8. Level 3 Repair

8-1. Block Diagram
8. Level 3 Repair

8-2. PCB Diagrams
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8. Level 3 Repair

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8. Level 3 Repair

8-3. Flow Chart of Troubleshooting

Equipments

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8. Level 3 Repair

8-3-1. Power On

Mobile phone does not power on.

Check the Battery Voltage. Is it more than 3.8V?

No

Charging the battery by TA. If its voltage level is extremely low (under 3.0V), change the battery.

Yes

Power-on the phone and check the power-on sound or motor vibration. Sound or Vibration is ok?

Yes

Change the FRONT-LCD ASSY

No

Check the voltage level at R7027 while pressing power key. Is the voltage high?

Abnormal

Replace the Power key FPCB

Yes

Check the signal of AP_PS_HOLD = 1.8V

No

Check the output voltage of U7000:
- C7014 > 0.8V, L7002 > 0.8V, L7008 > 0.8V,
- L7010 > 0.8V, L7011 > 0.8V, L7012 > 0.8V,
- C7054 > 1.1V, C7055 > 1.3V, C7058 > 1.9V,
- C7062 > 0.8V, C7063 > 1.1V

If the output voltage is not normal, change the U7000.

Yes

Check the Clock OSC7000. Is the frequency 32.768kHz?

Yes

Check the initial operation

No

Check the output voltage of U7000:
- C7014 > 0.8V, L7002 > 0.8V, L7008 > 0.8V,
- L7010 > 0.8V, L7011 > 0.8V, L7012 > 0.8V,
- C7054 > 1.1V, C7055 > 1.3V, C7058 > 1.9V,
- C7062 > 0.8V, C7063 > 1.1V

If the output voltage is not normal, change the U7000.

Check the output voltage of U7000:
- C7014 > 0.8V, L7002 > 0.8V, L7008 > 0.8V,
- L7010 > 0.8V, L7011 > 0.8V, L7012 > 0.8V,
- C7054 > 1.1V, C7055 > 1.3V, C7058 > 1.9V,
- C7062 > 0.8V, C7063 > 1.1V

If the output voltage is not normal, change the U7000.

Test condition (Oscilloscope setting):
- 20.0μs/div (time division)
8. Level 3 Repair

8-3-2. Initial

- **Initial Failure**
  - Yes
  - Re-download latest SW on the mobile phone.
  - Abnormal
    - Re Check “8-3-1 Power on” Trouble shooting process
    - Normal
      - Change UCP601
      - Abnormal
        - Change PBA
        - END
    - Abnormal
      - Check the OSC7000 (Crack, open etc.)
      - Check the U7000 (Crack etc)
8. Level 3 Repair

8-3-3. No Service

No service

Yes

Home screen → Phone → Keypad → *#1234# → check Phone version → CP : G930FXXX or unknown

CP : G930FXXX

Check the connection of RF coaxial cable

No

Yes

Check the voltage level

- C3001 = 0.8V
- C3002 = 1.8V
- C3003 = 1.2V
- C3000 = 0.8V

No

Yes

Check TCX3000 Frequency = 2.6MHz

No

Replace the U7000

Yes

Replace the TCX3000

Yes

Replace UCP601

END
8. Level 3 Repair

8-3-4. SIM & T-Flash Part

Insert SIM card

Yes

Is SIM socket ok?

Yes

Check the SIM Voltage.
(C5032, C5031) >= 1.8 or 2.8?

Yes

Change to the new SIM card.
If it doesn’t still work SIM card after changing the SIM card, Check the U7000,U4012 (Crack etc)

No

Replace SIM socket.

No

Check the SIM Voltage.
(C5032, C5031) >= 1.8 or 2.8?

Yes

Check the SIM DET.
(C5033) < 1.8 V

Yes

END

No

Check the SIM DET.
(C5033) < 1.8 V

No

Check the UCP601 (Crack etc)

Insert T-Flash card

Yes

Is T-Flash socket ok?

Yes

Check the T-Flash Voltage.
(C5030) >= 2.8?

Yes

Change to the new T-Flash card.
If it doesn’t still work T-Flash card after changing the T-Flash card, Check the U7001 (Crack etc)

No

Check the UCP601 (Crack etc)

No

Replace T-Flash socket.

