



The RFS 8PPXX271E is designed for global filtering applications associated with DTV television transmission. It is an 8-pole liquid-cooled filter incorporating dual cross-couplings. The 8-pole filter allows for FCC tightening of emission mask for ATSC 3.0 in the future.

**FEATURES / BENEFITS**

- Meet FCC mask requirements plus extra protection for adjacent channels.
- Very compact for easy integration into equipment.
- Lowest insertion loss and highest power rating for its 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.
- All data presented upon filed measured results.



8PPXX271E Filter

**Technical features**

**GENERAL SPECIFICATIONS**

Product Line		Filters
Product Type		Band IV/V (UHF) TV Bandpass Filter
Model		8PPXX271E
Filter type		8 Pole with 2 cross couplings - 270 mm ground plane spacing - Liquid Cooled
Input / Output Connector		3-1/8" to 6-1/8" Unflanged and Flanged Female Connectors Are Available

**ELECTRICAL SPECIFICATIONS**

Impedance	Ω	50
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**MECHANICAL SPECIFICATIONS**

Weight	kg (lb)	160 (352)
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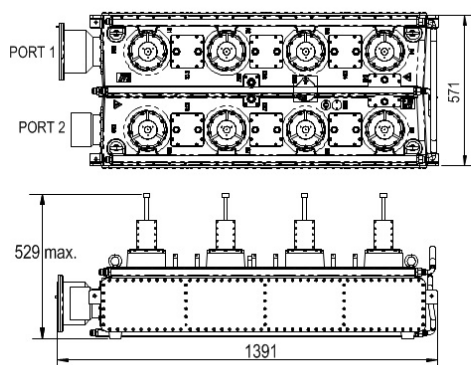
**COOLING**

Cooling		Liquid Cooled
Flow Rate	l/min	3 ≤ rate ≤ 12 (1 ≤ rate ≤ 4 US gal.min)
Max. Propylene Glycol / Water Concentration	%	50



**SPECIFICATIONS**

<b>Out-of-Band Emissions Mask</b>		DVB-T/T2, ETSI critical	DVB-T/T2, ETSI critical	ISDB-T critical	ATSC 1.0/ATSC 3.0 Note1
<b>Channel Bandwidths</b>	MHz	8	6	6	6
<b>Frequency Range</b>	MHz	470-704			
<b>Input Power Rating</b>	kW	26.5 @ 474 MHz 28.5 @ 698 MHz	24 @ 473MHz 22 @ 701MHz	24 @ 473MHz 22 @ 701MHz	30/24 @ 473MHz 30/25 @ 701MHz Note 2
<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	<1.2 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	<1.6 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	<1.3 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 3
<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) Note 2			
<b>Maximum Temperature Rise</b>	°C (°F)	Δ40 (Δ72)			
<b>Freq Drift - Tx Operation</b>	kHz/°C(°F)	<2 (1.2)			
<b>Freq Drift - Ambient Temperature</b>	kHz/°C(°F)	<2 (1.2)			

