

GSP-8000 系列 8.0GHz/3.8GHz/1.8GHz 頻譜分析儀



特 點

- * 頻率範圍
 - GSP-8800 : 9kHz ~ 8.0GHz
 - GSP-8380 : 9kHz ~ 3.8GHz
 - GSP-8180 : 9kHz ~ 1.8GHz
- * RBW : 1Hz ~ 1MHz in 1-3-5-10 steps
- * VBW : 10Hz ~ 3MHz in 1-3-5-10 steps
- * 相位雜訊 : -104dBc/Hz
- * 靈敏度 : -160dBm/Hz Typical @PreAmp On
- * 內建AM/FM 解調
- * 內建Time Spec功能
- * 量測功能 : ACPR/OCBW/CHPW, NdB BW, Pass-Fail, Freq. Counter, Noise Marker
- * 內建20dB 前置放大器
- * 通訊介面 : Lan, USB Host/Device
- * 螢幕 : 10.4吋 XGA 輸出 (解析度 : 1024*768)
- * 選配 : EMI濾波器

應 用 範 圍

- * 頻譜特性檢查及分析
- * 分析AM, FM信號特性
- * 監控衛星新聞轉播車的衛星上傳信號
- * 需要體積緊湊的測試系統
- * 測量射頻電纜, 衰減器, 濾波器及放大器的頻率響應

GSP-8000系列是固緯電子全新推出的基礎型頻譜分析儀，提供三種頻率範圍，分別為8.0GHz, 3.8GHz與1.8GHz，適用於教學研究、研發驗證、射頻產品在生產/開發階段的測試需求。整個系列提供1Hz ~ 1MHz的解析頻寬(RBW)、10Hz ~ 3MHz的視頻帶寬(VBW)、-104dBc/Hz的相位雜訊、20dB前置放大器、而最低的底噪可達-160dBm/Hz (typical)。

在量測應用上，GSP-8000內建Time Spec功能、AM/FM信號解調功能、通道測試(Channel Power Measurement)功能、Pass-Mail功能等；Time Spec功能可同時檢視顯示功率、頻率和時間之間的關聯；ACPR/OCBW/CHPW測試則可用來測試鄰近通道、功率占用頻寬比、通道功率等功能；Pass-Fail功能可用來判定信號是否在所設定的範圍內；使用者可透過這些功能來進行廣泛的量測應用。

為了讓信號在測試時更容易觀測，GSP-8000採用了10.4吋TFT LCD大尺寸螢幕，支援XGA (1024*768)解析度；在通訊界面部分，GSP-8000提供了USB與Lan兩種介面。透過USB Host，使用者可快速抓取量測後儲存的檔案，而USB Device與Lan介面則可讓使用者透過專屬的PC軟體進行控制，或者使用對應的指令集設計所需的程式。

