Features

- The frequency range is from 1uHz to 10MHz
- Two equivalent performance channels reach 60MHz and there are many correlated functions such as SUM, coupling, tracking, phase, etc.
- Pulse generator reaches 25MHz
- Genuine point-by-point output arbitrary waveform function features 200MSa/s, 100 waveform repetition rate, 14 bit resolution and 16k point memory depth
- Circuit design for ground isolation among output/input terminals and instrument chassis
- 150MHz, 8 bit frequency counter
- Various modulation methods：AM, FM, PM, ASK, FSK, PSK, SUM and PWM
- Instrument control interface：USB Host/ USB Device/
- 4.3 inch TFT color display

RS PRO Function Generators

RS Stock No.: 0642968

RS PRO is the own brand of RS. The RS PRO Seal of Approval is your assurance of professional quality, a guarantee that every part is rigorously tested, inspected, and audited against demanding standards. Making RS PRO the Smart Choice for our customers.

Electrical Specifications

The specifications apply under the following conditions: The GPP series is powered on for at least 30 minutes, within +20°C–+30°C.

CH1/ CH2

Arbitrary Functions			
	ARB function	Built-in	
	Sample Rate	200 MSa/s	
	Repetition Rate	100MHz	
	Waveform Length	16k points	
	Amplitude Resolution	14 bits	
	Non-Volatile Memory	10sets 16k points(1)	
	User-defined output section	From point 2~16384	
	User-defined output marker section	From point 2 ~ 16384	
	Output mode	1~1048575 cycles or infinite mode	
Frequency Characteristics			
	Range	Sine	10MHz(max)
		Square	5MHz(max)
		Triangle, Ramp	1MHz
	Resolution		1µHz
	Accuracy Stability	±20 ppm	
	Aging	±1 ppm, per 1 year	
	Tolerance	≦1µHz	
Output Characteristics(2)			
	Amplitude Range	1mVpp to 10 Vpp (into 50Ω)	
		2mVpp to 20 Vpp (open-circuit)	
	Accuracy	±2% of setting ±1 mVpp	
		(at 1 kHz/into 50Ω without DC offset))	
	Resolution	0.1mV or 4 digits	
	Flatness	± 1% (0.1dB) ≦1MHz	
		± 3% (0.3dB) ≦50 MHz	
		± 10% (0.9dB) ≦160MHz	
		± 30% (3dB) ≦320MHz	
		(sinewave relative to 1 kHz/into 50Ω)	
	Units	Vpp, Vrms, dBm	
Offset	Range	±5 Vpk AC +DC (into 50Ω)	
		±10Vpk AC +DC (Open circuit)	
	Accuracy	1% of setting + 5mV+ 0.5% of amplitude	
Waveform Output	Impedance	50Ω typical (fixed)	
		> 10MΩ (output disabled)	
	Protection	Short-circuit protected	
		Overload relay automatically disables main output	
	Ground Isolation	42Vpk max	
Sync Output	Range	TTL-compatible into>1kΩ	
	Impedance	50Ω standard	
	Ground Isolation	42Vpk max	
Sine wave Characteristics(3)			

