

ONE POINT REPAIR GUIDE

1. NO POWER

If the unit doesn't work by no power problem, repair the set according to the following guide.

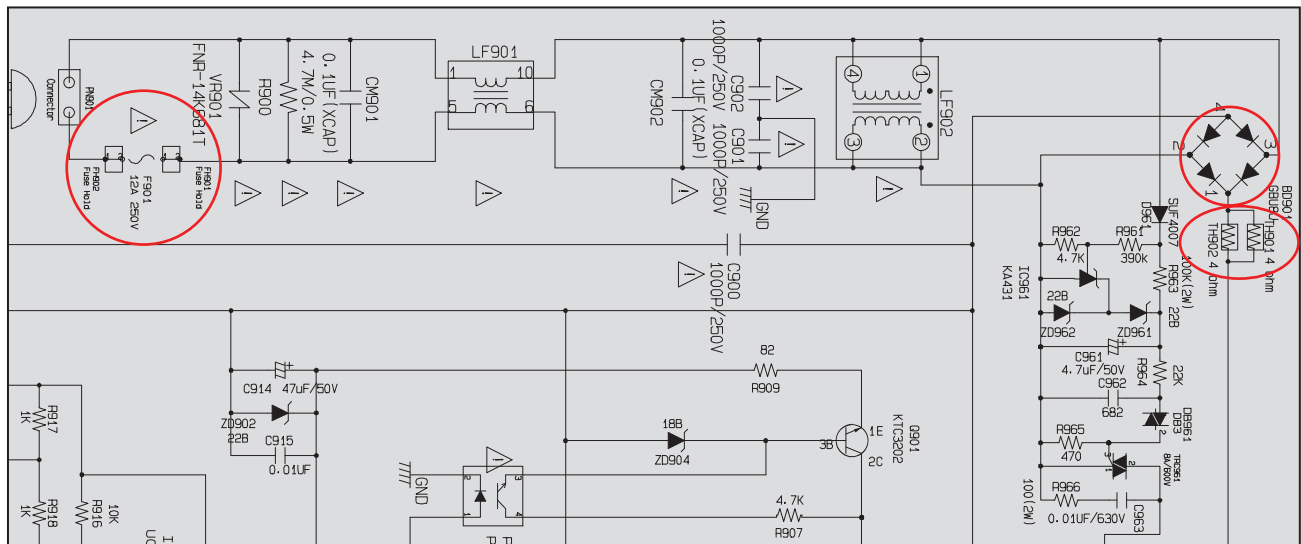
1-1. FUSE & BRIDGE DIODE

1-1-1. Solution

Please check and replace F901, BD901, TH901, TH903 on SMPS board.

1-1-2. How to troubleshoot (Countermeasure)

- 1) Check if the fuse F901 is open or short-circuit.
- 2) Check if the bridge diode DB901 is short-circuit by over current with a digital multi meter.
- 3) Check if the NTC thermistor TH901 and TH902 is normal or open.



1-1-3. Service hint (Any picture / Remark)



< F901 >

If F901 is not short-circuit, replace it with a same specifications one.



< BD901 >

If BD901 is short-circuit, replace it with a new one.



< TH901, TH903 >

If TH901 or TH902 is open, replace it with a new one.

ONE POINT REPAIR GUIDE

NO POWER

If the unit doesn't work by no power problem, repair the set according to the following guide.

1-2. D951, ZD951

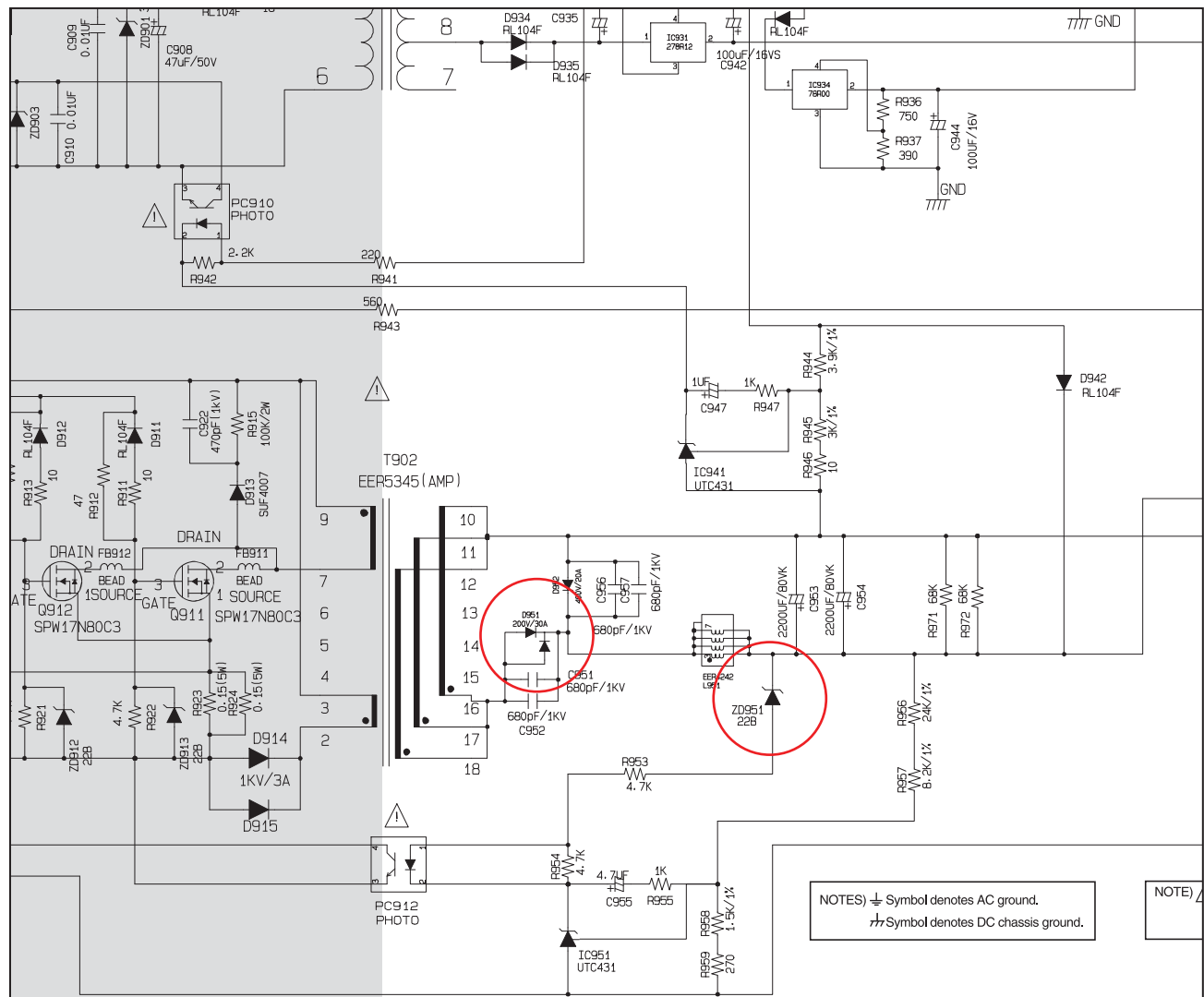
1-2-1. Solution

Please check and replace D951, ZD951 on SMPS board.

1-2-2. How to troubleshoot (Countermeasure)

- 1) Check the Anode-Cathod Voltage of D951 with a digital multi-meter, it is normally 0.2 ~ 0.3 V.
⇒ If it doesn't have any voltage, it's destroyed. Replace it with a new one.
- 2) Check if ZD951 is short-circuit.
⇒ If it is short-circuit, and then replace it with a new one.

1-2-3. Service hint (Any picture / Remark)



< SMPS schematic diagram >

ONE POINT REPAIR GUIDE

2. NO BOOTING WHEN POWER ON THE SET

The set doesn't work when press the power button on the front board or the remote control.

2-1. FLASH MEMORY

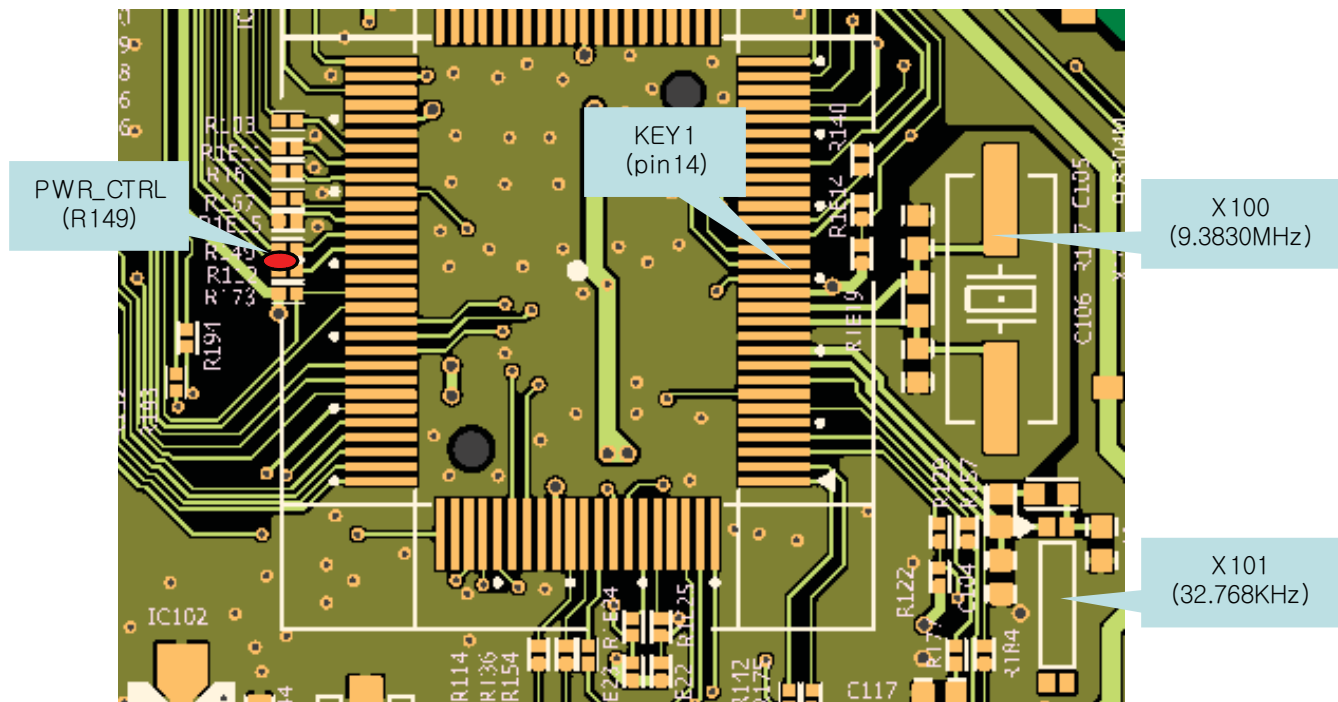
2-1-1. Solution

Please check and replace IC101 on MAIN board.

2-1-2. How to troubleshoot (Countermeasure)

- 1) Check the 3.7VA to CN102, CN103, and CN104 in standby mode.
⇒ If there is no 3.7 VA, check the SMPS.
- 2) Check 5.6 V, 12 VA, FL+, FL- and 32 V when power on the set.
- If the set doesn't work regardless of what the KEY1 changes high to low while pressing the power button. X100 and X101 work normally but, if you can not power on the set, replace the IC101 with a new one on the main board.

2-1-3. Service hint (Any picture / Remark)



ONE POINT REPAIR GUIDE

3. VFD IS NOT DISPLAYED WHEN POWER ON THE SET

When power on the set, any icons or characters on VFD are not displayed.

3-1. VFD

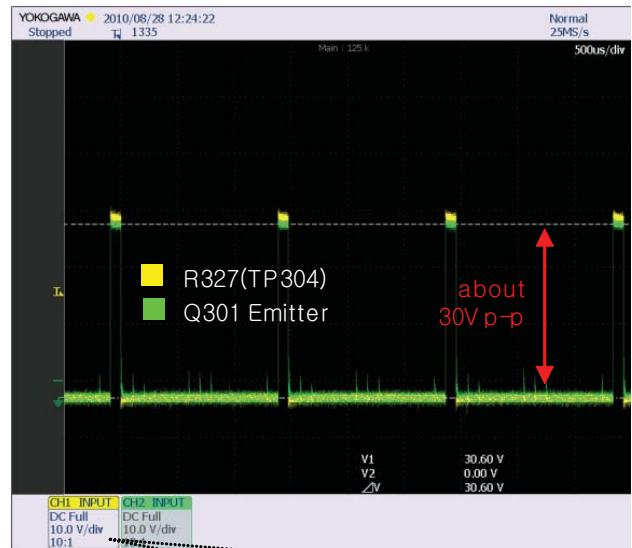
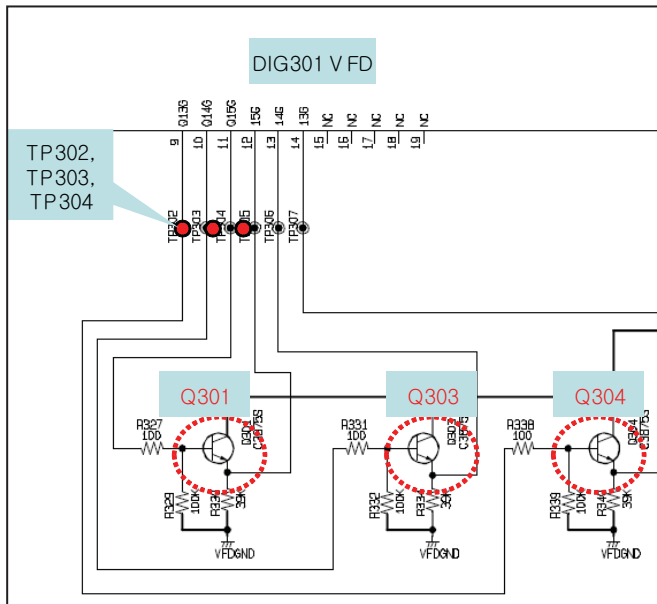
3-1-1. Solution

Please check and replace DIG301 on FRONT board.

3-1-2. How to troubleshoot (Countermeasure)

- 1) Check if 32 V, FL+ and FL- are output from SMPS to VFD via the MAIN board.
- 2) Check if the IC101 outputs VFD_RST, VFD_CLK, VFD_STB, and VFD_STB to the FRONT board.
- 3) Check if the VFD grid current amplifier circuit (Q301, Q303, Q304) on the FRONT board.
Check the drive signal to the transistor's base.
 - ⇒ If the control signals from VFD (TP302, TP303, TP304) isn't output, replace VFD with a new one.
 - ⇒ If the transistor doesn't work, replace it.

3-1-3. Service hint (Any picture / Remark)



Click the picture, and then drag to enlarge it.
Check the waveform on details.

< Waveform of the grid current driver >

ONE POINT REPAIR GUIDE

4. NO OPERATION OF MD

When no sound output in the CD function, you can not listen to music reading data from a CD disc if the servo motors in MD don't work. This step is for checking the SPINDLE MOTOR among them.

4-1. SPinDLE MOTOR

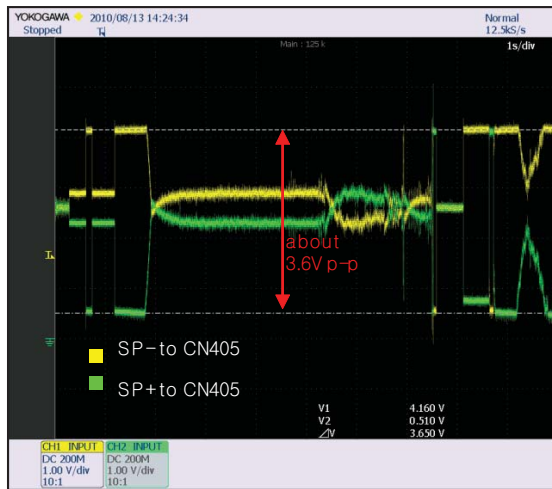
4-1-1. Solution

Please check and replace IC407, IC408 on MAIN board.

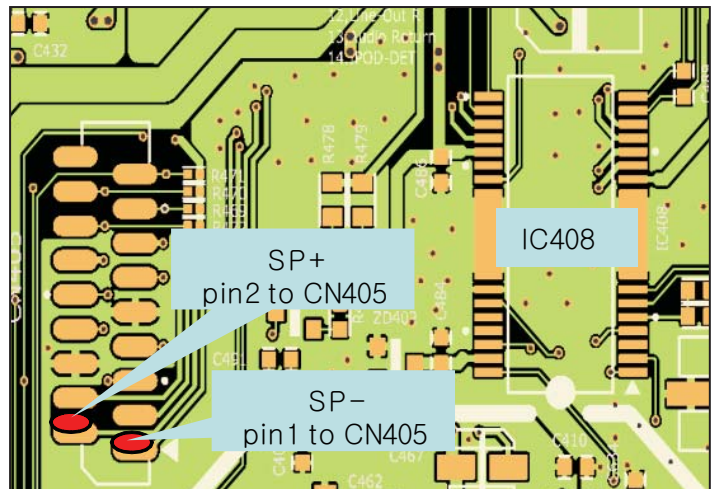
4-1-2. How to troubleshoot (Countermeasure)

- 1) Check the SPDO signal from Pin16 of IC407.
⇒ If no signal, check 3.3V(RF) and X402.
- 2) Check the SP- & SP+ from IC408 to CN405 for driving SPinDLE motor. It is about 3.6 Vp-p.
⇒ If no signal, check +1.8 V and +5 V for IC408.
- 3) Check if the FFC cable is solidly connected between CN405 and MD.
- 4) Check the MD.
⇒ If the sPindle motor is sort-circuit or has any trouble, it can not rotate CD discs.
Please check the function after changing another MD.

4-1-3. Service hint (Any picture / Remark)



< Waveform of SP- & SP+
for driving SPinDLE motor >



< Signal check point >

ONE POINT REPAIR GUIDE

NO OPERATION OF MD

When no sound output in the CD function, you can not listen to music reading data from a CD disc if the servo motors in MD don't work. This step is for checking the SLED MOTOR among them.

4-2. SLED MOTOR

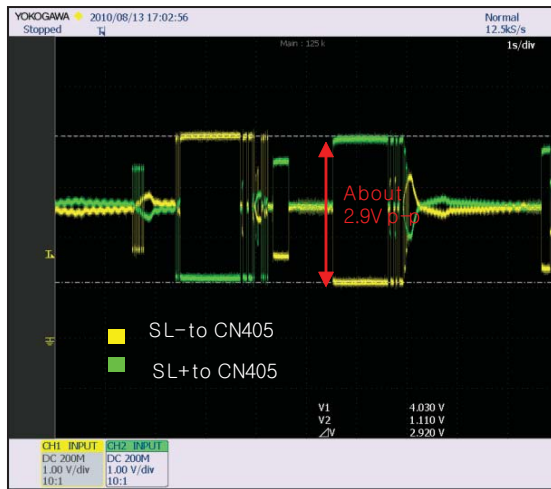
4-2-1. Solution

Please check and replace IC407, IC408 on MAIN board.

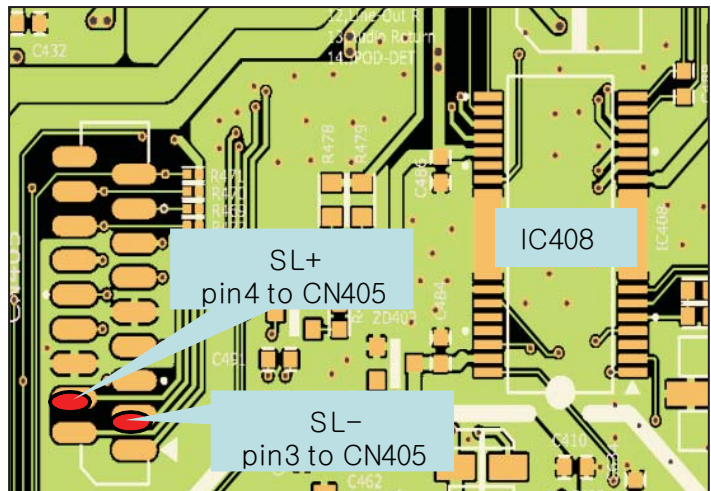
4-2-2. How to troubleshoot (Countermeasure)

- 1) Check the SLDO signal from Pin15 of IC407.
⇒ If no signal, check 3.3V(RF) and X402.
- 2) Check the SLED+ & SLED-from IC408 to CN405 for driving SPinDLE motor. It is about 2.9 Vp-p.
⇒ If no signal, check +1.8V and +5V for IC408.
- 3) Check if the FFC cable is solidly connected between CN405 and MD.
- 4) Check the MD.
⇒ If the sled motor is sort-circuit or has any trouble, it can not move the pickup module.
Please check the function after changing another MD.

4-2-3. Service hint (Any picture / Remark)



< Waveform of SLED- & SLED+
for driving SLED motor >



< Signal check point >

ONE POINT REPAIR GUIDE

NO OPERATION OF MD

When no sound output in the CD function, you can not listen to music reading data from a CD disc if the servo motors in MD don't work. This step is for checking the TRAY MOTOR among them.

4-3. TRAY MOTOR

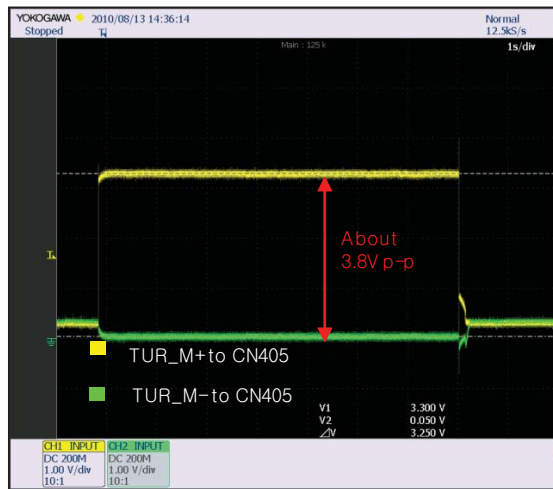
4-3-1. Solution

Please check and replace IC407, IC408 on MAIN board.

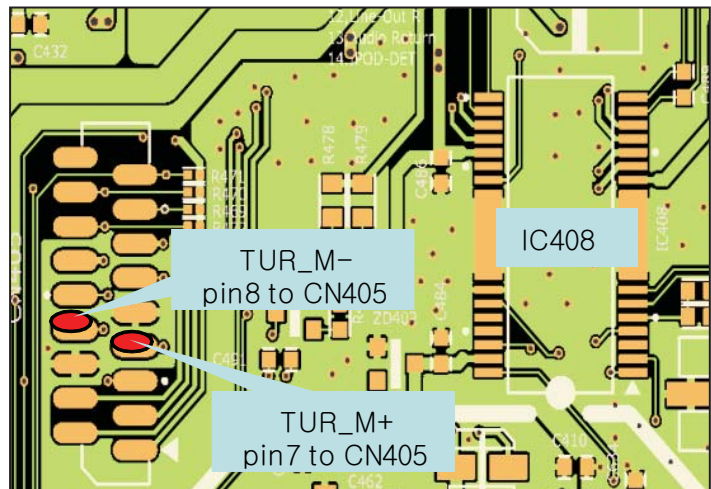
4-3-2. How to troubleshoot (Countermeasure)

- 1) Check TUR+ & TUR-signals from Pin56 & 57 of IC501 to IC406.
⇒ If no signal, check +5 V to IC406.
- 2) Check TUR_M+ & TUR_M- from IC406 to CN405 for driving TRAY motor. It is about 3.8 Vp-p.
⇒ If no signal, check +5 V to IC406. If it has any trouble, replace it with a new one.
- 3) Check if the FFC cable is solidly connected between CN405 and MD.
- 4) Check the MD.
⇒ If the tray motor is short-circuit or has any trouble, it can not rotate the tray.
Please check the function after changing another MD.

