

KORG R3 SERVICE MANUAL



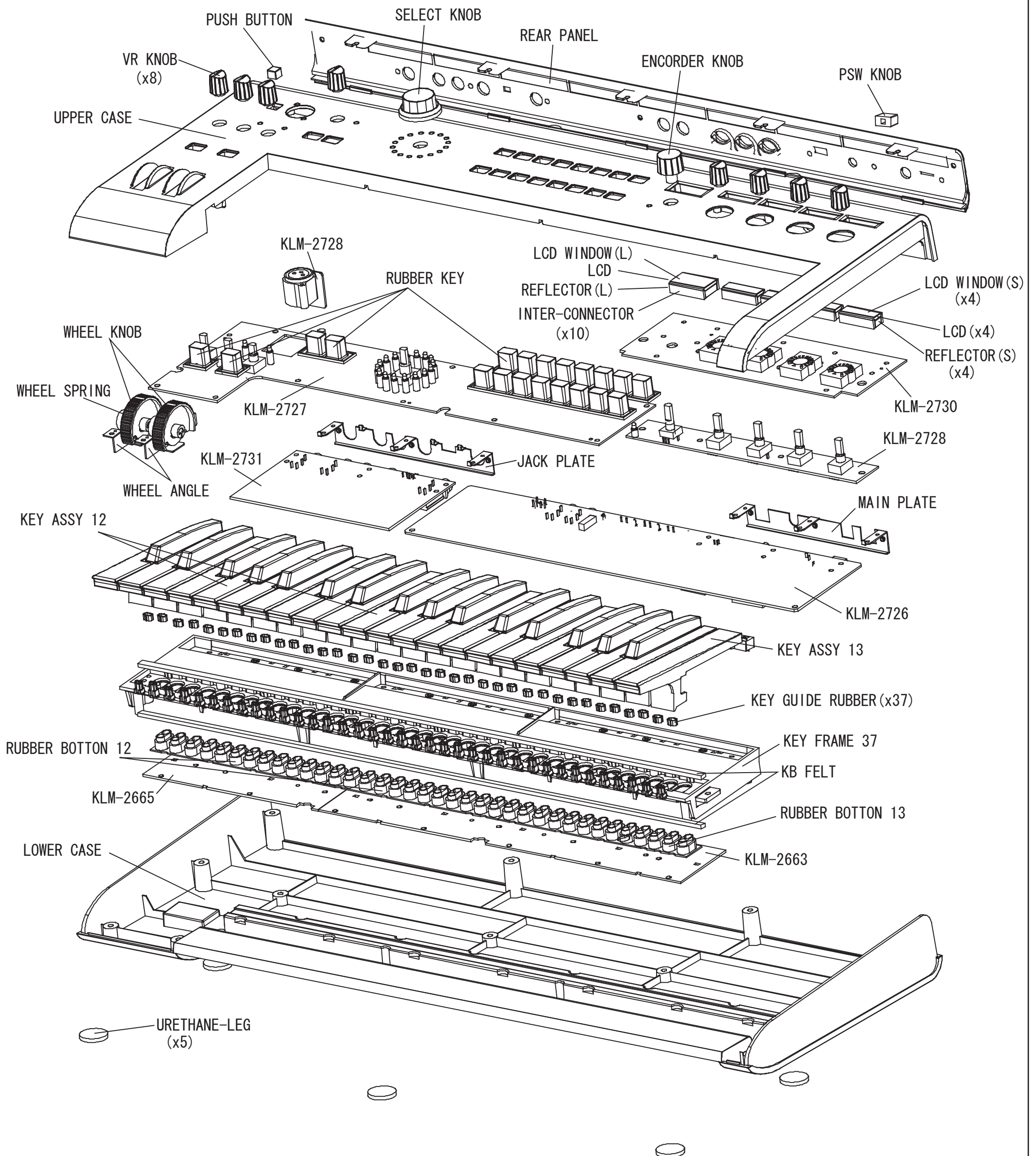
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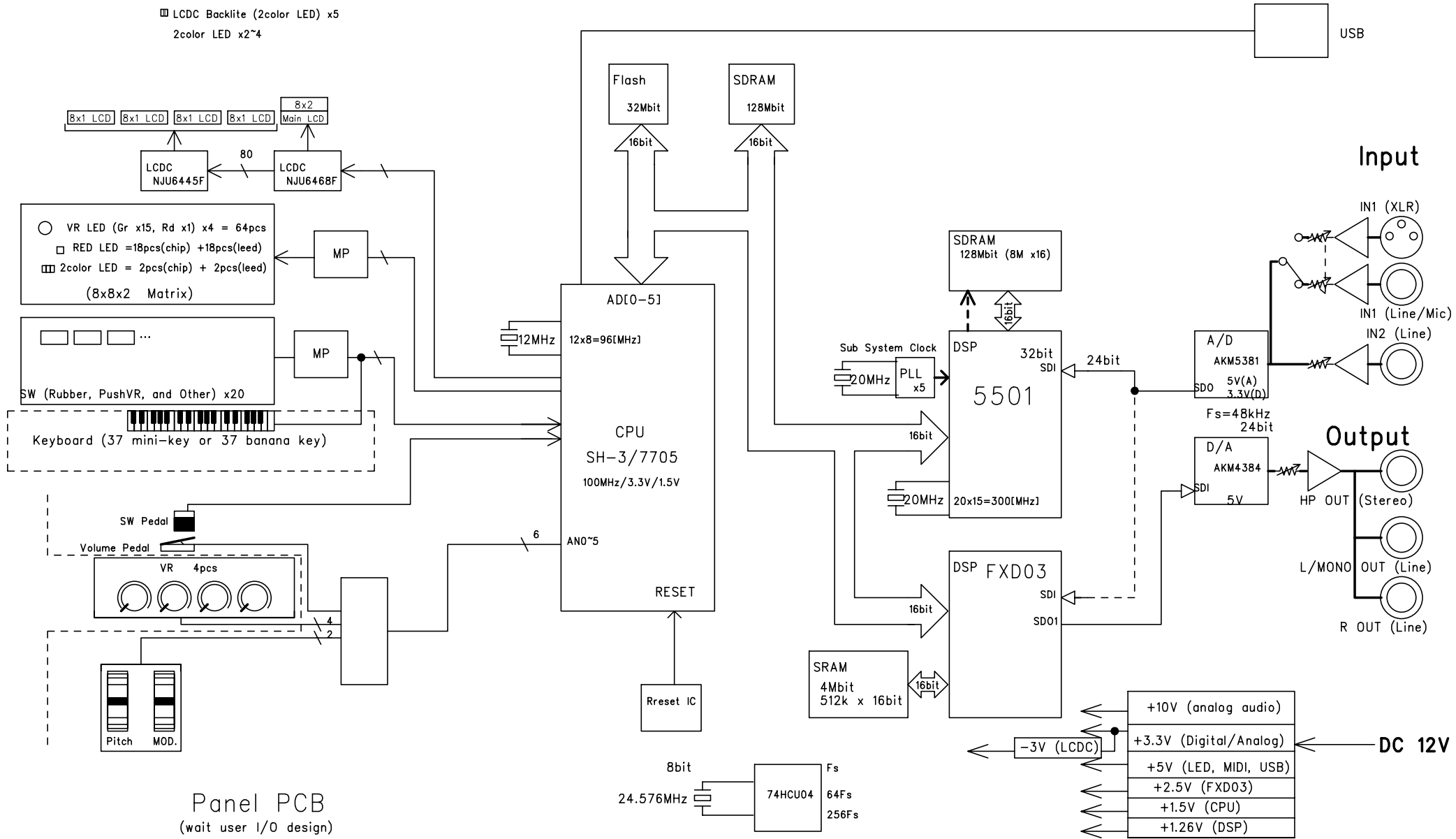
ASSEMBLY SKETCH (HOOKUP): 2
BLOCK DIAGRAM: 3
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HARNESS: 14-17
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PARTS LIST: 25-27

KORG

Issued Apr.20, 2007
Ver.1

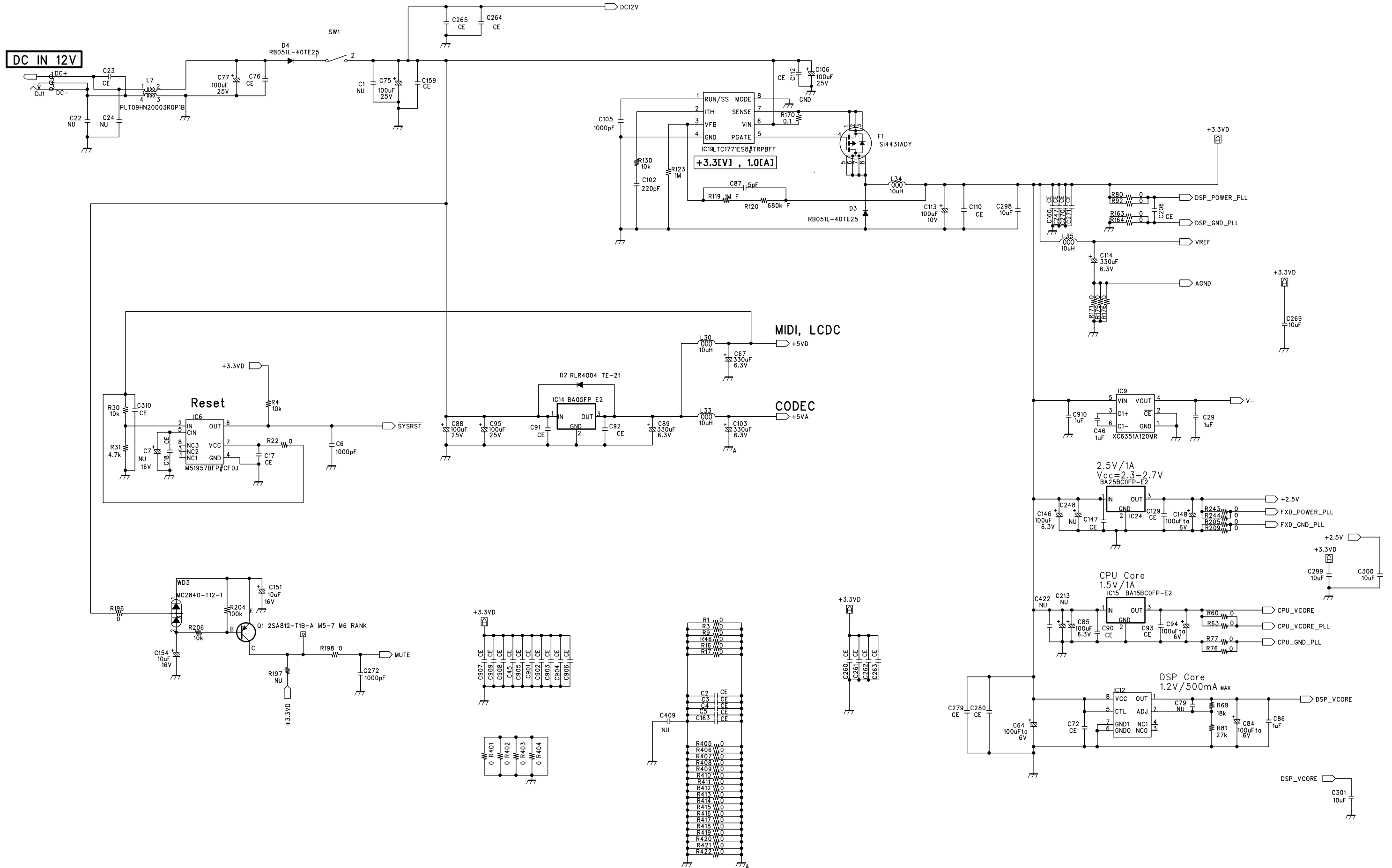
X-5100 (R3)





