

KENWOOD

GP-IB ADAPTER

GP-610A

GP-610D

GP-620

SERVICE MANUAL

KENWOOD CORPORATION



WARNING

The following instructions are for use by qualified personnel only. To avoid electric shock, do not perform any servicing other than contained in the operating instructions unless you are qualified to do so.

CONTENTS

PARTS LIST	3
SCHEMATIC DIAGRAM	5
P.C. BOARD	9

PARTS LIST

GP-610A (Y87-2550-00)

REF. NO	PARTS NO	NAME & DESCRIPTION
A01	1241-13	CASE
A10	1469-23	CHASSIS
A22	0886-14	SUB PANEL
A63	0033-03	FRONT PANEL
A83	0022-14	REAR PANEL
B40	2737-24	SERIAL NO. PLATE
B41	0889-04	FUSE RATING LABEL
B41	0890-04	LABEL;AC 100V 50/60HZ 15W
B41	0891-04	LABEL;AC 120V 50/60HZ 15W
B41	0892-04	LABEL;AC 220V 50/60HZ 15W
B41	0893-04	LABEL;AC 240V 50/60HZ 15W
B41	0894-04	LABEL;AC 120V 60HZ 15W
B63	0047-00	INSTRUCTION MANUAL;JAPANESE
B63	0048-00	INSTRUCTION MANUAL;ENGLISH
E21	0209-13	PAIR TERMINAL
E29	0506-04	SHORTING BAR
E30	0027-35	UL/CSA POWER CORD
E30	0545-05	JIS POWER CORD
E30	0571-15	SAA POWER CORD
E30	1815-05	CEE POWER CORD
E30	1867-05	BS POWER CORD
E30	1904-05	DIN CABLE:6 CORE
E30	1905-05	DIN CABLE:2 CORE
F05	4011-05	FUSE(6X32MM) 0.4A/250V
F05	4016-05	FUSE(5X20MM) T400MA/250V
F05	7011-05	FUSE(6X32MM) 0.7A/250V
H12	0582-02	FORMED STYRENE PAD
H25	0825-04	BAG
H53	0039-04	CARTON BOX
J02	0503-15	RUBBER FOOT
J11	0046-05	CABLE CLAMP, FOR 3 CORE
J19	1313-05	CABLE CLAMP, FOR 2 CORE
J21	4738-14	BRACKET;2 PIECES
J21	4750-04	BRACKET;1 PIECE
J21	4751-04	BRACKET;FOR OUTPUT UNIT
J30	0638-04	SPACER
J42	0083-05	BUSHING;FOR 2-CORE AC CORD
J42	0085-05	BUSHING;FOR 3-CORE AC CORD
K27	0509-04	PUSH BUTTON,ORANGE;POWER
K27	0555-04	BUTTON
L01	9960-05	POWER TRANSFORMER
S40	2514-05	PUSH SWITCH
W02	2183-08	GP-IB UNIT
W02	2184-08	D/A UNIT
W02	2185-08	OUTPUT UNIT

GP-610D (Y87-2550-01)

REF. NO	PARTS NO	NAME & DESCRIPTION
A01	1241-13	CASE
A10	1469-23	CHASSIS
A22	0886-14	SUB PANEL
A63	0042-03	FRONT PANEL
A83	0022-14	REAR PANEL
B40	2737-24	SERIAL NO. PLATE
B41	0889-04	FUSE RATING LABEL
B41	0890-04	LABEL;AC 100V 50/60HZ 15W
B41	0891-04	LABEL;AC 120V 50/60HZ 15W
B41	0892-04	LABEL;AC 220V 50/60HZ 15W
B41	0893-04	LABEL;AC 240V 50/60HZ 15W
B41	0894-04	LABEL;AC 120V 60HZ 15W
B63	0047-00	INSTRUCTION MANUAL;JAPANESE
B63	0048-00	INSTRUCTION MANUAL;ENGLISH
E21	0209-13	PAIR TERMINAL
E29	0506-04	SHORTING BAR
E30	0027-35	UL/CSA POWER CORD
E30	0545-05	JIS POWER CORD
E30	0571-15	SAA POWER CORD
E30	1815-05	CEE POWER CORD
E30	1867-05	BS POWER CORD
E30	1879-05	DIN CABLE:7 CORE
E30	1880-05	DIN CABLE:3 CORE
F05	4011-05	FUSE(6X32MM) 0.4A/250V
F05	4016-05	FUSE(5X20MM) T400MA/250V
F05	7011-05	FUSE(6X32MM) 0.7A/250V
H12	0582-02	FORMED STYRENE PAD
H25	0825-04	BAG

REF. NO	PARTS NO	NAME & DESCRIPTION
H53	0051-04	CARTON BOX
J02	0503-15	RUBBER FOOT
J11	0046-05	CABLE CLAMP, FOR 3 CORE
J19	1313-05	CABLE CLAMP, FOR 2 CORE
J21	4738-14	BRACKET;2 PIECES
J21	4750-04	BRACKET;1 PIECE
J21	4751-04	BRACKET;FOR OUTPUT UNIT
J30	0638-04	SPACER
J42	0083-05	BUSHING;FOR 2-CORE AC CORD
J42	0085-05	BUSHING;FOR 3-CORE AC CORD
K27	0509-04	PUSH BUTTON,ORANGE;POWER
K27	0555-04	BUTTON
L01	9960-05	POWER TRANSFORMER
S40	2514-05	PUSH SWITCH
W02	2183-08	GP-IB UNIT
W02	2184-08	D/A UNIT
W02	2185-08	OUTPUT UNIT

GP-620

(Y87-2520-00)

REF. NO	PARTS NO	NAME & DESCRIPTION
A01	1241-13	CASE
A10	1469-23	CHASSIS
A22	0886-14	SUB PANEL
A63	0019-03	FRONT PANEL
A83	0011-14	REAR PANEL
B40	2737-24	SERIAL NO. PLATE
B41	0878-04	LABEL;AC 100V 50/60HZ 5W
B41	0879-04	LABEL;AC 120V 50/60HZ 5W
B41	0880-04	LABEL;AC 220V 50/60HZ 5W
B41	0881-04	LABEL;AC 240V 50/60HZ 5W
B41	0882-04	LABEL;AC 120V 60HZ 5W
B41	0900-04	FUSE RATING LABEL
B63	0031-00	INSTRUCTION MANUAL;JAPANESE
B63	0032-00	INSTRUCTION MANUAL;ENGLISH
E21	0209-13	PAIR TERMINAL
E29	0506-04	SHORTING BAR
E30	1851-05	POWER CORD ASS'Y(JIS)
E30	1852-05	POWER CORD ASS'Y(CEE)
E30	1853-05	POWER CORD ASS'Y(SAA)
E30	1854-05	POWER CORD ASS'Y(UL/CSA)
E30	1868-05	POWER CORD ASS'Y(BS)
E38	0156-05	WIRE ASS'Y;3P
E38	0157-05	WIRE ASS'Y;5P
E38	0329-05	WIRE ASS'Y;GND
F05	1014-05	FUSE(5X20MM) T100MA/250V
F05	1016-05	FUSE(6.3X32MM) T0.1A/250V
H12	0582-02	FORMED STYRENE PAD
H25	0825-04	BAG
H53	0025-04	CARTON BOX
J02	0503-15	RUBBER FOOT
J11	0046-05	CABLE CLAMP, FOR 3 CORE
J19	1313-05	CABLE CLAMP, FOR 2 CORE
J21	4738-14	BRACKET;2 PIECES
J30	0638-04	SPACER
J42	0083-05	BUSHING;FOR 2-CORE AC CORD
J42	0085-05	BUSHING;FOR 3-CORE AC CORD
K27	0509-04	PUSH BUTTON,ORANGE;POWER
K27	0555-04	BUTTON
L01	9956-05	POWER TRANSFORMER
N09	0718-05	SCREW,SEMS PAN HD M3X6
N09	0731-05	SCREW,SEMS PAN HD M3X12
N09	0739-05	SCREW,SEMS BINDING TAPTITE 3X8
N09	0757-05	SCREW,SEMS BINDING TAPTITE 3X6
N09	0776-05	SCREW,SEMS PAN HD M3X16
N10	2030-41	NUT, HEX M3
N14	0404-04	FLANGE NUT M3
N15	1030-41	PLAIN WASHER M3
N16	0030-41	SPRING WASHER
N17	1030-41	LOCK WASHER M3
N89	3006-41	SCREW,BINDING TAPTITE 3X6
N89	3010-41	SCREW,BINDING TAPTITE 3X10
SI	3052V	IC,3-TERMINAL REGULATOR
X81	2910-00	GP-IB ADAPTER UNIT

