

DESCRIPTION

PG. 42

THESE CHANGES ARE EFFECTIVE AT SN B100000 AND ABOVE.

REMOVE:

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Discont	Name & Description
A28	670-5848-04	B010381	B041759	CIRCUIT BD ASSY:2114 RAM
A28	670-5848-07	B041760		CIRCUIT BD ASSY:2114 RAM
A28	670-5848-01	B010100	B010380	CIRCUIT BD ASSY:2114 RAM (OPTION 00 ONLY)
A28	670-5848-05	B010381	B041759	CIRCUIT BD ASSY:2114 RAM (OPTION 00 ONLY)
A28	670-5848-09	B041760	B042516	CIRCUIT BD ASSY:2114 RAM (OPTION 00 ONLY)
A28	670-5848-12	B042517		CIRCUIT BD ASSY:2114 RAM (OPTION 00 ONLY)
A28	670-5848-02	B010100	B010380	CIRCUIT BD ASSY:2114 RAM (OPTION 20 ONLY)
A28	670-5848-06	B010381	B041759	CIRCUIT BD ASSY:2114 RAM (OPTION 20 ONLY)
A28	670-5848-08	B041760	B042516	CIRCUIT BD ASSY:2114 RAM (OPTION 20 ONLY)
A28	670-5848-11	B042517		CIRCUIT BD ASSY:2114 RAM (OPTION 20 ONLY)
A28C120	283-0178-00	B010100	B041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C120	283-0421-00	B041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28C140	283-0178-00	B010100	B041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C140	283-0421-00	B041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28C150	290-0580-00			CAP, FXD, ELCTLT:0.27UF, 20%, 50V
A28C251	283-0178-00	B010100	B041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C251	283-0421-00	B041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28C260	283-0178-00	B010100	B041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C260	283-0421-00	B041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28C261	290-0804-00	B042517		CAP, FXD, ELCTLT:10UF, +50-10%, 25V
A28C310	283-0178-00	B010100	B041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C310	283-0421-00	B041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28C330	283-0178-00	B010100	B041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C330	283-0421-00	B041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28C420	283-0178-00	B010100	B041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C420	283-0421-00	B041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28C440	283-0178-00	B010100	B041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C440	283-0421-00	B041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28C460	283-0178-00	B010100	B041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C460	283-0421-00	B041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28C510	283-0178-00	B010100	B041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C510	283-0421-00	B041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28C530	283-0178-00	B010100	B041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C530	283-0421-00	B041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28C550	283-0178-00	B010100	B041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C550	283-0421-00	B041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28C620	283-0178-00	B010100	B041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C620	283-0421-00	B041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28C640	283-0178-00	B010100	B041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C640	283-0421-00	B041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28C660	283-0178-00	B010100	B041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C660	283-0421-00	B041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V

DESCRIPTION

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Discont	Name & Description
A28C661	290-0804-00	8042517		CAP, FXD, ELCTLT:10UF, +50-10%, 25V
A28C710	283-0178-00	8010100	8041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C710	283-0421-00	8041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28C730	283-0178-00	8010100	8041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C730	283-0421-00	8041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28C800	290-0755-00			CAP, FXD, ELCTLT:100UF, +50%-10%, 10V
A28C820	283-0178-00	8010100	8041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C820	283-0421-00	8041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28C840	283-0178-00	8010100	8041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C840	283-0421-00	8041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28C862	283-0178-00	8010100	8041759	CAP, FXD, CER DI:0.1UF, +80-20%, 100V
A28C862	283-0421-00	8041760		CAP, FXD, CER DI:0.1UF, +80-20%, 50V
A28CR160	152-0141-02			SEMICOND DVC, DI:5M, SI, 30V, 150MA, 30V, 00-35
A28CR260	152-0141-02			SEMICOND DVC, DI:5M, SI, 30V, 150MA, 30V, 00-35
A28Q150	151-0190-05			TRANSISTOR:SELECTED
A28Q151	151-0190-05			TRANSISTOR:SELECTED
A28Q160	151-0190-05			TRANSISTOR:SELECTED
A28Q161	151-0302-01			TRANSISTOR:SELECTED
A28Q162	151-0302-01			TRANSISTOR:SELECTED
A28Q163	151-0190-05			TRANSISTOR:SELECTED
A28Q760	151-0625-00			TRANSISTOR:PNP, SI, TO-220
A28Q855	151-0188-03			TRANSISTOR:SELECTED
A28Q860	151-0625-00			TRANSISTOR:PNP, SI, TO-220
A28R150	315-0203-00			RES, FXD, FILM:20K OHM, 5%, 0.25M
A28R151	315-0303-00			RES, FXD, FILM:30K OHM, 5%, 0.25M
A28R160	315-0332-00			RES, FXD, FILM:3.3K OHM, 5%, 0.25M
A28R161	315-0122-00			RES, FXD, FILM:1.2K OHM, 5%, 0.25M
A28R162	315-0272-00			RES, FXD, FILM:2.7K OHM, 5%, 0.25M
A28R163	315-0300-00			RES, FXD, FILM:30 OHM, 5%, 0.25M
A28R164	315-0240-00			RES, FXD, FILM:24 OHM, 5%, 0.25M
A28R165	315-0620-00			RES, FXD, FILM:62 OHM, 5%, 0.25M
A28R166	315-0681-00			RES, FXD, FILM:680 OHM, 5%, 0.25M
A28R250	315-0622-00			RES, FXD, FILM:6.2K OHM, 5%, 0.25M
A28R260	315-0472-00			RES, FXD, FILM:4.7K OHM, 5%, 0.25M
A28R750	315-0103-00			RES, FXD, FILM:10K OHM, 5%, 0.25M
A28R770	301-0471-00			RES, FXD, FILM:470 OHM, 5%, 0.5M
A28R862	315-0102-00			RES, FXD, FILM:1K OHM, 5%, 0.25M
A28R865	315-0472-00			RES, FXD, FILM:4.7K OHM, 5%, 0.25M
A28U110	156-1323-01			MICROCKT, DGTL:1024 X 4 STATIC RAM, BURN-IN (OPTION 2D ONLY)
A28U120	156-1323-01			MICROCKT, DGTL:1024 X 4 STATIC RAM, BURN-IN (OPTION 2D ONLY)
A28U130	156-1323-01			MICROCKT, DGTL:1024 X 4 STATIC RAM, BURN-IN (OPTION 2D ONLY)
A28U140	156-1323-01			MICROCKT, DGTL:1024 X 4 STATIC RAM, BURN-IN (OPTION 2D ONLY)
A28U210	156-1323-01			MICROCKT, DGTL:1024 X 4 STATIC RAM, BURN-IN (OPTION 2D ONLY)
A28U220	156-1323-01			MICROCKT, DGTL:1024 X 4 STATIC RAM, BURN-IN (OPTION 2D ONLY)
A28U230	156-1323-01			MICROCKT, DGTL:1024 X 4 STATIC RAM, BURN-IN (OPTION 2D ONLY)
A28U240	156-1323-01			MICROCKT, DGTL:1024 X 4 STATIC RAM, BURN-IN (OPTION 2D ONLY)
A28U250	156-0721-02			MICROCKT, DGTL:QUAD ST 2-IMP NAND GATES, SCRIB

DESCRIPTION

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Discont	Name & Description
A28U260	156-0381-02			MICROCKT,DGTL:QUAD 2-INP EXCL OR GATE
A28U310	156-1323-01			MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U320	156-1323-01			MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U330	156-1323-01			MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U340	156-1323-01			MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U350	156-0916-02			MICROCKT,DGTL:EIGHT 2-INP 3-STATE BFR,SCRN
A28U360	156-0916-02			MICROCKT,DGTL:EIGHT 2-INP 3-STATE BFR,SCRN
A28U410	156-1323-01			MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U420	156-1323-01			MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U430	156-1323-01			MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U440	156-1323-01			MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U450	156-0916-02			MICROCKT,DGTL:EIGHT 2-INP 3-STATE BFR,SCRN
A28U460	156-0916-02			MICROCKT,DGTL:EIGHT 2-INP 3-STATE BFR,SCRN
A28U510	156-1323-01			MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U520	156-1323-01			MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U530	156-1323-01			MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U540	156-1323-01			MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U550	156-0481-02			MICROCKT,DGTL:TRIPLE 3-INP & GATE,SCRN
A28U560	156-0736-02			MICROCKT,DGTL:BCD TO DECIMAL DCDR,SCRN
A28U610	156-1323-01			MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U620	156-1323-01			MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U630	156-1323-01			MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U640	156-1323-01			MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U650	156-0916-02			MICROCKT,DGTL:EIGHT 2-INP 3-STATE BFR,SCRN
A28U660	156-0720-02			MICROCKT,DGTL:HEX DRVR,4-TO-2 LINE ENABLE
A28U710	156-1323-01			MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U720	156-1323-01			(OPTION 20 ONLY) MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U730	156-1323-01			(OPTION 20 ONLY) MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U740	156-1323-01			(OPTION 20 ONLY) MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U750	156-0382-02	B010100	B010380	MICROCKT,DGTL:QUAD 2 INP NAND GATE BURN
A28U750	156-0030-03	B010381		MICROCKT,DGTL:QUAD 2 INPUT NAND GATE,SCRN
A28U810	156-1323-01			MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U820	156-1323-01			(OPTION 20 ONLY) MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U830	156-1323-01			(OPTION 20 ONLY) MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28U840	156-1323-01			(OPTION 20 ONLY) MICROCKT,DGTL:1024 X 4 STATIC RAM,BURN-IN
A28VR870	152-0175-01			SEMICOND DVC,DI:ZEN,SI,5.6V,5X,0.4M,00-7

