# EMC TEST REPORT For IC

| | | |
|---|---|---|
| Test Report No. | : | KES-EM-21T0279 |
| Date of Issue | : | Apr. 23, 2021 |
| Product name | : | LED MONITOR |
| Model/Type No. | : | SMT-4343 |
| Variant Model | : | - |
| Applicant | : | Hanwha Techwin Co., Ltd. |
| Applicant Address | : | 6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea |
| Manufacturer | : | Weihai Daewoo Electronics Co., Ltd. |
| Manufacturer Address | : | No.26, Hongkong Road, Economic & Technical Development Zone, 264205 Weihai City, Shandong Province, China |
| Date of Receipt | : | Mar. 30, 2021 |
| Test date | : | Apr. 01, 2021 ~ Apr. 07, 2021 |
| Test Results | : | ☒ **In Compliance** ☐ **Not in Compliance** |

*Tested by*

Jun Soo, Jung
EMC Test Engineer

*Reviewed by*

Dong-Hun, Jang
EMC Technical Manager

This test report is not related to KS Q ISO/IEC 17025 and KOLAS.

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# REPORT REVISION HISTORY

| Date | Test Report No. | Revision History |
|---|---|---|
| Apr. 23, 2021 | KES-EM-21T0279 | Issued |
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# 1.0 General Product Description

## Main Specifications of EUT are:

| | | SMT-4343 |
|---|---|---|
| Display | | |
| Screen Size | | 42.5" |
| Max. Resolution | | 3840*2160 |
| Brightness | | 300 cd/m² |
| Contrast Ratio | | 800:1 ( Min ) 1000:1 ( Typ ) |
| Aspect Ratio | | 16:9 |
| Viewing Angle (H/V) | | 178°/178° |
| Display Color | | 1.07G (8bits + FRC ) |
| Response Time | | 8ms(G to G) |
| Panel Life | | 30,000 hours |
| Interface | | |
| USB | Connector | USB2.0 hub x 1 (1 PC up , 2 down) |
| Video | Connector | HDMI 2.0(1) DP 1. 2(1) |
| HDMI | Connector | HDMI |
| | Available Format | 640 x 480@60Hz/70Hz/72Hz/75Hz (VGA), 720 x 400@50Hz/60Hz/70Hz, 720×576@50Hz , 800 x 600@56Hz/60Hz/72Hz/75Hz (SVGA), 832 x 624@75Hz, 1,024 x 768@60Hz/70Hz/75Hz (XGA), 1,152 x 864@60Hz/75Hz, 1,280 x 720@60Hz, 1,280 x 800@60Hz, 1,280 x 1,024@60Hz/75Hz (SXGA), 1,360 x 768@60Hz, 1,440 x 900@60Hz/75Hz, 1,600 x 900@60Hz, 1,680 x 1,050@60Hz, 1,920 x 1,080i@60Hz, 1,920 x 1,080p@60Hz,1920×1440@60Hz , 2560×1440@60Hz 3840×2160p@30Hz/60Hz |
| DP | Connector | DP |
| | Available Format | 640 x 480@60Hz/70Hz/72Hz/75Hz (VGA), 720 x 400@50Hz/60Hz/70Hz, 720×576@50Hz , 800 x 600@56Hz/60Hz/72Hz/75Hz (SVGA), 832 x 624@75Hz, 1,024 x 768@60Hz/70Hz/75Hz (XGA), 1,152 x 864@60Hz/75Hz, 1,280 x 720@60Hz, 1,280 x 800@60Hz, 1,280 x 1,024@60Hz/75Hz (SXGA), 1,360 x 768@60Hz, 1,440 x 900@60Hz/75Hz, 1,600 x 900@60Hz, 1,680 x 1,050@60Hz, 1,920 x 1,080i@60Hz, 1,920 x 1,080p@60Hz,1920×1440@60Hz , 2560×1440@60Hz 3840×2160p@30Hz/60Hz |
| Audio | Connector | Audio Out |
| | Output Signal | Loop-through line level(PC only), Speakers : 2x10W |
| Application Support | | Remote Controller |
| On Screen Display (OSD) | | |
| Functions | | VESA™ DPM Compatible |
| Language | | Korean, English, Русский, Deutsch, Français, Español, Italiano, Português, Chinese (Simplified), Chinese (Traditional), Japanese, Arabic |
| General | | |
| Electrical | Input Voltage | AC 100 ~ 240V(50/60Hz) |
| | Power Consumption | <80W |
| Environmental | Operating Temperature | 0 ~ +40°C (+32°F ~ +104°F) |
| | Operating Humidity | 10% ~ 80% (non-condensing) |
| Mechanical | Dimensions with Stand | 967.0*640.5*235.0mm |
| | Dimensions without Stand | 967.0*560*77.0mm |
| | Bezel Size | 8.6/16.4mm(Top/Bottom/Side) |
| | Weight | TBD |
| | Cabanet Color | Black |
| | Rack Mount | N/A |
| | VESA Mounts Interface | 100*100mm /400*200mm |
| Accessory | | STAND |

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## 1.1 Test Voltage & Frequency

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

☒ AC 120 V, 60 Hz

## 1.2 Variant Model Differences

Not applicable

## 1.3 Device Modifications

Not applicable

## 1.4 Equipment Under Test

| Description | Model Number | Serial Number | Manufacturer | Remarks |
|---|---|---|---|---|
| LED MONITOR | SMT-4343 | - | Weihai Daewoo Electronics Co., Ltd. | EUT |
| Remote control | - | - | - | - |

## 1.5 Support Equipments

| Description | Model Number | Serial Number | Manufacturer | Remarks |
|---|---|---|---|---|
| MacBook 1 | A1502 | C02NH8TNG3QH | Apple Inc. | - |
| MacBook 1 adapter | A1435 | - | Delta Electronics (Jiangsu) Ltd. | - |
| MacBook 2 | A1708 | C02W32TFHV22 | Apple Inc. | - |
| MacBook 2 adapter | A1718 | - | Apple Inc. | - |
| Headset | K550 | - | Britz® | - |
| Keyboard | ABKO HACKER K945P | K945P17010003 | AKKO | - |
| Mouse | M-U0026 | 1431HSO4U288 | Logitech | - |

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## 1.6 External I/O Cabling

■ HDMI Mode, DP Mode

| Start | | END | | Cable Spec. | |
|---|---|---|---|---|---|
| **Description** | **I/O Port** | **Description** | **I/O Port** | **Length** | **Shield** |
| LED MONITOR (EUT) | HDMI | MacBook 1 | HDMI | 1.5 | S |
| | USB(Type B) | | USB | 1.8 | U |
| | DP | MacBook 2 | USB(Type C) | 1.8 | U |
| | 3.5 ㎜ | Headset | Line IN | 1.6 | U |
| | USB | Keyboard | USB | 1.6 | U |
| | USB | Mouse | USB | 1.8 | U |

* Unshielded=U, Shielded=S

## 1.7 EUT Operating Mode(s)

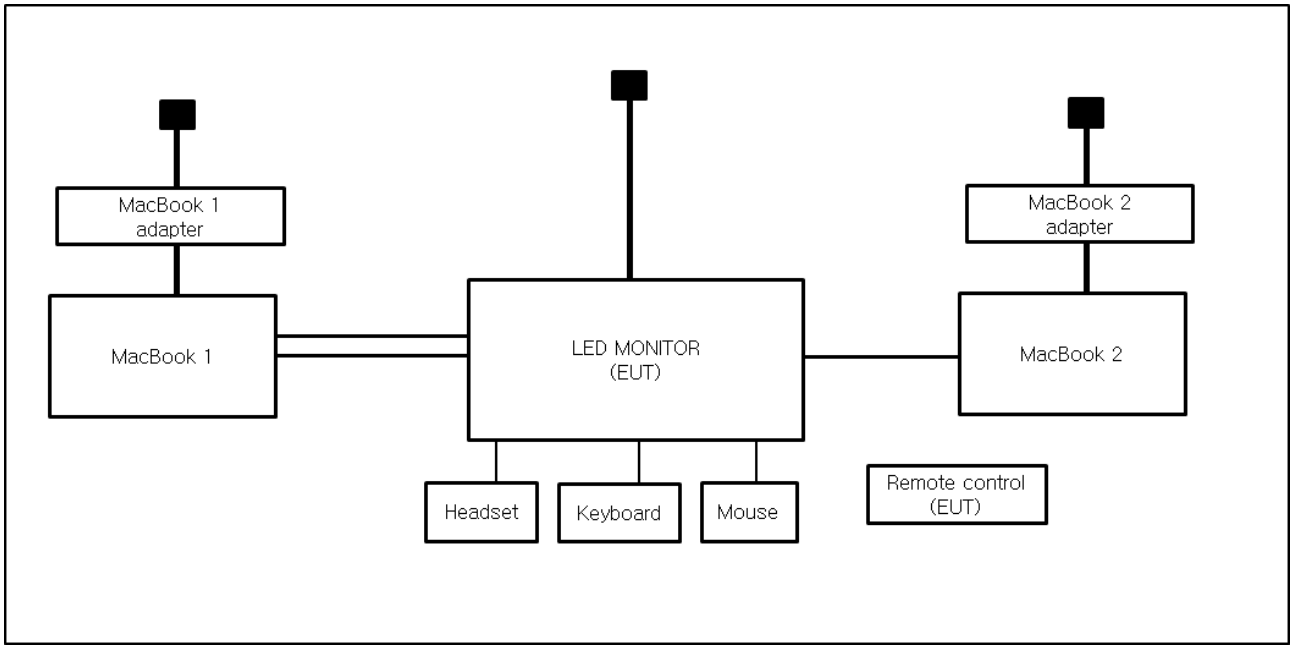
| Test Mode | operating |
|---|---|
| HDMI | The color bar image played on MacBook 1 was tested by checking whether the EUT screen is output normally and 1㎑ tone sound is output normally on the headset. |
| DP | The color bar images played on MacBook 2 were tested by checking if they were normally printed on the EUT screen. |

| EUT Test operating S/W | | |
|---|---|---|
| **Name** | **Version** | **Manufacture Company** |
| - | - | - |

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## 1.8 Configuration

■ AC Main
□ DC Main




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## 1.9 Remarks when standards applied

N/A

## 1.10 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less.

## 1.11 Test Facility

The measurement facility is located at 473-21 Gayeo-ro, Yeoju-si, Gyeonggi-do, 12658, Korea. The sites are constructed in conformance with the requirements of ANSI C63.4:2014 and CISPR 16-1-4:2019

## 1.12 Laboratory Accreditations and Listings

| Country | Agency | Scope of Accreditation | Logo |
|---|---|---|---|
| KOREA | **RRA** | EMI (3 m & 10 m Semi-Anechoic Chamber , 10 m Open Area and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions) | KR0100 |
| International | **KOLAS** | EMI (3 m & 10 m Semi-Anechoic Chamber , and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions) | KT489 |
| USA | **FCC** | 3 m & 10 m Semi-Anechoic Chamber, 10 m Open Area and Conducted test site to perform FCC Part 15/18 measurements. | KR0100 |
| Canada | **ISED** | 3 m & 10 m Semi-Anechoic Chamber and Conducted test site | 23298-1 |
| JAPAN | **VCCI** | Mains Ports Conducted Interference Measurement, Telecommunication Ports Conducted Disturbance Measurement and Radiation 10 meter site, Facility for measuring radiated disturbance above 1 GHz | R-20056, C-20036, T-20040, G-20057 |
| Europe | **TÜV SÜD** | EMI (3 m & 10 m Semi-Anechoic Chamber , 10 m Open Area and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions) | CARAT 001633 0004 |

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# 2.0 Test Regulations

The emissions tests were performed according to following regulations:

