
luzwavelabs
THz & Photonics
Workshop ‘Aplicaciones de la luz para la industria aeroespacial’

CORE

We have developed a disruptive HW for SIGNAL GENERATION (pure**/):**

We solve the limitations of traditional RF signal generation

CORE TECHNOLOGY

pure/

Ultra wideband, ultra high bandwidth signal generation from MHz to >1 THz

- Unique technology (not available by any other company in the world)
- PCT protected
- Inside the system, combination of Photonics, RF, precision electronics

DEMONSTRATOR VALIDATED
FINAL PRODUCT DEVELOPMENT
pure**/mm**
pure**/T**

Q4 2017

FREQUENCY RANGE

20 MHz to 110 GHz (coaxial)
50 GHz to >1000 GHz (free space)

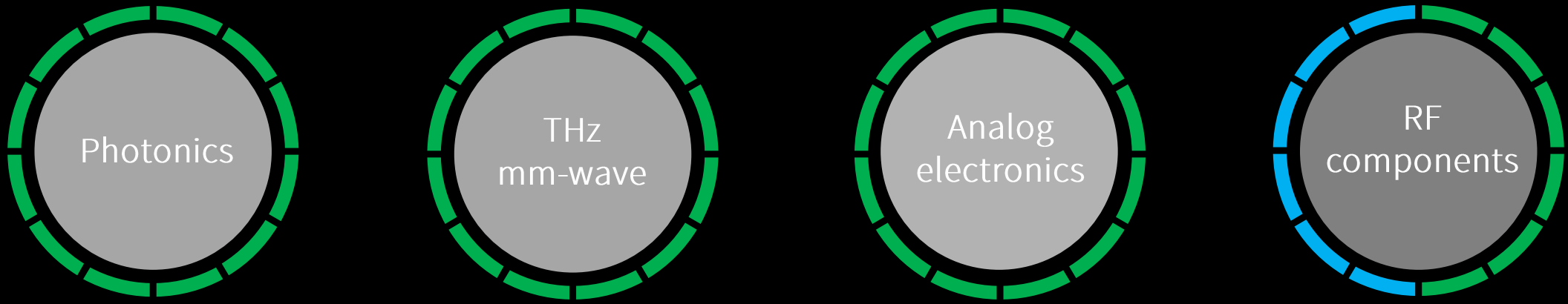
