

# SERVICE MANUAL

STEREO AV RECEIVER

- This Service manual contains the additional information "Electrical adjustment", "IC BLOCK DIAGRAM", "FL GRID and ANODE" and "IC DESCRIPTION". If requiring the other information, see Service Manual of AV-S17 (U), (S/M Code No. 09-007-435-0N1).

**aiwa**  
S/M Code No. 09-00A-435-0S1

SUPPLEMENT  
DATA

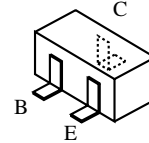
# ELECTRICAL MAIN PARTS LIST (Tuner additional parts)

# TRANSISTOR ILLUSTRATION

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-913-010	IC, LA1837NL	
	87-070-127-110	IC, LC72131D	
TRANSISTOR			
	87-A30-196-080	TR, 2SC4115SRS	
	89-327-143-080	TR, 2SC27140	
DIODE			
	87-A40-269-080	C-DIODE, MC2836	



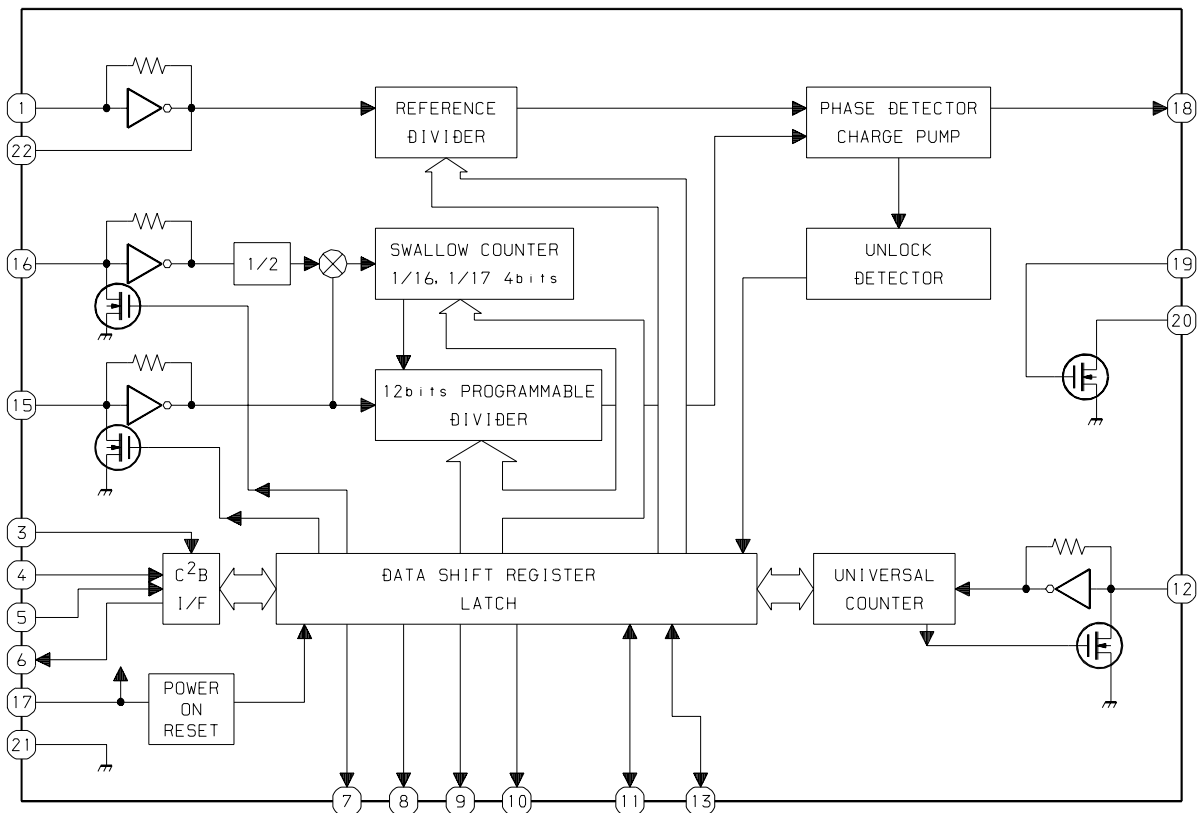
