

CASIO®

Service Manual

(without price)

AL-100R/150R

APR. 2001



AL-100R

ELECTRONIC KEYBOARD

Ver.1 : Feb. 2005

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SAFETY NOTICE

CAUTION!
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended
by the appliance manufacturer. Discard used batteries
according to manufacturer's instructions.

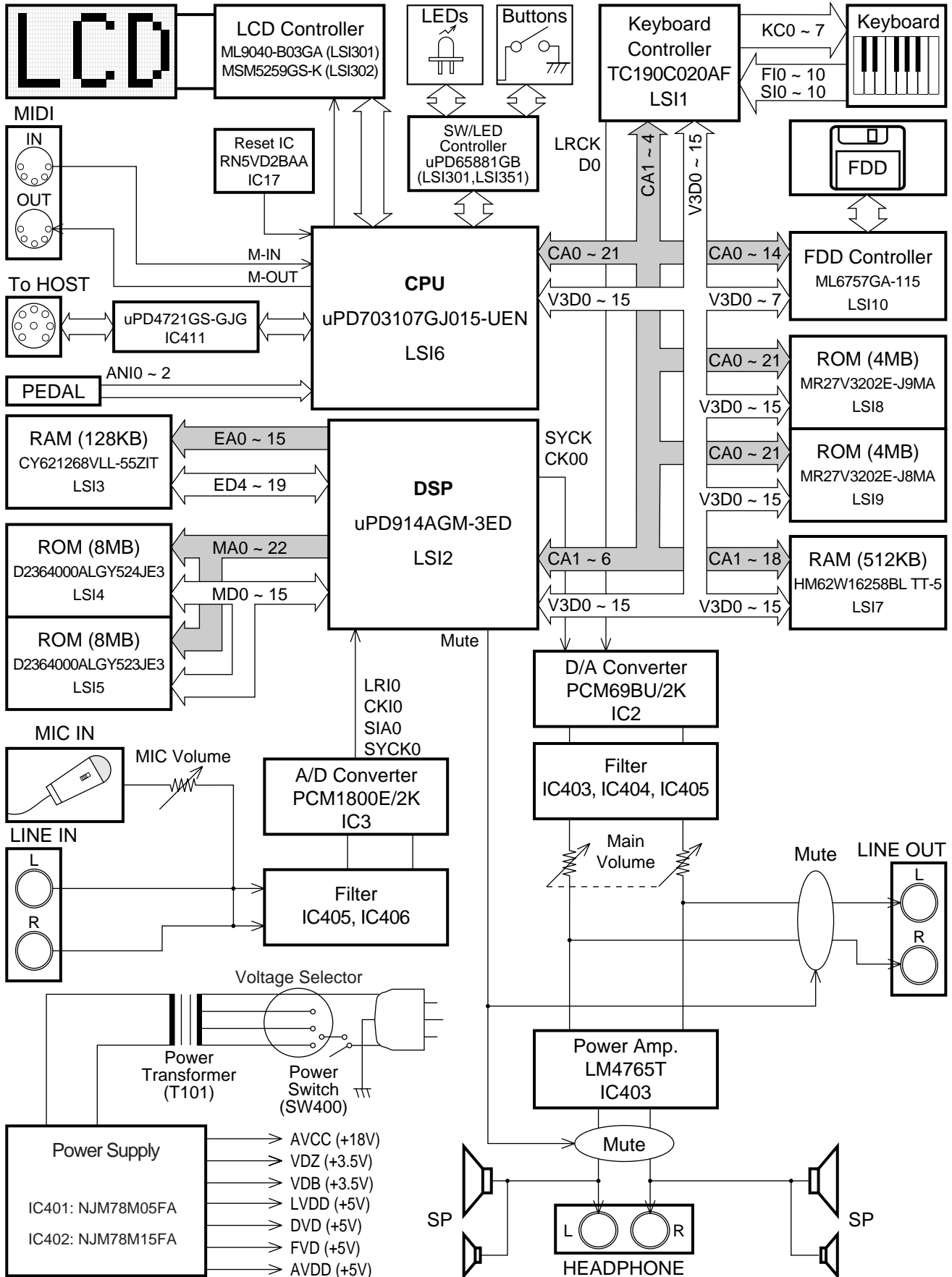
SPECIFICATIONS

GENERAL

Keyboard	<ul style="list-style-type: none">• Type: Piano• Number of Keys: 88 (A0 to C8)• Touch Response: Three sensitivity levels; on/off• Key Light System: Can be turned on and off, 2-color lighting (red, yellow)• Key Lighting Polyphony: 20
Tones	<ul style="list-style-type: none">• Number of Tones: 271 (63 panel tones + 128 GM tones + 70 variation tones + 10 drum sounds)• Maximum Polyphony: 64• Layering: on/off• Split: on/off (variable split point)
Effects	<ul style="list-style-type: none">• Number of Effects: v• Type: 3-channel Reverb (8 types) + Chorus (8 types) + DSP (16 types)• Other: DSP settings (volume, pan, reverb send, chorus send)
Metronome	<ul style="list-style-type: none">• Time Signatures: 0, 2/4 to 7/4, 9/4, 12/4, 3/8, 5/8, 6/8, 7/8, 9/8, 12/8• Tempo Range: 30 to 255• Metronome Volume: 0 to 127
Auto Accompaniment	<ul style="list-style-type: none">• Number of Rhythms: 100 (normal + piano)• Number of Rhythm Sound Sources: 65• Tempo Range: 30 to 255• Controllers: INTRO, FILL-IN, BREAK, VARIATION 1-2, SYNCHRO START/STOP, ENDING, START/STOP• Modes: Normal; CASIO CHORD; FINGERED; FULL RANGE CHORD• Parts: Drum; Percussion; Bass; Chord 1 to Chord 5• Accompaniment/Song Volume: v slider• Accomp Settings: Chord Hold on/off, Lower Hold on/off, Mixer Hold on/off, On Bass Chord on/off, Tension Chord on/off, 6th Chord on/off• Auto Harmonize: 12 types; adds harmony notes to melody in accordance with auto accompaniment chord fingerings.
One Touch Presets	<ul style="list-style-type: none">• Number of Presets: 100 (1 set per rhythm)• Setting Data: Tone, tempo, other
Mixer	<ul style="list-style-type: none">• Number of Channels: 31 (Group A: 15, Group B: 16)• Modes: Solo/Play/Normal• Parameters: Tone, part on/off, volume, pan, effect send, fine tune, coarse tune
Sequencer	<ul style="list-style-type: none">• Number of Songs: 10• Number of Tracks: System Track + 16 Tracks• Type: Real-time memory• Capacity: 15,500 notes• Editing: Punch-in• Other Functions: Quantize, delete, time signature, metronome on/off
Music Library	<ul style="list-style-type: none">• Number of Tunes: 80 preset + 10 user• Arrangement Levels: 3• Tempo: 30 to 255• Controller: Stop, Play/Pause, Fast Reverse/Back, Fast Forward/Next, Phrase Repeat• Repeat Function: Phrase repeat, section repeat• Demo: Sequential looping of all 80 preset tunes

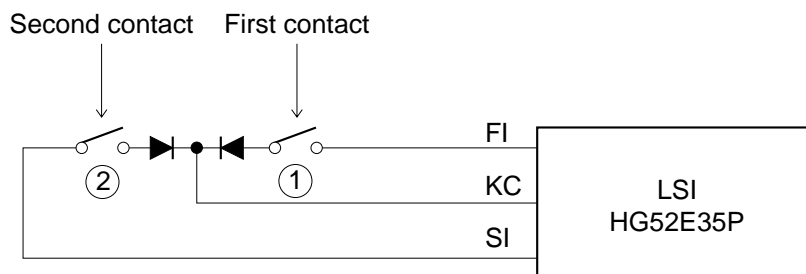
Lesson Function	<ul style="list-style-type: none"> • Step Lesson: 3-Step Lesson • Lesson Part: Left hand, right hand, both hands • Voice Fingering Guide: Selectable language (English, Japanese), on/off • Other: Repeat on/off, pre-count on/off
Other	<ul style="list-style-type: none"> • Transpose: ± 12 semitones, 25 steps • Master Tuning: A4 = 415.3Hz to 440.0Hz to 466.2Hz (Initial Default: 440.0Hz) Unit: 0.1 cent 510 levels • Baroque Pitch: v on/off • Stretch Tune: v on/off • Temperament Settings: 7 types (equal temperament, just major intonation, just minor intonation, Pythagorean system, mean-tone system, Werckmeister, Kirnberger); selectable root • System: Total (master) volume, total (master) pan
Display	<ul style="list-style-type: none"> • Backlight: v • Contrast Adjustment: v • Other: Selectable language (English, Japanese), Hold on/off
MIDI	<ul style="list-style-type: none"> • System: 16-channel multi-timbre receive; GM Level 1 compliant • Setting: GM ON command Rx/Tx channel setting; navigate channel setting MIDI In-chord Judge on/off Local on/off, realtime message on/off, device ID Accomp MIDI out on/off
Pedals	<ul style="list-style-type: none"> • Number of Pedals: 3 • Types: Damper; sostenuto; soft
FDD	<ul style="list-style-type: none"> • Type: 3.5" FDD (1 inch high) • Format: 2DD 720KB MS-DOS format; 2HD 1.44MB MS-DOS format • Functions: Direct play (SMF 0); load (auto fingering generation); save; disk format; data delete; data rename
Input/Output	<ul style="list-style-type: none"> • Headphones: Standard stereo jacks $\times 2$ • LINE OUT (R)(L/MONO): Standard monaural jacks $\times 2$ Output impedance: 1.1kΩ Output voltage: 2V (RMS) MAX • LINE IN (R)(L/MONO): Standard monaural jacks $\times 2$ Input impedance: 24.0kΩ Input voltage: 250mV • MIDI (OUT) (IN) • TO HOST: Mini DIN jack (selectable) • Microphone In: Standard jack (with microphone volume knob) Input impedance: 3.3kΩ Input sensitivity: 10mV
Speakers:	x 16.0cm $\times 2$, x 5.0cm $\times 2$ (Output: 30.0W + 30.0W)
Power Supply:	AL-100R/AL-150R: 120V AL-100RV: 220 - 240V
Power Consumption:	AL-100R/AL-150R: 78.0W AL-100RV: 78.0W
Dimensions:	CELVIANO (without stand): 141.5 \times 51.4 \times 23.3 cm (55 3/4" \times 20 1/4" \times 9 3/16") CELVIANO: 141.5 \times 53.8 \times 86.4 cm (55 3/4" \times 21 3/16" \times 34 1/16")
Weight:	CELVIANO (without stand): approximately 45.0 kg (99.0 lbs) CELVIANO: approximately 62.0 kg (136.0 lbs)

BLOCK DIAGRAM



CIRCUIT DESCRIPTION

KEY MATRIX



	KC0	KC1	KC2	KC3	KC4	KC5	KC6	KC7
FI0	A0 ①	A0 # ①	B0 ①	C1 ①	C1 # ①	D1 ①	D1 # ①	E1 ①
SI0	A0 ②	A0 # ②	B0 ②	C1 ②	C1 # ②	D1 ②	D1 # ②	E1 ②
EI1	F1 ①	F1 # ①	G1 ①	G1 # ①	A1 ①	A1 # ①	B1 ①	C2 ①
SI1	F1 ②	F1 # ②	G1 ②	G1 # ②	A1 ②	A1 # ②	B1 ②	C2 ②
FI2	C2 # ①	D2 ①	D2 # ①	E2 ①	F2 ①	F2 # ①	G2 ①	G2 # ①
SI2	C2 # ②	D2 ②	D2 # ②	E2 ②	F2 ②	F2 # ②	G2 ②	G2 # ②
FI3	A2 ①	A2 # ①	B2 ①	C3 ①	C3 # ①	D3 ①	D3 # ①	E3 ①
SI3	A2 ②	A2 # ②	B2 ②	C3 ②	C3 # ②	D3 ②	D3 # ②	E3 ②
FI4	F3 ①	F3 # ①	G3 ①	G3 # ①	A3 ①	A3 # ①	B3 ①	C4 ①
SI4	F3 ②	F3 # ②	G3 ②	G3 # ②	A3 ②	A3 # ②	B3 ②	C4 ②
FI5	C4 # ①	D4 ①	D4 # ①	E4 ①	F4 ①	F4 # ①	G4 ①	G4 # ①
SI5	C4 # ②	D4 ②	D4 # ②	E4 ②	F4 ②	F4 # ②	G4 ②	G4 # ②
FI6	A4 ①	A4 # ①	B4 ①	C5 ①	C5 # ①	D5 ①	D5 # ①	E5 ①
SI6	A4 ②	A4 # ②	B4 ②	C5 ②	C5 # ②	D5 ②	D5 # ②	E5 ②
FI7	F5 ①	F5 # ①	G5 ①	G5 # ①	A5 ①	A5 # ①	B5 ①	C6 ①
SI7	F5 ②	F5 # ②	G5 ②	G5 # ②	A5 ②	A5 # ②	B5 ②	C6 ②
FI8	C6 # ①	D6 ①	D6 # ①	E6 ①	F6 ①	F6 # ①	G6 ①	G6 # ①
SI8	C6 # ②	D6 ②	D6 # ②	E6 ②	F6 ②	F6 # ②	G6 ②	G6 # ②
FI9	A6 ①	A6 # ①	B6 ①	C7 ①	C7 # ①	D7 ①	D7 # ①	E7 ①
SI9	A6 ②	A6 # ②	B6 ②	C7 ②	C7 # ②	D7 ②	D7 # ②	E7 ②
FI10	F7 ①	F7 # ①	G7 ①	G7 # ①	A7 ①	A7 # ①	B7 ①	C8 ①
SI10	F7 ②	F7 # ②	G7 ②	G7 # ②	A7 ②	A7 # ②	B7 ②	C8 ②

