

Service Manual

ES-1

Provisional Version

CONTENTS

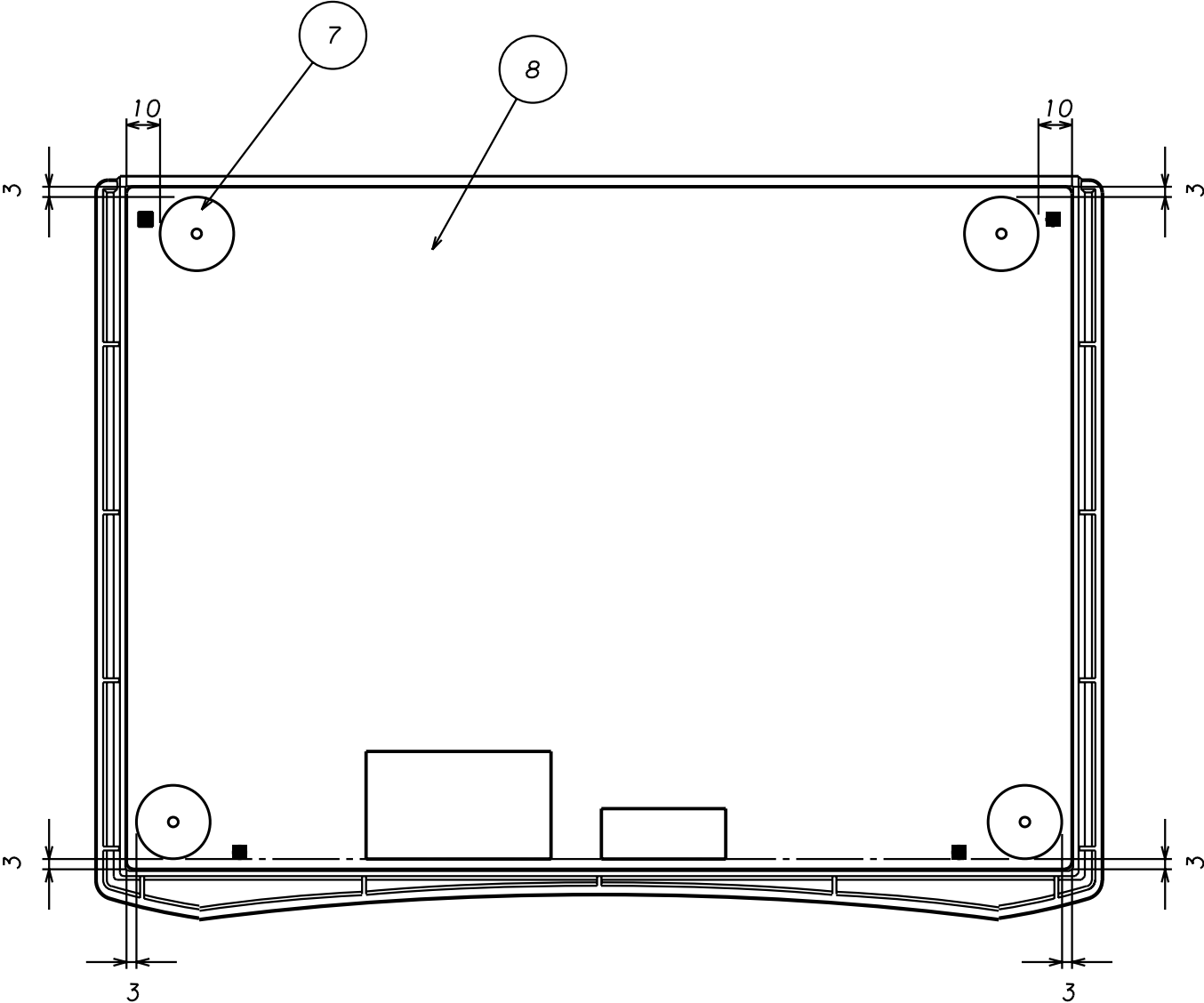
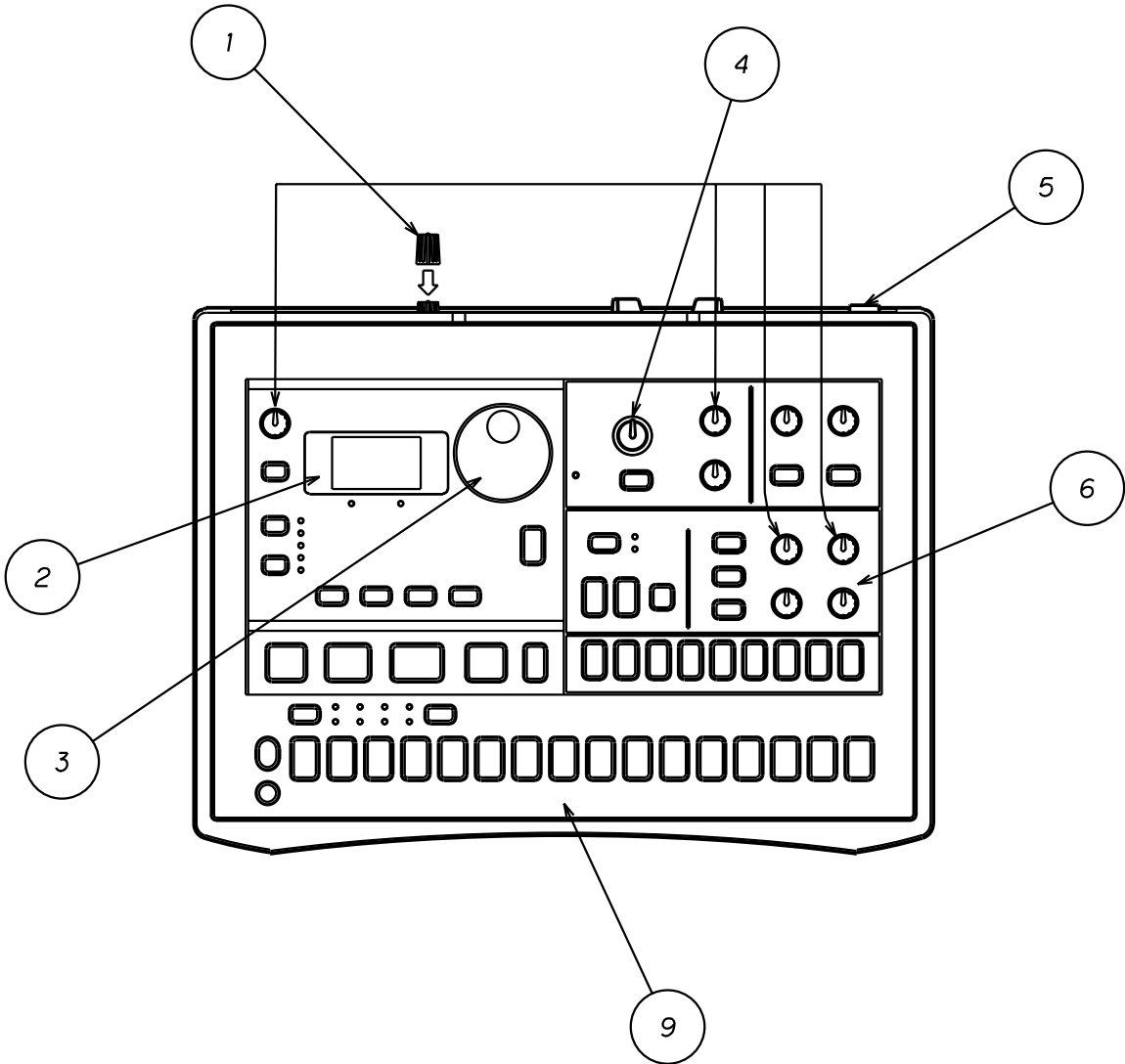
1) Structural Diagram	-----	2
2) Block Diagram	-----	6
3) Circuit Diagram	-----	7
4) Diagnostics	-----	?
5) Parts List	-----	17

Revision: 1.00

Issued date: July 18th, 2000

Issued by: KORG INC.

