Racal Instruments™ 1257A-D

2U, 4U, and 6U Developmental RF Interface Units

The Racal Instruments™ 1257A-D is a sixth-generation RFIU design. It comes with a new easy-to-use LXI Core 2011-compliant device and new enhanced features, including the ability to acquire all of the components you need to assemble your own unit in-house, reducing your design time.

Key Features

- **Complete development kit for customer self-assembly**
- **2U, 4U, and 6U chassis sizes with open floor and mezzanine areas**
- **Selection of Agilent, Radiall, Aeroflex/Weinschell, and other components**
- **Modular mounting hardware kits with internal adjustable rails for supported components**
- **LXI/Ethernet, USB, and GPIB control interface**
- **Scalable – accommodates up to 480 control, indicator read-back, and LED channels**
- **Flexible component control – supports TTL, open collector, pulse latching, and general purpose digital I/O**
- **Relay counter**
- **Front and rear removable panels for easy fabrication**

Product Information

The Racal Instruments™ 1257A-D is a development RF platform that includes all the pre-engineered hardware and software building blocks that enable customers to design and assemble their own customized RFIU solution. It features a standardized platform that delivers the reliability and supportability of COTS instrumentation, yet can be completely customized to suit specific application requirements.

This development unit is entirely scalable, as from one to ten drivers boards can be selected depending on the quantity of components to be installed in the instrument. With the capability to support up to 480 channels of I/O, control, LED, and general purpose digital I/O and the flexibility of TTL, open collector, and pulse latching component support, the 1257A-D can address a wide variety of RFIU application requirements.

The 1257A-D is ideal for developmental projects where the requirements may evolve or change rapidly. With the scalable design, modular mounting kits, flexible programming and control options, and a choice of standard relays, configuring or reconfiguring the RFIU for an application is fast, convenient, and cost effective. Further, since many of the hardware and software building blocks are standardized, subsequent units can be readily replicated offering equivalent performance.

The 1257A-D complements our other RFIU product offerings, the 1257A COTS RFIU and 1257A-C custom RFIU to address the full range of customer needs and preferences. Whether your project needs are best addressed by selecting an easily configured, off-the-shelf RFIU, a pre-engineered, modular development kit for self-assembly, or a completely custom engineered and fabricated RFIU ready for installation, we have a solution for you.

Applications for the 1257A-D

Common applications for the 1257A-D RFIU include the testing of communications equipment in production/installation/commissioning and the operational monitoring of RF, microwave, and radar signals. It can be used for base station, satellite antenna, or ATE test applications.

Relays with a frequency range of up to 18, 20, 26.5, or 40 GHz can be designed into the 1257A-D to accommodate a wide range of signal types. In many cases, the RFIU is utilized for routing and switching signals from one or more UUT's or antennae to different RF test and monitoring equipment such as spectrum analyzers, frequency counters, and/or power meters.

Due to the expense of RF test instrumentation and the frequent need to measure or monitor multiple RF signals very quickly, the 1257A-D can provide a substantial ROI and fast payback.

Easy to configure, assemble, and/or reconfigure

The 1257A-D incorporates a scalable and modular design that enables it to be rapidly configured or reconfigured to changing development requirements. A selection of Agilent and Radiall relays, and Agilent attenuators are available for customer selection. You may choose from driver board options, specific relays and/or attenua-

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Product Information

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tors, and matching component mounting hardware kits.

The driver cards mate with personality adapters (blanks) that translate into the connector types used on the components. This makes it possible for manufactured cable assemblies to be used with commercially available RF components.

For the 4U and 6U units, there is up to 130 square inches of microwave component mounting space plus an additional 112 square inches in the mezzanine. Modular hardware kits enable component shelf or rail mounting. Blank front, rear, and mezzanine panels provide the maximum flexibility for locating internal components within the RFIU.

Flexible control options – easy to program

The 1257A-D comes standard with LXI/Ethernet, USB, and GPIB control interfaces. This new LXI interface is based on Ethernet and offers discovery and a web-based interface. Set-up and control is simplified by auto recognition of relays. A rich SCPI command set and IVI drivers provide easy integration and compatibility with almost all software environments. Programming has been simplified with the incorporation of powerful and easy to use commands and features:

- Path Names – Makes paths intuitive
- Scan Lists – Set up a list the will run automatically
- Relay Counter – Counts relay closures and tracks relay end of life

Easy to service and support

The modular design of the 1257A-D platform and complete set of documentation reduce the Mean-Time-To-Repair (MTTR). 4U through 6U units offer removable top and bottom covers, facilitating service while the RFIU is still installed in the rack. These features enable relay or component replacement by dropping them out of the bottom of the unit, minimally disturbing sensitive microwave cables and preventing damage during service. Since each unit is delivered with a complete BOM, and system performance documentation, evaluating system performance degradation, and finding part numbers for replacements is straightforward. Additionally, relay counters provide visibility when components reach the end of their useful service life, enabling preventative maintenance instead of system downtime.

Specifications

Note: The Astronics Test Systems policy is one of continuous development and improvement. Consequently, the equipment may vary in detail from the description and specifications in this publication.

Interface

Front Panel Indicators
- System Power Indicator
- LAN Status

Rear Panel Indicators
- Ethernet

Front Connections
- USB Type A

Rear Connections
- GPIB, USB Type B, Ethernet

Front Panel Control
- System Reset

Rear Panel Control
- LAN Reset

Power Requirements
- Power Consumption: 550 VA (max)
- Input Voltage: 100 to 120/ 200 to 240 VAC
- Input Frequency: 50/60 Hz

2U Maximum Available Power (Total) (75 W)
- -12 V @ 3.0 A
- +3.3 V @ 4.0 A
- +5 V @ 4 A
- +12 V @ 3.0 A
- +24 V @ 3.0 A

2U Maximum Internal Power Dissipation (Ethernet and USB)
- 75 W @ 45° C

4U, 6U Maximum Available Power (Total) (170W)
- -12 V @ 3 A
- +3.3 V @ 4 A
- +5 V @ 4 A
- +12 V @ 3 A
- +24 V @ 5 A

4U, 6U Maximum Internal Power Dissipation (Ethernet and USB)
- 170 W @ 45° C

Software

Native Language
- SCPI and SCPI scripting

Driver Support
- IVI(C and Com), LabView™ version 9.0**

Web Page
- LXI Control v1.4 – LXI Core 2011 Compliant Device

Environmental

Temperature
- Operating: 0° C to 50° C (Ethernet and USB)
- Storage: -40° C to 71° C

Relative Humidity
- 80% RH at 40° C

Emissions/Immunity
- EN61326:2006 Class B

Safety
- EN61010-1:2010-06

Mechanical

2U
- Weight (base chassis)**: 13.5 lbs
- Dimensions: 3.47” H x 17.00” W x 16.00” D
- Height with Feet: 3.91”

4U
- Weight (base chassis)**: 24 lbs
- Dimensions: 6.90” H x 16.63” W x 24.34” D

6U
- Weight (base chassis)**: 26.5 lbs
- Dimensions: 10.40” H x 16.63” W x 24.34” D

* For adapter boards that connect outputs to inputs, the output leakage current will be the combination of the input/output leakage currents.

