JVC Power Supply trouble shooting procedure

This procedure is based on **GF Chassis**. Minor differences could be seen in other chassis

**Important Service manual information**
Due to component tolerance production changes were made during manufacturing. Every effort is made to inform those changes in the service manual. During troubleshooting, **Always refer to the service manual**

Listed below are explanations of some of the abbreviations used in JVC service manual

1. (*): Refer to the NOTE
2. (BW): Bus wire is used instead of that particular component
3. (OPT): The specific component is optional and is not used in this model
4. (Y): Chassis configuration bus wire
5. Shaded: Safety related components. Do not substitute these components

**Chassis Preparation**
1. Remove the main PWB along with the Operation PWB from the television
2. Do not apply AC power to the PWB
3. Using a suitable resistor, **discharge the electrolytic caps**, C910 and C538
4. Visually inspect the PWB and replace if there are any burnt components
5. Connect a **jumper wire between D922 Cathode and IC901 pin 4**
6. Connect another **jumper wire between the chassis’ cold ground (ex: E1) and hot ground (ex: IC901 heat sink)**
7. In order to disconnect 130V supply from the flyback transformer, **remove L921**.

**Test Jig Preparation**
Connect two long jumper wires from a 120V lamp assembly as shown in figure
Use a 40W lamp.

**Test Instruments**
1. Variable DC Power Supply (0~30V; 3A)
2. Digital Multimeter
3. Alligator clips
4. Test jig as shown in picture

**Caution**
Before replacing any components, turn off or disconnect all power supplies and **discharge any charged caps**
Follow procedures listed in page 1 and prepare the chassis for troubleshooting

Using the external power supply, connect 7.0V DC between D922 Cathode and the chassis’ ground

Observe the current readings on the power supply’s current meter

- Less than 1.0A: No, Trouble shoot and replace any shorted components
- Yes: Measure DC on IC701 (CPU) Pin61 and Pin22

- 5 ~ 5.5V DC: No
- Yes: On the external power supply, increase the DC voltage from 7.0V DC to 13.0V DC

Press the Power On/Off button and confirm the Power indicator operation

- Power Off: not lit
- Power On: lit: No, Goto Page 3 (CPU basic)
- Yes: Goto Page 4 (Feedback)

During Power On/Off operation, measure DC voltage on IC901 (STR-F6626) Pin1

- Power Off: approx 2.5V
- Power On: 0V: No, Goto Page 4 (Feedback)
- Yes: Refer to the Schematic. At Q923 collector or a convenient location, measure 13V

- Power Off: 0V
- Power On: 13V: No, Goto Page 5 (SW 13)
- Yes: Refer to the schematic. Measure the collector of both relay driver transistors (Q921 and Q922)

- Power Off: 13V
- Power On: 0V: No
- Yes: Goto Page 6 (Relay control)

Goto Page 7, Page 8
Follow procedures listed in page 1. Prepare the chassis for troubleshooting and Confirm CPU Vcc.

Using the external power supply, connect 13.0V DC between D922 Cathode and the chassis’ ground

Press the Power On/Off button and confirm the Power indicator operation

- **Power Off:** not lit
  - **Power On:** lit

  Troubleshoot if there is >0V on CPU pin 14

- **Flashes after couple of seconds**
  - **Yes**
    - **CPU pin7:**
      - **Power Off:** 5V
      - **Power On:** 0V
      - **Yes**
        - **Trouble shoot power indicator LED or related components**
      - **No**
        - **Goto Page 2 (Overall)**

  - **No**
    - **CPU pin54:** >4.5V
      - **Yes**
        - **Measure IC703 (reset IC) pin1**
        - If IC703 pin2 is 5V, Replace IC703 (RST)
        - **> 4.0V**
          - **Yes**
            - **Replace IC701 (CPU)**
          - **No**
        - **Replace CF701, C718, and C717. Measure Pin 62**
      - **No**
        - **5.0V 12MHz**
          - **Yes**
            - **Replace if any shorted components on Pin4 and Pin5 and check again**
          - **No**
    - **CPU pin 62, 63 5.0V 12MHz Oscillation**
      - **Yes**
        - **5.0V 12MHz**
      - **No**
    - **CPU pin 4, 5 5.0V**
      - **Yes**
        - **Trouble shoot power indicator LED or related components**
      - **No**

Goto Page 2
Feed back test

Follow procedures listed in page 1, Prepare the chassis for troubleshooting and Confirm CPU Vcc.

Using the external power supply, connect 13.0V DC between D922 Cathode and chassis ground

Press the Power On/Off button. After confirming the Power indicator function, measure DC voltage on IC901 (regulator) pin1

(A)

IC901(1)
Power Off: approx 2.5V
Power On: 0V

Yes

CPU pin53:
Power Off: >3V
Power On: 0V

No

Q944 (C):
Power Off: 0V
Power On: 1~2V

No

Q542 (C):
13V

Yes

Q942 (C):
Power Off: .7V
Power On: 0V

No

D942 (C):
Power Off: 7.5V
Power On: 6.8V

Yes

Yes

No

Continued on Page 5

Low Voltage (BL) control & Photo coupler (PC901)
(Before this test, Start with Page2)

Replace IC701 (CPU)

Check 5V supply, R757 and Q944
Goto (A)

Check D931 and Q944.
Replace if bad.
Goto (A)