	Harmonic distortion	−60 dBc DC～200kHz, Ampl>0.1 Vpp
		−55 dBc 200kHz～1 MHz, Ampl>0.1 Vpp
		−45 dBc 1MHz～10 MHz, Ampl＞0.1Vpp
		−30 dBc 10MHz～320MHz, Ampl＞0.1Vpp
	Total harmonic distortion	< 0.1% (Ampl>1Vpp) DC~100 kHz
Square wave Characteristics		
	Rise/Fall Time	<15ns
	Overshoot	<5%
	Asymmetry	1% of period +5 ns
	Variable duty Cycle	0.01% to 99.99%(limited by the current frequency setting)
	Jitter	20ppm+500ps(4)
Ramp Characteristics		
	Linearity	< 0.1% of peak output
	Variable Symmetry	0% to 100%
Pulse Characteristics		
	Frequency	1uHz~25MHz
	Pulse Width	≧20nS(limited by the current frequency setting)
	Variable duty Cycle	0.01%~99.99%(limited by the current frequency setting)
	Overshoot	<5%
	Jitter	20ppm +500ps(4)
Pulse Generator		
	Amplitude	1mVpp to 2.5 Vpp (into 50Ω)
		2mVpp to 5 Vpp (open–circuit)
	Offset	±1 Vpk AC +DC (into 50Ω)
		±2 Vpk AC +DC (Open circuit)
	Frequency	1uHz~25MHz
	Pulse Width	20nS~999.9ks(limited by the current frequency setting)
	Variable duty Cycle	0.01%~99.99%(limited by the current frequency setting)
	Leading and Trailing Edge Time(5)	10ns~ 20s(1ns resolution) (limited by the current frequency and pulse width settings)
	Overshoot	<5%
	Jitter	100ppm +500ps(4)
Sine wave Characteristics(3)		
	Harmonic distortion	−60 dBc DC～200kHz, Ampl>0.1 Vpp
		−55 dBc 200kHz～1 MHz, Ampl>0.1 Vpp
		−45 dBc 1MHz～10 MHz, Ampl＞0.1Vpp
		−30 dBc 10MHz～320MHz, Ampl＞0.1Vpp
	Total harmonic distortion	< 0.1% (Ampl>1Vpp) DC~100 kHz
Square wave Characteristics		
	Rise/Fall Time	<15ns
	Overshoot	<5%
	Asymmetry	1% of period +5 ns
	Variable duty Cycle	0.01% to 99.99%(limited by the current frequency setting)
	Jitter	20ppm+500ps(4)
Ramp Characteristics		
	Linearity	< 0.1% of peak output
	Variable Symmetry	0% to 100%
Modulation/Sweep		
	Modulation Type	AM,FM,PM,FSK,PWM (The detail same as CH1 modulation specification)
	Sweep type	Frequency

	Source	INT/EXT（INT only for AM,FM,PM, PWM)
Advanced Functions		
AM Modulation		
	Carrier Waveforms	Sine, Square, Triangle, Ramp, Pulse, Arb
	Modulating Waveforms	Sine, Square, Triangle, Upramp, Dnramp
	Modulating Frequency	2mHz to 20kHz (Int) DC to 20kHz (Ext)
	Depth	0% to 120.0%
	Source	Internal / External
FM Modulation		
	Carrier Waveforms	Sine, Square, Triangle, Ramp
	Modulating Waveforms	Sine, Square, Triangle, Upramp, Dnramp
	Modulating Frequency	2mHz to 20kHz (Int) DC to 20kHz (Ext)
	Peak Deviation	DC to max frequency
	Source	Internal / External
PM		
	Carrier Waveforms	Sine, Square, Triangle, Ramp
	Modulating Waveforms	Sine, Square, Triangle, Upramp, Dnramp
	Modulation Frequency	2mHz to 20kHz (Int) DC to 20kHz (Ext)
	Phase deviation	0∘~360.0∘
	Source	Internal / External
SUM		
	Carrier Waveforms	Sine, Square, Triangle, Ramp
	Modulating Waveforms	Sine, Square, Triangle, Upramp, Dnramp
	Modulation Frequency	2mHz to 20kHz (Int) DC to 20kHz (Ext)
	SUM depth	0%~100.0%
	Source	Internal / External
PWM		
	Carrier Waveforms	Sine, Square, Triangle, Ramp
	Modulating Waveforms	Sine, Square, Triangle, Upramp, Dnramp
	Modulation Frequency	2mHz to 20kHz (Int) DC to 20kHz (Ext)
	Phase deviation	0%~100.0% pulse width
	Source	Internal / External
FSK		
	Carrier Waveforms	Sine, Square, Triangle, Ramp, Pulse
	Modulating Waveforms	50% duty cycle square
	Internal Frequency	2 mHz to 1 MHz
	Frequency Range	1µHz to max frequency
	Source	Internal / External
Sweep		
	Waveforms	Sine, Square, Triangle, Ramp
	Type	Linear or Logarithmic
	Sweep direction	Sweep up or sweep down
	Start/Stop Freq	1uHz to max frquency
	Sweep Time	1ms to 500s
	Source	Internal / External
	Trigger	Single, External, Internal.
	Marker	Marker signal on falling edge (programmable)
	Source	Internal / External
Burst		
	Waveforms	Sine, Square, Triangle, Ramp
	Frequency	1uHz~Max Frequency
	Pulse count	1~1000000 Cycles or intfinite
	Start/ Stop Phase	−360.0∘~+360.0∘
	Internal Frequency	1 us~500 s