** Contact factory regarding other versions of LabView™

*** Actual weight is based on final configuration

Driver Board

Up to 10 driver boards per system

A maximum of 10 driver boards may be installed in each 1257A-D system

Each driver board supports a maximum of 48 (3x16) inputs, outputs, and LED drivers

Each driver board has three banks with up to 16 inputs, 16 outputs, and 16 LED drivers per bank

# of Banks
- 3

# of Outputs/Bank
- 16

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Specifications
continued

# of Inputs/Bank
- 16

# of LED Drivers/Bank
- 16

Output Types
- Open Collector
- TTL

Open Collector*
- Maximum Voltage: 30 V
- Off leakage Current: 50 µA
- On Current (Max): 600 mA
- Driver On Voltage (max): 0.4 V @ 600 mA

TTL* (3 V @ 1 mA)
- Hi Output Voltage: 4.8 V @ I_{OUT} = 90 µA @ I_{OUT} – 1 mA
- LO Output Voltage: 0.4 V @ 600 mA

Inputs
- Lo Input (Max): 0.8 V
- Hi Input (Min): 2.5 V
- Maximum Input Voltage: 30 V

Input Leakage Current
- 600 µA @ 30 V

LED Drivers
- LED Driver current: 5 mA nominal, programmable 1 to 20 mA
- Driver Compliance Voltage: 0.8 V

Ordering Information

1257A-D2-1 : Racal Instruments™ 1257A-D2-1

2U Developmental RF Interface Unit

1257A-D4-1 : Racal Instruments™ 1257A-D4-1

4U Developmental RF Interface Unit

1257A-D6-1 : Racal Instruments™ 1257A-D6-1

6U Developmental RF Interface Unit

Steps for Ordering Components

The following is the step-by-step process for identifying and ordering the components you need to construct your 1257A-D unit. Use the System Configuration Worksheet provided on the next page to record the components you need. This will simplify ordering.

Step 1: Select the desired maximum switch operating Frequency (once determined, refer to the frequency-appropriate tables in the Tables of Components A)

Step 2: Select required Switches/Attenuators and determine the quantity needed (for Switches, see Tables of Components A; for Attenuators, see Tables of Components B)

Step 3: Identify the required Cable Kit and determine the quantity needed based on the number of Switches/Attenuators selected; one cable per switch is required (see Tables of Components A)

Step 4: Select the required Mounting Kits and determine the quantity needed based on the number of Switches/Attenuators selected; you can choose Panel Mount Kits, Internal Mount Kits, or both (see Tables of Components A and the Mounting Kit Illustrations)

Step 5: Identify the required Adapter Boards and determine the quantity needed based on the number of Switches/Attenuators selected and the number of Switches per Adapter Board (see Tables of Components A and C)

Step 6: Determine the quantify of required Driver Boards based on the number of Adapter Boards needed; each Driver Board can hold a maximum of three Adapter Boards (see Tables of Components A)

Step 7: Select the desired Chassis based on the number of Driver Boards needed and component mounting space; the 2U chassis can hold up to two Driver Boards, the 4U chassis can hold up to 6 Driver Boards, and the 6U chassis can hold up to 10 Driver Boards (see Tables of Components A and the Chassis Diagrams)

Step 8: Determine if you would like to add the Accessory Mounting Plate (see Accessory Mounting Plate Diagrams)

Step 9: Design review is available upon request

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Ordering Information
continued

System Configuration Worksheet

Required Frequency:

☐ 18 GHz ☐ 20 GHz ☐ 26.5 GHz ☐ 40 GHz

Switch/ Attenuator Type	Astronics Test Systems P/N	Qty	Cable Kit P/N	Qty	Mounting Kit P/N	Qty	Adapter Board P/N	Qty	Driver Board Qty

Chassis:

☐ 2U ☐ 4U ☐ 6U

Optional Accessory Mounting Plate Components:

☐ 408450-001 : Mounting Plate Kit (4U, 6U)
☐ 408571-001 : Mounting Plate Kit (2U)
☐ 408449-001 : Vertical Mounting Rails (qty 4)

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Ordering Information
continued

Table of Components A: Switches/Relays

Frequency: 18 GHz

Notes:

- For Adapter Board Kits: The number in parentheses indicates the maximum number of switches per board.
- For Cable Kits: The number in parentheses indicates the number of cables in the kit.
- For Mounting Kits: The number in parentheses in front of the part number indicates the quantity of switches that that particular mounting bracket will hold; no notation indicates the bracket will hold a single switch. The number in parentheses after the part number indicates the number of brackets in that kit; no notation indicates one bracket.

Switch Type (Termination, Coil Voltage, Position Indicator, DC Connector) (Mfr P/N)	Astronics Test Systems P/N	Adapter Board Kit[1, 2]	Cable Kit	Panel Mount Kit[3]	Internal Mount Kit[4]
SPDT (No Term, 28 V, No Indicator, Solder Term) (Radiall R570433010)	310433-001	408442-001 (8)	408509-001	(1) 408494-001	408499-001
				(2) 408495-001	408436-001 (4)
				(3) 408496-001	
SPDT (Term, 28 V, No Indicator, Solder Term) (Radiall R585433210)	310434-001	408442-001 (8)	408509-001	(1) 408497-001	408499-001
				(2) 408498-001	408436-001 (4)
SP4T (No Term, 28 V, Indicator, DSub 25) (Radiall R573433415)	310435-001	408431-001 (4)	408511-001	(Switch has flange; does not require separate mount kit)	408506-001
SP4T (Term, 28 V, Indicator, DSub 25) (Radiall R574433415)	310436-001	408431-001 (4)	408511-001	(Switch has flange; does not require separate mount kit)	408506-001
SP6T (No Term, 28 V, Indicator, DSub 25) (Radiall R573433615)	310437-001	408431-001 (2)	408512-001	(Switch has flange; does not require separate mount kit)	408507-001
SP6T (Term, 28 V, Indicator, DSub 25) (Radiall R574433615)	310438-001	408431-001 (2)	408512-001	(Switch has flange; does not require separate mount kit)	408507-001
SP8T (No Term, 28 V, Indicator, DSub 25) (Radiall R573433815)	310439-001	408464-001 (2)	408513-001	(Switch has flange; does not require separate mount kit)	408502-001
SP8T (Term, 28 V, Indicator, DSub 25) (Radiall R574433815)	310440-001	408464-001 (2)	408513-001	(Switch has flange; does not require separate mount kit)	408502-001
SP10T (No Term, 28 V, Indicator, DSub 25) (Radiall R573433015)	310441-001	408524-001 (1)	408514-001	(Switch has flange; does not require separate mount kit)	408503-001
SP10T (Term, 28 V, Indicator, DSub 25) (Radiall R574433015)	310442-001	408524-001 (1)	408514-001	(Switch has flange; does not require separate mount kit)	408503-001
DPDT (No Term, 28 V, Indicator, DSub 9) (Radiall R577434017)	310444-001	408435-001 (8)	408515-001	(Switch has flange; does not require separate mount kit)	408500-001
					408444-001 (2)

1. Includes adapter board and mounting hardware
2. When mixing switch types, please refer to the Tables of Components C: Adapter Boards.
3. When selecting the Chassis, please refer to the Chassis Diagrams.
4. When selecting the Panel Mount Kits, please refer to the Panel Mount Kit Illustrations.
5. When selecting the Internal Mount Kits, please refer to the Internal Mount Kit Illustrations.