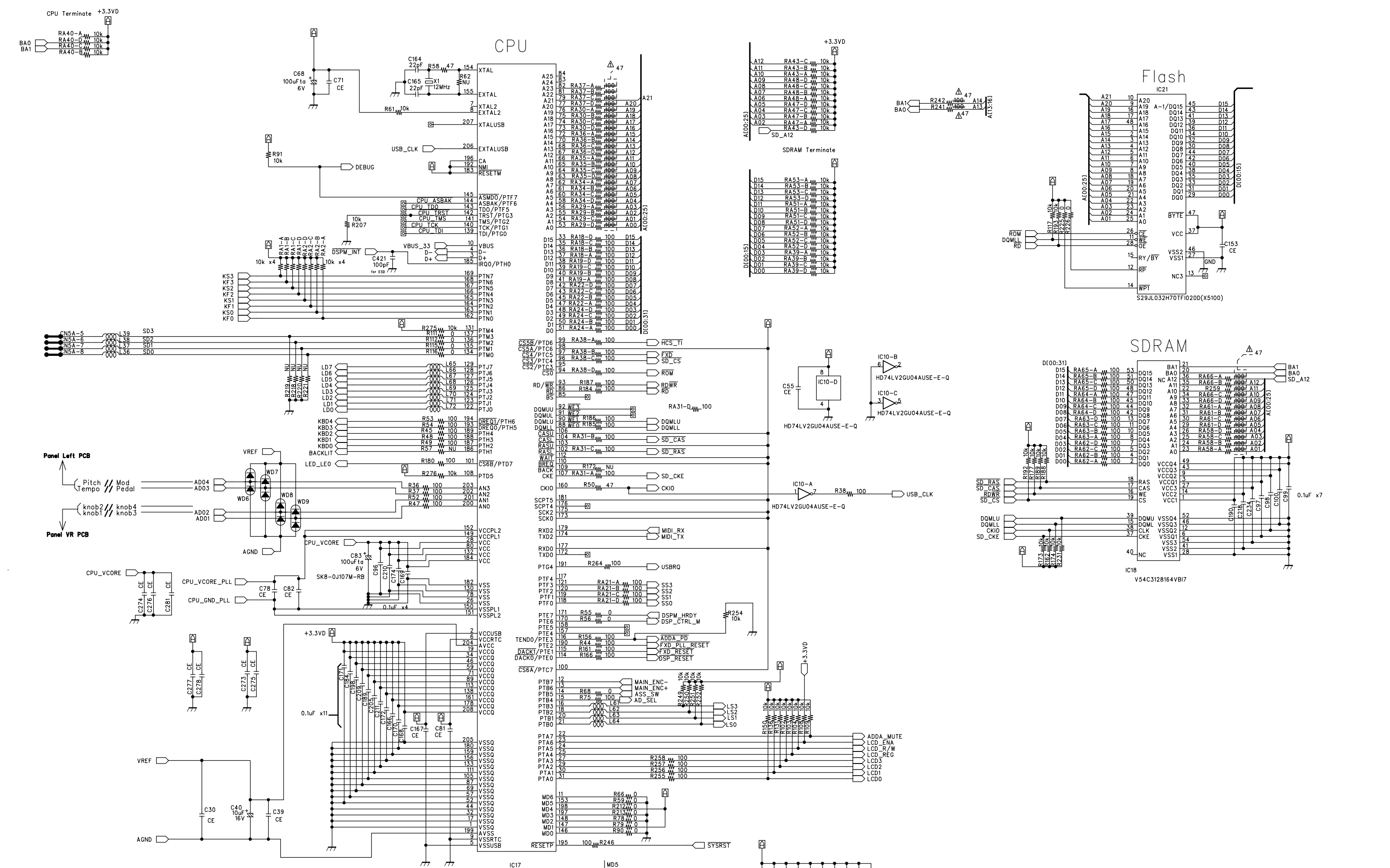
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MARK	REVISION REASON	DATE	REVISED BY

DRAWN BY	CHECKED BY	CHECKED BY	MODEL	R3 (X-5100)
K.Asami			TITLE	BLOCK DIAGRAM
KORG		DRAWING NO.	KOD-B40308	DATE '07.01.26



MARK	REVISION REASON	DATE	REVISED BY

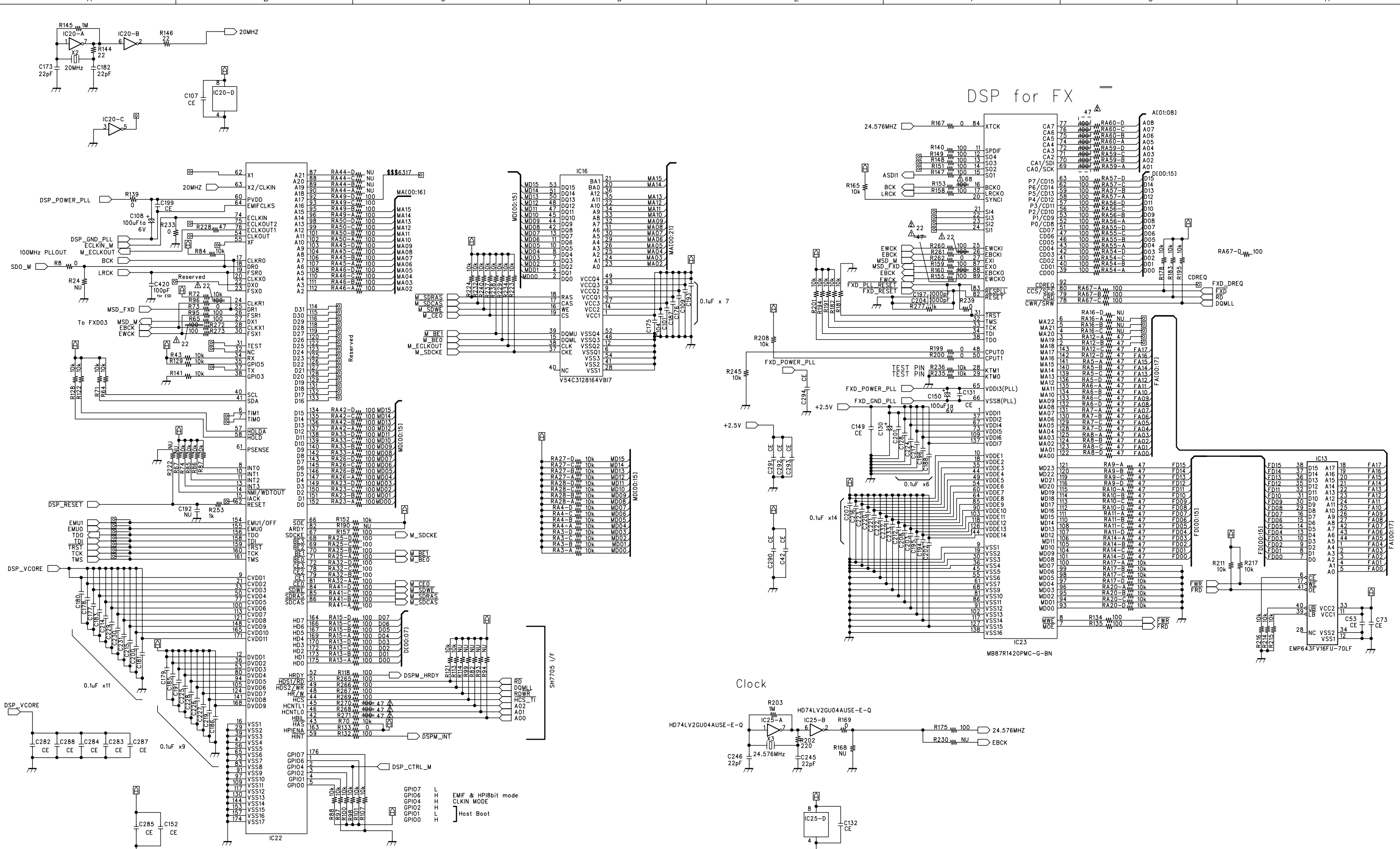
DRAWN BY	DESIGNED BY	CHECKED BY	MODEL	R3 (X-5100)
K.ASAMI			TITLE	KLM-2726
			Power	
DRAWING NO.		DATE		
KORG		KOD-A30707		'07.01.25



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△	Change for the better	07.02.23	K.Asami
MARK	REVISION REASON	DATE	REVISED BY

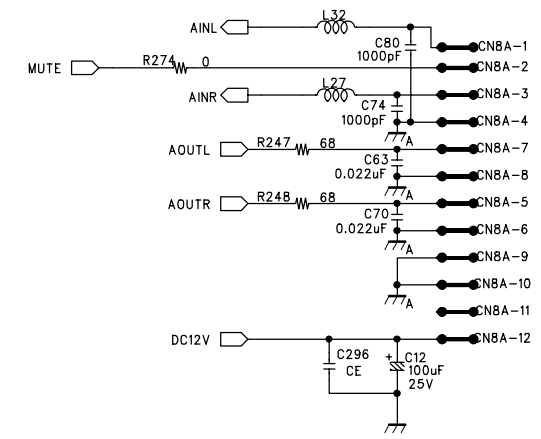
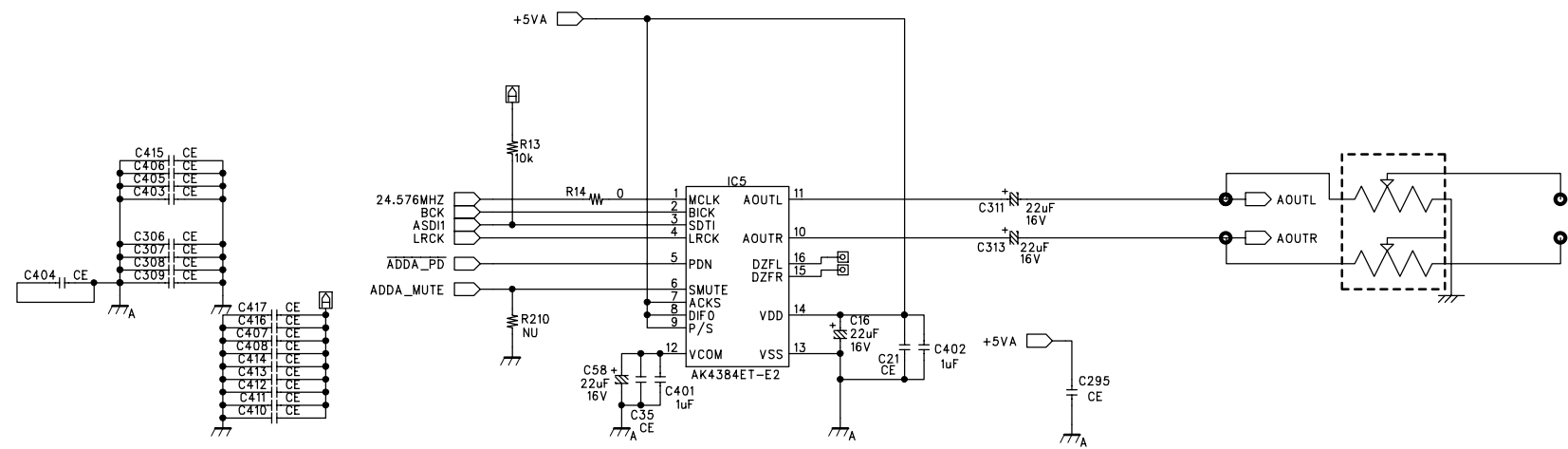
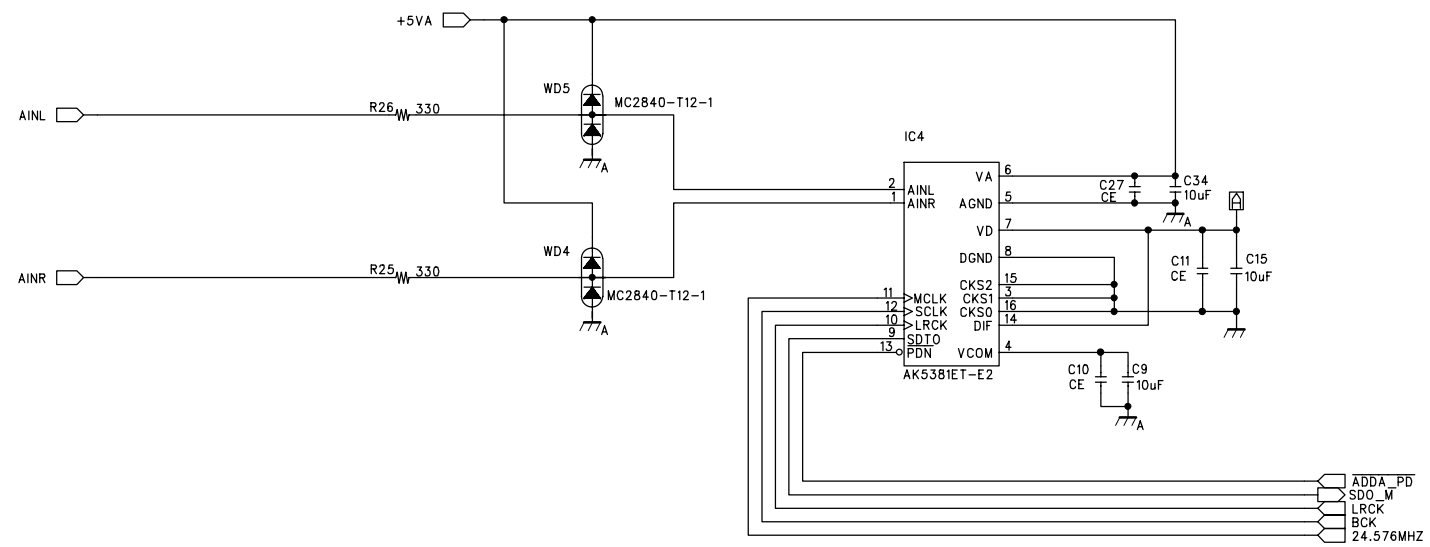
	MD5
Big endian	0
Little Endian	1
aread0 MD4 MD3	
16bit	1 0
8bit	0 1
32bit	1 1
clock	MD2 MD1 MD0 PL1
0	0 0 0 0 x1 Fxtal
1	0 0 0 1 x4 Fxtal
2	0 1 0 1 x4 Xtal

DRAWN BY	DESIGNED BY	CHECKED BY	MODEL	R3 (x-5100)
K.ASAMI	K.ASAMI		TITLE	KLM-2726
CPU				
KORG			DRAWING NO.	KOD-A30708
				DATE
				'07.01.25



