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Rev. 2001-05-28

## Emission measurements on Radar Amir 110 (4 enclosures)

### Test object

Radar Amir 110, No 9395, Rev. 03030002.

During the conducted emission measurement the test object was powered by a power supply, mascot type 8532.

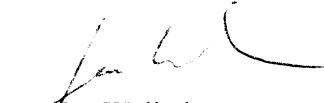
During the field strength of fundamental measurement the test object was powered by a power supply, mascot type 9226.

### Summary

| Standard  | Compliant | Enclosure | Remarks |
|---|-----------|-----------|---------|
| <b>FCC CFR 47 part 15<br/>Intentional Radiators</b> |           |           |         |
| 15.207 Conducted emission                           | Yes       | 2         | Note 1  |
| 15.245 Field strength of fundamental                | Yes       | 3         |         |

Note 1: To reduce the conducted emission below limit a filter was mounted at the power supply, Schaffner type FN2010-3-06.

### SP Swedish National Testing and Research Institute Electronics-EMC



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## **Performance test and requirements**

### **Test facility**

The used anechoic chamber (15:115) is compliant with the requirements of section 2.948 of the FCC rules and listed as a facility accepted for certification under parts 15 or 18.

### **Operation mode emission measurements:**

During the conducted emission measurement the test object was powered by a power supply, mascot type 8532.

During the field strength of fundamental measurement the test object was powered by a power supply, mascot type 9226.

A computer was connected to the test object.

The test object was set to measuring mode.

### **Functional test equipment**

|                            |
|----------------------------|
| Computer Toshiba Satellite |
|----------------------------|

### **Delivery of test object**

The test object was delivered by the client at the date of the test.

### **Test witness**

Leif Bergqvist, SENSYS TRAFFIC AB.

### **Reservation**

The test results in this report apply only to the particular Equipment Under Test (EUT) as declared in the report.

### **Uncertainties**

Measurement and test instrument uncertainties are described in the quality assurance documentation "FEx-QD1 (annex 8)".

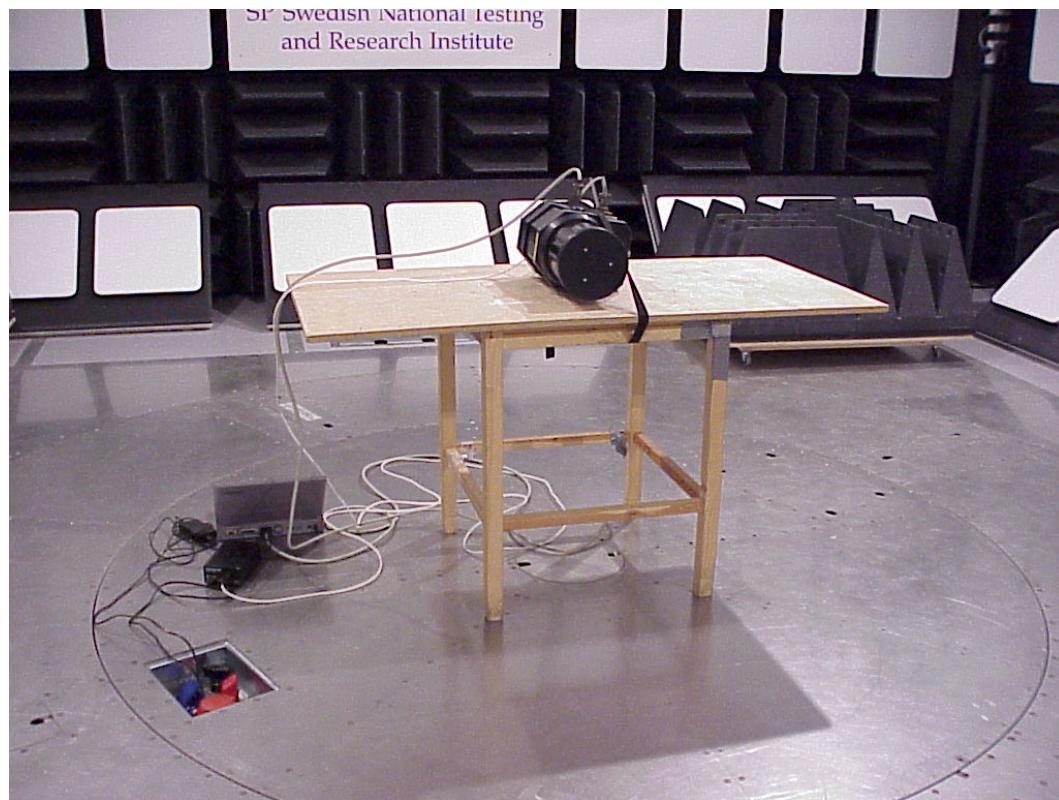
**Radiated emission measurements according to FCC CFR part 15.245**

|                    |                             |                       |
|--------------------|-----------------------------|-----------------------|
| Date<br>2001-05-18 | Temperature<br>20 °C ± 3 °C | Humidity<br>40% ± 5 % |
|--------------------|-----------------------------|-----------------------|

**Test set-up and Procedure**

The test of radiated emission was performed in a semi anechoic chamber. The EUT was scanned 360 degrees and the antenna height scanned from 1 to 4 m. The measurements were performed with both horizontal and vertical polarisation of the antenna. The antenna distance was 3 m.

