

# LINE PASSIVES

## Splitters, Directional Couplers, Line Power Inserters

### 1.2 GHz

### PCT-HSPA-x15B, PCT-HDCA-15xxB, PCT-LPIA-20A



Innovation for the Last Mile®



## OVERVIEW

A line power inserter combines RF signal and 60 or 90 volts AC and is placed after a line power supply. It inserts power into the trunk or feeder lines to serve the active modules while providing isolation between the AC and RF networks. A directional coupler is an unequal power divider; a splitter is an equal power divider. Both devices split the network's trunk and feeder lines. The 1.2 GHz frequency rating of the line power inserters, directional couplers and splitters, coupled with outstanding insertion loss and hum modulation characteristics, ensure their reliable performance in the most demanding applications and DOCSIS 3.1 compatibility.

## Features and Benefits

- ✓ True Performance
  - 1.2 GHz bandwidth with minimal insertion loss
  - 100 dB RFI shielding
  - RFI gasket ensures against ingress / egress interference
- ✓ Protection & Prevention
  - Stainless steel hardware for corrosion resistance
  - Aluminum alloy housing with weather resistant powder coating
  - Weather seal gasket ensures water tight protection, tested at 15 psi
- ✓ Conforms to all applicable SCTE standards

## General Specifications

Nominal Impedance	75 Ohms
Power Passing	Line Power Inserter: 20 A, 90 VAC (In-Out) Directional Couplers: 15 A, 90 VAC (In-Out) Splitters: 15 A, 90 VAC (In-Out)
Waterproof Condition	15 psi
Surge Withstand	All ports conforms to ANSI / SCTE 81 2012, IEEE C62.41-1991 Cat. B3 (6000 V, 3000 A, 1.2 / 50 $\mu$ s to 8/20 $\mu$ s Combination Wave)
Hum Modulation	-60 dB @ 10 A / 65 VAC
Connector Thread (all ports)	5 / 8-24 UNEF-2B female with red plastic cap
RFI Shielding	-100 dB
Temperature	+20 °C, +60 °C and -40 °C; allow 10% change in performance at +60 °C and -40 °C
Regulatory Compliance	CE, RoHS



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## Specifications

### PCT-HSPA-x15B

SPLITTER	215B	315B	3U15B
Parameters	Typical / Guaranteed Values		
<b>Insertion Loss</b> Max (dB)			
5 to 10 MHz	3.8 / 4.1	6.0 / 7.0	3.8, 7.0 / 4.1, 7.4
10 to 65 MHz	3.8 / 4.1	6.0 / 7.0	3.8, 7.0 / 4.1, 7.4
65 to 300 MHz	4.0 / 4.3	6.0 / 6.5	4.1, 7.3 / 4.3, 7.5
300 to 550 MHz	4.0 / 4.5	6.0 / 6.5	4.1, 7.3 / 4.5, 7.6
550 to 750 MHz	4.2 / 4.6	6.5 / 7.0	4.3, 7.7 / 4.6, 8.0
750 to 862 MHz	4.5 / 4.7	7.0 / 7.5	4.5, 8.0 / 4.7, 8.5
862 to 1000 MHz	4.6 / 5.0	7.2 / 8.0	4.7, 8.4 / 5.0, 9.0
1000 to 1200 MHz	5.4 / 5.8	8.5 / 9.0	5.4, 9.8 / 5.8, 10.5
<b>Isolation Out-Out/Tap</b> Min (dB)			
5 to 10 MHz	22 / 20	22 / 20	22 / 20
10 to 65 MHz	22 / 20	22 / 20	22 / 20
65 to 860 MHz	26 / 24	26 / 24	26 / 24
860 to 1200 MHz	22 / 20	22 / 22	22 / 22
<b>Return Loss In-Out</b> Min (dB)			
10 to 47 MHz	19 / 18	19 / 16	19 / 17
47 to 950 MHz	18 / 16	18 / 16	18 / 16
950 to 1200 MHz	18 / 14	18 / 14	18 / 14

