Fast Track Troubleshooting

Model:
NE58F9**

IMPORTANT SAFETY NOTICE – "For Technicians Only" This service data sheet is intended for use by persons having electrical, electronic, and mechanical experience and knowledge at a level generally considered acceptable in the appliance repair trade. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible, nor assume any liability for injury or damage of any kind arising from the use of this data sheet.

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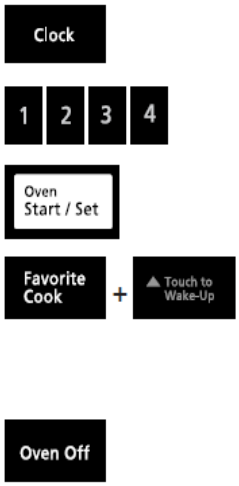
Support Information:

HELP: 1-888-751-4086 (Tech Sup. – ASC/SSD)
1-866-894-0637 (Tech Sup. - FE/ME)
GSPN:
http://service.samsungportal.com/EP/web/portal/jsp/EP_Default1.jsp
PLUS ONE: http://my.plus1solutions.net/clientPortals/samsung

Diagnostics Mode

1. Touch '**Clock**' key.
2. Touch a number '**1,2,3,4**' key.
3. Touch '**Oven Start / Set**' key.
4. Touch '**Favorite Cook**' and '**Wake-Up**' keys at the same time for 3seconds. Error codes are displayed.
5. Touch number '**0**' key, the last 5 error codes can be checked. But, if the oven turns off, the stored error codes are deleted.
6. Touch '**Oven Off**' key to return to normal display mode.



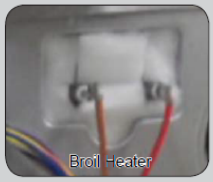
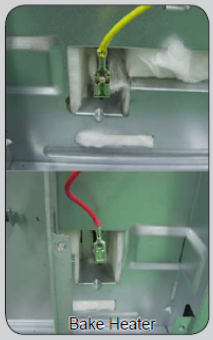
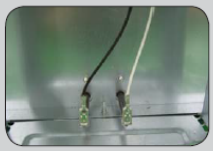
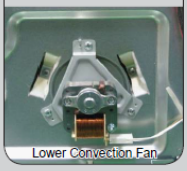
Oven sensor resistance (Temperature vs. Sensor resistance)
Ro = 1000 Ohms (0°C), RP = 2757 Ohms, Up = 5V, a = 0.00375

degree F	degree C	ohms	degree F	degree C	ohms
0	-17.8	932.12	113	45	1170.17
14	-10	961.86	122	50	1188.93
23	-5	980.95	212	100	1374.93
32	0	1000.00	302	150	1558.01
41	5	1019.02	392	200	1738.06
50	10	1038.02	482	250	1915.39
59	15	1056.99	572	300	2089.69
68	20	1075.92	662	350	2261.07
77	25	1094.83	752	400	2429.52
86	30	1113.71	842	450	2595.05
95	35	1132.56	932	500	2757.65
104	40	1151.38	1000	538	2878.57

