

Service

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 SM-SA160
 SVC MNL

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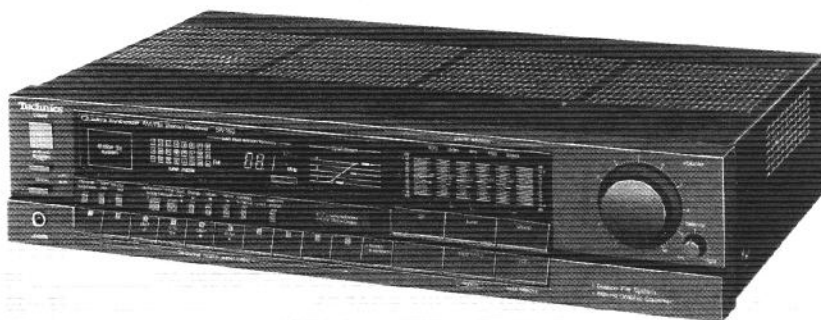
Receiver

SA-160

QUARTZ Synthesizer
 AM/FM Stereo Receiver

Color

(K)...Black Type



Area

Color	Area
(K)	(EX)Continental Europe.
(K)	(EH)Holland.
(K)	(XL)Australia.
(K)	(EG)F.R. Germany.

SPECIFICATIONS

(DIN 45 500)

■ AMPLIFIER SECTION

DIN power output 1kHz continuous power output both channels driven	2 x 40W (8Ω)
Total harmonic distortion half power at 1kHz	0.07% (8Ω)
Intermodulation distortion	
rated power at 60Hz: 7kHz=4: 1, SMPTE, 8Ω	0.5%
Power bandwidth both channels driven, -3dB	10Hz~40kHz (8Ω)
Damping factor	20 (8Ω)
Input sensitivity and impedance	
PHONO	3mV/47kΩ
CD, VCR 1, TAPE/VCR 2	200mV/22kΩ
PHONO maximum input voltage (1kHz, RMS)	150mV
S/N	
rated power (8Ω)	
PHONO	68dB (IHF, A: 71dB)
CD, VCR 1, TAPE/VCR 2	70dB (IHF, A: 85dB)
Frequency response	
PHONO	RIAA standard curve
	±0.8dB (30Hz~15kHz)
	10Hz~70kHz (±3dB)
CD, VCR 1, TAPE/VCR 2	
5 band graphic equalizer	80Hz, -10dB~+10dB
	250Hz, -10dB~+10dB
	1kHz, -10dB~+10dB
	4kHz, -10dB~+10dB
	12.5kHz, -10dB~+10dB
Loudness control (volume at -30dB)	50Hz, +9dB
Output voltage	
VCR 1, TAPE/VCR 2 REC OUT	200mV
Channel balance, 250Hz~6,300Hz	±1dB
Channel separation	55dB
Headphones output level and impedance	380mV/330Ω
Load impedance	
MAIN or REMOTE	4Ω~16Ω
MAIN and REMOTE	8Ω~16Ω

■ FM TUNER SECTION

Frequency range	87.50~108.00MHz
Sensitivity	
S/N 30dB	1.5μV (75Ω)
S/N 26dB	1.3μV (75Ω)
S/N 20dB	1.2μV (75Ω)
IHF usable sensitivity	1.5μV (IHF '58, 75Ω)
IHF 46dB stereo quieting sensitivity	22μV/75Ω
Total harmonic distortion	
MONO	0.2%
STEREO	0.3%
S/N	
MONO	60dB (75dB, IHF)
STEREO	58dB (71dB, IHF)
Frequency response	20Hz~15kHz, +1dB~-2dB
Alternate channel selectivity	±400kHz, 65dB
Capture ratio	1.0dB
Image rejection at 98MHz	40dB
IF rejection at 98MHz	70dB
Spurious response rejection at 98MHz	70dB
AM suppression	50dB
Stereo separation	
1kHz	40dB
10kHz	30dB
Carrier leak	
19kHz	-30dB (-35dB, IHF)
38kHz	-45dB (-50dB, IHF)
Channel balance (250Hz~6,300Hz)	±1.5dB
Limiting point	1.2μV
Bandwidth	
IF amplifier	180kHz
FM demodulator	1000kHz
Antenna terminals	75Ω (unbalanced)

Technics

Matsushita Electric Trading Co., Ltd.
 P.O. Box 288, Central Osaka Japan

SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology)

Note 1:

- **S1~S10** : Preset tuning switches.
[S1: 1, S2: 2, S3: 3, S4: 4, S5: 5,]
[S6: 6, S7: 7, S8: 8, S9: 9, S10: 0]
- **S11** : Memory-scan/group-search switch.
- **S12** : FM mode select switch. (AUTO→MONO)
- **S13, S14** : Band selectors.
S13: FM, S14: AM
- **S16, S17** : Character-input/tuning switches.
S16: down, S17: up
- **S18** : Change-mode selector.
- **S19** : Assort-mode selector.
- **S20** : Group select switch.
- **S21** : Memory switch.
- **S22** : Loudness switch.
- **S23~S27** : Input selector switches.
[S23: phono, S24: tuner, S25: CD,]
[S26: VCR1, S27: tape/VCR2]
- **S601-1, S601-2** : Speaker selectors.
S601-1: main, S601-2: remote
- **S701** : Power switch in "on" position.
- **Signal line**
 : B.P.F. signal
 : FM OSC
 : AM OSC
 : Phono signal
 : Positive voltage lines
 : Negative voltage lines
 : FM signal
 : AM signal
 : AF signal (Lch)

Important safety notice:

Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts. Indicated voltage values are standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on internal impedance of the DC circuit tester.

• All voltage values shown in circuitry are DC voltage in FM signal (Stereo signal) reception mode.

* Figures in () Stand for DC-voltage in AM signal reception mode

* Caution!

IC and LSI are sensitive to static electricity. Secondary trouble can be prevented by taking care during repair.

* Cover the parts boxes made of plastics with aluminum foil.

* Ground the soldering iron.

* Put a conductive mat on the work table.

* Do not touch the legs of IC or LSI with the fingers directly.

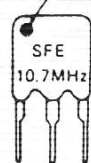
Note2:

• Use of ceramic filters in pairs

The ceramic filters (CF201, CF202) for FM-IF circuit are available in three ranks. For this circuit, be sure to use the ceramics of the same rank in a pair.

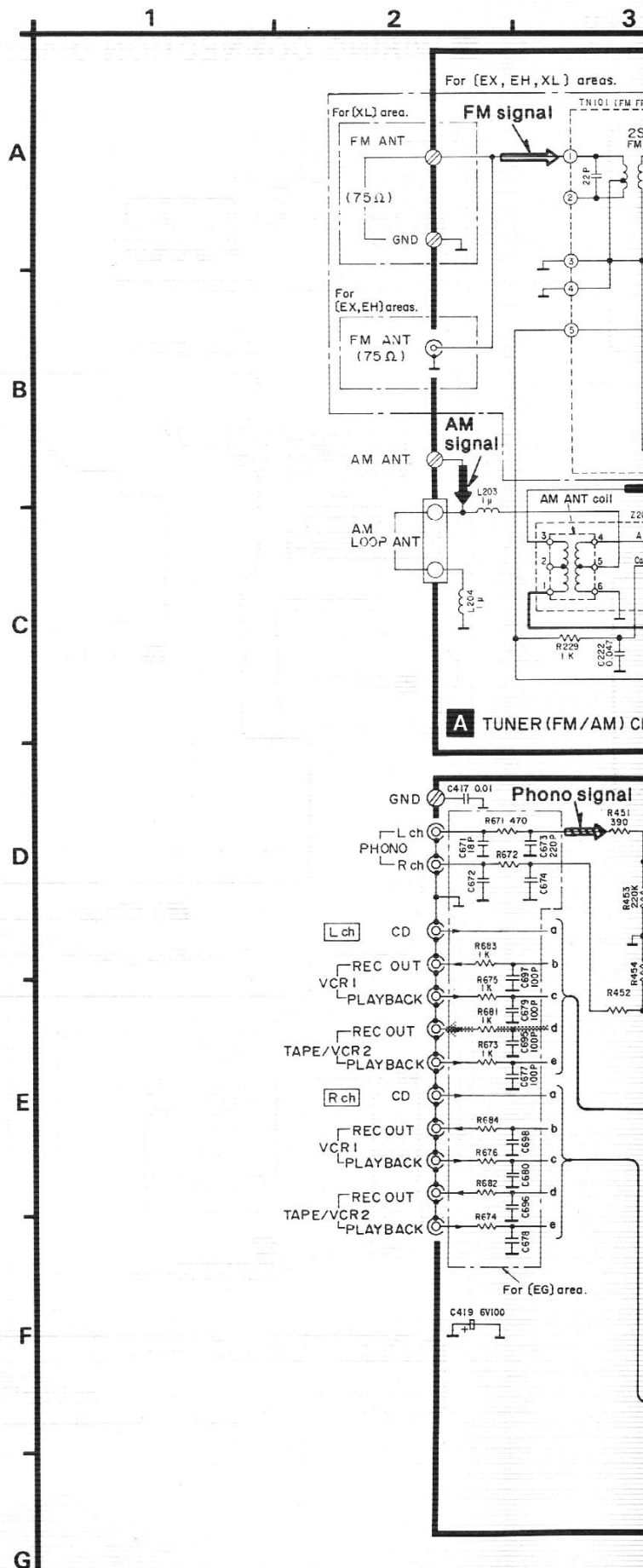
At repairing and replacement, pay close attention to the diodes (D914, D915) for use as different diodes must be used depending on each rank of the ceramic filters.