GP-610A/GP-610D GP-IB UNIT (W02-2183-08)

REF. NO	PARTS NO	NAME & DESCRIPTION
E02	0143-08	IC SOCKET
E31	2717-08	WIRE ASS'Y;P5
E31	2718-08	WIRE ASS'Y;P6
J13	0020-15	FUSE HOLDER, FOR 6X30MM
J13	0039-05	FUSE HOLDER, FOR 5X20MM
J25	5117-02	PCB (UNMOUNTED)
C1	CE04EWIE4R7M	CAP. ELECTRO 4.7 20% 25V
C2	C90-0298-05	CAP. CERAMIC 0.1 20% 12V
C3	L78-0103-05	CERAMIC RESONATOR/CAPACITOR
C4	CE04EWIE4R7M	CAP. ELECTRO 4.7 20% 25V
C5	C90-0298-05	CAP. CERAMIC 0.1 20% 12V
C6	C90-0298-05	CAP. CERAMIC 0.1 20% 12V
C7	CE04EWIV332M	CAP. ELECTRO 3300 20% 35V
C8	CE04EWIE101M	CAP. ELECTRO 100 20% 25V
C9	C90-0298-05	CAP. CERAMIC 0.1 20% 12V
C10	C90-0298-05	CAP. CERAMIC 0.1 20% 12V
C11	C90-0298-05	CAP. CERAMIC 0.1 20% 12V
C12	C90-0298-05	CAP. CERAMIC 0.1 20% 12V
C13	C90-0298-05	CAP. CERAMIC 0.1 20% 12V
C14	C90-0298-05	CAP. CERAMIC 0.1 20% 12V
C15	C90-0298-05	CAP. CERAMIC 0.1 20% 12V
C16	C90-0298-05	CAP. CERAMIC 0.1 20% 12V
C17	C90-0298-05	CAP. CERAMIC 0.1 20% 12V
C18	C90-0298-05	CAP. CERAMIC 0.1 20% 12V
C19	C90-0298-05	CAP. CERAMIC 0.1 20% 12V
C20	C90-0298-05	CAP. CERAMIC 0.1 20% 12V
C21	C90-0298-05	CAP. CERAMIC 0.1 20% 12V
C22	KK45B1H103K	CAP. CERAMIC 0.01 10% 50V
C23	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C24	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C25	CS15E1E010M	CAP. TUNTALUM 1 20% 25V
D1	LN222RP	LED;RED
D2	LN222RP	LED;RED
D3	LN222RP	LED;RED
D4	LN222RP	LED;RED
D5	LN222RP	LED;RED
D10	S2VB40F	DIODE, BRIDGE
FL1	L19-0420-08	LINE FILTER
J1	R92-1061-05	JUMPING RES. ZERO OHM (5MM)
J12	E31-2719-08	WIRE ASS'Y;J12-P12
J13	E31-2720-08	WIRE ASS'Y;J13-P13
J14	E31-2721-08	WIRE ASS'Y;J14-P14
J15	E31-2722-08	WIRE ASS'Y;J15-P15
J16	E31-2723-08	WIRE ASS'Y;J16-P16
J17	E31-2724-08	WIRE ASS'Y;J17-P17
OSC1	L78-0103-05	CERAMIC RESONATOR/CAPACITOR
P1	E10-2461-08	EDGE CARD CONNECTOR
P2	E40-0342-05	PIN CONNECTOR 3P
P3	E40-0342-05	PIN CONNECTOR 7P
P4	E40-0528-05	PIN CONNECTOR 5P
P5	E40-0528-05	PIN CONNECTOR 5P
P6	E40-0328-05	PIN CONNECTOR 3P
P7	E40-0630-05	PIN CONNECTOR 6P
P8	E40-0230-05	PIN CONNECTOR 2P
P9	E40-0330-05	PIN CONNECTOR 3P
P10	NO USE	
P11	E40-3237-05	PIN CONNECTOR 2P
Q1	2SA1175	TR. SI, PNP
R1	RD14BB2E100J	RES. CARBON 10 5% 1/4W
R2	RD14BB2E473J	RES. CARBON 47K 5% 1/4W
R3	R90-0638-08	RES. NETWORK 8X220
R4	RD14BB2E470J	RES. CARBON 47 5% 1/4W
R5	RD14BB2E103J	RES. CARBON 10K 5% 1/4W
R6	NO USE	
R7	RD14BB2E103J	RES. CARBON 10K 5% 1/4W
R8	RD14BB2E102J	RES. CARBON 1K 5% 1/4W
R9	R90-0612-05	RES. NETWORK 8X4.7K
R17	R90-0637-08	RES. NETWORK 6X3.3K
S1	S50-1426-05	TACT SWITCH
S2	S31-8502-05	DIP SWITCH

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
U1	TMP8085AP	IC,CPU
U2	TMP8155P	IC,256 BYTES RAM
U3	T93-0742-04	IC,PROGRAMMED ROM
U4	UPD7210C	IC,GP-IB CONTROLLER
U5	SN751614N	IC,INTERFACE BUS TRANSCEIVER
U6	SN75160AN	IC,INTERFACE BUS TRANSCEIVER
U7	SN74LS373N	IC,OCTAL D-LATCHES
U8	SN74LS139N	IC,DUAL 1-4 DECOD./DE-MPX
U9	PST518A	IC,SYSTEM RESET
U10	SN74LS14N	IC,HEX SCHMITT-TRIG INVERTER
U11	SN74LS00N	IC,QUAD 2-INPUT NAND GATE
U12	SN74LS04N	IC,HEX INVERTER
U13	SN74LS05N	IC,HEX INVERTER/OPEN-COLLECTOR
U14	SN74LS05N	IC,HEX INVERTER/OPEN-COLLECTOR

GP-610A/GP-610D D/A UNIT (W02-2184-08)

