1260 VXI
SWITCHING CARD

1260-64
18GHz MICROWAVE
SWITCH MODULE

PUBLICATION NO. 980673-010

RACAL INSTRUMENTS

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All Racal Instruments, Inc. products are designed and manufactured to exacting standards and in full conformance to Racal's ISO 9001 procedures.

For the specific terms of your standard warranty, or optional extended warranty or service agreement, contact your Racal customer service advisor. Please have the following information available to facilitate service.

1. Product serial number
2. Product model number
3. Your company and contact information

You may contact your customer service advisor by:

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RETURN of PRODUCT

Authorization is required from Racal Instruments before you send us your product for service or calibration. Call your nearest Racal Instruments support facility. A list is located on the last page of this manual. If you are unsure where to call, contact Racal Instruments, Inc. Customer Support Department in Irvine, California, USA at 1-800-722-3262 or 1-949-859-8999 or via fax at 1-949-859-7139. We can be reached at:

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PROPRIETARY NOTICE

FOR YOUR SAFETY

Before undertaking any troubleshooting, maintenance or exploratory procedure, read carefully the **WARNINGS** and **CAUTION** notices.

This equipment contains voltage hazardous to human life and safety, and is capable of inflicting personal injury.

If this instrument is to be powered from the AC line (mains) through an autotransformer, ensure the common connector is connected to the neutral (earth pole) of the power supply.

Before operating the unit, ensure the conductor (green wire) is connected to the ground (earth) conductor of the power outlet. Do not use a two-conductor extension cord or a three-prong/two-prong adapter. This will defeat the protective feature of the third conductor in the power cord.

Maintenance and calibration procedures sometimes call for operation of the unit with power applied and protective covers removed. Read the procedures and heed warnings to avoid “live” circuit points.

Before operating this instrument:

1. Ensure the instrument is configured to operate on the voltage at the power source. See Installation Section.

2. Ensure the proper fuse is in place for the power source to operate.

3. Ensure all other devices connected to or in proximity to this instrument are properly grounded or connected to the protective third-wire earth ground.

If the instrument:

- fails to operate satisfactorily
- shows visible damage
- has been stored under unfavorable conditions
- has sustained stress

Do not operate until performance is checked by qualified personnel.

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NOTE FOR SYSTEMS WITH 1260-OPT OIT

The "Module-Specific Syntax" section of this manual shows the command syntax for the 1260-01S Smart Card. If you are using the newer 1260-01T Smart Card, the commands will NOT work as shown.

Consult the 1260-01T Manual for a description of the commands which may be used with the 1260-01T Smart Card.

The channel numbers described in this manual are valid for the 1260-01T. The channel numbers continue to be used for the 1260-01T.

The syntax of the commands which use channel numbers has changed for those cards controlled by the 1260-01T.

The new syntax used to close a channel is:

CLOSE (@ <module address> (<channel>))

For example, with for a relay module whose <module address> is set to 7, closing <channel> 0 is performed with the command:

CLOSE (@ 7 (0))

Using the older 1260-01S, the command would be (as shown in this manual):

CLOSE 7.0

Many other command syntax differences exist. Please consult chapter 2 of the 1260-01T manual for a description of the commands which are available for the 1260-01T.

Control Information for the 1260-64 (A, B, and C)

The following information describes the control-register-to-relay-channel mapping for a 1260-64 Relay Module. This information may be used to control a 1260-64 when using a 1260-01T in the register-based mode of operation.

There are two types of relays which populate the 1260-64 module. The standard relays (channels 0 through 115), are each controlled by a single bit within an 8-bit Control Register. Each of these relays is controlled by setting or clearing a single bit within a Control Register. Control Registers on the module operate 8 channels simultaneously. There are eight control bits per Control Register. Setting the bit to a 1 closes the relay; setting the bit to a 0 opens the relay. These channels may be operated independently, without regard to the state of the other relays on this module.

The RF relays are single-pole, 6 throw type (1P6T) type relays. These are channels 200 through 505. Channels 200 through 205 represent the first 1P6T MUX. Channels 500 through 505 represent the last 1P6T MUX.

Care must be taken by the programmer to ensure that at most one of the 6 throws in a MUX is connected at any one time. Failure to observe this guideline could result in damage to the 1260-64, the external circuitry and instrumentation, or both.

The 1260-64A contains 4 1P6T relays. These are denoted by channels 200 through 205, 300 through 305, 400 through 405, and 500 through 505.

The 1260-64B contains 2 1P6T relays. These are denoted by channels 200 through 205 and 300 through 305.

The 1260-66C contains a single 1P6T relays. This is denoted by channels 200 through 205.

The table below shows the mapping from logical channels to control bits. The logical channels are used when operating the relay module in message-based mode. The control bits within the Control Registers are used to operate the module in register-based mode.

Each Control Register is located 2 addresses from the previous Control Register. That is, each Control Register is located at an odd address. This is shown in Table 2-2 of the 1260-01T manual. Control Register is located at the "Base A24 Address" for the module. Consult the "Register-Based Operation" Section of Chapter 2 of the 1260-01T manual for a description of calculating control register addresses.

Channel	Control Register	Control Bit
0	0	3
1	0	7
2	1	3
3	1	7
4	2	3
5	2	7
6	3	3
7	3	7
8	0	2
9	0	6
10	1	2
11	1	6
12	2	2
13	2	6
14	3	2
15	3	6
100	0	1
101	0	5
102	1	1
103	1	5
104	2	1
105	2	5

Channel	Control Register	Control Bit
106	3	1
107	3	5
108	0	0
109	0	4
110	1	0
111	1	4
112	2	0
113	2	4
114	3	0
115	3	4
200	4	0
201	4	1
202	4	2
203	4	3
204	4	4
205	4	5
300	5	0
301	5	1
302	5	2
303	5	3
304	5	4
305	5	5
400	6	0
401	6	1
402	6	2
403	6	3
404	6	4
405	6	5
500	7	0
501	7	1
502	7	2
503	7	3
504	7	4
505	7	5

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Chapter 1
MODULE SPECIFICATION

General

The 1260-64 consists of up to four 1P6T, 18 6Hz switches and two 1X16 switches. The 1x16 switches are intended to be used to drive external relays, although other applications are possible.

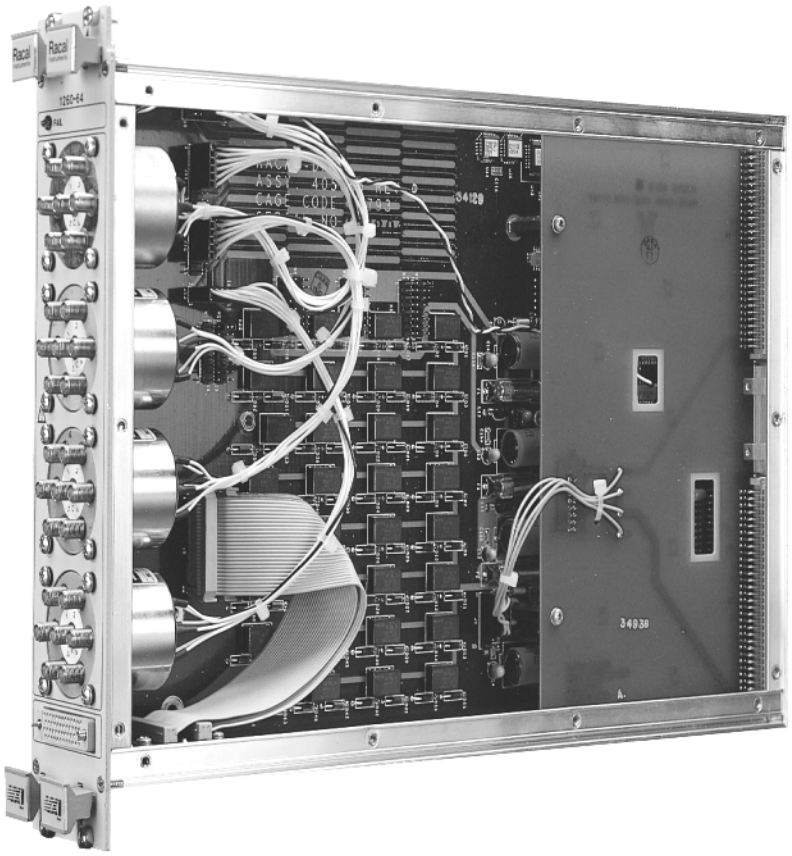

Figure 1-1, 1260-64

Specifications

Quantity of RF Switches

1260-64A	4 18GHz switches
1260-64B	2 18GHz switches
1260-64C	1 18GHz switch

User Connectors on Module SMA - Caution: Mating Connector engagement should not exceed 9 in. lbs. torque maximum.

Recommended Torque Wrench: Wiltron Model 01-201, 8in. lbs.

RF Impedance 50Q, nominal

Insertion Loss, dB Max
0.2 DC –3GHz
0.3 3GHz-8GHz
0.4 8GHz – 12GHz
0.5 12GHz-18GHz

Isolation, dB Mm
80 DC-3GHz
70 3GHz-8GHz
60 8GHz – 18GHz

VSWR, Max

1.2:1	DC-3GHz
1.3:1	3GHz-8GHz
1.4:1	8GHz-12GHz
1.5:1	l2GHz-18GHz

Minimum Option 01 Hardware Revision: 401901-004 Rev. D, or 401901-005 Rev. B

Minimum Option 01 Firmware Revision: 231417-001,Rev. 10.1B 231417-002, Rev. 10.1B

1x16 Switch Arrays Specifications

User Connector: 50-Pin Connector. Body Part #601855-050, Solder Type Pins #601857.

Number of Banks: 2

Number of Switches per Bank: 16, 1-wire

Relay Driver Configurations (User Configurable)
Source Driver, External Supply
Source Driver, VXI +5V Supply
Source Driver, VXI +12V Supply
Source Driver, VXI +24V Supply
Sink Driver, External Supply
Sink Driver, VXI +5V Supply
Sink Driver, VXI +12V Supply

Sink Driver, VXI +24V Supply

(External flyback-suppression diodes are required when switching inductive loads.)

Maximum Total VXI Current Available to Drive External Loads

+24V	5A (May be further limited by mainframe capability).
+12V	5A (May be further limited by mainframe capability)
+5V	6A (May be further limited by mainframe capability)

Maximum Current per Bank	4A (Internal or External Supply)
Maximum Current per Switch	.5Amp
Maximum Switchable Voltage	30V, DC Only
Maximum Switchable Power Per Channel	30W, 62.5 VA (Resistive Load)

Path Resistance:

Worst Case	<1.8Ω
End of Life	<2.7Ω

General

Power Requirements (Ipm)

+5V	0.4A (2.8A with Option 01 installed)
+12V	320mA per RF relay (energized) plus current drawn by external loads on 1x16 relay banks.
+24V	10mA per relay (energized)

Cooling Requirements

Airflow	4.0 L/S at 0.5 mmofH_2O
Weight	5.0lbs (2.25Kg) 5.28lbs (2.38Kg) with Option 01

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Chapter 2
INSTALLATION INSTRUCTIONS

Unpacking and Inspection

1. Before unpacking the switching module, check the exterior of the shipping carton for any signs of damage. All irregularities should be noted on the shipping bill.

2. Remove the instrument from its carton, preserving the factory packaging as much as possible.

3. Inspect the switching module for any defect or damage. Notify the carrier immediately if any damage is apparent.

4. Have a qualified person check the instrument for safety before use.

Reshipment Instructions

1. Use the original packing if it is necessary to return the switching module to Racal Instruments for calibration or servicing. The original shipping carton and the instrument's plastic foam will provide the necessary support for safe reshipment.

2. If the original packing is unavailable, wrap the switching module in plastic sheeting and use plastic spray foam to surround and protect the instrument.

3. Reship in either the original or a new, sturdy shipping carton.

Option 01 Installation

Installation of the Option 01 into the 1260-64 is described in the Installation section of the 1260-Series VXI Switching Cards Manual. Note that lockout keying for the double-wide 1260-64 module differs from that described in the 1260 manual section.

Lockout Keys

The lockout key configuration for the 1260-64 is slightly different from that of the other 1260 modules because the 1260-64 occupies two VXI slots. Lockout key mounting holes are present in the front panel for each of the occupied VXI slots.

If the module is not the leftmost nor the rightmost module in the group, lockout key "A" (Racal Instruments P/N 455540) should be installed in the location corresponding

to the module's left slot. Lockout key "C" (Racal Instruments P/N 455541) should be installed in the location corresponding to the module's right slot.

If the module is the leftmost module in the group, lockout key "C" should be installed in the location corresponding to the module's right slot.

if the module is the rightmost module in the group, lockout key "A" should be installed in the location corresponding to the module's left slot.

Module Installation

Installation of the 1260-64 Switching Module into a VXI mainframe, including the setting of DIP switches, is described in the Installation section of the 1260-Series VXI Switching Cards Manual. The ID byte DIP switches should be set as follows:

1260-64A	5=OFF	6=OFF
1260-64B	5=ON	6=OFF
1 260-64C	5=OFF	6=ON

Note that incorrect setting of the ID byte DIP switches will cause an incorrect module ID to be reported to the user in response to a PDATAOUT command. All other module functionality is unaffected by the setting of the ID byte switches.

Relay Bank Configuration

If two banks of DC relays are to be used, various internal jumpers must be installed. Examples of four possible configurations are shown in Figures 4-3 through 4-6. The card is shipped from the factory without any jumpers installed.

To access the jumpers, remove the right side cover from the module. The jumpers are located on the large PCB Assembly. There are two banks of relays. Each bank is configured independently, and the two configurations do not have to match. The banks are designated Bank A and Bank B.

The first consideration when configuring the relay banks is whether the bank is to act as a source driver or a sink driver. (A sink driver connects its output to ground to energize a load; a source connects its output to B+ to energize a load.) Eight push on jumpers are to be installed as shown below:

Bank A Source Driver:	W5.
Bank A Sink Driver:	W6.
Bank B Source Driver:	W11.
Bank B Sink Driver:	W12.

The next consideration is the source of power for the external loads on Bank A. If an external supply is to be used, the jumpers at locations W3 and W4 are to be removed. If the VXI *+5V* supply is to be used, eight jumpers are to be installed at location W3. (1-2, 3-4, 5-6, etc.) If the VXI +12V supply is to be used, three jumpers are to be installed at location W4 (1-2, 34, and 5-6) If the VXI +24V supply is to be used, the three jumpers are to be installed at location W4 (11-12, 13-14, 15-16).

The final consideration is the source of power for the external loads on Bank B. If an external supply is to be used, the jumpers at locations W8 and W9 are to be removed. If the VXI +SV supply is to be used, eight jumpers are to be installed at location W8. (1-2, 3-4, 5-6, etc.) If the VXI +12V supply is to be used, three jumpers are to be installed at location W9 (1-2, 3-4, and 5-6) If the VXI +24V supply is to be used, the three jumpers are to be installed at location W9 (11-12, 13-14, *15*-16).

The right cover can now be reinstalled on the module.

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Chapter 3

MODULE SPECIFIC SYNTAX

General

The Module Specific Syntax for the 1260-64 is required for use in the OPEN and CLOSE commands. It will also appear in data output by the 1260 Series Master in response to the PDATAOUT command.

The Module Specific Syntax for the 1260-64 module is as follows:

<mod addr>.<bank no><relay no>

where <mod addr> is the address of the 1260-64.

NOTE

The <mod addr> used here is NOT the VXIbus defined logical address of the 1260 Series Master. It is peculiar to the 1260 Series and describes the switching module in relation to the 1260 Master. This address corresponds to the binary value of the switch setting of SW1 on the switching module PCB.

<bank no> is a reference to the bank of the relay to be switched. It is a single digit number. The range for a valid <bank no> depends on the particular 1260-64 model used:

1260-64A: $0 \leq$ <bank no> ≤ 5
1260-64B: $0 \leq$ <bank no> ≤ 3
1260-64C: $0 \leq$ <bank no> ≤ 2

The <bank no> refers to the following relay banks:

0 1x16 Bank A
1 1x16 Bank B
2 1x6 Relay S1
3 1x6 Relay S2 (A and B models only)
4 1x6 Relay S3 (A model only)
5 1x6 Relay S4 (A model only)

<relay no> refers to the relay to be operated. This is a two-digit

number. For Bank A and Bank B, this value must be between 00 and 15. For relays S1, S2, S3, and S4, this must be between 00 and 05. Note the leading 0 for relays 00 through 09 is required.

Refer to Figures 4-1,4-2, and Table 4-1 for banks, relay numbers, and connector pins for the 1260-64 module.

If more than one connection is to be made or broken on the 1260-64 with contiguous relays, the following format is supported:

<mod addr>.<bank no><relay no>-<bank no><relay no>

Multiple groups of relays can be specified on a single command line by separating the path designators by commas. Command lines terminate at the end of the line.

EXAMPLE:

OPEN 3.000,004-015,100-1 15,201,303

PDATAOUT

The PDATAOUT command causes the specified module to transmit the CLOSED state of the relays in the 1260-64 module. The syntax used is:

PDATAOUT <mod addr>[;<mod addr>][;<mod addr>]....

The response to the PDATAOUT command for the 1260-64 is as follows:

<header>
<mod addr>. <bank no><group no>[,...]
<bank no><group no>[,...]
<mod addr>.END

where <header> is as follows:

1260-64A: <mod addr>. 1260-64A Quad 1x6 SWITCHING MODULE
1260-64B: <mod addr>. 1260-64B Dual 1x6 SWITCHING MODULE
1260-64C: <mod addr>. 1260-64C Single 1x6 SWITCHING MODULE

Note the actual <header> sent is determined by the setting of the ID Byte DIP switches on the module, and is independent of the number of microwave relays installed.

PSETUP

The PSETUP command causes the specified module to transmit its sequence mode. The supported sequence modes are IMM (Immediate), BBM (Break-Before-Make), and MBB (Make-Before-Break). The syntax used is:

PSETUP <mod addr>[;<mod addr>][;<mod addr>]....

The response to the PSETUP command for the 1260-64 is as follows:

<header>
<mod addr>.<seq mode>
<mod addr>.END

where <seq mode> is IMM, BBM, or MBB, and

where <header> is as follows:

1260-64A: <mod addr>. 1260-64A Quad 1x6 SWITCHING MODULE
1260-64B: <mod addr>. 1260-64B Dual 1x6 SWITCHING MODULE
1260-64C: <mod addr>. 1260-64C Single 1x6 SWITCHING MODULE

Note the actual <header> sent is determined by the setting of the ID Byte DIP switches on the module, and is independent of the number of microwave relays installed.

CLOSE

The 1260-64 1x6 microwave relays (S1 through S4) each allow at most one of the six relays to be closed at any one time. The card implements an "implicit exclusion list" for each 1x6 microwave relay. For example, if the 1260-64 module address is 3, and relay 3.204 is currently closed, then the command:

CLOSE 3.201

will cause the card to open relay 3.204, and then close relay 3.201. Similarly, if the command:

CLOSE 3.200-205

is issued, the card will close only relay 3.205, with relays 3.200 through 3.204 being opened prior to closing relay 3.205.

SETUP

The SETUP command affects only the DC relays in Banks A and B. These relays may be programmed as Break-Before-Make,

Make-Before-Break, or Immediate. The microwave relays (S1 through S4) are always implemented as Break-Before-Make (BBM) to ensure that at most 1 of 6 relays are closed at any one time.

The 1260-64 supports most standard 1260 features. These include Confidence Mode, Equate/Exclude/Scan Lists commands, and the STORE/RECALL commands.

Chapter 4
CONNECTOR PIN CONFIGURATION

RF Relays

Figure 4-1 shows the location of the four RF switches on the front panel of the 1260-64 module. The designations for each of the SMA male connectors on the switches are also shown.

Relay Banks

Figure 4-2 shows the pin locations for the 50-pin Relay Bank connector, J1. Table 4-1 lists the J1 pin signals. Connector J1 is Racal Instruments Part Number 601856-050. The mating connectors are Racal Instruments Part Number 601855-050 for the connector body, and 601857 for the pins.

Each of the two relay banks can be independently configured as a sink or a source driver. Either the VXI mainframe or an external supply can be selected.

