#### **U6200A SPECIFICATION LIST**

	Channe	el 1 & 2 Input Specifications	
DC Coupled		1 mHz to 400 MHz	
AC Coupled		200 KHz to 400 MHz (50 Ω)	
		30 Hz to 400 MHz (1 MΩ)	
FM Tolerance		FM Tolerance: 25 %	
	Volta	ge Range and Sensitivity	
		20 mVrms to ±5 V ac + dc(Medium & High)	
1 mH to 225 MHz	25 mVrms to ±5 V ac + dc(Low) (75 mVrms with optional rear connectors)		
225 MHz to 400 MHz	30 mVrms to ±5 V ac + dc (75 mVrms with optional rear connectors)		
	Channe	I 1 & 2 Input Characteristics	
Impedance		1 MO or 50 O	
(ATT X 1 1 MO			
(ATT X 1, 1 MΩ Capacitance)		24 pF	
(ATT X 10, 1 MΩ Capacitance)		15 pF	
		10.00	
Coupling		AC or DC	
Low-Pass Filter		100 KHz (or disabled) -20 dB at > 1 MHz	
Input Sensitivity	S	electable between Low, Medium(default), or High Wedium is approximately 1,35 x High Sensitivity.	
		low is approximately 1.7 x High Sensitivity	
	je Range	and Sensitivity (Single-Shot Pulse)	
1.5ns to 10ns Pulse		80 mVpp to 10 Vpp (150 mVpp with optional rear connectors)	
Width			
>10 ns Pulse Width		50 mVpp to 10 Vpp (150 mVpp with optional rear connectors)	
	т	rigger Level(ATT x 1)	
Range		±5.125 V	
Accuracy		±(15 mV + 1% of trigger level)	
Resolution		2.5mV	
Trigger Slope		Positive or Negative	
ringger Grope	Range	0 to 100% in 1% steps	
	rtungo	Peak Voltage fast mode > 10 KHz	
Auto Trigger Level	Frequency	Peak Voltage fast mode > 10 KHz Peak Voltage slow mode > 100 Hz	
	r requerie;	Amplitude> 100 mVpp (No amplitude modulation)	
		Damaga Lauri	
		Damage Level	
DC~400 KHz, 50 Ω		12 Vrms	
0 to 3.5 KHz, 1 MΩ 3.5 KHz to 100 KHz,		350 V dc + ac pk	
		350 V dc + ac pk linearly derated to 12 Vrms	
1 MΩ 100 KHz to 400 MHz,			
1 ΜΩ		12 Vrms	
		Attenuator	
Voltage Range		×10	
Trigger Range		×10	
	Chan	nel 3 Input Specifications	
Frequency Range		375 MHz to 6 GHz	
		nel 3 Input Characteristics	
Impedance	- Unam	50 Ω	
Coupling		AC AC	
VSWR		< 2.5:1	
	ower Pa	nge and Sensirivity(Sinusoid)	
375 MHz to 500 f		-16 dBm to +15 dBm	
		-16 dBm to +15 dBm -20 dBm to +15 dBm	
	1 14-	-20 dBm to +15 dBm -23 dBm to +15 dBm	
500 MHz to 1 G	lw .		
1 GHz to 2 GH		-25 dBm to +15 dBm	
