

STEREO- & RDS-Coder for STAR1800:

A compact qualitative coder-module was developed using the most up-to-date components and digital modulation for MPX, pilot-tone and RDS.

The module is build-in into the STAR1800 as an option.

The module works best in combination with a FM-audioprocessor in the studio. In this way perfect sound quality and maximal loudness is reached.

At the transmitter site there will only be the STAR receiver and the FM-transmitter. The STAR1800 gives MPX & RDS signal towards the FM-transmitter.

Details stereocoder:

The STAT1800 gets its audio from an audioprocessor in the studio.

In the STAR1800 receiver, the small overshoots resulting from the audio coding/decoding are clipped, to reach a signal as loud as possible.

A very slow peak leveler optimises the drive level into the clipper stage, so that the clipper only works on the overshoots and does not interfere with the sound quality.

The MPX and the 19kHz-pilot-tone are created digitally. A linear phase anti-alias-filter limits the spectrum.

Details RDS-coder:

The RDS-coder has basic functionality: PI, PTY, TP, TA, AF, scrolling PS-texts.

The broadcast stream is optimised to bring the alternating PS texts as quickly and reliably on the display of the radios as possible. This in contrast to most other RDS-coders.

The RDS is created digitally for a perfect spectral purity.

The phase of the RDS is inherently stable in regard to the stereo signal. By using an optimized phase-angle of the RDS, the stereocoder can deliver a fraction louder audio without exceeding the legal 75kHz deviation.

The RDS-coder receives its new data via the RF link (RS232 feed-in at the STAT1800).

The TA-flag (if used) is read-in in the STAT1800 and travels alongside the audio on the RF link.

Adjustments:

MPX output level

RDS subcarrier level

Typical specs:

Pilot level: fixed at 8%

RDS subcarrier: 0 .. 6kHz

MPX output: 0.5 ... 4.6Vptp

Stereo separation: 45dB

Audioprocessor setup so that the STAT1800 indicates an input of '50' to '70'.