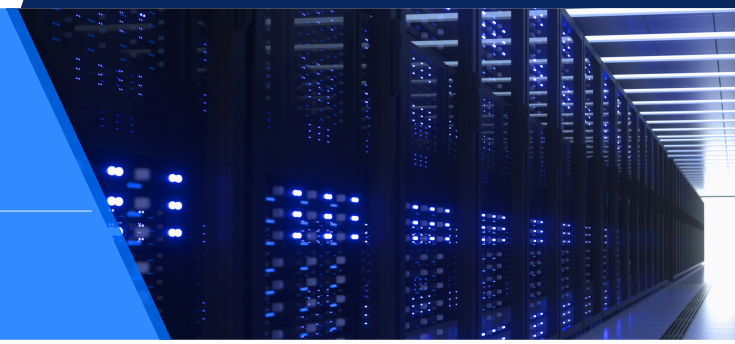
Centralized Processing Centers



Centralized processing powers scalable, low-latency solutions for AI, cloud, and crypto.

Summary

Centralized processing is a cornerstone of the modern telecom industry, serving as the central hub for managing vast amounts of data generated by an increasingly connected world. By integrating high-performance computing infrastructure with advanced technologies—such as PCIe interfaces, optical transceivers, high-speed GPUs/custom ASICs, and sophisticated power supply architectures—next-generation networks can ensure low-latency, scalable, and energy-efficient operations. These architectures not only support complex tasks within centralized data centers but also effectively complements edge computing strategies by offloading intensive computations from local nodes.

Applications

- AI and Machine Learning Servers
- AI Accelerator Cards
- Cloud Computing
- Enterprise Networking
- PCIe (Peripheral Component Interconnect Express)
- Crypto Mining
- 100G-800G Optical Transceivers

Market Driving Factors

- Explosive data growth from IoT devices and widespread 5G network deployment
- Increasing adoption of cloud-based services and enterprise virtualization
- Rising demand for AI and machine learning capabilities
- Need for secure, transparent blockchain processing
- Integration of edge computing with centralized data management
- Emphasis on energy efficiency and regulatory compliance

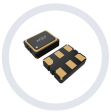
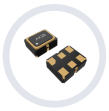
Industry Design Challenges

- Managing transient load response times and scaling power supplies to meet demand
- Ensuring multiphase voltage regulation for stable and efficient power delivery
- Overcoming latency issues and managing jitter in high-speed data systems
- Achieving precise time synchronization across distributed networks
- Addressing thermal management and efficient cooling in high-performance environments
- Coping with the challenges of integrating specialized hardware across diverse applications

Abracon's Commitment to the Space

Abracon is dedicated to advancing centralized processing by providing innovative products in timing, power, and RF that address key industry challenges. Our timing solutions deliver precise synchronization across networks, resolving latency and coordination issues. Our power solutions ensure efficient voltage regulation and transient load management, supporting scalable and energy-efficient power supply. Additionally, our RF components enable GNSS integration for improved synchronization and enhanced interoperability. Together, these products boost performance, reliability, and scalability, supporting both centralized and edge computing in the rapidly evolving telecom and data sectors.

TIMING DEVICES

Series Names	Product Description	Product Benefits	Product Features	Support Documents
AK1LP AK2LP AK3LP	HCSL Differential Oscillators	• Low Jitter and Phase Noise • Low Power Consuption • Miniature in Size	• Package Sizes: 3225, 2520, 2016 • 117fs Typ (@156.25) • 100MHz - 156.25MHz • 1.8V to 3.63V • ±15ppm stability	ClearClock Product Guide Watch Video ClearClock Whitepaper
AK2B AK3B	LVDS and LVPECL Differential Oscillators	• Ultra Low Jitter and Phase Noise • Customizable Freq. up to 312.5MHz • Tight Frequency Stability	• Package Sizes: 3225, 2520 • 54fs Typ (LVDS @156.25) • 100MHz - 250MHz • 1.8V to 3.63V • ±15ppm stability	ClearClock Product Guide ClearClock Whitepaper
ABCM-51 ABCM-60	GPS Disciplined OCXOs	• Ultra High Frequency Stability • Automatic Drift Correction • Reliable Long Term Accuracy • Integrated GNSS Modular Design	• Package Sizes: 51 x 51mm, 60 x 60 mm • ±0.1ppb Accuracy • 1.5us/24h Holdover • 1PPS input, or built in GNSS Receiver • 10MHz and 1PPS Output	View Product Page View Product Page
AR50LC AR36CPT	Atomic Clocks	• Ultra High Frequency Stability • High Stability Over Time • More Discrete Design	• Package Sizes: 50 x 50 and 45 x 36 mm • ±0.05ppb Tolerance • ±0.3ppb ~ ±0.5ppb Stability • Low Allan Deviation • 10MHz Sinewave or CMOS Output	View Product Page View Product Page

POWER & MAGNETICS



Series Names	Product Description	Product Benefits	Product Features	Support Documents
ATL	Trans-Inductor Voltage Regulator (TLVR) inductors	• Rapid response to transient loads • Minimal voltage drop • Reduce system impedance • Low profile 3.5mm option	• Inductance: 70nH- 220 nH • Saturation Current: Up to 160 A • Low DCR for primary and secondary windings	Product Flyer Application Note
AVR	Assembly/VRM Inductors	• Wide range of package sizes • Low Thermal Losses • High Efficiency	• Inductance: 22 nH - 680 nH • Saturation Currents Up to 155A • Ultra Low DCR	Read Blog
AMDLH AMPLH	Hot press molded power inductors	• Wide range of package sizes options • High Efficiency • Excellent heat dissipation	• Inductance: 0.1µH - 22.0 µH • Saturation Currents Up to 41A • Ultra Low DCR	Product Flyer

RF & ANTENNAS

Series Names	Product Description	Product Benefits	Product Features	Support Documents
AEACMK	GNSS Antenna	• Precise Satellite Signal Reception • Heavy Environmental Condition Tolerant • High Effeciency	• Multi-GNSS Constellations Support • 50dB Ex-Band Attenuation • High Gain of 5dBic • RHCP polarization • High LNA gain of 40 dB • IP67 Rated	Datasheet View Product Page