



EQUIPMENT DESCRIPTION

Introduction

This section provides a general description of the 363/800 Wattmeter Calibration System with detailed physical descriptions of the major assemblies. Pertinent physical and operational characteristics are provided in tabular form at the end of the section.

General Description

The 363/800 Wattmeter Calibration System (Figure 2-1) consists of four linear amplifiers, a system controller, and the necessary interconnecting cables. The equipment is housed in a double, 19-inch relay cabinet with provision for a signal source.

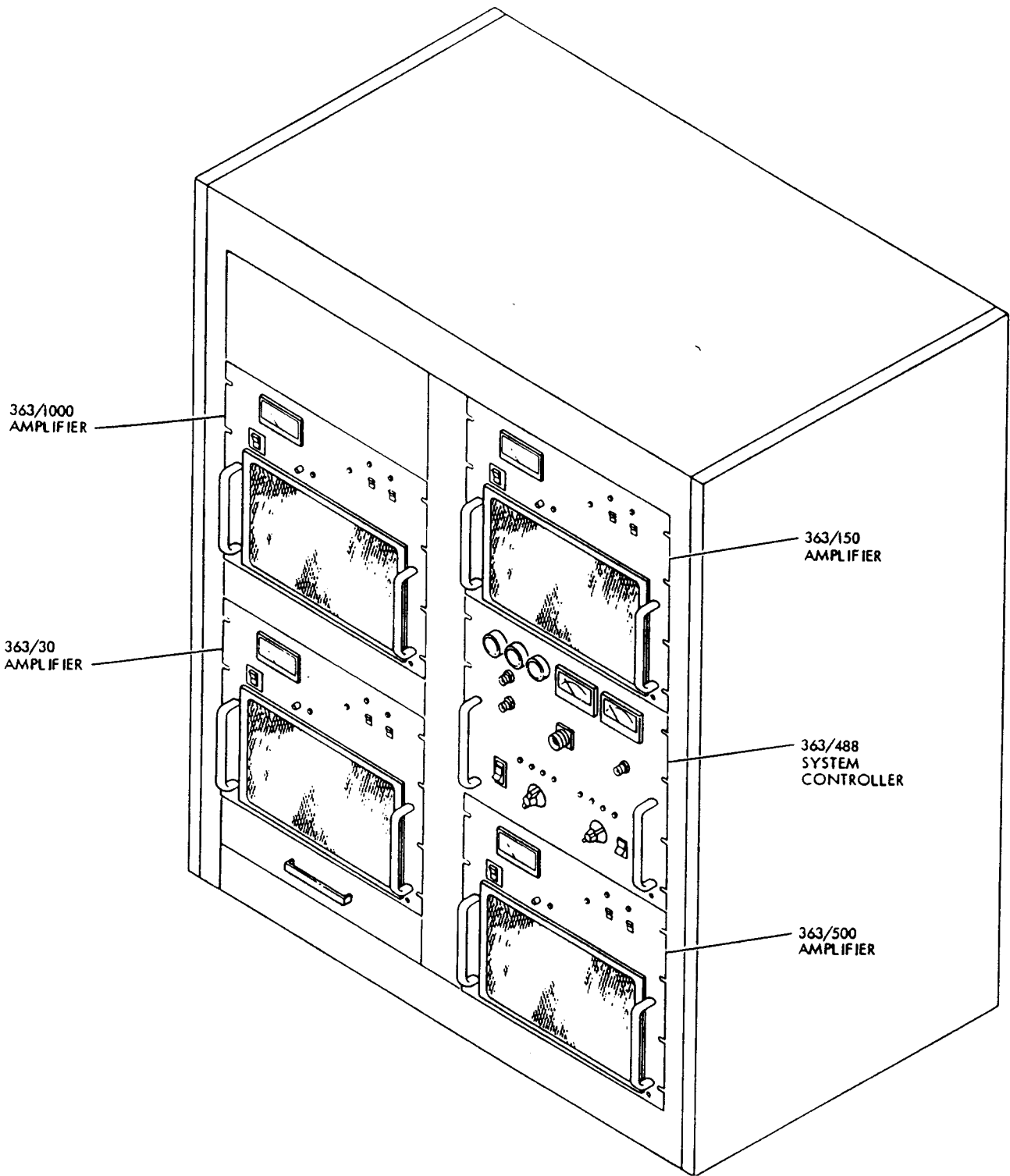
The amplifiers have self-contained power supplies and operate independently of each other, improving system reliability and simplifying servicing. The system will operate with one or more amplifiers removed, requiring only the elimination of the band of frequencies covered by the removed amplifier.

