

QUARTZ Synthesizer
AM/FM Stereo Receiver

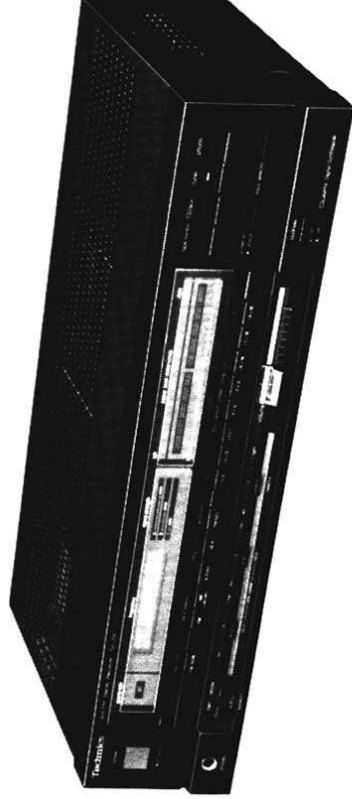
QUARTZ Synthesizer
LW/MW/FM Stereo Receiver

SA-290

SA-290L

Color

(K)...Black Type



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 × 50W (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) 20 (8Ω)
Damping factor	2.5 mV/47kΩ
Input sensitivity and impedance	150 mV/22kΩ
PHONO	150 mV
CD/AUX, TAPE/EXT	
PHONO maximum input voltage (1 kHz, RMS)	
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

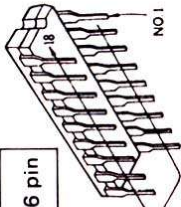
Frequency range	87.50~108.00 MHz
Sensitivity	
S/N 30 dB	1.5 μV (75Ω)
S/N 26 dB	1.3 μV (75Ω)
S/N 20 dB	1.2 μV (75Ω)
IHF usable sensitivity	1.5 μV (IHF '58, 75Ω)
IHF 46 dB stereo quieting sensitivity	22 μV/75Ω
Total harmonic distortion	
MONO	0.15%
STEREO	0.3%
S/N	
MONO	60 dB (75 dB, IHF)
STEREO	58 dB (71 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

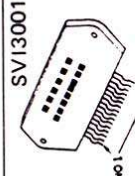
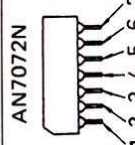
Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan
www.hifengine.com

■ TERMINAL GUIDE OF TRANSISTORS, DIODES AND IC'S

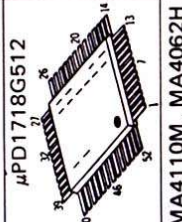
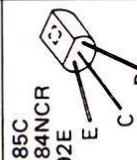
SV1NJ4559DDM	8 pin
μPC4570C	18 pin
AN7273A	16 pin
SV1μPC1161C3	
AN6882	



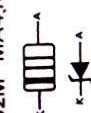
SV13001	AN7072N
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μPD1718G512	2SC1685C 2SC1384NCR 2SA992E
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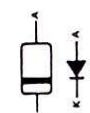
MA4110M, MA4062H MA4062M MA44160M	LN846RP, LN446YP
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2SD12650	MA325GIN
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1SS254, MA150	SWV66, SWV80 SLV31VC3, SLV31YT3M
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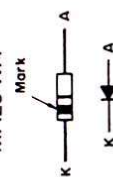
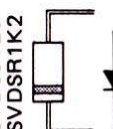

2SC2786M, 2SC2785F 2SC2787L, 2SA1175F	
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KV1260Z	2SK241GR
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MA29-WA	SVDS3V20 SVDSR1K2
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Note 1:

- 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)
14. FM signal line LW, MW signal line
 FM OSC AF signal line
 LW, MW OSC Positive and negative voltage line
15. 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

