

Service Manual

Receiver

SA-290

SA-290L

QUARTZ Synthesizer

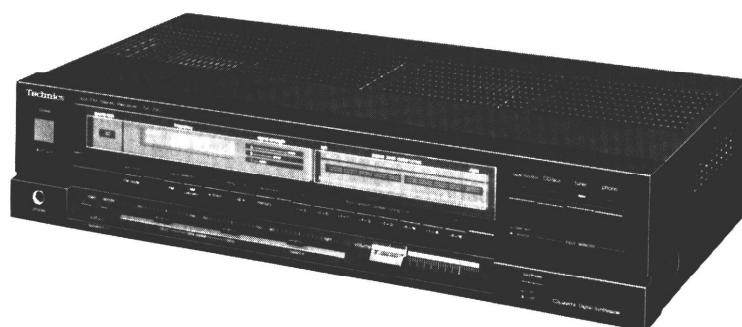
AM/FM Stereo Receiver

QUARTZ Synthesizer

LW/MW/FM Stereo Receiver

Color

(K)...Black Type



* This photo is SA-290.

Color	Areas
(K)	[EX]....Continental Europe. (SA-290)
(K)	[EH]...Holland. (SA-290)
(K)	[XL]....Australia. (SA-290)
(K)	[XA]....Asia, Latin America, Africa, Middle Near East and Oceania. (SA-290)
(K)	[EF]....France. (SA-290L)
(K)	[EB]....Belgium. (SA-290L)
(K)	[EK]....United Kingdom. (SA-290L)
(K)	[EW]...Switzerland. (SA-290L)

SPECIFICATIONS

(DIN 45 500)

■ AMPLIFIER SECTION

1 kHz continuous power output both channels driven	2 × 50 W (8Ω)
Total harmonic distortion half power at 1 kHz	0.02 % (8Ω)
Intermodulation distortion rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0.5%
Power bandwidth both channels driven, -3 dB	10 Hz~40 kHz (8Ω)
Damping factor	20 (8Ω)
Input sensitivity and impedance	
PHONO	2.5 mV/47kΩ
CD/AUX, TAPE/EXT	150 mV/22kΩ
PHONO maximum input voltage (1 kHz, RMS)	150 mV
S/N	
rated power (8Ω)	
PHONO	70 dB (IHF, A: 72 dB)
CD/AUX, TAPE/EXT	88 dB (IHF, A: 95 dB)
Frequency response	
PHONO	RIAA standard curve ±0.8 dB (30 Hz~15 kHz)
CD/AUX, TAPE/EXT	10 Hz~70 kHz (-3 dB)
Tone controls	
BASS	50 Hz, +10 dB~-10 dB
TREBLE	20 kHz, +10 dB~-10 dB
Loudness control (volume at -30 dB)	50 Hz, +9 dB
Output voltage	
REC OUT	150 mV

Channel balance, 250 Hz~6,300 Hz	±1 dB
Channel separation, 1 kHz	55 dB
Headphones output level and impedance	470 mV/330Ω
Load impedance	
MAIN or REMOTE	4Ω~16Ω
MAIN and REMOTE	8Ω~16Ω

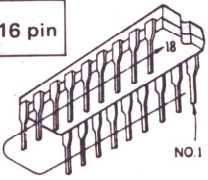
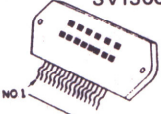
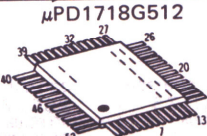
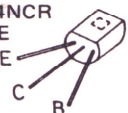
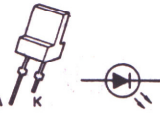
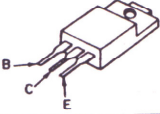
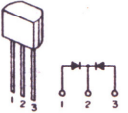
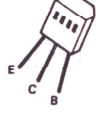
■ FM TUNER SECTION

Frequency range	87.50~108.00 MHz
Sensitivity	
S/N 30 dB	1.5 μV (75Ω)
S/N 26 dB	1.3 μV (75Ω)
S/N 20 dB	1.2 μV (75Ω)
IHF usable sensitivity	1.5 μV (IHF '58, 75Ω)
IHF 46 dB stereo quieting sensitivity	22 μV/75Ω
Total harmonic distortion	
MONO	0.15%
STEREO	0.3%
S/N	
MONO	60 dB (75 dB, IHF)
STEREO	58 dB (71 dB, IHF)
Frequency response	20 Hz~15 kHz, +1 dB~-2 dB
Alternate channel selectivity	±400 kHz, 65 dB
Capture ratio	1.0 dB
Image rejection at 98 MHz	40 dB
IF rejection at 98 MHz	70 dB

