Ministerstvo dopravy - Česká republika
Ministry of Transport - Czech Republic
*Nábřeží L.Svobody 12/1222, 110 15 Praha 1- CZ*

E8

OSVĚDČENÍ o:[1]

**UDĚLENÍ HOMOLOGACE**
ROZŠÍŘENÍ HOMOLOGACE
~~ODMÍTNUTÍ HOMOLOGACE~~
ODEJMUTÍ HOMOLOGACE
~~UKONČENÍ VÝROBY~~

COMMUNICATION concerning: [1]

**APPROVAL GRANTED**
APPROVAL EXTENDED
~~APPROVAL REFUSED~~
~~APPROVAL WITHDRAWN~~
~~PRODUCTION DEFINITELY DISCONTINUED~~

**~~typu vozidla~~/dílu/~~samostatného technického~~ celku [1] z hlediska Předpisu č. 10**
**of a ~~type of vehicle~~/component/~~separate~~ technical unit [1] with regard to Regulation No. 10**

Homologace č.: / Approval No.: **10R-04 1325**

Rozšíření č.: / Extension No.: --

| | | |
|---|---|---|
| 1. | Značka (obchodní název výrobce): / Make (trade name of manufacturer): | |
| 2. | Typ a obchodní značení: / Type and general commercial description(s): | **ELUC2S025A** / **LED Undercover 2Insert 25'** |
| 3. | Způsob označení typu, je-li uvedeno na vozidle/dílu/samostatném technickém celku [1]: / Means of identification of type, if marked on the vehicle/component/separate technical unit [1]: | **Typový štítek laserový tisk** / **Laser printed type label** |
| 3.1. | Umístění označení: / Location of that marking: | **Trvanlivě připevněn na krytu výrobku** / **Durably fixed on housing of appliance** |
| 4. | Kategorie vozidla: / Category of vehicle: | **Nepoužito** / **Not applicable** |
| 5. | Název a adresa výrobce: / Name and address of manufacturer: | **Soundoff Signal** / **3900 Central Parkway, Hundsonville , MI , 49426 , USA** |
| 6. | Pro díly a samostatné technické celky umístění a způsob připevnění homologační značky: / In the case of components and separate technical units, location and method of affixing of approval mark: | **Trvanlivě připevněn na krytu výrobku** / **Durably fixed on housing of appliance** |

Ministry of Transport and Communications Czech Republic

| | | |
|---|---|---|
| 7. | Adresa(-y) montážního závodu(-ů):<br>Address(es) of assembly plant(s): | **Soundoff Signal**<br>**3900 Central Parkway, Hundsonville ,**<br>**MI , 49426 , USA** |
| 8. | Případné doplňující informace:<br>Additional information (where applicable): | ----<br>---- |
| 9. | Homologační zkušebna:<br>Technical service responsible for carrying out the tests: | **Elektrotechnický zkušební ústav a.s.,**<br>**Pod lisem 129 , 171 02 Praha 8 Trója,**<br>**Česká republika.**<br>**Electrotechnical Testing Institute**<br>**Pod lisem 129 , 171 02 Praha 8 Trója,**<br>**Czech Republic** |
| 10. | Datum zkušebního protokolu:<br>Date of test report: | **26.02.2013** |
| 11. | Číslo zkušebního protokolu:<br>No. of test report: | **205607-01/01** |
| 12. | Případné poznámky:<br>Remarks (if any): | ---- |
| 13. | Místo:<br>Place: | **Praha** |
| 14. | Datum:<br>Date: | **14.03.2013** |
| 15. | Podpis:<br>Signature: | v.z.<br>**Dalibor Tatýrek** |

16. **Seznam informačních dokumentů uložených u schvalovacího orgánu, které lze na vyžádání obdržet je přiložen.**
**The index to the information package lodged with the approval authority, which may be obtained on request is attached.**

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1/ Nehodící se škrtněte
Strike out what does not apply

**Příloha k osvědčení o homologaci**
**Annex to the Communication concerning approval granted**

**Seznam podkladů:**
**List of documents:**

1. Protokol o zkoušce č. 205607-01/01
   Test report No.205607-01/01

2. Výkres
   Drawing

3. Technický popis
   Technical description

*ELECTROTECHNICAL TESTING INSTITUTE*
*Pod Lisem 129*
*171 02 Praha 8 - Troja*

*No. of pages:21*
*No. of annexes/No. of an. pages:-/-*
*Ref.:Nov*

*No. of the Test Report: 205607-01/01*

*Issued:26.02.2013*

# TEST REPORT

| | |
|---|---|
| **Name of product:** | LED Undercover 2 Insert 25´ |
| **Type of product:** | ELUC2S025A<br>For variants see next page. |
| **Ratings:** | 12V DC |
| **Serial number:** | --- |
| **Manufacturer:** | SoundOff Signal<br>Central Parkway 3900, Hudsonville MI 49426, U.S.A |
| **Production site:** | See manufacturer |
| **EZÚ product coding system:** | 105001 |
| **Ordering firm:** | SoundOff Signal<br>Central Parkway 3900, Hudsonville MI 49426, U.S.A |
| **Number of tested samples:** | 1 |
| **Samples submitted on:** | 11.02.2013 |
| **Location of testing:** | EZÚ |
| **Tested from** | 11.02.2013 **through** 25.02.2013 |
| **Other data:** | Type representative ELUC2S025A was tested. |
| **The product was tested according to:** | ECE R10.04:2011. |

The test results contained in this report refer to the tested items only. The values presented in this report were measured with the accuracy specified in the testing regulations. All measuring instruments used are properly traceable.
This Report shall not be reproduced except as a whole.

Compiled by: V.Nováková

Approved by: M.Vondra
Testing laboratory
technical manager

ZKUŠEBNÍ LABORATOŘ

Phone: +420 266104111 Fax: +420 284680070 E-mail: testing@ezu.cz
http://www.ezu.cz

**Product description:**

**Product:** LED Undercover 2 Insert 25´
**Type:** ELUC2S025A

**Variants:** ELUC2S010A,ELUC2S010B, ELUC2S010D, ELUC2S010E, ELUC2S010F, ELUC2S010G ELUC2S010H, ELUC2S010J, ELUC2S010K, ELUC2S010M,ELUC2S010N, ELUC2S010P ELUC2S010R, ELUC2S010W, ELUC2S025A, ELUC2S025B, ELUC2S025D, ELUC2S025E, ELUC2S025F, ELUC2S025G, ELUC2S025J, ELUC2S025R, ELUC2S025W, ELUC2SB10A, ELUC2SB10B, ELUC2SB10D, ELUC2SB10E, ELUC2SB10F, ELUC2SB10J, ELUC2SB10R, ELUC2SB10W, ELUC2SC10A, ELUC2SC10B, ELUC2SC10D, ELUC2SC10E, ELUC2SC10F, ELUC2SC10J, ELUC2SC10R, ELUC2SC10W, ELUC2SW10A, ELUC2SW10B, ELUC2SW10D, ELUC2SW10E, ELUC2SW10F, ELUC2SW10J, ELUC2SW10R, ELUC2SW10W

According to the declaration from the Applicant, the electrical circuit, layout, used components and internal wiring were identical for all models mentioned above, only with different colors of LED and lengths of cables.
Product installation must be carried out with the rules applicable in competent country.

