RACAL INSTRUMENTS™
1260-152/172
17 CHANNEL SPDT HIGH FREQUENCY PLUG-IN

Publication No. 980824-152/172 Rev. A

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

2. 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.

EC Declaration of Conformity

We

Astronics Test Systems
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Irvine, CA 92618

declare under sole responsibility that the

1260-152, 1260-172
High Frequency Coaxial Switch Modules
407742-003, 407742-004

conform to the following Product Specifications:

Safety: EN 61010-1

EMC: EN50081-1
CISPR 11:1990/EN 55011 (1991): Group 1 Class A
IEC 801-2:1991/EN 50082-1 (1992): 4 kV CD, 8 kV AD
IEC 801-3:1984/EN 50082-1 (1992): 3 V/m, 27-500 MHz
IEC 801-4:1988/EN 50082-1 (1992): 1 kV

Supplementary Information:

The above specifications are met when the product is installed in an Astronics Test Systems Adapt-a-Switch carrier with faceplates installed over all unused slots, as applicable. The carrier is installed in a certified mainframe.

The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC.

Irvine, CA, April 23, 2001

Quality Manager

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DOCUMENT CHANGE HISTORY

Revision	Date	Description of Change
A	01/28/09	Revised per EO 29549 Revised format to current standards. Company name revised throughout manual. Manual now revision letter controlled. Added Document Change History Page v.
No change	03/23/09	Back of cover sheet. Revised Warranty Statement, Return of Product, Proprietary Notice and Disclaimer to current standards. Removed Reshipment Instructions in (Chap. 2-1) and removed (Chap 5). Information. Now appears in first 2 sheets behind cover sheet. Updated table of contents to reflect changes made.

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Chapter 1
SPECIFICATIONS

Introduction

The 1260-152/172 is an RF plug-in switch module developed for a variety of platforms, such as the 1260-100 Adapt-a-Switch Carrier and the 1256 Switching System. The 1260-152/172 includes the following features:

- Standard Adapt-a-Switch™ and 1256 Switching System plug-in design, providing for ease of replacement.
- Data-Driven embedded descriptor, allowing immediate use with any Option-01T or 1256 switch controller, regardless of firmware revision level.
- 17 High Frequency channels of SPDT switching.

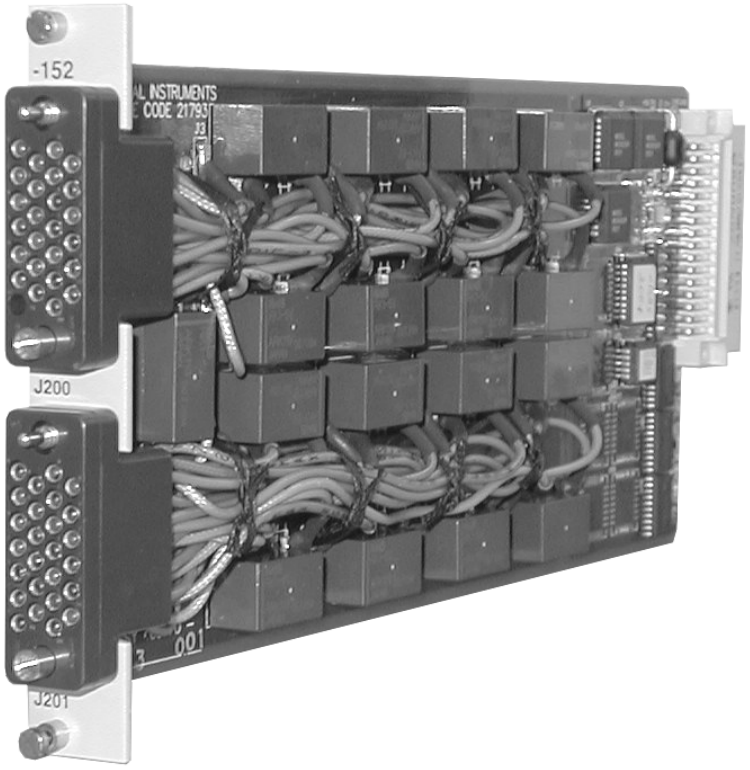

Figure 1-1, 1260-152/172

Specifications

Characteristic Impedance		
1260-152	50Ω	
1260-172	75Ω	
Bandwidth (-3dB)		
1260-152	≥ 1.2GHz	
1260-172	≥ 900 MHz	
Insertion Loss, 500MHz		
1260-152	≤ 0.5dB to 300MHz	
	≤ 0.75dB to 600MHz	
	≤ 0.9dB to 900MHz	
1260-172	≤ 0.5dB to 300MHz	
	≤ 1.5dB to 600MHz	
VSWR		
1260-152	to 900MHz	≤ 1.1:1 to 100MHz
		≤ 1.6:1 to 500Mz
		≤ 2.0:1 to 900MHz
1260-172	to 600MHz	≤ 1.5:1 to 100MHz
		≤ 2.1:1 to 500MHz
Isolation		
500MHz	≥ 85dB to 100MHz	
	≥ 55dB to 600MHz	
	≥ 45dB to 900MHz	
Crosstalk		
500 MHz	≤ -80dB to 100MHz	
	≤ -55dB to 600MHz	
	≤ -50dB to 900MHz	
Maximum Switching Voltage		
AC	30 VAC peak	
DC	30 VDC	
Switching Current		
AC	0.50 AAC peak	
DC	0.50 A	
Switching Power		
AC	10VA	
DC	10W	
Path resistance	< 1Ω	
Insulation resistance	> $10^9\Omega$	
Relay Settling Time	< 10ms	

