Instrument Manager Instructions

Overview :

Instrument manager provides relevant bundled software installation instruction for <u>UNI-T</u> oscilloscopes and signal sources, which includes:

Software Installation

Driver Installation

Instrument Manager and Instrument Connection

Oscilloscope Control Software

Waveform Analysis

Virtual Panel Control Program

Software Installation

Hardware Requirements

- Hardware configuration which satisfies Windows system requirements
- 1024 x 768 or higher display resolution

System Requirements

- Supports Win2000, WinXP, Win Vista, Win7, and Win8
- System which needs to be pre-installed: .Net Framework 4 Client Profile.

Other Requirement

• Original USB cable should be used to connect with the device.

Software Installation :

• Run "Devices Manager Installer.exe" and install it step by step.

Driver Installation

USB Driver Installation :

Find the driver installation: <u>..\\DriverPack_Libusb</u>. Run **Installer.bat** to start the driver installation guide. Please follow the tip and click "next step" to install.



If any other prompt occurs through the process, click "ignore" and continue.

Successful Installation Checking Method :

1. Start device manager. The following prompt means installation is successful.

libusb-win32 devices

- Unrecognized device is no longer indicated after the device is connected to computer through USB, means the device driver has been installed correctly.
- 3. Connection with control software also means the driver has been installed successfully.

Instrument Manager Usage and Instrument Connection

1. Find Device :

Start instrument manger and select the communication type. Click the "Find" button or right click to select the communication type name. Select "Scan" in the popup menu to find the all connected network devices.

	UNI-T Device Manager
	Devices
	awdan (1)
	UP02000CS (192.168.2.2:5000: 020160308001
	USB (I)
	UTG4162A (0x1234:0x5345:0)
	6.0
Fe	sund: LAN(1), USB(1)
	More Query Exit
	Picture 1 : DP-1
	UNI-I Device Manager
	David Scan
	UP02000CS (192, 168: 2, 2: 5000: 020160308001
	UTG4162A (0x1234:0x5345:0)
	Picture 2 · DP-2

2. Connect Device :

For different devices, the control software and relevant bundled software will also be different. Left click to select the device, and then right click to select the software you would like to start in the popup menu.

ing	
t	tion!

Picture 3 : DP-3

Picture 4 : DP-4

3. Start Assistant Software :

If you need to directly start other assistant software, click the "More" button to enter "Software" list.

Click to start.

UNI-T Device Manager			- ×
Devices MLAN(1) UP02000CS+(192.168.2.2.5000-020160308001			
USB(1)			
Universities (0x1204.0x0040.0)			
Found LAN(1), USB(1)		1	-
	More	Query	Exit

Picture 5 : DP-5



UNI-T Device Manager	- ×
Wave Analysis Waveform file analysis and recorded file replay!	ARB Editor Edit aribrary waveform for signal generator!
	e e e
ound: LAN(1), USB(1)	Return

Picture 6 : DP-6

You can also start these additional software by <u>Connect Device</u> method of Chapter 2.

UNI-T.

Oscilloscope Control Software

Overview:

All the functions of control software are based on the device terminal (oscilloscope). So the software interface is different after the different device is connected to control software. But all the function items should match with the instrument.

Controlling software configuration is faster than directly operating device terminal. For example, channel position and cursor line can be dragged directly by sliding block. Some parametric number is not adjusted by knob, but can be input directly. Waveform and screen capture are not saved by U disk copy but can be exported directly to computer disk. At the same time the functions of **waveform record**, **data export and process**, **screen capture** are

strengthened. See more details as the chapters.

