Target Audience:
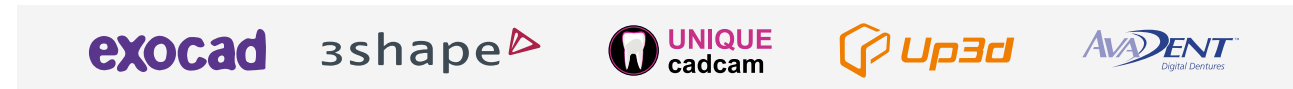
- Dental CAD and Nesting UI Developers
- Dental CNC Manufacturers
- Dental System Integrators
- Dental Solution Resellers and Vendors

Dental Scanner Manufacturer

Dental CAD/UI Partner

MW Dental CAM

Dental Reseller

Dental CNC Machine Manufacturer

Partners

exocad   3shape   UNIQUE cadcam   Up3d   AVADENT Digital Dentures

Integrated Nesting Software

exocam   **Up3d**   **UniqueCAM**

For further information about ModuleWorks Dental Framework, visit :
www.moduleworks.com or the ModuleWorks Dental YouTube Channel

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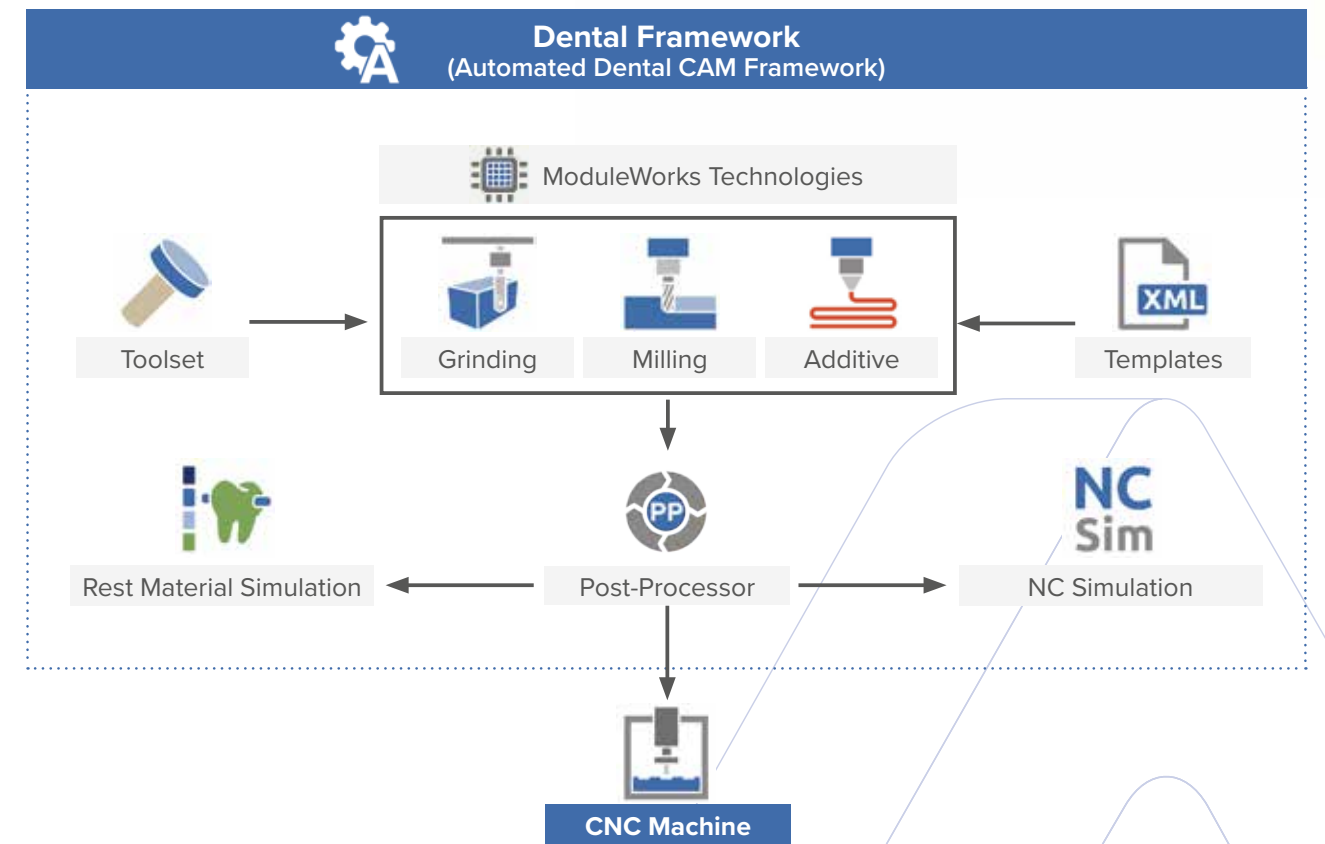hashimoto.h@moduleworks.com
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Dental Framework

ModuleWorks
Get There Faster.

