

Pioneer

Service Manual

ORDER NO.
TRT1123

LINEAR POWER ACTIVE SUBWOOFER

TS-WX20LPA

EW

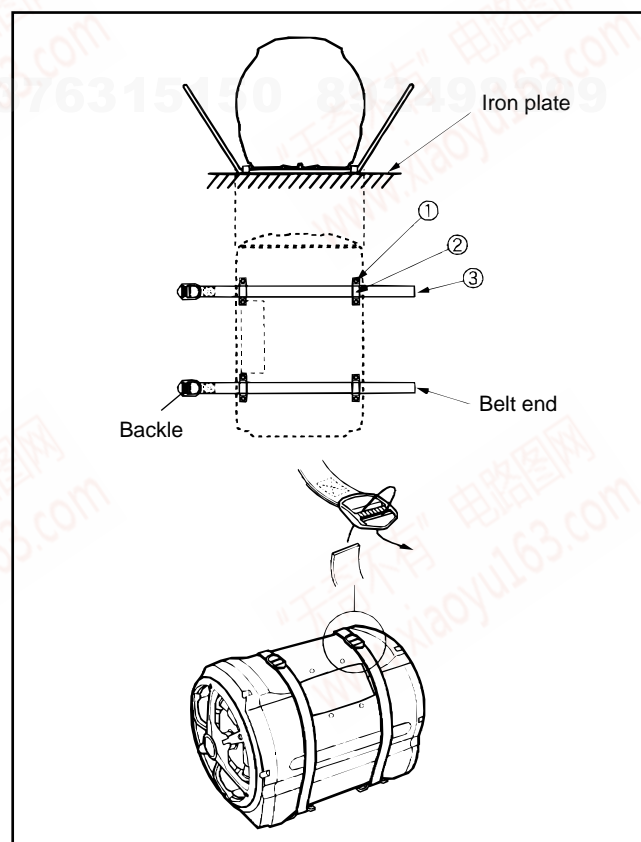
1. SPECIFICATIONS

- Speaker specifications
 - Size ϕ 200mm (8" Dia.)
 - Injection-molded polypropylene cone
 - Heat-resistant voice coil
 - Strontium magnet : 1,160g (41oz)
- Amplifier
 - Max. Power output 200W (60Hz, 35% THD)
 - Continuous output power 100W
 - DIN output power (DIN45324, 60Hz, $4\Omega+B=14.4V$) 100W
 - INPUT LEVEL (at Gain Max)
 - (RCA) 100mV+100mV/20k Ω
 - (Speaker line) 2.0V+2.0V/5k Ω
 - Power source DC14.4V (10.8~15.6V allowable)
 - Max. current consumption 14A
 - Grounding Negative ground
- Speaker system Bass reflex type
- Cabinet material High-density compound resin
- Sensitivity 106dB/W (In car, SUV type)
- Size
 - ... 282mm(11-1/8")(W) \times 291mm(11-1/2")(H) \times 431mm(17")(D)
- Weight (including accessory parts) 9.06kg (19lb 15oz)
- Gross weight (including packaging) 10.0kg (21lb 2oz)

Note:

Specifications and the design are subject to possible modification without notice due to improvements.

