

SRS MapCHECK®

SRS Patient QA, No Film



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SRS Patient QA, No Film

SRS MapCHECK[®] addresses the need for a dedicated array with absolute accuracy for the growing numbers of SRS/SBRT treatments being performed. With the SRS MapCHECK, delivering safe and accurate stereotactic radiotherapy is efficient and simple.

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Gain More Confidence in Stereotactic Quality Assurance

SRS MapCHECK is the latest Sun Nuclear solution to address the growing demand for stereotactic QA.

The SRS MapCHECK provides a high density diode array to replace film and single point dosimeters for patient-specific and end-to-end QA. Designed to insert into the StereoPHAN™, the SRS MapCHECK accurately and efficiently streamlines delivery and analysis.

INTRODUCING

SunPoint® 2

Diode Detectors

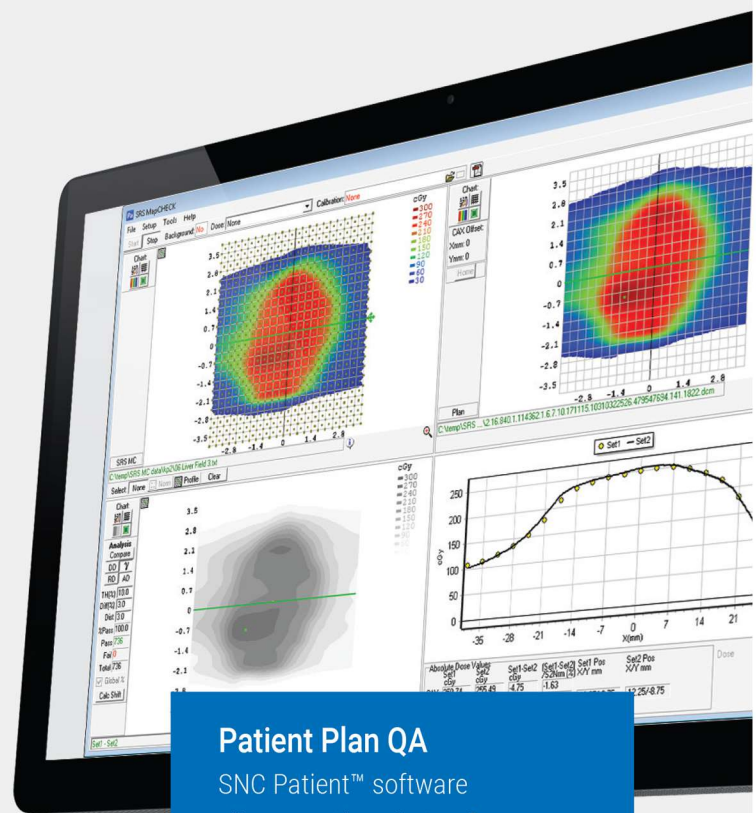
Smallest diode available ✓

Increased small field accuracy ✓

"The SRS MapCHECK is an effective tool for patient-specific and end-to-end stereotactic QA. It shows good agreement with film dosimetry for field sizes ranging from 7.0 cm to 0.5 cm. It proves to be an effective, time-saving substitute for film and point dose measurements."

Brett Miller, M.S., DABR

University of Tennessee Medical Center



Patient Plan QA

SNC Patient™ software allows rapid analysis of QA measurements against plan.

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SRS MapCHECK® and StereoPHAN™

Simple and Powerful Tools Together



MultiMet-WL Cube

Pair with the SRS MapCHECK and identify off-axis and rotational sources of error — Gantry, Couch or Collimator — in 6 degrees of freedom

SRS MapCHECK Features and Benefits

- 2D array for SRS applications
- 1,013 SunPoint® 2 Diodes, providing high resolution
 - 2.47mm detector grid
 - 0.5mm resolution
- Replaces film and standalone detector, expediting the workflow for time-sensitive patient QA
 - Provides absolute and relative dose in a single measurement
- The QA Setup Tool in SNC Patient™ provides guidance for ideal setup of Single-Isocenter Multiple-Target (SIMT) plans, and simplified shifts for occasional larger fields
- Works with static, rotational, coplanar and non-coplanar (including vertex), CyberKnife®, FFF, cone and MLC fields
 - 6MV, 10MV, 6FFF, and 10FFF
- With the StereoPHAN, supports irradiation from any gantry angle
 - Angular dependence, field size and pulse rate are accounted for and corrected to ensure accurate dose measurements
- Integration
 - Designed to insert into the StereoPHAN
 - Runs on SNC Patient software

