

SCALINX

NEW ART OF SIGNAL CONVERSION

CORPORATE PRESENTATION ■

June 2023 | Confidential

SCALINX

NEW ART OF SIGNAL CONVERSION



Company



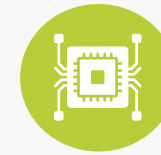
- Founded in 2015
- Headquarter in Paris, France
- 67 headcount (80 by end of 2023)
- Company backed by VC funds
- ISO 9001:2015 certified

Team



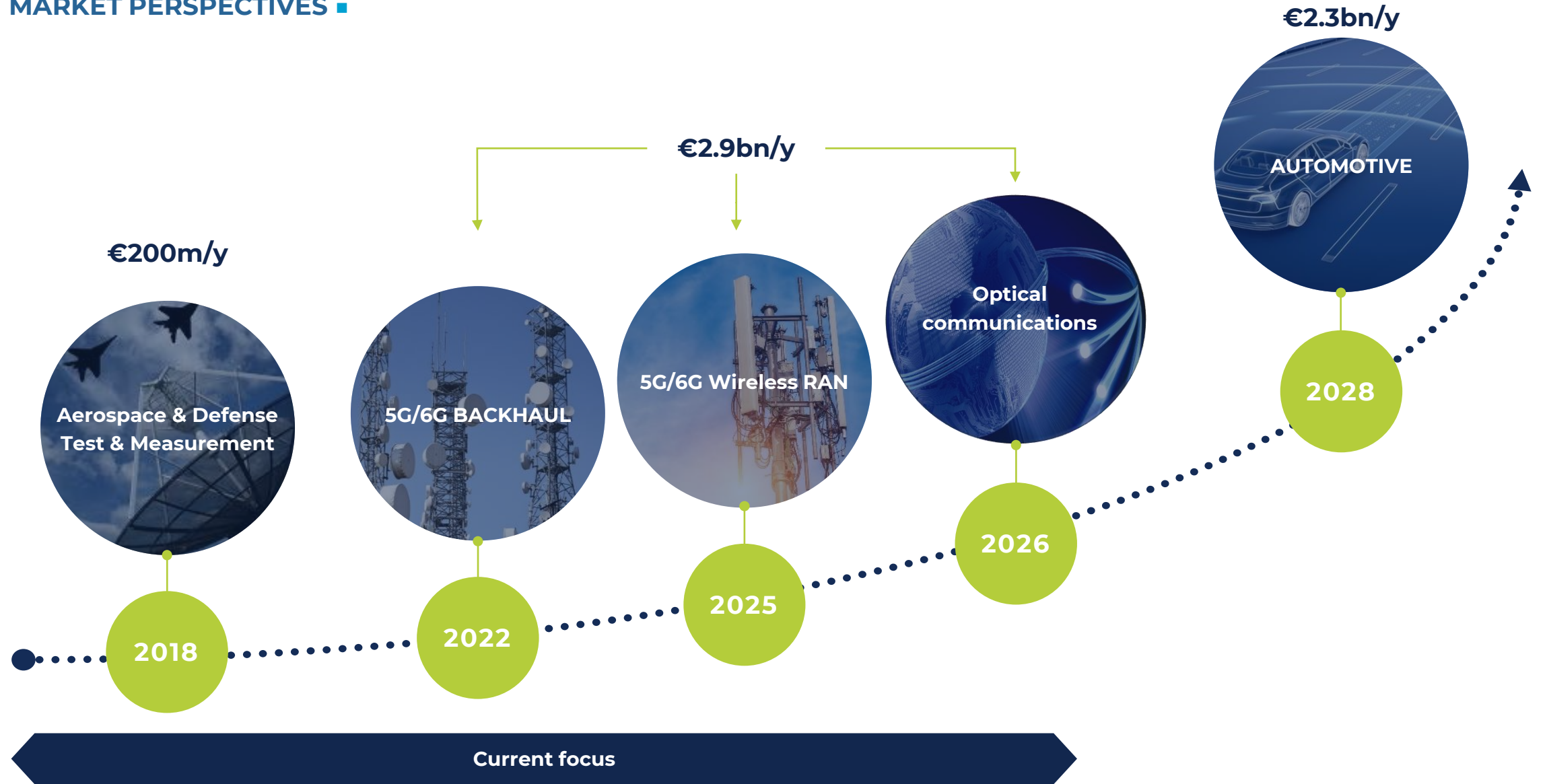
- World class, trusted engineering team
- Highly-skilled team of application engineers
- Proven industrial track record in high-speed data conversion IC design & supply