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Ordering Information
continued

Table of Components A: Switches/Relays continued

Frequency: 20 GHz

Notes:

- For Adapter Board Kits: The number in parentheses indicates the maximum number of switches per board.
- For Cable Kits: The number in parentheses indicates the number of cables in the kit.
- For Mounting Kits: The number in parentheses in front of the part number indicates the quantity of switches that that particular mounting bracket will hold; no notation indicates the bracket will hold a single switch. The number in parentheses after the part number indicates the number of brackets in that kit; no notation indicates one bracket.

Switch Type (Termination, Latching, Coil Voltage, Position Indicator, DC Connector) (Mfr P/N; Option #s)	Astronics Test Systems P/N	Adapter Board Kit[1,2]	Cable Kit	Panel Mount Kits[3]	Internal Mount Kits[4]
SPDT (No Term, LC, 24 V, No Indicator, 5-Pin SIL) (Agilent 8765B-024; -024)	922716	408442-001 (8)	408550-001	(1) 408494-001	408499-001
				(2) 408495-001	408436-001 (4)
				(3) 408496-001	
				(1) 408434-001 (4)	
SPDT (Term, LC, 24 V, No Indicator, Solder Term) (Agilent 8762B-024; -024)	310429-001	408435-001 (8) (Compatible with N1810 readback)	408446-001 (2)	(1) 408494-001	408499-001
				(2) 408495-001	408436-001 (4)
				(3) 408496-001	
				(1) 408434-001 (4)	
SPDT (Term, LC, 24 V, No Indicator, Solder Term) (Agilent 8762B-024; -024)	310429-001	408442-001 (8) (Connects output to input on adapter board)	408509-001	(1) 408494-001	408499-001
				(2) 408495-001	408436-001 (4)
				(3) 408496-001	
				(4) 408434-001 (4)	
SPDT (No Term, EL, 24 V, Indicator, DB9F) (Agilent N1810UL-20; -124, -402, -201)	310432-001	408435-001 (8)	408433-001 (2)	(1) 408494-001	408499-001
				(2) 408495-001	408436-001 (4)
				(3) 408496-001	
				(1) 408434-001 (4)	
SPDT (Term, EL, 24 V, Indicator, DB9F) (Agilent N1810TL-20; -124, -402, -201)	310431-001	408435-001 (8)	408433-001 (2)	(1) 408497-001	408499-001 (1)
				(2) 408498-001	408436-001 (4)
SP4T (No Term, LC, 24 V, Indicator, 16-Pin Header) (Agilent L7204B; -024, -161)	922717	408431-001 (4)	408432-001 (2)	(Switch has flange; does not require separate mount kit)	408501-001
					408430-001 (4)
SP4T (Term, LC, 24 V, Indicator, 16-Pin Header) (Agilent L7104B; -024, -161)	922718	408431-001 (4)	408432-001 (2)	(Switch has flange; does not require separate mount kit)	408501-001
					408430-001 (4)
SP4T (Term, EL, 24 V, Indicator, 16-Pin Header) (Agilent 87104B-024; -024, -161)	310427-001	408431-001 (4)	408432-001 (2)	(Switch has flange; does not require separate mount kit)	408501-001
					408430-001 (4)
SP6T (No Term, LC, 24 V, Indicator, 16-Pin Header) (Agilent L7206B; -024, -161)	310430-001	408431-001 (2)	408432-001 (2)	(Switch has flange; does not require separate mount kit)	408501-001
					408430-001 (4)
SP6T (Term, LC, 24 V, Indicator, 16-Pin Header) (Agilent L7106B; -024, -161)	922719	408431-001 (2)	408432-001 (2)	(Switch has flange; does not require separate mount kit)	408501-001
					408430-001 (4)
SP6T (Term, EL, 24 V, Indicator, 16-Pin Header) (Agilent 87106B-024; -024, -161)	310428-001	408431-001 (2)	408432-001 (2)	(Switch has flange; does not require separate mount kit)	408501-001
					408430-001 (4)

1. Includes adapter board and mounting hardware
2. When mixing switch types, please refer to the Tables of Components C: Adapter Boards.
3. When selecting the Chassis, please refer to the Chassis Diagrams.
4. When selecting the Panel Mount Kits, please refer to the Panel Mount Kit Illustrations.
5. When selecting the Internal Mount Kits, please refer to the Internal Mount Kit Illustrations.

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Ordering Information
continued

Table of Components A: Switches/Relays continued

Frequency: 26.5 GHz

Notes:

- For Adapter Board Kits: The number in parentheses indicates the maximum number of switches per board.
- For Cable Kits: The number in parentheses indicates the number of cables in the kit.
- For Mounting Kits: The number in parentheses in front of the part number indicates the quantity of switches that that particular mounting bracket will hold; no notation indicates the bracket will hold a single switch. The number in parentheses after the part number indicates the number of brackets in that kit; no notation indicates one bracket.

