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EXTERNAL MEDIA CONTROLLER

KOS-A210/A300
KOS-D210

SERVICE MANUAL

KENWOOD

Kenwood Corporation

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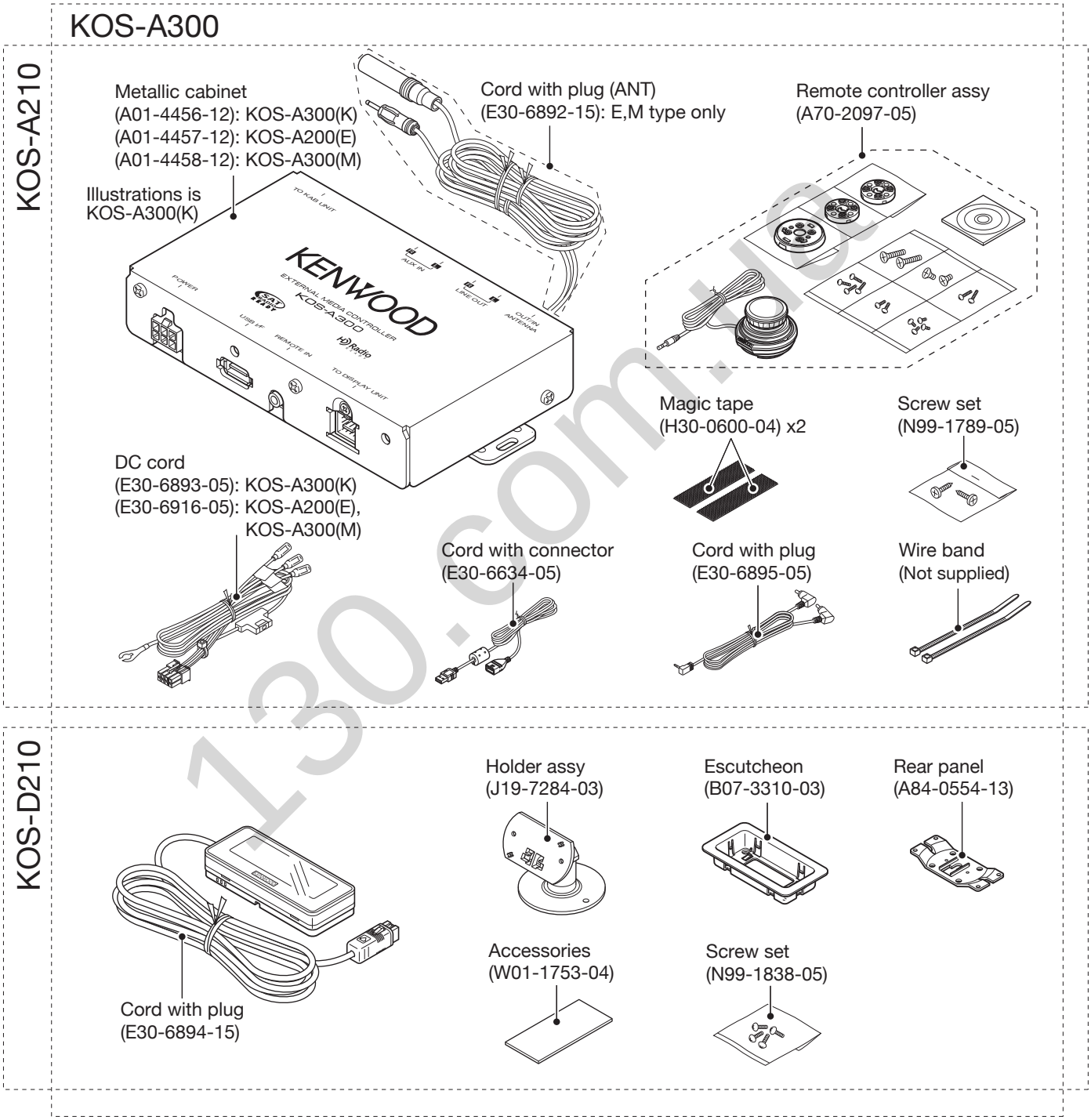
B53-0732-00 (N) 341



- The IC10,204 and IC700 in the Electric unit (X34-6500) are not replaceable components. When these ICs are defective, replace the whole Electric unit (X34-6500) .

This product uses Lead Free solder.
This product complies with the **RoHS** directive for the European market.

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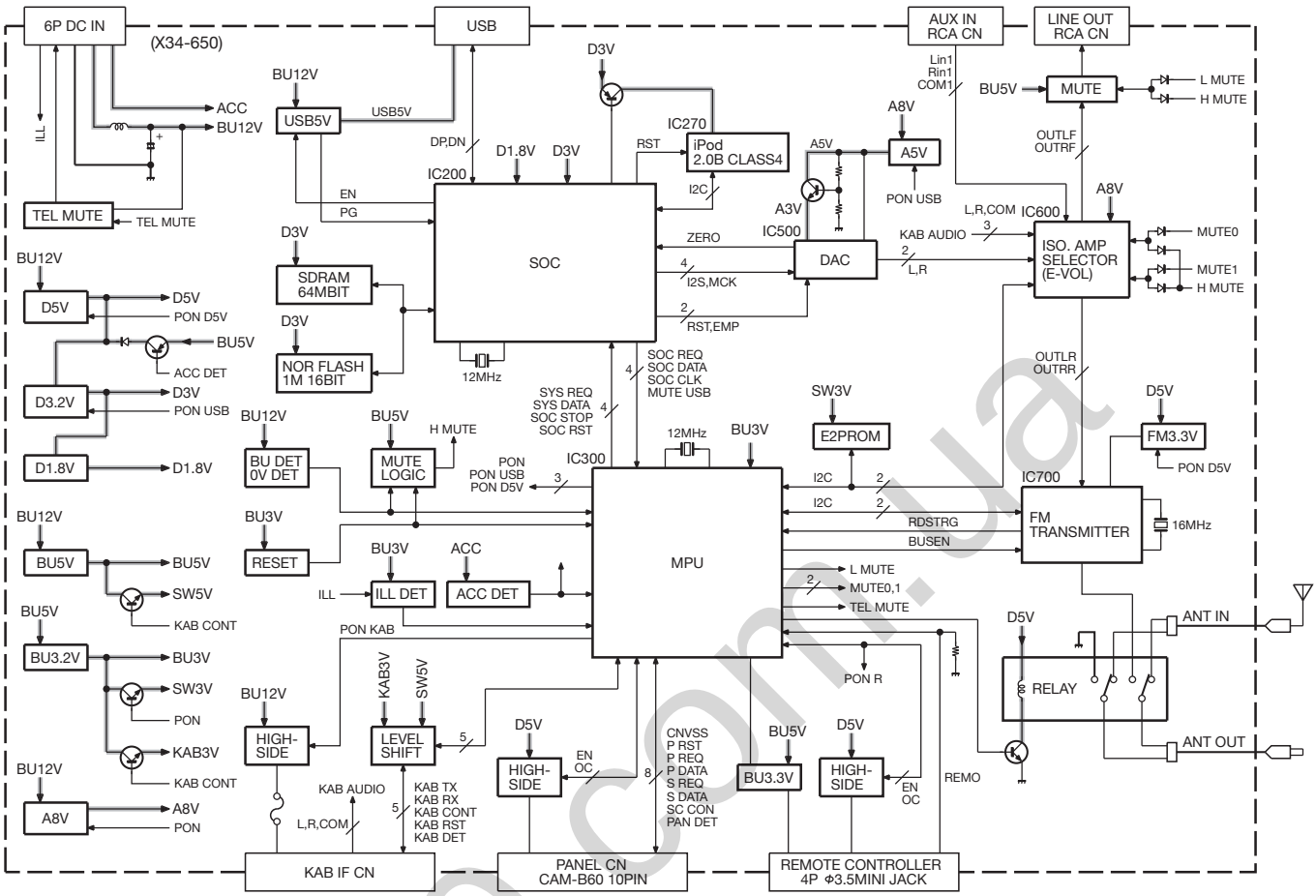
BLOCK DIAGRAM

X34-650x-xx



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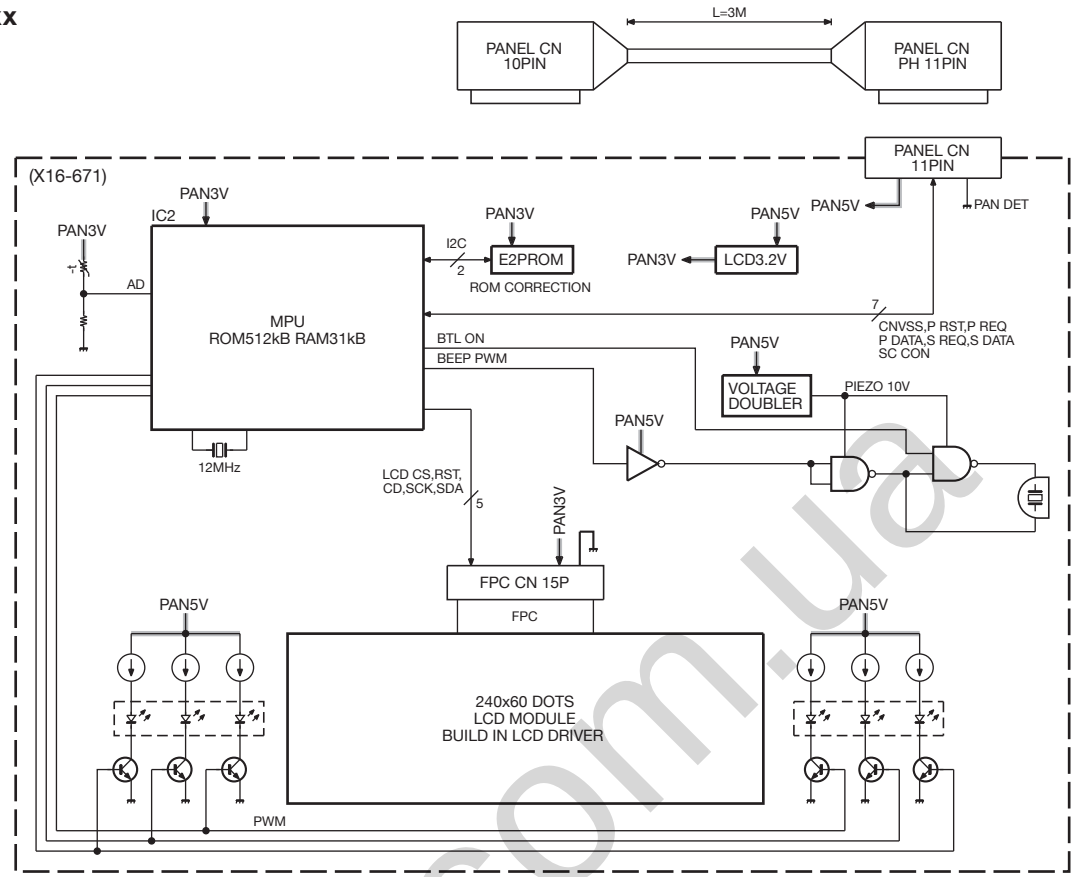
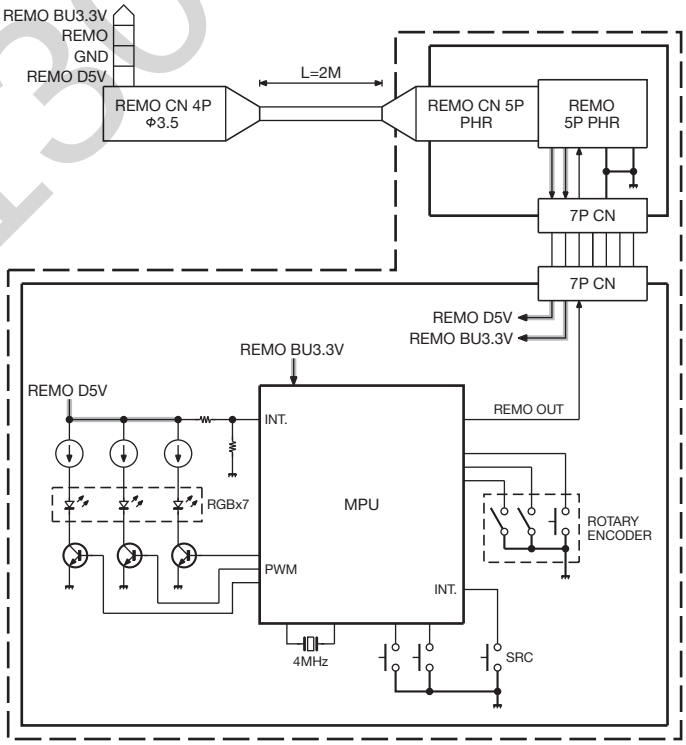
BLOCK DIAGRAM

X16-671x-xx



REMOTE CONTROLLER



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COMPONENTS DESCRIPTION

● SUB-CIRCUIT UNIT (X16-671x-xx)

Ref. No.	Application / Function	Operation / Condition / Compatibility
IC1	Memory of user data	Non-Volatile Memory (EEPROM) (Not used)
IC2	Panel µ-com	System control. LCD main power management & Brightness adjustment of LCD back light LED.
IC3	Panel 3.2V	Series Regulator.
IC4-6	Buzzer control	It sounds a buzzer within the range from 10 to 20V by the same frequency as “BEEP_PWM”.
IC7	Charge pump	“Panel_5V” voltage is doubled.
Q1,2	LED Driver	LCD back light illmination Driver 1 (Bule)
Q3,4	LED Driver	LCD back light illmination Driver 1 (Red)
Q5,6	LED Driver	LCD back light illmination Driver 1 (Green)
Q7,8	LED Driver	LCD back light illmination Driver 2 (Bule)
Q9,10	LED Driver	LCD back light illmination Driver 2 (Red)
Q11,12	LED Driver	LCD back light illmination Driver 2 (Green)
Q16	Buzzer volume switch	It changes into -6dB the buzzer volume when “BTL_ON” is “H”.

● ELECTRIC UNIT (X34-650x-xx)

Ref. No.	Application / Function	Operation / Condition / Compatibility
IC10	Disital 5V	Switching Regulator.
IC20	Disital 3.2V	Series Regulator.
IC30	Disital 1.8V	Series Regulator.
IC60	Backup 3.2V	Always output 3.2V
IC200	USB HOST Controller	USB Decode
IC201	SDRAM	Program processing for IC200.
IC202	NOR Flash Rom	Program storage for IC200.
IC204	USB 5V	Switching Regulator.
IC270	iPod IC	iPod attestation.
IC300	System µ-com	System control and Power management. (E-vol , Panel , Remo ,KAB ,FM Modurator ,etc.)
IC301	System µ-com Reset Control	Output “L” (System µ-com Reset) , when detection voltage goes below 2.9V or less.
IC302	Memory of user data.	Non-Volatile Memory (EEPROM)
IC303	MUTE Logic	Controls logic for muting.
IC304,305	System µ-com Reset Control	System µ-com Reset is “PAN_DET”, when “CNVSS” is “H”.
IC350	Power Control Switch	Panel power control switch with over current detection and protection.
IC400	Level shift	µ-com (3.2V) → KAB unit (5V) level shift.
IC450	Power Control Switch	Remote Control power control switch with over current detection and protection.
IC451	Remote Control 3.3V	Series Regulator.
IC500	D/A Converter	Convert degital audio data from IC200.
IC501	Audio 5V	Series Regulator. (8.2V to 5V)
IC600	Source Selector & Source level adjustment	Select source & Volume adjustment of each source.
IC700	FM Modulator IC	Output FM broadcasting. (Modulation level 40kHz / 70kHz / 90kHz)
IC701	FM Modulator 3.3V	Series Regulator.
Q40,41	Audio 8V AVR	System power on time output 8V.
Q42,43	Switch A8V	Active time is “Power on”
Q50,52	Backup 5V	Always output 5V
Q51,53	Switch 5V	Active time is “Power on”.
Q60,61	Switch 3.3V	Active time is “Power on”.

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COMPONENTS DESCRIPTION

Ref. No.	Application / Function	Operation / Condition / Compatibility
Q100	Backup detect switch	Check of Backup voltage. It is on if good.
Q101	Surge detect switch	Check of over input voltage. Detects it in on.
Q110	ACC detect switch	Check of ACC voltage. It is on if good.
Q120	Small lamp detect switch	Check of small lamp. Detects it in on.
Q130-133	Power control switch	Active time is “TEL_MUTE”.
Q200	“USB_MUTE” Buffer	Logic reversing
Q270	Switch 3.2V	For iPod IC (IC270). System power on time output.
Q300	“L_MUTE” Buffer	Logic reversing
Q302	System μ-com Reset Control	System μ-com Reset is “PAN_DET”, when “CNVSS” is “H”.
Q400,401	Level shift	KAB unit (5V) → μ-com (3.2V) level shift.
Q402	KAB detect switch	For KAB IF.
Q403,404	“KAB_TX” Buffer	Communication with KAB unit.
Q405,406	Power Switch	Power supply for KAB unit.
Q407,408	Switch 3.2V	For “KAB_RX”. System power on time output.
Q450	Switch 5V	Active time is “ACC on”.
Q500	Audio 3.3V AVR	Active time is “Audio 5V on”.
Q600	Preout mute switch	Rch
Q601	Preout mute Driver	When this Tr does on, it is mute.
Q602	Preout mute switch	Lch
Q700	Antenna output switch	Car Antenna & FM Modulator output switch.