REF. NO	PARTS NO	NAME & DESCRIPTION
J25	5115-02	PCB (UNMOUNTED)
C1	CE04EWIC101M	CAP. ELECTRO 100 20% 16V
C2	CS15E1E010M	CAP. TUNTALUM 1 20% 25V
C3	CS15E1E010M	CAP. TUNTALUM 1 20% 25V
C4	CQ92NH102K	CAP. NYLAR 1000P 10% 50V
C5	CE04EWIC101M	CAP. ELECTRO 100 20% 16V
C6	CS15E1E010M	CAP. TUNTALUM 1 20% 25V
C7	CS15E1E010M	CAP. TUNTALUM 1 20% 25V
C8	CQ92NH102K	CAP. NYLAR 1000P 10% 50V
C9	CE04EWIC101M	CAP. ELECTRO 100 20% 16V
C10	CQ92NH102K	CAP. NYLAR 1000P 10% 50V
C11	CS15E1E010M	CAP. TUNTALUM 1 20% 25V
C12	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C13	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C14	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C15	CS15E1E010M	CAP. TUNTALUM 1 20% 25V
C16	CE04EWIE101M	CAP. ELECTRO 100 20% 25V
C17	CE04EWIV331M	CAP. ELECTRO 330 20% 35V
C18	CE04EWIV331M	CAP. ELECTRO 330 20% 35V
C19	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C20	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C21	CQ92NH152K	CAP. NYLAR 1500P 10% 50V
C22	CQ92NH152K	CAP. NYLAR 1500P 10% 50V
C23	CE04EWIE470M	CAP. ELECTRO 47 20% 25V
C24	CE04EWIE470M	CAP. ELECTRO 47 20% 25V
C25	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C26	CE04EWIV331M	CAP. ELECTRO 330 20% 35V
C27	CE04EWIV331M	CAP. ELECTRO 330 20% 35V
C28	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C29	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C30	CQ92NH152K	CAP. NYLAR 1500P 10% 50V
C31	CQ92NH152K	CAP. NYLAR 1500P 10% 50V
C32	CE04EWIE470M	CAP. ELECTRO 47 20% 25V
C33	CE04EWIE470M	CAP. ELECTRO 47 20% 25V
C34	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C35	CE04EWIV331M	CAP. ELECTRO 330 20% 35V
C36	CE04EWIV331M	CAP. ELECTRO 330 20% 35V
C37	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C38	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C39	CQ92NH152K	CAP. NYLAR 1500P 10% 50V
C40	CQ92NH152K	CAP. NYLAR 1500P 10% 50V
C41	CE04EWIE470M	CAP. ELECTRO 47 20% 25V
C42	CE04EWIE470M	CAP. ELECTRO 47 20% 25V
C43	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C44	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C45	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C46	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C47	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C48	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C49	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C50	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C51	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C52	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C53	CE04EWIE470M	CAP. ELECTRO 47 20% 25V
C54	CE04EWIE470M	CAP. ELECTRO 47 20% 25V
C55	CE04EWIE470M	CAP. ELECTRO 47 20% 25V
C56	CQ92NH104K	CAP. NYLAR 0.1 10% 50V
C57	CQ92NH104K	

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION			
C63	CQ92M1H103K	CAP. MYLAR	0.01	10%	50V
C64	CQ92M1H103K	CAP. MYLAR	0.01	10%	50V
C65	CQ92M1H682K	CAP. MYLAR	6800P	10%	50V
C66	CQ92M1H682K	CAP. MYLAR	6800P	10%	50V
D2	SM-1XN06	DIODE			
D3	NO USE				
D4	SM-1XN06	DIODE			
D5	1SZ59(T)	DIODE ZENER	6.25V		
D6	1S1544A	DIODE			
D7	SM-1XN06	DIODE			
D8	S1VB20	DIODE,BRIDGE			
D9	S1VB20	DIODE,BRIDGE			
D10	S1VB20	DIODE,BRIDGE			
J2	R92-1061-05	JUMPING RES.	ZERO OHM	(5MM)	
J5	R92-1061-05	JUMPING RES.	ZERO OHM	(5MM)	
P12	E40-3237-05	PIN CONNECTOR	2P		
P13	E40-3241-05	PIN CONNECTOR	6P		
P14	E40-3241-05	PIN CONNECTOR	6P		
P15	E40-3241-05	PIN CONNECTOR	6P		
P24	E40-3238-05	PIN CONNECTOR	3P		
P25	E40-3238-05	PIN CONNECTOR	3P		
P26	E40-3238-05	PIN CONNECTOR	3P		
P27	E40-3238-05	PIN CONNECTOR	3P		
P28	E40-3238-05	PIN CONNECTOR	3P		
P29	E40-3238-05	PIN CONNECTOR	3P		
Q1	2SC1815(Y)	TR. SI, NPN			
Q2	2SC1815(Y)	TR. SI, NPN			
Q3	2SC1815(Y)	TR. SI, NPN			
Q4	2SA1408(O)	TR. SI, PNP			
Q5	2SC3621(O)	TR. SI, NPN			
Q6	2SA1408(O)	TR. SI, PNP			
Q7	2SC3621(O)	TR. SI, NPN			
Q8	2SA1408(O)	TR. SI, PNP			
Q9	2SC3621(O)	TR. SI, NPN			
R1	RD14BB2E472J	RES. CARBON	4.7K	5%	1/4W
R2	RD14BB2E331J	RES. CARBON	330	5%	1/4W
R3	RD14BB2E331J	RES. CARBON	330	5%	1/4W
R4	RD14BB2E331J	RES. CARBON	330	5%	1/4W
R5	NO USE				
R6	RD14BB2E821J	RES. CARBON	820	5%	1/4W
R7	NO USE				
R8	RD14BB2E821J	RES. CARBON	820	5%	1/4W
R9	NO USE				
R10	RD14BB2E821J	RES. CARBON	820	5%	1/4W
R11	RN14BC2E1803F	RES. METAL FILM	180K	1%	1/4W
R12	RN14BC2E6801F	RES. METAL FILM	6.8K	1%	1/4W
R13	RN14BC2E1803F	RES. METAL FILM	180K	1%	1/4W
R14	R90-0630-05	RES. ARRAY;3.9K,3.9K,9.1K,10K			
R15	RD14BB2E472J	RES. CARBON	4.7K	5%	1/4W
R16	RD14BB2E910J	RES. CARBON	91	5%	1/4W
R17	RD14BB2E102J	RES. CARBON	1K	5%	1/4W
R18	RD14BB2E222J	RES. CARBON	2.2K	5%	1/4W
R21	RD14BB2E472J	RES. CARBON	4.7K	5%	1/4W
R22	RD14BB2E331J	RES. CARBON	330	5%	1/4W
R23	RD14BB2E331J	RES. CARBON	330	5%	1/4W
R24	RD14BB2E331J	RES. CARBON	330	5%	1/4W
R25	NO USE				
R26	RD14BB2E821J	RES. CARBON	820	5%	1/4W
R27	NO USE				
R28	RD14BB2E821J	RES. CARBON	820	5%	1/4W
R29	NO USE				
R30	RD14BB2E821J	RES. CARBON	820	5%	1/4W
R31	RN14BC2E1803F	RES. METAL FILM	180K	1%	1/4W
R32	RN14BC2E6801F	RES. METAL FILM	6.8K	1%	1/4W
R33	RN14BC2E1803F	RES. METAL FILM	180K	1%	1/4W
R34	R90-0630-05	RES. ARRAY;3.9K,3.9K,9.1K,10K			
R35	RD14BB2E472J	RES. CARBON	4.7K	5%	1/4W
R36	RD14BB2E910J	RES. CARBON	91	5%	1/4W
R37	RD14BB2E102J	RES. CARBON	1K	5%	1/4W
R38	RD14BB2E222J	RES. CARBON	2.2K	5%	1/4W
R41	RD14BB2E472J	RES. CARBON	4.7K	5%	1/4W
R42	RD14BB2E331J	RES. CARBON	330	5%	1/4W
R43	RD14BB2E331J	RES. CARBON	330	5%	1/4W
R44	RD14BB2E331J	RES. CARBON	330	5%	1/4W
R45	NO USE				
R46	RD14BB2E821J	RES. CARBON	820	5%	1/4W

