

TABLE OF CONTENTS

Section I

General Information

1-1.	Introduction	1-1
1-3.	Manual Summary	1-1
1-5.	Specifications	1-1
1-7.	Safety Considerations	1-1
1-10.	Description	1-1
1-25.	Options	1-2
1-32.	Instrument Identification	1-2
1-34.	Accessories	1-2
1-38.	Recommended Test Equipment	1-2

Section II

Installation

2-1.	Introduction	2-1
2-3.	Unpacking and Inspection	2-1
2-5.	Preparation for Use	2-1
2-6.	Power Requirements	2-1
2-8.	Line Voltage Selection	2-1
2-10.	AC Line Fuse Selection	2-1
2-12.	DC Fuse Selection	2-1
2-15.	Power Cable	2-1
2-17.	HP-IB Interconnections	2-2
2-21.	HP-IB Talk/Listen Address Switch	2-2
2-23.	HP-IB Description	2-4
2-25.	Channel B Input Fuse	2-4
2-27.	Operating Environment	2-4
2-31.	Storage and Shipment	2-5
2-32.	Environment	2-5
2-35.	Packaging	2-5
2-38.	Where to Ship Your Unit for Repair	2-5
2-40.	Field Installation of Options	2-5
2-44.	Option 001 (TCXO) Installation	2-5
2-46.	Option 004 Oven Oscillator Installation	2-6
2-47.	Option 005 Battery Pack Installation	2-6

Section III

Operation and Programming

3-1.	Introduction	3-1
3-3.	Operating Characteristics	3-1
3-6.	Operating Instructions	3-1
3-10.	Operator's Maintenance	3-1
3-13.	General Operation Information	3-1
3-14.	Introduction	3-1
3-16.	Display	3-2
3-19.	Keyboard	3-2
3-22.	Inputs	3-2
3-24.	Power-Up/Self-Check	3-2
3-28.	Error Messages	3-3
3-35.	Front Panel Features	3-3
3-38.	ON/STBY	3-3
3-40.	A Channel	3-4
3-50.	B Channel and A&B	3-4
3-56.	GATE and DISPLAY Digits	3-5
3-67.	RESET/LOCAL and CHECK	3-5
3-73.	Inputs	3-6
3-81.	Rear Panel Features	3-7

Section III Operation and Programming (Continued)

3-91.	External DC Operation	3-7
3-93.	Making Frequency and Period Measurements	3-7
3-95.	Remote Programming	3-11
3-96.	Introduction	3-11
3-100.	Interface Description	3-11
3-102.	Hewlett-Packard Interface Bus (HP-IB)	3-11
3-104.	Interface Functional Overview	3-11
3-108.	Interface Systems Terms	3-11
3-110.	Address Selection	3-12
3-114.	Interface Commands	3-13
3-117.	Interface Capabilities	3-13
3-121.	Meta Messages	3-14
3-126.	SRQ, SRQ Mask, and Status Byte	3-14
3-127.	SRQ and Status Byte	3-14
3-132.	Service Request Mask	3-15
3-134.	Device Dependent Commands	3-15
3-136.	Output Formats	3-15
3-139.	Numeric Entry	3-16
3-143.	IN Initialize	3-16
3-148.	DR (string) Remote Display	3-16
3-155.	DL Display Local	3-17
3-157.	ID and SI Send Device ID	3-17
3-159.	SE Send Error	3-17
3-161.	LCD Character Set	3-17
3-163.	Program Examples	3-17
	Example 1. Instrument Identification	3-18
	Example 2. Reading Status Byte	3-19
	Example 3. Frequency A	3-20
	Example 4. Remote Display	3-20

Section IV Performance Testing

4-1.	Introduction	4-1
4-3.	Equipment Required	4-1
4-5.	Test Record	4-1
4-7.	Error Messages	4-1
4-9.	Performance Test	4-1