2. HOW TO INSTALL

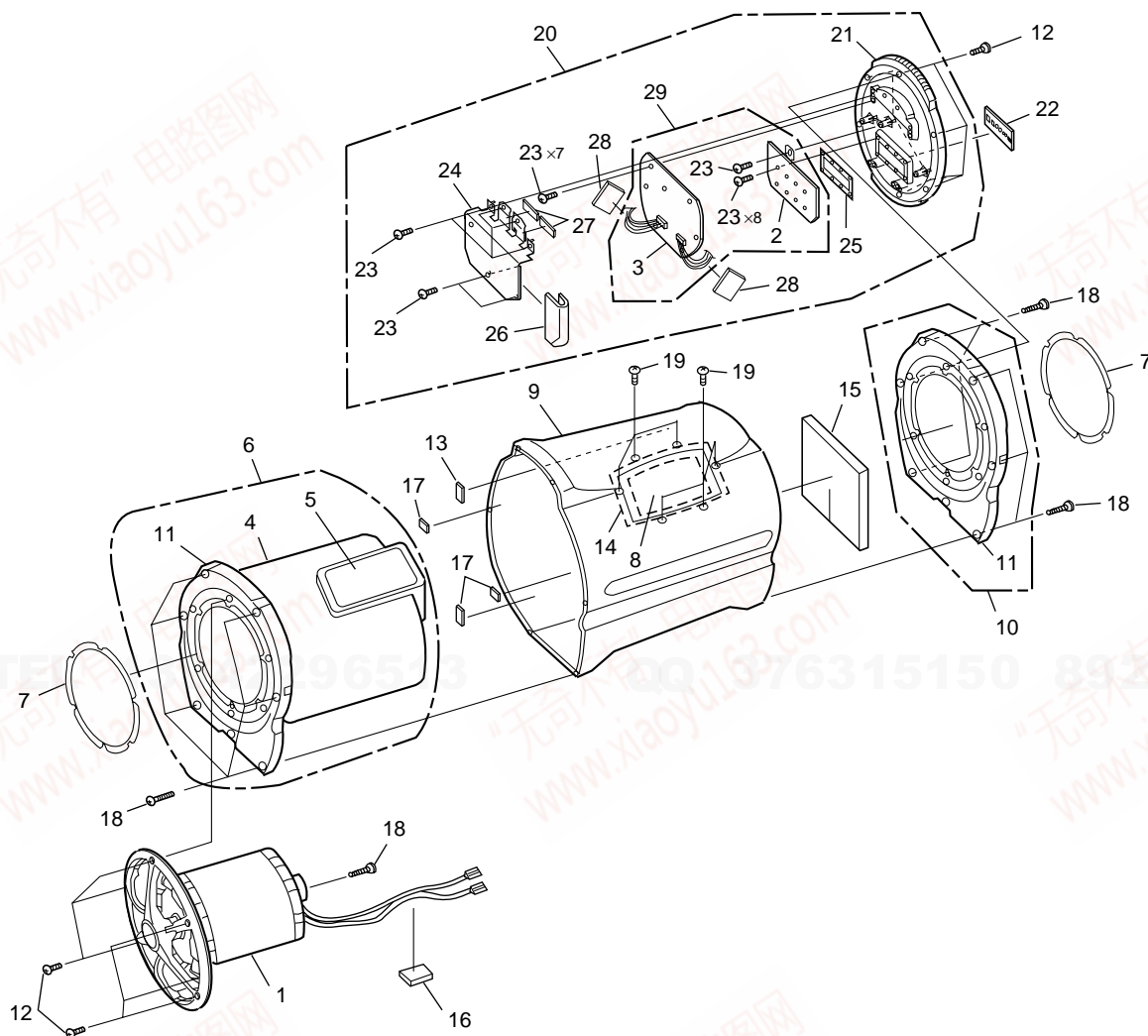


TS-WX20LPA

3. EXPLODED VIEWS AND PARTS LIST

NOTES: ● Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
● The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
● Screws adjacent to ∇ mark on the product are used for disassembly.

3.1 MAIN UNIT



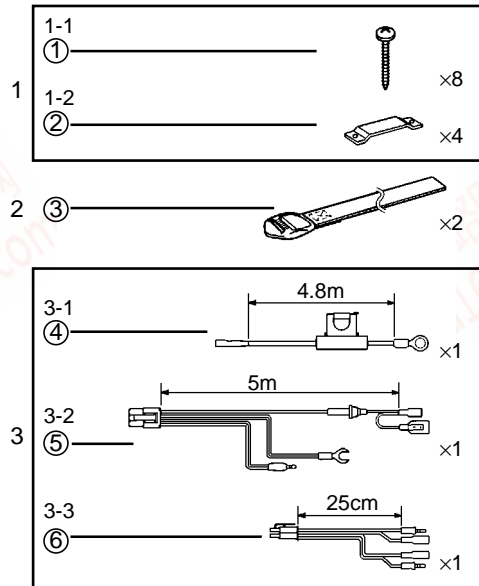
● MAIN UNIT PARTS LIST

Mark	No.	Description	Part No.	Remark	Mark	No.	Description	Part No.	Remark
	1	Speaker	20-210AZ	×1		16	Packing	TED1442	×1
NSP	2	CONTROL UNIT	TWG1013	×1		17	Packing	TED1483	×3
NSP	3	AMP UNIT	TWH1021	×1		18	Screw	BPH50P250FZK	×15
NSP	4	Port	TFX1026	×1		19	Screw	BPZ40P120FZK	×6
NSP	5	Port Panel	TLM1419	×1		20	AMP Assy	TWZ1016	×1
	6	Front Baffle Assy	TXL1269	×1		21	Heat Sink	TNA1509	×1
	7	Packing	TED1438	×2		22	Terminal Panel	TNS1019	×1
	8	Top Panel	TLM1418	×1		23	Screw	BBZ30P080FMC	×20
	9	Cabinet	TLM1444	×1		24	Shield Case	TNA1510	×1
	10	Baffle Assy	TXL1273	×2		25	Packing	TEB1332	×1
NSP	11	Baffle	TLM1417	×2		26	Cushion	TED1417	×1
	12	Screw	TBA1120	×12		27	Cushion	TED1471	×2
	13	Cushion	TED1366	×1		28	Cushion	TEC1416	×2
	14	Packing	TED1437	×2		29	PCB Unit	TWX1024-AZ	×1
	15	Sound Absorber	TED1439	×1					

