



Fast Track Troubleshooting

Model:
RF24J9960S4/AA
Counter Depth
Chef Collection



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wsRF24J9960 Production Date 06/03/2015

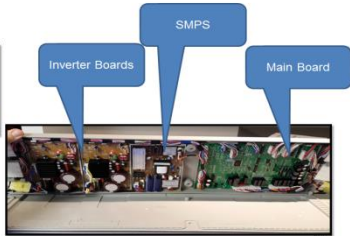
Support Information:

HELP: 1-888-751-4086 (Tech Sup. – ASC/SSD)

1-866-894-0637 (Tech Sup. - FE/ME)

GSPN: <http://gspn3.samsungcsportal.com/main.jsp>

PLUS ONE: <http://my.plus1solutions.net/clientPortals/samsung>



Main PCB, Power Supply and 2 Inverter PCBs are located at the top of this unit

Control Lock

Control Lock is activated automatically, locking out all functions to the controls. Press and hold “Control Lock” until LED goes out before attempting to change any of the settings or temperatures.

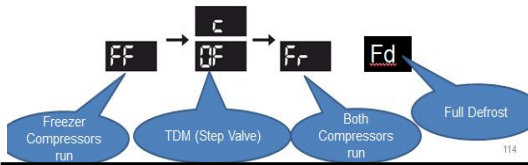


FORCE MODE turns compressor on / defrost

Press and hold “Freezer” and “Control Lock” until LEDs blink, then let go of buttons and tap on “Control Lock” again, before the LEDs stop blinking. FF is displayed. To advance to next step, press any key. Steps are shown below.



When blinking let go and press control lock



Diagnostic Mode shows the errors codes

Press and hold “Freezer” and “Control Lock” Keep holding until display stops blinking. If there are no errors recorded, the screen will be blank. Wait 30 sec for display to return to normal operation.



Load Mode used to check what is currently running

Press and hold “Freezer” and “Control Lock”

When LEDs blink, let go of buttons and tap on “Fridge”



DEMO Mode lights remain on but heating and cooling switched off

Press and hold “Freezer”, “Fridge” and “Control Lock” until you hear a chime

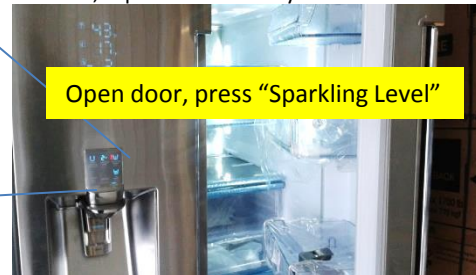
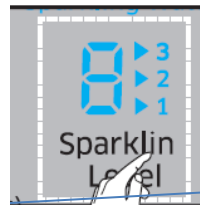
When O – FF displays you have entered the store demo mode

Heating and cooling will be shut off (Repeat process to get out of this mode)



Testing Sparkling Assy this will check the function of the sparkling assy

Open one of the top fridge doors , press and hold “Sparkling Level” button for 5 seconds until the operation of the valve is heard. The door must be open, and the sound will confirm correct operation. Check sparkling assy voltage for 120V if no Sound is heard, replace if necessary.

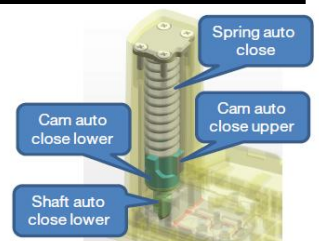


Open door, press “Sparkling Level”

※ The working principle of the hinge.

Auto hinge make to work the door by torsion of the spring.

Door must be held a little past 90 degrees to remove it.



DC FAN MOTORS

Brushless DC Fan motors are used to save energy. The fans operate at two speeds. Fan speed information is read by the Main PCB. If the fan speed exceeds 600 RPM or the speed is too slow, or stopped the fan drive circuit is disabled, After 10 seconds the circuit tries again with 3 seconds of DC voltage. If the fan continues this activity for 5 cycles, 10 seconds off 3 seconds on, the fan drive circuit is disabled for 10 minutes.

TO TEST THE FAN CIRCUIT VOLTAGE.

Power off and back on to check the DC voltage to the motor, wait from 10 to 60 seconds for the fan voltage to kick in, and then check fan voltage, the average reading is 9 VDC. If you get 3 seconds of voltage every 10 seconds for the 5 fan power up cycles, then the Main PCB is good.

NOTE: You may need to put unit in FORCED FREEZE mode to activate the fans/compressor.

If the fan blade is blocked by ice, then defrost and check the motor again, after removing power from the unit.

If the evaporator is ice blocked and thus blocking the air flow, the fan will over RPM and is stopped. Remove ice and check the motor again. If everything is clear around the fan blade then the motor would be at fault. Continuous fan errors will be displayed on the front panel display. **PLEASE NOTE:** The door switches control the evaporator fan motors. Have them closed to test the motors. Delay time 10 – 60 seconds.

Heat Release Ice Makers

Heat Release Ice production Explanation

38 minutes after the water fill is complete, the control board will check the temperature of the eject Thermistor, on the Ice Maker Head, if the Thermistor reads a temperature lower than 8.6 degrees F for more than 5 seconds, then the ice production process is completed. The Ice maker will harvest if the ice bucket is not sensed as full. If a Fault Mode is detected with the Ice Maker operation, the Ice Maker stops working for 3 hours. Which means, the Ice Maker checks the operation every 3 hours until it works properly.

Heat Release I/M Test Mode

Press and hold the ICE TEST S/W for at least 1.5sec, the harvest function will start. If the ice maker Thermistor is below 0 degrees the Ice maker heater turns on for about 2 minutes. If the temperature exceeds 0 degrees, Ice maker heater turns on for 30 seconds. After the Ice maker heater turns on for 30 seconds, the heater turns off and then Ice maker harvest motor turns on. The motor will rotate in right direction for about 3 minutes, after this, water supply valve is turned on, then the valve is turned off, the test mode is completed. If the above operation is not carried out within 6 minutes, it will go into a fault mode.

