

# SP4660

## 1GHz ÷ 256 PRESCALER WITH LOW CURRENT AND LOW RADIATION

The SP4660 ÷256 prescaler is one of GPS' range of high speed dividers for consumer frequency synthesis and measurement systems. It has a low supply current, giving reduced dissipation and operating temperatures in an 8-pin plastic DIL package. Spurious radiation has been reduced from all stages.

The SP4660 incorporates an on-chip preamplifier with differential inputs and has balanced ECL outputs.

### FEATURES

- Low Supply Current
- Low Radiation
- Input Wideband Amplifier
- High Input Sensitivity from 50MHz to 1GHz
- High Input Impedance
- Balanced ECL Outputs
- Electrostatic Protection †

† ESD precautions must be observed

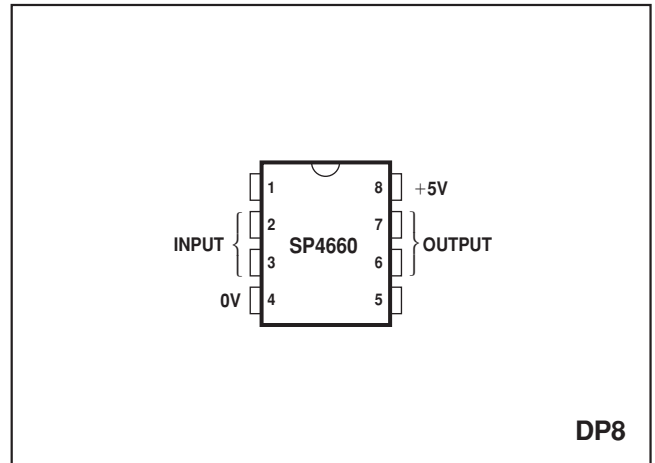


Fig 1. Pin connections - top view

### ABSOLUTE MAXIMUM RATINGS

Supply voltage, $V_{CC}$	+7V
Input voltage	2.5V p-p
Storage temperature	-55°C to +150°C
Operating temperature range	0°C to +80°C

