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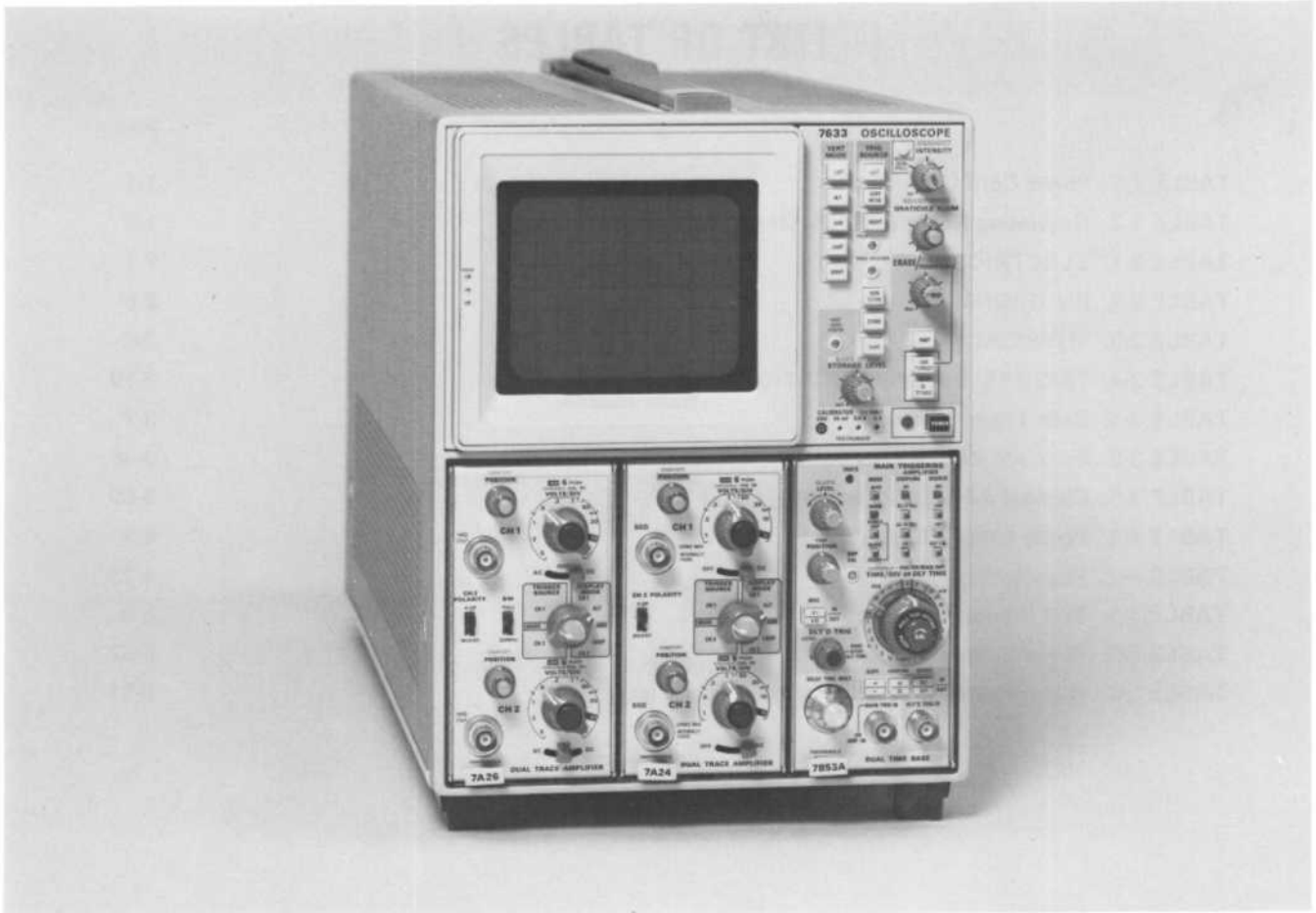
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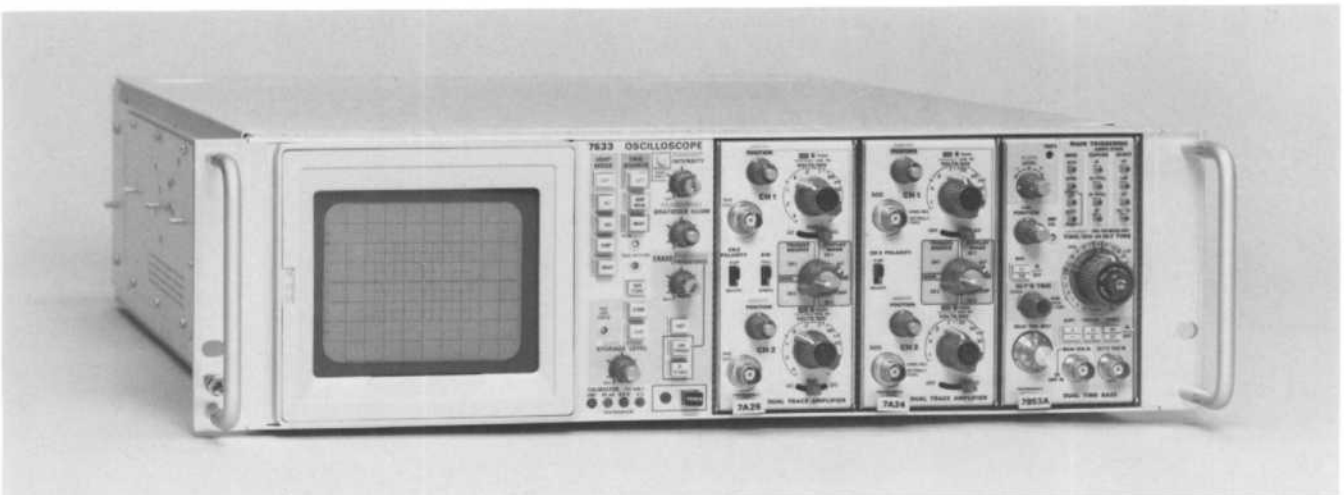
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The Tektronix 7633/R7633 Storage Oscilloscope is a solid-state instrument especially designed for fast writing rate storage applications. The 7633 operates in three display modes—NON STORE, STORE, and SAVE, and four storage modes—BISTABLE, VAR PERSIST, FAST BISTABLE, and FAST VAR PERSIST. The display and storage functions can be operated in either a full scan or a Reduced Scan mode. In FAST VAR PERSIST, the Reduced Scan feature effectively increases the writing speed approximately seven times. The instrument accepts any Tektronix 7-Series plug-in units to form a highly flexible measurement system.



OPERATING INFORMATION

PRELIMINARY OPERATION

To effectively use the 7633/R7633 Storage Oscilloscope, the operation and capabilities of the instrument must be known. This section provides preliminary operating information, describes operation of controls and connectors, and provides general operating information.

AC POWER SOURCES

This instrument is intended to be operated from a single-phase, earth-referenced power source having one current-carrying conductor (the Neutral Conductor) near earth potential. Operation from power sources where both current-carrying conductors are live with respect to earth (such as phase-to-phase on a three-wire system) is not recommended since only the Line Conductor has over-current (fuse) protection within the instrument.

AC POWER CORD

This instrument has a three-wire power cord with a three-terminal polarized plug for connection to the power source and safety-earth. The safety-earth terminal of the plug is directly connected to the instrument frame. For electric-shock protection, insert this plug only in a mating outlet with a safety-earth contact or otherwise connect the frame to a safety earth system. The color-coding of the cord conductors is in accordance with recognized standards as shown in Table 1-1.

TABLE 1-1
Power Cord Color Coding

Conductor	USA & Canada	IEC
Line	Black	Brown
Neutral	White	Blue
Safety-Earth	Green with Yellow stripe	Green with Yellow stripe

OPERATING VOLTAGE

The 7633/R7633 can be operated from either a 110-volt or a 220-volt nominal line-voltage source. In addition, three operating ranges can be selected within each nominal line voltage source. Use the following procedure to obtain correct instrument operation from the line voltage available:

1. Disconnect the instrument from the power source.
2. Remove the six screws securing the power unit (nine screws in the R7633; see Figure 1-1).
3. Slide the power unit out of the rear of the chassis.