DESCRIPTION

REMOVE:

Component No.	Tektronix Part No.	Serial/Assembly No.		Name & Description
		Effective	Discont	
A31	670-5847-00	8010100	8042244	CIRCUIT BD ASSY:ROM
A31	670-5847-01	8042245	8042516	CIRCUIT BD ASSY:ROM
A31	670-5847-02	8041517	8063172	CIRCUIT BD ASSY:ROM
A31	670-5847-03	8063173		CIRCUIT BD ASSY:ROM
A31C105	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V
A31C110	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V
A31C115	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V
A31C120	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V
A31C121	290-0804-00	8042517		CAP,FXD,ELCTL:10UF,+50-10%,25V
A31C205	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V
A31C210	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V
A31C215	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V
A31C220	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V
A31C222	283-0103-00			CAP,FXD,CER DI:180PF,5%,500V
A31C305	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V
A31C310	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V
A31C405	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V
A31C410	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V
A31C415	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V
A31C420	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V
A31C425	281-0775-00			CAP,FXD,CER DI:0.1UF,20%,50V
A31C430	290-0804-00	8042517		CAP,FXD,ELCTL:10UF,+50-10%,25V
A31R210	315-0152-00			RES,FXD,FILM:1.5K OHM,5%,0.25M
A31R220	315-0222-00			RES,FXD,FILM:2.2K OHM,5%,0.25M
A31R222	315-0201-00			RES,FXD,FILM:200 OHM,5%,0.25M
A31U100	160-0408-00	8010100	8059999	MICROCKT,DGTL:8192 X 8 ROM,CUSTOM MASK,SCRN
A31U100	160-0408-01	8060000		MICROCKT,DGTL:8192 X 8 ROM,CUSTOM MASK
A31U110	160-0409-00	8010100	8059999	MICROCKT,DGTL:8192 X 8 ROM,CUSTOM MASK,SCRN
A31U110	160-0409-01	8060000		MICROCKT,DGTL:8192 X 8 ROM,CUSTOM MASK
A31U120	160-0445-00	8010100	8042244	MICROCKT,DGTL:FPLA M/3 STATE OUT
A31U120	160-0445-01	8042245	8069999	MICROCKT,DGTL:FPLA M/3 STATE OUT
A31U120	160-0445-02	8060000		MICROCKT,DGTL:FPLA M/3 STATE OUT
A31U130	156-0916-02			MICROCKT,DGTL:EIGHT 2-INP 3-STATE BFR,SCRN
A31U200	160-0410-00	8010100	8059999	MICROCKT,DGTL:8192 X 8 ROM,CUSTOM MASK,SCRN
A31U200	160-0410-01	8060000		MICROCKT,DGTL:8192 X 8 ROM,CUSTOM MASK
A31U210	160-0411-00	8010100	8059999	MICROCKT,DGTL:8192 X 8 ROM,CUSTOM MASK,SCRN
A31U210	160-0411-01	8060000		MICROCKT,DGTL:8192 X 8 ROM,CUSTOM MASK
A31U220	156-0171-02			MICROCKT,DGTL:QUAD 2-INP OR GATE,SCREENED
A31U225	156-0382-02			MICROCKT,DGTL:QUAD 2 INP NAND GATE BURN
A31U227	156-0387-02			MICROCKT,DGTL:DUAL J-K FF,SCRN
A31U230	156-0916-02			MICROCKT,DGTL:EIGHT 2-INP 3-STATE BFR,SCRN
A31U320	156-0690-03			MICROCKT,DGTL:QUAD 2 INP NOR GATE,BURN IN
A31U325	156-0718-03			MICROCKT,DGTL:TRIPLE 3-INP NOR GATE,SCRN
A31U330	156-0916-02			MICROCKT,DGTL:EIGHT 2-INP 3-STATE BFR,SCRN
A31U400	160-0466-00	8010100	8042244	MICROCKT,DGTL:2048 X 8 EPROM,PROGRAMMED
A31U400	160-0466-01	8042245	8059999	MICROCKT,DGTL:2048 X 8 EPROM,PRGM
A31U400	160-0466-02	8060000		MICROCKT,DGTL:2048 X 8 EPROM,PRGM
A31U410	160-0467-00	8010100	8042244	MICROCKT,DGTL:2048 X 8 EPROM,PROGRAMMED
A31U410	160-0467-01	8042245	8059999	MICROCKT,DGTL:2048 X 8 EPROM,PRGM
A31U410	160-0467-02	8060000		MICROCKT,DGTL:2048 X 8 EPROM,PRGM
A31U420	156-0180-04			MICROCKT,DGTL:QUAD 2 INP NAND GATE,
A31U425	156-0385-02			MICROCKT,DGTL:HEX INVERTER,SCRN
A31U430	156-0916-02			MICROCKT,DGTL:EIGHT 2-INP 3-STATE BFR,SCRN
A31XU300	-----			(FOR FUTURE EXPANSION)
A31XU310	-----			(FOR FUTURE EXPANSION)

DESCRIPTION

REMOVE:

Component No.	Tektronix		Serial/Assembly No.		Name & Description
	Part No.	Effective	Dscont		
A32	670-5855-00	8010100	B031244		CIRCUIT BD ASSY:REAR PANEL CONNECTOR
A32	670-5855-02	8031245	B042306		CIRCUIT BD ASSY:REAR PANEL CONNECTOR
A32	670-5855-03	8042307			CIRCUIT BD ASSY:REAR PANEL CONNECTOR
A32	670-5855-01	8010100	B042306		CIRCUIT BD ASSY:REAR PANEL CONNECTOR (OPTION 00 ONLY)
A32	670-5855-04	8042307			CIRCUIT BD ASSY:REAR PANEL CONNECTOR (OPTION 00 ONLY)
A32C14	281-0775-00				CAP,FXD,CER 01:0.1UF,20%,50V
A32CR12	152-0198-00				SEMICOND DVC,01:RECT,SI,200V,3A,A249
A32CR15	152-0581-00				SEMICOND DVC,01:RECT,SI,20V,1A,A59
A32F12	159-0016-00				FUSE,CARTRIDGE:3AG,1.5,250V,FAST BLOW
A32Q14	151-0521-00				SCR:SI,MU-27
A32R12	308-0244-00				RES,FXD,MM:0.3 OHM,10%,2M
A32R13	315-0221-00	8010100	B042306		RES,FXD,FILM:220 OHM,5%,0.25M
A32R13	315-0101-00	8042307			RES,FXD,FILM:100 OHM,5%,0.25M
A32R14	315-0102-00				RES,FXD,FILM:1K OHM,5%,0.25M
A32R15	315-0331-00				RES,FXD,FILM:330 OHM,5%,0.25M
A32S110	260-1721-00				SMITCH,ROCKER:8,SPST,125MA,30VDC
A32VR13	152-0243-00				SEMICOND DVC,01:ZEN,SI,15V,5%,0.4M,00-7
A32VR16	152-0195-00				SEMICOND DVC,01:ZEN,SI,5.1V,5%,0.4M,00-7

Component No.	Tektronix		Serial/Assembly No.		Name & Description
	Part No.	Effective	Dscont		
A8	670-5844-00	8010100	8020175		CIRCUIT BD ASSY:MOTHER
A8	670-5844-01	8020176			CIRCUIT BD ASSY:MOTHER (NO ELECTRICAL PARTS)

THE ABOVE MENTIONED BOARDS WILL BE REPLACED WITH THE FOLLOWING A28 MEMORY CIRCUIT BOARD WHICH IS INSTALLED IN THE RAM SLOT. THE MEMORY BOARD HAS (2) 8 BY 8K RAMS ON IT. THESE RAMS REPLACE THE (32) RAMS. THE (R) ROMS. (2) EPROMS. AND FPLA ON THE ROM BOARD ARE REPLACED BY (2) 27128'S ON THE MEMORY BOARD. ON-BOARD BATTERY BACK-UP HAS BEEN ADDED TO THE MEMORY BOARD BY USING A LITHIUM BATTERY.

TO PROVIDE +15V TO THE MEMORY BOARD. ADD A WIRE STRAP FROM PIN 2 OF J107 TO PIN X OF J104 TO THE BACK SIDE OF THE A8 MOTHER CIRCUIT BOARD ASSEMBLY. REPLACE THE BOARD LAY-OUT ON THE A32 REAR PANEL CIRCUIT BOARD ASSEMBLY. REPLACE FIG. 2-68 REAR PANEL.

