1260 VXI
SWITCHING CARD

Model 1260-82
VXI OPTICAL SWITCH

PUBLICATION NO. 980673-059

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RACAL

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

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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.

Optical Ports

WARNING: To avoid eye damage, do not look directly into the optical output ports while there is an optical signal connected to the input port. Always attach the output ports to a receiver or cover with the supplied dust caps before enabling the source signal to the input port.

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Chapter 1

MODULE SPECIFICATION

Introduction

The 1260-82 is a VXI Optical Switch Module developed for the Racal 1260 Series of switch modules.

The 1260-82 is available configured from the factory and can be ordered with the Option-01T Message Based Interface.

The following features are included in the 1260-82

- Three, four, or six 1X2 Optical Switch configurations.
- Single-slot VXI C-size module.
- Message Based Interface Option available.
- New Data Driven Model embedded firmware.
- Single Mode, 9/125µm optical fiber with a wavelength range of 1290-1570 nm standard. Optional fiber types and wavelengths are available as specials.
- FC/SPC connectors are standard (other connectors or fiber pigtails are available as specials).
- Dust Caps are supplied with all front panel Fiberoptic adapters.

Specifications[1]

Optical Fiber Type	9/125µm
Wavelength Range	1290-1570 nm
Insertion Loss[2]	<1.2 dB max., 0.8 dB typ. <2.0dB max., including connectors
Back Reflection[2]	<-50 dB max, -55 dB typ.
Polarization Dependent Loss[3]	.05 dB max.
Repeatability[4]	+/-.005 dB max., +/-.003 dB typ.
Isolation	80dB max., 90 dB typ.
Switching Time	15msec
Shock	30g, 11msec, ½ sine wave
Vibration	0.013" PK-PK, 5-55Hz
Bench Handling	4in, 45°
Temperature	
Operating	0 to +50 degrees Centigrade
Non-operating	-20 to +70 degrees Centigrade
Relative Humidity	90% RH Non-Condensing at ≤ 40°C for 5 days
Power requirements	5 VDC at 1.65 Amps W/Option 01T 5 VDC at 0.65 Amp WO/Option 01T
Cooling Requirements	1.0 liter/sec @ .025 mmH_2O
Dimensions	Single-wide C-Size, VXIbus Module

Module Weight	1260-82C	1260-82D	1260-82F
w/OPT 01T	2.95lbs (1.34kg)	3.07lbs (1.40kg)	3.31lbs (1.51kg)
w/o OPT 01T	2.70lbs (1.23kg)	2.82lbs (1.28kg)	3.06lbs (1.39kg)

MTBF	100,000 Hours minimum

NOTES:

1. **All Specifications are referenced without connectors and measured at 23^0C $\pm 5^0$C.**
2. **Connector Insertion Loss typically less than 0.25dB, 0.4dB maximum per connector. Back Reflection less than –45dB.**
3. **Connector PDL typically less than .02dB, measured at 1550 nm.**
4. **Sequential Repeatability, 100 cycles measured at constant temperature after 1 hour warm-up**

Ordering Information

Listed below are part numbers for both the 1260-82 switch modules and available accessories.

ITEM	DESCRIPTION	PART #
1260-82C Switch Module	1260-82C, Three 1X2 Optical Switch	407705-003
1260-82D Switch Module	1260-82D, Four 1X2 Optical Switch	407705-004
1260-82F Switch Module	1260-82F, Six 1X2 Optical Switch	407705-006
1260-82 Shipping Kit	Manual, Key Locks	407706
Additional Manual	1260-82 User Manual	980673-059

Safety

Refer to the **"FOR YOUR SAFETY"** page preceding the Table of Contents. Follow all **NOTES, CAUTIONS,** and **WARNINGS** to ensure personnel safety and prevent damage to the instrument.

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 servicing, call 1-800-722-3262 or 1-949-859-8999 and ask for Customer Support. You may also contact Customer Support via E-Mail at:

Helpdesk@racalate.com

If parts are required to repair the product at your facility, call 1-800-722-3262 or 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 and enclose it with the instrument.

About MTBF

The 1260-82 MTBF is >100,000 hours, calculated in accordance with MIL-HDBK-217E, Ground Benign Environment.

The optical switch used on the 1260-82 module is Racal part no. 602382. The switch manufacturer's specifications for this switch are:

Switch Durability >10^7 operations minimum

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 and reported.

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. Immediately notify the carrier if any damage is apparent.

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

CAUTION

Always perform unpacking, disassembly, repair, and cleaning at a static safe work station.

Reshipment Instructions

1. Use the original packing material when returning the switching module to Racal Instruments for servicing. The original shipping carton and the instrument's plastic foam will provide the necessary support for safe reshipment.

2. If the original packing material is unavailable, wrap the switching module in an ESD Shielding bag and use plastic spray foam to surround and protect the instrument.

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

Option 01T Installation

Installation of the Option 01T is described in the Installation and Setup section of the 1260A-Option 01T Users Manual, Publication No. 980806-999.

NOTE:

Only install a 1260A Option 01T controller with release 7.1 or later firmware. The 1260-82 is not compatible with the older 1260 Option 01 controller.

Module Installation

Installation of the 1260-82 Switching Module into a VXI mainframe, including the setting of switches SW1-1 through SW1-4, SW2, and SW3, is described in the Installation and Setup Section of the 1260A Option 01T Users Manual, Publication No. 980806-999.

Module Configuration

The 1260-82 is a VXI 1X2 optical switch module consisting of up to six optical switches. Refer to **Figure 2-1** for a block diagram of the basic 1x2 switch used in a 1260-82. There are up to six 1x2 available in the 1260-82.

The 1260-82 module can be organized via software as N independent 1X2 optical switches or as N synchronous 1X2 switches (where N = 3,4, or 6) by use of the **INCLUDE** command (Refer to the 1260-01T User Manual).

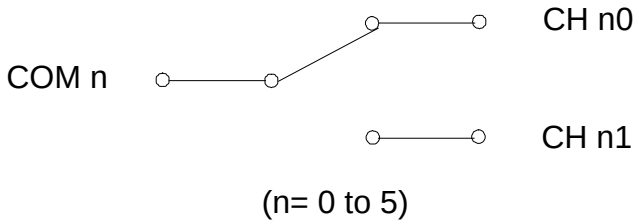

Figure 2-1, 1260-82 Block Diagram

Front Panel Connectors

The 1260-82 front panel connectors are labeled as shown in **Figure 2-3 through 2-5**. The connector type is a single mode FC connector adapter.

Fail LED

The Fail LED is available if the 1260 Option 01T Message Based Controller is installed. For further information refer to the 1260 Option 01T Users Manual, Publication No. 980806-999

Switch Status LED

The 1260-82 provides a single switch status LED (STATUS) common all switches installed. The status LED provides an indication of the state of the optical switch as shown below:

OFF: The optical switch is in an idle state.

GREEN: The optical switch is being accessed (in the process of switching). This pulse is stretched to allow the user to view switch accesses.

RED: An Error has occurred as a result of the last command and confidence mode is enabled (refer to the Option 01T User Manual for a description of the “MONITOR: STATE” command which is used to control the confidence mode). An Error is detected when position sense feedback does not match the programmed position.

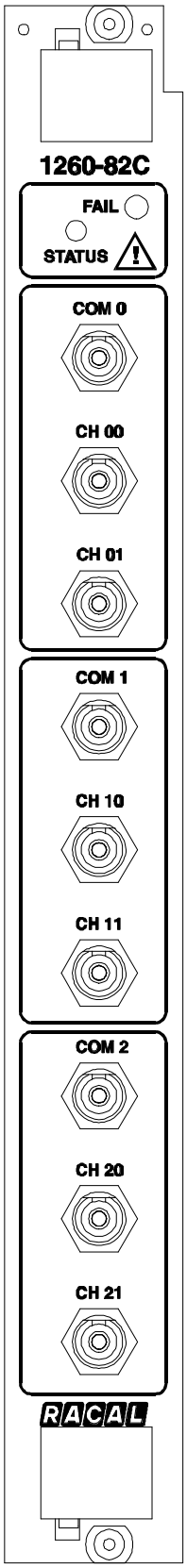

Figure 2-3 1260-82C Front Panel Pin Connections, Front View

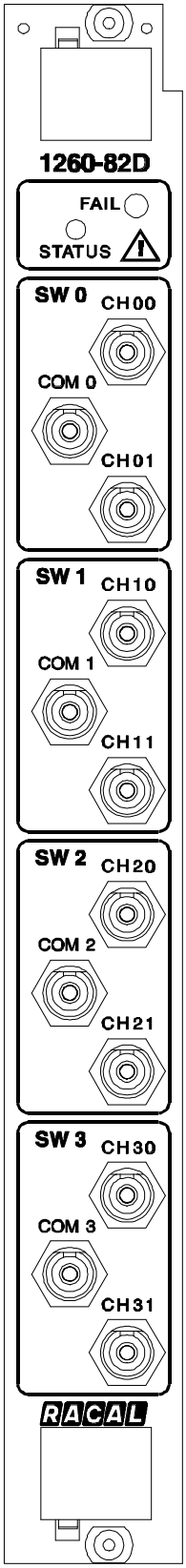

Figure 2-4 1260-82D Front Panel Pin Connections, Front View

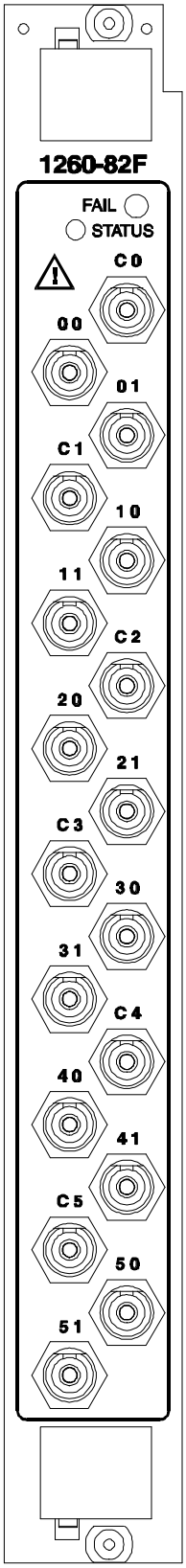

Figure 2-5 1260-82F Front Panel Pin Connections, Front View

Mating Connectors

Mating connectors for the 1260-82 module are standard FC types. It is preferable to use fiberoptic cables with low insertion loss, low reflection FC/UPC or FC/SPC connector types.

Refer to Appendix B for cleaning adapters, connectors, and handling of fiberoptic cables.

Optical Ports

WARNING: To avoid eye damage, do not look directly into the optical output ports while there is an optical signal connected to the input port. Always attach the output ports to a receiver or cover the ports with the supplied caps before enabling the source signal to the input port.

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Chapter 3
MODULE OPERATION

General Information

The 1260-82 may be operated either in *message-based mode* or in *register-based mode*.

When the *message-based mode* of operation is used, commands are sent to the 1260-01T command module. The 1260-01T command module interprets the commands, and operates the 1260-82 module by sending 8-bit bytes to control registers on the 1260-82 module.

A conceptual view of the message-based mode of operation is shown in Figure 3-1 below.

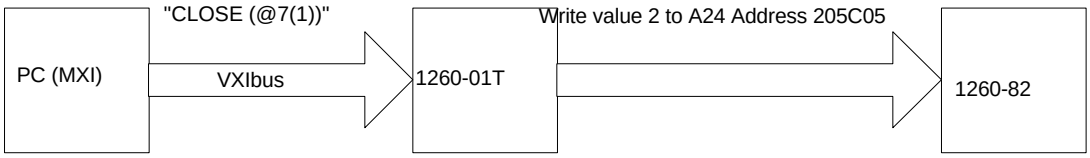

Figure 3-1, Message-Based Mode of Operation

When the *register-based mode* of operation is used, the user writes to the control registers on the 1260-82 module directly. The 1260-01T command module does not monitor the operations, and does not track the state of the optical switch on the module in this mode.

A conceptual view of the register-based mode of operation is shown in Figure 3-2 below.

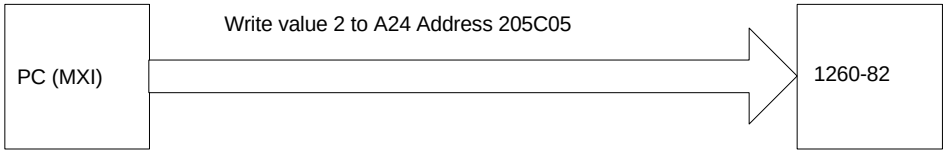

Figure 3-2, Register-Based Mode of Operation

Since the 1260-01T command module does not monitor the register-based mode of operation, it is advisable to select **either** the message-based or the register-based mode of operation, and continue to use the same mode throughout the application program.

In general, the message-based mode of operation is easier to use with utility programs, such as National Instruments VIC program. The message-based mode allows the user to send ASCII text commands to the 1260-01T and to read replies from the 1260-01T. In addition, there are a few features, such as a **SCAN** list and ***OPC** commands, which are available only with the message-based mode of operation.

The register-based mode of operation provides a faster update of optical switches. This mode provides for switch operations in less than 4.5 microseconds (not counting software overhead inherent in I/O libraries such as VISA) and optical switch switching time. Since the optical switch switching time is slow, the Message Based operation is preferable.

Consult the 1260-01T User's Manual for a comparison of the message-based and register-based modes of operation.

Operating The 1260-82 In Message-Based Mode

Channel Descriptors For The 1260-82 Module

The standard 1260-01T commands are used to operate the 1260-82 module. These commands are described in the 1260-01T User's Manual.

Each 1260-01T command uses a *channel descriptor* to select the channel(s) of interest. The syntax for a channel descriptor is the same for all 1260 series modules. In general, the following *channel descriptor* syntax is used to select a channel:

```
(@<module address> (<channel range>)
```

Where:

<module address> is the address of the 1260-82 module, as set by the logical address DIP switch SW1 on the 1260-82.

The module address is a number from 1 through 12, inclusive.

Set the module addresses for the 1260-82 and other 1260-Series modules so that no address is used by more than one 1260-Series module. For instructions on setting module addresses for a 1260-Series module, see the label on the side panel of the module.

The *channel range* is comprised of the channel or range of channels to be operated. Multiple individual channels may be specified using the following channel descriptor syntax:

```
(@ <module address> ( <chan1> , <chan2> , . . ., <chanN> ))
```

A range of channels may be specified using the following channel descriptor syntax:

```
(@ <module address> ( <first channel> : <last channel> ))
```

The following examples illustrate the use of the channel descriptors for the 1260-82:

`CLOSE (@8(0))`	Closes channel 0 (Com 0 connected to CH 01) on the 1260-82 with module address 8
`OPEN (@8(0))`	Opens channel 0 (Com 0 connected to CH 00) on the 1260-82
`CLOSE (@3(0,2))`	Closes channels 0 and 2 (Com 0 connected to CH 01, Com 2 connected to CH 21) on the 1260-82 with module address 3
`OPEN (@12(1:5))`	Opens channels 1 through 5 on the 1260-82 with module address 12

Reply To The MOD:LIST? Command

The 1260-01T returns a reply to the MOD:LIST? command. This reply is unique for each different 1260 series switch module. The syntax for the reply is:

<module address> : <module-specific identification string>

The <module-specific identification string> for the 1260-82 is:

1260-82C TRIPLE 1X2 OPTICAL SWITCH MODULE

or

1260-82D QUAD 1X2 OPTICAL SWITCH MODULE

or

1260-82F SEXTUPLE 1X2 OPTICAL SWITCH MODULE

So, for a 1260-82C whose <module address> is set to 8, the reply to this query would be:

8 : 1260-82C TRIPLE 1X2 OPTICAL SWITCH MODULE

Using The *OPC Query / Command

When you are using the 1260-82 in an automated test environment, it is important that you be aware of the time it takes for the switch movement to complete. For example, suppose you develop an automated test in which the optical switch closure is over the VXI bus via the CLOSE command. After each switch configuration, you might then take a reading from an optical power meter. In such a sequence, it is important that you not initiate the reading from the optical power meter before the 1260-82 has come to a stable position (up to 15 milliseconds).

Below is an example that illustrates the use of instrument commands and queries utilizing the *OPC? query. In this example, queries to other instruments (such as the power meter) are not made until all of the 1260-82's pending operations have completed.

Example: A command is sent to the 1260-82 to close channel 2, the command is immediately followed by an *OPC? query to the same 1260-82.

1. Write to the 1260-82 VXI address:

   ```
   CLOSE(@8(2)); *OPC?
   ```

2. Read from 1260-82 the VXI address:

   ```
   1
   ```

Up to 15 milliseconds may be required before the `CLOSE(@8(2))` command is completed and the *OPC? produces a "1" in the 1260-01T output queue. After the *OPC? query is sent to the1260-82, the programmer should immediately attempt a read instruction from the controller. The programmer's controller will wait until the 1260-82 finishes all adjustments and the *OPC query provides a "1" to be read.

NOTE:

It is important that you remember to set the time-out of the controller's READ instruction to be greater than the longest time possible for the 1260-82 to make any channel changes (up to 15 msecs may be required to make large changes to the optical switch.

You can also have the OPC bit of the SESR set by using the command form of *OPC instead of the query form. By setting the OPC bit to "1" via an *OPC command, an event will be generated assuming the user has enabled the proper register bits.

- Advanced programmers can develop other methods to accomplish the set-and-wait-until-complete routine utilizing the event queues and status registers provided in the 1260-01T controller. Refer to the 1260 Option 01T Users Manual Publication No. 980806-999.

Operating The 1260-82 in Register-Based Mode

The 1260-82 may be operated by directly setting one of the two control registers on the 1260-82 module. The first control register on the module sets the position for each of the relays on the module. The second control register controls the state of the ERROR LED on the module.

The control registers are located in the VXIbus A24 Address Space. The actual A24 address for a control register depends on:

1. The A24 Address Offset assigned to the 1260-01T module by the Resource Manager program. The Resource Manager program is provided by the VXIbus slot-0 controller vendor. The A24 Address Offset is placed into the "Offset Register" of the 1260-01T by the Resource Manager.

2. The <module address> of the 1260-82 module. This is set by the setting of the logical Address DIP switch SW1 on the 1260-82 to a value between 1 and 12 inclusive .

3. The control register on the 1260-82 to update. Each control register on the 1260-82 has a unique address.

The base A24 Address for the 1260-82 module may be calculated by:

(A24 Offset of the 1260-01T) + (1024 x Module Address of 1260-82).