FREEZER TEMPERATURE CONTROL BY THE ICE MAKER

Interior Temperature of the freezer will be set to -14 degrees Fahrenheit until the ice bucket is full. When the ice bucket is full, the freezer will maintain original set temperature. Also, whenever the ice is used, the freezer will again set to -14 degrees Fahrenheit. Selecting "Ice Off" will allow the freezer to be controlled by the set temperature. If water is not hooked up, the freezer will always be at -14 unless "Ice Off" is selected.

Temperature/Resistance/Voltage Chart for Samsung Refrigerators Sensors

Temp.	(Ω)	Volts	Temp.	(Ω)	Volts	Temp.	(Ω)	Volts	Temp.	(Ω)	Volts
-29.2°F	64227	4.326	1.4°F	28021	3.685	32.0°F	13290	2.853	62.6°F	6771	2.019
-27.4°F	61012	4.296	3.2°F	26760	3.64	33.8°F	12749	2.802	64.4°F	6521	1.974
-25.6°F	57977	4.264	5.0°F	25562	3.594	35.6°F	12233	2.751	66.2°F	6281	1.929
-23.8°F	55112	4.232	6.8°F	24425	3.548	37.4°F	11741	2.7	68.0°F	6052	1.885
-22.0°F	52406	4.199	8.6°F	23345	3.501	39.2°F	11271	2.649	69.8°F	5832	1.842
-20.2°F	49848	4.165	10.4°F	22320	3.453	41.0°F	10823	2.599	71.6°F	5621	1.799
-18.4°F	47431	4.129	12.2°F	21345	3.405	42.8°F	10395	2.548	75.2°F	5225	1.716
-16.6°F	45146	4.093	14.0°F	20418	3.356	44.6°F	9986	2.498	77.0°F	5000	1.675
-14.8°F	42984	4.056	15.8°F	19537	3.307	46.4°F	9596	2.449	78.8°F	4861	1.636
-13.0°F	40938	4.018	17.6°F	18698	3.258	48.2°F	9223	2.399	80.6°F	4690	1.596
-11.2°F	39002	3.98	19.4°F	17901	3.208	50.0°F	8867	2.35	86.0°F	4218	1.483
-9.4°F	37169	3.94	21.2°F	17142	3.158	51.8°F	8526	2.301	87.8°F	4072	1.447
-7.6°F	35433	3.899	23.0°F	16419	3.107	53.6°F	8200	2.253	89.6°F	3933	1.412
-5.8°F	33788	3.858	24.8°F	15731	3.057	55.4°F	7888	2.205	91.4°F	3799	1.377
-4.0°F	32230	3.816	26.6°F	15076	3.006	57.2°F	7590	2.158	95.0°F	3547	1.309
-2.2°F	30752	3.773	28.4°F	14452	2.955	59.0°F	7305	2.111	96.8°F	3428	1.277
-0.4°F	29350	3.729	30.2°F	13857	2.904	60.8°F	7032	2.064	100.4°F	3204	1.213

Make sure before measuring voltage of any DC component that circuit ground is used. Any marked GND on the main PCB will be your circuit ground. If Chassis ground is used, measurements will be incorrect.

Sensor Res. > 100KΩ = Open

Sensor Res. < 2KΩ = Shorted

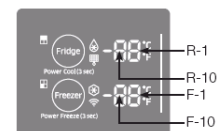
A Sensor Resistance over 100K ohm is considered OPEN
A Sensor Resistance under 2K ohm is considered Shorted
But Note that a sensor could also give wrong values if it is out of tolerance