**Tested type:** ELUC2S025A

Elaborate by: Nováková Date: 25.02.2013

| Clause | | | Result |
|---|---|---|---|
| *5.* | ***Markings*** | | |
| | Approval mark according to paragraph 5. | | P |
| *6* | ***Specifications in configurations other than "RESS charging mode coupled to the power grid"*** | | |
| 6.1.1.1 | Vehicle was tested for radiated emissions and for immunity to radiated disturbances. | | N |
| 6.1.1.2. | ESA(s) was tested for radiated and conducted emissions and for immunity to radiated and conducted disturbances. | | P |
| **6.2** | **Broadband electromagnetic radiation from vehicles.** | | |
| 6.2.1. | For the method - see annex 4 | | |
| 6.2.2 | Limit for broadband electromagnetic disturbances generated by the vehicle. | | |
| 6.2.2.1. | Distance between the antenna and vehicle 10.0 ± 0.2 m | | |
| | Frequency band [ MHz ] | Limit [ dBµV/m ] | |
| | 30-75 | 32 | N |
| | 75-400 | 32-43 increase logarithmically | N |
| | 400-1000 | 43 | N |
| 6.2.2.2. | Distance between the antenna and vehicle 3.0 ± 0.05 m | | |
| | Frequency band [ MHz ] | Limit [ dBµV/m ] | |
| | 30-75 | 42 | N |
| | 75-400 | 42-53 increase logarithmically | N |
| | 400-1000 | 53 | N |
| 6.2.2.3. | The measured values are below the limit | | N |
| **6.3.** | **Narrow band electromagnetic disturbances generated by vehicles.** | | |
| 6.3.1. | For the method - see annex 5 | | |
| 6.3.2. | Limit for narrowband electromagnetic disturbances generated by the vehicle. | | |
| 6.3.2.1. | Distance between the antenna and vehicle 10.0 ± 0.2 m | | |
| | Frequency band [ MHz ] | Limit [ dBµV/m ] | |
| | 30-75 | 22 | N |
| | 75-400 | 22-33 increase logarithmically | N |
| | 400-1000 | 33 | N |

| | | | |
|---|---|---|---|
| | Distance between the antenna and vehicle 3.0 ± 0.05 m | | |
| 6.3.2.2. | Frequency band [ MHz ] | Limit [ dBμV/m ] | |
| | 30-75 | 32 | N |
| | 75-400 | 32-43 increase logarithmically | N |
| | 400-1000 | 43 | N |
| 6.3.2.3. | The measured values are below the limit | | N |
| 6.3.2.4. | Measurement according to annex 5, paragraph 1.3 the value < 20 dBμV/m in frequency band - 76-108 MHz measured with an average detektor - the vehicle passed the limits without further testing. | | N |
| **6.4** | **Immunity of vehicles to electromagnetic radiation.** | | |
| 6.4.1. | For the method - see annex 6 | | |
| 6.4.2.1. | Field strength was 30V/m rms in over 90 % of the range 20 to 2000MHz and min.of 25 V/m rms over the whole range 20 to 2000MHz. | | N |
| 6.4.2.2. | The vehicle was complying with immunity requirements during the tests there was no degradation of 'immunity-related functions. | | N |
| **6.5.** | **Broadband electromagnetic disturbances generated by ESAs.** | | |
| 6.5.1. | For the method - see annex 7 | | |
| 6.5.2. | Limit for broadband electromagnetic disturbances generated by the ESAs. | | |
| 6.5.2.1. | Frequency band [ MHz ] | Limit [ dBμV/m ] | |
| | 30-75 | 62-52 decrease logarithmically | P |
| | 75-400 | 52-63 increase logarithmically | P |
| | 400-1000 | 63 | P |
| 6.5.2.2. | The measured values are below the limit | | P |
| **6.6.** | **Narrowband electromagnetic disturbances generated by ESAs.** | | |
| 6.6.1. | For the method - see annex 8 | | |
| 6.6.2. | Limit for narrowband electromagnetic disturbances generated by ESAs. | | |
| 6.6.2.1. | | | |
| | frequency band [ MHz ] | Limit [ dBμV/m ] | |
| | 30-75 | 52-42 decrease logarithmically | P |
| | 75-400 | 42-53 increase logarithmically | P |
| | 400-1000 | 53 | P |
| 6.6.2.2. | The measured values are below the limit | | P |

| | | | |
|---|---|---|---|
| **6.7.** | **Immunity of ESAs to electromagnetic radiation.** | | |
| 6.7.1. | For the method - see annex 9 | | |
| 6.7.2.1. | Reference levels was ( 90% in 20-2000MHz freq. band)<br>60 V/m for the 150 mm stripline testing method | | N |
| | 15V/m for the 800 mm stripline testing method | | N |
| | 75 V/m for the TEM cell testing method | | N |
| | 60 mA for the bulk current injection | | P |
| | 30 V/m for the free field test method | | P |
| | Reference level was (in whole 20-2000MHz freq. band)<br>50 V/m for the 150 mm stripline testing method | | N |
| | 12,5V/m for the 800 mm stripline testing method | | N |
| | 62,5 V/m for the TEM cell testing method | | N |
| | 50 mA for the bulk current injection | | P |
| | 25 V/m for the free field test method | | P |
| 6.7.2.2. | The vehicle was complying with immunity requirements during the tests, there was no degradation of 'immunity-related functions'. generated by ESAs | | P |
| **6.8.** | **Immunity to transient disturbances conducted along supply lines** | | |
| 6.8.1. | Method of testing by the method(s) according to ISO 7637-1, -2 | | |
| | For the results see next pages. | | P |
| **6.9.** | **Emission of conducted disturbances** | | P |
| 6.9.1. | The emission of ESA was tested by the method(s) according to ISO 7637-1, -2 | | |
| | Polarity of pulse amplitude | Maximum allowed pulse amplitude for vehicles with 12 V systems | |
| | Positive | + 75 | P |
| | Negative | – 100 | P |
| | Polarity of pulse amplitude | Maximum allowed pulse amplitude for vehicles with 24 V systems | |
| | Positive | + 150 | N |
| | Negative | – 450 | N |
| **6.10** | **EXCEPTIONS** | | |
| 6.10.1. | Vehicle or electrical/electronic system or ESA does not include an electronic oscillator with an operating frequency greater than 9 kHz, it in compliance with paragraph 6.3.2 or 6.6.2 f and with Annexes 5 and 8. | | N |
| 6.10.2. | Vehicle does not have electrical/electronic systems with immunity-related functions' so, need not to be tested for immunity to radiated disturbances and shall be deemed to comply with paragraph 6.4 and with Annex 6 of this Directive. | | N |

