



## Model 4048 POTS/ISDN Splitter Shelf Installation Guide

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This guide provides the basic information required to install the Comtest Model 4048 POTS/ISDN Splitter Shelf on a 19" or 23" rack assembly.

### Unpacking the 4048 shelf

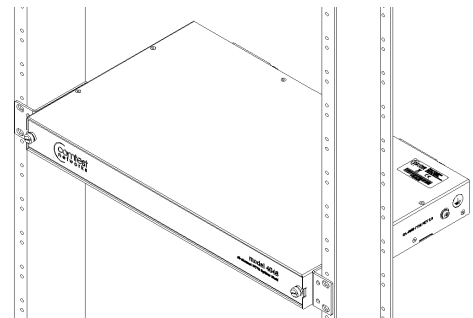
Before opening the 4048 shipping box, carefully inspect for any signs of damage. If the box has been damaged, note the damage before opening the box. Open the box and remove the 4048 shelf and carefully examine it for any damage. If the shelf is damaged, contact your supplier for instructions to return it for a replacement. If there is no damage, verify that all packed items have been received. You should receive the following:

- Comtest model 4048 shelf, part number SA-4048-7156
- Quantity 1, Rack Mounting Bracket Kit, Part Number SA-4048-7117
  - Quantity 2, Rack Mounting Brackets, part number SA-4048-7107
- Quantity 1, Cable Tie Kit, part number SA-4048-7119
  - Quantity 6, 8" nylon cable tie wraps, part number HW-CTS0-080N
  - Mounting hardware consisting of:
    - Quantity 4, 10-32 x 3/8" screws, part number HW-PP06-05SS
    - Quantity 4, 10-32 external tooth lock washers, part number HW-WE06-00SS

If any of the above items are missing, contact your supplier.

### Installation

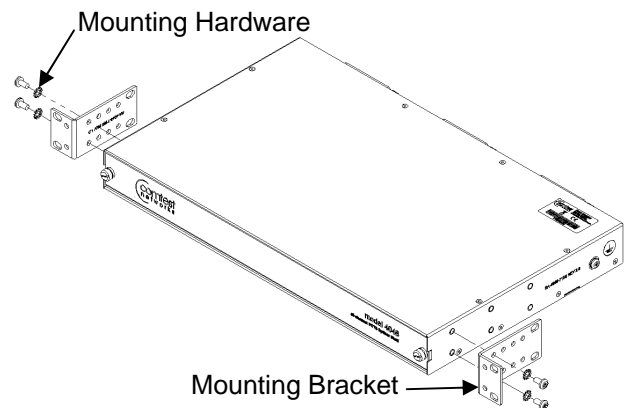
The 4048 requires 1U (1.75 inches) of rack space. The shelf is supplied with mounting brackets and hardware to allow installation in a 19 inch or 23 inch rack.



### Preparation for Mounting

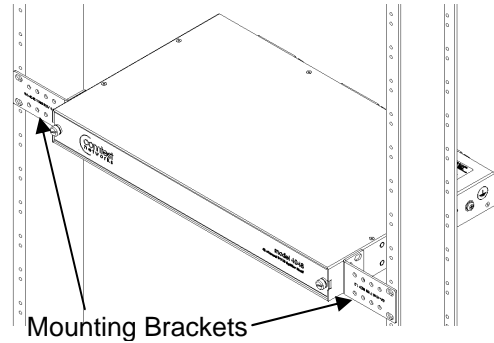
- 19 Inch Mounting

For 19 inch mounting, the long side of the mounting bracket is attached to the side of the shelf. There are three positions to mount the bracket on the shelf and four positions on the mounting bracket. The Rack Mounting Bracket can also be mounted with the flange at the back. Thus, there are 24 possible mounting positions for the Rack Mounting Bracket. Choose a suitable mounting position for the shelf then, using the provided 10-32 screws and lock washers, attach the bracket to each side of the shelf. Place the shelf in position on the rack and, using the appropriate screws and lock washers, attach the shelf to the rack. Please note the hardware (screws) required to mount the shelf to the rack is not supplied with the 4048 shelf mounting kit.



- 23 Inch Mounting

For 23 inch mounting, the short side of the mounting bracket is attached to the side of the shelf. There are three positions to mount the bracket on the shelf. Choose a suitable mounting position for the shelf then, using the provided 10-32 screws and lock washers, attach the bracket to each side of the shelf. Place the shelf in position on the rack and, using the appropriate screws and lock washers, attach the shelf to the rack. Please note the hardware (screws) required to mount the shelf to the rack is not supplied with the 4048 shelf mounting kit.