此外GSP-8000提供了EMI Filter選擇配備。只要透過對應的軟體授權(Soft-Key)就可開啟購買的選配，大幅度提升使用效率。



Website



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規 格							
Mode	GSP-8180			GSP-8380			GSP-8800
FREQUENCY							
Range	9 kHz ~ 1.8 GHz			9 kHz ~ 3.8 GHz			9 kHz ~ 8.0 GHz
Resolution	1 Hz						
FREQUENCY SPAN							
Frequency Range	0 Hz, 100 Hz to max. frequency of instrument						
Span Uncertainty	±span / (sweep points-1)						
INTERNAL FREQUENCY REFERENCE							
Frequency Range	10.000000 MHz						
Reference Frequency Accuracy	±(days from last calibrate × freq aging rate) + temperature stability + initial accuracy]						
Temperature Stability	<1ppm, 15°C ~ 35°C						
Aging Rate	<1ppm/year						
Initial Accuracy	<1ppm						
SSB PHASE NOISE							
Offset From Carrier	fc = 1 GHz, RBW = 1 kHz, VBW = 1kHz, 20°C ~ 30°C, average ≥ 40						
10 kHz	< -104 dBc/Hz						
100 kHz	< -106 dBc/Hz, Typical						
1 MHz	< -115 dBc/Hz, Typical						
BANDWIDTH							
Resolution Bandwidth	1Hz to 1MHz (1-3-5-10 steps by sequence) ; EMI Filter(6dB): 200Hz, 9kHz, 120kHz, 1MHz (Optional)						
RBW Uncertainty	< 5%, Typical, RBW ≤ 1 MHz						
Resolution Filter Shape Factor (60 dB: 3)	< 5: 1, Typical, digital and close to Gaussian shape						
Video Bandwidth (VBW)	10 Hz ~ 3 MHz						
AMPLITUDE							
AMPLITUDE AND LEVEL							
Amplitude Measurement Range	DANL ~ +10 dBm	100 kHz ~ 1 MHz, Preamp Off	DANL ~ +10 dBm	100 kHz ~ 1 MHz, Preamp Off	DANL ~ +10 dBm	100 kHz ~ 10 MHz, Preamp Off	100 kHz ~ 10 MHz, Preamp Off
Reference Level	DANL ~ +20 dBm	1 MHz ~ 1.8 GHz, Preamp Off	DANL ~ +20 dBm	1 MHz ~ 3.8 GHz, Preamp Off	DANL ~ +20 dBm	10 MHz ~ 8 GHz, Preamp Off	10 MHz ~ 8 GHz, Preamp Off
Preamp	20 dB, 100 kHz ~ Max. Frequency Range						
Input Attenuation	0 ~ 40 dB, in 1 dB step						
Max Input DC Voltage	50 VDC						
Max Continuous Power	+30dBm, Average continuous power						
Displayed Average Noise Level (DANL)							
Preamp Off	Input Attenuation = 0 dB, ref. level ≥ -60dBm, trace average ≥ 40, RBW normalizes to 1Hz, DETECTOR = SAMPLE, RBW = 100Hz, VBW = 100Hz						
	9 kHz ~ 1MHz	<-95 dBm (typical), <-88dBm	9 kHz ~ 1MHz	<-95 dBm (typical), <-88dBm	9 kHz ~ 1MHz	-95dBm (typical), <-88 dBm	-95dBm (typical), <-88 dBm
	1 MHz ~ 1 GHz	<-140dBm (typical), <-130 dBm	1 MHz ~ 1 GHz	<-140dBm (typical), <-130 dBm	1 MHz ~ 500MHz	-140dBm (typical), <-130 dBm	-140dBm (typical), <-130 dBm
	1 GHz ~ 1.8 GHz	<-138dBm (typical), <-128 dBm	1 GHz ~ 3.8 GHz	<-138dBm (typical), <-128 dBm	500MHz ~ 3GHz	-138dBm (typical), <-128 dBm	-138dBm (typical), <-128 dBm
					3GHz ~ 6GHz	-134dBm (typical), <-124 dBm	-134dBm (typical), <-124 dBm
					6GHz ~ 8GHz	-129dBm (typical), <-119dBm	-129dBm (typical), <-119dBm
Preamp On	Input Attenuation = 0 dB, ref. level ≥ -60dBm, trace average ≥ 40, RBW normalizes to 1Hz, DETECTOR = SAMPLE, RBW = 100Hz, VBW = 100Hz						
	100 kHz ~ 1MHz	<-135 dBm (typical), <-128dBm	100 kHz ~ 1MHz	<-135 dBm (typical), <-128dBm	100 kHz ~ 1MHz	-135dBm (typical), <-128 dBm	-135dBm (typical), <-128 dBm
	1 MHz ~ 1 GHz	<-160dBm (typical), <-150 dBm	1 MHz ~ 1 GHz	<-160dBm (typical), <-150 dBm	1 MHz ~ 500MHz	-160dBm (typical), <-150 dBm	-160dBm (typical), <-150 dBm
	1 GHz ~ 1.8 GHz	<-160dBm (typical), <-150 dBm	1 GHz ~ 3.8 GHz	<-160dBm (typical), <-150 dBm	500MHz ~ 3GHz	-160dBm (typical), <-150 dBm	-160dBm (typical), <-150 dBm
					3GHz ~ 6GHz	-154dBm (typical), <-144 dBm	-154dBm (typical), <-144 dBm
					6GHz ~ 8GHz	-149dBm (typical), <-139dBm	-149dBm (typical), <-139dBm
FREQUENCY RESPONSE							
Filter Bandwidth	20°C to 30°C, 30% to 70% relative humidity, input attenuation = 10 dB, reference frequency = 50 MHz, SPAN = 200KHz, RBW = 10kHz, VBW = 10kHz						
Preamp Off, fc ≥ 100 kHz	±0.8 dB, 100K ~ Max. Frequency Range						
Preamp On, fc ≥ 1MHz	±0.9 dB, 100K ~ Max. Frequency Range						
UNCERTAINTY AND ACCURACY							