☐ **EMC – Directive 2014/30/EU**

☐ EN 61000-6-3:2011

☐ EN 61000-6-1:2007

☐ EN 61000-6-4:2007 +A1:2011

☐ EN 61000-6-2:2005

☐ EN 55011:2007 +A1:2010 ☐ Group 1 ☐ Group 2
☐ Class A ☐ Class B

☐ EN 55014-1:2006 +A2:2011

☐ EN 55014-2:1997 +A2:2008

☐ EN 55015:2013

☐ EN 61547 :2009

☐ EN 55032:2012 ☐ Class A ☐ Class B

☐ EN 55024:2010 +A1:2015

☐ EN 50130-4:2011 +A1:2014

☐ EN 61000-3-2:2014

☐ EN 61000-3-3:2013

☐ EN 61326-1:2013

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| | | |
|---|---|---|
| ☐ **VCCI V-3 / 2015.04** | ☐ Class A | ☐ Class B |
| ☐ **AS/NZS CISPR22:2009 +A1:2010** | ☐ Class A | ☐ Class B |
| ☐ **47 CFR Part 15, Subpart B** | | |
| ☐ CISPR 22:2009 +A1:2010 | ☐ Class A | ☐ Class B |
| ☐ ANSI C63.4-2017 | ☐ Class A | ☐ Class B |
| ☒ **IC Regulation ICES-003 Issue 7** | | |
| ☒ CAN/CSA CISPR 32:17 | ☒ Class A | ☐ Class B |
| ☐ ANSI C63.4-2017 | ☐ Class A | ☐ Class B |

☐ **RE– Directive 2014/53/EU**

☐ EN 301 489-1 V2.2.3

- ☐ Equipment for fixed use
- ☐ Equipment for vehicular use
- ☐ Equipment for portable use

☐ EN 301 489-3 V1.6.1

☐ EN 301 489-17 V2.2.1

☐ EN 60945:2002

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# 2.1 Conducted Emissions Mains Power Ports

**Test Date**
Apr. 01, 2021

**Test Location**
Electro wave Shieldroom #6

**Test Equipment**

| Used | Description | Model Number | Manufacturer | Serial Number | Cal. Due |
|---|---|---|---|---|---|
| ☒ | EMI Test S/W | EMC32 | R & S | 9.12.00 | - |
| ☒ | EMI TEST RECEIVER | ESR3 | R & S | 101783 | 01, 15, 2022 |
| ☒ | LISN | ENV216 | R & S | 101787 | 12, 29, 2021 |
| ☒ | LISN | ESH2-Z5 | R & S | 100450 | 12, 29, 2021 |
| ☒ | PULSE LIMITER | ESH3-Z2 | R & S | 101915 | 12, 29, 2021 |

**Test Conditions**
Temperature: (24,3 ± 0,1) ℃
Relative Humidity: (44,7 ± 0,1) % R.H.

**Frequency Range of Measurement**
150 ㎑ to 30 ㎒

**Instrument Settings**
IF Band Width: 9 ㎑

**Test Results**
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

**Remarks**
See Appendix A for test data.

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# 2.2 Radiated Electric Field Emissions(Below 1 ㎓)

**Test Date**
Apr. 01, 2021

**Test Location**
☐ OPEN AREA TEST SITE #2 ☒ SEMI ANECHOIC CHAMBER #4(10m)

**Test Equipment**

| Used | Description | Model Number | Manufacturer | Serial Number | Cal. Due |
|---|---|---|---|---|---|
| ☒ | EMI Test S/W | EP5/RE | TOYO Corporation | 6.0.0 | - |
| ☒ | EMI TEST RECEIVER | ESU26 | R & S | 100551 | 04, 01, 2022 |
| ☒ | AMPLIFIER | SCU 01 | R & S | 100603 | 11, 25, 2021 |
| ☒ | TRILOG-BROADBAND ANTENNA | VULB9163 | Schwarzbeck | 715 | 12, 08, 2022 |
| ☒ | ATTENUATOR | 8491A | HP | 32173 | 03, 10, 2022 |

**Test Conditions**
Temperature: (23,9 ± 0,2) ℃
Relative Humidity: (44,8 ± 0,2) % R.H.

**Frequency Range of Measurement**
30 ㎒ to 1 ㎓

**Instrument Settings**
IF Band Width: 120 ㎑

**Test Results**
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

**Remarks**
See Appendix A for test data.

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# 2.3 Radiated Electric Field Emissions(Above 1 ㎓)

**Test Date**
Apr. 07, 2021

**Test Location**
SEMI ANECHOIC CHAMBER #5

**Test Equipment**

| Used | Description | Model Number | Manufacturer | Serial Number | Cal. Due |
|---|---|---|---|---|---|
| ☒ | EMI Test S/W | EP5/RE | TOYO Corporation | 6.0.120 | - |
| ☒ | EMI TEST RECEIVER | ESU26 | Rohde & Schwarz | 100552 | 04, 01, 2022 |
| ☒ | BILOG ANTENNA | VULB 9168 | SCHWARZBECK | 9168-461 | 12, 22, 2022 |
| ☒ | AMPLIFIER | 310N | SONOMA INSTRUMENT | 401123 | 06, 08, 2021 |
| ☐ | ATTENUATOR | 6806.17.A | HUBER+SUHNER | - | 11, 03, 2021 |

**Test Conditions**
Temperature: (24,2 ± 0,1) ℃
Relative Humidity: (42,9 ± 0,1) % R.H.

**Frequency Range of Measurement**
1 ㎓ to 5 ㎓

**Instrument Settings**
IF Band Width: 1 ㎒

**Test Results**
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

**Remarks**
See Appendix A for test data.

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# APPENDIX A – TEST DATA

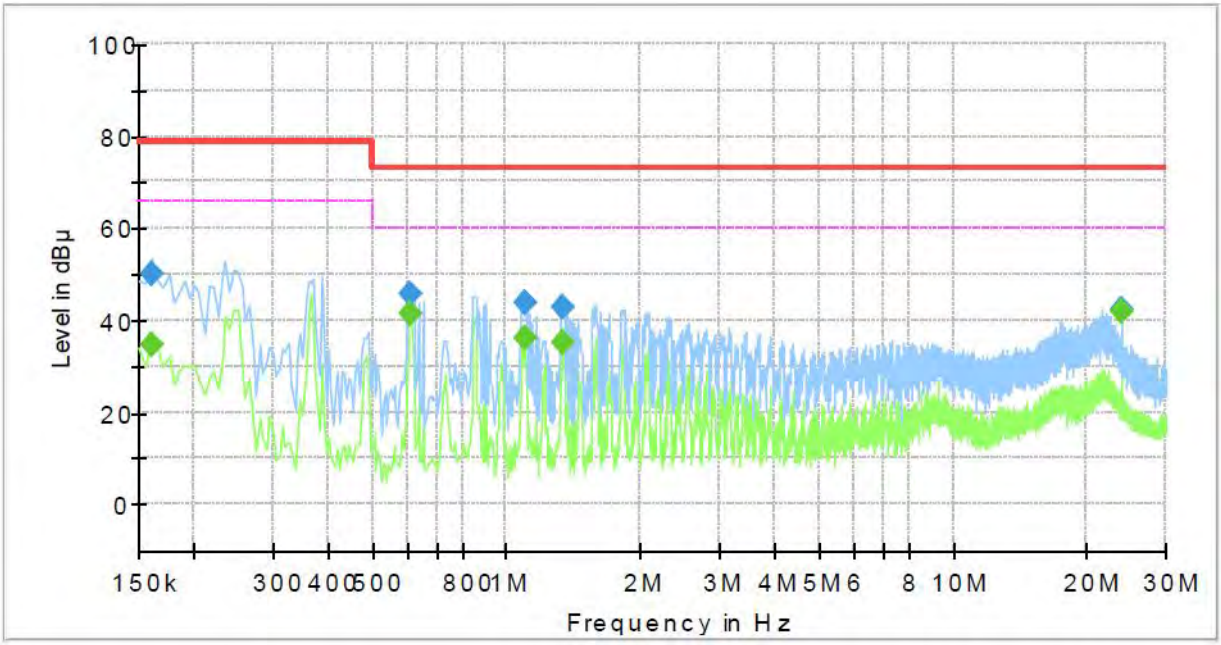
## Conducted Emissions at Mains Power Ports

■ HDMI Mode

HOT LINE

### Common Information

| | |
|---|---|
| Test Description: | Conducted Emission |
| Model No.: | SMT-4343 |
| Phase: | L1 |
| Mode: | HDMI |
| Operator Name: | KES |




### Final_Result

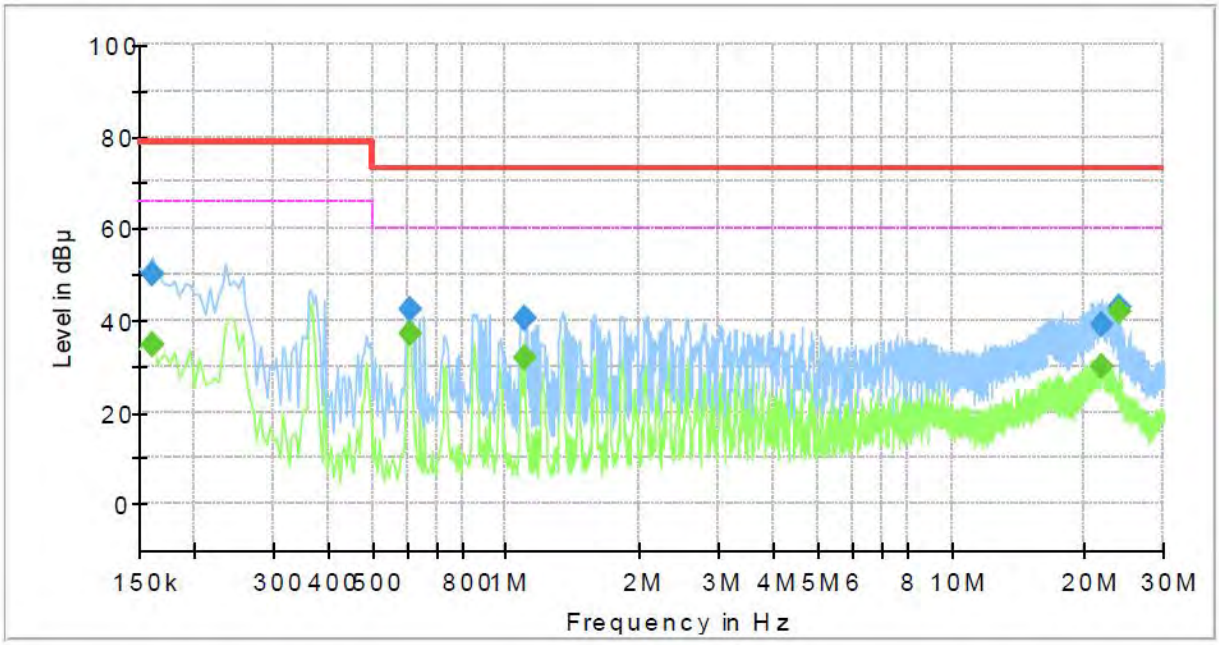
| Frequency (MHz) | QuasiPeak (dBµV) | CAverage (dBµV) | Limit (dBµV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 0.160000 | --- | 34.90 | 66.00 | 31.10 | 1000.0 | 9.000 | L1 | 19.4 |
| 0.160000 | 50.16 | --- | 79.00 | 28.84 | 1000.0 | 9.000 | L1 | 19.4 |
| 0.610000 | --- | 41.23 | 60.00 | 18.77 | 1000.0 | 9.000 | L1 | 19.8 |
| 0.610000 | 45.81 | --- | 73.00 | 27.19 | 1000.0 | 9.000 | L1 | 19.8 |
| 1.100000 | --- | 36.09 | 60.00 | 23.91 | 1000.0 | 9.000 | L1 | 20.0 |
| 1.100000 | 43.93 | --- | 73.00 | 29.07 | 1000.0 | 9.000 | L1 | 20.0 |
| 1.340000 | --- | 35.20 | 60.00 | 24.80 | 1000.0 | 9.000 | L1 | 20.1 |
| 1.340000 | 42.95 | --- | 73.00 | 30.05 | 1000.0 | 9.000 | L1 | 20.1 |
| 24.000000 | --- | 41.85 | 60.00 | 18.15 | 1000.0 | 9.000 | L1 | 20.1 |
| 24.000000 | 42.53 | --- | 73.00 | 30.47 | 1000.0 | 9.000 | L1 | 20.1 |

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NEUTRAL LINE

## Common Information

| | |
|---|---|
| Test Description: | Conducted Emission |
| Model No.: | SMT-4343 |
| Phase: | N |
| Mode: | HDMI |
| Operator Name: | KES |