ModuleWorks Dental Framework is an automatic plug-and-play dental CAM software that utilizes ModuleWorks milling, grinding and additive technologies to perform advanced toolpath calculations and output the corresponding manufacturing file (NC file) for the target dental CNC machine. It uses verified and fully-configurable machining templates for efficient and flexible implementation and supports a complete toolset library for manufacturing a wide spectrum of dental indications with different materials.

Optional add-ons for rest material simulation and NC simulation provide the full range of simulation features to create a powerful and complete dental CAM system that addresses the needs of all ModuleWorks partners.
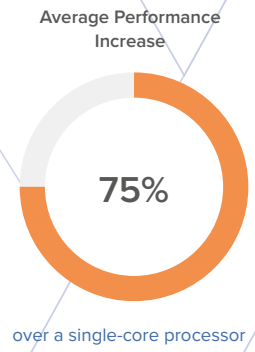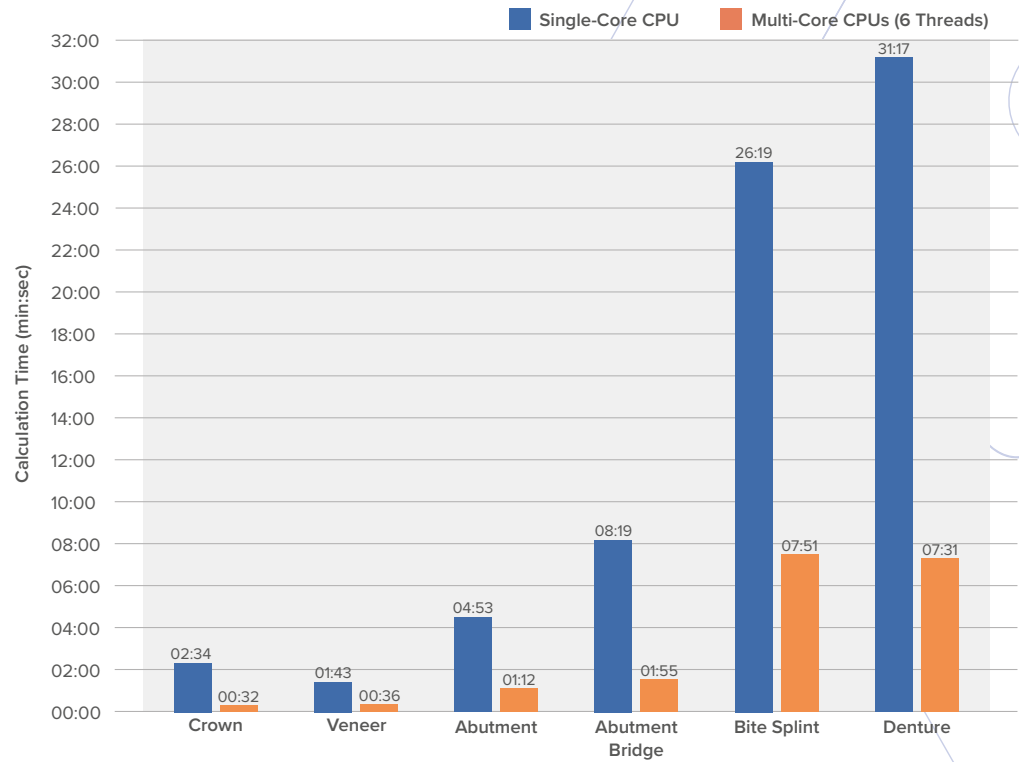
Dental Framework
(Automated Dental CAM Framework)

ModuleWorks Technologies

Toolset → Grinding | Milling | Additive ← Templates (XML)

Rest Material Simulation ← Post-Processor (PP) → NC Sim (NC Simulation)

CNC Machine

Indication Spectrum

	dental indications																
	Coping	Crown	Inlay	Onlay	Abutment	Veneer	Telescope	Bridge	Splint	Model	Denture	Implant-Bridge	Partial-Denture	Surgical Guide	Bar	Pre-mill	Implant based Abuments
Milling (Zirconia, Plastics and Metals)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●*
Grinding (Glass Ceramics)	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○
Additive	●	●	●	●	●	●	●	●	●	○	○	●	○	○	○	○	○

● Available   ○ Not Applicable

*subject to the availability of reliable implant library

Fact Sheet: Dental Framework

Milling Calculation Time (min:sec)

Legend: Single-Core CPU | Multi-Core CPUs (6 Threads)

Category	Single-Core CPU	Multi-Core CPUs (6 Threads)
Crown	02:34	00:32
Veneer	01:43	00:36
Abutment	04:53	01:12
Abutment Bridge	08:19	01:55
Bite Splint	26:19	07:51
Denture	31:17	07:31

