Service Manual

Portable Stereo CD System

Radio Cassette

RX-DS27

COMPACT disc DIGITAL AUDIO

MASH* multi-stage noise shaping

Colour

(K) ... Black Type

Area

Suffix for Model No.	Area	Colour
(E)	Europe	(K)
(EB)	Great Britain	
(EG)	Germany and Italy	

* MASH is a trademark of NTT.

TAPE SECTION : SG20 MECHANISM SERIES
CD SECTION : RAE0150Z TRAVERSE DECK SERIES

■ Specifications

■RADIO

Frequency range	
FM	87.5 - 108 MHz(50 kHz steps)
AM	522 – 1611 kHz (9 kHz steps)
Intermediate Frequency	
FM	10.7 MHz
AM	459 kHz
Sensitivity	
FM	16 dB/50 mW
AM	49 dB/50 mW

■TAPE RECORDER

Track system	4 track, 2 channel, stereo
Recording system	AC bias
Tape speed	4.8cm/s
Erasing system	Magnet (Multi pole)
Monitor system	Variable sound monitor
Frequency range(Normal position)	50 – 12,000 Hz

Notes :
Specifications are subject to change without notice.
Weight and dimensions are approximate.

■CD PLAYER

Sampling frequency	44.1 kHz
Decoding	16- bit linear
Beam source	Semiconductor laser (wavelength; 780 nm)
No. of channels	2 channel, stereo
Frequency Response	20 Hz – 20 kHz(+0, –2 dB)
S/N ratio	62 dB
Wow and flutter	Less than possible measurement data
D/A converter	MASH (1 bit DAC)

■GENERAL

Power requirement	
AC	230-240V, 50 Hz Power consumption: 36 W
Battery	12V (Eight "D" size, R20/LR20 batteries)
Memory back-up for computer	6V (Four "AA" size, R6/LR6 batteries)
Speakers	10 cm x 2
Jacks	
Output	Headphones; 32 Ω
Dimensions (W x H x D)	480 x 156 x 248 mm
Weight	3.9 kg without batteries

⚠ WARNING

This service information is designed for experiense repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic®

■ Schematic Diagram

A SERVO CIRCUIT

OPTICAL PICKUP

Q701
2SB709S
LASER POWER DRIVE

Q701
((4.9V))
((3.4V))
((4.5V)):STOP
((2.9V))
STOP:((1.3V))

R701 4.7
C701 6.3V33
R752 22
C703 6.3V100
C704 M0.1
TP70
TP30
C716 K560P
R771 1.5M
TJ701
(ARF)
PLAY
2VP-P
0.5us.0.2V/DIV

IC701
AN8835SBE1
SERVO AMP

TP29
C702 M0.1
C705 M0.1
C706 K2700P
C707 K0.027

CN701
VCC
PDF
PDE
LD
GND
GND
NB
GND
NA
VREF
LPD
GND
T+
T−
F+
F−

0.1
1K
K680P
K680P
K0.047

IC701
PDA PDB VCC LPD LD RF RFIN CAGC ARF CSBRT CEA BDD LDON GND
PDF PDE VREF FBAL TBAL FE TE CCRS TEBPF ENV VDET OFTR CROSS RFDET

C712 M.01
C711 M.01
C713 M0.1
C751 M.01
C749 M.01
C708 K4700P
C709 K0.047
R703 82K
TP31
TP33
TP39
TP41
TP71
R770 1.5M
R708 150K
R707 470K
R704 1K
R706 1K
R744 10K
R705 10K
TP32
TP34
TP40
TP42
C748 K470P
C742 K0.027
C710 K1800P
C747 K2200P
R772 273
PLAY 0.4V p-p
2ms.0.2V/DIV
PLAY 0.3Vp-p
2ms.0.1V/DIV

