

- F32F-19B131-AA
- F33F-19B131-AD
- F4BF-19B131-AB
- F4CF-19B131-AC
- F4TF-19B131-AB
- F4UF-19B131-AB
- F4ZF-19B131-AA
- F47F-19B131-AB
- F48F-19B131-AB
- F33F-19B132-BE
- F37F-19B132-DF
- F4BF-19B132-AB
- F4CF-19B132-AC
- F4CF-19B132-BC
- F4SF-19B132-AB
- F4TF-19B132-AB
- F4TF-19B132-BB
- F4UF-19B132-AB
- F4XF-19B132-CA
- F4XF-19B132-DA
- F4ZF-19B132-BA
- F48F-19B132-AB

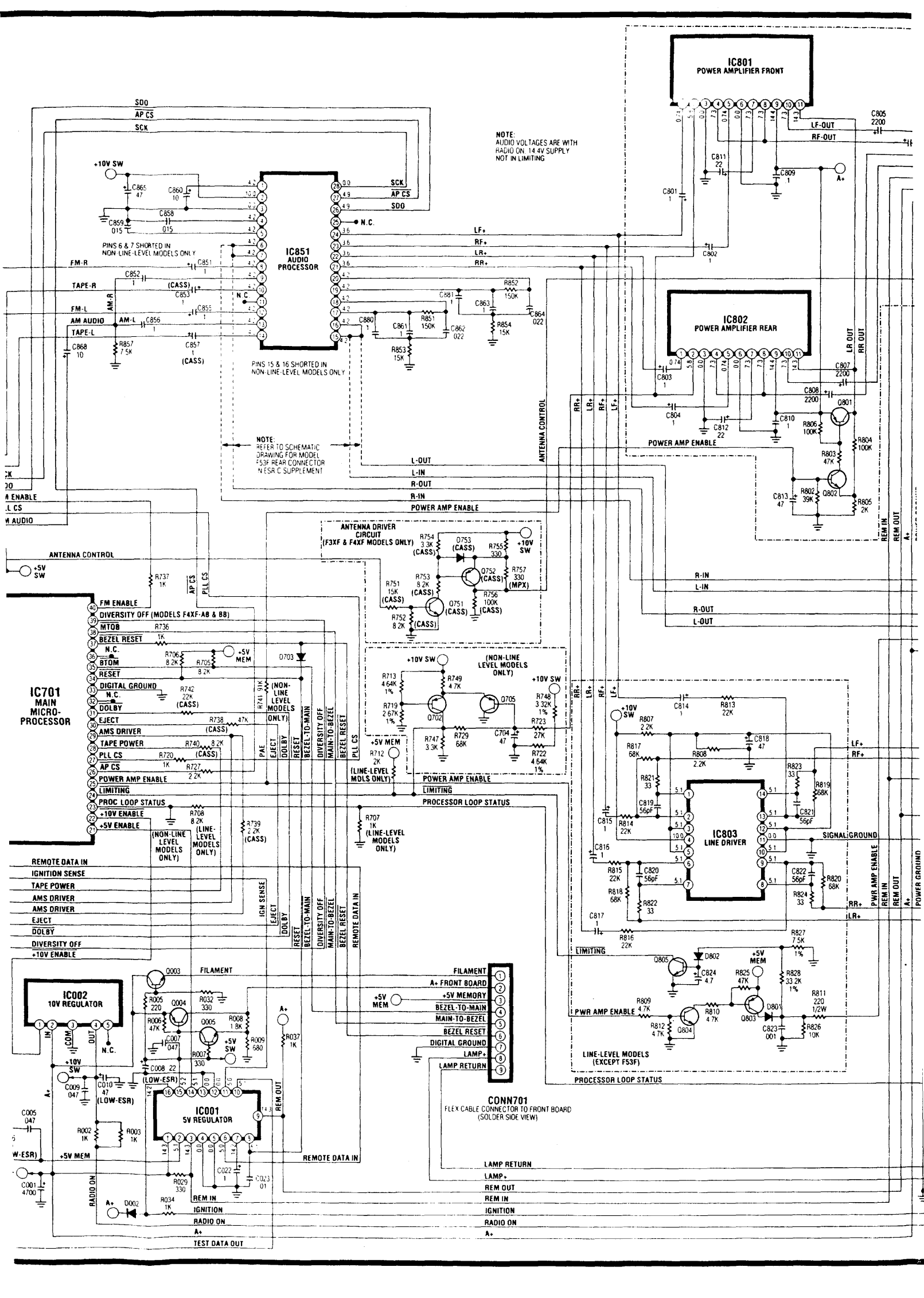
Transistor Voltages

Trans.	E	B	C	Operation Mode/Comments
Q001	10.0	9.4	9.8	FM
	10.0	10.0	0.0	AM
Q002	4.4	5.0	9.4	FM
	0.0	0.0	10.0	AM
Q003	2.4	3.0	14.4	Ignition On
	0.0	0.0	14.4	Ignition Off
Q004	14.4	13.6	14.2	Ignition On
	14.4	14.4	0.0	Ignition Off
Q005	4.4	5.0	13.6	Ignition On
	0.0	0.0	14.4	Ignition Off
Q151	0.0	0.0	10.0	Not Tuning 50µV @ 87.9MHz Not Tuning <8µV @ 87.9MHz Tuning
	0.0	0.0	0.0	
	0.0	0.7 max.	0.2 max.	
Q152	10.0	10.0	0.0	Q-Not=10V Q-Not=0V
	10.0	9.3	9.8	
Q153	10.0	10.0	0.0	Q=10V Q-Not=0V
	10.0	9.3	9.8	
Q502	0.66	1.30	9.9	
Q503	0.67	1.14	5.1	