Shock	30g, 11ms, ½ sine wave
Vibration	0.013 in. P_k-P_k, 5-55Hz
Bench Handling	4 in., 45°
Cooling	See 1260-100 cooling data
Temperature	
Operating	0°C to +55°C
Non-operating	-40°C to +75°C
Relative Humidity	85% ± 5% non-condensing at < 30°C
Altitude	
Operating	10,000 feet
Non-operating	15,000 feet
Power Requirements	
+5VDC	150mA + 40mA per energized relay (850mA Max.)
Weight	9oz. (0.26kg)
MTBF	>300,000 hours (MIL-HDBK-217E)
Dimensions	4.5”H X 0.75”W X 9.5”D

Power Dissipation

While the cooling of the Adapt-a-Switch carrier is dependent upon the chassis into which it is installed, the carrier can normally dissipate approximately 100 W. Care must be taken, then, in the selection and loading of the plug-in modules used in the carrier. It is not possible to fully load the carrier, energize every relay, and run full power through every set of contacts, all at the same time. In practice this situation would never occur.

To properly evaluate the power dissipation of the plug-in modules, examine the path resistance, the current passing through the relay contacts, the ambient temperature, and the number of relays closed at any one time.

For example, if a 1260-152/172 module (containing 17 relays) has all relays closed, passing a current of 0.5A, then:

Total power dissipation =
$[(\text{current})^2 * (\text{path resistance}) * 17] + (\text{quiescent power})$

By substituting the actual values:

Total power dissipation =
$[(0.5A)^2 * (1\Omega) * 17] + (5W) = 9.25W$ at 55°C

This is acceptable power dissipation for an individual plug-in

module. If five additional modules are likewise loaded, then the overall carrier dissipation is approximately 56 W, which is well within the cooling available in any commercial VXIbus chassis. In practice, rarely are more than 25% of the module's relays energized simultaneously, and rarely is full rated current run through every path. In addition, the actual contact resistance is typically one-half to one-fourth the specified maximum, and temperatures are normally not at the rated maximum. The power dissipated by each plug-in should be no more than 15 W if all six slots are used simultaneously. Consult the Power Dissipation Section of any other 1260 Adapt-a-Switch card manuals for additional information.

Most users of a signal-type switch, such as the 1260-152/172, switch no more than a few hundred milliamperes and are able to energize all relays simultaneously, should they so desire.

Additionally, if fewer plug-in modules are used, more power may be dissipated by the remaining cards. By using a chassis with high cooling capacity, such as the 1261B, almost any configuration may be realized.

About MTBF

The 1260-152/172 MTBF is >300,000 hours, calculated in accordance with MIL-HDBK-217E, with the exception of the electromechanical relays. Relays are excluded from this calculation because relay life is strongly dependent upon operating conditions. Factors affecting relay life expectancy are:

1. Switched voltage
2. Switched current
3. Switched power
4. Maximum switching capacity
5. Maximum rated carrying current
6. Load type (resistive, inductive, capacitive)
7. Switching repetition rate
8. Ambient temperature

The most important factor is the maximum switching capacity, which is an interrelationship of maximum switching power, maximum switching voltage and maximum switching current. When a relay operates at a lower percentage of its maximum switching capacity, its life expectancy is longer. The maximum switching capacity specification is based on a resistive load, and must be further de-rated for inductive and capacitive loads.

For more details about the above life expectancy factors, refer to the data sheet for the switch plug-in module.

The relays used on the 1260-152/172 plug-ins are P/N's 310157-001and 310289. The manufacturer's specifications for these relays are:

Life Expectancy

Mechanical	1,000,000 operations
Electrical	100,000 operations at 1W RF load or 10mA 24VDC (resistive)

For additional relay specifications, refer to the relay manufacturer's data sheet.

Ordering Information

Listed below are part numbers for both the 1260-152/172 switch modules and available mating connector accessories. Each 1260-152/172 uses two mating connectors, provided in the Shipping Kit. Coax pins or cables must be ordered separately.

ITEM	DESCRIPTION	PART #
1260-152 Switch Module	50Ω 17CH SPDT Coax Switch Module	407742-003
1260-172 Switch Module	75Ω 17CH SPDT Coax Switch Module	407742-004
Shipping Kit	Mating connectors (2) and manual	407653-152/172
Mating Connector	Spare 26 Pin Housing	602221-126
Coax Pin	Coax Pin	602221-903
Cable Assy. 2ft, 50Ω	Single Coax Cable w/connectors	407746-001
Cable Assy. 6ft, 50Ω	Single Coax Cable w/connectors	407746-003
Cable Assy. 12ft, 50Ω	Single Coax Cable w/connectors	407746-006
Cable Assy. 2ft, 75Ω	Single Coax Cable w/connectors	407747-001
Cable Assy. 6ft, 75Ω	Single Coax Cable w/connectors	407747-003
Cable Assy. 12ft, 75Ω	Single Coax Cable w/connectors	407747-006
Additional Manual	User Manual	980824-152/172

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Chapter 2
INSTALLATION INSTRUCTIONS

Unpacking and Inspection

1. Remove the 1260-152/172 module and inspect it for damage. If any damage is apparent, inform the carrier immediately. Retain shipping carton and packing material for the carrier's inspection.

