

# FreeForm® Modeling™ & FreeForm® Modeling Plus™

## Fast 3D Modeling with Precision for Product Design

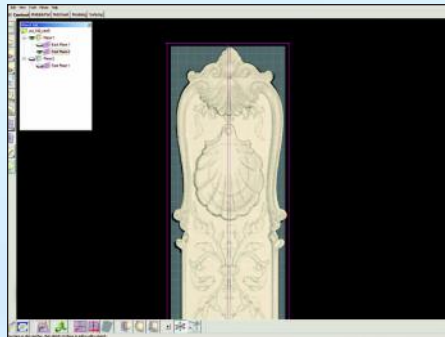
The **FreeForm®** systems are unique touch-enabled solutions for fast 3D modeling of complex, highly-detailed, organic shapes for manufacturing.

The **FreeForm Modeling** system offers a fast and cost effective way for designers and modelers to create original models or modify and stylize scan data, and then output to RP systems for prototyping or milling. The system includes a comprehensive set of modeling and detailing tools, dimensional control, and import of polygon data for reference and modeling. Parting line evaluation is also included, enabling users to avoid costly production mistakes through adjustment of their models early in the design process.

If your work requires CAD part interoperability and preparing models for manufacturing, the **FreeForm Modeling Plus** system has all the capability of the FreeForm Modeling system and also includes NURBS surfacing and solids tools, CAD part interoperability, and moldable part and mold insert functionality.



*The FreeForm systems use a virtual clay metaphor that provides unparalleled creative freedom, and include a PHANTOM® device—a true 3D interface with force feedback. Users work in 3D faster than ever before because they use their sense of touch to model virtual clay just like real clay. The FreeForm systems are easy to learn, and users typically become productive within a few days.*



*With the FreeForm Modeling Plus system, sketches can rapidly be transformed into virtual clay models. Sculptural, artistic details can then be added and the model can be exported for downstream CAD/CAM. The Chateau Collection of Baldwin Archetypes by designers of Black & Decker's – Hardware and Home Improvement Group. Baldwin and others reserve all rights to the Chateau design.*

### With the FreeForm systems you can:

- Use your sense of touch with virtual clay to work in 3D faster than ever before
- Model the most complex, organic shapes in record time
- Easily create multiple design variations
- Rapidly clean up, modify, and stylize scan data
- Create detailed textures for prototyping, evaluation, and manufacturing
- Accurately identify draft problems
- Replace manual mold processes
- Combine with other 2D & 3D tools, RP machines, and scanners
- Expand existing CAD/CAM workflows
- Output for RP or milling and CAD/CAM‡

# FreeForm® Modeling™ & FreeForm® Modeling Plus™

## Fast and Versatile Design & Modeling

Both the FreeForm Modeling and Modeling Plus systems include a comprehensive set of modeling and detailing tools. Which system is right for you depends on your specific modeling and workflow requirements.



Auto interior



Bike helmet



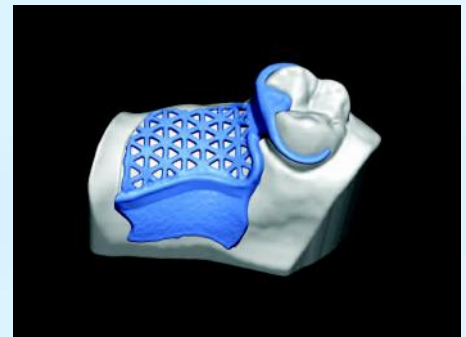
"Warrior Boar" figurine



Cranial implant



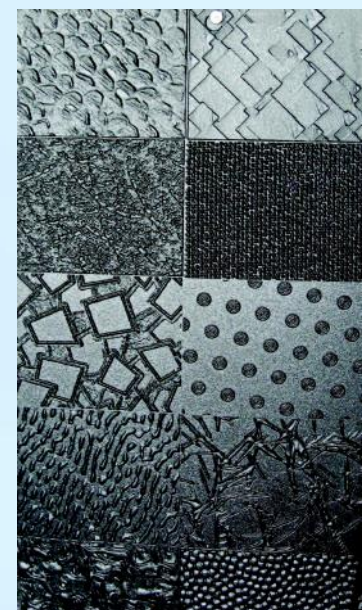
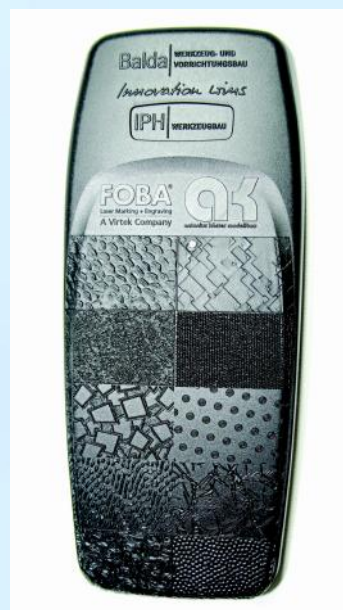
Acetabular implant



