

DOCSIS 4.0
R E A D Y



Outdoor RF passives

1.8 GHz SA STYLE

Taps, Splitters, DC Couplers & Power Inserter

The SA Outdoor **Line Taps** are high performance passives. The signal and power are constantly present on IN and OUT ports while the Tap ports are used to feed the subscriber outlets. The SA Series offers a wide range of different line taps that meet frequency range up to 1.8 GHz. All the housings are well screened to meet and exceed the Cenelec Class A+ (= Class A +10dB) standards. Moreover, the **Line Splitters**, **DC Couplers** and **Power Inserter** are high performance passives to split signal and power in coaxial trunk and distribution lines of HFC networks.

1.8 GHz SA feature

- Frequency range up to 1.8 GHz, Docsis 4.0 compliant
- High performance for Extreme environmental conditions
- Intended for use in access networks
- Electromagnetic compatibility exceeds Class A+ (= Class A +10 dB)
- Weather resistant powder coating
- F-ports DC blocked and waterproof designed
- Auto seizure mechanism on 5/8 in and output ports allowing for 1.7 mm to 2.0 mm pin diameters

TELESTE

OUTDOOR RF PASSIVES / 1.8 GHZ TAPS - SA STYLE

ELECTRICAL SPECIFICATIONS - 8-WAY TAPS (4TP8-xx)											
Frequency range (MHz)	(Tolerance)	8	11T	14	17	20	23	26	29	32	35
Insertion loss (dB, Max.) - In to Out											
5 - 10 ⁽¹⁾		NA	T	3.6	2.0	1.5	1.2	1.0	0.9	0.9	0.9
10 - 65		NA	T	3.6	2.0	1.5	1.2	1.0	0.9	0.9	0.9
65 - 300		NA	T	3.8	2.0	1.6	1.2	1.1	1.0	0.9	0.9
300 - 550		NA	T	4.3	2.4	1.9	1.6	1.3	1.3	1.3	1.3
550 - 750		NA	T	4.5	2.6	2.1	1.6	1.5	1.6	1.5	1.5
750 - 862		NA	T	4.8	2.9	2.3	1.9	1.7	1.8	1.7	1.7
862 - 1000		NA	T	5.0	3.0	2.5	2.0	1.8	1.8	1.8	1.8
1000 - 1218		NA	T	5.2	3.4	2.6	2.2	2.0	2.0	2.0	2.0
1218 - 1500		NA	T	5.6	3.7	3.0	2.5	2.3	2.3	2.3	2.3
1500 - 1700		NA	T	6.3	4.2	3.3	3.0	2.8	2.8	2.8	2.8
1700 - 1800		NA	T	6.5	4.7	3.6	3.3	3.2	3.2	3.2	3.2
Insertion loss (dB, Max.) - In to Tap											
5 - 10	±1.0	NA	11.0	14.0	17.0	20.0	23.0	26.0	29.0	32.0	35.0
10 - 65	±1.0	NA	11.0	14.0	17.0	20.0	23.0	26.0	29.0	32.0	35.0
65 - 860	±1.0	NA	11.0	14.0	17.5	20.0	23.0	26.0	29.0	32.0	35.0
860 - 1218	±1.5	NA	11.0	14.0	17.5	20.0	23.0	26.0	29.0	32.0	35.0
1218 - 1500	±2.0	NA	11.5	15.0	17.5	20.0	23.0	26.0	29.0	32.0	35.0
1500 - 1700	±2.0	NA	12.0	15.5	18.0	20.5	23.0	26.0	29.0	32.0	35.0
1700 - 1800	±2.0	NA	13.0	16.0	18.5	20.5	23.0	26.0	29.0	32.0	35.0
Isolation (dB, Min.) - Out to Tap											
5 - 15 ⁽¹⁾		NA	T	30.5	32.0	33.5	35.0	36.5	38.0	39.5	41.0
15 - 65		NA	T	22.0	22.0	26.0	30.0	33.0	36.0	39.0	41.0
65 - 860		NA	T	28.0	28.0	31.0	33.0	34.0	36.0	37.0	39.0
860 - 1218		NA	T	26.0	26.0	28.0	29.0	32.0	34.0	35.0	37.0
1218 - 1500		NA	T	23.0	23.0	25.0	25.0	25.0	25.0	25.0	25.0
1500 - 1700		NA	T	23.0	23.0	25.0	25.0	25.0	25.0	25.0	25.0
1700 - 1800		NA	T	23.0	23.0	25.0	25.0	25.0	25.0	25.0	25.0
Isolation (dB, Min.) - Tap to Tap											
5 - 15 ⁽¹⁾		NA	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0
15 - 65		NA	22.0	22.0	20.0	22.0	22.0	22.0	22.0	22.0	22.0
65 - 860		NA	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
860 - 1218		NA	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
1218 - 1500		NA	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
1500 - 1700		NA	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
1700 - 1800		NA	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Return loss (dB, Min.) - Input/Output											
5 - 15 ⁽²⁾		NA	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
15 - 47		NA	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
47 - 950		NA	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
950 - 1218		NA	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
1218 - 1500		NA	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
1500 - 1700		NA	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
1700 - 1800		NA	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
Return loss (dB, Min.) - Tap											
5 - 15 ⁽²⁾		NA	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
15 - 47		NA	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
47 - 950		NA	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
950 - 1218		NA	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
1218 - 1500		NA	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
1500 - 1700		NA	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
1700 - 1800		NA	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
ORDERING INFORMATION											
4TP2-xx-SAL/SW		Outdoor 2-way tap xdB, large housing with main line switch, 1.8GHz, SA									
4TP4-xx-SAL/SW		Outdoor 4-way tap xdB, large housing with main line switch, 1.8GHz, SA									
4TP8-xx-SAL/SW		Outdoor 8-way tap xdB, large housing with main line switch, 1.8GHz, SA									
Available values:											
4TP2-8-11-14-17-20-23-26-29-32-35											
4TP4-11-14-17-20-23-26-29-32-35											
4TP8-14-17-20-23-26-29-32-35											
4TP2-4T-SAL		Outdoor 2-way tap 4dB, large housing, 1.8GHz, SA									
4TP4-8T-SAL		Outdoor 4-way tap 8dB, large housing, 1.8GHz, SA									
4TP8-11T-SAL		Outdoor 8-way tap 11dB, large housing, 1.8GHz, SA									

