

LIMIT & HOME SENSORS FOR AXES 9-16 WHEN BROUGHT OUT VIA A RIBBON CABLE TO A DB37 CONNECTOR. NOTE THAT ONLY GROUND AND HOME ARE AVAILABLE FOR AXIS 16

LIMIT & HOME SENSORS FOR AXES 1-8 WHEN BROUGHT OUT VIA A RIBBON CABLE TO A DB37 CONNECTOR. NOTE THAT ONLY GROUND AND HOME ARE AVAILABLE FOR AXIS 8

Title	
PRELIMINARY PINOUTS FOR KUPPER2001-1 LIMIT AND HOME CONNECTORS	
Size	Document Number
A	SDF98.234-89/9204R-BAH
Date:	Tuesday, January 08, 2002
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Rev	1

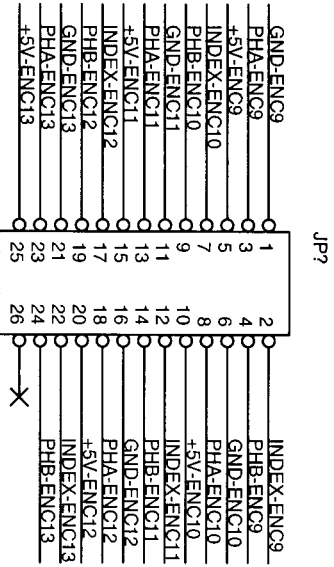
THE VERTICAL THREE PIN JUMPER JUST BELOW PIN ONE OF THE ENCODER 1-8 CONNECTOR SELECTS THE SOURCE OF THE POWER SUPPLIED TO THE "+5V-ENCX" PINS FOR BOTH ENCODER HEADERS.

IF THE CENTER AND BOTTOM PINS ARE JUMPED, THE "+5V-ENCX" PINS ARE CONNECTED TO THE COMPUTERS +5 VOLT POWER SUPPLY.

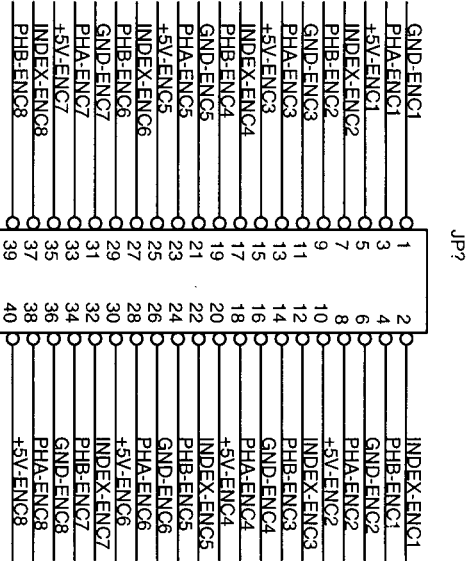
IF NO PINS ARE JUMPED, NO POWER IS SUPPLIED TO THE "+5V-ENCX" PINS.

AN EXTERNAL ENCODER POWER SUPPLY SHOULD BE USED IF MORE THAN 400 MILLIAMPERES TOTAL IS REQUIRED, OR TO MINIMIZE PROBLEMS WITH NOISE PIPED IN FROM EXTERNAL SOURCES. APPLY THE EXTERNAL GROUND TO THE TOP PIN, AND THE EXTERNAL +5 VOLTS TO THE MIDDLE PIN.

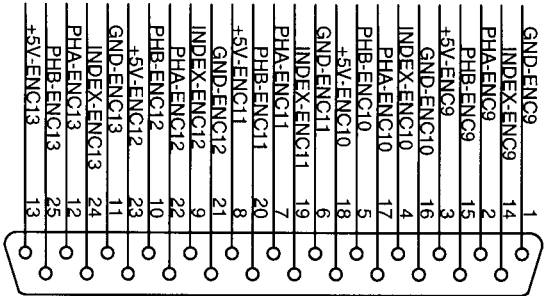
INDEX CONNECTIONS ARE OPTIONAL.



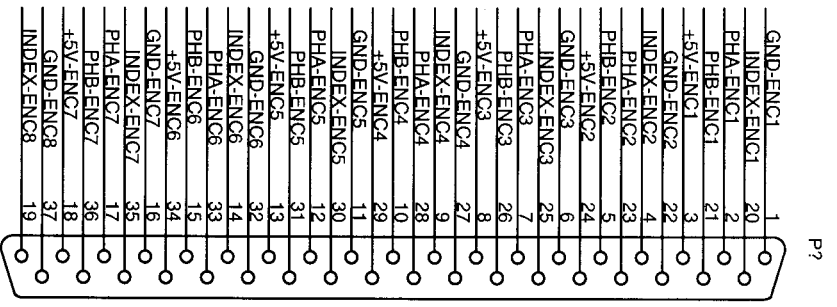
ENCODERS 9-13 HEADER ON CIRCUIT CARD



ENCODERS 1-8 HEADER ON CIRCUIT CARD



ENCODERS 9-13 WHEN BROUGHT OUT VIA A RIBBON CABLE TO A DB25 CONNECTOR.



