

SMA IN REMOTE SENSING

GENERAL

SMA is a Company involved in the defense market since many years, and it is interested and involved also in the environment studies and protection. This presence and interest are confirmed by the production of sensors used in this field and by the support given to studies about various related arguments.

In a certain way the first instruments related to the environment can be considered the radiometers that SMA has built for more than 15 years in the late 50's up to '70-'75 for the Sun studies, in cooperation with the Arcetri Observatory.

More recently SMA has built both active and passive instruments for agricultural studies; among them we can find radiometers in various frequency bands and scatterometers. This activity took place in the late 70's.

At present there are activities dedicated to the atmosphere in cooperation with the University of Rome II that uses SMA radiometers for its observations.

Beside to this activity there is an interest in the meteorological field with both

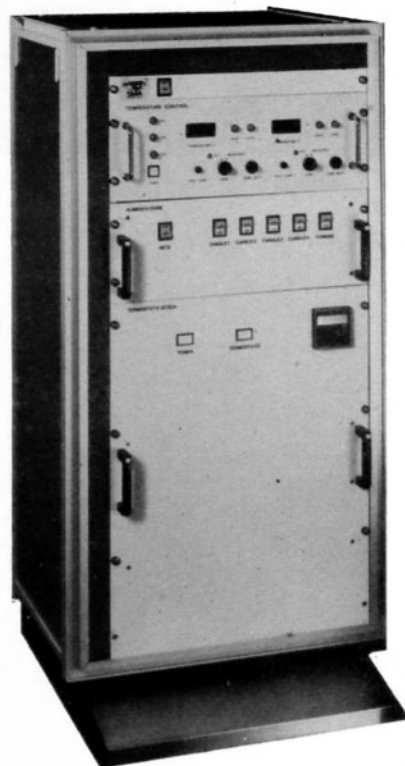
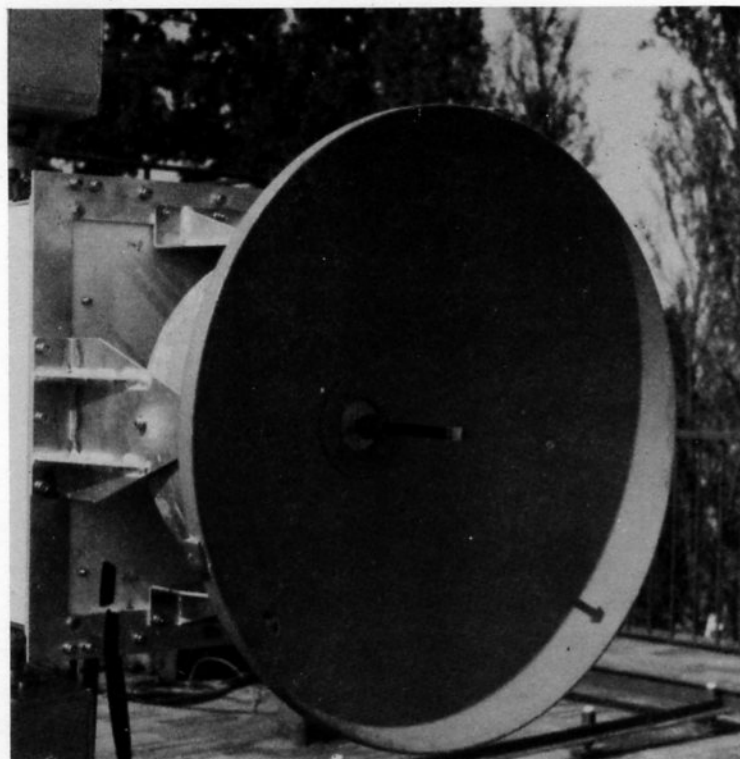
passive and active instruments. In the active field SMA is involved in the construction of meteorological radar, while on the passive side SMA is studying the realization of a spaceborne radiometer.

This last one is a multifrequency radiometer that will probably be fitted on the Polar Platform in the second half of next decade.

It is an instrument devoted to the observation of various meteorological parameters like sea surface temperature, wind speed, precipitation over sea and land, ice and snow coverage and water content of the atmosphere.

Beside to the realization of sensors there is an activity of analysis dealing with application of microwaves and mm-waves to other environmental problems.

