RACAL INSTRUMENTS™
1260-150
10 CHANNEL
HIGH FREQUENCY PLUG-IN

PUBLICATION NO. 980824-150

EADS North America Defense Test and Services, Inc.
4 Goodyear, Irvine, CA 92618
Tel: (800) 722-2528, (949) 859-8999; Fax: (949) 859-7139

info@eads-nadefense.com
sales@eads-nadefense.com
helpdesk@eads-nadefense.com
http://www.eads-nadefense.com

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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.

Racal Instruments

EC Declaration of Conformity

We

Racal Instruments Inc.
4 Goodyear Street
Irvine, CA 92718

declare under sole responsibility that the

1260-150 RF Switch Plug In Module
P/N 407656

conforms 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 a Racal Instruments 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, November 12, 1998

Quality Manager

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Chapter 1
SPECIFICATIONS

Introduction

The 1260-150 is a plug-in switch module developed for the 1260-100 Adapt-a-Switch Carrier. The 1260-150 includes the following features:

- Standard Adapt-a-Switch plug-in design, providing for ease of replacement
- Data-Driven embedded descriptor, allowing immediate use with any Option-01T switch controller, regardless of firmware revision level.

Specifications

Bandwidth (-3dB)	500 MHz
Insertion Loss	
500 MHz	< 3 dB
800 MHz	< 6 dB
1 GHz	< 9 dB
VSWR	
250 MHz	< 1.5 to 1
1 GHz	< 2.0 to 1
Return Loss	
350 MHz	> 14 dB
Isolation	
250 MHz	> 35 dB
800 MHz	> 20 dB
1 GHz	> 10 dB
Crosstalk	
250 MHz	> 35 dB
800 MHz	> 20 dB
1 GHz	> 10 dB
Maximum Switching Voltage	

AC	100 V
DC	100 V
Switching Current	
AC	0.25 A
DC	0.25 A
Switching Power	
RF	2 W
Path resistance	< 1 Ω
Thermal EMF	< 50 uV
Capacitance	
Channel-Chassis	< 100 pF
Open-Channel	< 10 pF
Insulation resistance	$> 10^9$ Ω
Relay Settling Time	< 10 ms
Shock	30g, 11 ms, ½ sine wave
Vibration	0.013 in. P-P, 5-55 Hz
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	
+5 VDC	150mA + 30mA per energized relay (1.5A Max.)
Weight	14 oz. (0.45 kg)
MTBF	559,408 hours (MIL-HDBK-217E)
Dimensions	4.5”H X 0.75”W X 9.5”D

Power

While the cooling of the Adapt-a-Switch carrier is dependent upon

Dissipation

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 1260-118 module (containing 80 relays) has 25 relays closed, passing a current of 0.5 A, then:

Total power dissipation =
$[(\text{current})^2 * (\text{path resistance}) * 25] + (\text{quiescent power})$

By substituting the actual values:

Total power dissipation =
$[(0.5\ A)^2 * (1\ \Omega) * 25] + (\ 0.75\ W) = 7\ W$ 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 36 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. This yields the following guideline:

0.5 A	Max. 56 relays closed
1.0 A	Max. 14 relays closed
2.0 A	Max. 4 relays closed

Most users of a signal-type switch, such as the 1260-118, switch no more than a few hundred milliamperes and are able to energize all relays simultaneously, should they so desire. The numbers in the above table represent worst-case, elevated-temperature, end-of-life conditions.

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 1260-150 MTBF is 559,408 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 relay used on the 1260-150 plug-in is part no. 310273. The manufacturer's specifications for this relay are:

Life Expectancy	
Mechanical	100,000,000 operations
Electrical	100,000 operations at full rated load (resistive)

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

Ordering Information

Listed below are part numbers for both the 1260-150 switch module and available mating connector accessories. Each 1260-150 uses two mating connectors.

ITEM	DESCRIPTION	PART #
1260-150 Switch Module	Switch Module, 10-Ch. SP4T, 250 MHz Consists of: P/N 405142 PCB Assembly P/N 407653 Shipping Kit (mating connector and manual)	407656
Backshell	26 Pin Backshell	602221-126
Coax Pin	Pins	602220-900
Cable Assy. 2ft	Single Coax Cable w/connectors	407368-001
Cable Assy. 6ft	Single Coax Cable w/connectors	407368-003
Cable Assy. 12ft	Single Coax Cable w/connectors	407368-006
Additional Manual		980824-150

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Chapter 2

INSTALLATION INSTRUCTIONS

Unpacking and Inspection

1. Remove the 1260-150 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 1260-150 module option and the 1260-150 Users Manual. Notify EADS North America Defense Test and Services, Inc. if the module appears damaged in any way. Do not attempt to install a damaged module into a VXI chassis.

