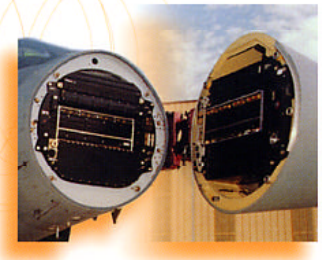
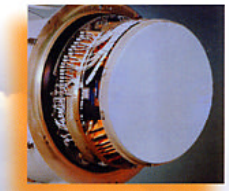


Technical features

The radar is made up of 4 Line Replaceable Units, LRUs



Antenna - block

- Passive electronic scanning
- High beam agility
- Very low side and scattered lobes in azimuth and elevation

Exciter - Receiver

- Coherent X band frequency generation
- Excellent spectral purity

- 4 independant channels (Σ, Az, El, G)
- Analog to digital conversion

Transmitter

- Matched to high, low, medium PRFs
- High output, wideband TWT
- Digital management of transmitter safety
- Gas dielectric isolation for easy maintenance

Programmable signal processor - Data processor

- Target detection and ECCM processing
- Fully programmable
- ASIC technology

- Tracking and fire control computations
- Radar map generation

THALES

2, avenue Gay-Lussac • 78851 Elancourt Cedex • France • Tel. : +33 (0)1 34 81 60 00 • Fax : +33 (0)1 30 66 79 66
www.detexis.thomson-csf.com info@detexis.thomson-csf.com

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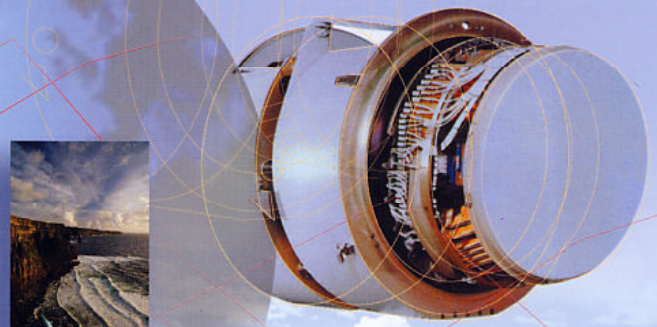
RBE2
Rafale radar



THALES

First in production electronic scanning multifunction radar

The RBE2 radar provides the whole range of radar functions required on a fully polyvalent aircraft of the 21st century.

Air-to-air

Air-to-ground

Air-to-sea

In order to maximize its contribution to the aircraft operational capabilities, the RBE2 has been designed to be fully integrated into the Rafale mission system. The main objective is, particularly in all weather conditions, to provide the crew with all tactical data required to fulfill the mission.

The extent of expected radar capabilities has led to the choice of an electronically scanned array.

Beyond intrinsic beam agility, electronic scanning provides flexible space / time beam steering capabilities which means that dwell and revisit times on targets can be adapted to the operational situations.
Moreover, electronic scanning brings capabilities for multifunction simultaneities.

The RBE2 range of functions covers:
- air-to-air with simultaneous BVR active missiles firing,
- air-to-ground and air-to-sea tactical situation build-up and weapon firing control,
- automatic terrain following and terrain avoidance.

Fulfilling the range of functions and performances required within the allocated volumes has led to adopt innovative technologies with wide growth potential, particularly in signal and data processing.

The widest range of radar functions ever put together in a combat aircraft.

Full swing role capability

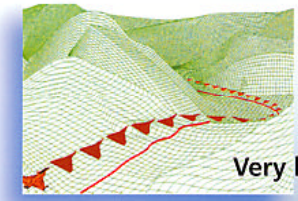
In the whole range of radar modes, sophisticated ECCMs maintain performances, even in most severe environments

Electronic scanning provides breakthroughs by enabling to maintain on going target tracking independantly from search volume selections and providing integrated radar-to-missile data links.

- Tactical situation build-up : up to 40 targets
- Prioritarization of 8 targets and simultaneous BVR firing of 4 targets with radar-to-missiles data-links interlaced with the search and track-while-scan radar mode.
- Multi-target combat modes : 4 targets.

Situation updates en route and in target areas.
Weapon fire control

- High resolution imagery modes
- Freeze and zoom modes.



Very low level flight

All weather flight below radar detections

- 3D terrain computation for combined terrain following and terrain avoidance
- Terrain features detection.

Radar function simultaneity

Electronic scanning makes it possible to carry out fast radar mode switches thereby enabling operational functions simultaneities such as, in air-to-air, simultaneity of search and track modes and radar-to-missiles data-links.
More over the crew can be provided simultaneously with tactical information related to different radar functions : i.e. simultaneous availability of air-to-air and terrain following / terrain avoidance informations.

Long range tactical situation build-up and assessment.
Weapon fire control

- Long range detection and multitarget tracking
- Target RCS assessments; freeze and zoom modes.