# About Silicon Creations

Silicon Creations is focused on providing world-class silicon intellectual property (IP) for precision and general-purpose timing (PLLs), SerDes and high-speed differential IOs. Silicon Creations' IP is in production from 3nm to 180nm for diverse applications including smart phones, wearables, consumer devices, processors, network devices, safety critical automotive and medical devices.

With a complete commitment to customer success, Silicon Creations' IP has an excellent record of first silicon to mass production in over 1,000 chips for over 400 customers and has earned "best-of" awards from leading foundries including TSMC.

Silicon Creations, founded in 2006, is self-funded, growing and is ISO 9001 certified. The company has development centers in Atlanta, USA, and Krakow, Poland, and worldwide sales representation.

General Purpose Fractional-N Ring PLLs

- ✓ Comprehensive programmability and very wide range so suitable for most applications
- ✓ Wide power/area/performance space – jitter supporting PCIe5 in FRAC mode and power below 300μW possible
- ✓ Great supply rejection, no injection locking, zero keep-out and allows shared supplies
- ✓ Digital modulation provides an exact SSCG
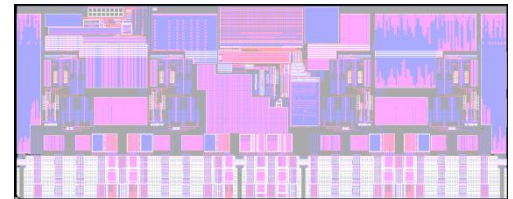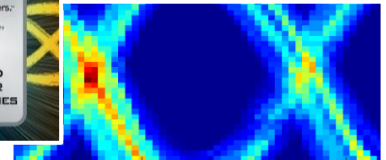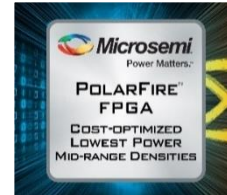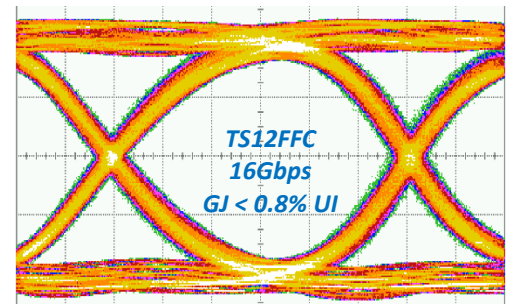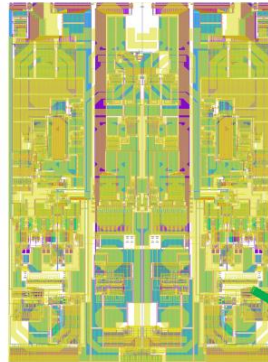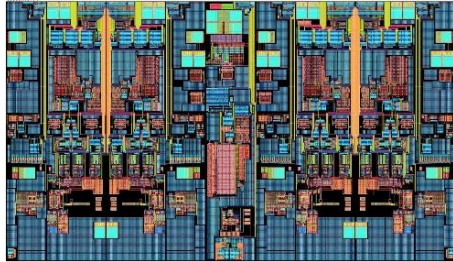- ✓ In mass production from 180nm to 3nm
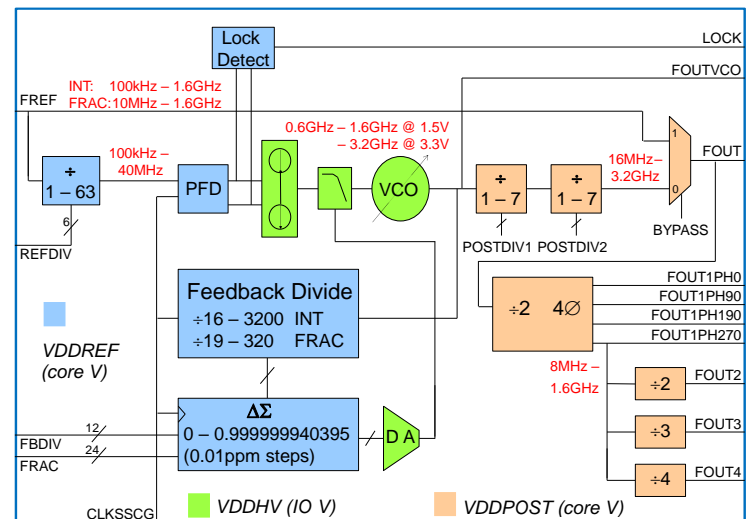
Other Clocking IPs