3. The 1260-150 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.

Reshipment Instructions

1. Use the original packing when returning the switching module to EADS North America Defense Test and Services, Inc. for calibration or servicing. The original shipping carton and the instrument's plastic foam will provide the necessary support for safe reshipment.

2. If the original packing 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.

Installation

Installation of the 1260-150 Switching Module into a 1260-100 Carrier assembly is described in the Installation section of the 1260-100 Adapt-a-Switch Carrier Manual.

.

Module Configuration

The 1260-150 contains ten 1 x 4 RF multiplexers. Each multiplexer is independent of the others, and has a bandwidth of 500 MHz. By cascading the multiplexers externally, larger arrays can be created, but with a substantial performance degradation.

Refer to **Figure 2-1**, for a Block Diagram. **Figure 2-2** shows a typical cascading configuration.

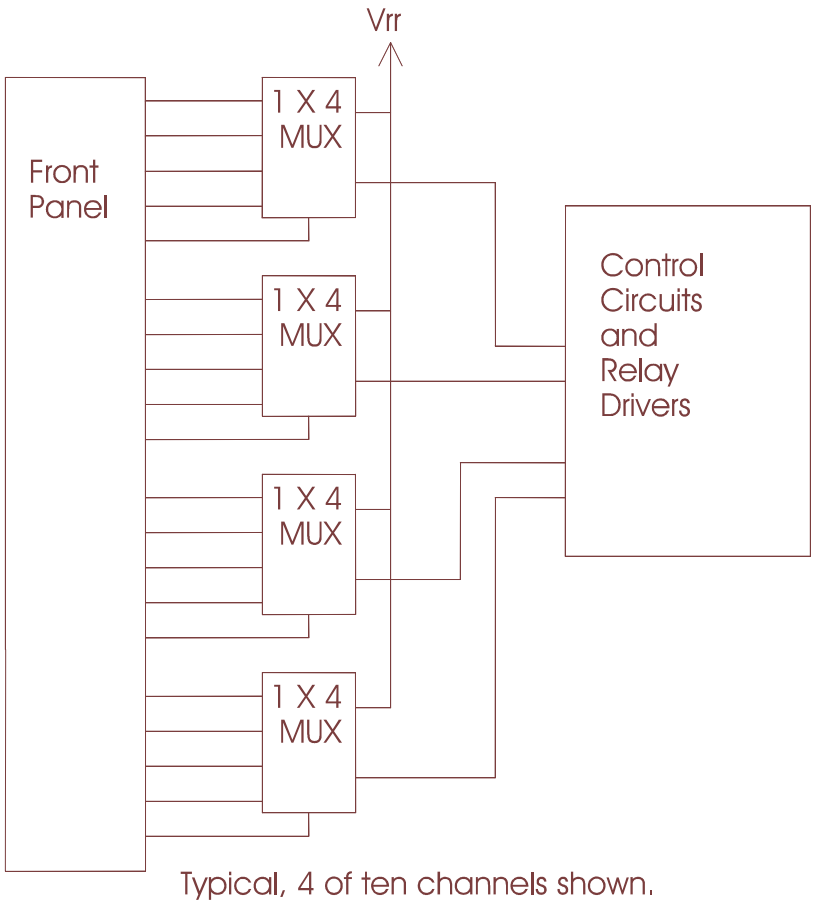


Figure 2-1, Block Diagram of 1260-150

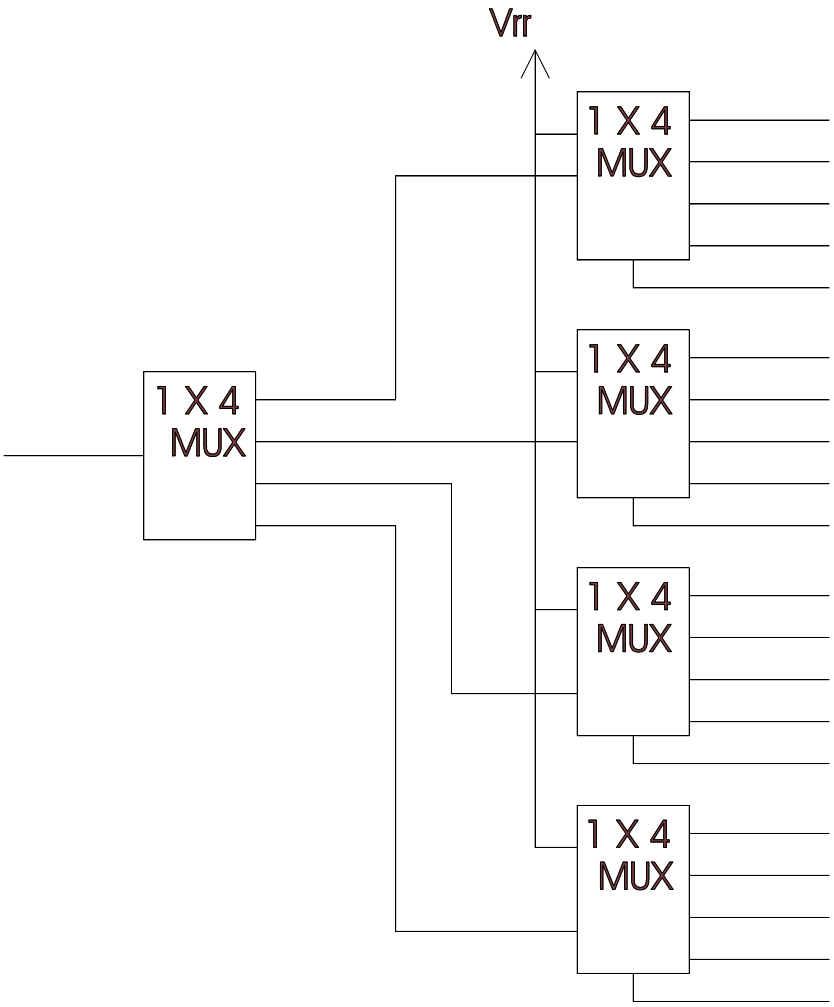


Figure 2-2, Typical Cascade Configuration

Front Panel Connectors

The 1260-150 front panel connectors are labeled J200 and J201. The connector is a 26 pin rack and panel style, using 25 coaxial pins, one for each input and one for each output. **Figure 2-3** shows the pin numbering.

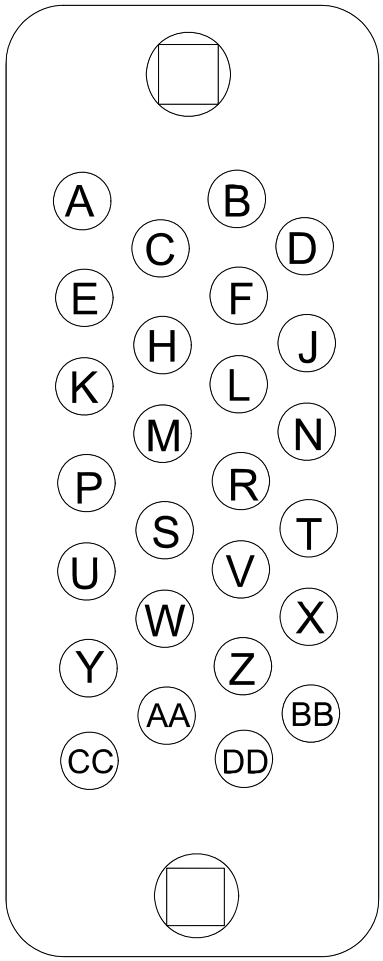


Figure 2-3, Front-Panel Connector Pin Numbering

Channel Mapping

Table 2-1 shows the mapping of signals from the relay to the connector.