If correct triggering for the desired display is not obtained in the VERT MODE position, the LEFT or RIGHT positions can be used to obtain the trigger signal from either the left vertical or right vertical plug-in unit. The internal trigger signal is obtained from the selected vertical compartment, whether the plug-in unit in that compartment is selected for display on the crt or not. If the internal trigger signal is obtained from one of the vertical units, but the other vertical unit is selected for display, the internal trigger signal must be time-related to the displayed signal in order to obtain a triggered (stable) display.

X-Y OPERATION

For some applications, it is desirable to display one signal versus another (X-Y) rather than against time (internal sweep). The flexibility of the plug-in units available for use with the 7633 provides a means for applying an external signal to the horizontal deflection system for this type of display. Some of the 7B-series time-base units can be operated as amplifiers in addition to their normal use as time-base generators. This feature allows an external signal to provide the horizontal deflection on the crt. For most of the time-base units with the amplifier function, the X (horizontal) signal can be connected either to an external input connector on the time-base unit or it can be routed to the time-base unit through the internal triggering system (see time-base instruction manual for details). If the latter method is used, the TRIG SOURCE switch must be set so that the X (horizontal) signal is obtained from one of the vertical units and the Y (vertical) signal is obtained from the other vertical unit. The advantages of using the internal trigger system to provide the X signal are that the attenuator switch of the amplifier unit providing the horizontal signal determines the horizontal deflection factor to allow full-range operation. The plug-in units do not have to be removed between compartments when X-Y operation is desired.

Another method of obtaining an X-Y display is to install an amplifier plug-in unit in the horizontal plug-in compartment (check amplifier unit gain as given in the plug-in instruction manual to obtain calibrated horizontal deflection factors). This method provides the best X-Y display, particularly if two identical amplifier units are used, since both the X and Y input systems will have the same delay time, gain characteristics, input coupling, etc. For further information on obtaining X-Y displays, see the plug-in unit manuals. Also, the reference books listed under Applications provide information on X-Y measurements and interpreting the resultant lissajous displays.

INTENSITY MODULATION

Intensity (Z-axis) modulation can be used to relate a third item of electrical phenomena to the vertical (Y-axis) and the horizontal (X-axis) coordinates without affecting the waveshape of the displayed signal. The Z-axis modulating signal applied to the crt circuit changes the intensity of the displayed waveform to provide this type of display. 'Gray scale' intensity modulation can be obtained by applying signals which do not completely blank the display. Large amplitude signals of the correct polarity will completely blank the display; the sharpest display is provided by signals with a fast risetime and fall. The voltage amplitude required for visible trace modulation depends upon the setting of the INTENSITY control. A two-volt peak-to-peak signal will completely blank the display even at high intensity levels. Lower amplitude signals can be used to only change the trace brightness rather than completely blank the display. Negative-going modulating signals increase the display intensity and positive-going modulating signals decrease the

COLUMN NUMBER		C-0	C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10
ROW NUMBER	CURRENT (MILLI-AMPERES)	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	≥ 1.0
		0	0	1	2	3	4	5	6	7	8	9
R-1	0											
R-2	0.1			<	I	/	+	-	+	C	Δ	>
R-3	0.2		ADD ¹ ONE ZERO	ADD ¹ TWO ZEROS	SHIFT ¹ PREFIX	SHIFT ¹ PREFIX AND ADD ONE ZERO						IDENTIFY ¹
R-4	0.3		m	μ	n	p	X	K	M	G	T	R
R-5	0.4		S	V	A	W	H	d	B	c	Ω	E
R-6	0.5		U	N	L	Z	Y	P	F	J	Q	D
R-7	0.6				DECIMAL ¹ POINT LOCATION NO. 3	DECIMAL ¹ POINT LOCATION NO. 4	DECIMAL ¹ POINT LOCATION NO. 5	DECIMAL ¹ POINT LOCATION NO. 6	DECIMAL ¹ POINT LOCATION NO. 7			
R-8	0.7											
R-9	0.8											
R-10	0.9	ADD SPACE IN DISPLAY ¹										

UNUSED LOCATIONS. AVAILABLE FOR FUTURE EXPANSION OF READOUT SYSTEM.

¹ OPERATIONAL ADDRESS.

Figure 3-25. Character Selection Matrix for 7633 Readout System.

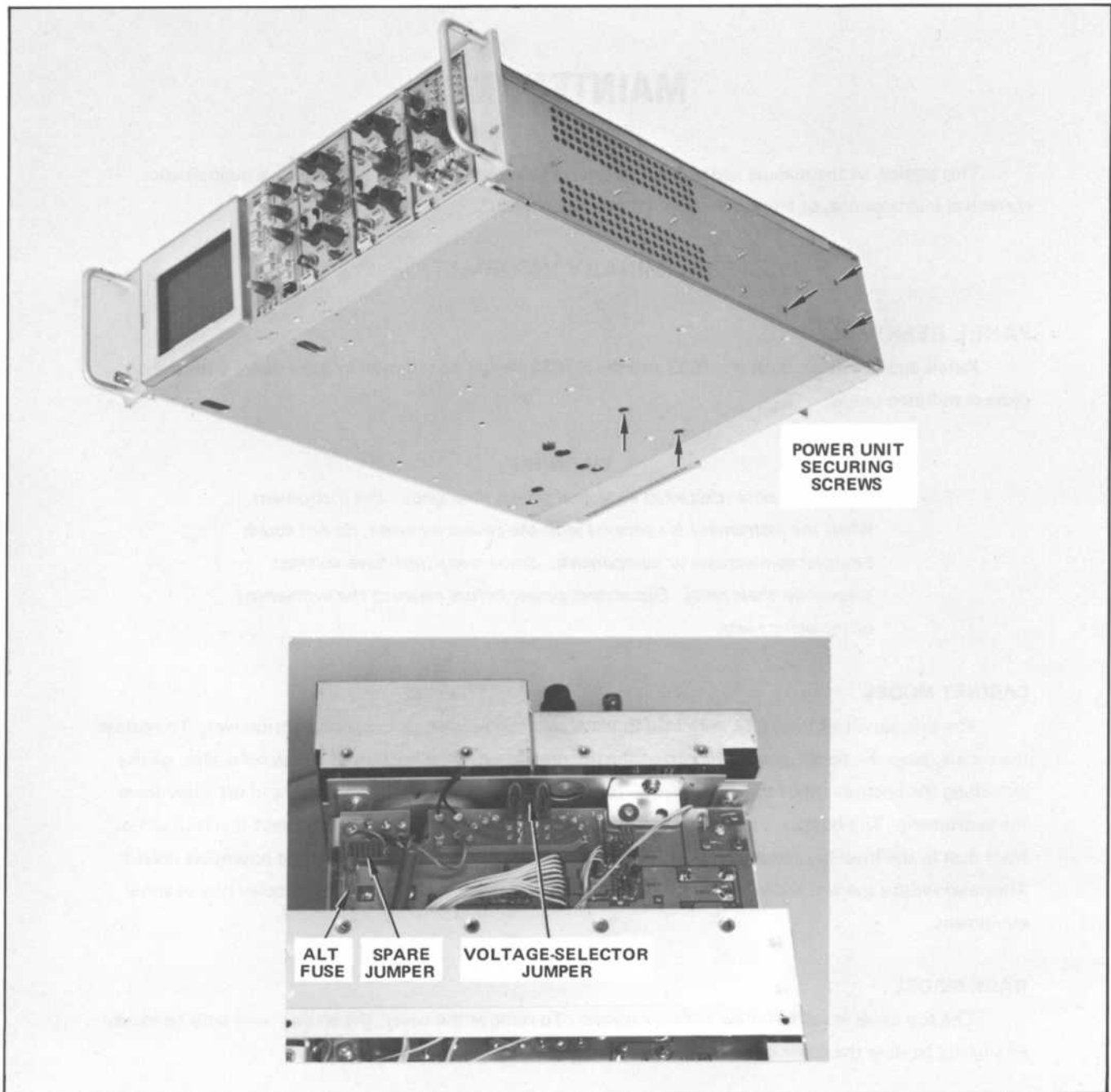


Figure 4-1. Power Unit removal.

