APPENDICES A-E

APPENDIX A

COMPUTER COMMUNICATION

Computer generated control signals, transmitted by an IR Remote keypad (remote control infrared transmitter), can be used to remotely control the projector. The control signals must meet the following specifications:

- No-signal voltage level = 5 to 12V DC.
- Signal voltage level = 0V.
- A signal must start with two "Start Instruction Codes" (hex 1F). The start instruction codes must be followed by one or more "Key Instruction Codes", e.g., CONT (hex 19). See Table A-1.
- Control signals must be terminated with two "End Instruction Codes" (hex 1F). Reference Figure A-1.
- Projectors can be programmed via the built-in or a wired keypad to respond to Protocol 1 or Protocol 2. See Table A-2.
- A control signal must be transmitted at least 4 times.
- The control line must be connected to the REMOTE SENSOR jack on the projector.

All signals are encoded by a bi-phase encoder. See Figure A-2.

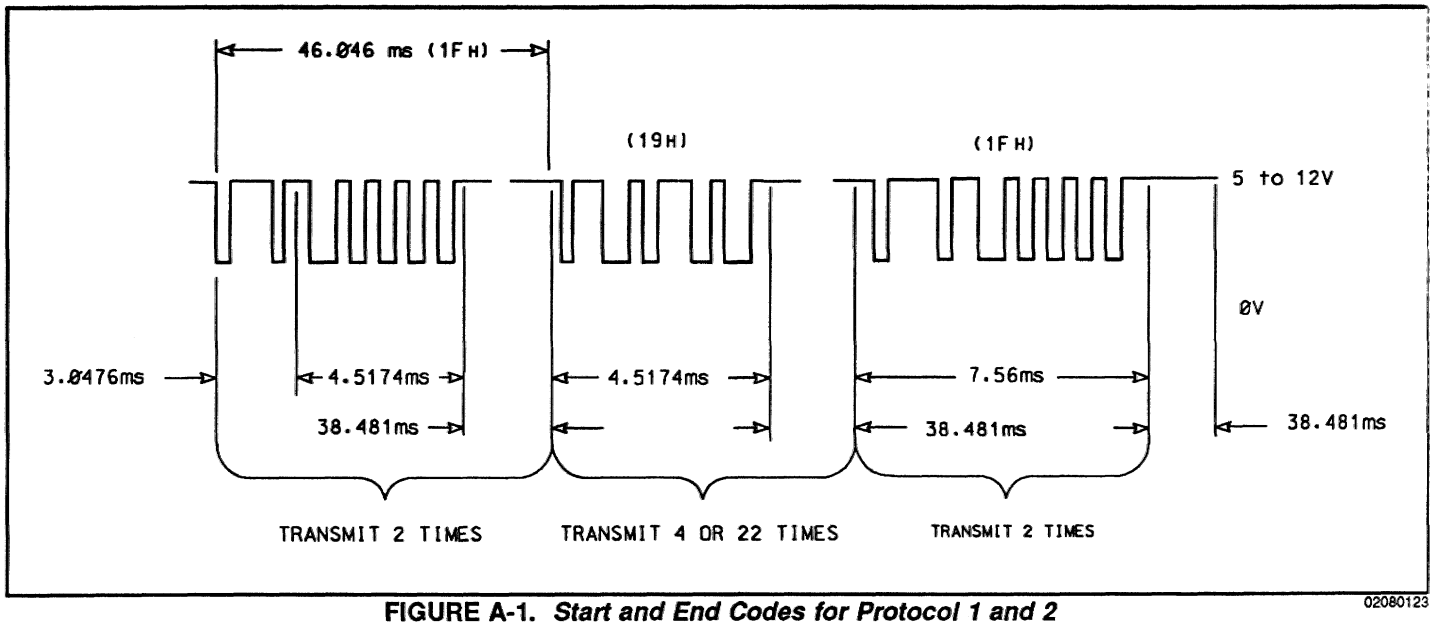

FIGURE A-1. ***Start and End Codes for Protocol 1 and 2***

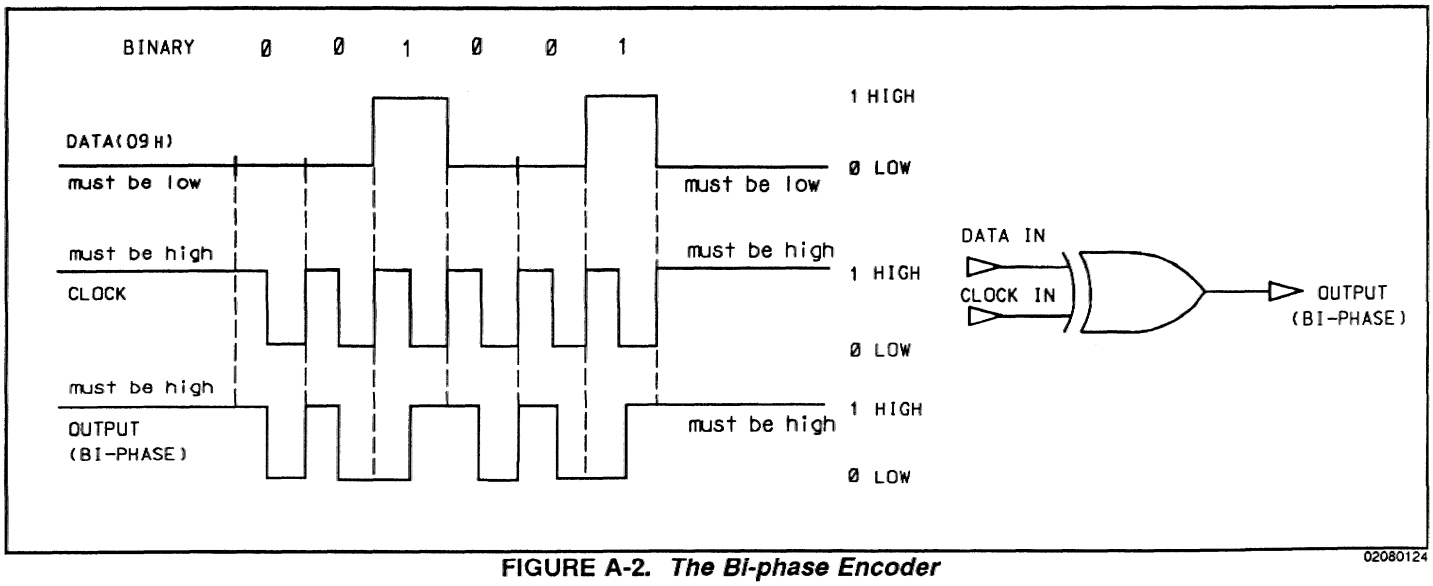

FIGURE A-2. ***The Bi-phase Encoder***

