

# T99X171.00 LED TEST REPORT



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# LED TEST FLOW

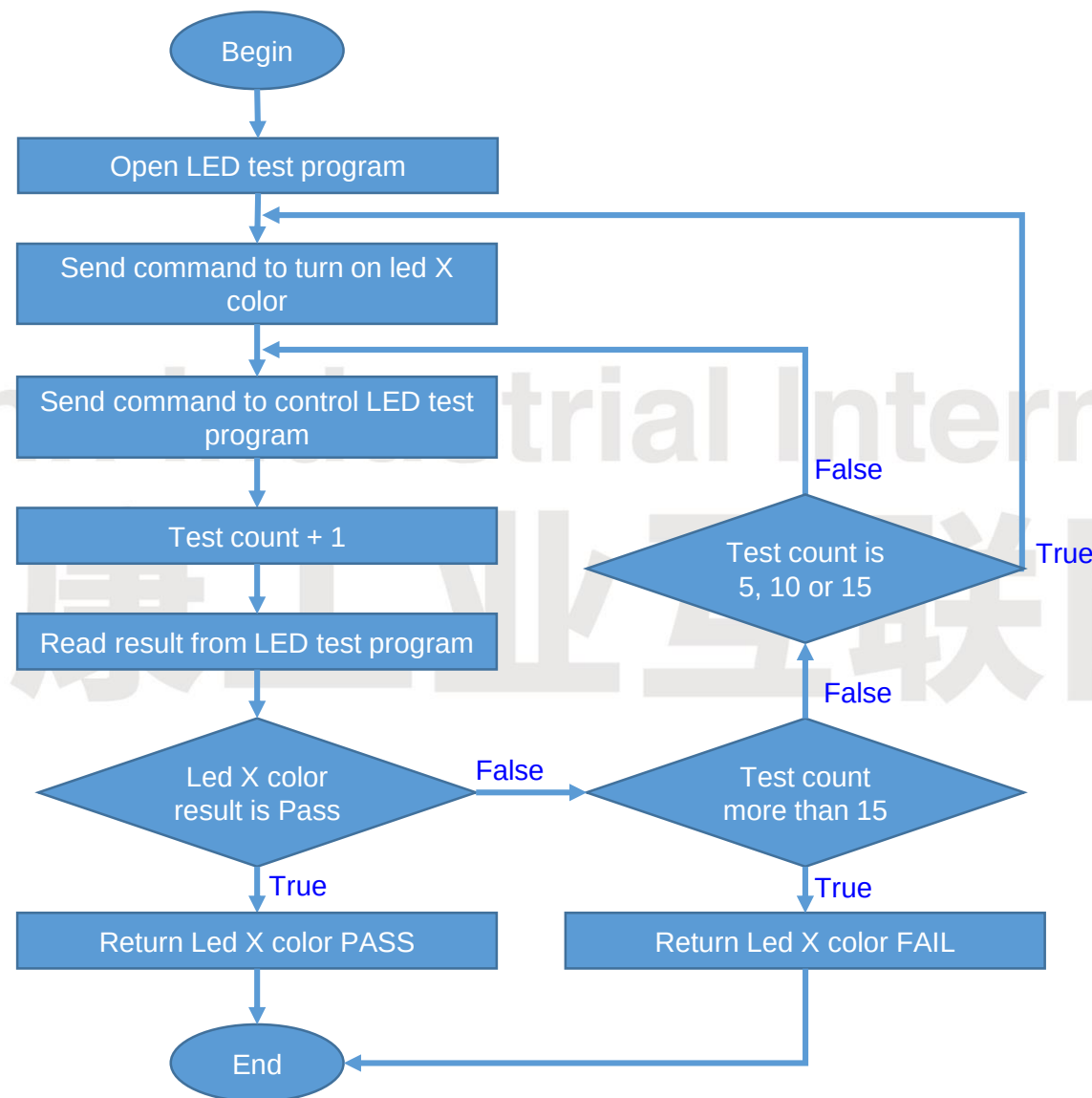
## ❑ Notes:

### ❖ Led X color

- X is red, green, blue or white.

