Table 1: Z801 pin functions and voltages, C8SS chassis

Pin	*Function, voltage*
1	HT voltage monitoring. Should be 125V
2	HT current monitoring. Should be 125V
3	Optocoupler drive for HT regulation. Should be 119V
5	6V from internal reference zener diode
11	25V. Monitors the audio output supply
13	X-ray protection. Normally 22V
14	Protection sensing input. Normally 0V. Any voltage here will trip the set to standby
15	Standby 5V supply. Used by internal latch (trip circuit)
16	Power-on control from microcontroller chip QA01. 5V = on, 0V = standby

(47μF, 50V) with protection provided by Z868 (PRF5000).

So if the set is dead with no light from the front LED power supply 2 is not working. The feed to the chopper transformer T863 is via fuse F807 (2AT). If this fuse is open-circuit, check the resistance between the fuse and chassis. If the reading is low, suspect the STR-S6708 chopper chip Q803. Also check the 6·2V zener diode D854.

If there is no centre or surround audio, check the 26·5V supply to ICs Q621 and Q641. This is provided by power supply 2 and is protected by F808 (4AT). Check Q641 and/or Q621 (both type TA8200AH) by replacement if F808 is open-circuit. Should Q621 or Q641 be faulty, check the associated 1N4148 protection diodes D621-6 or D641-6.

The left/right audio output chip Q601 (type LA4282) is on the signals board. A problem you can get here is the right channel noisy with TV and AV inputs, the noise does not vary with the setting of the volume control and eventually the sound is muted. In this event check the muting transistor Q682 (2SC2878A) by replacement.

If the field scan jumps and there is poor convergence, check that the VD waveform is present at pin 20 of P708 on the convergence/power supply 2 panel. Absence of this waveform probably means that Q774 (2SC1815Y) is faulty. If there are convergence errors, check the convergence output ICs Q751 and Q752 (both type STK392-110). If one or the other has overheated or failed, check resistors R7716/7721/7711 and R7726/7731/7736 respectively. These are all 2·2Ω, 2W resistors.

If the bottom of the picture is blank with bulging on the left-hand side but is OK when the set has warmed up, check the V-stop protection transistor Q350 (2SC1815Y) on the DPC PCB for leakage.

Models 40WH08, 46WH08 and 56WH08 (C00P chassis)

These newer sets use a similar power supply arrangement to the C8SS chassis, with a transformer (T803), bridge rectifier (D801, type S1WBA20) and a 5V regulator (Q810, type PQ05RR11) to produce the standby 5V-1 supply, and a main chopper circuit that produces a 120V HT supply for the line output stage, also various other outputs. This power supply is based on an STR-Z4369 chopper chip (Q801). There is an extra chopper power supply however that produces an audio 26V supply. This is based on an STR-F6668 chip (Q823). These circuits are all on a separate power PCB.

There's a very good out-of-circuit test for the STR-F6668 chip. Connect 18V (two PP3 batteries in series) between pins 4 and 5, positive to pin 4. Then use a scope, with Y input via a x10 probe, to monitor the waveforms at pins 1, 2 and 3. There should be a 16μsec sawtooth waveform with an amplitude of about 0·6V every 66μsec at pin 1. At pins 2 and 3 there should be an 8μsec square pulse of approximately 7V amplitude every 66μsec. These waveforms were illustrated on page 97 in the December 2001 issue of *Television*.

If the set is dead and the LED is out, check the mains input fuse F801 (3·15AT) on the power PCB. Next check for 240V AC at connector P888B. If there is no voltage here, suspect the on/off switch, which can be temporary bypassed as a check by removing the plug from socket P888A on the deflection PCB and inserting it in socket P801A on the power supply PCB. If the voltage is present at P888B, check that the 5V-1 standby supply is present at pin 4 of connector P840B. If not, suspect the 5V regulator Q810 (type PQ05RR11).

If the LED is lit however check for standby/on switching (0/5V) at pin 7 of P840B. If this is incorrect, check the standby switching circuit which is on the signals panel.

The next check if necessary is for 240V AC at the surge limiter resistor R821 (4·7Ω, 5W). If there is no voltage here, check both surge limiters R821 and R820 (1·8Ω, 2W fusible) for the open-circuit condition and the operation of relay SR80. If R821 or R820 is open-circuit, check whether the mains bridge rectifier D802 (LN65860) is short-circuit. There's a kit for this repair. If everything is OK up to this point check for 300V DC at circuit protector Z860 (PRF4000SPRT), which is in the feed between D802 and the main chopper circuit. If this fuse is open-circuit there is clearly a major failure in the chopper circuit: a check between Z860 and the power supply chassis (live) will show whether the chopper chip Q801 is short-circuit.

The next check if necessary is for the presence of the 120V HT supply at circuit protector Z856 (PRF2000SPRT). If there is no voltage here, lift connector BB21A to check whether the cause of the trouble is in the power supply or on the deflection panel.

General information

Safety: Don't attempt to operate one of these sets with the X-ray protection plate at the front removed (it's under the front plastic cover beneath the speaker grill). A safety interlock lead that has to be disconnected to gain access to the CRTs is attached to the plate. When the lead is disconnected the power supply is disabled. Overriding this connector and removing the plate will expose you to harmful X-rays from the CRTs.

Service mode: To enter the service mode, press the mute button on the remote-control unit once, then press and hold it down while pressing the menu button on the TV set. Make sure the remote-control unit is present when you collect a projection set or when one is brought into the workshop.

Screen problems: If the picture is defocused in one spot the cause may be a mark on the screen, or damage that distorts the image. In some cases a complete new screen may be required. A change in colours on the screen can be caused by an electronic fault or dirt on the screen – general dust or cigarette smoke. Odd displays can be caused by dust etc. A good clean will usually restore normal pictures. ■