

ATC311 Dead Set Troubleshooting

1. Check Raw B+ at connector J24204-2. If Raw B+ is OK, go to step 4. If not OK go to step 2.
2. Check AC fuse F24201. If fuse is OK, suspect AC IN CBA. If fuse is open, unplug J14401 and check for short between pins 1 and 2 on the deflection circuit board. If shorted suspect Deflection CBA. If not shorted go to next step.
3. Unplug connector P24203 and check for short across pins 1 & 2. If shorted suspect Subwoofer Amp/PS CBA. If not shorted, suspect AC IN CBA.
4. Check for standby voltages at connectors J24604, J24605, J24601 and J24602. If standby voltages missing, suspect AC IN CBA. If standby voltages are OK go to next step.
5. Apply AC power and press power button.
6. If LED flashes on and off, disconnect J11501 and press power button again. If power LED comes on and stays on suspect Audio CBA. If LED still flashes or does not light go to step 7.
7. Disconnect J26903 and press power button again. If power LED comes on and stays on suspect AV IN CBA. If LED still flashes or does not light go to step 8.
8. Disconnect J14801 and press power button again. If power LED comes on and stays on suspect Deflection CBA. If LED still flashes or does not light suspect DM2 module.

ATC311 No Video Troubleshooting

1. Apply AC power and turn on unit.
2. Press menu, if OSD is present go to step 6.
3. No OSD / video, connect 2H or 2.14H Y Pr Pb signal to Aux. 4 input and using the remote slowly cycle through all inputs. This requires pressing the input button on the remote seven (7) times to cycle through all inputs.
4. Video present and no OSD go to step 8. No video present, go to next step.
5. Using scope check for signals on J28901-1,2,4,6,8. Signals present, suspect deflection / back end processor. Signals not present suspect AV In CBA.
6. Using a known good NTSC RF source and splitter, connect source to both antenna inputs. Check for video on antenna A and B, if no video on both or just one antenna input suspect DM2. If video is present with both antenna A and B go to next step.
7. Connect a NTSC 1H video signal to aux inputs. Cycle through each of the inputs. No video or video on some inputs, suspect AV In CBA.
8. Using a video monitor connected to the video output, tune to an active station. Video displayed on monitor suspect A/V In CBA. No video displayed suspect DM2 module.

Dead Set Troubleshooting

- NOTE:** If power LED flashes when power button is pressed go to step 6.

 1. Use J24204-1 as the hot ground reference. Check Raw B+ at connector J24204-2 (AC IN CBA). If Raw B+ is OK, go to step 4. If not OK go to step 2.
 2. Check AC fuse, F24201. If fuse is OK, suspect AC IN CBA. If fuse is open, unplug horizontal yoke plug J14401 (Deflection CBA) and check for short between pins 1 and 2 on the deflection circuit board. If shorted suspect Deflection CBA. If not shorted go to next step.
 3. Unplug connector P24203 (AC IN CBA) and check for short across pins 1 & 2 (cable end). If shorted suspect Subwoofer Amp/PS CBA. If not shorted, suspect AC IN CBA.
 4. Use the interconnect diagram as a reference and J24604-10 as the cold ground reference. Check all standby voltages at connectors J24604, J24605, J24601 and J24602 (AC IN CBA). If any standby voltages missing, suspect AC IN CBA. If standby voltages are OK go to next step.
 5. Apply AC power and press power button.
 6. If LED flashes on and off, disconnect J11501 (Audio CBA) and press power button again. If power LED comes on and stays on suspect Audio CBA. If LED still flashes or does not light go to step 7.
 7. Disconnect J26903 (AV IN CBA) and press power button again. If power LED comes on and stays on suspect AV IN CBA. If LED still flashes or does not light go to next step.
 8. Disconnect J19500 (Convergence CBA) and press power button again. If power LED comes on and stays on troubleshoot the Convergence CBA. If LED still flashes or does not light go to next step.
 9. Disconnect J14801 (Deflection CBA) and press power button again. If power LED comes on and stays on suspect Deflection CBA. If LED still flashes or does not light suspect DM2 module.

Standby Power supply Troubleshooting

1. With AC power supplied, check for raw B+ at connector J24204-2. If raw B+ is ok, go to step 4. If not ok, check F24201, CR24201, C24208 and 209.
 2. If fuse F24201 is open, remove AC power, unplug J14401 and check for short between pins 1 and 2 on the deflection CBA side. If shorted troubleshoot the run supply and deflection circuits. If not shorted, go to step 3.
 3. Unplug connector P24203 and check for short across pins 1 and 2 on the subwoofer power supply / amp CBA side. If shorted troubleshoot subwoofer power supply / amp CBA. If not shorted, go to step 4.
 4. Remove AC power and check Q24601 for gate to drain short and drain to source short. If shorted replace all active components on the primary side of T24601 and R24601. If not shorted, go to step 5.
 5. Unsolder drain of Q24601, if fuse was open replace AC fuse and apply AC power.
 6. Apply AC power and check for +12Vdc on the gate of Q24601. If missing, suspect R24604, 605, 602, CR24601, 602, Q24602, and 601. If +12Vdc present, go to step 7.
 7. Remove AC power and check for proper resistance (see table below) on each output diode CR24620, 623, 626, 630, 637, and 638. If not correct check associated circuit with each incorrect resistance. If resistances ok, go to step 8.
 8. Solder drain of Q24601 back in, short pins 3 and 4 of U24601, and apply AC power. If supply starts to oscillate, check U24601, 602, and precision resistor network in feed back circuit. If not check components in the source circuit of Q24601.