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MICROCOMPUTER'S TERMINAL DESCRIPTION

● SYSTEM MICROCOMPUTER (X34 : IC300)

Pin No.	Pin Name	I/O	Application	Processing/ Operation Description
1	REMO_DATA	I	Remote control input	Pulse width detection
2-5	NC	O		Output L fixed
6	BYTE			
7	CNVSS		Writing-in CNVSS input terminal Rewritable with H at the start-up	
8,9	NC	O		Output L fixed
10	RESET			
11	XOUT			12MHz
12	VSS			
13	XIN			12MHz
14	VCC1			
15	NMI	I	Not used	
16	RDSTRG	I	RDSTRG input terminal	H: RDS data transmission sign L: I2C data transmission
16	NC	O	K destination is NC	Output L fixed
17	BUSEN	O	FM modulator chip enable output terminal	H: Power ON, L: Power OFF
17	NC	O	K destination is NC	Output L fixed
18	ANT_SEL	O	Relay switching terminal	H: FM modulator OUT, L: Car ANT through
18	NC	O	K destination is NC	Output L fixed
19	SOC_REQ	I	SOC → System μ-com communication request input	H: Request
20	SOC_DATA	I	SOC → System μ-com data input	400kHz
21	SOC_CLK	I	SOC → System μ-com clock input	400kHz
22	SYS_DATA	O	System μ-com → SOC data output	400kHz
23	SYS_REQ	O	System μ-com → SOC communication request output	H: Request
24	SOC_STOP	O	SOC STOP request terminal	H: Normal, L: Stop
25	SOC_RST	O	SOC RESET control terminal	H: Normal, L: Reset
26	TEST	I	Test mode terminal	H: Normal, L: Test mode
27	FM_SCL	I/O	FM modulator I2C clock I/O	Communication speed ≤400k
27	NC	O	K destination is NC	Output L fixed
28	FM_SDA	I/O	FM modulator I2C data I/O	Communication speed ≤400k
28	NC	O	K destination is NC	Output L fixed
29	S_DATA	O	System μ-com → Panel data output	UART MAX 500kHz
29	NC (NO PANEL)	O		Output L fixed
30	PAN_DATA	I	Panel μ-com → System μ-com data input	UART MAX 500kHz
30	NC (NO PANEL)	I		
31	PAN_REQ	I	Panel μ-com → System μ-com communication request input	H: Request
31	NC (NO PANEL)	I		
32	S_REQ	O	System μ-com → Panel μ-com communication request output	H: Request
32	NC (NO PANEL)	O		Output L fixed
33	PAN_RST	O	Panel reset control terminal	H: Normal, L: Reset
33	NC (NO PANEL)	O		Output L fixed

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MICROCOMPUTER'S TERMINAL DESCRIPTION

Pin No.	Pin Name	I/O	Application	Processing/ Operation Description
34	PAN_DET	I	Panel detection terminal	H: Not detected, L: Detected
35	PAN_EN	O	Panel HISIDE SW EN terminal	H: Power ON, L: Power down
35	NC (NO PANEL)	O		Output L fixed
36	PAN_OC	I	Panel HISIDE SW over current input terminal	H: Normal, L: Over current detected
36	NC (NO PANEL)	I		
37	SC_CON	O	Panel µ-com control terminal	H: Panel µ-com start-up, L: Shut down
37	NC (NO PANEL)	O		Output L fixed
38	NC	O		Output L fixed
39	ROM_DET	I	Rom correction writing-in request	H: Rom correction writing-in OK (I2C open)
39	EPM	I	Writing-in EPM input terminal Rewritable with L at the start-up	
40-43	NC	O		Output H fixed
44	FLASH_CE	I	Writing-in/CE terminal. Rewrite with H at the start-up	
45	KAB_TX	O	KAB data output terminal	57.6kbps
46	KAB_RX	I	KAB data input terminal	57.6kbps
47	KAB_RST	O	KAB RST terminal	H: Reset
48	KAB_CONT	O	KAB CONT terminal	H: Power ON, L: Power OFF, Reset
49	KAB_DET	I	KAB detection terminal	H: Detected, L: Not detected
50	PON_KAB	I/O	KAB power supply control terminal	H: Power ON, Hi-Z: Power OFF
51	PON_D5V	O	Power supply control terminal (OR of PON and PON_REMO) D5V	H: Power ON, L: Power OFF
52	PON	I/O	Power supply control terminal A8V/SW5V/SW3V	H: Power ON, Hi-Z: Power OFF
53	PON_USB	O	Power supply control terminal USB5V/A5V	H: Power ON, L: Power OFF
54	NC	O		Output L fixed
55	TYPE1	I	Destination port 1	Destination setting. Refer to (truth value table destination) sheet
56	TYPE2	I	Destination port 2	Destination setting. Refer to (truth value table destination) sheet
57	TYPE3	I	Destination port 3	Destination setting. Refer to (truth value table destination) sheet
58,59	NC	O		Output L fixed
60	VCC2			
61	NC	O		Output L fixed
62	VSS			
63-68	NC	O		Output L fixed
69	TEL_MUTE	I/O	TEL_MUTE control terminal	H: Mute ON, Hi-Z: Mute OFF
70	NC	O		Output L fixed
71	ILLMI_DET	I	ILL detection terminal	L: ON, H: OFF
72	ACC_DET	I	ACC detection	With ACC: L, Without ACC: H
73	BU_DET	I	Reduce voltage detection	With BU: L, Without BU, at reduce voltage: H
74	NC	O		Output L fixed
75	ROM_SDA	I/O	ROM_COR I2C data I/O	Communication speed ≤400k
75	A_SDA	I/O	E-VOL I2C data I/O	Communication speed ≤400k
76	ROM_SCL	I/O	ROM_COR I2C clock I/O	Communication speed ≤400k
76	A_SCL	I/O	E-VOL I2C clock I/O	Communication speed ≤400k

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MICROCOMPUTER'S TERMINAL DESCRIPTION

Pin No.	Pin Name	I/O	Application	Processing/ Operation Description
77-84	NC	O		Output L fixed
85	USB_MUTE	I	USB audio signal MUTE request	H: Mute, L: Normal
86,87	NC	O		Output L fixed
88	MUTE_0	O	E-VOL FM_MUTE control terminal	L: Mute ON, H: Normal
89	MUTE_1	O	E-VOL LINE_OUT_MUTE control terminal	L: Mute ON, H: Normal
90	L_MUTE	I/O	LINE_OUT external MUTE control terminal	H: Mute ON, Hi-Z: Normal
91-93	NC	O		Output L fixed
94	AVSS	-		
95	NC	O		Output L fixed
96	VREF	-		
97	AVCC	-		
98	PON_REMO	O	Remote control BU3.3V control terminal	H: Power ON, L: Power OFF
99	REMO_OC	I	Remote control HISIDE SW over current detection terminal	H: Normal, L: Over current detection
100	REMO_EN	O	Remote control HISIDE SW EN terminal	H: Power ON, L: Power OFF

Truth value table (Destination setting)

TYPE_3 (57)	TYPE_2 (56)	TYPE_1 (55)	Destination	Display
L	L	L	KOS-A300(K) [*]	"C-08016K"
L	L	H	KOS-A300(J)	"C-08016J"
L	H	L	KOS-A210(E)	"C-08016E"
L	H	H	(Reserve) *2	"C-08016K"
H	L	L	KOS-A300(M)	"C-08016M"
H	L	H	(Reserve) *2	"C-08016K"
H	H	L	(Reserve) *2	"C-08016K"
H	H	H	(System Reserved) *1	

[*]: When there is no setting specified, the model operates as the model designated with [*].

*1: Required for free alteration of the destination value in the test mode.

*2: Current reservation. (M derivation is possible for multilanguage use)

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MICROCOMPUTER'S TERMINAL DESCRIPTION

● USB HOST CONTROLLER (X34 : IC200)

Pin No.	Pin Name	I/O	Application	Processing Operation Description
1	VSS	-	DGND	
2-6	TD4-TD8	I/O	External memory DATA BUS	
7	VDDI	-	CORE power supply (1.8V)	
8	VSS	-	DGND	
9	VDDIO	-	I/O power supply (3.3V)	
10-16	TD9-TD15	I/O	External memory DATA BUS	
17-23	TA0-TA6	O	External memory ADDRESS BUS	
24	VDDI	-	CORE power supply (1.8V)	
25	VSS	-	DGND	
26	VDDIO	-	I/O power supply (3.3V)	
27-33	TA7-TA13	O	External memory ADDRESS BUS	
34	TA14	O	External memory ADDRESS BUS / SDRAM Bank Address1	
35	TA15	O	External memory ADDRESS BUS / SDRAM CAS	
36	TA16	O	External memory ADDRESS BUS / SDRAM RAS	
37-39	TA17-TA19	O	External memory ADDRESS BUS	
40	VDDI	-	CORE power supply (1.8V)	
41	UDQM	O	UPPER BYTE data I/O mask signal	
42	LDQM	O	LOWER BYTE data I/O mask signal	
43	VDDIO	-	I/O power supply (3.3V)	
44	SD_CLK	O	SDRAM clock	
45	VSS	-	DGND	
46	SD_CKE	O	SDRAM CKE signal	
47	SD_CS	O	SDRAM CS signal	
48	NWE	O	External memory writing-in control	
49	NOE	O	External memory reading control	
50-52	NC	O	Not used	
53	NCS3	O	NOR FLASH CS signal	
54	XOUT	O	Main clock output	12.000MHz
55	XIN	I	Main clock input	12.000MHz
56	NC	O	Not used	
57	NC	I	Not used	
58	VDDI	-	CORE power supply (1.8V)	
59	VSS	-	DGND	
60	IPOD_PON	I/O	IPOD power supply control	L: Power ON, Hi-Z: Power OFF
61	IPOD_RST	O	IPOD reset	H: Normal, L: Reset
62	IPOD_SCL	I/O	IPOD I2C with IC clock signal	
63	IPOD_SDA	I/O	IPOD I2C with IC data signal	
64	READY	I	READY INFORMATION terminal	
65	VDDIO	-	I/O power supply (3.3V)	
66,67	NC	I	Not used	
68	TYPE1	I	Destination setting terminal	Refer to the truth value table ②
69	VDDADC	-	Analogue power supply	
70	VSSADC	-	ADC GND	

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MICROCOMPUTER'S TERMINAL DESCRIPTION

Pin No.	Pin Name	I/O	Application	Processing Operation Description
71	VSSPLL1	-	PLL GND	
72	XFILT1	O	PLL filter 1200pF	
73	VDDPLL1	-	PLL power supply (1.8V)	
74	VDDPLL	-	PLL power supply (1.8V)	
75	XFILT	O	PLL filter 350pF	
76	VSSPLL	-	PLL GND	
77	SOC_RESET	I	System reset	L: Reset
78	MODE1	I	Mode setting	
79	USB0_DN	I/O	USB (iPod) host D- signal	
80	USB0_DP	I/O	USB (iPod) host D+ signal	
81	VSS	-	DGND	
82,83	NC	O	Not used	
84	VDDUSB	-	USB I/O power supply (3.3V)	
85	VDDIO	-	I/O power supply (3.3V)	
86	DAC_BCLK	O	AUDIO data clock signal output	
86	BM[0]	-	Boot mode setting terminal	Refer to the truth value table ①
87	DAC_LRCK	O	AUDIO LR clock signal output	
87	BM[1]	-	Boot mode setting terminal	Refer to the truth value table ①
88	DAC_MCLK	O	AUDIO master clock signal output	
89	DAC_AUDIO_OUT	O	AUDIO data signal output (reverse phase)	
89	BM[2]	-	Boot mode setting terminal	Refer to the truth value table ①
90	NC	O	Not used	
91	VDDI	-	CORE power supply (1.8V)	
92	DAC_EMPH	O	DAC de-emphasis setting	
93	E2P_I2C_SDA	I/O		
94	E2P_I2C_SCL	I/O		
95,96	NC	O	Not used	
97	VSS	-	DGND	
98	SOC_REQ	O	SOC communication request output	
99	SYS_REQ	I	System μ-com communication request	
100	JTAG_TDI	I	JTAG serial data signal input	
100	NC	O		Unused. L fixed (Internal pull_up is not used)
101	JTAG_TMS	I	JTAG test mode select	
101	NC	O		Unused. L fixed (Internal pull_up is not used)
102	JTAG_TCK	I	JTAG clock	
102	NC	O		Unused. L fixed (Internal pull_up is not used)
103	JTAG_TDO	O	JTAG serial data output	
103	NC	O		Unused. L fixed (Internal pull_up is not used)
104	JTAG_RST	I	JTAG reset	
104	NC	I	Not used	
105	CUR_DET_0	I	USB over current detection terminal	L: Over current detected, H: Normal operation
106	USB0_PON	I/O	VBUS control	H: ON, Hi-z: OFF
107-109	NC	O	Not used	
110	VDDI	-	CORE power supply (1.8V)	
111	ZERO_DET	I	0bit detection terminal	L: 0bit data detected, H: Others

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MICROCOMPUTER'S TERMINAL DESCRIPTION

Pin No.	Pin Name	I/O	Application	Processing Operation Description
112	DAC_RST	I/O	DAC reset	L: Reset, Hi-Z: Reset clear
113	NC	O	Not used	
114	SOC_DATA	O	Data transmission from SoC	
115	SOC_CLK	O	Clock output from SoC	
116	NC	O	Not used	
117	SYS_DATA	I	Data reception from system μ-com	
118	VSS	-	DGND	
119	VDDIO	-	I/O power supply (3.3V)	
120	SOC_STOP	I	Stop mode input signal to SOC	L: Operation stop
121	#A_MUTE	O	MUTE request terminal	L: MUTE ON, H: MUTE OFF
122,123	NC	O	Not used	
124	VDDI	-	CORE power supply (1.8V)	
125-128	TD0-TD3	I/O	DATA BUS	

Truth value table

① BM setting

MODE	BM[0] (86)	BM[1] (87)	BM[2] (89)	DESCRIPTION
NOR BOOT	L	L	L	NOR Flash (External ROM) must be attached to NCS3 pin.
DEVELOPMENT MODE	L	L	H	For JTAG Debug

② TYPE setting

MODE	TYPE (68)
'09KOS Model	L
undefined	H

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● PANEL MICROCOMPUTER (X16 : IC2)

Pin No.	Pin Name	I/O	Application	Processing Operation Description
1-5	NC	O	Not used	Output L fixed
6	BYTE	I		
7	CNVSS	I		
8,9	NC	O	Not used	Output L fixed
10	RESET	I		H: Normal, L: Reset
11	XOUT	O		12MHz
12	VSS			
13	VIN	I		
14	VCC	I		
15	NMI	I	Not used	

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MICROCOMPUTER'S TERMINAL DESCRIPTION

Pin No.	Pin Name	I/O	Application	Processing Operation Description
16-19	NC	O		Output L fixed
20	LED_R	O	LED control	
21	NC	O		Output L fixed
22	LED_G	O	LED control	
23	NC	O		Output L fixed
24	LED_B	O	LED control	
25	BTL_ON	O	Piezoelectric buzzer	
26	BEEP_PWM	O	Piezoelectric buzzer	
27,28	NC	O	Not used	Output L fixed
29	PAN_DATA	O	Panel μ-com → System μ-com data. μ-com reburning data input	
30	SYS_DATA	I	System μ-com → Panel μ-com data. μ-com reburning data output	
31	SYS_REQ	I	System μ-com → Panel μ-com communication request. μ-com reburning BUSY terminal	H: Data request
32	PAN_REQ	O	Pane μ-coml → System μ-com communication request. μ-com reburning CLK input	H: Data request
33-38	NC		Not used	Output L fixed
39	ROM_DET	I	Rom correction writing-in request	H: Rom correction writing-in OK
40-43	NC	O	Not used	Output L fixed
44	NC		Not used	Output L fixed
45	SDA	I/O	I2C Rom correction DATA I/O	Communication speed 200-400k
46	SCL	I/O	I2C Rom correction CLK I/O	Communication speed 200-400k
47-50	NC	O	Not used	Output L fixed
51,52	NC		Not used	Output L fixed
53-59	NC	O	Not used	Output L fixed
60	VCC			
61	NC	O	Not used	Output L fixed
62	VSS			
63	NC	O	Not used	Output L fixed
64-66	TYPE1-TYPE3	O	Not used	Output L fixed
67-74	NC	O	Not used	Output L fixed
75	LCD_SDA	O	LCD data output terminal	
76	NC	O	Not used	Output L fixed
77	LCD_SCK	O	LCD clock output terminal	
78	LCD_CD	O	LCD_CD terminal	L: Control data, H: Display data
79	LCD_RST	O	LCD reset output terminal	H: Normal, L: Reset
80	LCD_CS	O	LCD chip select output terminal	
81	NC		Not used	Output L fixed
82-93	NC	O	Not used	Output L fixed
94	AVSS			
95	NC	O	Not used	Output L fixed
96	VREF			
97	AVCC			
98-100	NC	O	Not used	Output L fixed

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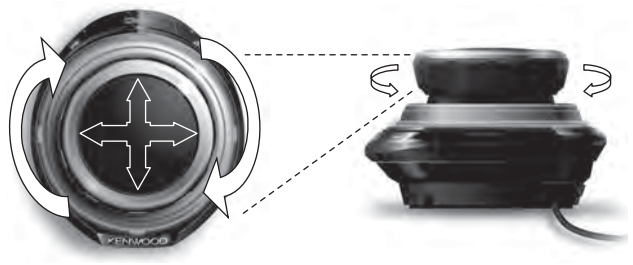
Autogoods "130"

TEST MODE



● Test mode environment

BOX + Monitor + Remote controller

● How to enter the test mode

Input “Lo (GND)” to TEST terminal (Pin 26) of IC300 (X34) and power ON.

● How to clear the test mode

① Power OFF

② Input “Hi” to TEST terminal and when connected with the product monitor software

● Test mode default condition

- Source is STANDBY
- Display lights are all turned on. (All lights are turned on even in the negative mode or positive mode of the default value.
- Illumination color shall be the preset “WHITE” (R:9, G:9, B:9).
- Whenever the key is pressed (whenever the signal from the wired remote controller is received), the monitor BEEP goes off.
- The default BEEP level is “5” (-6dB and Duty 50%)
- The default frequency of the FM modulator is 88.3MHz.
- The modulation level is “2”.
- Trans Mission Speed is “1”.
- DISPLAY TYPE is TYPE A and SIDE is Display Tag.
- The default for “Nega ↔ Posi” is NEGA1. (Only in the test mode, the “Nega ↔ Posi” is normally POSI 1.)

❮Display for all the destinations❯

- Display of AUX source shall be as below:
  Upper row (1st row) = SRC NAME
- Display of USB/iPod source shall be as below:
  Upper row (1st row) = P-TIME
  Lower row (2nd row) = File Name
- SOURCE SELECT shall be “2” (i.e. mode to allow the change of source only by pressing [SRC] key).
- TEL MUTE OUT terminal (Pin 69) changes in conjunction with KAB_CONT terminal (Pin 48). (Only for destination K) Pin 69 changes to “Hi” when Pin 48 is “Hi” and it changes to “Hi-Z” when Pin 48 is “Lo”.
- Only in the test mode, FM modulator audio changes to “MONO{(L+R) /2}”.
- The following is displayed as PS display in FM modulator RDS: (Only for destination E).
  STANDBY source: PS display = “STANDBY”
  USB source: PS display = “USB”
  AUX source: PS display = “AUX”
  Other source than the above: PS display = “UNKNON” (This text is scrolled).

● USB source test mode specification

- Jumps to the following tracks by pressing the [⏭] key.
  No.9 → No.15 → No.10 → No.11 → No.12 → No.13 → No.22 → No.14 → No.9 (recursive)
  However, in playing back the file whose number of tracks is 8 or less, the file is played back normally and successively from track No.1.
- Pressing the [⏮] key goes back by 1 track from the track being played

● MENU

- Press [FNC] key briefly to display the multi-function and press the [⏯] key briefly to enter the MENU.
- Only for operations in the test mode, it shall be designed such that “Type Set” item is output at TYPE 1, 2 and 3 terminals of B.BOX μ-com to allow the user to change the destination.
  [Limitation]
- In the test mode, DEMO ON/OFF change items shall not be shown in the MENU.

● Backup current measurement

When the power is turned on when Acc OFF (Back Up ON), MUTE terminal is turned OFF not in 15 seconds but in 2 seconds.

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Autogoods “130”

TEST MODE

● Special displays while all lights are on

When all lights are on with STANDBY source, if the following keys are pressed, the following messages are displayed.

[↑] key	Key pressed briefly: ROM correction (Display) S Y S _ R O M _ R 1 2 3 4 (Display) P A N _ R O M _ R 1 2 3 4 When E2PROM is not installed: R O M _ E R R _ _ When not written in: R O M _ R – – – – When data not matching: R O M _ R ∗ ∗ ∗ ∗
[⏭] key	Press this key only: [Table 1] Version & Service information display mode ON
[⏮] key	Key pressed briefly: Forced Power OFF data displayed. Press and hold: To clear the forced power OFF information. (Press and hold for 2 seconds while the forced power OFF data is displayed.) (Not confirmed because there is not Forced Power OFF) (Display) P O F F _ – – – (No Forced Power OFF) P N L (Forced Power OFF because of system µ-com and panel µ-com communication error)
[FNC] key	
[⏯] key	
[TEL] key	Backup / Installer memory & Service information (E2PROM data clear)
Turn in CW	BEEP goes off at Beep LV 5.
Turn in CCW	BEEP goes off at Beep LV 1.

Table 1 - Version & Service information display mode

[AM] key ↑ ↓ [FM] key	Key pressed briefly: Version is displayed (Switch) (Display) C 0 8 0 1 6 _ _ T M P _ A / D _ O K or N G * OK reference temperature is -20 degrees or higher and less than 70 degrees (0x06D < HEX < 0x315) (Display) S T Y P E : x _ S Y S 1 . 2 3 (Display) P T Y P E : x _ P A N 1 . 1 1 (Display) U S B _ F / W _ V E R ∗ ∗ . ∗ ∗ (Display) i P o d _ O K or N G "STYPE" indicates destination of system µ-com and "PTYPE" indicates destination of panel µ-com, and they display the status of destination terminal in real-time.
	Key pressed briefly: Serial No. is displayed (8 digits) (Display) S N o _ x x x x x x x x
	Key pressed briefly: Power ON time is displayed. (Display) P o m T i m _ 0 H x x (00~50 is displayed for "xx". When less than 1 hour, display by increment of 10 minutes.) (Display) x x x x x (00001~10922 is displayed for "xxxxx".) MAX 10922 (hours)
	Invalid
	Invalid
	Key pressed briefly: Illumination color change (In this mode, [⏮] or [⏭] key can be used to change color.) Every time when this key is pressed, the variable LED changes its color cyclically as "White → R → G → B → White →".
[⏯] key	Key pressed briefly: Invalid Press and hold: To clear the service information that is being displayed. (Press and hold for 2 seconds while each service information is displayed.) (Not confirmed because "0" is displayed for each service information.)
[FNC] key	Key pressed briefly: Version & Service information display mode OFF

● Other

- When in the test mode, even if the specified time has passed, back-up memory items are not written into E2PROM.
- DEMO mode should not be operated.
- In the test mode, USB F/W UPDATE operates automatically.

