Medit i500 Review – the next big IOS?

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TOPICS DISCUSSED

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BACKGROUND

The Medit i500 is one of the latest newcomers on the intraoral scanner market. It touts itself as the 'easy entry into digital dentistry' and is one of the most affordable when compared to other scanners from big names such as 3Shape, CEREC, Carestream Dental, Planmeca etc. It may be affordable, but does it deliver in terms of performance?

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Before we dive into the pros and cons of the system, first let's go over the company background. Medit is a Korean digital imaging company that was founded in 2000 as a 3D scanner company for the industrial sector. They have since released several dental products such as the Medit T-series lab scanners. Their latest product, the i500, is an intraoral scanner that was released in late 2018 and has started making waves in the industry worldwide. At a price tag of only $18,000 USD and boasting no annual fees or subscriptions this is proving to be desirable for many dentists. Update: a subscription model has been announced for the Medit i500, this primarily focuses around the cloud storage. Click here to read more.

A crucial distinction to make when compared to the CEREC, 3Shape and Planmeca scanners, is that these systems offer a complete CAD/CAM workflow with associated design software and CAD integration through their chairside software. The Medit i500 is just a scanner. It has no associated design software, and on its own, it is only used to scan and export scans. If you are looking to scan and send to labs, this may be exactly what you are after. However, if you want to carry out the entire digital workflow in-house (which we recommend), then you will need to investigate and learn about third party mills and CAD design software such as Exocad.

We have been using the i500 extensively for over a year now in our clinic, spending hundreds of hours learning the workflow including fabricating same-day crowns, implant restorations and digital smile design using third party mills. Below are our findings and thoughts about the system and how it compares to the other scanners on the market.

REVIEW OVERVIEW

EVALUATION RATINGS	
Scanning Speed	★★★★½
Scanning Flow	★★★★½
Scanner Size	★★★★☆
Ease of Use	★★★★☆
Investment Cost	💰💰💰💰💰

ADDITIONAL FEATURES		
Touch Screen		Not Applicable as it is a USB scanner
Wireless Scanner	✗	
Caries Detection	✗	
CAD Integration	✗	Scan Only
Subscription Requirements	✗	Cloud storage does have a monthly cost after 10 GB
Autoclavable Tips	✓	20 times per tip

SCANNING SPEED

The i500 is truly an impressive intraoral scanner. It is fast, clear and easy to use. It easily competes with some of the more expensive scanners on the market. When using the scanner it is positioned slightly differently to others such as the TRIOS, being held much closer to the tooth surfaces. The scanning protocol is identical across all scanners, therefore for us, using it was simple. When scanning the i500 has a realistic high-definition, colour aesthetic.

Some things that stood out when using the i500 was how quick it was to find its place again when the scan is paused and restarted again. Overall it's a smooth scanning experience. Scanning across the midline between quadrants don't seem to take much effort whereas for other scanners this can require stopping and starting a few times.

Like all other scanners, interproximal areas typically require a few touch-ups after the main scan is done to catch all the data if needed. The scanner is used without scanning powder. This is no longer a bonus but a requirement with modern scanners. The i500 overall does well without powder but very shiny surfaces seem to give it a little trouble requiring multiple overlaps or a light scan spray to collect all the information. Overall, we were impressed with the scanner as a whole, especially for its price point.

SCANNER SIZE & ERGONOMIC DESIGN

The i500 has one of the smaller scanner heads on the market. It is smaller than the TRIOS scanner and CEREC Primescan head but larger than the Omnicam. It is also very lightweight, at 280g this is less than the Omnicam (315g) and TRIOS 3 (340g). The scanner only comes in one configuration and that is pen-grip. It is also NOT wireless.

The i500 has a very simplistic design. The scanner has only two buttons, one on the top of the to start and stop the scan and one on the bottom to turn it on and off. Overall, not the most impressive looking design in our opinion but it does the job well. When holding the i500 for the first time, one thing I noticed straight away was that the plastic finish on the i500 scanner doesn't have any textured or rubber area in the place that you hold (like the TRIOS does). It has the same plastic finish across the entire scanner and lacks anything to improve grip.