The A24 Offset is usually expressed in hexadecimal. A typical value of 204000_{16} will be used in the examples which follow. So, a sample 1260-82 with a module address of 7 would have the base A24 Address computed as follows:

Base A24 Address of 1260-82 = 204000_{16} + (400_{16} x 7_{10}) = $205C00_{16}$

The control registers for 1260 series modules are always on odd A24 addresses. The three control registers for the 1260-82 reside at the following three odd A24 addresses for the module:

(Base A24 Address of 1260-82) + 5 = Relay Control Register

(Base A24 Address of 1260-82) + F = Error LED Control Reg

So, for our example, the control registers are located at:

205C05 Relay Control Register

205C0F ERROR LED Control Register

Switch Data Write Register

When a channel is closed, the COM n input for the relay is connected to the CH n1 (Normally Open) output (n=channel). When a channel is opened, the COM n input is connected to the CH n0 (Normally Closed) output (n=channel).

Each channel of the 1260-82 is controlled by a single bit within the Relay Control Register. When the bit is set to a 1, the corresponding channel is closed. When the bit is set to a 0, the corresponding channel is opened.

The Relay Control Register may be read as well. When the control register is read, the module returns the detected position rather than the commanded position. If the detected position is NOT the same as the commanded position, after the 15 millisecond settling time, then an error may have occurred. When the firmware controls the operation of the relays (message-based mode), this will result in the illumination of the ERROR LED if confidence mode is enabled. When register-based control is used, the programmer is responsible for controlling the ERROR LED.

The Relay Control Register bit assignments are shown below and also in Appendix A.

Control Register is located at (Module Base Address) + 5

Relay Control Register Bit	Channel	COM Channel	OPEN Connects COM To	CLOSE Connects COM To
0 (LSB)	0	COM 0	CH 00	CH 01
1	1	COM 1	CH 10	CH 11
2	2	COM 2	CH 20	CH 21
3	3	COM 3	CH 30	CH 31
4	4	COM 4	CH 40	CH 41
5	5	COM 5	CH 50	CH 51
6	N/A	N/A	N/A	N/A
7 (MSB)	N/A	N/A	N/A	N/A

Relay Data Status Read Register

The 1260-82, via the Relay Data Status Register, provides a read back of the position of each of the relays. This data uses the same format as the Relay Control Register. When the bit is a 1 in the status register, the corresponding relay is in the closed position (COM n input connected to CH n1 output). When the bit is a 0 in the status register, the COM n input is in the open position (connected to the CH n0 output). Bit 0 holds the status for channel 0, bit 1 holds the status for channel 1, and so on.

Note that since the status register reflects the ACTUAL relay position, and not the COMMANDED relay position, this register should not be used to form the relay control information when a single channel change is desired. This means that a programmer using the register-based mode should maintain a "RAM image" of the desired states of the relays.

ERROR LED Control Register

The ERROR LED Register controls the state of the 1260-82's ERROR LED. When the bit is set to a 1, the ERROR LED is illuminated. When the bit is set to a 0, the ERROR LED is off.

The firmware normally controls this LED. When the confidence mode is turned on, the firmware will turn the ERROR LED on if the programmed state of each channel does not match the state read back via the Relay Data Status register.

ERROR LED Register is located at (Module Base Address) + F_{16}

Relay Control Register Bit	Controls
0 (LSB)	N/A
1	N/A
2	N/A
3	ERROR LED
4	N/A
5	N/A
6	N/A
7 (MSB)	N/a

1260-82 Example Code

The VISA I/O library may be used to control the module. The VISA function viOut8() is used to write a single 8-bit byte to a control register, while viIn8() is used to read a single 8-bit byte from the control register. The following code example shows the use of viOut8() to update the 1260-82 module.

The VISA library functions (viIn8() and viOut8()) account for the base A24 offset of the 1260-01T controller. Therefore, the application code below uses only the module address to calculate the offset of the two control registers and the status register.

The following example shows many places where “error handling code goes here”. This is intended for application-specific error handling code which depends on the application and the manner in which errors are handled. Therefore, the specifics of the error handling code are not shown in the example.

```
#include <visa.h>

/* This example shows a 1260-01T at logical address 16 and a VXI/MXI*
/* interface */
#define RI1260_01_DESC     "VXI::16"

/* For a GPIB-VXI interface, and a logical address of 77 */
/* the descriptor would be:  "GPIB-VXI::77" */

/* this example shows a 1260-82B with module address 7 */
#define MOD_ADDR_82   7


void example_operate_1260_82(void)
{
ViInt32 base_addr;
ViBusAddress control_reg;
ViBusAddress error_LED_reg;
ViSession hdl1260;         /* VISA handle to the 1260-01T */
ViSession hdlRM;      /* VISA handle to the resource manager */
ViStatus error;            /* VISA error code */
ViUInt8 ctrl_val;          /* control register value */
ViUInt8 position;          /* position read from status register */


     /* open the resource manager */
     /* this must be done once in application program */
     error = viOpenDefaultRM (&hdlRM);
     if (error < 0) {
          /* error handling code goes here */
     }

     /* get a handle for the 1260-01T */
     error = viOpen (hdlRM, RI1260_01_DESC, VI_NULL,VI_NULL,&hdl1260);
     if (error < 0) {
          /* error handling code goes here */
     }

/* form the offset for control register 0 */
/* note that the base A24 Address for the 1260-01T */
/* is already accounted for by VISA calls viIn8() and viOut8() */

     /* module address shifted 10 places = module address x 1024 */
     base_addr = (MOD_ADDR_82 << 10);
     control_reg = (ViBusAddress) (base_addr + 5);
     error_LED_reg = (ViBusAddress) (base_addr + 0xF);
```

```
/*
 * CLOSE CHANNEL 2, OPEN ALL OTHER CHANNELS
 * Use “ctrl_val” as the RAM image to control all channels
*/
ctrl_val = 0x04;

 /* write the control register */
error = viOut8 (hdl1260, VI_A24_SPACE, control_reg, ctrl_val);
if (error < 0) {
     /* error handling code goes here */
}

/* now close channel 0 */
ctrl_val |= 0x01;
error = viOut8 (hdl1260, VI_A24_SPACE, control_reg, ctrl_val);
if (error < 0) {
     /* error handling code goes here */
}

 /* wait 16 milliseconds to allow relays to settle */
 /* before chacking actual position */
 /* this is a fictional delay routine; system-dependent */
 msec_delay( 16 );

 /* read the relay status register */
error = viIn8 (hdl1260, VI_A24_SPACE, control_reg, &position);
if (error < 0) {
     /* error handling code goes here */
}
     Position =  position;
 /* invert bits on read-back*/
 /* mask off the bits of interest (based on –82 model) */
 /* masks are: */
 /* 1260-82A:  0x01 */
 /* 1260-82B:  0x03 */
 /* 1260-82C:  0x07 */
 /* 1260-82D:  0x0F */
 /* 1260-82E:  0x1F */
 /* 1260-82F:  0x3F */
 /* this example is 1260-82C */
 mask = 0x7;

 if ((position & mask) != (ctrl_val & mask)) {
     /* set the ERROR LED on */
     error = viOut8 (hdl1260, VI_A24_SPACE, error_LED_reg, 0x08);
     if (error < 0) {
          /* error handling code goes here */
     }
```

```
      }
     else {
           /* turn the ERROR LED off */
           error = viOut8 (hdl1260, VI_A24_SPACE, error_LED_reg, 0x00);
           if (error < 0) {
                /* error handling code goes here */
           }
       }

      /* close the VISA session */
      error = viClose( hdl1260 );
      if (error < 0) {
           /* error handling code goes here */
      }
}
```

Power and Module Cooling Considerations

The 1260-82 is a VXI module providing precise switching of optical channels using defraction limited collimating lenses which enhance both thermal stability and repeatability. Because of this, certain precautions should be applied when using the switch module in a VXI chassis.

Airflow Requirements

VXI Modules are required to specify a particular airflow to maintain a specific temperature rise. The air flow required and the resultant back pressure (pressure drop across the module) values determine a specific operating point that is plotted or compared against a VXI chassis cooling curve. If the module operating point is below the chassis cooling curve, there is a high probability that the module will remain within its specified temperature rise. If the operating point lies above the chassis cooling curve the temperature rise may exceed the specified value.

The following procedure details how to calculate the cooling requirements for the 1260-82.

1. Determine the maximum temperature rise allowed across the module. This is typically 10 °C, but could be higher or lower depending the chassis ambient temperature, and the overall reliability requirements of the module.

2. Determine the required airflow to maintain the specified temperature rise of the module. This is calculated from the module power and the desired temperature rise, and the specific heat of air. For a given temperature rise the required air flow is:

   Airflow(liters/sec) = 0.83/Temp Rise(°C) x Module Power (Watts)

   For a 10 °C rise and a 1260-82 module power of 12 Watts:

   Airflow(liters/sec) = 0.83/10 °C x 12 Watts = 1.0 liters /sec

3. Determine the pressure drop across the module when the required airflow (liters/sec) is forced through the module. This can be determined by looking at pressure drop vs. airflow plot for the 1260-82 Module in **Figure 3-4**. Find the required airflow and then read the corresponding pressure in mm H_2O. For the case above, with an airflow of 1.0 liters/sec the pressure drop read from **Figure 3-4** is 0.12 mm H_2O.

4. Plot the 1260-82 operating point (Pressure, Airflow) against the chassis cooling curve. If the module operating point lies under the chassis curve, the module should remain within the specified temperature. An example of a 1260-82 Module in a Racal 1261B VXI Chassis is shown in **Figure 3-4.** The chassis airflow plotted is for the “worst case” slot airflow. In the 1261B chassis, the 1260-82 could be placed in any slot without much concern for the temperature rise of 10 °C being exceeded.

CAUTION

The required airflow may need to be increased depending on airflow distribution across the module, the ambient temperature and reliability issues. Consult the VXI specification for more details.

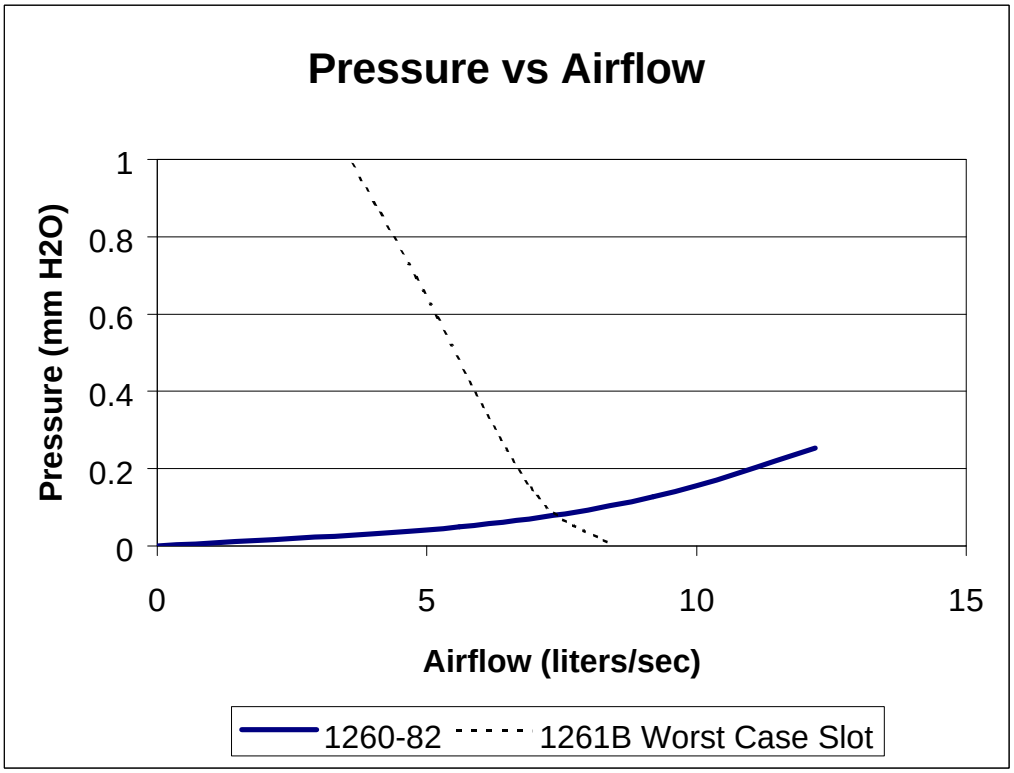

Figure 3-4, 1260-82 Optical Switch and Racal Instruments 1261B Chassis Airflow Resistance Curves

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Chapter 4
DRAWINGS

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407707	Cable Assy, Interface	4-23

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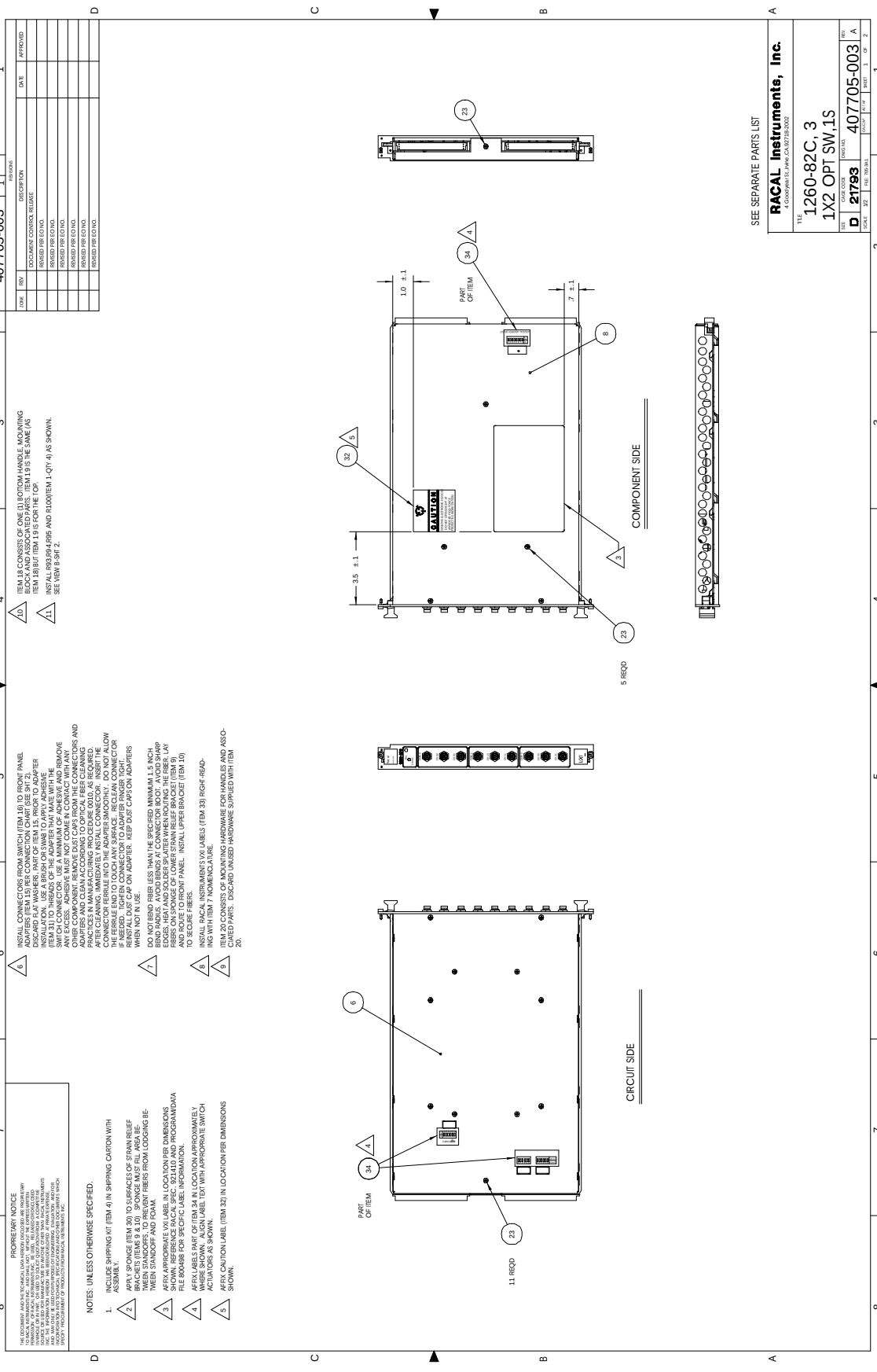
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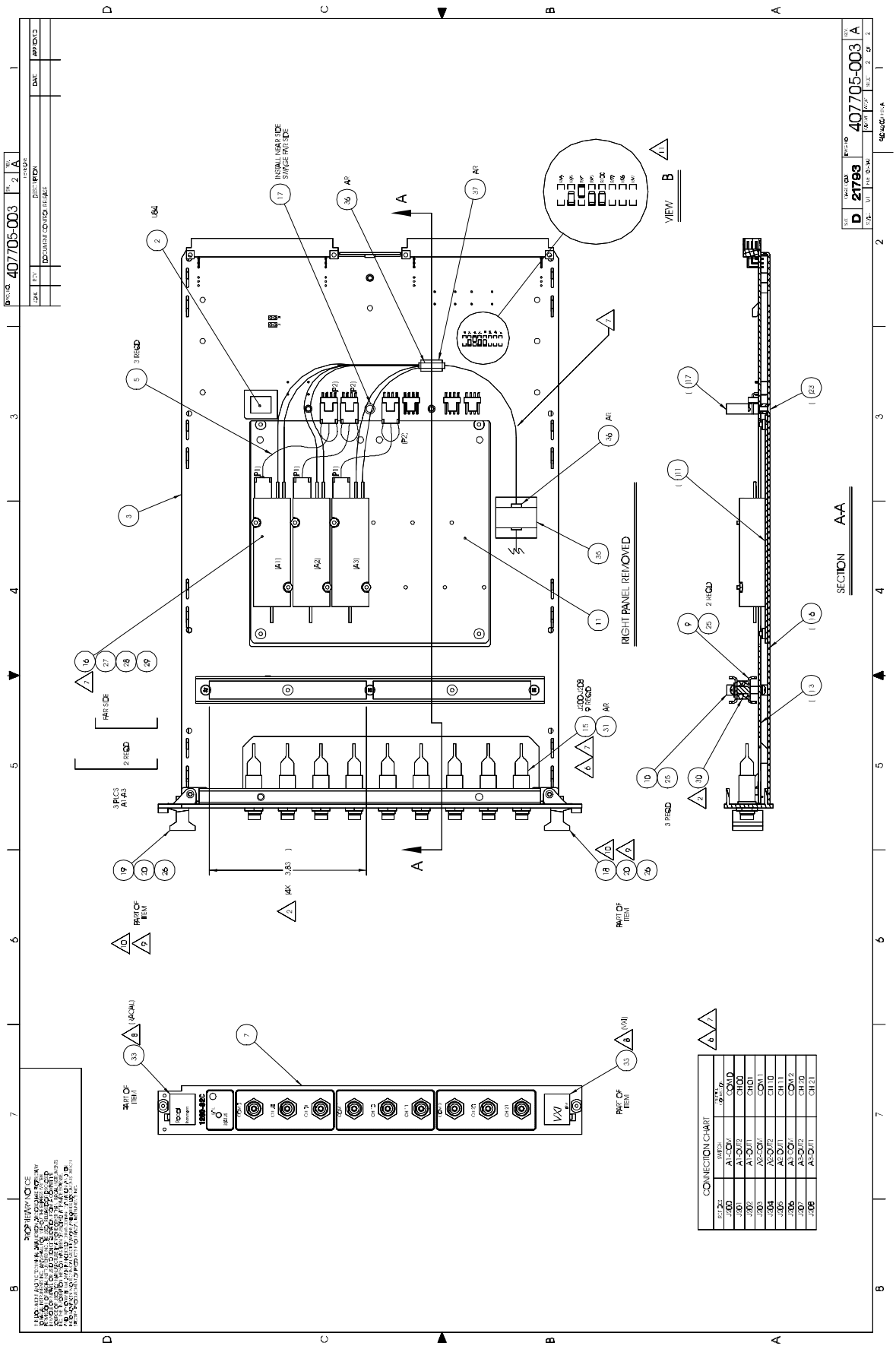
RB/SED PER EO NO.
PROPRIETARY NOTICE
NOTES: UNLESS OTHERWISE SPECIFIED.
1. INCLUDE SHIPPING KIT (ITEM 4) IN SHIPPING CARTON WITH ASSEMBLY.
2. APPLY SPONGE (ITEM 30) TO SURFACES OF STRAIN RELIEF BRACKET (ITEM 9) AS SHOWN. USE FLAT GLASS AS TWEEN STANDOFFS TO PREVENT FIBERS FROM LOOSENING BETWEEN STANDOFF AND FOAM.
3. AFFIX APPROPRIATE VXI LABEL IN LOCATION PER DIMENSIONS SHOWN. REFERENCE RACAL SPEC. 921410 AND PROGRAM/DATA FILE B00498 FOR SPECIFIC LABEL INFORMATION.
4. AFFIX LABELS PART OF ITEM 34 IN LOCATION APPROXIMATELY WHERE SHOWN. AFFIX LABEL TSH WITH APPROPRIATE SWITCH ACTUATORS AS SHOWN.
5. AFFIX CAUTION LABEL (ITEM 32) IN LOCATION PER DIMENSIONS SHOWN.
6. INSTALL CONNECTORS FROM SWITCH (ITEM 16) TO FRONT PANEL AS SHOWN. TIE FIBERS TO CONNECTORS AS SHOWN. DISCARD FLAT WASHERS, PART OF ITEM 15, PRIOR TO ADAPTER INSTALLATION. USE A BRUSH OR SWAB TO APPLY ADHESIVE (ITEM 31) TO THREADS OF THE ADAPTER THAT MATE WITH THE SWITCH CONNECTOR. BE A MINIMUM OF 6 MM FROM FIBER. REMOVE ANY EXCESS. ADHESIVE MUST NOT COME IN CONTACT WITH ANY OTHER COMPONENT. REMOVE DUST CAPS FROM THE CONNECTORS AND ADAPTERS AND CLEAN CONNECTORS PRIOR TO FIBER CONNECTIONS PER PRACTICES IN MANUFACTURING PROCEDURE 00103. AS REQUIRED AFTER CLEANING, IMMEDIATELY INSTALL CONNECTOR. INSERT THE CONNECTOR FERRULE INTO THE ADAPTER SMOOTHLY. DO NOT ALLOW THE FIBER END TO CONTACT ANY SURFACES. REMOVE CONNECTOR IF NEEDED. TIGHTEN CONNECTOR TO ADAPTER FINGER TIGHT. REINSTALL DUST CAP ON ADAPTER. KEEP DUST CAPS ON ADAPTERS WHEN NOT IN USE.
7. DO NOT BEND FIBER LESS THAN THE SPECIFIED MINIMUM 1.5 INCH RADIUS. AVOID SHARP BENDS AT CONNECTORS AND ALONG SHARP EDGES. HEAT AND SOLDER SPLATTER WHEN ROUTING THE FIBER. LAY FIBERS ON SPONGE OF LOWER STRAIN RELIEF BRACKET (ITEM 9) AND AT BOTTOM OF FRONT PANEL. INSTALL UPPER BRACKET (ITEM 10) TO SECURE FIBERS.
8. INSTALL RACAL INSTRUMENTS VXI LABELS (ITEM 33) RIGHT-READING WITH ITEM 7 NOMENCLATURE.
9. ITEM 20 CONSISTS OF MOUNTING HARDWARE FOR HANDLES AND ASSOCIATED PARTS. DISCARD UNUSED HARDWARE SUPPLIED WITH ITEM 20.
10. ITEM 18 CONSISTS OF ONE (1) BOTTOM HANDLE, MOUNTING HARDWARE AND ASSOCIATED PARTS. REFERENCE ITEM 18 BUT ITEM 19 IS THE SAME (AS ITEM 18 BUT ITEM 19 IS FOR THE TOP.
11. INSTALL R92,R94,R95 AND R100(ITEM 1-QTY 4) AS SHOWN. SEE VIEW B-SHT 2.
SEE SEPARATE PARTS LIST
RACAL Instruments, Inc.
4 Goodyear ST, Irvine CA 92718-2002
TITLE
1260-82C, 3
1X2 OPT SW,1S
SIZE D
CAGE CODE 21793
DWG NO 407705-003
REV A
SCALE 3/2
FILE 705-3A1
DO NOT SCALE
SHEET 1 OF 2
CIRCUIT SIDE
COMPONENT SIDE
PART OF ITEM
11 REQD
5 REQD
CAUTION
1.0 ±1
3.5 ±1
.7 ±1


