

# RF Splitter/Combiner and Directional Coupler Products

## Introduction



### Features

- Modular panel mount design
- Flat insertion loss
- High port-to-port isolation
- BNC or F connectors
- 5 MHz-1 GHz (HFC applications)
- 900 MHz-1.5 GHz (satellite applications)

ADC's RF splitter/combiners and directional couplers provide passive splitting, combining and coupling of RF signals. Designed for use in the 5 MHz - 1 GHz and 900 MHz - 1.5 GHz (satellite applications) frequency ranges, ADC's modular splitter/combiners and directional couplers offer superior electrical performance. The modular design provides the flexibility to add services and to grow those services as the need arises.

In the past, splitter/combiners were mounted to any structure that provided a space for attachment, such as the rear of an equipment shelf or peg board mounted on a wall. The lack of coaxial cable management inhibited access to equipment within a cabinet. As broadband networks continue to evolve, easy access to the cables and equipment racks/cabinets must be maintained for routine addition, removal, and equipment maintenance. ADC's splitter/combiners and directional couplers are packaged into panels that mount within a cabinet or rack and manage cables in a neat, orderly fashion, promoting continuous access and enabling network growth.

ADC's initial splitter/combiners and directional couplers were not interchangeable in one common chassis, thereby requiring two different panels for mounting capabilities. With the advent of the enhanced splitter/combiner and directional coupler product line, all components mount within the same chassis, offering further flexibility and reduced cost. All mention made of splitter/combiner and directional coupler products within this catalog are in reference to this new enhanced product.

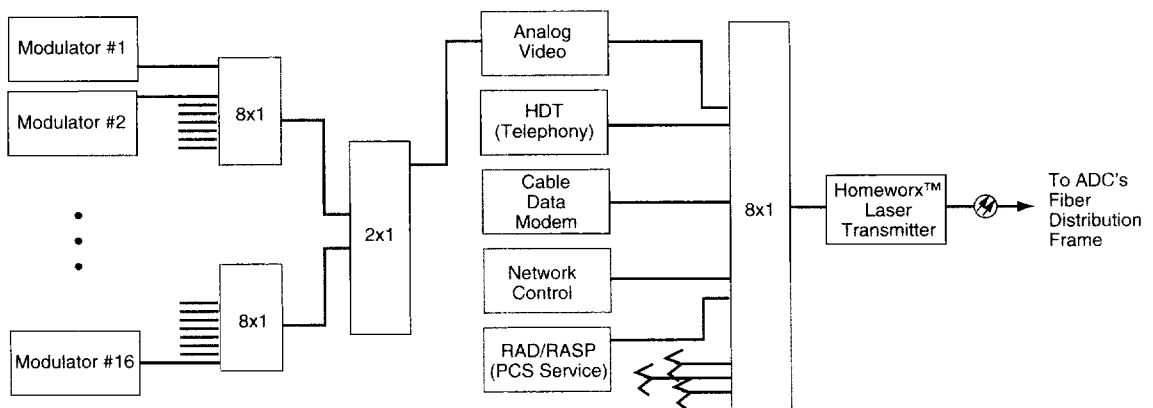
# RF Splitter/Combiner and Directional Coupler Products

## Splitter/ Combiners

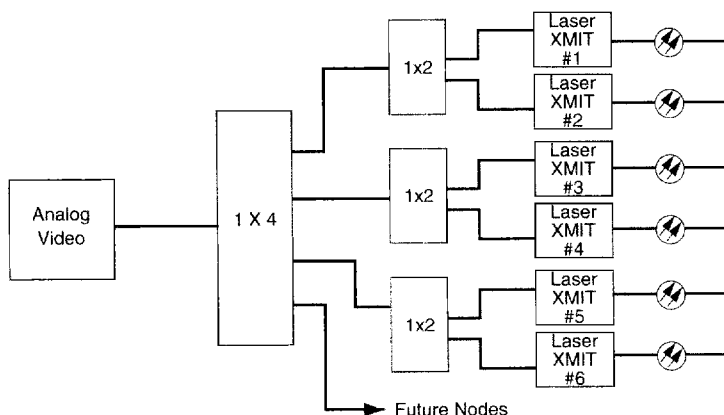
ADC's splitter/combiner modules are available in 2x1, 4x1, 8x1, 16x1 configurations. These modules feature a very flat (+/- 0.5 dB) frequency response from 5 MHz-1 GHz. These modules are available with BNC or F connectors.

