

# 12000-L-PBT

122xx-L-PBT – 2 Port Taps

124xx-L-PBT – 4 Port Taps

128xx-L-PBT – 8 Port Taps

1.2 GHz Full-Feature Equalizable Taps

## FEATURES

- Support DOCSIS® 3.1 expanded bandwidth up to 1218 MHz
- Improve network performance with signal conditioning plug-ins
- Maintain existing installed base with housing compatibility back to 9000-L series tap housings
- High level of network resilience with 6kV surge resistance on feeder and 4kV surge resistance on tap ports
- Integrated bypass capability maintains RF and AC connections with faceplate removed



## PRODUCT OVERVIEW

The ARRIS 12000-L-PBT 1.2 GHz series equalizable taps offer improved return path performance for advanced two-way HFC systems, while maintaining backwards compatibility with previous legacy Philips/C-COR installed base of taps using the deep body 9000-L series tap housing. The 12000-L-PBT tap series also allows for a direct drop in solution without the need to reconfigure the plant due to minimal loss changes to the current 1 GHz performance. As an added new feature in the new 1.2 GHz series of 12000-L-PBT taps now allow for signal conditioning with optional plug-in, field configurable modules that include cable equalizers, return path attenuators, and cable simulators. These plug-ins allow for drop signal conditioning without affecting the main feederline path.

## 12000-L-PBT Series Taps 5-1218 MHz

12000-L-PBT INSERTION LOSS SPECIFICATIONS<sup>1</sup> (5-1218 MHz)

Insertion Loss (dB)	Nom. Tap Value	5 MHz Typ/Max	10 MHz Typ/Max	50 MHz Typ/Max	100 MHz Typ/Max	450 MHz Typ/Max	550 MHz Typ/Max	750 MHz Typ/Max	870 MHz Typ/Max	1000 MHz Typ/Max	1218 MHz Typ/Max
<b>MODEL NO. 122xx-L-PBT</b>											
12204-L-PBT	4.0	—	—	—	—	—	—	—	—	—	—
12208-L-PBT	8.0	2.8/3.9	2.5/3.6	2.5/3.5	2.5/3.6	3.2/4.2	3.3/4.2	3.6/4.2	3.8/4.7	4.0/5.0	4.9/5.4
12212-L-PBT	12.0	1.6/2.0	1.2/1.8	1.1/1.8	1.1/2.0	1.5/2.4	1.6/2.4	2.0/2.6	2.3/2.8	2.6/3.0	3.3/3.7
12214-L-PBT	14.0	1.1/1.3	0.9/1.2	0.8/1.2	0.9/1.3	1.1/1.6	1.1/1.8	1.3/1.8	1.5/2.0	1.8/2.3	2.2/2.8
12217-L-PBT	17.0	0.8/1.2	0.7/1.1	0.6/1.1	0.7/1.2	0.9/1.5	1.0/1.5	1.1/1.5	1.3/1.6	1.5/1.8	2.0/2.3
12220-L-PBT	20.0	0.6/1.0	0.5/0.9	0.4/0.9	0.5/1.0	0.8/1.3	0.9/1.4	1.0/1.5	1.2/1.6	1.4/1.6	1.9/2.2
12223-L-PBT	23.0	0.4/0.7	0.3/0.6	0.3/0.7	0.3/0.8	0.6/1.1	0.7/1.2	0.8/1.3	1.0/1.4	1.3/1.6	1.8/2.2
12226-L-PBT	26.0	0.4/0.7	0.3/0.6	0.3/0.7	0.3/0.8	0.6/1.1	0.7/1.2	0.9/1.3	1.1/1.4	1.3/1.6	1.9/2.2
12229-L-PBT	29.0	0.4/0.8	0.3/0.6	0.3/0.7	0.3/0.8	0.6/1.1	0.7/1.2	0.9/1.3	1.1/1.4	1.4/1.6	2.0/2.2