Table 2-1, Channel Mapping 1

Relay	Channel Number	Input Pin	Output Pin
K1	00	J200-A	J200-B
K2	01	J200-A	J200-C
K3	02	J200-A	J200-D
K4	03	J200-A	J200-E
K5	10	J200-F	J200-H
K6	11	J200-F	J200-J
K7	12	J200-F	J200-K
K8	13	J200-F	J200-L
K9	20	J200-M	J200-N
K1O	21	J200-M	J200-P
K11	22	J200-M	J200-R
K12	23	J200-M	J200-S
K13	30	J200-T	J200-U
K14	31	J200-T	J200-V
K15	32	J200-T	J200-W
K16	33	J200-T	J200-X
K17	40	J200-Y	J200-Z
K18	41	J200-Y	J200-AA
K19	42	J200-Y	J200-BB
K20	43	J200-Y	J200-CC
K21	50	J201-A	J201-B
K22	51	J201-A	J201-C
K23	52	J201-A	J201-D
K24	53	J201-A	J201-E
K25	60	J201-F	J201-H
K26	61	J201-F	J201-J
K27	62	J201-F	J201-K
K28	63	J201-F	J201-L
K29	70	J201-M	J201-N
K30	71	J201-M	J201-P
K31	72	J201-M	J201-R
K32	73	J201-M	J201-S
K33	80	J201-T	J201-U
K34	81	J201-T	J201-V
K35	82	J201-T	J201-W
K36	83	J201-T	J201-X
K37	90	J201-Y	J201-Z
K38	91	J201-Y	J201-AA
K39	92	J201-Y	J201-BB
K40	93	J201-Y	J201-CC

Mating Connectors

Mating connectors are available for the 1260-150 module. EADS North America Defense Test and Services, Inc. also offers the following accessories for mating connectors (see ordering information for part numbers):

Name	Description	P/N
26 Pin Mating Connector	26 Pin Conn. Kit w/backshell & pins	407663
Cable Assy. 2ft	Single Coax Cable w/connectors	407368-001
Cable Assy. 6ft	Single Coax Cable w/connectors	407368-003
Cable Assy. 12ft	Single Coax Cable w/connectors	407368-006
Pin	Individual Coax pin (crimp)	602220-900
Block	Insulator Block (Conn. Body)	602221-126

The 26-pin connector kit consists of a connector housing, aluminum backshell, and 25 coaxial crimp-type pins. After attachment, the pin is inserted in the housing and will snap into place, providing positive retention. To be sure the pins are locked in place, the assembler should tug on the wire after insertion.

The suggested hand tool for the crimp pins is 990923. The corresponding removal tool is 990922.

Chapter 3

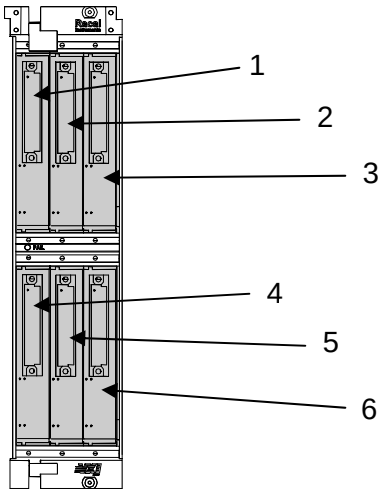
MODULE OPERATION

Setting the Module Address

The Option-01T switch controller identifies each Adapt-a-Switch plug-in or conventional 1260-Series module by a *module address* that is unique to that module. The module address is a number from 1 through 12, inclusive.

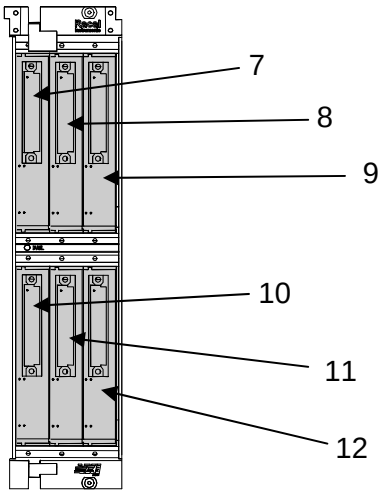
The module address assigned to the 1260-150 depends on the carrier slot into which the 1260-150 is inserted, and on the position of the logical address DIP switch on the carrier side panel. The switch has two settings:

- 1-6 (closed): When the switch is set to this position, the module addresses of the plug-ins in the 1260-100 Carrier are from 1 through 6. The module with address 1 is in the left slot of the top row. The plug-ins are addressed in the following pattern:



Front View – Module Addresses for 1260-100 Carrier

- 7 - 12 (open): When the switch is set to this position, the module addresses of the plug-ins in the 1260-100 Carrier are from 7 through 12, in the following pattern:



Front View – Module Addresses for 1260-100 Carrier

When setting module addresses for Adapt-a-Switch Carriers and conventional 1260-Series modules, be sure that no address is used by more than one plug-in or 1260-Series module.