1 GHz to 2 GH 2 GHz to 4 GH	iz	-25 dBm to +15 dBm	
1 GHz to 2 GH 2 GHz to 4 GH 4 GHz to 5 GH	lz lz	-25 dBm to +15 dBm -21 dBm to +15 dBm	
1 GHz to 2 GH 2 GHz to 4 GH 4 GHz to 5 GH 5 GHz to 5.5 GI	lz lz Hz	-25 dBm to +15 dBm	
1 GHz to 2 GH 2 GHz to 4 GH 4 GHz to 5 GH	lz lz Hz	-25 dBm to +15 dBm -21 dBm to +15 dBm -20 dBm to +15 dBm -17 dBm to +15 dBm	
1 GHz to 2 GH 2 GHz to 4 GH 4 GHz to 5 GH 5 GHz to 5.5 GI	lz lz Hz	-25 dBm to +15 dBm -21 dBm to +15 dBm -20 dBm to +15 dBm -20 dBm to +15 dBm -17 dBm to +16 dBm  Damage Level	
1 GHz to 2 GH 2 GHz to 4 GH 4 GHz to 5 GH 5 GHz to 5.5 GI	iz Iz Hz Hz	-25 dBm to +15 dBm -21 dBm to +15 dBm -20 dBm to +15 dBm -20 dBm to +15 dBm -17 dBm to +15 dBm  Damage Level +25 dBm, DC ±12V	
1 GHz to 2 GH 2 GHz to 4 GH 4 GHz to 5 GH 5 GHz to 5.5 G 5.5 GHz to 6 GI	iz iz Hz Hz Externa	-25 dBm to +15 dBm -21 dBm to +15 dBm -20 dBm to +15 dBm -20 dBm to +15 dBm -17 dBm to +15 dBm Damage Level +25 dBm, DC ±12V al Arm Input Specifications	
1 GHz to 2 GH 2 GHz to 4 GH 4 GHz to 5 GH 5 GHz to 5.5 G 5.5 GHz to 6 GI	iz iz Hz Hz Externa	-25 dBm to 15 dBm -21 dBm to 15 dBm -20 dBm to 15 dBm -25 dBm Db 15 dBm -25 dBm Db 12 dBm -25 dBm Db 12 tV	
1 GHz to 2 GH 2 GHz to 4 GH 4 GHz to 5 GH 5 GHz to 5.5 GI 5.5 GHz to 6 GI	iz iz Hz Hz Externa	-25 dBm to 1-15 dBm -21 dBm to 1-15 dBm -20 dBm to 1-15 dBm -17 dBm to 1-15 dBm  Damage Level +25 dBm, Dc 1217/ al Arm Input Specifications LV7TL and TTL compabile Timing Restrictions	
1 GHz to 2 GHz 2 GHz to 4 GH 4 GHz to 5 GH 5 GHz to 5.5 GH 5 GHz to 6.5 GHz 6 GHz to 6 GH	iz iz Hz Hz Externa	-2s dithn to 1-1s diffin -21 diffin to 1-1s diffin -20 diffin to 1-1s diffin -20 diffin to 1-1s diffin -20 diffin to 1-1s diffin -25 diffin, De 12/2 -25 diffin, De 12/2	
1 GHz to 2 GHz 2 GHz to 4 GH 4 GHz to 5 GH 5 GHz to 5.5 GH 5 GHz to 6.6 GI 5.5 GHz to 6 GI Signal Input Range Pulse Width Transition Time	iz iz Hz Hz Externa	-26 dibn to +15 dibn -21 dibn to +15 dibn -21 dibn to +15 dibn -20 dibn DC +12V all Arm Input Specifications UVTL and TIT, compatible Timing JOH -20 dibn DC +12V -20 dibn DC +12	
