

X3T9.2/94-23

To: X3T10
From: Bill Ham, Digital Equipment
Date:1 January 12, 1994
Subject: Ultra SCSI Update 1

New data has been acquired since the November meeting concerning Ultra SCSI. This document shows data at higher rates and from some configuration variations. None of the data acquired in this period indicates any surprises or seriously detrimental effects from the higher speed operation or configuration variations attempted (for differential operation).

Specifically, some configurations having various length stubs, having different temperature operation, and operation at 30 Megatransfers/sec were subjected to the same measurements described in the original Ultra SCSI document.

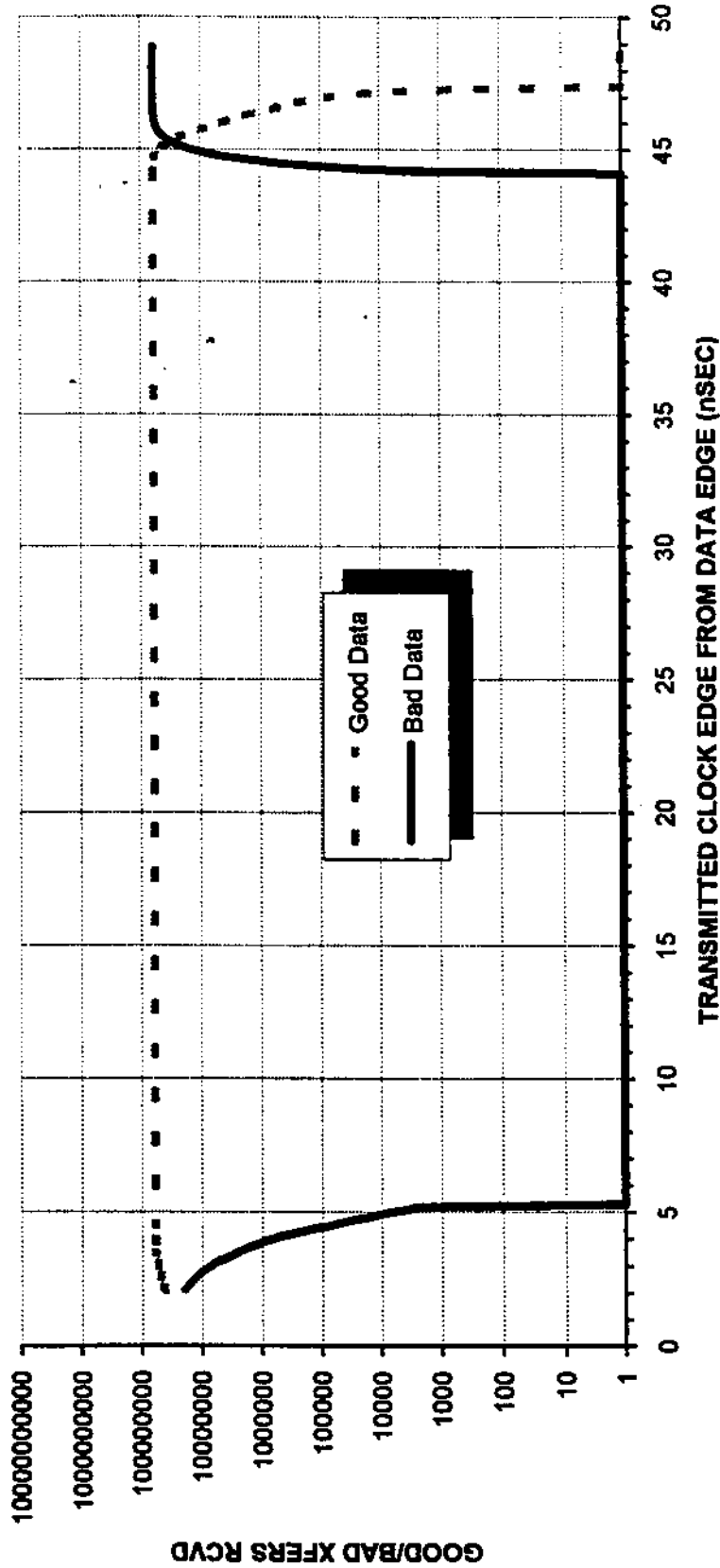
Data from these measurements are included.

There will be more information gathered over the next two months on even higher speed operation and on more configuration variations.