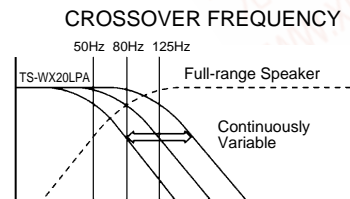
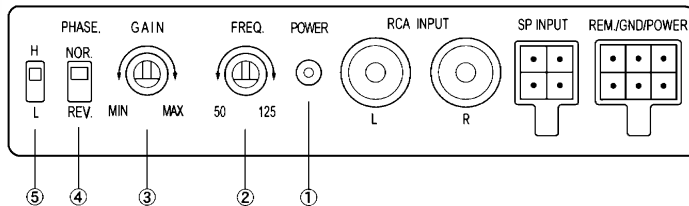
3.2 PACKING PARTS LIST

Mark	No.	Description	Part No.	Remark
NSP	1	Parts Bag	TEA1272	x1
	1-1	Screw	BNC40P250FZK	x8
	1-2	Fitting Metal	TNA1220	x4
	2	Belt Assy	TXH1420	x2
NSP	3	Cord Poly. Assy	TXH1572	x1
	3-1	Cord	TDC2255	x1
	3-2	Cord	TDC2244	x1
	3-3	Cord	TDC2245	x1
		Operating Instructions	TRD1165	x1
		Styrofoam Protector	TEC1902	One pair
		Packing Case	THF3333	x1

● PARTS INCLUDED



4. CONTROLS AND THEIR USE



① Power indicator

Lights up when power is turned on.

② Frequency control

Turn this knob to change the frequency during sound reproduction. Set the knob to the bass setting of your choice (continuously variable from 50Hz to 125Hz).

③ Gain control

Use this control to set the desired gain level.

④ Phase switch

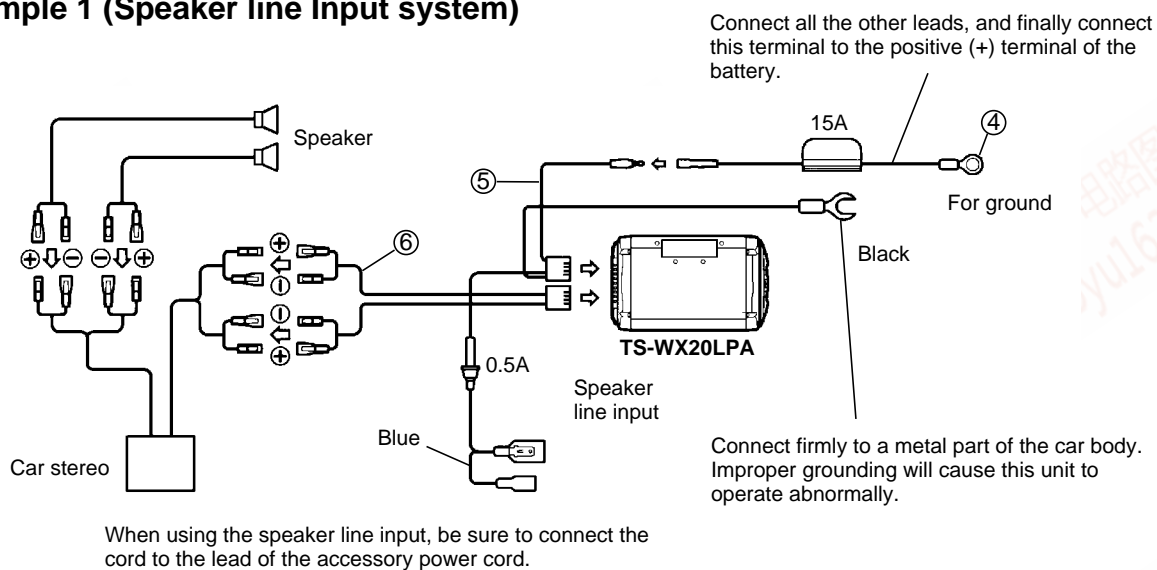
Use switch to select the phase according to the system.

