8-2. PCB Diagrams

8-2-1. Top

8-2-2. Bottom
8-3. Flow Chart of Troubleshooting

Equipments

- Oscilloscope
- Digital Multimeter
- Power Supply
- + driver, ESD Safe Tweezer
- 8960 & Spectrum Analyzer
- Soldering iron
8-3-1. Power On

Cell-phone can’t power on.

Check the Battery Voltage. Is it more than 3.4V?

- Yes
  - Check the key-FPCB (open, etc)
  - Abnormal: Change the key-FPCB
  - Normal: Power-on the phone and check the power-on sound. Sound or vibration is ok?
  - Yes: Change the FRONT ASSY
  - No: Check the U701 output voltage
    (C523 > 1.8V, C524 > 1.8V, C525 > 1.2V)
    - No: Charging the battery by TA.
    - Yes: Check the Clock OSC500(C705) Is that frequency 32KHz?
      - No: Change the OSC500
        - If OSC700 does not still work, Change the PM500
        - Test condition (Oscilloscope setting): 20.0us.div (time division)
      - Yes: Check the PM500 output signal
        (AP_PS_HOLD(TP) > 1.8V)
        - No: If the output voltage is not satisfied with normal condition, Change the PM500
        - Yes: check the initial operation
          - Yes: END
          - No: Abnormal

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8-3-2. Initial (Lock up)

- **Initial Failure (Lock up when booting)**
  - Check the AP Reset
    - **RESET_INn**
  - Check the oscillator clock waveforms.
    - 32.768KHz : OSC500(C462)
    - OSC500 is operating when phone is not in sleep mode
  - If phone do not go download mode, boot code area of Movinand MCP is damaged.
    - It need to change the UME300 (Movinand MCP)

- **No**  
  - Re-download SW the phone.
    - Download success
      - **RESET_INn**
    - **Yes**  
      - Check the OSC500.
        - (Crack, open etc.)
        - Check the output clock waveforms and frequency.
          - Test condition (Oscilloscope setting) : 20.0us.div (time division) @ 32.768Khz
          - Abnormal
            - Normal
            - Change UCP300, PM500
            - Abnormal
              - Change PBA
              - **END**
8-3-3. Charging Part

1. TA / USB Insert
   - Yes
   - Charging Sequence Start
     - Vin = 5V
     - Yes
     - Battery is Charging?
       - Yes
       - END
       - No
       - No
       - Resolder or Replace U506
   - No
   - Check CURRENT_TEST = 5V, or may not connected TA / USB
8-3-4. Microphone Part

Check microphone function in voice call speaker mode or in voice recording mode

Yes

Check Power&Volume key FPCB where MIC is placed for any damage (Tear in FPCB, etc)

No

Replace the Power&Volume key FPCB

Yes

Check the voltage at C422 = 1.65V

No

Resolder or replace C422

Yes

Check component soldering status of C418, L401

No

Resolder or replace C418, L401

Yes

END
8-3-5. Speaker Part

Check speaker function.
Play MP3 with maximum volume level.

Yes

Check the connection of SPK402/SPK403 (Left) or SPK400/SPK401 (Right) in main PCB

No

Yes

Replace the speaker module

Yes

Check the signals on L412, L405(Left) or C432, C435(R) on main PCB.

No

Replace PM500

Yes

END
8-3-6. BT Part

BT is not working

Yes

Check BT function ON

Yes

Check the Voltage on C210, C211, C203, C204 = 1.8V

No

Check PM500 (crack, open, damaged, etc.)

Yes

Check the OSC201 (crack, open, etc.)

No

Check the Voltage on C264, C265, C268

Yes

Check 37.4 MHz Clock at C230, C285

No

Check the OSC201 (crack, open, etc.)

Yes

Check the Status of C258, C242, C280, F203, F200

No

Resolder or replace C258, C242, C280, F203, F200

Yes

Check the Status of L204, C240, C241, ANT200

No

Resolder or Replace L204, C240, C241, ANT200

Yes

Check the Voltage on C264, C265, C268

Yes

Check the Status of C258, C242, C280, F203, F200

Yes

Check the Status of L204, C240, C241, ANT200

END

Yes

Resolder or Replace U202

Yes
Level 3 Repair

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8-3-7. WIFI Part

WIFI is not working

Yes

Check WIFI function ON

Yes

Check the Voltage on C210, C211, C203, C204 = 1.8V

No

Check the PM500 (crack, open, damaged, etc.)