Error Code	Item	Trouble contents	Diagnostic method
1E	Freezer Sensor	The sensor housing separating, incomplete contact, open-circuited wire, short-circuit and abnormal temperature errors are displayed when the temperature measured by the sensor is +50 °C or higher or -50 °C or lower.	The voltage between the Main PCB CN30 pins1 and 8 should be within the 4.5V~1.0V range.
2E	Fridge Sensor		The voltage between the Main PCB CN30 pins3 and 8 should be within the 4.5V~1.0V range.
4E	Freezer compartment defrosting sensor		The voltage between the Main PCB CN30 pins2 and 8 should be within the 4.5V~1.0V range.
5E	Fridge compartment defrosting sensor		The voltage between the Main PCB CN30 pins4 and 8 should be within the 4.5V~1.0V range.
6E	External air sensor		The voltage between the Main PCB CN41 pins1 and 2 should be within the 4.5V~1.0V range.
7E	Pantry Room Sensor		The voltage between the Main PCB CN30 pins8 and 10 should be within the 4.5V~1.0V range.
9E	Cool Select Room sensor		The voltage between the Main PCB CN30 pins5 and 8 should be within the 4.5V~1.0V range.
11E	Cool Select Room defrosting sensor		The voltage between the Main PCB CN30 pins6 and 8 should be within the 4.5V~1.0V range.
13E	Humidity sensor	This error is displayed while the corresponding fan motor is operating and a feedback signal line contact error, motor wire separation or motor error occurs.	The voltage between the Main PCB CN41 pins3 and 4 should be within the 4.5V~1.0V range.
14E	Ice Maker (Fridge) Sensor Error	Connector Slipped-Out or Open-Contact, Wire Cut or Short-Circuited, Abnormal Sensing Temp : higher than 149°F(+65°C) or lower than -58°F(-50°C)	The voltage between the Main PCB CN90 pins3 and 9 should be within the 4.5V~1.0V range.
15E	Ice Room Sensor Error		The voltage between the Main PCB CN30 pins8 and 9 should be within the 4.5V~1.0V range.
16E	Fridge humidity sensor	This error is displayed while the corresponding fan motor is operating and a feedback signal line contact error, motor wire separation or motor error occurs.	The voltage between the Main PCB CN30 pins7 and 8 should be within the 4.5V~1.0V range.
17E	Sparkling-Sensor	Connector Slipped-Out or Open-Contact, Wire Cut or Short-Circuited, Abnormal Sensing Temp : higher than 149°F(+65°C) or lower than -58°F(-50°C)	The Voltage of ASSY KIT PCB CN32 - "1" CN32-"3": shall be between 4.5v~1.0V
21E	Freezer Fan Error	The error is displayed while the corresponding fan motor is operating and a feedback signal line contact error, motor wire separation or motor error occurs.	The voltage of the MAIN PCB CN76 1↔4 : should be between 7V~12V.
22E	Fridge Fan Error		The voltage of the MAIN PCB CN76 1↔3 : should be between 7V~12V.
23E	C-Fan Error		The voltage of the MAIN PCB CN76 1↔2 : should be between 7V~12V.
24E	Freezer Defrosting Error	The separation of the freezer compartment defrosting heater housing part, contact error, disconnection, short circuit or temperature fuse error. One of these error codes is displayed if the defrosting operation of the freezer or Cool Select Room does not finish even after the continuous heating operation has been performed for 120 minutes.	After separating the MAIN PCB CN70 wire from the PCB, check the resistance between CN70 7 and 1. (For the resistance value, refer to the electric wiring diagram). For 0 Ohm, check if the heater is short-circuited. For ∞ Ohm, check if the wire or temperature fuse is open-circuited.
29E	Cool Select Room defrosting Error		After separating the MAIN PCB CN70 wire from the PCB, check the resistance between CN70 3 and 1. (For the resistance value, refer to the electric wiring diagram). For 0 Ohm, check if the heater is short-circuited. For ∞ Ohm, check if the wire or temperature fuse is open-circuited.
31E	Cool Select Room Fan Error	One of these error codes is displayed in case of the feedback signal line contact error, the motor wire separation or the motor error when the fan motor starts to run.	The voltage of the MAIN PCB CN76 1↔5 : should be between 7V~12V.
39E	Ice Maker (Fridge) Function Error	It occurs when there is a defect in removing ice cubes or in making it paralleled [When there is an error while doing self-diagnosis of the Initial Motor Rotation.]	After replacing the Ice Maker (Fridge), plug in the Fridge and check if the Ice Maker operates normally

Error Code	Item	Trouble contents	Diagnostic method
40E	Ice Maker Fan Error	When the related Fan Motor operates, it occurs if the contact of the Feed Back Signal Wire is defective, the Motor Wire is slipped out or the Motor is defective.	The voltage of the MAIN PCB CN76 1↔6 : should be between 7V~12V.
41E	Main↔Panel Error	A communications error between the Main and the Panel PCBs	Since an oscilloscope is required for the examination, it is recommended replacing the Main PCB and then checking the problem again.
44E	Main – F Comp. Inverter Communication Error	Display 44E in the panel : F Comp. Inverter MICOM ↔ Main MICOM communication error.	Actually, If there is not a problem, it is desirable to replace Main and Inverter PCB With the oscilloscope after a cable problem confirming.
45E	Main – R Comp. Inverter Communication Error	Display 45E in the panel : R Comp. Inverter MICOM ↔ Main MICOM communication error.	
46E	I/O Expander Communication Error	Display 46E in the panel : I/O Expander ↔ Main MICOM communication error.	It is desirable to replace Main PCB.
47E	Main↔Dispenser Panel Error	A communications error between the Main and the Dispenser Panel PCBs	Since an oscilloscope is required for the examination, it is recommended replacing the Main PCB and then checking the problem again.
61E	Fridge Ice Duct Heater Error	Connector Slipped-Out or Open-Contact, Wire Cut or Short-Circuited, Defective Thermistor	Remove the MAIN PCB CN51 connector from the MAIN PCB and read the continuity between CN51 #6 ↔ contact point R737 and R776.(Refer to the Block Diagram for the Resistance Value. When it reads 0 Ohm, check the Heater short and when it reads ∞ Ohm, check if the Wire is open or slipped out.
62E	Pantry Fan Error	The error is displayed while the corresponding fan motor is operating and a feedback signal line contact error, motor wire separation or motor error occurs	The voltage of the MAIN PCB CN76 1↔4 : should be between 7V~12V.
65E	Fridge Ice Bucket Heater Error	Connector Slipped-Out or Open-Contact, Wire Cut or Short-Circuited, Defective Thermistor	Remove the MAIN PCB CN51 connector from the MAIN PCB and read the continuity between CN51 #7 ↔ contact point R737 and R776.(Refer to the Block Diagram for the Resistance Value. When it reads 0 Ohm, check the Heater short and when it reads ∞ Ohm, check if the Wire is open or slipped out.
66E	Door Handle Heater Error	Door Handle Heater Open Error	Remove the MAIN PCB CN51 connector from the MAIN PCB and read the continuity between CN51 #2 ↔ CN51 #3(Refer to the Block Diagram for the Resistance Value. For ∞ Ohm, check if the wire is open-circuited or not connected.
71E	The F compartment abnormal high-temperature indicator blinks	When the freezer temperature is abnormally high or the freezer door is open for a certain period of time and the freezer temperature increases, the freezer display blinks.	The temperature has been abnormally increased. Check if the door has been open for a long time or if hot food has been stored in the compartment. If the reason for the error is removed, the error code disappears after a pre-determined period of time.