SEVEN QUAD XCEIVERS
PER DEVICE (28 BIT PATH)

XMTR NEAR TERMINATOR
RCVR NEAR TERMINATOR

20 MEGAXFERS/SEC -- NO STUBS, NO LOADS



20 FOOT TOTAL LENGTH:
STUB (IF ANY) IN CENTER

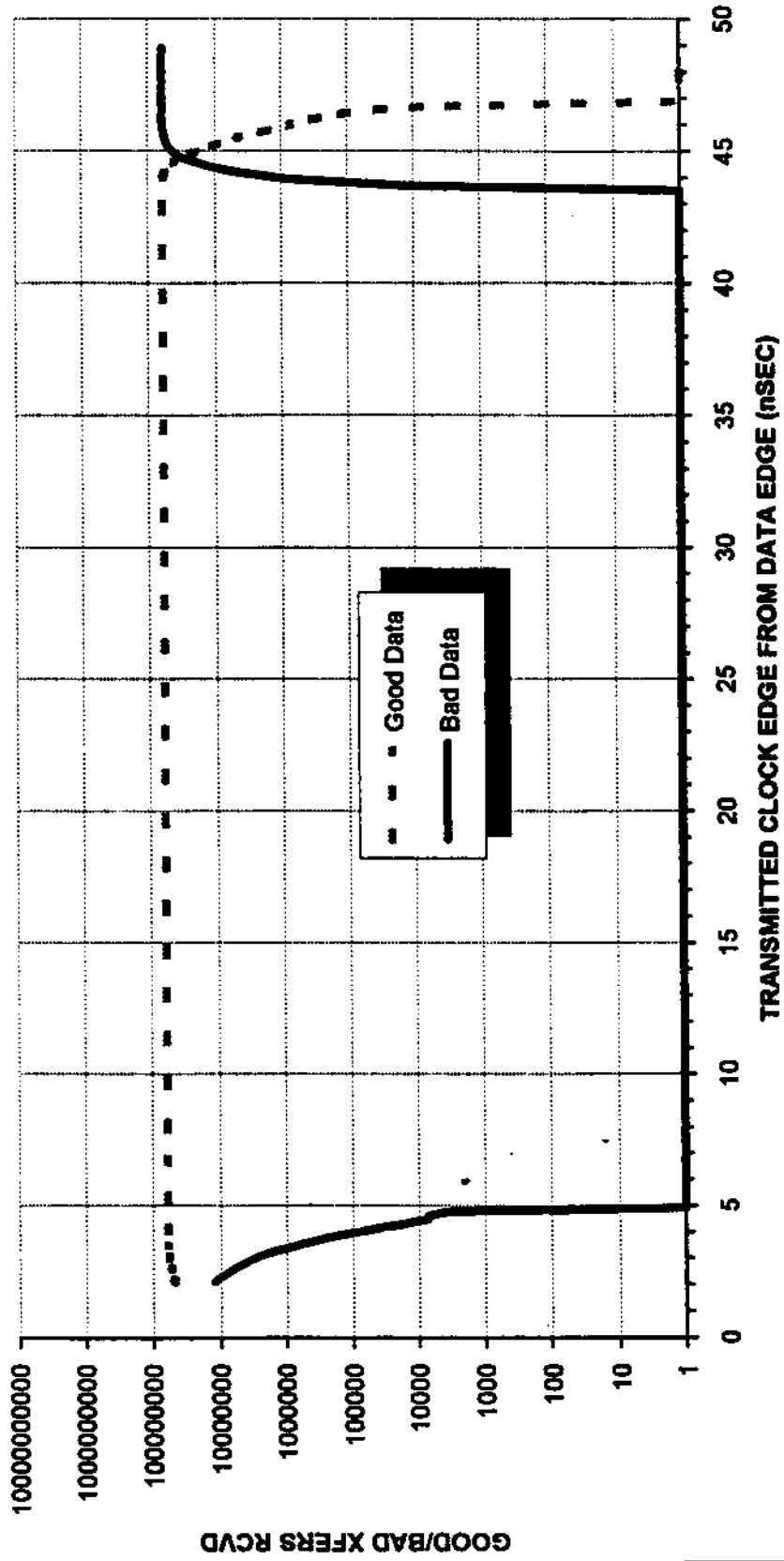
DIFFERENTIAL SCSI
ULTRA 1 RATES

NO SPECIAL HARDWARE
27 BIT XFERS
16k RANDOM DATA

SEVEN QUAD XCEIVERS
PER DEVICE (28BIT PATH)