| | | |
|---|---|---|
| 6.10.3. | ESAs with no immunity-related functions need not to be tested for immunity to radiated disturbances and shall be deemed to comply with paragraph 6.7 and with Annex 9 to this Directive. | N |
| 6.10.4. | Electrostatic discharge<br>No type approval test for electrostatic discharge is necessary | N |
| 6.10.5. | ESAs that are not switched, contain no switches or do not include inductive loads need not be to be tested for conducted emission and shall be deemed to comply with paragraph 6.9 of this Annex. | N |
| 6.10.6. | The loss of function of receivers during the immunity test, when the test signal is within the receiver bandwidth (RF exclusion band) passed the criteria. | N |
| 6.10.7. | RF transmitters were tested in the transmit mode.<br>Tested according to this article. | N |
| *7.* | ***Additional specifications in the configuration "RESS charging mode coupled to the power grid"*** | N |

**Result:** P- Pass F- Fail N -not applicable

**Note:** Type representative ELUC2S025A was tested.

**Total evaluation:** Tested sample **LED Undercover 2 Insert 25´** type **ELUC2S025A** fulfilled all requirements of ECE R10.04:2011.

Measured by: M.Vondra Date: 25.02.2013

## cl. 6.5, 6.6 Measurement of interfering radiation in the 30-1000 MHz Band

**Product:** LED Undercover 2 Insert 25'
**Type :** ELUC2S025A

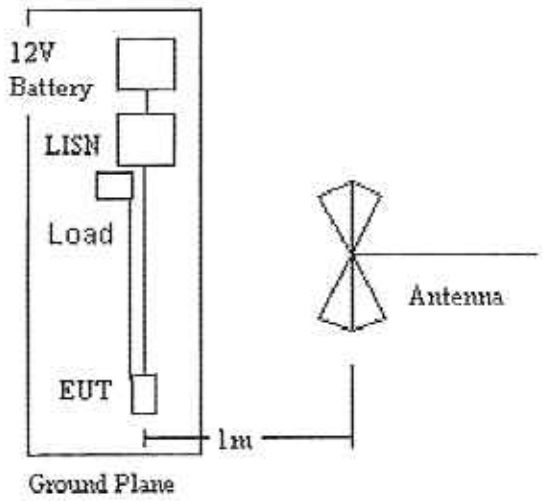
**Conditions during measurement:** Clause 6.5 and 6.6 of ECE R10.04
**Test mode:** in operation

**Measurement uncertainty:** 4 dB
**Temperature:** 22°C **Rel. Humidity:** 45%

**Detector:** Peak for pre-scan (120 kHz resolution bandwidth)
Quasi-Peak for broadband emissions(120 kHz resolution bandwidth)
Average for narrowband emissions ( 9kHz resolution bandwidth)