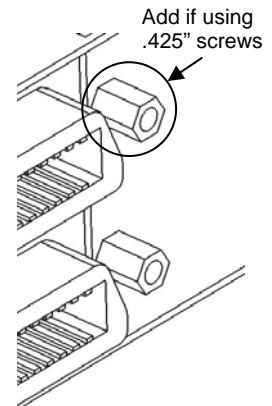


## Cabling Overview

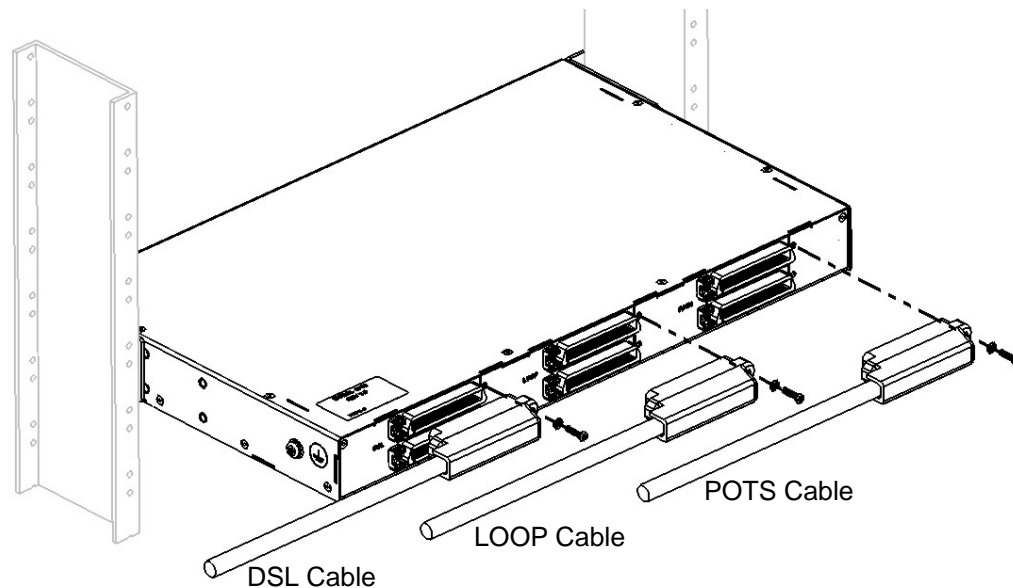
### New Installations

The 4048 Splitter Shelf cabling configurations will vary depending on installation locations and the number of lines supported by the DSLAM. However, the physical interface to the rear panel connectors is standard 50-pin RJ-21 type receptacle connectors. Each splitter card uses 24 pairs of the 25 pairs available on each 50-pin connector. After the shelf has been attached to the rack, the cabling can be prepared as shown below.

The threaded mounting holes for the RJ-21 covers are designed to utilize  $\frac{3}{4}$ " captive pan head screws. However, if only 0.425" captive pan head screws are available, jack screws will have to be screwed into the RJ-21 connectors before assembling the cover. Jack screws are available separately, order Comtest part number: HW-JS02-03Z1.



For improved DSL performance, Comtest recommends the use of CAT 5, or better, cabling on the DSL connectors for our 4048 POTS Splitter Shelf in order to ensure that optimum system performance is achieved and maintained. Comtest suggest that the CAT 5 mating connectors used be equipped with either a 90° or 120° cover so that routing of the cables is simplified.



**CAUTION** - To reduce the risk of fire, use only No. 26 AWG or larger telecommunication line cord/cable.

## Install the cables in the following sequence:

- Connect DSL Cable first  
Insert the screw through the connector cover and into the RJ-21 connector provided on the back panel and carefully tighten. Note, do not over tighten this screw as the RJ-21 plug assembly will not sit properly on the RJ-21 receptacle resulting in poor voice/data connections. To ensure that the connector plug remains firmly in place, insert a tie-wrap through the tie wrap mount and wrap over the cover and lock firmly into place.
- Connect LOOP Cable second  
Assemble the connector cover and plug as above.
- Connect PSTN Cable last  
Assemble the connector cover and plug as above.

Route the cables on top of each other and add additional cable ties as necessary to achieve a neat, orderly cable arrangement. After a row of connectors has been completed, repeat the above steps for the remaining row of connectors.

Note, other cable cover assemblies are, of course, possible. You may wish to change the arrangement of the cables to suit your normal operating practices.