72E	The R compartment abnormal high-temperature indicator blinks	When the freezer temperature is abnormally high or the fridge door is open for a certain period of time and the fridge temperature increases, the fridge display blinks.	Check if the door has been open for a long time or if hot food has been stored in the compartment. If the reason for the error is removed, the error code disappears after a pre-determined period of time.
81E	F Comp start failure error	The error code is displayed when the compressor has failed to start.	Check the soldering status of the inverter PCB. (Check if any parts have short-circuited). Check if the DC 15V output is less than 13.5V. Check the Comp and Cycle.
82E	F Comp IPM Fault Error	The error code is displayed when the compressor IPM fault error has occurred.	
83E	F Comp location detection error	The error code is displayed when the compressor location detection failed.	Check the compressor wire connections. Check the soldering status of the inverter PCB. (Check if any parts have short-circuited). Check the Comp and Cycle.
84E	F Comp motor constraint error	The error code is displayed when the compressor motor is constrained.	Check if the compressor and the Cycle is normal. Check the input voltage. Check the soldering of the inverter PCB. (Check if any parts have short-circuited.)
85E	F Comp low voltage error	The error code is displayed when the AC Input Voltage is too low.	Check the input voltage. (This error occurs when the input voltage is AC 106 V or lower.)
86E	F Comp over voltage error	The error code is displayed when the AC Input Voltage is too high.	Check the input voltage. (This error occurs when the input voltage is AC 310V or higher.)
87E	R Comp start failure error	The error code is displayed when the compressor has failed to start.	Check the soldering status of the inverter PCB. (Check if any parts have short-circuited). Check if the DC 15V output is less than 13.5V. Check the Comp and Cycle.
88E	R Comp IPM fault error	The error code is displayed when the compressor IPM fault error has occurred.	
89E	R Comp location detection error	This error code is displayed when an abnormal current is detected in the compressor.	Check the compressor wire connections. Check the soldering status of the inverter PCB. (Check if any parts have short-circuited). Check the Comp and Cycle.
90E	R Comp motor constraint error	The error code is displayed when the compressor motor is constrained.	Check if the compressor and the Cycle is normal. Check the input voltage. Check the soldering of the inverter PCB. (Check if any parts have short-circuited.)
91E	R Comp low voltage error	The error code is displayed when the AC Input Voltage is too low.	Check the input voltage. (This error occurs when the input voltage is AC 106 V or lower.)
92E	R Comp over voltage error	The error code is displayed when the AC Input Voltage is too high.	Check the input voltage. (This error occurs when the input voltage is AC 310V or higher.)
93E	Sparkling Tank Overflow	Display error when open error is detected by sparkling tank overflow : separation of Sparkling Tank Overflow Sensor housing part, contact error, disconnection, short circuit.	The voltage of ASSY PCB KIT CN30- "1" CN30-"2": shall be over 4.5V
94E	Water Supply to Sparkling Tank Error	Display error when open error is detected by water supply to sparkling tank error : separation of Sparkling Tank Water Level Sensor housing part, contact error, disconnection, short circuit.	The voltage of ASSY PCB KIT CN31- "1" CN31-"2": shall be over 4.5V

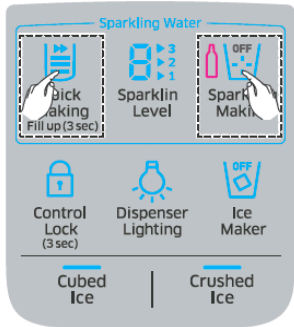
Load Mode – Unit Function testings



- ① Freezer + Control Lock Key are pressed simultaneously for 6 seconds, ALL ON/OFF will blink with 0.5 interval for 4 seconds.
- ② If take the finger off from above keys and press Fridge, load condition mode will be started.

NO	Part	DISPLAY LED	Description
1	R-FAN HIGHEST	R-1-Ⓐ,Ⓑ	In the case of the R-FAN HIGHEST operation, the corresponding LED is turned on.
2	R-FAN HIGH	R-1-Ⓐ	In the case of the R-FAN HIGH operation, the corresponding LED is turned on.
3	R-FAN LOW	R-1-Ⓑ	In the case of the R-FAN LOW operation, the corresponding LED is turned on.
4	R Comp.	R-1-Ⓓ	In the case of the R COMP operation, the corresponding LED is turned on.
5	Overload	R-1-Ⓔ	If the external air temperature is 34°C or higher, the corresponding LED is turned on.
6	Low Temperature	R-1-Ⓕ	If the external air temperature is 21°C or less, the corresponding LED is turned on.
7	Normal	R-1-Ⓖ,Ⓕ (ALL LED Off)	When the external temperature is within the range of 22°C ~ 33°C.
8	Demo Mode	R-1-Ⓗ	The LED is turned on in Demo Mode.
9	PANTRY-FAN	R-10-Ⓐ	In the case of the PANTRY-FAN operation, the corresponding LED is turned on.
10	Ice maker full	R-10-Ⓓ	When the Ice Maker's Bucket is full, applicable LED ON
11	F COMP	F-1-Ⓐ	In the case of the F COMP operation, the corresponding LED is turned on.
12	F-FAN HIGHEST	F-1-Ⓑ,Ⓒ	In the case of the F-FAN HIGHEST operation, the corresponding LED is turned on.
13	F-FAN HIGH	F-1-Ⓑ	In the case of the F-FAN HIGH operation, the corresponding LED is turned on.
14	F-FAN LOW	F-1-Ⓒ	In the case of the F-FAN LOW operation, the corresponding LED is turned on.
15	F compartment defrost heater	F-1-Ⓓ	The LED is turned on when the freezer defrosting heater operates.
16	C-FAN HIGHEST	F-1-Ⓔ,Ⓕ	In the case of the C-FAN HIGHEST operation, the corresponding LED is turned on.
17	C-FAN HIGH	F-1-Ⓔ	In the case of the C-FAN HIGH operation, the corresponding LED is turned on.
18	C-FAN LOW	F-1-Ⓕ	In the case of the C-FAN LOW operation, the corresponding LED is turned on.
19	Dispenser Heater	F-1-Ⓗ	In the case of the Dispenser Heater operation, the corresponding LED is turned on.
20	F Valve	F-10-Ⓑ	In the case of the F valve open, the LED is turned on.
21	CV Valve	F-10-Ⓒ	If the CV valve opens, the LED is turned on.
22	Ice Room-FAN HIGHEST	F-10-Ⓓ	When Ice Room-FAN HIGHEST operates, applicable LED ON.
23	Ice Room-FAN HIGH	F-10-Ⓓ	When Ice Room-FAN HIGH operates, applicable LED ON.
24	Ice Room-FAN LOW	F-10-Ⓔ	When Ice Room-FAN LOW operates, applicable LED ON.
25	French Heater	F-10-Ⓗ	In the case of the French Heater operation, the corresponding LED is turned on.
26	CV-FAN HIGHEST	"Freezer" and "Soft Freeze" for the CV compartment	In the case of the CV-FAN HIGHEST operation, the corresponding LED is turned on.
27	CV-FAN HIGH	Freezer" for the CV compartment	In the case of the CV-FAN HIGH operation, the corresponding LED is turned on.
28	CV-FAN LOW	"Soft Freeze" for the CV compartment	In the case of the CV-FAN LOW operation, the corresponding LED is turned on.
29	CV compartment defrosting heater	"Fridge" for the CV compartment	When the CV compartment defrosting heater operates, the LED is turned on.

