SPECIFICATIONS

Semiconductors

ICs 3
FETs 2
Transistors 41
Diodes 31

Amplifier Section

Continuous Power Output of 65 watts* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz with no more than 0.02 % total harmonic distortion or 65 watts per channel at 4 ohms from 20 Hertz to 20,000 Hertz with no more than 0.03% total harmonic distortion.

Continuous Power Output at 1kHz (both channels driven)
T.H.D. 0.02%, 8 ohms . . . . . 70 watts per channel
Total Harmonic Distortion (20 Hertz to 20,000Hertz, 8 ohms, from AUX)
continuous rated power output . . No more than 0.02%
32.5 watts per channel power output
. . . . . No more than 0.02%
1 watt per channel power output . No more than 0.02%
Intermodulation Distortion (50 Hertz: 7,000 Hertz = 4:1, 8 ohms, from AUX)
continuous rated power output . . No more than 0.02%
32.5 watts per channel power output
. . . . . No more than 0.02%
1 watt per channel power output . No more than 0.02%
Damping Factor
(20 Hertz to 20,000 Hertz, 8 ohms) 35
Input (Sensitivity/Impedance)
PHONO 2.5mV/50kilohms
TUNER 150mV/50kilohms
AUX 150mV/50kilohms
TAPE PLAY 1, 2 . . . . . 150mV/50kilohms
TAPE PLAY 2 (DIN connector) . . . 150mV/50kilohms
Phono Overload Level (T.H.D. 0.01%, 1kHz)
PHONO 200mV
Output (Level/Impedance)
TAPE REC 1 . . . . . 150mV/1kilohm
TAPE REC 2 . . . . . 150mV/1kilohm
TAPE REC 2 (DIN connector) 30mV/80kilohms
Speaker . . . . . A, B, A+B (4 – 16ohms)
Frequency Response
PHONO (RIAA Equalization)
. . . . . 20Hz to 20,000Hz ±0.2dB
TUNER, AUX, TAPE PLAY
. . . . . 10Hz to 50,000Hz ±1dB
Tone Control
BASS . . . . . +7.5dB, –7.5dB (100Hz)
TREBLE . . . . . +7.5dB, –7.5dB (10,000Hz)
Subsonic Filter . . . . . 15Hz (–6dB/oct)
Loudness Contour (Volume control set at –40dB position) . . . . . +6dB (100Hz), +3dB (10,000Hz)
Hum and Noise (IHF, short-circuited, A network)
PHONO 86dB
TUNER, AUX, TAPE PLAY 100dB
Hum and Noise (DIN continuous power/50mW)
PHONO 70dB/60dB
TUNER, AUX, TAPE PLAY 86dB/61dB
Muting . . . . . –20dB

