

# multicomp PRO



## + Performance Specifications

Model	MP700022	MP700023	MP700777
<b>Frequency</b>			
Range	9kHz-1.5 GHz	9kHz-3.6 GHz	9kHz-7.5 GHz
Resolution	1Hz		
<b>Frequency span</b>			
Range	0 Hz , 100 Hz to maximum frequency of device		
Accuracy	$\pm \text{span} / (\text{swept points} - 1)$		
<b>Internal reference</b>			
Reference frequency	10.000000 MHz		
Reference frequency accuracy	$\pm [ (\text{days from last calibrate} \times \text{freq aging rate}) + \text{temperature stability} + \text{initial accuracy} ]$		
Temperature stability	<2.5ppm ( 15°C to 35°C )	<1ppm ( 15°C to 35°C )	
Aging rate	<1ppm/year		
<b>Readout</b>			
Marker frequency resolution	$\text{span} / (\text{the number of sweep points} - 1)$		
Uncertainty	$\pm (\text{freq indication} \times \text{freq reference uncertainty} + 1\% \times \text{span} + 10\% \times \text{resolution bandwidth} + \text{Marker Frequency Resolution})$		
<b>Frequency counter</b>			
Resolution	1 Hz , 10 Hz , 100 Hz , 1 kHz		
Accuracy	$\pm (\text{marker freq} \times \text{freq reference uncertainty} + \text{counter resolution})$		
<b>Bandwidth</b>			
Resolution bandwidth (-3 dB)	10Hz to 500kHz ( in 1 to 10 sequence ) , 1MHz , 3MHz		
Resolution filter shape factor	<5 : 1 nominal ( Digital implement, similar to Gauss Pattern )		
Accuracy	<5% nominal		
Video bandwidth (-3 dB)	10Hz to 3MHz		

## Amplitude Specification

### Amplitude and electric level

Amplitude measurement range	DANL to +20 dBm , close the preamplifier	
Reference electric level	-80 dBm to +30 dBm , 0.01dBm steps	
Preamplifier	20 dB , nominal	
Input attenuator range	0~40 dB , 1 dB steps	0~50 dB , 1 dB steps
Max input DC voltage	50 VDC	
Max continuous power	+30dBm , average continuous power	

### Displayed average noise level ( DANL ) Input attenuation 0 dB , 1Hz resolution bandwidth

Preamp off	1 MHz~10 MHz -140dBm ( nominated )	
	10 MHz~1GHz -140dBm ( nominated )	
Preamp on	MP700022:1GHz~1.5 GHz -138 dBm( nominated )	
	MP700023G:1GHz~3.6 GHz -138 dBm( nominated )	
Phase noise	MP700777:1GHz~3.6GHz -138dBm( nominated ) ; 4GHz~5GHz,-133dBm( nominated )	
	5GHz~6GHz,-128dBm( nominated ) ; 6GHz~7GHz-123dBm( nominated ) ; 7GHz~7.5GHz,-118dBm( nominated )	
Phase noise	1 MHz~10 MHz -160dBm ( nominated )	
	10 MHz~1GHz -160dBm ( nominated )	
Phase noise	MP700022: 1GHz~1.5 GHz -158 dBm( nominated )	
	MP700023: 1GHz~3.6 GHz -158 dBm( nominated )	
Phase noise	MP700777: 1GHz~4GHz -158dBm( nominated );4GHz~5GHz -153dBm( nominated )	
	5GHz~6GHz -148dBm( nominated );6GHz~7GHz -143dBm( nominated ) 7GHz~7.5GHz -138dBm( nominated )	
Phase noise	20 °C ~30 °C , fc=1 GHz	
Phase noise	<-82 dBc/Hz @10 kHz offset	<-98 dBc/Hz @10 kHz offset
	<-100 dBc/Hz @100 kHz offset	
	<-110 dBc/Hz @1 MHz offset	