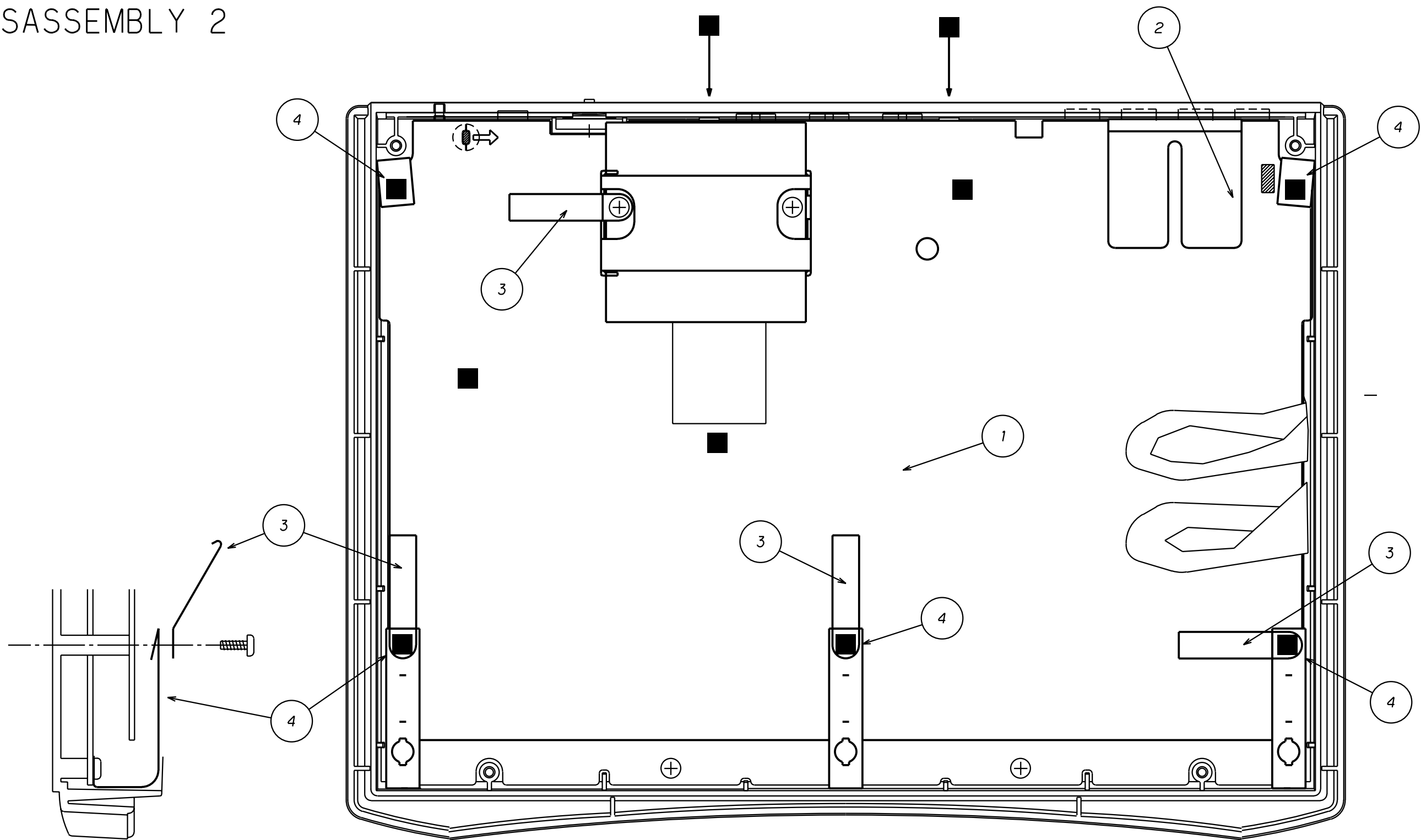
ES-1 DISASSEMBLY 1



NO.	PART CODE	PART NAME	Q'TY
1	620036500	X-8410 VR KNOB KOC-E40487	1
2	630024300	X-514/7 8-SEG LED WINDOW	1
3	620036000	X-610 ENCODER KNOB(BLK)E40466-	1
4	620036100	KNOB P82-90G (BK/L.GR)	1
5	620018200	PSW KNOB KOC-E40224	1
6	620033900	KNOB P422-90G(BK/L.GR)	9
7	500018300	CASE LEG 3X22X3 KOC-F48035	4
8	641041547	X-829P/B BOTTOM COVER C30525	1
9	646073400	X-829S UPPER CASE KOC-E40163-3	1

