



The RFS 8PPXX270E is designed for global filtering applications associated with DTV television transmission. It is an 8-pole natural air-cooled filter incorporating two cross couplings to meet all mask requirements. The 8-pole filter allows for FCC tightening of emission mask in ATSC3.0

**FEATURES / BENEFITS**

- Very compact for easy integration into equipment.
- Very low insertion loss (lowest for this size).
- Highest power rating for size/class.
- Tunable over UHF band (470 – 704 MHz)
- Adjustable bandwidth, available for 6 and 8 MHz channels for global applications. External coupling adjustment simplifies tuning.
- -5 to 55 degree C ambient temperature operation.
- All data presented based on measured results.



8PPXX270E Filter

**Technical features**

**GENERAL SPECIFICATIONS**

<b>Product Line</b>		Filters
<b>Product Type</b>		Band IV/V (UHF) TV Bandpass Filter
<b>Model</b>		8PPXX270E
<b>Filter type</b>		8 Pole with 2 cross couplings - 270 mm ground plane spacing
<b>Input / Output Connector</b>		4-1/2" IEC Unflanged Female (Standard) or 4-7/8" IEC Flanged Female or 6-1/8" EIA Flanged Female (Optional) or 4-1/16" Flanged MYAT (Optional)

**ELECTRICAL SPECIFICATIONS**

<b>Impedance</b>	Ω	50
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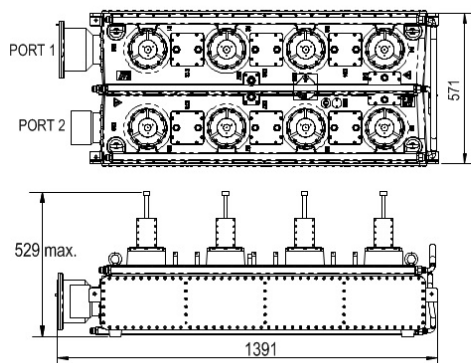
**MECHANICAL SPECIFICATIONS**

<b>Weight</b>	kg (lb)	150 (331)
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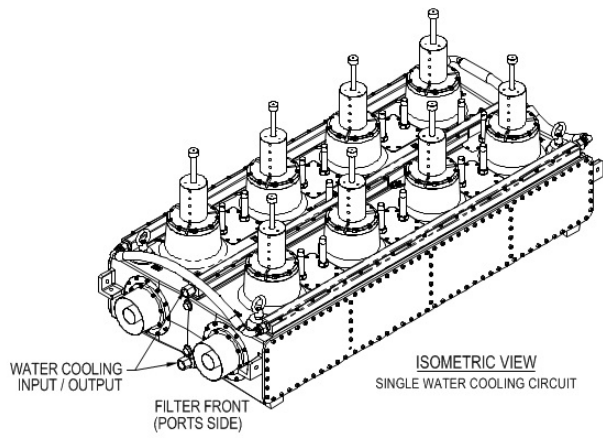


**SPECIFICATIONS**

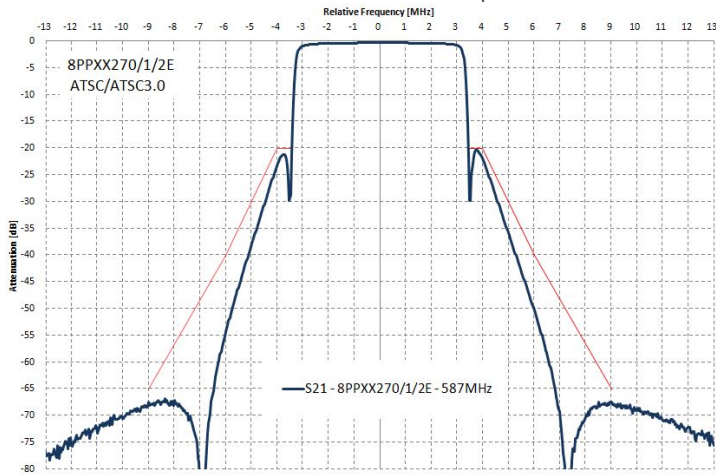
<b>Out-of-Band Emissions Mask</b>		DVB-T ETSI critical	DVB-T ETSI critical	ISDB-T critical	ATSC 1.0/ATSC 3.0
<b>Channel Bandwidths</b>	MHz	8	6	6	6
<b>Frequency Range</b>	MHz	474-698	473-701	473-701	473-701
<b>Input Power Rating</b>	kW	14.9 @ 474 MHz 13.9 @ 698 MHz	10.9 @ 473MHz 9.9 @ 701MHz	10.9 @ 473MHz 9.9 @ 701MHz	12.9 @ 473MHz 11.8 @ 701MHz
<b>Insertion Loss at fc</b>	dB	<0.24 @ 474 MHz <0.26 @ 698 MHz	<0.33 @ 473 MHz <0.35 @ 701 MHz	<0.33 @ 473 MHz <0.35 @ 701 MHz	<0.31 @ 473 MHz <0.33 @ 701 MHz
<b>Attenuation</b>	dB	<1.20 at Fc ± 3.8 MHz >15.0 at Fc ± 4.2 MHz >27.0 at Fc ± 6.0 MHz >52.0 at Fc ± 12.0 MHz	<1.50 at Fc ± 2.85 MHz >15.0 at Fc ± 3.15 MHz >27.0 at Fc ± 4.5 MHz >52.0 at Fc ± 9.0 MHz	<1.30 at Fc ± 2.79 MHz >14.0 at Fc ± 3.15 MHz >31.0 at Fc ± 4.5 MHz >61.0 at Fc ± 9.0 MHz	<0.7 at Fc ± 2.69 MHz <0.9 at Fc ± 2.915 MHz >20 at Fc ± 3.5 MHz >20 at Fc ± 4 MHz >40 at Fc ± 6 MHz >65 at Fc±9 MHz Note 1
<b>VSWR average across carriers</b>		≤1.1			
<b>Return Loss Average Across Carriers</b>	dB	≥26.4			
<b>Group Delay Variation</b>	ns	<590 at Fc ± 3.8 MHz	<690 at Fc ± 2.85 MHz	<590 at Fc ± 2.79 MHz	<290 at Fc ± 2.69 MHz
<b>Maximum Operating Temperature</b>	°C (°F)	80 (176)			
<b>Ambient Temperature Range</b>	°C (°F)	-5 to 55 (23 to 131)			
<b>Maximum Temperature Rise</b>	°C (°F)	40 (104)			
<b>Freq Drift - Ambient Temperature</b>	kHz/°C(°F)	<2 (1.2)			



8PPXX271E Filter views, water cooled option shown



8PPXX271E Iso View, water cooled option shown



Graph 1 - 8PPXX270/271E Filter Typical Response

External Document Links

- [ETSI 6MHz Application Guide](#)
- [ETSI 8MHz Application Guide](#)
- [ATSC Application Guide](#)
- [ISDB-T 6MHz Application Guide](#)

Notes

- Note 1. Tx intermod shoulders 37dB.