Function Generators

	Gate source	External Trigger
	Trigger Source	Single, External, Internal.
Trigger Delay	NCycle, Infinite	0s~100 s
External Trigger Input		
	Type	For FSK, Burst, Sweep
	Input Level	TTL Compatibility
	Slope	Rising or Falling(Selectable)
	Pulse Width	>100ns
	Input Impedance	10kΩ，DC coupled
External Modulation Input		
	Type	For AM, FM, PM,SUM,PWM
	Voltage Range	±5V full scale
	Input Impedance	10kΩ
	Frequency	DC to 20kHz
	Ground Isolation	42Vpk max
Trigger Output		
	Type	For FSK,Burst, Sweep
	Level	TTL Compatible into 50Ω
	Pulse Width	>450ns
	Maximum Rate	1MHz
	Fan-out	≥4 TTL Load
	Impedance	50Ω Typical
Frequency Counter		
	Range	5Hz to 150MHz
	Accuracy	Time Base accuracy±1count
	Time Base	±20ppm (23□C ±5□C)
	Resolution	The maximum resolution is: 100nHz for 1Hz, 0.1Hz for 100MHz.
	Input Impedance	1kΩ/1pf
	Sensitivity	35mVrms ~ 30Vms (5Hz to 150MHz)
	Ground Isolation	42Vpk max
Dual Channel Function(CH1/CH2)		
	Phase	–180○ ~180○ Synchronize phase
	Track	CH2=CH1
	Coupling	Frequency(Ratio or Difference) Amplitude & DC Offset
	Dsolink	√
Save/Recall		10 Groups of Setting Memories
Interface		LAN, USB
Display		4.3" TFT LCD 480 × 3 (RGB) × 272
General Specifications		
	Power Source	AC100~240V, 50~60Hz or AC100~120V, AC220~240V, 50~60Hz
	Power Consumption	30W or 80W(With power amplifier)
	Operating Environment	Temperature to satisfy the specification : 18 ~ 28□C Operating temperature : 0 ~ 40□C Relative Humidity: ≤ 80%, 0 ~ 40□C ≤ 70%, 35 ~ 40□C Installation category：CAT II
	Operating Altitude	2000 Meters
	Pollution Degree	IEC 61010 degree 2, Indoor use

Storage Temperature	–10~70□C, Humidity: ≤70%
Dimensions (WxHxD)	266(W) x 107(H) x 293(D) mm
Weight	Approx. 2.5kg
Safety designed to	EN61010-1
Accessories	GTL-101× 1(MFG-21XX)
	GTL-101× 2(MFG-22XX)
	Quick Start Guide ×1
	CD (user manual + software) ×1
	Power cord×1

(1). A total of ten waveforms can be stored. (Every waveform can be composed of a maximum of 16k points.)
(2). Add 1/10th of output amplitude and offset specification per °C for operation outside of 0°C to 28°C range (1–year specification).
(3). DC offset set to zero,
(4). Jitter specification for RF Generator: 20ppm +5ns.
(5).Only Pluse channel support

Electrical Specifications

Directive: 2014/30/EU(EMC), 2014/35/EU(LVD), 2012/19/EU(WEEE), 2011/65/EU(RoHS)

The above product is in conformity with the following standards or other normative documents

Harmonized Standard：

EN 61010-1: 2010+**A1: 2019**
EN **IEC** 61326-1: 20**21**
EN **IEC** 61326-2-1: 20**21**

Reference Basic Standards：

Emission:

EN 55011: 2016**+A2: 2021**
EN **IEC** 61000-3-2: **2019**
EN 61000-3-3: 2013**+A1: 2019**

Immunity:

EN 61000-4-2: 2009
EN **IEC** 61000-4-3: 20**20**
EN 61000-4-4: 2012
EN 61000-4-5: 2014**+A1: 2017**
EN 61000-4-6: 2014
EN 61000-4-8: 2010
EN 61000-4-11: 20**20**