### ORDERING INFORMATION

SP4660 NA DP

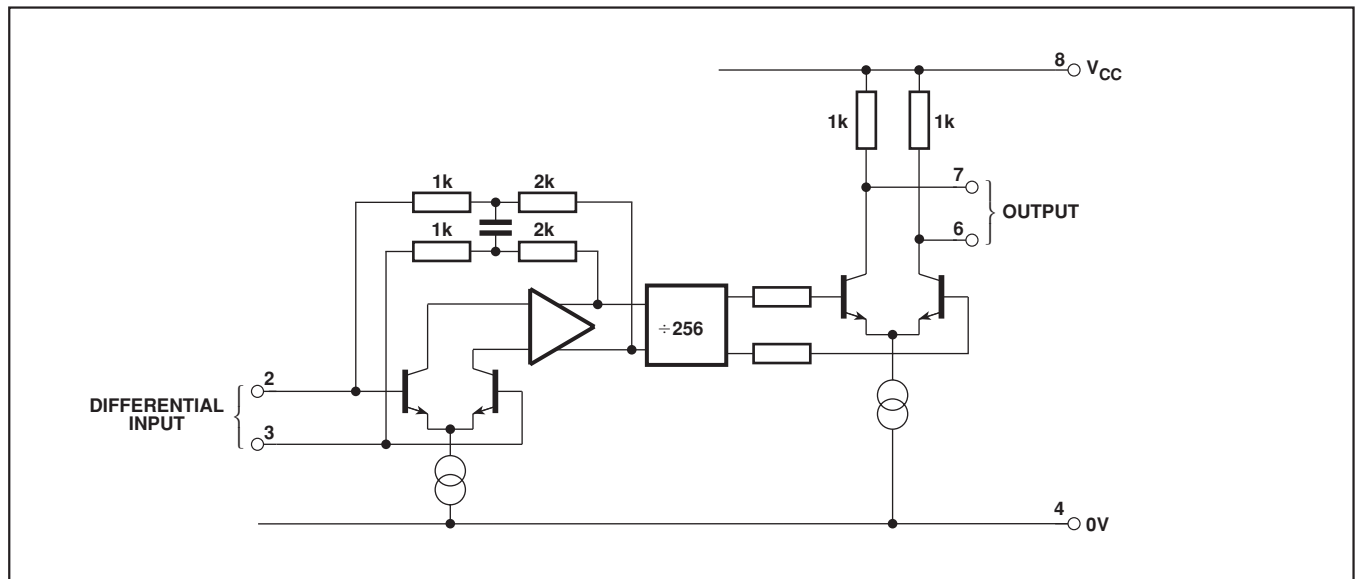


Fig. 2 SP4660 block diagram

# SP4660

## ELECTRICAL CHARACTERISTICS

These characteristics are guaranteed over the following conditions (unless otherwise stated):

$T_{AMB} = 0^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$ ,  $V_{CC} = 4.5\text{V}$  to  $5.5\text{V}$  (Test circuit see Fig. 3)

Characteristic	Pin	Value			Units	Conditions
		Min.	Typ.	Max.		
Supply current, $I_{CC}$	8		32	45	mA	$V_{CC} = +5\text{V}$ RMS sinewave (50Ω system)
Input sensitivity	2,3					
50MHz			3	5	mV	
150MHz to 1000MHz			1	5	mV	
Input overload	2,3	300			mV	50MHz to 1GHz operating frequency See Fig. 6
Input impedance	2,3		50		Ω	
			2		pF	
Output voltage, no load	6	0.8			V p-p	} $f_{IN} = 1\text{GHz}$ , $V_{CC} = +5\text{V}$
	7	0.8			V p-p	
Output voltage with load as Fig. 3	6	0.6			V	
	7	0.6			V	
Output impedance	6		1		kΩ	
	7		1		kΩ	
Output imbalance	6,7			0.1	V	

### NOTE

The difference between the maximum input sensitivity and minimum overload voltage is the guaranteed dynamic range. Input signal levels should be maintained within these limits at all frequencies.