Miscellaneous

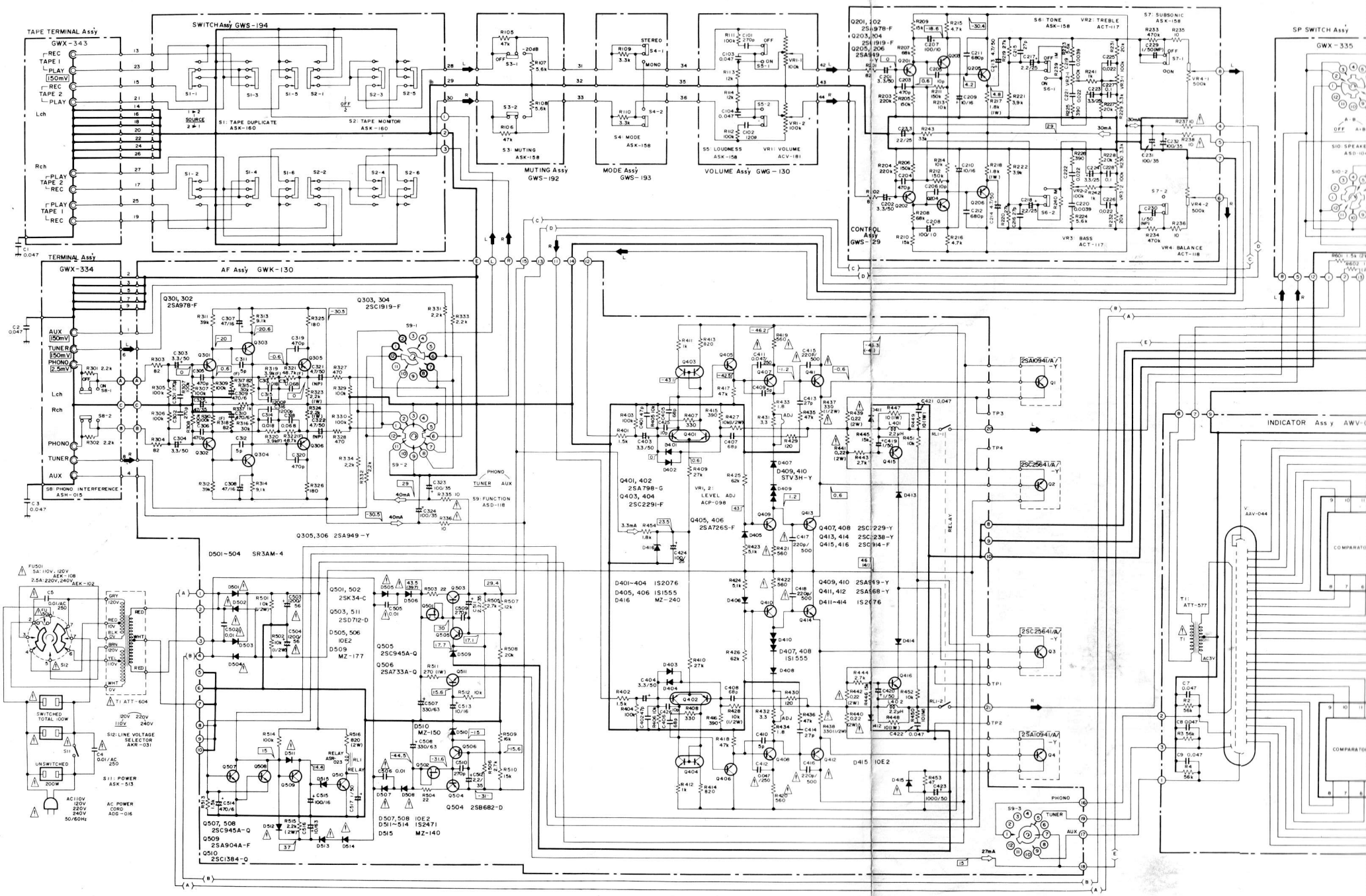
Power Requirements
HA model 220V, 50/60Hz
HR model 240V, 50/60Hz
S, S/G models 110V/120V/220V/240V, 50/60Hz
Power Consumption
HA, HR models 600W
S, S/G models 190W
Dimensions . . . . . 420(W) x 150(H) x 337(D) mm
16-9/16(W) x 5-7/8(H) x 13-1/4(D) in
Weight (without package) . . . . . 9.7kg (21 lb. 6 oz)