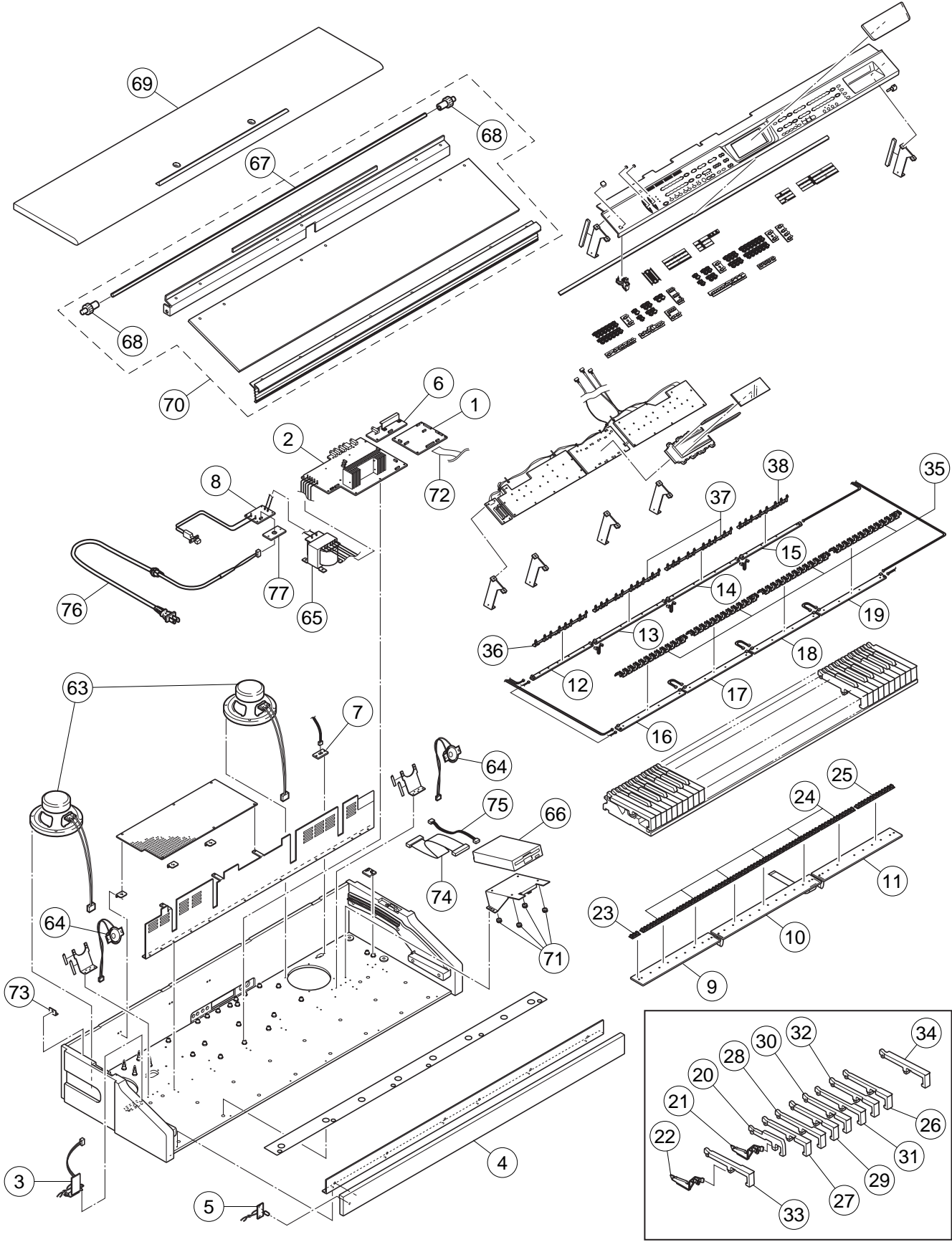
BUTTON MATRIX

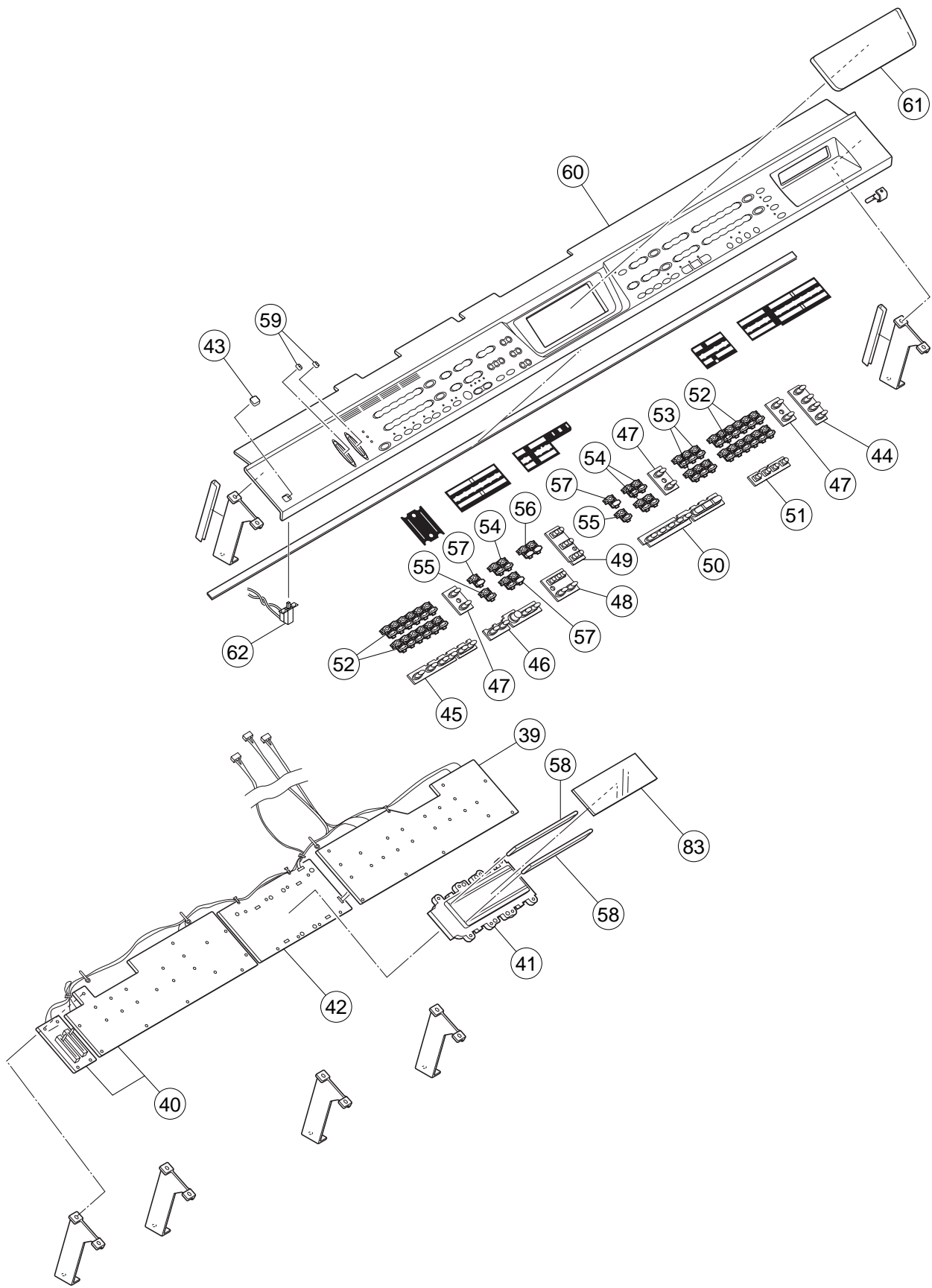
	SC0	SC1	SC2	SC3	SC4	SC5
SI0	Grand Piano	Piano	Guitar	Organ	Ensemble/Synth	Gm/Variou
SI1	Elec Piano	Harpsichord/ VIB	Sax/Clarinet	Flute/Brass	Bass	Drum Set
SI2	Part	Key Light	Demo	Reverb	Chorus	Dsp
SI3	Arrangement Level 1	Arrangement Level 2	Arrangement Level 3	Lesson Part Left	Lesson Part Right	Lesson Part Both
SI4	3-Step Lesson Step1	3-Step Lesson Step2	3-Step Lesson Step3	Split	Layer	Stop
SI5	Music Library	Classic 1	Classic 2	User	Rew/Prev (Start)	Play/Pause
SI6	Standard	Various	Select ▲	Select ▲	FF/Next (End)	
SI7			Select ▼	Select ▼	Phrase Repeat (Area)	

	SC0	SC1	SC2	SC3	SC4	SC5
SI0	Pops 1	Pops 2	Ballad	Rock	For Piano Ballad	For Piano Jazz
SI1	Dance	Jazz	Latin	Various	For Piano Classic	For Piano Various
SI2	Modo Casio Chord	One Touch Preset	Sequencer	Record	Metronome	Beat
SI3	Disk	Transpose/ Function	Mixer Mixer	Mixer Group A/B	Mixer Solo/Play/Normal	Execute
SI4	Intro	Variation 1	Variation 2	Fill-In	Break	Ending
SI5	Synchro Start/Stop	Start/Stop	Auto Harmonize	Exit		
SI6	Select ▲	▼/Yes	Main Menu ←	Tempo ▲	Sub Menu ←	
SI7	Select ▼	▼/No	Main Menu →	Tempo ▼	Sub Menu →	

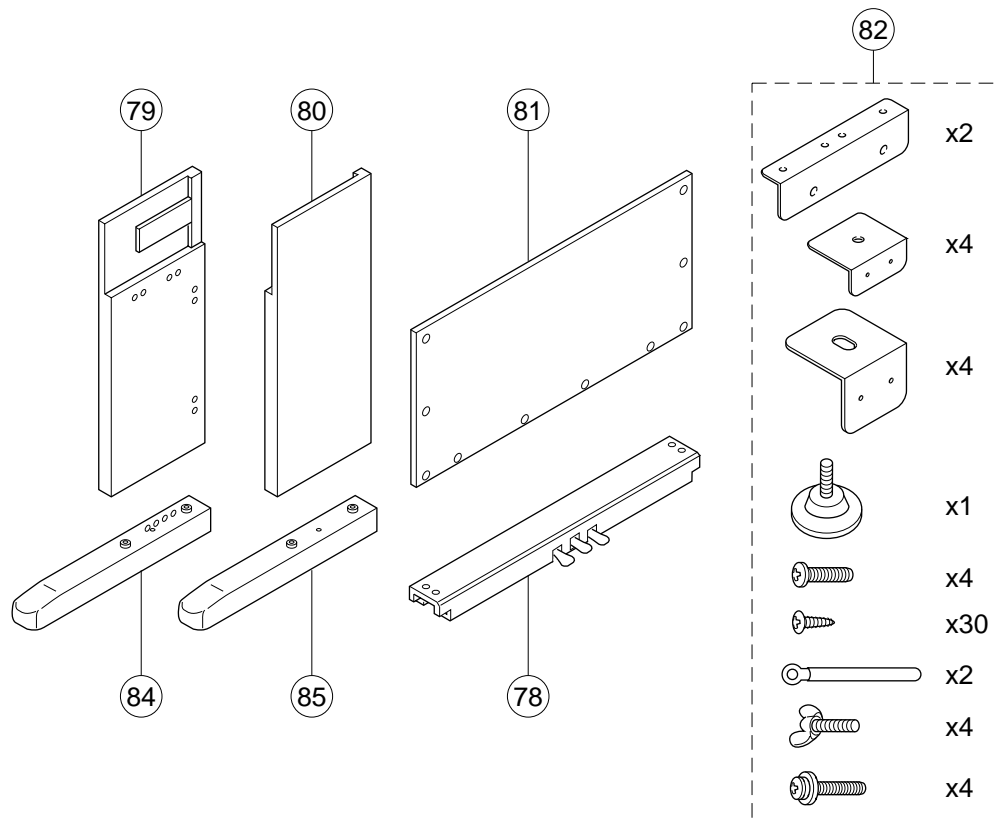
EXPLODED VIEW

CABINET





STAND



PARTS LIST

AL-100R/150R

Notes: This parts list does not include the cosmetic parts, which parts are marked with item No. "R-X" in the exploded view.

Contact our spare parts department if you need these parts for refurbish.

1. Prices and specifications are subject to change without prior notice.
2. As for spare parts order and supply, refer to the "GUIDEBOOK for Spare parts Supply", published separately.
3. The numbers in item column correspond to the same numbers in drawing.