POWER-UNIT REMOVAL

The power unit can be slid out of the back of the instrument to gain access to the Logic and Rectifier circuit boards and for power-unit maintenance. The power unit can be left connected to the rest of the instrument so that it can be operated in this position for troubleshooting. To remove the power unit, use the following procedure:

Electrical Parts List—7633/R7633 Service

Ckt No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
CR126	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR130	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR140	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR155	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR160	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR341	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR349	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR530	152-0153-00		SEMICON D DEVICE:SILICON,15V,50MA	13715	FD7003
CR531	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR532	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR533	152-0153-00		SEMICON D DEVICE:SILICON,15V,50MA	13715	FD7003
CR543	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR544	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR549	152-0153-00		SEMICON D DEVICE:SILICON,15V,50MA	13715	FD7003
CR621	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR622	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR635	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR641	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR672	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR674	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR676	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR806	152-0488-00		SEMICON D DEVICE:SILICON,200V,1500MA	14936	KBPO2-8
CR808	152-0488-00		SEMICON D DEVICE:SILICON,200V,1500MA	14936	KBPO2-8
CR811	152-0406-00		SEMICON D DEVICE:SILICON,200V,3A	83003	W601
CR820	152-0423-00		SEMICON D DEVICE:SILICON,300V,3A	04713	1N5000
CR821	152-0423-00		SEMICON D DEVICE:SILICON,300V,3A	04713	1N5000
CR852	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR861	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR867	152-0061-00		SEMICON D DEVICE:SILICON,175V,100MA	80009	152-0061-00
CR868	152-0061-00		SEMICON D DEVICE:SILICON,175V,100MA	80009	152-0061-00
CR875	152-0066-00		SEMICON D DEVICE:SILICON,400V,750MA	02735	37304
CR883	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR885	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR888	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR891	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR894	152-0141-02	XB110000	SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR895	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR896	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR903	152-0066-00		SEMICON D DEVICE:SILICON,400V,750MA	02735	37304
CR920	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR924	152-0061-00		SEMICON D DEVICE:SILICON,175V,100MA	80009	152-0061-00
CR925	152-0061-00		SEMICON D DEVICE:SILICON,175V,100MA	80009	152-0061-00
CR935	152-0066-00		SEMICON D DEVICE:SILICON,400V,750MA	02735	37304
CR941	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR950	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR951	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR952	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR958	152-0066-00		SEMICON D DEVICE:SILICON,400V,750MA	02735	37304
CR961	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR973	152-0061-00		SEMICON D DEVICE:SILICON,175V,100MA	80009	152-0061-00
CR980	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR981	152-0141-02		SEMICON D DEVICE:SILICON,30V,150MA	07910	1N4152
CR989	152-0066-00		SEMICON D DEVICE:SILICON,400V,750MA	02735	37304

VOLTAGES AND WAVEFORMS

The voltages and waveforms shown on this diagram were obtained using the recommended test equipment and test set-ups listed below.

RECOMMENDED TEST EQUIPMENT			
ITEM	SPECIFICATIONS		RECOMMENDED TYPE
Oscilloscope	Frequency response	DC to 65 MHz	Tektronix 7603 or 7613 equipped with 7A15A Amplifier and 7B53A Time-Base unit, or equivalent. A 7A13 Differential Comparator was used to obtain offset.
	Deflection factor	5 mV to 5 V/Div	
	Input impedance	10 M Ω , 20 pF	
	Sweep rate	500 ns	
Probe	Fast rise 10X attenuation probe compatible with the vertical amplifier of the test oscilloscope.		Tektronix P6053B, or equivalent.
Voltmeter (Non-Loading Digital Multimeter)	Input impedance	10 M Ω	Tektronix 7D13 Digital Multimeter (test oscilloscope must have readout system) or Tektronix DM 501 Digital Multimeter with power module, or equivalent.
	Range	0 to 500 V	

VOLTAGE MEASUREMENTS

Voltage measurements on this diagram were made under the following conditions:

- Set front panel controls (knob type) to mid-range.
- Set VERT MODE for CHOP.
- Set TRIG SOURCE for VERT MODE.
- Set for NON STORE condition.
- No plug-in units are installed.
- Voltmeter common is connected to chassis ground.

WAVEFORMS

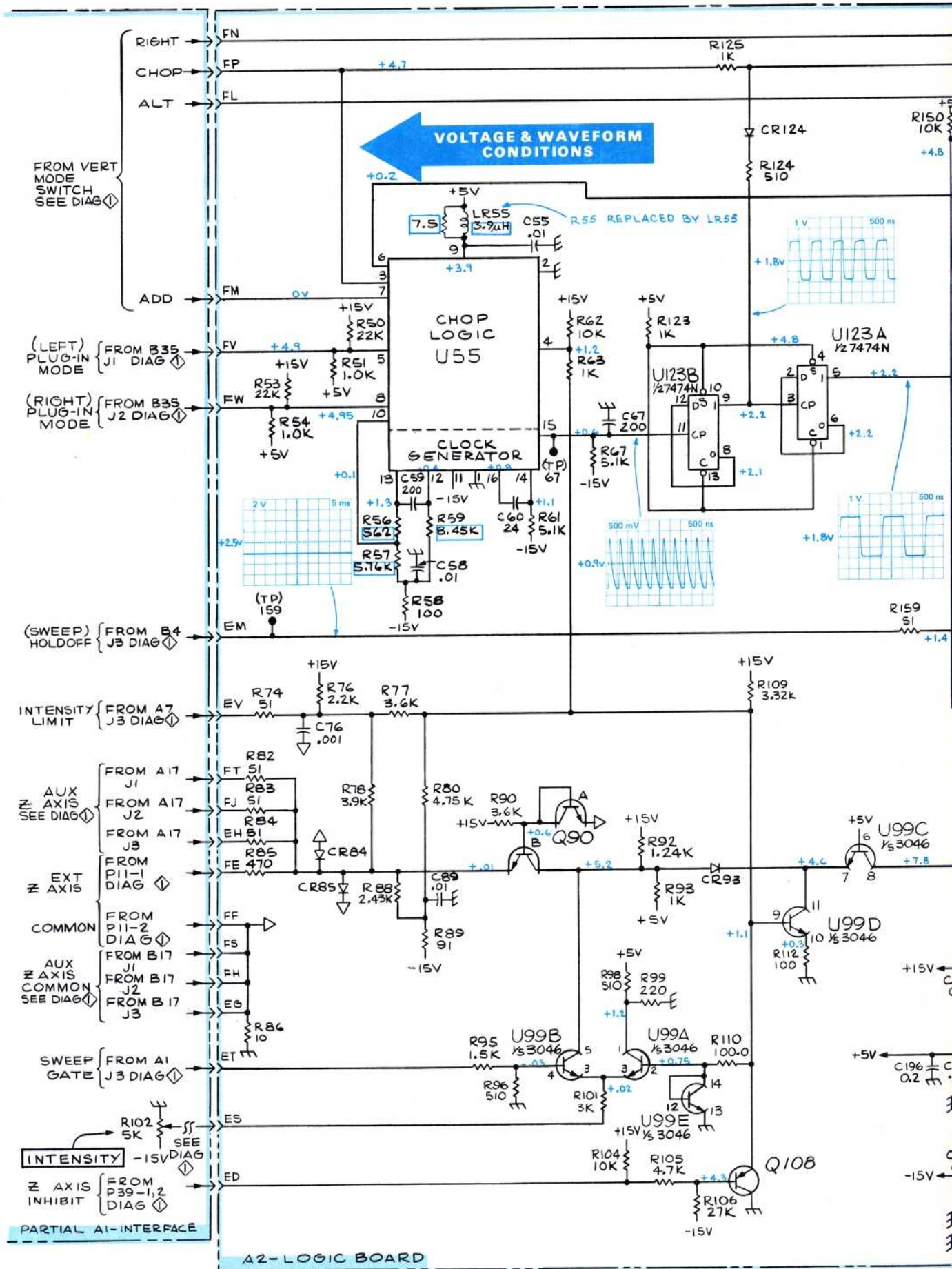
Waveforms shown on this diagram were obtained under the following conditions:

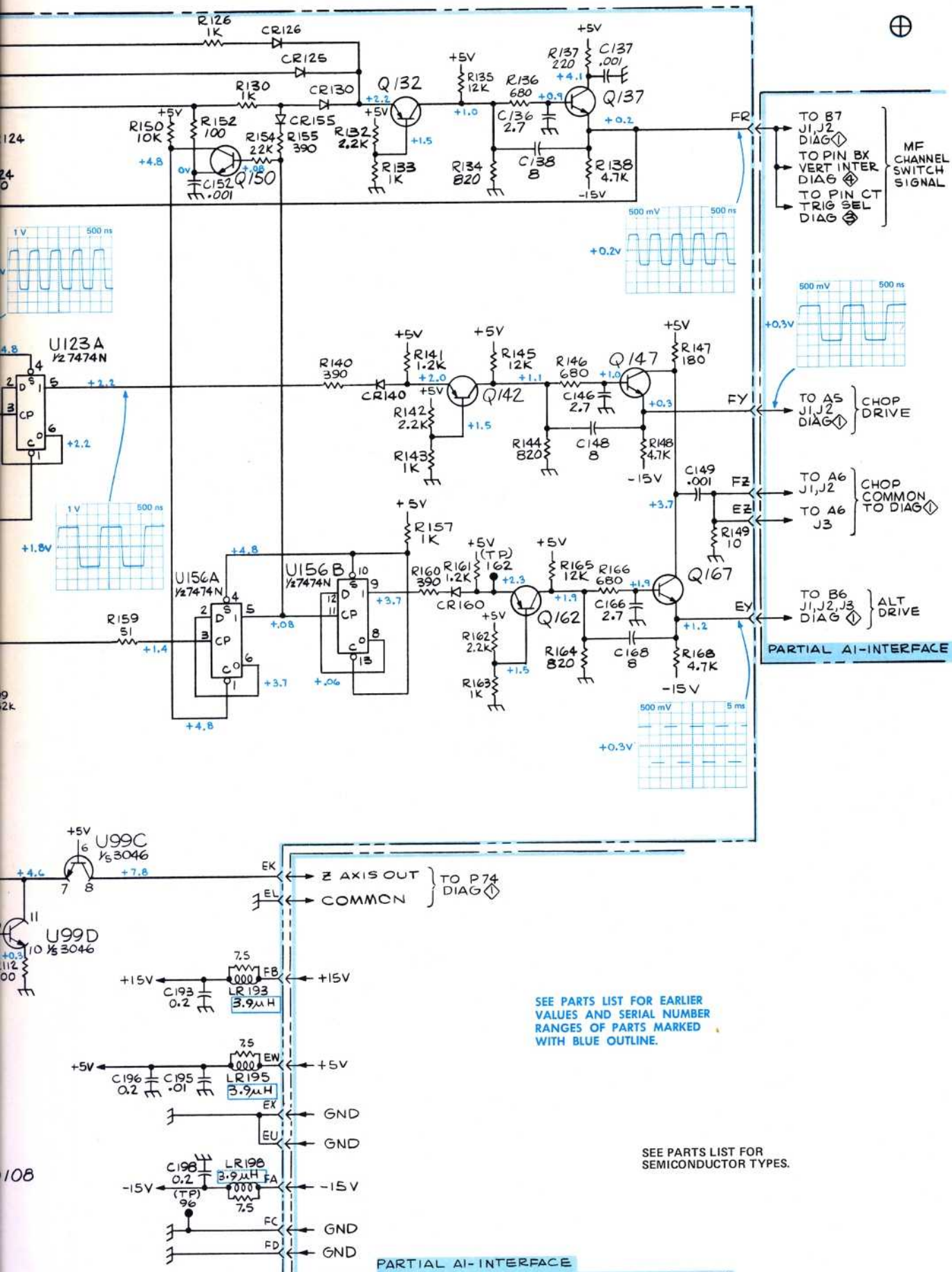
7633 OSCILLOSCOPE UNDER TEST. Front panel controls are set the same as for voltage measurements. A 7A15A Amplifier unit and a 7B53A Time-Base unit are installed in the mainframe under test. The test oscilloscope 4 Volts calibrator signal is applied to the amplifier unit. The amplifier unit is set for 1 V/division deflection centered on the crt. The 7B53A is set for internal auto-trigger, 0.5 ms/division sweep rate.

TEST OSCILLOSCOPE. The test oscilloscope is externally triggered from the +GATE OUT (MAIN) of the 7633 mainframe under test. The test oscilloscope is dc coupled.

Tolerances of voltages and waveforms shown are 20%.

Ⓐ





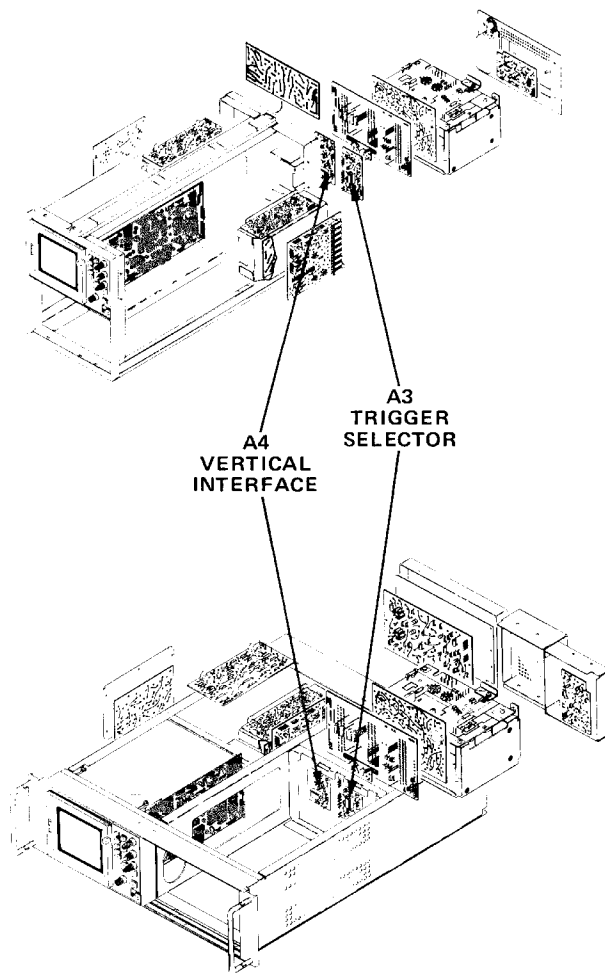
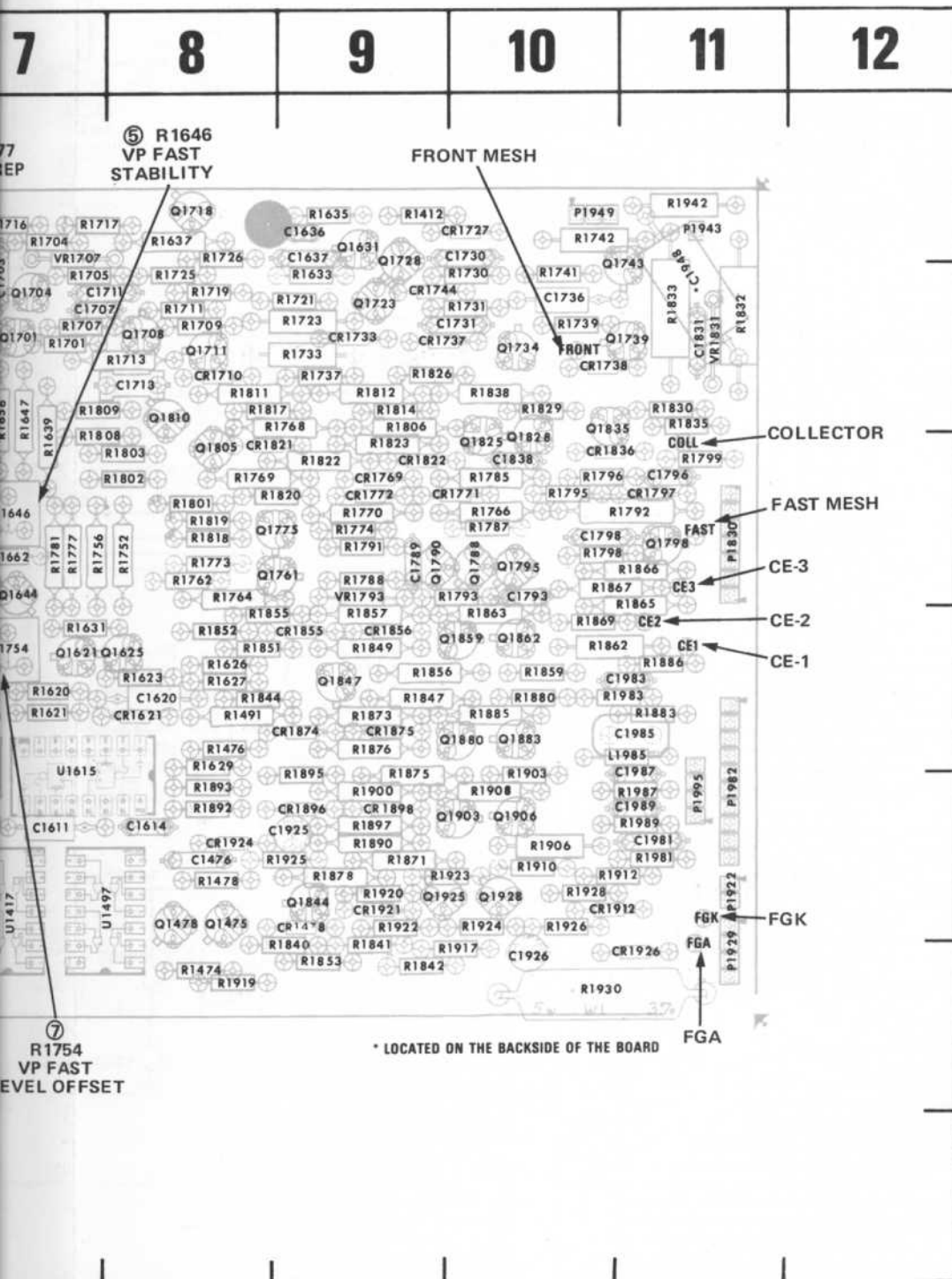