2. Verify that the pieces in the package you received contain the correct 1260-152/172 module option and the 1260-152/172 Users Manual. Notify Customer Support if the module appears damaged in any way. Do not attempt to install a damaged module into a VXI chassis.

3. The 1260-152/172 module is shipped in an anti-static bag to prevent electrostatic damage to the module. Do not remove the module from the anti-static bag unless it is in a static-controlled area.

Installation

Installation of the 1260-152/172 Switching Module into a 1260-100 Carrier assembly is described in the Installation section of the 1260-100 Adapt-a-Switch Carrier Manual, P/N 980824-100. The installation of the 1260-152/172 Switching Module into a 1256 Chassis is described in the installation section of the 1256 Manual, P/N 980855.

Module Configurations

The 1260-152 and the 1260-172 are high frequency coaxial switch modules each containing 17 channels of SPDT (single-pole double-throw) switches. The 1260-152 uses 50Ω coaxial cable and the 1260-172 uses 75Ω coaxial cable. Otherwise, the two modules are functionally equivalent.

Front Panel Connectors

The 1260-152/172 has two 26-pin front-panel connectors, labeled J200 and J201. It is a 26-pin, MIL-DTL-28748 style, with shielded coaxial pins. See **Figure 2-1** for pin numbering. **Table 2-1** shows the mapping of channel numbers to connector pins. Information about available mating connectors is provided immediately after **Table 2-1**. See **Figure 2-2** for a detail of the actual relay. See **Figure 2-3** for a block diagram of the 1260-152/172.

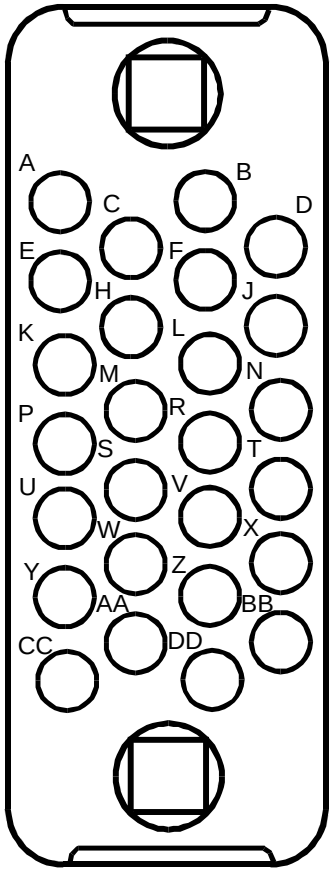

Figure 2-1, Front-Panel Connector Pin Numbering

Table 2-1, 1260-152/172 Front-Panel Connections

Channel Number	Common	Normally Closed	Normally Open
0	J200-C	J200-A	J200-E
1	J200-K	J200-H	J200-M
2	J200-D	J200-B	J200-F
3	J200-L	J200-J	J200-N
4	J200-S	J200-P	J200-U
5	J200-Y	J200-W	J200-AA
6	J200-T	J200-R	J200-V
7	J200-Z	J200-X	J200-BB
8	J201-C	J201-A	J201-E
9	J201-K	J201-H	J201-M
10	J201-D	J201-B	J201-F
11	J201-L	J201-J	J201-N
12	J201-S	J201-P	J201-U
13	J201-Y	J201-W	J201-AA
14	J201-T	J201-R	J201-V
15	J201-Z	J201-X	J201-BB
16	J201-CC	J200-DD	J201-DD