TABLE A-1. *IR (Infrared) Key Instruction Codes*

Keypad Function	Hex Code	Binary Code	Minimum Number of Times Transmitted
#	00	000000	4 times
EXIT	02	000010	4 times
HELP	03	000011	4 times
SIZE	04	000100	4 times
4	05	000101	4 times
POWER	07	000111	22 times
FAST/SLOW SYNC	08	001000	4 times
SOURCE	09	001001	4 times
KEY	0C	001100	4 times
7	0D	001101	4 times
TINT	10	010000	4 times
2	13	010011	4 times
H HOLD	14	010100	4 times
6	15	010101	4 times
VOL	17	010111	4 times
*	18	011000	4 times
CONT	19	011001	4 times
U	1A	011010	2 times
FOCUS	1C	011100	4 times
9	1D	011101	4 times
D	1E	011110	2 times
START/STOP	1F	011111	4 times
DETAIL	20	100000	4 times
3	23	100011	4 times
V HOLD	24	100100	4 times
5	25	100101	4 times
R	26	100110	2 times
MUTE	27	100111	22 times
PIN	28	101000	4 times
BRITE	29	101001	4 times
VBLANK	2C	101100	4 times
8	2D	101101	4 times
0	30	110000	4 times
CONVERGE	32	110010	4 times
1	33	110011	4 times
BOW	34	110100	4 times
STANDBY	35	110101	22 times
L	36	110110	2 times
RESET	37	110111	22 times
PROJ	38	111000	4 times
COLOR	39	111001	4 times
MOVE	3C	111100	4 times
RECALL	3D	111101	4 times