  Prerequisite conditions: There should be Player. rom (other than Ktype) file or Player Kz. rom (dedicated to Ktype) file on the root of USB device.

  Step 1: Insert USB device.

  Step 2: "Updating" should be displayed.

  Step 3: "Complete" on the display should indicate the completion of the update.

  Note 1: Do not remove USB device while "Updating" is displayed.

● Panel combination check

To avoid improper connection of the main body and panel, the below will be indicated in STANDBY source in the test mode according to the combination of system µ-com and panels

[K destination mother + K destination panel]
[E destination mother + E destination panel]
[M destination mother + M destination panel]
[J destination mother + J destination panel]

OK !

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Autogoods "130"

TEST MODE

[K destination mother + J destination panel]
[K destination mother + M destination panel]
[K destination mother + M destination panel]
[K destination mother + J destination panel]
[K destination mother + M destination panel]
[M destination mother + K destination panel]
[M destination mother + E destination panel]
[M destination mother + J destination panel]
[J destination mother + K destination panel]
[J destination mother + E destination panel]
[J destination mother + M destination panel]

```
NG
_Mother:X
_Panel_:X
```

NG !

● **When any one of the following keys are pressed while all the lights are turned on in the STAND-BY source, the next display should appear.**

● **Backup/Installer memory & Service information (Clearing E2PROM data) (X34: IC302)**

1. Press [TEL] key while all the lights are turned on in the STANDBY source to start initializing Backup/Installer memory data, Service information, and Favorite memory.
   [Service information]
   - Displays power ON time is displayed
   - Displays forced Power OFF information

2. After the initialization process is completed, the following is displayed.
   When successfully completed

```
E2P_CLR:○
```

   When finished but unsuccessful: Initialization NG

```
E2P_CLR:×
```

   The above display is shown when it is not possible to communicate with EEPROM.

3. In this mode, even if the specified time has passed, the backup memory items are not written into E2PROM.
4. This mode is cancelled by resetting. (The last screen will not be retained.)

Note: Do not operate any keys in this mode (during clearing) including power OFF/ON.

[Appendix]

Backup memory specifications

This is to specify the requirements to save the user setup in EEPWOM and to recover the setup when the backup power is removed from the unit in such a case where the battery has to be replaced.

- The user setup is saved in one hour intervals while the power is ON.
- Data for Volume Offset (data for all the source) is saved.
- When the backup power is removed due to such actions as battery replacement, the information saved is recovered and used as the default value at the start of next power ON.

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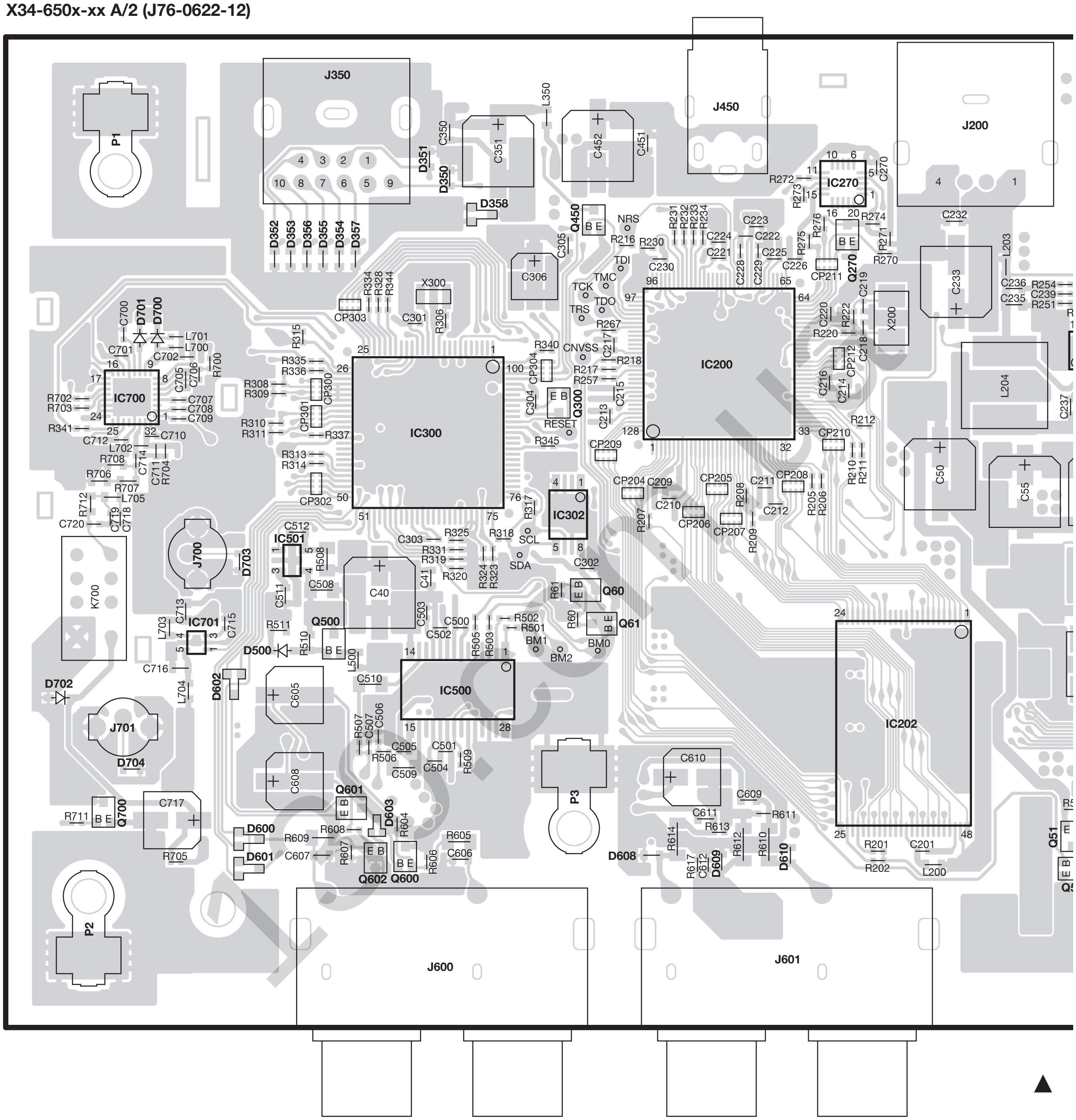
Autogoods “130”

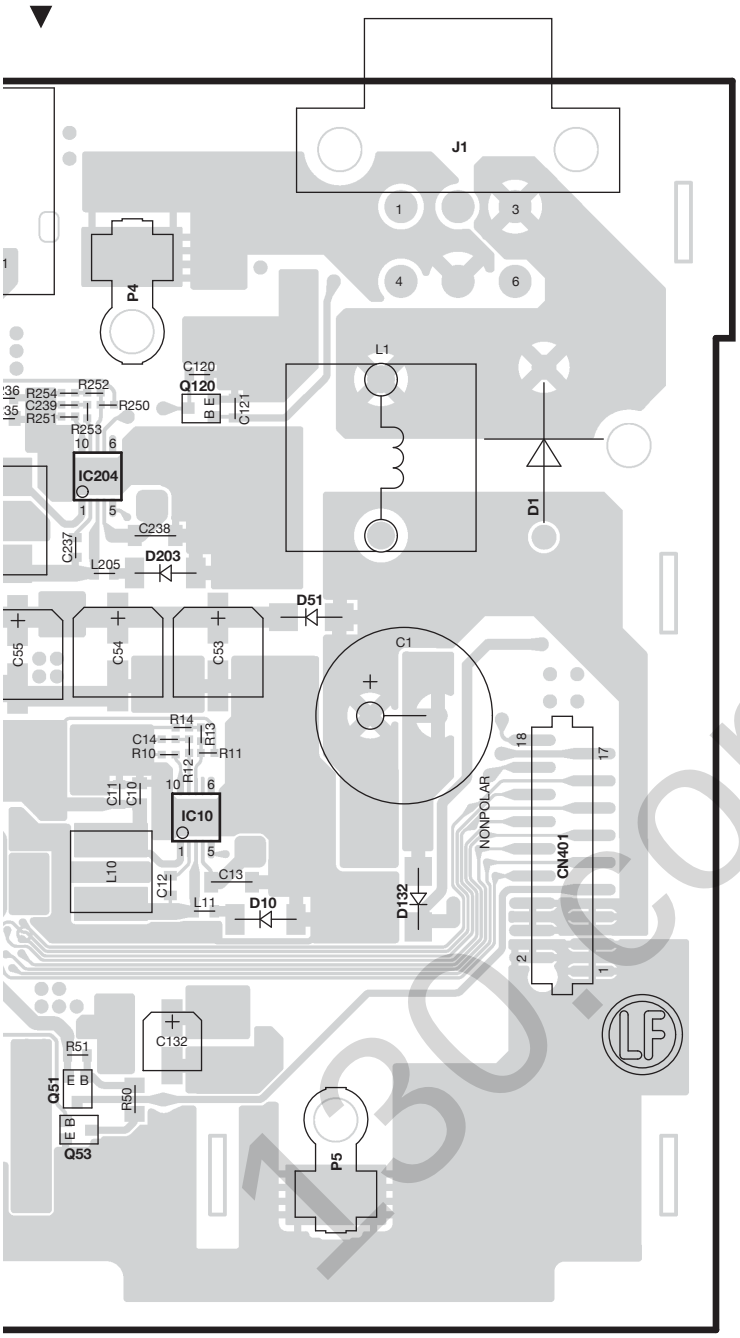
KOS-A210/A300/D210

PC BOARD (COMPONENT SIDE VIEW)

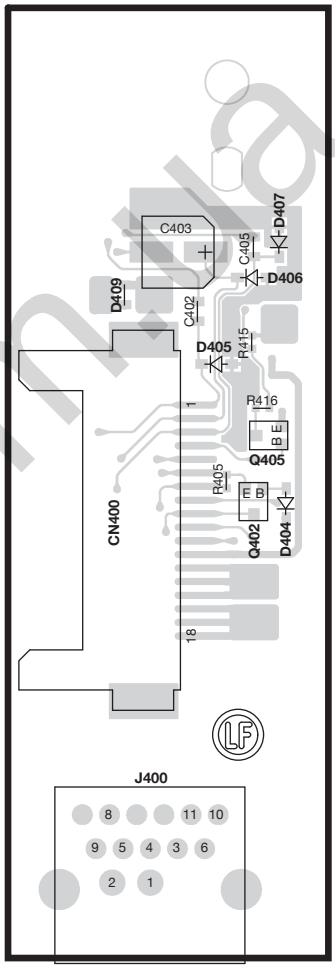
ELECTRIC UNIT
X34-650x-xx A/2 (J76-0622-12)



Autogoods “130”



X34 B/2



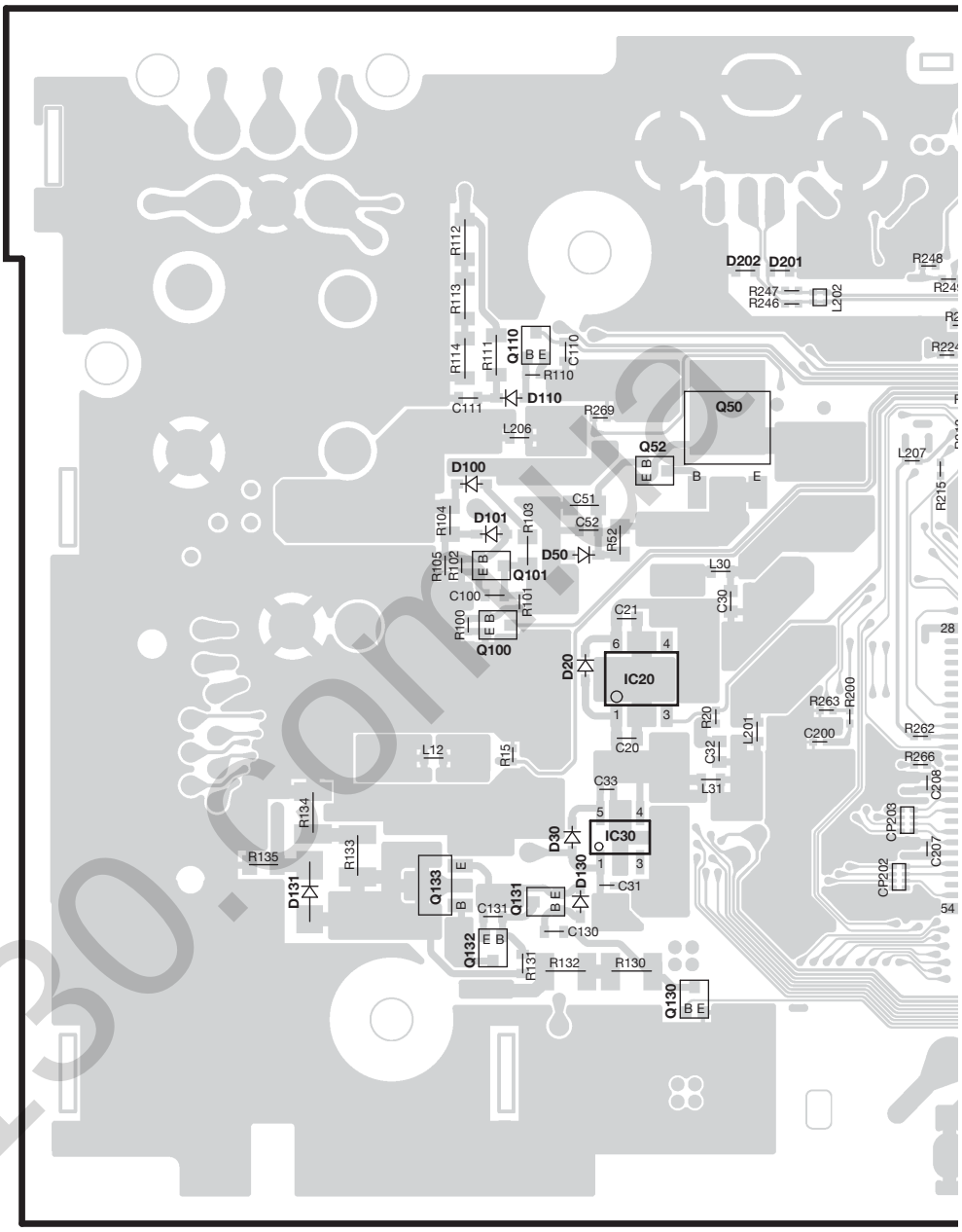
X34-650x-xx

Ref. No.	Address
IC10	4F
IC200	3D
IC202	4E
IC204	3F
IC270	2E
IC300	3C
IC302	4C
IC500	4C
IC501	4B
IC700	3A
IC701	4B
Q51	5F
Q53	5F
Q60	4D
Q61	4D
Q120	3F
Q270	2E
Q300	3C
Q402	4I
Q405	4I
Q450	2C
Q500	4B
Q600	5C
Q601	6B
Q602	5C
Q700	5A

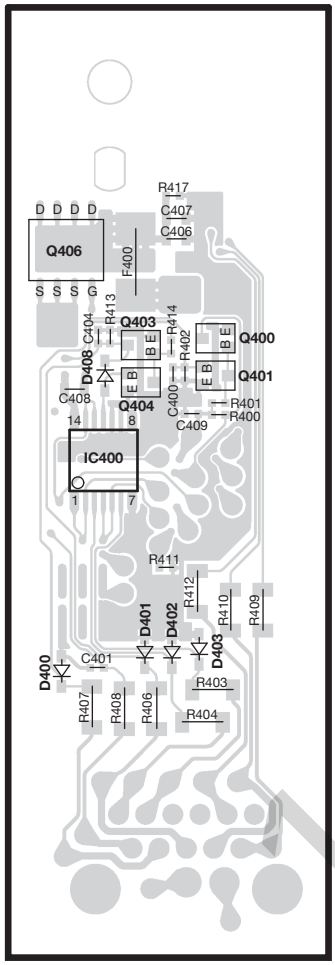
Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (FOIL SIDE VIEW)

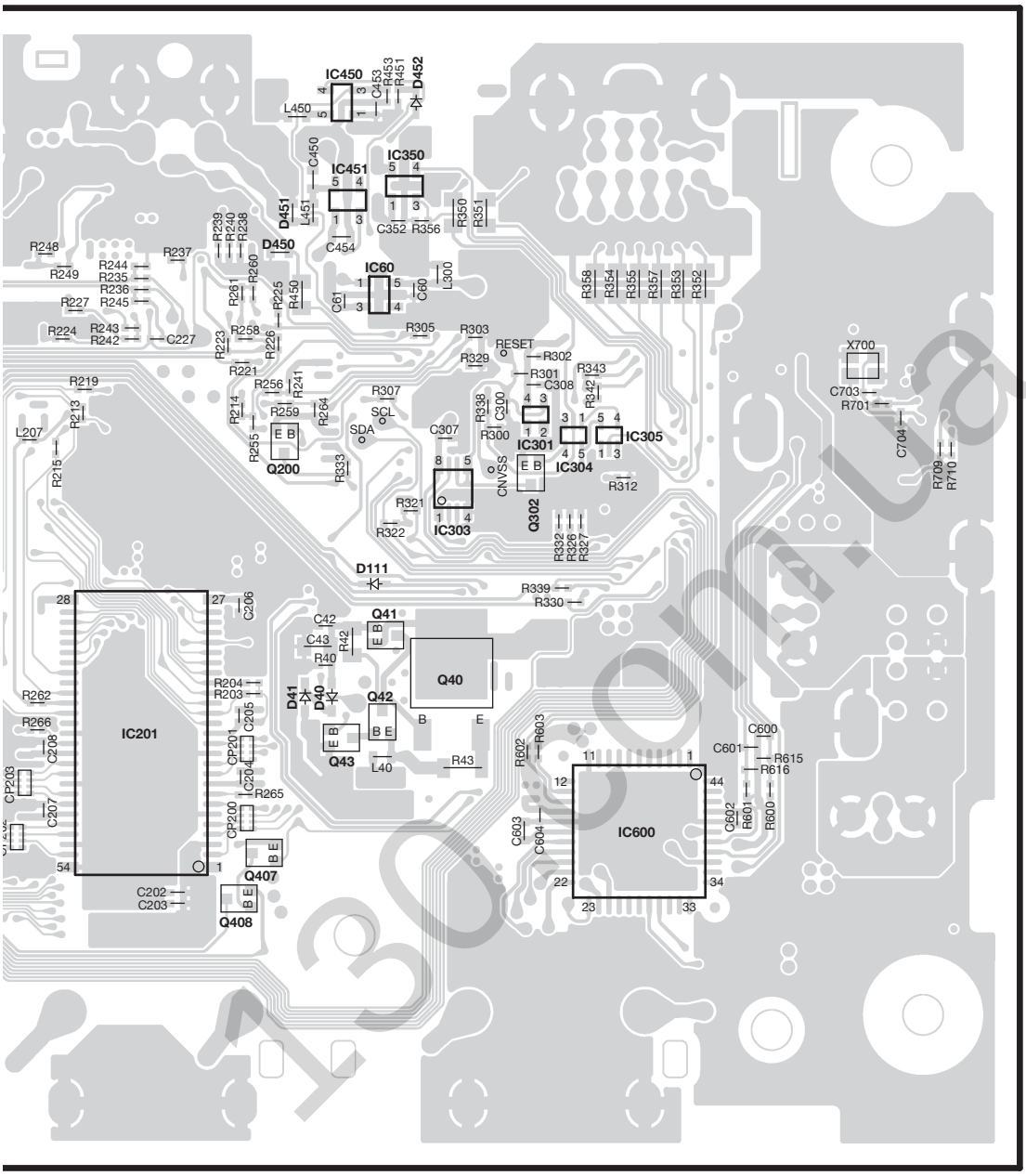
ELECTRIC UNIT
X34-650x-xx A/2 (J76-0622-12)



X34 B/2



▼



▲

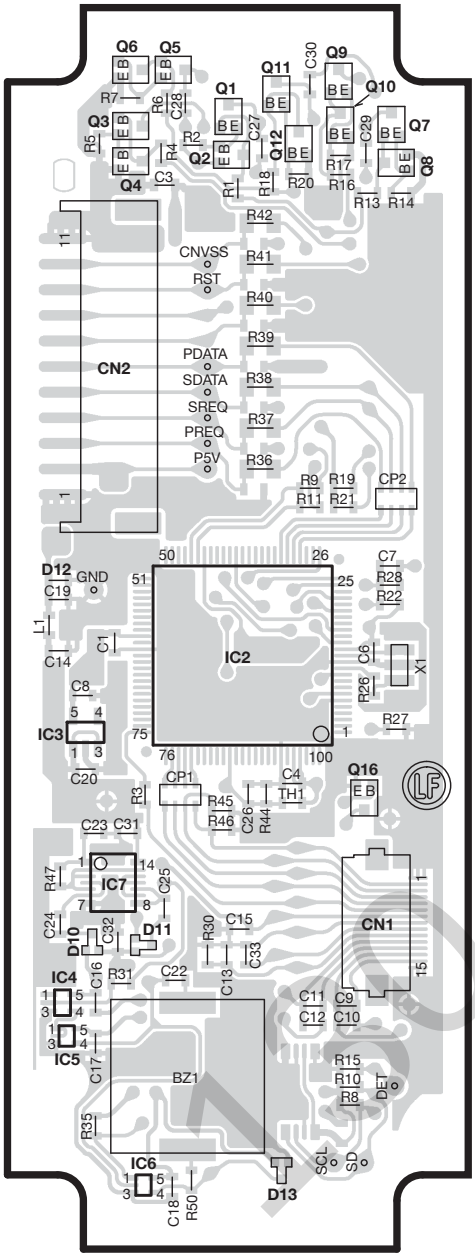
X34-650x-xx

Ref. No.	Address
IC20	4N
IC30	4N
IC60	2Q
IC201	4P
IC301	3Q
IC303	3Q
IC304	3R
IC305	3R
IC350	2Q
IC400	4K
IC450	2Q
IC451	2Q
IC600	4R
Q40	4Q
Q41	4Q
Q42	4Q
Q43	4Q
Q50	3O
Q52	3N
Q100	4N
Q101	3N
Q110	3N
Q130	5O
Q131	5N
Q132	5N
Q133	4N
Q200	3Q
Q302	3Q
Q400	3L
Q401	4L
Q403	3K
Q404	4K
Q406	3K
Q407	5P
Q408	5P

Refer to the schematic diagram for the values of resistors and capacitors.