ADC's RF splitter/combiner products either combine multiple RF signals into a single RF signal or split a single RF signal into multiple RF signals. The RF signals typically are modulated carrier waves used to deliver broadband services such as:

- analog video channels
- cable data modem services
- telephony services
- network control signals



*ADC's combiners used to combine sixteen analog video channels into a single signal and 8x1 combiner used to combine the analog video channels with narrowcast services such as telephony, cable data modem traffic, network control signals, and PCS type services.*

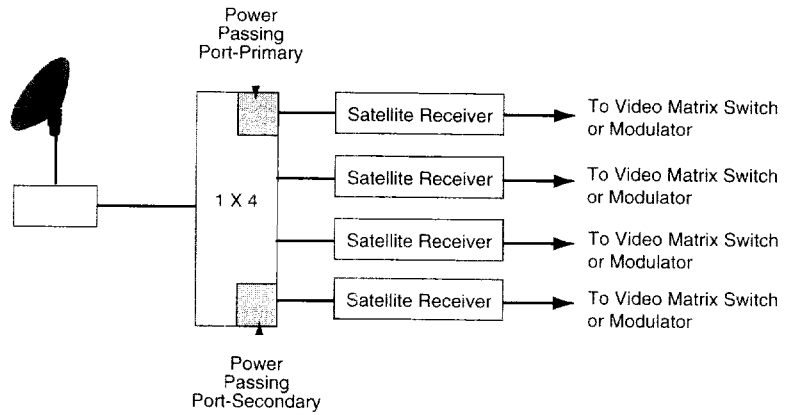


*ADC's splitters used to split an analog video channel lineup to multiple laser transmitters (laser Xmit).*

# RF Splitter/Combiner and Directional Coupler Products

## Satellite Splitter/Combiner

ADC's satellite splitter/combiner modules are available in 2x1, 4x1, 8x1, and 16x1 configurations. The modules are used for splitting/combining narrowband (900 MHz-1.5 GHz) signals in satellite applications. Featuring DC power passing ports to allow powering of pre-amplifiers, the modules mount in either the front or rear mount chassis.

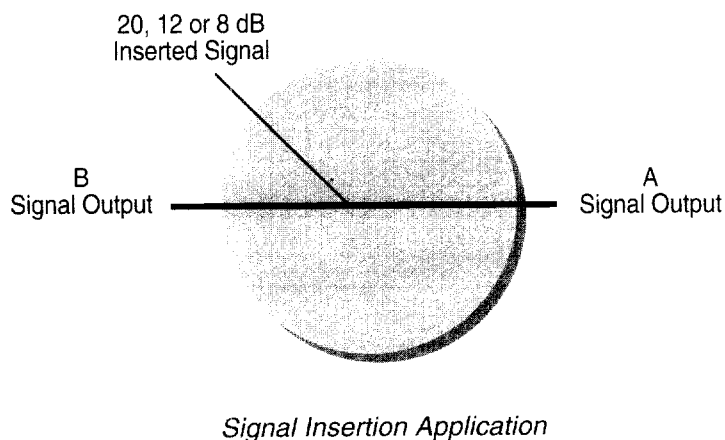
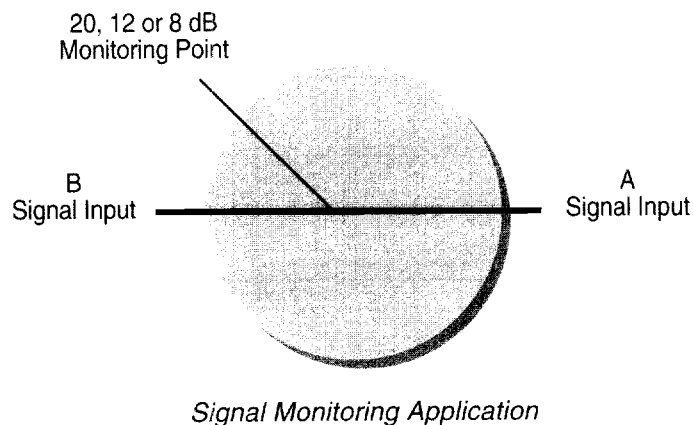


*ADC satellite (900 MHz - 1.5 GHz) splitter used to split a satellite downlink to multiple downconverters. Note the DC power ports on legs 1 and 4.*

