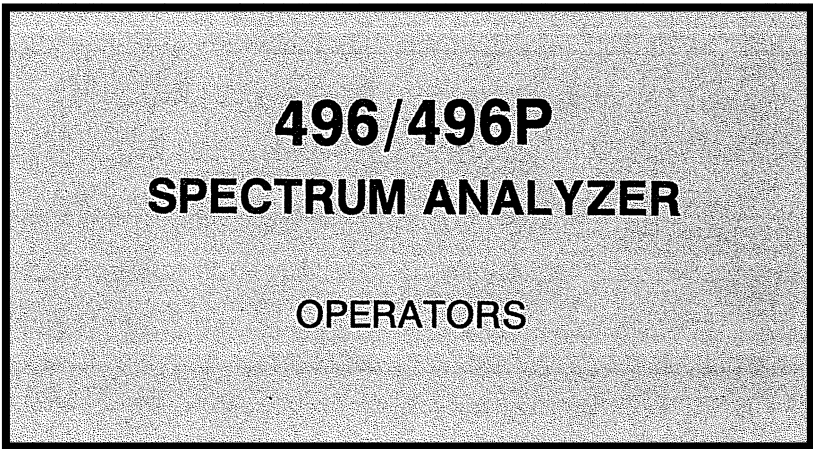


**Tektronix**<sup>®</sup>  
COMMITTED TO EXCELLENCE

Qservice - 496 Operators manual Sample - Qservice

PLEASE CHECK FOR CHANGE INFORMATION  
AT THE REAR OF THIS MANUAL.



INSTRUCTION MANUAL

Tektronix, Inc.  
P.O. Box 500  
Beaverton, Oregon 97077

Serial Number \_\_\_\_\_

# TABLE OF CONTENTS

	Page		Page
LIST OF ILLUSTRATIONS .....	iii	<b>Section 3</b>	<b>OPERATION (cont)</b>
LIST OF TABLES .....	iii		
OPERATORS SAFETY SUMMARY .....	v		3. Calibrate Reference Level and Dynamic Range .....
SERVICE SAFETY SUMMARY .....	vii		Functional or Operational Check. . . . .
<b>Section 1</b>			1. Check Operation of Front-Panel Push Buttons and Controls . . . . .
<b>GENERAL INFORMATION AND SPECIFICATION</b>			2. Check Frequency Readout Accuracy .....
General Information .....	1-1		3. Check Frequency Span/Div Range and Accuracy .....
Introduction .....	1-1		4. Check Resolution Bandwidth and Shape Factor .....
Standards, Documents, and References Used .....	1-1		5. Check Reference Level Gain and RF Attenuation Steps. . . . .
Change and History Information . . . . .	1-1		6. Check Sensitivity .....
Product Description .....	1-1		7. Frequency Drift .....
Specification .....	1-2		8. Check Residual FM .....
Electrical Characteristics .....	1-2		9. Digital Storage .....
Frequency Related .....	1-2		General Operating Information .....
Amplitude Related .....	1-4		Firmware Version and Error
Input Signal Characteristics . . . . .	1-7		Message Readout .....
Output Signal Characteristics . . . . .	1-7		Crt Light Filters .....
General Characteristics .....	1-8		Intensity Level, Focus, and Beam Alignment .....
Power Requirements .....	1-8		Signal Application .....
Environmental Characteristics . . . . .	1-9		RF INPUT Connector .....
Physical Characteristics .....	1-11		Amplitude Conversion .....
Accessories .....	1-12		Connecting to 75 $\Omega$ Source . . . . .
Options .....	1-12		Resolution Bandwidth, Frequency Span, and Sweep Time .....
Options for Power Cord Configuration	1-13		Phaselock Operation .....
<b>Section 2</b>			Using the Video Filter .....
<b>INSTALLATION AND REPACKAGING</b>			Zero Span Operation .....
Introduction .....	2-1		Triggering the Display .....
Unpacking and Initial Inspection . . . . .	2-1		Sweeping the Display .....
Preparation For Use .....	2-1		Manual Scan of the Spectrum . . . . .
Power Source and Power Require- ments .....	2-1		Reference Level, RF Attenuation, and Vertical Display .....
Repackaging for Shipment .....	2-2		Delta A Mode .....
<b>Section 3</b>			MIN NOISE/MIN DISTORTION . . . . .
<b>OPERATION</b>			Digital Storage .....
Controls, Indicators, and Connectors	3-1		496P GPIB Controls, Indicators, and Connectors .....
Firmware Version and Error	3-6		Reset to Local (REMOTE) . . . . .
Message Readout .....	3-6		496P TALK/LISTEN-Only Operation .....
Turn On Procedure and Preparation For Use .....	3-6		
1. Initial Turn On .....	3-6		
2. Calibrate Center Frequency Readout .....	3-7		