Technology



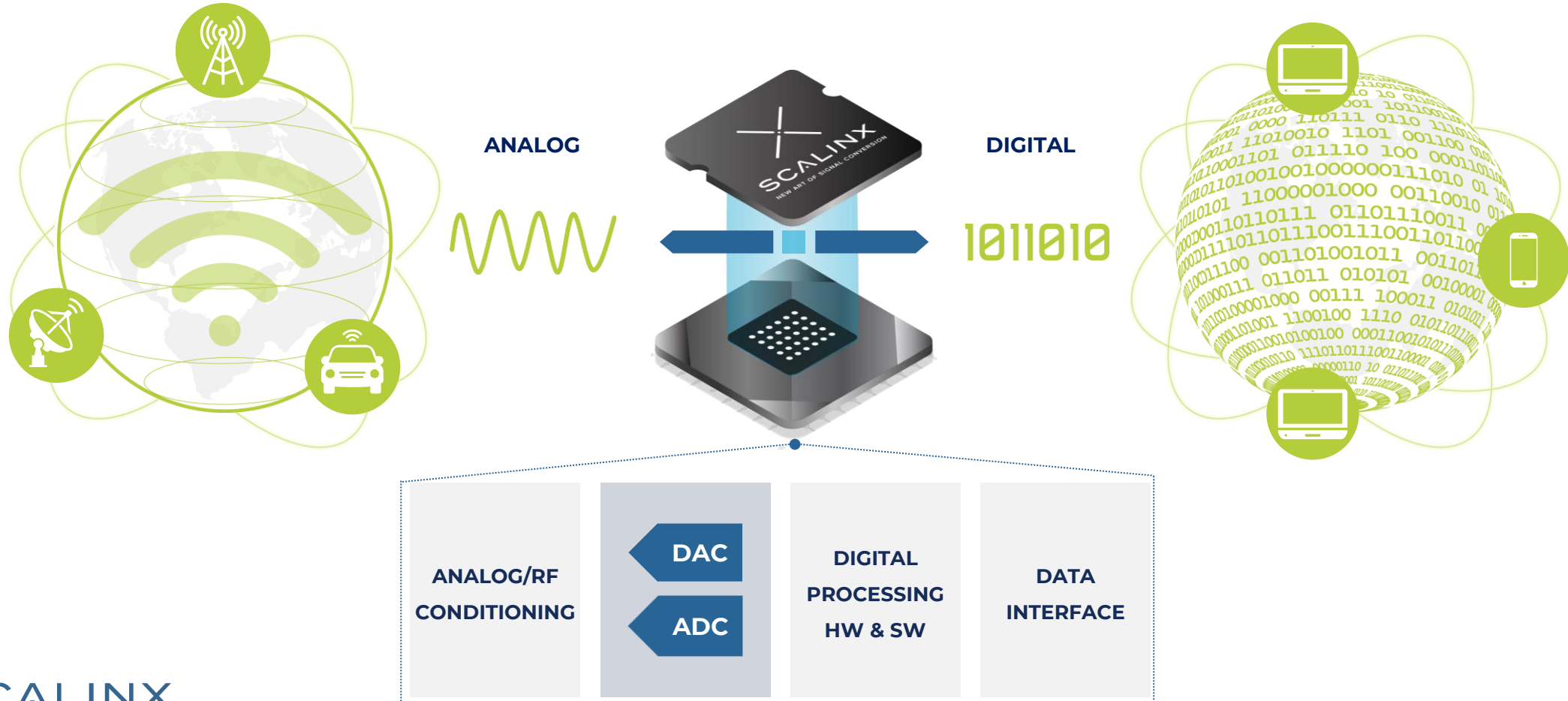
- Patented architecture & circuit
- Performance & power efficiency improvement enabled by proprietary calibration techniques
- Company holds several innovation awards

MARKET PERSPECTIVES ■



ABOUT US ■

- SCALINX is a fabless semiconductor company specializing in design and marketing of highly-integrated mixed-signal products, connecting physical and digital worlds.