Start :



Enter "oscilloscope control software" by the method in "instrument connection->Connect device" :

(Picture D-1)

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Function :

- Channel Property
- Location System
- Waveform Width
- Trigger System
- Waveform Collection
- <u>Cursor Measurement</u>
- Waveform Record
- Data Export
- Parameter Measurement
- Display and System Configuration
- Decode System



Channel Property

D90 Control Application	
TIN STOP AUTO (HI CH2 CH3 CH4 MATH) PORCE SINGLE CLEAR DECODE Protrigger Triggertevel Chammel Verial Pos	1/51/ Zoua Channel Properties Configuration Menu
Annual Toloro	3/26V COE
Normal : TRIGED MEos 0.000µs 12.5M3a/s Normal	Gurrent State 4 X
	Channel Chit
Ghannel button (to select and switch)	Status 08
	🗟 Physical Channel
	Coupling AC
	EY Linit OFF
	Probe 17
	Invert 07F
	INT? V
	E BiasVal
	H Trizzer (IGJ
	H Cursor
	H Storage
	🕑 🕑 Display
	B System
and the set was the set of the wastern and the set of	
CH1 1.00VsCoarses AC	
N 20µs T Edge CH1 Auto DC / 0.00µV	Peram measure Starage Current Status
Connect OE1	

If you need to select the channel or control on-off, you can realize by two methods: homepage shortcut

button and "current status->channel" on the right. Both MATH and REF are in the channel

classification.



Location System

Main View	Pre-Ingger position return-to-zero DS0 Control Application Channel vertical position return-to-zero	×
TIN STOF AUTO CH: CH2 CH3 CH4	M FORCE SENCES CLEAR DECODE Protrigger Totarious Chemical Post Transford Vol/Div Camana to Transford Vol/Div Caman	
Normal : TRIBED MPos 0.000	us 12,5M3305 Normal TriggerLevel position return-to-zero	
40(-75:200µs BX 72:0000µs BX 72:0000µs Trigger position correspondence AV:1720V BY:1720V BY:1720V BY:200	onding time PreTrigger position adjustment	
Channel vertical position adjustmen	nt TriggerLevel µdjustment	
CH1 100V×Coarse× AC W 20us T Edge CH1 Auto DC Z D001		
Connect OEL		

Waveform Width

Adjust vertical sensitivity slot (lengthways width) and time base slot (crosswise width) to realize.

Main Vie	**		DSD Control Applicat	ron		×
TUN STOF AUTO	1 2 3 4 M CH2 CH3 CH4 MATH	FORCE SINGLE CLEAR DECODE	tige tige tige PreTrigger TriggerLevel Chann Vertical	el L Pos Time/Div V 2005 V	Di xconnect	
Normal : TRIBED	MPlos:0.000µs	12.5MBa/s: Normai	-			
AV-79.200µs BX-72.000µs BX-72.199.000 11168445:5.020k W117.200 BY-17.200 BY-42:0.000µV	я 9 Hz 			Volt/div adjustment		
Sec/div display	Volt/div display marsey AC age CHT Auto DC: 2 0.00,1V					



Trigger System

PreTriever position return-to-zero	DS9 Control Application	- = ×
NUN STOP AUTO CHI	ver trigger Trigger Trigger Triger Chamel Time/Div 2014 + Disconnect	w.
Hann .	ICIGICS 2/DIV COM	
Normal: TRIBED NEos 0.000us 12.5M3ais: Normal		Current Status # X
		Channel Chan
		Channel CAI
Trigger position corresponding time		D Rhenie J Chennel
		Gumbers 40
		EV Linit OTE
		Ital (Dire Coarto
		Proho 17
a contra contra de trategia de contra contra de con		Towart 07E
		1000 V
		B BisseVal
		Triver (16)
	TriggorLevel adjustment	Turna Edina
		TG Service CHI
		IG Coupling DC
		TG Bode duty
		To note Kato
		E Annira
		Correct
		Ima Class
	Trigger type and properties configuration	12 Starsage
	under Ale and healterne some	livelar.
		Type Vector
the second se		Grid Bright 50
· · · · · · · · · · · · · · · · · · ·		Nava Intensity 40
		# System
a na si sta di musti da su ka su ka su k		
CH1 1 00V-Coarse> AC		
U 2014 T Edge OHI Aldo DO Z AD 00002		Param manufa Diseasa Corrects Status
M 2003 I CODE AND CON 2 COUNTRY		Current medanice Sturfage Current Status
Connect OK!		128

Note: Different model has different trigger type and property but adjustment methods and menu

location are constant.

