

SECTION 2

TECHNICAL SPECIFICATIONS

2.1 TECHNICAL SPECIFICATIONS

The technical specifications for the linear amplifier are defined in Table 2-1.

2.2 SEMICONDUCTORS

The semiconductors are defined in Table 2-2.

TABLE 2-1.
Technical Specifications.

POWER OUTPUT:	1000 W PEP or Avg \pm 1dB.
FREQUENCY RANGE:	2-30 MHz (1.6-2 MHz at reduced harmonic specification).
INTERMODULATION DISTORTION*:	2-24 MHz 30 dB 3rd order. 36 dB 5th order. 24-30 MHz 26 dB 3rd order. 30 dB 5th order. Measured relative to PEP output.
SPURIOUS PRODUCTS:	-60 dB.
HARMONIC FILTERS:	7-Pole elliptic function.
Ranges:	2-3 MHz 8-13 MHz 3-5 MHz 13-20 MHz 5-8 MHz 20-30 MHz The filters are selected by grounding each filter control line.
DUTY CYCLE:	Rated for continuous services all modes.
DRIVE LEVEL:	100 W nominal.
INPUT IMPEDANCE:	50 ohm VSWR less than 1.5:1.
OUTPUT IMPEDANCE:	50 ohm.
POWER REQUIREMENTS:	28 Vdc negative ground. SSB 30-A avg. voice. FSK 70 A typical.
COOLING:	Dual fans controlled by 60 ^o -C thermostats. (Over-temperature shutoff at 85 ^o C).
CIRCUIT BREAKER:	100 A magnetic.
SIZE (WHD):	48.3 cm x 22.3 cm x 38.9 cm.
WEIGHT:	23.6 kg.
CONTROLS:	Amplifier ON/OFF.
METERING:	Module collector current 50 A (2x). Power output 0-1500 W.

TABLE 2-1.
Technical Specifications, Continued.

CONNECTORS:

RF input UHF.
RF output UHF.
Control 10 pin.
Aux 28 V 2 pin.
Dc power 4 pin.

*The intermodulation distortion and spurious products are also a function of the excitation source. The distortion products and spurious output are measured using two high-power RF signal generators as the two-tone test source. The generators are coupled through a combiner adjusted for maximum isolation between input ports. The output is coupled to the amplifier through low-pass harmonic filters. To ensure compliance with the published specifications, the excitation sources should have a minimum distortion figure at least 3 dB greater than the amplifier at the required drive level, the spurious products should not exceed -60 dB and the harmonic level should not exceed -40 dB. Spurious products in the exciter, below the cutoff frequency of the TW1000A amplifier low-pass filter, will be amplified without attenuation. Spurious products and harmonics above the amplifier filter cutoff frequency will be attenuated by the amplifier, however, excessive harmonic or spurious output from the exciter may increase the distortion products.

Table 2-2.
Semiconductors.

DESIGNATOR	FUNCTION	DESCRIPTION
MAINFRAME:		
Q1	ALC Control Amp.	2N5306
Q2	Meter Amp.	2N5306
Q3	PTT Control Amp.	2N5306
Q4	Relay Driver	TIP120
Q5	Relay Driver	TIP120
Q6	Stop Switch	EC103Y
U2	Voltage Regulator	UA7812KC
AMP MODULES:		
Q1A, Q2A, Q1B, Q2B	150-W RF Amp.	310050
Q3, Q3B	Bias Driver	TIP33B
Q4, Q4B	Bias Compensation	TIP29A