Switch Type (Termination, Latching, Coil Voltage, Position Indicator, DC Connector) (Mfr P/N; Option #s)	Astronics Test Systems P/N	Adapter Board Kit[1,2]	Cable Kit	Panel Mount Kits[3]	Internal Mount Kits[4]
SPDT (No Term, 28 V, No Indicator, Solder Term) (Radiall R570F33010)	310433-002	408442-001 (8)	408509-001 (1)	(1) 408494-001	408499-001
				(2) 408495-001	408436-001 (4)
				(3) 408496-001	
SPDT (No Term, LC, 24 V, No Indicator, 5-Pin SIL) (Agilent 8765C-024; -024)	922716-002	408442-001 (8)	408509-001 (1)	(1) 408494-001	408499-001
				(2) 408495-001	408436-001 (4)
				(3) 408496-001	
				(1) 408434-001 (4)	
SPDT (Term, 28 V, No Indicator, Solder Term) (Radiall R585F33210)	310434-002	408442-001 (8)	408509-001 (1)	(1) 408497-001	408499-001
				(2) 408498-001	408436-001 (4)
SPDT (Term, LC, 24 V, No Indicator, Solder Term) (Agilent 8762C-024; -024)	310429-002	408435-001 (8) (Compatible with N1810 readback)	408446-001 (1)	(1) 408494-001	408499-001
				(2) 408495-001	408436-001 (4)
				(3) 408496-001	
				(1) 408434-001 (4)	
SPDT (Term, LC, 24 V, No Indicator, Solder Term) (Agilent 8762C-024; -024)	310429-002	408442-001 (8) (Connects output to input on adapter board)	408509-001 (1)	(1) 408494-001	408501-001
				(2) 408495-001	408430-001 (4)
				(3) 408496-001	
				(4) 408434-001 (4)	
SPDT (No Term, EL, 24 V, Indicator, DB9F) (Agilent N1810UL-26.5; -124, -402, -403, -201)	310432-002	408435-001 (8)	408433-001 (2)	(1) 408494-001	408499-001
				(2) 408495-001	408436-001 (4)
				(3) 408496-001	
				(1) 408434-001 (4)	
SPDT (Term, EL, 24 V, Indicator, DB9F) (Agilent N1810TL-26.5; -124, -402, -403, -201)	310431-002	408435-001 (8)	408433-001 (2)	(1) 408497-001	408499-001
				(2) 408498-001	408436-001 (4)
SP4T (No Term, 28 V, Indicator, DSub 25) (Radiall R573F33415)	310435-002	408431-001 (4)	408511-001	(Switch has flange; does not require separate mount kit)	408506-001
SP4T (No Term, LC, 24 V, Indicator, 16-Pin Header) (Agilent L7204C; -024, -161)	922717-002	408431-001 (4)	408432-001 (2)	(Switch has flange; does not require separate mount kit)	408501-001
					408430-001 (4)
SP4T (Term, 28 V, Indicator, DSub 25) (Radiall R874F33415)	310436-002	408431-001 (4)	408511-001	(Switch has flange; does not require separate mount kit)	408506-001

1. Includes adapter board and mounting hardware
2. When mixing switch types, please refer to the Tables of Components C: Adapter Boards.
3. When selecting the Chassis, please refer to the Chassis Diagrams.
4. When selecting the Panel Mount Kits, please refer to the Panel Mount Kit Illustrations.
5. When selecting the Internal Mount Kits, please refer to the Internal Mount Kit Illustrations.

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Ordering Information
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Table of Components A: Switches/Relays continued

Frequency: 26.5 GHz continued

Notes:

- For Adapter Board Kits: The number in parentheses indicates the maximum number of switches per board.
- For Cable Kits: The number in parentheses indicates the number of cables in the kit.
- For Mounting Kits: The number in parentheses in front of the part number indicates the quantity of switches that that particular mounting bracket will hold; no notation indicates the bracket will hold a single switch. The number in parentheses after the part number indicates the number of brackets in that kit; no notation indicates one bracket.

Switch Type (Termination, Latching, Coil Voltage, Position Indicator, DC Connector) (Mfr P/N; Option #s)	Astronics Test Systems P/N	Adapter Board Kit[1,2]	Cable Kit	Panel Mount Kits[3]	Internal Mount Kits[4]
SP4T (Term, LC, 24 V, Indicator, 16-Pin Header) (Agilent L7104C; -024, -161)	922718-002	408431-001 (4)	408432-001 (2)	(Switch has flange; does not require separate mount kit)	408501-001 408430-001 (4)
SP4T (Term, EL, 24 V, Indicator, 16-Pin Header) (Agilent 87104C-024; -024, -161)	310427-002	408431-001 (4)	408432-001 (2)	(Switch has flange; does not require separate mount kit)	408501-001 408430-001 (4)
SP6T (No Term, 28 V, Indicator, DSub 25) (Radiall R573F33615)	310437-002	408431-001 (2)	408512-001	(Switch has flange; does not require separate mount kit)	408507-001
SP6T (No Term, LC, 24 V, Indicator, 16-Pin Header) (Agilent L7206C; -024, -161)	310430-002	408431-001 (2)	408432-001 (2)	(Switch has flange; does not require separate mount kit)	408501-001 408430-001 (4)
SP6T (Term, 28 V, Indicator, DSub 25) (Radiall R574F33615)	310438-002	408431-001 (2)	408512-001	(Switch has flange; does not require separate mount kit)	408507-001
SP6T (Term, LC, 24 V, Indicator, 16-Pin Header) (Agilent L7106C; -024, -161)	922719-002	408431-001 (2)	408432-001 (2)	(Switch has flange; does not require separate mount kit)	408501-001 408430-001 (4)
SP6T (Term, EL, 24 V, Indicator, 16-Pin Header) (Agilent 87106C-024; -024, -161)	310428-002	408431-001 (2)	408432-001 (2)	(Switch has flange; does not require separate mount kit)	408501-001 408430-001 (4)
SP8T (No Term, 28 V, Indicator, DSub 25) (Radiall R573F33815)	310439-002	408464-001 (2)	408513-001	(Switch has flange; does not require separate mount kit)	408502-001
SP8T (Term, 28 V, Indicator, DSub 25) (Radiall R574F33815)	310440-002	408464-001 (2)	408513-001	(Switch has flange; does not require separate mount kit)	408502-001
SP10T (No Term, 28 V, Indicator, DSub 25) (Radiall R573F33015)	310441-002	408524-001 (1)	408514-001	(Switch has flange; does not require separate mount kit)	408503-001
SP10T (Term, 28 V, Indicator, DSub 25) (Radiall R574F33015)	310442-002	408524-001 (1)	408514-001	(Switch has flange; does not require separate mount kit)	408503-001
DPDT (No Term, 28 V, Indicator, DSub 9) (Radiall R577F34017)	310444-002	408435-001 (8)	408515-001	(Switch has flange; does not require separate mount kit)	408500-001 408444-001 (2)
DPDT (No Term, 24 V, Indicator, 10-Pin Header) (Agilent L7222C; -161)	310443-001	408435-001 (8)	408447-001 (2)	(Switch has flange; does not require separate mount kit)	408500-001 408444-001 (2)
DPDT (No Term, 24 V, Indicator, 10-Pin Header) (Agilent 87222C)	310443-002	408435-001 (8)	408447-001 (2)	(Switch has flange; does not require separate mount kit)	408500-001 408444-001 (2)

1. Includes adapter board and mounting hardware
2. When mixing switch types, please refer to the Tables of Components C: Adapter Boards.
3. When selecting the Chassis, please refer to the Chassis Diagrams.
4. When selecting the Panel Mount Kits, please refer to the Panel Mount Kit Illustrations.
5. When selecting the Internal Mount Kits, please refer to the Internal Mount Kit Illustrations.

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Ordering Information
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Table of Components A: Switches/Relays continued

Frequency: 40 GHz

Notes:

- For Adapter Board Kits: The number in parentheses indicates the maximum number of switches per board.
- For Cable Kits: The number in parentheses indicates the number of cables in the kit.
- For Mounting Kits: The number in parentheses in front of the part number indicates the quantity of switches that that particular mounting bracket will hold; no notation indicates the bracket will hold a single switch. The number in parentheses after the part number indicates the number of brackets in that kit; no notation indicates one bracket.