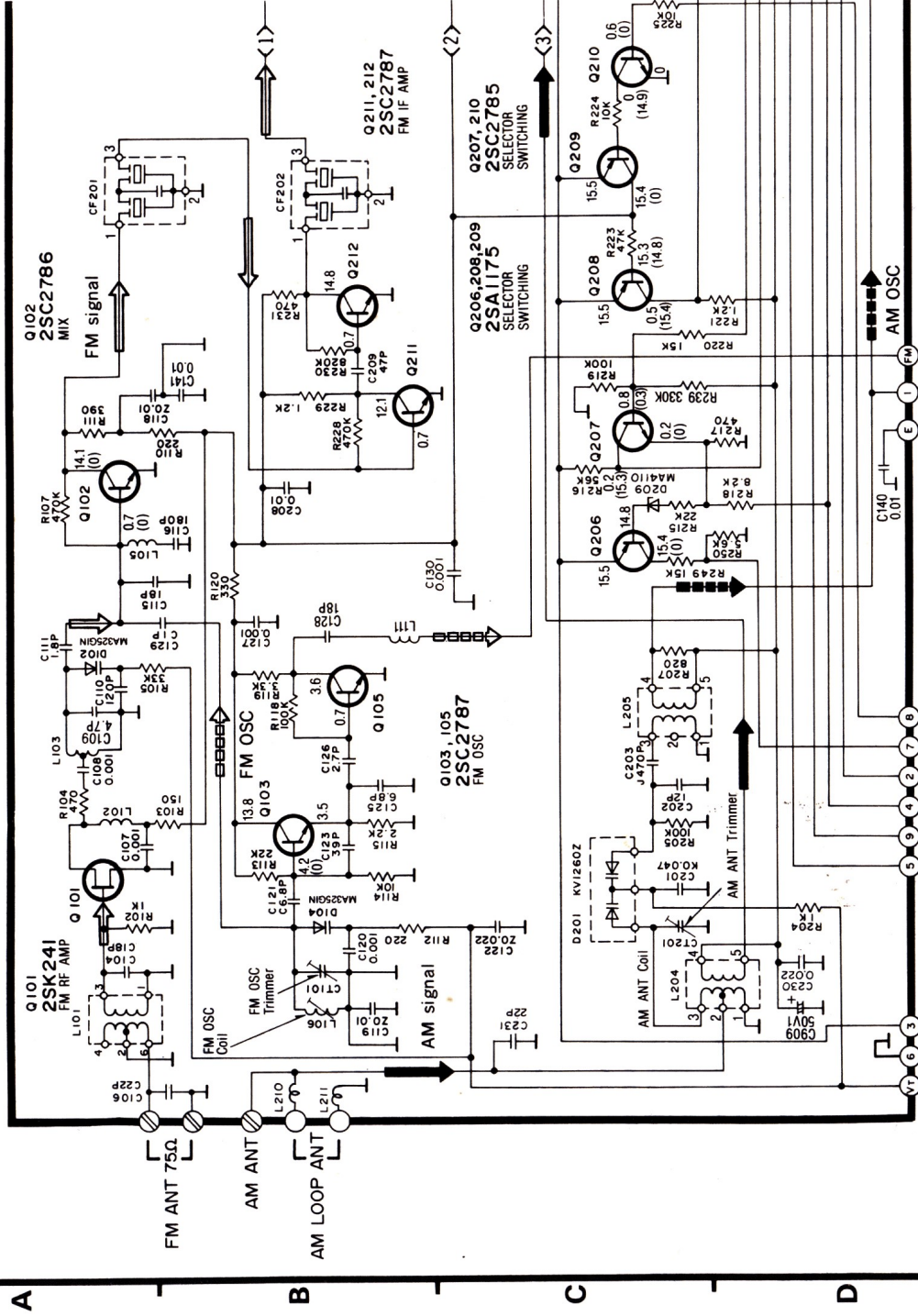


RANK (Color)	D915	D916	CENTER FREQUENCY
Red	X	X	10.70 MHz
White	X	○	10.75 MHz
Black	○	X	10.65 MHz

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

