

# Contents of LCD TV Standard Repair Process



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| 2   |                               | No video/No audio                                                                | 2    |         |
| 3   |                               | Tuning fail, Picture broken/ Freezing                                            | 3, 4 |         |
| 4   |                               | Color error                                                                      | 5    |         |
| 5   |                               | Vertical/Horizontal bar, residual image, light spot, external device color error | 6    |         |
| 6   | B. Power error                | No power                                                                         | 7    |         |
| 7   |                               | Off when on, off while viewing, power auto on/off                                | 8    |         |
| 8   | C. Audio error                | No audio/Normal video                                                            | 9    |         |
| 9   |                               | Wrecked audio/discontinuation/noise                                              | 10   |         |
| 10  | D. Function error             | Remote control & Local switch checking                                           | 11   |         |
| 11  |                               | External device recognition error                                                | 12   |         |
| 12  | E. Noise                      | Circuit noise, mechanical noise                                                  | 13   |         |
| 13  | F. Exterior error             | Exterior defect                                                                  | 14   |         |

First of all, Check whether there is SVC Bulletin in GCSC System for these model.

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# Contents of LCD TV Standard Repair Process Detail Technical Manual



| No. | Error symptom                                                              | Content                                        | Page     | Remarks                           |
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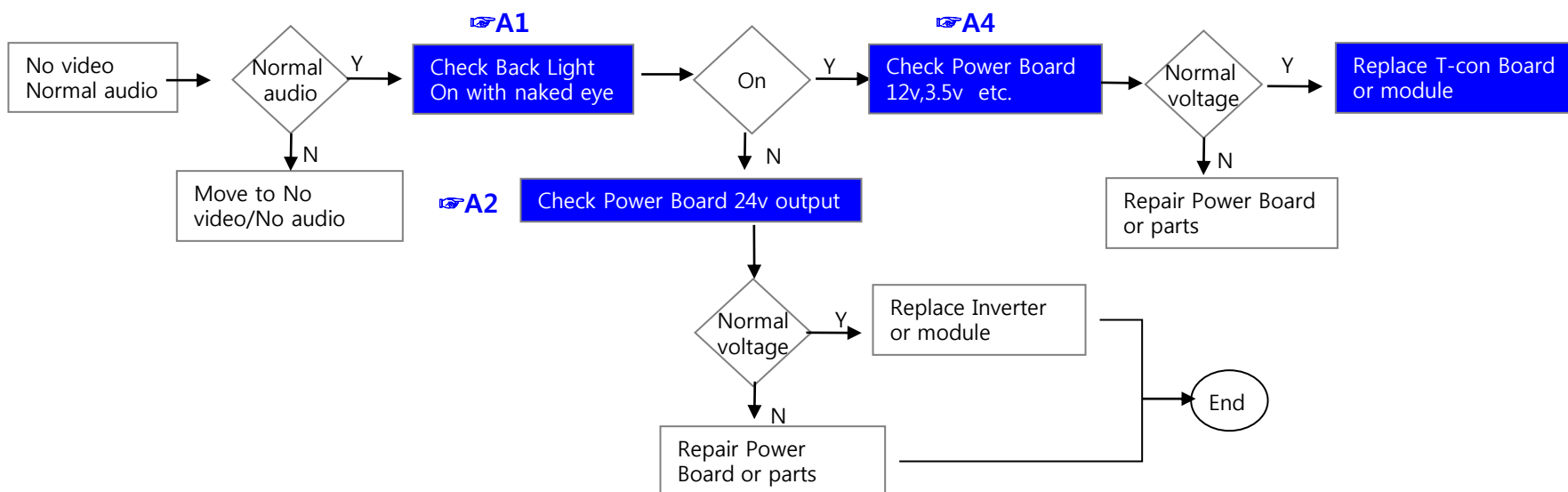
Continue to the next page

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|        |               |                        |                  |              |      |
|--------|---------------|------------------------|------------------|--------------|------|
| LCD TV | Error symptom | A. Video error         | Established date | 2012. 01 .14 |      |
|        |               | No video/ Normal audio | Revised date     |              | 1/14 |

**First of all, Check whether all of cables between board is inserted properly or not.**  
**(Main B/D↔ Power B/D, LVDS Cable,Speaker Cable,IR B/D Cable,,)**



※Precaution A6 & A3

Always check & record S/W Version and White Balance value before replacing the Main Board

Replace Main Board

Re-enter White Balance value

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| Standard Repair Process |               |                    |                  |               |      |
|-------------------------|---------------|--------------------|------------------|---------------|------|
| LCD TV                  | Error symptom | A. Video error     | Established date | 2012 . 01 .14 |      |
|                         |               | No video/ No audio | Revised date     |               | 2/14 |

No Video/  
No audio

A4

Check various voltages  
of Power Board  
( 3.5V,12V,20V or 24V...)

Normal  
voltage?