TABLE A-2. *Wired Keypad Instruction Codes*

Keypad Function	Hex Code	Binary Code	Minimum Number of Times Transmitted
#	00	000000	4 times
EXIT	02	000010	4 times
HELP	03	000011	4 times
SIZE	04	000100	4 times
8	05	000101	4 times
POWER	07	000111	22 times
FAST/SLOW SYNC	08	001000	4 times
SOURCE	09	001001	4 times
KEY	0C	001100	4 times
9	0D	001101	4 times
TINT	10	010000	4 times
4	13	010011	4 times
H HOLD	14	010100	4 times
2	15	010101	4 times
VOL	17	010111	4 times
*	18	011000	4 times
CONT	19	011001	4 times
L	1A	011010	2 times
FOCUS	1C	011100	4 times
3	1D	011101	4 times
R	1E	011110	2 times
DETAIL	20	100000	4 times
start	21	100001	4 times
stop	22	100010	4 times
1	23	100011	4 times
V HOLD	24	100100	4 times
5	25	100101	4 times
U	26	100110	2 times
MUTE	27	100111	22 times
PIN	28	101000	4 times
BRITE	29	101001	4 times
mute ON	2A	101010	22 times
mute OFF	2B	101011	22 times
VBLANK	2C	101100	4 times
6	2D	101101	4 times
standby ON	2E	101110	22 times
standby OFF	2F	101111	22 times
0	30	110000	4 times
CONVERGE	32	110010	4 times
7	33	110011	4 times
BOW	34	110100	4 times
STANDBY	35	110101	22 times
D	36	110110	2 times
RESET	37	110111	22 times
PROJ	38	111000	4 times
COLOR	39	111001	4 times
MOVE	3C	111100	4 times
RECALL	3D	111101	4 times

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APPENDIX B

REVERSE SCAN INSTALLATION

This appendix provides instructions for installing the projector from normal to reverse scan installation.

WARNING

The reverse scan procedure MUST be performed by a qualified service technician.

Tools & Equipment Required:
- Large slot screwdriver

STEP 1 - REMOVE POWER FROM THE PROJECTOR

STEP 2 - DISCONNECT YOKE PLUGS

a) Remove Top Cover of Projector. Remove the top cover to access the deflection yoke plugs. Refer to Section 5.

b) Locate the Yoke Plugs. The horizontal and vertical yoke plugs are located at the rear of the projector, slightly below the CRT necks. See Figure B-1 below.

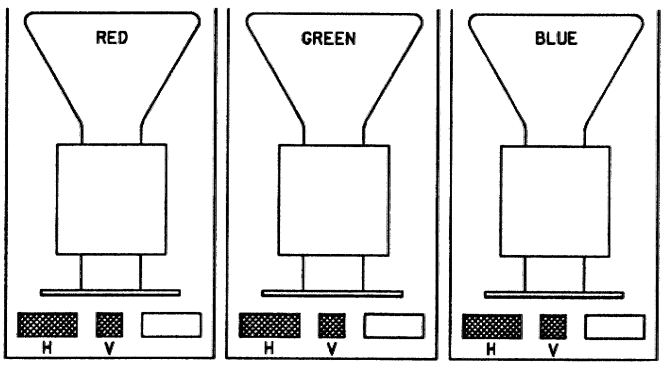

FIGURE B-1. ***Yoke Plug Locations***

c) Plug Removal. Remove the horizontal (P6) and vertical (P8) yoke plugs from each deflection board (3).

STEP 3 - CONNECT YOKE PLUGS ACCORDING TO INSTALLATION TYPE

The horizontal and vertical yoke plugs are connected in a NORMAL or REVERSED position, depending on the installation type. See Table B-1.

Unless customer-specified, the projector is shipped from the factory with the yoke plugs connected for a front screen - floor mount installation. To alter the yoke plug connections for a different installation type, refer to Table B-1 and Figures B-2 to B-4.

TABLE B-1. ***Yoke Plug Positions***

INSTALLATION	HORIZONTAL	VERTICAL
Front Screen, Floor Mount	Normal	Normal
Front Screen, Ceiling Mount	Reversed	Reversed
Rear Screen, Floor Mount	Reversed	Normal
Rear Screen, Ceiling Mount	Normal	Reversed

NOTE: When a yoke plug is in the REVERSE position, the label "REVERSE SCAN", is visible on the plug (viewed from the rear of the projector). In the NORMAL position, no marking is visible.