407705-003
D
21793
A
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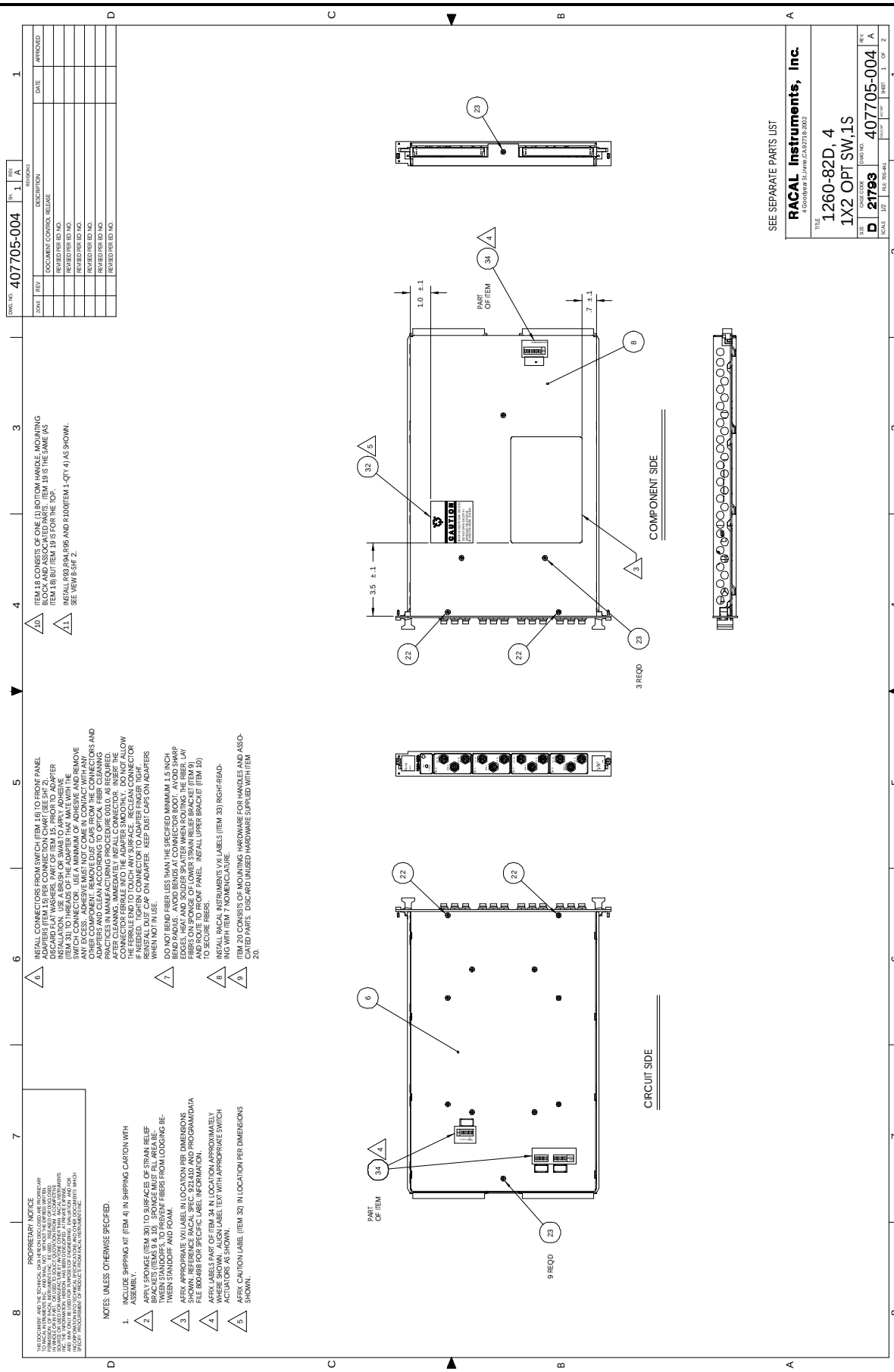
RIGHT PANEL REMOVED
SECTION A-A
INSTALL NEAR SIDE
SWAGE FAR SIDE
FAR SIDE
PART OF ITEM
CONNECTION CHART
PROPRIETARY NOTICE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REVISED PER ECO NO.
PROPRIETARY NOTICE
NOTES: UNLESS OTHERWISE SPECIFIED.
1. INCLUDE SHIPPING KIT (ITEM 4) IN SHIPPING CARTON WITH ASSEMBLY.
2. APPLY SPONGE (ITEM 30) TO SURFACES OF STRAIN RELIEF BRACKET (ITEM 9) AS SHOWN. SPONGE IS TO PREVENT FIBERS FROM LODGING BETWEEN STANDOFFS AND FOAM.
3. AFFIX APPROPRIATE VXI LABEL IN LOCATION PER DIMENSIONS SHOWN. REFERENCE RACAL SPEC. 921410 AND PROGRAMDATA FILE 800498 FOR SPECIFIC LABEL INFORMATION.
4. AFFIX LABELS PART OF ITEM 34 IN LOCATION APPROXIMATELY WHERE SHOWN. LASER LABEL TEXT WITH APPROPRIATE SWITCH ACTUATORS AS SHOWN.
5. AFFIX CAUTION LABEL (ITEM 32) IN LOCATION PER DIMENSIONS SHOWN.
6. INSTALL CONNECTORS FROM SWITCH (ITEM 1,6) TO FRONT PANEL ADAPTERS (ITEM 15) PER CONNECTION CHART (SEE SHT 2). DISCARD FLAT WASHERS, PART OF ITEM 15, PRIOR TO ADAPTER INSTALLATION. USE A 3/8 INCH OPEN END WRENCH TO INSTALL (ITEM 131) TO THREAD OF THE ADAPTER THAT MATE WITH THE SWITCH CONNECTOR. USE A MINIMUM OF ADHESIVE AND REMOVE ANY EXCESS. ADHESIVE MUST NOT COME IN CONTACT WITH ANY OPTICAL CONNECTORS. REFER TO SPEC. 921410 FOR MATE CONNECTORS AND ADAPTERS AND CLEAN ACCORDING TO OPTICAL FIBER CLEANING PRACTICES IN MANUFACTURING PROCEDURE 0010, AS REQUIRED. AFTER CLEANING, IMMEDIATELY INSTALL CONNECTOR. INSERT THE CONNECTOR FERRULE STRAIGHT AND SQUARE TO ADAPTER TO ALLOW THE FERRULE END TO TOUCH ANY SURFACE. RECLEAN CONNECTOR IF NEEDED. TIGHTEN CONNECTOR TO ADAPTER FINGER TIGHT. REINSTALL DUST CAP ON ADAPTER WHEN NOT IN USE.
7. DO NOT BEND FIBER LESS THAN THE SPECIFIED MINIMUM 1.5 INCH BEND RADIUS. AVOID BENDS AT CONNECTOR BODY. AVOID SHARP EDGES. HEAT AND SOLDER SPLATTER WHEN ROUTING THE FIBER. LAY FIBERS ON SPONGE OF LOWER STRAIN RELIEF BRACKET (ITEM 9) AND TIE TO THE FIBERS.
8. INSTALL RACAL INSTRUMENTS VXI LABELS (ITEM 33) RIGHT-READING WITH ITEM 7 NOMENCLATURE.
9. ITEM 20 CONSISTS OF MOUNTING HARDWARE FOR HANDLES AND ASSOCIATED PARTS. DISCARD UNUSED HARDWARE SUPPLIED WITH ITEM 20.
10. ITEM 18 CONSISTS OF ONE (1) BOTTOM HANDLE, MOUNTING BLOCK AND ASSOCIATED PARTS. ITEM 19 IS THE SAME (AS ITEM 18) BUT ITEM 19 IS FOR THE TOP.
11. INSTALL R93,R94,R95 AND R100(ITEM 1 -QTY 4) AS SHOWN. SEE VIEW B-SHT 2.
CIRCUIT SIDE
COMPONENT SIDE
9 REQD
3 REQD
PART OF ITEM
CAUTION
SEE SEPARATE PARTS LIST
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4 Goodyear St.,Irvine,CA 92718-2002
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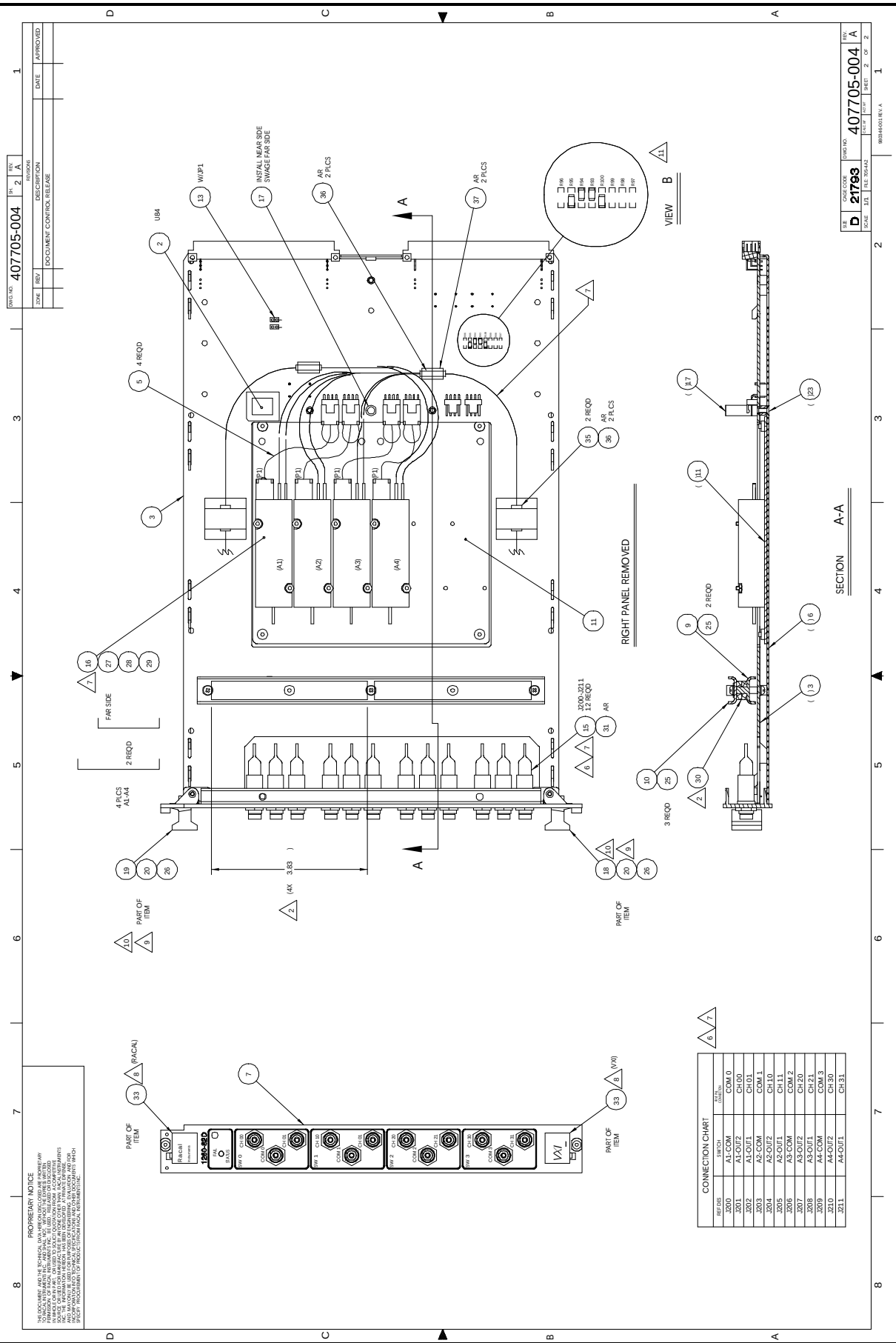
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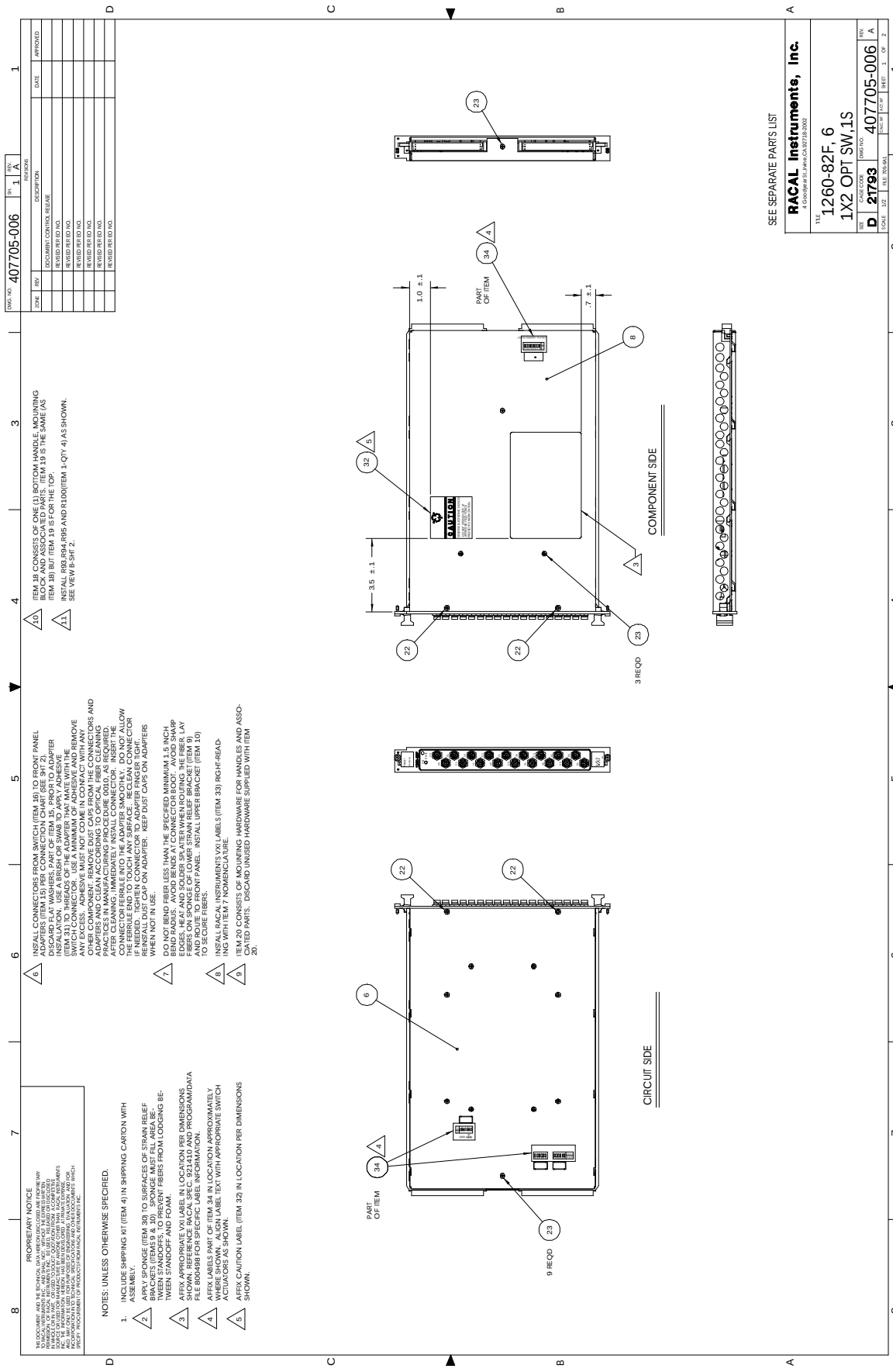
INSTALL NEAR SIDE SWAGE FAR SIDE
FAR SIDE
PART OF ITEM
CONNECTION CHART
PROPRIETARY NOTICE
21793
407705-004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APPROVED
DATE
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1. INCLUDE SHIPPING KIT (ITEM 4) IN SHIPPING CARTON WITH ASSEMBLY.
2 APPLY SPONGE (ITEM 30) TO SURFACES OF STRAIN RELIEF BRACKETS (ITEMS 9 & 10). SPONGE MUST FILL AREA BETWEEN STANDOFFS, TO PREVENT FIBERS FROM LODGING BETWEEN STANDOFF AND FOAM.
3 AFFIX APPROPRIATE VXI LABEL IN LOCATION PER DIMENSIONS SHOWN. REFER TO SALES ORDER FOR CONFIGURATION PROGRAMDATA FILE 800488 FOR SPECIFIC LABEL INFORMATION.
4 AFFIX LABELS PART OF ITEM 34 IN LOCATION APPROXIMATELY WHERE SHOWN. ALIGN LABEL TEXT WITH APPROPRIATE SWITCH ACTUATORS AS SHOWN.
5 AFFIX CAUTION LABEL (ITEM 32) IN LOCATION PER DIMENSIONS SHOWN.
6 INSTALL CONNECTORS FROM SWITCH (ITEM 16) TO FRONT PANEL ADAPTERS (ITEM 15) PER CONNECTION CHART (SEE SHT 2). DISCARD FLAT WASHERS, PART OF ITEM 15, PRIOR TO ADAPTER INSTALLATION. USE ONLY THE SUPPLIED HEX NUTS (ITEM 31) TO THREADS OF THE ADAPTER THAT MATE WITH THE SWITCH CONNECTOR. USE A MINIMUM OF ADHESIVE AND REMOVE ANY EXCESS. ADHESIVE MUST NOT COME IN CONTACT WITH ANY OTHER CONNECTOR THREADS. REFER TO ITEM 1 FOR CONNECTORS AND ADAPTERS AND CLEAN ACCORDING TO OPTICAL FIBER CLEANING PRACTICES IN MANUFACTURING PROCEDURE 0010, AS REQUIRED. APPLY CAPS AND PLUGS TO ALL CONNECTORS AND ADAPTERS. TIGHTEN CONNECTOR FERRULE INTO THE ADAPTER SMOOTHLY. DO NOT ALLOW THE FERRULE END TO TOUCH ANY SURFACE. RECLEAN CONNECTOR IF NEEDED. TIGHTEN CONNECTOR TO ADAPTER FINGER TIGHT. REMOVE ALL DUST CAPS ON ADAPTER. KEEP DUST CAPS ON ADAPTERS WHEN NOT IN USE.
7 DO NOT BEND FIBER LESS THAN THE SPECIFIED MINIMUM 1.5 INCH BEND RADIUS. AVOID BENDS AT CONNECTOR BOOT. AVOID SHARP EDGES, HEAT AND SOLDER SPLATTER WHEN ROUTING THE FIBER. LAY FIBERS IN SLOTS PROVIDED. CLAMP FIBER AT STRAIN RELIEF (ITEM 9) AND ROUTE TO FRONT PANEL. INSTALL UPPER BRACKET (ITEM 10) TO SECURE FIBERS.
8 INSTALL RACAL INSTRUMENTS VXI LABELS (ITEM 33) RIGHT-READING WITH ITEM 7 NOMENCLATURE.
9 ITEM 20 CONSISTS OF MOUNTING HARDWARE FOR HANDLES AND ASSOCIATED PARTS. DISCARD UNUSED HARDWARE SUPPLIED WITH ITEM 20.
10 ITEM 18 CONSISTS OF ONE (1) BOTTOM HANDLE, MOUNTING BLOCK AND ASSOCIATED PARTS. ITEM 19 IS THE SAME (AS ITEM 18) BUT ITEM 19 IS FOR THE TOP.
11 INSTALL R93,R94,R95 AND R100(ITEM 1-QTY 4) AS SHOWN. SEE VIEW B-SHT 2.
CIRCUIT SIDE
COMPONENT SIDE
PART OF ITEM
9 REQD
3 REQD
1.0 ±.1
3.5 ±.1
.7 ±1
SEE SEPARATE PARTS LIST
RACAL Instruments, Inc.
4 Goodyear St. Irvine CA 92718-2002
1260-82F, 6
1X2 OPT SW,1S
SIZE D
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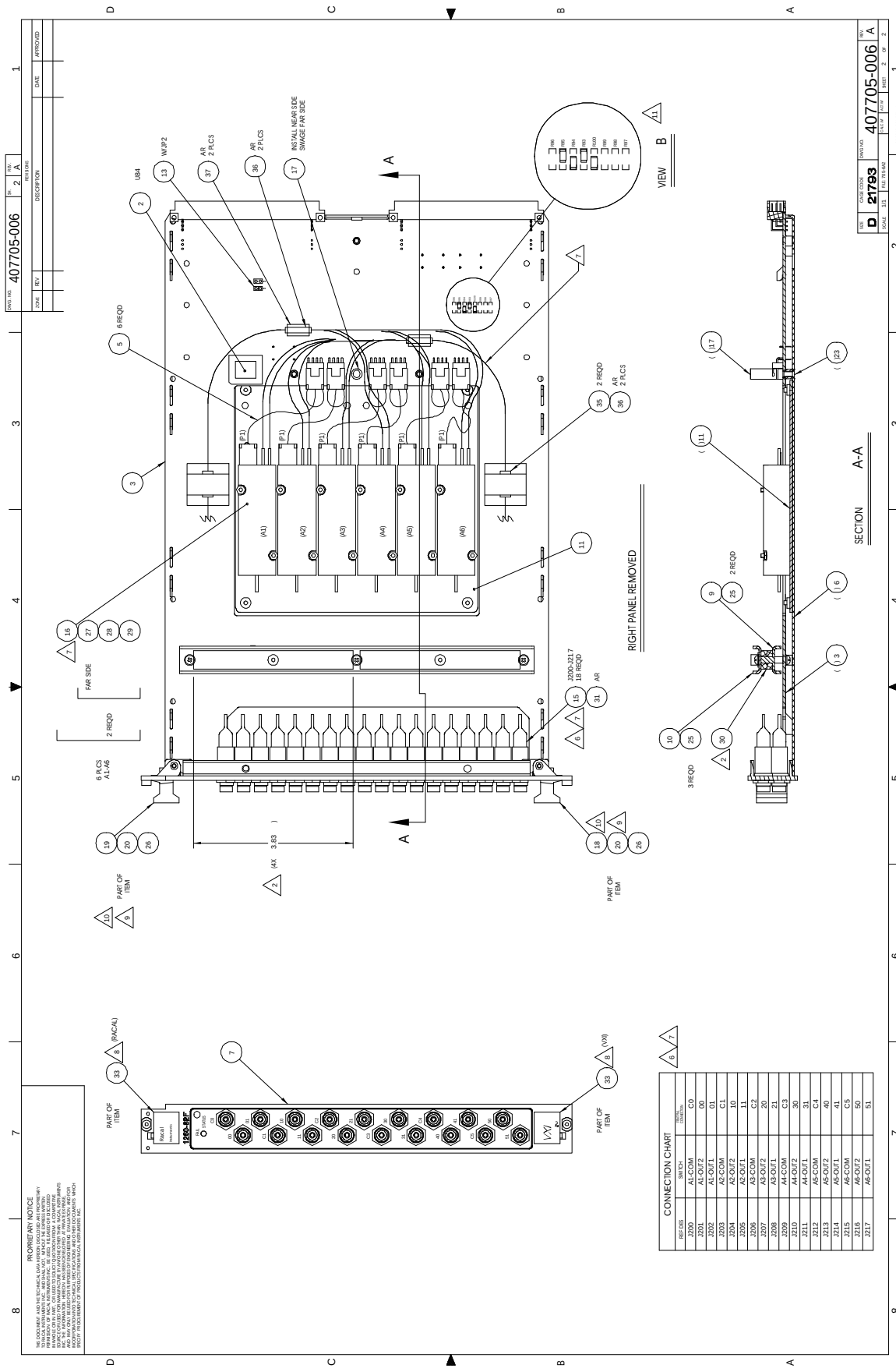
SHEET 1 OF 2
980346 REV F