WARNING

The user must use caution when wiring to the module to prevent damage to the relay banks.

The 1260-64 contains some internal protection circuitry. The internal current sourcing and handling capabilities of the module and the mainframe must not be exceeded. Properly interface external loads, especially if they are inductive. if an external supply is used, the external B+ and B- lines MUST be connected to the External B+ and the External Ground pins on J1. Flyback-clamping suppression diodes MUST be connected across any inductive loads. (Switching of AC inductive loads is not recommended.) Figures 4-3 through 4-6 show correct methods interfacing to the 1260-64 relay banks.

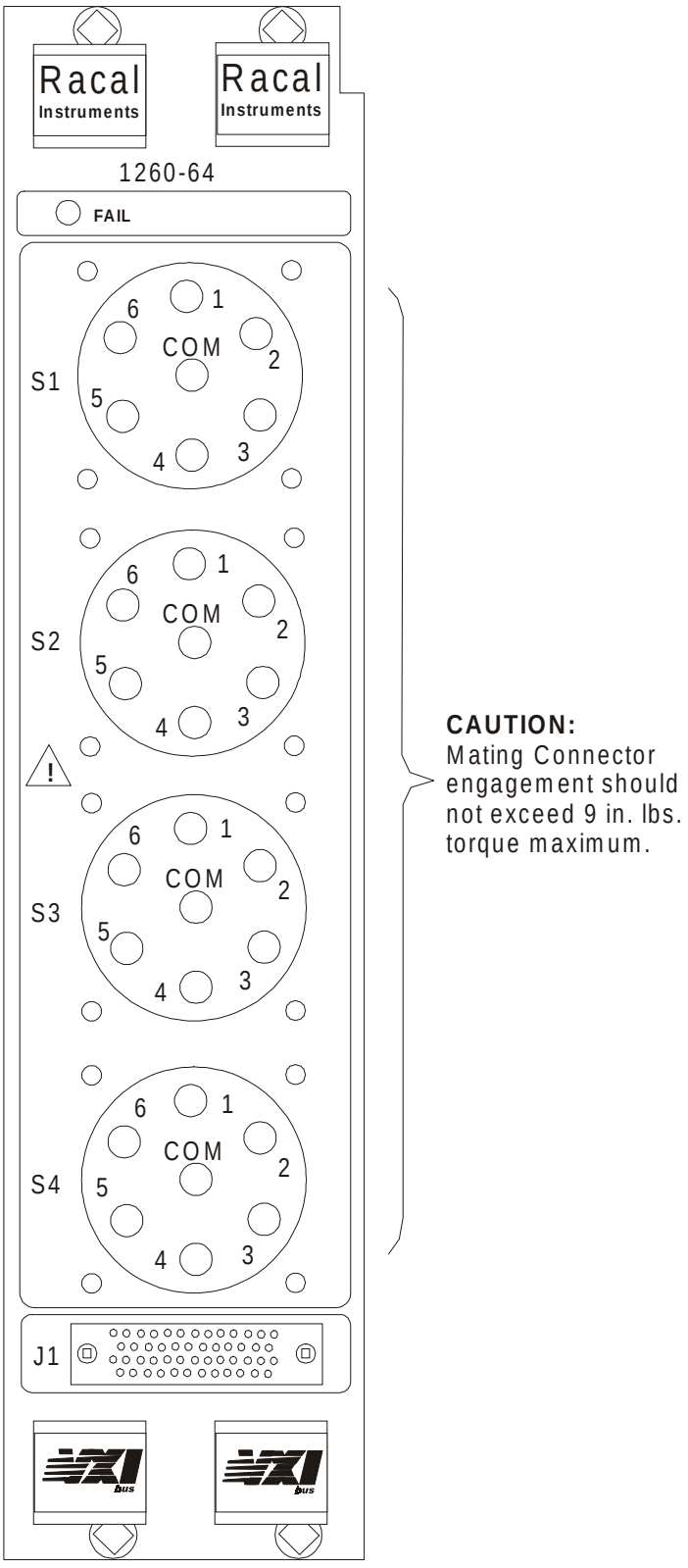

Figure 4-1, 1260-64 Front Panel

Table 4-1, 1260-64 Pin Assignments

BankA Pin	Function	BankB Pin	Function
A,C,E,H	External B+	B,D,F,J	External B+
X, y, z, AA	External Ground	CC,DD,EE	External Ground
z, AA, BB	External Ground	FF,HH	External Ground
d	Contact 0	p	Contact 0
L	Contact 1	V	Contact 1
b	Contact 2	T	Contact 2
S	Contact 3	M	Contact 3
a	Contact 4	W	Contact 4
k	Contact 5	e	Contact 5
t	Contact 6	r	Contact 6
w	Contact 7	m	Contact 7
j	Contact 8	u	Contact 8
R	Contact 9	z	Contact 9
x	Contact 10	N	Contact 10
P	Contact 11	K	Contact 11
Y	Contact 12	U	Contact 12
h	Contact 13	c	Contact 13
v	Contact 14	n	Contact 14
s	Contact 15	f	Contact 15

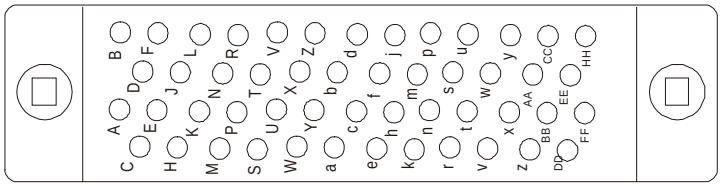

Figure 4-2, Relay Bank Pin Configuration (J1)

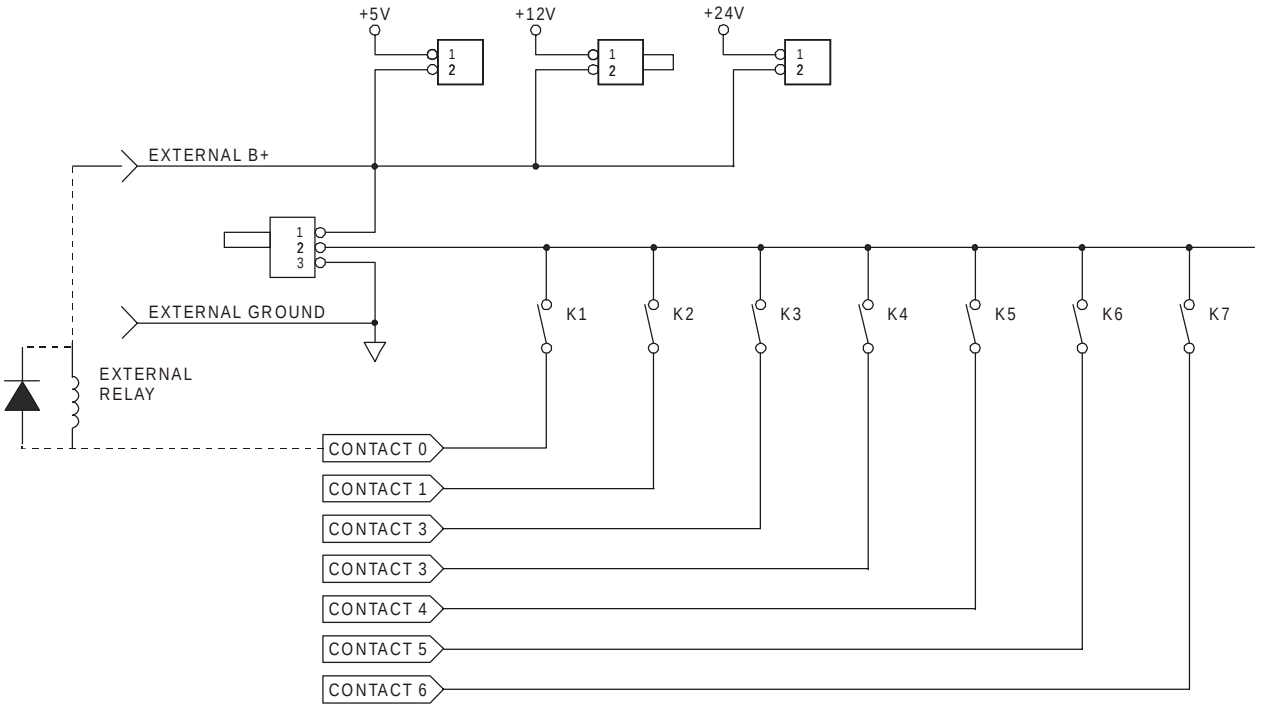

Figure 4-3, Internal Supply Sink Driver Example

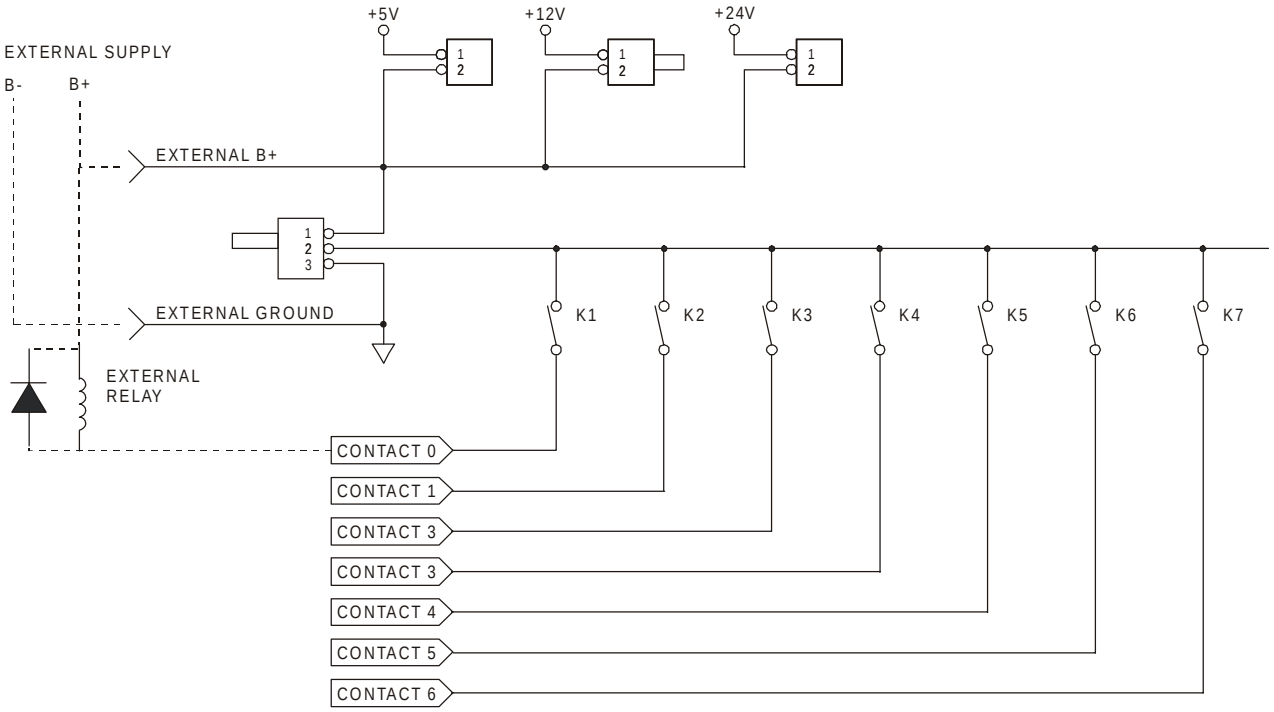

Figure 4-4, External Supply Sink Driver Example

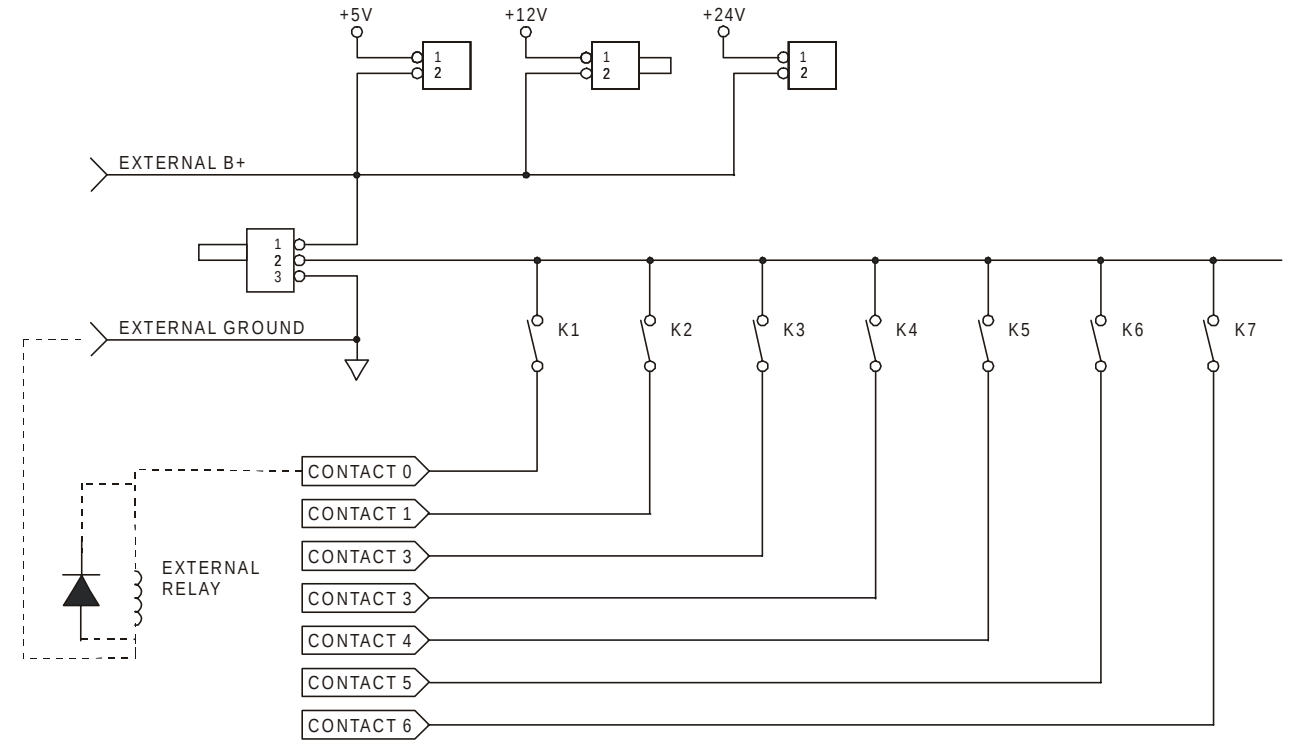

Figure 4-5, Internal Supply Source Driver Example

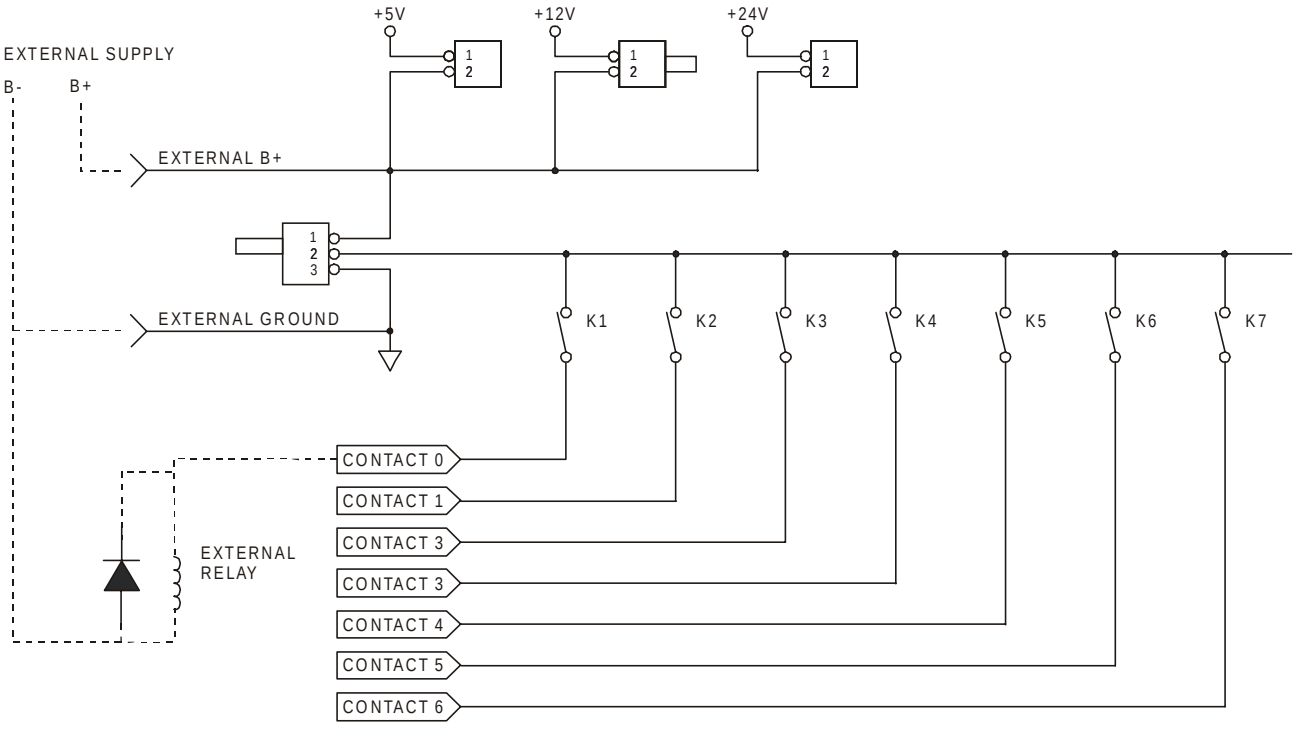

Figure 4-6, External Supply Source Driver Example

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Chapter 5
THEORY OF OPERATION

PCB Assemblies

The 1260-64 consists of three PCB Assemblies. The smallest is used only to mount connector J 1 to the front panel. The other small PCB Assembly is required to pass the local bus signals, LBUSO through LBUS 11, through the unused second slot of this double-wide module. The VXI IACK and BUS GRANT 0 through 3 signals are jumpered to allow the PCB Assembly to be used in autoconfiguring backplanes.

The main logic PCB Assembly contains DC relay banks, 1260 Local Bus interface circuitry, and drivers for both the relay bank and the RE relays. The VXI interface is described in the Theory of Operation section of the 1260 Series VXI Switching Cards Manual. The relay driver circuitry is contained in monolithic IC driver chips. The relay banks are shown in Figures 4-3 through 4-6. Not shown in these figures are internal clamp diodes. These diodes will clamp minor inductance effects, such as those caused by wiring; but they are not intended to replace suppression diodes across the solenoid coils of external relays, or other inductive loads. Referring to the schematic diagram, the diodes between the Contact lines and ground clamp switch-to-open transients when the bank is used as a source driver. The diodes between the Contact lines and the External B+ clamp switch-to-open transients when the bank is used as a sink driver.