Color marking
(Red, Black or White)

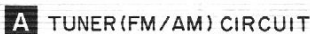


RANK (Color)	D914	D915	CENTER FREQUENCY
Black	○	×	10.65MHz
Red	×	×	10.70MHz
White	×	○	10.75MHz

Note: ○ mark: Diode is used.
× mark: Diode is not used.

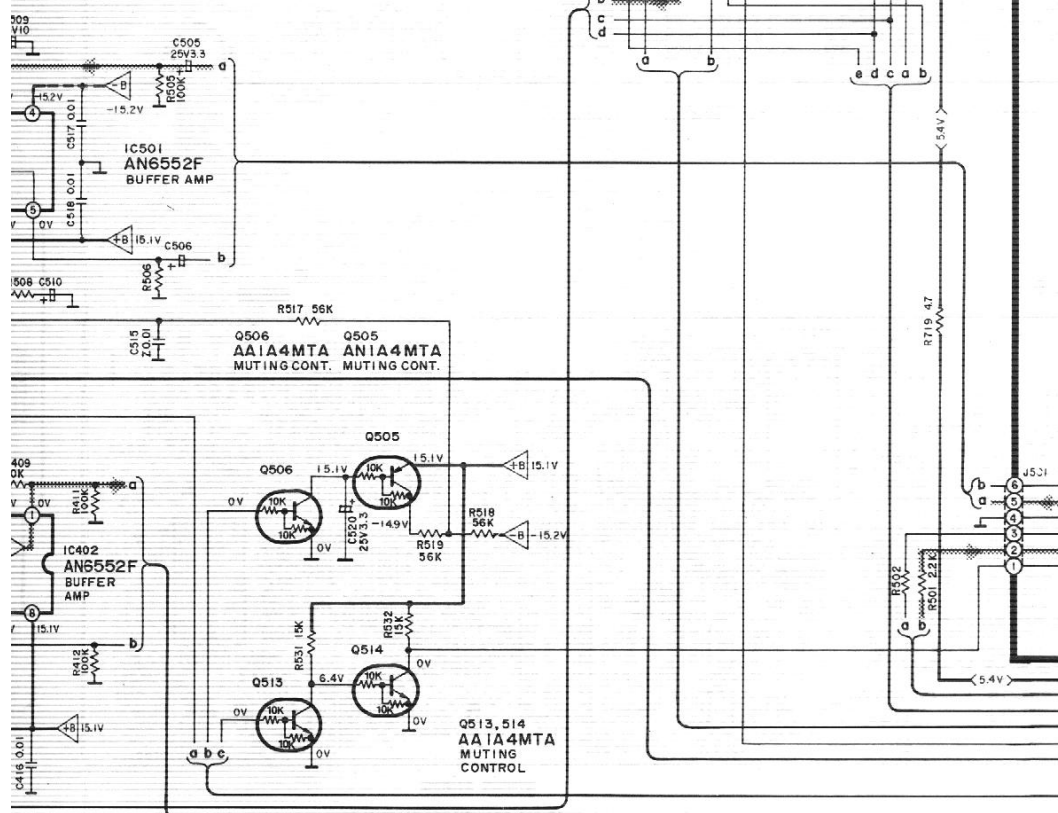


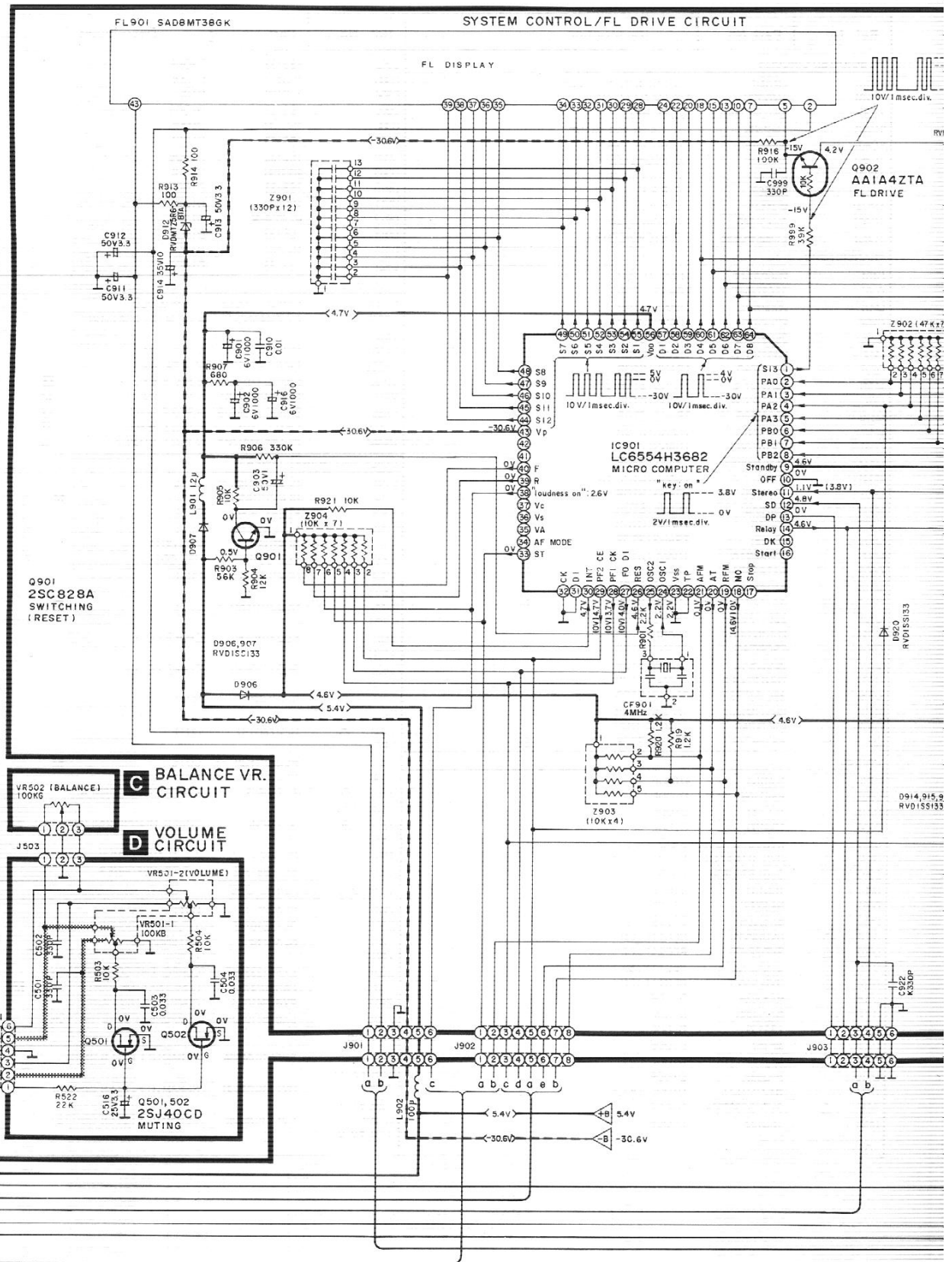
For (EG) area.470K



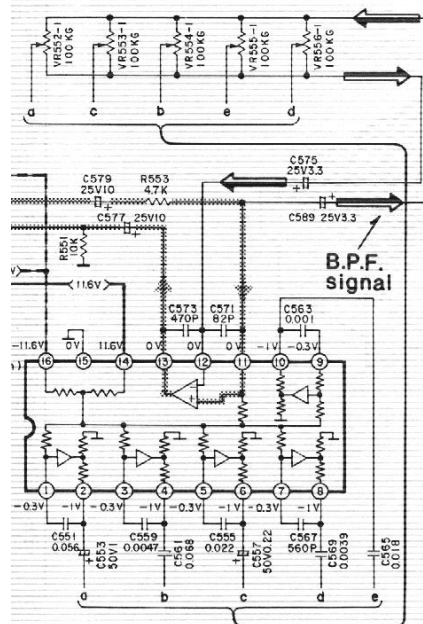
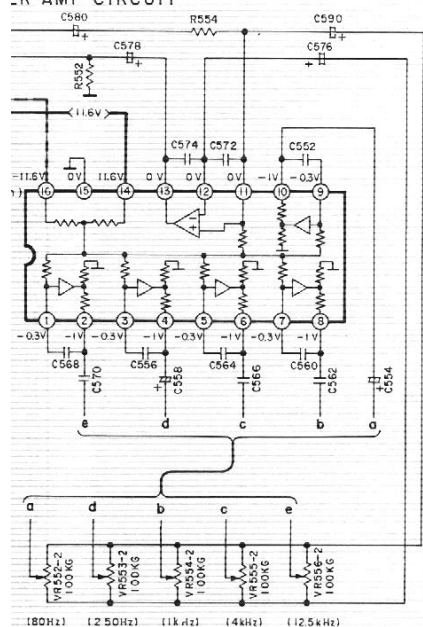
INPUT SELECTOR CIRCUIT

