

High Voltage Picosecond FID Pulse Generators

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A new series of high voltage picosecond pulse generators with the output voltage of up to 200 kV, the rise time of 80-150 ps and the PRF of up to 5 kHz has been developed.

As the main switches FID devices developed by FID GmbH are used.

High voltage pulse generators have the input power of AC 110-240V, internal and external triggering and forced air cooling.

The pulser consists of the following main modules: the triggering block, the high voltage converter, power FID block.

When the output voltage is higher than 100 kV the oil filled power FID blocks are used for high voltage insulation.

High voltage generators have the jitter in respect to the external triggering pulse of not more than 20-30 ps and also have high amplitude stability.

For measurement of the rise time of less than 100 ps at the amplitude of 100-200 kV special high voltage attenuators have been developed.

For connection of the cables and load the connectors designed by FID GmbH are used.

One of main advantages of the new high voltage picosecond pulsers is their high efficiency. At the pulse width of about 1 ns and the rise time of 80-150 ps the efficiency reaches 60-70%. This allows having the maximum pulse repetition frequency (PRF) of up to 5 kHz in continuous mode and 10 kHz in burst mode.