REF. NO	PARTS NO	NAME & DESCRIPTION			
R47	NO USE				
R48	RD14BB2E821J	RES. CARBON	820	5%	1/4W
R49	NO USE				
R50	RD14BB2E821J	RES. CARBON	820	5%	1/4W
R51	RN14BC2E7500F	RES. METAL FILM	750	1%	1/4W
R52	RN14BC2E3161F	RES. METAL FILM	3.16K	1%	1/4W
R53	RN14BC2E3161F	RES. METAL FILM	3.16K	1%	1/4W
R54	RN14BE2E4021F	RES. METAL FILM	4.02K	1%	1/4W
R55	RN14BC2E4701F	RES. METAL FILM	4.7K	1%	1/4W
R56	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R57	RN14BC2E1000F	RES. METAL FILM	100	1%	1/4W
R58	RD14BB2E910J	RES. CARBON	91	5%	1/4W
R59	RD14BB2E102J	RES. CARBON	1K	5%	1/4W
R60	RD14BB2E222J	RES. CARBON	2.2K	5%	1/4W
R61	RD14BB2E4R7J	RES. CARBON	4.7	5%	1/4W
R62	RD14BB2E4R7J	RES. CARBON	4.7	5%	1/4W
R63	RD14BB2E100J	RES. CARBON	10	5%	1/4W
R64	RD14BB2E100J	RES. CARBON	10	5%	1/4W
R65	RD14DB3A271J	RES. CARBON	270	5%	1W
R66	RD14BB2E4R7J	RES. CARBON	4.7	5%	1/4W
R67	RD14BB2E4R7J	RES. CARBON	4.7	5%	1/4W
R68	RD14BB2E100J	RES. CARBON	10	5%	1/4W
R69	RD14BB2E100J	RES. CARBON	10	5%	1/4W
R70	RD14DB3A271J	RES. CARBON	270	5%	1W
R71	RD14BB2E4R7J	RES. CARBON	4.7	5%	1/4W
R72	RD14BB2E4R7J	RES. CARBON	4.7	5%	1/4W
R73	RD14BB2E4R7J	RES. CARBON	4.7	5%	1/4W
R74	RD14BB2E4R7J	RES. CARBON	4.7	5%	1/4W
R75	RD14DB3A271J	RES. CARBON	270	5%	1W
R76	RD14BB2E473J	RES. CARBON	47K	5%	1/4W
R77	RD14BB2E473J	RES. CARBON	47K	5%	1/4W
R78	RD14BB2E473J	RES. CARBON	47K	5%	1/4W
R79	RD14BB2E473J	RES. CARBON	47K	5%	1/4W
R80	RD14BB2E473J	RES. CARBON	47K	5%	1/4W
R81	RD14BB2E473J	RES. CARBON	47K	5%	1/4W
RL1	S76-0626-08	RELAY			
RL2	S76-0626-08	RELAY			
RL3	S76-0626-08	RELAY			
U1	TLP521-1	IC,PHOTO COUPLER			
U2	TLP521-1	IC,PHOTO COUPLER			
U3	TLP521-1	IC,PHOTO COUPLER			
U4	TLP521-1	IC,PHOTO COUPLER			
U5	TC4094BP	IC,8-STAGE SHIFT/STORE REGISTE			
U6	TC4094BP	IC,8-STAGE SHIFT/STORE REGISTE			
U7	DAC80-CB1-V	IC,8-BIT D/A CONVERTER			
U8	OP-07DP	IC,OP AMP			
U9	TLP521-1	IC,PHOTO COUPLER			
U10	TLP521-1	IC,PHOTO COUPLER			
U11	TLP521-1	IC,PHOTO COUPLER			
U12	TLP521-1	IC,PHOTO COUPLER			
U13	TC4094BP	IC,8-STAGE SHIFT/STORE REGISTE			
U14	TC4094BP	IC,8-STAGE SHIFT/STORE REGISTE			
U15	DAC80-CB1-V	IC,8-BIT D/A CONVERTER			
U16	OP-07DP	IC,OP AMP			
U17	TLP521-1	IC,PHOTO COUPLER			
U18	TLP521-1	IC,PHOTO COUPLER			
U19	TLP521-1	IC,PHOTO COUPLER			
U20	TLP521-1	IC,PHOTO COUPLER			
U21	TC4094BP	IC,8-STAGE SHIFT/STORE REGISTE			
U22	DAC800LCN	IC,8-BIT D/A CONVERTER			
U23	OP-07DP	IC,OP AMP			
U24	TA7179P	IC,TRACKING REGULATOR			
U25	TA78L005AP	IC,3-TERMINAL REGULATOR			
U26	TA7179P	IC,TRACKING REGULATOR			
U27	TA78L005AP	IC,3-TERMINAL REGULATOR			
U28	TA7179P	IC,TRACKING REGULATOR			
U29	TA78L005AP	IC,3-TERMINAL REGULATOR			
VR1	R12-1537-08	RES. SEMI FIXED 2KB			
VR2	R12-1535-08	RES. SEMI FIXED 1KB			
VR3	R12-4513-08	RES. SEMI FIXED 50KB			
VR4	R12-1537-08	RES. SEMI FIXED 2KB			
VR5	R12-1535-08	RES. SEMI FIXED 1KB			
VR6	R12-4513-08	RES. SEMI FIXED 50KB			
VR7	R12-1536-08	RES. SEMI FIXED 2.5KB			
VR8	R12-4513-08	RES. SEMI FIXED 50KB			

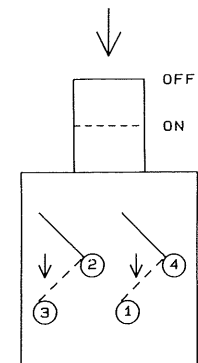
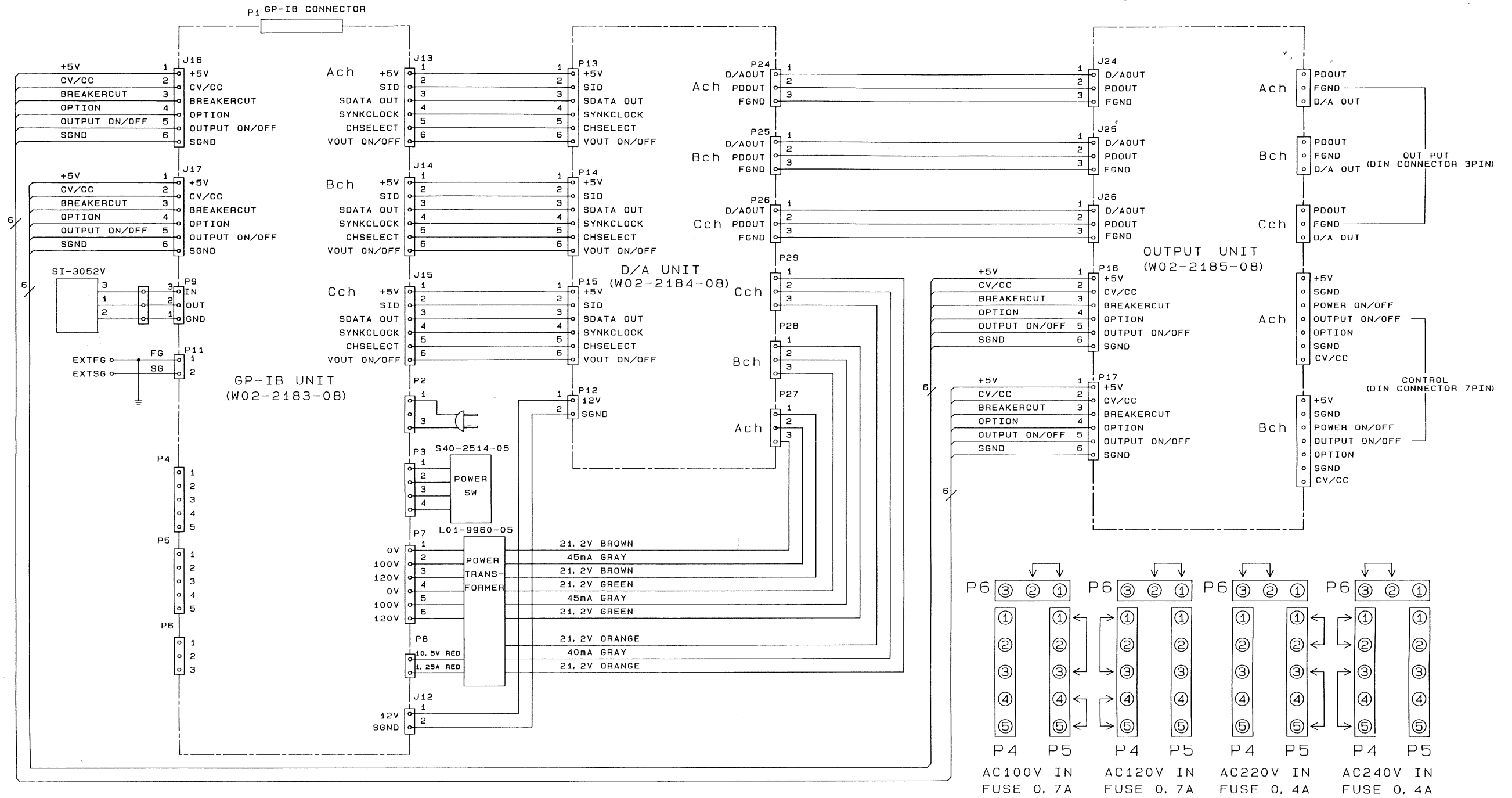
GP-610A/GP-610D OUTPUT UNIT (W02-2185-08)