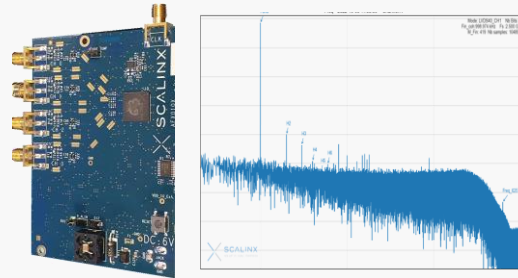
End-to-end offer

ASIC / ASSP Packaged or die



- Analog Front-End
- Mixed-Signal Front-End
- RF Receiver
- SoC Transceiver

EVALUATION KIT



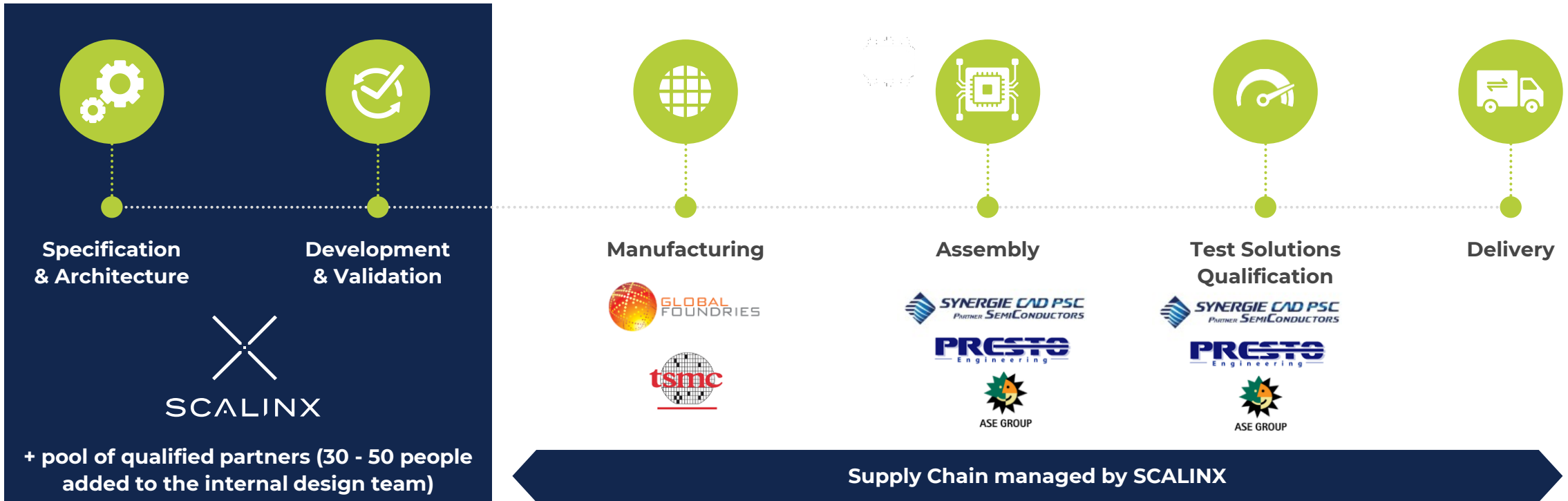
- FMC evaluation board compatible with EK-V7-VC707-G FPGA mother board
- Software with user-friendly GUI

SUPPORT

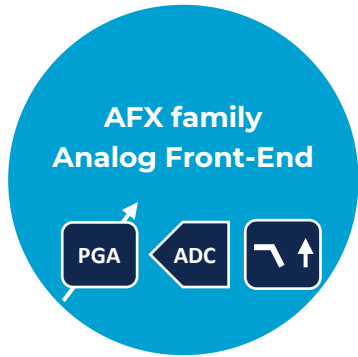


- Application team
- Customized web access to online documentation : data-sheet, application note, etc.