**Mounting jig, power supply, load:** ---

**Measuring arrangement:** ECE R10.04 annex 7, 8.



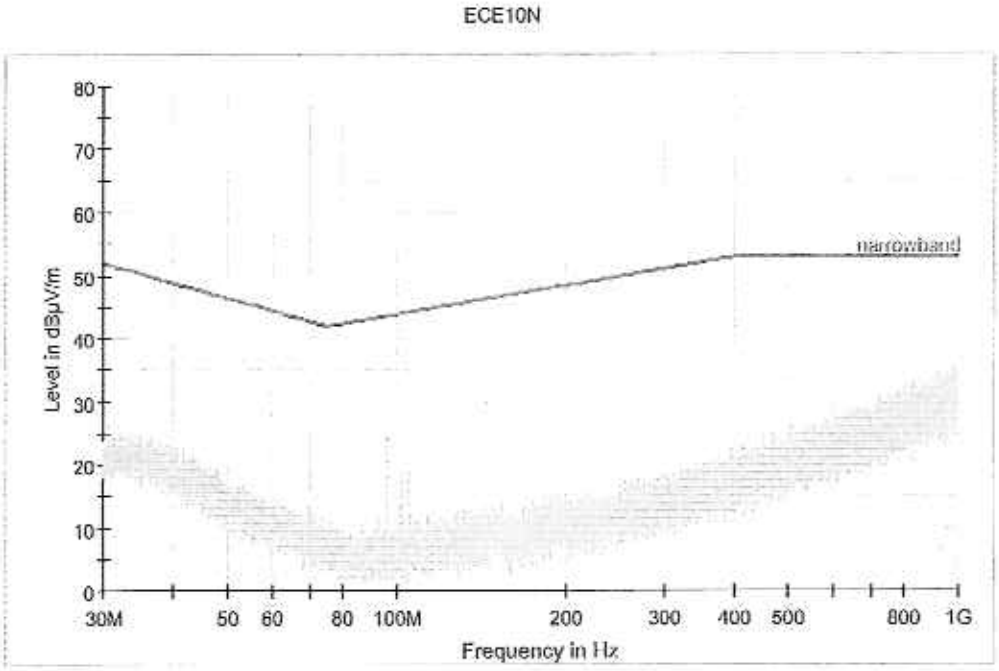

**Note:** ---

**Test Result:** Pass

**Measured by:** V.Nováková **Date:** 11.02.2013 **Measured at:**EZÚ

**Product:** LED Undercover 2 Insert 25´
**Type :** ELUC2S025A

HORIZONTAL



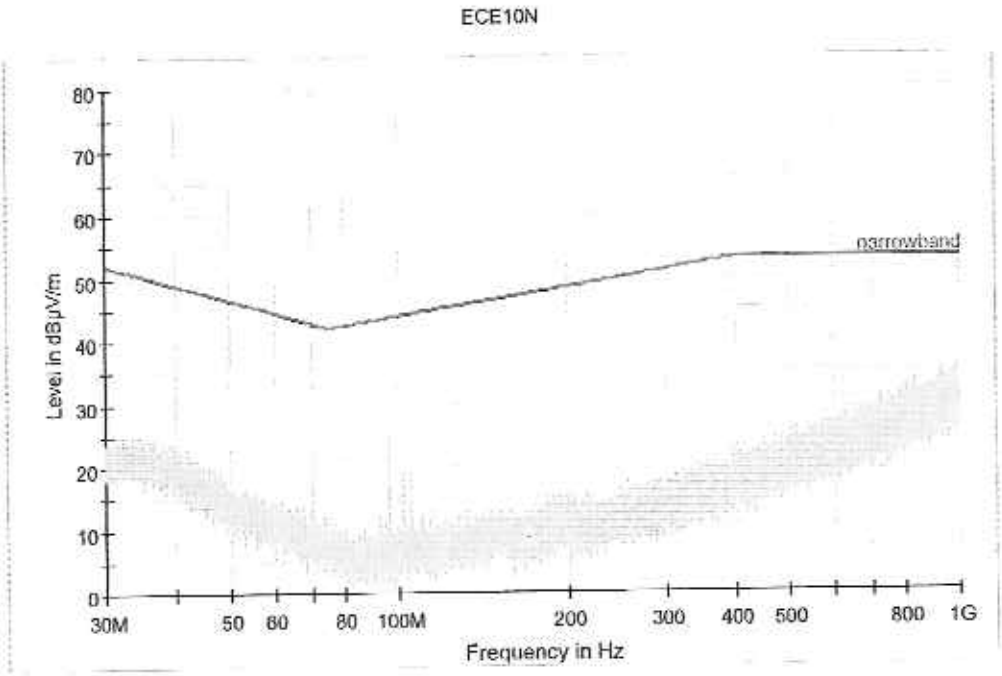

**Note:** Narrowband, in operation, 13,5V DC

**Test result:** Pass

**Measured by:** V.Novakova **Date:** 11.02.2013 **Measured at:**EZÚ

**Product:** LED Undercover 2 Insert 25´
**Type**: ELUC2S025A

VERTICAL



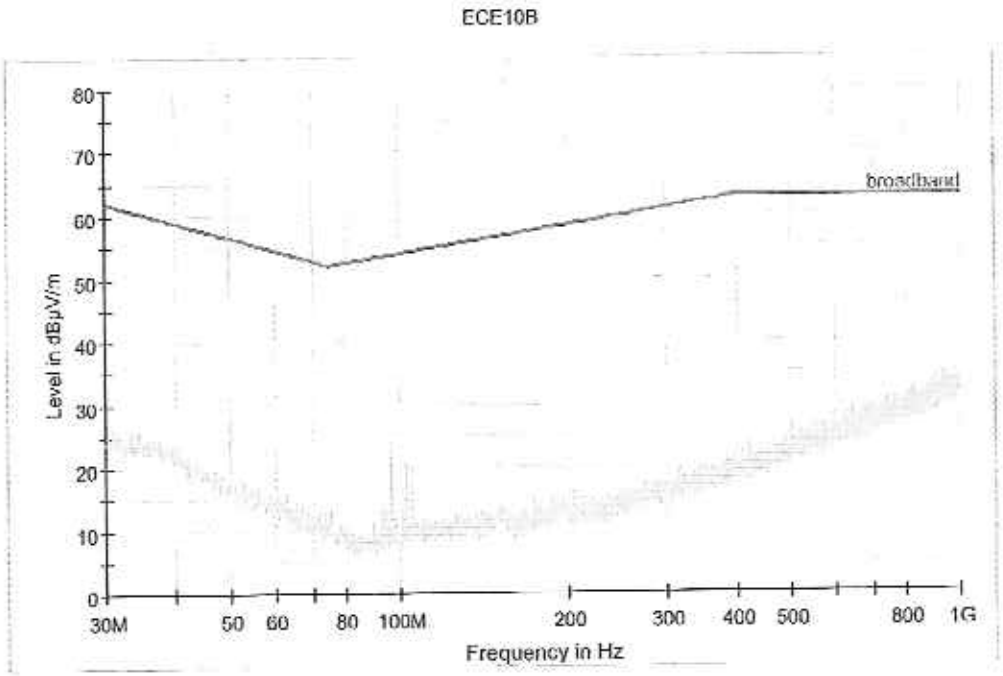

**Note:** Narrowband, in operation, 13,5V DC

**Test result:** Pass

**Measured by:** V.Novakova **Date:** 11.02.2013 **Measured at:**EZÚ

**Product:** LED Undercover 2 Insert 25´
**Type**: ELUC2S025A

VERTICAL



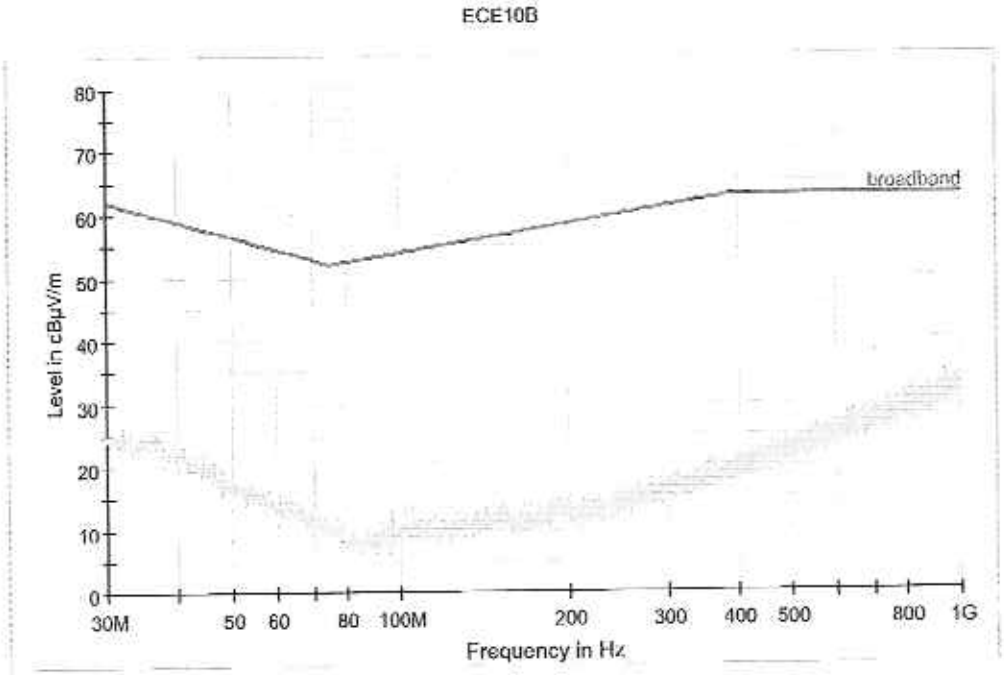

**Note:** Broadband, in operation, 13,5V DC

**Test result:** Pass

**Measured by:** V.Novakova **Date:** 11.02.2013 **Measured at:**EZÚ

**Product:** LED Undercover 2 Insert 25´
**Type**: ELUC2S025A

HORIZONTAL




**Note:** Broadband, in operation, 13,5V DC

**Test result:** Pass

**Measured by:** V.Novakova **Date:** 11.02.2013 **Measured at:**EZÚ

## 6.7. Immunity of ESAs to electromagnetic radiation.

**Product:** LED Undercover 2 Insert 25´
**Type**: ELUC2S025A

### FREE FIELD TEST

TEST SPECIFICATION

| | |
|---|---|
| Basic Standard | ISO 11452-2:2004 |
| Frequency Range | 80~2000MHz |
| Immunity Level | 30V/m |
| Modulation | (a) AM (amplitude modulation), with 1 kHz modulation and 80 per cent modulation depth in the 80 - 800 MHz frequency range;<br>(b) PM (pulse modulation), t on 577 µs, period 4,600 µs in the 800 - 2,000 MHz frequency range. |

