

52



C/P

SERVICE MANUAL **2270**



**marantz**

model 2270

*Stereophonic Receiver*

**TABLE OF CONTENTS**

	<b>PAGE</b>
Introduction .....	1
Service Notes .....	1
AM Tuner .....	1
FM Tuner .....	2
Phono and Tone Amplifiers .....	4
Power Amplifier .....	4
Power Protection Circuit .....	5
Speaker Protection Relay Circuit .....	5
Suggestion for Trouble Shooting of Power Amplifier .....	5
Voltage Conversion .....	6
Test Equipment Required for Servicing .....	8
AM Alignment Procedure .....	9
FM Alignment Procedure .....	9
Stereo Separation Alignment .....	9
Muting Circuit Alignment .....	10
Audio Adjustment .....	10
Parts List .....	23
Specifications .....	33

**LIST OF ILLUSTRATIONS**

<b>FIGURE NO</b>		<b>PAGE</b>
1.	Remove the Terminal Cover .....	6
2.	Voltage Conversion Chart .....	7
3.	Lissajou Figure on Oscilloscope .....	11
4.	Dial Stringing .....	11
5.	Front Panel Adjustment and Component Locations .....	12
6.	Main Chassis Component Locations (Top View) .....	12
7.	Rear Panel Adjustment and Component Locations .....	13
8.	Main Chassis Component Locations (Bottom View) .....	13
9.	FM Front End Assembly P100 Component Locations .....	14
10.	FM IF Amplifier Assembly P200 Component Locations .....	14
11.	FM Detector Assembly P500 Component Locations .....	15
12.	MPX Stereo Decoding Amplifier Assembly P300 Component Locations .....	15
13.	Muting Control Amplifier Assembly P550 Component Locations .....	16
14.	AM Tuner Unit Assembly P150 Component Locations .....	16
15.	Phono Amplifier Assembly P700 Component Locations .....	17
16.	Tone Amplifier Assembly P400 Component Locations .....	17
17.	Tone Control Unit Assembly P450 Component Locations .....	18
18.	Power Amplifier Assembly P750 Component Locations .....	19
19.	Regulated Power Supply and Protection Relay Circuit Assembly P800 Component Locations .....	20
20.	Mono, High and Low Filter Switch Unit Assembly P600 Component Locations .....	21
21.	Loudness, Muting and Speakers Switch Assembly P650 Component Locations .....	21
22.	Schematic Diagram .....	22

## INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for Marantz Model 2270 Stereophonic Receiver.

Service information and voltage data included in this manual are intended for use by the knowledgeable and experienced technician only. All instructions should be read carefully. No attempt should be made to proceed without a good understanding of the operation in the receiver.

The parts list furnishes information by which replacement parts may be ordered from the Marantz Company. A simple description is included for parts which can usually be obtained through local suppliers.

### 1. Service Notes

As can be seen from the circuit diagram the chassis of Model 2270 consists of the following units. Each unit mounted on a printed circuit board is described within the square enclosed by a bold dotted line on the circuit diagram.

- |                                                         |                            |
|---------------------------------------------------------|----------------------------|
| 1. FM Front End                                         | mounted on P.C. Board P100 |
| 2. FM IF Amplifier                                      | mounted on P.C. Board P200 |
| 3. FM Detector                                          | mounted on P.C. Board P500 |
| 4. MPX Stereo Decoding Amplifier                        | mounted on P.C. Board P300 |
| 5. Muting Control Amplifier                             | mounted on P.C. Board P550 |
| 6. AM Tuner Unit                                        | mounted on P.C. Board P150 |
| 7. Phono Amplifier                                      | mounted on P.C. Board P700 |
| 8. Tone Amplifier                                       | mounted on P.C. Board P400 |
| 9. Tone Control Unit                                    | mounted on P.C. Board P450 |
| 10. Power Amplifier                                     | mounted on P.C. Board P750 |
| 11. Regulated Power Supply and Protection Relay Circuit | mounted on P.C. Board P800 |
| 12. Mono, High and Low Filter Switch unit               | mounted on P.C. Board P600 |
| 13. Loudness, Muting and Speakers Switch unit           | mounted on P.C. Board P650 |

### 2. AM Tuner

All components except Tuning capacitor and ferrite bar antenna are mounted on a printed circuit board P150.

The AM signals induced in a ferrite bar antenna are applied to the base of RF amplifier transistor H151 through a capacitor of C151 and amplified to the level required for overcoming the conversion noises, thus giving good S/N performance. The tuned circuits inserted in both out-and-in put circuit of the RF amplifier assure very high image and spurious rejection performance. Thus amplified and selected AM signals are then applied to the base of converter transistor H152 through a coupling capacitor C156. While the local oscillator voltage is injected to the emitter of H152 through a capacitor C157. Both AM signals and oscillating voltage are mixed at the base-emitter junction and converted into 455KHz intermediate frequency. The resulting IF signal is applied to the first IF transformer L153 consisting of one ceramic filter and two tuned circuits.

The output of L153 is led to the transistor H153 which in turn applies its output to the transistor of next stage H154. The fully amplified IF output is then applied to the diode H157 to detect audible signal through the detector transformer L154. The detected audio signal is filtered and amplified and the final audio output is obtained from the collector of H155 and applied: one to the tape out jacks through monitor switch on the front panel and the other to the function rotary switch.

The DC component of the detected IF signal is used as a AGC voltage to control emitter current of H153 which in turn controls the bias current of the RF amplifier through the resistor R179 and R151. A part of IF signal output is also applied to the diode H158 through a capacitor C167 and rectified to obtain DC current for energizing the AM signal strength meter M001.