DESIGN & SUPPLY-CHAIN PARTNERS ■



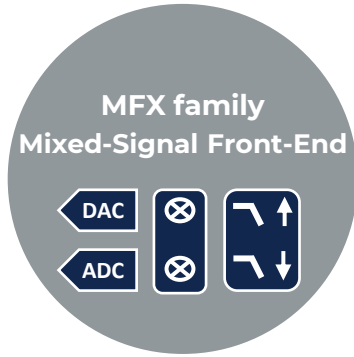
PRODUCT PORTFOLIO TIMELINE : supported by our ADC & DAC IP cores roadmap ■



- Functions: PGA, ADC, offset-DAC, PLL, Digital FIR filters, Digital gain
- Up to 4 channels
- Resolution up to 16-bit
- Data-Rate up to 5 GS/s
- Bandwidth up to 300 MHz
- LVDS interface
- BGA package
- IPs: $\Delta\Sigma$ offset DAC + Low-Pass $\Delta\Sigma$ ADC



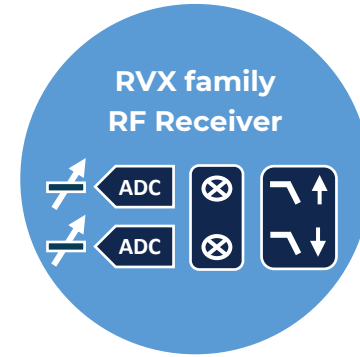
2023



- Functions: ADC, DAC, Quadrature NCO, DDC, DUC, Digital FIR filters
- Up to 4 channels
- Resolution up to 16-bit
- Data-Rate up to 208 MS/s
- Bandwidth up to 50 MHz
- JESD204B & LVDS interface
- BGA package
- IPs: Current-steering DAC + Band - Pass $\Delta\Sigma$ ADC



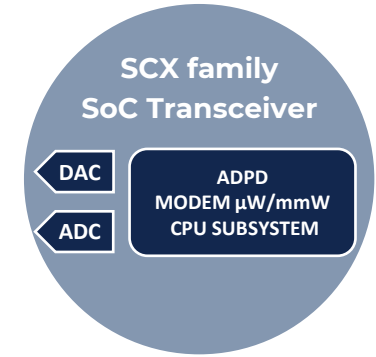
2024



- Functions: RF Attenuator, RF ADC, PLL, Quadrature NCO, DDC, Digital FIR filters
- Up to 2 channels
- Resolution up to 16-bit
- Data-Rate up to 8 GS/s
- Bandwidth up to 400 MHz
- JESD204B/C interface
- BGA package
- IPs: Band - Pass $\Delta\Sigma$ ADC



2025

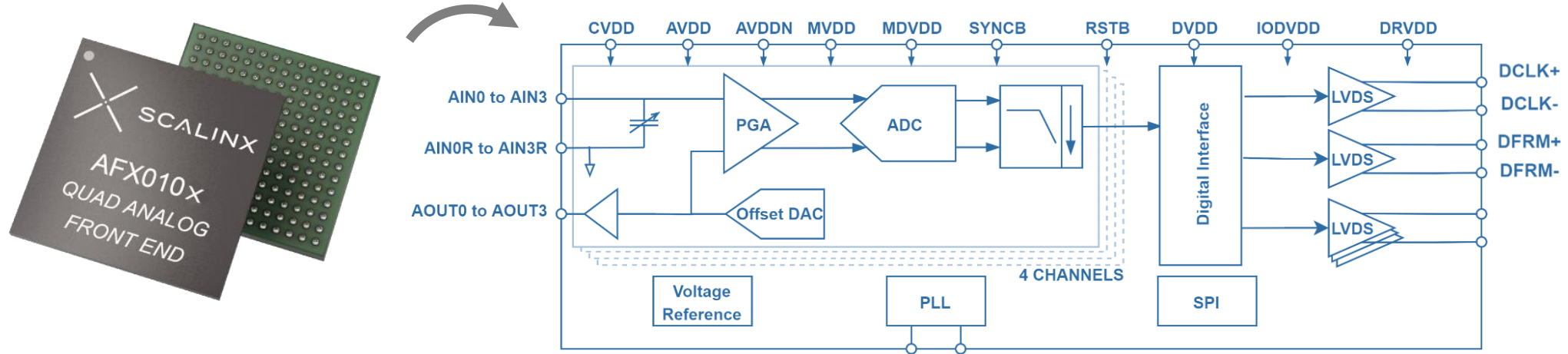


- Functions: ADC, DAC, NCO, DDC, DUC, MODEM, CPU sub-system, Data-Path
- Up to 4 μ W channels and 2 mmW channels
- Resolution up to 14-bit
- Data-Rate up to 8 GS/s
- Bandwidth > 2 GHz
- ETHERNET interface
- BGA package
- IPs: Pipeline ADC + RF current-steering DAC



