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## Design and development of array multipoint accelerator tube

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Linear accelerators with multiple ray sources are widely used in detection imaging technology. In this paper, an S-band multipoint source traveling wave accelerator tube is designed and developed. The accelerator tube consists of 8 parallel-arranged accelerator cavity units and uses a power source to output 8 X-ray beams alternating from different positions. The acceleration tube operates at S-band 2998 MHz. In this paper, the physical design of the accelerator tube is introduced, the dynamic design of the accelerator tube is completed by numerical calculation, and the verification calculation is carried out by PARMELA. After machining, the cold test tuning and high power beam test are carried out. The beam energy range is between 0.5 and 1 MeV, and 8 beams can be switched arbitrarily.

### Footnotes

### Funding Agency

### Paper preparation format

### Region represented

Asia

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