TXUD500 OPERATIONAL DESCRIPTION

The TXUD500 Transmitter is composed of a sophisticated ATSC exciter, a linear UHF amplifier, and an emission mask filter.

The ATSC exciter is an 8-VSB ATSC professional exciter, designed for the most demanding digital TV broadcasting applications. It receives the input transport stream and processes the signal. It integrates a modulator module with up-to-date FPGA technology and advanced digital signal processing algorithms in order to generate an absolutely accurate output 8-VSB signal, with exceptionally optimized modulation and the output filtering techniques.

Very high linearity performance is possible thanks to very careful RF design over the entire VHF and UHF bands and with an optimal digital precorrection engine working simultaneously in the time and frequency domains. A high degree of reliability is guaranteed, moreover, by the use of oversized cooling devices and by control circuits operated by modern microprocessor technologies.

The ATSC exciter can be used as a stand-alone 5W RMS transmitter or as a driver stage for amplifiers of greater power. The excellent spectral purity of the conversion oscillator lets the ATSC exciter radiate an 8-VSB signal with an excellent MER value.

The ATSC exciter is equipped with a powerful ASI/SMPTE input management block which allows the management of the Transport Stream (TS) inputs in a fully redundant configuration, thus significantly improving the reliability of the whole broadcasting system in every operating condition.

The ATSC exciter is totally compliant to the A53, A/54 and A/64 ATSC recommendations with 6MHz output channel bandwidth, in VHF and UHF bands.

The amplifier belongs to the Medium Power Amplifier products family of Television Amplifiers fully in solid state LDMOS technology. These TV Amplifiers operate in the UHF Band and has been designed to offer to the customer high performance, high reliability and greater simplicity in its operation and maintenance procedures.

Thanks to the amplitude and phase and non linearity pre-correction circuit, it is possible to cancel the distortions in the output stage, thus cutting down the operating costs.
Due to the unique design, the transmitter amplifier is suitable to any digital TV standard: DVB-T, DVB-H, DMB-T, and ATSC. It is only necessary to replace the modulator and the RF output band pass filter. The remaining components may be used without any change.

The cooling system is fully contained into the amplifier, and it is based on forced air flow. A powerful and very low acoustic noise blower is used. A front panel air dust filter is available, sized in order to enable easy replacement.

The user interface is based on a graphics display, where all the parameters are showed. A detailed log of events and alarm help the maintenance of the system. The unit can be fully controlled in REMOTE mode via PC direct-link or via PSTN, GSM or Ethernet networks by means of Elettronika Remote Control System.

The system can be easily upgraded with dual drive option. Besides, the transmitter can be easily integrated in a 1+1 or more complex N+1 redundancy configurations.