ITEM NO.	CODE NO.	PARTS NAME	SPECIFICATION	Applicable	Q	Price Code	R	REMARKS
Main PCB								
	1	1005 2374	PCB ASSY/M437-MA1M	M241560*1 TK(M437)	Common	1	EI	A
D1		7911 4127	DIODE	RB520S-30TE61	Common	1	AA	B
D2		1004 7442	DIODE/ZENER	HZU2.7B2TRF	Common	1	AA	B
IC1		1004 7445	IC/MONOLITHIC	NJM2068MD(T1)	Common	1	AC	B
IC10		2105 3696	IC/C-MOS	TC7SH04FU-TE85L	Common	1	AB	B
IC11		2105 6394	IC/C-MOS	TC7SET08FU-TE85L	Common	1	AB	B
IC13		2105 5824	IC/C-MOS	TC7SH32FU-TE85L	Common	1	AB	B
IC14		2105 3773	IC/MOS	TC7SH08FU-TE85L	Common	1	AB	B
IC16		2105 5712	IC	TC7S04FU(TE85L)	Common	1	AB	B
IC17		1004 7449	IC/MOS	RN5VD28AA-TR	Common	1	AC	B
IC18		2105 3773	IC/MOS	TC7SH08FU-TE85L	Common	1	AB	B
IC19		1001 4779	IC	TC7W32FK(TE85L)	Common	1	AD	B
IC2		1000 8350	LSI	PCM69BU/2K	Common	1	BA	A
IC3		1000 8349	LSI	PCM1800E/2K	Common	1	BH	A
IC4		1002 1416	IC/MOS	RN5RF35BA-TR	Common	1	AE	B
IC5,IC12		2105 6389	IC/C-MOS	TC7SET04FU-TE85L	Common	2	AD	B
IC6,IC15		2105 3696	IC/C-MOS	TC7SH04FU-TE85L	Common	2	AB	B
IC7		2112 0616	IC/MOS	TC7WU04F(TE12L)	Common	1	AC	B
IC8,IC9		2105 6576	IC/C-MOS	TC74LCX245FT(EL)	Common	2	AF	B
LSI1		2012 5987	LSI	TC190C020AF-001	Common	1	BC	A
LSI10		1004 7429	LSI	ML6757GA-115	Common	1	BN	A
LSI2		1005 4502	LSI	UPD914AGM-3ED	Common	1	CK	A
LSI3		1004 3417	LSI	CY62126BVL-55ZIT	Common	1	BR	A
LSI4		1004 7441	LSI	D2364000ALGY524JE3	Common	1	BZ	A
LSI5		1004 7440	LSI	D2364000ALGY523JE3	Common	1	BZ	A
LSI6		1004 7434	LSI	UPD70F3107GJ-M437A	Common	1	DF	A
LSI7		1000 8354	LSI	HM62W16258BLTT-5	Common	1	CL	A
LSI8		1006 3354	LSI	MR27V3202E-J9MA-N	Common	1	BN	A
LSI9		1006 3353	LSI	MR27V3202E-J8MA-N	Common	1	BN	A
Q1		2251 0672	TRANSISTOR	2SB1548-P.CS	Common	1	AD	B
Q2		2250 1162	TRANSISTOR	2SA1576A-T106R	Common	1	AA	B
Q3		2252 1169	TRANSISTOR	2SC4081-T106S	Common	1	AA	B
Q4,Q6		2252 1169	TRANSISTOR	2SC4081-T106S	Common	2	AA	B
Q5		2250 1162	TRANSISTOR	2SA1576A-T106R	Common	1	AA	B
X1		1004 7439	OSCILLATOR	CSTCV16.00MXJ0C4-T	Common	1	AC	B
X2		1002 1357	OSCILLATOR	DSX151GA-22.5792M	Common	1	AS	B
X3		1004 7437	OSCILLATOR	CSTCC8.00MG16953-T	Common	1	AD	B
X4		1004 7438	OSCILLATOR	CSTCR5M00G35-R0	Common	1	AC	B
Power supply PCB								
	2	1005 2372	PCB ASSY/M437-PS2M	M241556*1 TK(M437)	Common	1	DJ	A 120V area
	2	1006 3968	PCB ASSY/M437-PS2M	M241556*2 TK(M437)	Common	1	DN	A 230V area
BT400		3815 0658	BATTERY/LITHIUM	CR2354-1HF	Common	1	AN	B
D200		1004 7556	ZENER DIODE	MTZJT-7720A	Common	1	AA	B
D201-D208, D410, D412,D413,D419, D420,D422,D424		2315 3132	DIODE	1SS133T-77	Common	15	AA	B
D401,D402, D404-D409		1004 7403	DIODE	1N5401-EP	Common	8	AA	B
D411		1004 7558	ZENER DIODE	MTZJT-779.1C	Common	1	AA	B
D415		2390 0371	DIODE	DSK10B-BT-T	Common	1	AA	B
D416		1000 8352	DIODE	FMB-G14L	Common	1	AF	B
D421,D423,D425		1004 7557	ZENER DIODE	MTZJT-778.2B	Common	3	AA	B

Notes: Q - Quantity per unit

R - Rank

ITEM NO.	CODE NO.	PARTS NAME	SPECIFICATION	Applicable	Q	Price Code	R	REMARKS
F401	1004 7412	FUSE	50T032H	Common	1	AC	A	230V area
F401	1004 7399	FUSE	51MS032L	Common	1	AC	A	120V area
F402,F403	1004 7413	FUSE	50T063H	Common	2	AC	A	230V area
F402,F403	1004 7400	FUSE	51MS063L	Common	2	AC	A	120V area
IC200	1004 7559	IC/MONOLITHIC	NJM78L12A(T3)	Common	1	AC	B	
IC400	1000 8351	IC/MONOLITHIC	PQ1CG2032FZ	Common	1	AO	B	
IC402	2114 5796	IC/MONOLITHIC	NJM78M05FA	Common	1	AE	B	
IC403-IC408	2121 0072	IC/MONOLITHIC	NJM2068DD	Common	6	AD	B	
IC409	1004 7410	IC/HYBRID	STK402-070	Common	1	BH	B	
J400	3612 0789	JACK	YKB21-5010	Common	1	AC	A	
J401,J402,J404	3612 0584	JACK	YKB21-5012	Common	3	AD	A	
J403	3612 0665	JACK/PHONE	YKB21-5006	Common	1	AG	A	
Q200	1004 7397	TRANSISTOR	2SD1913S	Common	1	AD	B	
Q201,Q203,Q204, Q400-Q402, Q407,Q408	2250 1592	TRANSISTOR	2SC1740STPR	Common	8	AA	B	
Q202	2250 1577	TRANSISTOR	2SA933ASTPR	Common	1	AA	B	
Q405,Q406	1002 5042	TRANSISTOR	2SD1468STPR	Common	2	AA	B	
SW401	1004 7406	RELAY	G5PA-28DC12V	Common	1	AS	B	
VR400	1002 1364	POTENTIO METER/ROTARY	K091B0209-5KB	Common	1	AD	B	
PS1,PS3M,PS4M,PS5M,PS6M PCB's								
	3	1005 2380	PCB ASSY/M437-PS3M	Common	1	BZ	B	
	5	1005 2377	PCB ASSY/M437-PS4M	AL-100R	1	BU	B	
	5	1006 4261	PCB ASSY/M437-PS4M	AL-150R	1	BU	B	
	6	1005 2373	PCB ASSY/M437-PS5M	Common	1	CJ	B	
	7	1005 2381	PCB ASSY/M437-PS6M	Common	1	BU	B	
	8	1005 4207	PCB ASSY/M437-PS1	Common	1	BP	B	230V area
	8	1005 4206	PCB ASSY/M437-PS1	Common	1	BO	B	120V area
D385	2315 3132	DIODE	1SS133T-77	Common	1	AA	B	
D400	2370 1417	LED	SLP-135B-51	Common	1	AA	C	
F400	1004 7508	FUSE	50T025H	Common	1	AC	A	230V area
F400	1004 7505	FUSE	51MS050L	Common	1	AC	A	120V area
IC410	2114 1421	COUPLER/PHOTO	PC900V	Common	1	AK	C	
IC411	1004 7422	IC/C-MOS	UPD4721GS-GJG	Common	1	AU	B	
J405,J406	1004 7514	JACK	YKB22-5078	Common	2	AG	A	
J407	3502 1830	JACK	MD-S8000-90	Common	1	AE	A	
J408	3501 4816	JACK/DIN	YKF51-5051	Common	1	AH	B	
Q409	2250 1592	TRANSISTOR	2SC1740STPR	Common	1	AA	B	
SW402	1004 7421	SWITCH/SLIDE	SSSF114900	Common	1	AD	C	
Keyboard PCB's								
	9	6928 5460	PCB ASSY/M887T-KY1M	Common	1	BO	C	
	10	6928 5470	PCB ASSY/M887T-KY2M	Common	1	BT	C	
	11	6928 5480	PCB ASSY/M887T-KY3M	Common	1	BM	C	
Keyboard LED PCB'S								
	12	1005 2311	PCB ASSY/MLMP2-LD1-4M	Common	1	CR	B	
	13	1005 2312	PCB ASSY/MLMP2-LD1-4M	Common	1	CR	B	
	14	1005 2313	PCB ASSY/MLMP2-LD1-4M	Common	1	CR	B	
	15	1005 2314	PCB ASSY/MLMP2-LD1-4M	Common	1	CR	B	
	16	1005 2315	PCB ASSY/MLMP2-LD5-8M	Common	1	DD	B	
	17	1005 2316	PCB ASSY/MLMP2-LD5-8M	Common	1	DD	B	
	18	1005 2317	PCB ASSY/MLMP2-LD5-8M	Common	1	DD	B	
	19	1005 2318	PCB ASSY/MLMP2-LD5-8M	Common	1	DD	B	

Notes: Q - Quantity per unit

R - Rank

ITEM NO.	CODE NO.	PARTS NAME	SPECIFICATION	Applicable	Q	Price Code	R	REMARKS
	1004 5597	LED	URUY3117X-J546R	Common	36	AH	B	
	1004 5598	LED	GL3ZV802B1H6	Common	52	AD	B	
	1004 5599	LED	URUY3117X-J545R	Common	52	AH	B	
	2370 1407	LED	KR3301X-J444K	Common	52	AB	B	
Keyboard unit								
	1005 2259	KEY ASSY	M141175*2 TK(MLMP)	Common	1	EV	B	
20	1004 5531	BLACK KEY	M140784-2	Common	36	AH	A	
21	1005 2300	HAMMER ASSY/BLACK KEY(R)	M341438*1 TK(MLMP)	Common	9	BH	B	
21	1005 2301	HAMMER ASSY/BLACK KEY(G)	M341439*1 TK(MLMP)	Common	9	BH	B	
21	1005 2309	HAMMER ASSY/BLACK KEY(BK)	M341440*1 TK(MLMP)	Common	9	BH	B	
21	1005 2310	HAMMER ASSY/BLACK KEY(BL)	M341441*1 TK(MLMP)	Common	9	BH	B	
22	1005 2296	HAMMER ASSY/WHITE KEY(R)	M341434*1 TK(MLMP)	Common	13	BH	B	
22	1005 2297	HAMMER ASSY/WHITE KEY(G)	M341435*1 TK(MLMP)	Common	13	BH	B	
22	1005 2298	HAMMER ASSY/WHITE KEY(BK)	M341436*1 TK(MLMP)	Common	13	BH	B	
22	1005 2299	HAMMER ASSY/WHITE KEY(BL)	M341437*1 TK(MLMP)	Common	13	BH	B	
23	6928 4470	RUBBER/CONTACT	M240957-2	Common	1	AE	A	
24	6928 4480	RUBBER/CONTACT	M240958-2	Common	6	AH	A	
25	6928 4490	RUBBER/CONTACT	M240959-2	Common	1	AH	A	
26	1004 5544	WHITE KEY/A	M140789-2	Common	7	AL	A	
27	1004 5545	WHITE KEY/B	M140790-2	Common	8	AL	A	
28	1004 5530	WHITE KEY/C	M140783-2	Common	7	AL	A	
29	1004 5532	WHITE KEY/D	M140785-2	Common	7	AL	A	
30	1004 5533	WHITE KEY/E	M140786-2	Common	7	AL	A	
31	1004 5534	WHITE KEY/F	M140787-2	Common	7	AL	A	
32	1004 5543	WHITE KEY/G	M140788-2	Common	7	AL	A	
33	1004 5547	WHITE KEY/SA	M140792-2	Common	1	AR	A	
34	1004 5546	WHITE KEY/SC	M140791-2	Common	1	AR	A	
35	1004 5551	HOLDER/LED/LMP2-W	M341382-1	Common	4	AD	C	
36	1004 5552	HOLDER/LED/LMP2-B1	M341383-1	Common	1	AE	C	
37	1004 5553	HOLDER/LED/LMP2-B2	M341384-1	Common	2	AC	C	
38	1004 5554	HOLDER/LED/LMP2-B3	M341385-1	Common	1	AE	C	
	1004 5550	CAP/GUIDE/WHITE KEY	M341380-1	Common	13	AE	C	
	1004 6040	CAP/GUIDE/BLACK KEY	M341381-1	Common	36	AA	C	
	1004 5527	CHASSIS SUB ASSY	M140831C*2	Common	1	CT	C	
	6927 4161	FELT	M440767A-1	Common	1	AL	X	
	6932 4210	FELT	M441246-001V01	Common	1	AP	X	
	6932 4211	FELT	M441247-001V01	Common	1	BG	X	
CN Panel assy								
43	6924 5260	BUTTON/POWER	M340318-1	Common	1	AA	B	
44	1004 7614	BUTTON/RUBBER	M241510-1	Common	1	AB	B	
45	1004 7628	BUTTON/RUBBER	M241503-1	Common	1	AD	B	
46	1004 7629	BUTTON/RUBBER	M241504-1	Common	1	AC	B	
47	1004 7630	BUTTON/RUBBER	M241505-1	Common	3	AA	B	
48	1004 7631	BUTTON/RUBBER	M241506-1	Common	1	AB	B	
49	1004 7632	BUTTON/RUBBER	M241507-1	Common	1	AB	B	
50	1004 7633	BUTTON/RUBBER	M241508-1	Common	1	AE	B	
51	1004 7634	BUTTON/RUBBER	M241509-1	Common	1	AB	B	
52	1004 7615	BUTTON/TACT	M241511-1	Common	4	AH	B	
53	1004 7616	BUTTON/TACT	M241511-2	Common	2	AE	B	
54	1004 7617	BUTTON/TACT	M241511-3	Common	3	AC	B	
55	1004 7618	BUTTON/TACT	M241511-4	Common	3	AB	B	
56	1004 7619	BUTTON/TACT	M241512-1	Common	1	AC	B	
57	1004 7620	BUTTON/TACT	M241512-2	Common	3	AB	B	