For instructions on setting module addresses for a conventional 1260-Series module, see the label on the side panel of the module.

Operating Modes

The 1260-150 may be operated either in *message-based* mode or in *register-based* mode.

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 1260-150 module.

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

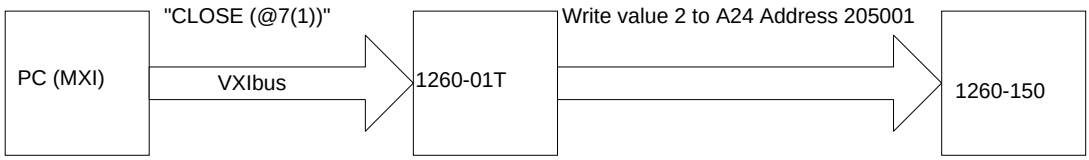


Figure 3-1, Message-Based Mode of Operation

In the *register-based* mode, the user writes directly to the control registers on the 1260-150 module. The 1260-01T command module does not monitor these operations, and does not keep track of the relay states on the 1260-150 module in this mode.

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

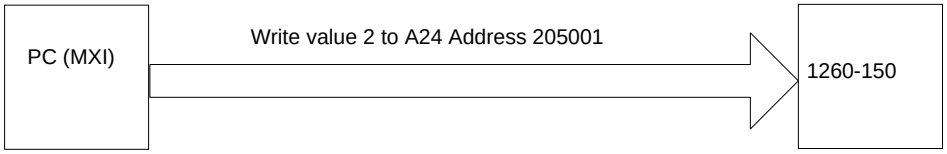


Figure 3-2, Register-Based Mode of Operation

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 Message-Based Mode

Channel Descriptors For The 1260-150

The standard 1260-01T commands are used to operate the 1260-150 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 1260-150 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. The first digit is between 0 and 9 (inclusive) and selects which 1x4 multiplexer to operate. The second digit is a number between 0 and 3 (inclusive) and selects which channel within the selected multiplexer to

operate. Thus, the valid channel numbers are:

00, 01, 02, 03,
10, 11, 12, 13,
20, 21, 22, 23,
…,
90, 91, 92, 93

Channels 20, 21, 22, and 23 are four inputs of the same multiplexer.

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 1260-150.

`OPEN (@8(0))`	Open channel 0 of the first multiplexer on the 1260-150
`OPEN (@8(10))`	Open channel 0 of the second multiplexer on the 1260-150
`CLOSE (@8(90))`	Close channel 0 of the tenth multiplexer on the 1260-150
`CLOSE (@8(11,33))`	Close channels 11 and 33 on the 1260-150
`OPEN (@8(0:93))`	Open channels 0 through 93 (all channels) on the 1260-150
`CLOSE (@8(0,10:22))`	Close channels 0, 10, 11, 12, 13, 20, 21, and 22 on the 1260-150

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 1260-150 is:

```
1260-150 HIGH FREQUENCY SWITCH MODULE
```

So, for a 1260-150 whose <module address> is set to 8, the reply to this query would be:

```
8 : 1260-150 HIGH FREQUENCY SWITCH MODULE
```

Operating The 1260-150 in Register-Based Mode

In register-based mode, the 1260-150 is operated by directly writing and reading control registers on the 1260-150 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 channels 16 through 19, etc. 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 1260-150 module. This is a value in the range from 1 and 12 inclusive.

3. The 1260-150 control register to be written to or read from. Each control register on the 1260-150 has a unique address.

The base A24 address for the 1260-150 module may be calculated by:

(A24 Offset of the 1260-01T) + (1024 x Module Address of 1260-150).

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

A 1260-150 with a module address of 7 would have the base A24 address computed as follows:

Base A24 Address of 1260-150 = 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 1260-150 reside at the first three odd-numbered A24 addresses for the module:

(Base A24 Address of 1260-150) + 1 = Control Register 0

(Base A24 Address of 1260-150) + 3 = Control Register 1

(Base A24 Address of 1260-150) + 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 channels 16 through 19.