Switch Type (Termination, Latching, Coil Voltage, Position Indicator, DC Connector) (Mfr P/N; Option #s)	Astronics Test Systems P/N	Adapter Board Kit[1,2]	Cable Kit	Panel Mount Kits[3]	Internal Mount Kits[4]
SPDT (No Term, 28 V, No Indicator, Solder Term) (Radiall R570833010)	310433-003	408442-001 (8)	408509-001	(1) 408494-001	408499-001
				(2) 408495-001	408436-001 (4)
				(3) 408496-001	
SPDT (Term, 28 V, No Indicator, Solder Term) (Radiall R585833210)	310434-003	408442-001 (8)	408509-001	(1) 408497-001	408499-001
				(2) 408498-001	408436-001 (4)
SPDT (No Term, EL, 24 V, Indicator, DB9F) (Agilent N1810UL-40; -124, -402, -403 -201)	310432-003	408435-001 (8)	408433-001 (2)	(1) 408494-001	408499-001
				(2) 408495-001	408436-001 (4)
				(3) 408496-001	
				(1) 408434-001 (4)	
SPDT (No Term, EL, 24 V, Indicator, DB9F) (Agilent N1810TL-40; -124, -402, -403 -201)	310432-003	408435-001 (8)	408433-001 (2)	(1) 408497-001	408499-001
				(2) 408498-001	408436-001 (4)
SP4T (No Term, 28 V, Indicator, DSub 25) (Radiall R573833415)	310435-003	408431-001 (4)	408511-001	(Switch has flange; does not require separate mount kit)	408506-001
SP4T (Term, 28 V, Indicator, DSub 25) (Radiall R574833415)	310436-003	408431-001 (4)	408511-001	(Switch has flange; does not require separate mount kit)	408506-001
SP4T (Term, EL, 24 V, Indicator, 16-Pin Header) (Agilent 87104D; -024, -161)	310427-003	408431-001 (4)	408432-001 (2)	(Switch has flange; does not require separate mount kit)	408501-001
					408430-001 (4)
SP6T (No Term, 28 V, Indicator, DSub 25) (Radiall R573833615)	310437-003	408431-001 (2)	408512-001	(Switch has flange; does not require separate mount kit)	408507-001
SP6T (Term, 28 V, Indicator, DSub 25) (Radiall R574833615)	310438-003	408431-001 (2)	408512-001	(Switch has flange; does not require separate mount kit)	408507-001
SP6T (Term, EL, 24 V, Indicator, 16-Pin Header) (Agilent 87106D-024; -024, -161)	310428-003	408431-001 (2)	408432-001 (2)	(Switch has flange; does not require separate mount kit)	408501-001
					408430-001 (4)
SP8T (No Term, 28 V, Indicator, DSub 25) (Radiall R573833815)	310439-003	408464-001 (2)	408513-001	(Switch has flange; does not require separate mount kit)	408502-001
SP8T (Term, 28 V, Indicator, DSub 25) (Radiall R574833815)	310440-003	408464-001 (2)	408513-001	(Switch has flange; does not require separate mount kit)	408502-001
SP10T (No Term, 28 V, Indicator, DSub 25) (Radiall R573833015)	310441-003	408524-001 (1)	408514-001	(Switch has flange; does not require separate mount kit)	408503-001

1. Includes adapter board and mounting hardware
2. When mixing switch types, please refer to the Tables of Components C: Adapter Boards.
3. When selecting the Chassis, please refer to the Chassis Diagrams.
4. When selecting the Panel Mount Kits, please refer to the Panel Mount Kit Illustrations.
5. When selecting the Internal Mount Kits, please refer to the Internal Mount Kit Illustrations.

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Table of Components A: Switches/Relays continued

Frequency: 40 GHz continued

Notes:

- For Adapter Board Kits: The number in parentheses indicates the maximum number of switches per board.
- For Cable Kits: The number in parentheses indicates the number of cables in the kit.
- For Mounting Kits: The number in parentheses in front of the part number indicates the quantity of switches that that particular mounting bracket will hold; no notation indicates the bracket will hold a single switch. The number in parentheses after the part number indicates the number of brackets in that kit; no notation indicates one bracket.

Switch Type (Termination, Latching, Coil Voltage, Position Indicator, DC Connector) (Mfr P/N; Option #s)	Astronics Test Systems P/N	Adapter Board Kit[1 2]	Cable Kit	Panel Mount Kits[3]	Internal Mount Kits[4]
SP10T (Term, 28 V, Indicator, DSub 25) (Radiall R574833015)	310442-003	408524-001 (1)	408514-001	(Switch has flange; does not require separate mount kit)	408503-001
DPDT (No Term, 28 V, Indicator, DSub 9) (Radiall R577834017)	310444-003	408435-001 (8)	408515-001	(Switch has flange; does not require separate mount kit)	408500-001 408444-001 (2)
DPDT (No Term, 24 V, Indicator, 10-Pin Header) (Radiall 87222D)	310443-003	408435-001 (8)	408447-001 (2)	(Switch has flange; does not require separate mount kit)	408500-001 408444-001 (2)

1. Includes adapter board and mounting hardware
2. When mixing switch types, please refer to the Tables of Components C: Adapter Boards.
3. When selecting the Chassis, please refer to the Chassis Diagrams.
4. When selecting the Panel Mount Kits, please refer to the Panel Mount Kit Illustrations.
5. When selecting the Internal Mount Kits, please refer to the Internal Mount Kit Illustrations.

Table of Components B: Attenuators

Note:

- For Adapter Board Kits: The number in parentheses indicates the maximum number of switches per board.
- For Cable Kits: The number in brackets indicates the number of cables in the kit.

Attenuator Type (Mfr P/N)	Astronics Test Systems P/N	Adapter Board Kit	Cable Kit	Attenuator Internal Mounting Bracket Kit[1]
11/1 dB (Agilent 8494G)	8494G	408443-001 (2)	408448-001 (2)	408445-001
11/1 dB (Agilent 8494H)	921847	408443-001 (2)	408448-001 (2)	408445-001
11/1 dB (Agilent 8496H)	921848	408443-001 (2)	408448-001 (2)	408445-001
110/10 dB (Agilent 8596G)	921849	408443-001 (2)	408448-001 (2)	408445-001