Overall the scanner is easy to hold and ergonomic enough that we didn't have any issues during long term use. If we are being very pedantic the area where you hold the i500 is relatively wide and may be a struggle for smaller hands. The start and stop button is on the top of the scanner making it sometimes difficult to press the button while holding in pen grip (the scanner can be activated using keyboard keys if required). As a whole the design of the scanner does the job but did not stand out in anyway. Although this is our opinion, it has to be mentioned the scanner has won an Red Dot design award (seems to be the case for a number of scanners these days).

The scanner is plug and play, in other words you connect it to a suitable laptop/computer by USB and use it. There are a few cables you will need to consider when setting it up and coming from the CEREC and TRIOS carts it felt a little cluttered with all the wires. If it is attached to a laptop, the laptop will need to be plugged into a power source at all times during use. It will not run properly on the battery alone as the CPU will not be running at full capacity.

There are two main cables coming from the scanner, one to the laptop and one to its own power source. A common problem with USB scanners is the cable management. It can look quite messy without a dedicated set-up, if it is sitting on the bench with multiple wires going to different ports. With a dedicated workstation and cable management this should not be a big deal, however.

The i500 has one of the smaller scanner heads of the bunch yet a relatively wide body.

INBUILT FAN

The i500 has an inbuilt fan in the scanner. Much like almost every scanner on the market now, this makes it a breeze to scan for long periods in the mouth as this fan prevents fogging of the scanner tip while in the mouth. This is a very useful addition for the scanner and great to see here. The scanner also does not need any warm-up time and can be used soon after it is turned on which is very handy.

FULL ARCH SCANNING

Again, the i500 is an impressive scanner overall and handles full arch scans well, especially in experienced hands. This was the first thing we tested out when getting the scanner, and we could easily carry out full arch scans within minutes. It's success in this aspect is a combination of factors; fast and accurate scanning, picking up where you stop the scanner quickly, and an inbuilt fan that prevents fogging and enables long periods of uninterrupted scanning. It follows a similar scan protocol to all other scanners, so this was nothing new for us. The i500 also performs very well when scanning edentulous sites.

The Medit i500 handles full arch scanning with ease

The i500 did a great job in this aspect. In regards to its accuracy in full-arch scanning this seems to be a point of contention and we will wait for further research to confirm this fact. Medit and its users are adamant that it performs more than sufficiently for cross-arch scans yet other companies say its not as accurate as their scanners.

EASE OF USE

As with almost every scanner on the market these days, the i500 does well in making the workflow straightforward. Ease of use comes from the software that supports the hardware. The workflow is intuitive and follows a simple step by step progression, identical across every system on the market.

This typical workflow is as follows: filling out the lab sheet and patient details, scanning the preparation, scanning the opposing teeth and finally, scanning the bite. Viewing scans and editing scans can be carried out. You can also marginate preps for your lab. Overall the software has an impressive range of different tools available for scan analysis and manipulation. New tools are being added all the time, as well.

The software, once again, does not design any prosthetics nor has any design aspects. It is just a scanner and has no CAD design software. For those looking to carry out the entire workflow in-house, this scanner is often bundled with the exocad software. You will need to investigate which 3rd Party mills you would like to use with it if you are looking for a completely in-house workflow. If we are being pedantic again, some aspects of the software look a bit simplistic, for example the Lab Sheet interface (when compared to TRIOS) but this is a very minor observation.