Dental chrome framework for acrylic retention

## Detailed Textures for Prototyping, Evaluation, and Manufacturing

You can create your own textures or use bitmap images to emboss or stamp textures into the model surface. Fine details in the model geometry are captured for accurate RP or milling and CAD/CAM†.



Cell phone cover with manufactured sample textures

Bike helmet modeled by Freddy Figuera. "Warrior Boar" designed & modeled with FreeForm Modeling Plus by MIC, Inc. All rights to "Warrior Boar" design reserved by MIC, Inc. Dental chrome framework modeled by Jörg Bressemer, Zahntechnik Bressemer. Cell phone cover modeled by Antonius Köster, Antonius Köster Modellbau e. K.

† FreeForm Modeling Plus only

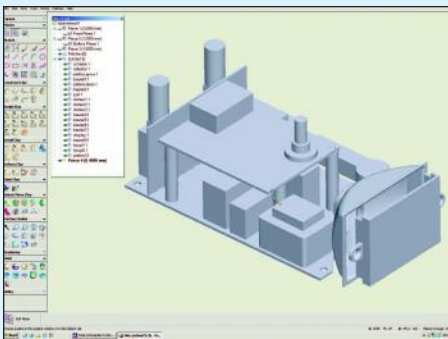
# FreeForm® Modeling™ & FreeForm® Modeling Plus™

## How are the FreeForm Modeling and Modeling Plus Systems Different?

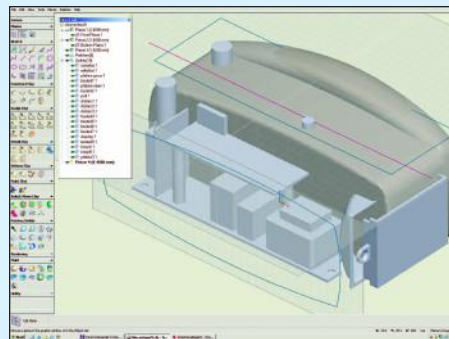
The FreeForm Modeling and Modeling Plus systems enable you to model and output for rendering and rapid prototyping or milling. In addition, the FreeForm Modeling Plus system includes features that enable you to prepare your models for manufacturing including:

- NURBS surfacing and solids tools such as semi-automated curve and patch creation tools and environment mapping
- Moldable part and mold insert design
- CAD part interoperability including import/export capability for native Parasolid®, STEP, and IGES solids & patches

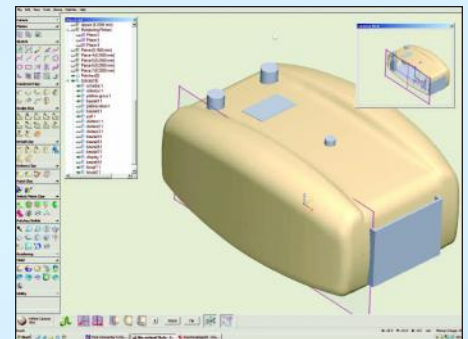
The FreeForm Modeling Plus system enables you to import CAD data from existing parts and then work with virtual clay to rapidly explore shapes and ideas, develop multiple design concepts, and refine the model. Then export to CAD/CAM to finalize for manufacturing.