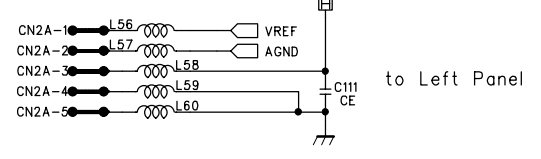
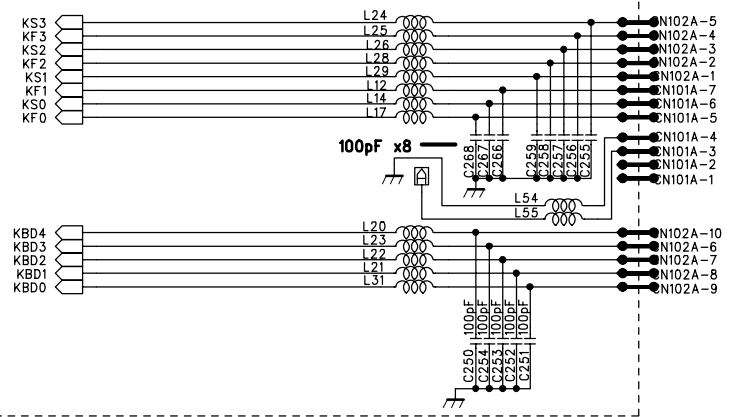
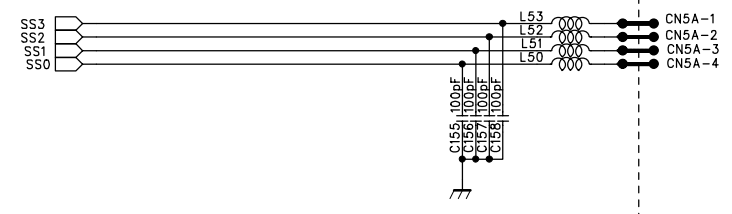
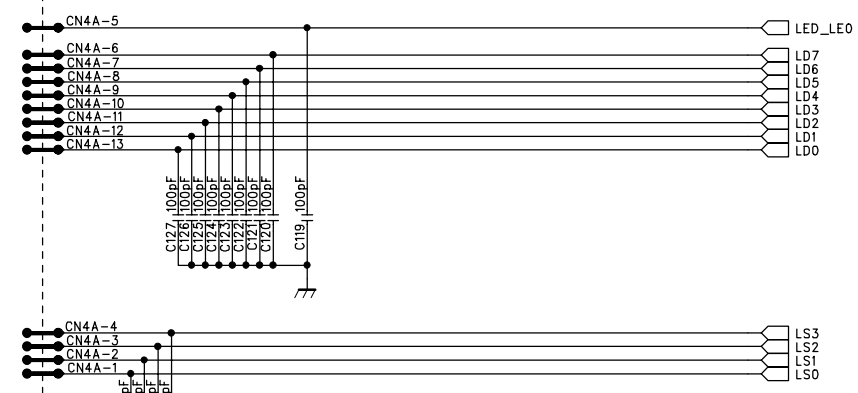
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△	Change for the better	2007.02.23	K.Asami
△	Change for the better	2007.01.30	K.Asami
MARK	REVISION REASON	DATE	REVISED BY

DRAWN BY	DESIGNED BY	CHECKED BY	MODEL	R3 (X-5100)
K.ASAMI	K.ASAMI		TITLE	R3 (X-5100)
DSP (SG/FX)				
KORG			DRAWING NO.	KOD-A30709
			DATE	'07.01.25

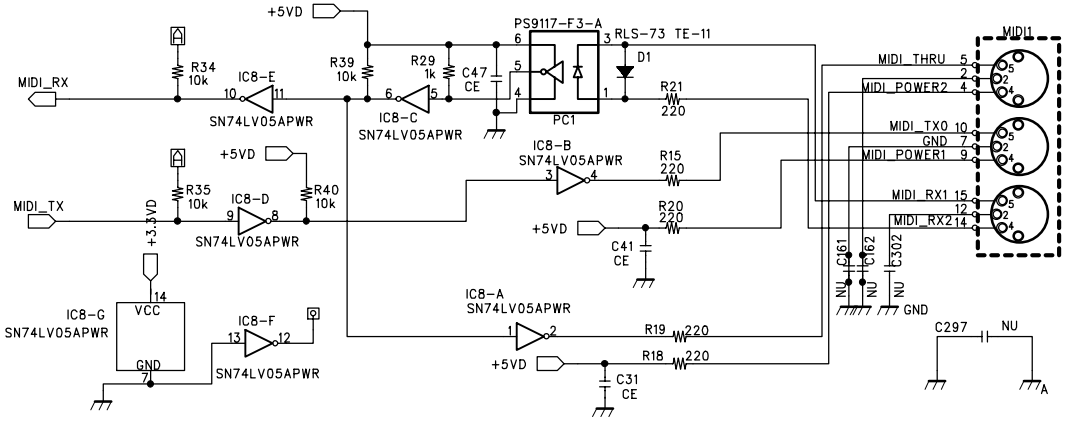
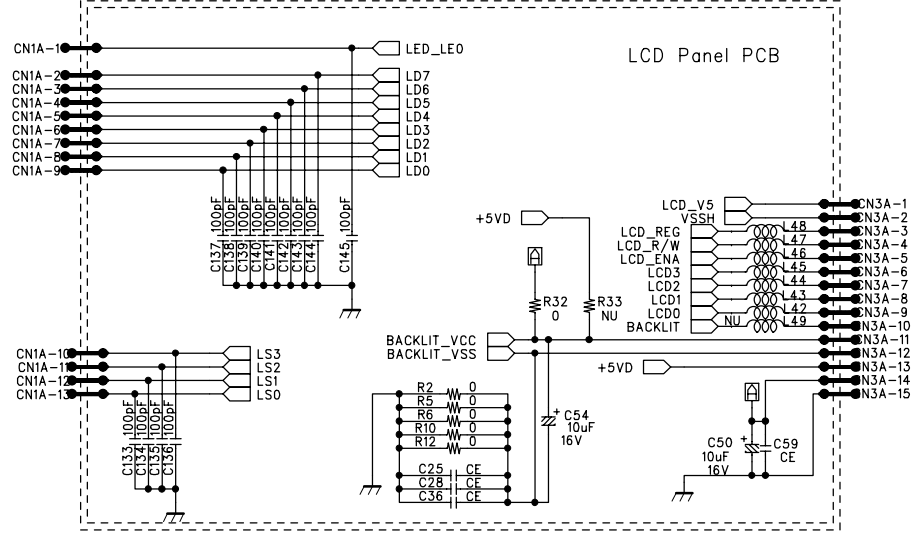
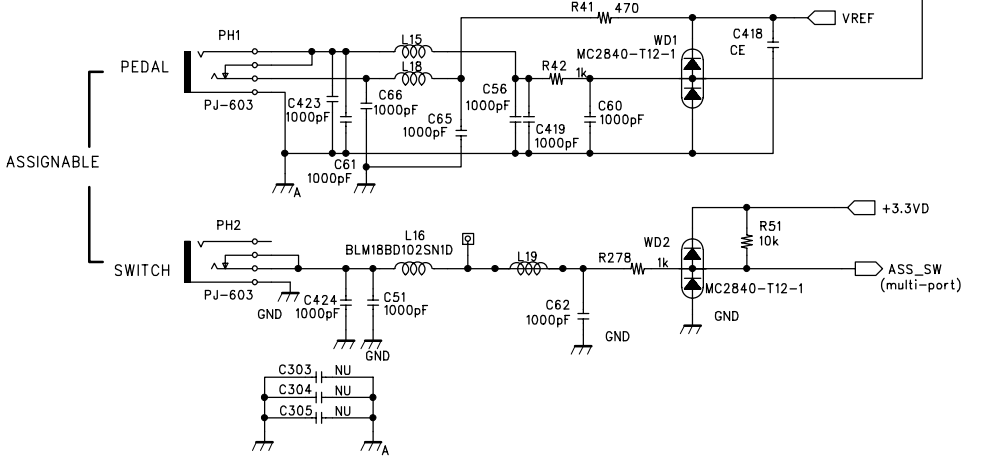
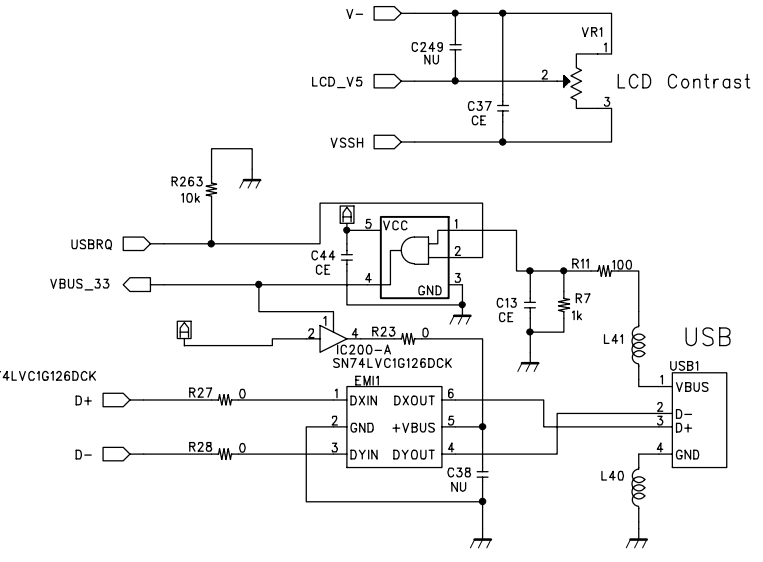
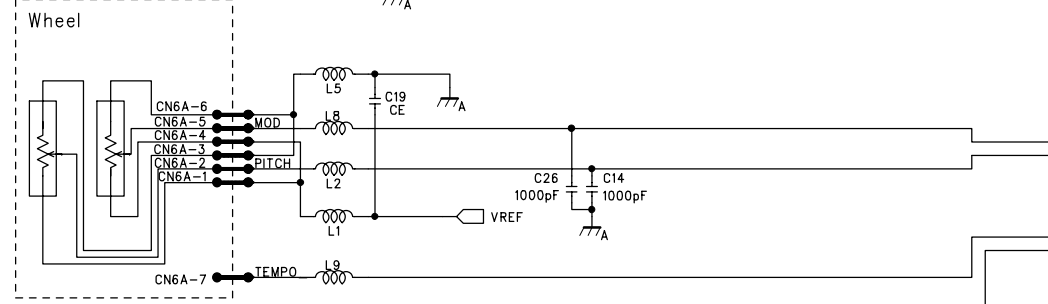
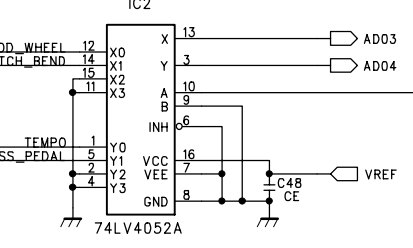
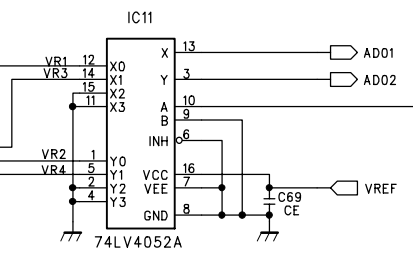
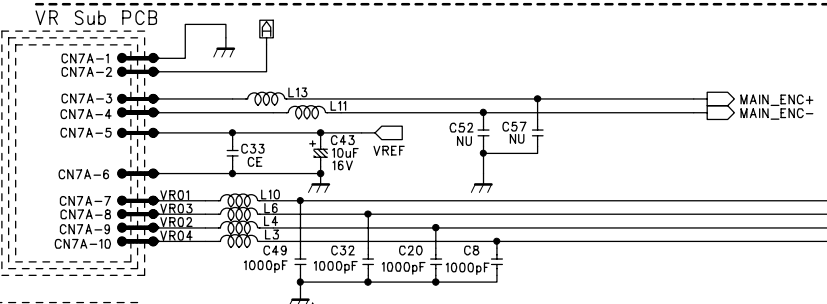


MARK	REVISION REASON	DATE	REVISED BY
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DRAWN BY	DESIGNED BY	CHECKED BY	MODEL	R3 (X-5100)
K.ASAMI			TITLE	KLM-2726
			Analog I/O	
DRAWING NO.		DATE		
KORG		KOD-A30710		'07.01.25