Q601	0.0	0.0	5.0	Dolby* On Dolby Off
	0.0	0.7	0.0	
Q641	S=0.0	G=5.0	D=0.15	AMS Pulse Mode Non-AMS
	S=0.0	G=0.0	D=14.4	
Q642	0.0	0.0	0.0	Initial Power On, Non-Tape Tape Mode/Audio Present AMS Output
	0.0	0.0	9.5	
	0.0	5.0	0.2	
Q661	S=14.4	G=0.2	D=14.4	Switch Tape Power On Switch Tape Power Off
	S=14.4	G=14.4	D=Open	
Q663	S=0.0	G=5.0	D=0.15	Eject Non-eject
	S=0.0	G=0.0	D=14.4	
Q664	0.0	0.7	0.2	Switch Tape Power On Switch Tape Power Off
	0.0	0.0	14.4	
Q702	4.3	3.7	4.0	
Q705	4.3	5.3	0.0	
Q751	0.0	0.20	0.13	Radio Off or Tape Playing Radio On and Tape Not Playing
	0.0	0.69	0.10	
Q752	0.14	0.14	0.0	Radio Off or Tape Playing Radio On and Tape Not Playing
	9.7	9.0	9.7	
Q801	14.4	13.7	14.3	
Q802	0.8	1.4	1.0	
Q803	5.0	4.3	4.9	
Q804	0.0	0.7	0.1	
Q805	0.0	0.55	4.9	

* Dolby Noise Reduction. Dolby is a trademark of Dolby Laboratories Licensing Corporation.

NOTES:
 Diversity voltages are with 50µV RF @87.9MHz, no modulation, applied to main antenna socket and standard FM antenna dummy; main antenna selected.