4-3-3. Service hint (Any picture / Remark)



< Waveform of TUR_M±
for driving TRAY motor >



< Signal check point >

ONE POINT REPAIR GUIDE

NO OPERATION OF MD

When no sound output in the CD function, you can not listen to music reading data from a CD disc if the servo motors in MD don't work. This step is for checking the TRAY OPEN/CLOSE MOTOR among them.

4-4. TRAY OPEN / CLOSE MOTOR

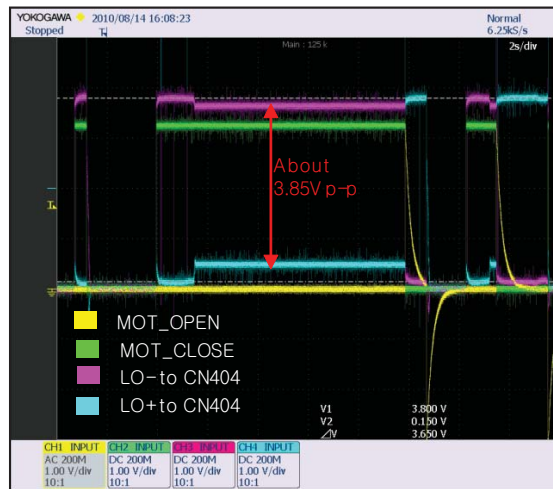
4-4-1. Solution

Please check and replace IC407, IC408 on MAIN board.

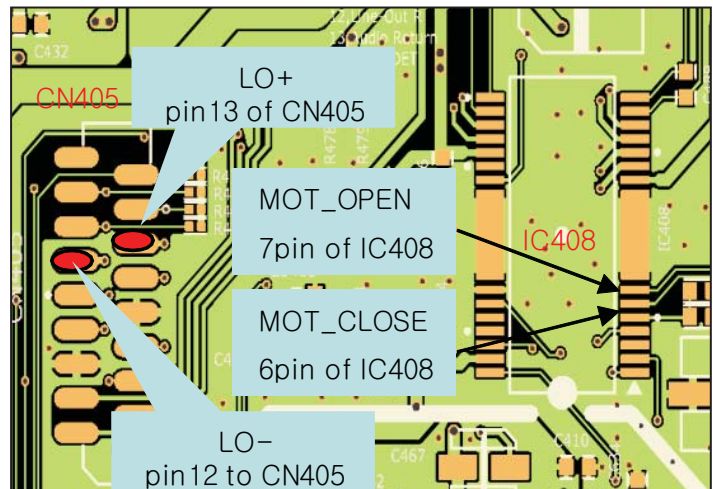
4-4-2. How to troubleshoot (Countermeasure)

- 1) Check MOT_OPEN & MOT_CLOSE signals from Pin104 & 105 of IC501 to IC408.
⇒ If no signal, check +1.8 V & + 5 V to IC408.
- 2) Check LOAD± from IC406 to CN405 for driving the tray open / close motor. It is about 3.85 Vp-p.
⇒ If no signal, check +5 V to IC406. If it has any trouble, replace it with a new one.
- 3) Check if the FFC cable is solidly connected between CN405 and MD.
- 4) Check the MD.
⇒ If the tray motor is short-circuit or has any trouble, it can not open or close the tray.
Please check the function after changing another MD.

4-4-3. Service hint (Any picture / Remark)



< Waveform
for driving TRAY open / close motor >



< Signal check point >

ONE POINT REPAIR GUIDE

NO OPERATION OF MD

When no sound output in the CD function, you can not listen to music reading data from a CD disc if the pickup module in MD doesn't work. This step is for checking the LASER TRACKING ACTUATOR.

4-5. LASER TRACKING ACTUATOR

4-5-1. Solution

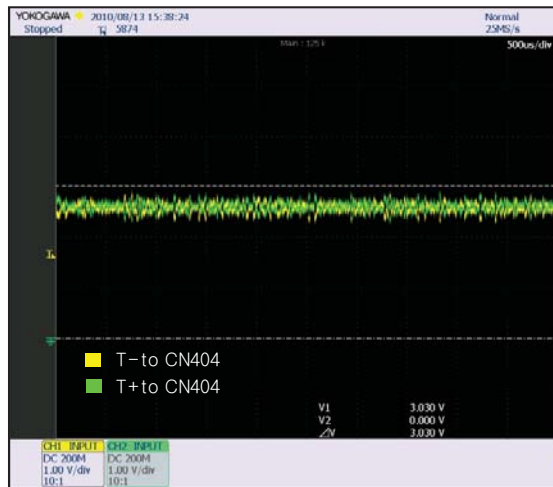
Please check and replace IC407, IC408 on MAIN board.

4-5-2. How to troubleshoot (Countermeasure)

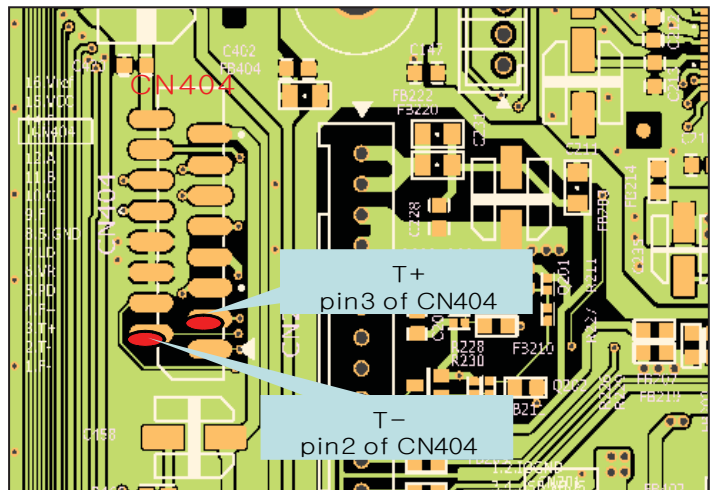
The tracking actuator makes the laser beam be positioned in the center of a track on CD disc.

- 1) Check the TRD signal from Pin14 of IC407.
⇒ If no signal, check 3.3 V(RF) and X402.
- 2) Check T- & T+ from IC408 to CN404 for driving the tracking actuator.
⇒ If no signal, check +1.8 V and +5 V for IC408.
- 3) Check if the FFC cable is solidly connected between CN404 and MD.
- 4) Check the MD.
⇒ If the pickup module has any trouble, it can not move the laser beam on the left or right side.
Please check the function after changing another MD.

4-5-3. Service hint (Any picture / Remark)



< Waveform of T±
for driving TRACKING actuator >



< Signal check point >

ONE POINT REPAIR GUIDE

NO OPERATION OF MD

When no sound output in the CD function, you can not listen to music reading data from a CD disc if the pickup module in MD doesn't work. This step is for checking the LASER FOCUSING ACTUATOR.

4-6. LASER FOCUSING ACTUATOR

4-6-1. Solution

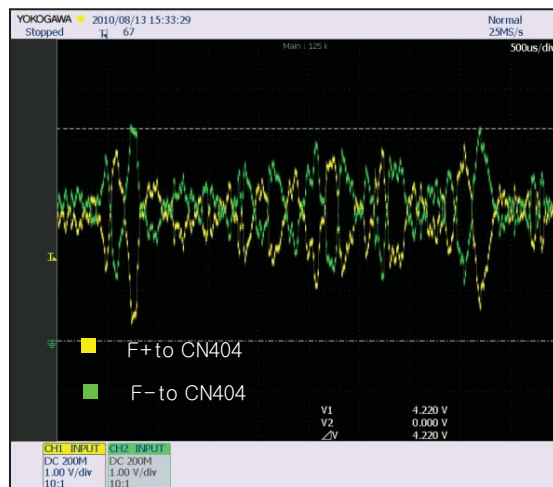
Please check and replace IC407, IC408 on MAIN board.

4-6-2. How to troubleshoot (Countermeasure)

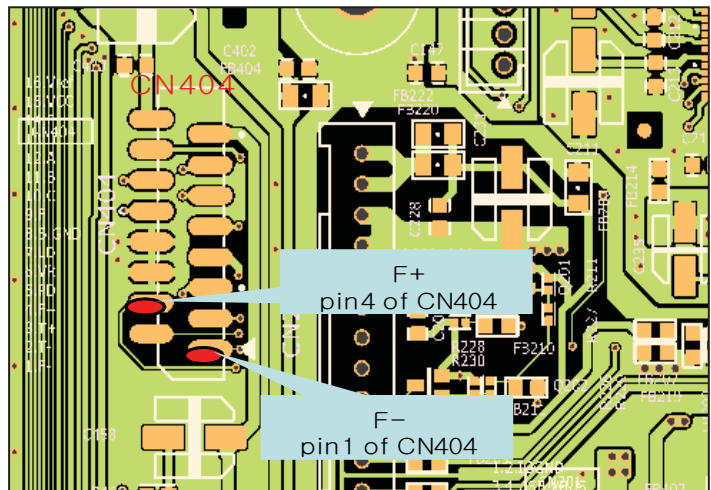
The focusing actuator makes the laser beam keep a regular interval with the surface of a CD disc.

- 1) Check the FOD signal from Pin13 of IC407.
 - ⇒ If no signal, check 3.3 V(RF) and X402.
 - 2) Check F- & F+ from IC408 to CN404 for driving the focusing actuator.
 - ⇒ If no signal, check +1.8 V and +5 V for IC408.
 - 3) Check if the FFC cable is solidly connected between CN404 and MD.
 - 4) Check the MD.
 - ⇒ If the pickup module has any trouble, it can not move the laser beam on the top or bottom side.
- Please check the function after changing another MD.

4-6-3. Service hint (Any picture / Remark)



< Waveform of TR±
for driving FOCUSING actuator >



< Signal check point >

ONE POINT REPAIR GUIDE

5. NO SOUND

There is no sound output in the CD FUNCTION, repair the set according to the following guide.

5-1. IN THE CD FUNCTION

5-1-1. Solution

Please check and replace IC501, IC602, IC801 on MAIN board.

5-1-2. How to troubleshoot (Countermeasure)

1) Check CD_BCK, CD_LRCK, & CD_DATA signals from IC407 to IC501.

⇒ If no signal, check if the RF & servo signals from MD is entered to IC407.

Refer to the "No operation of MD" guide on Item 4.

2) Check the following I2S signal flow. < I2S audio signal Interface >

- DAC_BCK: IC501_87Pin --> IC507_16Pin --> IC602_4Pin

- DAC_LRCK : IC501_88Pin --> IC507_5Pin --> IC602_4Pin (44.1 kHz)

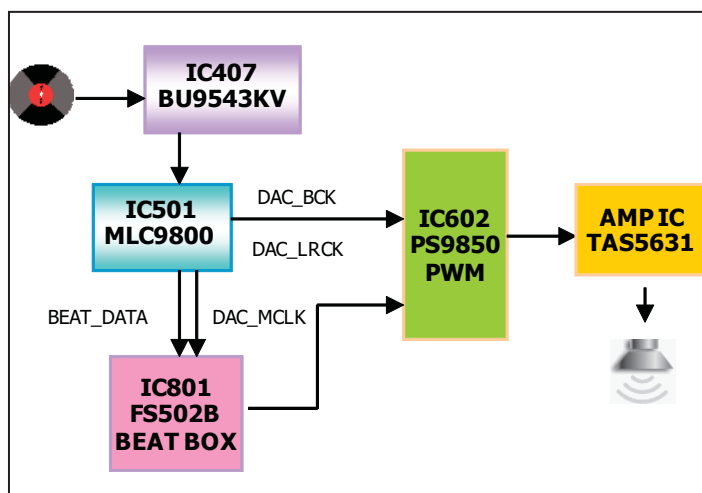
- DAC_DATA : IC501_83Pin --> R817 next to IC01 --> IC602_6/9Pin

- DAC_MCLK : IC501_86Pin --> R818 next to IC801

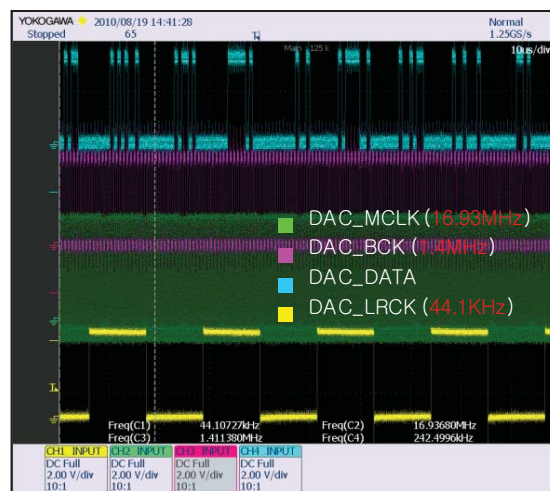
⇒ If there is any trouble, check the power for each IC. The power is normal but, if the signal waveform to the IC is distorted or no signal, replace it with a new one.

3) Check if "Digital audio AMP block" on Item 5-2 is normal.

5-1-3. Service hint (Any picture / Remark)



< I2S Signal Flow >



< Waveform of I2S audio interface signals >

ONE POINT REPAIR GUIDE

NO SOUND

There is no sound output by **DIGITAL AUDIO AMP DAMAGE**, repair the set according to the following guide.

5-2. BY DIGITAL AUDIO AMP DAMAGE (IN ALL FUNCTIONS)

5-2-1. Solution

Please check and replace IC701, IC702, IC703 on MAIN board.

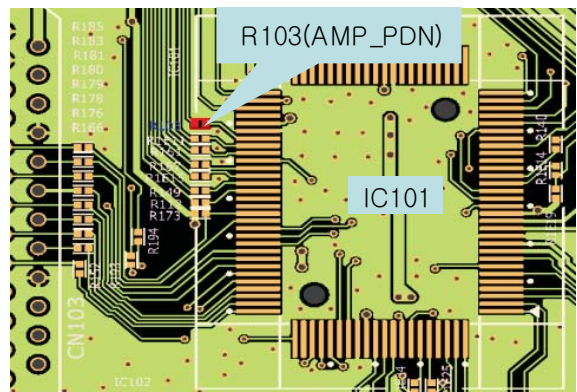
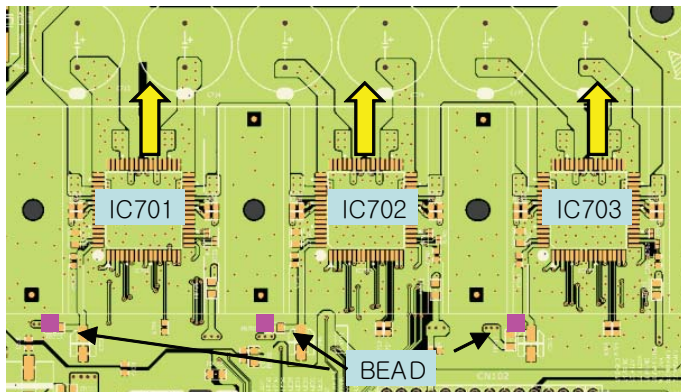
5-2-2. How to troubleshoot (Countermeasure)

- 1) Check FL \pm , FR \pm , RL \pm , RR \pm , SW1 \pm , & SW2 \pm signals from IC602 to IC701, 702 & 703 each input function.
 - ⇒ If no signal, check if I2S audio signals are entered to IC602.
Refer to "I2S audio signal interface" on Item 5-1.
- 2) Check PVDD_48V.
 - ⇒ If 48 V is abnormal, check the SMPS.
- 3) Check +12 for driving the gate of AMP IC.
 - a. All the powers are normal, but if +12 V is low, there is possible for AMP IC to be damaged.
 - b. Remove a ferrite bead among FB703, FB707 and FB713 one by one.
When removed a ferrite bead, if +12 V is recovered, the IC connected to it was damaged.
 - c. Replace the IC with a new one.
- 4) Check the impedance between SPK+ & GND and SPK- & GND.
 - a. If the impedance is 0 Ω , the IC must be damaged.
 - b. After removing the heat sink, replace it with a new one.

Comments !!

If a AMP IC among three is damaged, "AMP_PDN" to R103 changes HIGH to LOW at regular intervals.
The sound is not output by AMP power down function.

5-2-3. Service hint (Any picture / Remark)



< Signal check point >

ONE POINT REPAIR GUIDE

NO SOUND

There is no sound output in the USB FUNCTION, repair the set according to the following guide.

5-3. IN THE USB FUNCTION

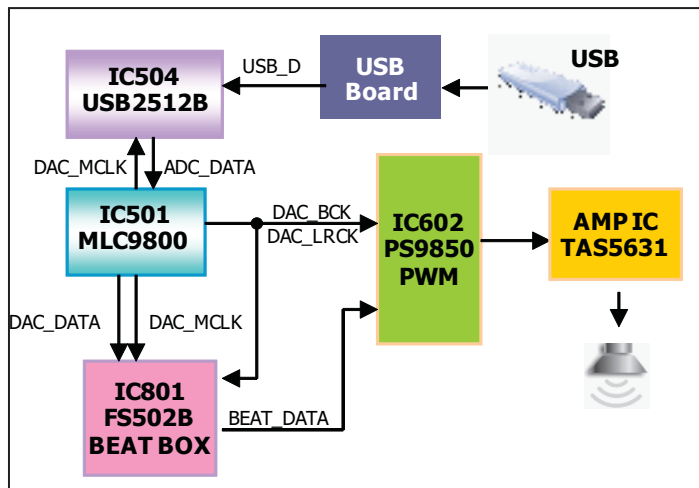
5-3-1. Solution

Please check and replace IC501, IC504 on MAIN board & IC3U01 on USB board.

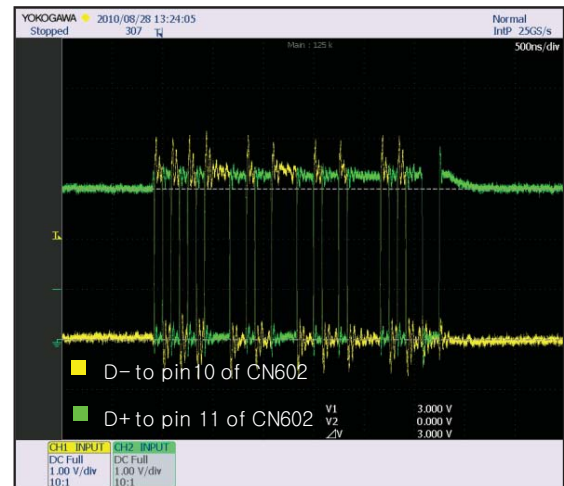
5-3-2. How to troubleshoot (Countermeasure)

- 1) Check +5VU to USB board.
 - ⇒ If the USB LEDs are turned on, the voltage is okay, if so not, check +5.6 V to Pin8 of CN602.
- 2) Check USB D± from main board to USB board.
 - a. Check USB_HUB_DN/DP signals to IC501(Pin116, 117)
 - b. Check USB1/2_DN/DP signals from IC504 to CN602 (Pin10, 11, 13, & 14)
 - ⇒ If there is any trouble, check the power for each IC. The power is normal but , if the signal waveform to the IC is distorted or no signal, replace it with a new one.
- 3) Check if “Digital audio AMP block” on **item 5-2 is normal**.

5-3-3. Service hint (Any picture / Remark)



< USB function signal flow >



< Waveform of USB D± signal >

ONE POINT REPAIR GUIDE

NO SOUND

There is no sound output in the AUX FUNCTION, repair the set according to the following guide.

5-4. IN THE AUX FUNCTION

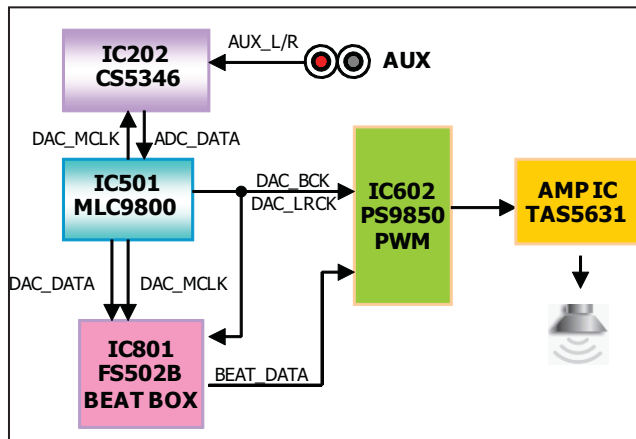
5-4-1. Solution

Please check and replace IC202 on MAIN board.

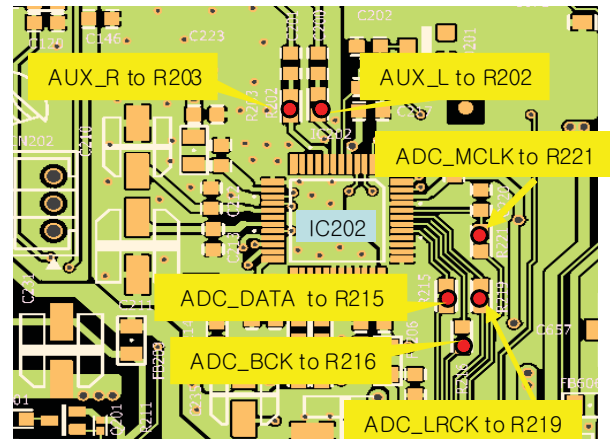
5-4-2. How to troubleshoot (Countermeasure)

- 1) Check AUX_L/R signals to IC202 (Pin7, 8).
- 2) Check if ADC_BCK, ADC_LRCK, & DAC_MCLK are entered from IC501 to IC202.
- 3) Check if ADC_DATA is entered from IC202 to IC501.
⇒ If no signal, check +5 V & +3.3 V(ADC) for IC202. If is NG, replace it a new one.
- 4) Check the following I2S signal flow from IC501 to IC602. (Refer to Item 5-1.)
⇒ If there is any trouble, check the power for each IC. The power is normal but, if the signal waveform to the IC is distorted or no signal, replace it with a new one.
- 5) Check if the digital audio AMP block is okay. Refer to "Digital Audio AMP" guide on Item 5-2.
⇒ If AMP is damaged, replace it with a new one.

5-4-3. Service hint (Any picture / Remark)



< AUX function signal flow >



< Signal check point >

ONE POINT REPAIR GUIDE

NO SOUND

There is no sound output in the IPOD FUNCTION, repair the set according to the following guide.