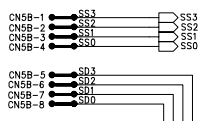
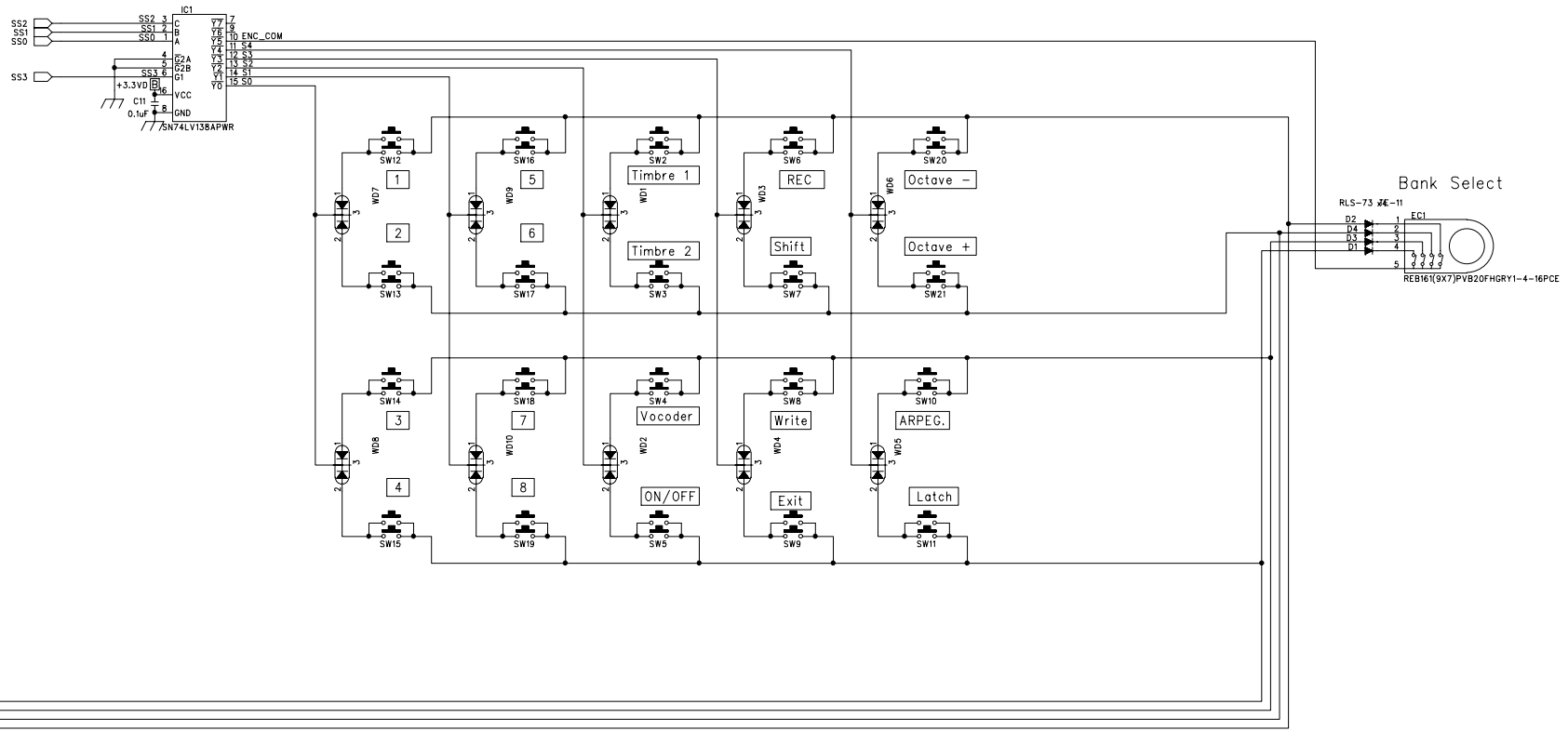


to Left Panel

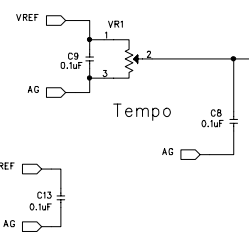
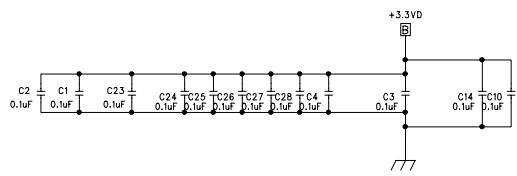
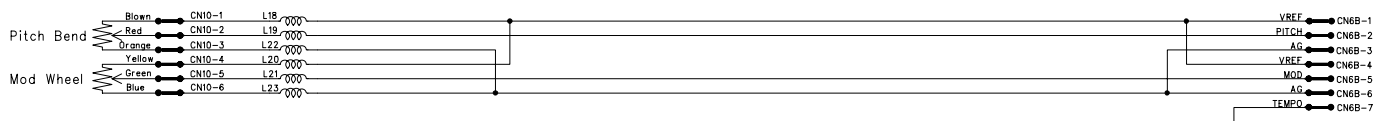


MARK	REVISION	REASON	DATE	REVISED BY

DRAWN BY	DESIGNED BY	CHECKED BY	MODEL	R3 (X-5100)
K.ASAMI			TITLE	KLM-2726
				I/F
DRAWING NO.			DATE	
KORG			'07.01.25	
			KOD-A30711	

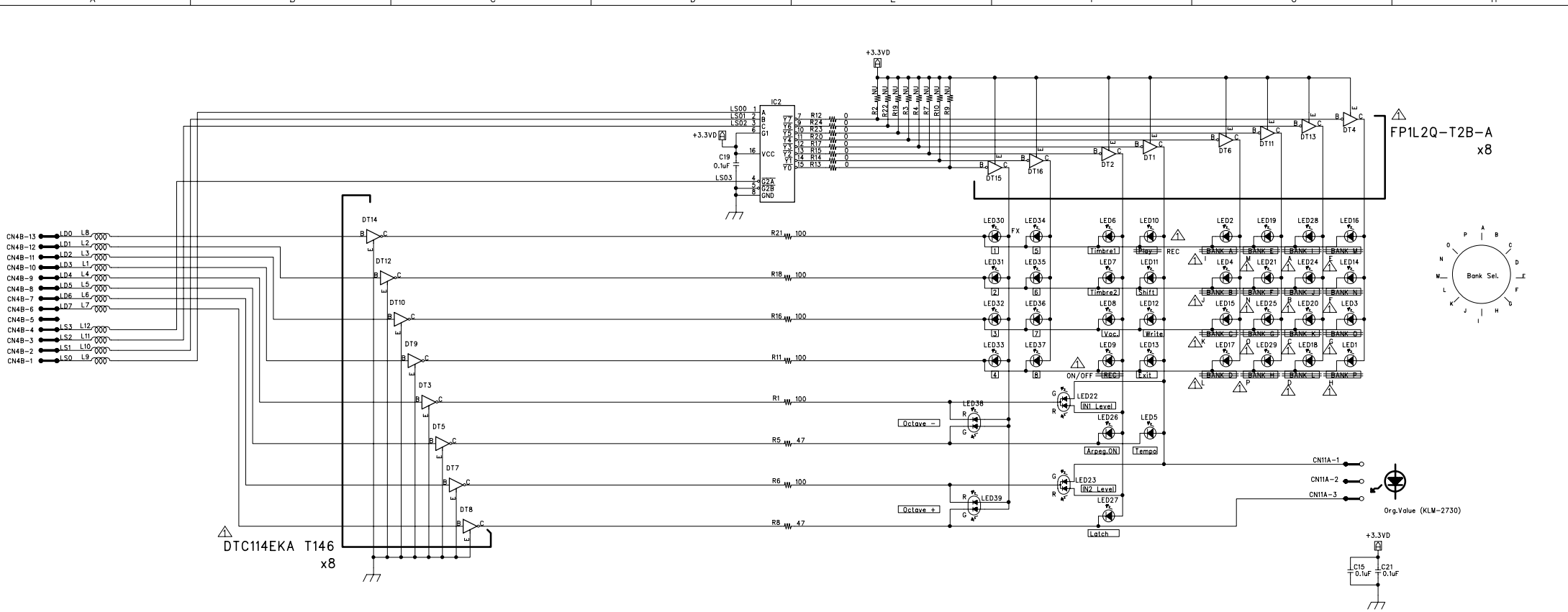


Pitch & Mod Wheel

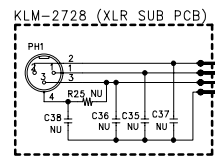


MARK	REVISION REASON	DATE	REVISED BY

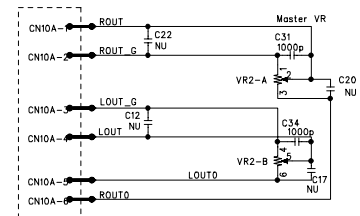
DRAWN BY	DESIGNED BY	CHECKED BY	MODEL	R3 (X-5100)
K.ASAMI			TITLE	KLM-2727
KORG			DRAWING NO.	KOD-A40628
			DATE	'07.01.25



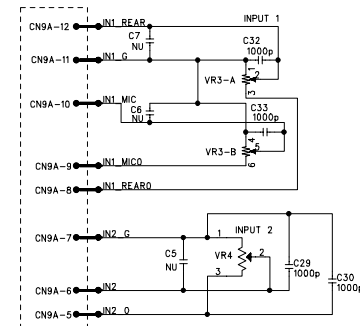
- CN4B-13 → LD0 L8 0000
- CN4B-12 → LD1 L2 0000
- CN4B-11 → LD2 L3 0000
- CN4B-10 → LD3 L1 0000
- CN4B-9 → LD4 L4 0000
- CN4B-8 → LD5 L5 0000
- CN4B-7 → LD6 L6 0000
- CN4B-6 → LD7 L7 0000
- CN4B-5 → LS3 L12 0000
- CN4B-4 → LS2 L11 0000
- CN4B-3 → LS1 L10 0000
- CN4B-2 → LS0 L9 0000



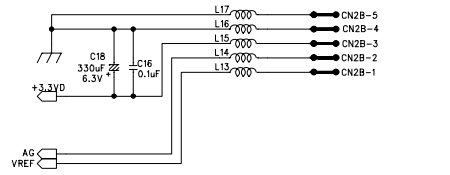
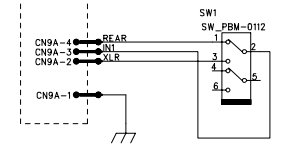
Board in Harness
HNS-3755



Board in Harness
HNS-3758

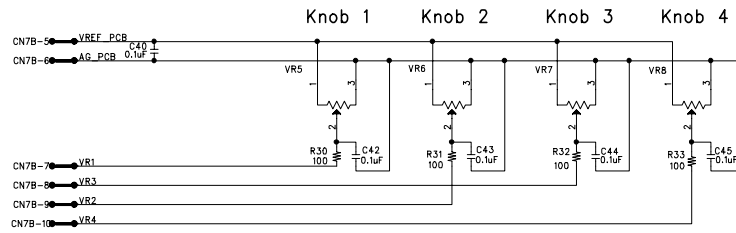
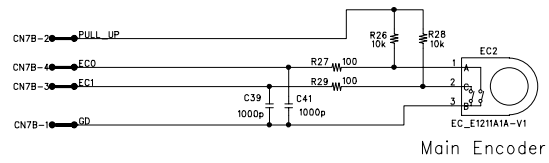


