

# SECTION 1-INTRODUCTION

## 1-1 GENERAL

This section provides a brief description of the internal electrical and mechanical configuration of the FM/AM-1100S/A, which is intended to familiarize the technician with the overall structure of the set. An "exploded" composite drawing of the FM/AM-1100S/A is provided in Figure 1-1 to aid the technician in identifying and locating the various major assemblies and modules which comprise the set.

### 1-1-1 ELECTRICAL DESCRIPTION

The FM/AM-1100S/A is a digitally synthesized AM/FM/SSB receiver and signal generator. All components within the unit are solid state, with the exception of the CRT and several switches. The receiver is a quadruple conversion receiver, capable of receiving communication signals from 300 kHz to 999.9999 MHz. The signal generator is capable of generating modulated or unmodulated signals from 1 kHz to 999.9999 MHz. Functionally, the FM/AM-1100S/A is made up of the major electrical systems or circuits listed in the table below. The individual modules which make up each circuit are listed below the respective headings.

<u>FREQUENCY SYNTHESIZING CIRCUITS</u>		
<u>High Frequency Phase Lock System (or 1st Local Oscillator System)</u>	<u>Frequency Reference System</u>	<u>Low Frequency Phase Lock System (or 2nd Local Oscillator System)</u>
1200-2200 MHz VCO VCO Tuner PC Bd AGC System PC Bd High Frequency Phase Lock PC Bd Heterodyne Amplifier/#2 Prescaler High Frequency Multiplier/Mixer Frequency Select Switch *	TCXO TCXO Output Distribution Amplifier Clock Divider 100 MHz Amplifier/108 MHz Mixer 100 MHz Filter	79-80 MHz Phase Lock Loop PC Bd 100 MHz Amplifier/108 MHz Mixer 108 MHz Bandpass Filter 1080 MHz Multiplier Frequency Select Switch *
<u>RECEIVE/GENERATE CIRCUITS</u>		
<u>Signal Input/Output Circuits</u>	<u>120 MHz/250 kHz IF Circuits</u>	<u>1200 MHz IF Circuits</u>
Static Discharge Protect 1st Mixer Assembly High Level Amplifier Power Termination Assembly	120 MHz Receiver 250 kHz IF/MON/AUDIO PC Bd 2nd Mixer Assy Dual Tone Generator 120 MHz Generator Assy Variable Attenuator Front Panel Monitoring Devices	1st Mixer Relay 2nd Mixer Assy 1200 MHz Filter/Diode Switch 1200 MHz Amplifier
<u>POWER SUPPLY</u>	<u>SPECTRUM ANALYZER/OSCILLOSCOPE</u>	
Power Supply Assy Battery Regulator/Timer PC Board	Spectrum Analyzer Module #1 Assy ** Spectrum Analyzer Module #2 Assy ** Spectrum Analyzer Inverter PC Assy Spectrum Analyzer Main Bd Assy	

\* Also referred to as RF FREQUENCY MHz Thumbwheels  
\*\* FM/AM-1100S Only

Table 1-1 FM/AM-1100S/A Major Electrical Systems