Check D942. Replace if bad.
Goto (A)

Check Q942, 943.
Replace if bad.
Goto (A)

Check D560, D561, Q542, Q541. Replace if bad.
Goto (A)

Check D931 and Q944.
Replace if bad.
Goto (A)

Check D942. Replace if bad.
Goto (A)
Continued from Page 4

Low Voltage (BL) control & Photo coupler (PC901)
(Before this test, Start with Page2)

PC901(pin2):
Power Off: 0V
Power On: 13V
No
Desolder IC941 pin2.
Yes
Replace IC941
Goto (B)

(PC901(pin3):
Power Off: 2~3V
Power On: 0V
No
Desolder IC901 pin1.
Yes
Replace IC901
Goto (B)

Goto Page2 (Overall)

SW13V check
(Before this test, Start with Page2)

SW13 Test

Goto Page 2

Using the external power supply, connect 13.0V DC between D922 Cathode and the chassis' ground

Press the Power On/Off button to confirm the 13V sw circuit

Q923 (C)
Power Off: 0V
Power On: 13V
Yes
Goto Page 2 (Overall)

No
Q924 (C)
Power Off: 13V
Power On:<.5V
Yes
Check Q923 or shorted components at Q923 collector.

No

Check Q924, R924.
If good, Goto Page4 (A)
Relay Control Test

Follow procedures listed on page 1. Prepare the chassis for troubleshooting and confirm CPU Vcc.

Using the external power supply, connect 13.0V DC between D922 Cathode and chassis ground.

(C)

If relay does not click, replace relay.

Q922(C)
Power Off: 13V
Power On: 6V

Yes

CPU pin52
Power Off: >3.0V
Power On: 0V

Yes

No

Desolder CPU pin52 and measure voltage on the print

> 4.0V

No

> 4.0V

Replace IC701 (CPU)

Yes

No

Check Q927 and Q922. Replace if bad. Goto (C)

Q922(C)
Power Off: 13V
Power On: 6V

No

Check D928, Q922 and relay. Replace if bad. Goto (C)

Q927(C)
Power Off: 0V
Power On: 1.3V

Yes

No

Check D928, Q922 and relay. Replace if bad. Goto (C)

Q542 (C): 13V

Yes

No

Check D928, Q922 and relay. Replace if bad. Goto (C)

Q921(C)
Power Off: 13V
Power On: 0.6V (momentarily)

Yes

If degauss relay does not click on and off, replace relay.

No

Q928(C)
Power Off: 0V
Power On: 5V

Yes

Check Q928

No

Check D933, C932, D927, Q921, and D926
Run DC Test

Goto Page 2

Remove all jumpers and the external power supply from the chassis. Connect multimeter common probe to SW transformer pin3 (live ground)

Using the external power supply, connect 20.0V DC between D914 Cathode and live ground

IC901 pin4 13.0V

Yes

Check Q912, D916, D918. Replace if bad.

No

Check Q912, D916, D918. Replace if bad.

Refresh circuit Test

Goto Page 2

Remove all jumpers and the external power supply from the chassis. Connect multimeter common probe to SW transformer pin3 (live ground)

Using the external power supply, connect 20.0V DC between D910 Cathode and live ground

IC901 pin1 5V

Yes

Check Q911, D911, D912. Replace if bad.

No

Check Q911, D911, D912. Replace if bad.

Check D910, R914. Replace if bad.

Goto Page 8
Switching and Regulation test

(Before this test, Start with Page 2)

Remove all jumpers and the external power supply from the chassis. Connect the test jig (See page1) across C924 (100MFD160V)

Remove L921. Using a jumper, Short between the cold ground and live ground

Using the external power supply, connect 30.0V DC to the television’s AC lead. (Positive to the neutral pin). Connect the jig (see page1) between D921 (cathode) and the chassis’ cold ground

D922 (C) 7.0V

Yes

Goto Page 9

No

IC901 pin4 11.0V

No

D902 (A) 30V

Yes

Check shorted IC901 or shorted components on Pin4. Replace if any

No

Check for reverse Power supply. Check F901, VA901, or related components. Replace if bad.

Check IC901 pin3 100–150Vp-p oscillation

No

Check R903/4/5

OK

Replace IC901

NG

Replace if defective

Check D922

Yes

Replace if defective

Goto Page 9

D922 (C) 7.0V

Yes

Goto Page 2

No

Goto Page 2
Regulator Test

Goto Page 2

OK

Goto Page 8

OK

Remove L921. Using a jumper, Short between the cold ground and live ground

Using the external power supply, connect 30.0V DC to the television's AC lead. **Positive to the nutral pin**. Connect the jig (see page 1) between D921 (cathode) and the chassis' cold ground

D922 (C) 7.0V

No

Goto Page 8

Yes

Press the power button, to turn the power on

Power LED Lights

No

Goto Page 3

Yes

On the jig, bulb lights

Yes

Measure the voltage at D921 Cathode

110~130V

<90V

Replace IC941

Yes

Replace IC941

No

>135V

Replace IC941

Yes

Replace any shorted components in the switched supplies. Replace and power ON

On the jig, bulb lights

Yes

Remove the bulb from the jig and measure the voltage at D921 cathode

135V

Replace IC941

Yes

Finish

No

Replace IC941

Goto Page 8

OK