The purpose of the 363/800 system is to provide high power RF levels in continuous coverage from 2 MHz to 1000 MHz. This is accomplished by employing four high power, broad band amplifiers. The 363/30 amplifier provides 800 watts minimum from 2 MHz to 30 MHz. The 363/150 amplifier provides 200 watts minimum from 30 MHz to 150 MHz. The 363/500 amplifier provides 200 watts minimum from 150 MHz to 500 MHz. The 363/1000 amplifier provides 100 watts minimum from 500 MHz to 1000 MHz. The 363/488 system controller (filter switch box) provides several functions. The primary function is to connect the amplifiers in a matrix to enable the system to have one input and one output. Additionally, low-pass filters are switched in every 0.72 octave at 2 MHz, decreasing to every 0.38 octave at 1000 MHz, to lower the harmonic content of the output. The filters require 13 bands to continuously cover 2 MHz to 1000 MHz. The bands are named band A through band M; band A being 2 MHz to 3.44 MHz, band B being 3.44 MHz to 5.90 MHz, etc. The band switching function is IEEE 488 bus programmable, or user selectable from the front panel. In addition to band selection, the 363/488 control box has indicators for monitoring the system operation.

The 363/800 system is designed to be driven by a frequency synthesizer, crystal controlled oscillator, or other stable frequency source.

Specifications

Refer to Table 2-1 for a listing of pertinent physical data and electrical characteristics and to "Maximum System Power Output" sheet for a specific 363/800 serial number. The module relationship with identification is shown in Figure 2-2.



Wattmeter Calibration System, Model 363/800

Leading Particulars

Item	Characteristics
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CALIBRATION SYSTEM:

Model No.	363/800
Cabinet:	
Type	Two-bay rack
Dimensions (inches)	56.5 high x 46.2 wide x 25.0 deep
Weight	900 lbs.

Connectors:

RF Input	N(f)
Input Sample	N(f)
RF Output	GR-900
Output Sample	N(f)

AMPLIFIER:

Model No.	<u>363/30</u>	<u>363/150</u>	<u>363/500</u>	<u>363/1000</u>
Frequency Range	2-30 MHz	2-150 MHz	150-500 MHz	500-100 MHz
Power Output (50 ohms load)	800 W min	200 W min	200 W min	100 W min
Compression	1 dB max @ 500 W	1 dB max @ 120 W	1 dB max @ 120 W	1 dB max @ 50 W
Gain/Sens (max mW in for W out)	13 dB min (40 W for 800 W)	53 dB min (1mW for 200 W)	53 dB min (1 mW for 200 W)	50 dB min (1 mW for 100 W)
Gain Variation	±3.0 dB max	±3.0 dB gain	±3.0 dB gain	±3.0 dB gain
Harmonics w/filter unit at full rated output	-40 dBc max	-40 dBc max	-40 dBc max	-40 dBc max

Leading Particulars (cont)

Item	Characteristics			
AMPLIFIER (cont):	<u>363/30</u>	<u>363/150</u>	<u>363/500</u>	<u>363/1000</u>
Spurious Response	-60 dBc min	-60 dBc min	-60 dBc min	-60 dBc min
Noise Figure	N/A	9 dB max	12 dB max	12 dB max
VSWR Protection (All phase angles)	Yes	Yes	Yes	Yes
Over Temp. (Shutdown)	Auto Reset	Auto Reset	Auto Reset	Auto Reset
Operating Ambient	0-50° C	0-50° C	0-50° C	0-50° C

Output Meter (50 ohms load)

High Range	±1 dB @ 800 W	±1 dB @ 200 W	±1 dB @ 200 W	±1 dB @ 100W
Low Range	±1 dB @ 200 W	±1 dB @ 100 W	±1 dB @ 100 W	±1 dB @ 50 W

Required AC Power All Units: 120/208 VAC 10% 3Ø (Y) 50-60 Hz 10%

SYSTEM CONTROLLER:

Model No.	<u>363/488</u>
Voltmeter Accuracy	±5% F.S.
Ammeter Accuracy	±5% F.S.
Sampling Accuracy	25-1000 MHz -50 dBc ±2 dB; sloping to -66 dBc ±5 dB at 2 MHz
Unit Insertion Loss	2 dB max
Input Power	120/208 VAC 10% 3Ø (Y) 50-60 Hz 10%