

muCheck and IMRT Check Verification Software

muCheck

muCheck has been designed to validate monitor unit calculations performed by your primary radiation treatment planning software. It is a Windows based IBM compatible program and operates independent of any treatment planning system. muCheck has an extensive list of features that will allow any qualified member of your therapy department to perform calculations quickly and with ease of use.

Software license is valid for any number of PCs for a single department. Any of the four software modules may be used independently. As the needs expand, additional modules may be obtained by purchasing software license to enable the module.

Features:

- ▶ DICOM Import support
- ▶ Perform calculations for photon and electron beams
- ▶ Provides for all types of correction factors, including: trays, table attenuation, physical wedges, enhanced dynamic wedges (Measured or Varian Golden STT), off-axis corrections and cone inserts/cutouts
- ▶ Supports Isocentric(SAD) and TSD(SSD) calculations
- ▶ Normalization to Isodose line
- ▶ Comprehensive utilities for management of beam data to include graphical representation of data
- ▶ Extensive error checking as parameters are entered
- ▶ Multiple ways to enter blocking or irregular fields
- ▶ Supports any number of treatment machines
- ▶ Provides on-line worksheet, PDF file output and hardcopy output for patient charts
- ▶ Multiple field calculations
- ▶ Dose point calculations
- ▶ Easy to use Elekta wedge in/wedge out calculations
- ▶ Diode calculations: optional field size corrections, optional source diode distance corrections, optional wedge corrections, min, max and expected readings



IMRT Check

IMRT Check was developed in response to the need to independently verify the dose calculated by the IMRT treatment planning system. IMRT Check can be used in addition to film dosimetry and phantom studies as yet another verification process in your Quality Assurance procedures.

Features:

- ▶ Ease of use – IMRT Check is very intuitive and easy to use. There are only two input screens required to verify the dose calculated by your treatment planning system or phantom measurements.
- ▶ Multiple file import utilities – IMRT Check can import directly the MLC file created by your planning system or data can be passed via the DICOM RT utility if available on your RTP system or RTP plan files
- ▶ Supports all Varian, Elekta and Siemens MLC configurations including the Brainlab Mini-MLC
- ▶ Supports off-axis calculations
- ▶ Calculates SAD and SSD setups
- ▶ Volumetric averaging around reference point – Studies have shown that the dose can vary greatly within a 2 mm area around the point of reference especially in areas where the fluence intensity is rapidly changing.
- ▶ IMRT Check will allow you to optionally average 9 points around a user defined area showing the dose at each of these points.
- ▶ Calculation algorithm – IMRT Check uses an algorithm developed by J.H. Kung and published in Medical Physics 27(10) p. 2226 October 2000. This algorithm is a modified Clarkson's integration using annulars instead of pie sections.
- ▶ Transmission due to the rounding of the leaf tips as well as overall leaf transmission can be adjusted for each photon energy.
- ▶ Capable of saving plan calculations for later recall.



muCheck and IMRT Check Verification Software

muCheck for CyberKnife plans

With close co-operation with physicists at Accuray, a second check system was developed for their CyberKnife linac module.

CyberKnife Features:

- ▶ Plans can be imported directly from the CyberKnife planning system
- ▶ Total dose will be calculated and compared to CyberKnife plan
- ▶ Up to 1200 beams can be calculated
- ▶ Detail or summary reports can be previewed on the screen, printed to hardcopy, or exported to PDF file

muCheck for Brachytherapy

- ▶ HDR, LDR, and permanent seed implants
- ▶ Follows AAPM TG43 formalism for close calculations
- ▶ Automatically decays your source
- ▶ Import plans from treatment planning system
- ▶ View dose and dwell positions
- ▶ Graphical display of catheters and dwell positions
- ▶ Export reports to Excel, PDF, TIFF, or RTF formats
- ▶ Summary or detailed reports available
- ▶ Catheter reconstruction for angular dependence
- ▶ Factors easily updated

System requirements

Pentium II Pentium III processor recommended
Windows 2000/XP/NT (service pack 6 required)
Minimum 128 MB RAM memory
52 MB hard disk space
1024 x 768 or greater screen resolution is recommended
CD-ROM drive for installation
Printer
Mouse

