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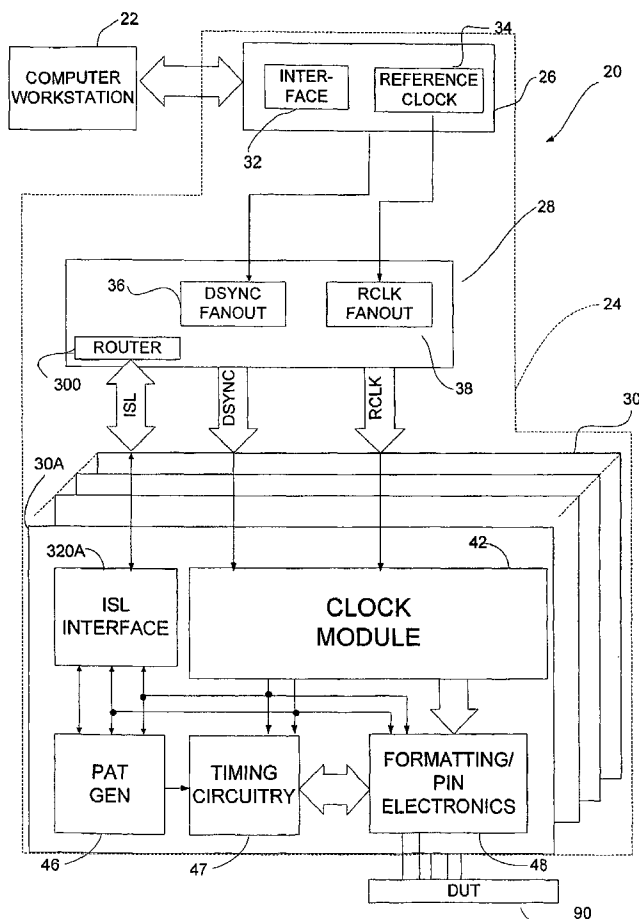
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(54) Title: AUTOMATIC TEST SYSTEM WITH SYNCHRONIZED INSTRUMENTS



(57) Abstract: A test system with multiple instruments. Some instruments act as controller instruments and others act as controlled instruments. Each instrument includes a clock generator that synthesizes one or more local clocks from a reference clock. The reference clock is a relatively low frequency clock that can be inexpensively but accurately generated and distributed to all of the instruments. A communication link between instruments is provided. Timing circuits within instruments that are to exchange time information are synchronized to establish a common time reference. Thereafter, instruments communicate time dependent commands or status messages asynchronously over the communication link by appending to each message a time stamp reflecting a time expressed relative to the common time reference. The test system includes digital instruments that contain pattern generators that send command messages to analog instruments, which need not include pattern generators. The architecture simplifies design of analog instruments and avoids redesign of analog instrument as pattern rates of digital instruments change.

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