## Final_Result

| Frequency (MHz) | QuasiPeak (dBµV) | CAverage (dBµV) | Limit (dBµV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 0.160000 | --- | 34.71 | 66.00 | 31.29 | 1000.0 | 9.000 | N | 19.4 |
| 0.160000 | 49.97 | --- | 79.00 | 29.03 | 1000.0 | 9.000 | N | 19.4 |
| 0.610000 | --- | 37.20 | 60.00 | 22.80 | 1000.0 | 9.000 | N | 19.8 |
| 0.610000 | 42.12 | --- | 73.00 | 30.88 | 1000.0 | 9.000 | N | 19.8 |
| 1.100000 | --- | 31.90 | 60.00 | 28.10 | 1000.0 | 9.000 | N | 20.0 |
| 1.100000 | 40.61 | --- | 73.00 | 32.39 | 1000.0 | 9.000 | N | 20.0 |
| 21.920000 | --- | 29.82 | 60.00 | 30.18 | 1000.0 | 9.000 | N | 20.2 |
| 21.920000 | 39.20 | --- | 73.00 | 33.80 | 1000.0 | 9.000 | N | 20.2 |
| 24.000000 | --- | 41.71 | 60.00 | 18.29 | 1000.0 | 9.000 | N | 20.1 |
| 24.000000 | 42.68 | --- | 73.00 | 30.32 | 1000.0 | 9.000 | N | 20.1 |

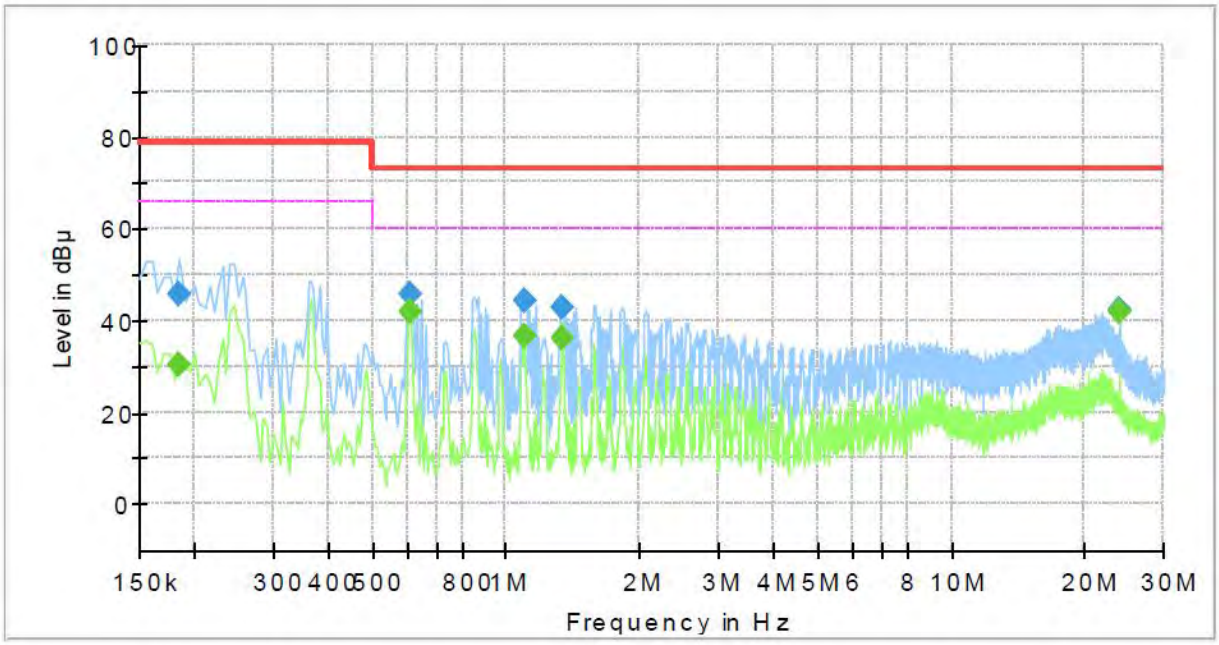
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■ DP Mode

HOT LINE

## Common Information

| | |
|---|---|
| Test Description: | Conducted Emission |
| Model No.: | SMT-4343 |
| Phase: | L1 |
| Mode: | DP |
| Operator Name: | KES |




## Final_Result

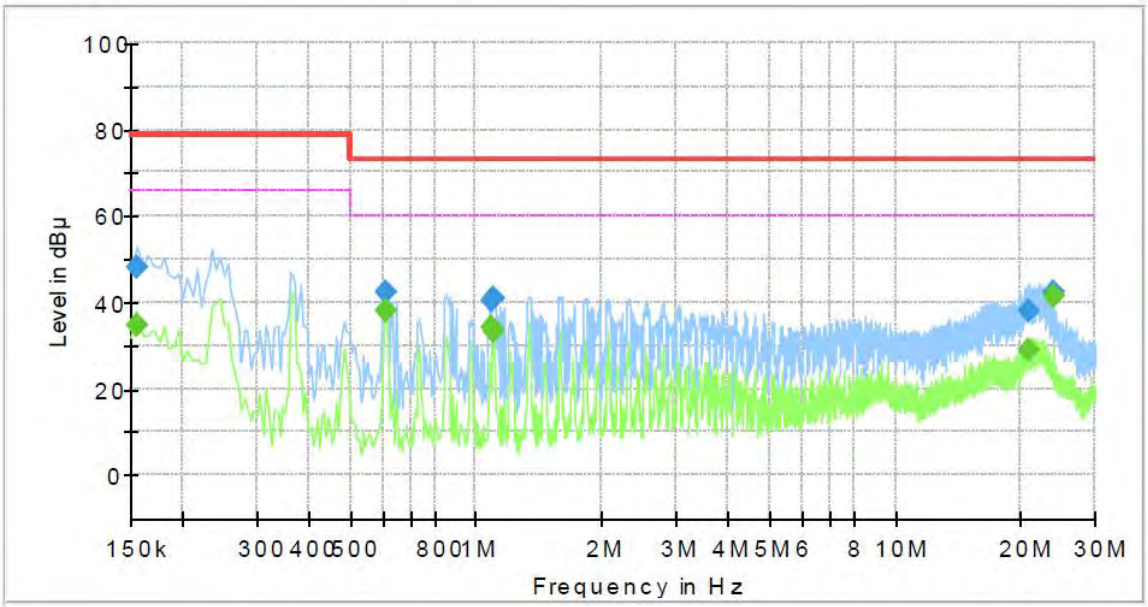
| Frequency (MHz) | QuasiPeak (dBµV) | CAverage (dBµV) | Limit (dBµV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 0.185000 | --- | 30.30 | 66.00 | 35.70 | 1000.0 | 9.000 | L1 | 19.4 |
| 0.185000 | 45.93 | --- | 79.00 | 33.07 | 1000.0 | 9.000 | L1 | 19.4 |
| 0.610000 | --- | 41.95 | 60.00 | 18.05 | 1000.0 | 9.000 | L1 | 19.8 |
| 0.610000 | 45.79 | --- | 73.00 | 27.21 | 1000.0 | 9.000 | L1 | 19.8 |
| 1.100000 | --- | 36.83 | 60.00 | 23.17 | 1000.0 | 9.000 | L1 | 20.0 |
| 1.100000 | 44.08 | --- | 73.00 | 28.92 | 1000.0 | 9.000 | L1 | 20.0 |
| 1.340000 | --- | 36.29 | 60.00 | 23.71 | 1000.0 | 9.000 | L1 | 20.1 |
| 1.340000 | 43.07 | --- | 73.00 | 29.93 | 1000.0 | 9.000 | L1 | 20.1 |
| 24.000000 | --- | 41.74 | 60.00 | 18.26 | 1000.0 | 9.000 | L1 | 20.1 |
| 24.000000 | 42.42 | --- | 73.00 | 30.58 | 1000.0 | 9.000 | L1 | 20.1 |

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NEUTRAL LINE

## Common Information

| | |
|---|---|
| Test Description: | Conducted Emission |
| Model No.: | SMT-4343 |
| Phase: | N |
| Mode: | DP |
| Operator Name: | KES |




## Final_Result

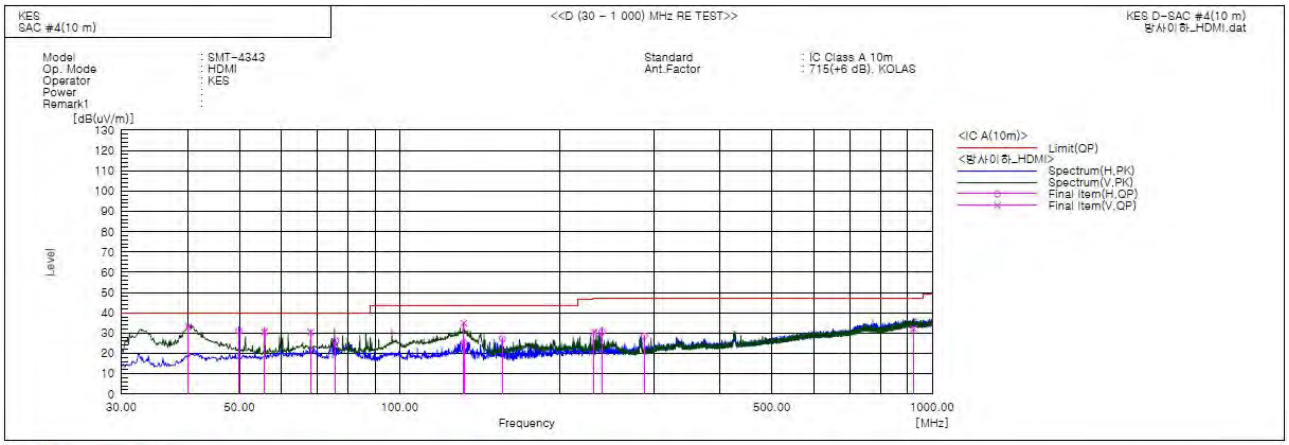
| Frequency (MHz) | QuasiPeak (dBµV) | CAverage (dBµV) | Limit (dBµV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 0.155000 | --- | 34.51 | 66.00 | 31.49 | 1000.0 | 9.000 | N | 19.4 |
| 0.155000 | 48.30 | --- | 79.00 | 30.70 | 1000.0 | 9.000 | N | 19.4 |
| 0.610000 | --- | 38.25 | 60.00 | 21.75 | 1000.0 | 9.000 | N | 19.8 |
| 0.610000 | 42.17 | --- | 73.00 | 30.83 | 1000.0 | 9.000 | N | 19.8 |
| 1.095000 | --- | 34.40 | 60.00 | 25.60 | 1000.0 | 9.000 | N | 20.0 |
| 1.095000 | 40.44 | --- | 73.00 | 32.56 | 1000.0 | 9.000 | N | 20.0 |
| 1.100000 | --- | 33.27 | 60.00 | 26.73 | 1000.0 | 9.000 | N | 20.0 |
| 1.100000 | 40.79 | --- | 73.00 | 32.21 | 1000.0 | 9.000 | N | 20.0 |
| 20.935000 | --- | 28.74 | 60.00 | 31.26 | 1000.0 | 9.000 | N | 20.2 |
| 20.935000 | 38.20 | --- | 73.00 | 34.80 | 1000.0 | 9.000 | N | 20.2 |
| 24.000000 | --- | 41.57 | 60.00 | 18.43 | 1000.0 | 9.000 | N | 20.1 |
| 24.000000 | 42.56 | --- | 73.00 | 30.44 | 1000.0 | 9.000 | N | 20.1 |

◆ Calculation
QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]
QuasiPeak / CAverage : The Final Value
Reading Value : Not shown in the table.
Corr. : Correction values (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

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# Radiated Electric Field Emissions(Below 1 ㎓)