XMTR NEAR TERMINATOR
RCVR NEAR TERMINATOR

20 MEGAXFERS/SEC - NO STUBS, ONE LOAD



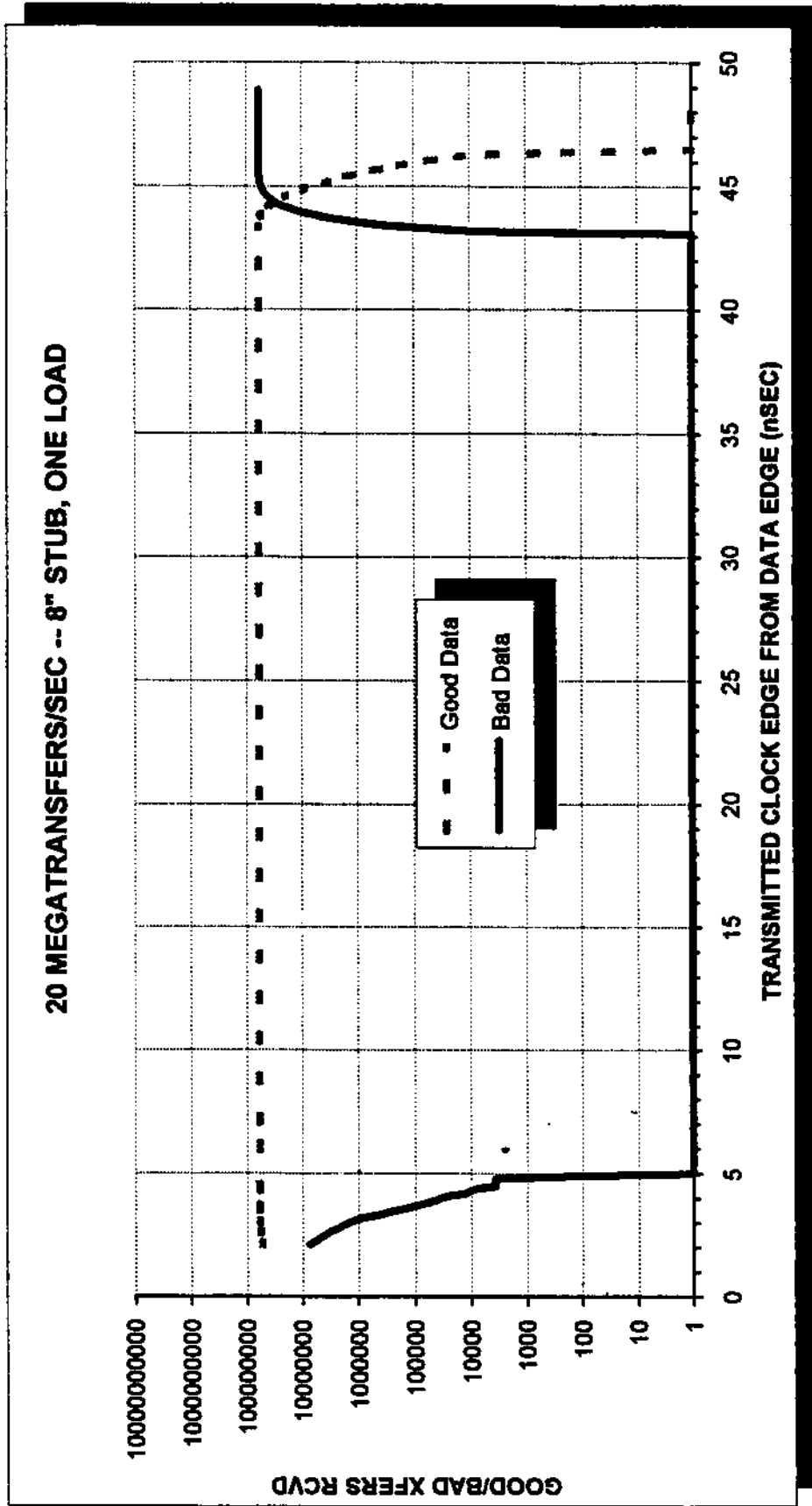
20 FOOT TOTAL LENGTH
STUB (1/2" IN CENTER)

DIFFERENTIAL SCSI
ULTRA 1 PAGES

NO SPECIAL HARDWARE
27 BIT DATA TRANSFERS
18K RANDOM DATA

SEVEN QUAD XCEIVERS
PER DEVICE (28 BIT PATH)