ENCODERS 1-8 WHEN BROUGHT OUT VIA A RIBBON CABLE TO AN EXTERNAL DB37 CONNECTOR, PIN 1 TO TO PIN1. NOTE THAT ENCODER 8 IS NOT AVAILABLE WHEN USING A DB37 CONNECTOR

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"LTC TIMECODE IN +" AND "LTC TIMECODE IN -" ARE CAPACITOR ISOLATED FROM THE COMPUTER GROUND. FOR BEST NOISE IMMUNITY, DO NOT CONNECT EITHER OF THESE SIGNALS TO THE COMPUTER OR BOARD GROUNDS.

"LTC TIMECODE OUT" IS REFERENCED TO BOARD GROUND.

"VIDEO IN" IS REFERENCED TO BOARD GROUND. EITHER COMPOSITE VIDEO OR SYNC ONLY MAY BE USED, IN EITHER PAL OR NTSC FORMAT.

"VIDEO OUT" IS REFERENCED TO BOARD GROUND. IT IS THE "VIDEO IN" SIGNAL, WITH TEXT INFORMATION INSERTED. THIS SIGNAL IS ONLY PRESENT WHEN A "VIDEO IN" SIGNAL IS BEING RECEIVED.

"FLASH OPTO ISO +" AND "CAP OPTO ISO +" ARE THE COLLECTORS OF OPTO ISOLATED TRANSISTORS, CONNECTED THROUGH 160 OHM RESISTORS.

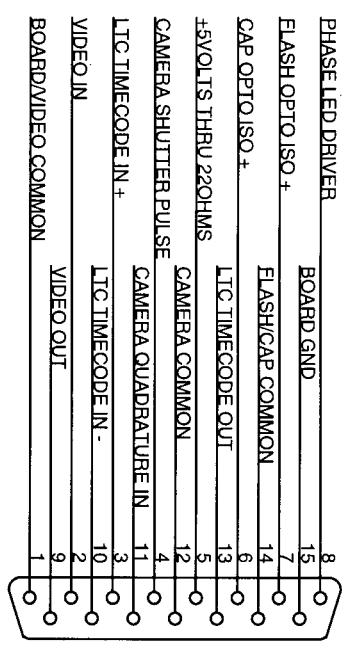
"FLASH/CAP COMMON" IS CONNECTED TO THE EMITTERS. DO NOT CONNECT EITHER OF THESE SIGNALS TO THE COMPUTER OR BOARD GROUNDS.

"CAMERA SHUTTER PULSE" MAY BE ANY ONCE-PER-FRAME, LOGIC SIGNAL, FROM APPROXIMATELY 5 TO 24 VOLTS.

"CAMERA QUADRATURE IN" IS EITHER THE A OR B PHASE FROM AN ENCODER ATTACHED TO THE CAMERA MOTOR. SIGNAL HIGH SHOULD BE BETWEEN 5 AND 24 VOLTS. THE COMMON IS SHARED BETWEEN "CAMERA SHUTTER PULSE" AND "CAMERA QUADRATURE IN." BOTH SIGNALS ARE OPTICALLY ISOLATED AND NO CONNECTION SHOULD BE MADE TO BOARD OR COMPUTER GROUND.

THE "CAMERA QUADRATURE IN" CONNECTION IS OPTIONAL WHEN SYNCING TO EXTERNAL CAMERAS. ITS USE ENHANCES THE ABILITY OF THE MOTION CONTROL TO TRACK RAPIDLY SLEWING CAMERAS.

"PHASE LED DRIVER" PROVIDES A CONVENIENT PHASING SIGNAL FOR CALIBRATING THE PHASE RELATIONSHIP BETWEEN AN EXTERNAL CAMERA AND THE MOTION CONTROL. CONNECT THIS SIGNAL DIRECTLY TO THE POSITIVE SIDE OF AN ULTRA-BRIGHT LED, AND THE NEGATIVE SIDE OF THE LED TO BOARD GROUND. DRIVE IS APPROXIMATELY 20 MILLIAMPERES AT 5 VOLTS. NO RESISTOR IS REQUIRED.