■ HDMI Mode

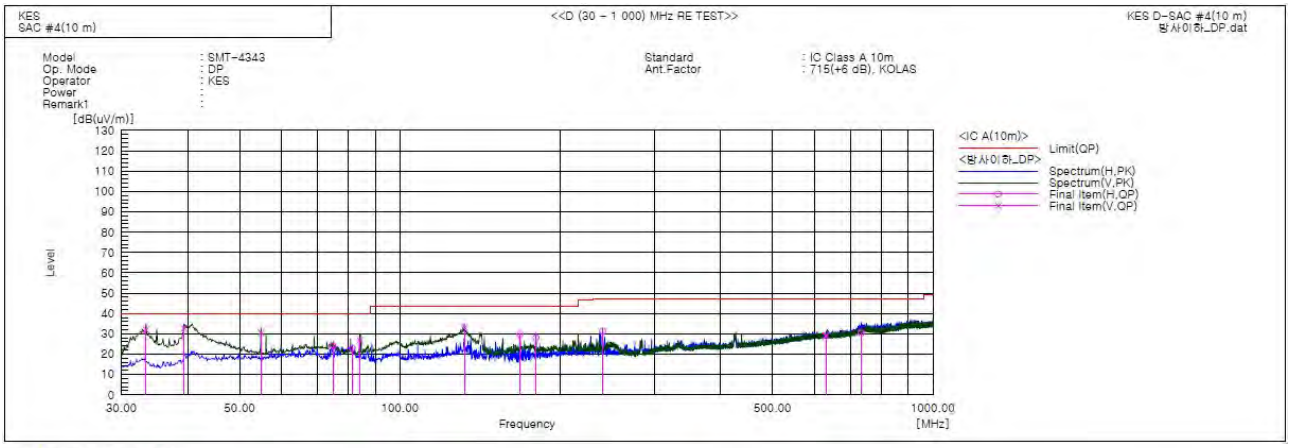



Final Result

| No. | Frequency [MHz] | (P) | Reading QP [dB(uV)] | c.f [dB(1/m)] | Result QP [dB(uV/m)] | Limit QP [dB(uV/m)] | Margin QP [dB] | Height [cm] | Angle [deg] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 40.064 | V | 55.8 | -22.6 | 33.2 | 40.0 | 6.8 | 100.0 | 200.0 | |
| 2 | 49.885 | H | 52.1 | -21.0 | 31.1 | 40.0 | 8.9 | 375.0 | 143.0 | |
| 3 | 55.705 | V | 52.1 | -21.5 | 30.6 | 40.0 | 9.4 | 107.0 | 231.0 | |
| 4 | 68.073 | V | 54.7 | -24.2 | 30.5 | 40.0 | 9.5 | 173.0 | 48.0 | |
| 5 | 75.833 | H | 53.3 | -27.1 | 26.2 | 40.0 | 13.8 | 397.0 | 268.0 | |
| 6 | 131.971 | V | 60.0 | -25.2 | 34.8 | 43.5 | 8.7 | 154.0 | 194.0 | |
| 7 | 132.093 | H | 50.5 | -25.2 | 25.3 | 43.5 | 18.2 | 255.0 | 44.0 | |
| 8 | 155.979 | H | 51.9 | -24.7 | 27.2 | 43.5 | 16.3 | 400.0 | 264.0 | |
| 9 | 231.639 | V | 50.3 | -19.7 | 30.6 | 47.0 | 16.4 | 171.0 | 148.0 | |
| 10 | 239.884 | H | 50.1 | -19.4 | 30.7 | 47.0 | 16.3 | 299.0 | 234.0 | |
| 11 | 288.020 | H | 46.9 | -18.3 | 28.6 | 47.0 | 18.4 | 249.0 | 177.0 | |
| 12 | 922.279 | V | 36.0 | -3.8 | 32.2 | 47.0 | 14.8 | 100.0 | 358.0 | |

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■ DP Mode




Final Result

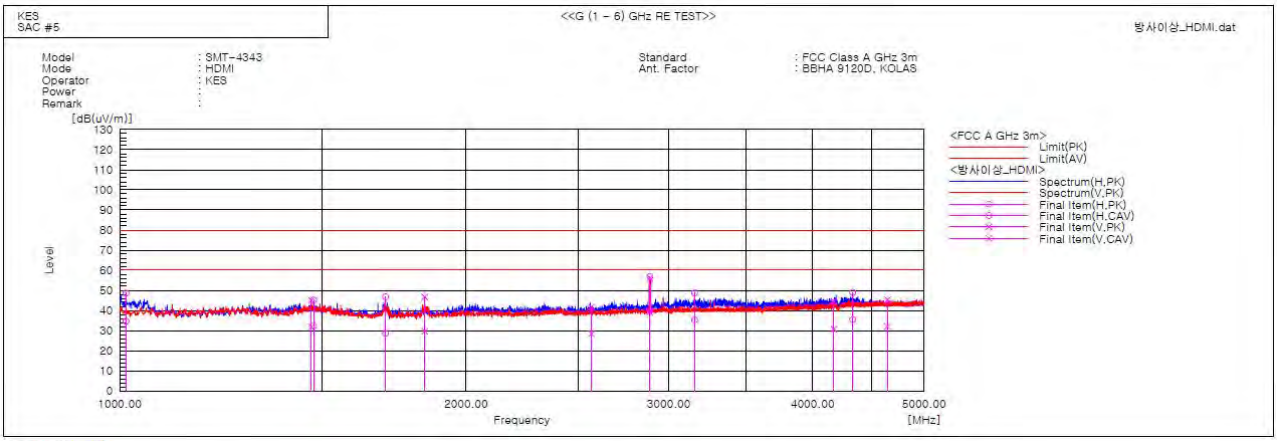
| No. | Frequency [MHz] | (P) | Reading QP [dB(uV)] | c.f [dB(1/m)] | Result QP [dB(uV/m)] | Limit QP [dB(uV/m)] | Margin QP [dB] | Height [cm] | Angle [deg] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 33.395 | V | 57.0 | -25.0 | 32.0 | 40.0 | 8.0 | 100.0 | 112.0 | |
| 2 | 39.336 | V | 55.7 | -23.0 | 32.7 | 40.0 | 7.3 | 173.0 | 109.0 | |
| 3 | 54.856 | V | 52.0 | -21.4 | 30.6 | 40.0 | 9.4 | 119.0 | 11.0 | |
| 4 | 74.863 | H | 50.8 | -26.8 | 24.0 | 40.0 | 16.0 | 324.0 | 264.0 | |
| 5 | 81.410 | H | 50.5 | -27.5 | 23.0 | 40.0 | 17.0 | 400.0 | 50.0 | |
| 6 | 84.078 | V | 53.4 | -26.6 | 26.8 | 40.0 | 13.2 | 184.0 | 268.0 | |
| 7 | 132.093 | V | 58.3 | -25.2 | 33.1 | 43.5 | 10.4 | 100.0 | 172.0 | |
| 8 | 167.861 | H | 54.0 | -24.2 | 29.8 | 43.5 | 13.7 | 275.0 | 54.0 | |
| 9 | 179.986 | H | 51.3 | -23.3 | 28.0 | 43.5 | 15.5 | 400.0 | 43.0 | |
| 10 | 240.005 | H | 50.7 | -19.4 | 31.3 | 47.0 | 15.7 | 388.0 | 56.0 | |
| 11 | 630.309 | V | 37.2 | -8.1 | 29.1 | 47.0 | 17.9 | 109.0 | 2.0 | |
| 12 | 733.735 | H | 36.6 | -6.2 | 30.4 | 47.0 | 16.6 | 394.0 | 277.0 | |

♦ Calculation – SAC #4(10 m)
Result(QP) [dB(㎶/m)] = (Reading(QP)[dB(㎶)] + c.f[dB(1/m)]
Margin(QP)[dB] = Limit[dB(㎶/m)] - Result(QP) [dB(㎶/m)]
Reading(QP) : Reading value, Result(QP) : Reading value + Factor value
Limit(QP) : Limit value, c.f : (ANT Factor + Cable Loss - Preamp Factor), Margin: Margin value

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# Radiated Electric Field Emissions(Above 1 ㎓)

■ HDMI Mode

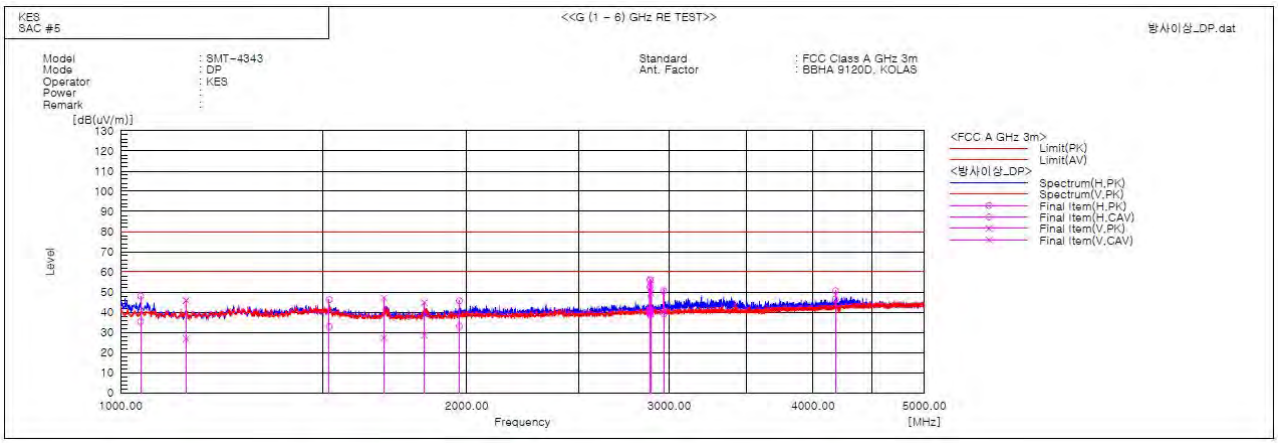



Final Result

| No. | Frequency [MHz] | (P) | Reading PK [dB(uV)] | Reading CAV [dB(uV)] | c.f [dB(1/m)] | Result PK [dB(uV/m)] | Result CAV [dB(uV/m)] | Limit PK [dB(uV/m)] | Limit AV [dB(uV/m)] | Margin PK [dB] | Margin CAV [dB] | Height [cm] | Angle [deg] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1012.500 | H | 58.4 | 44.5 | -9.8 | 48.6 | 34.7 | 80.0 | 60.0 | 31.4 | 25.3 | 135.0 | 328.8 | |
| 2 | 1466.875 | V | 52.9 | 39.7 | -7.8 | 45.1 | 31.9 | 80.0 | 60.0 | 34.9 | 28.1 | 179.0 | 330.0 | |
| 3 | 1473.750 | H | 52.9 | 40.0 | -7.7 | 45.2 | 32.3 | 80.0 | 60.0 | 34.8 | 27.7 | 130.0 | 341.2 | |
| 4 | 1701.875 | H | 53.8 | 35.6 | -7.0 | 46.8 | 28.6 | 80.0 | 60.0 | 33.2 | 31.4 | 100.0 | 3.5 | |
| 5 | 1840.625 | V | 53.1 | 36.1 | -6.4 | 46.7 | 29.7 | 80.0 | 60.0 | 33.3 | 30.3 | 137.0 | 140.4 | |
| 6 | 2570.000 | V | 45.9 | 32.6 | -4.2 | 41.7 | 28.4 | 80.0 | 60.0 | 38.3 | 31.6 | 120.0 | 17.7 | |
| 7 | 2887.500 | V | 58.9 | 42.0 | -2.8 | 56.1 | 39.2 | 80.0 | 60.0 | 23.9 | 20.8 | 106.0 | 343.9 | |
| 8 | 2888.750 | H | 59.7 | 42.8 | -2.8 | 56.9 | 40.0 | 80.0 | 60.0 | 23.1 | 20.0 | 104.0 | 326.8 | |
| 9 | 3159.375 | H | 50.9 | 37.5 | -2.2 | 48.7 | 35.3 | 80.0 | 60.0 | 31.3 | 24.7 | 119.0 | 158.9 | |
| 10 | 4171.875 | V | 43.9 | 30.1 | 0.7 | 44.6 | 30.8 | 80.0 | 60.0 | 35.4 | 29.2 | 271.0 | 304.5 | |
| 11 | 4334.375 | H | 47.7 | 34.2 | 1.3 | 49.0 | 35.5 | 80.0 | 60.0 | 31.0 | 24.5 | 102.0 | 153.7 | |
| 12 | 4646.875 | V | 43.2 | 29.9 | 2.2 | 45.4 | 32.1 | 80.0 | 60.0 | 34.6 | 27.9 | 223.0 | 126.4 | |

