

PERCOM DATA CO.
TECHNICAL MEMO

TM-CIS-30-01
CIS-30+ CASSETTE INTERFACE

JUNE 13, 1977

SUBJECT: INTERCONNECTING CABLE LENGTH

SEVERAL CIS-30 USERS HAVE REPORTED ERRATIC OPERATION OF THE CIS-30+ WHICH COULD NOT BE TRACED TO ANY COMPONENT DEFECTS. IN NEARLY ALL CASES THE PROBLEM DISAPPEARED WHEN THE INTERCONNECTING CABLE BETWEEN THE CIS-30 AND THE COMPUTER WAS SHORTENED TO LESS THAN THREE FEET. IF THE INTERCONNECTING CABLE IS TOO LONG, THE CLOCK LINE FROM THE COMPUTER (CO) DEVELOPS REFLECTIONS AND NOISE WHICH FALSELY TRIGGERS THE HIGH SPEED LSTTL DIVIDER IN THE CIS-30+.

FURTHERMORE, IT APPEARS THE CLOCK LINE RETURNED TO THE COMPUTER FROM THE CIS-30+ (CI) DOES NOT SWING HIGH ENOUGH IN SOME UNITS TO PROPERLY DRIVE THE CMOS DIVIDER ON THE MP-C CARD INSIDE THE SWTP COMPUTER.

THE FOLLOWING RECOMMENDATIONS AND MODIFICATIONS HAVE CORRECTED THE PROBLEM IN ALL REPORTED CASES.

1. KEEP THE CABLE CONNECTING THE CIS-30+ TO THE COMPUTER AS SHORT AS POSSIBLE - PREFERABLY 2 FEET LONG.
2. ~~REMOVE DIODE CR1 AND REPLACE WITH A 750pf OR 1000pf CAPACITOR. THIS CAPACITOR FILTERS OUT THE HIGH FREQUENCY NOISE ON THE CLOCK LINE FROM THE COMPUTER.~~
3. CONNECT A ^{1k} OHM 1/4 WATT RESISTOR FROM Z9-7 TO Z10-10 (+5vdc). MOUNT THE RESISTOR ON THE BOTTOM (SOLDER) SIDE OF THE CIRCUIT CARD BY HOOKING THE LEADS AROUND THE PROTRUDING IC LEADS. THIS RESISTOR 'PULLS UP' THE LOGIC ONE LEVEL OF THE CLOCK LINE TO THE COMPUTER TO PROVIDE PROPER DRIVE TO THE CMOS DIVIDER ON THE MP-C INTERFACE CARD.

IF THE CABLE BETWEEN THE CIS-30+ AND THE COMPUTER MUST BE LONGER THAN 3 FEET, IT MAY BE NECESSARY TO CONNECT A 750pf CAPACITOR FROM Z9-7 TO Z10-7 (GROUND) TO 'CALM' THE LINE REFLECTIONS.

PERCOM WILL PERFORM STEPS 2 AND 3 AT NO CHARGE ON CIS-30+ WHICH WERE PURCHASED ASSEMBLED. RETURN THE CIS-30 POSTAGE PAID AND PACKAGED SUFFICIENTLY TO AVOID SHIPPING DAMAGE. A 750pf CAPACITOR AND 4.7K OHM RESISTOR WILL BE SUPPLIED WITHOUT CHARGE UPON WRITTEN REQUEST. IF YOU HAVE NOT RETURNED THE WARRANTY CARD PLEASE INCLUDE PROOF OF PURCHASE.

PERCOM DATA CO.
TECHNICAL MEMO

TM-CIS-30-01
CIS-30+ CASSETTE INTERFACE

JUNE 13, 1977
REVISED DECEMBER 2, 1977

SUBJECT: INTERCONNECTING CABLE LENGTH AND CLOCK NOISE

SEVERAL CIS-30+ USERS HAVE REPORTED ERRATIC OPERATION OF THE CIS-30+ WHICH COULD NOT BE TRACED TO ANY COMPONENT DEFECTS. IN NEARLY ALL CASES THE PROBLEM DISAPPEARED WHEN THE INTERCONNECTING CABLE BETWEEN THE CIS-30+ AND THE COMPUTER WAS SHORTENED TO LESS THAN THREE FEET. IF THE INTERCONNECTING CABLE IS TOO LONG, THE CLOCK LINE FROM THE COMPUTER (CO) PICKS UP CROSSTALK AND NOISE WHICH FALSELY TRIGGERS THE HIGH SPEED LSTTL DIVIDER IN THE CIS-30+.

1. KEEP THE CABLE CONNECTING THE CIS-30+ TO THE COMPUTER AS SHORT AS POSSIBLE-PREFERABLY 2 FEET LONG.
2. REMOVE DIODE CR3 AND INSTALL A 1.0K OHM 1/4 WATT RESISTOR IN ITS PLACE.
3. ON CIS-30+ CIRCUIT CARDS BEFORE REVISION B CONNECT A 1.0K OHM 1/4 WATT RESISTOR FROM Z9-7 TO Z10-10(+5vdc). MOUNT THE RESISTOR ON THE BOTTOM (SOLDER) SIDE OF THE CIRCUIT CARD BY HOOKING THE LEADS AROUND THE PROTRUDING IC LEADS. THIS RESISTOR 'PULLS UP' THE LOGIC ONE LEVEL OF THE CLOCK LINE TO THE COMPUTER TO PROVIDE PROPER DRIVE TO THE CMOS DIVIDER ON THE MP-C INTERFACE CARD.

IF THE CABLE BETWEEN THE CIS-30+ AND THE COMPUTER MUST BE LONGER THAN 3 FEET, IT MAY BE NECESSARY TO INSTALL A 470PF CAPACITOR IN C15 TO 'CALM' THE LINE REFLECTIONS.

EARLY VERSIONS OF THE CIS-30+ CIRCUIT CARDS (PREVIOUS TO REVISION B) DO NOT HAVE PROVISION FOR C15. CONNECT THE 470PF CAPACITOR FROM Z9-7 TO Z10-7(GROUND).