### Level display range

Log scale coordinate	1dB ~255dB
Linear scale coordinate	0 to reference level
level unit	dBm, dBuW, dBpW, dBmV, dBuV, W,V
Points	201~1001
Number of traces	5
Detectors	Positive-peak, negative-peak, sample, normal, RMS
Trace functions	Clear write, Max Hold, Min Hold, View, Blank, Average

### Frequency response

	20°C ~30°C , 30%~70% relative humidity, 20 dB input attenuation, reference 50 MHz	
Preamp off	±0.8 dB ;	
Preamp on	±0.9 dB ;	

### Accuracy

Input Attenuation Switching Uncertainty	20°C ~30°C , fc=50 MHz , Preamplifier Off , 20dB RF attenuation , input signal 1~40 dB ±0.5 dB
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Absolute Amplitude Uncertainty	20°C ~30°C , fc=50 MHz , RBW=1 kHz , VBW=1 kHz , peak detector, 20 dB RF attenuation , Preamplifier Off ±0.4 dB , input signal= -20dBm Preamplifier On ±0.5 dB, input signal= -40dBm	
Uncertainty	input signal range 0dbm~-50dbm ±1.5 dB	
VSWR	input 10 dB RF attenuation , 1 MHz~1.5GHz	input 20 dB , 1 MHz~7.5GHz
	<1.5 , nominal	

### Distortion and spurious response

Second harmonic distortion	fc ≥ 50 MHz , Preamp off, signal input -30 dBm, 0 dB RF attenuation, 20 °C to 30 °C -65dbc	
Third-order intermodulation	fc ≥ 50 MHz +2 dBm (NSA1015/NSA1032/NSA1036) +10dBm(NSA1075)	
1 dB Gain Compression	fc ≥ 50 MHz , 0 dB RF attenuation , Preamp off , 20 °C to 30 °C +2 dBm, nominal	
Residual response	connect 50 Ω load at input port , 0 dB input attenuation , 20 °C to 30 °C <-85dBm , nominated	
Input related spurious	-30 dBm signal at input mixer , 20 °C to 30 °C <-60 dBc	

### Sweep time and triggering

Span range	100Hz≤SPAN≤3GHz 10ms to 3000s zero sweep width 1ms to 3000s	
Mode	Continue, single	
Trigger	Free run, video	

### Tracking generator

Output frequency range	100 kHz~1.5 GHz	100 kHz~3.6 GHz ( Tracking generator ) 35 MHz~3.6 GHz ( Tracking generator )	100 kHz~7.5 GHz ( Tracking generator )
Output power level range	-30 dBm~0 dBm ,	-40 dBm~0 dBm ,	
Output power level resolution	1dB		
Output flatness	+/-3 dB		
Maximum safe reverse level	Average total power : +30 dBm , DC : ±50 VDC		

### Inputs and Outputs

Front panel RF input connector	50 Ω , N-type female
Front panel track generator output	50 Ω , N-type female
10 M reference input	50 Ω , N-type female
Communication port	USB HOST, USB DEVICE, LAN, earphone port, REF and VGA

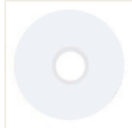
## General technical specification

Display	TFT LCD , 10.4 inches
Weight (without package)	About 5 kg
Dimension (W x H x D)	421 x 221 x 115 (mm)
Working temperature	0~40 °C
Storage temperature	-20 °C to +60 °C
Power	100V~240V 50/60Hz

## + standard Accessories



Power Cord



CD Rom



Quick Guide



USB Cable

## Options Accessories



N-N Cable  
(MP700418)



N-SMA Cable  
(MP700419)



SMA-SMA Cable  
(MP700420)



SMA Adaptor  
(MP700422)



N-SMA Adaptor  
(MP700421)



Near Field Probe includes: Four near-field probes, N-SMA adapter, SMA-SMA cable  
( Frequency range: 30 MHz – 3 GHz) (MP700423)