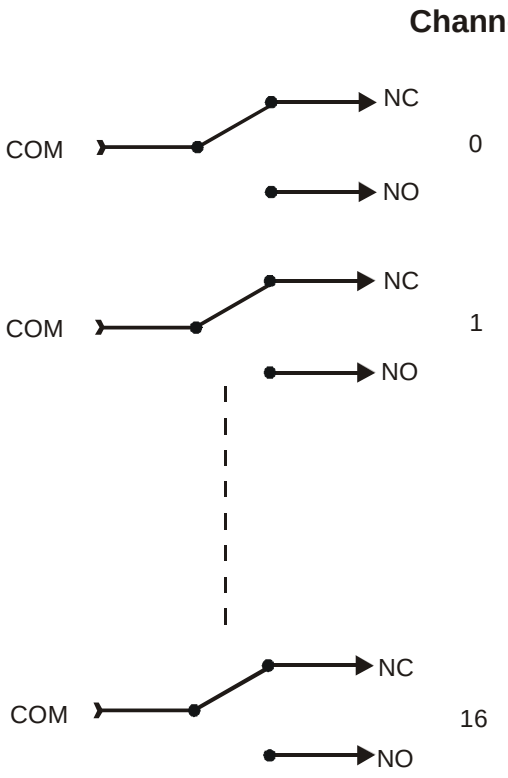

Figure 2-2, Relay Diagram

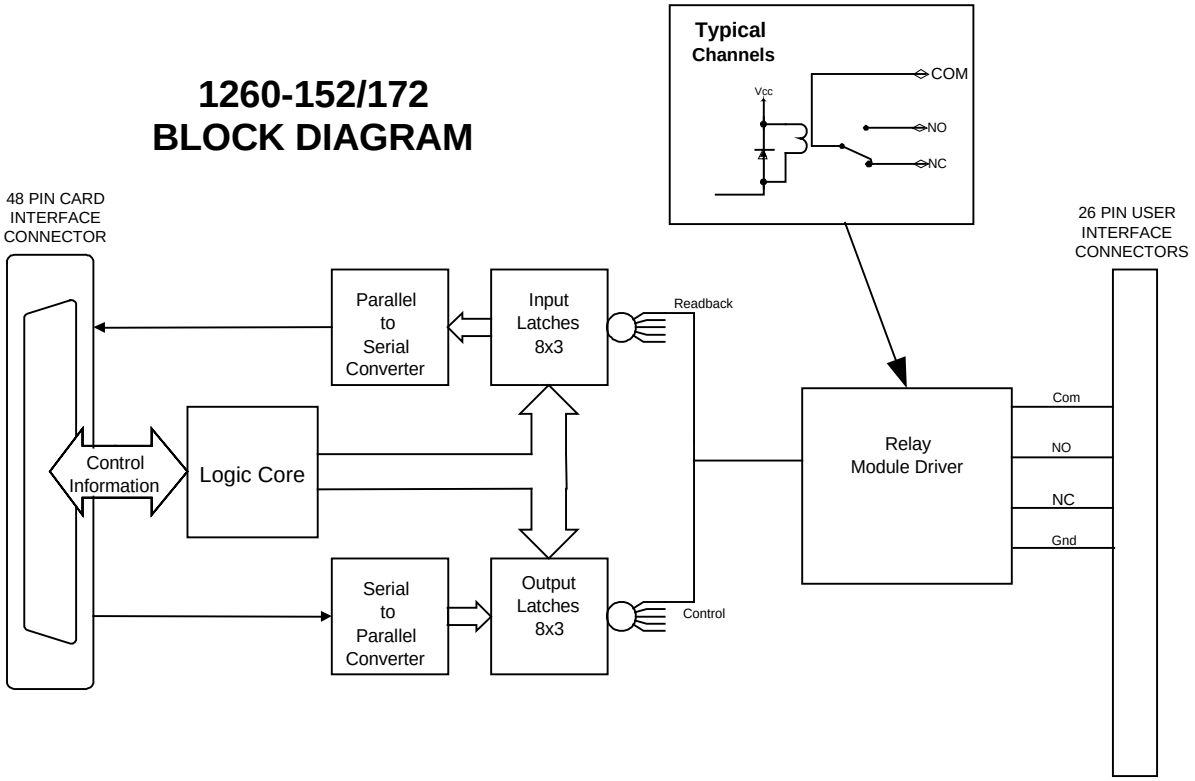

Figure 2-3, Block Diagram

Mating Connectors

Mating connector accessories are available:

26-Pin Connector, P/N 602221-126 and pins, P/N 602221-903

The 26 pin connectors are provided as part of the 1260-152/172 Shipping Kit. Mating Pins or Cable assemblies must be ordered separately. Refer to the Ordering Information section of this manual.

If mating pins are used, the suggested hand tool for the Crimp Pins is P/N 991034. After cable attachment, the pin is inserted into the housing and will snap into place, providing positive retention. The corresponding pin removal tool is P/N 990922.

Chapter 3
MODULE OPERATION

Setting the Module Address

Both the Option-01T and 1256 switch controllers identify each Adapt-a-Switch plug-in by a *module address* that is unique to that module.

For setting the module address of the 1260-152 and 1260-172 refer to one of the following manuals.

- 1260-100 Adapt-a-Switch Manual – Publication No. 980824-100
- 1256 User Manual – Publication No. 980855

1256 Operation

For a detailed description of the use of the 1260-152 and 1260-172 when they are being used in a 1256 Switch Controller, refer to the 1256 User Manual (P/N 980855).

VXI Operating Modes

The 1260-152/172 may be operated either in *message-based* mode or in *register-based* mode when used with an Adapt-a-switch Carrier in a VXI chassis.

In the *message-based* mode, the 1260-01T switch controller interprets commands sent by the slot 0 controller, and determines the appropriate data to send to the control registers of the 1260-152/172 module.

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

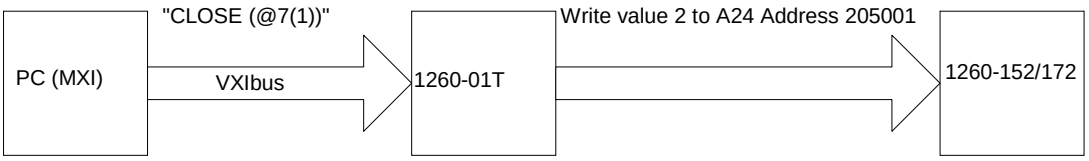

Figure 3-1, Message-Based Mode of Operation

In the *register-based* mode, the user writes directly to the control registers on the 1260-152/172 module. The 1260-01T command module does not monitor these operations, and does not keep track of the relay states on the 1260-152/172 module in this mode.

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

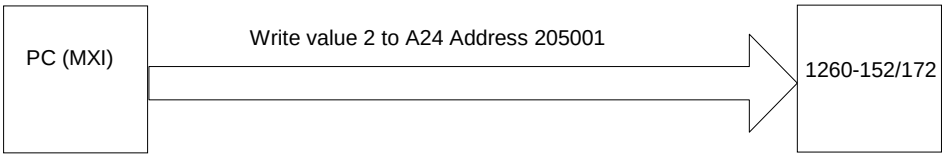

Figure 3-2, Register-Based Mode of Operation

Since the 1260-01T switch controller does not keep track of relay states during the register-based mode, it is advisable to use **either** the message-based or the register-based mode, 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 software such as the National Instruments VXI Interactive Control (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, some features, such as the SCAN list, are available only in the message-based mode of operation.