Notes: Q - Quantity per unit

R - Rank

ITEM NO.	CODE NO.	PARTS NAME	SPECIFICATION	Applicable	Q	Price Code	R	REMARKS
58	1004 7623	CONNECTOR	M441196-1	Common	2	AK	C	
59	6906 9312	KNOB/SL	M311859B-1	Common	2	AA	C	
60	1004 7645	PANEL SUB ASSY/CN	M141193*2	AL-100R	1	BX	B	
60	1005 4407	PANEL SUB ASSY/CN	M141193*4	AL-150R	1	BZ	B	
61	1005 3835	PLATE/DISPLAY/437	M341405-2	Common	1	AD	C	
62	1005 2387	SWITCH ASSY/POWER	M341447*2 TK(M437)	Common	1	BN	C	
83	1004 3510	LCD	CG1903-TTP	Common	1	CH	B	
Console PCB's								
39	1005 2383	PCB ASSY/M437-CN1M	M241563*1 TK(M437)	Common	1	CX	B	
40	1005 2384	PCB ASSY/M437-CN2-3M	M241564*1 TK(M437)	Common	1	CX	B	
LED301-LED303, LED316-LED323, LED328	1000 5470	LED	SLZ-190B-02-T1	Common	12	AA	B	
LED304-LED315, LED324-LED327	1004 7537	LED	SLI-332URCTB7	Common	16	AA	B	
LED329-LED331	1000 5471	LED	SLZ-290B-02-T1	Common	3	AA	B	
LED351,LED363, LED376-LED383	1000 5470	LED	SLZ-190B-02-T1	Common	10	AA	B	
LED352-LED362, LED364-LED375	1004 7537	LED	SLI-332URCTB7	Common	23	AA	B	
LSI301	1004 3507	LSI	UPD65881GB-031-8ES	Common	1	AU	A	
LSI351	1004 3507	LSI	UPD65881GB-031-8ES	Common	1	AU	A	
Q321-Q331	1004 7535	TRANSISTOR	RN2205(TPE4)	Common	11	AA	B	
Q332-Q334	1004 7532	TRANSISTOR	2SC5720(TPE4)	Common	3	AA	B	
Q351-Q361	1004 7535	TRANSISTOR	RN2205(TPE4)	Common	11	AA	B	
Q362-Q364	1004 7532	TRANSISTOR	2SC5720(TPE4)	Common	3	AA	B	
SW301-SW344, SW351-SW394	1004 7536	SWITCH/TACT	SKQNAED010	Common	88	AA	A	
VR321	1004 7473	VOLUME	RS30H1210C95B14	Common	1	AE	A	
VR322	1004 7472	VOLUME	RS30H1110C95B54	Common	1	AD	A	
X351	2529 2032	OSCILLATOR/CERAMIC	CSB1000J	Common	1	AC	B	
BL assy								
41	1005 2390	BACKLIGHT ASSY	M341475*1 TK(M437)	Common	1	CP	B	
42	1005 2391	PCB ASSY/LCD-1M	M241561*1	Common	1	CJ	B	
IC301,IC302	2105 6394	IC/C-MOS	TC7SET08FU-TE85L	Common	2	AB	B	
LSI301	1004 3508	LSI	ML9040-B03GA	Common	1	AU	A	
LSI302	1004 7457	LSI	MSM5259GS-K	Common	1	AP	A	
	1004 7644	CONNECTOR/14P	SHR-14P-28-M437	Common	1	AU	C	
	1004 7626	FACE/D	M441229-1	Common	2	AA	C	
	1004 7638	FACE/D	M441230-1	Common	2	AA	C	
	1004 7622	FILM	M441195-1	Common	1	AC	C	
	1004 7530	LED	UY40675-9B1-B170	Common	3	AF	B	
	1004 7624	PIECE/TOP 437 LEFT	M441220-1	Common	1	AB	C	
	1004 7625	PIECE/TOP 437 RIGHT	M441221-1	Common	1	AB	C	
	1004 7635	PLATE/BL	M341387-1	Common	1	BE	C	
	1004 7639	SPONGE	M441232-1	Common	2	AA	C	
Other Electrical Parts								
63	1004 7602	SPEAKER	S16J75A	Common	2	BL	B	
64	3831 1075	SPEAKER	S05JH37A	Common	2	AR	B	
65	1004 7604	TRANSFORMER	TE-437-1M1	Common	1	CJ	B	120V area
65	1004 7607	TRANSFORMER	TE-437-2M1	Common	1	CJ	B	230V area
66	1004 7585	FDD	DF354H123F	Common	1	CV	B	

Notes: Q - Quantity per unit

R - Rank

ITEM NO.	CODE NO.	PARTS NAME	SPECIFICATION	Applicable	Q	Price Code	R	REMARKS
Components								
4	1005 2376	BOARD ASSY/FRONT	M241598*1 TK(M437)	AL-100R	1	DA	B	
4	1005 8211	BOARD ASSY/FRONT	M241656*1 TK(M438)	AL-150R	1	DA	B	
67	6924 5121	SHAFT	M440300A-1	Common	1	BA	C	
68	6924 5140	GEAR	4247002100	Common	2	AC	C	
69	1005 2371	BOARD ASSY/TOP	M241596*1TK(M437)	AL-100R	1	DQ	X	
69	1005 8210	BOARD ASSY/TOP	M241658*1TK(M438)	AL-150R	1	DS	X	
70	1005 2370	COVER ASSY/KEY	M241595*1 TK(M437)	AL-100R	1	DK	X	
70	1005 8209	COVER ASSY/KEY	M241657*1 TK(M438)	AL-150R	1	DN	X	
71	6926 9420	DAMPER/RUBBER	M440598-2	Common	4	AA	X	
72	3719 5442	FFC/MLMPA	N30315B1B05-UL2896	Common	1	AO	C	
73	1001 4480	STOPPER	M440862A-1	Common	1	CK	C	
74	1004 7605	34P-CONNECTOR	YAF11-0973	Common	1	AS	C	
75	1004 7594	3P-CONNECTOR	EH-3P-75-M437	Common	1	AE	C	
	1005 4204	CASE ASSY	M141191*1 TK(M437)	AL-100R	1	EA	X	
	1005 8212	CASE ASSY	M141191*2 TK(M438)	AL-150R	1	ED	X	
	1004 7376	FLOPPY DISK	AL100R-DISK-1	Common	1	AM	C	
	1005 2369	STAND ASSY/MUSIC	M241594*1 TK(M437)	AL-100R	1	CT	X	
	1005 8208	STAND ASSY/MUSIC	M241659*1 TK(M438)	AL-150R	1	CX	X	
Stand								
78	1005 2392	PEDAL ASSY	M241592*1 TK(M437)	AL-100R	1	DN	C	
78	1005 8213	PEDAL ASSY	M241592*2 TK(M438)	AL-150R	1	DN	C	
79	1005 2393	ST-SIDE SUB ASSY	M341473*1 TK(M437)	AL-100R	1	DE	C	
79	1005 8361	ST-SIDE ASSY	M341473*3 TK(M438)	AL-150R	1	DL	C	
80	1005 2397	ST-SIDE SUB ASSY	M341473*2 TK(M437)	AL-100R	1	DE	C	
80	1005 8362	ST-SIDE ASSY	M341473*4 TK(M438)	AL-150R	1	DL	C	
81	1004 7379	BACK/ST	M341368-1	Common	1	CH	X	
82	1004 7378	SCREW SET	M241602-1	Common	1	BW	X	
84	1005 2396	FOOT ASSY	M341474*1 TK	AL-100R	1	BY	X	
84	1006 4259	FOOT ASSY	M341474*3 TK(M438)	AL-150R	1	CC	C	
85	1005 2398	FOOT ASSY	M341474*2 TK	AL-100R	1	BY	X	
85	1006 4260	FOOT ASSY	M341474*4 TK(M438)	AL-150R	1	CC	C	
Ac cord								
76	1005 4071	CORD ASSY/AC	TK-M341449*2(M427)	Common	1	AW	C	120V area
	1004 5709	CORD SET	UC2NC-M001A	Common	1	AK	C	USA, Canada
77	1005 4205	INLET ASSY/2P-AC	M341448*2 TK(M437)	Common	1	BK	C	230V area
	1004 5706	CORD SET	EC2NC-M001A	Common	1	AM	C	Europe
	1004 5707	CORD SET	BC2NC-M001A	AL-100R	1	BD	C	UK

Notes: Q - Quantity per unit

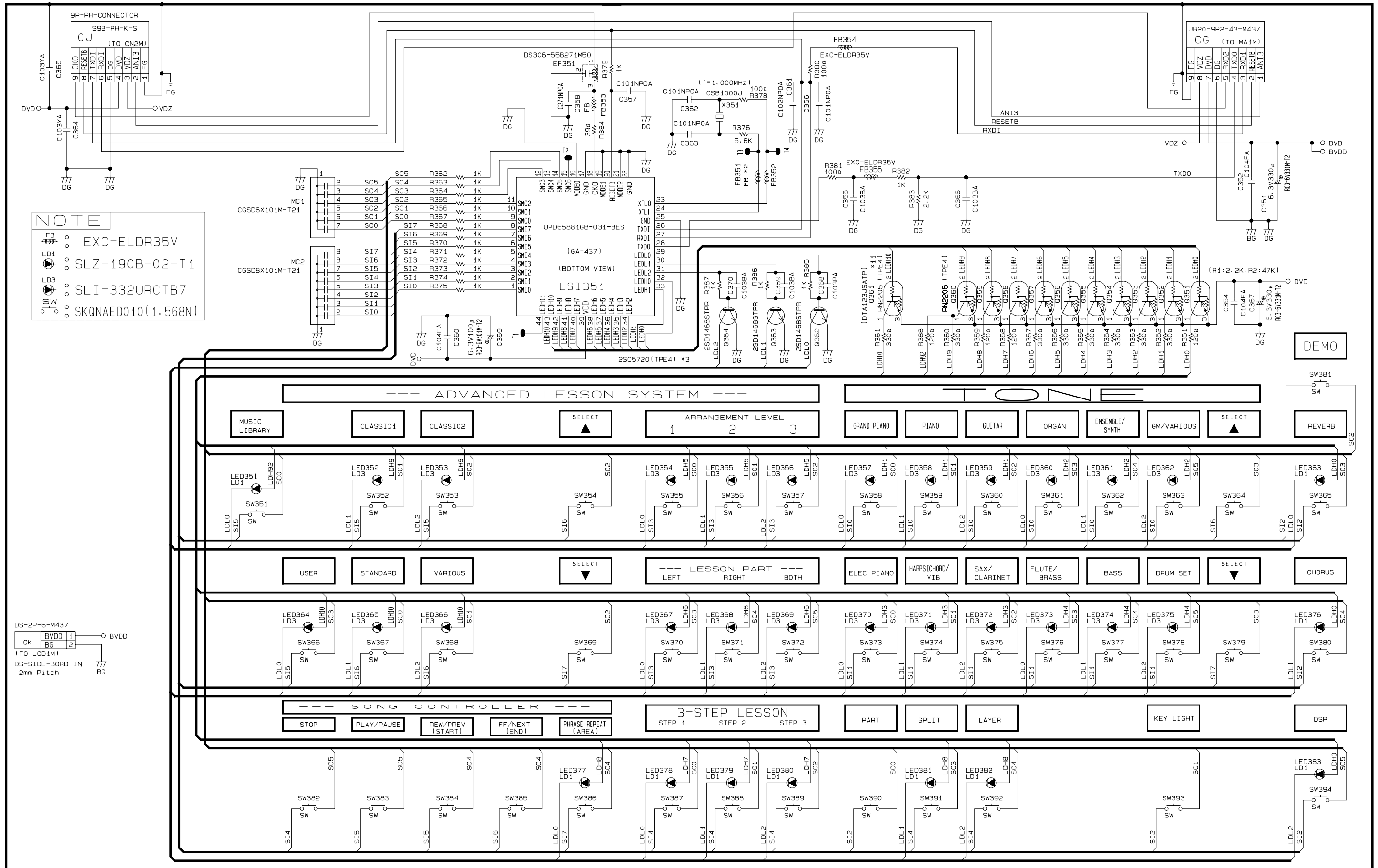
R - Rank

SCHMATIC DIAGRAMS

Contents

MAIN PCB (JCM437-MA1M)	
MA1M-1 SCHEMATIC	17
MA1M-2 SCHEMATIC	18
COSOLE PCB (JCM437-CN1M/CN2M)	
CONSOLE-1 SCHEMATIC	19
CONSOLE-2 SCHEMATIC	20
I/O PCB (JCM437-PS1/PS2M/PS3M/PS4M/PS6M)	
MA1M-3 SCHEMATIC (120 V)	21
MA1M-3 SCHEMATIC (230 V)	22
I/O PCB (JCM437-PS5M)	
MA1M-5 SCHEMATIC	23
LCD PCB (JCM437-LCD1M)	
LCD SCHEMATIC	24
KEY PCB (JCM887T-KY1M ~ KY3M)	
M887T-1 SCHEMATIC	25
M887T-2 SCHEMATIC	26
M887T-3 SCHEMATIC	27
LED PCB (JCMLMP2-LD1M ~ LD8M)	
LED-NAVI1 SCHEMATIC	28
LED-NAVI2 SCHEMATIC	29
LED-NAVI3 SCHEMATIC	30
LED-NAVI4 SCHEMATIC	31
LED-NAVI5 SCHEMATIC	32
LED-NAVI6 SCHEMATIC	33
LED-NAVI7 SCHEMATIC	34
LED-NAVI8 SCHEMATIC	35