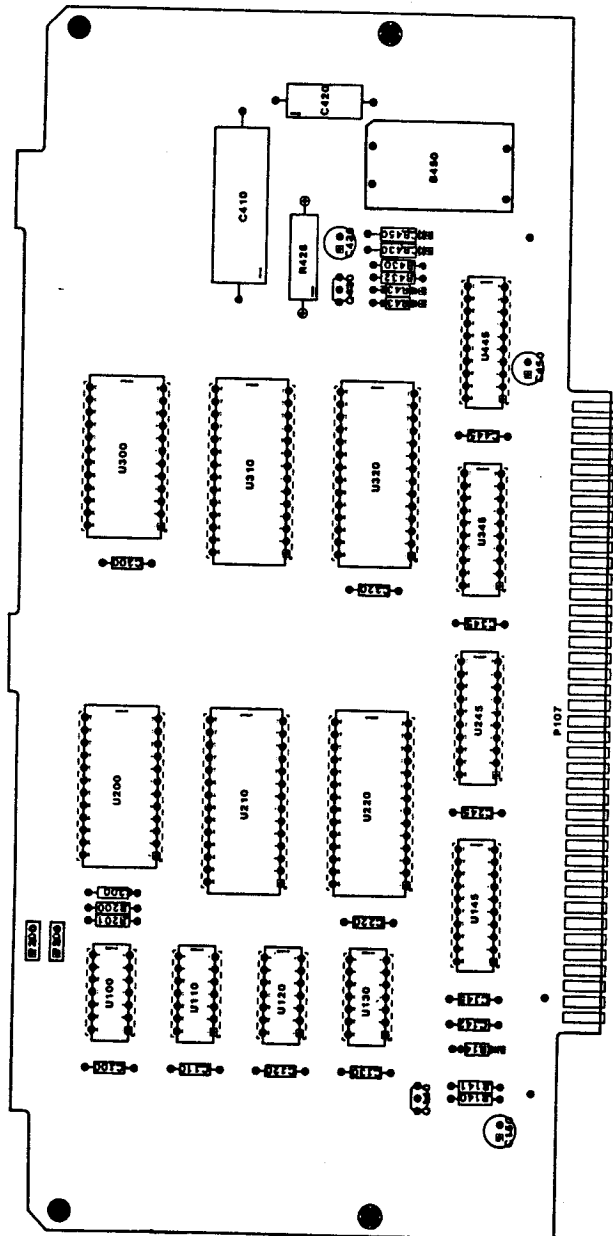
DESCRIPTION

ADD:

A28	670-9520-00	CIRCUIT BD ASSY:MEMORY 388-9063-XX WIRED
A28B450	146-0049-00	BATTERY,STORAGE,3.5V,750 MAH
A28C100	281-0775-00	CAP,FXD,CER DI,0.1UF,20%,50V
A28C110	281-0775-00	CAP,FXD,CER DI,0.1UF,20%,50V
A28C120	281-0775-00	CAP,FXD,CER DI,0.1UF,20%,50V
A28C130	281-0775-00	CAP,FXD,CER DI,0.1UF,20%,50V
A28C142	281-0775-00	CAP,FXD,CER DI,0.1UF,20%,50V
A28C145	281-0775-00	CAP,FXD,CER DI,0.1UF,20%,50V
A28C150	290-0804-01	CAP,FXD,ELECTLT:10UF,20%,25V
A28C200	281-0775-00	CAP,FXD,CER DI,0.1UF,20%,50V
A28C220	281-0775-00	CAP,FXD,CER DI,0.1UF,20%,50V
A28C245	281-0775-00	CAP,FXD,CER DI,0.1UF,20%,50V
A28C300	281-0775-00	CAP,FXD,CER DI,0.1UF,20%,50V
A28C320	281-0775-00	CAP,FXD,CER DI,0.1UF,20%,50V
A28C345	281-0775-00	CAP,FXD,CER DI,0.1UF,20%,50V
A28C410	285-1048-00	CAP,FXD,PLASTIC:2UF,5%,100V
A28C420	285-0808-00	CAP,FXD,PLASTIC:0.1UF,10%,50V
A28C430	290-0782-01	CAP,FXD,ELECTLT:4.7UF,20%,35VDC AL
A28C445	281-0775-00	CAP,FXD,CER DI,0.1UF,20%,50V
A28C450	290-0804-01	CAP,FXD,ELECTLT:10UF,20%,25V
A28CR140	152-0141-02	SEMICON DVC,DI,SW,SI,30V,150 MA
A28CR430	152-0242-00	SEMICON DVC,DI,SIG,SI,225V,0.2A
A28CR432	152-0141-02	SEMICON DVC,DI,SW,SI,30V,150 MA
A28CR433	152-0141-02	SEMICON DVC,DI,SW,SI,30V,150 MA
A28CR450	152-0323-00	SEMICON DVC,DI,SW,SI,35V,0.1A
A28P201	131-0993-00	BUS,CONDUCTOR SHUNT ASSEMBLY,BLACK
A28P200	131-0993-00	BUS,CONDUCTOR SHUNT ASSEMBLY,BLACK
A28Q140	151-0190-09	TRANS:NPN,SI,TO-106,52N3904
A28Q430	151-0190-09	TRANS:NPN,SI,TO-106,52N3904
A28R140	315-0203-00	RES,FXD:20K Ω ,5%,0.25W
A28R141	315-0103-00	RES,FXD:10K Ω ,5%,0.25W
A28R200	315-0472-00	RES,FXD:4.7K Ω ,5%,0.25W
A28R201	315-0472-00	RES,FXD:4.7K Ω ,5%,0.25W
A28R428	303-0680-00	RES,FXD,CMPSN:68 Ω ,5%,1W
A28R430	315-0202-00	RES,FXD:2K Ω ,5%,0.25W
A28R432	315-0102-00	RES,FXD:1K Ω ,5%,0.25W
A28S20	260-1812-00	SWITCH,SLIDE,DPDT,0.5A,125 VAC/VDC,PNL MT
A28U100	156-0381-02	MICROCKT,DGTL:QUAD 2-INP EXCL OR GATE SCR N 74LS86
A28U110	156-0718-03	MICROCKT,DGTL:TRIPLE 3-INP NOR GATE,SCR N 74LS27
A28U120	156-0382-02	MICROCKT,DGTL:QUAD 2-INP NAND GATE BURN IN 74LS00NP3
A28U130	156-0385-02	MICROCKT,DGTL:HEX INVERTER,SCR N 74LS04
A28U145	156-1111-02	MICROCKT,DGTL:OCTAL BUS TRANSCEIVERS W/3 STATE OUT, SCR N 74LS245
A28U210	156-1842-00	MICROCKT,DGTL,CMOS,8192X8 SRAM
A28U220	160-3725-00	MICROCKT,DGTL,NMOS,16384X8 EPROM,LOW OR DER BITS 27128-3
A28U245	156-1111-02	MICROCKT,DGTL:OCTAL BUS TRANSCEIVERS W/3 STATE OUT, SCR N 74LS245

DESCRIPTION

A28U310	156-1842-00	MICROCKT,DGTL,CMOS,8192X8 SRAM
A28U320	160-3724-00	MICROCKT,DGTL,NMOS,16384X8 EPROM,HIGH ORDER BITS 17128-3
A28U345	156-0956-02	MICROCKT,DGTL:OCTAL BFR W/3 STATE OUT,SCRN 74LS244
A28U445	156-0956-02	MICROCKT,DGTL:OCTAL BFR W/3 STATE OUT,SCRN 74LS244

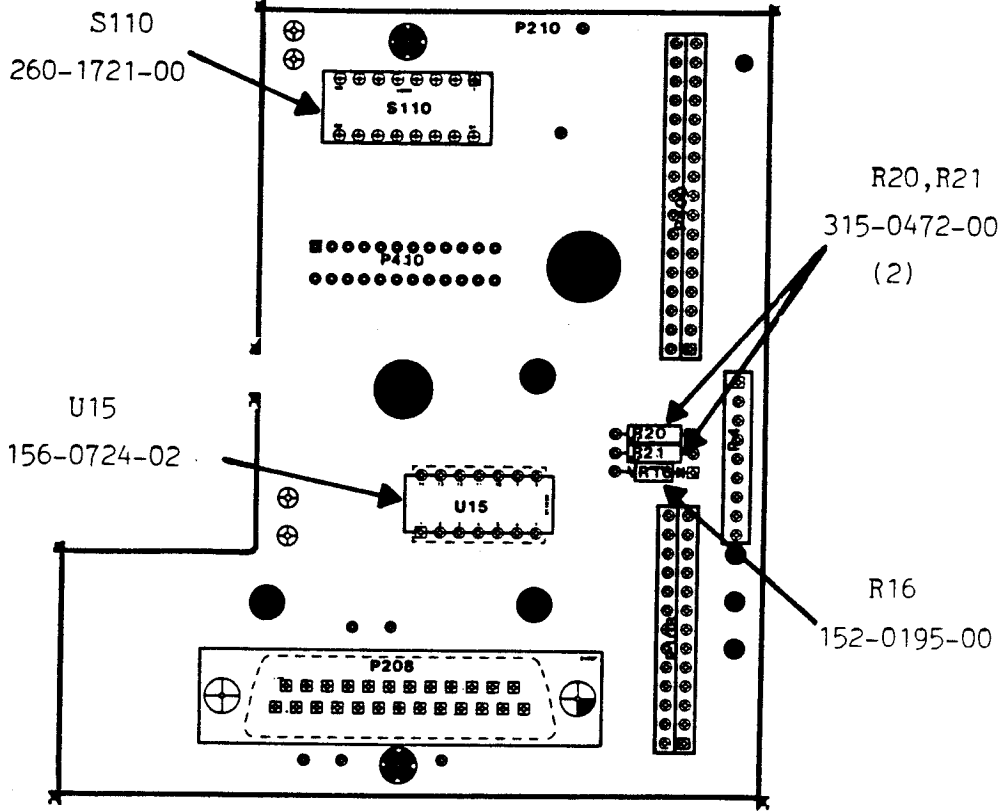


NEW A28 MEMORY CIRCUIT BOARD 388-9063-01
 ASSEMBLY 670-9520-00

DESCRIPTION

ADD:

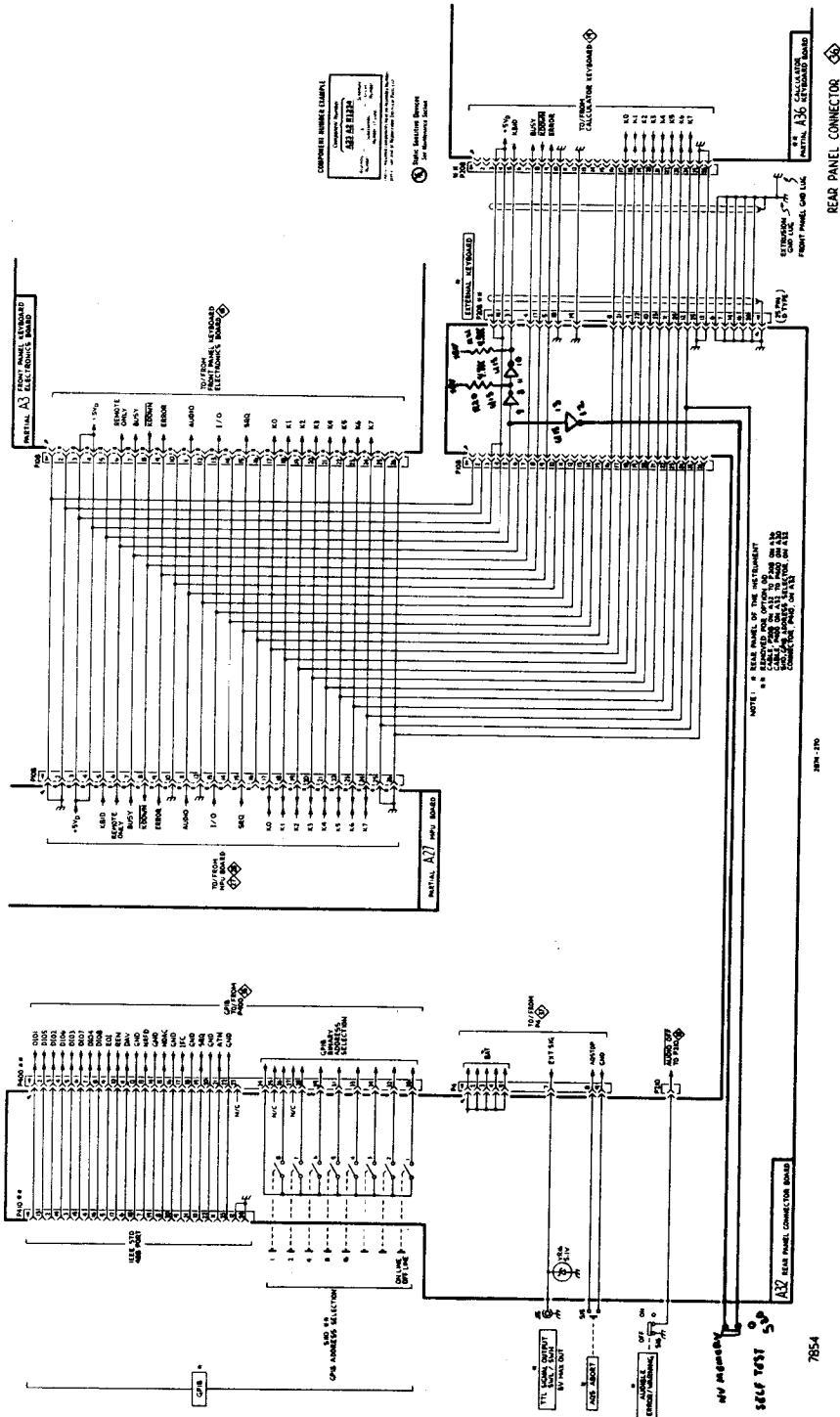
A32 670-5855-05 CKT BD ASSY:REAR PANEL CONN.



NEW A32 REAR PANEL CIRCUIT BOARD 388-6366-02
ASSEMBLY 670-5855-05

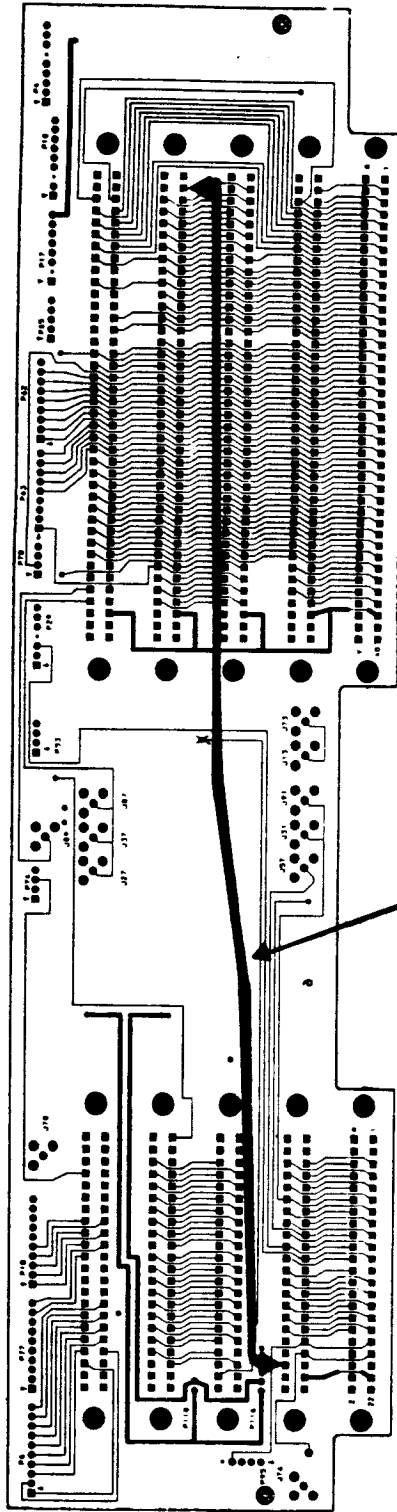
DESCRIPTION

ADD:



DESCRIPTION

ADD: A8 670-5844-02 CKT BD ASSY:MOTHER
(NO ELECTRICAL PARTS)