Technics

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

■ TERMINAL GUIDE OF TRANSISTORS, DIODES AND IC'S

<table border="1"> <tr> <td>SVINJ4559DDM</td> <td>8 pin</td> </tr> <tr> <td>μPC4570C</td> <td></td> </tr> <tr> <td>AN7273A</td> <td>18 pin</td> </tr> <tr> <td>SVIμPC1161C3</td> <td></td> </tr> <tr> <td>AN6882</td> <td>16 pin</td> </tr> </table> 		SVINJ4559DDM	8 pin	μ PC4570C		AN7273A	18 pin	SVI μ PC1161C3		AN6882	16 pin
SVINJ4559DDM	8 pin										
μ PC4570C											
AN7273A	18 pin										
SVI μ PC1161C3											
AN6882	16 pin										
SVI3001 	AN7072N 										
μ PD1718G512 	2SC1685C 2SC1384NCR 2SA992E 										
MA4110M, MA4062H MA4062M MA4160M 	LN846RP, LN446YP 										
2SD12650 	MA325GIN 										
1SS254, MA150 	SWV66, SWV80 SLV31VC3, SLV31YT3M 										
2SC2786M, 2SC2785F 2SC2787L, 2SA1175F 											
KV1260Z 	2SK241GR 										
MA29-WA Mark 	SVDS3V20 SVDSR1K2 										

Note 1:

- S501~S503 : Input selector switch in "tuner" position.

S501 — phono	S502 — tuner
S503 — CD/aux	
- S504 : Tape monitor selector switch in "source" position.
(— tape/ext, — source)
- S601 : Main speaker switch in "on" position.
(— on, — off)
- S602 : Remote speaker switch in "off" position.
(— on, — off)
- S603 : Loudness switch in "off" position.
(— on, — off)
- S604 : Speaker impedance switch in "4~6Ω" position.
(4~6Ω ↔ 8~16Ω)
- S701 : Power switch in "on" position.
(— on, — off)
- S702 : Voltage selector switch in "240V" position.
(110V ↔ 127V ↔ 240V ↔ 220V) (SA-290 [XA] area only)
- S901~S908 : Preset tuning switch.

S901 — CH1/CH9	S902 — CH2/CH10
S903 — CH3/CH11	S904 — CH4/CH12
S905 — CH5/CH13	S906 — CH6/CH14
S907 — CH7/CH15	S908 — CH8/CH16
- S909 : Memory switch in "manual" position.
(manual — auto)
- S910 : FM mode selector switch in "mono" position.
(auto — mono)
- S911~S913 : Band mode selector switch in "FM" position.
(S911 — FM, S912 — LW (SA-290L only), S913 — MW)
- S914, S915 : Tuning switch.
(S914 — up, S915 — down)
- | | | | |
|--|----------------|--|------------------------------------|
| | FM signal line | | LW, MW signal line |
| | FM OSC | | AF signal line |
| | LW, MW OSC | | Positive and negative voltage line |
- Important safety notice:
Components identified by mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
• Indicated voltage values are the 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 the internal impedance of the DC circuit tester.
All voltage values shown in circuitry are DC voltage in FM signal (Monaural signal) reception mode.
Figures in () stand for DC voltage in AM signal reception mode.

Part No.	Original Part No.	Supplyment Part No.
D915, D916	MA150	MA162A
D701~704	SVDS3V20	SVDS3V40

Note 2:

• Use of ceramic filters in pairs

The ceramic filters (CF201, CF202 and CF203) for FM-IF circuit are available in two ranks. For this machine, be sure to use the ceramics of the same rank in a pair.

At repairing and replacement, pay close attention to the diode (D915, D916) for use as different diodes must be used depending on each rank of the ceramic filters.

