LinaTech

TiGRT

Intensity Modulated Radiotherapy System

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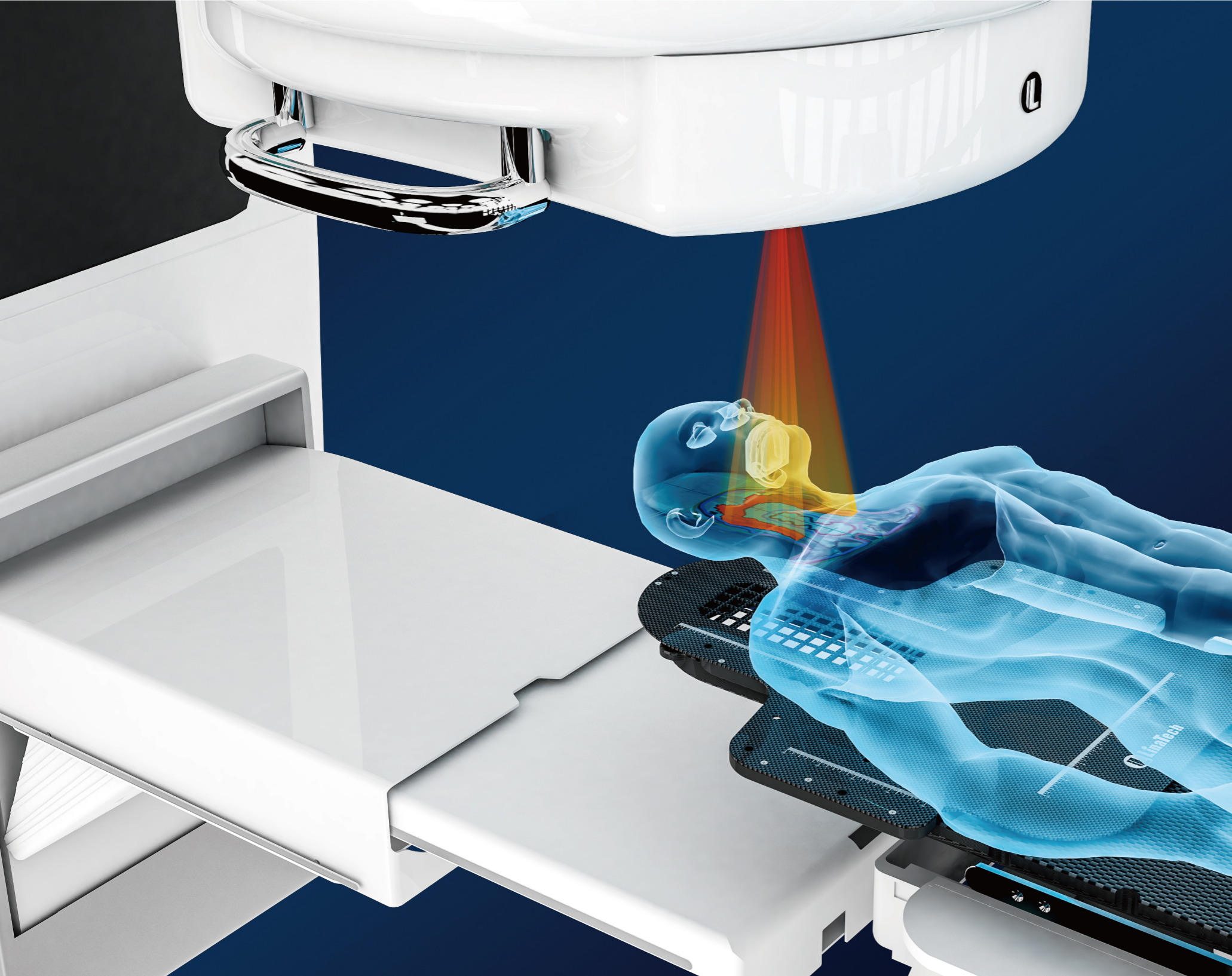