DOCSIS 3.1 Compliant

Designed with expanded bandwidth for modern applications

Features & Benefits

- *Comparative to other manufacturers the HPS Series modules are engineered for best in class performance in port-to-port isolation, return loss, and frequency response within the working frequency range of 5-1218 MHz*
- *HPS "X" and "XS" Series Modules offer a minimum - 30dB port-to-port isolation and minimum return loss specification of 20dB.*
- *All HPS Series modules offer excellent flatness (±0.5 dB) of insertion loss in the frequency range of 5-1218 MHz which is ideal for channel bonding transmission and receiving.*
- *High flatness of Insertion Loss characteristics in channel spacing from 24 MHz to 192 MHz*
- *Our very competitive pricing structure allows customers to realize significant cost savings.*
- *Custom designs welcomed.*

THREE YEAR PARTS AND LABOR WARRANTY INCLUDED

*CommDev now offers an all new Advanced Series of Head End Passive Modules for the HPS platform designated as Series **"X"** and **"XS"**. These all new series include a variety of module's configurations to fit the standard HPS Series 1RU, 2RU or 5RU Chassis.*

*The new **HPS "X"** and **"XS" Series** of passive modules provide RF signal management solutions for modern CATV Head-end or Hub site applications to meet the requirements of DOCSIS 3.1 standards. Working frequency range extends up to 1218MHz compare "B" and "S" Series.*

***HPS "X"** and **"XS" Series** passive modules are designed for an expanded Broadband frequency range; made available in a variety of configurations. Modules are designed as universal or "bi-directional splitters/combiners", or as specialized unidirectional combiners or splitters featuring –20 dB test port. All configurations are optimized for best performance in a designated frequency range. Modules can also be specified as "flat" with a built in equalizer and "regular" without an equalizer for systems using external equalization.*

The internal equalization feature will insure a flat response (± 0.5 dB) within channel spacing from 24 MHz to 192 MHz or beyond.

To maximize utilization of rack space the 2- and 4-way models are packaged by three and two correspondingly while occupying a single slot in the modular chassis. Directional couplers with customized attenuation at Coupled Port are also available and packaged by three in a single housing. Modular passives are designed with internal walls which prevent any cross talk, while the cover of the unit is completely solder sealed to minimize RFI.

All modules feature anti-corrosive plating, nickel plated machine brass connectors (comply with SCTE Standards).

Please contact us for additional technical support or product information.

CommDev LLC * 4500 N Hiatus Road, Suite 202, Sunrise, Florida 33351
E-mail: Info@commdev.net WEB: www.commdev.net Phone: +1(954) 746-4747

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HPS Series / "X" Band Series Modular Passives

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Insertion Loss

(Maximum Values Shown, Typical Values are 0.2-to-0.5dB Better)

Module Type	Model #	Frequency 5MHz◄——►1218MHz					
		5-10MHz	10-48MHz	48-200MHz	200-750MHz	750-1000MHz	1000-1218 MHz
Universal	T2XU-E	4.2dB	4.2dB	4.2dB	4.2dB	4.3dB	4.4dB
Universal	D4XU-E	8.2dB	8.2dB	8.1dB	8.2dB	8.3dB	8.4dB
Universal	S8XU-E	11.9dB	11.8dB	11.7dB	11.7dB	11.8dB	12.2dB
Universal	T2XU	3.2dB	3.2dB	3.3dB	3.7dB	4.1dB	4.5dB
Universal	D4XU	6.7dB	6.7dB	6.6dB	7.2dB	7.8dB	8.3dB
Universal	S8XU	10.7dB	10.5dB	10.9dB	11.5dB	11.8dB	12.2dB
Combiner	T2XC-T	3.9dB	3.7dB	3.9dB	4.3dB	4.6dB	5.2dB
Splitter	T2XS-T	3.9dB	3.7dB	3.9dB	4.3dB	4.6dB	5.2dB
Combiner	D4XC-T	7.2dB	7.0dB	7.4dB	7.9dB	8.2dB	9.0dB
Splitter	D4XS-T	7.2dB	7.0dB	7.4dB	7.9dB	8.2dB	9.0dB
Combiner	S8XC-T	10.8dB	10.5dB	10.9dB	11.5dB	12.0dB	13.5dB
Splitter	S8XS-T	10.8dB	10.5dB	10.9dB	11.5dB	12.0dB	13.5dB
DC 20dB		0.8dB	0.6dB	0.8dB	0.9dB	1.0dB	1.2dB
DC 9dB		1.4dB	1.4dB	1.3dB	1.6dB	2.1dB	2.4dB

Return Loss "Common" Port

(Minimum Values Shown, Typical Values are 1-to-3dB better)