REF. NO	PARTS NO	NAME & DESCRIPTION			
	E07-0562-08	DIN CONNECTOR	5P		
	E07-0764-08	DIN CONNECTOR	7P		
	E31-2729-08	WIRE ASS'Y;D/A OUT			
	J25-5116-03	PCB (UNMOUNTED)			
C1	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C2	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C3	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C4	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C5	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C6	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C7	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C8	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C9	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C10	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C11	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C12	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C13	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C14	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C15	NO USE				
P16	E40-3241-05	PIN CONNECTOR	6P		
P17	E40-3241-05	PIN CONNECTOR	6P		

GP-620 GP-IB ADAPTER UNIT (X81-2910-00)

REF. NO	PARTS NO	NAME & DESCRIPTION			
	E02-0143-05	IC SOCKET	28P		
	F15-0744-05	BLIND PLATE			
	J13-0020-15	FUSE HOLDER, FOR 6X30MM			
	J13-0039-05	FUSE HOLDER, FOR 5X20MM			
	J73-0039-22	PCB (UNMOUNTED)			
	N09-0623-04	SCREW,SENS PAN HD M3X8			
	S40-2524-05	PUSH SWITCH;POWER			
C1	CE04EW1H010M	CAP. ELECTRO	1	20%	50V
C2	CC45CH1H100D	CAP. CERAMIC	10P	0.5P	50V
C3	CC45CH1H100D	CAP. CERAMIC	10P	0.5P	50V
C4	C90-0298-05	CAP. CERAMIC	0.1	20%	12V
C5	C90-0298-05	CAP. CERAMIC	0.1	20%	12V
C6	C90-0298-05	CAP. CERAMIC	0.1	20%	12V
C7	C90-0298-05	CAP. CERAMIC	0.1	20%	12V
C8	C90-0298-05	CAP. CERAMIC	0.1	20%	12V
C9	C90-0298-05	CAP. CERAMIC	0.1	20%	12V
C10	C90-0298-05	CAP. CERAMIC	0.1	20%	12V
C11	C90-0298-05	CAP. CERAMIC	0.1	20%	12V
C12	C90-0298-05	CAP. CERAMIC	0.1	20%	12V
C13	C90-0298-05	CAP. CERAMIC	0.1	20%	12V
C14	C90-0298-05	CAP. CERAMIC	0.1	20%	12V
C15	C90-0298-05	CAP. CERAMIC	0.1	20%	12V
C16	C90-0980-05	CAP. ELECTRO	3300	20%	25V
C17	CE04EW1A331M	CAP. ELECTRO	330	20%	10V
C18	CE04EW1A101M	CAP. ELECTRO	100	20%	10V
D1	LN222RP	LED;RED			
D2	LN222RP	LED;RED			
D3	LN222RP	LED;RED			
D4	LN222RP	LED;RED			

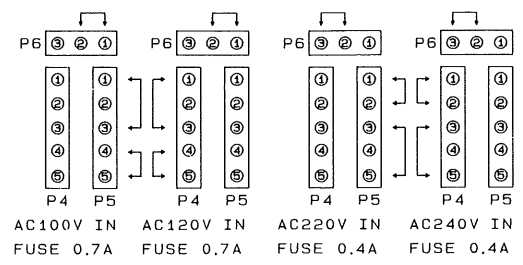
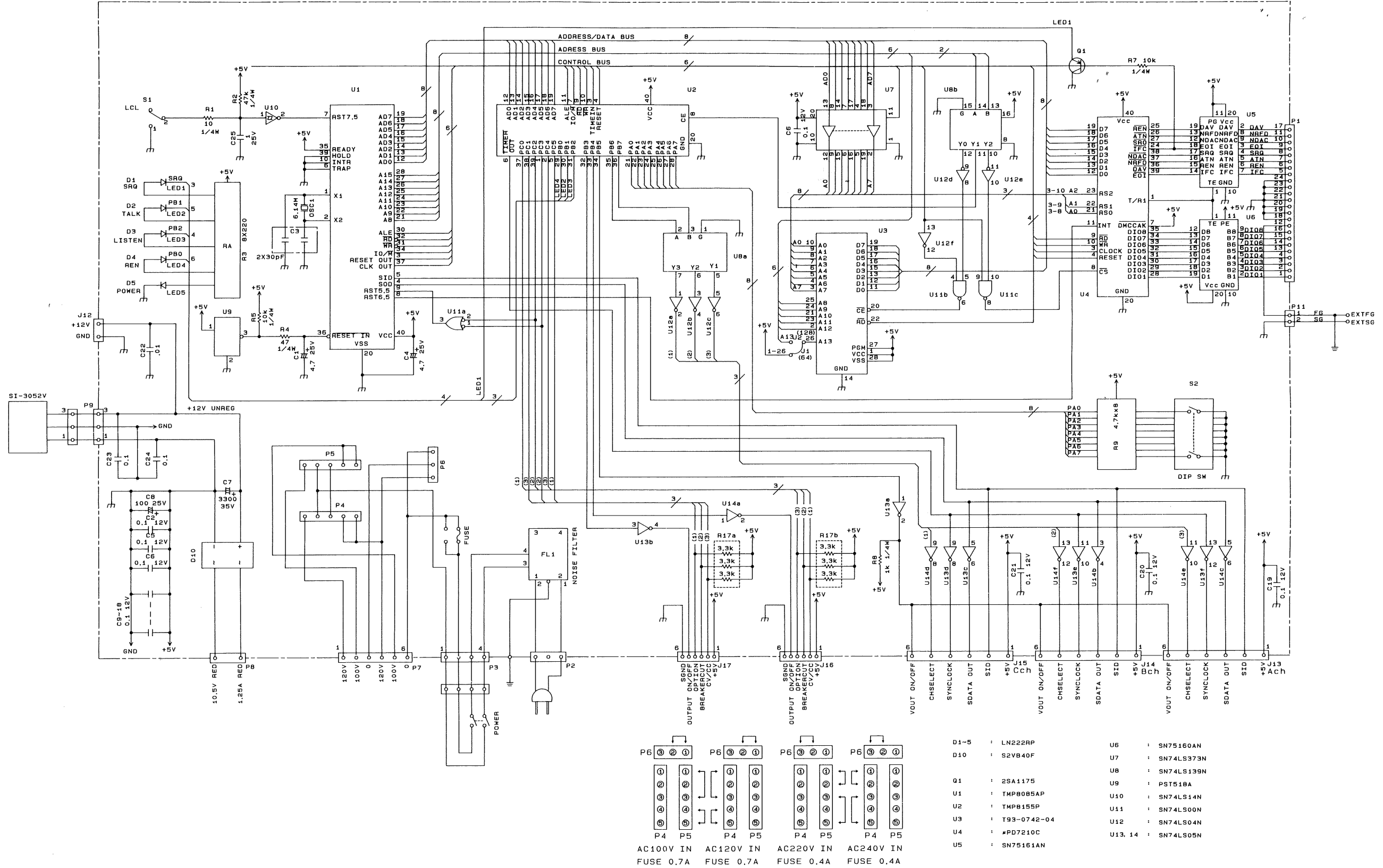
GP-610A/GP-610D SCHEMATIC DIAGRAM



