PO 2022911 N/0155-1 thru 4

INSTRUCTION MANUAL

PCD-85

CLOSED CAPTION DECODER

LINK ELECTRONICS, INC.

2137 Rust Avenue
Cape Girardeau, Missouri 63703
Phone: 573-334-4433
Fax: 573-334-9255

e-mail: sales @ linkelectronics.com
website: www.linkelectronics.com

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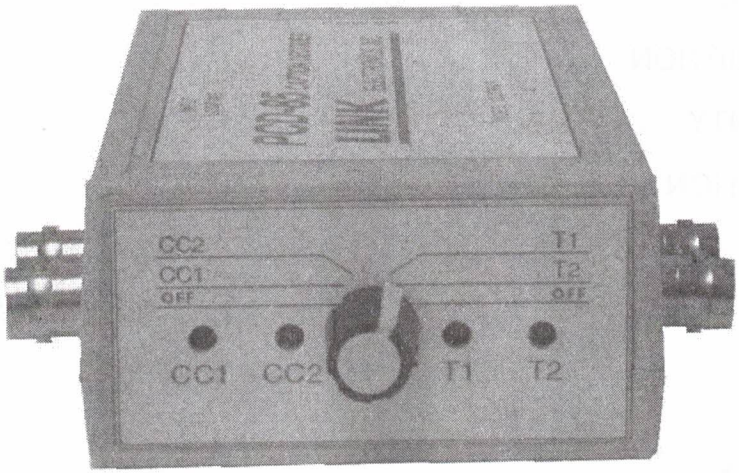
TWO VERSIONS OF THE PORTABLE CC DECODER

The PCD-85 is the standard closed caption decoder for field one line 21 decoding. The rotary switch on the end selects CC1, CC2, T1 and T2. There are two other positions to select captions off. The power remains on and the captions only are turned off. The input video is high impedance loop through. If the video input is not looped on to another product, the remaining BNC must be terminated.



MODEL PCD-85

The PCD-85/R is for GPI remote control. A mating connector is supplied with the PCD-85/R. Captions are turned on without a connection to the Remote ON/OFF connector. When the contact is closed, captions are turned OFF. The input video is high impedance loop through. If the video input is not looped on to another product, the remaining BNC must be terminated.

MODEL PCD-85/R

PCD-85 GENERAL DESCRIPTION

The PCD-85 is a high performance closed caption decoder for the NTSC system. It is capable of processing and displaying all standard line 21 closed captions and text on field one. The four channels of data are CC1, CC2, T1 and T2. The various operating modes are selectable from a four position rotary switch. Four LED's on the front panel indicate which channels have been selected.

This unit can easily be mounted alongside a video monitor that does not have a built-in closed caption decoder to accomplish excellent results.

A switch on the end panel selects the four modes of operation, CC1, CC2, T1, and T2. There are two positions for OFF on each side of selection. The PCD-85 is designed with the professional user in mind. The required input signal is baseband video with caption data on line 21 of field one. There are two 75 Ω BNC composite video outputs. The input is high impedance looping configured for single ended operation, AC coupled, to work in all environments. The PCD-85 operates on 12VAC, 12VDC, or wall transformer.

Three internal controls provide for adjustment of composite video level, background level and character intensity.

The PCD-85 is housed in a compact and rugged portable case for reliable performance. All Link products are backed by a ten-year warranty including parts and labor.

PCD-85 SPECIFICATIONS

INPUT:

Video Level:	1.0 Vp-p ±3dB
Impedance:	50KΩ, Bridging
Configuration:	Single Ended, AC Coupled

OUTPUTS:

Number:	Two
Level:	Unity
Impedance:	75 Ω ±1%, source terminated
Character Video:	90 IRE
Character Background:	10 IRE
Frequency Response:	±0.1dB to 8Hz
	-1dB at 11 MHz
	-3dB at 14 MHz
Differential Gain:	0.2%
Differential Phase:	0.5°
Output DC Offset:	AC Coupled
Hum & Noise:	>50dB
Propagation Delay:	27nS
Line Rate Tilt:	0.1%
Field Rate Tilt:	0.1%

INTERNAL CONTROLS:

Video Level:	1 Vp-p +/- 6db
Character Intensity:	90 IRE +/- 20 IRE
Background Level:	10 IRE +/- 50 IRE

ENVIRONMENTAL:

Temperature:	0° TO 50°C, Ambient
Humidity:	0% to 90% non-condensing

POWER:

12 Volts AC or DC

Range:	11 to 18 Volts
Power:	1.0 watt Typical

MECHANICAL:

High:	1.4"
Wide:	4.5"
Deep:	2.6"
Weight	5.5oz.