5-5. IN THE IPOD FUNCTION

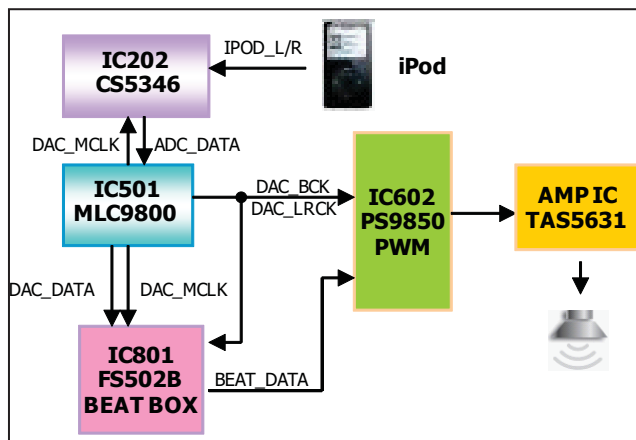
5-5-1. Solution

Please check and replace IC201, IC202, IC203 on MAIN board.

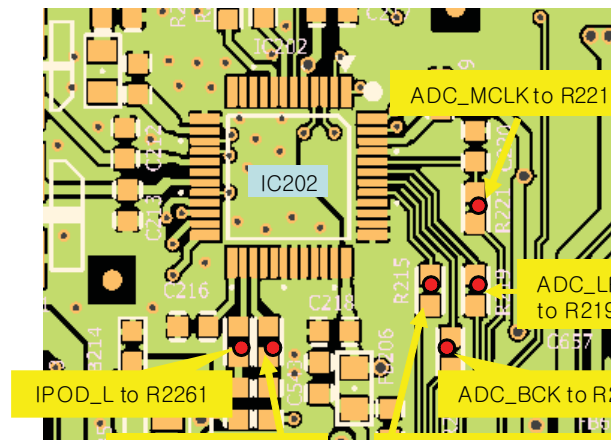
5-5-2. How to troubleshoot (Countermeasure)

- 1) Check USB VBUS_+5V to Pin3 of CN201 after inserting the iPod to IPOD Docking System.
⇒ If no power, check if IPOD_P_CTRL to Pin3 of IC203 change Low to High.
- 2) Check if IPOD Audio L/R signals are entered from Pin11 & 12 of CN201 to Pin10 & 6 of IC201.
- 3) Check if the IPOD Audio L/R that some noise is removed to IC201 are output from Pin1 & 5 of IC201.
⇒ If no signal, replace the IC with a new one.
- 4) Check IPOD_L/R signals from 1 & 5 of IC201 to IC202(Pin26, 27).
- 5) Check if ADC_BCK, ADC_LRCK & DAC_MCLK are entered from IC501 to IC202.
- 6) Check if ADC_DATA is entered from IC202 to IC501.
⇒ If there is no signal, check +5 V & +3.3 V(ADC) for IC202. If is NG, replace it a new one.
- 7) Check the following I2S signal flow from IC501 to IC602. (Refer to Item 5-1.)
⇒ If there is any trouble, check the power for each IC. The power is normal but , if the signal waveform to the IC is distorted or no signal, replace it with a new one.
- 8) Check if the digital audio AMP block is okay. Refer to "Digital Audio AMP" guide on Item 5-2.
⇒ If an AMP is damaged, replace it with a new one

5-5-3. Service hint (Any picture / Remark)



< iPod function signal flow >



< Signal check point >

ONE POINT REPAIR GUIDE

NO SOUND

There is no sound output in the PORT. IN FUNCTION, repair the set according to the following guide.

5-6. IN THE PORT. IN FUNCTION

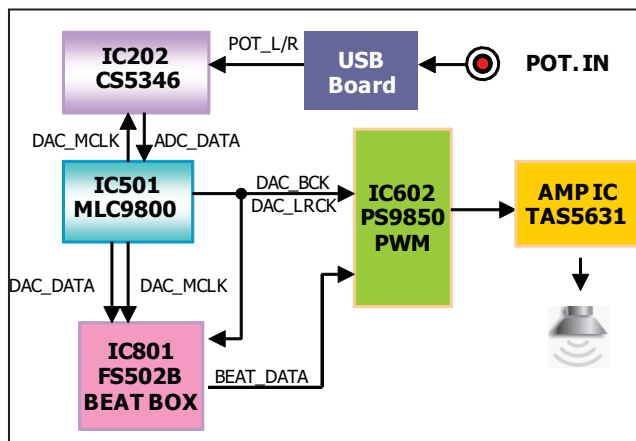
5-6-1. Solution

Please check and replace IC202 on MAIN board.

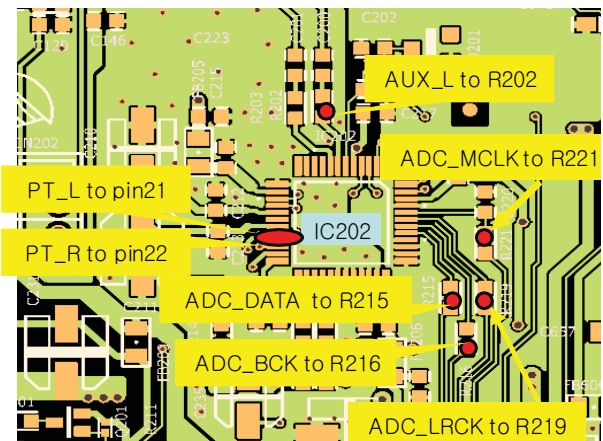
5-6-2. How to troubleshoot (Countermeasure)

- 1) Check PT_L/R signal from Main board to USB board.
- 2) Check if PT_LR is entered from Pin1 & 3 of CN3U01 to Pin1 & 3 to CN502.
- 3) Check POT_L/R signals to IC202(Pin21, 22).
- 4) Check if ADC_BCK, ADC_LRCK, & DAC_MCLK are entered from IC501 to IC202.
- 5) Check if ADC_DATA is entered from IC202 to IC501.
⇒ If no signal, check +5 V & +3.3 V(ADC) for IC202. If is NG, replace it a new one.
- 6) Check the following I2S signal flow from IC501 to IC602. (Refer to Item 5-1.)
⇒ If there is any trouble, check the power for each IC. The power is normal but , if the signal waveform to the IC is distorted or no signal, replace it with a new one.
- 7) Check if the digital audio AMP block is okay. Refer to “Digital Audio AMP” guide on Item 5-2.
⇒ If AMP is damaged, replace it with a new one

5-6-3. Service hint (Any picture / Remark)



< PORT. IN function signal flow >



< Signal check point >

ONE POINT REPAIR GUIDE

NO SOUND

There is no sound output in the TUNER FUNCTION, repair the set according to the following guide.

5-7. IN THE TUNER FUNCTION

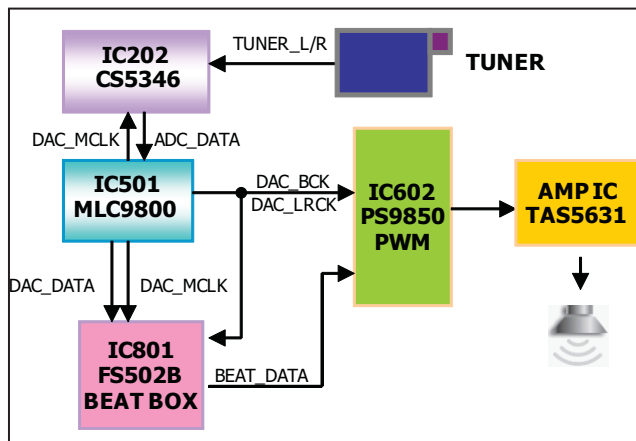
5-7-1. Solution

Please check and replace IC202, TU101 on MAIN board.

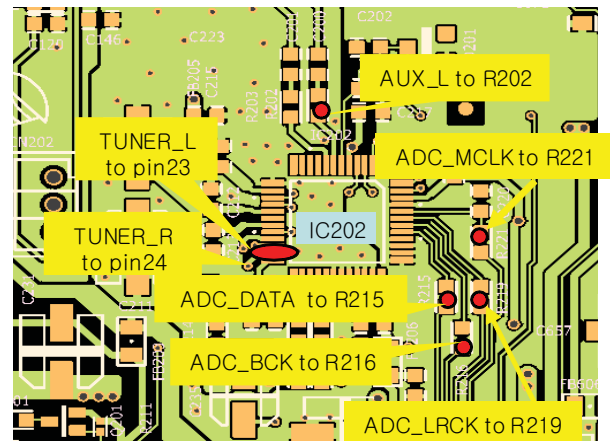
5-7-2. How to troubleshoot (Countermeasure)

- 1) Check if TUNER_LR is entered from Pin1 & 3 of T1U01 to IC202(Pin23, 24).
 ⇒ If no signals, Check +3.3 V for Tuner power.
 ⇒ Check if the Tuner control signals (CLK, DAT, CE, RST, GPO2) are entered from IC101 to TU101.
 If it doesn't work, replace TUNER with a new one.
- 2) Check if ADC_BCK, ADC_LRCK, & DAC_MCLK are entered from IC501 to IC202.
- 3) Check if ADC_DATA is entered from IC202 to IC501.
 ⇒ If no signal, check +5 V & +3.3 V(ADC) for IC202. If is NG, replace it a new one.
- 4) Check the following I2S audio signal flow from IC501 to IC602. (Refer to Item 5-1.)
 ⇒ If there is any trouble, check the power for each IC. The power is normal but, if the signal waveform to the IC is distorted or no signal, replace it with a new one.
- 5) Check if the digital audio AMP block is okay. Refer to "Digital Audio AMP" guide on Item 5-2.
 ⇒ If AMP is damaged, replace it with a new one.

5-7-3. Service hint (Any picture / Remark)



< TUNER function signal flow >



< Signal check point >

ONE POINT REPAIR GUIDE

NO SOUND

There is no sound output in the MIC IN FUNCTION, repair the set according to the following guide.

5-8. IN THE MIC IN FUNCTION

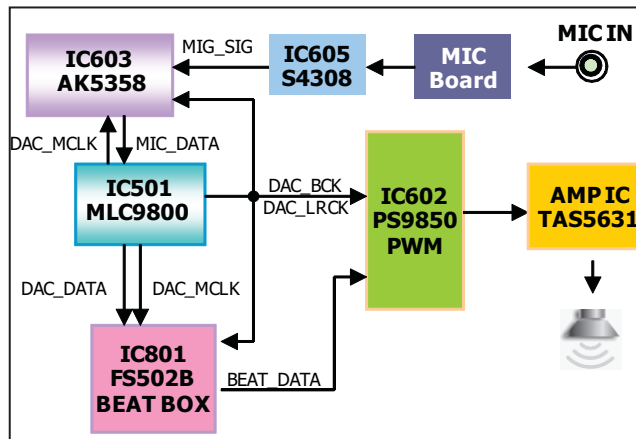
5-8-1. Solution

Please check and replace IC603, IC605 on MAIN board.

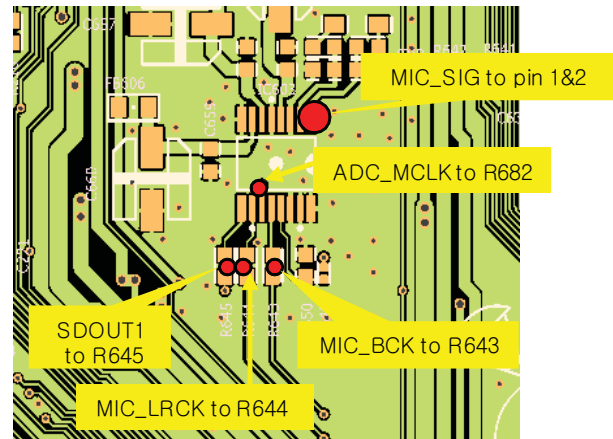
5-8-2. How to troubleshoot (Countermeasure)

- 1) Check MIC_SIG signal to Pin 27 of CN104.
⇒ If no signal, Check the signal to Pin 5 of CN3M01 on the MIC board. Check it from Pin5 of CN302 on the VOLUME board. Check if the signal is entered from Pin3 of CN301 to MAIN board.
- 2) Check if MIC_SIG is entered from Pin27 of CN104 to Pin3 to IC605 (MIC AMP).
- 3) Check if the amplified signal is entered from Pin4 of IC605.
⇒ If no signal output, check +12 V for IC605, replace IC605 with a new one if it has a problem.
- 4) Check if MIC_BCK & MIC_LRCK is entered from IC507 to IC603 and DAC_MCLK from IC501 to IC603.
Check if MIC_DATA is entered from Pin 9 of IC603 to Pin 7 of IC602.
⇒ If no signal, check +5 V & +3.3 V for IC603. If it is abnormal, change replace it a new one.
- 6) Check the following I2S signal flow from IC603 to IC602.
⇒ If there is any trouble, check the power for each IC. If the signals are abnormal, replace it a new one.
- 7) Check if the digital audio AMP block is okay. Refer to "Digital Audio AMP" guide on Item 5-2.
⇒ If AMP is damaged, replace it with a new one.

5-8-3. Service hint (Any picture / Remark)