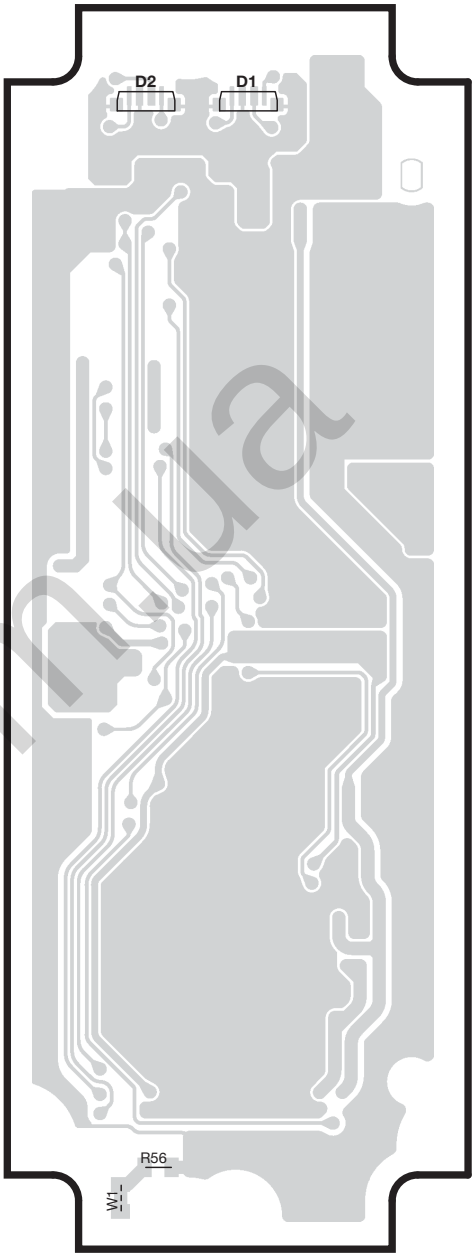
PC BOARD (COMPONENT SIDE VIEW)

SUB CIRCUIT UNIT
X16-671x-xx (J76-0623-12)



PC BOARD (FOIL SIDE VIEW)

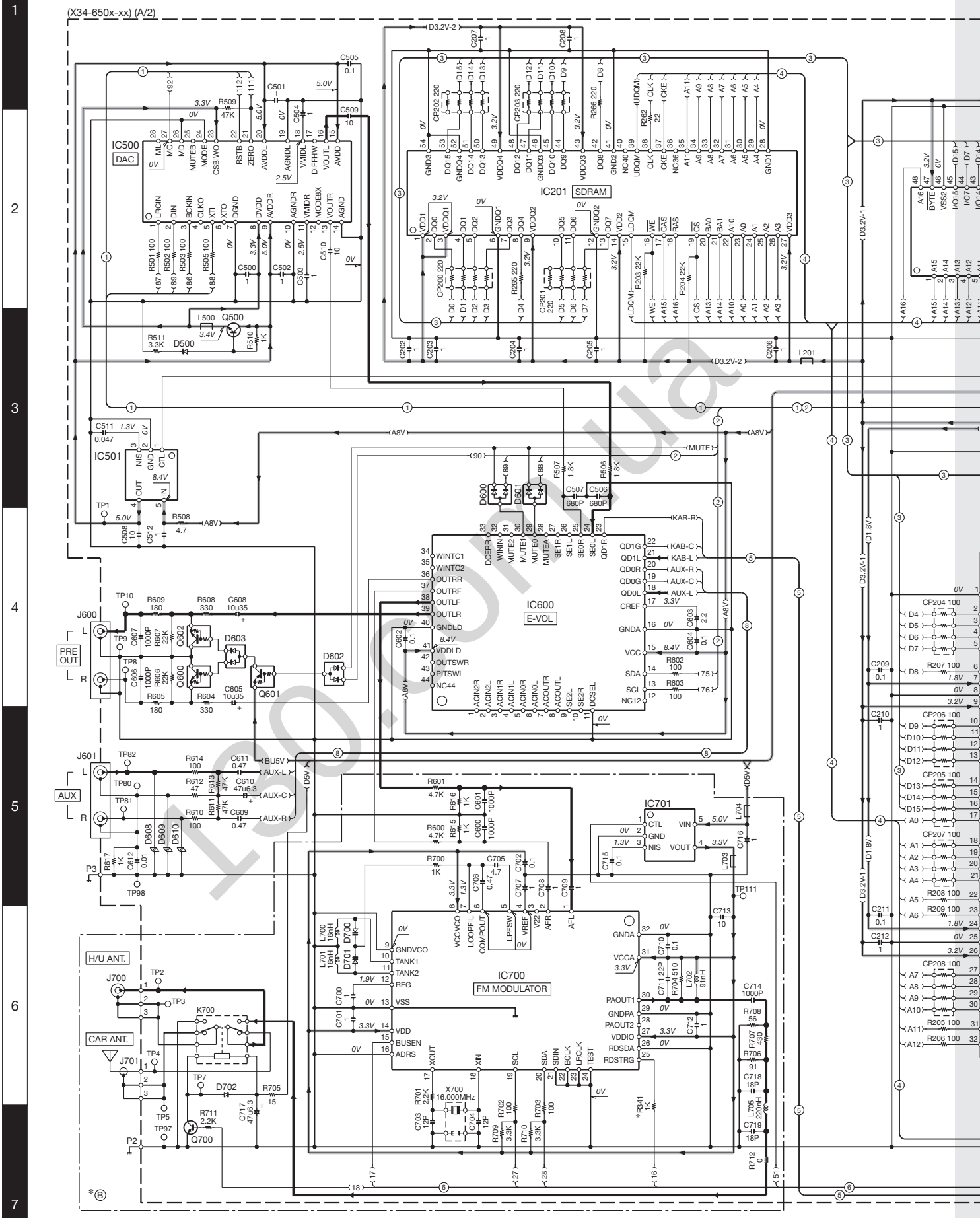
SUB CIRCUIT UNIT
X16-671x-xx (J76-0623-12)



X16-671x-xx

Ref. No.	Address	Ref. No.	Address
IC2	4V	Q5	2V
IC3	4U	Q6	2V
IC4	5U	Q7	2W
IC5	5U	Q8	2W
IC6	5V	Q9	2V
IC7	4V	Q10	2V
Q1	2V	Q11	2V
Q2	2V	Q12	2V
Q3	2V	Q16	4V
Q4	2V		

Refer to the schematic diagram for the values of resistors and capacitors.


(X34-650x-xx) (A/2)
IC500
DAC
IC201
SDRAM
IC501
IC600
E-VOL
IC701
IC700
FM MODULATOR
PRE OUT
AUX
H/U ANT.
CAR ANT.
J600
J601
J700
J701
Q500
Q600
Q601
Q700
D500
D600
D601
D602
D603
D702
K700
X700
16.000MHz
L201
L500
L703
L704
L705
L702
TP111

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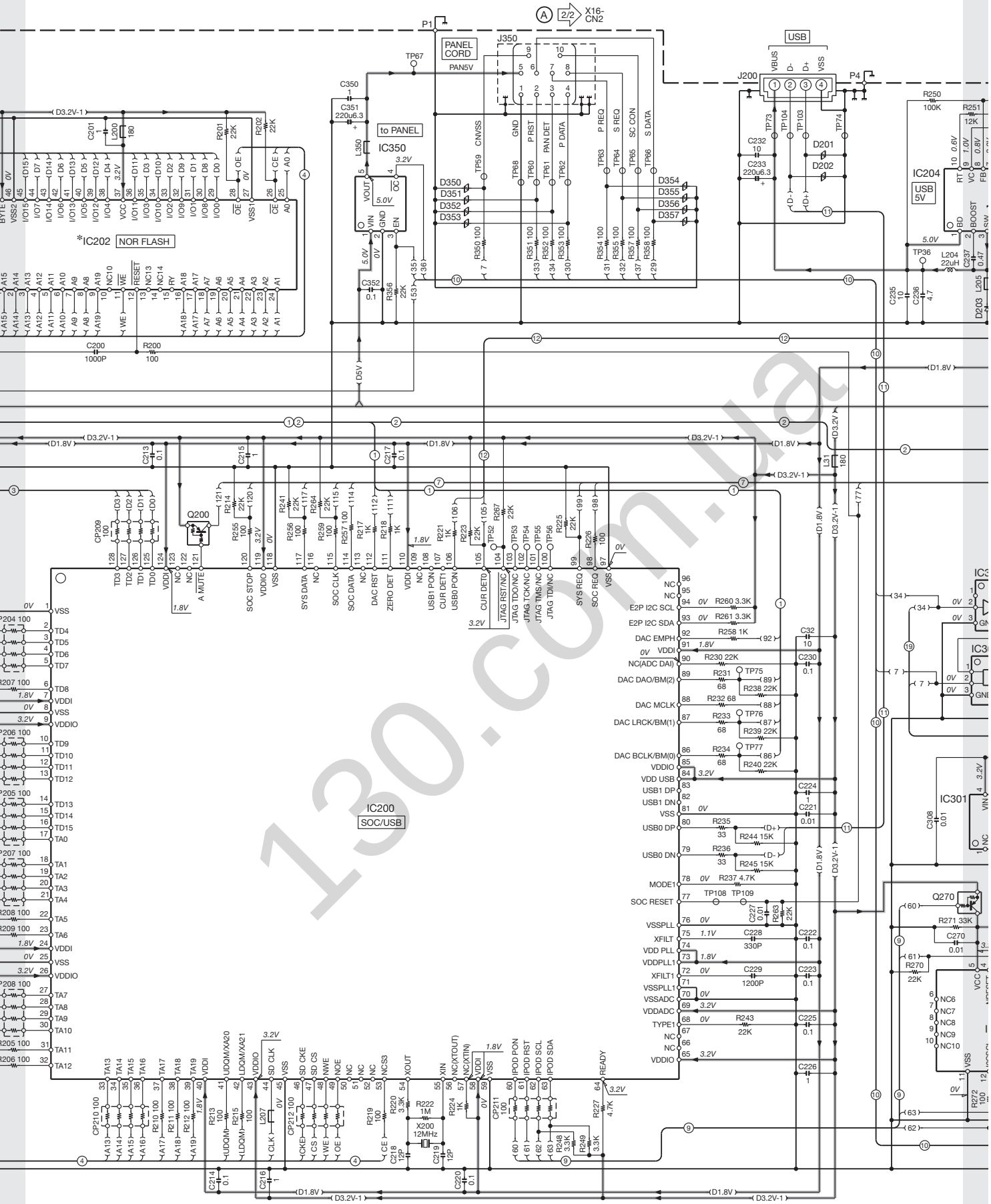
KOS-A210/A300/D210



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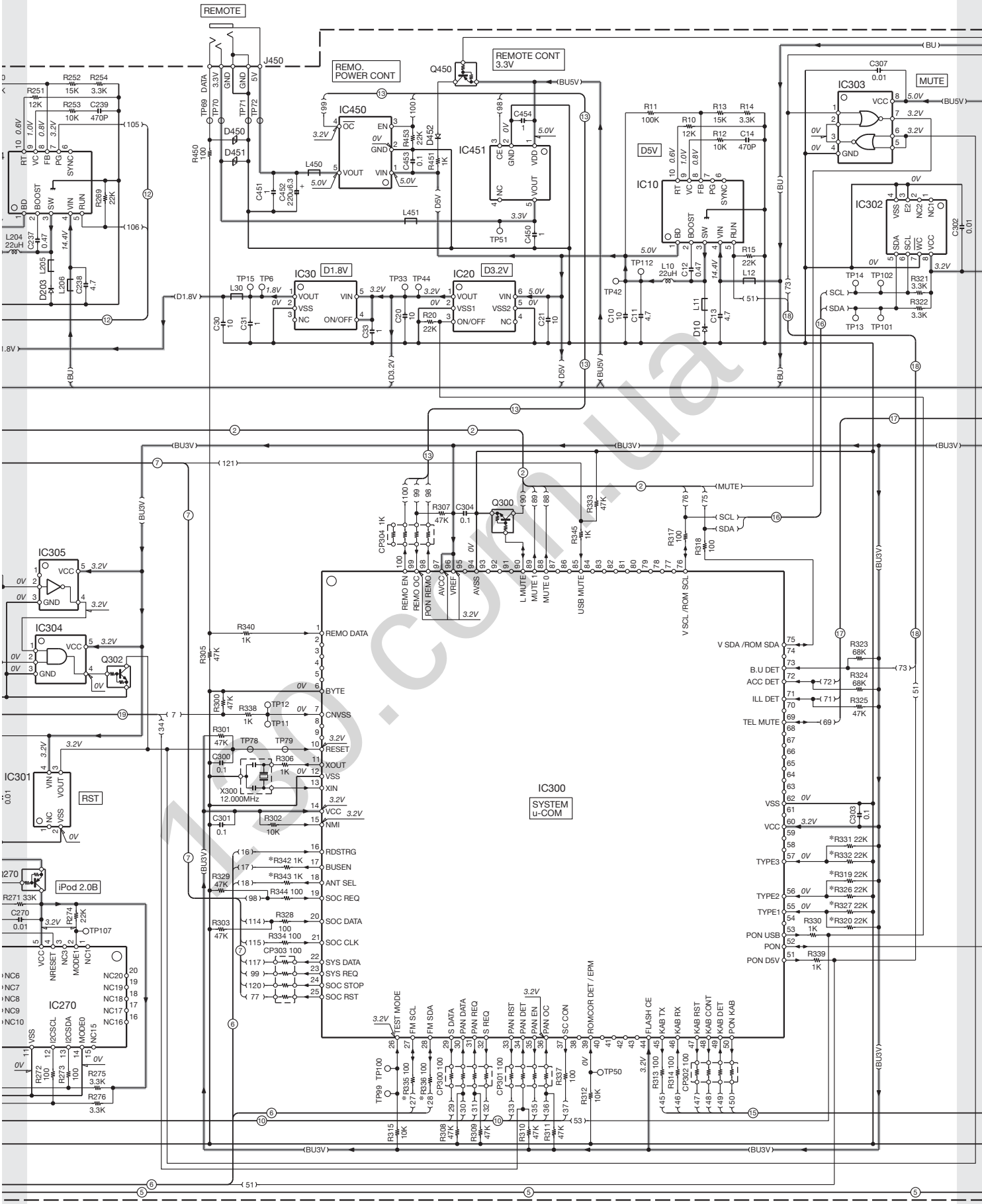
KOS-A210/A300/D210



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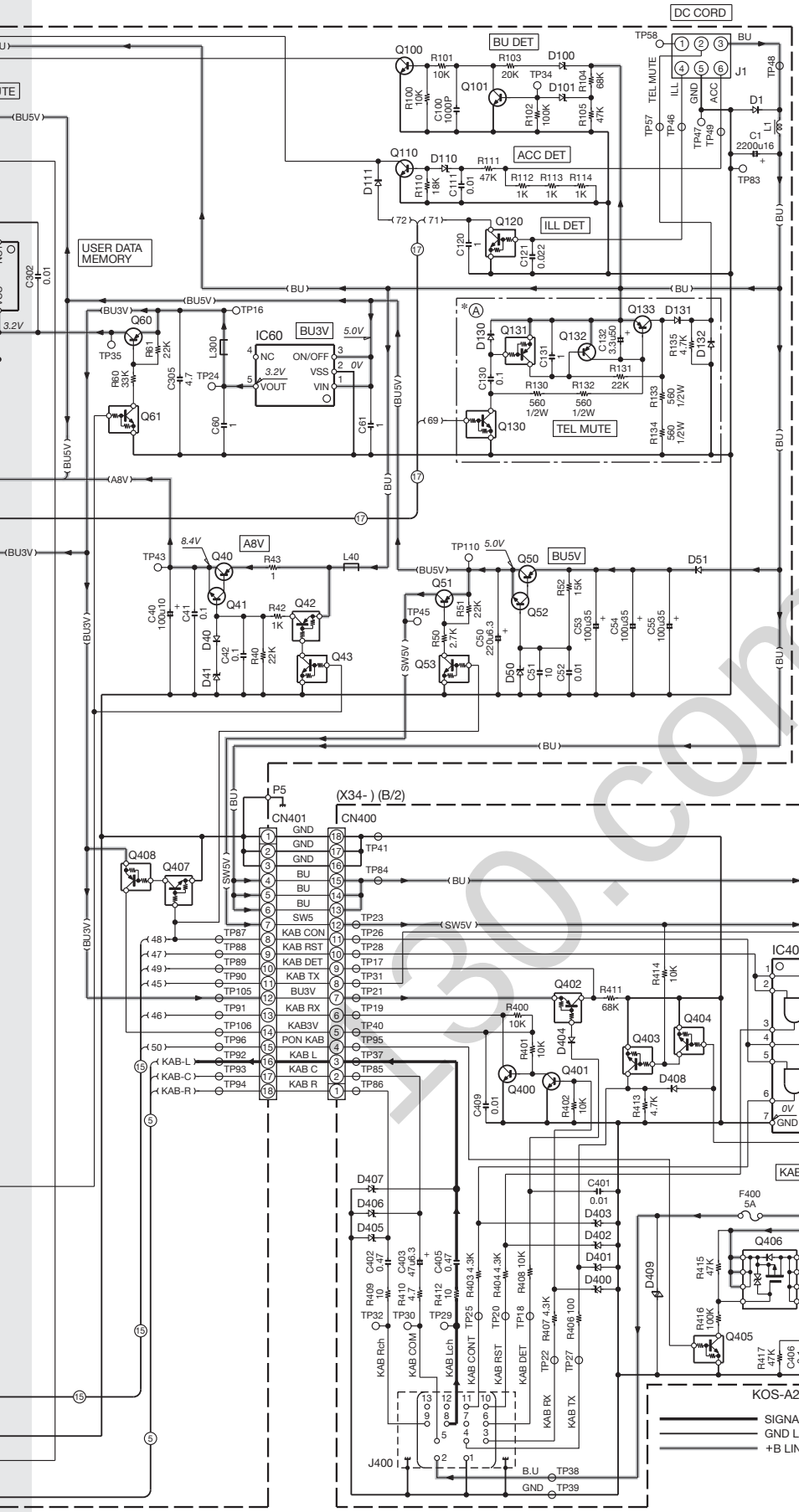
KOS-A210/A300/D210