With no RF signal applied:
 IC151 pins 2,3,5=noisy DC <0.6V;
 pin 7=0V;
 pin 1 may randomly switch 10V/0V.
 IC152 pins 4,6,8,9,10,11,13 may randomly switch 10V/0V:



NOTE: AUDIO VOLTAGES ARE WITH RADIO ON 14.4V SUPPLY NOT IN LIMITING

NOTE: PINS 6 & 7 SHORTED IN NON-LINE-LEVEL MODELS ONLY

NOTE: PINS 15 & 16 SHORTED IN NON-LINE-LEVEL MODELS ONLY

NOTE: REFER TO SCHEMATIC DRAWING FOR MODEL #53F REAR CONNECTOR N53F C SUPPLEMENT

ANTENNA DRIVER CIRCUIT (F3XF & F4XF MODELS ONLY)

(NON-LINE LEVEL MODELS ONLY)

LINE-LEVEL MDLS ONLY

PROCESSOR LOOP STATUS

LIMITING

POWER AMP ENABLE

POWER AMP ENABLE

POWER AMP ENABLE

POWER AMP ENABLE

POWER AMP ENABLE

POWER AMP ENABLE

POWER AMP ENABLE

POWER AMP ENABLE

POWER AMP ENABLE

POWER AMP ENABLE

POWER AMP ENABLE

POWER AMP ENABLE

POWER AMP ENABLE

POWER AMP ENABLE

POWER AMP ENABLE

POWER AMP ENABLE

CONN701 FLEX CABLE CONNECTOR TO FRONT BOARD (SOLDER SIDE VIEW)

- 1 FILAMENT
- 2 A+ FRONT BOARD
- 3 +5V MEMORY
- 4 BEZEL-TO-MAIN
- 5 MAIN-TO-BEZEL
- 6 BEZEL RESET
- 7 DIGITAL GROUND
- 8 LAMP+
- 9 LAMP RETURN