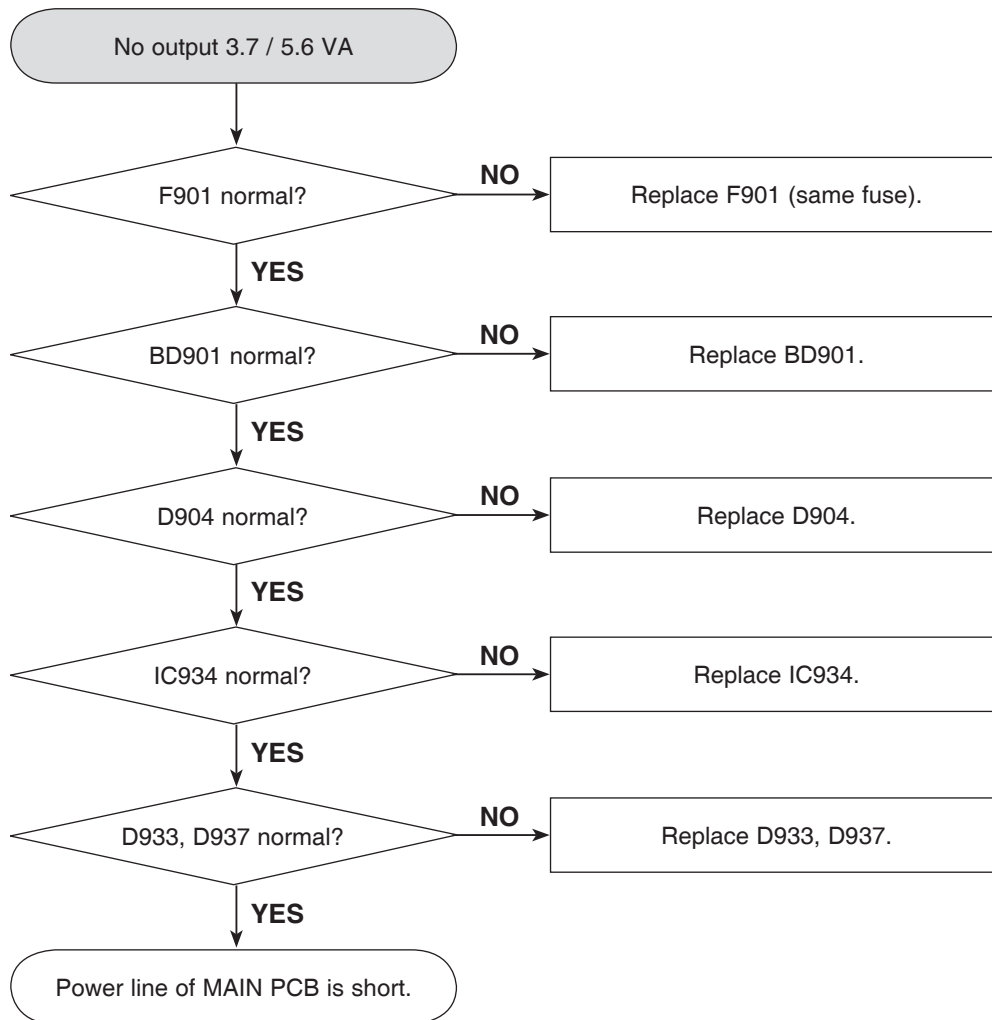
< MIC IN function signal flow >



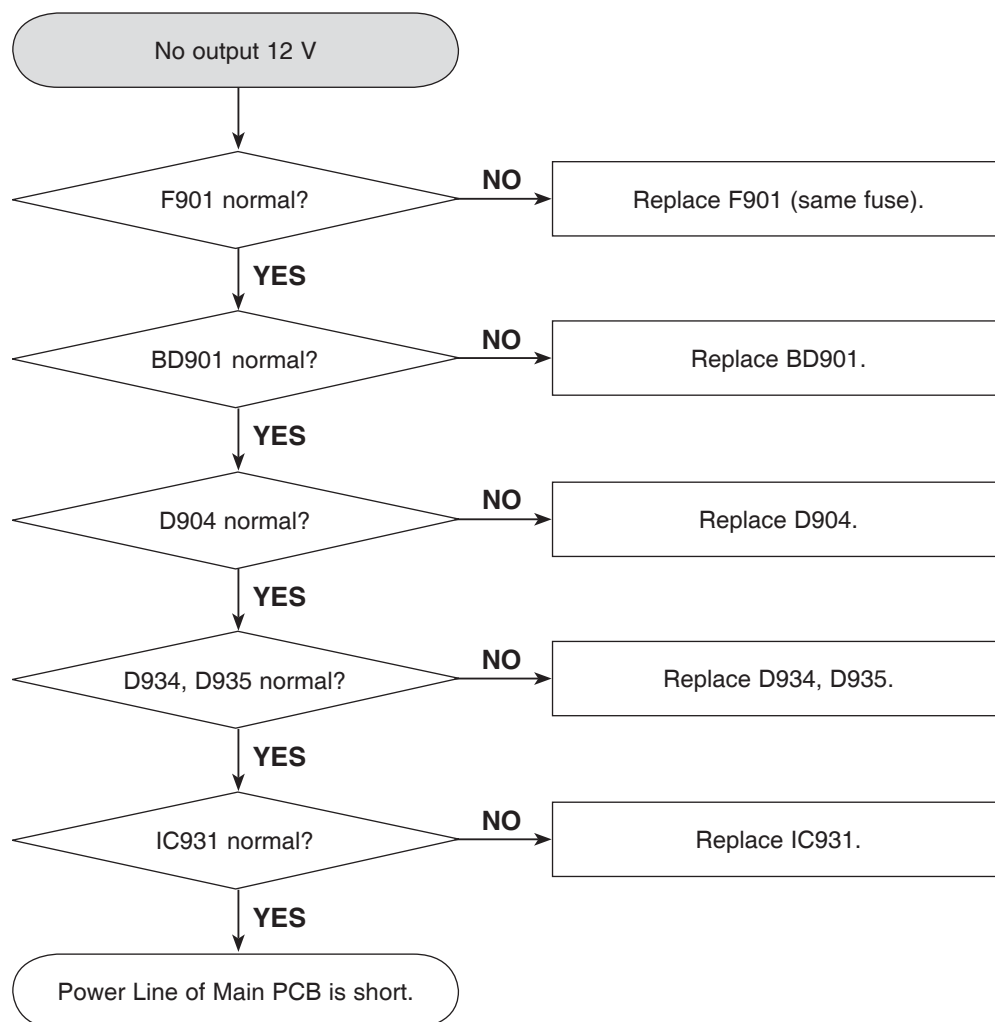
< Signal check point >

ELECTRICAL TROUBLESHOOTING GUIDE

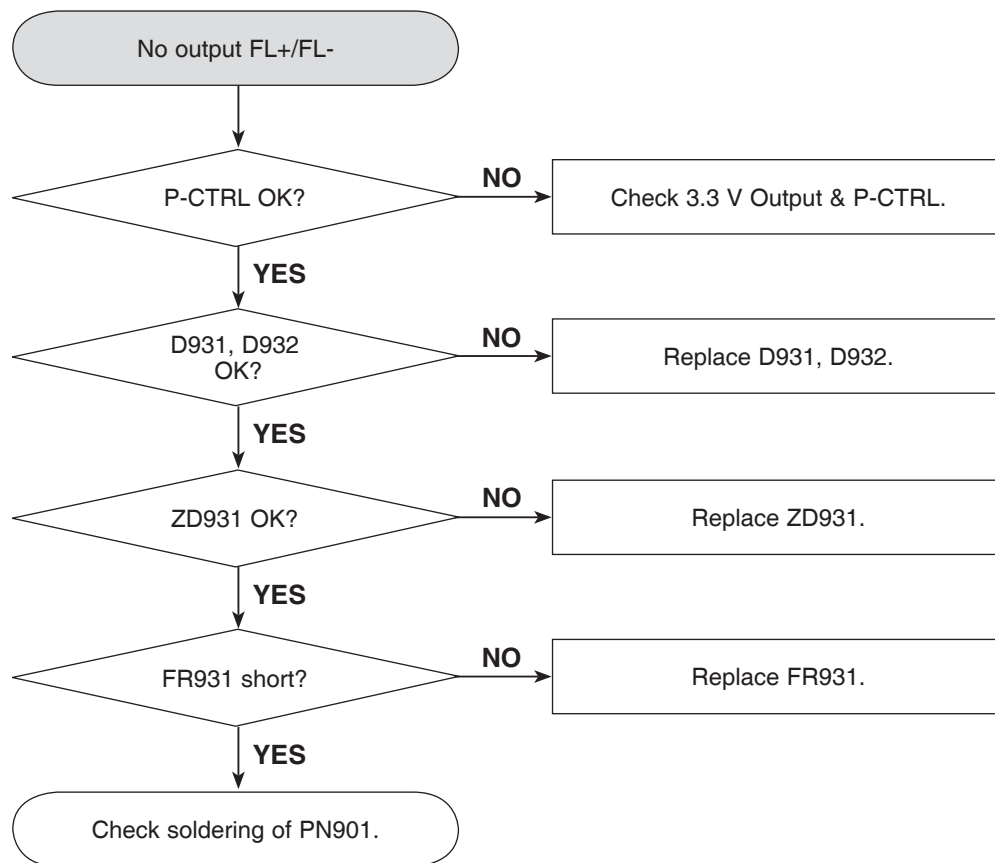
1. POWER SUPPLY ON SMPS BOARD



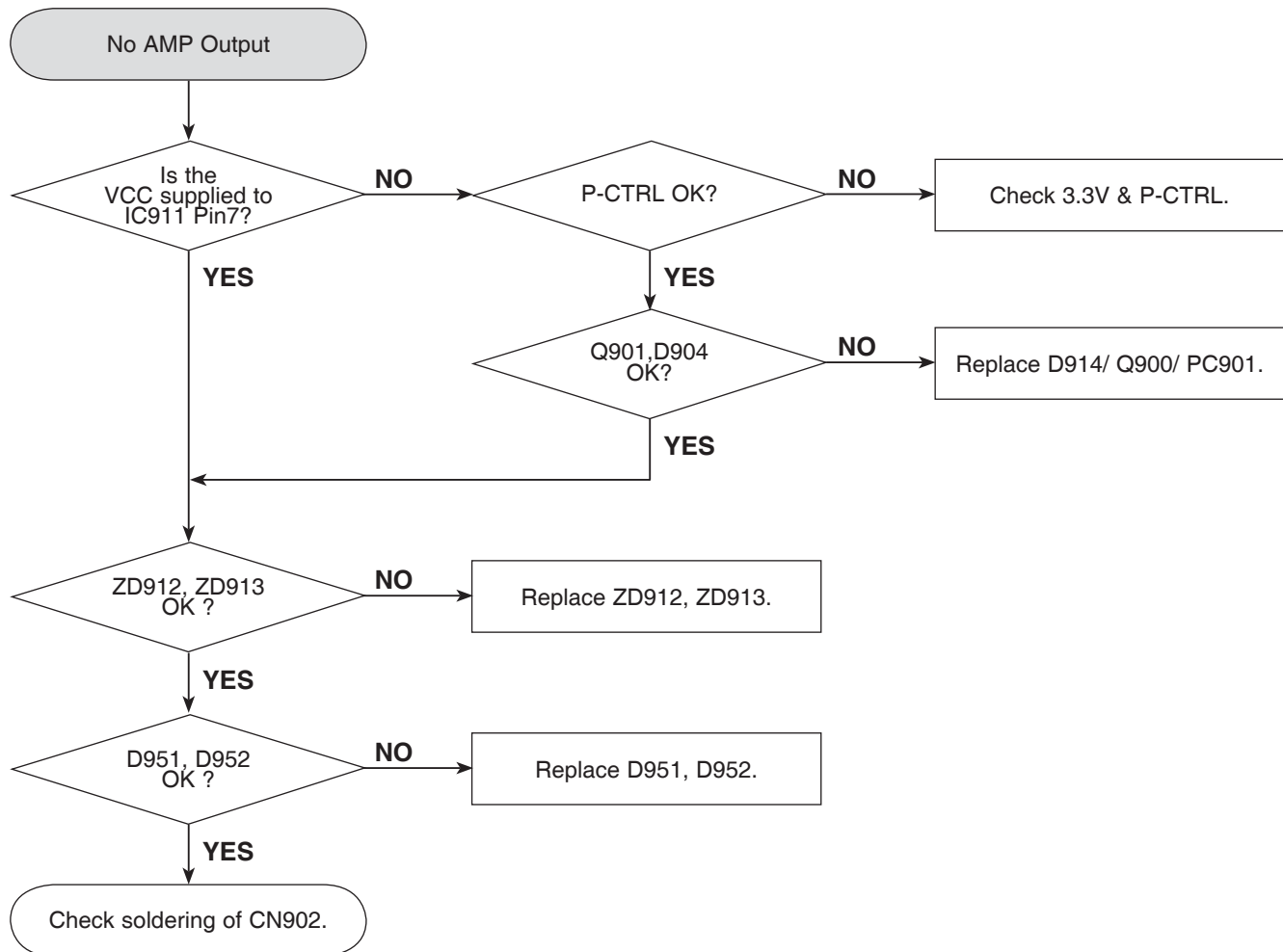
ELECTRICAL TROUBLESHOOTING GUIDE



ELECTRICAL TROUBLESHOOTING GUIDE

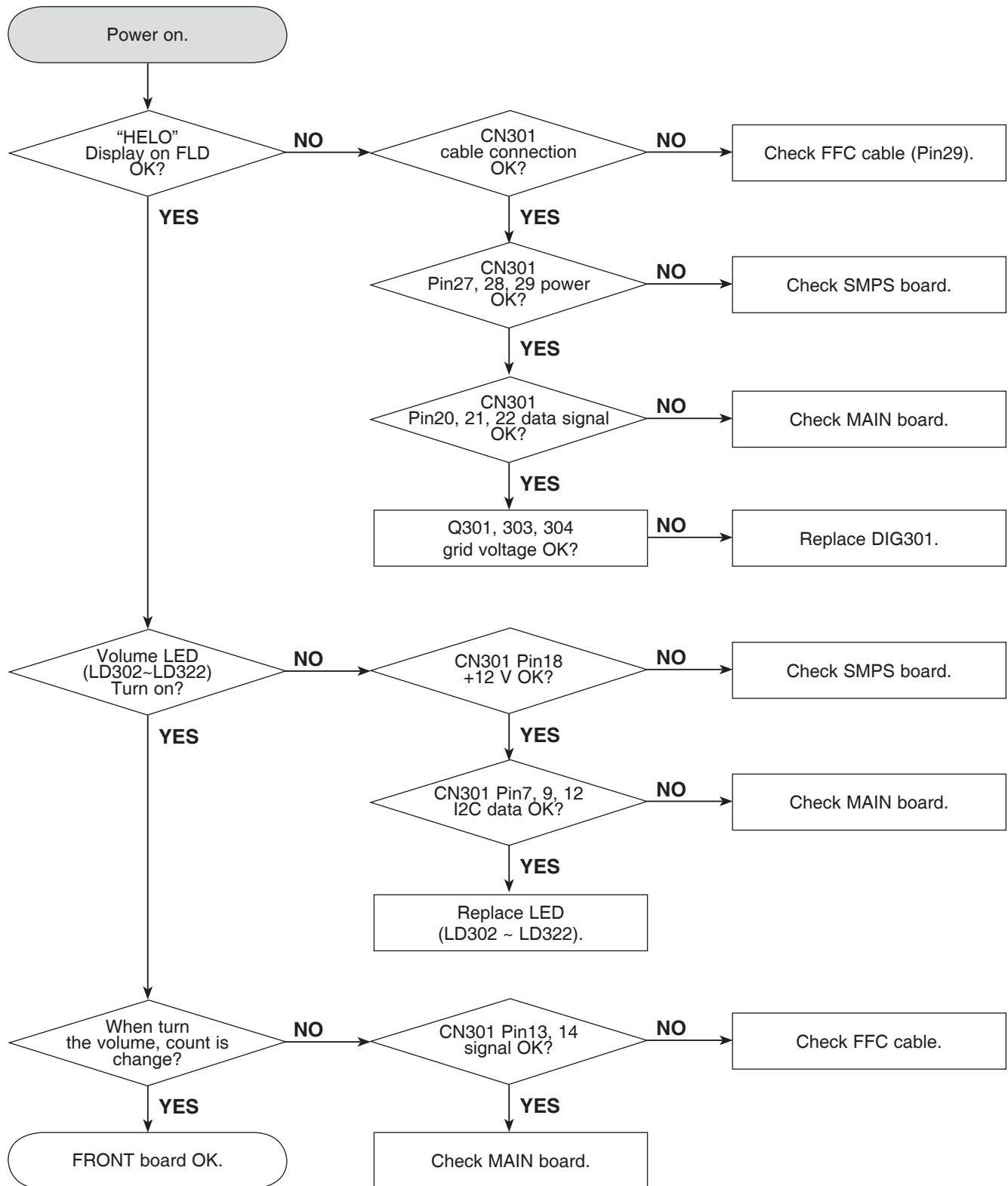


ELECTRICAL TROUBLESHOOTING GUIDE



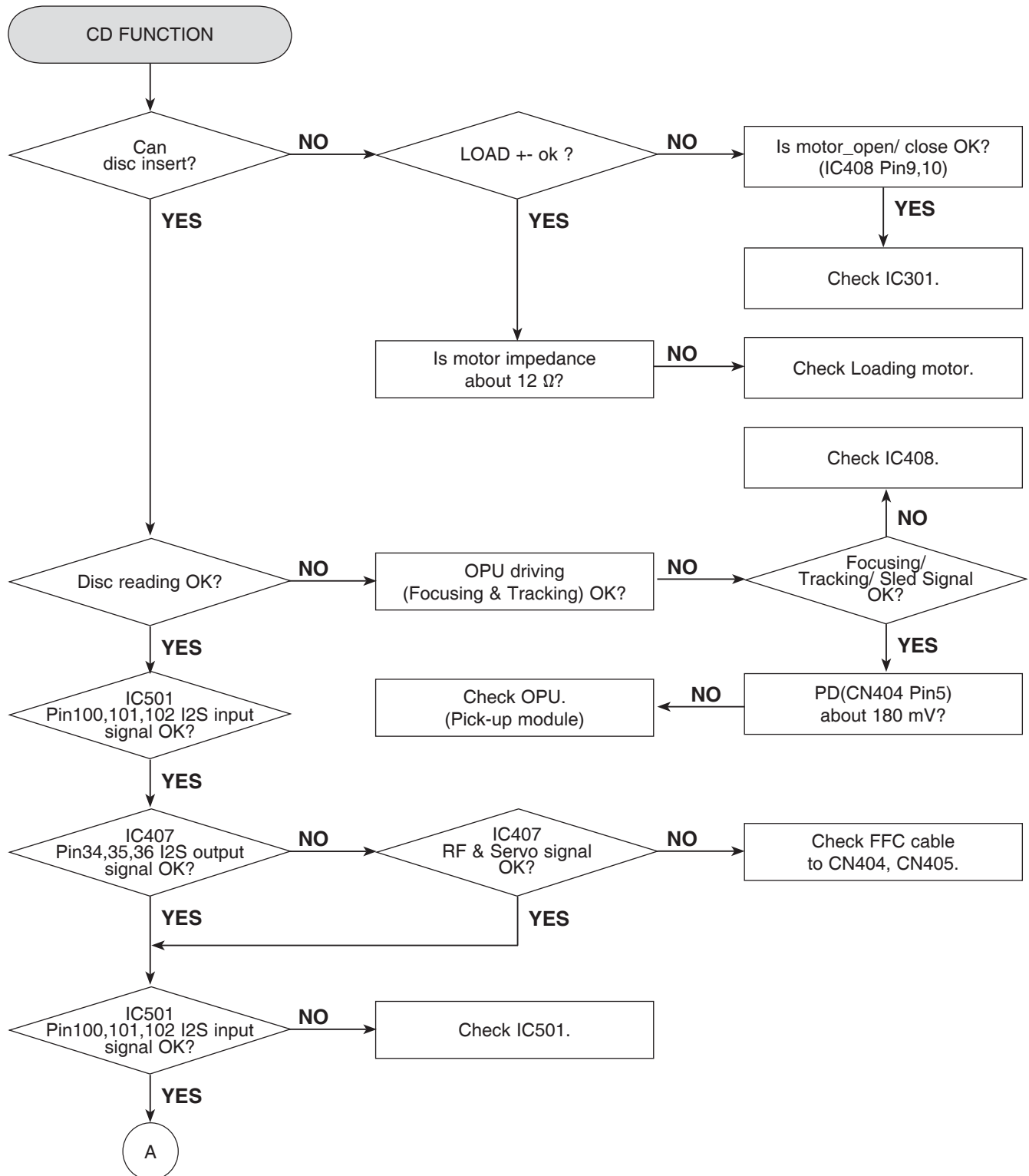
ELECTRICAL TROUBLESHOOTING GUIDE

2. SYSTEM PART

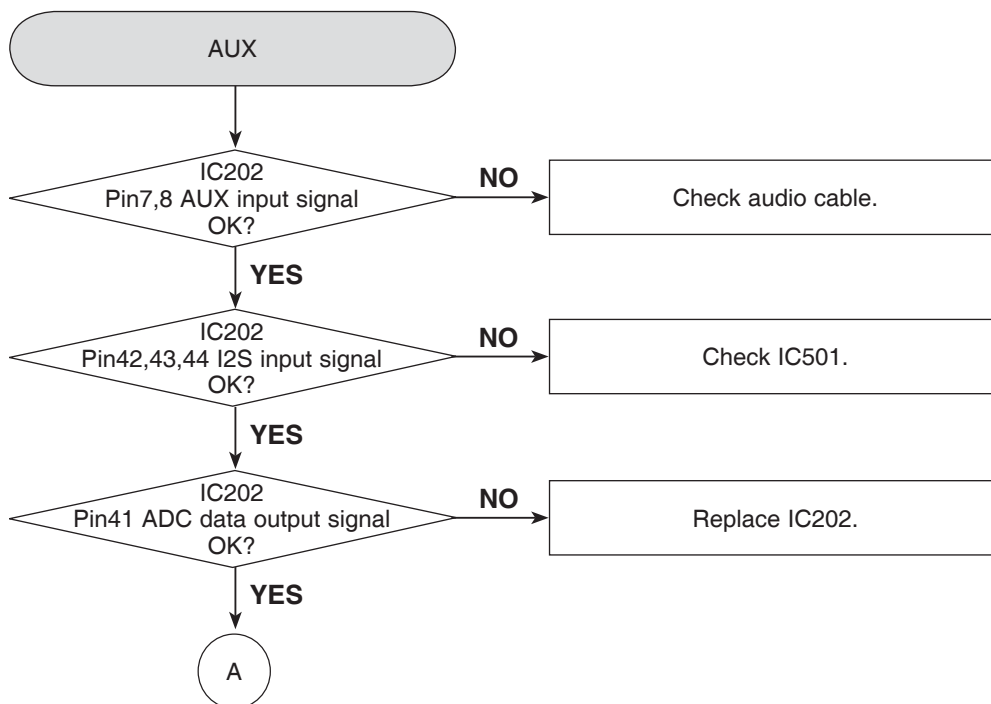
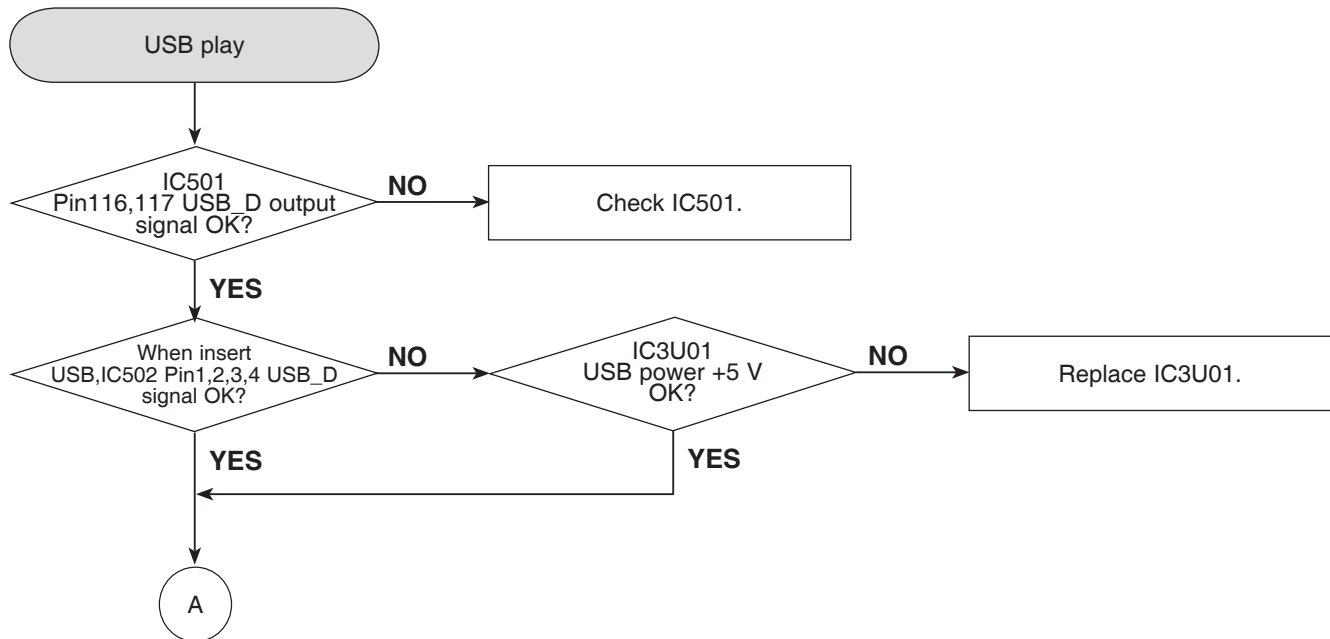


ELECTRICAL TROUBLESHOOTING GUIDE

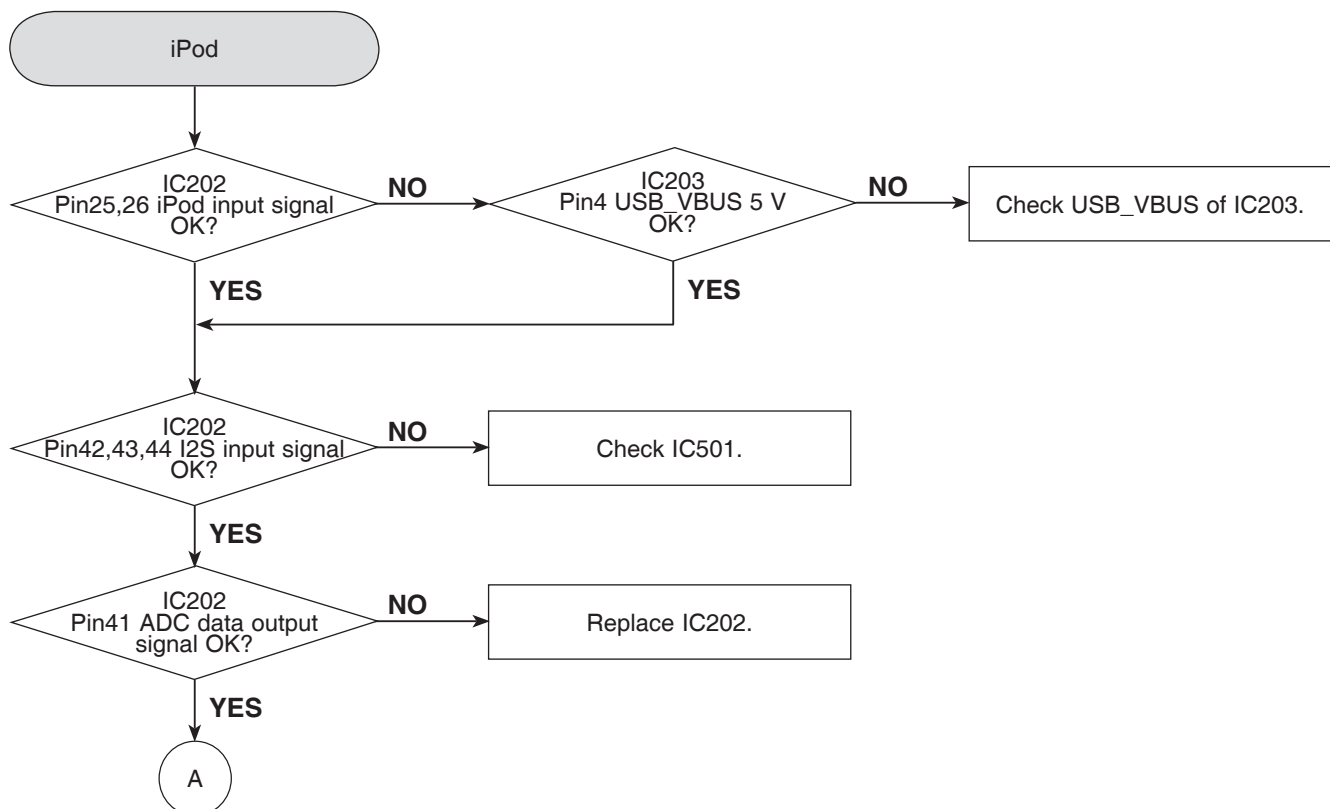
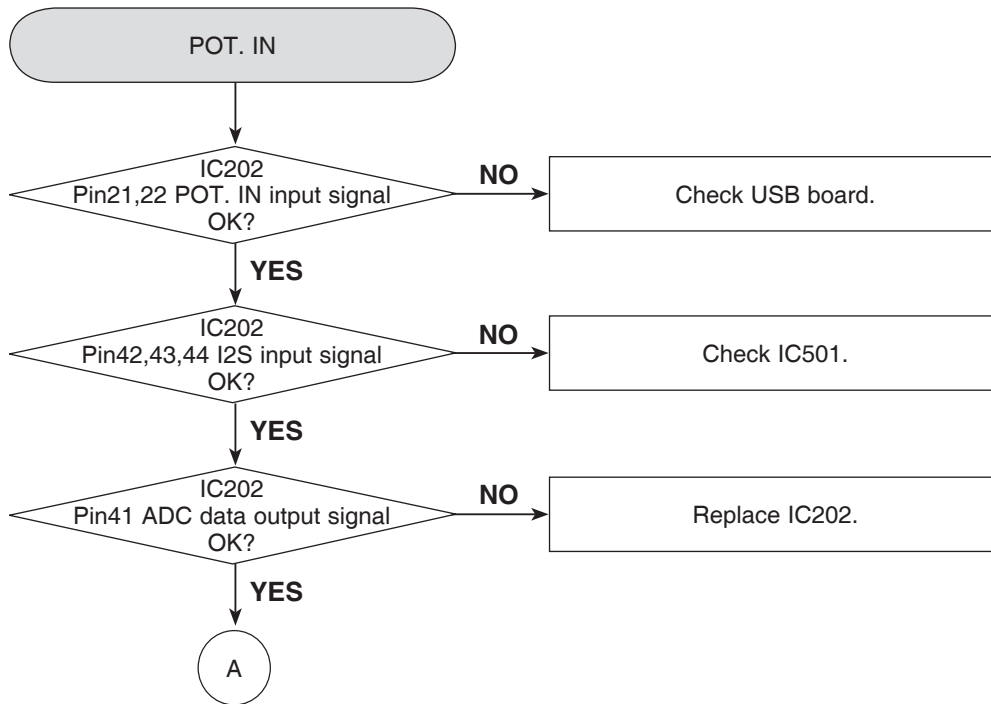
3. NO AUDIO PART



