

Title:	<i>“Dual redundant low noise amplifier for Q/V band applications“</i>		
Contract type	ARTES 5.1	Budget (K€)	443 k€
Company (-ies) (including country)	<ul style="list-style-type: none"> - Fraunhofer Institute for Applied Solid State Physics IAF, Germany - Radiometer Physics GmbH, Germany 		
Team (name of the participant in the project)	<ul style="list-style-type: none"> - Mikko Kotiranta (Fraunhofer IAF) - Ralf Henneberger (Radiometer Physics GmbH) 		
(*) Speaker (s)	Mikko Kotiranta	Email	mikko.kotiranta@iaf.fraunhofer.de
Short Speaker Information (experience and involvement in this project)	<ul style="list-style-type: none"> - Group Manager at the Department of Microelectronics working in the fields of transistor modelling and MMIC design - Prime Contract Project Manager in this project 		
Summary of the activity (maximum 400 words)	<p>A dual redundant low noise amplifier (LNA) for the Q/V-band has been successfully designed and manufactured in this project. The reliability of the amplifier is improved by including a redundant LNA into the amplifier module. The LNAs have been realized as monolithic millimeter wave integrated circuits (MMIC) using the Fraunhofer IAF metamorphic high electron mobility transistor (HEMT) technology. The selection of the operating amplifier branch is carried out with a structure consisting of a novel dual waveguide probe developed by Radiometer Physics GmbH and two shunt MMIC single pole single throw (SPST) switches located in the front of the LNAs. This is a reliable and low loss redundancy solution that allows one to obtain noise figure performance similar to the performance of a redundant amplifier utilizing a waveguide switch while having a smaller size and lower cost.</p> <div style="display: flex; justify-content: space-around;">   </div>		

(*) The speaker needs to do the registration through the [website](#)