The test set-up during the tests can be seen in the picture below.



| Measurement equipment                     | Calibration Due | SP number |
|---|-----------------|-----------|
| Anechoic chamber                          | -               | 15:115    |
| R&S ESI                                   | 2001-09         | 503 292   |
| EMCO Horn Antenna 3115                    | 2001-10         | 502 175   |
| Testo 610, Temperature and humidity meter | 2001-11         | 502 658   |

**Result**

The field strength of the fundamental with the Average -detector can be found in the table below:

| Frequency<br>(MHz) | Peak<br>Amplitude<br>(dB $\mu$ V/m) | Average<br>Amplitude<br>(dB $\mu$ V/m) | 3m Limit<br>(dB $\mu$ V/m)<br>(Average) | Turntable<br>Angle<br>(Note 1) | Antenna<br>height<br>(m) | Polarisation | Compliant |
|--------------------|-------------------------------------|--|---|--------------------------------|--------------------------|--------------|-----------|
| 10 525             | 125.7                               | 122.7                                  | 128                                     | 357                            | 1.0                      | Vertical     | Yes       |
| 10 525             | 116.7                               | 107.8                                  | 128                                     | 357                            | 1.0                      | Horizontal   | Yes       |

Note 1: Clockwise rotation, the front of the test object (according to the picture above, front side) facing the antenna is 0 degree.

|                       |     |
|-----------------------|-----|
| Emissions below limit | Yes |
|-----------------------|-----|

**Conducted emission measurements according to FCC CFR part 15.207**

|                    |                             |                       |
|--------------------|-----------------------------|-----------------------|
| Date<br>2001-05-28 | Temperature<br>20 °C ± 3 °C | Humidity<br>60% ± 5 % |
|--------------------|-----------------------------|-----------------------|

**Test set-up and Procedure**

Measurements were performed on the 230 V AC mains, neutral and phase.

| Measurement equipment                     | Calibration Due | SP number |
|---|-----------------|-----------|
| Test Site                                 | -               | 15:115    |
| R&S ESI                                   | 2001-09         | 503 292   |
| Control computer, Fujitsu Siemens         | -               | -         |
| Software: R&S ES-K1, ver. 1.60            | -               | -         |
| Schwartzbeck NNLK 8121                    | 2001-05         | 502 112   |
| Schwartzbeck NNLK 8126                    | 2001-12         | 503 114   |
| Testo 610, Temperature and humidity meter | 2001-11         | 502 658   |