▼		
▲		
■	BT B BZMC 3 x 10	4
●		
MARK	SCREWS	Q'TY

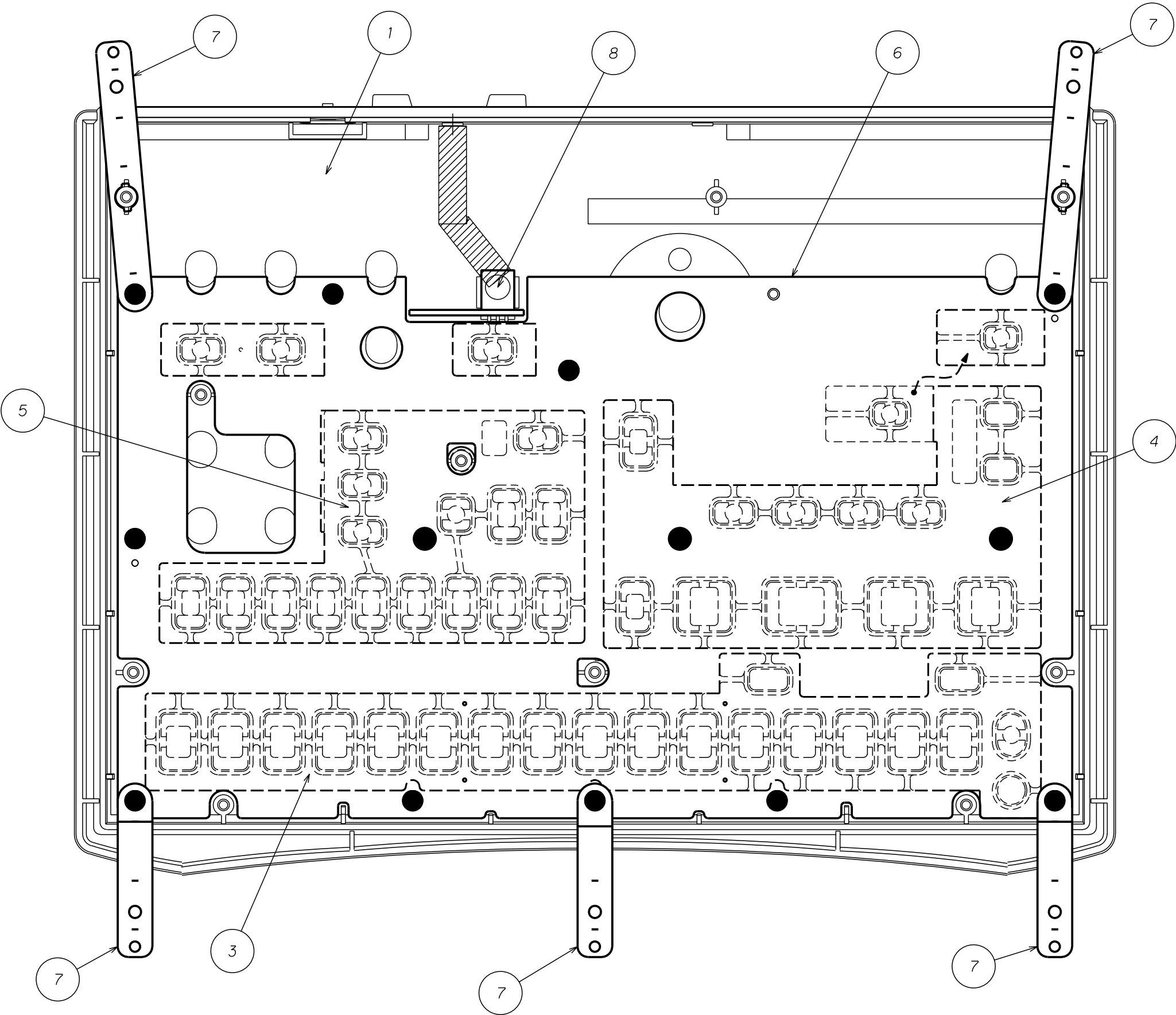
ES-1 DISASSEMBLY 2



NO.	PART CODE	PART NAME	Q'TY
1	001219700	PCB ASSY KLM-2197 ES-1	1
2	644007700	GND SPRING KOC-C46014	1
3	644009000	X-8510 GND SPRING(K) KOC-C4116	4
4	630025703	X-829P/B SHIELD SHEET F40869	5

▼		
▲		
■	BT B BZMC 3 x 10	10
●		
MARK	SCREWS	Q'TY

ES-1 DISASSEMBLY 3

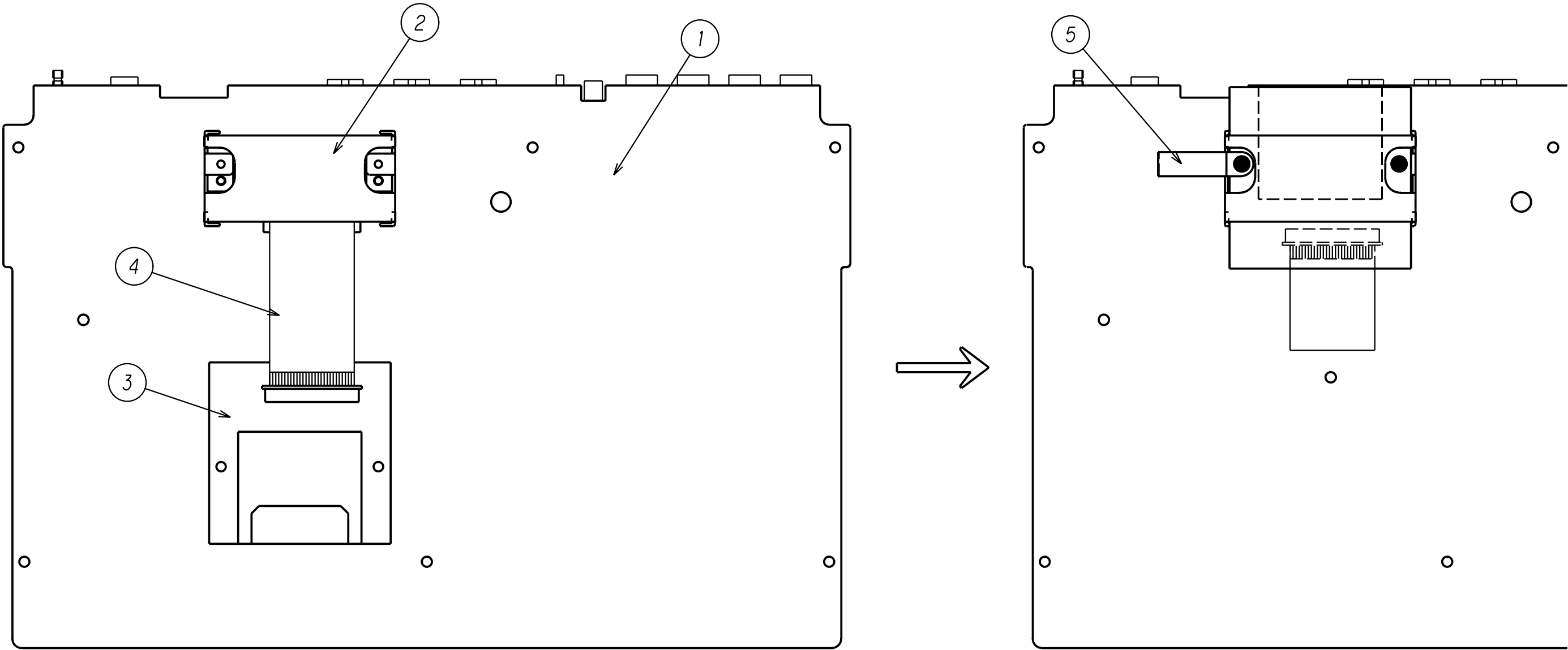


NO.	PART CODE	PART NAME	Q'TY
1	646073400	X-829S UPPER CASE KOC-E40163-3	1
3	620035400	X-829P RUBBER KEY F(20KEYS)	1
4	620035600	X-829P/B RUBBER KEY L(13KEYS)	1
5	620038700	X-829S RUBBER KEY S(19KEYS)	1
6	001219800	PCB ASSY KLM-2198/2201 ES-1	1
7	630025703	X-829P/B SHIELD SHEET F40869	5
8	362009005	VR RK0971110SOM	1