## Connector Pin Outs

As viewed from the rear of the shelf:

- xDSL signals to and from the DSLAM enter the 4048 splitter shelf using the left most RJ-21 type connectors, designated 'DSL' interface.
- Signals to and from the LOOP (outside plant) enter the 4048 splitter shelf using the centre RJ-21 type connectors, designated 'LOOP' interface.
- Cables to and from the central office switch enter the 4048 splitter shelf via the right hand RJ-21 type connectors, designated 'PSTN' interface.

Filter No.	ADSL Connector		LOOP Connector		PSTN Connector	
	Tip	Ring	Tip	Ring	Tip	Ring
1	26	1	26	1	26	1
2	27	2	27	2	27	2
3	28	3	28	3	28	3
4	29	4	29	4	29	4
5	30	5	30	5	30	5
6	31	6	31	6	31	6
7	32	7	32	7	32	7
8	33	8	33	8	33	8
9	34	9	34	9	34	9
10	35	10	35	10	35	10
11	36	11	36	11	36	11
12	37	12	37	12	37	12
13	38	13	38	13	38	13
14	39	14	39	14	39	14
15	40	15	40	15	40	15
16	41	16	41	16	41	16
17	42	17	42	17	42	17
18	43	18	43	18	43	18
19	44	19	44	19	44	19
20	45	20	45	20	45	20
21	46	21	46	21	46	21
22	47	22	47	22	47	22
23	48	23	48	23	48	23
24	49	24	49	24	49	24

## Existing Installations

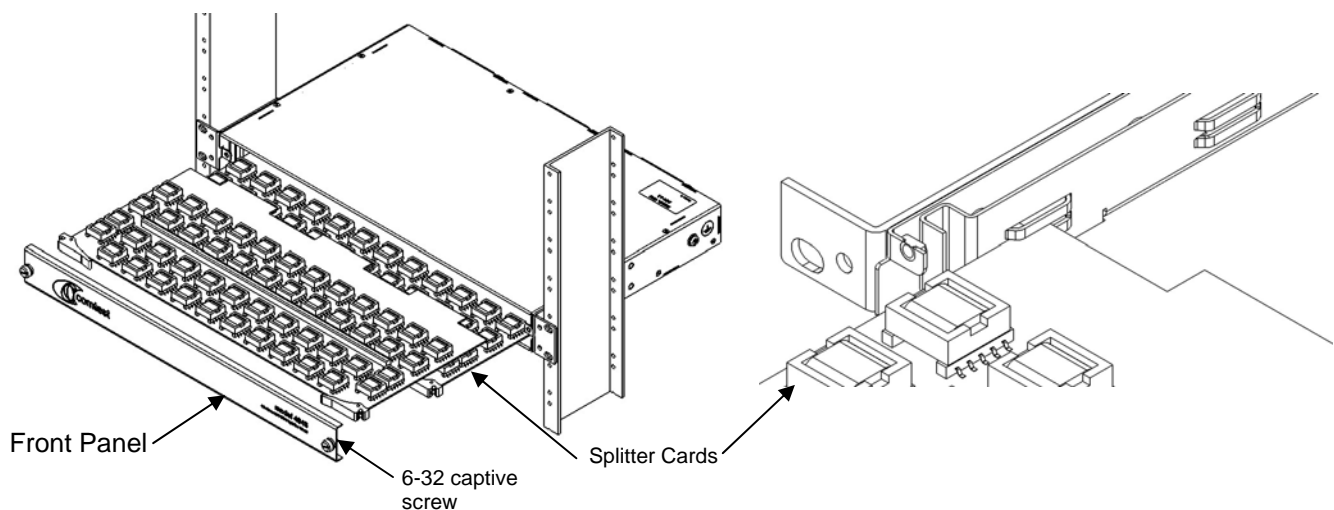
Please note that the Comtest Model 4048 shelf ships with DSL, LOOP and PSTN female connectors. If you are replacing existing splitter shelves with the new Comtest 4048 shelf, you may wish to use a 25-pair male to female direction changer on the PSTN connector - do not install it on the DSL or LOOP connector. A direction changer consists of a plug/receptacle connector with a 2 ¼ inch long screw to attach to the existing RJ-21 connector on the shelf.

Comtest recommends the use of Anixter P/N: T886881.

## Installing Splitter Cards

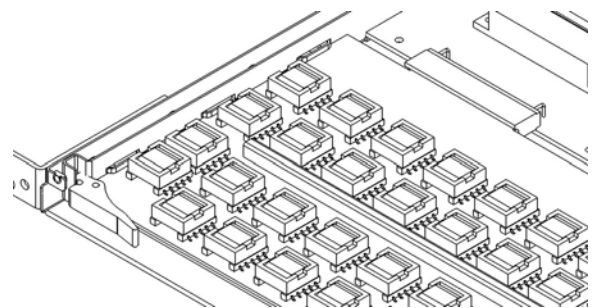
Before proceeding, verify that your cabling has been correctly installed before proceeding and that all RJ-21 plug connectors are properly and securely seated on the shelf's RJ-21 receptacle connectors.