END

No
8. Level 3 Repair

8-3-5. Charging Part

- **TA / USB Insert**
  - Yes
  - **Charging Sequence Start**
    - **Yes**
    - **VBUS_IF_5P0(L7022) = 5V or 9V**
      - No → **Replace SUB PBA**
      - Yes → **Yes**
    - **No** → **Replace U7009**
  - **Check the CHG_IN_5P0(C7149)=5V or 9V**
    - **Yes** → **Battery is Charging?**
    - **No** → **Replace U7011**
  - **No** → **END**

Battery is Charging? (No): Replace U7011
8. Level 3 Repair

8-3-6. OTG

OTG does not work

Yes

Check CHG_IN_5P0(C7149)=5V

No

Replace U7011

Yes

Check VBUS_5P0(L7022) =5V

No

Replace U7009

Yes

END

OTG is working?

No

Replace SUB PBA

Yes
8. Level 3 Repair

8-3-7-1. Sensor Hub

Sensor Hub does not work

Yes

Check the voltage C4004,C4017,C4019 = 1.8V

No

Replace U7000

Yes

Replace U4004 (Sensor Hub)

Yes

END
8. Level 3 Repair

8-3-7-2. Magnetic Sensor

Magnetic Sensor does not work

- Yes
  - Check the voltage C4039=2.8V & C4047=1.8V
    - Yes
      - Check R4002, R4003 (I2C is OK?)
        - Yes
          - Replace U4011 (Magnetic Sensor)
              - END
        - No
          - Replace U4004
          - Replace U7000
    - No
      - Replace U7000

No
8. Level 3 Repair

8-3-7-3. 6Axis Sensor

8Axis Sensor does not work

Yes

Check the voltage C4036 = 1.8V

No

Replace U7000

Yes

Check 6AXIS_MOSI, 6AXIS_CLK, 6AXIS_NSS, 6AXIS_MISO Pin (SPI is OK?)

No

Replace U4004

Yes

Replace U4006 (6Axis Sensor)

END
8. Level 3 Repair

8-3-7-4. Barometer sensor

Sensor does not work

Yes

Check C4045 = 1.8V? (SENSOR’s Voltage)

No

Replace U7000

Yes

Check R4002, R4003 (I2C is OK?)

No

Replace U4004

Yes

Replace Sensor IC U4007

Yes

END
8. Level 3 Repair

8-3-7-5. Proximity+RGB sensor

Sensor does not work

Yes

Check C4027 = 1.8V? (SENSOR's IO Voltage)

Yes

Check R4002, R4003 (I2C is OK?)

Yes

Check HDC4000 (Connector is OK?)

Yes

Replace Sensor FPCB

Yes

END
8. Level 3 Repair

8-3-7-6. HRM Sensor

Sensor does not work

Yes

Check C4049, C4050 (LED's Voltage) C4041, C4042 (SENSOR's Voltage)

No

Replace U9010

Yes

Check R5049, R5050 (I2C is OK?)

No

Replace U4012

Yes

Replace Sensor IC U4010

Yes

END
8. Level 3 Repair

8-3-7-7. Hall Sensor

PBA Hall Sensor(Upper) does not work

Check C6058 = 1.8V? (SENSOR’s Voltage)

Yes

Replace Sensor IC U6000

Yes

END

No

Replace U7000

SUB PBA Hall Sensor does not work

Check C6058 = 1.8V? (SENSOR’s Voltage)

Yes

Replace SUB PBA

Yes

END

No

Replace U7000
8. Level 3 Repair

8-3-8-1. Microphone Part - Main MIC

Check main microphone function in voice call Handset mode or voice recorder mode

Yes

Check sub board connection (HEA8000)

No

Set the HEA8000 connection

Yes

Check the voltage at 39 PIN of HDC8000 = 1.8V ?

No

replace U8010

Yes

END
8. Level 3 Repair

8-3-8-2. Microphone Part - Sub(2nd) MIC

Check Sub(2nd) microphone function
   in voice call loudSPK mode
   or in camcording mode

Yes

Check the voltage at
C8038 = 1.8V

Yes

No

replace U8010

END
8. Level 3 Repair

8-3-9. Speaker Part

Check speaker function. Play MP3 with maximum volume level.