Run Power supply Troubleshooting

No Start, Relay clicks, and Power LED is on

NOTE: If relay clicks and power LED comes on then the standby power supply and system control are functioning.

1. Apply AC power and check Q14101-D for raw B+ (approx.150Vdc). If missing, check J14101 from the standby supply and T14101 for an open circuit. If raw B+ is correct go to step 2.
2. Remove AC power, unsolder the drain of Q14101 and short collector to emitter of on/off transistor Q14150. This will turn on bias to the oscillator circuit and gate of Q14101. Check for +24V on the Q14101-G. If missing check Q14102, 103, 151, R14103, 104, 105, 106, 107, CR14113, and CR14114. If +24V present, go to step 3.
3. Using the resistance table, check each output diode. If resistances are correct go to step 4. If not correct check associated circuit of improper resistance reading.
4. With Q14150 still shorted (C-E), solder the drain of Q14101 back in and short pins 3 and 4 of U14101 to bypass regulation control. This makes the supply operate at reduced voltage. Apply AC power, if supply starts to oscillate, check feedback circuit Q14104, U14103, U14101, and precision resistors. If no oscillation, go to step 5.
5. Remove AC power and check components off of pin 11 of T14101 and off of pins 3 and 4 of U14101. Check components in the source circuit of Q14101.

CR14109	55K
CR14108	9K
CR14107	28K
CR14106	Infinity
CR14140	5K
CR14142	5K

Resistance Table

System Control Troubleshooting

Dead set, isolate down to chassis or DM2 module. Power LED blinks.

1. Apply AC power and check J13604 and J13605 for proper voltages all pins. Voltages not correct troubleshoot AC in CBA. Voltages correct go to step 2.
2. Check J13604-1 for 5Vdc. If missing or low power supply is indicating power failure. Troubleshoot AC in CBA. If 5Vdc ok, go to step 3.
3. Remove AC power and disconnect J14801 on the deflection CBA. Apply AC power and turn on set. If power led turns on, troubleshoot deflection CBA. If power LED still wont stay on suspect DM2 module.

Horizontal Out Troubleshooting

- Setup:

 - Unsolder Q14401-C
 - Disconnect all three CRT sockets
 - Force on Run supply by shorting C-E on Q14150
 - Force on 9Vr for BEP by shorting C-E on Q14111 and apply AC power.

Horizontal Drive should be present at pin 34 of J14808 if not troubleshoot BEP.
1. Check for drive signal at Q14304-C. If missing check +26Vr, Q14304, and Q14303. If ok go to step 2.
 2. Check for horizontal drive at Q301-E. If missing check base circuit of Q14302 and Q14301, 14302, and C14304. If ok go to step 3.
 3. Check for signal at the base of Q14401. If missing suspect Q14401, T14300, and L14301. If present, remove AC power and reconnect Q14401-C.
 4. Unplug J14401, horizontal yoke.
 5. Apply AC power and check for signal (490V P-P) at the collector of Q14401. If incorrect, suspect T14401 or it’s secondary circuits. If correct suspect yokes or yoke return circuit.

Troubleshooting Tips

- If there is no vertical pulse from U12901-27, confirm fly-back pulse is present at U12901-24. It must be present for the vertical countdown to function.
 - If the vertical power stage U14501 has failed, CR14501 has likely failed also, and should be replaced. Failure to replace it will result in the boost voltage being equal to the 28VR1 supply voltage. The retrace will be too slow, and SCAN_V will not be proper. AKB blanks the picture if this pulse is not proper.
1. Disconnect CRT sockets from all three CRT’s.
 2. Disconnect vertical yoke plug J14501.
 3. Apply AC power and turn on set.
 4. Check Source voltages +28Vr, +15Vr, and +45Vr. If sources are missing trouble-shoot source supplies. If ok, go to step 5
 5. Check U14501 for proper voltages at pins 1, 2, 3, 5, 6, and 7. See chart below. If incorrect, suspect U14501, CR14501, RN14501, and C14503. If correct, go to step 6.
 6. Check for waveform at pin 5 of U14501. If correct suspect open yoke. If not correct suspect R14509, 14510, and feed back components to RN14501.

U14501 Pin Number	VoltageWith Yokes	Voltage W/O Yokes
1	7.9Vdc	7.9Vdc
2	31.5Vdc	31.5Vdc
3	46.8Vdc	47.3Vdc
5	15.1Vdc	15.8Vdc
6	30.9Vdc	31.0Vdc
7	7.8Vdc	7.8Vdc