IN1 Select SW



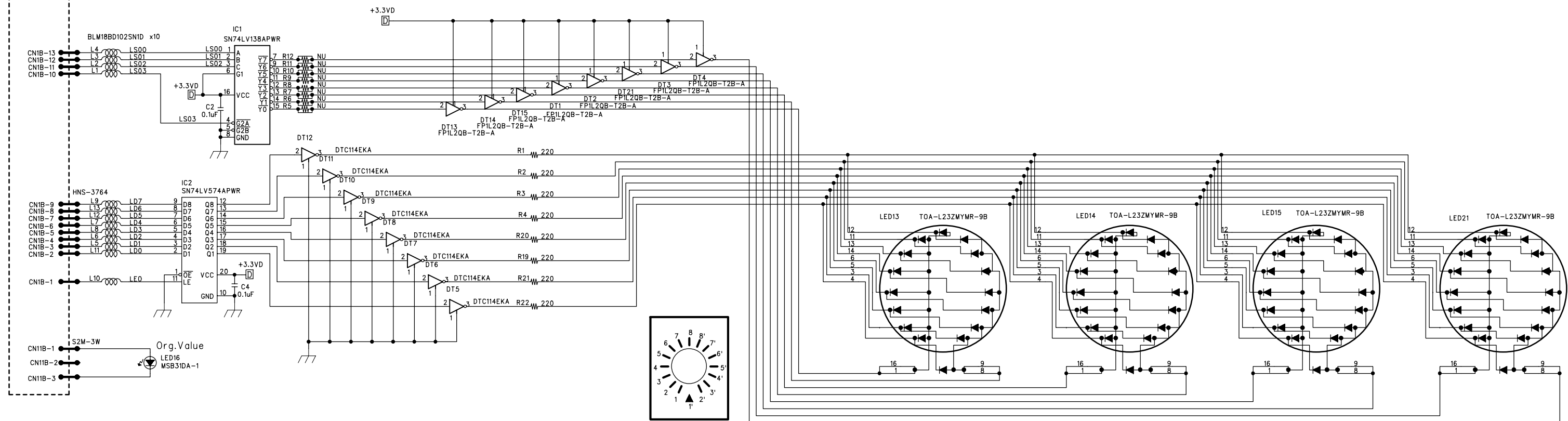
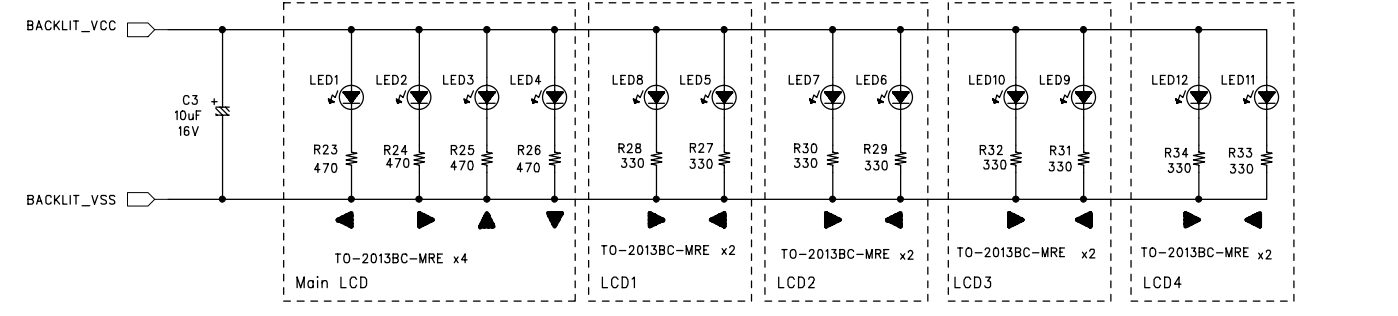
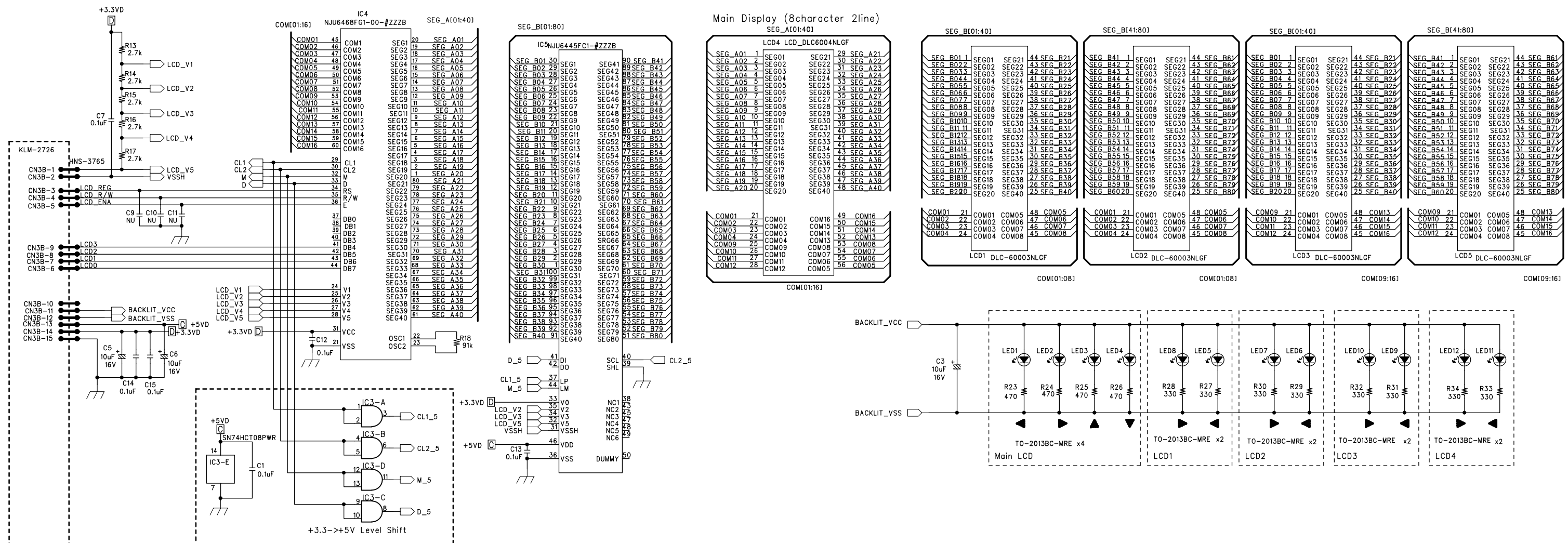
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△	Correct Mistake / Add Parts Name	07.02.14	K.Asami	
MARK	REVISION REASON	DATE	REVISED BY	

DRAWN BY	DESIGNED BY	CHECKED BY	MODEL	R3 (X-5100)
K.ASAMI			TITLE	KLM-2727/28
				LED / XLR
KORG		DRAWING NO.	KOD-A40629	DATE '07.01.25



DRAWN BY	DESIGNED BY	CHECKED BY	MODEL	R3 (X-5100)
K.ASAMI			TITLE	KLM-2729
			VR,ENC	
KORG		DRAWING NO.	KOD-A40630	DATE
				'07.01.25

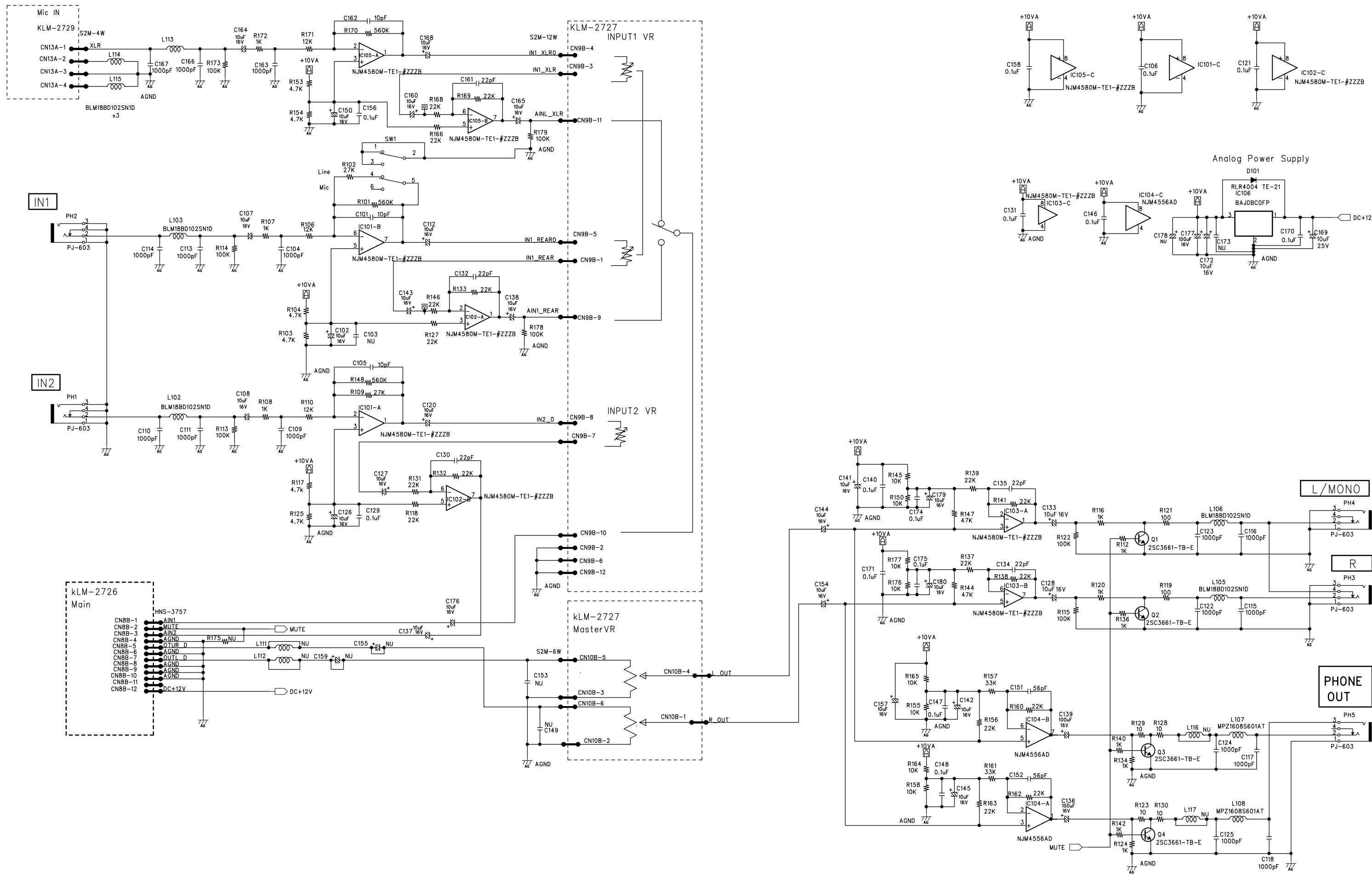
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MARK	REVISION REASON	DATE	REVISED BY



to Main PCB

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MARK	REVISION REASON	DATE	REVISED BY

DRAWN BY	DESIGNED BY	CHECKED BY	MODEL	R3 (X-5100)
K.ASAMI			TITLE	KLM-2730
			LCD/Circle LED	
DRAWING NO.			DATE	
KORG			'07.01.25	
KOD-A30712				



KLM-2731

DRAWN BY	DESIGNED BY	CHECKED BY	MODEL	X-5100
K.Asami			TITLE	Analog Input / Output Schematic
KORG			DRAWING NO.	KOD-A30713
			DATE	'07.01.25

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△			
MARK	REVISION REASON	DATE	REVISED BY

HARNESS NUMBER	QTY
HNS-3764	1
HNS-3765	1
HNS-3766	1

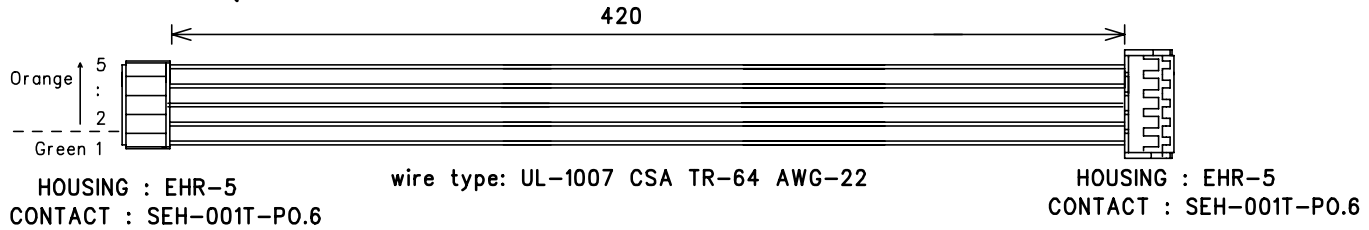
UNIT : mm

COMMERCIAL TOLERANCE

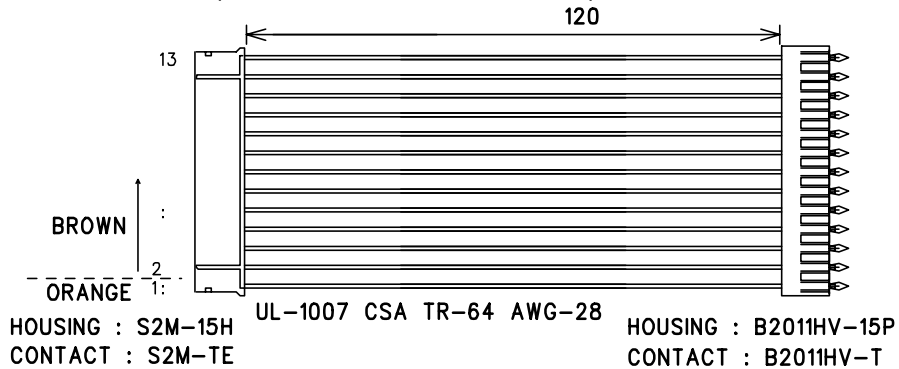
+ 10mm
- 5mm

* Wire : Stranded Wire Only

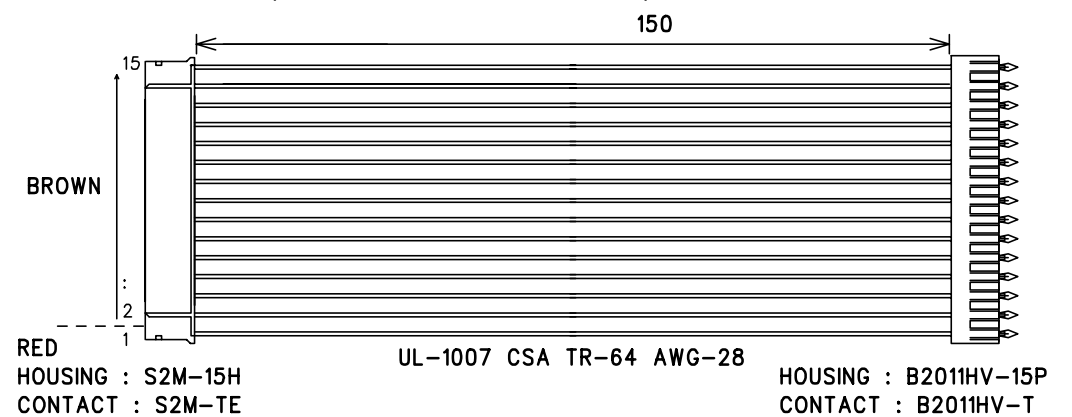
HNS-3766 (KLM-2726 -> KLM-2727)



HNS-3764 (KLM-2726 -> KLM-2730)



HNS-3765 (KLM-2726 -> KLM-2730)