XMTR NEAR TERMINATOR
RCVR NEAR TERMINATOR



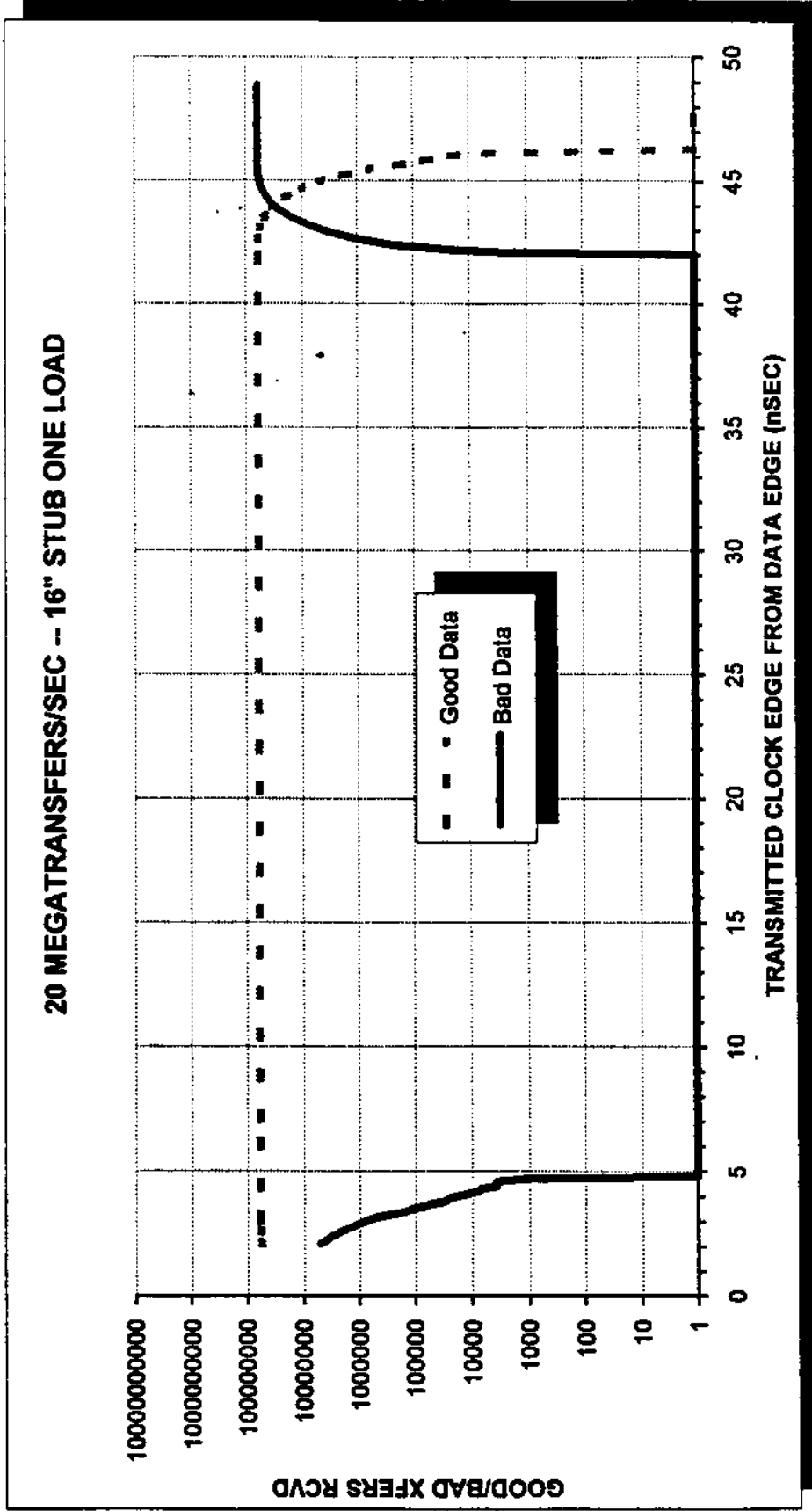
NO SPECIAL HARDWARE
27 BIT DATA TRANSFERS
16K RANDOM DATA

DIFFERENTIAL SCSI
ULTRA 1 RATES

20 FOOT TOTAL LENGTH
STUB (IF ANY) IN CENTER

SEVEN QUAD XCEIVERS
PER DEVICE (28 BIT PATH)

XMTR NEAR TERMINATOR
RCVR NEAR TERMINATOR



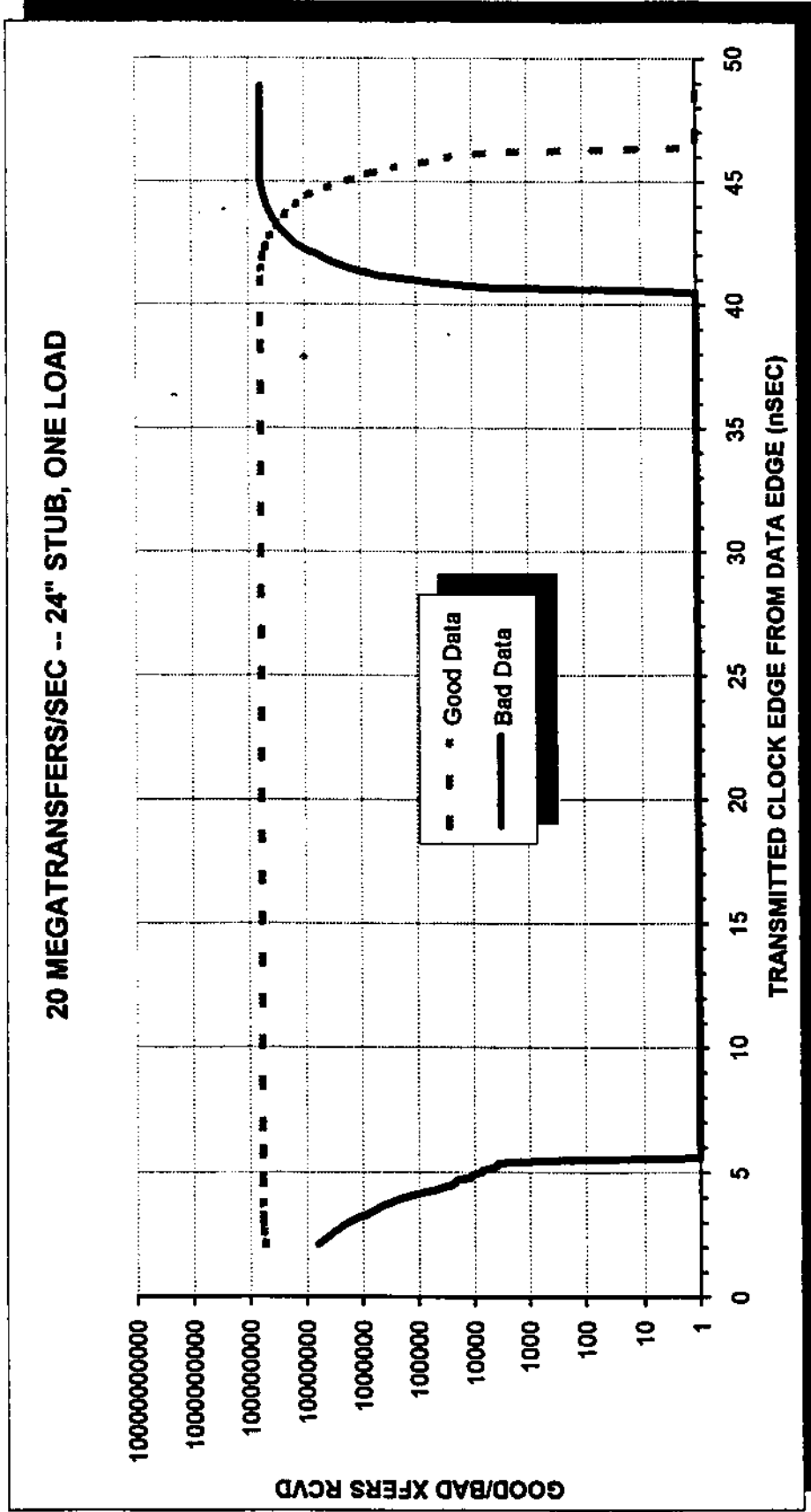
20 FOOT TOTAL LENGTH
STUB --- ANY) IN CENTER