MODULATION BANDWIDTH

Up to 70 GHz

PHASE NOISE, FREQUENCY RESOLUTION

Similar to traditional RF
Sub-Hz linewidth and frequency resolution

CORE COMPETENCES

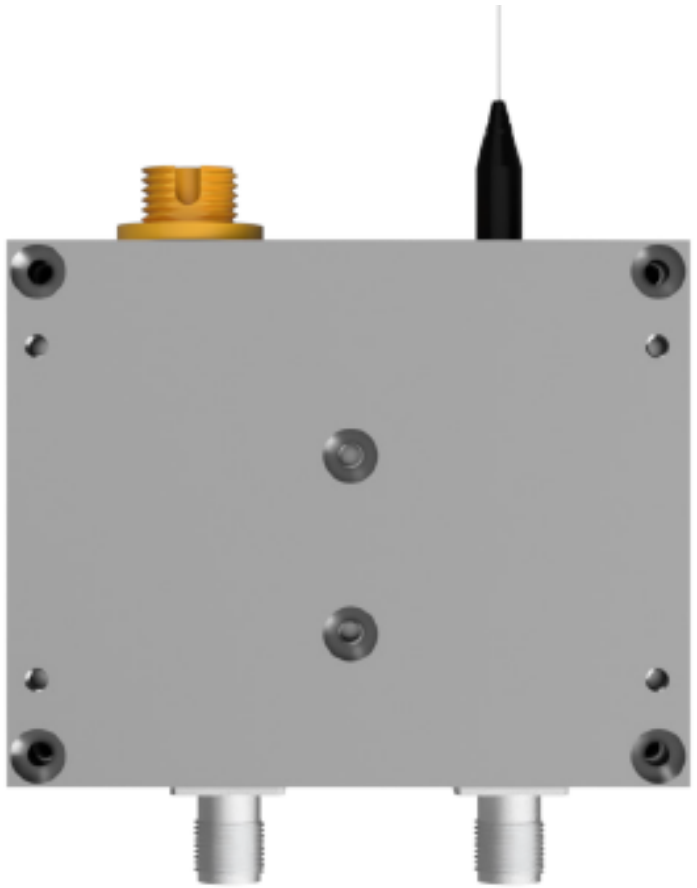


International recognition
Unique and proprietary technologies
Decades of expertise
Production capabilities demonstrated (+100 units / series)
State of the art technologies and competences
Continuous technology and research scouting

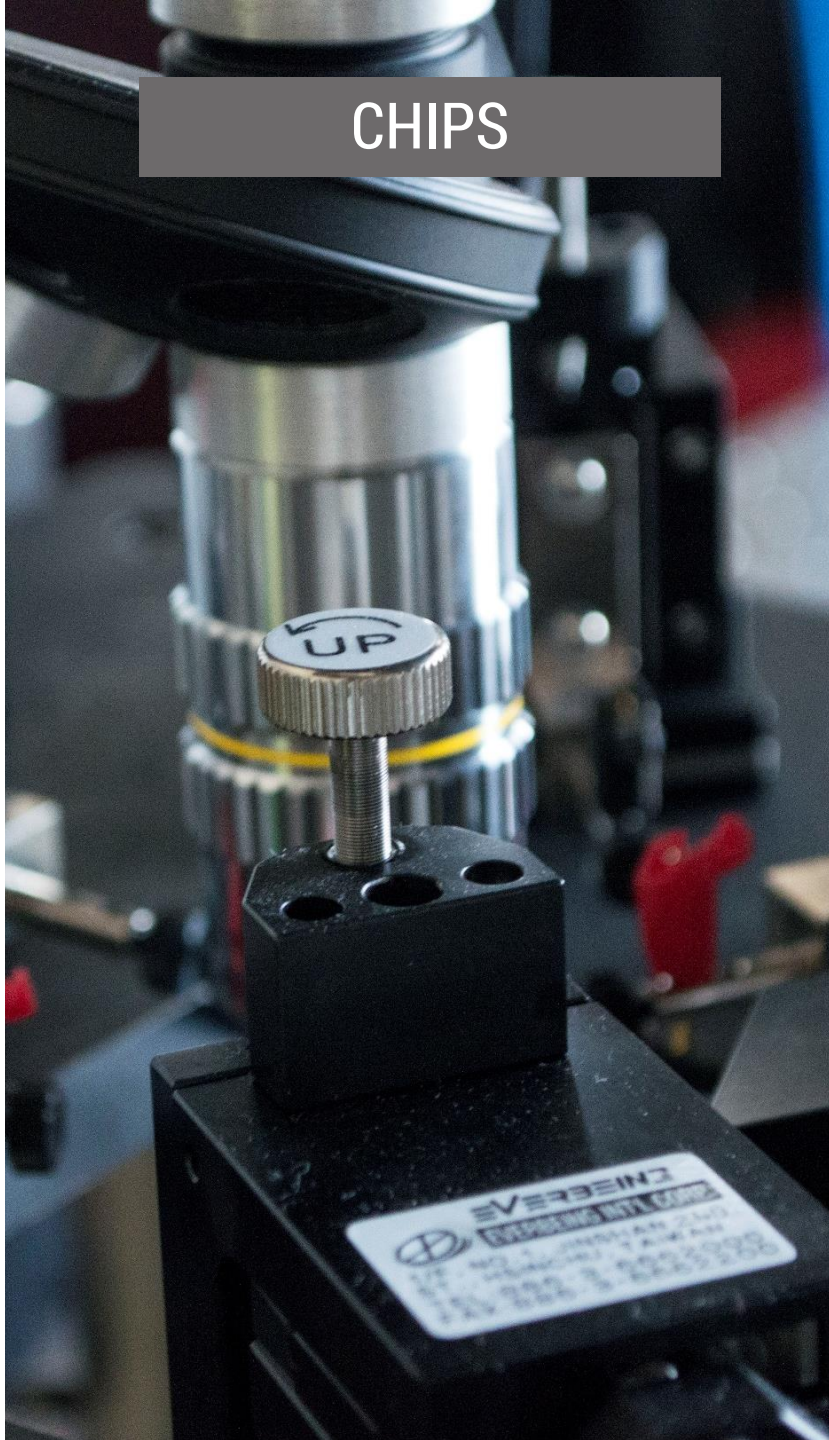
Test, measurement, design and basic prototyping at LWL.
Industrial Partner ALTAIX (shareholder): clean room, design, simulation and manufacturing of high performance RF components up to 40 GHz