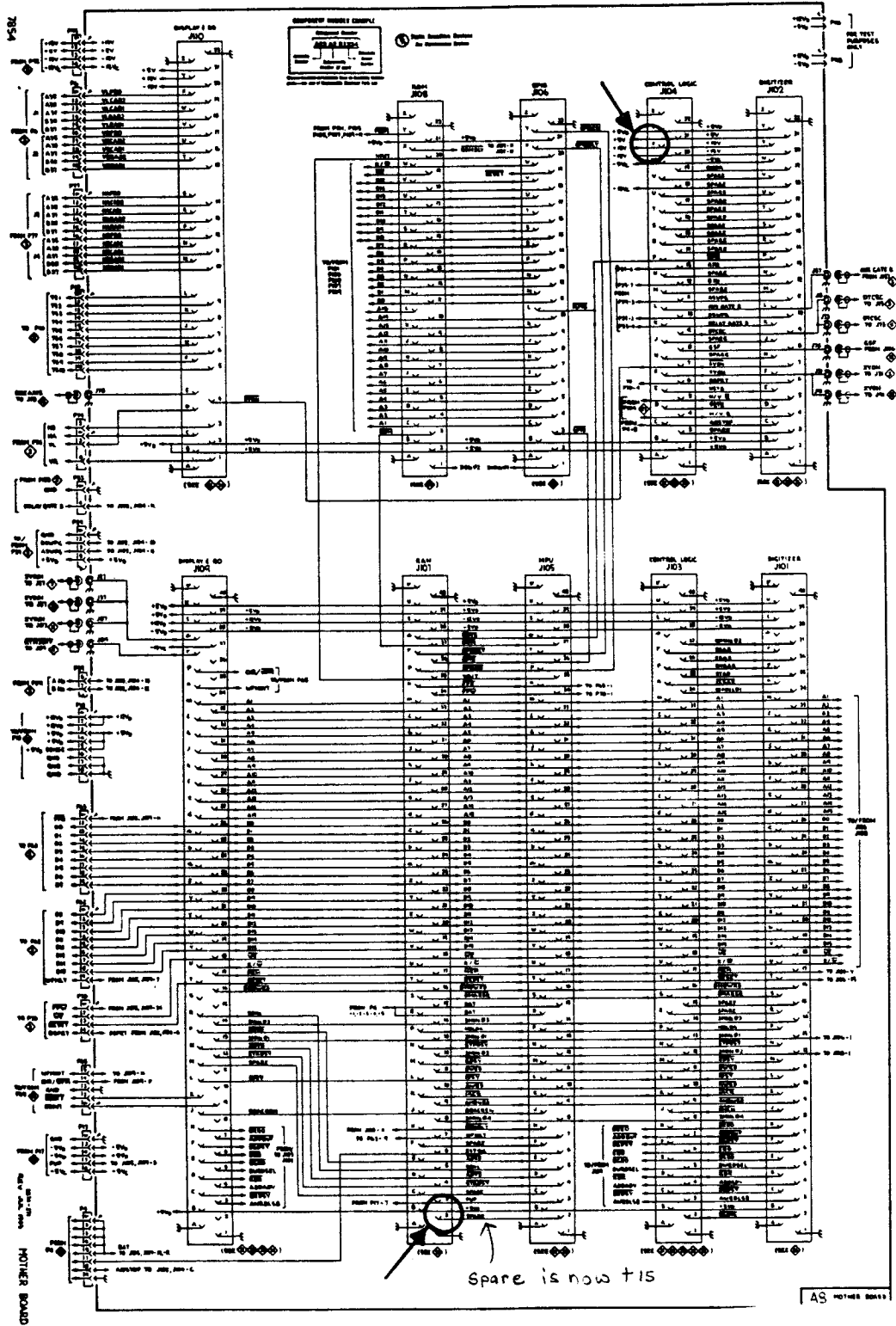
BACK

ADD; 196-3088-00

A8 MOTHER CIRCUIT BOARD 388-6355-02
ASSEMBLY 670-5844-02

DESCRIPTION

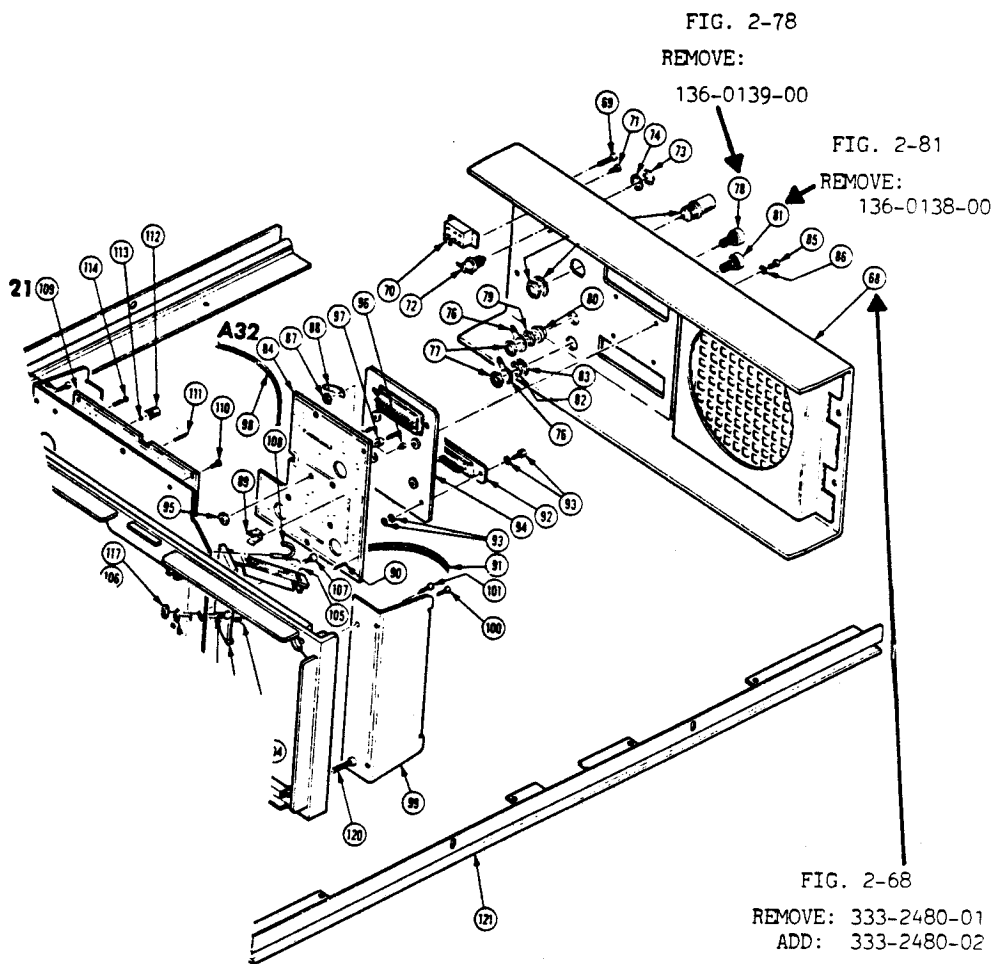
ADD:



37
AS MOTHER BOARD

DESCRIPTION

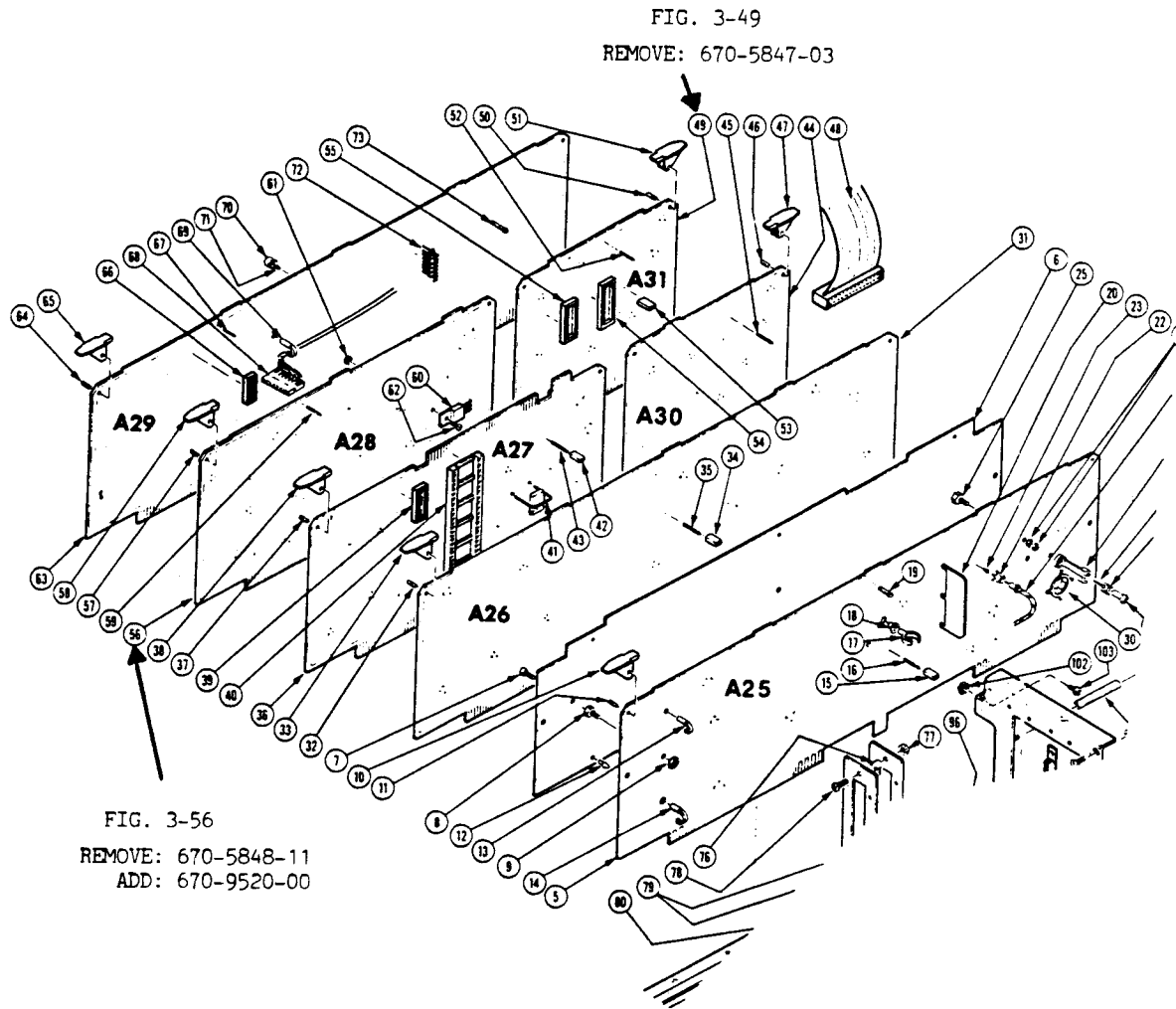
ADD:



PARTIAL FIG. 2

DESCRIPTION

ADD:



PARTIAL FIG. 3

DESCRIPTION

Page 1-3

ADD:

Memory Back-up Power

Back-up power for the volatile storage devices used for processor memory is provided by a 3.5V Lithium Battery mounted on the Memory Board.

Lithium Battery Removing and Handling

NOTE

Wear safety glasses when desoldering or soldering a Lithium Battery.