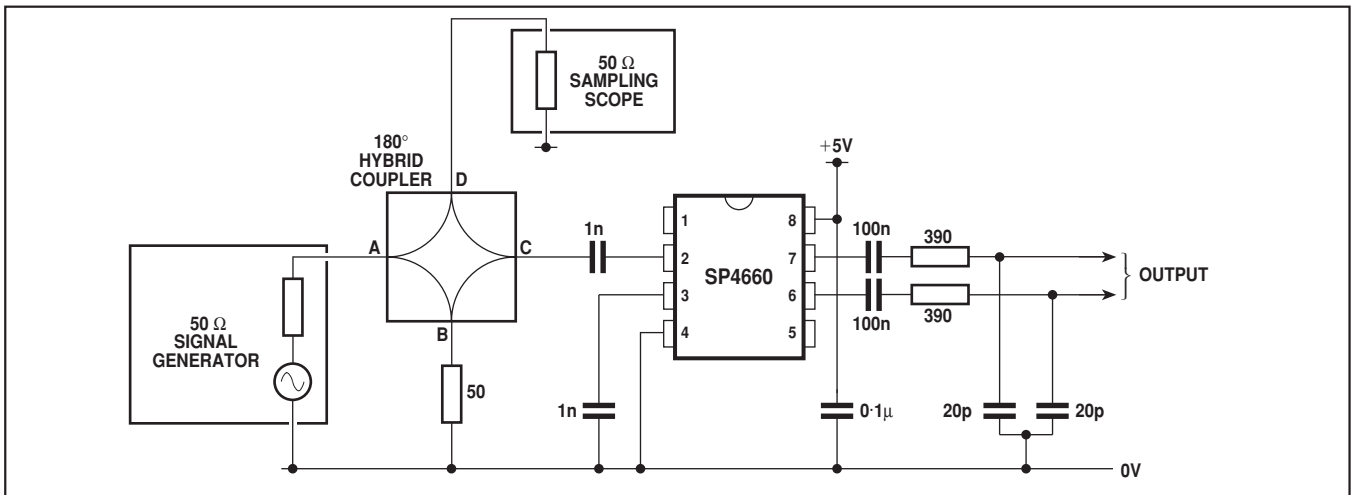


Fig. 3 Test circuit

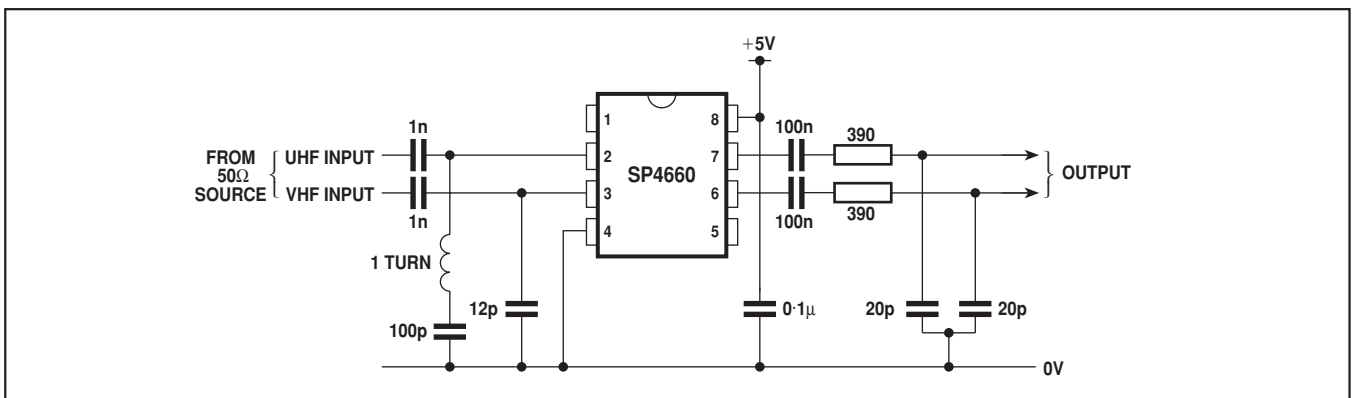


Fig. 4 Application circuit

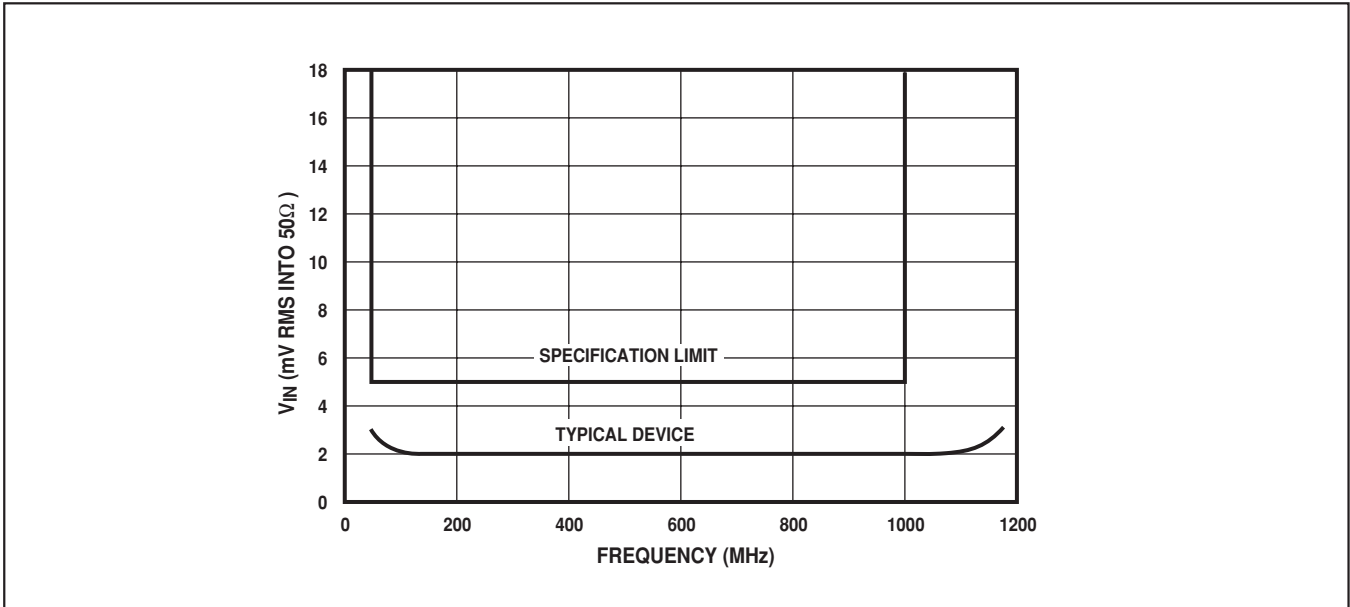