PCD-85 SETUP PROCEDURE

NOTE: YOUR UNIT HAS BEEN COMPLETELY CALIBRATED BEFORE IT WAS SHIPPED. USE THIS FACTORY SETUP PROCEDURE ONLY IF NEEDED!

1. MID-RANGE INTERNAL POTENTIOMETERS. CONNECT A 1Vpp VIDEO SIGNAL TO ONE BNC AND PLACE A 75Ω BNC TERMINATION PLUG ON THE OTHER **(PICTURE WILL DISTORT IF THIS IS NOT DONE!)**

2. CONNECT AN OUTPUT BNC TO THE TEST SYSTEM, TYPICALLY CONSISTING OF A VIDEO MONITOR, WAVEFORM MONITOR, VECTOR-SCOPE AND OSCILLOSCOPE.

3. CONNECT AN EXTERNAL 12VDC POWER SOURCE TO THE POWER INPUT CONNECTOR. (INPUT VOLTAGE RANGE: 11.0VDC TO 18.0VDC) A 12V AC SOURCE MAY BE USED AS WELL. WHEN POWER IS APPLIED, VIDEO SHOULD APPEAR ON THE MONITORING EQUIPMENT. IF NOT, MEASURE THE VOLTAGE ACROSS R18. (SHOULD NOT EXCEED 125mV.)

4. ADJUST R15 FOR 1Vpp OUTPUT. CHECK BOTH OUTPUT BNCs FOR 1Vpp VIDEO.

5. APPLY A VIDEO SIGNAL THAT IS ENCODED WITH CLOSED CAPTION INFORMATION. SELECT CC1 USING FRONT PANEL SWITCH SW1. WHILE CAPTIONS ARE PRESENT, ADJUST R32 (WHITE LEVEL) AND R34 (BLACK LEVEL) TO SET THE CAPTION CHARACTER LEVELS AT 90IRE AND 10IRE, RESPECTIVELY.

6. CHECK ALL CAPTION DATA CHANNELS (CC1, CC2, T1, AND T2). FOR EACH SELECTION, THE CORRESPONDING LED SHOULD BE ILLUMINATED. NOTE: THE VIDEO SOURCE MUST BE ENCODED IN ALL CHANNELS.

THIS CONCLUDED THE SET-UP OF THE PCD-85

Video is applied at looping BNC connectors J1 and J2. The emitter-follower buffer Q1 drives U5 (Closed Caption Decoder IC), U1 (Sync Stripper), and U3A (Op-Amp Gain Cell). The heart of the system is U5, which requires composite video and horizontal sync inputs and produces caption luminance and key signal outputs. Horizontal sync is provided by U2 which essentially converts composite sync from U1 to horizontal sync. Caption decoding mode (CC1, CC2, T1, or T2) is selected by the front panel rotary switch SW1. A three-to-eight line decoder, U6, provides the interface to the mode-indicator LEDs (DS1, DS2, DS3, and DS4). The caption luminance from U5 is AC coupled to the Caption Keyer, U4, via the White Level adjustment, R32. Caption Black Level is set by R34 at the Caption Keyer input.

The video path through U3A takes advantage of the input clamp of U1. Resistors R21 and R22 shift the DC level at the output of U3A to the optimum level to interface with U4, the Caption Keyer.

The key signal from U5 uses a transistor inverter, Q2, as a logic level interface to the Caption Keyer. Output of the keyer appears at U4, pin 7, as composite video plus decoded (open) captions. This combined signal is applied to the output amplifier, U3B, via the output level trim, R15. The output signal is AC coupled by C7 and C8 to the output BNCs, J3 and J4.

PRODUCT WARRANTY

Link Electronics Inc. warrants its product to be free from defective material and workmanship for a period of TEN-YEARS from date of shipment, including parts and labor. Labor performed at the Link Electronics factory in Cape Girardeau, Missouri.

This warranty does not extend to products which have been subjected to misuse, neglect, accident, incorrect wiring, alteration, improper installation, or used in violation of instructions from Link Electronics. Link Electronics makes no other warranties, express or implied, of merchantability, fitness for a particular purpose, or otherwise. Link Electronics liability for any cause, including breach of contract, breach of warranty, or negligence, with respect to products sold by it, is limited to repair or replacement by Link Electronics, at its sole discretion.

The product must be shipped to Link Electronics, freight costs prepaid. Repaired or replaced equipment shall be shipped customer surface freight only, to be paid by Link Electronics. This warranty is in lieu of all other warranties, expressed or implied, with respect to the condition or performance of any Link Electronics products, its merchantability, or fitness for a particular purpose.

The product warranty will be null and void, if a specific component part should become obsolete by the manufacturer. If the component part becomes obsolete and not available through distribution, Link Electronics, Inc will not be responsible for repair or replacement of a Link Electronics manufactured product.