407705-006
D
21793
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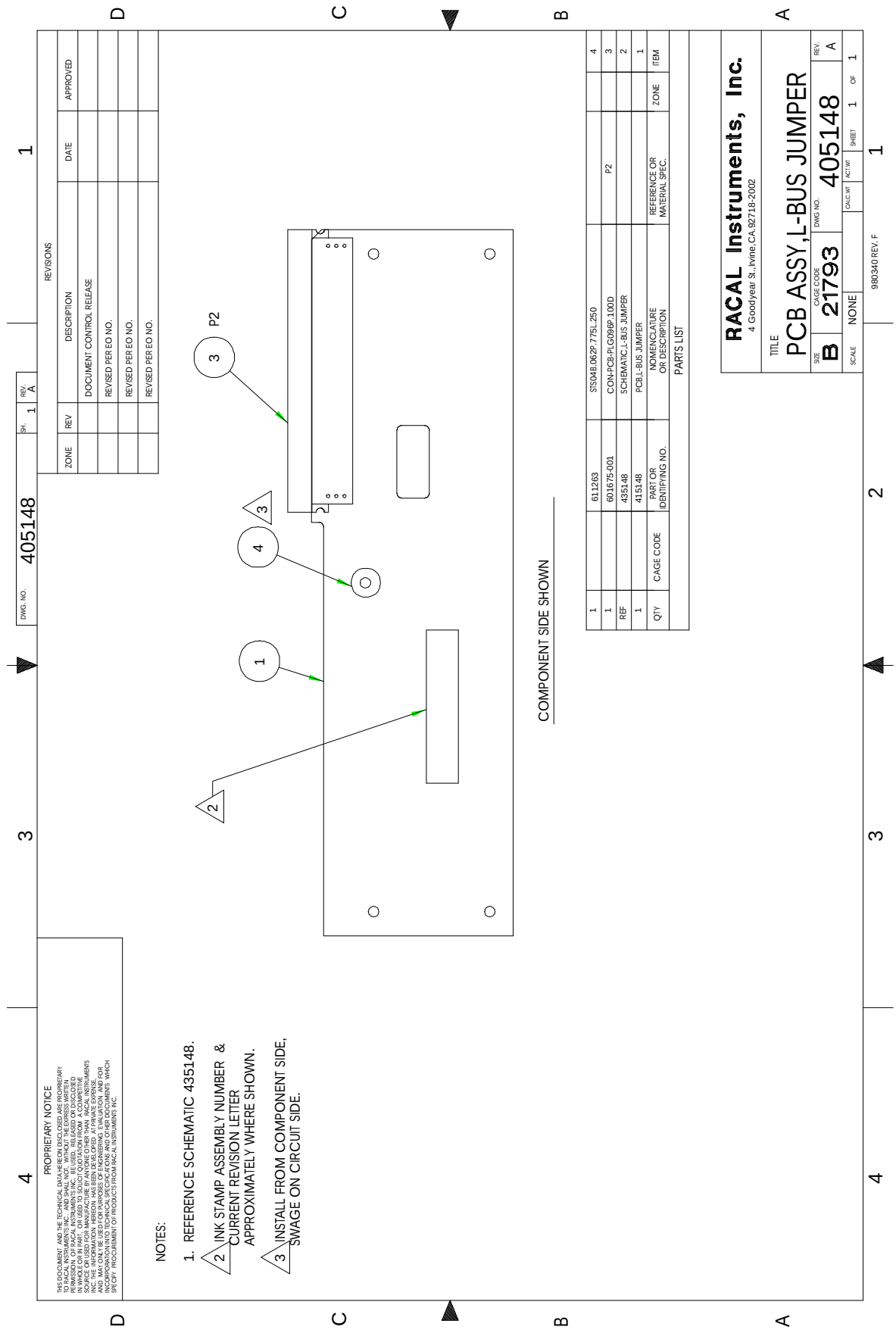
FAR SIDE
PART OF ITEM
CONNECTION CHART
PROPRIETARY NOTICE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SH. 1
REV. A
REVISIONS
ZONE | REV | DESCRIPTION | DATE | APPROVED
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REVISED PER EO NO.
REVISED PER EO NO.
REVISED PER EO NO.
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3 INSTALL FROM COMPONENT SIDE, SWAGE ON CIRCUIT SIDE.
P2
COMPONENT SIDE SHOWN
PARTS LIST
QTY | CAGE CODE | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION | REFERENCE OR MATERIAL SPEC. | ZONE | ITEM
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REF | | 435148 | SCHEMATIC,L-BUS JUMPER | | | 2
1 | | 415148 | PCB,L-BUS JUMPER | | | 1
RACAL Instruments, Inc.
4 Goodyear St., Irvine, CA 92718-2002
TITLE
PCB ASSY,L-BUS JUMPER
SIZE B
CAGE CODE 21793
DWG NO. 405148
REV. A
SCALE NONE
CALC WT
ACT WT
SHEET 1 OF 1
980340 REV. F

DWG. NO. 435148	SH. 1	REV. A

REVISIONS

REV	DESCRIPTION	DATE	APPROVED
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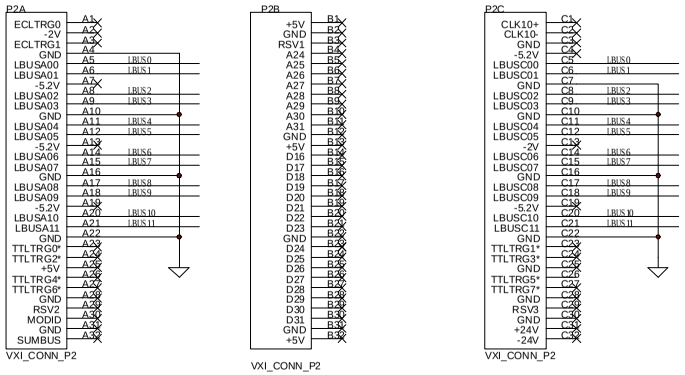