**Result**

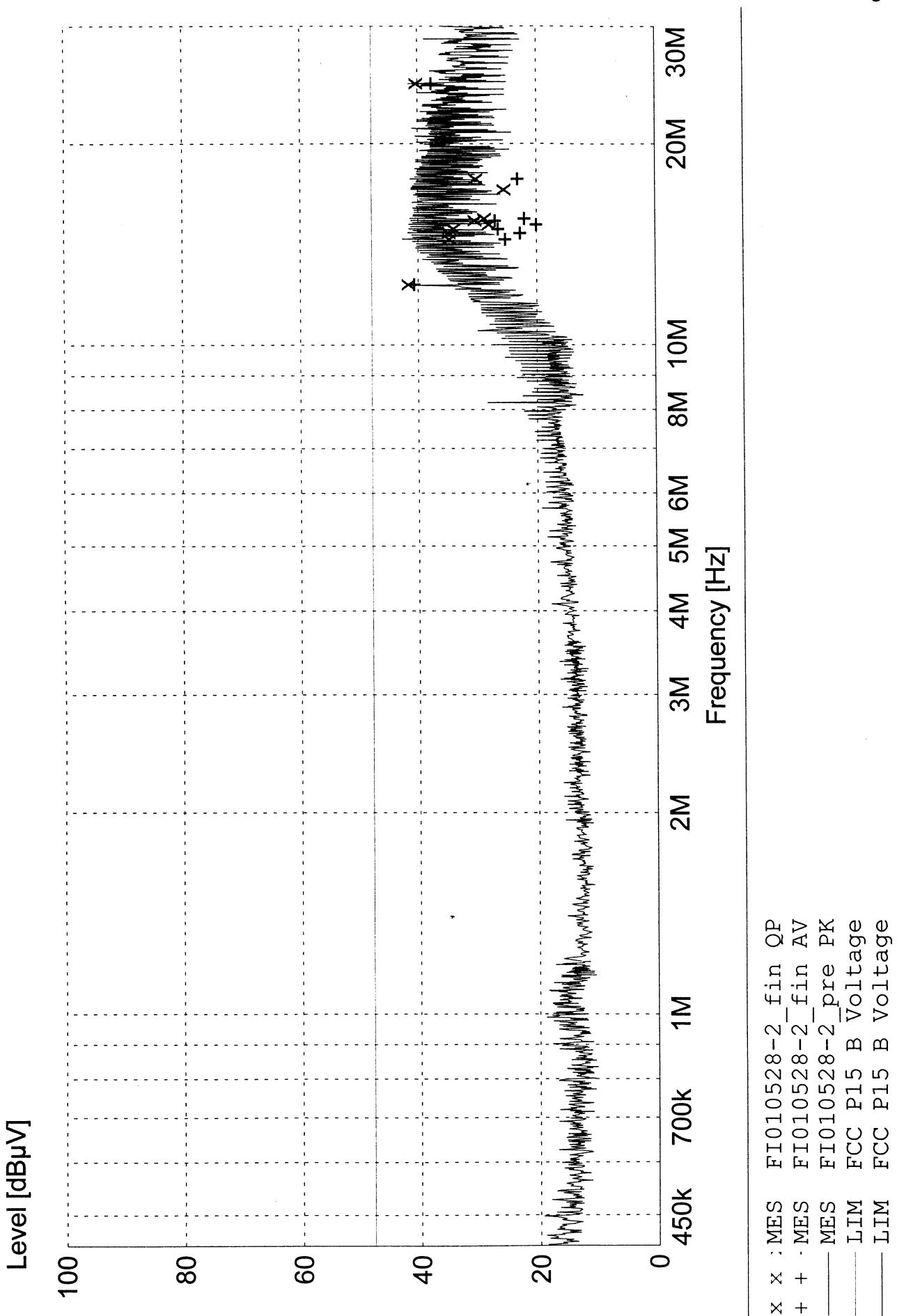
The emission spectra can be found in enclosure 3.1:

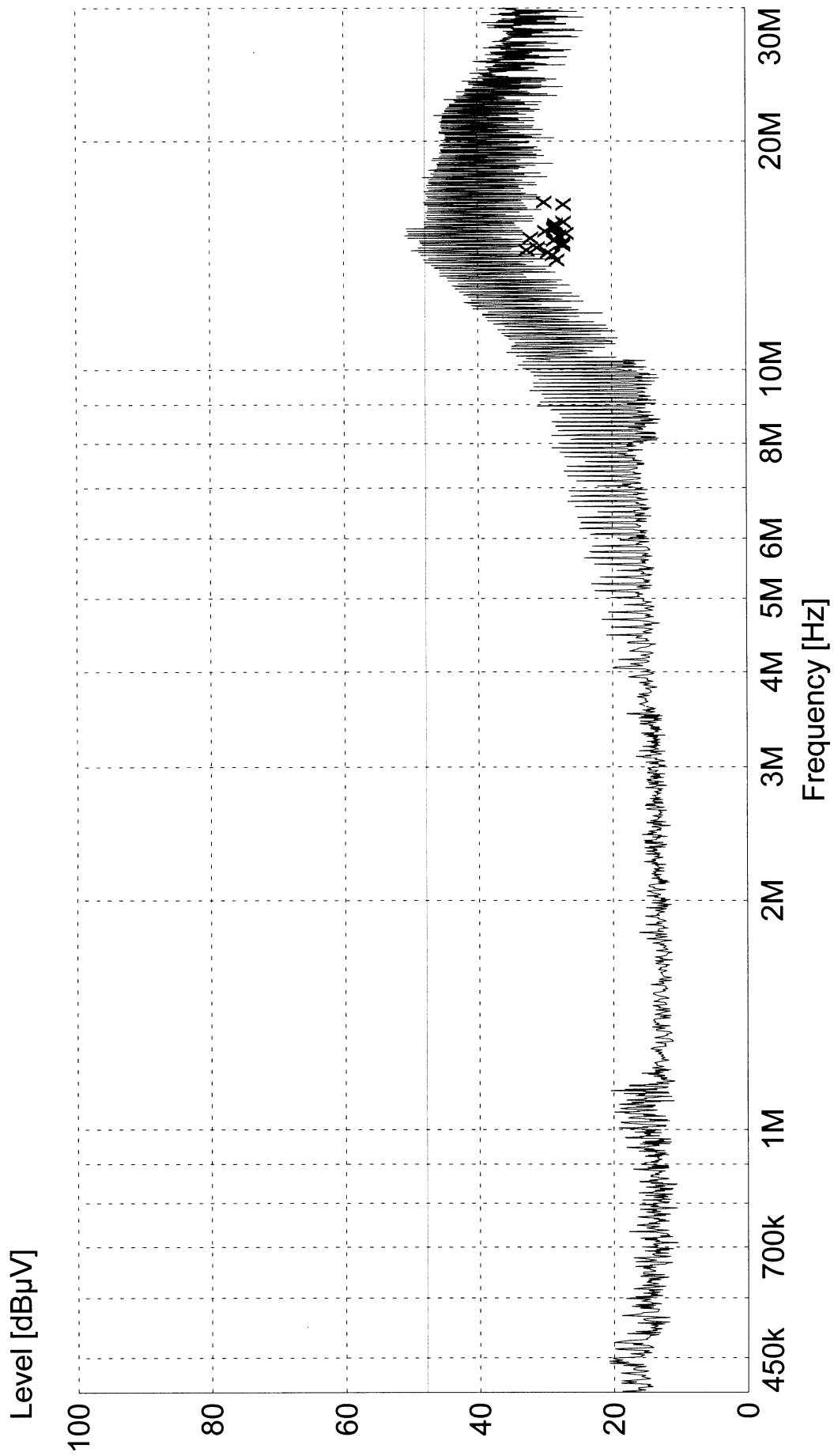
Diagram 1: Conducted emission, 230 V AC mains, neutral,  
The computer connected to the test object.