⑤ BFC (Beat Frequency Control) switch

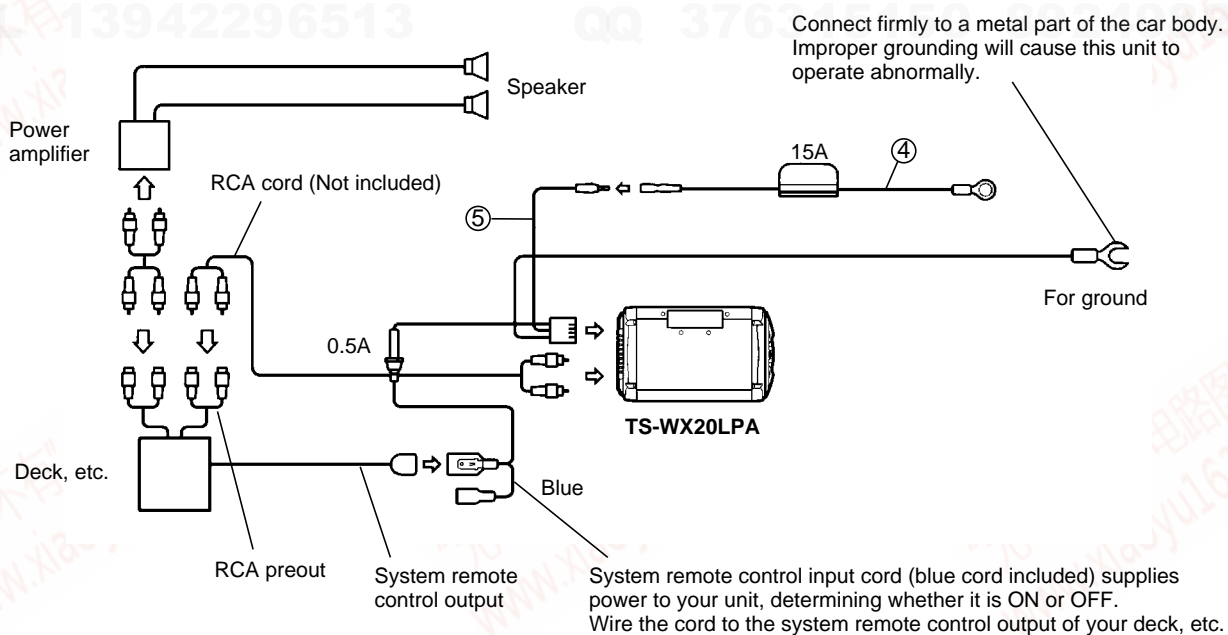
If beating is heard when listening to AM stations on your car radio, change the position of the BFC switch with a small flat-bladed screwdriver.

5. CONNECTIONS

Wiring Example 1 (Speaker line Input system)



Wiring Example 2 (RCA Input system)

