

ABSTRACT

The present disclosure provides a CT scanning imaging system based on a single linear scanning channel, including: a conveying device configured to move a scanned object in a single linear scanning channel in a predetermined conveying direction; a plurality of scanning segments arranged at intervals in the conveying direction, where each scanning segment includes a plurality of ray sources and at least one detector, in each scanning segment, the plurality of ray sources are sequentially arranged at intervals on one side of the scanning channel and configured to alternately emit ray beams to form a scanning region, and the at least one detector is located on the other side of the scanning channel and configured to detect projection data formed by the ray beams transmitted through the scanned object in a process of the scanned object passing through the scanning region; and an imaging device configured to generate a three-dimensional reconstructed image of the scanned object according to the projection data detected by each detector in the plurality of scanning segments.