Waveform Collection

Nain View							
	3 4 M	40	\$* +\$* +\$*	Vo1/D1V 🔻 🔺	*		
UN STOP AUTO CHI CHZ	CH3 CH4 MATH	SINGLE CLEAR DECODE	rigger TriggerLevel Channel		Disconnect		
			Vertical Pos				
	Hatter		Toloto,	3/ D3V	\$34		
Normal : TRIGED	MP os 0.000µs	12:5MBa/s Normai		**		Current Status	
N/A TO SOLVE			1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	- 1710 - U.S AND - AND - AND	And the local division in the local division	C Channel	
HX 170 0000s						Channel	CM
BX-AX 199.200us						Status	01
1/(EX-AX: 5.020KHz						- Physical Cha	anel
AV: 1.720V						Coupling	AC
BY.1.720V						BY Linit	07F
BY-AY: 0.000µV						Vol/Div	Course
						Probe	11
						Invert	07F
			in the second	- Maria - 1944 - 1944 - 1944 - 1944 - 1944 - 1944 - 1944 - 1944 - 1944 - 1944 - 1944 - 1944 - 1944 - 1944 - 194	The second s	1017	v
						III BiasVol	
						🖂 Trizzer (IG)	
						Туре	Edge
					n configuration menu	IG Source	СНІ
1.22						IG Coupling	DC
						IG Node	A uto
						Slope	Rise
						C Acquire	Towns and the
						Node	Marnsl
						Nenory Depth	Hornal
						E Cursor	110010
						lype U. de	Talasialist
						n oce	CM
an and the present the test						E Staroge	0.11
						H Display	
						I System	
. (t							
CH1 1 00V <coarse> AC</coarse>							



Cursor Measurement

National View			DSD Control Appl	ication			×
NUN STOF AUTO CHI	2 3 4 M CH2 CH3 CH4 MATH FC	WCE SINGLE CLEAN DECODE	Hột Hột Pretrigger TriggerLevel	Channel Vertical Pos	Di konnect		
TRIOSO	1010	A CARDINA MANUAL	101070			Comment Charles	
Normal: TRUED	MP 05/0 UUUµs	12.5Mi38/8: Normai	111			Current Status	4 X
	Cursor measurements		Name and a second				
AVC-79.200µs					Bx	🖂 Channel	
BX 120.000µs						Channel	СНІ
BX-AX: 199.200µs	19 M					Status	0N
11/EX-AX: 5.020KHz						- Physical Char	mel
AY 1720V						Coupling	AC
BY: 1.720V						EY Linit	07F
HA-W. DODDHA						Vol/Div	Course
						Frobe	11
						Invert	075
				All and a second se	the second se	10117	v
						🗉 BiasVol	
						🖂 Trigger (IG)	A AN
						Туре	Edge
						IG Source	СНІ
						IG Coupling	DC
	and an analy and a second fragment	dara moni wow moay assisted	wind the symptotic strength of the	are the second and the second		IG Hode	Auto
					[SLope	Rise
				10	Cursor moosurement monu	E Acquire	
					Cursor measurement menu	Node	Hornsl
						Nenary Depth	Warnal
						E Cur sor	
						Ivn-	Time
	ursor line					Nade	Independent
						Source	Сні
	the second s					H Storage	
						H Display	
						I System	
						-	
						-	
CH1_1.00V/control_A							
offit Food scoal ser A						Construction of the second state of the	and a second sec
M 20µs T Edge OH1	Auto DC / 40.00mV			1760		Param measure Str	mage Current Status
Connect OE!							

Note :

- 1. The display mode of cursor measurement is different due to the different model.
- 2. Mouse can directly drag the cursor line.



