

# *Service Manual*

## **COMBO ORGAN CX-3**

### **Provisional Version**

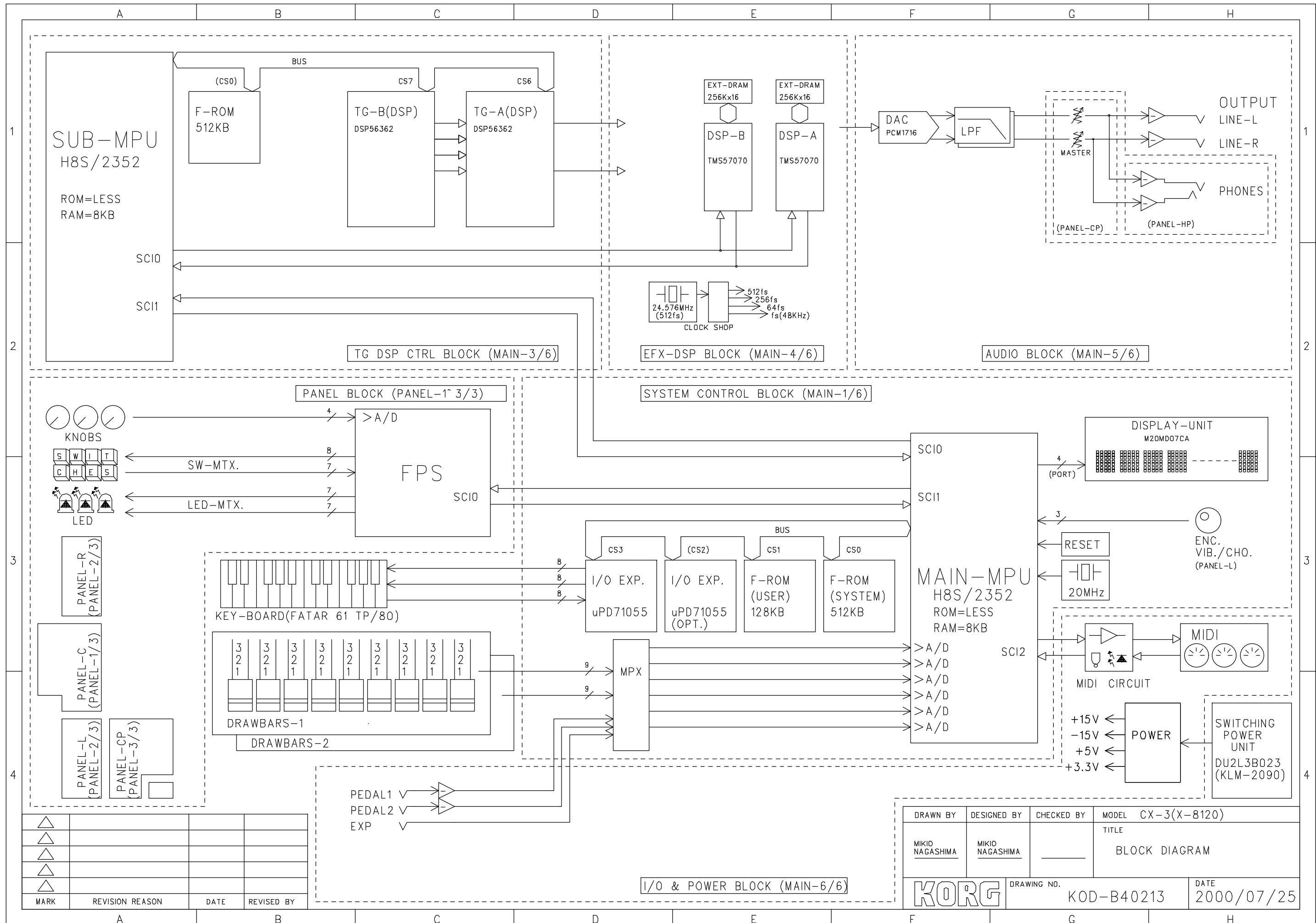
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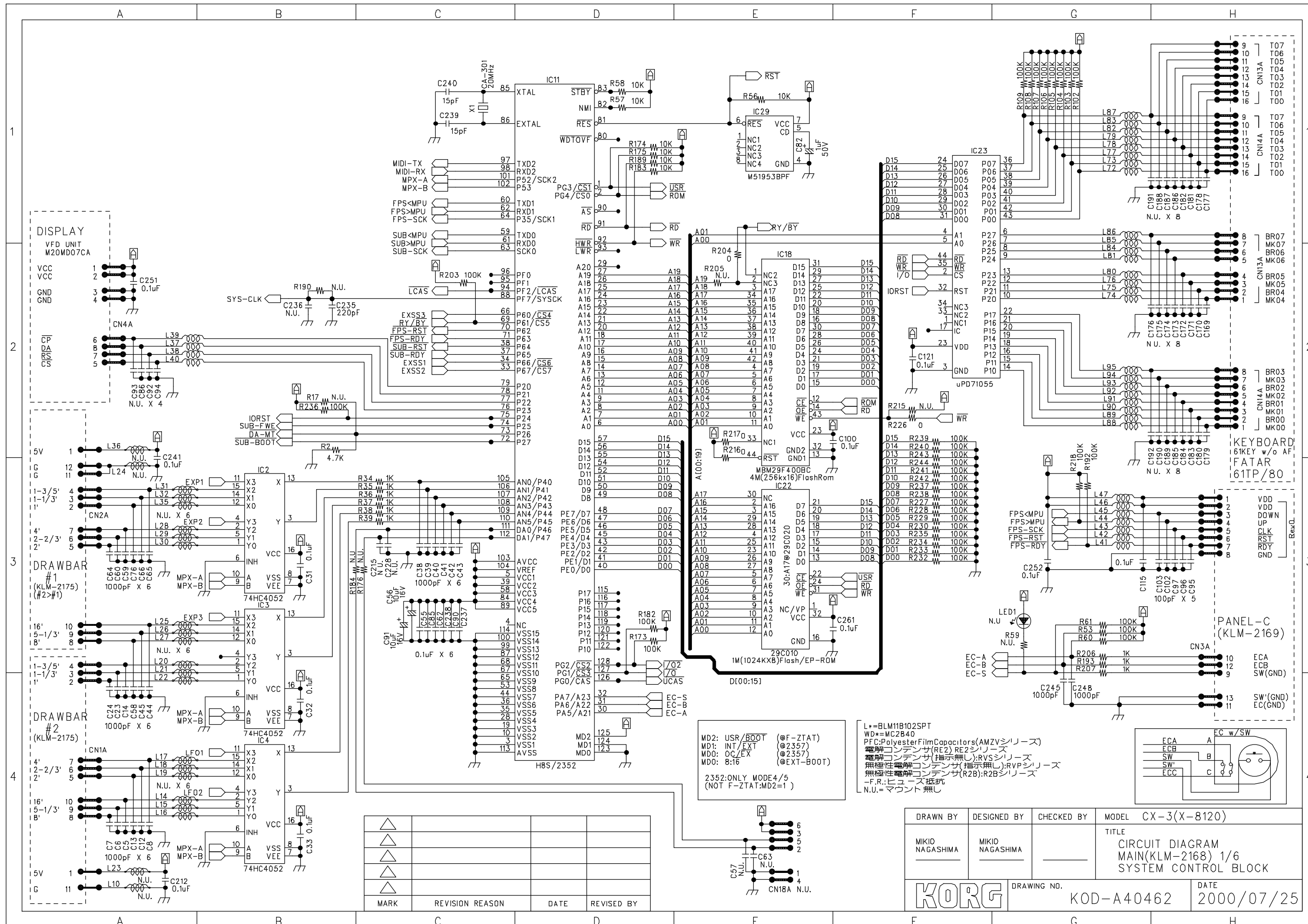
|                       |       |         |
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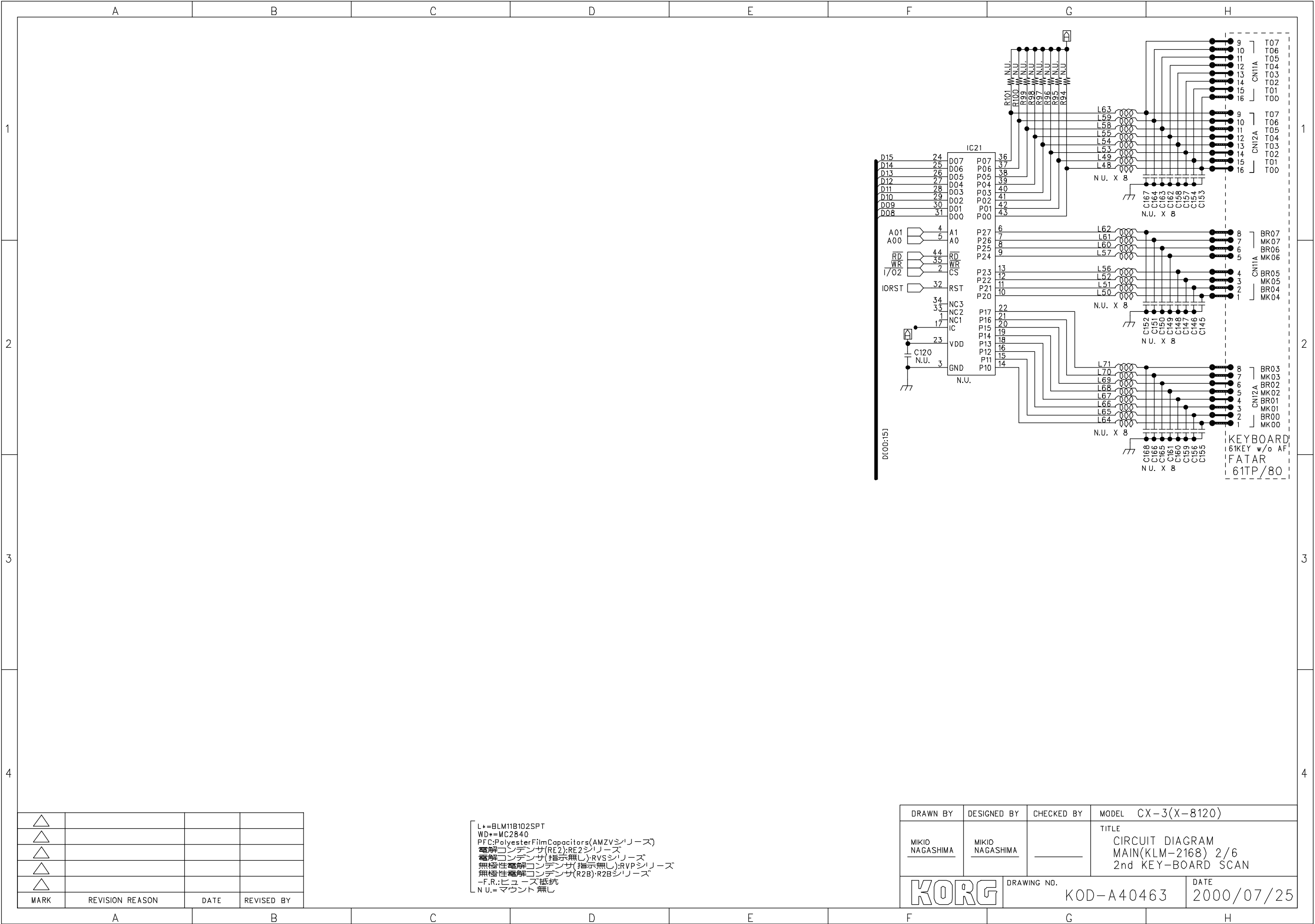
Revision: 1.00