DIFFERENTIAL SCSI
ULTRA 1 RATES

NO SPECIAL HARDWARE
27 BIT TRANSFERS
16K RANDOM PATTERN

SEVEN QUAD XCEIVERS
PER DEVICE (28 BIT PATH)

XMTR NEAR TERMINATOR
RCVR NEAR TERMINATOR



20 FOOT TOTAL LENGTH
STUB (IF ANY) IN CENTER

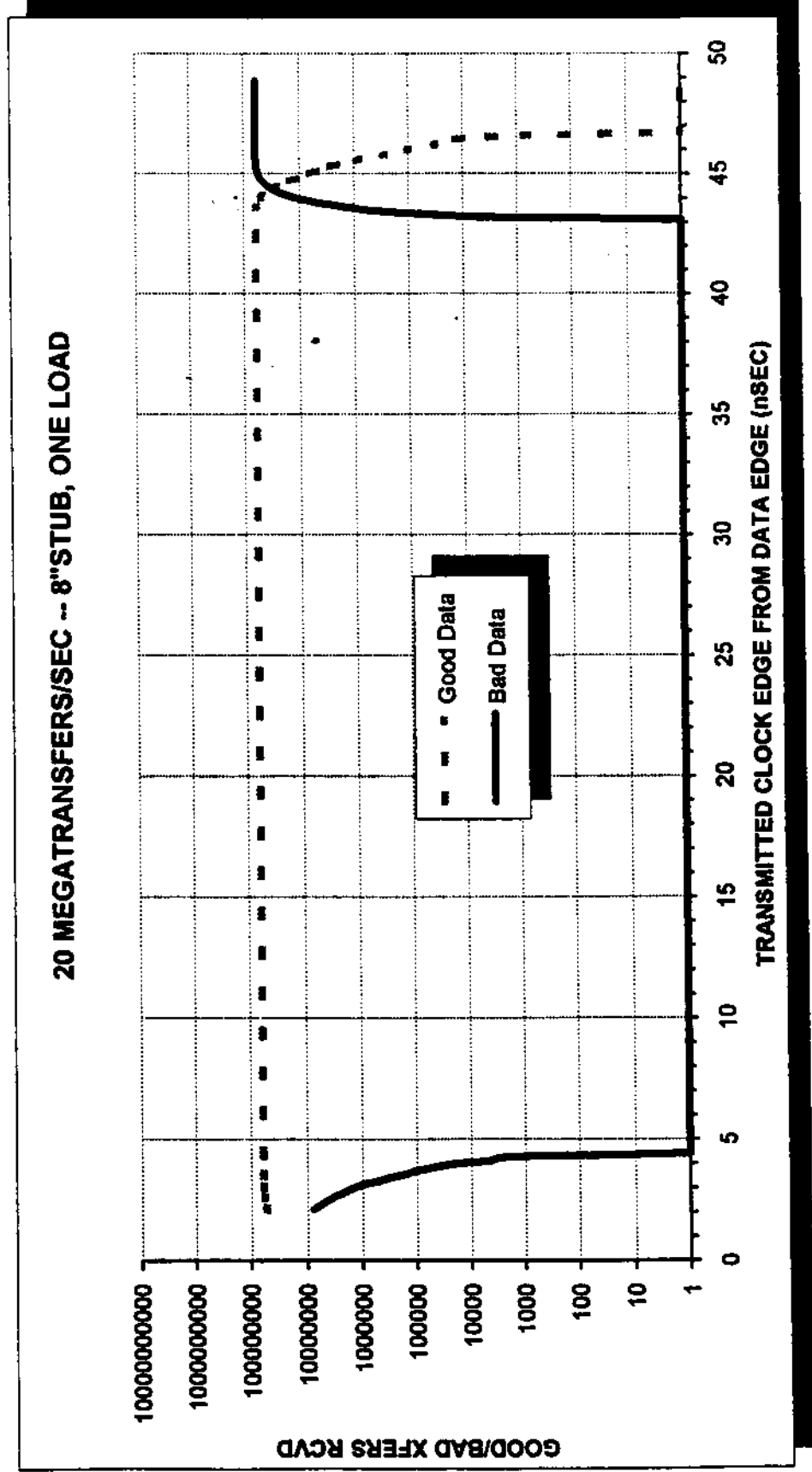
DIFFERENTIAL SCSI
ULTRA 1 RATES

NO SPECIAL HARDWARE
27 BIT TRANSFERS

SEVEN QUAD XCEIVERS
PER DEVICE (28 BIT PATH)