Color marking

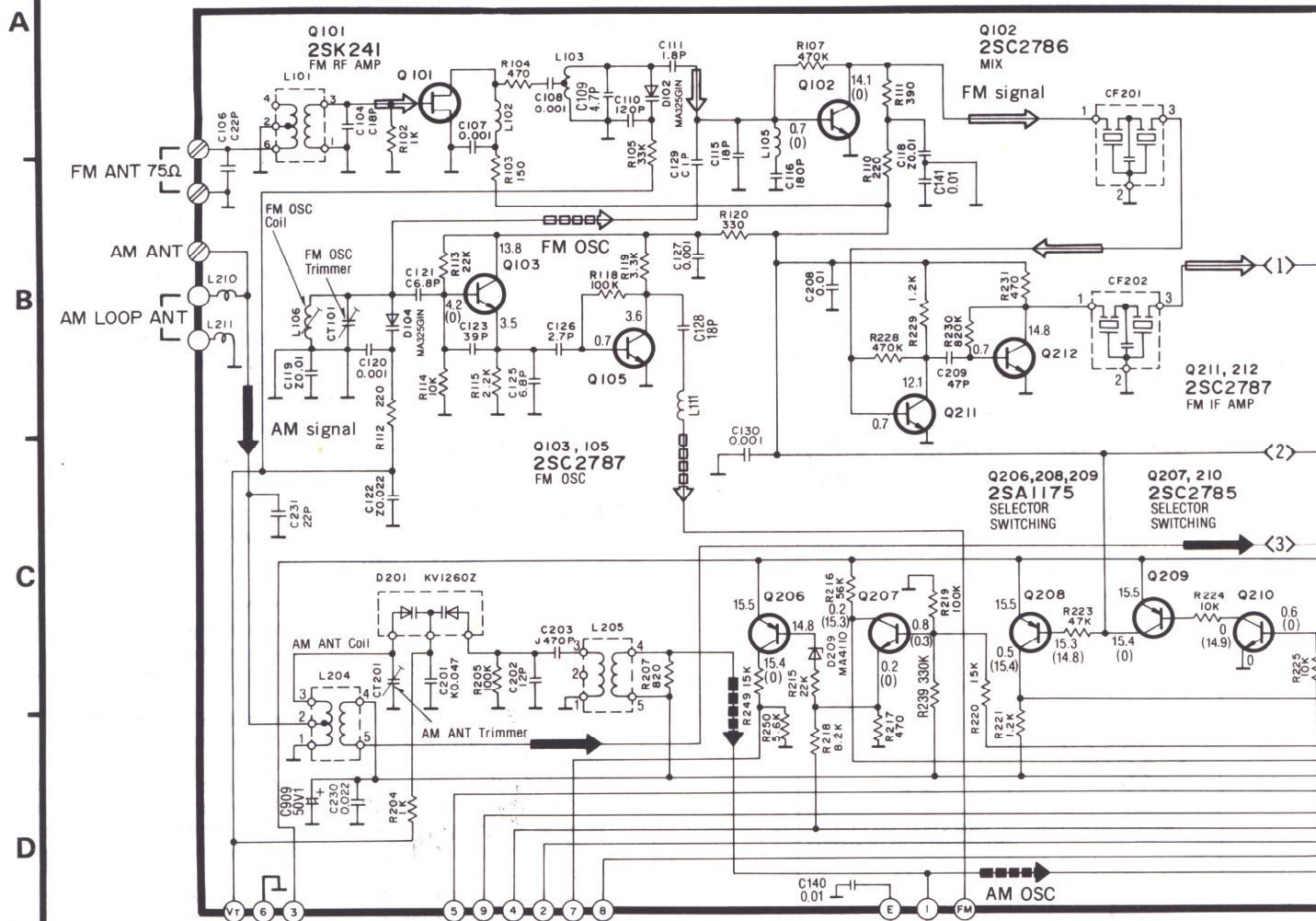


RANK (Color)	D915	D916	CENTER FREQUENCY
Red	X	X	10.70 MHz
White	X	○	10.75 MHz
Black	○	X	10.65 MHz