E C B  
2SC4115



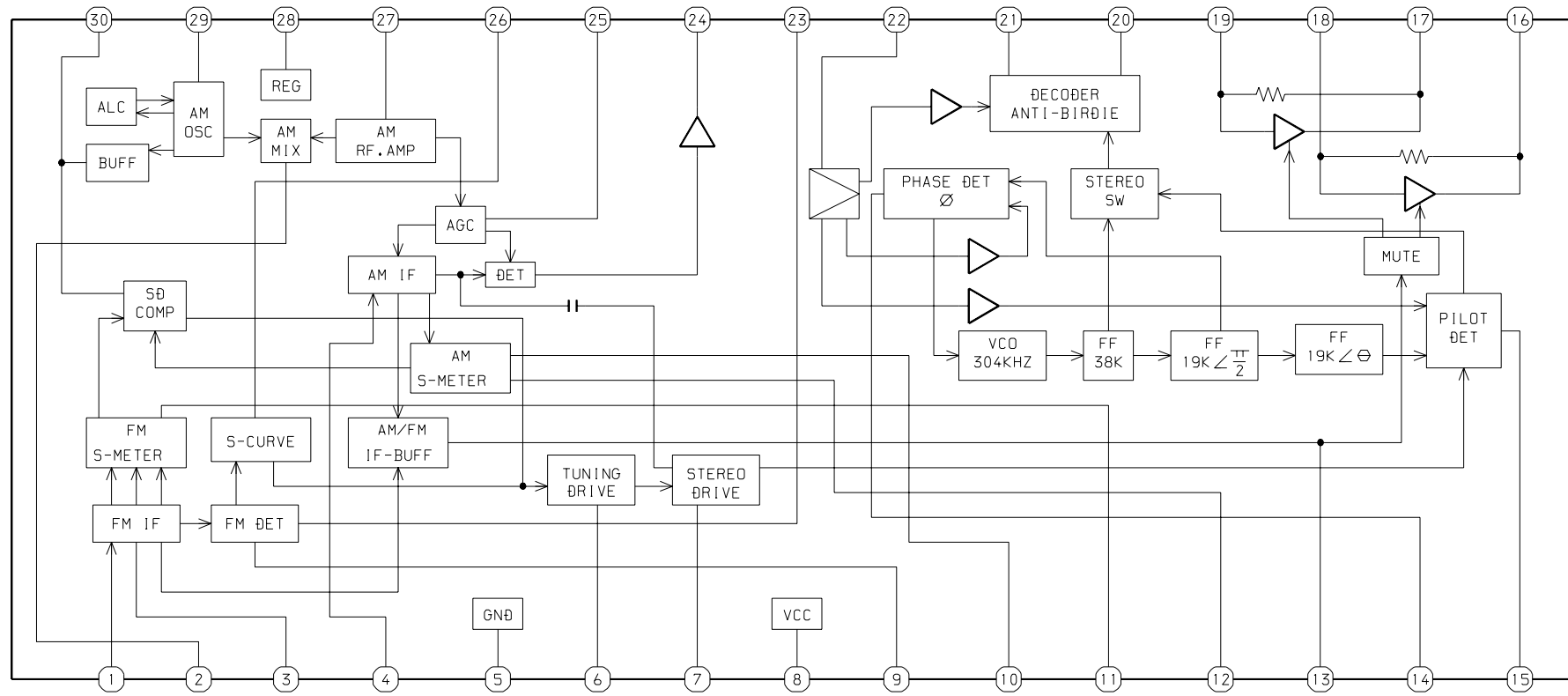
B E C  
2SC2714

## IC BLOCK DIAGRAM

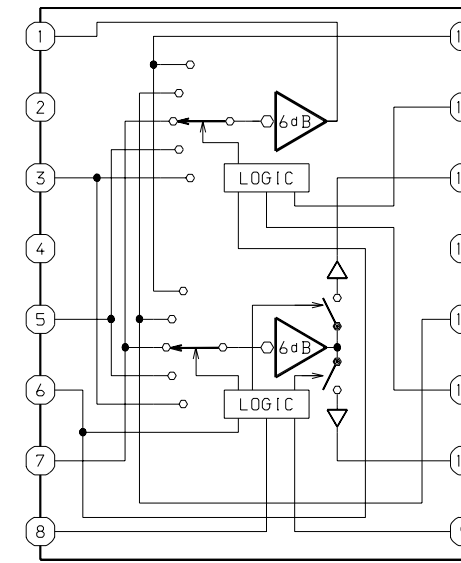
IC, LC72131D



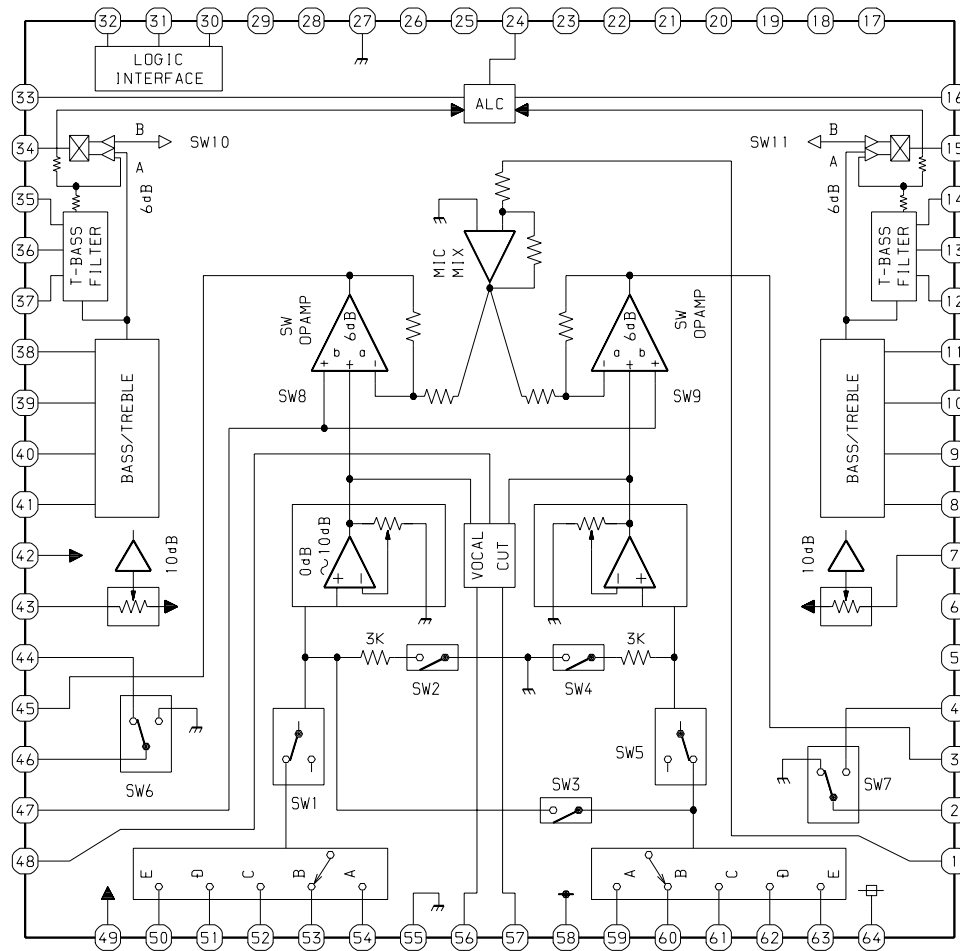
IC, LA1837NL



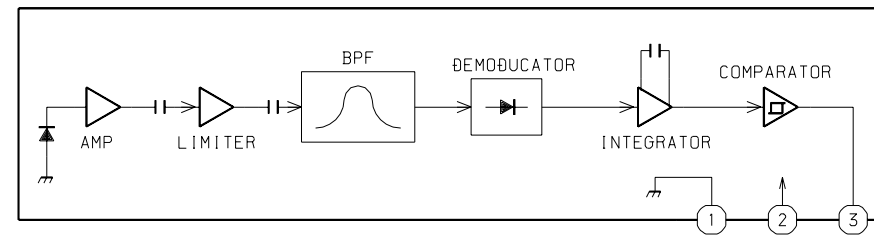
IC, BA7625



IC, M62445AFP



IC, GP1U281X



## IC DESCRIPTION

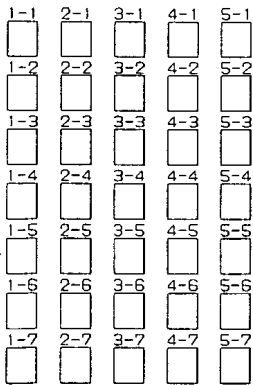
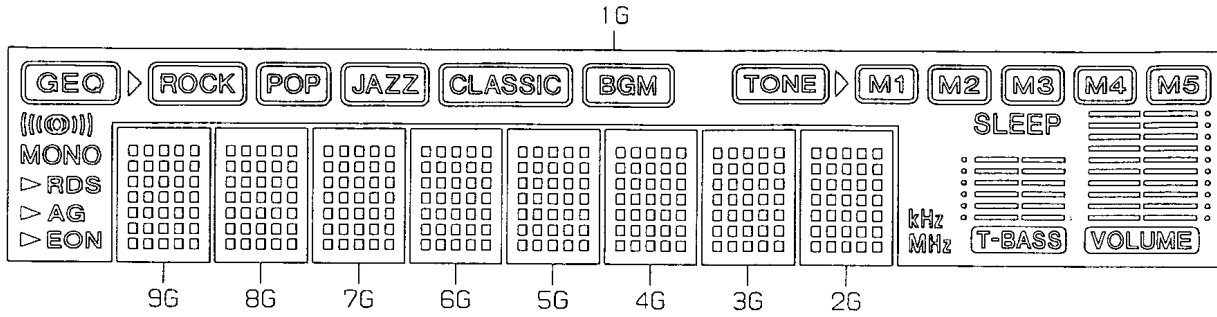
IC, UPD780226-016-3BA

Pin No.	Pin Name	I/O	Description
1	$\overline{\text{O-K-SCAN}}$	O	Switch scan timing output.
2	O-PLL-CE	O	PLL IC chip enable output.
3	O-DATA(M)	O	Data output for sound.
4	$\overline{\text{I-TUNE/IFC}}$	I	TUNE-IF count serial data input.
5	O-STB(M)	O	Latch strobe output for sound control.
