FMCW Base Module
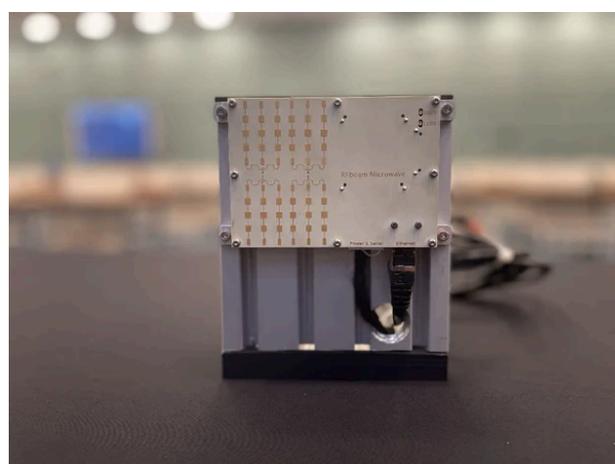
FMCW Base Module

The FMCW base module is an extension of the NextGen Radar Training system. The abbreviation FMCW stands for Frequency-modulated continuous-wave radar. The FMCW radar operates with a 4 array patch antenna (3 Rx channels, 1 Tx channel) and provides applications as FMCW mode, Doppler, etc.

FEATURES

Operating Modes

- FMCW
- Doppler

Scopes (enabled through FreeScopes)

- A-Scope
- B-Scope
- Plan-Position-Indicator (PPI)

Amplification

- Amplification of raw signal (IQ signal) at receiver
- Amplification of filtered signal in the scopes

Filters and Signal Treatment

- Sensitivity Time Control (STC)
- Signal Threshold and Limiter
- Range Calibration and Extension
- Cutting out selections of the signal range
- Moving Target Detection and Indication
  and more

PREREQUISITES

- 8 GHz Pulse Radar
- Network of Computers with latest HTML5 enabled browser. Current versions of Chrome is best suitable to read HTML5.
- SkyRadar FreeScopes Basic I

EXTENSIONS

- Rotary Tripod (recommended)
- Cloud Server (recommended)
- FreeScopes Basic II
- FreeScopes ATC I
- FreeScopes ATC II
- System Monitoring and Control
- DSP Radar Simulator
- FreeScopes ATC Disturbance Filtering and Analysis I
- FreeScopes ATC Disturbance Filtering and Analysis II

- FreeScopes Artificial Intelligence I
- SkyRadar Mobile Target Positioning System
- 24 GHz Noise Radar extension

See more extension

basic MTI algorithm is part of the FreeScopes Basic II package

The above video shows the algorithms Moving Target Indication (MTI) , MTI with post-processing, Moving Target Detection (MTD) as well as MTD with Doppler filter, applied on raw data of a 24 GHz FMCW.