VXI LBUS JUMPERS

CAD CURRENT REV. LTR
FOR SHEET 1
REVISION A
DRAWN WITH PROTEL 98
VERSION 4.2.0

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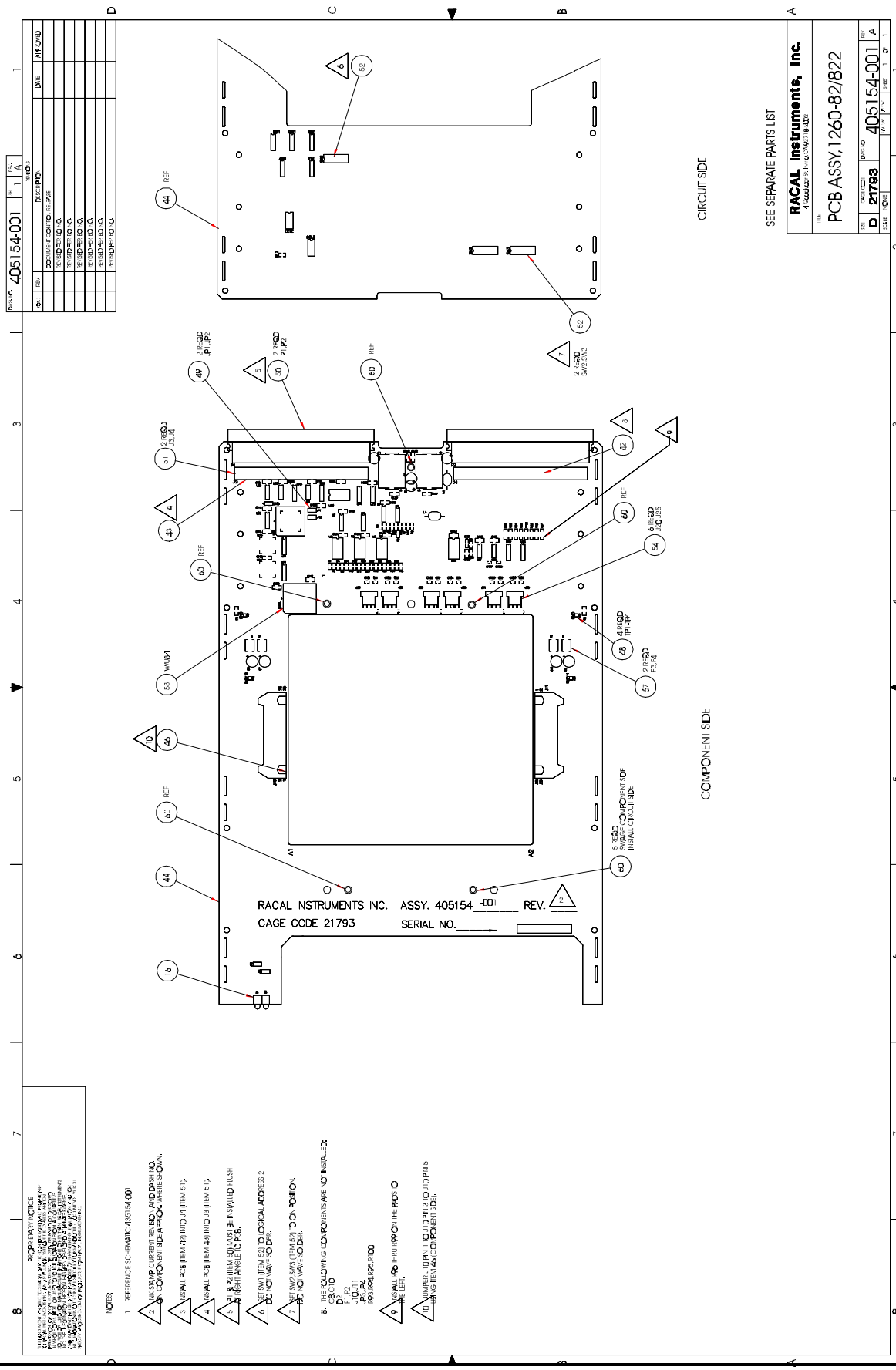
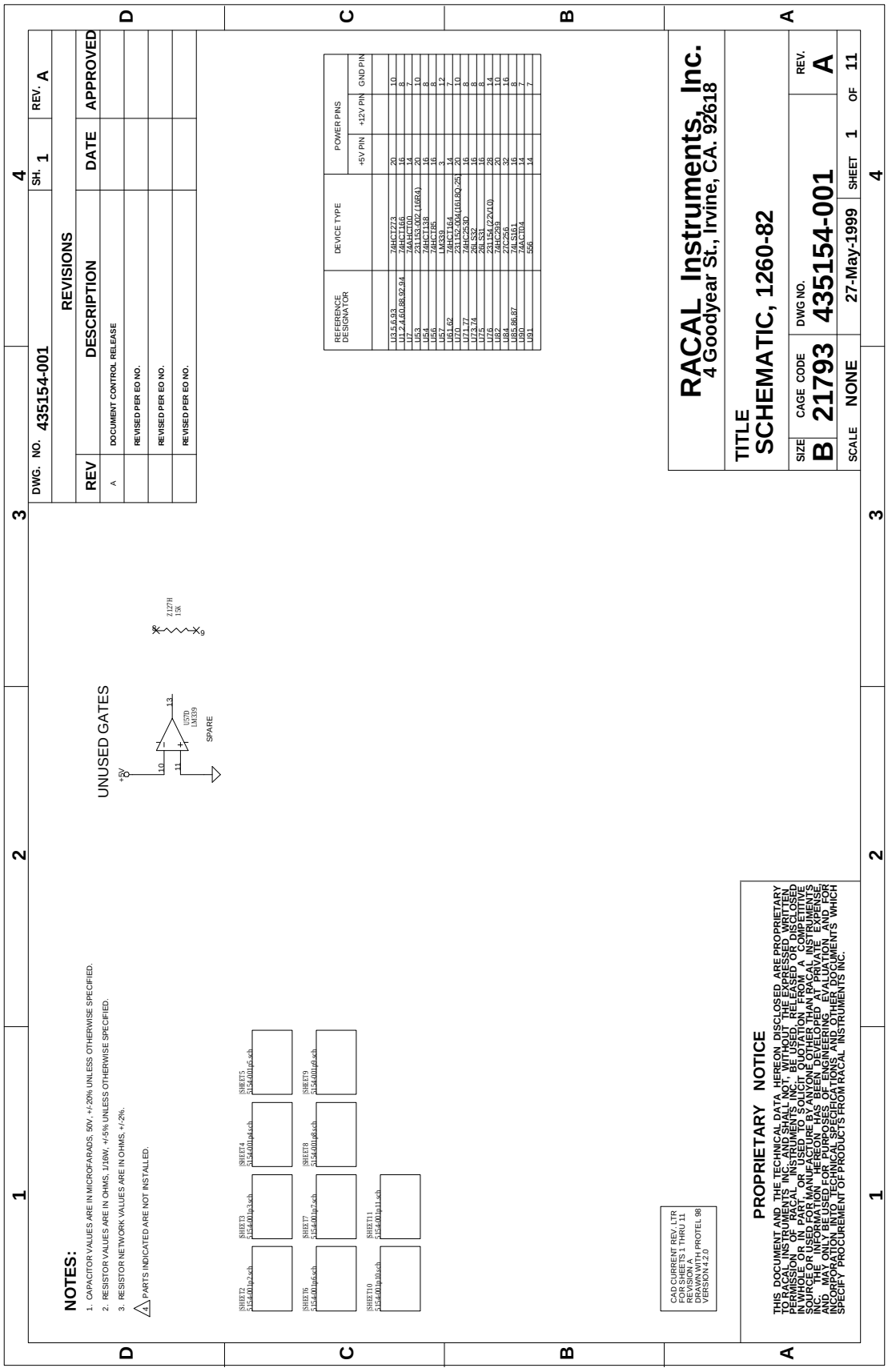
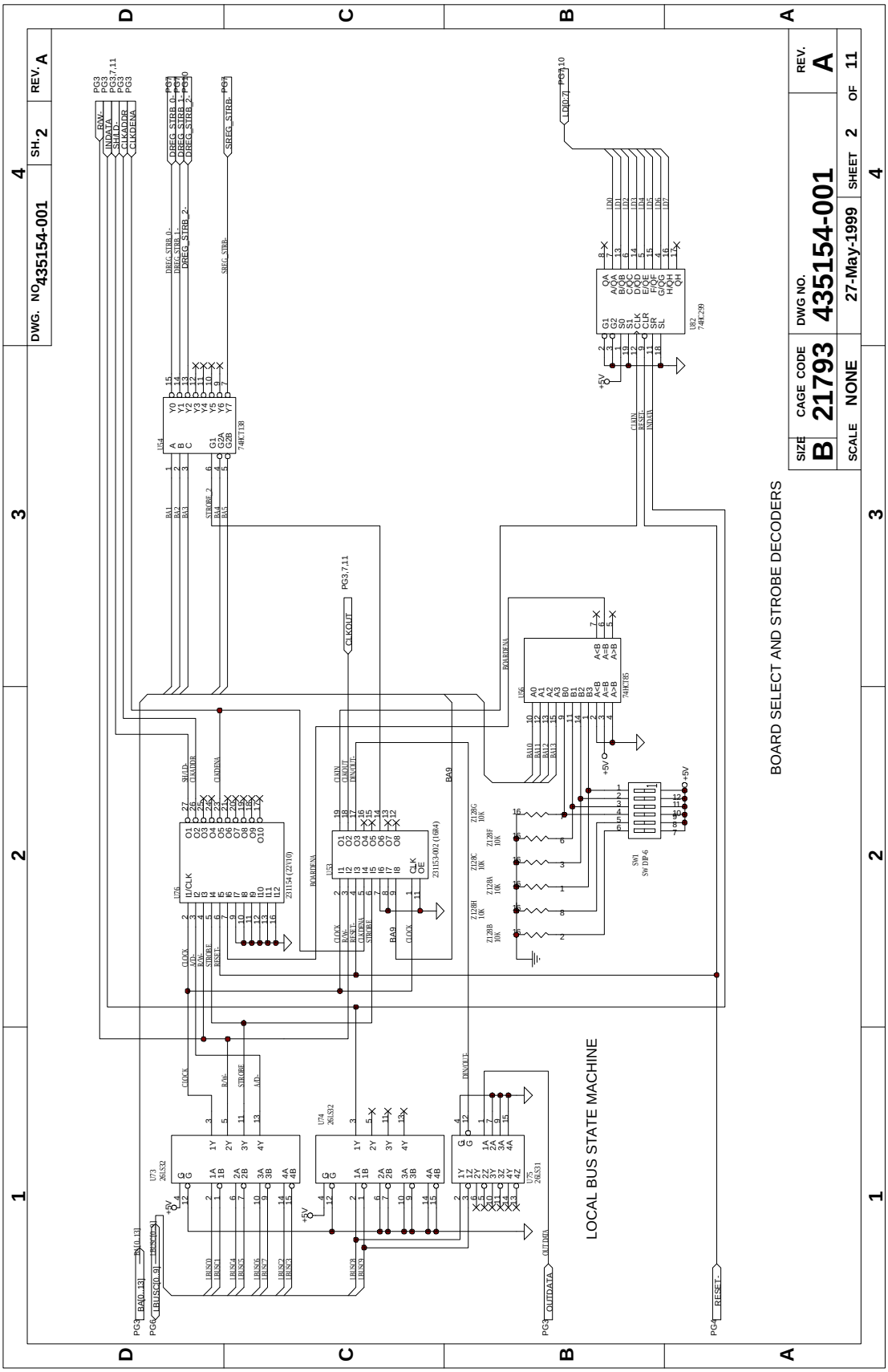
RACAL Instruments, Inc.
4 Goodyear St., Irvine, CA. 92618

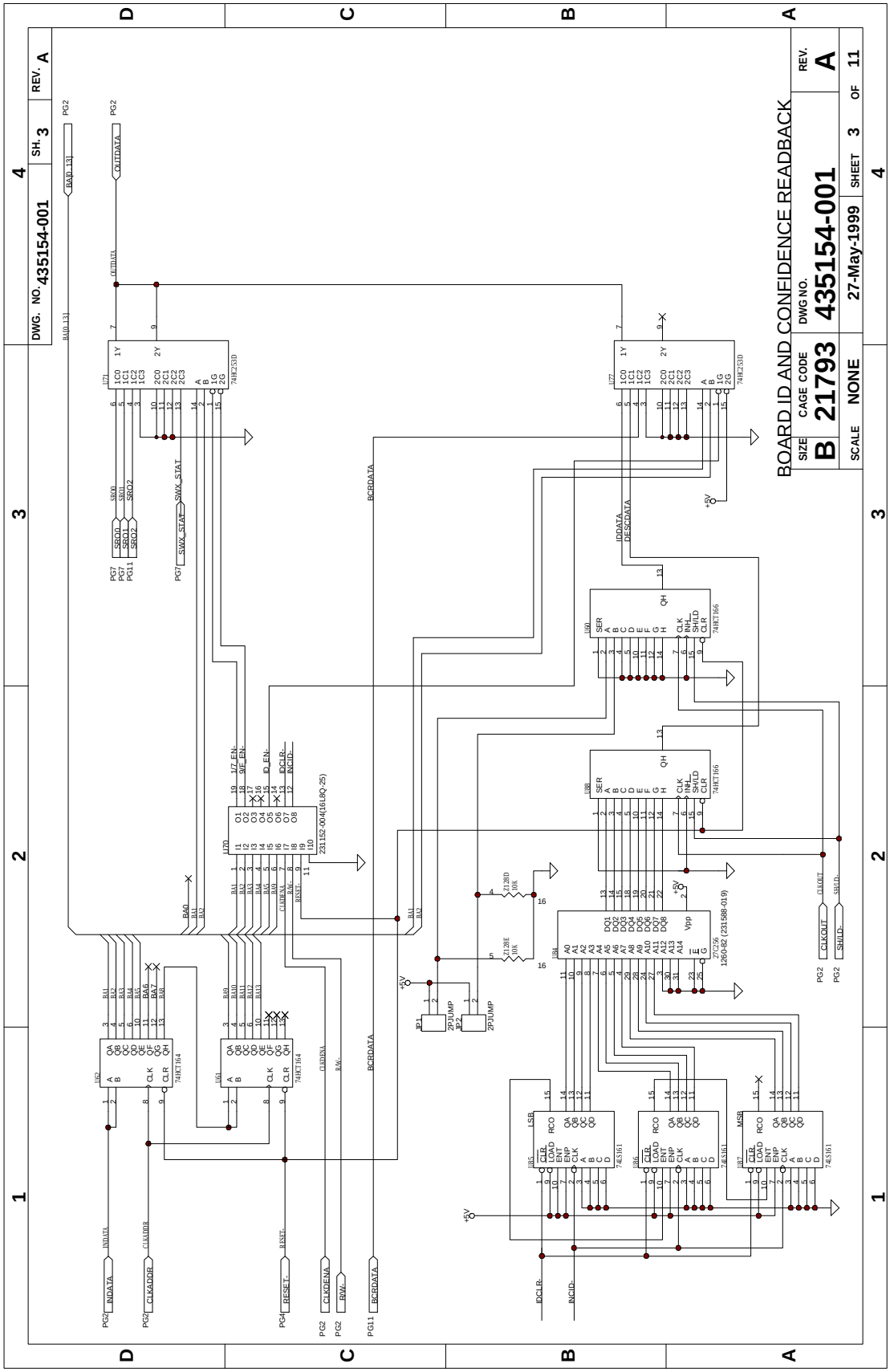
TITLE
SCHEMATIC, L-BUS JUMPER

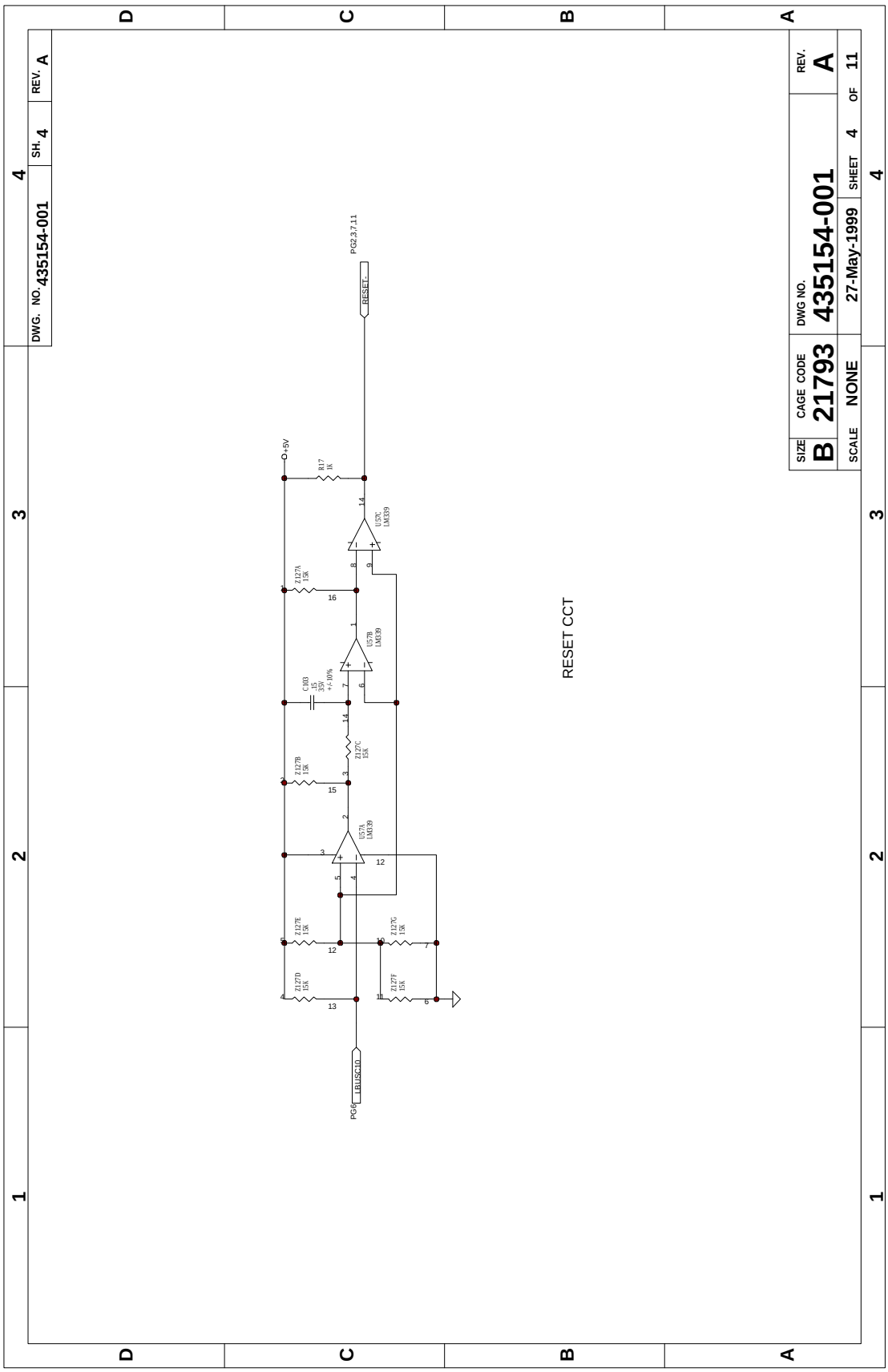
SIZE	CAGE CODE	DWG NO.	REV.
B	21793	435148	A
SCALE NONE	27-Apr-1999	SHEET 1 OF 1	

