



PTS2600 Microwave Frequency Counter



General Description

The PTS2600 is a low cost microwave frequency counter. It will measure frequencies over the 40 Hz to 20 GHz range in four bands with good sensitivity. Operation to 26 GHz and beyond is possible at reduced sensitivity. Although not having all the features of the top models, it never the less, gives good performance for under half the price of competitive models. Options to extend the frequency to 65 GHz will be available in the future.

12-Digit Display

The PTS2600 has a 12-digit LCD graphic frequency display. The display shows the frequency measurement result, gate times (resolution), menu functions as well as the power meter display. All these displays are shown simultaneously.

Multi-Gate Times

Gate times from 1 ms to 10 s can be selected, giving frequency resolutions from 0.1 Hz to 10 kHz, even when measuring a 20 GHz frequency! Also the display update can be changed from 0 seconds to infinite (hold) in four settings. The infinite setting effectively freezes the display.

Null Function

When the null button is pressed, the current frequency reading is used as a reference, and all subsequent readings show the difference between the new frequency measurement and this stored reference. The stored reference value is also shown on the LCD display.

Various Timebase Options including Rubidium Oscillator Timebase

Various timebase options allow the PTS2600 to be configured to your exact requirements. The basic timebase gives ± 2 ppm accuracy. Option 02, the OXCO timebase gives 0.05 ppm accuracy and Option 03 adds an internal Rubidium oscillator. The Rubidium oscillator has an initial accuracy of $\pm 5 \times 10^{-11}$ and a drift rate of less than 5×10^{-11} per month. Alternatively the PTS2600 has an external timebase input enabling the PTS2600 to be synchronized to an external time base such as a caesium oscillator or GPS frequency standard. An example of an ideal GPS frequency standard is the GPS10R, also available from Precision Test Systems.

Power Meter Indicator supplied as standard

The power meter will display the power input on band three (350 MHz to 20 GHz). Power over the range -5 dBm to -20 dBm can be measured to ± 10 dB accuracy and 0.1 dB resolution.

High Quality of Construction and Low Price

Don't be fooled by the price. The PTS2600 is made to the highest standards. All RF circuits are housed in aluminium enclosures which have been milled out of solid pieces of aluminium. These modules sit on a steel base plate. The PTS2600 is then housed in a purpose built aluminium case with solid front and rear aluminium panels.

Specifications

Specification Parameter	Special Condition	Specification	Comments
Frequency			
Frequency Range	Band One A	40 Hz to 70 MHz	Usable from 20 Hz
	Band One B	70 MHz to 300 MHz	
	Band Two	30 MHz to 350 MHz	Usable to > 400 MHz
	Band Three	350 MHz to 20 GHz	Usable to over 26 GHz
Frequency Resolution		0.1 Hz to 10 kHz	Settable on front panel
Inputs			
Input Impedance	Band One	1 M Ω nominal	
	Band Two and Three	50 Ω nominal	
Connectors	Band One and ,Two	BNC socket	
	Band Three	N type socket	
Input Sensitivity	Band One	50 mV rms	Typically <30 mV rms
	Band Two	-25 dBm (12mV rms)	Typically < -30 dBm
	Band Three	Better than -18 dBm from 0.35GHz to 20 GHz	Typically better than: -35 dBm 1-8 GHz -30 dBm 8-11 GHz -25 dBm 11-17 GHz -23 dBm 17-18.6 GHz
Maximum Input	Band One	10 V rms and 50 VDC	
	Band Two	+13 dBm and 50 VDC	
	Band Three	+13 dBm and 0 VDC	Damage Level 3V rms
Miscellaneous			
Acquisition Time	Band Three	1 to 4 seconds	Can be improved to < 0.3 s using manual acquire mode
AM Tolerance	Band Three	< 85%	At a 1 kHz rate
FM Tolerance	Band Four	< 1 MHz p-p	At a 1 kHz rate
Timebase Accuracy	0 to +40 $^{\circ}$ C	± 2 ppm	High Stability Options available

External Reference (10 MHz)	Rear Panel BNC socket	0 dBm nominal	Settable via front panel
Display	LCD graphic display	130 mm x 37 mm	With back light
Frequency Display		12 digit LCD	10 mm high digits
Display Time	All bands	0.5 sec, 2 sec, infinite and minimum (0 sec)	
Power Meter			
Power Meter Range	Operates on Band Three only	-5 dBm to -20 dBm	Can be used as low as -40 dBm at some frequencies
Display		3 digit LCD display	
Resolution		0.1 dB	
Accuracy		± 10 dB	Typically < 7 dB error at most frequencies
Option 02 OXCO Timebase			
Accuracy	0 to +40 °C	± 0.05 ppm	
Option 03 Rubidium Timebase			
Temperature Coefficient	0 to +40 °C	± 5 x 10 ⁻¹¹	
Accuracy at shipment		± 5 x 10 ⁻¹¹	
Aging		< 5 x 10 ⁻¹¹ per month	After 30 days operation
Option 04, RS232 Interface and Option 05, 65 GHz Frequency Extender			
These options will be available in the future			
General			
Operating Temperature		0 °C to 40 °C	
AC Power Input		115 and 230 VAC ± 10%	Settable on rear panel
AC Mains Fuse	115 VAC	1 A slow blow (2A opt 03)	250 V type
	230 VAC	500 mA slow blow (1A opt 03)	250 V type
Dimensions	depth x width x height (mm)	370 x 300 x 85	
Weight		8 kg's	
Accessories Furnished		Operating Manual, Power Cord	

Specifications subject to change without notice

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