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## ■ DP Mode




Final Result

| No. | Frequency [MHz] | (P) | Reading PK [dB(uV)] | Reading CAV [dB(uV)] | c.f [dB(1/m)] | Result PK [dB(uV/m)] | Result CAV [dB(uV/m)] | Limit PK [dB(uV/m)] | Limit AV [dB(uV/m)] | Margin PK [dB] | Margin CAV [dB] | Height [cm] | Angle [deg] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1040.625 | H | 57.7 | 45.0 | -9.7 | 48.0 | 35.3 | 80.0 | 60.0 | 32.0 | 24.7 | 151.0 | 322.1 | |
| 2 | 1140.000 | V | 55.0 | 36.0 | -9.2 | 45.8 | 26.8 | 80.0 | 60.0 | 34.2 | 33.2 | 128.0 | 25.8 | |
| 3 | 1518.733 | H | 53.8 | 40.4 | -7.6 | 46.2 | 32.8 | 80.0 | 60.0 | 33.8 | 27.2 | 103.0 | 311.3 | |
| 4 | 1693.750 | V | 54.1 | 34.2 | -7.0 | 47.1 | 27.2 | 80.0 | 60.0 | 32.9 | 32.8 | 123.0 | 149.6 | |
| 5 | 1836.875 | V | 51.2 | 35.0 | -6.4 | 44.8 | 28.6 | 80.0 | 60.0 | 35.2 | 31.4 | 128.0 | 136.6 | |
| 6 | 1970.625 | H | 51.7 | 39.0 | -6.0 | 45.7 | 33.0 | 80.0 | 60.0 | 34.3 | 27.0 | 110.0 | 168.7 | |
| 7 | 2886.250 | H | 55.5 | 44.1 | -2.8 | 52.7 | 41.3 | 80.0 | 60.0 | 27.3 | 18.7 | 100.0 | 329.9 | |
| 8 | 2886.259 | H | 58.9 | 41.6 | -2.8 | 56.1 | 38.8 | 80.0 | 60.0 | 23.9 | 21.2 | 119.0 | 325.3 | |
| 9 | 2890.621 | V | 58.8 | 41.9 | -2.8 | 56.0 | 39.1 | 80.0 | 60.0 | 24.0 | 20.9 | 100.0 | 359.5 | |
| 10 | 2890.625 | V | 52.3 | 42.5 | -2.8 | 49.5 | 39.7 | 80.0 | 60.0 | 30.5 | 20.3 | 108.0 | 1.7 | |
| 11 | 2966.875 | H | 53.3 | 41.8 | -2.6 | 50.7 | 39.2 | 80.0 | 60.0 | 29.3 | 20.8 | 133.0 | 200.8 | |
| 12 | 4185.000 | H | 49.9 | 45.7 | 0.8 | 50.7 | 46.5 | 80.0 | 60.0 | 29.3 | 13.5 | 119.0 | 166.3 | |

♦ Calculation

Result(PK/CAV) [dB(μV/m)] = (Reading(PK/CAV)[dB(μV)] + c.f[dB(1/m)]

Margin(PK/CAV)[dB] = Limit[dB(μV/m)] - Result(PK/CAV) [dB(μV/m)]

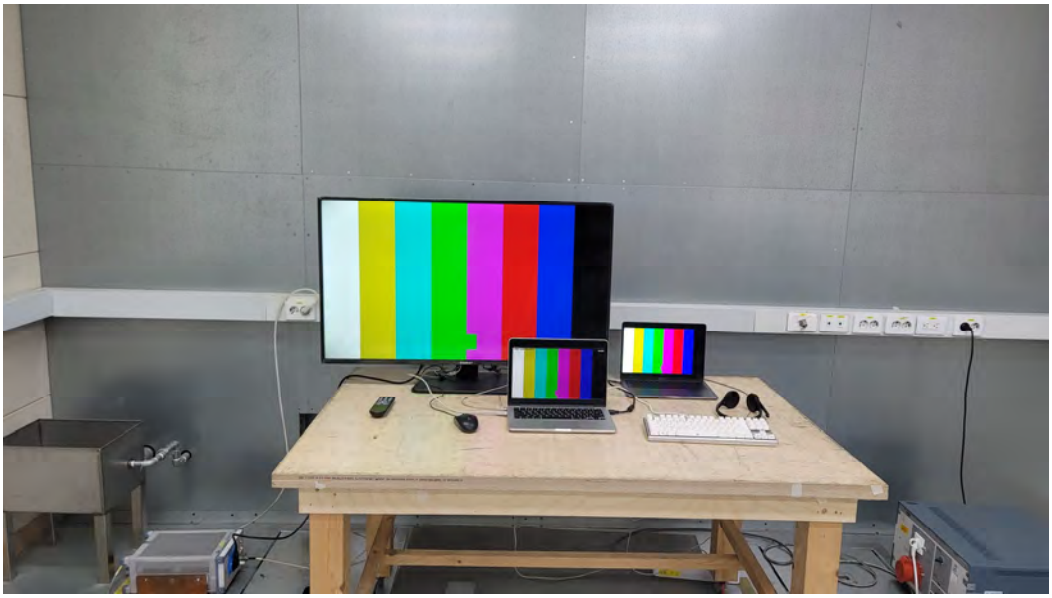
Reading(PK/CAV) : Reading value, Result(PK/CAV) : Reading value + Factor value

Limit(QP) : Limit value, c.f : (ANT Factor + Cable Loss - Preamp Factor), Margin: Margin value

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## Test Setup Photos and Configuration

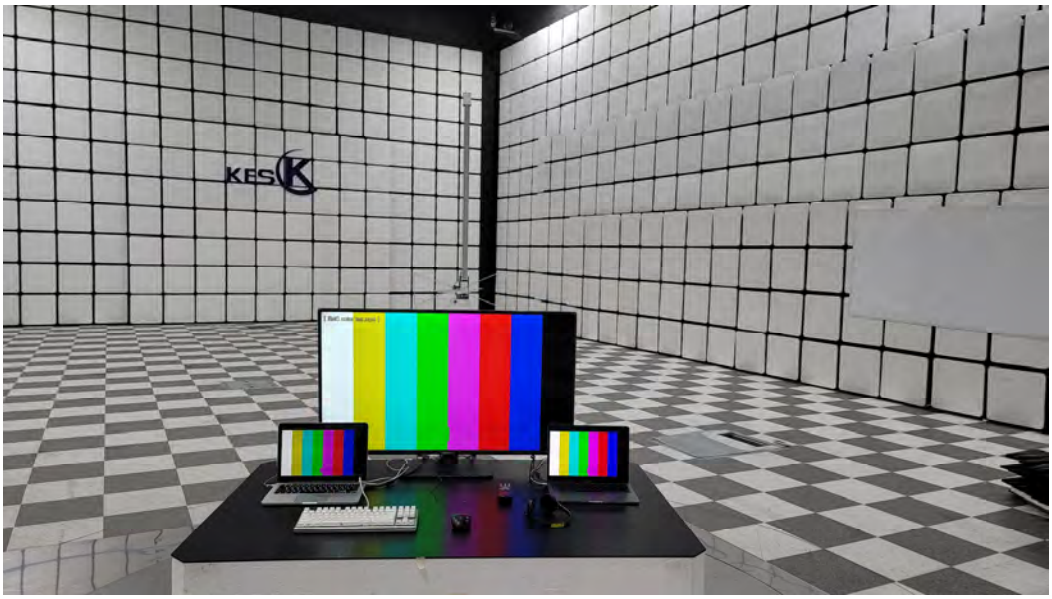
## Conducted Emissions at Mains Power Ports





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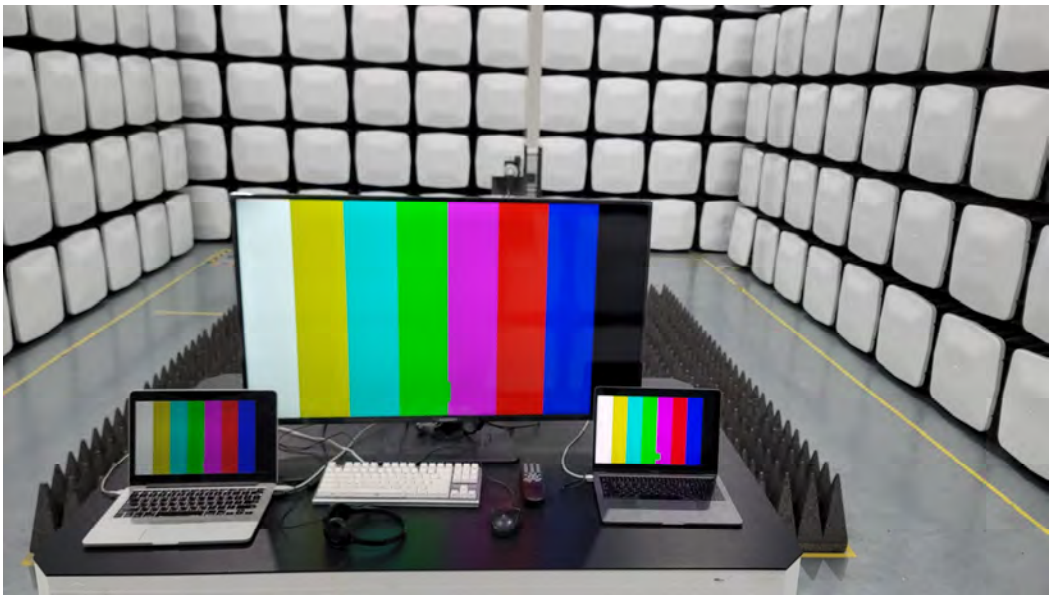
# Radiated Electric Field Emissions(Below 1 ㎓)

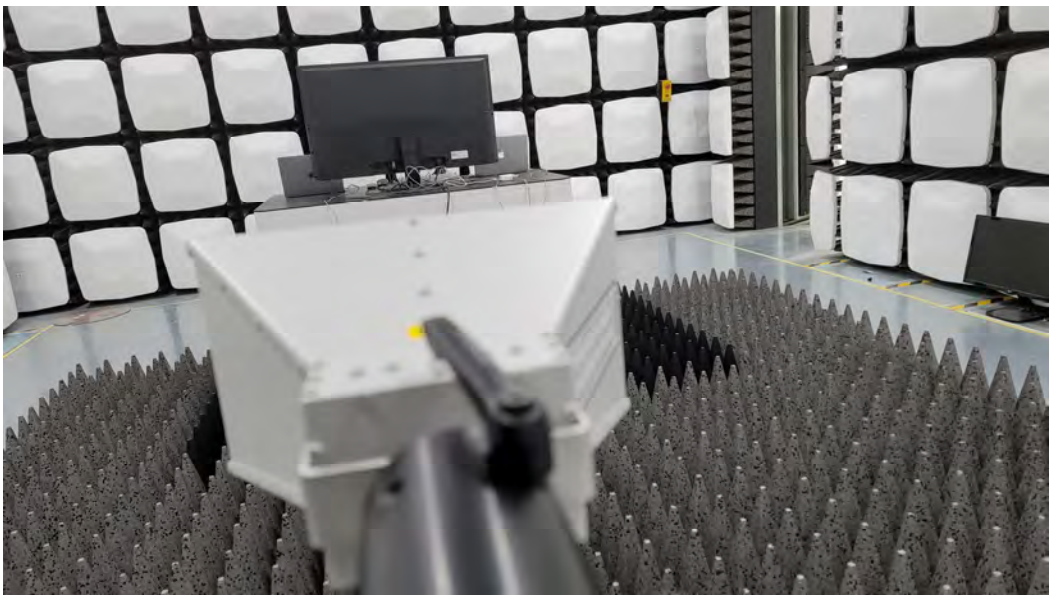




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## Radiated Electric Field Emissions(Above 1 ㎓)





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# EUT External Photographs

(Top)



(Bottom)



