

December 4, 1987

To: X3T9.2 Committee (SCSI)

From: James Semenak (AT&amp;T)

Subject: SCSI REQUEST SENSE Residue  
Document #X3T9.2/87-205

Please refer to REQUEST SENSE command in the SCSI-2 Draft Revision 3. Specifically, the last two paragraphs on Page 7-60 and the top three paragraphs on 7-61.

This section generally states that except for when a SCSI WRITE command is active on a CHECK CONDITION status, the reporting of the residue in the information bytes shall be in the number of blocks and filemarks in the buffer for Buffered modes of 1h and 2h. This definition is changed from Revision 2 and is not consistent with the definitions of residue for WRITE FILEMARKS command or the WRITE command when the Fixed bit is zero. The paragraphs should state:

*For sequential-access devices operating in buffered modes 1h or 2h that detect an unrecoverable write error, and when unwritten data blocks and/or filemarks remain in the buffer the residue in the information bytes for all commands shall be:*

1. *the number of data blocks and filemarks in the buffer if the device is in fixed block mode (fixed bit of the MODE SENSE parameter list is one).*
2. *the number of bytes in the buffer, not including filemarks, if the device is in variable mode (fixed bit of the MODE SENSE list is zero).*

The residue when the fixed bit is zero should indicate the number of bytes remaining in the target's buffer when the CHECK CONDITION occurred. The recovery action can then be based on the fact that the drive is in variable mode. The initiator can then allocate a buffer size sufficient to recover any unwritten data bytes (filemarks are not included in this count). The initiator can issue the RECOVERED BUFFER DATA command until the total number of bytes transferred is equal to the residue in the information bytes (i.e., each RECOVERED BUFFER DATA command shall transfer data from a single block). If a filemark is encountered while performing a RECOVERED BUFFERED DATA command a CHECK CONDITION status shall be returned. The sense key shall be set to NO SENSE, the FM bit and valid bits shall be set to one and the information bytes shall be set to the difference (residue) of the requested transfer length minus the actual number of bytes transferred. If the transfer length does not equal the logical block size a CHECK CONDITION status shall be returned. The sense key shall be set to NO SENSE, the ILI bit and valid bits shall be set to one and the information bytes shall be set to the difference (residue) of the requested transfer length minus the actual number of bytes transferred. The sense key shall be set to NO SENSE and the EOM and valid bits shall be set to one.

NOTE: The additions to the byte mode of RECOVERED BUFFERED DATA command will allow an initiator to recover all the unwritten data from the target's buffer. The residue in bytes provides enough information to an initiator to step up a recovery scheme. It allows the initiator to allocate a maximum buffer size as well as provide a recovery procedure to retrieve all the buffered data. It provides enough information to indicate logical block sizes and logical position of filemarks.