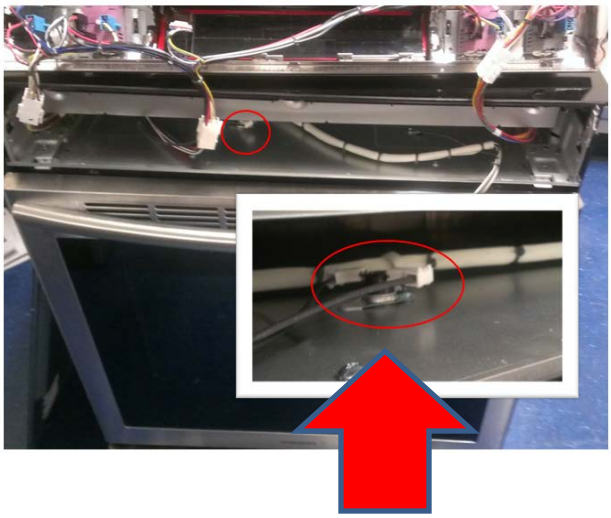
Error Codes

Failure code	CAUSE	SOLUTION
E-24	Oven heating over	1. Disconnect power. Open the back cover.Disconnect sensor harness from control.Measure sensor resistance:1080Ω at the room temperature → If there are any problems, replace oven sensor. 2. Check the broil, bake and convection heater.Check the resistance of the each heater. 3. Check whether DLB of Main PCB, Broil, Bake and Convection heater relay are being worked normally. 4. Check whether there is any disconnection of harness which is linked with main PCB on sub PCB. 5. Check the resistance of oven sensor connector on main PCB. (Normal : 2850Ω) 6. It will display "E-24" after beeping 10 times l ⌣, if temperature is more than 600°F(316℃) during oven is working excluding the case of self-cleaning. 7. Please make sure through the method of 4-1 on 31 page, if those series of working for informing error take long time or not functioned."
E-0E	Door locking error	1. Disconnect power. Open the back cover. Check wether harness has been connected with door lock switch and motor. 2. Confirm whether resistance value of door lock motor is to be normal one or not. 3. With operating door lockout, measure a voltage of connector on harness which is linked with door lock motor. (Normal Voltage : AC 120V) 4. Check whether door locking switch is being worked normally.
E-21	Oven sensor opened (Over 2950Ω)	1. Disconnect power. Open the back cover. Disconnect sensor harness from control Measure sensor resistance : 1080Ω at the room temperature → If there are any problems, replace oven sensor. 2. If there is not any problem with oven sensor, Please check whether there is a damaged therminal or wire on harness. 3. Check resistance of oven sensor connector on main PCB (Normal:2850Ω)
E-22	Oven sensor shorted (Under 940Ω)	
E-83	Main PCB communication error	1. Check whether connector(CN201) of main PCB has been inserted. 2. Check whether connector(CN02) of Sub PCB has been inserted. 3. If there is not a problem occurred with connector on Sub PCB and main PCB, replace the main PCB.
-tE-	Sub PCB communication error	1. Check whether connector(TE201) of SUB PCB has been inserted. 2. If there is not a problem occurred with connector on Sub PCB and Touch glass, replace the Control box.
-SE-	Key short	1. Check whether cable of keypad has been inserted into connector of Sub PCB. 2. Check whether between Sub PCB and connector or keypad and cable have a short circuit. 3. If there is not a problem occurred with connector on Sub PCB and cable of keypad, replace the Sub PCB.
-dE-	Partition switch error	1. Disconnect power. Open the back cover. Check whether harness has been connected with assy-partition switch. 2. Confirm whether resistance value of assypartition-switch is to be normal one or not.
E-2E	Probe short	1. Disconnect power. Open the back cover. Disconnect Probe harness from control Measure probe resistance : 50kΩ at the room temperature → If there are any problems, replace meat probe. 2. If there is not any problem with meat probe, Please check whether there is a damaged therminal or wire on harness. 3. Check resistance of meat probe connector on main PCB (Normal:10kΩ ~ 11kΩ)