Front Screen Projection - Ceiling Mount

Plug the horizontal plug, P6, in the REVERSE position. Plug the vertical plug, P8, in the REVERSE position. Plug orientation must be as shown below.

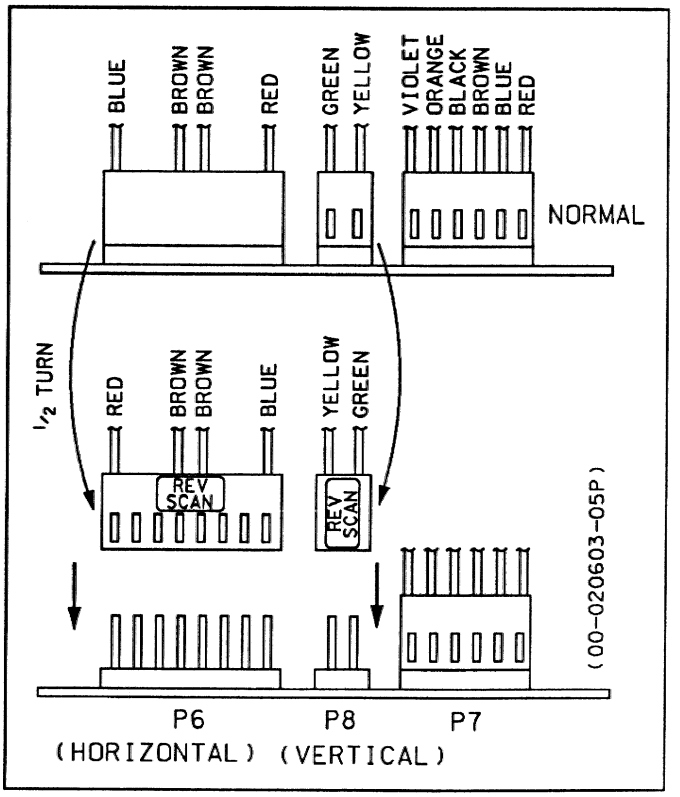

FIGURE B-2. ***Front Screen - Ceiling Mount***

Rear Screen Projection - Floor Mount

Plug the horizontal plug, P6, in the REVERSE position. Plug the vertical plug, P8, in the NORMAL position. Plug orientation must be as shown below.

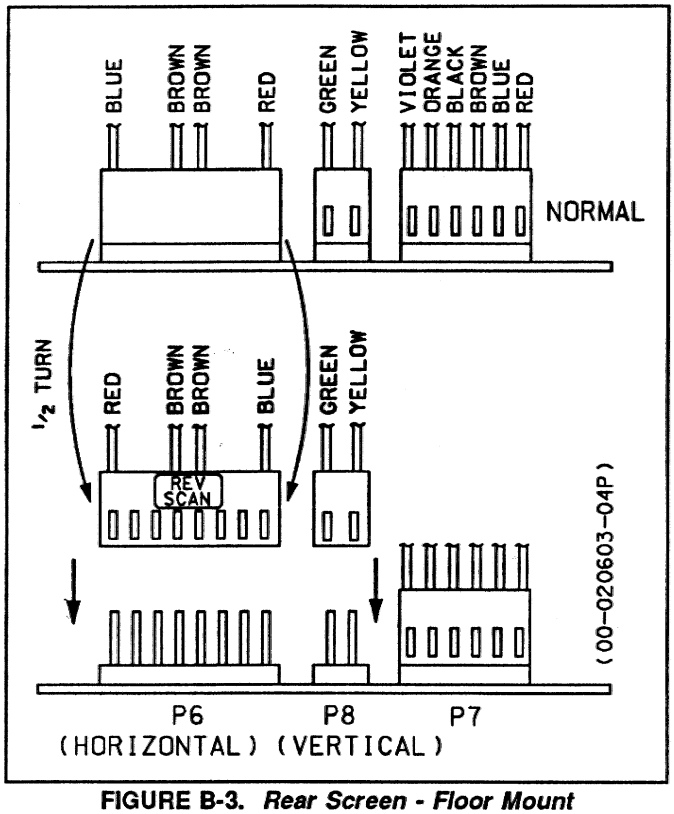

FIGURE B-3. ***Rear Screen - Floor Mount***

NOTE: If a single mirror is used to fold the optical path in a rear screen - floor mount installation, the factory shipped settings apply. For other (special) installation types, consult your dealer or Vidikron for assistance.

