

Microwavefilters® & ®

Wideband Quadruplexer with 20 dB Coupling Port



From 2 GHz to 18 GHz
Rejection > 60 dB

Microwavefilters & TVC srl

Via G. Cavalcanti, 10 - 20063 Cernusco s/N (MI) - ITALY
Tel. +39-02-92162703 Fax. +39-02-92162705

info@mw-tvc.com www.mw-tvc.com

This new **Quadruplexer** works from 2 GHz to 18 GHz. Its main use is in the defense sector for radar warning receiver (RWR) applications, but it can be used for any application where small-size high-performance multiplexers are needed.

Stopband rejection is **more than 60 dB** between the four bands. Insertion losses are ≤ 1.75 dB (typically ≤ 1.75 dB). The coupling port is **20 dB (± 1.5 dB)**.

Quadruplexer QPCD10000-CCCT

Main Characteristics

MECHANICAL & ENVIRONMENTAL SPECIFICATIONS

Connectors: SMA Female on all Ports

Dimensions: 80 x 44 x 11 mm

Operating Temperature Range: -55 ÷ +85 °C

Input Power: 5W

Humidity: Up to 100% non-condensation, MIL-STD-202F, Method 106G

Mechanical Shock: 20g, 1/2sine, 11mili-sec MIL-STD-202, Method 213B, Test Condition A

Vibration Sinusoidal: 10g peak, sine .06" double amplitude, 10-2000Hz, MIL-STD-202, Method 204D, Test condition C

Thermal Shock: MIL-STD-202, Method 107G, Condition A, 5 cycles -55 to +85 Degrees C

EMI/EMC: Units designed to meet EMI/EMC requirements in accordance with MIL-STD- 461E

Finish: Epoxy Painting

FILTER #1

Pass Band: 2.0 – 5.7 GHz

Insertion Loss ≤ 1.2 dB

Return Loss ≥ 10 dB

Stopband Rejection DC ÷ 1.6 GHz ≥ 60 dB

Stopband Rejection 6.6 ÷ 18.0 GHz ≥ 60 dB

FILTER # 2

Pass Band: 6.2 – 9.6 GHz

Insertion Loss ≤ 1.5 dB

Return Loss ≥ 10 dB

Stopband Rejection DC ÷ 5.5 GHz ≥ 60 dB

Stopband Rejection 10.5 ÷ 18.0 GHz ≥ 60 dB

FILTER #3

Pass Band: 10.4 – 13.6 GHz

Insertion Loss ≤ 1.5 dB

Return Loss ≥ 10 dB

Stopband Rejection DC ÷ 9.2 GHz ≥ 60 dB

Stopband Rejection 15.2 ÷ 18.0 GHz ≥ 60 dB

FILTER # 4

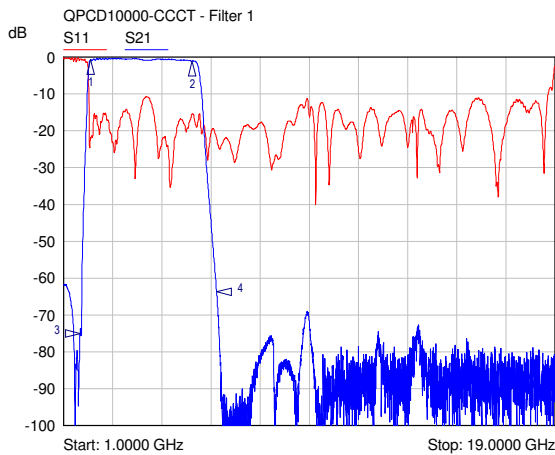
Pass Band: 14.6 – 18.0 GHz

Insertion Loss ≤ 1.75 dB

Return Loss ≥ 10 dB

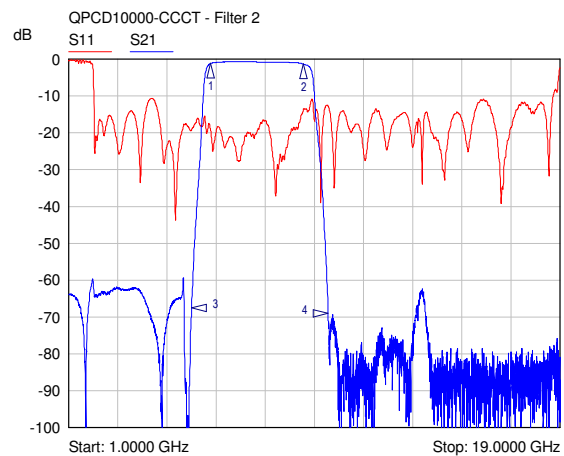
Stopband Rejection DC ÷ 13.0 GHz ≥ 60 dB