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Chapter 6
DRAWINGS

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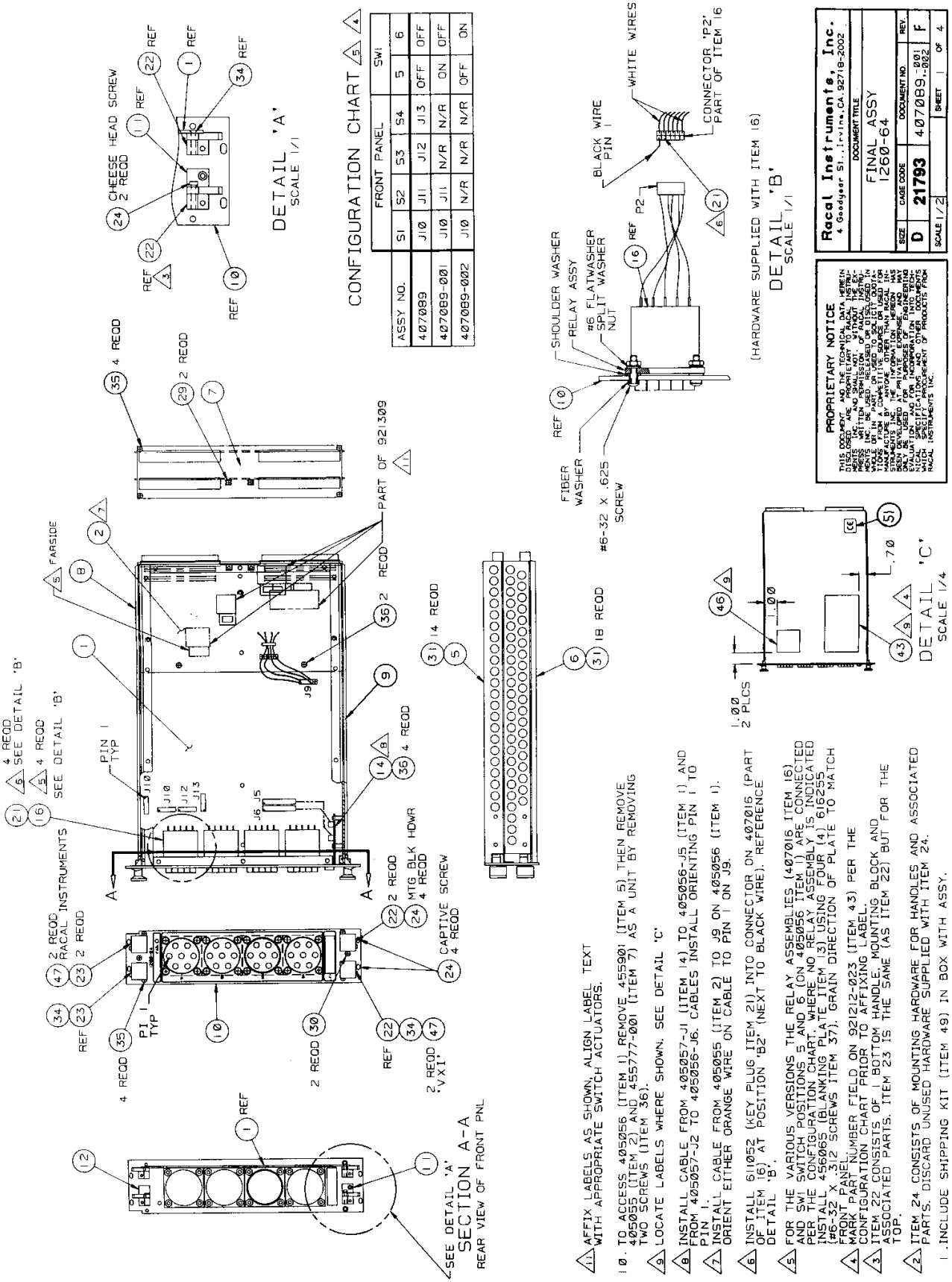
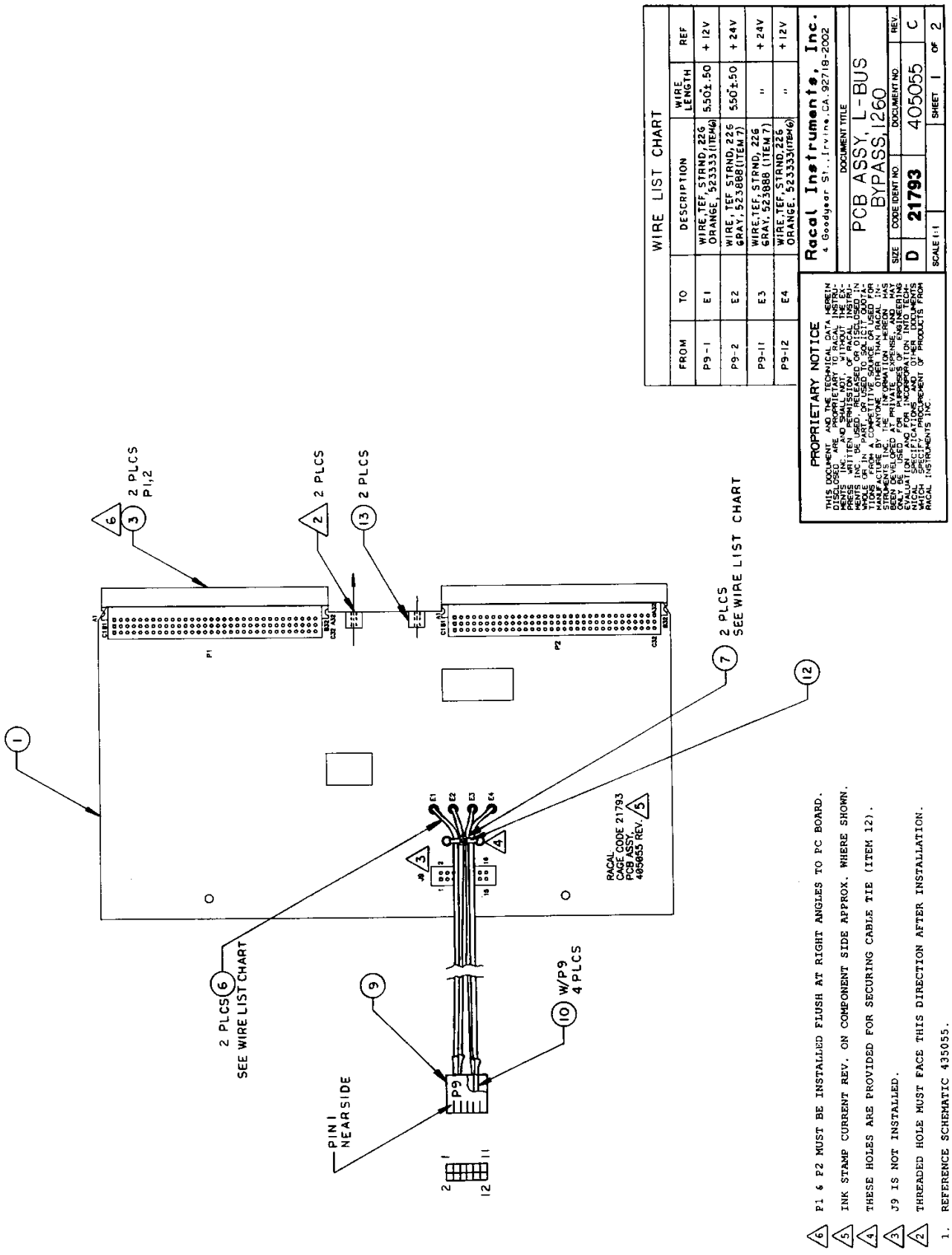
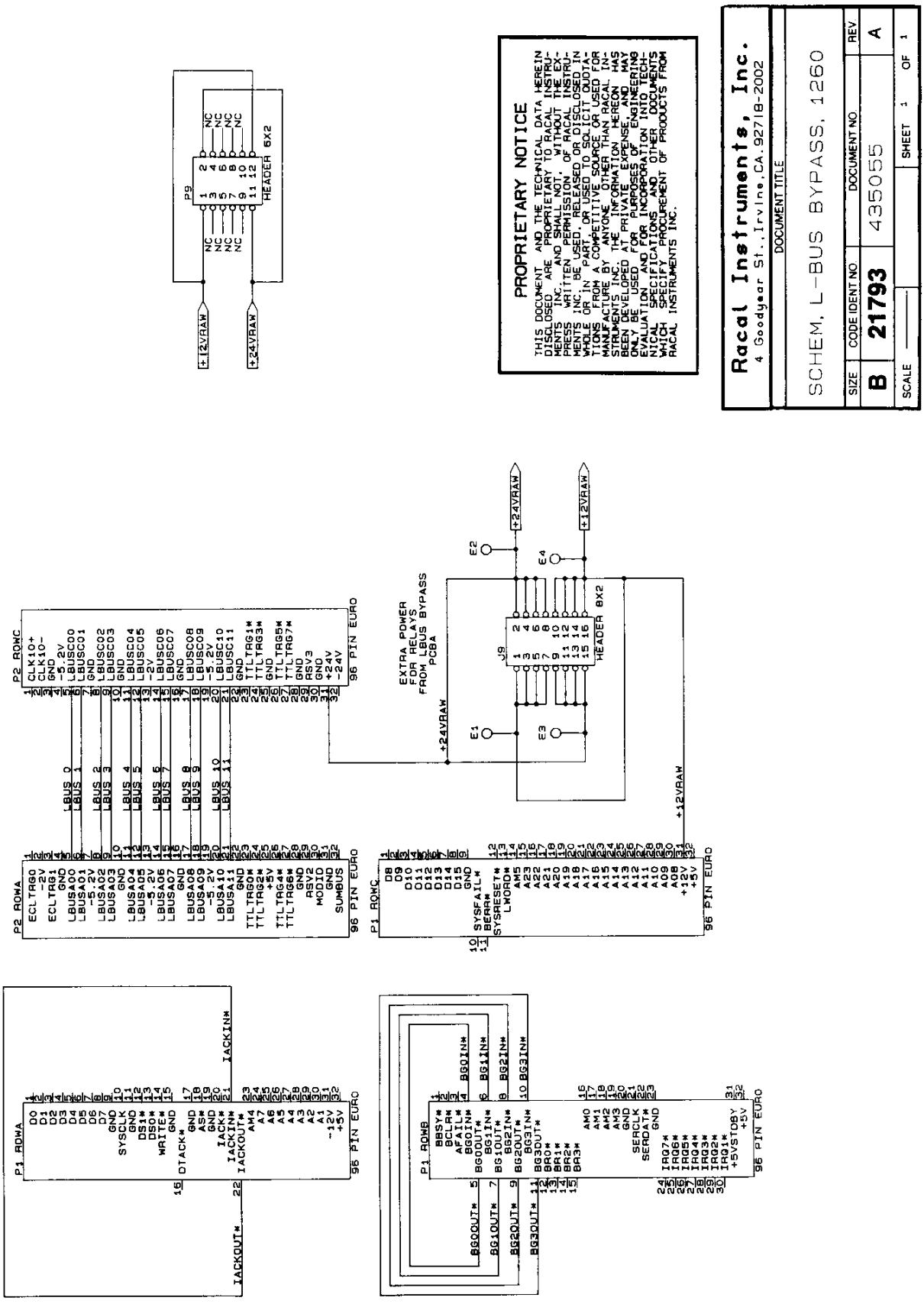

CONFIGURATION CHART
DETAIL 'A'
DETAIL 'B'
DETAIL 'C'
SECTION A-A
Racal Instruments, Inc.
FINAL ASSY 1260-64
PROPRIETARY NOTICE



6. P1 & P2 MUST BE INSTALLED FLUSH AT RIGHT ANGLES TO PC BOARD.
5. INK STAMP CURRENT REV. ON COMPONENT SIDE APPROX. WHERE SHOWN.
4. THESE HOLES ARE PROVIDED FOR SECURING CABLE TIE (ITEM 12).
3. J9 IS NOT INSTALLED.
2. THREADED HOLE MUST FACE THIS DIRECTION AFTER INSTALLATION.
1. REFERENCE SCHEMATIC 435055.


PROPRIETARY NOTICE
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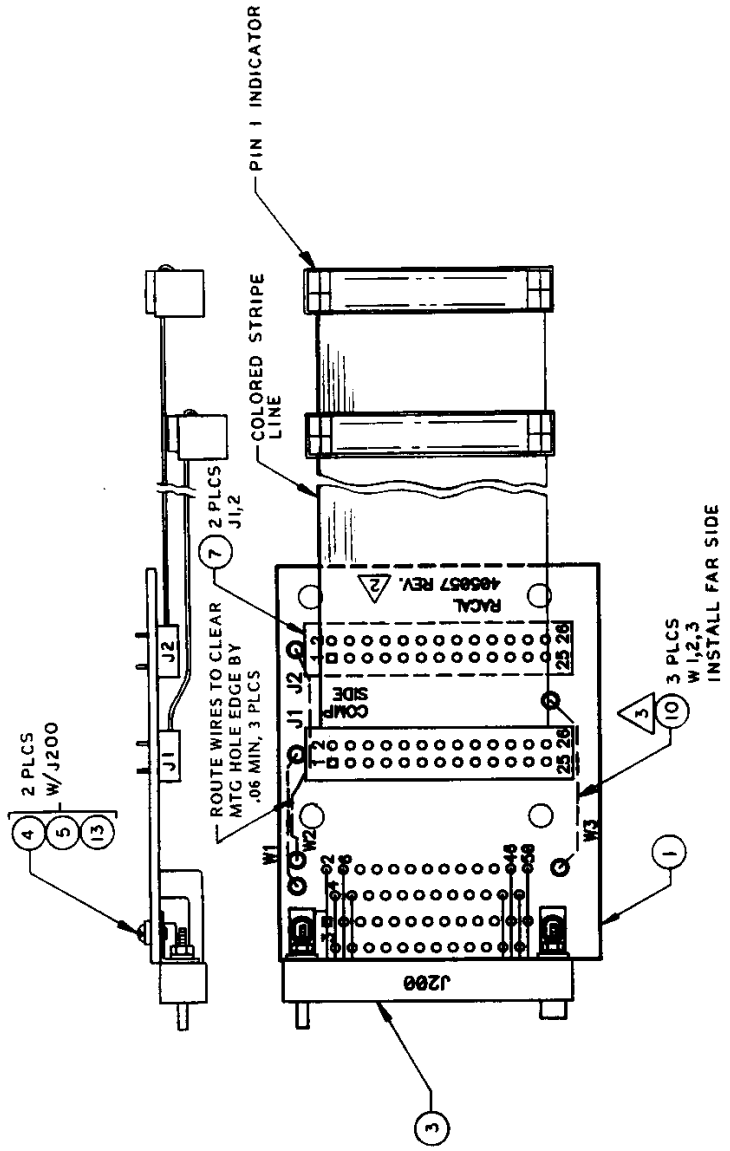
Racal Instruments, Inc.
4 Goodyear St., Irvine, CA. 92718-2002
DOCUMENT TITLE
SCHEM, L-BUS BYPASS, 1260
SIZE
CODE IDENT NO.
21793
DOCUMENT NO.
435055
REV
A
B
SCALE
SHEET 1 OF 1
P9
HEADER 6X2
+12VRAW
+24VRAW
P2 ROWC
P2 ROWA
P1 ROWA
P1 ROWB
P1 ROWC
96 PIN EURO
EXTRA POWER FOR RELAYS FROM LBUS BYPASS PCBA
J9
E1
E2
E3
E4
IACKIN*
IACKOUT*
SYSCLK
SYSFAIL*
SYSRESET*
BERR*
LWORD*
DTACK*
AS*
DS0*
DS1*
WRITE*
IACK*
SERCLK
SERDAT*
+5VSTDBY
+5V
+12V
-12V
-5.2V
-2V
GND



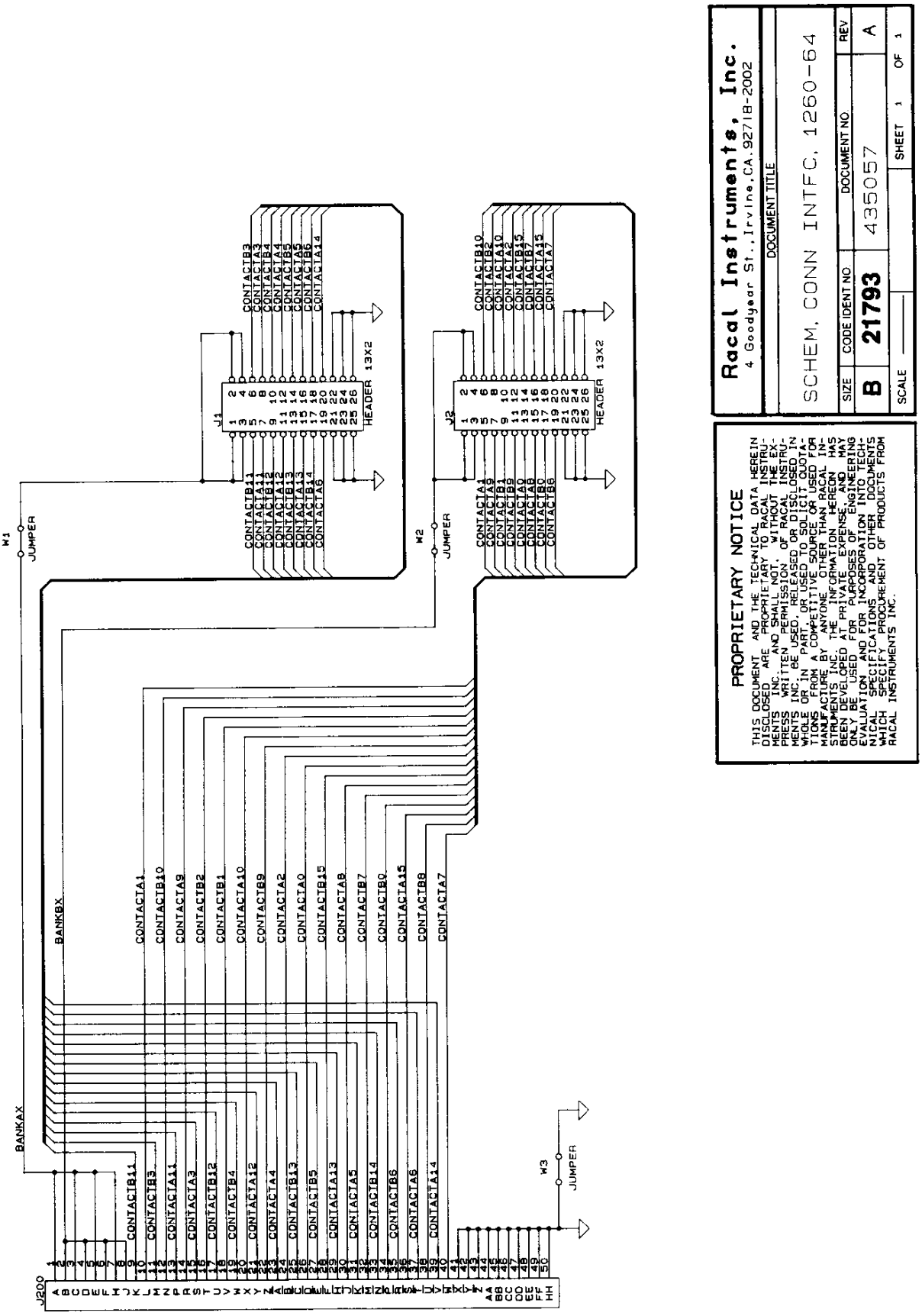
Racal Instruments, Inc.
4 Goodyear St., Irvine, CA. 92718-2002

DOCUMENT TITLE: PCB ASSY CONN INTFC 1260-64

SIZE	CODE IDENT NO	DOCUMENT NO	REV.
C	21793	405057	B

SCALE 2:1 SHEET 1 OF 2

3. INSTALL WIRE (ITEM 10) TO W1,2 & 3 ON CIRCUIT SIDE AS SHOWN.
2. INK STAMP CURRENT REVISION ON COMPONENT SIDE APPROX. WHERE SHOWN.
1. REFERENCE SCHEMATIC 435057.


