

The New CT Dose Profiler

2nd Generation CT QA from RTI



Computed tomography is changing at a quick pace, and is now becoming one of the biggest sources of radiation dose to the average patient. As the dose gets higher and the X-ray field gets wider, the demands of quality assurance increase.

When RTI's CT Dose Probe was introduced to the market in 2006, it quickly achieved a high measure of popularity among users, and has continued to be a strong force in the market – thanks to its One Shot method for CTDI, using helical scans for measurements and analysis.

RTI now presents the second generation Dose Probe for CT quality assurance – the CT Dose Profiler. The new RTI CT Dose Profiler has taken CT Quality Assurance to the next level. The revolutionary design of the CT Dose Profiler has transformed the traditional method of measuring CTDI. With the advent of CT fan beam widths greater than 10 cm, measurements

of CTDI using the traditional CT ion chamber have proven to underestimate the dose. Using the One Shot method with the solid state technology the CT Dose Profiler provides a complete Dose Profile along with a quicker and more complete analysis of the CT beam for any size fan beam width.

With its improved interior design, the CT Dose Profiler is considerably less sensitive to external interference and other electrical noise. With its new high quality, customized solid-state chip and its rotational symmetry, it is able to repeatedly perform exact measurements of the point dose. Its shorter external shape also makes it easier to position the probe in both 130 and 150 mm phantoms, even allowing for its use with phantoms that are sealed at one end.

The CT Dose Profile Analyzer software guides the user for setup, measurement, calculation, and storage of the individual dose values.

Imagine all this, and imagine it all in one shot ...

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Calendar 2009

ACMP

Virginia Beach, VA USA, May 2-5

ICTP-IAEA

Trieste, Italy, May 11-15

CRCPD

Columbus, OH, May 18-21

IPEM Fluoroscopy

Cardiff, UK, May 19

International Saudi Conf. on Med. Phys.

Damman, Saudi Arabia, May 23-25

SGR/SSR

Genève, Switzerland, June 4-6

AAMI

Baltimore, USA, June 6-8

UKRC

Manchester, UK, June 8-10

Nordic Congress

Copenhagen, Denmark, June 10-12

Malmö Conf. on Med. X-ray Imaging

Malmö, Sweden, June 25-27

AAPM

Anaheim, CA, July 26-30

FIME

Miami, FL, August 12-14

EDGE Newsletter is published three times per year by RTI Electronics. If you would like more information or have questions on any of the products featured in this issue, feel free to contact us at our head office in Sweden, Monday thru Friday 8:00 a.m. to 4:00 p.m. EST. E-mail to: sales@rti.se. Call us at: +46 (0) 31 746 36 00

Increased presence on the European market

We proudly welcome I-B-O, and Radioqual to the RTI team.

Since February, I-B-O becomes the RTI representative for Germany. And in May, Xavier will be the RTI distributor in France.



Hans Ozimek, I-B-O.

a great challenge getting into the diagnostic QA business again.

Xavier, as well, has strong knowledge about the diagnostic QA area, since he has been selling Fluke instrument before taking



Xavier Masana, Radioqual.

the stage and started his own business.

From RTI's perspective we see this as an important step to increase our presence on the European market.

Hans do have a wide experience in the market. He has in the past worked with Victoreen, but for the last years he has entirely focused on the therapy QA market, representing Sun Nuclear. Hans states that it will be

New Piranha Model

Piranha R&F 160

Built on the popular Piranha platform, the Model 160 is a simple, compact dosimeter with an external solid-state dose probe – great for measuring Radiographic and Fluoro dose and dose rates. The Model 160 can be connected



via Bluetooth to a PDA or Laptop for convenience and interfaces with

RTI's oRTIgo software. And like the rest of the Piranha line, if you need more capabilities at a later date, you can upgrade your Model 160. The best part is – this all comes at a remarkably affordable price. Call us for more details.