STEP 4 - INSTALL PROJECTOR COVER

Place the projector top cover back into position. The cover alignment tabs assure a secure fit. .

Using a large slot type screw driver, turn the head of the two slot head fasteners approximately 3 turns clockwise to lock the top cover in place.

Rear Screen Projection - Ceiling Mount

Plug the horizontal plug, P6, in the NORMAL position. Plug the vertical plug, P8, in the REVERSE position. Plug orientation must be as shown below.

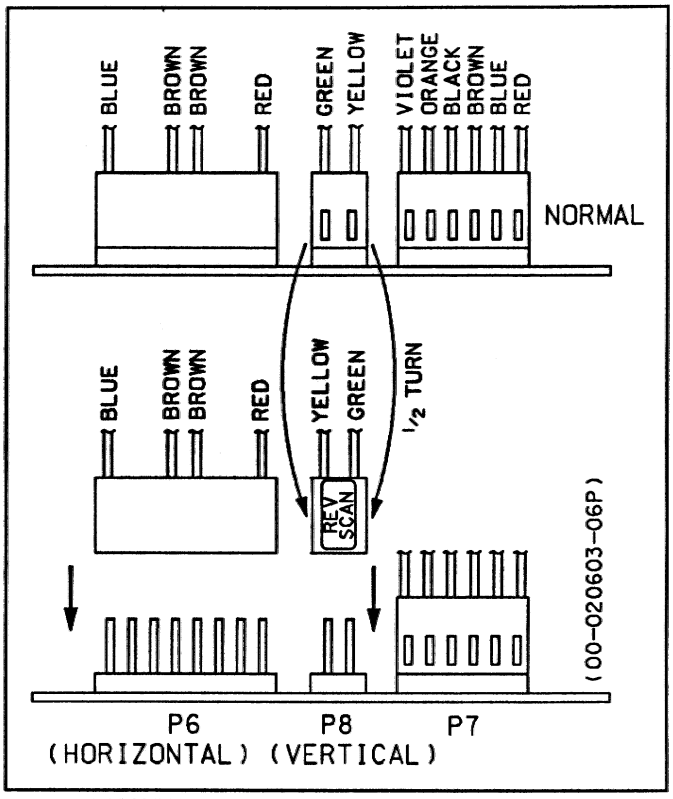

FIGURE B-4. ***Rear Screen - Ceiling Mount***

STEP 5 - APPLY POWER TO THE PROJECTOR

Plug in the projector.

STEP 6 - SET SOFTWARE SETTING

With the projector ON, press HELP 5 2 to change the software setting to the current mounting configuration.