Model	Frequency 5MHz◄——►1218MHz					
	5-10MHz	10-48MHz	48-200MHz	200-750MHz	750-1000MHz	1000-1218MHz
All Modules	20dB	22dB	22dB	22dB	22dB	20dB

Return Loss all "In" or "Out" Ports

(Minimum Value Shown)

Model	Frequency 5MHz◄——►1218MHz					
	5-10MHz	10-48MHz	48-200MHz	200-750MHz	750-1000MHz	1000-1218MHz
All Modules	20dB	23dB	23dB	23dB	22dB	22dB

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*CommDev LLC * 4500 N Hiatus Road, Suite 202, Sunrise, Florida 33351*

E-mail: Info@commdev.net WEB: www.commdev.net Phone: +1(954) 746-4747

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Isolation Port to Port

(Minimum Values Shown, Typical Values are 3-to-5dB Better)

Module Type	Model #	Frequency 5MHz ◄——► 1218MHz					
		5-10MHz	10-48MHz	48-200MHz	200-750MHz	750-1000MHz	1000-1218 MHz
Universal	T2XU-E	30dB	30dB	30dB	30dB	30dB	30dB
Universal	D4XU-E	30dB	30dB	30dB	30dB	30dB	30dB
Universal	S8XU-E	30dB	30dB	30dB	30dB	30dB	30dB
Universal	T2XU	30dB	30dB	30dB	30dB	30dB	30dB
Universal	D4XU	30dB	30dB	30dB	30dB	30dB	30dB
Universal	S8XU	30dB	30dB	30dB	30dB	30dB	30dB
Combiner	T2XC-T	30dB	30dB	30dB	30dB	30dB	30dB
Splitter	T2XS-T	30dB	30dB	30dB	30dB	30dB	30dB
Combiner	D4XC-T	30dB	30dB	30dB	30dB	30dB	30dB
Splitter	D4XS-T	30dB	30dB	30dB	30dB	30dB	30dB
Combiner	S8XC-T	30dB	30dB	30dB	30dB	30dB	30dB
Splitter	S8XS-T	30dB	30dB	30dB	30dB	30dB	30dB
DC 20dB		40dB	45dB	45dB	45dB	40dB	35dB
DC 9dB		30dB	30dB	30dB	30dB	30dB	30dB

Isolation between modules in a single housing for 2-way and 4-way models is better than 85 dB.

HPS "X" Series Passive Module Model # Reference

First	Second	Third	Fourth	Fifth	Sixth
"T" Triple	"2" 2-way	"X" Series Expanded Bandwidth Frequency Range 5-1218MHz.	"S" Splitter	"T" Test Port -20 dB±0.5dB	"E" Equalizer
"D" Dual	"4" 4-way		"C" Combiner		
"S" Single	"8" 8-way		"U" Universal		
"DC" Direc-tional Coupler	"X" Directional Coupler Value				

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*CommDev LLC * 4500 N Hiatus Road, Suite 202, Sunrise, Florida 33351*
E-mail: Info@commdev.net WEB: www.commdev.net Phone: +1(954) 746-4747

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Insertion Loss

(Maximum Values Shown, Typical Values are 0.2-to-0.5dB Better)

Module Type	Model #	Frequency 5MHz ◄——► 1218MHz					
		5-10MHz	10-48MHz	48-200MHz	200-750MHz	750-1000 MHz	1000-1218 MHz
Universal	D2XU-ES	4.7dB	4.5dB	4.5dB	4.5dB	4.5dB	4.8dB
Universal	D4XU-ES	8.7dB	8.6dB	8.5dB	8.5dB	8.5dB	8.7dB
Universal	S8XU-ES	12.3dB	12.3dB	12.0dB	12.2dB	12.3dB	12.5dB
Combiner	S8XC-TES	13.8dB	13.8dB	13.7dB	13.7dB	13.8dB	13.9dB
Splitter	S8XS-TES	13.8dB	13.8dB	13.7dB	13.7dB	13.8dB	13.9dB
Combiner	D4XC-TES	9.8dB	9.8dB	9.6dB	9.8dB	9.8dB	9.8dB
Splitter	D4XS-TES	9.8dB	9.8dB	9.6dB	9.8dB	9.8dB	9.8dB
Combiner	D2XC-TES	5.2dB	5.2dB	5.1dB	5.1dB	5.1dB	5.3dB
Splitter	D2XS-TES	5.2dB	5.2dB	5.1dB	5.1dB	5.1dB	5.3dB

In Table the maximum values shown, typical values are 0.2—0.5 dB better
CommDev offers three different type of Step Attenuators according Customer's Request:

1. *0 - 5dB with 1dB Step*
2. *0 - 7.5dB with 1.5dB Step*
3. *0 - 10dB with 2.0dB Step*

Return Loss "Common" Port

(Minimum Values Shown, Typical Values are 1-to-3dB better)

Model	Frequency 5MHz ◄——► 1218MHz					
	5-10MHz	10-48MHz	48-200MHz	200-750MHz	750-1000MHz	1000-1218MHz
All Modules	18dB	20dB	20dB	20dB	20dB	18dB

CommDev LLC * 4500 N Hiatus Road, Suite 202, Sunrise, Florida 33351
E-mail: Info@commdev.net WEB: www.commdev.net Phone: +1(954) 746-4747

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Return Loss all "In" or "Out" Ports

(Minimum Value Shown)

Model	Frequency 5MHz ◄——► 1218MHz					
	5-10MHz	10-48MHz	48-200MHz	200-750MHz	750-1000MHz	1000-1218MHz
All Modules	18dB	20dB	20dB	20dB	20dB	18dB

Isolation Port to Port

(Minimum Values Shown, Typical Values are 3-to-5dB Better)

Module Type	Model #	Frequency 5MHz ◄——► 1218MHz					
		5-10MHz	10-48MHz	48-200MHz	200-750MHz	750-1000 MHz	1000-1218 MHz
Universal	D2XU-ES	30dB	30dB	30dB	30dB	30dB	30dB
Universal	D4XU-ES	30dB	30dB	30dB	30dB	30dB	30dB
Universal	S8XU-ES	30dB	30dB	30dB	30dB	30dB	30dB
Combiner	S8XC-TES	30dB	30dB	30dB	30dB	30dB	30dB
Splitter	S8XS-TES	30dB	30dB	30dB	30dB	30dB	30dB
Combiner	D4XC-TES	30dB	30dB	30dB	30dB	30dB	30dB
Splitter	D4XS-TES	30dB	30dB	30dB	30dB	30dB	30dB
Combiner	D2XC-TES	30dB	30dB	30dB	30dB	30dB	30dB
Splitter	D2XS-TES	30dB	30dB	30dB	30dB	30dB	30dB

*) in ***"XS" Series Passive Module Model with Step Attenuators Part Number Reference***

First	Second	Third	Fourth	Fifth	Sixth	Seventh
"T" Triple	"2" 2-way "4" 4-way "8" 8-way	"X" Broadband Modular Passives with Frequency band 5-1218MHz	"S" Splitter	"T" Test Port -20 dB±0.5dB	"E" Equaliz-er	"S" Step Attenuators
"D" Dual						
"S" Single			"C" Combiner			
"DC"	"X" Directional Coupler Value		"U" Universal			
"S1x4"	Narrocast Combiner					

DCx - the "x" - value of Couples Port Loss

*CommDev LLC * 4500 N Hiatus Road, Suite 202, Sunrise, Florida 33351*
E-mail: Info@commdev.net WEB: www.commdev.net Phone: +1(954) 746-4747

DOCSIS 3.1 Compliant

Custom Narrowcast Module
Model S1x4XC-TS

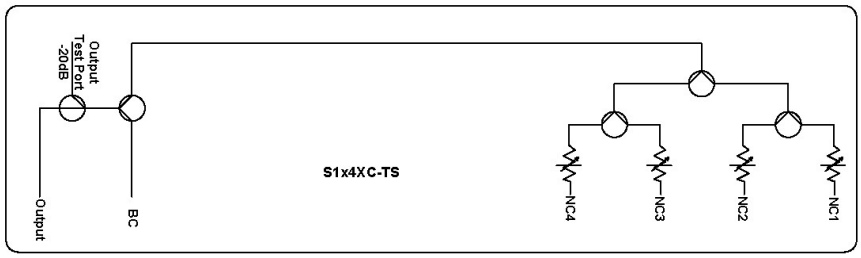
Features & Benefits

- *XS Series Modules are designed to be installation compatible within CommDev, Maxnet, or ADC Signal-On Series Chassis*
- *The module provides for the signal insertion of 1-Broadcast input (BC), and 4-Narrowcast Inputs (NC).*
- *Built-in Step Attenuator feature set allows for 5 1dB incremental switch positions*
- *Engineered for excellent flatness and a minimal insertion loss within the frequency range of 5-1218 MHz*
- *Designed to achieve a minimum of -40dB isolation between each of the two input sections, and a minimum return loss specification of 20dB*
- *Custom designs welcomed.*

THREE YEAR PARTS AND LABOR WARRANTY INCLUDED

CommDev has designed and engineered a new passive narrowcast modular passive which is installation compatible with CommDev HPS, Maxnet, or ADC SignalOn Series Chassis. The module occupies a single slot of a modular passive chassis and is specially designed to achieve a minimum level of -40dB Isolation within the operational frequency range of 5-1218MHz between BC and NC Inputs.