IC10,204 : —
IC20 : S-1172B32E6T1
IC30 : S-1132B18U5T1G
IC60 : S-1112B32MCG
IC200 : TCC8600
IC201 : IS45S164F7TL1
IC202 : *
IC270 : MFI341S2162
IC300 : W05-1515-00
IC301 : XC6120N292N1
IC302 : M24C08-RDW6TP
IC303 : 74HCT2G02DP
IC304 : TC7SH08FU-F
IC305 : TC7SH04FU-F
IC350,450 : BD6538G
IC400 : 74AHCT08PW
IC451 : R1114N331B-TR
IC500 : WM8716SEDS/R
IC501 : TAR5S50-F
IC600 : E-TDA7716
IC700 : —
IC701 : TAR5S33U-F

Q40,50 : 2SB1184
Q41,52,100,101,110, 400,401,500,700 : 2SC4081
Q42,450 : DTA124EUA
Q43,53,61,300,302, 403-405,407 : DTC114YUA
Q51 : 2SA1577
Q60,132 : 2SA1576A
Q120 : DTC144EUA
Q130 : DTC143ZUA
Q131 : DTA114EUA
Q133 : 2SB1188(Q,R)
Q200,270,402,408,601 : DTA114YUA
Q406 : TPC8110-F
Q600,602 : DTC143TUA

D1 : S2V60-5009F46
D10,203 : CMS14
D40,404,408,500,702 : 1SS355
D41 : UDZW8.2(B)
D50 : UDZW5.6(B)
D51 : RB160L-40
D100,101,405-407 : UDZW6.8(B)
D110,400-403 : UDZW6.2(B)
D111,452 : 1SS400
D130 : 1SS355
D131,132 : 1SR154-400
D201,202 : LVS10C270S030
D350-357,409,450,451, 608-610 : CVL10C270M300
D600-602 : DAP202U
D603 : DAP222
D700,701 : TKV1476AS6G0R

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

(X34-650x-xx)

MODEL NAME	UNIT No.	Ⓐ	Ⓑ	IC202	R319	R320	R326	R327	R331	R332	R335-336, 341-343
KOS-A300	0-10	YES	—	A29L16AUV4C0F	—	—	YES	YES	—	YES	YES
	0-01	—	YES	A29L80AUV9B2F	—	YES	YES	—	—	YES	YES
	0-21	—	YES	A29L80AUV9B2F	YES	—	—	YES	—	YES	YES
KOS-A210	2-71	—	YES	A29L80AUV9B2F	—	YES	YES	—	YES	—	YES

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KOS-A210/A300/D210

IC2 : W05-1514-00
IC3 : S-1112B32MCG
IC4 : TC7SET04FU-F
IC5,6 : RD74HV1G00
IC7 : TC74VHC14FK

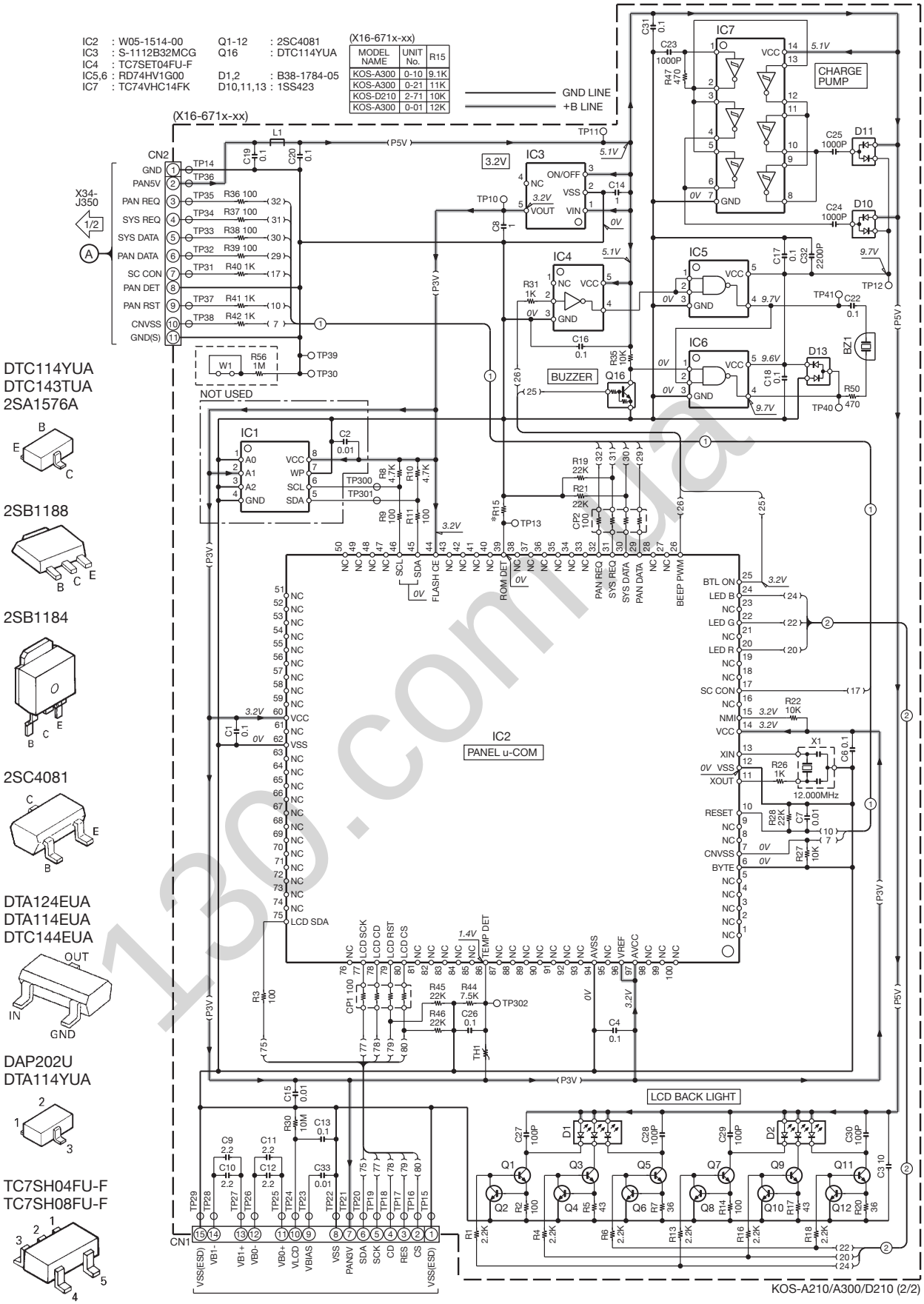
Q1-12 : 2SC4081
Q16 : DTC114YUA

D1,2 : B38-1784-05
D10,11,13 : 1SS423

(X16-671x-xx)

MODEL NAME	UNIT No.	R15
KOS-A300	0-10	9.1K
KOS-A300	0-21	11K
KOS-D210	2-71	10K
KOS-A300	0-01	12K

GND LINE
+B LINE



DTC114YUA
DTC143TUA
2SA1576A

2SB1188

2SB1184

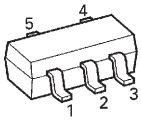
2SC4081

DTA124EUA
DTA114EUA
DTC144EUA

DAP202U
DTA114YUA

TC7SH04FU-F
TC7SH08FU-F

TC7SET04FU-F



KOS-A210/A300/D210 (2/2)

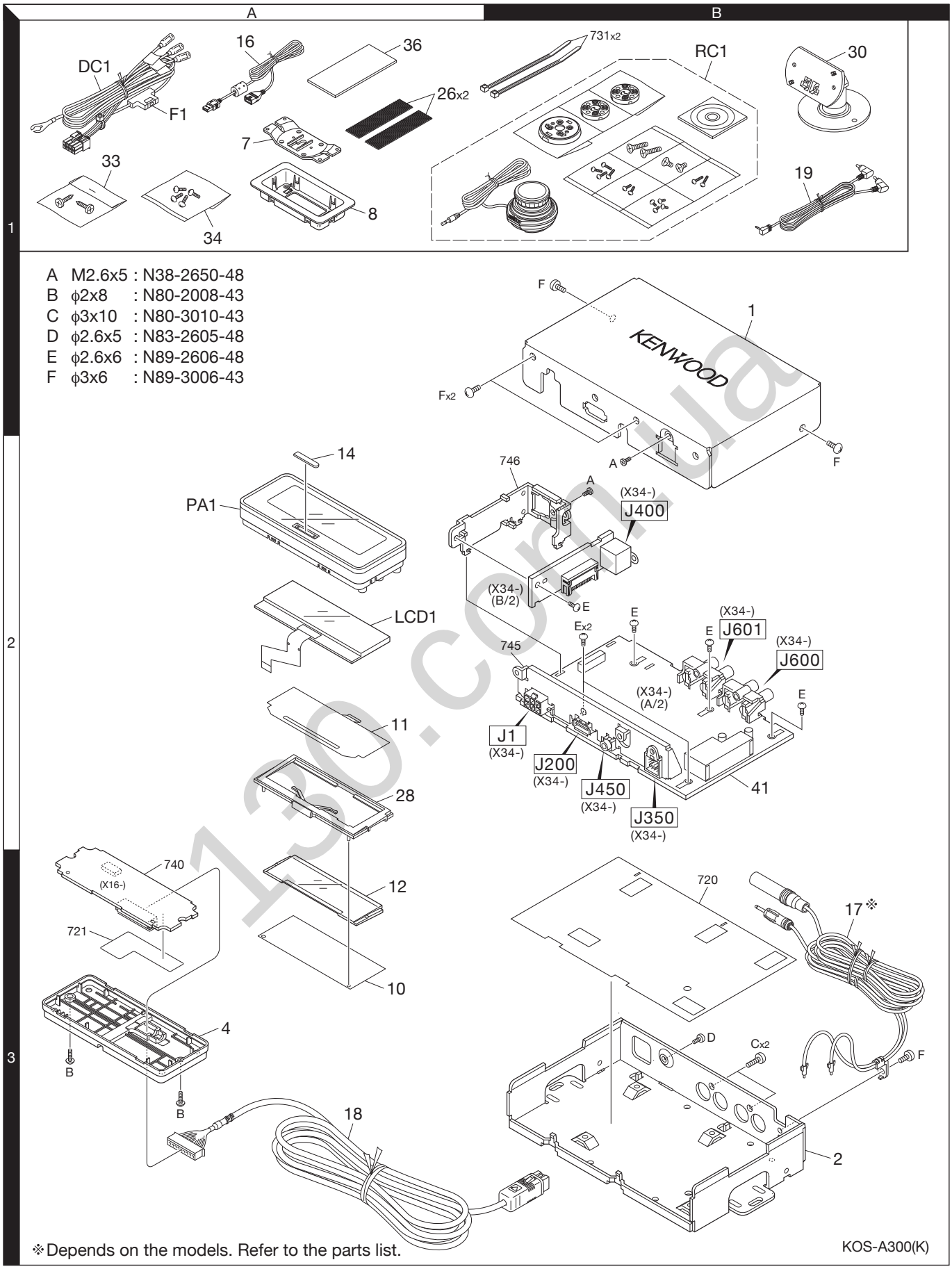
CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).

⚠Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

Autogoods "130"

EXPLODED VIEW



Parts with the exploded numbers larger than 700 are not supplied.

Autogoods “130”

PARTS LIST

✻ New parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No.	Add	New	Parts No.	Description	Destination
KOS-A210/A300/D210					
F1	1A		F52-0005-05	FUSE 7.5A	KM1E1
1	1B	✻	A01-4456-12	METALLIC CABINET	K
1	1B	✻	A01-4457-12	METALLIC CABINET	E1
1	1B	✻	A01-4458-12	METALLIC CABINET	M1
2	3B	✻	A10-5522-02	CHASSIS	K
2	3B	✻	A10-5529-02	CHASSIS	E1M1
4	3A	✻	A46-1898-21	REAR COVER	KM1E2
7	1A	✻	A84-0554-13	REAR PANEL	KM1E2
PA1	2A	✻	A64-4918-13	PANEL ASSY	KM1E2
RC1	1B	✻	A70-2097-05	REMOTE CONTROLLER ASSY	KM1E1
8	1A	✻	B07-3310-03	ESCUTCHEON	KM1E2
10	3A		B11-2027-04	REFLECTION SHEET	KM1E2
11	2A		B11-2028-04	OPTICAL DIFFUSER	KM1E2
12	3A		B19-2535-03	LIGHTING BOARD	KM1E2
14	2A		B43-1518-04	BADGE	KM1E2
-		✻	B64-4452-00	INSTRUCTION MANUAL (ENG.)	K
-		✻	B64-4453-00	INSTRUCTION MANUAL (FRE.)	K
-		✻	B64-4455-00	INSTRUCTION MANUAL (ENG.)	E1
-		✻	B64-4456-00	INSTRUCTION MANUAL (FRE.)	E1
-		✻	B64-4458-00	INSTRUCTION MANUAL (DUT.)	E1
-		✻	B64-4460-00	INSTRUCTION MANUAL (SPA.)	E1
-		✻	B64-4462-00	INSTRUCTION MANUAL (RUS.)	E1
-		✻	B64-4464-00	INSTRUCTION MANUAL (ENG.)	M1
-		✻	B64-4465-00	INSTRUCTION MANUAL (S-CHI.)	M1
LCD1	2A	✻	B38-1218-05	LCD	KM1E2
16	1A		E30-6634-05	CORD WITH CONNECTOR (USB1.5M)	KM1E1
17	3B	✻	E30-6892-15	CORD WITH PLUG (ANT)	E1M1
18	3A	✻	E30-6894-15	CORD WITH PLUG (MONITOR)	KM1E2
19	1B	✻	E30-6895-05	CORD WITH PLUG (RCA-MINI)	KM1E1
DC1	1A	✻	E30-6893-05	DC CORD	K
DC1	1A	✻	E30-6916-05	DC CORD	E1M1
26	1A		H30-0600-04	MAGIC TAPE	KM1E1
-		✻	H54-4649-03	ITEM CARTON CASE	K
-		✻	H54-4650-03	ITEM CARTON CASE	E1
-		✻	H54-4654-03	ITEM CARTON CASE	E2
-		✻	H54-4699-03	ITEM CARTON CASE	M1
28	2A		J19-7252-03	HOLDER	KM1E2
30	1B	✻	J19-7284-03	HOLDER ASSY	KM1E2
33	1A		N99-1789-05	SCREW SET	KM1E1
34	1A	✻	N99-1838-05	SCREW SET	KM1E2
-	30	✻	N10-2030-43	HEXAGON NUT (M 3 HOLDER ASSY)	KM1E2
-	30	✻	N10-2040-43	HEXAGON NUT (M 4 HOLDER ASSY)	KM1E2
-	30	✻	N15-1030-43	FLAT WASHER (3 HOLDER ASSY)	KM1E2
-	30	✻	N15-1040-43	FLAT WASHER (4 HOLDER ASSY)	KM1E2
-	30		N35-3008-43	BINDING HEAD M SCREW (HOLDER A	KM1E2
-	30	✻	N35-4020-43	BINDING HEAD M SCREW (HOLDER A	KM1E2
A	2B		N38-2650-48	PAN HEAD MACHINE SCREW	KM1E1
B	3A		N80-2008-43	PAN HEAD TAPTITE SCREW	KM1E2
C	3B		N80-3010-43	PAN HEAD TAPTITE SCREW	KM1E1
D	3B		N83-2605-48	PAN HEAD TAPTITE SCREW	KM1E1
E	2B		N89-2606-48	BINDING HEAD TAPTITE SCREW	KM1E1
F	1B		N89-3006-43	BINDING HEAD TAPTITE SCREW	KM1E1
36	1A	✻	W01-1753-04	ACCESSORIES	KM1E2
41	2B	✻	X34-6500-10	ELECTRIC UNIT	K
41	2B	✻	X34-6500-21	ELECTRIC UNIT	M1
41	2B	✻	X34-6502-71	ELECTRIC UNIT	E1
SUB-CIRCUIT UNIT (X16-671x-xx)					
D1 ,2			B30-1784-05	LED (RGB SIDE)	KM1E2
C1			CK73GB1H104K	CHIP C 0.10UF K	KM1E2
C3			CK73GB0J106M	CHIP C 10UF M	KM1E2
C4			CK73GB1H104K	CHIP C 0.10UF K	KM1E2
C6			CK73GB1C104K	CHIP C 0.10UF K	KM1E2
C7			CK73GB1H103K	CHIP C 0.010UF K	KM1E2
C8			CK73GB1A105K	CHIP C 1.0UF K	KM1E2
C9 -12			CK73GB1C225K	CHIP C 2.2UF K	KM1E2
C13			CK73GB1C104K	CHIP C 0.10UF K	KM1E2
C14			CK73GB1A105K	CHIP C 1.0UF K	KM1E2
C15			CK73GB1H103K	CHIP C 0.010UF K	KM1E2
C16 -18			CK73GB1C104K	CHIP C 0.10UF K	KM1E2
C19 ,20			CK73GB1H104K	CHIP C 0.10UF K	KM1E2
C22			CK73GB1C104K	CHIP C 0.10UF K	KM1E2
C23 -25			CK73GB1H102K	CHIP C 1000PF K	KM1E2
C26			CK73GB1C104K	CHIP C 0.10UF K	KM1E2
C27 -30			CC73GCH1H101J	CHIP C 100PF J	KM1E2
C31			CK73GB1H104K	CHIP C 0.10UF K	KM1E2
C32			CK73GB1H222K	CHIP C 2200PF K	KM1E2
C33			CK73GB1H103K	CHIP C 0.010UF K	KM1E2
CN1			E41-3094-05	FLAT CABLE CONNECTOR	KM1E2
CN2			E41-2730-05	PIN ASSY	KM1E2
L1			L92-0373-05	CHIP FERRITE	KM1E2
X1			L78-0872-05	RESONATOR (12MHZ)	KM1E2
CP1 ,2			RK74GB1J101J	CHIP-COM 100 J 1/16W	KM1E2
R1			RK73GB2A222J	CHIP R 2.2K J 1/10W	KM1E2
R2			RK73GH2A101D	CHIP R 100 D 1/10W	KM1E2
R3			RK73GB2A101J	CHIP R 100 J 1/10W	KM1E2
R4			RK73GB2A222J	CHIP R 2.2K J 1/10W	KM1E2
R5		✻	RK73GH2A430D	CHIP R 43 D 1/10W	KM1E2
R6			RK73GB2A222J	CHIP R 2.2K J 1/10W	KM1E2
R7			RK73GH2A360D	CHIP R 36 D 1/10W	KM1E2
R8			RK73GB2A472J	CHIP R 4.7K J 1/10W	KM1E2
R9			RK73GB2A101J	CHIP R 100 J 1/10W	KM1E2
R10			RK73GB2A472J	CHIP R 4.7K J 1/10W	KM1E2
R11			RK73GB2A101J	CHIP R 100 J 1/10W	KM1E2
R13			RK73GB2A222J	CHIP R 2.2K J 1/10W	KM1E2
R14			RK73GH2A101D	CHIP R 100 D 1/10W	KM1E2
R15			RK73GB2A103J	CHIP R 10K J 1/10W	E2
R15			RK73GB2A113J	CHIP R 11K J 1/10W	M1
R15			RK73GB2A912J	CHIP R 9.1K J 1/10W	K
R16			RK73GB2A222J	CHIP R 2.2K J 1/10W	KM1E2
R17		✻	RK73GH2A430D	CHIP R 43 D 1/10W	KM1E2
R18			RK73GB2A222J	CHIP R 2.2K J 1/10W	KM1E2
R19			RK73GB2A223J	CHIP R 22K J 1/10W	KM1E2

E1 : KOS-A210 **E2** : KOS-D210 (Europe)
K : KOS-A300 (North America) **M1** : KOS-A300 (Other Areas)

⚠Indicates safety critical components.