Average Performance Increase

75%

over a single-core processor

Grinding Calculation Time (min:sec)

Legend: Single-Core CPU | Multi-Core CPUs (6 Threads)

Category	Single-Core CPU	Multi-Core CPUs (6 Threads)
Crown	11:25	02:00
Inlay	15:47	00:59
Veneer	08:44	00:53

Average Performance Increase

90%

over a single-core processor

Grinding Machining Time (min)

Legend: Release 2013 | Release 2019

Average Performance Increase

80%
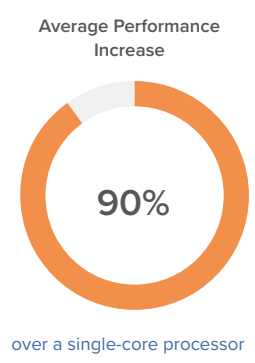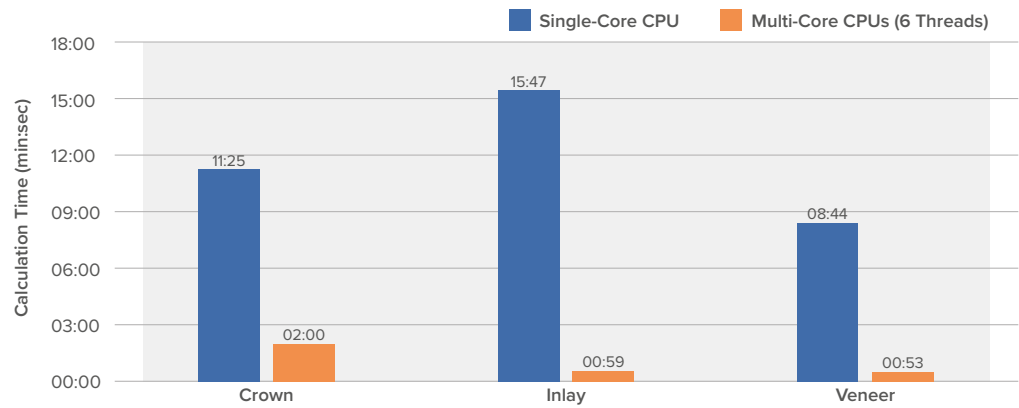
reduction in machining time

Highlights

The integrated CAM technologies, which are used for the toolpath calculations, provide high-performance 3-axis, 4-axis, and 5-axis CAM features for enhanced machining strategies for dental milling and grinding (chairside) applications. The additive manufacturing technology supports DLP, FDM, SLM, and SLA.
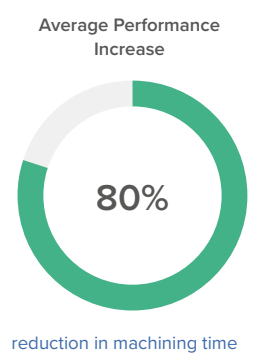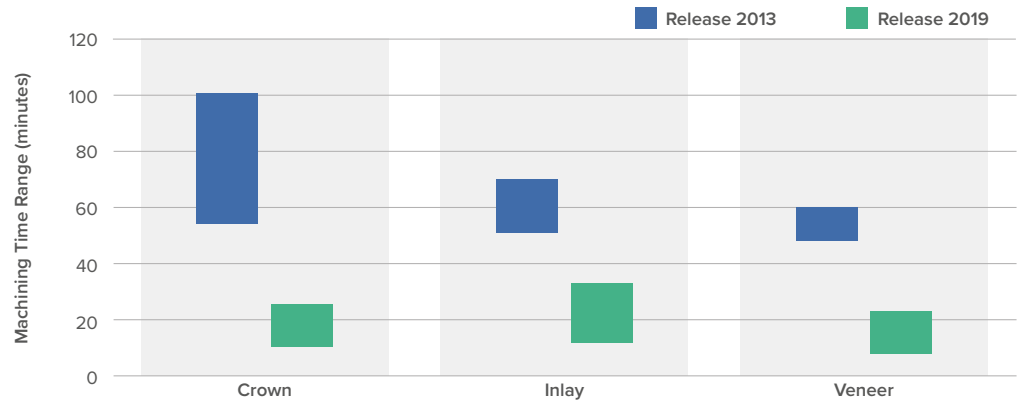
Milling

3-Axis Constant Cusp with Excluded Undercuts

3+2-Axis, 5-Axis Undercut Machining

Undercut Machining Processed From Both Sides

3-Axis Constant Cusp 3D-Silhouette

Rest Finishing

4-Axis, 5-Axis Geodesic

Grinding

Parallel Offset Roughing

Helix into Multiple Deep Cavities

4-Axis, 5-Axis Helix

Adaptive Roughing

Parallel Cuts Adaptive Depth Step

Constant Cusp Adaptive Stepover

Additive

Digital Light Processing

Fused Deposition Modeling

Selective Laser Melting