S40-2514-05
POWER SW

GP-610A/GP-610D SCHEMATIC DIAGRAM

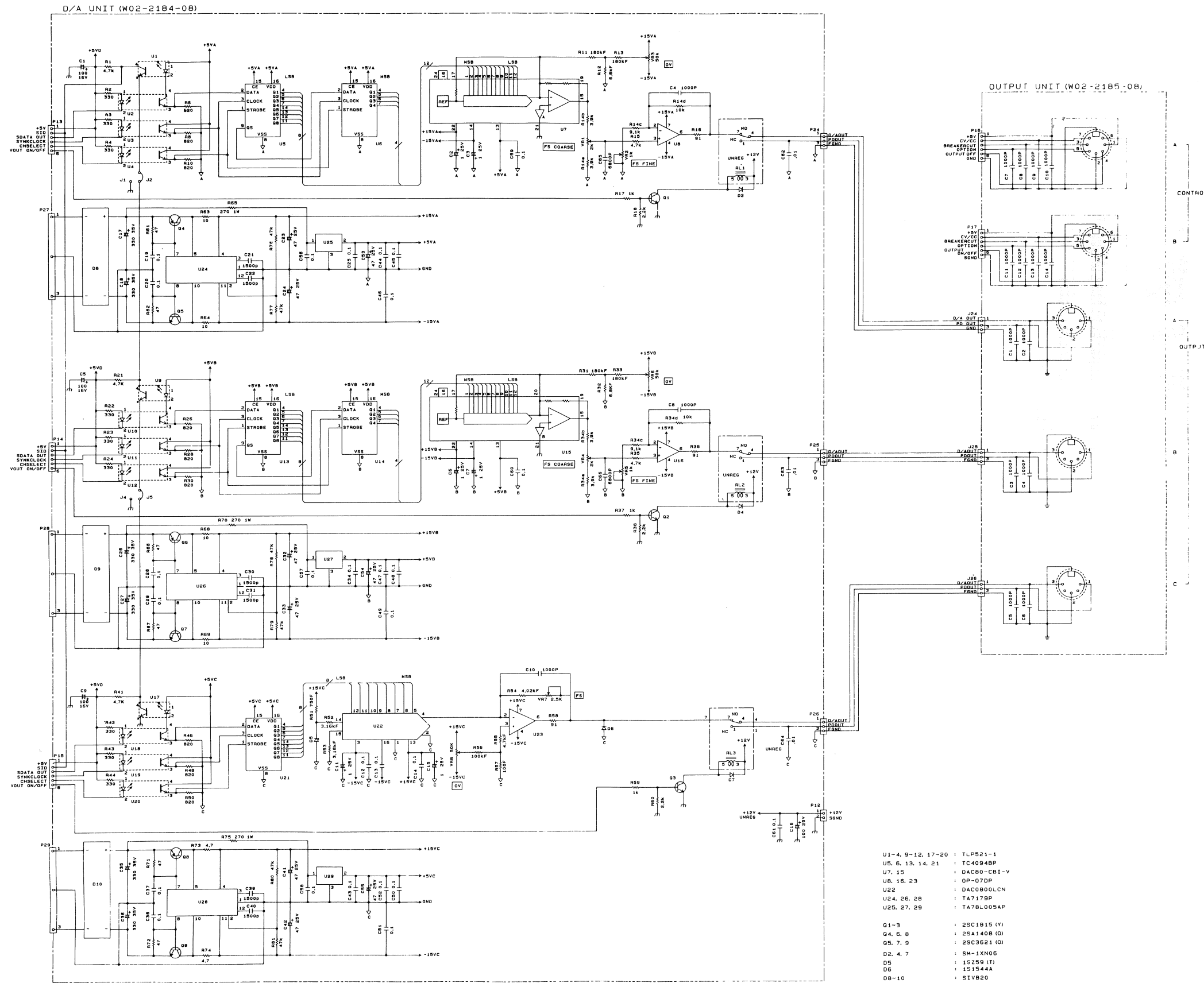
GP-IB UNIT (W02-2183-08)



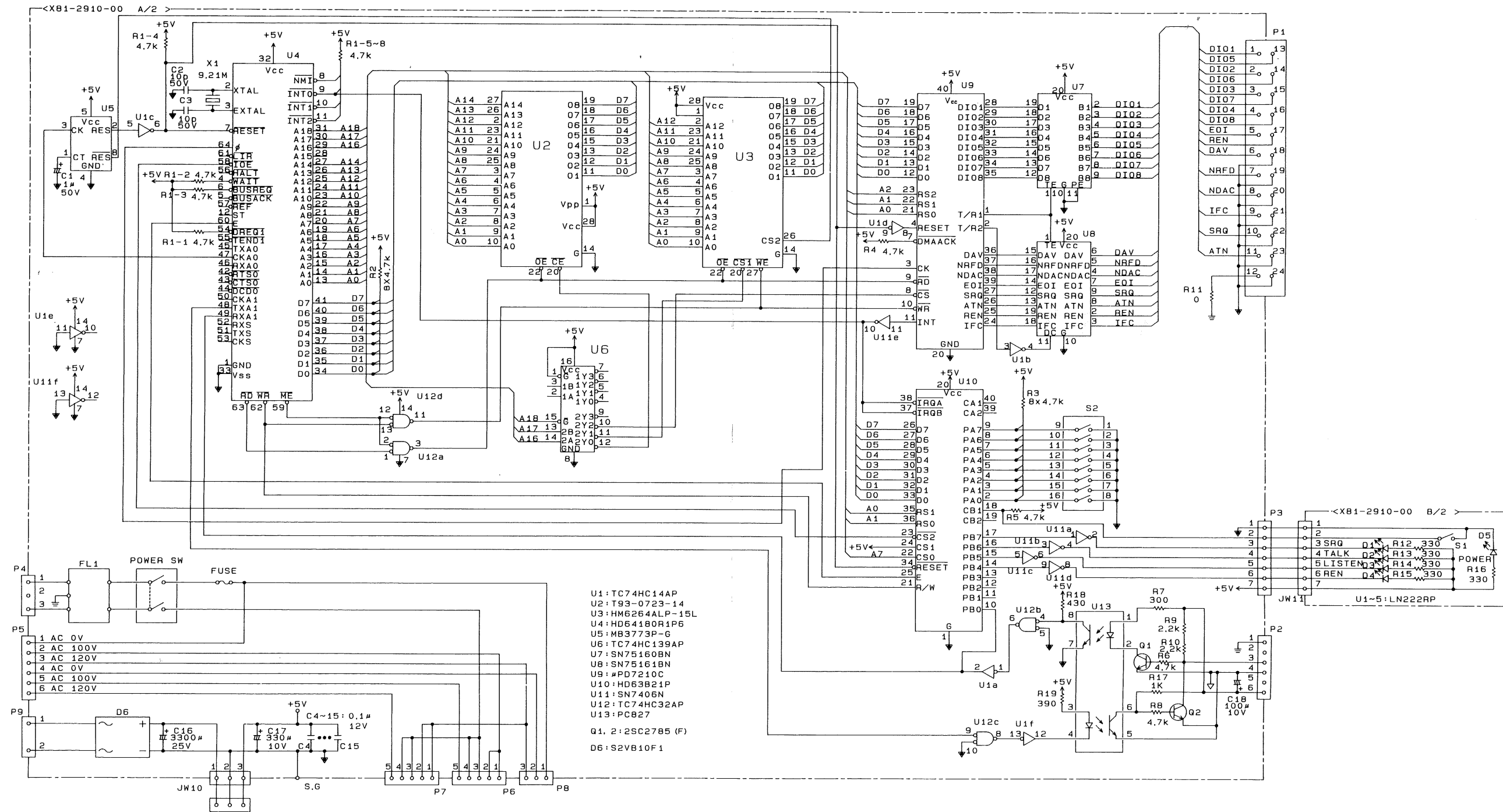
- | | | | |
|------|-----------|---------|--------------|
| D1-5 | : LN222RP | U6 | : SN75160AN |
| D10 | : S2V840F | U7 | : SN74LS373N |
| | | U8 | : SN74LS139N |
| | | U9 | : PST518A |
| | | U10 | : SN74LS14N |
| | | U11 | : SN74LS00N |
| | | U12 | : SN74LS04N |
| | | U13, 14 | : SN74LS05N |
| | | U5 | : SN75161AN |