Autogoods “130”

PARTS LIST

SUB-CIRCUIT UNIT (X16-671x-xx)

Ref. No.	Add	New	Parts No.	Description				Destination
R20			RK73GH2A360D	CHIP R	36	D	1/10W	KM1E2
R21			RK73GB2A223J	CHIP R	22K	J	1/10W	KM1E2
R22			RK73GB2A103J	CHIP R	10K	J	1/10W	KM1E2
R26			RK73GB2A102J	CHIP R	1.0K	J	1/10W	KM1E2
R27			RK73GB2A103J	CHIP R	10K	J	1/10W	KM1E2
R28			RK73GB2A223J	CHIP R	22K	J	1/10W	KM1E2
R30			RK73GB2A106J	CHIP R	10M	J	1/10W	KM1E2
R31			RK73GB2A102J	CHIP R	1.0K	J	1/10W	KM1E2
R35			RK73GB2A103J	CHIP R	10K	J	1/10W	KM1E2
R36 -39			RK73FB2B101J	CHIP R	100	J	1/8W	KM1E2
R40 -42			RK73FB2B102J	CHIP R	1.0K	J	1/8W	KM1E2
R44			RK73GH2A752D	CHIP R	7.5K	D	1/10W	KM1E2
R45 ,46			RK73GB2A223J	CHIP R	22K	J	1/10W	KM1E2
R47			RK73GH2A471D	CHIP R	470	D	1/10W	KM1E2
R50			RK73GB2A471J	CHIP R	470	J	1/10W	KM1E2
R56			RK73FB2B105J	CHIP R	1.0M	J	1/8W	KM1E2
W1			R92-2052-05	CHIP R	0 OHM	J	1/10W	KM1E2
BZ1		✻	T95-0280-05	PIEZOELECTRIC VIBRATOR				KM1E2
D10 ,11		✻	1SS423	DIODE				KM1E2
D13		✻	1SS423	DIODE				KM1E2
IC2		✻	W05-1514-00	MICROCONTROLLER IC				KM1E2
IC3			S-1112B32MCG	ANALOGUE IC				KM1E2
IC4			TC7SET04FU-F	MOS-IC				KM1E2
IC5 ,6		✻	RD74HV1G00	MOS-IC				KM1E2
IC7		✻	TC74VHC14FK	MOS-IC				KM1E2
Q1 -12		✻	2SC4081	TRANSISTOR				KM1E2
Q16			DTC114YUA	DIGITAL TRANSISTOR				KM1E2
TH1			TH11-3H103FT	THERMISTOR				KM1E2

ELECTRIC UNIT (X34-650x-xx)

Ref. No.	Add	New	Parts No.	Description				Destination
C1			C90-5682-05	ELECTRO	2200UF		16WV	KM1E1
C10			CK73GB0J106M	CHIP C	10UF		M	KM1E1
C11			CK73GB0J475K	CHIP C	4.7UF		K	KM1E1
C12			CK73GB1A474K	CHIP C	0.47UF		K	KM1E1
C13			CK73EB1H475K	CHIP C	4.7UF		K	KM1E1
C14			CC73HCH1H471J	CHIP C	470PF		J	KM1E1
C20 ,21			CK73GB0J106M	CHIP C	10UF		M	KM1E1
C30			CK73GB0J106M	CHIP C	10UF		M	KM1E1
C31			CK73HB0J105K	CHIP C	1.0UF		K	KM1E1
C32			CK73GB0J106M	CHIP C	10UF		M	KM1E1
C33			CK73HB0J105K	CHIP C	1.0UF		K	KM1E1
C40			CE32BD1A101M	CHIP EL	100UF		10WV	KM1E1
C41			CK73GB1H104K	CHIP C	0.10UF		K	KM1E1
C42			CK73HB1A104K	CHIP C	0.10UF		K	KM1E1
C50			CE32BF0J221M	CHIP EL	220UF		6.3WV	KM1E1
C51			CK73FB1C106K	CHIP C	10UF		K	KM1E1
C52			CK73GB1H103K	CHIP C	0.010UF		K	KM1E1
C53 -55			CE32BF1V101M	CHIP EL	100UF		35WV	KM1E1
C60 ,61			CK73HB0J105K	CHIP C	1.0UF		K	KM1E1
C100			CK73GB1H102K	CHIP C	1000PF		K	KM1E1
C111			CK73GB1H103K	CHIP C	0.010UF		K	KM1E1
C120			CK73GB1A105K	CHIP C	1.0UF		K	KM1E1
C121			CK73GB1H223K	CHIP C	0.022UF		K	KM1E1
C130			CK73GB1H104K	CHIP C	0.10UF		K	K
C131			CK73GB1A105K	CHIP C	1.0UF		K	K
C132			CE32BJ1H3R3M	CHIP EL	3.3UF		50WV	K
C200			CK73HB1H102K	CHIP C	1000PF		K	KM1E1
C201-208			CK73HB0J105K	CHIP C	1.0UF		K	KM1E1
C209			CK73HB1A104K	CHIP C	0.10UF		K	KM1E1
C210			CK73HB0J105K	CHIP C	1.0UF		K	KM1E1
C211			CK73HB1A104K	CHIP C	0.10UF		K	KM1E1
C212			CK73HB0J105K	CHIP C	1.0UF		K	KM1E1
C213,214			CK73HB1A104K	CHIP C	0.10UF		K	KM1E1
C215,216			CK73HB0J105K	CHIP C	1.0UF		K	KM1E1
C217			CK73HB1A104K	CHIP C	0.10UF		K	KM1E1
C218,219			CC73HCH1H120J	CHIP C	12PF		J	KM1E1
C220			CK73HB1A104K	CHIP C	0.10UF		K	KM1E1
C221			CK73HB1E103K	CHIP C	0.010UF		K	KM1E1
C222,223			CK73HB1A104K	CHIP C	0.10UF		K	KM1E1
C224			CK73HB0J105K	CHIP C	1.0UF		K	KM1E1
C225			CK73HB1A104K	CHIP C	0.10UF		K	KM1E1
C226			CK73HB0J105K	CHIP C	1.0UF		K	KM1E1
C227			CK73HB1E103K	CHIP C	0.010UF		K	KM1E1
C228			CC73HCH1H331J	CHIP C	330PF		J	KM1E1
C229			CK73HB1H122K	CHIP C	1200PF		K	KM1E1
C230			CK73HB1A104K	CHIP C	0.10UF		K	KM1E1
C232			CK73GB0J106M	CHIP C	10UF		M	KM1E1
C233			CE32BF0J221M	CHIP EL	220UF		6.3WV	KM1E1
C235			CK73GB0J106M	CHIP C	10UF		M	KM1E1
C236			CK73GB0J475K	CHIP C	4.7UF		K	KM1E1
C237			CK73GB1A474K	CHIP C	0.47UF		K	KM1E1
C238			CK73EB1H475K	CHIP C	4.7UF		K	KM1E1
C239			CC73HCH1H471J	CHIP C	470PF		J	KM1E1
C270			CK73HB1E103K	CHIP C	0.010UF		K	KM1E1
C300,301			CK73HB1A104K	CHIP C	0.10UF		K	KM1E1
C302			CK73HB1E103K	CHIP C	0.010UF		K	KM1E1
C303,304			CK73HB1A104K	CHIP C	0.10UF		K	KM1E1
C305			CK73GB0J475K	CHIP C	4.7UF		K	KM1E1
C307,308			CK73HB1E103K	CHIP C	0.010UF		K	KM1E1
C350			CK73GB1A105K	CHIP C	1.0UF		K	KM1E1
C351			CE32BF0J221M	CHIP EL	220UF		6.3WV	KM1E1
C352			CK73HB1A104K	CHIP C	0.10UF		K	KM1E1
C401			CK73HB1E103K	CHIP C	0.010UF		K	KM1E1
C402			CK73GB1A474K	CHIP C	0.47UF		K	KM1E1
C403			CE32BJ0J470M	CHIP EL	47UF		6.3WV	KM1E1
C405			CK73GB1A474K	CHIP C	0.47UF		K	KM1E1
C406			CK73GB1H104K	CHIP C	0.10UF		K	KM1E1
C407,408			CK73GB1H103K	CHIP C	0.010UF		K	KM1E1
C409			CK73HB1E103K	CHIP C	0.010UF		K	KM1E1
C450,451			CK73GB1A105K	CHIP C	1.0UF		K	KM1E1
C452			CE32BF0J221M	CHIP EL	220UF		6.3WV	KM1E1
C453			CK73HB1A104K	CHIP C	0.10UF		K	KM1E1
C454			CK73GB1A105K	CHIP C	1.0UF		K	KM1E1
C500-504			CK73HB0J105K	CHIP C	1.0UF		K	KM1E1
C505			CK73HB1A104K	CHIP C	0.10UF		K	KM1E1
C506,507			CC73HCH1H681J	CHIP C	680PF		J	KM1E1
C508			CK73FB0J106K	CHIP C	10UF		K	KM1E1
C509,510			CK73FB1C106K	CHIP C	10UF		K	KM1E1
C511			CK73GB1H473K	CHIP C	0.047UF		K	KM1E1
C512			CK73GB1A105K	CHIP C	1.0UF		K	KM1E1

E1 : KOS-A210 **E2** : KOS-D210 (Europe)
K : KOS-A300 (North America) **M1** : KOS-A300 (Other Areas)

⚠Indicates safety critical components.

Autogoods “130”

PARTS LIST

ELECTRIC UNIT (X34-650x-xx)

Ref. No.	Add	New	Parts No.	Description			Destination
C600,601			CK73HB1H102K	CHIP C	1000PF	K	E1M1
C602			CK73HB1A104K	CHIP C	0.10UF	K	KM1E1
C603			CK73GB1C225K	CHIP C	2.2UF	K	KM1E1
C604			CK73HB1A104K	CHIP C	0.10UF	K	KM1E1
C605			CE32BJ1V100M	CHIP EL	10UF	35WV	KM1E1
C606,607			CC73GCH1H102J	CHIP C	1000PF	J	KM1E1
C608			CE32BJ1V100M	CHIP EL	10UF	35WV	KM1E1
C609			CK73GB1A474K	CHIP C	0.47UF	K	KM1E1
C610			CE32BJ0J470M	CHIP EL	47UF	6.3WV	KM1E1
C611			CK73GB1A474K	CHIP C	0.47UF	K	KM1E1
C612			CK73HB1E103K	CHIP C	0.010UF	K	KM1E1
C700,701			CK73HB0J105K	CHIP C	1.0UF	K	E1M1
C702			CK73HB1A104K	CHIP C	0.10UF	K	E1M1
C703,704			CC73HCH1H120J	CHIP C	12PF	J	E1M1
C705			CK73GB0J475K	CHIP C	4.7UF	K	E1M1
C706			CK73HB0J474K	CHIP C	0.47UF	K	E1M1
C707-709			CK73HB0J105K	CHIP C	1.0UF	K	E1M1
C710			CK73HB1A104K	CHIP C	0.10UF	K	E1M1
C711			CC73HCH1H220J	CHIP C	22PF	J	E1M1
C712			CK73HB0J105K	CHIP C	1.0UF	K	E1M1
C713			CK73GB0J106M	CHIP C	10UF	M	E1M1
C714			CK73HB1H102K	CHIP C	1000PF	K	E1M1
C715			CK73HB1A104K	CHIP C	0.10UF	K	E1M1
C716			CK73GB1A105K	CHIP C	1.0UF	K	E1M1
C717			CE32BD0J470M	CHIP EL	47UF	6.3WV	E1M1
C718,719			CC73HCH1H180J	CHIP C	18PF	J	E1M1
CN400			E41-2643-05	PIN ASSY			KM1E1
CN401		✻	E41-3120-05	SOCKET FOR PIN ASSY			KM1E1
J1			E08-0610-05	RECTANGULAR RECEPTACLE			KM1E1
J200			E59-0849-05	RECTANGULAR PLUG			KM1E1
J350		✻	E58-1117-05	RECTANGULAR RECEPTACLE			KM1E1
J400			E58-1097-05	RECTANGULAR RECEPTACLE			KM1E1
J450			E11-0647-05	3.5D PHONE JACK (GREEN)			KM1E1
J600,601			E63-0930-05	PIN JACK (RED)			KM1E1
J700,701			E04-0154-05	RF COAXIAL CABLE RECEPTACLE			E1M1
F400			F53-0306-05	FUSE (UL,CSA) 5A			KM1E1
⚠ L1			L33-2436-05	CHOKE COIL ASSY			KM1E1
L10			L33-2462-05	SMALL FIXED INDUCTOR			KM1E1
L11			L92-0611-05	CHIP FERRITE			KM1E1
L12			L92-0365-05	CHIP FERRITE			KM1E1
L30 ,31			L92-0373-05	CHIP FERRITE			KM1E1
L40			L92-0373-05	CHIP FERRITE			KM1E1
L200,201			L92-0373-05	CHIP FERRITE			KM1E1
L204			L33-2453-05	SMALL FIXED INDUCTOR			KM1E1
L205			L92-0611-05	CHIP FERRITE			KM1E1
L206			L92-0365-05	CHIP FERRITE			KM1E1
L207		✻	L92-0663-05	CHIP FERRITE			KM1E1
L300			L92-0373-05	CHIP FERRITE			KM1E1
L350			L92-0615-05	CHIP FERRITE			KM1E1
L450,451			L92-0373-05	CHIP FERRITE			KM1E1
L500			L92-0373-05	CHIP FERRITE			KM1E1
L700,701		✻	L33-2537-05	SMALL FIXED INDUCTOR			E1M1
L702		✻	L33-2538-05	SMALL FIXED INDUCTOR			E1M1

Ref. No.	Add	New	Parts No.	Description				Destination
L703,704			L92-0373-05	CHIP FERRITE				E1M1
L705			L40-2288-98	SMALL FIXED INDUCTOR (220NH)				E1M1
X200			L77-2908-05	CRYSTAL RESONATOR (12.000MHZ)				KM1E1
X300			L78-0872-05	RESONATOR (12MHZ)				KM1E1
X700		✻	L77-3818-05	CRYSTAL RESONATOR (16M)				E1M1
A	2B		N38-2650-48	PAN HEAD MACHINE SCREW				KM1E1
E	2B		N89-2606-48	BINDING HEAD TAPTITE SCREW				KM1E1
CP200-203			RK74HB1J221J	CHIP-COM	220	J	1/16W	KM1E1
CP204-212			RK74HB1J101J	CHIP-COM	100	J	1/16W	KM1E1
CP300-303			RK74HB1J101J	CHIP-COM	100	J	1/16W	KM1E1
CP304			RK74HB1J102J	CHIP-COM	1.0K	J	1/16W	KM1E1
R10			RK73HH1J123D	CHIP R	12K	D	1/16W	KM1E1
R11			RK73HH1J104D	CHIP R	100K	D	1/16W	KM1E1
R12			RK73HH1J103D	CHIP R	10K	D	1/16W	KM1E1
R13			RK73HH1J153D	CHIP R	15K	D	1/16W	KM1E1
R14			RK73HH1J332D	CHIP R	3.3K	D	1/16W	KM1E1
R15			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1E1
R20			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1E1
R40			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1E1
R42			RK73FB2B102J	CHIP R	1.0K	J	1/8W	KM1E1
R43			RK73EB2E1R0J	CHIP R	1.0	J	1/4W	KM1E1
R50			RK73FB2B272J	CHIP R	2.7K	J	1/8W	KM1E1
R51			RK73GB2A223J	CHIP R	22K	J	1/10W	KM1E1
R52			RK73FB2B153J	CHIP R	15K	J	1/8W	KM1E1
R60			RK73HB1J333J	CHIP R	33K	J	1/16W	KM1E1
R61			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1E1
R100,101			RK73HB1J103J	CHIP R	10K	J	1/16W	KM1E1
R102			RK73HH1J104D	CHIP R	100K	D	1/16W	KM1E1
R103			RK73FB2B203J	CHIP R	20K	J	1/8W	KM1E1
R104			RK73FB2B683J	CHIP R	68K	J	1/8W	KM1E1
R105			RK73GB2A473J	CHIP R	47K	J	1/10W	KM1E1
R110			RK73HB1J183J	CHIP R	18K	J	1/16W	KM1E1
R111			RK73EB2E473J	CHIP R	47K	J	1/4W	KM1E1
R112-114			RK73EB2E102J	CHIP R	1.0K	J	1/4W	KM1E1
R130			RK73PB2H561J	CHIP R	560	J	1/2W	K
R131			RK73GB2A223J	CHIP R	22K	J	1/10W	K
R132-134			RK73PB2H561J	CHIP R	560	J	1/2W	K
R135			RK73FB2B472J	CHIP R	4.7K	J	1/8W	K
R200			RK73HB1J101J	CHIP R	100	J	1/16W	KM1E1
R201-204			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1E1
R205-213			RK73HB1J101J	CHIP R	100	J	1/16W	KM1E1
R214			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1E1
R215			RK73HB1J101J	CHIP R	100	J	1/16W	KM1E1
R217,218			RK73HB1J102J	CHIP R	1.0K	J	1/16W	KM1E1
R219			RK73HB1J101J	CHIP R	100	J	1/16W	KM1E1
R220			RK73HB1J332J	CHIP R	3.3K	J	1/16W	KM1E1
R221			RK73HB1J102J	CHIP R	1.0K	J	1/16W	KM1E1
R222			RK73HB1J105J	CHIP R	1.0M	J	1/16W	KM1E1
R223			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1E1
R224			RK73HB1J102J	CHIP R	1.0K	J	1/16W	KM1E1
R225			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1E1
R226			RK73HB1J101J	CHIP R	100	J	1/16W	KM1E1
R227			RK73HB1J472J	CHIP R	4.7K	J	1/16W	KM1E1
R230			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1E1

E1 : KOS-A210 **E2** : KOS-D210 (Europe)
K : KOS-A300 (North America) **M1** : KOS-A300 (Other Areas)

⚠Indicates safety critical components.

