

Model	Acute TS2202A	Acute TS2212A	Agilent U2701A	Agilent U2702A	Pico 5203	Pico 5204	TiePie HS805	TiePie HS5-530
Power	USB power only	USB power only	Extra Power needed	Extra Power needed	Extra Power needed	Extra Power needed	Extra Power needed	Extra Power needed
Acquisition								
mode	Sample, Peak detect, Average, Envelope, Hi-Res.	Sample, Peak detect, Average, Envelope, Hi-Res.	Sample	Sample			Sample	Sample
Sampling Rate	1 GS/s @ 1-channel	1 GS/s @ 1-channel	1 GS/s @ 1-channel	1 GS/s @ 1-channel	1 GS/s @ 1-channels	1 GS/s @ 1-channels	1 GS/s @ 1-channels	500 MS/s @ 1-channels
	500 MS/s @ 2-channels	500 MS/s @ 2-channels	500 MS/s @ 2-channels	500 MS/s @ 2-channels	500 MS/s @ 2-channels	500 MS/s @ 2-channels	500 MS/s @ 2-channels	200 MS/s @ 2-channels
Record Length					20 GS/s	20 GS/s		
Normal	10 kpts/ch	10 kpts/ch						
Single-Shot	10 kpts/ch	64 Mpts/ch	32 Mpts/ch	32 Mpst/ch	16 Mpts/ch	64 Mpst/ch	32 Mpts/ch	32 Mpts/ch
Inputs								
Input channels	2 (Ch1, Ch2), stackable to 6~8 ch	2 (Ch1, Ch2), stackable to 6~8 ch	2 (Ch1, Ch2)	2 (Ch1, Ch2)	2 (Ch1, Ch2)	2 (Ch1, Ch2)	2 (Ch1, Ch2)	2 (Ch1, Ch2)
Input coupling	AC/DC	AC/DC	AC/DC	AC/DC	AC/DC	AC/DC	AC/DC	AC/DC
Input impedance	1 Mohm 18 pF	1 Mohm 18 pF	1 Mohm 16 pF	1 Mohm 16 pF	1 Mohm 13 pF	1 Mohm 13 pF	1 Mohm 20 pF	1 Mohm 25 pF
Overvoltage protection	± 100 V (AC+DC peak)	± 100 V (AC+DC peak)	30 Vrms, 42 Vpk (AC+DC peak)	Vrms, 42 Vpk (AC+DC peak)	± 100 V (AC+DC peak)	± 100 V (AC+DC peak)	± 200 V (AC+DC peak)	± 200 V (AC+DC peak)
Ch-Ch skew	100 ps between any two channels	100 ps between any two channels						
Vertical								
Bandwidth	200 MHz @ Single-channel	200 MHz @ Single-channel	100 MHz @ Single-channel	200 MHz @ Single-channel	250 MHz @ Single-channel	250 MHz @ Single-channel	250 MHz @ Single-channel	250 MHz @ Single-channel
Rise Time	1.75 ns	1.75 ns	3.5 ns	1.75 ns				
Resolution	8 bits, 12 bits@Hi-Res.	8 bits, 12 bits@Hi-Res.	8 bits	8 bits	8 bits, 12 bits@Hi-Res.	8 bits, 12 bits@Hi-Res.	8 bits	12 bits
Input scale	2 mV/div to 10 V/div (Full Scale: ±4 div/screen)	2 mV/div to 10 V/div (Full Scale: ±4 div/screen)	2 mV/div to 5 V/div	2 mV/div to 5 V/div	20 mV/div to 4 V/div	20 mV/div to 4 V/div	25 mV/div to 10 V/div (2-4-8 sequence)	25 mV/div to 10 V/div (2-4-8 sequence)
Position range	±4 divisions	±4 divisions	±4 divisions	±4 divisions				
	±150 V @ 2, 5, 10 V/div;	±150 V @ 2, 5, 10 V/div;	±4 divisions	±4 divisions	±20 V @ 1, 2, 4 V/div	±20 V @ 1, 2, 4 V/div		
	±15 V @ 0.2, 0.5, 1 V/div	±15 V @ 0.2, 0.5, 1 V/div	±4 divisions	±4 divisions	±2.5 V @ 100, 200, 400	±2.5 V @ 100, 200, 400		