Load Mode – Display Function



- 1) Quick Making + Sparkling Making key are pressed simultaneously for 8 seconds
- 2) Sparkling Load condition display mode shows the load that micom signal is outputting. However, It means that micom signal is outputting, it does not mean whether load is operating or not. That is to say that though load operation is displayed, load could not be operated by actual load error or PCB relay error etc. (This function would be applied at A/S.)
- 3) Sparkling Load condition display function will maintain for 30 seconds and then normal condition will be returned automatically.

DISPLAY LED	Part	Description
	Vent Valve	When the Vent Valve operates LED Blink
	Sparkling Water To Dispenser Valve	When the Sparkling Water To Dispenser Valve operates LED Blink
	Sparkling Water To Tank Valve	When the Sparkling Water To Tank Valve operates LED Blink
	Sparkling Water To Dispenser Valve	When the Sparkling Water To To Dispenser Valve operates LED Blink
	DC Valve	When the DC valve operates LED Blink
	CO2 Valve	When CO2 Valve operates LED Blink
▶ 1	Sparkling Water Tank Low Detection	When water is detected by the Water Low Sensor in the Sparkling Water Tank (Water is low), the LED blinks
▶ 2	Sparkling Water Tank Fill-Up Detection	When water is detected by the Water Fill-Up Sensor in the Sparkling Water Tank (Water is full), the LED blinks.
▶ 1, ▶ 2 (ALL LED Off)	Sparkling Water Tank Water Level Detection : EMPTY	It is the case in which water is not detected by either the Water Fill-Up Sensor or the Water Low Sensor in the Sparkling Water Tank. It is the condition that it enters the Sparkling Water Production while the Sparkling Water Production function is turned on.

1) Display function when Panel → MAIN MICOM communication has error

1-1) If there is no answer for 10 seconds after the panel micom received the requirement of communication, "Pc - Er" display on the panel PCB will be ON/OFF alternately until the communication error is canceled. (0.5 sec ALL ON, 0.5 sec ALL OFF alternately)



2) Display function when Panel → MAIN MICOM OPTION has error

2-1) "OP - Er" code is repeatedly ON/OFF until Option error settles down.

3) Display function when Dispenser Panel → MAIN MICOM communication has error

3-1) If there is no answer for 10 seconds after the dispenser panel micom received the requirement of communication, dispenser display on the panel PCB will be ON/OFF alternately until the communication error is canceled. (0.5 sec ALL ON, 0.5 sec ALL OFF alternately)

4) Display function when Dispenser Panel ↔ MAIN MICOM OPTION has error

4-1) Dispenser display on the panel PCB will be ON/OFF alternately.
(0.5 sec ALL ON, 1.5 sec ALL OFF alternately)

- CN77
 - 1 F-LAMP
 - 2 GND
 - 3 CV-LAMP
 - 4 GND
 - 5 DC 12V
 - 6 F-STEP VALVE A
 - 7 F-STEP VALVE A-BAR
 - 8 F-STEP VALVE B
 - 9 F-STEP VALVE B-BAR
 - 10 DC 12V
 - 11 R-STEP VALVE A
 - 12 R-STEP VALVE A-BAR
 - 13 R-STEP VALVE B

- CN70
 - 1 F-DEF-HEATER
 - 3 CV-DEF-HEATER
 - 5 FRENCH HEATER

- CN71
 - 1 R-DEF-HEATER
 - 3 DISPENSER HEATER

- CN72
 - 1 WATER SOL VALVE
 - 3 ICE SOL VALVE

- CN73
 - 1 NC
 - 3 COM1
 - 5 ICE ROUTE MOTOR
 - 7 AUGER MOTOR

- CN74
 - 1 R-LAMP
 - 2 NC
 - 3 NC

- CN11
 - 1 DC 12V
 - 2 DC 12V
 - 3 DC 12V
 - 4 GND
 - 5 DC 5V
 - 6 INV #1 DC 5V
 - 7 INV #1 GND
 - 8 INV #1 TX
 - 9 INV #1 RX
 - 10 INV #2 DC 5V
 - 11 INV #2 GND
 - 12 INV #2 TX

- CN50
 - 1 EXT-SENSOR
 - 2 GND
 - 3 EXT HUMID-SENSOR
 - 4 GND
 - 5 DC 5V
 - 6 DC 12V
 - 7 WATER LEVER
 - 8 ICE LEVER
 - 9 ICE ROUTE 1
 - 10 ICE ROUTE 2
 - 11 SPARKLING SW