1 GHz to 2 GHz 2 GHz to 4 GH 4 GHz to 5 GH 5 GHz to 5.5 GH 5 GHz to 6.5 GHz 6 GHz to 6 GH Signal Input Range Pulse Width Pulse Width Start-to-Stop Time	iz iz Hz Hz Externa	28 dBm to +1 5 dBm 21 dBm 22 dBm 20 dBm	
1 GHz to 2 GHz 2 GHz to 4 GH 4 GHz to 5 GH 5 GHz to 5.5 GH 5 GHz to 6.6 GI 5.5 GHz to 6 GI Signal Input Range Pulse Width Transition Time	iz i	28 dBm to +15 dBm 27 dBm to 15 dBm 28 dBm to 12 dBm 29 dBm .	
1 OHz to 2 OHz to 4 OHz 2 OHz to 5 OH 4 OHz to 5 OH 5 OHz to 5.5 OH 5.5 GHz to 6 OH 5.5 GHz to 6 OH  Pulse Width Transition Time Start-to-Stop Time Damage Level	iz i	-28 dBm to +15 dBm27 dBm to +15 dBm27 dBm to +15 dBm28 dBm to +10 dBm28 dBm to -10 dBm28 dBm , DC +12V28 dBm , DC +12V28 dBm , DC +12V29 dBm , DC +12V29 dBm , DC +12V20 dBm , DC +12V	
1 GHz to 2 GHz 2 GHz to 4 GHz 4 GHz to 5 GHz 5 GHz to 5.5 Gi 5.5 GHz to 6.5 Gi 5.5 GHz to 6.6 Gi Signal Input Range Pulse Width Transition Time Damage Level	iz i	-28 dBm to +15 dBm -21 dBm to +15 dBm -21 dBm to +15 dBm Damage Lave -28 dBm, DC 120 Damage Lave -28 dBm, DC 120 -29 dBm, DC 1	
1 GHz to 2 GHz 2 GHz to 4 GH 4 GHz to 5 GH 5 GHz to 5 GH 5 GHz to 6 GH 5 GHz to 6 GH 6 GHz to 6 GH Signal Input Range Pulse Width Pulse Width Prassition Time Damage Level Impedance Input Capacitance Input Capacitance	iz i	-28 dBm to +1 5 dBm - 21 dBm to +15 dBm - 22 dBm to +15 dBm - 25 dBm DC 112V at Arm Input Specifications  LVTI, and TTI, compatible Timing Restrictions  2-50 ns - 250 ns - 250 ns  4 Arm Input Characteristics  IXCI 17 FF	
1 GHz to 2 GHz 2 GHz to 4 GHz 4 GHz to 5 GH 5 GHz to 5.5GHz to 5.5	iz i	-28 dibm to ±15 difm -21 dibm to ±15 difm -21 dibm to ±15 difm -22 dibm to ±15 difm -22 dibm to ±16 difm -23 dibm to ±16 dibm -25 dibm, Dec ±170 -	
1 GMz to 2 GMz 2 GMz to 4 GM 4 GMz to 5 GM 5 GMz to 5 GM 5 GMz to 6 GM 5 GMz to 6 GM 5 GMz to 6 GM  Signal Input Range Pulse Width Transition Time Damage Level Impedance Input Capacitance	Externa	-28 dBm to +1 5 dBm - 21 dBm to +15 dBm - 22 dBm to +15 dBm - 25 dBm DC 112V at Arm Input Specifications  LVTI, and TTI, compatible Timing Restrictions  2-50 ns - 250 ns - 250 ns  4 Arm Input Characteristics  IXCI 17 FF	