Waveform Record

Bain Viex	_	_	DS0 Control Appl	ication	_	_	- = ×
TUN STOF AUTO CH:	2 3 4 M CH2 CH3 CH4 MATH	FORCE SINCLE CLEAR DECODE	PreTrigger TriggerLevel	Channel Vertical Pos	1/Div ▼ ▲	Di konnect	2. Switch to"Record waveform"
Normal : TRIGED	MP os 0.000µs	12.5MSa/s Normal	L De Mare		• 3 Confi	nuration record parameter	Storage 4 M
AVC-79.200µs HX:120000µs HX:42000µs HX:425.000µs 1/(EX-AX:5000kHz					SV COM		Record waveform(.uwr)
AY: 1.720V BY: 1.720V BY-AY: 0.000pV						ecording Process Control	Stot
		n ji se istor					Stop Replay
			+				Frame count: Duration:
							Fraile rate:
						312	Cpen the folder
							1. Switch to "Storage"
CH1 1 00V <coarse> A0</coarse>	Auto D.C. 7 40.00004						
Connect OE!	and the graduation of the						Teran Bessure Distrace Lurrent Status

The record waveform of control software has no direct relation with that of the device terminal, but their principles are same.

Features of control software waveform record :

- 1. Directly record waveform to computer disk and the record waveform is compressed format data. So the record time is longer, and the resources occupancy is smaller.
- 2. The record interval time can be set, that is, set as a timer. Record one frame when time is up. If the function is not used, the record will be continuous.
- 3. Record playback is directly played by waveform analysis software.



Data Export

Main Viex			DSO Control App	lication	_		- m x Ø
NUN STOF AUTO	2 3 4 M CH2 CH3 CH4 MATH	ONCE SINGLE CLEAN DECODE	PreTrigger TriggerLevel	Channel Vertical Pos	01/DIV	Dixconnect	
Normal : TRIGED	MP os 0.000 µs	12.5M3a/s. Normal	101.070	L	Sto	rage - Export Waveforms	Starter X
							Deep waveform(.det)
AX: -79.200µs BX: 120.000µs	Acc.						
BX-AX: 199.200µs 1//EX-AX: 5.020KHz						8 9 <mark>4 1</mark>	D: 1My Dogments1DSO Control(SAV
AV 1.720V							
BY-AY; 0.000pV							⊙сні Осна Осна Осна
				ti i			Save Open:
							Full path:
							Coper life (state)
							$\leq \gamma \gamma$
							2
CH1 1 00V×Coarse× AC							
Connect OKL	an oc 3 dronux						resenuessure Signate Lurrent Status

The exported waveform can be opened by **waveform analysis software** to check, analyze and measure.

Parameter Measurement

Nain View		DSO Control App	ication.			_	- (
NUN STOF AUTO	1 2 3 4 M CR2 CR3 CR4 MATH	SINGLE CLEAN DECODE	Chamei Vertical Pos	Disconnect			
Normal: TRIBED	MP os 0.000us	12.5MBa/a Normal			Paran measure		_
			Open "Param measure" and Select the	measurement source	Source CH1		
					Payern Valu	e Param	Va
			3. Observed "Param measu	re" result	Mmax 1.72 YMIn -1.64 High 1.26 Hoy -1.66 High 1.27 Low -1.66 Widi 60.00 PH2PK 3.36 Namp 3.32 Mean 60.46 Period/Hean 7.260 Area 16.93 Period/area 7.22 Overshoot 1.200 Period 100.00 Rise 60.00	v Fall v PPulse v PPulse v Polse v Polse vv Polse	80. 50. 50. 50. 50. 0. 0. 0. 50. 50. 50.
CH1 100V-Coars	аех АС) СНК Анао пос. и алалому]		1. Swit	ch to "Param measure"	Paran menure 3	oraze Durrent	Statu

Parameter quantity and content of parameter measurement depend on the product model.



3-10 shows:

Some models may show advanced measurement configuration interface, for example, UTD 2000M.

Param measure			џ ×
Open			
Source CH1			~
Param	Value	Param	Value
Freq		Average	
Period		PK2PK	
Rise		RMS	
Fall		VTop	
PPulse		VBase	
NPulse		VMid	
Preshoot		VMax	
OverShoot		VMin	
PDuty		VAmp	
NDuty			

Picture 3-8

If the Open option is ticked, the parameter measurement function will be enabled and various measured parameter values will be obtained in real time. See Fig.3-9.