Autogoods “130”

PARTS LIST

ELECTRIC UNIT (X34-650x-xx)

Ref. No.	Add	New	Parts No.	Description				Destination
R231-234			RK73HB1J680J	CHIP R	68	J	1/16W	KM1E1
R235,236			RK73HB1J330J	CHIP R	33	J	1/16W	KM1E1
R237			RK73HB1J472J	CHIP R	4.7K	J	1/16W	KM1E1
R238-241			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1E1
R243			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1E1
R244,245			RK73HB1J153J	CHIP R	15K	J	1/16W	KM1E1
R248,249			RK73HB1J332J	CHIP R	3.3K	J	1/16W	KM1E1
R250			RK73HH1J104D	CHIP R	100K	D	1/16W	KM1E1
R251			RK73HH1J123D	CHIP R	12K	D	1/16W	KM1E1
R252			RK73HH1J153D	CHIP R	15K	D	1/16W	KM1E1
R253			RK73HB1J103J	CHIP R	10K	J	1/16W	KM1E1
R254			RK73HH1J332D	CHIP R	3.3K	D	1/16W	KM1E1
R255-257			RK73HB1J101J	CHIP R	100	J	1/16W	KM1E1
R258			RK73HB1J102J	CHIP R	1.0K	J	1/16W	KM1E1
R259			RK73HB1J101J	CHIP R	100	J	1/16W	KM1E1
R260,261			RK73HB1J332J	CHIP R	3.3K	J	1/16W	KM1E1
R262			RK73HB1J220J	CHIP R	22	J	1/16W	KM1E1
R263,264			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1E1
R265,266			RK73HB1J221J	CHIP R	220	J	1/16W	KM1E1
R267			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1E1
R269,270			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1E1
R271			RK73HB1J333J	CHIP R	33K	J	1/16W	KM1E1
R272,273			RK73HB1J101J	CHIP R	100	J	1/16W	KM1E1
R274			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1E1
R275,276			RK73HB1J332J	CHIP R	3.3K	J	1/16W	KM1E1
R300,301			RK73HB1J473J	CHIP R	47K	J	1/16W	KM1E1
R302			RK73HB1J103J	CHIP R	10K	J	1/16W	KM1E1
R303			RK73HB1J473J	CHIP R	47K	J	1/16W	KM1E1
R305			RK73HB1J473J	CHIP R	47K	J	1/16W	KM1E1
R306			RK73HB1J102J	CHIP R	1.0K	J	1/16W	KM1E1
R307-311			RK73HB1J473J	CHIP R	47K	J	1/16W	KM1E1
R312			RK73HB1J103J	CHIP R	10K	J	1/16W	KM1E1
R313,314			RK73HB1J101J	CHIP R	100	J	1/16W	KM1E1
R315			RK73HB1J103J	CHIP R	10K	J	1/16W	KM1E1
R317,318			RK73HB1J101J	CHIP R	100	J	1/16W	KM1E1
R319			RK73HB1J223J	CHIP R	22K	J	1/16W	E1
R321,322			RK73HB1J332J	CHIP R	3.3K	J	1/16W	KM1E1
R323,324			RK73HB1J683J	CHIP R	68K	J	1/16W	KM1E1
R325			RK73HB1J473J	CHIP R	47K	J	1/16W	KM1E1
R326,327			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1
R327			RK73HB1J223J	CHIP R	22K	J	1/16W	E1
R328			RK73HB1J101J	CHIP R	100	J	1/16W	KM1E1
R329			RK73HB1J473J	CHIP R	47K	J	1/16W	KM1E1
R330			RK73HB1J102J	CHIP R	1.0K	J	1/16W	KM1E1
R331			RK73HB1J223J	CHIP R	22K	J	1/16W	M1
R332			RK73HB1J223J	CHIP R	22K	J	1/16W	KE1
R333			RK73HB1J473J	CHIP R	47K	J	1/16W	KM1E1
R334			RK73HB1J101J	CHIP R	100	J	1/16W	K
R334-337			RK73HB1J101J	CHIP R	100	J	1/16W	E1M1
R337			RK73HB1J101J	CHIP R	100	J	1/16W	K
R338-340			RK73HB1J102J	CHIP R	1.0K	J	1/16W	K
R338-343			RK73HB1J102J	CHIP R	1.0K	J	1/16W	E1M1
R344			RK73HB1J101J	CHIP R	100	J	1/16W	KM1E1
R345			RK73HB1J102J	CHIP R	1.0K	J	1/16W	KM1E1
R350-355			RK73FB2B101J	CHIP R	100	J	1/8W	KM1E1

Ref. No.	Add	New	Parts No.	Description				Destination
R356			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1E1
R357,358			RK73FB2B101J	CHIP R	100	J	1/8W	KM1E1
R400-402			RK73HB1J103J	CHIP R	10K	J	1/16W	KM1E1
R403,404			RK73EB2E432J	CHIP R	4.3K	J	1/4W	KM1E1
R406			RK73EB2E101J	CHIP R	100	J	1/4W	KM1E1
R407			RK73EB2E432J	CHIP R	4.3K	J	1/4W	KM1E1
R408			RK73EB2E103J	CHIP R	10K	J	1/4W	KM1E1
R409			RK73EB2E100J	CHIP R	10	J	1/4W	KM1E1
R410			RK73EB2E4R7J	CHIP R	4.7	J	1/4W	KM1E1
R411			RK73HB1J683J	CHIP R	68K	J	1/16W	KM1E1
R412			RK73EB2E100J	CHIP R	10	J	1/4W	KM1E1
R413			RK73HB1J472J	CHIP R	4.7K	J	1/16W	KM1E1
R414			RK73HB1J103J	CHIP R	10K	J	1/16W	KM1E1
R415			RK73HB1J473J	CHIP R	47K	J	1/16W	KM1E1
R416			RK73HB1J104J	CHIP R	100K	J	1/16W	KM1E1
R417			RK73HB1J473J	CHIP R	47K	J	1/16W	KM1E1
R450			RK73FB2B101J	CHIP R	100	J	1/8W	KM1E1
R451			RK73HB1J102J	CHIP R	1.0K	J	1/16W	KM1E1
R453			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1E1
R501-503			RK73HB1J101J	CHIP R	100	J	1/16W	KM1E1
R505			RK73HB1J101J	CHIP R	100	J	1/16W	KM1E1
R506,507			RK73HH1J182D	CHIP R	1.8K	D	1/16W	KM1E1
R508			RK73FB2B4R7J	CHIP R	4.7	J	1/8W	KM1E1
R509			RK73HB1J473J	CHIP R	47K	J	1/16W	KM1E1
R510			RK73GH2A102D	CHIP R	1.0K	D	1/10W	KM1E1
R511			RK73GH2A332D	CHIP R	3.3K	D	1/10W	KM1E1
R600,601			RK73HH1J472D	CHIP R	4.7K	D	1/16W	E1M1
R602,603			RK73HB1J101J	CHIP R	100	J	1/16W	KM1E1
R604			RK73HB1J331J	CHIP R	330	J	1/16W	KM1E1
R605			RK73FB2B181J	CHIP R	180	J	1/8W	KM1E1
R606,607			RK73HB1J223J	CHIP R	22K	J	1/16W	KM1E1
R608			RK73HB1J331J	CHIP R	330	J	1/16W	KM1E1
R609			RK73FB2B181J	CHIP R	180	J	1/8W	KM1E1
R610			RK73EB2E101J	CHIP R	100	J	1/4W	KM1E1
R611			RK73HB1J473J	CHIP R	47K	J	1/16W	KM1E1
R612			RK73EB2E470J	CHIP R	47	J	1/4W	KM1E1
R613			RK73HB1J473J	CHIP R	47K	J	1/16W	KM1E1
R614			RK73EB2E101J	CHIP R	100	J	1/4W	KM1E1
R615,616			RK73HH1J102D	CHIP R	1.0K	D	1/16W	E1M1
R617			RK73HB1J102J	CHIP R	1.0K	J	1/16W	KM1E1
R700			RK73HB1J102J	CHIP R	1.0K	J	1/16W	E1M1
R701			RK73HB1J222J	CHIP R	2.2K	J	1/16W	E1M1
R702,703			RK73HB1J101J	CHIP R	100	J	1/16W	E1M1
R704			RK73HB1J511J	CHIP R	510	J	1/16W	E1M1
R705			RK73HB1J150J	CHIP R	15	J	1/16W	E1M1
R706			RK73GH2A910D	CHIP R	91	D	1/10W	E1M1
R707		✻	RK73GH2A431D	CHIP R	430	D	1/10W	E1M1
R708		✻	RK73GH2A560D	CHIP R	56	D	1/10W	E1M1
R709,710			RK73HB1J332J	CHIP R	3.3K	J	1/16W	E1M1
R711			RK73HB1J222J	CHIP R	2.2K	J	1/16W	E1M1
R712			RK73GB2A000J	CHIP R	0.0	J	1/10W	E1M1
K700		✻	S76-0819-05	MAGNETIC RELAY				E1M1
D1			S2V60-5009F46	DIODE				KM1E1

E1 : KOS-A210 **E2** : KOS-D210 (Europe)
K : KOS-A300 (North America) **M1** : KOS-A300 (Other Areas)

⚠Indicates safety critical components.

Autogoods “130”

PARTS LIST

The IC10, 204 and IC700 in the Electric unit (X34-650) are not replaceable components. When these ICs are defective, replace the whole Electric unit (X34-650).

ELECTRIC UNIT (X34-650x-xx)

Ref. No.	Add	New	Parts No.	Description	Destination
D10			CMS14	DIODE	KM1E1
D40			1SS355	DIODE	KM1E1
D41			UDZW8.2(B)	ZENER DIODE	KM1E1
D50			UDZW5.6(B)	ZENER DIODE	KM1E1
D51			RB160L-40	DIODE	KM1E1
D100,101			UDZW6.8(B)	ZENER DIODE	KM1E1
D110			UDZW6.2(B)	ZENER DIODE	KM1E1
D111			1SS400	DIODE	KM1E1
D130			1SS355	DIODE	K
D131,132			1SR154-400	DIODE	K
D201,202			LVS10C270S030	VARISTOR	KM1E1
D203			CMS14	DIODE	KM1E1
D350-357			CVL10C270M300	VARISTOR	KM1E1
D400-403			UDZW6.2(B)	ZENER DIODE	KM1E1
D404			1SS355	DIODE	KM1E1
D405-407			UDZW6.8(B)	ZENER DIODE	KM1E1
D408			1SS355	DIODE	KM1E1
D409			CVL10C270M300	VARISTOR	KM1E1
D450,451			CVL10C270M300	VARISTOR	KM1E1
D452			1SS400	DIODE	KM1E1
D500			1SS355	DIODE	KM1E1
D600-602			DAP202U	DIODE	KM1E1
D603			DAP222	DIODE	KM1E1
D608-610			CVL10C270M300	VARISTOR	KM1E1
D700,701		✻	TKV1476AS6G0R	VARIABLE CAPACITANCE DIODE	E1M1
D702			1SS355	DIODE	E1M1
IC10			-	ANALOGUE IC	KM1E1
IC20			S-1172B32E6T1	ANALOGUE IC	KM1E1
IC30			S-1132B18U5T1G	ANALOGUE IC	KM1E1
IC60			S-1112B32MCG	ANALOGUE IC	KM1E1
IC200			TCC8600	MOS-IC	KM1E1
IC201			IS45S164F7TL1	DRAM IC	KM1E1
IC202		✻	A29L16AUV4C0F	ROM IC	K
IC202		✻	A29L80AUV9B2F	ROM IC	E1M1
IC204			-	ANALOGUE IC	KM1E1
IC270			MFI341S2162	MICROPROCESSOR IC	KM1E1
IC300		✻	W05-1515-00	MICROCONTROLLER IC	KM1E1
IC301			XC6120N292N1	MOS-IC	KM1E1
IC302			M24C08-RDW6TP	ROM IC	KM1E1
IC303			74HCT2G02DP	MOS-IC	KM1E1
IC304			TC7SH08FU-F	MOS-IC	KM1E1
IC305			TC7SH04FU-F	MOS-IC	KM1E1
IC350			BD6538G	MOS-IC	KM1E1
IC400			74AHCT08PW	MOS-IC	KM1E1
IC450			BD6538G	MOS-IC	KM1E1
IC451			R1114N331B-TR	ANALOGUE IC (3.3V LF)	KM1E1
IC500			WM8716SEDS/R	MOS-IC	KM1E1
IC501			TAR5S50-F	ANALOGUE IC	KM1E1
IC600			E-TDA7716	ANALOGUE IC	KM1E1
IC700		✻	-	MOS-IC	E1M1
IC701		✻	TAR5S33U-F	ANALOGUE IC	E1M1
Q40			2SB1184	TRANSISTOR	KM1E1
Q41		✻	2SC4081	TRANSISTOR	KM1E1
Q42			DTA124EUA	DIGITAL TRANSISTOR	KM1E1
Q43			DTC114YUA	DIGITAL TRANSISTOR	KM1E1
Q50			2SB1184	TRANSISTOR	KM1E1
Q51			2SA1577	TRANSISTOR	KM1E1
Q52		✻	2SC4081	TRANSISTOR	KM1E1
Q53			DTC114YUA	DIGITAL TRANSISTOR	KM1E1
Q60			2SA1576A	TRANSISTOR	KM1E1
Q61			DTC114YUA	DIGITAL TRANSISTOR	KM1E1
Q100,101		✻	2SC4081	TRANSISTOR	KM1E1
Q110		✻	2SC4081	TRANSISTOR	KM1E1
Q120			DTC144EUA	DIGITAL TRANSISTOR	KM1E1
Q130			DTC143ZUA	DIGITAL TRANSISTOR	K
Q131			DTA114EUA	DIGITAL TRANSISTOR	K
Q132			2SA1576A	TRANSISTOR	K
Q133			2SB1188(Q,R)	TRANSISTOR	K
Q200			DTA114YUA	DIGITAL TRANSISTOR	KM1E1
Q270			DTA114YUA	DIGITAL TRANSISTOR	KM1E1
Q300			DTC114YUA	DIGITAL TRANSISTOR	KM1E1
Q302			DTC114YUA	DIGITAL TRANSISTOR	KM1E1
Q400,401		✻	2SC4081	TRANSISTOR	KM1E1
Q402			DTA114YUA	DIGITAL TRANSISTOR	KM1E1
Q403-405			DTC114YUA	DIGITAL TRANSISTOR	KM1E1
Q406			TPC8110-F	FET	KM1E1
Q407			DTC114YUA	DIGITAL TRANSISTOR	KM1E1
Q408			DTA114YUA	DIGITAL TRANSISTOR	KM1E1
Q450			DTA124EUA	DIGITAL TRANSISTOR	KM1E1
Q500		✻	2SC4081	TRANSISTOR	KM1E1
Q600			DTC143TUA	DIGITAL TRANSISTOR	KM1E1
Q601			DTA114YUA	DIGITAL TRANSISTOR	KM1E1
Q602			DTC143TUA	DIGITAL TRANSISTOR	KM1E1
Q700		✻	2SC4081	TRANSISTOR	E1M1

E1 : KOS-A210 **E2** : KOS-D210 (Europe)
K : KOS-A300 (North America) **M1** : KOS-A300 (Other Areas)

⚠Indicates safety critical components.

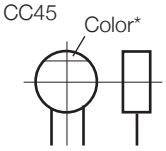
Autogoods “130”

PARTS LIST

CAPACITORS

CC	45	TH	1H	220	J
1	2	3	4	5	6

1 = Type ... ceramic, electrolytic, etc.
2 = Shape ... round, square, etc.
3 = Temp. coefficient
4 = Voltage rating
5 = Value
6 = Tolerance



• Capacitor value

010 = 1pF
100 = 10pF
101 = 100pF
102 = 1000pF = 0.001μF
103 = 0.01μF

2 2 0 = 22pF
Multiplier
2nd number
1st number

• Temperature coefficient

1st Word	C	L	P	R	S	T	U
Color*	Black	Red	Orange	Yellow	Green	Blue	Violet
ppm/°C	0	–80	–150	–220	–330	–470	–750

2nd Word	G	H	J	K	L
ppm/°C	±30	±60	±120	±250	±500

Example : CC45TH = –470±60ppm/°C

• Tolerance (More than 10pF)

Code	C	D	G	J	K	M	X	Z	P	No code
(%)	±0.25	±0.5	±2	±5	±10	±20	+40 –20	+80 –20	+100 –0	More than 10μF : –10~+50 Less than 4.7μF : –10~+75

(Less than 10pF)

Code	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

• Voltage rating

1st word \ 2nd word	A	B	C	D	E	F	G	H	J	K	V
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	–
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	–
3	1000	1250	1600	2000	2500	2150	4000	5000	6300	8000	–

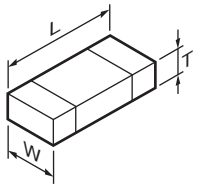
• Chip capacitors

(EX) CC 73 F SL 1H 000 J
1 2 3 4 5 6 7
(Chip) (CH, RH, UJ, SL)

(EX) CK 73 F F 1H 000 Z
1 2 3 4 5 6 7
(Chip) (B, F)

Refer to the table above.
1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Voltage rating
6 = Value
7 = Tolerance

• Dimension



Chip capacitor

Code	L	W	T
Empty	5.6±0.5	5.0±0.5	Less than 2.0
A	4.5±0.5	3.2±0.4	Less than 2.0
B	4.5±0.5	2.0±0.3	Less than 2.0
C	4.5±0.5	1.25±0.2	Less than 1.25
D	3.2±0.4	2.5±0.3	Less than 1.5
E	3.2±0.2	1.6±0.2	Less than 1.25
F	2.0±0.3	1.25±0.2	Less than 1.25
G	1.6±0.2	0.8±0.2	Less than 1.0
H	1.0±0.05	0.5±0.05	0.5±0.05

Chip resistor

Code	L	W	T
E	3.2±0.2	1.6±0.2	1.0
F	2.0±0.3	1.25±0.2	1.0
G	1.6±0.2	0.8±0.2	0.5±0.1
H	1.0±0.05	0.5±0.05	0.35±0.05

RESISTORS

• Chip resistor (Carbon)

(EX) RD 73 E B 2B 000 J
1 2 3 4 5 6 7
(Chip) (B, F)

• Carbon resistor (Normal type)

(EX) RD 14 B B 2C 000 J
1 2 3 4 5 6 7

1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Rating wattage
6 = Value
7 = Tolerance

• Rating wattage

Code	Wattage	Code	Wattage	Code	Wattage
1J	1/16W	2C	1/6W	3A	1W
2A	1/10W	2E	1/4W	3D	2W
2B	1/8W	2H	1/2W		

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SPECIFICATIONS

E TYPE

FM mdulator section

Modulating Frequency (200kHz step)..... 87.9/ 88.1/ 88.3/ 88.5/ 88.7/ 88.9/ 89.1/ 89.3/ 89.5/ 89.7/ 89.9 MHz

RDS Encode

RDS encode
..... Compliant with CENELEC RDS Standard EN50067

USB Interface

USB Standard USB1.1/ 2.0
Compatible Device .....Mass storage class
Compatible File System FAT16/ 32
Maximum Supply current ..... 500 mA
MP3 decode..... Compliant with MPEG-1/2 Audio Layer-3
WMA decode.....Compliant with Windows Media Audio
AAC decode ..... AAC-LC ".m4a" files
WAV decode.....Linear-PCM

Auxiliary input

Input Maximum Voltage.....1800 mV
Input Impedance ..... 47 kΩ

Line Output

Output Maximum Voltage.....1200 mV
Output Impedance ..... ≤ 600 Ω

Other Terminals

Input .....KAB-BUS Interface

General

Operating voltage (10.5 – 16V allowable).....14.4 V
Maximum Current consumption.....1.0 A
Dimensions (W x H x D)
Hideaway unit .....156 x 95 x 31 mm
Controller .....60 x 67 x 44 mm
Weight
Hideaway unit .....530 g
Controller .....81 g
Cable Length
Hideaway unit .....2.5 m
Controller .....2.0 m
RCA Cable .....3.0 m

KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

K TYPE

USB Interface

USB Standard USB1.1/ 2.0
Compatible Device .....Mass storage class
Compatible File System FAT16/ 32
Maximum Supply current ..... 500 mA
MP3 decode..... Compliant with MPEG-1/2 Audio Layer-3
WMA decode.....Compliant with Windows Media Audio
AAC decode ..... AAC-LC ".m4a" files
WAV decode.....Linear-PCM

Auxiliary input

Input Maximum Voltage.....1800 mV
Input Impedance ..... 47 kΩ

Line Output

Output Maximum Voltage.....1200 mV
Output Impedance ..... ≤ 600 Ω

Other Terminals

Input .....KAB-BUS Interface
Output .....Telephone Mute Cable (MAX Current : 500mA)

General

Operating voltage (10.5 – 16V allowable).....14.4 V
Maximum Current consumption.....1.0 A
Dimensions (W x H x D)
Hideaway unit .....156 x 95 x 31 mm
Controller .....60 x 67 x 44 mm
Display unit .....100 x 41 x 19 mm
Weight
Hideaway unit ..... 435 g (0.96 lbs)
Controller ..... 81 g (0.18 lbs)
Display unit ..... 171 g (0.38 lbs)
Cable Length
Hideaway unit .....2.5 m
Controller .....2.0 m
Display unit .....3.0 m
RCA Cable .....3.0 m

KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

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Autogoods "130"

SPECIFICATIONS

M TYPE

FM mdulator section

Modulating Frequency (200kHz step)..... 87.9/ 88.1/ 88.3/ 88.5/ 88.7/ 88.9/ 89.1/ 89.3/ 89.5/ 89.7/ 89.9 MHz

USB Interface

USB Standard USB1.1/ 2.0
Compatible Device .....Mass storage class
Compatible File System FAT16/ 32
Maximum Supply current ..... 500 mA
MP3 decode..... Compliant with MPEG-1/2 Audio Layer-3
WMA decode.....Compliant with Windows Media Audio
AAC decode ..... AAC-LC ".m4a" files
WAV decode.....Linear-PCM

