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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.

FREQUENCY SYNTHESIZING CIRCUITS

High Frequency Phase Lock System (or 1st Local Oscillator System)

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 *

Frequency Reference System

TCXO
TCXO Output Distribution Amplifier
Clock Divider
100 MHz Amplifier/108 MHz Mixer
100 MHz Filter

Low Frequency Phase Lock System (or 2nd Local Oscillator System)

79-80 MHz Phase Lock Loop PC Bd
100 MHz Amplifier/108 MHz Mixer
108 MHz Bandpass Filter
1080 MHz Multiplier
Frequency Select Switch *

RECEIVE/GENERATE CIRCUITS

Signal Input/Output Circuits

Static Discharge Protect
1st Mixer Assembly
High Level Amplifier
Power Termination Assembly

120 MHz/250 kHz IF Circuits

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

1200 MHz IF Circuits

1st Mixer Relay
2nd Mixer Assy
1200 MHz Filter/Diode Switch
1200 MHz Amplifier

POWER SUPPLY

Power Supply Assy
Battery
Regulator/Timer PC Board

SPECTRUM ANALYZER/OSCILLOSCOPE

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

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