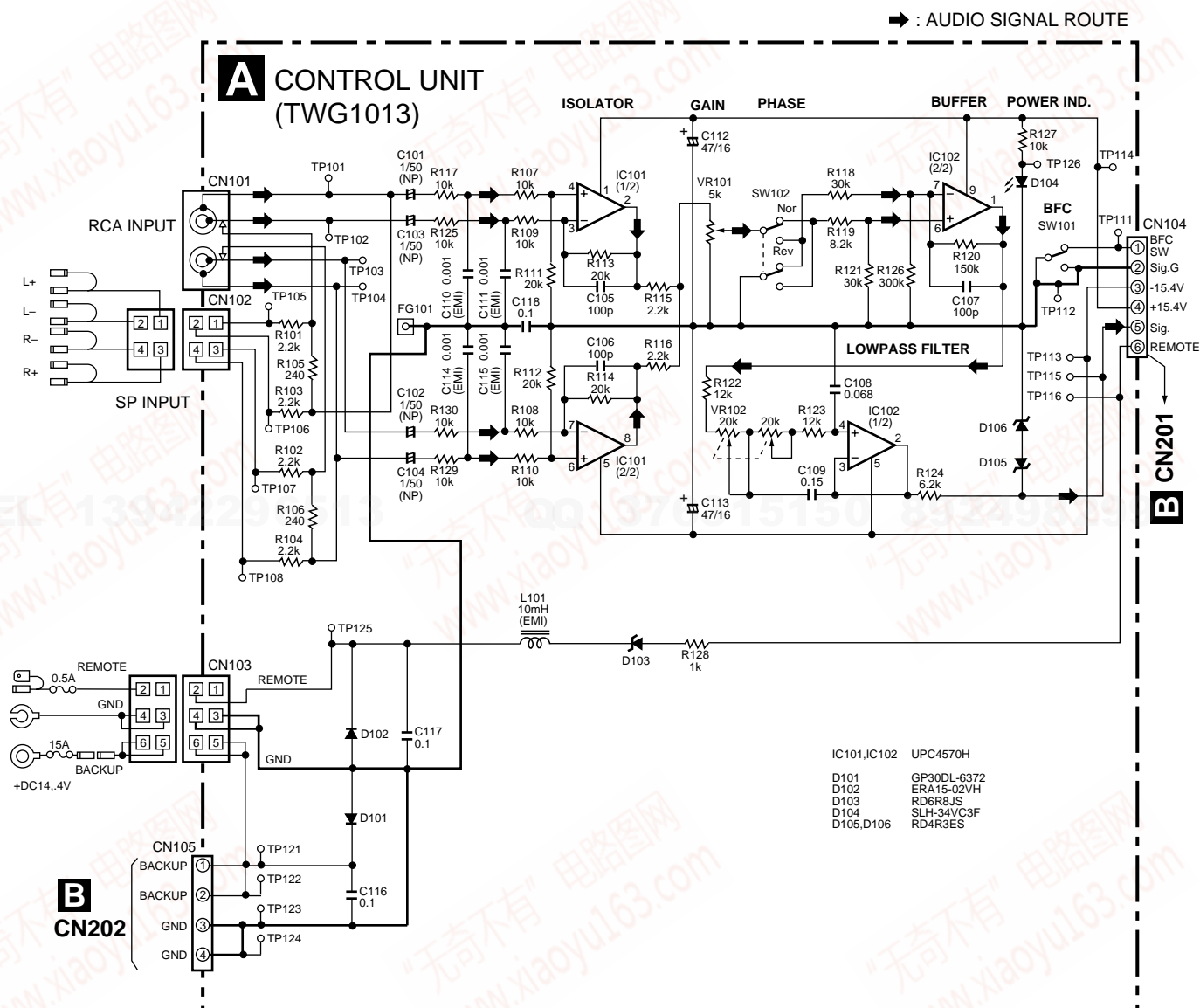


6. PCB UNIT(TWX1024-AZ)

6.1 SCHEMATIC DIAGRAM

6.1.1 CONTROL UNIT

Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".



6.1.2 AMP UNIT

B AMP UNIT (TWH1021)