# RF Splitter/Combiner and Directional Coupler Products

## Directional Couplers

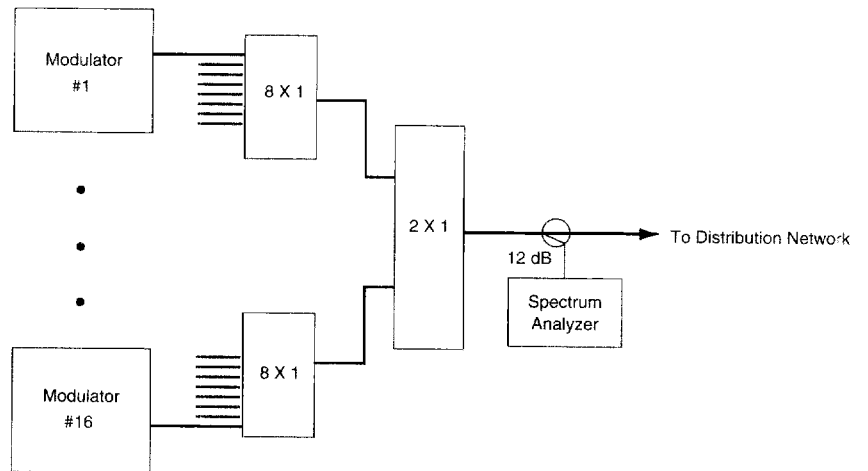
ADC's directional coupler modules are available in 20 dB, 12 dB, or 8 dB tap configurations. The modules feature very flat ( $\pm 0.5$  dB) frequency response from 5 MHz through 1 GHz. Available with BNC or F connectors, the modules mount in either the front or rear mount chassis.



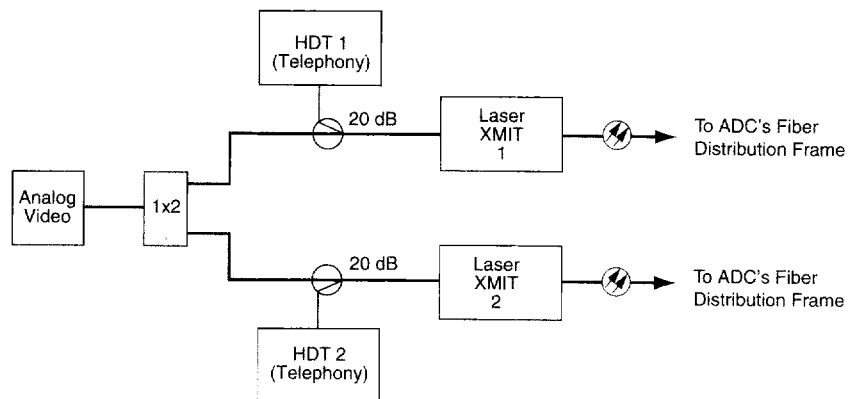
# RF Splitter/Combiner and Directional Coupler Products

## Directional Couplers

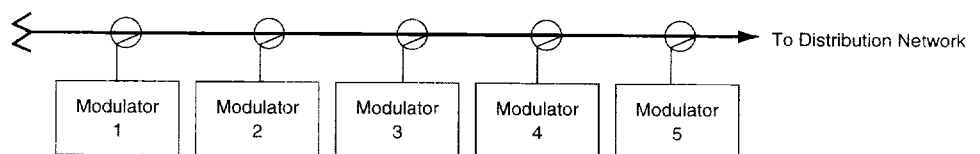
ADC's RF directional couplers monitor and combine RF signals. A directional coupler's very high output port to tap port isolation makes it an excellent tool in the design of RF broadband networks.



*An ADC 12 dB directional coupler used as a monitor port for analog video channels.*



*An ADC 20 dB directional coupler used as an insertion point for telephony services. The high isolation required in this shared frequency application is provided by the directional coupler's isolation characteristics.*



*ADC 12 dB directional couplers used as combiners for five analog video channels.*

# RF Splitter/Combiner and Directional Coupler Products

## Chassis

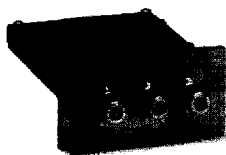
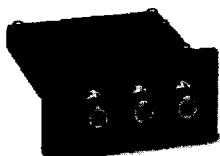
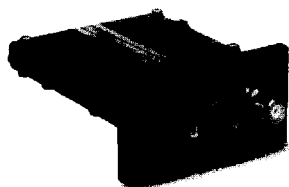
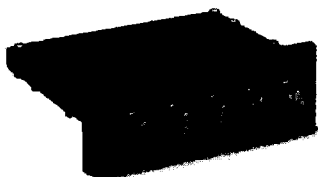
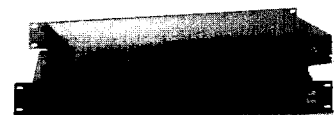
The chassis is available in either front mount or rear mount configurations. The 2x1, 4x1, 8x1 splitter/combiner modules and directional couplers mount in this chassis. Blank faceplates cover unused slots. These unused slots provide space for additional modules as the broadband network grows. Standard product is 19" (48.26cm) wide; extender brackets are included for 23" (58.42 cm) rack mounting.