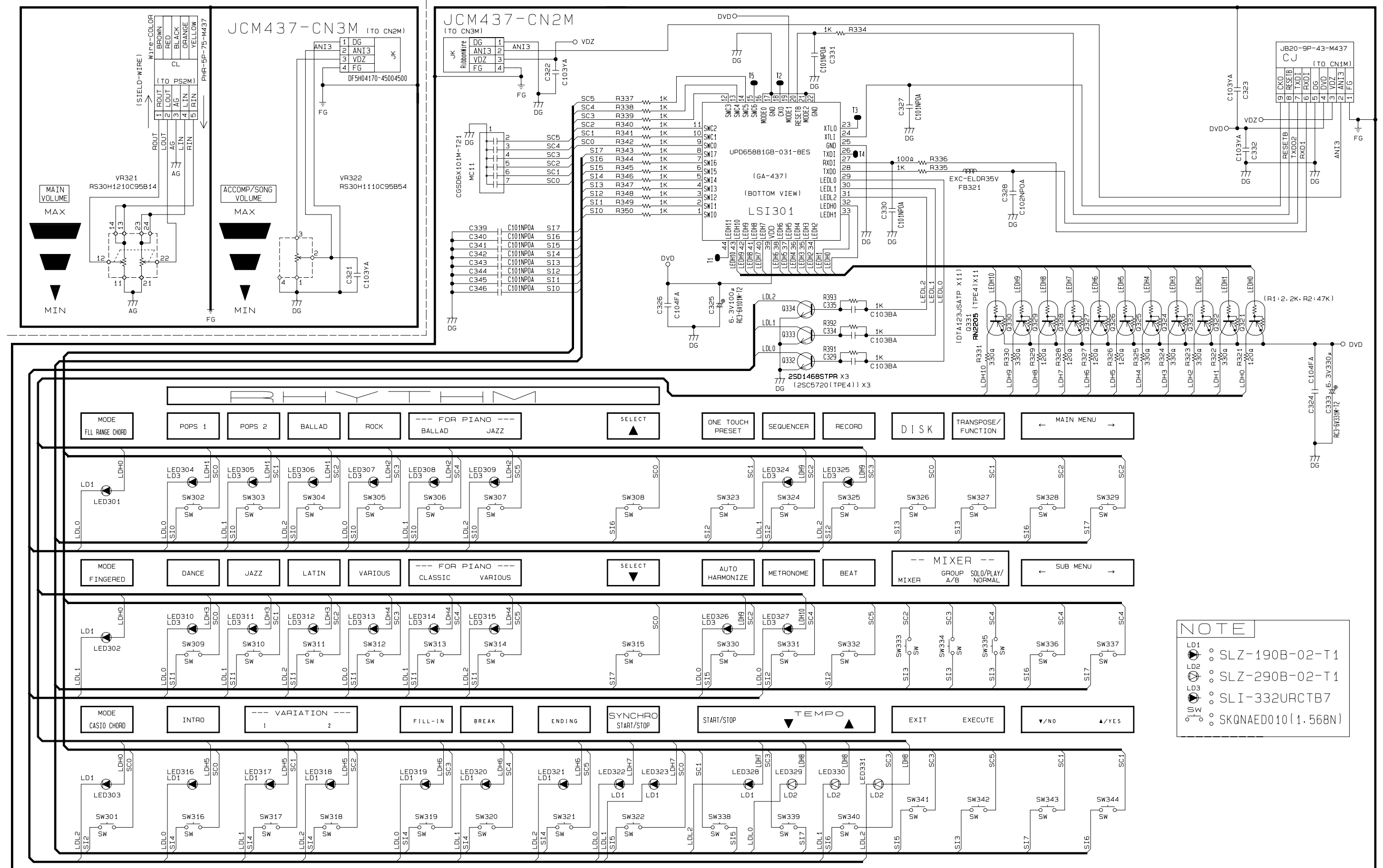
COSOLE PCB JCM437-CN1M



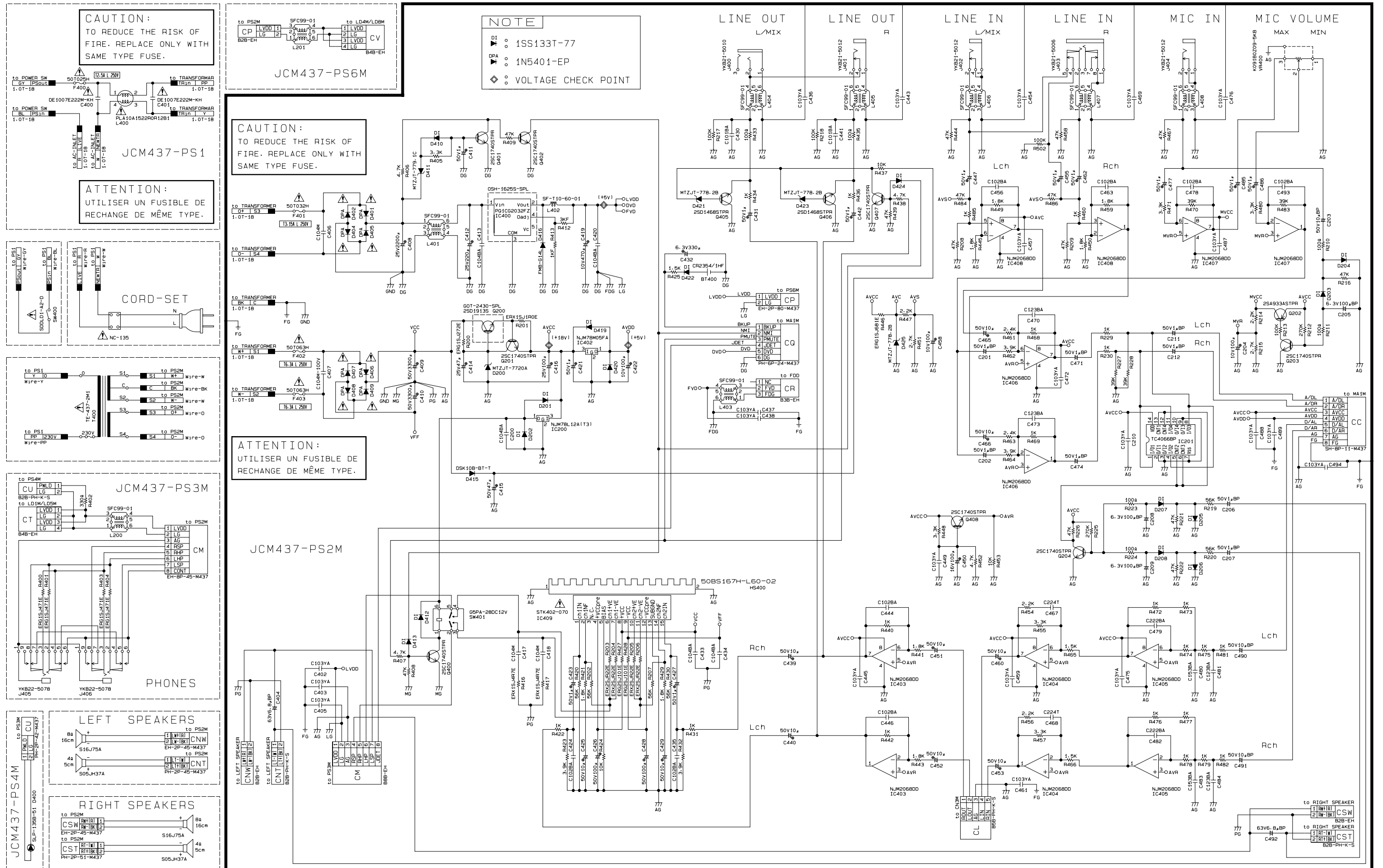
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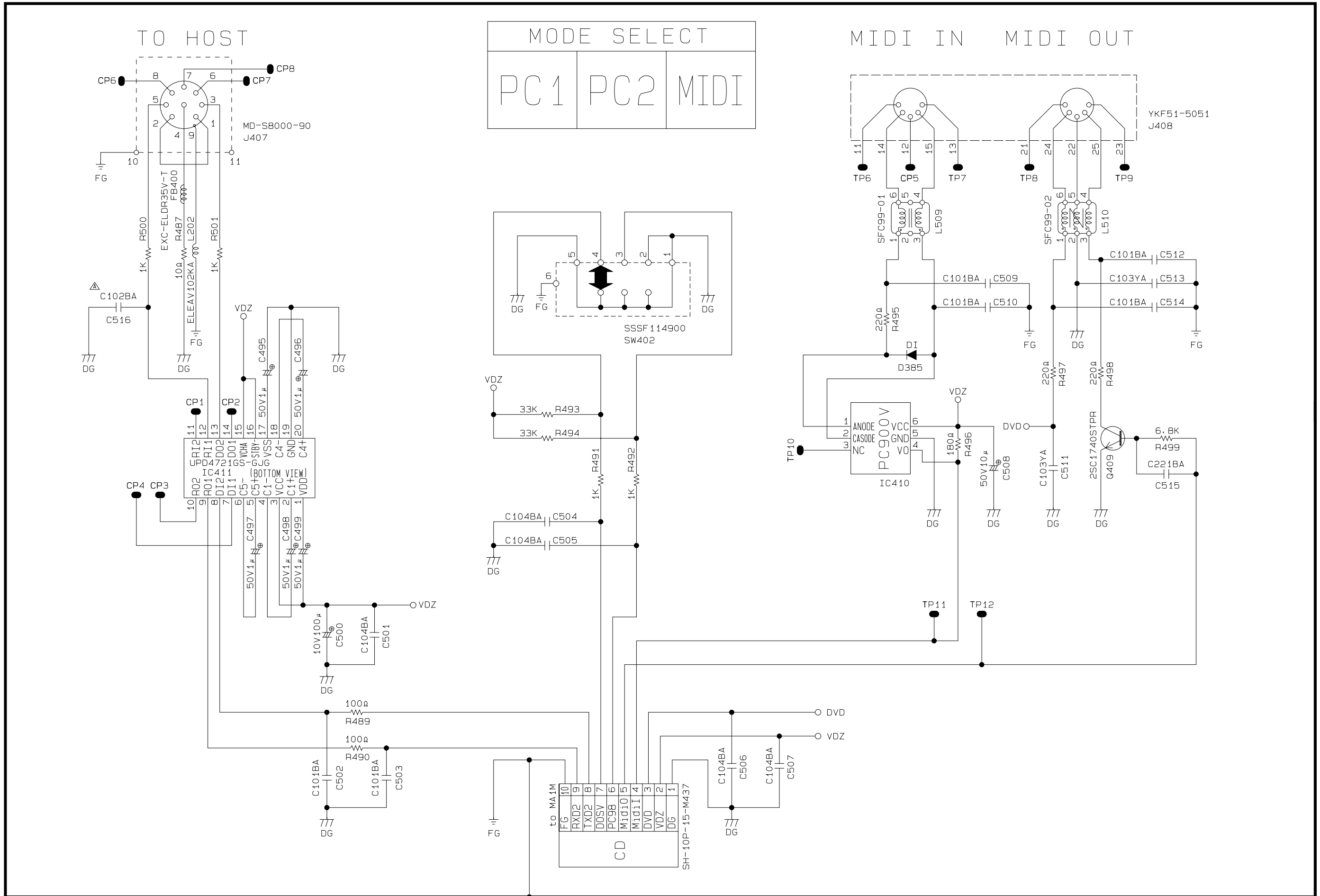
- FB ○ EXC-ELDR35V
- LD1 ○ SLZ-190B-02-T1
- LD3 ○ SLI-332URCTB7
- SKQNAED010(1.568N)

COSOLE PCB JCM437-CN2M

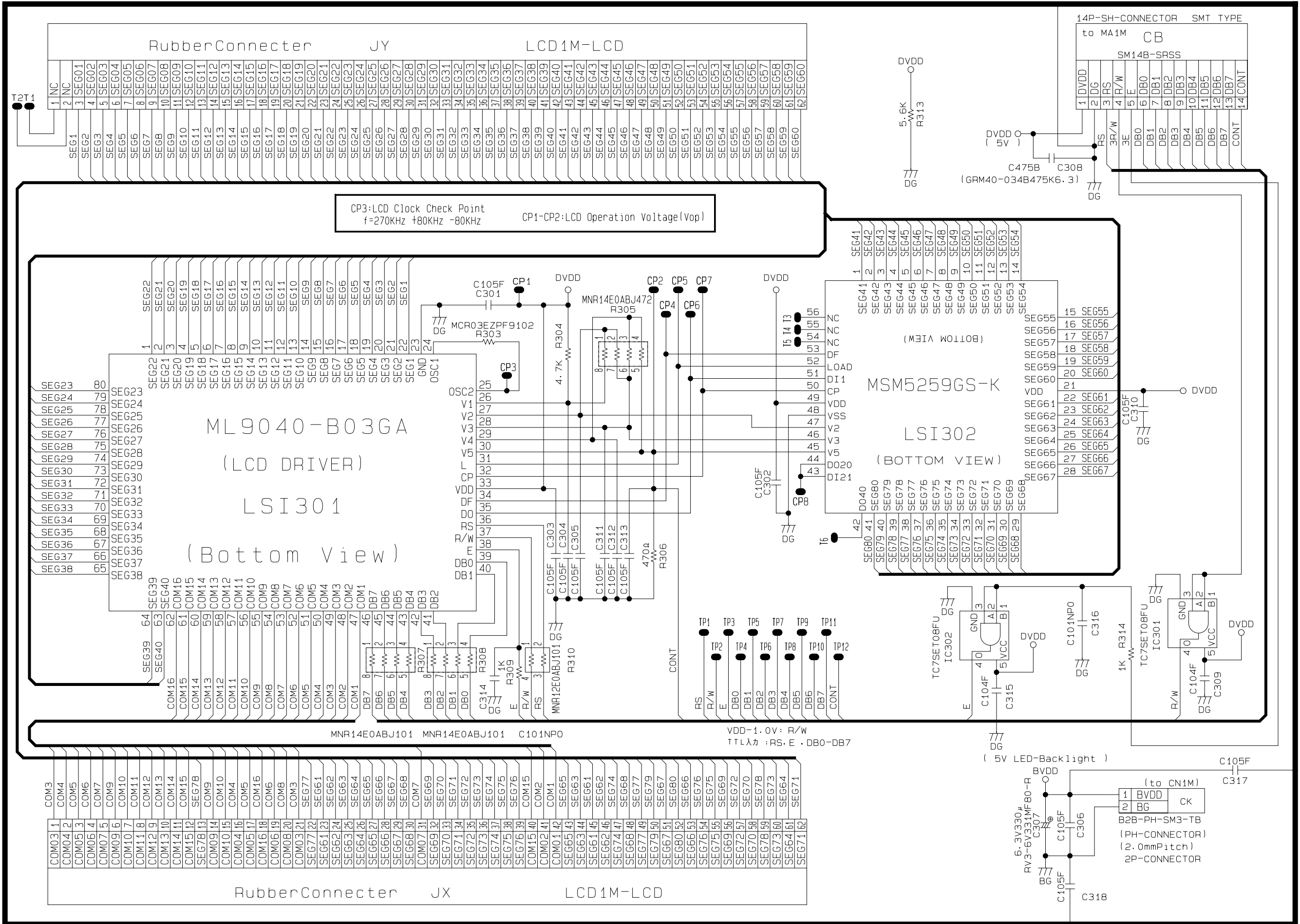
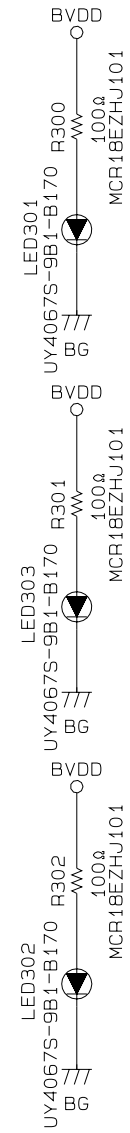


I/O and POWER SUPPLY PCB JCM437-PS1/PS2M/PS3M/PS4M/PS6M (230 V)