- Yes
  - Check C-clips ANT8000, ANT8001
    - Yes
      - Replace rear ass'y with speaker module
        - Yes
          - END
    - No
      - Resolder or Replace ANT8000, ANT8001

- No
  - Resolder or Replace ANT8000, ANT8001
8. Level 3 Repair

8-3-10. Receiver Part

Check receiver function in voice call receiver mode.
- Yes
  - Check RCV module where RCVs placed for any damage
    - Yes
      - Replace the RCV module
    - No
      - Replace U8010
- No
  - Replace U8010

END
8. Level 3 Repair

8-3-11. BT/WIFI

BT/WiFi is not working

Yes

Check BT or WiFi function ON

No

Enable BT or WiFi Function

Yes

Check the Voltage on C4020 = 1.8V

No

Check the U7000 (crack, open, damaged, etc.)

Yes

Check the Voltage on C4022 = 1.3V

No

Resolder or change the C4022

Yes

Check the Status of
ANT4000, ANT4001, ANT4002, ANT2003

No

Resolder or change the ANT4000, ANT4001, ANT4002, ANT2003

Yes

Check the Status of

No


Yes

Resolder or Replace U4005

No

Yes

END
8. Level 3 Repair

8-3-12. GPS

GPS is not working

Yes

Check GPS function ON

Yes

Check the Antenna connect ANT2002, ANT2004

Yes

Check the Antenna connect ANT2002, ANT2004

No

1. Resolder or Replace ANT2002, ANT2004
2. Replace REAR

No

Check the Antenna connect ANT2002, ANT2004

Check(crack,open,etc)

L2038,L2008,L4001,C4002,C4005,L4002, L4005

Yes

Resolder or change the wrong element (open, crack, deviation, etc)

No

Check 19.2MHz Clock at output of OSC4000

Yes

Check the voltage on L4000=2.8V

Yes

Check if GPS_EN at L4001 is 1.8V

Yes

Check F4000 (short, open, crack, etc.)

Yes

Change U4004

Yes

END
8. Level 3 Repair

8-3-13. NFC

NFC is not working

Yes

Check NFC function ON

Yes

Check NFC function ON

No

Enable NFC Function

---

Check the Voltage on C4044 = 1.8V

Yes

Check the Voltage on C4044 = 1.8V

No

Check U7000 (crack, open, damaged, etc.)

---

Check the antenna contact ANT4004, ANT4005 (crack, open, etc.)

Yes

Resolder or Replace ANT4004, ANT4005

1. Resolder or Replace ANT4004, ANT4005
2. Replace REAR

No

Check the Status of L4021, C4056, C4055, L4022, C4061, C4060, C4058, C4059, C4054, R4013, C4058, C4064

Yes

Resolder or Replace L4021, C4056, C4055, L4022, C4061, C4060, C4058, C4059, C4054, R4013, C4058, C4064

No

Resolder or Replace U4012

---

Check UCP601

Yes

Check 26MHz Clock at TP4040

No

Check UCP601

---

Check the ant enna cont act ANT4004, ANT4005 (crack, open, etc)

Yes

1. Resolder or Replace ANT4004, ANT4005
2. Replace REAR

No

1. Resolder or Replace ANT4004, ANT4005
2. Replace REAR

---

END
8. Level 3 Repair

8-3-14. Display

LCD is still off after PWR ON

Yes

Check the connection of HDC9001

No

Reconnect the HDC9001

Check VDD_DDI_3P0=3.0V(C9036), VDD_DDR_1P6=1.6V(C9042)

Yes

No

Resolder or Replace the PMIC(U9010)

Check DISP_TE(HDC9002 No. 40pin)

Yes

No

Resolder or Replace the AP(UCP601)

Check ELVDD_4.6V=4.6V(C9037), ELVSS_-4P4=-1.4~-5.4V(C9035), ELAVDD_7P0=5.8~7.9V(C9040)

Yes

No

Resolder or Replace the DCDC(U9005)

Replace the LCD module

Yes

END
8. Level 3 Repair

8-3-15. 12M CAM

"Camera" function does not work

Check the Camera connector on Main PBA

Reconnect the HDC9002

Check the voltage
C9007 = 2.8V,
C7023 = 1.05V
C7027 = 1.8V
C7029 = 2.8V
C7030 = 2.8V
C7031 = 2.8V
C7033 = 1.8V

Resolder or Replace U7001

Check MAIN_CAM_MCLK is 26MHz(C9010)

Replace the PBA.