ONE XCEIVER COOLER THAN OTHERS DUE TO MINIMAL TRAFFIC
ATTEMPT TO MAKE SKEW WORSE

XMTR NEAR TERMINATOR
RCVR NEAR TERMINATOR



NO SPECIAL HARDWARE
27 BIT TRANSFERS
16K RANDOM DATA
ONLY ONE BIT ACTIVE IN
ONE OF THE QUAD XCEIVERS

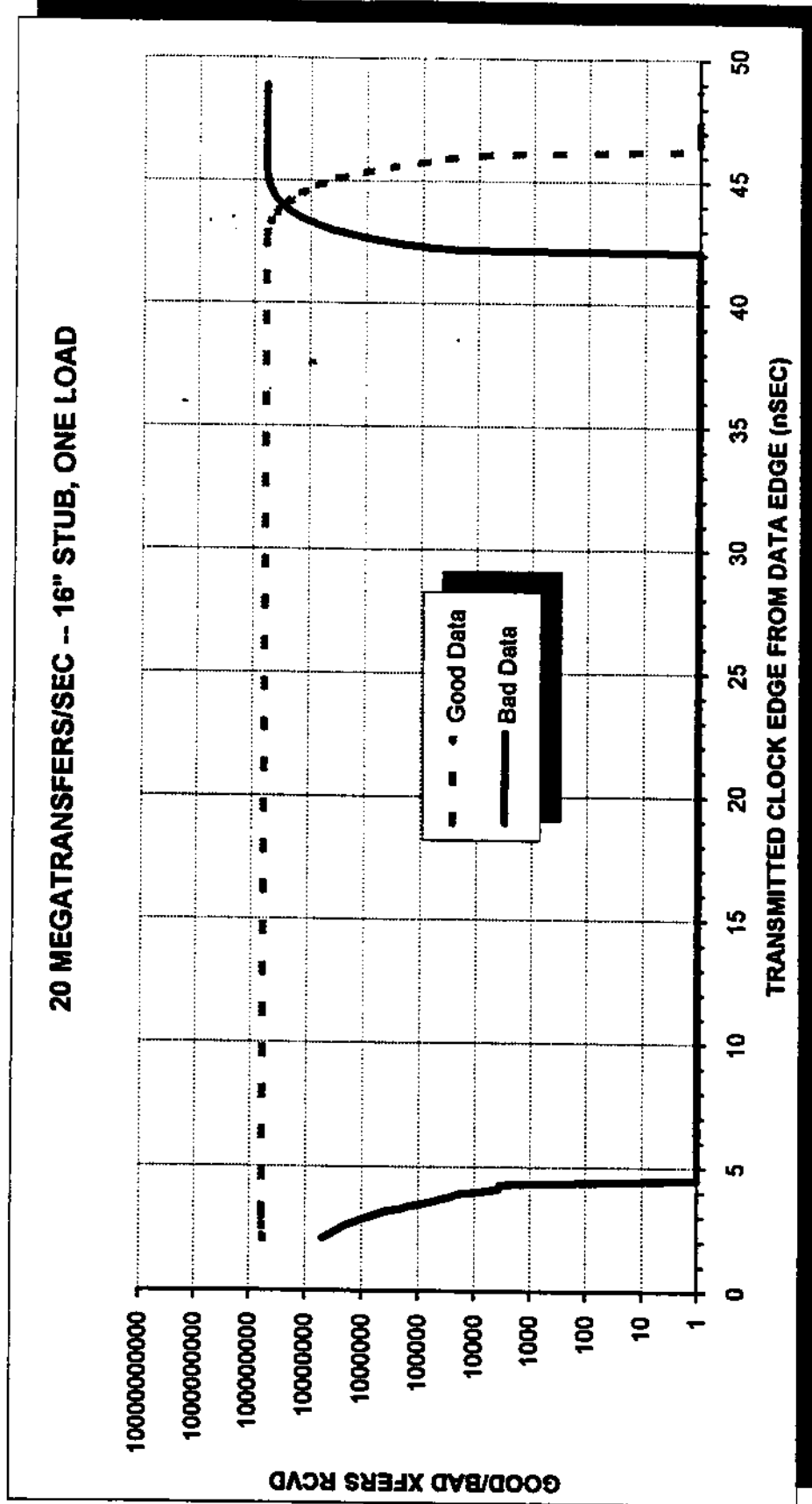
DIFFERENTIAL SCSI
ULTRA RATES

