***SCREEN SERVICE BROADCASTING TECHNOLOGIES***
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# 1 OPERATIONAL DESCRIPTION

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## 1.1 Operational Description

The SDTx ARK6 Transmitter is composed of a sophisticated software controlled ATSC exciter, a linear UHF amplifier, and emission masks filter. The ATSC exciter is an ATSC professional exciter, designed for the most demanding digital broadcasting applications. It receives the input transport stream and processes the signal. It integrates a modulator module that incorporates modulus/group delay software precorrection as well as AM/PM software precorrection for the power amplifier and emission mask filter.

Very high linearity performance is possible thanks to very careful RF design over the entire UHF band 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 four amplifiers operating in parallel and softfail operation. Multiple power supplies are operated in parallel to reduce the possibility of single-point failure modes. Also, multiple cooling fans are used to keep the operational temperature of critical components Due to the unique design, the transmitter amplifier is suitable to any digital TV standard: ATSC, ATSC-MH, ISDB-T, DVB-T, DVB-H and DMB-T. It is only necessary to reconfigure the modulator and use the appropriate RF output band pass filter. The remaining components may be used without any change.

The emission mask filter is a low-loss filter that reduces the out-of-channel radiation to limits that are acceptable to prevent interference to other services and eliminate harmonic radiation.