Racal Instruments, Inc.
4 Goodyear St., Irvine, CA. 92718-2002
DOCUMENT TITLE
SCHEM, CONN INTFC, 1260-64
SIZE
CODE IDENT NO
DOCUMENT NO
REV
B
21793
435057
A
SCALE
SHEET 1 OF 1
PROPRIETARY NOTICE
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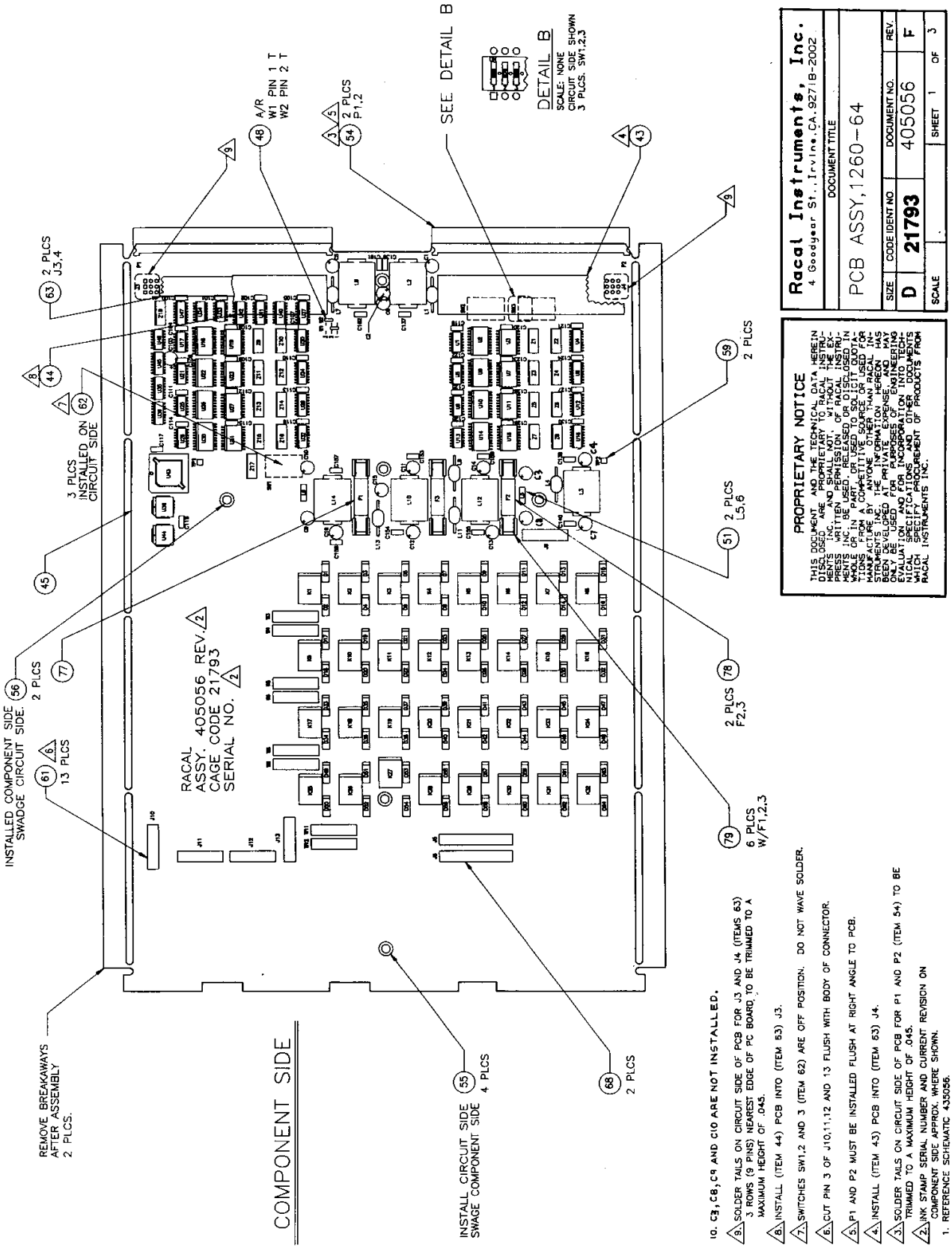
J200
J1
J2
HEADER 13X2
W1
W2
W3
JUMPER
BANKAX
BANKBX


COMPONENT SIDE
INSTALLED COMPONENT SIDE SWAGDGE CIRCUIT SIDE.
REMOVE BREAKAWAYS AFTER ASSEMBLY 2 PLCS.
INSTALL CIRCUIT SIDE SWAGE COMPONENT SIDE 4 PLCS
RACAL ASSY. 405056 REV. 2 CAGE CODE 21793 SERIAL NO. 2
3 PLCS INSTALLED ON CIRCUIT SIDE
2 PLCS
13 PLCS
2 PLCS
6 PLCS W/F1,2,3
2 PLCS F2,3
2 PLCS L5,6
2 PLCS
2 PLCS J3,4
A/R W1 PIN 1 T W2 PIN 2 T
2 PLCS P1,2
SEE DETAIL B
DETAIL B
SCALE: NONE
CIRCUIT SIDE SHOWN
3 PLCS. SW1,2,3
PROPRIETARY NOTICE
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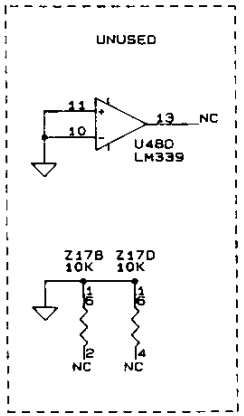
Racal Instruments, Inc.
4 Goodyear St., Irvine, CA. 92718-2002
DOCUMENT TITLE
PCB ASSY, 1260-64
SIZE D
CODE IDENT NO 21793
DOCUMENT NO. 405056
REV. F
SCALE
SHEET 1 OF 3
10. C3, C8, C9 AND C10 ARE NOT INSTALLED.
9. SOLDER TAILS ON CIRCUIT SIDE OF PCB FOR J3 AND J4 (ITEMS 63) 3 ROWS (9 PINS) NEAREST EDGE OF PC BOARD TO BE TRIMMED TO A MAXIMUM HEIGHT OF .045.
8. INSTALL (ITEM 44) PCB INTO (ITEM 63) J3.
7. SWITCHES SW1,2 AND 3 (ITEM 62) ARE OFF POSITION. DO NOT WAVE SOLDER.
6. CUT PIN 3 OF J10,11,12 AND 13 FLUSH WITH BODY OF CONNECTOR.
5. P1 AND P2 MUST BE INSTALLED FLUSH AT RIGHT ANGLE TO PCB.
4. INSTALL (ITEM 43) PCB INTO (ITEM 63) J4.
3. SOLDER TAILS ON CIRCUIT SIDE OF PCB FOR P1 AND P2 (ITEM 54) TO BE TRIMMED TO A MAXIMUM HEIGHT OF .045.
2. INK STAMP SERIAL NUMBER AND CURRENT REVISION ON COMPONENT SIDE APPROX. WHERE SHOWN.
1. REFERENCE SCHEMATIC 435056.

REF. DES.	IC TYPE	+5V PIN NO.	GND PIN NO.
U43	231154 (22V10H)	28	14
U42	26LS31	16	8
U40, 41	26LS32	16	8
U37, 39	74HCT253	16	8
U36	231152-001 (16L8Q)	20	10
U48	LM339	3	12
U47	74HCT85	16	8
U45	74LS138	16	8
U44	231153 (16R4)	20	10
U4, 8, 12, 16, 20, 24, 28 U32, 35	74HCT166	16	8
U3, 7, 11, 15, 19, 23, U27, 31	2803	NC	9
U2, 6, 10, 14, 18, 22, U26, 30	74HCT273	20	10
U1, 5, 9, 13, 17, 21, 25, 29 U33, 34	74HCT164	14	7

IC POWER AND GROUND CONNECTIONS

HIGHEST REF. DES.
Z18
W12
U48
TP2
SW3
P2
L14
K32
J13
F3
D64
C162



4. C3, C8, C9, AND C10 ARE NOT INSTALLED

3. RELAYS K1 THRU K32 ARE RACAL P/N 310197. ALL RELAYS SHOWN IN DE-ENERGIZED POSITION.

2. RESISTOR NETWORKS ARE IN OHMS.

1. CAPACITOR VALUES ARE IN MICROFARADS, 50V, +/-20%

NOTES: UNLESS OTHERWISE SPECIFIED

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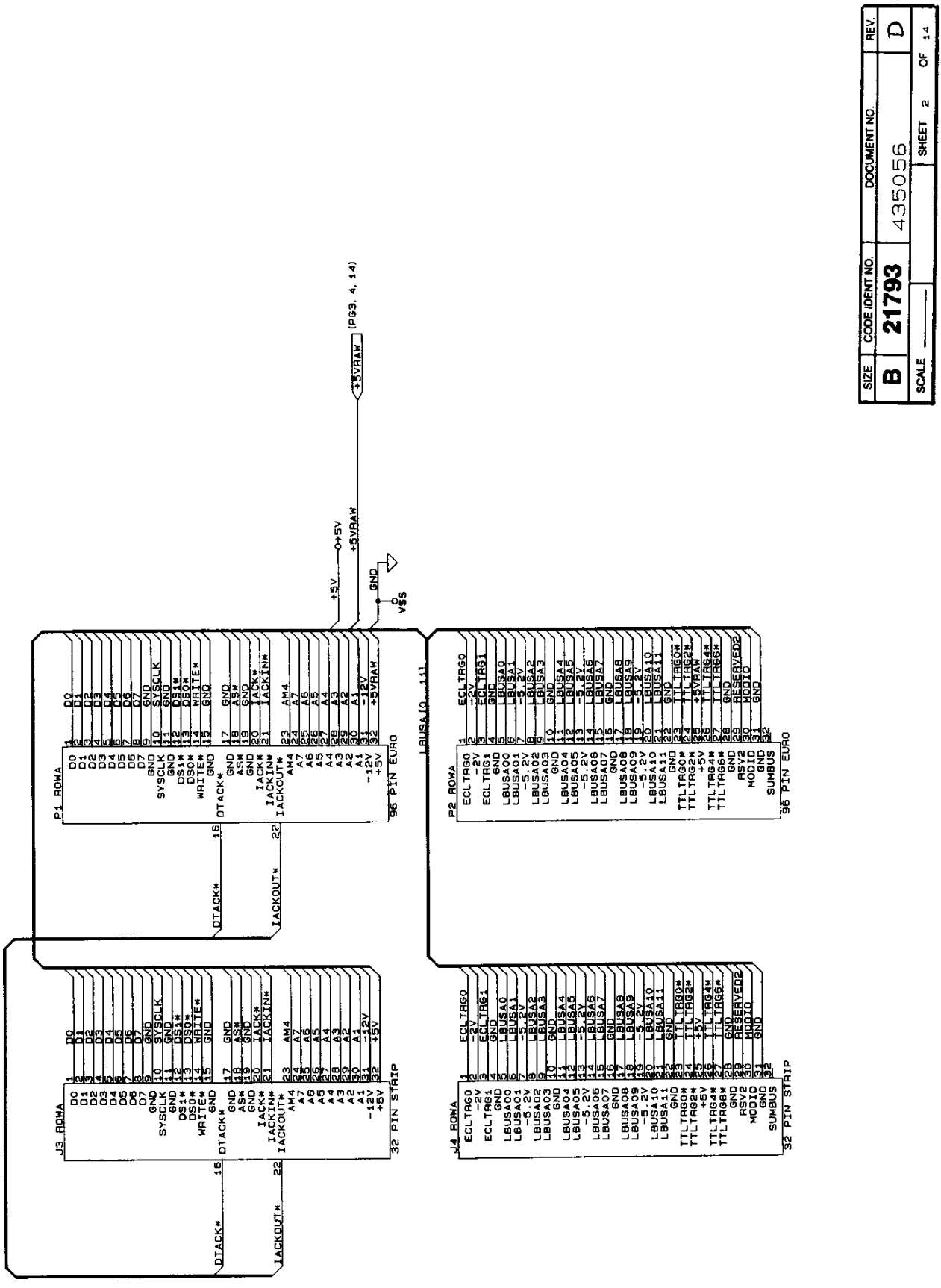
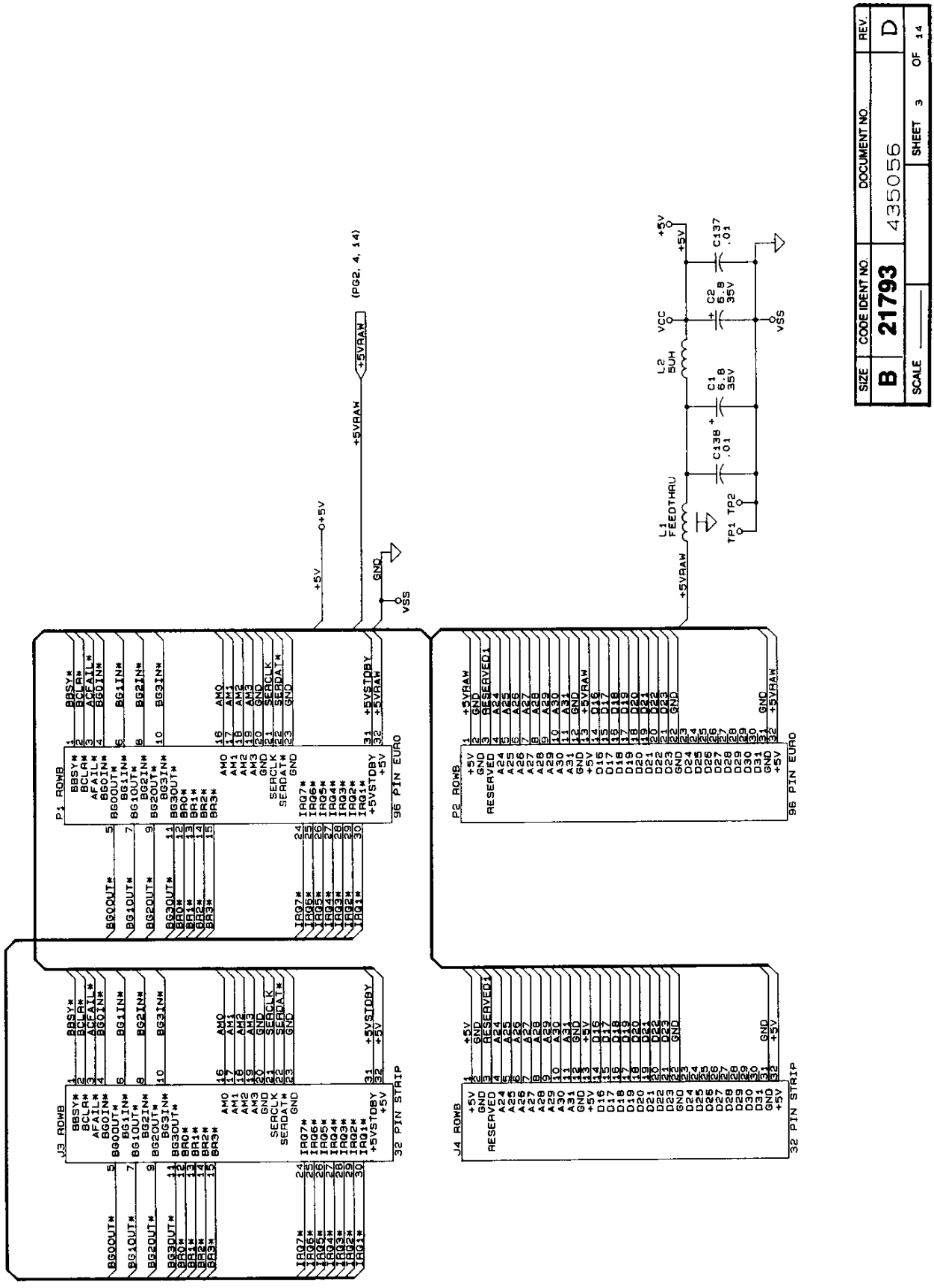
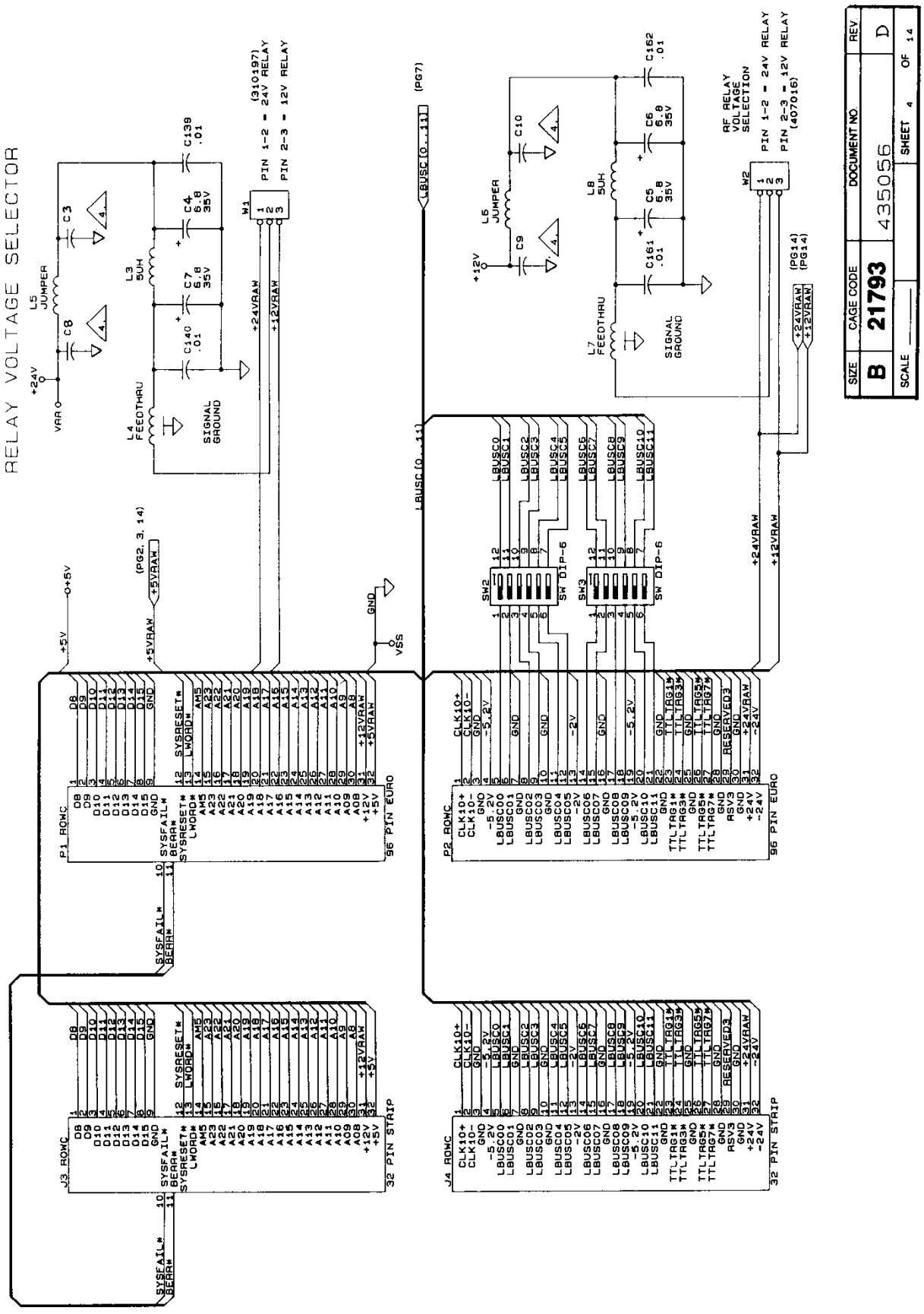
DOCUMENT TITLE: SCHEM, 1260-64/60/15

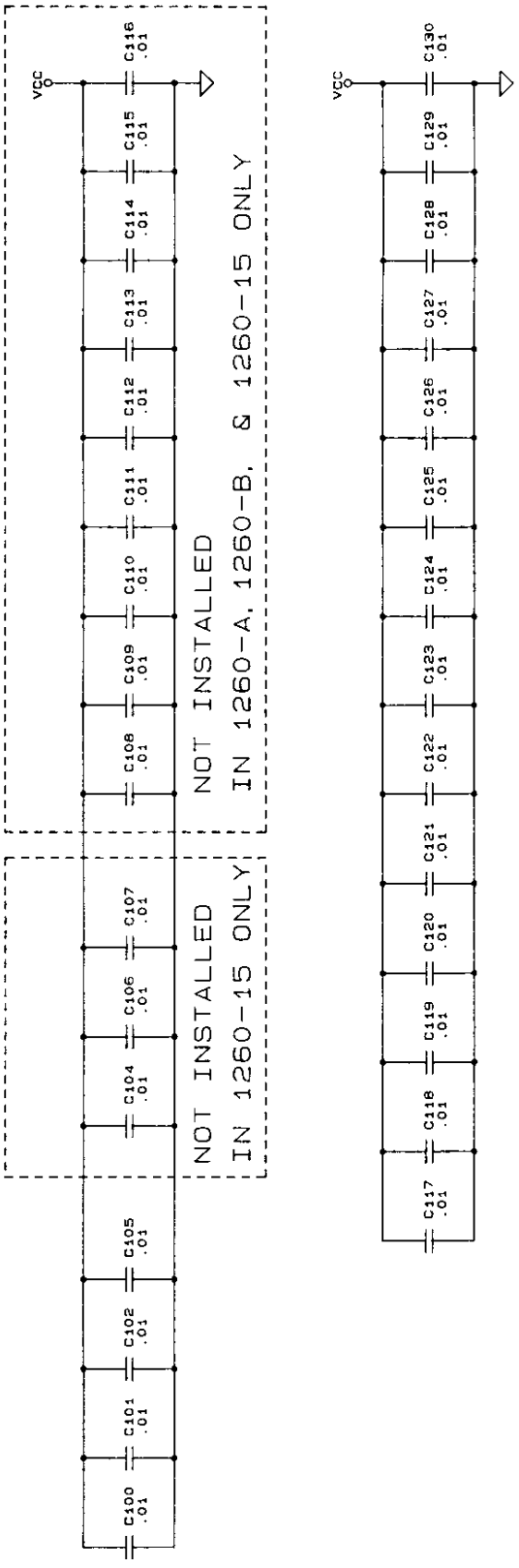
SIZE	CAGE CODE	DOCUMENT NO.	REV.
B	21793	435056	D

