

NATALIA

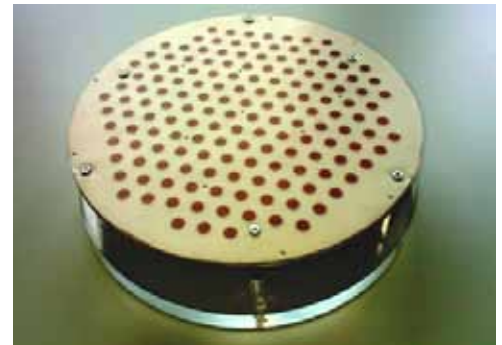
SATCOM RX-FRONTEND FOR KU-BAND

OVERVIEW

The project NATALIA (New Automotive Tracking Antenna for Low-cost Innovative Applications), funded by ESA under contract number 18612/04/NL/US, focuses on the realisation of a compact, cost-effective, receive-only fully-electronically steerable antenna for automotive platforms in Ku-band. The consortium is composed of partners from Switzerland, Luxembourg, and Germany. The design is based on a phased array concept. The planar antenna aperture is composed of 156 dual polarised microstrip stacked patches, arranged in a triangular grid. The antenna features polarisation agility. The final buildup is very compact and cost-effective, a first important step towards a commercial product.

FEATURES:

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| ■ Operation frequency | 10.700 GHz-12.750 GHz |
| ■ Operation mode | receive-only |
| ■ Polarisation | linear |
| ■ G/T (Figure-of-Merit) | > -6 dB/K |
| ■ X pol. discrimination | > 15 dB |
| ■ Scan range | 20°-60° in elevation from horizon, 0°-360° in azimuth |
| ■ Size | ~22 cm Ø, 3cm in height |
| ■ Weight | < 2 kg |



Antenna under test

The antenna, in combination with a dedicated receiver/modem, will launch a new generation of mobile satellite terminals: compact antenna front-end, intelligent receiver and smart broadcast services for the mass market. Satellite reception in cars would be possible without disturbing the aesthetics of the vehicle. This could open new markets for both service providers and the automotive sector.

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