Y

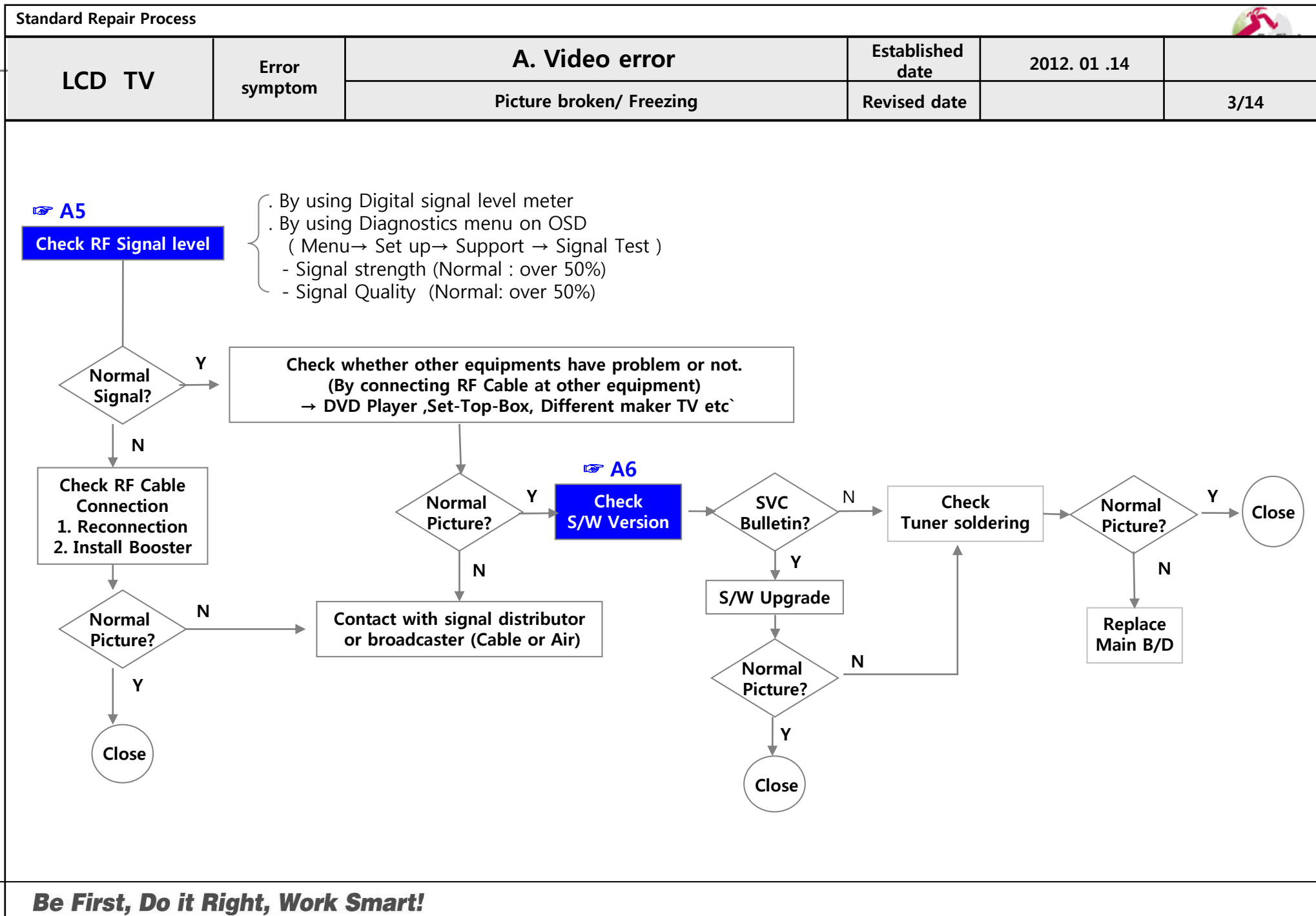
N

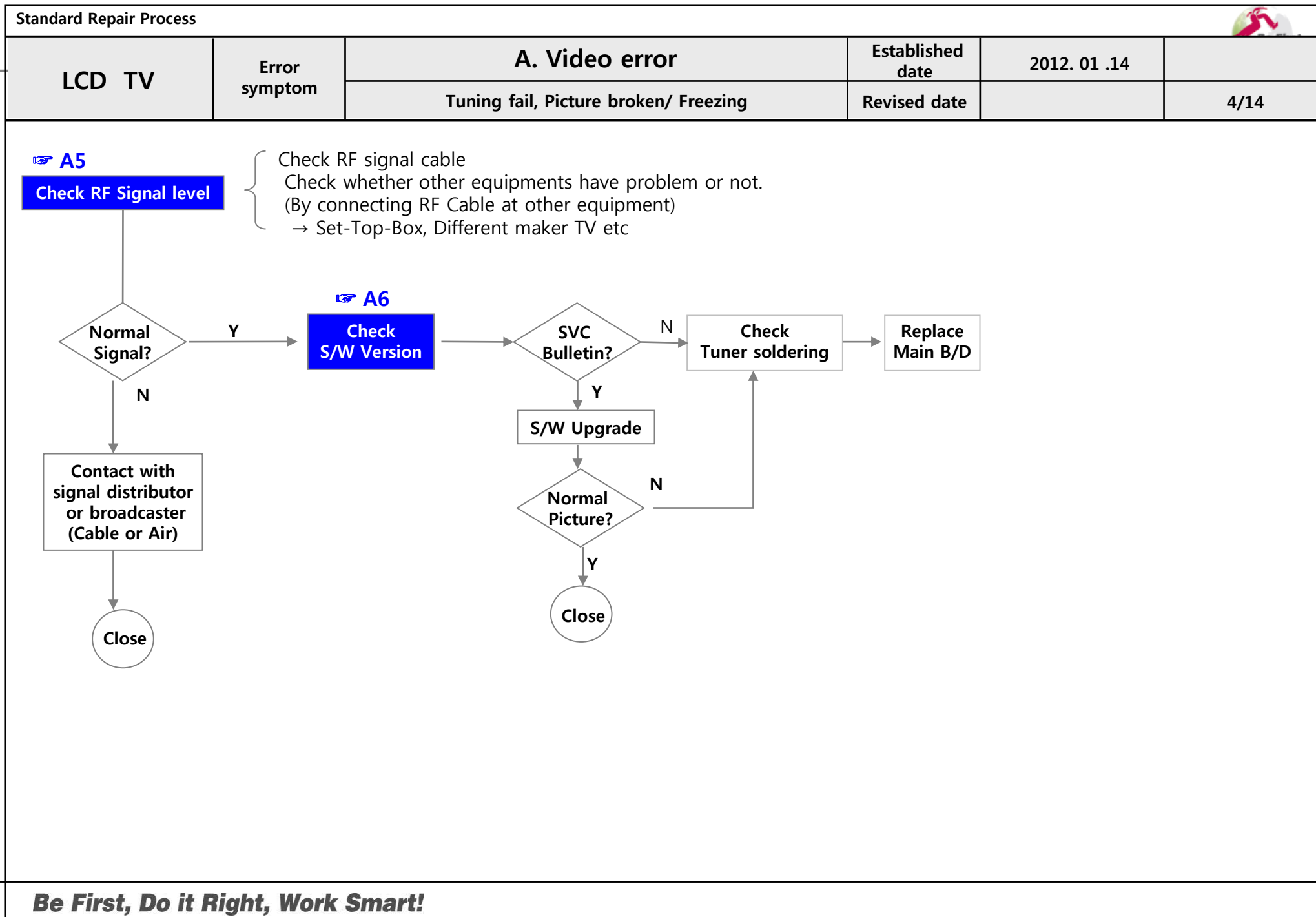
Check and  
replace  
MAIN B/D

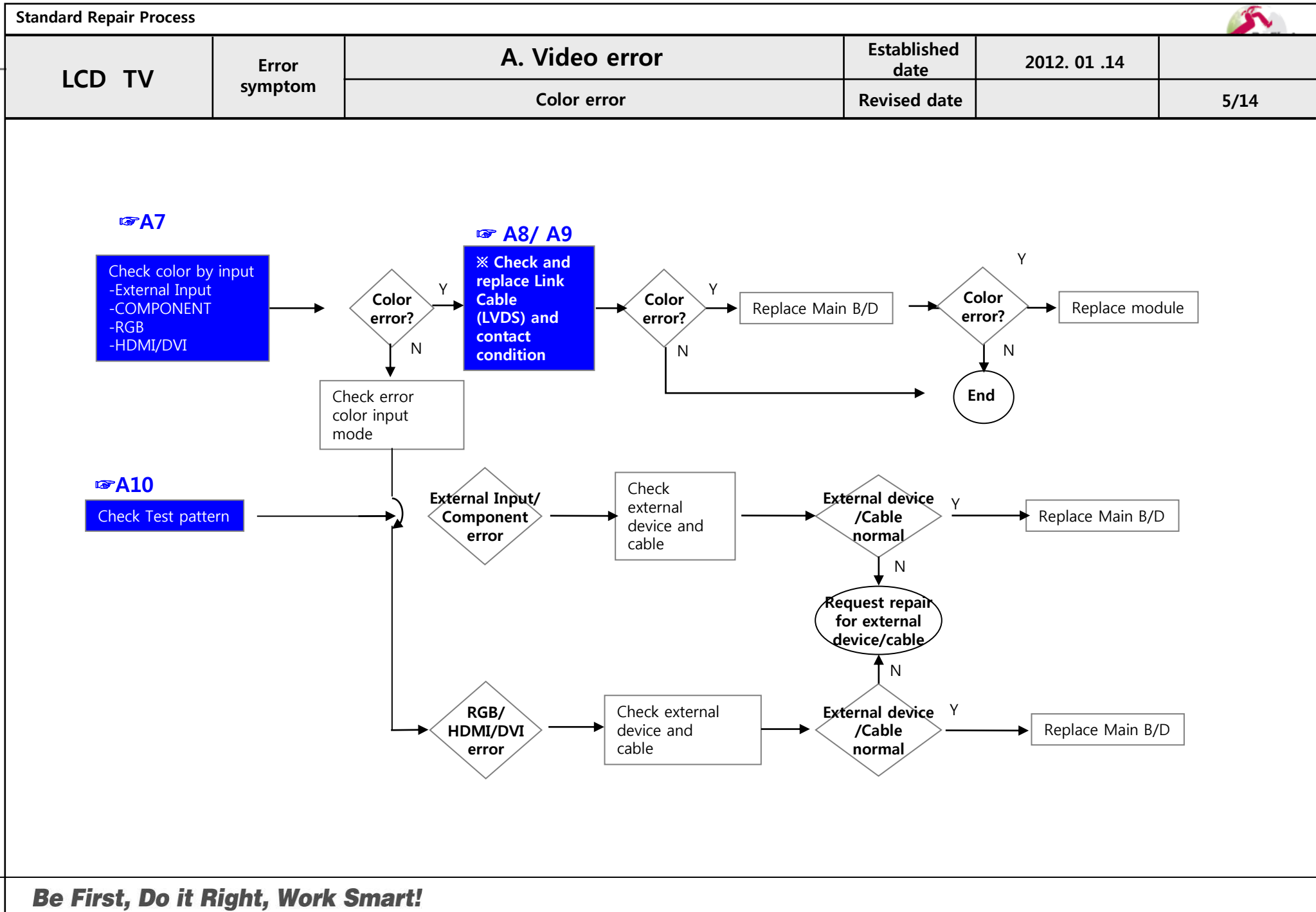
Replace Power  
Board and repair  
parts

End

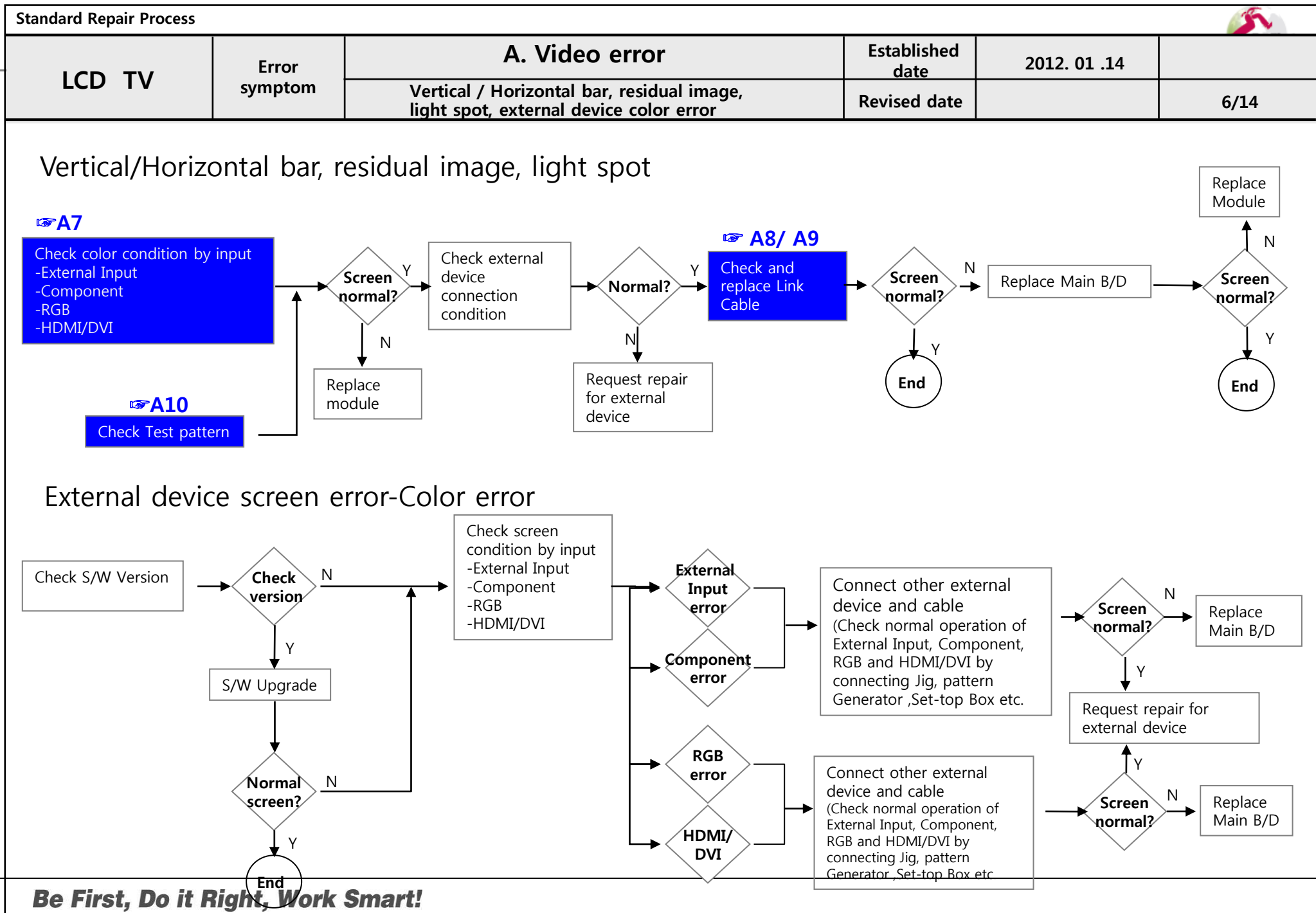
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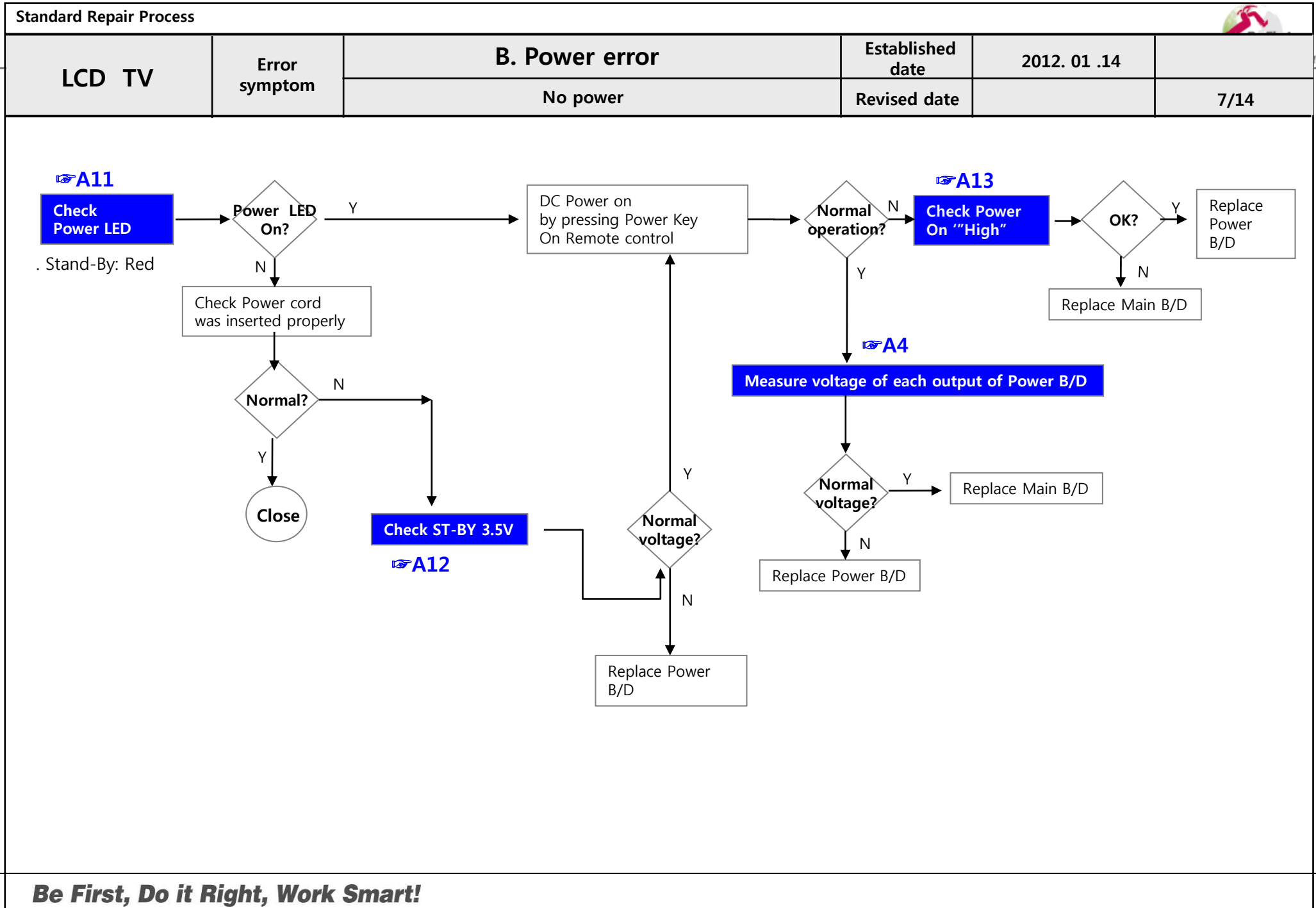