The register-based mode provides faster control of relay channels.

In this mode, relay operations are processed in less than 9 microseconds, not counting relay settling time or software overhead inherent in I/O libraries such as VISA. To determine the relay settling time, refer to Relay Settling Time in the Specifications section.

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

Operating In VXI Message-Based Mode

Channel Descriptors For The 1260-152/172

The standard 1260-01T commands are used to operate the 1260-152/172 module. These commands are described in the 1260-01T User's Manual.

Each 1260-01T relay 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 syntax is used to select a single channel:

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

Where:

- <module address> is the address of the 1260-152/172 module. This is a number is in the range from 1 through 12, inclusive.
- <channel range> is a list of channels to operate. Each channel is a two-digit number. Thus, the valid channel numbers are:

  0 through 16

  When listing multiple channels, separate the channels with a comma (,). To select a contiguous range of channels, specify the first and last channels, and separate them by a colon (:).

The following examples illustrate the use of the channel descriptors for the 1260-152/172, with a module address of 8.

`OPEN (@8(0))`	Open channel 0.
`OPEN (@8(10))`	Open channel 10.
`CLOSE (@8(9))`	Close channel 9 on the 1260-152/172.
`CLOSE (@8(11,13))`	Close channels 11 and 13 on the 1260-152/172.

`OPEN (@8(0:16))`	Open channels 0 through 16 (all channels) on the 1260-152/172.
`CLOSE (@8(0,10:16))`	Close channels 0, 10, through 16 on the 1260-152/172.

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 1260-152/172 are:

```
1260-152 HIGH FREQUENCY 50 OHM SWITCH

or

1260-172 HIGH FREQUENCY 75 OHM SWITCH
```

So, for a 1260-152 whose <module address> is set to 8, the reply to this query would be:

```
8 : 1260-152 HIGH FREQUENCY 50 OHM SWITCH
```

Operating in VXI Register-Based Mode

In register-based mode, the 1260-152/172 is operated by directly writing and reading control registers on the 1260-152/172 module. The first control register on the module operates channels 0 through 7. The second control register operates channels 8 through 15. The third control register operates channel 16. When a control register is written to, all channels controlled by that register are operated simultaneously.

The control registers are located in the VXIbus A24 Address Space. The 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 1260-152/172 module. This is a value in the range from 1 and 12 inclusive.

3. The 1260-152/172 control register to be written to or read from. Each control register on the 1260-152/172 has a unique address.

The base A24 address for the 1260-152/172 module may be calculated by:

> (A24 Offset of the 1260-01T) + (1024 x Module Address of 1260-152/172).

The A24 address offset is usually expressed in hexadecimal. A typical value of 204000_{16} is used in the examples that follow.

A 1260-152/172 with a module address of 7 would have the base A24 address computed as follows:

> Base A24 Address of 1260-152/172 = 204000_{16} + (400_{16} x 7_{10}) = $205C00_{16}$

The control registers for Adapt-a-Switch plug-ins and conventional 1260-Series modules are always on odd-numbered A24 addresses. The three control registers for the 1260-152/172 reside at the first three odd-numbered A24 addresses for the module:

> (Base A24 Address of 1260-152/172) + 1 = Control Register 0
>
> (Base A24 Address of 1260-152/172) + 3 = Control Register 1
>
> (Base A24 Address of 1260-152/172) + 5 = Control Register 2

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

205C01	Control Register 0, controls channels 0 through 7.
205C03	Control Register 1, controls channels 8 through 15.
205C05	Control Register 2, controls channel 16.

Table 3-1 shows the channel assignments for each control register.

Table 3-1, Control Register Channel Assignments

Control Register	Channels							
	Bit 7 (MSB)	**Bit 6**	**Bit 5**	**Bit 4**	**Bit 3**	**Bit 2**	**Bit 1**	**Bit 0 (LSB)**
0	7	6	5	4	3	2	1	0
1	15	14	13	12	11	10	9	8
2	X	X	X	X	X	X	X	16

X= not used, 1= close, 0= open

Setting a control bit to 1 closes the corresponding channel, and clearing the bit to zero opens the corresponding channel. Thus, if you write the value 1000 0101 binary = 133 decimal = 85 hexadecimal to Control Register 0, channels 0, 2, and 7 will close, while channels 1, 3, 4, 5, and 6 will open.

The present control register value may be read back by reading an 8-bit value from the control register address. **The value is inverted.** In other words, the eight-bit value read back is the one's complement of the value written.

If you want to change the state of a single relay without affecting the present state of the other relays controlled by the control register, you must:

1. Read the control register.
2. Invert the bits (perform a one's complement on the register data).
3. Perform a bit-wise AND operation, leaving all but the specific control register bit for the relay to change.
4. **To open**: continue to step 5. **To close**: OR in the bit for the relay to close.
5. Write the modified value back to the control register.

For example, to close channel 13:

1. Read Control Register 1 (this register controls channels 8 through 15, with channel 8 represented by the LSB).
2. Invert the bits in the value read in step 1.
3. AND with 1101 1111 binary (the zero is in the position corresponding to channel 13).

4. OR with 0010 0000 binary.

5. Write the value to Control Register 1.

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 1260-152/172 module.