6	O-MUTE	O	System mute ON/ $\overline{\text{OFF}}$ output.
7	O-CLK(M)	O	Clock output.
8	NC	–	Not connected.
9	$\overline{\text{O-POWER}}$	O	System power supply $\overline{\text{ON/OFF}}$ output.
10,11	NC	–	Not connected.
12	I-TM-BASE	I	Reference clock input for timer watch.
13	NC	–	Not used.
14	$\overline{\text{TAPE-MONITOR}}$	O	LED output for tape monitor.
15	$\overline{\text{PWR-LED}}$	O	LED output for standby.
16	NC(5.1CH)	O	Not used.
17	IC	–	Connected to ground.
18	VSS	–	Connected to ground.
19	VDD(+5.5V)	–	Power supply input (+5.5V).
20	NC	–	Not connected.
21	$\overline{\text{TUNER}}$	O	LED output for TUNER.
22	$\overline{\text{PHONO}}$	O	LED output for PHONO.
23	$\overline{\text{AUX}}$	O	LED output for AUX.
24	$\overline{\text{CD}}$	O	LED output for CD.
25	$\overline{\text{VIDEO1}}$	O	LED output for VIDEO1.
26	$\overline{\text{VIDEO2}}$	O	LED output for VIDEO2.
27	$\overline{\text{VIDEO3}}$	O	LED output for VIDEO3.
28,29	NC	–	Not used.
30	$\overline{\text{RESET}}$	I	Reset input.
31 ~ 33	NC	–	Not connected.
34	$\overline{\text{I-RMC}}$	I	Remote control signal input.
35	NC	–	Not connected.
36	C-SHIFT	O	Microprocessor clock shift output.
37	VDD1	–	Power supply.
38	X2	O	Main clock output (4.19MHz).
39	X1	I	Main clock input (4.19MHz).
40	VSS1	–	Ground.
41	AVDD	–	AC connector power supply.
42	$\overline{\text{HOLD}}$	I	System power supply voltage monitoring AD input.
43	I-RE-VOL	I	Rotary encoder (vol) AD input.
44	NC	–	Not used.
45	I-JOG2	I	Rotary encoder (multy jog) AD input.

