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Wed-Af-Po3.23-04 [89]: Design and Test of the 64 T with 10ms Flat-Top Magnetic Field System Driven by Capacitor at the Wuhan National High Magnetic Field Center

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The 64 T with 10ms flat-top magnetic field system driven by capacitor was manufactured and tested at the Wuhan National High Magnetic Field Center (WHMFC). The system consists of the primary circuit and the secondary circuit driven by capacitor banks as they are normally used to generate a pulsed field. The magnet coil and the outer winding of the transformer are connected in series to form the primary circuit. The secondary circuit includes the inner winding of the transformer. The current in the magnet circuit will decrease when the secondary circuit is triggered due to the electromagnetic coupling. A flat-top current in the magnet circuit can be obtained by adjusting the discharge voltage and trigger time of the secondary circuit. The primary and the secondary circuit are driven by ten and two 1MJ capacitor banks. Fields up to 64 T with 10ms flat-top have been obtained with a conventional user magnet used at the WHMFC.

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