- LAMP RETURN
- LAMP+
- REM OUT
- REM IN
- IGNITION
- RADIO ON
- A+

IC701 MAIN MICRO-PROCESSOR

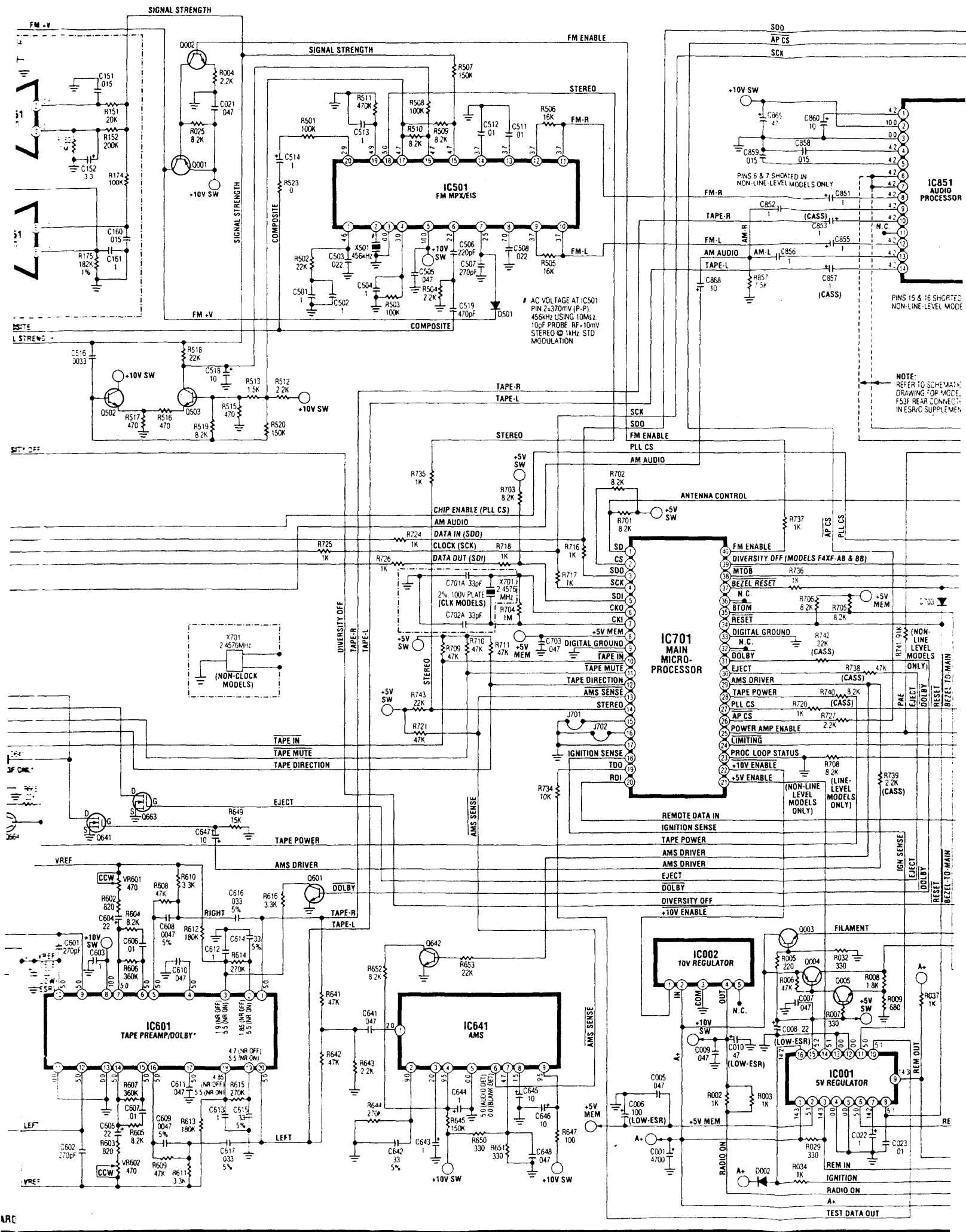
IC801 POWER AMPLIFIER FRONT

IC802 POWER AMPLIFIER REAR

IC803 LINE DRIVER

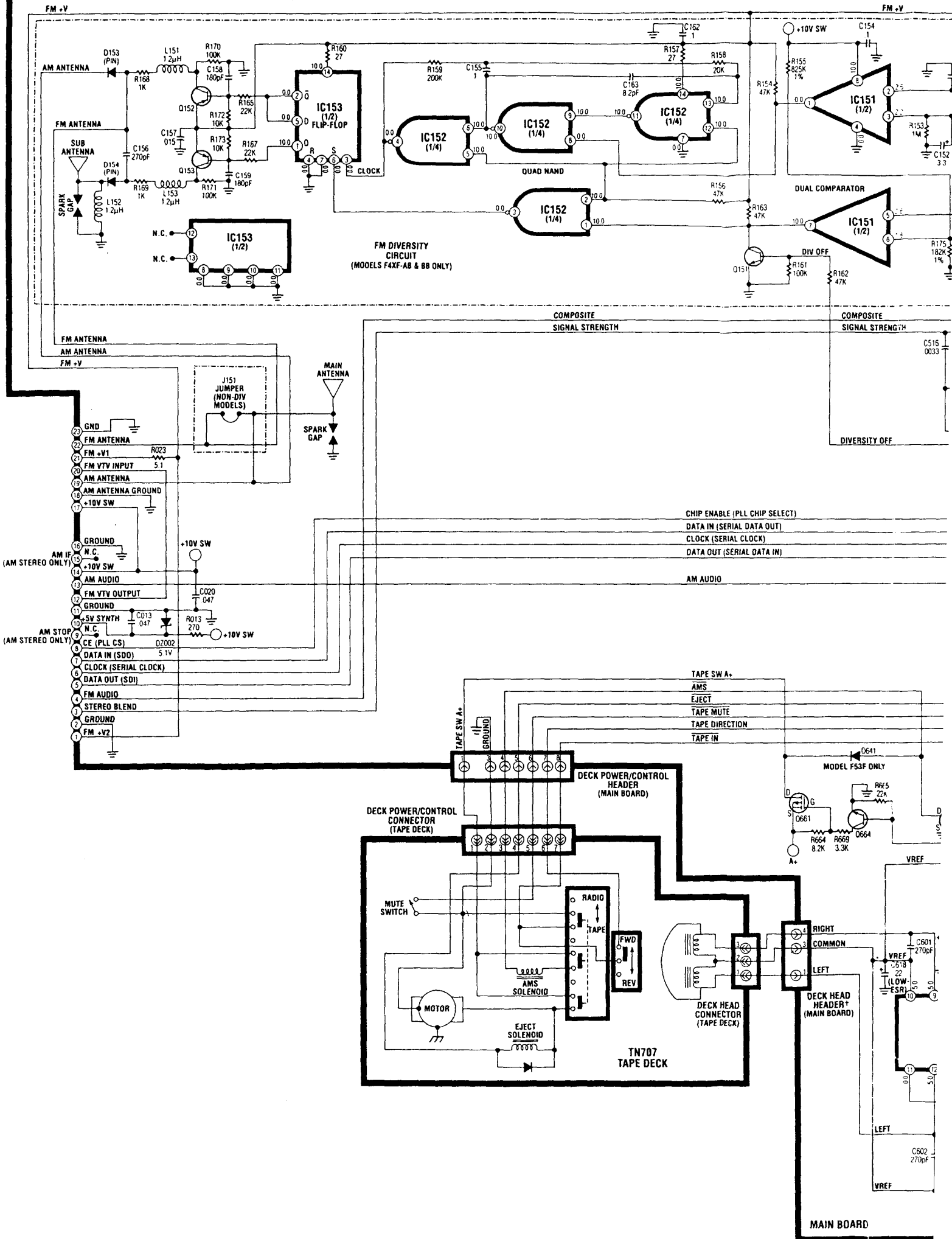
IC002 10V REGULATOR

IC001 5V REGULATOR



RES ARE 1/8-WATT SMD WITH

MAIN BOARD



NOTE: RESISTORS ARE 1/8-W

Component Application Chart

Model	Components							PWM Dimming Circuit
	D401	D402	D403	D404	D405	R404	R901	
Multiplex								
F3AF		■				■	■	
F3DF		■				■	■	
F3XF		■			■			■
F3ZF	■				■		■	
F31F		■				■	■	
F32F		■				■		■
F33F	■	■				■	■	
F4BF	■	■		■		■		■
F4CF	■	■		■		■	■	■
F4TF	■	■					■	■
F4UF	■	■				■	■	
F4ZF	■	■				■	■	
F47F	■	■				■	■	
F48F	■	■			■		■	
Cassette								
F3AF						■	■	
F3DF						■	■	
F31F						■	■	
F32F(LL)		■	■			■		■
F33F	■					■	■	
F37F	■					■	■	
F4BF-AB	■			■		■	■	■