Param measure			д х
⊡ Open			4
Source CH1			~
Param	Value	Param	Value
Freq	1.00kHz	Average	-800.00µV
Period	1.00ms	PK2PK	20,80mV
Rise	260.00µs	RMS	7.16mV
Fall	260.00µs	VTop	8.60mV
PPulse	500.00µs	VBase	-10.20mV
NPulse	500.00µs	VMid	-800.00µV
Preshoot	4.26%	VMax	9.80mV
OverShoot	6.38%	VMin	-11.00mV
PDuty	50.00%	VAmp	20.59mV
NDuty	50.00%		

Fig.3-9

Click the advanced parameter button and advanced parameter measurement window pops up as picture

 \mathbf{x}

Add

Add

Clear

Sure

Advance param measure Delay: Fall From CH1 CH1 🗸 edge Phase CH1 🗸 From CH1 Current custom param(4 params at most) :



The real time measurement of delay parameter and phase parameter can be set in the window as picture



3-11 shows. The max parameter quantity can be up to 4.

Custom	Advance
Param	Value
Delay <c1f-c2r></c1f-c2r>	501.0µs
Delay <c1f-c2r></c1f-c2r>	501.0µs
Phase <c2-c1></c2-c1>	0.00°
Phase <c2-c1></c2-c1>	0.00°
Param measure Storage Current Status	

Picture 3-11

Display and System Configuration

Nain View		DS0 Control A	pplication	i)	_	~
STOP AUTO CH	2 3 4 M CH2 CH3 CH4 NATH FC	RCE SINGLE CLEAR DECODE	vol/biv v vol/biv	Disconnect		
	Aun	10100	2 2 /287	COM		
Normal : TRIGED	MP os 0.000µs	12.5M3a/s: Normal			Current Status	
					125	
a la contra la contra de la contra	فسيتم استعاده فتخلص والانتكاد ستعاد والات		ومنصابة المتعربة الأسمية والمتواصية والمتعادة والمتعاول والمتعاد		G Channel	
					Channel	CHI
					Status	0¥
					E Physical Chan	
					Coupling	AC
					BY Linit	07F
					Vol/Div	Course
					Probe	11
					Invert	07F
				The second se	UNIT	v
					I BiasVol	
				-	I Trizzer (TG)	
				-	Acquire	
					H Cursor	
			Display and S	System configuration	H Storage	
ev nov politicapion				la ser a	- Display	
					Тура	Vactor
					Grid Bright	50
					Wave Intensity	40
					🖂 System	
					Self Adj	
					Reset To Factory	
					Language	English
					HTC Config	Right click to :
					Nanu Display	Manual
					Square	1 XHz
					Cynometer	07F
					OutputSel	Trigger
					Backlight Lun	100
CH1 1 00V×Coarse>	AC					
M 20µs T Edge Ch	Ht Auto DC 🕜 40.00mV				Peram measure Sins	Current Statu
					ni son www.00034	

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Decode System

Decode function can only be used for specific model. If upper computer shows DECODE menu and the menu can be opened, that means the model supports decode function. As to the instruction of decode function, please see the corresponding model manual.



The decode function configuration is more convenient than the device terminal configuration.

As the following picture shows, the number can be directly input at will during setting address and data,

which is more convenient than device terminal setting.



12C		
SCL	CH1	
SDA	CH1	
When	Start	
E Address Conf	ig	
Width	10 bits	
Addr	0x02	1
Direction	Read	_
🖃 Data Config		
When	=	
Data	0x0000020000	
🗏 Trigger (Comm	on)	
TG Mode	Normal	
TG Coupling	AC	
😑 Bus Config		
Bus Status	OFF	
Format	Hex	
Event Table	OFF	

Others such as RS232 baud rate, SPI condition setting and free time setting.

