

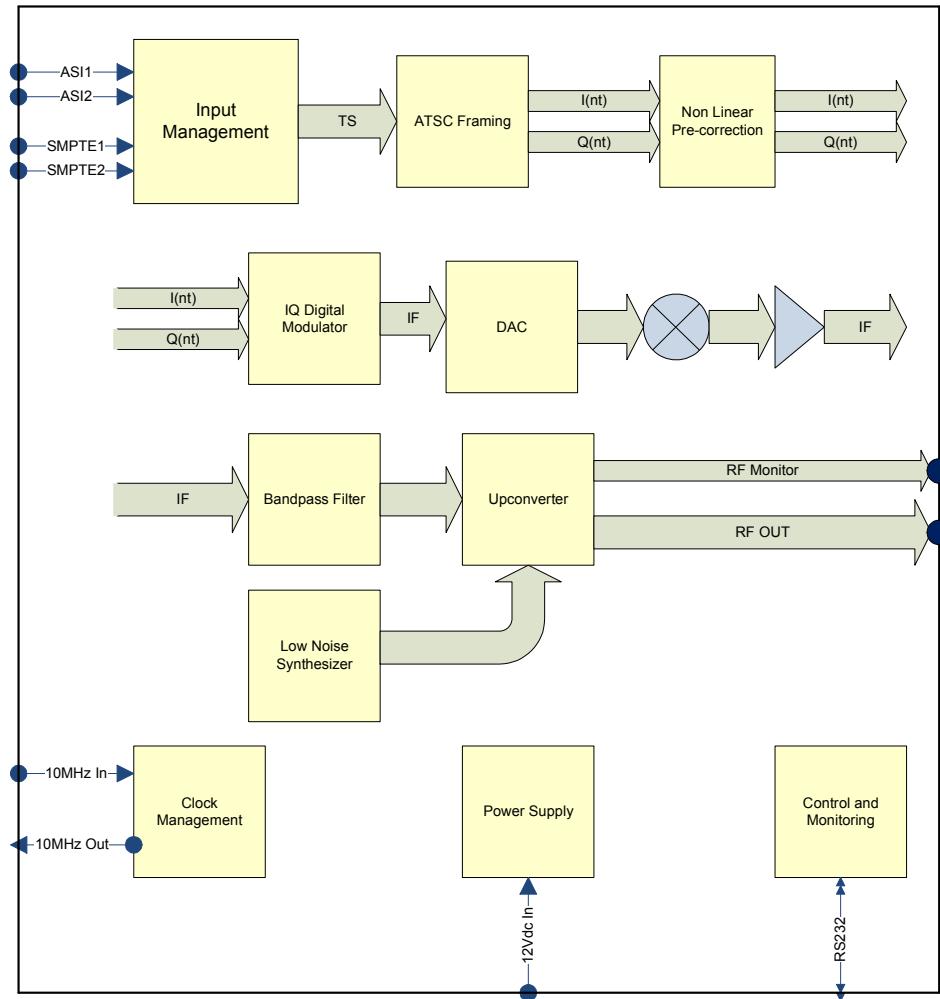
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## BLOCK DIAGRAM

The TXUD-40 is an agile solid state digital TV transmitter designed to accept an ASI or SMPTE MPEG-2 encoded transport stream and outputs an amplified 8VSB signal on any UHF television channel.

From the AC-DC main power supply, the modulator takes 24Vdc and distributes specific voltages to the appropriate boards in the modulator. The Transport Stream (TS) from a MPEG-2 encoder (either ASI-320 or SMPTE-310) enters the 8-VSB modulator board from the back panel on the enclosure. This board completes Forward Error Correction (FEC), synchronization and frame insertion. After processing and synchronization, the TS passes through the pre-correction circuitry and is then modulated to an IF frequency. Next, the signal gets amplified before it enters the up-converter section which changes the IF frequency to the required channel frequency. The control software communicates to the modulator through the RS232 interface which displays modulator status, changes output level, and selects channel. After the modulated 8-VSB signal exits the modulator, it then passes into the RF amplifier which steps up the output level to 30 watts 8-VSB. The amplifier enclosure also contains a digital emissions mask filter. On units that potentially interfere with the RNSS band, the amplifier portion of the system also includes a GPS filter.

## Modulator



## Power Amplifier