Two cards may be inserted into the 4048 shelf. The order of card insertion is not important that is, you may insert either the top or bottom card first. Note, if a card is removed from the shelf, or not installed, the POTS service is maintained but high speed data is not. The POTS connectors (PSTN and LOOP) are equipped with life-line contacts so that POTS tip and ring pairs are shorted together on the PSTN and LOOP connectors.



The 4048 shelf is equipped with a Front Panel that is held in place by two 6-32 captive screws. Carefully unscrew the Front Panel's captive screws (either by hand or with a ¼" [6.5mm] slotted screwdriver). Remove the Front Panel and set aside.

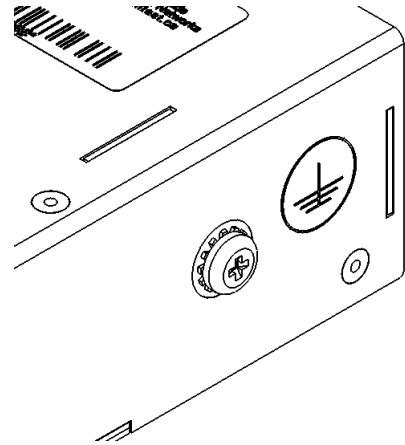
Insert the cards into the shelf with the card inserters/ejectors turned outward roughly 90°. When the card gold fingers reaches the rear connectors, make sure that the inserters/ejectors mate with the inside of the curved front metal of the card guide brackets on each side of the shelf. Placing your thumbs on the inserters/ejectors and pushing inwards will cause the card to seat fully into the card edge connectors located inside the back of the shelf.



After the cards are inserted into the shelf, re-install the shelf's Front Panel. Insert one end of the Front Panel into position first and then slowly press the panel into place towards the other end. Tighten the captive screws to the shelf being careful not to over tighten them.

## Grounding

For safety reasons, the 4048 needs to be grounded to the rack through a ground terminal located on the right side near the rear of the shelf. Use the hardware provided to attach your ground wire to the shelf. Note, 14 AWG wire is recommended for the ground.



## Warranty

Comtest warrants all equipment manufactured by it and bearing its nameplate to be free from defects in workmanship and materials, during normal use and service, for a period of three (3) years from the date of shipment. In the event that a defect in any such equipment arises within the warranty period it shall be the responsibility of the customer to return the equipment by prepaid transportation to a Comtest service centre prior to the expiration of the warranty period for the purpose of allowing Comtest to inspect and repair the equipment. If inspection by Comtest discloses a defect in workmanship or material it shall, at its option, repair or replace the equipment without cost to the customer, and thereafter return it to the customer by the least expensive mode of transportation the cost of which shall be prepaid by Comtest. In no event shall this warranty apply to equipment which has been modified without the written authorization of Comtest, or which has been subject to abuse, neglect, accident or improper application. If inspection by Comtest discloses that the repairs that must be made on the equipment are not covered by this warranty, the regular repair charges shall apply to any repairs made to the equipment.

This warranty constitutes the only warranty applicable to the equipment sold by Comtest and no other warranty or condition, statutory or otherwise, expressed or implied shall be imposed upon Comtest nor shall any representation made by any person including a representation by a representative or agent of Comtest be effective to extend the warranty coverage provided herein. In no event (including, but not limited to the negligence of Comtest, its agents or employees) shall Comtest be liable for special or consequential damages or damages arising from the loss of use of the equipment and on the expiration of the warranty period all liability of Comtest whatsoever in connection with the equipment shall terminate.

### Canada

171-E Macfarlane Rd.  
Ottawa, Ontario  
K2E 6V4, Canada  
Tel: 1-613-369-5499

### Help

techhelp@comtest.ca  
1-877-369-5499 (Canada)  
Fax: 1-613-368-4616

Model 4048 POTS/ISDN Splitter Shelf

Carton Contents

		QTY	Checked
1.	4048 Shelf Assembly [SA-4048-7156]	1	_____
2.	SA-4048 Rack Mounting Bracket Kit [SA-4048-7117]	1	_____
3.	SA-4048 Cable Tie Kit [SA-4048-7119]	1	_____
4.	Installation Guide	1	_____