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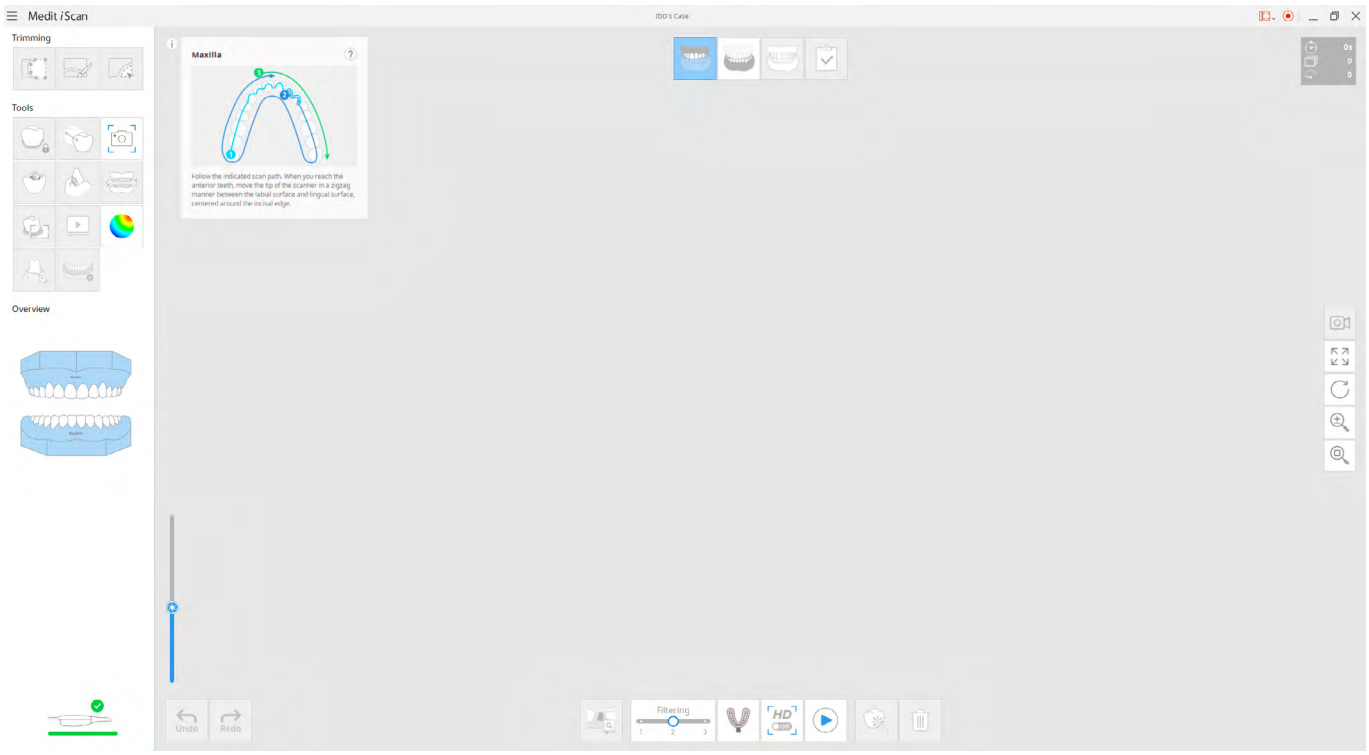