Mail：info@linatech.com
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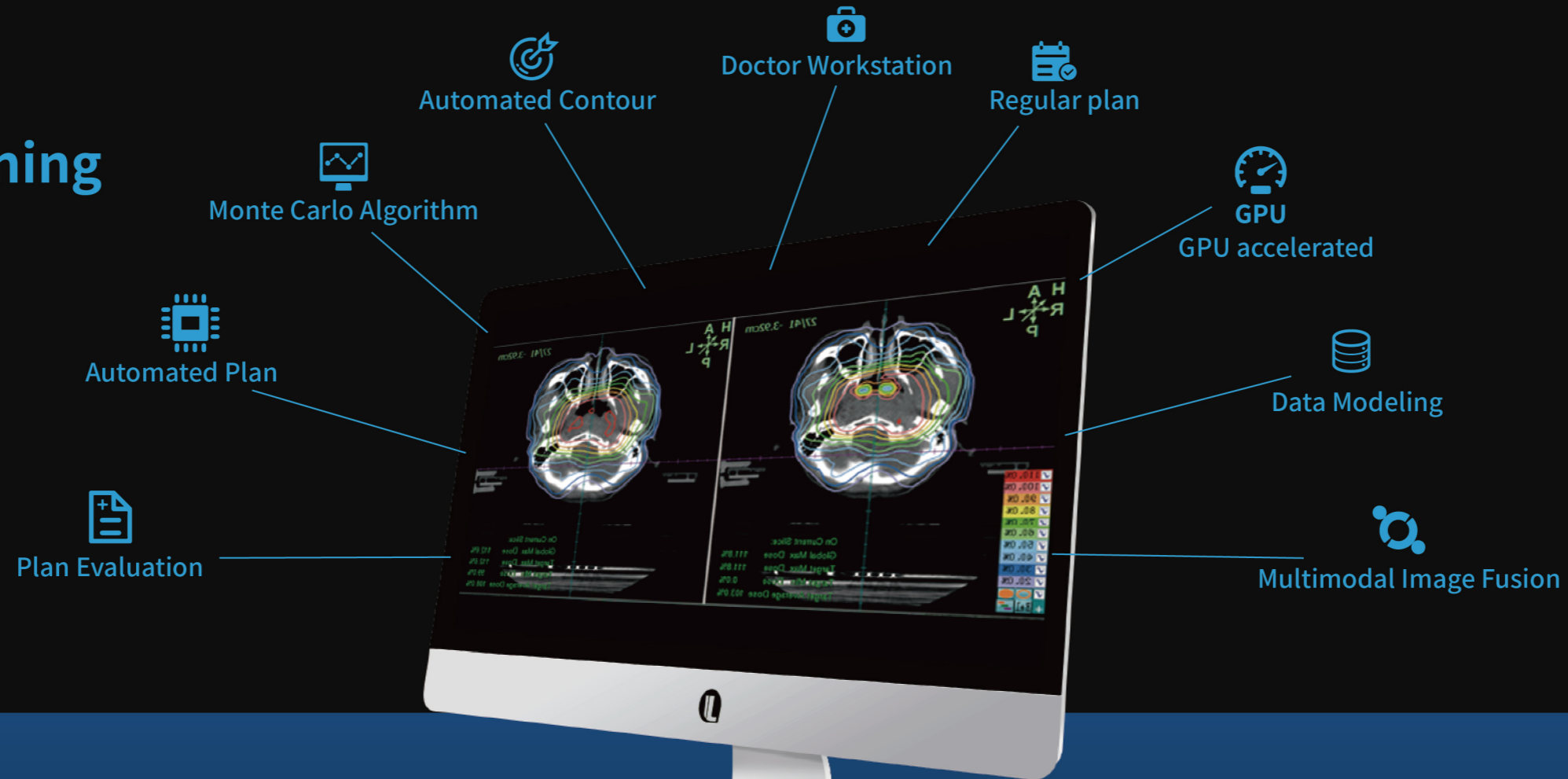www.linatech.com.cn