SCALE ——— SHEET 1 OF 14

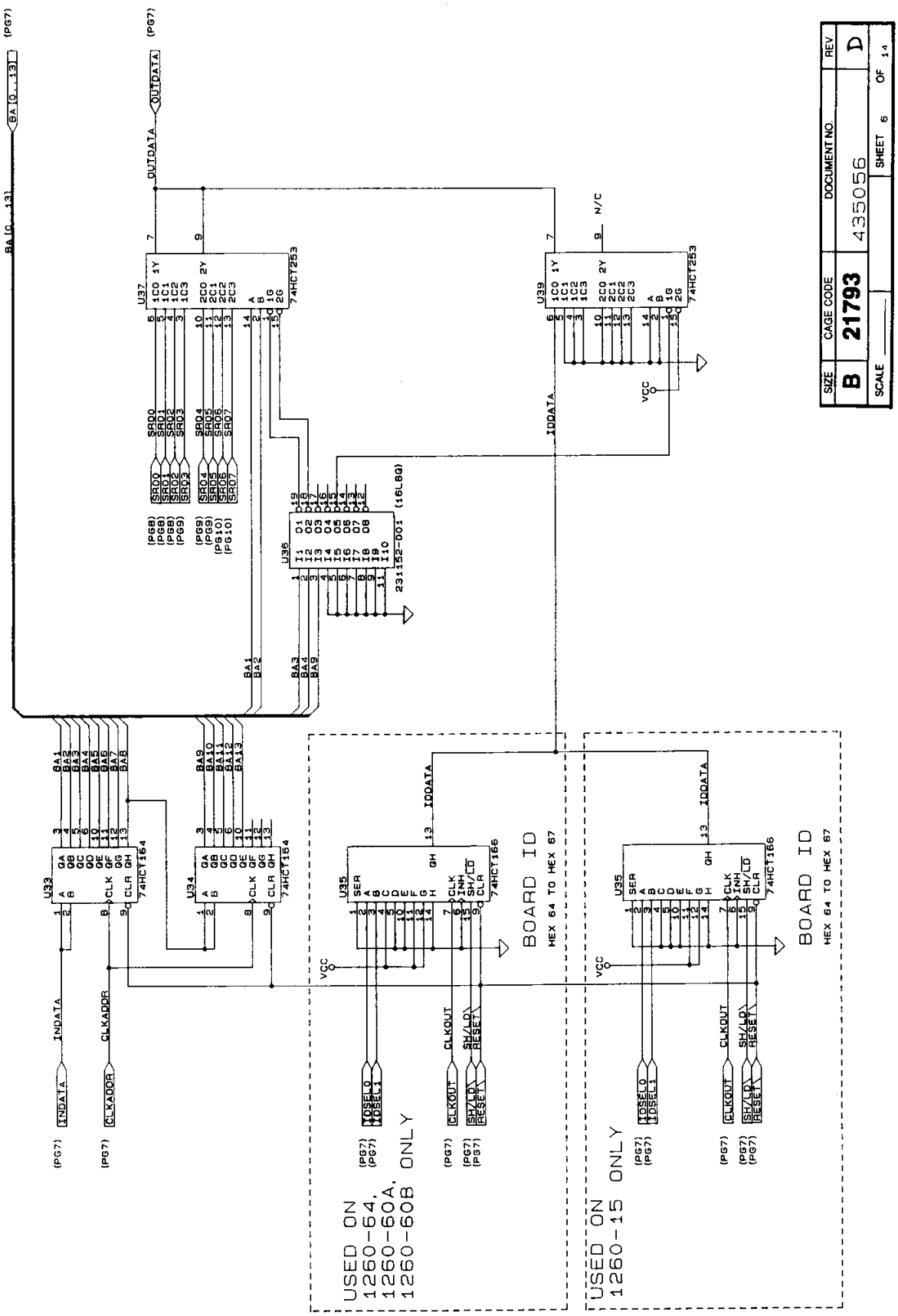

SIZE
CODE IDENT NO.
DOCUMENT NO.
REV.
B
21793
435056
D
SCALE
SHEET 2 OF 14
(P63, 4, 14)
+5VRAW
+5V
GND
VSS
LBUSA(0...11)
J3 ROWA
32 PIN STRIP
P1 ROWA
96 PIN EURO
J4 ROWA
32 PIN STRIP
P2 ROWA
96 PIN EURO
DTACK*
IACKOUT*

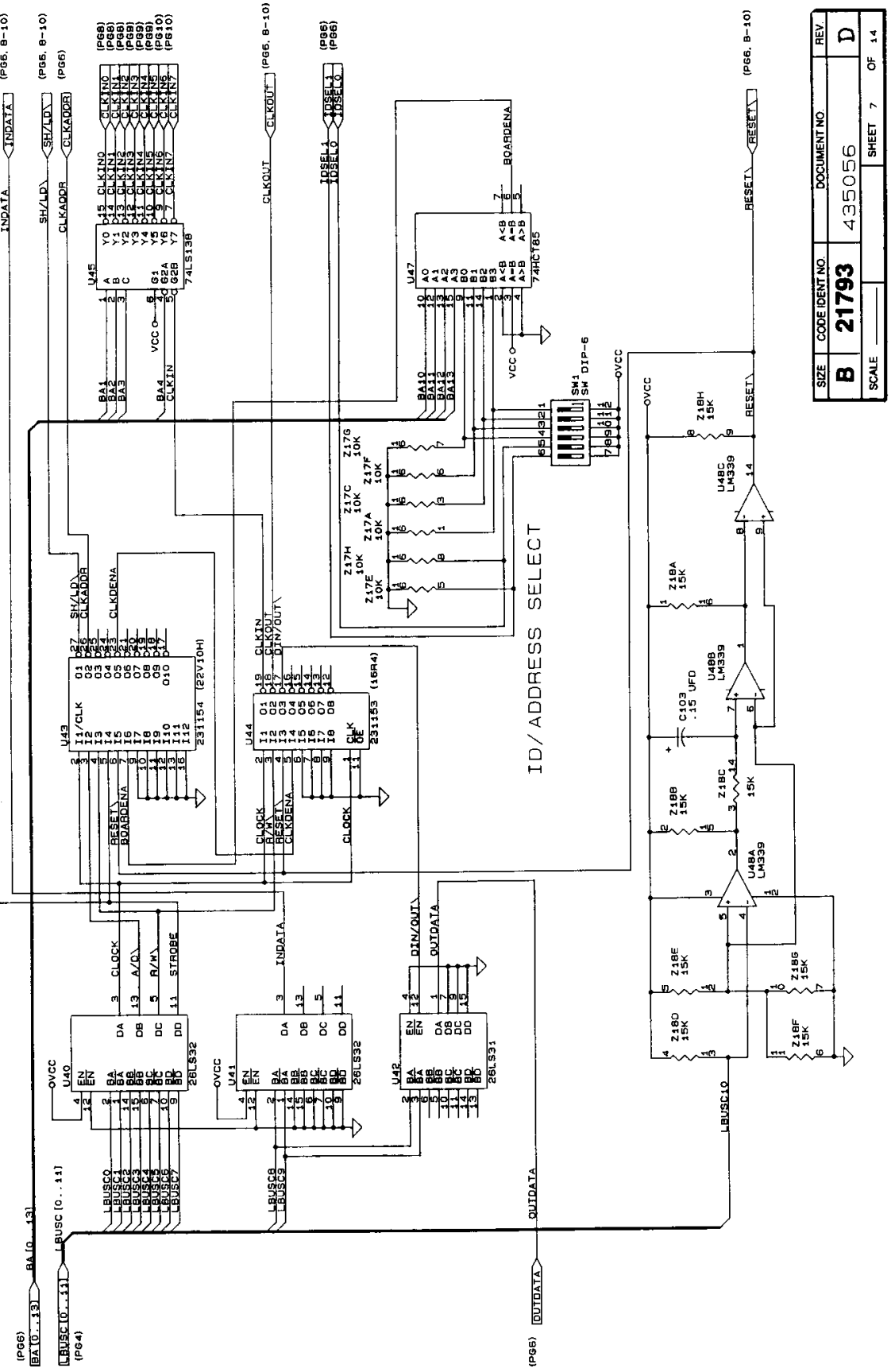

SIZE
B
CODE IDENT NO.
21793
DOCUMENT NO.
435056
REV.
D
SCALE
SHEET 3 OF 14
P1 ROWB
P2 ROWB
J3 ROWB
J4 ROWB
96 PIN EURO
32 PIN STRIP
+5VRAW
+5V
GND
VSS
VCC
L1 FEEDTHRU
L2 5UH
C1 6.8 35V
C2 6.8 35V
C137 .01
C138 .01
TP1 TP2
(PG2, 4, 14)

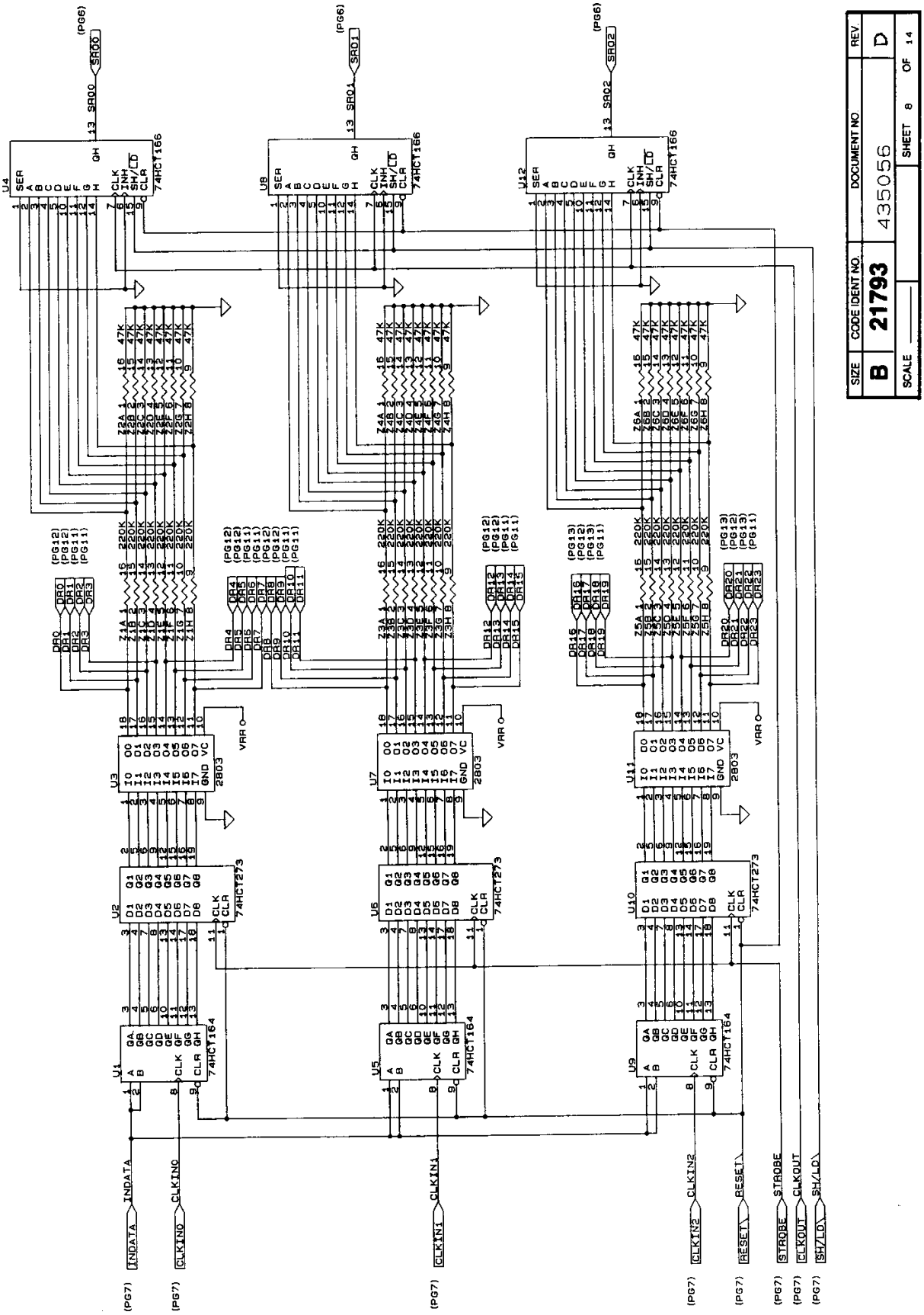

RELAY VOLTAGE SELECTOR
SIZE
CAGE CODE
21793
DOCUMENT NO.
435056
REV
D
B
SCALE
SHEET 4 OF 14
P1 ROMC
P2 ROMC
J3 ROMC
J4 ROMC
96 PIN EURO
32 PIN STRIP
SW2
SW3
SW DIP-6
L3 5UH
L4 FEEDTHRU
L5 JUMPER
L6 JUMPER
L7 FEEDTHRU
L8 5UH
W1
W2
PIN 1-2 = 24V RELAY
PIN 2-3 = 12V RELAY
(310197)
(407016)
RF RELAY VOLTAGE SELECTION
SIGNAL GROUND
LBUSC (0..11)
(PG7)
(PG2, 3, 14)
(PG14)
+5VRAW
+12VRAW
+24VRAW
SYSFAIL*
BERR*
SYSRESET*
LWORD*

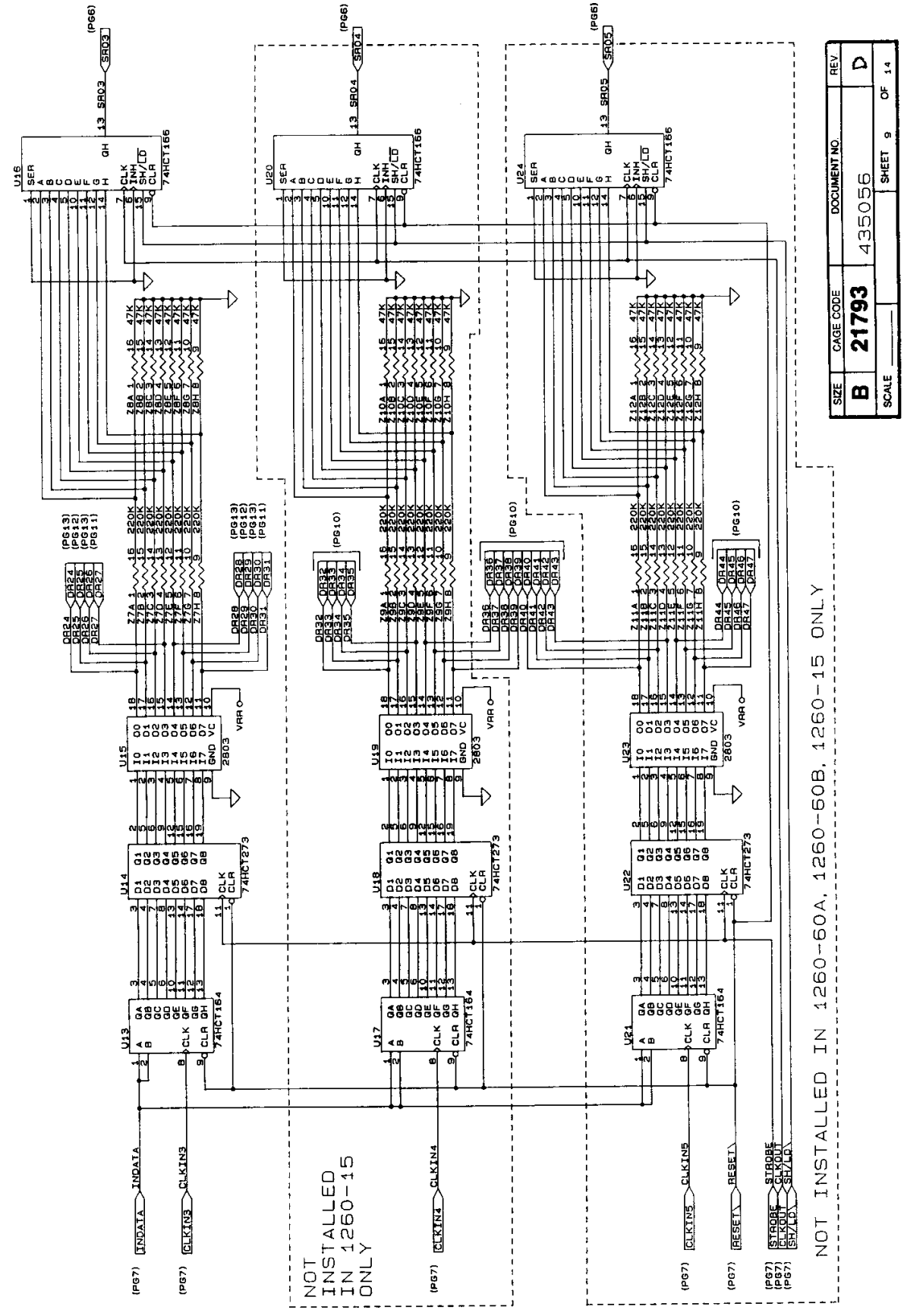


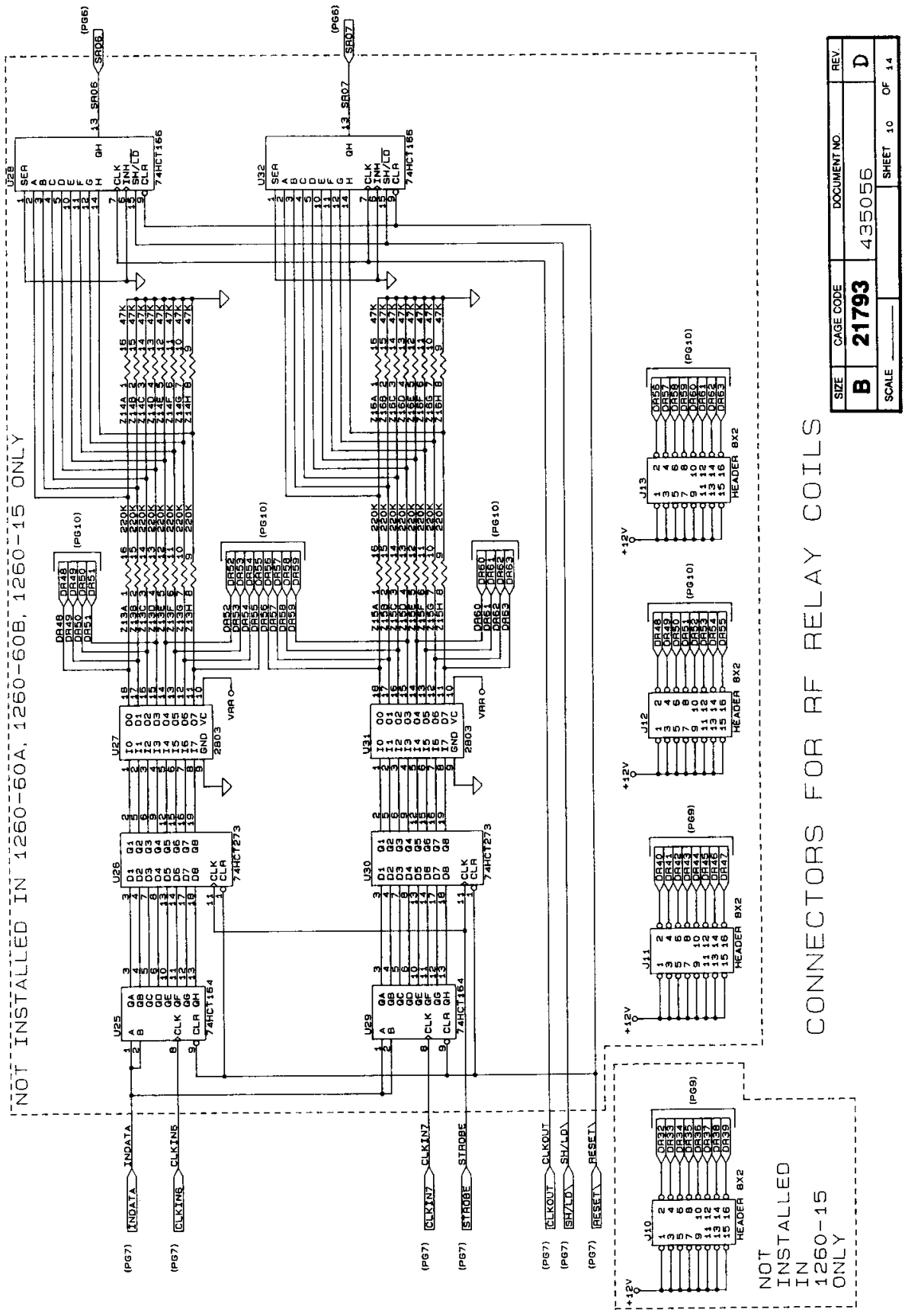
SIZE	CAGE CODE	DOCUMENT NO.	REV.
B	21793	435056	D
SCALE ____		SHEET 5	OF 14

