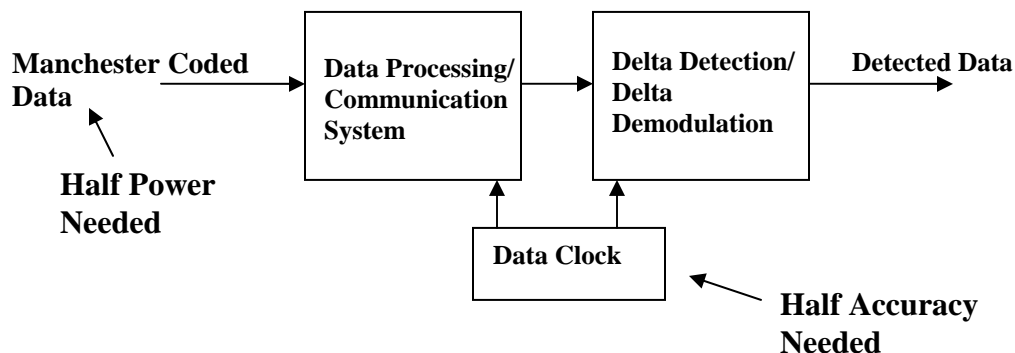


## Detection Method for Manchester Coded Data

### Description

The Manchester code has been specified for the IEEE 802.3 standard for baseband coaxial cable and twisted-pair Carrier Sense Multiple Access/Collision Detection (CSMA/CD) bus LANs. Manchester codes are widely used in data storage and communications for its unique property. That is every symbol has a transition – the information needed for carrier sensing or synchronization. However, the Manchester coded data loses 3 dB in sensitivity using the conventional detection and need highly accurate data clocks. The University of North Florida is developing a special detection method to detect the Manchester coded data, which is called delta detection. The system can gain back up to 3dB (half of the transmission power) and double the tolerance of data clock drifting or jittering when the delta detection is used. This method can be used together with most modulation schemes. This delta detector utilizes the incoming Manchester signal energy more efficiently, resulting in a lower required transmission power and/or higher detection sensitivity. The simulation of Manchester coded data transmission system with the delta detector verified this method and confirmed the expected results.



### Advantages

- Higher sensitive detector and lower transmission power are needed or lower detect error rate
- Inexpensive system/data clocks are needed (double tolerance to clock drifting and jetting)
- Products used the detector contribute less interference to other users

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