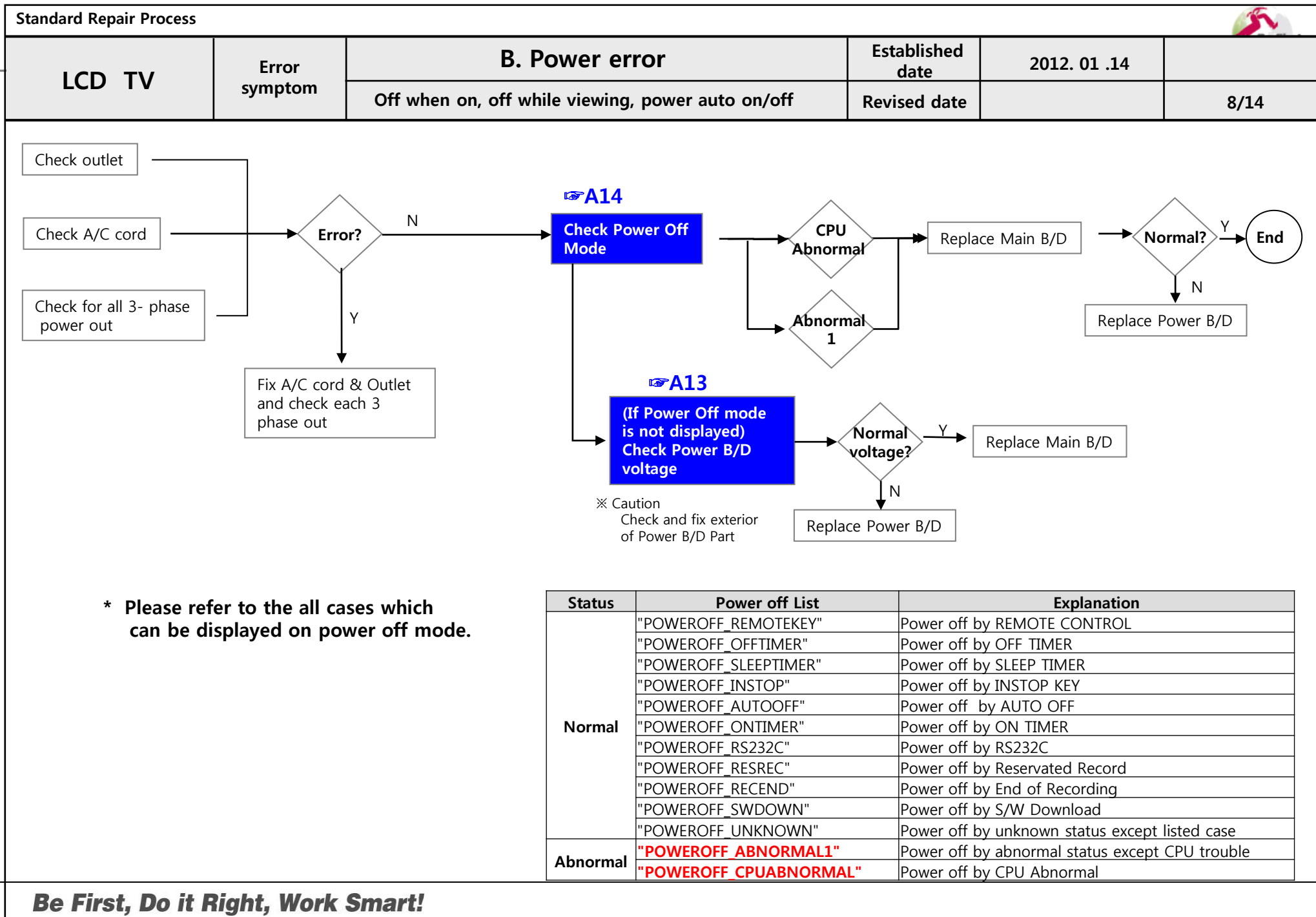
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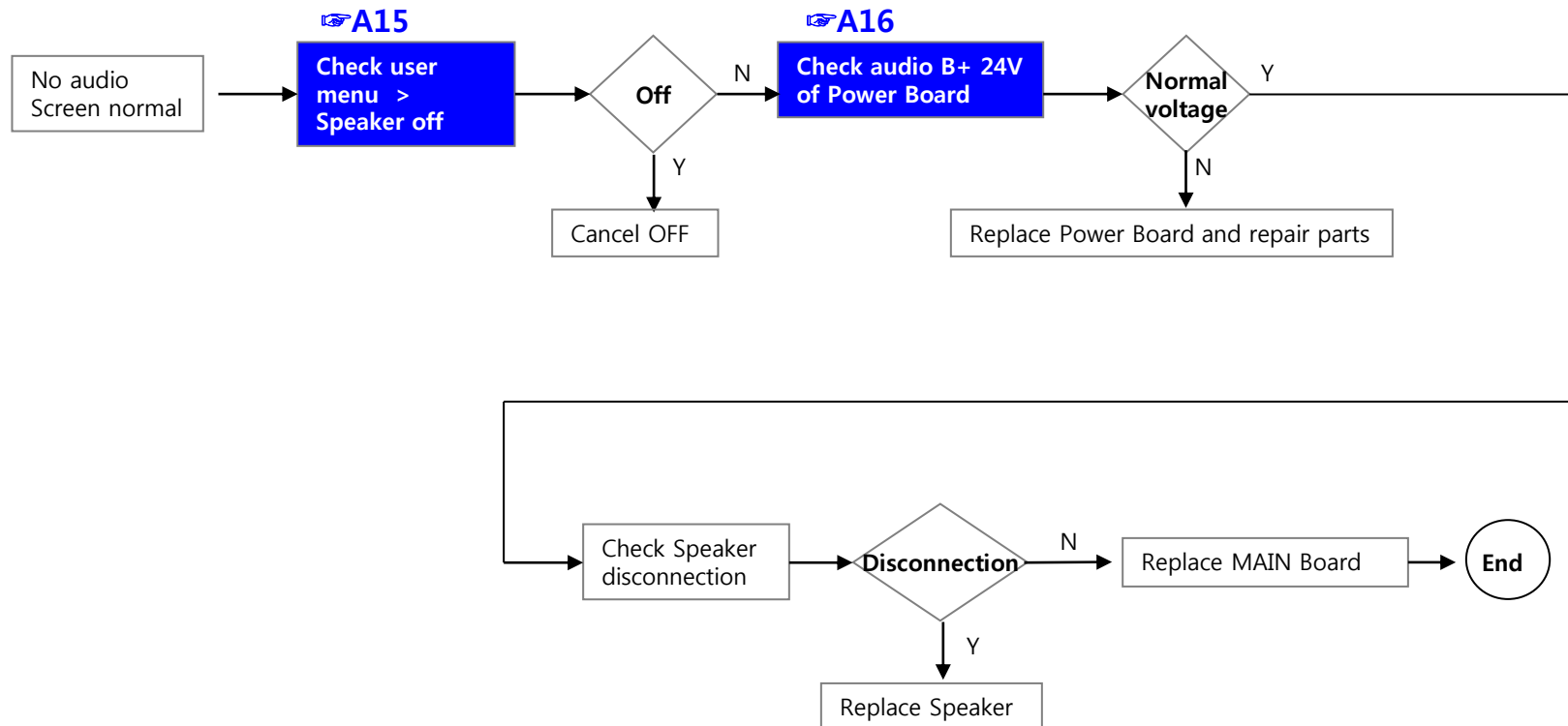


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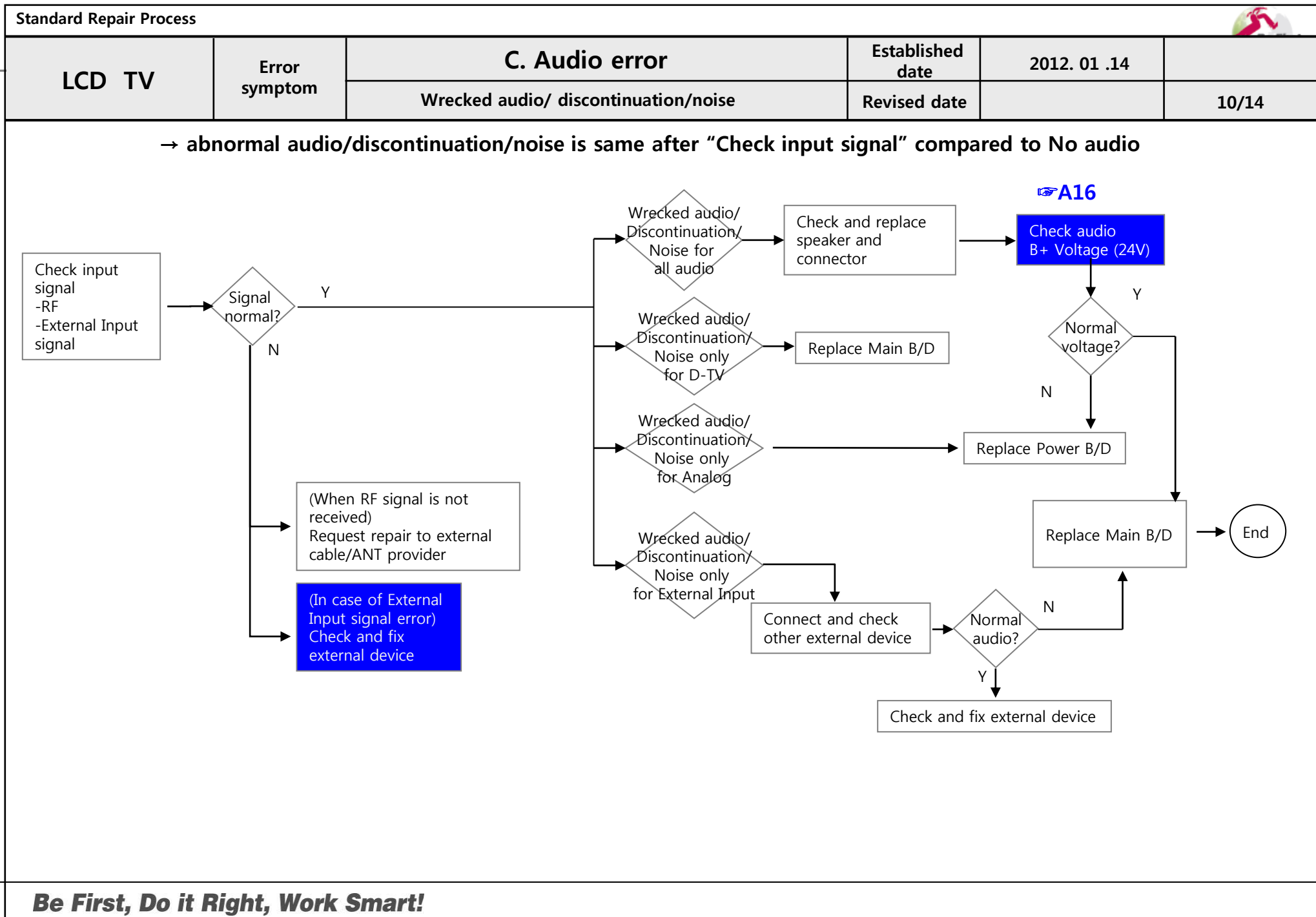


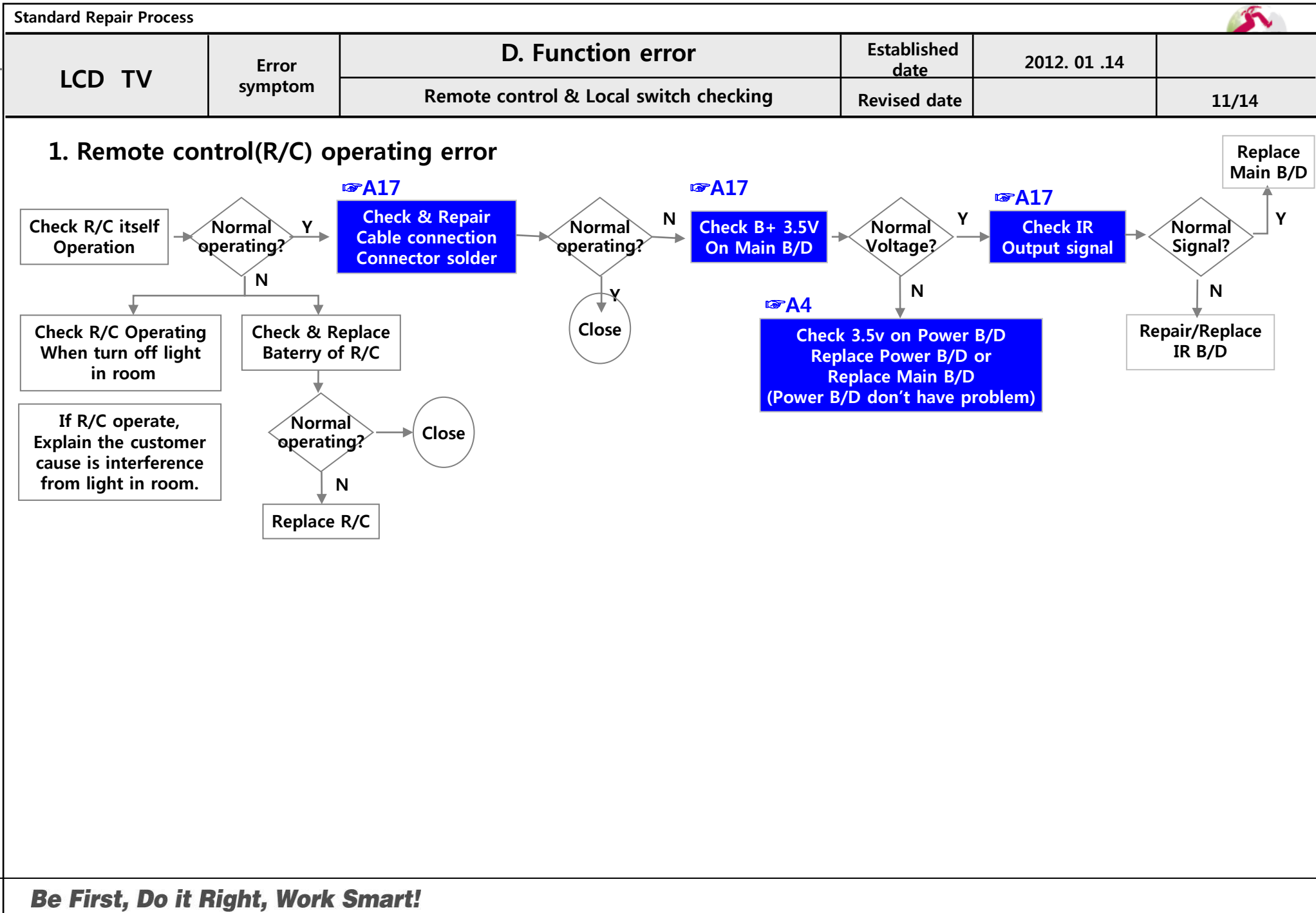


|        |               |                        |                  |              |      |
|--------|---------------|------------------------|------------------|--------------|------|
| LCD TV | Error symptom | C. Audio error         | Established date | 2012. 01 .14 |      |
|        |               | No audio/ Normal video | Revised date     |              | 9/14 |