SYSTEMS

MODULES



CHIPS



SYSTEMS


luzwavelabs
THz & Photonics
chassis/28HP
SOM/E
LDC/E
Temp
LDC/E
Current
LDC/E
Mount
POWER
STATUS
CONFIG
LAN
DEVICE
HOST
IN
OUT
STATUS
STATUS

RF test and instrumentation

RF INSTRUMENTATION

pure**/mm**
Signal generator 0.02-110 GHz (coaxial)

pure**/T**
Signal generator 50-1000 GHz (free space)

Beamforming / MIMO / Phased arrays

Remote signal distribution

(time, frequency, GPS, LO, Galileo…)

RoF transceivers up to 70 GHz

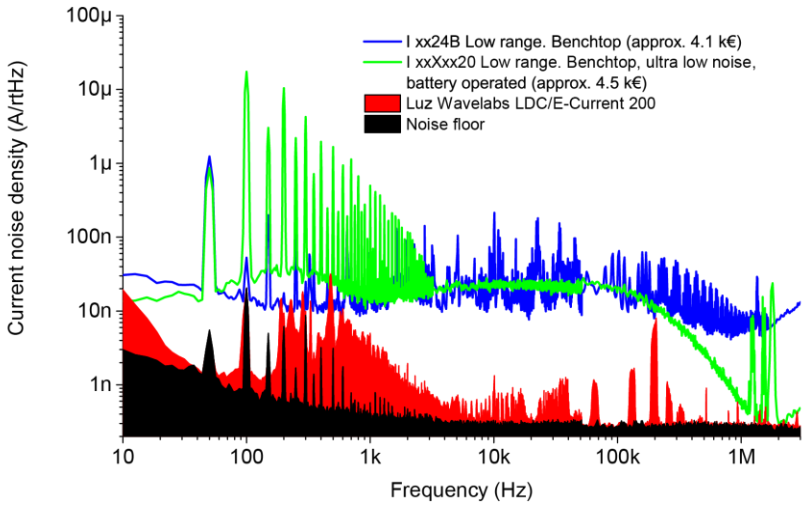
MICROWAVE PHOTONICS

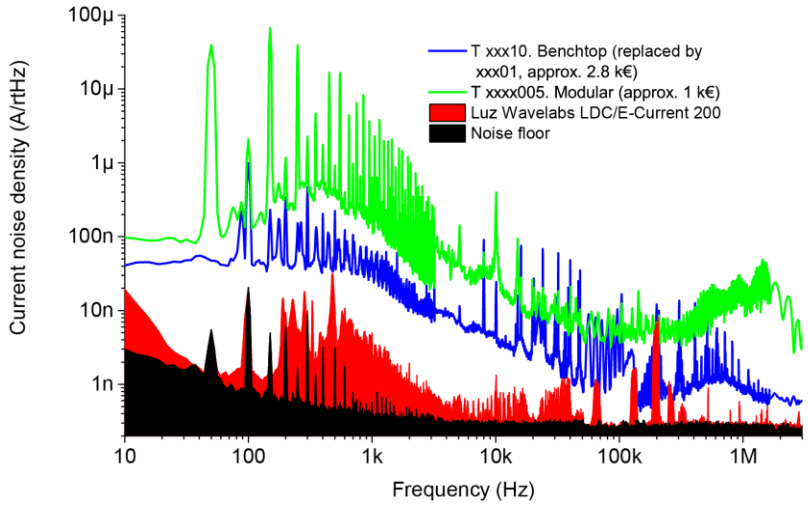
High performance modular instrumentation and electronics for Photonics