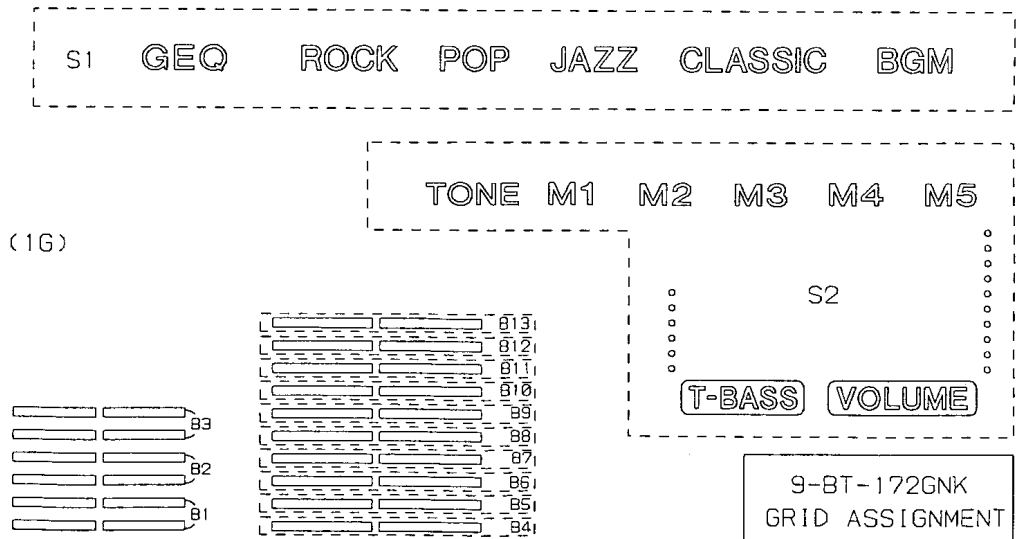
Pin No.	Pin Name	I/O	Description
46	I-FU-JOG1	I	Rotary encoder (function) AD input.
47	I-KEY2	I	Key2 AD input.
48	I-KEY1	I	Key1 AD input.
49	I-MULTI-LEVEL	I	Not used.
50	AVSS	–	Ground.
51	NC	–	Not connected.
52 ~ 58	P35 ~ P29	O	FL segment P35 ~ P29 output.
59	$\overline{\text{GEQ}}$	O/I	FL segment P28 output / $\overline{\text{GEQ}}$ data input to diode (Not used).
60	LW	O/I	FL segment P27 output / LW mode data input to diode (Not used).
61	FM1	O/I	FL segment P26 output / FM1 mode data input to diode (Not used).
62	RDS	O/I	FL segment P25 output / RDS data input to diode (Not used).
63	BBE	O/I	FL segment P24 output / BBE data input to diode (Not used).
64	AMST/WIDE	O/I	FL segment P23 output / AM stereo, wide band data input to diode (Not used).
65	AM10K	O/I	FL segment P22 output / AM10kHz step data input to diode (Not used).
66	KARAOKE	O/I	FL segment P21 output / KEY CON data input to diode (Not used).
67	OSD	O/I	FL segment P20 output / OSD data input to diode (Not used).
68	AC-3	O/I	FL segment P19 output / DOLBY DIGITAL data input to diode (Not used).
69	DIGITAL-IN	O/I	FL segment P18 output / Digital input data input to diode (VIDEO1/2/3, Not used).
70	96KHZ	O/I	FL segment P17 output / 96kHz data input to diode (Not used).
71	DTS	O/I	FL segment P16 output / DTS data input to diode (Not used).
72	$\overline{\text{DSP}}$	O/I	FL segment P15 output / $\overline{\text{DSP}}$ data input to diode (Not used).
73	P14	O	FL segment P14 output.
74	STEREO	O/I	FL segment P13 output / Tuner stereo detected input.
75	$\overline{\text{HP-MUTE}}$	O/I	FL segment P12 output / $\overline{\text{Headphone mute detected}}$ (Not used).
76	$\overline{\text{I-MIC}}$	O/I	FL segment P11 output / $\overline{\text{Mic input detected}}$ input (Not used).
77	P10	O	FL segment P10 output.
78	P9	O	FL segment P9 output.
79	VDD2	–	Power supply input.
80	-VFL	–	Power supply for FL display.
81 ~ 88	P8 ~ P1	O	FL segment P8 ~ P1 output.
89 ~ 91	NC	–	Not connected.
92 ~ 100	G9 ~ G1	O	FL grid output G9 ~ G1 output.