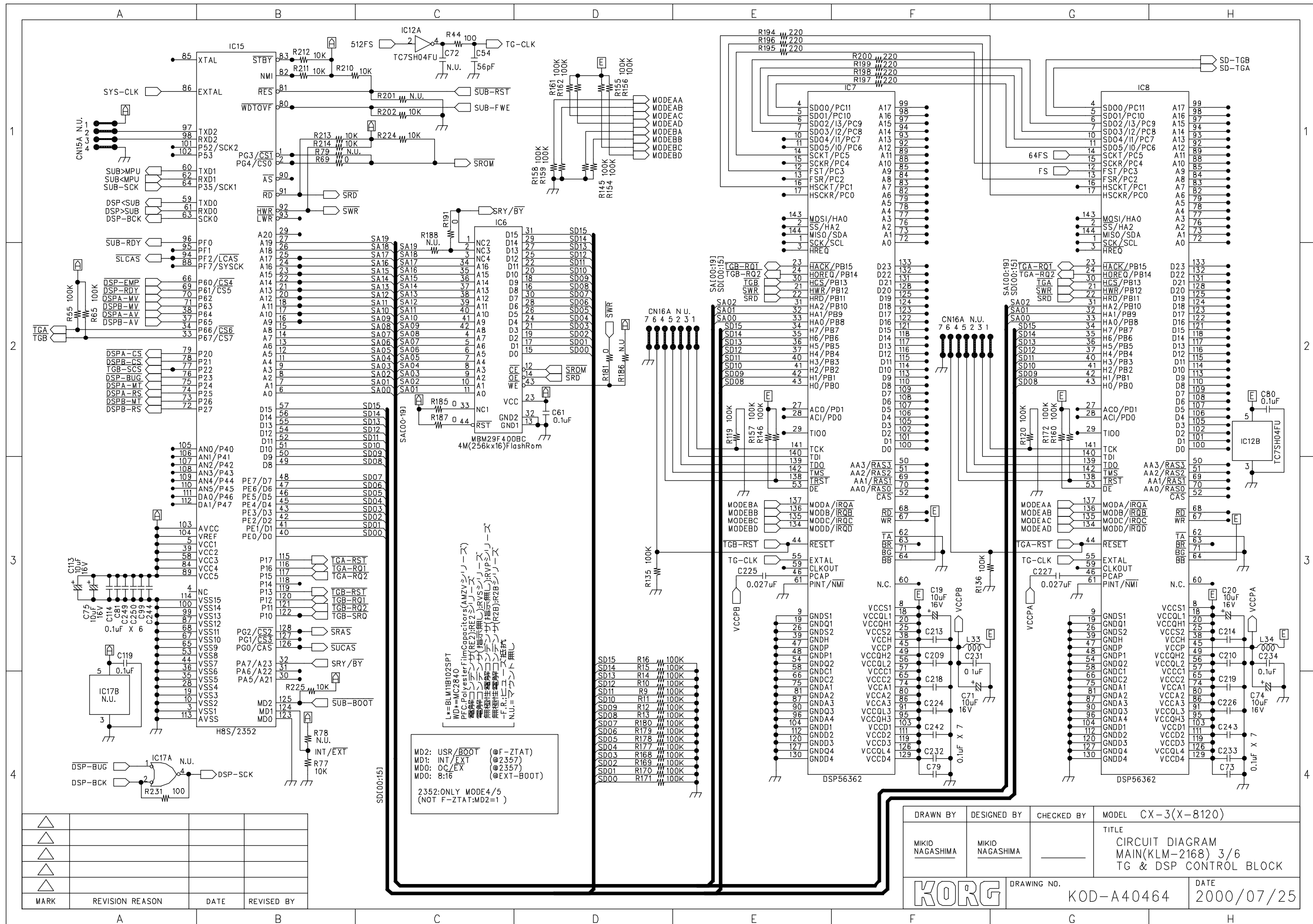
Issued date: Nov. 1st, 2000

Issued by: KORG INC.