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# EUT Internal Photographs

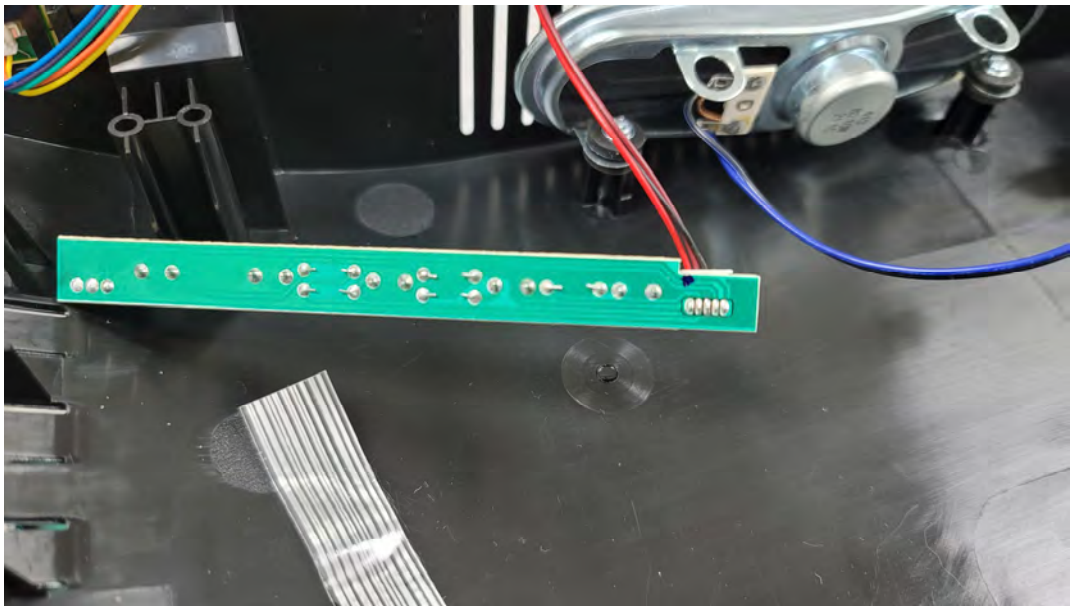
(Internal View)



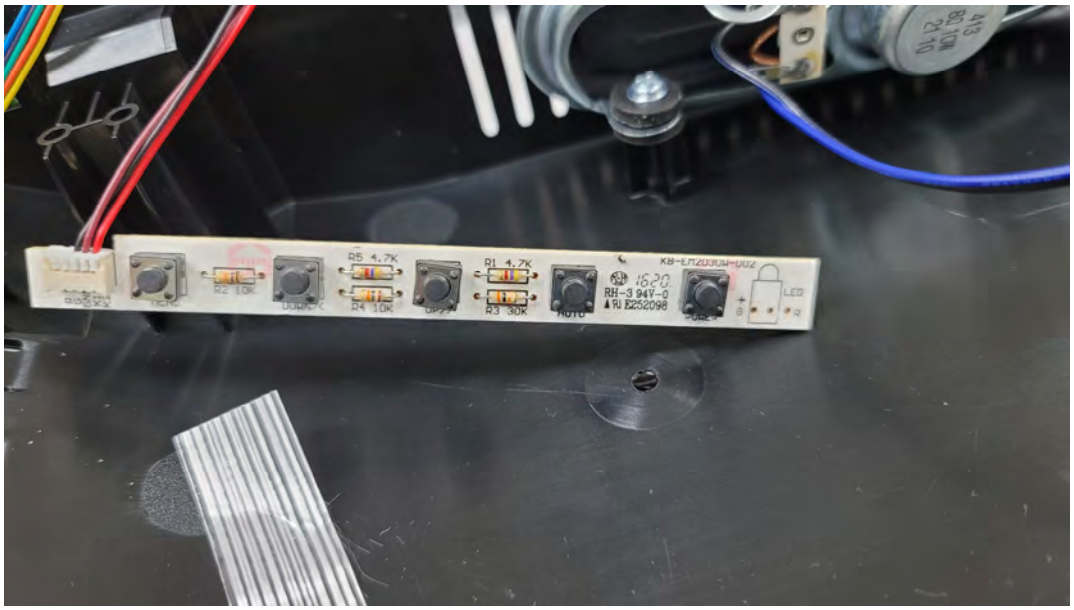
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# EUT Internal View – Board 1

(Top)



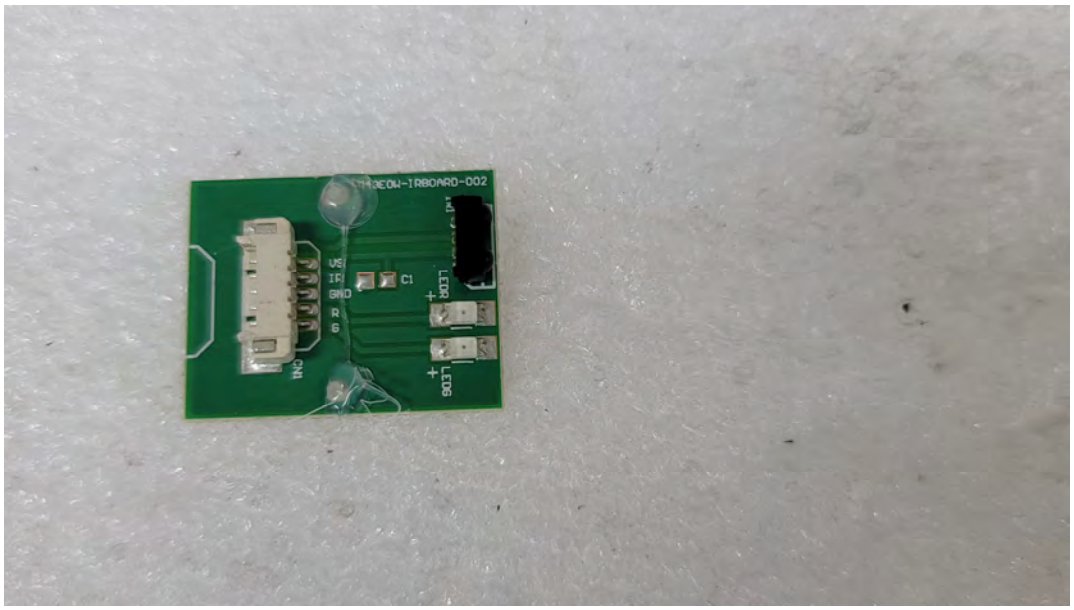
(Bottom)



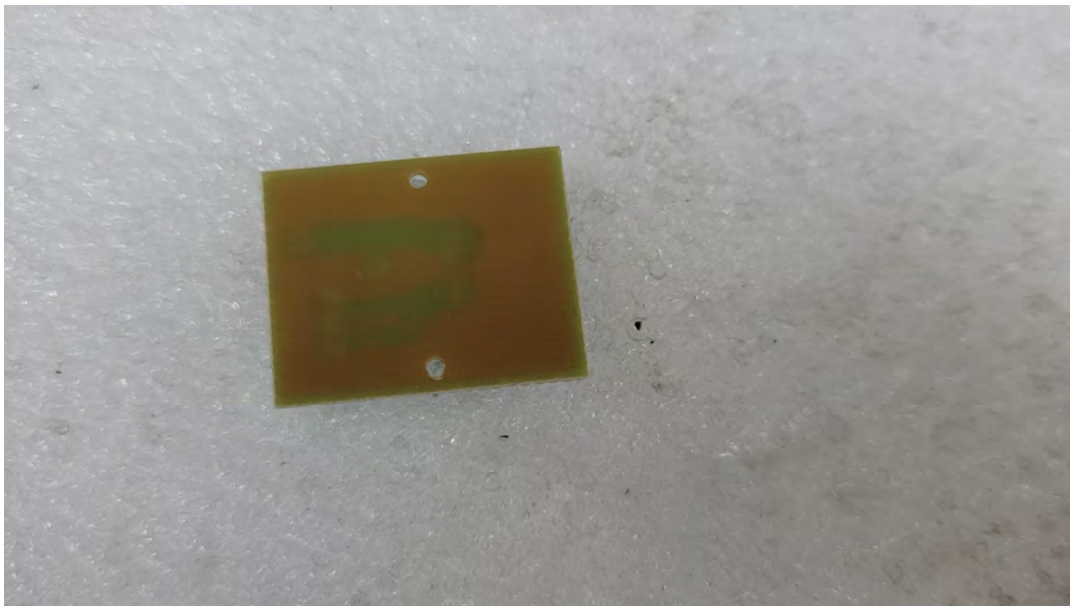

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# EUT Internal View – Board 2

(Top)

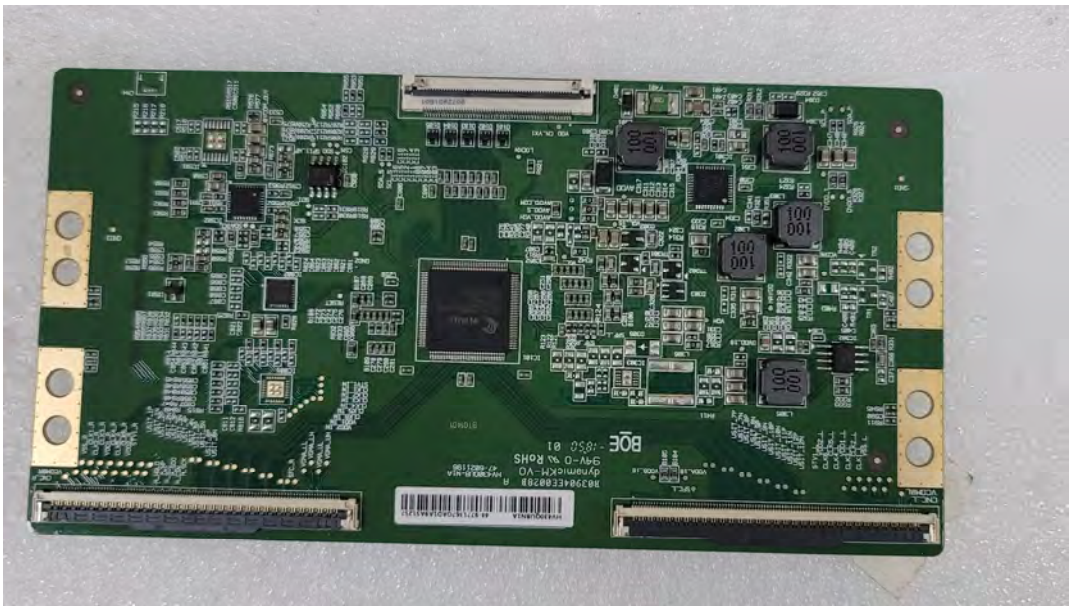



(Bottom)

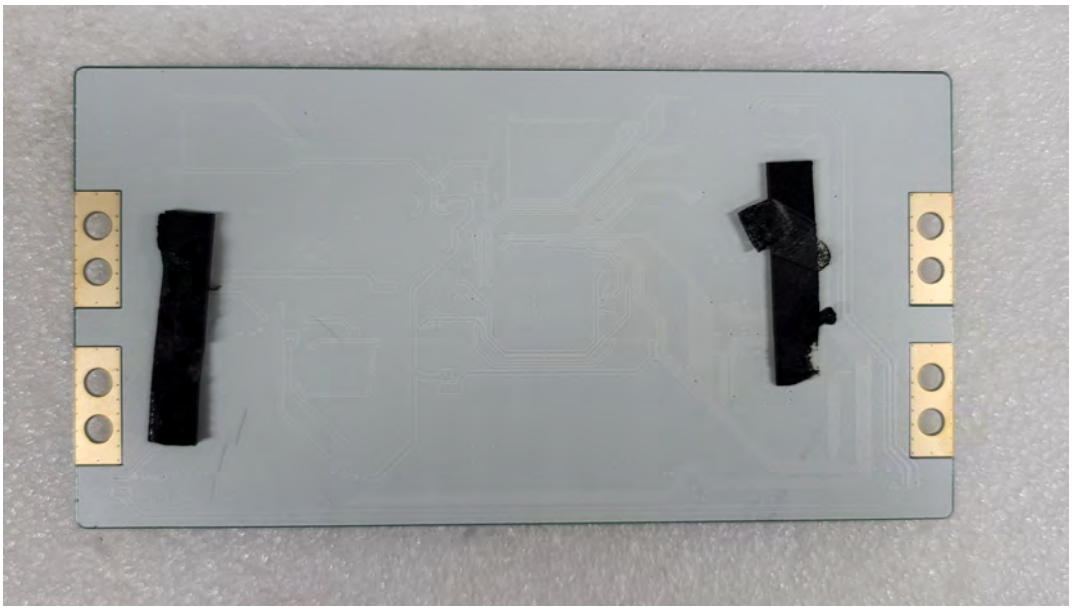


# EUT Internal View – Board 3

(Top)