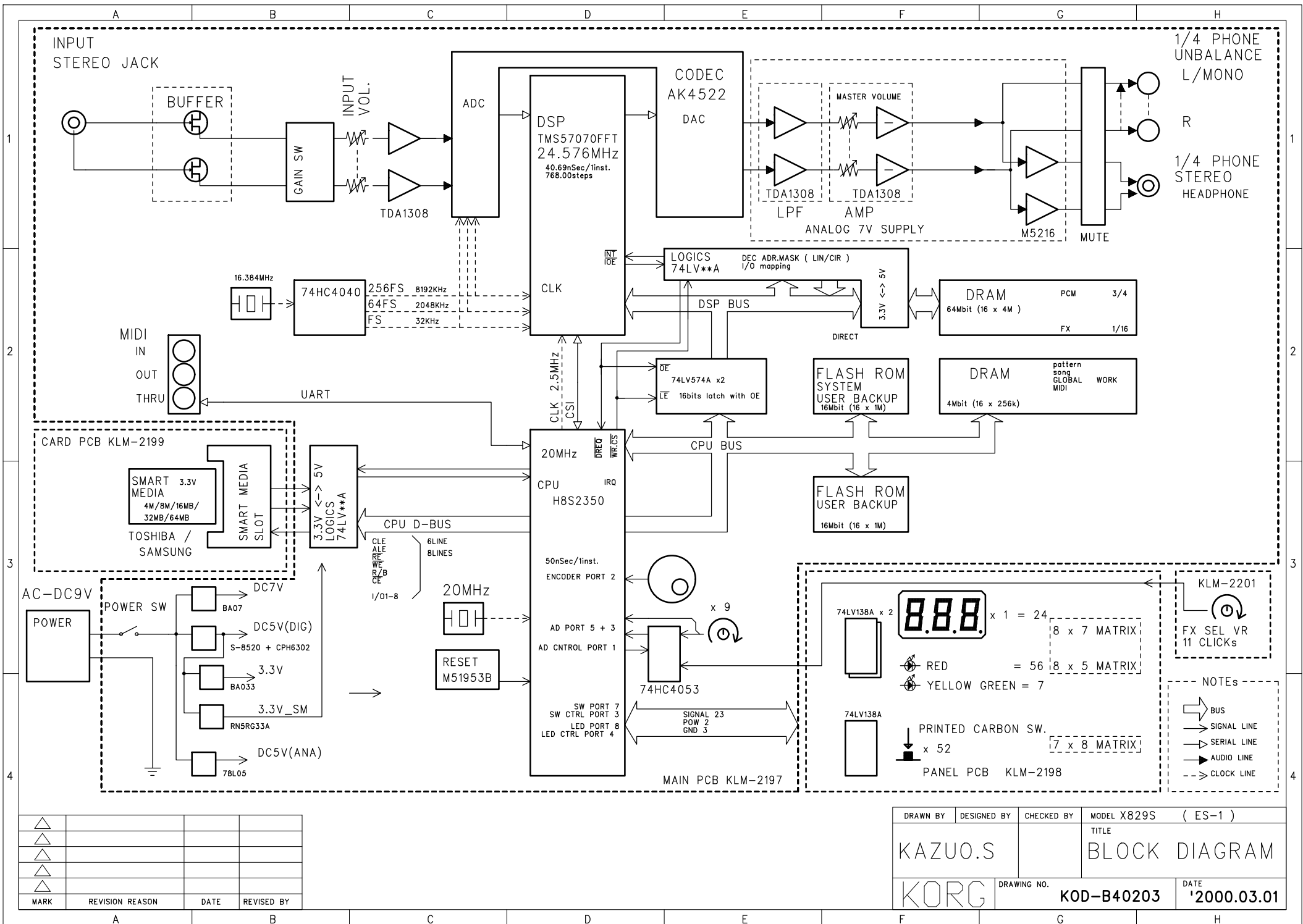
	VN	7	1
	BT	B	ZMC 3 x 8
MARK		SCREWS	Q'TY

ES-1 DISASSEMBLY 4

NO.	PART CODE	PART NAME	Q'TY
1	001219700	PCB ASSY KLM-2197 ES-1	1
2	641041575	X-829S SM BRACKET KOC-C41166	1
3	001219900	PCB ASSY KLM-2199 ES-1	1
4	545050720	FLAT CABLE TFL100K-26-90	1
5	644009000	X-8510 GND SPRING(K) KOC-C4116	1



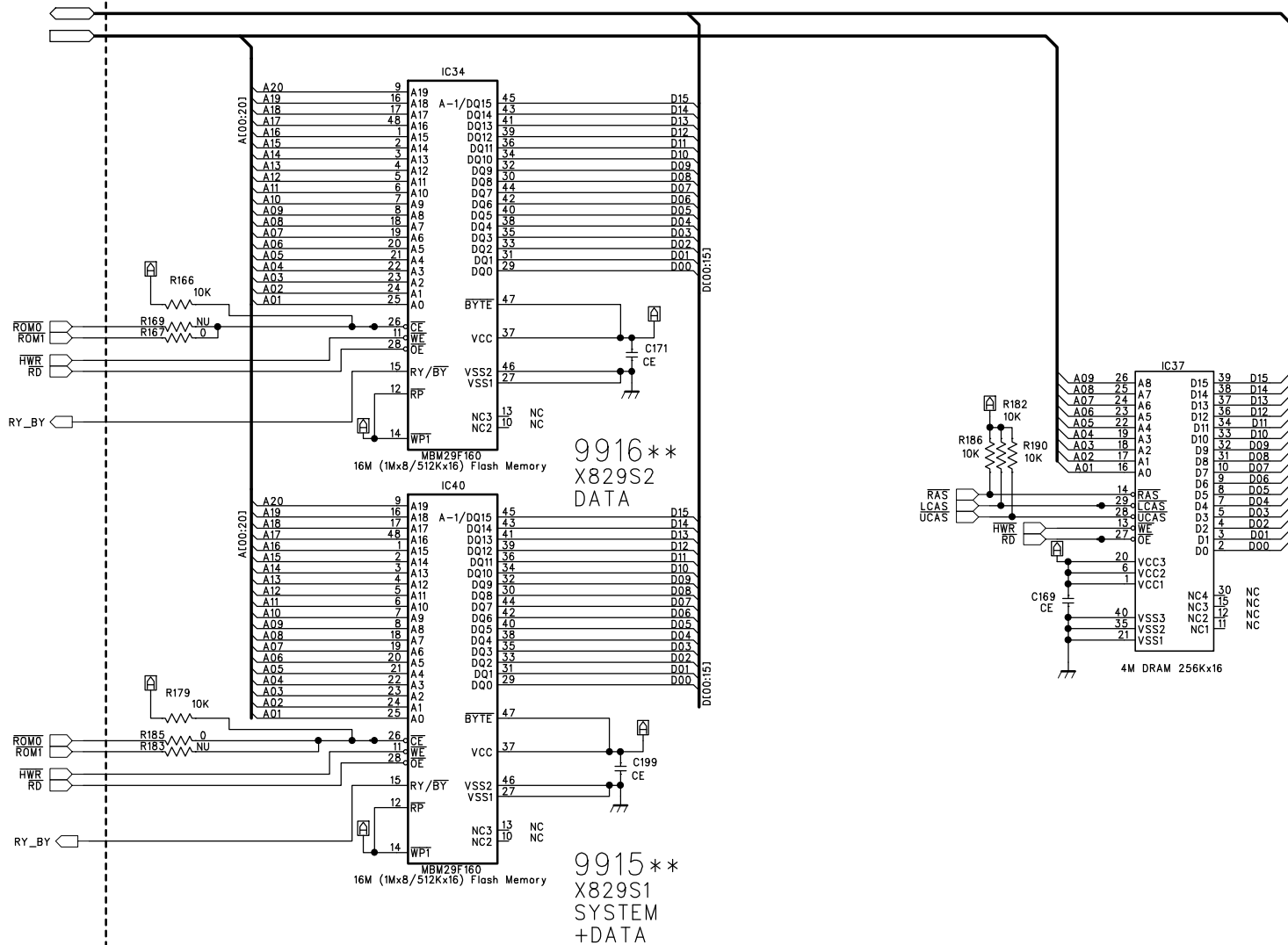
▼		
▲		
■		
●	BT B ZMC 3 x 8	4
MARK	SCREWS	Q'TY