Replace the camera module

END
8. Level 3 Repair

8-3-16. 5M CAM

"Camera" function does not work

Yes

Check the Camera connector on Main PBA

No

Reconnect the HDC9000

Yes

Check the voltage
C9013 = 1.2V,
C9012 = 1.8V
C9014 = 2.9V

No

Resolder or Replace U7001

Yes

Check VTCAM_MCLK is 24MHz(L9002)

No

Replace the PBA

Yes

Replace the camera module

No

END
8. Level 3 Repair

8-3-17. TSP

Touch Screen does not work

Check TSP Connector on Main PBA

- Yes
- No

- Yes
- No

Check the C9038 = 1.85V, C9039 = 3.3V

- Yes
- No

Replace LCD Module

- Yes
- No

Reconnect the HDC9001

Resolder or Replace 1.85V / 3.3V => U7000

END
8. Level 3 Repair

8-3-18. Motor

Motor does not work

Yes

Check the Clip on Main PBA, ANT7004 and ANT7005

No

Resolder: ANT7004, ANT7005

Yes

Check L7024, L7025 is OK.

No

Resolder L7024, L7025

Yes

Resolder : U7011

Yes

Replace Motor or PBA

Yes

END
8. Level 3 Repair

8-3-19. GSM900 / WCDMA B8 / LTE B8 Rx

NORMAL CONDITION

- catch the channel?
  - NO
  - YES

- Check RFS1000 ≤ -65dBm?
  - NO
  - YES

- Check C1019 ≥ -65dBm?
  - NO
  - YES

- Check component soldering status OK at F1003
  - NO
  - YES

- Check L1019 ≥ -65dBm
  - NO
  - YES

- Check component soldering status OK at PAM1000
  - NO
  - YES

- Check L1020 ≥ -65dBm
  - NO
  - YES

- Check component soldering status OK at U2002
  - NO
  - YES

- Check component soldering status OK at F2001
  - NO
  - YES

- Check the voltage at C3005 = 1.2V C3007 = 1.8V C3013 = 1.2V
  - NO
  - YES

- Receiver is O.K?
  - NO
  - YES

END

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8. Level 3 Repair

8-3-20. LTE B12 / 17 Rx

NORMAL CONDITION
catch the channel?

NO

Check RFS1000 ≤ -65dBm

YES

CHECK soldered RFS1000

NO

Check C1019 ≥ -65dBm

NO

Resolder or change C1019

YES

Check component soldering status OK at F1003

NO

Resolder or change F1003

YES

Check L1019 ≥ -65dBm

NO

Resolder or change L1019

YES

Check component soldering status OK at PAM1000

NO

Resolder or change PAM1000

YES

Check L1022 ≥ -65dBm

NO

Resolder or change L1022

YES

Check the voltage at C3005 = 1.2V

NO

Resolder or change U3003

C3007 = 1.8V

C3013 = 1.2V

YES

Check component soldering status OK at PAM1000

NO

Resolder or change PAM1000

YES

Receiver is O.K?

NO

Resolder or change UCP601

END
8. Level 3 Repair

8-3-21. LTE B28 Rx

NORMAL CONDITION

catch the channel?

NO

Check RFS1000 ≤ -65dBm

YES

Check C1019 ≥ -65dBm

NO

Resolder or change C1019

YES

Check component soldering status OK at F1003

NO

Resolder or change F1003

YES

Check L1019 ≥ -65dBm

NO

Resolder or change L1019

YES

Check component soldering status OK at PAM1000

NO

Resolder or change PAM1000

YES

Check L1026 ≥ -65dBm

NO

Resolder or change L1026

YES

Check the voltage at C3006 = 1.2V

NO

Resolder or change U3003

YES

C3007 = 1.8V

C3013 = 1.2V

Check the voltage at

NO

Resolder or change UCP601

YES

Receiver is O.K?

NO

END
8. Level 3 Repair

8-3-22. GSM850 / WCDMA B5 / LTE B5 / B18 / B19 / B26 Rx

NORMAL CONDITION
catch the channel?

NO

Check RFS1000 ≤ -65dBm

NO

Check C1019 ≥ -65dBm

NO

Check component soldering status OK at F1003

YES

Check L1019 ≥ -65dBm

YES

Check component soldering status OK at F1003

NO

Resolder or change F1003

YES

Resolder or change U3003

Check component soldering status OK at PAM1000

NO

Check L1027 ≥ -65dBm

YES

Check component soldering status OK at U2001

NO

Resolder or change U2001

YES

Check component soldering status OK at F2000

NO

Resolder or change U3003

YES

Resolder or change UCP601

NO

Check the voltage at
C3005 = 1.2V
C3007 = 1.8V
C3013 = 1.2V

YES

Receiver is O.K.