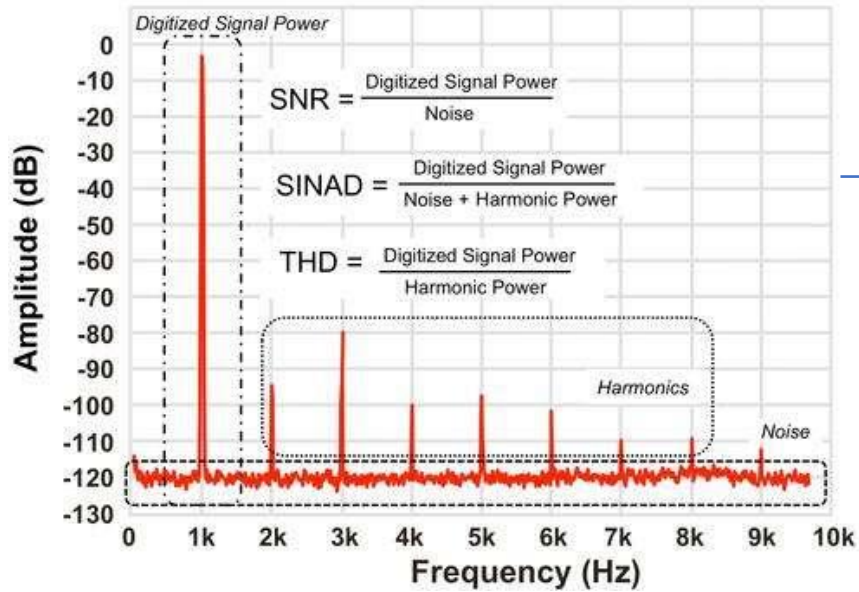
2026

AFX010x ANALOG FRONT-END FEATURES & KEY SPECIFICATION ■



- Four channels of full PGA, Offset DAC, ADC and digital processor
- Sampling-rate up to 5 GS/s per channel
- ENOB up to 11-bit @ $f_{in}=10$ MHz
- THD as low as 78dBc@ $f_{in}=10$ MHz
- On-chip clock synthesizer and voltage reference
- Digitally-selectable bandwidth from 20 MHz up to 300 MHz
- Flexible power modes
- PGA with bipolar input voltage range from ± 20 mV up to ± 200 mV
- Programmable analog gain range : 5x, 10x, 20x
- 16-bit Offset-DAC with output range from -300mV to +300mV
- Programmable digital gain range : 1x, 2.5x, 5x, 10x, 25x, 50x
- Overshoot less than 0.5% for 300 MHz bandwidth
- Fast overload-recovery
- 425 mW/channel at 5 GS/s sampling-rate