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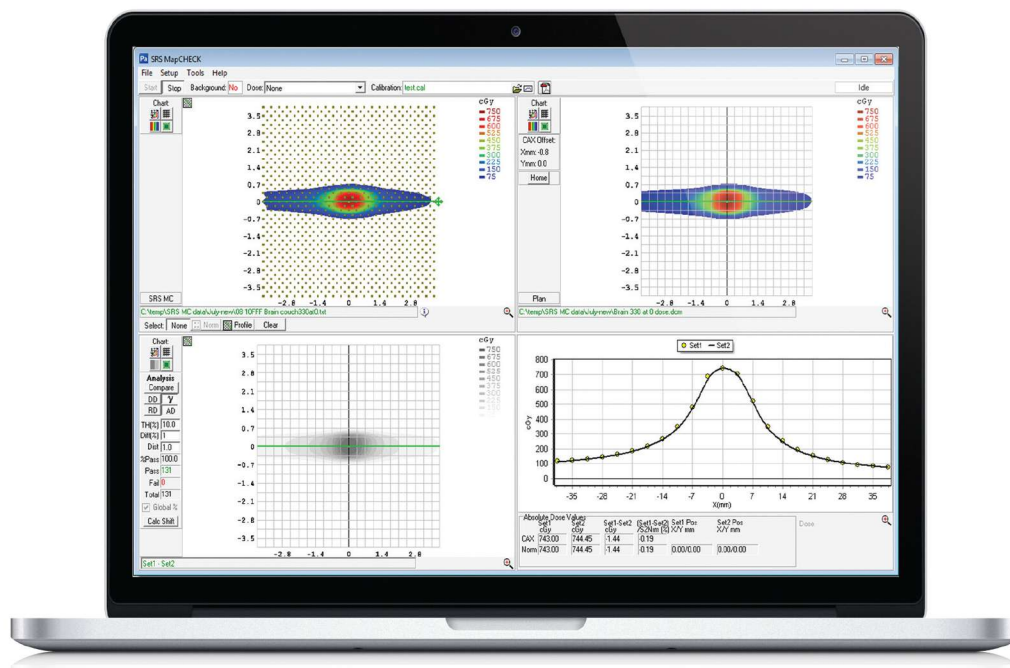
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SNC Patient™ Software

Simply import the QA files from your treatment planning system (TPS) and SNC Patient software compares the dose distribution of the treatment plan file to the actual measured values.

Highlights

- Provides the data necessary to meet the requirements in AAPM TG-101 (<1mm resolution and end-to-end testing annually for SBRT programs)
- Detects and corrects for translational offset between compared datasets with precision of 0.1mm for SRS applications
- Supports Gamma Analysis¹ in absolute and relative dose mode with user-specified criteria with passing rates greater than 90% using 3% and 1mm, global, as compared to True Dose²
- Easy to set up, measure, and analyze
- High spatial resolution and high spatial sampling frequency
- Ability to evaluate delivered dose with gantry and couch geometries as specified in the patient plan
- QA Setup Tool provides guidance for ideal setup for Single-Isocenter Multiple-Target (SIMT) plans
- Optimization-based Calculation Shift algorithm supports co-registering measurements to planned dose with 6 degrees of freedom
- Instantaneous analysis results / no film scanning

¹ Ju, T., Simpson, T., Deasy, J. O., & Low, D. a. (2008). Geometric interpretation of the dose distribution comparison technique: Interpolation-free calculation. Medical Physics, 35(3), 879

² True Dose- determined from film measurements, calculations from commissioned treatment planning systems or other means acceptable in clinical practice

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Streamline your Workflow

CONVENTIONAL WORKFLOW



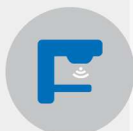
Measure Absolute Dose with Chamber/Electrometer and Compare to TPS Plan



Put on Gloves to Avoid Prints on Film



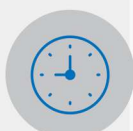
Cut Film to Size and Clean Film



Deliver Beam



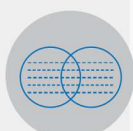
Enter Room to Exchange Film for each Delivery



Wait 2+ Hours for Film to Develop³



Scan Film and Convert Image to Dose with Film Calibration



Compare Image Dose to TPS Plan

~300 MINUTES



If any of the film QA results fail, repeat the entire process from the beginning.