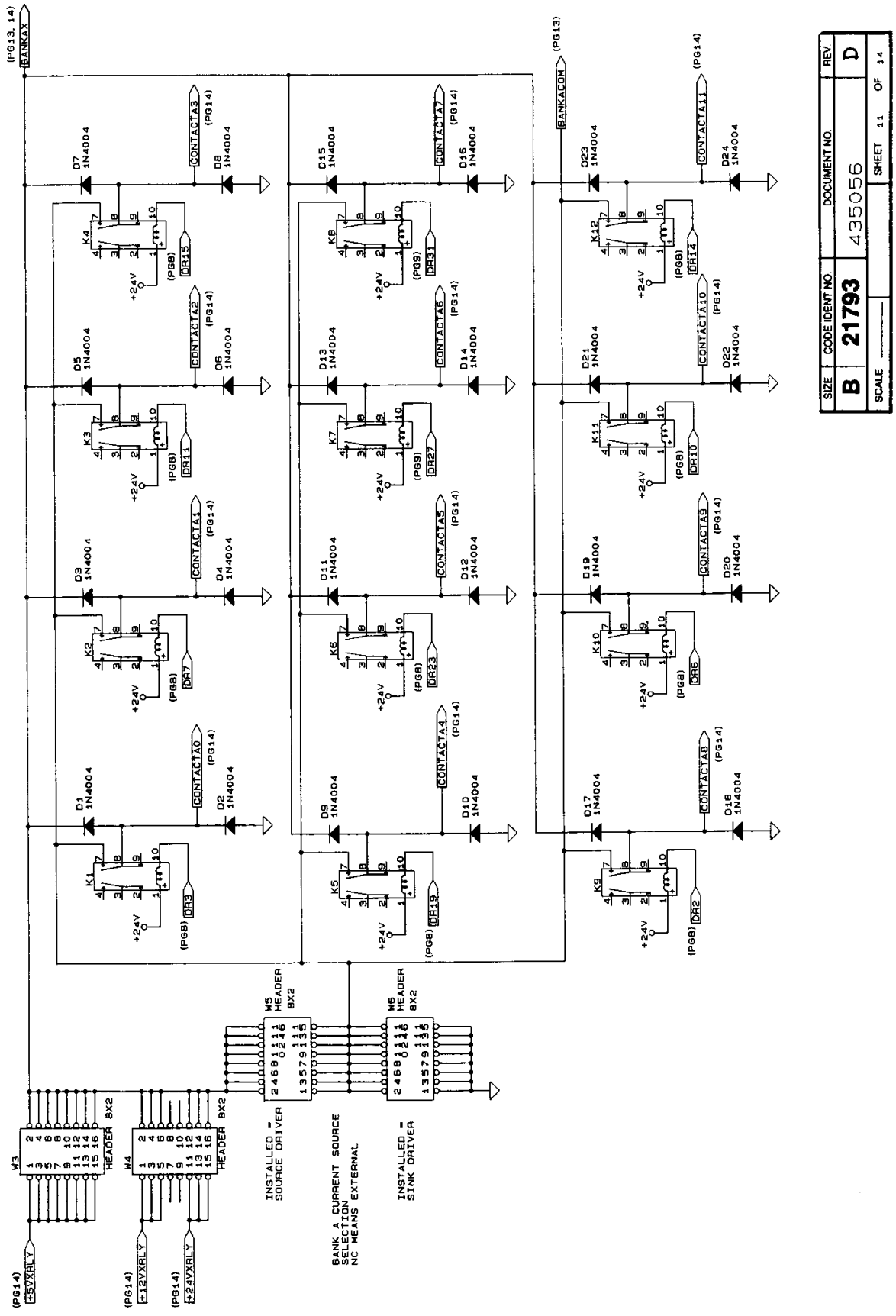

BA[0..13]
OUTDATA
INDATA
IODATA
CLKADDR
74HCT253
74HCT164
74HCT166
231152-001 (16L80)
BOARD ID
HEX 64 TO HEX 67
USED ON
1260-64,
1260-60A,
1260-60B ONLY
USED ON
1260-15 ONLY
SIZE
B
CAGE CODE
21793
DOCUMENT NO.
435056
REV
D
SCALE
SHEET 6 OF 14

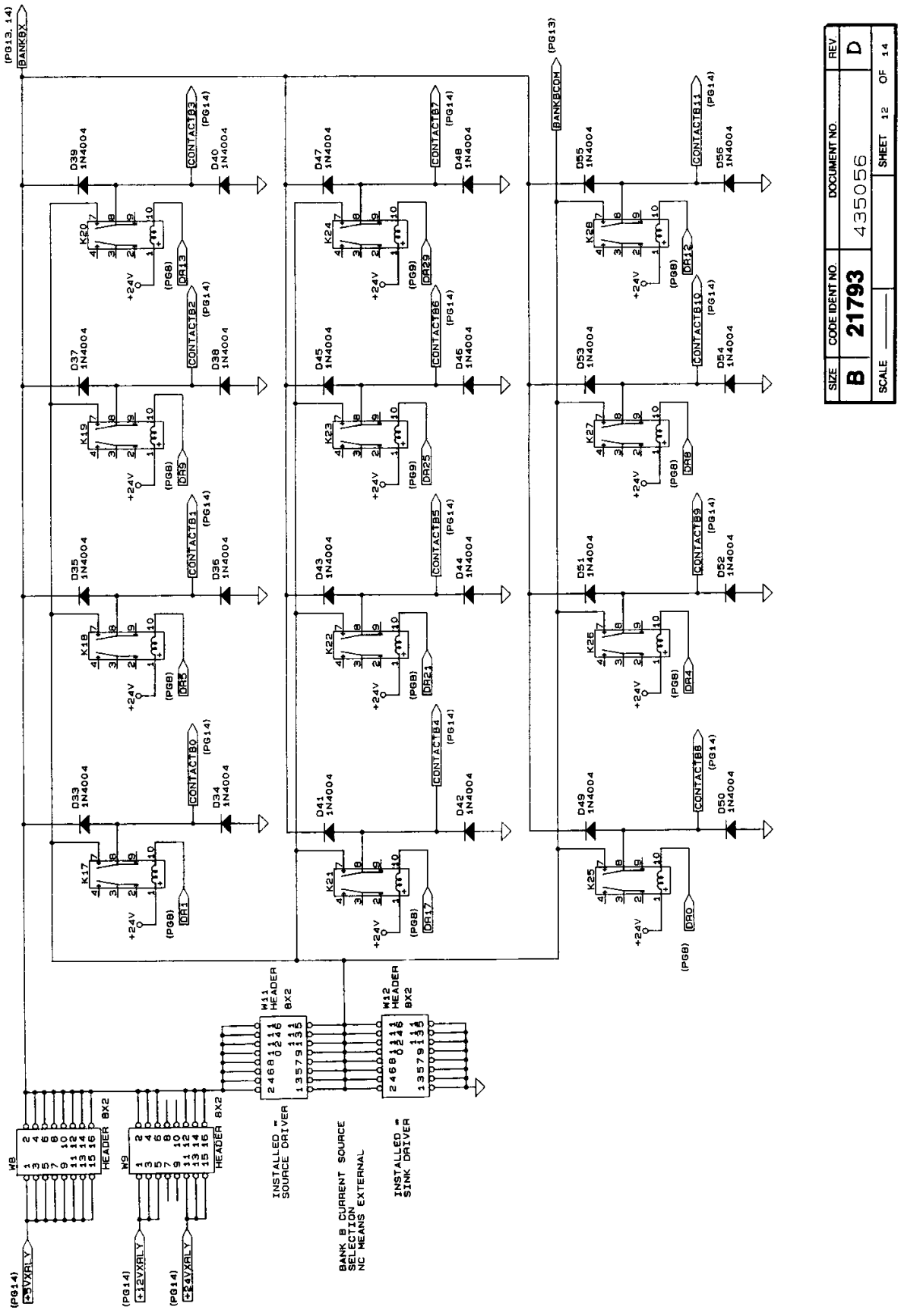

ID/ADDRESS SELECT
SIZE B
CODE IDENT NO. 21793
DOCUMENT NO. 435056
REV. D
SCALE
SHEET 7 OF 14

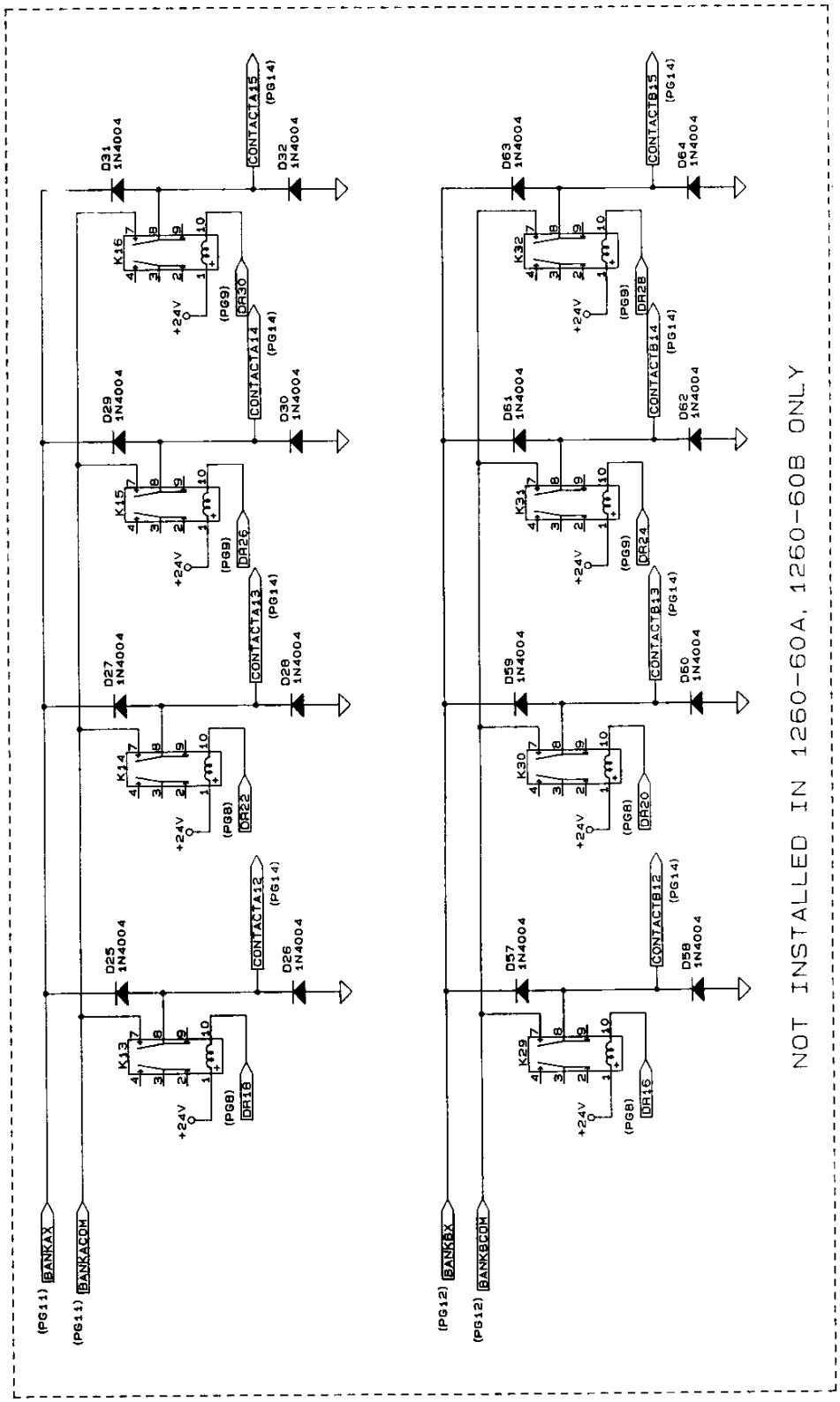

SIZE
B
CODE IDENT NO.
21793
DOCUMENT NO
435056
REV
D
SCALE
SHEET 8 OF 14
INDATA
CLKIN0
CLKIN1
CLKIN2
RESET
STROBE
CLKOUT
SH/LD


NOT INSTALLED IN 1260-60A, 1260-60B, 1260-15 ONLY
NOT INSTALLED IN 1260-15 ONLY
SIZE B
CAGE CODE 21793
DOCUMENT NO. 435056
REV D
SCALE
SHEET 9 OF 14

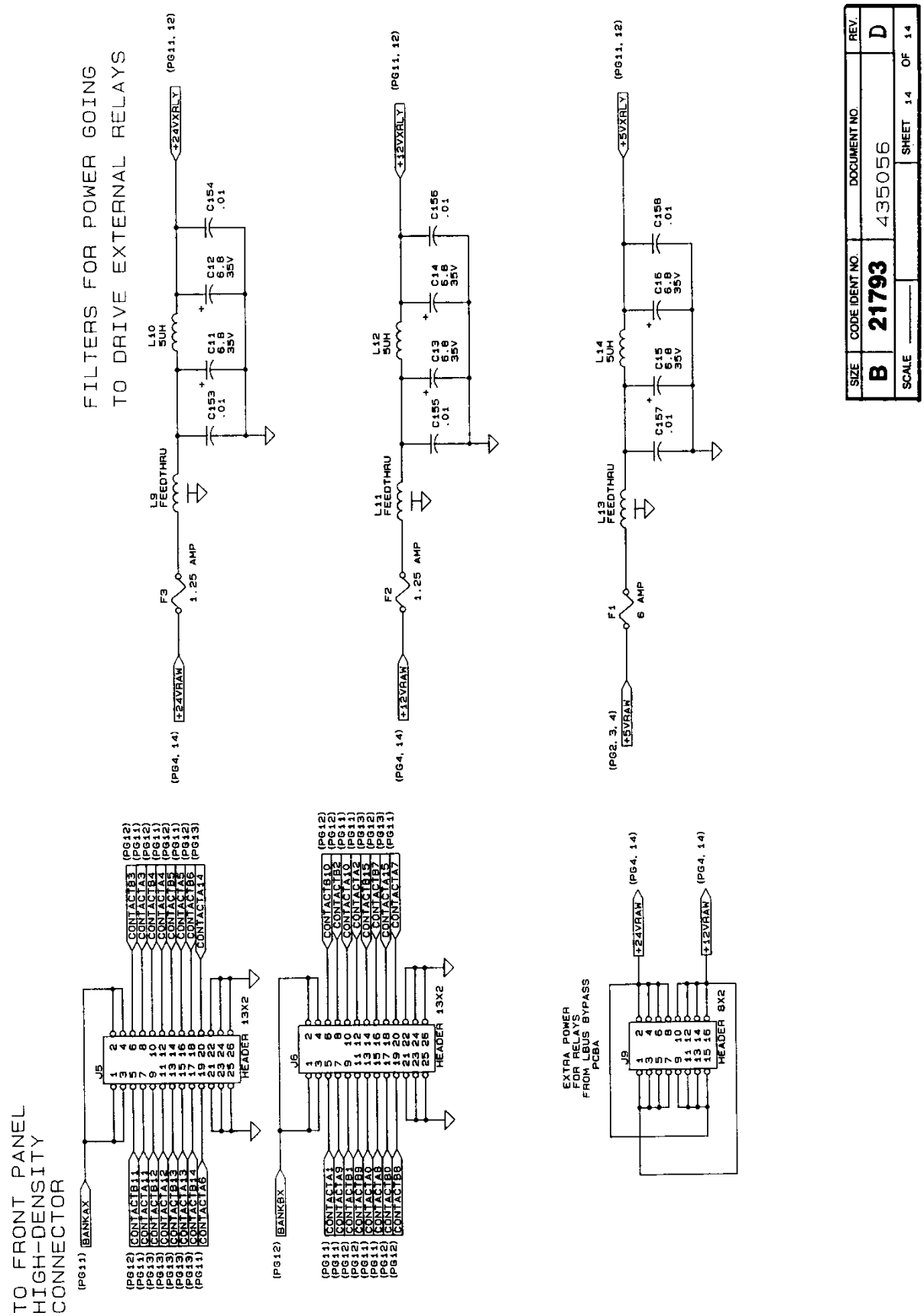

NOT INSTALLED IN 1260-60A, 1260-60B, 1260-15 ONLY
CONNECTORS FOR RF RELAY COILS
NOT INSTALLED IN 1260-15 ONLY
SIZE B
CAGE CODE 21793
DOCUMENT NO. 435056
REV. D
SCALE
SHEET 10 OF 14
INDATA
CLKIN6
CLKIN7
STROBE
CLKOUT
SH/LD
RESET
74HCT166
74HCT273
74HCT164
2803
HEADER 8X2


(PG13, 14)
BANKAX
BANKACOM
(PG13)
D1 1N4004
D2 1N4004
D3 1N4004
D4 1N4004
D5 1N4004
D6 1N4004
D7 1N4004
D8 1N4004
D9 1N4004
D10 1N4004
D11 1N4004
D12 1N4004
D13 1N4004
D14 1N4004
D15 1N4004
D16 1N4004
D17 1N4004
D18 1N4004
D19 1N4004
D20 1N4004
D21 1N4004
D22 1N4004
D23 1N4004
D24 1N4004
K1
K2
K3
K4
K5
K6
K7
K8
K9
K10
K11
K12
+24V
(PG8)
DR3
DR7
DR11
DR15
DR19
DR23
DR27
DR31
DR2
DR6
DR10
DR14
CONTACTA0 (PG14)
CONTACTA1 (PG14)
CONTACTA2 (PG14)
CONTACTA3 (PG14)
CONTACTA4 (PG14)
CONTACTA5 (PG14)
CONTACTA6 (PG14)
CONTACTA7 (PG14)
CONTACTA8 (PG14)
CONTACTA9 (PG14)
CONTACTA10 (PG14)
CONTACTA11 (PG14)
W3 HEADER 8X2
W4 HEADER 8X2
W5 HEADER 8X2
W5 HEADER 8X2
(PG14) +5VXRLY
(PG14) +12VXRLY
(PG14) +24VXRLY
INSTALLED - SOURCE DRIVER
BANK A CURRENT SOURCE SELECTION NC MEANS EXTERNAL
INSTALLED - SINK DRIVER
SIZE B
CODE IDENT NO. 21793
DOCUMENT NO. 435056
REV. D
SCALE
SHEET 11 OF 14