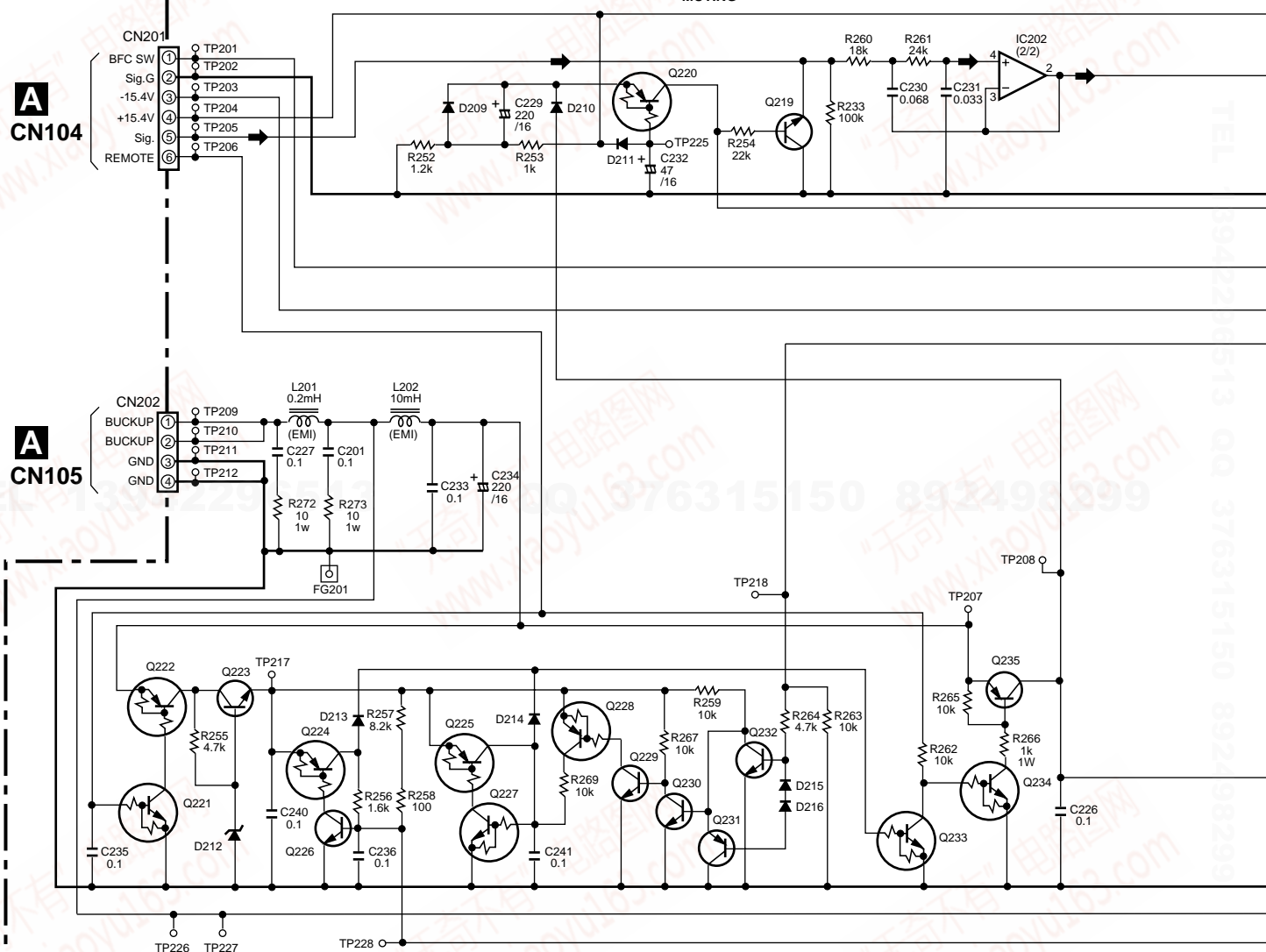
A
CN104

A
CN105

THERMAL AND DC-OFFSET PROTECTION

MUTING

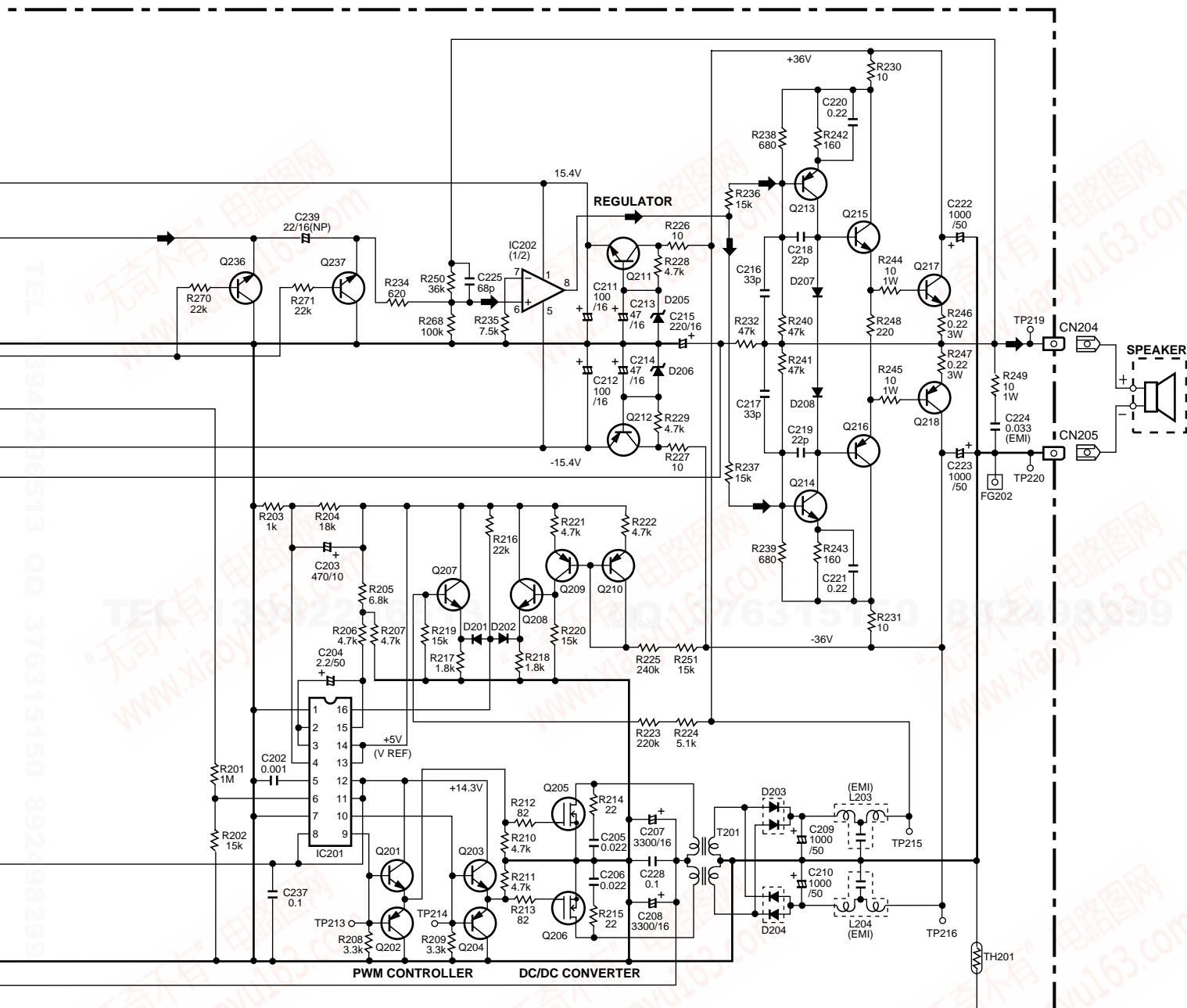
LOWPASS FILTER



QQ 376315150

892498299

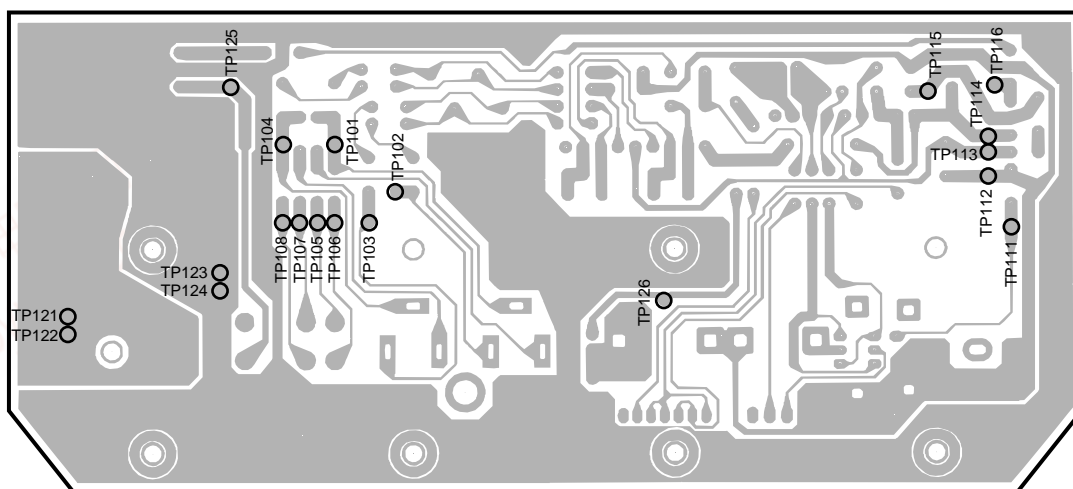
➡ : AUDIO SIGNAL ROUTE



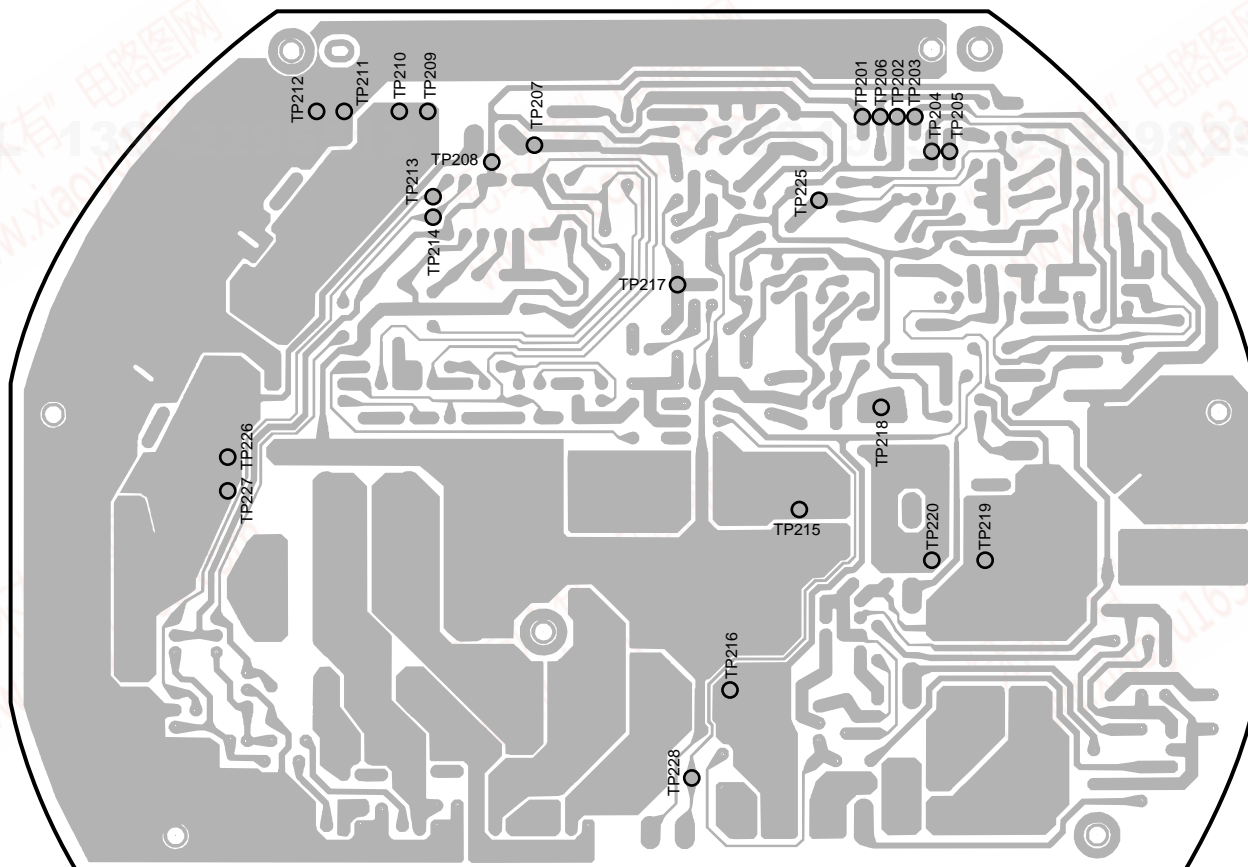
TH201	TCX1005	Q207, Q208, Q223, Q226	2SC2458	D201, D202, D207-D211	1SS133
IC201	UPC494C	Q229, Q230, Q232	2SC2458	D213-D216	1SS133
IC202	UPC4570HA	Q214	2SC2705	D205, D206	RD16JS
		Q215	2SC3421	D212	RD9R1JS
		Q219, Q236, Q237	2SD1468S	D203	YG902C2
				D204	YG902N2
Q209, Q210, Q231	2SA1048				
Q213	2SA1145				
Q216	2SA1358				
Q218	2SB1154				
Q202, Q204, Q212, Q235	2SB1329				
		Q205, Q206	2SD1705		
		Q201, Q203, Q211	2SD2005		
		Q205, Q206	2SK1946		
		Q220, Q222, Q224	DTA114ES		
		Q225, Q228	DTA114ES		
		Q221, Q227, Q233, Q234	DTC114ES		

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A CONTROL UNIT



B AMP UNIT



• This diagram is viewed from the foil side.