Insertion Loss (dB)	Nom. Tap Value	5 MHz Typ/Max	10 MHz Typ/Max	50 MHz Typ/Max	100 MHz Typ/Max	450 MHz Typ/Max	550 MHz Typ/Max	750 MHz Typ/Max	870 MHz Typ/Max	1000 MHz Typ/Max	1218 MHz Typ/Max
<b>MODEL NO. 124xx-L-PBT</b>											
12408-L-PBT	8.0	—	—	—	—	—	—	—	—	—	—
12412-L-PBT	12.0	2.6/3.9	2.5/3.6	2.4/3.5	2.5/3.6	3.1/4.3	3.3/4.4	3.5/4.4	3.8/4.7	4.2/5.0	5.1/5.4
12415-L-PBT	15.0	1.8/2.0	1.4/1.8	1.3/1.8	1.3/2.0	1.6/2.4	1.7/2.6	2.02/2.8	2.2/3.0	2.4/3.1	3.0/3.7
12417-L-PBT	17.0	1.1/1.3	0.8/1.2	0.8/1.2	0.8/1.3	1.1/1.7	1.2/1.9	1.4/1.9	1.6/2.1	1.8/2.4	2.4/3.0
12420-L-PBT	20.0	0.9/1.2	0.7/1.1	0.6/1.1	0.6/1.2	0.9/1.5	0.9/1.5	1.0/1.6	1.2/1.8	1.4/2.0	1.7/2.4
12423-L-PBT	23.0	0.6/1.0	0.5/0.9	0.4/0.9	0.5/1.0	0.7/1.3	0.8/1.4	1.0/1.5	1.2/1.6	1.4/1.7	1.8/2.2
12426-L-PBT	26.0	0.4/0.7	0.3/0.6	0.3/0.7	0.3/0.8	0.6/1.1	0.6/1.2	0.8/1.3	1.0/1.4	1.1/1.5	1.5/2.2
12429-L-PBT	29.0	0.4/0.8	0.3/0.7	0.3/0.7	0.3/0.8	0.6/1.1	0.7/1.2	0.9/1.3	1.0/1.4	1.3/1.5	2.0/2.2

Insertion Loss (dB)	Nom. Tap Value	5 MHz Typ/Max	10 MHz Typ/Max	50 MHz Typ/Max	100 MHz Typ/Max	450 MHz Typ/Max	550 MHz Typ/Max	750 MHz Typ/Max	870 MHz Typ/Max	1000 MHz Typ/Max	1218 MHz Typ/Max
<b>MODEL NO. 128xx-L-PBT</b>											
12812-L-PBT	12.0	—	—	—	—	—	—	—	—	—	—
12815-L-PBT	15.0	2.6/3.9	2.4/3.6	2.4/3.5	2.4/3.6	3.0/4.4	3.3/4.5	3.5/4.5	3.8/4.7	4.0/5.0	5.0/5.4
12818-L-PBT	18.0	1.7/2.0	1.5/1.8	1.3/1.8	1.3/2.0	1.6/2.6	1.8/2.8	2.0/2.8	2.32/2.9	2.5/3.1	3.2/3.7
12821-L-PBT	21.0	1.1/1.3	0.8/1.2	0.8/1.2	0.8/1.3	1.0/1.9	1.4/1.9	1.3/1.9	1.6/2.1	1.87/2.3	2.4/2.8
12824-L-PBT	24.0	0.8/1.1	0.5/0.9	0.5/0.9	0.5/1.1	0.8/1.5	0.9/1.6	1.0/1.6	1.2/1.8	1.4/2.0	1.9/2.2
12827-L-PBT	27.0	0.6/0.9	0.5/0.7	0.4/0.7	0.5/1.1	0.7/1.4	0.8/1.4	1.0/1.4	1.2/1.4	1.4/1.7	1.9/2.2