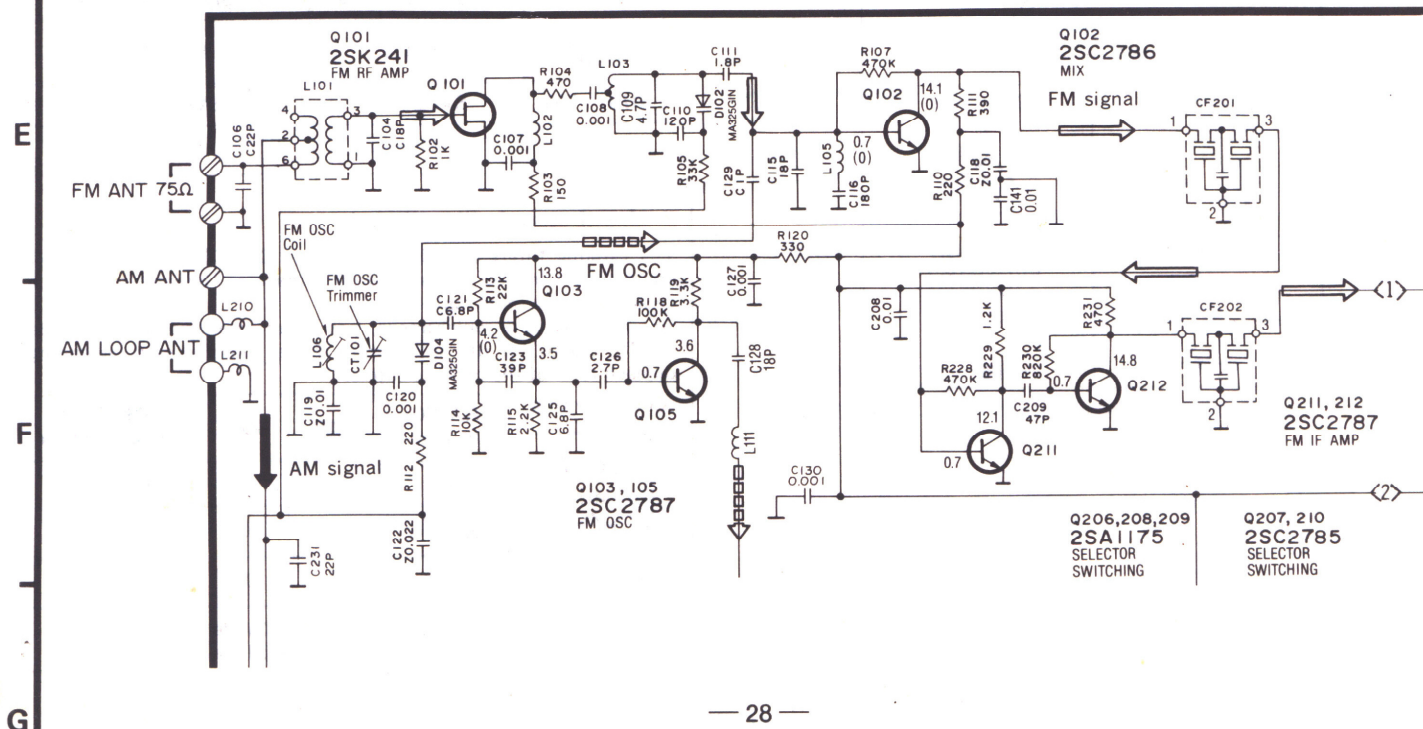
Note: ○ Mark Diode is used.
X Mark Diode is not used.

SCHEMATIC DIAGRAM (SA-290 TUNER CIRCUIT SECTION)