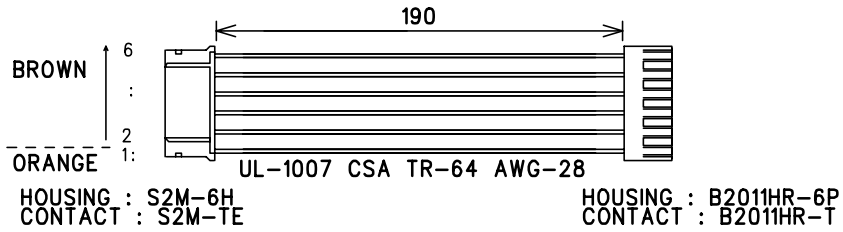
MARK	REVISION	REASON	DATE	REVISED BY
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DRAWN BY	DESIGNED BY	CHECKED BY	MODEL R3 (X-5100)
K.ASAMI	K.ASAMI		TITLE
			DESIGN FOR HARNESS (1)
KORG		DRAWING NO.	DATE
		KOD-040358	07.01.25

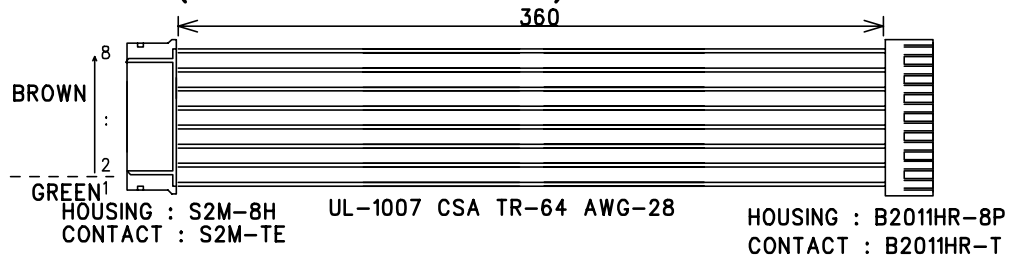
HARNESS NUMBER	QTY
HNS-3758	1
HNS-3759	1
HNS-3760	1
HNS-3761	1
HNS-3762	1
HNS-3763	1

UNIT : mm
 COMMERCIAL TOLERANCE
 + 10mm
 - 5mm
 * Wire : Stranded Wire Only

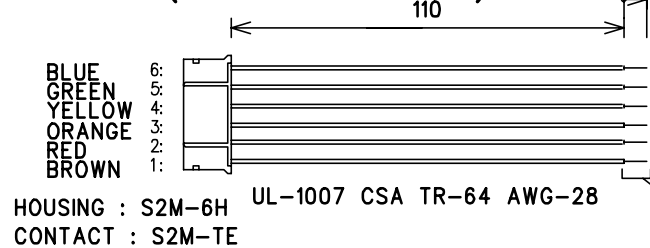
HNS-3758 (KLM-2731 ← KLM-2727)



HNS-3760 (KLM-2726 ← KLM-2727)

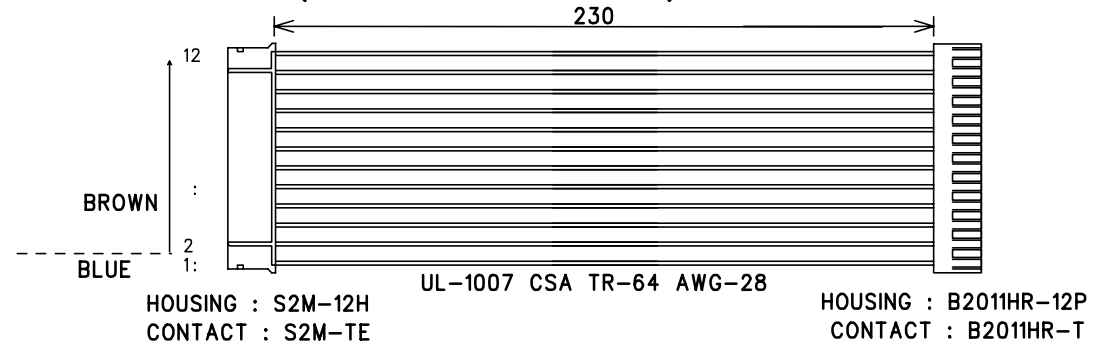


HNS-3763 (KLM-2727 ← Wheel)

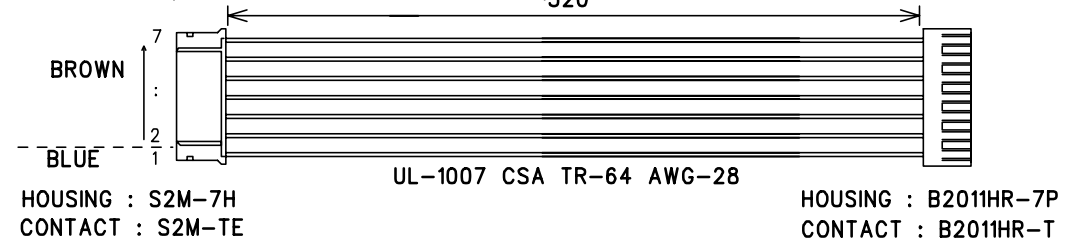


* Pre-soldering for stripped wires.

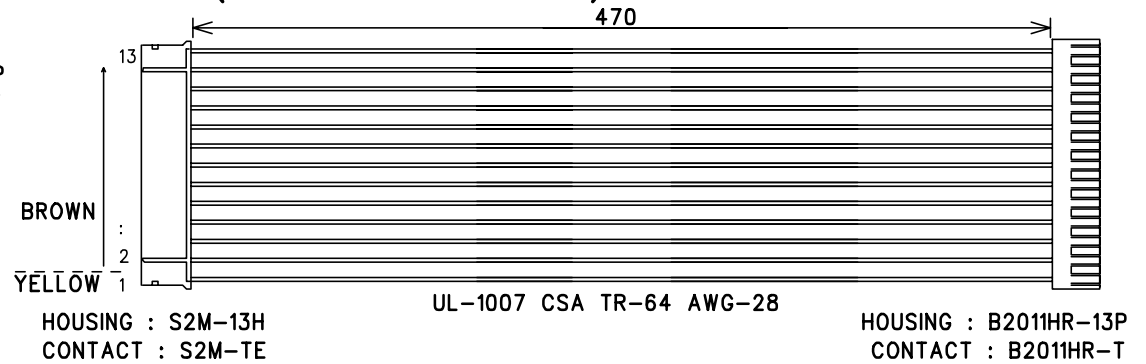
HNS-3759 (KLM-2731 → KLM-2727)



HNS-3761 (KLM-2726 ← KLM-2727)



HNS-3762 (KLM-2626 → KLM-2727)



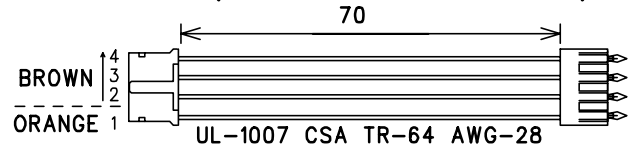
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MARK	REVISION	REASON	DATE
REVISD BY			

DRAWN BY	DESIGNED BY	CHECKED BY	MODEL R3 (X-5100)
K.ASAMI	K.ASAMI		TITLE
			DESIGN FOR HARNESS (2)
KORG		DRAWING NO.	DATE
		KOD-040359	07.01.25

HARNESS NUMBER	QTY
HNS-3755	1
HNS-3756	1
HNS-3757	1
HNS-3769	1

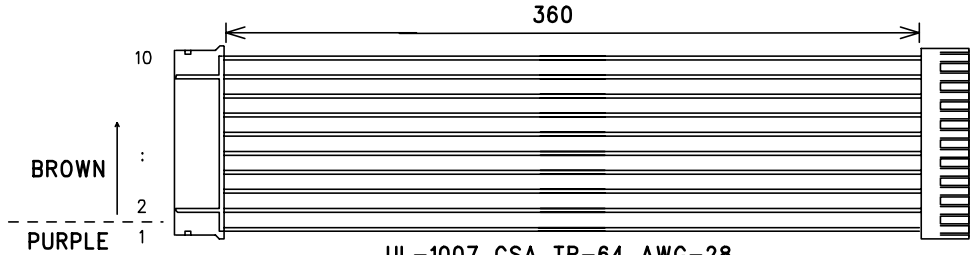
UNIT : mm
 COMMERCIAL TOLERANCE
 + 10mm
 - 5mm
 * Wire : Stranded Wire Only

HNS-3755 (KLM-2731 ← KLM-2729)



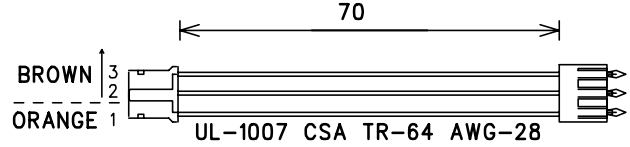
HOUSING : S2M-4H HOUSING : B2011HV-4P
 CONTACT : S2M-TE CONTACT : B2011HV-T

HNS-3756 (KLM-2726 ← KLM-2728)



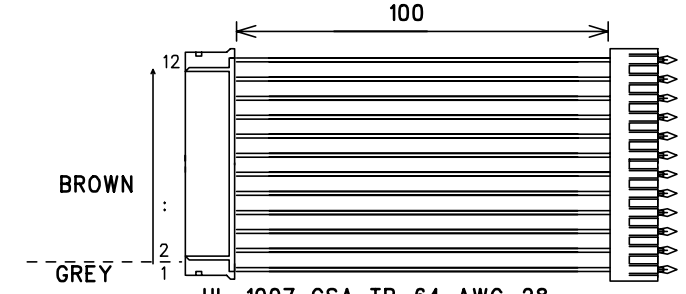
HOUSING : S2M-10H HOUSING : B2011HR-10P
 CONTACT : S2M-TE CONTACT : B2011HR-T

HNS-3769 (KLM-2727 → KLM-2730)



HOUSING : S2M-3H HOUSING : B2011HV-3P
 CONTACT : S2M-TE CONTACT : B2011HV-T

HNS-3757 (KLM-2726 → KLM2731)



HOUSING : S2M-10H HOUSING : B2011HV-10P
 CONTACT : S2M-TE CONTACT : B2011HV-T

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△				

DRAWN BY	DESIGNED BY	CHECKED BY	MODEL R3 (X-5100)
K.ASAMI	K.ASAMI		TITLE
			DESIGN FOR HARNESS (3)
KORG		DRAWING NO.	DATE
		KOD-040360	0701.25

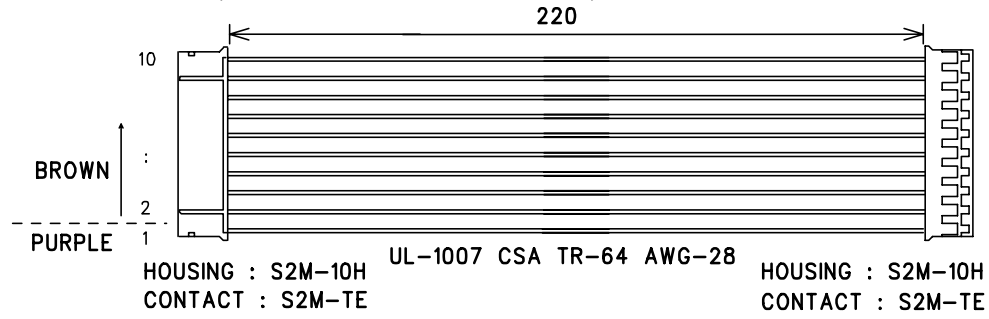
HARNESS NUMBER	QTY
HNS-3767	1
HNS-3768	1

UNIT : mm

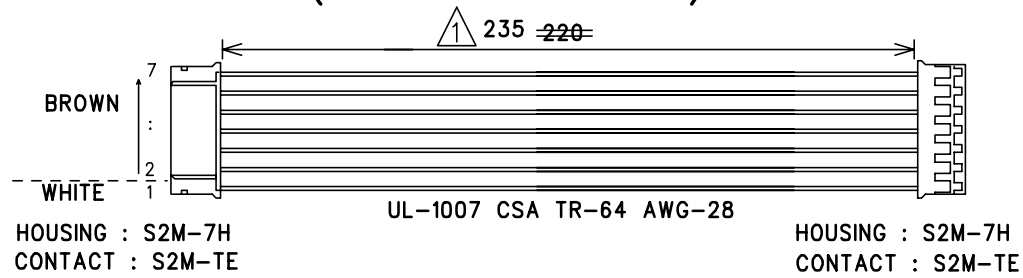
COMMERCIAL TOLERANCE
 + 10mm
 - 5mm

* Wire : Stranded Wire Only

HNS-3768 (KLM-2726 -> KLM-2730)



HNS-3767 (KLM-2726 -> KLM-2730)



△			
△			
△			
△			
△	for Core Addition	07.03.08	K.Asami
MARK	REVISION REASON	DATE	REVISED BY

DRAWN BY	DESIGNED BY	CHECKED BY	MODEL R3 (X-5100)
K.ASAMI	K.ASAMI		TITLE
			DESIGN FOR HARNESS
			Key
KORG		DRAWING NO.	DATE
		KOD-040361	07.01.25

R3 Test Mode

How to start the test mode

[REC] + [3] :Internal Test only(Automatic Test)
[REC] + [5] :External Test with output check
[REC] + [7] :Test Mode for Service Engineer
[REC] + [8] :Keyboard Test
[EXIT] + [7] :Ver. UP Mode
[EXIT] :Ver. Check
[LATCH] + [OCT UP]:Wheel Calibration