(Bottom)



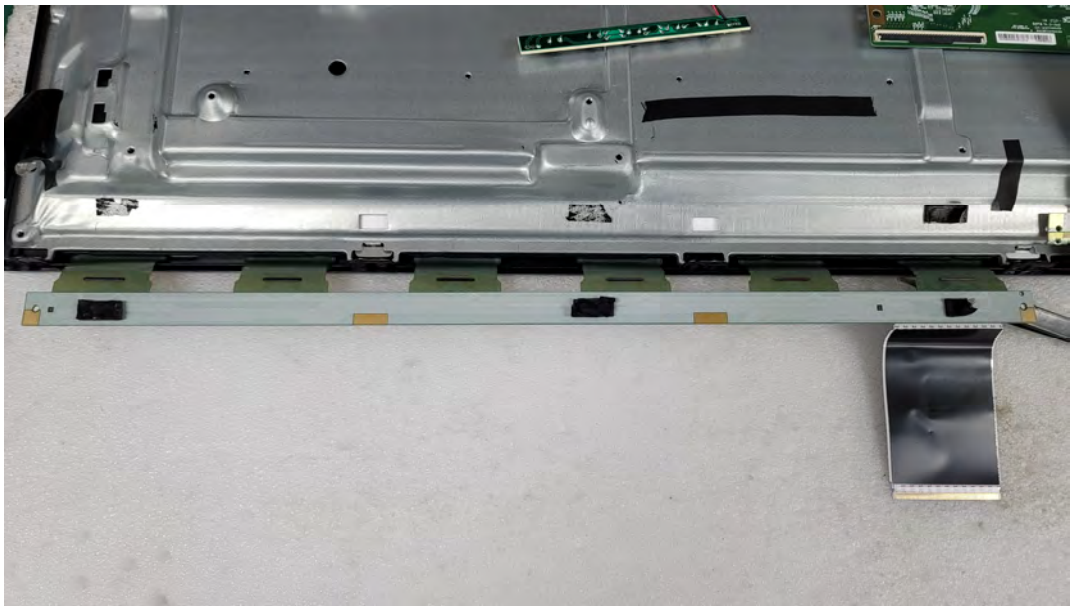
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# EUT Internal View – Board 4

(Top)



(Bottom)



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# EUT Internal View – Board 5

(Top)



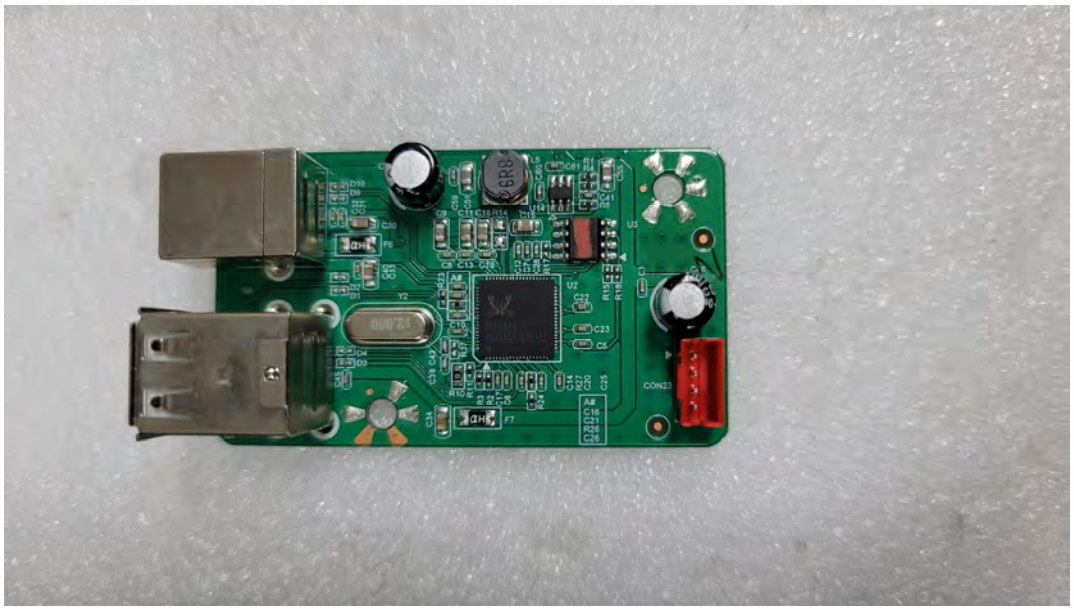

(Bottom)



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# EUT Internal View – Board 6

(Top)



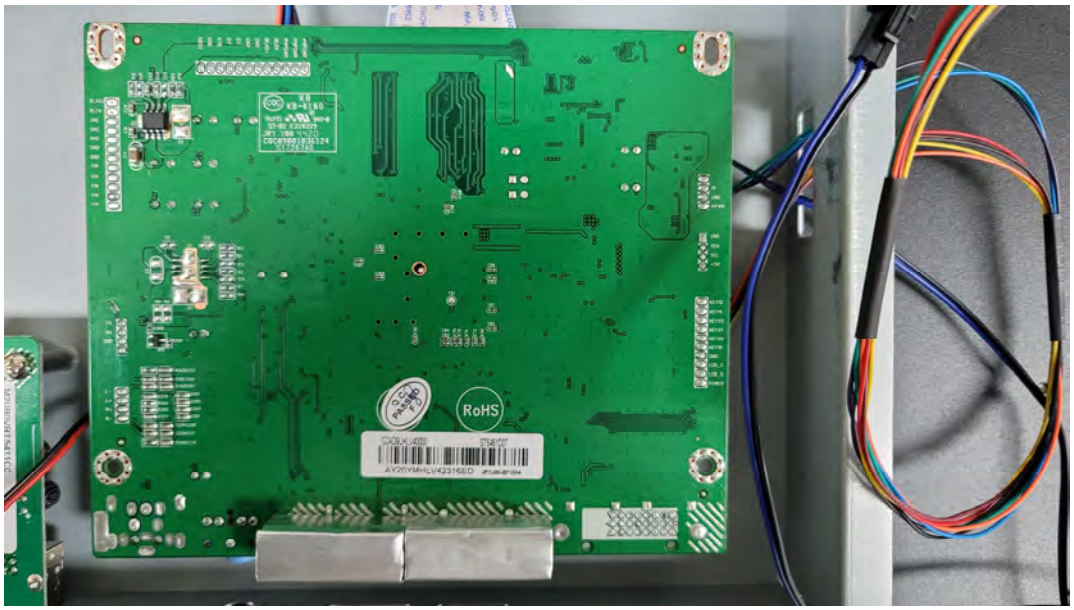
(Bottom)



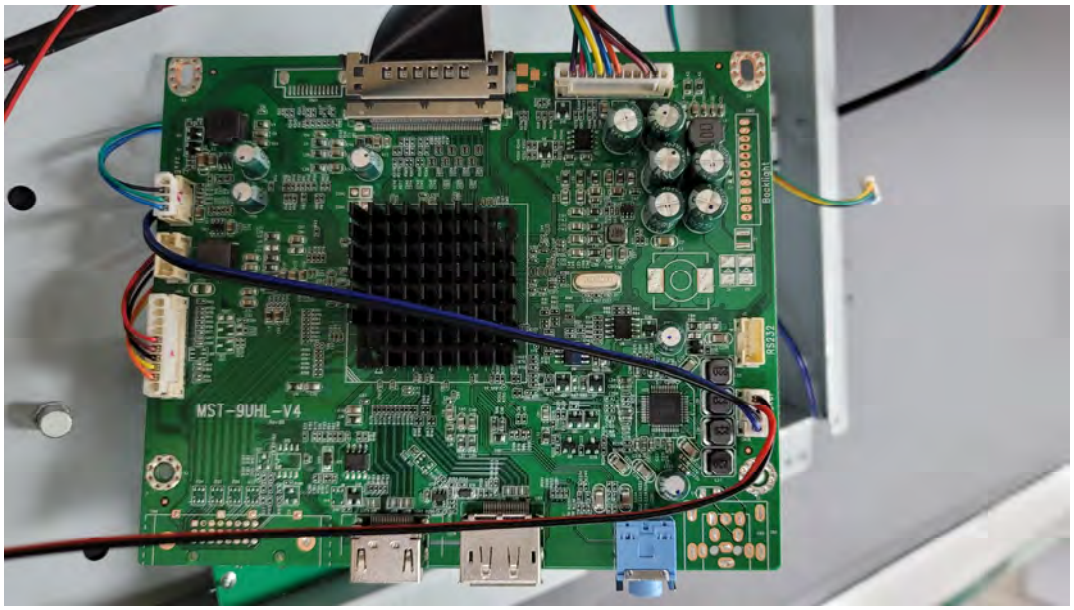

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# EUT Internal View – Board 7

(Top)

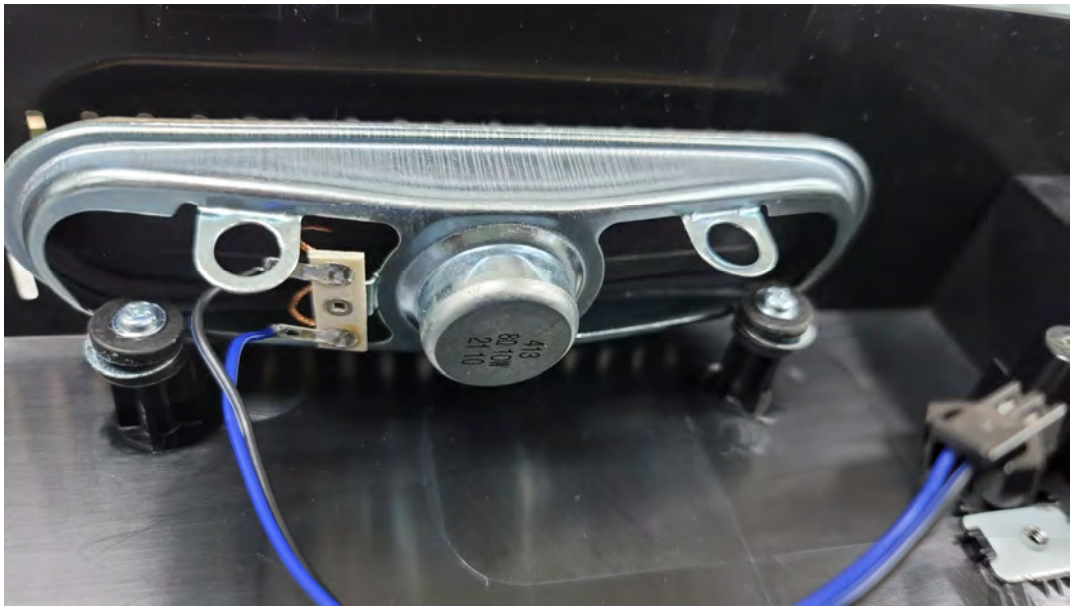



(Bottom)

