

METHOD AND APPARATUS FOR COMBINING
SPACE-FREQUENCY BLOCK CODING, SPATIAL
MULTIPLEXING AND BEAMFORMING
IN A MIMO-OFDM SYSTEM

Abstract

A method and apparatus for combining space-frequency block coding (SFBC), spatial multiplexing (SM) and beamforming in a multiple-input multiple-output (MIMO) orthogonal frequency division multiplexing (OFDM) system. The system includes a transmitter (110) with a plurality of transmit antennas (126) and a receiver (130) with a plurality of receive antennas (128). The transmitter generates at least one data stream and plurality of spatial streams (118). The number of generated spatial streams is based on the number of the transmit antennas and the number of the receive antennas. The transmitter determines a transmission scheme in accordance with at least one of SFBC (112), SM (114), and beam forming (122). The transmitter transmits data in the data stream to the receiver based on the selected transmission scheme.

Fig. 1