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APPENDIX C

HARNESS/WIRING DIAGRAM

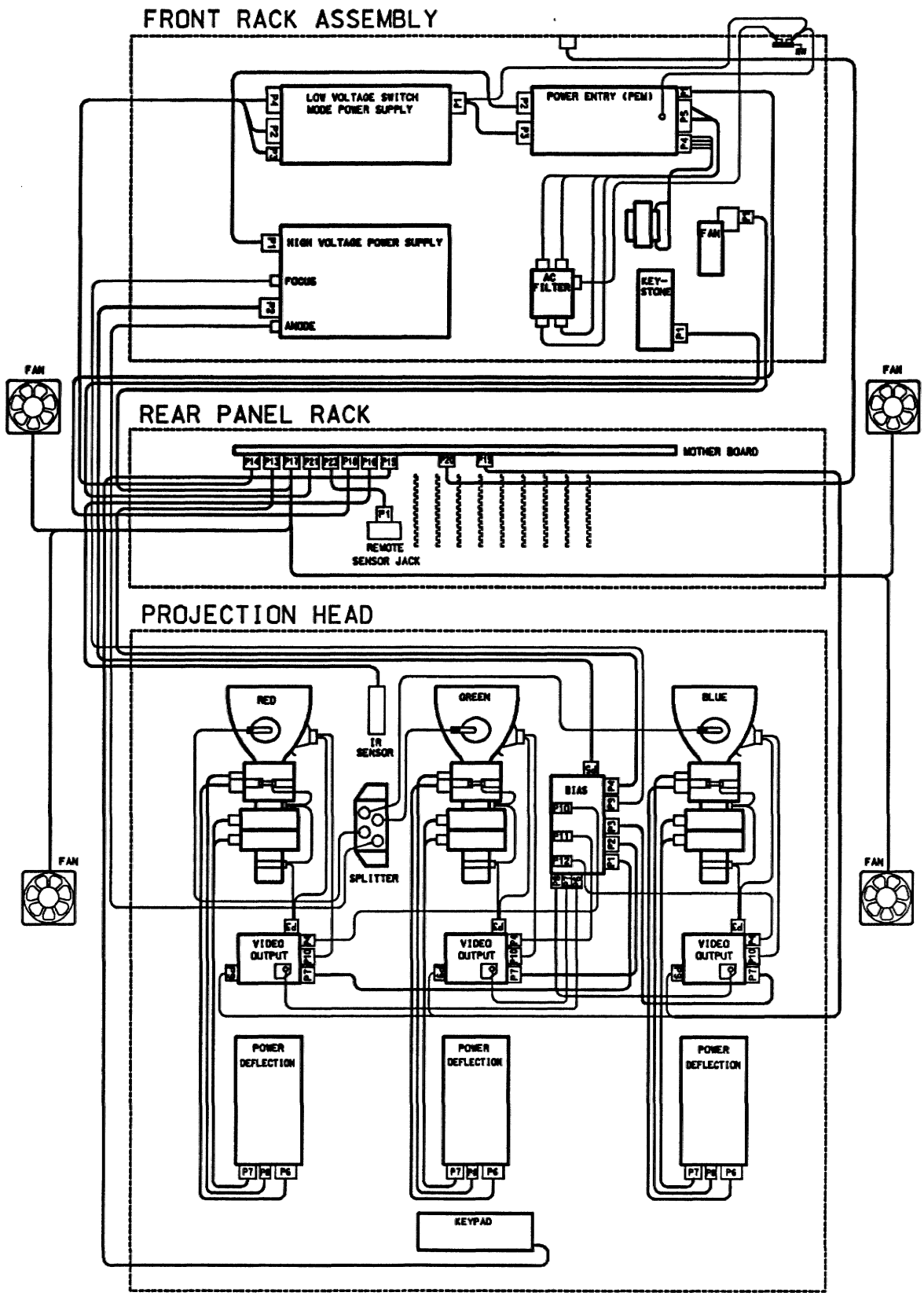

FIGURE C-1. *Harness/Wiring Diagram*

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APPENDIX D

TERMS AND ABBREVIATIONS

AUTO	Automatic Convergence Option
ALE	address line enable
ASI	Automatic Source Interpolation
ASR	Automatic Source Recall
A MUTEa	audio mute
B GAIN	blue gain
BH CENT	blue horizontal centering
BH CONV	blue horizontal convergence
BLK LEVEL	black level
BUCK LOW	a DC voltage proportional to BUCK OUT
BUCK OUT	a DC voltage output from the horizontal regulator
BV CENT	blue vertical centering
BV CONV	blue vertical convergence
CAB LIMIT	cabinet (temperature) limit switch
COMM A	communication line A
COMM B	communication line B
DAC	digital to analog converter
DACOUT1	digital to analog converter output #1
DACOUT2	digital to analog converter output #2
DYNFOCUS	dynamic focus
EHT	extra high tension (voltage)
ELEC FOCUS	electronic focus
FBK V SIZE	vertical size feedback
G GAIN	green gain
GH CENT	green horizontal centering
GH CONV	green horizontal convergence
GND	earth ground
GV CENT	green vertical centering
GV CONV	green vertical convergence
H A/M SW	horizontal auto/manual switch
H DELAY SW	horizontal delay switch
HDRIVE	horizontal drive pulse
HFB	horizontal flyback
H HOLD	horizontal hold
H PHASE	horizontal phase
HPLLCLK	horizontal phase locked loop clock
HRESET	horizontal reset
H SIZE	horizontal size
IR	infrared (or infrared sensor)
KEY WFM	keystone waveform
PEM	power entry module
PIN BOT	pincushion bottom control
PIN SIDE	pincushion side control
PIN TOP	pincushion top control
PIN WFM	pincushion waveform
PSEN	program store enable
PWR RELAY	power relay
$\overline{RD}$	read
RD	read (active low)
REVERSE SCAN	use of the projector in ceiling mounted or rear screen applications
REV SCAN	reverse scan
R GAIN	red gain
RGB	red, green, blue
RH CENT	red horizontal centering
RH CONV	red horizontal convergence
RV CENT	red vertical centering
RH CONV	red horizontal convergence
RXD	receive date
SDA	serial data address
SEL	select
SEL	select (active low)
SMPS	switch mode power supply
STBY	standby
TTL	transistor-transistor logic
TXD	transmit data
V A/M SW	vertical auto/manual switch
VAR DC DEFL	variable DC deflection
VCR SW	video cassette recorder switch
V DELAY SW	vertical delay switch
VERT I	vertical I, a positive going vertical sync pulse
VFB	vertical flyback
V HOLD	vertical hold
V PHASE	vertical phase
VPLLCLK	vertical phase locked loop clock
VRESET	vertical reset
V SIZE	vertical size
WFM	waveform
$\overline{WR}$	write
WR	write (active low)