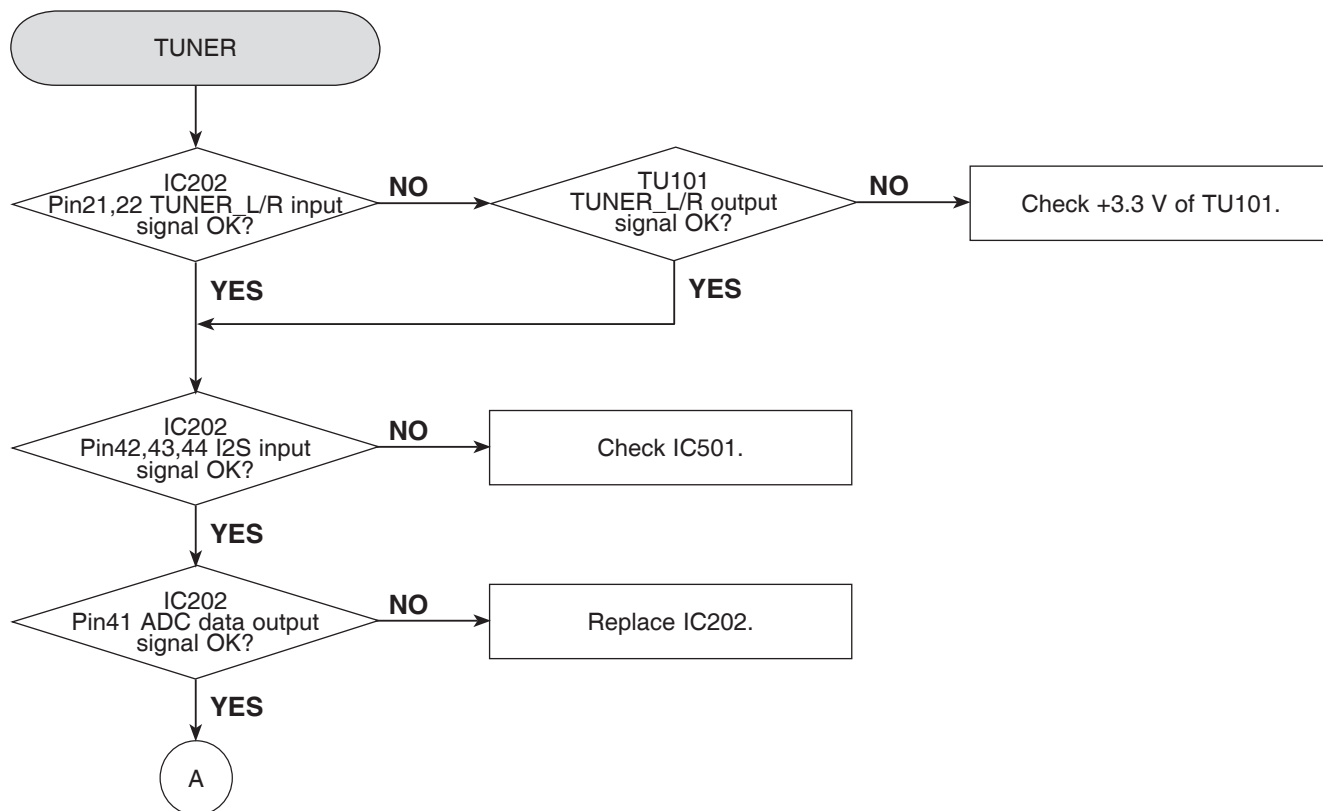
ELECTRICAL TROUBLESHOOTING GUIDE



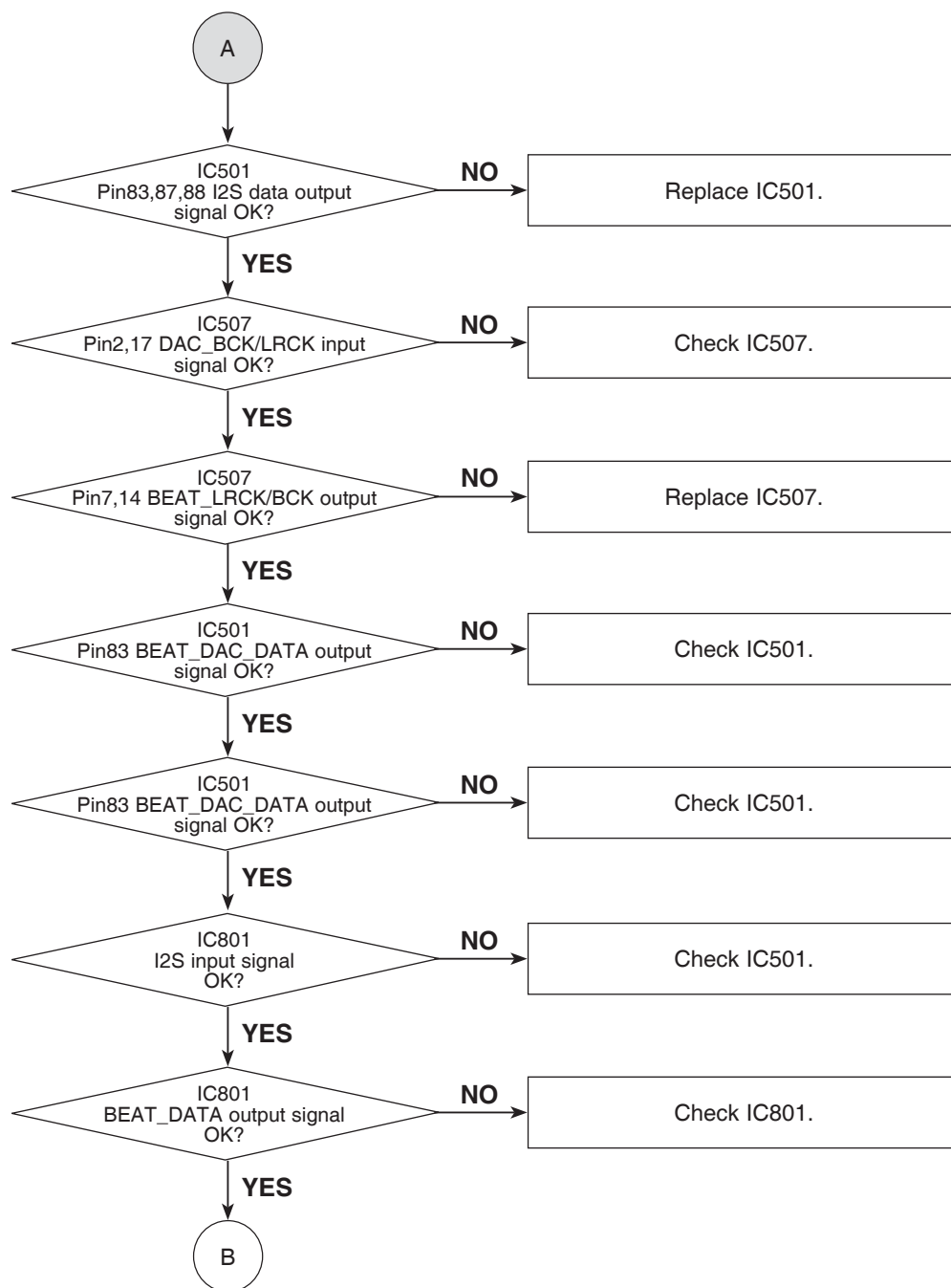
ELECTRICAL TROUBLESHOOTING GUIDE



ELECTRICAL TROUBLESHOOTING GUIDE

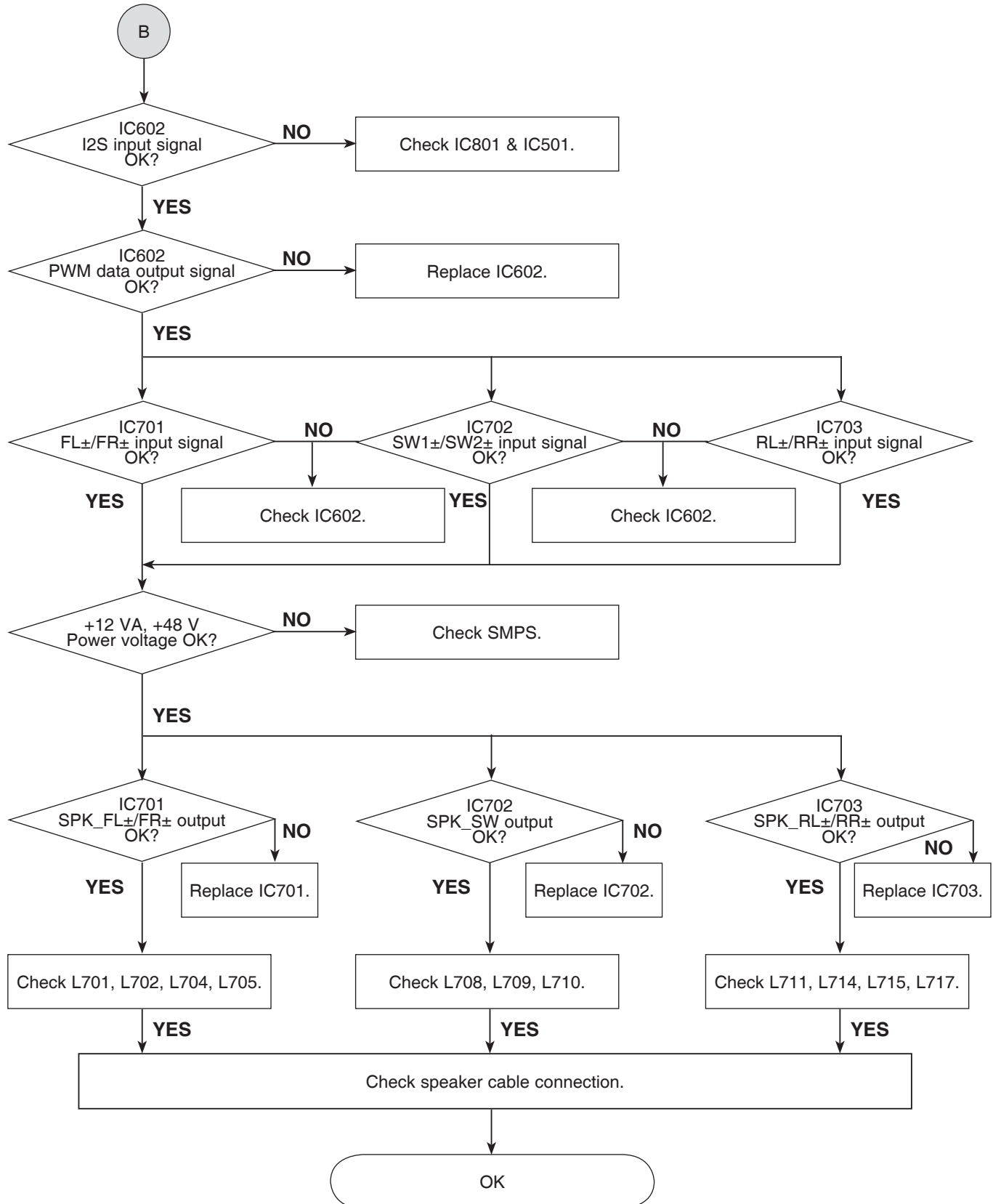


ELECTRICAL TROUBLESHOOTING GUIDE



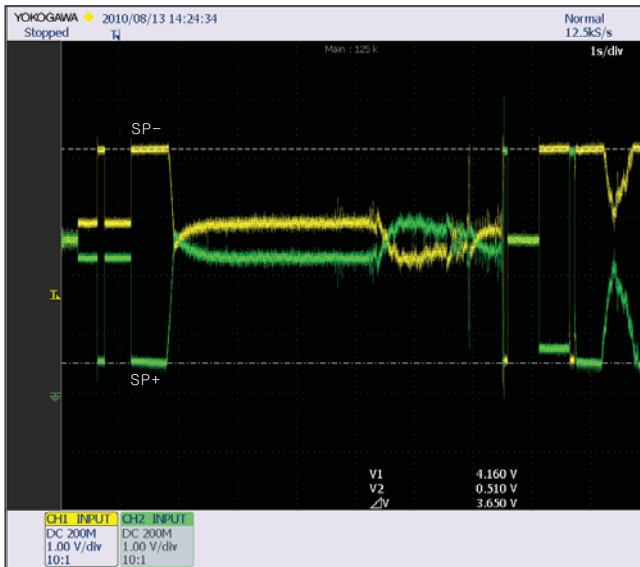
ELECTRICAL TROUBLESHOOTING GUIDE

4. DIGITAL AUDIO AMP CHECK

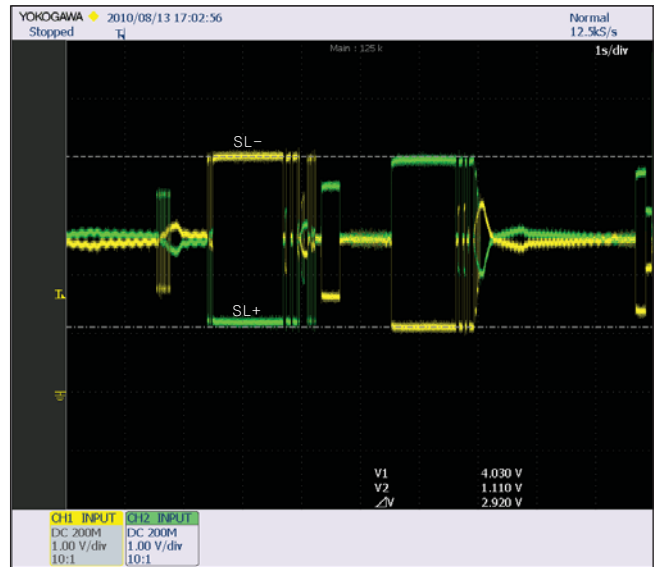


WAVEFORMS

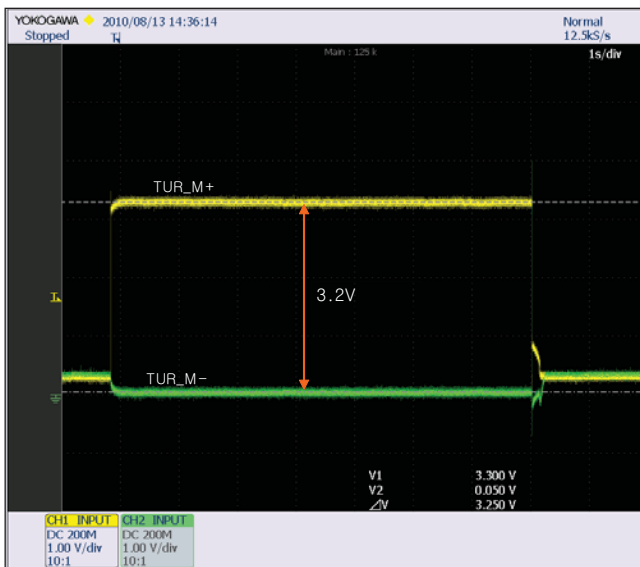
1. WAVEFORM OF SP- & SP+ FOR DRIVING SPINDLE MOTOR



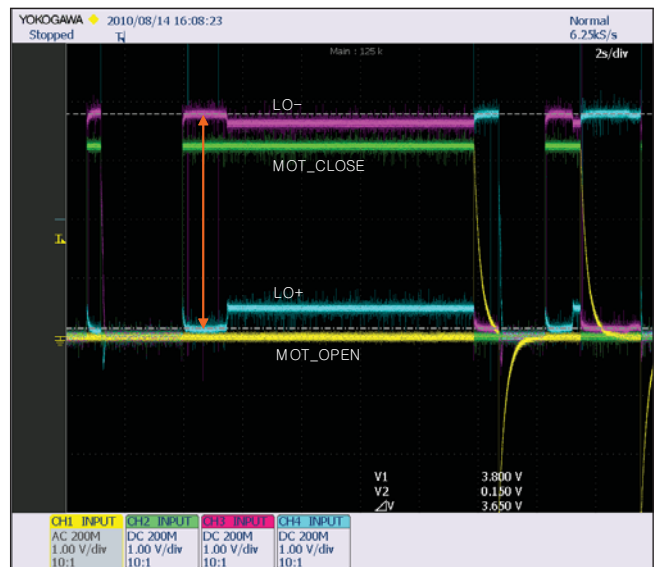
2. WAVEFORM OF SL- / SL+ FOR DRIVING SLED MOTOR



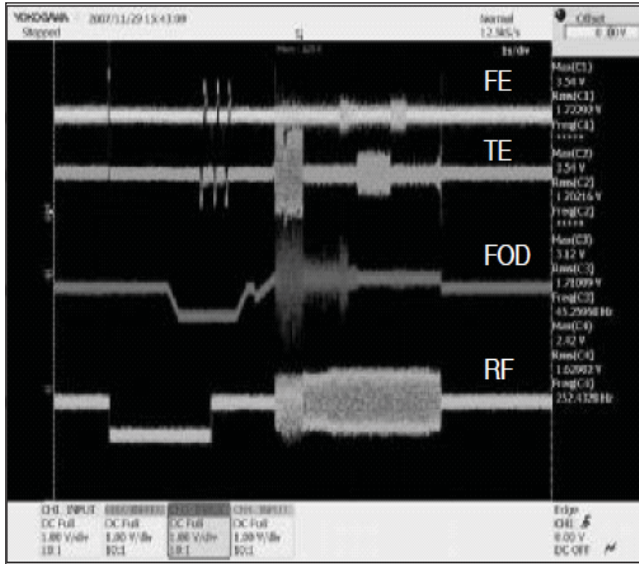
3. WAVEFORM OF TUR_M+ & TUR_M- FOR DRIVING TRAY MOTOR



4. WAVEFORM OF LO- & LO+ FOR DRIVING PICKUP MODULE UP/DOWN MOTOR



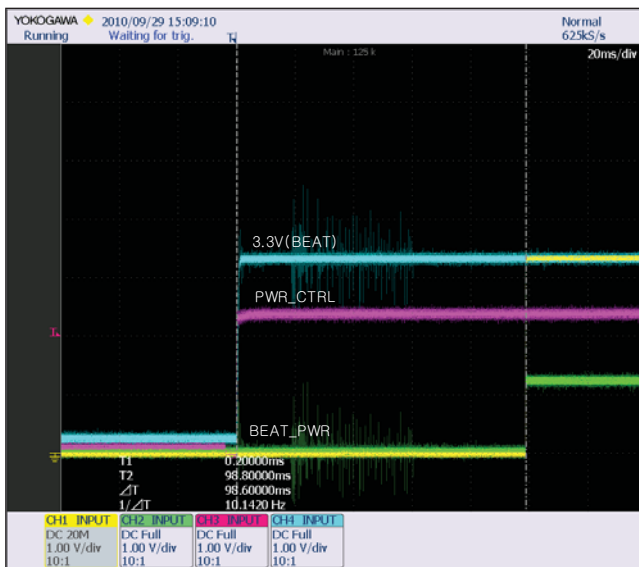
5. WAVEFORM OF RF SERVO



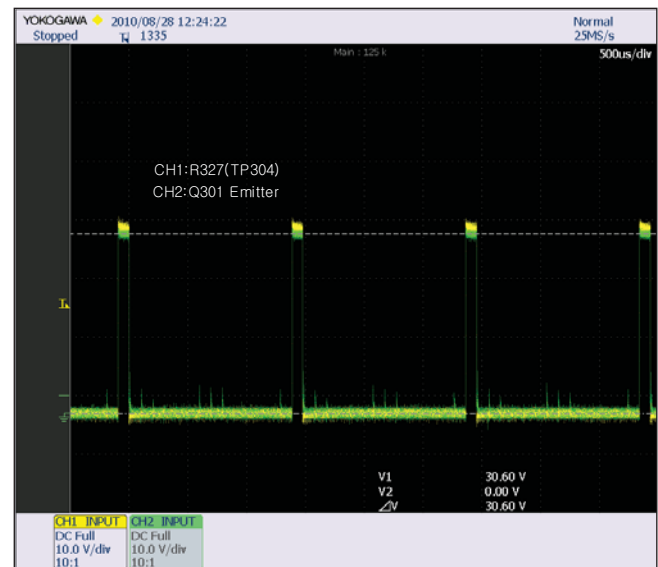
6. WAVEFORM OF I2S SIGNAL TO BEAT BOX IC (IC801)



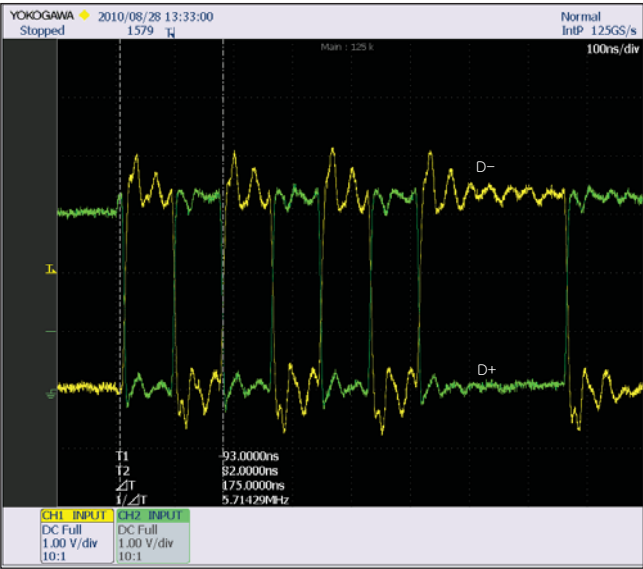
7. WAVEFORM OF BEAT BOX IC'S POWER SEQUENCE



