



**Belarusian State University
of Informatics and Radioelectronics**

R&D Department

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Announcement

10th international exhibition of arms and military equipment MILEX-2021

July 23 – 26, 2021

Minsk, Belarus

About

MILEX-2021 is held with the aim of a wide presentation of the products of the Belarusian defense industry, familiarization with new developments in high technologies, demonstration of the capabilities of enterprises engaged in the modernization, repair of military equipment and providing services to the Armed Forces.

The organizers of the exhibition are the State Military-Industrial Committee, the Ministry of Defense of the Republic of Belarus. Hosts: "BelExpo", the Administrative Department of the President of the Republic of Belarus.

The main directions:

- Armored vehicles;
- Missile, artillery and small arms;
- Air defense systems of small and medium range;
- High-tech equipment and systems;
- Ammunition and special chemicals, range measuring instruments and equipment;
- Optoelectronic equipment and systems;
- Technique and means of radiation, chemical and biological protection;
- Equipment and support systems for troops;
- Information systems and information security systems;
- Vehicles: cars, tractors;
- Aviation and rocket and space complexes. Aerospace technology;
- Flight and navigation complexes and automatic control systems;
- Dual-use equipment and technologies;
- Road, construction and lifting means and mechanisms;
- Modernization and repair of military equipment and weapons;

- Equipment and technologies for the disposal of weapons, military equipment and ammunition;
- Military universities and training centers;
- Military medicine;
- Military research base;
- Uniforms, clothing and special accessories.

BSUIR will showcase high-tech developments

1. A set of telemetry equipment

Designed to receive on-board telemetry information from on-board devices and sensors located on the aircraft, transmit it in real time to a ground receiving point, receive and record information at a ground receiving point, and display the received information on a monitor.

Features and Benefits:

- high speed of UAV detection due to the simultaneous use of eight probing beams, which reduces the time for scanning in elevation;
- versatility of use: detection of various types of UAVs at long distances and in any meteorological conditions;
- suppression of communication channels with an unmanned aerial vehicle;
- the possibility of using for solving problems of protecting the perimeter of the air and ground space;
- availability of a mobile version.

2. Short-range radar

Designed to detect and measure the coordinates of air and ground targets. It is used to solve the problems of air and ground space protection, air traffic control as part of ground mobile points, including to ensure the landing of large-scale unmanned aerial vehicles.

Features and Benefits: determination of targets with a small effective scattering surface, automatic mode of maintaining the sector in elevation from 0 to 30 degrees, small dimensions and weight.

3. Radio altimeter 140 GHz

Designed to measure the flight altitude of a high-speed object in real time.

Features and Benefits:

- millimeter wavelength range;

- high accuracy of height measurement (error 1%);
- wide range of measurements (from 0 m);
- high speed of information updating;
- the capability to work at high-speed facilities;
- modern element base; all-weather;
- minimum dimensions and weight.

4. Low-altitude radio altimeter for unmanned aerial vehicles

Designed to measure the flight altitude of an unmanned aerial vehicle with high accuracy in real time.

Features and Benefits:

- millimeter wavelength range; high accuracy of height measurement (error 1%);
- wide range of measurements (from 0 m);
- high speed of information updating;
- the capability to work at high-speed facilities;
- modern element base; all-weather; minimum dimensions and weight.

5. Instrumentation and testing microwave equipment: vector network analyzer and microwave power meter

Designed for maintenance and repair of jamming stations and replacement of the outdated infrastructure of enterprises of the defense and telecommunications industry of the Republic of Belarus.

Features and Benefits:

- a line of devices in the range from 0.01 to 220 GHz has been developed;
- integrates into the measuring system using a standard computer Ethernet interface.

Included in the Registers of Measuring Instruments of the Republic of Belarus and the Russian Federation.

6. Automatic multifunctional radar test system

Designed for testing radars in laboratory conditions, checking and developing detection and tracking algorithms.

Features and Benefits:

- the frequency range of the transmitting and receiving module is 2 ... 140 GHz;
- movement of the transmitting and receiving module in two coordinates;
- control interfaces: Ethernet, USB;

- 8 simulated targets;
- 4 input and 1 output channels.

7. Locator for detecting devices of unauthorized information collection

Designed to detect devices for unauthorized collection of information on resonance phenomena in their antenna systems and associated filters. It can be used when conducting search activities for the localization of radio control devices or other actuators with a radio control channel.

Features and benefits: the capability to identify shielded bugs in a given frequency range in real time.

8. Speech information security device "Priboi"

Designed to secure speech information through acoustic and vibration channels from the room outside the security zone.

Features and Benefits:

The device generates masking signals such as "white noise", "speech-like signals", "white noise" + "speech-like signals", which ensures the closure of the channels of speech information leakage;

"Speech-like signals" are formed by microprocessor according to the random law and correspond to all of the formal qualities of speech (presence of formant signal characteristics, frequency of the main tone, equal to the frequency of the main tone of the masking speech, pauses between words) and can be adapted for a certain person.

9. Software and hardware systems for ensuring electromagnetic compatibility of radio electronic means

Designed for EMC analysis and EMC support in local airborne and ground radioelectronic systems, generation of specifications for airborne and ground radioelectronic complexes, taking into account EMC requirements, modeling of radio reception in a complex electromagnetic environment.

Hardware and software complexes:

- EMC-Analyzer - a specialized expert system for solving problems of electromagnetic compatibility in airborne and local ground radioelectronic systems;
- ADFTS - an automated dual-frequency sensing system for measuring and simulating EMC parameters of radio receivers;
- DNA - technology and software for discrete nonlinear analysis of electromagnetic compatibility of radio systems in a complex electromagnetic environment;
- GIS-RF - specialized geoinformation technology and software for the development and design of radio frequency;

- VTA - a virtual testing ground for the analysis of electromagnetic compatibility in complex territorial groupings of radio systems of various services.

Distinctive features and advantages: technologies and software and hardware complexes have no analogues in the world.

10. Electrostatic jet microthruster

Electrostatic jet microthruster for moving, maneuvering and maintaining the altitude of the low Earth orbit of small CubeSat spacecraft with dimensions of 3 - 9U.

The feature of the developed microthruster is the use of MEMS technology for the manufacture of its units and an ionic liquid as a fuel, which makes it possible to reduce the requirements for the temperature regime of operation, simplify the assembly and operation of the device, and increase its safety.

11. Radar detector of buried objects

Designed to search for buried objects (dielectric and metal) and determine the depth of their occurrence; visualization of the internal structure of building structures; detection of various defects (cracks, air cavities) in the road surface.

Features and benefits:

- detection of buried objects – 40 cm;
- increased dynamic range;
- improved channel balancing;
- high technological efficiency;
- stability of the characteristics.

[Official website](#)