NBOUT GND VCC BIN AIN
NAOUT GND VREF

TJ702
(VREF)
TRACKING COIL
FOCUS COIL

TP36
TP35
TP38
TP37
M702 SPINDLE MOTOR
M701 TRAVERSE MOTOR
C737 M.1
C736 M0.1

IC703
AN8389SE1
FOCUS COIL / TRACKING COIL / TRAVERSE MOTOR / SPINDLE MOTOR DRIVE

C734 10V220
C735 M0.1
PVCC1 PGND1 D1− D1+ D2− D2+ D3− D3+ D4− D4+ PGND2 PVCC2
((4.8V)):STOP
((0V)):STOP
IC703
PC1 IN1 PC2 IN2 GND NRESET NC GND IN3 IN4 VREF VCC

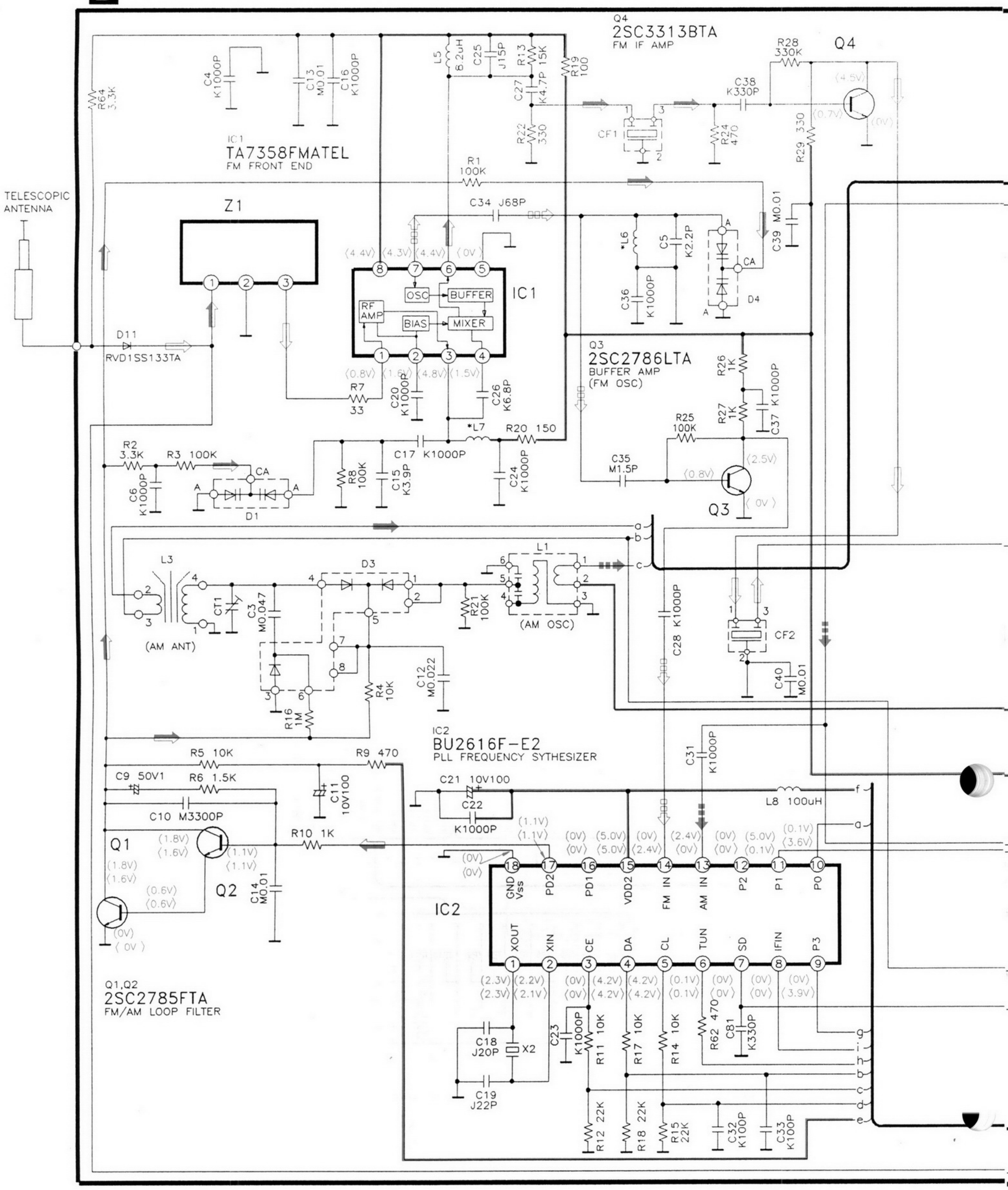
R722 56K
R723 1.8K
R735 100
R724 33K
R725 4.7K
R734 100
R726 47K
R727 8.2K
R728 10K
R736 100
R731 8.2K
C738 K0.15
R748 1.8K
R749 6.8K
C752 K1500P
C714 6.3V100
TP28
TP16

