

# Features and Benefits

**ANTRONIX®**

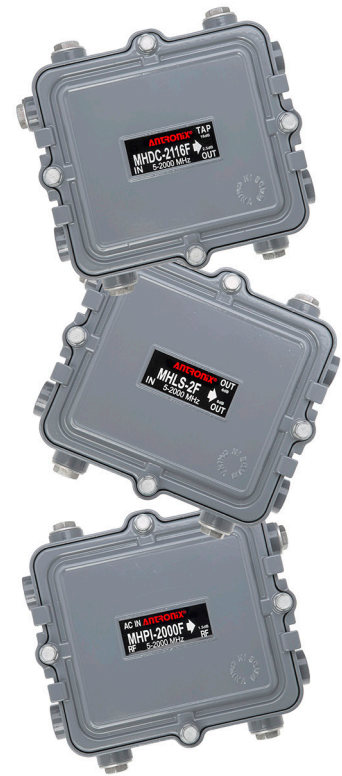
## MHPI-2000F/MHLS-xF/MHDC-21xx-F Power Inserter/Line Splitter/Directional Coupler Milenium NXT Series 2 GHz Line Passives

Antronix offers a complete main line product family to meet every design requirement. The line passives feature a screwless seizure mechanism which supports low insertion loss.

The NXT line passives series are fully complaint with DOCSIS4.0 requirements containing 2.0 GHz electronics mounted in a 3 GHz future proof housing. The 2.0 GHz power inserters, line splitters and directional couplers can handle high current continuously on all ports. The main line passives can also withstand multiple 6 kV surges.

Antronix main line passives have a four-stage corrosion protection process to withstand harsh environments. To ensure our main line passives exceed industry performance standards, Antronix has developed a proprietary ferrite core material and circuit design. This design, when combined with the surge withstand capability and environmentally robust housing, provides the user with unmatched performance and reliability.

- **2.0 GHz Bandwidth**
- **6 kV Combination Surge Withstand on all Ports**  
Antronix line passives have the capacity to withstand a 6 kV combination wave surge (per IEEE C62.41 Cat. B3) on each port
- **Integrated Strip Gauge**  
Allows for quick and accurate connector pin length
- **Four-Stage Corrosion Protection**
  - A 360 aluminum alloy housing (the most corrosive-resistant alloy material on the market)
  - The housing is then impregnated with a sealer to eliminate porosity
  - Clear chromate coatings are then applied inside and out to protect the aluminum and prevent corrosion
  - Two polyurethane coatings are applied for superior protection
- **High Current Capacity for Extreme Situations**  
The power inserter can withstand 25 amperes for a short duration, if main line is short-circuited under extreme fault conditions
- **Available High-Current Electronic Crowbar Device**  
Engages when voltage exceeds 180 V
- **Fuse Holder for Each Leg**  
Provides the ability to direct and conserve power through on each output leg
- **Interlocking Tongue-and-Groove Housing and Faceplate**  
Also includes a wire mesh gasket to guarantee excellent RF Isolation



## Electrical Specifications Milenium NXT Series 2 GHz Line Passives

Model Tap Value	Frequency (MHz)	MHPI-2000F Power Inserter		MHLS-2F 2 Way Splitter		MHLS-3F 3 Way Splitter		MHDC-2108F 8dB Coupler		MHDC-2112F 12dB Coupler		MHDC-2116F 16dB Coupler	
		Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg
<b>Tap Loss</b> Max/Avg (dB)	5	—	—	—	—	8.4	7.9	9.0	8.4	13.8	12.8	18.8	18.0
	12	—	—	—	—	7.7	7.3	8.5	7.9	13.0	11.7	17.5	16.9
	50	—	—	—	—	7.5	7.1	8.5	7.9	13.0	11.6	17.5	16.7
	108	—	—	—	—	7.8	7.3	8.5	8.0	13.0	11.8	17.5	16.9
	258	—	—	—	—	8.5	7.6	8.5	8.0	13.0	11.9	17.5	16.8
	492	—	—	—	—	8.5	8.0	9.0	8.2	13.0	12.1	17.5	16.9
	870	—	—	—	—	8.9	8.2	9.0	8.2	13.0	11.9	17.5	16.6
	1002	—	—	—	—	9.1	8.5	9.0	8.4	13.0	12.1	17.5	16.8
	1218	—	—	—	—	9.3	8.8	9.0	8.5	13.5	12.5	17.5	16.9
	1794	—	—	—	—	12.0	11.2	10.0	8.9	14.0	12.8	18.0	16.6
	2000	—	—	—	—	13.8	13.2	10.5	9.7	14.5	13.6	18.5	17.2
<b>Insertion Loss</b> Max/Avg (dB)	5	1.4	1.2	5.2	4.5	5.6	5.0	3.1	2.8	2.0	1.7	1.9	1.6
	12	0.8	0.6	4.5	4.1	4.5	4.1	2.6	2.3	1.5	1.3	1.4	1.2
	50	0.7	0.4	4.3	4.0	4.3	3.9	2.5	2.2	1.4	1.2	1.3	1.1
	108	0.9	0.5	4.5	4.1	4.5	4.0	2.7	2.4	1.8	1.3	1.5	1.2
	258	1.0	0.6	4.7	4.3	4.6	4.2	2.9	2.5	2.0	1.5	1.7	1.3
	492	1.0	0.8	5.1	4.6	4.8	4.4	3.2	2.8	2.2	1.8	1.9	1.6
	870	1.1	0.7	5.6	4.8	5.2	4.7	3.5	3.1	2.5	2.0	2.3	1.7
	1002	1.1	0.8	5.8	5.0	5.3	4.9	3.6	3.2	2.6	2.1	2.4	1.9
	1218	1.2	1.0	6.0	5.2	5.5	4.9	3.8	3.5	2.7	2.2	2.5	2.1
	1794	1.7	1.4	7.2	6.4	6.9	6.1	4.6	4.3	3.6	3.0	3.2	2.6
	2000	2.0	1.7	8.5	7.5	7.7	7.3	5.7	5.2	4.2	3.8	3.9	3.5
<b>Output to Tap Isolation</b> Min (dB)	5 - 12	60		—		20		16		20		22	
	12 - 50	60		—		28		25		28		28	
<b>Output to Tap Isolation</b> Min (dB)	50 - 108	60		—		28		28		28		30	
	108 - 258	60		—		26		28		28		30	
	258 - 492	60		—		24		28		23		30	
	492 - 870	60		—		22		22		20		24	
	870 - 1002	60		—		22		20		20		24	
	1002 - 1218	55		—		22		20		20		24	
	1218 - 1794	40		—		20		18		18		20	
	1794 - 2000	40		—		20		18		18		20	

