



**FDJ85020D4-S1**

ShareLite™ 555-806/824-960 MHz Twin Diplexer with Auto DC/AISG Sense, Dual configuration, 4.3-10 Connectors

The FDJ8 Series of diplexers are designed to enable feeder sharing between systems in the 555-806 MHz range and in the 824-960 MHz range. RFS's innovative cavity filter design provides a very low insertion loss of 0.2dB typical while keeping the product extremely compact and lightweight. The usage of highly selective filters also guarantees a high isolation level of 50dB between ports, to ensure an interference-free environment for any technology deployed. The filter design also comprises of lightning protection for additional reliability. Designed to withstand the most severe outdoor environments, it also features an IP67 class protection with a vented enclosure to avoid any possible effects of condensation and pressure instability, thus providing a long lasting, extremely reliable solution to any network.

**FEATURES / BENEFITS**

- Dual unit for use with X-pol Antennas
- Auto DC sense to prevent installation mistakes and eliminate the need for DC stops
- Extremely Low Insertion Loss
- High level of Rejection between bands - Protection against interference
- Extremely High Power Handling Capability
- 4.3-10 connectors - Reduce tower loading with connectors that are 40% smaller and lighter than 7/16 DIN connectors
- Very compact & small size design - Easy installation and reduced tower load
- Exceptional reliability & environmental protection (IP-67)
- Mounting hardware for Wall and Pole mount provided (P/N SEM2-1A)
- Grounding already provided through the mounting bracket



FDJ85020D4 Series

**Technical features**

**GENERAL SPECIFICATIONS**

<b>Product Type</b>		Diplexer/Cross Band Combiner
<b>Application</b>		600MHz, LTE700, LTE800, LTE850, GSM900, LTE900
<b>Configuration</b>		Dual indoor/outdoor

**ELECTRICAL SPECIFICATIONS**

<b>Branch</b>		1, 2
<b>Frequency Range</b>	MHz	555-806 824-960
<b>Impedance</b>	Ohms	50, 50
<b>Frequency Band</b>		600MHz, LTE700, LTE800, LTE850, GSM900, LTE900
<b>DC Pass</b>		Auto DC Sense
<b>Insertion Loss</b>	dB	.20 typ., .20 typ.
<b>GROUP DELAYS</b>	ns	<7 typ., 40 max., <9 typ., 35 max.
<b>Total Group Delay</b>	ns	<7 typ., 40 max., <9 typ., 35 max.
<b>Return Loss</b>	dB	22 typ., 22 typ.
<b>Power Handling Continuous, Max.</b>	W	600 at common port, 300 on each path
<b>Input Power, PEP</b>	W	3000
<b>Rejection between bands</b>	dB	50, 50
<b>3rd Order PIM</b>	dBm (dBc)	-118 (-161) @2x43 typ., -118 (-161) @2x43 typ.

**TESTING AND ENVIRONMENTAL**

<b>Temperature Range</b>	°C (°F)	-40 to 65 (-40 to 149)
<b>Ingress Protection</b>		IP 67
<b>Environmental</b>		ETSI 300-019-2-4 Class 4.1E
<b>Lightning Protection</b>		EN/IEC61000-4-5 Level 4



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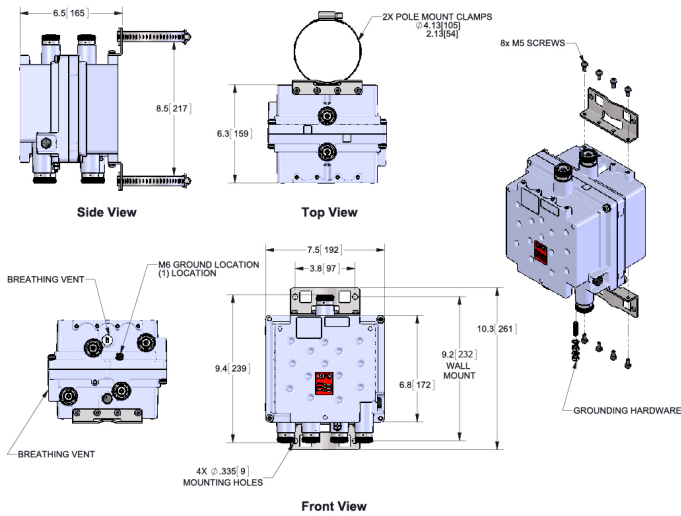
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**MECHANICAL SPECIFICATIONS**

<b>RF Connectors</b>		4.3-10 Female; 4 ports in, 2 ports out
<b>Shipping Weight</b>	kg (lb)	5.3 (11.7)
<b>Dimensions, H x W x D</b>	mm (in)	191.3 x 172.3 x 157.5 (7.5 x 6.8 6.2)
<b>Shipping Dimensions, H x W x D</b>	mm (in)	191.3 x 172.3 x 157.5 (7.5 x 6.8 6.2)
<b>Mounting</b>		Wall Mounting: With 4 screws (maximum 6mm diameter) Pole Mounting: With included clamp set 40-110mm (1.57-4.33")

**SELECTION TABLE**

Type	Model Number	No DC Pass	DC Pass 824-960	DC Pass 555-806	Full DC Pass	DC Sense priority
Dual	FDJ85020D4-S1					555-806
Dual	FDJ85020D4-1C				X	
Dual	FDJ85020D4-2C			X		
Dual	FDJ85020D4-3C		X			
Dual	FDJ85020D4-NC	X				
Dual with Smart Bias T	FDJ85020D4-S1A					555-806 with AISG





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## Diplexer **Auto DC Sense**

FDJ85020D4-S1 and FDJ85020D4-S1A Models ONLY

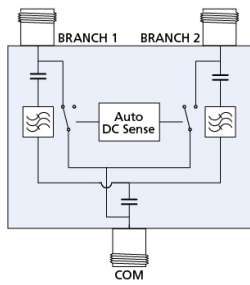
	Branch 1 555-806 MHz	Branch 2 824-960 MHz
Priority 1 (Highest)	X	
Priority 2 (Lowest)		X

In case of more than one port supplying DC/AISG signal:

- Higher Priority will automatically bypass to/from the COM port
- Lower Priority will not pass
- DC-Block Jumper can be used if DC Should not be passed per logic above

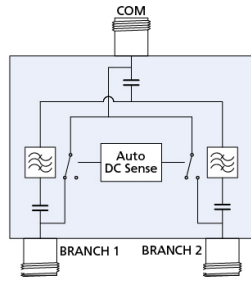
### Diplexer Mode (Near Antenna)

- DC Blocks provide a DC open circuit, will not pass DC/AISG
- Antennas connected without a Bias-T provide a DC short circuit, will not pass DC/AISG
- To turn on port after it has been shut off due to short, reset unit by cycling the power



Standard Priority for Diplexer Mode

### Combiner Mode (Near BTS)



Standard Priority for Combiner Mode

External Document Links

Notes