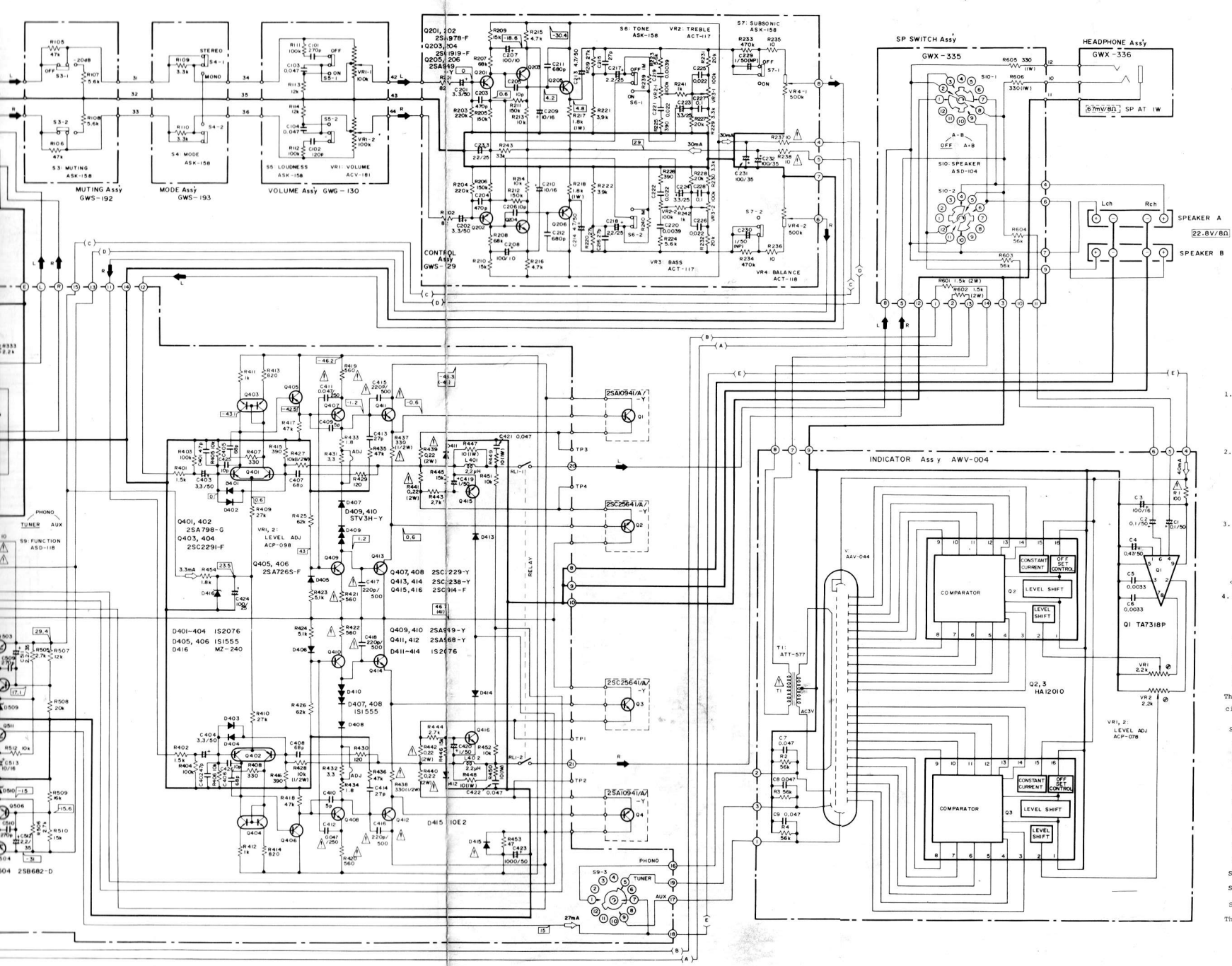
Furnished Parts

Operating instructions 1
Fuse 2.5A (S, S/G models only) 1
Fuse 5A (S, S/G models only) 1

NOTE:
Specifications and the design subject to possible modifications without notice due to improvements.