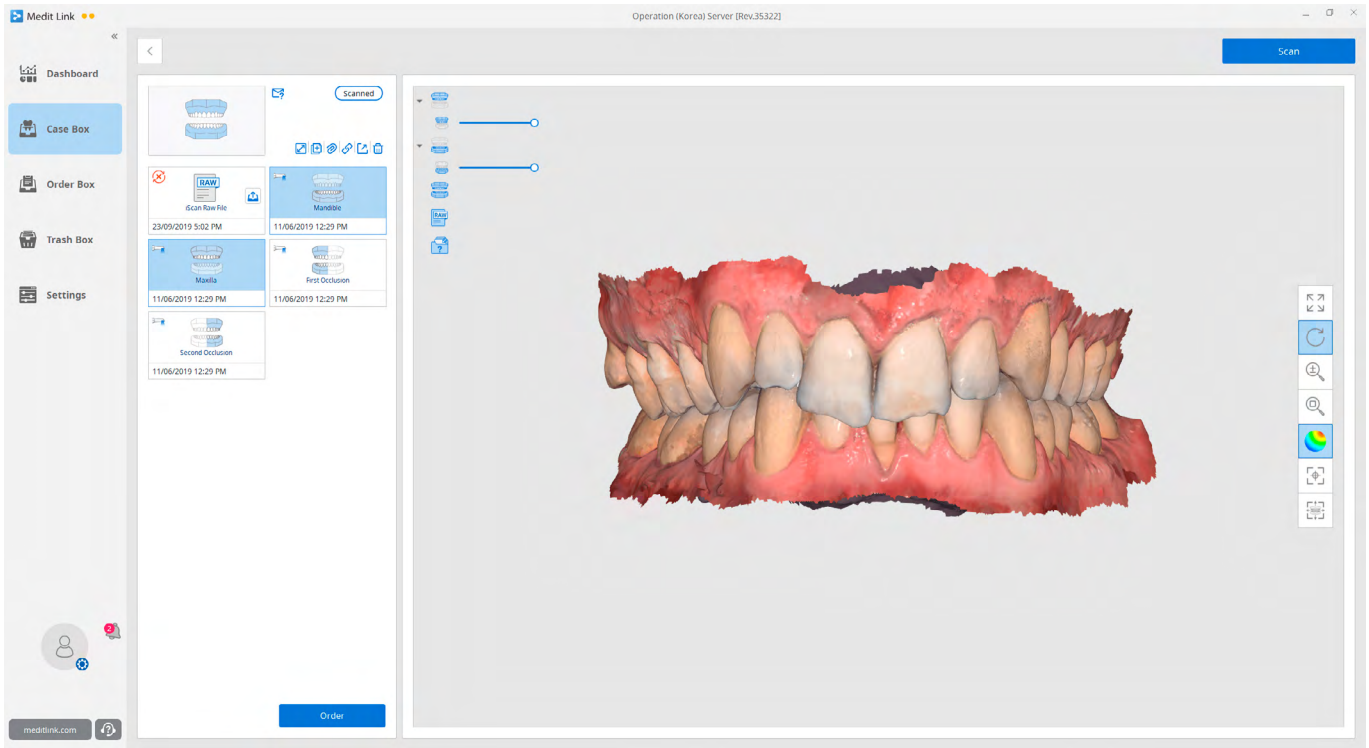

The software does a great job guiding you through the steps of scanning

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Overall the software user interface is great and works well. It is constantly being updated with new tools and features, which is all free of charge (for now and hopefully forever). It is impressive to see this level of support with new additions and optimizations. When we first started using the scanner one year ago it was almost a completely different experience to now. The software has been improved tremendously over time.

OPEN OR CLOSED ARCHITECTURE

With the Medit i500 being a scanner with no design software, the system is completely open. The i500 enables very easy exporting of the scans in multiple different formats. This includes the popular STL but also OBJ and PLY. Note that many other scanners only allow STL export.

You will likely primarily use STL as this is the most widely accepted scanning format across many labs and design software. One key distinction to make is that the STL file is NOT a colour file. Although the scanner is colour, when exporting in STL and opening in a design software you will be designing on a monochrome model (kind of takes away from the point of having a colour scanner).

The other export formats (PLY and OBJ) provide full-colour models; however, not all software or labs can import this. For instance, the TRIOS design studio does not allow importing of these file types and relies on STL, whereas Exocad allows importing of all of these files.

The Medit system also has a cloud software called Medit Link that all scans are automatically uploaded to if you have an internet connection. This enables anyone with the Medit Link software to easily download scans that you have uploaded (the lab you will send to). Otherwise, you can always export the scans and send them online via cloud storage.

Side note: for those of you who provide Invisalign treatment for their patients, a crucial thing to realise is that Align Tech will NOT accept Medit scans for Invisalign treatment. This holds true for all new scanners now on the market and seems to be in effort to promote their own Itero scanner. Annoying, we know.

COST

This is the big selling point for the scanner. It is one of the most affordable intraoral scanners on the market. Medit's i500 is advertised for $18,000 USD, which is approximately NZD 28,000 depending on the exchange rate.