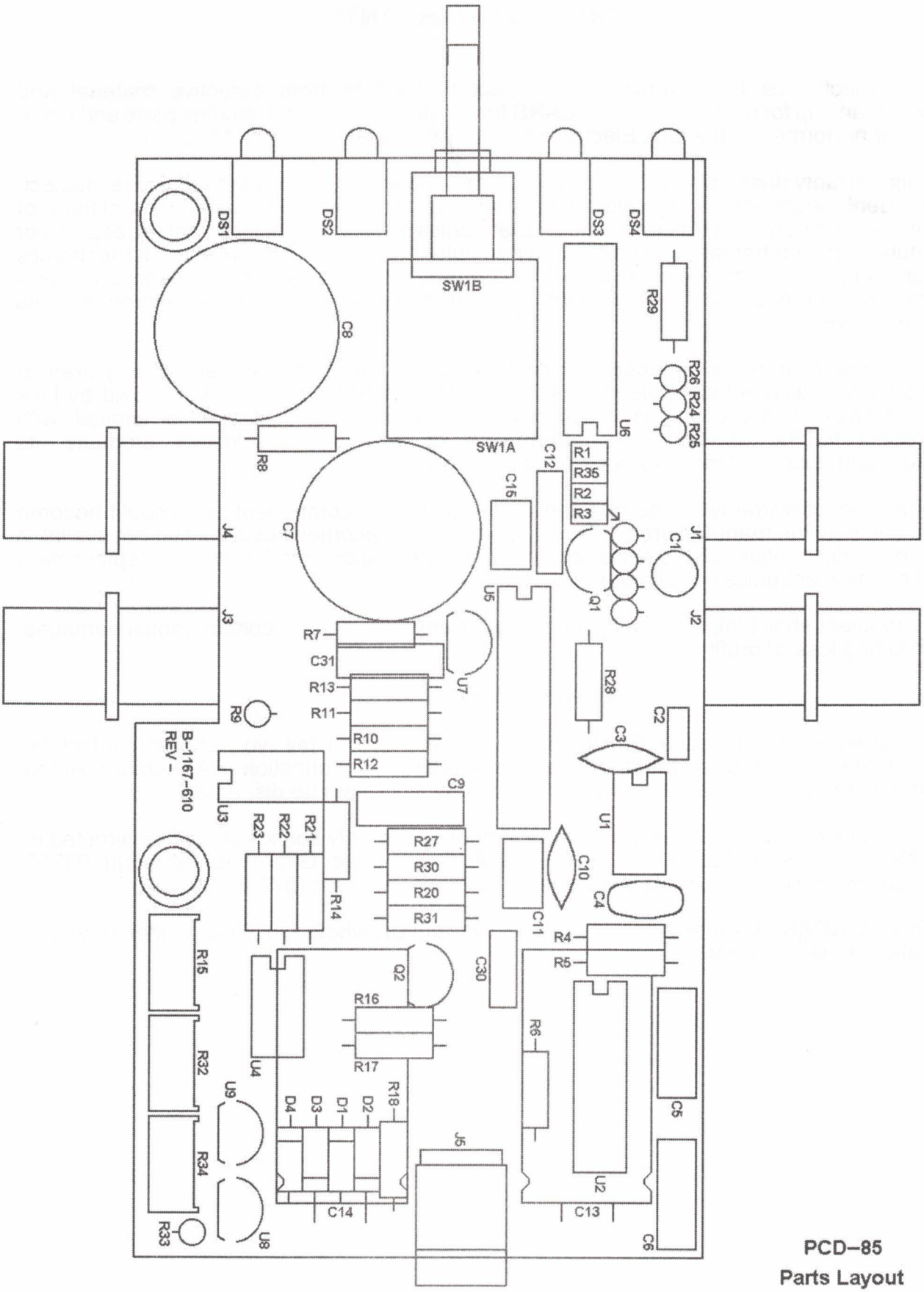
In no event shall Link Electronics be liable for any incidental or consequential damages, including loss of profits.

SERVICE INFORMATION

In the event that the Link Electronics equipment should fail, you should contact the Customer Service Department and request a Return Authorization (RA) number. At that time, the details of how the repair should be processed will be discussed.

All inquiries relating to either parts replacement or warranty service should be directed to: LINK ELECTRONICS, INC., 2137 Rust Avenue, Cape Girardeau, Missouri 63703. Attention: Service Department. Phone: (573)334-4433. Fax: (573)334-9255.

This WARRANTY supersedes all previous warranties, whether implied, written or verbal, Date, January 1, 2004



PCD–85
Parts Layout