Yes

Check 37.4 MHz Clock at C230, C285

No

Check the OSC201 (crack, open, etc.)

Yes

Check the Voltage on C256, C257, C251, C252, C253

No

Check the U207 (crack, open, damaged, etc.)

Yes

Check the Voltage on C264, C265, C268

No

Check the U208 (crack, open, damaged, etc.)

Yes

Check the Status of C242, C280, C249, R217, C259, C274, C272, F203, F200

No

Resolder or Replace C242, C280, C249, C217, C259, C276, C272, F203, F200

Yes

Resolder or Replace U202

No

Resolder or Replace C204, C240, L241, ANT200

Yes

Check the Status of L204, C240, L241, ANT200

END
8-3-8. GPS Part

GPS is not working

Yes

Check GPS function ON

Yes

Check the Voltage on L218 = 1.8V, C243, L206 = 1.8V

No

Check the PM500 (crack, open, damaged, etc.)

Yes

Check the Voltage on L218 = 1.8V, C243, L206 = 1.8V

No

Check the TCX202 (crack, open, etc.)

Yes

Check 26MHz Clock at C236, C237

Yes

Check the Status of L223, C245, C246, L210, C247, C248, F202, F201

Yes

Check the Status of C247, C248, ANT201

Yes

Resolder or Replace U209

No

Resolder or Replace L223, C245, C246, L210, C247, C248, F202, F201

No

Resolder or Replace C247, C248, ANT201

END
8-3-9. LCD

LCD is still off after PWR ON

Yes

Check the connection of HDC601

Yes

Check LCD FPCB

No

Reconnect the HDC601

Yes

Check the Voltage on C630 (High: VBAT)

No

If there is LCD FPCB crack, replace the LCD FPCB.

Yes

Check L603

No

Check U602 (crack, open, damaged, etc.)

If there is damage on it, Resolder or Replace U602

Yes

Check the Voltage on C604 = 3.3V

No

Resolder or Replace the PM500

Yes

Replace LCD Module

Yes

END
8-3-10. TSP

Touch Screen does not work

- Yes
  - Check TSP Connector on Main PBA
    - Yes
      - Reconnect the HDC702
    - No
      - No

- No
  - Yes
    - Check the Voltage on C702 = 3.3V
      - Yes
        - C702 ≥ 3.3V? C703 ≥ 3.3V?
          - Yes
            - Check the I2C signal
              - Yes
                - Replace U705
          - No
            - Resolder or Replace R703, R704
      - No
        - Resolder or Replace R700
          - Yes
            - Resolder or Replace R702
          - No
            - Resolder or Replace R703, R704
8-3-11. 3M CAM

"Camera" function does not work

- Check the Camera connector on Main PBA
  - Yes
  - No
    - Reconnect the HDC701

- Yes
  - Check the voltage
    - C710 = 1.2V?
    - C709 = 1.8V?
    - C708 = 2.8V?
  - No
    - Resolder C710
    - Resolder CC709
    - Resolder CC708
    - Replace the PBA

- Yes
  - Check the I2C line
    - TP CAM I900 & TP CAM I901 = HIGH
  - No
    - Resolder R301, R302
    - Replace the PBA

- Yes
  - Replace the camera module

- Yes
  - END
8-3-12. 1.3M CAM

"Camera" function does not work

Yes

Check the Camera connector on Main PBA

No

Reconnect the HDC703

Abnormal

Check the voltage

C704 = 1.8V?
C706 = 2.8V?
C707 = 1.8V

No

Yes

Resolder C704
Resolder C706
Resolder C707
Replace the PBA

Check the I2C line
TP CAM I900
& TP CAM I901 = HIGH

No

Yes

Resolder R315, R316
Replace the PBA

Yes

Replace the camera module

Yes

END
8-3-13. No Service

No service

Yes

Check menu setting
Menu → applications → setting → wireless and network → mobile networks → network mode → setting is auto mode?