When comparing to the other popular scanners on the market, they tend to range from $35,000 - $60,000 NZD depending on what generation of a scanner you purchase. The Medit i500 is obviously very competitively priced.

An on-going cost is the scanning heads. The i500 has removable and autoclavable scanning heads which provides ideal cross-infection control. This feature has become the norm across the entire intraoral scanner market. The i500 autoclavable scanning heads have a limit of 20 cycles and then begin to warp and will need to be replaced. This is quite a small number of cycles, for instance TRIOS scanner heads last up to 150 cycles. Here in NZ we pay 89.00NZD per i500 scanner head. We have been advised by the team at Medit that scanner tips that will last up to 50 cycles are in development.

YEARLY FEES / SUBSCRIPTION (PRICE IN NZD)

The i500 is going to have subscriptions introduced in 2020. Read our update blog regarding the subscription costs here. This new subscription model is based around extra storage for the cloud service. The Meditlink Link software has 10 gb free storage for all scans to be uploaded. If you require more space there is a cost for additional cloud storage. Although this is not mandatory, if you are thinking of storing cases on the cloud long term, it will need to be considered. Alternatively, you can remove any cases from the cloud and keep them stored externally if you wish to stay within the free limit.

The Medit i500 gives you the option of a free subscription as long as you stay within the free cloud storage. The Medit team has clearly stated that opting for the free membership will not affect scanning or functionality of the scanner at all. Compared to other scanners, it is good to see we get a free membership option here. For example, compared to the 3Shape system, which has the most elaborate subscription-based service, if you do not pay for the subscription the scanner cannot be used.

MEDIT LINK

The Medit Link software is the brains of the entire system. The team at Medit dedicate a lot of time and resources in developing this software and over the year it has seen some major changes. The Medit Link is the software that runs the scanner and cloud based storage. Like we have discussed above, it is overall a great software. It does the job well and has a good user interface. It also enables tracking of various metrics such as number of scans per month etc. which is a nice touch.

One annoyance with the software is the time it takes in processing and uploading to the cloud that occurs at the end of the scans. For single quadrants, this is not too bad, but full arches it can take considerable time in which you are waiting for the software before you can continue. Faster computers should be doing this slightly faster but we were using a computer well above the requirements and recommended by the local rep. This factor is getting better and better with time and optimisations to the software.

Also keep in mind that to run the software and i500 smoothly you will need a good internet connection even if you do not want to send the scans outside of your clinic. Once the scans are processed, the software automatically uploads the scans to the cloud, and this cannot be bypassed. Although you can continue to use the software to scan other cases or export, you must upload cases to the cloud. If your internet speed is not very good, this can be a grueling wait. This may not be a big deal for a scan and send set up, but for working in-house, it is a nuisance as I found myself not needing to use the cloud at all (all our fixed pros is done in-house). One workaround to make this process slightly faster is to turn off WIFI and work offline. This is not a permanent fix as after some time you are forced to have an online connection, and then it will batch upload everything you have scanned while offline.

One other important factor to consider is how demanding the software is on computer hardware. Much like other CAD/CAM software, these programs are very demanding. You will need to make sure you have a capable computer before purchasing. Expect to spend $3000-$4000 NZD on a computer that is good enough to run the software. Without meeting these requirements, you can expect crashes, slow scans, slow processing and blue screens.