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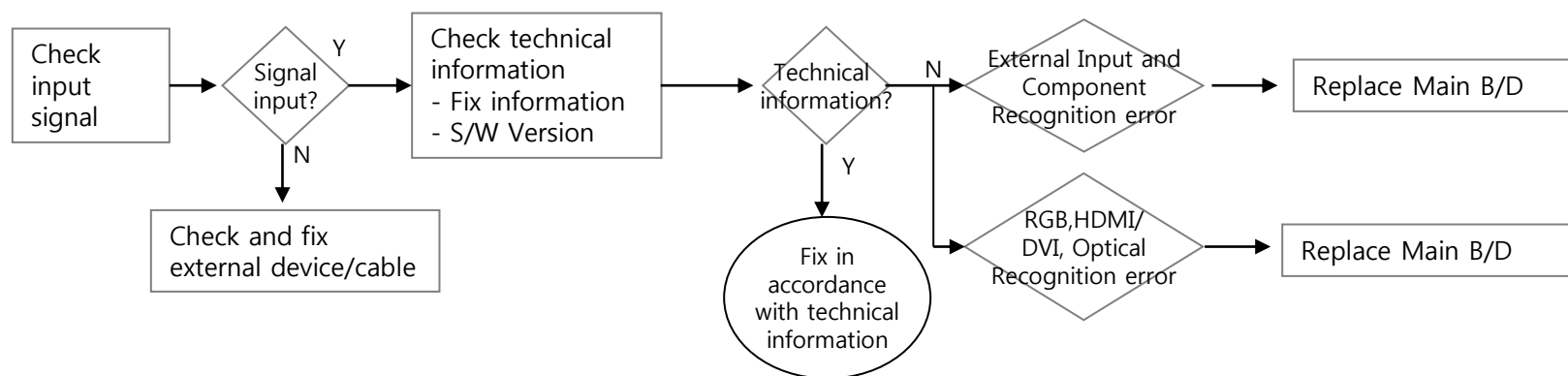




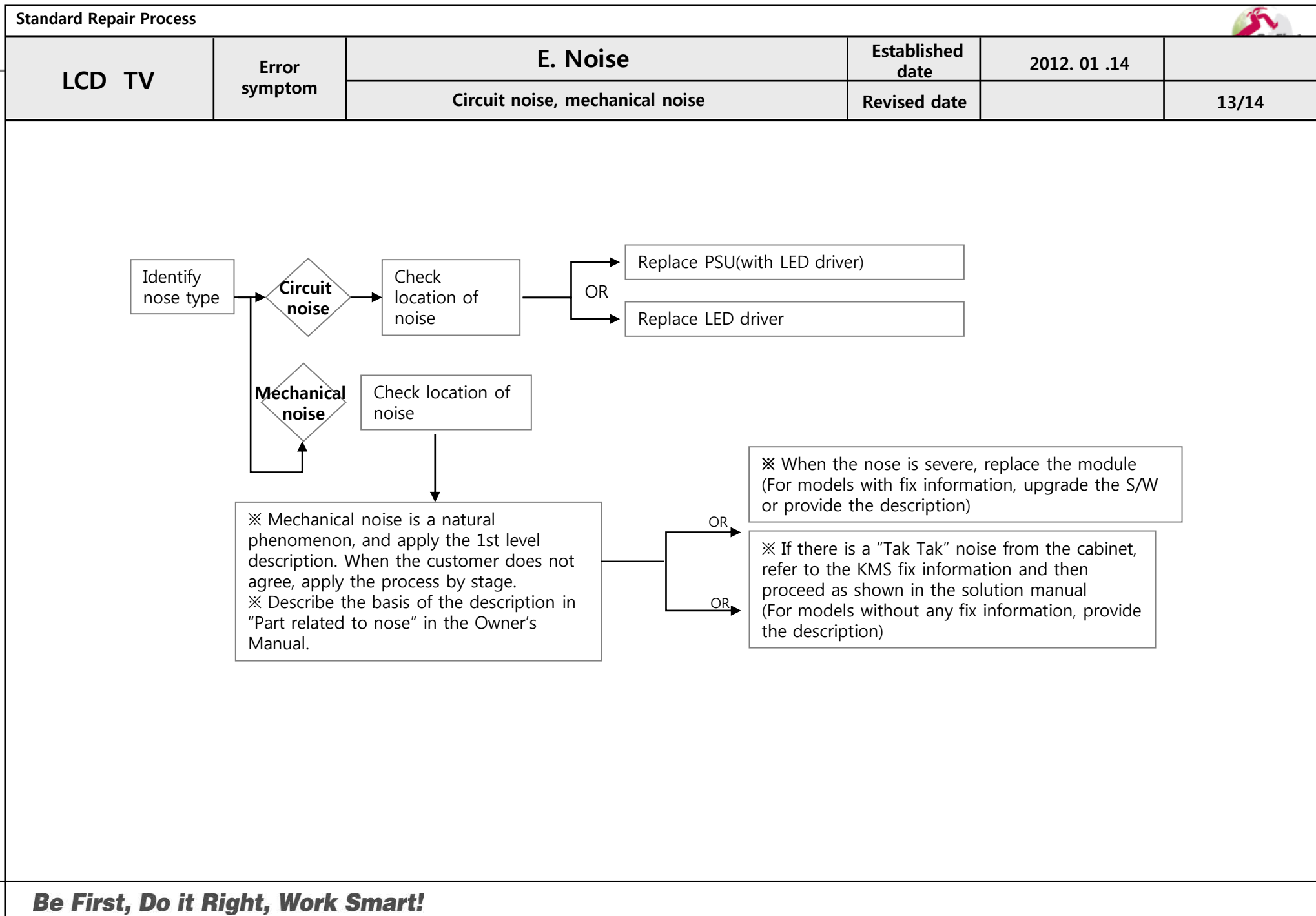
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|        |               |                                   |                  |              |       |
|--------|---------------|-----------------------------------|------------------|--------------|-------|
| LCD TV | Error symptom | D. Function error                 | Established date | 2012. 01 .14 |       |
|        |               | External device recognition error | Revised date     |              | 12/14 |

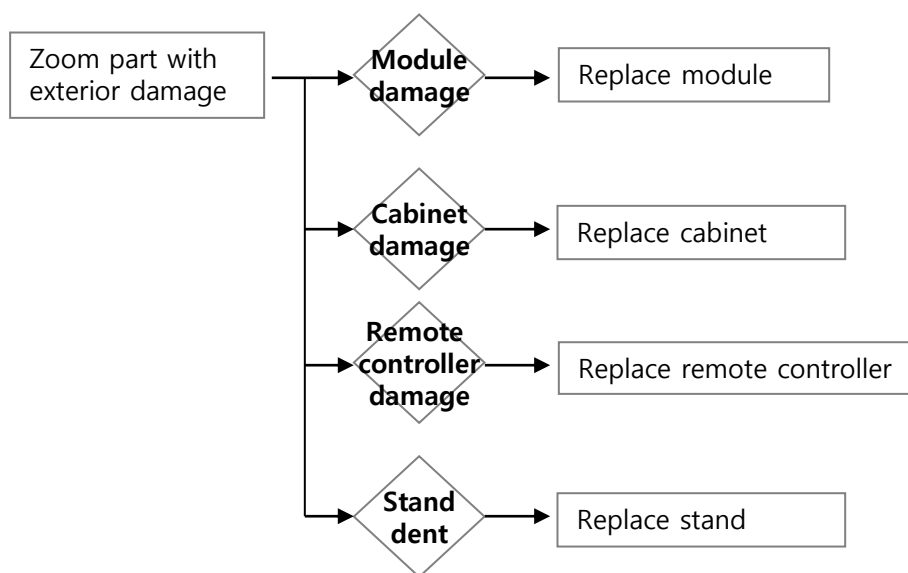


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|        |               |                    |                  |              |       |
|--------|---------------|--------------------|------------------|--------------|-------|
| LCD TV | Error symptom | F. Exterior defect | Established date | 2012. 01 .14 |       |
|        |               | Exterior defect    | Revised date     |              | 14/14 |



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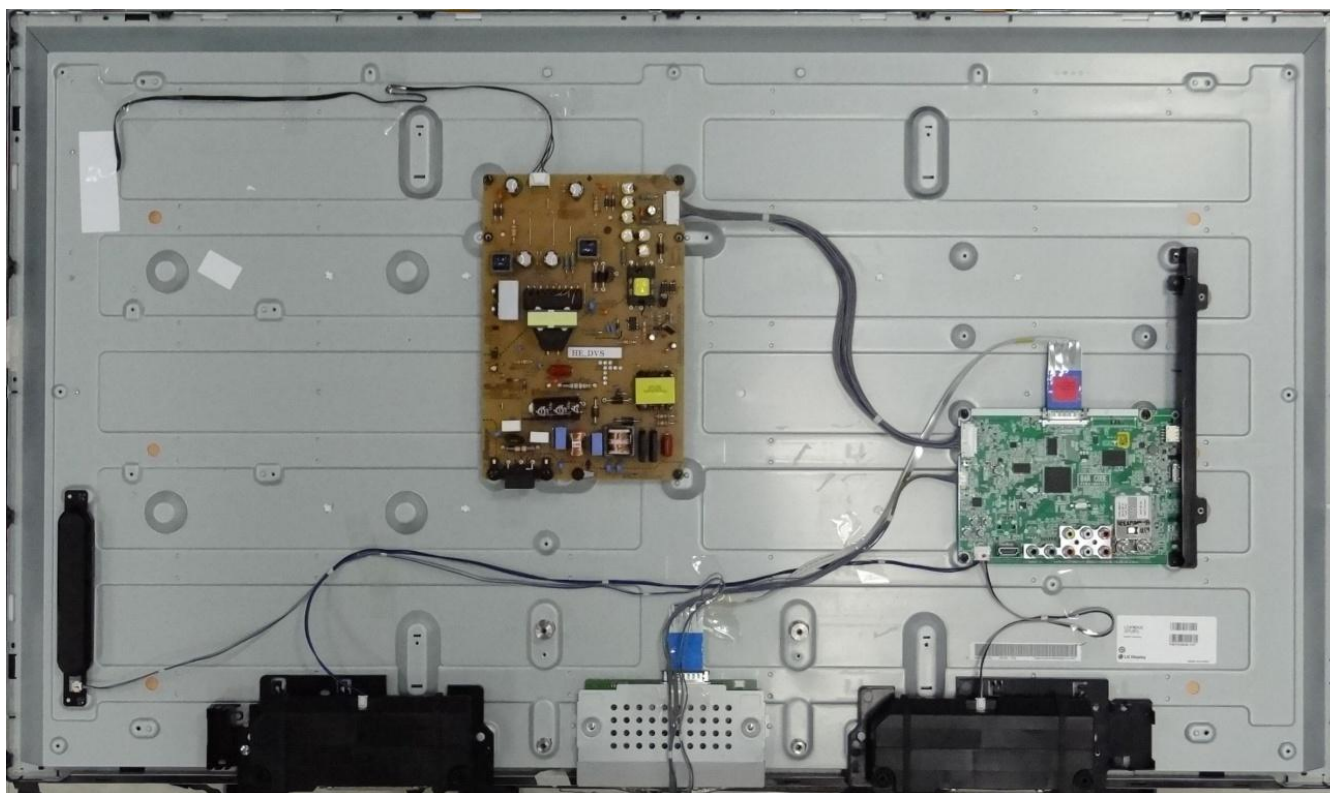
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## Standard Repair Process Detail Technical Manual



|        |               |                                      |                  |             |    |
|--------|---------------|--------------------------------------|------------------|-------------|----|
| LCD TV | Error symptom | A. Video error_No video/Normal audio | Established date | 2012. 01.14 |    |
|        | Content       | Check Back Light On with naked eye   | Revised date     |             | A1 |

