



The RFS 8PPXX201E is designed for global filtering applications associated with DTV television transmission. It is an 8-pole liquid cooled filter incorporating two cross couplings to meet all mask requirements. 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 full UHF band (470 – 862 MHz).
- Adjustable bandwidth, available for 6, 7 & 8 MHz channels for global applications.
- External, non-invasive coupling adjustment.
- Tunable for ETSI and ISDB-T critical and non-critical, and ATSC applications.
- -5 to 55 degree ambient temperature operation.



8PPXX201E Liquid Cooled Filter

**Technical features**

**GENERAL SPECIFICATIONS**

<b>Product Line</b>		Filters
<b>Product Type</b>		Band IV/V (UHF) TV Bandpass Filter
<b>Model</b>		8PPXX201E
<b>Filter type</b>		8 Pole with 2 cross couplings - 200 mm ground plane spacing - Liquid Cooled
<b>Input / Output Connector</b>		3-1/8" EIA Unflanged Female (Standard) or 3-1/8" EIA Flanged Female (Optional) or 3-1/8" MYAT Unflanged Female (Optional) or NAX77D (Optional)

**ELECTRICAL SPECIFICATIONS**

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

<b>Weight</b>	kg (lb)	82 (180.4)
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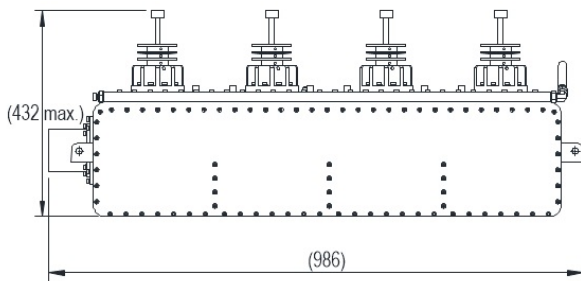
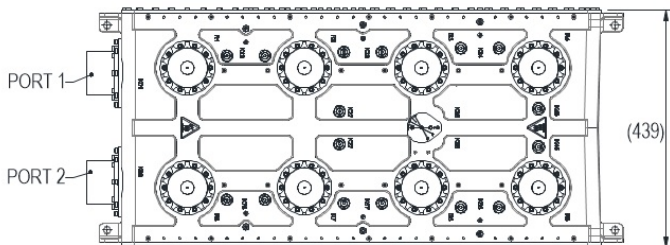
**COOLING**

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

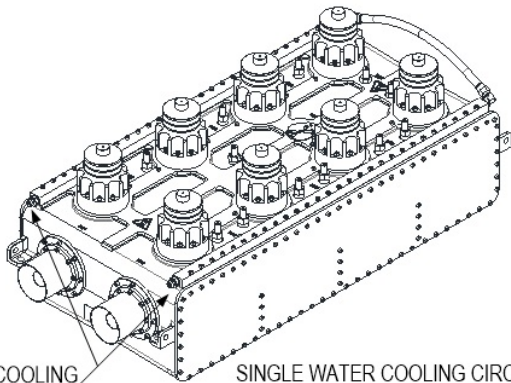


**SPECIFICATIONS**

Out-of-Band Emissions Mask		DVB-T ETSI critical	DVB-T ETSI critical	ISDB-T critical	ATSC 1.0/ ATSC 3.0
Channel Bandwidths	MHz	8	6	6	6
Input Power Rating	kW	14.0 @ 474 MHz 9.8 @ 858 MHz	12.4 @ 473MHz 8.0 @ 803MHz	12.5 @ 473MHz 8.0 @ 803MHz	12.5 @ 473MHz 8.0 @ 803MHz
Insertion Loss at fc	dB	<0.27 @ 474 MHz <0.35 @ 858 MHz	<0.32 @ 473 MHz <0.44 @ 803 MHz	<0.37 @ 473 MHz <0.48 @ 803 MHz	<0.32 @ 473 MHz <0.44 @ 803 MHz
Attenuation	dB	<1.35 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	<1.75 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	<1.45 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	<1 at Fc ± 2.69 MHz <1.2 at Fc ± 2.915MHz >20.0 at Fc ± 3.5 MHz >20.0 at Fc ± 4.0 MHz >40.0 at Fc ± 6.0 MHz >65.0 at Fc ± 9.0 MHz Note 1
VSWR average across carriers		≤1.1	≤1.1	≤1.1	≤1.1
Return Loss Average Across Carriers	dB	≥26.4	≥26.4	≥26.4	≥26.4
Group Delay Variation	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
Maximum Operating Temperature	°C (°F)	80 (176)			
Ambient Temperature Range	°C (°F)	-5 to 55 (23 to 131)			
Maximum Temperature Rise	°C (°F)	Δ40 (Δ72)			
Freq Drift - Tx Operation	kHz/°C(°F)	<2 (1.2)			
Freq Drift - Ambient Temperature	kHz/°C(°F)	<2 (1.2)			



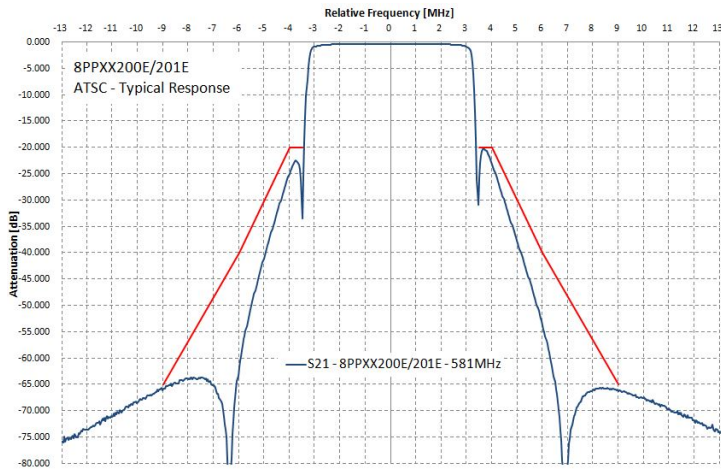
8PPXX201E Plan and Side Views



WATER COOLING  
INPUT / OUTPUT

SINGLE WATER COOLING CIRCUIT

8PPXX201E Isometric View



Graph 1 - 8PPXX200E/201E Typical Filter 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 shoulder at 37dB.