**Test results**

| Frequency Range | Performance under test | Result |
|---|---|---|
| 400~2000MHz | A | PASS |

### BULK CURRENT INJECTION (BCI)

TEST SPECIFICATION

| | |
|---|---|
| Basic Standard | ISO 11452-4:2005 |
| Frequency Range | 20 ~ 400MHz |
| Immunity Level | 60mA |
| Modulation | 1kHz Sine Wave, 80%, AM Modulation |

**Test results**

| Frequency Range | Performance under test | Result |
|---|---|---|
| 20~400MHz | A | PASS |

**Note:** ---

**Test result: Pass**

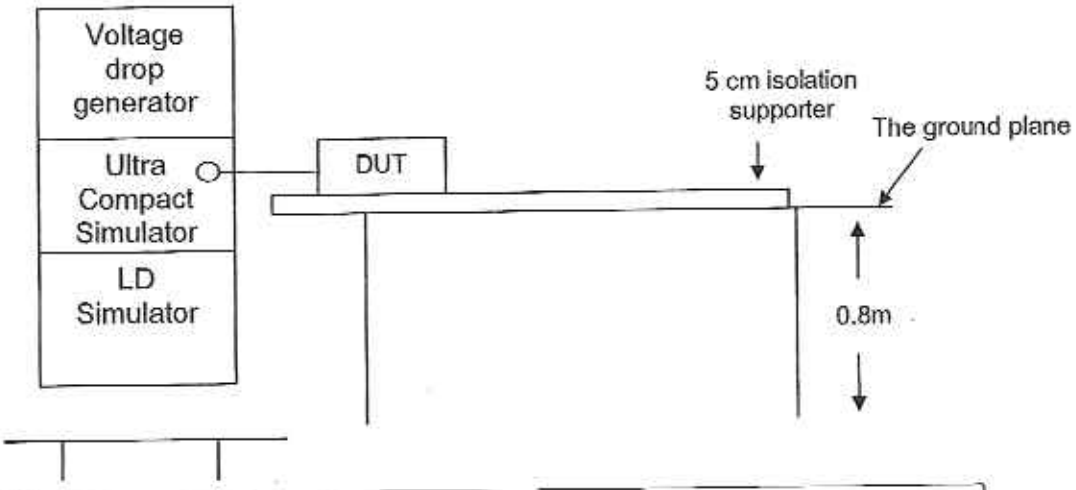
**Measured by:** M.Vondra **Date:** 22.02.2013 **Measured at:**EZÚ

## cl.6.8 Immunity test of ESA representative of according to ISO 7637-1, -2.

**Product:** LED Undercover 2 Insert 25'
**Type** : ELUC2S025A

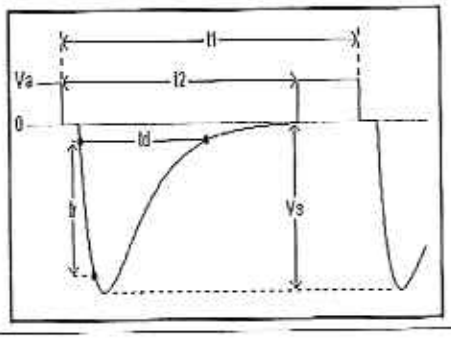
**Conditions during measurement:** Clause 6.8 of ECE R10.04, & ISO 7637-1,-2

**Test mode:** in operation
**TEST SETUP**



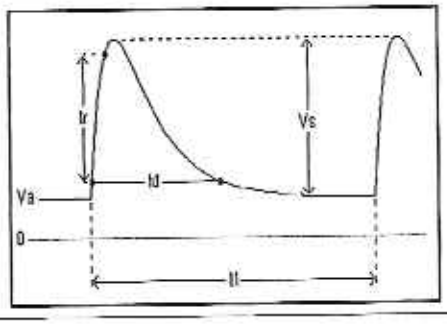

**Pulse 1 12V**

| | | |
|---|---|---|
| Vs: | -75 | V |
| t1: | 0.5 | s |
| t2: | 200 | ms |
| tr: | 1 | us |
| td: | 2000 | us |
| Ri: | 10 | Ohm |
| Coupling: | Battery | |
| Events: | 5000 | |



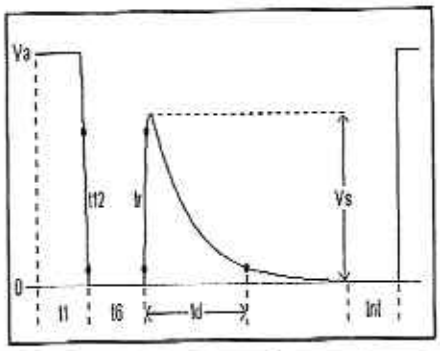

**Pulse 2a 12V**

| | | |
|---|---|---|
| Vs: | +37 | V |
| t1: | 0.2 | s |
| tr: | 1 | us |
| td: | 50 | us |
| Ri: | 2 | Ohm |
| Coupling: | Battery | |
| Events: | 5000 | |



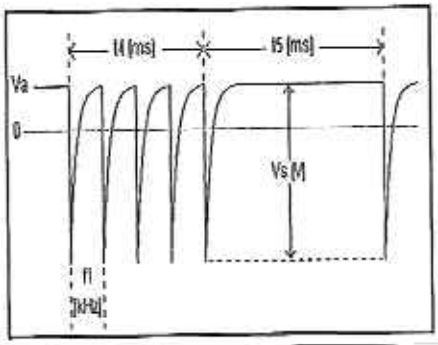
**Pulse 2b 12V**

| | | |
|---|---|---|
| Vs: | 10.0 | V |
| t1: | 1.0 | s |
| t6: | 1 | ms |
| td: | 200 | ms |
| Int: | 1.0 | s |
| Ri: | 0.05 | Ohm |
| t12: | 1 | ms |
| tr: | 1 | ms |
| Events: | 10 | |