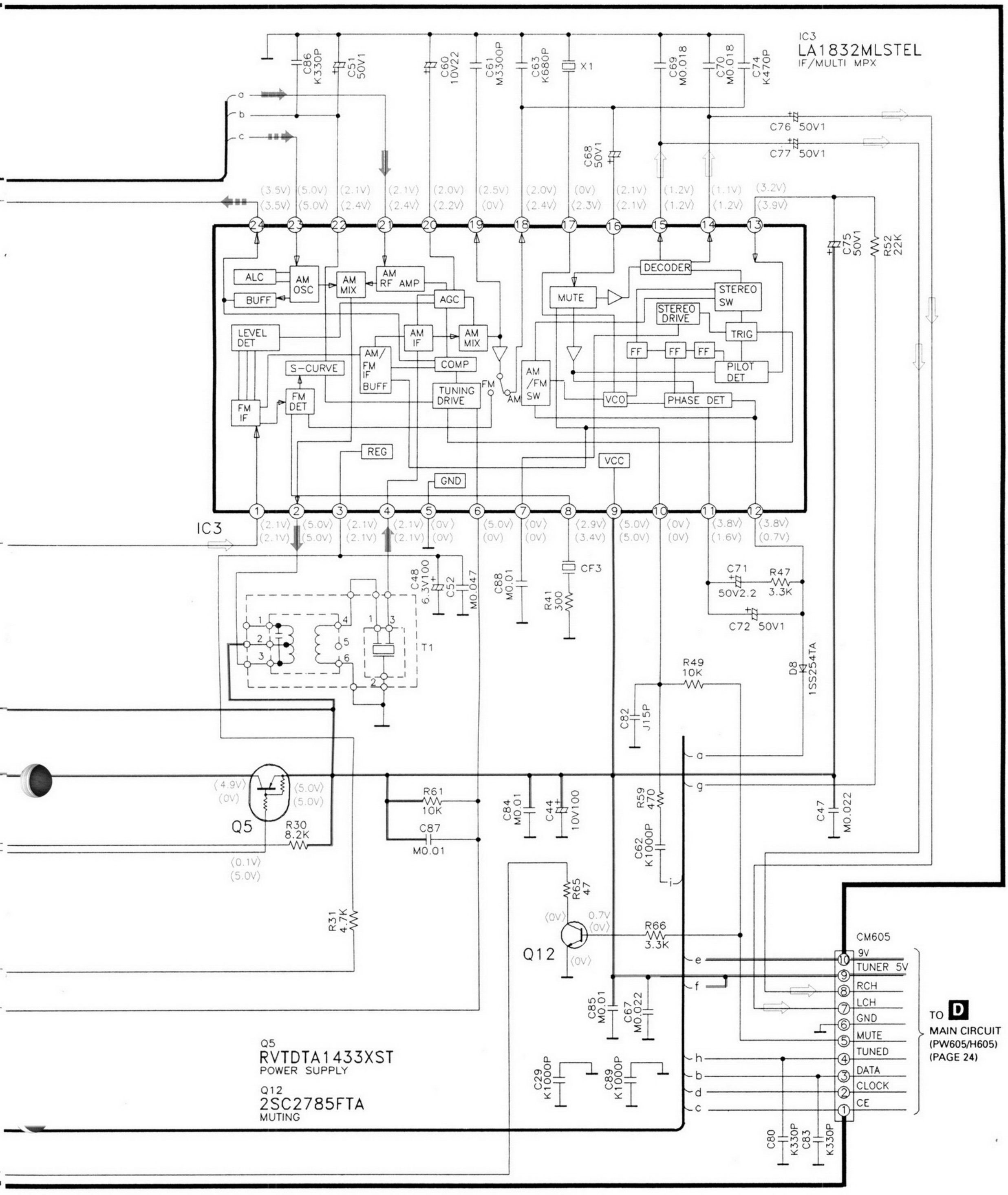
IC702

IC702
MN662741RPA
SERVO PROCESSOR / DIGITAL
SIGNAL PROCESSOR / DIGITAL