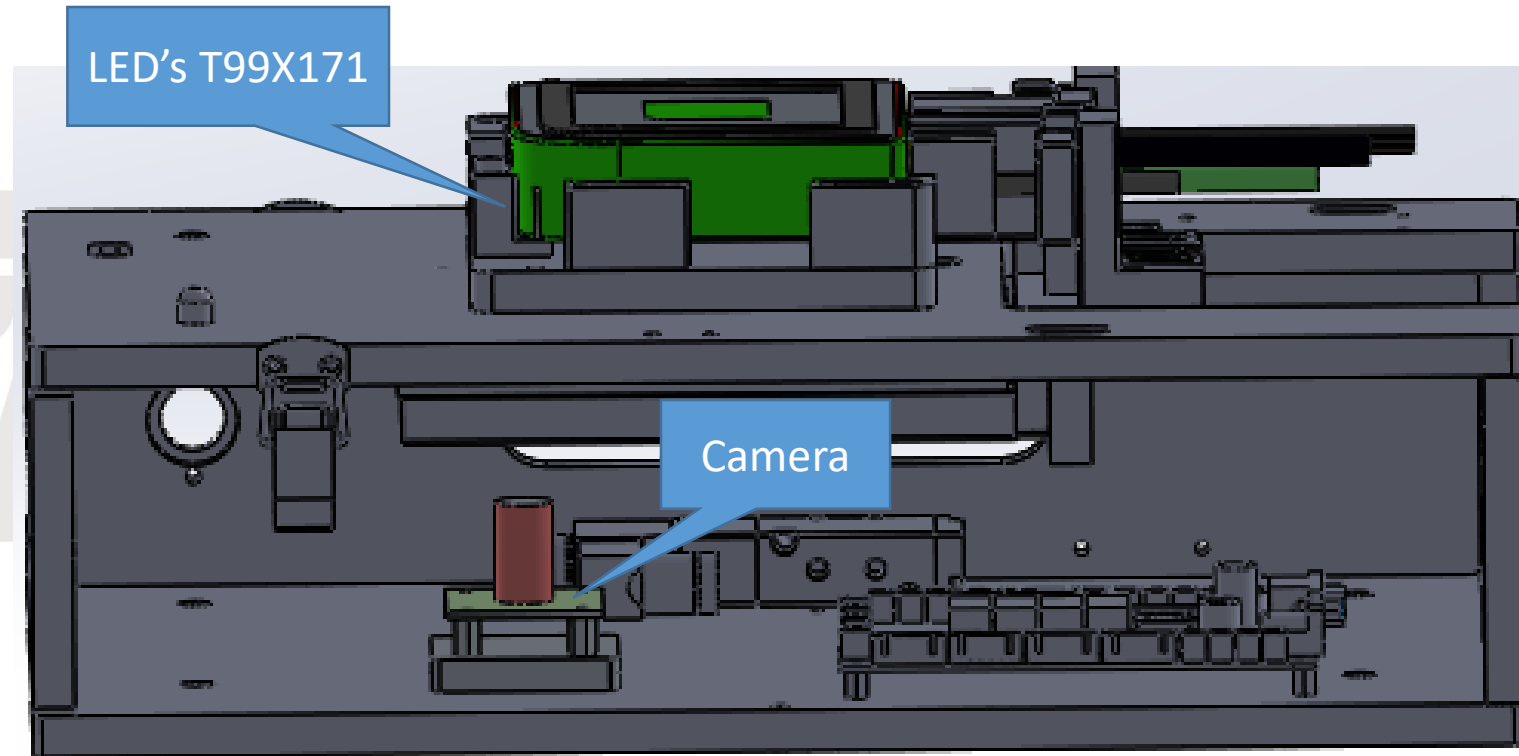
### ❖ Send command turn on Led X color:

- adb shell fac set\_led\_red
- adb shell fac set\_led\_green
- adb shell fac set\_led\_blue
- adb shell fac set\_led\_white



# LED TEST EQUIPMENT

## 1. Test fixture



Led test fixture

# LED TEST EQUIPMENT

## 2. Camera



USB camera

| USB camera specifications |                 |
|---------------------------|-----------------|
| Model                     | Jetion DCM-143  |
| Image sensor              | 1/2.9           |
| Lens                      | 3.6mm/75.7      |
| Effective resolution      | 1932(H) 1088(V) |
| Effective pixels          | 2.0 Mega pixels |
| Signal to noise ratio     | 50dB            |