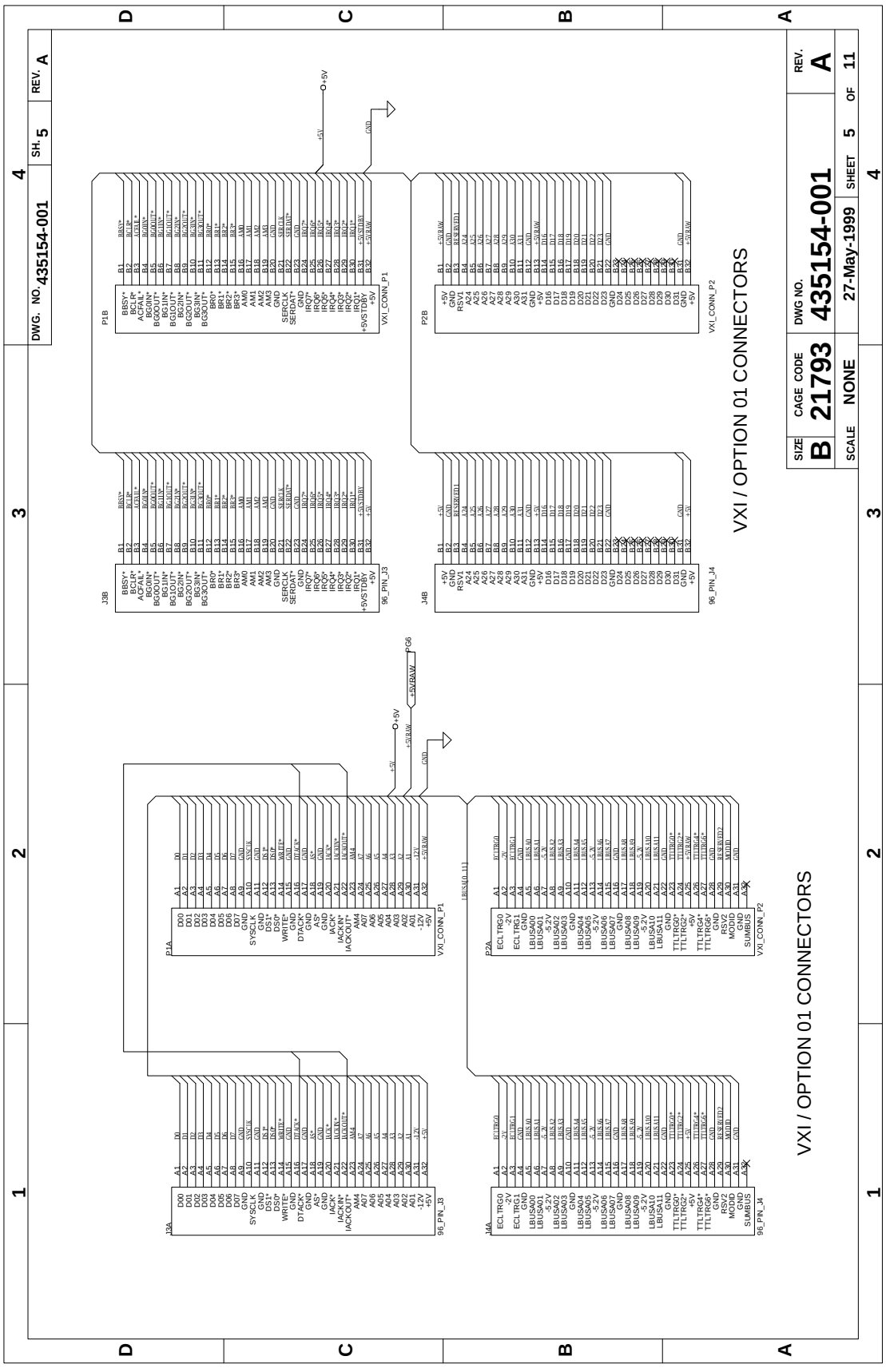

RACAL INSTRUMENTS INC. ASSY. 405154-001 REV. A
CAGE CODE 21793 SERIAL NO.
COMPONENT SIDE
CIRCUIT SIDE
SEE SEPARATE PARTS LIST
RACAL Instruments, Inc.
PCB ASSY, 1260-82/822
405154-001
21793

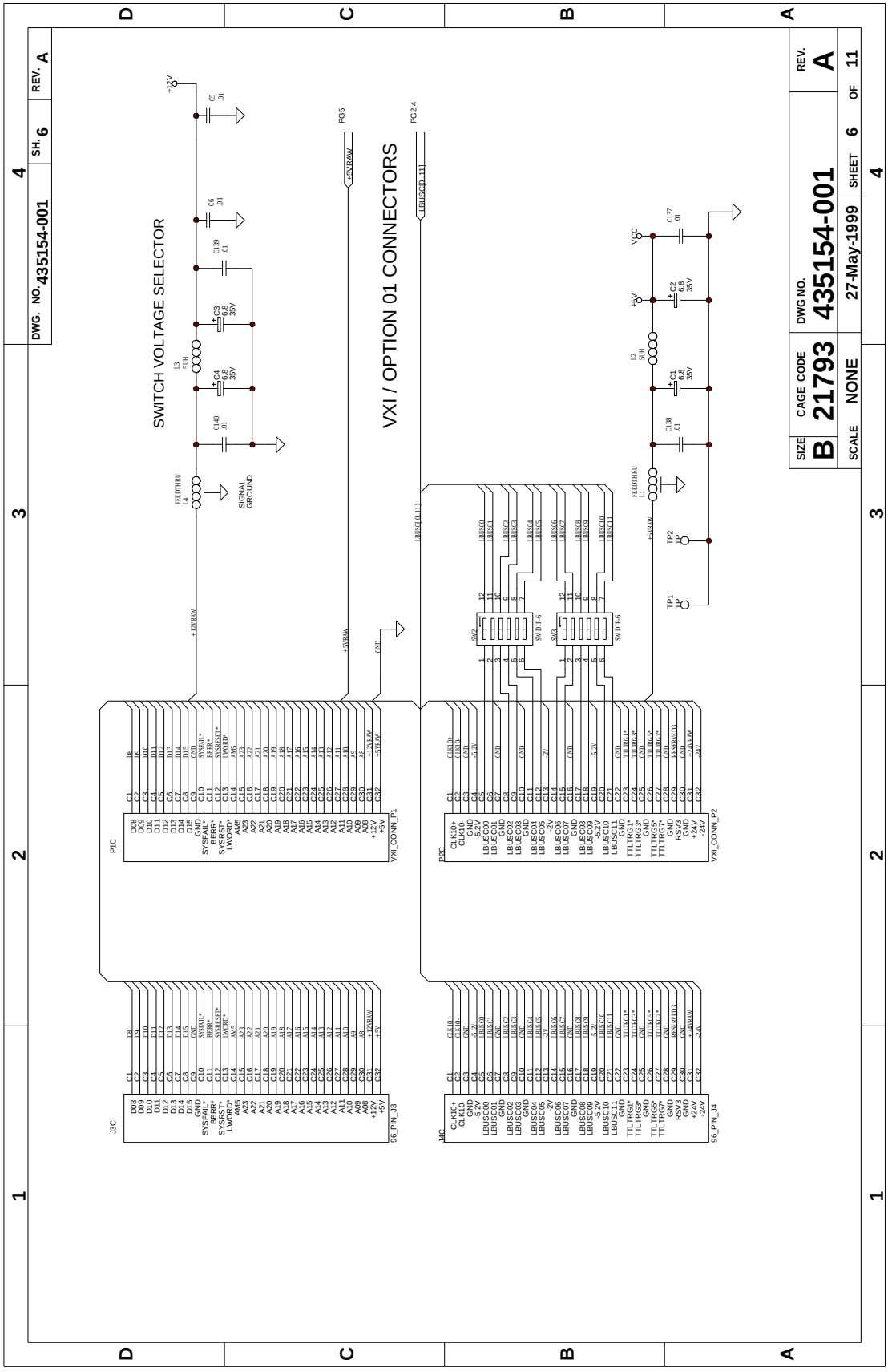

NOTES:
1. CAPACITOR VALUES ARE IN MICROFARADS, 50V, +/-20% UNLESS OTHERWISE SPECIFIED.
2. RESISTOR VALUES ARE IN OHMS, 1/16W, +/-5% UNLESS OTHERWISE SPECIFIED.
3. RESISTOR NETWORK VALUES ARE IN OHMS, +/-2%.
PARTS INDICATED ARE NOT INSTALLED.
UNUSED GATES
+5V
U57D LM339
SPARE
Z127H 15K
DWG. NO. 435154-001
SH. 1
REV. A
REVISIONS
REV
DESCRIPTION
DATE
APPROVED
A
DOCUMENT CONTROL RELEASE
REVISED PER EO NO.
REVISED PER EO NO.
REVISED PER EO NO.
REFERENCE DESIGNATOR
DEVICE TYPE
POWER PINS
+5V PIN
+12V PIN
GND PIN
U3,5,6,93
74HCT273
20
10
U7,24,60,88,92,94
74HCT646
16
8
U26
74AHC100
14
7
U53
231153-002 (16B4)
20
10
U54
74HCT138
16
8
U55,56
74HC595
16
8
U57
LM339
3
12
U61,62
74HCT164
14
7
U70
27512 (U16,U60,25
28
14
U71,77
74HC253
16
8
U73,74
28LS32
16
8
U75
28LS31
16
8
U76
231154 (22U0)
28
14
U82
74HC299
20
10
U84
27C256
32
16
U85,86,87
74LS541
16
8
U90
74AC04
14
7
U91
556
14
7
RACAL Instruments, Inc.
4 Goodyear St., Irvine, CA. 92618
TITLE
SCHEMATIC, 1260-82
SIZE
B
CAGE CODE
21793
DWG NO.
435154-001
REV.
A
SCALE
NONE
27-May-1999
SHEET 1 OF 11
SHEET2 435400.lp2.sch
SHEET3 435400.lp3.sch
SHEET4 435400.lp4.sch
SHEET5 435400.lp5.sch
SHEET6 435400.lp6.sch
SHEET7 435400.lp7.sch
SHEET8 435400.lp8.sch
SHEET9 435400.lp9.sch
SHEET10 435400.lp10.sch
SHEET11 435400.lp11.sch
CAD CURRENT REV. LTR FOR SHEETS 1 THRU 11
REVISION A
DRAWN WITH PROTEL 98
VERSION 4.2.0
PROPRIETARY NOTICE
THIS DOCUMENT AND THE TECHNICAL DATA HEREON DISCLOSED ARE PROPRIETARY TO RACAL INSTRUMENTS INC. AND SHALL NOT, WITHOUT THE EXPRESSED WRITTEN PERMISSION OF RACAL INSTRUMENTS INC., BE USED, REPRODUCED, DISCLOSED IN WHOLE OR IN PART, OR USED TO SOLICIT QUOTATION FROM A COMPETITIVE SOURCE OR USED FOR MANUFACTURE BY ANYONE OTHER THAN RACAL INSTRUMENTS INC. EXCEPT AS SPECIFICALLY AUTHORIZED IN THE CONTRACT UNDER WHICH THIS AND ANY OTHER INFORMATION HEREON HAS BEEN FURNISHED. ANY USE, EVALUATION AND/OR REPRODUCTION OF THIS DOCUMENT FOR PURPOSES OTHER THAN THOSE AUTHORIZED BY RACAL INSTRUMENTS INC. IS EXPRESSLY PROHIBITED. ANY USE OF THIS INFORMATION IN THE ENGINEERING, MANUFACTURE, AND/OR PROCUREMENT OF PRODUCTS OTHER THAN THOSE OF RACAL INSTRUMENTS INC. OR ITS SUBSIDIARIES IS EXPRESSLY PROHIBITED. ANY USE, REPRODUCTION OR INCORPORATION INTO TECHNICAL SPECIFICATIONS AND OTHER DOCUMENTS WHICH SPECIFY PROCUREMENT OF PRODUCTS FROM RACAL INSTRUMENTS INC.

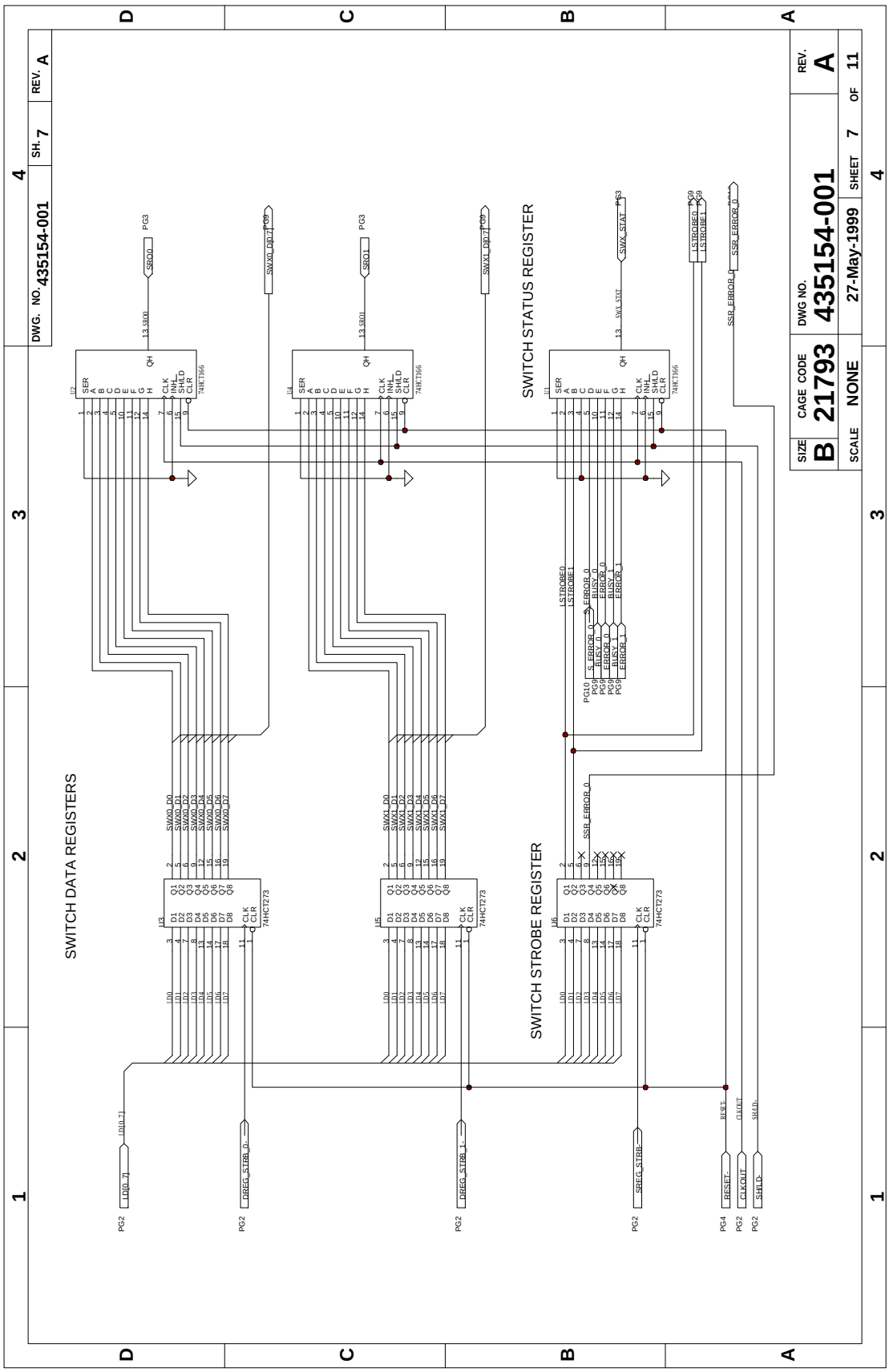

DWG. NO 435154-001
SH. 2
REV. A
SIZE B
CAGE CODE 21793
DWG NO. 435154-001
REV. A
SCALE NONE
27-May-1999
SHEET 2 OF 11
BOARD SELECT AND STROBE DECODERS
LOCAL BUS STATE MACHINE

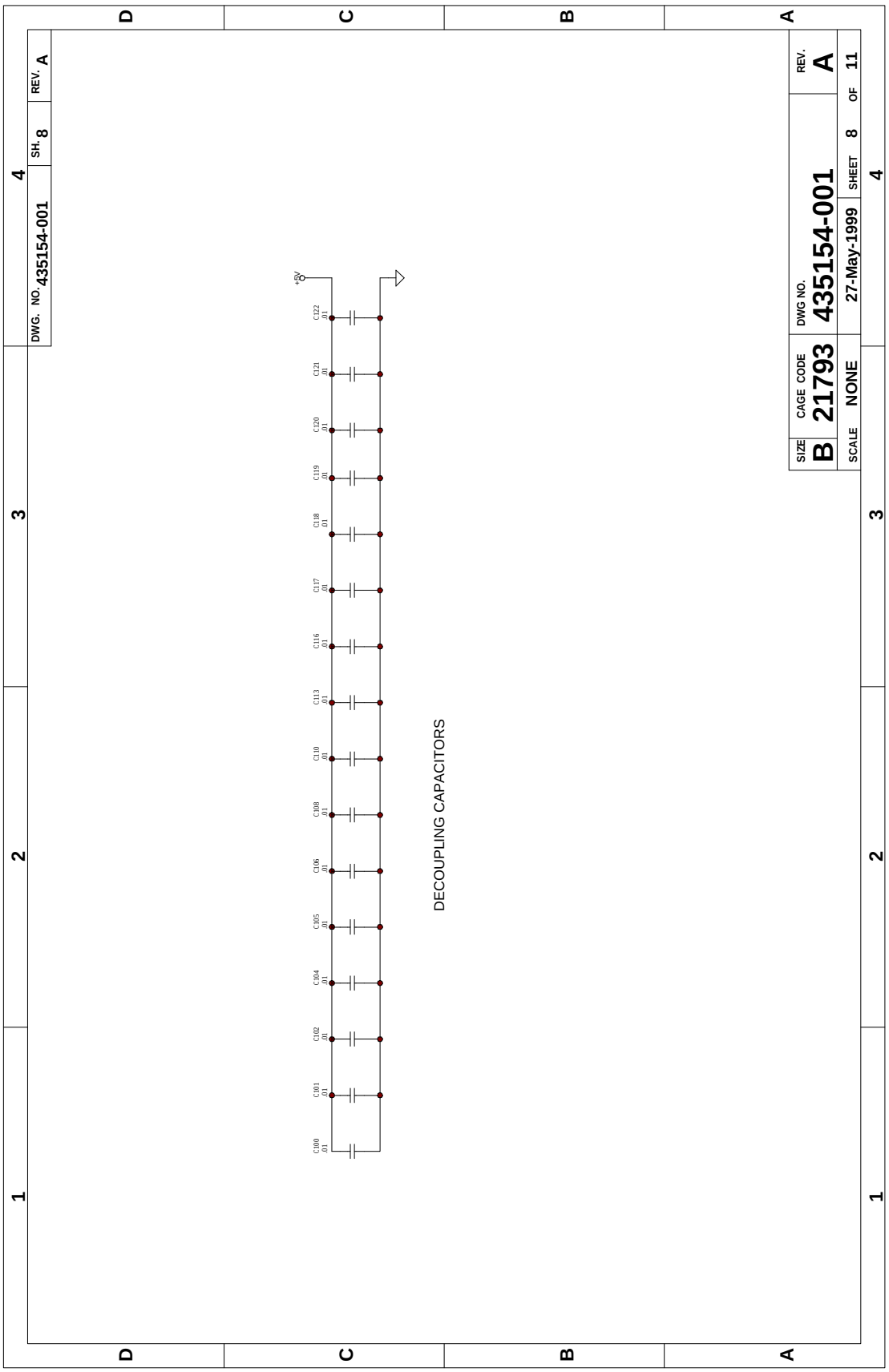

BOARD ID AND CONFIDENCE READBACK
SIZE B
CAGE CODE 21793
DWG NO. 435154-001
REV. A
SCALE NONE
27-May-1999
SHEET 3 OF 11
DWG. NO. 435154-001
SH. 3
REV. A