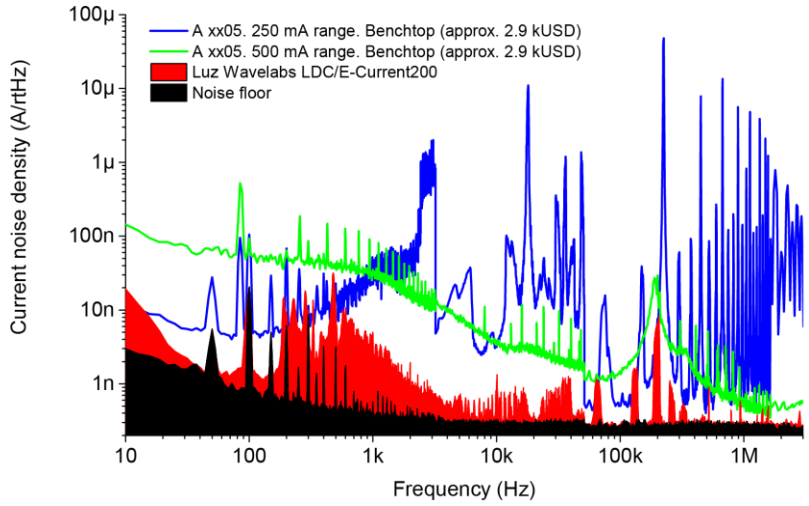
-Fast, cost efficient HW-SW custom developments for microwave photonics and Radio over Fiber
-State of the art performance and cost
-Flexible and high performance platform

-Transceivers up to 100 Gbps or 70 GHz
-True Time Delay, optical signal processing
-Upconverters, downcovnerters, time and frequency distribution, Distributed Antenna

MICROWAVE PHOTONICS







MICROWAVE PHOTONICS

High performance modular instrumentation and electronics for Photonics

-RoF Transceivers (6, 18, 40 GHz)
-Up/down converters
-Optical sources
-Optical pulsed sources (optical combs)
-Photonic ADCs
-Optical RF signal processing
-Radar target simulation
-Phased array signal distribution
-Remote LO distribution
-Custom state of the art applications