KEY INDICATORS



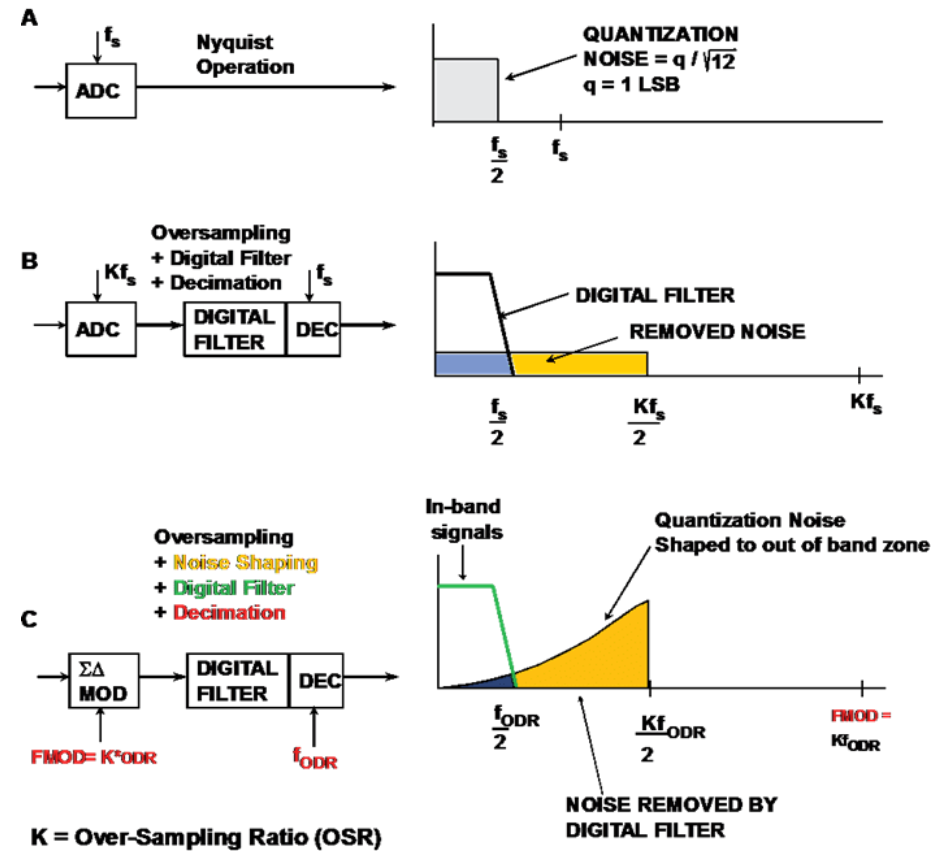
Resolution	SNR max (dB)
8	50
10	62
12	74
14	86
16	98

$$\text{SNR} = 6.02 \times \text{Nbits} + 1.76 \text{ (dB)}$$

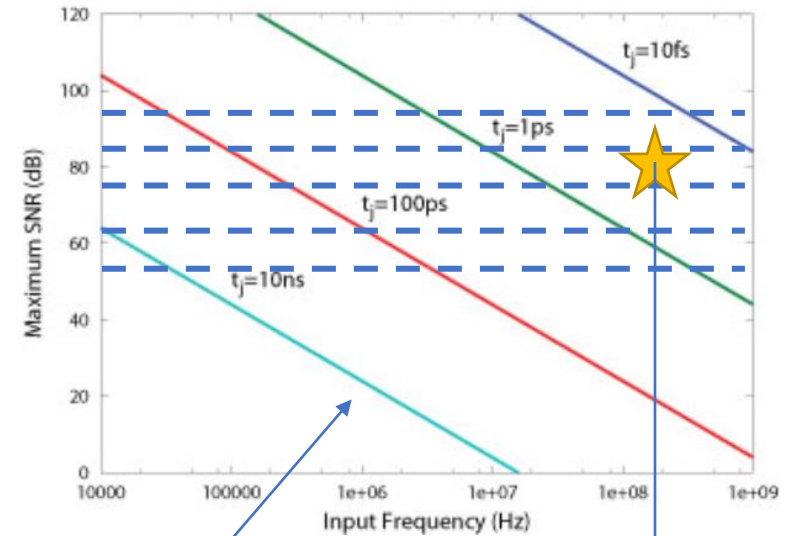
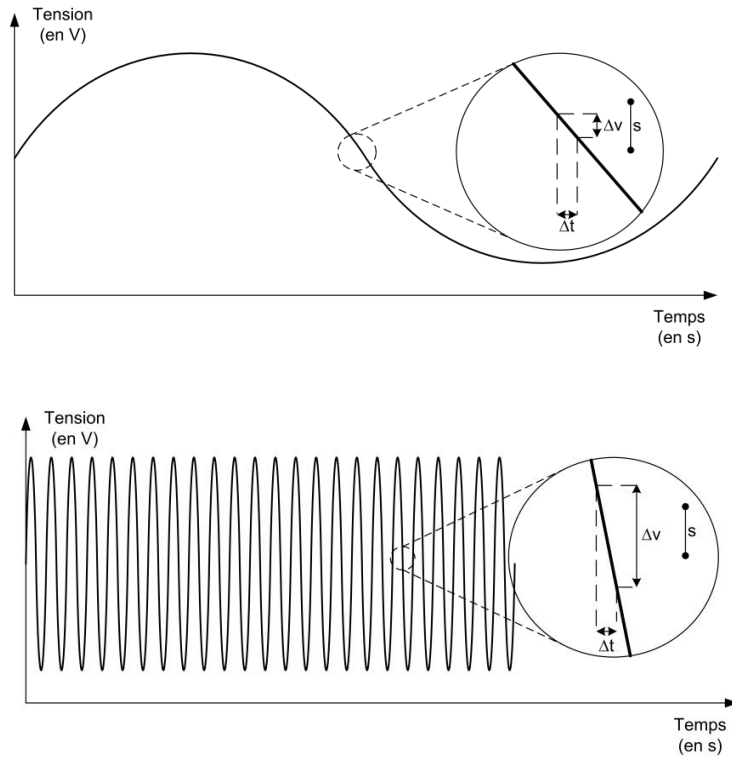
$$\text{ENOB} = (\text{SNR} - 1.76) / 6.02$$