OUTDOOR RF PASSIVES / DC COUPLERS & SPLITTERS - SA STYLE

ELECTRICAL SPECIFICATIONS - DC COUPLERS (4DC-xx)			
Frequency range (MHz)	4DC-8-SA	4DC-12-SA	4DC-16-SA
Insertion loss (dB, Max.) - In to Out - OUT port			
5 - 10 ⁽¹⁾	1.8	1.5	1.0
10 - 15	2.2	1.8	1.4
15 - 65	2.2	1.4	1.2
65 - 300	2.0	1.7	1.2
300 - 550	2.5	1.9	1.4
550 - 750	2.7	2.1	1.6
750 - 860	2.9	2.3	1.9
860 - 1000	3.1	2.5	2.0
1000 - 1218	3.3	2.7	2.5
1218 - 1500	3.5	3.2	3.0
1500 - 1700	3.8	3.2	3.0
1700 - 1800	4.5	3.5	3.0
Insertion loss (dB, Max.) - In to Tap - TAP port			
5 - 860	8.0 ± 1.0	12.0 ± 1.0	16.0 ± 1.0
860 - 1700	8.0 ± 1.5	12.0 ± 1.5	16.0 ± 1.5
1700 - 1800	8.5 ± 1.5	12.0 ± 1.5	16.0 ± 1.5
Isolation (dB, Min.) - Out to Tap			
5 - 10 ⁽¹⁾	27.0	27.0	27.0
10 - 65	22.0	27.0	28.0
65 - 860	24.0	25.0	28.0
860 - 1218	22.0	22.0	26.0
1218 - 1500	20.0	20.0	20.0
1500 - 1700	20.0	20.0	20.0
1700 - 1800	20.0	20.0	20.0
Return loss (dB, Min.) - Input/Output/Tap			
5 - 15 ⁽²⁾	18.0	18.0	18.0
15 - 65	17.0	17.0	17.0
65 - 300	17.0	17.0	17.0
300 - 1000	18.0	18.0	18.0
1000 - 1218	17.0	17.0	17.0
1218 - 1800	14.0	14.0	14.0
ELECTRICAL SPECIFICATIONS - SPLITTERS (4SP-xx)			
Frequency range (MHz)	4SP-2-SA	4SP-3U-SA	4SP-3-SA
Insertion loss (dB, Max.) - In to Out			
5 - 10 ⁽¹⁾	4.1	4.1 / 7.4	6.3
10 - 15	4.3	4.1 / 7.8	6.3
15 - 65	4.1	4.1 / 7.4	6.3
65 - 300	4.3	4.3 / 7.5	6.3
300 - 550	4.5	4.5 / 7.6	6.3
550 - 750	4.6	4.6 / 7.7	7.0
750 - 860	4.8	4.9 / 8.0	7.0
860 - 1000	4.8	5.0 / 8.0	7.2
1000 - 1218	5.0	5.3 / 8.5	7.8
1218 - 1500	5.5	5.9 / 9.3	8.5
1500 - 1700	5.8	6.0 / 9.8	9.0
1700 - 1800	6.5	6.5 / 10.8	9.5
Isolation (dB, Min.) - Port to Port			
5 - 10 ⁽¹⁾	22.0	22.0	22.0
10 - 65	22.0	22.0	22.0
65 - 860	24.0	24.0	24.0
860 - 1218	22.0	22.0	22.0
1218 - 1500	20.0	20.0	20.0
1500 - 1700	20.0	20.0	20.0
1700 - 1800	20.0	20.0	20.0
Return loss (dB, Min.) - Input/Output/Tap			
5 - 15 ⁽²⁾	18.0	18.0	18.0
15 - 65	17.0	17.0	17.0
65 - 300	17.0	17.0	17.0
300 - 1000	18.0	18.0	18.0
1000 - 1218	17.0	17.0	17.0
1218 - 1800	14.0	14.0	14.0

