All-optical orthogonal frequency division multiplexing (OFDM) transmitter

The invention relates to an all-optical orthogonal frequency division multiplexing (OFDM) transmitter for generating an OFDM output signal. The transmitter comprises a first time-domain optical Fourier transform (OFT) assembly, the first OFT assembly is of a K-D-K configuration and comprises in said order a first phase modulator, a dispersive element and a second phase modulator. The first and second phase modulators are configurable for exercising a parabolic phase modulation to substantially linearly phase chirp an optical signal so as to have a chirp rate $K_1$ and $K_2$, respectively. The dispersive element has a dispersion parameter $D$. The phase modulators are configurable to have nominally identical chirp rates, $K_1 = K_2 = K$, and the OFT assembly is further configurable such that $D = 1/K$. The invention further relates to methods of generating an OFDM signal.

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