To remove the battery from a board, apply a vacuum solder extractor to the joint where the battery is connected. Touch the solder extractor only on the tabs sealed to the battery terminals.

WARNING

Never touch the battery itself with a hot solder extractor or soldering iron. Do not desolder or solder directly on the battery terminals. Battery is soldered in.

Once the solder is removed from the connection, remove the battery by pulling it free from the circuit board.

Do not drop a battery. Short circuits or other problems can be caused by dropping. Do not place a battery on any metal surface.

WARNING

To avoid personal injury, observe proper procedures for the handling of Lithium Batteries. Improper handling may cause fire, explosion, or severe burns. Do not recharge, crush, disassemble, heat the battery above 212 F (100°C), incinerate, or expose the contents to water.

Storage

When storing a battery, separate it from all metal or conductive surfaces. Do not store batteries loosely nor dump them into bins. Store them in their original shipping container or individually wrapped in plastic.

DESCRIPTION

Board Cleaning

Battery salts, if present, will usually appear like a white powder upon contact with a circuit board. These salts may react with one or more layers of the board material, resulting in permanent damage and/or open traces.

Clean the salts from the board immediately with a brush and water. Any boards which were in contact with battery salts for more than a few minutes must be thoroughly tested for possible damage.

Discharging

To discharge, solder a 10 ohm resistor across the battery to the tabs welded at each end.

After discharging for 24 hours, test the battery with an ammeter. If the reading is no more than 10ma of current, the battery is considered fully discharged. (The resistor can be left attached for disposal).

Disposal

After the battery has been discharged, dispose of it according to Local, State and Federal Regulations.

NOTE

Typically small quantities (less than 20) can be safely disposed of with ordinary garbage in a sanitary landfill. Larger quantities must be sent by surface transport to a Hazardous Waste Disposal Facility. The batteries should be individually packaged to prevent shorting. Then, pack them into a sturdy container that is clearly labeled, "Lithium Batteries - DO NOT OPEN."

POWER-UP CONDITIONS

When the 7854 is turned on (with the memory backup switch in the "self-test on turn-on" position) the digital processor runs four self-checking tests. Although these tests are not all-inclusive, they indicate if major portions of the processor are working properly. The self-test sequence outlined below begins when power is applied to the 7854.

STEP 1: When power is applied the following indicators will light: POWER, selected positions of the A and B TRIGGER SOURCE switches, and all selected indicators on the plug-in units. For approximately three seconds after power-up the following indicators will remain off: all positions of the VERTICAL and HORIZONTAL MODE switches, all intensity indicators, all red front-panel (measurement keyboard) and Waveform Calculator indicators.

DESCRIPTION

STEP 2: All positions of the VERTICAL and HORIZONTAL MODE switches, all Intensity indicators, and all red-front-panel and Waveform Calculator indicators will now light.

STEP 3: A fault condition found through any of the four tests is indicated with the lights of the VERTICAL and HORIZONTAL MODE switches. Fault condition codes are listed in Table 1-3. Be sure to note the code received so that you may more fully inform the service person about the trouble.

If a fault code occurs, press any button of the VERTICAL or HORIZONTAL MODE switches and the self-testing will continue. Then, refer to the Performance Check Procedure in the Calibration section of this Manual to verify the electrical performance of the instrument.

STEP 4: Successful completion of the self tests is indicated by the issuance of the audible warning tone (if the rear-panel AUDIBLE WARNING switch is ON), and the extinguishing of all red indicators, the S and A Intensity indicators, all VERTICAL MODE lights except LEFT, and all HORIZONTAL MODE switch lights except B. In addition, if the READOUT intensity control is set to about midrange, the message SELF TEST COMPLETE will be displayed on the crt.

Page 2-2

Change Figure 2-1. Block Diagram:

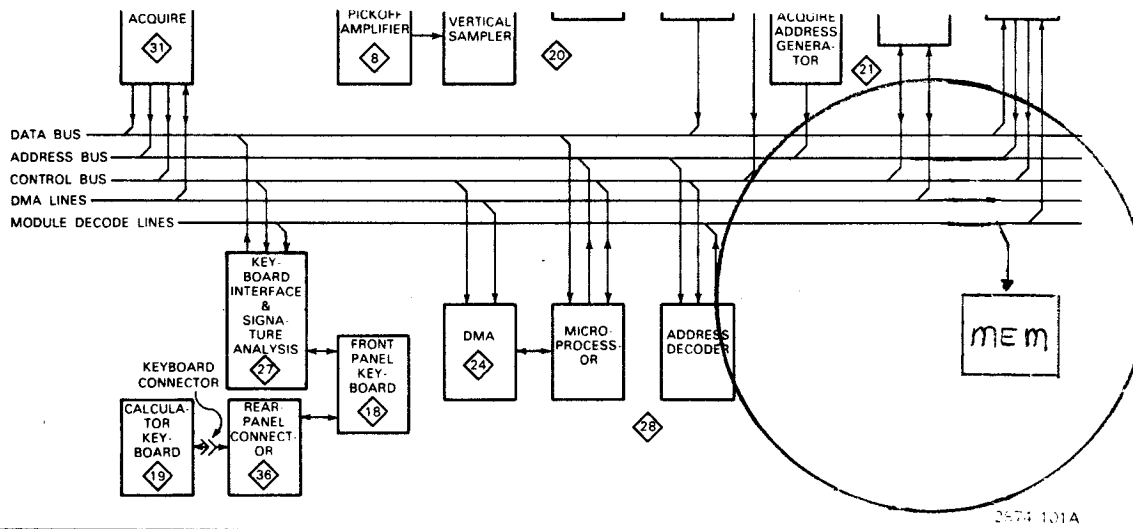


Figure 2-1. Block Diagram

DESCRIPTION

Page 2-3

Change Figure 2-1. Block Diagram:

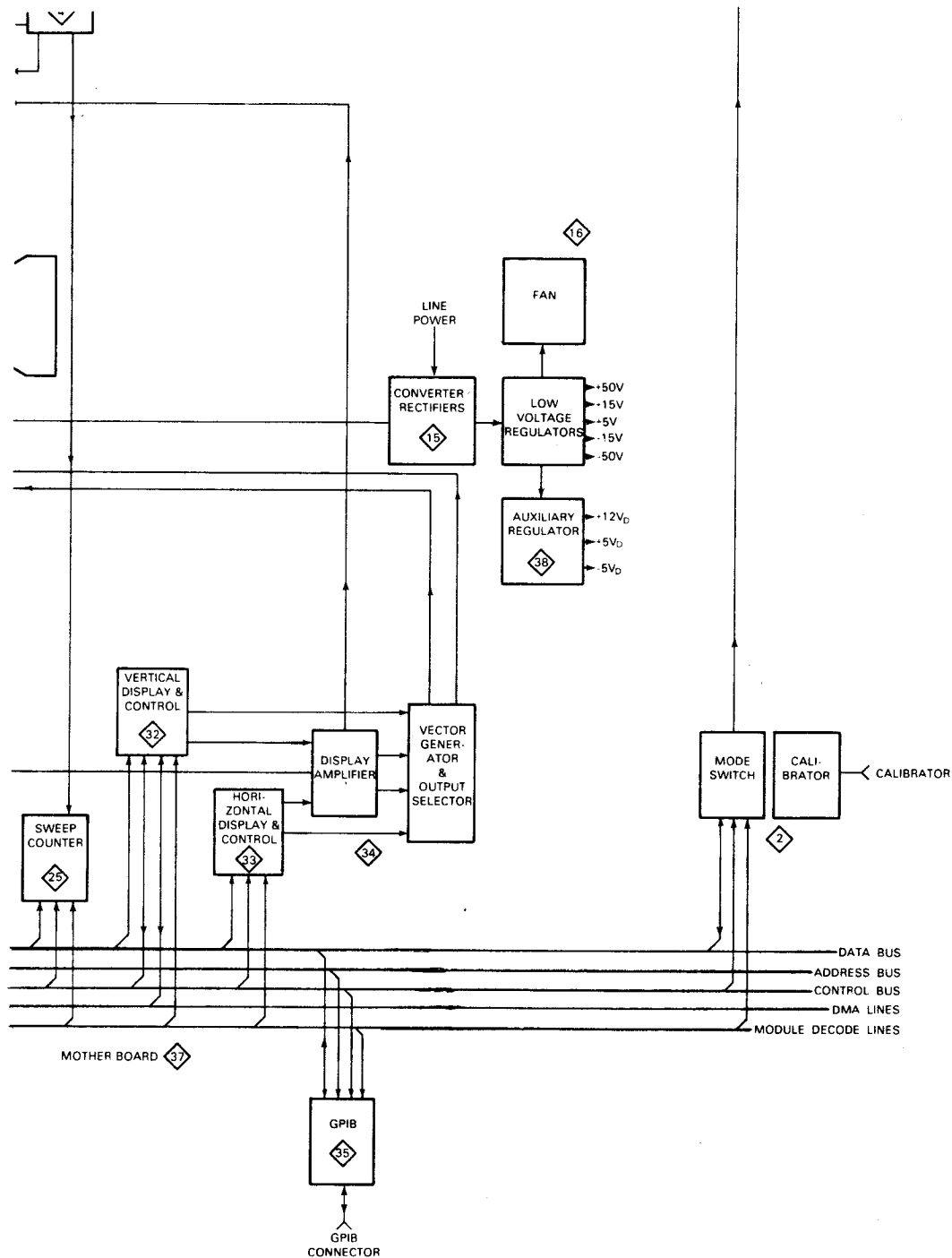


Figure 2-1. Block Diagram (continued)

DESCRIPTION

Page 2-78

ADD:

**MEMORY**

The MEMORY circuit contains both RAM (random access memory) and ROM (read only memory). The RAM circuitry provides for the storage and retrieval of digital data by the microprocessor or by a DMA (direct memory access) device on the GPIB. The ROM circuit contains the stored firmware responsible for the proper operation of this instrument. Back-up power for volatile memory is provided by a 3.5 volt battery mounted directly on the circuit board. The schematic is divided by gray shaded lines separating the circuitry into major stages. These stage names are used to aid in locating and identifying the components and portions of circuitry described.