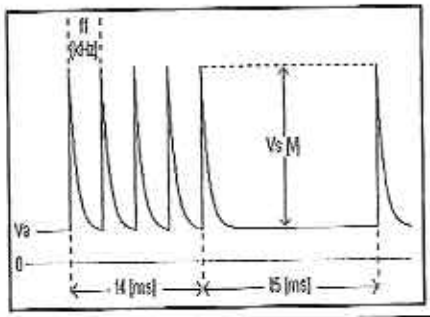

**Pulse 3a 12V**

| | | |
|---|---|---|
| Vs: | -112 | V |
| f1: | 10 | kHz |
| t4: | 10 | ms |
| t5: | 90 | ms |
| tr: | 5 | ns |
| td: | 100 | ns |
| Ri: | 50 | Ohm |
| Coupling: | Battery | |
| Test duration: | 1 | h |



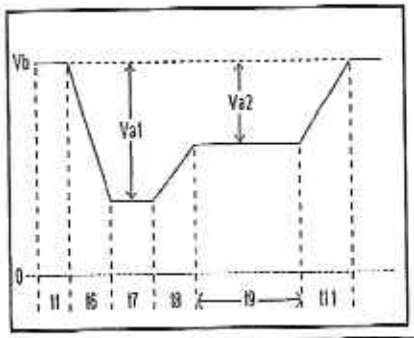

**Pulse 3b 12V**

| | | |
|---|---|---|
| Vs: | +75 | V |
| f1: | 10 | kHz |
| t4: | 10 | ms |
| t5: | 90 | ms |
| tr: | 5 | ns |
| td: | 100 | ns |
| Ri: | 50 | Ohm |
| Coupling: | Battery | |
| Test duration: | 1 | h |




**Pulse 4 12V**

| | | |
|---|---|---|
| Va1: | -6.0 | V |
| Va2: | -2.5 | V |
| t1: | 1.0 | s |
| t6: | 5 | ms |
| t7: | 15 | ms |
| t8: | 50 | ms |
| t9: | 0.5 | s |
| t11: | 5 | ms |
| Events: | 1 | |



Test Results:

| Test Pulse Number | Immunity Test Level for 12V (min. voltage) | Performance Criterion required | Performance under test |
|---|---|---|---|
| 1 | III (-75) | C | B |
| 2 a | III (+37) | B | A |
| 2 b | III (+10) | C | B |
| 3 a | III (-112) | A | A |
| 3 b | III (+75) | A | A |
| 4 | III (-6) | B | B |

A: No Loss of Function.

B: EUT is blinking and stopped working for a short time.
It recovered automatically after test.

**Note:** ---

**Test result:** Pass

**Measured by:** M.Vondra **Date:** 19.02.2013 **Measured at:** EZÚ

## cl.6.9 Emission of conducted disturbances

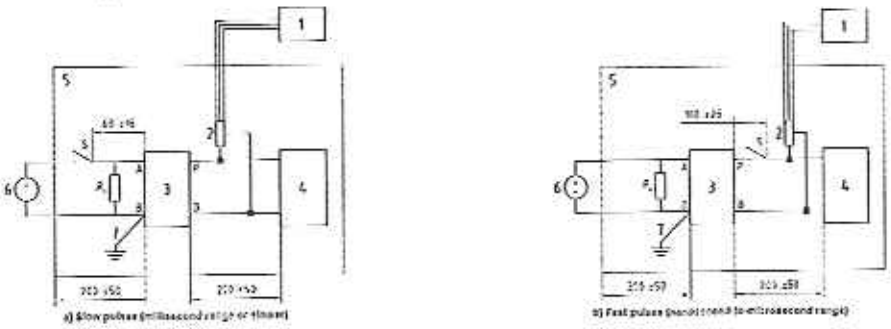
**Product:** LED Undercover 2 Insert 25´
**Type :** ELUC2S025A

**Test mode:** in operation

Table 2: Maximum allowed pulse amplitude

| Polarity of pulse amplitude | Maximum allowed pulse amplitude for | |
|---|---|---|
| | vehicles with 12 V systems | vehicles with 24 V systems |
| Positive | + 75 | + 150 |
| Negative | – 100 | – 450 |

Test Setups:



Key
1 oscilloscope or equivalent
2 voltage probe
3 artificial network
4 DUT (source of transient)
5 ground plane
6 power supply
7 Ground connection: length ≤ 100 mm

| 12V systems: | | | |
|---|---|---|---|
| Polarity of pulse amplitude | Maximum allowed pulse amplitude(V) | Type of pulse | Observation result (V) |
| Positive | +75 | Slow | 10 |
| | | Fast | 12 |
| Negative | -100 | Slow | -13 |
| | | Fast | -11 |

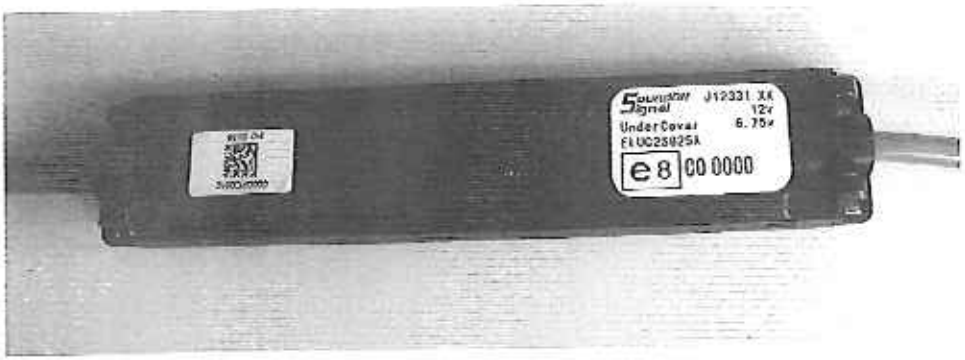
**Test result:** Pass

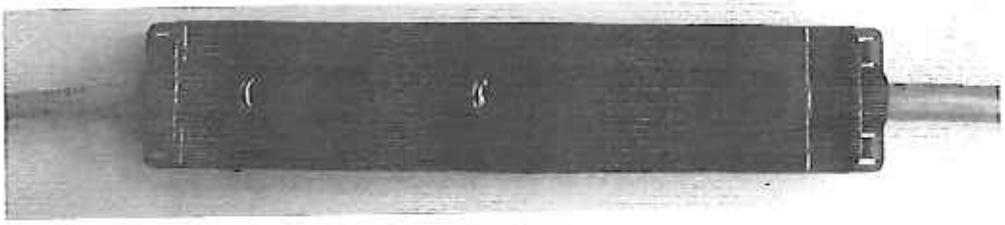
**Measured by:** M.Vondra **Date:** 25.02.2013 **Measured at:**EZÚ