Filter # 1: 2.0 – 5.7 GHz



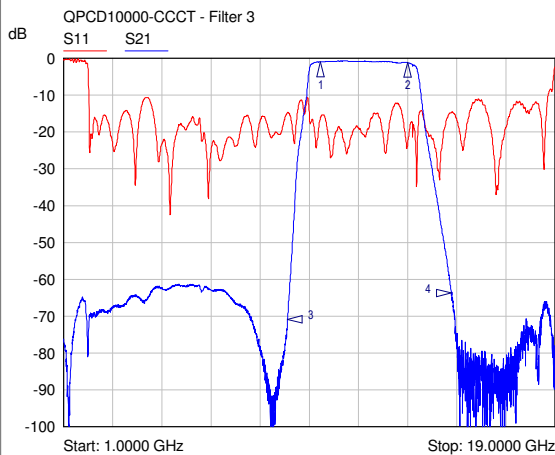
Mkr	Trace	X-Axis	Value	Notes
1 ▾	S21	2.0000 GHz	-0.70 dB	
2 ▾	S21	5.7000 GHz	-1.10 dB	
3 ▾	S21	1.6000 GHz	-75.02 dB	
4 ▾	S21	6.6000 GHz	-63.71 dB	

Filter # 2: 6.2 – 9.6 GHz



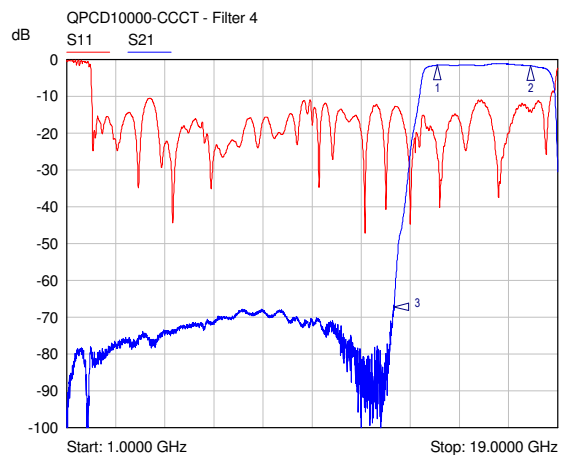
Mkr	Trace	X-Axis	Value	Notes
1 ▾	S21	6.2000 GHz	-1.22 dB	
2 ▾	S21	9.6000 GHz	-1.41 dB	
3 ▾	S21	5.5000 GHz	-67.43 dB	
4 ▾	S21	10.5000 GHz	-68.99 dB	

Filter # 3: 10.4 – 13.6 GHz



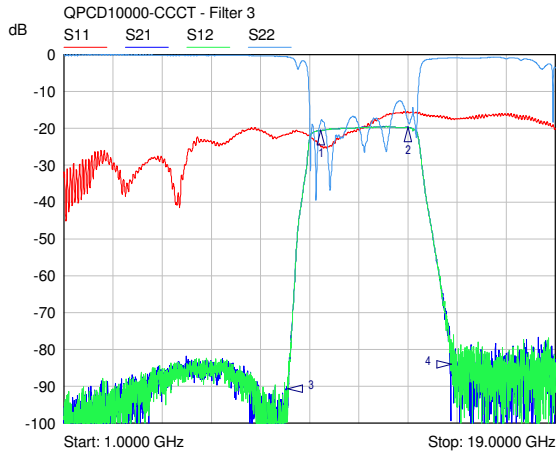
Mkr	Trace	X-Axis	Value	Notes
1 ▾	S21	10.4000 GHz	-1.01 dB	
2 ▾	S21	13.6000 GHz	-1.21 dB	
3 ▾	S21	9.2000 GHz	-70.84 dB	
4 ▾	S21	15.2000 GHz	-63.64 dB	

Filter # 4: 12.6 – 18.0 GHz



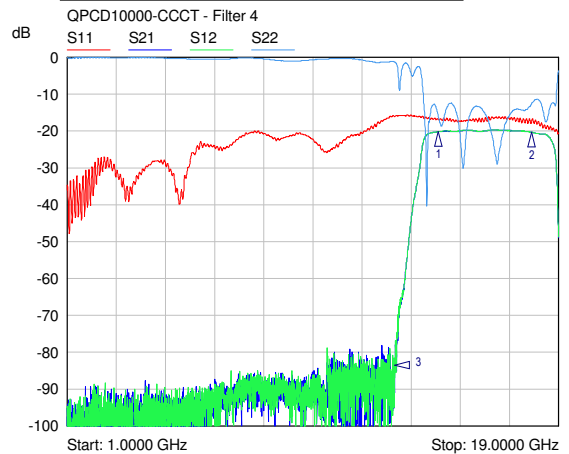
Mkr	Trace	X-Axis	Value	Notes
1 ▾	S21	14.6000 GHz	-1.57 dB	
2 ▾	S21	18.0000 GHz	-1.69 dB	
3 ▾	S21	13.0000 GHz	-67.13 dB	

Filter # 3 to Coupled Port



Mkr	Trace	X-Axis	Value	Notes
1	S21	10.4000 GHz	-20.58 dB	
2	S21	13.6000 GHz	-19.75 dB	
3	S21	9.2000 GHz	-90.57 dB	
4	S21	15.2000 GHz	-84.00 dB	

Filter # 4 to Coupled Port



Mkr	Trace	X-Axis	Value	Notes
1	S21	14.6000 GHz	-20.21 dB	
2	S21	18.0000 GHz	-20.36 dB	
3	S21	13.0000 GHz	-83.59 dB	