ RDS Standards: UECP 7.05 compliant, CENELEC EN 50067
- ▶ Compatible with Arcos Config and Arcos Network
- ▶ RDS 2.0 ready

## Pay as you grow

- ▶ Activation of all components is purely software based. In conclusion, this means technicians are able to configure a device fitting absolutely to their needs on-site, saving costs and rack space.
- ▶ FM Tuner for rebroadcasting and monitoring.
- ▶ SAT Tuner to receive and decode satellite TS.

## Multi-Format Audio Coding

- ▶ MPX encoding: 100% lossless audio coding, supporting all common codecs (MPEG1L2, AAC, E-aptX etc.)

## Hybrid IP / SAT

- ▶ Forwarding MPX signal and pilot via IP or via SAT (by using MPE) to increase coverage.

## Transmission robustness

- ▶ 100% loss less audio encoding & decoding.
- ▶ Pro-MPEG FEC (Forward Error Correction) to reduce bit errors in data stream.
- ▶ Dual Streaming
- ▶ High sensitivity, selectivity and large signal immunity at once
- ▶ Passive loopthrough for Audio and MPX with switch over matrix (in case of failure).

## Smart Management

- ▶ Remote management and control via web interface / SNMPv2
- ▶ Remote control and monitoring via HTTP, FTP, Telnet, Ember+, JSON, NMS and SNMP
- ▶ Monitoring and alarm control of FM, RDS and MPX parameters.

### Stereo Generator:

- ▶ Software controlled signal synthesis and modulation control.
- ▶ Adjustable Peak-limiter and Mod-limiter.
- ▶ Configurable filter settings for monitoring or rebroadcast.

### RDS:

- ▶ RDS configuration and monitoring via Arcos Config or ARCOS Network for RDS encoder fleet.
- ▶ Built-in RDS decoder for live view
- ▶ Up to 16 Datasets available.
- ▶ Scrolling PS to show messages of up to 160 characters



## 4 audio MPX series - solutions



### 2wcom's 4audio MPX solution setup

General advantages: All features and modules in just one rack unit saving rack space and money.

#### 1. MPX-g /MPX-1g

##### Modules

- ▶ Basic: pure Stereo generator.
- ▶ Basic: pure RDS encoder.
- ▶ Optional: MPX encoder.

##### Use Cases

- ▶ Generating of the whole MPX signal, including audio, pilot and RDS. Forwarding (compressed or uncompressed) the MPX for further transmission via IP or SAT (MPE encapsulated).
- ▶ Generating the MPX signal only including audio and pilot. Forwarding (compressed or uncompressed) the MPX for further transmission via IP or SAT (MPE encapsulated). RDS data is forwarded separately via IP or SAT (also MPE encapsulated).
- ▶ Generating the MPX signal only including audio and pilot. Forwarding (compressed or uncompressed) the MPX for further transmission via IP or SAT (MPE encapsulated). RDS data is not forwarded but assembled at the regional studios.

Please note: If only an already assembled MPX signal has to be forwarded and RDS encoder or stereo generator are not needed the IP-4c is sufficient.

#### 2. MPX-d / MPX-2d

##### Modules

- ▶ Basic: MPX decoder.
- ▶ Optional: RDS encoder and SAT tuner.

##### Use Cases

- ▶ Receiving the whole MPX signal (audio, pilot and RDS) via IP or SAT and forwarding it directly to the transmitter.
- ▶ Decoding the whole MPX signal (audio, pilot and RDS) via SAT or IP. Substitution of RDS of a full MPX signal already assembled in the main studio for regionalization.
- ▶ Receiving the MPX signal (audio and pilot) via SAT or IP. Adding of local RDS data to the MPX signal. Forwarding the assembled MPX signal to the transmitter.

Please note: If only the MPX signal has to be received and forwarded to the transmitter the IP-4c is sufficient.



# Interfaces



Back panel of MPX-1g. MPX-d back panel is reduced to output interfaces.

## Front Panel

- Headphone** 6.3 mm / 1/4" socket
- LEDs** Power, Input, Output, Warning
- Operation** Display and Jog Wheel

## Back Panel

### Power supply

- Single supply** 230 VAC or 48 VDC
- Dual supply (optional)** Second integrated 230 VAC or 48 VDC power supply with auto switchover and prioritisation
- Redundant hot plug power supply (optional)** Hot pluggable redundant power supply, each combination of 230 VAC and 48 VDC is possible, with auto switchover and prioritisation

### Contact closure

- Control & monitoring** RJ-45 connector; 10/100/1000 Base-T
- USB** USB 2.0 interface for service issues
- Data 1 / 2** 2x RJ-45 connectors; 10/100/1000 Base-T interface
- GPIO** 26 pole sub-D male connector; Remote Control Inputs/Outputs for GPIO transmission; 16 inputs; 3+1 floating relays;

### DTE 1 + 2

2x 9 pole D-Sub male connector for the serial RS-232C data communication

### Digital in / out 1 + 2

4x integrated AES/EBU 100Ω balanced XLR female/male interfaces; shared with Analogue In/Out L/R

### Analogue audio in / out

4x integrated 100Ω balanced XLR female/male socket; shared with Digital In/Out 1 + 2

### MPX in / out 1 + 2

4x integrated 50Ω BNC socket; unbalanced >10kΩ

### 1 PPS

SMA connector for 1pps synchronization

## Expansion

### SAT tuner

2x 75Ω F-Type  
1x 50Ω BNC

Please note:



# Main technical details

## Time synchronization (optional)

<b>PTP</b>	Network synchronization according to IEEE 1588-2008
<b>1PPS</b>	SMA connector

## Control & Monitor

### Ethernet

<b>User interface</b>	Integrated WebGUI, LCDisplay
<b>Data</b>	Controlling and setup functions
<b>Protocol</b>	2wcom NMS, Telnet, HTTPS, SNMP, UDP, RTCP, SRT Secure Reliable Transport, SFTP, IGMP, ICMP, NTP, DHCP, SNMP, SSH, PTPv2, TCP (Icecast)

## General data

<b>Power consumption</b>	<20
<b>Case dimensions</b>	19", 1 HU, depth: 310 mm, width: 424 mm, front panel: 484 mm
<b>Weight</b>	< 5 kg
<b>Material</b>	steel plate (aluminium-zinc coated)
<b>Operating temp. range</b>	0...+45°C
<b>Storage temp. range</b>	-40...+70°C
<b>Languages</b>	English

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