Waveform Analysis

Overview:

Waveform analysis software aims to analyze waveform data and playback the record data of control software. It can check the waveform exported from the device terminal and control software and analyze parameter measurement, filtering and FFT. It can also convert inner waveform document to CSV document in order to support the third software like MATLAB\EXCEL. Only one can be selected between waveform analysis and waveform record playback, that is, they are mutually exclusive.

Start :

1. Use instrument manager to start. Method: <u>Start assistant software</u>



- 2. Use oscilloscope control software to start :
 - 1) Indirectly start. Check : data export and waveform record ;
 - 2) Directly start :



Preview :



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Waveform Analysis Software Menu Instruction

As the above picture shows, there are five menus at the top left of screen: document, view, analysis, playback and help. The followings are the five menus instructions.

Document

Open : Read waveform in the document of computer hard disk or other storage medium to digital storage oscilloscope analysis software. Select "document" → "open", and load supported format documents to the waveform analysis software.

Document Information : Waveform status can be seen clearly in the document information

column when it is saved. Waveform during being saved can be played again easily as the following picture shows:

Param	Walley-	
	Value	
File type	sav	
Data source(Device type)		
Frame Contraction	1	
Data type	Original data	
	File type Data source(Device type) Frame Data type	File type sav Data source(Device type) Frame 1 Data type Original data



Export Data : Export the current data of waveform analysis software to the computer hard

disk or other storage medium by *.CSV format.



Choose	CH1	WaveAnalysis 🛛 🔀	191	Check a
Save dir:	C:\Documer	Export file ok!	ist 👩	Export
File path:	C:\Documer	ок	istrato	Open folder

Exit: Exit waveform analysis software.

View

As to the imported *.rec document type data, only toolbar and status bar are usable under view menu.

Original : Display the most original *.sav document type data that oscilloscope records.

- **Filtering (Comparison/Single) :** Only when the imported waveform is filtered under the "analysis" menu after importing data, can be used this function. The filtered waveform can be individually display or contrastively display.
- **FFT :** Only when the imported waveform is FFT under the "analysis" menu, can be used this function and displayed the waveform through FFT.
- Scaling Mode : Enlarge the waveform of virtual screen at different axis directions. For
 example, enlarge X. Press the left mouse button and hold on in the waveform area.
 Then drag mouse crosswise to select the area. Finally release the mouse left button to enlarge the selected area at X direction
- Measurement Mode : The cursor can measure time difference (△t)and amplitude difference(△V) between two cursors. Move the mouse to the cursor, and then press the mouse left button to drag the cursor. Read the difference value among



coordinate axis, and time difference ($^t=|x1-x2|$) and amplitude difference ($^V=|y1-y2|$) can be calculated.

- **Toolbar :** Select the items "standard" and "playback", and display shortcut toolbar under menu bar.
- **Status bar :** Move the mouse to the relative shortcut button icons or menus. The status bar at the left corner of virtual screen will display the relevant information the mouse indicates currently. The display can be closed here.

Analysis (It is effective for *.SAV type data)

Measurement : Measure amplitude, frequency, pulse width and duty ratio of the imported waveform as the following picture shows:

Measure			X
No.	Param	CH1	~
0	VMax	2.96V	
1	VMin	-240.00mV	
2	VTop	2.80V	
3	VBase	-160.00mV	
4	VMid	1.28V	
5	PK2PK	3.20V	
6	VAmp	2.96V	
7	Average	1.28V	
8	RMS	1.92V	
9 0 /	PeriodMean	1.28V	
10	PeriodRMS	1.92V	
11	Area	9.45mVS	10
12	PeriodArea	1.35mVS	
13	Freq	1.00kHz	
14	Period	1.00ms	
15	Rise time	10.00 µ s	
16	Fall time	10.00 µ s	
č .	nn i	F00.00	

FFT: Fourier transforms the imported waveform. The selectable window functions are:

Blackman, Hamming, Hanning, and Rectangle as the following picture shows.



ertical coordinate : I	inear		
FFT Windows	Blackman	~	

Select suitable window function and click "Confirm" . Original waveform data is converted to FFT

waveform data as the following picture shows.