(PG13, 14)
BANKBX
BANKBCOM
(PG13)
D33 1N4004
D34 1N4004
D35 1N4004
D36 1N4004
D37 1N4004
D38 1N4004
D39 1N4004
D40 1N4004
D41 1N4004
D42 1N4004
D43 1N4004
D44 1N4004
D45 1N4004
D46 1N4004
D47 1N4004
D48 1N4004
D49 1N4004
D50 1N4004
D51 1N4004
D52 1N4004
D53 1N4004
D54 1N4004
D55 1N4004
D56 1N4004
CONTACTB0 (PG14)
CONTACTB1 (PG14)
CONTACTB2 (PG14)
CONTACTB3 (PG14)
CONTACTB4 (PG14)
CONTACTB5 (PG14)
CONTACTB6 (PG14)
CONTACTB7 (PG14)
CONTACTB8 (PG14)
CONTACTB9 (PG14)
CONTACTB10 (PG14)
CONTACTB11 (PG14)
K17
K18
K19
K20
K21
K22
K23
K24
K25
K26
K27
K28
+24V
(PG8)
DR1
DR5
DR9
DR13
DR17
DR21
DR25
DR29
DR0
DR4
DR8
DR12
(PG9)
W8 HEADER 8X2
W9 HEADER 8X2
W11 HEADER 8X2
W12 HEADER 8X2
(PG14)
+5VXRLY
+12VXRLY
+24VXRLY
INSTALLED = SOURCE DRIVER
INSTALLED = SINK DRIVER
BANK B CURRENT SOURCE SELECTION
NC MEANS EXTERNAL
SIZE
B
CODE IDENT NO.
21793
DOCUMENT NO.
435056
REV.
D
SCALE
SHEET 12 OF 14



SIZE	CAGE CODE	DOCUMENT NO.	REV.
B	21793	435056	D
SCALE ____		SHEET 13	OF 14


FILTERS FOR POWER GOING
TO DRIVE EXTERNAL RELAYS
TO FRONT PANEL
HIGH-DENSITY
CONNECTOR
EXTRA POWER
FOR RELAYS
FROM LBUS BYPASS
PCBA
+24VXRLY
+12VXRLY
+5VXRLY
+24VRAW
+12VRAW
+5VRAW
BANKAX
BANKBX
HEADER 13X2
HEADER 8X2
SIZE
B
CODE IDENT NO.
21793
DOCUMENT NO.
435056
REV.
D
SCALE
SHEET 14 OF 14

Chapter 7
PARTS LIST

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407089 FINAL ASSY., 1260-64A

REF DESIG	RACAL INST P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
{1}1	405056	PCB ASSY., 1260-64	21793	405056
{2}1	405055	PCB ASSY., L-BUS BYPASS	21793	405055
{5}1	455901	PANEL, RIGHT SIDE	21793	455901
{6}1	455779-003	PANEL, SIDE, LEFT	21793	455779-003
{7}1	455777-001	PANEL, REAR, DOUBLE	21793	455777-001
{8}1	455818-001	PANEL, TOP, 2X	21793	455818-001
{9}1	455819-001	PANEL, BOTTOM, 2X	21793	455819-001
{10}1	456042	FRONT PANEL, 1260-64	21793	456042
{11}1	456056-001	BRACKET, HANDLE SUPPORT, BOTTOM	21793	456056-001
{12}1	456056-002	BRACKET, HANDLE SUPPORT, TOP	21793	456056-002
{14}1	405057	PCB ASSY., CONNECTOR INTERFACE	21793	405057
{16}4	407016	RELAY ASSY., SP6T, 18 GHZ	21793	407016
{21}4	611052	KEY, POLARIZING, PLUG	00779	87077-1
{22}2	611264	HANDLE, EXTRACTOR, BOTTOM	62559	20817-327
{23}2	611265	HANDLE, EXTRACTOR, TOP	62559	20817-328
{24}1	611266	MOUNTING HARDWARE, HANDLE	62559	21100-745
{29}2	615292	SCREW, PFL, 4-40 X .312	-	-
{30}2	615514	SCREW, PFH, 2-56 X .312	-	-
{31}32	615539	SCREW, PFH, 4-40X. 125	-	-
{34}2	616405	SCREW, PFH, M2.5-.45 X 12	-	-
{35}8	616480	SCREW, PFH, 4-40 X .375	-	-
{36}6	616251	SCREW, PPH, SEMS ASSY, 4-40X.250	78189	SEMS W/SQ CONE WA.
{43}1	921212-023	LABEL, VXI, 1260-64	21793	921212-023
{44}A/R	920962	LOCTITE, 242, MED STR.	05972	272
{46}1	921059	LABEL, CAUTION, STATIC	21793	921059
{47}2	921148-001	LABEL SET VXI	21793	921148-001
{48}1	921309	LABEL, VXI SWITCH ID	21793	921309
{49}1	407090	SHIPPING KIT, 1260-64	21793	407090
{51}1	921423	LABEL, CE MARKING	21793	921423

407089-001 FINAL ASSY., 1260-64B

REF DESIG	RACAL INST P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
{1}1	405056	PCB ASSY., 1260-64	21793	405056
{2}1	405055	PCB ASSY., L-BUS BYPASS	21793	405055
{5}1	455901	PANEL, RIGHT SIDE	21793	455901
{6}1	455779-003	PANEL, SIDE, LEFT	21793	455779-003
{7}1	455777-001	PANEL, REAR, DOUBLE	21793	455777-001
{8}1	455818-001	PANEL, TOP, 2X	21793	455818-001
{9}1	455819-001	PANEL, BOTTOM, 2X	21793	455819-001
{10}1	456042	FRONT PANEL, 1260-64	21793	456042
{11}1	456056-001	BRACKET, HANDLE SUPPORT, BOTTOM	21793	456056-001
{12}1	456056-002	BRACKET, HANDLE SUPPORT, TOP	21793	456056-002
{13}2	456065	PLATE, BLANKING, 1260-64	21793	456065
{14}1	405057	PCB ASSY., CONNECTOR INTERFACE	21793	405057
{16}2	407016	RELAY ASSY., SP6T, 18 GHZ	21793	407016
{21}2	611052	KEY, POLARIZING, PLUG	00779	87077-1
{22}2	611264	HANDLE, EXTRACTOR, BOTTOM	62559	20817-327
{23}2	611265	HANDLE, EXTRACTOR, TOP	62559	20817-328
{24}1	611266	MOUNTING HARDWARE, HANDLE	62559	21100-745
{29}2	615292	SCREW, PFL, 4-40 X .312	-	-
{30}2	615514	SCREW, PFH, 2-56 X .312	-	-
{31}32	615539	SCREW, PFH, 4-40X .125	-	-
{34}2	616405	SCREW, PFH, M2.5-.45 X 12	-	-
{35}8	616480	SCREW, PFH, 4-40 X .375	-	-
{36}6	616251	SCREW, PPH, SEMS ASSY, 4-40X.250	78189	SEMS W/SQ CONE WA.
{37}8	616255	SCREW, PPH, SEMS ASSY, 6-32X.312	78189	SEMS W/SQ CONE WA.
{43}1	921212-023	LABEL, VXI, 1260-64	21793	921212-023
{44}A/R	920962	LOCTITE, 242, MED STR.	05972	272
{46}1	921059	LABEL, CAUTION, STATIC	21793	921059
{47}2	921148-001	LABEL SET VXI	21793	921148-001
{48}1	921309	LABEL, VXI SWITCH ID	21793	921309
{49}1	407090	SHIPPING KIT, 1260-64	21793	407090
{51}1	921423	LABEL, CE MARKING	21793	921423

407089-002 FINAL ASSY., 1260-64C

REF DESIG	RACAL-INST P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
{1}1	405056	PCB ASSY., 1260-64	21793	405056
{2}1	405055	PCB ASSY., L-BUS BYPASS	21793	405055
{5}1	455901	PANEL, RIGHT SIDE	21793	455901
{6}1	455779-003	PANEL, SIDE, LEFT	21793	455779-003
{7}1	455777-001	PANEL, REAR, DOUBLE	21793	455777-001
{8}1	455818-001	PANEL, TOP, 2X	21793	455818-001
{9}1	455819-001	PANEL, BOTTOM, 2X	21793	455819-001
{10}1	456042	FRONT PANEL, 1260-64	21793	456042
{11}1	456056-001	BRACKET, HANDLE SUPPORT, BOTTOM	21793	456056-001
{12}1	456056-002	BRACKET, HANDLE SUPPORT, TOP	21793	456056-002
{13}3	456065	PLATE, BLANKING, 1260-64	21793	456065
{14}1	405057	PCB ASSY., CONNECTOR INTERFACE	21793	405057
{16}1	407016	RELAY ASSY., SP6T, 18 GHZ	21793	407016
{21}1	611052	KEY, POLARIZING, PLUG	00779	87077-1
{22}2	611264	HANDLE, EXTRACTOR, BOTTOM	62559	20817-327
{23}2	611265	HANDLE, EXTRACTOR, TOP	62559	20817-328
{24}1	611266	MOUNTING HARDWARE, HANDLE	62559	21100-745
{29}2	615292	SCREW, PFL, 4-40 X .312	-	-
{30}2	615514	SCREW, PFH, 2-56 X .312	-	-
{31}32	615539	SCREW, PFH, 4-40X .125	-	-
{34}2	616405	SCREW, PFH, M2.5-.45 X 12	-	-
{35}8	616480	SCREW, PFH, 4-40 X .375	-	-
{36}6	616251	SCREW, PPH, SEMS ASSY, 4-40X.250	78189	SEMS W/SQ CONE WA.
{37}12	616255	SCREW, PPH, SEMS ASSY, 6-32X.312	78189	SEMS W/SQ CONE WA.
{43}1	921212-023	LABEL, VXI, 1260-64	21793	921212-023
{44}A/R	920962	LOCTITE, 242, MED STR.	05972	272
{46}1	921059	LABEL, CAUTION, STATIC	21793	921059
{47}2	921148-001	LABEL SET VXI	21793	921148-001
{48}1	921309	LABEL, VXI SWITCH ID	21793	921309
{49}1	407090	SHIPPING KIT, 1260-64	21793	407090
{51}1	921423	LABEL, CE MARKING	21793	921423

407090 - SHIP KIT, 1260-64

REF DESIG	RACAL INST P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
{1}2	455541	KEY, LOCKOUT, TTL, A/C	21793	455541
{2}2	455542	KEY, LOCKOUT, TTL, A/C	21793	455542
{4}1	601855-050	CONNECTOR, SGMC. CABLE PLUG	21793	601855-050
{5}50	601857	CONTACT, SGMC. MAIL	28198	M5422N
{7}4	615013	SCREW, PPF, 2-56 X .188	-	-
{9}64	601195	PLUG, JUMPER, 0.1 CTR, LOW PROFILE	00779	530153-2
{11}1	980673-010	MANUAL, 1260-64 MODULE	21793	980673-010

405055 - PCB ASSY, L-BUS BYPASS, 1260

REF DESIG	RACAL INST P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
P1	601675-001	CONNECTOR, EUROCARD, 96 PIN MOD.	21793	601675-001
P2	601675-001	CONNECTOR, EUROCARD, 96 PIN MOD.	21793	601675-001
P9	602094-012	CONNECTOR HOUSING, CABLE RECEPT, 12 PIN	22526	65043-031
{1}1	415055	PCB, L-BUS BYPASS, 1260 (UNLOADED)	21793	415055
{6}A/R	523333	WIRE, TEFLON STRANDED, 22 GA, ORG	92194	5855/7-ORG
{7}A/R	523888	WIRE, TEFLON STRANDED, 22 GA, GRY	92194	5855/7-GRY
{10}4	611311	TERMINAL, CRIMP	22526	48251-000
{12}1	610777	CABLE TIE	16956	08-432
{13}2	610802	FASTENER, CHASSIS SWAGE, 4-40	88245	B1591B-11

405057 - PCB ASSY, CONN INTFC, 1260-64

REF DESIG	RACAL INST P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
J1	602105	CABLE ASSY., PCB INTERFACE	21793	602105
J2	602105	CABLE ASSY., PCB INTERFACE	21793	602105
J200	601856-050	CONNECTOR, SMPL, PCB RECEPT	21793	601856-050
{1}1	415057	PCB, CONNECTOR INTERFACE, 1260-64(UNLOADED)	21793	415057
{4}2	615014	SCREW, PPH, 2-56 X .250	-	-
{5}2	610980	WASHER, FLAT, #2 X .062	-	-
{10}A/R	522555	WIRE, TEFLON STRANDED, 18 GA, GRN	-	-
{13}A/R	920962	LOCTITE, 242, MED STR.	05972	272

405056 - PCB ASSY, 1260-64

REF DESIG	RACAL INST P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
C1	110126	CAP, TANTA, 6.8UF, 35V, 20 PERCENT	05397	T355F685M035A5
C2	110126	CAP, TANTA, 6.8UF, 35V, 20 PERCENT	05397	T355F685M035A5
C4-C7	110126	CAP, TANTA, 6.8UF, 35V, 20 PERCENT	05397	T355F685M035A5
C11-C16	110126	CAP, TANTA, 6.8UF, 35V, 20 PERCENT	05397	T355F685M035A5
C100-C102	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C103	110165	CAP, TANTA, .15 MF, 35V, 10PCT	05397	T355A154K035AS
C104-C130	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C137-C140	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C153-C158	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C161	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
C162	R-21-1801	CAP, CHIP, 10 NF	95275	VJ1206Y103MF
D1-D64	210004	DIODE, SILICON	81349	1N4004
F1	920930	FUSE, NORMAL BLO, 6A, 250V	75915	312.006
F2	920776	FUSE, SLO BLO, 1.25A, 250V	71400	MDX1-1/4
F3	920776	FUSE, SLO BLO, 1.25A, 250V	71400	MDX1-1/4
J3	601925	CONNECTOR, PCB, RECEPT, 3 ROW, 96P	52072	618008
J4	601925	CONNECTOR, PCB, RECEPT, 3 ROW, 96P	52072	618008
J5	601583-026	CONNECTOR, PCB, PLUG, 26 PIN	55322	TSW-113-08-G-D
J6	601583-026	CONNECTOR, PCB, PLUG, 26 PIN	55322	TSW-113-08-G-D
J9-J13	601731	CONNECTOR, PCB, PLUG, 16-PIN	52072	CA-D16-23B-43
K1-K32	310197	RELAY, 2 FORM C	61529	TQ2E-24V
L1	100164	CAP, FEED-THRU,800PF, 50V	00779	842448-2
L2	310193	CHOKE, SHIELDED, 5UH	91637	IH-5-5-10
L3	310193	CHOKE, SHIELDED, 5UH	91637	IH-5-5-10
L4	100164	CAP, FEED-THRU,800PF, 50V	00779	842448-2
L5	600245	JUMPER, INSULATED	52210	L-2007-1
L6	600245	JUMPER, INSULATED	52210	L-2007-1
L7	100164	CAP, FEED-THRU,800PF, 50V	00779	842448-2
L8	310193	CHOKE, SHIELDED, 5UH	91637	IH-5-5-10
L9	100164	CAP, FEED-THRU,800PF, 50V	00779	842448-2
L10	310193	CHOKE, SHIELDED, 5UH	91637	IH-5-5-10
L11	100164	CAP, FEED-THRU,800PF, 50V	00779	842448-2
L12	310193	CHOKE, SHIELDED, 5UH	91637	IH-5-5-10
L13	100164	CAP, FEED-THRU,800PF, 50V	00779	842448-2
L14	310193	CHOKE, SHIELDED, 5UH	91637	IH-5-5-10
P1	601675-001	CONNECTOR, EUROCARD, 96 PIN MOD.	21793	601675-001
P2	601675-001	CONNECTOR, EUROCARD, 96 PIN MOD.	21793	601675-001
SW1-SW3	601969	SWITCH, DIP 6 POS, LOW PROFILE	65832	K406S
TP1	601197	POST, TEST, .025 SQ	00779	6-87022-6
TP2	601197	POST, TEST, .025 SQ	00779	6-87022-6
U1	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U2	231130	IC, DIGITAL, FLIP FLOP	18324	PC74HC273
U3	231098	IC, SOIC TRANSISTOR	56289	ULN-2803LW
U4	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U5	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U6	231130	IC, DIGITAL, FLIP FLOP	18324	PC74HC273
U7	231098	IC, SOIC TRANSISTOR	56289	ULN-2803LW
U8	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U9	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U10	231130	IC, DIGITAL, FLIP FLOP	18324	PC74HC273
U11	231098	IC, SOIC TRANSISTOR	56289	ULN-2803LW
U12	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U13	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U14	231130	IC, DIGITAL, FLIP FLOP	18324	PC74HC273
U15	231098	IC, SOIC TRANSISTOR	56289	ULN-2803LW
U16	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U17	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U18	231130	IC, DIGITAL, FLIP FLOP	18324	PC74HC273
U19	231098	IC, SOIC TRANSISTOR	56289	ULN-2803LW

405056 - PCB ASSY, 1260-64

REF DESIG	RACAL INST P/N	DESCRIPTION	FSC	MANUFACTURER'S P/N
U20	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U21	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U22	231130	IC, DIGITAL, FLIP FLOP	18324	PC74HC273
U23	231098	IC, SOIC TRANSISTOR	56289	ULN-2803LW
U24	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U25	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U26	231130	IC, DIGITAL, FLIP FLOP	18324	PC74HC273
U27	231098	IC, SOIC TRANSISTOR	56289	ULN-2803LW
U28	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U29	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U30	231130	IC, DIGITAL, FLIP FLOP	18324	PC74HC273
U31	231098	IC, SOIC TRANSISTOR	56289	ULN-2803LW
U32	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U33	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U34	231131	IC, DIGITAL, SHIFT REGISTER	18324	PC74HCT164D
U35	231120	IC, 8-BIT, PARALLEL/SERIAL OUT S.R.	18324	74HCT166D
U36	231152-001	IC, DIGITAL 16L8, PAL	21793	231152-001
U37	231147	IC, MULTIPLEXER	04713	74HC253D
U39	231147	IC, MULTIPLEXER	04713	74HC253D
U40	231096	IC, QUAD DIFF RECEIVER	01295	AM26LS32ACD
U41	231096	IC, QUAD DIFF RECEIVER	01295	AM26LS32ACD
U42	231125	IC, DIGITAL, LINE DRIVER	27014	DS26LS31MN
U43	231154	IC, PROGRAMMED PLA	21793	231154
U44	231153	IC, PROGRAMMED PLA	21793	231153
U45	231094	IC, DEMUX DECODER	18324	N74LS138D
U47	231135	IC, DIGITAL, 4-BIT COMPARATOR	18324	PC74HCT85D
U48	231093	IC, QUAD COMPARATOR	04713	LM339D
W3-W6	601731	CONNECTOR, PCB, PLUG, 16-PIN	52072	CA-D16-23B-43
W8	601731	CONNECTOR, PCB, PLUG, 16-PIN	52072	CA-D16-23B-43
W9	601731	CONNECTOR, PCB, PLUG, 16-PIN	52072	CA-D16-23B-43
W11	601731	CONNECTOR, PCB, PLUG, 16-PIN	52072	CA-D16-23B-43
W12	601731	CONNECTOR, PCB, PLUG, 16-PIN	52072	CA-D16-23B-43
Z1	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z2	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z3	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z4	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z5	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z6	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z7	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z8	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z9	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z10	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z11	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z12	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z13	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z14	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z15	080119	RES NETWORK, 220K	91637	SOMC-1603-224K
Z16	080117	RES NETWORK, 16P8R, 47K	73138	628-AL-473J
Z17	080120	RES NETWORK, 10K	11236	767-161R10K
Z18	080114	RES NETWORK, 16P8R, 15K	73138	628-AL-153J
{43}1	401951	PCB ASSY., LBUS JUMPER	21793	401951
{44}1	401951-003	PCB ASSY., P3 JUMPER	21793	401951-003
{45}1	415056	PCB, 1260-64 (UNLOADED)	21793	415056
{48}A/R	500022	WIRE, BARE COPPER/TIN, 22 GA	21793	500022
{50}A/R	501376	TUBING, TEFLON, 20 GA, THIN WALL	29005	TW20GA
{55}4	611258-001	STANDOFF, SWAGE 4-40 X .170	06540	8091-11B-B-440-28
{56}2	611260	STANOFF, SWG, 4-40 X 1.138L	51506	51075HB105-1.138L
{79}6	920971	FUSE CLIP, PC MOUNT	75915	122088

List of Suppliers

FSC	SUPPLIER
00779	AMP, INC. HARRISBURG, PA
01295	TEXAS INSTRUMENTS, INC. DALLAS, TX
04713	MOTOROLA, INC. (SEMICONDUCTOR PRODUCTS DIV.) PHOENIX, AZ
05397	UNION CARBIDE CORP. (MATERIALS SYSTEMS DIV.) CLEVELAND, OH
05972	LOCTITE CORP. HARTFORD, CT
06540	AMATOM ELECTRONIC HARDWARE NEW ROCHELLE, NY
11236	CTS OF BERNE, INC. BERNE, IN
16956	DENNISON MFG. CO. FRAMINGTON, MA
18324	SIGNETICS, INC. SUNNYVALE, CA
21793	RACAL INSTRUMENTS INC. IRVINE, CA
27014	NATIONAL SEMI-CONDUCTOR CORP. SANTA CLARA, CA
28198	POSITRONIC INDUSTRIES INC. SPRINGFIELD, MO
29005	STORM PRODUCTS CO. LOS ANGELES, CA
51506	ACCURATE SCREW MACHINE NUTLEY, NJ
52072	CIRCUIT ASSY. CORP. COSTA MESA, CA
52210	GETTING ENGRG. & MFG. CO. SPRING MILLS, PA
55322	SAMTEC, INC NEW ALBANY, IN
56289	SPAGUE ELECTRIC CO. N. ADAMS, MA
61529	AROMAT CORP. CUPERTINO, CA
62559	SCHROFF, INC. WARWICK, RI
65832	AMERICAN RESEARCH & ENGINEERING ELGIN, IL
71400	MCGRAW-EDISON CO. (BUSSMAN DIV.) ST. LOUIS, MO
73138	BECKMAN INSTRUMENTS FULLERTON, CA
75915	LITTELFUSE, INC. DES PLAINES, IL
78189	ILLINOIS TOOL WORKS, INC. (SHAKEPROOF DIV.) ELGIN, IL
81349	MILITARY SPECIFICATION
83330	HERMAN H. SMITH, INC. BROOKLYN, NY
88245	LITTON PRECISION PRODUCTS VAN NUYS, CA
91637	DALE ELECTRONICS, INC. COLUMBUS, NE
95275	VITRAMON, INC. BRIDGEPORT, CT

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Chapter 8

OPTIONAL HARNESS ASSEMBLIES

The following harness assemblies are used to connect Racal Instruments Model 1260-64 to Freedom Series Test Receiver Interfaces.