How to Use

Step Up :[TIMBRE2]
Step Down :[TIMBRE1]
Item Up :[2]
Item Down :[1]
Retry(error):[WRITE] + [8]
Skip(error) :[ARPEGGIATOR ON/OFF] + [8]

Test Mode Item List

Test Mode for Service Engineer

*Internal Auto Check

[SDRAM]
[CPU]
[FLASH ROM]
[FXD]
[DSP1]
[LCDC]
[MIDI]
[Audio Loop]

*External Check

[CHECK-THRU]
[MUTE]
[PANEL (LED/SW)]
[RotaryEncoder]
[RotarySW]
[A/D]
[LCD]
[USB]
[Assign Pedal]
[Assign Sw]
[WHEEL]

[KBD]

[User Calibration]

[QUIT]

Internal test only(Automatic Test)

[SDRAM]

[CPU]

[FLASH ROM]

[FXD]

[DSP1]

[LCDC]

[DSP-SERIAL]

[MIDI]

External Test with output check

[SDRAM] (internal check)

[CPU] (internal check)

[CHECK-THRU]

[MUTE]

[PANEL (LED/SW)]

[RotaryEncoder]

[RotarySW]

[A/D]

[LCD]

[USB]

[Assign Pedal]

[Assign Sw]

[WHEEL]

[KBD]

[Audio Output]

[User Calibration]

[QUIT]

Keyboard Test

***Internal Auto Check**

[SDRAM]

[CPU]

***External Check**

[KBD-Contact]

Error Message

*Internal test

[SDRAM]

|SDRAM-NG| = CS Error

|CS Err! |

|DRAM-NG | = Address Bus Error

|AB Err! |

|SDRAM-NG| = Data Bus Error

|DB Err! |

|SDRAM-NG| = Size(cell) Error

|SizeCell|

[CPU]

|CPU Err. | = CPU Pin Short Error (ppp/PPP:pin no.)

|ppp->PPP|

[FLASH ROM]

|<FLASH >|SYS :xxx|USR :xxx|PCM :xxx|----: | = Checksum Error (xxx:"OK "/"Err")

|ROM Err |

**note:"USR :Err" only means "Wait for Initialize"*

1) Push [WRITE]

2) LCD Display "[WR]>Ini"

3) Push [ARPEGGIATOR ON/OFF] + [8] to No-Initialize

3')Push [WRITE] to Data Initialize

|<FLASH >|SYS :xxx|USR :Err|PCM :xxx|----: | = User Data Initialize Failed

|ExtrctEr| EXTRACT error (xxx:"OK "/"Err")

|<FLASH >|SYS :xxx|USR :Err|PCM :xxx|----: | = User Data Initialize Failed

|SumError| CHECKSUM error (xxx:"OK "/"Err")

|<FLASH >|SYS :xxx|USR :Err|PCM :xxx|----: | = User Data Initialize Failed

|Wr Error| Write error (xxx:"OK "/"Err")

[FXD]

|<FXD03 >|GRx:read|ddddddd| = GR x Read Data Error (x:1~4, d~d:Read Data)

|<FXD03 >|GRx:keep|ddddddd| = GR x Keep Error (x:1~4, d~d:Read Data)

|<FXD03 >|GRx:clr |ddddddd| = GR x Clear Error (x:1~4, d~d:Read Data)

|<FXD03 >|A:aaaaaa|Rd =rrrr|Crt=dddd| = SRAM data compare Error
|SRAMdata| (a~a:Address, rrrr:ReadData, dddd:WriteData)

|<FXD03 >|W:aaaaaa| = SRAM Write Error
|SRAMtout| (a~a:Address)

|<FXD03 >|R:aaaaaa| = SRAM Read Error
|SRAMtout| (a~a:Address)

|<FXD03 >|Sts Tout| = SRAM 24bit Low TimeOut
|24 RdLow|

|<FXD03 >|Data: dd| = SRAM 24bit Low Error
|24 RdLow| (dd:data)

|<FXD03 >| = Reset Error
|Rst Tout|

|FXD #048|Rst Tout|bbbbbbbb|cccccccc|verxx.xx| = Reset Error
|Rst Tout|

|<FXD03 >| = Reset Error
|BootTout|

|<FXD03 >|A-Bus:xx| = Address Bus Error
|I-BusErr|

|<FXD03 >|D-Bus:xx| = Data Bus Error
|I-BusErr|

|<FXD03 >| = Bus Error
|I-BusErr|

|<FXD03 >| = Reset open Error
|RstPinEr|

|<FXD03 >| = FXD busy Error
|BootTout|

[DSP1]

|< DSP1 >|HPI WR..| = Waiting for "HPI Write HINT"
|HINTTout|

< DSP1 > HPI WR.. Wr =xxxx WrVerify	= HPI Write Error
< DSP1 > HPI RD.. HINTTOut	= Waiting for "HPI Read HINT"
< DSP1 > HPI RD.. Rd =rrrr Lgl=xxxx RdVerify	= HPI Read Error (rrrr:ReadData, xxxx:WriteData)
< DSP1 > SDRAM... HINTTOut	= Waiting for "SDRAM HINT"
< DSP1 > SDRAM... SD Start	= Can't Start "SDRAM Check"
< DSP1 > SDRAM... SD Unfin	= SDRAM Check Failed
< DSP1 > SDRAM... aaaaaaaa Wr =www Rd =rrrr SD D-Bus	= SDRAM Data BUS Error (a~a:Address, www:WriteData, rrrr:ReadData)
< DSP1 > SDRAM... aaaaaaaa Wr =www Rd =rrrr SD A-Bus	= SDRAM Address BUS Error (a~a:Address, www:WriteData, rrrr:ReadData)
< DSP1 > SDRAM... SD Size	= SDRAM Size Error
< DSP1 > SDRAM... SD ?????	= SDRAM unknown Error
< DSP1 > GP107... GP7 Stt	= Can't Start "GP107 Check"
< DSP1 > GP107... 175-176 GP7 Shrt	= GP107 short Error
< DSP1 > GP107... GP7 ?????	= GP107 unknown Error
< DSP1 > Rst GP4	= GP104 not ready

|< DSP1 >| = HINT not ready

|Rst HINT|

|< DSP1 >|CodecRST| = Codec Reset Pin short or open Error

|RST Err!|

|< DSP1 >|DR0....| = DRO Pin short or open Error

|DRO Err!|

[LCDC]

|<LCDRAM>| = CGRAM Error

|LCD CG:x|

|<LCDRAM>| = DDRAM Error

|LCD DD:x|

[DSP-SERIAL]

|<DSPSER>|Seri Bus| = DSP no-response

|no respo|

|<DSPSER>|Seri Bus| = FXD>DSP Data Compare N.G

|FXD->DSP|

|<DSPSER>|Seri Bus| = DSP>FXD Data Compare N.G

|DSP->FXD|

|<DSPSER>|Seri Bus| = FXD busy Error

|DSP tout|

[MIDI]

|< MIDI >| = "Can't Receive" Error

|MDloop:x|

|< MIDI >| = Receive Data Error

|MDvrfy:x|

*External Test

[PANEL(LED/SW)]

|xxxxxxx| | | |VerXX.XX| = Other Switches were Pushed

|NG other| (xxxxxxx:Item Name)

|xxxxxxx| | | |VerXX.XX| = Other Switches were Pushed with Target Switch

|NG short| (xxxxxxx:Item Name)

[A/D]

|xxxxxxx|XXXXXXXX| = Other A/D (VR) moved

|ErrShort|

(xxxxxxx, XXXXXXXX: VR Name)

“TEMPO “,”KONB1 “,”KNOB2 “,”KNOB3 “,”KNOB4 “,”MOD “,”BEND “,”ASSPEDAL”

[Assign Pedal]

|ASSPEDAL|XXXXXXXX| | | |VerXX.XX| = Other A/D (VR) moved

|ErrShort|

(XXXXXXXX:VR Name)

“TEMPO “.”KONB1 “,”KNOB2 “,”KNOB3 “,”KNOB4 “,”MOD “,”BEND “”

[Assign Sw]

|ASS SW | | | |VerXX.XX| = Short with Rotary Encoder

|short RE|

[KBD]

|# KBD | | | |VerXX.XX| = Keys have already been pushed

|ErrShort|

KORG R3 Part List

Part No.	Category	Part Name	Reference	QTY
510210510001	EMI/EMC PART	USB USBUF01W6 (S)	KLM-2726[TOP]EMI1	1
510320516010	Logic IC	SN74LV05APWR (S)	KLM-2726[TOP]IC8	1
510320516038	Logic IC	SN74LVC1G08DCKR DCK6	KLM-2726[TOP]IC201	1
510320516034	Logic IC	SN74LV4052APWR (TS)	KLM-2726[TOP]IC2.IC11	2
510320510510	Logic IC	HD74LV2GU04AUSE-E-Q	KLM-2726[TOP]IC10,IC20,IC25	3
510320516092	Logic IC	SN74LVC1G126DCKR	KLM-2726[TOP]IC200	1
500330003700	PHOTO COUPLER	PS9117-F3-A	KLM-2726[TOP]PC1	1
510320514026	LDO IC	BD00KA5WF	KLM-2726[TOP]IC12	1
510320514028	LDO	BA15BC0FP-E2	KLM-2726[TOP]IC15	1
510320514022	LDO IC	BA25BC0FP-E2 (TS)	KLM-2726[TOP]IC24	1
510320514007	LDO IC	BA05FP E2 (S)	KLM-2726[TOP]IC14	1
510320516505	DC-DC Converter	XC6351A120MR (S)	KLM-2726[TOP]IC9	1
500324035006	ASSP IC	LTC1771ES8#TRPBFF	KLM-2726[TOP]IC19	1
510324018019	A/D Converter	AK5381ET-E2	KLM-2726[TOP]IC4	1
510324038010	D/A Converter	AK4384ET-E2	KLM-2726[TOP]IC5	1
500324006013	SDRAM	V54C3128164VBI7(TP)	KLM-2726[TOP]IC16,IC18	2
500324041005	SRAM	EM643FV16FU-70LF	KLM-2726[TOP]IC13	1
500320012355	FLASH(NOR)	S29JL032H70TFI020D(X5100)	KLM-2726[TOP]IC21	1
510320512005	RESET IC	M51957BFP#CF0J (S)	KLM-2726[TOP]IC6	1
500320004715	CPU	HD6417705F100BV	KLM-2726[TOP]IC17	1
510320516070	DSP	TMS320VC5501PGF300	KLM-2726[TOP]IC22	1
500320012334	ASIC	MB87R1420PMC-G-BND	KLM-2726[TOP]IC23	1
510335520011	CRYSTAL	HC-49US 12.00MHZ (D)	KLM-2726[TOP]X1	1
510335520007	CRYSTAL	HC-49US 20.00MHZ (D)	KLM-2726[TOP]X2	1
510335520008	CRYSTAL	HC-49US 24.576MHZ SS (D)	KLM-2726[TOP]X3	1
500402007100	INDUCTOR	PLT09HN2003R0P1B	KLM-2726[TOP]L7	1
510402510501	INDUCTOR	R12A163EA C6-K3.0L R12W228EA	KLM-2726[TOP]L30,L33,L34,L35	4
510402511003	EMI/EMC PART	BLM18BD102SN1D (S)	KLM-2726[TOP]L1-6,L8-L17,L20-L29,L31-32 L36-39,L42-48,L50-72,[BOT]L18	63
510402511006	Chip INDUCTOR	BLM21PG221SN1D (S)	KLM-2726[BOT]L40,L41	2
510310510502	DOUBLE DIODES	MC2840-T112-1 (S)	[TOP]WD1-3 [BOT]WD4-9	9
510310511506	SCHOTTKY DIODE	RB051L-40TE25 (S)	KLM-2726[TOP]D3 [BOT]D4	2
510310511508	DIODE	RLR4004 TE-21 (S)	KLM-2726[TOP]D2	1
510310511507	DIODE	RLS-73 TE-11 (S)	KLM-2726[TOP]D1	1
510306510502	POWER MOS FET	SI4431ADY	KLM-2726[TOP]F1	1
510450521501	DIN JACK	YKF51-5046 (DIN) (D)	KLM-2726[TOP]MID1	1
510474520501	USB CONNECTOR	GE813A02-LC(USB B TYPE) (D)	KLM-2726[TOP]USB1	1
510450520012	PHONE JACK	PJ-603 (PHONE JACK) (D)	KLM-2726[TOP]PH1,PH2	2
510450522504	DC JACK	PJCP042100-42-0 (D)	KLM-2726[TOP]DJ1	1
510374520007	POWER SW	PSW SDKLA10200 (D)	KLM-2726[TOP]SW1	1
510360521001	VR	R0911NOXH1B103TG0000 (D)10kΩ	KLM-2726[TOP]VR1	1
510640501502		X-1500 TERMINAL KOC-C41254	KLM-2726[TOP]PT1	1
510474524011	CONNECTOR	S2M-15W (WAFER FOR PH)	KLM-2726[TOP]CN3A	1
510374520079	PH Connector	A2001WV-13P	KLM-2726[TOP]CN1A,CN4A	2
510474524010	CONNECTOR	S2M-12W (WAFER FOR PH)	KLM-2726[TOP]CN8A	1
510374520080	PH Connector	A2001WV-10P	KLM-2726[TOP]CN7A,CN102A	2
510474524008	CONNECTOR	S2M-7W (WAFER FOR PH)	KLM-2726[TOP]CN6A,CN101A	2
510474524009	CONNECTOR	S2M-8W (WAFER FOR PH)	KLM-2726[TOP]CN5A	1
510474520013	CONNECTOR	JS1132-05 (B5B-EH-A) (WAF) (D)	KLM-2726[TOP]CN2A	1
510C90102726	PCB ASS'Y	KLM-2726-R3 ASS'Y		(1)
510402511003	EMI/EMC PART	BLM18BD102SN1D (S)	[KLM-2727 TOP]L-23	23
510310510501	DOUBLE DIODES	MC2838-T112-1 (S)	[KLM-2727 TOP]WD1-10	10
510300511009	DIGITAL TR	DTC114EKA T146 (TS) (S)	[KLM-2727 TOP]DT3,5,7-10,12,14	8
510300510505	DIGITAL TR	FP1L2Q-T2B-A (TS) (S)	[KLM-2727 TOP]DT1,2,4,6,11,13,15,16	8
510310511507	DIODE	RLS-73 TE-11 (S)	[KLM-2727 TOP]D1,D2,D3,D4	4
510320516008	Logic IC	SN74LV138APWR	[KLM-2727 TOP]IC1,IC2	2
510450524507	XLR JACK	LX-1604H-3	[KLM-2729 TOP]PH1	1
510374522019	VIRTICAL PUSH SW	PBM-0112	[KLM-2727 TOP]SW1	1
500370005700	SW	REB161(9X7)PVB20FHGRY1-4-16PCE	[KLM-2727 TOP]EC1	1
510370520004	Rotary Encoder	EC12E240204A9	[KLM-2728 TOP]EC2	1
510374524017	ROTARY VR	RV09ACF-40-20F-B5K-0057	[KLM-2727 TOP]VR1	1
510374524031	ROTARY VR	RV09ACF-40-25F-B5K	[KLM-2728 TOP]VR5,VR6,VR7,VR8	4
510374524021	ROTARY VR	RV112BCF-40-20A-B10K	[KLM-2727 TOP]VR2,VR3	2
510374524029	Rotary Potentiometer	RV09ACF-40-20F-B10K	[KLM-2727 TOP]VR4	1
510312513001	Chip LED	TO-2013BC-MRE (S)	[KLM-2727 TOP]LED6-13,26,27,30,31-37	18
510312511002	LED	MT-19-22SURVGC/TR8 (B/L) (S)	[KLM-2727 TOP]LED38,LED39	2
510312521502	LED	MSB31DA-1 (W/PLATING) (D)RED	[KLM-2727 TOP]LED1-5,14,15-21, 24,25,28,29	17
510312521511	LED	MSGB39W (VER.A)(D)RED/GREEN	[KLM-2727 TOP]LED22,LED23	2
510450523017	LED SPACER	LEDH-9 (3HOLE)	[KLM-2727 TOP]LED1-5,14-25,28,29	19
510C90102727	PCB ASS'Y	KLM-2727/28/29-R3 ASS'Y		(1)
510474524006	CONNECTOR	S2M-6W (WAFER FOR PH) (D)	[KLM-2727 BOT]CN10	1
510470523015	Board in Harness	HNS-3769(PH size 3pin, 70mm)	[KLM-2727 BOT]CN11A	1
510470523004	Board in Harness	HNS-3758(PH size 6pin, 190mm)	[KLM-2727 TOP]CN10A	1
510470523005	Board in Harness	HNS-3759(PH size 12pin, 230mm)	[KLM-2727 TOP]CN9A	1
510470523006	Board in Harness	HNS-3760(PH size 8pin, 360mm)	[KLM-2727 TOP]CN5B	1
510470523007	Board in Harness	HNS-3761(PH size 7pin, 320mm)	[KLM-2727 TOP]CN6B	1
510470523008	Board in Harness	HNS-3762(PH size 13pin, 470mm)	[KLM-2727 TOP]CN4B	1