RBW Switch Uncertainty	Reference: 10 kHz RBW at Frequency Center is 50 MHz ; ±0.2 dB, Log resolution						
Input Attenuation Uncertainty	20°C ~ 30°C, fc = 50 MHz, Preamp Off, 10 dB RF attenuation, RBW = 10K ; 1 ~ 40 dB ±0.5 dB						
Absolute Amplitude Uncertainty	20°C to 30°C, fc = 50 MHz, Span = 200 kHz, RBW = 10 kHz, VBW=10 kHz, peak detector, 10 dB RF attenuation, average ≥ 20, 2db/div, 95% confidence level						
Preamp Off	±0.4 dB, input signal level -20 dBm						
Preamp On	±0.5 dB, input signal level -40 dBm						
Uncertainty	20°C to 30°C, fc ≥ 1MHz, signal input range 0 ~ -50dBm, Ref Level range 0 ~ -50dBm, 10 dB RF attenuation, RBW = 1kHz, VBW = 1kHz, Preamp Off						
	±1.5 dB(typical)						
VSWR	<1.5, Nominal, Input 10 dB RF attenuation, 1MHz ~ 1.8GHz / 3.8GHz						
	<1.8, Nominal, Input 20 dB RF attenuation, 1MHz ~ 8GHz						
DISTORTION AND SPURIOUS RESPONSE							
Second Harmonic Distortion	fc ≥ 50 MHz, Preamp off, signal input -20 dBm, 0 dB RF attenuation, 20°C ~ 30°C ; -65 dBc						
Third-order Intermodulation	fc ≥ 50 MHz, Input double tone level -20 dBm, frequency interval 100 kHz, input attenuation 0 dB, preamp off, 20°C ~ 30°C ; +10 dBm						
1 dB Gain Compression	Nominal, fc ≥ 50 MHz, 0 dB RF attenuation, Preamp off, 20°C ~ 30°C ; > -2 dBm						
Residual Response	Connect 50 Ω load at input port, 0 dB input attenuation, 20°C to 30°C, average ≥ 40, RBW = 300Hz, VBW = 3kHz, SPAN = 2M						
	< -85 dBm, from 1 MHz ~ Max. Frequency Range						
Input Related Spurious	< -60 dBc, -30 dBm signal at input mixer, 20°C ~ 30°C						
SWEEP							
Sweep Time							
Range	10 ms ~ 3000 s, None-zero Span ; 1 ms ~ 3000 s, Zero Span						
Sweep Mode	Continuous; Single						
TRACKING GENERATOR (OPTION 01)							
Tracking Generator Output							
Frequency Range	100 kHz ~ Max. Frequency Range						
Output Power Level Range	-40 dBm ~ 0 dBm						
Output Power Level Resolution	1 dB						
Output Flatness	± 3 dB						
Maximum Safe Reverse Level	Average total power: +30 dBm, DC : ±50 VDC						
Impedance	50 Ω, Nominal						
Connector	N Type Female						
FREQUENCY COUNTER							
Frequency Counter							
Resolution	1Hz, 10Hz, 100Hz, 1kHz						
Accuracy	±(frequency indication × frequency reference accuracy) + counter resolution						
INPUTS AND OUTPUTS							
RF Input							
Impedance	50 Ω, Nominal						
Connector	N Type Female						
Reference Input							
Connector	BNC Female						
10MHz Reference Amplitude	0 dBm to +10 dBm						
Trigger Input							
Impedance	1 kΩ						
10MHz Reference Amplitude	BNC Female						
USB							
USB Host	Connector: A Plug, Protocol: USB 2.0 (Host End)						
USB Device	Connector: B Plug, Protocol: 2.0 Version						
GENERAL							
Display	10.4" TFT LCD, Resolution: 1024*768, Color: 65,536 colors						
Remote Control	USB Device: B Plug, supports USB TMC ; LAN TCP/IP Interface : RJ-45, supports 10Base-T/100Base-Tx						
Mass Memory	Internal Memory: 256M Bytes						
Temperature	Operating Temperature: 0 °C to 40°C ; Storage Temperature: -20°C to 70°C						
Relative Humidity	0°C to 30°C : ≤ 95% ; 30°C to 40°C : ≤ 75%						
Power Consumption	28W						
Dimensions & Weight	421(W) × 221(H) × 115(D) mm; Approx. 5.0 kg (without package)						
AC Power Socket	100V ~ 240V, 50/60Hz						

The specifications apply when the function generator is powered on for at least 30 minutes under +20°C~+30°C.

規格若有局部變更，恕不另行通知！ GSP-8000_C_D1DH

購買資訊	
GSP-8800	8.0GHz頻譜分析儀
GSP-8800(TC)	8.0GHz頻譜分析儀(帶追蹤產生器)
GSP-8380(TC)	3.8GHz頻譜分析儀(帶追蹤產生器)
GSP-8180(TC)	1.8GHz頻譜分析儀(帶追蹤產生器)
標準配件	
電源線 x 1, 出廠證明、安全資訊、USB Cable	

選購配件		
GSP-8800E1	EMI Activation Option for GSP-8800	ADP-001 N(M)-BNC(F) 轉接頭
GSP-8380E1	EMI Activation Option for GSP-8380	ADP-002 N(M)-SMA(F) 轉接頭
GSP-8180E1	EMI Activation Option for GSP-8180	GTL-301 N(M)-N(M) 射頻信號線
		GTL-303 SMA(M)-SMA(M) 射頻信號線

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