TDMA USING TIME-COMPRESSED ANALOG SIGNALS

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A time division multiple access concept for use in satellite communication applications is described which uses analog modulation of the RF carriers. This approach, although first proposed many years ago, now appears to be practical based on the use of recently developed CCD's which may be used as dual-speed analog shift registers to achieve the desired time compression. The requirements on shift register, baseband filter, and synchronizing circuit performance are discussed from the standpoint of multi-channel transmission to commercial telephone standards. It is concluded that acceptable shift register devices and filters can be fabricated and that the synchronizing accuracy required is somewhat less than for a digital TDMA system with the same channel capacity. It is further concluded that analog TDMA will probably require less expensive equipment than digital TDMA, and will be better adapted for use in a growth mode for systems that already use analog transmission techniques.

These desirable properties may lead to earlier extensive implementation of TDMA systems on a commercial basis than would have been practical using the conventional digital approach.

FULL PAPER TO BE FOUND IN SECTION E

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