

ABSTRACT

Ramp period detecting circuit 101 outputs signal T_c that indicates the start and end of the ramp period. Two-dimensional quadrature coordinates $(I\alpha, Q\alpha)$ and $(I\beta, Q\beta)$ are output alternately. Coordinate accumulator 106 accumulates $I\alpha$ which is
5 +1 or -1 corresponding to each odd piece of two-bit data; coordinate accumulator 107 accumulates $Q\alpha$ which is 0 corresponding to each even piece of two-bit data. Response waveforms from a digital lowpass filter (or rise/fall ramp waveforms) corresponding to signal T_c and outputs from coordinate accumulators 106 and 107,
10 namely accumulated values of $I\alpha$ and $Q\alpha$, are alternately read from storage unit 112.