NO

END
8. Level 3 Repair

8-3-23. LTE B13 Rx

NORMAL CONDITION
catch the channel?

NO

YES

Check RFS1000 ≤ -65dBm

NO

YES

Check C1019 ≥ -65dBm

NO

YES

Check component soldering status OK at F1003

NO

YES

Check component soldering status OK at F1001

NO

YES

Check component soldering status OK at FAM1000

NO

YES

Check L1019 ≥ -65dBm

NO

YES

Check L1001 ≥ -65dBm

NO

YES

Check L1006 ≥ -65dBm

NO

YES

Check the voltage at C3005 = 1.2V
C3007 = 1.8V
C3013 = 1.2V

NO

YES

Receiver is O.K?

END

CHECK soldered RFS1000

Resolder or change C1019

Resolder or change F1003

Resolder or change L1019

Resolder or change PAM1000

Resolder or change L1001

Resolder or change F1001

Resolder or change L1006

Resolder or change U3003

Resolder or change UCP601
8. Level 3 Repair

8-3-24. LTE B20 Rx

NORMAL CONDITION
catch the channel?

NO

Check RFS1000 ≤ -65dBm

NO

Check C1019 ≥ -65dBm?

NO

Check component soldering status OK at F1003

NO

Resolder or change F1003

YES

Resolder or change C1019

YES

Resolder or change L1019

NO

Resolder or change L1012

NO

Resolder or change F1004

YES

Resolder or change PAM1000

YES

Check component soldering status OK at F1000

NO

Resolder or change L1082

YES

Check L1019 ≥ -65dBm

YES

Check C1019 ≥ -65dBm

YES

Check the voltage at
C3007 = 1.2V
C3007 = 1.6V
C3003 = 1.2V

YES

Resolder or change U3003

NO

NO

NO

NO

NO

NO

NO

NO

NO

NO

NO

NO

NO

Receiver is O.K?

YES

END
8. Level 3 Repair

8-3-25. WCDMA B1 / B4 / LTE B1 / B4 Rx

NORMAL CONDITION

catch the channel?

NO

Check RFS1000 ≤ -65dBm

NO

Check C1019 ≥ -65dBm

NO

Check component soldering status OK at F1003

NO

Check L1063 ≥ -65dBm

YES

Check component soldering status OK at PAM1001

NO

Check C1043 ≥ -65dBm

YES

Check component soldering status OK at U1009

NO

Check L1071 ≥ -65dBm

YES

Check the voltage at C3005 = 1.2V

C3007 = 1.8V

C3013 = 1.2V

YES

Receiver is O.K?

NO

END

YES

CHECK soldered RFS1000

NO

Resolder or change C1019

NO

Resolder or change F1003

YES

Resolder or change L1063

NO

Resolder or change PAM1001

NO

Resolder or change C1043

YES

Resolder or change U1009

NO

Resolder or change L1071

NO

Resolder or change U3003

YES

Resolder or change UCP601
8. Level 3 Repair

8-3-26. DCS1800 / LTE B3 Rx

NORMAL CONDITION

- Catch the channel?
  - NO
  - CHECK soldered RFS1000
  - NO
  - Check RFS1000 ≤ -65dBm
    - NO
    - Resolder or change C1019
    - NO
    - Check C1019 ≥ -65dBm ...
    - YES
    - Check component soldering status OK at F1003
      - NO
      - Resolder or change F1003
      - YES
      - resolder or change C1044
    - NO
    - Check component soldering status OK at L1063
      - NO
      - resolder or change PAM1001
      - YES
      - Check L1063 ≥ -65dBm
        - NO
        - Resolder or change C1044
        - YES
        - Check component soldering status OK at U1015
          - NO
          - Resolder or change U1015
          - YES
          - Check L1073 ≥ -65dBm
            - NO
            - Resolder or change U1015
            - YES
            - Check the voltage at C3009 = 1.2V
              - NO
              - Resolder or change U3003
              - YES
              - Resolder or change UCP601
              - NO
              - Receiver is O.K?
8. Level 3 Repair

8-3-27. PCS1900 / WCDMA B2 / LTE B2 / B25 Rx

NORMAL CONDITION
check the channel?

NO

Check RFS1000 ≤ -65dBm

YES

CHECK soldered RFS1000

NO

Check C1019 ≥ -65dBm ?