Part No.	Category	Part Name	Reference	QTY
510470523002	Board in Harness	HNS-3756(PH size10pin, 360mm)	[KLM-2728 TOP]CN7B	1
510470523001	Board in Harness	HNS-3755(PH size 4pin, 70mm)	[KLM-2729 TOP]CN13B	1
510474520013	CONNECTOR	JS1132-05 (B5B-EH-A) (WAF) (D)	[KLM-2727 BOT]CN2B	1
510402511003	EMI/EMC PART	BLM18BD102SN1D (S)	[KLM-2730 TOP]L1-13 [KLM-2731 TOP]L102,103,105,106,L113-115	20
510402523003	EMI/EMC PART	MPZ1608S601AT	[KLM-2731 TOP]L107,L108	2
510300511009	DIGITAL TR	DTC114EKA T146 (TS) (S)	[KLM-2730 BOT]DT5-12	8
510300510505	DIGITAL TR	FP1L2Q-T2B-A (TS) (S)	[KLM-2730 TOP]DT1-4 [BOT]DT13-15,21	8
510310511508	DIODE	RLR4004 TE-21 (S)	[KLM-2731 TOP]D101	1
510320511002	DISPLAY IC	NJU6468FG1-00-#ZZZB (S)	[KLM-2730 BOT]IC4	1
510320511001	DRIVER IC	NJU6445FC1-#ZZZB(S)	[KLM-2730 BOT]IC5	1
510320516006	Logic IC	SN74AHCT08PWR	[KLM-2730 TOP]IC3	1
510320516031	Logic IC	SN74LV574APWR (S)	[KLM-2730 TOP]IC2	1
510320516008	Logic IC	SN74LV138APWR	[KLM-2730 TOP]IC1	1
510300511504	TRANSISTOR	2SC3661-TB-E (S)	[KLM-2731 TOP]Q1,Q2,Q3,Q4	4
510312513001	Chip LED	TO-2013BC-MRE (S)RED	[KLM-2730 TOP]LED1-12	12
510316521503	LED	TOA-L23ZMRMG-9B 16POINT CIRCLE LE	[KLM-2730 TOP]LED13-15,21	4
510450523010	LED SPACER	L=5.0MM LEDH-5 (3HCLE)	[KLM-2730 TOP]LED16	1
510312521502	LED	MSB31DA-1 (W/PLATING) (D)RED	[KLM-2730 TOP]LED16	1
510320514037	REGULATOR IC	BAJ0BC0FP	[KLM-2731 TOP]IC106	1
510320520502	OPAMP	NJM4556AD (D)	[KLM-2731 TOP]IC104	1
510320511003	OPAMP	NJM4580M-TE1-#ZZZB (S)	[KLM-2731 TOP]IC101-103,IC105	4
510C90102730	PCB ASS'Y	KLM-2730/31-R3 ASS'Y		(1)
510474524006	CONNECTOR	S2M-6W (WAFER FOR PH) (D)	[KLM-2731 TOP]CN10B	1
510474524010	CONNECTOR	S2M-12W (WAFER FOR PH)	[KLM-2731 TOP]CN9B	1
510474524005	CONNECTOR	S2M-3W (WAFER FOR PH) (D)	[KLM-2730 BOT]CN11B	1
510474524021	CONNECTOR	S2M-4W (WAFER FOR PH)	[KLM-2731 TOP]CN13A	1
510450520012	PHONE JACK	PJ-603 (PHONE JACK) (D)	[KLM-2731 TOP]PH1-5	5
510374522002	SLIDE SW	SK-22D06G8 2P2T (D)	[KLM-2731 TOP]SW1	1
510470523010	HARNESS	HNS-3764 120MM	[KLM-2730 BOT]CN1B	1
510470523011	HARNESS	HNS-3765 150MM	[KLM-2730 BOT]CN3B	1
510470523003	HARNESS	HNS-3757 100MM	[KLM-2731 TOP]CN8B	1
510C90102663	PCB ASS'Y	KLM-2663-R3 ASS'Y	(25KEY)	(1)
510C90102665	PCB ASS'Y	KLM-2665-R3 ASS'Y	(12KEY)	(1)
510310520501	DIODE	1SS133 T-77 (D)	[KLM-2663]D1-50 [KLM-2665]D99-122	74
510320516052	Logic IC	SN74HC138N	[KLM-2663]IC1 [KLM-2665]IC3	2
510474520019	CONNECTOR	JS-1125-07 (WAF FOR VOLUME)(D)	[KLM-2663]CN5	1
510474520021	CONNECTOR	JS-1125-10 (PINHDR FOR LCD)(D)	[KLM-2663]CN6	1
510470521050	HARNESS	HNS-3631 (X-4130)	[KLM-2663]WIRE1	1
510470521051	HARNESS	HNS-3632 (X-4130)	[KLM-2663]WIRE3	1
510474523007	FFC CONNECTOR	RIBBON CABLE CNCTR 52147-0810	[KLM-2665]CN4	1
510474523008	FFC CONNECTOR	RIBBON CABLE CNCTR 52147-1010	[KLM-2665]CN2	1
510313500013	LCD	DLC-60004NLGF	SUB ASS'Y	1
510313500008	LCD	DLC-60003NLGF X2830	SUB ASS'Y	4
510360520005	ROTARY VR	RK1631110G1T 10K B CURVE (D)	SUB ASS'Y	2
510470523013	Harness	HNS-3767(PH size 7pin, 220mm)	SUB ASS'Y	1
510470523014	Harness	HNS-3768(PH size 10pin, 220mm)	SUB ASS'Y	1
510470523009	Harness	HNS-3763(PH size 6pin, 110mm)	SUB ASS'Y	1
510470523012	Harness	HNS-3766(EH size 5pin, 420mm)	SUB ASS'Y	1
510525520003	FERRITE CORE	K3 T 16X14X10	SUB ASS'Y	2
510640502527		X-5100 MAIN PLATE KOC-C30712	MECHANICAL	1
510640502528		X-5100 JACK PLATE KOC-C30713	MECHANICAL	1
510640505503		X-1110 WHEEL ANGLE KOC-C41269	MECHANICAL	2
510640504016		X-1110 WHEEL SPRING KOC-C41278	MECHANICAL	1
510646502100		X-5100 KEY FRAME 37 KOC-E10235	MECHANICAL	1
510646502101		X-5100 UPPER CASE KOC-E10237	MECHANICAL	1
510646502102		X-5100 LOWER CASE KOC-E10238	MECHANICAL	1
510646502103		X-5100 REAR PANEL KOC-E20277	MECHANICAL	1
510646502008		X-1110 WHEEL KNOB KOC-E30289	MECHANICAL	2
510500502536		X-5100 RUBBER KEY KOC-E30433	MECHANICAL	1
510646502104		X-5100 SELECT KNOB KOC-E30434	MECHANICAL	1
510646502105		X-5100 ENCODER KNOB KOC-E40672	MECHANICAL	1
510646502106		X-5100 VR KNOB KOC-E40673	MECHANICAL	8
510646502107		X-5100 PUSH BUTTON KOC-E40674	MECHANICAL	1
510646502108		X-5100 REFLECTOR (L) KOC-E40675	MECHANICAL	1
510646502109		X-5100 REFLECTOR (S) KOC-E40676	MECHANICAL	4
510646506507		X-5100 LCD WINDOW (L) KOC-E40677	MECHANICAL	1
510646506508		X-5100 LCD WINDOW (S) KOC-E40678	MECHANICAL	4
510646506514		X-5100 SHEET (L) KOC-F41314	MECHANICAL	1
510646506515		X-5100 SHEET (S) KOC-F41315	MECHANICAL	4
500620018201		PSW KNOB EXP KOC-E40224	MECHANICAL	1
510646502085		KEY ASSY 12(M) KOC-H30305-1	MECHANICAL	2
510646502086		KEY ASSY 13(M) KOC-H30306-1	MECHANICAL	1
510500504503		RUBBER BOTTON 13 KOC-E30438	MECHANICAL	3
510500505506		X-5100 KB FELT KOC-F41281-3	MECHANICAL	2
510500505001		KEY GUIDE RUBBER QMGG055AA	MECHANICAL	37
510500500008		X-332CHINA URETHANE-LEG F40709	MECHANICAL	5
510630500004		X-5100 SHIELD SHEET-1 KOC-F41334	MECHANICAL	1
510630500005		X-5100 SHIELD SHEET-2 KOC-F41335	MECHANICAL	1

Part No.	Category	Part Name	Reference	QTY
510630500006		X-5100 SHIELD SHEET-3 KOC-F41336	MECHANICAL	1
510630500007		X-5100 SHIELD SHEET-4 KOC-F30136	MECHANICAL	1
510500501516	INTER CONNECTOR	INTER-CONNECTOR	MECHANICAL	10
510405015300	SWITCHING ADAPTER	KA310 (DSA-015AD-12A)		1
510415500003	MIC	GM-23D		1
500600006513	AC CABLE	DC-1800-D02LY (PSE)	100JP	(1)
510600006510	AC CABLE	UC-1800-U02LY(UL) (W/POLYBAG)	120US,CN,EX	(1)
510600006509	AC CABLE	EC-1800-E02LY(VDE) (W/POLYBAG)	230WG,FR,GE	(1)
500600006512	AC CABLE	SC-1800-S02LY (SAA)	240AU	(1)
510600006511	AC CABLE	BC-1800-B02LY(BS) (W/POLYBAG)	230UK	(1)