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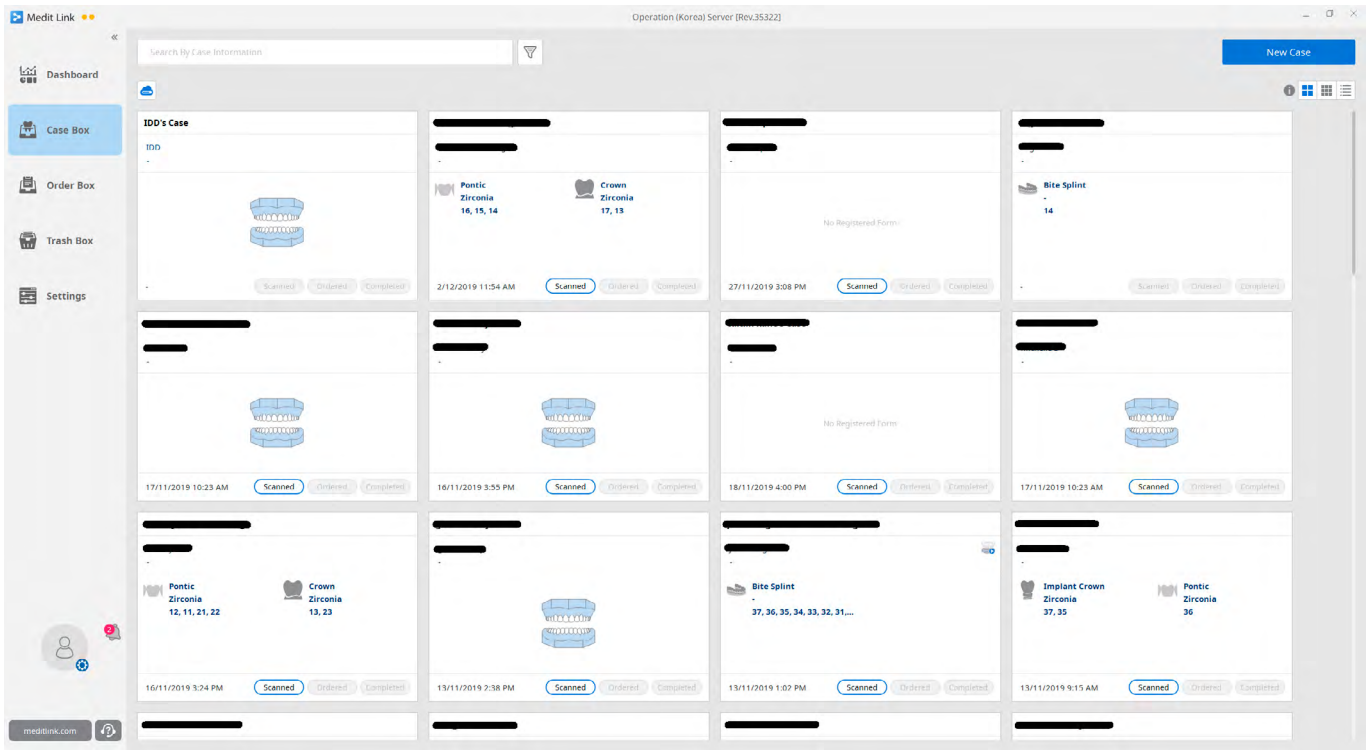