**NOTE:**

1. The 12xxx-L-PBT is shipped standard with a jumper (T-JP) installed into the plug-in module sockets.

## 12000-L-PBT Series Taps 5-1218 MHz

## 12000-L-PBT SPECIFICATIONS TAP TO OUTPUT ISOLATION, (dB) NOMINAL

MODEL NO. 122xx-L-PBT	5-9 MHz	9-85 MHz	85-750 MHz	750-1000 MHz	1000-1218 MHz
12204-L-PBT	—	—	—	—	—
12208-L-PBT	20	25	22	20	20
12212-L-PBT	20	25	24	22	20
12214-L-PBT	20	25	26	25	22
12217-L-PBT	20	25	28	27	24
12220-L-PBT	20	28	33	31	26
12223-L-PBT	20	30	35	33	28
12226-L-PBT	20	33	37	35	30
12229-L-PBT	20	34	40	38	30

MODEL NO. 124xx-L-PBT	5-9 MHz	9-85 MHz	85-750 MHz	750-1000 MHz	1000-1218 MHz
12408-L-PBT	—	—	—	—	—
12412-L-PBT	20	25	24	22	20
12415-L-PBT	20	25	27	25	22
12417-L-PBT	20	25	30	28	24
12420-L-PBT	20	25	33	31	26
12423-L-PBT	20	29	36	34	30
12426-L-PBT	20	32	38	36	32
12429-L-PBT	20	32	40	38	34

MODEL NO. 128xx-L-PBT	5-9 MHz	9-85 MHz	85-750 MHz	750-1000 MHz	1000-1218 MHz
12812-L-PBT	—	—	—	—	—
12815-L-PBT	20	25	27	25	22
12818-L-PBT	20	25	30	28	24
12821-L-PBT	20	25	32	30	26
12824-L-PBT	20	29	34	33	30
12827-L-PBT	20	32	38	34	30

## 12000-L-PBT Series Taps 5-1218 MHz

## GENERAL SPECIFICATIONS

Power Passing	12 Amperes Maximum (60/90 volts)
Surge: In/Out F-Port	6 kV Combination Wave 4 kV Combination Wave
Hum Modulation (10 Amperes)	
5 – 10 MHz:	58 dB Minimum
10 – 750 MHz:	65 dB Minimum
750 – 1218 MHz:	60* dB Minimum
RFI	100 dB minimum
Operating Temperature	-40°C to +60°C

## SPECIFICATIONS

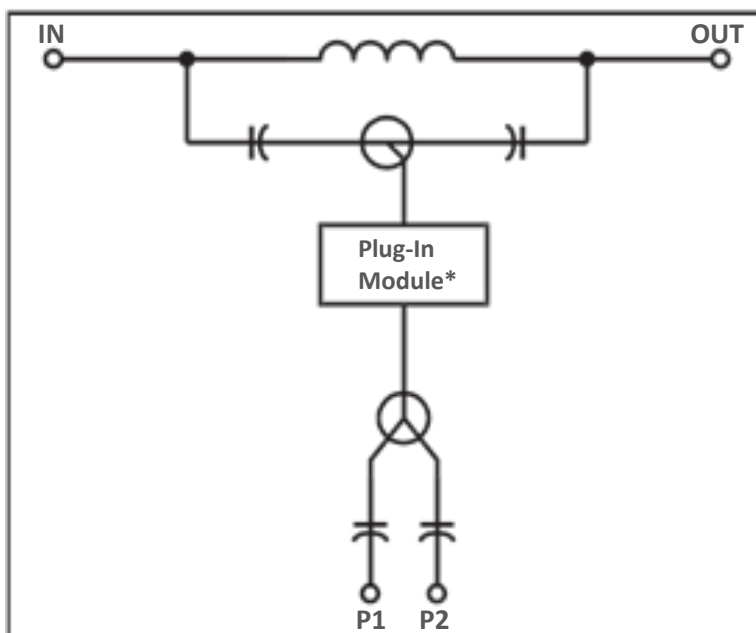
Tap Value Tolerance	2-way	5 – 1000 MHz	± 2.0 dB
		1000 – 1218 MHz	± 2.5 dB
	4-way	5 – 1000 MHz	± 2.0 dB
		1000 – 1218 MHz	± 3.0 dB
	8-way	5 – 500 MHz	± 2.0 dB
		500 – 1000 MHz	± 3.0 dB
1000 – 1218 MHz		± 3.7 dB	
Tap to Tap Isolation		5 – 10 MHz	18 dB
		10 – 450 MHz	24 dB (122xx-L-PBT only) 25 dB
		450 – 750 MHz	23 dB
		750 – 1218 MHz	20 dB
Return Loss: Tap Ports		5 – 30 MHz	16 dB
		30 – 600 MHz	17 dB
		600 – 1000 MHz	16 dB
		1000 – 1218 MHz	16 dB
Return Loss: In/Out Ports		5 – 10 MHz	16 dB
		10 – 30 MHz	17 dB
		30 – 600 MHz	18 dB
		600 – 1000 MHz	16 dB
		1000 – 1218 MHz	15 dB

