Maestro Scanner system

Author: Terence Whitty

The concept of digital study models has often been talked about, particularly in orthodontic circles, as a solution to the considerable physical space required to store plaster models. If a model could be scanned in three dimensions to a high degree of accuracy, stored electronically and then reconstituted should the need arise sometime in the future, then the need for physical storage of models could potentially be eliminated.

While there has been talk of this, little in the way of real solutions have been available. Study model scanning services exist but often if you look at the fine print in their terms and conditions, you may not even own the scans of your own models! A more practical alternative is to be able to scan study models in your own laboratory rather than sending them out to be scanned by a third party.

Digital models have many advantages. They are easy to make, inexpensive, very accurate, cost very little to store and transportation is a breeze. Amazingly, you can store more than 800 sets of models on one DVD-R disc or an average 500GB hard drive could hold a staggering 100,000 sets of models! Much better than rooms and rooms full of study models.

New digital study model
I have been working with digital models for some time and have examined several systems on the market today. I have recently found a great new digital study model system with a host of very “useable” features and the best news of all is that it is very affordable.

The Maestro Scanner system consists of a digital 3D scanner and various software programs so you can easily scan dental models, manipulate the data in various ways and then easily share this data so anyone anywhere with the viewing software can visualise the digital models.

The Maestro Scanner is a smartly designed state-of-the-art structured light 3D scanner. It uses patterns of light and two digital cameras to measure the surface of the model in three dimensions. Projecting a narrow band of light onto a three-dimensionally shaped surface produces a line of illumination that appears distorted from other perspectives than that of the projector, and can be used for an exact geometric reconstruction of the surface shape. This is the basis of structured light scanning and in this case, uses no lasers so it's completely safe for anyone to use. It also has great accuracy and is quite speedy in operation. This type of scanning is used by many dental CAD/CAM manufacturers so the technology is well proven for our market.

The Maestro System comes with the Maestro Easy Dental Scan program and I have to say, the name says it all. Put your model into the scanner, click a button or two and you are on your way to a scanned model. However, diving deeper into the program allows you to uncover more complex features if you wish. It even allows you to scan crown and bridge models and acquire multiple dies (up to eight) in one scan. Some of the more advanced C&B scanners are not able to do this. Remember, digital study models are not just for orthodontic purposes but can be used for all dental models. It’s a great way to diagnose, discuss and store models.

Quality
The quality of the scans is more than impressive with a great amount of detail once the scans are processed. Once you scan the upper and lower models and do a quick occlusal scan, the registering of the scanned models into the correct bite relationship is completely automatic. This is a feature I really like. You can also register the models in various relationships—centric relation; centric occlusion; protrusive or construction bite to name a few. There are also various editing and measuring tools provided and you can do adjustments to the scans if need be. You can save the finished files in industry standard STL or a proprietary ORTHO and ORTHO iPad file format. File sizes are quite small and easily emailed to clients.

One of the additional notable features of Easy Dental Scan is the option to batch scan. In many systems, immediately after the scan is completed, it is processed which can take quite a bit of time. With the batch scan, you can quickly scan several models and then complete the processing of the scans at a later time. You simply walk away and the computer does all
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