Data Field (710 bytes)

```
-------------------------------------------
D5 AA AD Sect <encoded data> ChkSum DE AA off
-------------------------------------------
```

The data field contains the actual data in the sector. The sub-fields are:

D5 AA AD	data marks: this identifies the field as a data field.
Sector	encoded sector number
encoded data	524 data bytes encoded into 699 code bytes; the first 12 data bytes are typically used as a sector tag by the operating system, and the remaining 512 bytes for actual data
Checksum	a 24-bit checksum encoded into 4 code bytes (see below)
DE AA	bit slip marks: this identifies the end of the field
off	pad byte where the write electronics were turned off

Data Encoding Format

A sector is composed of 524 user data bytes and a 3 byte checksum. These are translated into 6 bit nibbles that are used to look up GCR codewords to be written to the disk. The data is encoded as follows. CSUMA, CSUMB,CSUMC are registers used for accumulating the checksum. BYTEA, BYTEB, BYTEC contain three bytes from the data buffer. GCR is the table of GCR codewords.

1. Rotate CSUMC left
   CSUMC[76543210] <- CSUMC[65432107]
   Carry <- CSUMC[7]
2. CSUMA <- CSUMA + BYTEA + carry from step 1
3. BYTEA <- BYTEA xor CSUMC
4. CSUMB <- CSUMB + BYTEB + carry from step 2
5. BYTEB <- BYTEB xor CSUMA
6. CSUMC <- CSUMC + BYTEC + carry from step 4
7. BYTEC <- BYTEC xor CSUMB
8. Convert BYTEA, BYTEB and BYTEC to 6 bit nibbles
   NIBL1 <- A7 A6 B7 B6 C7 C6 High bits of the bytes
   NIBL2 <- A5 A4 A3 A2 A1 A0 Low bits of BYTEA
   NIBL3 <- B5 B4 B3 B2 B1 B0 Low bits of BYTEB
   NIBL4 <- C5 C4 C3 C2 C1 C0 Low bits of BYTEC
9. Write GCR(NIBL1), GCR(NIBL2), GCR(NIBL3) and GCR(NIBL4)

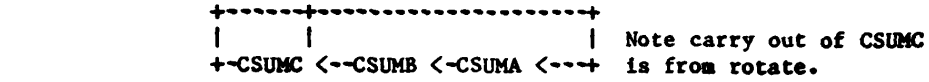

Figure showing carry propagation