

taken off an r-f voltage divider across a capacitor in the ground side of the buffer stage. A-f monitoring is accomplished by means of a voltage developed across a resistor connected in series with the secondary of the modulation transformer, at which point a level of approximately +10 dbm is available at 100% modulation.

Control circuits are simplified and offer maximum protection to the transmitter and operating personnel. A distinctive feature is a relay which eliminates the necessity of recycling of the time delay when momentary power failures or interruptions occur. Overload protection is provided by using magnetic circuit breakers that also serve as switches.

The BTA-1L is normally supplied for operation at 1000 watts output. Where power change is required, a kit of power change equipment (MI-7188-A) is necessary and is easily installed on the chassis in the center section of the equipment. This equipment will reduce the power output from 1000 to 500 or 250 watts or from 500 to 250 watts as required. A variable transformer adjustable from the control panel provides a means of maintaining the proper voltages as required. A separate 110 volts, 50 to 60 cycle supply is required for the crystal heaters.

The BTA-1L is furnished with two sets of tubes and two crystals.

## Specifications

Carrier Frequency Range	540 to 1600 kcs
Carrier Frequency Stability	±10 cycles
Carrier Power Output	
(a) 1,000 watts	(c) 500/1,000 watts*
(b) 500 watts	(d) 250/1,000 watts*
	(e) 250/500 watts*
Carrier Frequency Harmonics	below .05%
A-c Power Input (220 to 240 volt, 50/60 cycles, single phase)	
(Line voltage regulation and variation not to exceed 5%)	
Average Program Level at 1,000 watts	4,500 watts
500 watts	3,700 watts
250 watts	3,350 watts
100% Modulation	
1,000 watts	5,700 watts
500 watts	4,900 watts
250 watts	4,450 watts
A-c Power Input (crystal heaters)	110 volts, 28 watts
Carrier Shift—from zero to 100% modulation	less than 5%
Carrier Noise and Hum Level	
(unweighted below 100% modulation)	-60 db
Audio Frequency Response (30 to 10,000 cycles)	±1.5 db
Audio Input for 100% Modulation	+11 dbm**

Audio Frequency Harmonic Distortion (50 to 7,500 cycles, 0 to 95% modulation) not to exceed 3% rms

R-f Load Impedance

(unbalanced transmission line or antenna) 20 to 250 ohms

Dimensions, overall

Width 108 3/4"

Depth (door swing 18 3/4") 20 1/4"

Height 84 7/8"

Weight (unpacked) 3,410 lbs.

## Tube Complement

For BTA-1L Transmitter Exciter Only MI-7320

1 RCA-807 1 RCA-810 2 RCA-6J7

3 828 2 RCA-8008 1 RCA-5Y3GT

For Type BTA-1L Amplifier Only MI-7318

4 RCA-833-A 4 RCA-8008 2 RCA-866/866A

Stock Identification

BTA-1L Transmitter MI-7186-B

BTA-1L Amplifier (for 250K and BTA-250-L)

(complete with conversion accessories) MI-7187-A

## Equipment Supplied

The following is a condensed list of equipment included as a complete BTA-1L transmitter:

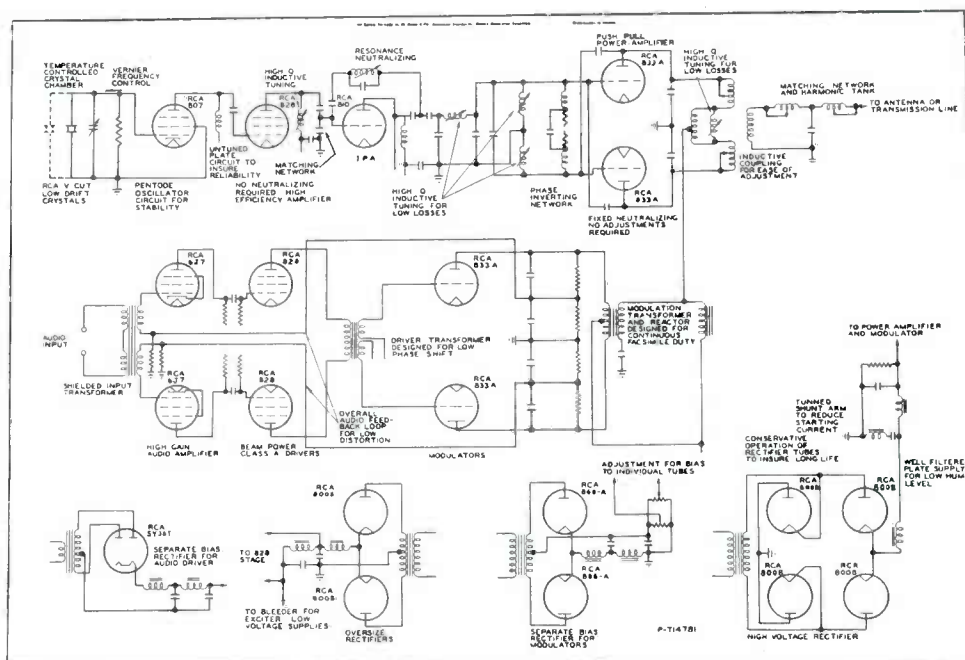
1 Type BTA-1L Exciter Unit	MI-7281-B
1 Type BTA-1L Power Amplifier	MI-7185-A
1 Type BTA-1L Power Equipment Section	MI-7284-A
1 Type UL-4392 Crystal Oscillator Unit	MI-19458
1 Touchup Finish Kit	MI-7443
1 Miscellaneous Hardware Kit	MI-7474
2 Instruction Books	IB-30118-1
2 Type TMV-129B Crystal Units	MI-7467
1 RF Output Meter	MI-7157-B
2 Sets of Tubes	MI-7320/7318
1 Set of Station Call Letters	MI-26910

## Available Accessories

Type BPA-1 Antenna Tuner	MI-28901-A
Power Change Equipment	MI-7188-A
Type BPM-1A Remote Metering Kit	MI-28027/MI-28037-A
Antenna Phasing Equipment	On application
Antenna Towers and RF Transmission Line	On application

\* MI-7188-A Power Change equipment is required.

\*\* dbm = no. of db above one milliwatt when single frequency tone modulation is used.



Simplified Schematic Diagram of BTA-1L