- CN50
 - 1 TX
 - 2 RX
 - 3 DC 12V
 - 4 DC 5V
 - 5 GND
 - 6 TX
 - 7 RX
 - 8 DC 12V
 - 9 DC 5V
 - 10 GND

- CN40
 - 1 R-DOOR REED SW
 - 2 F-DOOR REED SW
 - 3 CV REED SW
 - 4 CUBE SW
 - 5 GND

- CN90
 - 1 ICE MAEKIR IN_B
 - 2 ICE MAEKIR IN_A
 - 3 ICE MAEKIR SENSOR
 - 4 ICE MAEKIR HALL IC
 - 5 ICE MAKER TEST SW
 - 6 ICE MAKER VS2B
 - 7 ICE MAKER IR SENSOR
 - 8 DC 5V
 - 9 GND
 - 10 DC 12V
 - 11 FLOW SENSOR VCC
 - 12 FLOW SENSOR GND
 - 13 FLOW SENSOR OUT

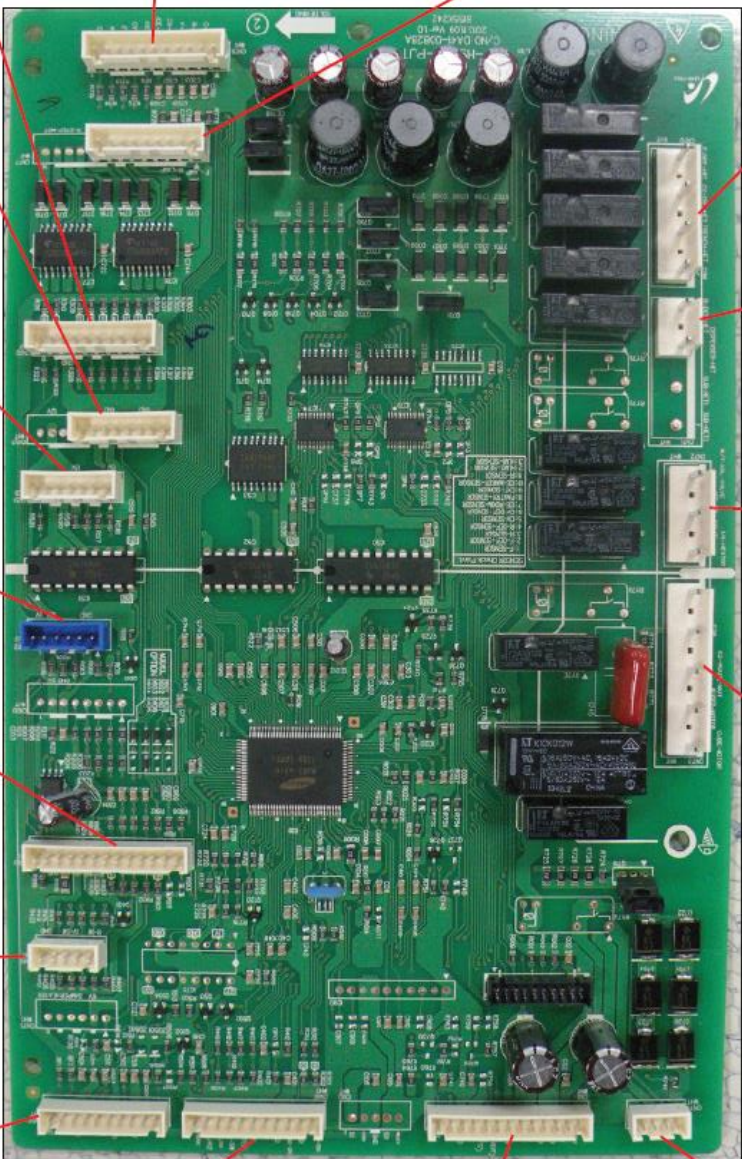
- CN12
 - 1 RX
 - 2 GND
 - 3 TX
 - 4 nRST
 - 5 DC 12V
 - 6 DC 5V

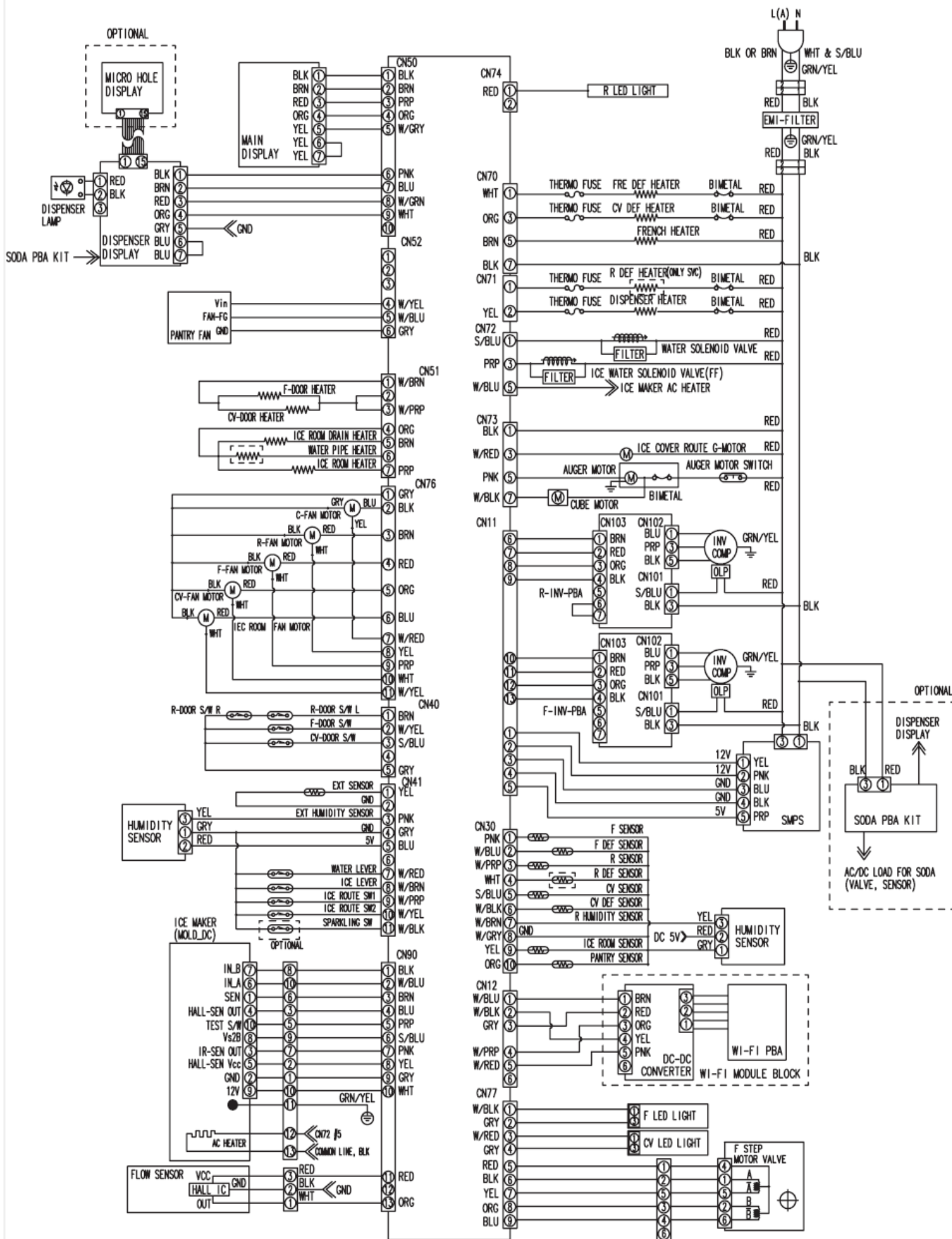
- CN51
 - 1 DV 12V
 - 2 HEATER COBD FF/CV
 - 3 HEATER COBD FF/CV
 - 4 DC 12V
 - 5 HEATER COBD WATER PIPE
 - 6 HEATER COBD DRAIN ICE ROOM
 - 7 HEATER COBD ICE ROOM

