

## SPECIFICATIONS

### Frequency

Range:	0.100 000 0 MHz to 159.999 999 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)

### Switching Time (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

### Output

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

### Spurious

#### Outputs

	(at full power output, +13 dBm)
Discrete:	-75 dBc
Harmonics:	-35 dBc at full output (-40 dBc at lower level)
Phase Noise:	-63 dBc (0.5 Hz to 15 KHz) including effects of internal standard
$\mathcal{L}(1\text{Hz})$ :	100 Hz/ -105 dBc, 1 KHz/ -115 dBc, 10 KHz/ -123 dBc, 100 KHz/ -127 dBc
Noise Floor:	-135 dBc/Hz

### Frequency Standard

Internal:	OCXO	or	TCXO
	3 x 10 <sup>-9</sup> /day		1 x 10 <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 x 10 <sup>-6</sup> /year		2 x 10 <sup>-6</sup> /year
External:	10 MHz, 0.4-2.0 Vrms into 300 $\Omega$ ; 5 MHz, 0.5-2.0 Vrms into 300 $\Omega$		
Aux. Output:	10.000 MHz, 0.4 Vrms into 50 $\Omega$ (Note: internal or external standard required for operation)		

### General

Operating Ambient:	0 - 55°C, 95% R.H.
Power:	105 - 125V, 50 - 400 Hz, 40W (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 **DDS-TLU** option, specifications are modified as follows:

### DDS Option

#### H

#### K

#### Phase-Continuous Switching Range

100 KHz thru 0.1 Hz digits (~1 MHz bandwidth)	10 KHz thru 0.1 Hz digits (~100 KHz bandwidth)
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#### Frequency Resolution

0.1 Hz	0.1 Hz
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#### Optional Phase Rotation

0-360° in .36° steps	N/A
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#### Switching Time

(within phase-continuous range) <1 $\mu$ s transient, 2 $\mu$ s delay

#### Spurious Outputs

Discrete:	-65 dBc	-75 dBc
Phase Noise:	-63 dBc	-63 dBc



## PTS 160 FREQUENCY SYNTHESIZER

- 0.1 MHz to 160 MHz
- + 3 to + 13 dBm output
- choice of resolution
- very low phase noise
- fast switching, 5 - 20 $\mu$ s
- fully programmable, BCD or GPIB
- modular flexibility, remote-only versions
- low power consumption, high reliability
- 7 decades of DDS resolution available with phase continuous switching

#### NOTE:

PTS 160 shown for illustration in "B" cabinet.  
Consult pages 28, 29 for full cabinet style listing.  
Consult page 26 for cabinet mechanical specifications.