Mechanical	SCTE IPS-SP-400 – F-port Interface/SCTE IPS-SP-420 – Entry Port Interface
Emission	47 CFR Part 15 FCC Radio Frequency Devices October 1, 2011, CISPR 22 Ed. 6.0 b:2008, EN 61000-3-2:2006 +A1/A2:2009 Electromagnetic Compatibility (EMC) Part 3-2, EN 61000-3-3:2013- Electromagnetic Compatibility (EMC) – Part 3-3, ICES Issue 6 - Information Technology Equipment (ITE), EN55022:2010/AC:2011
Safety	IEC 60950-22, Edition 2.0 2016-01
Dimensions	5.5 L x 4.0 H x 3.0 D (inches) (13.97 x 10.16 x 7.62 cm)
Weight	1.5 lb (0.69 kg)

\* Hum performance can degrade 2 dB at 60°C.

12000-L-PBT Series Taps 5-1218 MHz

## 12000-L-PBT Block Diagram



*\*Plug-In Module may be T-JP, T-EQ-\*-Q, T-RPA/\*-Q, or T-CS-\*-Q. Block Diagram shown is for a 2-port tap. The 4-port and 8-port taps will have additional splitters after the plug-in module.*

## 12000-L-PBT Series Taps 5-1218 MHz

## 2-WAY ORDERING INFORMATION

Model Number	Part Number (Complete Tap)	Description
12204-L-PBT	1510422-001	4 dB Terminating Two-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12208-L-PBT	1510422-002	8 dB Two-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12212-L-PBT	1510422-003	12 dB Two-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12214-L-PBT	1510422-004	14 dB Two-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12217-L-PBT	1510422-005	17 dB Two-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12220-L-PBT	1510422-006	20 dB Two-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12223-L-PBT	1510422-007	23 dB Two-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12226-L-PBT	1510422-008	26 dB Two-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12229-L-PBT	1510422-009	29 dB Two-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.

## 4-WAY ORDERING INFORMATION

Model Number	Part Number (Complete Tap)	Description
12408-L-PBT	1510423-001	8 dB Terminating Two-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12412-L-PBT	1510423-002	12 dB Four-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12415-L-PBT	1510423-003	15 dB Four-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12417-L-PBT	1510423-004	17 dB Four-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12420-L-PBT	1510423-005	20 dB Four-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12423-L-PBT	1510423-006	23 dB Four-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12426-L-PBT	1510423-007	26 dB Four-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12429-L-PBT	1510423-008	29 dB Four-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.

## 12000-L-PBT Series Taps 5-1218 MHz

## 8-WAY ORDERING INFORMATION

Model Number	Part Number (Complete Tap)	Part Number (Complete Tap)
12812-L-PBT	1510424-001	12 dB Terminating Eight-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12815-L-PBT	1510424-002	15 dB Eight-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12818-L-PBT	1510424-003	18 dB Eight-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12821-L-PBT	1510424-004	21 dB Eight-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12824-L-PBT	1510424-005	24 dB Eight-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.
12827-L-PBT	1510424-006	27 dB Eight-port RF/AC bypass tap with equalization plug-in capability. Shipped with jumper installed.

## RELATED PRODUCTS

12-TFC/LPI® Passives	RF Amplifiers
T*-Q 1.2 GHz Tap Plug-ins	Optical Nodes
Headend Optics	

## Customer Care

Contact Customer Care for product information and sales:

- United States: 866-36-ARRIS
- International: +1-678-473-5656

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