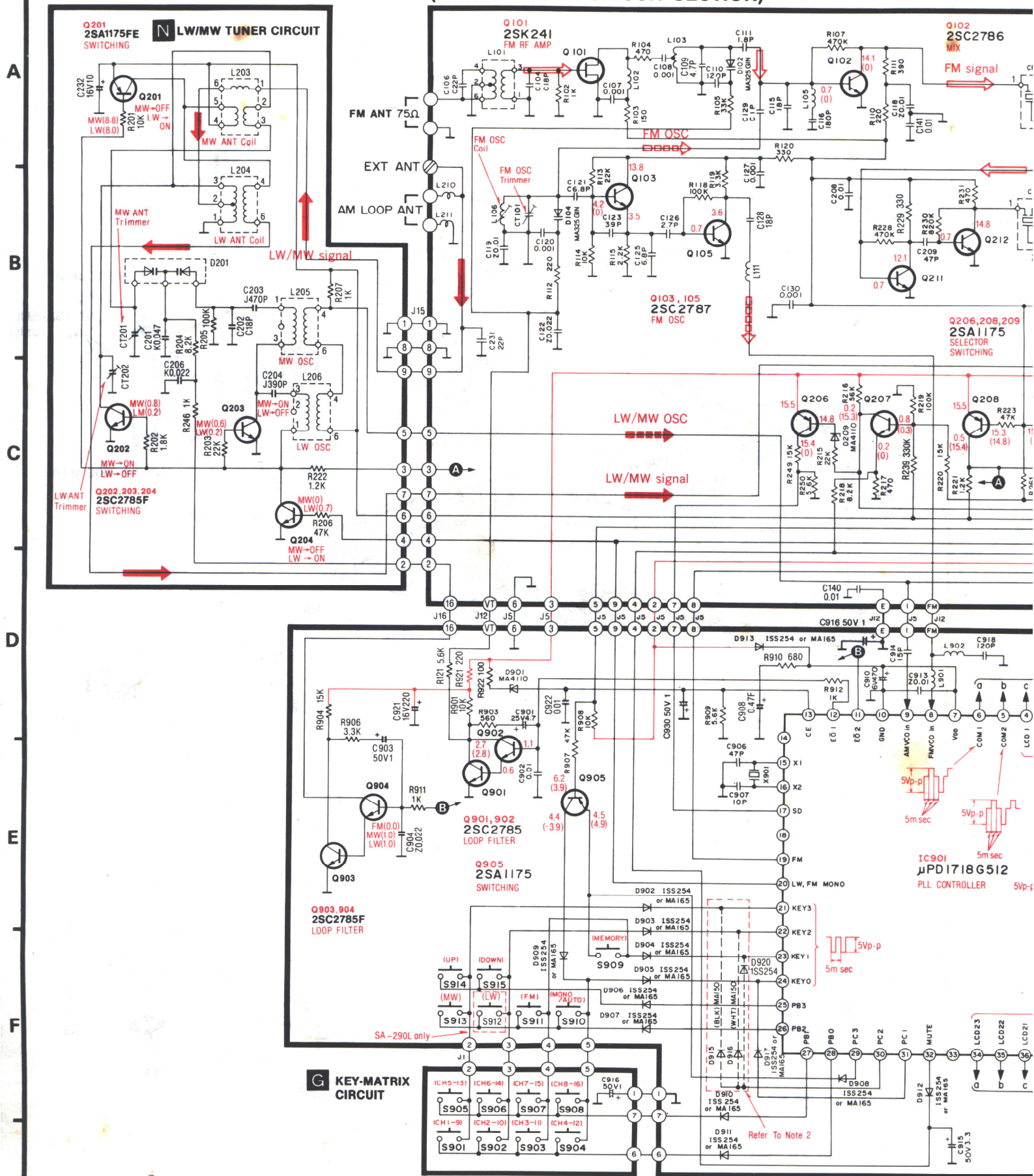
[EH, EX] areas only

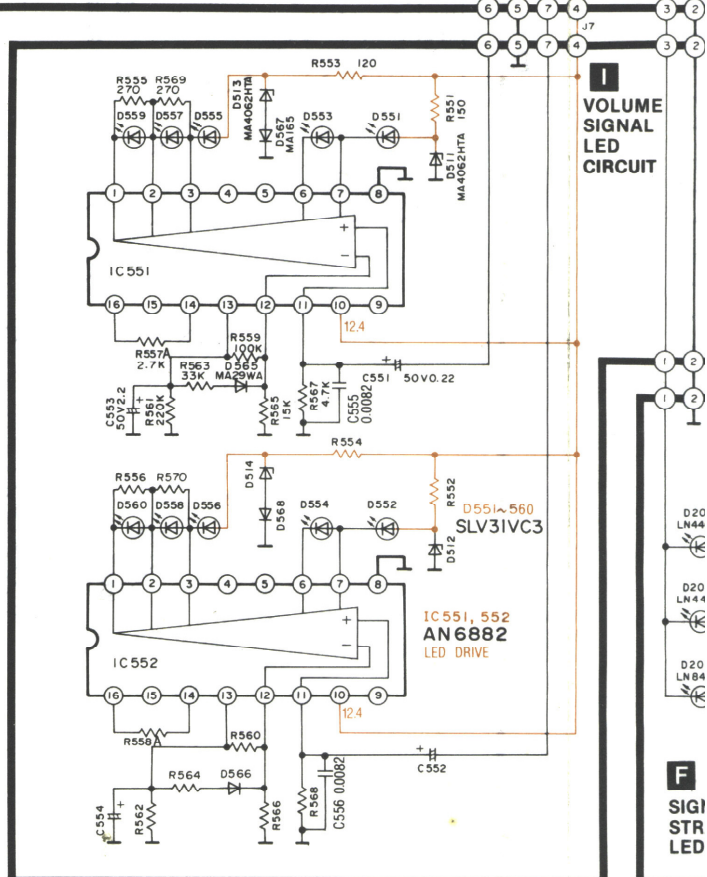


SA-290 [XA, XL] areas only



(SA-290L TUNER CIRCUIT SECTION)