PHONE : T211XXXX

Menu → Phone → Keypad → *
#1234# → check Phone version → PHONE : T211XXXX

Check the Main Antenna exists or not

No

Check the C126, C153, C141, C152 is well soldered

Yes

Check VDD
\[ V(C128) = 2.8V \]

Abnormal

Replace the U124

Abnormal

Change the Main Antenna

Abnormal

Change the PBA

Yes

END
8-3-14. GSM850/WB5

NORMAL CONDITION
catch the channel?

No

Trouble occurs only in
GSM850/B5 band?

NO > Try 8-3-3 Repair procedure

Yes

Check
C124,L116,C125,L114,L15
6,L117,L115,C127,C126,L
119 soldering condition

Yes

CHECK soldered components
C124,L116,C125,L114,L156,L117,L115,
C127,C126,L119

No

Check DUF100,U116,
U117 for any damage
(crack, open, etc)

Yes

Resolder or change
DUF100,U116,U117

No

Check U124 for any
damage (crack, open,
etc)

Yes

Resolder or change
U124

No

Change the board

END

---

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8-3-15. GSM900/WB8

NORMAL CONDITION
catch the channel?

No

Trouble occurs only in GSM900/WB8 band?

NO

Try 8-3-3 Repair procedure

Yes

Check C131,C131,L124,L118,L119,L12,L120,C154,C153,L1
26 soldering condition

Yes

CHECK soldered components C131,C131,L124,L118,L119,L12,L120,C154,C153,L126

No

Check DUF100,U116, U117 for any damage (crack, open, etc)

Yes

Resolder or change DUF100,U116,U117

No

Check U124 for any damage (crack, open, etc)

Yes

Resolder or change U124

No

Change the board

END
8-3-16. WB1

NORMAL CONDITION

catch the channel?

No

Trouble occurs only in WB1 band?

Yes


No

Check DUF100, U116, U117 for any damage (crack, open, etc)

Yes

Resolder or change DUF100, U116, U117

No

Check U124 for any damage (crack, open, etc)

Yes

Resolder or change U124

No

Change the board

END

Try 8-3-3 Repair procedure

No

Yes

No

Yes

END
8-3-17. WB2

NORMAL CONDITION

catch the channel?

No

Trouble occurs only in WB2 band?

NO

Try 8-3-3 Repair procedure

Yes

Check C143,L146,C151,L141,C152,L142,L143,L144,L147,L145 soldering condition

Yes

CHECK soldered components C143,L146,C151,L141,C152,L142,L143,L144,L147,L145

No

Check DUF100,U116, U117 for any damage (crack, open, etc)

Yes

Resolder or change DUF100,U116,U117

No

Check U124 for any damage (crack, open, etc)

Yes

Resolder or change U124

No

Change the board

END
8-3-18. GSM1800 Rx

NORMAL CONDITION
catch the channel?

No

Trouble occurs only in
GSM1800 band?

Yes

Check
C120,L154,L106,C138,C139,L108 soldering
condition for any damage

No

Check U106, U104 for
any damage (crack, open,
etc)

Yes

Resolder or change
U106,U104

No

Check U124 for any
damage (crack, open,
etc)

Yes

Resolder or change
U124

No

Change the board

END

Try 8-3-3 Repair procedure
8-3-19. GSM1900 Rx

NORMAL CONDITION catch the channel?
- No
- Yes

Trouble occurs only in GSM1900 band?
- No
- Yes

Check C120,L154,L111,L112,L155,L113 soldering condition for any damage
- No
- Yes

CHECK soldered components C120,L154,L111,L112,L155,L113
- No
- Yes

Check U106, U104 for any damage (crack, open, etc)
- No
- Yes

Resolder or change U106, U104
- No
- Yes

Check U124 for any damage (crack, open, etc)
- No
- Yes

Resolder or change U124
- No
- Yes

Change the board

END
8-3-20. Grip Sensor

"Grip Sensor" function does not work

Yes

Check the Grip Sensor Functionality (*#0*# or *#435517#)

Abnormal

No

Check the status of Main ANT & Sub ANT

Replace the ANTs

Yes

Check the status of Grip Sensor Components.
L101, R116, L109, L159, R149

No

Replace the components

Yes

END
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