△			
△			
△			
△			
△			
MARK	REVISION REASON	DATE	REVISED BY

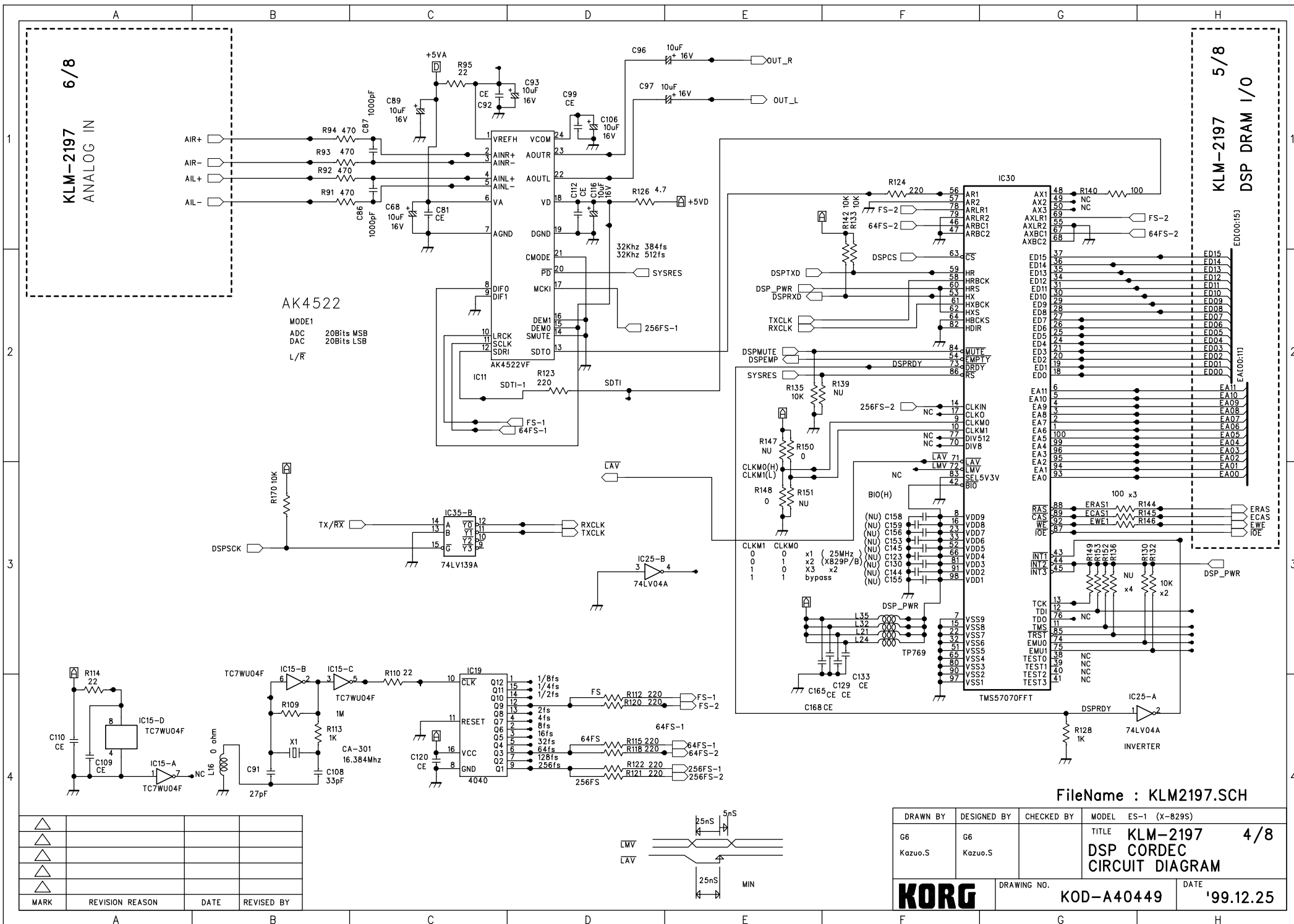
DRAWN BY	DESIGNED BY	CHECKED BY	MODEL X829S (ES-1)
KAZUO.S			TITLE
KORG	DRAWING NO.	KOD-B40203	DATE '2000.03.01
			BLOCK DIAGRAM