CIRCUIT

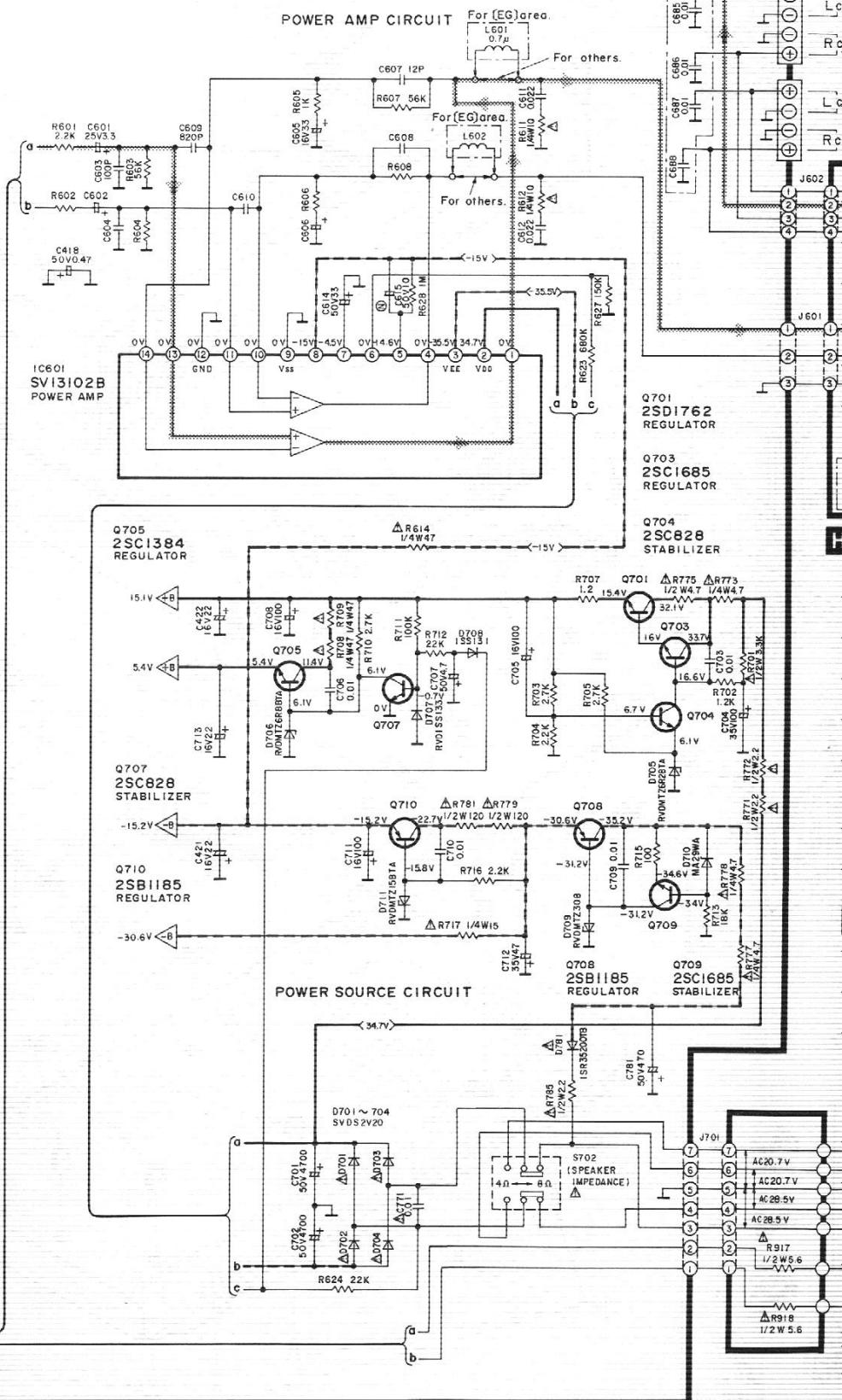




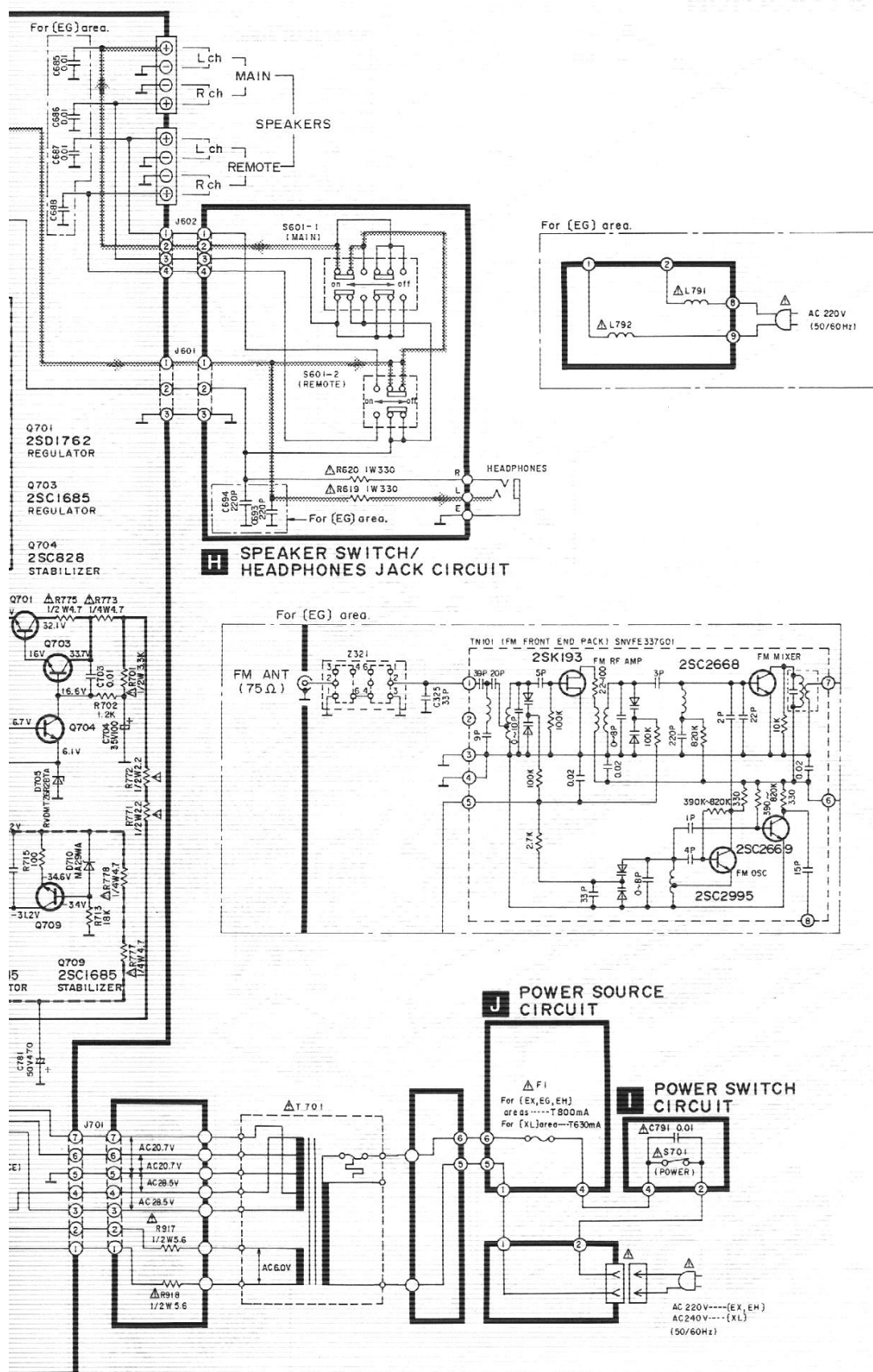
