



*** Phase Rotator**

*** Delayed Release for distortion reduction**

*** 4 band programmable Audio Processor**

*** Loudness Clipper Module**

*** AGC/Leveler**

*** Pre- & de-emphasis correction filters**

*** Multiband Filter/Clipper module**

*** 15kHz Low Pass Filter**

The Warsanis 1401FM-M2: A Audio Processing system for FM Radio Broadcast.

The Warsanis 1401FM-M2 has been developed to process audio signals as naturally as possible. You can adjust the Warsanis 1401FM-M2 for every market no matter how competitive it is. You can vary your sound between 'unprocessed' and 'heavily processed'. Regardless the amount of processing, your station's sound will always be loud, open and clear. When desirable, the Warsanis 1401FM-M2 can be adjusted to provide automatic frequency equalization. The Warsanis 1401FM-M2; A powerful and affordable Audio Processor.

Input Filter / Phase Symmetry

A phase rotator removes the asymmetrical waveforms from the audio signal. Some voices contain asymmetrical waveforms. By removing the asymmetrical waveforms you can apply more multiband gain reduction and clipping with less distortion. The phase rotator can be switched off by two internal jumpers.

15kHz Low Pass Filter

A 15kHz low pass filter prevents the processing system from 'out of the band' frequencies. (>15kHz).

AGC / Leveler

The level of audio signals from different sources may vary. The slow AGC keeps the signal in a certain range. Because of the slow time constants, the AGC does not affect short variations in the audio signal. There will be no short dynamic changes made by the AGC. The Gate circuit slows down the release time dramatically if the signal drops under Gate Threshold. The threshold of the Gate circuit can be adjusted inside the unit.

4 Band Audio Processor

After the crossover filters each of the four audio bands will be feed into their own Audio Processor. By using this mutiband technique spectral intermodulation will not occur. For example; when a heavy bass is applied, it causes only gain reduction on the low band processor and does not affect the mid, mid high and high band processors. Each processor Density can be switched between slow, medium and fast. Stereo Tracking can be selected per band.

Multiband Soft Clipping

In our opinion this is the best way to remove peaks from the individual bands. Our Soft clipping module does not create noticeable distortion. The outputs of the four soft clipping modules are feed to their own filters to remove 'out of the band' frequencies.

Loudness Clipping / Low Pass Filtering

We are using a loudness clipping module to get absolute peak control. This distortion controlled circuit gives you a peak control better than 1%. A lot of the peaks are removed by the multiband clipping module so you can force more Loudness Clipping on the signal without producing distortion. With this Loudness control you can give your station the loudness it needs. In highly competitive markets the Warsanis 1401FM-M2 can produce a very loud signal with a minimum of distortion. The phase and overshoot filters give you a constant phase response throughout the frequency range. A 7th order 15 kHz lowpass filter completes the system so it can be directly connected to a flat input of a stereo generator (build in stereo generator is optional). De-emphasis can be selected for a flat output.

Easy To Adjust

In comparison with other Audio Processing units the Warsanis 1401FM-M2 is easy to setup. You only need 12 controls to setup the entire system. All controls are mounted on the front panel behind the removable name plate to prevent unauthorized access. The user manual will easily guide you through the installation procedure.