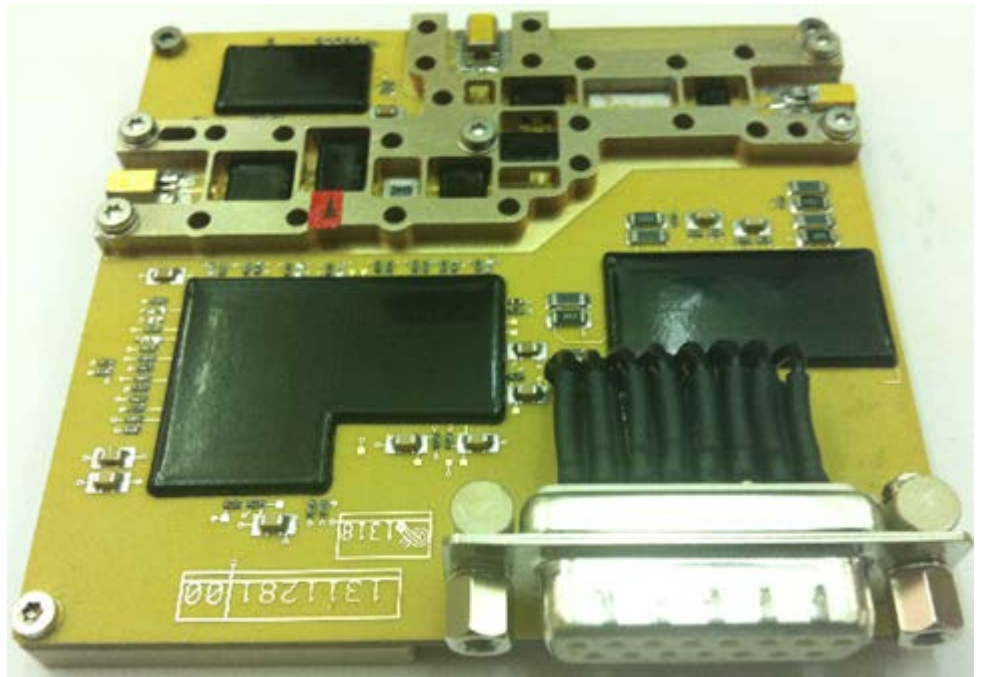


<b>Title:</b>	<i>“Advanced front end RF units based on non hermetic packaging”</i>		
<b>Contract type</b>	ARTES 5.1	<b>Budget (K€)</b>	<b>700k€</b>
<b>Company (-ies) (including country)</b>	THALES ALENIA SPACE - FRANCE		
<b>Team (name of the participant in the project)</b>	Hervé LEBLOND Cécile CAILLE Régis BARBASTE Céline FRINAULT Jean-François VILLEMASET Laurent COURSELLE Renaud ARNAL Vincent LAVALETTE		
<b>(*) Speaker (s)</b>	Hervé LEBLOND	<b>Email</b>	herve.leblond@thalesaleniaspace.com
<b>Short Speaker Information (experience and involvement in this project)</b>	Hervé Leblond was born in 1979. He received his master’s degree and the PhD degree in high-frequency and optical telecommunications from the University of Limoges, France in 2002 and 2006 respectively. He joined Thales Alenia Space in 2006 and worked as microwave design engineer. He was in charge of the development of the new generation of Microwave Units. He was the project manager of this project.		
<b>Summary of the activity (maximum 400 words)</b>	<p>The overall objective of this study is concerned with the design, manufacture and test of a Ka/IF EM Down-Converter based on a Non hermetic packaging and reduce the weight and the size of RF/IF section, LO section, TM/TC section, DC/DC section by using new devices and technologies or by considering new architectures.</p> <p>The first phase includes an exhaustive review of all possible improvements leading to a further integration of the RF unit. Based on this first analysis phase, the various effective RF Front end unit improvements targeted for the EM shall be identified and preliminary design architecture shall be presented together with the adequate reliability evaluation test program.</p> <p>The second phase will consist in the detailed design, manufacturing and test of an EM Frequency Converter associated to evaluation tests.</p> <p>The Down-Converter demonstrator is composed of:</p> <ul style="list-style-type: none"> <li>• a slice including the RF chain and the TM/TC function</li> <li>• a dummy LO section</li> <li>• a DC/DC converter section. It assures the bus voltage conversion, the bias voltages regulation and the ON/OFF TM/TC interface</li> </ul> <p>These sections are gathered on a single structure (stand-alone configuration).</p> <p>The Down-converter demonstrator performs the following functions:</p> <ul style="list-style-type: none"> <li>• the amplification of the RF signal with a low added noise</li> <li>• the translation of the input signal from the 30 GHz band to the 800 MHz band</li> <li>• the amplification of the signal at 800 MHz</li> </ul>		

The following figure shows the RF and TMTC slice.



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