ADDRESS BUS BUFFER

The ADDRESS BUS BUFFER stage consists of U445 and U345. This stage buffers 15 bits of data from the ADDRESS BUS to the address inputs of the memory devices (RAM, ROM).

**TABLE 2-4
MEMORY ENABLING**

	ROM	MEM	WE	R/W	A13	A14	A15	DATA BUFFER	RAM	ROM	ROM PATCH
WRITE RAM	HI	LO	LO	LO	A14	A13	HI	←	√	—	—
READ RAM	HI	LO	HI	HI	A14	A13	HI	→	√	—	—
READ ROM	LO	LO	HI	HI	X	X	LO	→	—	√	—
READ ROM PATCH	HI	LO	HI	HI	LO	LO	HI	→	—	—	√

*** Enable data buffer and ROM**

INPUT/OUTPUT BUFFER

The INPUT/OUTPUT BUFFER stage consists of two tri-state, bi-directional buffers U245 and U145.

Stored digital data, read from RAM or ROM, is buffered to the data bus when the W/R level (at pin 1) and the enable inputs (pin 19) of the buffers are both at a LO logic level. Data is stored in RAM when the enable inputs are LO and the W/R level is HI. If the enable inputs are HI, the buffers are disabled so that the buses are effectively isolated.

DESCRIPTION

MEMORY CONTROLLER

The MEMORY CONTROLLER stage consists of U100, U110, U120, and U130. This stage determines, from various inputs, which memory devices should be enabled (RAM, ROM, or expanded *ROM), as well as if the DATA BUS is to be enabled and the direction of data flow. For more detailed information, refer to RAM and ROM circuit descriptions.

RAM

For the following conditions, it is assumed that the PUP (power up) level at the base of Q140 and the BPUP (buffered PUP) are HI, indicating that all supplies are functioning properly.

The RAM stage consists of two 8K x 8-bit random access memory ICs, U310 and U210, and provides the actual storage functions for data of the data bus. The combination of the two 8-bit outputs forms a 16-bit memory word, the data format required by the microprocessor. The RAM stage has the capacity to store 8192 sixteen-bit data words.

The MEMORY CONTROLLER stage determines if the RAM stage is to be read from, or written to, and produces the appropriate enable conditions for each mode.

If address bit 15 (A15) is HI, MEM (Memory Enable) is LO, and either address bit 13 (A13) or 14 (A14) is HI (but not both, the LO output at pin U130-10 enables both RAMS for reading or writing data.

To write into memory, ROM (ROM enable) must be HI, and WE (write enable) and R/W (read/write) must both be LO. This produces a LO at the output of U120A-3, allowing data to be written into the RAMs. The INPUT/OUTPUT BUFFERS are enabled by the LO produced at the output of U130F-12. The Lo R/W signal is inverted by U130B to produce a HI W/R, controlling the direction of data flow through the INPUT/OUTPUT buffers for proper data transfer into RAM.

To read from RAM, ROM (ROM enable), WE (write enable), and R/W (read/write) must all be HI. This produces a HI level at the output of pin 3, disabling the WE inputs of the RAMs. The R/W signal is inverted by pin 4, producing a LO W/R level at the OE inputs of the RAMs and at the buffer direction inputs of the INPUT/OUTPUT buffers. The INPUT/OUTPUT BUFFERS are enabled as in the Write cycle, and the stored data can now be read.

ROM

ROM is divided into two sections one section, consisting of U320 and U220, contains the programmed information necessary for the proper operation of this instrument. The other section, consisting of *U200 and *U300 is for program expansion (if necessary). Selection of the ROM section is performed by the MEMORY CONTROLLER stage.

U220 and U320 are 16K x 8-bit ROMs connected to provide up to 16384 sixteen-bit memory words. To enable these ROMs, the ROM signal must be at a LO logic level. The MEMORY CONTROLLER stage prevents data bus contention by disabling the RAMs and *U200 and *U300 (if used). The signal input conditions allowing ROM to be read are that ROM, MEM, and A15 must be LO while WE and R/W are HI.

DESCRIPTION

*U200 and *U300, if used, require that MEM, A13, and A14 are LO while ROM, WE, and R/W are HI. These signals will enable *U200 and *U300 and enable the INPUT/OUTPUT buffers properly. These ROMs are 4K x 8-bit connected to provide up to 4096 sixteen-bit memory words. Program control to read these ROMs originates in U220 and U320.

MEMORY BACK-UP

The MEMORY BACK-UP stage provides a means of maintaining RAM contents when the 7854 power supply is turned off, either intentionally or due to a fault in the power system (either internal or external to the instrument).

Normal Vcc power to the RAMs (U210 and U310 pin 28) is supplied by Q2. If the power supply voltages are interrupted, Q430 will turn off. Vcc retention power to the RAMs is then supplied by B450.

Similarly, when the supply voltage is restored, the +5B voltage rises when the supply voltage becomes greater than the battery voltage. The data retention voltage required by the RAMs is 2 volts, minimum.

Page 2-120

ADD:



REAR PANEL CONNECTOR

The Rear Panel Connector circuit consists of S15, S16, S20, S110, VR16 and their associated components. A schematic of this circuit is given on diagram 36 in Section 7, Diagrams and Circuit Board Illustrations.

S20 and associated circuitry is used to tell the MPU to turn on, or self-test at turn on.

Switch S110 is an externally settable GPIB address selector. This instrument's GPIB address is set by either opening or closing the individual rocket switches within S110.

The STOP EXTERNAL WAVEFORM ACQUIRE switch, S15, is a pushbutton switch used to stop waveform acquisition when acquiring externally (see the Digitizer Sweep Counter description). The AUDIBLE ERROR WARNING switch S16 is used to either enable or disable the audible warning circuit.

Connector J15 is located on the rear panel. It provides a user programmable TTL output level (for simple on/off or similar control) to a peripheral device.

Connector J410 is a GPIB connector adhering to the IEEE 488-1978 GPIB Standard and provides for using the 7854 in GPIB configurations.

DESCRIPTION

The cabling associated with P108 connects the MPU (microprocessor unit) to both the Front Panel Keyboard circuit and to the Rear Panel Connector board. Connector P208 is an RS-232 connector that connects the external Calculator Keyboard to the MPU board via the Rear Panel Connector Board and P108.

Page 4-9

CHANGE THE FIRST HALF OF TABLE 4-2 (CONT) TO READ:

Table 4-2 (CONT)
Performance Check Summary

Characteristic	Performance Requirement	Part I Performance Check Procedure Title	Part II Adjustment and Performance Check Procedure Title
EXTERNAL CONNECTORS (CONT)			
EXTERNAL KEYBOARD	25-pin female rear-panel connector for connecting an external keyboard.	Does not normally require customer verification. Substantiated at the factory.	
GPIB IEEE-488-1978	24-pin female rear-panel connector for connecting instrument to GPIB Meets IEEE-488-1978 (Not available on Option 0D.)		
MEMORY BACK-UP POWER	3.5 V Lithium Battery Soldered on memory Board. Provides power to maintain power on RAM, thereby providing non-volatile memory.	Satisfactory operation substantiated throughout procedure where plug-ins are removed and installed with POWER OFF.	
Voltage Requirement	2-3.5 VDC		

DESCRIPTION

Page 4-20

CHANGE TABLE 4-3 (CONT) TO READ:

**Table 4-3
Test Equipment**

Description	Minimum Specifications	Purpose	Examples of Applicable Test Equipment
19. Nylon Tuning Tool ¹	1 inch shaft.	Adjustment of Vertical high-frequency	a. Tektronix Part 003-0675-00.
20. Low-Capacitance Screwdriver ¹	1 inch shaft.	Used throughout adjustment procedure to adjust variable components.	a. Tektronix Part 003-0000-00.
21. Screwdriver ¹ (Phillips head)	3 inch shaft. 3/32-inch bit.	Used for power supply and rear panel removal.	a. Tektronix Part 003-0341-00.
22. 18" Jumper Wire	18 inch with alligator or similar clips.	Used to center vertical Amplifier and set Digitizer codes.	a. Allied Part 920-605.
23. Bnc to Clip Lead Adapter	Bnc to 2 lead.	Used to check TTL SIGNAL OUTPUT.	a. Tektronix Part 013-0076-00.
24. Resistor	887 ohm.	Used to check TTL SIGNAL OUTPUT.	a. Tektronix Part 321-0188-00.
25. Resistor	909 ohm.	Used to check TTL SIGNAL OUTPUT.	a. Tektronix Part 321-0189-00.