Among them we can find the woodland fires, in both aspects of their detection and of help to aircrafts and helicopters during emergency, and the oil spill detection on sea surfaces. Other activities are provided in the future in this fastly growing area of microwaves application.

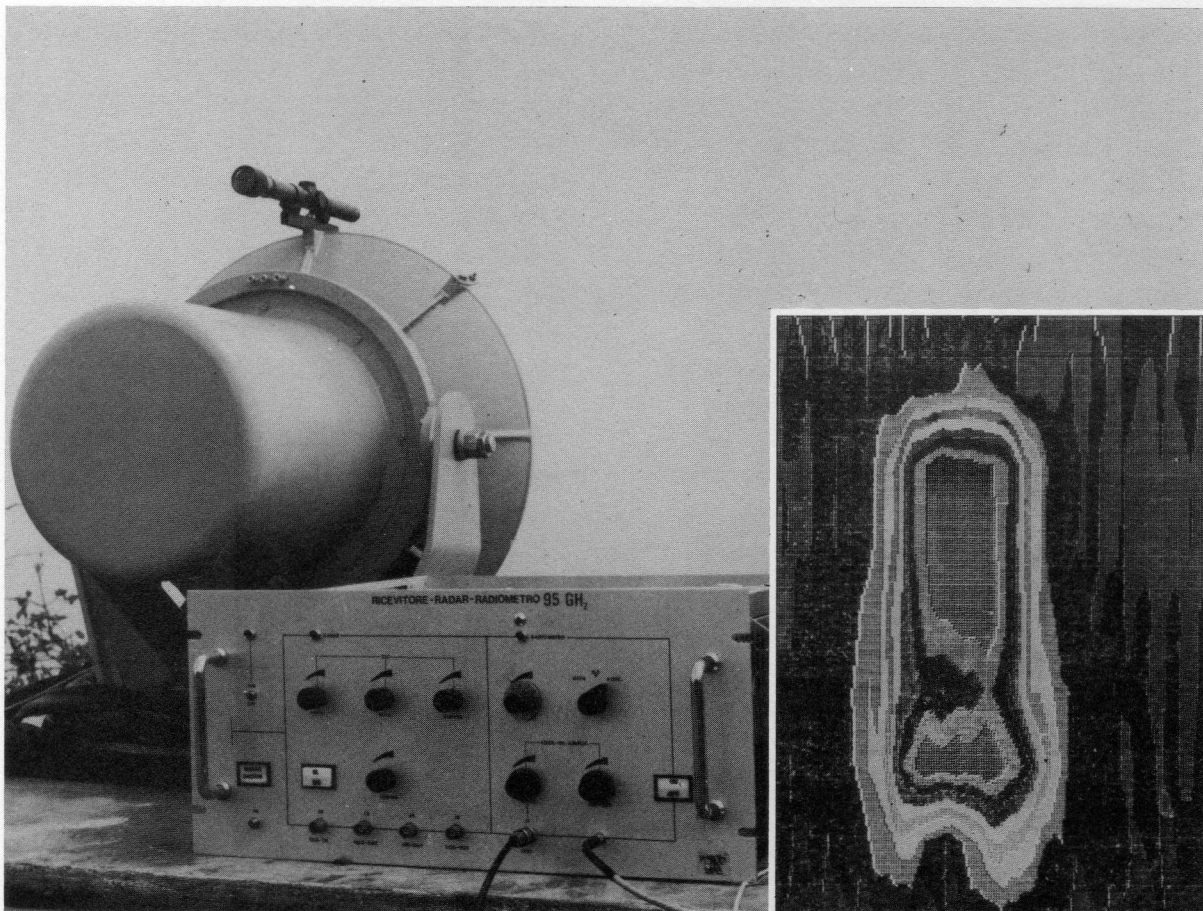


OPERATIONAL FEATURES

- High sensitivity and accuracy due to thermal stabilization and control
- Easy integration with computer system
- Selectable integration times
- Selectable dynamic range
- Processing and imaging capabilities
- Antennas available for different application purposes

MAIN CHARACTERISTICS

- Different frequencies from "L" band up to mm-waves
- Different radiometric schemes:
 - Quasi total power with internal calibration
 - Dicke type with stabilized references
 - Automatic gain control with dual thermal reference
- Thermal stabilization and control
- Easy calibration facilities



SMA

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