Module Types		
2x1 Splitter/Combiners or Directional Couplers	4x1 Splitter/Combiners	8x1 Splitter/Combiners
Number of Modules per Chassis		
6	0	0
5	0	0
4	1	0
3	2	0
3	0	1
2	0	1
1	3	0
1	1	1

*The chassis supports a mixed compliment of splitter/combiner and directional coupler modules. The above table shows the chassis' capacity for various module combinations.*

# RF Splitter/Combiner and Directional Coupler Products

## Ordering Information



Ordering Information	
Description	Catalog Number
<p><b>16x1 Splitter/Combiner Panels</b>  <i>1.75" x 19" x 8" (4.45 x 48.26 x 20.32 cm); EIA mounting</i>                      F connectors (5 MHz -1 GHz)                      BNC (5 MHz -1 GHz)                      Satellite (900 MHz-1.5 GHz) - F connectors                      Satellite (900 MHz-1.5 GHz) - BNC</p> <p><i>1.75" x 19" x 8" (4.45 x 48.26 x 8.9 cm); EIA mounting</i>                      Rear Mount Panel – F connectors                      Rear Mount Panel – BNC</p>	<p>SC1016                      SC1016-B                      SC7016                      SC7016-B</p> <p>SC1016-RMC                      SC1016-B-RMC</p>
<p><b>8x1 Splitter/Combiner Modules</b>  <i>1.25" x 7.84" x 3.03" (3.18 x 19.91 x 7.7 cm)</i>                      F connectors (5 MHz-1 GHz)                      BNC (5 MHz -1 GHz)                      Satellite (900 MHz -1.5 GHz) - F connectors                      Satellite (900 MHz -1.5 GHz) - BNC</p>	<p>SC2-SC1008M                      SC2-SC1008M-B                      SC2-SC7008M                      SC2-SC7008M-B</p>
<p><b>4x1 Splitter/Combiner Modules</b>  <i>1.25" x 3.91" x 3.03" (3.18 x 9.93 x 7.7 cm)</i>                      F connectors (5 MHz -1 GHz)                      BNC (5 MHz -1 GHz)                      Satellite (900 MHz -1.5 GHz) - F connectors                      Satellite (900 MHz -1.5 GHz) - BNC</p>	<p>SC2-SC1004M                      SC2-SC1004M-B                      SC2-SC7004M                      SC2-SC7004M-B</p>
<p><b>2x1 Splitter/Combiner Modules</b>  <i>1.25" x 2.6" x 3.03" (3.18 x 6.6 x 7.7 cm)</i>                      F connectors (5 MHz -1 GHz)                      BNC (5 MHz -1 GHz)                      Satellite (900 MHz -1.5 GHz) - F connectors                      Satellite (900 MHz -1.5 GHz) - BNC</p>	<p>SC2-SC1002M                      SC2-SC1002M-B                      SC2-SC7002M                      SC2-SC7002M-B</p>
<p><b>Directional Couplers</b>  <i>1.25" x 2.6" x 3.03" (3.18 x 6.6 x 7.7 cm)</i>                      8 dB directional coupler - (5 MHz -1 GHz) F connectors                      8 dB directional coupler - (5 MHz -1 GHz) BNC                      12 dB directional coupler - (5 MHz -1 GHz) F connectors                      12 dB directional coupler - (5 MHz -1 GHz) BNC                      20 dB directional coupler - (5 MHz -1 GHz) F connectors                      20 dB directional coupler - (5 MHz -1 GHz) BNC</p>	<p>SC2-DC8                      SC2-DC8-B                      SC2-DC12                      SC2-DC12-B                      SC2-DC20                      SC2-DC20-B</p>
<p><b>Chassis (empty)</b>  <i>Accommodates 8x1, 4x1, 2x1 splitter/combiner and directional coupler modules listed above</i></p> <p><i>1.75" x 19" x 8" (4.45 x 48.26 x 20.32 cm)</i>  <i>(extender brackets included for 23" rack mount)</i></p> <p><i>1.75" x 19" x 3.5" (4.45 x 48.26 x 8.9 cm)</i>  <i>rear mount; (extender brackets included for 23" rack mount)</i></p>	<p>SC2-C</p> <p>SC2-RMC</p>