FILTER / D/A CONVERTER

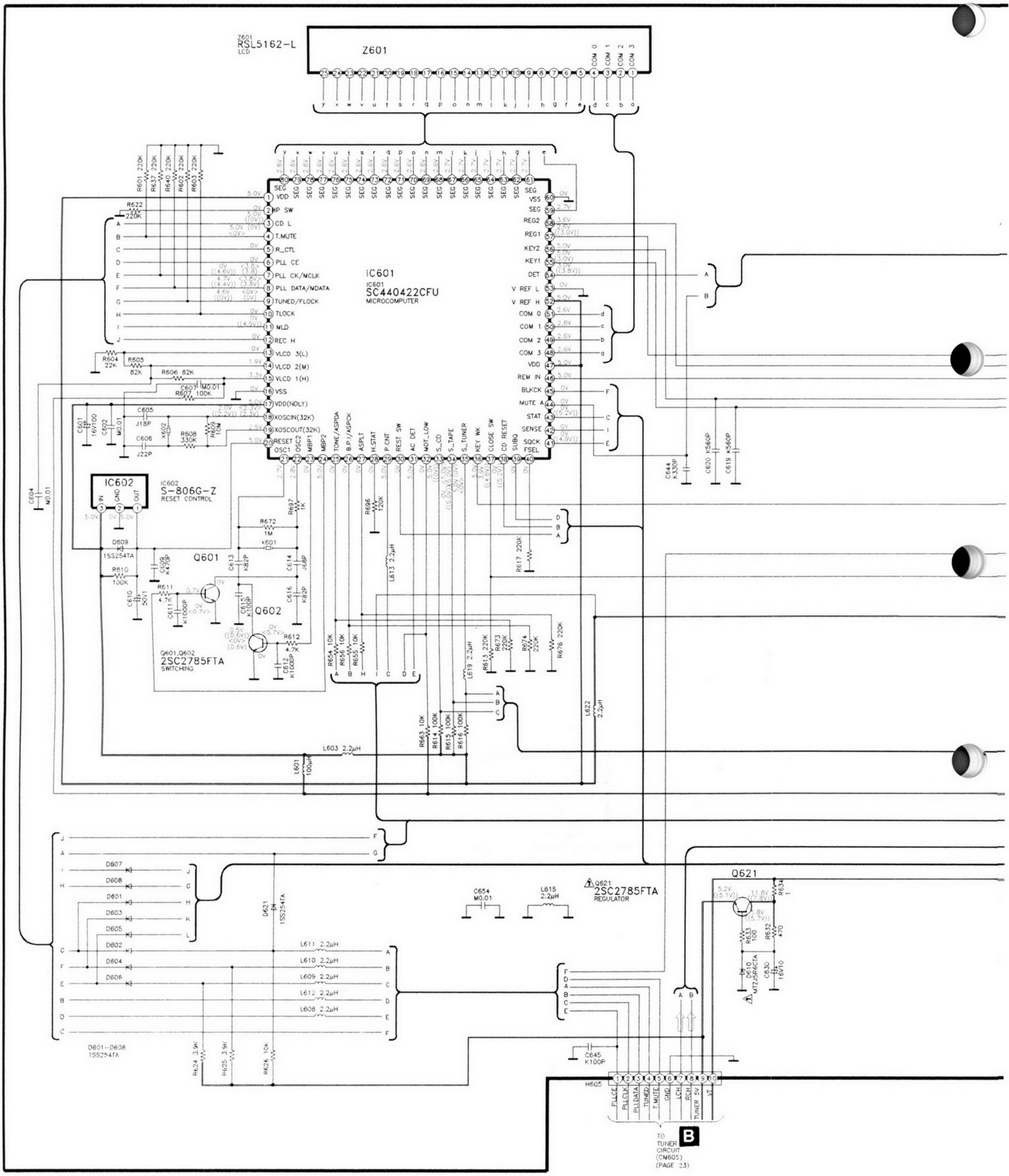
D MAIN CIRCUIT
(CN702)
(PAGE 25)