TS-WX20LPA

6.3 PCB PARTS LIST

NOTES: ●Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

●The Δ mark found on some component parts indicates the importance of the safety factor of the part.

Therefore, when replacing, be sure to use parts of identical designation.

●When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	\rightarrow	56 $\times 10^1$	\rightarrow	561	.....	RD1/4PU	5 6 1	J
47k Ω	\rightarrow	47 $\times 10^3$	\rightarrow	473	.....	RD1/4PU	4 7 3	J
0.5 Ω	\rightarrow	R50	.....			RN2H	R 5 0	K
1 Ω	\rightarrow	1R0	.....			RS1P	1 R 0	K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	\rightarrow	562 $\times 10^1$	\rightarrow	5621	RN1/4PC	5 6 2 1	F
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Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
LIST OF ASSEMBLIES				B AMP UNIT			
PCB UNIT				SEMICONDUCTORS			
NSP		CONTROL UNIT	TWX1024-AZ		IC201		UPC494C
NSP		AMP UNIT	TWG1013		IC202		UPC4570HA
			TWH1021		Q209,Q210,Q231		2SA1048
					Q213		2SA1145
					Q216		2SA1358
A CONTROL UNIT					Q218		2SB1154
SEMICONDUCTORS					Q202,Q204,Q212,Q235		2SB1329
	IC101,IC102		UPC4570HA		Q207,Q208,Q223,Q226,Q229		2SC2458
	D101		GP30DL-6372		Q230,Q232		2SC2458
	D102		ERA15-02VH		Q214		2SC2705
	D103		RD6R8JS		Q215		2SC3421
	D104		SLH-34VC3F		Q219,Q236,Q237		2SD1468S
	D105,D106		RD4R3ES		Q217		2SD1705
SWITCHES					Q201,Q203,Q211		2SD2005
	SW101		TSG1009		Q205,Q206		2SK1946
	SW102		TSG1010		Q220,Q222,Q224,Q225,Q228		DTA114ES
COIL					Q221,Q227,Q233,Q234		DTC114ES
	L101		TTH1080		D201,D202,D207-D211		1SS133
CAPACITORS					D213-D216		1SS133
	C112,C113		CEJA470M16		D205,D206		RD16JS
	C101-C104		CEJANP1R0M50		D212		RD9R1JS
	C116-C118		CFTNA104J50		D203		YG902C2
	C109		CFTNA154J50		D204		YG902N2
	C108		CFTNA683J50	COILS • TRANSFORMER			
	C105-C107		CKCYB101K50		T201		TTT1009
	C110,C111,C114,C115		CKCYB102K50		L201		TTH1082
RESISTORS					L202		TTH1080
	VR101 (5k Ω)		TCS1018		L203,L204		CCG-081
	VR102 (20k Ω)		TCS1019	CAPACITORS			
	Other Resistors		RD1/4PU□□□J		C218,C219		CCCSL220J50
OTHERS					C216,C217		CCCSL330J50
	FG101	TERMINAL PLATE	MXK1007		C225		CCCSL680J50
	CN101	RCA JACK	TKS1061		C211,C212		CEAS101M16
	CN102	CONNECTOR	TKS1063		C215,C229,C234		CEAS221M16
	CN103	CONNECTOR	TKS1062		C204		CEAS2R2M50
		LED SPACER	MNK1123		C203		CEAS471M10
		SCREW	BPZ26P060FZK		C213,C214,C232		CEJA470M16
					C239		CEJANP220M16
					C201,C226,C227,C233,C235		CFTNA104J50
					C236,C237,C240,C241		CFTNA104J50
					C228		CFTNA105J50
					C205,C206		CFTNA223J50
					C220,C221		CFTNA224J50

Mark	No.	Description	Part No.
	C224,C231		CFTNA333J50
	C230		CFTNA683J50
	C202		CQMA102J50
	C207,C208 (3300μF/16V)		TCH1235
	C209,C210,C222,C223 (1000μF/50V)		TCH1236

RESISTORS

R244,R245,R249,R272,R273	RS1V100JL
R266	RS1V102JL
R246,R247	RS3LMFR22J
Other Resistors	RD1/4PU□□□J

OTHERS

CN201	CORD	TDC2248
CN202	CORD	TDC2247
CN204,CN205	TERMINAL	TKX1006
FG201,FG202	TERMINAL PLATE	MKX1007
TH201	THERMISTER	TCX1005