YES

Resolder or change C1019

NO

Check component soldering status OK at F1003

NO

Resolder or change F1003

YES

Check L1063 ≥ -65dBm

YES

Check component soldering status OK at PAM1001

NO

Resolder or change PAM1001

YES

Check L1079 ≥ -65dBm

YES

Check component soldering status OK at U1010

NO

Resolder or change U1010

YES

Check L1075 ≥ -65dBm

YES

Check the voltage at C3005 = 1.2V
C3007 = 1.8V
C3013 = 1.2V

YES

Resolder or change U3003

NO

Resolder or change UCP601

NO

Receiver is O.K?

END
8. Level 3 Repair

8-3-28. TDS CDMA B34 / B39 Rx

NORMAL CONDITION
catch the channel?

NO

Check RFS1000 ≤ -65dBm

NO

Check C1019 ≥ -65dBm

NO

Check component soldering status OK at F1003

YES

Check L1063 ≥ -65dBm

NO

Check component soldering status OK at PAM1001

YES

Check component soldering status OK at U1013

YES

Check the voltage at
C3005 = 1.2V
C3007 = 1.8V
C3013 = 1.2V

YES

Receiver is O.K?

END

NO

YES

CHECK soldered RFS1000

Resolder or change C1019

Resolder or change F1003

Resolder or change L1063

Resolder or change PAM1001

Resolder or change F1006

Resolder or change U1013

Resolder or change L1065

Resolder or change U3003

Resolder or change UCP601

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8. Level 3 Repair

8-3-29. LTE B7 Rx

NORMAL CONDITION
catch the channel?

NO

Check RFS1001 \( \leq -65 \text{dBm} \)

YES

CHECK soldered RFS1001

NO

Check L1069 \( \geq -65 \text{dBm} \)

NO

Resolder or change L1069

YES

Resolder or change C1018

NO

Check component soldering status OK at PAM1002

YES

Resolder or change PAM1002

NO

Check C1083 \( \geq -65 \text{dBm} \)

YES

Resolder or change C1083

NO

Check component soldering status OK at U1014

YES

Resolder or change U1014

NO

Check component soldering status OK at F1010

YES

Resolder or change F1010

NO

Check the voltage at
C3005 = 1.2V
C3007 = 1.8V
C3013 = 1.2V

YES

Resolder or change U3003

NO

Resolder or change U1014

NO

Resolder or change U1014

NO

Resolder or change F1010

NO

Resolder or change U3003

NO

Resolder or change UCP601

NO

Receiver is O.K?

END
8. Level 3 Repair

8-3-30. LTE B38 / B41 Rx

NORMAL CONDITION
catch the channel?

NO

YES

Check RFS1001 ≤ -65dBm

NO

YES

Check L1069 ≥ -65dBm ?

NO

YES

Check C1018 ≥ -65dBm

NO

YES

Check component soldering status OK at PAM1002

NO

YES

Check L1054 ≥ -65dBm

NO

YES

Check component soldering status OK at U1013

NO

YES

Check L1065 ≥ -65dBm

NO

YES

Check the voltage at C3005 = 1.2V

C3007 = 1.8V

C3013 = 1.2V

NO

YES

Receiver is O.K?

NO

END

YES

CHECK soldered RFS1001

Resolder or change L1069

Resolder or change C1018

Resolder or change PAM1002

Resolder or change L1054

Resolder or change U1013

Resolder or change L1065

Resolder or change U3003

Resolder or change UCP601
8. Level 3 Repair

8-3-31. LTE B40 Rx

NORMAL CONDITION
catch the channel?

NO

Check RFS1001 ≤ -65dBm

YES

CHECK soldered RFS1001

NO

Check L1069 ≥ -65dBm

NO

Resolder or change L1069

YES

Resolder or change C1018

NO

Check component soldering status OK at PAM1002

NO

Resolder or change PAM1002

YES

Check L1057 ≥ -65dBm

NO

Resolder or change L1057

YES

Check component soldering status OK at U1013

NO

Resolder or change U1013

YES

Check L1065 ≥ -65dBm

NO

Resolder or change L1065

YES

Check the voltage at C3005 = 1.2V
C3007 = 1.8V
C3013 = 1.2V

NO

Resolder or change U3003

YES

Receiver is O.K?

NO

Resolder or change UCP601

END
8. Level 3 Repair

8-3-32. WCDMA B1 / B4 / LTE B1 / B4 4RxD

NORMAL CONDITION
catch the channel?

NO

Check RFS1001 ≤ -65dBm

YES

CHECK soldered RFS1001

NO

Check L1069 ≥ -65dBm?

