SuperStar 4900B Troubleshooting

Transmit Section Repair Memorandum - 12/2000

Transmit Section Voltage Chart:

2SC2314	Receive	Transmit	Transmit RF Pre-Driver
Emitter	0.0 VDC	0.9 VDC	
Collector	0.0 VDC	10.8 VDC	
Base	0.0 VDC	1.9 VDC	

2SC2166	Receive	Transmit	Transmit RF Driver
Emitter	0.0 VDC	0.0 VDC	
Collector	10.2 VDC	11.2 VDC	
Base	0.0 VDC	1.0 VDC	

2SC1969	Receive	Transmit	Transmit RF Final (1 of 2)
Emitter	0.0 VDC	0.0 VDC	
Collector	10.1 VDC	10.1 VBC	
Base	0.0 VDC	1.0 VDC	

2SC1969	Receive	Transmit	Transmit RF Final (2 of 2)
Emitter	0.0 VDC	0.0 VDC	
Collector	10.1 VDC	10.1 VBC	
Base	0.0 VDC	1.0 VDC	

2SA1940	Receive	Transmit	DC Power Regulator
Emitter	29.0 VDC	24.8 VDC	
Collector	10.8 VDC	10.4 VDC	
Base	28.6 VDC	23.4 VDC	

Repair Notes:

The voltages shown on the transmit buss are directly related to the variable RF output control on the front panel. This control varies the voltage from 2.5 VDC through 10.8 VDC at the collector of the 2SA1940 DC power regulator transistor. The 2SA1940 DC voltage regulator is good for about 55 Watts and can be directly replaced with a 2SB754 (60 Watts) if necessary.

A good method of trouble shooting the transmit section is to check the voltage at the collector of the 2SC2314 pre driver first. There should be around 10.8 VDC on the collector in transmit mode. If the voltage is substantially lower, the 2SC2314 is probably bad. Next, check the collector of the 2SA1940. This voltage should be around 10.8 VDC with the RF Power Control completely clockwise. If the voltage here is substantially low, the 2SC2166 (Driver) or one or more of the 2SC1969 (Finals) is shorted. To check this quickly, unsolder the collector of the 2SC2166 first and check voltage again. If this doesn't bring the voltage back up, do the same thing on each 2SC1969 (Final) transistors (one at a time) to determine which transistor is bad.

The 2SA1940 DC regulator transistor could be bad if the voltage doesn't return in the tests above. Check the emitter and base voltages to see if the rest of the power suply if functioning. By lifting the collector and checking these voltages, one can determine if the transformer and rectifiers are working properly. If the collector voltage drops to near zero after soldering it back to the board, the 2SC1940 or one of it's support transistors (located in front of it) are probably shorted.

Although the SuperStar 4900 circuit board is largely SMT (Surface Mount Technology) it is very easily repaired because most of the components that usually need service are standard components and located conveniently.

*** See the pictorial diagrams for component location and pin out information.**

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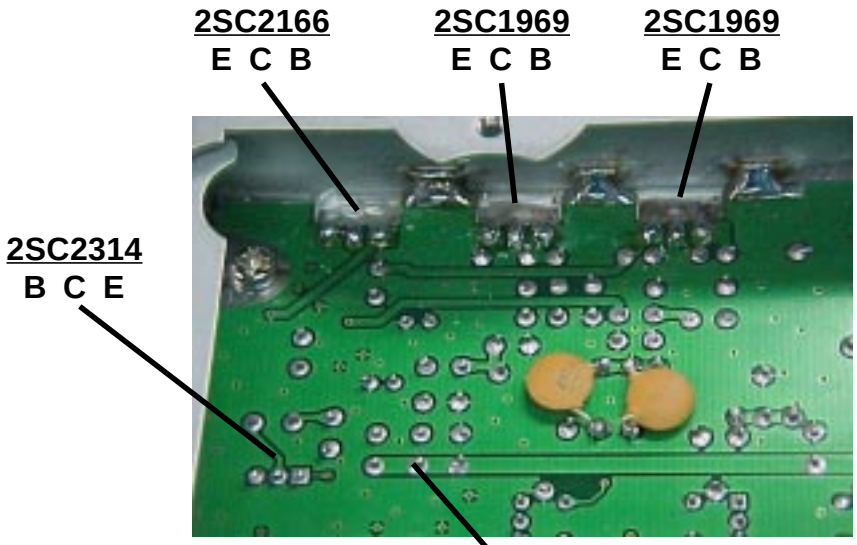
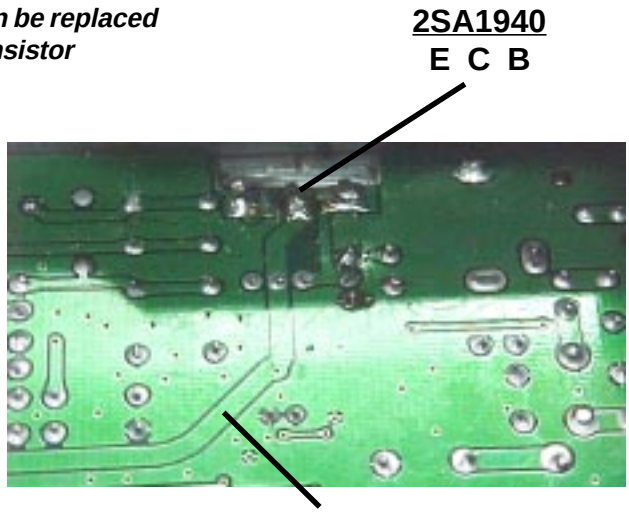


2.5 VDC - 10.8 VDC Varies With Front Panel RF Power Control

Note: 2SA1940 Can be replaced with a 2SB754 Transistor



2SA1940 Collector - Variable Voltage From RF Power Control