B TUNER CIRCUIT



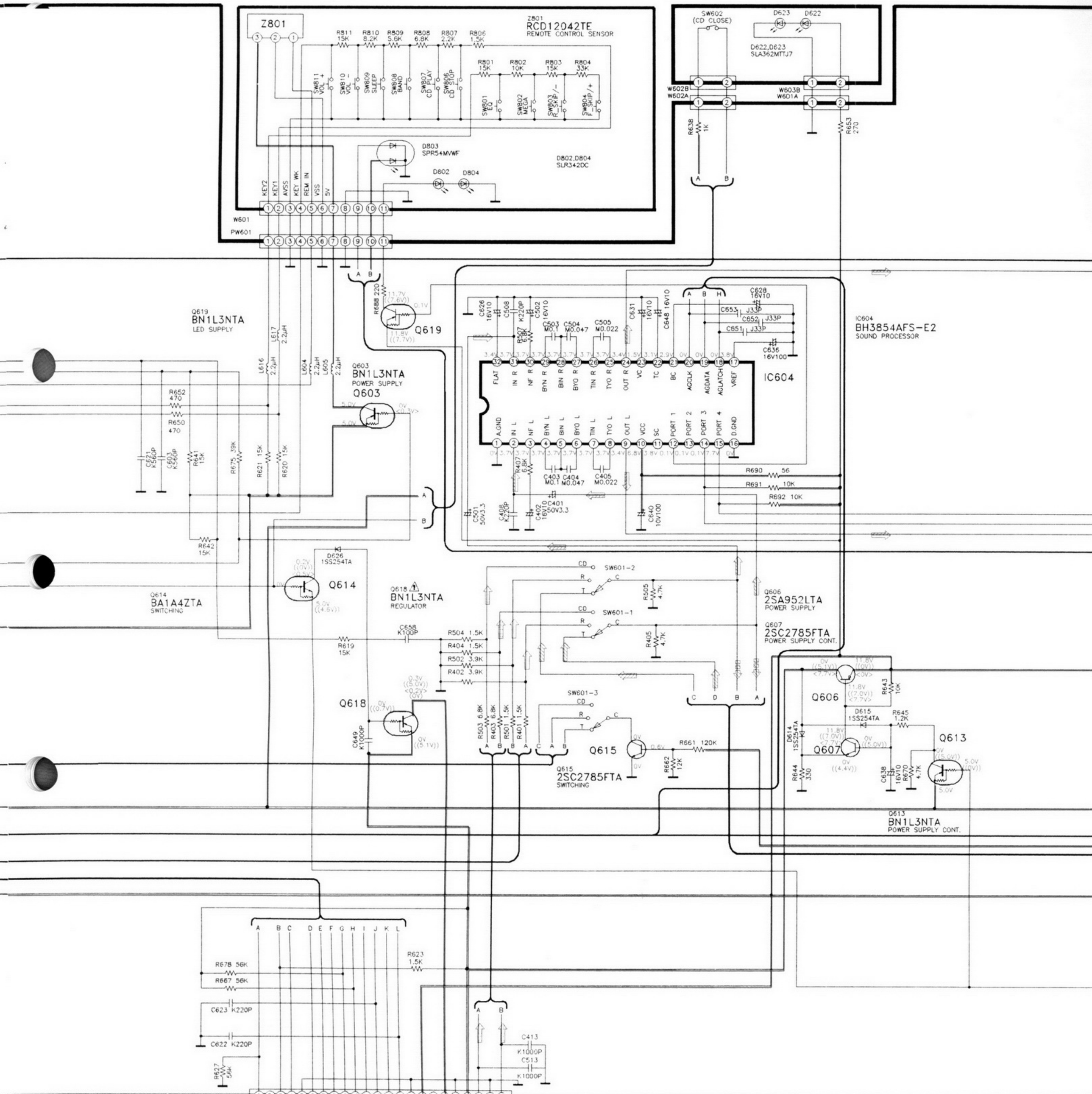


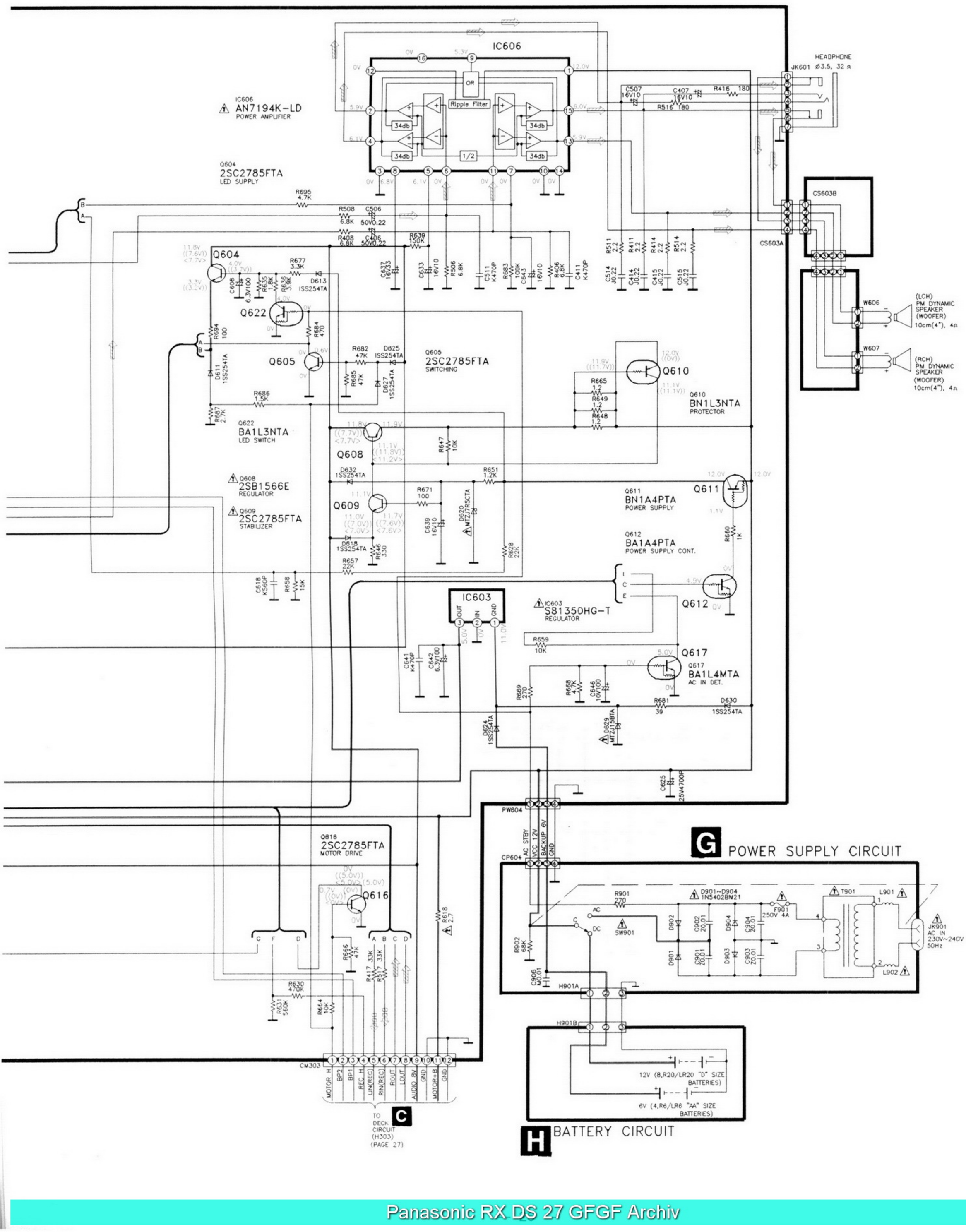
D MAIN CIRCUIT



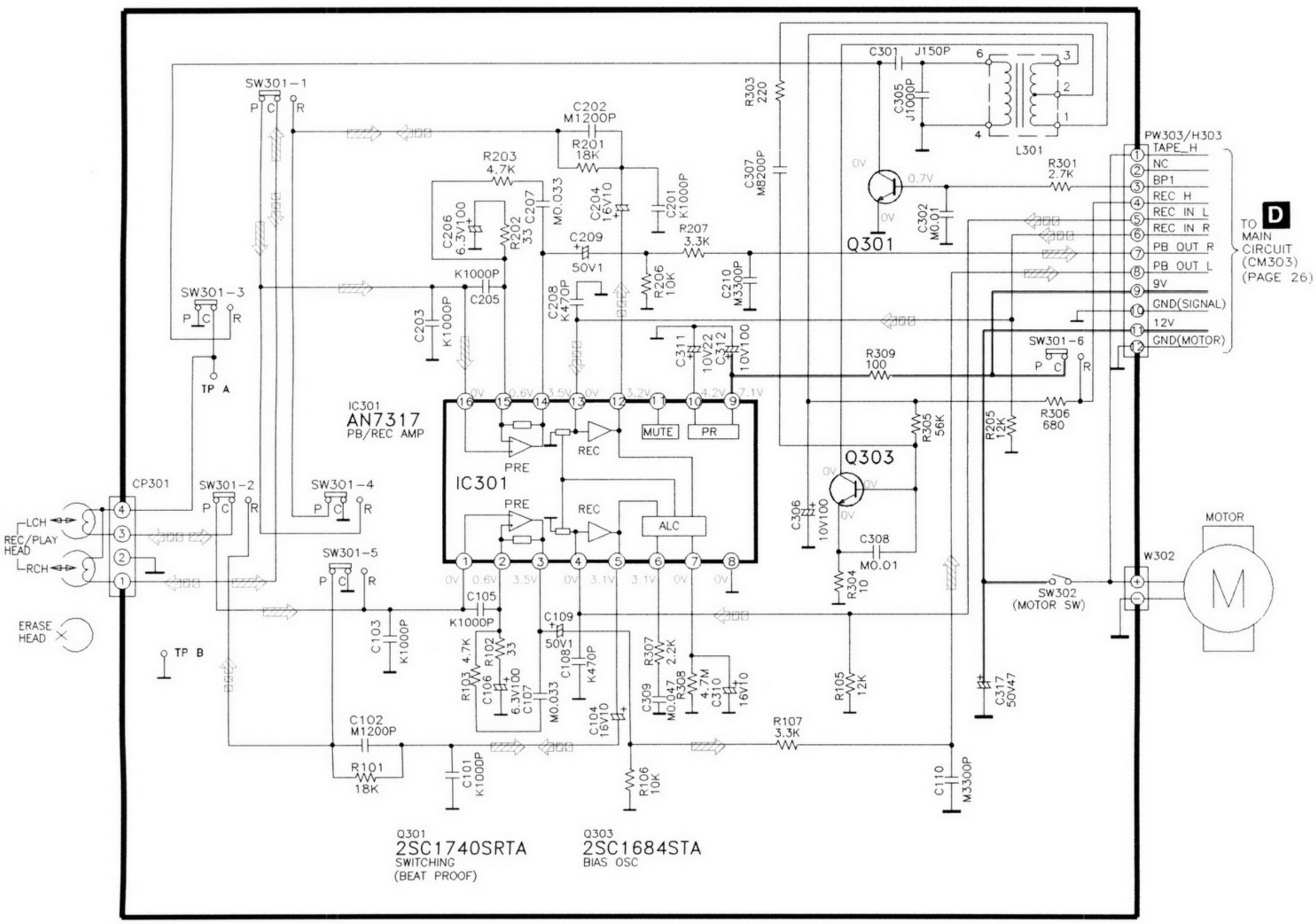
E OPERATION CIRCUIT

F SWITCH CIRCUIT





C DECK CIRCUIT



Q301
2SC1740SRTA
SWITCHING
(BEAT PROOF)

Q303
2SC1684STA
BIAS OSC

■ Schematic Diagram

(All schematic diagrams may be modified at any time with the development of new technology)
Note :

< for Servo circuit > (Page 20 ~ 21)
- **S701** : Rest switch

< for Main circuit, Switch circuit and Operation circuit > (Page 24 ~ 26)