- CN52
 - 1 SPL LED
 - 2 SPIPOWER
 - 3 GND
 - 4 PANTRY FAN Win
 - 5 PANTRY FAN FG
 - 6 GND
 - 7 N.C
 - 8 PANTRY LED1
 - 9 PANTRY LED2
 - 10 PANTRY LED3
 - 11 DC 12V
 - 12 PANTRY SW

- CN30
 - 1 F-SENSOR
 - 2 F-DEF-SENSOR
 - 3 R-SENSOR
 - 4 (R-DEF-SENSOR)
 - 5 CV-SENSOR
 - 6 CV-DEF-SENSOR
 - 7 R-HUMID SENSOR
 - 8 GND
 - 9 ICE ROOM-SENSOR
 - 10 PANTRY-SENSOR

- CN76
 - 1 GND
 - 2 C-FAN
 - 3 R-FAN
 - 4 F-FAN
 - 5 CV-FAN
 - 6 ICE-FAN
 - 7 ICE-FG
 - 8 CV-FG
 - 9 F-FG
 - 10 R-FG





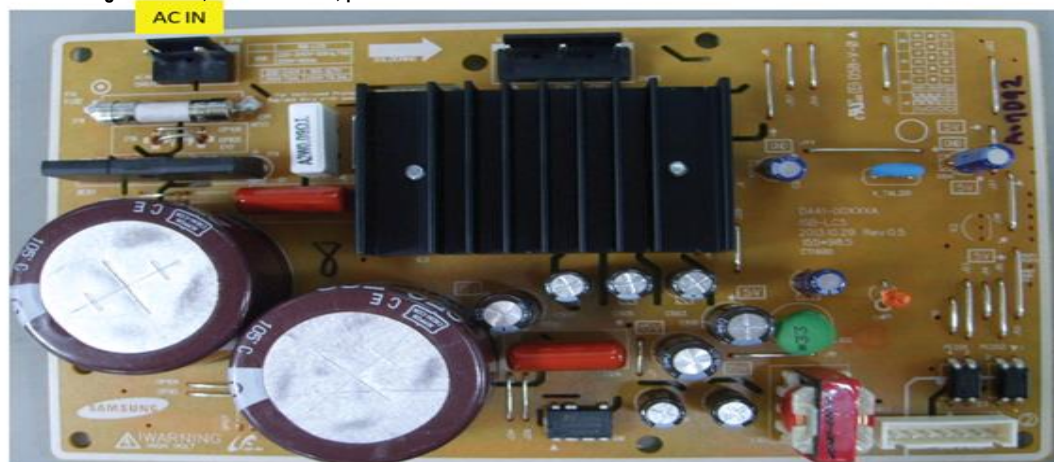
If the Failure Condition is detected while the compressor is operating, stop the Compressor operating immediately and wait for 5 minutes. During these 5 minutes, the RPM command signal is not available. Even if the RPM command that orders the compressor to run is sent, the compressor does not work and keep standing by.

The LED is tuned on for 1 second and then off for 2 seconds.

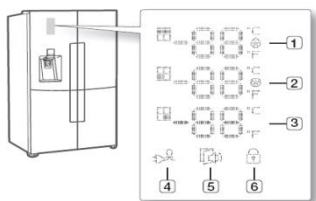
LED Blinking Frequency	Protecting Functions	Remarks
	Normal Operation	N/A
	Starting Failure	1. Check the COMP terminals short(U,V,W) 2. Check IPM Pins short of Inverter PBA 3. Check IPM operating Voltage(under DC 13.5V) 4. Other cases, check the COMP, cycle, etc.
	SPM Fault	
	Abnormal Current Detection	1. Check COMP wire connections(U,V,W) 2. Check PCB Bottom side soldering state 3. Other cases, check the COMP, cycle, etc.
	Motor Locked / Over RPM	1. Check PCB Bottom side soldering state. 2. Check Input voltage oscillation 3. Other cases, check the COMP, cycle, etc.
	Under Voltage	1. Check Input voltage under AC 53V(Input Power AC110~127V) or AC 106V(Input Power AC 220 ~ 240V) 2. Check PCB Bottom side soldering state.
	Over Voltage	1. Check input voltage over AC 155V(Input Power AC110~127V) or AC 310V(Input Power AC 220 ~ 240V) 2. Check PCB Bottom side soldering state.