* ***Measured pursuant to the Federanl Trade Commision's Trade Regulation rule on Power Output Claims for Amplifiers.***


TAPE TERMINAL Assy
GWX-343
SWITCH Assy GWS-194
S1: TAPE DUPLICATE ASK-160
S2: TAPE MONITOR ASK-160
S3: MUTING ASK-158
MUTING Assy GWS-192
S4: MODE ASK-158
MODE Assy GWS-193
S5: LOUDNESS ASK-158
VR1: VOLUME ACV-181
VOLUME Assy GWG-130
Q201, 202 2SA978-F
Q203, 204 2SA949
Q205, 206 2SA949
S6: TONE ASK-158
VR2: TREBLE ACT-117
S7: SUBSONIC ASK-158
VR3: BASS ACT-117
VR4: BALANCE ACT-118
CONTROL Assy GWS-29
SP SWITCH Assy GWX-335
TERMINAL Assy GWX-334
AF Assy GWK-130
Q301, 302 2SA978-F
Q303, 304 2SC1919-F
S8: PHONO INTERFERENCE ASH-015
S9: FUNCTION ASD-118
Q305,306 2SA949-Y
D501~504 SR3AM-4
Q501, 502 2SK34-C
Q503, 511 2SD712-D
D505, 506 10E2
D509 MZ-177
Q505 2SC945A-Q
Q506 2SA733A-Q
Q507, 508 2SC945A-Q
Q509 2SA904A-F
Q510 2SC1384-Q
D510 MZ-150
Q504 2SB682-D
D507, 508 D511~514 D515 10E2 1S2471 MZ-140
Q401, 402 2SA798-G
Q403, 404 2SC2291-F
VR1, 2: LEVEL ADJ ACP-098
Q405, 406 2SA726S-F
D401~404 1S2076
D405, 406 1S1555
D416 MZ-240
Q407, 408 2SC1229-Y
Q413, 414 2SC1238-Y
Q415, 416 2SC914-F
D409, 410 STV3H-Y
D407, 408 1S1555
D411~414 1S2076
D415 10E2
2SA1094I/A-Y
2SC2564I/A-Y
2SA1094I/A-Y
2SC2564I/A-Y
INDICATOR Ass'y AWV-044
COMPARATOR
COMPARATOR
T1: ATT-577
T: ATT-604
S11: POWER ASK-513
S12: LINE VOLTAGE SELECTOR AKR-031
AC POWER CORD ADG-016
RELAY
TUNER
PHONO
AUX



1. RESISTORS;
   Indicated in Ω, 1/4W, ±5% tolerance unless otherwise noted
   k;kΩ, M;MΩ, (F);±1%, (G);±2%, (K);±10% tolerance
2. CAPACITORS;
   Indicated in capacity(μF)/voltage(V) unless otherwise noted p;pF
   Indication without voltage is 50V except electrolytic capacitor.
3. VOLTAGE, CURRENT;
   V ; Signal voltage at 65W + 65W 8Ω output(1kHz)
   ; DC voltage(V) at no input signal
   Value in ( ) is DC voltage at rated power.
   mA ; DC current at no input signal
4. OTHERS;
   ➡ : Signal route
   ⌀ : Adjusting point
   The ⚠ 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.