PROGRAMMABLE TRUE TIME DELAY

delay/P

-Custom number of bits
-Custom frequency range
-Custom delay ranges

Analog to Digital (ADC) conversion with 70 GHz bandwidth

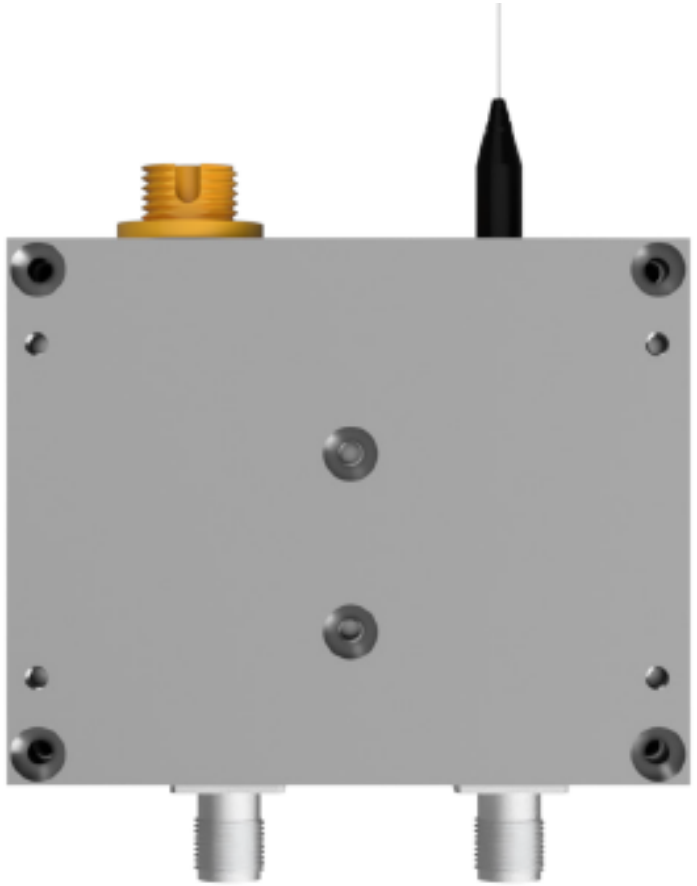
OPTICAL COMBS / PULSED SOURCES

pulse**/P**

Optical Frequency Comb

-Active reference to GHz rate RF signal
-Optical spans from 120 GHz to >5THz
-Tunable frequency spacing
-Tunable center wavelength

