



Tunable High-Q, High Power VHF/UHF Bandpass Filter

The core of Teledyne's CB503 is the three section passive machined combine filter with an input/output coupling structure that enables the filter to be tuned to any central frequency in the range of 160MHz to 360MHz maintaining its high-Q and this excellent rejection, insertion loss and centre return loss performance.

A unique tuning mechanism is employed that is designed to handle peak RF voltages generated by high power input signals and avoids the need for moving and sliding RF grounding contacts that have inherently poor reliability and short operational life time due to wear and tear through mechanical friction. The controller supports both RS232 and USB interfaces as standard. However, optional support can be added for RS422, RS485, SPI, I2C, Ethernet and CAN interfaces.

The need for tunable filter technology stems from the fact that high power communication systems and IED Jammer transmitters severely limit the use of tactical radio communication systems on the battle field. Generally, this clash within the radio spectrum's operational needs during the tactical missions, is de-conflicted using fixed high-Q high power RF bandpass and band stop filters installed prior to the mission. This can limit the operational effectiveness due to the potentially large number of filters within the allocated radio communication channels, which need to be transported, stored in the field and fitted by trained technical personnel. A single tunable filter would replace many of these filters having the ability to be tuned over an octave range.

FEATURES

- Tuning range: 160 - 360MHz
- Bandwidth: 3% fo
- Insertion loss: <0.6dB
- VSWR: Better than 1.5:1
- 40dBc rejection bandwidth: 17% fo
- Fully digitally controlled using high resolution stepper motor actuators
- Operating power range: 100 Watts

APPLICATIONS

- De-confliction filtering
- Military mobile/mounted VHF/UHF Communication systems
- Base station antenna filters

See restrictions on published datasheets at www.teledynedefence.co.uk/