<ALL MODELS>



Power On -> disjoint back case -> check lighting at any point



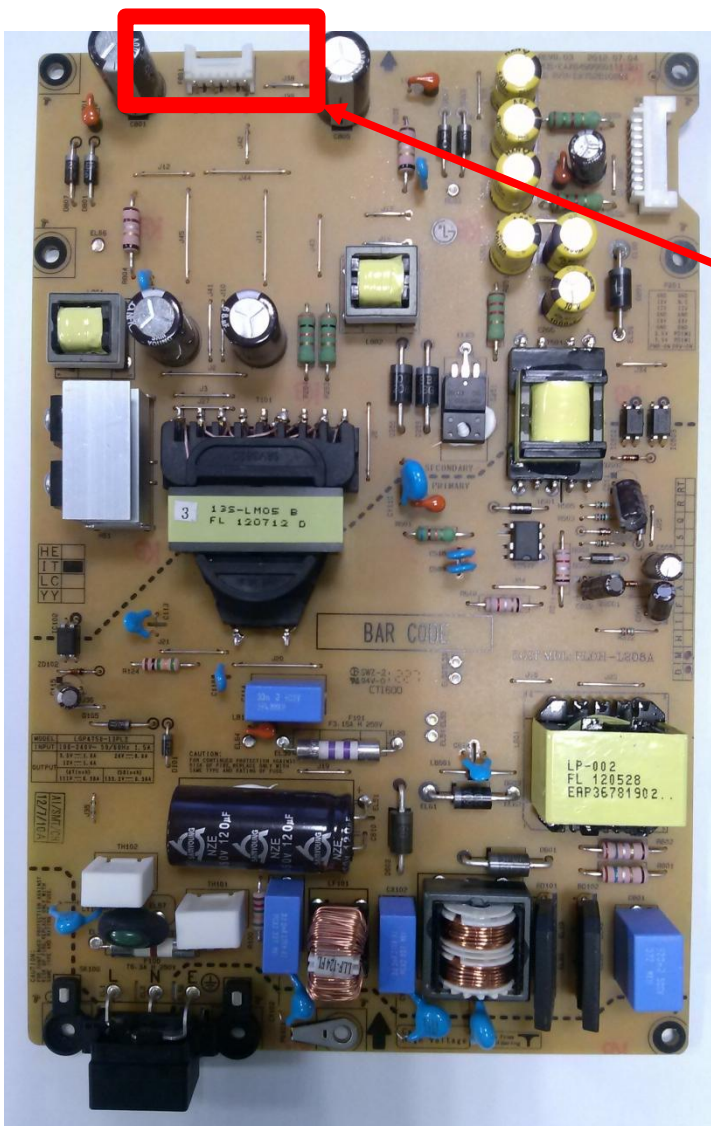
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|        |               |                                      |                  |              |    |
|--------|---------------|--------------------------------------|------------------|--------------|----|
| LCD TV | Error symptom | A. Video error_No video/Normal audio | Established date | 2012. 11 .17 |    |
|        | Content       | Inverter B+ 24V measuring method     | Revised date     |              | A2 |

<LPB MODELS>



Measure LED+ applying to LED Back Light from Power Board.

Output LED+ from Power Board -> supply to LED B/L.  
Check Pin contacting statement and connection statement.

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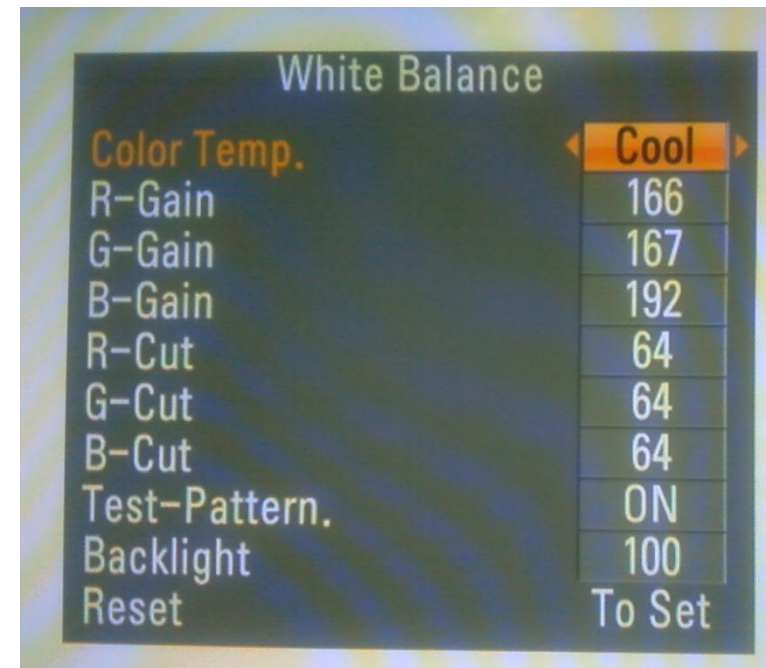
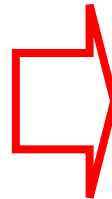
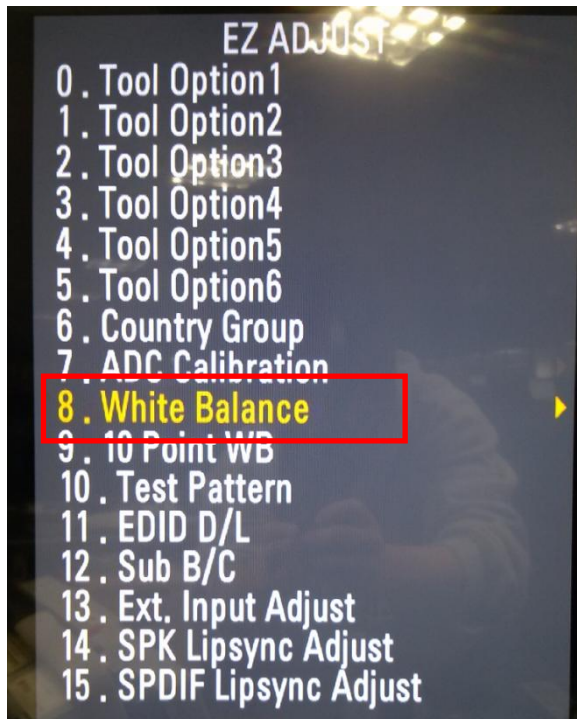


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|        |               |                                      |                  |              |    |
|--------|---------------|--------------------------------------|------------------|--------------|----|
| LCD TV | Error symptom | A. Video error_No video/Normal audio | Established date | 2012. 11 .17 |    |
|        | Content       | Check White Balance value            | Revised date     |              | A3 |

<ALL MODELS>



## Entry method

1. Press the ADJ button on the remote controller for adjustment.
2. Enter into White Balance of item 8.
3. After recording the R, G, B (GAIN, Cut) value of Color Temp (Cool/Medium/Warm), re-enter the value after replacing the MAIN BOARD.

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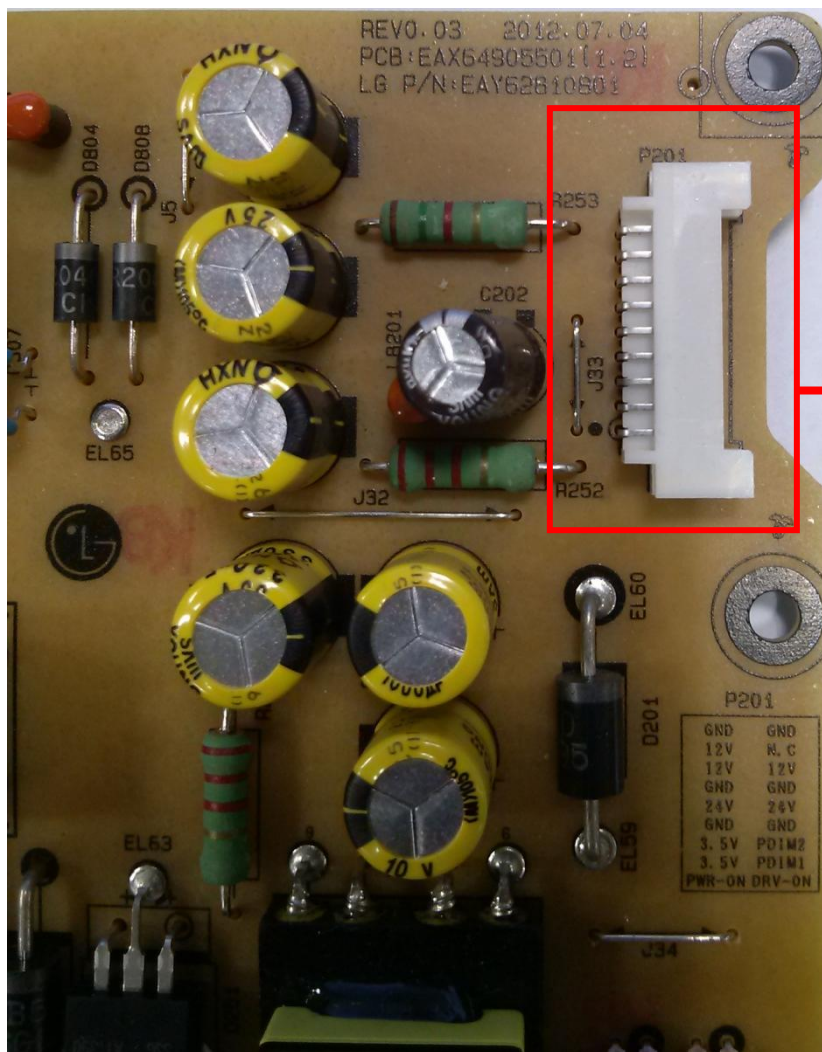




# Standard Repair Process Detail Technical Manual



|        |               |                                      |                  |              |    |
|--------|---------------|--------------------------------------|------------------|--------------|----|
| LCD TV | Error symptom | A. Video error_No video/ Audio       | Established date | 2012. 11 .17 |    |
|        | Content       | Power Board voltage measuring method | Revised date     |              | A4 |



Check the DC 24V, 12V, 3.5V.

| 18 Pin (Power Board ↔ Main Board) - 공통 |        |    |        |
|----------------------------------------|--------|----|--------|
| ?(YEONHO)                              |        |    |        |
| 1                                      | PWR-ON | 2  | DRV-ON |
| 3                                      | 3.5V   | 4  | PDIM1  |
| 5                                      | 3.5V   | 6  | PDIM2  |
| 7                                      | GND    | 8  | GND    |
| 9                                      | 24V    | 10 | 24V    |
| 11                                     | GND    | 12 | GND    |
| 13                                     | 12V    | 14 | 12V    |
| 15                                     | 12V    | 16 | 24V    |
| 17                                     | GND    | 18 | GND    |

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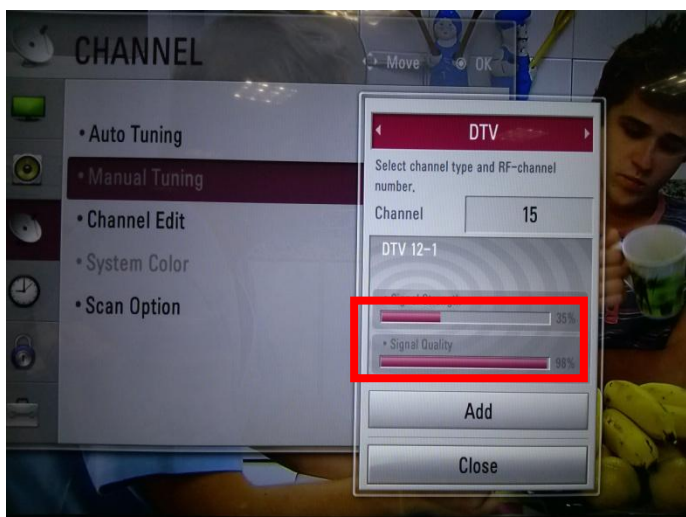
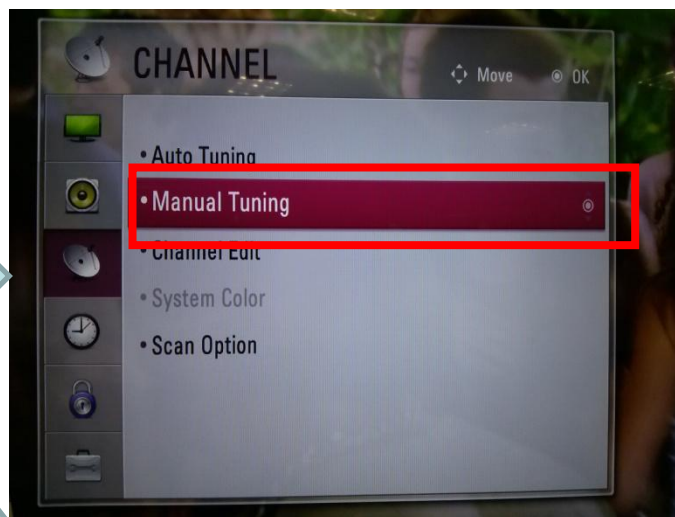
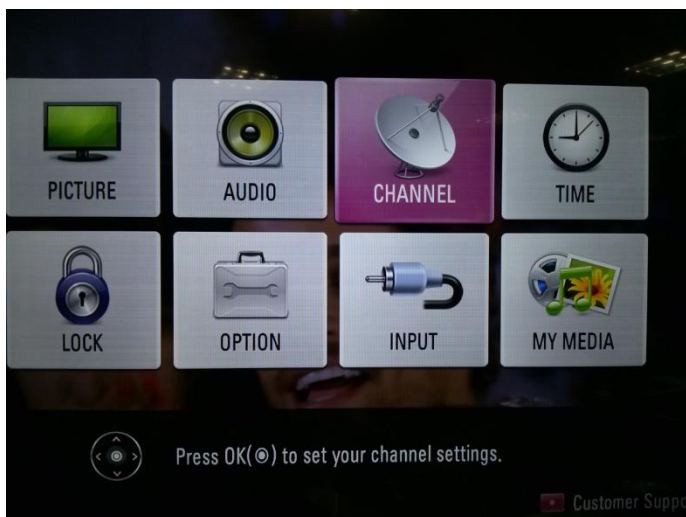


