6 Valeri Petrov Str., Sofia-Bozhurishte Industrial Park, Bozhurishte 2227
E-mail: acom@acom-bg.com Phone: +359 2 920 97 80 Fax: +359 2 920 96 56

Operational Description

The **ACOM 1400S** is a state-of-the-art, 1200W heavy-duty solid-state linear amplifier, covering all amateur bands from 1.8 to 54 MHz. It builds upon the successful design of the previous model, the **ACOM 1200S** (FCC ID: 2AJXZ1200S), with key improvements, including increased output power and the addition of a remote control unit (RCU). The amplifier's advanced design features isolated input and output ports, which reduce intermodulation and improve SWR resilience, self-excitation resistance, and overall reliability.

The input signal is fed into the amplifier module and then passed through a permanent 10dB T-pad attenuator followed by a set of switchable T-pad attenuators. These attenuators not only provide proper signal attenuation but also ensure a consistent input SWR across the amplifier's entire frequency range. A matching balun transformer then splits the signal into two anti-phase signals ($\Delta\omega = 180°$) to drive the gates of the LDMOS transistor.

The amplified signal is routed through a matching and balun transformer pair and delivered to the Diplexer Filter block. This block consists of eight switchable LP/HP filter pairs. The low-pass (LP) filter allows the fundamental operating frequency to pass through to the antenna, while the high-pass (HP) filter diverts harmonic content to a matched 50-ohm dummy load within the amplifier. After filtering, the signal is directed through the output wattmeter and then to the antenna.

The amplifier is powered by a **2500W switching power supply** featuring a PFC module and a comprehensive EMI filter, ensuring stable operation. At the rated output of 1200W (continuous carrier), the nominal voltages and currents are as follows:

- **LDMOS drain DC voltage**: 56V
- **LDMOS drain DC current**: 36A
- **LDMOS gate bias DC voltage**: 2.4V
- **LDMOS drain idle current**: 0.9A

The ACOM 1400S incorporates multiple measurement and protection systems, all managed by a high-performance **Microchip DSP CPU**. For connectivity, the amplifier features a CAT/AUX transceiver interface and an RS232 port for computer control.

A key innovation is the **remote control unit (RCU)**, which provides operational control via a high-resolution color touchscreen display. All indicators and controls are accessible remotely, enhancing convenience for the operator.

Additionally, the amplifier stores numerous operational parameters and fault diagnostics in non-volatile memory. These settings and status data can be downloaded to a PC for detailed analysis, logging, and troubleshooting.