Troubleshooting

FIGURE	TESTS MEASURE	RESULTS
 Broil Heater	* Measure resistance values of heater's terminal after taking off harness from heater. * Measure voltage of heater's terminal after making oven work by pressing broil keypad.	* Approx : 13 ~ 16Ω (at the room temperature) * Terminal voltage of Broil heater : AC 240V * Replace or repair harness * Replace or repair sub PCB
 Bake Heater	* Measure resistance values of heater's terminal after taking off harness from heater. * Measure voltage of heater's terminal after making oven work by pressing bake keypad. (Make sure that voltage has to be measured for more than 1 minute because heater is supposed to on-off cycling work.)	* Approx : 26 ~ 30Ω (at the room temperature) * Terminal voltage of bake heater : AC 240V * Replace or repair harness * Replace or repair sub PCB
	* Measure the resistance values of heater's terminal after taking off harness from heater. * Measure the voltage of heater's terminal after having oven worked, by pressing convection bake keypad. (Make sure that voltage has to be measured for more than 1 minute because heater is supposed to on-off cycling work.)	* Approx : 70 ~ 73Ω(at the room temperature) * Terminal voltage of convection heater : AC 240V * Replace or repair harness * Replace or repair sub PCB
	* Measure the resistance of values of heater, after taking off harness from heater. * Measure the terminal voltage of heater after making oven work by pressing warming drawer keypad.	* Approx : 22 ~ 25Ω (at the room temperature) * Terminal voltage of Drawer heater : AC 120V * Replace or repaire harness * Replace or repaire sub PCB
	* Measure the state of micro switch and motor after taking off harness from the heater. * Check whether the lock works normally by pressing cooking time button and delay start keypad at the same time for 3 seconds.	* Lock motor Resistance : 1750 ~ 1850Ω (at the room temperature) voltage : 120V * Micro switch COM-NO * Replace or repair if harness has been loosen or disconnected.
	* First of all, make sure that lamp filament is disconnected or not. * Measure resistance socket's terminal after separating harness from heater and removing lamp. * Measure the voltage at the lamp sockets terminal, after turning on the Lamp by pressing the Oven light on the main keypad.	* Approx : ∞Ω * Terminal voltage of lamp socket : 120V * Replace or repair harness. * Replace or repair sub PCB
 Upper Convection Fan  Lower Convection Fan	* Measure resistance value of Motor terminal after taking off harness from Motor. * Measure Voltage of Motor's terminal after making oven work by pressing bake keypad. (Make sure that voltage has to be measured for more than 1 minute because Fan is supposed to on-off Cycling work.)	**Approx** * Convection Fan : 20 ~ 30Ω * Terminal Voltage of Convection Fan : 120V * Replace or repair harness * Replace or repair main PCB.
 < Partition Switch>	* Mesure the state of partition switch after taking off harness.	* Partition Switch Resistance : 1750 ~ 1850Ω * Replace or repair if harness has been loosen or disconnected.

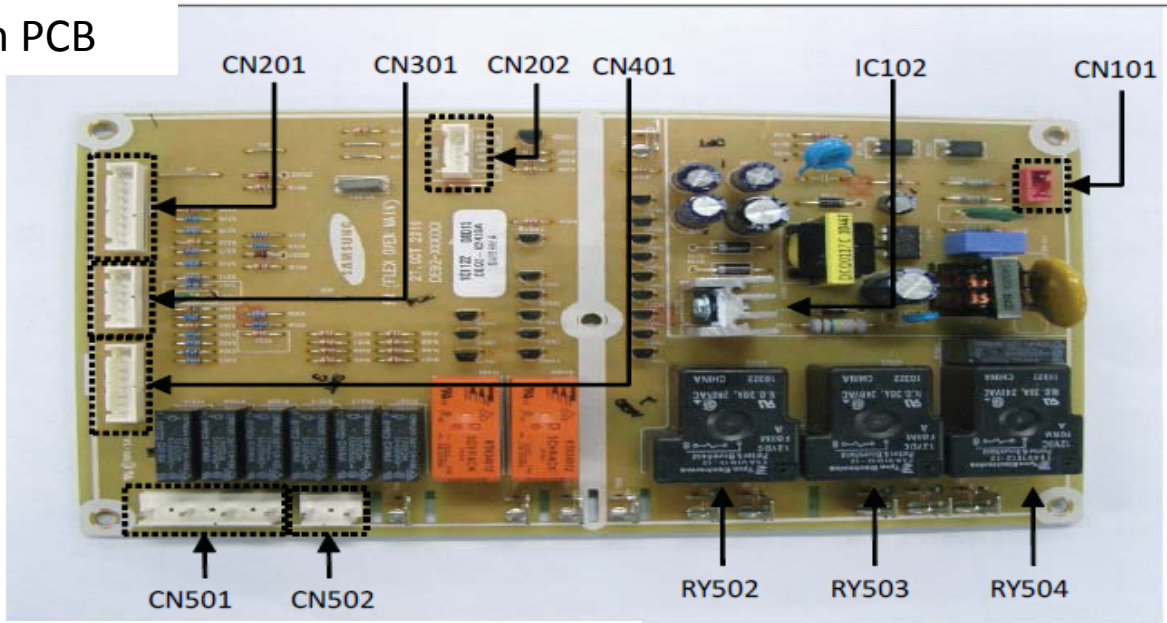
 Door plunger switch	* Check the state of working of switch. * Make sure whether wire, housing and terminal is connected with switch has been damaged or not	Nomal open : 0Ω Nomal close : ∞Ω * Replace or repair if wire or terminal has been damaged.
		
