weasic Microelectronics S.A.

Custom Microwave Transceivers & Frequency synthesizers

Weasic 2025

About

- Founded in **2014**, based in Athens, Greece
- Designs, develops and markets state-of-the-art **mmWave Silicon IP and Chips** for **5G**, **Automotive RADAR** and **Satellite** applications
- A Long Track Record on delivering **Complex Wireless Transceivers**
- **Unique mmWave Silicon Integrated RADAR technology**
- **20+ Customers**
- **35 projects** completed
- **Global Reach**
- **ISO 9001:2015 & ISO 27001 Certified** on the Research, Development And Supply of Silicon Integrated Intellectual Property Cores and Chips

IP Blocks & End-to-End ASIC

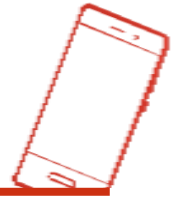
- WEASIC Microelectronics S.A. designs, develops, and markets high quality complex analog and RF IP Cores and ICs for wireless communications and wireless sensors applications, helping semiconductor and system companies to shrink the product design cycle.
- WEASIC, silicon verified, IP is designed in the state of the art CMOS, CMOS-SOI and SiGe processes and can be easily ported and customized to serve the development of 5G and Backhaul communications transceivers, mmWave front-end modules, and RADAR sensors.
- Weasic offers high-end broad-band frequency synthesizers for low jitter communication applications.
- Weasic offers RADAR transceiver and modulator IP in state of the art CMOS-SOI process.
- Weasic's synthesizer based FMCW modulator for RADAR applications, exhibits low phase noise, high bandwidth and high speed, while maintaining ultra low INL.

IP Blocks & End-to-End ASIC

- Our RADAR TX/RX IP with the highest output power and the lowest Noise Figure, enables the design of silicon integrated phased array RADAR transceivers for industrial, ADAS and surveillance applications.
- In addition weasic offers all the auxiliary blocks of a complete transceiver such as : Power Detectors, Saturation Detectors, Temperature and Voltage Sensors, ADC converters and a big variety of current and voltage biasing circuits.
- By leveraging our highly integrated solutions in CMOS, SiGe, and CMOS-SOI processes, time to market can be significantly reduced.
- Weasic can customize and adapt designs to meet customer’s specific requirements in a record time.
- Weasic has the ability to design complex digital control and processing algorithms and co-integrate with the analog/RF chips.

Applications

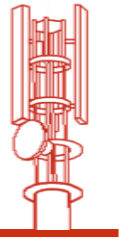
5G mmWave



Smart Phones, Base Stations

- High performance Front-End Modules
- Ultra low phase noise Synthesizers
- Low power foundation Analog IP

Backhaul Networks



Radio Links

- sub-6GHz up to D-Band
- Fully integrated high performance Transceivers

RADAR

Vehicles, Security and Health

- 77GHz Sensors
- Fast and ultra linear FMCW Synthesizer
- Receiver and Transmitter Arrays

SatCom

Satellite to Earth

- Low phase noise Synthesizers 8-16 GHz
- Phased Array Transceivers

Executive Team

Dr. Emmanouil Metaxakis

(CEO)

Field proven engineer, manager and entrepreneur with 30 years of solid background in the semiconductor business.

Co-founder of Elxys Innovations that was acquired by Ceragon Networks (NASDAQ: CRNT)

RFIC & Systems Engineer in Athena Semi, acquired by Broadcom

Dr. George Kamoulakos

(CTO)

Dozens of successful tape outs, followed by the launch of several products in the RFIC market.

Co-founder of Elxys Innovations that was acquired by Ceragon Networks (NASDAQ: CRNT)