# LED TEST EQUIPMENT

## 3. LED Test Program

### □ Notes:

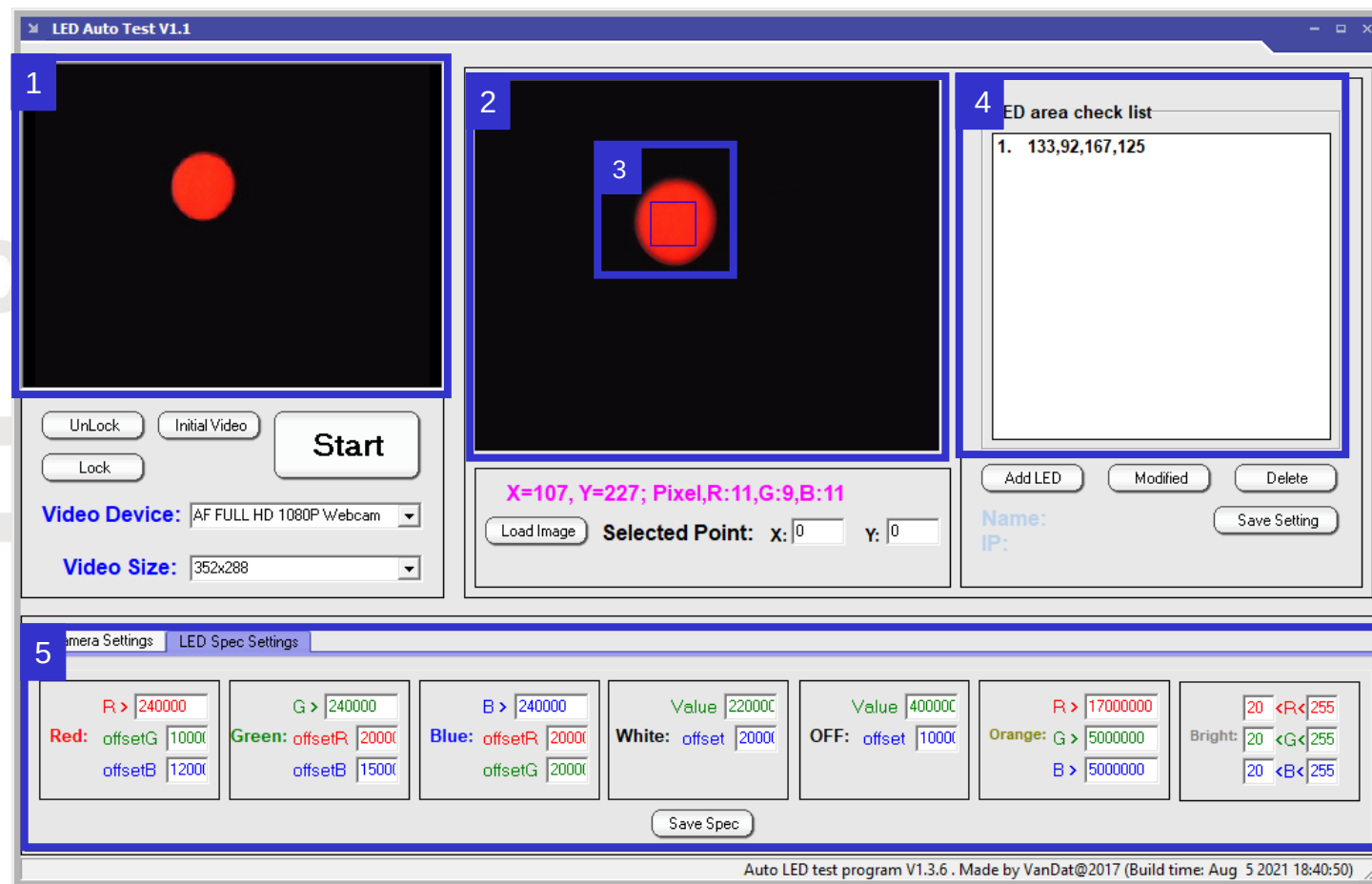
- (1) Camera preview
- (2) The image taken of LED light
- (3) LED selection area on the image
- (4) LED setting area on the image
- (5) LED spec setting area

### □ On the test log:

- Total Red Color: Sum of red pixel values on selection area(3).
- Total Green Color: Sum of green pixel values on selection area(3).
- Total Blue Color: Sum of blue pixel values on selection area(3).