Keep Your RTI Software and Firmware Current

– Download takes just minutes

Keep your Piranha and Barracuda up-to-date with the latest firmware and software updates. It takes just minutes and can be done via web. Simply go to www.rtielectronics.com and select "Download" and "Software". The latest software versions available are:

QA Browser, version 3.7A

oRTIgo, version 6.3C

CT Dose Profile Analyzer, version 3.0A

Call Sara Börjesson, Support & Application, at +46 (0) 31 476 36 00 if you have any questions.

Summer is a popular time for Calibration

– Schedule yours now

Summer is a popular time for vacations and to send in the RTI equipment for calibration. Now is the time to schedule that service interval with the RTI cal lab. Take 5 minutes and let us know when you will be sending in your meter for its biannual calibration. This will help assure you of a timely turn-around and a meter ready when you return from your vacation. Contact RTI Service Department, at +46 (0) 31 746 36 00 or at service@rti.se

Innovative X-ray QA solutions ... of course!



Record number of visitors to the RTI stand

Record number of visitors came to RTI's stand at the 21st European Congress of Radiology (ECR), in Vienna, Austria. Participation hit a new all-time high, with 18.200 delegates from 97 countries.

There was a huge crowd at the RTI stand and a new record was set for visitor statistics. Sure, there were a few more visitors in 1991, but then the trade fair covered six days, i.e. it was two days longer. Some of

RTI's distributors were on hand at the stand too, to represent their regions. Well known faces from Italy, Greece and Great Britain met Hans Ozimek, our new German representative.

Dealers took the opportunity, together with RTI's representatives, to give demonstrations to visitors and show the latest news from RTI. They most curious visitors also got a chance to get an advanced look at CT Dose Profile, released in May.

RTI's oRTIgo Continues to Show the Way

oRTIgo Quality Assurance software from RTI Electronics continues to be the perfect companion for your Piranha or Barracuda, making measured data analysis, documentation and X-ray QC a snap. Easy to use and intuitive, X-ray data are acquired directly from the RTI meters and stored in the oRTIgo database.

A large selection of pre-designed templates for all modalities are available for all the standard tests—such as kVp accuracy, reproducibility, linearity, HVL, max R, etc. oRTIgo also allows the user to "design a template from scratch" making the software as individual as your institution dictates.

Of course, acceptance limits are user-defined and can be specified globally or individually for each test template. Waveforms can be viewed and stored for all or selected exposures. Personalized reports are generated and available for print.

Productivity

Four Simple Steps: Facility, Room, Tube, Test Templates and you are on your way.

Test templates are chosen from the pre-designed library or can be user-defined.

Documentation

Measured data are stored in a database, including waveforms, graphs, and tables. Each test

generates a pass/fail "test result" based on user defined criteria. Previous tests are available the next time you measure, allowing you to see trends and to make critical comparisons.

Flexibility

oRTIgo provides its own report format and also has a dynamic link to Microsoft Excel allowing direct input of measured data into an Excel spreadsheet. The choice is yours.

Use Bluetooth or USB connectivity from your laptop to either your Barracuda or Piranha.

If you haven't seen oRTIgo recently, ask your representative for a presentation. You will be impressed.

RTI Leading the Way with CT QA Innovation

Application of CT-SD16 Probe

Paul Lin, Ph.D. describes his initial experience using a Barracuda and the CT-SD 16 Probe from RTI Electronics with the Toshiba Aquilion ONE and an 810 mm phantom in March '08. Dr. Lin's comments were edited due to space limitations.

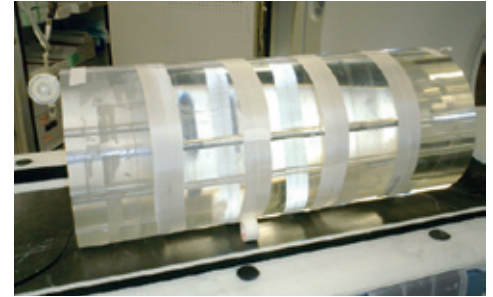
As the early users know, the original CT SD-16 Slice Probe had two solid state detectors (3 x 3 x 0.3 mm in size) designed to initiate "start measurements signal" with detector D1, and detector D2 for actual data recording. This meant the user needed to control two different "timings"; (1) delay time between the "start" signal, and (2) the data "recording time".

