

PEDAGOGICAL RADAR, including:

NextGen 8 GHz Pulse Radar Module



- one (1) transceiver and antenna unit 8 GHz,
- one (1) digital signal processing unit (DSP)
- one (1) horn-shaped antenna with adjustable inclination
- one (1) parabolic reflector with adjustable inclination
- one (1) motor control unit (only activated when rotary unit is added)
- one (1) cable set.

It requires FreeScopes as visualization software and CloudServer when the number of concurrent users exceeds 6.

- Range Resolution: better than 11 cm
- Range: up to 25 m
- Tx center frequency: 8 GHz
- Tx bandwidth: 1.4 GHz
- Pulse Width: 0.5 nsec
- Peak Pulse output power (ETSI): -0.7 - 6.3 dBm
- Max pulse repetition frequency: 40.5 MHz
- Rx sampling rate: 23.3 GS/s
- Rx gain (ETSI): 12.3 - 15 dB
- Rx noise figure (ETSI): 5.4 - 8.8 dB

Rotary Unit

One (1) Body with implemented Step-Motor and Slip Ring
One (1) Power Supply Unit

Server Module

The server module comes as a 19 Zoll Rack Mount Server Case.

Its features are as follows or equal / better (in offers we will always state the actual version)

CPU Ryzen 9 5900 X or similar

Ram 32 GB Corsair DDR4 3600 or similar

Mainboard Asus Pro Art B550 Creator or similar

Gigabyte Power Unit 750 Watt or similar

Hard Disk Samsung 860 Pro 250 GB or similar

It hosts SkyRadar simulators or application servers.

Linear Training Conveyor

Servo-Motor controlled Linear Axis, approximately 1800 mm .

Parts:

- Servo Motor
- Linear Axis
- Cables

Cloud Server Software

One (1) SkyRadar Cloud Server software to manage traffic and to allow connection to customer LMS (SCORM-based).

This CloudServer will be physically located within the premises of the customer.

The CloudServer Software requires the server module

NextGen FreeScopes Basic I

Virtual Radar Control Center, allowing for control and visualization.

The FreeScopes Basic I software includes the modular hardware control environment, which controls all components of the radar training system's hardware.

It includes a user interface for the trainer / teacher where specific hardware features can be controlled.

FreeScopes visualizes the Scopes

- A-Scope
- B-Scope
- PPI

The Control Center reads out I and Q data, from SkyRadar radars.

It embeds several controls and filters i.e.

- Tx Power Control (teacher mode)
- Control Motor (rotate and panning, only when rotary module is available)
- Suppress Source
- Threshold (max and min)
- STC
- Contrast
- basic CFAR
- MTI
- IQ Data Block (I, Q, Magnitude)

allowing manipulations of the signals.

The users are enabled to do manipulations independently on their computers. FreeScopes is based on HTML-5 Technologies (JavaScript, Canvas, JSON-LD).

The scope of delivery includes one customer license unlimited in time and number of users within the restricted customer Intranet or Ethernet. A free provision into the Internet is explicitly not allowed.



computer not supplied

The FreeScopes Basic I is the basic software package for the Digital Signal Processing & Radar Control Center in the modular SkyRadar solution.

NextGen FreeScopes Basic II

FreeScopes Software Extension, expanding FreeScopes Basic I.

The Module provides a set of features including:

- Burst
- FFT
- C-FAR (2D)
- RCS
- Windows Functions (Hann, Hamming, Blackman and more)
- Spectrogram
- 3D Scope
- Heatmap

The scope of delivery includes one customer license unlimited in time and number of users within the restricted customer Intranet or Ethernet. A free provision into the Internet is explicitly not allowed.

NextGen FreeScopes SAR – Radar

FreeScopes SAR Extension, expanding FreeScopes Basic I for NextGen 8 GHz RADAR SOURCES.

The Module provides a set of features including:

- SAR analytics Software
- high resolution image formation through frame aggregation
- Angle Sweep
- Linear Axis Motor control

The max. range for good SAR measurement will be

- 15 m without Parabolic Reflector
- 30 m including Parabolic Reflector

The scope of delivery includes one customer license unlimited in time and number of users within the restricted customer Intranet or Ethernet. A free provision into the Internet is explicitly not allowed.

This FreeScopes Software requires a server module

NextGen FreeScopes ATC I

FreeScopes Software Extension, expanding NextGen FreeScopes Basic II.

The Module provides a set of features including:

- Basic Plot & Track extraction and visualization
- MTD
- MTD with Doppler Filter
- MTI with Post-Processing
- Standing Person Algorithm

The scope of delivery includes one customer license unlimited in time and number of users within the restricted customer Intranet or Ethernet. A free provision into the Internet is explicitly not allowed.



All the documentations will be supplied in English (only).

Country of Origin : Luxembourg - European Union

Caution : The SAR accessory is subject of release by the Luxembourgian Ministry of Economy (the same for all European and US American suppliers) as the SAR (Synthetic Aperture Radar) is of Military use.