Functional Schematic—Model S1x4XC-TS



The configuration of the new module design begins with a standard Dual 4-way combiner, whereas the Die Cast housing of the module is internally separated into two separate cavities.

In this custom arrangement, a 4-way combiner occupies the first cavity (4-Narrowcast Inputs), and a 2-way combiner (Broadcast Input) within the other cavity. There is an internal connection made between the common output of the 4-way combiner and one of the two inputs of the 2-way combiner. The remaining input port of the 2-way combiner is external, and allows for insertion from the CCAP plant. Each input of the 4-way combiner is arranged with a step attenuator feature set offering 5 incremental 1dB switch positions.

All Input and Output ports are placed on the rear side of the module, while the Test Port and Attenuators have access from the front side of module to simplify Output signal balancing.

CommDev modular passives are designed with internal walls which prevent any cross talk, while the cover of the unit is completely solder sealed to minimize RFI. All modules feature with clear labels, port identification, anti-corrosive plating, with use of SCTE standards compliant nickel plated, machine threaded brass connectors.

Please contact us for additional technical support or product Information.

CommDev LLC * 4500 N Hiatus Road, Suite 202, Sunrise, Florida 33351
E-mail: Info@commdev.net WEB: www.commdev.net Phone: +1(954) 746-4747

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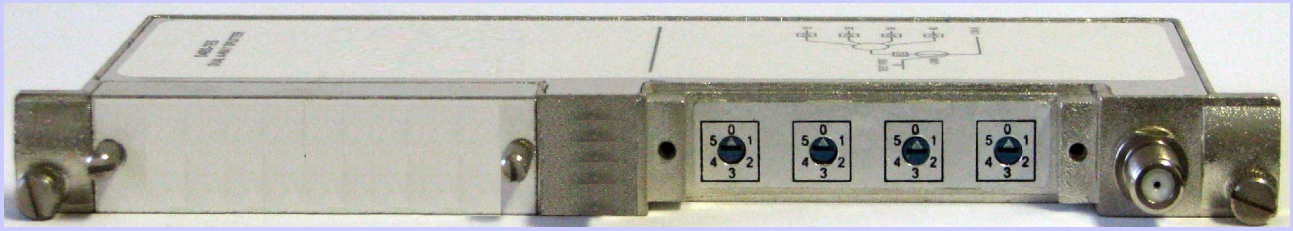
HPS Series "XS"/ Narrowcast Combiner

DOCSIS 3.1 Compliant



S1x4XC-TS Insertion Loss

(Maximum Values Shown, Typical Values are 0.2-to-0.5dB Better)

Ports	Frequency 5MHz - 1218MHz					
	5-10MHz	10-48MHz	48-550MHz	550-870MHz	870-1002MHz	1002-1218MHz
BC to Output	3.7dB	3.6dB	3.9dB	4.2dB	4.3dB	4.8dB
NCx to Output *	10.6dB	10.6dB	11.2dB	12.0dB	12.5dB	13.8dB
Test Port	20±0.5dB	20±0.5dB	20±0.5dB	20±0.5dB	20±0.5dB	20±0.5dB

*) x = 1, 2, 3, 4

S1x4XC-TS Return Loss

(Minimum Values Shown, Typical Values are 1-to-3dB better)

Port	Frequency 5MHz - 1218MHz					
	5-10MHz	10-48MHz	48-550MHz	550-870MHz	870-1002MHz	1002-1218MHz
BC	20dB	20dB	20dB	20dB	20dB	20dB
Output	20dB	20dB	20dB	20dB	20dB	20dB
NCx *	18dB	20dB	20dB	20dB	20dB	20dB
Test	20dB	20dB	20dB	20dB	20dB	20dB

*) x = 1, 2, 3, 4

S1x4XC-TS Port to Port Isolation

(Minimum Values Shown, Typical Values are 3-to-5dB Better)

Between Ports	Frequency 5MHz -1218MHz					
	5-10MHz	10-48MHz	48-550MHz	550-870MHz	870-1002MHz	1002-1218MHz
BC - NCx *	31dB	40dB	40dB	40dB	40dB	40dB
NCx - NCy *	28dB	30dB	30dB	30dB	30dB	30dB

*) x & y = 1, 2, 3, 4

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*CommDev LLC * 4500 N Hiatus Road, Suite 202, Sunrise, Florida 33351*
E-mail: Info@commdev.net WEB: www.commdev.net Phone: +1(954) 746-4747