Section V Adjustments

5-1.	Introduction	5-1
5-4.	Equipment Required	5-1
5-6.	Adjustment Locations	5-1
5-8.	Safety Considerations	5-1
5-10.	HP 5384A/HP 5385A Adjustment Procedures	5-1
5-11.	HP 5384A/HP 5385A +3 Volt dc Adjustment Procedure	5-1
5-13.	HP 5385A/HP 5385A Channel A Input Amplifier Adjustment Procedure	5-2
5-15.	HP 5384A Channel B Input Amplifier Adjustment Procedure	5-4
5-17.	HP 5385A Channel B Input Amplifier Adjustment Procedure	5-4
5-19.	Standard Oscillator Adjustment Procedures	5-5
5-21.	TCXO Adjustment Procedure	5-5
5-25.	Oven Oscillator Adjustment Procedure	5-7
5-26.	HP 5384A/HP 5385A Battery Charger Adjustment Procedure	5-7

Section VI Replaceable Parts

6-1.	Introduction	6-1
6-2.	Special Parts Replacement Considerations	6-1
6-3.	Abbreviations and Reference Designations	6-1
6-4.	Replaceable Parts List	6-1

Section VI Replaceable Parts (Continued)

6-5.	How to Order a Part	6-1
6-6.	Parts Identification	6-1
6-7.	Contacting Hewlett-Packard	6-1
6-8.	Cabinet Parts and Hardware	6-2

Section VII Manual Changes

7-1.	Introduction	7-1
7-3.	Manual Changes	7-1
	Example 5. Frequency A Measurement	7-8

Section VIII Service

8-1.	Introduction	8-1
8-3.	Schematic Diagram Symbols and Reference Designators	8-1
8-5.	Reference Designations	8-1
8-7.	Identification Markings on Printed Circuit Boards	8-1
8-11.	Safety Considerations	8-2
8-16.	Safety Symbols	8-2
8-18.	Recommended Test Equipment	8-2
8-20.	Service Aids	8-2
8-21.	Pozidrive Screwdrivers	8-2
8-23.	Nut Drivers	8-2
8-25.	Service Aids on Printed Circuit Boards	8-3
8-27.	After Service Safety Checks	8-3
8-32.	HP 5384A and HP 5385A Disassembly Procedures	8-3
8-35.	Assembly Identification	8-3
8-37.	Logic Symbols	8-5
8-39.	Explanation of New Logic Symbols (by F. A. Mann)	8-5
8-40.	Introduction	8-5
8-52.	Qualifying Symbols	8-7
8-65.	Dependency Notation	8-10
8-125.	Bistable Elements	8-17
8-129.	Coders	8-18
8-137.	Use of Binary Grouping to Produce Affecting Inputs	8-19
8-139.	Sequence of Input Labels	8-19
8-144.	Sequence of Output Labels	8-20
8-151.	Theory of Operation	8-20
8-152.	Overall Counter Operation	8-20
8-167.	Signal Descriptions	8-22
8-169.	Detailed Theory of Operation	8-23
8-177.	HP 5384A Channel B	8-23
8-182.	HP 5385A Channel B	8-23
8-193.	3870 Microcomputer	8-24
8-200.	Interpolator Technique	8-24
8-207.	HP-IB	8-26
8-213.	Power Supply	8-27
8-229.	Battery Pack Charger	8-27
2-241.	Troubleshooting	8-28
8-242.	Introduction	8-28
8-246.	Built-in Diagnostics	8-28
8-248.	Accessing the Built-In Diagnostics	8-29
8-252.	Power-Up Self-Check	8-29
8-255.	CPU Check	8-29
8-258.	I/O Address	8-29
8-261.	Interpolator, Long and Short Calibration	8-29
8-266.	Microprocessor Port Check	8-30
8-269.	Manual Troubleshooting	8-30
8-271.	Power Supply Troubleshooting	8-30

Section VIII Service (Continued)

8-272.	Oscillator Troubleshooting	8-31
8-276.	Input Amplifier Troubleshooting	8-31
8-280.	Battery Pack Troubleshooting	8-36
8-282.	Battery Charger Board Troubleshooting	8-36
8-286.	Charging Circuit Troubleshooting Test	8-36
8-288.	Battery Load Current Test	8-36
8-290.	Shut-Down Voltage Test	8-37
8-292.	Battery Tests	8-37
8-294.	Charge State	8-37
8-297.	Capacity Test	8-37
8-299.	HP-IB Interface Assembly (A5 Board) Troubleshooting	8-38