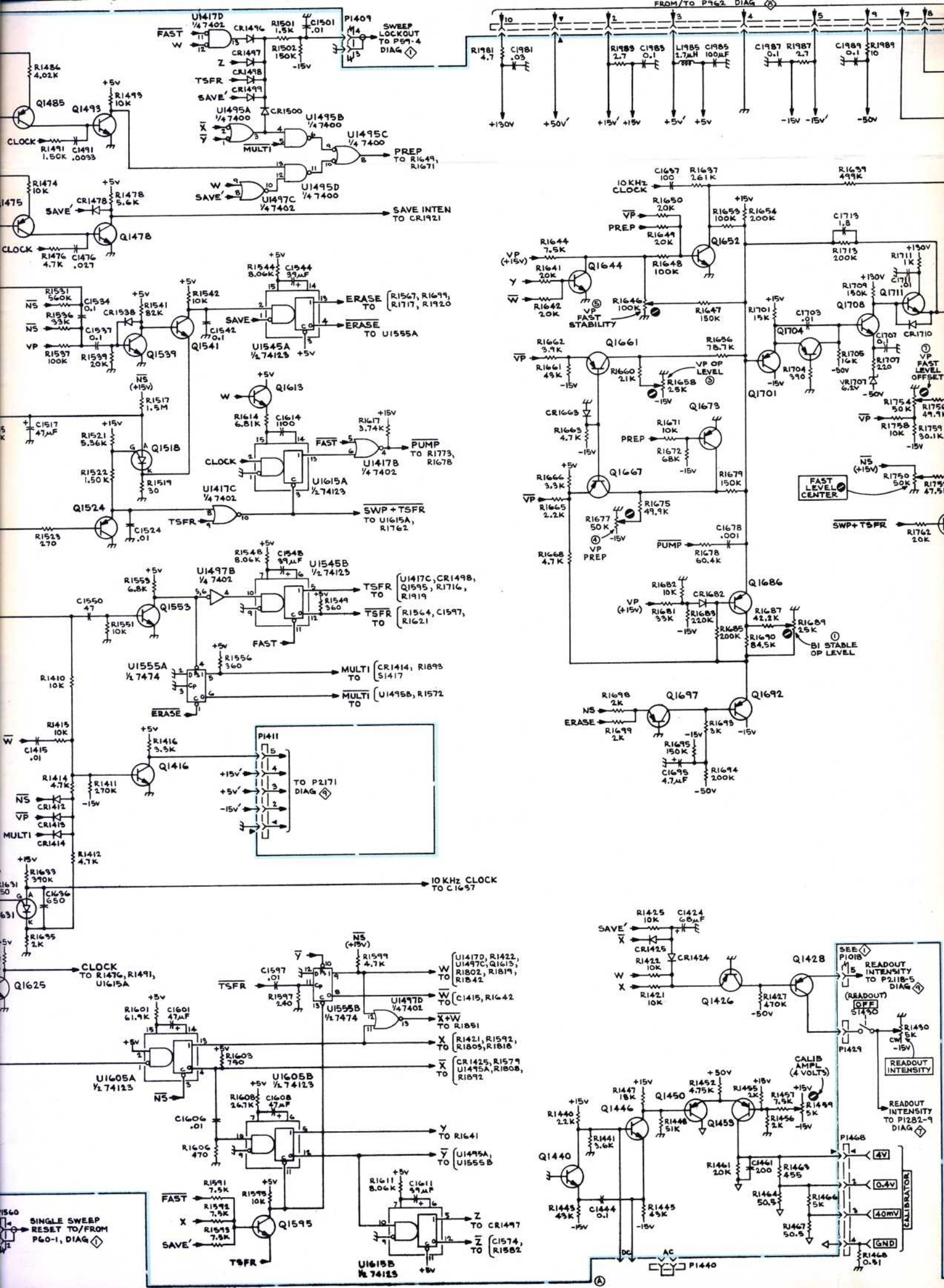


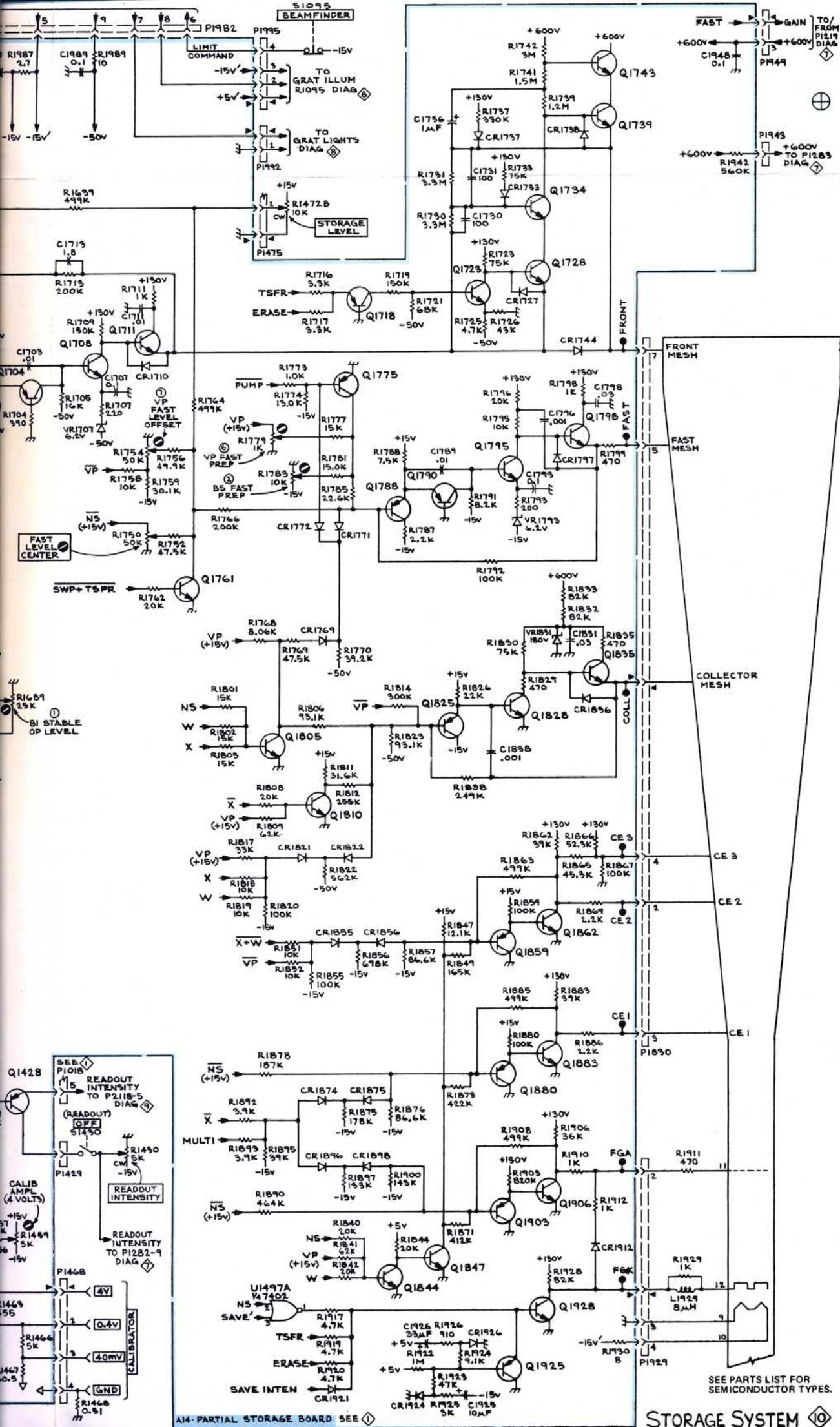
Figure 8-16. A14-Storage board.



CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO
C1415	3D	CR1500	3D	Q11
C1424	2C	CR1516	4B	Q11
C1444	5E	CR1538	4C	Q11
C1461	3E	CR1539	3C	Q11
C1476	8E	CR1579	3E	Q11
C1491	6D	CR1621	8D	Q11
C1501	1D	CR1663	5B	Q11
C1517	4B	CR1682	7B	Q11
C1534	4C	CR1710	8B	Q11
C1537	4C	CR1727	10A	Q11
C1542	5B	CR1733	9B	Q11
C1544	5D	CR1737	9B	Q11
C1548	5D	CR1738	10B	Q11
C1565	4D	CR1744	9B	Q11
C1574	5E	CR1769	9C	Q11
C1580	4E	CR1771	10C	Q11
C1583	4E	CR1772	9C	Q11
C1597	5C	CR1797	11C	Q11
C1601	5E	CR1821	8C	Q11
C1606	7D	CR1822	9C	Q11
C1608	6E	CR1836	10C	Q11
C1611	7E	CR1855	9D	Q11
C1614	8E	CR1856	9D	Q11
C1620	8D	CR1874	9D	Q11
C1636	9A	CR1875	9D	Q11
C1637	9A	CR1898	9E	Q11
C1695	5A	CR1896	9E	Q11
C1703	7B	CR1912	10E	Q11