F4BF-BB(LL)	■			■		■	■	■
F4CF	■			■		■	■	■
F4CF-CC(LL)	■			■				■
F4SF						■	■	
F4TF						■	■	
F4UF	■					■	■	
F4XF-AB(LL)	■		■					■
F4XF-BB(LL)			■					■
F4XF-CA	■		■		■			■
F4XF-DA	■		■		■			■
F4ZF					■		■	
F48F	■				■		■	■
F53F(LL)							■	

IC901 Voltages

Pin	Function	Voltage
1	RC Voltage (pin 2) Below Dimming Level Threshold Dimming Level Threshold Exceeded	5V 0V
2	Headlights Off (peak RC network voltage) Headlights On (peak RC network voltage)	0-0.3V 0.3-5V
3	Headlights Off Headlights On	0-0.3V 0.3-5V
4		Ground
5		+5V
6	Headlights Off Headlights On	0V 0/14 4V PWM
7	Headlights Off Headlights On	0V 0/14 4V PWM
8	Headlights On Headlights Off	14 4V 0V

Notes:

Resistors are 1/8 Watt SMD
with value in Ohms unless noted

Capacitance values are
in Microfarads unless noted

**Dolby Noise Reduction*

Dolby is a trademark of Dolby Laboratories Licensing Corporation