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	13	12	11	10	3	2	1	0
1	33	32	31	30	23	22	21	20
2	53	52	51	50	43	42	41	40
3	73	72	71	70	63	62	61	60
4	93	92	91	90	83	82	81	80

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 1260-150 module.

1260-150 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 1260-150 with module address 7 */
#define MOD_ADDR_120  7


void example_operate_1260_150(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_150 << 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 */
}

/* open channel 16 without affecting channels 17 through 23 */
error = viIn8 (hdl1260, VI_A24_SPACE, creg2_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 16 unchanged */
/* leave bit 0 clear to open channel 16 */
creg_val &= ~ (0x01);

/* write the updated control register value */
error = viOut8 (hdl1260, VI_A24_SPACE, creg2_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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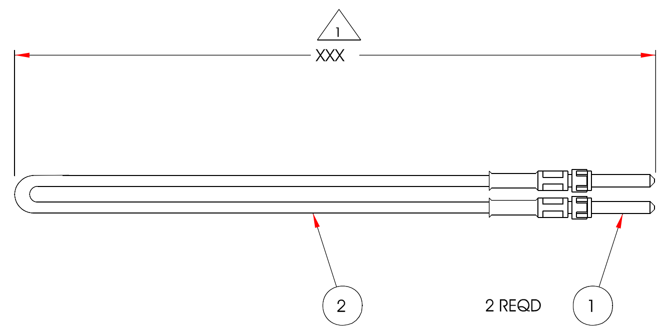
PROPRIETARY NOTICE

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A			

NOTES:

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 LEVEL.
3. FOR ITEM 2 USE CRIMP TOOL HYTOOL M10S-1. SET CRIMP TOOL AS FOLLOWS: DIE SET S-80,STOP BUSH SL-105.



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"

PARTS LIST

QTY	CAGE CODE	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	REFERENCE OR MATERIAL SPEC.	ZONE	ITEM
A/R		500295	CACX-SHD-01C26G-1STR	R6-316/U		2
2		602220-900	CON-CXL-PLG001C			1

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

TITLE: CABLE,COAX,50 OHM,GMCT,50C/D

SIZE: C | CAGE CODE: 21793 | DWG NO.: 407368 -001 -999 | REV.: A

SCALE: 2/1 | SHEET 1 OF 1

DRAWN: S.LEE 12/16/94

NEXT ASSY: — | USED ON: 1260-50C,D

407368 -001 -999

Assembly 407663
Connector Kit, 26 Pin Coax Rev Date 7/28/98 Revision A

#	Component	Description	U/M	Qty Reqd.	REF
1	602221-026	CON-CAB-RLG026-.---T	-E EA	1.000	
2	602221-900	CON-CXL-RCP001C.	-E EA	25.000	

Chapter 5

PRODUCT SUPPORT

Product Support

EADS North America Defense Test and Services, Inc. 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 closest to your facility, refer to the website for the most complete information http://www.eads-nadefense.com.

Warranty

Use the original packing material when returning the 1260-151 to EADS North America Defense Test and Services, Inc. for calibration or servicing. The original shipping container and associated packaging material will provide the necessary protection for safe reshipment.

If the original packing material is unavailable, contact EADS North America Defense Test and Services, Inc. Customer Service at 1-800-722-3262 for information.

REPAIR AND CALIBRATION REQUEST FORM

To allow us to better understand your repair requests, we suggest you use the following outline when calling and include a copy with your instrument to be sent to the EADS North America Defense Test and Service, Inc. Repair Facility.

Model_____ Serial No._____ Date_____

Company Name_____ Purchase Order #_____

Billing Address_____

City

State/Province Zip/Postal Code Country

Shipping Address_____

City

State/Province Zip/Postal Code Country

Technical Contact_____ Phone Number ( )_____
Purchasing Contact_____ Phone Number ( )_____

1. Describe, in detail, the problem and symptoms you are having. Please include all set up details, such as input/output levels, frequencies, waveform details, etc.

2. If problem is occurring when unit is in remote, please list the program strings used and the controller type.

3. Please give any additional information you feel would be beneficial in facilitating a faster repair time (i.e., modifications, etc.)

4. Is calibration data required? Yes No (please circle one)

Call before shipping
Note: We do not accept "collect" shipments.

Ship instruments to nearest support office.