Announcing Next Generation Family of OCTEON Fusion

- Industry-leading merchant silicon 5G macro cell baseband processor family
- Supports traditional all-in-one macro and disaggregated Distributed Unit (DU) base station architectures
- Delivers the performance of an ASIC with the flexibility of a processor
- May be tailored via differentiated IP integration on a per customer basis

CNF95xx is in volume production with a Tier 1 OEM
A Long History of Compute Innovation

- **2010**: OCTEON Fusion CNF7130 Small Cell
- **2015**: OCTEON Fusion CNF73xx Micro Cell
- **2019**: OCTEON Fusion CNF95xx Macro Cell
- **2020**: OCTEON Fusion Semi-custom Beamformer
- **2021**: OCTEON Fusion

- **3G**
- **LTE R9**
- **LTE R13**
- **LTE R14**
- **5G**
OCTEON Fusion CNF95xx Architecture

**PHY Subsystem**
- Software defined PHY subsystem
- Multi-core DSPs
- 4G/5G Specific HW accelerator blocks
- Dedicated large internal SMEM
- High-speed non-blocking multi-ported Interconnect Fabric
- PHY Ethernet for radio and very low-latency chip-to-chip interface

**SoC Interfaces**
- 25G SerDes support
- 100G/50G/25G/10G/1GbE support
- Application acceleration manager for core workload distribution
- Packet IO acceleration support

**OCTEON TX2 CPU Cores**
- Arm v8.2 Architecture, Up to 2.6 GHz
- Quad Issue, Out-of-order Pipeline
- 128b SIMD and floating-point support
- Full ARM virtualization spec supported

**Cache, Interconnect**
- Coherent MLC and LLC
- Low-latency interconnect at core speed
- Up-to 2x DDR4-2666 MHz

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Multiple Business Model Options

**BUY**
- OCTEON Fusion CNF95xx Merchant Solution
- Leading cellular baseband supplier to infrastructure market
- Proven 10+ year track record
- Software and ecosystem support

**PARTNER**
- Semi-custom CNF95xx-based solutions
- Leverage OCTEON Fusion for related processing functions
- Customer IP

**BUILD**
- ASIC designed around OCTEON Fusion IP
- End-to-end technology development
- Leading process nodes and IP
5G Macro Cell All-in-One Example

- **OCTEON Fusion CNF95XX** implements 5G Layer 1
- **OCTEON TX2 CN92XX** implements Layer 2 and 3 as well as Transport functions
- Integrates to Radio Units using eCPRI
- RoE/eCPRI
- 25GbE
- 10/25/40GbE
- Midhaul/Backhaul
- RU (4x4 100Mhz)
- RU (4x4 100Mhz)
- RU (4x4 100Mhz)
- RU (4x4 100Mhz)
- Layer 2 / Layer 3 (MAC Scheduler RLC, PDCP, Transport, IPSec, Control)
5G O-RAN Architecture Design Example

Marvell complete Portfolio enables 5G system architectures, such as the one proposed by the ORAN Alliance, to scale deployments and achieve the best OPEX and CAPEX in the industry.
OCTEON Fusion – Key Takeaways

- Industry-leading merchant silicon 5G macro cell baseband processor family
- Supports traditional all-in-one macro and disaggregated Distributed Unit (DU) base station architectures
- Delivers the performance of an ASIC with the flexibility of a processor
- Currently in Volume production with a Tier1