ER AMP CIRCUIT

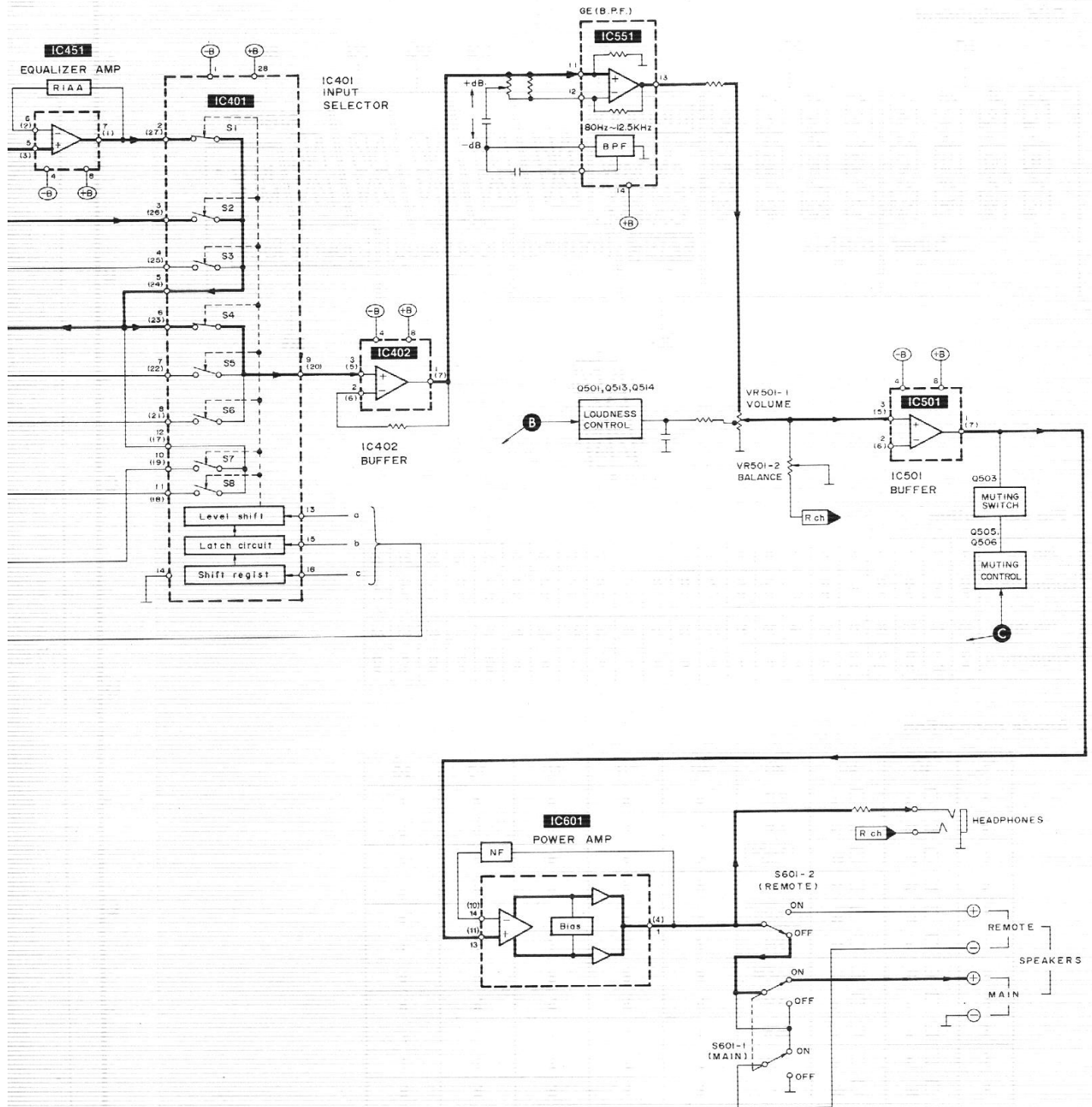


POWER AMP CIRCUIT

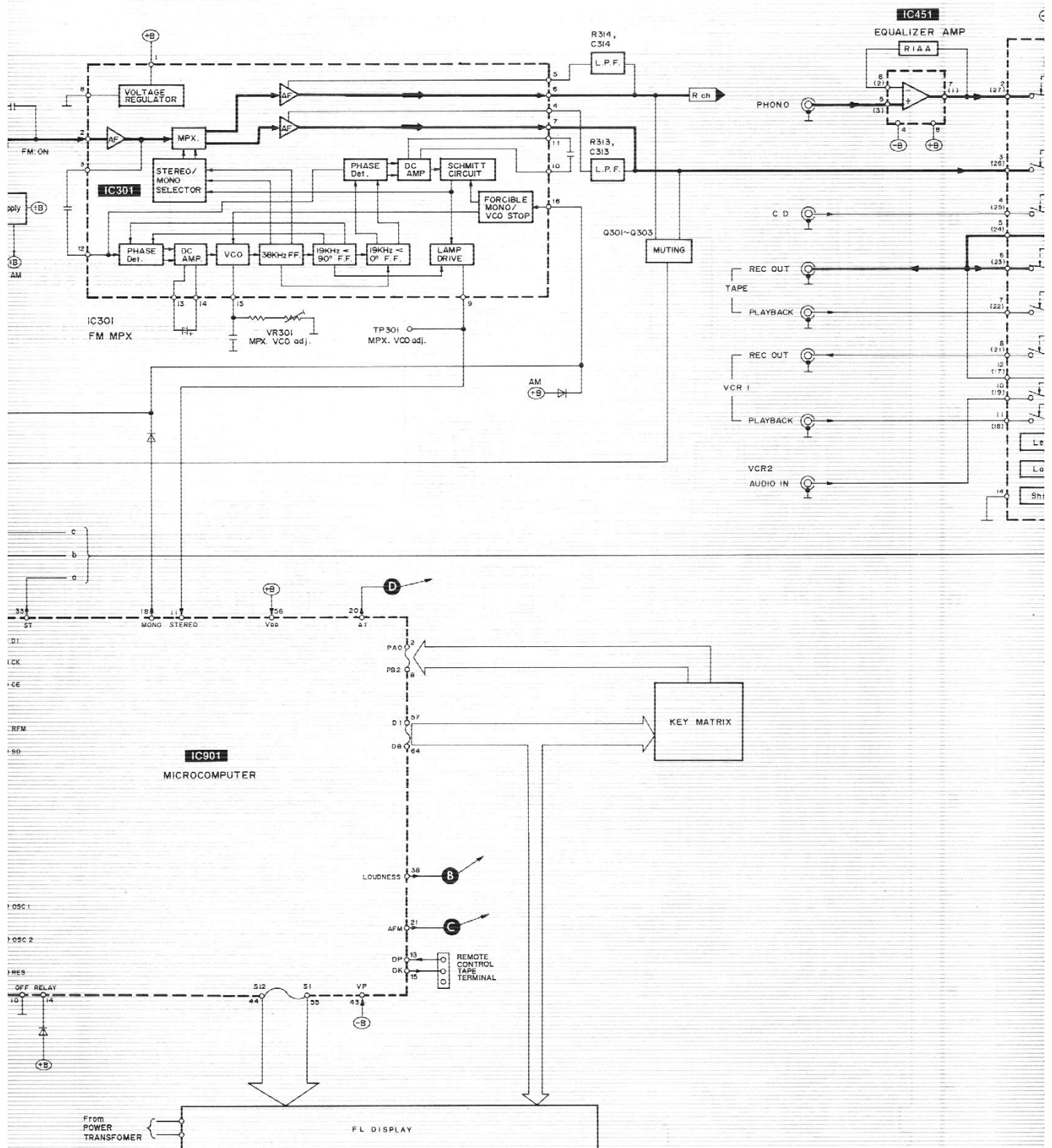