KLM-2197 CPU 1/8



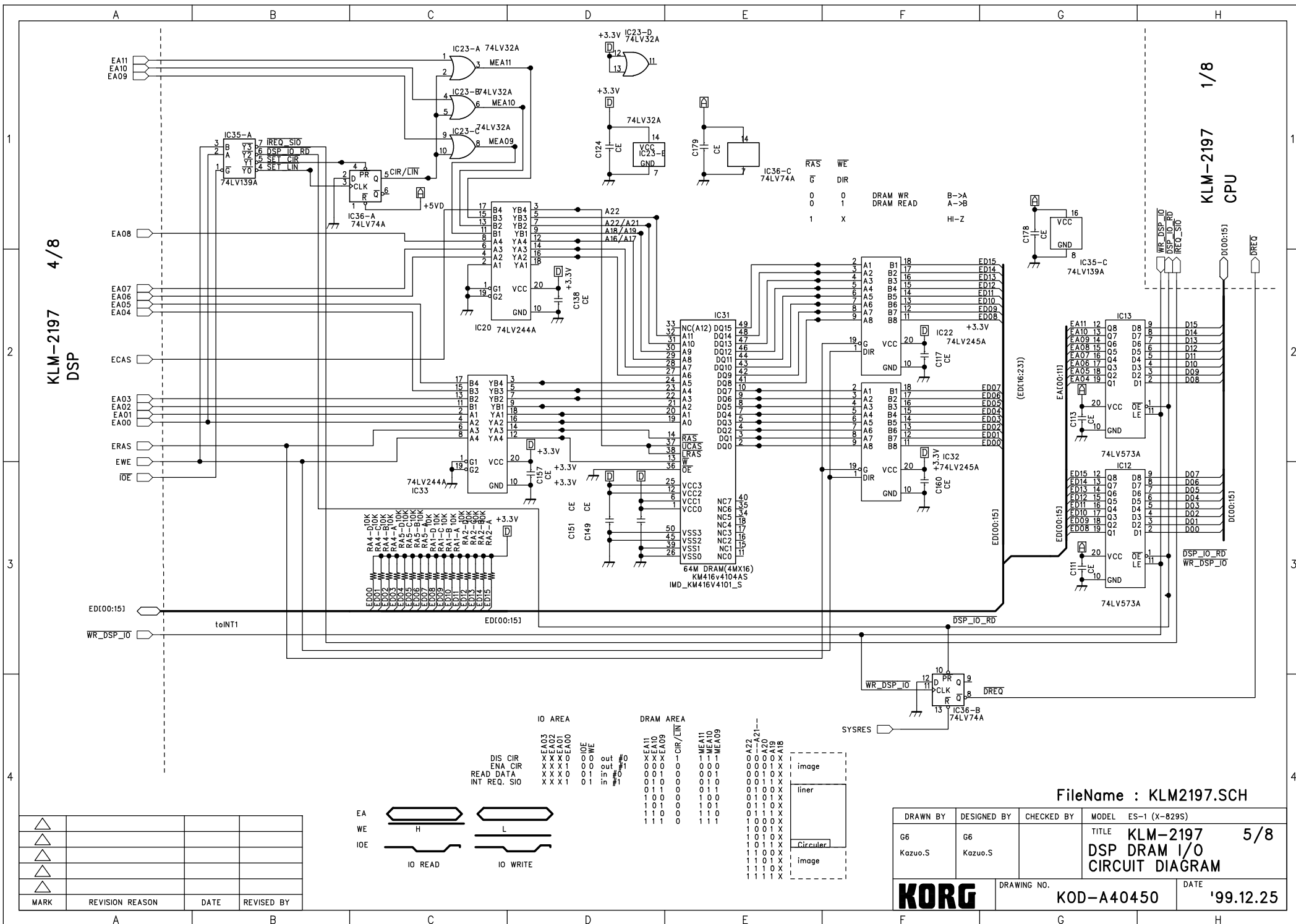
FileName : KLM2197.SCH

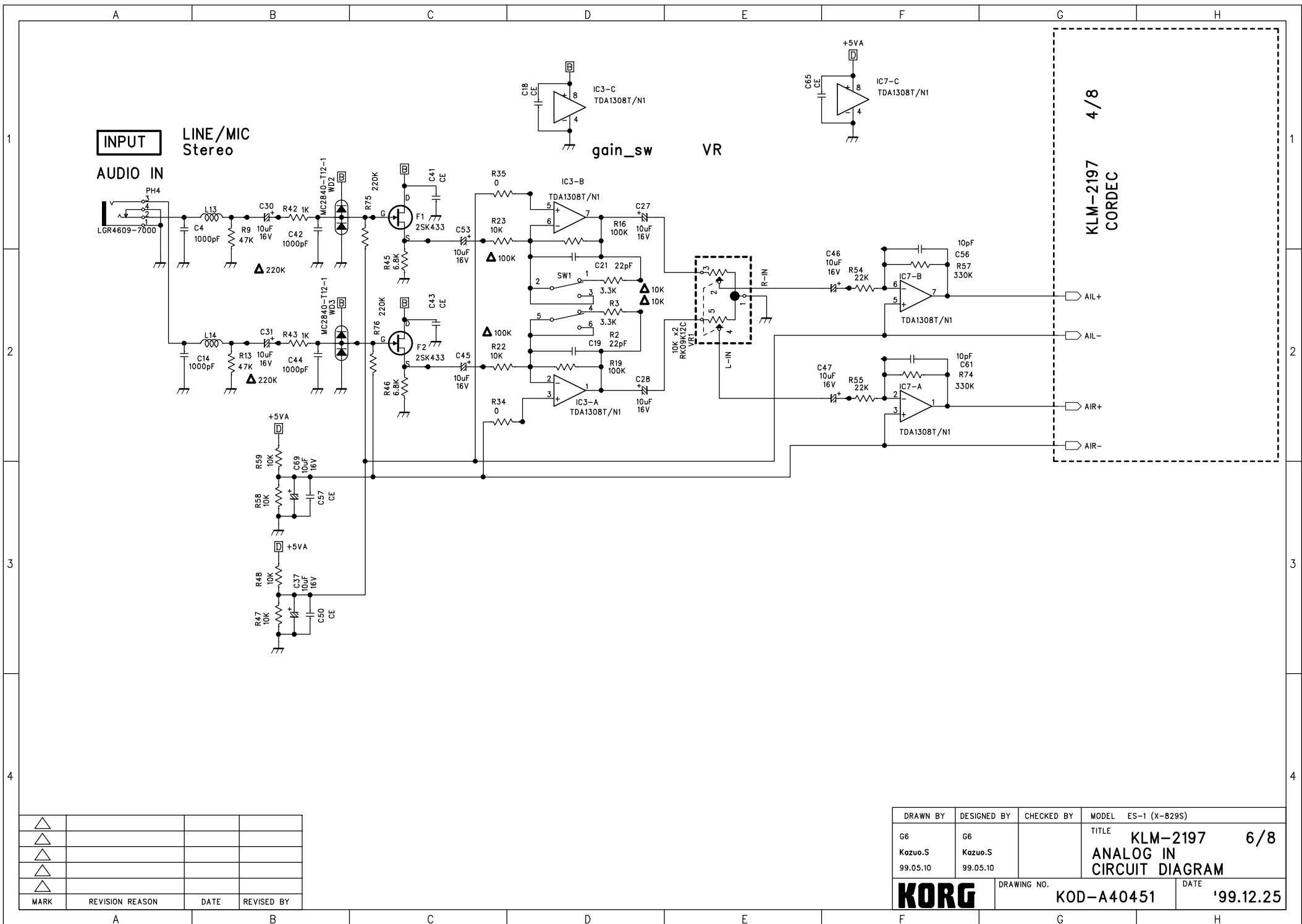
DRAWN BY	DESIGNED BY	CHECKED BY	MODEL	ES-1 (X-829S)
G6	G6		TITLE	KLM-2197 2/8
Kazuo.S	Kazuo.S		MEMORY FOR CPU	
			CIRCUIT DIAGRAM	
KORG		DRAWING NO.	DATE	
		KOD-A40447	'99.12.25	