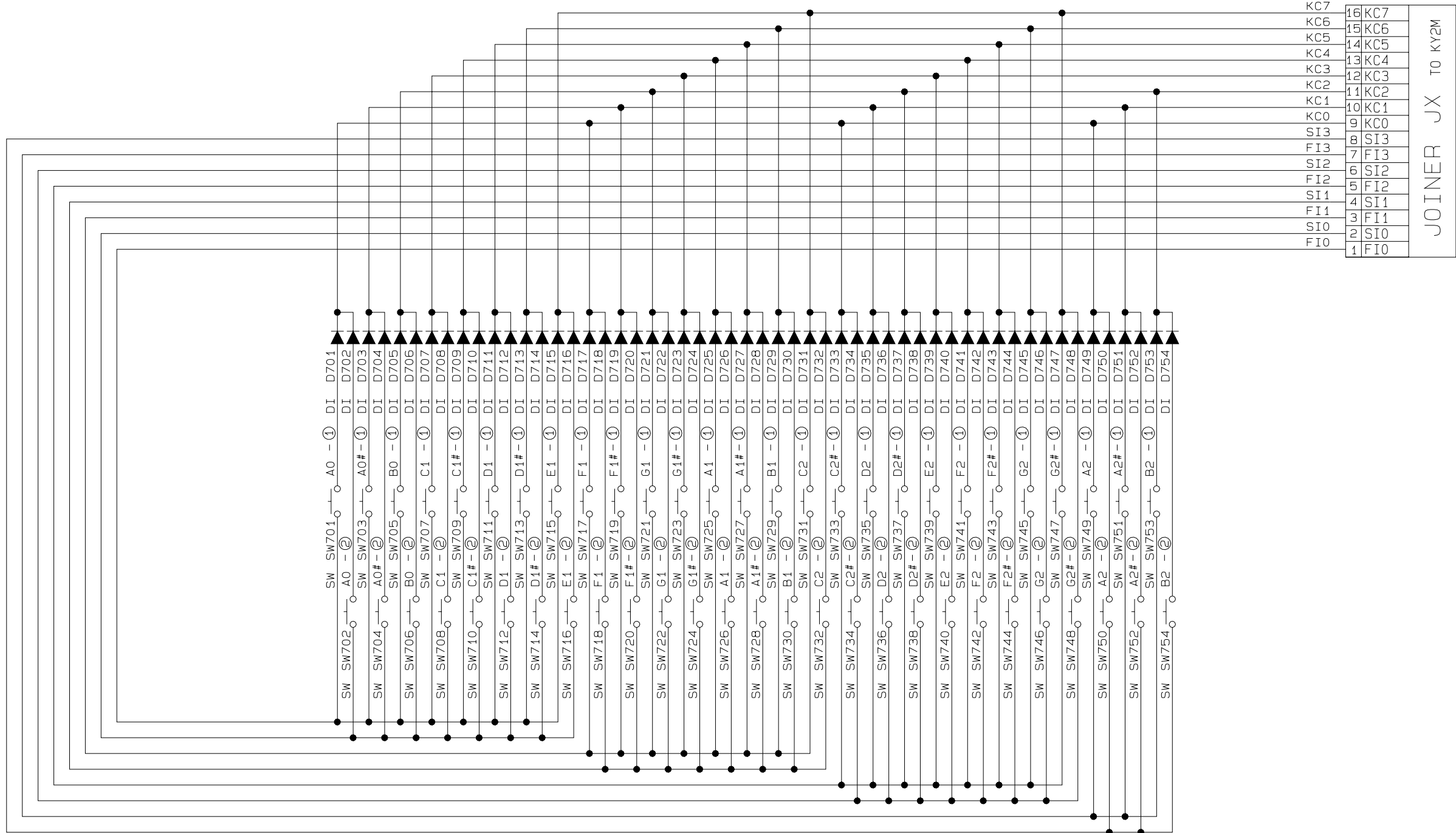


LCD PCB JCM437-LCD1M



JCM887T-KY1M

NOTE
 : 1S2076TE



KC7	16	KC7
KC6	15	KC6
KC5	14	KC5
KC4	13	KC4
KC3	12	KC3
KC2	11	KC2
KC1	10	KC1
KC0	9	KC0
SI3	8	SI3
FI3	7	FI3
SI2	6	SI2
FI2	5	FI2
SI1	4	SI1
FI1	3	FI1
SI0	2	SI0
FI0	1	FI0

JOINER JX TO KY2M

KEY PCB JCM887T-KY2M

NOTE
 DI ◻ 1S2076TE

JCM887T-KY2M

CONNECTOR CA701 TO MA1M

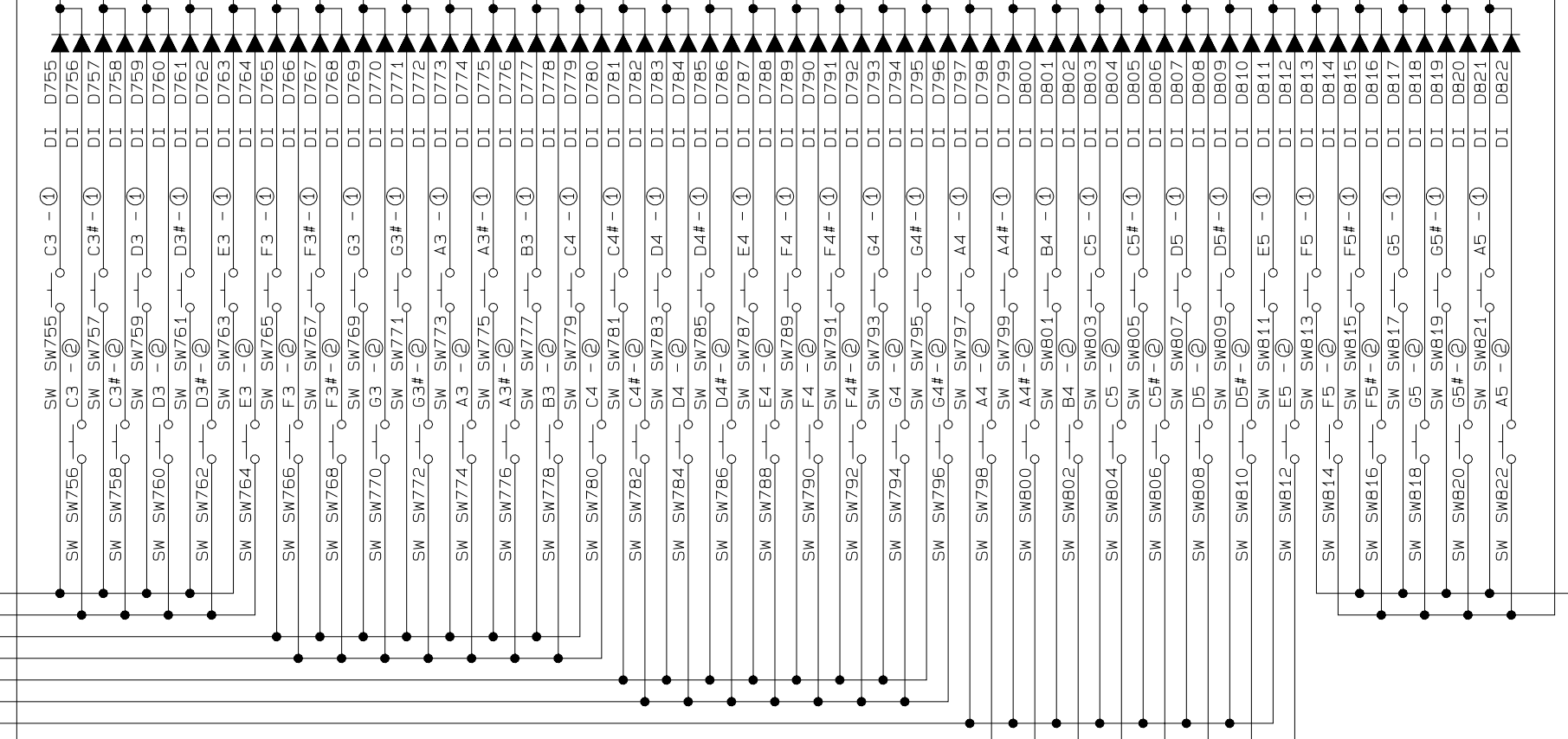
JOINER JX TO KY1M

FI0	1
SI0	2
FI1	3
SI1	4
FI2	5
SI2	6
FI3	7
SI3	8
KC0	9
KC1	10
KC2	11
KC3	12
KC4	13
KC5	14
KC6	15
KC7	16

30	FI0
29	SI0
28	FI1
27	SI1
26	FI2
25	SI2
24	FI3
23	SI3
22	FI4
21	SI4
20	KC0
19	KC1
18	KC2
17	KC3
16	KC4
15	KC5
14	KC6
13	KC7
12	SI5
11	FI5
10	SI6
9	FI6
8	SI7
7	FI7
6	SI8
5	FI8
4	SI9
3	FI9
2	SI10
1	FI10