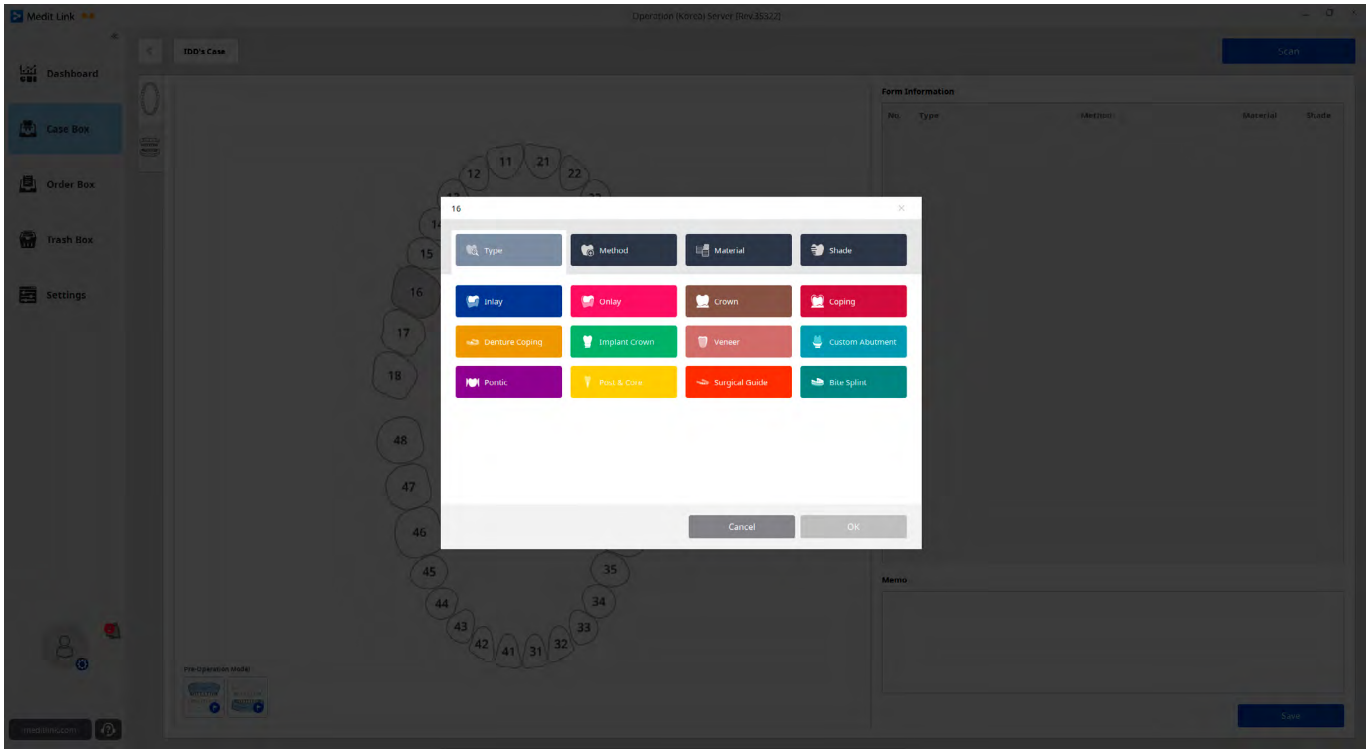

Medit Link is the brains behind the operation and provides a seamless user experience

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REVIEW SUMMARY

PROS	CONS
✔ Small Scanner Head	✘ No CAD Design Software
✔ Light Weight	✘ Only 20 steri cycles per scan head
✔ High Speed	✘ Scans not accepted for Invisalign
✔ Colour and High Definition Scanner	
✔ Removable Scanner Tips	
✔ Powder-Less	
✔ Competitively Priced	

In summary, this is our in-depth look at the Medit i500 scanner. In this comparison, we have focused on the clinical aspects rather than technical specifications. Overall the i500 really is a great scanner, especially for its price point. It will without a doubt, be the first scanner for many dentists due to the affordable cost. The scanner really does impress in many ways and we have to try hard to find aspects we do not like about it.

We had some annoyances with the scanner related to its software, and these mainly revolve around annoying processing/uploading times. The software however is continually evolving and being updated with optimisations, so the entire workflow is being streamlined. The amount of support the team at Medit provide is really great to see and they are regularly adding new software additions that are completely free of charge.

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We can see the clear merits of the Medit i500 when compared to other scanners as a stand-alone scanner option and the i500 will likely be an attractive option for those who just want to scan and send to labs. For those who are looking to carry out CAD/CAM in-house (which we highly recommend every dentist looks into) this scanner may find some trouble due to reliance on third party systems which often let scanners down.

Consider that other competitors such as CEREC and TRIOS offer a lot in terms of the in-house workflow and design software. You will need careful consideration if you are planning on doing work in-house using the Medit, as it will mean you will require a 3rd party design software (such as exocad) and milling machine. This by no means is a big problem as we have tried and tested it with many different mills but you can run into more issues than you would with a complete system. For instance, the CEREC system in which one system does everything and communicates seamlessly with itself.