Auxiliary input

Input Maximum Voltage.....1800 mV
Input Impedance ..... 47 kΩ

Line Output

Output Maximum Voltage.....1200 mV
Output Impedance .....≤ 600 Ω

Other Terminals

Input .....KAB-BUS Interface

General

Operating voltage (10.5 – 16V allowable).....14.4 V
Maximum Current consumption.....1.0 A
Dimensions (W x H x D)
- Hideaway unit .....156 x 95 x 31 mm
- Controller .....60 x 67 x 44 mm
- Display unit .....100 x 41 x 19 mm

Weight
- Hideaway unit ..... 530 g (1.17 lbs)
- Controller ..... 81 g (0.18 lbs)
- Display unit ..... 171 g (0.38 lbs)

Cable Length
- Hideaway unit .....2.5 m
- Controller .....2.0 m
- Display unit .....3.0 m
- RCA Cable .....3.0 m

KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

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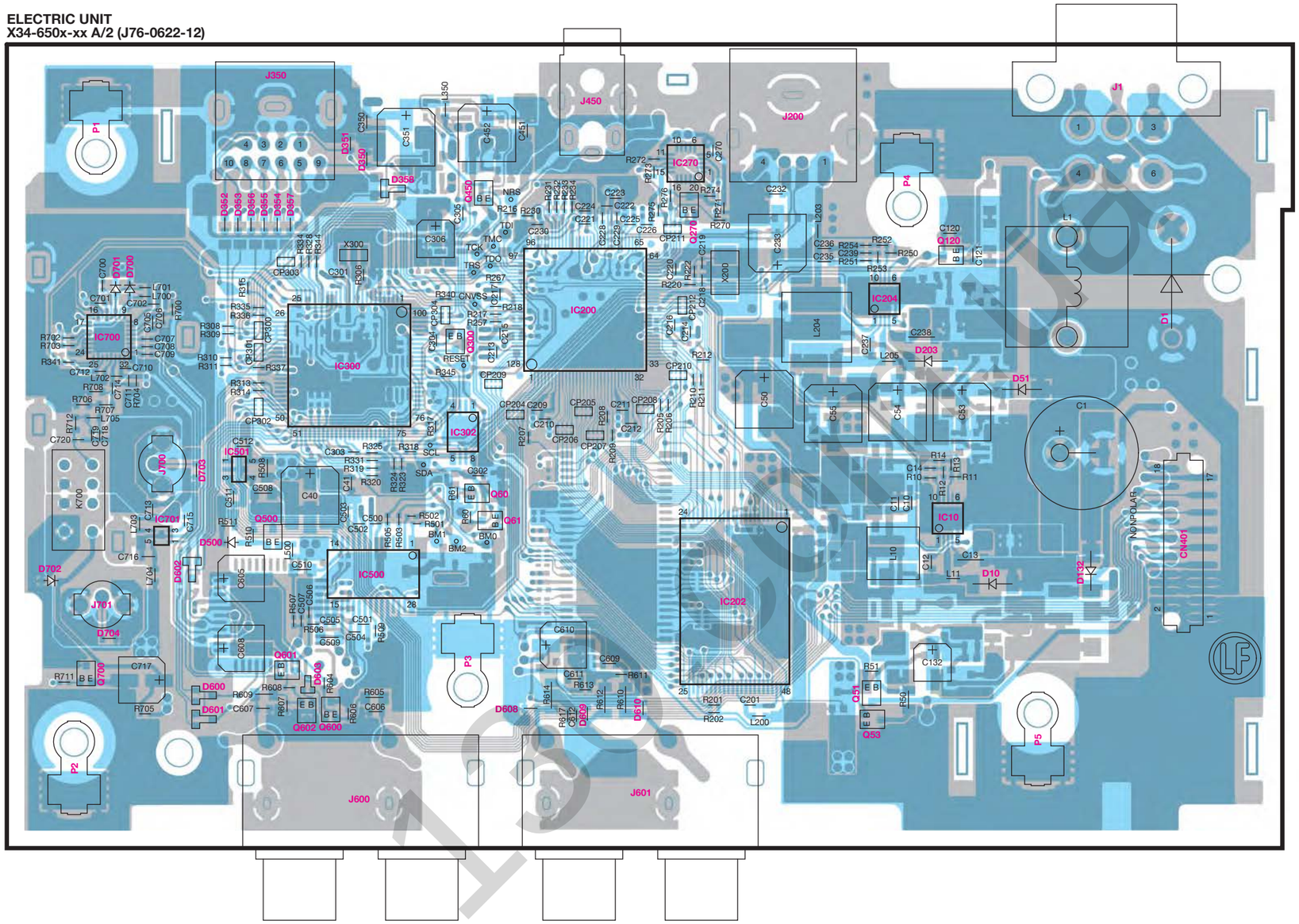
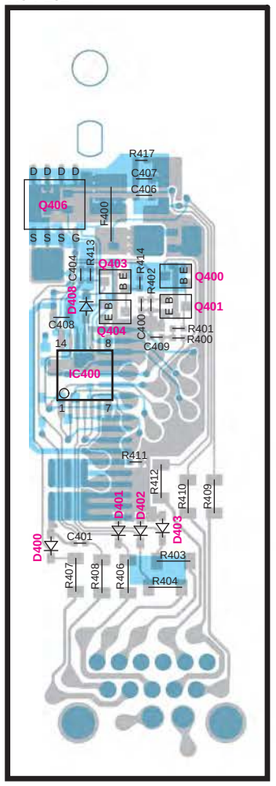
PC BOARD (COMPONENT SIDE VIEW)

ELECTRIC UNIT
X34-650x-xx A/2 (J76-0622-12)

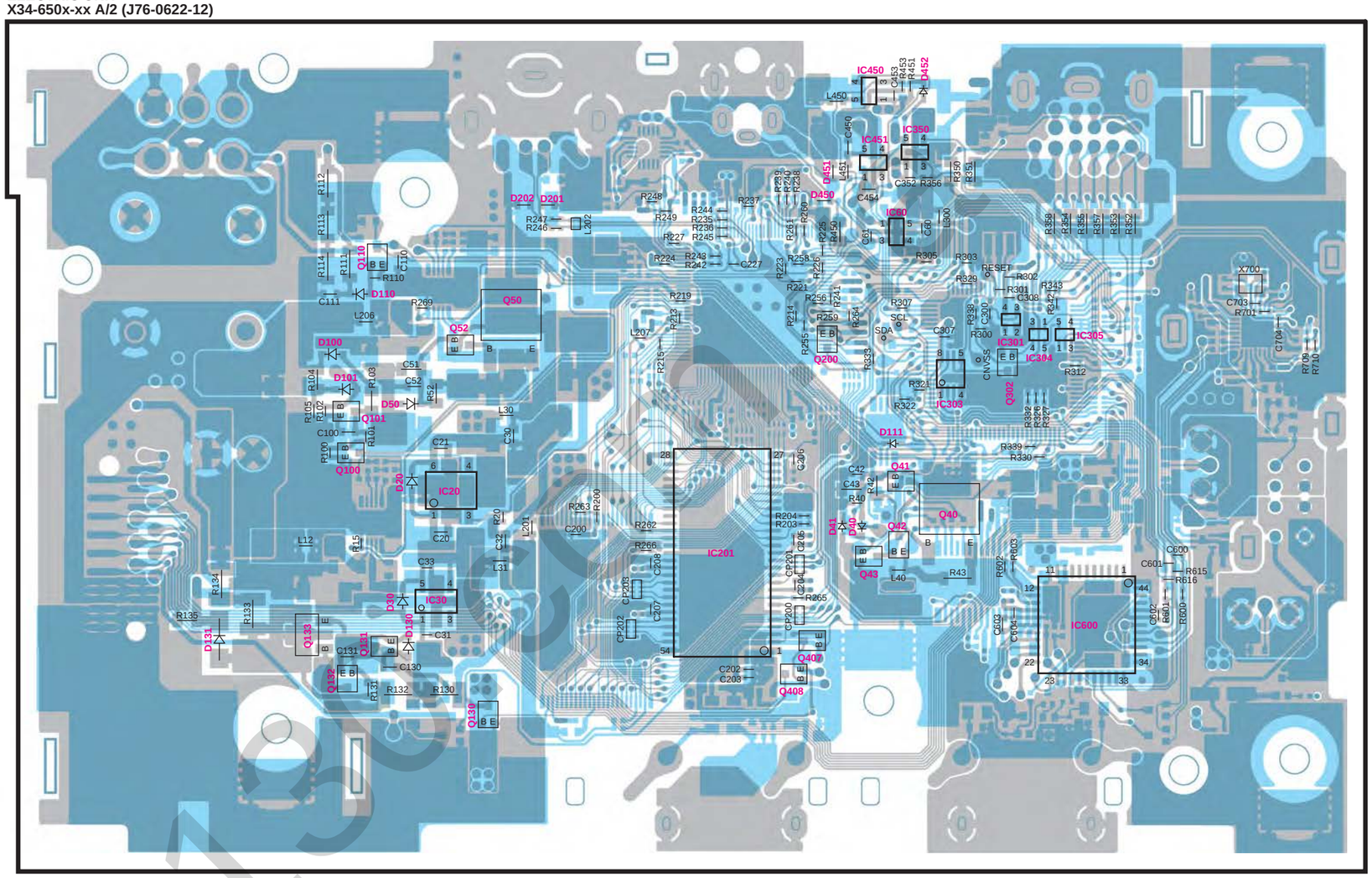


PC BOARD (FOIL SIDE VIEW)

X34 B/2



ELECTRIC UNIT
X34-650x-xx A/2 (J76-0622-12)



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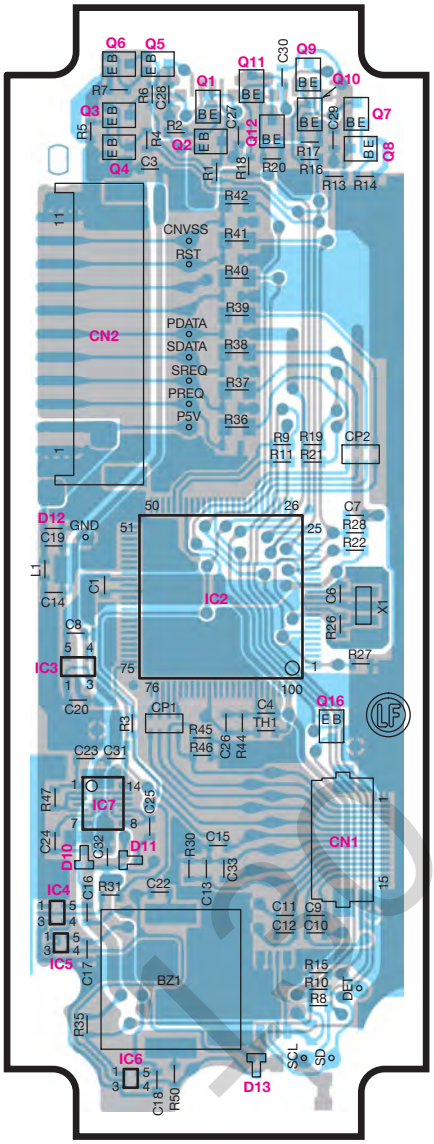
KOS-A210/A300/D210

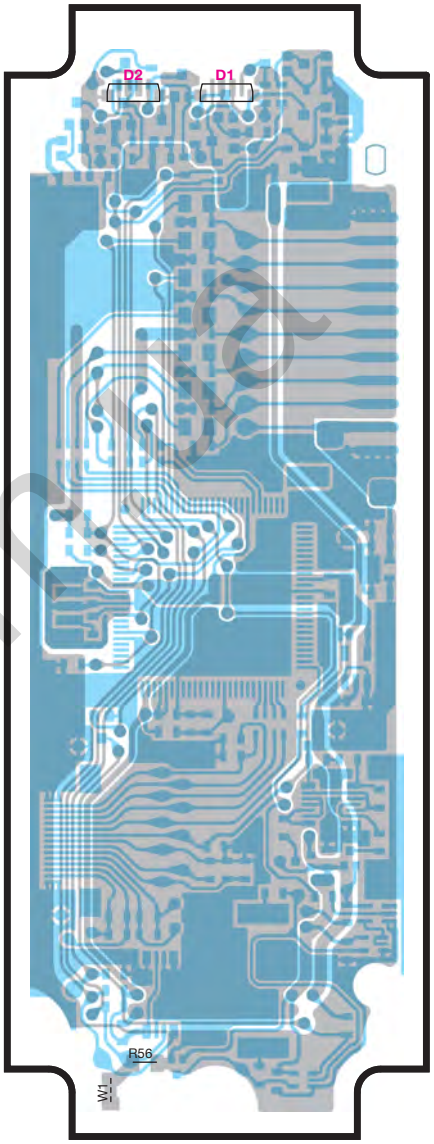
PC BOARD (COMPONENT SIDE VIEW)

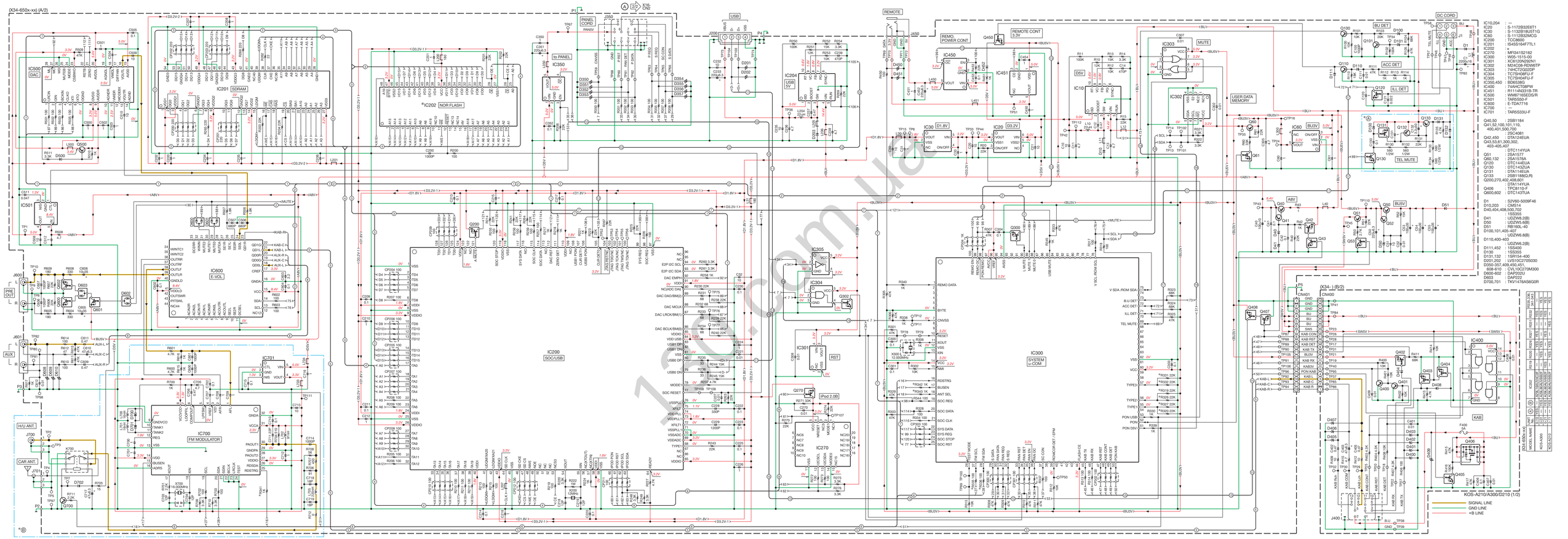
SUB CIRCUIT UNIT
X16-671x-xx (J76-0623-12)



PC BOARD (FOIL SIDE VIEW)

SUB CIRCUIT UNIT
X16-671x-xx (J76-0623-12)





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Autogoods "130"

IC2 : W05-1514-00
IC3 : S-1112B32MCG
IC4 : TC7SET04FU-F
IC5,6 : RD74HV1G00
IC7 : TC74VHC14FK

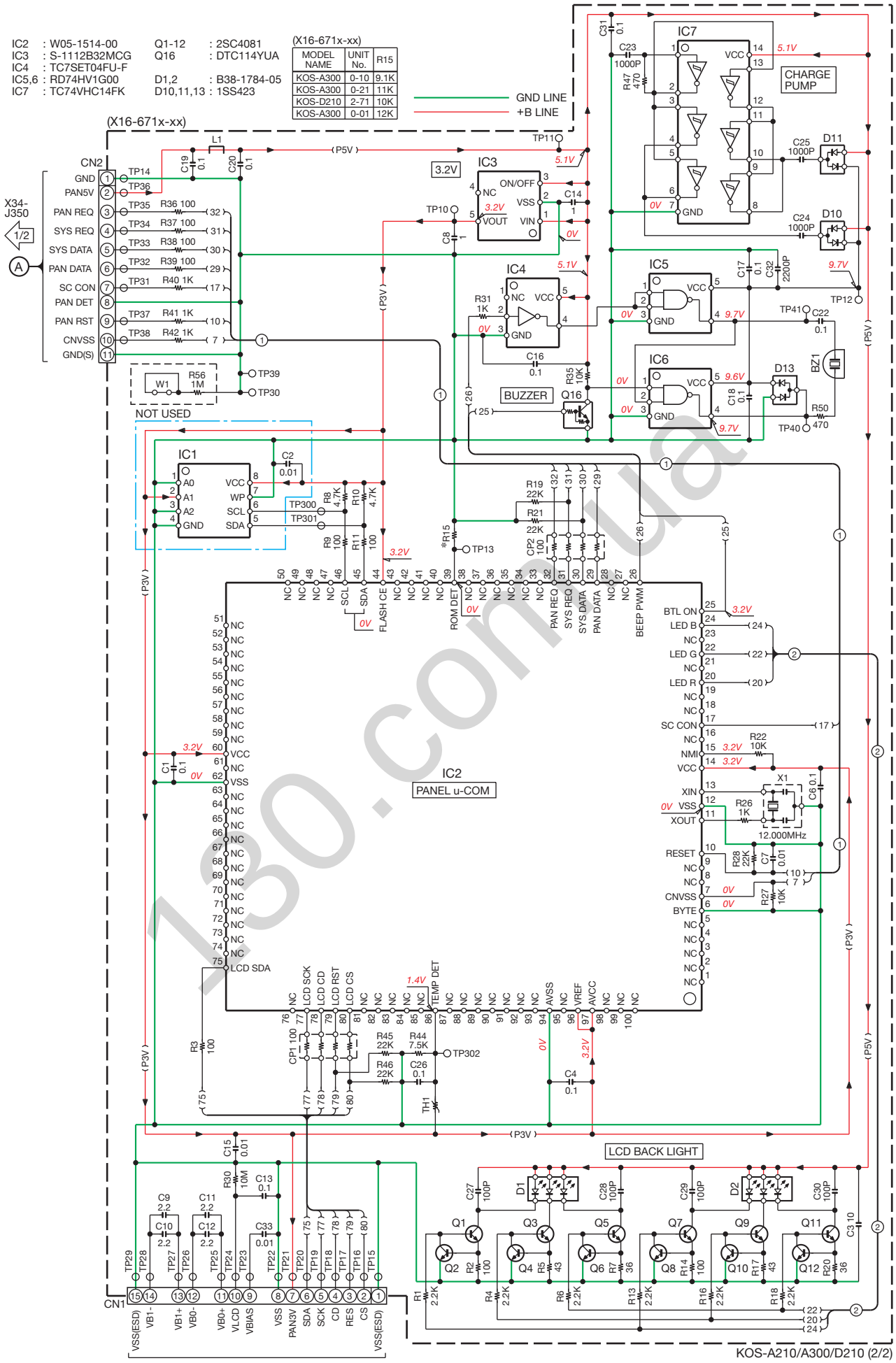
Q1-12 : 2SC4081
Q16 : DTC114YUA

D1,2 : B38-1784-05
D10,11,13 : 1SS423

(X16-671x-xx)

MODEL NAME	UNIT No.	R15
KOS-A300	0-10	9.1K
KOS-A300	0-21	11K
KOS-D210	2-71	10K
KOS-A300	0-01	12K

GND LINE
+B LINE



KOS-A210/A300/D210 (2/2)

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