PASS\_YX80DIV\_38D57ADC0EF6\_16\_51\_59.rtf



## 1. Red color

### ❑ Condition:

- 1) Total red color > Red spec
- 2) Total red color - Total blue color > Red offset blue
- 3) Total red color - Total green color > Red offset green

### ❑ Example:

#### ❖ LED spec setting:

Red spec: 240000

Red offset green: 100000

Red offset blue: 120000

#### ❖ LED values:

Total red color: 282831

Total green color: 86769

Total blue color: 67588

- $282831$  (Total red color) >  $240000$  (Red spec) (1)
  - $282831$  (Total red color) -  $67588$  (Total blue color) =  $215243$  >  $120000$  (Red offset blue) (2)
  - $282831$  (Total red color) -  $86769$  (Total green color) =  $196062$  >  $100000$  (Red offset green) (3)
- Condition (1), (2) and (3) are true => LED is red color

## 2. Green color

### ❑ Condition:

- 1) Total green color > Green spec
- 2) Total green color - Total blue color > Green offset blue
- 3) Total green color - Total red color > Green offset red

### ❑ Example:

#### ❖ LED spec setting:

Green spec: 240000

Green offset red: 200000

Green offset blue: 15000

#### ❖ LED values:

Total red color: 12019

Total green color: 281518

Total blue color: 220651

- $281518$  (Total green color) >  $240000$  (Green spec) (1)
- $281518$  (Total green color) -  $220651$  (Total blue color) =  $60867$  >  $15000$  (Green offset blue) (2)
- $281518$  (Total green color) -  $12019$  (Total red color) =  $269499$  >  $200000$  (Green offset red) (3)
- Condition (1), (2) and (3) are true => LED is green color

## 3. Blue color

### ❑ Condition:

- 1) Total blue color > Blue spec
- 2) Total blue color - Total red color > Blue offset red
- 3) Total blue color - Total green color > Blue offset green

### ❑ Example:

#### ❖ LED spec setting:

Blue spec: 240000

Blue offset red: 200000

Blue offset green: 200000

#### ❖ LED values:

Total red color: 12139

Total green color: 11351

Total blue color: 283799

- $283799 \text{ (Total blue color)} > 240000 \text{ (Blue spec)}$  (1)
- $283799 \text{ (Total blue color)} - 12139 \text{ (Total red color)} = 271660 > 200000 \text{ (Green offset red)}$  (2)
- $283799 \text{ (Total blue color)} - 11351 \text{ (Total green color)} = 272448 > 200000 \text{ (Green offset green)}$  (3)
- Condition (1), (2) and (3) are true => LED is blue color

## 4. White color

### ❑ Condition:

- 1) Total red color > White spec
- 2) Total green color > White spec
- 3) Total blue color > White spec
- 4) |Total red color - Total blue color| < White offset
- 5) |Total red color - Total green color| < White offset
- 6) |Total blue color - Total green color| < White offset

### ❑ Example:

#### ❖ LED spec setting:

White spec: 220000

White offset: 20000

#### ❖ LED values:

Total red color: 260840

Total green color: 262505

Total blue color: 264024

- 260840 (Total red color) > 220000 (White spec) (1)
- 262505 (Total green color) > 220000 (White spec) (2)
- 264024 (Total blue color) > 220000 (White spec) (3)
- [260840 (Total red color) – 264024 (Total blue color) ] = 3184 < 20000 (White offset) (4)
- [260840 (Total red color) – 262505 (Total green color) ] = 1665 < 20000 (White offset) (5)
- [264024 (Total blue color) – 262505 (Total green color) ] = 1519 < 20000 (White offset) (6)
- Condition (1), (2), (3), (4), (5) and (6) are true => LED is blue color