Fig. 5 Typical input sensitivity

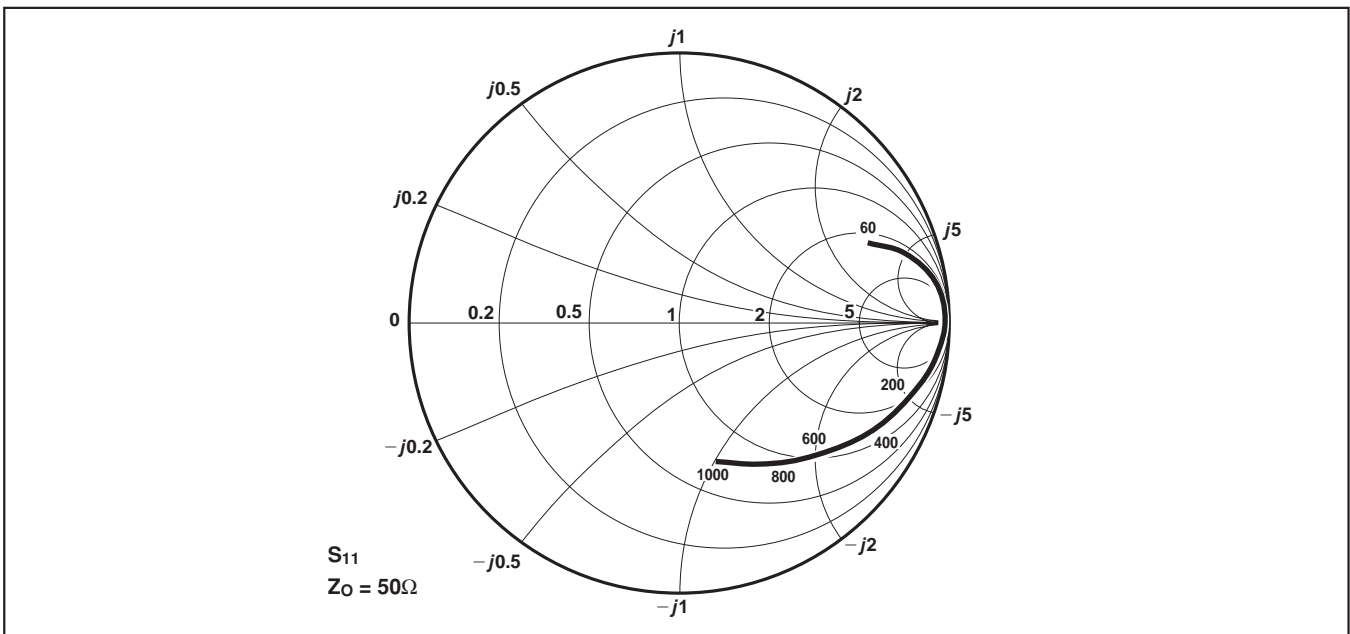


Fig. 6 Typical input impedance (frequencies in MHz)



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