Our flexible self-biased architecture and silicon verified and repeatable jitter/power/area optimization tools allow us to quickly create application-optimized PLLs and clocking IPs. Silicon proven examples include:

| PLL Type	Key feature	Example applications
Digital LC-PLL	<10mW and typical LTJ 250fs RMS	PCIe4-6 reference; High-end ADCs, DACs and AFEs
Tiny, low power ring PLLs	Area down to 0.005mm^2, core Vdd only	Digital clocking
Power-optimized ring PLLs	Power < 5μW	Low power clocks for CODECs and battery-operated devices
Low bandwidth & IoT PLLs	Fref = 32kHz watch Xtal, output usable in < 40 cycles	Very low system power clocks for mobile audio and IoT devices
Free running oscillator	Accuracy as good as ±1% after trimming (3nm)	Safety monitor for automotive; Always on logic domain
Xtal oscillator	Programmable power/jitter; wide resonator compatibility	Trusted reference source for our PLLs
Digital loop filter for Fractional-N PLL	Bandwidth < 50Hz and output long term jitter < 1ps RMS	Clock de-spreading and Jitter attenuation

SerDes

- One CDR architecture proven from 180nm to 12nm, from <100Mbps to >32Gbps and is available in 6nm
- Wide range: over 10:1 data rate from one IP
- TIE jitter below 0.3ps RMS from a crystal reference clock
- Low-latency, semi-custom and multiprotocol including PCIe, (e)DP, V-by-One, Ethernet 10G-X/S/K/R, JESD204B/C, SGMII, XAUI, OIF-CEI, PON, OTN/OTU, 3GSDI, SATA1-3

TS12FFC
16Gbps
GJ < 0.8% UI

Microsemi
Power Matters.
POLARFIRE FPGA
COST-OPTIMIZED
LOWEST POWER
MID-RANGE DENSITIES

LVDS-based Interfaces

- Custom, semi-custom and standards-based interfaces available including FPD Link, FastLVDS, OpenOLDI, CameraLink, Mini LVDS and POD
- Robust and wide range: dynamic phase alignment and pixel clocks from <10MHz to >200MHz; line rates over 3Gbps
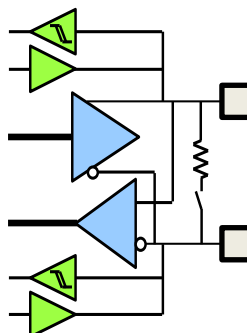
Free Running Oscillators

- Power below 30μW possible
- Accuracy over PVT after trimming better than ±1% possible
- 3nm to 65nm

V_{DD} V_{DD}

I. Ref

V. Ref
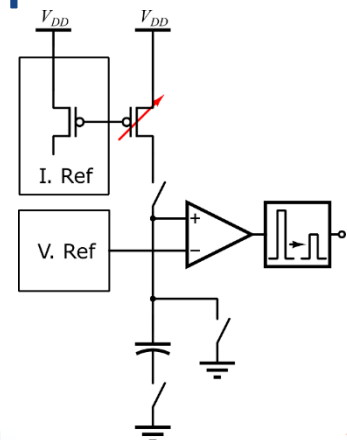
Processes Supported

- Silicon Creations IP is TSMC IP 9000 qualified and is proven or in mass production in many processes
- Automotive/ISO26262 safety supported
- Our in-house PDKs and standard cells mean our IP does not require third party licenses and we can port our IP to new processes very quickly and with low risk

tsmc

intel foundry services

SMIC

Tower Semiconductor
Where Analog and Value Meet

UMC

IBM

TOSHIBA
Leading Innovation >>>

DB HiTek

SAMSUNG

RENESAS

ST

GlobalFoundries

FinFet: 3nm, 4nm, 5nm, 7nm, 8/10nm, 12/14/16nm;
FDSOI: 22nm, 28nm;
CMOS: 22/28nm, 40/45nm, 55/65nm, 90nm, 130nm, 180nm

Contact Us

- Website: www.siliconcr.com
- Phone: +1 (678) 259-9301 / +1 (866) 232-3431
- Email: sales@siliconcr.com