# TABLE OF CONTENTS (cont)

Section 3	OPERATION (cont)	Page
	Data Logging .....	3-26
	Restoring Control Settings and Display .....	3-27
	Connecting to a System .....	3-27
	Operational Precautions .....	3-27
	1. Signal FM .....	3-27
	2. Correct Trigger Mode .....	3-27
	3. Level of Pulsed Signals .....	3-27
	4. Level of Continuous Wave Signals .....	3-28
	5. Excessive Input Signal Level .....	3-28
	6. No Crt Trace .....	3-28
	7. Digital Storage Effects on Signal Analyses ...	3-28
	8. Stored Display Averaged in Wide Spans .....	3-28
	9. Cold Storage or Power-Interrupt Initialization ...	3-28
	Service Manual .....	3-28
	Product Service .....	3-28
<b>Section 4</b>	<b>OPTION INFORMATION .....</b>	<b>4-1</b>
<b>Appendix A</b>	<b>GLOSSARY .....</b>	<b>A-1</b>
	<b>CHANGE INFORMATION</b>	

Qservice - 496 Operators Manual Sample - Qservice

# LIST OF ILLUSTRATIONS

Fig. No.	Page	Fig. No.	Page
1-1	Probe Power Connector . . . . .	1-9	
1-2	Dimensions . . . . .	1-11	
1-3	International power and plug configuration for the 496. . . . .	1-13	
3-1	Front panel selectors, controls, and connectors . . . . .	3-1	
302	Rear panel connectors . . . . .	3-5	
3-3	Crt readout for power-up state. . . . .	3-6	
3-4	Typical display of calibrator markers in MAX SPAN position. . . . .	3-7	
3-5	Display that illustrates how bandwidth and shape factor are determined. . . . .	3-12	
3-6	Typical display using digital storage with MAX HOLD activated, to measure drift . . .	3-14	
3-7	Display to illustrate how residual FM is measured . . . . .	3-15	
3-8	Using digital storage to measure the differential between two events . . . . .	3-16	
3-9	Volts-dBm-Watts conversion chart for 50 $\Omega$ impedance . . . . .	3-17	
3-10	Circuit of a 75 $\Omega$ to 50 $\Omega$ matching pad (ac coupled). . . . .	3-18	
3-11	Graph to illustrate the relationship between dBm, dBmV, and dB $\mu$ V (matching attenuator included where necessary) . . . . .	3-18	
3-12	Integrating the display with the Video Filter . . . . .	3-12	
3-13	GPIB control and indicators on the front panel . . . . .	3-22	
3-14	Status of GPIB functions indicated when active . . . . .	3-23	
3-15	The 496P GPIB port and switches . . . . .	3-24	
3-16	GPIB address, LF, DOI, TALK-ONLY and LISTEN-ONLY switches . . . . .	3-25	
3-17	The TEKTRONIX 4924 Digital Cartridge . . . . .	3-25	
3-18	Controls on the 4924 and 496P used for the TALK/LISTEN only data transfers . . . . .	3-26	

# LIST OF TABLES

Table	Page
1-1 Electrical Characteristics . . . . .	1-2
1-2 Environmental Characteristics. . . . .	1-9
1-3 Physical Characteristics . . . . .	1-11
2-1 Shipping Carton Test Strength. . . . .	2-2