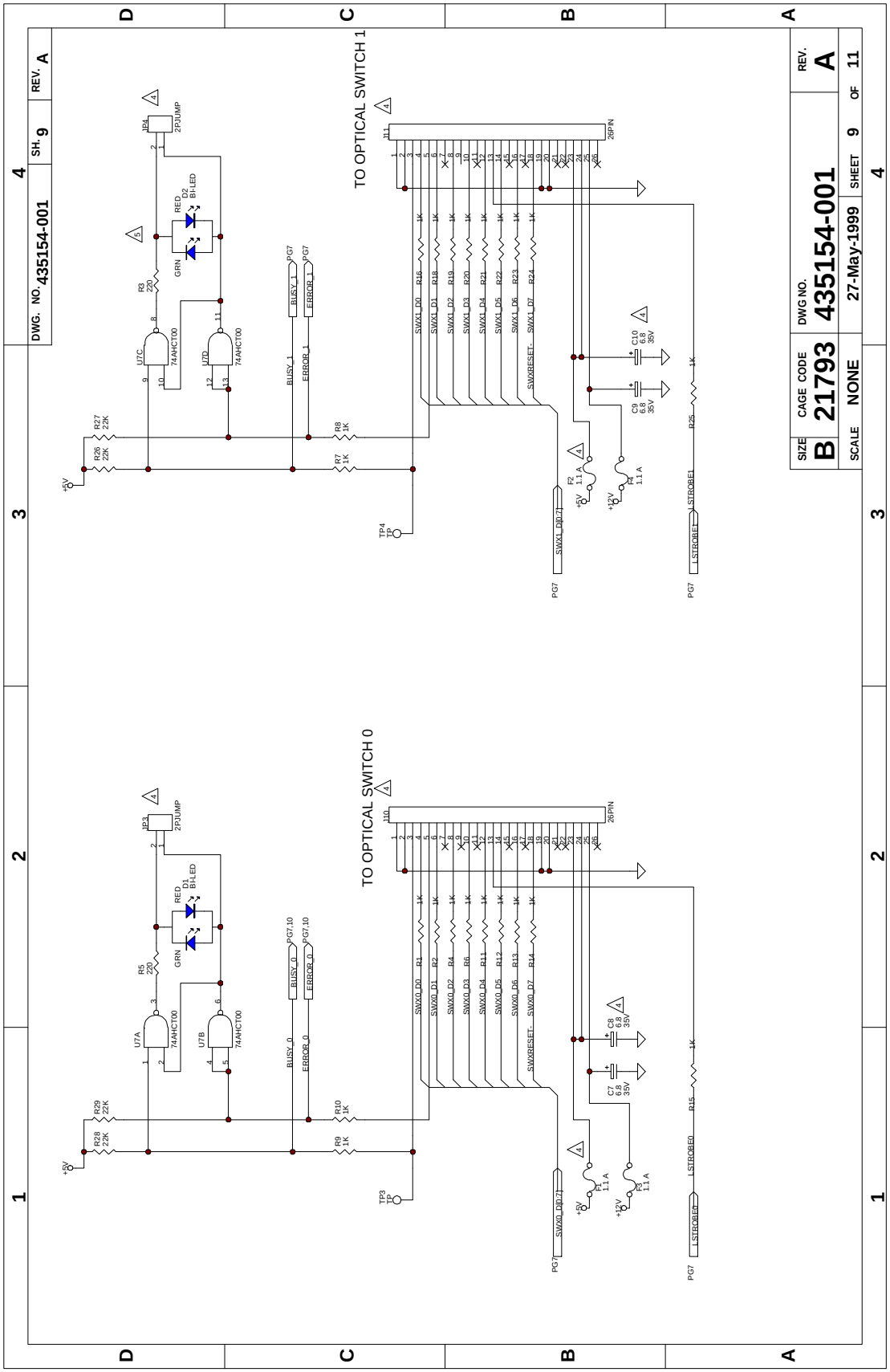

DWG. NO. 435154-001
SH. 4
REV. A
SIZE B
CAGE CODE 21793
SCALE NONE
DWG NO. 435154-001
REV. A
27-May-1999
SHEET 4 OF 11
RESET CCT
PG2,3,7,11
RESET-
+5V
R17 1K
U57C LM339
Z127A 15K
U57B LM339
C103 .1U 50V +/- 10%
Z127C 15K
Z127B 15K
U57A LM339
Z127E 15K
Z127G 15K
Z127D 15K
Z127F 15K
PG6
LBUSC10

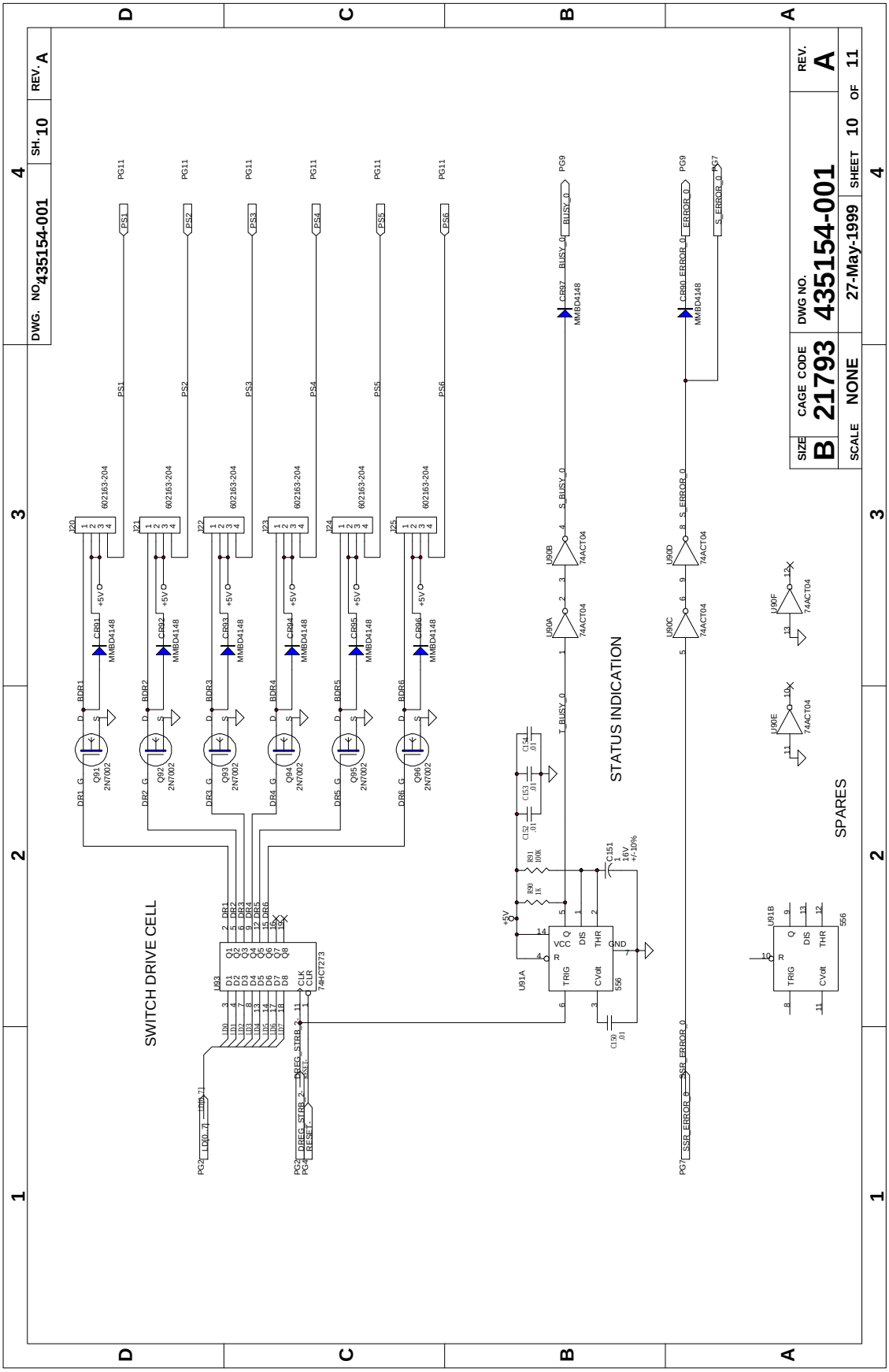

VXI / OPTION 01 CONNECTORS
VXI / OPTION 01 CONNECTORS
SIZE B
CAGE CODE 21793
DWG NO. 435154-001
REV. A
SCALE NONE
27-May-1999
SHEET 5 OF 11
DWG. NO. 435154-001
SH. 5
REV. A
J3A
J4A
P1A
P2A
P1B
P2B
J3B
J4B
96_PIN_J3
96_PIN_J4
VXI_CONN_P1
VXI_CONN_P2
VXI_CONN_P1
VXI_CONN_P2
+5V
GND
+5VSTDBY
+5VBAW

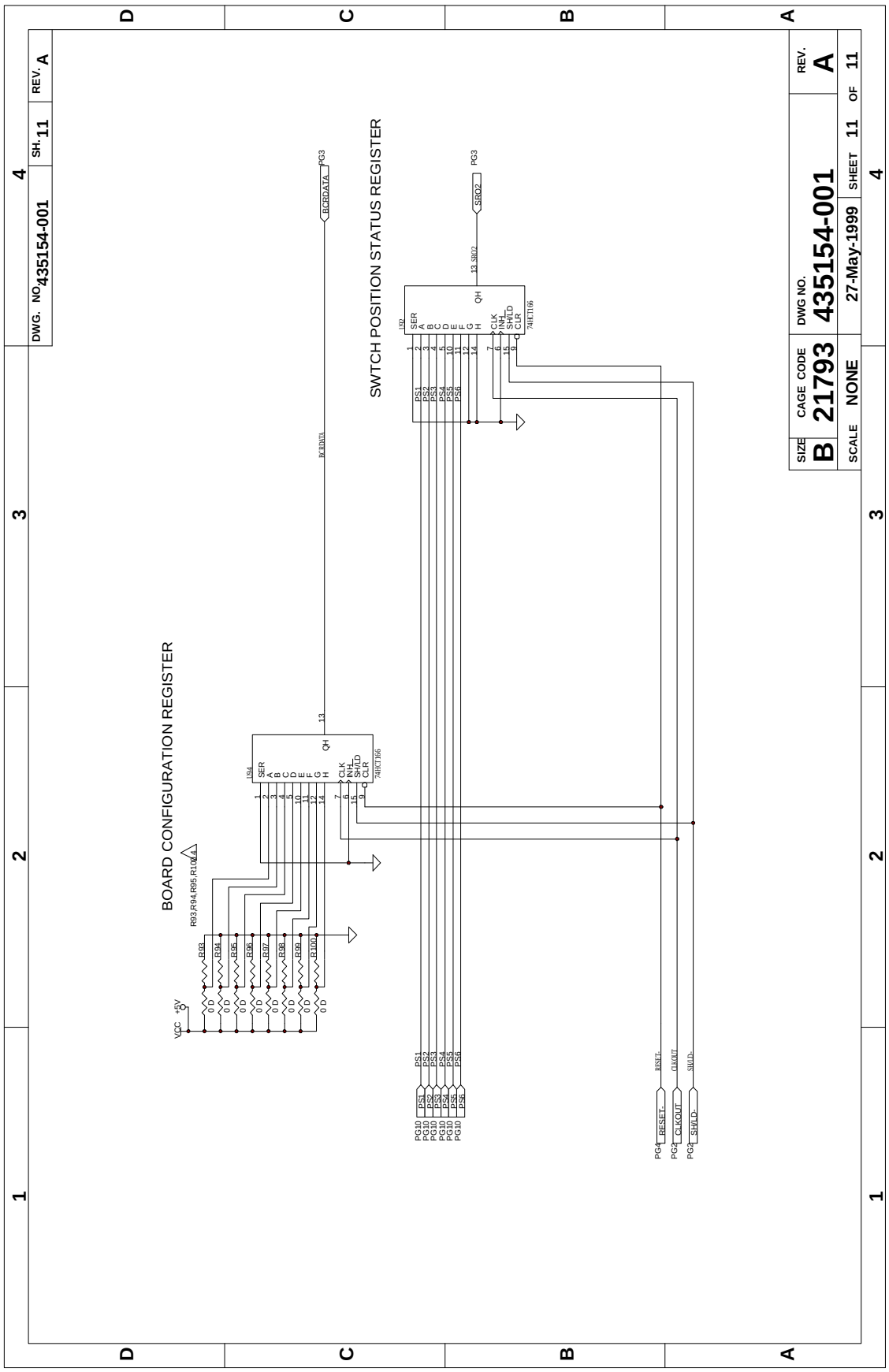

SWITCH VOLTAGE SELECTOR
VXI / OPTION 01 CONNECTORS
SIGNAL GROUND
FEEDTHRU
VXI_CONN_P1
VXI_CONN_P2
96_PIN_J3
96_PIN_J4
SW DIP-6
DWG. NO. 435154-001
REV. A
SH. 6
SIZE B
CAGE CODE 21793
DWG NO. 435154-001
REV. A
SCALE NONE
27-May-1999
SHEET 6 OF 11

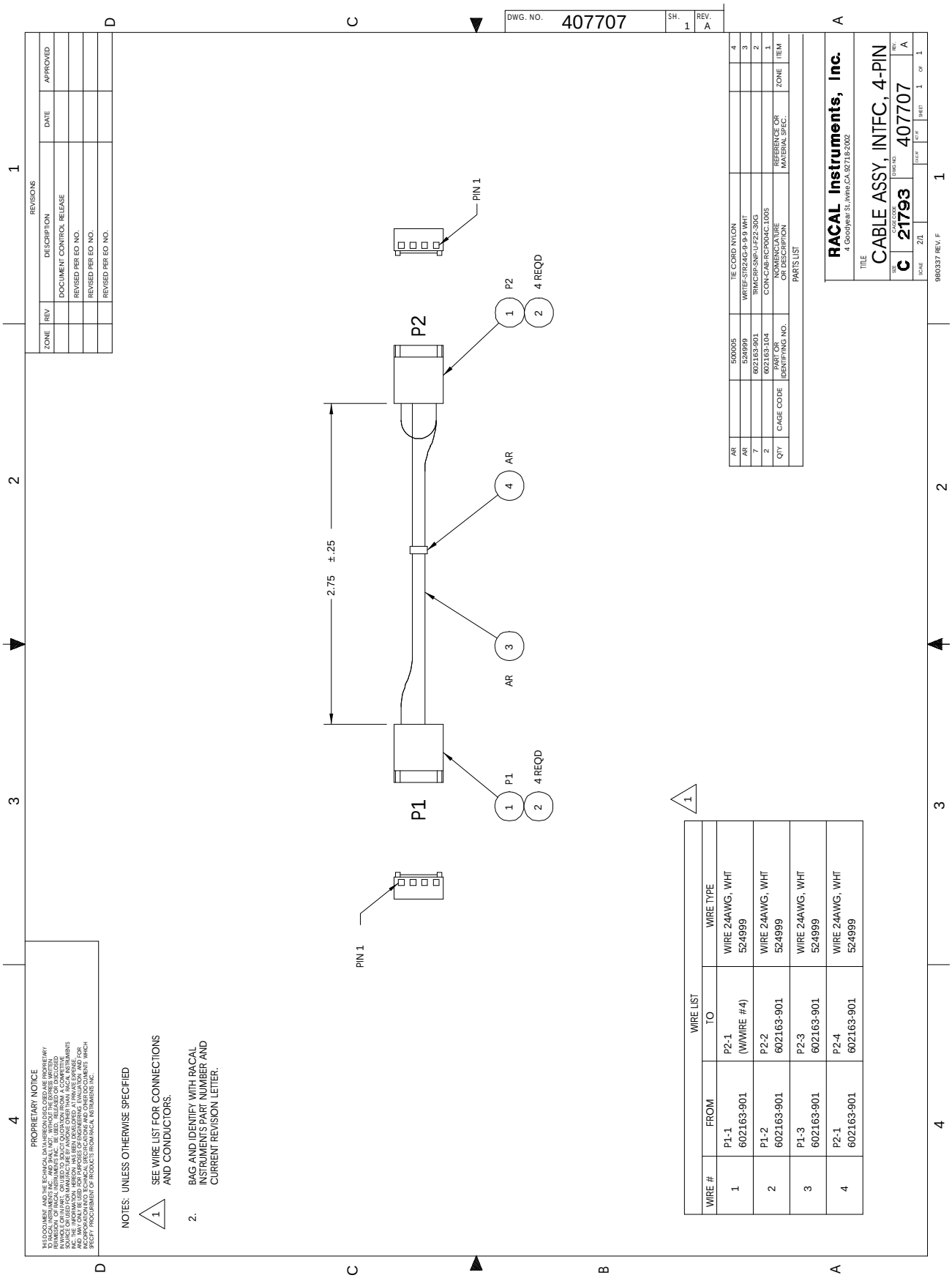

SWITCH DATA REGISTERS
SWITCH STROBE REGISTER
SWITCH STATUS REGISTER
74HCT273
74HCT166
DWG. NO. 435154-001
REV. A
SIZE B
CAGE CODE 21793
SCALE NONE
DWG NO. 435154-001
27-May-1999
SHEET 7 OF 11
DREG_STRB_0
DREG_STRB_1
SREG_STRB
RESET
CLKOUT
SHLD
SSR_ERROR_0
LSTROBE0
LSTROBE1
SWX_STAT


DECOUPLING CAPACITORS
+5V
C122
C121
C120
C119
C118
C117
C116
C113
C110
C108
C106
C105
C104
C102
C101
C100
DWG. NO. 435154-001
SH. 8
REV. A
SIZE B
CAGE CODE 21793
SCALE NONE
DWG NO. 435154-001
REV. A
27-May-1999
SHEET 8 OF 11