AC100V IN FUSE 0.7A AC120V IN FUSE 0.7A AC220V IN FUSE 0.4A AC240V IN FUSE 0.4A

GP-610A/GP-610D SCHEMATIC DIAGRAM



NARDAL GP-620 SCHEMATIC DIAGRAM



- U1: TC74HC14AP
 U2: T93-0723-14
 U3: HM6264ALP-15L
 U4: HD64180R1P6
 U5: MB3773P-G
 U6: TC74HC139AP
 U7: SN75160BN
 U8: SN75161BN
 U9: MPD7210C
 U10: HD63821P
 U11: SN7406N
 U12: TC74HC32AP
 U13: PCB27
 Q1: 2-2SC2785 (F)
 D6: S2VB10F1

GP-610A/GP-610D P.C. BOARD

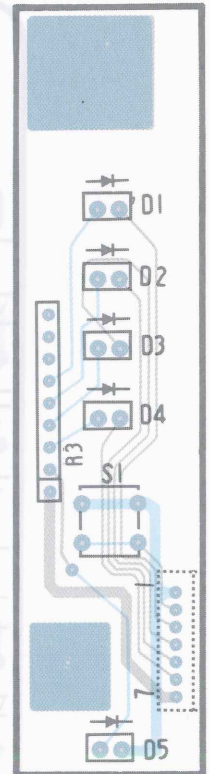
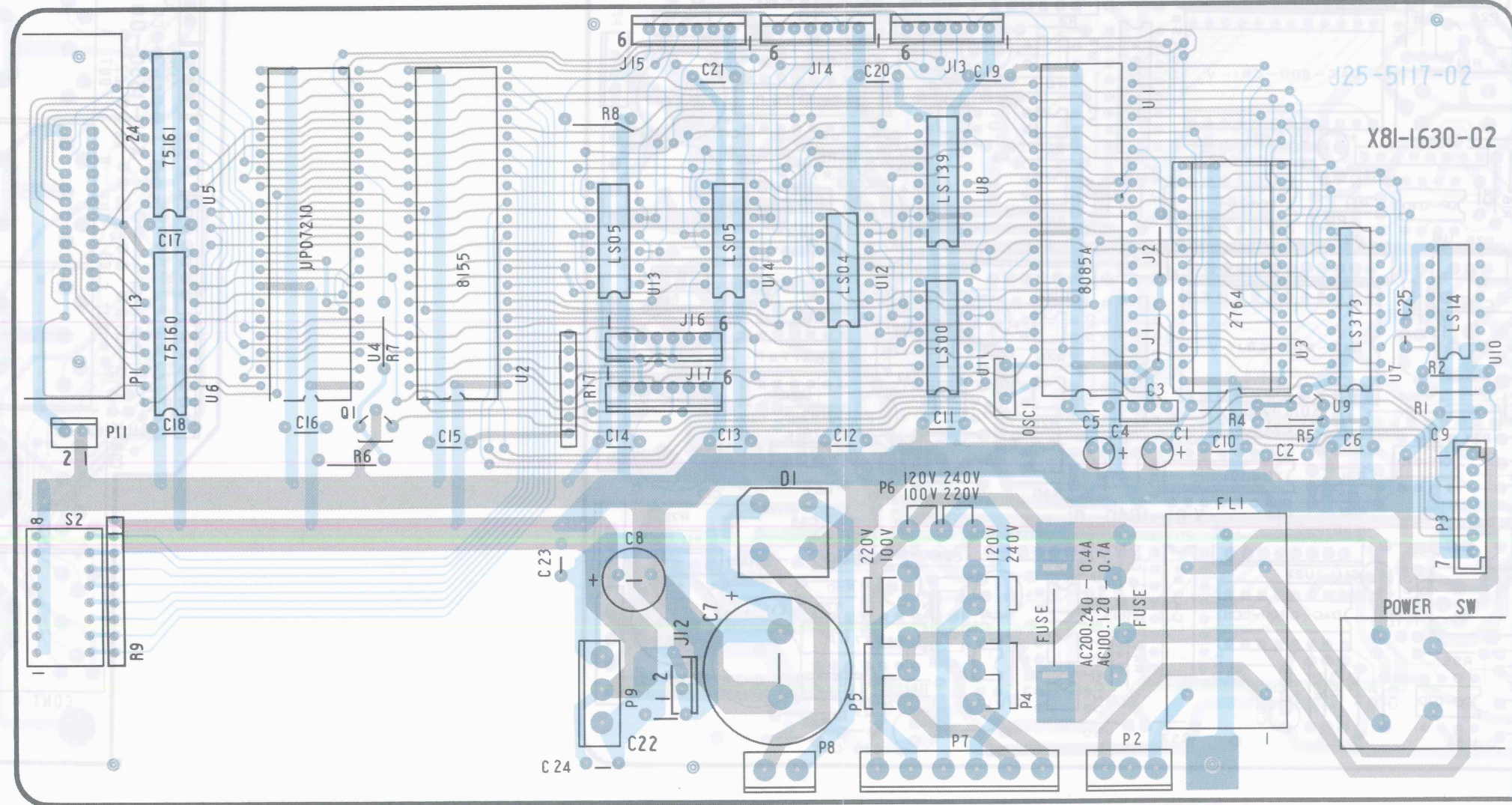
(80-882-50W) TIMU A/D
Pattern side view

GP-IB UNIT (W02-2183-08)