20 FOOT TOTAL LENGTH
STUB ANY IN CENTER

SEVEN QUAD XCEIVERS
PER DEVICE (28 BIT PATH)

ONE XCEIVER COOLER THAN OTHERS DUE TO MINIMAL TRAFFIC
ATTEMPT TO MAKE SKEW WORSE

XMTR NEAR TERMINATOR
RCVR NEAR TERMINATOR



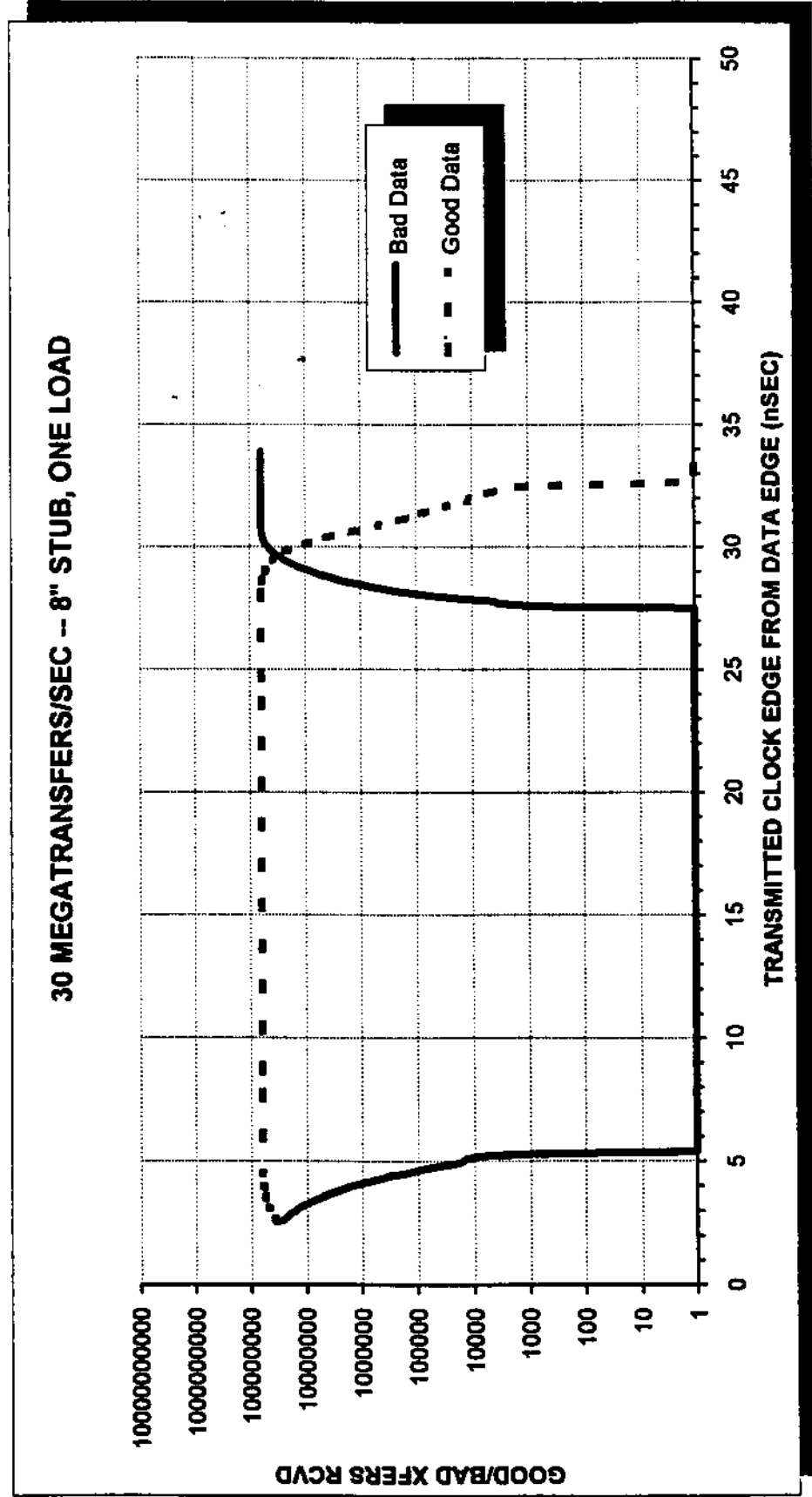
20 FOOT TOTAL LENGTH
STUB (IF ANY) IN CENTER