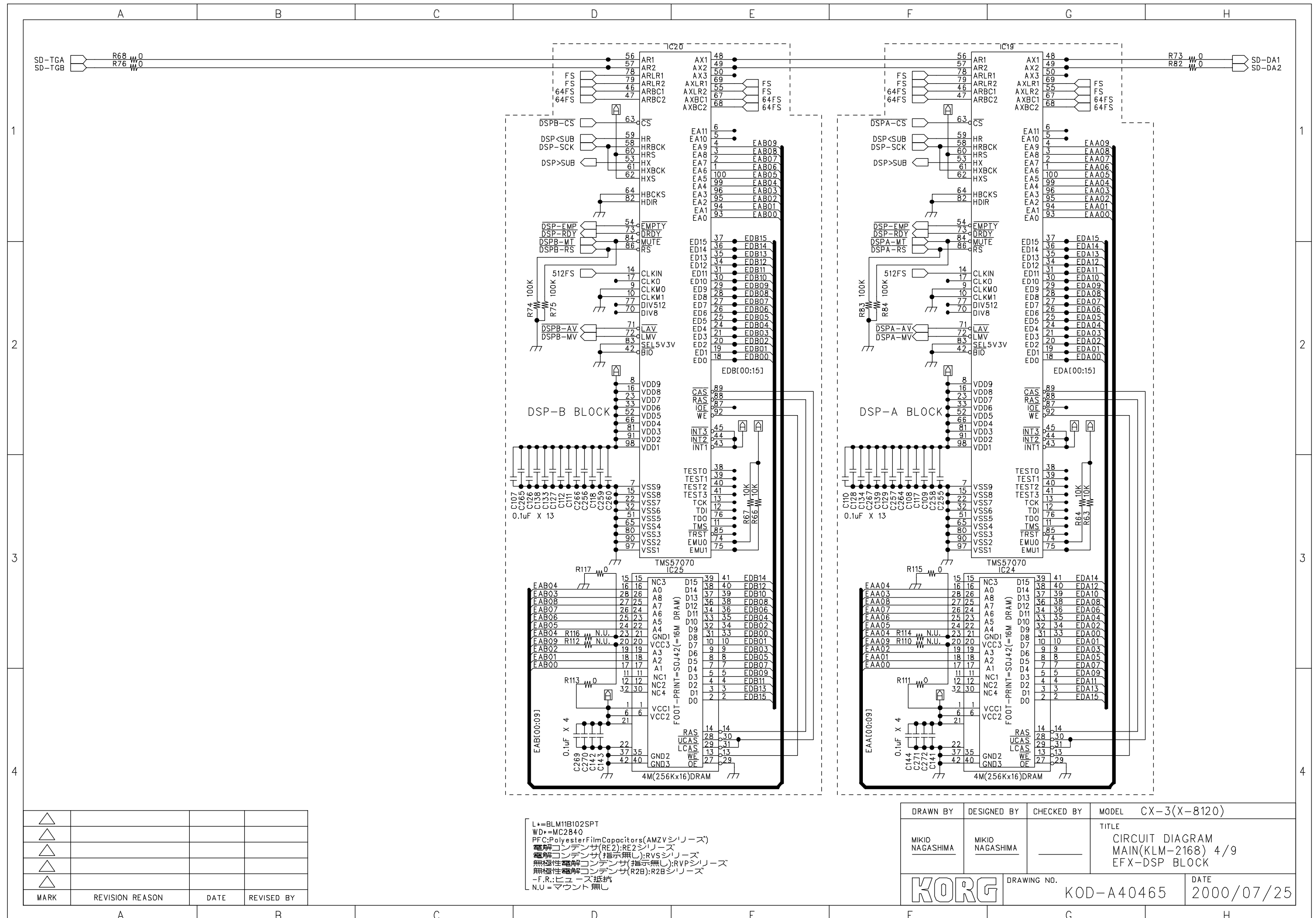




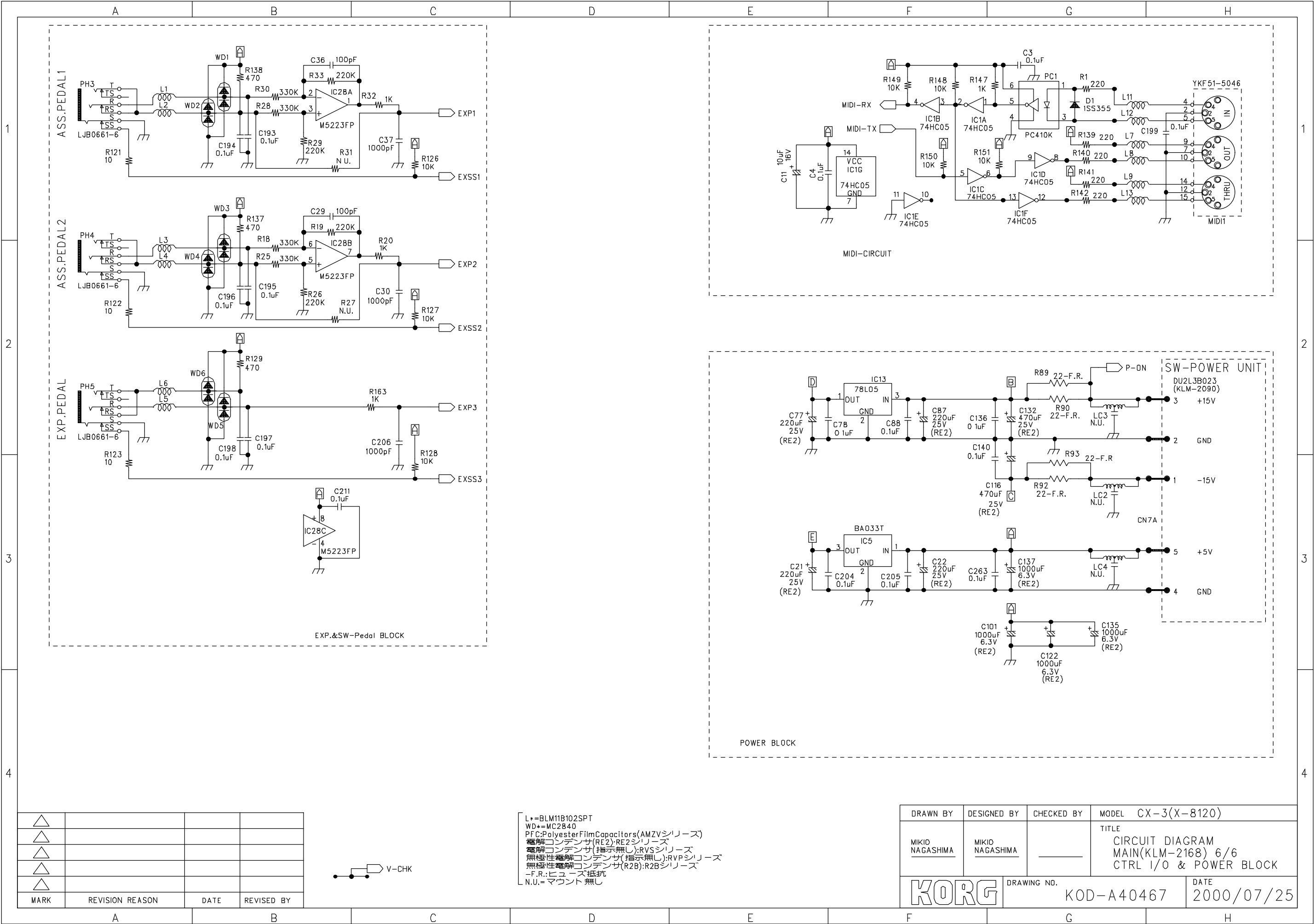




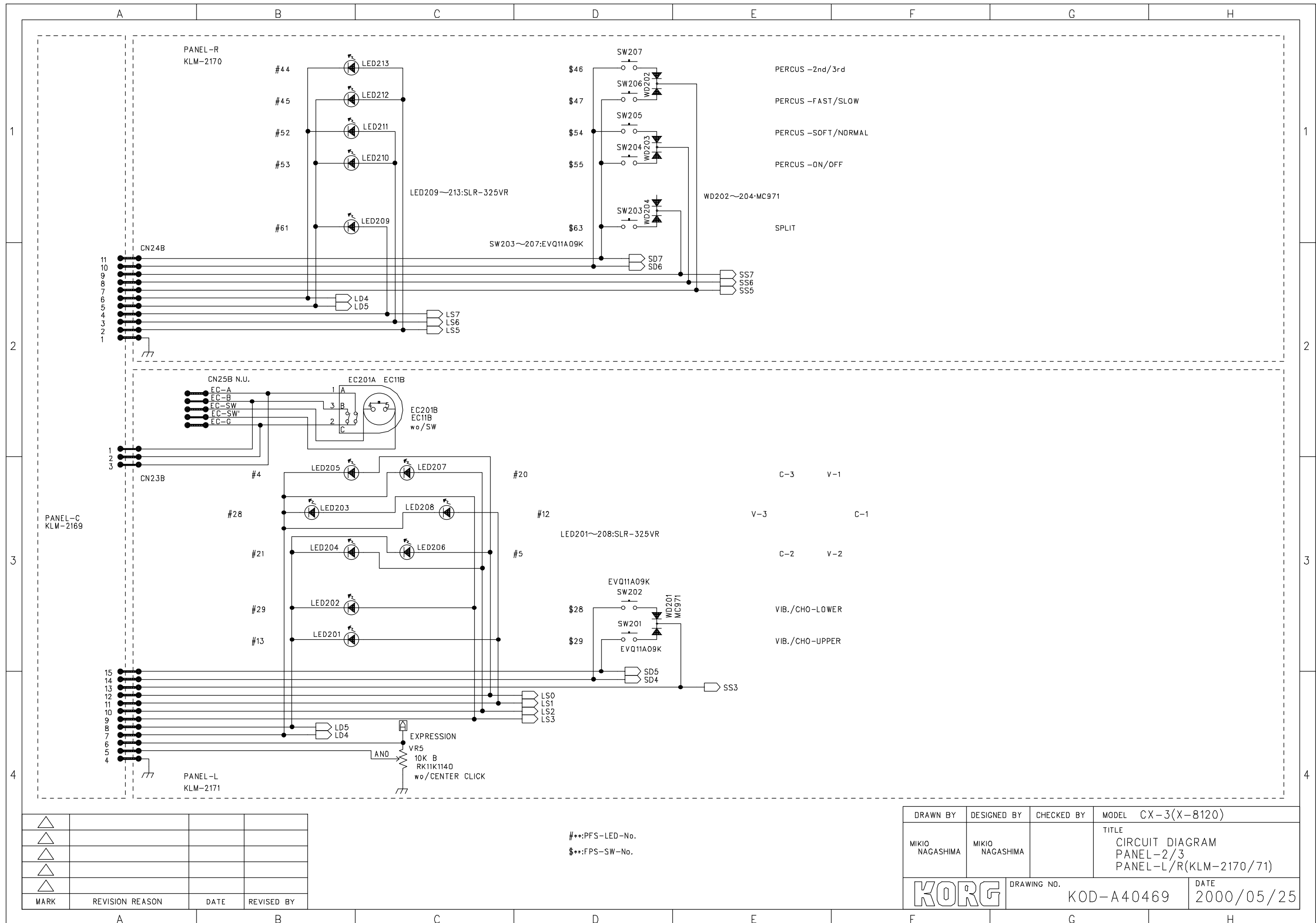
|                        |                 |            |                        |
|------------------------|-----------------|------------|------------------------|
| DRAWN BY               | DESIGNED BY     | CHECKED BY | MODEL CX-3(X-8120)     |
| MIKIO NAGASHIMA        | MIKIO NAGASHIMA |            | TITLE                  |
|                        |                 |            | CIRCUIT DIAGRAM        |
|                        |                 |            | MAIN(KLM-2168) 3/6     |
|                        |                 |            | TG & DSP CONTROL BLOCK |
| DRAWING NO. KOD-A40464 |                 |            | DATE 2000/07/25        |