Each harness documentation consists of an assembly drawing, parts list, system wire list, and wire list.

407321, Virginia Panel, Inc. Series VP90 Interface Harness.

For more information on Racal Instruments complete line of Test Receiver Interface solutions, contact your Sales Representative.

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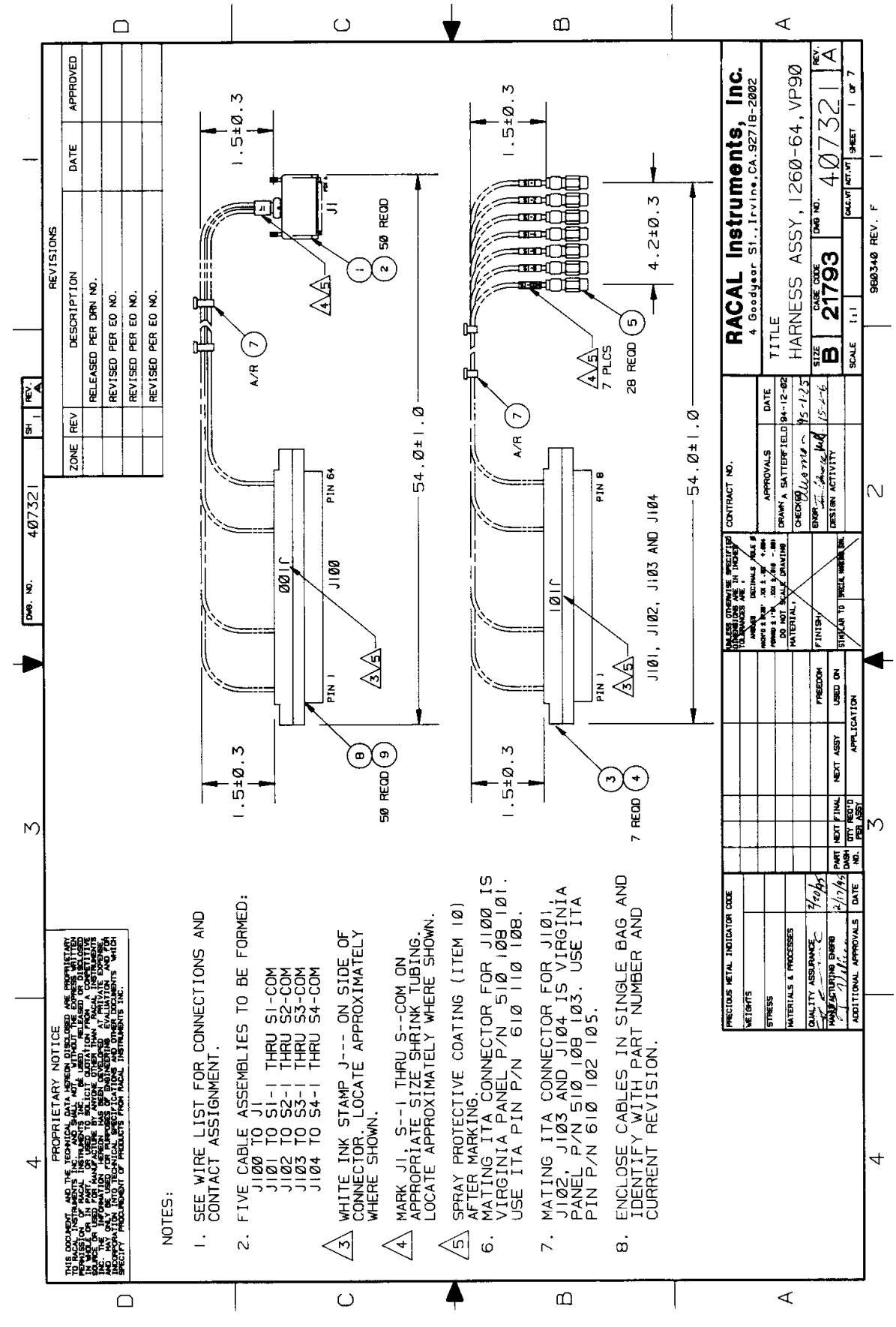
PROPRIETARY NOTICE
REVISIONS
ZONE
REV
DESCRIPTION
DATE
APPROVED
RELEASED PER DRN NO.
REVISED PER EO NO.
REVISED PER EO NO.
REVISED PER EO NO.
DWG. NO. 407321
SH 1
REV. A
NOTES:
1. SEE WIRE LIST FOR CONNECTIONS AND CONTACT ASSIGNMENT.
2. FIVE CABLE ASSEMBLIES TO BE FORMED:
J100 TO J1
J101 TO S1-1 THRU S1-COM
J102 TO S2-1 THRU S2-COM
J103 TO S3-1 THRU S3-COM
J104 TO S4-1 THRU S4-COM
3 WHITE INK STAMP J--- ON SIDE OF CONNECTOR. LOCATE APPROXIMATELY WHERE SHOWN.
4 MARK J1, S--1 THRU S--COM ON APPROPRIATE SIZE SHRINK TUBING. LOCATE APPROXIMATELY WHERE SHOWN.
5 SPRAY PROTECTIVE COATING (ITEM 10) AFTER MARKING.
6. MATING ITA CONNECTOR FOR J100 IS VIRGINIA PANEL P/N 510 108 101. USE ITA PIN P/N 610 110 108.
7. MATING ITA CONNECTOR FOR J101, J102, J103 AND J104 IS VIRGINIA PANEL P/N 510 108 103. USE ITA PIN P/N 610 102 105.
8. ENCLOSE CABLES IN SINGLE BAG AND IDENTIFY WITH PART NUMBER AND CURRENT REVISION.
1.5±0.3
54.0±1.0
50 REQD
A/R
7 REQD
28 REQD
7 PLCS
4.2±0.3
J1
J100
J101
PIN 1
PIN 64
PIN 8
J101, J102, J103 AND J104
RACAL Instruments, Inc.
4 Goodyear St., Irvine, CA. 92718-2002
TITLE
HARNESS ASSY, 1260-64, VP90
SIZE B
CAGE CODE 21793
DWG NO. 407321
REV. A
SCALE 1:1
SHEET 1 OF 7
980340 REV. F

ENGINEERING PARTS LIST

ITEM	BIN	PART NO.	DESCRIPTION	QTY	REFERENCE
1		601855-050	CON-CAB-PLG50CP, 1260-30-40	1	J1
2		602092-001	CONT,SGMC MALE, CRIMP	50	W/J1
3		602201-007	CON-RCV-PLG008C.---S-VP90	4	J101-J104
4		602230	CONTACT,COAX,18GHZ,SF142	28	W/J101-J104
5		602231	CON-CXL-PLG001C.	28	S1-S4
6		500317	CACX-SHD-01C28G-1STR	A/R	
7		610777	TIE-CA-LKG-.062-.075	A/R	
8		602201-001	CON-RCV-PLG064C.---D-VP90	1	J100
9		602201-806	PATCHCORD,SIGNAL,24 AWG,60"	50	
10		910541	POLYURETHANE CONF. COAT	A/R	

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ENGINEERING WIRE LIST

WIRE	FROM	TO	TYPE	PART #	WIRE LEN	REFERENCE
	BLK AA (J100)	Uxx-SLOT yy (J1)	CABLE	407321		SYSTEM WIRE LIST
	BLK AA (J101)	Uxx-SLOT yy (S1)	CABLE	407321		
	BLK AA (J102)	Uxx-SLOT yy (S2)	CABLE	407321		
	BLK AA (J103)	Uxx-SLOT yy (S3)	CABLE	407321		
	BLK AA (J104)	Uxx-SLOT yy (S4)	CABLE	407321		

This system wirelist serves as a template for incorporating this harness assembly into the overall system wirelist. It does not in any way affect the fabrication of this harness assembly.

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ENGINEERING WIRE LIST

WIRE	FROM	TO	TYPE	PART #	WIRE LEN	REFERENCE
1	J101-1 602230	S1-1 (602231)	COAX	500317	54"	SW 1-1
2	J101-2 602230	S1-2 (602231)	COAX	500317	54"	SW 1-2
3	J101-3 602230	S1-3 (602231)	COAX	500317	54"	SW 1-3
4	J101-4 602230	S1-4 (602231)	COAX	500317	54"	SW 1-4
5	J101-5 602230	S1-5 (602231)	COAX	500317	54"	SW 1-5
6	J101-6 602230	S1-6 (602231)	COAX	500317	54"	SW 1-6
7	J101-7 602230	S1-COM (602231)	COAX	500317	54"	SW 1-COM
8	J101-8	NO CONNECT				
9	J102-1 602230	S2-1 (602231)	COAX	500317	54"	SW 2-1
10	J102-2 602230	S2-2 (602231)	COAX	500317	54"	SW 2-2
11	J102-3 602230	S2-3 (602231)	COAX	500317	54"	SW 2-3
12	J102-4 602230	S2-4 (602231)	COAX	500317	54"	SW 2-4
13	J102-5 602230	S2-5 (602231)	COAX	500317	54"	SW 2-5
14	J102-6 602230	S2-6 (602231)	COAX	500317	54"	SW 2-6
15	J102-7 602230	S2-COM (602231)	COAX	500317	54"	SW 2-COM
16	J102-8	NO CONNECT				
17	J103-1 602230	S3-1 (602231)	COAX	500317	54"	SW 3-1
18	J103-2 602230	S3-2 (602231)	COAX	500317	54"	SW 3-2
19	J103-3 602230	S3-3 (602231)	COAX	500317	54"	SW 3-3
20	J103-4 602230	S3-4 (602231)	COAX	500317	54"	SW 3-4
21	J103-5 602230	S3-5 (602231)	COAX	500317	54"	SW 3-5
22	J103-6 602230	S3-6 (602231)	COAX	500317	54"	SW 3-6
23	J103-7 602230	S3-COM (602231)	COAX	500317	54"	SW 3-COM
24	J103-8	NO CONNECT				
25	J104-1 602230	S4-1 (602231)	COAX	500317	54"	SW 4-1

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ENGINEERING WIRE LIST

WIRE	FROM	TO	TYPE	PART #	WIRE LEN	REFERENCE
26	J104-2 602230	S4-2 (602231)	COAX	500317	54"	SW 4-2
27	J104-3 602230	S4-3 (602231)	COAX	500317	54"	SW 4-3
28	J104-4 602230	S4-4 (602231)	COAX	500317	54"	SW 4-4
29	J104-5 602230	S4-5 (602231)	COAX	500317	54"	SW 4-5
30	J104-6 602230	S4-6 (602231)	COAX	500317	54"	SW 4-6
31	J104-7 602230	S4-COM (602231)	COAX	500317	54"	SW 4-COM
32	J104-8	NO CONNECT				
33	J100-1 (602201-001)	J1-A 602092-001	24 AWG WHT	602201- 806	54"	BANK A, EXTERNAL B+
34	J100-33 (602201-001)	J1-C 602092-001	24 AWG WHT	602201- 806	54"	BANK A, EXTERNAL B+
35	J100-2 (602201-001)	J1-E 602092-001	24 AWG WHT	602201- 806	54"	BANK A, EXTERNAL B+
36	J100-34 (602201-001)	J1-H 602092-001	24 AWG WHT	602201- 806	54"	BANK A, EXTERNAL B+
37	J100-3 (602201-001)	J1-x 602092-001	24 AWG WHT	602201- 806	54"	BANK A, EXTERNAL GND
38	J100-35 (602201-001)	J1-y 602092-001	24 AWG WHT	602201- 806	54"	BANK A, EXTERNAL GND
39	J100-4 (602201-001)	J1-z 602092-001	24 AWG WHT	602201- 806	54"	BANK A, EXTERNAL GND
40	J100-36 (602201-001)	J1-AA 602092-001	24 AWG WHT	602201- 806	54"	BANK A, EXTERNAL GND
41	J100-5 (602201-001)	J1-BB 602092-001	24 AWG WHT	602201- 806	54"	BANK A, EXTERNAL GND
42	J100-37 (602201-001)	J1-d 602092-001	24 AWG WHT	602201- 806	54"	BANK A, CONTACT 0
43	J100-6 (602201-001)	J1-L 602092-001	24 AWG WHT	602201- 806	54"	BANK A, CONTACT 1
44	J100-38 (602201-001)	J1-b 602092-001	24 AWG WHT	602201- 806	54"	BANK A, CONTACT 2
45	J100-7 (602201-001)	J1-S 602092-001	24 AWG WHT	602201- 806	54"	BANK A, CONTACT 3
46	J100-39 (602201-001)	J1-a 602092-001	24 AWG WHT	602201- 806	54"	BANK A, CONTACT 4
47	J100-8 (602201-001)	J1-k 602092-001	24 AWG WHT	602201- 806	54"	BANK A, CONTACT 5
48	J100-40 (602201-001)	J1-t 602092-001	24 AWG WHT	602201- 806	54"	BANK A, CONTACT 6
49	J100-9 (602201-001)	J1-w 602092-001	24 AWG WHT	602201- 806	54"	BANK A, CONTACT 7
50	J100-41 (602201-001)	J1-j 602092-001	24 AWG WHT	602201- 806	54"	BANK A, CONTACT 8

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ENGINEERING WIRE LIST

WIRE	FROM	TO	TYPE	PART #	WIRE LEN	REFERENCE
51	J100-10 (602201-001)	J1-R 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 9
52	J100-42 (602201-001)	J1-X 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 10
53	J100-11 (602201-001)	J1-P 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 11
54	J100-43 (602201-001)	J1-Y 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 12
55	J100-12 (602201-001)	J1-h 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 13
56	J100-44 (602201-001)	J1-v 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 14
57	J100-13 (602201-001)	J1-s 602092-001	24 AWG WHT	602201-806	54"	BANK A, CONTACT 15
58	J100-45 (602201-001)	J1-B 602092-001	24 AWG WHT	602201-806	54"	BANK B, EXTERNAL B+
59	J100-14 (602201-001)	J1-D 602092-001	24 AWG WHT	602201-806	54"	BANK B, EXTERNAL B+
60	J100-46 (602201-001)	J1-F 602092-001	24 AWG WHT	602201-806	54"	BANK B, EXTERNAL B+
61	J100-15 (602201-001)	J1-J 602092-001	24 AWG WHT	602201-806	54"	BANK B, EXTERNAL B+
62	J100-47 (602201-001)	J1-CC 602092-001	24 AWG WHT	602201-806	54"	BANK A, EXTERNAL GND
63	J100-16 (602201-001)	J1-DD 602092-001	24 AWG WHT	602201-806	54"	BANK A, EXTERNAL GND
64	J100-48 (602201-001)	J1-EE 602092-001	24 AWG WHT	602201-806	54"	BANK A, EXTERNAL GND
65	J100-17 (602201-001)	J1-FF 602092-001	24 AWG WHT	602201-806	54"	BANK A, EXTERNAL GND
66	J100-49 (602201-001)	J1-HH 602092-001	24 AWG WHT	602201-806	54"	BANK A, EXTERNAL GND
67	J100-18 (602201-001)	J1-p 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 0
68	J100-50 (602201-001)	J1-V 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 1
69	J100-19 (602201-001)	J1-T 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 2
70	J100-51 (602201-001)	J1-M 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 3
71	J100-20 (602201-001)	J1-W 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 4
72	J100-52 (602201-001)	J1-e 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 5
73	J100-21 (602201-001)	J1-r 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 6
74	J100-53 (602201-001)	J1-m 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 7

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ENGINEERING WIRE LIST

WIRE	FROM	TO	TYPE	PART #	WIRE LEN	REFERENCE
75	J100-22 (602201-001)	J1-u 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 8
76	J100-54 (602201-001)	J1-Z 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 9
77	J100-23 (602201-001)	J1-N 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 10
78	J100-55 (602201-001)	J1-K 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 11
79	J100-24 (602201-001)	J1-U 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 12
80	J100-56 (602201-001)	J1-c 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 13
81	J100-25 (602201-001)	J1-n 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 14
82	J100-57 (602201-001)	J1-f 602092-001	24 AWG WHT	602201-806	54"	BANK B, CONTACT 15
83	J100-26	NO CONNECT				
84	J100-58	NO CONNECT				
85	J100-27	NO CONNECT				
86	J100-59	NO CONNECT				
87	J100-28	NO CONNECT				
88	J100-60	NO CONNECT				
89	J100-29	NO CONNECT				
90	J100-61	NO CONNECT				
91	J100-30	NO CONNECT				
92	J100-62	NO CONNECT				
93	J100-31	NO CONNECT				
94	J100-63	NO CONNECT				
95	J100-32	NO CONNECT				
96	J100-64	NO CONNECT				

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Chapter 9
PRODUCT SUPPORT

Product Support

Racal Instruments has a complete Service and Parts Department. If you need technical assistance or should it be necessary to return your product for repair or calibration, call 1-800-722-3262. If parts are required to repair the product at your facility, call 1-949-859-8999 and ask for the Parts Department.

When sending your instrument in for repair, complete the form in the back of this manual.

For worldwide support and the office closes to your facility, refer to the Support Offices section on the following page.

Reshipment Instructions

Use the original packing material when returning the 1260-64 to Racal Instruments for calibration or servicing. The original shipping crate and associated packaging material will provide the necessary protection for safe reshipment.

If the original packing material is unavailable, contact Racal Instruments Customer Service for information.

Support Offices

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