# Standard Repair Process Detail Technical Manual



|        |               |                                             |                  |              |    |
|--------|---------------|---------------------------------------------|------------------|--------------|----|
| LCD TV | Error symptom | A. Video error_Video error, video lag/stop  | Established date | 2012. 01 .14 |    |
|        | Content       | TUNER input signal strength checking method | Revised date     |              | A5 |

<ALL MODELS>



MENU => CHANNEL => Manual Tuning  
=> Check Signal Strength & Signal Quality



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|        |               |                                            |                  |              |    |
|--------|---------------|--------------------------------------------|------------------|--------------|----|
| LCD TV | Error symptom | A. Video error_Video error, video lag/stop | Established date | 2012. 11 .17 |    |
|        | Content       | LCD-TV Version checking method             | Revised date     |              | A6 |

<ALL MODELS>

## 1. Checking method for remote controller for adjustment

Version



Press the IN-START with the remote controller for adjustment

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|        |               |                                                                     |                  |              |    |
|--------|---------------|---------------------------------------------------------------------|------------------|--------------|----|
| LCD TV | Error symptom | A. Video error _Vertical/Horizontal bar, residual image, light spot | Established date | 2012. 11 .17 |    |
|        | Content       | LCD TV connection diagram (1)                                       | Revised date     |              | A7 |

<ALL MODELS>



As the part connecting to the external input, check the screen condition by signal



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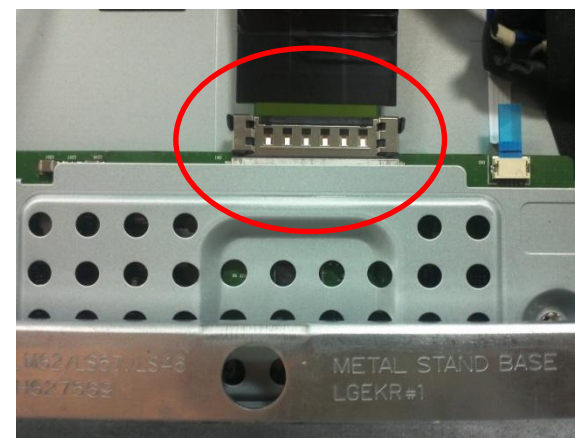
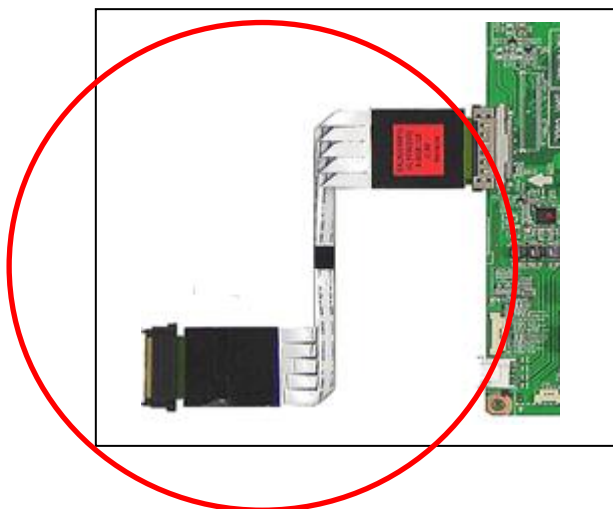


# Standard Repair Process Detail Technical Manual



|        |               |                                                          |                  |              |       |
|--------|---------------|----------------------------------------------------------|------------------|--------------|-------|
| LCD TV | Error symptom | A. Video error_Color error                               | Established date | 2012. 01 .14 |       |
|        | Content       | Check and replace Link Cable(LVDS) and contact condition | Revised date     |              | A8/A9 |

<ALL MODELS>



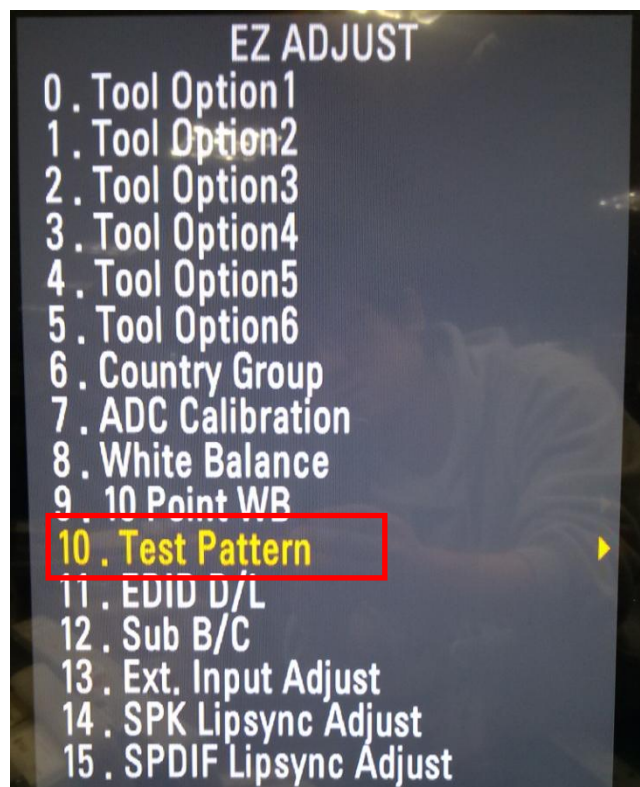
1. Check and replace LVDS Cable
2. Check LVDS connection condition

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|        |               |                                   |                  |              |     |
|--------|---------------|-----------------------------------|------------------|--------------|-----|
| LCD TV | Error symptom | A. Video error_Color error        | Established date | 2012. 11 .17 |     |
|        | Content       | Adjustment Test pattern - ADJ Key | Revised date     |              | A10 |



You can view 6 types of patterns using the ADJ Key

Checking item : 1. Defective pixel    2. Residual image    3. MODULE error (ADD-BAR,SCAN BAR..)  
4.Video error (Classification of MODULE or Main-B/D!)



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## Appendix : Exchange T-Con Board (1)



Solder defect, CNT Broken



Solder defect, CNT Broken



Solder defect, CNT Broken



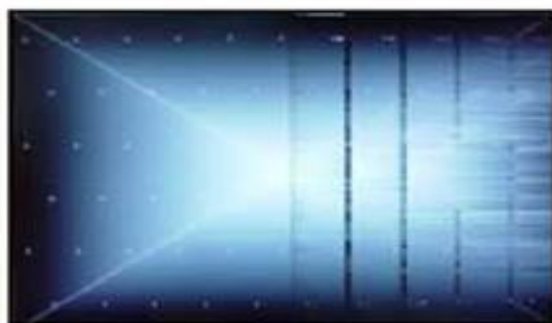
Solder defect, CNT Broken



Solder defect, CNT Broken



Abnormal Power Section



Solder defect, Short/Crack



Abnormal Power Section

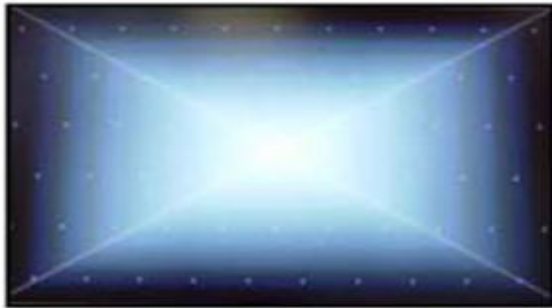


Solder defect, Short/Crack

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## Appendix : Exchange T-Con Board (2)



Abnormal Power Section



Abnormal Power Section



Solder defect, Short/Crack



Solder defect, Short/Crack



Fuse Open, Abnormal power section



Abnormal Display



GRADATION



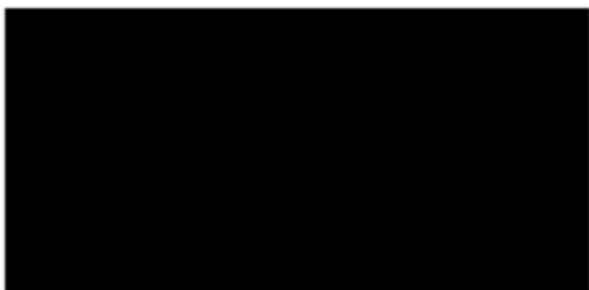
Noise



GRADATION

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## Appendix : Exchange PSU(LED driver)



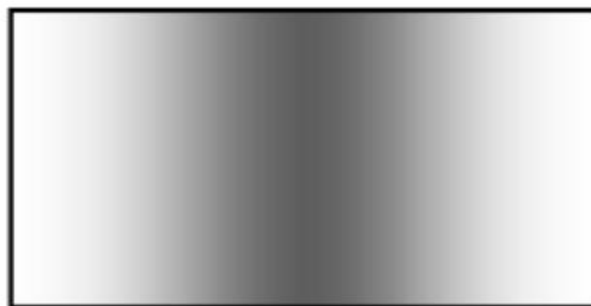
No Light



Dim Light



Dim Light



Dim Light



No picture/Sound Ok

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## Appendix : Exchange the Module (1)



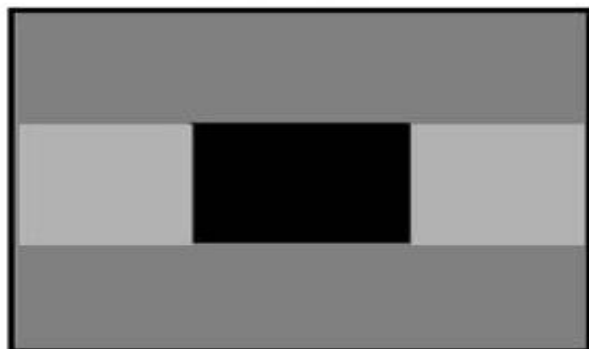
Panel Mura, Light leakage



Panel Mura, Light leakage



Press damage



Crosstalk



Press damage



Crosstalk

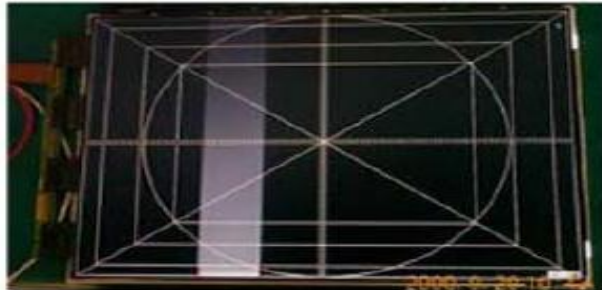


Press damage

**Un-repairable Cases**  
**In this case please exchange the module.**

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## Appendix : Exchange the Module (2)