¹ Used for callbration only; NOT used for performance check.

DESCRIPTION

Page 4-21

CHANGE PERFORMANCE CHECK POWER-UP SEQUENCE TO READ:

NOTE

The performance of this instrument can be checked at any ambient temperature from 0° to +50°C unless otherwise stated.

1. Check that the instrument has been set for the proper power source and also that a suitable power cord and plug has been attached. Refer to Power Source Information in Section 1 for specific details.
2. Connect the instrument to the power source.
3. Press the POWER button and allow 20 minutes warmup before proceeding.

CAUTION

To prevent instrument damage, turn off 7854 POWER before installing or removing plug-in units.

Page 4-47

CHANGE TO READ:

B. Z-AXIS AND DISPLAY

Equipment Required: (Numbers correspond to those listed in Table 4-3, Test Equipment.)

- | | |
|--|--|
| 1. Test oscilloscope | 14. Coaxial cable (two 42-inch required) |
| 2. Amplifier unit | 17. Bnc-T connector |
| 4. Time base (two required) | 18. Screwdriver |
| 8. Precision dc voltmeter (DVM) | 19. Nylon tuning tool |
| 10. Low-frequency sine-wave generator | 20. Low-capacitance screwdriver |
| 13. 10X probe with short grounding strap | 21. Phillips head screwdriver |

DESCRIPTION

Page 4-54

CHANGE TO READ:

C. CALIBRATOR AND OUTPUT SIGNALS

Equipment Required: (Numbers correspond to those listed in Table 4-3, Test Equipment.)

- | | |
|--|---------------------------------|
| 1. Test oscilloscope | 17. Bnc-T connector |
| 4. Delaying time base | 20. Low Capacitance Screwdriver |
| 8. Precision dc voltmeter (DVM) | 22. Jumper wire |
| 9. Time-mark generator or frequency counter (optional) | 23. Bnc to clip lead adapter |
| 14. Coaxial cable (one 18-inch, two 42-inch required) | 25. 887 Ω Resistor |
| 15. 50 ohm-terminator | 26. 909 Ω Resistor |

Page 4-60

CHANGE TO READ:

D. TRIGGER SYSTEM

Equipment Required: (Numbers correspond to those listed in Table 4-3, Test Equipment.)

- | | |
|---|---|
| 1. Test oscilloscope | 14. Coaxial cable (one 18-inch, two 42-inch required) |
| 2. Amplifier unit | 15. 50 ohm terminators (two required) |
| 4. Time base (two required) | 20. Low capacitance screwdriver |
| 5. Signal Standardizer | 21. Phillips head screwdriver |
| 6. Plug-in extender (rigid calibration fixture) | |

Page 4-66

CHANGE TO READ:

E. HORIZONTAL SYSTEM

Equipment Required: (Numbers correspond to those listed in Table 4-3, Test Equipment.)

- | | |
|---------------------------------------|---|
| 2. Amplifier unit (two required) | 12. Function Generator |
| 4. Time base | 14. Coaxial bnc cable (one 18-inch, two 42-inch required) |
| 5. Signal Standardizer unit | 20. Low-capacitance screwdriver |
| 9. Time-mark generator | 22. Jumper wire |
| 10. Low-frequency sine-wave generator | |

DESCRIPTION

Page 4-71

CHANGE TO READ:

F. VERTICAL SYSTEM

Equipment Required: (Numbers correspond to those listed in Table 4-3, Test Equipment.)

- | | |
|---------------------------------------|---|
| 2. Amplifier | 11. High-Frequency sine-wave generator |
| 4. Time base (two required) | 14. Coaxial cable (one 18-inch, one 42-inch required) |
| 5. Signal Standardizer | 15. 50 ohm terminators (two required) |
| 6. Plug-in Extender | 16. 2X Attenuator |
| 7. Analog Test Card (067-0912-00) | 17. Bnc-T connector |
| 10. Low-Frequency sine-wave generator | 19. Nylon tuning tool |

Page 4-79

CHANGE TO READ:

GA1. DISPLAY SYSTEM PRELIMINARY SETUP

- a. With the POWER switch OFF, install the 067-0961-XX Diagnostic Memory Board per the appropriate instructions in the Maintenance section of this manual. Install the keyboard overlay on the Front-Panel Keyboard for the Push Button nomenclature used in this procedure. Remove both ROM Jumper's J200 and J201 on Memory Board.

Page 4-80

CHANGE TO READ:

FIRST COLUMN

- n. Reinstall both ROM jumper's J200 and J201 in original position.

DESCRIPTION**Page 4-81****CHANGE TO READ:****FIRST COLUMN**

- p. Reinstall the ROM Jumper's J200 and J201 (pins 2 and 3) in original position.

SECOND COLUMN

- j. Reinstall the ROM Jumper's J200 and J201 (pins 2 and 3) in original position.

Page 4-82**CHANGE TO READ:****SECOND COLUMN**

- o. Reinstall the ROM Jumpers J200 and J201 (pins 2 and 3) in original position.

Page 4-83**CHANGE TO READ:****GB1. DISPLAY SYSTEM PRELIMINARY SETUP**

- a. Perform the Adjustment and Performance Check Power-Up sequence with Rear-Panel Memory Switch in Self Test on Turn On position.

DESCRIPTION

Page 4-85

CHANGE TO READ:

**GB4. ADJUST CHARACTER DISPLAY
(A29R1100, A29R1106, A29R1200)**

- a. Set Rear-Panel Memory SW to Self-Test on Turn On Position.

Switch in Self Test on

Page 4-87

CHANGE TO READ:

GC1. DISPLAY SYSTEM PRELIMINARY SETUP

- a. Perform the Adjustment and Performance Check Power-Up sequence.

Page 4-88

CHANGE TO READ:

**GC3. ADJUST DISPLAY HORIZONTAL
CENTERING AND GAIN (A29R1205,
A29R1300)**

- a. Set Rear Panel Memory SW to Self Test on Turn On position.

Page 4-89

CHANGE TO READ:

**GC5. ADJUST CHARACTER DISPLAY
(A29R1100, A29R1106, A29R1200)**

- a. Set Rear Panel Memory SW to Self Test on Turn On position.

DESCRIPTION

Page 4-90

CHANGE TO READ:

H. VERTICAL AND HORIZONTAL PICKOFF SYSTEM

Equipment Required: (Numbers correspond to those listed in Table 4-3, Test Equipment.)

- | | |
|------------------------|---|
| 1. Test Oscilloscope | 14. Coaxial cable (one 18-inch, one 42-inch required) |
| 4. Time base | 16. 2X Attenuator |
| 5. Signal Standardizer | 20. Low capacitance screwdriver |
| 9. Time-mark generator | 22. 18" jumper wire |
| 12. X10 Probe | |

Page 5-1

CHANGE TO READ:

INSTRUMENT OPTIONS

Your 7854 Oscilloscope may be equipped with one or more instrument options. This section includes a brief description of each available option, and an Option Information Locator Table. The Option Information Locator lists all the available options and tells where they are mentioned in this manual. For further information about options, see your Tektronix Products catalog or contact your Tektronix Field Office.

WARNING

To avoid electric shock hazard, operating personnel must not remove the protective instrument covers. Component replacement and internal adjustments must be made by qualified service personnel only.

OPTION 02

Option 02 is an X-Y delay-compensation network to equalize signal delay between the vertical and horizontal deflection systems. With this network installed and activated, the phase shift between the vertical and horizontal channels is adjustable to less than 2° from dc to 1 MHz.

DESCRIPTION

OPTION 03

Option 03 includes parts that enable the instrument to meet the electromagnetic compatibility listed in Section 2 of the Operators Manual.

OPTION 78

Option 78 substitutes a P11 phosphor crt for the standard P31 phosphor crt.

OPTION 1S

Option 1S makes the currently applicable version of Diagnostic Memory Card, 067-0961-XX available at the time of instrument purchase.

The 067-0961-XX is a component of the digital service package and is not required for instrument operation.

OPTION 2S

Option 2S makes the currently applicable version of Signature Tables, 070-2972-XX, available at the time of instrument purchase.

DESCRIPTION

Page 5-3

CHANGE TO READ:

TABLE 5-1 (CONT)
Option Information Locator

Option	Location In Manual		Information
	Section	Heading	
Option 03	5 Instrument Options	Option 03	Includes a brief description of Option 03.
	8 Replaceable	Option 03 (pullout page)	Provides a mechanical parts list and an exploded-view drawing of Option 03.
Option 78	5 Instrument Options	Option 78	Includes a brief description of Option 78.

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CHANGE TO READ:

WHICH OPTIONS DOES YOUR 7854 HAVE?

Instruments with one or more Options (02, 03, 78, A1, A2, A3, A4) will have a tag to identify each Option. The tag(s) will be attached to the rear of the 7854 (see Fig. 5-1). Instruments with Options 1S or 2S will have no identification tags since those Options are not part of the 7854.