9	[Wave analysis] C:\Docum	ents and Settings\Administrator	Desktop\SAV_	_201462515584.sav	- a x
File(F) Mew(V) Analysis(A) Replay(R) Help(H)					
			<u>.</u>		
1.485					
1.27875					
1.0725-					
866.25m-					
860m					
v					
453.75m-					
247.5m-					
	la serie				
41.25m-1	Malan	.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A	mann	~~^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	

If the original waveform data need to be restored, click the "original" of view menu as the following



Filtering : Filter the imported waveform. Filter signals except frequency band. There are three filtering types to select: band-pass, high pass and low pass as the following picture shows:



Filter type:	Band	×
Freq high:	47.5	kHz
Freg low:	2.5	kHz

Set the filtering type, upper and lower limit of frequency, and then click OK. The filtered waveform data is



displayed in the waveform analysis software as the following picture shows:

Playback (It is effective for *.REC type data)

Play/Pause/Stop : The imported waveform type data (*.REC) document is played, stopped or paused.

Single Frame Play: Click the counting up button or counting down button as the following picture

shows to realize single frame play waveform data.



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Help

About: Display relevant version information of the current software.

Check the Current Frame Property

Measurement Mode

Open SAV waveform data. Right click mouse in the tool bar 📶 and in the waveform display area to

enter measurement mode as the following shows:



Picture 4-14

Under measurement mode, use cursor line to realize measuring and analyzing SAV wave form data as the

following shows:





Two vertical red cursor lines can be dragged by mouse. With the cursor being dragged, the voltage and

relevant time parameter value will be displayed real time at the left bottom corner.

Scaling Mode

There are totally three modes: X, Y and XY as the following picture shows:



Reset to 100% view :



Check the Current Frame Property

Open *.SAV or *.REC document, and then right click mouse in the waveform display area. The "check the current frame property" option pops up as the following picture shows. Take *.REC document for an example.



Click "check the current frame property" and the frame information window pops up. The window displays the waveform parameter information of current frame as the following picture shows.



Cur f	rame info(1/35)		
No.	Param	Value	^
1	Acquire type	Normal	
2	Trigger type	Edge	
3	Trigger mode	AUTO	
4	Trigger coupling	DC	
5	Trigger source	CH1	
6	Edge Polar	Rise	E
7	Trigger voltage	1.36V	
8	CH count	2	
9	CH1_CH coupling	DC	
10	CH1_Probe polar	Normal	
11	CH1_Band limit	Full	
12	CH1 Probe	1X	
13	CH1 Vol/div	2V	
14	CH1_Time/div	500 µ s	
15	CH1 Data count	700	
16	CH2_CH coupling	DC	101
17	OUD Deske seles	NI	

Application Example

Load 1 KHz/3Vpp square wave signal data (*.SAV) to the waveform analysis software.

Use band-pass filter with 100Hz upper limit and 10Hz lower limit to filter. "Virtual screen"

only can display filtering wave.

- Start waveform analysis software according to methods of Chapter 1
- Select "document >open" in the menu, and then select waveform document

according to the correct path as the following picture shows





Load waveform	n file					? 🛛	
Look in	🞯 Desktop		~	6 Ø	ج 🔁		
My Recent Documents	My Documents My Computer My Network Plan New Folder New Folder (3)	:es 201462516627.rec					
Desktop	tsav_	_201462515584.sav					
My Documents							
My Computer						0	
S	File name:				~	Open	
My Network	Files of type:	Data File (*.sav;*.rec)			*	Cancel	
	Bain and prior Orden	nante suit terrespectantes en electrite (nemanen electrica) presente suit terrespectantes en electrica (nemanen electrica)	оком -	antiverritik an-	2	ruma protestation	- ×
magne d'a sa s			Mediter and the			MARCHINE TO T	
a 10000a 1,0397	1 60m 2 00m	200n 2,00n 400	n 45	an soln	f.sDn	Eolin I.Con	7.00m
T SOCIONING PLODE (CHT CT) TATAKON (C DTD.), (T(T.464) CD2.82ms(, (A)(T.484) 24(10))	00.04455 4460, AnGO, 85mV)					1000	

