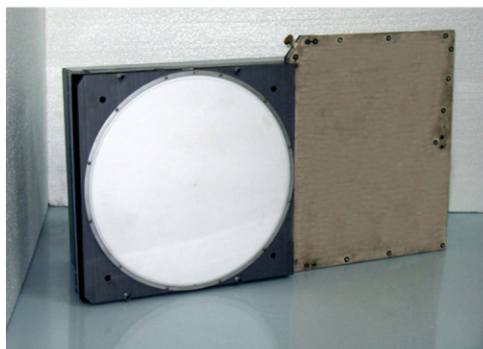


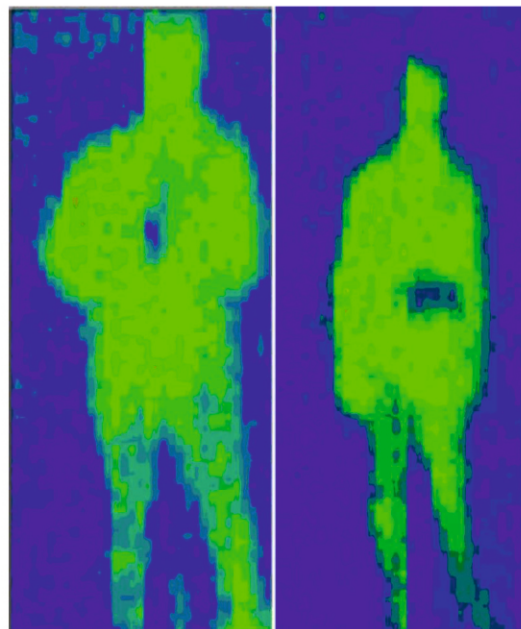
# MILLIMETER-WAVE RADIOMETRIC SYSTEM OF IMAGE FORMATION FOR SHORT DISTANCE OPERATIVE PEOPLE SUPERVISION FOR SOLUTION OF ANTI-TERRORIST, SECURITY AND CUSTOMS TASKS



Total view of the W-band 64-beam scanning  
diffraction type antenna

## Areas of Application

The device is intended for operative formation of radio thermal images in W radio band and their processing in order to detect hidden objects on the body of a person under clothing (weapons from metal or plastic, explosive devices, etc.).



Examples of radiothermal images of  
people obtained with the unit prototype

## Advantages

The original method of forming radio thermal images with creating 64 beams in the antenna of diffraction radiation with electromechanical scanning is used. Only MMW amplifier is used that greatly reduces cost of the device. The antenna has small thickness and is immovable in operation, the device has small dimensions and consumption, which provides autonomous work with use of wire-off communication lines.

## Specification

Distance 3 m.  
Inspection area  $1,2 \times 2 \text{ m}^2$ .  
Spatial resolution  $30 \times 30 \text{ mm}^2$ .  
Frequency band 84-100 GHz.  
Image rate 2/sec.

## IPR Protection

IPR3. Ukrainian patent for invention was secured without current support.

## Stage of Development

IRL3, TRL4, elements of a prototype are developed and its characteristics are studied. The ways for technical parameters improvement were formulated. Initial level of competitiveness was estimated.

## Contacts

**Shylo Sergiy**; O.Ya.Usikov Institute of Radiophysics and Electronics, National Academy of Sciences of Ukraine; +38-066-6364764, +38-057-7634381; shilo@ire.kharkov.ua