KLM-2197 4/8 DSP

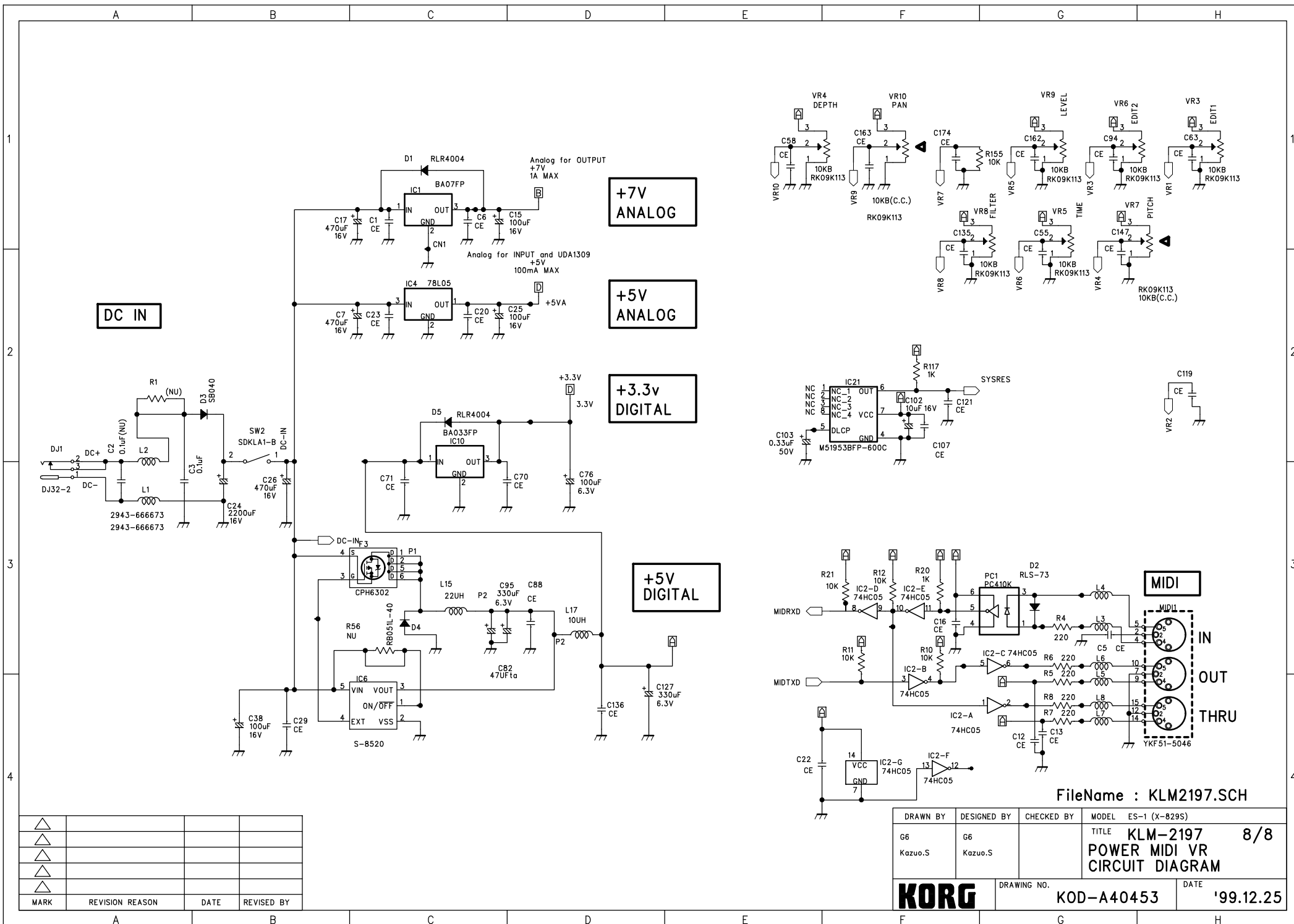
KLM-2197 1/8 CPU

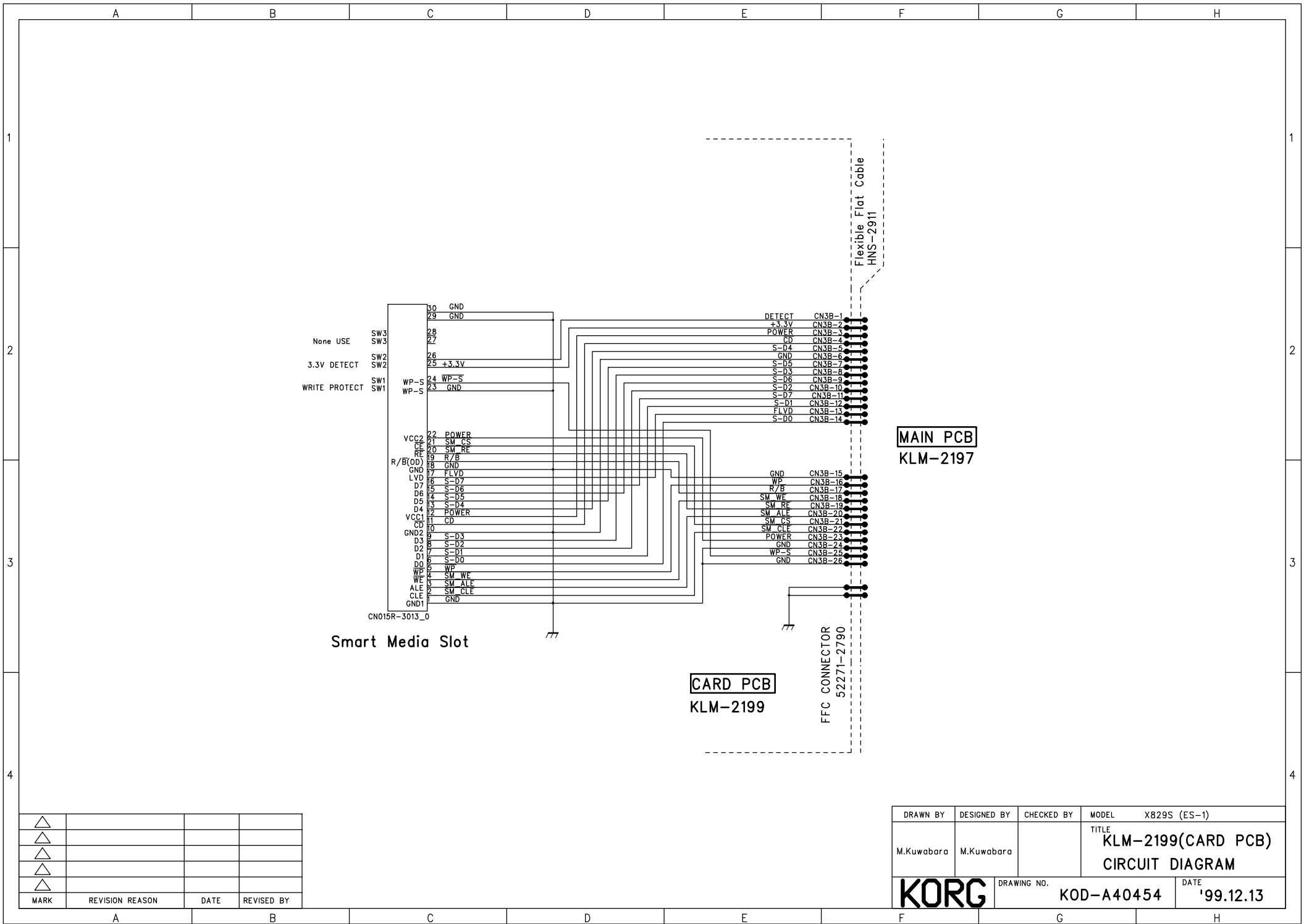




△			
△			
△			
△			
△			
MARK	REVISION REASON	DATE	REVISED BY

DRAWN BY	DESIGNED BY	CHECKED BY	MODEL ES-1 (X-829S)
G6	G6		TITLE KLM-2197 6/8
Kazuo.S	Kazuo.S		ANALOG IN
99.05.10	99.05.10		CIRCUIT DIAGRAM
DRAWING NO. KOD-A40451		DATE	'99.12.25





