



UniScan™

X-band remote sensing data receiving station

UniScan™ - is the universal hardware/software complex for reception and processing of data, transmitted from low-orbiting Earth observation satellites in 8GHz frequency channels in real-time

Today the **UniScan™** stations developed at the ScanEx R&D Center enable to receive both optical data with a spatial resolution from 1 km to 0.7 m (Terra, AQUA, SPOT, LANDSAT, FORMOSAT, IRS, CARTOSAT, Resourcesat, EROS, THEOS satellite data) and all-weather round-the-clock radar images with a spatial resolution from 100 m to 1 m (RADARSAT-1, RADARSAT-2, ENVISAT-1, TerraSAR-X and COSMO-SkyMed satellites data), thus making it possible to resolve a wide range of applied tasks – agriculture and forestry, meteorology and cartography, construction and others.

One UniScan™ station covers area of about 12 million sq. km (within a radius of up to 2500 km). This provides for the most efficient routine monitoring of the coverage zone without leaving the workplace. In addition the expenses for in-situ and aerial observations could be significantly reduced. The UniScan™ station is not only the tool for data acquisition but also a set of software tools for this data storage, processing and thematic analysis.

The UniScan™ consist of

- the antenna system
- the control unit
- universal demodulator
- computer interface boards
- an Intel Pentium IV based PC (one or more)
- a set of connecting cables
- software
- documentation

UniScan™ hardware is universal and programmable. It provides for reception of information in any format, which parameters are within the following limits:

Parameter	Range
Carrier frequency, MHz	8 025 ... 8 400 7 750 ... 7 850
Digital data rate, Mbps	7.0 ... 320 (QPSK) 3.5 ... 160 (BPSK)
Modulation	BPSK, QPSK, SQPSK

UniScan™ is supplied in two configurations:

1. solid-reflector antenna, 3.1 m in diameter with a 3-axis positioner (UniScan™-36)

2. solid-reflector antenna, 2.4 m in diameter with a 2-axis «X – Y» positioner (UniScan™-24)

Software included in the delivery set:

- ScanReceiver® for station control and data reception
- ScanEx Tools for preliminary processing and generation of standard exchange products
- ScanMagic® for visualization, analysis and image processing, including electronic data cataloging tools (MagicCatalog®)
- ScanEx Image Processor® (basic configuration) for in-depth and thematic processing and generation of value added products

In addition, the following software can be supplied together with the station:

- ScanEx TaskFlow® for data processing automation
- Additional modules of ScanEx Image Processor®: Thematic Pro thematic interpretation module, 3D modeling and visualization modules, SAR radar data processing module, DEM module, hydrological modeling modules, SDK kit of ScanEx Image Processor®

Licensing for remote sensing data reception:

Terra and Aqua satellites' data are broadcasted almost continuously and no license is required to receive them. For all other satellites a data downlink license is required and operational imaging is made to order.

ScanEx RDC offers flexible conditions of participation interest in operations with licensed data and offers a service package as a station operator on the territory of Russia and CIS countries in cooperation with satellite Operators.