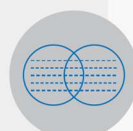
FILMLESS WORKFLOW WITH SRS MapCHECK



Insert SRS MapCHECK into StereoPHAN



Deliver Beam

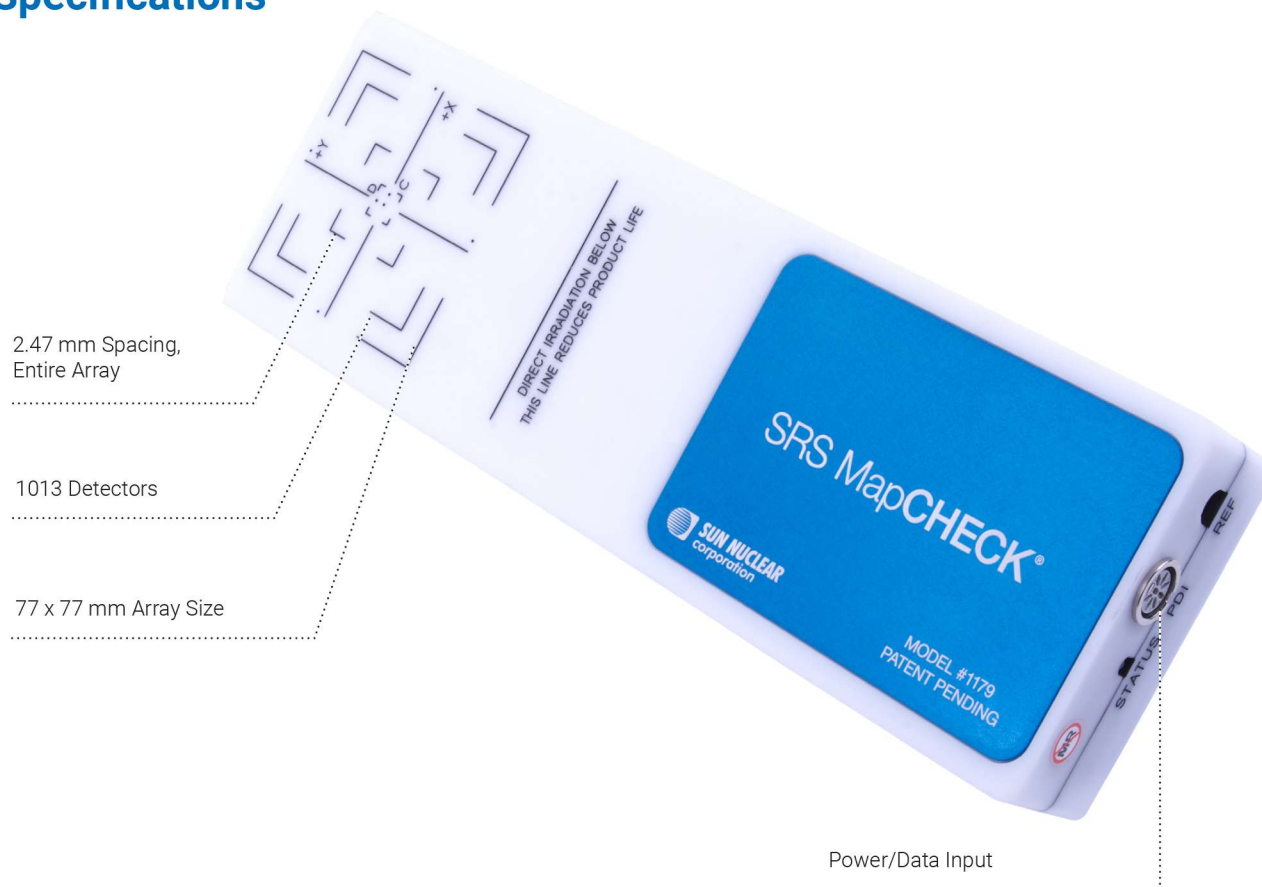


Compare Absolute and Relative Dose to TPS Plan

~10 MINUTES

³ <http://www.gafchromic.com/documents/Efficient%20Protocols%20for%20Calibration%20and%20Dosimetry.pdf>

Specifications



SRS MapCHECK Specifications

| | |
|--|---|
| Detector Type: | SunPoint® 2 Diode Detectors |
| Detector Quantity: | 1,013 |
| Detector Spacing (mm): | 2.47 |
| Active Detector Area (mm x mm): | 0.48 x 0.48 |
| Array Size (mm): | 77 x 77 |
| Detector Sensitivity (nC/Gy): | 15 |
| Sampling Frequency (ms): | 50 |
| Dose Rate Dependence: | +/- 1.5% over the range 100 MU/min to 2400 MU/min |
| Inherent Buildup (g/cm ²): | 2.75 |
| Inherent Backscatter (g/cm ²): | 2.75 |
| Radiation Measured: | Photons: 6MV, 10MV, 6FFF, 10FFF |
| Number of Connection Cables: | Single power/data cable |
| Dimensions (L/W/H): | 320 x 105 x 45 (mm) |
| Weight (kg): | 1.9 |

StereoPHAN Specifications

| | |
|----------------------------------|--------------------------------|
| Material: | Polymethyl methacrylate (PMMA) |
| Weight (cylinder, stand, slide): | 6.6 kg (15 lbs) |
| Measurement cubes (mm): | 85 x 85 x 85 |
| Dimensions - L x W x H (mm): | 522 x 276 x 229 |

System Requirements (SNC Patient)

| | |
|-------------------|---|
| Operating System: | Windows 10 Professional |
| CPU: | Recommended 2.4 GHz or better, multi-core (2 or more cores) |
| RAM: | Recommended 4 GB or more |
| Hard Drive Space: | Recommended 5 GB or more |

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