SNR (dB)	ENOB
40	6.3
50	8.0
60	9.7
70	11.33
80	13

SIGMA-DELTA BENEFITS ON NOISE



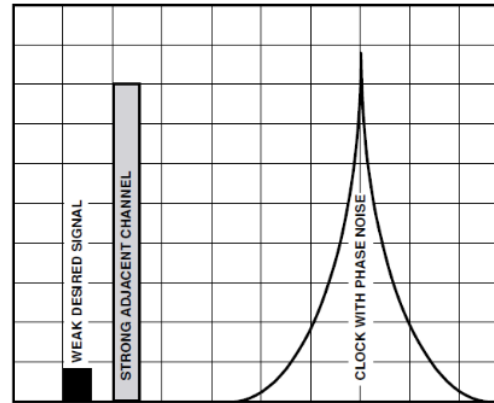
CLOCK JITTER IMPACT



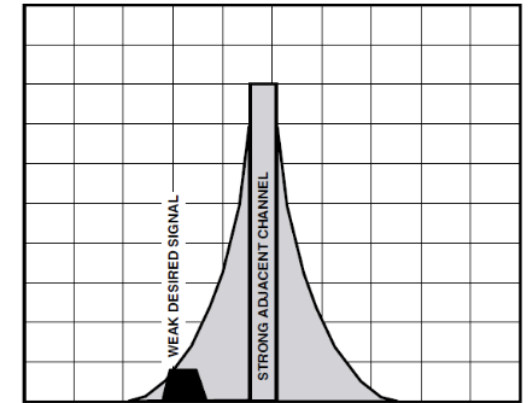
$SNR = -20 \log(2 \times \pi \times F_{in} \times t_j)$