In working with Lars Herrnsdorf (creator of the CT Slice Probe) on several occasions, we quickly discovered only one detector, the D2, was needed for the CT dose profile measurements, and it would be easier to remove the D1 detector. In the meantime, Lars has developed a new probe with a smaller detector (2 x 2 x 0.3 mm) with improved symmetry so that the dose profile needs no corrections due to the asymmetrical design of the detector D2. (I had my probe modified; disconnected the D1, and all I get are the same signals from D2; the same configuration as the newer model – CT Dose Profiler.)

Lars and I cooperated in making the dose

profile measurements on the Toshiba's Aquilion ONE CT scanner in Nasu Factory Training Bay (courtesy of Toshiba's CT Group). A paper will be submitted to the Journal of Computer Assisted Tomography for future publication in January of 2009, which I hope will be accepted for publication. If you wish to perform the dose measurement on the Aquilion ONE CT scanner under the cone beam geometry (volume mode), since the helical scan mode is not available under the "volume" mode, you will need to have a stepping motor to pull the detector through the phantom(s). I might add, the phantom we used was 810 mm long. I had repeated the same measurements later at BIDMC. My institution installed the same Aquilion ONE in early March of 2008 with five standard 32 cm CTDI phantoms. (See picture).

Obviously, our work involved several "improvisations". One laptop connected to the Barracuda with the probe, a second connected to a prototype stepping motor, and a third used to record the whole process and the various steps of the experiment we had planned were all present. Of course there was the control consoles for Aquilion ONE to operate--to measure the 160 mm cone beam MDCT's radiation profile. It was an interesting and satisfying venture to use the CT probe, and



I think we are fortunate to have this probe to perform the CT dose profile measurements with proper instrumentation from our friends at RTI.

I was given a peek of what the new CT Dose Profiler looks like after 2008 RSNA. I can tell you it is shorter and has the tip modified to accommodate the wire to pull the probe, and most of all a better symmetry in radiation detection capability. All we need is a new standard to measure the CT dosimetry using helical scan and small detector like CT Dose Profiler and equivalent.

I would like to talk about this interesting experience with every one in this newsletter but with limited space available, I cannot tell you everything in detail. If you catch me during the 2009 AAPM meeting, I would be glad to share my experience with you.

// Pei-Jan Paul Lin, Ph.D., Beth Israel Deaconess Medical Center. March, 2009.

New President at RTI Electronics AB Growth Provides Changes in Organization

After 3 years of record growth, and over 25 years in the X-ray QA field, RTI Electronics AB has recently announced some important changes in its organization – including a new President, and two new positions – Product Manager and Business Development Key Account Manager.

Ulf Toll, co-owner of RTI Electronics, and president of the company for the past 15 years, will take his experience in the industry and assume the role as Product Manager. This will mean that Toll will leave his duties as president and fully concentrate on his new responsibilities.

In order to continue the positive evolution and focus of the recent years, Ivan Rylander, Chairman of RTI Electronics board for 25 years, has been appointed president of RTI Electronics and assumed those duties beginning of January 2009.

Because of his relationship to RTI Electronics, Ivan Rylander already has a good understanding of the company and the industry. His resume brings a solid experience in developing, building, and pro-

moting positive growth for a number of companies. Rylander is confident about RTI Electronics and its future and feels ready to accept the challenge.

– I am entering the post during an exciting time and we are at the gateway to many changes and great development. As chairman for many years, I have a good knowledge of the company and the industry, and together with the current team, take the company forward, says Rylander.

For X-ray QA and Service

Measure and Analyze in One Shot.



In One Shot A Pioneer at Measuring



Superiority Worth its Price

The RTI CT Dose Profiler has taken the CT Quality Assurance to the next level. Because of its revolutionary design, it has transformed the CTDI measurement from being inaccurate due to underestimation of the dose for wide beams to be more exact. It also has the ability to further analyze the result ...

All in one shot.



Accurate Easy Quick Affordable Small Accurate Smart Quick Affordable Small Accurate



Innovative X-ray QA Solutions ...of Course!