PART CODE	PART NAME	NOTE	QTY
001219700	PCB ASSY KLM-2197 ES-1	ES-1 M.PART	1
001219800	PCB ASSY KLM-2198/2201 ES-1	ES-1 M.PART	1
001219900	PCB ASSY KLM-2199 ES-1	ES-1 M.PART	1
304000070	TR 2SA812-T1B (M5-7) (TS)	KLM-2197 ES-1	1
304010020	TR 2SB1120-F/G (TS)	KLM-2197 ES-1	1
304020230	TR 2SC3661-TA/TB(3K) (TS)	KLM-2197 ES-1	4
304020380	DIGITAL TR FP12Q-T1B (TS)	KLM-2198/2201	12
304050140	DIGITAL TR DTC114EKA T146 (TS)	KLM-2198/2201	8
304060070	FET 2SK433-T12-1C (TS)	KLM-2197 ES-1	2
304060250	FET CPH6302-TL(TS)	KLM-2197 ES-1	1
312052000	LED LB603VF	KLM-2198/2201	1
314001400	DIODE RLS-73 TE-11 (TS)	KLM-2197 ES-1	1
314010340	LED SLZ-190B-02-T1(TR)	KLM-2198/2201	13
314010350	LED SLZ-290B-02-T1(TR)	KLM-2198/2201	5
314029500	DIODE SB040-G23(TA)	KLM-2197 ES-1	1
314029700	DIODE RLR4004 TE-21 (TS)	KLM-2197 ES-1	2
314029800	LED CL-200YG-C-TU (TS)	KLM-2198/2201	2
314029900	LED SML-210JTT86 (TS)	KLM-2198/2201	43
314030700	SCHOTTKY DIODE RB051L-40TE25	KLM-2197 ES-1	1
315000500	DOUBLE DIODE MC-2840-T12-1(TS)	KLM-2197 ES-1	3
315000600	DOUBLE DIODE MC2838-T12-1 (TS)	KLM-2198/2201	29
320004649	IC HD6412350(D12350F20) (S)	KLM-2197 ES-1	1
320012260	IC MBM29F160BE70TN-K(X-829S):S	KLM-2197 ES-1	1
320021156	IC TMS57070FFT (S)	KLM-2197 ES-1	1
324003010	IC TC7WU04F TE12L (TS)	KLM-2197 ES-1	1
324004168	IC HD74HC4053FPEL (TS)	KLM-2197 ES-1	1
324004176	IC HD74HC05FPEL (TS)	KLM-2197 ES-1	1
324007006	IC BA07FP-E2 (TS)	KLM-2197 ES-1	1
324007009	IC BA033FP-E2 (TS)	KLM-2197 ES-1	1
324009004	IC NJM78L05UA-TE1 (TS)	KLM-2197 ES-1	1
324011004	IC M5216FP-600C (TS)	KLM-2197 ES-1	1
324011012	IC M51953BFP-600C (TS)	KLM-2197 ES-1	1
324017009	IC RN5RG33AA-TR (TS)	KLM-2197 ES-1	1
324017015	IC EM614163A-50J(TS)	KLM-2197 ES-1	1
324018006	IC AK4522-VF-E2(TS)	KLM-2197 ES-1	1
324021014	IC SN74LV138ANS-EL (TS)	KLM-2198/2201	3
324021022	IC SN74HC4040APWR(TS)	KLM-2197 ES-1	1
324021025	IC SN74AHCT240PWR(TS)	KLM-2197 ES-1	1
324021101	IC SN74LV04APWR (TS)	KLM-2197 ES-1	1
324021102	IC SN74LV08APWR (TS)	KLM-2197 ES-1	1
324021103	IC SN74LV32APWR (TS)	KLM-2197 ES-1	1
324021104	IC SN74LV74APWR (TS)	KLM-2197 ES-1	2
324021105	IC SN74LV245APWR (TS)	KLM-2197 ES-1	3
324021106	IC SN74LV139APWR (TS)	KLM-2197 ES-1	1
324021107	IC SN74LV125APWR (TS)	KLM-2197 ES-1	1
324021108	IC SN74LV138APWR (TS)	KLM-2197 ES-1	2
324021109	IC SN74LV244APWR (TS)	KLM-2197 ES-1	2
324021110	IC SN74LV574APWR (TS)	KLM-2197 ES-1	3

PART CODE	PART NAME	NOTE	QTY
324023007	IC S-8520F50MC-B0J-T2(TS)	KLM-2197 ES-1	1
324037006	IC HY51V65164ASLTC-50-TE1(TS)	KLM-2197 ES-1	1
324038005	IC TDA1308T/N1 (TS)	KLM-2197 ES-1	4
334000600	PHOTO COUPLER PC-410K (TS)	KLM-2197 ES-1	1
335011000	X'TAL OSC CA-301 20.00MHZ	KLM-2197 ES-1	1
335011800	X'TAL OSC CA-301 16.384MHZ	KLM-2197 ES-1	1
362009005	VR RK0971110SOM	KLM-2198/2201	1
362009016	VR RK09K1130CA6	KLM-2197 ES-1	6
362009017	VR RK09K1130D0K	KLM-2197 ES-1	2
362009018	VR RK09K12C0D08	KLM-2197 ES-1	1
362009030	RK09K12A0D06(G3857335M)10KDX2	KLM-2197 ES-1	1
370004500	REC EC16B242041S	KLM-2197 ES-1	1
373009700	SSW SAA120200(G4177036M)	KLM-2197 ES-1	1
375014800	PSW SDKLA10200	KLM-2197 ES-1	1
402004600	COIL 2943-666673	KLM-2197 ES-1	2
402006200	COIL C10-FR/33331 22UH(TR)	KLM-2197 ES-1	1
402400400	COIL C8-E/33331 10UH	KLM-2197 ES-1	1
404001040	CHIP COIL BLM21A102FPT(TS)	KLM-2198/2201	1
404001070	CHIP COIL BLM11B102SPT:TS	KLM-2197 ES-1	39
405008000	AC ADAPTOR A30960J	ES-1 JP M.PART	1
405008100	AC ADAPTOR A30950	ES-1 US M.PART	1
405008100	AC ADAPTOR A30950	ES-1 EX M.PART	1
405008100	AC ADAPTOR A30950	ES-1 CN M.PART	1
405008300	AC ADAPTOR A9600E	ES-1 FR M.PART	1
405008300	AC ADAPTOR A9600E	ES-1 WG M.PART	1
405008300	AC ADAPTOR A9600E	ES-1 GE M.PART	1
405010500	AC ADAPTOR A9600B	ES-1 UK M.PART	1
450003100	PHONE JACK LGR4609-7000	KLM-2197 ES-1	4
454012700	DC POWER JACK DJ32-2	KLM-2197 ES-1	1
472071301	CONNECTOR SIDE S13B-PH-K-S (U)	KLM-2197 ES-1	1
472071501	CONNECTOR SIDE S15B-PH-K-S (U)	KLM-2197 ES-1	1
474029500	CONNECTOR CN015R-3013-0	KLM-2199 ES-1	1
474030400	FFC CONNECTOR 52271-2690 (TS)	KLM-2199 ES-1	1
474030400	FFC CONNECTOR 52271-2690 (TS)	KLM-2197 ES-1	1
475002790	HARNESS HNS-2790 BOARD IN	KLM-2198/2201	1
475002909	HARNESS HNS-2909 BOARD IN	KLM-2198/2201	1
475002910	HARNESS HNS-2910 BOARD IN	KLM-2198/2201	1
480010200	DIN SOCKET YKF51-5046	KLM-2197 ES-1	1
500018300	CASE LEG 3X22X3 KOC-F48035	ES-1 M.PART	4
540021900	PLASTIC SUPPORT PS-610	ES-1 M.PART	4
545050720	FLAT CABLE TFL100K-26-90	ES-1 M.PART	1
620018200	PSW KNOB KOC-E40224	ES-1 M.PART	1
620033900	KNOB P422-90G(BK/L.GR)	ES-1 M.PART	9
620035400	X-829P RUBBER KEY F(20KEYS)	ES-1 M.PART	1
620035600	X-829P/B RUBBER KEY L(13KEYS)	ES-1 M.PART	1
620036000	X-610 ENCODER KNOB(BLK)E40466-	ES-1 M.PART	1
620036100	KNOB P82-90G (BK/L.GR)	ES-1 M.PART	1
620036500	X-8410 VR KNOB KOC-E40487	ES-1 M.PART	1

PART CODE	PART NAME	NOTE	QTY
620038700	X-829S RUBBER KEY S(19KEYS)	ES-1 M.PART	1
630024300	X-514/7 8-SEG LED WINDOW	ES-1 M.PART	1
630025703	X-829P/B SHIELD SHEET F40869	ES-1 M.PART	5
641041547	X-829P/B BOTTOM COVER C30525	ES-1 M.PART	1
641041575	X-829S SM BRACKET KOC-C41166	ES-1 M.PART	1
644007700	GND SPRING KOC-C46014	ES-1 M.PART	1
644009000	X-8510 GND SPRING(K) KOC-C4116	ES-1 M.PART	6
646073400	X-829S UPPER CASE KOC-E40163-3	ES-1 M.PART	1