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# High-power testing of TPS heterogeneous one-to-four power combination

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The Taiwan Photon Source (TPS) is a third-generation synchrotron light source located in Taiwan. Currently, it operates with two RF stations, each capable of delivering 300 kW of RF power. As the number of beamlines at TPS increases, more insertion devices will be installed, necessitating additional RF power. Presently, each RF station provides approximately 250 kW of power. To maintain operational margin, increasing the RF power available per station is a critical task. To address this, we have implemented a heterogeneous power combination method, where the power from solid-state power amplifiers is combined to raise the available RF power per station to 375 kW. This report describes the power combination methodology employed at one of the RF stations, high-power testing results, and the outcomes of long-term operation under combined power conditions. Future plans for power combination are also discussed in this paper.

## Footnotes

## Paper preparation format

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