C1707	7B	CR1921	9E	Q11
C1711	7B	CR1926	11F	Q11
C1713	8B			Q11
C1730	10A	L1985	11D	Q11
C1731	10B	P1013	3A	Q11
C1736	10B	P1018	3A	Q11
C1789	9C	P1023	2A	Q11
C1793	10C	P1409	3D	Q11
C1796	11C	P1028	3E	Q11
C1798	10C	P1404	3E	Q11
C1831	11B	P1411	3E	Q11
C1838	10C	P1429	2A	Q11
C1925	9E	P1440	5F	Q11
C1926	10F	P1468	3F	Q11
C1935	11D	P1475	6F	Q11
C1948	11B	P1488	3B	Q11
C1981	11E	P1539	3C	Q11
C1983	11D	P1560	4E	Q11
C1987	11E	P1830	11C	Q11
C1989	11E	P1922	11E	Q11
		P1929	11F	Q11
CEC	11C	P1943	11A	Q11
CE1	11D	P1982	11E	Q11
CE2	11D	P1995	11E	Q11
CR1021	2A	Q1416	3E	Q11
CR1024	2A	Q1426	3B	Q11
CR1412	1B	Q1428	2B	R10
CR1413	1B	Q1440	6E	R10
CR1414	4A	Q1446	5E	R10
CR1424	3B	Q1450	5E	R10
CR1924	8E	Q1453	4E	R12
CR1425	1B	Q1475	8E	R12
CR1478	9E	Q1478	8E	R12
CR1496	3D	Q1481	4B	R12
CR1497	6E	Q1485	4C	R14
CR1498	6E	Q1493	4C	R14
CR1499	3D	Q1513	4B	R14

CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC	CKT NO	GRID LOC
C1415	3D	CR1500	3D	Q1518	4B	R1416	3E	R1576	4E	R1704	7A	R1832	11B	U1497	7E
C1424	2C	CR1516	4B	Q1524	4C	R1414	1B	R1579	6E	R1705	7B	R1833	11B	U1545	5C
C1444	5E	CR1538	4C	Q1539	4C	R1415	3D	R1580	4E	R1707	7B	R1835	11B	U1555	6D
C1461	3E	CR1539	3C	Q1541	4C	R1418	2C	R1582	5E	R1709	8B	R1838	10B	U1605	6E
C1476	8E	CR1579	3E	Q1553	4C	R1419	1E	R1584	4E	R1711	8B	R1840	9F	U1615	7D
C1491	6D	CR1621	8D	Q1564	4D	R1421	3B	R1589	5E	R1713	8B	R1841	9F		
C1501	1D	CR1663	5B	Q1569	5D	R1422	3B	R1591	4E	R1716	7A	R1842	9F	VR1707	7A
C1517	4B	CR1682	7B	Q1576	4E	R1425	2C	R1592	5E	R1717	7A	R1844	8D	VR1793	9C
C1534	4C	CR1710	8B	Q1585	4E	R1427	3B	R1593	5E	R1719	8B	R1847	9D	VR1831	11B
C1537	4C	CR1727	10A	Q1587	4E	R1440	5F	R1595	6E	R1721	9B	R1849	9D		
C1542	5B	CR1733	9B	Q1595	6E	R1441	5F	R1597	6C	R1723	9B	R1851	8D		
C1544	5D	CR1737	9B	Q1613	6D	R1443	6F	R1599	4B	R1725	8B	R1852	8D		
C1548	5D	CR1738	10B	Q1621	7D	R1445	4E	R1601	6E	R1730	10B	R1853	9F		
C1565	4D	CR1744	9B	Q1625	8D	R1447	5F	R1603	1E	R1726	8A	R1855	8D		
C1574	5E	CR1769	9C	Q1631	9A	R1448	5F	R1606	6D	R1731	10B	R1856	9D		
C1580	4E	CR1771	10C	Q1644	7C	R1453	4E	R1608	7D	R1733	9B	R1857	9D		
C1583	4E	CR1772	9C	Q1652	6C	R1455	4F	R1611	7D	R1737	9B	R1859	10D		
C1597	5C	CR1797	11C	Q1661	6C	R1456	3E	R1614	6D	R1739	10B	R1862	10D		
C1601	5E	CR1821	8C	Q1667	6B	R1457	4F	R1620	7D	R1741	10B	R1863	10D		
C1606	7D	CR1822	9C	Q1673	6B	R1459	4F	R1621	7D	R1742	10A	R1865	11D		
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C1620	8D	CR1874	9D	Q1701	7B	R1466	3F	R1629	8D	R1756	7C	R1871	9E		
C1636	9A	CR1875	9D	Q1704	7B	R1467	3F	R1631	7D	R1758	6C	R1873	9D		
C1637	9A	CR1898	9E	Q1708	8B	R1474	8F	R1633	9B	R1759	6C	R1875	9E		
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C1711	7B	CR1926	11F	Q1723	9B	R1486	4C	R1641	6D	R1768	9B	R1883	11D		
C1713	8B			Q1734	10B	R1491	8D	R1642	6D	R1769	8C	R1885	10D		
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C1736	10B	P1018	3A	Q1761	8C	R1502	1D	R1647	7B	R1774	9C	R1892	8E		
C1789	9C	P1023	2A	Q1775	8C	R1510	4B	R1648	6C	R1777	7C	R1893	8E		
C1793	10C	P1409	3D	Q1788	10C	R1511	3A	R1649	6C	R1779	6D	R1895	9E		
C1796	11C	P1028	3E	Q1790	9C	R1513	4B	R1650	6C	R1781	7C	R1897	9E		
C1798	10C	P1404	3E	Q1795	10C	R1515	4B	R1653	7B	R1783	5D	R1900	9E		
C1831	11B	P1411	3E	Q1798	11C	R1517	4B	R1654	7B	R1785	10C	R1903	10E		
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C1925	9E	P1440	5F	Q1810	8B	R1522	5B	R1658	5C	R1788	9C	R1906	10E		
C1926	10F	P1468	3F	Q1825	10C	R1523	4C	R1660	6B	R1791	9C	R1910	10E		
C1935	11D	P1475	6F	Q1828	10C	R1519	5B	R1661	6C	R1792	11C	R1912	10E		
C1948	11B	P1488	3B	Q1835	10C	R1531	4C	R1662	7C	R1793	10C	R1917	10F		
C1981	11E	P1539	3C	Q1844	9E	R1532	3C	R1663	5B	R1795	10C	R1919	8F		
C1983	11D	P1560	4E	Q1847	9D	R1534	4C	R1665	5B	R1796	10C	R1920	9E		
C1987	11E	P1830	11C	Q1859	10D	R1536	3E	R1666	5B	R1798	10C	R1922	9E		
C1989	11E	P1922	11E	Q1862	10D	R1537	3D	R1668	5B	R1799	11C	R1923	9E		
		P1929	11F	Q1880	10D	R1541	4B	R1670	5B	R1801	8C	R1924	10E		
CEC	11C	P1943	11A	Q1883	10D	R1542	5C	R1671	5B	R1802	8C	R1925	9E		
CE1	11D	P1982	11E	Q1903	10E	R1544	4D	R1672	5B	R1803	8C	R1926	10E		
CE2	11D	P1995	11E	Q1906	10E	R1548	4D	R1675	6C	R1806	9B	R1928	10E		
				Q1925	9E	R1549	5D	R1677	6C	R1808	7C	R1930	10F		
CR1021	2A	Q1416	3E	Q1928	10E	R1550	4D	R1679	6B	R1809	7B	R1942	11A		
CR1024	2A	Q1426	3B			R1551	4D	R1681	6B	R1811	8B	R1949	10A		
CR1412	1B	Q1428	2B	R1018	3D	R1553	4D	R1682	6B	R1812	9B	R1981	11E		
CR1413	1B	Q1440	6E	R1019	3D	R1556	5B	R1683	6B	R1814	9B	R1983	11D		
CR1414	4A	Q1446	5E	R1020	3D	R1561	4D	R1685	6B	R1818	8C	R1987	11E		
CR1424	3B	Q1450	5E	R1022	1B	R1562	4D	R1687	5B	R1817	8B	R1989	11E		
CR1924	8E	Q1453	4E	R1230	1C	R1564	4D	R1690	6B	R1819	8C				
CR1425	1B	Q1475	8E	R1240	2C	R1565	4D	R1693	6A	R1820	8C	S1021	3C		
CR1478	9E	Q1478	8E	R1286	1C	R1567	4D	R1694	5A	R1822	9C	S1101	2B		
CR1496	3D	Q1481	4B	R1296	2C	R1571	4E	R1695	6A	R1823	9C	S1417	2D		
CR1497	6E	Q1485	4C	R1410	3D	R1572	4D	R1698	4A	R1826	9B				
CR1498	6E	Q1493	4C	R1411	1B	R1573	4E	R1699	5B	R1829	10B	U1417	7E		
CR1499	3D	Q1513	4B	R1412	9A	R1574	5E	R1701	7B	R1030	11B	U1495	5C		





**TEKTRONIX®**committed to
technical excellence**MANUAL CHANGE INFORMATION**

PRODUCT 7633/R Service

CHANGE REFERENCE M23,333

EFF SN B110948-up

DATE 1-10-75

CHANGE:

DESCRIPTION

070-1767-00

ELECTRICAL PARTS LIST AND SCHEMATIC CHANGE

ADD:

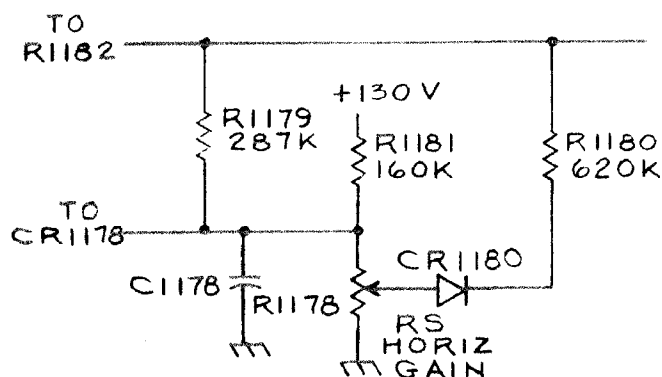
CR1180 152-0141-02 SEMICOND DEVICE:SILICON,30V,150MA

CHANGE TO:

R1179 321-0429-00 RES.,FXD,FILM:287K OHM, 1%, 0.125W

R1180 315-0624-00 RES.,FXD,COMP:620K OHM, 5%, 0.25W

R1181 315-0164-00 RES.,FXD,COMP:160K OHM, 5%, 0.25W

DIAGRAM 7 CRT-Z-AXIS - Partial

TEKTRONIX®

7633/R7633

**STORAGE
OSCILLOSCOPE**

OPERATORS

INSTRUCTION MANUAL

**Tektronix, Inc.
P.O. Box 500
Beaverton, Oregon 97005**

Serial Number _____

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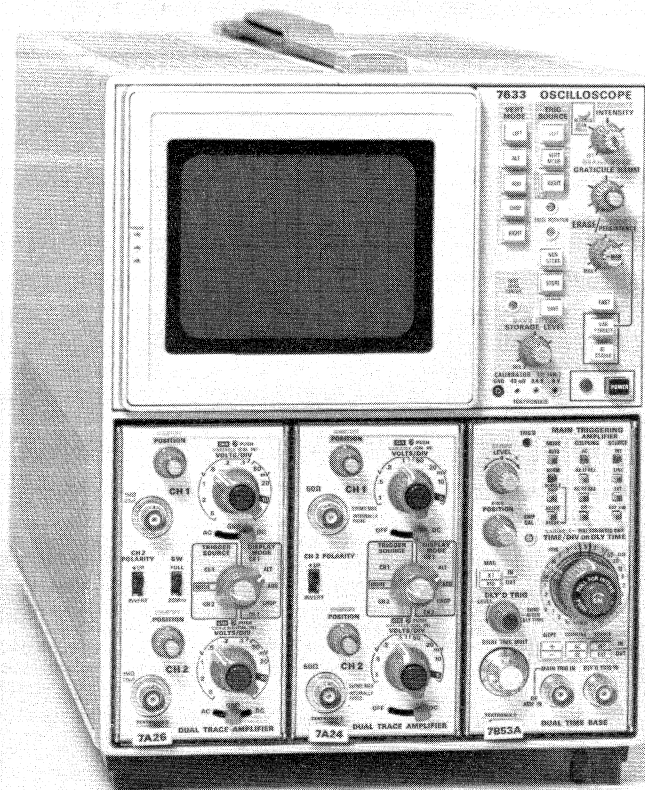
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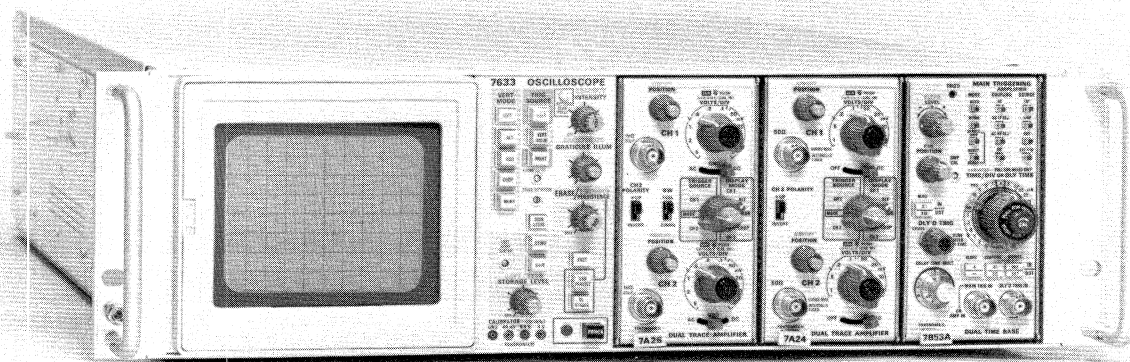
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The Tektronix 7633/R7633 Storage Oscilloscope is a solid-state instrument especially designed for fast writing rate storage applications. The 7633 operates in three display modes—NON STORE, STORE, and SAVE, and four storage modes—BISTABLE, VAR PERSIST, FAST BISTABLE, and FAST VAR PERSIST. The display and storage functions can be operated in either a full scan or a Reduced Scan mode. In FAST VAR PERSIST, the Reduced Scan feature effectively increases the writing speed approximately seven times. The instrument accepts any Tektronix 7-Series plug-in units to form a highly flexible measurement system.



OPERATING INSTRUCTIONS

PRELIMINARY OPERATION

To effectively use the 7633/R7633 Storage Oscilloscope, the operation and capabilities of the instrument must be known. This section provides preliminary operating information, describes operation of controls and connectors, and provides an operating checkout procedure.

AC POWER SOURCES

This instrument is intended to be operated from a single-phase, earth-referenced power source having one current-carrying conductor (the Neutral Conductor) near earth potential. Operation from power sources where both current-carrying conductors are live with respect to earth (such as phase-to-phase on a three-wire system) is not recommended since only the Line Conductor has over-current (fuse) protection within the instrument.

AC POWER CORD

This instrument has a three-wire power cord with a three-terminal polarized plug for connection to the power source and safety-earth. The safety-earth terminal of the plug is directly connected to the instrument frame. For electric-shock protection, insert this plug only in a mating outlet with a safety-earth contact or otherwise connect the frame to a safety earth system. The color-coding of the cord conductors is in accordance with recognized standards as shown in Table 1-1.

TABLE 1-1

Power Cord Conductor Identification

Conductor	Color	Alternate Color
Ungrounded (line)	Brown	Black
Grounded (neutral)	Blue	White
Grounding (Earthing)	Green-Yellow	Green-Yellow

OPERATING VOLTAGE

The 7633/R7633 can be operated from either a 110-volt or a 220-volt nominal line-voltage source. In addition, three operating ranges can be selected within each nominal line voltage source. Use the following procedure to obtain correct instrument operation from the line voltage available:

1. Disconnect the instrument from the power source.
2. Remove the six screws securing the power unit (nine screws in the R7633; see Figure 1-1).
3. Slide the power unit out of the rear of the chassis.

The slide-out tracks consist of two assemblies, one for the left side of the instrument and one for the right side. Figure 3-1 shows the slide-out track assembly. The stationary section of each assembly attaches to the front and rear rails of the rack. The chassis sections allow the instrument to be extended out of the rack.

The hardware needed to mount the tracks to the rack is also shown in Figure 3-1. Since enough hardware is supplied to make the tracks compatible with a variety of racks and installation methods, some of it may not be needed.

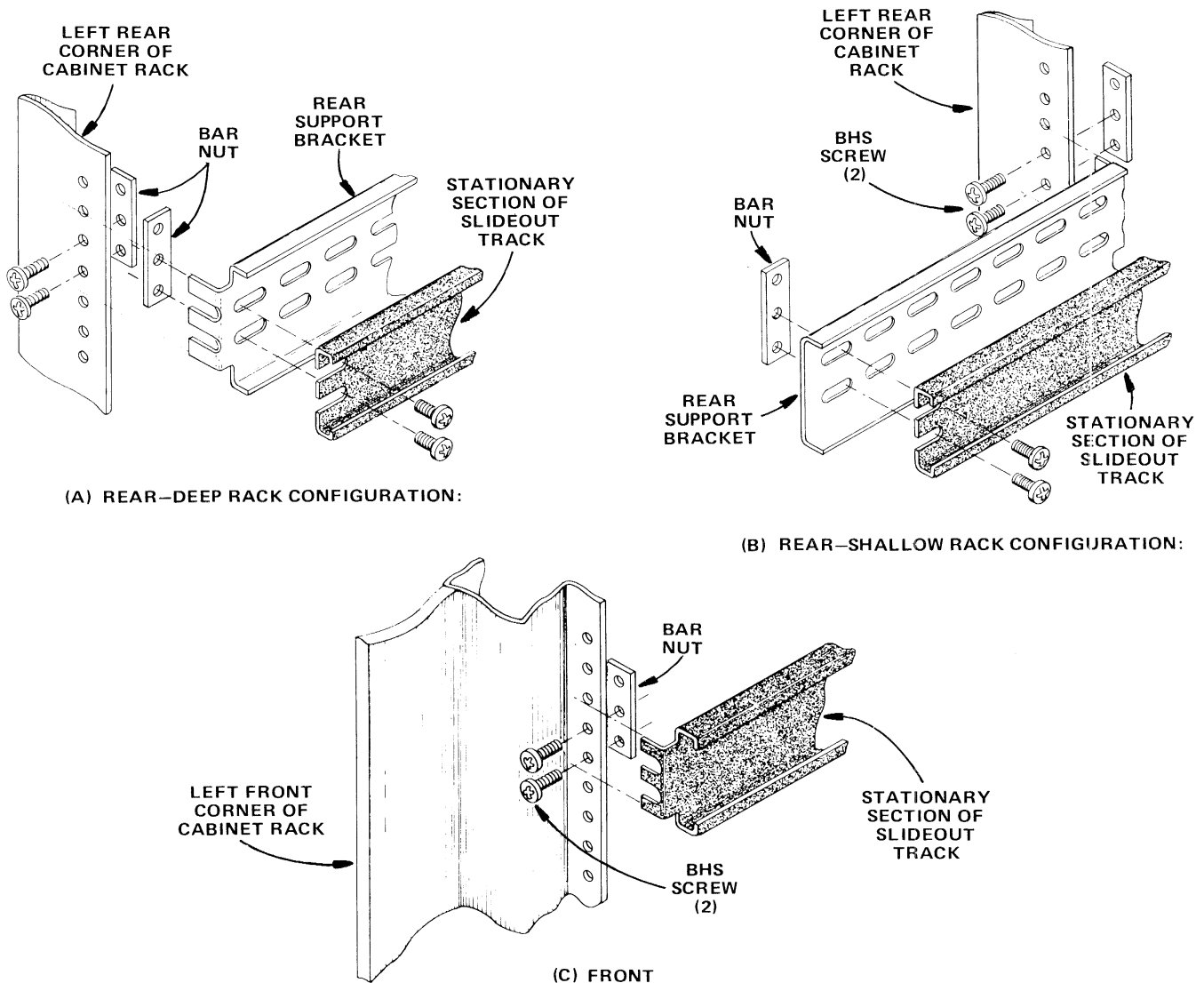


Figure 3-3. Details for mounting stationary sections.



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