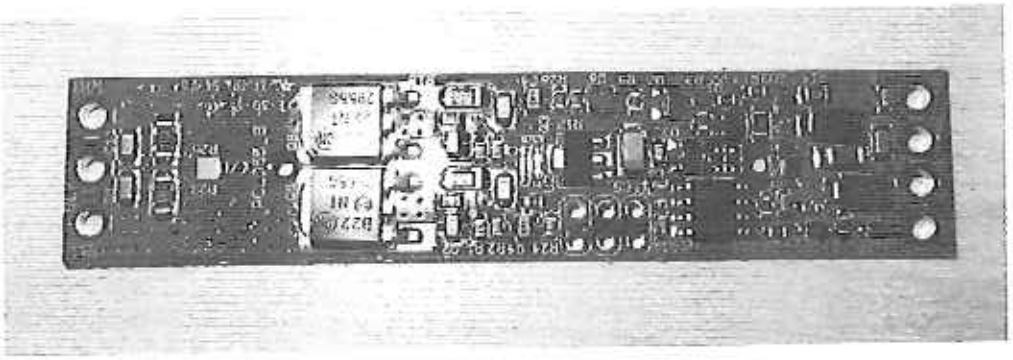
## Used test equipments

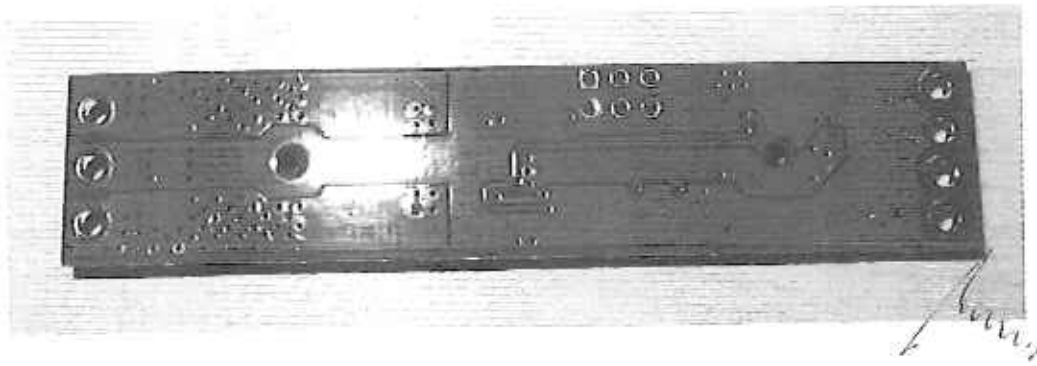
| Description | Type | Evidence No. | Next calibration |
|---|---|---|---|
| ☒ Test receiver RaS | ESCI | 110213 | 10.2014 |
| ☒ Antenna Frankonia | BTA-M | 00-6321 | 09.2014 |
| ☐ Antenna | HF- 907 | 00110177 | 07.2013 |
| ☒ Isotropic field mon DARE | CTR1001A | 110117 | 11.2013 |
| ☒ Isotropic field probe DARE | 05D0000ISN024 | 110117 | 11.2013 |
| ☒ Amplifier BONN ELEKTRONIK | BLWA0810-100 | 96-5871 | |
| ☒ Amplifier PRANA | AP32LT225 | 110145 | |
| ☒ Amplifier MILMEGA | AS0822-100 | 110009 | |
| ☒ Amplifier MILMEGA | AS0204-125 | 110144 | |
| ☒ Signal. generator RaS | SMT03 | 96-5874 | |
| ☒ Generator RaS | SMF 100A | 110 117 | |
| ☒ Generator EM TEST | UCS 200-M | 110 158 | 04.2014 |
| ☒ Generator EM TEST | VDS 200 | 110 157 | 04.2014 |
| ☐ Signal. generator PHILIPS | PM5390 | 88-5818 | |
| ☒ Heterodyne Analyzer | BK2010 | 4904 | |
| ☐ MPEG2 Measurement generator | DVG | 110120 | |
| ☐ TV Test Transmitter | SFL-T | 110121 | |
| ☒ Current Probe | F- 65 | 110 166/C | |
| ☒ Current Probe | F -140 | 110 166/3 | |
| ☐ Coupling/dec. EM TEST | CDNxxx | | |
| ☐ Coupling. SHAFNER | Txxx | | |
| ☐ Current probe | CT - 5 | | |
| ☐ Current probe | AM503 | 79-4221 | |
| ☐ Ferrite clamp 1-1000 MHz | Z-24 | 10003 | |
| ☒ Anechoic chamber EZU | | | |
| **Cables:** | | | |
| ☐ K7a , K9a ,K1, ESH3-Z2 | | | |
| ☒ K23 | | | |
| ☒ K24 | | | |
| **EZU equipments:** | | | |
| ☒ Artificial mains EZU (ECE10) | PR-04 | 550837 | |
| ☒ Voltage power supply | 0-60V | 550960 | |
| ☒ Strip line | | 97-5957 | |
| ☒ Measuring scale | | 400010 | 10.2018 |
| ☒ Accumulator | 12V/ 140 Ah | | |
| ☒ Multimeter | MX24 | 21624 | 08.2013 |
| ☒ Hygromoter | Testo 625 | 551001 | 06.2013 |
| | | | |

