

**ABSTRACT****FAST METHOD AND RECEIVER FOR CDMA JOINT DETECTION**

A joint detection method for a discontinuous transmission system, the method comprising applying a data detection algorithm to a received signal to generate an estimated data set, said algorithm comprising a step of (a) generating a set of linear equations and (b) solving said linear equations using Cholesky decomposition to produce said estimate data set, wherein said Cholesky decomposition step comprises:-

- (i) generating a system matrix (S) of sub-matrices, said system matrix having a Toeplitz block structure;
- (ii) generating a reduced dimension matrix (S');
- (iii) performing Cholesky factorisation on the reduced dimension matrix (S') to obtain a triangular matrix (T'); and
- (iv) expanding the triangular matrix (T') to a reconstructed matrix (L) for solution of said linear equations.

FIG.1