Vertical Block  
Source TAB IC Defect



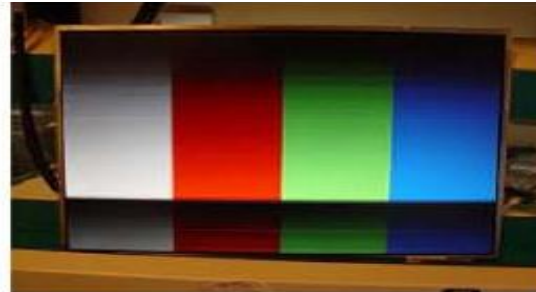
Vertical Line  
Source TAB IC Defect



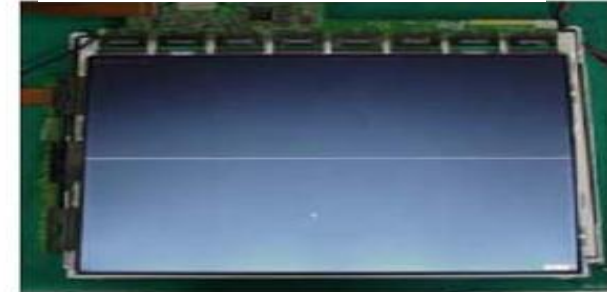
Vertical Block  
Source TAB IC Defect



Horizontal Block  
Gate TAB IC Defect



Horizontal Block  
Gate TAB IC Defect



Horizontal line  
Gate TAB IC Defect



Horizontal Block  
Gate TAB IC Defect

**Un-repairable Cases**  
**In this case please exchange the module.**

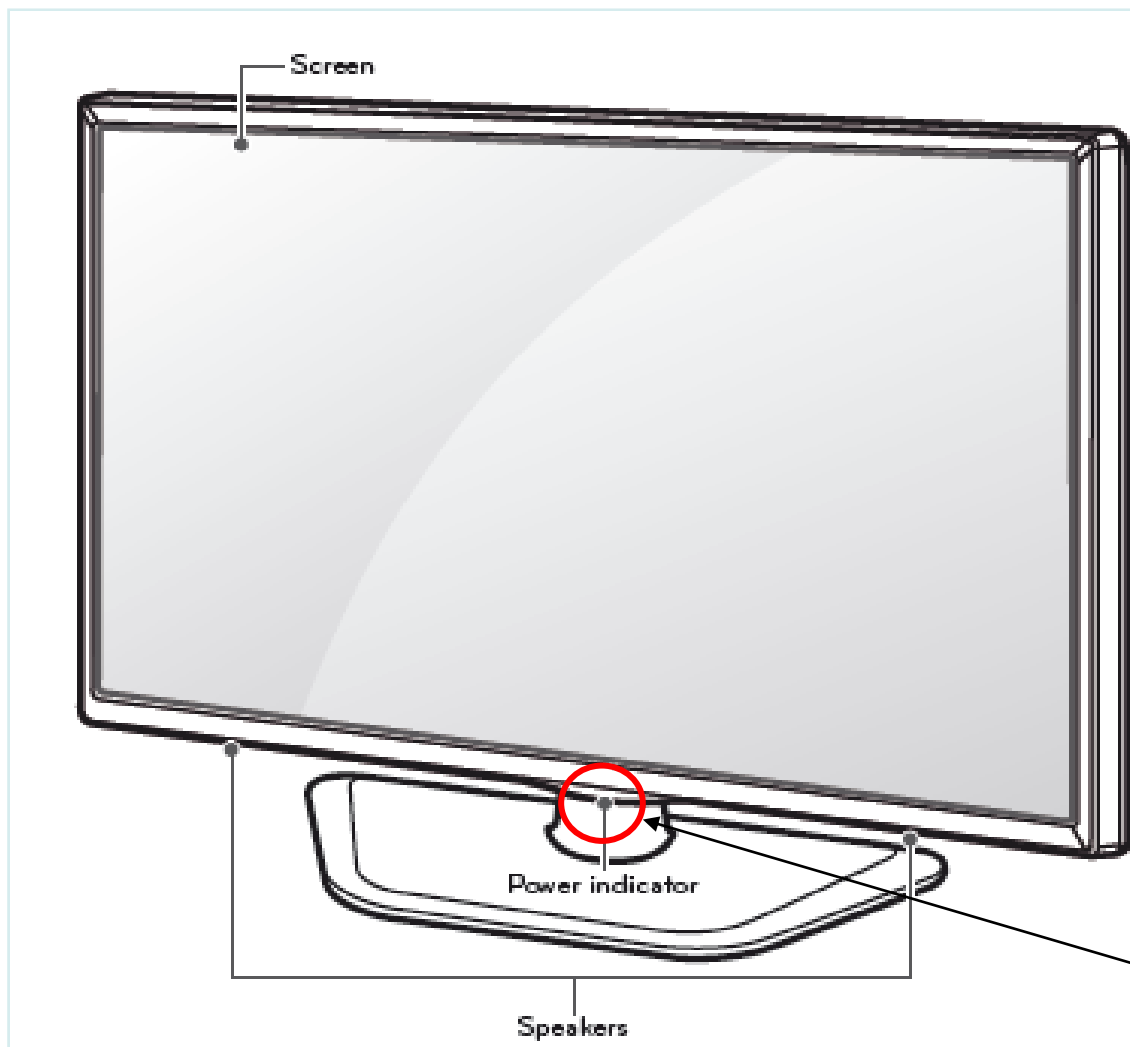
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|        |               |                          |                  |             |     |
|--------|---------------|--------------------------|------------------|-------------|-----|
| LCD TV | Error symptom | B. Power error _No power | Established date | 2012. 11.17 |     |
|        | Content       | Check front display LED  | Revised date     |             | A11 |



Front LED control :  
Menu → Option → Power Indicator  
→ Standby light ON

ST-BY condition: Red

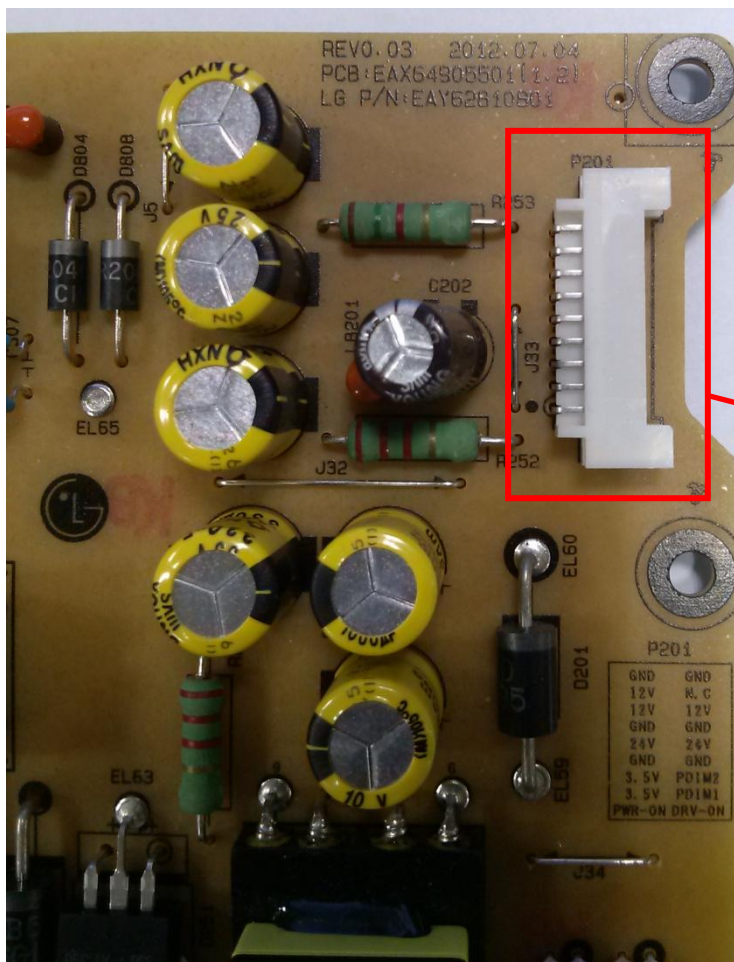


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|        |               |                                          |                  |              |     |
|--------|---------------|------------------------------------------|------------------|--------------|-----|
| LCD TV | Error symptom | B. Power error _No power                 | Established date | 2012. 11 .17 |     |
|        | Content       | Check power input voltage and ST-BY 3.5V | Revised date     |              | A12 |



Check the DC 20V/24V, 12V, 3.5V.

| 18 Pin (Power Board ↔ Main Board) - 공통 |        |    |        |
|----------------------------------------|--------|----|--------|
| ?(YEONHO)                              |        |    |        |
| 1                                      | PWR-ON | 2  | DRV-ON |
| 3                                      | 3.5V   | 4  | PDIM1  |
| 5                                      | 3.5V   | 6  | PDIM2  |
| 7                                      | GND    | 8  | GND    |
| 9                                      | 24V    | 10 | 24V    |
| 11                                     | GND    | 12 | GND    |
| 13                                     | 12V    | 14 | 12V    |
| 15                                     | 12V    | 16 | 24V    |
| 17                                     | GND    | 18 | GND    |

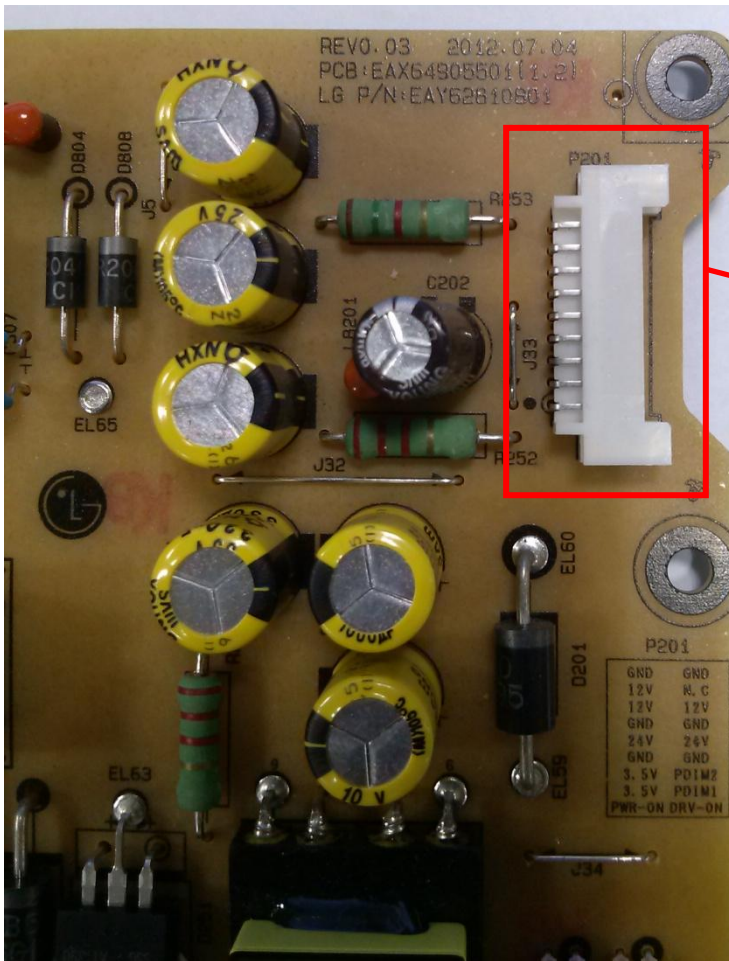
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|        |               |                                  |                  |              |     |
|--------|---------------|----------------------------------|------------------|--------------|-----|
| LCD TV | Error symptom | B. Power error _No power         | Established date | 2012. 11 .17 |     |
|        | Content       | Checking method when power is ON | Revised date     |              | A13 |



Check "power on(Pin 1)" pin is high(about 3.3V)

| 18 Pin (Power Board ↔ Main Board) - 공통 |        |    |        |
|----------------------------------------|--------|----|--------|
| ?(YEONHO)                              |        |    |        |
| 1                                      | PWR-ON | 2  | DRV-ON |
| 3                                      | 3.5V   | 4  | PDIM1  |
| 5                                      | 3.5V   | 6  | PDIM2  |
| 7                                      | GND    | 8  | GND    |
| 9                                      | 24V    | 10 | 24V    |
| 11                                     | GND    | 12 | GND    |
| 13                                     | 12V    | 14 | 12V    |
| 15                                     | 12V    | 16 | 24V    |
| 17                                     | GND    | 18 | GND    |