	* Check whether the resistance values of oven sensor is same with a chart's one. * Check whether wire or housing has been loosen or disconnected.	**Approx.** at the room temperature :1080Ω



The Main TCO is located behind the Display panel

The main TCO will shut off all functions. Check for continuity if unit has no power

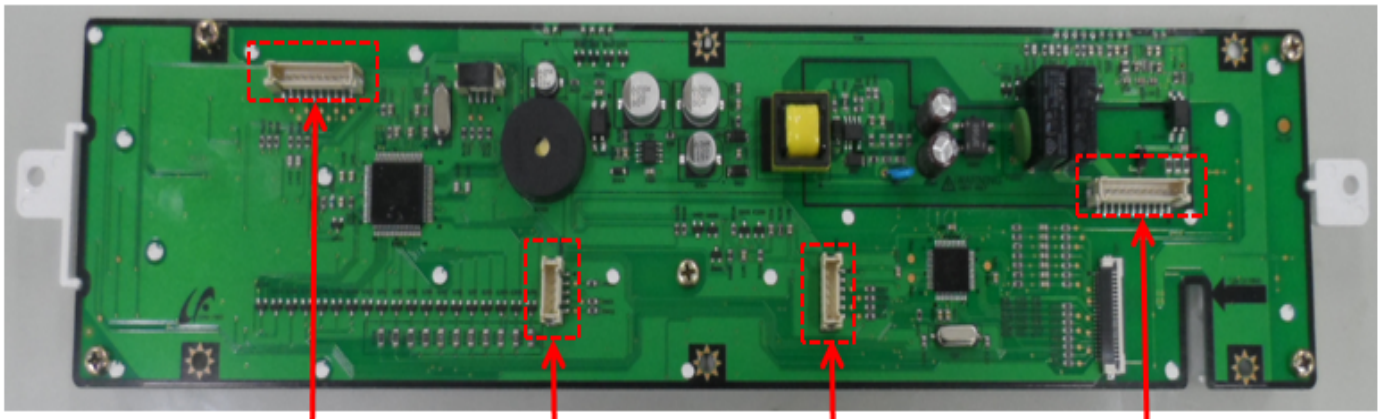
Main PCB



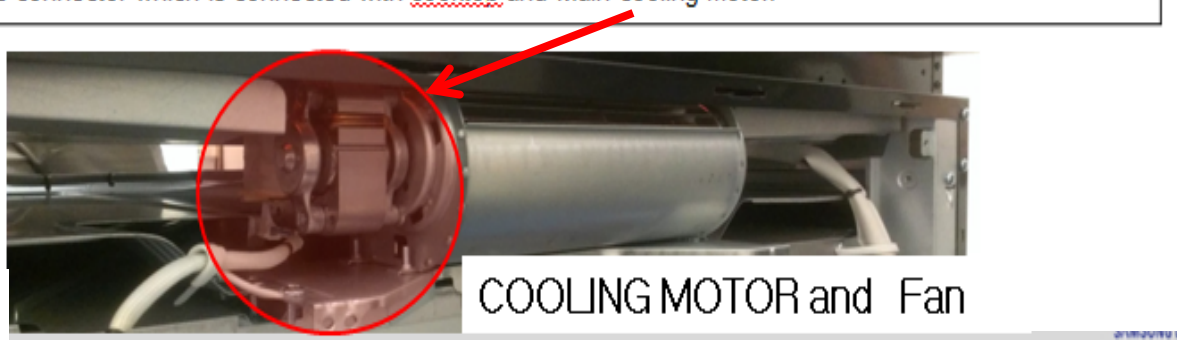
Connector description

CN101	This is to supply power with SMPS.
CN201	This is connector which is connected with Sub PCB to communicate.
CN202	When do micom revision, connect to micom writer. And this connector which is connected with Touch PCB to communicate.
CN301	This connector which is connected with oven sensor.
CN401	This is connector which is connected with Door plunger switch and Door lock switch, partition switch.
CN501	This connector which have Door plunger switch, upper lamp and relay of upper convection fan connected.
CN502	This connector which have lower lamp and relay of lower convection fan connected.
RY-Source Relay(RY501)	This is relay which control source of DLB,BAKE,BROIL, W/Drawer relay.
DLB Relay(RY502)	Circuit is designed to have broil relay or convection relay worked after DLB relay is being worked by Double line break. (It will not be problem with reversing the order in inserting Red)
Broil Relay(RY503), Bake Relay(RY504), Relay(RY505)	Broil relay(Ry503), Bake relay(Ry504), convection relay(Ry505) will be on-off working by mi-com signal after DLB relay is worked. (Broil relay : It will not be problem with reversing the order in inserting Brown) (Bake relay : It will not be problem with reversing the order in inserting Blue)
IC102	This is to supply DC 12V with main PCB by voltage regulator.

Sub PCB



TE400	This connector is used to communicate with the Main PCB.
CN400	Used for Microprocessor updates. Connects to Microprocessor writer. (No connection at normal times)
CN200	Used for Microprocessor updates. Connects to Microprocessor writer. (No connection at normal times)
CN502	This is the connector which is connected with cooktop and Main cooling motor.