3. Select "analysis—>filtering " in the menu and filter parameter setup dialog box pops up. Select "Band" among the filtering type. Set upper limit to 10KHz and lower limit to 100Hz. Click " OK" as the following picture shows:

Filter params co	ufig:	×
Filter type:	Band 🗸	
Freq high:	10 kHz	
Freq low:	100 Hz	
Freq range : [0µHz,50	0kHz], (Upper limit - Lower limit) > 5kHz	
	OK Cancel	



4. Select" view - >filtering(single)" in the menu, and check "virtual screen "of waveform analysis software as the following picture:



Virtual Panel Control Program

Overview :

Now only support signal source to control through virtual panel. Software interfaces of different signal

sources are a little different.

Start :

Only support to start the software through instrument manager and check: connection device

Preview :

		Sine	MODE
CH1 Highz Sine SWEEP	CH2 OFF Highz Sine	Amp	I KOL SWEEF BURST
Amp 3.000 Vpp	Freq 1.000,000,000 kHz	High	
Offset 0 mV	Amp 1.200 Vpp	Offset F2	
Phase 0.000 °	Offset -300 mV	Low	- Sine Noise
	Phase 0.000	Phase 5	Square Arb 4 5 6
		F4	
Connection status displays Sc Exit the progra	reen display area		

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Control :

- Operate the button and model on the panel directly through mouse and keyboard shortcut key ;
- Click the right menu in "screen display area" to realize quick operation as the following picture

shows.

		Sine	MODE	
CH1 Sine Sine	CH2 OFF 500 Sine	I/1 Freq	MOD SWEEP BURST	
Freq 1.000,000,000 kHz	Freq 1.000,000,000 kHz	Period		
Amp 1.000 Vpp	Amp 1.000 Vpp	Amp	WAVEFORM	
Offset 0 mV	Offset 0 mV	High	Sine Noise	8 9
Phase 0.000 °	Phase 0.000 °	Offset		5 6
		Low	Ha Square And	
*		Phase	F4 Ramp Harmonic 1 Pulse DC 1 F5 CH1 - CH2 CH2	2 3 0 +/- TRIGGEF
			CH1 SYNC1 CH2	SYNC2

• Click the area as the following picture shows to simulate the function of Enter button.

			Sine 🔚	
	CH1 OFF 500 Sine	CH2 OFF 500 Sine	Freq	MOD SWEEP BURST
	Freq 1.000,000,000 kHz	Freq 1.000,000,000 kHz	Period	
	Amp 1.000 Vpp	Amp 1.000 Vpp	Amp F2	WAVEFORM
	Offset 0 mV	Offset 0 mV	High	Sine Noise
	Phase 0.000 °	Phase 0.000 *	Offset	Source Add
			Low	
11. IN				Ramp Harmonic 1 2 3
1.1	\frown		Phase F4	
10				Pulse DC . 0 +/-
	**		F5	
1.				
87 T			F6	
				CH1 SYNC1 CH2 SYNC2
	and the second se			$\mathbf{O} + \mathbf{O}$
				± 🕰 🕹

LINI-T. Additional Function :

Right click in any place of panel. In the popup menu select "screen shot" to quickly capture screen and save screen shot to disk. You can also select "more" to use more functions.



Configuration Interface :

0		
Capture screen.		
Save path:		Capture
0.0		
Send ARB File		
Load mode:	Carrier	
Channel:	CH1	~
Choose file:	[
chicose interest		Send
-		
Connection.	17. 742.7. gr grav	
Auto conne	ct after break!	
		UK J

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Function Introduction :

• Capture Screen Image :

It is the image save path after capturing screen. The "screen shot" document of the right-click menu is saved in this catalogue.

• Send Arbitrary Wave Document :

Select the loading mode of arbitrary wave. There are two modes: carrier wave and modulated wave

Select the Channel to be Loaded ;

Select the document to be loaded and click "send" button to send wave document to the device.

• Connected to Device

If you select the reconnection function after accidental disconnection, the connection will be rebuilt.



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Thank You!