

What is adjustable capacitance?

Adjustable capacitance makes these capacitors essential for fine-tuning electronic circuits. In electronic applications like radios and oscillators, their ability to adjust capacitance by changing surface area, plate spacing, or dielectric material allows for precise control.

Can a switch-capacitor filter achieve multifunctional filtering characteristics?

The measurement results indicate that the proposed switch-capacitor filter can achieve multifunctional filtering characteristics, including low-pass, high-pass, band-pass, band-stop, and all-pass. Meanwhile, it can achieve a bandwidth of 5 Hz to 10 kHz.

What is the feedback coefficient of a switched-capacitor filter?

Among is the feedback coefficient (in switched-capacitor filters, the integral capacitor is often much larger than the switching capacitor, and the feedback coefficient is close to 1). In our design, has a minimum of approximately 0.8. For a 0.1% small signal establishment accuracy, the required establishment time is approximately .

What is a second-order switch-capacitor filter?

In this paper, a second-order switch-capacitor filter based on the relationship between the transfer function characteristics of each function filter is designed by using switch-capacitor technology, which integrates low-pass, high-pass, band-pass, band-stop, and all-pass.

How many kHz can a switch-capacitor filter achieve?

The two completely independent second-order switch-capacitor filters are integrated on a single chip and manufactured using the Huahong BCD350GE high-voltage 24 V process. The measurement results indicate that the proposed switch-capacitor filter achieves various functional filtering characteristics and achieves a bandwidth of 5 Hz to 10 kHz.

What is a variable capacitor?

Learn about variable capacitors, essential parts of many electronic devices. Adjustable capacitance makes these capacitors essential for fine-tuning electronic circuits.

The circuit uses the UAF42 state-variable filter IC, two op amps, a few resistors and two common MDACs. Capacitors aren't required because the UAF42 has on chip 1000pF, 0.5% precision ...

The invention discloses a tunable filter including a first circuit and a second circuit. The first circuit and the second circuit respectively include a first adjustable capacitor, a second adjustable capacitor, a first inductor, and a second inductor. The first inductor is connected in series with the second inductor, and is further connected in parallel with the first adjustable capacitor.

The filters exhibit relatively wider bandwidths which are easily adjustable by way of changing the geometrical parameters of interdigital capacitors and slots.

Rotary variable capacitor Rotary variable capacitor: several rotor positions.. A variable capacitor is a capacitor whose capacitance may be intentionally and repeatedly changed mechanically or electronically. Variable capacitors are often used in L/C circuits to set the resonance frequency, e.g. to tune a radio (therefore it is sometimes called a tuning capacitor or tuning condenser), or ...

a variety of filters may be required in the circuit prior to the multiplexer. Usually these filters are implemented with operational amplifiers (op amps) in combination with fixed resistors and capacitors. An alternative filter design solution is to have one filter following the multiplexer. In this circuit, the low-pass

Filter capacitors convert alternating current into direct current for grid-level energy storage and digital communications. This study explores replacing electrolytic ...

Integrated Passives Baluns Balun-Filter Combinations Band Pass Filters Couplers Diplexers & Triplexers High Pass Filters Low Pass Filters RF Hybrid Coupler 90-Degrees Power Dividers ...

An Adjustable Audio Filter System for the Receiver - Part 1 The audio response is shaped as required using Switched Capacitor Filters Lloyd Butler VK5BR (Originally Published in Amateur Radio, March 1995) Front panel view of the original receiver filter unit. Not shown are frequency calibration scales added with the modifications, Part 2 ...

Adjustable capacitance value: Ideal for applications requiring precise, stable capacitance: Useful for tuning and adjusting circuit parameters: ... Power supplies, ...

Several adjustable filter structures in monolithic microwave integrated circuits (MMICs) have been proposed, such as the LC BPF, RC BPF, transconductance-capacitor (g m-C) BPF,, and N-path BPF . Most of them realize the ...

This article proposes a second-order switch-capacitor filter that integrates low-pass, high-pass, band-pass, band-stop, and all-pass, and achieves flexible bandwidth ...

Keywords: active filter, adjustable band-pass treble and bass audio amplifier. 1 Introduction ... This adjustable band-pass filter system needs capacitors, resistors, potentiometers, op-amps, a input jack, a portable audio device, a speaker, lead wires, a DC power supply

Home; Principle of adjustable filter capacitor; Principle of adjustable filter capacitor. Frequency Response. We can see from the results above, that as the frequency applied to the RC network increases from 100Hz to 10kHz, the voltage dropped across the capacitor and therefore the output voltage (V_{OUT}) from the circuit

decreases from 9.9v to 0.718v.

A radio transmitter and/or receiver comprising: an oscillator tuning circuit comprising an adjustable capacitor whose capacitance is adjustable by means of a first tuning signal; a filter tuning circuit comprising an adjustable capacitor whose capacitance is adjustable by means of a second tuning signal; an oscillator whose operational frequency is dependant on the reactance of the ...

This paper introduces a fully reconfigurable floating-gate-transistor-capacitor (FGT-C) filter that exhibits compactness and power efficiency. The proposed filter incorporates ...

For example: UKMF1-0,4-250-50 U3 - Filter capacitor bank upgraded for voltage class 0,4 kV with mismatching factor 5,67% (210 Hz), rated power 250 kVAr with a control step 50 kVAr, climatic performance and location category as per GOST 15150-69 - U3.

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