It is also important to remember that some scanner systems come with complete design ecosystems such as TRIOS which enables designing everything from crowns, bridges, implants, surgical guides, bite splints and even aligners. This is not something the Medit alone provides.

It is quite incredible how the price point for CAD/CAM scanners has dropped over the years, and this is beneficial for all dental professionals worldwide as it will enable more adoption for those worried about the initial investment cost. Without a doubt the Medit i500 is a scanner that anyone who is looking at getting into intraoral scanning or CAD/CAM should at least explore when considering their options.

THE STORY BEHIND THE INSTITUTE OF DIGITAL DENTISTRY

The Institute of Dental Dentistry is an organisation that is created to bring together dental professionals that are passionate about digital dentistry and its possibilities.

One of our aims is to promote the many facets of digital dentistry and how it can revolutionise your practice and make dentistry more enjoyable and insightful for you and your patients.

Our goal is to help our colleagues within the dental profession to take the first steps into the digital world. The technology is available, the clinical experience and guidance are not.

Unfortunately, there are very few 3rd party independent course providers to help guide dentists into digital dentistry and help them master these cutting-edge tools.

The sheer amount of choice can be overwhelming, especially when each representative says their intraoral scanner, mill or 3D printer and software is the best.

This is why we publish articles and provide training, to give you an impartial opinion that is not sponsored by any company yet is informed by real world clinical application experience.

We have absolutely no ties or sponsorship with any of these companies and like our popular article, Battle of the CAD/CAM Titans, we have made this as objective as possible.

The information we share is based on our own experience and findings. We want to give you the most transparent overview to help you on your digital dentistry journey.

We aim to create a place where dental professionals can come together and share findings, thoughts and experiences about digital dentistry.

We also aim to provide courses that will help clinicians learn and master the many aspects of digital dentistry and help make them more confident and proficient in this ever-growing branch of dentistry.

iDD stands for advanced, innovative and cutting-edge training in CAD/CAM technology.

MEET THE TEAM

Dr Hamid Al-Hassiny has been practicing dentistry in New Zealand for 18 years. He runs a state of the art 7-chair dental practice in Wellington, New Zealand and has dedicated himself to utilising the most advanced dental technology. An early adopter of CAD/CAM technology, Hamid has been using CAD/CAM for more than 10 years during which he has completed over 3000 digital restorations.

Hamid has advanced clinical experience in three different CAD/CAM systems: CEREC, Trios and Planmeca, and uses all 3 systems daily in his practice in many fields of dentistry including single tooth dentistry, full mouth rehab, digital smile design and dental implants. He has an infectious drive for mastering digital dentistry, helping teach his associates the many facets of CAD/CAM dentistry and its benefits.

During his career Hamid has completed hundreds of hours of CPD focussing on the digital work flow. He is very experienced in the most up to date techniques and technologies, establishing iDD as a way to help dentists master CAD/CAM. Having been to hundreds of courses in the past, Hamid knows what makes an excellent hands-on course and has taken this insight to establish successful hands-on focussed CAD/CAM courses.

Dr Ahmad Al-Hassiny is a driven and passionate dentist who has a strong focus on the digital workflow. Graduating from the University of Otago in 2015 with First Class Honours and being awarded many Clinical and Research prizes, he has continued his pursuit of excellence in dentistry.

Having been trained at Otago solely using analogue and traditional techniques, Dr Ahmad is fortunate to adopt CAD/CAM and digital dentistry very early on in his dental career which has allowed him to focus on developing his skills in this field.

Dr Ahmad understands the benefits of digital dentistry and how this can positively change daily dental practice. Following in his father's footsteps and working alongside him, Dr Ahmad has been exposed and involved in many aspects of complex dentistry including CAD/CAM full mouth rehabilitation and smile design.

Helping run courses with Dr Hamid, he helps provide dentists with the confidence and perspective of adopting these techniques and the benefits it can have early on in their career. Dr Ahmad empowers dentists to bring their practice and procedures into the digital age which enables them to reap the many benefits of CAD/CAM and digital dentistry.

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