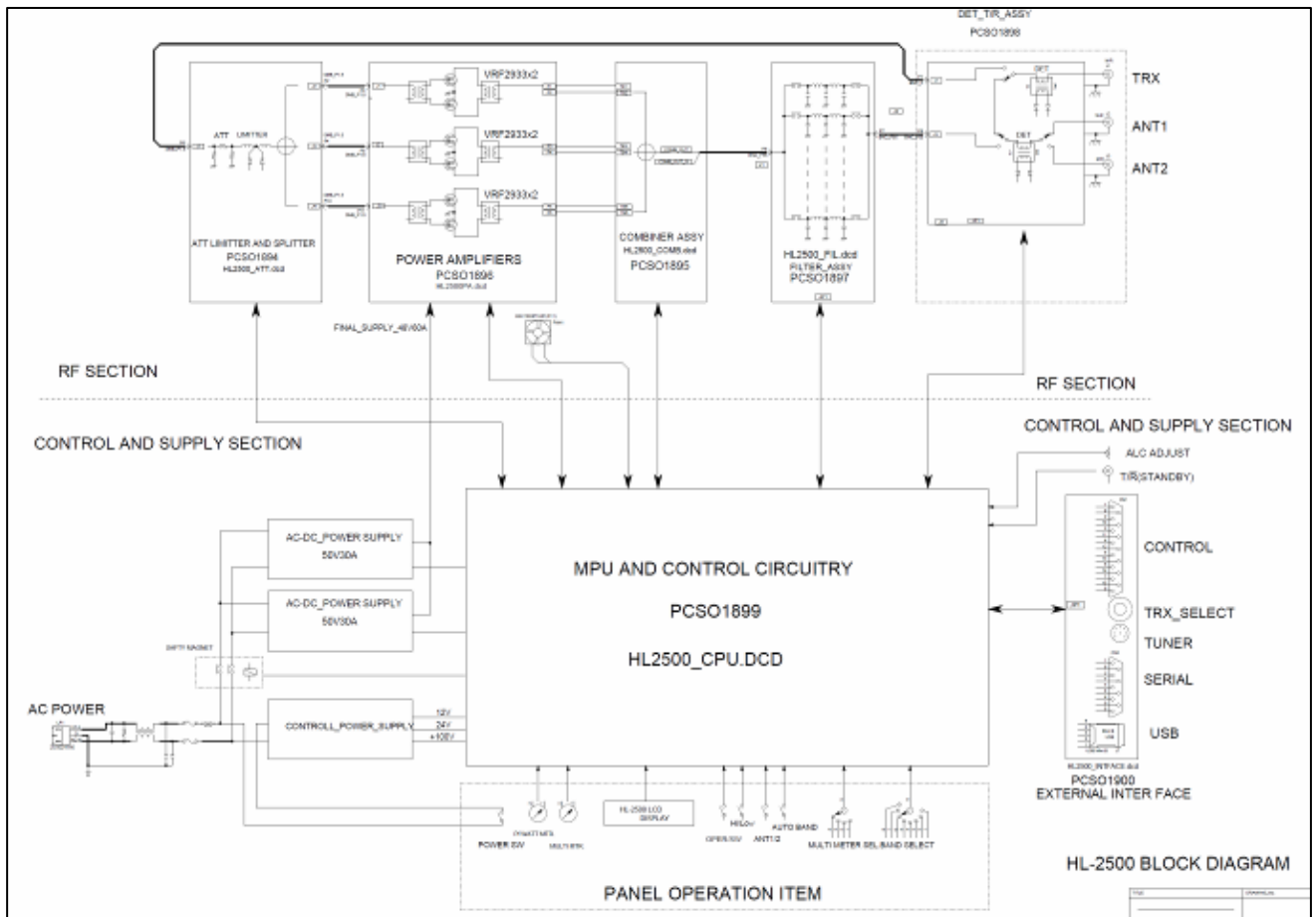


14 Block Diagram and Explanation of Major Circuitry



14-A RF Amp

Driving RF signal transmitted from the transceiver is lead to the ATT/ Limiter board via T/R-Assy unit, where there is 3dB attenuator as well as RF limiter. These circuitry properly levels the magnitude of RF signal and also instantly shuts down the input to protect the amplifier.

There is a three port splitter located in this board that sprits a driving signal equally into three components, which are then fed to final PA module.

PA module consists of three sets of wide band class AB1 linear amp. using THP2933 FET's in the push-pull form. 500W is achieved per one basic amp. board. Then the three outputs from the PA module is sent to the combiner unit, where three 500W components are combined to become 1,500W.

Operating status of three PA's are strictly monitored in the combiner stage with regard to heat balancing of respective amps.

Finally 1,500W of RF output is lead to LPF (low pass filter) unit, where harmonics and spurious signals are reduced to FCC rules. Filtered output signal is sent to T/R ASSY unit again and is lead to antenna terminal by way of antenna relay.

14 Block Diagram and Explanation of Major Circuitry

14-B DC Power Supply

AC power is received at the IEC socket intake and passes the line filter. There are safety fuses on both lines. There are control power supply and FET drain power supply . Start up is usually made by turning on and off of control power supply. DC 12V, 24V and 100V are available when control power supply is turned on, and are always outputted once the POWER is turned on.

There are a magnet relay at primary side and DC ON/OFF function at secondary side. Depending on the operating condition, this power supply is turned on and off through the control circuit, and is provided in this power supply to meet IEC61000-3-2 harmonics regulation.

14-C Control Circuit

Control circuit performs various control using micro-processor PIC18F8722 chip. Also, basic interface meet the necessary rules and conditions using the specialized semiconductor devices.