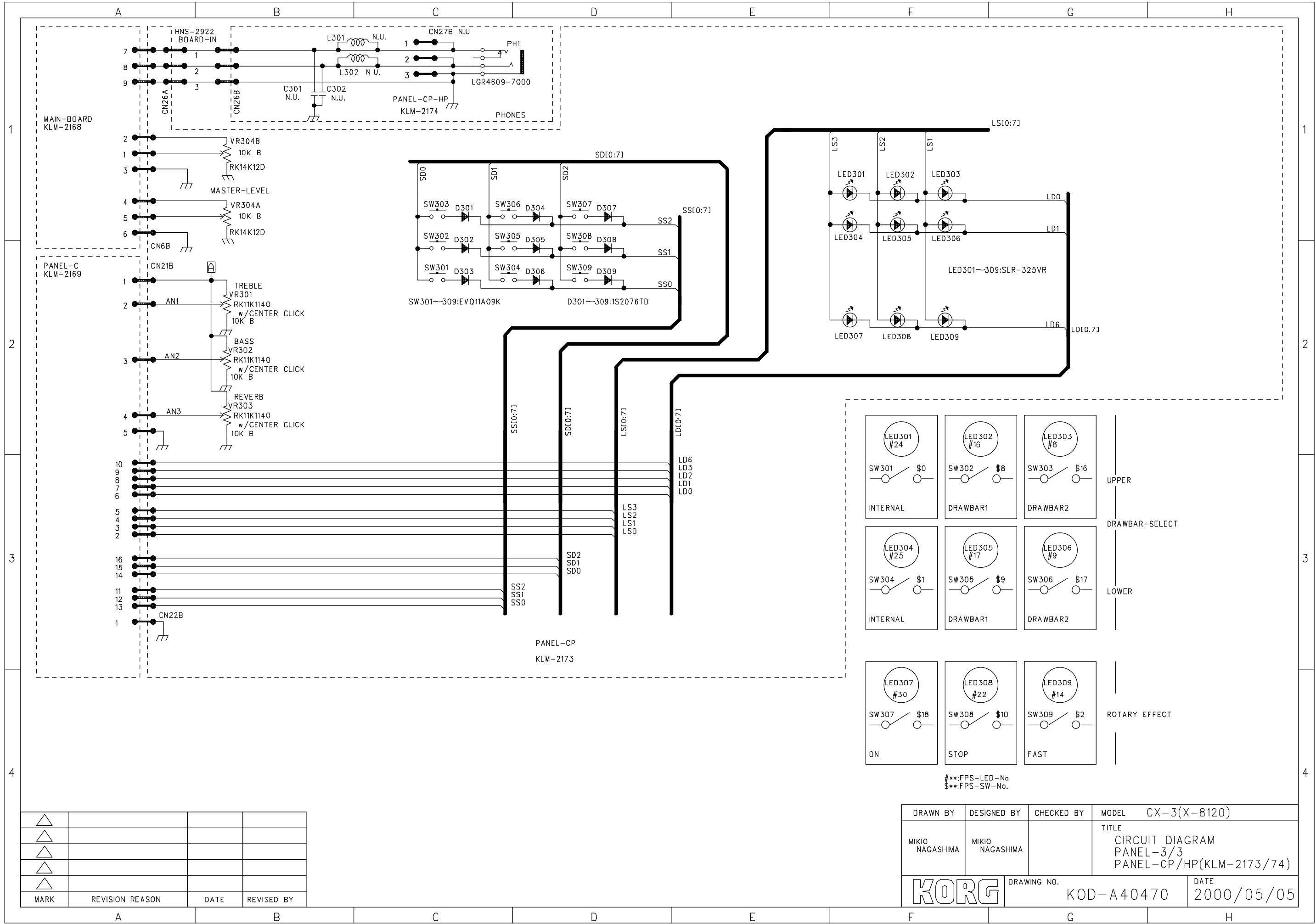






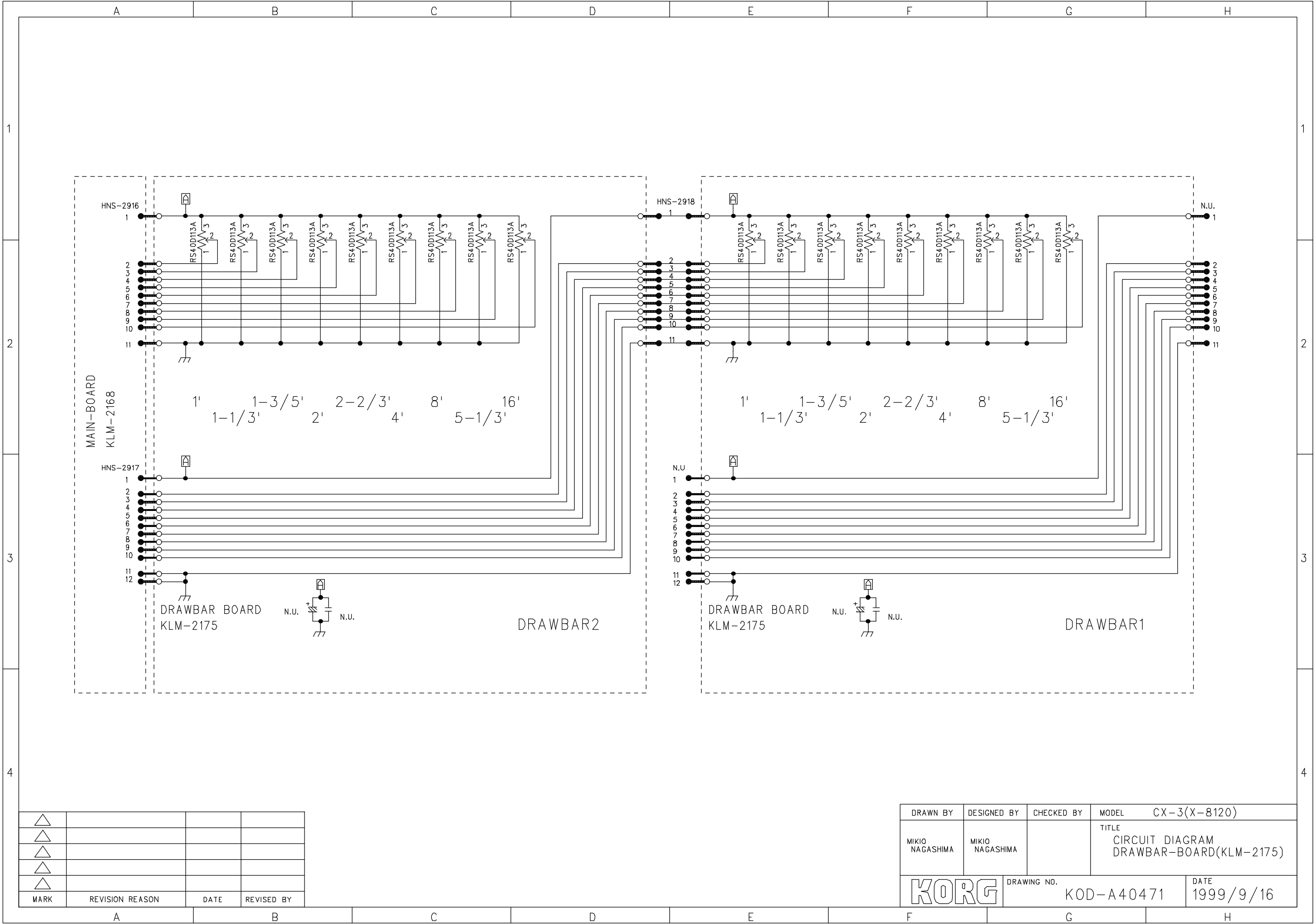


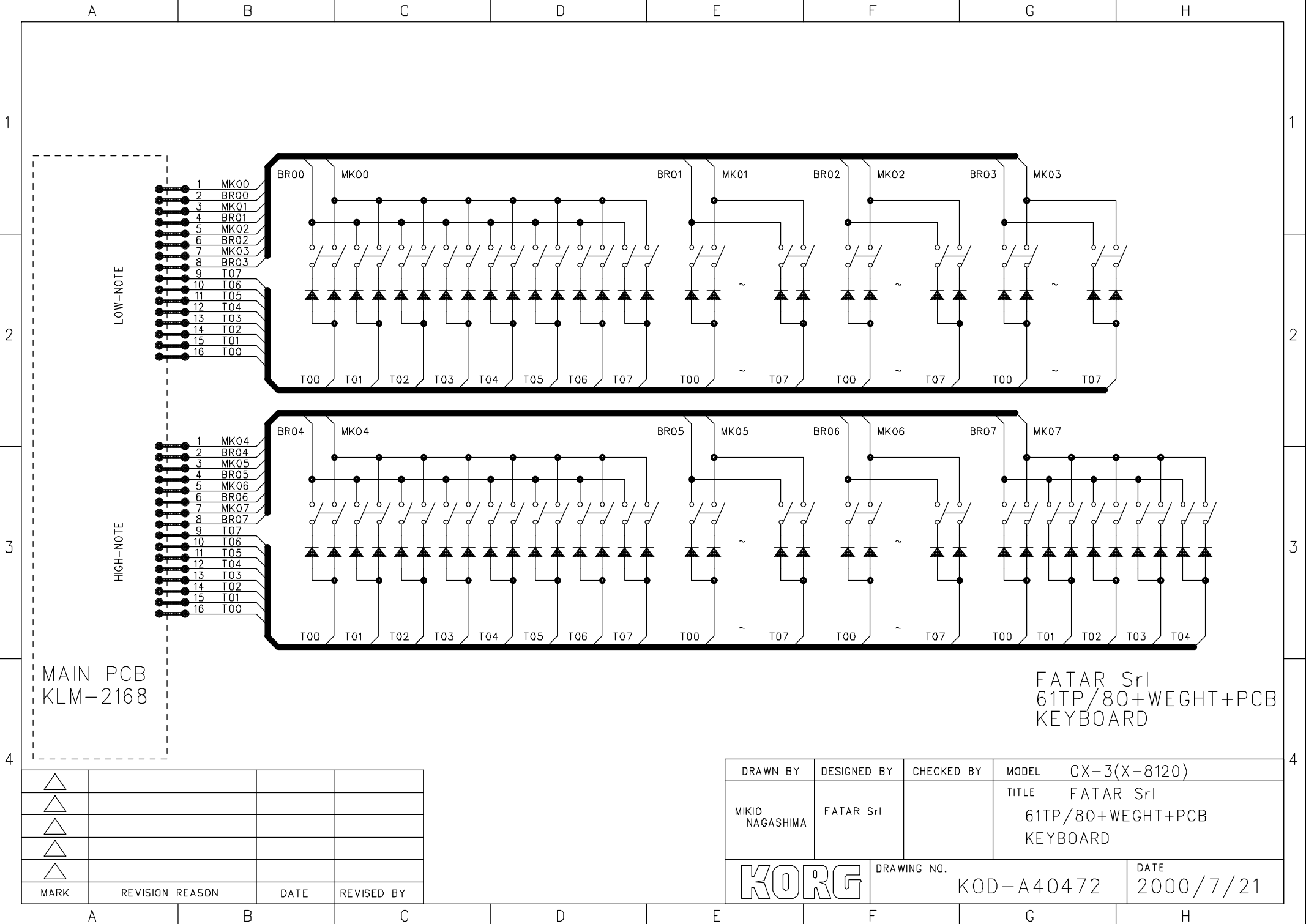




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| △    |                 |      |            |
| MARK | REVISION REASON | DATE | REVISED BY |

|                 |                 |                        |                                                                   |
|-----------------|-----------------|------------------------|-------------------------------------------------------------------|
| DRAWN BY        | DESIGNED BY     | CHECKED BY             | MODEL CX-3(X-8120)                                                |
| MIKIO NAGASHIMA | MIKIO NAGASHIMA |                        | TITLE<br>CIRCUIT DIAGRAM<br>PANEL-3/3<br>PANEL-CP/HP(KLM-2173/74) |
| KORG            |                 | DRAWING NO. KOD-A40470 | DATE 2000/05/05                                                   |





MAIN PCB  
KLM-2168

FATAR Srl  
61TP/80+WEGHT+PCB  
KEYBOARD

|      |                 |      |            |
|------|-----------------|------|------------|
| △    |                 |      |            |
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| △    |                 |      |            |
| MARK | REVISION REASON | DATE | REVISED BY |

|                    |             |            |             |                                            |
|--------------------|-------------|------------|-------------|--------------------------------------------|
| DRAWN BY           | DESIGNED BY | CHECKED BY | MODEL       | CX-3(X-8120)                               |
| MIKIO<br>NAGASHIMA | FATAR Srl   |            | TITLE       | FATAR Srl<br>61TP/80+WEGHT+PCB<br>KEYBOARD |
| KORG               |             |            | DRAWING NO. | KOD-A40472                                 |
|                    |             |            | DATE        | 2000/7/21                                  |



## **How to start/operate the test mode**

**[Program 4] + [Program 6] + Power ON** : Completion test  
( Internal test + External test )

[Percussion 3rd]: ITEM UP

[Percussion Soft]: ITEM DOWN

[Percussion 3rd]: STEP UP

[Percussion Fast]: STEP DOWN

### **NOTE :**

1. When the internal test is executed, the factory preset (Preset and Global) data is damaged. To return the factory preset data, please execute:

**[Program 2] + [Program 7] + Power ON**

2. It is sometimes seen that the step to the tests of DSP3, DSP4 or keyboard become slow.

| PART CODE | PART NAME                      | NOTE           | Q'TY |
|-----------|--------------------------------|----------------|------|
| 001216800 | PCB ASSY KLM-2168 CX-3         | CX-3 M.PART    | 1    |
| 001216900 | PCB ASSY KLM-2169 CX-3         | CX-3 M.PART    | 1    |
| 001217000 | PCB ASSY KLM-2170/71 CX-3      | CX-3 M.PART    | 1    |
| 001217300 | PCB ASSY KLM-2173/74 CX-3      | CX-3 M.PART    | 1    |
| 002202091 | PCB ASSY KLM-2090 : CEM3       | CX-3 M.PART    | 1    |
| 002217500 | DRAWBAR ASSY (X-8120)          | CX-3 M.PART    | 1    |
| 304000070 | TR 2SA812-T1B (M5-7) (TS)      | KLM-2168 CX-3  | 1    |
| 304020340 | TR 2SC4213-A TE85L (TS)        | KLM-2168 CX-3  | 8    |
| 304050220 | DIGITAL TR DTC114ESA TP(TR)    | KLM-2169 CX-3  | 7    |
| 304050270 | DIGITAL TR DTB113ZSTP(TR)      | KLM-2169 CX-3  | 7    |
| 313005300 | VFD MODULE M202MD07CA          | CX-3 M.PART    | 1    |
| 314001800 | DIODE 1SS355 TE-17 (TS)        | KLM-2168 CX-3  | 1    |
| 314010300 | DIODE 1S2076TD (TA)            | KLM-2169 CX-3  | 18   |
| 314010300 | DIODE 1S2076TD (TA)            | KLM-2173/74 CX | 9    |
| 314010310 | LED HLMF-K200#2UM (TR)         | KLM-2173/74 CX | 3    |
| 314010310 | LED HLMF-K200#2UM (TR)         | KLM-2169 CX-3  | 3    |
| 314031000 | LED SLR-325VRT31(TR)           | KLM-2173/74 CX | 6    |
| 314031000 | LED SLR-325VRT31(TR)           | KLM-2170/71 CX | 13   |
| 315000500 | DOUBLE DIODE MC-2840-T12-1(TS) | KLM-2168 CX-3  | 7    |
| 315000900 | DIODE BRIDGE MC971-T11(TR)     | KLM-2170/71 CX | 4    |
| 320001261 | IC UPD71055GB-10-3B4 (S)       | KLM-2168 CX-3  | 1    |
| 320004671 | IC HD6412352F20(D12352F20)(S)  | KLM-2168 CX-3  | 2    |
| 320007027 | IC BA033T                      | KLM-2168 CX-3  | 1    |
| 320012222 | IC MB89635RP-G-368-SH          | KLM-2169 CX-3  | 1    |
| 320012268 | IC MBM29F400BC-90PF X8120A(S)  | KLM-2168 CX-3  | 1    |
| 320012269 | IC MBM29F400BC-90PF X8120B(S)  | KLM-2168 CX-3  | 1    |
| 320020206 | IC XCB56362PV100B(S)           | KLM-2168 CX-3  | 2    |
| 320021156 | IC TMS57070FFT (S)             | KLM-2168 CX-3  | 2    |
| 320049001 | IC SST29EE010-90-4C-NH (S)     | KLM-2168 CX-3  | 1    |
| 324001006 | IC UPD74HCU04GS-E2 (TS)        | KLM-2168 CX-3  | 1    |
| 324003059 | IC TC7SH04FU(TE85L) (TS)       | KLM-2168 CX-3  | 1    |
| 324004165 | IC HD74HC4040FPEL (TS)         | KLM-2168 CX-3  | 1    |
| 324004167 | IC HD74HC4052FPEL (TS)         | KLM-2168 CX-3  | 3    |
| 324004176 | IC HD74HC05FPEL (TS)           | KLM-2168 CX-3  | 1    |
| 324009004 | IC NJM78L05UA-TE1 (TS)         | KLM-2168 CX-3  | 1    |
| 324011002 | IC M5223FP-600C (TS)           | KLM-2168 CX-3  | 1    |
| 324011004 | IC M5216FP-600C (TS)           | KLM-2168 CX-3  | 1    |
| 324011012 | IC M51953BFP-600C (TS)         | KLM-2168 CX-3  | 1    |
| 324011017 | IC M5218AFP-600C (TS)          | KLM-2168 CX-3  | 2    |
| 324017015 | IC EM614163A-50J(TS)           | KLM-2168 CX-3  | 2    |
| 324036008 | IC PCM1716E/2K(TS)             | KLM-2168 CX-3  | 1    |
| 334000600 | PHOTO COUPLER PC-410K          | KLM-2168 CX-3  | 1    |
| 335009500 | CERAMIC OSC CST10.0MTW         | KLM-2169 CX-3  | 1    |
| 335011000 | CRYSTAL OSC CA-301 20.00MHZ    | KLM-2168 CX-3  | 1    |
| 335011200 | CRYSTAL OSC CA-301 24.576MHZ   | KLM-2168 CX-3  | 1    |
| 360024800 | VR RK14K12D0D08 10KBX2         | KLM-2173/74 CX | 1    |
| 362009031 | VR RK11K114004L 10KB           | KLM-2173/74 CX | 1    |

| PART CODE | PART NAME                      | NOTE           | Q'TY |
|-----------|--------------------------------|----------------|------|
| 362009032 | VR RK11K1140A23 10KB           | KLM-2170/71 CX | 1    |
| 370005300 | REC EC11B15204AH               | KLM-2170/71 CX | 1    |
| 374000600 | TSW EVQ11A09K (TR)             | KLM-2170/71 CX | 7    |
| 374000600 | TSW EVQ11A09K (TR)             | KLM-2169 CX-3  | 18   |
| 374000600 | TSW EVQ11A09K (TR)             | KLM-2173/74 CX | 9    |
| 375012500 | PSW SDDFA31500                 | CX-3 M.PART    | 1    |
| 404001070 | CHIP COIL BLM11B102SPT:TS      | KLM-2168 CX-3  | 47   |
| 420006600 | KEYBOARD 61TP/8O+WEIGHT+PCB    | CX-3 M.PART    | 1    |
| 450003100 | PHONE JACK LGR4609-7000        | KLM-2173/74 CX | 1    |
| 450003900 | PHONE JACK LJB0661-6           | KLM-2168 CX-3  | 5    |
| 471070801 | CONNECTOR TOP B8B-PH-K-S (U)   | KLM-2168 CX-3  | 1    |
| 471101050 | CONNECTOR TOP SC25-05WS        | KLM-2168 CX-3  | 1    |
| 471102050 | CONNECTOR TOP SJ20-05WX        | KLM-2173/74 CX | 1    |
| 471102050 | CONNECTOR TOP SJ20-05WX        | KLM-2169 CX-3  | 1    |
| 471102090 | CONNECTOR TOP SJ20-09WX        | KLM-2173/74 CX | 1    |
| 471102090 | CONNECTOR TOP SJ20-09WX        | KLM-2168 CX-3  | 1    |
| 471102110 | CONNECTOR TOP SJ20-11WX        | KLM-2168 CX-3  | 1    |
| 471102110 | CONNECTOR TOP SJ20-11WX        | KLM-2170/71 CX | 1    |
| 471102110 | CONNECTOR TOP SJ20-11WX        | KLM-2169 CX-3  | 1    |
| 471102120 | CONNECTOR TOP SJ20-12WX        | KLM-2168 CX-3  | 1    |
| 471102130 | CONNECTOR TOP SJ20-13WX        | KLM-2169 CX-3  | 1    |
| 471102130 | CONNECTOR TOP SJ20-13WX        | KLM-2168 CX-3  | 1    |
| 471102150 | CONNECTOR TOP SJ20-15WX        | KLM-2170/71 CX | 1    |
| 471102150 | CONNECTOR TOP SJ20-15WX        | KLM-2169 CX-3  | 1    |
| 471102160 | CONNECTOR TOP SJ20-16WX        | KLM-2169 CX-3  | 1    |
| 471102160 | CONNECTOR TOP SJ20-16WX        | KLM-2173/74 CX | 1    |
| 474019500 | CONNECTOR 1-215079-6 16P (AMP) | KLM-2168 CX-3  | 2    |
| 475002215 | HARNESS HNS-2215               | CX-3 M.PART    | 1    |
| 475002761 | HARNESS HNS-2761               | CX-3 M.PART    | 1    |
| 475002825 | HARNESS HNS-2825               | CX-3 M.PART    | 1    |
| 475002919 | HARNESS HNS-2919               | CX-3 M.PART    | 1    |
| 475002922 | HARNESS HNS-2922 BOARD IN      | KLM-2173/74 CX | 1    |
| 475002925 | HARNESS HNS-2925               | CX-3 M.PART    | 1    |
| 475002982 | HARNESS HNS-2982               | CX-3 M.PART    | 1    |
| 475002983 | HARNESS HNS-2983               | CX-3 M.PART    | 1    |
| 475002984 | HARNESS HNS-2984               | CX-3 M.PART    | 1    |
| 475002985 | HARNESS HNS-2985               | CX-3 M.PART    | 1    |
| 475002986 | HARNESS HNS-2986               | CX-3 M.PART    | 1    |
| 475008054 | HARNESS HNS-8054               | CX-3 M.PART    | 1    |
| 475102269 | HARNESS HNS-2269(F) L=25CM     | CX-3 M.PART    | 1    |
| 475108028 | HARNESS HNS-8025(F) L=33CM     | CX-3 M.PART    | 1    |
| 480010200 | DIN SOCKET YKF51-5046          | KLM-2168 CX-3  | 1    |
| 500019500 | X-122W PANEL CUSHION 2 F40576  | CX-3 M.PART    | 4    |
| 500023300 | X-323 CUSION C KOC-F40661      | CX-3 M.PART    | 13   |
| 525001300 | FERRITE CORE NFT-25(WITH CASE) | CX-3 M.PART    | 1    |
| 540020200 | INLET SOCKET SS-7B             | CX-3 M.PART    | 1    |
| 580048000 | X-8120 REAR SHEET KOC-F40911   | CX-3 M.PART    | 1    |