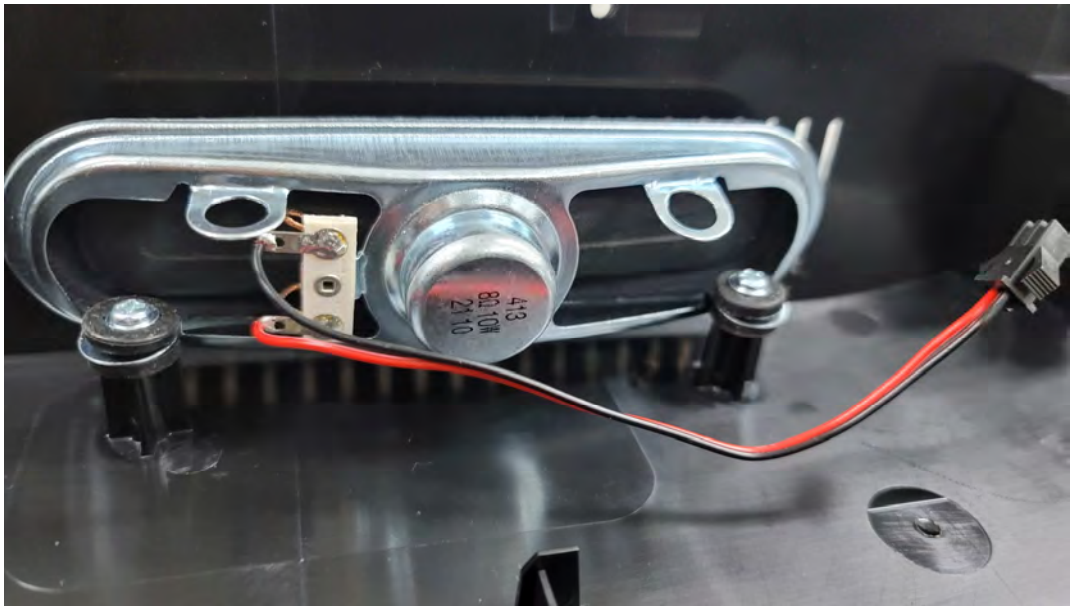



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## EUT Internal View – Speaker 1



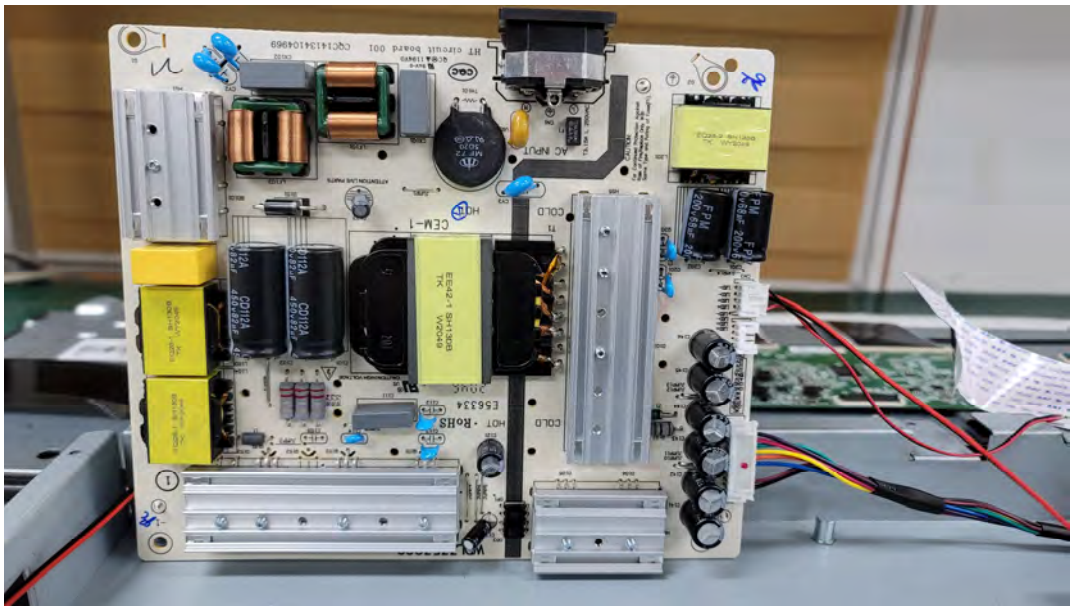
## EUT Internal View – Speaker 2



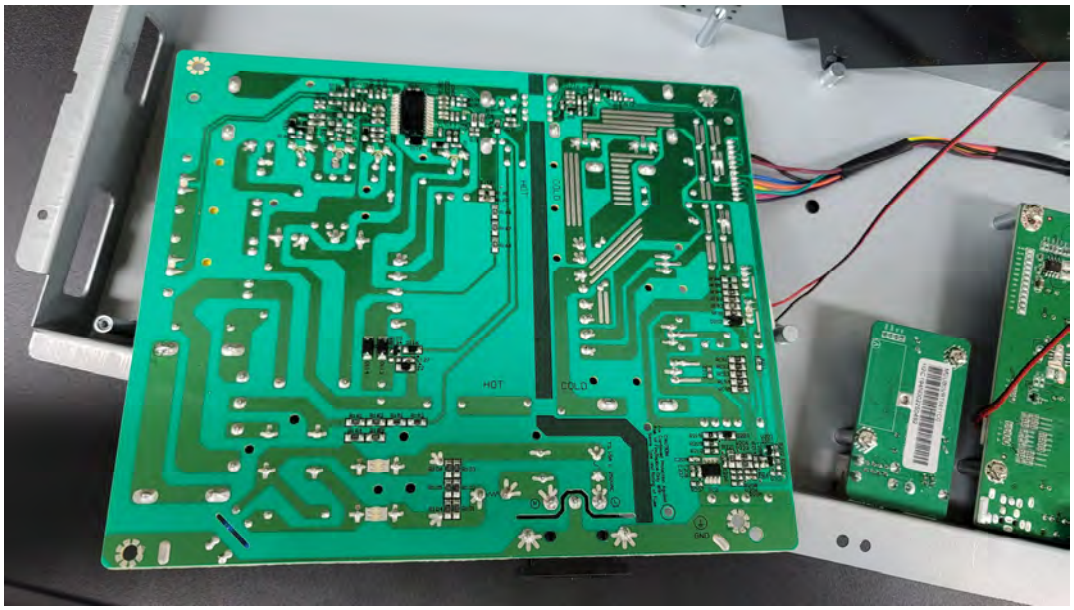
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# EUT Internal View – Power Board

(Top)



(Bottom)



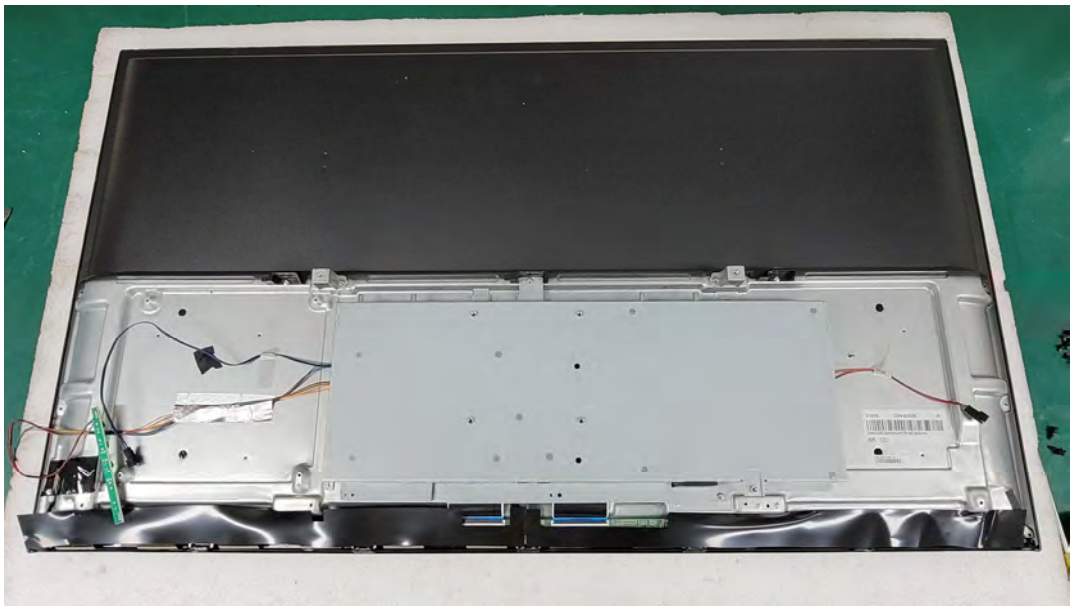
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# EUT Internal View – Display panel

(Top)



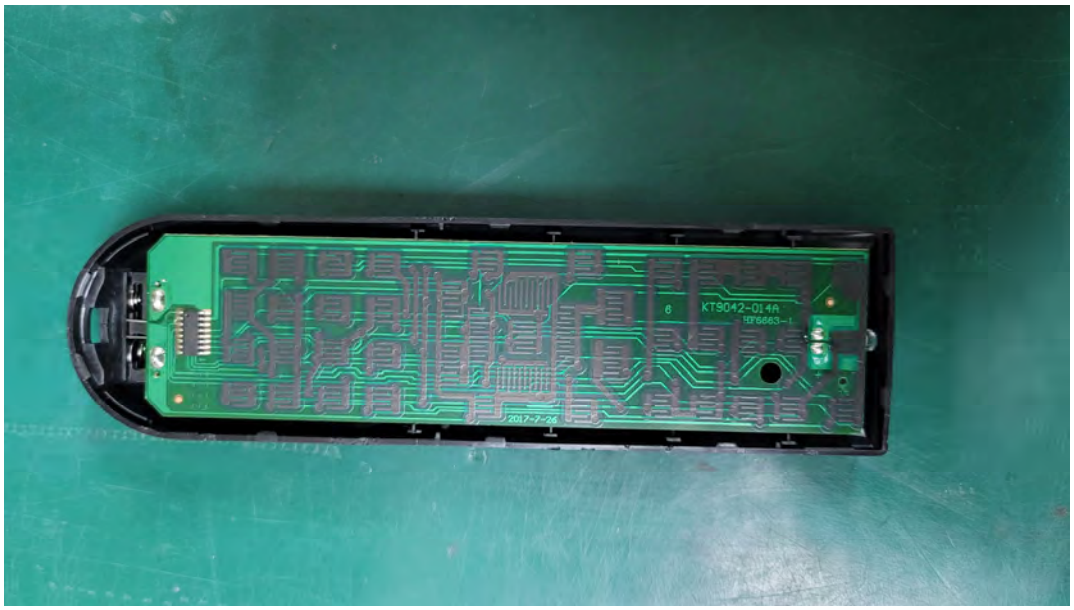

(Bottom)



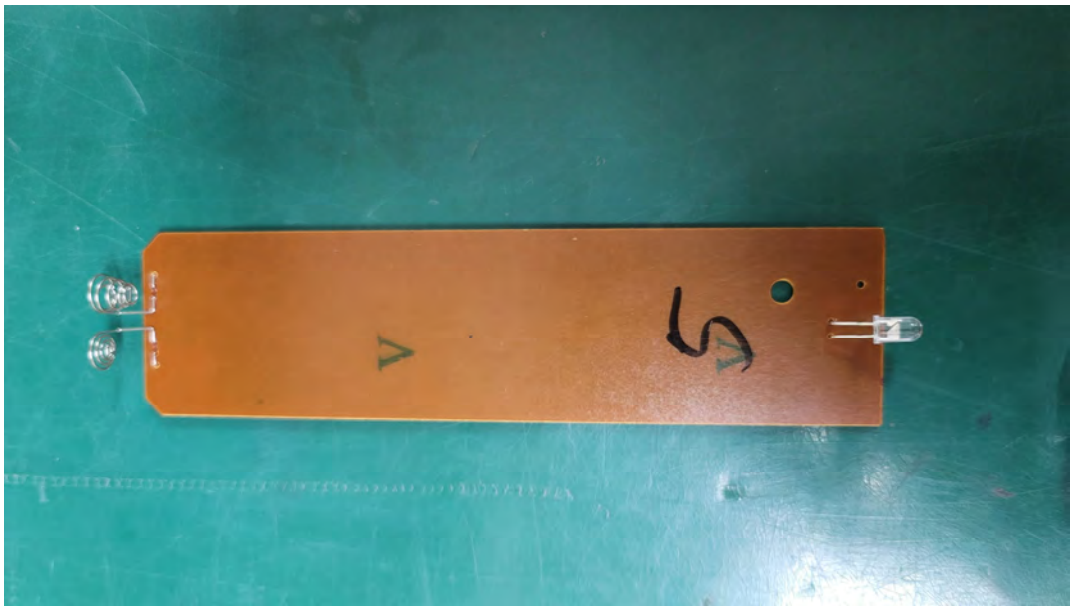
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# EUT Internal View – Remote Control Board

(Top)




(Bottom)



# Label Photographs



CAN ICES-3 (A)/NMB-3(A)

[LABEL VIEW]

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