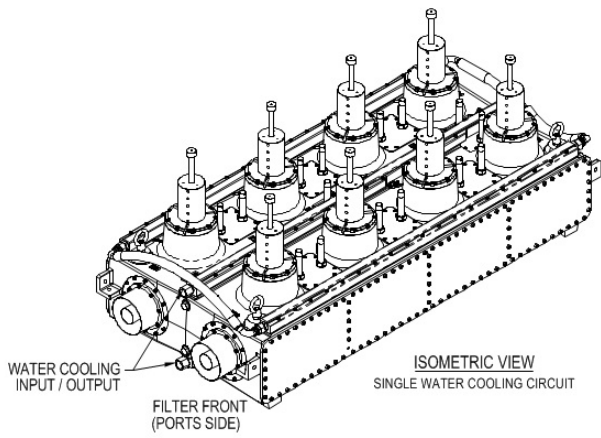


8PPXX271E Plan and Side View

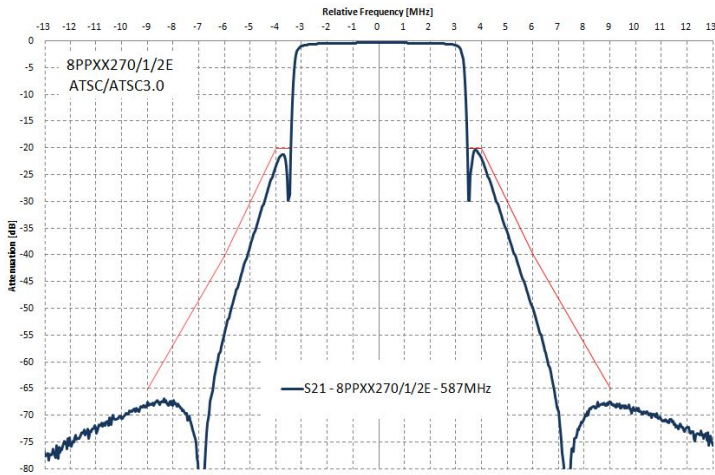


### 8PPXX271E Series

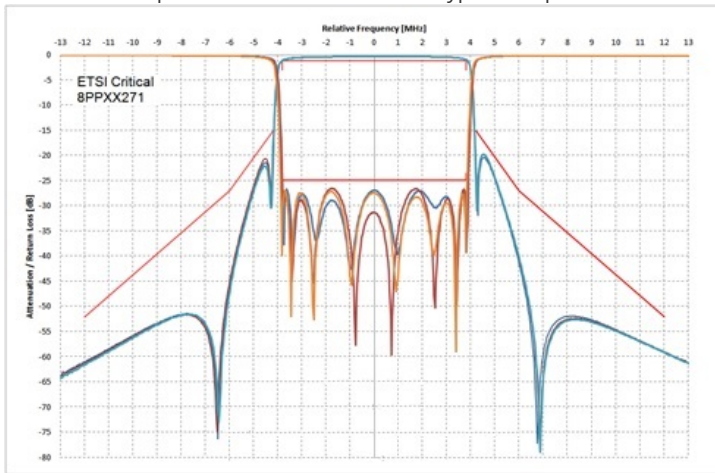
Band IV/V (UHF) PeakPower+™ 30kW bandpass filter



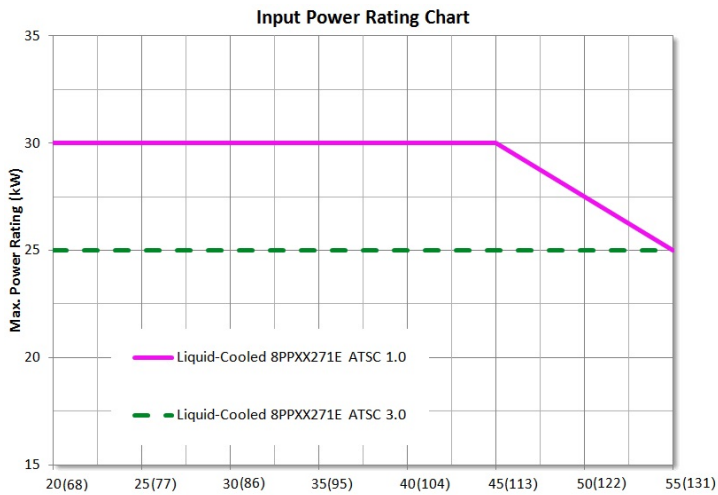
8PPXX271E Iso View



Graph 1 - 8PPXX270/271E Filter Typical Response



Graph 2 - 8PPXX270/1/2E DVB-T/T2 Filter Typical Response



Graph 3 - Coolant (Liquid Cooled) Temperature [°C(°F)]

External Document Links

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

Notes

- Note 1. Other out-of-band emissions masks upon request.
- Note 2. >25kW input power for ATSC 1.0 only. Refer to Graph 3 for required cooling conditions.
- Note 3. Tx intermod shoulders 37dB.