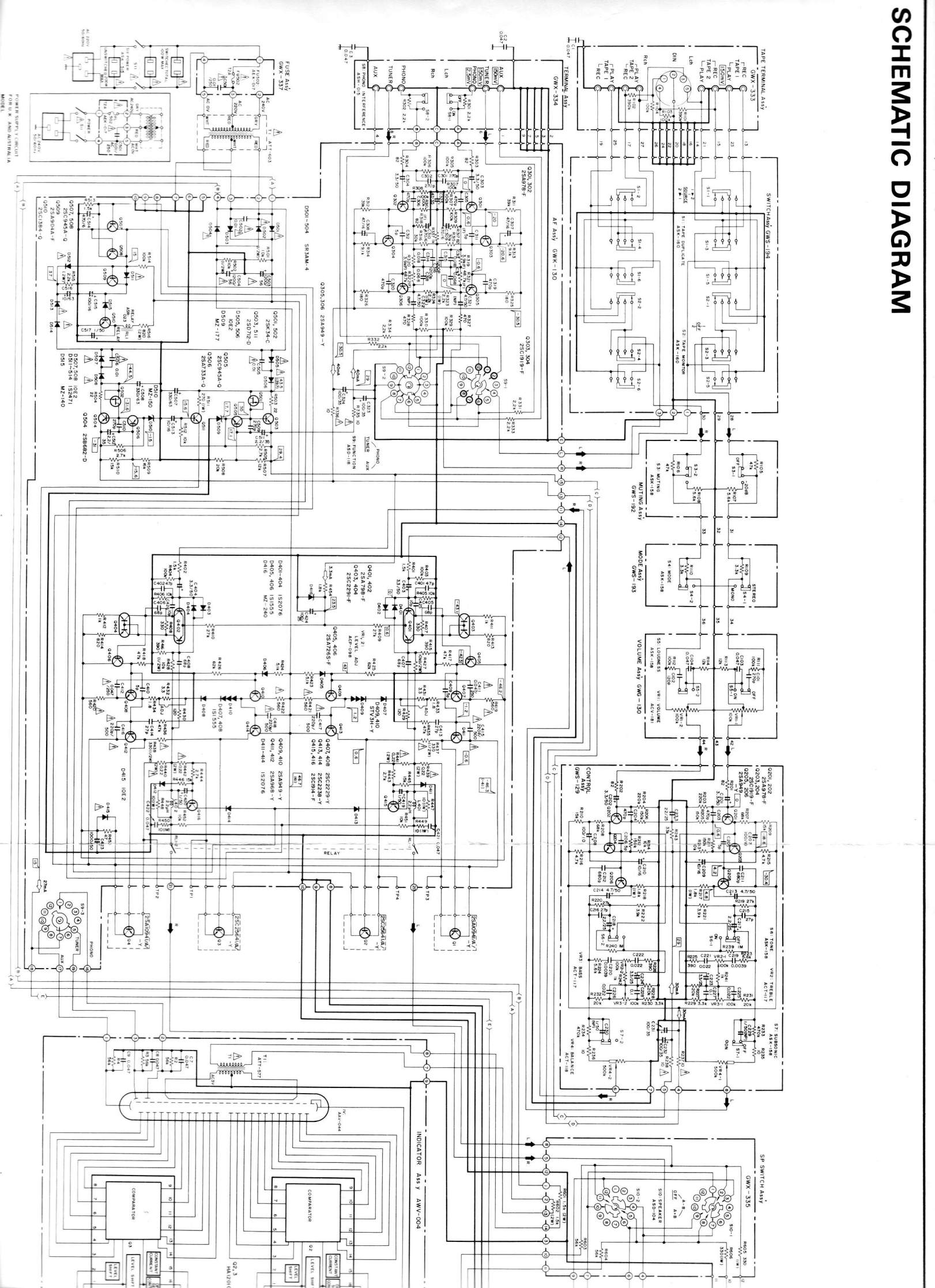
This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