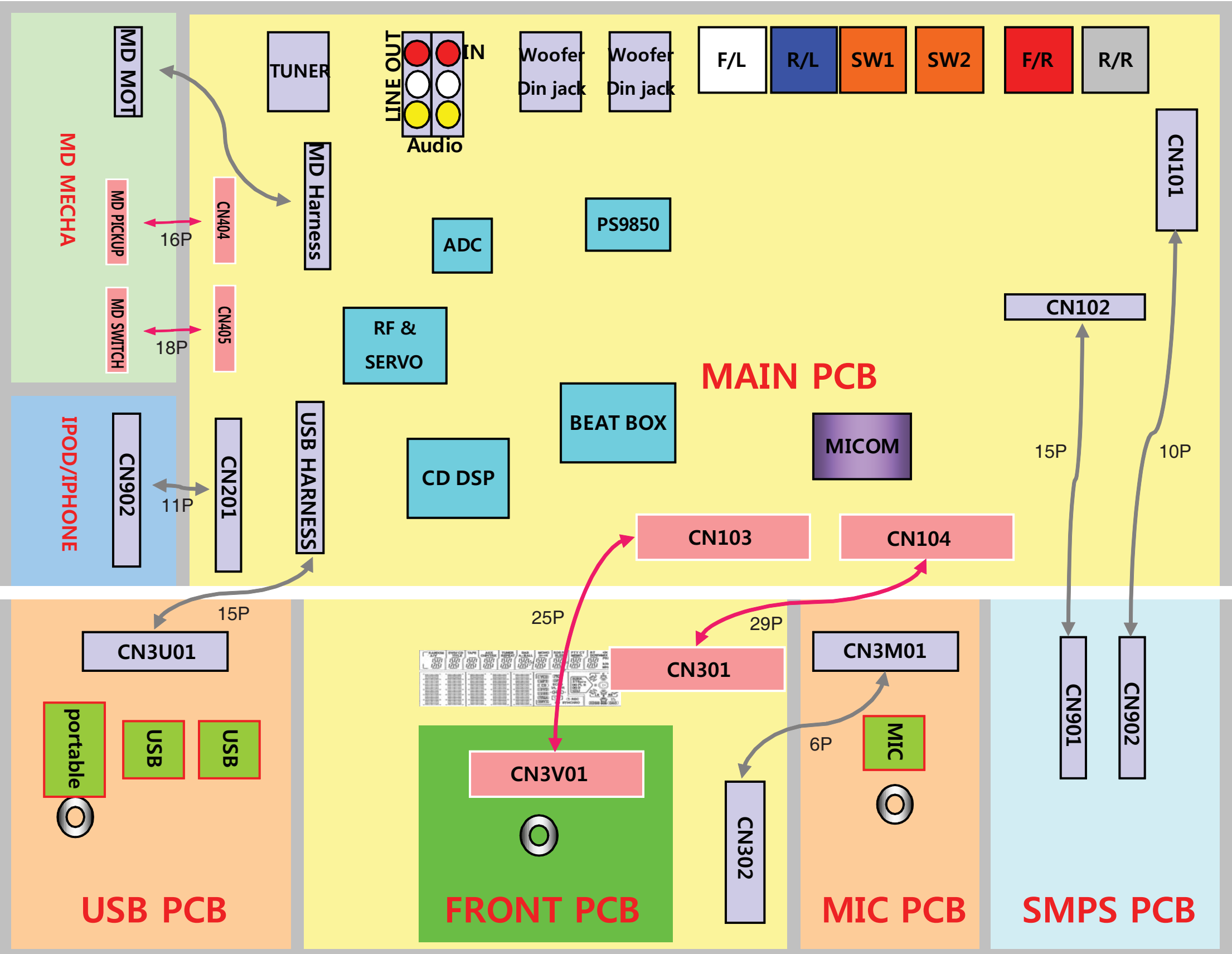
8. WAVEFORM OF VFD GRID CURRENT DRIVER



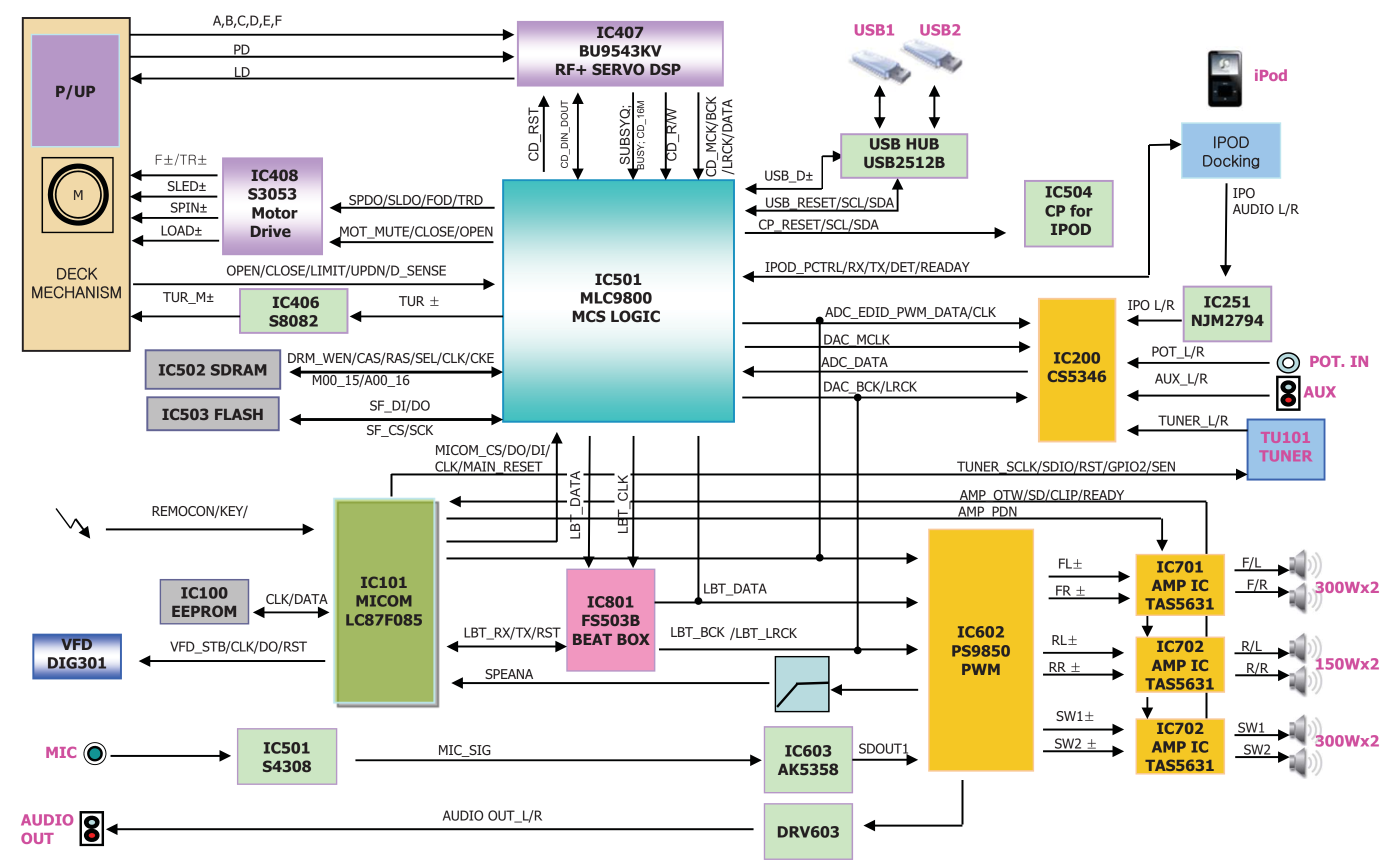
9. WAVEFORM OF USB_D±



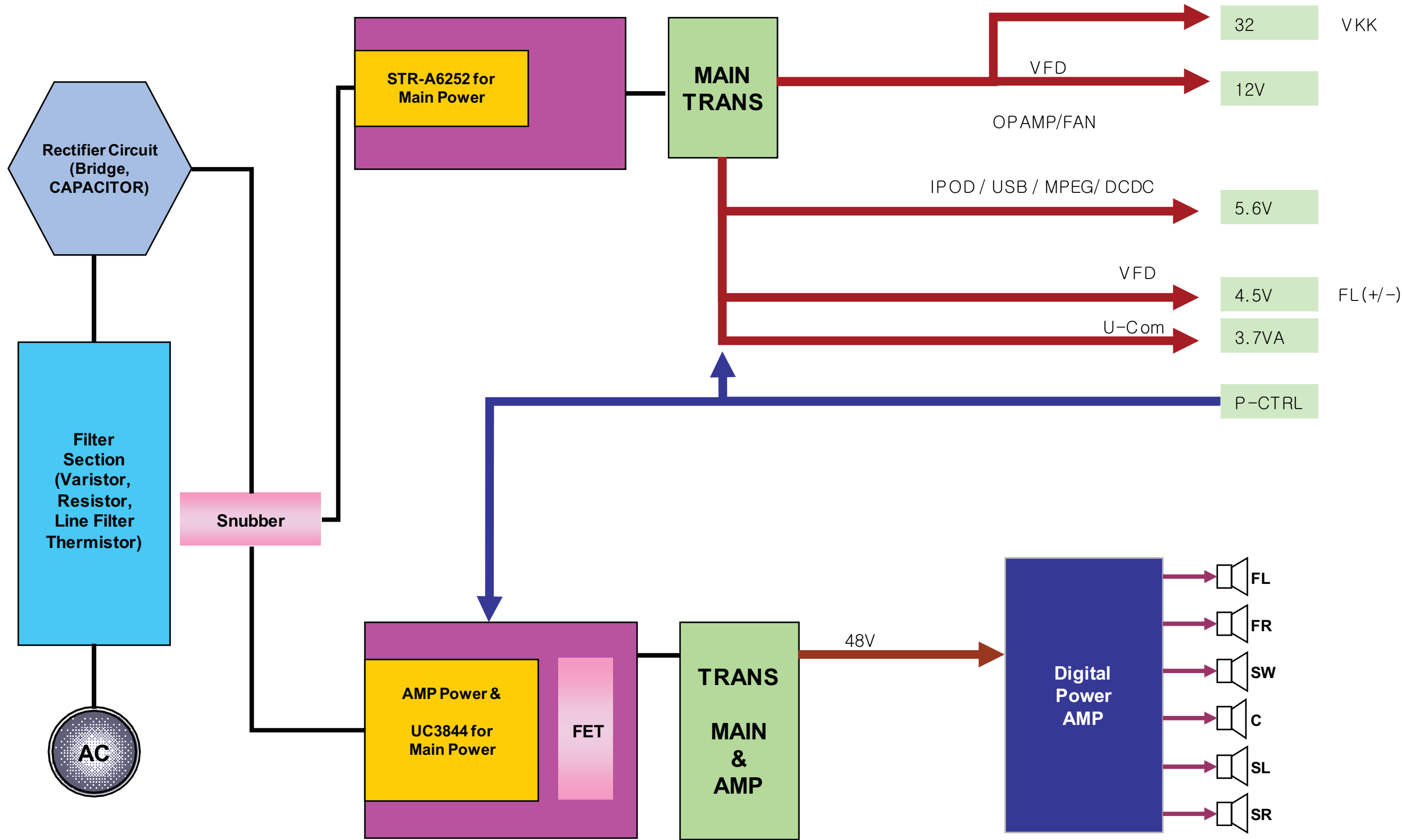
WIRING DIAGRAM



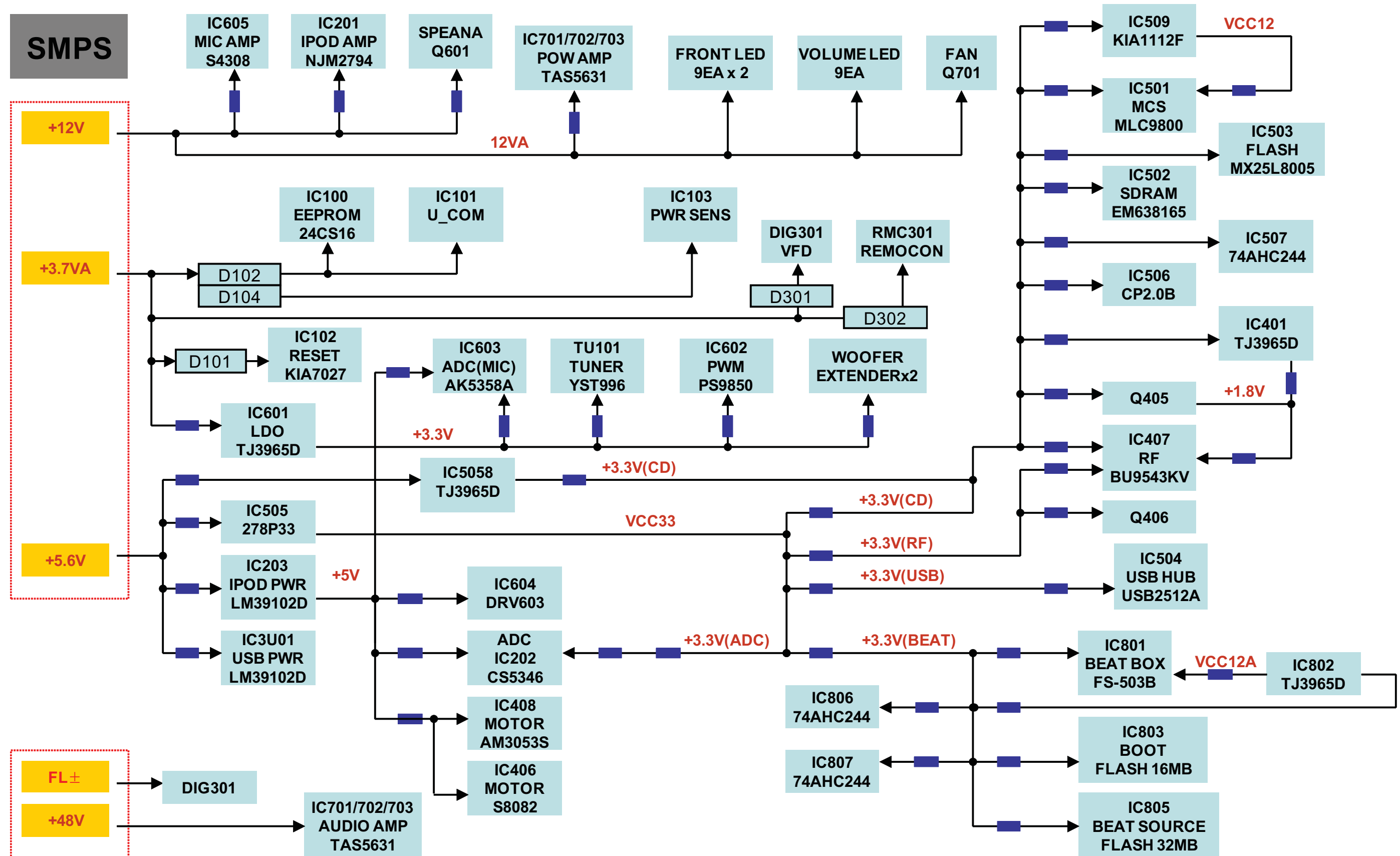
BLOCK DIAGRAMS
1. OVERALL BLOCK DIAGRAM



2. SMPS BLOCK DIAGRAM

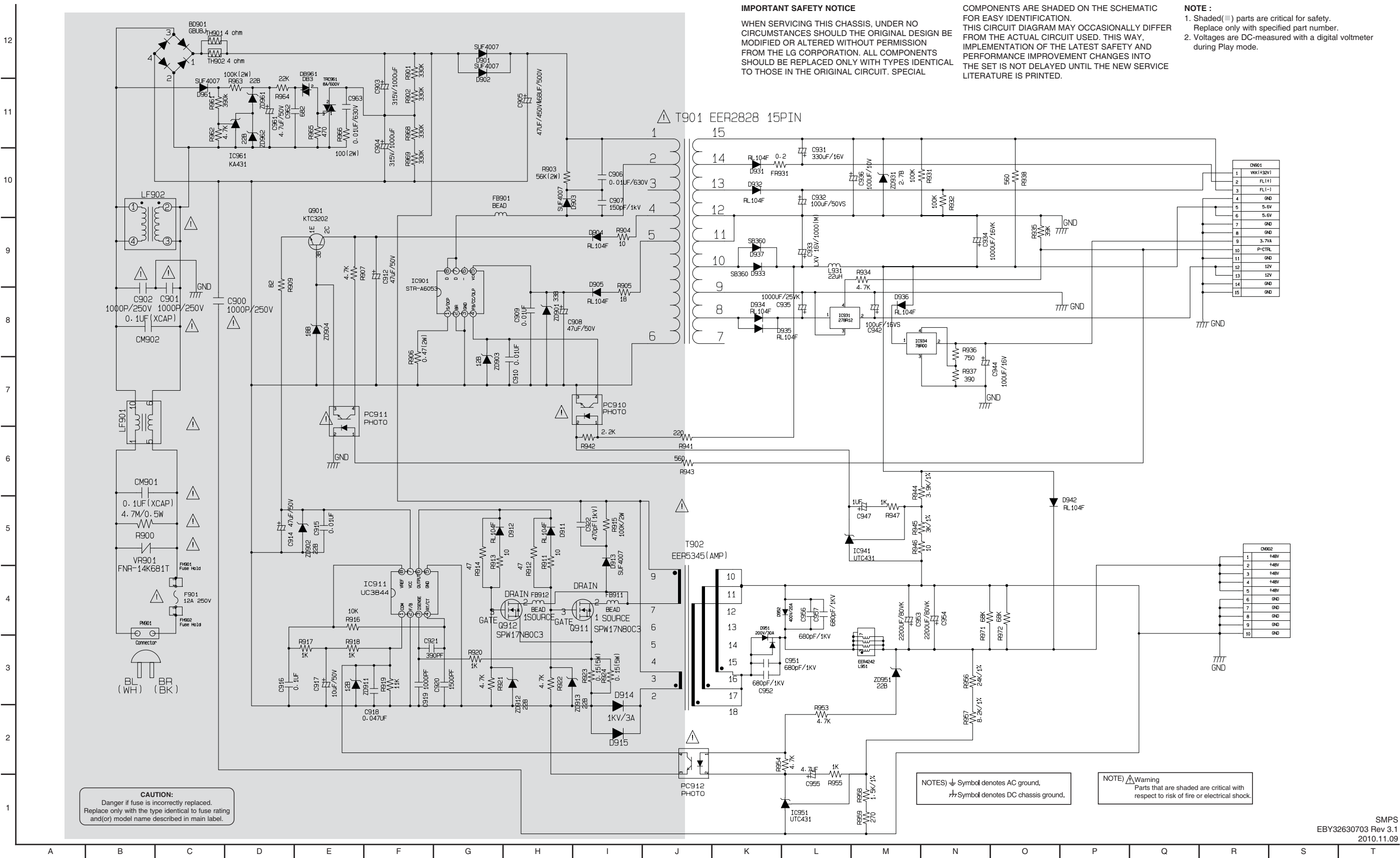


3. POWER BLOCK DIAGRAM



CIRCUIT DIAGRAMS

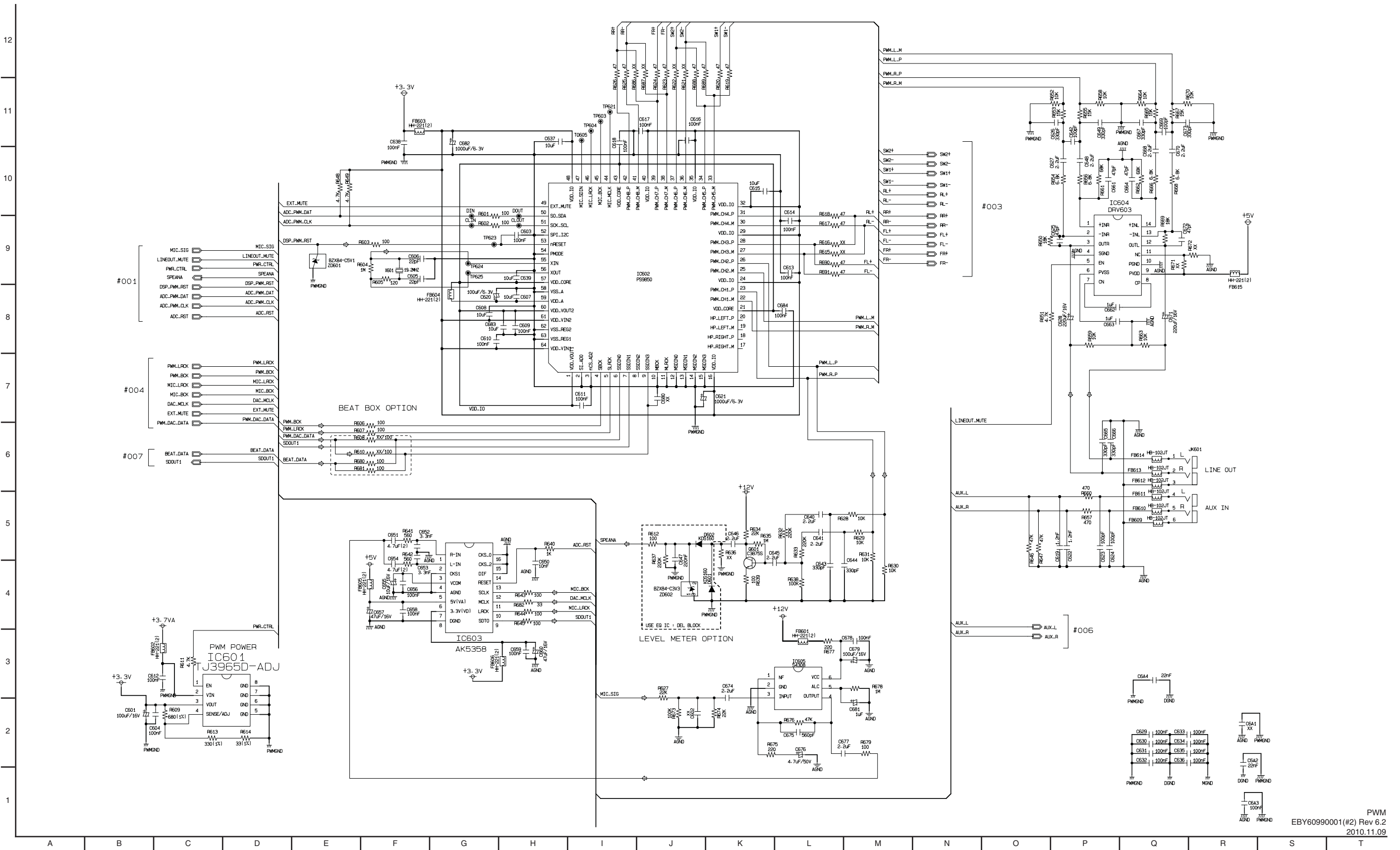
1. SMPS CIRCUIT DIAGRAM



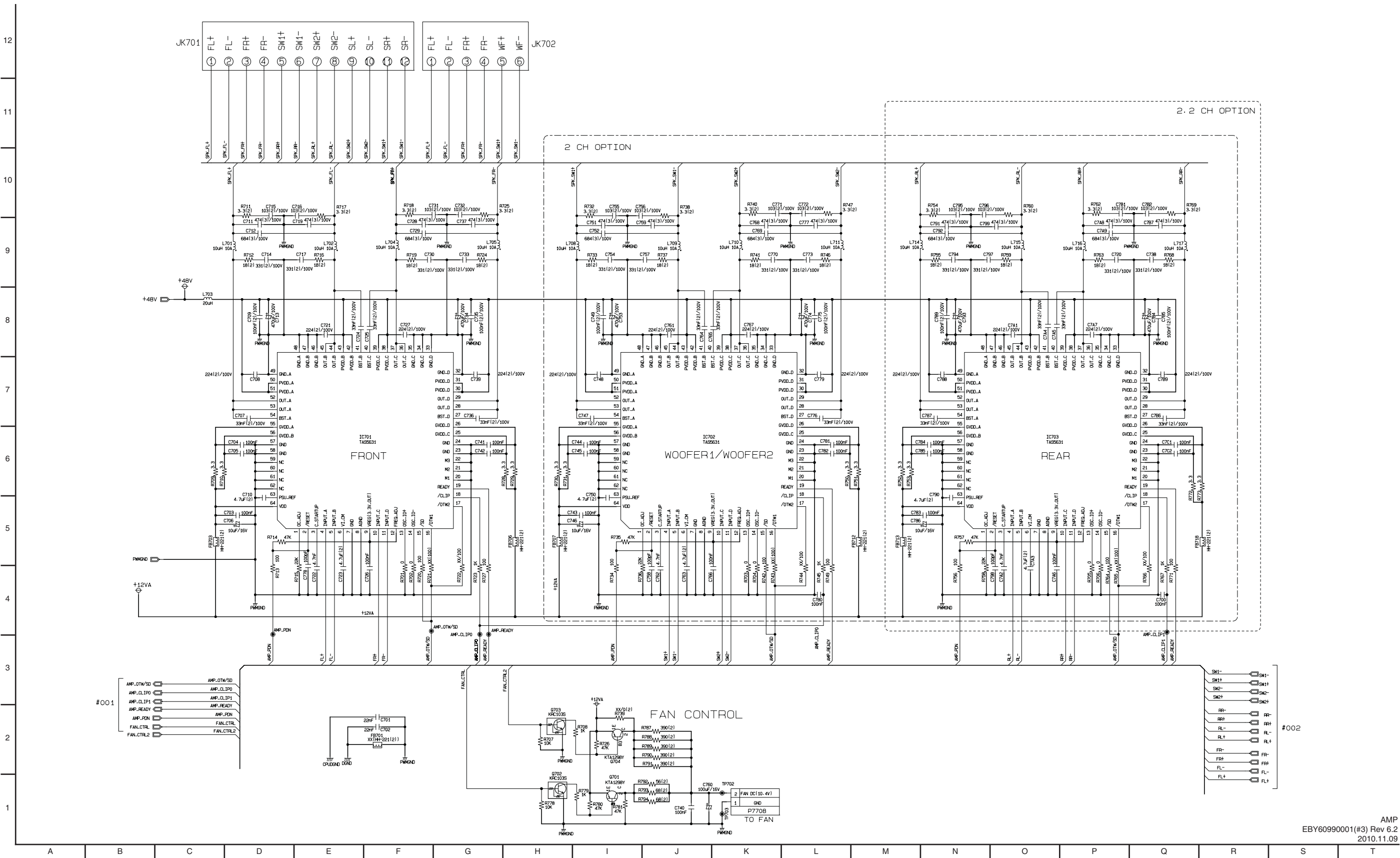
12
11
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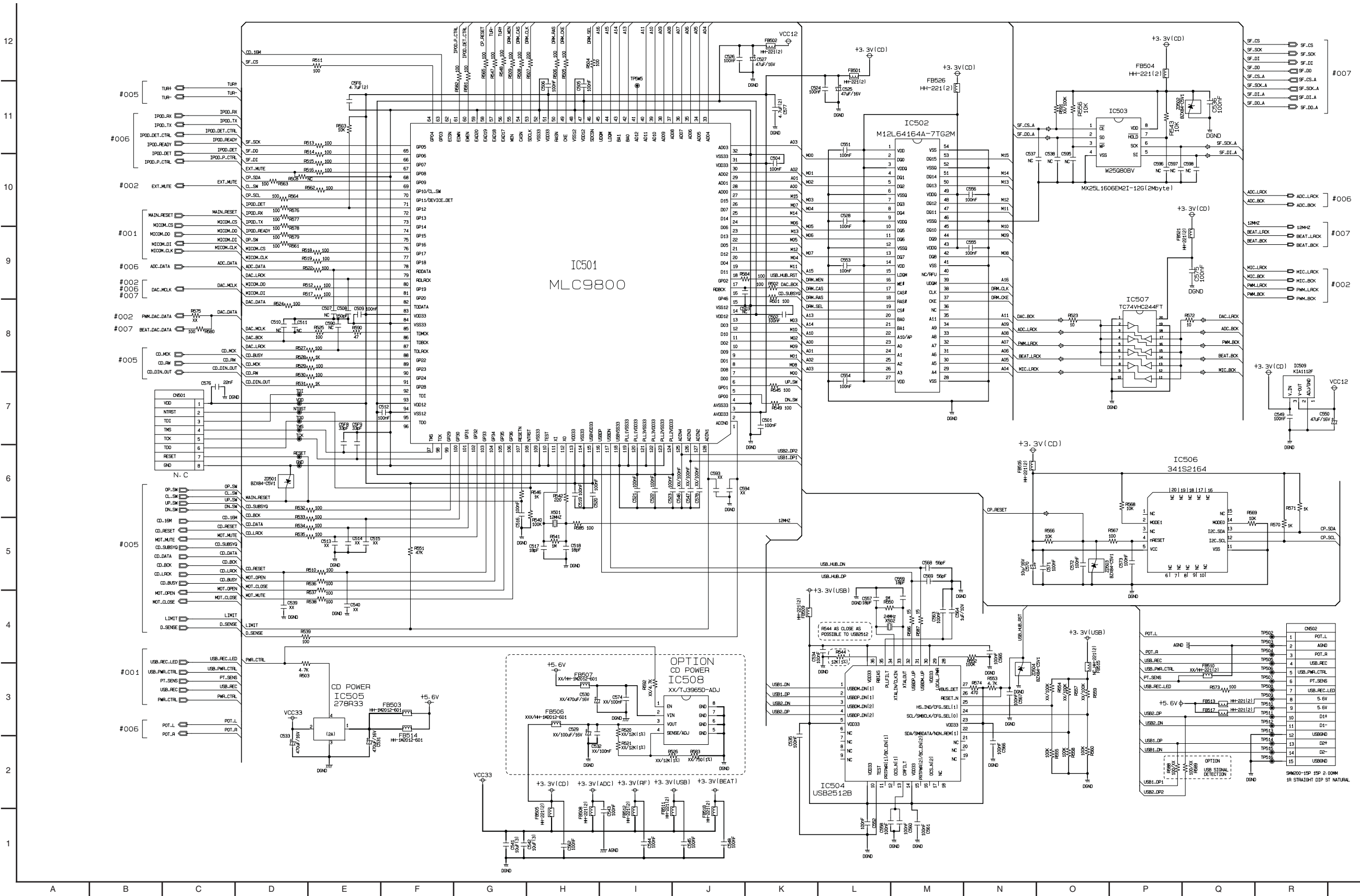
3. PWM CIRCUIT DIAGRAM