1. Please refer to the Attenuator Internal Mounting Bracket Illustration

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Ordering Information
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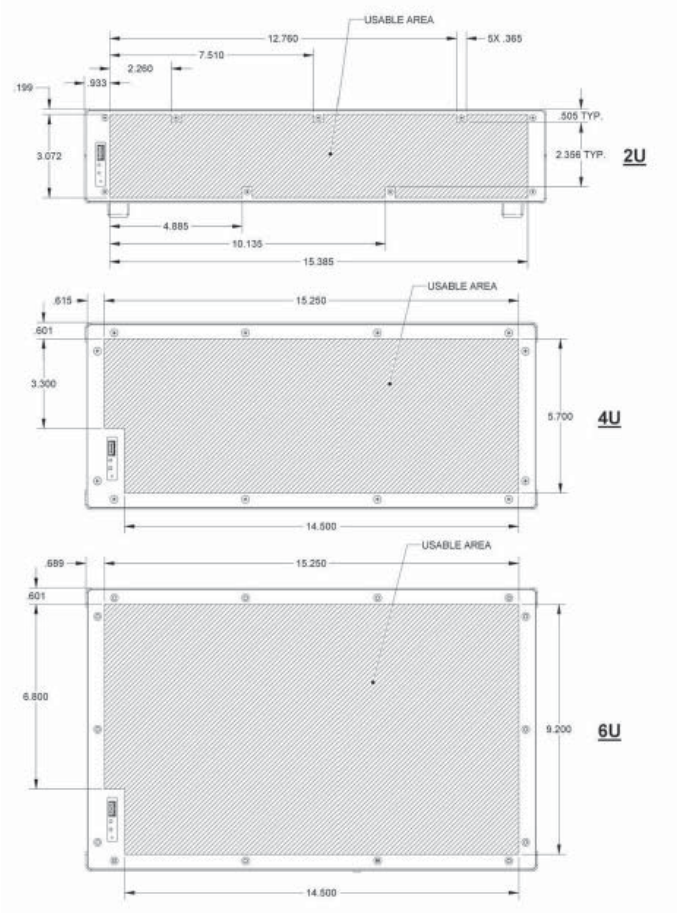
Table of Components C: Adapter Boards

Note:

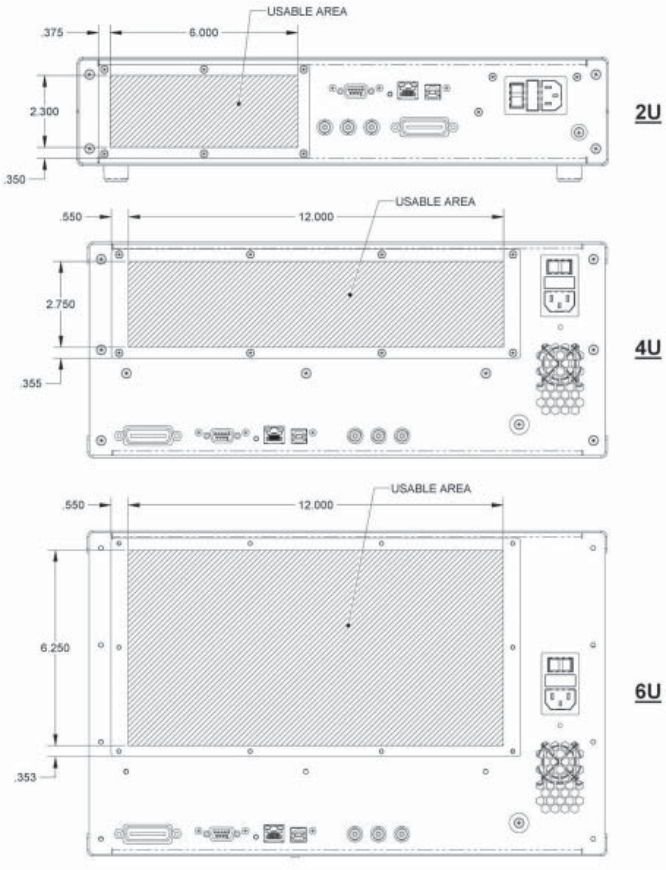
- Use this table to identify the Adapter Boards you need when mixing switch types

Adapter Board Kit	Adapter Board	Supported Switches
408525-001	405365	(Terminal blocks) 16 x Drive 16 x Indicator 4 x Reset
408431-001	405343	4 x SP4T 2 x SP6T, 1 x SP4T 1 x SP6T, 2 x SP4T
408435-001	405366	8 x SPDT or DPDT
408442-001	405372	8 x SPDT or DPDT
408464-001	405367	2 x SP8T
408524-001	405373	1 x SP10T
408523-001	405405	2 x SP6T, 1 x SP4T
408443-001	405370	2 x 4 cell Atten

Chassis Front and Rear Diagrams for Usable Space



Front View



Rear View

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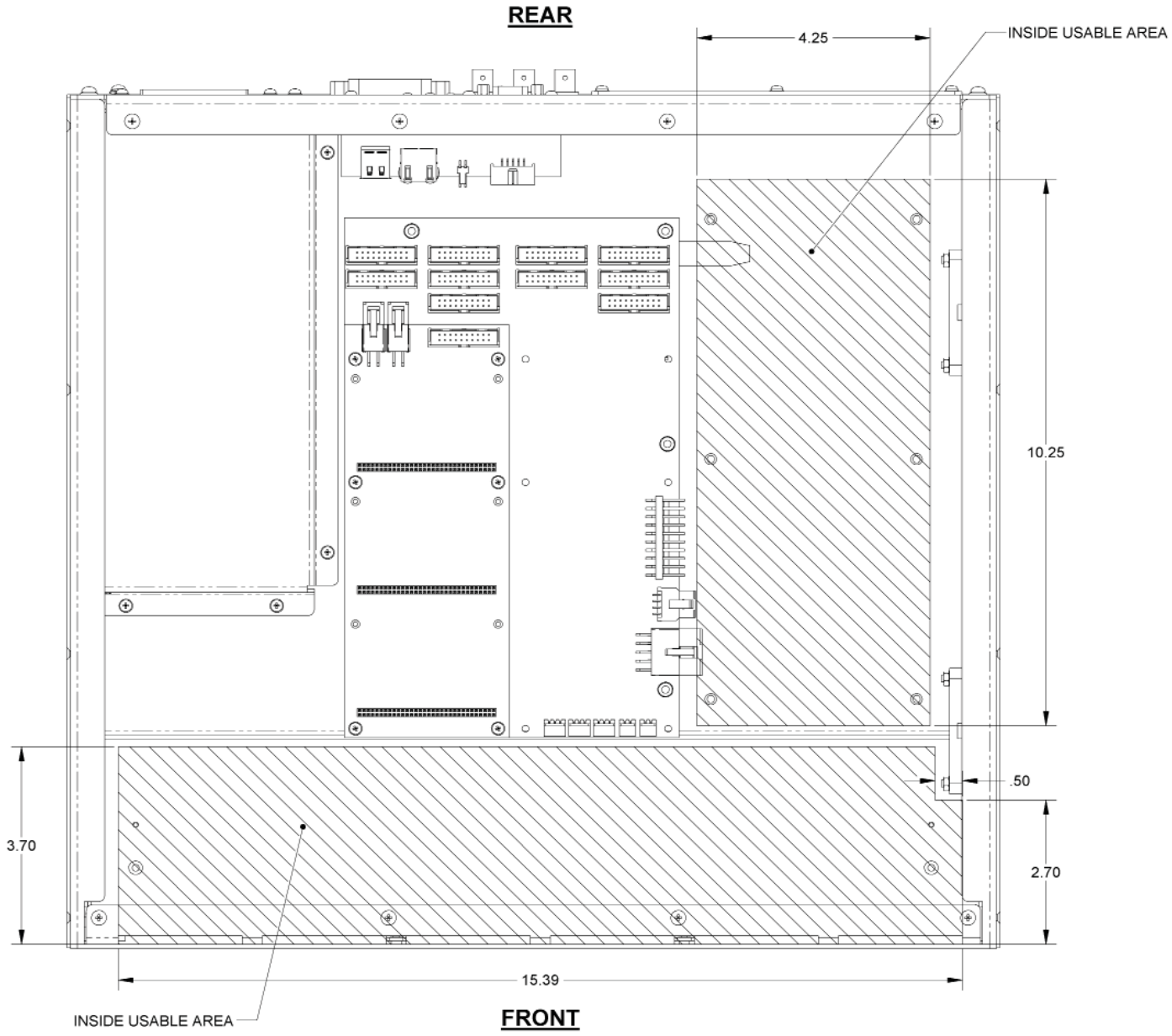
Chassis Top and Bottom Diagrams for Usable Space