1260-152/172 Example Code

```
#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 1260-152/172 with module address 7 */
#define MOD_ADDR_152 7


void example_operate_1260_152(void)
{
      ViUInt8 creg_val;
      ViBusAddress creg0_addr;
      ViBusAddress creg1_addr;
      ViBusAddress creg2_addr;
      ViSession hdl1260;    /* VISA handle to the 1260-01T */
      ViSession hdlRM;      /* VISA handle to the resource manager */
      ViStatus error;       /* VISA error code */

      /* 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 */
      creg0_addr = (MOD_ADDR_152 << 10) + 1;
      creg1_addr = creg0_addr + 2;
      creg2_addr = creg1_addr + 2;

      /* close channel 13 without affecting the state of */
      /* channels 8, 9, 10, 11, 12, 14, and 15 */
      error = viIn8 (hdl1260, VI_A24_SPACE, creg1_addr, &creg_val);
      if (error < 0) {
           /* error handling code goes here */
      }

      /* invert the bits to get the present control register value */
      creg_val = ~creg_val;

      /* AND to leave every channel except 13 unchanged */
      creg_val &= ~ (0x20);

      /* OR in the bit to close channel 13 */
      creg_val |= 0x20;

      /* write the updated control register value */
      error = viOut8 (hdl1260, VI_A24_SPACE, creg1_addr, creg_val);
      if (error < 0) {
           /* error handling code goes here */
      }


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

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Chapter 4
OPTIONAL ASSEMBLIES

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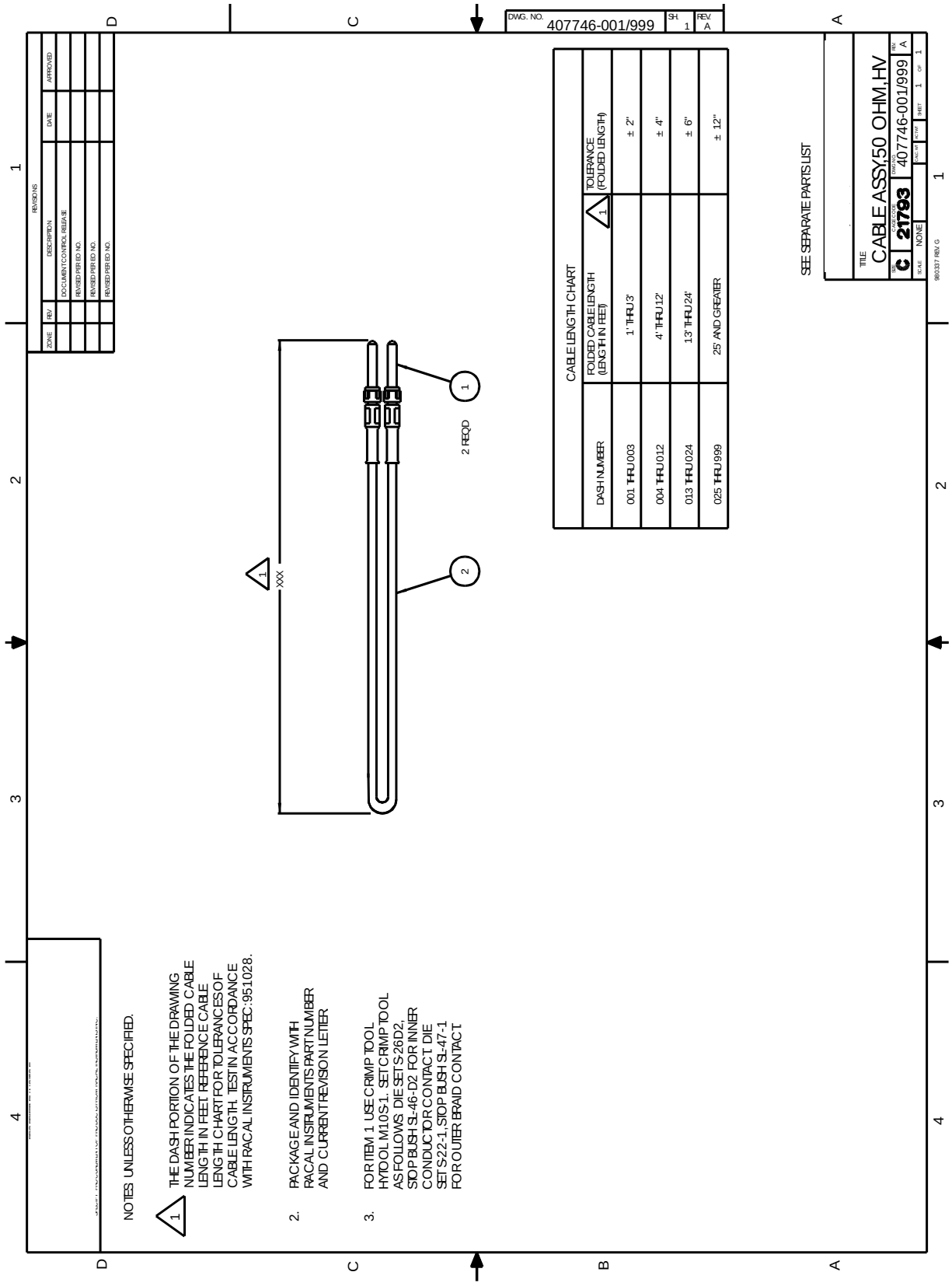

REVISIONS
ZONE REV DESCRIPTION DATE APPROVED
DOCUMENT CONTROL RELEASE
REVISED PER ED. NO.
REVISED PER ED. NO.
REVISED PER ED. NO.
DWG. NO. 407746-001/999
SH 1
REV. A
CABLE LENGTH CHART
DASH NUMBER
FOLDED CABLE LENGTH (LENGTH IN FEET)
1
TOLERANCE (FOLDED LENGTH)
001 THRU 003 1' THRU 3' ± 2"
004 THRU 012 4' THRU 12' ± 4"
013 THRU 024 13' THRU 24' ± 6"
025 THRU 999 25' AND GREATER ± 12"
SEE SEPARATE PARTS LIST
