

SPECIFICATIONS

Frequency

Range:	specified 10 MHz decade, 0.1-100 MHz (0.1-10, 10-20,...90-100 MHz)
Resolution:	1 Hz (optional, 0.1 Hz under remote-control only)
Accuracy	same as frequency standard
Control:	manual by 10-position dial; remote by TTL-level parallel entry BCD or GPIB (optional)

Switching Time (to within 0.1 radian at new frequency)

1 MHz digit	
non-phase-continuous:	5 μ seconds
phase-continuous:	<1 μ second transient, 1 μ second delay
100 KHz - 1 Hz digits:	<1 μ second transient, 1 μ second delay, phase-continuous

Output

Level:	+3 to +13 dBm (1V max, 50 Ω)
Flatness:	± 0.25 dB
Impedance:	50 Ω
Control:	manual by front panel control; remote by analog voltage

Spurious Outputs

	(at full power output, +13 dBm)
Discrete:	-60 dBc
Harmonics:	-35 dBc
Phase Noise:	-70 dBc (0.5 Hz to 15 KHz) including effects of internal standard
$\mathcal{L}(1\text{Hz})$:	10 Hz/-110 dBc, 100 Hz/-122 dBc, 1 KHz/ -132 dBc, 10 KHz/ -133 dBc, 100 KHz/ -134 dBc
Noise Floor:	-135 dBc/Hz

Frequency Standard

Internal:	OCXO	or	TCXO
	$3 \times 10^{-9}/\text{day}$		$1 \times 10^{-8}/\text{day}$
	$\pm 1 \times 10^{-8}/0 - 50^\circ\text{C}$		$\pm 1 \times 10^{-6}/0 - 50^\circ\text{C}$
	$1 \times 10^{-6}/\text{year}$		$2 \times 10^{-6}/\text{year}$
External:	10 MHz, 0.4-2.0 Vrms into 50 Ω ; 5 MHz, 0.5-2.0 Vrms into 50 Ω		
Aux. Output:	10.000 MHz, 0.4 Vrms into 50 Ω (Note: internal or external standard required for operation)		

General

Operating Ambient:	10 - 55°C, 95% R.H.
Power:	105 - 125V, 50 - 400 Hz, 30W (100, 220, 240V optional)
Dimensions:	19 x 3.5 x 17.5 inches (relay rack or bench cabinet)
Weight:	18 lbs
Optional Phase Rotation:	0 - 360° in .225° steps

PHASE-CONTINUOUS SWITCHING

The PTS x10 sets new standards by offering users a 2 MHz bandwidth of ultra-low phase noise and low spurious phase-continuous switching range. Furthermore, the 2 MHz bandwidth can be switch-selected to span either **even** or **odd** MHz steps, guaranteeing phase-continuous coverage in the neighborhood of **any** selected output frequency.

Example:

Consider the PTS x10 configured to cover the 40-50 MHz decade.

With switch-selected **even** coverage, phase-continuous spans are: 40-41.999999, 42-43.9, 44-45.9, 46-47.9, 48-49.9

With switch-selected **odd** coverage, phase-continuous spans are: 39-40.999999, 41-42.9, 43-44.9, 45-46.9, 47-48.9



PTS x10 FREQUENCY SYNTHESIZER

- 10 MHz bandwidth, configured to cover any specified decade 0.1 - 100 MHz (0.1-10, 10-20,...80-90, 90-100)
- 1 Hz resolution with DDS phase-continuous switching
- fully programmable, BCD or GPIB, with remote-only versions available.

The PTS x10 transfers the accuracy and stability of a frequency standard (built-in or external) to any output frequency within the configured 10 MHz decade specified by the user at the time of order (e.g., 20-30 MHz, 30-40 MHz, etc.). Additional optional field-installable replacement modules allow easy and rapid reconfiguration to another selected decade.

NOTE:

PTS x10 shown for illustration in "M" and "R" cabinets. Consult pages 28, 29 for full cabinet style listing. Consult page 27 for cabinet mechanical specifications