| PART CODE   | PART NAME                      | NOTE           | Q'TY |
|-------------|--------------------------------|----------------|------|
| 600005100   | AC CORD KP610,GTBS3,KS31AY     | CX-3 UK M.PART | 1    |
| 600005300   | AC CORD DC-480-J01             | CX-3 JP M.PART | 1    |
| 600005400   | AC CORD EC-652-E03             | CX-3 GE M.PART | 1    |
| 600005700   | AC CORD UC-953-J01             | CX-3 US M.PART | 1    |
| 600005700   | AC CORD UC-953-J01             | CX-3 CN M.PART | 1    |
| 620024600   | X-925 PSW KNOB KOC-E40304-2    | CX-3 M.PART    | 1    |
| 620032000   | 4 LINKAGE KNOB E20180/H40130-2 | CX-3 M.PART    | 1    |
| 620032100   | 4 LINKAGE KNOB E20180/H40130-1 | CX-3 M.PART    | 1    |
| 620032300   | 4 LINKAGE KNOB E20180/H40131-2 | CX-3 M.PART    | 2    |
| 620032400   | 4 LINKAGE KNOB E20180/H40131-1 | CX-3 M.PART    | 3    |
| 620035200   | 4 LINKAGE KNOB E20180/H40130LG | CX-3 M.PART    | 3    |
| 620037600   | X-8110 LED REFLECTOR H40147-1  | CX-3 M.PART    | 19   |
| 620038300   | X-8120 SQUARE KNOB (IVORY)     | CX-3 M.PART    | 10   |
| 620039700   | X-8120 SQUARE KNOB (GRAY)      | CX-3 M.PART    | 3    |
| 620039800   | VR KNOB DRD-130D98(S)          | CX-3 M.PART    | 5    |
| 620039900   | X-8120 KNOB L-4-BK H40148-5    | CX-3 M.PART    | 2    |
| 620040000   | X-332 ENCODER KNOB E30187-1    | CX-3 M.PART    | 1    |
| 630031500   | X-8120 VFD WINDOW KOC-E40502   | CX-3 M.PART    | 1    |
| 630032500   | X-8120 SHIELD SHEET KOC-F40932 | CX-3 M.PART    | 1    |
| 641038500   | X-181 PP SUPPORT PLATE C40907  | CX-3 M.PART    | 1    |
| 641039700   | X-115 PSW METAL FITTING C40914 | CX-3 M.PART    | 1    |
| 641041436   | GND METAL FITTING M1866-A      | KLM-2173/74 CX | 1    |
| 641041584   | X-8120 L TYPE ANGLE C41178-1   | CX-3 M.PART    | 3    |
| 641041596   | X-8120 PANEL KOC-C10214        | CX-3 M.PART    | 1    |
| 641041597   | X-8120 CONTROL PANEL KOC-20361 | CX-3 M.PART    | 1    |
| 641041598   | X-8120 FRONT GRILL KOC-C20362  | CX-3 M.PART    | 1    |
| 641041599   | X-8120 PCB CHASSIS ASSY H30203 | CX-3 M.PART    | 1    |
| 641041600   | GND PLATE KOC-C41104           | KLM-2168 CX-3  | 5    |
| 641041601   | X-8120 ORNAMENT WASHER C41197  | CX-3 M.PART    | 6    |
| 641041606   | X-8120 KORG PLATE 3 C41155-3   | CX-3 M.PART    | 1    |
| 645053221   | X-8120 ROOF BOARD KOC-D30192   | CX-3 M.PART    | 1    |
| 645053222   | X-8120 BOTTOM BOARD ASSY       | CX-3 M.PART    | 1    |
| *365X812000 | SLIDE VR RA40P-201-B14 (10KB)  | CX-3 KLM-2175  | 18   |
| *475002916  | HARNESS HNS-2916 (BOARD IN)    | CX-3 KLM-2175  | 1    |
| *475002917  | HARNESS HNS-2917 (BOARD IN)    | CX-3 KLM-2175  | 1    |
| *475002918  | HARNESS HNS-2918 (BOARD IN)    | CX-3 KLM-2175  | 1    |
| *620X812000 | DRAWBAR KNOB BR-1 KOC-E30252-1 | CX-3 M.PART    | 2    |
| *620X812001 | DRAWBAR KNOB BR-2 KOC-E30252-2 | CX-3 M.PART    | 2    |
| *620X812002 | DRAWBAR KNOB WH-1 KOC-E30252-3 | CX-3 M.PART    | 2    |
| *620X812003 | DRAWBAR KNOB WH-2 KOC-E30252-4 | CX-3 M.PART    | 2    |
| *620X812004 | DRAWBAR KNOB WH-3 KOC-E30252-5 | CX-3 M.PART    | 2    |
| *620X812005 | DRAWBAR KNOB WH-4 KOC-E30252-6 | CX-3 M.PART    | 2    |
| *620X812006 | DRAWBAR KNOB BL-1 KOC-E30252-7 | CX-3 M.PART    | 2    |
| *620X812007 | DRAWBAR KNOB BL-2 KOC-E30252-8 | CX-3 M.PART    | 2    |
| *620X812008 | DRAWBAR KNOB BL-3 KOC-E30252-9 | CX-3 M.PART    | 2    |