Top View, 2U Chassis

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Ordering Information
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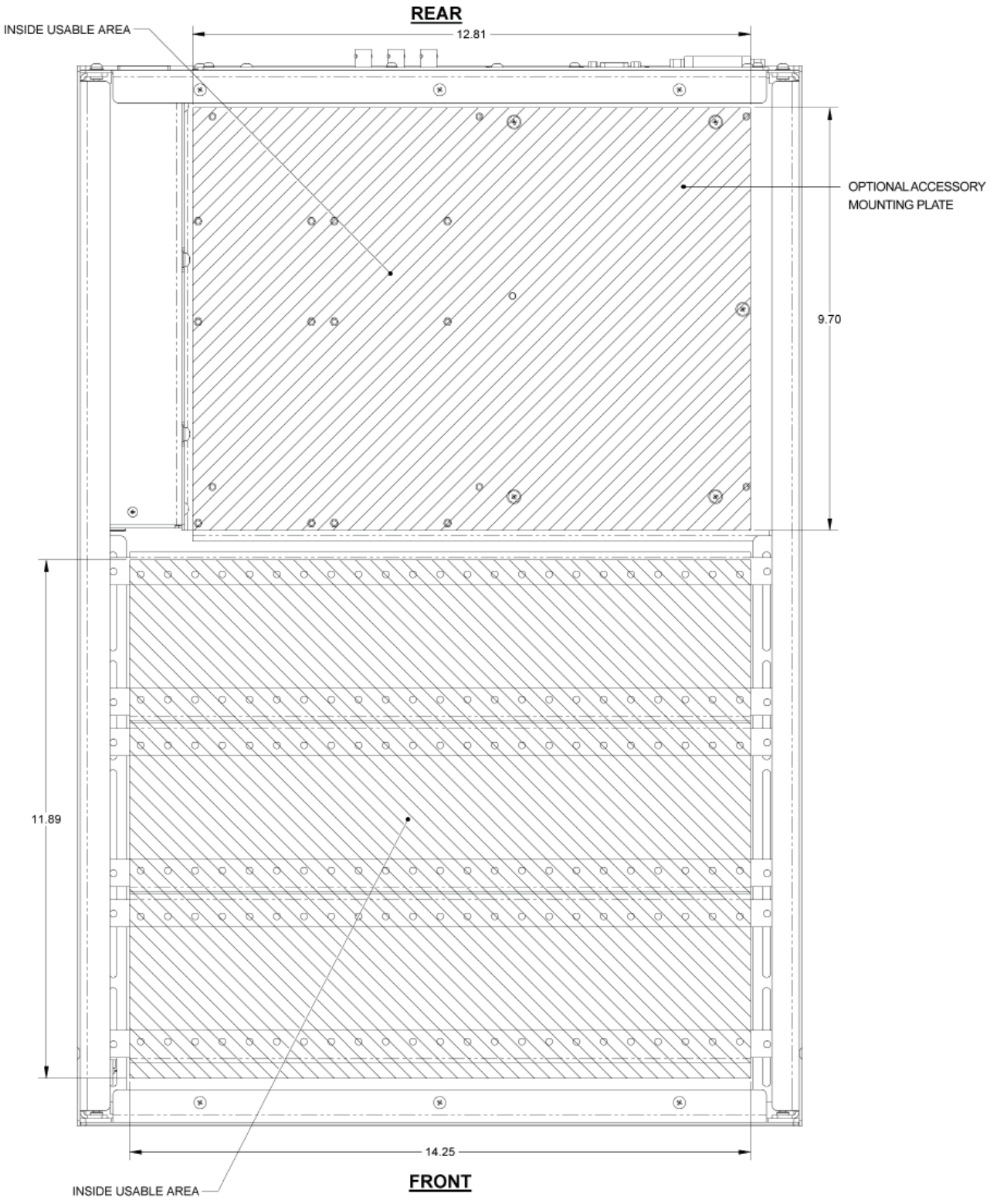
Chassis Top and Bottom Diagrams for Usable Space continued