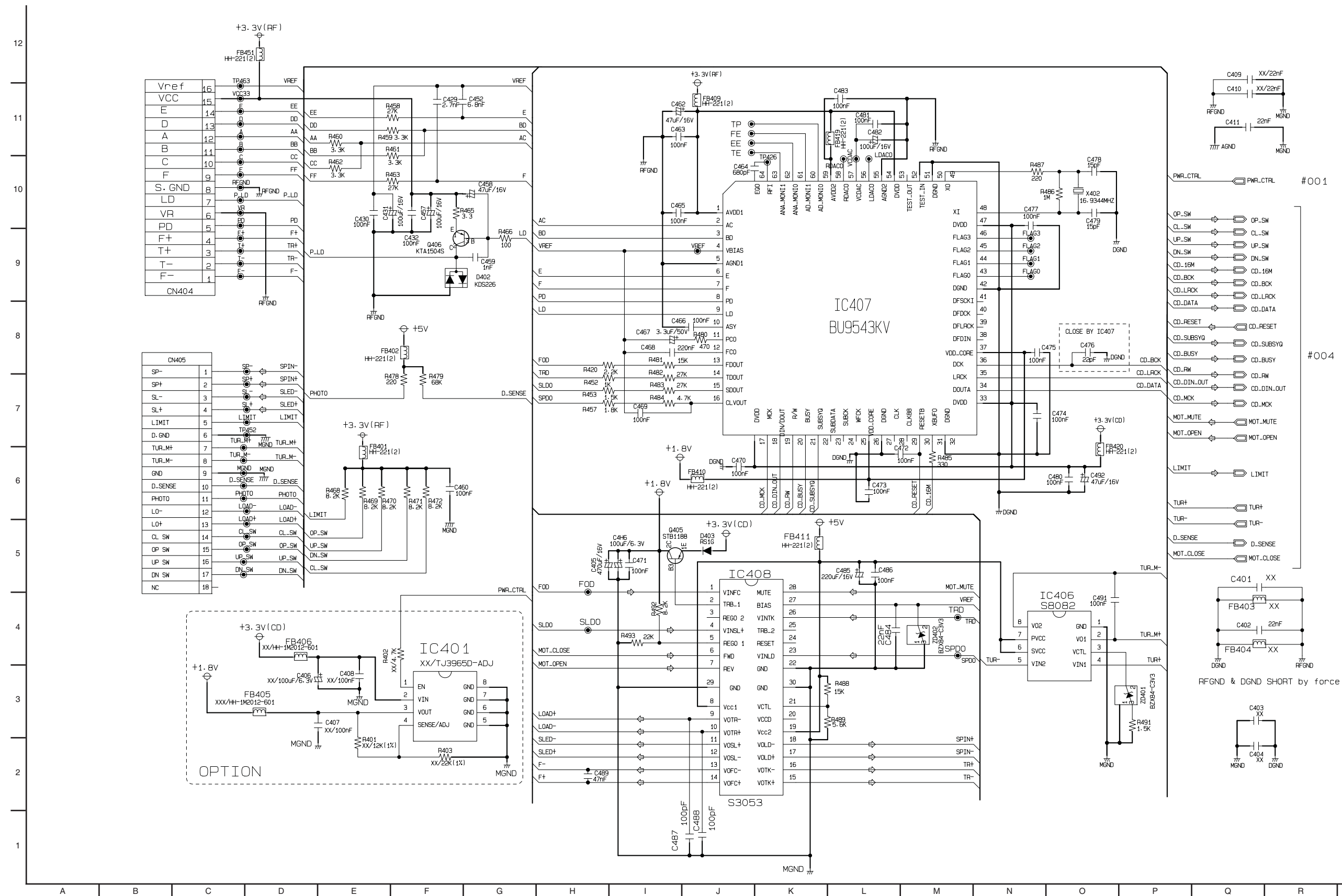
4. AMP CIRCUIT DIAGRAM

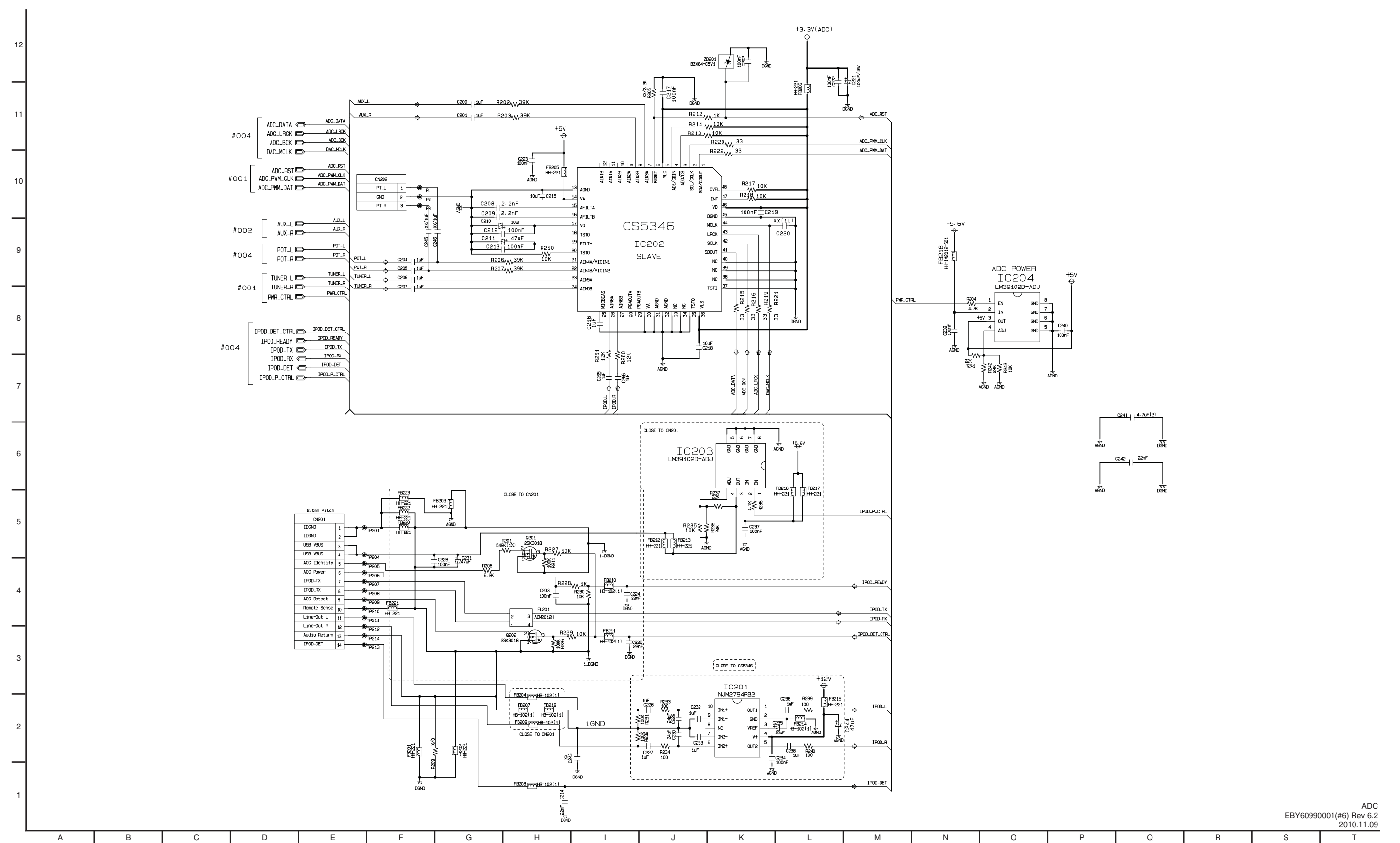


5. DSP CIRCUIT DIAGRAM

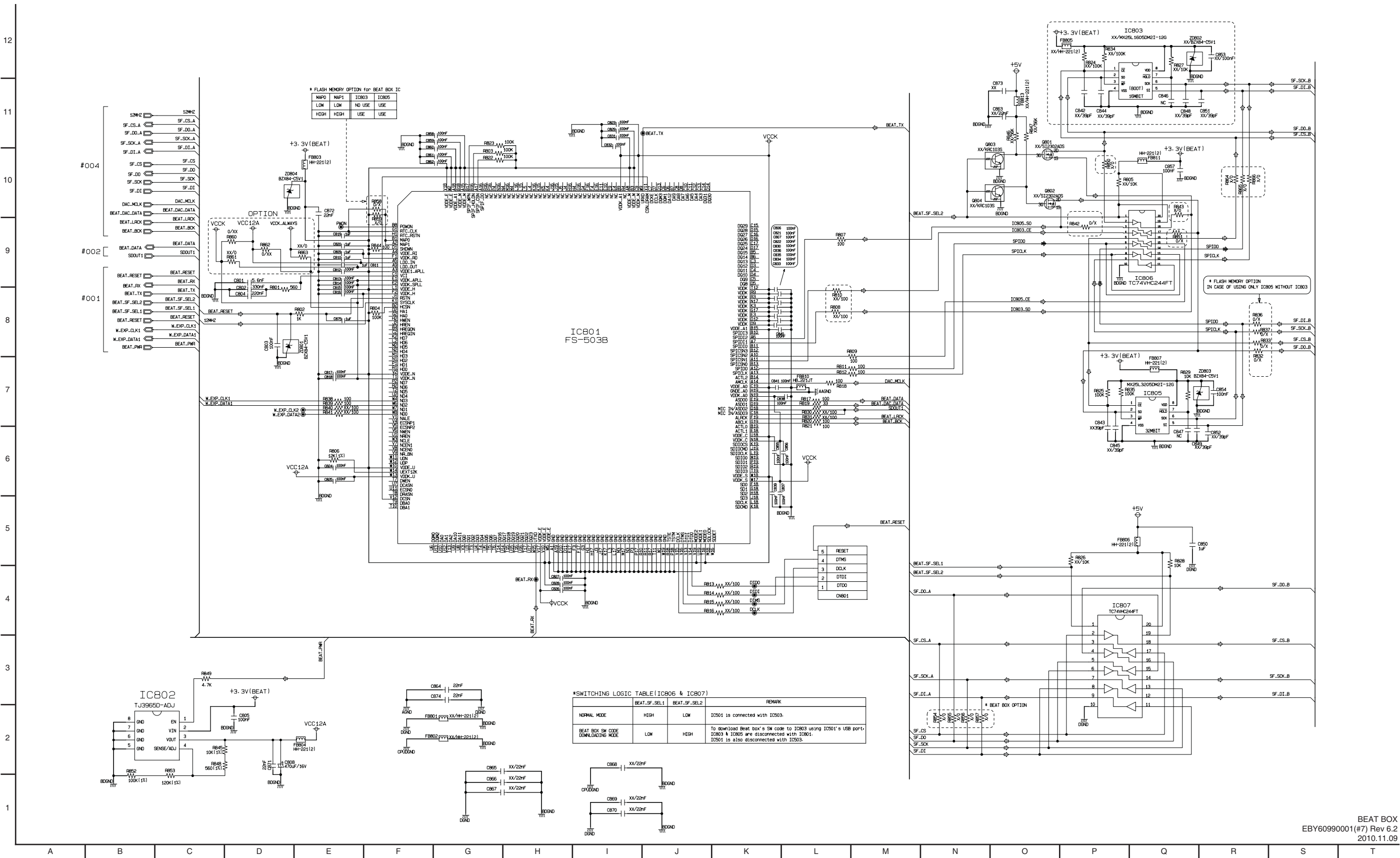


6. RF SERVO CIRCUIT DIAGRAM



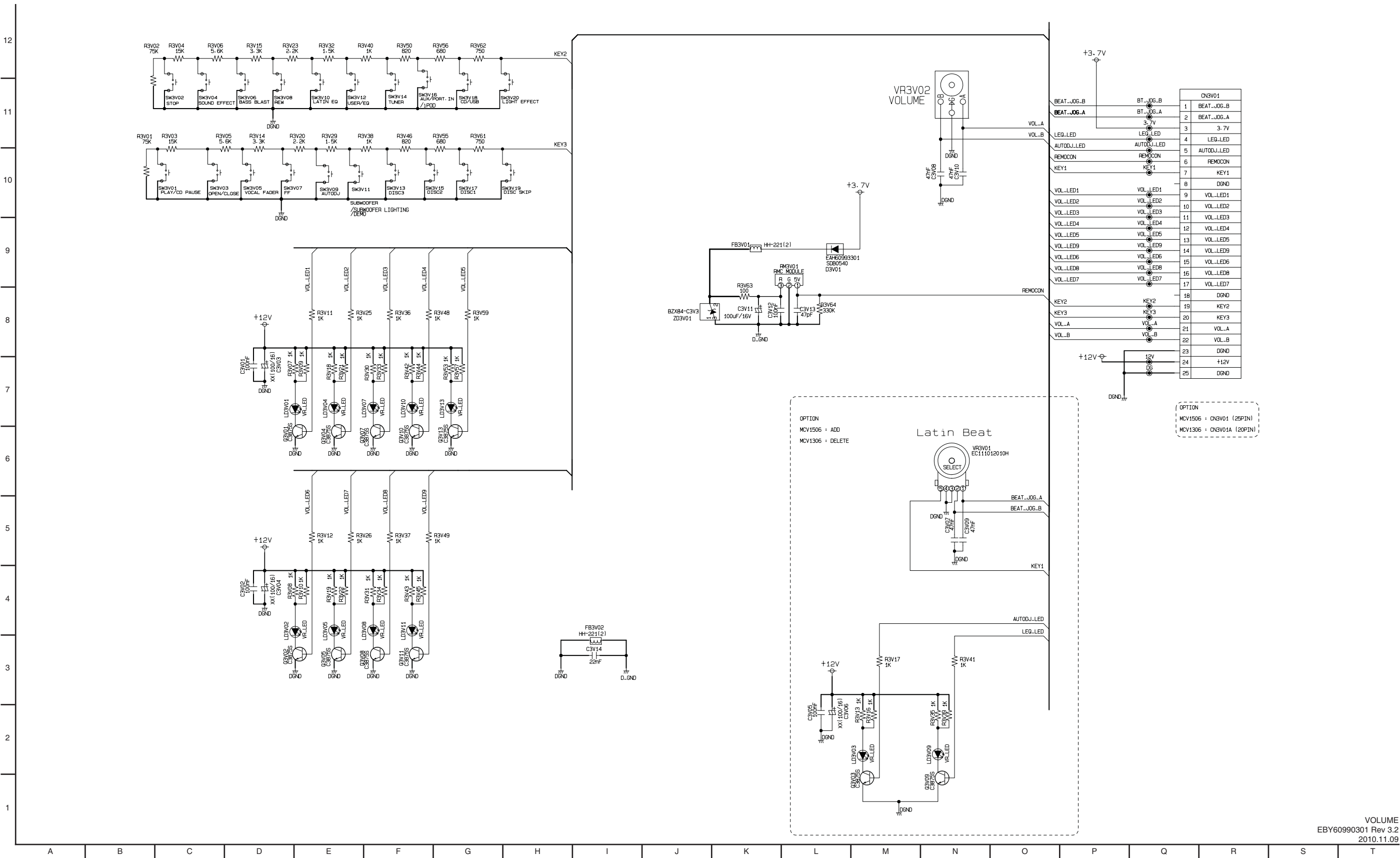


8. BEAT BOX CIRCUIT DIAGRAM

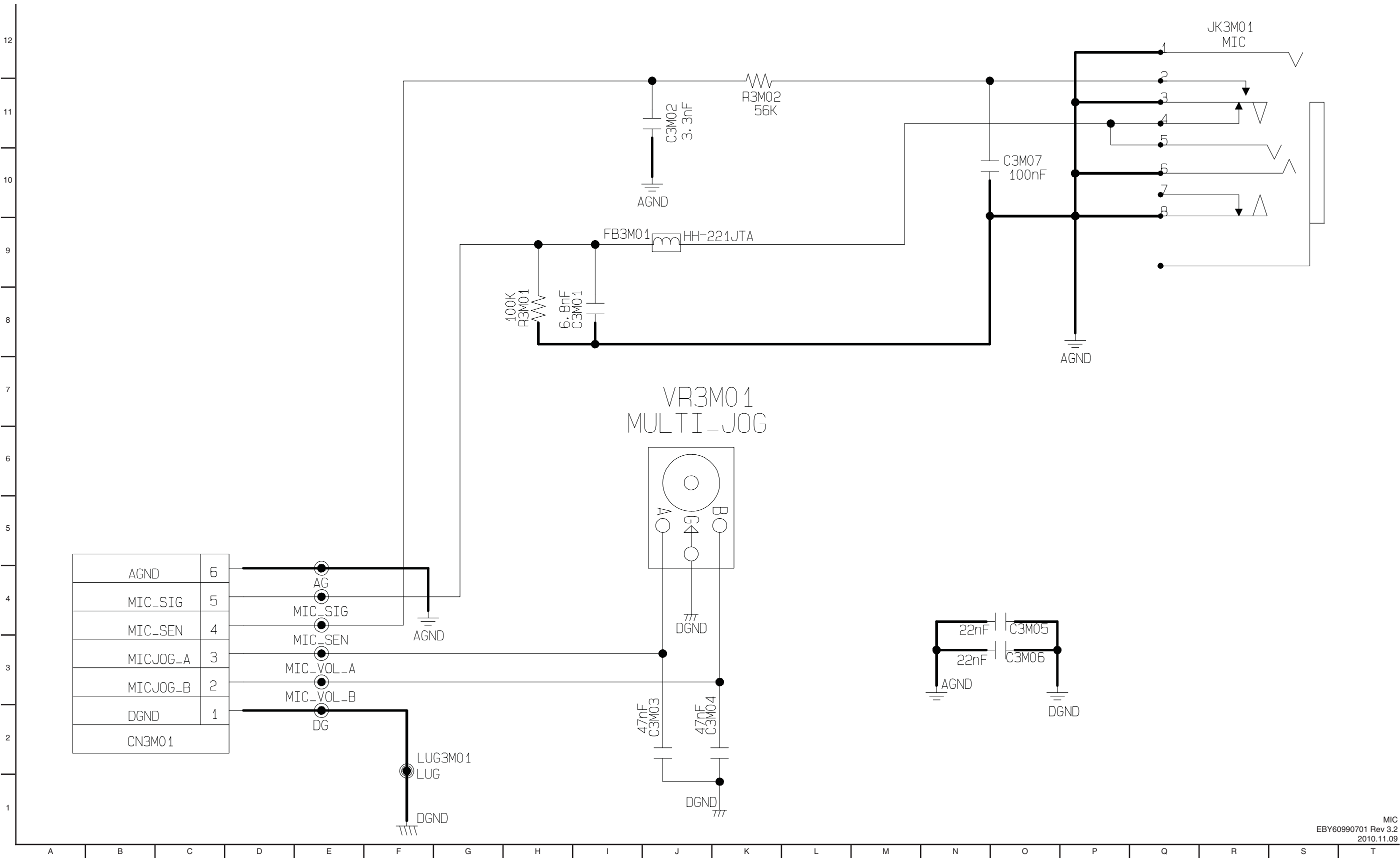


EBY60990201 Rev 3.3
2010.11.09

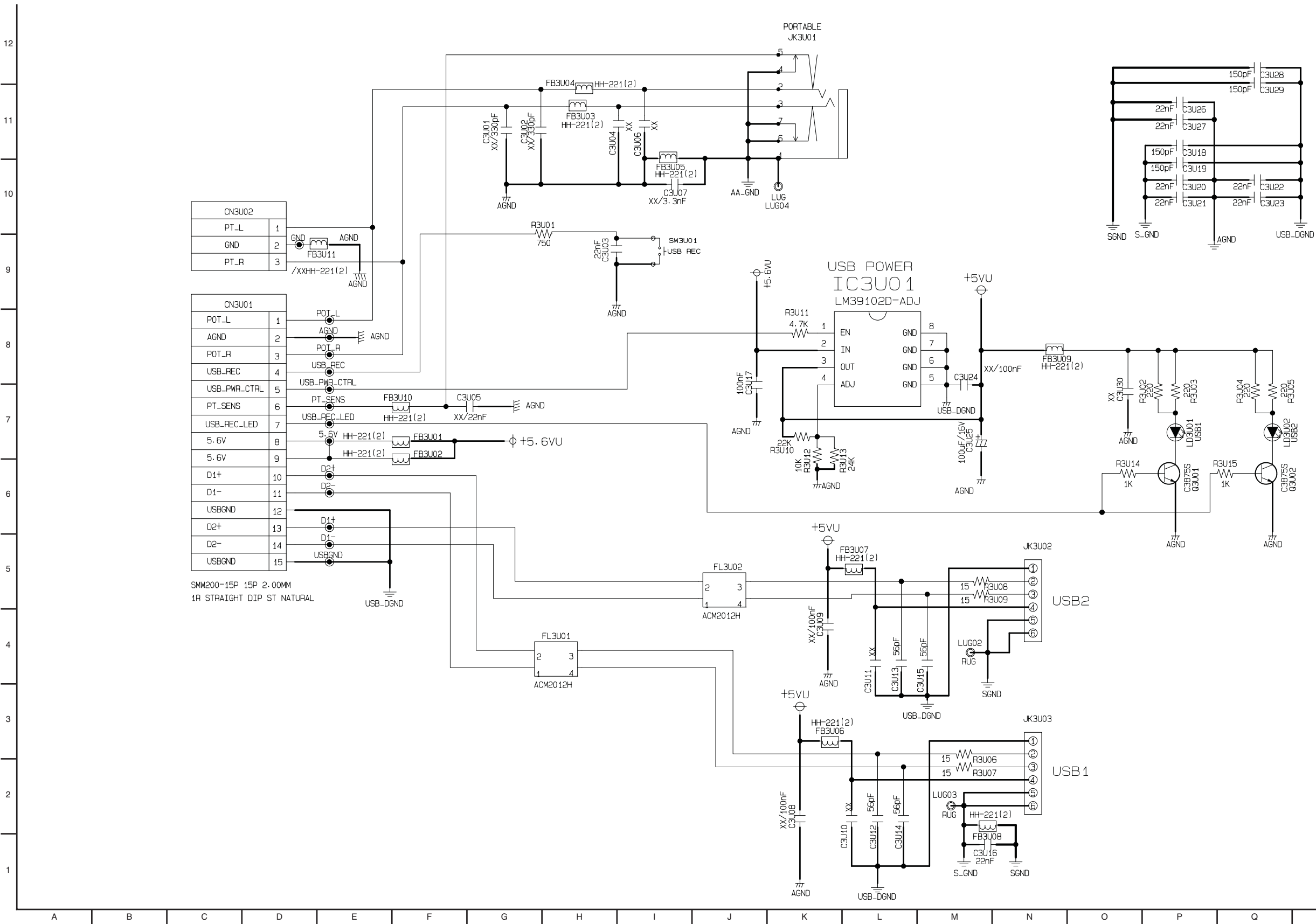
10. VOLUME CIRCUIT DIAGRAM



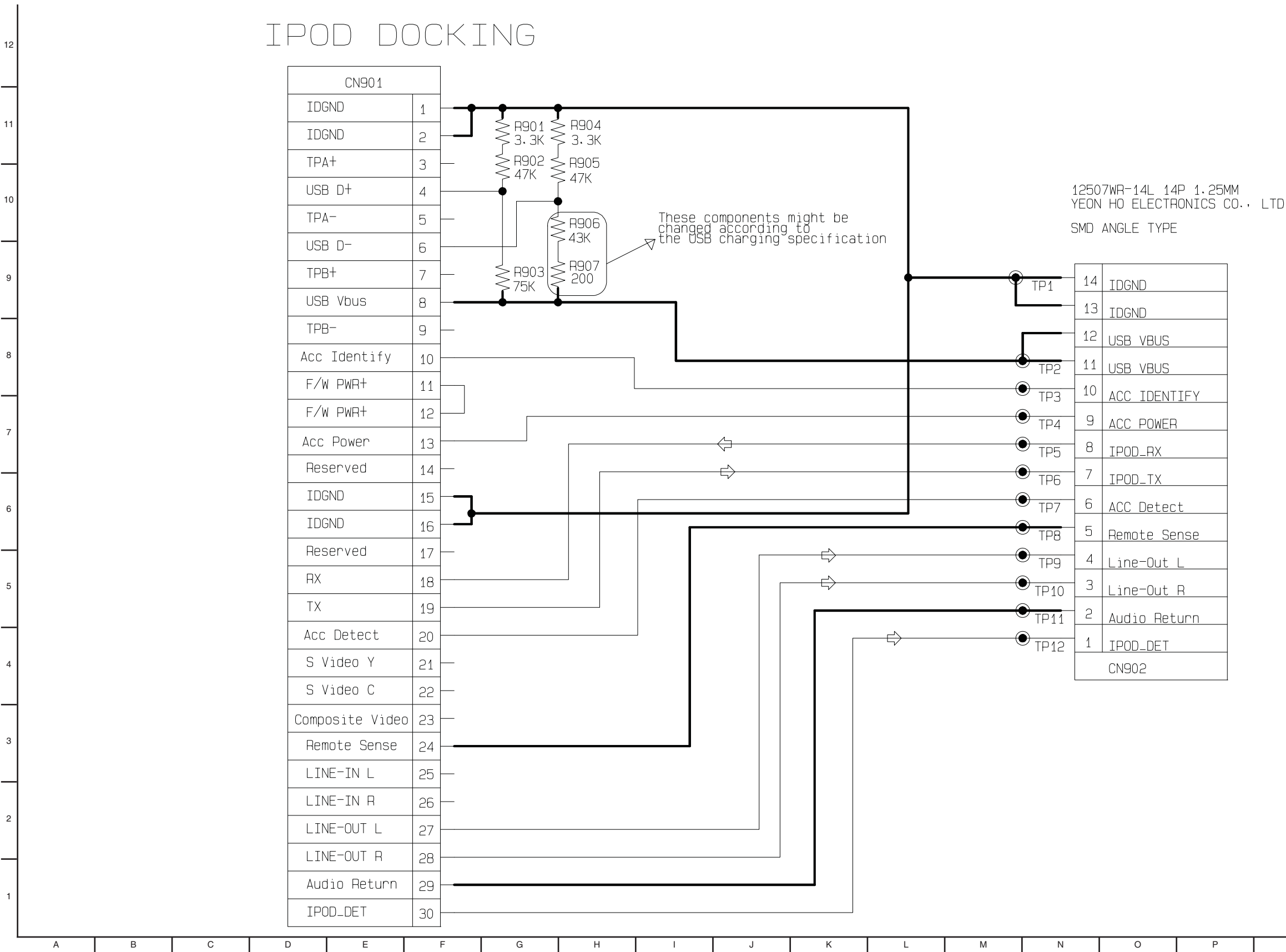
11. MIC CIRCUIT DIAGRAM



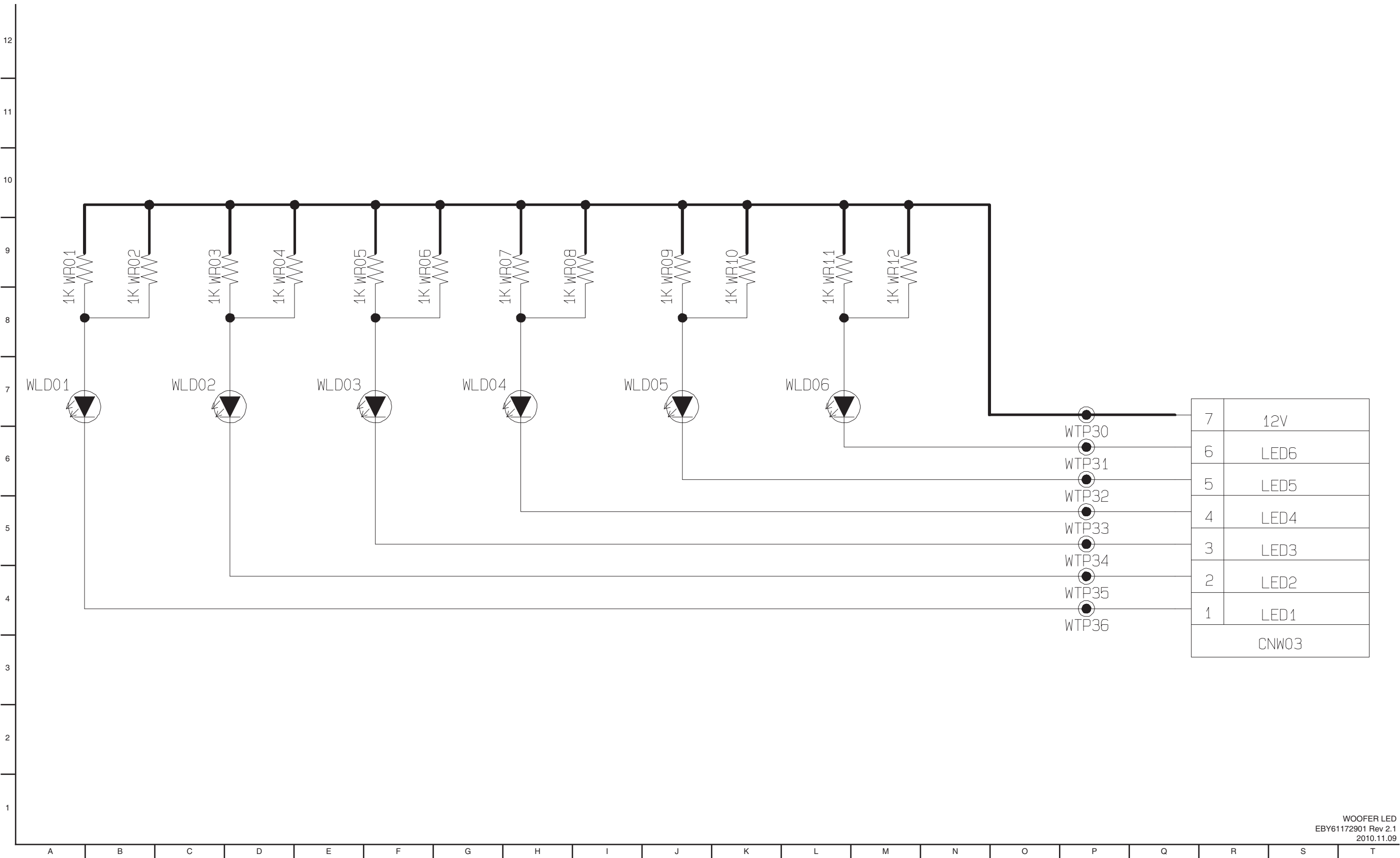
12. USB CIRCUIT DIAGRAM



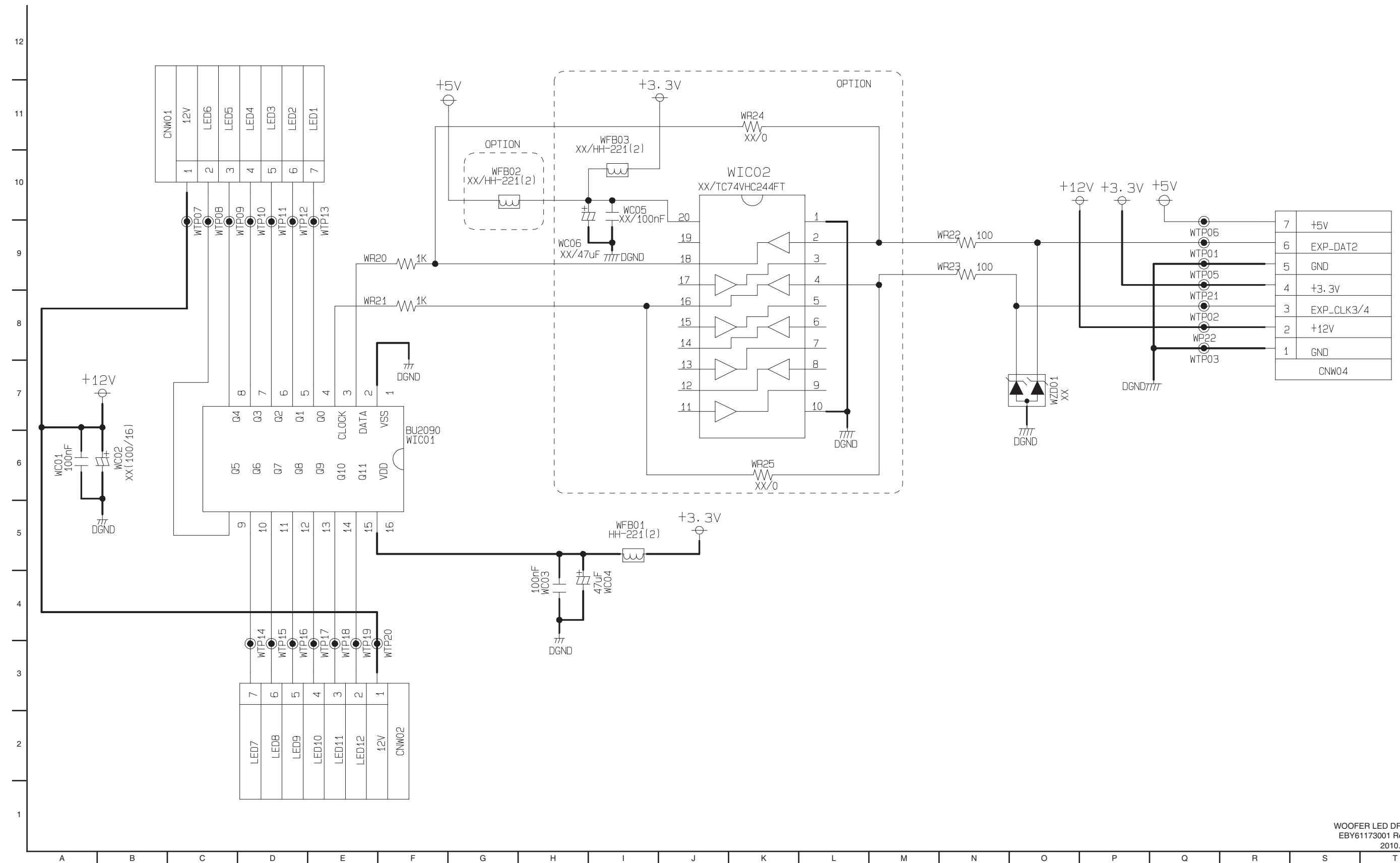
13. IPOD CIRCUIT DIAGRAM



14. WOOFER LED CIRCUIT DIAGRAM



15. WOOFER LED DRIVER CIRCUIT DIAGRAM



CIRCUIT VOLTAGE CHART

1. MAJOR ICs

No.	Location / Description	Supply Voltage Pin No.	Source	Spec / Rating	Measured voltage
1	IC501 MLC9800	13,47,94-VDD12	1.2V	1.08~1.32V	1.18V
		30,51,84,113-IO-VDD33	3.3V	3.0~3.6V	3.26V
		120-PLL1VDD12	1.2V	1.08~1.32V	1.18V
		124-PLL2VDD12	1.2V	1.08~1.32V	1.18V
		122-PLL3VDD12	1.2V	1.08~1.32V	1.18V
		115-USBVDD33	3.3V	3.0~3.6V	3.26V
		14,48,95-VSS12	3.3V	3.0~3.6V	3.26V
		3,52,85,109,114-IO-VSS33	1.2V	1.08~1.32V	1.18V
		119-PLL1VSS12	3.3V	3.0~3.6V	3.26V
		123-PLL2VSS12	1.2V	1.08~1.32V	1.18V
		121-PLL3VSS12	1.2V	1.08~1.32V	1.18V
		3-AVSS33	3.3V	3.0~3.6V	3.26V
		118- USBVSS33	3.3V	3.0~3.6V	3.26V
2	IC101 LC87F085NC8A	VDD1,VDD2, VDD3,VDD4	3.3V	2.8~5.5V	3.37V
3	IC100 S-24CS16	VCC	3.3V	2.7~5.5V	3.37V
4	IC602 PS9850	VDD_IO	3.3V	2.97~3.63V	3.31V
		VDD_CORE	1.2V	1.08~1.32V	1.25V
		VDD_VIN1	3.3V	2.20~3.30V	3.30V
		VDD_VIN2	3.3V	2.20~3.30V	3.30V
		VDD_A	1.2V	1.08~1.32	1.25V
5	IC603 AK5358	VA	5V	6.0V MAX	5.11V
		VD	3.3V	4.6V MAX	3.31V
6	IC605 S4308	VCC	12V	4.5~12V	11.25V
7	IC604 DRV603	VDD	5V	3~5.5V	5.1V
8	IC701 TAS5631	PVDD_X	48V	25~52.5V	47.7V
		GVDD_X	12V	10.8~13.2V	11.91V
		VDD	12V	10.8~13.2V	11.91V
9	IC502 EM638165TS-6G	VDD,VDDQ	3.3V	3.0~3.6V	3.27V
10	IC503 M25L1605D2I-12G	VDD	3.3V	4.6V MAX	3.27V
11	IC507 TC74VHC244FT	VCC	3.3V	2.0~5.5V	3.27V
12	IC506 CP Chip	VCC	3.3V	7.0V MAX	3.27V
13	IC504 USB2512A	VDD33	3.3V	3.0~3.6V	3.26V
14	IC505 278R33	VOUT	3.3V	-	3.28V
15	IC407 BU9543KV	VDD	3.3V	2.7~3.6V	3.27V
		VCORE	1.5V	1.4~1.65V	1.58V

No.	Location / Description	Supply Voltage Pin No.	Source	Spec / Rating	Measured voltage
16	IC408 S3053	VCC1, VCC2	5V	4.3~13.2V	5.10V
17	IC406 S8082	SVCC, PVCC	5V	4.3~13.2V	5.10V