Performances could not be reached if clock is not good enough

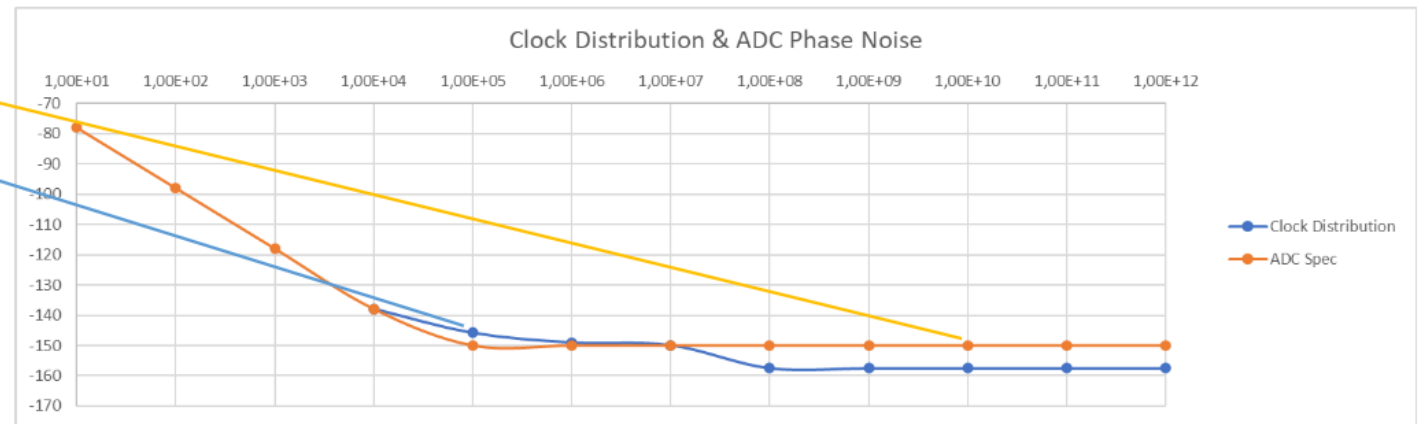
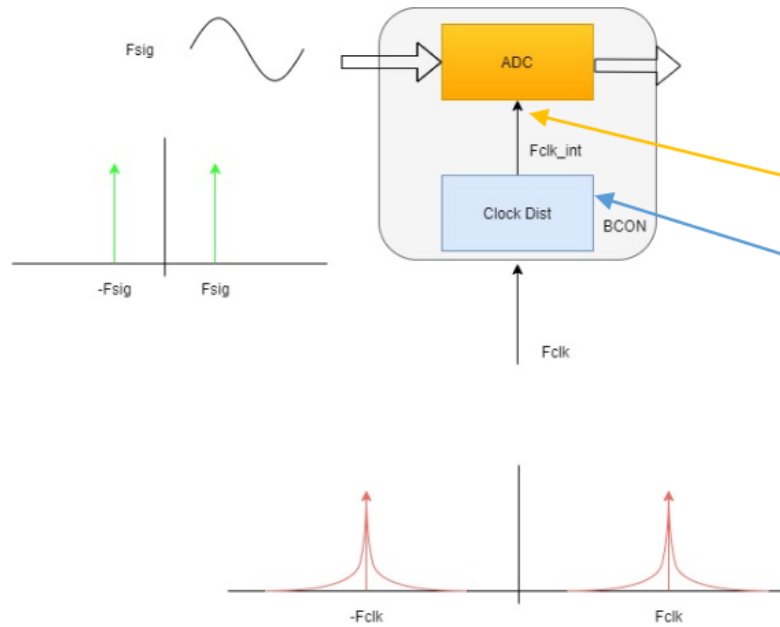
CLOCK PHASE NOISE IMPACT



RELATIVE SPECTRUM OF ANALOG AND SAMPLING SIGNALS



RELATIVE EFFECTS OF SAMPLE CLOCK ON ANALOG SIGNAL. RECIPROCAL IS ALSO TRUE



CONTACT & LEGAL INFO ■

- Main contact to discuss our products :

Denis MARSAULT – Product Manager

denis.marsault@scalinx.com

+33 6 25 14 93 99

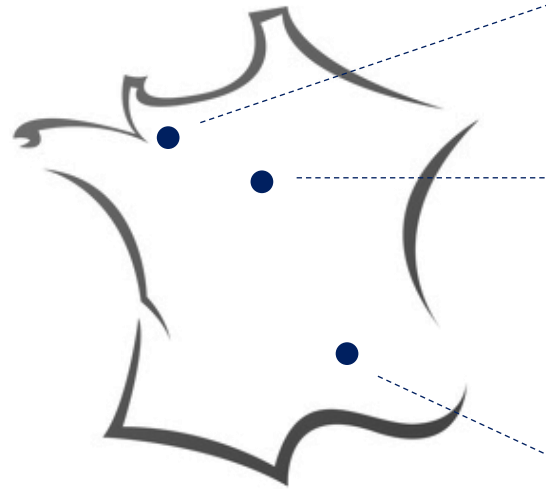
- Company information

Registration n° 813 872 025

VAT FR 84 813 872 025

contact@scalinx.com

www.scalinx.com



SCALINX OFFICES

Design Center

8 rue Commodore JH Hallet
14000 Caen - FRANCE

Headquarter

18 rue des Belles Feuilles
75116 Paris - FRANCE

Design Center

27 rue de la Vistule
75013 Paris - FRANCE

Design Center

155 Cours Berriat
38000 Grenoble - FRANCE

THANK YOU ■