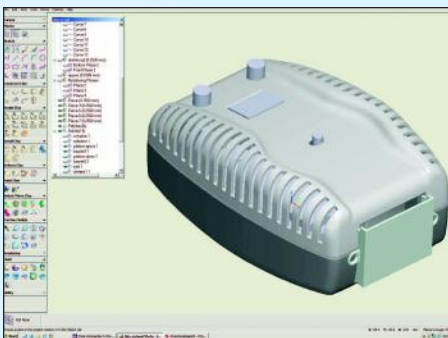
*Import CAD data (IGES and Parasolid) from existing part.*



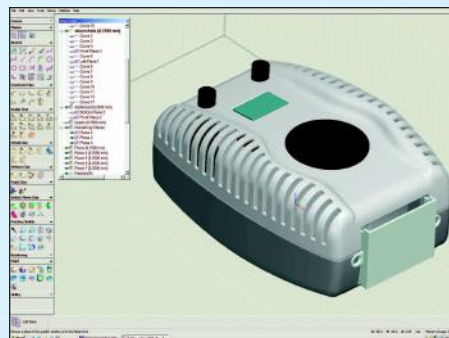
*Quickly explore ideas and experiment with forms to develop design concepts.*



*First concept model with cut-away view.*



*Second concept model for prototyping, and export to CAD/CAM (Cimatron).*



*Model prepared for rendering.*



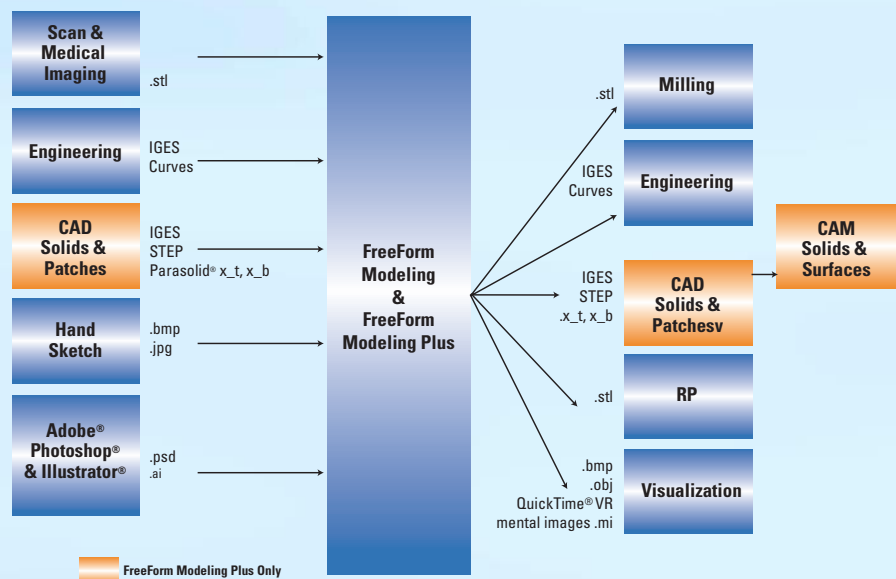
*BBE-Electronic Stroboscope  
[www.bbe-electronic.de](http://www.bbe-electronic.de)*

**For a comprehensive FreeForm Modeling and FreeForm Modeling Plus feature comparison chart and system requirements, see FreeForm systems online at: [www.sensable.com](http://www.sensable.com)**

# FreeForm® Modeling™ & FreeForm® Modeling Plus™

## Flexible workflows

The FreeForm systems support a broad range of all-digital workflows that allow users to leverage other 2D and 3D tools.



## Sculpt and carve virtual clay models just like real clay

The FreeForm systems include a PHANTOM® device—a true 3D interface with force feedback that enables you to use your sense of touch to sculpt and carve virtual clay models. This natural and direct way of working makes the FreeForm systems easy to learn, and users typically become productive within a few days.



PHANTOM Desktop



PHANTOM Omni

Upgrades from the FreeForm Modeling system to the top-of-the-line FreeForm Modeling Plus system are available.

The FreeForm Modeling Plus system includes the PHANTOM® Desktop™ device, which delivers higher fidelity, stronger forces, and lower friction than the PHANTOM® Omni™ device. The FreeForm Modeling system is available with either the PHANTOM Desktop or PHANTOM Omni device.

## About SensAble Technologies, Inc.®

SensAble Technologies is a leading provider of 3D touch-enabled digital solutions for product design, digital content creation and fine arts, commercial software development, and academic and commercial research. At the core of SensAble™ products is the PHANTOM line of haptic devices, which makes it possible for users to touch and manipulate virtual objects. SensAble maintains headquarters in the United States and a sales office in Japan. SensAble products are available through direct and reseller channels.

System requirements: See FreeForm Systems at [www.sensable.com](http://www.sensable.com)

Product and corporate information: [www.sensable.com](http://www.sensable.com).

Product specifications are for the FreeForm Modeling and FreeForm Modeling Plus v9.0 software and are subject to change without notice.



[www.sensable.com](http://www.sensable.com)

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