### PCT-HDCA-15xxB

COUPLER	158B	1512B
Parameters	Typical / Guaranteed Values	
<b>Insertion Loss</b> Max (-dB)		
5 to 10 MHz	1.6 / 1.8	1.0 / 1.3
10 to 65 MHz	1.6 / 1.8	1.0 / 1.3
65 to 300 MHz	1.8 / 2.3	1.2 / 1.7
300 to 550 MHz	2.0 / 2.5	1.3 / 1.9
550 to 750 MHz	2.2 / 2.7	1.4 / 2.1
750 to 862 MHz	2.4 / 2.9	1.8 / 2.3
862 to 1000 MHz	2.7 / 3.1	2.0 / 2.5
1000 to 1200 MHz	3.7 / 4.0	2.8 / 3.2
<b>Tap Loss In-Tap</b> Max (-dB)		
5 to 10 MHz	9.5 / 10.0	13 / 13
10 to 65 MHz	9.5 / 10.0	13 / 13
65 to 300 MHz	9.5 / 10.0	13 / 13
300 to 550 MHz	9.5 / 10.0	13 / 13
550 to 750 MHz	9.5 / 10.0	13 / 13
750 to 862 MHz	9.5 / 10.0	13 / 13
862 to 1000 MHz	9.5 / 10.0	13 / 14
1000 to 1200 MHz	9.5 / 10.0	13 / 14
<b>Isolation Out-Tap</b> Min (-dB)		
5 to 10 MHz	22 / 20	22 / 20
10 to 65 MHz	24 / 22	24 / 22
65 to 860 MHz	26 / 23	26 / 23
860 to 1200 MHz	22 / 20	22 / 20
<b>Return Loss In-Out, Tap</b> Min (-dB)		
10 to 47 MHz	19 / 18	19 / 17
47 to 950 MHz	18 / 16	18 / 16
950 to 1200 MHz	18 / 14	18 / 14

### PCT-LPIA-20A

POWER INSERTER	Typical / Guaranteed Values
Parameters	Typical / Guaranteed Values
<b>Insertion Loss</b> Max (dB)	
5 to 10 MHz	0.5 / 0.8
10 to 65 MHz	0.5 / 0.8
65 to 300 MHz	0.7 / 1.1
300 to 550 MHz	0.7 / 1.2
550 to 750 MHz	0.8 / 1.3
750 to 862 MHz	0.9 / 1.3
862 to 1000 MHz	1.0 / 1.3
1000 to 1200 MHz	1.2 / 1.4
<b>Isolation RF-AC</b> Min (dB)	
5 to 10 MHz	75 / 70
10 to 65 MHz	75 / 70
65 to 860 MHz	63 / 60
860 to 1200 MHz	55 / 50
<b>Return Loss In-Out</b> Min (dB)	
10 to 47 MHz	19 / 18
47 to 950 MHz	18 / 16
950 to 1200 MHz	18 / 14

## Ordering Information

### Splitter, PCT-HSPA-x15B

- PCT-HSPA-215B Splitter, Outdoor, Traditional Series, 1.2 GHz, 2-Way
- PCT-HSPA-315B Splitter, Outdoor, Traditional Series, 1.2 GHz, 3-Way, Balanced
- PCT-HSPA-3U15B Splitter, Outdoor, Traditional Series, 1.2 GHz, 3-Way, Unbalanced

### Directional Coupler, PCT-HDCA-15xxB

- PCT-HDCA-158B Directional Coupler, Outdoor, Traditional Series, 1.2 GHz, 8 dB
- PCT-HDCA-1512B Directional Coupler, Outdoor, Traditional Series, 1.2 GHz, 12 dB
- PCT-HDCA-1516B Directional Coupler, Outdoor, Traditional Series, 1.2 GHz, 16 dB

### Line Power Inserter, PCT-LPIA-20A

- PCT-LPIA-20A Power Inserter, Outdoor, Traditional Series, 1.2 GHz, 20 A