NOTE: Also refer to the projector User's manual.

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APPENDIX E

SERVICE REPLACEMENT MODULES AND ASSEMBLIES

Refer to the following list for the service replacement modules and assemblies available for the ECP 3200 series projection system.

ITEM	PART #
Adjusting Tool (for tool kit)	PK-39-001453-01P
Allen Wrench - 3/16" (for tool kit)	PK-33-000723-04P
Ball Top Driver (for tool kit)	PK-33-000812-02P
Bias Module	A-03-270008-01P
Bulkhead Assembly - BLUE	B-03-230001-03P
	B-03-230001-06P
Bulkhead Assembly - RED	B-03-230001-01P
	B-03-230001-04P
Bulkhead Assembly - GREEN	B-03-230001-02P
	B-03-230001-05P
Card Extractor (for tool kit)	PK-35-005015-01P
Case - Upper (complete)	
Red	B-RTOP40
White	B-WTOP40
Black	B-BTOP40
Case - Lower (complete)	
Red	B-RBOT40HD
White	B-WBOT40HD
Black	B-BBOT40HD
Ceiling Mount Fixture	
Red	B-RBKT40HD
White	B-WBKT40HD
Black	B-BBKT40HD
Convergence Module	A-03-270007-02P
Deflection Yoke/Converge/DC Centering Assembly	L-21-000160-05P
Extender Card	A-03-230330-01P
Fan Filter Assembly	FAN-03-201044-02P
Horizontal Deflection Module	A-03-270004-01P
Infrared Remote Sensor	A-38-800617-00
Input Module - RGB Sync 2 Input	A-38-800913-91
Input Module - Multi-Standard Decoder	A-38-800920-01
or	A-38-800930-01
Keypad - Fixed	A-03-201046-02P
Keypad - IR Hand Held Remote	A-03-000213-01P
Keypad - Protocol 2	A-38-800625-01
Keypad - Wired Remote	A-38-800624-01
Keypad - Executive Remote	38-800630-01
Keystone Module	A-03-270013-01P

ITEM	PART #
Lens Assembly	LEN-03-000215-01P
Line Cord	PWR-34-000604-26P
Mother Board	A-03-230299-01P
	A-03-260101-02P
Panel - right side (from back)	B-53-100996-03P
	B-53-100996-05P
Panel - left side (from back)	B-53-100996-04P
	B-53-100996-06P
Pouch (tool kit)	PK-39-001524-01P
Power Supply - High Voltage (HV)	A-03-000222-01P
	A-03-000226-01P
Power Supply - Low Voltage Switch Mode (LVSM)	A-03-230328-01P
	A-03-000225-01P
Power Deflection Module	A-03-270002-01P
Power Entry Module	A-03-260102-01P
Remote Sensor Assembly	A-03-201043-01P
Remote Control Module	A-03-270010-02P
Remote Jack PCB	A-02-260104-01P
Vertical Deflection and Horizontal Regulation Module	A-03-270009-01P
Video Output Module	A-03-270012-01P
Video Control Module	A-03-270011-01P
Waveform Module	A-03-270001-01P
Wrench - 7/16" (for tool kit)	PK-33-000919-01P
Yoke Clamp	HWR-33-000901-02P
AUTO-ALIGN Control Module	A-03-270006-01P
AUTO-ALIGN Locator Kit	A-03-230211-01P

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