Video trigger	NTSC, PAL, SECAM	NTSC, PAL, SECAM	NTSC, PAL, SECAM	NTSC, PAL, SECAM	NA	NA	NA	NA
	Field, Odd/Even, Scan-line	Field, Odd/Even, Scan-line	Field, Odd/Even, Scan-line	Field, Odd/Even, Scan-line	NA	NA	NA	NA
Edge	A-trigger	A-trigger	A-trigger	A-trigger			A-trigger	A-trigger
Logic	Pattern (And, Or, Nor, Nand), State	Pattern (And, Or, Nor, Nand), State	NA	NA			And, Or	And, Or
Pulse	Width(8ns~50s), Runt	Width(8ns~50s), Runt	Width(8ns~10s)	Width(8ns~10s)			Inside Window, Outside Window	Inside Window, Outside Window
<u>I/O port</u>								
Trig-In	TTL 3.3 V level (Rising/Falling)	TTL 3.3 V level (Rising/Falling)	Yes (Analog type)	Yes (Analog type)	Yes (Analog type)	Yes (Analog type)	TTL 3.3 V (Extension Connector)	TTL 3.3 V (Extension Connector)
Trigger pulse approval	≥ 8 ns	≥ 8 ns						
Trig-Out	Yes (TTL 3.3 V)	Yes (TTL 3.3 V)	NA	NA	NA	NA	Yes (TTL 3.3 V @Extension Connector)	Yes (TTL 3.3 V @Extension Connector)
<u>Generator</u>								
Output channels	2 (Gen1, Gen2)	2 (Gen1, Gen2)	NA	NA	1	1	1	1
Output impedance	600 ohm	600 ohm			50 ohm	50 ohm	50 ohm	50 ohm
Frequency	DC to 1 MHz	DC to 1 MHz					DC to 20 MHz	DC to 30 MHz
Amplitude	0~2.5 V (50mV/step) to 1Mohm load @2-Gen.	0~2.5 V (50mV/step) to 1Mohm load @2-Gen.			+/- 2 V	+/- 2 V	+/- 12 V to 1Mohm load	+/- 12 V to 1Mohm load
	-1.25~1.25V to 1Mohm @Single Gen. (Gen2)	-1.25~1.25V to 1Mohm @Single Gen. (Gen2)						
Offset	fixed at 0 V @ Dual Gent.	fixed at 0 V @ Dual Gent.						
	-1.25 V to 1.25 V @ Single Gent. (Gent2)	-1.25 V to 1.25 V @ Single Gent. (Gent2)			+/- 1V	+/- 1V		+/- 12V
FG mode	Sine, Square, Triangle, Sawtooth, DC	Sine, Square, Triangle, Sawtooth, DC			Sine, Square, Triangle, Sawtooth, DC	Sine, Square, Triangle, Sawtooth, DC	Sine, Square, Triangle, Sawtooth, DC	Sine, Square, Triangle, Sawtooth, DC
Modulation	AM, FM, PM, ASK, FSK, PSK	AM, FM, PM, ASK, FSK, PSK			NA	NA	NA	AM, FM, PM, ASK, FSK, PSK
Sweep	Yes	Yes			Yes	Yes	Yes	Yes
Burst	Yes	Yes			NA	NA	NA	Yes
	Gaussian, Lorentz,	Gaussian, Lorentz,						

Special Pattern	Haversine, White-noise	Haversine, White-noise			Gaussian, half-sine, white noise, PRBS	Gaussian, half-sine, white noise, PRBS	user define	user define
	ExpUp, ExpDown, Sinc, NTSC, PRBS	ExpUp, ExpDown, Sinc, NTSC, PRBS						
AWG mode	Yes	Yes	NA	NA	Yes	Yes	Yes	Yes
Update rate	12.5 MS/s	12.5 MS/s			125 MS/s	125 MS/s	200 MS/s	240 MS/s
Resolution	8 bits	8 bits			12 bits	12 bits	14 bits	14 bits
Buffer size	8 kpts	8 kpts			8 kpts	8 kpts	32 Mpts	256 kpts (64Mpts optional)
Stack								
Channels expand	6 ch	6 ch	NA	NA	NA	NA	NA	Yes
Trigger source	trigger source only available in Master-scope	trigger source only available in Master-scope						
Skew between devices	±1 ns between Master & Slave @1-channel	±1 ns between Master & Slave @1-channel						0 skew (Reference Clock In)
	±2 ns between Master & Slave @2-channels	±2 ns between Master & Slave @2-channels						
Model	Acute TS2202A	Acute TS2212A	Agilent U2701A	Agilent U2702A	Pico 5203	Pico 5204	TiePie HS805	TiePie HS5
Reference Price (US\$)	<u>800</u>	<u>1200</u>	<u>1385</u>	<u>1708</u>	<u>1971.75</u>	<u>2961.75</u>	<u>2500</u>	<u>1700</u>