MOTOROLA
SEMICONDUCTOR ■
TECHNICAL DATA

MOTOROLA SC (TELECOM)

Encoder/Decoder (Transcoder)
For Transmission Applications

The MC145439 and MC142103 are high speed CMOS integrated circuits designed to perform the coding translation of clocked serial data into two streams of return to zero (RZ) digital pulses, which are externally mixed to form either AMI, HDB3, B6ZS, or B8ZS (MC142103—AMI or HDB3 only) ternary signals for driving transmission lines. They perform the reverse operation by translating two streams of clocked pulses [which have been derived from an incoming AMI, HDB3, B6ZS, or B8ZS (MC142103—AMI or HDB3 only) ternary encoded signal] into a single stream of clocked binary data. They also feature loopback and error monitoring functions. The coding and decoding functions perform independently at clock rates from 0 (dc) to 9 mbps. The HDB3 coding and decoding are performed in a manner consistent with the CCITT G.703 recommendations.

Both Devices:
- Low Power CMOS Operation
- Single 5-V Power Supply Operation
- Error Monitor Functions Provided
- Loopback Feature Provided
- Encode and Decode Clock Rates to 9 mbps
- Pin Selectable Modes of Operation
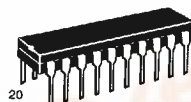- TTL Compatible Inputs and Outputs

MC145439 Only:
- 20-Pin Package
- NRZ to AMI, HDB3, B6ZS, B8ZS; AMI, HDB3, B6ZS, B8ZS to NRZ
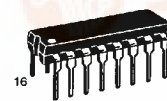- Force Alarm and Output Enable Function
- Pin Compatible with HC-5560

MC142103 Only:
- 16-Pin Package
- NRZ to AMI, HDB3; AMI, HDB3 to NRZ
- Pin Selectable HDB3 or AMI Operation
- Pin Compatible with CD22103 and MJ1471

NOT RECOMMENDED FOR NEW DESIGN

MC145439
MC142103

MC145439
PLASTIC
CASE 738

MC142103
PLASTIC
CASE 648

PIN ASSIGNMENTS

MC145439

FA	1●	20	V_{DD}
MS1	2	19	$\overline{OE}$
NRZ_{in}	3	18	N.C.
ECLK	4	17	P_{out}
MS2	5	16	N_{out}
NRZ_{out}	6	15	N_{in}
DCLK	7	14	LOOP
$\overline{RAIS}$	8	13	P_{in}
AIS	9	12	CLK
V_{SS}	10	11	ERR

MC142103

NRZ_{in}	1●	16	V_{DD}
ECLK	2	15	P_{out}
HDB3/$\overline{AMI}$	3	14	N_{out}
NRZ_{out}	4	13	N_{in}
DCLK	5	12	LOOP
$\overline{RAIS}$	6	11	P_{In}
AIS	7	10	CLK
V_{SS}	8	9	ERR

BLOCK DIAGRAM
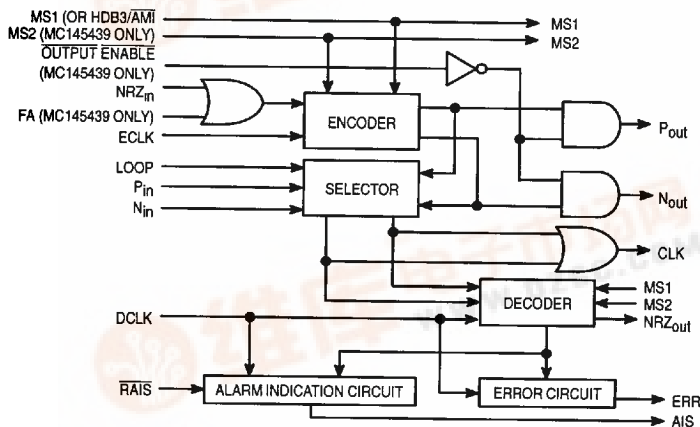
This document contains information on a new product. Specification and information herein are subject to change without notice.