Top View, 4U and 6U Chassis

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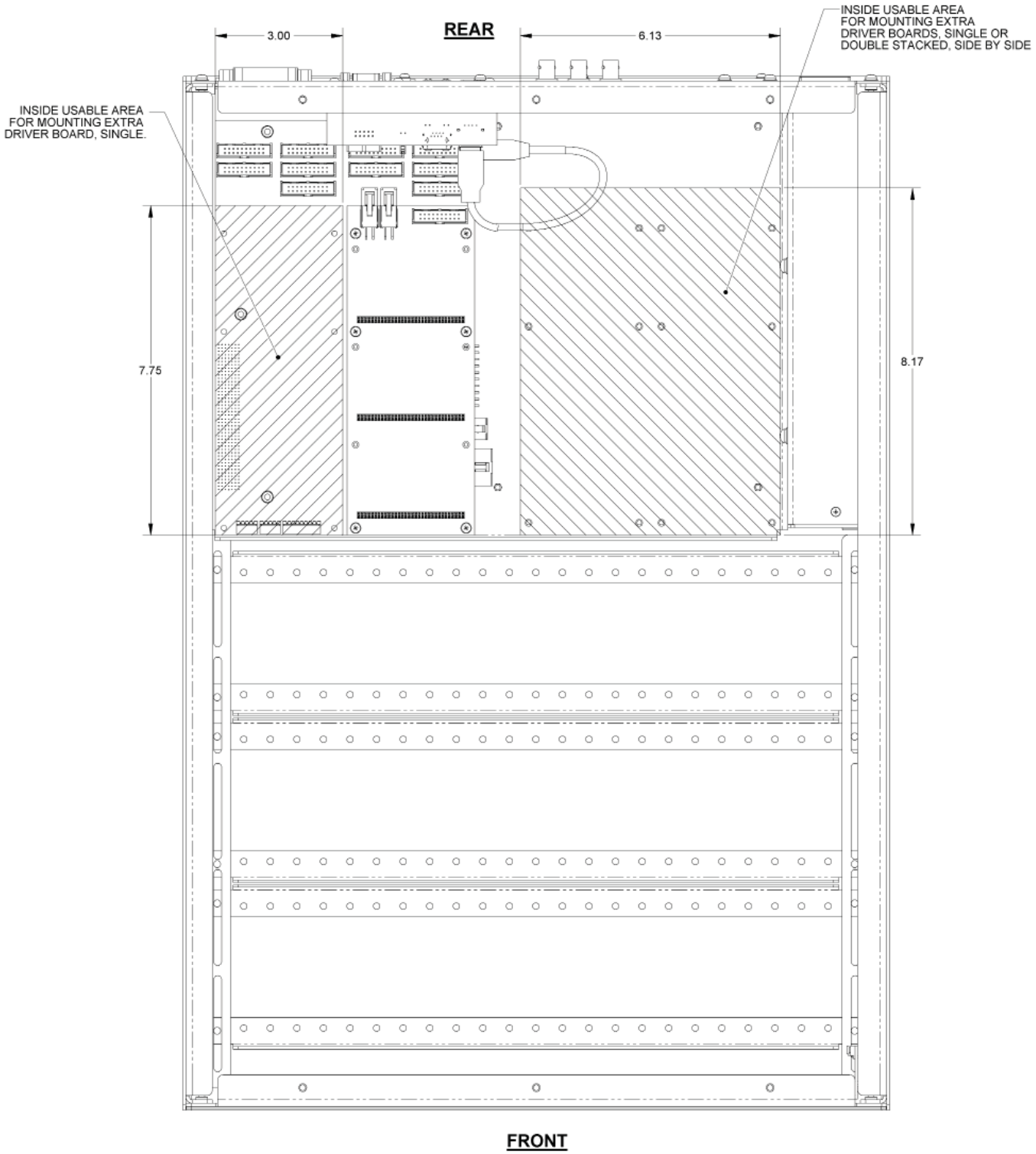
Ordering Information
continued

Chassis Top and Bottom Diagrams for Usable Space continued



Bottom View, 4U and 6U Chassis

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Ordering Information
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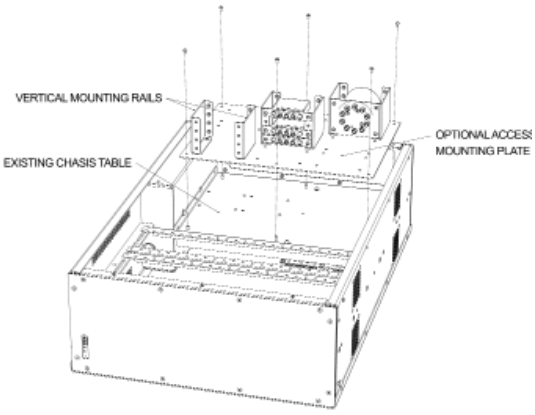
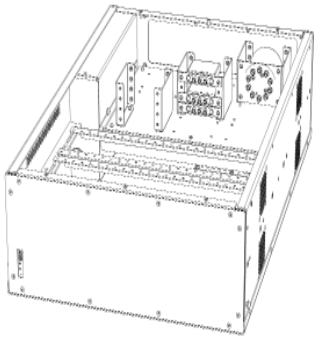
Optional Accessory Mounting Plate

The optional Accessory Mounting Plate Kits are available for additional component and driver board mounting inside the 1257A-D. One plate is designed for use with 4U and 6U configurations, and one is available for the 2U. Both kits come with screws to mount the plates to standoffs onto the existing chassis table.

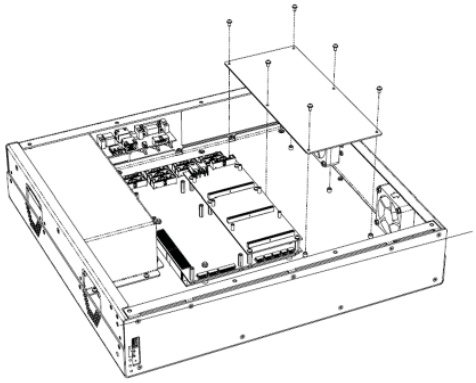
Optional Vertical Mounting Rails are used to mount the components to the Accessory Mounting Plate. Four rails (two pair) come in each kit along with mounting screws.



Inserting Accessory Plate and Mounting Rails (4U, 6U)

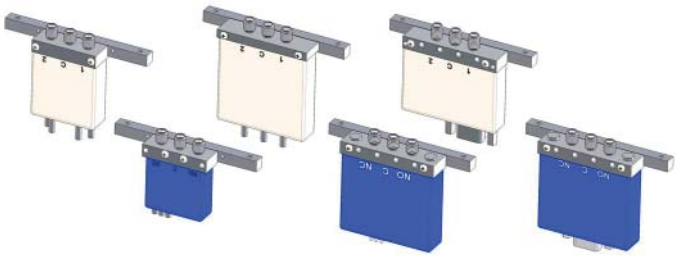


Example of Installed Accessory Plate and Components (4U, 6U)



2U Adapter Mounting Plate

Internal Mount Kit Illustrations



408499-001
408436-001 (4)

408500-001
408444-001 (4)

408501-001
408430-001 (4)

408502-001

408503-001

408506-001

408507-001

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Panel Mount Kit Illustrations


408494-001
408434-001 (4)

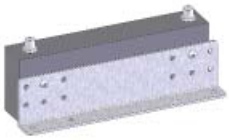

408495-001


408496-001


408497-001


408498-001

Attenuator Internal Mounting Bracket Illustration


408445-001

2U Accessories
408465-001 : 2U, Upper Blanking Panel
408466-011 : 2U, Lower Blanking Panel
408415 : Rackmount brackets (ears) (pair), 2U

4U Accessories
407813 : Rackmount slides (pair), 4U or 6U
408491-001 : Rackmount brackets (ears) (pair), 4U
408450-001 : Optional Accessory Mounting Plate Kit
408449-001 : Optional Vertical Mounting Rails (qty 4) for Accessory Mounting Plate

6U Accessories
407813 : Rackmount slides (pair), 4U or 6U
408428-001 : Rackmount brackets (ears) (pair), 6U
408450-001 : Optional Accessory Mounting Plate Kit
408449-001 : Optional Vertical Mounting Rails (qty 4) for Accessory Mounting Plate

General Accessories
602269 : European power cord (unterminated)
602269-001 : African power cord
602269-003 : UK power chord
602269-008 : China power cord
500310-001 : GPIB cable, 1 m
500310-002 : GPIB cable, 2 m
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