

## Synthesizer Specifications (Select Model)

PTS 040

PTS 120

PTS 160

PTS 250

PTS 310

PTS 500

PTS 620

PTS 1600

PTS 3200

PTS 6400

PTS x10

PTS D310

PTS D620

## PTS Synthesizer Specifications

### PTS 500 FREQUENCY SYNTHESIZER



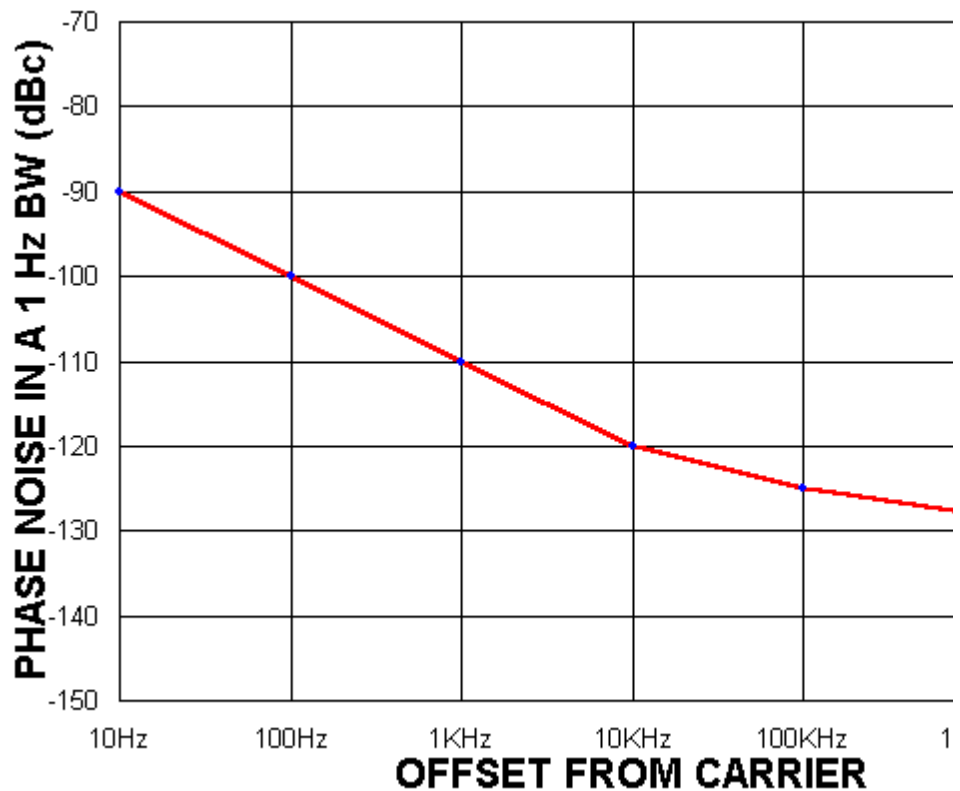
- 1 MHz to 500 MHz
- +3 to +13 dBm output
- choice of resolution
- very low phase noise
- fast switching, 5-20  $\mu$ s
- fully programmable, BCD or
- modular flexibility, remote-c
- 7 decades of DDS resolution  
(with phase-continuous swi

NOTE: PTS 500 shown for illustration in "M" and "V" cabinets. Consult catalog for full cabinet mechanical specifications.

#### SPECIFICATIONS

<b>Frequency</b>	Range:	1.000 000 0 MHz to 499.999 999 9 MHz	
	Resolution:	0.1 Hz to 100 KHz, optional in decades	
	Accuracy:	same as frequency standard	
	Control:	manual by 10-position dial; remote by TTL-level parallel entry BCD or GPIB (optional)	
<b>Switching Time</b>		(to within 0.1 radian at new frequency)	
	100 MHz - 10 MHz digit:	20 $\mu$ seconds	
	1 MHz - 0.1 Hz digit:	5 $\mu$ seconds	
<b>Output</b>	Level:	+3 to +13 dBm (1V max, 50 $\Omega$ ), metered in dBm and volts (rms)	
	Flatness:	$\pm$ 0.5 dB	
	Impedance:	50 $\Omega$	
	Control:	manual by front panel control; remote by analog voltage	
<b>Spurious</b>		(at full power output, +13 dBm)	
<b>Outputs</b>	Discrete:	-70 dBc (-55 dBc, 1/2 & 3/2 $f_{out}$ above 250 MHz)	
	Harmonics:	-30 dBc at full output (-40 dBc at lower level)	
	Phase Noise:	-63 dBc (0.5 Hz to 15 KHz) including effects of internal standard	
	$\mathcal{L}$ (1Hz):	100 Hz/ -100 dBc, 1 KHz/ -110 dBc, 10 KHz/ -120 dBc, 100 KHz	
	Noise Floor:	- 135 dBc/Hz	
<b>Frequency Standard</b>	Internal:	OCCO	or TCXO
		3x10 <sup>-9</sup> /day	1x10 <sup>-8</sup> /day

		$\pm 1 \times 10^{-8}/0-50^{\circ} \text{ C}$	$\pm 1 \times 10^{-6}/0-50^{\circ} \text{ C}$
		$1 \times 10^{-6}/\text{year}$	$2 \times 10^{-6}/\text{year}$
	External Drive:	10 MHz, 0.4 Vrms into 300 $\Omega$ ; 5 MHz, 0.5 Vrms into 300 $\Omega$	
	Aux. Output:	10.000 MHz, 0.4 Vrms into 50 $\Omega$	
		(Note: internal or external standard required for operation)	
<b>General</b>	Operating Ambient:	0 - 55° C, 95% R.H.	
	Power:	105 - 125V, 50 - 400 Hz, 50W (100, 220, 240V optional)	
	Dimensions:	19 x 5.25 x 18 inches (relay rack or bench cabinet)	
	Weight:	35 lbs.	
For units equipped with a <b>DDS-TLU option</b> , specifications are modified as follows:			
<b>DDS Option:</b>		<b>H</b>	<b>K</b>
<b>Phase-Continuous Switching Range</b>		100 KHz thru 0.1 Hz digits (~1 MHz bandwidth)	10 KHz thru 0.1 Hz digits (~100 KHz bandwidth)
<b>Frequency</b>	Resolution:	0.1 Hz (0.2 Hz, 250-500MHz)	0.1 Hz
	Optional Phase Rotation:	0 - 360° in .36° steps (.72° steps, 250-500 MHz)	N/A
<b>Switching Time</b>		(within phase-continuous range) < 1 $\mu\text{s}$ transient, 2 $\mu\text{s}$ delay	
<b>Spurious Outputs</b>	Discrete:	-60 dBc	-70 dBc
	Phase Noise:	-63 dBc	-63 dBc
<b>Pricing (USA domestic)</b>		\$6,770 (100 KHz resolution) to \$8,450 (0.1 Hz resolution) plus a	



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