Diagram 2: Conducted emission, 230 V AC mains, phase,  
The computer connected to the test object.

Note 1: To reduce the conducted emission below limit a filter was mounted at the power supply, Schaffner type FN2010-3-06.

|                       |             |
|-----------------------|-------------|
| Emissions below limit | Yes, Note 1 |
|-----------------------|-------------|



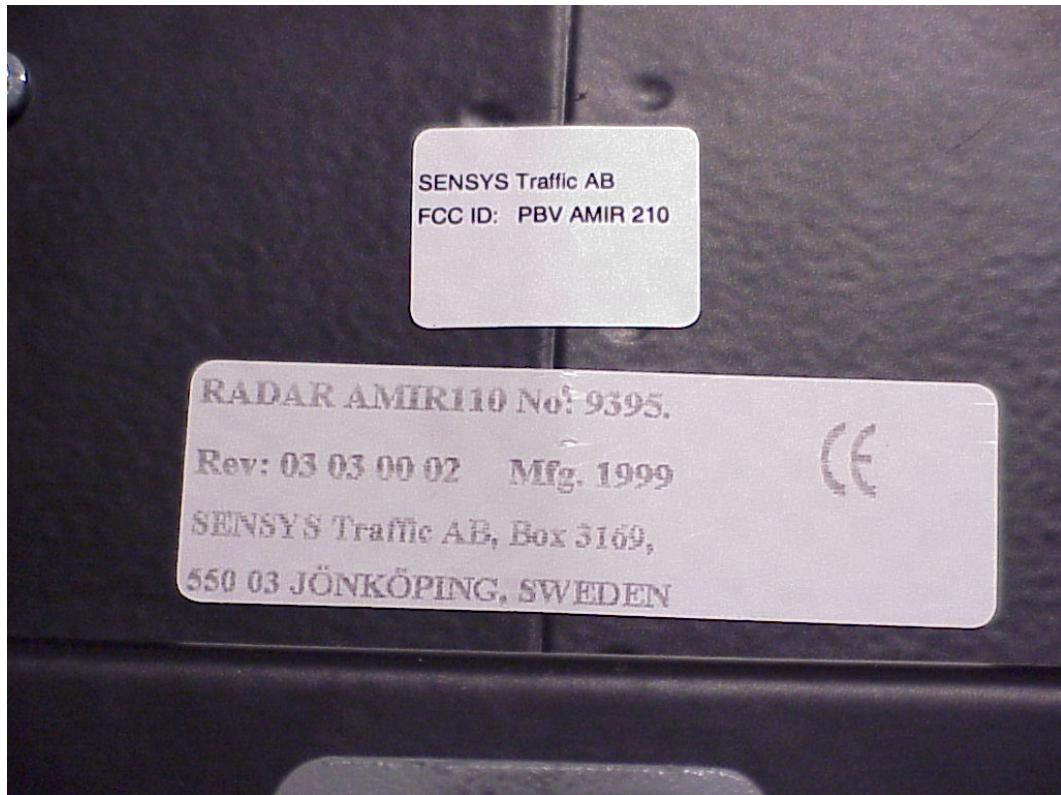


$\times$  X : MES FI010528-4 fin QP  
+ + MES FI010528-4 fin AV  
MES FI010528-4 pre PK  
LIM FCC P15 B Voltage  
LIM FCC P15 B Voltage

# REPORT

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## Photo, Identity



Sign:....