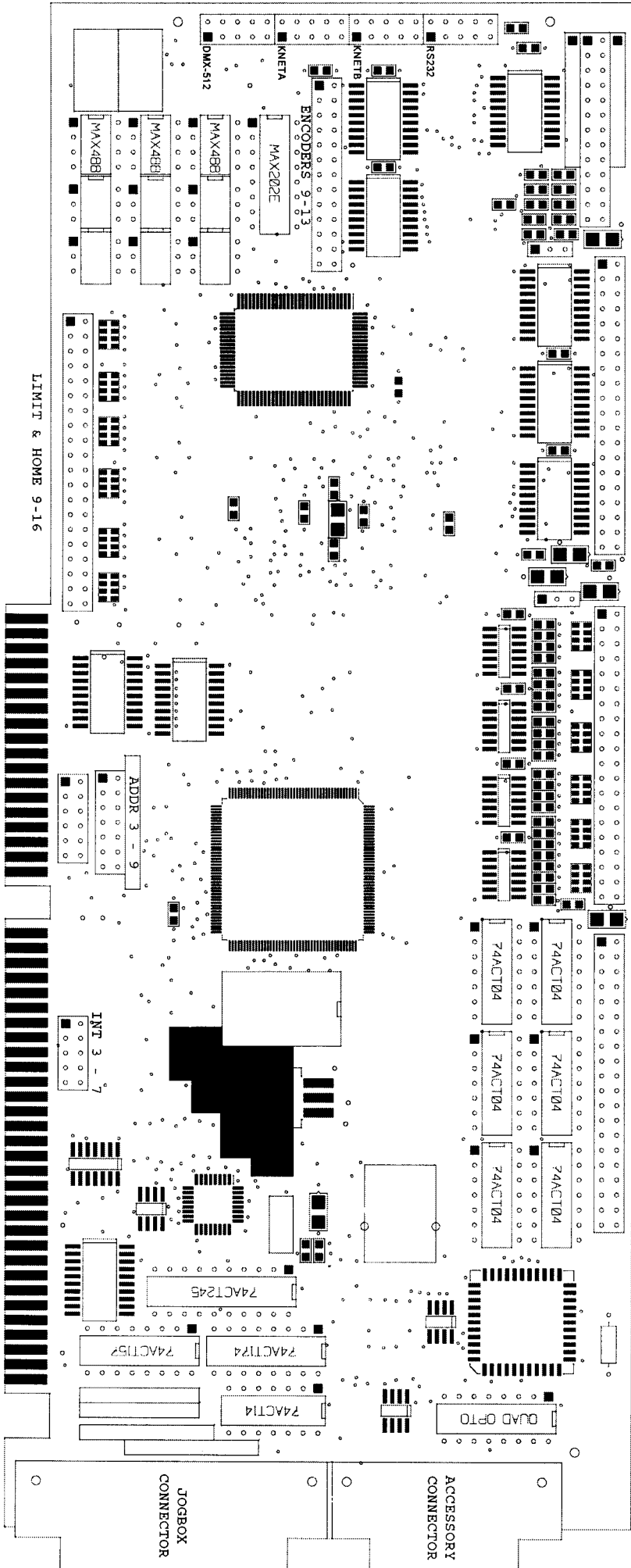
ACCESSORY CONNECTOR

THE FOLLOWING SIGNALS ARE NEW TO THE KUPER2001-I ACCESSORY CONNECTOR. ALTHOUGH THIS SLIGHTLY MODIFIED CONNECTOR SHOULD BE COMPATIBLE WITH MOST ACCESSORY CABLES AND DEVICES BUILT FOR THE OLDER RTMC48 CARD, PLEASE VERIFY THAT THERE ARE NO CONFLICTING SIGNALS PRESENT ON THESE PINS:

- PIN 8, PHASE LED DRIVER
- PIN 9, VIDEO OUT
- PIN 11, CAMERA QUADRATURE IN

**PIN 13 IS NOW LTC TIMECODE OUT. ON THE RTMC48 CARD, PIN 13 WAS THE "CAP-" OPTO ISOLATOR OUTPUT. IT IS IMPORTANT THAT ANY WIRE PREVIOUSLY CONNECTED TO PIN 13 BE MOVED TO SHARE PIN 14.**

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RTMC LOGIC

ENCODERS 1-8

LIMITS & HOME 1-8

STEPP & DIRECTION 1-16

LIMIT & HOME 9-16

JOGBOX  
CONNECTOR

ACCESSORY  
CONNECTOR