The LED blinking frequency depending on the protection functions

If the blinking continues, after 5 minutes, please refer to the remarks in the table above.



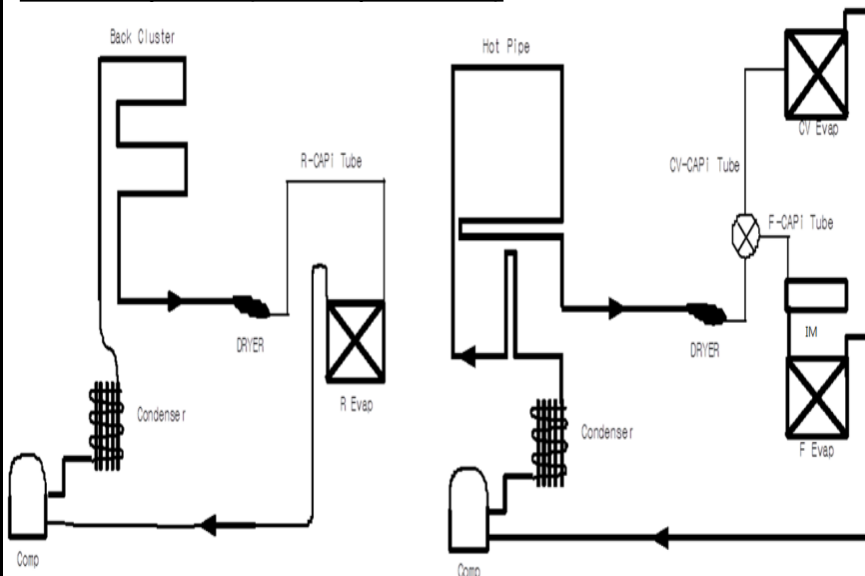
Door Pin hole Display



Display could be removed out from the top of the door



Sealed System (2 compressors)



Fridge room

Freezer room

Sparkling level, the large number to the left shows the current setting, the smaller number on the left shows the next fill setting. During the next charging process the sparkling level will charge to that level. Change it to level 1, 2 or 3. Level 1 = 10min charge
Level 2 = 20min charge
Level 3 = 30min charge

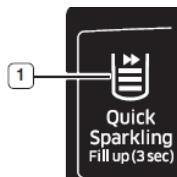
1. Open the Cylinder Cover.

- The refrigerator comes from the factory with the Sparkling Water function set to Off. If the Sparkling Water function is Off, the OFF icon is displayed on the Display Panel.

Refer to Page 41 : Turning Off the Sparkling Water Function.



2. Attach the SodaStream 60L Carbonator to the Regulator, and then rotate it clockwise.



When you touch the Quick Sparkling button, the (▶▶) icon lights and the refrigerator makes sparkling water rapidly at the level indicated by the Sparkling Level icon. If there is no sparkling water in the Sparkling Water tank, the refrigerator will begin making sparkling water immediately. If there is sparkling water in the tank, the refrigerator applies the Quick Sparkling function the next time it makes sparkling water.

When you replace the SodaStream carbonator, press the 'Quick Sparkling/Fill up (3 sec)' button for 3 seconds to activate the Fill up function.

The refrigerator will fill the sparkling water tank with water and inject CO₂ gas into the water to make sparkling water. The sparkling level of the water may differ from the set level, depending on the amount and CO₂ concentration of the sparkling water remaining in the tank. If the tank is empty or the concentration is very low, the refrigerator will make sparkling water at the level indicated by the Sparkling Level icon.

The Quick Sparkling icon (▶▶) also indicates the amount of sparkling water in the sparkling water tank. When the tank is full, three bars light. The number of bars lit decreases as the amount of sparkling water decreases.

Smart Grid

Depending on the energy provider

This option allows the energy provider to shut on or off some features of the machine during busy times of the day

When Smart Grid override is on the unit will not be

able to communicate with the energy provider

Or - on = Control Off

Or - of = Control On

Control OFF



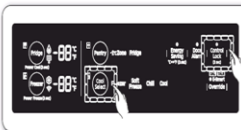
Control On



MAC ADDRESS DISPLAY MODE

This function displays the MAC address of the Wi-Fi module on the refrigerator display. The refrigerator displays the MAC address of the Wi-Fi module for 1 minute.

1. Press and hold both buttons of [CoolSelect] and [ControlLock(3 sec)] at the same time for 3seconds.



2. A Buzzer sound is heard and Four each out of twelve Mac address of the Wi-Fi module are displayed in turns on the fridge and freezer temperature displays for 1 minute.

E.g. If the Wi-Fi module's MAC address is "11-22-33-44-55-66", the MAC address will be displayed as follows: "11 22" → "33 44" → "55 66" → ... → "11 22" for 1 minute.

3. After 1 minute, the display returns to the normal state with a Buzzer sound.

Things to know about Filters

- The Filter should be changed every 6 months.
- Some areas have large amounts of lime in their water, which causes the water filter to clog more quickly.
- If water is not dispensing or dispensing slowly, you need to replace the water filter because the water filter is clogged.
- ONLY USE SAMSUNG filters, non Samsung or Generic Brands may leak. Such repairs should not be covered



E – Smart App

This app allows the customer to monitor energy consumption



Connect to the app store (e.g. Google Play, etc.), search for the app using the "Samsung E-Smart Ref." keyword, and download and install the app.



Hold Fridge and the Energy Saver button



Tip for Customer : If the customer is having trouble getting the filter back into the fridge, tell them to turn off the water supply valve to fridge and dispense water from the water dispenser to lower the pressure.