TITLE
CABLE ASSY 50 OHM, HV
SIZE C
CAGE CODE 21793
DRAWING NO. 407746-001/999
REV A
SCALE NONE
WEIGHT
SHEET 1 OF 1
980337 REV. G
2 REQD
XXX
NOTES: UNLESS OTHERWISE SPECIFIED.
1 THE DASH PORTION OF THE DRAWING NUMBER INDICATES THE FOLDED CABLE LENGTH IN FEET. REFERENCE CABLE LENGTH CHART FOR TOLERANCES OF CABLE LENGTH. TEST IN ACCORDANCE WITH RACAL INSTRUMENTS SPEC. 951028.
2. PACKAGE AND IDENTIFY WITH RACAL INSTRUMENTS PART NUMBER AND CURRENT REVISION LETTER.
3. FOR ITEM 1, USE CRIMP TOOL HYTOOL M10S1. SET CRIMP TOOL AS FOLLOWS: DIE SETS 26D2, STOP BUSH SL-46-D2 FOR INNER CONDUCTOR CONTACT. DIE SETS 22-1, STOP BUSH SL-47-1 FOR OUTER BRAID CONTACT.

PSR350 1 SNL PAGE 1
Product Structure Report 12/08/00
By Assembly/Balloon No.

Assembly 407746-001 Low Level Cd
U/M EA CABLE ASSY,50 OHM,HV,2FT Rev Date 12/08/00 Revision A

#	Component	Description	U/M	Qty Reqd Ty	Engineer Txt
1	602221-903	CON-CXL-RCP00lC.	-E EA	2.00000	
2	50029S	CACX-SHD-01C26G-lSTR50OHM	-E FT	.00001	
2	SP-152-CA	1260 CARD PAK	EA	1.00000	

** END OF DATA **

PSR35O 1 SNL PAGE 1
Product Structure Report 12/08/00
By Assembly/Balloon No.
Assembly 407746-003 Low Level Cd
U/M EA CABLE ASSY,50 OHM,HV,6FT Rev Date 12/08/00 Revision A

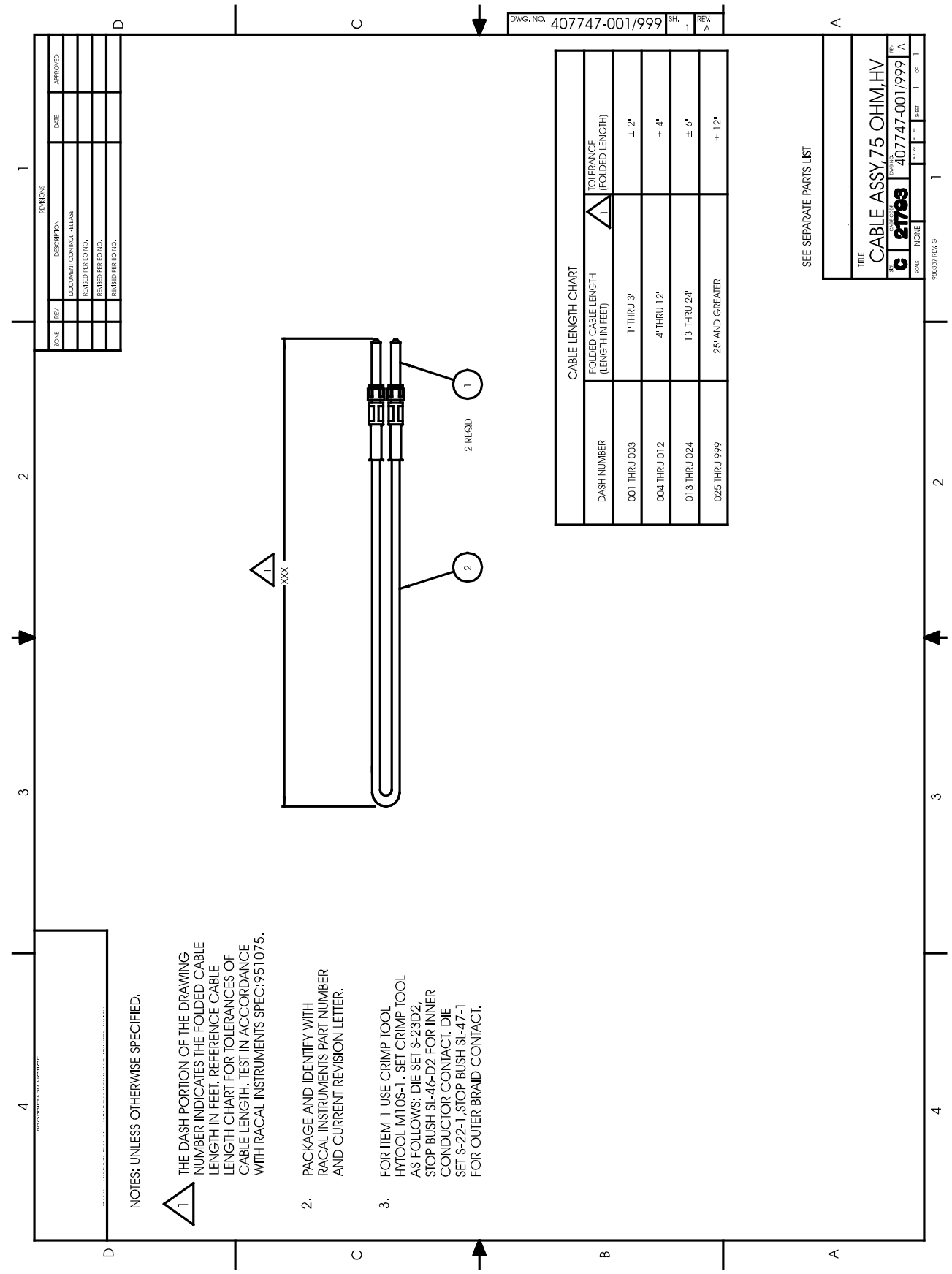
#	Component	Description	U/M	Qty Reqd Ty	Engineer Txt
1	602221-902	CON-CXL-RCP001C.	-E EA	2.00000	
2	500295	CACX-SHD-01C26G-lSTR50OHM	-E FT	.00001	
3	SP-152-CA	1260 CARD PAK	EA	1.00000	

** END OF DATA **

P5R350 1 SNL PAGE 1
Product Structure Report 12/08/00
By Assembly/Balloon No.
Assembly 407746-006 Low Level Cd
U/M EA CABLE ASSY,50 OHM,HV,12FT Rev Date 12/08/00 Revision A

#	Component	Description	U/M	Qty Reqd Ty	Engineer Txt
1	602221-903	CON-CXL-RCP001C.	-E EA	2.00000	
2	500295	CACX-SHD-01C26G-1STR50OHM	-E FT	.00001	
3	SP-152-CA	1260 CARD PAK	EA	1.00000	

** END OF DATA **


REVISIONS
ZONE
REV
DESCRIPTION
DATE
APPROVED
DOCUMENT CONTROL RELEASE
REVISED PER ECO NO.
REVISED PER ECO NO.
REVISED PER ECO NO.
DWG. NO. 407747-001/999
SH. 1
REV. A
CABLE LENGTH CHART