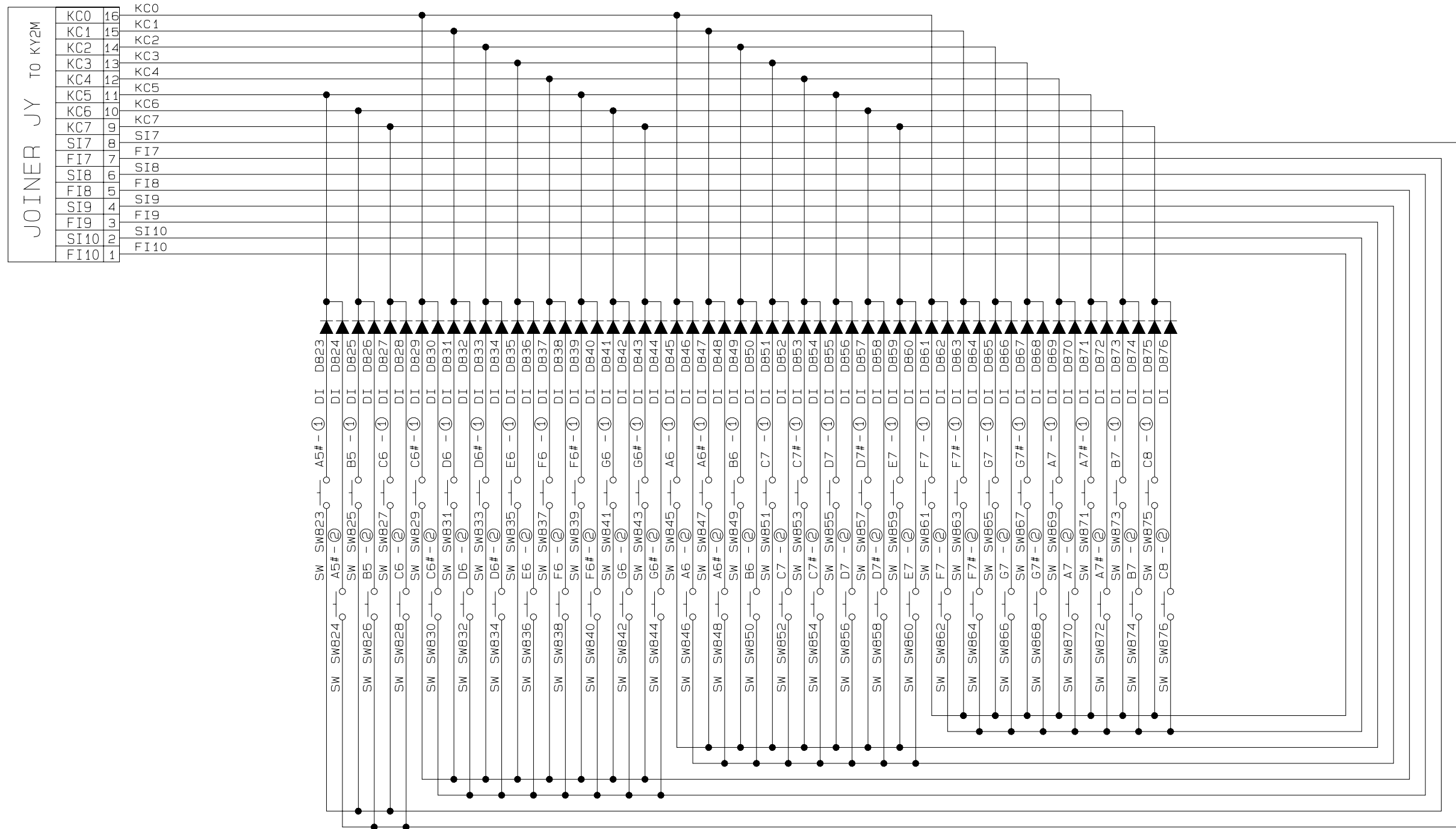
JOINER JY TO KY3M

1	FI10
2	SI10
3	FI9
4	SI9
5	FI8
6	SI8
7	FI7
8	SI7
9	KC7
10	KC6
11	KC5
12	KC4
13	KC3
14	KC2
15	KC1
16	KC0

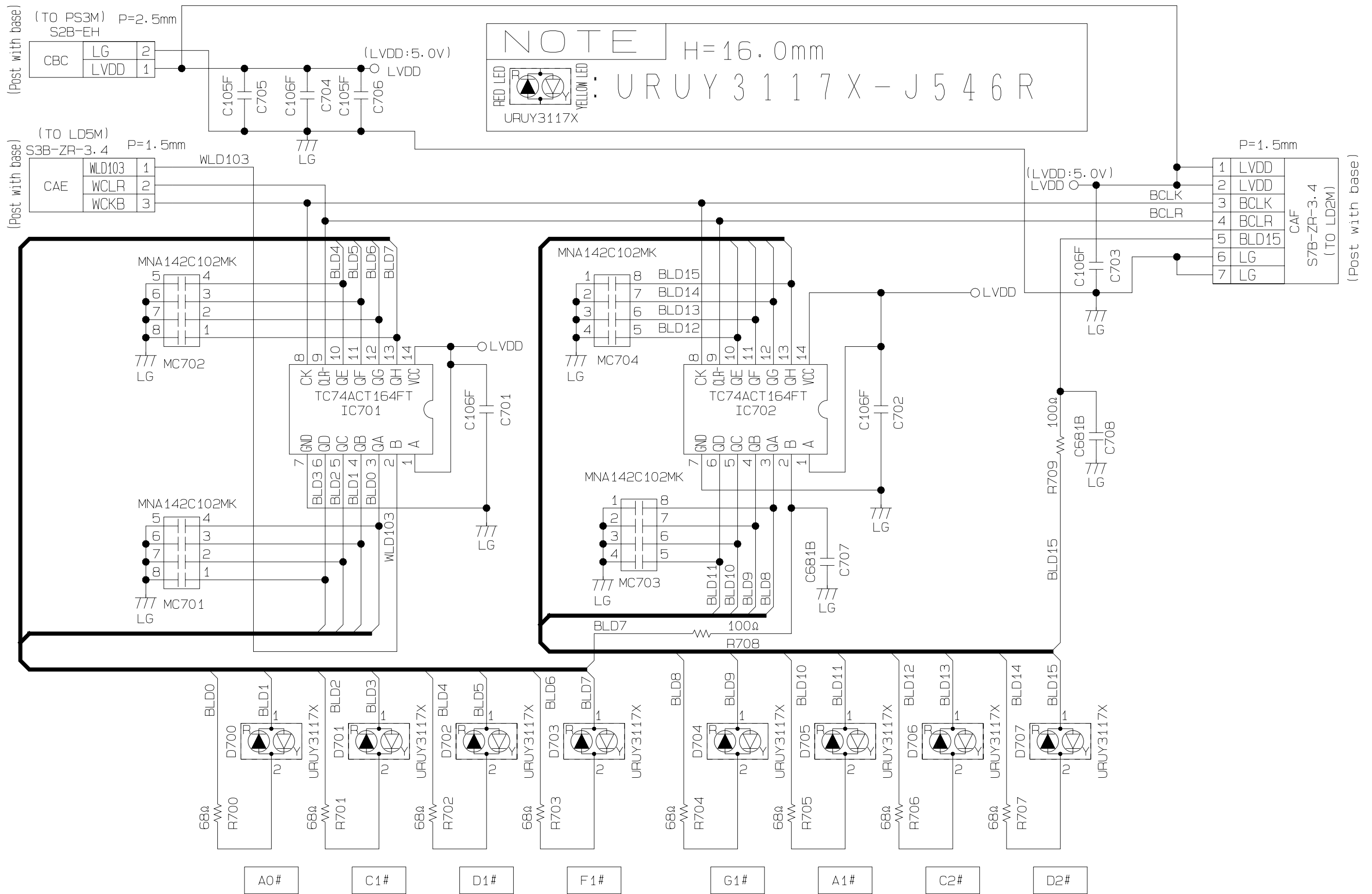


JCM887T-KY3M

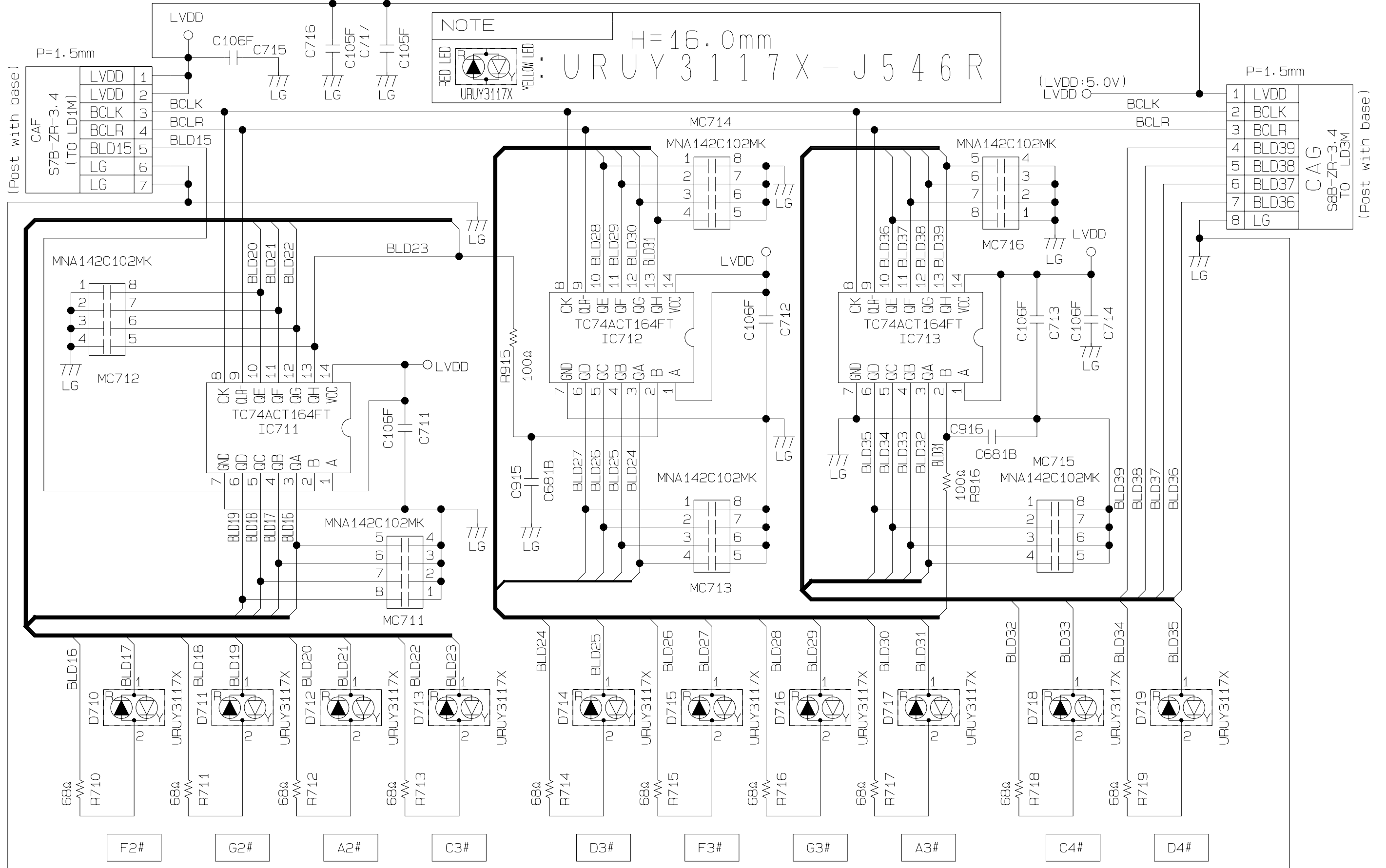
NOTE
 DI ◻ : 1S2076TE



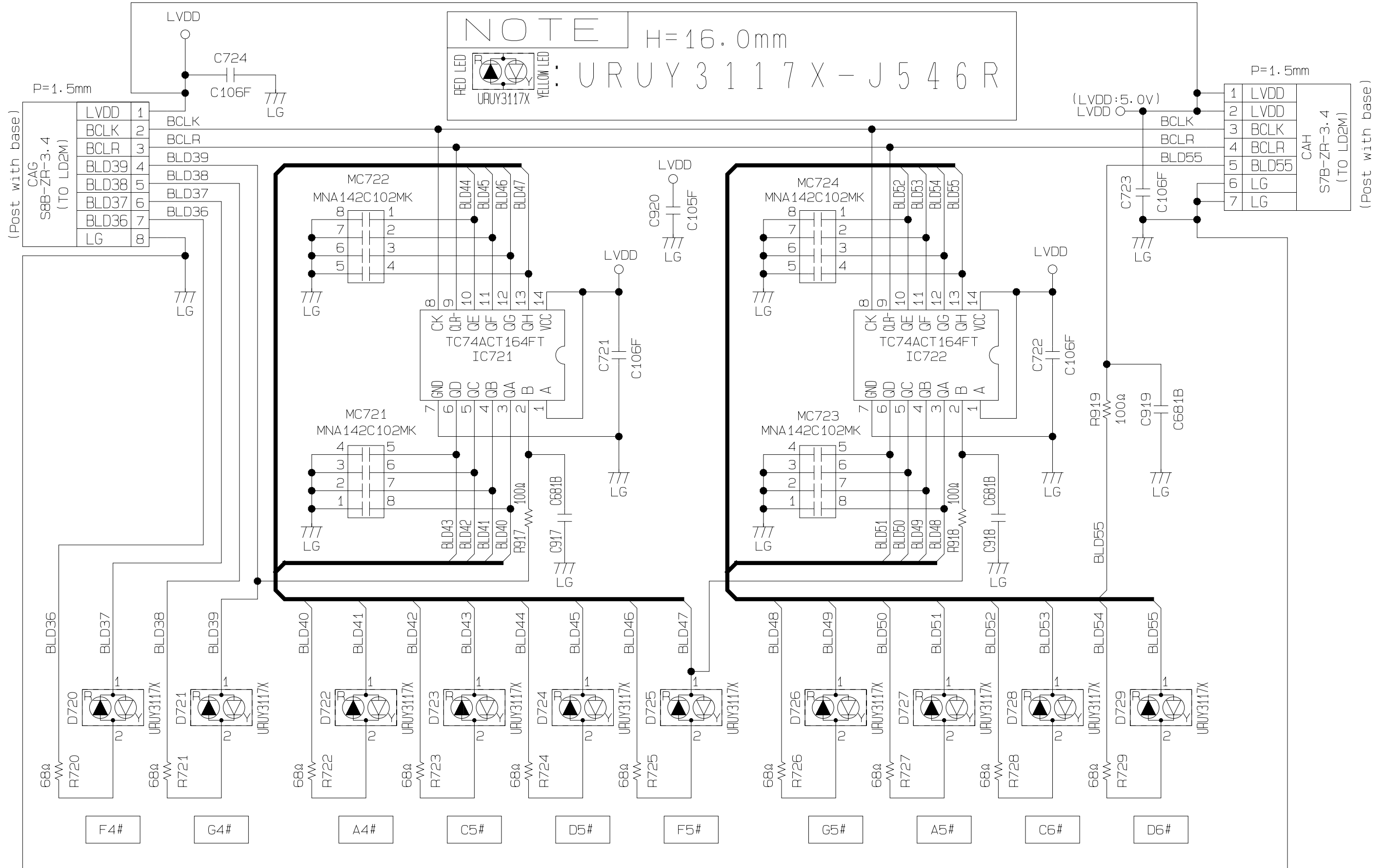
LED PCB JCMLMP2-LD1M



LED PCB JCMLMP2-LD2M



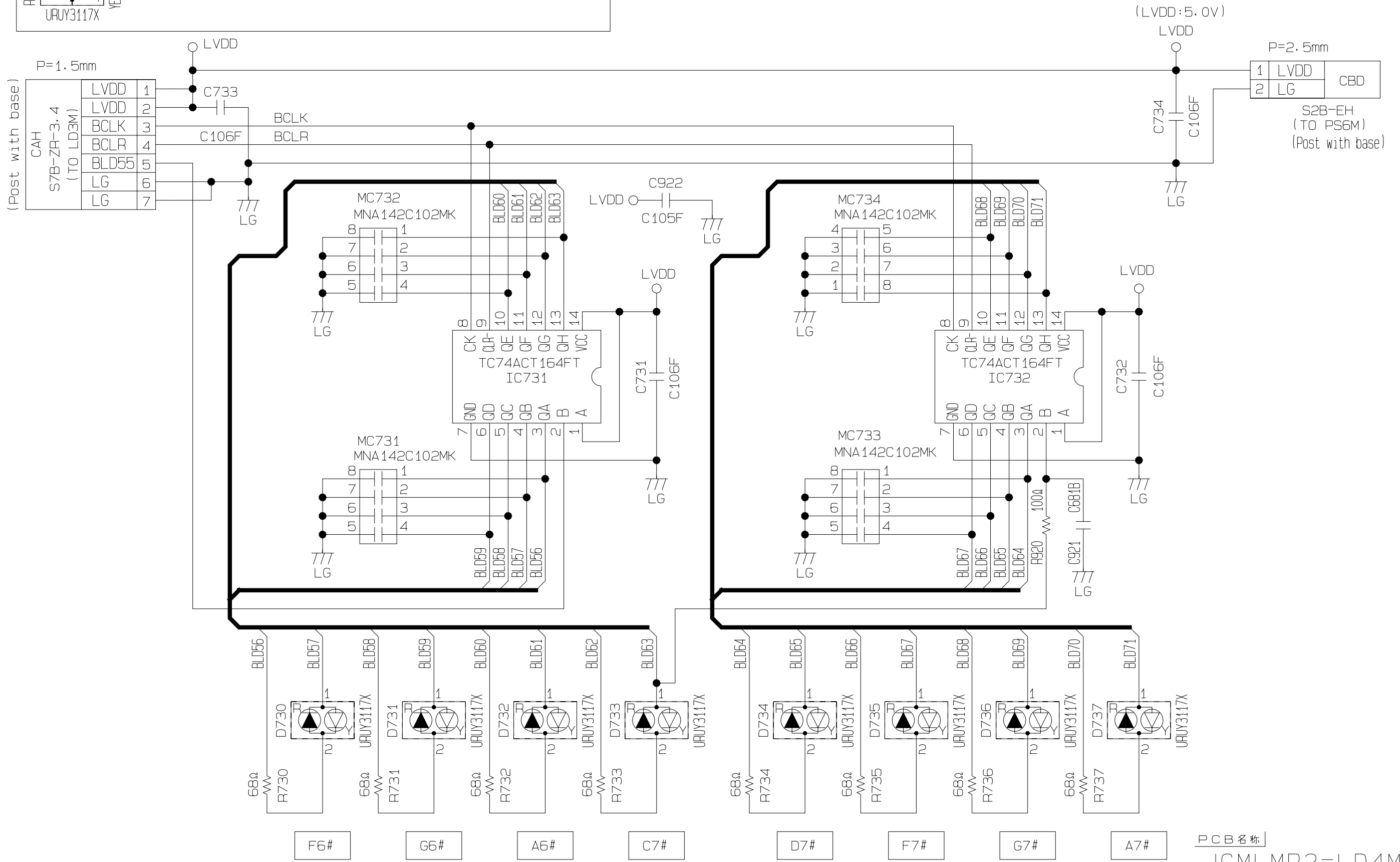
LED PCB JCMLMP2-LD3M



LED PCB JCMLMP2-LD4M