Internal Time Base Stability					
		Standard (0" to 50"C)	High Stability Oven (U6200-opt01)		
	ire Stability ad to 25°C)	± 1×10E-6	±5×10E-9		
	Per Day		±8×10E-10		
Aging Rate	Per Month				
	Per Year	± 2x10E-6	±8 x 10E-8		
Turn-on stability	vs. time (30 min.)		± 2.0 x 10E-8 (referenced to 24 hours)		

E	xternal Time	Base Input S	pecifications			
Voltage Range	200 mVrms to 10 Vrms					
Damage Level	12 Vrms					
E	xternal Time	Base Input C	haracteristics			
Threshold		0V				
Impedance		1 KC				
Input Capacitance	25 pF 10 MHz					
Input Frequency						
Internal vs. External Time Base Selection	Manual Automatic In		nternal or External External not present (default)			
	Time Base	Output Spec				
Output Frequency		10 MF				
Voltage		570 mVpp (0 dl				
Impedance		50 Ω (typical), A	AC coupled			
	Measure	ement Specif	ications			
Frequency, Period Channel 1 and 2	1	mHz to 400 MHz	(2.5 ns to 1000 s)			
Trigger	Det	fault setting is Aut	o Trigger at 50 %			
"Auto" Gate Time		0.1 se	10			
STD CH 3		MHz to 6 GHz (0				
Frequency Ratio			CH 2/ CH 1, CH 3/ CH1			
	(Measurement i	(Measurement is specified over the full signal range of each input.) 10E-10 to 10E+11				
Results Range						
"Auto" Gate Time		0.1 se				
Time Interval	Measurement is sp width of the pulse	ecified over the full must be greater the	signal ranges of Channels 1 and 2. The an 1 ns, frequency range to 300 MHz.			
Trigger	Default setting is Auto Trigger at 50 %					
Results Range		-0.5 ns to				
Resolution		40 pr	3			
RMS Resolution		120 p				
Pulse Width Time	Measurement is specified over the full signal range of Channel 1, The width of the pulse must be greater than 1 ns frequency range to 300 MHz).					
Pulse Selection			or Negative			
Trigger Results Range			Auto Trigger at 50 %			
		1.5 ns to 1				
Resolution RMS Resolution		40 pr				
	Management		signal range of Channel 1. The width o			
Rise/Fall Time Edge Selection	the pulse mu	ust be greater than 1	ns frequency range to 300 MHz).			
Trigger	Defa		Trigger at 10 % and 90 %			
Results Range		2 ns to 10				
Resolution		40 ps				
RMS Resolution		120 p	s			
Phase	Measurement is specified over the full signal range of each input. The width of the pulse must be greater than 1 ns, frequency range to 300 MHz.					
Results Range Resolution		-180° to 4				
Resolution RMS Resolution		40 pt				
	Measurement is sr		signal range of Channel 1. The width of			
<b>Duty Cycle</b>			ns, frequency range to 300 MHz			
Pulse Selection			r Negative			
Trigger		Default setting is A	uto Trigger at 50 %			
Results Range		0 to				
Resolution		40 pr				
RMS Resolution		120 p				
Totalize	Measurement is sp the pulse mu	ust be greater than 1	signal range of Channel 1. The width o ns, frequency range to 400 MHz			
Pulse Selection Trigger		Positive or N				
Results Range		Default setting is				
Resolution		0 to 10E+				
resolution	Results Range					
Peak Voltage	Resolution	-5.1 V to + 5.1 V 2.5 mV				
DC Signals		15 mV + 2 % of V	peak-to-peak amplitude greater than 200 mV			
DC Signals (ATTx10)	400 10- 40 177	150 mV + 2 % of V	peak-to-peak amplitude greater than 1 \			
11/0 - 50.0						
1 Vp-p. 50 Ω.	100 Hz ~ 10 KHz 10 KHz ~ 5 MHz	15 mV + 2 % of V 15 mV + 4 % of V	neak-to-neak amplitude greater than			

General Specifications							
Item		Bench Dimensions	210 x 85 x 350 mm (World)				
Power Supply Voltage -	100 V / 240 V ± 10 % 50 Hz - 60 Hz ± 10 %	Weight	3200 g				
	100 V / 120 V ± 10 % 400 Hz ± 10 %	Safety	IEC61010-1:2001/EN61010-1:2001 (2 <sup>M</sup> Edition)				
Power Requirements	50 VA Maximum	EMC	EN61326, IEC61000-3, IEC61000-4				
	Maximum relative humidity 80% for	Warm-Up Time	1 Hour				
Operating Humidity	furnidity temperature up to 31°C decreasing linearly Warrant to 50% relative humidity at 40°C		1 Year				
perating Environment	0 to 50% relative numbery at 40 C		1, US200-cpt01 High Stability Oven				
		Accessory	US00-opt04: Rear panel input module (CH1CH2)     US00-opt05: Rear panel input module (CH1CH2/CH0)				
Storage Temperature	- 40°C to 70°C						
Operating Altitude	Up to 2000 m		4.M3500-optOk GPIS Card				

Area Agency Information:





