

MODERN MICROWAVE TECHNOLOGY IN HIGH-SPEED QPSK COMMUNICATION SYSTEMS

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Abstract

This paper presents a technical survey and status report of the microwave subsystems presently in use in the RF portion of modern high-speed phase-shift-keying communication systems, operating at data rates up to one gigabit per second. The principal subsystems reviewed will include four-phase phase-shift modulators of both the direct-frequency type plus up-converter; the four-phase demodulators; and the microwave circuits used to derive both carrier frequency (clock) and reference phase information from a received QPSK modulated carrier.

The circuits and subsystems reviewed will be discussed at the level of the technology of the associated microwave components including details of the switching diodes, high F_T transistors, video amplifiers, VCO's and special frequency multipliers involved.