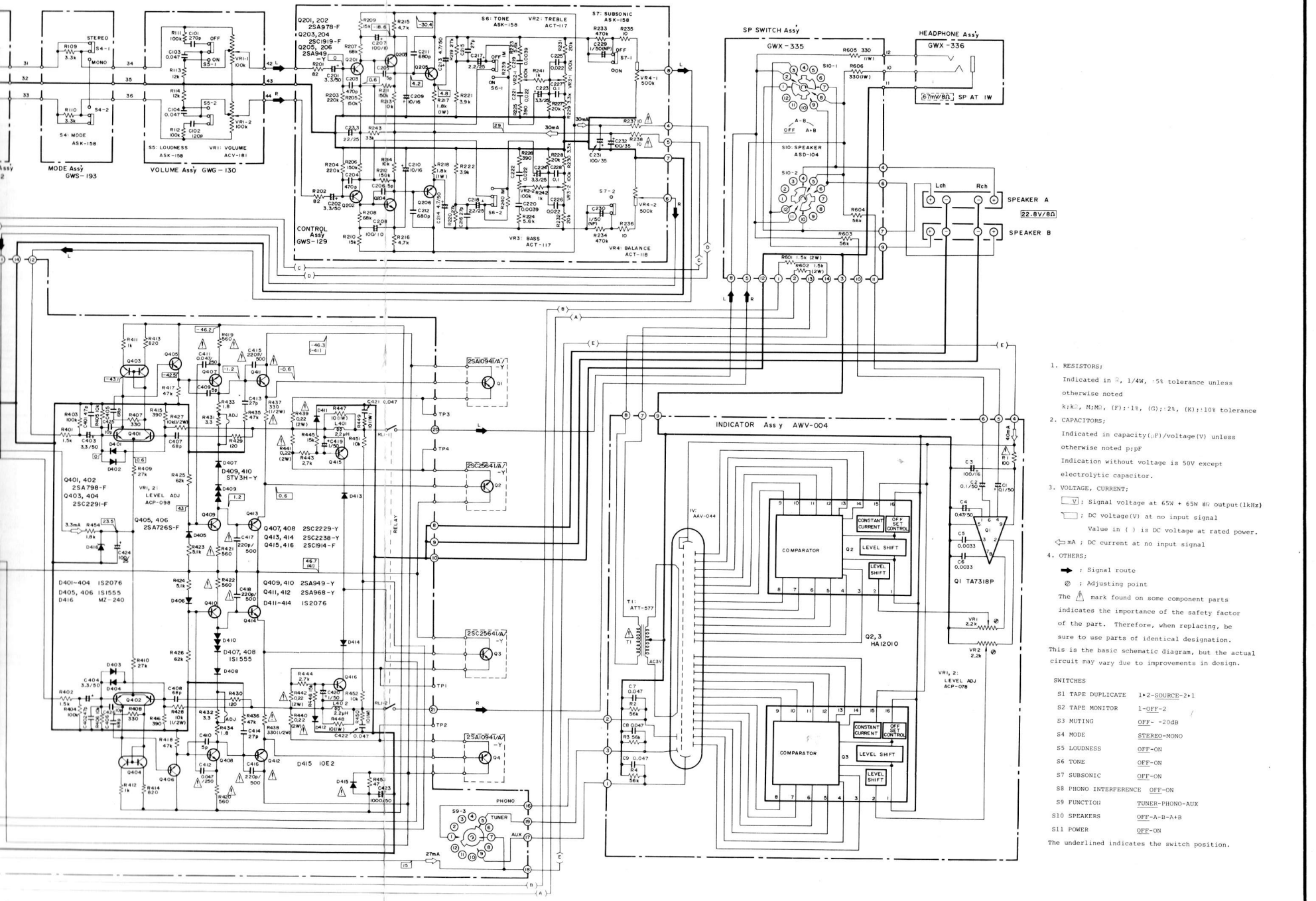
SWITCHES

S1	TAPE DUPLICATE	1➡2-SOURCE-2➡1
S2	TAPE MONITOR	1-OFF-2
S3	MUTING	OFF- -20dB
S4	MODE	STEREO-MONO
S5	LOUDNESS	OFF-ON
S6	TONE	OFF-ON
S7	SUBSONIC	OFF-ON
S8	PHONO INTERFERENCE	OFF-ON
S9	FUNCTION	TUNER-PHONO-AUX
S10	SPEAKERS	OFF-A-B-A+B
S11	POWER	OFF-ON
S12	LINE VOLTAGE SELECTOR	110V-120V-220V-240V

The underlined indicates the switch position.

SCHEMATIC DIAGRAM





1. RESISTORS;
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   kΩ, MΩ, (F):±1%, (G):±2%, (K):±10% tolerance
2. CAPACITORS;
   Indicated in capacity(μF)/voltage(V) unless otherwise noted p;pF
   Indication without voltage is 50V except electrolytic capacitor.
3. VOLTAGE, CURRENT;
   V ; Signal voltage at 65W + 65W 8Ω output(1kHz)
   ; DC voltage(V) at no input signal
   Value in ( ) is DC voltage at rated power.
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