## **Marvelous 6GHz Counter**

Plus 400MHz Universal Solutions

#### WITH GREAT FEATURES

- CHANNEL 3 PROVIDES 375MHz ~ 6GHz FREQUENCY RANGE.
- CHANNEL 1 & 2 PROVIDE 1 mHz ~ 400 MHz FREQUENCY RANGE.
- 12 DIGITS RESOLUTION WITH 1S GATE TIME.
- 40 PS TIME DOMAIN FUNCTION RESOLUTION.
- TIME DOMAIN FUNCTION (RISE/FALL TIME, PULSE WIDTH, TIME INTERVAL), PEAK VOLTAGE, PHASE.
- TIMEBASE REFERENCE TEMPERATURE STABILITY < 1 PPM.</li>
- MULTI-PARAMETER DISPLAY OF RESULTS.

- EASY-TO-USE KEYS WITH LIGHT.
- OPERATION INSTRUCTIONS ON BUTTONS.
- CONNECTION VIA USB. ETHERNET 10M/100M & GPIB (OPTIONAL).
- SUPPORT IEEE488.2/USBTMC.
- SUPPORT WEBSERVER.
- SUPPORT A HIGH STAILITY OVEN (OPTIONAL).
- PROVIDE FREE PC SOFTWARE.



http://www.picotest.com.tw

Printed Date: 2009/01

# PICOTEST

### Resolution: 12 Digits & Frequency: 6 GHz

The Picotest U6200A universal counter, whose production procedures conform to ISO 9001, has frequency resolution of 12 digits per second (Figure-1), 40 ps time interval resolution and a complete set of test and analysis features. The standard U6200As CH3 comes with the range from 375 MHz to 6GHz and the standard CH 1 & Z from 1 mHz to 400 MHz.



Figure-1

#### **G**reat Features for Universal Purposes

The Picotest U6200A also provides great features including Frequency & Ratio (11 Digits/Sec.). Time interval, Period (2.5 ns to 1000s), Duty Cycle, Pulse Width, Rise/Fall Time, Peak Voltage (100 Hz ~300 MHz), Phase, Totalize, Temperature Stability (< 1 PPM), Aging Rate (< 2 PPM per year), timebase reference channel (Figure-2) and complete Front-End Isolation. Moreover, it offers 20 memories (Figure-3) for storing frequently-used operations.





Figure-2

Figure-3

#### Full Math Functions & Easy Operation Panel

The Picotest U6200A offers built-in statistics and math functions. Users can do general, simultaneous measurements, count in mean, min/max, delta and standard deviation (Figure-4). On the other hands, the scale & offset button can be easily used for compensation purpose according to users' applications. In addition, to reach these measurements, user can easily use the numeric buttons to define settings. Moreover, the U6200 also provides users the visible light buttons as functions are actuated (Figure-5-).







Figure-5











Figure-10

#### Fast Measurement & Special Application

The U6200A supports real-time digital signal processing technology, which is applied to analyze data as simultaneously getting new readings and speeding measurement. The "Limit Modes" is worth to be mentioned, i.e. users can set margin according to their specific measurements. Via Go-On or Stop and USB Output settings (Figure-6), the U6200A will keep or stop measuring as a limit is exceeded, and generate an output signal to trigger external devices.



Figure-6

#### Efficient After-Service

By the incredible calibration design and detailed user's manual, calibration service (Figure-7) is not the exclusive business for specific labs or calibration centers any more. And with 1-year warranty, Picotest provides full service including calibration and repair. Users can leave messages on Pioctest website http://www.picotest.com.tw/contact.asp (Figure-8) or via the address sales@picotest.com.tw for more technical assistance.



Figure-7

Figure-8

#### Free Software & Familiar SCPI Commands

Via a USB or an optional GPIB interface, users can get data logs (Figure-9) by Microsoft Excel\*. Furthermore, U6200A supports a webserver function, so users can easily control it via a LAN interface (Figure-10) by inputting an Ethernet address (Default: 192.168.0.247) on web browsers. In addition, by the SCPI commands compatible to Agilent 53132A, the Picotest U6200A can provide familiar syntax string for users' applications. For more command information, please refer to the Section 5.4 of the U6200A User's Manual.