First employee in Athena Semi, acquired by Broadcom

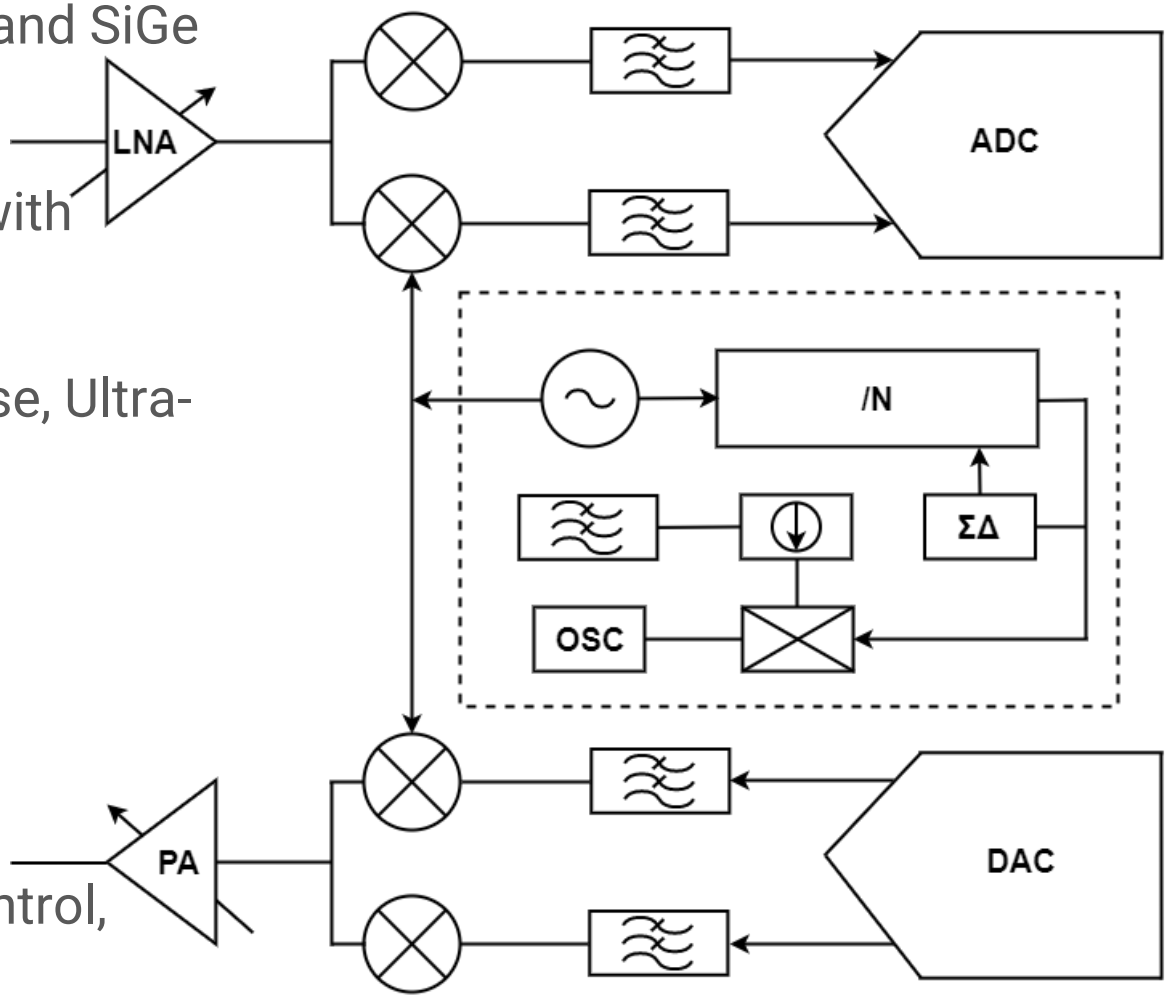
Dr. Matthias Bucher

(Board Member)

Professor in the Technical University of Crete. Consultant to microelectronics industry in Europe, US and Japan. Over 100 scientific papers in peer reviewed journals and international conferences.

One stop shop for wireless transceivers

- **Wireless Transceivers** in the state-of-the-art SOI and SiGe processes up to 150 GHz
- **Fractional-N Synthesizers up to 16GHz, 90GHz** with Frequency Multipliers
- **RADAR FMCW Chirp Generators**, Low Phase Noise, Ultra-Fast Ultra-Linear
- **Power Detectors** for 5G applications
- **Temperature Sensors**
- **Data Converters**
- Foundation Analog IP libraries for biasing and control, signal monitoring



Synthesizers, Clock & Modulators IP

- Please visit https://www.weasic.com/synthesizers/
- Family of Frequency Synthesizers from 3.5 GHz to 28 GHz
- 3.5 -7 GHz Fractional-N synthesizer TSMC 55
- 8 - 16 GHz Fractional-N synthesizer STM BiCMOS B55
- 7 - 28 GHz Fractional–N synthesizer GF 45RFSOI
- 12 GHz Fractional–N synthesizer 14LPU Samsung (under development)
- 50 MHz, 500 MHz, 2.5GHz Clock Generator with quad LVDS outputs
- 5 GHz - 20 GHz FMCW Modulators, Gen1 & Gen 2

Wireless Transceivers

- 24T12R 76 GHz-81 GHz RADAR Transceiver GF 22FDX
- 12T16R 76 GHz-81 GHz RADAR Transceiver GF 22FDX
- E-Band Transceiver STM BiCMOS B55
- D-Band FEM STM BiCMOS B55
- Ku Band Front-End Module, SiGe IBM 8XP
- 30 GHz FEM GF 45RFSOI

Best-In-Class RADAR IP Blocks

- **RADAR FMCW Modulator**
  - Best In Class Phase noise
    - **1 to 3 dB Better** Phase Noise than competition @ 1MHz offset
  - Fastest retrace rate of 3.2GHz/us without loosing lock
    - **Ten times faster** than competition
  - Ultra Linear chirp with INL of **0.01 %**
  - Typical Bandwidth of 5.6 GHz @80GHz

- **76GHz-81GHz RADAR Receiver**
  - Lowest NF among competition !

- **76GHz-81GHz RADAR Receiver**
  - Highest Output Power among competition !

Auxiliary Blocks

- Temperature Sensors
  - 45RFSOI, 22FDX
- Power Detectors 15GHz up to 90GHz
  - 45RFSOI, 22FDX
- 1-10 MSPS 8 Bit ADC
  - 45RFSOI, 22FDX
- 1 Gbit differential LVDS
  - 45RFSOI
- Bias Generator Blocks
  - 22FDX, 45RFSOI, SiGe 8XP, ST-B55, TSMC 55, Samsung FF 14LPU
- Logic Converters (Positive, Negative, 2X CoreVoltage)
  - 45RFSOI
- Negative Voltage Generator
  - 45RFSOI

Newly developed IPs

- High Speed 250MSPS 12bit SAR ADC in GF 22nm FDSOI
  - Our ADC architecture allows higher data-rate if we reduce the number of bits
  - ADC output samples Trace Buffer (FIFO + SIPO/PISO)
- High Speed 2 GSPS 12bit Time Interleaved SAR ADC in GF 22nm FDSOI
- DLL with Calibration
- Low Power PLL clock generator with ring Oscillator
- GP PLL clock generator with ring Oscillator

Contact

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