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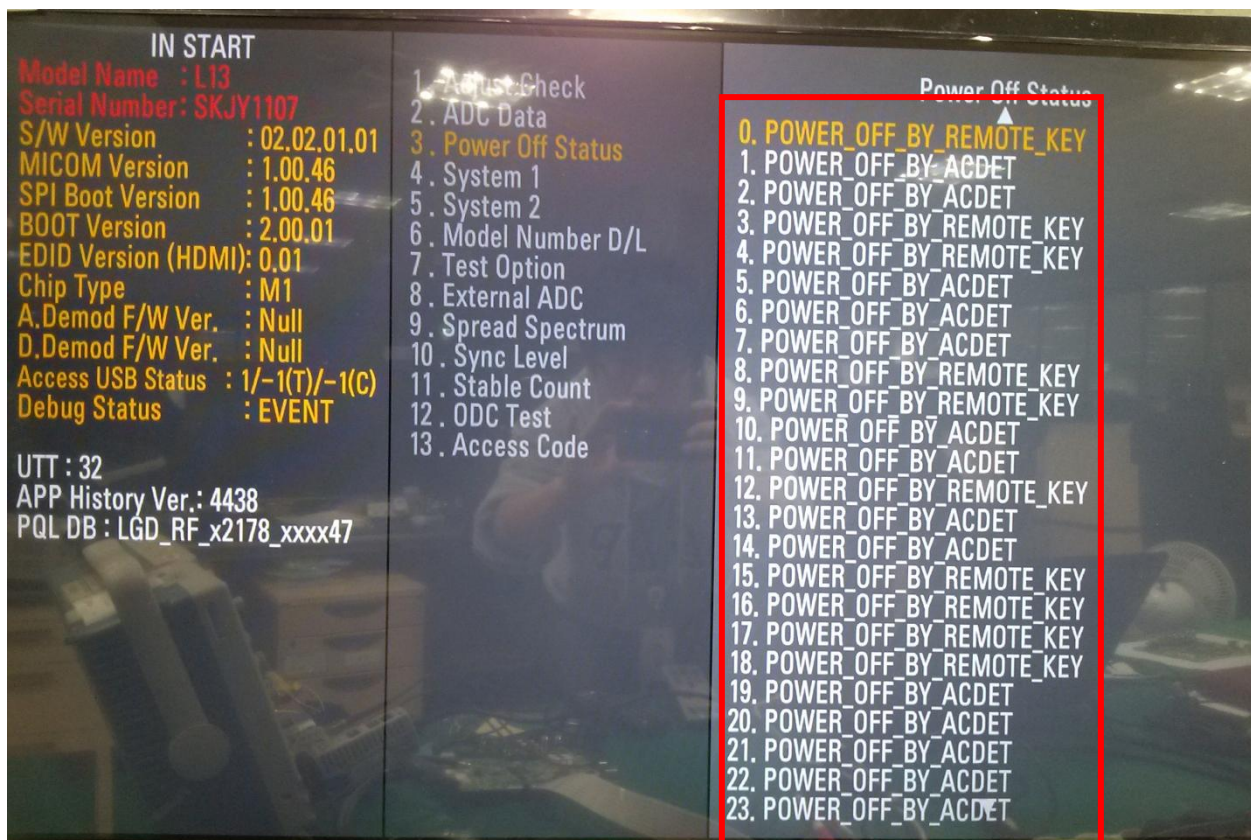


# Standard Repair Process Detail Technical Manual



|        |               |                                                  |                  |              |     |
|--------|---------------|--------------------------------------------------|------------------|--------------|-----|
| LCD TV | Error symptom | B. Power error _Off when on, off whiling viewing | Established date | 2012. 11 .17 |     |
|        | Content       | POWER OFF MODE checking method                   | Revised date     |              | A14 |

<ALL MODELS>



Entry method

1. Press the IN-START button of the remote controller for adjustment
2. Check the entry into adjustment item 3

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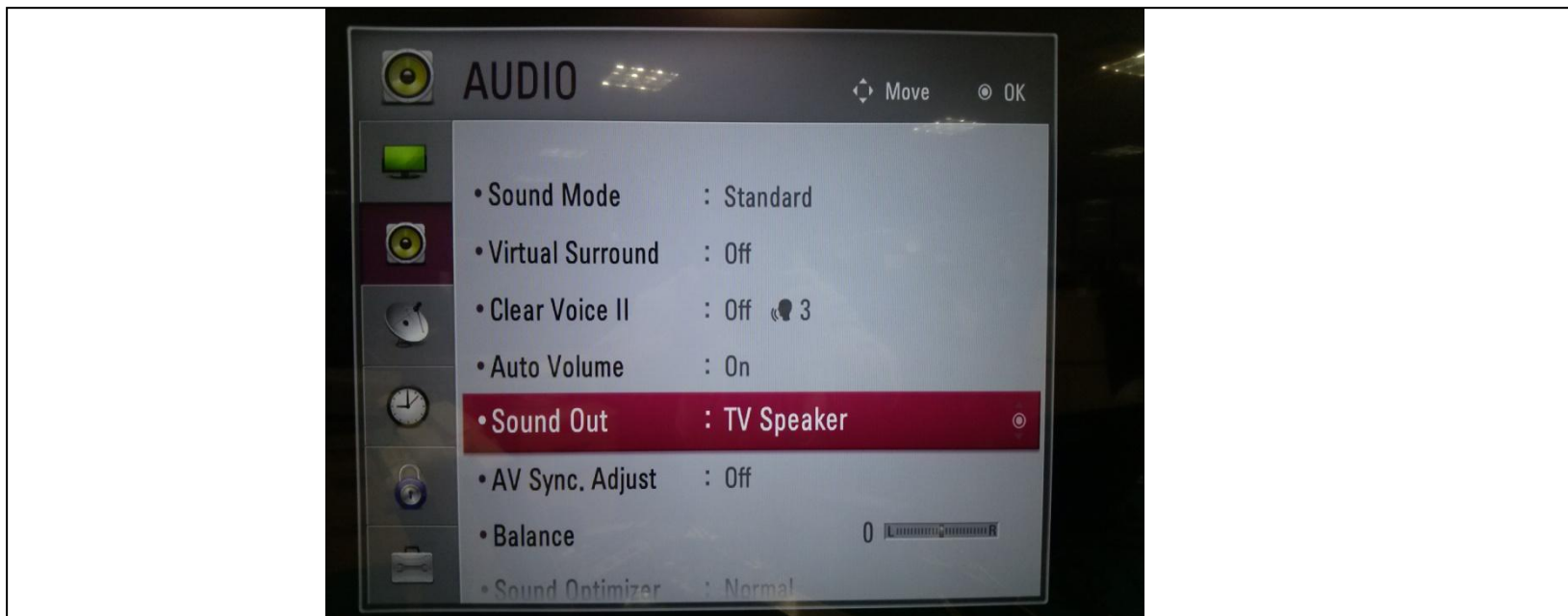


# Standard Repair Process Detail Technical Manual



|        |               |                                                |                  |              |     |
|--------|---------------|------------------------------------------------|------------------|--------------|-----|
| LCD TV | Error symptom | C. Audio error_No audio/Normal video           | Established date | 2012. 01 .14 |     |
|        | Content       | Checking method in menu when there is no audio | Revised date     |              | A15 |

<LA58xx>



## Checking method

1. Press the MENU button on the remote controller
2. Select the AUDIO function of the Menu
3. Select TV Speaker from Off to On



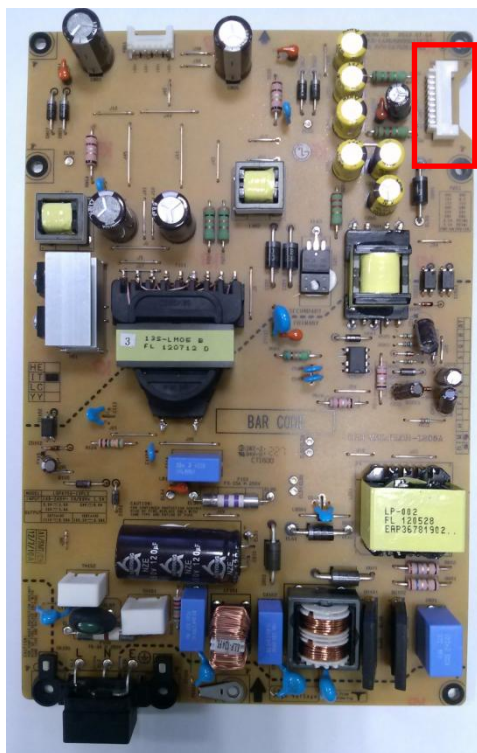
**Be First, Do it Right, Work Smart!**

# Standard Repair Process Detail Technical Manual



|        |               |                                                            |                  |              |     |
|--------|---------------|------------------------------------------------------------|------------------|--------------|-----|
| LCD TV | Error symptom | C. Audio error_No audio/Normal video                       | Established date | 2012. 11 .17 |     |
|        | Content       | Voltage and speaker checking method when there is no audio | Revised date     |              | A16 |

<ALL MODELS>



| 18 Pin (Power Board ↔ Main Board) - 공통 |        |    |        |
|----------------------------------------|--------|----|--------|
| ② ?(YEONHO)                            |        |    |        |
| 1                                      | PWR-ON | 2  | DRV-ON |
| 3                                      | 3.5V   | 4  | PDIM1  |
| 5                                      | 3.5V   | 6  | PDIM2  |
| 7                                      | GND    | 8  | GND    |
| 9                                      | 24V    | 10 | 24V    |
| 11                                     | GND    | 12 | GND    |
| 13                                     | 12V    | 14 | 12V    |
| 15                                     | 12V    | 16 | 24V    |
| 17                                     | GND    | 18 | GND    |



## Checking order when there is no audio

- ① Check the contact condition of or 24V connector of Main Board
- ② Measure the 24V input voltage supplied from Power Board  
(If there is no input voltage, remove and check the connector)
- ③ Connect the tester RX1 to the speaker terminal and if you hear the Chik Chik sound when you touch the GND and output terminal, the speaker is normal.

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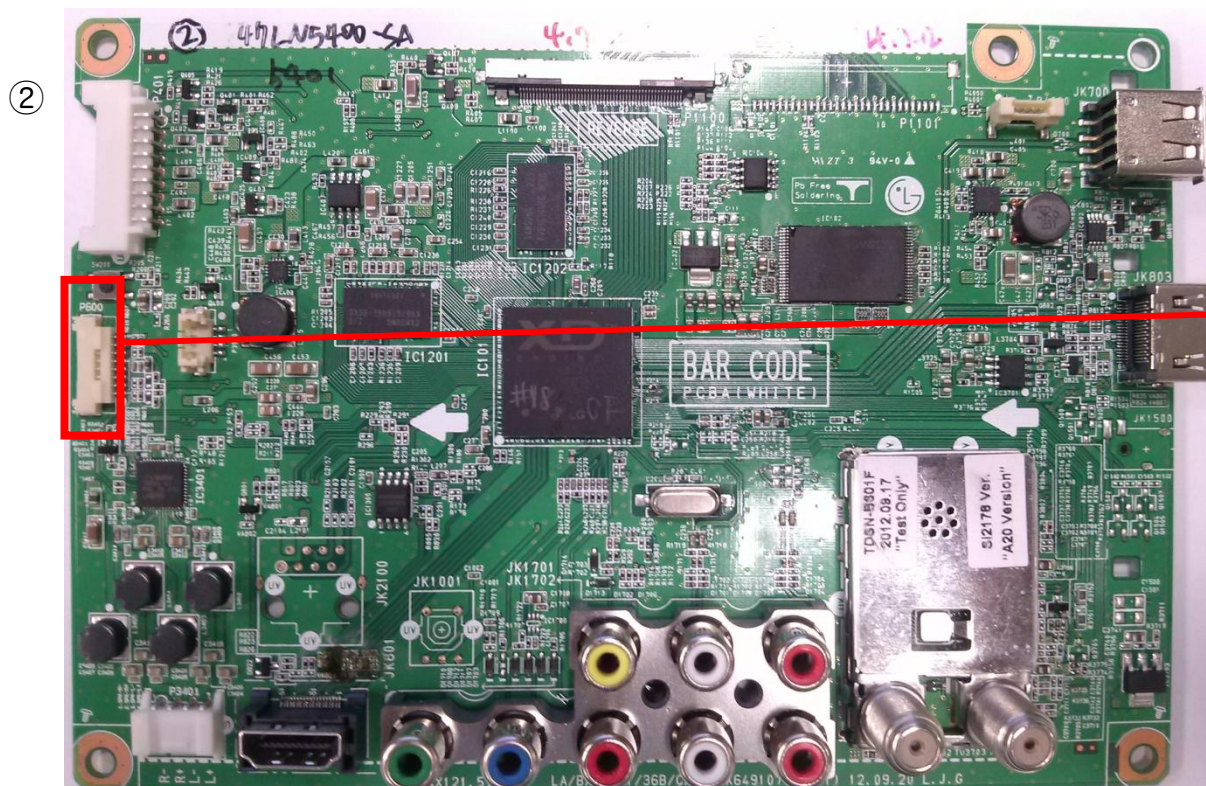


# Standard Repair Process Detail Technical Manual



|        |               |                                                                |                  |              |     |
|--------|---------------|----------------------------------------------------------------|------------------|--------------|-----|
| LCD TV | Error symptom | D. Function error_ No response in remote controller, key error | Established date | 2012. 01 .14 |     |
|        | Content       | Remote controller operation checking method                    | Revised date     |              | A17 |

<ALL MODELS>



| P600 |         |
|------|---------|
| 1    | GND     |
| 2    | KEY1    |
| 3    | KEY2    |
| 4    | St 3.5V |
| 5    | GND     |
| 6    | RED_LED |
| 7    | IR      |
| 8    | GND     |

Checking order

- 1, 2. Check IR cable condition between IR & Main board.
3. Check the st-by 3.3V on the terminal 6.
4. When checking the Pre-Amp when the power is in ON condition, it is normal when the Analog Tester needle moves slowly, and defective when it does not move at all.

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