YES

Resolder or change L1069

NO

Check component soldering status OK at C3018

YES

Resolder or change C3018

NO

Resolder or change PAM1002

YES

Check component soldering status OK at F1009

NO

Resolder or change F1009

YES

Check L1056 ≥ -65dBm

YES

Check component soldering status OK at U1013

NO

Resolder or change U1013

YES

Check L1057 ≥ -65dBm

YES

Check the voltage at C3005 = 1.2V
C3007 = 1.8V
C3013 = 1.2V

NO

Resolder or change U3003

YES

NO

Resolder or change UCP601

Receiver is O.K?

YES

END
8. Level 3 Repair

8-3-33. LTE B3 4RxD

NORMAL CONDITION
catch the channel?

\[ \text{NO} \]

Check RFS1001 \[ \leq -65\text{dBm} \]

\[ \text{NO} \]

Check L1069 \[ \geq -65\text{dBm} \]

\[ \text{NO} \]

Check C1018 \[ \geq -65\text{dBm} \]

\[ \text{YES} \]

Check component soldering status OK at

PAM1002

\[ \text{NO} \]

Check component soldering status OK at

F1009

\[ \text{NO} \]

Check component soldering status OK at

U1013

\[ \text{NO} \]

Check component soldering status OK at

U1013

\[ \text{NO} \]

Check component soldering status OK at

F1009

\[ \text{NO} \]

Check component soldering status OK at

L1065

\[ \text{YES} \]

Check the voltage at

C3005 = 1.2V
C3007 = 1.8V
C3013 = 1.2V

\[ \text{NO} \]

Resolder or change

U1013

\[ \text{NO} \]

Resolder or change

U3003

\[ \text{YES} \]

Receiver is O.K?

\[ \text{NO} \]

Resolder or change

UCP601

\[ \text{END} \]
8. Level 3 Repair

8-3-34. GSM850 / 900 Tx

Check RFS1000: About 23dBm?

- NO: Resolder or change RFS1000
- YES:
  - Check C1019 at: About 23dBm?
    - NO: Resolder or change C1019
    - YES: Check F1003
      - Solder State: About 30dBm?
        - NO: Resolder or change F1003
        - YES: Check L1019
          - About 23dBm?
            - NO: Resolder or change L1019
            - YES: Check component soldering status OK at PAM1000
              - NO: Resolder or change PAM1000
              - YES: Check C1054
                - About 0dBm
                  - NO: Resolder or change C1054
                  - YES:
                    - Check the voltage at:
                      - C3005 = 1.2V
                      - C3007 = 1.8V
                      - C3013 = 1.2V
                        - NO: Resolder or change U3003
                        - YES: Resolder or change UCP601

END
8. Level 3 Repair

8-3-35. LTE B12 / B17 Tx

Check RFS1000

- About 23dBm?
  - YES
  - NO

  - Resolder or change RFS1000

Check C1019 at

- About 23dBm?
  - YES
  - NO

  - Resolder or change C1019

Check F1003

- Solder Sate
  - About 30dBm?
    - YES
    - NO

    - Resolder or change F1003

Check L1019

- About 23dBm?
  - YES
  - NO

  - Resolder or change L1019

Check component

- soldering status OK at
  - PAM1000
    - YES
    - NO

  - Resolder or change PAM1000

Check component

- soldering status OK at
  - F1000
    - YES
    - NO

  - Resolder or change F1000

Check the voltage at

- C3005 = 1.2V
- C3007 = 1.8V
- C3013 = 1.2V
  - YES
  - NO

  - Resolder or change U3003

Resolder or change UCP601

END
8. Level 3 Repair

8-3-36. LTE B13 Tx

- Check RFS1000: About 23dBm?
  - NO: Resolder or change RFS1000
  - YES: Check C1019 at: About 23dBm?
    - NO: Resolder or change C1019
    - YES: Check F1003: About 30dBm?
      - NO: Resolder or change F1003
      - YES: Check L1019: About 23dBm?
        - NO: Resolder or change L1019
        - YES: Check component soldering status OK at PAM1000
          - NO: Resolder or change PAM1000
          - YES: Check component soldering status OK at F1002
            - NO: Resolder or change F1002
            - YES: Check the voltage at:
              - C3005 = 1.2V
              - C3007 = 1.8V
              - C3014 = 1.2V
                - NO: Resolder or change U3003
                - YES: Resolder or change UCP3002

END
8. Level 3 Repair

8-3-37. WCDMA B5 / B8 / LTE B5 / B8 / B18 / B19 / B20 / B26 / B28 Tx

Check RFS1000

About 23dBm?