Summary

TiGRT intensity modulated radiotherapy system mainly includes radio-therapy planning system (TPS), multi-leaf collimator (MLC), integrated patient positioning couchtop, which can cover from target positioning, planning design and treatment. The 51 pairs MLC have a maximum open field of 30cmx30cm, which can meet the needs of 95% of IMRT clinical patients. The ultra-thin leaf with an isocenter of 3mm thickness ensures a higher conformity of the target area and reduces damage to OARs.

The Monte Carlo dose calculation algorithm based on GPU acceleration can ensure the dose calculation of the nasopharyngeal carcinoma IMRT plan within 3 minutes, making the treatment more accurate.

With its excellent performance, the TiGRT intensity modulated radio-therapy system can implement treatment methods such as conformal radiotherapy, static intensity-modulated radiotherapy, and dynamic intensity-modulated radiotherapy for precise treatment.

TiGRT TPS (Monte Carlo) Treatment Planning System

Automated Contour

Doctor Workstation

Regular plan

Monte Carlo Algorithm

GPU
GPU accelerated

Automated Plan

Data Modeling

Plan Evaluation

Multimodal Image Fusion

TGRT TPS-MC radiotherapy planning system is an advanced planning software that can meet the requirements of clinical tumor radiotherapy. The software is equipped with the Monte Carlo dose calculation algorithm, which can accurately calculate the dose distribution.

TIGRT TPS-MC provides a variety of planning solutions, including IMRT, DCA, VMAT etc. Through experimental comparison, TIGRT TPS-MC has demonstrated excellent planning production performance. While ensuring the coverage of the target area ond the dose outside the target area, it significantly reduces the planned MU and saves treatment time.

The Record & Verify module of the TiGRT MLC system is used to monitor the consistency of the accelerator treatment parameters and the design parameters of IMRT to ensure the safety of the treatment. By connecting the BEAM ON signal, when the beam output signal of the accelerator is detected, the MLC is energized and moved to realize the synchronous operation of the two devices. When there is an abnormal state in the treatment, the access control signal alarm is used to cut the output of the accelerator to ensure the safety of treatment and avoid the potential safety hazards of add-on device. For some accelerators with unstable dose rate, the RV system can monitor the changes in the accelerator dose rate in real time, and adjust the MLC movement speed to ensure accurate IMRT without any worries.

- Isocentric leaf thickness: 3mm
- Isocenter maximum distance: 50mm
- Treatment mode: 3D-CRT/IMRT
- Number of MLC: 51 pairs
- Leakage: <1%
- Max. open field of the isocenter: 30cmx30cm
- Positioning accuracy: 0.25mm

αC Automated contour

- ## High Contour Accuracy

  Accurately contouring OARs based on AI deep learning algorithm
  More than 90% of cases can be used for plan design without or with little modification manually.
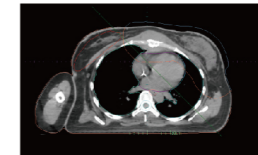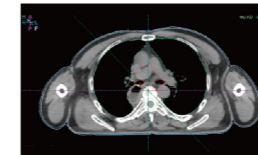
- ## More Contour Organs

  Automated contour can cover more than 40 organs at risk and tissues throughout the body.

Head&Neck	22
Thorax&Abdomen	10
Pelvis	10

- ## Fast Contour Speed

  Based on GPU accelerated algorithm, the conventional contouring time is shortened by more than 10 times.