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## Electrical Specifications

### Milenium NXT Series 2 GHz Line Passives

Model Tap Value		MHPI-2000F Power Inserter	MHLS-2F 2 Way Splitter	MHLS-3F 3 Way Splitter	MHDC-2108F 8dB Coupler	MHDC-2112F 12dB Coupler	MHDC-2116F 16dB Coupler
Frequency (MHz)		Min	Min	Min	Min	Min	Min
<b>Tap to Tap Isolation</b> Min (dB)	5 - 12	60	18	20	—	—	—
	12 - 50	60	24	25	—	—	—
	50 - 108	60	24	25	—	—	—
	108 - 258	60	20	20	—	—	—
	258 - 492	60	20	20	—	—	—
	492 - 870	60	20	20	—	—	—
	870 - 1002	60	20	20	—	—	—
	1002 - 1218	55	20	20	—	—	—
	1218 - 1794	40	16	16	—	—	—
	1794 - 2000	40	16	16	—	—	—
<b>Input Return Loss</b> Min (dB)	5 - 12	15	15	14	14	13	15
	12 - 50	15	15	15	14	14	15
	50 - 108	16	16	16	15	15	16
	108 - 258	16	16	16	15	15	16
	258 - 492	16	16	16	16	16	16
	492 - 870	16	16	16	16	16	16
	870 - 1002	16	16	16	16	16	16
	1002 - 1218	16	16	16	16	16	16
	1218 - 1794	15	15	15	15	15	15
	1794 - 2000	13	13	13	13	13	13
<b>Output Return Loss</b> Min (dB)	5 - 12	15	15	15	15	15	15
	12 - 50	15	15	15	15	15	15
	50 - 108	16	16	16	16	16	16
	108 - 258	16	16	16	16	16	16
	258 - 492	16	16	16	16	16	16
	492 - 870	16	16	16	16	16	16
	870 - 1002	16	16	16	16	16	16
	1002 - 1218	16	16	16	16	16	16
	1218 - 1794	15	15	15	15	15	15
	1794 - 2000	13	13	13	13	13	13

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## Electrical Specifications Milenium NXT Series 2 GHz Line Passives

Model		MHPI-2000F Power Inserter	MHLS-2F 2 Way Splitter	MHLS-3F 3 Way Splitter	MHDC-2108F 8dB Coupler	MHDC-2112F 12dB Coupler	MHDC-2116F 16dB Coupler
<b>Tap Value</b>							
<b>Frequency (MHz)</b>		Min	Min	Min	Min	Min	Min
<b>Tap Port Return Loss</b> Min (dB)	5 - 12	—	15	15	15	13	10
	12 - 50	—	15	15	15	15	15
	50 - 108	—	16	16	16	16	16
	108 - 258	—	16	16	16	16	16
	258 - 492	—	16	16	16	16	16
	492 - 870	—	16	16	16	16	16
	870 - 1002	—	16	16	16	16	16
	1002 - 1218	—	16	16	16	16	16
	1218 - 1794	—	15	15	15	15	15
	1794 - 2000	—	13	13	13	13	13
					Max		
<b>Hum Modulation</b> Max (dB)	5 - 1218				-55		
	1218 - 1794				-50		
	1794 - 2000				-50		



## MHPI-2000F/MHLS-xF/MHDC-21xx-F Milenium NXT Series 2 GHz Line Passives

General	
Nominal Impedance	75 $\Omega$
Surge Withstand	6 kV Combination Wave Surge per IEEE C62.41 Category B3
Power Rating	15 Amps Continuous, 60 to 90 VAC 18 Amps Continuous, 60 to 90 VAC, Power Inserter RF Ports 20 Amps Continuous, 60 to 90 VAC, Power Inserter AC Port
Screening Effectiveness	105 dB (min)
Dimensions	5.6"Lx5.1"Wx2.5"H
Environmental	
Pressure Seal	15 psi
Operating Temperature	-40 °C to 60 °C
Salt Fog	1000 hours