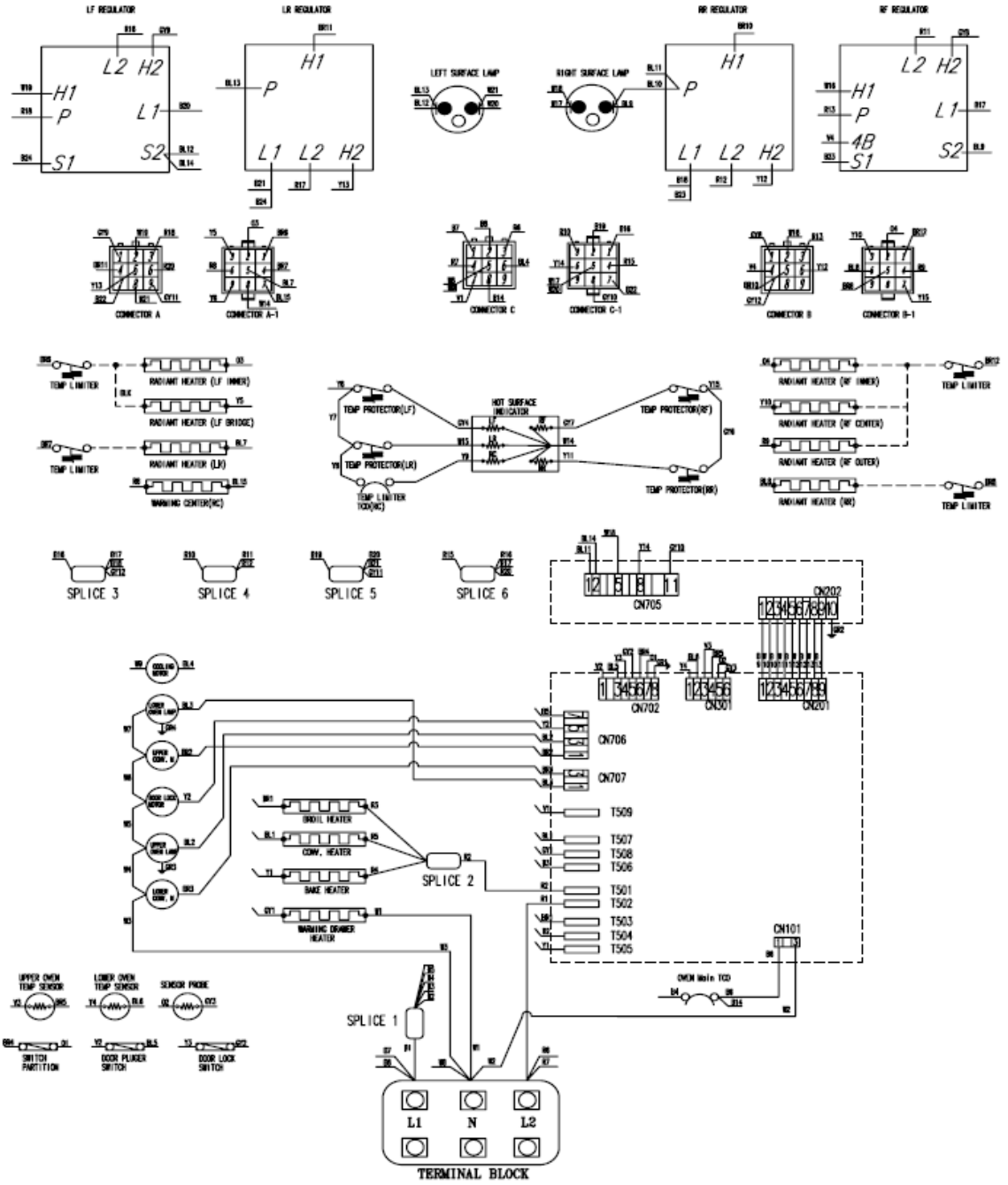
110-120V is supplied to the Cooling motor from the Sub PCB

Note: Fan will remain on during cool down even if the unit has been shut off

NOTE
1) INPUT POWER : AC240V 60Hz, 14000W, 58.3A
   1-1) OVEN HEATER : MAX 5400W, 22.5A
   1-2) COOKTOP : MAX 8600W, 35.8A
2) OVEN DOOR OPENED AND UNLOCKED

WIRING DIAGRAM
MODEL : NE58F9710WS/AA

COLOR		COLOR	
RED	R	ORANGE	O
WHITE	W	VIOLET	V
BLUE	BL	BLACK	B
YELLOW	Y	GRAY	GY
SKY	SK	GREEN	GR
BRN	BR		



HEATING ELEMENTS

COOKTOP ELEMENTS		
COMPONENTS	INPUT	WATTAGE
RF RADIANT ELEMENT	240V	3000
RR RADIANT ELEMENT	240V	1200
LF RADIANT ELEMENT	240V	2400
LR RADIANT ELEMENT	240V	1800
RC WARMER ELEMENT	240V	100

OVEN HEATING ELEMENTS		
COMPONENTS	INPUT	WATTAGE
BAKE	240V	3000W
BROIL	240V	4200W
CONVECTION	240V	1250W
WARM DRAWER	120V	600W

Oven Door Removal

Parts	Explanation Photo	Explanation
 Oven door		**To remove Oven Door:** 1. Fully open the door 2. Pull the hinge locks downward.
		3. Firmly grasp both side of the door at the top. 4. Close door to the door removal position, which is approximately 5 degrees. Lift door up and out until the hinge arm are clear of the slot.
	 	**To replace door:** 1. Firmly grasp both sides of the door at the top position and insert the hinges into the hinge openings on the oven.
		2. Fully open the door. (If the door will not fully open, it means that the indentation is not seated correctly in the bottom edge of the slot. Push the hinge locks up to the locked position.) 3. Close the oven door.

* Reassembly of All part is the reverse order of disassembly.