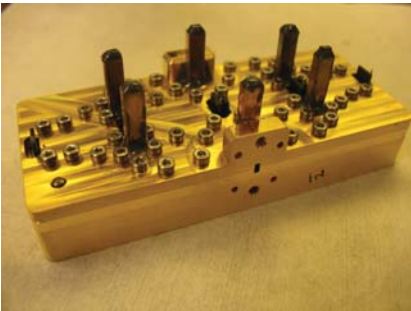


Activity Title:	<i>Millimetre-Wave Power Amplifier (CCN2)</i>		
Contract type	TRP	Budget (k€)	100
Company (-ies) <i>(including country)</i>	TNO (The Netherlands), Fraunhofer IAF (Germany), DA-Design (Finland)		
Team <i>(name of the participants in the project)</i>	Marc van Heijningen (TNO) Gijs van der Bent (TNO) Marien Rodenburg (TNO) Rüdiger Quay (IAF) Petri Jukkala (DA-Design)		
(*) Speaker (s)	Rüdiger Quay	Email	Ruediger.Quay@iaf.fraunhofer.de
Short Speaker Information <i>(experience and involvement in this project – maximum 60 words)</i>	Rüdiger Quay is head of the business field power electronics at IAF, has 15 years experience and was the project leader on the Fraunhofer IAF side.		
Summary of the activity <i>(maximum 400 words and 2 pictures)</i>	<p>This presentation covers the CCN extension phase of the 94 GHz power amplifier project. In the original part of the project, over 400 mW of output power has been demonstrated on-wafer from a single GaN power amplifier MMIC. The packaged single chip module has demonstrated 25 dBm output power. Furthermore a 4-chip waveguide module package with integrated power splitter and combiner has been realized, but unfortunately with unexpected high loss and poor performance. The extension phase has focused on increasing the output power by using the newest GaN MMIC processing technology and a new 4-chip waveguide power combining module design. The new module has a measured output power of 28 dBm, at 9 dB large signal gain (about 3 dB gain compression). With respect to the large signal gain this is a 6 dB improvement over the old module.</p> <div style="display: flex; justify-content: space-around;">   </div>		

(*) The speaker needs to do the registration through this website