18	IC202 CS5346	VA	5V	4.75~5.25V	5.11V
		VD	3.3V	3.13~3.47V	3.27V
		VLS	3.3V	3.13~3.47V	3.27V
		VLC	3.3V	3.13~3.47V	3.27V
19	IC203 LM39102D	VOUT	5V	-	5.12V
20	IC201 NJM2794RB2	VCC	12V	4.3~13V	11.93V
21	IC204 LM39102D	VOUT	5V	-	5.13V
22	IC801 FS-503B	VDDK	1.2V	1.4V MAX	1.19V
		VDDE	3.3V	4.0V MAX	3.27V
23	IC803 M25L1605D2I-12G	VDD	3.3V	4.6V MAX	3.27V
24	IC806 TC74VHC244FT	VCC	3.3V	2.0~5.5V	3.27V
25	IC807 M25L1605D2I-12G	VDD	3.3V	4.6V MAX	3.27V
26	IC807 TC74VHC244FT	VCC	5V	2.0~5.5V	5.12V
27	IC807 KIA1112F	VOUT	1.2V	-	1.19V
28	IC301 BU2090	VDD	3.3V	7.0V MAX	3.66V
29	IC302 BU2090	VDD	3.3V	7.0V MAX	3.66V
30	IC3U01 LM3912D	VOUT	5V	-	5.11V

CIRCUIT VOLTAGE CHART

2. CAPACITORS ON MAIN BOARD

No.	Location	Value Capacitor (uF)	Voltage Spec.	Measured voltage
01	C111	47uF	16V	3.37V
02	C145	2.2uF	16V	3.37V
03	C124	1000uF	6.3V	3.38V
04	C109	1000uF	6.3V	3.38V
05	C808	47uF	16V	1.19V
06	C529	100uF	16V	3.30V
07	C530	470uF	16V	5.66V
08	C531	470uF	16V	5.65V
09	C533	470uF	16V	3.28V
10	C706	10uF	16V	11.92V
11	C746	10u	16V	11.92V
12	C786	10uF	16V	11.92V
13	C713	470uF	100V	47.7V
14	C734	470uF	100V	47.7V
15	C753	470uF	100V	47.7V
16	C774	470uF	100V	47.7V
17	C793	470uF	100V	47.7V
18	C784	470uF	100V	47.7V
19	C527	47uF	16V	1.19V
20	C550	47uF	16V	1.19V
21	C570	10uF	16V	3.27V
22	C525	47uF	16V	3.27V
23	C482	100uF	16V	1.65V
24	C462	47uF	16V	3.27V
25	C467	3.3uF	50V	1.65V
26	C492	47uF	16V	3.27V
27	C405	470u	16V	1.57V
28	C4H6	100uF	6.3V	1.57V
29	C406	100uF	6.3V	3.27V
30	C485	220uF	16V	5.11V
31	C221	100uF	16V	3.28V
32	C235	10uF	16V	5.7V
33	C231	47uF	16V	5.1V
34	C221	100uF	16V	5.1V
35	C210	10uF	16V	2.55V
36	C660	47uF	16V	3.31V
37	C657	47uF	16V	5.12V
38	C655	10uF	16V	2.56V
39	C681	1uF	50V	.3V
40	C679	100uF	16V	11.25V
41	C676	22uF	16V	1.96V
42	C122	100uF	16V	3.31V
43	C620	100uF	6.3V	1.25V
44	C621	1000uF	6.3V	3.30V
45	C682	1000uF	6.3V	3.30V
46	C601	100uF	16V	3.31V
47	C3U25	100uF	16V	5.1V

3. CAPACITORS ON SMPS BOARD

No.	Location	Value Capacitor (uF)	Voltage Spec.	100V-10%	240V/50Hz+10%
				Measured voltage	Measured voltage
01	C903	1000uF	315V	122.3V	190V
02	C904	1000uF	315V	123.9V	180.7V
03	C905	47uF	450V	245.9V	370.1V
04	C912	47uF	50V	18.47V	18.59V
05	C914	47uF	50V	12.68V	13.8V
06	C908	47uF	50V	15.34V	15.33V
07	C931	330uF	16V	4.81V	4.8V
08	C932	100uF	50V	31.96V	31.98V
09	C933	1000uF	16V	5.75V	5.75V
10	C935	1000uF	25V	12.63V	12.62V
11	C942	100uF	16V	11.99V	11.98V
12	C953	2200uF	80V	47.9V	48.1V