Check C1019 at
About 23dBm?

Check F1003
Solder State
About 30dBm?

Check L1019
About 23dBm?

Check component soldering status OK at PAM1000

Check the voltage at
C3005 = 1.2V
C3007 = 1.8V
C3013 = 1.2V

Resolder or change RFS1000

Resolder or change C1019

Resolder or change F1003

Resolder or change L1019

Resolder or change PAM1000

Resolder or change L1015

Resolder or change U3003

resolder or change UCP601

END
8. Level 3 Repair

8-3-38. DCS1800 / PCS1900 Tx

Check RFS1000

- About 23dBm?
  - NO
    - Resolder or change RFS1000
  - YES
    - Check C1019 at
      - About 23dBm?
        - NO
          - Resolder or change C1019
        - YES
          - Check F1003
            - About 30dBm?
              - NO
                - Resolder or change F1003
              - YES
                - Check L1063
                  - About 23dBm?
                    - NO
                      - Resolder or change L1063
                    - YES
                      - Check component soldering status OK at
                        - PAM1001
                          - NO
                            - Resolder or change PAM1001
                          - YES
                            - Check C1045
                              - About 23dBm?
                                - NO
                                  - Resolder or change C1045
                                - YES
                                  - Check the voltage at
                                    - C3005 = 1.2V
                                    - C3007 = 1.8V
                                    - C3013 = 1.2V
                                      - NO
                                        - Resolder or change U3003
                                      - YES
                                        - Resolder or change UCP801

END
8. Level 3 Repair


- Check RFS1000: About 23dBm?
  - NO: Resolder or change RFS1000
  - YES:
    - Check C1019 at: About 23dBm?
      - NO: Resolder or change C1019
      - YES:
        - Check F1003 Solder State About 30dBm?
          - NO: Resolder or change F1003
          - YES:
            - Check L1063: About 23dBm?
              - NO: Resolder or change L1063
              - YES:
                - Check component soldering status OK at PAM1001
                  - NO: Resolder or change PAM1001
                  - YES:
                    - Check C1036: About 23dBm?
                      - NO: Resolder or change C1036
                      - YES:
                        - Check the voltage at C3005 = 1.2V, C3007 = 1.8V, C3013 = 1.2V
                          - NO: Resolder or change U3003
                          - YES: Resolder or change UCP801

END
8. Level 3 Repair

8-3-40. LTE B7 Tx

- Check RFS1000: About 23dBm?
  - NO: Resolder or change RFS1001
  - YES: Check L1069 at: About 23dBm?
    - NO: Resolder or change L1069
    - YES: Check C1018: About 23dBm?
      - NO: Resolder or change C1018
      - YES: Check component soldering status OK at PAM1002
        - NO: Resolder or change PAM1002
        - YES: Check L1087: About 23dBm?
          - NO: Resolder or change L1087
          - YES: Check the voltage at:
            - C3005 = 1.2V
            - C3007 = 1.8V
            - C3013 = 1.2V
          - YES: Resolder or change U3003
          - NO: Resolder or change U30801

END
8. Level 3 Repair

8-3-41. LTE B38 / B40 / B41 Tx

Check RFS1000: About 23dBm?

YES

Check L1069 at: About 23dBm?

YES

Check C1018: About 23dBm?

YES

Check component soldering status OK at PAM1002

YES

Check L1050: About 23dBm?

YES

Check the voltage at:
- C3005 = 1.2 V
- C3007 = 1.8 V
- C3013 = 1.2 V

YES

Resolder or change U3003

Resolder or change RFS1001

Resolder or change L1069

Resolder or change C1018

Resolder or change PAM1002

Resolder or change L1050

Resolder or change U3003

RES

END
8. Level 3 Repair

8-3-42. MST

MST is not working

Yes

Check MST function ON

Yes

Check the ANT Contact
ANT7006, ANT7007

No

Enable MST Function

Yes

Type *#0*# ->MST Test->On

Check voltage on C7161

No

Check the status of U7012, then resolder or replace it.

Yes

Check the Voltage on
C7162=3.0V

No

Resolder of replace U7000

Yes

Check the Status of U7014

No

Resolder or replace U7014

END
8. Level 3 Repair

8-4. Service Schematics

- NC Point (Top View)