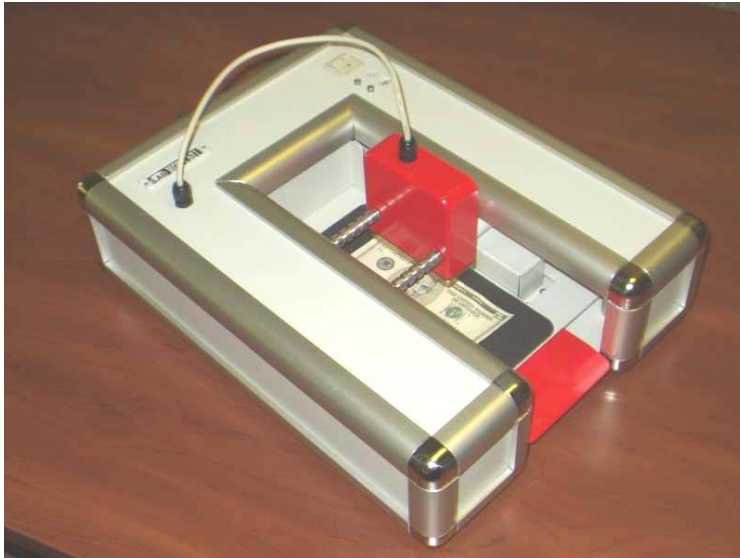


DOCUMENTS MAGNETIC PROPERTIES SCANNER "SEZAM"

Application

Forensic researches of documents magnetic properties (for **criminalistics, banking, custom and frontier control**):

- Invisible magnetic touches reading,
- Comparative researches of type and materials of print. Detection of presence or absence of magnetic properties in researched paint. Investigation of touches (magnetic paints, fibers, tapes and others types of magnetic elements): form, size and disposition.
- Damaged documents researches: swimming and smeary words reading, which are kept with magnetic paint.



Methods

- External magnetic field creation;
- Magnetic-optical visualization of scattered field of object by using Faraday's effect;
- Visualized image transformation to television signal;
- Visualized area scanning by 2-coordinate manual stepping of MOV scanner, automated two-dimensional computer sewing of sub-frames sequence;
- Digital image processing, including images comparison and its angle, linear and amplitude characteristics measurement.

Support

Hardware

- MOV unit,
- Personal computer with videocapture.

Software

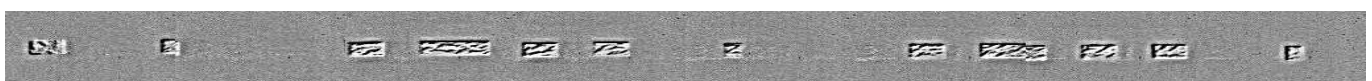
- Image input, sewing, and processing.

Methodical

- Banknote electronic guides,
- Firmware operation guide.



Transmitted light observation allow to see microtext on protection stripe of 50 EURO banknote



Magnetic-optical visualization of stripe, magnetic code is in compliance with banknote value.



General view of \$5 USA 1999 year issued banknote



And its magnetic-optical visualization



Fragment of \$100 USA 1996 year issued banknote.
Metameric paint don't allow to separate visually magnetic and non-magnetic strokes.



Magnetic-optical visualization of the same fragment.
This is result of image software processing: negative presentation and 3D processing make magnetic stroke more obvious.

Characteristics

- Scanning area size (object maximal size), not more than 156 x 80 mm,
- Visible area size (sub-frame size) - 11 x 14 mm,
- Number of sub-frames in sewed image, not more than 104,
- Spatial permit of MOV - not worse than 37 mkm.
- Videosignal output standard - PAL (625 lines/ 50 fields).
- MOV unit consumable power, not more than 20 Watt (~220 V, 50 Hz).
- MOV unit overall dimensions, not more than 440 x 340 x 160 mm.
- Mass: less than 8 kg.

Specification

- Investigation of spatial allocation of magnetic paint on researched object area, pick up magnetic paint area allocation.
- Investigation of spatial allocation of magnetic paint in micro touches. Evaluation of form, size and disposition of magnetic touches.
- Other magnetic protection elements researches: metal stripes, magnetic tapes, fibres etc,
- Researches of magnetic materials with small level of magnetization,
- Comparison of researches results with information in the banknotes electronic guide,
- Registration of researches results on electronic medium.

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