MODULES

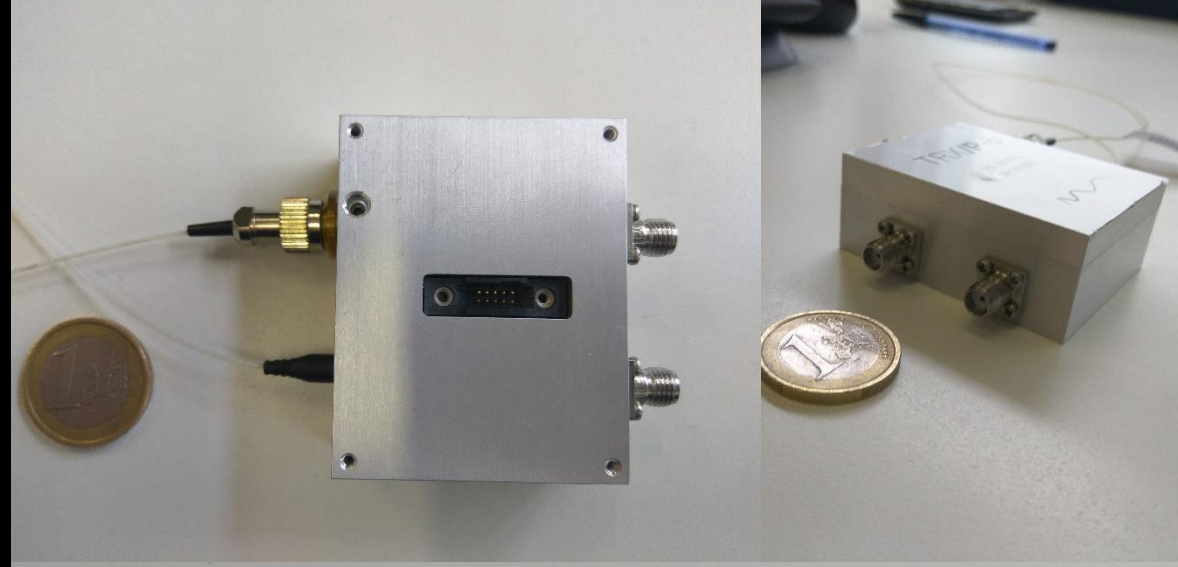


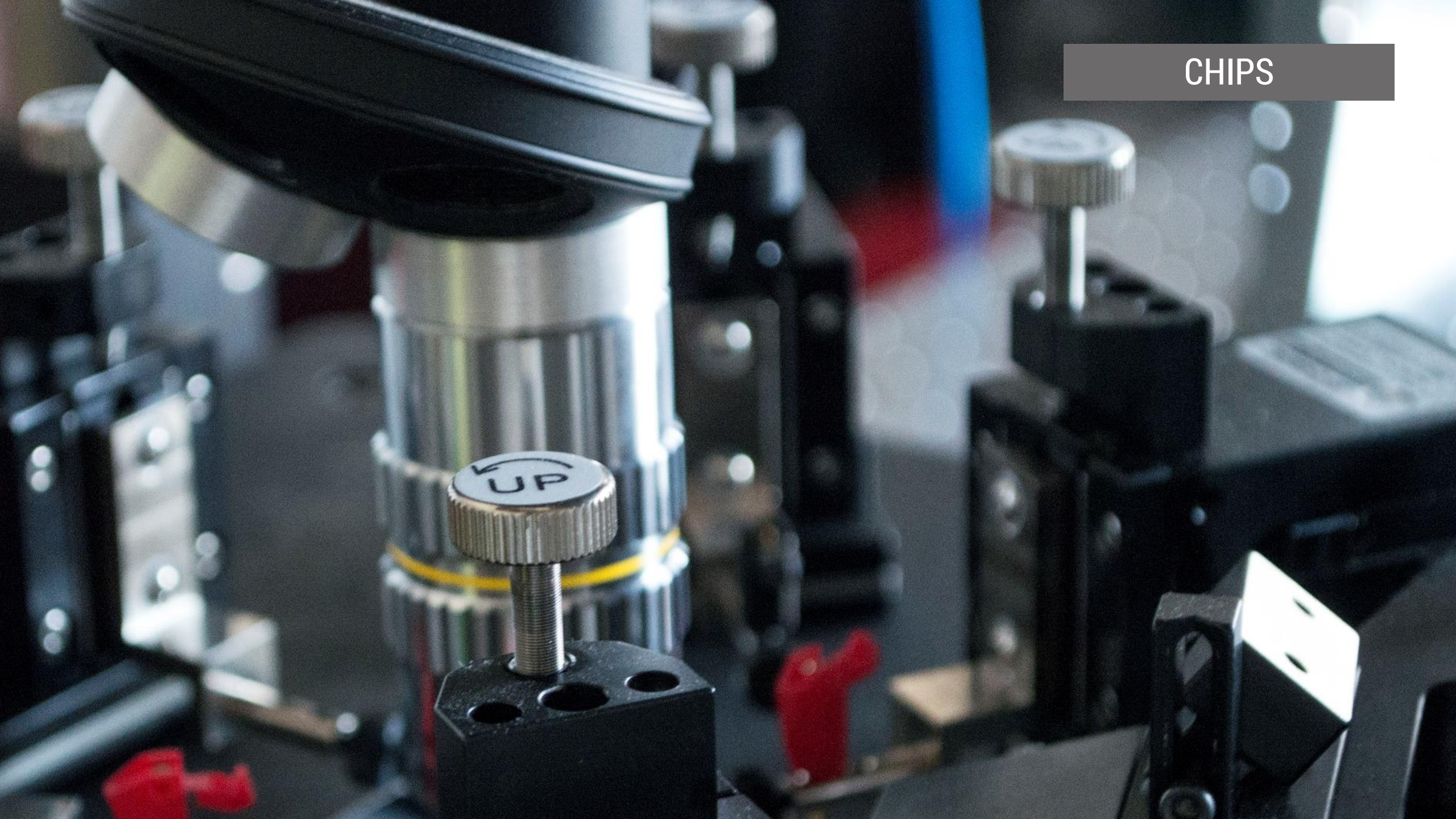
TRANSCEIVERS

Modules

-RoF transceivers (6 GHz), Nano-factor
-Custom modules

-Distributed Antenna
-Anechoic chamber measurements
-Countermeasures Eurofighter





CHIPS

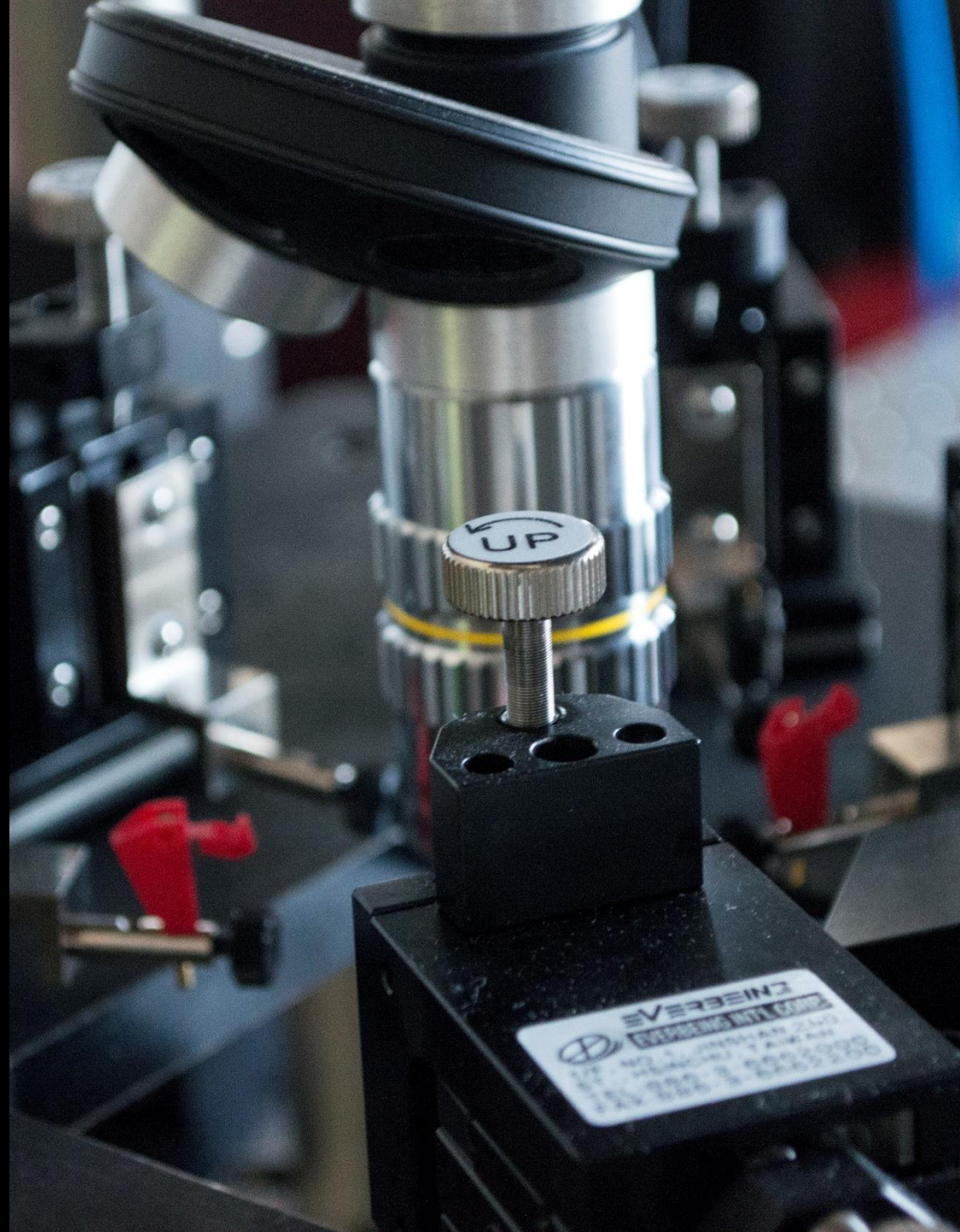
PHOTONICS

Photonic Integrated Circuits (Photonic chips)

-Design and manufacturing. Validated partners
-Characterization. In-house. Up to 40 GHz
-Packaging. Validated partners

-Currently, pulse/P chip under testing

-Know how in state of the art and technology readiness



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Thanks

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