- **SW601-1 ~ SW601-3** : Function switch
- **SW602** : Leaf switch
- **SW801** : PRESET EQ switch
- **SW802** : Power Blaster switch
- **SW803** : SKIP/SEARCH (–) switch
- **SW804** : SKIP/SEARCH (+) switch
- **SW806** : CD Stop/Clear switch
- **SW807** : CD Play/Pause switch
- **SW808** : Band switch
- **SW809** : Sleep (TUNER/CD) switch
- **SW810** : Volume (–) switch
- **SW811** : Volume (+) switch

< for Power Supply circuit > (Page 26)
- **SW901** : AC/DC switch (JK901)

< for Deck circuit > (Page 27)
- **SW301-1 ~ SW301-6** : REC. switch
- **SW302** : Leaf switch

< General >
- **Battery Current**

Vol. min	330 mA (FM)	Vol. max	1.31 A (FM)
	310 mA (AM)		620 mA (AM)
	390 mA (TAPE)		1.49 A (TAPE)
	490 mA (CD)		1 .53 A (CD)

(Measurement condition:
Radio : FM 60 dB, 30%mod
AM 74 dB/m, 30%mod
Tape : 315 Hz, 0dB
CD : 1kHz, 0dB)

•Signal line

: +B line
: FM/AM signal line
: Main signal line
: Playback signal line
: Record signal line
: CD signal line
: FM signal line
: AM signal line
: AM OSC signal line
: FM OSC signal line

•The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis.
Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.

No mark : Playback << >>.....Rec { } : Tuner (( )) : CD ( ) ..... AM < > ..... FM

•Importance safety notice:
Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

Caution !
IC, LSI and VLSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
•Cover the parts boxes made of plastics with aluminium foil.
•Ground the soldering iron.
•Put a conductive mat on the work table.
•Do not touch the pins of IC, LSI or VLSI with fingers directly.