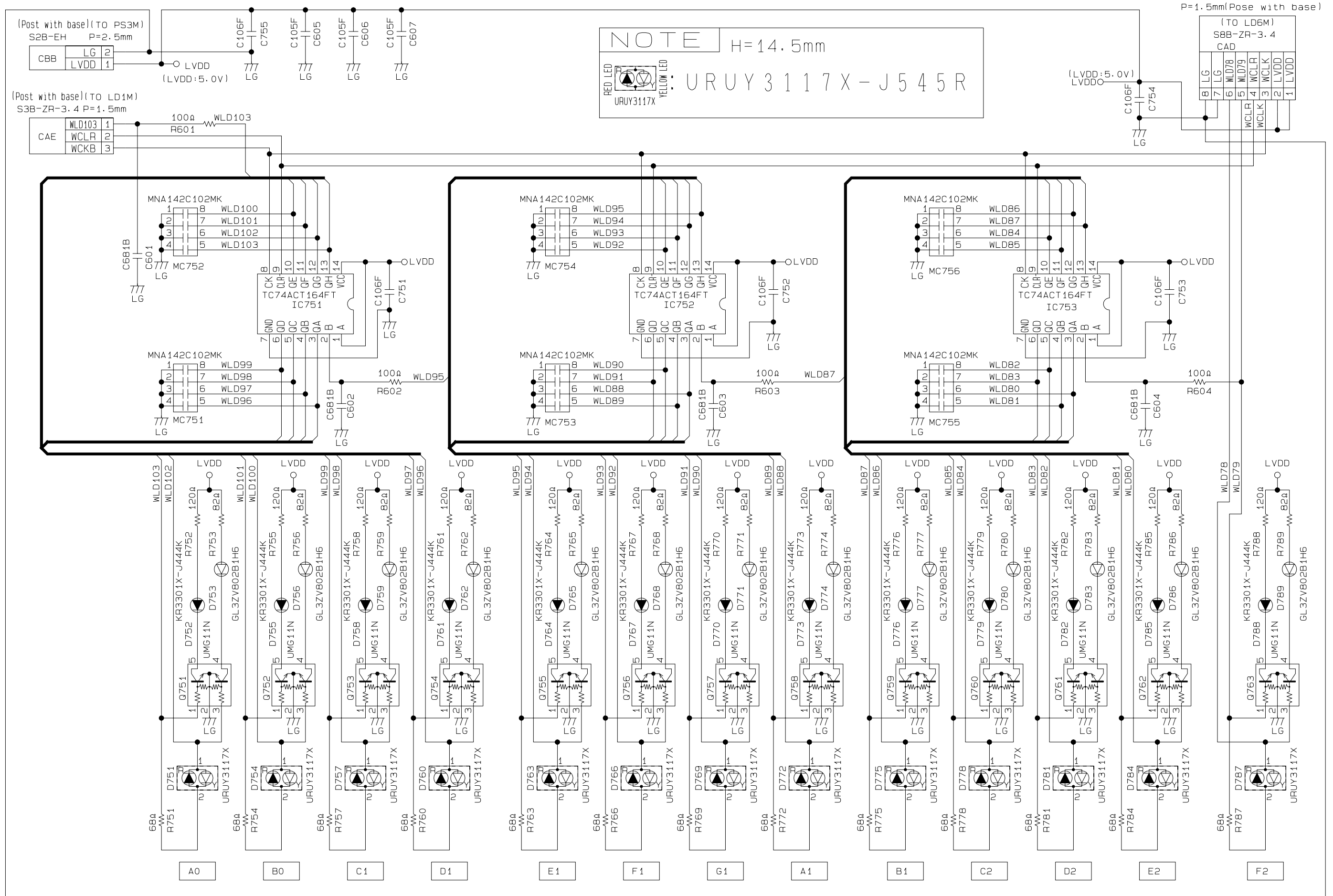
NOTE H=16.0mm

RED LED: URUY3117X
YELLOW LED: URUY3117X - J546R

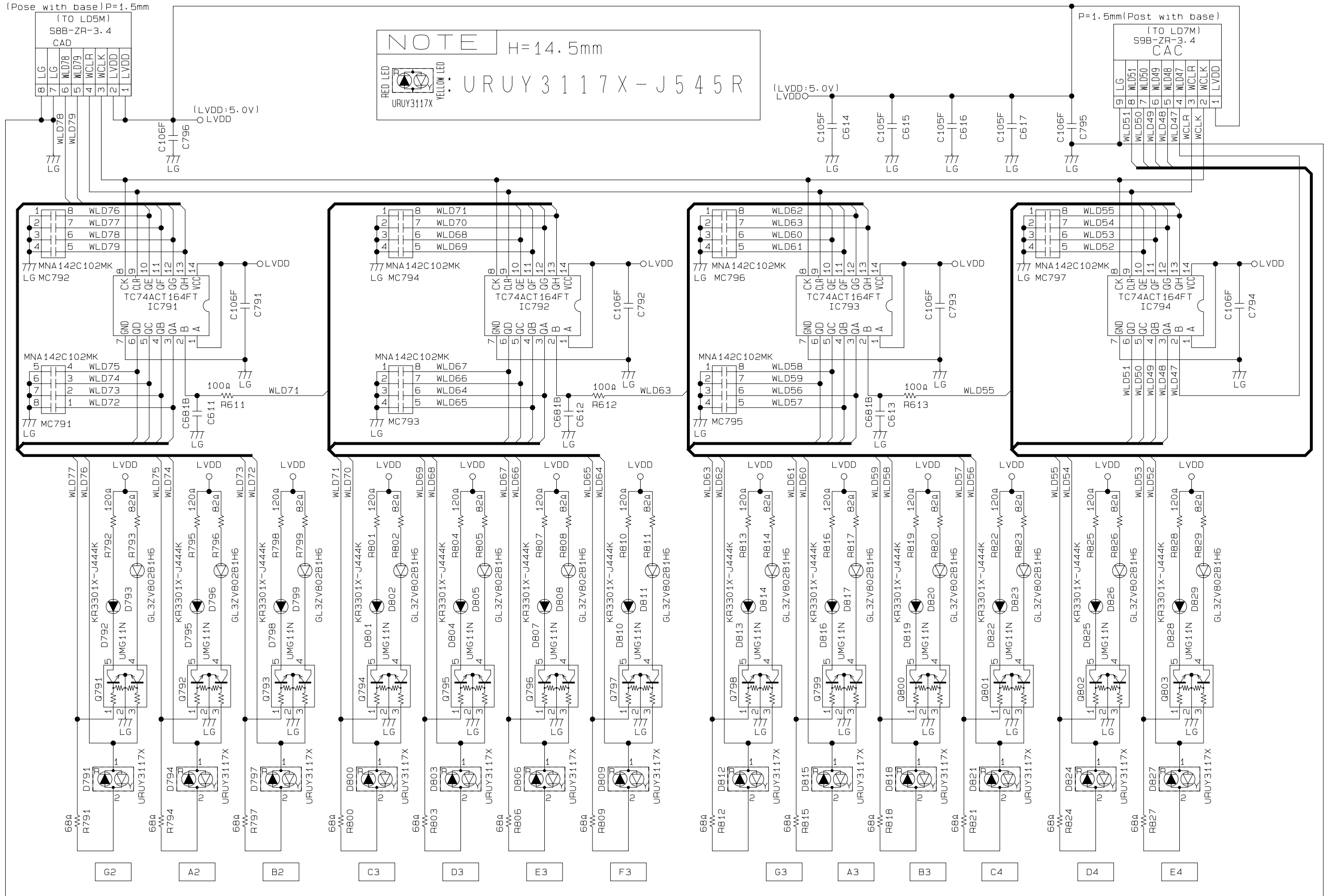


PCB名称
JCMLMP2-LD4M

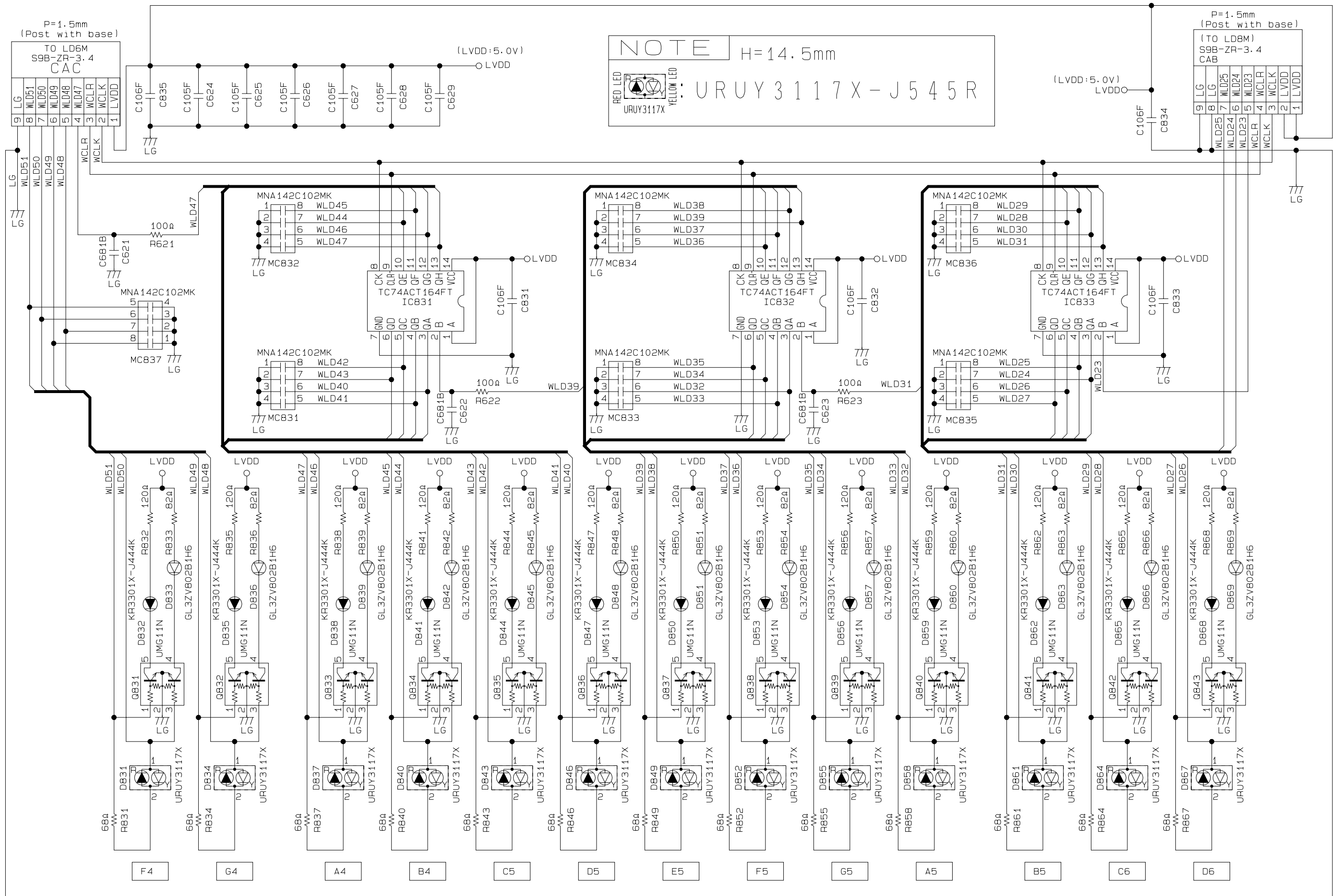
LED PCB JCMLMP2-LD5M



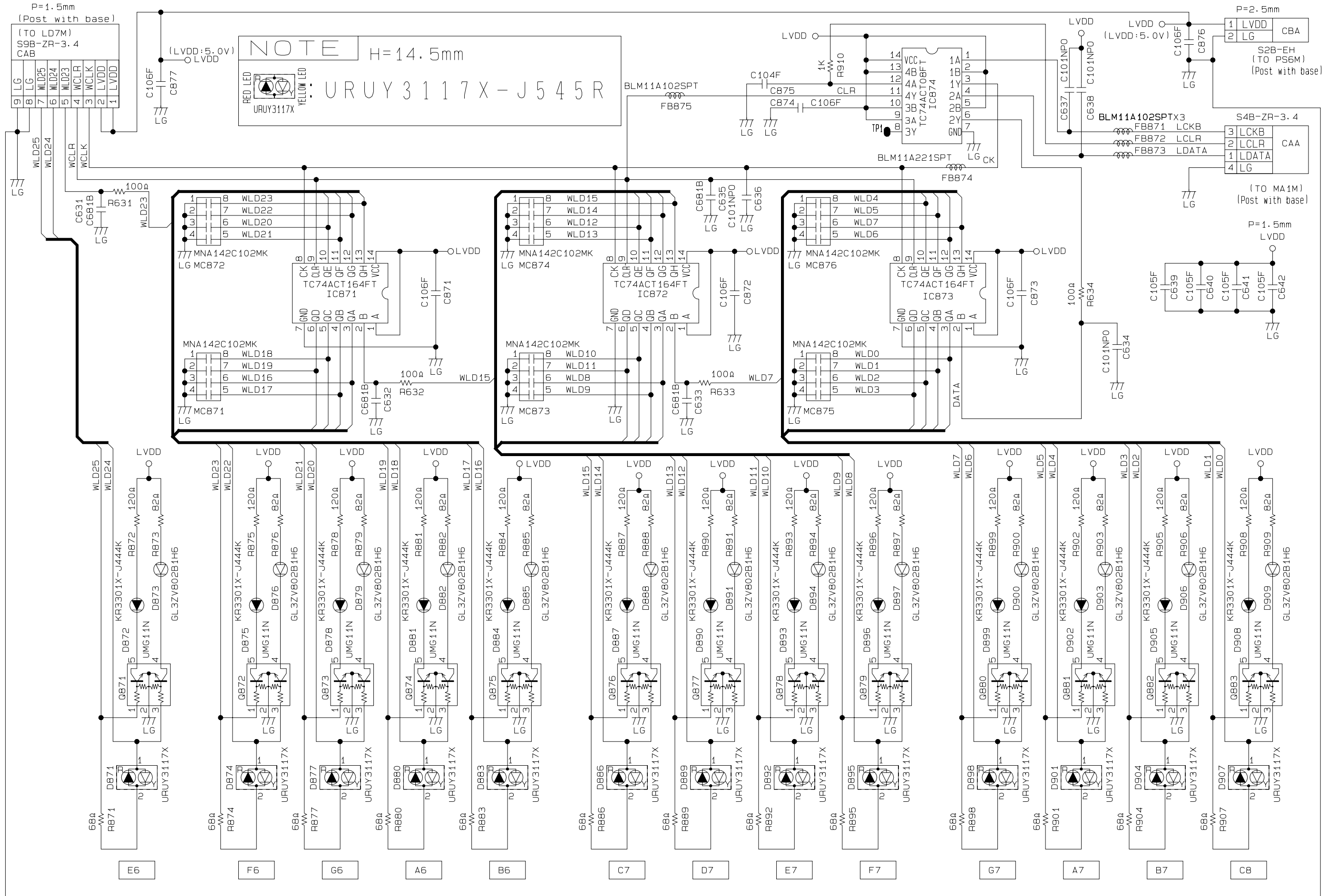
LED PCB JCMLMP2-LD6M



LED PCB JCMLMP2-LD7M



LED PCB JCMLMP2-LD8M



Ver.1 : Feb. 2005

Correction of the PARTS LIST (P13)

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