DIFFERENTIAL SCSI
ULTRA 1 RATES

NO SPECIAL HARDWARE
27 BIT TRANSFERS
ONLY ONE BIT ACTIVE IN
ONE OF THE QUAD XCEIVERS

SEVEN QUAD XCEIVERS
PER DEVICE (28 BIT PATH)

XMTR NEAR TERMINATOR
RCVR NEAR TERMINATOR



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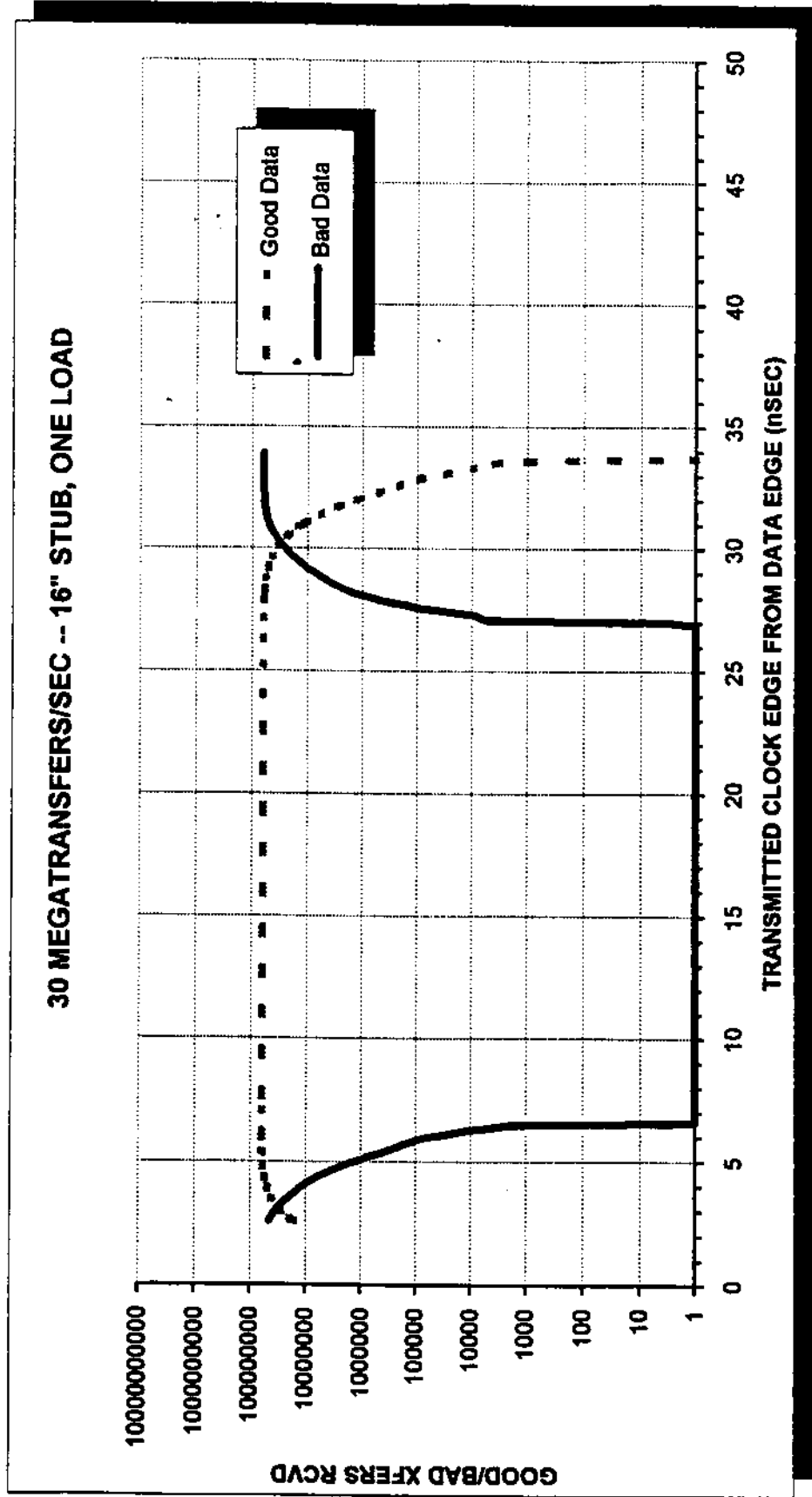
20 FOOT TOTAL LENGTH
STUB ANY IN CENTER

DIFFERENTIAL SCSI
ULTRA RATES

NO SPECIAL HARDWARE
27 BIT TR

SEVEN QUAD XCEIVERS
PER DEVICE (28 BIT PATH)

XMTR NEAR TERMINATOR
RCVR NEAR TERMINATOR



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20 FOOT TOTAL LENGTH
STUB (IF ANY) IN CENTER

DIFFERENTIAL SCSI
ULTRA 1.5 RATES

NO SPECIAL HARDWARE
27 BIT TRANSFER