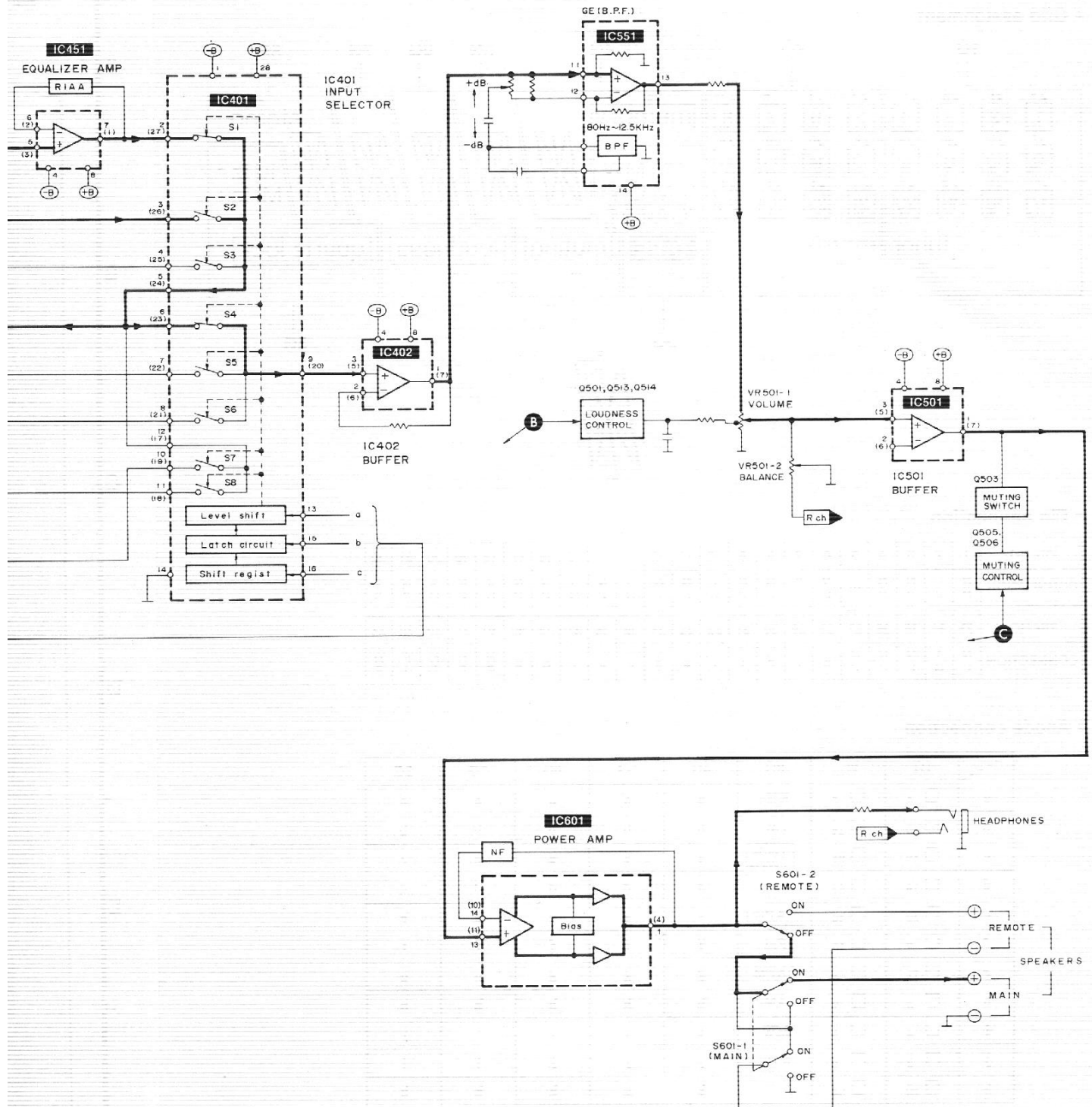
POWER SOURCE CIRCUIT



**Note:**

- FM Signal
- FM OSC
- AM Signal
- AM OSC



**Note:**

- FM Signal
- FM OSC
- AM Signal
- AM OSC