

**Product Name :**  
Error Detection and Correction-Cyclic Code Trainer for Communication  
Teaching Labs

**Product Code :**  
COM-TR-29



#### Description :

Error Detection and Correction-Cyclic Code Trainer - friendly learning platforms to provide a modern, portable, comprehensive and practical way to learn Technology. Each TechBook is provided with detailed Multimedia learning material which covers basic theory, step by step procedure to conduct the experiment and other useful information. Error Detection and Correction - Cyclic Code Scientech 2120 is designed to provide the conceptual knowledge of code correction and detection by adding the redundant bits to actual bit pattern, which are use to represent the code word. Error detection is the ability to detect the presence of errors caused by noise or other impairments during transmission from the transmitter to the receiver. Error correction is the additional ability to reconstruct the original, error-free data. A Cyclic Redundancy Check (CRC) is a type of function that takes as input a data stream of any length, and produces as output a value of a certain space, commonly a 32-bit integer. The term CRC denotes either the function or the function`s output. A CRC can be used as a checksum to detect accidental alteration of data during transmission or storage. CRCs are popular because they are simple to implement in binary hardware, are easy to analyze mathematically, and are particularly good at detecting common errors caused by noise in transmission channels. The selection of generator polynomial is the most important part of implementing the CRC algorithm. The polynomial must be chosen to

maximize the error detecting capabilities while minimizing overall collision probabilities. The most important attribute of the polynomial is its length i.e. the number of the highest nonzero coefficient, because of its direct influence of the length of the computed checksum

On-board data and code clock generation

On-board data generator

BCD rotary switches for data selection

LED numeric display

Multiple data rate and code rate selection

Seven bit code for four bit running or static data

Single bit error detection and correction

## Naugra Export

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