FL (9-BT-172GNK) GRID ASSIGNMENT AND ANODE CONNECTION  
 GRID ASSIGNMENT

GRID ASSIGNMENT



















(9G-2G)



9-BT-172GNK  
 GRID ASSIGNMENT

# ANODE CONNECTION

## ANODE CONNECTION

	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	B1
P2	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	B2
P3	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	B3
P4	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	B4
P5	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	B5
P6	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	B6
P7	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	B7
P8	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	B8
P9	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	B9
P10	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	B10
P11	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	B11
P12	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	B12
P13	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	B13
P14	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	SLEEP
P15	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	KHz
P16	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	MHz
P17	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	S2
P18	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	 (M5)
P19	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	 (M4)
P20	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	 (M3)
P21	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	 (M2)
P22	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	 (M1)
P23	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	 (TONE)
P24	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	 (BGM)
P25	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	 (CLASSIC)
P26	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	 (JAZZ)
P27	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	 (POP)
P28	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	 (ROCK)
P29	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	 (GEQ)
P30	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	 (MONO)
P31	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	MONO
P32	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	 RDS
P33	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	 AG
P34	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	 EON
P35	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	S1

9-BT-172GNK  
ANODE CONNECTION

## ADJUSTMENT <TUNER>

1. Clock Check  
Settings : • Test point : TP2(CLK)  
Method : Set to AM 1710kHz and check that the test point is 2160kHz  $\pm$  45Hz.
2. AM VT Check  
Settings : • Test point : TP1(VT),  
Method : Set to AM 1710kHz, AM 530kHz and check that the test point is less than 8.5V(1710kHz) and more than 0.6V(530kHz).
3. AM Tracking Adjustment  
Settings : • Test point : TP8(Lch), TP9(Rch)  
• Adjustment location :  
L981(1/3) ..... 1000kHz  
Method : Set to MW 1000kHz and adjust L981(1/3) so that the test point is max.
4. FM VT Check  
Settings : • Test point : TP1(VT)  
Method : Set to FM 108.0MHz and check that the test point is less than 8.0V.  
Then set to FM 87.5MHz and check that the test point is more than 0.5V.
5. FM Tracking Check  
Settings : • Test point : TP9(Lch), TP9(Rch)  
Method : • Set to FM 98.0MHz and check that the test point is less than 9.0dB.
6. AM IF Adjustment  
Settings : • Test point : TP8(Lch), TP9(Rch)  
• Adjustment location :  
L772 ..... 450kHz
7. DC Balance / Mono Distortion Adjustment  
Settings : • Test point : TP3, TP4 (DC Balance)  
TP8(Lch), TP9(Rch) (Distortion)  
• Adjustment location : L771  
• Input level : 60dB $\mu$ V  
Method : Set to FM 98.0MHz and adjust L771 so that the voltage between TP3 and TP4 becomes 0V  $\pm$  0.04V.  
Next, check that the distortion is less than 1.3%.



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