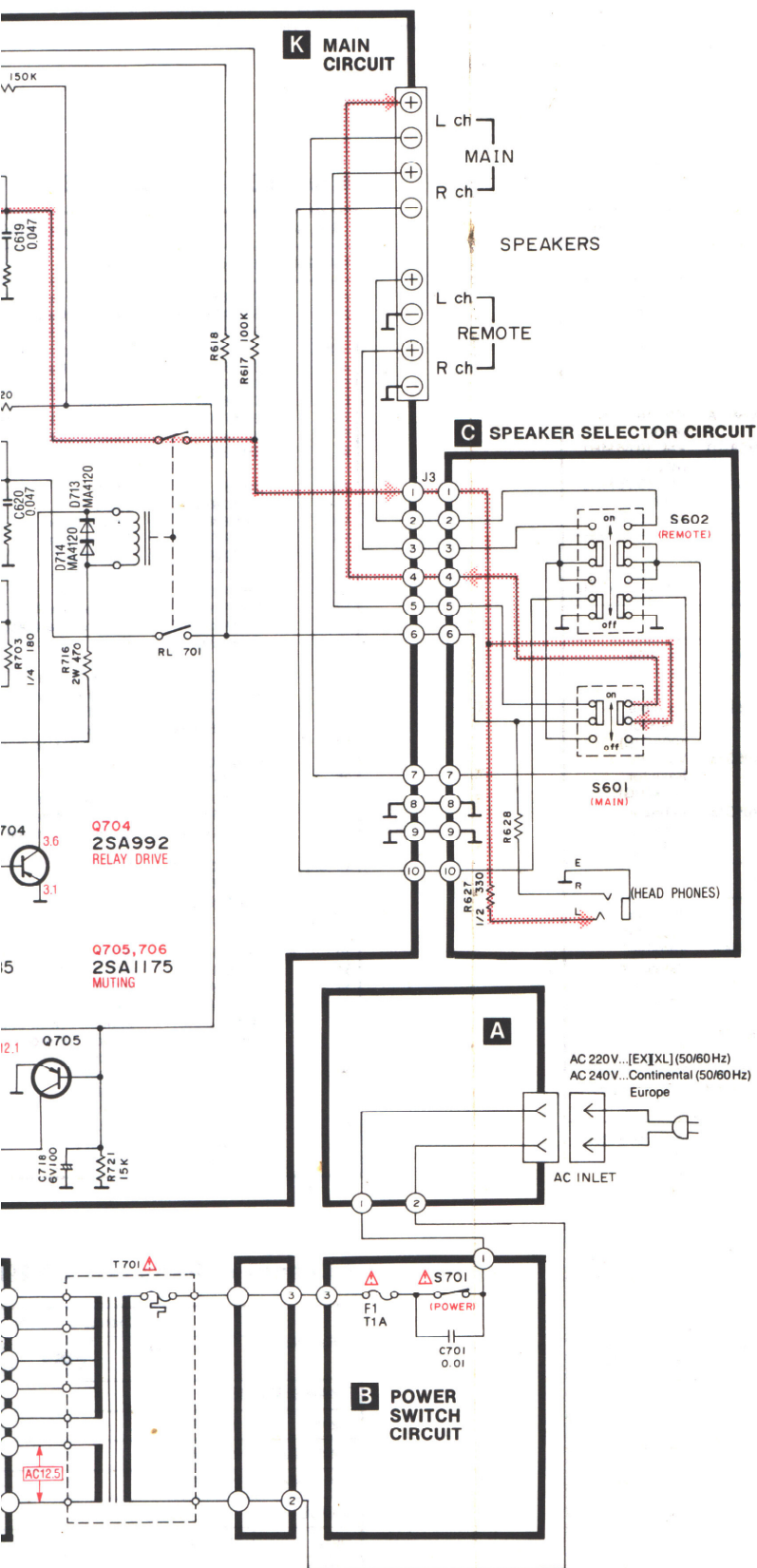






■ SCHEMATIC DIAGRAM

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



* 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.

SA-290 [XA] area