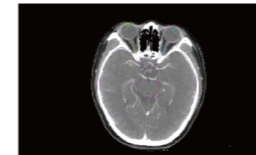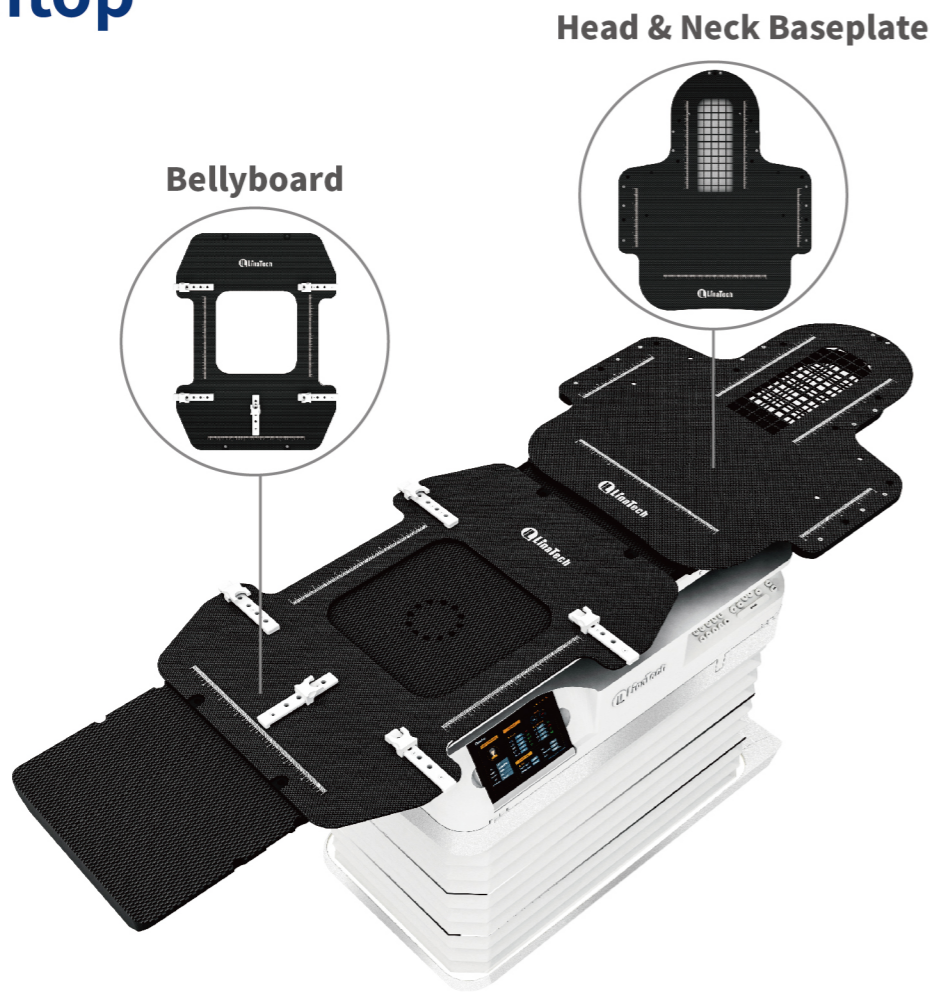| Body part	Time
Head&Neck	within 1 minute
Thorax&Abdomen	30s
Pelvis	30s

GPU

TPS Function

TiGRT TPS realizes the input and output of DICOM 3.0/RT images and plans for various image and planning systems, and provides independent contouring functions, planning simulation functions and planning evaluation functions. TPS is also a convenient and efficient software for manual contour, variable 3D automatic extension, interslice duplication and interpolation of CT images, and has rich functions such as automated contour of organs and image fusion.

Patient Positioning Couchtop

Bellyboard

Head & Neck Baseplate

- Material: **Carbon fiber**
- Positioning accuracy: **1㎜**
- Stiffness: **Load 250kg, deformation less than 2㎜**
- Radiation transmittance: **99%**

Wide Range of Indications

Lung Cancer

Nasopharyngeal Cancer

Breast Cancer

Multiple intracranial metastases

Prostate Cancer

Hypopharyngeal Cancer