OUTDOOR RF PASSIVES / POWER INSERTER - SA STYLE

ELECTRICAL SPECIFICATIONS - POWER INSERTER (4LPI)					
Frequency range (MHz)	Insertion loss (dB, Max.)	Frequency range (MHz)	Return loss (dB, Min.)	Frequency range (MHz)	Isolation RF to AC (dB, Min.)
5 - 10 ⁽¹⁾	1.0	5 - 15 ⁽²⁾	12.0		
10 - 15	0.8	15 - 65	17.0		
15 - 65	0.8	65 - 300	17.0	5 - 65	60.0
65 - 300	1.1	300 - 550	18.0	65 - 860	60.0
300 - 550	1.2	550 - 750	18.0	860 - 1218	52.0
550 - 750	1.3	750 - 860	18.0	1218 - 1500	52.0
750 - 860	1.3	860 - 1000	18.0	1500 - 1700	52.0
860 - 1000	1.3	1000 - 1218	17.0	1700 - 1800	52.0
1000 - 1218	1.5	1218 - 1500	14.0		
1218 - 1500	1.9	1500 - 1700	14.0		
1500 - 1700	2.0	1700 - 1800	14.0		
1700 - 1800	2.2				
GENERAL SPECIFICATIONS					
Frequency range (MHz)	5 - 1800 MHz		Nominal impedance	75 Ohm	
Operating temperature range	-40 ... +65 °C		Enclosure classification	IP68 to IEC 60529 Edition 2.1:2001-02 IPx8	
Connectors	TAP			IN-OUT	
	Type	F connector		Type	5/8"-24 female
	Compliance	ANSI/SCTE 2015 01, IEC61169-24 2010			
	Body	Material: Brass + Plating: NiSn			
	Inner contact	Material: Beryllium Copper + Plating: NiSn		Auto seizure test range pin diameters	1.7 - 2.0 mm
	Acceptance dia. range	0.7 - 1.2 mm			
	Clamp force	≥ 115 gr. @ 0.7 mm pin			
Torque	Nom. tightening torque 4.5 Nm				
Surge Immunity Test	IEC 61000-4-5:2006 Surge pulse 2.0 kV, 1.2 /50 µsec, 2 Ω source impedance, all ports		6.0 kV, 1.2 /50 µsec, 2 Ω source impedance, all ports	IEEE C62.41-1991 Category B3/6kV combination wave, 3000 A	
Intermodulation distortion (dBc, Min.) ⁽³⁾	2f1, f1+f2, 2f2		Before surge After 25V surge After 1kV surge	115.0 ^(a) 115.0 ^(b) 105.0 ^(c)	
HUM modulation All models	10 - 1400 1400 - 1800	> 70 dBc > 60 dBc 10A current passing / 65 VAC	EMC compatibility	EN60728-2 2012, Class A+	
Maximum current	15 A		F port isolation	600 V	
Weight	2-4 way: 0.32 kg 8 way: 0.65 kg		Dimensions (H x W x D)	2-4 way: 90 x 80 x 90mm 8 way: 145 x 80 x 125 mm	
NOTES					
(1) Typical value in 5 - 10 MHz range					
(2) Typical value in 5 - 15 MHz range					
(3) Two carriers (60 & 65 MHz), applied to each port, @ 120 dBµV					
(a) No surge					
(b) Measured after 10 pulses 25 VDC (1.2/500 µS) have been applied to each port					
(c) Measured after 1 pulse of 1 kV (1.2/50 µsec) have been applied to each port					
ORDERING INFORMATION					
4DC-8-SA	Outdoor directional coupler 8 dB, 5-1800 MHz, SA				
4DC-12-SA	Outdoor directional coupler 12 dB, 5-1800 MHz, SA				
4DC-16-SA	Outdoor directional coupler 16 dB, 5-1800 MHz, SA				
4SP-2-SA	Outdoor 2-way splitter 5-1800 MHz, SA				
4SP-3-SA	Outdoor 3-way splitter, 5-1800 MHz, SA				
4SP-3U-SA	Outdoor 3-way splitter unbalanced, 5-1800 MHz, SA				
4LPI-SA	Outdoor Power Inserter, 5-1800 MHz, SA				



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