DWG. NO. 435154-001
SH. 9
REV. A
SIZE B
CAGE CODE 21793
DWG NO. 435154-001
REV. A
SCALE NONE
27-May-1999
SHEET 9 OF 11
TO OPTICAL SWITCH 1
TO OPTICAL SWITCH 0
J11
J10
26PIN
JP4
JP3
2PJUMP
D2 BI-LED
D1 BI-LED
RED
GRN
R3 220
R5 220
U7C
U7D
U7A
U7B
74AHCT00
R26 22K
R27 22K
R28 22K
R29 22K
R7 1K
R8 1K
R9 1K
R10 1K
R16 1K
R18 1K
R19 1K
R20 1K
R21 1K
R22 1K
R23 1K
R24 1K
R25 1K
R15 1K
R1 1K
R2 1K
R4 1K
R6 1K
R11 1K
R12 1K
R13 1K
R14 1K
C10 68 35V
C9 68 35V
C8 68 35V
C7 68 35V
F2 1.1 A
F1 1.1 A
TP4
TP3
BUSY_1
ERROR_1
BUSY_0
ERROR_0
SWX1_D0-7
SWX0_D0-7
SWXRESET-
STROBE1
STROBE0
+5V
+12V
PG7
PG7,10


SWITCH DRIVE CELL
STATUS INDICATION
SPARES
DWG. NO 435154-001
REV. A
SH. 10
SIZE B
CAGE CODE 21793
DWG NO. 435154-001
REV. A
SCALE NONE
27-May-1999
SHEET 10 OF 11
74HCT273
74ACT04
556
2N7002
MMBD4148
602163-204


SWTCH POSITION STATUS REGISTER
BOARD CONFIGURATION REGISTER
DWG. NO. 435154-001
SH. 11
REV. A
SIZE B
CAGE CODE 21793
DWG NO. 435154-001
REV. A
SCALE NONE
27-May-1999
SHEET 11 OF 11


DWG. NO. 407707
SH. 1
REV. A
REVISIONS
ZONE
REV
DESCRIPTION
DATE
APPROVED
DOCUMENT CONTROL RELEASE
REVISED PER EO NO.
REVISED PER EO NO.
REVISED PER EO NO.
PIN 1
P2
P2
4 REQD
AR
AR
2.75 ±.25
P1
P1
4 REQD
PIN 1
PROPRIETARY NOTICE
NOTES: UNLESS OTHERWISE SPECIFIED
1 SEE WIRE LIST FOR CONNECTIONS AND CONDUCTORS.
2. BAG AND IDENTIFY WITH RACAL INSTRUMENTS PART NUMBER AND CURRENT REVISION LETTER.
WIRE LIST
WIRE # | FROM | TO | WIRE TYPE
1 | P1-1 602163-901 | P2-1 (W/WIRE #4) | WIRE 24AWG, WHT 524999
2 | P1-2 602163-901 | P2-2 602163-901 | WIRE 24AWG, WHT 524999
3 | P1-3 602163-901 | P2-3 602163-901 | WIRE 24AWG, WHT 524999
4 | P2-1 602163-901 | P2-4 602163-901 | WIRE 24AWG, WHT 524999
AR | 500005 | TIE CORD NYLON | 4
AR | 524999 | WRTEF-STR24G-9-9-9 WHT | 3
7 | 602163-901 | TRMCRP-SNP-U-F22-30G | 2
2 | 602163-104 | CON-CAB-RCP004C.100S | 1
QTY | CAGE CODE | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION | REFERENCE OR MATERIAL SPEC. | ZONE | ITEM
PARTS LIST
RACAL Instruments, Inc.
4 Goodyear St., Irvine, CA 92718-2002
TITLE
CABLE ASSY, INTFC, 4-PIN
SIZE C
CAGE CODE 21793
DWG NO. 407707
REV A
SCALE 2/1
SHEET 1 OF 1
980337 REV. F

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Chapter 5
PARTS LIST

407705-003	Final Assy, 1260-82C	5-3
407705-004	Final Assy, 1260-82D	5-4
407705-006	Final Assy, 1260-82F	5-5
405148	PCB Assy, L-BUS Jumper	5-6
405154-001	PCB Assy, 1260-82	5-7
407707	Cable Assy, Interface	5-8
407706	Shipping Kit	5-9

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RACAL INSTRUMENTS INC.

Assembly 407705-003 1260-82C, 3 1X2 OPT SW, 1S Date 5/27/99 Revision A

#	Component	Description	U/M	Qty Reqd	Ref
1	050000-000	RSCH1-000 00H. 06W005	EA	4.00000	R93-95, 100
2	231588-019	ICMEM-27C256-15-U84-PLCCP	EA	1.00000	U8 4
3	405154-001	PCB ASSY, 1260-82/822	EA	1.00000	
4	407706	SHIP KIT, 1260-82 B&T	EA	1.00000	
5	407707	CABLE ASSY, INTFC, 4-PIN	EA	3.00000	W/A1, A2 , A3
6	456722	COVER, LEFT, VXI , MOD-ADDR	EA	1.00000	
7	456787-003	PANEL, FRONT, 1260-82C-1	EA	1.00000	
8	456773	PANEL, RIGHT, 88-1	EA	1.00000	
9	456775	BRET, STRAIN RELIEF, LOWER, 1W	EA	1.00000	
10	456776	BRKT, STRAIN RELIEF, UPPER, 1W	EA	1.00000	
11	456786	PLATE, SWITCH MOUNTING	EA	1.00000	
15	602362	CONN, FIBER OPTIC, FC ADAPTER	EA	9.00000	J200-J208
16	602382	SWITCH, OPTICAL, 1x2, SGL MODE	EA	3.00000	Al, A2 , A3
17	611263	STSO4B. 062P. 775L.250	EA	1.00000	
18	611264	HAN DLE-EXT-BOT	EA	1.00000	
19	611265	HANDLE-EXT-TOP	EA	1.00000	
20	611266	MOUNTING HDW, HANDLE	EA	.50000	
23	615541	S1M-PFL1H004-40X.250	EA	17.00000	
25	616252	53M-PPANHOO4-40X. 312	EA	5.00000	
26	616405	S1MPFL9-M2 . 5x0 . 45x12	EA	2.00000	
27	615519	S1M-PFL1H002-56X.750	EA	6.00000	
28	617002	NT1HEXOO2-5655N-PSVT	EA	6.00000	
29	617126	W15002 - 165D. 01ST. 088	EA	6.00000	
30	910634	SPONGE, PRESSURE, SENSITIVE	FT	.00001	
31	920962	LOCTITE-242-MED STR	EA	.00001	
32	921059	LABEL-CAUTION-STATIC	EA	1.00000	
33	921148-001	LABEL SET,VXI	EA	1.00000	
34	921309	LABEL,VXI SWTCH IDENT.	EA	1.00000	
35	611472	CLP-CA-ADJ. 690D-ADBK	EA	1.00000	
36	611473	CABLE WRAP,VELCRO. ,63W	EA	.00001	
37	921055	TAPE-DBL SIDED-FOAM	EA	.00001	

RACAL INSTRUMENTS INC.

Assembly 407705-004 1260-82D, 4 1x2 OPT SW,1S Date 5/27/99 Revision A

#	Component	Description	U/M	Qty Reqd	Ref
1	050000-000	RSCH1-000 . 00H. 06W005	EA	4.00000	R93-95, 100
2	231588-019	ICMEM-27C256-15-U84-PLCCP	EA	1.00000	U84
3	405154-001	PCB ASSY, 1260-82/822	EA	1.00000	
4	407706	SHIP KIT, 1260-82 B&T	EA	1.00000	
5	407707	CABLE ASSY, INTFC, 4-PIN	EA	4.00000	W/A1-A4
6	456722	COVER, LEFT, VXI, MOD-ADDR	EA	1.00000	
7	456787-004	PANEL, FRONT, 15, 1260-82D	EA	1.00000	
8	456773	PANEL, RIGHT, 88-1	EA	1.00000	
9	456775	BRKT, STRAIN RELIEF, LOWER, 1W	EA	1.00000	
10	456776	BRKT, STRAIN RELIEF, UPPER, 1W	EA	1.00000	
11	456786	PLATE, SWITCH MOUNTING	EA	1.00000	
13	601195	PLUG-JUMPER-0. 1 CTR	EA	1.00000	W/JP1
15	602362	CONN,FIBER OPTIC,FC ADAPTER	EA	12.00000	J2 00-J2 11
16	602382	SWITCH, OPTICAL, 1x2,SGL MODE	EA	4.00000	A1-A4
17	611263	STSO4B 062P. 775L.250	EA	1.00000	
18	611264	HANDLE-EXT-BOT	EA	1.00000	
19	611265	HANDLE-EXT-TOP	EA	1.00000	
20	611266	MOUNTING HDW, HANDLE	EA	.50000	
22	615540	S1M-PFL1HOO4-40X. 188	EA	4.00000	
23	615541	S1M-PFL1HOO4-40X .250	EA	13.00000	
25	616252	53M-PPANHOO4-40X. 312	EA	5.00000	
26	616405	S1MPFL9-M2 . 5x0 - 45X12	EA	2.00000	
27	615519	S1M-PFL1H002-56X.750	EA	8.00000	
28	617002	NT1HEXOO2-5655N-PSVT	EA	8.00000	
29	617126	W15002 . 165D. 01ST. 088	EA	8.00000	
30	910634	SPONGE, PRESSURE, SENSITIVE	FT	.00001	
31	920962	LOCTITE-242-MED STR	EA	.00001	
32	921059	LABEL-CAUTION-STATIC	EA	1.00000	
33	921148-001	LABEL SET, VXI	EA	1.00000	
34	921309	LABEL, VXI SWTCH IDENT.	EA	1.00000	
35	611472	CLP-CA-ADJ. 690D-ADBK	EA	2.00000	
36	611473	CABLE WRAP, VELCRO. ,63W	EA	.00001	
37	921055	TAPE-DBL SIDED-FOAM	EA	.00001	

RACAL INSTRUMENTS INC.

Assembly 407705-006 1260-82F, 6 1X2 OPT SW, 1S Date 5/27/99 Revision A

#	Component	Description	U/M	Qty Reqd	Ref
1	050000-000	RSCH1-000. 00H. 06W005	EA	4.00000	R93-95, 100
2	231588-019	ICMEM-27C256-15-U84-PLCCP	EA	1.00000	U8 4
3	405154-001	PCB ASSY, 1260-82/822	EA	1.00000	
4	407706	SHIP KIT, 1260-82 B&T	EA	1.00000	
5	407707	CABLE ASSY, INTFC, 4-PIN	EA	6.00000	W/A1-A6
6	456722	COVER, LEFT, VXI, MOD-ADDR	EA	1.00000	
7	456787-006	PANEL, FRONT, 15, 1260-82F	EA	1.00000	
8	456773	PANEL, RIGHT, 88-1	EA	1.00000	
9	456775	BRKT, STRAIN RELIEF, LOWER, 1W	EA	1.00000	
10	456776	BRKT, STRAIN RELIEF, UPPER, 1W	EA	1.00000	
11	456786	PLATE, SWITCH MOUNTING	EA	1.00000	
13	601195	PLUG-JUMPER-0 .1 CTR	EA	1.00000	W/JP2
15	602362	CONN, FIBER OPTIC,FC ADAPTER	EA	18.00000	J200-J217
16	602382	SWITCH, OPTICAL, 1x2, SGL MODE	EA	6.00000	A1-A6
17	611263	STS04B. 062P. 775L.250	EA	1.00000	
18	611264	HAN DLE-EXT-BOT	EA	1.00000	
19	611265	HANDLE-EXT-TOP	EA	1.00000	
20	611266	MOUNTING HDW, HANDLE	EA	.50000	
22	615540	51M-PFL1H004-40X. 188	EA	4.00000	
23	615541	S1M-PFL1H004-40X. 250	EA	13.00000	
25	616252	S3M-PPANH004-40X.312	EA	5.00000	
26	616405	S1MPFL9-M2 . 5x0 . 45x12	EA	2.00000	
27	615519	S1M-PFL1H002-56X.750	EA	12.00000	
28	617002	NT1HEXOO2-5655N-PSVT	EA	12.00000	
29	617126	W15002. 165D. 01ST. 088	EA	12.00000	
30	910634	SPONGE, PRESSURE, SENSITIVE	FT	.00001	
31	920962	LOCTITE-242-MED STR	EA	.00001	
32	921059	LABEL-CAUTION-STATIC	EA	1.00000	
33	921148-001	LABEL SET, VXI	EA	1.00000	
34	921309	LABEL, VXI SWTCH IDENT.	EA	1.00000	
35	611472	CLP-CA-ADJ. 690D-ADBK	EA	2.00000	
36	611473	CABLE WRAP, VELCRO. ,63W	EA	.00001	
37	921055	TAPE-DBL SIDED-FOAM	EA	.00001	

RACAL INSTRUMENTS INC.

Assembly 405148 PCB ASSY, L-BUS JUMPER Date 1/28/99 Revision A

#	Component	Description	U/M	Qty Reqd	Ref
	415148	PCB, L-BUS JUMPER	EA	1.00000	-
	601675-001	CON-PCB-PLG096P. 100D	E	1.00000	P2
	611263	STS04B. 062P. 775L.250	EA	1.00000	-
2	435148	SCHEMATIC, L-BUS JUMPER	EA		-

RACAL INSTRUMENTS INC.

Assembly 405154-001 PCB ASSY,1260-82/822 Date 5/27/99 Revision A

#	Component	Description	U/M	Qty Reqd	Ref
1	R-21-1801	CPCH2-0010.0N0050V20	EA	26.00000	CS, 6,100-102, 104-106, 108, 110,113, 116,-122, 137-140, 150, 152-154
2	050000-000	RSCH1-000 .00H. 06W005	EA	4.00000	R96, 97, 98, 99
3	050000-102	RSCH2-001 .00K. 06W005	EA	24.00000	R1, 2,4,6-25, 90
4	050000-104	RSCH2-100.00K. 06W005	EA	1.00000	R91
5	050000-221	RSCH1-220. 00H. 06W005	EA	2.00000	R3, 5
6	050000-223	RSCH2-022.00K. 06W005	EA	4.00000	R26, 27,28,29
7	080114	RSNW2-015. 000K16P08R	EA	1.00000	Z127
8	080120	RSNW2-010. 000K16P1SR	EA	1.00000	Z128
9	100164	CPFT1-0800. 0P0050v	EA	2.00000	L1, 4
10	110126	CPTA3-0006. 8u0035v20	EA	6.00000	C1, 2,3,4,7,9
11	110244	CPCH3-0001 . 0U0016V10	EA	1.00000	C151
13	130198	CPCH2-0150. 0N0035v10	EA	1.00000	C103
14	200363	TRFE-NCHPR-SS60V200M2N7 002	EA	6.00000	Q91-96
15	210153	DISLC-075. 0V00 . 20A-1N4148	EA	7.00000	CR90-97
16	210155	DILED-002 . 2V00 . 01A-RED/GRN	EA	1.00000	D1
17	231093	ICLIN-LM33 9 COMP	EA	1.00000	U57
18	231096	ICINT-2 6LS32---RCVR	EA	2.00000	U73, 74
19	231119	ICDIG-74HC2 99---SHFT	EA	1.00000	U82
20	231120	ICDIG-74HCT1 66-SHFT	EA	7.00000	U1, 2,4, 60,88, 92, 94
22	231125	ICINT-26L531---DRVR	EA	1.00000	U75
23	231130	ICDIG-74HCT273-FLOP	EA	4.00000	U3, 5, 6, 93
24	231131	ICDIG-74HCT164-SHFT	EA	2.00000	U61, 62
25	231135	ICDIG-74HCT85	EA	1.00000	U56
26	231147	ICDIG-74HC253D—MUX	EA	2.00000	U71, 77
27	231152-004	ICPLA-16L8Q-25-U70-PLCCP	EA	1.00000	U70
28	231153-002	ICPLA-16R4-U53-PLCCP	EA	1.00000	U53
29	231154	ICMEM-22V10-U52-PAL	EA	1.00000	U76
30	231380	ICDIG-74ACT04---SOIC	EA	1.00000	U90
32	231386	ICDIG-74L5161----	EA	3.00000	U85, 86,87
33	231445	ICDIG-74HCT138—SOIC	EA	1.00000	U54
36	231519	ICLIN-556 SOIC	EA	1.00000	U91
37	231596	ICDIG-74AHCT00—SOIC	EA	1.00000	U7
40	310193	CKF1-SH005. 00U10. 1%I	EA	2.00000	L2, 3
42	401951	PCB ASSY,L-BUS JUMPER,P4	EA	1.00000	W/J4
43	401951-003	PCB ASSY,BUS GRANT,JUMPER,P3	EA	1.00000	W/J3
44	415154-001	PCB, 1260-8XX	EA	1.00000	
45	435154-001	SCHEMATIC, 1260-82	EA		
46	500204	WRTEF-SLD28G-9-9-9-WHT	FT	.00001	
48	601197	POST-TEST-. 025 SQ	EA	4.00000	TP1, TP2, TP3, TP4
49	601208-010	CON-PCB-PLG02SD. 100S	EA	2.00000	JP1, JP2
50	601675	CON-PCB-PLG096S. 100T	EA	2.00000	P1, P2
51	601925	CON-PCB-RCP96SD. 100T	EA	2.00000	J3, J4
52	601969	SWITCH,DIP-6 POS,LOW	EA	3.00000	SW1-3
53	602068-032	CON-SKT-RCPO32S.050S	BA	1.00000	w/U84
54	602163-204	CON-PCB-PLGOO4S.1OOSRT ANGLE	BA	6.00000	J20-J25
60	611258-001	STSO4T.062P.170L.218	BA	5.00000	
67	921421	FUSE-01. 1OOA-030V	BA	2.00000	P3, 4

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Assembly 407707 CABLE ASSY, INTFC,4-PIN Date 5/27/99 Revision A

#	Component	Description	U/M	Qty Reqd	Ref
1	602163-104	CON-CAB-RCP004C. 100S	EA	2.00000	
2	602163-901	TRMCRP-SNP-U-F22-30G	EA	7.00000	
3	524999	WRTEF-STR24G-9-9-9 WHT	FT	.00001	
4	500005	TIE CORD NYLON	FT	.00001	

RACAL INSTRUMENTS INC.

Assembly 407706 SHIP KIT, 1260-82 B&T Date 3/23/99 Revision A

#	Component	Description	U/M	Qty Reqd	Ref
	455540	KEY, LOCKOUT, TTL AC	EA	2.00000	
	455541	KEY, LOCKOUT, TTL, C	EA	2.00000	
	455542	KEY, LOCKOUT, TTL, A	EA	2.00000	
	615013	S1M-PPANHOO2-56X. 188	EA	3.00000	
	980673-059	MANUAL, 1260-82	EA	1.00000	

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Chapter 6

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 1260-82 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.

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