DASH NUMBER
FOLDED CABLE LENGTH (LENGTH IN FEET)
TOLERANCE (FOLDED LENGTH)
001 THRU 003
1' THRU 3'
± 2'
004 THRU 012
4' THRU 12'
± 4'
013 THRU 024
13' THRU 24'
± 6'
025 THRU 999
25' AND GREATER
± 12"
SEE SEPARATE PARTS LIST
XXX
2 REQD
NOTES: UNLESS OTHERWISE SPECIFIED.
1. THE DASH PORTION OF THE DRAWING NUMBER INDICATES THE FOLDED CABLE LENGTH IN FEET. REFERENCE CABLE LENGTH CHART FOR TOLERANCES OF CABLE LENGTH. TEST IN ACCORDANCE WITH RACAL INSTRUMENTS SPEC:951075.
2. PACKAGE AND IDENTIFY WITH RACAL INSTRUMENTS PART NUMBER AND CURRENT REVISION LETTER.
3. FOR ITEM 1 USE CRIMP TOOL HYTOOL M10S-1, SET CRIMP TOOL AS FOLLOWS: DIE SET S-23D2, STOP BUSH SL-46-D2 FOR INNER CONDUCTOR CONTACT. DIE SET S-22-1, STOP BUSH SL-47-1 FOR OUTER BRAID CONTACT.
TITLE
CABLE ASSY,75 OHM,HV
SIZE C
CAGE CODE 21703
DWG NO 407747-001/999
REV A
SCALE NONE
WEIGHT
SHEET 1 OF 1
980337 REV. G

PSR350 1 SNL PAGE 1
Product Structure Report 12/08/00
By Assembly/Balloon No.
Assembly 407747-001 Low Level Cd
U/M EA CABLE ASSY,75 OBM,BV,2FT Rev Date 12/08/00 Revision A

#	Component	Description	U/M	Qty Reqd Ty	Engineer Txt
1	602221-903	CON-CXL-RCP001C.	-E EA	2.00000	
2	500269	CACX-BRD-02C30G-lSTR	-E FT	.00001	
3	SP-152-CA	1260 CARD PAK	EA	1.00000	

** END OF DATA **

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Product Structure Report 12/08/00
By Assembly/Balloon No.
Assembly 407747-003 Low Level Cd
U/M EA CABLE ASSY,75 OHM,HV,6FT Rev Date 12/08/00 Revision A

#	Component	Description	U/M	Qty Reqd Ty	Engineer Txt
1	602221-903	CON-CXL-RCP00TC.	-E EA	2.00000	
2	500269	CACX-BRD-02C30G-1STR	-E FT	.00001	
3	SP-152-CA	1260 CARD PAK	EA	1.00000	

** END OF DATA **

P5R350 1 SNL PAGE 1
Product Structure Report 12/08/00
By Assembly/Balloon No.
Assembly 407747-006 Low Level Cd
U/M RA CABLE ASSY,75 OHM,BV,12FT Rev Date 12/08/00 Revision A

#	Component	Description	U/M	Qty Reqd Ty	Engineer Txt
1	602221-903	CON-CXL-RCP00lC.	-E EA	2.00000	
2	500269	CACX-BRD-02C30G-1STR	-E FT	.00001	
3	SP-152-CA	1260 CARD PAK	EA	1.00000	

** END OF DATA **