Pattern side view

(80-882-50W) TIMU A/D
Pattern side view

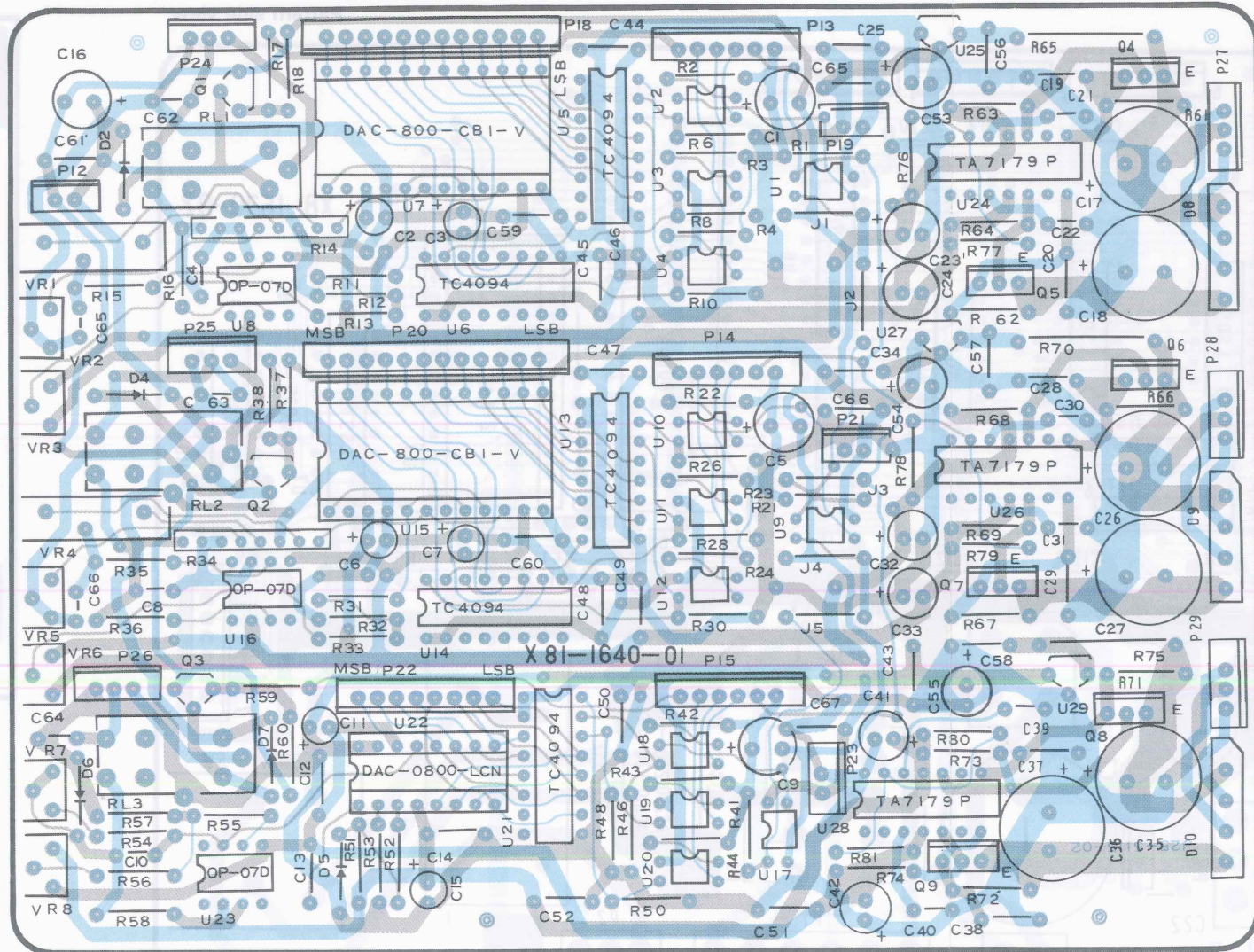
Pattern side view



GP-610A/GP-610D P.C. BOARD

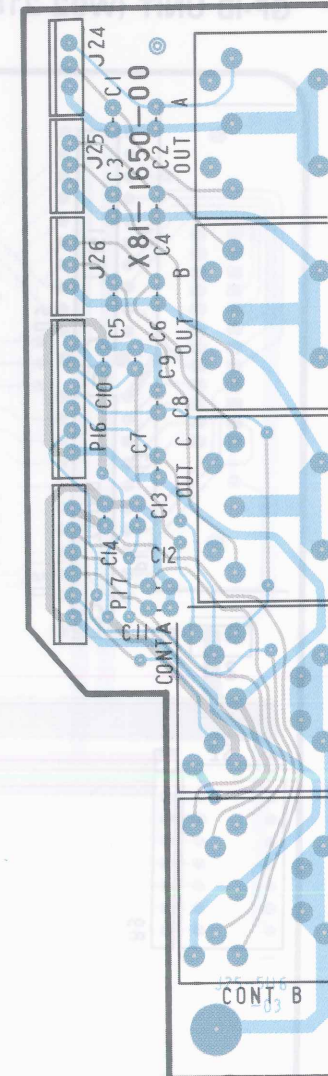
D/A UNIT (W02-2184-08)

Pattern side view



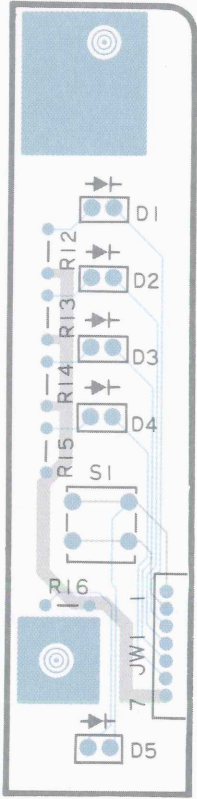
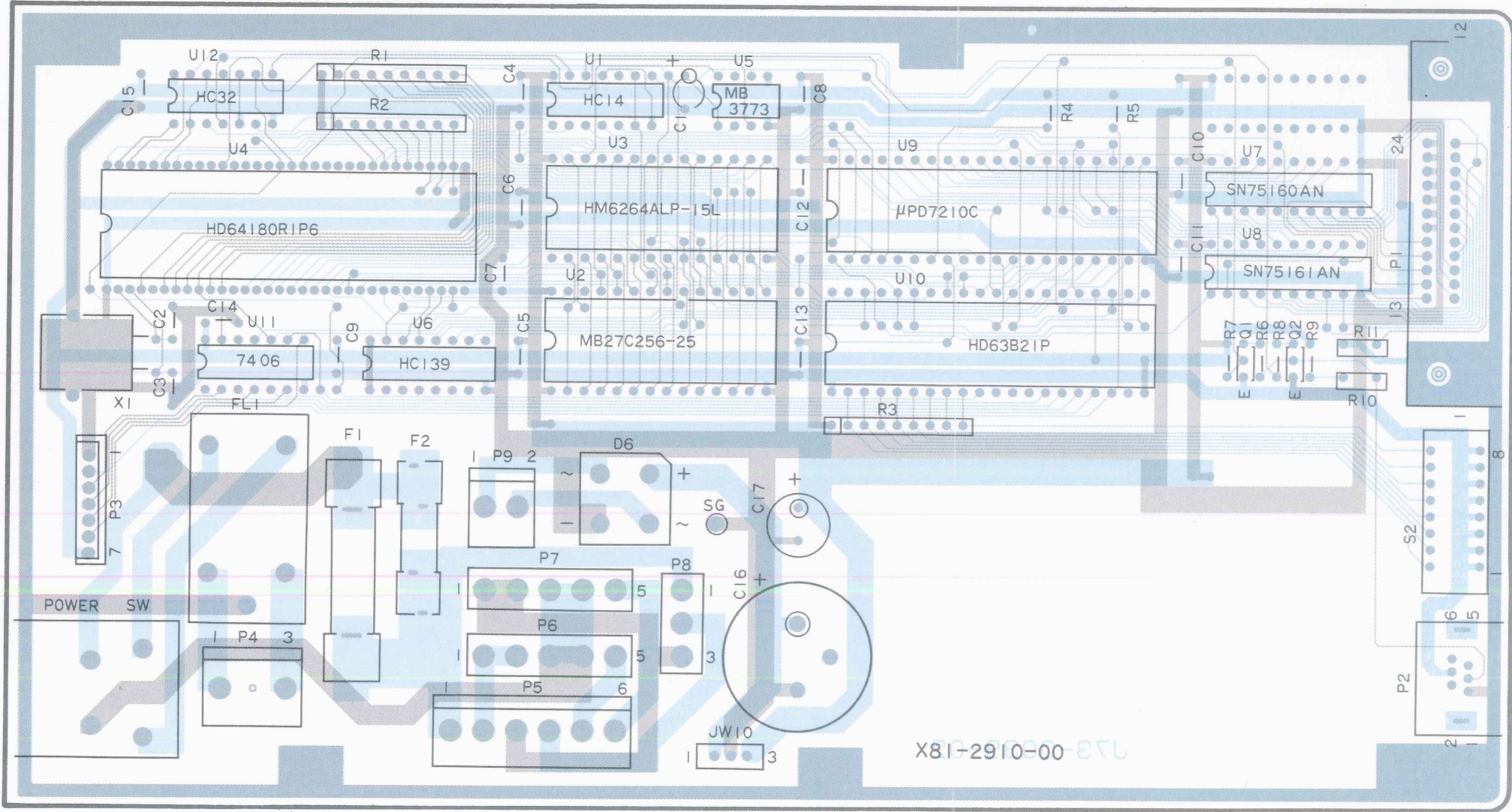
OUTPUT UNIT (W02-2185-08)

Pattern side view



GP-620 P.C. BOARD

GP-IB ADAPTER UNIT (X81-2910-00)



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A product of
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B51-1110-00 (MC)