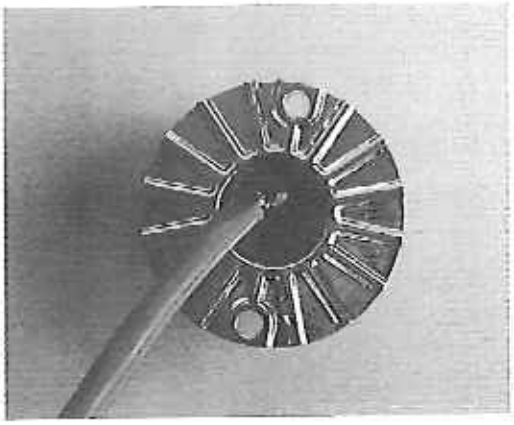
## Photos









**SAMPLES OF LABEL**

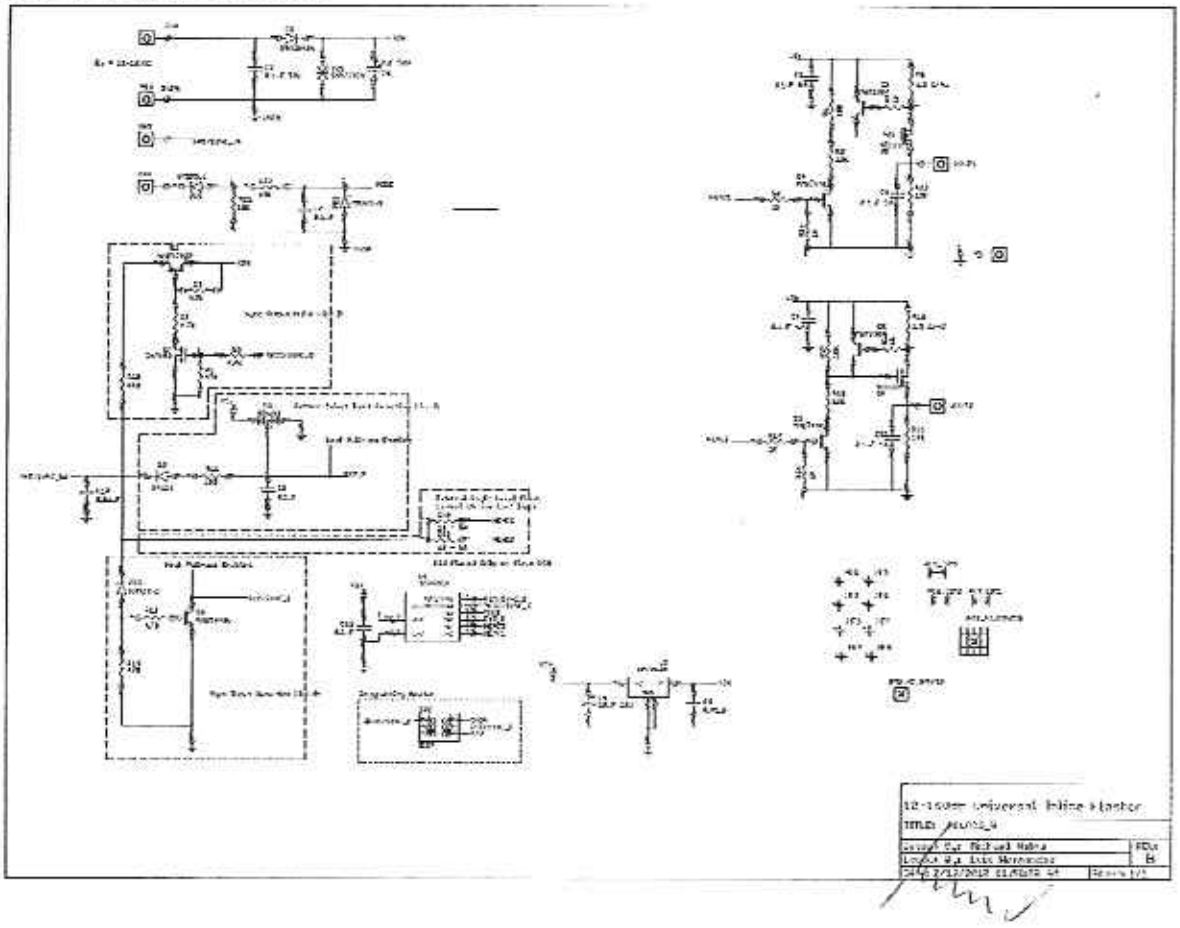




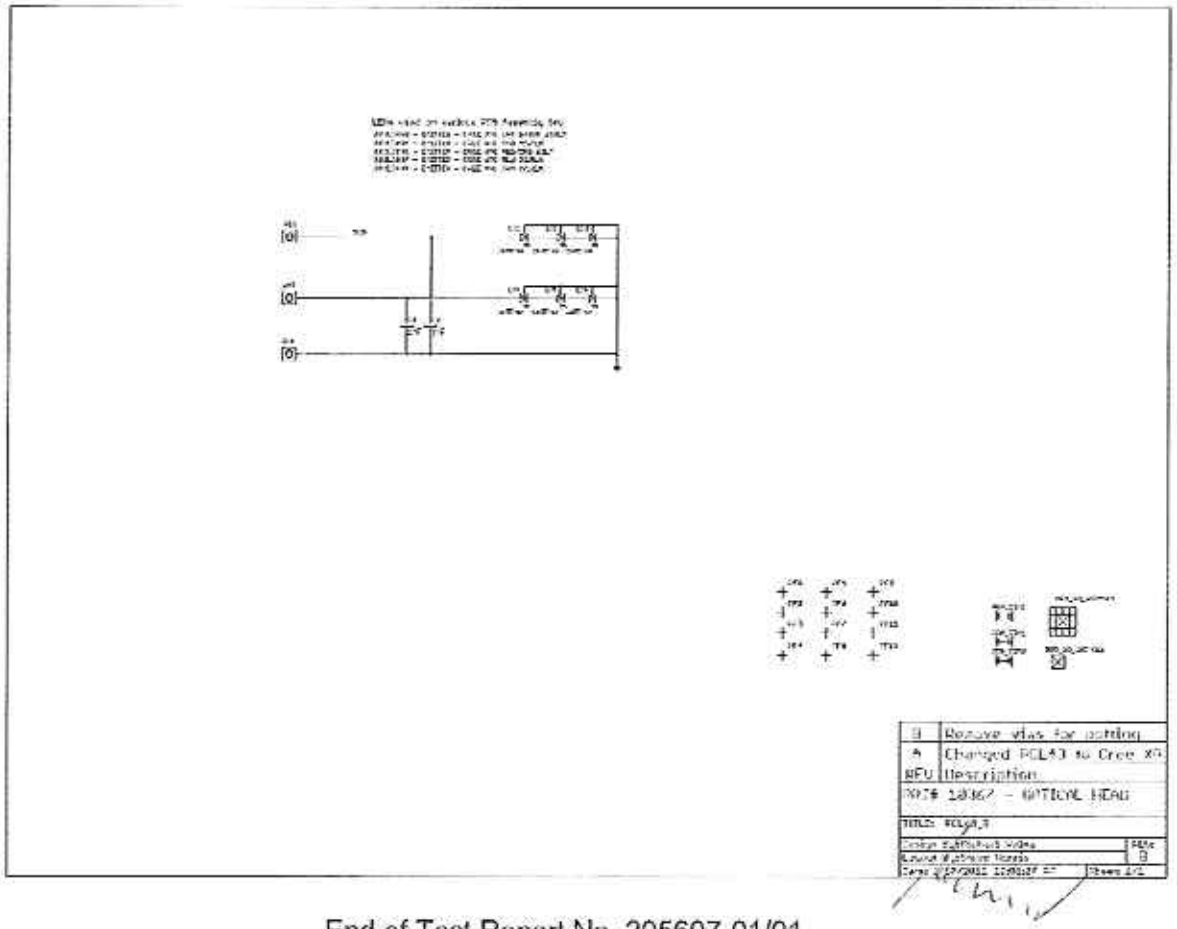

**Etc.**

## Wiring diagrams

### Block diagram / scheme



## Block diagram / scheme




End of Test Report No. 205607-01/01